

# PRELIMINARY INFORMATION SHEET (BRIDGE)

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FINAL HYDRAULIC REPORT

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STANDARDS LIST

B-5	SLOPE GRADING, EMBANKMENTS, MUCK	06-01-1994
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1	STEEL BEAM GUARDRAIL DET. (POST, DELINEATOR, TYPICALS)	11-10-2015
G-1D	STEEL BEAM GUARDRAIL DET. (END TERMINAL, ANCHOR, MEDIUM)	02-10-2014
T-1	TRAFFIC CONTROL GENERAL NOTES	04-25-2016
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-17	TRAFFIC CONTROL MISCELLANEOUS DETAILS	08-06-2012
T-28	CONSTRUCTION SIGN DETAILS	08-06-2012
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	08-06-2012
T-36	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING	08-06-2012
T-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013

HIGHWAY SAFETY & DESIGN DETAILS

HSD-400.01	SAFETY EDGE DETAILS	3/29/2016
HSD-621.06	GUARDRAIL TERMINAL LABEL DETAIL	11/3/2016

STRUCTURES DETAIL SHEETS

SD-366.00	LONGSPAN STEEL BEAM GUARDRAIL, GALVANIZED	1/3/2014
SD-501.00	CONCRETE DETAILS AND NOTES	2/9/2012
SD-502.00	CONCRETE DETAILS AND NOTES	10/10/2012

HYDROLOGIC DATA

Date: Sept. 2014

DRAINAGE AREA : 1.4 sq. mi.  
 CHARACTER OF TERRAIN : Hilly to mountainous, mostly forested  
 STREAM CHARACTERISTICS : Incised, alluvial, sinuous, with high sediment transport  
 NATURE OF STREAMBED : Mostly cobbles with some gravel and boulders

PEAK FLOW DATA

Q 2.33 =	100 cfs	Q 50 =	325 cfs
Q 10 =	225 cfs	Q 100 =	375 cfs
Q 25 =	275 cfs	Q 500 =	525 cfs

DATE OF FLOOD OF RECORD : Unknown  
 ESTIMATED DISCHARGE : Unknown  
 WATER SURFACE ELEV. : Unknown  
 NATURAL STREAM VELOCITY : @ Q50 = 9.1 fps  
 ICE CONDITIONS : Moderate  
 DEBRIS : Moderate  
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes  
 IS ORDINARY RISE RAPID? Yes  
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No  
 IF YES, DESCRIBE :

WATERSHED STORAGE : < 1% HEADWATERS :  
 UNIFORM : X  
 IMMEDIATELY ABOVE SITE :

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : Reinforced Concrete Box  
 YEAR BUILT : 1957  
 CLEAR SPAN(NORMAL TO STREAM) : 7'  
 VERTICAL CLEARANCE ABOVE STREAMBED : 5'  
 WATERWAY OF FULL OPENING : 35 sq. ft.  
 DISPOSITION OF STRUCTURE : Remove and replace  
 TYPE OF MATERIAL UNDER SUBSTRUCTURE : Unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1070.5'	VELOCITY =	11.8 fps
Q10 =	1072.8'	"	14.2 fps
Q50 =	1073.5'	"	14.7 fps
Q100 =	1073.8'	"	14.9 fps

LONG TERM STREAMBED CHANGES : Scour and streambed degradation at the outlet.

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes  
 FREQUENCY: Q10  
 RELIEF ELEVATION: 1072.8'  
 DISCHARGE OVER ROAD @Q100: 96 cfs

UPSTREAM STRUCTURE

TOWN: None DISTANCE:  
 HIGHWAY #: STRUCTURE #:  
 CLEAR SPAN: CLEAR HEIGHT:  
 YEAR BUILT: FULL WATERWAY:  
 STRUCTURE TYPE:

DOWNSTREAM STRUCTURE

TOWN: NA - confluence with Hancock Brook DISTANCE: 500'  
 HIGHWAY #: STRUCTURE #:  
 CLEAR SPAN: CLEAR HEIGHT:  
 YEAR BUILT: FULL WATERWAY:  
 STRUCTURE TYPE:

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR.	4A STR.	5A SEM
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY							
POSTING							
OPERATING							
COMMENTS:							

AS BUILT "REBAR" DETAIL

LEVEL I			LEVEL II			LEVEL III		
TYPE:	TYPE:	TYPE:	TYPE:	TYPE:	TYPE:	TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:	GRADE:	GRADE:	GRADE:	GRADE:	GRADE:	GRADE:

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	20 year ESAL for flexible pavement from 2015 to 2025 : 304000
2015	1200	160	52	10.8	110	40 year ESAL for flexible pavement from 2015 to 2035 : 680000
2025	1200	160	52	13.0	140	Design Speed : 50 mph

PROPOSED STRUCTURE

STRUCTURE TYPE: Precast Concrete Box

CLEAR SPAN(NORMAL TO STREAM): 14'  
 VERTICAL CLEARANCE ABOVE STREAMBED: 5'  
 WATERWAY OF FULL OPENING: 70 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1069.2'	VELOCITY=	7.5 fps
Q10 =	1070.4'	"	10.3 fps
Q25 =	1070.8'	"	11.1 fps
Q50 =	1071.2'	"	11.9 fps
Q100 =	1071.6'	"	12.6 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No  
 FREQUENCY: above Q100  
 RELIEF ELEVATION: 1072.8'  
 DISCHARGE OVER ROAD @Q100: 0 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 1072.5' at inlet  
 VERTICAL CLEARANCE: @ Q50 = 1.3'

SCOUR: Not calculated for a box

REQUIRED CHANNEL PROTECTION: Stone fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW: 3 cfs DEPTH OR ELEVATION:  
 ORDINARY LOW WATER: 1 cfs Depth = 0.5'  
 ORDINARY HIGH WATER: 43 cfs Depth = 1.0'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Temporary bridge not required.  
 CLEAR SPAN (NORMAL TO STREAM):  
 VERTICAL CLEARANCE ABOVE STREAMBED:  
 WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. TRAFFIC SIGNALS ARE NOT NECESSARY.
2. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	dp: 3.0 INCH
3. DESIGN SPAN	L: 14.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	fy: 270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f'c: 6.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'ci: 5.0 KSI
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f'c: 4.0 KSI
9. CONCRETE, HIGH PERFORMANCE CLASS A	f'c: 4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'c: 3.5 KSI
11. CONCRETE, CLASS C	f'c: 3.0 KSI
12. REINFORCING STEEL	fy: 60 KSI
13. STRUCTURAL STEEL AASHTO M270	fy: ---
14. ALLOWABLE BEARING RESISTANCE OF SOIL	qn: 3.0 KSF
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
16. NOMINAL BEARING RESISTANCE OF ROCK	qn: 10.0 KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
18. PILE RESISTANCE FACTOR	φ: ---
19. LATERAL PILE DEFLECTION	Δ: ---
20. BASIC WIND SPEED	V3s: ---
21. MINIMUM GROUND SNOWLOAD	pg: ---
22. SEISMIC DATA	PGA: 0 Ss: --- S1: ---
23.	---
24.	---
25.	---
26.	---

PROJECT NAME: HANCOCK

PROJECT NUMBER: ER STP 0174(18)

FILE NAME: z12c412pi.xls PLOT DATE: 10/11/2016  
 PROJECT LEADER: J. TUCKER DRAWN BY: O. DALMER  
 DESIGNED BY: B. BRESLEND CHECKED BY: P. BERO  
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