

SITE PLAN REVIEW CHECKLIST

Drainage Review:

IF for Building Department (no rezoning):

- The final amount of on site stormwater runoff to be stored is the **DIFFERENCE** between the amount of runoff generated by the proposed work and the existing conditions.
- Site is only required to provide additional storage for the proposed work. If proposed work is on existing impervious area, then technically no additional storage is needed.

IF for Area Plan Commission (rezoning required):

- The final amount of onsite stormwater runoff to be stored is the **TOTAL** amount of runoff generated by the **ENTIRE** site. 100% of stormwater runoff shall be stored on site unless a release rate is approved.

Storm Water Runoff Calculations:

- Property shall retain all water from a 24 hour, 100 year storm plus 6% for siltation.
- Adjacent property contributing to runoff shall be taken into considerations.
- For areas up to and including 200 acres, the Rational Method shall be used.
 - $Q = CIA$
 - C = runoff coefficient
 - I = rainfall intensity of 24 hour, 100 year storm (**0.234 in/hr**)
 - A = total drainage area in acres (**1 acre = 43,560 ft²**)

RUNOFF COEFFICIENTS (multiple by 1.1 for 100 year storm)

Roof:	0.96*1.1 = 1.00
Concrete:	0.92*1.1 = 1.00
Asphalt:	0.90*1.1 = 0.99
Gravel:	0.70*1.1 = 0.77
Lawn:	
Sandy, <2% Slope:	0.07*1.1 = 0.08
Sandy, 2-7% Slope:	0.12*1.1 = 0.13
Sandy, >7% Slope:	0.20*1.1 = 0.22
Clay, <2% Slope:	0.16*1.1 = 0.18
Clay, 2-7% Slope:	0.21*1.1 = 0.23
Clay >7% Slope:	0.30*1.1 = 0.33

WEIGHTED RUNOFF COEFFICIENTS

	AREA (ft ²)	AREA (acre)	COEFF.	TOTAL
Roof	1,998	0.046	1.00	1,998
Asphalt	180	0.004	0.99	178
Gravel	4,967	0.114	0.77	3,825
Lawn	8,515	0.195	0.08	681
TOTAL	15,660	0.36		6,682

- If Weighted Runoff Coefficient ≤ 0.30, then the minimum value shall be **0.45**
- If Weighted Runoff Coefficient > 0.30, then the minimum value shall be **0.60**
- If Weighted Runoff Coefficient >0.60, then use the calculated value.

Weighted Runoff Coefficient = 6,682/15,660 = 0.43 (0.43 > 0.30, so use **0.60**)

$$Q_d = C_d I_d A$$

$$Q_d = (0.60) (0.234 \text{ in/hr}) (0.36 \text{ acre}) = 0.05 \text{ ft}^3/\text{sec}$$

$$0.05 \text{ ft}^3/\text{sec} (24 \text{ hours}) (60 \text{ min}) (60 \text{ sec}) = 4,320 \text{ ft}^3$$

$$4,320(1.06) = \mathbf{4,579 \text{ ft}^3 \text{ Storage Volume Required}}$$

- Runoff Release Rate Determination
 - A runoff release may be used if there is a stream channel into which the water is to be released. The release rate shall be approved by the St. Joseph County Engineer.
 - The allowable runoff release rate shall be based on the undeveloped condition of the property.
 - $Q_u = C_u I_u A$
 - The weight runoff coefficient “ C_u ” shall be calculated based on the undeveloped condition of the property. The maximum runoff coefficient “ C_u ” shall be **0.20**.
 - The rainfall intensity “ I_u ” shall be based on the undeveloped time of concentration.
 - The release structure inlet shall be placed a distance above the bottom of the detention basin suitable to allow for the undisturbed settlement of silt and debris.
- Retention Basin Design Requirements
 - Open retention basins shall have a 4:1 maximum pond slope. Retention basins may have steeper slopes, but a “swimming pool grade” fence and gate shall be required.
 - All retention basins adjacent to roadways shall have 6:1 slopes.
 - Retention basins contained by raised berms shall have 2 feet of freeboard to prevent blowouts when overtopped. Ponds not contained by a raised berm do not require any additional freeboard.

Right-of-Way Access & Safety Review

- Driveway construction within the County Right-of-Way shall conform to County Standards for driveway dimensions and INDOT pavement thickness for commercial drives (Class III & IV). See attached details.
- If a culvert is required under a drive, within the County Right-of-Way, it shall be a minimum size of 12”.
- Driveways shall be constructed in safe locations.
 - Driveways shall not be less than 150 feet from an intersection
 - Proposed driveways where line of sight is less than desirable shall require horizontal/vertical line of sight calculations be submitted. Line of sight calculation shall be submitted in graphical form and shall meet AASHTO guidelines.
- Individual properties shall only have one access to the County Right-of-Way. In cases where multiple access points are deemed necessary, there shall be a minimum separation on 150 feet.
- Accel/decel lane shall meet St. Joseph County requirements. The need for an Accel/decel lane is decided on a case by case basis. Arterial and Collectors shall require them, and local street shall not.
- Passing blisters may be required where accel/decel lanes are required and traffic exceeds 4000 ADT. St. Joseph County Traffic Counts can be accessed on the MACOG GIS website: <http://www.macoggis.com/Applications/TrafficCountMap.htm>
- Site plans shall have note on plan that states:

Prior to construction within the St. Joseph County Right-of-Way a permit must be obtained at:

St. Joseph County Department of Public Works
Room 732, County-City Building
227 W. Jefferson Blvd. South Bend, IN 46601
Phone: (574) 235-9626 Fax: (574) 235-5057

Stormwater Quality Review

- Need to state on site plan the soil types and the depth to the ground water table.
- Site plan needs to have a Post Construction Maintenance Plan that states the frequency, type of work, contact person and their information.
- A Stormwater Pollution Prevention Plan (SWPPP) shall be required for any land disturbing activities greater than 1 acre or as deemed necessary by MS4 Coordinator.
 - The SWPPP shall follow requirements as outlined in St. Joseph County Ordinance 33-06 – Construction Site Stormwater Runoff Requirements.
 - SWPPP shall also adhere to Indiana Administrative Code 15-5-1 through 15-5-12 (Rule 5) for Construction Site Stormwater Runoff Control
 - SWPPP can be submitted to the St. Joseph County Department of Public Works along with a copy of the Rule 5 Notice of Intent (NOI) and a \$150.00 filing fee made payable to “St. Joseph County, Indiana”.
- If a runoff release rate is approved by St. Joseph County Engineer, the site may be subject to further consideration of stormwater quality measures and best management practices (BMP’s) to minimize pollutants from entering receiving waters.

Additional Requirements

- St. Joseph County Health Department requires the following minimum setbacks:
 - 50 feet between septic and retention basins
 - 50 feet between well heads and retention basins
 - 100 feet between septic and well heads.
- Site being rezoned adjacent to County Roadways may require additional Right-of-Way dedication. Typical dedication is 40 feet from the centerline of road. Final width is site specific.

St. Joseph County Contacts:

- Department of Public Works – (574) 235-9626
- County Surveyor/Drainage Board – (574) 235-9631
- Area Plan Commission – (574) 235-9571
- Building Department – (574) 235-9554
- Health Department – (574) 235-9750

St. Joseph County, IN – Basic Criteria for Design is available in the St. Joseph County Department of Public Works. This document further explains St. Joseph County requirements.