

PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

INDEX OF SHEETS

PLAN SHEETS

1	TITLE SHEET
2	PRELIMINARY INFORMATION SHEET
3	TYPICAL SECTIONS
4 - 7	QUANTITY SHEETS
8	TIE SHEET
9 - 10	LAYOUT SHEETS
11	PROFILE VT RT 14
12	TRAFFIC DETOUR SHEET
13	TRAFFIC SIGNS AND PAVEMENT MARKINGS
14	TRAFFIC SIGN SUMMARY SHEET
15	PIPE SECTIONS
16	DRAINAGE DETAIL SHEET
17	BORING LAYOUT SHEET
18 - 19	BORING LOGS
20	PLAN AND ELEVATION SHEET
21	GENERAL NOTES
22	DECK STRUCTURAL DETAILS
23	SUPERSTRUCTURE DETAILS
24	FRAMING DETAILS
25	CURTAINWALL DETAILS
26	BEARING DETAIL SHEET
27	APPROACH SLAB DETAILS SHEET
28	ABUTMENT 1 DETAILS
29	ABUTMENT 1 FOOTING REINFORCEMENT
30	ABUTMENT 2 DETAILS
31	ABUTMENT 2 TYPICAL DETAILS
32	ABUTMENT 2 FOOTING REINFORCEMENT
33	WINGWALLS 1 & 2 DETAILS
34	WINGWALL 4 DETAILS
35	RAILING LAYOUT
36 - 38	ALUMINUM RAILING DETAILS
39	REINFORCING STEEL SCHEDULE
40 - 41	ROW LAYOUT SHEETS
42 - 43	ROW DETAIL SHEETS
44	ENVIRONMENTAL IMPACTS
45	EROSION CONTROL NARRATIVE
46	EXISTING CONDITIONS
47	EPSC PLAN SHEET
48	FINAL CONDITIONS SHEET
49 - 51	EPSC DETAIL SHEETS
52 - 56	MAINLINE CROSS SECTIONS
57 - 63	CHANNEL CROSS SECTIONS

STANDARDS LIST

B-71	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	07-08-2005
E-100	CONSTRUCTION APPROACH SIGNS	01-02-2004
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	01-02-2004
E-101	CONSTRUCTION SIGN DETAILS	05-30-2003
E-102	CONSTRUCTION SIGN DETAILS	06-30-2003
E-102A	CONSTRUCTION SIGN DETAILS	05-01-2004
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	06-30-2003
E-107A	BREAKAWAY BARRICADE DETAILS	06-08-2009
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-123	GUIDE SIGN PLACEMENT - MISCELLANEOUS DETAILS	03-16-2004
E-127	ROUTE MARKINGS AT RURAL INTERSECTIONS	08-08-1995
E-134	BRIDGE NUMBER PLAQUE	08-08-1995
E-136B	STATE ROUTE MARKER SIGN DETAILS	08-08-1995
E-138	MILE MARKER DETAILS - STATE & TOWN HIGHWAYS	05-30-2003
E-141	REGULATORY SIGN DETAILS	09-20-1995
E-143	REGULATORY SIGN DETAILS	06-15-2004
E-160	FLANGED CHANNEL STEEL SIGN POST	05-20-1999
E-193	PAVEMENT MARKING DETAILS	08-18-1995
E-198	DELINEATOR SAND MILE POSTS	04-01-2005
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	01-03-2000
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	01-03-2000

STRUCTURES DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	5/7/2010
SD-502.00	CONCRETE DETAILS AND NOTES	6/4/2010
SD-516.10	BRIDGE JOINT ASPHALTIC PLUG	5/7/2010
SD-601.00	STRUCTURAL STEEL DETAILS & NOTES	6/4/2010
SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	5/7/2010

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: _____

DRAINAGE AREA : 131.3 sq. km

CHARACTER OF TERRAIN : Rolling to Mountainous

STREAM CHARACTERISTICS : Perennial, straight at site but sinuous up & downstream.

NATURE OF STREAMBED : Ledge

PEAK FLOW DATA

Q 2.33 =	41 cms	Q 50 =	133 cms
Q 10 =	75 cms	Q 100 =	160 cms
Q 25 =	105 cms	Q 500 =	270 cms

DATE OF FLOOD OF RECORD : November 1927

ESTIMATED DISCHARGE : Unknown

WATER SURFACE ELEV. : Unknown

NATURAL STREAM VELOCITY : @ Q50 = 3.7 mps

ICE CONDITIONS : Slight

DEBRIS : Slight

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No

IS ORDINARY RISE RAPID? No

IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes

IF YES, DESCRIBE : There is a concrete dam under the upstream side of the bridge.

WATERSHED STORAGE: 3.7% HEADWATERS: _____

UNIFORM: X

IMMEDIATELY ABOVE SITE: _____

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span steel beam bridge

YEAR BUILT: 1936

CLEAR SPAN(NORMAL TO STREAM): 17.1 m

VERTICAL CLEARANCE ABOVE STREAMBED: 3.1 m to top of dam

WATERWAY OF FULL OPENING: 56 sq. m

DISPOSITION OF STRUCTURE: Remove and replace

TYPE OF MATERIAL UNDER SUBSTRUCTURE: Ledge

WATER SURFACE ELEVATIONS AT:

Q2.33 =	211.1	VELOCITY =	2.9 mps
Q10 =	211.7	"	3.5 mps
Q25 =	212.1	"	3.9 mps
Q50 =	212.5	"	4.2 mps
Q100 =	213.4	"	4.5 mps

LONG TERM STREAMBED CHANGES: None, due to ledge.

IS THE ROADWAY OVERTOPPED BELOW Q100: No

FREQUENCY: Above Q100

RELIEF ELEVATION: 213.5

DISCHARGE OVER ROAD @Q100: None

UPSTREAM STRUCTURE

TOWN: East Montpelier DISTANCE: 240 m

HIGHWAY #: VT 14 STRUCTURE #: 72

CLEAR SPAN: 24.4 m CLEAR HEIGHT: 5.0 m

YEAR BUILT: 1991 FULL WATERWAY: 87 sq. m

STRUCTURE TYPE: Single Span steel beam bridge

DOWNSTREAM STRUCTURE

TOWN: East Montpelier DISTANCE: 2.4 km

HIGHWAY #: T.H. 31 STRUCTURE #: 21

CLEAR SPAN: 7.9 m CLEAR HEIGHT: 4.0 m

YEAR BUILT: N.A. FULL WATERWAY: 34 sq. m

STRUCTURE TYPE: Single Span King truss bridge

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	HL-93	HL-93	3S2	6 AXLE	3A STR.	4A STR.	5A SEMI
TONNAGE							
INVENTORY	1.03	2.3	2.06	1.33	1.71	1.53	1.72
POSTING							
OPERATING	1.34	2.99	2.68	1.73	2.22	1.99	2.23
COMMENTS:	LRFR SERVICE II CONTROLS						

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span steel beam bridge

CLEAR SPAN(NORMAL TO STREAM): 18.2 m

VERTICAL CLEARANCE ABOVE STREAMBED: 2.9 m to top of dam

WATERWAY OF FULL OPENING: 58 sq. m

WATER SURFACE ELEVATIONS AT:

Q2.33 =	211.0	VELOCITY =	2.8 mps
Q10 =	211.6	"	3.4 mps
Q25 =	212.0	"	3.8 mps
Q50 =	212.3	"	4.1 mps
Q100 =	212.7	"	4.4 mps

IS THE ROADWAY OVERTOPPED BELOW Q100: No

FREQUENCY: Above Q 100

RELIEF ELEVATION: 213.6

DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 212.7

VERTICAL CLEARANCE: @ Q 50 = 0.4 m

SCOUR: None. Abutment footings will be poured on sound ledge.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW: 2.9 cms DEPTH OR ELEVATION: _____

ORDINARY LOW WATER: 1.3 cms 0.3 m

ORDINARY HIGH WATER: 17.6 cms 1.0 m

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Temporary Pedestrian Bridge

CLEAR SPAN (NORMAL TO STREAM): 17.0 m Min.

VERTICAL CLEARANCE ABOVE STREAMBED: Min. Bottom of Beam Elev. = 212.0

WATERWAY AREA OF FULL OPENING: 40.0 Sq. m Min.

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	dp: 80 mm
3. DESIGN SPAN	L: 19.600 M
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND	fy: ---
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: 30 MPa
10. CONCRETE, HIGH PERFORMANCE CLASS B	f'c: 25 MPa
11. CONCRETE, CLASS C	f'c: 20 MPa
12. REINFORCING STEEL	fy: Grade 420
13. STRUCTURAL STEEL AASHTO M270 (WEATHERING)	fy: Grade 345W
14. SOIL UNIT WEIGHT	γ: 22 KN/CM
15. NOMINAL BEARING RESISTANCE OF SOIL	qn: ---
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
17. NOMINAL BEARING RESISTANCE OF ROCK	qn: 480 KPa
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: 0.45
19. NOMINAL AXIAL PILE RESISTANCE	qp: ---
20. PILE YIELD STRENGTH ASTM A572	fy: ---
21. PILE SIZE	---
22. EST. PILE LENGTH	Lp: ---
23. PILE RESISTANCE FACTOR	φ: ---
24. LATERAL PILE DEFLECTION	Δ: ---
25. BASIC WIND SPEED	V3s: ---
26. MINIMUM GROUND SNOW LOAD	ps: ---
27. SEISMIC DATA	PGA: --- S: --- S1: ---

PROJECT NAME: EAST MONTPELIER

PROJECT NUMBER: BRF 037-2(8)

FILE NAME: 86e054/structures/se054pi.dgn PLOT DATE: 6/22/2010

PROJECT LEADER: C.P.WILLIAMS DRAWN BY: D.D.BEARD

DESIGNED BY: H.I.SALLS CHECKED BY: L.J.STONE

PRELIMINARY INFORMATION SHEET 1 SHEET 2 OF 63

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	20 year ESAL for flexible pavement from 2011 to 2031 : 3480000
2011	4700	530	69	6.4	360	40 year ESAL for flexible pavement from 2011 to 2051 : 8399000
2031	5700	640	69	9.7	650	Design Speed : 35 mph