

# PRELIMINARY INFORMATION SHEET

INDEX OF SHEETS

FINAL HYDRAULIC REPORT

PLAN SHEETS

1	TITLE SHEET
2	PRELIMINARY INFORMATION SHEET
3 - 4	TYPICAL SECTIONS SHEETS
5	DRIVE LAYOUTS
6 - 8	QUANTITY SHEETS
9	BRIDGE QUANTITY SHEET
10	DRAINAGE DETAIL SHEET
11 - 12	TIE SHEETS
13 - 14	LAYOUT SHEETS
15 - 16	MAINLINE PROFILE SHEETS
17	MATERIAL TRANSITION SHEET
18 - 19	SUPER ELEVATION DIAGRAM SHEETS
20 - 21	DRAINAGE LAYOUT SHEETS
22	DRAINAGE PROFILE SHEET
23 - 24	AERIAL UTILITIES LAYOUT SHEETS
25 - 26	TRAFFIC SIGN LAYOUT SHEETS
27	TRAFFIC SIGN SUMMARY SHEET
28	BORING LAYOUT SHEET
29 - 38	BORING LOG SHEETS
39	PROJECT NOTES
40	PLAN AND ELEVATION
41	BRIDGE TYPICAL
42	DECK REINFORCING LAYOUT SHEET
43	FRAMING PLAN AND GIRDER ELEVATION
44	END DIAPHRAGM AND INTERMEDIATE DETAILS
45	BEARING NOTES
46	FIXED BEARING ABUTMENT 1
47	EXPANSION BEARING ABUTMENT 2
48	ABUTMENT FOOTING DETAILS
49	ABUTMENT MICROPILE LAYOUT
50	ABUTMENT 1 DETAILS
51	ABUTMENT 2 DETAILS
52	WINGWALL 1 AND 2 DETAILS
53	WINGWALL 3 AND 4 DETAILS
54	ABUTMENT BACKWALL DETAILS
55	APPROACH SLAB 1 DETAILS
56	APPROACH SLAB 2 DETAILS
57	BRIDGE RAIL EXPANSION JOINT DETAILS
58	BRIDGE RAIL SPLICE DETAILS
59	CONCRETE BRIDGE RAIL DETAILS
60	WINGWALL CONCRETE RAIL DETAILS
61	DOWNSPOUT DETAILS SHEET
62	BRIDGE SIDEWALK EXPANSION JOINT DETAILS
63	APPROACH RAIL DETAILS
64	CONCRETE SIDEWALK APPROACH
65	REINFORCING STEEL SCHEDULE
66	WATER AND SEWER UTILITIES
67 - 68	RIGHT OF WAY LAYOUT SHEETS
69	RIGHT OF WAY DETAIL SHEET
70	EPSC NARRATIVE
71 - 72	EPSC EXISTING CONDITIONS SHEETS
73 - 74	EPSC CONSTRUCTION CONDITIONS SHEETS
75 - 76	EPSC FINAL CONDITIONS SHEETS
77 - 79	EPSC DETAILS SHEETS
80 - 86	MAINLINE CROSS SECTION SHEETS
87 - 90	CHANNEL CROSS SECTION SHEETS

CONSULTANT UTILITY PLANS

C1	WATER AND SEWER MAIN PLAN AND GENERAL NOTES
C2	WATER AND SEWER MAIN PROFILES
C3-C4	GENERAL DETAILS
E1	ELECTRICAL SITE PLAN WITH DETAILS
E1	ELECTRICAL SITE PLAN WITH DETAILS
E2	WIRING DIAGRAMS AND DETAILS

STRUCTURES DETAIL SHEETS

SD-501.00	CONCRETE DETAILS
SD-502.00	CONCRETE DETAILS
SD-516.11a	BRIDGE EXPANSION JOINT, VERMONT
SD-516.11b	BRIDGE EXPANSION JOINT, VERMONT
SD-601.00	STRUCTURAL STEEL DETAILS AND NOTES

STANDARDS LIST

A-61	SLOPES IN SOLID ROCK EXCAV. (ADT UNDER 400 VPD)	1-Jun-94
A-76	STANDARDS FOR TOWN & DEVELOPMENT ROADS	3-Mar-03
A-80	SHARED USE PATH / HIGHWAY INTERSECTION DETAILS	31-Mar-04
B-11	UNDERDRAIN - ROCK SUBGRADE, SLOPE STABILIZ	1-Jun-94
B-71	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	8-Jul-05
C-2A	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK A	14-Oct-05
C-2B	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK A	14-Oct-05
C-3B	SIDEWALK RAMPS AND MEDIAN ISLANDS	10-Mar-08
C-10	CURBING	11-Feb-08
D-6	REINFORCED CONCRETE DROP INLET W/GRATE (DITCHES)	1-Jun-94
D-8	REINFORCED CONCRETE DROP INLET WITH PRECAST COVER & GRATE	3-Jan-00
D-9	REINFORCED CONCRETE DROP INLET WITH VERTICAL CURB & THROAT ADAPTER	1-Jun-94
D-10	REINFORCED CONCRETE DROP INLET TOP FOR BITUMINOUS CONCRETE CURB & C	1-Jun-94
D-11	STEEL OR IRON GRATES& COVERS (TYPE A)	1-Jun-94
D-13	CONCRETE CATCH BASIN	3-Jan-00
D-15	PRECAST REINF CONC. MH-GRATES, CAST IRON GRATE WITH FRAME, TYPE D & E	1-Jun-94
D-16	DRAINAGE DETAILS INCLUDING DROP INLETS, IRON GRATE TYPE B&C, CONC END	1-Jun-94
D-17	CGM DROP INLET, REDUCER, RISER	1-Jun-94
D-30	UNDERDRAIN CONSTRUCTION DETAILS	13-Aug-07
E-100	CONSTRUCTION APPROACH SIGNS	2-Jan-04
E-101	CONSTRUCTION SIGN DETAILS	30-May-03
E-102	CONSTRUCTION SIGN DETAILS	30-Jun-03
E-102A	CONSTRUCTION SIGN DETAILS	1-May-04
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	30-Jun-03
E-107A	BREAKAWAY BARRICADE DETAILS	8-Jun-09
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	8-Aug-95
E-164	SQUARE STEEL SIGN POST	8-Jun-09
E-193	PAVEMENT MARKING DETAILS	18-Aug-95
E-198	DELINEATOR SAND MILE POSTS	1-Apr-05
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	3-Jan-00
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	3-Jan-00

HYDROLOGIC DATA

Date: 4/10/2001

DRAINAGE AREA : 81.6 square kilometers  
 CHARACTER OF TERRAIN : Mountainous, forested to wetlands  
 STREAM CHARACTERISTICS : Perennial, sinuous, not braided and equiwidth  
 NATURE OF STREAMBED : Boulders, cobble to gravel

PEAK FLOW DATA

Q 2.33 =	40 cms	Q 50 =	147 cms
Q 10 =	85 cms	Q 100 =	178 cms
Q 25 =	122 cms	Q 500 =	239 cms

DATE OF FLOOD OF RECORD : Unknown  
 ESTIMATED DISCHARGE : "  
 WATER SURFACE ELEV. : "  
 NATURAL STREAM VELOCITY : @ Q25 = 4.1 mps  
 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? Yes  
 IF YES, DESCRIBE : Confluence with the Deerfield River 45 meters below Bridge 32

WATERSHED STORAGE: 4% HEADWATERS: X  
 UNIFORM: \_\_\_\_\_  
 IMMEDIATELY ABOVE SITE: \_\_\_\_\_

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Two span steel beam bridge  
 YEAR BUILT: 1900 (reconstructed in 1967)  
 CLEAR SPAN(NORMAL TO STREAM): 36.0 m  
 VERTICAL CLEARANCE ABOVE STREAMBED: 5.8m (average low steel =36.8 m)  
 WATERWAY OF FULL OPENING: 106 sq m  
 DISPOSITION OF STRUCTURE: Remove  
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: Refer to boring logs

WATER SURFACE ELEVATIONS AT:

Q2.33 =	357.0 m *	VELOCITY=	2.8 mps
Q10 =	357.8 m *	"	3.8 mps
Q25 =	358.3 m *	"	4.2 mps
Q50 =	358.6 m *	"	4.4 mps
Q100 =	358.9 m *	"	4.6 mps

LONG TERM STREAMBED CHANGES: Some scour noted through the bridge area, due to the channel drop in this area and stone fill protection constricting the flow.

IS THE ROADWAY OVERTOPPED BELOW Q100: No  
 FREQUENCY: Above Q100  
 RELIEF ELEVATION: 361.5 m  
 DISCHARGE OVER ROAD @Q100: None

UPSTREAM STRUCTURE

TOWN: Readsboro DISTANCE: 450 m  
 HIGHWAY #: TH-3 STRUCTURE #: 31  
 CLEAR SPAN: 30 m CLEAR HEIGHT: 7 m  
 YEAR BUILT: 1948 FULL WATERWAY: unk.  
 STRUCTURE TYPE: Single span bridge

DOWNSTREAM STRUCTURE

TOWN: N/A-Confluence with Deerfield DISTANCE: \_\_\_\_\_  
 HIGHWAY #: \_\_\_\_\_ STRUCTURE #: \_\_\_\_\_  
 CLEAR SPAN: \_\_\_\_\_ CLEAR HEIGHT: \_\_\_\_\_  
 YEAR BUILT: \_\_\_\_\_ FULL WATERWAY: \_\_\_\_\_  
 STRUCTURE TYPE: \_\_\_\_\_

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK					
	HL-93	SS2	6 AXLE	3A STR	4A STR	5A SEMI
TONNAGE	36	36	66	30	34.5	38
INVENTORY	1.17					
POSTING	1.29					
OPERATING		1.85	1.13	1.82	1.63	1.65
COMMENTS:						

PROPOSED STRUCTURE

STRUCTURE TYPE: Steel Plate Girder

CLEAR SPAN(NORMAL TO STREAM): 31 m  
 VERTICAL CLEARANCE ABOVE STREAMBED: 4.6 m  
 WATERWAY OF FULL OPENING: 84 sq m

WATER SURFACE ELEVATIONS AT:

Q2.33 =	356.7 m *	VELOCITY=	3.0 mps
Q10 =	357.5 m *	"	3.6 mps
Q25 =	357.9 m *	"	4.0 mps
Q50 =	358.2 m *	"	4.2 mps
Q100 =	358.4 m *	"	4.4 mps

IS THE ROADWAY OVERTOPPED BELOW Q100: No  
 FREQUENCY: Above Q100  
 RELIEF ELEVATION: 361.1 m  
 DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 359.6 m  
 VERTICAL CLEARANCE: @ Q25 = 1.7 m \*(see note below)

SCOUR: Maximum contraction scour of 1 m @ Q500

REQUIRED CHANNEL PROTECTION: Type IV Stone Fill

PERMIT INFORMATION

AVERAGE DAILY FLOW: 2 cms DEPTH OR ELEVATION:  
 ORDINARY LOW WATER: 1 cms 0.3 m  
 ORDINARY HIGH WATER: 17 cms 1.0 m

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Single span bridge  
 CLEAR SPAN (NORMAL TO STREAM): 21 m  
 VERTICAL CLEARANCE ABOVE STREAMBED: 358.5 m (min. elevation)\*\*  
 WATERWAY AREA OF FULL OPENING: 79 sq m

ADDITIONAL INFORMATION

\* This bridge is located immediately upstream of the confluence. During a flood event, there will be backwater effects from the Deerfield River which would raise water surface elevations at this site. There is no flood insurance study for the Deerfield in this area so normal depth was assumed.  
 \*\* Temporary bridge was sized to be installed approximately 7 m upstream of the existing bridge.

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN ONE-WAY TRAFFIC ON A TEMPORARY BRIDGE.
2. INSTALL AND MAINTAIN TRAFFIC SIGNALS.
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: 75 mm
3. DESIGN SPAN	L: 32.89 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'c: ---
8. CONCRETE, HIGH PERFORMANCE CLASS AA (30 Mpa)	f'c: ---
9. CONCRETE, HIGH PERFORMANCE CLASS A, LOW CEMENT (30 Mpa)	f'c: 4.0 ksi
10. CONCRETE, HIGH PERFORMANCE CLASS B (25 Mpa)	f'c: 3.5 ksi
11. CONCRETE, CLASS C (20 Mpa)	f'c: ---
12. REINFORCING STEEL (420 Mpa)	fy: 420
13. STRUCTURAL STEEL AASHTO M270, GRADE 345W (350 Mpa) (WE/ fy)	fy: 350
14. SOIL UNIT WEIGHT (22 kN/m3)	γ: 0.14 kcf
15. MAX. FACTORED BEARING RESISTANCE (SOIL) (380 kPa)	qn: 8 KSF
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: 0.45
17. NOMINAL BEARING RESISTANCE OF ROCK (475 kPa)	qn: 10.0 KSF
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
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: 0.55
24. LATERAL PILE DEFLECTION	Δ: ---
25. BASIC WIND SPEED	V3s: 40 m/s
26. MINIMUM GROUND SNOW LOAD	ps: 2.4 kN/m2
27. SEISMIC DATA	PGA: --- S: --- SI: ---

PROJECT NAME: READSBORO  
 PROJECT NUMBER: BRF 0105(3)  
 FILE NAME: s89j088pi.xls PLOT DATE: 3/5/2012  
 PROJECT LEADER: J. LACROIX DRAWN BY: G.ROKES  
 DESIGNED BY: W.PELLETIER CHECKED BY: W.PELLETIER  
 PRELIMINARY INFORMATION SHEET SHEET 2 OF 90

TRAFFIC DATA

TEMPORARY BRIDGE PROFILE ALONG TEMP CL

YEAR	ADT	DHV	% D	% T	ADTT	20 year ESAL for flexible pavement from 2012 to 2032 : 257000	40 year ESAL for flexible pavement from 2012 to 2052 : 628000	Design Speed : 25 mph
2012	650	100	53	7.9	75			
2032	740	110	53	12.8	140			

