STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET

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FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: June 21, 2002

DRAINAGE AREA : 363.0 sq. mi. *
CHARACTER OF TERRAIN : Hilly uplands to wide flat valley at the site.
STREAM CHARACTERISTICS : Incised, sinuous, not braided or anabranched, wide floodplain.
NATURE OF STREAMBED : Mostly silt, clay and sand

PEAK FLOW DATA

Q 2.33 =	5,200 cfs **	Q 50 =	18,040 cfs *
Q 10 =	11,370 cfs *	Q 100 =	21,530 cfs *
Q 25 =	15,100 cfs **	Q 500 =	31,320 cfs *

DATE OF FLOOD OF RECORD : November 1927
ESTIMATED DISCHARGE: Not Available (NA)
WATER SURFACE ELEV.: 370.4' (from Pittsford 1988 Flood Insurance Study)
NATURAL STREAM VELOCITY : @ Q?? = NA
ICE CONDITIONS : Moderate
DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
IS ORDINARY RISE RAPID? No
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes
IF YES, DESCRIBE: The flat channel grade and natural and manmade features downstream control watersurface elevations at this site.

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Covered Bridge
YEAR BUILT: 1841
CLEAR SPAN(NORMAL TO STREAM): 91'
VERTICAL CLEARANCE ABOVE STREAMBED: 26' (Bottom of chord elev. 364.3')
WATERWAY OF FULL OPENING: 2,200 sq. ft.
DISPOSITION OF STRUCTURE: Rehabilitate superstructure. New abutments.
TYPE OF MATERIAL UNDER SUBSTRUCTURE: Silt and sand

WATER SURFACE ELEVATIONS AT:

Q2.33 =	NA	VELOCITY =	NA
Q10 =	363.8' *	"	NA
Q25 =	365.1 **	"	NA
Q50 =	366.0' *	"	NA
Q100 =	368.0' *	"	3.4 fps *

LONG TERM STREAMBED CHANGES: There is about 5' of scour through the bridge area. No other long term changes noted in the bridge area.

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Below Q10
RELIEF ELEVATION: 359.2' within the limits of the project survey.
DISCHARGE OVER ROAD @Q100: NA

UPSTREAM STRUCTURE

TOWN: Proctor
HIGHWAY # : T.H. 3
CLEAR SPAN: 121'
YEAR BUILT: 1918
STRUCTURE TYPE: 3 span concrete arch with marble facing
DISTANCE: 11,700'
STRUCTURE #: 2
CLEAR HEIGHT: 23'
FULL WATERWAY: 2,260 sq. ft.

DOWNSTREAM STRUCTURE

TOWN: Pittsford
HIGHWAY # : Railway
CLEAR SPAN: NA
YEAR BUILT: NA
STRUCTURE TYPE: NA
DISTANCE: 11,000'
STRUCTURE #: NA
CLEAR HEIGHT: NA
FULL WATERWAY: NA

ASD LOAD RATING (TONS)

LOADING LEVELS	TRUCK						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY	14						
POSTED	18						
OPERATING	20						

COMMENTS: NEW FLOOR BEAMS CONTROL LOAD RATING

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2002	550	80	58	2	20
2022	740	105	58	2	30

20 year ESAL for flexible pavement 2002 to 2022 : 395,000
40 year ESAL for flexible pavement 2002 to 2042 : 937,000
Design Speed : 20 mph

PROPOSED STRUCTURE

STRUCTURE TYPE: Rehabilitated covered bridge.

CLEAR SPAN(NORMAL TO STREAM): 99'
VERTICAL CLEARANCE ABOVE STREAMBED: 26' (Min. streambed elev. 338'+-)
WATERWAY OF FULL OPENING: 2,250 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	NA	VELOCITY=	NA
Q10 =	363.8' *	"	NA
Q25 =	365.1 **	"	NA
Q50 =	366.0' *	"	NA
Q100 =	368.0' *	"	3.4 fps *

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Below Q10
RELIEF ELEVATION: 359.2' within the limits of the project survey.
DISCHARGE OVER ROAD @Q100: NA

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 364.3'
VERTICAL CLEARANCE: @ Q25 = Water is up to the bridge below the design Q25.

SCOUR: 3.3' of contraction scour calculated at Q100 for the existing bridge, by the USGS in 1998. The proposed bridge scour will be the same or slightly less due to the longer span.
REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW:	760 cfs	
ORDINARY LOW WATER:	330 cfs	DEPTH OR ELEVATION: Elev. 349.0' (estimated)
ORDINARY HIGH WATER:	2,230 cfs	Elev. 356.0'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Traffic will be maintained on the existing temporary bridge.
CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

* Hydrologic and hydraulic information from the 1978 Proctor Flood Insurance Study.
** Determined graphically based on information in the 1978 Proctor Flood Insurance Study.
This project will not cause any significant changes hydraulically. Therefore no new hydraulic study was done as results would be similar to the flood insurance study.

DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTO H - 20 (OPERATING LEVEL)
2. DESIGN SPAN 114' - 6"
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N / A
   ON LEDGE N / A
4. ALLOWABLE LOAD FOR PILING 192 KIPS
   TYPE HP 14X73 - ASTM A572/A572M GRADE 50
   ESTIMATED LENGTH 41' @ ABUTMENT #1 ; 75' @ ABUTMENT #2
5. STRUCTURAL STEEL AASHTO GRADE N / A
6. REINFORCING STEEL GRADE 60
7. CONCRETE CLASS A (HPC-A) f'c : NOT USED
   CONCRETE CLASS B (HPC-B) f'c : 3500 psi
   SILICA - FUME CONCRETE f'c : NOT USED
8. SOIL UNIT WEIGHT 140 pcf
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL N / A

TRAFFIC MAINTENANCE

1. IS TRAFFIC TO BE MAINTAINED? YES
   IF YES, ON EXISTING STRUCTURE OR ON TEMPORARY BRIDGE ON EXISTING TEMPORARY BRIDGE
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OF TWO WAY ONE WAY
   TRAFFIC CONTROL SIGNALS REQUIRED N /A
   MINIMUM CLEAR SPAN (NORMAL TO STREAM): N /A
   WATERWAY OF FULL OPENING: N /A
   VERTICAL CLEARANCE ABOVE STREAMBED: N /A
   ARE SIDEWALKS REQUIRED? N / A
   IF SO, ON WHAT SIDE? N / A
   STRUCTURE TYPE: MABEY BRIDGE

PROJECT NAME: **PROCTOR - PITTSFORD**
PROJECT NUMBER: **BHO 1443 (37)**

FILE NAME: **s96j242epi.xls**
PROJECT LEADER: **C. P. WILLIAMS**
DESIGNED BY: **W. B. SYMONDS**
PRELIMINARY INFORMATION SHEET
PLOT DATE: **8/12/02**
DRAWN BY: **T. ANDERSON**
CHECKED BY: **W. B. SYMONDS**
SHEET **2** OF **60**