

PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

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STANDARDS LIST

E-100	CONSTRUCTION APPROACH SIGNS	01-02-2004
E-101	CONSTRUCTION SIGN DETAILS	05-30-2003
E-102	CONSTRUCTION SIGN DETAILS	06-30-2003
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	06-30-2003
E-134	BRIDGE NUMBER PLAQUE	08-08-1995
E-164	SQUARE STEEL SIGN POST	06-08-2009
E-193	PAVEMENT MARKING DETAILS	08-18-1995
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 DETAILS

SD-501.00	CONCRETE DETAILS AND NOTES	05-07-2010
SD-502.00	CONCRETE DETAILS AND NOTES	05-08-2010

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: Jan. 2012

DRAINAGE AREA : 0.74 sq. mi.
 CHARACTER OF TERRAIN : Hilly, mostly forested with a few open areas and ponds
 STREAM CHARACTERISTICS : Sinuous, probably incised and semi-alluvial
 NATURE OF STREAMBED : Mostly cobbles and boulders with some gravel

PEAK FLOW DATA

Q 2.33 =	60 cfs	Q 50 =	210 cfs
Q 10 =	140 cfs	Q 100 =	240 cfs
Q 25 =	180 cfs	Q 500 =	340 cfs

DATE OF FLOOD OF RECORD : Unknown
 ESTIMATED DISCHARGE : Unknown
 WATER SURFACE ELEV. : Unknown
 NATURAL STREAM VELOCITY : @ Q50 = 8.7 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: Concrete box
 YEAR BUILT: Unknown, widened in 1963
 CLEAR SPAN(NORMAL TO STREAM): 5'
 VERTICAL CLEARANCE ABOVE STREAMBED: 5'
 WATERWAY OF FULL OPENING: 25 sq. ft.
 DISPOSITION OF STRUCTURE: Remove and replace with a new box
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: _____

WATER SURFACE ELEVATIONS AT:

Q2.33 =	2321.7'	VELOCITY =	13.5 fps
Q10 =	2323.8'	"	16.0 fps
Q25 =	2324.8'	"	16.8 fps
Q50 =	2325.6'	"	17.4 fps
Q100 =	2326.5'	"	17.8 fps

LONG TERM STREAMBED CHANGES: The stream may be degrading downstream of the structure. We do not have enough historical information to know long term changes.

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: Above Q100
 RELIEF ELEVATION: 2335.5'
 DISCHARGE OVER ROAD @Q100: None

UPSTREAM STRUCTURE

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

DOWNSTREAM STRUCTURE

TOWN: Searsburg DISTANCE: 6,700'
 HIGHWAY #: TH 3 STRUCTURE #: 24
 CLEAR SPAN: 9.75' CLEAR HEIGHT: 6.58'
 YEAR BUILT: _____ FULL WATERWAY: 52 sq. ft.
 STRUCTURE TYPE: CGMPPA

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							
POSTING							
OPERATING							
COMMENTS:	TABLE TO BE COMPLETED BY CONTRACTOR'S DESIGNER						

PROPOSED STRUCTURE

STRUCTURE TYPE: Pre-cast concrete box with the invert buried 2'

CLEAR SPAN(NORMAL TO STREAM): 12'
 VERTICAL CLEARANCE ABOVE STREAMBED: 5'
 WATERWAY OF FULL OPENING: 60 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	2321.2'	VELOCITY =	7.6 fps
Q10 =	2322.2'	"	10.4 fps
Q25 =	2322.6'	"	11.5 fps
Q50 =	2322.9'	"	12.1 fps
Q100 =	2323.2'	"	12.8 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: Above Q100
 RELIEF ELEVATION: 2335.7'
 DISCHARGE OVER ROAD @Q100: none

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: Inside top of box at inlet = 2324.9'
 VERTICAL CLEARANCE: @ Q50 = 2.0'

SCOUR: Not applicable for a box.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW: 2 cfs DEPTH OR ELEVATION:
 ORDINARY LOW WATER: 1 cfs Depth = 0.5'
 ORDINARY HIGH WATER: 26 cfs Depth = 1.0'

TEMPORARY BRIDGE REQUIREMENTS

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

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. SEE PLANS AND SPECIAL PROVISIONS

DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	d _p : 3.0 INCH
3. CULVERT OPENING	L: 12.0 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f _y : ---
6. PRESTRESSED CONCRETE STRENGTH	f' _c : ---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' _{cr} : ---
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	f _y : 60 KSI
13. STRUCTURAL STEEL AASHTO M270	f _y : ---
14. SOIL UNIT WEIGHT	γ: 0.140 KCF
15. NOMINAL BEARING RESISTANCE OF SOIL	q _n : 4.0 KSF
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
17. NOMINAL BEARING RESISTANCE OF ROCK	q _n : 10.0 KSF
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
19. NOMINAL AXIAL PILE RESISTANCE	q _p : ---
20. PILE YIELD STRENGTH ASTM A572	f _y : ---
21. PILE SIZE	L _p : ---
22. EST. PILE LENGTH	L _p : ---
23. PILE RESISTANCE FACTOR	φ: ---
24. LATERAL PILE DEFLECTION	Δ: ---
25. BASIC WIND SPEED	V _{3s} : ---
26. MINIMUM GROUND SNOW LOAD	p _g : ---
27. SEISMIC DATA	P _{GA} : --- S _s : --- S ₁ : ---

PROJECT NAME: SEARSBURG
 PROJECT NUMBER: STP SCR(7)

FILE NAME: d10c198_PI Sheet Builder_v00 PLOT DATE: 2/27/2013
 PROJECT LEADER: K. UPMAL DRAWN BY: B. MCADAMS
 DESIGNED BY: B. MCADAMS CHECKED BY: A. KEMPTON
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TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	20 year ESAL for flexible pavement from 2032 to 2052 : 230000
2032	580	65	56	5.9	35	40 year ESAL for flexible pavement from 2032 to 2072 : 513000
2052	610	70	56	8.1	50	Design Speed : 50 mph