PLANS

OF PROPOSED

RECONSTRUCTION AND STRENGTHENING OF EXISTING BRIDGE OVER ASSINIBOINE RIVER - CONTRACT THREE

ON P.T.H. No. 100

DESIGN DATA

SPECIFICATIONS:

1. AASHTO LFRD BRIDGE DESIGN SPECIFICATIONS, THIRD EDITION 2004 PLUS INTERIMS
2. AASHTO/AWS BRIDGE WELDING CODE D1.5M-2002 EDITION.

VEHICULAR LIVE LOADING (WHICHEVER GOVERNS)

1. MODIFIED AASHTO MSS22.5 (HSS 25) TRUCK DESIGN LOADING
2. AASHTO M27 (HS30)LANE LOADING
3. AASHTO LRFD HL "93" LOADING
4. 62 500 kg AND 56 500 kg TAC LEGAL VEHICLE LOADING

STRUCTURAL CONCRETE:

1. SUBSTRUCTURE (TYPE A): ABUTMENTS OTHER THAN ABUTMENT CAP JACKETS, BEARING PEDESTALS
   - CSA A23.1 - 04 EXPOSURE CLASS C1
   - f'c = 35 MPa @ 28 DAYS
   - AIR CONTENT CATEGORY 1
2. SUBSTRUCTURE (TYPE B): ABUTMENT CAP JACKETS
   - CSA A23.1 - 04 EXPOSURE CLASS C1
   - f'c = 35 MPa @ 28 DAYS
   - AIR CONTENT CATEGORY 1
   - SELF CONSOLIDATING
   - FLOW (SPREAD) = 500 mm ± 100 mm
   - MAXIMUM COARSE AGGREGATE SIZE = 14 mm NOMINAL
3. SUPERSTRUCTURE (TYPE A): BRIDGE DECK, SIDEWALK ON BRIDGE DECK, SHOULDER BARRIERS, MEDIAN BARRIER
   - CSA A23.1 - 04 EXPOSURE CLASS C-1
   - f'c = 45 MPa @ 28 DAYS
   - AIR CONTENT CATEGORY 1
   - MINIMUM POST-CRACKING RESIDUAL STRENGTH INDEX 0.15
   - SYNTHETIC FIBRES
4. SUPERSTRUCTURE (TYPE B): APPROACH SLABS, TRANSITION SLABS, ROADWAY MEDIAN SLABS
   - CSA A23.1 - 04 EXPOSURE CLASS C-1
   - f'c = 35 MPa @ 28 DAYS
   - AIR CONTENT CATEGORY 1
5. SUPERSTRUCTURE (TYPE C): SLIP FORMED MEDIAN BARRIERS
   - CSA A23.1-04 EXPOSURE CLASS C-1
   - f'c = 35 MPa @ 28 DAYS
   - AIR CONTENT CATEGORY 1
   - SLUMP: SUITABLE FOR SLIP FORMING

REINFORCING STEEL:

1. MMFX-2 CONFORMING TO ASTM A615 GRADE 75, ASTM A1035 AND AASHTO M31 FOR DECK, SHOULDER BARRIERS, MEDIAN BARRIERS AND SIDEWALK.
2. CSA G30.18-M92 GRADE 400W FOR ALL OTHER REINFORCED CONCRETE

PILE LOADING:

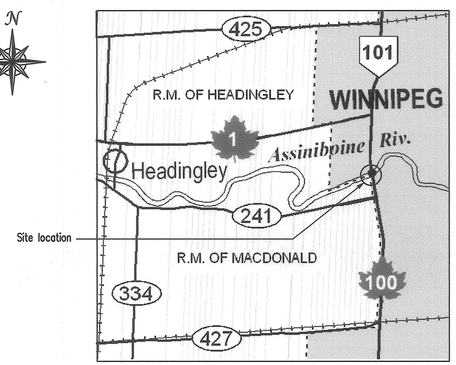
1. ABUTMENT PILES:
   HP 310 x 110 STEEL H-PILES WITH WELDED DRIVING TIPS, DRIVEN TO REFUSAL:
   - FACTORED LOAD (LRFD SERVICE LIMIT STATE) = 340 kN
   - FACTORED RESISTANCE (LRFD SERVICE LIMIT STATE) = 575 kN

PROJECT CONTRACTS

Contract	Primary Items of Work	Approximate Construction Period
1 (by others)	Structural steel fabrication, bearing supply, pier modifications and related works	June 2009 to February 2010
2 (by others)	PTH 100 embankment grade widening and related works.	June 2009 to October 2009
3	Abutment modifications, structural steel erection, superstructure reconstruction and strengthening and related works	April 2010 to November 2011

Work Item	Work Description	Contract
1	Modify piers	1
2	Construct temporary supports for new girder G10	3
3	Fabricate new girder G10	1
4	Erect new girder G10	3
5	Fabricate cross frames for G10	1
6	Erect cross frames for G10	3
7	Fabricate jacking diaphragms for bay G9-G10	1
8	Erect jacking diaphragms for bay G9-G10	3
9	Fabricate remaining jacking diaphragms	1
10	Erect remaining jacking diaphragms	3
11	Fabricate cover plates for girders G1 to G9	1
12	Erect cover plates for girders G1 to G9	3
13	Supply bearings for girder G10	1
14	Install bearings for girder G10	1 & 3
15	Supply bearings for remaining girders	1
16	Install bearings for remaining girders	3
17	Modify abutments	3
18	Replace and repair miscellaneous structural steel	3
19	Demolish existing concrete structures	3
20	Construct new bridge deck and barriers	3
21	Paint structural steel	3
22	Supply and install new expansion joints	3
23	Install navigation lights	3
24	Install pedestrian handrail	3
25	Demolish existing approach slabs and roadway slabs	3
26	Construct new approach slabs and transition slabs	3
27	Construct under bridge slope drainage	3
28	Install approach guardrail	3

LENGTH	APPROX. 138 862 C. TO C. ABUTMENT BEARINGS
SUBSTRUCTURE	TWO REINFORCED CONCRETE ABUTMENTS & FOUR REINFORCED CONCRETE PIERS
SUPERSTRUCTURE	TWO SIMPLY SUPPORTED END SPANS, THREE CONTINIOUS MIDDLE SPANS; REINFORCED CONCRETE DECK ON WELDED STEEL PLATE I GIRDERS
LOCATION	R.L.'S 72, 73 & 94 PARISH OF ST. CHARLES CITY OF WINNIPEG



LOCATION PLAN

Not to Scale

SHEET LEGEND:

1. COVER SHEET
2. GENERAL ELEVATION
3. BORE HOLE LOGS
4. SITE DETAILS
5. STANDARD EROSION CONTROL DETAILS
6. ROADWAY PROFILE
7. GENERAL LAYOUT - STAGE 1 - DEMOLITION AND GIRDER G10 ERECTION
8. GENERAL LAYOUT - STAGE 1 - DEMOLITION AND GIRDER G10 ERECTION
9. GENERAL LAYOUT - STAGE 1 - DEMOLITION AND GIRDER G10 ERECTION
10. GENERAL LAYOUT - STAGE 1 - MODIFICATIONS
11. GENERAL LAYOUT - STAGE 1 - MODIFICATIONS
12. GENERAL LAYOUT - STAGE 1 - MODIFICATIONS
13. GENERAL LAYOUT - STAGE 1 - WINTER OPERATION
14. GENERAL LAYOUT - STAGE 2 - DEMOLITION
15. GENERAL LAYOUT - STAGE 2 - DEMOLITION
16. GENERAL LAYOUT - STAGE 2 - DEMOLITION
17. GENERAL LAYOUT - STAGE 2 - MODIFICATIONS
18. GENERAL LAYOUT - STAGE 2 - MODIFICATIONS
19. GENERAL LAYOUT - STAGE 2 - MODIFICATIONS
20. GENERAL LAYOUT - STAGE 3 - MODIFICATIONS
21. ABUTMENT MODIFICATIONS - STAGE 1 - DEMOLITION
22. SOUTH ABUTMENT MODIFICATIONS - STAGE 1 - CONCRETE DETAILS
23. SOUTH ABUTMENT MODIFICATIONS - STAGE 1 - REINFORCING DETAILS
24. SOUTH ABUTMENT MODIFICATIONS - STAGE 1 - REINFORCING DETAILS
25. SOUTH ABUTMENT MODIFICATIONS - STAGE 1 - REINFORCING DETAILS
26. NORTH ABUTMENT MODIFICATIONS - STAGE 1 - CONCRETE DETAILS
27. NORTH ABUTMENT MODIFICATIONS - STAGE 1 - REINFORCING DETAILS
28. NORTH ABUTMENT MODIFICATIONS - STAGE 1 - REINFORCING DETAILS
29. NORTH ABUTMENT MODIFICATIONS - STAGE 1 - REINFORCING DETAILS
30. ABUTMENT MODIFICATIONS - STAGE 1 - BILL OF REINFORCING
31. ABUTMENT MODIFICATIONS - STAGE 1 - BILL OF REINFORCING
32. ABUTMENT MODIFICATIONS - STAGE 2 - DEMOLITION
33. SOUTH ABUTMENT MODIFICATIONS - STAGE 2 - CONCRETE DETAILS
34. SOUTH ABUTMENT MODIFICATIONS - STAGE 2 - REINFORCING DETAILS
35. SOUTH ABUTMENT MODIFICATIONS - STAGE 2 - REINFORCING DETAILS
36. SOUTH ABUTMENT MODIFICATIONS - STAGE 2 - REINFORCING DETAILS
37. NORTH ABUTMENT MODIFICATIONS - STAGE 2 - CONCRETE DETAILS
38. NORTH ABUTMENT MODIFICATIONS - STAGE 2 - REINFORCING DETAILS
39. NORTH ABUTMENT MODIFICATIONS - STAGE 2 - REINFORCING DETAILS
40. NORTH ABUTMENT MODIFICATIONS - STAGE 2 - REINFORCING DETAILS
41. ABUTMENT MODIFICATIONS - STAGE 2 - BILL OF REINFORCING
42. ABUTMENT MODIFICATIONS - STAGE 2 - BILL OF REINFORCING
43. NEW BEARING PEDESTAL CONCRETE AND REINFORCING DETAILS
44. BEARING ERECTION PLAN AND SECTIONS
45. BEARING ERECTION DETAILS
46. GIRDER TEMPORARY SUPPORT DETAILS
47. STEEL SUPERSTRUCTURE PLAN
48. GIRDER G1 STRENGTHENING DETAILS
49. GIRDER G1 STRENGTHENING DETAILS
50. GIRDER G1 MODIFICATION DETAILS
51. GIRDERS G2 TO G8 MODIFICATION DETAILS
52. GIRDERS G2 TO G8 STRENGTHENING DETAILS
53. GIRDERS G2 TO G8 MODIFICATION DETAILS
54. GIRDER G9 STRENGTHENING DETAILS
55. GIRDER G9 STRENGTHENING DETAILS
56. GIRDER G9 MODIFICATION DETAILS
57. GIRDER G9 MODIFICATION DETAILS
58. GIRDER G9 MODIFICATION DETAILS
59. GIRDER G9 MODIFICATION DETAILS
60. MISCELLANEOUS STRUCTURAL STEEL REPAIRS
61. MISCELLANEOUS STRUCTURAL STEEL REPAIRS
62. MISCELLANEOUS STRUCTURAL STEEL REPAIRS
63. DECK REPLACEMENT - STAGE 1, 2 & 3 - CONCRETE DETAILS
64. DECK REPLACEMENT - STAGE 1, 2 & 3 - CONCRETE DETAILS
65. DECK REPLACEMENT - STAGE 1, 2 & 3 - CONCRETE DETAILS
66. DECK REPLACEMENT - STAGE 1 - DECK REINFORCING DETAILS FOR SOUTH ABUTMENT TO PIER 1
67. DECK REPLACEMENT - STAGE 1 - REINFORCING DETAILS FOR SOUTH ABUTMENT TO PIER 1
68. DECK REPLACEMENT - STAGE 1 - REINFORCING DETAILS FOR PIER 4 TO NORTH ABUTMENT
69. DECK REPLACEMENT - STAGE 1 - REINFORCING DETAILS FOR PIER 4 TO NORTH ABUTMENT
70. DECK REPLACEMENT - STAGE 1 - REINFORCING DETAILS FOR PIER 1 TO PIER 4
71. DECK REPLACEMENT - STAGE 1 - REINFORCING DETAILS FOR PIER 1 TO PIER 4
72. DECK REPLACEMENT - STAGE 1 - REINFORCING DETAILS FOR PIER 1 TO PIER 4
73. DECK REPLACEMENT - STAGE 1 - REINFORCING DETAILS FOR PIER 1 TO PIER 4
74. DECK REPLACEMENT - STAGE 1 - REINFORCING DETAILS
75. CURB AND SIDEWALK REPLACEMENT - STAGE 1 - REINFORCING DETAILS
76. CURB AND SIDEWALK REPLACEMENT - STAGE 1 - REINFORCING DETAILS
77. CURB AND SIDEWALK REPLACEMENT - STAGE 1 - REINFORCING DETAILS
78. DECK REPLACEMENT - STAGE 1 - REINFORCING DETAILS
79. DECK REPLACEMENT - STAGE 1 - REINFORCING DETAILS
80. DECK REPLACEMENT - STAGE 2 & 3 - DECK REINFORCING DETAILS FOR SOUTH ABUTMENT TO PIER 1
81. DECK REPLACEMENT - STAGE 2 & 3 - DECK REINFORCING DETAILS FOR SOUTH ABUTMENT TO PIER 1
82. DECK REPLACEMENT - STAGE 2 & 3 - DECK REINFORCING DETAILS FOR PIER 4 TO NORTH ABUTMENT
83. DECK REPLACEMENT - STAGE 2 & 3 - DECK REINFORCING DETAILS FOR PIER 4 TO NORTH ABUTMENT
84. DECK REPLACEMENT - STAGE 2 & 3 - DECK REINFORCING DETAILS FOR PIER 1 TO PIER 4
85. DECK REPLACEMENT - STAGE 2 & 3 - DECK REINFORCING DETAILS FOR PIER 1 TO PIER 4
86. DECK REPLACEMENT - STAGE 2 & 3 - DECK REINFORCING DETAILS FOR PIER 1 TO PIER 4
87. DECK REPLACEMENT - STAGE 2 & 3 - DECK REINFORCING DETAILS FOR PIER 1 TO PIER 4
88. DECK REPLACEMENT - STAGE 2 & 3 - REINFORCING DETAILS
89. DECK DRAIN DETAILS
90. DECK DRAIN DETAILS
91. EXPANSION JOINT DETAILS
92. EXPANSION JOINT DETAILS
93. EXPANSION JOINT DETAILS
94. EXPANSION JOINT DETAILS
95. ELECTRICAL SITE PLAN AND DETAILS
96. NAVIGATION LIGHTS
97. RIVER LEVEL MONITORING STATION DETAILS
98. EAST SHOULDER BARRIER - STAGE 1 - CONCRETE DETAILS
99. EAST SHOULDER BARRIER - STAGE 1 - CONCRETE DETAILS
100. SHOULDER BARRIER - STAGE 1 & 2 - CONCRETE DETAILS
101. EAST SHOULDER BARRIER - STAGE 1 - REINFORCING DETAILS
102. EAST SHOULDER BARRIER - STAGE 1 - REINFORCING DETAILS
103. WEST SHOULDER BARRIER - STAGE 2 - CONCRETE DETAILS
104. WEST SHOULDER BARRIER - STAGE 2 - CONCRETE DETAILS
105. WEST SHOULDER BARRIER - STAGE 2 - REINFORCING DETAILS
106. WEST SHOULDER BARRIER - STAGE 2 - REINFORCING DETAILS
107. SHOULDER BARRIER - STAGE 1 & 2 - REINFORCING DETAILS
108. MEDIAN BARRIER - STAGE 3 - CONCRETE DETAILS
109. MEDIAN BARRIER - STAGE 3 - REINFORCING DETAILS
110. MEDIAN BARRIER INFILL - STAGE 3 - CONCRETE AND REINFORCING DETAILS
111. ALUMINUM BARRIER RAIL DETAILS
112. ALUMINUM BARRIER RAIL DETAILS
113. ALUMINUM PEDESTRIAN HANDRAIL
114. ALUMINUM PEDESTRIAN HANDRAIL DETAILS
115. ALUMINUM PEDESTRIAN HANDRAIL DETAILS
116. UNDER BRIDGE SLOPE SITE DRAINAGE DETAILS
117. UNDER BRIDGE SLOPE SITE DRAINAGE DETAILS
118. UNDER BRIDGE SLOPE SITE DRAINAGE DETAILS
119. DRAIN PAD AND SLOPE PROTECTION REINFORCING DETAILS
120. CONCRETE SLOPE PROTECTION REINFORCING DETAILS
121. ROADWORK AND MEDIAN BARRIER DEMOLITION AND REPLACEMENT
122. APPROACH SLABS, TRANSITION SLABS AND APPROACH SIDEWALK CONCRETE DETAILS
123. APPROACH SLABS - STAGE 1 - CONCRETE DETAILS
124. TRANSITION SLABS- STAGE 1 - CONCRETE DETAILS
125. APPROACH SIDEWALK - STAGE 1 - CONCRETE DETAILS
126. APPROACH SLAB - STAGE 1 - DETAILS
127. APPROACH SLABS - STAGE 2 - CONCRETE DETAILS
128. TRANSITION SLABS - STAGE 2 - CONCRETE DETAILS
129. APPROACH SLAB - STAGE 2 - DETAILS
130. APPROACH SLABS - STAGE 1 - REINFORCING DETAILS
131. APPROACH SLABS - STAGE 1 - REINFORCING DETAILS
132. TRANSITION SLABS - STAGE 1 - REINFORCING DETAILS
133. APPROACH SIDEWALK AND CURB - STAGE 1 - REINFORCING DETAILS
134. APPROACH SLABS, TRANSITION SLABS AND PEDESTRIAN SIDEWALK & CURB - STAGE 1 - REINFORCING DETAILS
135. APPROACH SLABS - STAGE 2 - REINFORCING DETAILS
136. APPROACH SLABS - STAGE 2 - REINFORCING DETAILS
137. TRANSITION SLABS - STAGE 2 - REINFORCING DETAILS
138. APPROACH SLABS AND TRANSITION SLABS - STAGE 2 - REINFORCING DETAILS

1 of 5. APPROACH GUARDRAIL
2 of 5. APPROACH GUARDRAIL
3 of 5. APPROACH GUARDRAIL
4 of 5. APPROACH GUARDRAIL
5 of 5. APPROACH GUARDRAIL
1 of 7. TRAFFIC CONTROL PLAN STAGE 1A
2 of 7. TRAFFIC CONTROL PLAN STAGE 1B
3 of 7. TRAFFIC CONTROL PLAN STAGE 1C
4 of 7. TRAFFIC CONTROL PLAN STAGE 2
5 of 7. TRAFFIC CONTROL PLAN STAGE 3
6 of 7. TRAFFIC CONTROL PLAN
7 of 7. TRAFFIC CONTROL PLAN

MANITOBA INFRASTRUCTURE AND TRANSPORTATION

WATER CONTROL AND STRUCTURES

RELEASED FOR CONSTRUCTION BY : Ruth Yoden

DIRECTOR
STRUCTURES, DESIGN & CONSTRUCTION BRANCH

DATE March 15, 2010

ENVIRONMENTAL APPROVALS

- [ ] MANITOBA ENVIRONMENT LICENCE RECEIVED
  LICENCE No. _____
- [✓] FISHERIES AND OCEANS CANADA - LETTER OF ADVICE/ AUTHORIZATION TO HARMFULLY ALTER, DISRUPT OR DESTRUCT HABITAT SUBJECT TO CONDITIONS IN LETTER
  DATED SEPT. 29, 2008
  DFO FILE No. 08-HEAA-CAI-00522
- [✓] TRANSPORT CANADA - LETTER OF APPROVAL SUBJECT TO CONDITIONS IN LETTER DATED July 22, 2009
  NWPA FILE No. 8200-04-6331
- [ ] FISHERIES AND OCEANS CANADA - WORK SHALL BE COMPLETED IN ACCORDANCE WITH DFO'S OPERATIONAL STATEMENT, AS PER LETTER/MEMO
  DATED _____
  FROM _____
- [ ] NO ENVIRONMENTAL CLEARANCE REQUIRED

COMPLETED BY: N. GONZALEZ DATE: March 15/10.

NOTE:

Elevations on original 1957 construction drawings are shown 275 mm higher than actual elevations. All elevations for proposed work shall be field verified.

ALL DIMENSIONS ARE IN MILLIMETRES (mm) AND ALL ELEVATIONS AND STATIONS ARE IN METRES (m) UNLESS SHOWN OTHERWISE.

DRAWN BY: M.S. DATE: MARCH 2010 SHEET No. 1

CHECKED BY: S.S.R. DATE: MARCH 2010 SITE No. 2924-00

...\2924_border.dgn 2010-03-15 7:52:07 AM