

BOARD OF COUNTY COMMISSIONERS OF DOUGLAS COUNTY, KANSAS

WEDNESDAY, JULY 12, 2017

6:00 p.m.

CONSENT AGENDA

- (1) (a) Consider approval of Commission Orders; and
- (b) [Review and Approve 7th Judicial District Kansas Department of Corrections-Juvenile Services SBG Line Item Adjustment Request for SFY 2017. \(Pam Weigand\);](#)
- (c) [Consent Agenda approval of Supplemental Agreement No. 2 for an Engineering Services agreement with BG Consultants: Construction Engineering Services, Realignment of Hamm Landfill Access Road; Project No. 2015-18 \(Keith Browning\)](#)

REGULAR AGENDA

- (2) [Consider approval to publish 2018 Budget public hearing notice in the Journal World for August 9, 2017](#)
- (3) [Public Hearing for the Sanitary Sewer Code; and Consider adoption of the Sanitary Sewer Code by Resolution \(Dan Partridge\)](#)
- (4) a) Consider approval of Accounts Payable (if necessary)
- b) Appointments
 - Board of Zoning Appeals (1) position 10/16**
 - Palmyra Township Trustee position**
- c) Public Comment
- d) Miscellaneous
- (5) Adjourn

WEDNESDAY, JULY 19, 2017

-Presentation on financial statements (Michael Lowry AGH)

WEDNESDAY, JULY 26, 2017

-815 Vermont Street NRA (Britt-Crum-Cano)

WEDNESDAY, AUGUST 2, 2017

WEDNESDAY, AUGUST 9, 2017

WEDNESDAY, AUGUST 16, 2017

WEDNESDAY, AUGUST 23, 2017

WEDNESDAY, AUGUST 30, 2017

***Note:** The Douglas County Commission meets regularly on Wednesdays at 4:00 P.M. for administrative items and/or 6:00 P.M. for public items at the Douglas County Courthouse. Specific regular meeting dates that are not listed above have not been cancelled unless specifically noted on this schedule.*

MEMORANDUM

TO: Board of County Commissioners
Craig Weinaug, County Administrator

FROM: Pam Weigand, Youth Services Director

SUBJECT: Review and Approve 7th Judicial District Kansas Department of Corrections-
Juvenile Services SBG Line Item Adjustment Request for SFY 2017.

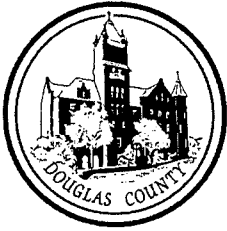
DATE: June 28, 2017

As the SFY grant year closes we need to make some budget adjustments so the County can optimize the use of state grant funds. KDOC-JS Financial Rules and Guidelines requirements in Section 3: Adjustments to Awards, Line-Item Changes:" JCAB and Board of County Commissioner Approval is required for line-item changes that exceed \$5,000 per event."

We are requesting to move grant funds in the amount of \$10,644.18 from JISP Salary line item to the CM Benefits line item so we are able to expend the entire grant award for SFY 2017 and be able to reimburse the employee benefits budget for some of the employee benefits costs incurred by KDOC-JS grant staff. There are other line items requiring adjustments, but these are under \$5,000.00 and do not require approval.

The Juvenile Corrections Advisory Board is reviewing the request at their meeting on July 11th.

Thank you for your consideration.



DOUGLAS COUNTY PUBLIC WORKS

3755 E. 25th Street
Lawrence, KS 66046
(785) 832-5293 Fax (785) 842-1201
dgcopubw@douglascountyks.org
www.douglascountyks.org

Keith A. Browning, P.E.
Director of Public Works/County Engineer

MEMORANDUM

To : Board of County Commissioners

From : Keith A. Browning, P.E., Director of Public Works/County Engineer *KAB*

Date : July 7, 2017

Re : Consent Agenda approval of Supplemental Agreement No. 2
Engineering Services agreement with BG Consultants
Construction Engineering Services
Realignment of Hamm Landfill Access Road
Project No. 2015-18

In December 2015, the BoCC approved a contract with BG Consultants in the amount of \$47,931.28 for design engineering services for Project No. 2015-18, the realignment of the Hamm Landfill access road (N 2100 Road). In May 2016, the BoCC approved Supplemental Agreement No. 1 to add design services for an eastbound left turn lane on US-24/59 highway. The additional cost for these services was \$14,837.48.

The attached Supplemental Agreement No. 2 adds construction engineering services to BG Consultants' contract. The not-to-exceed cost for these services is \$73,922.50. This department has no available personnel to devote to construction of the landfill road project this summer given other ongoing County projects.

This cost for construction engineering services was discussed during the June 14, 2017 meeting during which the BoCC awarded a construction contract to Hamm for this project. As a reminder, all costs for this project are being funded by the Landfill Road Maintenance Fund using proceeds from the \$0.15/ton surcharge on waste delivered to the landfill.

Action Required: Consent Agenda approval of Supplemental Agreement No. 2, which adds construction engineering services to the Engineering Services Agreement with BG Consultants for Project No. 2015-18, the realignment of the Hamm Landfill access road, at a not-to-exceed cost of \$73,922.50.

**Supplemental Agreement No. 2
to
Engineering Services Agreement
Between
Douglas County, Kansas and BG Consultants, Inc.
for
Douglas County Project No. 2015-18**

The purpose of this Supplement No. 2 is to define additional engineering services requested by **Douglas County, Kansas**, hereinafter called the "County", to be provided by **BG Consultants, Inc.**, hereinafter called the "Engineer". This agreement is a supplement to the ENGINEERING SERVICES AGREEMENT FOR DOUGLAS COUNTY PROJECT No. 2015-18 BETWEEN DOUGLAS COUNTY, KANSAS AND **BG CONSULTANTS, INC.**, DATED **DECEMBER 23, 2015**.

SECTION I – SCOPE OF SERVICES

Under the terms of Supplement No. 2, the County and Engineer agree to modify the scope of services to include additional engineering services described as follows:

Complete Scope of Work

Engineer will provide full time construction observation services. Engineer will make available staff with KDOT CIT certification to perform construction observation services.

SECTION II – COMPENSATION

As compensation for the additional services required as described in Exhibit A, Sections I to VII, the County agrees to pay the Engineer an amount not to exceed **\$73,922.50**.

Billing procedures and all other items pertaining to compensation are as described in the Engineering Services Agreement for Douglas County Project No. 2015-18 between Douglas County, Kansas and BG Consultants, Inc., dated December 23, 2015.

SECTION III – OTHER MATTERS

It is mutually agreed and understood that all terms of the original Agreement, not specifically revised by this Supplement No. 2, shall remain unchanged and in full force.

IN WITNESS WHEREOF, the parties have executed this Supplement No. 2 on this _____ day of _____, 2017.

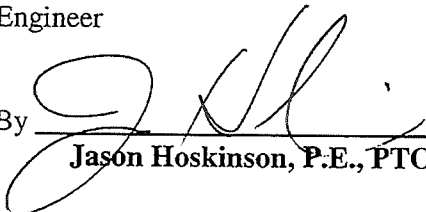
Douglas County, Kansas
County

By _____

Title _____

Date _____

BG Consultants, Inc.
Engineer

By  _____
Jason Hoskinson, P.E., PTOE

Title Vice President

Date 7/7/2017

Exhibit B
Improvements to JF/DG Landfill Access Road

Construction Observation

1. Direct Payroll
A. Construction Phase

<u>Position</u>	<u>Estimated Hours</u>	<u>Hourly Rate</u>	<u>Total</u>
Principal	8	\$ 69.00	\$ 552.00
Senior Construction Observer	655	\$ 37.29	\$ 24,424.95
Clerical	30	\$ 19.86	\$ 595.80
Total Direct Payroll =			\$ 25,572.75

2. Salary Related Overhead

Total Direct Payroll =	\$ 25,572.75
Overhead Rate =	<u>1.5622</u>
Salary Related Overhead =	\$ 39,949.75

3. Total Payroll Plus Overhead

Direct Payroll + Salary Related Overhead = \$ 65,522.50

4. Net Fee

+ Net Fee = \$ 7,900.00

3. Direct Expenses
Proctor Test

2 @	\$ 250.00	\$ 500.00
Subtotal Direct Expenses =		\$ 500.00

Total = \$ 73,922.50

Note: The hourly rates shown above are subject to a small annual adjustment due to salary adjustments.

**The enclosed Douglas County Code has been officially
adopted by the Douglas County Board of Commissioners.**

Signature

Chairman, Board of County Commissioners

Date

DOUGLAS COUNTY SANITARY CODE

ADOPTED

MM DD, 2017

By

DOUGLAS COUNTY BOARD OF COUNTY COMMISSIONERS

EFFECTIVE

MM DD, 2017

ADMINISTERED BY

**LAWRENCE-DOUGLAS COUNTY HEALTH DEPARTMENT
200 MAINE, SUITE B
LAWRENCE, KS 66044
785-843-3060**

SANITARY CODE

DOUGLAS COUNTY, KANSAS

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SANITARY CODE

DOUGLAS COUNTY, KANSAS

CHAPTER 1

ADMINISTRATIVE PROCEDURES

SECTION 1 AUTHORITY AND POLICY

- 1-1.1 Legal Authority. This code is adopted under the authority granted to the Board of County Commissioners by K.S.A. 19-3701 et. seq. as amended.
- 1-1.2 Purpose. The purpose and intent of this code is to set forth procedures and regulations that shall be followed and administered to promote and protect the health, safety, comfort and general welfare of the people of Douglas County, Kansas. The enforcement of this code will reduce and retard the development of environmental conditions that are hazardous or could potentially be hazardous to people's health and safety.
- 1-1.3 Title. This code shall be known and referred to as the Douglas County Sanitary Code.
- 1-1.4 Applicability. The standards shall not apply to incorporated cities or to any premises under one ownership which exceeds 650 acres in area and which is used only for agricultural purposes. For the purposes of these standards "agricultural purposes" means a purpose related to the production of livestock or crops.
- 1-1.5 Effective Date. This code shall take effect and be in force from and after its adoption by county resolution and publication of the resolution once in the official county newspaper.

SECTION 2 DEFINITIONS

The following words and phrases, when used in this code, shall have the meanings ascribed to them in this section, unless indicated otherwise.

- 1-2.1 Administrative Rules: those rules and regulations contained in Chapter 1 of this code which prescribe general procedures to be followed in the administration of the code adopted by the county.
- 1-2.2 Authorized Representative: any employee of the Lawrence-Douglas County Health Department who is designated by the Health Officer to administer this code.

- 1-2.3 Board of County Commissioners: the Board of County Commissioners of Douglas County, Kansas.
- 1-2.4 Board of Health: the Lawrence-Douglas County Health Board.
- 1-2.5 Health Officer: the legally appointed Health Officer of Douglas County or his/her duly authorized representative.
- 1-2.6 KDHE: the Kansas Department of Health and Environment.
- 1-2.7 Local Health Department: the Lawrence-Douglas County Health Department; also referred to herein as “Health Department”.
- 1-2.8 Person: any individual, association, firm, partnership, corporation or government entity.
- 1-2.9 Premises: any one or more lots or tracts of land, including all buildings, structures, or facilities located thereon.
- 1-2.10 Sanitary Code: rules, standards and regulations adopted by the county designed to minimize or control those environments and environmental conditions that may adversely affect the health and well being of the public. Such environments and environmental conditions may include but are not restricted to: wastewater and wastewater disposal; water supply; food and food handling. Whenever the term “code” is used herein, such reference shall be to the Sanitary Code of Douglas County, Kansas.

SECTION 3 ADMINISTRATIVE POWERS AND PROCEDURES

- 1-3.1 Right of Entry. The Health Officer or his/her authorized representative may, at any reasonable time, enter upon, examine and/or survey all such premises, establishments and buildings as he/she shall deem necessary for the enforcement of this code. In the event that the owner or person lawfully in control of the premises refuses to consent to such entry, then, upon application by the Health Officer or his/her authorized representative, any court of competent jurisdiction shall issue an exparte order requiring the owner or person lawfully in control of the premises to permit entry upon the premises and permitting the Health Officer, when accompanied by the county sheriff, to enter forcibly upon the premises and conduct the examination and/or survey.

1-3.2

Permit and License.

- a. Applications for Permits and Licenses. All persons required by this code to obtain a permit or license shall make application for such permit or license to the Health Department on standard forms provided for that purpose.
- b. Issuance of Permit or License. After receipt of an application for a permit or license required by this code, the Health Officer shall begin such investigations and inspections as he/she shall deem necessary to determine whether the permit or license should be issued or denied, and shall issue or deny the permit or license within a reasonable period of time, depending upon information and data requested. If the permit or license is denied, the Health Officer shall send the applicant a written notice with the reasons for denial stated thereon.
- c. Permit Non-transferable. No permit or license required by this sanitary code shall be transferable, nor shall any fees required and paid therefore be refunded.
- d. Errors and Omissions.
 - 1) The issuance of a permit shall not prevent the Health Department from thereafter requiring the correction of errors in plans and specifications or from preventing construction activity being carried on thereunder when such activity would be in violation of this code or of any other code or resolution or from revoking any permit or license when issued in error.
 - 2) The Health Department may, in writing, suspend or revoke a permit issued under provisions of this code whenever the permit is issued in error or on the basis of incorrect information provided by the applicant.
- e. Standard Fees. For the purpose of defraying all or part of the costs of administration of this code, the Lawrence-Douglas County Health Board shall establish a schedule of fees for all permits and licenses required by the code, payable upon submission of the application for such permit or license.

1-3.3

Notices, Orders, Appeals.

- a. Notice of Violations. Whenever the Health Officer determines that there has been, or is likely to be, a violation of any provisions of this code, he/she shall give notice of such alleged violation. The notice:
 - 1) Shall be in writing;
 - 2) Shall identify the code violation and the factual basis therefore;
 - 3) Shall specify necessary corrective action;

- 4) Shall specify a reasonable period of time for performance of any corrective action and/or work required by the notice; and
- 5) Shall be properly served upon the owner or occupant of the premises; provided, that such notice shall be deemed properly served upon such owner or occupant when a copy thereof has been sent by registered or certified mail to the last known address of the owner or occupant as identified on the latest county tax rolls. If properly addressed and mailed, the failure of an owner or occupant to actually receive or sign for receipt of such notice shall not affect the validity of service of such notice.

The failure of the Health Officer to serve such a notice upon the owner or occupant shall not be a defense to any criminal prosecution for violation of any provision of this code.

- b. Request and Hearing for Review of Notices and Decisions; Variances. Any person aggrieved by any notice or decision by the Health Officer under the provisions of this sanitary code, or aggrieved by the strict application of specific provisions hereof, may request, and shall be granted, a hearing on the matter before the Board of Health; provided that if such request is to review a notice or decision by the Health Officer, such person shall file the request with the Board of Health within ten working days after the date of issuance of the notice or decision. For good cause, the Board of Health may grant extensions to the ten day request period.

Any request for hearing shall be in writing and set forth the grounds upon which the request is made. Upon receipt of such request, the Board of Health shall set a time and place for such hearing, and shall provide written notice thereof to the requestor. At such hearing, the requestor shall be given an opportunity to be heard and to show why such notice or decision should be modified or withdrawn, or why a variance or waiver of the strict application of specific provisions hereof should be granted.

After such hearing, the Board of Health may sustain, modify, or withdraw the notice or decision. In addition, the Board of Health may grant a variance or waiver of the strict application of specific terms of this code in cases in which it is impossible or impractical to strictly comply with such terms and the variance or waiver will not undermine the health, safety, comfort and general welfare of the people of Douglas County, Kansas. The Board of Health shall notify the requestor of its decision in writing.

The decision of a majority of the Board of Health on such appeals shall be final, with no right of appeal to the Board of County Commissioners. Any persons aggrieved by the final decision of the Board of Health may appeal such decision

to the district court in the same manner that final decisions of the Board of County Commissioners are appealed.

- c. Emergency Orders. Whenever the Health Officer finds that an emergency exists which requires immediate action to protect the public health, he/she may, without notice or hearing, issue an order reciting the existence of such an emergency and require that such action be taken as he/she may deem necessary to meet the emergency, including the suspension of the permit. Notwithstanding any other provisions of this code, such order shall be effective immediately and shall be enforceable in Douglas County District Court.

1-3.4 Records, Permit Applications. Applications for permits or licenses required by this code shall be filed with the Health Department.

1-3.5 Disclaimer of Liability. This code shall not be construed or interpreted as imposing upon the County or any city adopting this code its officials or employees (1) any liability or responsibility for damages to any property; or (2) any warranty that any system, installation or portion thereof that is constructed or repaired under permits and inspections required by this code will function properly. In addition any employee charged with the enforcement of this code, acting in good faith and without malice in the discharge of his or her duties, shall not thereby be personally liable and is hereby relieved from personal liability for damage that may occur to any person or property as a result of any act required by this code in the discharge of his or her duties.

1-3.6 Separability. No decision of a Court of competent jurisdiction declaring any section, subsection, paragraph, sentence, clause or phrase of this code invalid, shall affect the remaining portion of this code, which shall remain in full force and effect; and to this end the provisions of this code are hereby declared to be severable and shall be presumed to have been adopted knowing that the part of section declared invalid would be so declared.

1-3.7 Penalties and Enforcement Procedures. Any person who shall willfully violate any provision of this code, shall be subject to the penalties provided for such violation pursuant to K.S.A. 19-3707. Each day's violation shall constitute a separate fineable offense. In addition, the Health Department is hereby authorized to apply to the District Court for enforcement of this code.

SANITARY CODE

DOUGLAS COUNTY, KANSAS

CHAPTER 2

CONVENTIONAL, ALTERNATIVE, EXPERIMENTAL, AND INNOVATIVE ON-SITE SEWAGE MANAGEMENT SYSTEMS

SECTION 1 DEFINITIONS

In addition to the definitions provided in Chapter 1 of this code, the words, terms and phrases listed below, for purposes of this Chapter 2, are defined as follows:

- 2-1.1 Absorption Field: a configuration of on-site trenches installed to absorb sewage effluent from a septic tank or other sewage solids removal device.
- 2-1.2 Absorption Pit: a pit or hole in which gravel is placed, which receives sewage effluent.
- 2-1.3 Absorption Trench: a trench that is laid to convey and distribute septic tank effluent.
- 2-1.4 Alternative On-Site Sewage Management System: any on-site sewage management system which has been approved by the Health Department, and has proven reliability and performance in field use, but which differs in design or operation from approved conventional septic tank and absorption-field systems.
- 2-1.5 Approval or Approved: accepted or acceptable by the Health Department in accordance with applicable specifications stated herein or with additional criteria accepted by the Department.
- 2-1.6 Available Sewer: any Public Sewer within 200 feet of a building which is permitted by the owner of the public sewer to be connected to the public sewer system.
- 2-1.7 Buildable Lot: any lot, parcel, or tract of land which has been determined by the Douglas County Zoning and Codes Department to meet all requirements necessary for issuance of a building permit.
- 2-1.8 Building Sewer: that part of the piping of a drainage system beyond the building which receives and conveys liquid wastes to a Public Sewer, private sewer, on-site sewage management system or other disposal system.

- 2-1.9 Chamber System: an absorption field that utilizes vaulted plastic chambers rather than gravel.
- 2-1.10 Cistern: a container or receptacle utilized to contain potable water delivered from a public water supply for household domestic uses. To be approved by the Health Department, cisterns shall have a minimum capacity of 1,000 gallons and meet minimum standards for material, design and construction.
- 2-1.11 Composting Toilet: a biological composting unit used for the disposal of human excreta.
- 2-1.12 Conventional On-Site Sewage Management System: a system that includes a septic tank, absorption field, and all other elements intended to be used for management and disposal of sewage on-site.
- 2-1.13 Domestic Sewage: sewage originating primarily from kitchen, bathroom, and laundry sources, including waste from food preparation, dishwashing, garbage-grinding, toilets, baths, showers, and sinks.
- 2-1.14 Experimental or Innovative On-Site Sewage Management System: any on-site sewage management system which has been approved by the Health Department and is installed for testing and observation.
- 2-1.15 Floodplain: Land which is subject to inundation as a result of flooding having a one percent (1%) chance of occurrence every one hundred (100) years in any given year and identified on the Flood Insurance Rate Maps for Douglas County, Kansas
- 2-1.16 Grade: the ratio of vertical drop of pipe invert, trench bottom, or ground surface to the horizontal distance transversed.
- 2-1.17 Grease Trap: a device that captures grease in sewage and from which the grease may be removed for proper disposal.
- 2-1.18 Health Department: the Lawrence-Douglas County Health Department.
- 2-1.19 Industrial or Commercial Wastes: any wastes produced as a by-product of any industrial or commercial process or operation, other than domestic sewage.
- 2-1.20 Installer License: an annual license issued by the Health Department authorizing an individual to install, construct, repair, or alter conventional on-site sewage management systems in Douglas County, Kansas.
- 2-1.21 KDHE: the Kansas Department of Health and Environment.

- 2-1.22 Lagoon or Sewage Lagoon: an artificial pond designed to exclude surface water and receive raw sewage through a submerged sewer for biological decomposition.
- 2-1.23 Lateral Rock: washed gravel or washed crushed stone ranging in size from three-fourths (3/4) inch to two (2) inches in diameter (p. 12, KDHE Bulletin 4-2, or as amended).
- 2-1.24 Lot: the smallest basic portion of a subdivision or other tract of land, normally intended to be developed and transferred individually.
- 2-1.25 Multi-Family Building: any building intended to be occupied as living quarters by more than one family.
- 2-1.26 Non-Public Water Supply: all water supplies for domestic uses that do not meet the definition of Public Water Supply.
- 2-1.27 Non-Residential Building: any building intended to be utilized for business, religious, or commercial purposes, which is not intended to be occupied by one or more persons as living quarters.
- 2-1.28 On-Site Sewage Management System: a conventional, alternative, experimental, or innovative sewage disposal system which serves a single family residential building or a single non-residential building.
- 2-1.29 Package Plant: an approved watertight structure installed underground to receive, agitate and aerate sewage from a building sewer, effecting separation and organic decomposition of sewage solids and discharging effluent to an absorption field.
- 2-1.30 Pit Privy: an enclosed structure having a seat with one or more holes over an earthen pit, serving as an outdoor toilet, which is not connected to a water supply or an absorption field.
- 2-1.31 Public Water Supply: a system for delivery to the public of piped water for human consumption that has at least ten (10) service connections or regularly serves at least twenty-five (25) individuals daily at least sixty (60) days out of the year. This term includes any source, treatment, storage, or distribution facilities used in connection with the system.
- 2-1.32 Public Sewer: any public or community sewerage system for collection, treatment and disposal, including sewers, treatment plants, pumping stations, force mains and all other elements owned, operated or managed by a public entity (including agents thereof) and serving more than one residential premises.
- 2-1.33 PVC: polyvinyl chloride.

- 2-1.34 Sanitary Privy: a covered facility with a water-tight vault designed to receive, store and provide treatment for periodic removal of non-water carried wastes from the human body.
- 2-1.35 Septic Tank: an approved watertight structure installed underground to receive domestic sewage from a building sewer, effecting separation and organic decomposition of sewage solids and discharging effluent to an absorption field.
- 2-1.36 Sewage Holding Tank: a watertight receptacle used to contain domestic sewage discharged from a building which has a water supply and does not discharge to an conventional On-Site Sewage Management System or Public Sewer.
- 2-1.37 Sewage Vault: a watertight receptacle used to contain sewage generated from a building which does not have a water supply and does not discharge to an conventional On-Site Sewage Management System or Public Sewer.
- 2-1.38 Single Family Residential Building: any building intended to be occupied by one family as living quarters.
- 2-1.39 Subdivision Regulations: the Lawrence-Douglas County Subdivision Regulations.
- 2-1.40 Toilet: a sanitary fixture meeting Health Department and plumbing code requirements for receipt and conveyance of human body wastes.
- 2-1.41 Water Supply Main: any water line, including the water meter, which is owned by a public water supply.
- 2-1.42 Water Well: any excavation that is drilled, cored, bored, washed, driven, dug, jetted, or otherwise constructed when the intended use of such excavation is for the location, diversion, artificial recharge or acquisition of groundwater.

SECTION 2 DISPOSAL OF DOMESTIC SEWAGE

- 2-2.1 No person shall urinate or defecate in a public place other than in a toilet or other disposal receptacle approved by the Health Department. Flush toilets must be connected to a public sewer, an approved on-site sewage management system, or an approved sewage lagoon. Privies must meet requirements of the Health Department as to design and installation in lieu of a flush toilet and must be specifically approved by the Health Department.
- 2-2.2 All sinks, lavatories, garbage disposals, dishwashers, clothes washing machines, shower baths, bathtubs, basins and similar plumbing fixtures or appliances shall be connected to a public sewer, an approved on-site sewage management system, or an approved sewage lagoon.

- 2-2.3 Foundation drain water or other non-sewage or surface water must not go into the septic tank or on-site sewage management system. Only domestic sewage shall be permitted to discharge to an approved on-site sewage management system.
- 2-2.4 No household, industrial or commercial wastes shall be discharged into any watercourse, impoundment, storm sewer or public thoroughfare. The discharge of sewage into cesspools, absorption pits, abandoned wells, cisterns, streams, or upon the surface of the ground shall be prohibited. In no case shall treated or untreated sewage, or the effluent from a septic tank or on-site sewage management system, be permitted to drain directly or indirectly into a ditch or stream, nor shall it be allowed to surface or run or drain across any adjacent land.
- 2-2.5 In the event that a failure of an on-site sewage management system occurs and it is determined by the Health Department that the system cannot be repaired, then either connection to a public sewer shall be made or a new approved on-site sewage management system shall be installed.
- 2-2.6 Where no public sewer is available or where conventional on-site sewage management is not possible, experimental, innovative, or alternative systems may be considered for approval by the Health Department.
- 2-2.7 On-site sewage management systems shall be maintained in sanitary condition by regular maintenance and/or repair.
- 2-2.8 No two or more residential and/or non-residential buildings shall be connected to the same on-site sewage management system without written approval from the Health Department or KDHE.
- 2-2.9 All onsite wastewater systems shall be designed, constructed and operated in accordance with standards set forth in KDHE Bulletin 4-2 "Minimum Standards for Design and Construction of Onsite Wastewater Systems" published March, 1997, as amended, by KDHE and Kansas State University Agricultural Experiment Station and Cooperative Extension Service. KDHE Bulletin 4-2 is hereby adopted by reference and is included herein as an Appendix to this Code.

SECTION 3 TOILETS

- 2-3.1 Every newly constructed residential building shall be provided with at least one flush toilet in accordance with the provisions of this regulation.
- 2-3.2 Flush toilets shall at all times be provided with sufficient water and pressure to provide adequate flushing.

- 2-3.3 Composting toilets or electrically incinerating toilets may be approved by the Health Department on an individual basis only if the use of such devices does not create a public health nuisance.

SECTION 4 CONNECTION TO SEWER

- 2-4.1 The owner, lessee or agent thereof of any building, residence or other facility designed or used for human occupancy or congregation, shall provide on the premises a system to dispose of the sewage generated within the building, residence or other facility.
- 2-4.2 If a public sewer is available and a new building is being constructed then the building sewer shall be connected to the available sewage system.
- 2-4.3 A public sewer shall be considered available if it is within two hundred (200) feet of the building, and connection to the sewerage system is permitted by the owner of the available public sewage system.
- 2-4.4 When a public sewer has become available to premises served by an on-site sewage management system and failure of the on-site sewage management system occurs, the owner, lessee or agent shall be required to connect properties affected to the available public sewer system within 30 days.

SECTION 5 SEWAGE CONDUITS FOR ON-SITE SEWAGE MANAGEMENT SYSTEMS

- 2-5.1 Size of sewage conduits. Sewage conduits connecting component parts of on-site sewage management systems shall be a minimum of four (4) inches in diameter.
- 2-5.2 Materials. All pipe and fittings used in sewage conduits and/or in absorption fields shall meet nationally-recognized standards for their designated use, such as standards published by the American Society for Testing and Materials or the National Sanitation Foundation, and shall have been approved by the Health Department for use in on-site sewage management systems. Sewage conduits under driveways or similar areas of load or impact shall be of material capable of withstanding maximum anticipated loads.

All perforated sewer pipe shall be constructed of PVC and shall be marked to indicate it meets or exceeds a three thousand (3,000) pound “crush test” rating. All non-perforated sewer pipe shall be constructed of PVC. All non-perforated sewer pipe from the building to the septic tank, and the first ten (10) feet exiting the septic tank, shall be marked to indicate it meets or exceeds a Schedule 40 pipe or heavier (p. 8, KDHE Bulletin 4-2, or as amended). All non-perforated sewer pipe beyond that

point shall be marked to indicate it meets or exceeds an SDR-35 or three thousand five hundred (3,500) pound “crush test” rating.

2-5.3 Construction. Sewage conduits (other than perforated pipe used in absorption fields) shall be installed with sealed, watertight, root-resistant joints and shall be laid on a firm foundation. This shall not be subject to settling, and shall be installed at a grade not less than one-eighth (1/8) inch per foot. All pipe from the structure to the absorption field shall be laid “bells up” if bell-and-spigot pipe is used.

2-5.4 Cleanouts. Cleanouts shall be placed outside the building at the junction of the building drain and building sewer and at intervals not to exceed one hundred (100) feet between the building and septic tank.

2-5.5 The building sewer shall not cross above or below any private water line and shall be a minimum horizontal distance of ten (10) feet from a private water line (p. 4, KDHE Bulletin 4-2, or as amended), unless the building was constructed prior to October 10, 1997. The building sewer shall be covered by a minimum of twelve (12) inches of soil.

2-5.6 The building sewer shall not cross above or below any public water main and shall be a minimum horizontal distance of twenty five (25) feet from any public water line or water meter (p. 4, KDHE Bulletin 4-2, or as amended), unless written approval is granted by the public water supplier.

SECTION 6 ON-SITE SEWAGE MANAGEMENT SYSTEMS

2-6.1 Permits Required

- a. No person shall be issued a building permit without having first obtained from the Health Department a permit to construct an on-site sewage management system. A fee shall be charged by the Health Department for the on-site sewage management system permit.
- b. No person shall construct, repair or alter an on-site sewage management system without obtaining a construction permit for such purpose from the Health Department. No permit for the construction, repair or alteration of an on-site sewage management system shall be issued until the Health Department has inspected and approved the site and the proposed location and design of the on-site sewage management system. A fee shall be charged by the Health Department for the service.

No on-site sewage management system constructed, altered or repaired may be covered totally or in part until it has been inspected and approved by the Health Department. The system may be inspected by the Health Department at any stage of construction. Permits for the construction, repair, or alteration

of an on-site sewage management system shall be valid for two years from the date issued.

- c. All applicants, or agents for the applicants, will be required to sign an application form to acknowledge the on-site sewage management system must be inspected and installed according to the approved plan and requirements of the Douglas County Sanitary Code.
- d. No house or structure shall be occupied or used until a final inspection shows the on-site sewage management system has been approved by the Health Department.
- e. An owner or agent for the owner may request an on-site review by the Health Department of a lot without obtaining a permit to construct the system. A fee shall be charged for this consultation service.
- f. No portion of an on-site sewage management system shall be located within the floodplain for any land divisions after January 1, 2007 [Subdivision Regulation 20-811 (d) (2) (iii), p. 57, or as amended].
- g. For individual lots, tracts, or parcels which contain three (3) or more adjoining acres but less than five (5) adjoining acres, no permit for the construction of a new on-site sewage management system shall be issued after the effective date of this Sanitary Code before a water supply is approved by the Health Department. Approval of the water supply shall include one of the following requirements:
 - 1) A letter of confirmation has been issued by the appropriate public water supply district that a water meter has been purchased for the property. [Subdivision Regulation 20-811 (e) (1) p. 58, or as amended].
 - 2) A permit has been issued by the Health Department for a private cistern to be constructed. Cisterns shall not be installed on lots, tracts, or parcels divided on or after January 1, 2007, within the City of Lawrence Urban Growth Area (a public water supply is required). [Subdivision Regulation 20-811 (e) (1) p.58, or as amended].
- h. For individual lots, tracts, or parcels which contain five (5) or more adjoining acres, no permit for the construction of a new on-site sewage management system shall be issued after the effective date of this Sanitary Code before the water supply is approved by the Health Department. Approval of the water supply shall include one of the following requirements:

- 1) A letter of confirmation has been issued by the appropriate public water supply district that a water meter has been purchased for the property. [Subdivision Regulation 20-811 (e) (1) p. 58, or as amended].
- 2) A permit has been issued by the Health Department for a private water well to be constructed. Lots, tracts, or parcels divided after January 1, 2007, and are located within the City of Lawrence Urban Growth Area, shall use private water wells for irrigation purposes only and the wells shall not be connected to a residential or commercial building (a public water supply is required) [Subdivision Regulation 20-811 (e) (1) p. 58, or as amended].
- 3) A permit has been issued by the Health Department for a private cistern to be constructed. Cisterns shall not be installed on lots, tracts, or parcels divided on or after January 1, 2007, within the City of Lawrence Urban Growth Area. [Subdivision Regulation 20-811 (e) (1) p. 58, or as amended].

2-6.2

Installer License Required

- a. No person shall install, construct, repair, or alter an on-site sewage management system without having first obtained an annual installer license from the Health Department. An annual fee shall be charged by the Health Department for the license.
- b. An installer license may be issued to a commercial contractor or homeowner. A homeowner shall install, repair, or alter an on-site sewage management system located on his/her property only.
- c. A licensed installer shall be on site at all times when an on-site sewage management system is being installed, constructed, repaired, or altered.
- d. The licensed commercial contractor shall be responsible for informing the property owner regarding recommended maintenance of an on-site sewage management system that the contractor installs, repairs, or alters.
- e. No person shall receive an installer license from the Health Department without having first passed a written examination. A minimum of seventy (70) percent of the answers on the written examination shall be answered correctly to receive the installer's license.
- f. Written examinations may be taken at any time during the calendar year. Any person wishing to take a written examination may do so by making an appointment with the Health Department. There will be a test fee for taking the examination.

- g. Annual licenses shall expire on December 31 of the calendar year in which they are issued. The annual license fee shall be the same for any fraction of the year as for the entire year.
- h. Installer License Revocation. A license may be revoked for continued failure to comply with the requirements of this Sanitary Code.

2-6.3

Area Requirements

- a. Residential Parcels, Tracts, or Lots. For the unincorporated areas of Douglas County, Kansas, an individual on-site sewage management system shall not be constructed upon any parcel, tract, or lot of less than:
 - 1) Three (3) adjoining acres when a public water supply or cistern is provided. Any land divided after January 1, 2007, which is located within the floodplain shall not be counted in calculating lot area for the purpose of meeting minimum lot area requirements for on-site sewage management systems [Subdivision Regulation 20-811 (d) (2) (ii), p. 57, or as amended]. Cisterns shall not be installed on lots, tracts, or parcels divided on or after January 1, 2007, within the City of Lawrence Urban Growth Area [Subdivision Regulation 20-811 (e) (1), p.58, or as amended].
 - 2) Five (5) adjoining acres when a water well is provided. Any land divided after January 1, 2007, which is located within the floodplain shall not be counted in calculating lot area for the purpose of meeting minimum lot area requirements for on-site sewage management system use [Subdivision Regulation 20-811 (d) (2) (i), p.57, or as amended].

New private water wells constructed after the effective date of this Sanitary Code, which are located within the City of Lawrence Urban Growth Area, shall be installed for irrigation purposes only, and shall not be connected to any residential or commercial building [Subdivision Regulation 20-811 (e) (1), p. 58, or as amended].

 - 3) The exemptions to this requirement are when:
 - a) A division of property which is less than the above stated minimums has occurred and has been filed with the Douglas County Register of Deeds prior to October 10, 1997.
 - b) A property is exempt under Section 21-4.07 of the Douglas County Zoning Regulations.

- c) Any lands divided prior to January 1, 2007, shall not be required to meet the floodplain requirements [Subdivision Regulation 20-801 (d)(2)(ii), p. 7, or as amended].
- b. Non-Residential Parcels, Tracts, or Lots. For the unincorporated areas of Douglas County, Kansas, an individual on-site sewage management system shall not be constructed upon any parcel, tract, or lot of less than:
 - 1) Three (3) adjoining acres when a public water supply or cistern is provided. Any land divided after January 1, 2007, which is located within the floodplain shall not be counted in calculating lot area for the purpose of meeting minimum lot area requirements for on-site sewage management systems [Subdivision Regulation 20-811 (d) (2) (ii), p. 57, or as amended]. Cisterns shall not be installed on lots, tracts, or parcels divided on or after January 1, 2007, within the City of Lawrence Urban Growth Area [Subdivision Regulation 20-811 (e) (1), p. 58, or as amended].
 - 2) Five (5) adjoining acres when a water well is provided. Any land divided after January 1, 2007, which is located within the floodplain, shall not be counted in calculating lot area for the purpose of meeting minimum lot area requirements for on-site sewage management system use [Subdivision Regulation 20-811 (d) (2) (i), p. 57, or as amended].

New private water wells constructed after the effective date of this Sanitary Code, which are located within the City of Lawrence Urban Growth Area, shall be installed for irrigation purposes only, and shall not be connected to any residential or commercial building [Subdivision Regulation 20-811 (e) (1), p. 58, or as amended].

- 3) The exemptions to this requirement are when:
 - a) A division of property which is less than the above stated minimums has occurred and has been filed with the Douglas County Register of Deeds prior to October 10, 1997.
 - b) A property is exempt under Section 21-4.07 of the Douglas County Zoning Regulations.
 - c) Any lands divided prior to January 1, 2007, shall not be required to meet the floodplain requirements [Subdivision Regulation 20-801 (d)(2)(ii), p. 7, or as amended].
- 4) Reserve area for absorption field required. A reserve area for a future secondary absorption field shall be required for all new non-residential

building sites constructed after the effective date of this Sanitary Code. The reserve area shall be the same size as the area required for the primary absorption field.

2-6.4

Data Requirements

- a. Residential. The following shall be submitted to and accepted by the Health Department before issuance of a permit to construct an on-site sewage management system:
 - 1) An application form including the following:
 - a) Name, address and phone number of applicant and owner.
 - b) Location of building site, including legal description with section, township and range.
 - c) Number of bedrooms in the home.
 - 2) A drawing of the lot or site, showing:
 - a) Overall dimensions of the lot.
 - b) Location of buildings, driveways and geographical features near the proposed absorption field.
 - c) Location and type of all water supplies, and location of all water service lines.
 - d) Layout of entire on-site sewage management system, including septic tank, absorption field, interconnecting lines, and / or any other components.
 - e) Location of foundation footing or any other non-sewage drain(s).
 - f) An arrow indicating North direction.
 - 3) Other supportive data or information required by the Health Department.
 - 4) A letter from the Douglas County Zoning and Codes Department which states that the lot, tract or parcel is a Buildable Lot.
 - 5) For lands divided after January 1, 2007, a copy of a Certificate of Survey which clearly displays what acreage, if any, is included within the

floodplain and what acreage, if any, is included outside the floodplain [Subdivision Regulation 20-811 (d) (2) (i) & (ii), p. 57, or as amended].

- b. Non-Residential. The following data shall be submitted to and accepted by the Health Department prior to issuance of a permit to construct an on-site sewage management system:
- 1) An application form including the following:
 - a) Name, address and phone number of applicant and owner.
 - b) Location of building site, including legal description with section, township and range.
 - 2) A site plan of the entire property under development showing:
 - a) Overall dimensions of the lot, area in square feet.
 - b) Location of buildings, structures, driveways, parking, access roads, loading areas, receptacle locations, buffers, public and private easements and any geographical features near the proposed on-site sewage management system.
 - c) Location and type of all water supplies and location of all water service lines.
 - d) Layout of entire on-site sewage management system, including septic tank, absorption field, interconnecting lines, and/or any other components.
 - e) Location of foundation footing or any other non-sewage drain(s)
 - f) An arrow indicating North direction.
 - 3) Other supportive data or information required by the Health Department, including but not limited to size of building, type of establishment, anticipated water usage and peak daily sewage flow, whether the sanitary facilities are for private and/or public use, an estimate of the maximum number of customers, employees, etc., all water-using equipment or appliances, the specific use of the facilities including identification of any industrial or commercial wastes that may be discharged from the building, existing and proposed topography, and proposed drainage.

- 4) A letter from the Douglas County Zoning and Codes Department which states that the lot, tract or parcel is a Buildable Lot.
- 5) For lands divided on or after January 1, 2007, a copy of a Certificate of Survey which clearly displays what acreage, if any, is included within the floodplain and what acreage, if any, is included outside the floodplain [Subdivision Regulation 20-811 (d) (2) (i) & (ii), p. 57, or as amended].

2-6.5

Field Data Requirements

- a. Water Table Borings. Borings to determine groundwater elevation in low areas may be required by the Health Department. Borings shall be made to a minimum depth of seven (7) feet. Water table elevations shall not be recorded until sufficient time has elapsed for stabilization of groundwater (such stabilization in clay soils may require several hours or overnight). Location, identification number and depth to water table shall be recorded on the plat or site plan which may indicate topography, if required. Other records of water table elevation, including seasonal peaks, may be submitted or required.
- b. Rock Borings. Where surface outcroppings or subsurface rock or hard-pan exist or are suspected, a sufficient number of borings to a minimum depth of four (4) feet may be required by the Health Department to determine if such conditions may interfere with installation, performance or repair of the proposed on-site sewage management system. Boring locations and data shall be recorded by number on the plat or site plan which may indicate topography, if required.
- c. Evidence of the presence of water in the borings shall negate the use of conventional on-site sewage management systems in that area. Innovative or alternative systems may be reviewed on an individual basis. Evidence of rock in the borings may negate the use of a conventional on-site sewage management system in that area.
- d. Soil or groundwater test holes for an on-site sewage management system shall be required, reviewed, and approved by the Director of the Health Department [Subdivision Regulation 20-808 (d) (5) (ii), p. 35, or as amended]. Soil analysis and other field tests may be required. The number, depth and location shall be determined by the Health Department. If test holes are left unattended, they shall be “benched” for safety reasons (see Figure A).
- e. The location of the house must be staked or flagged and the absorption field area must be staked or flagged.

SECTION 7 SEPTIC TANKS

- 2-7.1 All septic tanks shall be designed and constructed according to the specifications set forth by the Kansas Department of Health and Environment's Bulletin 4-2.
- 2-7.2 There shall be no permanent structure (patio, building, driveway, etc.) over the tank, lateral or other part of an on-site wastewater system (p. 6, KDHE Bulletin 4-2, or as amended).
- 2-7.3 All abandoned or unused septic tanks, cesspools, seepage pits, or other holes that have received wastewater shall be emptied and plugged following procedures described in K-State Research and Extension bulletin MF-2246 (p. 6, KDHE Bulletin 4-2, or as amended).
- 2-7.4 Compacting of the absorption field during placement of the septic tank shall be avoided (p. 9, Bulletin 4-2, or as amended).
- 2-7.5 Where natural soil is not suitable, tanks shall be placed on a bed of at least four (4) inches of sand, pea gravel, or crushed non-corrosive granular material. Material shall be no larger than two (2) inches in diameter (p. 9, KDHE Bulletin 4-2, or as amended).
- 2-7.6 Septic tanks shall be watertight (p. 7, KDHE Bulletin 4-2, or as amended).
- 2-7.7 Special considerations for fiberglass, fiberglass-reinforced polyester, and polyethylene tanks (p. 9, KDHE Bulletin 4-2, or as amended):
- a. All tanks shall be sold and delivered by the manufacturer completely assembled.
 - b. Tanks shall be structurally sound and support external forces as specified above when empty and internal forces when full. Tanks shall not deform or creep resulting in deflection more than 5 percent in shape as a result of loads imposed.
 - c. Tanks and all below grade fittings and connections shall be water tight.
 - d. Tanks shall be placed on a bed of at least four (4") inches of sand, pea gravel, or crushed non-corrosive granular material. Material shall be no larger than two (2") in diameter (p. 9, Bulletin 4-2, or as amended).
 - e. Plastic tanks shall not be used in high or seasonally high water tables (p. 10, KDHE Bulletin 4-2, or as amended).

- f. Fiberglass or plastic septic tanks shall be installed according to the manufacturer's specifications to ensure that the installation will not void the manufacturer's warranty.

2-7.8 Location. The septic tank shall be located as set forth in Table 1. No septic tank shall be installed after the effective date of this Sanitary Code within:

- a. Ten (10) feet of any house or other building.
- b. Twenty-five (25) feet of any public water main, water meter (p. 4, KDHE Bulletin 4-2, or as amended), or in-ground swimming pool.
- c. Fifty (50) feet of any private water well, cistern, surface water course, creek bank, stream, pond, river, or lake (p. 4, KDHE Bulletin 4-2, or as amended).
- d. One hundred (100) feet of any public water supply well or suction line (p. 4, KDHE Bulletin 4-2, or as amended).
- e. Any floodplain, unless the lot, parcel or tract of land was divided prior to January 1, 2007 [Subdivision Regulation 20-811 (d) (2) (iii) p. 57, or as amended].
- f. The Health Department, after site inspection, may stipulate greater separation than cited herein, due to adverse on-site conditions including location of a well on-site or nearby, site configuration or structural placement, sub-surface soil characteristics, and/or groundwater interference.

2-7.9 Capacity. The minimum liquid capacity of septic tanks shall be sized as follows (p. 6, Table 7, KDHE Bulletin 4-2, or as amended):

1 to 3 bedrooms:	1,000 gallons
4 bedrooms:	1,200 gallons
5 bedrooms:	1,500 gallons

2-7.10 Foundation and Backfill. Septic tanks shall be constructed or installed level on a foundation that will prevent settling. Where natural soil is not suitable, tanks shall be placed on a bed of at least four (4) inches of sand, pea gravel, or crushed non-corrosive granular material. Material shall be no larger than two (2) inches in diameter (p. 9, KDHE Bulletin 4-2, or as amended). Backfill shall be free of voids, stumps, broken masonry or other such materials. The lid of the tank shall be covered with earth.

2-7.11 Access and Inspection. Septic tanks shall have an access manhole with twenty (20) inches minimum dimension for each compartment that shall extend to the surface of the ground. When any opening larger than eight (8) inches extends to the surface,

that opening shall be child and tamper-resistant. Ways to accomplish this include lids weighing at least sixty-five (65) pounds, locks, or anchors that are not removable without special tools (p. 8, KDHE Bulletin 4-2, or as amended).

- 2-7.12 Inlet Pipe. The inlet invert should be located at least three (3) inches above the liquid level in the tank. A vented inlet tee shall be used to divert the incoming sewage downward. It shall extend at least twelve (12) inches below the liquid level, but the penetration must not be greater than that provided by the outlet device.
- 2-7.13 Outlet Pipe. The outlet device shall extend eighteen (18) inches below the liquid surface. A vented outlet tee shall be provided.
- 2-7.14 Sealed. A watertight seal shall be made around the inlet and outlet pipes with a rubber gasket or bonding compound that will adhere both to the concrete septic tank and the exterior surfaces of the inlet and outlet pipes. The lid shall be sealed to the walls of the tank. Any holes in the tank shall be sealed so that the tank is watertight.
- 2-7.15 The top of the septic tank shall be a maximum of twelve (12) inches from the finished grade (KDHE Bulletin 4-2, p. 7, or as amended).
- 2-7.16 Septic tanks are illustrated in Figure B.

SECTION 8 ABSORPTION FIELDS

- 2-8.1 Area Computation. The following criteria shall be used to determine the amount of absorption field required:
- a. Single Family Residential Buildings
- 1) Alternative systems. Alternative systems which have been approved by the Health Department shall be required if either or both of the following conditions are present:
- a) Heavy clay: the soil type in the absorption site is a heavy clay of the Leanna, Wabash, or Woodson series (as determined by the USDA Soil Survey of Douglas County), with or without slope; or
- b) Slowly permeable soil with level surface area: the soil type in the absorption site is of any slowly permeable soil series (0.2 inches per hour or less, as determined by the USDA Soil Survey of Douglas County) and the undisturbed absorption site has a level surface area.

2) Conventional Septic Tank-Lateral Field Systems

- a) Conventional sequential step-down septic tank-lateral field systems may be utilized in sloping, slowly permeable soils except Leanna, Wabash, or Woodson series (as determined by the USDA Soil Survey of Douglas County). The absorption field in those conditions shall be sized as follows:

Number of bedrooms	1	2	3 or more
Square feet of absorption trench	1,200	2,300	2,500
Linear feet of 3' wide trench	400	767	834

- b) Conventional septic tank-lateral field systems may be utilized in sloping or level moderately to rapidly permeable soils (as determined by the USDA Soil Survey of Douglas County). The absorption field in those conditions shall be sized as follows:

Number of bedrooms	1	2	3 or more
Square feet of absorption trench	800	1,500	1,800
Linear feet of 3' wide trench	267	500	600

- b. Non-Residential Buildings. Requirements for the size of absorption field shall be determined by the Health Department. Professional manuals such as the EPA Design Manual, International Plumbing Code, or the Uniform Plumbing Code may be referred to for guidance to help determine adequate sizing. When expected non-farm water usage exceeds ten thousand (10,000) gallons per month, the owner(s) of the establishment shall construct a dual absorption field system according to Health Department regulations, or construct a commercial lagoon system according to KDHE regulations.
- c. Multi-Family Buildings. Requirements for the size of absorption fields which will serve multi-family buildings (i.e., group boarding homes, foster care homes, etc.) shall follow the same sizing requirements as for a single-family residence. When expected non-farm water usage exceeds ten thousand (10,000) gallons per month, the owner(s) of the establishment shall construct a dual absorption field system according to Health Department regulations, or construct a commercial lagoon system according to KDHE regulations.
- d. Existing Buildings. Absorption fields constructed or repaired which serve existing buildings shall follow the same absorption field sizing requirements as newly constructed buildings whenever possible. When site or area constraints will not allow adequate area to accomplish sizing requirements for new construction, then absorption fields shall be sized as large as physically possible

to meet the same requirements as that of new construction. All other requirements for septic tank and absorption field construction and installation shall be required as stated within these regulations.

- e. Other. The absorption field size shall be determined by the Health Department based on the anticipated loading, water use, and sewage produced. A minimum of two hundred (200) lineal feet of absorption trench shall be required.

2-8.2 Absorption Field Location Restrictions. Unless otherwise approved by the Health Department, the absorption field shall be located as set forth in Table 1. Unless otherwise approved by the Health Department, no part of an absorption field installed after the effective date of this Sanitary Code shall be located within:

- a. Ten (10) feet of any private water line, septic tank, foundation drain, buried utility line, driveway, property line, or drop-off.
- b. Twenty-five (25) feet of any house or other building, water meter (p. 4, KDHE Bulletin 4-2, or as amended), or public water main.
- c. Fifty (50) feet of any cistern, in-ground swimming pool, surface water course, creek bank, stream, river, pond, or lake (p. 4, KDHE Bulletin 4-2, or as amended).
- d. One hundred (100) feet of any water well.
- e. Absorption fields constructed upon lands divided after January 1, 2007, shall not be installed in the floodplain [Subdivision Regulation 20-811 (d) (2) (iii), p. 57, or as amended], nor where groundwater or adverse geological formations may interfere with the absorption of treated sewage or result in the contamination of groundwater by sewage.
- f. The Health Department may require that a licensed surveyor stake or flag the floodplain [Subdivision Regulation 20-811 (d) (2) (iii), p. 57, or as amended] in areas where it is difficult to determine floodplain locations.
- g. Absorption fields shall not be installed in areas subject to excessive surface water, ponding, or runoff, including but not limited to storm water and discharge from building gutters.
- h. No absorption field, or any portion thereof, shall be placed within any fill material unless such fill material is specifically approved in writing by the Health Department prior to installation of the absorption field. Installation of any absorption field within fill material not approved by the Health

Department may be cause for revocation of the on-site sewage management system construction permit.

- i. The Health Department, after site inspection, may require variations of these distances due to adverse conditions relative to topography, subsurface soil characteristics, and/or groundwater sources. No part of the absorption field shall be covered by buildings or pavement or be used for vehicular traffic or parking.

2-8.3 Site Preparation

The area in which the on-site sewage management system is proposed to be constructed shall not have any of the original topsoil removed from the area without specific written approval from the Health Department. Removal of topsoil from the area may be cause for revocation of the on-site sewage management system construction permit.

2-8.4 General Requirements for Design and Construction of Absorption Fields

- a. An absorption trench shall not exceed one hundred (100) feet in length from where it is fed unless specific approval is given by the Health Department.
- b. Absorption trenches shall be between twenty-seven (27) inches and thirty-nine (39) inches in depth.
- c. The trench shall be thirty-six (36) inches wide, unless otherwise specifically approved by the Health Department.
- d. Installation of absorption trenches must be along contour lines that the level trenches of uniform depth can be constructed unless otherwise specifically approved by the Health Department.
- e. There shall be a minimum of twelve (12) inches of earth cover over the lateral rock or chamber system and a maximum of twenty-four (24) inches of earth cover over the lateral rock or chamber system.
- f. Excavation for absorption trenches in wet clay soils and smearing of trench walls and bottoms shall be avoided since reduced permeability may result and approvals may be voided thereby.
- g. The ground surface of the absorption field area shall be so graded as to prevent the accumulation of surface water and to minimize the flow of surface water over the absorption field. Test holes, diverter ditches or flow control devices will be required under some circumstances. It may be necessary to prepare the ground for the absorption field, such as by removal of rocks, trees, or

replacement of soil. The Health Department may require that the preparation work for the absorption field be inspected and approved prior to the installation of the absorption field.

- h. There shall be a minimum of four (4) feet between the bottom of the absorption trench and any groundwater table.
- i. There shall be a minimum distance of fifteen (15) feet between absorption trench sidewalls, or eighteen (18) feet between trench centers, unless specifically approved by the Health Department.

2-8.5

General Requirements for Field Layout Methods

- a. Sequential Step-Down or “Overhead” Conventional System. This method is well suited to terrain with a slope. In this system, effluent is not distributed equally to all the absorption trenches. Instead, the trenches are filled sequentially, and diversion to the next trench does not occur until the fluid level in the preceding trench reaches slightly above the top of the rock fill or chamber system.
 - 1) The overhead distribution line must be connected toward the center of each absorption trench, unless specifically approved by the Health Department.
 - 2) The overhead distribution line must be set on a firm foundation of undisturbed earth or compacted earth or sand. Gravel shall not be placed beneath the overhead line.
 - 3) The sequential system is illustrated in Figure C.
- b. Level Field Conventional System. On flat terrain the level field method may be used. When this method is used, all distribution trenches shall be installed level and at the same elevation, shall not exceed one hundred (100) feet in length, and shall be connected at the ends to form a continuous system. A standard tee fitting shall be used to distribute treated sewage. A standard tee fitting shall be used to effect a juncture of the ends of any three distribution lines. The level field method is illustrated in Figure D.

2-8.6

Additional Requirements for Absorption Fields Utilizing Lateral Rock

The following requirements are in addition to all other requirements noted within these regulations.

- a. A fifteen (15) inch depth of three-fourths (3/4) to two (2) inch (p. 12, KDHE Bulletin 4-2, or as amended) washed lateral rock (i.e., aggregate) shall be provided in the bottom of the trench (as detailed in “c” below).
- b. Perforated pipe shall be laid in the center of the lateral rock. Perforations shall be oriented toward the bottom of the trench.
- c. Lateral rock shall be placed under the perforated pipe to a minimum depth of six (6) inches and shall extend the full length of the trench. Five (5) inches of lateral rock shall cover the perforated pipe.
- d. A continuous layer of permeable material shall be placed over the lateral rock before backfilling with the earth cover. The permeable material shall be four (4) to six (6) inches of hay or straw, or another material approved by the Health Department.

2-8.7 Additional Requirements for Absorption Fields Utilizing Chamber Systems

The following requirements are in addition to all other requirements noted within these regulations.

- a. Inspection ports may be required by the Health Department for monitoring purposes.
- b. The end plates of each chamber trench shall be constructed of plastic, made by the manufacturer of the chamber system, and shall be securely fastened to the chambers with screws.
- c. All chamber systems shall be required to have washed lateral rock, hay, straw, or filter fabric placed between the excavated trench and the outside sidewalls of the chamber units to prevent infiltration of soil into the chamber units.
- d. The overhead distribution pipe shall be fed into the top of the chamber (unless otherwise specifically approved by the Health Department) with a standard PVC tee fitting. The PVC tee shall extend downward midway into the depth of the chamber.

2-8.8 Alternative and Experimental On-Site Sewage Management Systems

- a. Consideration of Alternative Systems. Where appropriate, and after thorough assessment of alternatives, the Health Department will consider alternative on-site sewage management systems and/or site modifications for conventional or alternative systems in areas of marginal suitability.

- b. Priorities. Priority consideration will be given to those proposals for alternative sewage disposal systems whose implementation may resolve existing sewage management problems.
- c. Review and Approval of Alternative On-Site Sewage Management Systems. Those desiring to install an alternative on-site sewage management system may be required to submit the following information to the Health Department:
 - 1) Plans and specifications including type and location of site modifications, along with any engineering, laboratory, or field data required.
 - 2) Provisions for a backup system, including reservation of undisturbed space.
 - 3) Any additional information required for complete understanding and decision formulation by the Health Department.

If the proposal for the system is approved, those making application will be informed by the Health Department of responsibilities for maintenance and of any monitoring procedures deemed appropriate by the Health Department. Reduction of water usage by installation of water-conserving fixtures and devices may be required.

- d. Experimental and Innovative on-site sewage disposal systems. The Health Department may consider proposals for the use of experimental and innovative on-site sewage management systems for testing and observation.
- e. The Health Department may require the alternative, experimental and innovative on-site sewage disposal systems to be designed by a professional engineer and may ask for review of the proposal by KDHE.
- f. Maintenance Requirements. Any owners and/or operators of any alternative or experimental on-site sewage management systems permitted after the effective date of this Sanitary Code shall maintain a contract for, at a minimum, the annual inspection of the system and pertinent components and prescribed maintenance with a licensed installer, licensed maintenance technician, or representative of the manufacturer of the system. A copy of the inspection report, along with a report of any corrective actions taken as prescribed by the inspection report, shall be filed with the Health Department within sixty (60) calendar days of the date of inspection.

2-8.9

Grease Traps

- a. Grease Trap Requirement. Grease traps are neither necessary nor recommended for on-site sewage management systems serving residences, but

shall be required for those serving commercial or industrial establishments where it is determined by the Health Department that introduction of grease into the on-site system might adversely affect it. On-site sewage management systems serving commercial or industrial establishments shall be permitted by the Kansas Department of Health and Environment.

- b. Grease Trap Design. Grease trap plans and specifications shall be submitted to the Health Department for approval. No human waste shall pass through the grease trap. No grease trap shall have less than one hundred twenty-five (125) gallons capacity and effluent shall be directed to the septic tank.
- c. Construction. Grease traps shall be located, installed and constructed so that they will reduce the temperature of kitchen wastes to permit congealing of grease. Easy access for cleaning and grease removal shall be provided.

2-8.10 Sewage Lift Pumps

In the event that the sewage generated from a building or residence cannot be plumbed to an absorption field or sanitary sewer by gravity, then a sewage lift pump with the necessary appurtenances as determined by the Health Department may be required. The pump chamber must be sealed, odor proof and watertight.

SECTION 9 AERATION SYSTEMS

- 2-9.1 The use of preassembled aeration systems, usually referred to as “package plants,” may be approved by the Health Department. When used individually in a residential installation, their volume shall be equal to or greater than that required of a septic tank. The effluent shall be discharged to an absorption field as required for septic tanks. Their flow-through ability must not be affected by a power failure.

SECTION 10 OTHER

- 2-10.1 Cesspools and Absorption Pits. Cesspools and absorption pits shall be prohibited for new or permanent installations.
- 2-10.2 Portable Toilets. Portable toilets equipped with holding or storage tanks, chemical or otherwise, shall be prohibited except on a temporary basis as determined acceptable by the Health Department. Portable holding tanks serving camping, recreation vehicles, and boats are acceptable.

2-10.3 Sewage Holding Tanks.

- a. Sewage holding tanks shall not be permitted for any newly constructed building after the effective date of this Sanitary Code. Holding tanks shall be permitted only for existing buildings on a case-by-case basis when a health hazard has been determined by the Health Department, and only when it is not possible or feasible to utilize any other type of on-site sewage management system, or connect to any public sewer. A written permit for the use of any sewage holding tank shall be required by the Health Department. The Health Department retains the right to revoke any said written permit at any time.
- b. All sewage holding tanks shall be pumped out by septage waste haulers who have been licensed by the Health Department. The Health Department shall require that the licensed septage waste hauler report in writing to the Health Department each time a sewage holding tank has been pumped out.
- c. All sewage holding tanks shall be a minimum of one thousand five hundred (1,500) gallon capacity, and shall be equipped with an alarm system which alerts the owner and/or operator before the sewage holding tank causes overflow of septage onto the surface of the ground, or backup of septage into the building it serves.

2-10.4 Sewage Vaults

Sewage vaults shall be permitted by the Health Department on a case-by-case basis. Sewage vaults may be permitted for camping or recreational areas. All sewage vaults shall be a minimum of one thousand (1,000) gallon capacity and shall be pumped out by septage waste haulers who have been licensed by the Health Department. A permit shall be required for the construction of a sewage vault. No water supply shall be connected to the sewage vault.

2-10.5 Sanitary Privies

No person, company, or corporation or institution shall excavate, drill, construct or use or permit to be constructed or used any well, pit mine shaft or subsurface excavation for the disposal of untreated or inadequately treated domestic sewage.

SECTION 11 REAL ESTATE TRANSFER OF OWNERSHIP

- 2-11.1 Whenever ownership is transferred of any property connected to or served by an on-site sewage management system, or lagoon, the Health Department shall inspect the condition of the wastewater management system being used, prior to the transfer of ownership. A fee shall be charged to the owner by the Health Department for the inspection.

- 2-11.2 Any on-site sewage management system, or lagoon, that is found to be discharging sewage, and / or creating a public health hazard, shall be repaired or replaced, as determined by the Health Department, and approved within thirty (30) days of discovery.
- 2-11.3 Uncovering of the inspection manhole of the septic tank shall be the responsibility of the owner, and the septic tank shall be inspected by the Health Department prior to the transfer of ownership.
- 2-11.4 The septic tank shall be pumped out by a Licensed Septage Hauler before the transfer of ownership. The owner shall be responsible for this cost.
- 2-11.5 Septic tanks shall be of water-tight design and in good repair.
- 2-11.6 If the property being transferred utilizes a water well as a potable water source, the Health Department shall inspect the water well casing and well seal for compliance with KDHE regulations. A water sample shall be taken by the Health Department and screened for coliform bacteria and nitrate compounds.
- 2-11.7 Any abandoned water well(s) located upon the property shall be plugged by the owner in accordance with KDHE regulations.
- 2-11.8 In the event that the owner, or person paying for the inspection, believes that the inspection or the inspection report was conducted negligently or in a manner that failed to disclose deficiencies, and a claim is made against the Health Department for damages, the liability of the Health Department shall be limited to the cost of the inspection only.

Table 1

LOCATION OF ON-SITE SEWAGE MANAGEMENT SYSTEM

See 2-8.2 – Absorption Field Location Restrictions

Minimum Horizontal Distance (Feet) Required

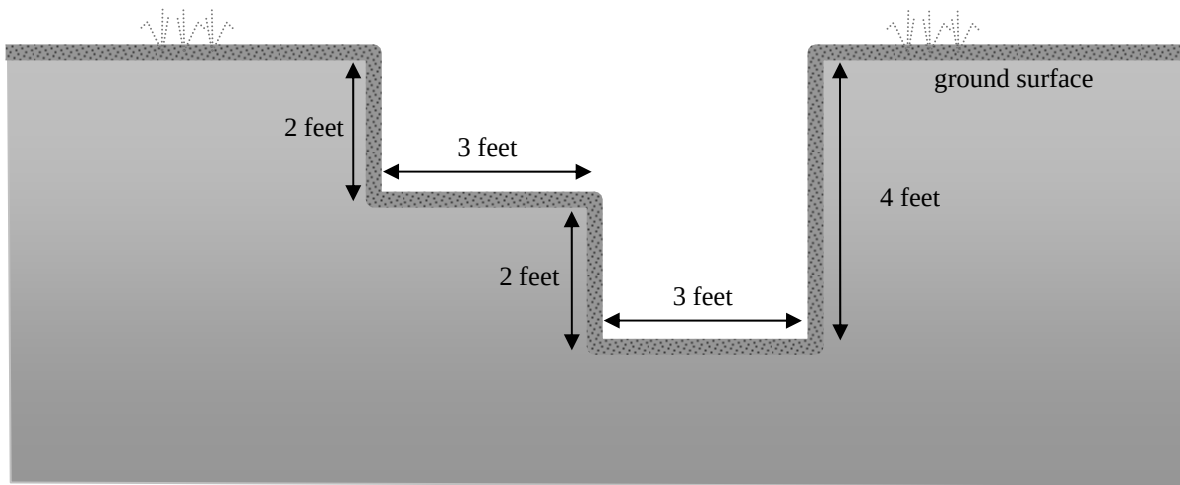
from:	to Septic Tank	to Absorption Field
House or other building	10	25
Private water line (p. 4, KDHE Bulletin 4-2, or as amended)	10	10
Absorption trench	10	—
Septic tank	—	10
Foundation drain	10	10
Buried utility line	10	10
Driveway	10	10
Property line	10	10
Drop-off	10	10
Public water main	25	25
Water meter (p. 4, KDHE Bulletin 4-2, or as amended)	25	25
Cistern	50	50
In-ground swimming pool	25	50
Private water well	50	100
Surface water course, creek bank, stream, river, pond, or lake (p. 4, KDHE Bulletin 4-2, or as amended)	50	50
Public water supply well or suction line (p. 4, KDHE Bulletin 4-2, or as amended)	100	100

Figure A

“BENCHED” TEST HOLE

See 2-6.5.d. Field Data Requirements

4-Foot Deep Test Hole for Rock



7-Foot Deep Test Hole for Groundwater

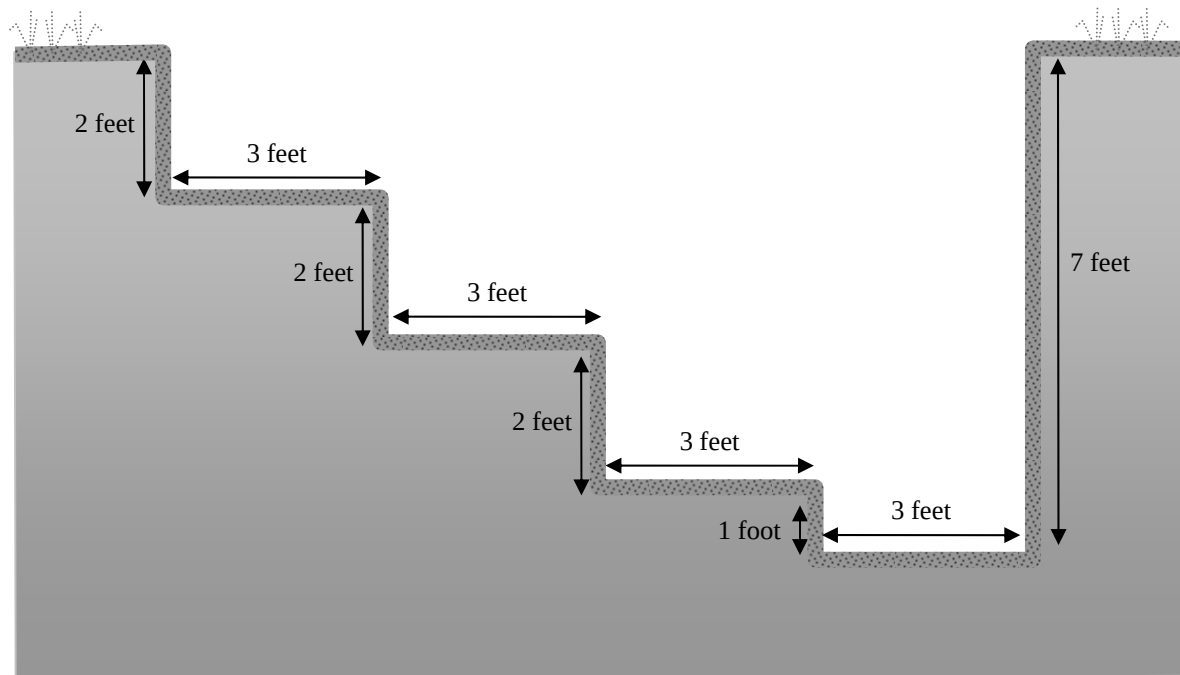


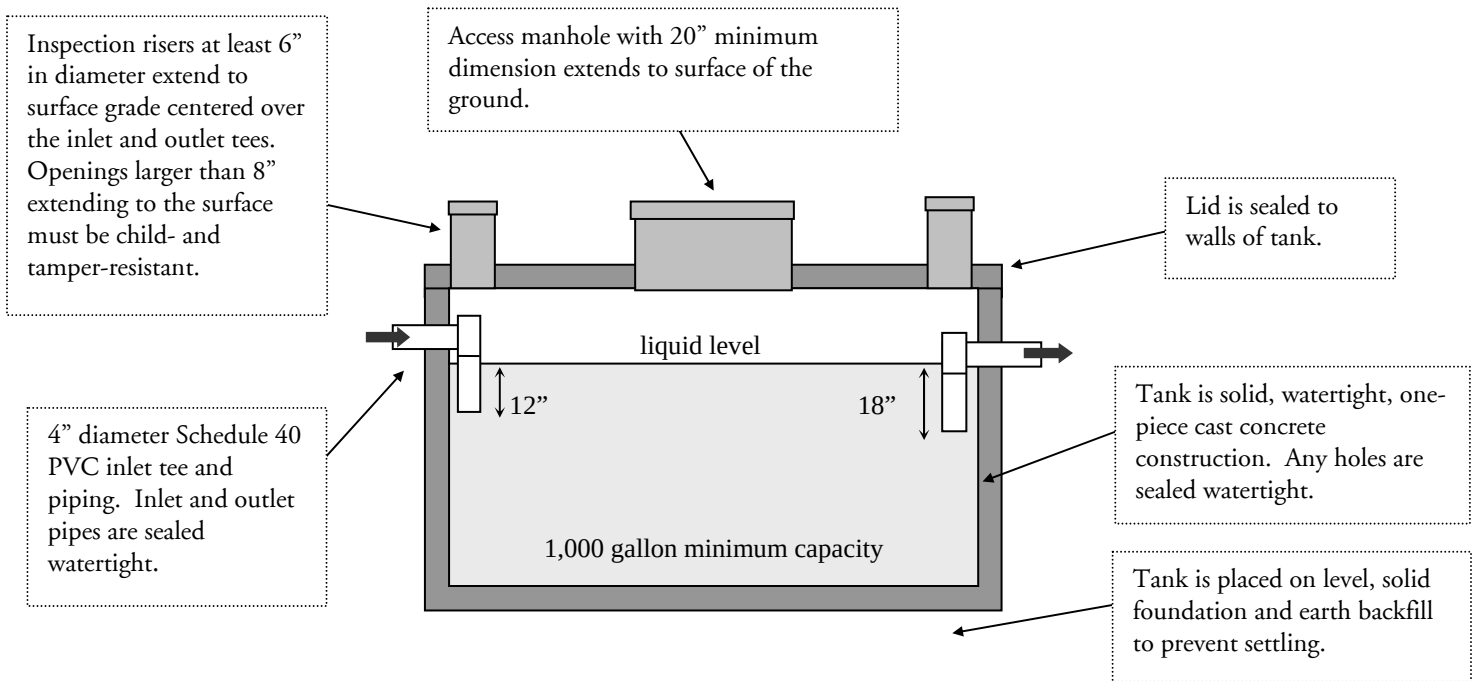
Figure B

CONCRETE SEPTIC TANKS

See 2-6.6. Septic Tanks

(See also: 2-6.6.g. Special Considerations for Fiberglass, Fiberglass Reinforced Polyester, and Polyethylene Tanks)

Single-Compartment Concrete Septic Tank



Two-Compartment Concrete Septic Tank

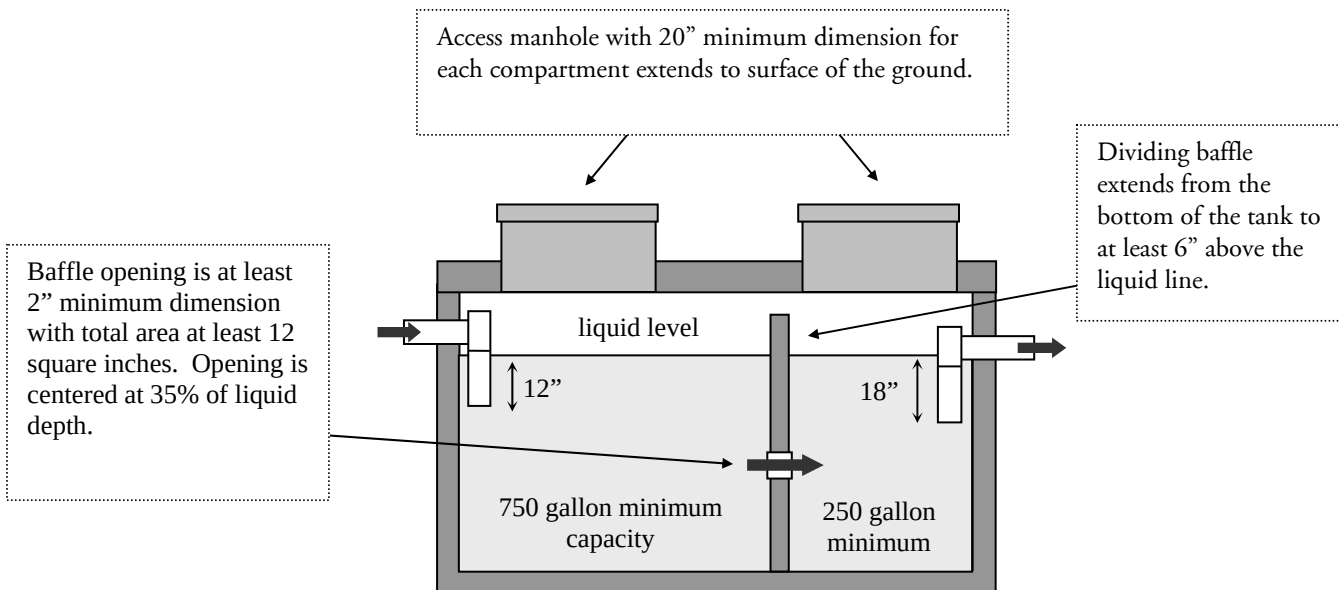
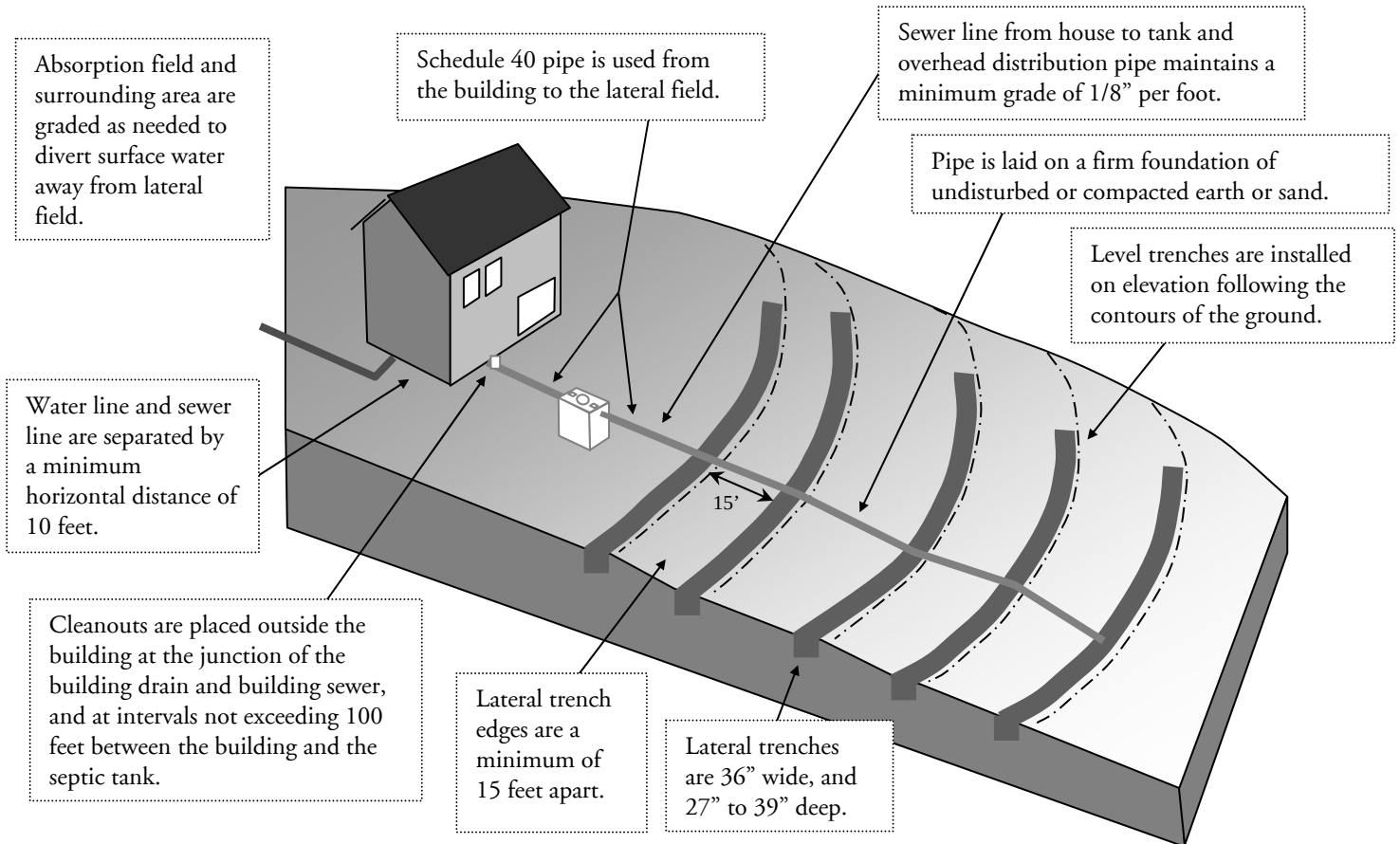


Figure C

SEPTIC TANK AND LATERAL FIELD

Conventional Sequential (Step-Down) Overhead System
for Sloping Terrain in Soils with Slow, Moderate, or Rapid Permeability

Field Layout



Cross Section of Lateral Trench Utilizing Lateral Rock and Pipe

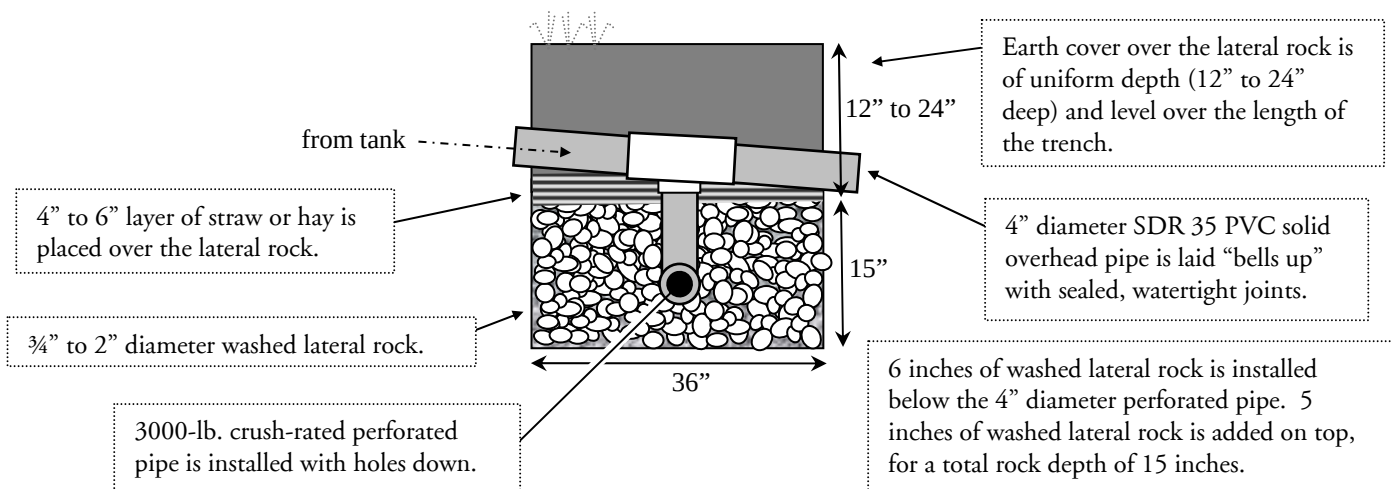
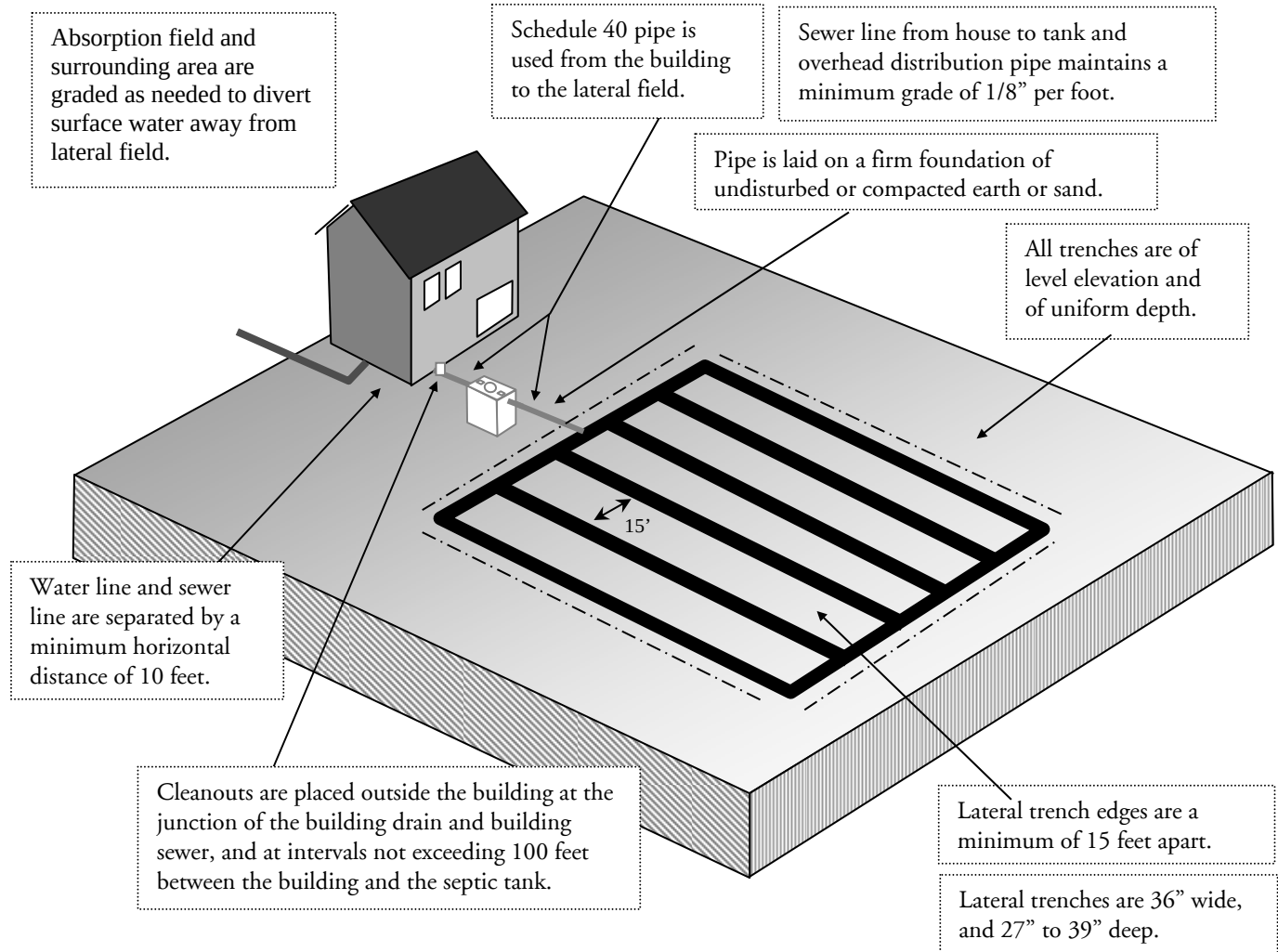


Figure D

SEPTIC TANK AND LATERAL FIELD

Level System
for Flat Terrain in Soils with Moderate or Rapid Permeability

Field Layout



SANITARY CODE

DOUGLAS COUNTY, KANSAS

CHAPTER 3

SINGLE-FAMILY WASTE STABILIZATION PONDS (LAGOONS)

SECTION 1 DEFINITIONS

In addition to the definitions provided in other chapters of this code, the words, terms and phrases listed below, for purposes of this Chapter 3, are defined as follows:

- 3-1.1 Lagoon or Sewage Lagoon: an artificial pond designed to exclude surface water and receive raw sewage through a submerged sewer for biological decomposition.

SECTION 2 AREA REQUIREMENTS

- 3-2.1 Residential Parcels, Tracts, or Lots. For the unincorporated areas of Douglas County, Kansas, an individual waste stabilization pond (lagoon) shall not be constructed upon any parcel, tract, or lot of less than ten (10) adjoining acres.

The exceptions to this requirement are when:

- a. A division of property, which is less than the above stated minimum, has occurred and has been filed with the Douglas County Register of Deeds prior to October 10, 1997; or
- b. A property is exempt under Section 21 - 4.07 of the Douglas County Zoning Regulations.

SECTION 3 USE OF SINGLE-FAMILY WASTE STABILIZATION PONDS (LAGOONS)

- 3-3.1 The use of an individual waste stabilization pond, usually referred to as a lagoon, will be considered only when located within slowly permeable soils of 0.2 inches per hour or less, as determined by the USDA Soil Survey of Douglas County.

SECTION 4 PERMIT REQUIRED

- 3-4.1 No person shall be issued a building permit without having first obtained from the Health Department a permit to construct a lagoon. A fee shall be charged by the Health Department for the permit.
- 3-4.2 No person shall construct, repair or alter a lagoon without obtaining a construction permit for such purpose from the Health Department. No permit for the construction, repair or alteration of a lagoon shall be issued until the Health Department has inspected and approved the site and the proposed location and design of the lagoon. The lagoon may be inspected by the Health Department at any stage of construction.
- 3-4.3 All applicants will be required to sign an application form to acknowledge the lagoon must be inspected and installed according to the approved plan.
- 3-4.4 No house or structure shall be occupied or used until a final inspection shows the lagoon has been approved by the Health Department.

SECTION 5 **INSTALLER LICENSE REQUIRED**

- 3-5.1 No person shall install, construct, repair, or alter a lagoon without having first obtained an annual Installer License from the Health Department. An annual fee shall be charged by the Health Department for the license.
- 3-5.2 An Installer License may be issued to a commercial contractor or homeowner. A homeowner shall install, repair, or alter lagoon located on his/her property only.
- 3-5.3 A licensed installer shall be on site at all times when the lagoon is being installed, constructed, repaired, or altered.
- 3-5.4 The licensed commercial contractor shall be responsible for informing the property owner regarding recommended maintenance of a lagoon that the contractor installs, constructs, repairs, or alters.
- 3-5.5 No person shall receive an Installer License from the Health Department without having first passed a written examination. A minimum of 70 percent of the answers on the written examination shall be answered correctly to receive the Installer's License.
- 3-5.6 Written examinations may be taken at any time during the calendar year. Any person wishing to take a written examination may do so by making an appointment with the Health Department. There will be a test fee for taking the examination.

SECTION 6 **DATA REQUIREMENTS**

3-6.1 The following shall be submitted to and accepted by the Health Department before issuance of a permit to construct a lagoon.

- a. An application form including the following:
 - 1) Name, address and phone number of applicant and owner.
 - 2) Location of building site, including legal description with section, township and range.
 - 3) Number of bedrooms, number of persons to live in the home and a list of all water-using appliances.
- b. A drawing of the lot or site, showing:
 - 1) Overall dimensions of the lot;
 - 2) Location of buildings, driveways, public and private easements and geographical features near the proposed lagoon;
 - 3) Location and type of water supply and location of water service lines;
 - 4) Layout of entire lagoon system; lagoon, diversion box, if used, and interconnecting lines;
 - 5) Proposed size and location of lagoon;
 - 6) Foundation, footing or any other non-sewage drain location;
 - 7) Arrow indicating North direction; and
- c. Other supportive data or information required by the Health Department.

3-6.2 Field Data. Field data including the following:

- a. The permeability class of the soil layers at and below the proposed floor of the lagoon and the interior dikes of the lagoon.
- b. The depth to permanent or fluctuating water table.
- c. The depth to hardrock, bedrock or other impervious materials.
- d. The slope of the proposed lagoon area.

- e. The percentage by volume of coarse fragments greater than ten (10) inches in diameter.
- f. The percentage of soil surface covered by coarse fragments greater than ten (10) inches in diameter.
- g. The unified soil group at and below the bottom and sides of the lagoon based on the unified soil-engineering classification system.

Soil and groundwater test holes shall be made to a minimum depth of four (4) feet below the proposed floor of the lagoon. If test holes are left unattended, they shall be “benched” for safety reasons (see Figure A).

3-6.3 Percolation Tests. Percolation tests may be required by the Health Department.

- a. Preparation of Percolation Test Holes. Percolation test holes shall be dug or bored with vertical sides, shall be four (4) inches in width and shall extend to the proposed depth of the Single-family Waste Stabilization Pond. Sides and bottom of test holes shall be scratched with a pointed instrument to remove smeared soil surfaces and to provide a natural soil interface into which water may percolate. Loose material shall be removed and two (2) inches of fine gravel or coarse sand shall be added to the test hole.

Test holes shall not be located in or near draws, banks, stump holes or any other location where percolation rates derived would not be representative of typical soil and terrain conditions. Six or more percolation tests shall be made in separate test holes spaced uniformly over the proposed Single-family Waste Stabilization Pond site.

- b. Saturation and Swelling of Soil. Percolation test holes shall be filled with water and shall be kept filled until the soil is saturated and clays have had an opportunity to swell. No tests shall be performed until the soil has been soaked at least four (4) hours. The Health Department may require that the test holes be soaked overnight.
- c. Percolation Rate Measurement. After soaking, water depths in the percolation test holes shall be adjusted until six (6) inches of water remains over the gravel. From a fixed reference point, established at or near ground surface, repeated measurements shall be made at equal time intervals of the distance in inches from the reference point to the water surface. Water shall be added to restore a six (6) inch depth if the water falls to less than two (2) inches above the gravel.

Measurements shall be continued until a constant percolation rate is evidenced (i.e. the water surface drops the same distance each time interval). The time in minutes required for the water column to drop one inch at this constant rate

shall be recorded as the percolation rate. When percolation rates vary significantly within the proposed area, additional tests may be required and data on all tests performed must be submitted for review.

SECTION 7 EXISTING SINGLE-FAMILY WASTE STABILIZATION PONDS

- 3-7.1 Any lagoon lawfully installed prior to the effective date of these standards may remain in use if, and so long as, it continues to operate in accordance with the original design and location and does not present any hazard to the public health, safety or welfare. Any replacement, alteration, enlargement, repair, removal, conversion, improvement or demolition shall comply with the requirements of these standards or as amended.

SECTION 8 CONNECTION TO SEWER – SINGLE-FAMILY WASTE STABILIZATION PONDS

- 3-8.1 If a public sewer becomes available to a premise served by a Single-family Waste Stabilization Pond, the owner, lessee or agent shall be required to connect the properties affected to the public or community sewage system within 90 days.
- 3-8.2 The waste stabilization pond shall be abandoned by dewatering and pushing in the dikes and returning the area to the contours it had before construction of the waste stabilization pond.
- 3-8.3 A public sewer shall be considered available if it is within 200 feet of a building connected to the Single-family Waste Stabilization Pond.

SECTION 9 CONNECTION TO SINGLE-FAMILY WASTE STABILIZATION POND

- 3-9.1 All sinks, flush toilets, lavatories, garbage disposals, dishwashers, clothes washing machines, shower baths, bath-tubs, basins and similar plumbing fixtures or appliances shall be connected to the Single-family Waste Stabilization Pond.
- 3-9.2 If water from roof drains and/or foundation drains is discharged into the lagoon, then provision shall be made so that this water can be diverted from the pond when the lagoon is at capacity.

SECTION 10 SIZE OF SINGLE-FAMILY WASTE STABILIZATION PONDS

- 3-10.1 The following criteria shall be used to determine the size of the Single-Family Waste Stabilization Pond:

- a. If the house has 3 bedrooms or less or if it will serve 5 persons or less, then the smaller lagoon shall be required. The smaller lagoon is illustrated in Figure B.
- b. If the house has 4 or 5 bedrooms and will serve 6, 7 or 8 persons, then the larger lagoon shall be required. The larger lagoon is illustrated in Figure C.
- c. If there is any question about size, then the larger lagoon, Figure C, shall be required. For instance, if the house has 3 bedrooms and is occupied by 6 persons, the larger size will be used.

SECTION 11 SINGLE-FAMILY WASTE STABILIZATION POND REQUIREMENTS

- 3-11.1 If percolation tests are required then the percolation rate shall be slower than or equal to 1-inch fall per hour in the area of the Single-family Waste Stabilization Pond.
- 3-11.2 If undisturbed soil forms the bottom of the lagoon, then the bottom of the lagoon shall not be closer than four (4) feet to bedrock.
- 3-11.3 When the pond excavation penetrates or terminates in either a rock strata or porous (sand or gravel) strata the excavation shall be extended a distance of one foot on both the bottom and side slopes. The areas of supplemental excavation shall be filled with a non-permeable earthen material to limit seepage from the pond to a maximum value of $\frac{1}{4}$ inch per day. This may be accomplished by using a clay soil which is free of rocks. If a clay soil is not available, the fill soil shall be mixed with bentonite clay at the manufacturer's recommended rate and then compacted.
- 3-11.4 The normal ground water elevation shall be at least ten (10) feet below ground surface and four (4) feet below the bottom of the lagoon.

SECTION 12 LOCATION REQUIREMENTS

- 3-12.1 Unless otherwise approved by the Health Department, the single-family waste stabilization pond shall be located as set forth in Table 1. No single-family waste stabilization pond shall be installed within:
 - a. Twenty-five (25) feet of any private water line or water meter (p. 4, KDHE Bulletin 4-2, or as amended).
 - b. Fifty (50) feet of any house or other building.
 - c. Fifty (50) feet of any cistern, in-ground swimming pool, surface water course, creek bank, stream, river, pond, or lake (p. 4, KDHE Bulletin 4-2, or as amended).

- d. One hundred (100) feet of any property line, including right-of-way.
- e. One hundred (100) feet of any water well.

3-12.2 No single-family waste stabilization pond permitted after January 1, 2007, shall be installed within the floodplain nor where groundwater or adverse geological formations may result in the contamination of groundwater by sewage.

3-12.3 All distances shall be measured from inside top of the waste stabilization pond dike.

SECTION 13 MINIMUM DESIGN AND CONSTRUCTION

3-13.1 Sewage Conduits

- a. Size of sewage conduits – Sewage conduits connecting component parts of Single-family Waste Stabilization Pond systems shall be a minimum of four (4) inches in diameter.
- b. Materials – All pipe and fittings used in sewage conduits shall be constructed of PVC and meet nationally-recognized standards for their designated use-such as Standards published by the American Society for Testing and Materials or the National Sanitation Foundation and shall have been approved by the Health Department for use in on-site management systems. Sewage conduits under driveways or similar areas of load or impact shall be of material capable of withstanding maximum anticipated loads. All sewage pipe shall be marked to indicate it meets or exceeds a Schedule 40 or heavier “crush test” rating.
- c. Construction – Sewage conduits shall be installed with sealed, watertight, root-resistant joints and shall be laid on a firm foundation. This shall not be subject to settling, and shall be installed at a grade not less than one-eighth ($\frac{1}{8}$) inch per foot. All pipe from the structure to the Single-family Waste Stabilization Pond shall be laid “bells up” if bell and spigot pipe is used.
- d. Cleanouts – Cleanouts shall be placed at the junction of the building drain and building sewer at intervals not to exceed 100 feet in straight runs and as required by the Health Department.

A capped cleanout shall be placed near the junction of the sewer and the Single-family Waste Stabilization Pond at the nearest point where the flowline will be above the maximum pond water level. This cleanout shall be located so that water will not flow out of the pipe during the periods when the pond is full. This cleanout shall be accessible during the full pond stage.

3-13.2 Dike Requirements

- a. All dike slopes shall be 3½ feet horizontal to 1 foot vertical.
- b. The top of the dike shall be smoothed to a width of five feet to facilitate fencing.
- c. The dike shall be smooth with no clods, rocks, or ruts that will interfere with a mower.
- d. The top of the dike shall be below the point where sewage exits the house.
- e. Surface drainage shall not enter the pond. Surface drainage shall be diverted around the pond.

3-13.3 Watering Requirements

- a. The lagoon shall be prewatered to a depth of 2½ feet.
- b. Operating water depth shall be maintained between 1½ and 5 feet.
- c. Roof drains may be discharged to the sewer system provided there is a control arrangement which can divert this water from the sewer system during times of high water in the pond. Water shall be added as needed.
- d. The minimum dike freeboard shall be 2½ feet.
- e. If the pond appears that it will overflow then the Lawrence-Douglas County Health Department shall be contacted for emergency procedures.

3-13.4 Outflow Pipe

The outflow pipe shall terminate about one foot from the center of the bottom of the pond. An extension shall be provided which will allow discharge of sewage at that point.

3-13.5 Fencing Requirements

- a. Fencing shall be installed to a minimum height of four feet.
- b. Corner posts shall be of substantial construction. Creosote, Osage orange or pipe corner posts are acceptable. They shall be cemented and provided with a “H” or “N” style brace at each corner.

- c. A four foot high hung gate with a lock shall be provided. The gate width shall be no less than four feet.
- d. The fencing shall be installed no closer than four feet from the top inside edge of the dike.
- e. Chain link fence or fencing with openings no greater than 4" x 4" is acceptable. In areas where livestock will have access to the fence, the fence posts shall be tall enough to install two strands of barbed wire or a single strand of electric fencing at the top of the fencepost.
- f. Fence posts shall be no further than twelve (12) feet apart. Fencing is illustrated in Figures D-E-F-G at the end of the document.
- g. No other fencing can be installed unless specific written approval is granted by the Health Department.
- h. All fencing requirements shall be completed and approved by the Health Department prior to occupancy of the residence.

3-13.6 Seeding and Sterilization

- a. The pond bottom and interior dikes up to two (2) feet elevation shall be treated with a herbicide at the manufacturer's recommended sterilization rate. Care shall be taken not to apply herbicide above the two (2) feet elevation level where grass will be seeded.
- b. All dike area not sterilized shall be seeded with a densely growing, short-rooted grass, such as Blue, Fescue, Brome or Bermuda.

SECTION 14 OPERATION AND MAINTENANCE DIRECTIONS

- 3-14.1 The dikes shall have a good stand of groundcover established and maintained on it. This grass must be a short-rooted perennial such as Blue, Fescue, Brome or Bermuda. Once this vegetation is established it shall be regularly maintained. Trees and tall weeds shall not be allowed to develop in the dike area. Vegetation shall not be allowed to grow higher than six (6) inches.
- 3-14.2 Water vegetation shall be controlled at first appearance. All trees and weeds, such as cattails and duckweed, shall be removed as soon as the first ones develop in the water. Trees and weeds shall be removed from the water so that they do not contribute to the organic loading of the pond.
- 3-14.3 The water depth shall be maintained between 1½ and 5 feet.

- 3-14.4 Any damage to the dikes shall be repaired by reshaping the area to the original plan and then establishing a good stand of groundcover on the worked areas. Surface water shall be diverted around the pond so it will not contribute to the hydraulic loading of the pond or create an erosion problem.
- 3-14.5 The waste stabilization pond, fence, gate and pipe, shall be maintained in the condition called for in the original plans and specifications.
- 3-14.6 Animal and waterfowl shall not be confined within the pond fence.

Table 1

LOCATION OF SINGLE-FAMILY WASTE STABILIZATION POND

See Section 11 – Location Restrictions

Minimum Horizontal Distance (Feet) Required

from:	to Single-Family Waste Stabilization Pond
Private water line or water meter (p. 4, KDHE Bulletin 4-2, or as amended)	25
House or other building.	50
Cistern	50
In-ground swimming pool	50
Surface water course, creek bank, stream, river, pond, or lake (p. 4, KDHE Bulletin 4-2, or as amended).	50
Property line, including right-of-way	100
Water well	100

Figure A

“BENCHED” TEST HOLE

See 3-5.2. Field Data Requirements

10-Foot Deep Test Hole for Lagoon

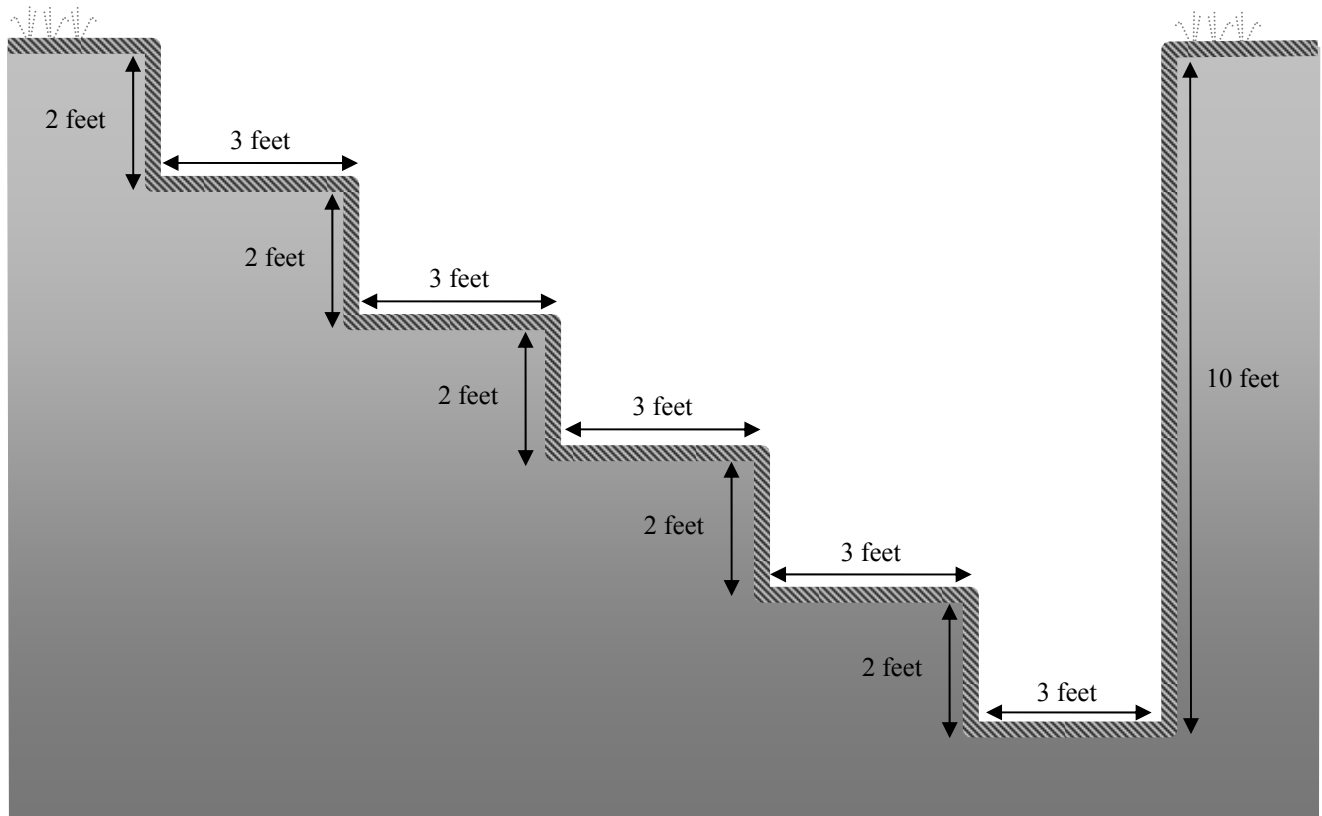


Figure B

THE SMALLER SINGLE-FAMILY WASTE STABILIZATION POND

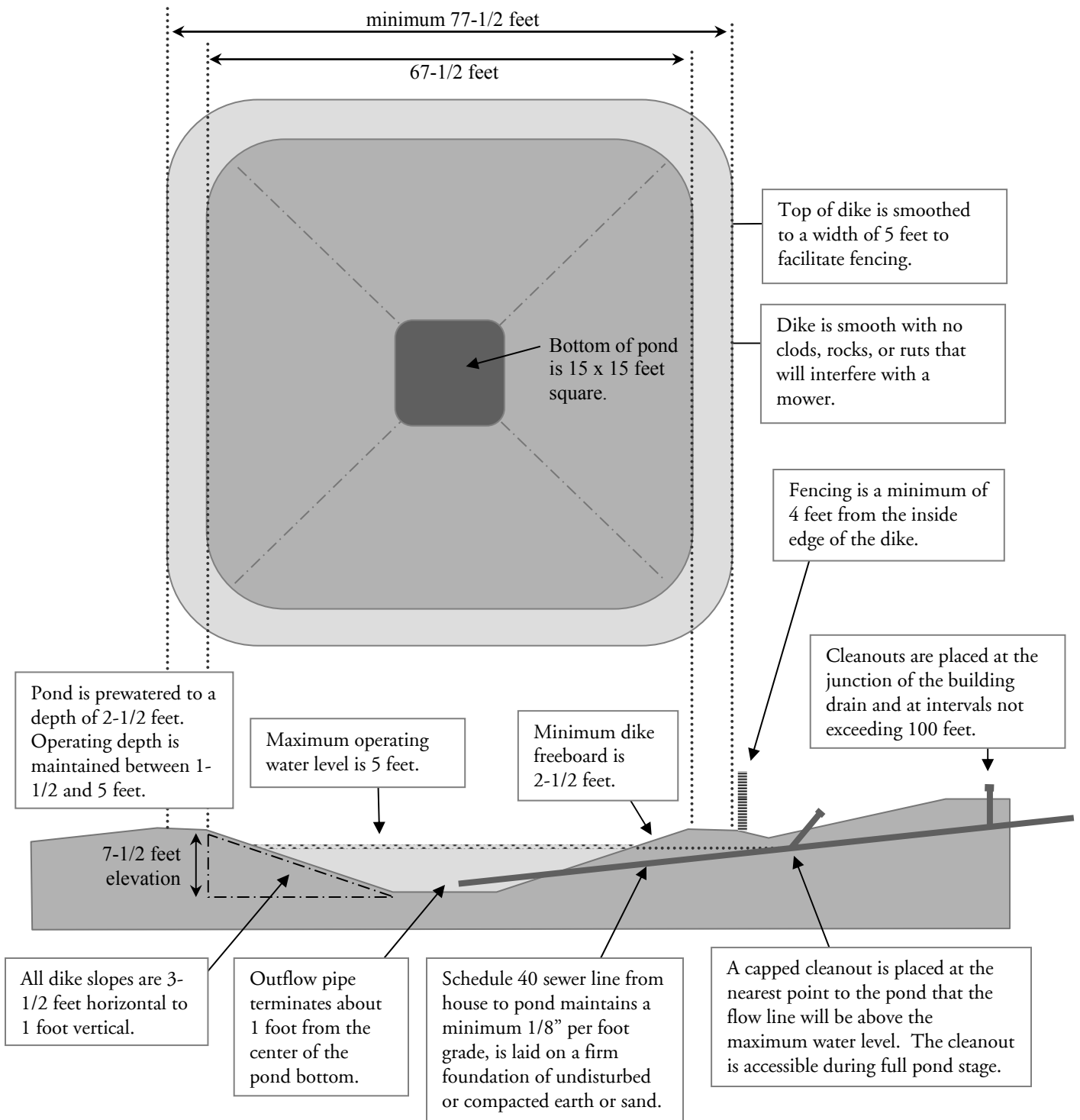


Figure C

THE LARGER SINGLE-FAMILY WASTE STABILIZATION POND

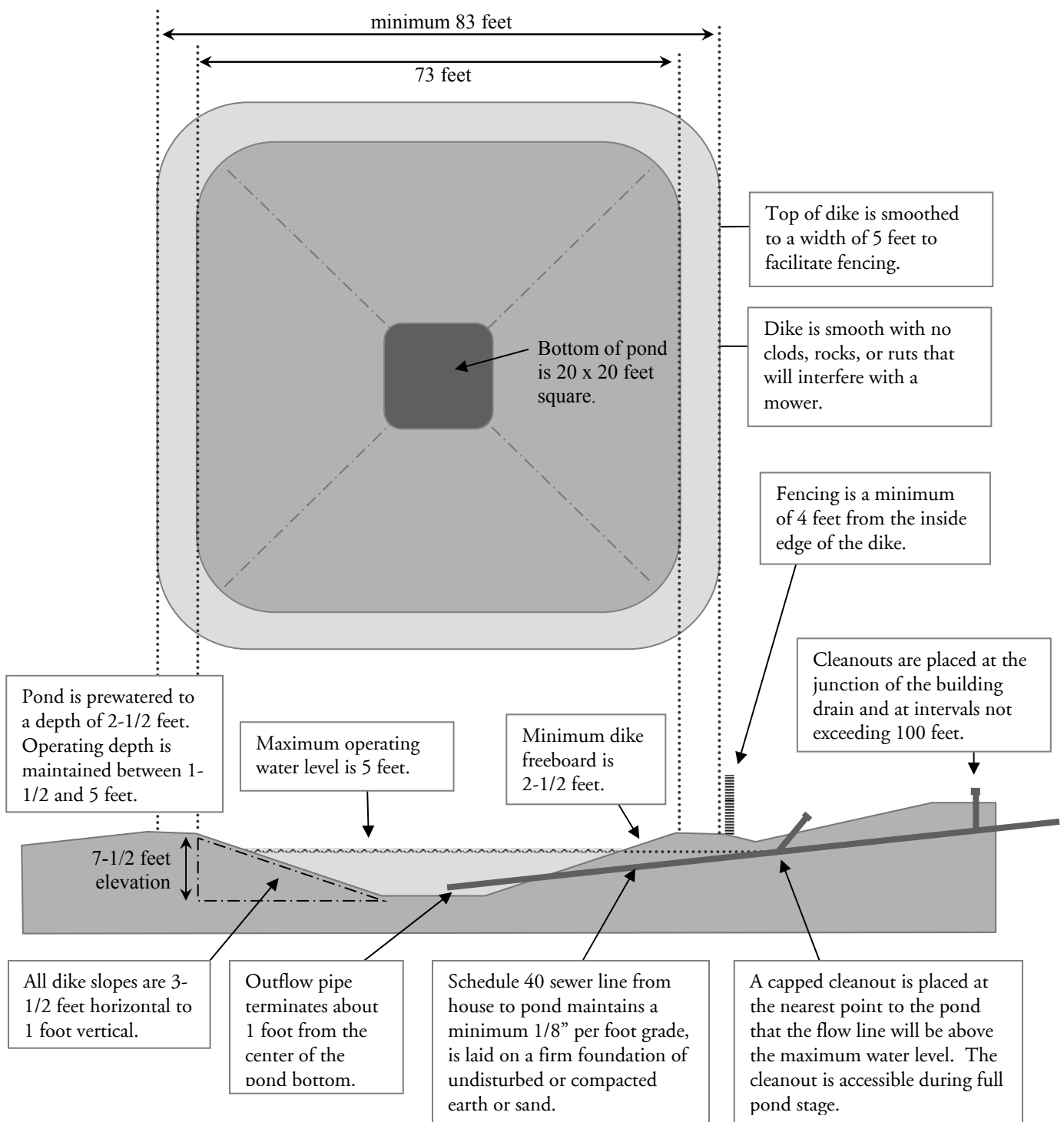
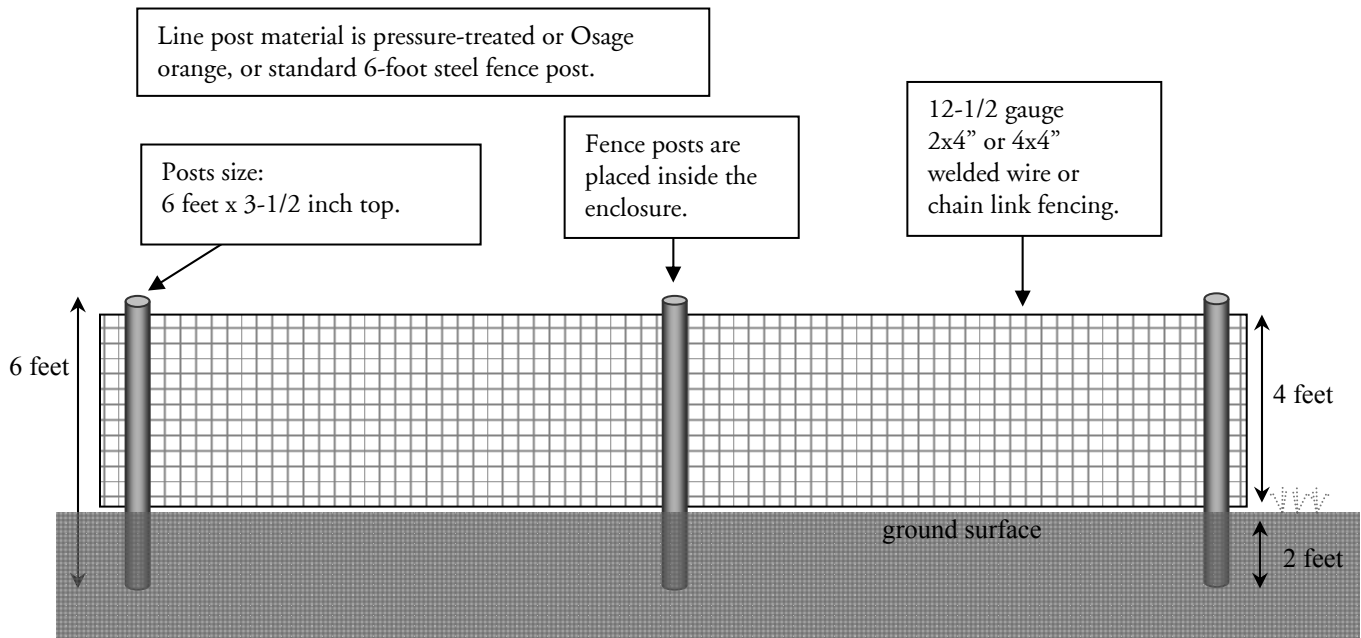


Figure D

FENCING: THE STANDARD FENCE

Installation of Line Posts and Fencing



Attaching Fencing to Wooden Fence Post

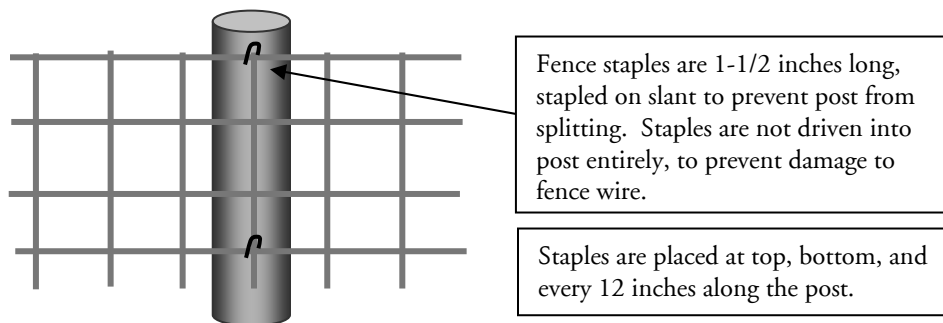


Figure E

FENCING: STANDARD BRACING FOR "N" STYLE CORNERS

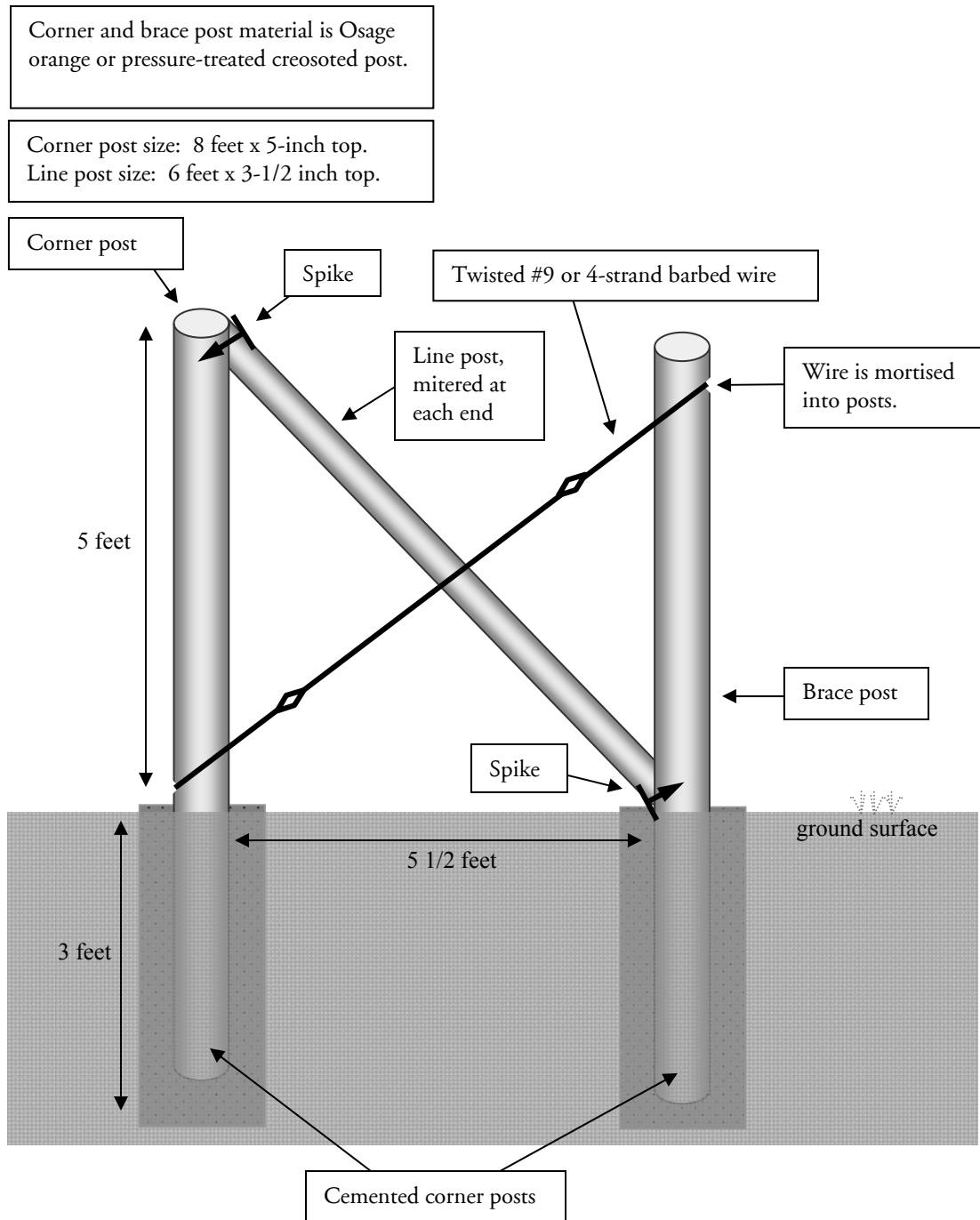


Figure F

FENCING: STANDARD BRACING FOR "H" STYLE CORNERS

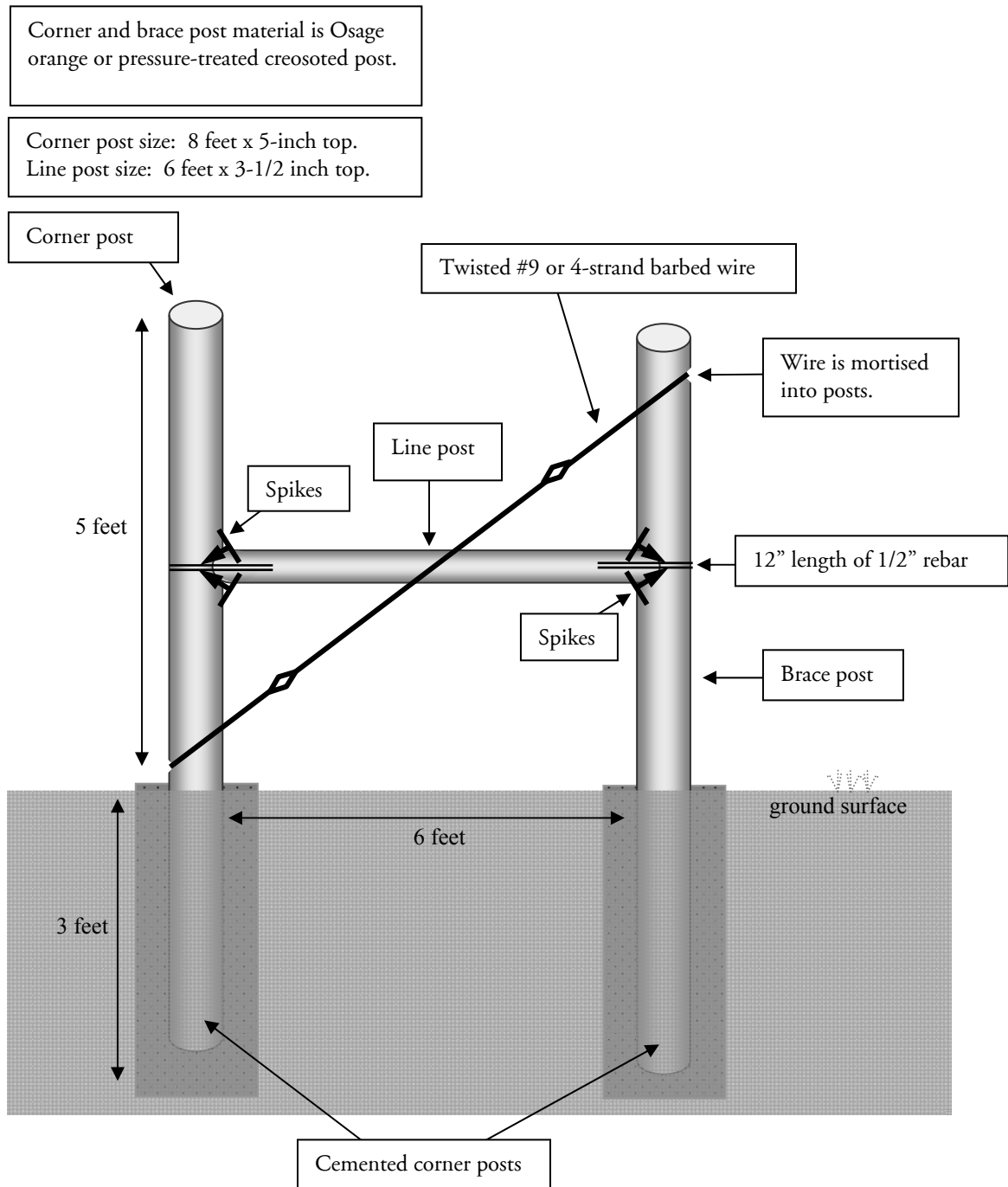
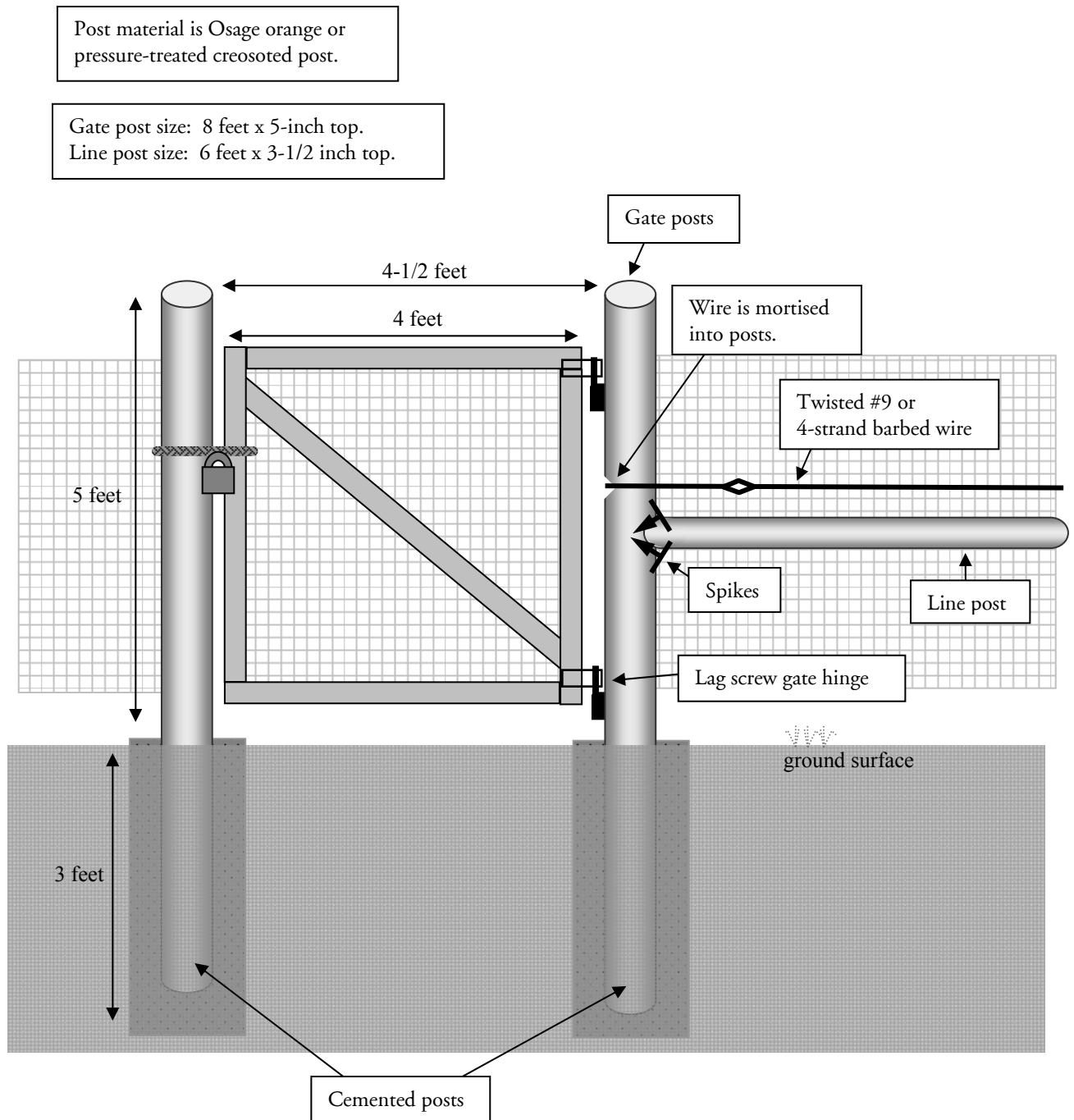


Figure G

FENCING: STANDARD HUNG GATE WITH "H" STYLE BRACING



SANITARY CODE

DOUGLAS COUNTY, KANSAS

CHAPTER 4

WATER SUPPLIES

SECTION 1 DEFINITIONS

In addition to the definitions provided in other chapters of this code, the words, terms and phrases listed below, for purposes of this Chapter 4, are as follows:

- 4-1.1 Abandoned Water Well: a water well determined by the Kansas Department of Health and Environment to be a well which meets any of the following criteria:
- a. Use has been permanently discontinued.
 - b. Pumping equipment has been permanently removed.
 - c. The well is in such a state of disrepair that it cannot be used to supply water, or has the potential for transmitting surface contaminants into the aquifer, or both.
 - d. The well poses a potential health or safety hazard.
 - e. The well is in such condition that it cannot be placed in active or inactive status.
- 4-1.2 Active Well: a water well which is an operating well used to withdraw water, monitor or observe groundwater conditions.
- 4-1.3 Annular Space: the space between the well casing and the well bore or the space between two or more strings of well casing.
- 4-1.4 Aquifer: an underground formation that contains and is capable of transmitting groundwater.
- 4-1.5 Backflow: the undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the distribution pipes of the potable supply of water from any source or sources.
- 4-1.6 Confined Aquifer: an aquifer overlain and underlain by impermeable layers. Groundwater in a confined aquifer is under pressure greater than atmospheric pressure and will rise in a well above the point at which it is first encountered.

- 4-1.7 Construction of Water Wells: all acts necessary to obtain groundwater by any method for any use including, without limitation, the location of and excavation for the well.
- 4-1.8 Cross-Connection: any unprotected actual or potential connection or structural arrangement between a public or a consumer's potable water system and any other source or system through which it is possible to introduce into any part of the potable system any used water, industrial fluid, gas, or substance other than the intended potable water with which the system is supplied. By-pass arrangements, jumper connections, removable sections, swivel or change-over devices and other temporary or permanent devices through which or because of which temporary or permanent devices through which or because of which "backflow" can or may occur are considered to be cross-connections.
- 4-1.9 Domestic Uses: the use of water by any person or family unit or household for household purposes, or for the watering of poultry, farm and domestic animals used in operating a farm, or for the watering of less than one thousand (1,000) head of livestock, or for the irrigating of lands not exceeding a total of two acres in area for the growing of gardens, orchards and lawns.
- 4-1.10 Groundwater: the part of the subsurface water which is in the zone of saturation.
- 4-1.11 Grout: cement grout, neat cement grout, bentonite clay grout or other material approved by the department used to create a permanent impervious watertight bond between the casing and the undisturbed formation surrounding the casing or between two or more strings of casing.
- a. Neat cement grout is a mixture consisting of one ninety-four (94) pound bag of portland cement to five to six gallons of clean water.
 - b. Cement grout is a mixture consisting of one ninety-four (94) pound bag of portland cement to an equal volume of sand having a diameter no larger than 0.080 inches (2 millimeters) to five to six gallons of clean water.
 - c. Bentonite clay grout is a mixture consisting of water and commercial grouting or plugging sodium bentonite clay containing high solids such as that manufactured under the trade name of "volclay grout", or an equivalent as approved by the Kansas Department of Health and Environment.
 - 1) The mixture shall be per the manufacturer's recommendations to achieve a weight of not less than 9.4 pounds per gallon of mix. Weighting agents may be added as per the manufacturer's recommendations.
 - 2) Sodium bentonite pellets, tablets or granular sodium bentonite may also be used provided they meet the specifications listed in 4-1.13.c. above.

- 3) Sodium bentonite products that contain low solids, are designed for drilling purposes or that contain organic polymers shall not be used.

- 4-1.12 Grout Tremie Pipe or Grout Pipe: a steel or galvanized steel pipe or similar pipe having equivalent structural soundness that is used to conduct pumped grout to a point of selected emplacement during the grouting of a well casing or plugging of an abandoned well or test hole.
- 4-1.13 Heat Pump Hole: a hole drilled to install piping for an earth coupled water source heat pump system, also known as a vertical closed loop system.
- 4-1.14 Inactive Status: a water well which is not presently operating but is maintained in such a way it can be put back in operation with a minimum of effort.
- 4-1.15 License: a document issued by the Kansas Department of Health and Environment to qualified persons making application therefore, authorizing such persons to engage in the business of water well contracting.
- 4-1.16 Non-Public Water Supply: all water supplies for domestic uses which do not meet the definition of public water supply.
- 4-1.17 Pitless Well Adapter or Unit: an assembly of parts installed below frost line which will permit pumped groundwater to pass through the wall of the casing or extension thereof and prevent entrance of contaminants.
- 4-1.18 Public Water Supply System: a system for delivery to the public of piped water for human consumption that has at least ten (10) service connections or regularly serves at least twenty-five (25) individuals daily at least sixty (60) days out of the year. This term includes any source, treatment, storage or distribution facilities used in connection with the system.
- 4-1.19 Pump Pit: a watertight structure constructed at least two feet away from the water well and below ground level to prevent freezing of pumped groundwater and which houses the pump or pressure tank, distribution lines, electrical controls, or other appurtenances.
- 4-1.20 Reconstructed Water Well: an existing well that has been deepened or has had the casing replaced, repaired, added to or modified in any way for the purpose of obtaining groundwater.
- 4-1.21 Sanitary Well Seal: a manufactured seal, approved by the Kansas Department of Health and Environment and Lawrence-Douglas County Health Department, installed at the top of the well casing which, when installed, creates an air and

watertight seal to prevent contaminated or polluted water from gaining access to the groundwater supply.

- 4-1.22 Static Water Level: the highest point below or above ground level which the groundwater in the well reaches naturally.
- 4-1.23 Test Hole or Hole: any excavation constructed for the purpose of determining the geologic, hydrologic and water quality characteristics of underground formations.
- 4-1.24 Treatment: the stimulation of production of groundwater from a water well, through the use of hydrochloric acid, muriatic acid, sulfuric acid, calcium, or sodium hypochlorite, polyphosphates or other chemicals and mechanical means, for the purpose of reducing or removing iron and manganese hydroxide and oxide deposits, calcium and magnesium carbonate deposits and slime deposits associated with iron or manganese bacterial growths which inhibit the movement of groundwater into the well.
- 4-1.25 Uncased Test Hole: any test hole in which casing has been removed or in which casing has not been installed.
- 4-1.26 Unconfined Aquifer: an aquifer containing groundwater at atmospheric pressure. The upper surface of the groundwater in an unconfined aquifer is the water table.
- 4-1.27 WWC-5 Form: a water well drilling report completed by a well driller licensed by the Kansas Department of Health and Environment (KDHE).
- 4-1.28 Water Well: any excavation that is drilled, cored, bored, washed, driven, dug, jetted, or otherwise constructed when the intended use of such excavation is for the location, diversion, artificial recharge or acquisition of groundwater.
- 4-1.29 Water Well Contractor: any individual, firm, partnership, association or corporation who shall construct, reconstruct or treat a water well. The term shall not include:
- a. An individual constructing, reconstructing or treating a water well located on land owned by the individual, when the well is used by the individual for farming, ranching, or agricultural purposes or for domestic purposes at the individual's place of abode.
 - b. An individual who performs labor or services for a licensed water well contractor at the contractor's direction and under the contractor's supervision.

SECTION 2 WATER SUPPLY REQUIRED

- 4-2.1 Owners of private homes that are used as a principle residence and all rented or leased homes shall furnish at least one convenient outlet supplying an adequate quantity of potable water. Owners of permanent establishments shall furnish an adequate supply of safe water for the clientele.
- 4-2.2 For individual lots, tracts, or parcels which contain a minimum lot area of three (3) adjoining acres but less than five (5) adjoining acres, no permit for the construction of a new on-site sewage management system will be issued after the effective date of this Sanitary Code before approval of the water supply by the Health Department. Approval of the water supply shall include one of the following requirements:
- a. A letter of approval has been issued by the appropriate public water supply that a water meter has been purchased for the property [Subdivision Regulation 20-811 (e) (1), p. 58, or as amended].
 - b. A permit has been issued by the Health Department for a private cistern to be constructed. Cisterns shall not be installed on lots, tracts, or parcels divided after January 1, 2007, within the City of Lawrence Urban Growth Area (a public water supply is required for such lots) [Subdivision Regulation 20-811 (e) (1), p. 58, or as amended].
- 4-2.3 For individual lots, tracts, or parcels which contain a minimum lot area of five (5) adjoining acres, no permit for the construction of a new on-site sewage management system shall be issued after the effective date of this Sanitary Code before approval of the water supply by the Health Department. Approval of the water supply shall include one of the following requirements:
- a. A letter of approval has been issued by the appropriate public water supply that a water meter has been purchased for the property [Subdivision Regulation 20-811 (e) (1), p. 58, or as amended].
 - b. A permit has been issued by the Health Department for a private well to be constructed. Lots, tracts, or parcels divided after January 1, 2007, which are located within the Urban Growth Area shall not use private water wells as the primary potable water source (a public water supply is required for such lots) [Subdivision Regulation 20-811 (e) (1), p.58, or as amended].
 - c. A permit has been issued by the Health Department for a private cistern to be constructed. Cisterns shall not be installed on lots, tracts, or parcels divided after January 1, 2007, within the City of Lawrence Urban Growth Area (a public water supply is required for such lots) [Subdivision Regulation 20-811 (e) (1), p. 58, or as amended].

SECTION 3 PUBLIC WATER SUPPLIES

4-3.1 State Permit. No person shall operate a public water supply without obtaining a permit from the Kansas Department of Health and Environment.

4-3.2 State Approved Plans. No person shall construct any public water supply on any property subject to the provisions of this code until the plans and specifications have been submitted and approved by the Kansas Department of Health and Environment. A copy of the plans and specifications shall be made available to the Lawrence-Douglas County Health Department if requested by the Lawrence-Douglas County Health Department.

SECTION 4 NON-PUBLIC WATER SUPPLIES

4-4.1 No person shall construct a non-public water supply without approval from the Health Department.

4-4.2 Use of surface water (lakes, ponds, or streams) as a source of water for a non-public water supply shall not be permitted.

SECTION 5 NON-PUBLIC WATER SUPPLIES WITH TWO (2) OR MORE SERVICE CONNECTIONS

4-5.1 Permit Required

- a. No permit for constructing a non-public water supply with two (2) or more service connections shall be issued to any person when in the discretion of the Lawrence-Douglas County Health Department the property can be served by a public water supply.
- b. No person shall construct, repair or alter a non-public water supply with two (2) or more service connections without obtaining a construction permit for such purpose from the Lawrence-Douglas County Health Department. No permit for the construction, repair or alternation of the water supply shall be issued until the Lawrence-Douglas County Health Department has inspected and approved the site and the proposed location and design of the water supply. A fee shall be charged by the Lawrence-Douglas County Health Department for the service. The water supply may be inspected by the Lawrence-Douglas County Health Department at any stage of construction.
- c. The Lawrence-Douglas County Health Department may require the water supply to be designed by a professional engineer and may ask for review of the proposal by the Kansas Department of Health and Environment.

4-5.2 Operation and Maintenance Requirements

- a. The owner of the water supply or his/her representative shall immediately notify the Lawrence-Douglas County Health Department of a situation with the water system including a breakdown or loss of water service which presents or may present an imminent and substantial endangerment to health.
- b. Newly constructed or repaired water distribution mains and finished water storage facilities shall be flushed and disinfected before use in accordance with methods acceptable to the Lawrence-Douglas County Health Department.
- c. The water supply shall be operated and maintained to provide a minimum positive pressure of twenty (20) psi (140kN/m²) throughout the distribution system except under extraordinary conditions such as unusual peak fire flow demand or major distribution system breaks.
- d. No person shall operate or maintain a non-public water supply system with two (2) or more service connections that has been:
 - 1) Constructed or reconstructed after October 10, 1997, until it has been inspected and a permit issued by the Lawrence-Douglas County Health Department.
 - 2) Temporarily or permanently enjoined as a public health nuisance by a court of competent jurisdiction.
 - 3) Found by the Lawrence-Douglas County Health Department not to comply with the provisions of these standards and a written notice thereof has been given to the owner or his/her agent.

4-5.3 Water Samples and Use of a Non-Public Water Supply with Two (2) or More Service Connections

In addition to the requirements which pertain to non-public water wells, the following shall be done and reviewed by the Lawrence-Douglas County Health Department prior to the issuance of a permit, to assure water quality for the public:

- a. A bacterial analysis is to be done initially and at least annually thereafter.
- b. A partial chemical analysis is to be done initially and every three (3) years thereafter.
- c. Other tests such as a screen for pesticides, volatile organic chemicals and heavy metals may be required, at the direction of the Lawrence-Douglas County Health Department to protect the public's health.

- d. The water samples shall be collected by the Lawrence-Douglas County Health Department and sent to Kansas Department of Health and Environment lab or other state certified labs for analysis. The fee for the analysis is the responsibility of the owner of the water supply or his/her representative.

SECTION 6 CISTERNS

- 4-6.1 New cisterns shall not be installed on lots, tracts, or parcels divided after January 1, 2007, within the City of Lawrence Urban Growth Area (a public water supply is required for such lots) [Subdivision Regulation 20-811 (e) (1), p. 58, or as amended].
- 4-6.2 Permit Required. No permit for the construction of a cistern shall be issued until the Health Department has inspected and approved the site and the proposed location and design of the cistern. A fee shall be charged by the Health Department for the construction permit. The cistern and water system may be inspected by the Health Department at any stage of construction.
- 4-6.3 Minimum Standards. Cisterns constructed after the effective date of this Sanitary Code shall meet the following requirements:
 - a. Cisterns shall be constructed of monolithic concrete or “food grade” plastic.
 - b. Cisterns shall have a minimum capacity of one thousand (1,000) gallons.
 - c. Cisterns shall be filled with potable water delivered from a public water supply.
- 4-6.4 Location Requirements. No cistern shall be installed after the effective date of this Sanitary Code within:
 - a. Fifty (50) feet of any septic tank.
 - b. Fifty (50) feet of any septic absorption field.
 - c. Any areas where rainwater is likely to enter the cistern.

SECTION 7 NON-PUBLIC WATER WELLS

- 4-7.1 Permit Required. No person shall construct a non-public water well for domestic uses without obtaining a construction permit for such purpose from the Lawrence-Douglas County Health Department. No permit for the construction shall be issued until the Lawrence-Douglas County Health Department has inspected and approved the site and the proposed location and design of the non-public water well. A fee

shall be charged by the Lawrence-Douglas County Health Department. The system and well may be inspected by the Lawrence-Douglas County Health Department at any stage of construction.

SECTION 8 MINIMUM STANDARDS FOR NON-PUBLIC WATER WELLS

Construction regulations for all wells other than public water supply:

4-8.1 Area Requirements

- a. No well shall be located upon any parcel, tract, or lot of less than five (5) adjoining acres whereon an on-site sewage management system is utilized.
- b. Any land divided after January 1, 2007, which is located within the floodplain shall not be counted in calculating lot area for the purpose of meeting minimum lot area requirements for on-site sewage management systems [Subdivision Regulation 20-811 (d) (2) (i), p.57, or as amended]. Lots, tracts, or parcels divided after January 1, 2007, which are located within the Urban Growth Area shall not use private water wells as the primary potable water source (a public water supply is required for such lots) [Subdivision Regulation 20-811 (e) (1), p. 58, or as amended].

The exemptions to this requirement are when:

- 1). A division of property, which is less than the above stated minimum, has occurred and has been filed with the Douglas County Register of Deeds prior to October 10, 1997; or
- 2) A property is exempt under Section 21-4.07 of the Douglas County Zoning Regulations.
- 3) Any lands divided prior to January 1, 2007, shall not be required to meet the floodplain requirements [Subdivision Regulation 20-801 (d), p. 7, or as amended].

4-8.2 Location Requirements

- a. Unless otherwise approved by the Health Department, the well shall be located as set forth in Table 3. After the effective date of this Sanitary Code, no new well shall be installed within:
 - 1) Fifteen (15) feet of any utility line.

- 2) Twenty-five (25) feet of any property line, allowing public right-of-ways to be counted.
 - 3) Fifty (50) feet of any residential building or any other building which has the potential to be treated for termites.
 - 4) Fifty (50) feet of any septic tank, surface water course, creek bank, stream, pond, river, or lake (p. 4, KDHE Bulletin 4-2, or as amended).
 - 5) Fifty (50) feet of any sewer line or pressure sewer line.
 - 6) One hundred (100) feet of any abandoned cesspool, inactive well, barnyard, feedlot, waste stabilization pond (lagoon), manure storage, pit privy, or septic system absorption field.
 - 7) One hundred fifty (150) feet of any chemical storage, fertilizer storage, fuel storage, pesticide storage or landfill.
 - 8) Any floodplain.
- b. Proper drainage in the vicinity of the well shall be provided so as to prevent the accumulation and ponding of surface water within fifty (50) feet of the well. The well shall not be located in a ravine or any other drainage area where surface water may flow into the well.
 - c. The water well shall be so located as to minimize the potential for contamination of the delivered or obtained groundwater and to protect groundwater aquifers from pollution and contamination.
 - d. After the effective date of this Sanitary Code, any newly constructed well shall be located within the boundaries of the same legally described lot, tract, or parcel as the building(s) for which the well supplies water.

4-8.3

Grouting For Constructed or Reconstructed Wells

- a. Constructed or reconstructed wells shall be sealed by grouting the annular space between the casing and the well bore from ground level to a minimum of twenty (20) feet or to a minimum of five feet into the first clay or shale layer, if present, whichever is greater. If a pitless well adapter or unit is being installed, the grouting shall start below the junction of the pitless well adapter or unit where it attaches to the well casing and shall continue a minimum of twenty (20) feet below this junction or to a minimum of five feet into the first clay or shale layer whichever is greater.

- b. To facilitate grouting, the grouted interval of the well bore shall be drilled to a minimum diameter at least three inches greater than the maximum outside diameter of the well casing. If a pitless well adapter or unit is being installed on the well's casing, the well bore shall be a minimum diameter of at least three inches greater than the outside maximum diameter of the well casing through the grouted interval below the junction of the pitless well adapter or unit where it attaches to the well casing.
- c. If groundwater is encountered at a depth less than the minimum grouting requirement, the grouting requirement may be modified to meet local conditions if approved by the Kansas Department of Health and Environment.
- d. Waters from two or more separate aquifers shall be separated from each other in the annular space by sealing the bore hole between the aquifers with grout.

4-8.4

Well Casing

- a. Asbestos-cement well casing (transite) shall not be used in water wells that produce water for human consumption or food processing.
- b. All wells shall have durable watertight casing from at least one foot above finished ground surface to the top of the producing zone of the aquifer. In no event shall the watertight casing extend less than twenty (20) feet below the ground level. Exceptions to either of the above may be granted by the Kansas Department of Health and Environment if warranted by local conditions.

The casing shall be clean and serviceable and of a type to guarantee reasonable life so as to insure adequate protection to the aquifer or aquifers supplying the groundwaters. Used, reclaimed, rejected, or contaminated pipe shall not be used for casing any well. All water well casing shall be approved by the Kansas Department of Health and Environment.

- c. All groundwater producing zones that are known or suspected to contain natural or man-made pollutants shall be adequately cased and grouted off during construction of the well to prevent the movement of the polluted groundwater to either overlying or underlying fresh groundwater zones.
- d. The well casing shall terminate not less than one (1) foot above the finished ground surface. No opening shall be made through the well casing except for installation of a pitless well adapter so designed and fabricated to prevent soil, subsurface and surface water from entering the well.

4-8.5

Well Vents

Well vents shall be used and shall terminate not less than one foot above ground surface and shall be screened with 16-mesh, brass, bronze, copper screen or other screen materials approved by the Kansas Department of Health and Environment and turned down in a full one hundred eighty (180) degree return bend so as to prevent the entrance of contaminating materials.

4-8.6 Temporary Capping

All wells, when unattended during construction, reconstruction, treatment or repair, or during use as cased test holes, observation or monitoring wells, shall have the top of the well casing securely capped in a watertight manner to prevent contaminating or polluting materials from gaining access to the groundwater aquifer.

4-8.7 Sanitary Well Seal

The top of the well casing shall be sealed by installing a sanitary well seal which has been approved by KDHE.

4-8.8 Pump Pit

- a. Any pump pit shall be constructed at least two feet away from the water well. The pipe from the pump or pressure tank in the pump pit to the water well shall be sealed in a watertight manner where it passes through the wall of the pump pit.
- b. Water wells shall not be constructed or reconstructed in pits, basements, garages or crawl spaces.

4-8.9 Pump Mounting

- a. All pumps installed directly over the well casing shall be so installed that an airtight and watertight seal is made between the top of the well casing and the gear or pump head, pump foundation or pump stand.
- b. When the pump is not mounted directly over the well casing and the pump column pipe or pump suction pipe emerges from the top of the well casing, a sanitary well seal shall be installed between the pump column pipe or pump suction pipe and the well casing. An airtight and watertight seal shall be provided for the cable conduit when submersible pumps are used.

4-8.10 Cleaning of Well

Prior to completion of a constructed or reconstructed well, the well shall be cleaned of mud, drill cuttings and other foreign matter so as to make it suitable for pump installations.

4-8.11 Toxic Materials

Toxic materials shall not be used in the construction, reconstruction, treatment or plugging of a water well unless those material are thoroughly flushed from the well prior to use.

4-8.12 Natural Organic or Nutrient Producing Material

Natural organic or nutrient producing material shall not be used during the construction, reconstruction or treatment of a well unless it is thoroughly flushed from the well and the groundwater aquifer or aquifers before the well is completed. Natural organic or nutrient producing material shall not be added to a grout mix used to grout the well's annular space.

4-8.13 Disinfection

Water well disinfection for wells constructed or reconstructed for human consumption or food processing:

- a. Gravel for gravel-packed wells shall be disinfected by immersing the gravel in chlorine solution containing not less than two hundred (200) milligrams per liter (mg/l) of available chlorine before it is placed in the wells annular space.
- b. Constructed or reconstructed wells shall be disinfected by adding sufficient hypochlorite solution to them to produce a concentration of not less than one hundred (100) mg/l of available chlorine when mixed with water in the well.
- c. The pump, casing, screen and pump column shall be washed down with a two hundred (200) mg/l available chlorine solution.
- d. All persons constructing, reconstructing, or treating, a water well and removing the pump or pump column, replacing a pump, or otherwise performing an activity which has potential for contaminating or polluting the groundwater supply shall be responsible for adequate disinfection of the well, well system and appurtenances thereto.
- e. All drilling waters used during the construction or reconstruction of any water well shall be initially disinfected by mixing with the water enough sodium hypochlorite to produce at least one hundred (100) milligrams per liter (mg/l) of available chlorine.

SECTION 9 ABANDONED WELLS

- 4-9.1 All abandoned wells shall be plugged in accordance with Kansas Department of Health and Environment regulation.

SECTION 10 GENERAL OPERATING REQUIREMENTS

4-10.1 Water Well Record

- a. A water well contractor who constructs, reconstructs or plugs a water well shall submit a copy of the WWC-5 form provided by KDHE, to the Lawrence-Douglas County Health Department and the Kansas Department of Health and Environment within thirty (30) days after the construction, reconstruction or plugging of the water well. The copy sent to the Lawrence-Douglas County Health Department shall be mailed to: 200 Maine Street, Suite B, Lawrence, Kansas 66044.
- b. A landowner who constructs, reconstructs or plugs a water well which will be or was used by the landowner for farming, ranching or agricultural purposes or is located at the landowner's place of abode, shall submit a copy of the water well record, form WWC-5, to the Lawrence-Douglas County Health Department and the Kansas Department of Health and Environment within thirty (30) days after the construction, reconstruction or plugging of the water well.

- 4-10.2 Artificial Recharge and Return. The Construction of artificial recharge wells and freshwater return wells shall comply with all applicable rules and regulations of the Kansas Department of Health and Environment.

- 4-10.3 Well Tests. When a pumping test is run on a well, results of the test shall be reported on the water well record, form WWC-5, or a copy of the contractor's record of the pumping test shall be attached to the water well record.

4-10.4 Water Samples.

- a. Within 30 days after receipt of the water well record, form WWC-5, the Kansas Department of Health and Environment or Lawrence-Douglas County Health Department may request the contractor, or landowner who constructs or reconstructs his or her own water well, to submit a sample of water from the well for chemical analysis.
- b. All wells constructed or reconstructed after September 20, 1993, should be sampled for coliform bacteria and parts per million (ppm) of nitrate-nitrogen. A fee may be charged by the Lawrence-Douglas County Health Department for the service.

- c. Samples of water from any water supply may be taken and examined by the Lawrence-Douglas County Health Department whenever deemed necessary for the detection of pollution, compliance or unwholesomeness. The Lawrence-Douglas County Health Department may refuse to take or examine samples of water from any water supply which is not adequately protected from surface contamination.
- d. The Lawrence-Douglas County Health Department may condemn and prohibit use or require repairs of any water supply which is determined to be a present danger to the public health.

SECTION 11 CROSS-CONNECTION AND BACK-SIPHONAGE

- 4-11.1 No person shall install and maintain a cross-connection between any public water supply and any other water supply.

Table 1

Kansas Department of Health and Environment Approved Water Well Casing
[Authorization K.A.R. 28-30-6(f)(4)]

WATER WELL CASING FOR WATER WELLS OTHER THAN PUBLIC WATER SUPPLY
AND RESERVOIR SANITATION ZONE WATER WELLS

Steel and Wrought Iron

Minimum Wall Thickness

Depth of Casing (Feet)	Nominal Diameter (Gauge or Inches)*									
	4	6	8	10	12	14	16	18	24	30
0-100	10	10	10	10	10	10	10	10	7	0.219
100-200	10	10	10	10	10	7	7	7	0.219	0.219
200-400	10	10	10	10	7	7	7	0.219	0.250	0.250
400-600	7	7	7	7	7	7	0.219	0.250	0.312	0.312
600 or more	7	0.219	0.219	0.219	0.219	0.219	0.250	0.375	0.375	0.375

* Whole numbers indicate the U.S. standard gauge (10 gauge = 0.141 inches and 7 gauge = 0.179 inches).

* Decimal numbers indicate thickness in inches

Table 2

Kansas Department of Health and Environment Approved Water Well Casing
[Authorization K.A.R. 28-30-6(f)(4)]

**WATER WELL CASING FOR WATER WELLS OTHER THAN PUBLIC WATER SUPPLY
AND RESERVOIR SANITATION ZONE WATER WELLS**

Thermalplastic

Polyvinyl Chloride (PVC)
Styrene Rubber (SR) which is the same as Rubber Modified Polystyrene (RMP)
Acrylonitrile-Butadiene-Styrene (ABS)

Minimum Wall Thickness (Inches) and Tolerances (Inches)
made in Standard Dimension Ratios (SDR)

Nominal Pipe Size	SDR 26		SDR 21		SDR 17		SDR 13.5	
	Minimum	Tolerance	Minimum	Tolerance	Minimum	Tolerance	Minimum	Tolerance
2			0.113	0.02	0.14	0.02	0.176	0.021
2.5			0.137	0.02	0.169	0.02	0.213	0.025
3			0.167	0.02	0.206	0.025	0.259	0.031
3.5			0.19	0.023	0.235	0.028	0.296	0.036
4	0.173	0.021	0.214	0.026	0.265	0.032	0.333	0.040
5	0.214	0.027	0.265	0.032	0.327	0.039	0.412	0.049
6	0.255	0.031	0.316	0.038	0.39	0.047	0.491	0.058
8	0.332	0.04	0.41	0.049	0.508	0.061		
10	0.413	0.05	0.511	0.061	0.632	0.076		
12	0.490	0.059	0.606	0.073	0.75	0.09		
14	0.539	0.065						
16	0.616	0.074						

Table 3

LOCATION OF WATER WELL

See 4-8.2 – Location Restrictions

Minimum Horizontal Distance (Feet) Required

from:	to Water Well
Utility line	15
Property line, allowing public right-of-way to be counted	25
Residential building or any other building which has the potential to be treated for termites	50
Septic tank	50
Surface water course, creek bank, stream, pond, river, or lake (p. 4, KDHE bulletin 4-2, or as amended)	50
Abandoned cesspool	100
Inactive well	100
Barnyard or feedlot	100
Waste stabilization pond (lagoon)	100
Manure storage	100
Pit privy	100
Septic system absorption field	100
Chemical storage	150
Fertilizer storage	150
Fuel storage	150
Pesticide storage	150
Landfill	150

SANITARY CODE

DOUGLAS COUNTY, KANSAS

CHAPTER 5

SEPTAGE WASTE HAULERS

SECTION 1 SEWAGE REMOVAL PERMIT

5-1.1 No person, firm or corporation may remove, transport, or dispose of the contents of septic tanks, or onsite sewage management systems without having first obtained from the Lawrence-Douglas County Health Department an annual sewage removal permit. The application for the permit shall be submitted in writing on forms provided by the Health Department.

5-1.2 The application shall include:

- a. Business name and address.
- b. Name and address of the applicant.
- c. License tag number and identification number of vehicle.
- d. Manner by which such contents are to be removed, transported, and given final disposal.
- e. Written documentation that sewage removed and transported will be accepted at disposal sites.

5-1.3 A fee shall be charged by the Health Department for the Sewage Removal Permit.

SECTION 2 DISPOSAL METHODS

5-2.1 Disposal of sewage from onsite sewage management systems shall be by:

- a. Discharge to a public or community sewerage system, or
- b. By another method and disposal site approved by the Lawrence-Douglas County Health Department. Disposal shall require written permission of the appropriate governmental jurisdiction or land owner and the Health Department.

- 5-2.2 Septage shall be pumped from the septic tank manhole, and not from the inspection risers.

SECTION 3 ADDITIONAL REQUIREMENTS FOR LAND APPLICATION OF SEPTAGE

- 5-3.1 The licensee shall comply with all the requirements mandated under Title 40, Part 503, of the Code of Federal Regulations.
- 5-3.2 All land application sites shall be inspected and approved in writing by the Health Department prior to any land application use.
- 5-3.3 Application rates shall not exceed 30,000 gallons per acre, per year.
- 5-3.4 No land application sites activated into service after the effective date of this Sanitary Code shall be permitted within the FEMA-designated 100-year floodplain.
- 5-3.5 No application onto any surface such as frozen or saturated soil shall be permitted, if any run-off to the waters of the State is likely to occur.
- 5-3.6 No land application sites shall be permitted within 100 feet of a property line.
- 5-3.7 No septage application shall be permitted into a private wastewater lagoon or sanitary landfill.
- 5-3.8 No application shall be permitted within one-half mile of a public water supply well.
- 5-3.9 No land application sites shall be permitted within 500 feet of a residence except for the residence of the property owner

SECTION 4 VEHICLE IDENTIFICATION

- 5-4.1 The name of the person or firm engaging in the removal of sewage from onsite sewage management systems shall be lettered on both sides of each vehicle used for sewage removal purposes. Letters and numerals shall not be less than two (2) inches in height.

SECTION 5 VEHICLE MAINTENANCE

- 5-5.1 Every vehicle used for removal of sewage from onsite sewage management systems shall be equipped with a watertight tank or body. All pumps, hose lines, valves and fittings shall be maintained so as to prevent leakage. The operator shall demonstrate

that the equipment is in good operating condition and will perform its function without leakage or spillage.

SECTION 6 REVOCATION OF SANITARY SERVICES LICENSE

6-1.1 A permit may be revoked for failure to comply with these regulations.

RESOLUTION NO. _____

**A RESOLUTION ADOPTING AN AMENDED AND RESTATED DOUGLAS COUNTY
SANITARY CODE**

WHEREAS, K.S.A. 19-3702 authorizes the Board of County Commissioners of Douglas County, Kansas (the "Board") to adopt a sanitary code or codes to apply to the unincorporated areas of Douglas County, Kansas, for the control of those environments and environmental conditions that may adversely affect the health and well-being of the public;

WHEREAS, pursuant to K.S.A. 19-3702, by Resolution No. 08-44, the Board has previously adopted the current version of Douglas County Sanitary Code;

WHEREAS, the Board believes the public safety, health and welfare will be served by the adoption of the proposed amended and restated Douglas County Sanitary Code;

WHEREAS, the Secretary of Health and Environment of the State of Kansas has reviewed and, on April 13, 2017, approved the proposed amended and restated Douglas County Sanitary Code;

WHEREAS, a notice of the public hearing in conformance with K.S.A. 19-3704 was published in the official Douglas County newspaper once a week for three consecutive weeks, with the last published notice occurring on June 23, 2017, providing notification of a public hearing to be held before the Board on July 12, 2017, to afford interested parties an opportunity to be heard either in favor or in protest of the proposed amended and restated Douglas County Sanitary Code, with the last date of publication being not less than 10 but not more than 30 days prior to the date of the public hearing;

WHEREAS, a public hearing was held before the Board on July 12, 2017, at which hearing all interested parties were provided an opportunity to be heard either in favor or in protest of the proposed amended and restated Douglas County Sanitary Code; and

WHEREAS, after conclusion of the public hearing on July 12, 2017 and after hearing statements and evidence presented by all interested parties, the Board desires to adopt and enact the proposed amended and restated Douglas County Sanitary Code, to supersede and replace the current version of the Douglas County Sanitary Code in its entirety.

NOW, THEREFORE, be it resolved by the Board of County Commissioners of Douglas County, Kansas, meeting in regular session this 12th day of July, 2017 does hereby resolve as follows:

Section 1. *Declaration of Necessity.* The Board of County Commissioners of Douglas County, Kansas (the "Board") declares that the proposed Douglas County Sanitary Code is necessary for the protection of the health and welfare of the public.

Section 2. *Adoption of Code.* The Douglas County Sanitary Code, as proposed by the Lawrence-Douglas County Health Board and submitted to and, on April 13, 2017, approved by the Secretary of Health and Environment of the State of Kansas, and as presented to the Board at the public hearing on July 12, 2017, is hereby adopted and the provisions thereof are incorporated and made a part of this Resolution as if fully set forth within the text of this Resolution.

Section 3. Purpose of the Code. The purpose of the Douglas County Sanitary Code is to set forth procedures and regulations that shall be followed and administered to promote and protect the health, safety, comfort and general welfare of the people of Douglas County, Kansas. Enforcement of the Douglas County Sanitary Code will reduce and retard the development of environmental conditions that are hazardous or could be potentially hazardous to the public's health and safety.

Section 4. Areas Subject to the Code. The boundaries of the areas to be subjected to the Douglas County Sanitary Code are the boundaries of Douglas County, Kansas; provided that, the Douglas County Sanitary Code shall not apply to incorporated cities within Douglas County, Kansas or to any premises under one ownership which exceeds 650 acres in area and which is used only for agricultural purposes. For this purpose, "agricultural purposes" means a purpose related to the production of livestock or crops.

Section 5. Copies Available for Inspection. Copies of the Douglas County Sanitary Code adopted by this Resolution are available for public inspection at the Lawrence-Douglas County Health Department, 200 Maine, Suite B, Lawrence, Kansas.

Section 6. Repeal of Prior Resolution. Resolution No. 08-44 and any prior version of the Douglas County Sanitary Code adopted are hereby repealed and replaced by this Resolution and the Douglas County Sanitary Code adopted by this Resolution.

Section 7. Effective Date. This Resolution shall take effect and be in force from and after publication once in the official Douglas County newspaper.

THIS RESOLUTION IS ADOPTED this 12th day of July, 2017.

**BOARD OF COUNTY COMMISSIONERS
OF DOUGLAS COUNTY, KANSAS**

Mike Gaughan, Chairman

ATTEST:

Nancy Thellman, Member

Jameson D. Shew, County Clerk

Michelle Derusseau, Member