

PRELIMINARY INFORMATION SHEET (BRIDGE)

INDEX OF SHEETS

FINAL HYDRAULIC REPORT - BRIDGE NO. 2

PLAN SHEETS

STANDARDS LIST

INDEX OF SHEETS

VAOT STANDARD SHEETS

PAGE NO.	SHEET TITLE
1	TITLE SHEET
2	PRELIMINARY INFORMATION SHEET - BR2
3	PRELIMINARY INFORMATION SHEET - BR5
4	PROJECT NOTES
5-10	QUANTITY SHEETS - QS1 - QS6
11	CONVENTIONAL SYMBOLOLOGY LEGEND
12	TYPICAL SECTIONS - BR2
13	SURVEY CONTROL AND TIES - BR2
14	PLAN LAYOUT SHEET - BR2
15	ROADWAY PROFILE - BR2
16	STREAM PROFILE - BR2
17	STRUCTURAL PLAN AND DETAILS - BR2
18	DETOUR PLAN - BR2
19	TRAFFIC CONTROL DETAILS 1 - BR2
20	TRAFFIC CONTROL DETAILS 2 - BR2
21	BORING PLAN - BR2
22	BORING LOG 1 - BR2
23	BORING LOG 2 - BR2
24	ROADWAY CROSS SECTIONS - RXS1 - BR2
25	ROADWAY CROSS SECTIONS - RXS2 - BR2
26	ROADWAY CROSS SECTIONS - RXS3 - BR2
27	ROADWAY CROSS SECTIONS - RXS4 - BR2
28	CHANNEL CROSS SECTIONS - CXS1 - BR2
29	CHANNEL CROSS SECTIONS - CXS2 - BR2
30	CHANNEL CROSS SECTIONS - CXS3 - BR2
31	EPSC NARRATIVE - ECN1 - BR2
32	EPSC CONSTRUCTION SITE PLAN - ECP1 - BR2
33	EROSION CONTROL DETAILS - ECD1 - BR2
34	EROSION CONTROL DETAILS - ECD2 - BR2
35	PROJECT IMPACTS PLAN 1 - BR2
36	PROJECT IMPACTS PLAN 2 - BR2
37	TYPICAL SECTIONS - BR5
38	SURVEY CONTROL AND TIES - BR5
39	PLAN LAYOUT SHEET - BR5
40	ROADWAY PROFILE - BR5
41	STREAM PROFILE - BR5
42	STRUCTURAL PLAN AND DETAILS - BR5
43	DETOUR PLAN - BR5
44	TRAFFIC CONTROL DETAILS 1 - BR5
45	TRAFFIC CONTROL DETAILS 2 - BR5
46	BORING PLAN - BR5
47	BORING LOG 1 - BR5
48	ROADWAY CROSS SECTIONS - RXS1 - BR5
49	ROADWAY CROSS SECTIONS - RXS2 - BR5
50	CHANNEL CROSS SECTIONS - CXS1 - BR5
51	CHANNEL CROSS SECTIONS - CXS2 - BR5
52	EPSC NARRATIVE - ECN1 - BR5
53	EPSC CONSTRUCTION SITE PLAN - ECP1 - BR5
54	EROSION CONTROL DETAILS - ECD1 - BR5
55	EROSION CONTROL DETAILS - ECD2 - BR5
56	PROJECT IMPACTS PLAN 1 - BR5
57	PROJECT IMPACTS PLAN 2 - BR5

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 WITH STEEL POSTS	02/10/14
G-10	STEEL BEAM GUARDRAIL WITH WOOD POSTS	02/10/14
G-10	STEEL BEAM GUARDRAIL APPROACH END TERMINAL	02/10/14
G-10	STEEL BEAM GUARDRAIL TRAILING END TERMINAL	02/10/14
G-10	ANCHOR FOR STEEL BEAM GUARDRAIL	02/10/14
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	01/02/13

STRUCTURE DETAIL SHEETS

SD-366.00 LONGSPAN STEEL BEAM GUARDRAIL, GALVANIZED 01/03/14

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2013	1400	190	64	10	130
2023	1400	190	64	11.8	150

10 year ESAL for flexible pavement from 2013 to 2023 : 397000
20 year ESAL for flexible pavement from 2013 to 2033 : 869000
Design Speed : 50 mph

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

HYDROLOGIC DATA

Date: 1 November 2013

DRAINAGE AREA : 7.57 sq. mi.
CHARACTER OF TERRAIN : Lowland agricultural with some wooded areas
STREAM CHARACTERISTICS : Perennial, sinuous
NATURE OF STREAMBED : Flat, clay streambed material

PEAK FLOW DATA

Q 2.33 =	175 cfs	Q 50 =	690 cfs
Q 10 =	435 cfs	Q 100 =	800 cfs
Q 25 =	585 cfs	Q 500 =	1120 cfs

DATE OF FLOOD OF RECORD : Unknown
ESTIMATED DISCHARGE : Unknown
WATER SURFACE ELEV. : Unknown
NATURAL STREAM VELOCITY : @ Q50 = 4.5 fps
ICE CONDITIONS : Light
DEBRIS : Light
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEV. RAPIDLY? No
IS ORDINARY RISE RAPID? No
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: 17' x 11'-2" corrugated multi-plate pipe arch (CMPPA)
YEAR BUILT: 1956
CLEAR SPAN(NORMAL TO STREAM): 17'
VERTICAL CLEARANCE ABOVE STREAMBED: 11'-2"
WATERWAY OF FULL OPENING: 146 sq. ft.
DISPOSITION OF STRUCTURE: Remove and replace
TYPE OF MATERIAL UNDER SUBSTRUCTURE: See borings

WATER SURFACE ELEVATIONS AT:

Q2.33 =	137.8'	VELOCITY =	6.2 fps
Q10 =	139.9'	"	7.7 fps
Q25 =	141.0'	"	8.5 fps
Q50 =	141.7'	"	9.1 fps
Q100 =	142.4'	"	9.6 fps

LONG TERM STREAMBED CHANGES: None noted

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: N/A
RELIEF ELEVATION: 155.7'
DISCHARGE OVER ROAD @Q100: None

UPSTREAM STRUCTURE

TOWN: Bridport DISTANCE: 6,300'
HIGHWAY #: TH 44 STRUCTURE #: BR 22
CLEAR SPAN: 39'-8" CLEAR HEIGHT: 6'-11"
YEAR BUILT: Unknown FULL WATERWAY: 194 sf
STRUCTURE TYPE: Wood deck on steel beams with concrete abutments; upstream confluence

DOWNSTREAM STRUCTURE

TOWN: Bridport DISTANCE: 11,500'
HIGHWAY #: TH 5 STRUCTURE #: BR 26
CLEAR SPAN: 11' CLEAR HEIGHT: 11'
YEAR BUILT: Unknown FULL WATERWAY: 95 sf
STRUCTURE TYPE: Culvert

LRFR LOAD RATING FACTORS

LOADING LEVELS	TRUCK						
	H-20	HL-93	SS2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
TONNAGE	20	36	36	66	30	34.5	38
INVENTORY							
POSTING							
OPERATING							
COMMENTS:							

PROPOSED STRUCTURE

STRUCTURE TYPE: Precast Concrete Box Culvert

CLEAR SPAN(NORMAL TO STREAM): 20.0'
VERTICAL CLEARANCE ABOVE STREAMBED: 8.0'
WATERWAY OF FULL OPENING: 160 sq. ft.

WATER SURFACE ELEVATIONS AT:

Q2.33 =	137.0'	VELOCITY =	2.9 fps
Q10 =	138.9'	"	4.4 fps
Q25 =	139.8'	"	5.1 fps
Q50 =	140.4'	"	5.5 fps
Q100 =	141.0'	"	6.0 fps

IS THE ROADWAY OVERTOPPED BELOW Q100: No
FREQUENCY: N/A
RELIEF ELEVATION: 156.8'
DISCHARGE OVER ROAD @Q100: None

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 141.9'
VERTICAL CLEARANCE: @ Q50 = 1.5'

SCOUR: Replacement structure is a box culvert so scour is not a concern.

REQUIRED CHANNEL PROTECTION: Stone Fill, Type II

PERMIT INFORMATION

AVERAGE DAILY FLOW: 15 cfs DEPTH OR ELEVATION:
ORDINARY LOW WATER: 7 cfs Depth = 0.5'
ORDINARY HIGH WATER: 75 cfs Depth = 2.0'

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: Temporary Bridge not Required
CLEAR SPAN (NORMAL TO STREAM): N/A
VERTICAL CLEARANCE ABOVE STREAMBED: N/A
WATERWAY AREA OF FULL OPENING: N/A

ADDITIONAL INFORMATION

TRAFFIC MAINTENANCE NOTES

1. MAINTAIN TRAFFIC ON AN OFF SITE DETOUR.
2. TRAFFIC SIGNALS ARE NOT NECESSARY.
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: 0.00 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. NOMINAL BEARING RESISTANCE OF SOIL q_n : * 10 KSF
15. SOIL BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) ϕ : * 0.45
16. NOMINAL BEARING RESISTANCE OF ROCK q_n : ---
17. ROCK BEARING RESISTANCE FACTOR (REFER TO AASHTO LRFD) ϕ : ---

18. PILE RESISTANCE FACTOR ϕ : ---
19. LATERAL PILE DEFLECTION Δ : ---
20. BASIC WIND SPEED V_{3s} : ---
21. MINIMUM GROUND SNOW LOAD p_g : ---
22. SEISMIC DATA PGA : 0 S_s : --- S_f : ---
23. * SEE GEOTECHNICAL REPORT
24. ---
25. ---
26. ---

PROJECT NAME: Bridport
PROJECT NUMBER: STP CULV (29)

FILE NAME: z11c264_BR2_P1.xls PLOT DATE: 3/18/2014
PROJECT LEADER: M. CHENETTE DRAWN BY: L. BUXTON
DESIGNED BY: A. LACHANCE CHECKED BY: M. CHENETTE
PRELIMINARY INFORMATION SHEET - BR2 SHEET 2 OF 57