

PRELIMINARY INFORMATION SHEET (BRIDGE)

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STANDARDS LIST

B-71	STANDARD FOR RESIDENTIAL AND COMMERCIAL DRIVES	07-08-2005
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08-08-1995
G-18M	BOX BEAM GUARD RAIL	06-13-1997
J-3	MAIL BOX SUPPORT DETAILS	08-07-1995
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-2	TRAFFIC SIGN GENERAL NOTES	04-25-2016
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08-08-2012
T-28	CONSTRUCTION SIGN DETAILS	08-08-2012
T-30	CONSTRUCTION SIGN DETAILS	08-08-2012
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	08-08-2012
T-36	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING	08-08-2012
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: July 2015

DRAINAGE AREA: 9.2 sq. mi.
 CHARACTER OF TERRAIN: Hilly to mountainous, mostly forested with some development
 STREAM CHARACTERISTICS: Sinuous, semi-alluvial. Grade transition from steep to flatter.
 NATURE OF STREAMBED: Sand, gravel, cobbles, boulders and ledge

PEAK FLOW DATA

Q 2.33 =	550 cfs	Q 50 =	1800 cfs
Q 10 =	1100 cfs	Q 100 =	2100 cfs
Q 25 =	1500 cfs	Q 500 =	3000 cfs

DATE OF FLOOD OF RECORD: Unknown
 ESTIMATED DISCHARGE: Unknown
 WATER SURFACE ELEV.: Unknown
 NATURAL STREAM VELOCITY: @ Q50 = 14.7 fps
 ICE CONDITIONS: Moderate
 DEBRIS: Moderate
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
 IS ORDINARY RISE RAPID? Yes
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
 IF YES, DESCRIBE:

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span steel beam bridge with concrete deck

CLEAR SPAN(NORMAL TO STREAM): 40'
 VERTICAL CLEARANCE ABOVE STREAMBED: 9'
 WATERWAY OF FULL OPENING: 328 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1029.9'	VELOCITY =	9.8 fps
Q10 =	1031.0'	"	12.4 fps
Q25 =	1031.8'	"	13.8 fps
Q50 =	1032.5'	"	14.6 fps
Q100 =	1033.1'	"	15.1 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: Above Q100
 RELIEF ELEVATION: 1038.2'
 DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 1035.9' upstr., 1033.9' dnstr.
 VERTICAL CLEARANCE: @ Q50 = 3.4' upstr. & 1.4' dnstr. above approach W.S.E.

SCOUR: 0' of contraction scour up to Q500.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

WATERSHED STORAGE: < 1% HEADWATERS:
 UNIFORM: X
 IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single span concrete T-beam bridge
 YEAR BUILT: Built 1927, reconstructed 1964
 CLEAR SPAN(NORMAL TO STREAM): 22'
 VERTICAL CLEARANCE ABOVE STREAMBED: 8'
 WATERWAY OF FULL OPENING: 175 sq. ft.
 DISPOSITION OF STRUCTURE: Remove and replace with new bridge.
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: See boring logs.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	1030.3'	VELOCITY =	9.8 fps
Q10 =	1032.5'	"	12.4 fps
Q25 =	1033.9'	"	13.8 fps
Q50 =	1035.0'	"	14.6 fps
Q100 =	1036.0'	"	15.1 fps

LONG TERM STREAMBED CHANGES: Scour hole through bridge and at outlet.

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: Above Q100
 RELIEF ELEVATION: 1038.2'
 DISCHARGE OVER ROAD @Q100: None

UPSTREAM STRUCTURE

TOWN: Jay DISTANCE: 2,100'
 HIGHWAY #: TH 23 STRUCTURE #: 13
 CLEAR SPAN: 36' CLEAR HEIGHT: 10'
 YEAR BUILT: 1955, reconstructed 2008 FULL WATERWAY:
 STRUCTURE TYPE: I-beam bridge

DOWNSTREAM STRUCTURE

TOWN: Jay DISTANCE: 5,800'
 HIGHWAY #: TH 1 STRUCTURE #: 6
 CLEAR SPAN: 41' CLEAR HEIGHT: 8'
 YEAR BUILT: 1971 FULL WATERWAY:
 STRUCTURE TYPE: I-beam bridge

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	352	6 AXLE	3A STR	4A STR	5A SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY	1.84	1.11					
POSTING							
OPERATING	2.39	1.44	2.53	1.33	1.75	1.60	2.01

COMMENTS:

REVISOR: [Signature]

DATE: 12/19/17

PERMIT INFORMATION

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

TEMPORARY BRIDGE REQUIREMENTS

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

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN ONE-WAY TRAFFIC ON THE EXISTING STRUCTURE.
2. INSTALL AND MAINTAIN TRAFFIC SIGNALS.
3. SIDEWALKS ARE NOT NECESSARY.

DESIGN VALUES

1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	dp: ---
3. DESIGN SPAN	L: 45.41 FT
4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND	f _y : ---
6. PRESTRESSED CONCRETE STRENGTH	f' _c : ---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' _{cr} : ---
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 : ---
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
16. NOMINAL BEARING RESISTANCE OF ROCK	q _n : 150 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 _{3s} : ---
21. MINIMUM GROUND SNOW LOAD	p _g : ---
22. SEISMIC DATA	PGA: 0 S: --- S _r : ---

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

HIGHWAY SAFETY & DESIGN DETAIL SHEETS

HSD-400.01	SAFETY EDGE DETAILS	03-29-2016
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REVISIONS

NO.	DATE	DESCRIPTION
1	09.27.16	UPDATED PLAN SHEETS LIST
2	11.13.17	CORRECTED RATING FACTORS

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 2015 to 2035 : 478500
2015	1400	290	62	11.6	170	40 year ESAL for flexible pavement from 2015 to 2055 : 0
2035	1500	300	62	15.6	240	Design Speed : 40 mph

PROJECT NAME: JAY
 PROJECT NUMBER: BHF 0278(3)
 FILE NAME: Jay PI sheet.xls PLOT DATE: 11/13/2017
 PROJECT LEADER: M. Chenette DRAWN BY: L. Buxton
 DESIGNED BY: G. Bogue CHECKED BY: M. Chenette
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