

PRELIMINARY INFORMATION SHEET (BRIDGE)

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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	8/29/2011
SD-601.00	STRUCTURAL STEEL DETAILS AND NOTES	6/4/2010
SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	5/2/2011
HSD-400.01	SAFETY EDGE DETAILS	3/29/2016
HSD-621.06	GUARDRAIL TERMINAL LABEL DETAIL	11/3/2015

STANDARDS LIST

B-71	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	07-08-2005
C-10	CURBING	02-11-2008
D-1	PRECAST REINFORCED CONCRETE DROP INLET DETAILS	06-01-1994
D-15	PRECAST REINF CONC. MH-GRATES, CAST IRON GRATE WITH FRAME, TYPE D & E	06-01-1994
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	11-10-2015
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIUM)	02-10-2014
G-4	PLANK RAIL, GUIDE POSTS, MARKER POSTS	06-01-1994
G-19	GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS	11-15-2002
T-1	TRAFFIC CONTROL 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-24	TRAFFIC CONTROL FOR MAINTENANCE PAVEMENT MARKING OPERATION	08-06-2012
T-28	CONSTRUCTION SIGN DETAILS	08-06-2012
T-29	CONSTRUCTION SIGN DETAILS	08-06-2012
T-30	CONSTRUCTION SIGN DETAILS	08-06-2012
T-31	CONSTRUCTION SIGN DETAILS	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: April 2015

DRAINAGE AREA : 34.7 sq. mi.
 CHARACTER OF TERRAIN : Mostly forested, small ponds, rural
 STREAM CHARACTERISTICS : Sinuous and alluvial
 NATURE OF STREAMBED : Cobbles, gravel, and sand

PEAK FLOW DATA

Q 2.33 =	1125 cfs	Q 50 =	3900 cfs
Q 10 =	2350 cfs	Q 100 =	4700 cfs
Q 25 =	3150 cfs	Q 500 =	6500 cfs

DATE OF FLOOD OF RECORD : Unknown
 ESTIMATED DISCHARGE : Unknown
 WATER SURFACE ELEV. : Unknown
 NATURAL STREAM VELOCITY : @ Q50 = 8.4 fps
 ICE CONDITIONS : Moderate
 DEBRIS : Light to moderate
 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 concrete t-beam
 YEAR BUILT: 1923
 CLEAR SPAN(NORMAL TO STREAM): 43'
 VERTICAL CLEARANCE ABOVE STREAMBED: ~10'
 WATERWAY OF FULL OPENING: 425 sq. ft.
 DISPOSITION OF STRUCTURE: Remove and replace
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

WATER SURFACE ELEVATIONS AT:

Q2.33 =	879.8'	VELOCITY =	5.2 fps
Q10 =	882.3'	"	7.5 fps
Q25 =	883.3'	"	9.5 fps
Q50 =	885.9'	"	9.5 fps
Q100 =	886.5'	"	11.2 fps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
 FREQUENCY: Below Q50
 RELIEF ELEVATION: 884.7'
 DISCHARGE OVER ROAD @Q100: 645 cfs

UPSTREAM STRUCTURE

TOWN: Strafford DISTANCE: 8600'
 HIGHWAY #: TH 2 STRUCTURE #: 28
 CLEAR SPAN: 26' CLEAR HEIGHT:
 YEAR BUILT: 1919 FULL WATERWAY:
 STRUCTURE TYPE: Concrete t-beam

DOWNSTREAM STRUCTURE

TOWN: Stratford DISTANCE: 4040'
 HIGHWAY #: TH 39 STRUCTURE #: 61
 CLEAR SPAN: 62' CLEAR HEIGHT:
 YEAR BUILT: 1919, Reconstructed in 1971 FULL WATERWAY:
 STRUCTURE TYPE: Rolled beam

LRFD 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	2.1	1.15					
POSTING							
OPERATING	2.73	1.49	2.46	1.51	1.96	1.76	2.03
COMMENTS:							

AS BUILT "REBAR" DETAIL

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

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	
2016	1400	180	55	3.7	65	20 year ESAL for flexible pavement from 2016 to 2036 : 228000
2036	1500	190	55	6	110	40 year ESAL for flexible pavement from 2016 to 2056 : 542000
Design Speed : 25 mph						

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span steel beam
 CLEAR SPAN(NORMAL TO STREAM): 53'
 VERTICAL CLEARANCE ABOVE STREAMBED: ~11.5'
 WATERWAY OF FULL OPENING: 565 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	879.4'	VELOCITY =	5.2 fps
Q10 =	882.0'	"	7.0 fps
Q25 =	883.1'	"	8.3 fps
Q50 =	884.0'	"	9.6 fps
Q100 =	884.8'	"	11.4 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: N/A
 RELIEF ELEVATION: 884.7'
 DISCHARGE OVER ROAD @Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 885.0'
 VERTICAL CLEARANCE: @ Q50 = 1.0'

SCOUR: 4' of contraction scour up to Q200
 Piles should be freestanding up to 6' below streambed elevation.
 REQUIRED CHANNEL PROTECTION: Stone Fill Type III

PERMIT INFORMATION

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

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: 0.0 INCH
3. DESIGN SPAN L: 57.00 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'ci: ---
8. CONCRETE, HIGH PERFORMANCE CLASS AA f'c: ---
9. CONCRETE, HIGH PERFORMANCE CLASS A f'c: ---
10. CONCRETE, HIGH PERFORMANCE CLASS B f'c: ---
11. CONCRETE, CLASS C f'c: ---
12. REINFORCING STEEL fy: 60 KSI
13. STRUCTURAL STEEL AASHTO M270(GALVANIZED OR METALLIZED) fy: 50 KSI
14. NOMINAL BEARING RESISTANCE OF SOIL qn: 4.0 KSF
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) φ: ---
16. NOMINAL BEARING RESISTANCE OF ROCK qn: 10.0 KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) φ: ---
18. PILE RESISTANCE FACTOR φ: 0.65
19. LATERAL PILE DEFLECTION Δ: ---
20. BASIC WIND SPEED V3s: ---
21. MINIMUM GROUND SNOW LOAD ps: ---
22. SEISMIC DATA PGA: 0.65 Ss: --- S1: ---
23. ---
24. ---
25. ---
26. ---

PROJECT NAME: **STRAFFORD**
 PROJECT NUMBER: **BF 0177(10)**
 FILE NAME: s13j088excel.dgn PLOT DATE: 3/10/2016
 PROJECT LEADER: K. HIGGINS DRAWN BY: T. MATTHEWS
 DESIGNED BY: J. GRIGAS CHECKED BY: J. GRIGAS
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