

### INDEX OF SHEETS

1. TITLE SHEET
2. PRELIMINARY INFORMATION SHEET
3. TYPICAL BRIDGE SECTIONS
4. TYPICAL ROADWAY SECTIONS
- 5.-6. QUANTITY SHEETS
7. TIE SHEET
8. SITE PLAN AND ELEVATION
9. EPSC NARRATIVE
10. EPSC EXISTING CONDITIONS SITE PLAN
11. EPSC CONSTRUCTION SITE PLAN
12. EPSC FINAL CONDITIONS SITE PLAN
- 13.-15. EPSC DETAIL SHEETS
16. TRAFFIC CONTROL PLAN
17. BRIDGE AND DETOUR PROFILE
18. SIDEWALK MODIFICATIONS
19. TEMPORARY TRAFFIC SIGNAL PLAN
20. DETOUR SIGN SHEET
21. PROJECT NOTES
22. FRAMING PLAN
- 23.-24. STEEL DETAIL SHEETS
25. TYPICAL DECK SECTION & DETAILS
26. DECK REINFORCING PLAN
27. SCUPPER AND MISC. DETAILS
28. EXPANSION JOINT PLAN
29. EXPANSION JOINT DETAILS
30. DOWNSPOUT DETAILS
31. ABUTMENT NO. 1 PLAN & ELEVATION
32. ABUTMENT NO. 2 PLAN & ELEVATION
33. ABUTMENT SECTIONS
34. BRIDGE RAIL DETAILS
35. RAILING REPLACEMENT DETAILS
36. PAVEMENT MARKINGS PLAN
37. REINFORCING SCHEDULE
38. ROADWAY CROSS SECTIONS
- 39.-41. DETOUR CROSS SECTIONS

### VAOT STANDARDS

C-1	01/03/00
C-2A	10/14/05
D-8	01/03/00
D-9	06/01/94
D-15	06/01/94
E-100	01/02/04
E-100A	01/02/04
E-101	05/30/03
E-102	06/30/03
E-102A	05/01/04
E-106	03/01/04
E-107	06/30/03
E-107A	08/08/95
E-121	08/08/95
E-140	08/30/96
E-142	09/20/95
E-170	11/04/99
E-171A	08/09/95
E-171B	08/09/95
E-171C	08/09/95
E-172	08/09/95
E-175	11/17/93
E-191	02/01/99
E-192	10/12/00
E-193	08/18/95
G-1b	06/01/94
SB-R6-82	01/06/95

## FINAL HYDRAULICS REPORT

### HYDROLOGIC DATA

DRAINAGE AREA= 393.4 square miles  
 CHARACTER OF TERRAIN: \_\_\_\_\_  
 CHARACTER & TYPE OF STREAM: \_\_\_\_\_  
 NATURE OF STREAMBED: \_\_\_\_\_  
 Q2.33= 8,300 cfs Q50= 18,000 cfs  
 Q10= 13,300 cfs Q100= 20,000 cfs  
 Q25= 15,600 cfs Q500= 25,500 cfs  
 DATE OF FLOOD OF RECORD: \_\_\_\_\_  
 WATER SURFACE ELEV.: \_\_\_\_\_ ESTIMATED DISCHARGE: \_\_\_\_\_  
 NATURAL STREAM VELOCITY @ Q25 = \_\_\_\_\_  
 ICE CONDITIONS: \_\_\_\_\_ DEBRIS: \_\_\_\_\_  
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? \_\_\_\_\_  
 IS ORDINARY RISE RAPID? \_\_\_\_\_  
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? \_\_\_\_\_  
 IF YES, DESCRIBE: \_\_\_\_\_  
 WATERSHED STORAGE \_\_\_\_\_ HEADWATERS \_\_\_\_\_ UNIFORM THROUGHOUT WATERSHED \_\_\_\_\_  
 IMMEDIATELY ABOVE SITE \_\_\_\_\_

### EXISTING STRUCTURE

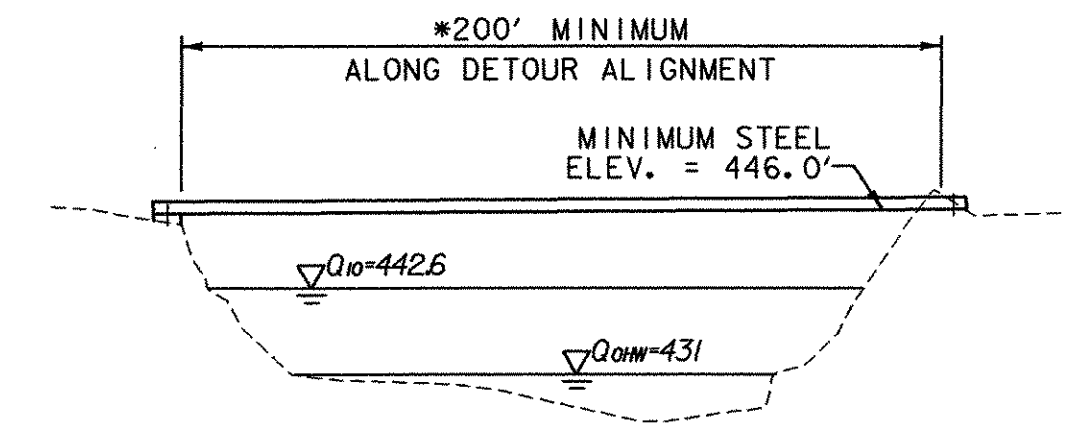
STRUCTURE TYPE: STEEL PONY TRUSS BRIDGE  
 YEAR BUILT: 1934  
 CLEAR SPAN (NORMAL TO STREAM): 119 feet  
 VERTICAL CLEARANCE ABOVE STREAMBED: \_\_\_\_\_  
 WATERWAY OF FULL OPENING: \_\_\_\_\_  
 DISPOSITION OF STRUCTURE: Rehabilitation  
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: Ledge  
 WATER SURFACE ELEV. @ Q2.33= 435.5 ft VELOCITY= \_\_\_\_\_  
 Q10= 442.6 ft " \_\_\_\_\_  
 Q25= 444.0 ft " \_\_\_\_\_  
 Q50= 445.4 ft " \_\_\_\_\_  
 Q100= 446.6 ft " \_\_\_\_\_  
 LONG TERM STREAM BED CHANGES: \_\_\_\_\_  
 IS THE ROADWAY OVERTOPPED BELOW THE Q100? \_\_\_\_\_ FREQUENCY: \_\_\_\_\_  
 RELIEF ELEVATION: \_\_\_\_\_ DISCHARGE OVER ROAD @ Q100: \_\_\_\_\_  
 UPSTREAM STRUCTURE: TOWN: \_\_\_\_\_ DISTANCE: \_\_\_\_\_  
 HIGHWAY NO.: \_\_\_\_\_ STRUCTURE NO.: \_\_\_\_\_  
 STRUCTURE TYPE: \_\_\_\_\_  
 CLEAR SPAN: \_\_\_\_\_ CLEAR HEIGHT: \_\_\_\_\_  
 YEAR BUILT: \_\_\_\_\_ FULL WATERWAY: \_\_\_\_\_  
 DOWNSTREAM STRUCTURE: TOWN: \_\_\_\_\_ DISTANCE: \_\_\_\_\_  
 HIGHWAY NO.: \_\_\_\_\_ STRUCTURE NO.: \_\_\_\_\_  
 STRUCTURE TYPE: \_\_\_\_\_  
 CLEAR SPAN: \_\_\_\_\_ CLEAR HEIGHT: \_\_\_\_\_  
 YEAR BUILT: \_\_\_\_\_ FULL WATERWAY: \_\_\_\_\_

### PROPOSED STRUCTURE

STRUCTURE TYPE: N/A  
 CLEAR SPAN (NORMAL TO STREAM): \_\_\_\_\_  
 VERTICAL CLEARANCE ABOVE STREAMBED: \_\_\_\_\_  
 WATERWAY OF FULL OPENING: \_\_\_\_\_  
 WATER SURFACE ELEV. @ Q2.33= \_\_\_\_\_ VELOCITY= \_\_\_\_\_  
 Q10= \_\_\_\_\_ " \_\_\_\_\_  
 Q25= \_\_\_\_\_ " \_\_\_\_\_  
 Q50= \_\_\_\_\_ " \_\_\_\_\_  
 Q100= \_\_\_\_\_ " \_\_\_\_\_  
 IS THE ROADWAY OVERTOPPED BELOW THE Q100? \_\_\_\_\_ FREQUENCY: \_\_\_\_\_  
 RELIEF ELEVATION: \_\_\_\_\_ DISCHARGE OVER ROAD @ Q100: \_\_\_\_\_  
 AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: \_\_\_\_\_  
 VERTICAL CLEARANCE: \_\_\_\_\_  
 SCOUR: \_\_\_\_\_  
 REQUIRED CHANNEL PROTECTION: \_\_\_\_\_

### PERMIT INFORMATION

AVERAGE DAILY FLOW: 800 cfs  
 ORDINARY LOW WATER: 350 cfs DEPTH: EL. 427'  
 ORDINARY HIGH WATER: 3,600 cfs DEPTH: EL. 431'



\* - CONTRACTOR SHALL HAVE THE OPTION OF CONSTRUCTING A SINGLE SPAN OR TWO SPAN TEMPORARY BRIDGE. MAXIMUM PIER WIDTH SHALL BE 3 FEET.

### TEMPORARY BRIDGE REQUIREMENTS

NTS

### DESIGN CRITERIA:

1. DESIGN LIVE LOAD AASHTO HS-20
2. DESIGN SPAN 125'
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL \_\_\_\_\_ N/A ON LEDGE \_\_\_\_\_ N/A
4. ALLOWABLE LOAD FOR PILING \_\_\_\_\_ TYPE \_\_\_\_\_ ESTIMATED LENGTH \_\_\_\_\_
5. STRUCTURAL STEEL AASHTO GRADE SEE PROJECT GENERAL NOTES
6. REINFORCING STEEL GRADE 60  
 CONCRETE, HIGH PERFORMANCE CLASS A  $f'_c$  : 4000 PSI  $f'_c$  = 1600 psi  
 CONCRETE, HIGH PERFORMANCE CLASS B  $f'_c$  : 3500 PSI  $f'_c$  = 1400 psi

### TRAFFIC MAINTENANCE:

1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE NO OR ON TEMPORARY BRIDGE YES
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY TWO WAY TRAFFIC CONTROL SIGNALS REQUIRED YES  
 MINIMUM CLEAR SPAN (NORMAL TO STREAM) 200 feet MINIMUM CLEAR HEIGHT SEE TEMPORARY BRIDGE SKETCH  
 MINIMUM WATERWAY AREA \_\_\_\_\_  
 ARE SIDEWALKS REQUIRED? YES IF SO, ON WHAT SIDE? UPSTREAM  
 STRUCTURE TYPE \_\_\_\_\_

### LOAD FACTOR LOAD RATING (TONS)

LOADING LEVELS (LOAD FACTOR)	TRUCK						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY A=2.17; B=1.00	35	39					
POSTED A=1.55; B=1.40	48	55	60		51	53	56
OPERATING A=1.30; B=1.67		66	72	79	61	63	

### TRAFFIC DATA

YEAR	AADT	DHV	% D	% T	ADTT
2008	4900	550	52	2.1	220
2028	6000	680	52	3.2	410

20 year ESAL for flexible pavement 2008 to 2028 : 2,079,000  
 40 year ESAL for flexible pavement 2008 to 2048 : 5,391,000  
 Design speed: 25 mph

TRUSS TOP CHORD OF BAY #2 & #7 ARE THE CONTROLLING MEMBER

$$\text{STRENGTH RF} = \frac{\phi M_N - 1.3 M_{DL}}{A \times M_{LL+I}}$$



Stantec

PROJECT NAME: RICHFORD  
 PROJECT NUMBER: BHF 0302 (3) S

FILE NAME: ...\Structures\Design\rich-pl.d\DOT DATE: 12/19/2007  
 PROJECT LEADER: MJC DRAWN BY: JTS  
 DESIGNED BY: SEB CHECKED BY: MJC  
**PRELIMINARY INFORMATION SHEET** SHEET 2 OF 41