

PRELIMINARY INFORMATION SHEET

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FINAL HYDRAULIC REPORT

HYDROLOGIC DATA Date: October 2006

DRAINAGE AREA: 1.9 sq. mi.
 CHARACTER OF TERRAIN: Hilly, mostly open areas with some woods.
 STREAM CHARACTERISTICS: Small, sinuous stream. Probably incised.
 NATURE OF STREAMBED: Gravel and cobbles.

PEAK FLOW DATA

Q 2.33 = 65 cfs	Q 50 = 230 cfs
Q 10 = 150 cfs	Q 100 = 275 cfs
Q 25 = 190 cfs	Q 500 = 365 cfs

DATE OF FLOOD OF RECORD: Unknown
 ESTIMATED DISCHARGE: Unknown
 WATER SURFACE ELEV.: Unknown
 NATURAL STREAM VELOCITY: @ Q50 = 8.9 fps (0.8 fps)*
 ICE CONDITIONS: Moderate
 DEBRIS: Light
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
 IS ORDINARY RISE RAPID? No
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? Yes
 IF YES, DESCRIBE: This site is 187' upstream of the confluence with the New Haven River.
 Hydraulics at this site are controlled by that river during high flows.

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Corrugated Metal Plate Arch. This structure has failed & is not in use.
 YEAR BUILT: Unknown
 CLEAR SPAN(NORMAL TO STREAM): 14'
 VERTICAL CLEARANCE ABOVE STREAMBED: 6'
 WATERWAY OF FULL OPENING: 73.2 sq. ft.
 DISPOSITION OF STRUCTURE: Remove
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 = 333.8' (333.8)'	VELOCITY = 7.5 fps (7.5 fps)*
Q10 = 334.5' (338.8)'	" 8.4 fps (1.1 fps)*
Q25 = 334.8' (339.7)'	" 8.7 fps (0.9 fps)*
Q50 = 335.0' (340.5)'	" 8.9 fps (0.7 fps)*
Q100 = 335.2' (341.1)'	" 9.0 fps (0.6 fps)*

LONG TERM STREAMBED CHANGES: Possible deposition upstream.

IS THE ROADWAY OVERTOPPED BELOW Q100: No (Yes)*
 FREQUENCY: Above Q100 (Between Q25 and Q50)*
 RELIEF ELEVATION: 340.0'
 DISCHARGE OVER ROAD @Q100: None (100 cfs)*

UPSTREAM STRUCTURE

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

DOWNSTREAM STRUCTURE

TOWN: N.A. - confluence with the New Haven River DISTANCE: 180'
 HIGHWAY #: STRUCTURE #:
 CLEAR SPAN: CLEAR HEIGHT:
 YEAR BUILT: FULL WATERWAY:
 STRUCTURE TYPE:

LOADING LEVELS	XXXX LOAD RATING (TONS)				
	H	HS	3S2	6 AXLE	3A STR 4A STR 5A SEMI
INVENTORY					
POSTED					
OPERATING					

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT

20 year ESAL for flexible pavement from to :
 40 year ESAL for flexible pavement from to :
 Design Speed: mph

PROPOSED STRUCTURE

STRUCTURE TYPE: Precast concrete box
 CLEAR SPAN(NORMAL TO STREAM): 14'
 VERTICAL CLEARANCE ABOVE STREAMBED: 5'
 WATERWAY OF FULL OPENING: 70 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 = 333.8' (333.8)'	VELOCITY = 7.5 fps (7.5 fps)*
Q10 = 334.5' (338.8)'	" 8.4 fps (1.1 fps)*
Q25 = 334.8' (339.6)'	" 8.7 fps (0.9 fps)*
Q50 = 335.0' (340.5)'	" 8.9 fps (0.7 fps)*
Q100 = 335.2' (341.1)'	" 9.0 fps (0.7 fps)*

IS THE ROADWAY OVERTOPPED BELOW Q100: No (Yes)*
 FREQUENCY: Above Q100 (Between Q25 and Q50)*
 RELIEF ELEVATION: 340.0'
 DISCHARGE OVER ROAD @Q100: None (84 cfs)*
 AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 337.0' at inlet
 VERTICAL CLEARANCE: @ Q50 = 2.0' (-3.5)*

SCOUR: Not applicable to a box structure
 REQUIRED CHANNEL PROTECTION: Stone Fill, Type II

PERMIT INFORMATION

AVERAGE DAILY FLOW: 4 cfs DEPTH OR ELEVATION:
 ORDINARY LOW WATER: 2 cfs Depth = <0.5'
 ORDINARY HIGH WATER: 28 cfs Depth = 1.0'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: A temporary bridge is already in place.
 CLEAR SPAN (NORMAL TO STREAM):
 VERTICAL CLEARANCE ABOVE STREAMBED:
 WATERWAY AREA OF FULL OPENING:

ADDITIONAL INFORMATION

*The hydraulics at this site are controlled by the New Haven River. Some lines on this report have two answers. The first answer is based on low flows on the New Haven River, and therefore no effects from that river on the hydraulics. Answers in () represent equal frequency flows on both streams.

- DESIGN CRITERIA**
- DESIGN LIVE LOAD AASHTO
 - DESIGN SPAN
 - ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL ON LEDGE
 - ALLOWABLE LOAD FOR PILING TYPE ESTIMATED LENGTH
 - STRUCTURAL STEEL AASHTO M270MM270 GRADE 50W
 - REINFORCING STEEL GRADE 60
 - CONCRETE, HIGH PERFORMANCE CLASS A f'c: 4000 psi
CONCRETE, HIGH PERFORMANCE CLASS B f'c: 3500 psi
 - DESIGN SOIL UNIT WEIGHT 140 pcf
 - DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL

- TRAFFIC MAINTENANCE**
- IS TRAFFIC TO BE MAINTAINED?
IF YES, ON EXISTING STRUCTURE?
OR ON TEMPORARY BRIDGE?
ONE OR TWO-WAY TRAVEL?
 - TRAFFIC CONTROL SIGNALS REQUIRED?
 - ARE SIDEWALKS REQUIRED?
IF SO, ON WHAT SIDE?

PROJECT NAME: Bristol
 PROJECT NUMBER: ER ST 0211 (22)
 FILE NAME: s05b128excel.dgn PLOT DATE: 11/1/2006
 PROJECT LEADER: M. Evans-Mongeon DRAWN BY: L. Duquette
 DESIGNED BY: CHECKED:
 PRELIMINARY INFORMATION SHEET #1 ROY SHEET 5 OF 18