

PRELIMINARY INFORMATION SHEET



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STANDARD DRAWINGS

B-71	RESIDENTIAL AND COMMERCIAL DRIVES	7/8/2005
D-4	FLUSHING BASINS, END SECTION, ELBOWS 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	8/13/2007
D-20	HIGHWAY CROSSING FOR UNDERGROUND UTILITIES	3/3/2003
E-100	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-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	8/8/1995
E-123	GUIDE SIGN PLACEMENT - MISCELLANEOUS DETAILS	3/16/2004
E-141	REGULATORY SIGN DETAILS	9/20/1995
E-143	REGULATORY SIGN DETAILS	6/15/2004
E-155	WARNING SIGN DETAILS	5/1/2004
E-160	FLANGED CHANNEL STEEL SIGN POST	5/20/1999
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-4	MARKERS - GUIDE POSTS - PLANK GUARD RAIL PLANK RAIL GUIDE POSTS WOOD MARKER POSTS STEEL MARKER POSTS	6/1/1994
J-3	MAILBOX SUPPORT DETAILS	8/7/1995
SB-R6-82M	BRIDGE RAILING - HEAVY DUTY STEEL BEAM	7/10/1997

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA Date: August 26, 2004

DRAINAGE AREA : 11.9 sq. km
CHARACTER OF TERRAIN : Hilly to Mountainous with mixed rural cover
STREAM CHARACTERISTICS : Mostly Straight, Semi-Alluvial, probably incised
NATURE OF STREAMBED : Gravel, Cobbles, and Boulders

PEAK FLOW DATA

Q 2.33 = 8.5 cms	Q 50 = 29.7 cms
Q 10 = 18.4 cms	Q 100 = 35.4 cms
Q 25 = 24.6 cms	Q 500 = 56.6 cms

DATE OF FLOOD OF RECORD : unknown
ESTIMATED DISCHARGE : unknown
WATER SURFACE ELEV. : unknown
NATURAL STREAM VELOCITY : @ Q25 = 2.7 m/s, at new bridge location
ICE CONDITIONS : Moderate
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 :
IMMEDIATELY ABOVE SITE :

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE : Single span steel beam bridge
YEAR BUILT : unknown
CLEAR SPAN(NORMAL TO STREAM) : 6.8 m
VERTICAL CLEARANCE ABOVE STREAMBED : 3.4 m
WATERWAY OF FULL OPENING : 22.0 sm
DISPOSITION OF STRUCTURE : Removal of old structure and roadway fill.
TYPE OF MATERIAL UNDER SUBSTRUCTURE : unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 = 171.4 m*	VELOCITY = 2.3 m/s*
Q10 = 172.1 m*	" 3.0 m/s*
Q25 = 172.4 m*	" 3.3 m/s*
Q50 = 172.4 m*	" 3.5 m/s*
Q100 = 172.6 m*	" 3.7. m/s*

LONG TERM STREAMBED CHANGES : None noted.

IS THE ROADWAY OVERTOPPED BELOW Q100 : No
FREQUENCY : N/A
RELIEF ELEVATION : 174.3 m
DISCHARGE OVER ROAD @Q100 : No

UPSTREAM STRUCTURE

TOWN : Guilford DISTANCE : 1.2 km
HIGHWAY # : T.H. # 1 STRUCTURE # : 6
CLEAR SPAN : 4.6 m CLEAR HEIGHT : 3.0 m
YEAR BUILT : 1957 FULL WATERWAY : 11.0 sm
STRUCTURE TYPE : CMPPA

DOWNSTREAM STRUCTURE

TOWN : Guilford DISTANCE : 0.7 km
HIGHWAY # : T.H. # 17 STRUCTURE # : 60
CLEAR SPAN : 9.1 m CLEAR HEIGHT : 4.3 m
YEAR BUILT : unknown FULL WATERWAY : 39.0 sm
STRUCTURE TYPE : Steel pony truss w/ wooden deck

PROPOSED STRUCTURE

STRUCTURE TYPE : Singal span concrete slab bridge, concrete deck
CLEAR SPAN(NORMAL TO STREAM) : 8.0 m
VERTICAL CLEARANCE ABOVE STREAMBED : 2.8 m
WATERWAY OF FULL OPENING : 22.2 sm

WATER SURFACE ELEVATIONS AT:

Q2.33 = 172.3 m*	VELOCITY = 1.7 m/s*
Q10 = 172.9 m*	" 2.2 m/s*
Q25 = 173.0 m*	" 3.1 m/s*
Q50 = 173.2 m*	" 3.3 m/s*
Q100 = 173.4 m*	" 3.5 m/s*

IS THE ROADWAY OVERTOPPED BELOW Q100 : No
FREQUENCY : N/A
RELIEF ELEVATION : 175.0 m
DISCHARGE OVER ROAD @Q100 : No

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE : 174.4 m
VERTICAL CLEARANCE : @ Q100 = 1.5 m

SCOUR : Contraction scour 0.6 m @ Q 500

REQUIRED CHANNEL PROTECTION : Type III Stone Fill

PERMIT INFORMATION

AVERAGE DAILY FLOW : 0.3 cms DEPTH OR ELEVATION :
ORDINARY LOW WATER : 0.1 cms Depth 0.1 m
ORDINARY HIGH WATER : 3.6 cms Depth 0.3 m

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE : Existing bridge remains in use.
CLEAR SPAN (NORMAL TO STREAM) : N/A
VERTICAL CLEARANCE ABOVE STREAMBED : N/A
WATERWAY AREA OF FULL OPENING : N/A

ADDITIONAL INFORMATION

* The new structure is 60 m upstream from the existing bridge. Water surface elevations are listed at the approach to each structure, and are therefore higher for the proposed bridge. Velocities listed are an average channel velocity through the area of the structure.

DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTO MS 22.5
2. DESIGN SPAN 8.5 m
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 287kPa
ON LEDGE N/A
4. ALLOWABLE LOAD FOR PILING N/A
TYPE N/A
ESTIMATED LENGTH
5. STRUCTURAL STEEL AASHTO M270MM270 GRADE N/A
6. REINFORCING STEEL GRADE 420
7. CONCRETE, HIGH PERFORMANCE CLASS A fc: N/A
CONCRETE, HIGH PERFORMANCE CLASS B fc: 25 Mpa
8. DESIGN SOIL UNIT WEIGHT 22.00 kN/m³
9. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL 190 kPa

TRAFFIC MAINTENANCE

1. IS TRAFFIC TO BE MAINTAINED? YES
IF YES, ON EXISTING STRUCTURE? YES
OR ON TEMPORARY BRIDGE? N/A
ONE OR TWO-WAY TRAVEL? N/A
2. TRAFFIC CONTROL SIGNALS REQUIRED? N/A
3. ARE SIDEWALKS REQUIRED? N/A
IF SO, ON WHAT SIDE? N/A

LOAD FACTOR - LOAD RATING (METRIC TONS)

LOADING LEVELS	TRUCK						
	M	MS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY	33	54					
POSTED	46	75	93		54	56	93
OPERATING		90	111	101	65	67	

COMMENTS:

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
1999	380	50	55	8	25
2019	510	70	55	11	40

20 year ESAL for flexible pavement from 1999 to 2019 : 217,000
40 year ESAL for flexible pavement from 1999 to 2039 : 576,000
Design Speed : 40 km/h

PROJECT NAME : Guilford
PROJECT NUMBER : BRO 1442(24)

FILE NAME : 94j076\structures\sj076pi.xls PLOT DATE : 4/9/2008
PROJECT MANAGER : R. Whitcomb DRAWN BY : L. Bullock
DESIGNED BY : T. Lackey CHECKED BY : J. Perrigo
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