

**STANDARDS FOR THE DESIGN AND CONSTRUCTION  
OF WASTEWATER COLLECTION SYSTEMS  
IN THE TOWN OF MOORES HILL, INDIANA**

**Ordinance No. 2002- 01**

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## 1. GENERAL PROVISIONS

- 1.1. Applicability. These regulations shall apply to any wastewater collection system that is to be connected directly or indirectly to the wastewater collection and treatment system of the Town of Moores Hill, Indiana.
- 1.2. Authorization to Connect. No extension of or connection to a sanitary sewer main belonging to the Town of Moores Hill shall be made unless it has been approved in accordance with the requirements in this Ordinance and Town of Moores Hill Ordinances 64-3 and 2000-01.
- 1.3. Unauthorized Discharges. No sanitary sewer system or service lateral shall discharge into the wastewater collection and treatment system of the Town of Moores Hill unless it has first been approved by the Town Council.
- 1.4. Public System Required. All parts of any wastewater collection system that is to be connected directly or indirectly into the wastewater collection and treatment system of the Town of Moores Hill shall be owned and maintained by the Town; except, however, that each individual service lateral and any other pipes or devices that are used only for sanitary sewer service to a particular property shall be owned and maintained by the owner of the property that is served by the service lateral and/or devices.
- 1.5. References to Other Regulations. All references to regulations, standards, codes, ordinances, statutes or other citations shall mean the most recent version thereof, including all amendments or replacement.
- 1.6. Reimbursement Agreements. Where a sanitary sewer main that was extended by a developer in accordance with this Ordinance also permits a service lateral connection by a party that was not a participant in the construction of that main, the Town Council and developer may enter into an agreement concerning the reimbursement of a pro-rata share of the expenses incurred by the developer in the installation of that main. The agreement must comply with the following:
  - 1.6.1. The agreement can only apply to service lateral connections made directly into the main installed by the developer, and cannot apply to indirect connections or to extensions of the main.
  - 1.6.2. The developer must determine the total number of potential service lateral connections, including the developer's connections, that can be made directly into the main, and the true and actual cost of the main extension, which shall be certified by a professional engineer.
  - 1.6.3. A pro-rata share shall be determined by dividing the true and actual cost of the installation by the total number of potential service lateral connections.
  - 1.6.4. The total amount of the reimbursement cannot exceed the true and actual cost of the installation minus the developer's pro-rata shares.
  - 1.6.5. The term of the agreement shall not exceed fifteen (15) years from the date of acceptance of the system by the Town, after which no reimbursements will be made.
  - 1.6.6. The Town will collect the special assessment in addition to other fees and shall reimburse special assessments to the developer on a quarterly basis.
  - 1.6.7. The basis for reimbursement and the form of agreement must be approved by the Town



Council.

An agreement under this section cannot be used where the requirements under IC 36-9-22-2(b) apply.

- 1.7. Separability. The provisions of this Ordinance shall be deemed separable and the invalidity of any provision shall not affect the validity of the remainder.
- 1.8. Appeals. An appeal of the terms of this Ordinance must be addressed in writing to the Town Council and delivered to the Council for their review at least thirty (30) days or more prior to the date on which the matter will be considered at a public meeting. Except where specified elsewhere in this Ordinance, each appeal must state in detail the hardship that is or will be endured by the developer in complying with the terms of this Ordinance, and the minimum level of relief that is necessary in order to abate the hardship. Financial considerations do not constitute hardship.

## 2. DEFINITIONS

The following words or terms shall have the associated meanings wherever used in this Ordinance:

"Council." The elected Town Council of the Town of Moores Hill, Indiana.

"Design Engineer." A professional engineer trained and licensed to prepare and certify wastewater collection and treatment systems in the State of Indiana.

"Developer." The person or organization requesting authorization to extend the sanitary sewer services of the Town of Moores Hill to specific property.

"Easement." The right to use real property owned by others for a specific purpose.

"Force Main." A pipe in which wastewater is carried under pressure.

"Pumping Station." A component of a force main system that provides pressure to pump wastewater to a higher elevation.

"Right-of-Way." The strip of land on which is located a public road or alley.

"Service Lateral." All pipes, pumps and other devices that are required to connect a building to a sanitary sewer main, including the point of connection to the sanitary sewer main and all components between the point of connection and the building served by the lateral.

"Superintendent." The appointed Sewer Superintendent of the Town of Moores Hill or the Superintendent's designated representative.

"Ten States Standards." The most recent edition of *Recommended Standards for Wastewater Facilities – 1997 Edition*, as may be from time to time amended or replaced, of the Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, published by Health Education Services, a division of Health Research, Inc., P.O. Box 7126, Albany, NY 12224.

"Town." The Town of Moores Hill, Indiana.

"Wastewater." The combination of liquid and water-carried wastes from residential, commercial and industrial buildings, plants and institutions that are discharged from toilet and other sanitary plumbing facilities, polluted cooling water, and industrial process water from pre-treatment facilities.



"Wastewater Collection System." A sewer whose main purpose is to collect wastewater from individual point source discharges.

### 3. DESIGN REQUIREMENTS

- 3.1. Design and Installation Costs. Except where noted in this Ordinance, the developer shall be responsible for payment of all expenses related to design, permitting, licensing, installation, testing and certification of the sanitary sewer system.
- 3.2. Sanitary Sewer Main Extension Policy. Each sanitary sewer main extension shall be installed across the entire frontage and to the most distant property line of the properties to be served in order to permit future extensions of the main to additional properties beyond those currently proposed to be served. The Town Council may modify or waive this requirement upon a finding that there is no potential for the main to be extended to additional properties.
- 3.3. Minimum Design Standards. Each wastewater collection system shall be designed and constructed by the developer in accordance with applicable federal, State of Indiana and Town of Moores Hill regulations. Where specific guidance for the design of a proposed system is not provided in this Ordinance or another Town of Moores Hill ordinance, or in any federal or state regulations, the standards in the most recent edition of the *Recommended Standards for Wastewater Facilities* ("Ten States Standards") shall be utilized.
- 3.4. Treatment Capacity. The Town Council shall determine whether the Town's wastewater collection and treatment system has sufficient capacity to transport and treat the effluent of a proposed system in accordance with the requirements in Town of Moores Hill Ordinances 64-3 and 2000-01.
- 3.5. Minimum System Requirements. The system shall be designed to accommodate the estimated wastewater requirements for the project to be served based on the estimate of a licensed professional engineer, which estimated requirements shall be approved by the Town Council.
- 3.6. Additional System Requirements. At its option, the Town Council may require the developer to install pipes and other components of greater capacity or different design in order to accommodate additional future users of the system. The Town shall directly reimburse or enter into an agreement to reimburse the developer for the additional cost of the materials required to facilitate the higher-capacity design. The difference in costs shall be based on the difference between the design engineer's estimated cost for the materials required for the proposed system, and the design engineer's estimated cost for the materials required for the higher-capacity system. The Town will not pay additional engineering or installation costs.
- 3.7. Design Exceptions. Where the design engineer certifies that a particular element of a proposed design is equivalent to or superior to the requirements of this Ordinance, the Town Council may at its option approve the proposed alternate design.
- 3.8. Interconnection With Other Systems. There shall be no interconnection between the proposed wastewater collection system and any other system that conveys unpolluted waters or waters identified in Ordinance 2000-01, Section 2.
- 3.9. Gravity and Force Main Systems. Gravity mains shall be installed wherever the combination of slope and pipe cover satisfies the standards of the Ten States Standards. Pump stations and force mains will be installed only where gravity mains cannot be installed, and only for the minimum distance necessary to continue the project with a gravity-main system.
- 3.10. Service Lateral Restrictions. Service laterals shall be installed as nearly as possible at a ninety



(90) degree angle to the main into which the lateral is to connect. Where a sanitary sewer main can be extended and can then serve more than one property or can serve potential future development, service laterals shall not be permitted to cross other property, and shall not be installed along the length or run of an easement or right-of-way for access to a more distant sanitary sewer main instead of extending a sewer main to serve that property. The requirement to extend a main may be waived only upon a finding by the Town Council that the extended sewer main will have no potential for serving any existing or future users of the system except the single lateral that is at present to be connected to the system. Under no circumstances may a service lateral be shared by separate structures except as provided in Ordinances 64-3 and 2000-01.

3.11. Supplemental Design Requirements. The following requirements are supplemental to or supersede those in the Ten States Standards:

3.11.1. Gravity Pipes. All mains and laterals shall be a minimum of SDR 35 PVC pipe conforming to ASTM D-3034. All joints shall conform to ASTM D-3212. Mains shall be not less than eight (8) inch diameter. Service laterals shall be not less than six (6) inch diameter between the sanitary sewer main and the property line of the property served by the lateral, and not less than four (4) inch diameter between the property line and the structure being served.

3.11.2. Force Main Pipes. All mains shall be a minimum of SDR 21 PVC pipe conforming to ASTM D-2241. All joints shall conform to ASTM D-3139. The diameter shall be consistent with the maximum projected capacity of the system as estimated by the design engineer, and shall be approved by the Town Council.

3.11.3. Infiltration. The maximum allowable groundwater infiltration rate into the completed system shall not exceed two hundred (200) gallons per inch diameter of pipe per mile of pipe per day.

3.11.4. Pump Stations. Wherever a pump station is required in a collection system, the developer shall install a duplex pumping station with force main, electric service, and all other devices required to adequately serve the design estimated load, and the pump station must comply with the following:

3.11.4.1. The well shall be pre-cast concrete conforming to ASTM C-478.

3.11.4.2. Pumps within a pump station shall be of the same model.

3.11.4.3. Air release valves shall be installed at all high points in force mains between pump stations, and between pump stations and manholes.

3.11.4.4. Exterior surfaces of the well shall be coated with a bituminous waterproofing material. Where factory bituminous coating has been damaged it shall be field repaired using the same material and in accordance with the manufacturer's recommendations, prior to any backfilling operation.

3.11.4.5. All buried force main pipes shall have a minimum of four (4) feet of backfill cover.

3.11.5. Manholes. All manholes shall comply with the following minimum requirements:

3.11.5.1. Manholes shall be pre-cast concrete, not less than forty-eight (48) inches in diameter with a twenty-two (22) inch diameter access.

3.11.5.2. Castings shall be watertight "Class A" type with a solid lid. Gray cast iron shall conform to ASTM A-48 and ductile cast iron shall conform to ASTM A-536.

3.11.5.3. Pipe connectors shall be resilient type conforming to ASTM C-923 between the reinforced concrete manhole structure and all pipes into and/or out of the manhole.

3.11.5.4. Joints shall be tongue-and-groove with flexible rubber gaskets conforming to



ASTM C-443. "Cretex" or equivalent seals shall be installed between the manhole frame and the cone section where manholes are to be located in areas determined by the Town Council to be water-prone areas.

- 3.11.5.5. Steps shall be approved cast-in-place non-corrosive fiberglass material conforming to ASTM A-48.
- 3.11.5.6. Exterior surfaces shall be coated with a bituminous waterproofing material. Where factory bituminous coating has been damaged it shall be field repaired using the same material and in accordance with the manufacturer's recommendations, prior to any backfilling operation.
- 3.11.5.7. Lift holes in pre-cast sections shall be filled with non-shrinking concrete grout. When cured, grouted lift holes, casting grout, and adjusting rings and grout shall be coated with bituminous waterproofing material to ensure a water tight manhole structure.
- 3.11.6. Clean-Outs. On all service laterals that are more than ten (10) feet long, the developer shall install clean-outs in the following locations: not more than five (5) feet from the wall of the building where the service lateral exits the building; every one-hundred and fifty (150) feet between the wall of the building and the sanitary sewer main; and at each ninety degree (90°) turn in the lateral.
- 3.11.7. System Testing. The developer shall conduct the following tests, which shall be witnessed by a representative of the Town and by the developer's engineer:
  - 3.11.7.1. System air testing shall be in accordance with ASTM F-1417 for plastic pipe.
  - 3.11.7.2. Manhole negative air pressure (vacuum) testing shall be in accordance with ASTM C-1244.
  - 3.11.7.3. Deflection testing shall be conducted not less than thirty (30) days following completion of the installation using a "go/no-go" mandrel in accordance with the requirements in the Ten States Standards. Maximum deflection shall not exceed five percent (5%). Any section of pipe not passing the deflection test shall be repaired or replaced, then retested thirty (30) days or more after repair or replacement, and before acceptance of the project by the Town.
  - 3.11.7.4. Hydrostatic testing of force mains shall be in accordance with State of Indiana regulations.
- 3.11.8. Service Lateral Markers. The developer shall mark the location of each service lateral at the property line using a one (1) inch diameter PVC pipe set vertically and painted green.
- 3.11.9. Tracing Wire. Tracing wire shall be installed along all non-metallic force mains.

#### 4. PLANS AND APPROVALS

- 4.1. Preparation of Plans. The developer shall have a complete set of plans and specifications for the wastewater system prepared and certified by a professional engineer licensed to prepare such plans in the State of Indiana. All plans shall be prepared in 24" x 36" size and shall include plan, profile and detail sheets, and design and materials specifications.
- 4.2. Rights-of-Way and Easements. All components of a wastewater collection system that will be owned and/or maintained by the Town shall be installed in either dedicated public rights-of-way or dedicated public utility easements, at the option of the Town Council. Right-of-way width shall comply with the Town's street design and construction standards. Easement width shall be not less than twenty (20) feet. All public rights-of-way and public utility easements shall be shown on a plat or described in a deed of dedication in the name of the Town, and the plat or deed shall have been recorded by the developer in the office of the Dearborn County Recorder prior to acceptance of the system by the Town.



- 4.3. Approvals, Permits and Licenses. The design engineer shall obtain all design and construction approvals, permits and licenses required by federal, state or local agencies for the design and the construction work, including a permit from the Indiana Department of Environmental Management ["IDEM"]. Plans that require only the approval of the Town shall be reviewed and approved by the Town's Sewer Superintendent or another person or party designated by the Town Council. In all cases, certified plans, specifications, permits and licenses shall be submitted to and approved by the Town Council prior to the start of construction.

## 5. CONSTRUCTION AND INSPECTION

- 5.1. Construction Standards. The developer shall construct the new system in accordance with the plans approved by the Town Council.
- 5.2. Change Orders. All modifications or changes to the system shall be approved by the Town Council prior to being installed or implemented.
- 5.3. Construction Inspection. The developer shall provide professional inspection services under the management of a professional engineer to ensure compliance with the approved plans. The Town may at it's option and expense also provide inspection services, and the developer shall accommodate and assist the Town's inspector without cost to the Town.
- 5.4. Construction Certification. The developer shall obtain the certification of a professional engineer that the completed system was constructed in accordance with the approved plans and any amendments to the plans that were approved by the Town Council.

## 6. ACCEPTANCE OF THE COMPLETED SYSTEM

- 6.1. Superintendent's Approval. The Sewer Superintendent shall review and approve the installation and tests, after which the developer may request Town Council approval.
- 6.2. Maintenance Guarantee. All materials and workmanship shall be guaranteed by the developer for three (3) years after the date of acceptance of the project by the Town Council. The guarantee shall be accompanied by surety in the amount of ten percent (10%) of the actual cost of the project including all design, labor and materials costs, which actual cost shall be certified by the developer's professional engineer. The form of the surety shall be a bond issued by an agency licensed to bond in the State of Indiana, or a letter of credit issued by a financial institution licensed to do business in the State of Indiana. The guarantee and surety shall be approved by the Town Council prior to acceptance of the project.
- 6.3. As-Built Drawings. The developer's engineer shall prepare a complete set of drawings that show the wastewater collection system both as it was designed and as it was constructed, including the locations of service lateral taps. The as-built drawings shall be approved by the Town Council prior to the Council's acceptance of the system for ownership and/or maintenance. After Council approval, the developer shall provide the Town with one (1) complete set of reproducible as-built prints and two (2) complete sets of paper prints, together with two copies of the specifications and other documentation of the as-built system.
- 6.4. Town Council Approval. After receiving the Sewer Superintendent's approval, the engineer's itemized list of actual costs and the maintenance guarantee, the Council shall review the as-built drawings, related documents, guarantee, and the installation of the system. If satisfactory, the Council shall accept the system into the Town's ownership and maintenance program and shall thereafter treat the effluent of the system at the Town's wastewater treatment facility.

