

PRELIMINARY INFORMATION SHEET (BRIDGE)

INDEX OF SHEETS

PLAN SHEETS

76	TITLE SHEET
77	PRELIMINARY INFORMATION SHEET
78 - 79	TYPICAL SECTIONS AND DETAILS
80	PROJECT NOTES
81 - 83	QUANTITY SHEETS
84	BRIDGE QUANTITY SHEET
85	TIE SHEET
86	LAYOUT SHEET
87	PROFILE AND BANKING DETAIL SHEET
88	LOCAL TRAFFIC CONTROL PLAN
89	CURB INLET DETAILS
90	APPROXIMATE UTILITY RELOCATION LAYOUT
91	RAIL LAYOUT SHEET
92	TRAFFIC SIGNS AND LINES LAYOUT
93 - 94	TRAFFIC SIGN SUMMARY SHEETS
95	BORING INFORMATION AND LAYOUT SHEET
96 - 99	BORING LOGS
100	PLAN & ELEVATION
101	SUPERSTRUCTURE PLAN
102 - 103	PBU TYPICAL SECTIONS AND DETAILS
104 - 105	CURTAINWALL DETAILS
106	FRAMING PLAN AND DETAILS
107 - 108	GIRDER DETAILS
109	BEARING DETAILS
110 - 111	APPROACH SLAB DETAILS
112	ABUTMENT REMOVAL DETAILS
113	ABUTMENT 1 RECONSTRUCTION
114	ABUTMENT 2 RECONSTRUCTION
115	RETAINING WALL 1
116	RETAINING WALL 3
117 - 118	BRIDGE RAILING DETAILS
119	APPROACH RAILING DETAILS
120	REINFORCING STEEL SCHEDULE
121 - 124	VT 110 CROSS SECTIONS
125 - 129	CHANNEL SECTIONS
130	EPSC PLAN NARRATIVE
131	EPSC EXISTING SITE PLAN
132	EPSC CONSTRUCTION SITE PLAN
133	EPSC FINAL SITE PLAN
134 - 135	EPSC DETAILS
136	R.O.W. DETAIL SHEET
137	ROW LAYOUT SHEET

DETAIL SHEETS

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
SD-601.00	STRUCTURAL STEEL DETAILS AND NOTES	06-04-2010
SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	05-02-2011
HSD-400.01	SAFETY EDGE DETAILS	03-29-2016
HSD-621.06	GUARDRAIL TERMINAL LABEL DETAIL	11-03-2015

STANDARDS LIST

B-5	SLOPE GRADING, EMBANKMENTS, MUCK	06-01-1994
B-71	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	07-08-2005
C-2A	PORTLAND CEMENT CONCRETE SIDEWALK DRIVE ENTRANCES WITH SIDEWALK ADJACENT TO CURB	10-14-2005
C-3A	SIDEWALK RAMPS	03-10-2008
C-10	CURBING	02-11-2008
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
E-136B	STATE ROUTE MARKER SIGN DETAILS	08-08-1995
E-175	POWER DROP STANCHIONS	06-08-2009
E-191	PAVEMENT MARKING DETAILS	02-01-1999
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1BM	BOX BEAM GUARD RAIL	06-13-1997
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	04-25-2016
T-2	TRAFFIC SIGN GENERAL NOTES	04-25-2016
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-17	TRAFFIC CONTROL MISCELLANEOUS DETAILS	08-06-2012
T-28	CONSTRUCTION SIGN DETAILS	08-06-2012
T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	08-06-2012
T-40	DELINEATORS AND MILEPOSTS	01-02-2013
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: October 2015

DRAINAGE AREA : 15.5 sq. mi.
 CHARACTER OF TERRAIN : Hilly, mostly forested
 STREAM CHARACTERISTICS : Sinuous, incised and alluvial
 NATURE OF STREAMBED : Gravel, cobbles

PEAK FLOW DATA

Q 2.33 =	750 cfs	Q 50 =	2,470 cfs
Q 10 =	1,290 cfs	Q 100 =	3,240 cfs
Q 25 =	1,900 cfs	Q 500 =	6,700 cfs

DATE OF FLOOD OF RECORD : Unknown
 ESTIMATED DISCHARGE : Unknown
 WATER SURFACE ELEV. : Unknown
 NATURAL STREAM VELOCITY : @ Q50 = 9.1 fps
 ICE CONDITIONS : Moderate
 DEBRIS : Light
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
 IS ORDINARY RISE RAPID? No
 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 : Single span steel beam bridge with concrete deck
 YEAR BUILT : 1939
 CLEAR SPAN(NORMAL TO STREAM): 50'
 VERTICAL CLEARANCE ABOVE STREAMBED : ~7' (Ave. low beam elev. 829.1')
 WATERWAY OF FULL OPENING : 285 sq. ft.
 DISPOSITION OF STRUCTURE : Remove and replace superstructure
 TYPE OF MATERIAL UNDER SUBSTRUCTURE : Dense gravelly sands

WATER SURFACE ELEVATIONS AT:

Q2.33 =	827.1'	VELOCITY =	6.6 fps
Q10 =	828.1'	"	8.6 fps
Q25 =	828.8'	"	10.9 fps
Q50 =	830.2'	"	11.7 fps
Q100 =	832.9'	"	12.6 fps

LONG TERM STREAMBED CHANGES : None apparent

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
 FREQUENCY : Below Q50
 RELIEF ELEVATION : 829.3'
 DISCHARGE OVER ROAD @Q100: 1450 cfs

UPSTREAM STRUCTURE

TOWN: Chelsea DISTANCE: 1,150'
 HIGHWAY #: Private Drive STRUCTURE #: N/A
 CLEAR SPAN: Unknown CLEAR HEIGHT: Unknown
 YEAR BUILT: Unknown FULL WATERWAY:
 STRUCTURE TYPE: Single span steel beam bridge with timber deck.

DOWNSTREAM STRUCTURE

TOWN: Chelsea DISTANCE: 500'
 HIGHWAY #: Confluence w/1st Brnch White Rvr 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 SEM
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	3.55	1.82					
POSTING							
OPERATING	4.60	2.36	3.94	2.59	3.52	3.15	3.39
COMMENTS:							

AS BUILT "REBAR" DETAIL

LEVEL I			LEVEL II			LEVEL III		
TYPE:			TYPE:			TYPE:		
GRADE:			GRADE:			GRADE:		

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	20 year ESAL for flexible pavement from 2015 to 2035 : 539000
2015	1700	210	52	7.9	130	40 year ESAL for flexible pavement from 2015 to 2055 : 1225000
2035	1800	220	52	11.9	200	Design Speed : 30 mph

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span steel beam bridge with concrete deck

CLEAR SPAN(NORMAL TO STREAM): 50'
 VERTICAL CLEARANCE ABOVE STREAMBED: 7.5'
 WATERWAY OF FULL OPENING: 305 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	827.0'	VELOCITY=	6.8 fps
Q10 =	828.1'	"	8.8 fps
Q25 =	828.7'	"	11.2 fps
Q50 =	829.4'	"	12.7 fps
Q100 =	832.7'	"	12.6 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
 FREQUENCY: Below Q50
 RELIEF ELEVATION: 829.3'
 DISCHARGE OVER ROAD @Q100: 750 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 829.6'
 VERTICAL CLEARANCE: @ Q50 = 0.2'

SCOUR: Any new substructure foundations should be placed at 6' below streambed.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW: - DEPTH OR ELEVATION:
 ORDINARY LOW WATER: -
 ORDINARY HIGH WATER: - See other plan sheets.

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge. Road to be closed with a detour.
 CLEAR SPAN (NORMAL TO STREAM):
 VERTICAL CLEARANCE ABOVE STREAMBED:
 WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES

1. DESIGN LIVE LOAD HL-93
2. FUTURE PAVEMENT d_p : 3.0 INCH
3. DESIGN SPAN L: 80.25 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 $f'c$: ---
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 $f'c$: ---
12. REINFORCING STEEL f_y : 60 KSI
13. STRUCTURAL STEEL AASHTO M270 f_y : 50 KSI
14. NOMINAL BEARING RESISTANCE OF SOIL q_n : 24.7 KSF
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) ϕ : 0.45
16. NOMINAL BEARING RESISTANCE OF ROCK q_n : ---
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) ϕ : ---
18. PILE RESISTANCE FACTOR ϕ : ---
19. LATERAL PILE DEFLECTION Δ : ---
20. BASIC WIND SPEED V_{3s} : 100 MPH
21. MINIMUM GROUND SNOW LOAD p_g : 0.05 K/FT²
22. SEISMIC DATA PGA: 8 %g S_s : 18 %g S_1 : 5 %g
23. ---
24. ---
25. ---
26. ---

PROJECT NAME: CHELSEA
 PROJECT NUMBER: BHF 0169(10)

FILE NAME: z12c152.dgn PLOT DATE: 10/4/2016
 PROJECT LEADER: J. OLUND DRAWN BY: T. POULIN
 DESIGNED BY: T. POULIN CHECKED BY: J. OLUND
 PRELIMINARY INFORMATION SHEET SHEET 77 OF 137