

3.6 Drainage

A. General Drainage Requirements

1. The *Plan Commission* shall not approve any *Subdivision* which does not make adequate provision for storm or flood water runoff channels or basins.
2. The storm water drainage system shall be separate and independent of any sanitary sewer system.
3. Storm sewers, where required, shall be designed by the Rational Method, or other methods as approved by the *Town Engineer*, and a copy of the design computations shall be submitted along with the construction plans.
4. Inlets shall be provided so that surface water is not carried across or around any intersection, nor for a distance of greater than four-hundred (400) feet on *Local Streets*, three-hundred (300) feet on *Collector Streets*, and as indicated by approved calculations submitted to the *Town Engineer* based upon a ten (10) year design storm and maximum spread as provided by the *Town Engineer* on *Arterial Streets*. Additional inlets shall be required when encroachment of storm water into the *Street* disrupts traffic under the ten (10) year design storm.
5. The *Subdivider* shall provide a grading plan at a maximum scale of 1"=60' showing surface water drainage patterns on each *Lot* and *Street*.
6. The *Subdivider* shall provide storm water conveyance facilities in accordance with the *Town Standards*, Plainfield Ordinance No. 17-97, "Drainage and Erosion Control Ordinance", and the Storm Water Drainage Manual by Christopher B. Burke, Highway Extension and Research Project for Indiana Counties and Cities, School of Engineering, Purdue University, West Lafayette, Indiana.

B. Nature of Storm Water Facilities

1. Location

The *Subdivider* may be required by the *Plan Commission* to carry away, by pipe or open ditch, any spring or surface water that may exist, either previously to, or as a result of the *Subdivision*. Such drainage facilities shall be located in the *Street Right-of-Way* or in perpetual, unobstructed easements of appropriate width, and shall be constructed in accordance with the Town of Plainfield construction standards and specifications.

Whenever a change of land use occurs, concentrated storm water discharge to adjacent areas shall not be permitted unless the discharge is conveyed through a suitable drainage feature to: (i) an approved outlet within the *Right-of-Way*; (ii) an existing drainage easement; (iii) a defined drainageway as approved by the *Town Engineer*; or (iv) an open ditch which appears as a dashed or solid blue line on the 7.5 Minute Series Topographic Quadrangle Map as published by the United States Geological Survey. The drainage feature used to convey the site discharge to the approved outlet shall be located in the *Right-of-Way* or easement of appropriate width.

2. Public Storm Sewers

With the exception of storm water conveyance along non-residential *Local Streets* within the I-2, I-3 and I-4 *Districts*, all storm water conveyance within or parallel to and adjacent to the public *Right-of-Way* shall be fully contained in storm sewers with an adequate and approved outlet. Residential *Subdivisions* containing *Lots* of less than 15,000 square feet and Non-Residential *Subdivisions* shall be provided with storm sewers to convey all on-site drainage. However, on-site drainage swales with required conveyance capacity of less than five (5) cubic feet per second under the ten (10) year post-development design storm may be allowed.

3. Accommodation of Upstream Drainage Areas

A culvert, storm sewer, open ditch, or other drainage facility shall, in each case, be large enough to convey potential runoff from its entire upstream drainage area, whether inside or outside the *Subdivision*. The minimum conveyance provided for upstream, off-site drainage areas shall be the runoff resulting from the one-hundred (100) year storm over the present state of upstream, off-site drainage areas. The conveyance provided for upstream waters may be decreased to the extent that hydrograph routing and detention on land controlled by the *Subdivider* and dedicated to the Town of Plainfield as a drainage easement allows for decreased capacity; provided, that the runoff resulting from the one-hundred (100) year storm is staged less than one (1) foot above the stage on the natural drainage way at the interface of the development with the upstream drainage area.

Culvert capacities for conveyance under interior *Local*, *Collector*, and *Arterial Streets* without roadway overtopping shall be the runoff resulting from the twenty-five (25) year, fifty (50) year, and one-hundred (100) year storms respectively over off-site areas in present state and on-site areas in post development state. *Driveway* culvert capacities shall be the capacities required for the *Street* classification to which the *Driveway* connects. Greater culvert capacity shall be required to protect the finished floor elevation of *Buildings* from the post-development one-hundred (100) year storm when, in the opinion of the design engineer or the *Town*

Engineer, the finished floor elevation is threatened. It is recommended that drainage of loading docks or other building features which are proposed at an elevation lower than adjacent roadways be considered with respect to culvert drainage impacts.

4. Effect on Downstream Drainage Areas

The release rate of storm water from development, redevelopment and new construction shall not exceed the storm water runoff rate from the land in its present state of development.

5. Areas of Poor Drainage

Areas which are not in the floodplain, but which contain soils subject to flooding, may be approved for *Subdivision* by the *Plan Commission*, provided that the *Subdivider* fills the affected areas of said *Subdivision* to an elevation sufficient to place *Building* sites and *Streets* two (2) feet above the ponding levels.

6. Areas of High Seasonal Water Tables

In areas characterized by soils having a high seasonal water table as determined by the Hendricks County Soil and Water Conservation District, *Lots* shall be limited to slab type construction unless the *Plan Commission* determines that appropriate engineering techniques will be applied to alleviate the subsurface problem.

7. Special Flood Hazard Areas

If any portion of a proposed *Subdivision* lies within the floodplain, the *Subdivision* shall comply with Plainfield Ordinance No. 1-96, "Management of the Floodplain and Other Areas of Special Flood Hazard of the Town of Plainfield".

C. Dedication of Drainage Easements

1. General Requirements

- a. When a *Subdivision* is traversed by a watercourse, drainageway, channel or stream, a storm water easement or drainage *Right-of-Way* shall be provided granting or dedicating to the Town of Plainfield said area in an amount conforming substantially to the lines of such watercourse, and of such width and construction as will be adequate for the purpose of accommodating drainage and providing for the maintenance of the *Right-of-Way*.

- b. Wherever possible, it is desirable that the drainage be maintained as an open channel with landscaped banks and adequate width for maximum potential volume of flow.
- c. All storm water easements and drainage *Rights-of-Way* which are to be dedicated to the Town of Plainfield on the *Secondary Plat* shall use the following language: "All storm water easements and drainage rights-of-way shown on this plat are hereby dedicated to the Town of Plainfield, Indiana."

2. Drainage Easements

- a. Where topography or other conditions are such as to make impractical the inclusion of drainage facilities within *Street Rights-of-Way*, perpetual, unobstructed easements for drainage facilities measuring at least fifteen (15) feet in width shall be provided across property outside of *Street Right-of-Way* lines. All drainage easements shall provide *Access* to a *Public Street*. Drainage easements shall extend from the *Street* to a natural watercourse or to other drainage facilities.
- b. The *Subdivider* shall dedicate, either in fee or by drainage or conservation easement to the Town of Plainfield, land on both sides of existing watercourses of a width to be determined by the *Plan Commission* and, in the case of legal drains, by the County Drainage Board.
- c. When a proposed drainage system will carry water across private land outside the *Subdivision*, appropriate drainage rights satisfactory to the *Plan Commission* shall have been secured and indicated on the *Secondary Plat*.
- d. Low-lying land along watercourses subject to flooding or overflowing during storm periods, whether or not included in areas for dedication, shall be preserved and retained in their natural state as drainage ways. Such land or lands subject to periodic flooding shall not be counted in satisfying the *Minimum Yard* or *Lot Area* requirement of the Plainfield Zoning Ordinance.
- e. All drainage easements shall be indicated on the *Secondary Plat* and which are to be dedicated to the Town of Plainfield shall use the following language: "All drainage easements shown on this plat are hereby dedicated to the Town of Plainfield, Indiana."

D. Connection to Town Drainage Utilities

Whenever practical, all *Subdivisions* within the Town of Plainfield shall connect to drainage utilities provided by the Town of Plainfield. In those instances where the *Plan Commission* determines that connection to Town of Plainfield drainage utilities would pose an unusual or unnecessary hardship at the time of development, the *Plan Commission* may make a recommendation to the Town Council to approve a connection to another public or semi-public drainage utility, provided, however, that all drainage facilities are installed to Town of Plainfield standards or alternative standards approved by the *Town Engineer*, and, provision is made in the design and layout of the drainage facilities for connection to the Town of Plainfield drainage utilities at such time as the Town of Plainfield extends drainage utility facilities to the *Subdivision*.

E. Maintenance Responsibility for Detention/Retention Facilities

The *Subdivider* shall be responsible for the maintenance of all detention and retention facilities during construction. After construction, the owner of the real estate shall be responsible for the maintenance of all detention and retention facilities. Assignment of the responsibility for maintaining a detention or retention facility which serves more than one *Lot* or land holding shall be permitted only where:

1. Such assignment of maintenance responsibility for the detention or retention facilities has been documented by properly executed and recorded covenants or deed restrictions; or,
2. A public body is informed of the desire to have public maintenance of the detention or retention facilities at the time of filing for *Primary Plat* approval, the final drainage plans are approved by such public body prior to construction, and the public body formally accepts the maintenance responsibility for the detention or retention facilities.