

PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

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FINAL HYDRAULIC REPORT

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STANDARDS LIST

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
S-367A	BRIDGE RAILING, GALVANIZED HDSB/FASCIA MOUNTED/STEEL TUBING	05-24-2012
S-367B	GUARDRAIL APPROACH SECTION, GALVANIZED HD STEEL BEAM	05-24-2012
T-1	TRAFFIC CONTROL GENERAL NOTES	08-06-2012
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-06-2012
T-11	CONSTRUCTION APPROACH SIGNING DIVIDED HIGHWAY ONE LANE CLOSED	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

HYDROLOGIC DATA

Date: April 2013

DRAINAGE AREA : 7.9 sq. mi.
 CHARACTER OF TERRAIN : Mix of fields and forest, rural
 STREAM CHARACTERISTICS : Incised and alluvial
 NATURE OF STREAMBED : Silt, sand and gravel

PEAK FLOW DATA

Q 2.33 =	360 cfs	Q 50 =	1150 cfs
Q 10 =	670 cfs	Q 100 =	1320 cfs
Q 25 =	920 cfs	Q 500 =	1740 cfs

DATE OF FLOOD OF RECORD : Unknown
 ESTIMATED DISCHARGE : Unknown
 WATER SURFACE ELEV. : Unknown
 NATURAL STREAM VELOCITY : @ Q50 = 7.4 fps
 ICE CONDITIONS : Moderate
 DEBRIS : Little 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 slab bridge
 YEAR BUILT : 1949, reconstructed in 2004
 CLEAR SPAN(NORMAL TO STREAM) : 23'
 VERTICAL CLEARANCE ABOVE STREAMBED : ~7'
 WATERWAY OF FULL OPENING : 130 sq. ft.
 DISPOSITION OF STRUCTURE : Remove and replace
 TYPE OF MATERIAL UNDER SUBSTRUCTURE : See borings

WATER SURFACE ELEVATIONS AT:

Q2.33 =	598.7'	VELOCITY =	5.6 fps
Q10 =	600.1'	"	8.4 fps
Q25 =	602.2'	"	11.7 fps
Q50 =	602.6'	"	8.3 fps
Q100 =	602.9'	"	9.0 fps

LONG TERM STREAMBED CHANGES : None noted

IS THE ROADWAY OVERTOPPED BELOW Q100 : Yes
 FREQUENCY : Below Q50
 RELIEF ELEVATION : 602.7'
 DISCHARGE OVER ROAD @Q100 : 280 cfs

UPSTREAM STRUCTURE

TOWN : Fairfield DISTANCE : 2200'
 HIGHWAY # : TH 3 STRUCTURE # : BR 12
 CLEAR SPAN : 21' CLEAR HEIGHT : 8'
 YEAR BUILT : 1996 FULL WATERWAY :
 STRUCTURE TYPE : Precast Concrete Box

DOWNSTREAM STRUCTURE

TOWN : Fairfield DISTANCE : 2800'
 HIGHWAY # : TH 62 STRUCTURE # : BR 39
 CLEAR SPAN : 20' CLEAR HEIGHT : 11'
 YEAR BUILT : 1963 FULL WATERWAY :
 STRUCTURE TYPE : Concrete Slab Bridge

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	1.8	1.11					
POSTING							
OPERATING	2.34	1.44	2.35	1.29	1.73	1.59	1.9
COMMENTS:							

AS BUILT "REBAR" DETAIL

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

STRUCTURES DETAIL SHEETS

SD-501.00	CONCRETE DETAILS AND NOTES	5/7/2010
SD-502.00	CONCRETE DETAILS AND NOTES	5/7/2010
SD-516.10	BRIDGE JOINT ASPHALTIC PLUG	5/7/2010
SD-601.00	STRUCTURAL STEEL DETAILS AND NOTES	6/4/2010

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT	Design Speed
2015	580	90	50	6.7	40	40 mph
2035	620	95	50	10.8	60	40 mph

PROPOSED STRUCTURE

STRUCTURE TYPE : Solid Slab
 CLEAR SPAN(NORMAL TO STREAM) : 40'
 VERTICAL CLEARANCE ABOVE STREAMBED : ~8'
 WATERWAY OF FULL OPENING : 210 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	598.7'	VELOCITY =	4.5 fps
Q10 =	599.8'	"	6.2 fps
Q25 =	600.5'	"	7.7 fps
Q50 =	601.1'	"	9.2 fps
Q100 =	601.5'	"	10.4 fps

IS THE ROADWAY OVERTOPPED BELOW Q100 : No
 FREQUENCY : N/A
 RELIEF ELEVATION : 602.7'
 DISCHARGE OVER ROAD @Q100 : N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE : 602.4'
 VERTICAL CLEARANCE : @ Q50 = 1.3'

SCOUR : Contraction scour at Q100 = 1.0'

REQUIRED CHANNEL PROTECTION : Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW : 20 cfs DEPTH OR ELEVATION :
 ORDINARY LOW WATER : 10 cfs 1.5'
 ORDINARY HIGH WATER : 155 cfs 3.0'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE : None required. Detour to be used.
 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 : 0.0 INCH
3. DESIGN SPAN	L: 43.00 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND (0.60 INCH DIAMETER - LOW RELAX)	f _y : 270 KSI
6. PRESTRESSED CONCRETE STRENGTH	f' _c : 8.0 KSI
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' _{cr} : 6.0 KSI
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f' _c : 4.0 KSI
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	f _y : 60 KSI
13. STRUCTURAL STEEL AASHTO M270	f _y : ---
14. NOMINAL BEARING RESISTANCE OF SOIL	q _n : 4.0 KSF
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
16. NOMINAL BEARING RESISTANCE OF ROCK	q _n : 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: 0.38 INCH
20. BASIC WIND SPEED	V _{3s} : ---
21. MINIMUM GROUND SNOW LOAD	p _g : ---
22. SEISMIC DATA	PGA: 0.65 S _s : ---
23.	S ₁ : ---
24.	---
25.	---
26.	---

PROJECT NAME : FAIRFIELD
 PROJECT NUMBER : BR 0281 (25)

FILE NAME : s12j156excel.dgn PLOT DATE : 8/18/2014
 PROJECT LEADER : R. YOUNG DRAWN BY : K. FRIEDLAND
 DESIGNED BY : R. KLINFELTER CHECKED BY : J. SALVATORI
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