

PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

INDEX OF SHEETS

PLAN SHEETS

1	TITLE SHEET
2	PRELIMINARY INFORMATION SHEET
3	TYPICAL SECTIONS - TYP 1
4	TYPICAL SECTIONS - TYP 2
5	PROJECT NOTES
6 - 7	QUANTITY SHEETS 1-2
8	CONVENTIONAL SYMBOLOLOGY LEGEND
9	SURVEY CONTROL AND TIES
10	LAYOUT PLAN - LP 1
11	PROFILE SHEET & BANKING DIAGRAM - RP 1
12 - 13	TRAFFIC CONTROL PLANS TC 1-2
14	DETOUR PLAN - DP 1
15	DETOUR DETAILS - DD 1
16	DETOUR DETAILS - DD 2
17	DETOUR DETAILS - DD 3
18	UTILITY LAYOUT SHEET - UTL 1
19	TRAFFIC SIGNS AND LINES LAYOUT - TSL 1
20	TRAFFIC SIGN SUMMARY SHEET - TSS 1
21	BORING PLAN
22	BORING LOG 1
23	BORING LOG 2
24	PLAN AND ELEVATION
25	STRUCTURAL PLAN
26	APPROACH SLAB DETAILS 1
27	APPROACH SLAB DETAILS 2
28	PEDESTAL FRAME 1 PLAN AND ELEVATION
29	PEDESTAL 1 FOOTING PLAN & PILE LAYOUT
30	PEDESTAL FRAME 2 PLAN AND ELEVATION
31	PEDESTAL 2 FOOTING PLAN & PILE LAYOUT
32	STRUCTURE DETAILS
33	BRIDGE RAIL LAYOUT
34 - 36	ROADWAY CROSS SECTIONS - RXS 1-3
37 - 40	CHANNEL CROSS SECTIONS - CXS 1-4
41	EROSION CONTROL NARRATIVE - ECN 1
42	EPSC EXISTING SITE PLAN
43	EPSC CONSTRUCTION SITE PLAN
44	EPSC FINAL CONDITIONS PLAN - FCP 1
45	EROSION CONTROL DETAILS - ECD 1
46	EROSION CONTROL DETAILS - ECD 2
47	EROSION CONTROL DETAILS - ECD 3
48	STREAM PHASING SUMMARY
49	R.O.W. DETAIL SHEET #1
50	R.O.W. LAYOUT SHEET 1 OF 1

STANDARDS LIST

E-119	UTILITY WORK ZONE	03-01-2004
E-121	STANDARD PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-13M	BOX BEAM GUARDRAIL	06-13-1997
S-364A	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM	02-10-2014
S-364B	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	02-10-2014
S-364C	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	02-10-2014
S-364D	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	04-23-2012
T-1	TRAFFIC CONTROL GENERAL NOTES	08-06-2012
T-10	CONVENTIONAL ROADS AND CONSTRUCTION APPROACH SIGNING	08-06-2012
T-28	CONSTRUCTION SIGN DETAILS	08-06-2012
T-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA Date: March 2015

DRAINAGE AREA : 8.4 sq. mi.
 CHARACTER OF TERRAIN : Hilly to mountainous, 80% forested and 20% open
 STREAM CHARACTERISTICS : Straight to sinuous, steep river. Probably incised and alluvial.
 NATURE OF STREAMBED : Gravel, cobbles, some boulders and sand

PEAK FLOW DATA

Q 2.33 =	500 cfs	Q 50 =	1700 cfs
Q 10 =	950 cfs	Q 100 =	2075 cfs
Q 25 =	1350 cfs	Q 500 =	3400 cfs

DATE OF FLOOD OF RECORD : Unknown
 ESTIMATED DISCHARGE : Unknown
 WATER SURFACE ELEV. : Unknown
 NATURAL STREAM VELOCITY : @ Q50 = 6.1 fps
 ICE CONDITIONS : Moderate
 DEBRIS : Moderate
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
 IS ORDINARY RISE RAPID? Yes
 IS STAGE AFFECTED BY UP-STREAM OR DOWNSTREAM CONDITIONS? No
 IF YES, DESCRIBE:

PROPOSED STRUCTURE

STRUCTURE TYPE: Rigid Frame Bridge

CLEAR SPAN(NORMAL TO STREAM): 30'
 VERTICAL CLEARANCE ABOVE STREAMBED: 9'
 WATERWAY OF FULL OPENING: 246 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	977.0'	VELOCITY=	8.0 fps
Q10 =	978.7'	"	9.4 fps
Q25 =	980.2'	"	11.4 fps
Q50 =	981.3'	"	11.5 fps
Q100 =	982.5'	"	13.8 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: Above Q100
 RELIEF ELEVATION: 983.3'
 DISCHARGE OVER ROAD @Q100: 0 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 982.3'
 VERTICAL CLEARANCE: @ Q50 = 1.0'

SCOUR: Long term and contraction scour up to Q200 (scour design check flood) = 5'.
 Piles should be designed to be freestanding to elevation 964.0'.
 REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

WATERSHED STORAGE: 1% **HEADWATERS:** _____
INFORM: X
IMMEDIATELY ABOVE SITE: _____

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Concrete T-Beam bridge
 YEAR BUILT: 1924
 CLEAR SPAN(NORMAL TO STREAM): 14'
 VERTICAL CLEARANCE ABOVE STREAMBED: 8' (Ave. low beam elev. 980.6')
 WATERWAY OF FULL OPENING: 110 sq. ft.
 DISPOSITION OF STRUCTURE: Remove and replace
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring logs.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	978.3'	VELOCITY =	10.9 fps
Q10 =	981.3'	"	15.9 fps
Q25 =	983.6'	"	18.4 fps
Q50 =	985.5'	"	20.2 fps
Q100 =	988.0'	"	20.8 fps

LONG TERM STREAMBED CHANGES: There is a scour hole through the bridge area.
 The bridge footings have been undermined due to scour and/or channel degradation.

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: Above Q100
 RELIEF ELEVATION: 983.3'
 DISCHARGE OVER ROAD @Q100: 0 cfs

UPSTREAM STRUCTURE

TOWN: Woodstock DISTANCE: 3,900'
 HIGHWAY #: VT 106 STRUCTURE #: 23
 CLEAR SPAN: 30' CLEAR HEIGHT: 13'
 YEAR BUILT: 1950 FULL WATERWAY: 260 sq. ft.
 STRUCTURE TYPE: Concrete rigid frame

DOWNSTREAM STRUCTURE

TOWN: Woodstock DISTANCE: 500'
 HIGHWAY #: VT 106 STRUCTURE #: 25
 CLEAR SPAN: 18' CLEAR HEIGHT: 10'
 YEAR BUILT: 1934 FULL WATERWAY: 180 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 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:
GRADE:	GRADE:	GRADE:

* REFER TO MICROPILE FOUNDATION NOTES ON SHEET 5

STRUCTURES DETAILS

SD-501.00	CONCRETE DETAILS AND NOTES	02-09-2012
SD-502.00	CONCRETE DETAILS AND NOTES	10-10-2012
SD-516.10	BRIDGE JOINT ASPHALTIC PLUG	08-29-2011

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	ESAL
2014	1500	170	66	5.1	90	20 year ESAL for flexible pavement from 2014 to 2034 : 382000
2034	1600	180	66	7.7	150	40 year ESAL for flexible pavement from 2014 to 2054 : 874000

Design Speed : 40 mph

PERMIT INFORMATION

AVERAGE DAILY FLOW: 20 cfs DEPTH OR ELEVATION:
 ORDINARY LOW WATER: 10 cfs Depth = 1'
 ORDINARY HIGH WATER: 225 cfs Depth = 2'

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. MAINTAIN ONE WAY TRAFFIC DURING PHASE I.
2. OFFSITE DETOUR DURING PHASE II.
3. TEMPORARY SIGNALS ARE NOT NECESSARY.
4. SIDEWALKS ARE NOT NECESSARY.

DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	d_p : 0.0 INCH
3. DESIGN SPAN	L : 42'-5" 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 : 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 : ---
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	ϕ : ---
17. NOMINAL BEARING RESISTANCE OF ROCK	q_n : ---
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	
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	PGA : --- S_s : --- S_1 : ---

PROJECT NAME: **WOODSTOCK**
 PROJECT NUMBER: **BRF 0151(21)**

FILE NAME: z10c426_pl.xls PLOT DATE: 3/24/2015
 PROJECT LEADER: G. BOGUE DRAWN BY: L. BUXTON
 DESIGNED BY: G. BOGUE CHECKED BY: J. HUNGERFORD
 PRELIMINARY INFORMATION SHEET SHEET 2 OF 50