

PRELIMINARY INFORMATION SHEET (BRIDGE)

LRFD

INDEX OF SHEETS

FINAL HYDRAULIC REPORT

PLAN SHEETS

STANDARDS LIST

INDEX OF SHEETS

PAGE NO.	SHEET TITLE
1	TITLE SHEET
2	PRELIMINARY INFORMATION SHEET 1 - BR47
3	PRELIMINARY INFORMATION SHEET 2 - BR52
4	PROJECT NOTES
5-10	QUANTITY SHEETS - QSI-Q56
11	CONVENTIONAL SYMBOLOLOGY LEGEND
12	TYPICAL SECTIONS - BR47
13	SURVEY CONTROL AND TIES - BR47
14	PLAN LAYOUT SHEET - BR47
15	ROADWAY PROFILE - BR47
16	STREAM PROFILE - BR47
17	STRUCTURAL PLAN AND DETAILS - BR47
18	TRAFFIC CONTROL PLAN - BR47
19	BORING PLAN - BR47
20	BORING LOG 1 - BR47
21	BORING LOG 2 - BR47
22	ROADWAY CROSS SECTIONS - RXS1 - BR47
23	ROADWAY CROSS SECTIONS - RXS2 - BR47
24	ROADWAY CROSS SECTIONS - RXS3 - BR47
25	ROADWAY CROSS SECTIONS - RXS4 - BR47
26	CHANNEL CROSS SECTIONS - CXS1 - BR47
27	CHANNEL CROSS SECTIONS - CXS2 - BR47
28	CHANNEL CROSS SECTIONS - CXS3 - BR47
29	CHANNEL CROSS SECTIONS - CXS4 - BR47
30	EPSC NARRATIVE - ECN1 - BR47
31	EPSC CONSTRUCTION SITE PLAN - ECP1 - BR47
32	EROSION CONTROL DETAILS - ECD1 - BR47
33	EROSION CONTROL DETAILS - ECD2 - BR47
34	EROSION CONTROL DETAILS - ECD3 - BR47
35	PROJECT IMPACTS PLAN 1 - BR47
36	PROJECT IMPACTS PLAN 2 - BR47
37	TYPICAL SECTIONS - BR52
38	SURVEY CONTROL AND TIES - BR52
39	PLAN LAYOUT SHEET - BR52
40	ROADWAY PROFILE - BR52
41	STREAM PROFILE - BR52
42	STRUCTURAL PLAN AND DETAILS - BR52
43	TRAFFIC CONTROL PLAN - BR52
44	BORING PLAN - BR52
45	BORING LOG 1 - BR52
46	BORING LOG 2 - BR52
47	ROADWAY CROSS SECTIONS - RXS1 - BR52
48	ROADWAY CROSS SECTIONS - RXS2 - BR52
49	CHANNEL CROSS SECTIONS - CXS1 - BR52
50	CHANNEL CROSS SECTIONS - CXS2 - BR52
51	CHANNEL CROSS SECTIONS - CXS3 - BR52
52	EPSC NARRATIVE - ECN1 - BR52
53	EPSC CONSTRUCTION SITE PLAN - ECP1 - BR52
54	EROSION CONTROL DETAILS - ECD1 - BR52
55	EROSION CONTROL DETAILS - ECD2 - BR52
56	EROSION CONTROL DETAILS - ECD3 - BR52
57	PROJECT IMPACTS PLAN 1 - BR52
58	PROJECT IMPACTS PLAN 2 - BR52
59	ROW DETAIL SHEET #1
60	ROW LAYOUT SHEET 1 OF 1

NO.	STANDARD SHEETS	DATE
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	08/08/95
E-123	GUIDE SIGN PLACEMENT - MISCELLANEOUS DETAILS	03/16/04
E-171A	TRAFFIC CONTROL SIGNALS GENERAL NOTES & DETAILS	08/09/95
E-172	VEHICLE LOOP DETAILS	08/09/95
E-191	PAVEMENT MARKING DETAILS	02/01/99
E-192	PAVEMENT MARKING DETAILS	10/12/00
E-193	PAVEMENT MARKING DETAILS	08/18/95
G-1	STEEL BEAM GUARDRAIL DETAIL (POST, DELINEATOR, TYPICALS)	01/03/00
G-19	GENERIC PLANS FOR GUARDRAIL END TERMINALS	11/15/02
G-1D	STEEL BEAM GUARDRAIL DETAILS (END TERMINAL, ANCHOR, MEDIAN)	01/03/00
T-1	TRAFFIC CONTROL GENERAL NOTES	08/06/12
T-10	CONVENTIONAL ROADS CONSTRUCTION APPROACH SIGNING	08/06/12
T-17	TRAFFIC CONTROL MISCELLANEOUS DETAILS	08/06/12
T-28	CONSTRUCTION SIGN DETAILS	08/06/12
T-29	CONSTRUCTION SIGN DETAILS	08/06/12
T-30	CONSTRUCTION SIGN DETAILS	08/06/12
T-31	CONSTRUCTION SIGN DETAILS	08/06/12
T-35	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS	08/06/12
T-36	CONSTRUCTION ZONE LONGITUDINAL DROP-OFFS FOR PAVING	08/06/12
T-42	BRIDGE NUMBER PLAQUE	04/09/14
T-45	SQUARE TUBE SIGN POST AND ANCHOR	08/06/12

HYDROLOGIC DATA	Date:
DRAINAGE AREA:	0.8 sq. mi.
CHARACTER OF TERRAIN:	Hilly to mountainous, mostly forested
STREAM CHARACTERISTICS:	Perennial, sinuous, alluvial with low relief to floodplains
NATURE OF STREAMBED:	Mostly gravel and cobbles

PEAK FLOW DATA			
Q 2.33 =	60 cfs	Q 50 =	215 cfs
Q 10 =	145 cfs	Q 100 =	250 cfs
Q 25 =	180 cfs	Q 500 =	350 cfs

DATE OF FLOOD OF RECORD	unknown
ESTIMATED DISCHARGE:	unknown
WATER SURFACE ELEV.:	unknown
NATURAL STREAM VELOCITY:	@ Q50 = 11.6 fps
ICE CONDITIONS:	Moderate
DEBRIS:	Moderate
DOES THE STREAM REACH MAXIMUM HIGH-WATER 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:	CGMPP
YEAR BUILT:	1957
CLEAR SPAN(NORMAL TO STREAM):	6.0'
VERTICAL CLEARANCE ABOVE STREAMBED:	6.0'
WATERWAY OF FULL OPENING:	28 sq. ft.
DISPOSITION OF STRUCTURE:	Remove
TYPE OF MATERIAL UNDER SUBSTRUCTURE:	unknown

WATER SURFACE ELEVATIONS AT:			
Q2.33 =	1626.0'	VELOCITY =	9.0 fps
Q10 =	1627.9'	"	11.5 fps
Q25 =	1628.7'	"	12.1 fps
Q50 =	1629.6'	"	12.7 fps
Q100 =	1630.6'	"	13.1 fps

LONG TERM STREAMBED CHANGES: About 4' of stream degradation downstream, based on comparison with record plans.

IS THE ROADWAY OVERTOPPED BELOW Q100:	No
FREQUENCY:	Above Q100
RELIEF ELEVATION:	1637.1'
DISCHARGE OVER ROAD @Q100:	None

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

DOWNSTREAM STRUCTURE			
TOWN:	Not Applicable - Confluence	DISTANCE:	
HIGHWAY #:		STRUCTURE #:	
CLEAR SPAN:		CLEAR HEIGHT:	
YEAR BUILT:		FULL WATERWAY:	
STRUCTURE TYPE:			

LRFR LOAD RATING FACTORS							
LOADING LEVELS	TRUCK						
	H-20	HL-93	3S2	6 AXLE	3A STR.	4A STR.	5A SEM
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY							
POSTING							
OPERATING							
COMMENTS:							

PROPOSED STRUCTURE	
STRUCTURE TYPE:	Precast concrete box
CLEAR SPAN(NORMAL TO STREAM):	12'
VERTICAL CLEARANCE ABOVE STREAMBED:	5'
WATERWAY OF FULL OPENING:	60 sq. ft.

WATER SURFACE ELEVATIONS AT:			
Q2.33 =	1624.4'	VELOCITY =	8.1 fps
Q10 =	1625.5'	"	11.3 fps
Q25 =	1625.8'	"	12.3 fps
Q50 =	1626.2'	"	13.1 fps
Q100 =	1626.5'	"	13.8 fps

IS THE ROADWAY OVERTOPPED BELOW Q100:	No
FREQUENCY:	Above Q100
RELIEF ELEVATION:	1637.3'
DISCHARGE OVER ROAD @Q100:	none

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE:	1628.1' at inlet
VERTICAL CLEARANCE:	@ Q50 = 1.9' at inlet

SCOUR:	Not applicable for a box
REQUIRED CHANNEL PROTECTION:	Stone Fill, Type III

PERMIT INFORMATION			
AVERAGE DAILY FLOW:	2 cfs	DEPTH OR ELEVATION:	
ORDINARY LOW WATER:	1 cfs	Depth = 0.5'	
ORDINARY HIGH WATER:	25 cfs	Depth = 1.0'	

TEMPORARY BRIDGE REQUIREMENTS	
STRUCTURE TYPE:	Not required - Traffic will be maintained with phased construction
CLEAR SPAN (NORMAL TO STREAM):	
VERTICAL CLEARANCE ABOVE STREAMBED:	
WATERWAY AREA OF FULL OPENING:	

ADDITIONAL INFORMATION	

TRAFFIC MAINTENANCE NOTES
1. MAINTAIN ONE-WAY TRAFFIC UNDER PHASED CONSTRUCTION
2. INSTALL AND MAINTAIN TRAFFIC SIGNALS.
3. SIDEWALKS ARE NOT NECESSARY

DESIGN VALUES	
1. DESIGN LIVE LOAD	HL-93
2. FUTURE PAVEMENT	d _p : 3.0 INCH
3. DESIGN SPAN	L: 12.00 FT

4. MIN. MID-SPAN POS. CAMBER @ RELEASE (PRESTRESSED UNITS)	Δ: ---
5. PRESTRESSING STRAND	f _y : ---
6. PRESTRESSED CONCRETE STRENGTH	f' _c : ---
7. PRESTRESSED CONCRETE RELEASE STRENGTH	f' _{cr} : ---
8. CONCRETE, HIGH PERFORMANCE CLASS AA	f' _c : ---
9. CONCRETE, HIGH PERFORMANCE CLASS A	f' _c : ---
10. CONCRETE, HIGH PERFORMANCE CLASS B	f' _c : 3.5 KSI
11. CONCRETE, CLASS C	f' _c : ---
12. REINFORCING STEEL	f _y : 60 KSI
13. STRUCTURAL STEEL AASHTO M270	f _y : ---
14. SOIL UNIT WEIGHT	γ: 0.140 KCF
15. NOMINAL BEARING RESISTANCE OF SOIL	q _n : 6.0 KSF
16. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: 0.45
17. NOMINAL BEARING RESISTANCE OF ROCK	q _n 10 KSF - F
18. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD)	φ: ---
19. NOMINAL AXIAL PILE RESISTANCE	q _p : ---
20. PILE YIELD STRENGTH ASTM A572	f _y : ---
21. PILE SIZE	---
22. EST. PILE LENGTH	L _p : ---
23. PILE RESISTANCE FACTOR	φ: ---
24. LATERAL PILE DEFLECTION	Δ: ---
25. BASIC WIND SPEED	V _{3s} : ---
26. MINIMUM GROUND SNOW LOAD	p _g : ---
27. SEISMIC DATA	PGA: --- S ₁ : ---

PROJECT NAME:	WINHALL		
PROJECT NUMBER:	STP CULV(31)		
FILE NAME:	z_winhall_br47_pi.xls	PLOT DATE:	10/9/2014
PROJECT LEADER:	M. CHENETTE	DRAWN BY:	L. BUXTON
DESIGNED BY:	VTRANS	CHECKED BY:	M. CHENETTE
PRELIMINARY INFORMATION SHEET - BR47		SHEET 2	OF 60

AS BUILT "REBAR" DETAIL		
LEVEL I	LEVEL II	LEVEL III
TYPE:	TYPE:	TYPE:
GRADE:	GRADE:	GRADE:

TRAFFIC DATA					
YEAR	ADT	DHV	% D	% T	ADTT
2013	3000	450	51	11.4	300
2033	3200	480	51	14.8	420

10 year ESAL for flexible pavement from 2013 to 2033 : 753000
20 year ESAL for flexible pavement from 2013 to 2033 : 1751000
Design Speed : 50 mph