LD-293D (3/20/07) Page 1 of 6

DEPARTMENT OF TRANSPORTATION LOCATION AND DESIGN HYDROLOGIC & HYDRAULIC ANALYSIS OUTLINE

	Н	DROLOGIC &	HYDKAU	LIC ANALYSI	SOUTLINE	
DATE:		E	NGINEER:			
		•				
		HYDROLOGIC	& HYDRAU	LIC ANALYSIS	OUTLINE	
ROUTE:		PROJ. #:			UPC:	
CITY/CO	INTV-	STREAM NAME			UFC.	
DRAIN. A	REA:	STATION:	LAT:		LONG:	
EX#			REFE	RENCE DATA		
	MAPS:					
	DILOTOG					
	PHOTOS:					
	OTHER:					
	APPLICABLE FI	OOD PLAIN MAN	NAGEMENT:			
	CONTINUES DATES	TERNIAL AGENC	TEC.			
	STUDIES BY EX	TERNAL AGENC	IES:			
	STUDIES BY INTERNAL SOURCES:					
	GAGING DATA AVAILABLE:					
	AVAILABLE SU	DVEV DATA				
	AVAILABLE SU	KVEY DATA:				
	TECH. AIDES &	FILE NAMES:				
	OTHER DATA:					
REMARKS:						
Add any relevant comments concerning the data obtained and its quality (particularly if it is questionable).						

LD-293D	Page 2 of 6
(3/20/07)	

(3/20/07)					
HYDROLOGY					
METHODS USED FOR DISCHARGES:					
REASONS FOR FINAL SELECTION OF DISCHARGE VALUES:					
INFLUENCE AND CONTROL OF SITE:					
HIGH WATER ELEV: DATE & SOURCE:**					
** See documentation data at the end of form for approximate discharge and frequency of event:					
REMARKS:					
STREAM STABILITY - LEVEL 1: QUALITATIVE ANALYSIS PER HEC-20					
STREAM STABILITY - LEVEL 1; QUALITATIVE ANALYSIS PER HEC-20					
BRIDGE CHARACTERISTICS:					
STREAM CHARACTERISTICS:					
LAND USE CHANGES:					
OVERALL STABILITY:					
LATERIAL STABILITY:					
VERTICAL STABILITY:					
STREAM RESPONSE:					
BASED UPON THE ABOVE ANALYSIS, IS A MORE DETAILED ANALYSIS NECESSARY: YES: NO:					
IF YES, WHAT LEVEL: SEE EXHIBIT #:					

Please complete with general comments based on observations of the conditions at the site.

REMARKS:

LD-293D (3/20/07) Page 3 of 6

EX#		HYDRAUI	IC ANALYS	IS OF EXI	STING STRUCTURE		
	Computer M	odel:	FILE	7-	Plan:		
	Computer W				G STRUCTURE:		
	SPAN LENG		1101, 01	PARAPE			
	ABUTMEN'	Г ТҮРЕ:		SKEW T	O CL: TO FLOO	DD FLOWS:	
	NO. OF PIE	RS & TYPE:			-		
	PIER WIDT				PIER AREA:		
	ABUTMEN'				GRADE ELEV:		
	ABUTMEN'				GRADE ELEV:		
	ELLC ELEV			ELLC FO	OR PRESSURE FLOW:		
		ED ELEVATION:					
		ON EACH SIDE OF S	TRUCTURE:	LEFT:	RIGHT:		
	EXPANSIO			CONTRA	ACTION COEF:		
	ENERGY S _o "n" VALUES:						
		ODELING APPROACH:					
	REASON FO	R SELECTION:					
	HIGH FLOV	V METHOD:					
	REASON FOR SELECTION:						
DISC	CHARGE	EXCEEDANCE	WSPEL	EV. AT	WSP ELEV. AT	VEL. AT	
		PROBABILITY	COM	MON	UPSTREAM FACE	DOWNSTREAM	
			UPSTR	REAM	OF BRIDGE #	FACE OF	
			SECTI	ON#		STRUCTURE #	
(cfs)		(%)	(ft))	(ft)	(fps)	
		50					
		20					
		10					
		4					
		2					
		1-N 1-FW					
		0.2					

4			
2			
1-N			
1-FW			
0.2			
OHW			
HW Event			
		•	•
EVENT	STAGE ELEV.	DISCHARGE	EXC. PROB.
High Water Flood			
Base Flood			
Overtopping Flood			

REMARKS:

Comment on the modeling approach and correction or observations relative to the original analysis.

DOCUMENTATION OF STEPS TAKEN TO CALIBRATE MODEL

If there is difficulty in calibrating the model to a historical event contact VDOT to see if there is additional information available regarding that particular event.

LD-293D Page 4 of 6

(3/20/0	7)						
EX#	· ·						
			SCHE				
	Compute	er Model:	FIL		Plan:		
			DESCRIPTION OF	PROPOSED STRU	CTURE:	· ·	
	SPAN L		<u> </u>	PARAPETS:			
		ENT TYPE:		SKEW TO CL:	TO FLOOD F	LOWS:	
		PIERS & TYPE:		momat pers			
	PIER W			TOTAL PIER AR			
		ENT "A" STA:		FINISH GRADE			
	ELLC E	ENT "B" STA:		FINISH GRADE			
		LEV: M BED ELEVATION		ELLC FOR PRES	SUKE FLOW:		
		LEV. ON EACH SID		LEFT:	RIGHT:		
		SION COEF:	L OI DIRUCTURE	CONTRACTION			
	ENERG		"n" VALUES:	2011IME HOI	- Jan I		
		MODELING APPR					
		N FOR SELECTION:					
		LOW METHOD:					
	REASO	N FOR SELECTION:	·	·	<u> </u>	<u> </u>	
p.c.	II. D.C.	propps :	p.mppps.com	THOS ST. T	Won Press	11575	
DISC	HARGE	EXCEEDANCE PROBABILITY	DIFFERNCE AT COMMON	WSP ELEV AT	WSP ELEV AT UPSTREAM	VEL AT DWNSTREAM	
		rkodadilii i	SECTION #	COMMON UPSTREAM	FACE OF	FACE OF	
			SLCTION #	SECTION#	BRIDGE #	STRUCTURE#	
-	cfs	%	ft	ft	ft	fps	
	_	50	2.5				
		20					
		10					
		40					
		2					
		1-N					
		1-FW					
		0.2					
		OHW					
		HW Event					
		EVENE	STAGE ELEV	DISCHARGE	EXC. PROB		
		EVENT Design Flood	STAGE ELEV	DISCHARGE	EAC. PROB		
		Base Flood					
		Overtopping					
		Overtopping	REMA	RKS:			
			KLMA				
	DOCUMENTATION OF STEPS TAKEN FOR PROPOSED MODEL - SCHEME #:						
	DOCUMENTATION OF STEES TAKEN FOR PROPOSED MODEL - SCHEME #:						
Commen	Comment on modification to existing conditions model to develop the proposed model						
	- 1 1 1						

LD-293D (3/20/07) Page 5 of 6

EX#	T	HVD	PAULIC ANALYS	IS OF PROPOSED	STRUCTURE			
ши т	HYDRAULIC ANALYSIS OF PROPOSED STRUCTURE SCHEME #:							
	Compute	r Model	FIL		Plan:			
	Computer Model: FILE: Plan: DESCRIPTION OF PROPOSED STRUCTURE:							
	SPANII	SPAN LENGTH: PARAPETS:						
		ENT TYPE:		SKEW TO CL:	TO FLOOD F	I OWS:		
		PIERS & TYPE:		SKEW TO CE.	TOTLOODT	LOWS.		
	PIER W			TOTAL PIER AR	EA.			
		ENT "A" STA:		FINISH GRADE				
		ENT "B" STA:						
	ELLC EI				FINISH GRADE ELEV: ELLC FOR PRESSURE FLOW:			
		M BED ELEVATION:		ELLC FOR PRES	SUKE FLOW:			
		LEV. ON EACH SIDI		LEFT:	RIGHT:			
			E OF STRUCTURE:					
		SION COEF:	"n" VALUES:	CONTRACTION	COEF:			
	ENERG'							
		E MODELING APPRO N FOR SELECTION:	JACH:					
	KEASOI	N FOR SELECTION:						
	HIGH E	LOW METHOD:						
		N FOR SELECTION:						
	RESAUL	N FOR SELECTION:						
DICCI	HARGE	EXCEEDANCE	DIFFERNCE	WSP ELEV AT	WSP ELEV AT	VEL AT		
DISCI	HARGE	PROBABILITY	AT COMMON	COMMON	UPSTREAM	DWNSTREAM		
		PROBABILITY	SECTION #		FACE OF	FACE OF		
			SECTION #	UPSTREAM SECTION#	BRIDGE #	STRUCTURE#		
	efs	%	ft	ft	ft			
	218	50	11	It	It	fps		
		20						
		10						
		40						
		_						
		1-N						
		1-FW						
		0.2						
		OHW						
		HW Event						
		EVENT	STAGE ELEV	DISCHARGE	EXC. PROB			
		Design Flood						
		Base Flood						
		Overtopping						
			REMA	ARKS:				
	DC	OCUMENTATION C	F STEPS TAKEN	FOR PROPOSED N	AODEL - SCHEME	: #:		
		J. J	. JIMO IAREA	. OK I KOI OGED N	TODEL - SCHEME			
Commen	t on modif	ication to existing con	ditions model to dev	elop the proposed mo	odel			
Commen	Comment on modification to existing conditions model to develop the proposed model							

LD-293D (3/20/07) Page 6 of 6

EX #:	SCOUR DATA					
	SCOUR POTENTIAL: SEE EX. # FOR COMPUTATIONS AND PLOT					
	SUMMARY OF RESULTS:					
	RIPRAP RECOMMENDATIONS: IF DESIRED, CLASS , D= , OVER FILTER CLOTH					
	BEDDING WILL BE SATISFACTORY.					
	HISTORICAL RETURN PERIOD					
The appr	roximate frequency of the event that caused the highwater at the existing structure is theYear or the					
%	Exc. Event.					
	CAUSEWAY ANALYSIS RESULTS					
The use	of causeways for temporary construction access was not considered in this analysis. If it is					
subseque	ently found necessary to use causeways, they must be submitted to the Hydraulics Unit for analysis and					
documer	ntation.					
Tempora	ary construction access causeways for this project should be composed of:					
	Armor layering will/will not be required on either side					
	nary highwater will be increased byft.					
The high	n flow profiles will not be affected.					
	seway will not affect the water surface profile.					
	timum causeway elevation isft.					
From ab	utment A stationto station					
	From abutment B station to station .					
Only one will be in place at a time.						
SUMMARY						
Make a brief summary statement about the impact of the proposed bridge on the flooding.						