

PRELIMINARY INFORMATION SHEET

INDEX OF SHEETS

1. TITLE SHEET
2. PRELIMINARY INFORMATION SHEET
3. TYPICAL SECTIONS
- 4-5. QUANTITY SHEETS
6. BLANK
7. TIE SHEET
8. PLAN SHEET
9. BLANK
10. TRAFFIC SIGN SUMMARY SHEET
11. BANKING DIAGRAM AND PROFILE SHEET
- 12-17. EROSION PREVENTION AND SEDIMENT CONTROL SHEETS
- 18-19. TRAFFIC CONTROL SHEETS
20. BLANK
21. PLAN AND ELEVATION SHEET
22. GENERAL NOTES
23. BOX PROFILE AND DETAILS
24. WING WALL AND HEADWALL DETAILS
25. BLANK
- 26-28. MAINLINE SECTIONS
29. MATERIAL TRANSITION
30. CHANNEL SECTIONS

STANDARDS

B-71	RESIDENTIAL AND COMMERCIAL DRIVES	7/8/2005
E-100	CONSTRUCTION APPROACH SIGNS	1/2/2004
E-100A	SIDE ROAD CONSTRUCTION - APPROACH SIGNS	1/2/2004
E-101	CONSTRUCTION SIGN DETAILS	5/30/2003
E-102	CONSTRUCTION SIGN DETAILS	6/30/2003
E-102A	CONSTRUCTION SIGN DETAILS	5/1/2004
E-106	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	3/1/2004
E-107	DELINEATION, BARRICADES AND DETOURS FOR U-TURNS ON DIVIDED HIGHWAY	6/30/2003
E-107A	BREAKAWAY BARRICADE DETAILS	8/8/1995
E-108	CONSTRUCTION ZONE LONGITUDINAL DROP OFFS	8/18/1995
E-110	MAJOR MAINTENANCE OPERATION LANE CLOSURE	8/8/1995
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	8/8/1995
E-134	BRIDGE NUMBER PLAQUE	8/8/1995
E-138	MILEMARKER DETAILS - STATE & TOWN HIGHWAYS	5/30/2003
E-140	REGULATORY SIGN DETAILS	8/30/1996
E-150	WARNING SIGN DETAILS	5/1/2004
E-152	WARNING SIGN DETAILS	5/1/2004
E-155	WARNING SIGN DETAILS	5/1/2004
E-160	FLANGED CHANNEL STEEL SIGN POST	5/20/1999
E-170	TRAFFIC CONTROL SIGNALS PEDESTAL POST MOUNTED	11/4/1999
E-171A	TRAFFIC CONTROL SIGNALS GENERAL NOTES & DETAILS	8/9/1995
E-171B	TRAFFIC CONTROL SIGNALS MISC. DETAILS	8/9/1995
E-171C	TRAFFIC CONTROL SIGNALS CANTILEVER MOUNTING DETAILS	8/9/1995
E-172	VEHICLE DETECTOR LOOP DETAILS	8/9/1995
E-173	PULL BOXES AND JUNCTION BOXES	8/9/1995
E-175	POWER DROP STANCHIONS	11/17/1993
E-193	PAVEMENT MARKING DETAILS	8/18/1995
E-197	DELINEATOR PLACEMENT TYPICAL	4/1/2005
E-198	DELINEATORS AND MILEPOSTS	4/1/2005
G-1	STEEL BEAM GUARDRAIL WITH STEEL POSTS	1/3/2000
	STEEL BEAM GUARDRAIL WITH WOOD POSTS	
G-1D	STEEL BEAM GUARDRAIL APPROACH END TERMINAL	1/3/2000
	STEEL BEAM GUARDRAIL TRAILING END TERMINAL	
	ANCHOR FOR STEEL BEAM GUARDRAIL	
	STEEL BEAM MEDIUM BARRIER	
G-18	PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER	8/1/1994
G-19	GENERIC GRADING PLANS FOR GUARDRAIL END TERMINALS	11/15/2002

FINAL HYDRAULIC REPORT

TOWN: Buels Gore COUNTY: Chittenden
PROJECT #: STP ST CULV (1) STREAM: Beaver Meadow
HIGHWAY #: VT 17 STRUCTURE #: 27

HIGHWAY #: T.H. 4 STRUCTURE #: 5
CLEAR SPAN: 15.0 ft CLEAR HEIGHT: 8.0 ft
YEAR BUILT: unknown FULL WATERWAY: 120 sf
STRUCTURE TYPE: Bridge

HYDROLOGIC DATA

DRAINAGE AREA: 0.93 sm
CHARACTER OF TERRAIN: Hilly to Mountainous
STREAM CHARACTERISTICS: Sinuous
NATURE OF STREAMBED: Gravel, Cobbles

PEAK FLOW DATA

Q 2.33 = 60 cfs Q 50 = 250 cfs
Q 10 = 140 cfs Q 100 = 325 cfs
Q 25 = 200 cfs Q 500 = 460 cfs

DATE OF FLOOD OF RECORD: unknown
ESTIMATED DISCHARGE: unknown
WATER SURFACE ELEV.: unknown
NATURAL STREAM VELOCITY: @ Q50 = 8.0 f/s
ICE CONDITIONS: Moderate
DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? Yes
IS ORDINARY RISE RAPID? Yes
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: CGMPP
YEAR BUILT: 1954
CLEAR SPAN(NORMAL TO STREAM): 7.0 ft
VERTICAL CLEARANCE: 7.0 ft
WATERWAY OF FULL OPENING: 38.5 sf
DISPOSITION OF STRUCTURE: Removal of old structure
TYPE OF MATERIAL UNDER SUBSTRUCTURE: n/a

WATER SURFACE ELEVATIONS AT:

Q2.33 = 1449.9 ft VELOCITY = 11.2 ft/s
Q10 = 1450.8 ft " 13.8 ft/s
Q25 = 1451.9 ft " 14.9 ft/s
Q50 = 1452.8 ft " 15.7 ft/s
Q100 = 1454.0 ft " 16.7 ft/s

LONG TERM STREAMBED CHANGES: Large stream wide scour hole at outlet.

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: N/A
RELIEF ELEVATION: 1456.0 ft at Sta. 42+00
DISCHARGE OVER ROAD @Q100: N/A

UPSTREAM STRUCTURE

TOWN: Buels Gore DISTANCE: 3,800 ft
HIGHWAY #: V.T. 17 STRUCTURE #: 29
CLEAR SPAN: 6.0 ft CLEAR HEIGHT: 6.0 ft
YEAR BUILT: 1957 FULL WATERWAY: 28.3 sf
STRUCTURE TYPE: CMP

DOWNSTREAM STRUCTURE

TOWN: Starksboro DISTANCE: 3,700 ft

LOAD FACTOR - LOAD RATING (TONS)

LOADING LEVELS	TRUCK						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A SEMI
INVENTORY	N/A	N/A	N/A	N/A	N/A	N/A	N/A
POSTED	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OPERATING	N/A	N/A	N/A	N/A	N/A	N/A	N/A

COMMENTS: TO BE DETERMINED BY FABRICATOR

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2005	960	280	50	6	40
2025	1200	290	50	10	80

20 year ESAL for flexible pavement from 2005 to 2025 : 203,000
40 year ESAL for flexible pavement from 2005 to 2045 : 501,000
Design Speed : 40 mph

PROPOSED STRUCTURE

STRUCTURE TYPE: Concrete Box with 1' high bed retention sills & stone fill in bottom

CLEAR SPAN(NORMAL TO STREAM): 15.0 ft Stone lined
VERTICAL CLEARANCE ABOVE STREAMBED: 5.3 ft average
WATERWAY OF FULL OPENING: 97.5 sf

WATER SURFACE ELEVATIONS AT:

Q2.33 = 1449.9 ft VELOCITY = 6.5 ft/s
Q10 = 1450.5 ft " 9.0 ft/s
Q25 = 1450.8 ft " 10.3 ft/s
Q50 = 1451.0 ft " 11.1 ft/s
Q100 = 1451.3 ft " 12.1 ft/s

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: N/A
RELIEF ELEVATION: 1456.0 ft at Sta. 42+00
DISCHARGE OVER ROAD @Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 1452.6 ft
VERTICAL CLEARANCE: @ Q50 = 1.5 ft

SCOUR: N/A

REQUIRED CHANNEL PROTECTION: Type II Stone Fill

PERMIT INFORMATION

AVERAGE DAILY FLOW: 2 cfs DEPTH OR ELEVATION:
ORDINARY LOW WATER: 1 cfs < 0.5 ft
ORDINARY HIGH WATER: 26 cfs 1.5 ft

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: 84" diameter pipe extension (see traffic control sheets)
CLEAR SPAN (NORMAL TO STREAM): n/a
VERTICAL CLEARANCE ABOVE STREAMBED: n/a
WATERWAY AREA OF FULL OPENING: 9.6 sq. ft.

ADDITIONAL INFORMATION

Stream diversion, min: 42" pipe, 9.6 sq. ft. waterway, (3.6 ft headwater at Q2.33)

DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTO HS-25-44
2. DESIGN SPAN 15FT
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL MAX 4KSF
ON LEDGE N/A
4. ALLOWABLE LOAD FOR PILING N/A
TYPE N/A
ESTIMATED LENGTH N/A
5. STRUCTURAL STEEL AASHTO M270MM270 GRADE N/A
6. REINFORCNG STEEL GRADE 60
7. CONCRETE, HIGH PERFORMANCE CLASS A fc: 4000 psi
CONCRETE, HIGH PERFORMANCE CLASS B fc: 3500 psi
8. DESIGN 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? PHASE I OF TRAFFIC PACKAGE
OR ON TEMPORARY BRIDGE? PHASE II OF TRAFFIC PACKAGE
ONE OR TWO-WAY TRAVEL? ONE
2. TRAFFIC CONTROL SIGNALS REQUIRED? YES
3. ARE SIDEWALKS REQUIRED? NO
IF SO, ON WHAT SIDE?

NOTE

N/A = NOT APPLICABLE

PROJECT NAME: BUELS GORE

PROJECT NUMBER: STP ST CULV(1)

FILE NAME: /04C138/str/s04c138pi.xls PLOT DATE: 05-APR-2006
PROJECT MANAGER: M. EVANS-MONGEON DRAWN BY: T. HUSK
DESIGNED BY: W. FARLEY CHECKED BY: W. FARLEY
PRELIMINARY INFORMATION SHEET SHEET 2 OF 30