STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET (BRIDGE)

Version 09.02.01

LRFD

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TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2013	5400	610	52	14	670
2033	5900	660	52	21	1100

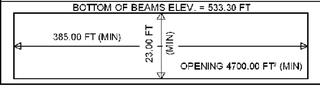
20 year ESAL for flexible pavement from 2013 to 2033 : 5101000

40 year ESAL for flexible pavement from 2013 to 2053 : 11436000

Design Speed : 25 mph

TEMPORARY BRIDGE PROFILE ALONG TEMP CL

BOTTOM OF BEAMS ELEV. = 533.30 FT



FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: April 2000

DRAINAGE AREA : 408 square miles
CHARACTER OF TERRAIN : Mountainous, rolling hills and agricultural lands
STREAM CHARACTERISTICS : Perennial, sinuous, not braided, equiwidth
NATURE OF STREAMBED : Gravel to cobble and boulders with some ledge

PEAK FLOW DATA

Q 2.33 =	11,600 cfs	Q 50 =	42,000 cfs
Q 10 =	25,400 cfs	Q 100 =	51,000 cfs
Q 25 =	34,300 cfs	Q 500 =	76,000 cfs

DATE OF FLOOD RECORD : November 1927
ESTIMATED DISCHARGE: Unknown
WATER SURFACE ELEV : 542 feet (Approximate according to COE 12/73 Study)
NATURAL STREAM VELOCITY : @ Q50 = 11.6 fps
ICE CONDITIONS : moderate
DEBRIS: moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
IS ORDINARY RISE RAPID? No
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

WATERSHED STORAGE: 1% Est. HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Through truss w/ 5 rolled beam approach spans, 4 to south, 1 to north
YEAR BUILT: 1928
CLEAR SPAN(NORMAL TO STREAM): Total = 330 feet
VERTICAL CLEARANCE ABOVE STREAMBED: 25 feet (over main channel)
WATERWAY OF FULL OPENING: Total = 6200 square feet
DISPOSITION OF STRUCTURE: Remove
TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 =	527.7 feet *	VELOCITY =	6.0 fps
Q10 =	532.4 feet *	"	9.8 fps
Q25 =	535.3 feet *	"	11.2 fps
Q50 =	537.9 feet *	"	11.6 fps
Q100 =	540.7 feet *	"	12.2 fps

LONG TERM STREAMBED CHANGES: Unknown

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Above Q100
RELIEF ELEVATION: 539.4 feet
DISCHARGE OVER ROAD @Q100: None - due to drawdown through the bridge

UPSTREAM STRUCTURE

TOWN: N/A - confluence 600 feet upstream** DISTANCE:
HIGHWAY# : STRUCTURE #:
CLEAR SPAN: CLEAR HEIGHT:
YEAR BUILT: FULL WATERWAY:
STRUCTURE TYPE:

DOWNSTREAM STRUCTURE

TOWN: Royalton DISTANCE: 3.2 miles
HIGHWAY# : I-89 STRUCTURE #: 26-S
CLEAR SPAN: 889 feet CLEAR HEIGHT: 17 feet
YEAR BUILT: 1968 FULL WATERWAY: 12,600 sf
STRUCTURE TYPE: 6-span continuous welded plate girder

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEM
TONNAGE	36	36	66	30	34.5	38
INVENTORY	1.07					
OPERATING	1.43					
LEGAL		1.81	1.19	1.46	1.40	1.14
COMMENTS:						

PILE DRIVING AND TESTING REQUIREMENTS

	Ref	
1. NOMINAL PILE DRIVING CAPACITY		Gen. Notes
2. PILE TEST RESISTANCE FACTOR	ϕ:	0.65
3. MAXIMUM PILE TIP ELEVATION		Per Plans

PROPOSED STRUCTURE

STRUCTURE TYPE: Through truss main span w/1 rolled beam approach span on south side

CLEAR SPAN(NORMAL TO STREAM): Total = 311 feet
VERTICAL CLEARANCE ABOVE STREAMBED: 25 feet (over main channel)
WATERWAY OF FULL OPENING: Total = 6250 square feet

WATER SURFACE ELEVATIONS AT:

Q2.33 =	527.7 feet *	VELOCITY=	6.0 fps
Q10 =	532.3 feet *	"	9.8 fps
Q25 =	535.3 feet *	"	11.2 fps
Q50 =	537.9 feet *	"	11.6 fps
Q100 =	540.6 feet *	"	12.1 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Above Q100
RELIEF ELEVATION: 539.8 feet
DISCHARGE OVER ROAD @Q100: None - due to drawdown through the bridge

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 540.3 feet
VERTICAL CLEARANCE: @ Q50 = 2.4 feet

SCOUR: Maximum contraction scour @ Q100 = 4 feet
Maximum pier scour @ Q500 = 9 feet
REQUIRED CHANNEL PROTECTION: Type IV Stone Fill

PERMIT INFORMATION

AVERAGE DAILY FLOW:	850 cfs	
ORDINARY LOW WATER:	375 cfs	DEPTH OR ELEVATION: 515 feet
ORDINARY HIGH WATER:	5000 cfs	520 feet

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: 4-span rolled beam ***
CLEAR SPAN (NORMAL TO STREAM) Total = 385 feet
VERTICAL CLEARANCE ABOVE STREAMBED: 23 feet (B.O.S. elev = 537.0 feet)
WATERWAY AREA OF FULL OPENING: 4700 square feet

ADDITIONAL INFORMATION

* WSE's are reported 250 feet upstream of the existing and proposed bridge(s) centerline.
** Confluence of White River and the Third Branch of the White River.
*** Temporary bridge designed to be in through the winter.
Pier piles should be designed to be freestanding above elevation 505.5 feet.

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TWO-WAY TRAFFIC ON A TEMPORARY BRIDGE.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. INSTALL SIDEWALKS ON THE RIGHT SIDE OF THE BRIDGE
4. THE APPROACHES FOR THE TEMPORARY BRIDGE SHALL BE PAVED.

DESIGN VALUES

1. DESIGN LIVE LOAD		HL-93
2. FUTURE PAVEMENT	dp:	3 IN
3. DESIGN SPAN 1 (TO THE NEAREST 10TH OF A FOOT)	L1:	67.5 FT
DESIGN SPAN 2	L2:	250 FT
[DESIGN SPAN 3 (LEAVE BLANK IF NOT REQUIRED)]	L3)?	
4. CONCRETE, HIGH PERFORMANCE, MASS POUR	f'c:	3.5 KSI
5. CONCRETE, HIGH PERFORMANCE CLASS A	f'c:	4 KSI
6. CONCRETE, HIGH PERFORMANCE CLASS B	f'c:	3.5 KSI
7. CONCRETE, CLASS C	f'c:	3 KSI
8. REINFORCING STEEL	fy:	60 KSI
9. STRUCTURAL STEEL AASHTO M270	fy:	36,50,70 KSI
TYPE OF STEEL		GEN. NOTES
10. SOIL UNIT WEIGHT	g:	0.14 K/FT3
11. NOMINAL BEARING RESISTANCE OF SOIL	qn:	4.7 KSF
12. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	f:	0.45
13. NOMINAL BEARING RESISTANCE OF ROCK	qn:	10 KSF
14. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	f:	N/A
15. PILE SIZE		(14X117)(14X89)
16. PILE YIELD STRENGTH ASTM A572	fy:	50 KSI
17. NOMINAL AXIAL PILE RESISTANCE PIER	qp:	390 KIPS
NOMINAL AXIAL PILE RESISTANCE ABUTMENT 2	qp:	252 KIPS
ENTER PILES AS OVERALL AVERAGE OR FOR EACH SUBSTRUCTURE		
18. EST. PILE LENGTH AT PIER (TO THE NEAREST TENTH FOOT)	L1:	40.4 FT
EST. PILE LENGTH AT ABUTMENT 2	L2:	18.5 FT
19. PILE RESISTANCE FACTOR (REFER TO AASHTO LRFD)	f:	0.65
20. LATERAL PILE DEFLECTION	Δ	GEN. NOTES
21. BASIC WIND SPEED	V3s:	100 MPH
22. MINIMUM GROUND SNOW LOAD	pg:	N/A
23. SEISMIC DATA (AASHTO LRFD)	PGA:	ZONE 1

PROJECT NAME: **BETHEL**
PROJECT NUMBER: **BRF 022-1(14)**

FILE NAME: **sf161forms.dgn**
PROJECT LEADER: **M. EVANS-MONGEON**
DESIGNED BY: **S. SCRIBNER**
PRELIMINARY INFORMATION SHEET

PLOT DATE: 6/15/2011
DRAWN BY: **M. LONGSTREET**
CHECKED BY: **S. SCRIBNER**
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