

# PRELIMINARY INFORMATION SHEET (BRIDGE)

### INDEX OF SHEETS

### FINAL HYDRAULIC REPORT

#### PLAN SHEETS

1	TITLE SHEET
2	PRELIMINARY INFORMATION SHEET
3	TYPICAL BRIDGE SECTION
4	TYPICAL ROADWAY SECTIONS
5	TYPICAL EARTHWORK SECTIONS
6 - 7	PROJECT NOTES
8 - 10	QUANTITY SHEETS
11	CONVENTIONAL SYMBOLOLOGY LEGEND
12	TIE SHEET
13	ALIGNMENT SHEET
14	LAYOUT SHEET
15 - 16	PROFILE AND BANKING DIAGRAMS
17 - 18	TRAFFIC CONTROL SHEETS
19	UTILITY LAYOUT SHEET
20	TRAFFIC SIGNS & LINE STRIPING SHEET
21	TRAFFIC SIGN SUMMARY SHEET
22	BORING INFORMATION SHEET
23 - 26	BORING LOGS
27	PLAN AND ELEVATION
28	DECK REINFORCING DETAILS
29	BRIDGE END DETAILS
30	FRAMING PLAN
31	CAMBER AND DEFLECTION
32 - 33	BEARING DETAILS
34 - 35	PRECAST APPROACH SLAB DETAILS
36	ABUTMENT NO 1 PLAN & ELEVATION
37	ABUTMENT NO 1 REINFORCING
38	ABUTMENT NO 1 SECTIONS
39	ABUTMENT NO 1 WINGWALL DETAILS
40	ABUTMENT NO 2 PLAN & ELEVATION
41	ABUTMENT NO 2 FOOTING
42	ABUTMENT NO 2 REINFORCING
43	ABUTMENT NO 2 WINGWALL DETAILS
44	RETAINING WALL DETAILS
45	BRIDGE RAIL LAYOUT
46	REINFORCING STEEL SCHEDULE SHEET
47 - 52	ROADWAY CROSS SECTIONS
53 - 56	CHANNEL CROSS SECTIONS
57	EPSC NARRATIVE
58	EPSC EXISTING SITE PLAN
59	EPSC CONSTRUCTION SITE PLAN
60	EPSC FINAL SITE PLAN
61 - 62	EPSC DETAILS

#### STANDARDS LIST

B-71	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	07-08-2005
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
G-1BM	BOX BEAM GUARDRAIL	08-13-1997
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	04-25-2016
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	08-06-2012
T-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-44	MILEMARKER DETAILS STATE AND TOWN HIGHWAYS	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013
T-80	VERMONT WARNING SIGN DETAILS	02-12-2016

#### STRUCTURES DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	2/9/2012
SD-502.00	CONCRETE DETAILS AND NOTES	10/10/2012
SD-516.10	BRIDGE JOINT ASPHALTIC PLUG	8/9/2011
SD-601.00	STRUCTURAL STEEL DETAILS AND NOTES	6/4/2010
SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	5/2/2011

#### HIGHWAY SAFETY & DESIGN DETAILS

HSD-400.01	SAFETY EDGE DETAILS	3/29/2016
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#### HYDROLOGIC DATA

Date: April 2015

DRAINAGE AREA: 18.4 sq. mi.  
 CHARACTER OF TERRAIN: Mostly forested, rural  
 STREAM CHARACTERISTICS: Sinuous and alluvial  
 NATURE OF STREAMBED: Cobbles, gravel and sand

#### PEAK FLOW DATA

Q 2.33 =	850 cfs	Q 50 =	2800 cfs
Q 10 =	1700 cfs	Q 100 =	3400 cfs
Q 25 =	2300 cfs	Q 500 =	4700 cfs

DATE OF FLOOD OF RECORD: Unknown  
 ESTIMATED DISCHARGE: Unknown  
 WATER SURFACE ELEV.: Unknown  
 NATURAL STREAM VELOCITY: @ Q50 = 11.7 fps  
 ICE CONDITIONS: Moderate  
 DEBRIS: Low  
 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 rolled beam bridge  
 YEAR BUILT: 1934  
 CLEAR SPAN(NORMAL TO STREAM): 42'  
 VERTICAL CLEARANCE ABOVE STREAMBED: ~15.5'  
 WATERWAY OF FULL OPENING: 485 sq. ft.  
 DISPOSITION OF STRUCTURE: Remove and replace  
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

#### WATER SURFACE ELEVATIONS AT:

Q2.33 =	779.5'	VELOCITY =	7.9 fps
Q10 =	782.0'	"	12.2 fps
Q25 =	783.5'	"	13.4 fps
Q50 =	784.6'	"	14.3 fps
Q100 =	785.9'	"	15.3 fps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: No  
 FREQUENCY: N/A  
 RELIEF ELEVATION: 792.1'  
 DISCHARGE OVER ROAD @Q100:

#### UPSTREAM STRUCTURE

TOWN: Huntington DISTANCE: 5000'  
 HIGHWAY #: TH 31 STRUCTURE #: BR 40  
 CLEAR SPAN: 50' CLEAR HEIGHT:  
 YEAR BUILT: 1964, reconstructed 2010 FULL WATERWAY:  
 STRUCTURE TYPE: Prestress void slab

#### DOWNSTREAM STRUCTURE

TOWN: Huntington DISTANCE: 9970'  
 HIGHWAY #: TH 28 STRUCTURE #: BR 38  
 CLEAR SPAN: 71' CLEAR HEIGHT:  
 YEAR BUILT: 1977 FULL WATERWAY:  
 STRUCTURE TYPE: Rolled beam

#### 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	1.82	1.17					
POSTING							
OPERATING	2.37	1.55	1.89	1.19	1.82	1.62	1.66
COMMENTS:							

#### AS BUILT "REBAR" DETAIL

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 2016 to 2036	40 year ESAL for flexible pavement from 2016 to 2056
2016	1100	150	65	9.8	85	558000	1253000
2036	1200	160	65	12.9	120	558000	1253000

#### PROPOSED STRUCTURE

STRUCTURE TYPE: Single span steel beam  
 CLEAR SPAN(NORMAL TO STREAM): 86'  
 VERTICAL CLEARANCE ABOVE STREAMBED: ~16.5'  
 WATERWAY OF FULL OPENING: 970 sq. ft.

#### WATER SURFACE ELEVATIONS AT:

Q2.33 =	779.3'	VELOCITY =	6.2 fps
Q10 =	781.1'	"	8.7 fps
Q25 =	782.1'	"	10.2 fps
Q50 =	782.9'	"	11.3 fps
Q100 =	783.8'	"	12.6 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No  
 FREQUENCY: N/A  
 RELIEF ELEVATION: 792.3'  
 DISCHARGE OVER ROAD @Q100:

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 789.5'  
 VERTICAL CLEARANCE: @ Q50 = 6.6'

SCOUR: 6.0' - Minimum design scour depth or to ledge

REQUIRED CHANNEL PROTECTION: Stone Fill Type III

#### PERMIT INFORMATION

AVERAGE DAILY FLOW: 40 cfs DEPTH OR ELEVATION:  
 ORDINARY LOW WATER: 20 cfs 776'  
 ORDINARY HIGH WATER: 370 cfs 778'

#### 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

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	dp: 2.5 INCH
3. DESIGN SPAN	L: 94.00 FT
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'cr: ---
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: 3.0 KSI
12. REINFORCING STEEL	fy: 60 KSI
13. STRUCTURAL STEEL AASHTO M270 (WEATHERING)	fy: 50 KSI
14. NOMINAL BEARING RESISTANCE OF SOIL	qn: ---
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
16. NOMINAL BEARING RESISTANCE OF ROCK	qn: 70.0 KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: 0.45
18. PILE RESISTANCE FACTOR	φ: 0.65
19. LATERAL PILE DEFLECTION	Δ: 0.06 INCH
20. BASIC WIND SPEED	V3s: ---
21. MINIMUM GROUND SNOW LOAD	ps: ---
22. SEISMIC DATA	PGA: 0.65 Ss: --- S1: ---
23.	---
24.	---
25.	---
26.	---
27.	---
28.	---

PROJECT NAME: HUNTINGTON

PROJECT NUMBER: BF 0211(32)

FILE NAME: z13j080pi.dgn PLOT DATE: 3/15/2016  
 PROJECT LEADER: S.E. BURBANK DRAWN BY: A.J. GOUDREAU  
 DESIGNED BY: S.E. BURBANK CHECKED BY: E.F. LAWES  
 PRELIMINARY INFORMATION SHEET 1 SHEET 2 OF 62

