

**TOWN OF WHITELAND
DESIGN STANDARDS AND SPECIFICATIONS MANUAL**

Adopted: _____, 2014

THE TOWN OF WHITELAND, INDIANA

549 Main Street
Whiteland, Indiana 46184
Phone: (317)535-5531
Fax: (317)535-8724

TOWN COUNCIL

Robert Zehr – President
Kent Beeson – Vice President
Ed Tichenor – Member
Chris Hadley – Member
Roger Ford – Member

CLERK-TREASURER

Michelle R. Richards

PLAN COMMISSION

Richard Hill, President
Tim Brown
Norm Gabehart
Gary Howard
Rusty Snyder
Byron Temple
Robert Zehr

**TOWN MANAGER &
BUILDING COMMISSIONER**

Dennis Capozzi

PLANNING & ZONING DIRECTOR

Nathan Bilger

TOWN ATTORNEY

Stephen Watson

Table of Contents

Chapter 1. General Construction Specifications	4
1.1 General Information	4
1.2 Permit Requirements	4
1.3 Demolition Permit Requirements	4
1.4 Bond Requirements	5
1.5 Right-of-way Work Completion	5
1.6 Time Restrictions on Work Hours	5
1.7 Traffic Control	5
1.8 Street Repair/Street Patching	5
1.9 Material Specifications.....	7
1.10 Sidewalks, Curbing, Ramps, and Driveways	8
1.11 New Roadway Construction	10
1.12 Work in Highway, Railroad or Utility Right-of-Ways.....	11
1.13 Multi-Phase Subdivisions.....	11
1.14 Typical Detail Drawings	11
Chapter 2. Drainage and Stormwater Control	12
2.1 Overview	12
2.2 Submittals.....	13
2.3 Stormwater Hydrology	13
2.4 Storm Sewer Design.....	16
2.5 Stormwater Detention Design	17
2.6 Materials.....	20
2.7 Materials.....	21
Chapter 3. New Potable Water Extension Construction Specifications	24
3.1 Overview	24
3.2 Permit and Bond Requirements	24
3.3 General New Construction Procedures	24
Chapter 4. New Sanitary Sewer System Connection Construction Specifications.....	26
4.1 Overview	26
4.2 Permit and Bond Requirements	26
4.3 General New Construction Procedures	26
4.4 Materials Acceptable for Construction of Gravity Sanitary Sewers	27
4.5 Force Main Sewer Minimum Design Requirements	28

4.6	Tapping Clay and AC Mains.....	30
4.7	Increasing the Flow of Existing Sewer Systems	30
4.8	Prohibited Uses of Sewer Systems.....	30
4.9	Abandoning Existing Sewer Systems	30
4.10	New Lateral Connections.....	30
4.11	Workmanship for Installation	31
4.12	Private Single Structure Force Main System Requirements	32
4.13	Sewer Lateral Replacement.....	33
4.14	Septic System Abandonment after New Public Sewer Connection.....	33
4.15	Town Inspection of New/Replacement Laterals	33
4.16	Tapping of Clay or AC Mains for Lateral Connections.....	33
4.17	Lateral Cap Abandonment (Cap-off)	33
4.18	Determination of Provided Lateral Locations.....	34
4.19	Laterals Requiring Work within Public Right-of-Ways	34
Chapter 5.	As-Built Specifications	34
5.1	Overview	34
5.2	Streets.....	34
5.3	Grading or Development.....	34
5.4	Sanitary Sewers.....	34
5.5	Detention System	35
5.6	Storm Sewer.....	35
5.7	Water Systems.....	35

Chapter 1. General Construction Specifications

1.1 General Information

The procedures included in this Design Standards and Specifications Manual are intended to be a guide for property owners and developers preparing to construct/alter buildings or develop property within the Town of Whiteland or adjacent to public right-of-way or connect to public utilities. It is not intended to be a comprehensive list of all the requirements for development, but a summary of the steps to be taken to obtain approvals for building permits or subdivision or development plans. The forms attached as appendices to this manual are subject to revision and modification by the Town's Director of Planning and Zoning or the Town Manager, at their discretion, and in consultation with the Town Attorney as needed.

Please contact the Town of Whiteland Planning & Zoning Director with any questions or suggestions regarding the information included in this manual:

CONTACT: Billy Patrick
PHONE: (317) 535-5531
FAX: (317) 535-8724
E-MAIL: bpatrick@whiteland.in.gov
LOCATION: 549 Main Street, Whiteland, IN 46184
OFFICE HOURS: 8:00 AM to 5:00 PM, Monday thru Friday

Requests for waivers of these standards and specifications, other than substituting equivalent or better materials and methods, shall be approved by the Town Council or, for subdivision development waivers only, by the Plan Commission.

1.2 Permit Requirements

Before any excavation or construction may take place within the public right-of-way (street, alley, tree-row, sidewalk, driveway approaches), an application must be made in writing to the Town of Whiteland on the appropriate permitting form (see APPENDIX A – RIGHT-OF-WAY USE/EXCAVATION PERMIT APPLICATION) in this manual. Sketches of the proposed work shall be furnished with the application as needed. In the event of an emergency, notification will be given to the Town of Whiteland at the time repair crews are dispatched. If work is required outside business hours, the Town of Whiteland is to be contacted the following business day at 8:00 A.M. Permits must be kept on-site when right of way work is being performed. If permitting is not on site, work will be stopped and violators will be subject to fines and license suspension. Right-of-way permits will be open for a period of 90 days from the time of purchase. All right-of-way permits shall be activated within this 90-day period by contacting the Town of Whiteland. Once the permit is activated, the permit owner will have a period of five (5) working days to excavate and restore area as specified. Extensions may be applied for by contacting the Town of Whiteland. If a permit is not activated within 90 days after purchase, the permit is void. If a road closure is required a request for road closure shall be submitted on the appropriate permitting form (see APPENDIX B – APPLICATION TO CLOSE/OBSTRUCT ANY STREET/SIDEWALK) in writing to the Town of Whiteland at least 10 days prior to the proposed closing date.

1.3 Demolition Permit Requirements

If any wrecking or demolition work is to be done, a Demolition Permit (see APPENDIX C – DEMOLITION PERMIT) needs to be signed by the title holder of the property, and obtained by either the property owner, general contractor, or wrecking contractor.

1.4 Bond Requirements

Each person or entity to perform work within a Town right-of-way must file a performance bond as follows:

- A. For an individual, partnership, association or corporation, other than a public utility, a cash bond in the amount of \$500 shall be deposited with the Clerk-Treasurer;
- B. For a public utility, a performance bond, in a form acceptable to the Town Attorney, from a reputable bonding company in the amount of \$5,000 shall be supplied to the Clerk-Treasurer with the application, which shall be in full force and effect for 2 year and renewable annually thereafter;
- C. Any cash bond filed shall be returned to the applicant following reclamation of the street in compliance with these standards and to the satisfaction of the Street Department Supervisor. If reclamation is not so completed, the Clerk-Treasurer shall retain the cash bonds; and
- D. If a public utility which obtained a street cut permit does not perform proper reclamation of the street, the town may seek relief from that utility's bonding company and perform the necessary repairs and reclamation itself.

Each person or entity applying to work within a Town right-of-way under Town Code section §95.01 shall file with the Town of Whiteland proof of liability insurance in the minimum amount of one million dollars (\$1,000,000) for bodily injury or death and one hundred thousand dollars (\$100,000) for property damage. Such insurance shall provide that the Town is additionally insured under its provisions. The Town may waive or alter the requirements at their discretion.

1.5 Right-of-way Work Completion

Once right-of-way work is complete the permit holder shall be responsible for the work to meet or exceed the Town General Construction Specifications for a period of three years. If the work is found to be in noncompliance, the permit holder shall be contacted by the Town of Whiteland and will be given a specified time limit to repair the defects; failure to comply will result in penalties as per Town Code section §95.99 Street Cut Permit Ordinance.

1.6 Time Restrictions on Work Hours

Adjacent properties shall have access to the abutting street between the hours of 6:00 PM and 8:00 AM unless notice has been given to the property owner and occupant at least 5 days prior to work. On major thoroughfares designated in APPENDIX D, blocking or altering traffic is restricted on weekdays between 6:00 AM and 8:15 AM, and between 4:00 PM and 6:00 PM, unless prior approval is given by the Town of Whiteland. Specific to Whiteland Road, blocking or altering traffic is restricted on weekdays between 6:00 AM and 8:15 AM, and between 3:00 PM and 6:00 PM.

1.7 Traffic Control

It is the sole responsibility of the contractor to make sure that barricades are placed at the excavation site when not in attendance or where the safety of the public is of concern while work is proceeding. Barricades shall meet the requirements of the latest version of the *Indiana Manual on Uniform Traffic Control Devices*. Contractor shall provide lighting of barricades on construction sites.

1.8 Street Repair/Street Patching

A. General

Finished elevation of repair should provide a smooth driving surface matching the existing grades unless directed otherwise by the Town of Whiteland. In general, the minimum size of

street repair/patching will be a 4' X 4' section; smaller sections will require the approval of the Town of Whiteland. No more than 200 linear feet of trench top shall be open at one time.

B. Pavement Excavation

All openings shall be saw-cut with straight, neat, vertical edges and square corners. Saw cuts shall be made to a minimum of 2" depth. The cut shall be completed with a mechanical hammer and chisel starting from the center of the cut. When cutting asphalt over brick or concrete the saw cut shall be the full depth of the asphalt.

Openings shall be made so that there is no section of adjacent existing pavement with a dimension of less than 24 inches unless authorized by the Town of Whiteland. Patches shall have a minimum width of no less than the depth of excavation unless a trench box is utilized. Cuts in concrete streets shall be taken out to an adjacent joint. Any variation shall require approval from the Town of Whiteland.

Methods used in removal of pavement material shall not cause damage to adjacent pavement.

Where existing pavement contains reinforcing steel, the steel shall not be cut with pneumatic hammers, but shall be cut by sawing or torching.

C. Backfilling

Backfilling shall be done in accordance with the current Indiana Department of Transportation Standard Specifications. The excavation shall be filled with flowable mortar or "B" borrow to a depth no more than 8" below the top surface of existing pavement. The fill shall be free from large or frozen lumps, wood and other extraneous material. It shall consist of suitable sand, crushed stone, or other approved material (pea gravel is no longer an approved backfill material). The fill material shall be placed in layers not to exceed twelve (12) inches, loose measurement, and each layer compacted thoroughly by approved mechanical means. Each lift shall be compacted to at least ninety five percent (95%) of its maximum dry density.

D. Repair of Concrete Pavement

Concrete finish shall be perpendicular to the centerline of the road, with a rough broom finish.

Depth required is equal to the existing depth of pavement or 8" poured monolithically, whichever is greater, over a minimum of 6" compacted aggregate #53 or #73 stone or flowable mortar.

If opening is to be more than 12 feet in length and no original joints are provided, then contraction joints must be constructed so that joint spacing is not greater than 12 feet.

Concrete streets will be doweled to existing concrete with 5/8" diameter x 11" steel stock with cut threads and expansion types sleeve. Anchor bolts shall be placed along all sides of the removed area and spaced 3 feet on center on traverse side and 5 feet on center on the longitudinal side with a minimum of 2 anchor bolts on each side.

E. Repair of Asphalt Pavement

Asphalt Surfaces for Cuts 20' X 20' and over:

1. Minimum thickness of 1.5" (9.5 mm) HMA surface or match greater existing pavement thickness and materials, placed and compacted in accordance with latest INDOT Standard Specifications.

2. 4.5" (minimum) (25 mm) HMA base or 6" class A concrete base required under asphalt surface.
3. Tack coat must be used between asphalt surface and concrete base, as well as the sides of existing pavement surrounding the cut.

Asphalt Surfaces for Cuts under 20' X 20':

1. Use specifications for Repair of Concrete Pavement (Section 1.8-D). If street has been paved within the last three years, use specifications for Asphalt Surfaces for Cuts 20' X 20' and over provided above.
2. Concrete pavement that has been overlaid with asphalt shall be considered as asphalt pavement for repair.

F. Repair of Aggregate Pavement

Compacted aggregate #53 limestone shall be placed where existing alley roadbed is white rock or other stone material. The depth of the compacted material shall be minimum 6 inches.

G. Temporary Street Repair/Patch

Between April 2 and October 31, street may be temporarily repaired with approval by the Street Department. Existing pavement shall be initially saw cut to a 5" minimum depth to obtain straight lines perpendicular from the curb edge and neat edge for paving. Edges of broken pavement shall be squared off and trimmed to neat straight lines. Temporary pavement material is to be 6-1/2" thick hot mix asphalt, placed in maximum 4" lifts to be compacted with a mechanical tamp. The use of steel street plates must be requested in written form and accompanied with a repair schedule.

Between November 1 and April 1, when permanent patch cannot be completed within 10 working days, if hot mix asphalt is not available, use of an INDOT approved "high performance cold patch" or equal may be used. Existing pavement shall be initially saw cut to a 5" minimum depth to obtain straight lines perpendicular from the curb edge and neat edge for paving. Edges of broken pavement shall be squared off and trimmed to neat straight lines. Temporary pavement material is to be 6-1/2" thick high performance cold patch mixture #1 or #2, placed in maximum 4" lifts to be compacted with a mechanical tamp. The use of steel street plate must be requested in written form and accompanied with a repair schedule. Final repair shall be made by removing the temporary patch and repairing as per material requirements. Final repairs shall be made by May 15.

1.9 Material Specifications

A. Concrete Specifications

Concrete used shall be 7 bag mix, class "C" with 5-8% entrained air and a slump no more than 4 inches. Test beams may be required by the Town with minimum 550 PSI break strength before opening to traffic. Cost of preparation and testing is the responsibility of the contractor. Concrete mix shall provide compressive strength of 4,000 PSI after 28 days. Concrete shall be placed with uniform depth. Concrete shall meet any and all applicable current INDOT specifications for placement of Portland Cement Concrete. As soon as newly placed concrete acquires an initial set, an approved method of curing shall be initiated which will not discolor or disfigure the pavement. Curing methods approved include white membrane as specified in

INDOT sections. Concrete shall not be left exposed for more than thirty (30) minutes during the curing period. When white membrane curing is used, after the concrete has been finished, the entire surface of the concrete shall be cured by mechanically applying thereon a uniform coating of the curing compound. The compound shall be type 2, in accordance with AASHTO M-148 white pigmented compound. The compound shall be applied in a continuous uniform film by means of a spraying or distributing device no less than one gallon per 150 square feet of surface. Concrete shall be closed to traffic for a period of 48 hours when the temperature is above 50 degrees F and for a period of 72 hours when the temperature is below 50 degree F. Concrete placements at temperatures below 35 degrees F, will be permitted only at the approval of the Town. Transverse and longitudinal joints and outer edges of the pavement which are part of the replaced concrete shall be edged with an edging tool having a radius 1/4".

B. Brick

Contact the Town for information on brick paving material.

C. Asphalt

Asphalt material shall be hot mix asphalt in accordance with INDOT Specifications, Section 400 - asphalt pavements.

D. Aggregate

Compacted Aggregate #53 limestone shall be used in accordance with latest INDOT Specifications, Section 300 and 900.

1.10 Sidewalks, Curbing, Ramps, and Driveways

A. Sidewalks

Sidewalks shall be placed so that the edge away from the street is on the street right-of-way line or shall be in alignment with existing adjacent sidewalk. Any variation from this guideline will require specific approval from the Town or his assigned agent. New sidewalks shall be five feet (5') wide, four inches (4") thick with medium broom finish. Concrete shall be well troweled to prevent spalling and other defects. Sidewalks shall be installed with tooled construction joints, minimum, 1/3 depth of concrete, on 5' centers with an approved expansion joint to be installed every 50' and where new sidewalk abuts existing sidewalk, or other fixed objects, such as curbs, drainage structures, water meters, etc. Typical sidewalks are shown on Sheet 4 of Town of Whiteland Typical Construction Guidelines and Details (Appendix E).

Sidewalks less than five feet (5') in width shall require approval of the Town. In no case may sidewalks placed within the public right-of-way have a width less than four feet (4'), in compliance with the Americans with Disabilities Act. In general, sidewalks to be replaced shall match the width of existing sidewalk. Sidewalks placed through driveway sections shall be 6" thick through the driveway section. Sidewalks placed adjacent to parking lots, or other large paved surfaces, shall have 6" curbing placed between the sidewalk and parking lot (except at entrances and exits) to prevent traffic flow onto the sidewalk and tree row areas. Sidewalks shall be replaced in whole sections. Under no circumstances will the replacement of a partial section be allowed.

B. Curbing

New curbing will be monolithic combined curb and gutter as illustrated on Sheet 5 of Town of Whiteland Typical Construction Guidelines and Details (Appendix E). Concrete shall have a light broom finish. When matching to existing, care must be taken to transition the last 2 linear feet of curbing to the existing conditions. Replacement or curb to connect to existing shall match existing type.

C. Curb Ramps

Curb ramps will be installed per Indiana Department of Transportation Specifications at repair locations. Acceptable ramps are shown on Sheets 4 and 5 of Town of Whiteland Typical Construction Guidelines and Details (Appendix E). Ramps should have a rough broom finish and remain unpainted. All curb ramps shall meet or exceed current ADA standards. INDOT curb ramps Type B, E, and F shall not be used on new construction unless field conditions warrant their use.

D. Driveway Approaches

Residential Driveways

1. Residential driveways shall be concrete, and shall have the matching type of existing curbing (if any) with a 20' maximum width at the right-of-way line, and 3' apron wings, for a maximum 26' width. Driveway aprons shall not be doweled to existing curb, when driveway is not placed monolithically with curbing. See Town of Whiteland Typical Construction Guidelines and Details (Appendix E) for more information.
2. The portion in the right-of-way, including where it is part of the sidewalk, shall be a minimum of 6" thick
3. In areas where no curbing exists along the street, no curbing shall be placed in the radii (or wings) of the driveway within the public right-of-way.

Commercial and Industrial Driveways

1. Commercial driveways shall be concrete; the width shall be 12' to 15' for one-way traffic and 24' to 30' for two-way traffic. The Town shall be provided with site plans showing elevations and water drainage for two hundred feet (200') in all directions. The site plans should also detail all existing intersections located within one hundred feet (100') of the proposed drives. Entrances will not be allowed within 40' of the intersection. Driveway aprons shall not be doweled to existing curb, when driveway is not placed monolithically with curbing.
2. The portion of the driveway in the public right-of-way, including the sidewalk section shall be a minimum 6" thick.
3. In areas where no curbing exists along the street, no curbing shall be placed in the radii (or wings) of the driveway section in the public right-of-way. This rule does not apply when curbing is placed along the street as part of the commercial or industrial development. Typical driveway layouts are provided in the Town of Whiteland Typical Construction Guidelines and Details (Appendix E).

E. Utility Strip/Tree Row

If trees are present, tree rows should be restored with a minimum four inches (4") of topsoil matching adjacent elevations, and should have seed and straw or sod as specified. A right-of-way permit will be obtained for tree work, no trees will be allowed within the public right-of-

way. Once the tree has been removed, the stump shall either be removed or be ground a minimum of eight inches (8") below the surface grade. The disturbed area is to be filled with suitable topsoil.

Trees/shrubs shall be a minimum of 15' away from manholes, 10' away from valves, 10' away from inlets, and 10' away from all other structures within the right of way or Town utility easement.

1.11 New Roadway Construction

A. General

Streets that are constructed with the intent to be adopted as town streets shall be constructed with sidewalks, curbs, snow plowing and snow removal accommodation measures, and drainage as specified herein and in accordance with the Town Code. Streets that are constructed with the intent to be privately maintained are generally discouraged; however, any such streets will meet any applicable construction standards as specified herein and in accordance with the Town Code. Contractor shall submit plans and specifications of new roadway with typical cross sections for permit approval to the Town. A licensed surveyor or engineer must certify all plans. Typical cross sections can be found in the Town of Whiteland Typical Construction Guidelines and Details (Appendix E). The Town shall review the plans and, if acceptable, send a notice of plan approval to the contractor. A representative from the Town shall be present for a roll test of subgrade material and during placement of the pavement. A 48-hour notice for inspection is required. Once the roadway has been placed, the contractor shall make a written request to the Town of Whiteland for acceptance. The Town shall perform a final inspection of the roadway and provide a written approval or rejection with comments on defects.

B. Certain specifications

1. New subdivision entrances shall have clear visibility for line of sight on existing roadways as follows:

Posted Speed Limit	Minimum Line of Sight
30 mph	400 feet
35 mph	470 feet
40 mph	580 feet
45 mph	710 feet
50 mph	840 feet
55 mph	990 feet
2. Sight distance shall be measured from a point three and one-half feet above the roadway at the subdivision entrance, at a distance of ten feet back from the traveled lane, along a line of sight to a point one-half foot above the roadway for stopping sight distance, and 51 inches for all other sight distance measurements.
3. Clear visibility for stopping sight distance, measured along the centerline of the street, shall be provided for at least 600 feet on all arterial streets, 400 feet on collector streets, and at least 200 feet on all local streets.
4. The maximum vertical grade for arterial streets shall not exceed 7- 1/2%; for collector streets, 10%; and for local streets, 10%; provided, however, that within 200 feet of a street or railway intersection, the maximum grade permitted shall be 50% of the maximum grade specification. The minimum vertical grade for all types of streets shall be 0.5%.

5. Vertical curves conforming to AASHTO standards shall be provided at all changes in grade. The minimum size for any vertical curve shall be 50 feet.

1.12 Work in Highway, Railroad or Utility Right-of-Ways

The contractor shall obtain and prepare all necessary permits from highway, railroad and utility authorities for proposed construction and operations relative to the scope of the work. The contractor shall comply with all codes and regulations of the agencies involved when working on their property. Required permits, codes, repair specifications and regulations regarding work within the right-of-way boundaries of the Town of Whiteland are described in Chapter 1 of these specifications.

1.13 Multi-Phase Subdivisions

When sanitary sewers or water mains are constructed in coordination with the development of multiphase subdivisions, separate Agreements with the Water Department and Sewer Department for the construction of sanitary sewers and water mains in each phase shall be created and executed according the provisions in the agreement. Additionally, all construction plans and documentation shall be created independently for each phase.

1.14 Typical Detail Drawings

Typical detail drawings can be found in the Town of Whiteland, Indiana Typical Construction Guidelines and Details (Appendix E).

Chapter 2. Drainage and Stormwater Control

2.1 Overview

A. Purpose

The purpose of this chapter is to ensure the proper design and construction of stormwater control devices, so as to minimize the impact of development on neighboring properties and public sewers, and to provide for the public health and safety. One property owner's right to develop his or her land does not supersede adjacent owners' rights to maintain their property in its current state. Stormwater shall be managed to prevent loss or damage of property due to increased storm water runoff from a proposed development. The scope of the design shall consider both property within the development and property adjacent to and downstream of the development.

B. Use of Storm Sewers

Only a portion of the Town of Whiteland is currently served by dedicated storm sewers. In areas where storm sewer does exist, use of the storm sewer will be allowed by a direct connection of the proposed line into the existing system, provided there is adequate capacity. Connection to existing sewer will be by the standards set out for connection to storm sewers as stated in the Town of Whiteland Typical Construction Guidelines and Details (Appendix E). In all other areas, stormwater control will be by a retention or detention system. Under no circumstances will combined sewers be utilized for additional collection of stormwater. All stormwater will be retained on site except where approved discharge points exist.

C. Compliance with Town of Whiteland Drainage and Sediment Control Ordinance

All persons shall comply with Chapter 159 of the Town Code, Drainage and Sediment Control Standards, as it relates to “development” of land within the Town of Whiteland Town Limits.

“Development” shall be defined as any man-made change to improved or unimproved real estate a quarter-acre or larger, including, but not limited to:

1. Construction, reconstruction, or placement of a building or any addition to an existing building that adds over 1/4 acre or more of impermeable surface (ie: rooftop, parking lot, driveway, etc.);
2. All subdivisions requiring approval under the current Town of Whiteland Subdivision Control Ordinance;
3. Installing utilities, construction or reconstruction of roads, or similar projects;
4. Construction of flood control structures such as levees, dikes, dams, channel improvements, etc.;
5. Mining, dredging, filling, grading, excavation;
6. Construction and/or reconstruction of bridges or culverts;
7. Any other activity that might change the direction, height, or velocity of flood or surface waters.

"Development" does not include activities such as the maintenance of existing buildings and facilities such as painting or re-roofing; resurfacing roads, or gardening, plowing, and similar agricultural practices. In addition, “Development” does not include the reconstruction or maintenance of regulated drains or replacement of existing stream crossings by the Town of Whiteland.

2.2 Submittals

Before any construction may commence on any property other than a single family residence, the following must be submitted to the Town:

A. Areas impacting less than 1/4 acre:

Developer shall submit to the Town a site plan showing pre-developed area versus post-developed area. If based upon the calculations of impermeable area added (i.e. less than 1/4 acre) and agreement of the Town, the developer will not have to comply with Title XV: land usage chapter 160.055 unless area is classified as an Impact Drainage Area by the Town.

B. Areas impacting greater than 1/4 acre:

If the development adds impermeable area greater than 1/4 acre (or any of the items listed in 2.1 Item C are met), the Developer shall comply Title XV: land usage chapter 160.055 and submit the required information to the Town.

C. Impact on Adjacent Properties

All stormwater on or flowing from the site after development must be detained. Exceptions will only be considered when unusual circumstances require variance from these standards or where an approved discharge point exists. In these cases, sufficient evidence must be submitted to the Town, demonstrating that a discharge from the site is necessary, and that the discharge will not have a negative effect on adjacent property during or after any rainfall.

2.3 Stormwater Hydrology

Runoff quantities shall be computed for the area of the parcel under development plus the area of the watershed flowing into or through the parcel under development. The calculation shall be done based on pre-development conditions and again with the proposed post-development conditions. The quantity of runoff which is generated as the result of a given rainfall intensity shall be calculated as follows:

A. Areas Up to and Including 5 Acres

For areas up to and including 5 acres, the Rational Method may be used to determine the peak discharge rate.

$$Q = CiA$$

Where:

C = Runoff coefficient, representing the characteristics of the drainage area and defined as the ratio of runoff to rainfall

i = Average intensity of rainfall for a duration equal to the time of concentration (t_c) for a selected rainfall frequency.

A = Tributary drainage area in acres

Table 1 and 2 on Standard detail provides runoff coefficient “C” values for different types of surface and soil characteristics. The composite “C” value used for a given drainage area with various surface types shall be the weighted average for the total area calculated from a breakdown of the individual areas having different surface types. Runoff coefficients and inlet times for different land use classifications are detailed in Table 3. Tables 1 through 3 are provided on the following pages.

The time of concentration (t_c) shall be determined as outlined in the U.S. Department of Agriculture (USDA) - NRCS TR-55 Manual. In urban or developed areas, the methodology to

be used shall be the sum of the inlet time and flow time in the stormwater facility from the most remote part of the drainage area to the point under consideration. The flow time in the storm sewers may be estimated by the distance in feet divided by velocity of flow in feet per second. The velocity shall be determined by the Manning's Equation. A minimum time-of-concentration of 5 minutes shall be used for all calculations. In cases where a time-of-concentration is assumed without supported calculations, 5 minutes - must be used as the design time-of-concentration.

B. Areas Over 5 Acres

For areas greater than 5 acres, the runoff rate and contributing drainage areas shall be determined by a computer model that can generate hydrographs based on the NRCS TR-55 time of concentration and curve number calculation methodologies and the 24-hour Huff Rainfall Distributions. 24-hour Rainfall depths for various frequencies shall be taken from NOAA online Precipitation Frequency Data Server http://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=in.

C. Areas Over One Square Mile

For the design of any major conveyance system, defined as any drainage system carrying runoff from an area of one or more square miles, shall be designed in accordance with Indiana Department of Natural Resources standards.

Table 1

Urban Runoff Coefficients	
Type of Surface	Runoff Coefficient “C”
Hard Surfaces	
Asphalt	0.82
Concrete	0.85
Roof	0.85
Gravel/Stone	0.50
Lawns (Sandy)	
Flat (0-2% Slope)	0.07
Rolling (2-7% Slope)	0.12
Steep (Greater than 7% Slope)	0.17
Lawns (Clay)	
Flat (0-2% Slope)	0.16
Rolling (2-7% Slope)	0.21
Steep (Greater than 7% Slope)	0.30

Source: HERPICC Stormwater Drainage Manual, July 1995

Table 2

Rural Runoff Coefficients	
Type of Surface	Runoff Coefficient “C”
Woodland (Sandy)	
Flat (0-5% Slope)	0.10
Rolling (5-10% Slope)	0.25
Steep (Greater than 10% Slope)	0.30
Woodland (Clay)	
Flat (0-5% Slope)	0.30
Rolling (5-10% Slope)	0.35
Steep (Greater than 10% Slope)	0.50
Pasture (Sandy)	
Flat (0-5% Slope)	0.10
Rolling (5-10% Slope)	0.16
Steep (Greater than 10% Slope)	0.22
Pasture (Clay)	
Flat (0-5% Slope)	0.30
Rolling (5-10% Slope)	0.36
Steep (Greater than 10% Slope)	0.42
Cultivated (Sandy)	
Flat (0-5% Slope)	0.30
Rolling (5-10% Slope)	0.40
Steep (Greater than 10% Slope)	0.52
Cultivated (Clay)	
Flat (0-5% Slope)	0.50
Rolling (5-10% Slope)	0.60
Steep (Greater than 10% Slope)	0.72

Source: HERPICC Stormwater Drainage Manual, July 1995

Table 3

Runoff Coefficients “C” by Land Use and Typical Inlet Times				
Land Use	Runoff Coefficients			Inlet Times (Minutes)
	Flat Slope:0-2%	Rolling Slope:2%-7%	Steep Slope:>7%	
Commercial	0.75	0.83	0.91	5
Commercial (neighborhood)	0.54	0.60	0.66	5-10
Industrial	0.63	0.70	0.77	
Garden Apartments	0.54	0.60	0.66	
Churches	0.54	0.60	0.66	
Schools	0.31	0.35	0.39	10-15
Semi Detached Residential	0.45	0.50	0.55	
Detached Residential	0.40	0.45	0.50	
Quarter Acre Lots	0.36	0.40	0.44	
Half Acre Lots	0.31	0.35	0.39	
Parkland	0.18	0.20	0.22	To be Computed

Source: HERPICC Stormwater Drainage Manual, July 1995

2.4 Storm Sewer Design

All storm sewers, whether private or public, and whether constructed on private or public property shall conform to the design standards and other requirements contained herein.

A. Design Storm Frequencies

All storm sewers, inlets, catch basins and street gutters shall accommodate a minimum peak runoff from the 10-year storm event. For Rational Method analysis, the duration shall be equal to the time of concentration for the drainage area. In computer based analysis, the duration is as noted in the applicable methodology associated with the computer program.

Culverts shall be capable of accommodating peak runoff from the 50-year frequency storm of critical duration when crossing under a road which is part of the INDOT Urban or Rural Functional Classification System or is classified as primary arterial, arterial, and/or collectors by the Town of Whiteland Thoroughfare Plan or provides the only access to and from any portion of any commercial or residential developments.

For portions of the system considered minor drainage systems, the allowable spread of water on Collector Streets is limited to maintaining two clear 10-foot moving lanes of traffic. One lane is to be maintained on Local Roads, while other access lanes (such as a subdivision cul-de-sac) can have a water spread equal to one-half of their total width. An emergency overflow path from sag inlets to an overflow channel or basin shall be provided at sag inlets so that the maximum depth of water that might be ponded in the street sag shall not exceed 7 inches.

B. Minimum size for Storm Sewers

The minimum pipe size for all storm sewers shall be twelve (12) inches inside diameter. When the minimum 12-inch diameter pipe will not limit the rate of release to the required amount, the rate of release for detention storage shall be controlled by an orifice plate or other device.

C. Pipe Cover and Grade

Sewer grade shall be such that, in general, a minimum of 2.0 feet of cover is maintained over the top of the pipe. If the pipe is to be placed under pavement, then the minimum pipe cover shall be 2.5 feet from top of pavement to top of pipe. Pipe cover less than the minimum may be allowed per manufacturer’s specifications or recommendations, and used only with prior written approval from the Town.

Uniform slopes shall be maintained between inlets, manholes and inlets to manholes. Final grade shall be set with full consideration of the capacity required, sedimentation problems, and other design parameters. Minimum and maximum allowable slopes shall be those capable of producing velocities of between 2.5 and 10 feet per second, respectively, when the sewer is flowing full.

D. Storm Structures

The horizontal alignment of the sewer pipe shall be straight between manholes, inlets, and similar structures.

Manholes shall be installed to provide access to continuous underground storm sewers for the purpose of inspection and maintenance. Manholes shall be provided at locations where two or more storm sewers converge, at pipe size changes, at changes in horizontal alignment, and where a change in storm sewer profile grade occurs. The maximum distance between storm sewer manholes shall be as shown in the below table.

Size of Pipe	Max. Distance
12 in. thru 48 in.	400 ft
48 inches and larger	600 ft

Inlets, or other collecting drainage structures, shall be designed and utilized to collect surface water through grated openings and convey it into storm sewers, channels or culverts.

The inlet grate opening provided shall be adequate to pass the design 10-year flow with 50% of the sag inlet areas clogged. An overload channel from sag inlets to the overflow channel or basin shall be provided at sag inlets so that the maximum depth of water that is ponded in the street sag shall not exceed 7 inches.

Inlet design and spacing shall be in accordance with the INDOT Design Manual, or other approved procedures.

2.5 Stormwater Detention Design

The following shall govern the design of any improvement with respect to the detention of stormwater runoff. Basins shall be constructed to temporarily detain the stormwater runoff that exceeds the maximum peak release rate authorized by these Standards. The required volume of storage provided in these basins, together with such storage as may be authorized in other on-site facilities, shall be sufficient to control excess runoff from the 10-year or 100-year storm as explained below. Also, basins shall be constructed to

provide adequate capacity to allow for a water quality collection volume as described in IDEM's *Indiana Storm Water Quality Manual*.

A. Management of Off-Site Runoff

Water quality design must accommodate the additional areas and run-off from upstream, offsite watersheds. A variance request may be submitted to the Town on cases where providing detention for offsite run-off creates an undue burden.

B. Release Rates

A proposed development may release up to the 2-year predevelopment flows for the 10-year post development storm. Also, a development may release up to the 10-year predevelopment conditions for the 100-year storm event. Modeling or justification for these allowable releases and proposed detention volumes must be provided to the Town for review.

C. General Detention Basin Design Requirements

1. The detention facility shall be designed in such a manner that a minimum of 90% of the maximum volume of water stored and subsequently released at the design release rate shall not result in a storage duration in excess of 48 hours from the start of the storm unless additional storms occur within the period. In other words, the design shall ensure that a minimum 90% of the original detention capacity is restored within 48 hours from the start of the design 100-year storm.
2. The 100-year elevation of stormwater detention facilities shall be separated by not less than 25 feet from any building or structure to be occupied. The Lowest Adjacent Grade (including walkout basement floor elevation) for all residential, commercial, or industrial buildings shall be set a minimum of 2 feet above the 100-year pond elevation or 2 feet above the emergency overflow weir elevation, whichever is higher. In addition to the Lowest Adjacent Grade requirements, any basement floor must be at least a foot above the normal water level of any wet-bottom pond or the local groundwater table, whichever is higher, to avoid the overuse of sump pumps and frequent flooding of the basement.
3. All stormwater detention facilities shall be separated from any road right-of-way by no less than 50 feet, measured from the top of bank or the 100-year pool if no defined top of bank is present, using the most restrictive right-of-way possible. Use of guard rails, berms, or other structural measures may be considered in lieu of the above-noted setbacks. All detention or retention facilities must be located within a designated easement.
4. Slopes no steeper than 3 horizontal to 1 vertical (3:1) for safety, erosion control, stability, and ease of maintenance shall be permitted. Longitudinal slopes of 2% must be maintained along the basin bottom unless underdrains are provided, in which case a minimum 1% longitudinal slope may be used. A maintenance strip providing a maximum slope of 10% must be provided to allow access to the bottom of the detention/retention facility. Pertaining to a dry detention facility, if ponding water depth shall exceed 4 feet, a 5 foot bench shall be used to provide a grade break for safety in the pond embankment.
5. Safety screens having a maximum opening of four (4) to six (6) inches shall be provided for any pipe or opening end sections 12-inch in diameter or larger.
6. Prior to final acceptance, danger signs shall be mounted at appropriate locations to warn of deep water, possible flood conditions during storm periods, and other dangers that exist. The locations of the noted danger signs shall be shown on the plans.
7. Use of fences around all detention ponds is strongly encouraged to assure safety. Unless specifically required by the Town, the decision to use fencing around detention ponds are

left to the owner or the developer. Recommendations contained within this document do not relieve the applicant and owner/developer from the responsibility of taking all necessary steps to ensure public safety with regards to such facilities.

8. Outlet control structures shall be designed to operate as simply as possible and shall require little or no maintenance and/or attention for proper operation. For maintenance purposes, the outlet from the pond shall be a minimum of 0.5 foot above the normal water level of the receiving water body. Outlets shall limit discharges into existing or planned downstream channels or conduits so as not to exceed the predetermined maximum authorized peak flow rate.
9. Emergency overflow facilities such as a weir or spillway shall be provided for the release of exceptional storm runoff or in emergency conditions should the normal discharge devices become totally or partially inoperative. The overflow facility shall be of such design that its operation is automatic and does not require manual attention. Design of any weir facility should incorporate the use of articulated block or Town approved alternatives that avoid visible riprap or concrete structures.
Emergency overflow facilities shall be designed to handle one and one quarter (1.25) times the peak discharged runoff resulting from the 100-year design storm event from the entire contributing watershed draining to the detention/retention facility, assuming post-development conditions on-site and existing conditions off-site. Weir design should assume all outlet structures are clogged. The top of pond should be established at a minimum of 1 foot above the maximum water surface elevation required for emergency overflows to pass through the proposed emergency overflow facility.
10. Grass or other suitable vegetative cover shall be provided along the banks of the detention storage basin. Vegetative cover around detention facilities should be maintained as appropriate.
11. Debris and trash removal and other necessary maintenance shall be performed on a regular basis to assure continued operation in conformance to design.
12. No residential lots or any part thereof, shall be used for any part of a detention basin or for the storage of water, either temporary or permanent.

D. Detention Facilities in Floodplains

Placement of detention ponds within the 100-year floodplain is not appropriate. In rare cases when the Town of Whiteland may allow a detention storage to be provided within a 100-year floodplain, only the net increase in storage volume above that which naturally existed on the floodplain shall be credited to the development. In order to be hydraulically effective, the outfall elevations, including any open spillways, should be at or above the 100-year floodplain elevation and, unless the detention pond storage is provided entirely above the 100-year flood elevation, any pipe outlets must be equipped with a backflow prevention device. A detention pond constructed within the 100-year floodplain and utilizing a backflow prevention device will eliminate the floodplain storage that existed on the detention pond site, and will therefore require compensatory floodplain storage. The detention analysis for a detention pond in the floodplain must consider appropriate tailwater impacts and the effect of any backflow prevention device.

2.6 Materials

A. Sewer Pipe Materials

Storm sewers shall be gasket type, reinforced concrete pipe (RCP), high-density polyethylene (HDPE) pipe, or polyvinyl chloride (PVC) pipe. For new subdivisions/development, only concrete pipe will be allowed. Concrete or plastic pipe may be used for repair or replacement of existing pipes.

Reinforced Concrete Pipe (RCP)

Reinforced concrete pipe shall be Class IV in accordance with ASTM C 76, latest edition. A minimum "B" wall thickness will be required. Gasketed joints shall be in conformance with ASTM C443

High Density Polyethylene (HDPE) Pipe

Corrugated High Density Polyethylene Type S (HDPE) pipe shall be manufactured in accordance with AASHTO M 294. Pipe manufactured under this specification shall have a minimum Cell Class of D 324420C in accordance with ASTM D 3350. The flexibility factor of HDPE pipe shall not exceed 0.095.

Ribbed Polyethylene pipe shall be in accordance with ASTM F 894 for the specified sizes, meeting the requirements for RSC 100 or RSC 160. Pipe manufactured under this specification shall have a minimum Cell Class of 334433C in accordance with ASTM D 3350.

Smooth wall Polyethylene pipe shall be in accordance with ASTM F 714 for the specified sizes. Pipe manufactured under this specification shall have a minimum Cell Class of 35434C in accordance with STM D 3350. All polyethylene pipe and fittings shall be made from high molecular weight high density polyethylene material meeting the applicable Cell Class requirements. All polyethylene material used in storm sewer pipe manufacture shall be virgin resin.

High Density Polyethylene pipe shall possess male and female pipe ends which allow the construction of overlapping, gasketed pipe joints, in conformance with the requirements of ASTM D 3212 and ASTM F 477.

Polyvinyl Chloride (PVC) Pipe

Polyvinyl chloride (PVC) pipe must be used anytime storm sewer pipes do not maintain 1 foot of vertical separation from outside of pipe to outside of pipe from crossing water lines. Additionally, PVC pipe shall convey storm flows in cases where the regulatory 10 feet of horizontal separation and the 1 foot of vertical separation are not maintained between water lines and storm sewers.

Polyvinyl chloride (PVC) profile wall gravity flow storm sewer pipe shall be the integral wall bell and spigot type with elastomeric seal joints and smooth inner walls in accordance with AASHTO M 304. A minimum Cell Class of 12454C or 12364C as set forth by ASTM D 1784 shall be required.

Smooth wall PVC pipe shall be in accordance with ASTM D 3034, ASTM F 679, ASTM F 891 or AASHTO M 278 for the specified sizes, and shall have a minimum Cell Class of 12364C for pipes meeting specification ASTM F 679, or 12454C for pipes meeting specification AASHTO M 278. Cell class properties shall be as set forth by ASTM D 1784.

PVC Joints - Flexible, gasketed joints shall be compression type so that when assembled, the gasket inside the bell is compressed radially on the pipe spigot to form a soil-tight seal. The assembly of joints shall be in accordance with the pipe manufacturer's recommendations contained in ASTM D 3212 or AASHTO M 304. The gasket shall conform to the requirements of ASTM F 477.

For polyvinyl chloride (PVC) pipe products, each length of pipe must be marked with the following information as a minimum: Name of manufacturer; Trade name or trademark; Nominal pipe size; Production/extrusion code; Material and cell class designation; and ASTM designation.

B. Drainage Structures

All storm sewer manholes, catch basins, and inlets shall be precast concrete, unless approved otherwise by the City. Precast concrete storm sewer manholes shall meet or exceed the requirements of ASTM C478 and shall be in accordance with INDOT standard specifications. Precast concrete catch basins and inlets shall be in accordance with INDOT standard specifications.

Bedding and backfill for drainage structures shall conform to INDOT specifications and standard drawings.

Cast iron frames and covers shall conform to the requirements of the latest edition of ASTM A48 for Gray Cast Iron. Ductile cast iron frames, covers and grates shall conform to the requirements of the latest edition of ASTM A536 for Ductile Cast Iron. The dimensions, weights and finish preparation shall conform to the appropriate construction standards.

C. Channel Lining Material

Materials acceptable for use as channel lining are:

1. Grass;
2. Revetment riprap;
3. Concrete;
4. Hand-laid riprap;
5. Pre-cast cement concrete riprap;
6. Grouted riprap;
7. Gabions;
8. Coir logs;
9. Mesh matting; or
10. Cellular walls

2.7 Materials

A. Storm Sewer Pipe Installation

Preparation of Bed

As soon as excavation has been completed to required depth, place and compact bedding materials, as shown in the Standard Drawings, to the elevation necessary to bring the pipe to grade. The compacted bedding material shall be placed so that the pipe shall rest firmly on the bedding for the full length of the barrel. Suitable holes for bells or couplings shall be dug around the pipe joints to provide ample space for making tight joints.

Laying Pipe

Each pipe length shall be inspected for cracks, defects in coating or lining, and any other evidences of unsuitability. Pipe shall be laid in the dry and at no time shall water in the trench be permitted to flow into the pipe.

The pipe shall then be laid on the trench bedding, and the pipe pushed home. Jointing and laying shall be in accordance with the manufacturer's instructions and appropriate ASTM Standards. Pipe laying shall proceed upgrade with spigot ends pointing in the direction of the flow.

Blocking under the pipe will not be permitted except where a concrete cradle is proposed, in which case precast concrete blocks shall be used.

After placement of the haunching material, the pipe shall be checked for line and grade and any debris, tools, etc., shall be removed.

If inspection of the pipe indicates that the pipe has been properly installed, backfill the remainder of the trench in accordance with the typical trench detail shown on the Standard Drawings.

At any time that work is not in progress, the end of the pipe shall be suitably closed to prevent the entry of animals, earth, water, etc.

B. Structure Installation

Bedding for Structures

Precast base sections shall be placed on a well-graded granular bedding course conforming to the requirements for sewer bedding, but not less than four (4) inches in thickness and extending to the limits of the excavation. The bedding course shall be firmly tamped and made smooth and level to assure uniform contact and support of the precast element.

Cast-in-Place Bases

Unless otherwise specified, cast-in-place bases shall be at least eight (8) inches in thickness and shall extend at least six (6) inches radially outside of the outside dimensions of the manhole section. The cast-in-place base shall be made of 3,000 psi concrete, 28-day compression test, and shall be reinforced as shown on the construction standards.

Lift Holes

All lift holes in precast elements shall be thoroughly wetted and be completely filled with non-shrinking concrete grout, smoothed and painted both inside and out, to ensure water tightness.

Placing Precast Sections

Precast sections shall be placed and aligned to provide vertical sides and vertical alignment of the ladder rungs. The completed manhole shall be rigid, true to dimensions and watertight.

Placing of Castings

Castings placed on a concrete surface shall be set in full grout beds. The grout shall be mixed in proportion of one (1) part Portland Cement to three (3) parts sand, by volume, based on dry materials. Castings shall be set accurately to the finished elevation so that no subsequent

adjustment will be necessary, or unless otherwise specified by the licensed Engineer. After grout has cured, use an approved bitumastic material around the outside of casting to ensure water tightness. When working in paved streets or areas which have been brought to grade, not more than fifteen (15) inches shall be provided between the top of the cone or slab and the underside of the manhole casting for adjustment of the casting to street grade.

When working in an unimproved street or alley, not less than twelve (12) inches of adjusting rings shall be provided between the top of the cone or slab and the underside of the manhole casting for adjustment of the casting to finished grade. The top of the manhole casting shall be flush with the finished grade, unless otherwise shown in the plans. When working in cultivated areas, the top of the manhole casting shall be buried three (3) feet. In non-cultivated areas, the casting shall be flush with the finished grade, unless otherwise directed by the licensed Engineer. In the event that the last manhole section is a reducing cone set to final grade by the licensed Engineer and if it becomes necessary to lower them below the cone, compensation to the contractor will be allowed for said adjustment and changing of the manhole stacks.

When concrete adjusting rings are used to set the castings to grade, they shall be pointed up and a grout bed placed between each ring and casting; and made watertight with a heavy coating of an approved bitumastic material on the outside of the structure. The casting is flush with the surrounding pavement. When rubber adjustment rings are used to set castings to grade, they shall be positioned so that the casting is flush with surrounding pavement.

Channels and Inverts

Channels and inverts shall be made to conform accurately to the sewer characteristics and grades, and shall be brought together smoothly with well-rounded junctions, satisfactory to the licensed Engineer and in conformance with the Stormwater Conveyance Details.

Pipe Connections

Pipes shall be firmly full of jointing material at entrance to manhole to ensure water tightness. The pipes shall not protrude farther than three (3) inches into the inside face of the manhole, measured along the horizontal center of the pipe. Special care shall be taken to see that the opening through which pipes enter the structure have all pipe ends sawed and smoothed completely.

Rubber water stops, “O”-Ring gaskets, or poured-in-place pipe sleeves shall be used for water tightness between the pipe and the manhole for all sidewall pipes. When new holes are required in the manhole, they shall be core drilled, or star drilled, in a circle of the required diameter and then knocked out. In no instance shall new holes be sledge-hammered out.

Grade Adjustment of Existing Structures

When adjusting castings to grade or reconstructing structures, the applicant shall conform to the applicable provisions of the Indiana Department of Transportation Standard Specifications, current edition.

Chapter 3. New Potable Water Extension Construction Specifications

3.1 Overview

The purpose of this chapter is to ensure the proper design and construction of potable systems and to provide for the public health and safety. These specifications serve as a guide for developers and are not intended to address every possible situation. Developers who intend to use alternative specifications and procedures are required to have such approved by the Town before construction may begin. The Town understands that unique situations may require variances from these specifications and procedures and will provide the necessary guidance and assistance in the best interests of construction and design integrity, public health and public safety.

3.2 Permit and Bond Requirements

Refer to Sections 1.2 and 1.4 in these specifications for permitting and bonding requirements if working within the public right of way.

3.3 General New Construction Procedures

- A. The developer/owner shall check for the availability of sewer and water service in the proposed construction area and receive permission from the Town to increase the capacity of the system.
- B. A written agreement shall be entered into between the developer and the Town of Whiteland through its Water Department. This shall define the contract terms for the construction of water service within the service areas of Whiteland. This agreement shall be obtained before any construction begins. For water connections to land located outside the incorporated area of the Town of Whiteland, the agreement shall include a provision that the owner will not remonstrate or in any way contest annexation of such property into the Town.
- C. The developer shall furnish the Town with preliminary design plans for review and approval at least thirty (30) days before the proposed starting date of the actual construction and within ninety (90) days of signing a written agreement to construct new water mains.
- D. The plans and design shall conform to all applicable State and Town specifications regarding design and construction of such systems.
- E. The plans shall be stamped and signed by an Indiana licensed professional engineer.
- F. All plans shall include, but not be limited to, the following:
 1. Cover page showing the location, project name, designer, owner, and other pertinent information about the project overview
 2. Plan design
 3. Profile design
 4. Construction details
 5. Lift station details if applicable
 6. Proposed lateral and service locations (8.5" x 11" sheet in table format)
 7. All necessary easements, right-of-ways, and lot numbers for plan design
 8. All pages shall be 24" x 36"
 9. All drawings shall not be less than 1" = 50' scale
- G. Preliminary plans should be computer generated original drawings, but may be blueprint copies.

- H. All final as-built drawings must be computer-generated drawings (ie: CAD).
- I. Final as-built plan sets shall include 3 copies and 1-CD computer CAD or .pdf disk file.
- J. The developer shall ensure all necessary easements are obtained, properly recorded, and on file with the Johnson County, Indiana Recorder's office. All easements shall be for the use and benefit of the Town of Whiteland. Such easements shall be shown on all final as-built plan drawings.
- K. After the preliminary plans have been reviewed and approved by the Town, construction may begin. The Town shall be given at least three (3) days notice to schedule necessary construction inspection. Work shall not commence without proper notice. Any work that has been accomplished without inspection and covered may be regarded as unacceptable.
- L. Any actual construction changes to the proposed design must first be approved by the Town. Such changes must be noted upon the construction drawings. All final field measurements shall be noted on the construction plans for "as-built" information.
- M. All water service lines shall be carefully measured in reference to the center of valves or other monuments and recorded in table form. These measurements shall be submitted to the Town along with all final as-built drawings.
- N. All water meters shall be installed within the Town right of way.
- O. The following performance tests are required for water distribution systems by the contractor/developer and shall be witnessed by a representative of the Town:
 - 1. Hydrostatic pressure test 1.5 times the working pressure
 - 2. Chlorinate and Dechlorinate to AWWA standards
 - 3. Take and pass bacteriological samples in accordance with IDEM standards
- P. The acceptance of the sewer and water systems and extensions by the Town of Whiteland will be based upon the following criteria:
 - 1. The owner/developer must fulfill the conditions set forth by the Agreement signed with the Water Department and Sewer Department.
 - 2. The system shall be required to pass all tests and inspections required by the Town.
 - 3. As-Built plans and lateral information must be submitted to the Town prior to acceptance.

Chapter 4. New Sanitary Sewer System Connection Construction Specifications

4.1 Overview

The purpose of this chapter is to ensure the proper design and construction of sanitary sewer systems and to provide for the public health and safety. These specifications serve as a guide for developers and are not intended to address every possible situation. Contractors and homeowners who intend to use alternative specifications and procedures are required to have such approved by the Town before construction may begin. The Town understands that unique situations may require variances from these specifications and procedures and will provide the necessary guidance and assistance in the best interests of construction and design integrity, public health and public safety.

4.2 Permit and Bond Requirements

Refer to Sections 1.2 and 1.4 in these specifications for permitting and bonding requirements if working within the public right of way.

4.3 General New Construction Procedures

- A. The developer/owner shall check for the availability of sewer service in the proposed construction area and receive permission from the Town to increase the capacity of the system.
- B. A written agreement shall be entered into between the developer and the Town of Whiteland through its Sewer Department. This shall define the contract terms for the construction of sanitary sewers within the service areas of Whiteland. This agreement shall be obtained before any construction begins. For sanitary sewer connections to land located outside the incorporated area of the Town of Whiteland, the agreement shall include a provision that the owner will not remonstrate or in any way contest annexation of such property into the Town.
- C. The developer shall furnish the Town with preliminary design plans for review and approval at least thirty (30) days before the proposed starting date of the actual construction and within ninety (90) days of signing a written agreement to construct new sanitary sewers.
- D. The plans and design shall conform to all applicable State and Town specifications regarding design and construction of such systems.
- E. The plans shall be stamped and signed by an Indiana licensed professional engineer. In addition, an Indiana licensed surveyor may approve gravity only type sanitary sewer systems.
- F. All plans shall include, but not be limited to, the following:
 1. Cover page showing the location, project name, designer, owner, and other pertinent information about the project overview
 2. Plan design
 3. Profile design
 4. Construction details
 5. Lift station details if applicable
 6. Proposed lateral and service locations (8.5" x 11" sheet in table format)
 7. All necessary easements, right-of-ways, and lot numbers for plan design
 8. All pages shall be 24" x 36"
 9. All drawings shall not be less than 1" = 50' scale
- G. Preliminary plans should be computer generated original drawings, but may be blueprint copies.
- H. All final as-built drawings must be computer-generated drawings (ie: CAD).

- I. Final as-built plan sets shall include 3 copies and 1-CD computer CAD or .pdf disk file.
- J. The developer shall ensure all necessary easements are obtained, properly recorded, and on file with the Johnson County, Indiana Recorder's office. All easements shall be for the use and benefit of the Town of Whiteland. Such easements shall be shown on all final as-built plan drawings.
- K. After the preliminary plans have been reviewed and approved by the Town, construction may begin. The Town shall be given at least three (3) days notice to schedule necessary construction inspection. Work shall not commence without proper notice. Any work that has been accomplished without inspection and covered may be regarded as unacceptable.
- L. Any actual construction changes to the proposed design must first be approved by the Town. Such changes must be noted upon the construction drawings. All final field measurements shall be noted on the construction plans for "as-built" information.
- M. All sanitary sewer service taps (laterals) shall be carefully measured in reference to the center of iron manhole castings and recorded in table form. These measurements shall be submitted to the Town along with all final as-built drawings. Linear distances shall be measured from the downstream manhole. In addition baseline (lateral length) measurements shall be included.
- N. The following performance tests are required for sanitary sewer collection systems by the contractor/developer and shall be witnessed by a representative of the Town :
 - 1. Air pressure tests
 - 2. Mandrel alignment tests
 - 3. Lift station pump capacity test
 - i. Force main pipe hydrostatic test
 - ii. Light test (unless installed using a laser level)
 - iii. Manhole Vacuum Test
- O. The following performance tests will be conducted by a representative of the Town :
 - 1. Visual manhole inspection
 - 2. Video camera inspection
 - 3. Any other quality control inspection during or after construction
- P. The acceptance of the sewer systems and extensions by the Town of Whiteland will be based upon the following criteria:
 - 1. The owner/developer must fulfill the conditions set forth by the Agreement signed with the Water Department and Sewer Department.
 - 2. The system shall be required to pass all tests and inspections required by the Town.
 - 3. As-Built plans and lateral information must be submitted to the Town prior to acceptance.

4.4 Materials Acceptable for Construction of Gravity Sanitary Sewers

The following materials are minimum requirements for use during the construction of public sanitary sewer systems in the Town of Whiteland Service Area. Material requirements shall not be limited to these standards. All materials used shall conform to but not be limited to ASTM, ANSI, IDEM standards for testing and construction of gravity sanitary sewers in Indiana.

- A. **Pipe:** Polyvinylchloride (PVC), Reinforced Concrete Pipe, Ductile Iron Pipe, Truss Pipe and High Density Polyethylene Pipe (HDPE)
- B. **Manholes:** Pre-Cast reinforced manholes including bases, risers/barrels, cones and flat slabs constructed of Class A concrete. Manhole steps shall be provided. Manholes shall be a

minimum of 48" diameter for pipe up to 24". For larger pipes, the minimum diameter shall be 60".

- C. **Monolithic (Cast-in-Place) manholes** designed by a registered Professional Engineer. Manhole steps shall be provided. Designed sizes shall conform to those for Pre-Cast manholes.
- D. **Castings:** The type of frame and cover used shall be Neenah Foundry Company R-1772 or equal. The cover shall be labeled "Sanitary Sewer". Variations and larger sizes must be approved by the Town.
- E. **Riser Rings:** Pre-Cast adjusting rings ranging from 2" to 12" shall be used for the accomplishment of adjustments in casting elevation.

4.5 Force Main Sewer Minimum Design Requirements

The following materials are minimum requirements for use during the construction of public sanitary sewer systems in the Town of Whiteland Service Area. Material requirements shall not be limited to these standards. All materials used shall conform to but not be limited to ASTM, ANSI, IDEM standards for testing and construction of force main sanitary sewers in Indiana.

- A. **Pipe:** PVC that conforms to ASTM D-2241. Joints shall be bell end or push-on type Ductile Iron Pipe that conforms to ANSI A21.51 and AWWA C-151 with mechanical, slip or flanged joints.
- B. **Pumps:** Pumps shall be manufactured with a warranty period of five years. The contractor, through the manufacturer, shall provide one set of spare parts including an impeller, upper and lower seal assembly, upper and lower bearing assembly, wear rings and two sets each of O-rings and gaskets.
- C. **Station:** All components of the lift station that are exposed to weather shall be constructed of material that is resistant to corrosion and will not require surface protection throughout the expected life of the lift station. In general, these materials are stainless steel, aluminum, fiberglass reinforced polyester and ultraviolet stabilized PVC.

Exception:

Lifting Chains - Stainless Steel only

Guide Rails - Stainless Steel only

Guide Rail Hangers - Aluminum or Stainless Steel

The availability of all spare parts shall be within a one hundred (100) mile radius of the Town of Whiteland.

- D. **Controls:** All pump stations shall have a size 30" x 36" x 12" duplex automatic pump control panel in NEMA 4X enclosure for outdoor mounting.

The controls shall allow automatic and manual operation of all pumps simultaneously or independently.

The pump control panel shall be fabricated by a company with at least (5) years experience in the manufacturing of similar control panels and shall comply with the following:

1. The enclosure will be NEMA 4X stainless steel with a blank outer door. The selector switches, pilot lights, elapsed time totalizers, push buttons, duplex GFI receptacle and other through the panel components shall be mounted in a dead front swing out panel housed within the enclosure. Motor circuit protectors, circuit breakers, starters, relays, transformer, alternator and terminal strips will be mounted on a sub-panel behind the aforementioned swing out panel.

2. Motor circuit protectors shall be provided for each pump motor and a circuit breaker for the control power transformer. They shall be of the proper ampacity for the load of which they are connected and have operating mechanisms extending through the dead front swing out panel.
3. Control power transformer size shall be adequate for the sum of all loads connected plus an additional 500 VA for the above mentioned duplex receptacle. Provide separate fusing or circuit breakers for the control circuit and the duplex receptacle.
4. Motor starters shall be properly sized for the motors they serve and shall be NEMA rated with interchangeable overload heaters. IEC starters and adjustable trip overload relays are not approved and shall not be substituted.
5. Selector switches, push buttons and pilot lights shall be NEMA style 30.5 mm oiltite series. IEC or miniature series are not acceptable. Pilot lights shall be push-to-test transformer type with #756 or 1866 lamps.
6. In accordance with the requirements of “Ten State Standards” provide intrinsically safe relays for transient protection of said relays. All other relays shall be NEMA rated.
7. Provide an alternator to automatically alternate pump operation. In addition to the automatic alternator, provide a three position selector switch to override said alternator and manually select the lead and lag pumps.
8. Control and interconnecting wiring shall be copper, type MTW, neatly bundled and in plastic wireway. Provide insulated crimp lugs as required. Terminals with more than one wire each must be approved for that purpose.
9. Integral motor thermal protection and pump seal failure detectors must be included as part of the pump package. When these are provided, they shall be wired in accordance with the pump manufacturer’s recommendation.
10. Elapsed time totalizers shall be provided for each pump motor. They shall be non-resettable hour meters and wired parallel to the holding coil of the motor starter.
11. Provide audible and visual alarms to indicate high level in the wet well. Include the necessary relays and push buttons to silence the audible alarm while maintaining the visual alarm until the alarm condition has been corrected.
12. Provide a blower for panel ventilation with panel mounted inlet including louvers and filter assembly. Inlet and blower are to be located at upper side of panel. The outlet ventilation opening is to be located on the lower panel side opposite the inlet opening. The outlet opening is to be covered with a louver and screen assembly. The ventilation blower is to be thermostatically controlled.
13. Provide a control panel heater with thermostatically controlled switches.

In addition, all pump stations shall incorporate the use of radio telemetry warning systems for operating failure. Such systems shall be electronically compatible with those used by the Whiteland Waste Water Treatment Plant. Contact the Town for this information.

Sealed float type switches shall be supplied to control pump operations and alarm signals. For backup, an Appleton Electric Plug Model ADR 1044RS and Brems Switch Model CB1000007243 generator connector shall be installed.

- E. **Valves:** All types of operational valves used shall meet the requirements of design, material and workmanship for AWWA C500 latest edition. An emergency bypass valve shall be placed in the valve pit.

4.6 Tapping Clay and AC Mains

In all cases of connecting to the Whiteland sanitary sewer system, every effort shall be made to not disturb aging mains constructed of clay and asbestos cement (AC). Clay and AC sewer mains are often fragile and are generally difficult to perform heavy construction on or around; however, if no other reasonable means of providing sanitary service is available, tapping clay and AC mains will be allowed with the written permission of the Town. In these cases, careful consideration shall be given to the quality and workmanship of all construction. In addition, the Town will perform increased inspection to ensure that all work is in accordance with standard practices and additional directions, if any, given by the Town.

4.7 Increasing the Flow of Existing Sewer Systems

In all cases of increasing the flow of existing sewer systems, the owner/developer shall submit the expected flow increase data and obtain written permission from the Town to cause such an increase. This requirement shall allow the Town to examine the existing system and determine if any overloading or surcharging will result from such additions.

4.8 Prohibited Uses of Sewer Systems

In no circumstance shall storm water or any other form of natural water runoff be allowed to enter the Whiteland sanitary sewer system. Crawl space drains, footing drains, gutter downspouts, and sump pumps may not be connected to sanitary sewer.

Additional information has been provided for storm water management in Chapter 2. In addition, the discharge of hazardous materials or potentially damaging substances into the sanitary sewer system is strictly prohibited. These substances may require onsite pretreatment by the owner before such discharge will be allowed into the sanitary sewer system. Rules and regulations set forth by the Indiana Department of Environmental Management and the Town Code shall be used to determine if any discharge is hazardous or otherwise damaging to the integrity of the sewer system operated by the Town of Whiteland. Please contact the Town for any concerns regarding hazardous material discharge.

4.9 Abandoning Existing Sewer Systems

Existing sewer systems currently owned and maintained by the Town of Whiteland may be abandoned only by a special written request to the Whiteland Sewer Department and the Whiteland Town. Such requests will only be granted to property owners adjacent to such sewers when it can be shown that the existing sewer provides service to only those requesting abandonment. Those proposing abandonment shall agree to accept said abandoned sewer and therefore supervise and maintain all applicable sewer lines and appurtenances.

4.10 New Lateral Connections

If a residential/business connection is made to a public sewer owned and maintained by the Town of Whiteland, the property owner shall be required to sign and purchase a "*Sewer/Water System Connection Application*" at the Town Water Department (Town Hall). The Sewer Department has established tap fees for residential/business occupancies. In addition, the property owner shall be required to purchase and provide a "*Sewer Tap Construction Permit*" (or equivalent) available from the Sewer Department. This permit shall remain on-site at all times until the inspection of the connection is complete. If the construction requires work within the public right-of-way, a right-of-way construction permit must be obtained by the Town, Indiana Department of Transportation, or the Johnson County Highway Department depending on the work location. This permit shall remain on-site until the public right-of-way has been restored according to the required specifications of the controlling agency. All construction shall require inspection before backfilling. The Town Wastewater Department will provide inspection for all Design Standards and Specifications Manual - Town of Whiteland

connections. Inspections are scheduled by contacting the Wastewater Department at (317)535-7627. All inspections should be scheduled with a minimum of four (4) hours notice.

4.11 Workmanship for Installation

- A. All new sewer laterals shall be constructed using Polyvinylchloride (PVC) pipe.
- B. Sanitary sewer laterals for house connections shall be 4" or 6" diameter. Four inch (4") pipes will be allowed to exit a structure for a maximum of thirty-six inches (36").
- C. The pipe strength/diameter ratio shall not be less than Schedule 40 and shall conform in all respects to the dimensional requirements of ASTM D-3034.
- D. All gravity sewer connections to be glue joints.
- E. PVC shear gird or Fernco with steel bands will only be allowed to repair existing clay laterals and may not be used for any new construction. It shall meet the requirements of ASTM designation C700.
- F. All plastic shall be installed closely following the guidelines of ASTM D-2321, "Standard Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe".
- G. The building sewer shall be constructed at no less than the minimum uniform grade for the size of pipe used (1/8" fall/foot minimum for six (6) inch pipes) and installed in a straight line. Any change in slope or direction shall be accomplished with the proper angled pipe joints (22.5°, 45° elbows).
- H. No building sewer lateral shall be laid parallel within three feet (3') of any bearing wall. The minimum depth of the pipe at any point shall not be less than eighteen inches (18"). A thirty inch (30") depth is recommended for protection against freezing conditions.
- I. At least one six inch (6") cleanout riser shall be installed for each six inch (6") building sewer lateral. This cleanout shall be accessible from the outside of the building. No portion of the lateral shall exceed one hundred feet (100') without additional cleanouts. A cleanout must also be installed whenever the lateral makes necessary 90-degree angle directional changes. This cleanout must be installed immediately before or after the 90-degree angle fitting. All cleanouts shall remain accessible from ground level.
- J. The building sewer shall be placed in granular fill 6" below and above. The trench floor shall be shaped to support the lower quadrant of the barrel of the pipe.
- K. All pipe joints shall be made tight and waterproof through the use of pipe and glue.
- L. Unstable trench bottoms must be stabilized before laying pipe. A sufficient depth of unstable soil shall be removed and replaced with a bedding of processed stone, sand or gravel and properly graded. The depth of the processed material depends upon the severity of trench bottom soil conditions. If the foundation soil contains significantly large particles in proportion to the size of the pipe, a bedding of acceptable material shall be provided above the trench floor.
- M. Pipe shall be laid in the uphill direction with the bell end of the pipe upgrade. Efforts shall be made to allow the lettering printed on the pipe wall to face up to allow the inspector visibility for inspection.
- N. Number 10 tracer wire shall be installed above all pipe lines except straight runs between manholes or other structures.
- O. The trench should be backfilled manually to the top of the pipe directly after being passed by the inspector. This will allow the pipe to retain a proper alignment. Manual compaction is recommended for the full length of the pipe barrel. Caution shall be taken to prevent bedding

material from being forced under the pipe thus causing vertical displacement and slope change.

- P. Every effort shall be made to install a separate lateral for separate buildings. However, in special circumstances, with the approval of the Town, additional buildings may be connected.
- Q. When a structure is too low to permit gravity flow to a public sewer line, wastewater must be lifted and transported by a private forced sewer main system. Guidelines for a private force main system are given in the following section.
- R. All connections shall be made at existing lateral stubs provided. Banded *Fernco* or *Mission* type adapters shall be utilized to connect existing plumbing. If a lateral does not currently exist, the owner may be required to expose the sewer main line and make an appropriate connection in the right-of-way. An approved saddle connection for the type of main pipe is required for this installation. The owner may also connect at a nearby manhole if main line connections are not feasible. All manhole connections shall require an approved drop section inside the manhole. All manhole connection requests must be examined and approved in writing by the Town or his/her designee.
- S. The Town and/or Wastewater Staff will provide the owner/contractor with all available lateral location information. It shall be noted that certain older addresses have vague or no information at all. Every effort will be made to provide the most accurate information possible.
- T. Lateral clean-out caps, openings and piping shall be installed within the private property boundaries. Clean-outs are not allowed within the right-of-way limits unless authorized by the Town.

4.12 Private Single Structure Force Main System Requirements

Small diameter pressure sewer systems incorporating the use of individual home grinder pump units will be allowed in areas where the surrounding terrain and elevations do not allow the use of conventional gravity systems. The maintenance of the grinder pump system and the building force main to the point of connection at the public sewer shall be the responsibility of the home owner. The Town of Whiteland shall only be responsible for the publicly owned main. Such grinder pump systems can be obtained in this area. In most cases, pump suppliers should be able to help the owner specify a system appropriate for each case. If the owner wishes to use other standards, the Town must be contacted for review of such apparatus standards and specifications prior to installation. For homes less than 200' from a gravity main sewer system, an E/ONE brand DH071 type grinder pump should be installed, 1.25 inch discharge connection is adaptable to any piping material, allowing it to meet code requirements. For homes greater than 200' from a gravity main sewer system, private grinder pump stations should be installed using the following recommended specifications as general guidelines.

- A. Unit may be a simplex pumping station (one pump)
- B. Unit shall have a fiberglass (or polymer) twenty-four inch (24") diameter basin at least seventy-two inches (72") in height
- C. The inlet of the station shall not be less than forty-eight inches (48") to protect from freezing
- D. The outlet of the station shall not be less than forty-eight inches (48") to protect from freezing
- E. The basin shall have a removable top for component access
- F. The pump shall have a minimum rating of 2 HP, capable of at least 25 GPM
- G. All discharge piping shall be Schedule 40 PVC or DR 11 HDPE - one and a quarter inches (1.25") as a minimum
- H. A ball type shutoff valve shall be provided for the discharge piping

- I. All guides, pump rails, and hold-downs shall be structural plastic
- J. A check valve shall be installed on the discharge side of the pump
- K. Anti-siphon valves shall be installed for systems with negative discharge slope
- L. A sealed control pad having an audio/visual high water alarm shall control the system
- M. The entire unit shall be mounted upon a six inch (6") minimum concrete slab three feet (3') in diameter
- N. A redundant combination shut-off/check valve shall be installed in a meter pit at the property line

4.13 Sewer Lateral Replacement

If a property owner replaces any aging or damaged existing sewer lateral, all requirements for new lateral installation shall apply regarding materials, workmanship, inspection and work permits. Owners will not be required to purchase a "Sewer Tap Agreement" if a current agreement and/or billing account exists, but shall be required to purchase a "*Sewer Tap Construction Permit*" as well as all necessary right-of-way construction permits by the governing agency (Town, County, State Highway) where the work will occur.

4.14 Septic System Abandonment after New Public Sewer Connection

Owners of structures that use septic systems and make connection to public sewers are required to properly abandon said septic systems. All septic tanks and holding structures shall be emptied completely and cleaned. All empty tanks shall be filled with suitable non-contaminated material such as clean sand or gravel. Tank or pipe structures previously used for septic systems may not be utilized in the construction of new lateral connections. Further, all outlets of the tank or holding structure shall be securely sealed to prevent loss of fill material. These requirements may be in addition to those established by the Johnson County Health Department Regulations.

4.15 Town Inspection of New/Replacement Laterals

All lateral construction shall be inspected by a representative of the Town before such work is backfilled. For each inspection, the Sewer Tap Construction Permit (or photocopy) shall be provided on-site for the inspector. The inspector will conduct the inspection following the guidelines set forth in Section 4.3. This will ensure that the owner has received quality construction and the connection will not interfere with the normal operation of the public sewer system. Upon completion, the connection will receive either a pass or fail report. The inspector will provide the results of the inspection in writing to the owner or to the contractor who shall provide such results to the property owner. A minimum of four (4) hours notice shall be required under most circumstances. Requests for immediate inspections will only be granted if the Town inspector has adequate time available without delaying other scheduled inspections.

4.16 Tapping of Clay or AC Mains for Lateral Connections

Refer to Section 4.6 for information regarding clay or AC mains.

4.17 Lateral Cap Abandonment (Cap-off)

When it has been determined that a lateral will no longer be used by a property owner, the lateral shall be taken out of service. The cap-off process shall ensure that the lateral will remain in working order and can be located for any future use. All laterals shall be saw-cut at or very near the property line. Plastic pipe shall be capped using a cap-end sized for the specific pipe. The cap shall be glued securely into place. Clay pipe shall be plugged using mortar. The mortar shall extend at least twelve inches (12") into the pipe. In addition, care shall be taken to prevent the mortar from falling into the pipe before curing has occurred. Four (4) hours notice shall be given to the Town for all cap-off inspection scheduling. No work shall be

concealed prior to inspection. When a lateral is taken out of service due to demolition, the permit issued for building demolition shall be provided to the inspector and recorded. When a lateral is taken out of service for reasons other than demolition, a Sewer Inspection Permit shall be purchased from the Sewer Department. This permit must remain on-site at all times during the process and provided to the Town Inspector. Monthly utility fees must be maintained to avoid future reconnection fee.

4.18 Determination of Provided Lateral Locations

Information regarding the location and depth of laterals for individual properties shall be provided by the Town. The Town will make every effort to provide the most accurate information available. In some cases, such information may be vague, incomplete or non-existent due to older records, which may not contain detailed information.

4.19 Laterals Requiring Work within Public Right-of-Ways

All construction work and restoration relative to sanitary sewer connection within the public right-of-way shall conform to the standards set forth in Chapter 1. For broken laterals located under the public street roadway area (the area from back-of-curb to back-of-curb, or from edge of pavement to edge of pavement for curbsless streets), the Town will perform the construction work to repair the lateral to the standards of this manual. Broken laterals outside of the public street roadway area or plugged laterals shall be the responsibility of the property owner or customer to repair or repair.

Chapter 5. As-Built Specifications

5.1 Overview

The Town of Whiteland accepts hard copy as-built records, with a digital version copy. As-builts shall specify what horizontal and vertical datums are being used. Copies must be signed and sealed by the registered professional engineer or land surveyor who prepared the drawings. A cover letter must be submitted and a statement must be made that the plans being submitted are the final as-built plans for the project, and a statement shall be made that installation has been done in reasonable compliance with the original design plans with respect to horizontal locations and grades and shall identify any material deviations of locations, grade, or material used.

Digital files shall be submitted in Adobe Acrobat PDF format rendered as digital copies of the hard copy sheets, Autocad format (each improvement on a separate layer), and a GIS .shp file conforming to the specifications of the Johnson County GIS Task Force.

5.2 Streets

As-built street plans shall indicate all grades, low and high points, percentage of grade, any deviation of alignment, and grades and dimensions on accel and decel lanes if applicable.

5.3 Grading or Development

As-built grades shall be shown in all major drainage swales; pad grades; paved swales, at 50' intervals; lakes or ponds; locations of sidewalk ramps; and street grades. Street grades shall be shown with centerline and curb. Street grades shall be shown at a maximum of 50 ft. spacing. Street grades shall clearly identify all sag and crest points.

5.4 Sanitary Sewers

As-built sanitary sewer system plans shall indicate the offset of sanitary sewers from the centerline of lots and shall include, but not be limited to length of sewer, invert elevation, rim elevation, percentage of

grade, manhole location, sewer material and joints used. An as-built profile drawing must also be provided for all sanitary sewer systems.

Locations shall be shown on the plans with an accuracy of \pm one (1) foot. In addition, the location of all building service leads must be indicated with distance from the upstream manhole. The length of the lead and any riser information must also be indicated.

As-built sanitary sewer plans shall list the as-built quantities and the type, brand name and lengths of pipe used.

5.5 Detention System

As-built plans of the retention system must include as-built grade contours, with adequate spot elevations to substantiate these contours. The high water and freeboard elevation and contour lines must be clearly indicated. The side slopes of the pond also must be clearly indicated. Also, as-built volumetric calculations must be shown to verify that this system was built as designed and approved by the Town of Whiteland.

5.6 Storm Sewer

As-built storm system plans shall include, but not be limited to length of sewer, invert elevation, rim elevation, percentage of grade, manhole location, sewer material and joints used. An as-built profile drawing must also be provided for all public storm sewer systems and private systems on sites larger than one acre.

Locations of all pipes and structures shall be shown on the plans with an accuracy of \pm one (1) foot.

As-built storm sewer plans shall list the as-built quantities and the type, brand name and lengths of pipe used.

5.7 Water Systems

As-built water system plans shall indicate the offset of water mains from property lines and *shall locate gate valve wells, hydrants and all water system appurtenances from the nearest property corner*. An as-built profile drawing must also be provided for all water mains 16" in diameter or larger. Locations shall be shown on the plans with an accuracy of \pm one (1) foot. Locations shall be shown on the plans with an accuracy of \pm one (1) foot.

As-built water system plans shall list the as-built quantities and the type, brand name and lengths of pipe used. Hydrants, gate valves, etc., shall also be listed showing their type, brand name, and quantity. The location, size, manufacturer and model number of every restrained joint shall be noted.

APPENDIX A

RIGHT-OF-WAY USE/EXCAVATION PERMIT APPLICATION

TOWN OF WHITELAND, IN 46184

PHONE: (317)535-5531 FAX: (317)535-8724

1. Name/Address of Applicant: _____
2. Telephone/Fax/E-mail Address: _____
3. Address of Proposed Work: _____
4. Reason for Work: _____
5. Is Excavation (Removal of Surface and Subsurface Materials) Required: Yes No (circle)
 - a. If yes, Please Explain: _____
6. Size of Street Cut and Excavation (Length, Width, & Depth): _____
7. Name/Address/Telephone Number of Person or Firm Performing the Cut and Excavation: _____
 - a. Name and Title of Representative in Charge of Work: _____
8. Date of Commencement of Work: _____
9. Anticipated Date of Completion of Work: _____
10. Name/Address/Telephone Number of Person or Firm Performing Street Reclamation: _____
 - a. Name and Title of Representative in Charge of Work: _____
 - b. Describe Method of Reclamation: _____
11. \$100.00 Permit Fee Submitted: Yes No (circle)
12. Plat Map or Scaled Drawing Submitted: Yes No (circle)
13. Cash Bond: Yes No (circle)
14. Performance Bond: Yes No (circle)
15. Applicant is:
 - a. Individual _____
 - b. Firm _____
 - c. Public Utility _____
16. Applicant, by signing below, in consideration for the issuance of a street cut permit, agrees to hold harmless and indemnify the Town of Whiteland, its officers, employees, agents and representative against any and all damages and claim for damages which may be asserted against said Town, etc. by reason of or arising out of the street cut or excavation and any work done as a result thereof for which a permit has been issued.

Applicant Signature: _____

Approved By: _____

Permit Number: _____ Date Issued: _____

Permit Denied: _____ Reason: _____

-
- The permit holder shall be responsible for a period of three years from the date of completion for maintaining the area in the public right-of-way.
 - Right-of-way permits will be open for a period of 90 days. Permits shall be activated within 90 day period by contacting the Town. Once activated permittee will have a period of five working days to excavate and restore the area to the Town Construction Guidelines and Details.
 - If a road closure is necessary, a written request shall be submitted to the Town of Whiteland at least 10 days prior to the proposed closing date.
 - Traffic control is the contractor's responsibility. Barricades, signals, and flagmen, conforming to the Indiana State Manual on Uniform Traffic Control Devices are to be provided by the contractor.
 - The contractor is responsible for notifying all utilities for underground installation locations.

PLEASE SKETCH PROPOSED WORK ON THE BACK OF THIS PAGE

APPENDIX B
APPLICATION TO CLOSE/OBSTRUCT ANY STREET/SIDEWALK
TOWN OF WHITELAND, IN 46184
PHONE: (317)535-5531 FAX: (317)535-8724

1. Permit Number: _____
2. Date of Obstruction: _____
3. Company/Corporation/Organization: _____
4. D/B/A: _____
5. Owner/Manager: _____
6. Address of Applicant: _____
7. Telephone/Fax/E-mail Address: _____
8. Purpose of Closure: _____
9. Description of Obstructed Area: _____

Applicant Signature: _____ Date: _____

Approved By: _____ Date: _____
Street Superintendent Signature

Approved By: _____ Date: _____
Town Manager Signature

Approved By: _____ Date: _____
Police Chief Signature

Approved By: _____ Date: _____
Fire Chief Signature

Approved By: _____ Date: _____
Planning and Zoning Director Signature

1-copy Applicant 1-copy Clerk-Treasurer 1-copy Police Chief 1-copy Fire Chief 1-copy Town of Whiteland

APPENDIX C
DEMOLITION PERMIT

TOWN OF WHITELAND, IN 46184

PHONE: (317)535-5531 FAX: (317)535-8724

1. Address of Demolition Work: _____
2. Name/Address of Applicant: _____
3. Telephone/Fax/E-mail Address: _____
4. Category of Demolition: _____ Demolition _____ Removal/Relocation
5. Address of Proposed Relocation: _____
6. Height of Structure: _____ No. of Stories: _____
7. Ground Floor Area: _____
8. Type of Structure:
 - a. Accessory: _____
 - b. Addition: _____
 - c. Addition to Accessory Structure: _____
 - d. Addition to Principal Structure: _____
 - e. Principal: _____
 - f. Specialized/Unique: _____
9. Existing Use of Structure:
 - a. Multi-Family: _____ Number of Units: _____
 - b. Non-Residential: _____
 - c. 1 Family Dwelling: _____
 - d. 2 Family Dwelling: _____
10. If removing a residential detached garage, will the slab remain to be used for parking: Yes No (circle)
11. Utility Disconnect Letters:
 - a. Water Department: _____ Yes _____ No _____ n/a
 - b. Wastewater Department: _____ Yes _____ No _____ n/a
 - c. Electric Company: _____ Yes _____ No _____ n/a
 - d. Gas Company: _____ Yes _____ No _____ n/a
 - e. Telephone Company: _____ Yes _____ No _____ n/a
12. Applicant, by signing below, in consideration for the issuance of a demolition permit, agrees to hold harmless and indemnify the Town of Whiteland, its officers, employees, agents and representative against any and all damages and claim for damages which may be asserted against said Town, etc. by reason of or arising out demolition or wrecking or any work done as a result thereof for which a permit has been issued.

Record Titleholder Authorization Statement:

The undersigned hereby state under the penalties for perjury that they are the titleholder of the herein-described premises located at _____ and have appointed _____ (our) agent and that they are authorized to raze the structure described herein. This statement is made to induce the Building Commissioner to issue a Demolition Permit.

Titleholders Signature

Town Building Commissioner Signature

APPENDIX D
MAJOR THOROUGHFARES
WITHIN WHITELAND TOWN LIMITS

Street	From	To
Interstate 65	Town Limits	Town Limits
E 600 N (Tracy Rd)	US – 31	I – 65
E 500 N (Whiteland Road)(Main Street)	Town Limits	Town Limits
US – 31	Town Limits	Town Limits
Graham Road	Town Limits	Town Limits
Front Street	E 600 N (Tracy Rd)	E 500 N (Whiteland Road)(Main Street)
Emerson Avenue	Town Limits	E 600 N (Tracy Rd)
Paul Hand Boulevard	Town Limits	Town Limits

Major thoroughfares were based on streets that were classified as minor collectors, major collectors, minor arterials, other principal arterials, other freeways or expressways, and interstates by the Roadway Inventory map supplied by INDOT at [gis.in.gov/apps/DOT/Roadway Inventory](http://gis.in.gov/apps/DOT/Roadway%20Inventory). For updates to this table, please consult the supplied INDOT map.

APPENDIX E

The Town of Whiteland, Indiana Typical Construction Guidelines and Details, dated August, 2013 are herein incorporated as Appendix E.

APPENDIX F
NOTICE OF VIOLATION
TOWN OF WHITELAND, IN 46184
PHONE: (317)535-5531 FAX: (317)535-8724

On the ____ day of _____, 20____, the right-of-way work performed by you or your representative at _____, Whiteland, Indiana was inspected by this office and was found to be in non-compliance with the Standards and Specifications set by the Town of Whiteland.

Permit Number: _____

Comments on Violation: _____

Upon completion of the work it shall be the duty and responsibility of the permittee to fill, replace, and repair such openings in the streets that the permittee has opened according to plans and specifications of the Town of Whiteland. The permittee shall be responsible for maintaining the cut to adhere to all applicable standards for a period of three (3) years from the date of the inspection and approval by the Town of Whiteland.

You are hereby notified that you have ten days from the date of this notice to bring the right-of-way into compliance with the Standards and Specifications of the Town of Whiteland.

Failure to comply to with the provisions of this notice will result in further legal action pursuant to Town Code §95.99 and fines imposed. Additionally, the Town Code may give the Town the option to fix the violation and recover costs from the permittee.

Dated this ____ day of _____, 20____

Whiteland Planning and Zoning Office
or representative

APPENDIX G
WATER CONNECTION AND CONSENT TO ANNEXATION AGREEMENT
TOWN OF WHITELAND, IN 46184
PHONE: (317)535-5531 FAX: (317)535-8724

This Agreement is made and entered into by and between the Town of Whiteland Water Department through the Town Council (the Town), and _____ (Owner), owner of the premises known as _____, Johnson County, Indiana (Property), more particularly described in Attachment A, which is attached hereto and made a part hereof.

WHEREAS, the Town owns and operates a water transmission main, and Owner owns land and improvements on such land which adjoins or abuts the land through which passes the above water main;

WHEREAS, the land owned by Owner is outside the incorporated area of the Town of Whiteland; and,

NOW THEREFORE, for the mutual covenants and considerations set out herein, the parties agree as follows:

1. That this Agreement shall be in full force and effect from the date of execution set forth below;
2. That the Owner, after connection shall be permitted to receive water service from the Town of Whiteland only such as is permissible under the rules, regulations, and ordinances of the Town of Whiteland, and the laws of the state of Indiana and federal government, as may be applicable.
3. That Owner shall be liable for the construction and maintenance of any water connecting to the Town's water main which serves land owned by Owner and that Owner shall construct Owner's water line in accordance with the stipulations prescribed by the Town, including but not limited to size of pipe, type of connection, inspection of connection before backfilling, and resurfacing of area used for laying of water line.
4. That this agreement shall run with the real estate, shall be recorded in the office of the county recorder, shall be binding upon Owner, his/her personal representatives, heirs, devisees, grantees, successors, and assigns.
5. That Owner consents to the annexation of the Property (see Attachment A) into the Town, and agrees that Owner will not remonstrate or in any way contest such annexation.
6. That the Owner shall pay the Town's current, established connection fee, at the rate established for the size of pipe used by the Owner in the Town's connection fee ordinance (see Chapter 51), prior to connecting to the Town's water main, and shall thereafter pay any established monthly fees. Inspections done afterhours will cost \$75, in an emergency Inspections will be \$50.
7. That Owner shall not permit any other person or persons, corporation, partnership or owner to connect to the water main owned and constructed under the terms of this Agreement. It is mutually agreed and understood by the parties hereto that this agreement is for the purpose of servicing a one family dwelling, which dwelling shall be inhabited by only one family. It is further understood and agreed that, should this section of this agreement not be kept by Owner, the Town may, at its option, cease providing water service to owner without notice.
8. That, upon the Property being annexed into the Town of Whiteland, this agreement shall automatically terminate.

Executed this _____ day of _____, _____.

**Town of Whiteland
Town Council**

Owner

Robert Zehr, President

Kent Beeson, Vice President

Ed Tichenor, Member

Chris Hadley, Member

Roger Ford, Member

STATE OF INDIANA)
) SS:
COUNTY OF JOHNSON)

Before me, the undersigned Notary Public, in and for said County and State, personally appeared _____ who acknowledged the execution of the foregoing Water Connection and Consent to Annexation Agreement as his/her voluntary act and deed for the purposes therein expressed.

Sworn before me this _____
day of _____, _____.

Notary Public

My commission expires:

APPENDIX H
SEWER CONNECTION AND CONSENT TO ANNEXATION AGREEMENT
TOWN OF WHITELAND, IN 46184
PHONE: (317)535-5531 FAX: (317)535-8724

This Agreement is made and entered into by and between the Town of Whiteland Sewer Department through the Town Council (the Town), and _____ (Owner), owner of the premises known as _____, Johnson County, Indiana (Property), more particularly described in Attachment A, which is attached hereto and made a part hereof.

WHEREAS, the Town owns and operates a sanitary sewer, and Owner owns land and improvements on such land which adjoins or abuts the land through which passes the above sanitary sewer;

WHEREAS, the land owned by Owner is outside the incorporated area of the Town of Whiteland; and,

NOW THEREFORE, for the mutual covenants and considerations set out herein, the parties agree as follows:

1. That this Agreement shall be in full force and effect from the date of execution set forth below;
2. That the Owner, after connection shall be permitted to discharge into the Town's sanitary sewer only such effluent as is permissible under the rules, regulations, and ordinances of the Town of Whiteland, and the laws of the state of Indiana and federal government, as may be applicable.
3. That Owner shall be liable for the construction and maintenance of any sewer connecting to the Town's sanitary sewer which serves land owned by Owner and that Owner shall construct Owner's sewer in accordance with the stipulations prescribed by the Town, including but not limited to size of pipe, type of connection, clean out openings, inspection of connection before backfilling, and resurfacing of area used for laying of sewer.
4. That Town will receive and treat all effluent discharged by owner into said sewer owned by the Town.
5. That this agreement shall run with the real estate, shall be recorded in the office of the county recorder, shall be binding upon Owner, his/her personal representatives, heirs, devisees, grantees, successors, and assigns.
6. That Owner consents to the annexation of the Property (see Attachment A) into the Town, and agrees that Owner will not remonstrate or in any way contest such annexation.
7. That the Owner shall pay the Town's current, established connection fee, at the rate established for the size of pipe used by the Owner in the Town's connection fee ordinance, prior to connecting to the Town's sanitary sewer, and shall thereafter pay any established monthly treatment fees.
8. That Owner shall not permit any other person or persons, corporation, partnership or owner to connect to the sewer owned and constructed under the terms of this Agreement or to discharge effluent into such sewer owned by Owner; it is further mutually agreed and understood by the parties that this agreement shall permit the discharge by Owner into the sewer owned by the Town of domestic sewerage only, unless approved by Town. It is mutually agreed and understood by the parties hereto that this agreement is for the purpose of servicing a one family dwelling, which dwelling shall be inhabited by only one family. It is further understood and agreed that, should

this section of this agreement not be kept by Owner, the Town may, at its option, cease receiving effluent from said sewer of owner without notice.

- 9. That, upon the Property being annexed into the Town of Whiteland, this agreement shall automatically terminate.

Executed this _____ day of _____, _____.

**Town of Whiteland
Town Council**

Owner

Robert Zehr, President

Kent Beeson, Vice President

Ed Tichenor, Member

Chris Hadley, Member

Roger Ford, Member

STATE OF INDIANA)
) SS:
COUNTY OF JOHNSON)

Before me, the undersigned Notary Public, in and for said County and State, personally appeared _____ who acknowledged the execution of the foregoing Sewer Connection and Consent to Annexation Agreement as his/her voluntary act and deed for the purposes therein expressed.

Sworn before me this _____
day of _____, _____.

Notary Public

My commission expires:

APPENDIX I

(OFFICE USE)

TOWN OF WHITELAND
549 MAIN STREET
WHITELAND, IN 46184
OFFICE (317) 535-5531 FAX (317) 535-8724

CODE _____
ROUTE _____
ACCT. # _____
METER ID # _____
FIRE HYD. CODE _____
TRASH CODE _____
STORM SEWER CODE _____
LOT INFO _____
PAGE NUMBER _____

TOWN OF WHITELAND UTILITIES SERVICE APPLICATION

POSSESSION DATE _____ (Please print or type information)

CUSTOMER _____ SOCIAL SECURITY # _____
DATE OF BIRTH ____/____/_____
EMPLOYER _____
STREET ADDRESS _____
CITY/STATE/ZIP CODE _____

SPOUSE _____ SOCIAL SECURITY # _____
DATE OF BIRTH ____/____/_____
EMPLOYER _____
STREET ADDRESS _____
CITY/STATE/ZIP CODE _____

SERVICE ADDRESS _____

TELEPHONE # (____) _____

BILLING ADDRESS, IF DIFFERENT FROM SERVICE ADDRESS

OWNERSHIP STATUS: (Check one of the following)

- _____ Tenant at Service Address
- _____ Own Real Estate with Mortgage
- _____ Own Real Estate with no Mortgage
- _____ Purchasing Real Estate by Contract

Please provide the name, address, and telephone # of landlord, mortgage company and/or contract seller (whichever is appropriate)

(____) _____

The undersigned, and each of them, agree, that they are financially and legally responsible for any and all Town of Whiteland water and sewer charges for the above referenced service address. The undersigned financial and legal responsibility for Town of Whiteland water and sewer charges shall be on the date that service is initiated, and continue until service is terminated. In the event that the undersigned customer(s) fail to make payment for Town of Whiteland water and sewer charges, the Town of Whiteland shall be entitled to recover the actual amount of water and sewer charges due, interest and late charges and the cost of collection, including reasonable attorney's fee.

Customer Signature

Customer Signature

Date

Photo ID Required

APPENDIX J

SAMPLE SUBDIVISION IMPROVEMENT AGREEMENT FORM

This Agreement, made by and between the Town of Whiteland Town Council (“Council”) and [name of Subdivider] (“Subdivider”).

Preamble

WHEREAS, Subdivider applied to the Plan Commission for primary plat approval for the [name of subdivision];

WHEREAS, on [date of approval], the Plan Commission granted Subdivider primary plat approval for the [name of subdivision] but conditioned such approval on the installation of certain public improvements throughout the subdivision;

WHEREAS, the Town of Whiteland Subdivision Control Ordinance states and requires that each secondary plat submitted to the Commission shall be accompanied by a subdivision improvement agreement that is secured by a financial guarantee, if the required public improvements have not been completed;

WHEREAS, Subdivider applied to the Plan Commission Staff for secondary plat approval, as authorized by the Plan Commission, for the [name of subdivision];

WHEREAS, Subdivider has not completed the required public improvements, namely improvements to [general description of public improvements], and desires to submit a subdivision improvement agreement, secured by [type of financial guarantee], in order to qualify for secondary plat approval.

NOW, THEREFORE, IN CONSIDERATION OF THE PROMISES AND MUTUAL COVENANTS CONTAINED IN THIS AGREEMENT:

Promises and Mutual Covenants

(1) Subdivider submits herewith to the Council a(n) [type of financial guarantee] in the amount of [amount of financial guarantee], in favor of the Town of Whiteland, to secure the completion of all required public improvements at the [name of subdivision].

(2) Subdivider agrees to complete the [name of subdivision] public improvements on or before [date of dedication of public improvements], in accordance with the construction and design standards set forth or incorporated in the Town of Whiteland Subdivision Control Ordinance, the Town of Whiteland Design Standards and Specifications Manual, and in accordance with the development plans set forth or incorporated in the approved [name of subdivision] Plat and application materials.

(3) The parties acknowledge and agree that the Plan Commission Staff may withhold improvement location permits for any undeveloped [name of subdivision] lot unless and until Subdivider has completed the public improvements that serve the lot.

(4) The parties acknowledge and agree that time is of the essence and that any failure by Subdivider to strictly adhere to the foregoing schedule (paragraph number 2 above) would constitute a material breach and violation of this Agreement. Upon such violation, or any other violation of this Agreement, the Council may submit a claim under the [type of financial guarantee] in an amount sufficient to cover the breach.

(5) The parties acknowledge and agree that by accepting the [type of financial guarantee] from Subdivider and that by entering into this Agreement, the Town has not and does not waive any of its rights with respect to the

enforcement of the Town of Whiteland Subdivision Control Ordinance and/or approval granted thereunder in relation to the [name of subdivision], against the Subdivider.

IN WITNESS WHEREOF, the Town Council, by its President, and Subdivider execute this Agreement this _____ day of [month], [year].

WHITELAND TOWN COUNCIL

SUBDIVIDER

President

[name of Subdivider]

Member

Member

Member

Member

ATTEST:

Clerk-Treasurer

Town of Whiteland

APPENDIX K

SAMPLE MAINTENANCE AGREEMENT FORM

State of Indiana: County of Johnson: THIS AGREEMENT made and entered into this ____ day of _____, 20____, by and between (name of subdivider), and the Town of Whiteland, herein represented by the Whiteland Town Council.

WITNESSETH:

WHEREAS, the Subdivider has subdivided lots ____ through _____, _____ Subdivision, and has received approval and acceptance from the Council for subdivision improvements constructed herein; and

WHEREAS, under the provisions of the Subdivision Control Ordinance, the Subdivider is required to maintain certain improvements for a period of three (3) years;

NOW THEREFORE, it is hereby agreed by and between the Subdivider and the Council that the Subdivider hereby agrees to keep all public improvements, which includes, without limitation, filled trenches, pipes, manholes, structures, and paved and unpaved surfaces, constructed in _____ Subdivision in good condition, and will make such repairs to any defect in materials or workmanship as may develop or be discovered when called upon to do so by the Council.

It is agreed that this Agreement shall be in full force and effect for a period of three (3) years from _____, 20____.

IN WITNESS THEREOF, these presents have been signed in the presence of the undersigned competent witnesses, at on this ____ day of _____, 20____.

WITNESSES: (NAME OF SUBDIVIDER OR DEVELOPMENT COMPANY)

TOWN OF WHITELAND, INDIANA

TOWN COUNCIL

Council President

ATTEST:

Clerk-Treasurer

Town of Whiteland, Indiana

