

# PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

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FINAL HYDRAULIC REPORT

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STANDARDS LIST

C-10	CURBING	02-11-2008
E-153	WARNING SIGN DETAILS	05-01-2004
E-193	PAVEMENT MARKING DETAILS	08-18-1995
G-1	STEEL BEAM GUARDRAIL DETAILS (POST, DELINEATOR, TYPICALS)	02-10-2014
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIUM)	02-10-2014
S-352A	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	08-22-2012
S-352B	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	08-22-2012
S-352C	BRIDGE RAILING, GALVANIZED STEEL TUBING/CONCRETE COMBINATION	08-22-2012
S-352D	GUARDRAIL APPROACH SECTION TO CONCRETE COMBINATION BRIDGE RAILING, TL-3	08-22-2012
T-1	TRAFFIC CONTROL GENERAL NOTES	08-06-2012
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	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-42	BRIDGE NUMBER PLAQUE	04-09-2014
T-45	SQUARE TUBE SIGN POST AND ANCHOR	01-02-2013

STRUCTURES 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

HYDROLOGIC DATA

Date: July 2011

DRAINAGE AREA : 10.29 sq mi  
 CHARACTER OF TERRAIN : Hilly to Mountainous  
 STREAM CHARACTERISTICS : Meandering  
 NATURE OF STREAMBED : Cobbles With Some Ledge Through Structure

PEAK FLOW DATA

Q 2.33 =	310 cfs	Q 50 =	1300
Q 10 =	775	Q 100 =	1550
Q 25 =	1025	Q 500 =	2125

DATE OF FLOOD OF RECORD :  
 ESTIMATED DISCHARGE :  
 WATER SURFACE ELEV. :  
 NATURAL STREAM VELOCITY : @ Q50 =  
 ICE CONDITIONS :  
 DEBRIS :  
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY?  
 IS ORDINARY RISE RAPID?  
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS?  
 IF YES, DESCRIBE :

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : Two Span Concrete Slab Bridge  
 YEAR BUILT :  
 CLEAR SPAN(NORMAL TO STREAM) : 19 ft  
 VERTICAL CLEARANCE ABOVE STREAMBED : 11 ft  
 WATERWAY OF FULL OPENING : 200 sq ft  
 DISPOSITION OF STRUCTURE : To be removed  
 TYPE OF MATERIAL UNDER SUBSTRUCTURE : Ledge

WATER SURFACE ELEVATIONS AT:  
 Q2.33 = \*\*See Additional Information\*\* VELOCITY =  
 Q10 = " "  
 Q25 = " "  
 Q50 = " "  
 Q100 = " "

LONG TERM STREAMBED CHANGES :  
 IS THE ROADWAY OVERTOPPED BELOW Q100 :  
 FREQUENCY :  
 RELIEF ELEVATION :  
 DISCHARGE OVER ROAD @Q100 :

UPSTREAM STRUCTURE

TOWN: Essex DISTANCE: 14,700 ft  
 HIGHWAY #: TH3 STRUCTURE #: Br22  
 CLEAR SPAN: 10 ft CLEAR HEIGHT: 10 ft  
 YEAR BUILT: 1994 FULL WATERWAY: 64 sq ft  
 STRUCTURE TYPE: CGMPP

DOWNSTREAM STRUCTURE

TOWN: Colchester DISTANCE: 5,000 ft  
 HIGHWAY #: US7 STRUCTURE #: Br155  
 CLEAR SPAN: 18 ft CLEAR HEIGHT: 20 ft  
 YEAR BUILT: 1929 FULL WATERWAY: 358 sq ft  
 STRUCTURE TYPE: Concrete Box

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	2.29	1.25					
POSTING							
OPERATING	2.97	1.62	2.38	1.69	2.25	2.03	2.11
COMMENTS:							

PROPOSED STRUCTURE

STRUCTURE TYPE: Single Span Curved Girder Bridge  
 CLEAR SPAN(NORMAL TO STREAM): 70 ft  
 VERTICAL CLEARANCE ABOVE STREAMBED: 12.5 ft  
 WATERWAY OF FULL OPENING: 530 sq ft

WATER SURFACE ELEVATIONS AT:  
 Q2.33 = \*\*See Additional Information\*\* VELOCITY=  
 Q10 = " "  
 Q25 = " "  
 Q50 = " "  
 Q100 = " "

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

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE :  
 VERTICAL CLEARANCE : @ Q50 =

SCOUR :  
 REQUIRED CHANNEL PROTECTION : Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW : DEPTH OR ELEVATION :  
 ORDINARY LOW WATER :  
 ORDINARY HIGH WATER : 3.5' Depth

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: N/A  
 CLEAR SPAN (NORMAL TO STREAM):  
 VERTICAL CLEARANCE ABOVE STREAMBED :  
 WATERWAY AREA OF FULL OPENING :

ADDITIONAL INFORMATION

\*\*No water surface elevations were calculated due to the proximity of the dam upstream.  
 It is assumed elevations and velocities will be decreased by the proposed longer and higher single span bridge.

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 <sub>p</sub> : 3.0 INCH
3. DESIGN SPAN	L: 70.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND	f <sub>y</sub> : ---
6. PRESTRESSED CONCRETE STRENGTH	f' <sub>c</sub> : ---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' <sub>cr</sub> : ---
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f' <sub>c</sub> : ---
9. CONCRETE, HIGH PERFORMANCE CLASS A	f' <sub>c</sub> : 4.0 KSI
10. CONCRETE, HIGH PERFORMANCE CLASS B	f' <sub>c</sub> : 3.5 KSI
11. CONCRETE, CLASS C	f' <sub>c</sub> : 3.0 KSI
12. REINFORCING STEEL	f <sub>y</sub> : 60 KSI
13. STRUCTURAL STEEL AASHTO M270	f <sub>y</sub> : 50 KSI
14. NOMINAL BEARING RESISTANCE OF SOIL	q <sub>n</sub> : 4.0 KSF
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: 0.45
16. NOMINAL BEARING RESISTANCE OF ROCK	q <sub>n</sub> : 20.0 KSF
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: 0.45

18. PILE RESISTANCE FACTOR φ: ---
19. LATERAL PILE DEFLECTION Δ: ---
20. BASIC WIND SPEED V<sub>3s</sub>: 90 MPH
21. MINIMUM GROUND SNOW LOAD p<sub>g</sub>: ---
22. SEISMIC DATA PGA: 0 S<sub>s</sub>: --- S<sub>1</sub>: ---
23. ---
24. ---
25. ---
26. ---

PROJECT NAME: COLCHESTER  
 PROJECT NUMBER: STP 5600 (12)  
 FILE NAME: s95j298pi.xls PLOT DATE: 1/30/2015  
 PROJECT LEADER: C. CARLSON DRAWN BY: R. PELLETT  
 DESIGNED BY: N. VANDENBERG CHECKED BY: N. VANDENBERG  
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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	2015 to 2035	: 198000
2015	2300	370	76	3.3	70	40 year ESAL for flexible pavement	2015 to 2055	: 449000
2035	2500	400	46	4.1	100	Design Speed :	35 mph	