

PRELIMINARY INFORMATION SHEET



INDEX OF SHEETS

1. TITLE SHEET
2. PRELIMINARY INFORMATION SHEET
3. TYPICAL DETAIL SHEET
- 4-5. QUANTITY SHEETS
6. RIGHT-OF-WAY DETAIL SHEET
- 7-7a. RIGHT-OF-WAY PLAN SHEETS
- 8-9. TIE SHEETS
- 10-11. PLAN SHEETS
12. MAINLINE PROFILE
13. SIDELINE PROFILE
14. DRIVE ALIGNMENTS
15. DRIVE PROFILES SHEET
- 16-17. TRAFFIC CONTROL SHEET
18. BORING LAYOUT SHEET
- 19-21. BORING LOG SHEETS
22. PLAN & ELEVATION
23. EROSION CONTROL NARRATIVE
- 24-25. EXISTING SITE PLAN
- 26-27. EROSION & SEDIMENT CONTROL PLAN
- 28-29. FINAL CONDITIONS SITE PLAN
30. EROSION CONTROL DETAILS
31. DRAINAGE SHEET
32. DRAINAGE DETAIL SHEET
33. GENERAL NOTES
34. DECK PLAN
35. BRIDGE RAILING & DECK DETAILS
36. FRAMING PLAN
37. GIRDER DETAILS
38. SUPERSTRUCTURE DETAILS
39. CROSSFRAME & BRACING DETAILS
- 40-42. BEARING DETAILS
43. APPROACH SLAB DETAILS
44. ABUTMENT #1 DETAILS
45. ABUTMENT #2 DETAILS
46. FOOTING REINFORCING PLANS
47. WINGWALL DETAILS
48. REINFORCING STEEL SCHEDULE
49. SIGNS & PAVEMENT MARKING SHEETS
50. SIGN SUMMARY SHEET
51. MAINLINE BANKING DIAGRAM
52. SUBBASE TRANSITION DIAGRAMS
53. SIDELINE BANKING DIAGRAM
- 54-59. MAINLINE CROSS SECTIONS
- 60-61. SIDELINE CROSS SECTIONS
- 62-67. CHANNEL CROSS SECTIONS

LIST OF STANDARDS

B-5M	1-03-00
B-12M	1-03-00
B-71	7-08-05
D-2M	6-13-97
E-100	1-02-04
E-100A	1-02-04
E-106	3-01-04
E-107	6-30-03
E-107A	8-08-95
E-121	8-08-95
E-138	5-30-03
E-142	9-20-95
E-143	6-15-04
E-144	3-29-99
E-164	5-20-99
E-193	8-18-95
G-1M	1-03-00
G-1DM	1-03-00
J-3M	6-13-97
SB-R6-82M	7-10-97
SB-R7-90M	7-10-97

FINAL HYDRAULIC REPORT

HYDROLOGIC DATA

Date: 11/2/99

DRAINAGE AREA: 53.3 sq. km
 CHARACTER OF TERRAIN: Mountainous
 STREAM CHARACTERISTICS: Sinuous, Steep and Flashy
 NATURE OF STREAMBED: Boulders to Cobbles

PEAK FLOW DATA

Q 2.33 =	50 cms	Q 50 =	95 cms
Q 10 =	65 cms	Q 100 =	130 cms
Q 25 =	80 cms	Q 500 =	220 cms

DATE OF FLOOD RECORD: Unknown
 ESTIMATED DISCHARGE: Unknown
 WATER SURFACE ELEV.: Unknown
 NATURAL STREAM VELOCITY: @ Q25 = 3.5 mps
 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: N/A

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

EXISTING STRUCTURE INFORMATION

STRUCTURE TYPE: Single Span, One Lane Steel Beam w/ Concrete Deck
 YEAR BUILT: 1939
 CLEAR SPAN(NORMAL TO STREAM): 23.5 m
 VERTICAL CLEARANCE ABOVE STREAMBED: 2.9 m
 WATERWAY OF FULL OPENING: 45 sq. m
 DISPOSITION OF STRUCTURE: Remove
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEVATIONS AT:

Q2.33 =	283.3 m	VELOCITY =	3.1 mps
Q10 =	283.5 m	"	3.4 mps
Q25 =	283.7 m	"	3.5 mps
Q50 =	283.9 m	"	3.7 mps
Q100 =	284.3 m	"	4.0 mps

LONG TERM STREAMBED CHANGES: Unknown

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: Above Q100
 RELIEF ELEVATION: 284.8 m
 DISCHARGE OVER ROAD @Q100: None

UPSTREAM STRUCTURE

TOWN: Sunderland DISTANCE: 5.6 km
 HIGHWAY #: TH-3 STRUCTURE #: 16
 CLEAR SPAN: 16.2 m CLEAR HEIGHT: 2.1 m
 YEAR BUILT: Unknown - Reconstructed in 1984 FULL WATERWAY: Unknown
 STRUCTURE TYPE: Single Span, One Lane, Steel Beam w/ Timber Deck

DOWNSTREAM STRUCTURE

TOWN: Sunderland DISTANCE: 0.6 km
 HIGHWAY #: U.S. 7 STRUCTURE #: 22
 CLEAR SPAN: 21.6 m CLEAR HEIGHT: 3 m
 YEAR BUILT: 1982 FULL WATERWAY: Unknown
 STRUCTURE TYPE: Single Span, Steel Beam w/ Concrete Deck

LOAD FACTOR LOAD RATING (METRIC TONNES)

LOADING LEVELS: (LOAD FACTOR)	TRUCK						
	M	M5	352	6 AXLE	3A STR.	4A STR.	5A SEMI
INVENTORY A=2.17; B=1.00	41	46					
POSTED A=1.55; B=1.40	46	58	61		48	49	56
OPERATING A=1.30; B=1.67		52	69	83	54	55	

STRENGTH RF = $\frac{M_N - 1.3 M_D}{A \times M_{LEH}}$ SERVICEABILITY RF = $\frac{.35 F_y S_{LLV} - M_{DL} S_{LLV} - M_{SD} S_{LLV}}{1.67 M_{LEH}}$

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2017	940	130	55	2	2
2037	1200	170	55	2	2

20 year ESAL for flexible pavement from 2002 to 2022 : 120,000
 40 year ESAL for flexible pavement from 2002 to 2042 : 362,000
 Design Speed : 55 km/h

PROPOSED STRUCTURE

STRUCTURE TYPE: Single Span, Two Lane, Steel Beam w/ Concrete Deck

CLEAR SPAN(NORMAL TO STREAM): 24.0 m
 VERTICAL CLEARANCE ABOVE STREAMBED: 2.9 m
 WATERWAY OF FULL OPENING: 49 sq. m

WATER SURFACE ELEVATIONS AT:

Q2.33 =	283.3 m	VELOCITY =	3.1 mps
Q10 =	283.5 m	"	3.4 mps
Q25 =	283.7 m	"	3.5 mps
Q50 =	283.9 m	"	3.7 mps
Q100 =	284.2 m	"	3.8 mps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
 FREQUENCY: Above Q100
 RELIEF ELEVATION: 284.4 m
 DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 284.28 m
 VERTICAL CLEARANCE: @ Q50 = 0.4 m

SCOUR: No contraction scour @ Q100 and 1 m of contraction scour @ Q500

REQUIRED CHANNEL PROTECTION: Stone Fill Type IV

PERMIT INFORMATION

AVERAGE DAILY FLOW: 1.2 cms DEPTH OR ELEVATION:
 ORDINARY LOW WATER: 0.6 cms 0.3 m
 ORDINARY HIGH WATER: 20.7 cms 1.0 m

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: N/R
 CLEAR SPAN (NORMAL TO STREAM): _____
 VERTICAL CLEARANCE ABOVE STREAMBED: _____
 WATERWAY AREA OF FULL OPENING: _____

ADDITIONAL INFORMATION

DESIGN CRITERIA

1. DESIGN LIVE LOAD AASHTO MS 22.50
2. DESIGN SPAN 26.500m
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 240 kPa
ON LEDGE N/A
4. ALLOWABLE LOAD FOR PILING N/A
TYPE N/A
5. ESTIMATED LENGTH N/A
6. STRUCTURAL STEEL AASHTO M270/M270M GRADE Grade 345W
7. REINFORCING STEEL GRADE 420
8. ALLOWABLE STRESS FOR CONCRETE
HIGH PERFORMANCE CLASS A f'c: 30 Mpa
HIGH PERFORMANCE CLASS B f'c: 25 Mpa
9. SOIL UNIT WEIGHT 22 KN/m³
10. DESIGN LOAD FOR SPREAD FOOTINGS ON SOIL 232 kPa

TRAFFIC MAINTENANCE

1. IS TRAFFIC TO BE MAINTAINED? YES
IF YES, ON EXISTING STRUCTURE? YES
OR ON TEMPORARY BRIDGE? N/A
2. ONE OR TWO-WAY TRAVEL? N/A
TRAFFIC CONTROL SIGNALS REQUIRED? NO
3. ARE SIDEWALKS REQUIRED? NO

PROJECT NAME: SUNDERLAND

PROJECT NUMBER: BRF 0114(2)

FILE NAME: /TransFANS/93j009/sj009pi.xls

PROJECT MANAGER: R. R. WHITCOMB

DESIGNED BY: D. BONNEAU

PRELIMINARY INFORMATION SHEET

PLOT DATE: 11/16/2005

DRAWN BY: J. GILMORE

CHECKED BY: C. CARLSON

SHEET 2 OF 67