STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET

Metric

INDEX OF SHEETS

1. TITLE SHEET
2. PRELIMINARY INFORMATION SHEET
3-4. PROJECT TYPICAL SECTIONS
5-6. QUANTITY SHEETS
7-9. R.O.W. SHEETS
10. TIE SHEET
11-13. LAYOUT SHEETS
14. PROFILE SHEET
15. SIDE ROAD AND DRIVES PROFILE SHEET
16. TEMPORARY DETOUR LAYOUT SHEET
17. PERMANENT TRAFFIC SIGNS AND PAVEMENT MARKINGS LAYOUT SHEET
18-19. PERMANENT TRAFFIC SIGNS SUMMARY SHEETS
20-21. BORING INFORMATION SHEETS
22. PLAN AND ELEVATION
23. EROSION CONTROL SHEET
24. RESOURCES SHEET
25. PROJECT NOTES
26. BRIDGE TYPICAL SECTIONS
27. DECK REINFORCING PLAN
28. MISCELLANEOUS PROJECT DETAILS
29. TRUSS REPAIRS
30. FLOOR FRAMING PLAN & TRUSS SPAN STRINGER DETAILS
31. APPROACH SPAN STRINGER DETAILS
32. FLOORBEAM DETAILS
33. STRINGER TO FLOORBEAM CONNECTION DETAILS
34-36. BEARING DETAILS
37. EXPANSION JOINT PLAN
38. EXPANSION JOINT DETAILS
39. DOWNSPOUT DETAILS
40. APPROACH SLAB DETAILS
41. BRIDGE RAILING DETAILS
42. ABUTMENT NO.1 PARTIAL REMOVAL DETAILS
43. ABUTMENT NO.1 REPAIR DETAILS
44. WINGWALLS NO.1 & 2 DETAILS
45-46. ABUTMENT NO.2 DETAILS
47. REINFORCING STEEL SCHEDULE
48. ADDITIONAL MAINLINE ROADWAY DETAILS
49-55. ROADWAY CROSS SECTIONS
56-67. CHANNEL CROSS SECTIONS
68-78. REFERENCE SHEETS

LIST OF STANDARDS

A-76M	STANDARD FOR DEVELOPMENT ROADS		06/13/1997
B-71M	RESIDENTIAL AND COMMERCIAL DRIVES		06/13/1997
D-2M	C.R.M. HEADWALLS, UNDERDRAIN		06/13/1997
	C.R.M. HEADWALLS & RETAINING WALLS		
	RIPRAP LIGHT TYPE SLOPE HEADWALL		
	REINFORCED CONCRETE HEADWALL,		
	UNDERDRAIN & CARRIER PIPE CONSTRUCTION DETAILS		
D-4M	FLUSHING BASINS, END SECTION, ELBOWS		08/13/1997
	TYPICAL WATERFALL FOR CULVERTS UP TO AND		
	INCLUDING 48" DIA		
	EXTENSION SERVICE BOX AND CURB STOP		
	CORRUGATED PIPE ELBOW		
	GRANULAR BORROW AT CULVERT LOCATIONS		
	UNDERDRAIN FLUSHING BASIN		
	CORRUGATED STEEL PIPE END SECTION		
	CORRUGATED STEEL PIPE ARCH END SECTION		
D-16M	PRECAST CURB DI, GRATE, RCP END SECTION, ETC.		06/13/1997
	CAST IRON GRATE,TYPE B		
	CAST IRON GRATE,TYPE C		
	UNDERDRAIN RISER		
	REINFORCED CONCRETE PIPE END SECTION		
	ENERGY DISSIPATOR FOR CULVERT		
E-100M	CONSTRUCTION APPROACH SIGNS		06/13/1997
E-101M	CONSTRUCTION SIGN DETAILS		06/13/1997
E-102M	CONSTRUCTION SIGN DETAILS		06/13/1997
E-102AM	CONSTRUCTION SIGN DETAILS		06/13/1997
E-106M	TRAFFIC CONTROL - MISCELLANEOUS DETAILS		06/13/1997
E-107M	DELINEATION, BARRICADES AND DETOURS FOR		06/13/1997
	U-TURNS ON DIVIDED HIGHWAY		
E-107AM	BREAKAWAY BARRICADE DETAILS		06/13/1997
E-108M	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS		06/13/1997
E-110M	MAJOR MAINTENANCE OPERATION LANE CLOSURE		06/13/1997
E-120M	STANDARD SIGN PLACEMENT - EXPRESSWAY & FREEWAY		06/13/1997
E-121M	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD		06/13/1997
E-129M	RUNAWAY TRUCK RAMP-SIGN DETAILS		06/13/1997
E-142M	REGULATORY SIGN DETAILS		06/13/1997
E-143M	REGULATORY SIGN DETAILS		06/13/1997
E-146M	REGULATORY SIGN DETAILS		06/13/1997
E-150M	WARNING SIGN DETAILS		06/13/1997
E-151M	WARNING SIGN DETAILS		06/13/1997
E-152M	WARNING SIGN DETAILS		06/13/1997
E-154M	WARNING SIGN DETAILS		06/13/1997
E-155M	WARNING SIGN DETAILS		06/13/1997
E-160M	FLANGED CHANNEL STEEL SIGN POST		06/13/1997
E-175M	POWER DROP STANCHIONS		06/13/1997
G-1M	STEEL BEAM GUARDRAIL (50MPH & OVER)		01/03/2000
	HEAVY DUTY STEEL BEAM GUARDRAIL		
	TWISTED END TERMINAL		
	ANCHOR FOR STEEL BEAM RAIL		
G-1DM	STEEL BEAM GUARDRAIL (40MPH & LESS)		01/03/2000
	HEAVY DUTY STEEL BEAM GUARDRAIL		
	STEEL BEAM MEDIAN BARRIER		
	ANCHOR FOR STEEL BEAM RAIL		
G-18M	PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER		06/13/1997
J-3M	MAILBOX SUPPORT DETAILS		06/13/1997
SB-R6-82M	BRIDGE RAILING - HEAVY DUTY STEEL BEAM		07/10/1997
T-1M	TEMPORARY EROSION CONTROL DETAILS		06/13/1997
T-2M	TEMPORARY EROSION CONTROL DETAILS		06/13/1997

SCOPE OF WORK

1. INSTALLATION OF TEMPORARY BRIDGE TO BE REMOVED UPON COMPLETION OF REHABILITATION OF EXISTING STRUCTURE.
2. REHABILITATION OF EXISTING ABUTMENT NO. 1.
3. COMPLETE REPLACEMENT OF EXISTING ABUTMENT NO. 2.
4. COMPLETE REPLACEMENT OF EXISTING BEARINGS AT ABUTMENT NO. 1, ABUTMENT NO.2 AND THE PIER, AND REPAIRS TO TRUSS BEARINGS AT THE PIER.
5. COMPLETE REPLACEMENT OF EXISTING TRUSS FLOOR SYSTEM, INCLUDING NEW STRINGERS, FLOORBEAMS AND CONNECTIONS.
6. COMPLETE REPLACEMENT OF EXISTING APPROACH SPAN STRUCTURAL STEEL WITH NEW STRINGERS AND DIAPHRAGMS.
7. PARTIAL REPLACEMENT OF EXISTING TRUSS MEMBERS.
8. BLAST CLEANING AND PAINTING OF ALL REMAINING EXISTING STEEL.
9. COMPLETE REPLACEMENT OF EXISTING DECKING ON THE TRUSS AND APPROACH SPAN WITH A NEW BARE CONCRETE DECK.
10. RELATED CHANNEL AND APPROACH ROADWAY WORK.

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: January 2001

DRAINAGE AREA : 798 sq. km
CHARACTER OF TERRAIN : Hilly to mountainous, mixture of forested and open area
STREAM CHARACTERISTICS : Semi-alluvial, sinuous, not braided or anabranched
NATURE OF STREAMBED : Gravel, cobbles and some exposed ledge

PEAK FLOW DATA

Q 2.33 =	198 cms	Q 50 =	331 cms
Q 10 =	269 cms	Q 100 =	360 cms
Q 25 =	306 cms	Q 500 =	612 cms

DATE OF FLOOD OF RECORD : 1938, 2nd largest = 1927. Based on USGS gage 120 m dnstr.
ESTIMATED DISCHARGE: 1481 cms, 1274 cms. Both before upstr flood control dams.
WATER SURFACE ELEV.: Unknown, 124.0 m based on record plans
NATURAL STREAM VELOCITY : @ Q25 = 3.3 mps
ICE CONDITIONS : Moderate to high
DEBRIS: Light
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
IS ORDINARY RISE RAPID? No
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? See below.
IF YES, DESCRIBE: There are two flood control dams upstream which affect peak flows. There is nothing downstream that affects the stage at this site.

WATERSHED STORAGE: at dams
HEADWATERS: UNIFORM: at flood dams
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Steel thru-truss with steel beam approach span.
YEAR BUILT: 1928
CLEAR SPAN(NORMAL TO STREAM): 46.9 m + 8.5 m = 55.4 m total
VERTICAL CLEARANCE ABOVE STREAMBED: 6.8 m (Low beam elev. 123.6 m)
WATERWAY OF FULL OPENING: 299 sq. m
DISPOSITION OF STRUCTURE: Rehabilitate
TYPE OF MATERIAL UNDER SUBSTRUCTURE: Abut. 1-ledge, others-timber piles

WATER SURFACE ELEVATIONS AT:

Q2.33 =	119.8 m	VELOCITY =	3.0 mps
Q10 =	120.2 m	"	3.5 mps
Q25 =	120.3 m	"	3.7 mps
Q50 =	120.5 m	"	3.8 mps
Q100 =	120.6 m	"	4.0 mps

LONG TERM STREAMBED CHANGES: None noted.

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Above Q100
RELIEF ELEVATION: 123.5 m
DISCHARGE OVER ROAD @Q100: None at Q100

UPSTREAM STRUCTURE

TOWN:	Townshend	DISTANCE:	4.2 km
HIGHWAY # :	VT Rte. 30	STRUCTURE #:	15
CLEAR SPAN:	130.5 m	CLEAR HEIGHT:	5.2 m
YEAR BUILT:	1952	FULL WATERWAY:	497 sq. m
STRUCTURE TYPE:	4-span steel beam bridge		

DOWNSTREAM STRUCTURE

TOWN:	Dummerston	DISTANCE:	10.0 km
HIGHWAY # :	T.H. 1	STRUCTURE #:	35
CLEAR SPAN:	81.4 m	CLEAR HEIGHT:	9.0 m
YEAR BUILT:	Not available	FULL WATERWAY:	N.A.
STRUCTURE TYPE:	2-span covered bridge		

LOAD FACTOR LOAD RATING (TONS)

LOADING LEVELS	TRUCK						
	M	MS	3S2	6 AXLE	3A. STR.	4A. STR.	SA. SEMI
INVENTORY	14	27					
POSTED	20	38	47		26	28	47
OPERATING		45	56	50	30	33	

COMMENTS: NEW TRUSS FLOOR STRINGERS (NON-COMPOSITE) CONTROL RATING FOR ALL ENTRIES.*

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2002	1450	200	50	5	121
2022	1970	275	50	5	165

20 year ESAL for flexible pavement 2002 to 2022 : 865,000
40 year ESAL for flexible pavement 2002 to 2042 : 1,991,000
Design Speed : 30 km/h

PROPOSED STRUCTURE

STRUCTURE TYPE: Rehabilitated steel through truss

CLEAR SPAN(NORMAL TO STREAM): 46.7 m + 8.5 m = 55.2 m total
VERTICAL CLEARANCE ABOVE STREAMBED: 6.8 m
WATERWAY OF FULL OPENING: 298 sq. m

WATER SURFACE ELEVATIONS AT:

Q2.33 =	119.8 m	VELOCITY=	3.0 mps
Q10 =	120.2 m	"	3.5 mps
Q25 =	120.3 m	"	3.7 mps
Q50 =	120.5 m	"	3.9 mps
Q100 =	120.6 m	"	4.0 mps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Above Q100
RELIEF ELEVATION: 123.5 m
DISCHARGE OVER ROAD @Q100: None at Q100

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 123.6 m
VERTICAL CLEARANCE: @ Q100 = 3.0 m

SCOUR: Q100 contraction scour=0.1 m, pier scour=1.0 m, total Q100 scour at pier=1.1 m
Q500 contraction scour = 0.2 m, Q500 pier scour = 1.3 m, total Q500 scour at pier = 1.5 m
REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW:	18 cms	DEPTH OR ELEVATION:
ORDINARY LOW WATER:	8 cms	Elev. = 118.0 m in bridge area
ORDINARY HIGH WATER:	85 cms	Elev. = 119.6 m in bridge area

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Bridge
CLEAR SPAN (NORMAL TO STREAM): 47 m minimum
VERTICAL CLEARANCE ABOVE STREAMBED: Bottom of steel elev. 120.6 m min.
WATERWAY AREA OF FULL OPENING: 130 sq. m minimum

ADDITIONAL INFORMATION

DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTO MS 18.0
2. DESIGN SPAN TRUSS SPAN: 48.77m; APPROACH SPAN: 9.23m
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A
   ON LEDGE N/A
4. ALLOWABLE LOAD FOR PILING 860 kN
   TYPE HP310 X 79 ASTM A572/A572M GR 345
   ESTIMATED LENGTH 15.9m (INCLUDING 0.6m EMBEDMENT IN CONCRETE)
5. STRUCTURAL STEEL AASHTO M270M/M270 GRADE 345 (PAINTED)
6. REINFORCING STEEL GRADE 420
7. CONCRETE, HIGH PERFROMANCE CLASS A f'c: 30 Mpa
   CONCRETE, HIGH PERFROMANCE CLASS B f'c: 25 Mpa
8. DESIGN SOIL UNIT WEIGHT 22.00 kN/m³
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL N/A

TRAFFIC MAINTENANCE

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

*** NOTE:**
FOR LOAD RATING PURPOSES, THE NEW FLOOR SYSTEM STRINGERS AND FLOORBEAMS WERE ASSUMED TO BE NON-COMPOSITE. THE SHEAR STUDS PROVIDED ARE NOT SPACED SUFFICIENTLY TO PROVIDE FOR FULL COMPOSITE ACTION BETWEEN THE DECK AND FLOOR SYSTEM STEEL. THEY ARE PROVIDED AS A MEANS OF DEFLECTION CONTROL.

PROJECT NAME: **BROOKLINE-NEWFANE**
PROJECT NUMBER: **BHO 1442 (25)**

FILE NAME: **\95j278\Structures\sj278pi.xls** PLOT DATE: **05/06/2003**
PROJECT MANAGER: **R. WHITCOMB** DRAWN BY: **G. ROY**
DESIGNED BY: **M. LOZIER** CHECKED BY: **M. LOZIER**
PRELIMINARY INFORMATION SHEET SHEET **2** OF **78**