

PRELIMINARY INFORMATION SHEET (BRIDGE)

INDEX OF SHEETS

PLAN SHEETS

1	TITLE SHEET
2	PRELIMINARY INFORMATION SHEET
3	GENERAL NOTES
4 - 6	QUANTITY SHEETS
7	BRIDGE QUANTITY SHEET
8	TYPICAL SECTIONS
9	THE SHEET
10 - 11	PLAN SHEETS
12 - 13	PROFILE SHEETS
14 - 15	TRAFFIC CONTROL SHEETS
16 - 17	SIGN & PAVEMENT MARKING LAYOUT SHEETS
18	TRAFFIC SIGN SUMMARY SHEET
19	BORING INFORMATION SHEET
20 - 29	BORING LOGS
30	PLAN AND ELEVATION SHEET
31	DECK REINFORCING DETAIL
32	BRIDGE RAILING SHEET
33	FRAMING PLAN
34	GIRDER DETAILS
35	LIGHTING AND UTILITIES DETAIL SHEET
36	BRIDGE LIGHTING LAYOUT SHEET
37	BEARING NOTES SHEET
38	INTEGRAL ABUTMENT BEARING DETAILS
39	PIER BEARINGS DETAIL SHEET
40	APPROACH SLAB DETAIL SHEET
41	ABUTMENTS 1 & 2 TYPICAL SHEET
42	ABUTMENT 1 PLAN AND ELEVATION
43	ABUTMENT 2 PLAN AND ELEVATION
44	WINGWALL DETAIL SHEET
45	PIER DETAIL SHEET
46	BOX BEAM GUARDRAIL LAYOUT
47	REINFORCING STEEL SCHEDULE
48	MATERIAL TRANSITION DIAGRAM
49 - 58	MAINLINE SECTIONS
57 - 60	ABUTMENT 1 CHANNEL SECTIONS
61 - 65	ABUTMENT 2 CHANNEL SECTIONS
66	EPSC - NARRATIVE
67 - 68	EPSC - EXISTING CONDITIONS
69 - 70	EPSC - PLANS
71 - 72	EPSC - FINAL CONDITIONS
73 - 75	EPSC - DETAIL SHEETS

STANDARDS LIST

C-2A	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK A	10-14-2005
C-2B	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK A	10-14-2005
C-3A	SIDEWALK RAMPS	03-10-2008
C-3B	SIDEWALK RAMPS AND MEDIAN ISLANDS	03-10-2008
C-10	CURBING	02-11-2008
D-1	PRECAST REINFORCED CONCRETE DROP INLET DETAILS	06-01-1994
D-11	STEEL OR IRON GRATES & COVERS (TYPE A)	06-01-1994
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-106	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	03-01-2004
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	06-30-2003
E-107A	BREAKAWAY BARRICADE DETAILS	06-08-2009
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	06-08-2009
E-108A	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS FOR PAVING	06-08-2009
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	04-08-1995
E-153B	WARNING SIGN DETAILS	05-30-2003
E-191	PAVEMENT MARKING DETAILS	02-01-1999
E-193	PAVEMENT MARKING DETAILS	06-18-1995
G-1B	BOX BEAM GUARD RAIL	06-01-1994

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: August 2011

DRAINAGE AREA : 311 sq. mi.
 CHARACTER OF TERRAIN : Hilly to mountainous
 STREAM CHARACTERISTICS : The bridge is over the South Bay of Lake Memphremagog
 NATURE OF STREAMBED : Silt, sand and gravel

PEAK FLOW DATA

Q 2.33 =	5,000 cfs	Q 50 =	12,500 cfs
Q 10 =	9,000 cfs	Q 100 =	14,000 cfs
Q 25 =	11,000 cfs	Q 500 =	17,000 cfs

DATE OF FLOOD OF RECORD : The maximum water level since 1931 was on April 20, 1933.

ESTIMATED DISCHARGE : Unknown

WATER SURFACE ELEV. : 685.5' as recorded at the USGS gage that was on this bridge.

NATURAL STREAM VELOCITY : @ Q25 = 1.0 fps

ICE CONDITIONS : Sheet ice. Design thickness = 36" at Q25, strength = 100 psi.

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 : Water levels at the site are controlled by Lake Memphremagog

WATERSHED STORAGE : 10% HEADWATERS : X
 UNIFORM : X
 IMMEDIATELY ABOVE SITE : X

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : 5-span steel beam bridge with concrete deck
 YEAR BUILT : 1947
 CLEAR SPAN(NORMAL TO STREAM) : 5 spans at 56' each = 280' total
 VERTICAL CLEARANCE ABOVE STREAMBED : 30'
 WATERWAY OF FULL OPENING : 5,730 sq. ft.
 DISPOSITION OF STRUCTURE : Remove and replace
 TYPE OF MATERIAL UNDER SUBSTRUCTURE : Silt, sand and gravel

WATER SURFACE ELEVATIONS AT:

Q2.33 =	683.5'	VELOCITY =	1.0 fps
Q10 =	684.5'		1.7 fps
Q25 =	685.0'		2.0 fps
Q50 =	685.3'		2.2 fps
Q100 =	685.6'		2.5 fps

LONG TERM STREAMBED CHANGES : Based on record plans, there appears to be several feet of scour through the center spans and some aggradation in the eastern spans.

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY : Above Q100
 RELIEF ELEVATION : 686.4', at about station 10+90 on the western approach
 DISCHARGE OVER ROAD @Q100: None

UPSTREAM STRUCTURE

TOWN : Newport City DISTANCE : 1,600'
 HIGHWAY # : Railway STRUCTURE # : ---
 CLEAR SPAN : approximately 405' CLEAR HEIGHT : ---
 YEAR BUILT : --- FULL WATERWAY : ---
 STRUCTURE TYPE : Multi-span bridge

DOWNSTREAM STRUCTURE

TOWN : Newport City DISTANCE : 500'
 HIGHWAY # : U.S. 5 STRUCTURE # : ---
 CLEAR SPAN : 8 spans at 37' each = 236' total CLEAR HEIGHT : 30'
 YEAR BUILT : Built in 1927, rehabilitated in 1981 FULL WATERWAY : 7,000 sq. ft.
 STRUCTURE TYPE : 8-span steel beam bridge with concrete deck

LRFD LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR	4A STR	5A SEMI
TONNAGE	20	36	36	66	39	34.5	38
INVENTORY	2.49	1.07					
POSTING							
OPERATING	3.22	1.38	2.53	1.66	2.37	2.13	

COMMENTS:

PILE DRIVING AND TESTING REQUIREMENTS

- NOMINAL PILE DRIVING CAPACITY 312.00 KIP
- PILE TEST RESISTANCE FACTOR 0.66
- MAXIMUM PILE TIP ELEVATION 544.00 FT
- ONE DYNAMIC PILE LOAD TEST SHALL BE CONDUCTED AT EACH ABUTMENT.

PROPOSED STRUCTURE

STRUCTURE TYPE : 3-span continuous steel girder bridge with concrete deck
 CLEAR SPAN(NORMAL TO STREAM) : 84' + 114' + 84' = 282' Total
 VERTICAL CLEARANCE ABOVE STREAMBED : 31'
 WATERWAY OF FULL OPENING : 6060 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	683.5'	VELOCITY =	0.9 fps
Q10 =	684.5'		1.6 fps
Q25 =	685.0'		1.9 fps
Q50 =	685.3'		2.2 fps
Q100 =	685.6'		2.4 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY : Above Q100
 RELIEF ELEVATION : 686.4', at about station 10+75 on the western approach
 DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE : Approx 686.2', Low end 684.4'
 VERTICAL CLEARANCE : @ Q25 = 1.2' average, Low end submerged 0.6'

SCOUR : No contraction scour, 0' of pier scour at Q100 and 7' of pier scour at Q500

REQUIRED CHANNEL PROTECTION : Stone fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW : 650 cfs DEPTH OR ELEVATION : ---
 ORDINARY LOW WATER : 280 cfs Elevation 681.0'
 ORDINARY HIGH WATER : 2150 cfs Elevation 682.7' - per USACOE

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE : None required.
 CLEAR SPAN (NORMAL TO STREAM) : ---
 VERTICAL CLEARANCE ABOVE STREAMBED : ---
 WATERWAY AREA OF FULL OPENING : ---

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

- MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
- TRAFFIC SIGNALS ARE NOT NECESSARY.
- SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	dp: 3.0 INCH
3. ABUTMENT BEARING TO BEARING LENGTH (THREE SPANS)	L: 288.00 FT
(89.00 - 120.00 - 89.00) 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' _c : ---
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f' _c : ---
9. CONCRETE, HIGH PERFORMANCE CLASS A, LOW CEMENT	f' _c : 4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f' _c : 3.5 KSI
11. CONCRETE, CLASS C	f' _c : ---
12. REINFORCING STEEL	f _y : 60 KSI
13. STRUCTURAL STEEL AASHTO M270	f _y : 50 KSI
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 : 10.0 KSF
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
19. NOMINAL AXIAL PILE RESISTANCE	Δq _p : 312.0 KIPS
20. PILE YIELD STRENGTH ASTM A572	f _y : 50 KSI
21. PILE SIZE	HP 12X 84
22. EST. PILE LENGTH	L _p : 136 FT
23. PILE RESISTANCE FACTOR	φ: ---
24. LATERAL PILE DEFLECTION	Δ: 1.35 INCH
25. BASIC WIND SPEED	V ₅₀ : 80 MPH
26. MINIMUM GROUND SNOW LOAD	p _g : ---
27. SEISMIC DATA	PGA: --- S _e : --- S ₁ : ---

STRUCTURES DETAILS

SD-501.00	CONCRETE DETAILS AND NOTES	7-May-10
SD-502.00	CONCRETE DETAILS AND NOTES	4-Jun-10
SD-518.10	BRIDGE JOINT ASPHALTIC PLUG	7-May-10
SD-601.00	STRUCTURAL STEEL DETAILS & NOTES	4-Jun-10
SD 602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	2-May-11

ALDRICH & ELLIOT WATER LINE PLANS

AE1	PROPOSED SITE PLAN AND PROFILE	1-Aug-11
AE2	WATER DETAILS	1-Aug-11

RECORD PLANS

RP-1	PLAN AND ELEVATION	1947
RP-2	SUPERSTRUCTURE DETAILS	1947
RP-3	DETAILS OF ABUTMENTS	1947
RP-4	DETAILS OF PIERS	1947

REV.	DESCRIPTION	DATE	REVISION BY
△	UPDATED DRIVING CAPACITY	2/23/2012	DRP

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	
2009	5900	610	71	8.7	430	20 year ESAL for flexible pavement from 2009 to 2029 : 3049000
2029	6500	680	71	10.9	760	40 year ESAL for flexible pavement from 2009 to 2049 : 7590000 Design Speed: 30 mph

PROJECT NAME : **NEWPORT CITY**

PROJECT NUMBER : **BRO 1449(25)**

FILE NAME : s86j314_pt_NEW.xls PLOT DATE : 2/23/2012
 PROJECT LEADER : C. CARLSON DRAWN BY : C. MOONEY
 DESIGNED BY : D. PETERSON CHECKED BY : C. CARLSON
 PRELIMINARY INFORMATION SHEET SHEET 2 OF 75