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FINAL HYDRAULIC REPORT

PLAN SHEETS

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HYDROLOGIC DATA

DATE: _____

SECTION NOT APPLICABLE

DRAINAGE AREA: _____
 CHARACTER OF TERRAIN: _____
 STREAM CHARACTERISTICS: _____
 NATURE OF STREAMBED: _____

Q 2.33 = _____ Q50 = _____
 Q 10 = _____ Q 100 = _____
 Q 25 = _____ Q 500 = _____

DATE OF FLOOD OF RECORD: _____
 ESTIMATED DISCHARGE: _____
 WATER SURFACE ELEVATION: _____
 NATURAL STREAM VELOCITY: _____
 ICE CONDITIONS: _____
 DEBRIS: _____
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? _____
 IS ORDINARY RISE RAPID? _____
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? _____
 IF YES, DESCRIBE _____

WATERSHED STORAGE: _____ HEADWATERS: _____
 UNIFORM: _____
 IMMEDIATELY ABOVE SITE: _____

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: _____
 YEAR BUILT: _____
 CLEAR SPAN (NORMAL TO STREAM): _____
 VERTICAL CLEARANCE ABOVE STREAMBED: _____
 WATERWAY OF FULL OPENING: _____
 DISPOSITION OF STRUCTURE: _____
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: _____

WATER SURFACE ELEVATIONS AT:
 Q 2.33 = _____ VELOCITY = _____
 Q 10 = _____ " _____
 Q 25 = _____ " _____
 Q50 = _____ " _____
 Q 100 = _____ " _____

LONG TERM STREAMBED CHANGES: _____
 IS THE ROADWAY OVERTOPPED BELOW Q100? _____
 FREQUENCY: _____
 RELIEF ELEVATION: _____
 DISCHARGE OVER ROAD @ Q100: _____

UPSTREAM STRUCTURE

TOWN: _____ DISTANCE: _____
 HIGHWAY #: _____ STRUCTURE #: _____
 CLEAR SPAN: _____ CLEAR HEIGHT: _____
 YEAR BUILT: _____ FULL WATERWAY: _____
 STRUCTURE TYPE: _____

DOWNSTREAM STRUCTURE

TOWN: _____ DISTANCE: _____
 HIGHWAY #: _____ STRUCTURE #: _____
 CLEAR SPAN: _____ CLEAR HEIGHT: _____
 YEAR BUILT: _____ FULL WATERWAY: _____
 STRUCTURE TYPE: _____

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	1.98	1.17					
POSTING							
OPERATING	2.7	1.64	2.25	1.35	1.24	1.65	1.18
COMMENTS:							

AS BUILT "REBAR" DETAILS		
LEVEL I	LEVEL II	LEVEL III
TYPE: _____	TYPE: _____	TYPE: _____
GRADE: _____	GRADE: _____	GRADE: _____

**AS BUILT
RECORD PLANS**

PILE DRIVING AND TESTING REQUIREMENTS

1. NOMINAL PILE DRIVING CAPACITY F_{dr} : 0.00 KIP
 2. PILE TEST RESISTANCE FACTOR ϕ : 0
 3. MAXIMUM PILE TP ELEVATION: 0.00 FT
 4. 0

PROPOSED STRUCTURE

STRUCTURE TYPE: _____
 CLEAR SPAN (NORMAL TO STREAM): _____
 VERTICAL CLEARANCE ABOVE STREAMBED: _____
 WATERWAY OF FULL OPENING: _____

WATER SURFACE ELEVATIONS AT:
 Q 2.33 = _____ VELOCITY = _____
 Q 10 = _____ " _____
 Q 25 = _____ " _____
 Q50 = _____ " _____
 Q 100 = _____ " _____

IS THE ROADWAY OVERTOPPED BELOW Q100? _____
 FREQUENCY: _____
 RELIEF ELEVATION: _____
 DISCHARGE OVER ROAD @ Q100: _____

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: _____
 VERTICAL CLEARANCE: _____

SCOUR: _____
 REQUIRED CHANNEL PROTECTION: Stone Fill Class IV at Abutments

PERMIT INFORMATION

AVERAGE DAILY FLOW: _____ DEPTH OR ELEVATION: _____
 ORDINARY LOW WATER: _____
 ORDINARY HIGH WATER: _____

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: _____
 CLEAR SPAN (NORMAL TO STREAM): _____
 VERTICAL CLEARANCE ABOVE STREAMBED: _____
 WATERWAY AREA OF FULL OPENING: _____

ADDITIONAL INFORMATION

DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	d_p : 2.5 INCH
3. ABUTMENT BEARING TO BEARING LENGTH (THREE SPANS)	L : 139.80 FT (48.00 - 48.90 - 42.90) FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ : 1.25 INCH
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f_y : 270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f'_c : 8.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f'_{cr} : 6.0 KSI
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 : 0.0 KSI
12. REINFORCING STEEL	f_y : 60 KSI
13. STRUCTURAL STEEL AASHTO M270	f_y : ---
14. SOIL UNIT WEIGHT	γ : 0.140 KCF
15. ALLOWABLE BEARING RESISTANCE OF SOIL (ASD)	q_n : 15.6 KSF
16. SOIL BEARING FACTOR OF SAFETY	ϕ : 3.00
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 : 74.0 KIPS
20. PILE YIELD STRENGTH ASTM A572	f_y : 36
21. PILE SIZE	HP 10X42
22. EST. PILE LENGTH (ONE SUBSTRUCTURES)	L_p : _____
23. PILE RESISTANCE FACTOR	ϕ : NA
24. LATERAL PILE DEFLECTION	Δ : NA INCH
25. BASIC WIND SPEED	V_{3s} : 100 MPH
26. MINIMUM GROUND SNOW LOAD	P_g : ---
27. SEISMIC DATA	PGA : 9 %g S_s : 16 %g S_f : 4 %g

PROJECT NAME: **BRATTLEBORO**
 PROJECT NUMBER: **I-91 BRIDGE IMPROVEMENTS**
 FILE NAME: z02A014PL_5.dgn PLOT DATE: 3/18/2012
 PROJECT LEADER: P. KENDALL DRAWN BY: S. MORGAN
 DESIGNED BY: J. OLUND CHECKED BY: D. MYERS
 PRELIMINARY INFO. SHEET BR. No. 5N & 5S SHEET **ZB-100-GP-102**

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	
2010	11300	1500	Unk	Unk	Unk	20 year ESAL for flexible pavement from 2010 to 2030 : 0
2030	Unk	Unk	Unk	Unk	Unk	40 year ESAL for flexible pavement from 2010 to 2050 : 0
						Design Speed : 65 mph