If you require assistance accessing this information or require it in an alternative format, contact the Michigan Department of Transportation's (MDOT) Americans with Disabilities Act (ADA) coordinator at www.Michigan.gov/MDOT-ADA.

Michigan Department of Transportation 2484 (06/2025)

# DRAINAGE DESIGN REQUIREMENTS FOR ACCESSING STATE TRUNKLINE DRAINAGE SYSTEMS

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The following information is required for MDOT's review of drainage connections within MDOT right of way (ROW). Use MDOT's <u>Drainage Manual</u> as the primary reference for hydrologic/hydraulic design calculations and hydraulic design within MDOT ROW. MDOT will not accept a drainage connection that increases existing flow rates, comes from land that does not naturally drain to MDOT ROW, or violates MDOT's Municipal Separate Storm Sewer System (MS4) permit requirements. With the exception of drainage connections and driveway culverts, additional changes to MDOT's conveyance system will require plan approval by the MDOT Hydraulic Unit Supervisor.

- Base Information (provide all)
- Contour maps of existing and proposed conditions
- □ Hydrologic analyses of existing and proposed conditions (Rational or Modified Rational Methods are not acceptable for calculating runoff volume)
- □ Plans of proposed storm water conveyance system
- □ Outlet control details (limit outlet velocity to 6 fps or less)
- □ Drainage connection details to MDOT's conveyance system
- □ Hydrologic and hydraulic design calculations (digital copy of modeling program required when computer application is used)

### Detention/Retention/Infiltration Basin Information (when needed to match existing flow rates)

- □ Inflow hydrographs
- □ Elevation vs. storage table or curve (excluding volume under permanent pond elevation)
- Elevation vs. discharge table or curve (excluding infiltration component)
- □ Hydrograph routing calculations (choose one method):
  - □ Modified Puls Method
  - □ FHWA Hydraulic Toolbox
  - □ NRCS TR-55
  - □ TR-20
  - □ HEC-1/HEC-HMS
  - □ Other (Rational or Modified Rational Methods are not acceptable for hydrograph routing)
- □ Soil boring information showing groundwater elevations (taken at the deepest elevation of the basin(s) and advanced to a min. depth of 5 ft.)
- □ Permeability test results

### National Pollutant Discharge Elimination System (NPDES) Information (provide all)

- □ Applicant verifies that the discharge to MDOT's stormwater system will not cause a violation of <u>MDOT's NPDES Municipal Separate Storm Sewer System (MS4) discharge permit</u>
- □ Calculations showing the discharge rate and volume to the MDOT drainage system for the 2-yr., 24-hr will not increase compared to existing conditions
- Documentation that the first inch of runoff from the site to the MDOT drainage system will be treated to remove 80% of total suspended solids using a NJDEP certified manufactured treatment device or provide calculations showing at least an 80% sediment removal efficiency for other treatment methods
- □ Table on plans showing inspection frequency and maintenance action protocols (e.g., remove collected sediment in basin if 6" in depth, clean out control structure if 25% clogged, etc.)

### Additional Information (provide all that apply)

- Private drainage easement(s) (required when multiple properties share the proposed drainage system)
- □ Energy dissipation details to control discharge velocities (required when proposed velocity is 6 fps or greater entering a non-enclosed MDOT system)
- □ Local stormwater requirements (required when either flows or storage volumes are more restrictive than MDOT's requirements; meeting local requirements may not meet MDOT requirements)
- □ Input and output reports in .pdf format for the range of flows (required when computer application is used)
- \*\* Failure of the applicant to submit all required materials may result in delays or rejection of the application. \*\*

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### ALL FIELDS SHALL BE COMPLETED BY THE APPLICANT

### **Data Summary**

Site Information	Existing Conditions	Proposed Conditions	
Drainage Area (Acres)			
Site % Impervious			

	Existing Flow to MDOT ROW		Proposed Flow to MDOT ROW						
			Without Detention		With Detention*				
Frequency	Discharge (cfs)	Runoff Volume (cft)	Discharge (cfs)	Velocity ** (ft/s)	Runoff Volume (cft)	Discharge (cfs)	Velocity (ft/s)	Required Storage Volume*** (cft)	Water Surface Elevation (ft)
2-year Storm Event									
10-year Storm Event									
50-year Storm Event									
100-year Storm Event****									

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

\*\* Not applicable (N/A) if "sheet flow" into MDOT ROW or detention is proposed

\*\*\* Difference in volume between proposed and existing conditions. N/A if proposed volume is less than or equal to existing volume

\*\*\*\* Harmful Interference Evaluation

### Certification

I,

(Print your name)

P.E., have prepared the attached plans and specifications for

the proposed drainage system. The proposed flow 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 is storage on the permit applicant's property for the range of flows above so that no harmful interference to MDOT ROW or adjacent properties will be caused. This discharge to MDOT's stormwater system will not cause a violation of MDOT's NPDES stormwater discharge permit and the site is designed to include stormwater control measures (SCMs) to treat the first inch of runoff to achieve 80% total suspended sediment removal and maintain the existing discharge rate and volume for the 2-year, 24-hour storm event. A maintenance plan is developed to ensure the long-term operation of the SCMs.

Signature:	, P.E.
Michigan Professional Engineer License Number:	
Date:	
This document shall be sealed in the space to the left and sub- application.	mitted with the