

Attachment H: Engineering Documentation

Part 1: Engineering Report Checklist

The following is a checklist of requirements that need to be completed, included and submitted as part of the Engineering Report. Please complete this checklist by identifying where each requirement listed is addressed in the Engineering Report (report title and page numbers). If an item is not applicable, place "NA" in the box. Attach the completed checklist as the cover sheet to engineering reports, as applicable, which fully describe the design of the proposed facilities or other actions and the hydraulic and hydrologic effects thereof. The application instructions (DEP-IWRD-INST-100) should be consulted for a complete description of each item listed. This checklist is required to be signed and sealed by a professional engineer licensed in the State of Connecticut.

Stormwater Management

Location of Item	Item Description
	Description of the design storm frequency intensity, volume and duration
	Watershed maps, existing and proposed
	Computations for Tc
	Imperviousness calculations
	NRCS runoff curve numbers, volumetric runoff coefficients
	Computations used to determine peak runoff rates, and velocities for each watershed area (24-hour storm): <ul style="list-style-type: none"> • Stream Channel Protection: 2-year frequency ("over-control" of 2-year storm) • Conveyance Protection: 10-year frequency • Peak Runoff Attenuation: 2-year, 10-year, and 100-year frequency • Emergency Outlet Sizing: safely pass the 100-year frequency or larger storm
	Hydrograph routing calculations
	Description, schematics, and calculations for drainage and stormwater management systems, bridges and culverts
	Infiltration rates
	Documentation of sources
	Computer disk containing input and output data and the associated program for all computer models used in the analyses
	Hard copy of input and output data including input/output tables
	Detention basin analysis including timing and duration of expected outflow, stream stability analysis and hydrograph summation

Flood Plain Assessment

Location of Item	Item Description
	Description or simulation of existing and proposed conditions upstream and downstream of the proposed activity
	(For SCEL applications only) A determination of the effect of the proposed activity on flooding and flood hazards together with an equivalent encroachment on the opposite bank for the flood event establishing the encroachment lines
	For any bridge or culvert placement or replacement with a drainage area of 100 acres or more, plan sheets showing the existing and proposed inundation area for the 2, 10, 25, 50, and 100 year discharges, carried to convergence
	A description and analysis of the floodplain modifications required to restore any flood conveyance and flood storage capacity
	Demonstration that backwater from the proposed activity will not impact an existing dam, dike, or similar structure
	Backup data and complete hydraulic analysis for proposed modifications to the floodplain including location plan and plot for sections, profile sheet, summary sheet

Dams, Dikes, Diversion Channels, Similar Structures

Location of Item	Item Description
	Primary and emergency spillway and outlet structure erosion protection
	Dam breach analysis
	Geotechnical evaluation
	Construction Specifications for foundation preparation, embankment material, outlet structure, and construction inspection

Soil Erosion and Sediment Control Plan

Location of Item	Item Description
	Narrative
	Drawings
	Details
	Calculations for Engineered Measures

Professional Certification

For any Engineering Report submitted as part of the IWRD permit application, the following certification must be signed and sealed by a professional engineer licensed to practice in Connecticut and submitted with the Engineering Report Checklist and Report.

"I certify that in my professional judgement, each requirement listed in the Engineering Report Checklist has been addressed in the Engineering Report submitted as part of the IWRD permit application as Attachment H, Part 1 and that the information is true, accurate and complete to the best of my knowledge and belief.

This certification is based on my review of the Engineering Report.

I understand that a false statement made in the submitted information may, pursuant to Section 22a-6 of the General Statutes, be punishable as a criminal offense under Section 53a-157b of the General Statutes, and may also be punishable under Section 22a-438 of the General Statutes."

Signature of Applicant

Date

Name of Applicant (print or type)

Title (if applicable)

Signature of Professional Engineer

Date

Name of Professional Engineer (print or type)

P.E. Number (if applicable)

Affix P.E. Stamp Here
(if applicable)

