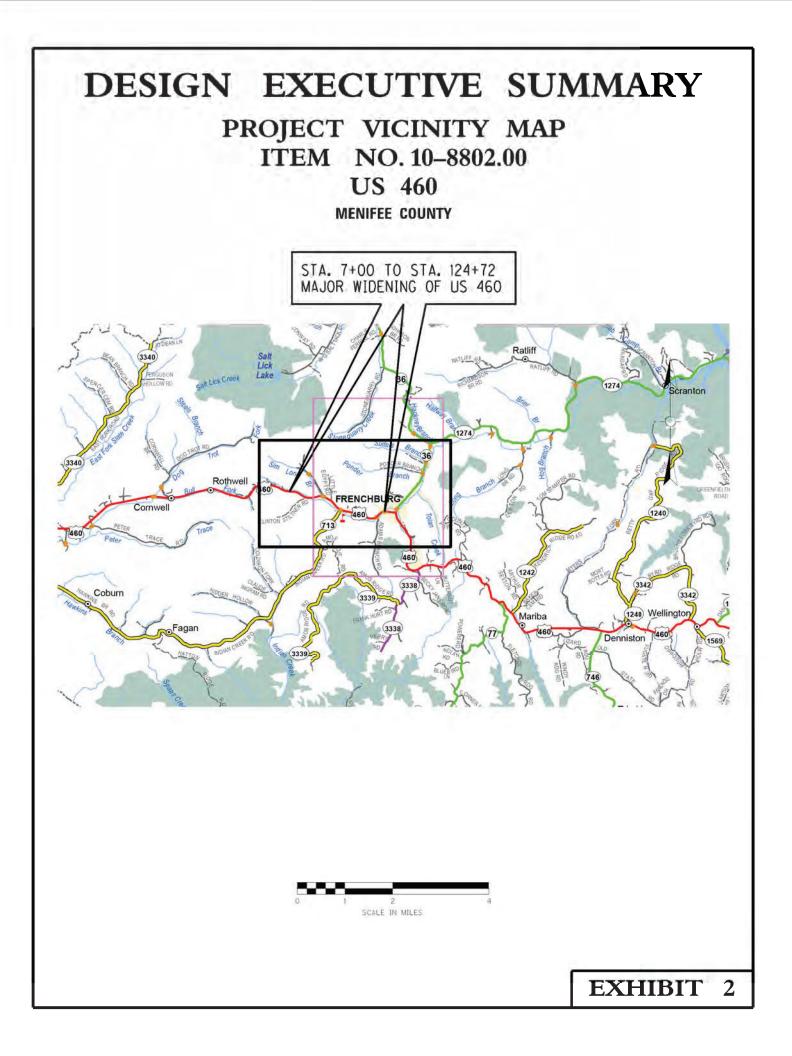


DIVISION OF HIGHWAY DESIGN



SECTION 1 – PROJECT DRAINAGE SUMMARY

Summary Sheet of Designed Structures (w/flow changes at outfalls)

Project Drainage Discussion

Site Conditions

Design Assumptions

Analysis Methods

Programs Used

Deviations from Drainage Manual Guidance

Watershed maps: Pipes, Storm Sewers, & Ditches with Longest Flow Path, C Value Calculations and Existing Areas (if different)

Email Correspondence & Drainage Inspection Minutes

Pertinent Hydrology - NOAA Intensities Table

DRAINAGE STRUCTURE SUMMARY							
Line	Station	Length	Analysis*	Q100 at Outfall (cfs)			
MAIN	9+00	118 lf - 18" Storm Sewer		Existing 28	Proposed 30		
WAIN	9+00 14+79	77 lf - 30" Pipe		26.5	30		
"	22+79	64 lf - 24" RCP		20.5	25		
"	28+68	82 lf - 12'x4' RCBC		110	125		
"	33+68	64 lf - 30" Pipe		27	33		
"	48+00	28 lf - 12'x6' Dbl RCBC		115	130		
"	56+83	104 lf - RCBC		90	95		
"	79+77	146 lf - 8'x5' RCBC		209	212		
"	82+80	85 lf - 30" Pipe		24	25		
"	87+62	120 lf - 48" Pipe		100	115		
"	121+83	94 lf - 7'x4' RCBC		202	207		
"	200+00	150 lf, Bridge	Advanced	2500	no change		
Clinton	27+87	52 lf - 18" RCP		15	21		
"	58+24	8 lf - 18 " Pipe Ext.		19	no change		

* - Advanced denotes 1 or 2 dimensional hydraulic modeling, scour analysis or other complicated or involved analysis technique. Blank denotes typical analysis.

DRAINAGE SOFTWARE SUMMARY							
Provider	Identification	Version	Used	Comment			
	HY8	7.50	Y				
FHWA	Hydraulic Toolbox	4.30		Roadway Ditch Design			
	Hydraulic Toolbox	4.30	Y	Rational Flows			
U.S. Army	HECRAS	4.1.0	Y				
Corps	HECRAS	5.0.6					
Engineers	HEC-HMS	4.2.1					
-							
Bentley	Stormcad	10.01.01.04					
-							
	Spreadsheet	02.17	Y	Regional Flows			
КҮТС	Spreadsheet	17	Y	Rational Flows			
KTIC	Spreadsheet	12a-13		Inlet Spread Calculations			
	Spreadsheet	01-16		Storm Sewer Capacity			
A	SMS / SRH-2D	13.0.3					
Aquaveo	WMS	11.0.1					
HydroCAD	HydroCAD	10.00-24	Y	Storage Analysis			

SECTION 2 – CULVERTS AND BRIDGES

Standard Analysis

Pipe Sheets or Situation Survey Sheets with:

Hydraulic Data Table containing Design & Check Q, HW, Outlet Velocities, Basis for Allowable HW, & Drainage Area

Outfall Channel Geometry

Hydraulic Design Output Report

Advanced Analysis

Structure Plan or Layout Sheet

Hydraulic Design Output

Maps (FIRM, Contour, Aerial, Drainage Area, Land Use, etc. as needed)

Risk Assessment Form (if applicable)

Output Results

Site Specific Hydrologic & Hydraulic Discussion

FEMA Restrictions & Conclusions

Environmental Commitments or Limitations

SECTION 3 – STORM SEWER SYSTEMS

Output of Results Plot of EGL/HGL Profile (if needed) **SECTION 4 – PAVEMENT INLET CALCULATIONS**

Hydraulic Design Output

SECTION 5 – ROADSIDE DITCH CALCULATIONS

Hydraulic Design Output