

PRELIMINARY INFORMATION SHEET



INDEX OF SHEETS

1. TITLE SHEET
2. PRELIMINARY INFORMATION
- 3-6. TYPICAL SECTIONS
- 7-8. QUANTITY SHEETS
9. EARTHWORK SHEET
10. TIE SHEET
- 11-14. SURVEY PLANS
15. BLANK
- 16-18. LAYOUT PLANS
- 19-22. PROFILES
23. WIDTH & SUPERELEVATION
24. MATERIAL TRANSITION DETAIL
- 25-27. BLANK
- 28-30. EXISTING SIGNS, PAVEMENT MARKING & NEW SIGN SHEETS
31. TRAFFIC SIGN SUMMARY SHEET
32. CONSTRUCTION APPROACH SIGNING
33. BORING LAYOUT INFORMATION
- 34-35. BORING LOGS
36. PLAN & ELEVATION
37. RESOURCE PLAN
38. EROSION CONTROL - EXISTING GRADING PLAN
39. EROSION CONTROL - FINAL GRADING PLAN
- 40-41. BRIDGE RAIL DETAILS
- 42-51. ROADWAY CROSS SECTIONS
- 52-53. DRIVE CROSS SECTIONS
- 54-60. CHANNEL CROSS SECTIONS

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: 1-22-03

DRAINAGE AREA: 129.5 sq km

CHARACTER OF TERRAIN: Mountainous and forested

STREAM CHARACTERISTICS: Incised, sinuous to meandering channel with eroded banks.

NATURE OF STREAMBED: Gravel, cobbles and boulders

PEAK FLOW DATA

Q 2.33 = 29.7 cms	Q 50 = 107.6 cms
Q 10 = 65.1 cms	Q 100 = 124.6 cms
Q 25 = 90.6 cms	Q 500 = 165.7 cms

DATE OF FLOOD RECORD: November 1927

ESTIMATED DISCHARGE: Unknown

WATER SURFACE ELEV.: Unknown

NATURAL STREAM VELOCITY: @ Q50 = 1.2 mps

ICE CONDITIONS: Moderate

DEBRIS: Moderate

DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes

IS ORDINARY RISE RAPID? Yes

IS STAGE AFFECTED BY UPS TREAM OR DOWNSTREAM CONDITIONS? Yes

IF YES, DESCRIBE: Several dams are within this watershed to include the Chittenden Reservoir, Glen Dam and the Rutland City Reservoir.

WATERSHED STORAGE: 3% HEADWATERS: _____

UNIFORM: _____ X

IMMEDIATELY ABOVE SITE: _____

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Three span concrete T-beam bridge

YEAR BUILT: 1931

CLEAR SPAN(NORMAL TO STREAM): 29.3 m

VERTICAL CLEARANCE ABOVE STREAMBED: 4.2 m

WATERWAY OF FULL OPENING: 87 sq m

DISPOSITION OF STRUCTURE: Remove

TYPE OF MATERIAL UNDER SUBSTRUCTURE: refer to boring logs

WATER SURFACE ELEVATIONS AT:

Q2.33 = 194.5 m	VELOCITY = 1.4 mps
Q10 = 195.0 m	" 1.9 mps
Q25 = 195.4 m	" 2.2 mps
Q50 = 195.6 m	" 2.5 mps
Q100 = 195.8 m	" 2.7 mps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: No

FREQUENCY: Above Q100

RELIEF ELEVATION: 196.6 m

DISCHARGE OVER ROAD @Q100: None

UPSTREAM STRUCTURE

TOWN: Rutland DISTANCE: 0.6 km

HIGHWAY #: TH-1 FAS 165 STRUCTURE #: 5

CLEAR SPAN: 40 m CLEAR HEIGHT: 3 m

YEAR BUILT: 1995 FULL WATERWAY: unknown

STRUCTURE TYPE: Single span welded plate girder bridge

DOWNSTREAM STRUCTURE

TOWN: Rutland DISTANCE: 1.6 km

HIGHWAY #: TH-19 STRUCTURE #: 9

CLEAR SPAN: 29 m CLEAR HEIGHT: 4 m

YEAR BUILT: 1950 FULL WATERWAY: unknown

STRUCTURE TYPE: Single span rolled beam bridge

LOAD FACTOR - LOAD RATING (TONS)

LOADING LEVELS	TRUCK						
	M	MS	3S2	6 AXLE	3A. STR.	4A. STR.	SA SEM
INVENTORY							
POSTED							
OPERATING							

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2006	9400	1100	56	7	83
2026	12400	1200	56	8	13

20 year ESAL for flexible pavement from 2006 to 2026 : 10 464 000

40 year ESAL for flexible pavement from 2006 to 2046 : 27 425 000

Design Speed : 80 km/h

PROPOSED STRUCTURE

STRUCTURE TYPE: Single span integral abutment bridge

CLEAR SPAN(NORMAL TO STREAM): 33 m

VERTICAL CLEARANCE ABOVE STREAMBED: 3.7 m

WATERWAY OF FULL OPENING: 77 sq m

WATER SURFACE ELEVATIONS AT:

Q2.33 = 194.4 m	VELOCITY = 1.4 mps
Q10 = 194.9 m	" 1.9 mps
Q25 = 195.2 m	" 2.2 mps
Q50 = 195.4 m	" 2.4 mps
Q100 = 195.6 m	" 2.7 mps

IS THE ROADWAY OVERTOPPED BELOW Q100: No

FREQUENCY: Above Q100

RELIEF ELEVATION: 196.7 m

DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 196.04 m

VERTICAL CLEARANCE: @ Q50 = 0.6 m

SCOUR: 1 meter of contraction scour at Q500

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW: 3.0 cms DEPTH OR ELEVATION: _____

ORDINARY LOW WATER: 1.5 cms 0.3 m

ORDINARY HIGH WATER: 13.0 cms 1.0 m

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Single span bridge

CLEAR SPAN (NORMAL TO STREAM): 15 m (centered on the stream)

VERTICAL CLEARANCE ABOVE STREAMBED: 196 m (minimum low beam elev.)

WATERWAY AREA OF FULL OPENING: 36 sq m (minimum)

ADDITIONAL INFORMATION

Stone fill should not constrict channel, abutment stems should be set at or below elevation 194.5m (below the stone fill). Piles should be designed to withstand a freestanding load down to elevation 190.3m.

DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTO MS 22.5
2. DESIGN SPAN 40 m
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 27.8 Mpa ON LEDGE
4. ALLOWABLE LOAD FOR PILING _____ TYPE _____ ESTIMATED LENGTH _____
5. STRUCTURAL STEEL AASHTO M270/M270M GRADE 345W
6. REINFORCING STEEL GRADE 420
7. CONCRETE CLASS A (HPC-A) f'c: 30 Mpa
- CONCRETE CLASS B (HPC-B) f'c: 25 Mpa
8. SOIL UNIT WEIGHT 22.00 Kn/m³
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL _____

TRAFFIC MAINTENANCE

1. IS TRAFFIC TO BE MAINTAINED? YES
- IF YES, ON EXISTING STRUCTURE? _____
- OR ON TEMPORARY BRIDGE? YES
- ONE OR TWO-WAY TRAVEL? TWO WAY
2. TRAFFIC CONTROL SIGNALS REQUIRED? NO
3. ARE SIDEWALKS REQUIRED? NO
- IF SO, ON WHAT SIDE? _____

PROJECT NAME: Rutland Town

PROJECT NUMBER: BRF 019-3(48)

FILE NAME: 95b172p1.xls PLOT DATE: 09/05/2003

PROJECT MANAGER: Whitcomb DRAWN BY: L. Bullock

DESIGNED BY: T. Lackey CHECKED BY: _____

PRELIMINARY INFORMATION SHEET SHEET 2 OF 19