

# PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

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FINAL HYDRAULIC REPORT

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STANDARDS LIST

E-100	CONSTRUCTION APPROACH SIGNS	01-02-2004
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	01-02-2004
E-102	CONSTRUCTION SIGN DETAILS	08-30-2003
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	08-08-1995
E-123	GUIDE SIGN PLACEMENT - MISCELLANEOUS DETAILS	03-16-2004
E-135	INTERSTATE ROUTE MARKER SIGN DETAILS	08-18-1995
E-136C	STATE NUMBERED TOWN HIGHWAY SIGN DETAILS	08-08-1995
E-141	REGULATORY SIGN DETAILS	09-20-1995
E-144	REGULATORY SIGN DETAILS	03-29-1999
E-151	WARNING SIGN DETAILS	05-01-2004
E-155	WARNING SIGN DETAILS	05-01-2004
E-164	SQUARE STEEL SIGN POST	06-08-2009
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	01-03-2000
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	01-03-2000
SB-R6-82	BRIDGE RAILING - HEAVY DUTY STEEL BEAM	01-06-1995
SB-R7-90	BRIDGE RAILING - HEAVY DUTY STEEL BEAM	01-11-1995

STRUCTURES DETAILS

SD-601.00	CONCRETE DETAILS AND NOTES	05-07-2010
SD-602.00	CONCRETE DETAILS AND NOTES	06-04-2010
SD-601.00	STRUCTURAL STEEL DETAILS & NOTES	06-04-2010
SD-602.00	STRUCTURAL STEEL PLATE GIRDER DETAILS AND NOTES	05-02-2011

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	
2012	1400	180	65	6.7	100	20 year ESAL for flexible pavement from 2012 to 2032 : 536000
2032	1600	200	65	10.3	170	40 year ESAL for flexible pavement from 2012 to 2052 : 1245000 Design Speed : 25 mph

HYDROLOGIC DATA

Date: N/A

DRAINAGE AREA : Approximately 56.4 sq. mi.  
 CHARACTER OF TERRAIN : Steep banks near river to rolling hills, mostly forested  
 STREAM CHARACTERISTICS : Wide and curving with moderate current  
 NATURE OF STREAMBED : Gravel, cobbles, boulders and ledge

PEAK FLOW DATA

Q 2.33 =	<u>Unknown</u>	Q 50 =	<u>Unknown</u>
Q 10 =	<u>Unknown</u>	Q 100 =	<u>Unknown</u>
Q 25 =	<u>Unknown</u>	Q 500 =	<u>Unknown</u>

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

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : Three span steel beam bridge with concrete deck  
 YEAR BUILT : 1946  
 CLEAR SPAN(NORMAL TO STREAM): 150'  
 VERTICAL CLEARANCE ABOVE STREAMBED: 22'  
 WATERWAY OF FULL OPENING: 2500 sq. ft.  
 DISPOSITION OF STRUCTURE : Remove & replace superstructure, repair substructure  
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 =	<u>Unknown</u>	VELOCITY =	<u>--</u>
Q10 =	<u>Unknown</u>	"	<u>--</u>
Q25 =	<u>Unknown</u>	"	<u>--</u>
Q50 =	<u>Unknown</u>	"	<u>--</u>
Q100 =	<u>Unknown</u>	"	<u>--</u>

LONG TERM STREAMBED CHANGES: Unknown

IS THE ROADWAY OVERTOPPED BELOW Q100: Unknown  
 FREQUENCY: --  
 RELIEF ELEVATION: --  
 DISCHARGE OVER ROAD @Q100: --

UPSTREAM STRUCTURE

TOWN: Stratford DISTANCE: 19,000'  
 HIGHWAY # : Private Drive off VT 132 (TH 1) STRUCTURE #: N/A  
 CLEAR SPAN: Unknown CLEAR HEIGHT: Unknown  
 YEAR BUILT: Unknown FULL WATERWAY: Unknown  
 STRUCTURE TYPE: Single span bridge, unknown superstructure/substructure

DOWNSTREAM STRUCTURE

TOWN: Thetford DISTANCE: 4,000'  
 HIGHWAY # : Government Road (USACE) STRUCTURE #: Unknown  
 CLEAR SPAN: Unknown CLEAR HEIGHT: Unknown  
 YEAR BUILT: Unknown FULL WATERWAY: No  
 STRUCTURE TYPE: Single span steel beam bridge

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR	4A STR	5A SEMI
TONNAGE	<b>20</b>	<b>36</b>	<b>36</b>	<b>66</b>	<b>30</b>	<b>34.5</b>	<b>38</b>
INVENTORY	1.31	1.02					
POSTING							
OPERATING	1.70	1.32	2.80	1.74	2.44	2.18	2.45
COMMENTS:							

PROPOSED STRUCTURE

STRUCTURE TYPE: 3 span bridge with curved continuous steel plate girders and composite concrete deck  
 CLEAR SPAN(NORMAL TO STREAM): 150'  
 VERTICAL CLEARANCE ABOVE STREAMBED: 22'  
 WATERWAY OF FULL OPENING: 2500 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	<u>Unknown</u>	VELOCITY=	<u>--</u>
Q10 =	<u>Unknown</u>	"	<u>--</u>
Q25 =	<u>Unknown</u>	"	<u>--</u>
Q50 =	<u>Unknown</u>	"	<u>--</u>
Q100 =	<u>Unknown</u>	"	<u>--</u>

IS THE ROADWAY OVERTOPPED BELOW Q100: Unknown  
 FREQUENCY: --  
 RELIEF ELEVATION: --  
 DISCHARGE OVER ROAD @Q100: --

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: Matches existing  
 VERTICAL CLEARANCE: @ Q25 = Unknown

SCOUR: Unknown

REQUIRED CHANNEL PROTECTION: Unknown

PERMIT INFORMATION

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

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge required.  
 CLEAR SPAN (NORMAL TO STREAM):                       
 VERTICAL CLEARANCE ABOVE STREAMBED:                       
 WATERWAY AREA OF FULL OPENING:                     

ADDITIONAL INFORMATION

\* Hydraulics at this site can be affected by the Union Village Flood Control Dam which is approx. 3.1 miles downstream. The dam is owned and operated by the U.S. Army Corps of Engineers.  
 \* For this project, the existing hydraulic opening and water surface elevations will be unchanged.

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	<u>HL-93</u>
2. FUTURE PAVEMENT	<u>dp: 3.0 INCH</u>
3. ABUTMENT BEARING TO BEARING LENGTH (THREE SPANS)	<u>L: 222.23 FT</u> ( 73.69 - 75.07 - 73.47 ) FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	<u>Δ: ---</u>
5. PRESTRESSING STRAND	<u>fy: ---</u>
6. PRESTRESSED CONCRETE STRENGTH	<u>f'c: ---</u>
7. PRESTRESSED CONCRETE RELEASE STRENGTH	<u>f'cr: ---</u>
8. CONCRETE, HIGH PERFORMANCE CLASS AA	<u>f'c: ---</u>
9. CONCRETE, HIGH PERFORMANCE CLASS A LOW CEMENT	<u>f'c: 4.0 KSI</u>
10. CONCRETE, HIGH PERFORMANCE CLASS B	<u>f'c: 3.5 KSI</u>
11. CONCRETE, CLASS C	<u>f'c: ---</u>
12. REINFORCING STEEL	<u>fy: 60 KSI</u>
13. STRUCTURAL STEEL AASHTO M 270MM 270 (WEATHERING)	<u>fy: 50 KSI</u>
14. SOIL UNIT WEIGHT	<u>γ: 0.140 KCF</u>
15. NOMINAL BEARING RESISTANCE OF SOIL	<u>qn: ---</u>
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	<u>φ: ---</u>
17. NOMINAL BEARING RESISTANCE OF ROCK	<u>qn: ---</u>
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	<u>φ: ---</u>
19. NOMINAL AXIAL PILE RESISTANCE	<u>qp: ---</u>
20. PILE YIELD STRENGTH ASTM A572	<u>fy: ---</u>
21. PILE SIZE	<u>---</u>
22. EST. PILE LENGTH	<u>Lp: ---</u>
23. PILE RESISTANCE FACTOR	<u>φ: ---</u>
24. LATERAL PILE DEFLECTION	<u>Δ: ---</u>
25. BASIC WIND SPEED	<u>V3s: ---</u>
26. MINIMUM GROUND SNOW LOAD	<u>pg: ---</u>
27. SEISMIC DATA	<u>PGA: --- S: ---</u>

PROJECT NAME: **THETFORD**  
 PROJECT NUMBER: **BHF 0177(9)**

FILE NAME: **z08j174pi.dgn** PLOT DATE: 2/14/2012  
 PROJECT LEADER: **M.A. COLGAN** DRAWN BY: **B.M. KLINEFELTER**  
 DESIGNED BY: **B.M. KLINEFELTER** CHECKED BY: **S.E. BURBANK**  
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