STATE OF VERMONT
AGENCY OF TRANSPORTATION

PRELIMINARY INFORMATION SHEET

INDEX OF SHEETS

INDEX OF SHEETS

1.	TITLE SHEET
2.	PRELIMINARY INFORMATION SHEET
3.	QUANTITY SHEET #1
4.	QUANTITY SHEET #2
5.	TYPICAL SECTION
6.	EXCAVATION AND TRANSITION DETAILS
7.	ALIGNMENT & TRAVERSE TIE SHEET
8.	LAYOUT
9.	VT 244 PROFILE
10.	PLAN AND ELEVATION
11.	DETOUR MAP
12.	TRAFFIC CONTROL
13.	GENERAL NOTES
14.	BOX CONSTRUCTION DETAILS
15.	WINGWALL LAYOUT
16.	ROCK WEIR DETAILS
17.	NESTED HDSB GUARDRAIL DETAILS
18.	EROSION CONTROL NARRATIVE
19.	EPSC EXISTING CONDITIONS SITE PLAN
20. - 23.	MAINLINE CROSS SECTIONS
24. - 26.	CHANNEL CROSS SECTIONS

LIST OF STANDARDS

E-100	CONSTRUCTION APPROACH SIGNS	1/2/2004
E-102	CONSTRUCTION SIGN DETAILS	6/30/2003
E-102A	CONSTRUCTION SIGN DETAILS	5/1/2004
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	6/30/2003
E-107A	BREAKAWAY BARRICADE DETAILS	8/8/1995
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	8/8/1995
E-127	ROUTE MARKINGS AT RURAL INTERSECTIONS	8/8/1995
E-136A	U.S. ROUTE MARKER SIGN DETAILS	8/8/1995
E-136B	STATE ROUTE MARKER SIGN DETAILS	8/8/1995
G-1	STEEL BEAM GUARDRAIL (50MPH & OVER) HEAVY DUTY STEEL BEAM GUARDRAIL TWISTED END TERMINAL ANCHOR FOR STEEL BEAM RAIL	1/3/2000
G-1D	STEEL BEAM GUARDRAIL (40MPH & LESS) HEAVY DUTY STEEL BEAM GUARDRAIL STEEL BEAM MEDIAN BARRIER ANCHOR FOR STEEL BEAM RAIL	1/3/2000
G-19	GENERIC PLANS FOR GUARDRAIL END TERMINALS	11/15/2002

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: Jan. 27, 2009

DRAINAGE AREA : 0.41 sq. mi. (260 acres)
CHARACTER OF TERRAIN : Hilly to mountainous, mostly forested with some open areas
STREAM CHARACTERISTICS : Small, perennial, steep, sinuous stream.
NATURE OF STREAMBED : Cobbles, gravel and sand

PEAK FLOW DATA

Q 2.33 =	35 cfs	Q 50 =	110 cfs
Q 10 =	70 cfs	Q 100 =	135 cfs
Q 25 =	90 cfs	Q 500 =	200 cfs

DATE OF FLOOD OF RECORD : unknown
ESTIMATED DISCHARGE: unknown
WATER SURFACE ELEV.: unknown
NATURAL STREAM VELOCITY : @ Q50 = 7.3 fps
ICE CONDITIONS : Low
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: 0.5% HEADWATERS:
UNIFORM: X
IMMEDIATELY ABOVE SITE:

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Corrugated metal pipe arch
YEAR BUILT: 1948
CLEAR SPAN(NORMAL TO STREAM): 71"
VERTICAL CLEARANCE ABOVE STREAMBED: 47"
WATERWAY OF FULL OPENING: 18 sq. ft.
DISPOSITION OF STRUCTURE: Remove
TYPE OF MATERIAL UNDER SUBSTRUCTURE: unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 =	719.9'	VELOCITY =	5.8 fps
Q10 =	721.0'	"	7.9 fps
Q25 =	721.5'	"	8.4 fps
Q50 =	721.9'	"	8.6 fps
Q100 =	722.2'	"	8.8 fps

LONG TERM STREAMBED CHANGES: Scour and channel erosion downstream.

IS THE ROADWAY OVERTOPPED BELOW Q100: Yes
FREQUENCY: Below Q25
RELIEF ELEVATION: 721.3'
DISCHARGE OVER ROAD @Q100: 24 cfs

UPSTREAM STRUCTURE

TOWN: None
HIGHWAY # :
CLEAR SPAN:
YEAR BUILT:
STRUCTURE TYPE:
DISTANCE:
STRUCTURE #:
CLEAR HEIGHT:
FULL WATERWAY:

DOWNSTREAM STRUCTURE

TOWN: Fairlee
HIGHWAY # : VT 244
CLEAR SPAN: 5.0'
YEAR BUILT: Unknown
STRUCTURE TYPE: 5.0' R.C. Pipe
DISTANCE: 4,000'
STRUCTURE #: 11
CLEAR HEIGHT: 5.0'
FULL WATERWAY: 19.5 sq. ft.

A LOAD RATING SHALL BE PROVIDED BY THE PRECAST CONCRETE BOX FABRICATOR

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2010	1600	200	57	8.6	130
2030	2000	250	57	13.7	260

20 year ESAL for flexible pavement from 2010 to 2030 : 992,000
40 year ESAL for flexible pavement from 2010 to 2050 : 2,618,000
Design Speed : 50 mph

PROPOSED STRUCTURE

STRUCTURE TYPE: Precast concrete box

CLEAR SPAN(NORMAL TO STREAM): 8.0'
VERTICAL CLEARANCE ABOVE STREAMBED: 4.0'
WATERWAY OF FULL OPENING: 32 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	719.0'	VELOCITY=	5.3 fps
Q10 =	719.7'	"	6.7 fps
Q25 =	720.1'	"	7.2 fps
Q50 =	720.5'	"	7.8 fps
Q100 =	720.9'	"	8.4 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: Q100
RELIEF ELEVATION: 721.3'
DISCHARGE OVER ROAD @Q100: 0 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 721.7' at inlet
VERTICAL CLEARANCE: @ Q50 = 1.2'

SCOUR: Not applicable for a box structure.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW:	1 cfs	DEPTH OR ELEVATION:	
ORDINARY LOW WATER:	0.5 cfs		0.2'
ORDINARY HIGH WATER:	15 cfs		1.0'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: None - Offsite detour
CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTC HL-93
2. DESIGN SPAN
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL
   ON LEDGE
4. ALLOWABLE LOAD FOR PILING N/A
   PILE TYPE
   ESTIMATED LENGTH N/A
5. STRUCTURAL STEEL AASHTO M270M/M270 GRADE
6. REINFORCING STEEL GRADE 60
7. CONCRETE, HIGH PERFORMANCE CLASS A f'c: N/A
   CONCRETE, HIGH PERFORMANCE CLASS B f'c: N/A
8. DESIGN SOIL UNIT WEIGHT 140 pcf
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL

TRAFFIC MAINTENANCE

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

PROJECT NAME: FAIRLEE
PROJECT NUMBER: STP CULV(13)

FILE NAME: s08c060excel.dgn
PROJECT LEADER: C.P.WILLIAMS
DESIGNED BY: L.J.STONE
PRELIMINARY INFORMATION SHEET
PLOT DATE: 3/4/2009
DRAWN BY: L.J.STONE
CHECKED BY: E.L.RUSTAY