

PRELIMINARY INFORMATION SHEET

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LIST OF STANDARDS

E-100	CONSTRUCTION APPROACH SIGNS	01-02-2004
E-102	CONSTRUCTION SIGN DETAILS	06-30-2003
E-106	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	03-01-2004
E-108	CONSTRUCTION ZONE - LONGITUDINAL DROP OFFS	06-08-2009
E-110	MAJOR MAINTENANCE OPERATION LANE CLOSURE	08-08-1995

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA Date: January 2009

DRAINAGE AREA : 0.2 sq. mi.
 CHARACTER OF TERRAIN : Forested, rural, steep
 STREAM CHARACTERISTICS : Sinuous, semi-alluvial
 NATURE OF STREAMBED : Large steps with boulders, cobbles

PEAK FLOW DATA

Q 2.33 = 60 cfs	Q 50 = 125 cfs
Q 10 = 95 cfs	Q 100 = 140 cfs
Q 25 = 110 cfs	Q 500 = 180 cfs

DATE OF FLOOD OF RECORD Unknown
 ESTIMATED DISCHARGE: Unknown
 WATER SURFACE ELEV.: Unknown
 NATURAL STREAM VELOCITY: @ Q50 = 11.7 fps
 ICE CONDITIONS : Moderate to Heavy
 DEBRIS: Moderate to Heavy
 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: 6' Corrugated galvanized metal pipe
 YEAR BUILT: 1919
 CLEAR SPAN(NORMAL TO STREAM): 6'
 VERTICAL CLEARANCE ABOVE STREAMBED: 6'
 WATERWAY OF FULL OPENING: 28.3 sq. ft.
 DISPOSITION OF STRUCTURE: Retain and line
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 = 2157.6'	VELOCITY = 10.4 fps
Q10 = 2158.6'	" 12.0 fps
Q25 = 2158.9'	" 12.2 fps
Q50 = 2159.3'	" 12.9 fps
Q100 = 2159.7'	" 13.0 fps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY:
 RELIEF ELEVATION: 2162.2'
 DISCHARGE OVER ROAD @Q100: None

UPSTREAM STRUCTURE

TOWN: N/A DISTANCE:
 HIGHWAY #: STRUCTURE #:
 CLEAR SPAN: CLEAR HEIGHT:
 YEAR BUILT: FULL WATERWAY:
 STRUCTURE TYPE:

DOWNSTREAM STRUCTURE

TOWN: Stratton DISTANCE: 120'
 HIGHWAY #: TH 20 STRUCTURE #:
 CLEAR SPAN: 3' CLEAR HEIGHT: 3'
 YEAR BUILT: FULL WATERWAY: 7.1 sq. ft.
 STRUCTURE TYPE: Corrugated metal pipe

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2010	1300	250	55	16.1	170
2030	1600	310	55	24.1	300

20 year ESAL for flexible pavement from 2010 to 2030 : 883,000
 40 year ESAL for flexible pavement from 2010 to 2050 : 2,154,000
 Design Speed : 50 mph

PROPOSED STRUCTURE

STRUCTURE TYPE: Corrugated aluminum plate liner

CLEAR SPAN(NORMAL TO STREAM): 5'
 VERTICAL CLEARANCE ABOVE STREAMBED: 5'
 WATERWAY OF FULL OPENING: 19.6 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 = 2158.3'	VELOCITY= 9.9 fps
Q10 = 2159.3'	" 11.3 fps
Q25 = 2159.7'	" 11.7 fps
Q50 = 2160.1'	" 12.0 fps
Q100 = 2160.5'	" 12.4 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY:
 RELIEF ELEVATION: 2162.2'
 DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 2160.3'
 VERTICAL CLEARANCE: @ 50 = 0.2'

SCOUR: Scour is not calculated for culverts

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW: 0.5 cfs DEPTH OR ELEVATION:
 ORDINARY LOW WATER: 0.2 cfs 0.5'
 ORDINARY HIGH WATER: 26 cfs 2.0'

TEMPORARY BRIDGE REQUIREMENTS

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

ADDITIONAL INFORMATION

- DESIGN CRITERIA**
- DESIGN LIVE LOAD AASHTO HL-93
 - DESIGN SPAN
 - ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL ON LEDGE
 - ALLOWABLE LOAD FOR PILING TYPE ESTIMATED LENGTH
 - STRUCTURAL STEEL AASHTO M270M/M270 GRADE
 - REINFORCING STEEL GRADE 60
 - CONCRETE, HIGH PERFORMANCE CLASS A fc: CONCRETE, CLASS B fc: 3500 psi
 - DESIGN SOIL UNIT WEIGHT 140 pcf
 - DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL

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

PROJECT NAME: **STRATTON**
 PROJECT NUMBER: **STP CULV(12)**

FILE NAME: 08b058\08b058excel.dgn PLOT DATE: 5/21/2010
 PROJECT LEADER: C.P.WILLIAMS DRAWN BY: D.D.BEARD
 DESIGNED BY: D.D.BEARD CHECKED H.I. SALLS
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