STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version
LRFD

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STRUCTURES DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	2/6/2012
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HIGHWAY SAFETY & DESIGN DETAIL

HSD-621.06	GUARDRAIL TERMINAL LABEL DETAIL	11/3/2015

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: June 2014

DRAINAGE AREA : 5.1 sq. mi.
CHARACTER OF TERRAIN : Hilly to mountainous, mostly forested
STREAM CHARACTERISTICS : Steep, sinuous, semi-alluvial, incised, narrow valley setting
NATURE OF STREAMBED : Gravel, cobbles and boulders

PEAK FLOW DATA

Q 2.33 =	365 cfs	Q 50 =	1350 cfs
Q 10 =	810 cfs	Q 100 =	1550 cfs
Q 25 =	1125 cfs	Q 500 =	2050 cfs

DATE OF FLOOD OF RECORD: unknown
ESTIMATED DISCHARGE: unknown
WATER SURFACE ELEV.: unknown
NATURAL STREAM VELOCITY : @ Q25 = 11.0 fps
ICE CONDITIONS : Slight to 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: Single span steel beam bridge with timber deck
YEAR BUILT: 1925
CLEAR SPAN(NORMAL TO STREAM): 25'
VERTICAL CLEARANCE ABOVE STREAMBED: 10'
WATERWAY OF FULL OPENING: 230 sq. ft.
DISPOSITION OF STRUCTURE: Remove and replace with new bridge
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring logs

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1081.3' *	VELOCITY =	7.3 fps
Q10 =	1082.4'	"	9.3 fps
Q25 =	1083.1'	"	10.1 fps
Q50 =	1083.5'	"	10.6 fps
Q100 =	1083.8'	"	11.1 fps

LONG TERM STREAMBED CHANGES: Some local scour along the abutments and through the bridge area.

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Above Q100
RELIEF ELEVATION: 1086'
DISCHARGE OVER ROAD @Q100: N.A.

UPSTREAM STRUCTURE

TOWN: N.A - Stream divides
DISTANCE:
HIGHWAY # :
STRUCTURE #:
CLEAR SPAN:
CLEAR HEIGHT:
YEAR BUILT:
FULL WATERWAY:
STRUCTURE TYPE:

DOWNSTREAM STRUCTURE

TOWN: Huntington
DISTANCE: 1,000'
HIGHWAY # : TH 22
STRUCTURE #: 31
CLEAR SPAN: 31'
CLEAR HEIGHT: 9'
YEAR BUILT: 2001
FULL WATERWAY: 275 sq. ft.
STRUCTURE TYPE: Concrete slab bridge

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	**20**	**36**	**36**	**66**	**30**	**34.5**	**38**
INVENTORY	1.96	1.19					
POSTING							
OPERATING	2.54	1.54	2.7	1.4	1.89	1.73	2.33
COMMENTS:							

AS BUILT "REBAR" DETAIL

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

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2015	270	55	55	4.7	10
2035	290	60	55	5.3	15

20 year ESAL for flexible pavement from 2015 to 2035 : 39000
40 year ESAL for flexible pavement from 2015 to 2055 : 74000
Design Speed : 20 mph

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span concrete slab bridge

CLEAR SPAN(NORMAL TO STREAM): 36'
VERTICAL CLEARANCE ABOVE STREAMBED: 12'
WATERWAY OF FULL OPENING: 380 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1081.3' *	VELOCITY=	8.1 fps
Q10 =	1082.4'	"	9.9 fps
Q25 =	1083.2'	"	10.7 fps
Q50 =	1083.7'	"	11.4 fps
Q100 =	1084.1'	"	11.8 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Abvoe Q100
RELIEF ELEVATION: 1088'
DISCHARGE OVER ROAD @Q100: N.A.

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 1088.1'
VERTICAL CLEARANCE: @ Q25 = 5.1'

SCOUR: Contraction scour is 1' up to Q500.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW:	10 cfs	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	5 cfs	Depth = 0.5'
ORDINARY HIGH WATER:	160 cfs	Depth = 3'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge required.
CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

* Proposed bridge reported water surface elevations are higher than those for the existing bridge, because the proposed bridge is located upstream of the existing bridge.

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TWO-WAY TRAFFIC ON THE EXISTING STRUCTURE.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	d_p:	2.5 INCH
3. DESIGN SPAN	L:	42.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ:	- - -
5. PRESTRESSING STRAND	f_y:	- - -
6. PRESTRESSED CONCRETE STRENGTH	f'_c:	- - -
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{ci}:	- - -
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f'_c:	- - -
9. CONCRETE, HIGH PERFORMANCE CLASS A	f'_c:	- - -
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'_c:	3.5 KSI
11. CONCRETE, CLASS C	f'_c:	3.0 KSI
12. REINFORCING STEEL	f_y:	60 KSI
13. STRUCTURAL STEEL AASHTO M270	f_y:	- - -
14. NOMINAL BEARING RESISTANCE OF SOIL	q_n:	6.5 KSF
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	0.45 KSF
16. NOMINAL BEARING RESISTANCE OF ROCK	q_n:	20.0 KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ:	0.45
18. PILE RESISTANCE FACTOR	ϕ:	- - -
19. LATERAL PILE DEFLECTION	Δ:	- - -
20. BASIC WIND SPEED	V_{3s}:	- - -
21. MINIMUM GROUND SNOW LOAD	p_g:	- - -
22. SEISMIC DATA PGA: 0	S_s:	- - -
	S_1:	- - -
23.		- - -
24.		- - -
25.		- - -
26.		- - -

PROJECT NAME: **HUNTINGTON**
PROJECT NUMBER: **BRO 1445(35)**

FILE NAME: **s12j162pi.xls**
PROJECT LEADER: **C. CARLSON**
DESIGNED BY: **D. PETERSON**
PRELIMINARY INFORMATION

PLOT DATE: 12/3/2015
DRAWN BY: **R. PELLETT**
CHECKED BY: **C. MOONEY**
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