

# DRAINAGE DESIGN CHECKLIST FOR ACCESSING STATE TRUNKLINES

**INSTRUCTION: ALL FIELDS SHALL BE COMPLETED BY THE APPLICANT.**

This checklist provides the required information necessary for MDOT review of drainage connections within MDOT right of way (ROW). MDOT's Drainage Manual (DM) should be used as the primary reference for hydrologic and hydraulic calculations and can be found at: [https://www.michigan.gov/mdot/0,4616,7-151-9621-11041\\_91575\\_91583-93193--,00.html](https://www.michigan.gov/mdot/0,4616,7-151-9621-11041_91575_91583-93193--,00.html). MDOT will not accept drainage connections from properties that do not naturally drain to the MDOT ROW.

**Base Information** (Provide all)

- Contour map of existing and proposed conditions
- Hydrologic analysis of existing and proposed conditions (Rational or modified rational methods are not acceptable for determining volume.)
- Plans of proposed storm water conveyance system
- Outlet control details
- Connection details to MDOT system
- Hydraulic design calculation
- Certification Statement (Signed by a Michigan Registered Professional Engineer.)

**Information for Detention/Retention Basins**

- Elevation vs storage table or curve
- Elevation vs discharge table or curve
- Soil boring information showing groundwater elevations, permeability tests shall be performed for infiltration basins

**Flood Routing Method** (Choose one. Required for sites with detention and/or retention.)

- NRCS TR55
- TR20
- Modified Puls Method
- HEC-1
- Other \_\_\_\_\_

Notes:

1. Program must use a hydrograph to calculate volume.
2. The rational or modified rational methods are not acceptable for flood routing.

**Additional Information** (Provide all that apply)

- Public Drainage Easement(s)  
(Required when multiple properties share the proposed drainage system)
- NPDES Storm Water Industrial Permit (Certificate of Coverage)  
(Required when storm water discharge associated with industrial activities defined by 40 CFR 122.25(b)(14)).
- Energy Dissipation details to control outlet velocities  
(Required when proposed velocity is greater than 6 fps)
- Outlet shut off details for water quality purposes  
(Required when the possibility for a potentially hazardous material spillage exists)
- Local Requirements  
(Required when either flows or storage volumes are more restrictive than MDOT's requirements. Meeting local requirements does not necessarily indicate MDOT requirements have been met.)
- Digital copy of modeling program  
(Required when computer application is used)
- Input and output reports in .pdf format for the range of flows  
(Required when computer application is used)

**Water Quality**

- Applicant verifies that the discharge to MDOT's stormwater system will not cause a violation of [MDOT's National Pollution Discharge Elimination System stormwater discharge permit](#).

**Data Summary**

Frequency	Existing flow to MDOT ROW		Proposed flow to MDOT ROW						
	Discharge (cfs)	Run off Volume (cft)	Without detention			With required detention***			
			Discharge (cfs)	Velocity * (ft/s)	Run off Volume (cft)	Discharge (cfs)	Velocity (ft/s)	Required Storage Volume** (cft)	Water Surface Elevation (ft)
10-year Storm Event									
50-year Storm Event									
100-year Storm Event Harmful Interference Evaluation									
Drainage Area (Acres)									
Design Storage Volume (cft)									

\* Not applicable (N/A) if "sheet flow" into MDOT right of Way, or detention is proposed.

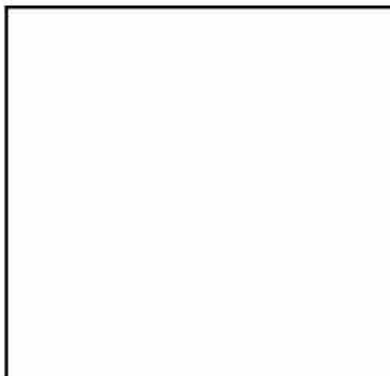
\*\* Difference in volume between the proposed and existing conditions.

i.e. Required Storage Volume = Proposed Volume - Existing Volume, or (N/A) if Proposed Volume <= Existing Volume

\*\*\* Not required if proposed discharge is less than or equal to the existing discharge without detention.

**Certification**

I (print your name) \_\_\_\_\_, P.E., have prepared the attached plans and specifications for the proposed drainage system. The proposed outlet control from this drainage system is discharged at a flow rate equal to or less than the existing flow rate conditions into the MDOT stormwater conveyance system; the velocity discharged is properly dissipated; there exists sufficient storage on the permit applicant's property for all the range of flows summarized above, so that no harmful interference to MDOT ROW or adjacent properties will be caused as a result of utilizing this facility. This discharge to MDOT's stormwater system will not cause a violation of MDOT's National Pollution Discharge Elimination System stormwater discharge permit.



Signature: \_\_\_\_\_, P.E.

Michigan Professional Engineer License Number: \_\_\_\_\_

This document shall be sealed in the space provided to the left and submitted with the permit package.