

HYDRAULIC DATA

1. DRAINAGE AREA 65 SQ.MI.
 CHARACTER OF TERRAIN STEELY SLOPED FORESTED UPLANDS; MODERATELY DEVELOPED FLOOD PLAIN
 NATURE OF STREAMBED GRAVEL OVER DEEP SANDY SILT

Q 2.33	2000 CFS	Q 50	6550 CFS
Q 10	3750 CFS	Q 100	8200 CFS
Q 25	5100 CFS	Q 500	14200 CFS

DATE OF FLOOD OF RECORD 1927 WATER SURFACE ELEVATION 512 ESTIMATED DISCHARGE _____
 NATURAL STREAM VELOCITY @ Q 10 = 6.2 fps (approach section) ICE CONDITIONS MODERATE TO HEAVY DRIFT MODERATE
 DOES THE STREAM REACH MAX. HIGHWATER ELEVATION RAPIDLY? YES
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? DOWNSTREAM
 IF YES, DESCRIBE: CONFLUENCE OF THE LAMOILLE RIVER IS APPROX. 0.35 MILES DOWNSTREAM
 WATERSHED STORAGE 2% HEADWATERS X UNIFORM THROUGHOUT WATERSHED IMMEDIATELY ABOVE SITE

EXISTING STRUCTURE

1. STRUCTURE TYPE: STEEL THROUGH GIRDER YEAR BUILT: 1928
 2. SPAN NORMAL TO STREAM: 66'
 3. VERTICAL CLEARANCE ABOVE STREAMBED: 13.8'
 4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM): 810 SF
 5. DISPOSITION OF STRUCTURE: SUPERSTRUCTURE AND PORTIONS OF SUBSTRUCTURE TO BE REMOVED
 6. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL: WOODEN PILES THROUGH SANDY SILT
 7. WATER SURFACE ELEVATION @ Q 2.33 486.17 @APPROACH AREA VELOCITY= 6.9 fps
 Q 10 486.53 (491.56) = 8.7 fps (5.7 fps)
 Q 25 489.98 = 10.4 fps
 Q 50 491.42 (496.27) = 12.3 fps (7.8 fps)
 Q 100 493.16 (497.71) = 14.7 fps (8.1 fps)
 8. LONG TERM STREAM BED CHANGES: SINUOUS STREAM
 9. IS THE ROADWAY OVERTOPPED BELOW THE 0100? NO FREQUENCY: SEE NOTE 2
 10. RELIEF ELEVATION: SEE NOTE 2 DISCHARGE OVER ROAD @0100: (1339 cfs)

PROPOSED STRUCTURE

1. STRUCTURE TYPE: REINFORCED CONCRETE SLAB ON STEEL GIRDERS
 2. CLEAR SPAN LENGTH(S) NORMAL TO STREAM: 71'
 3. VERTICAL CLEARANCE ABOVE STREAMBED: 12.8'
 4. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? YES WATER LINE ON BRIDGE & BURIED SEWER LINE UNDER RIVER

HYDRAULIC DATA

1. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM): 780 SF
 2. WATER SURFACE ELEVATION @ Q 2.33 488.38 @APPROACH AREA VELOCITY= 7.3 fps
 Q 10 488.71 (491.56) = 8.8 fps (5.5 fps)
 Q 25 490.15 = 10.4 fps
 Q 50 491.55 (496.38) = 12.2 fps (8.1 fps)
 Q 100 493.11 (497.71) = 14.3 fps (8.1 fps)
 3. IS THE ROADWAY OVERTOPPED BELOW THE 0100? NO FREQUENCY: SEE NOTE 2
 4. RELIEF ELEVATION: SEE NOTE 2 DISCHARGE OVER ROAD @0100: (1590 cfs)
 5. AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 492.7' (LIMITED BY LOW STEEL)
 6. VERTICAL CLEARANCE @0100: 0
 7. SCOUR: 5'
 8. REQUIRED CHANNEL PROTECTION: STONE FILL, TYPE IV

ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO HS25-44
 2. DESIGN SPAN 75 ft
 3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE N/A
 4. ALLOWABLE LOAD FOR PILING
ASTM A36 (GRADE 36 STEEL) 192.6 KIPS TYPE HP 14 X 73 AVERAGE LENGTH 27 KSI
 5. ALLOWABLE STRESS FOR STRUCTURAL STEEL AASHTO M 270 GR50 TENSION 27 KSI
 6. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24000 PSI COMPRESSION 20000 PSI
 7. ALLOWABLE STRESS FOR CONCRETE, HIGH PERFORMANCE CLASS A f_c = 4000 PSI f_c = 1400 PSI
 CONCRETE, HIGH PERFORMANCE CLASS B f_c = 3500 PSI f_c = 1400 PSI

TRAFFIC MAINTENANCE:

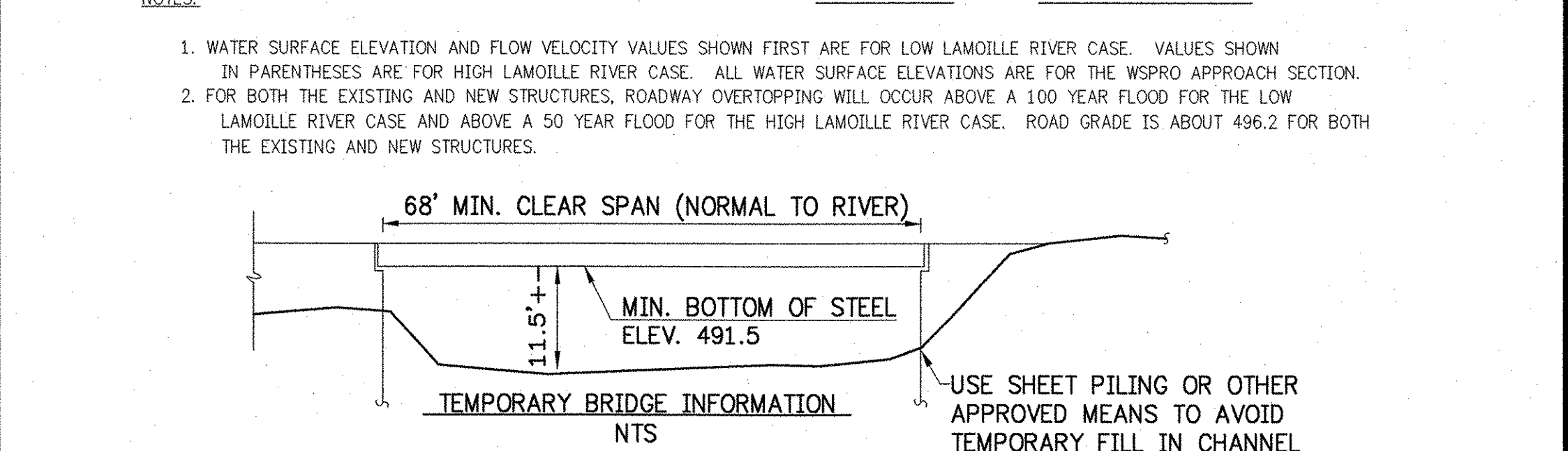
1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE YES, DURING PHASE I
 OR ON TEMPORARY BRIDGE YES, DURING PHASE II
 2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY TWO WAY TRAFFIC CONTROL SIGNALS REQUIRED NO (SEE SKETCH BELOW)
 MINIMUM CLEAR SPAN SEE SKETCH BELOW MINIMUM CLEAR HEIGHT SEE SKETCH BELOW MINIMUM WATERWAY AREA
 ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE? N/A

PERMIT INFORMATION

AVERAGE DAILY FLOW: 134 cfs ORDINARY LOW WATER: 61 cfs DEPTH: 1 ft
 ORDINARY HIGH WATER: 858 cfs DEPTH: 4 ft

NOTES:

1. WATER SURFACE ELEVATION AND FLOW VELOCITY VALUES SHOWN FIRST ARE FOR LOW LAMOILLE RIVER CASE. VALUES SHOWN IN PARENTHESES ARE FOR HIGH LAMOILLE RIVER CASE. ALL WATER SURFACE ELEVATIONS ARE FOR THE WSPRO APPROACH SECTION.
 2. FOR BOTH THE EXISTING AND NEW STRUCTURES, ROADWAY OVERTOPPING WILL OCCUR ABOVE A 100 YEAR FLOOD FOR THE LOW LAMOILLE RIVER CASE AND ABOVE A 50 YEAR FLOOD FOR THE HIGH LAMOILLE RIVER CASE. ROAD GRADE IS ABOUT 496.2 FOR BOTH THE EXISTING AND NEW STRUCTURES.



LOAD FACTOR LOAD RATING (TONS)

LOAD LEVELS (LOAD FACTOR)	TRUCK						
	H	HS	3S2	6 AXLE	SA STR	4ASTR	5ASEMI
INVENTORY A=2.17 B=1.00	33	60					
POSTED A=1.55 B=1.40	47	84	121	91	93	110	
OPERATING A=1.30 B=1.67			100	144	173	108	111

REVISIONS

NO.	DESCRIPTION	BY & DATE

STATE OF VERMONT

AGENCY OF TRANSPORTATION

Town Of JOHNSON Bridge No. 37
 Highway No. VT. ROUTE 15 Log Sta. _____
 Surv. Sta. _____

VT. ROUTE 15 OVER GIHON RIVER
PRELIMINARY INFORMATION SHEET

Designed By R. RICARD Drawn By D. DUGAL
 Checked By Date Bridge Design Supervisor
R. ROONEY 11/02 J. BYATT Date 11/06

PROJECT JOHNSON PROJECT NO. BRF 030-2(17)S
 I.G.C. Info. _____
 Bridge Sheet No. _____ Sheet 45 Of 85

