ISO A1 - 594mm x 841mm

REFERENCE DRAWINGS

- ST VITAL BRIDGE PROJECT - NORTH CONNECTING ROADWAYS
- ST VITAL BRIDGE PROJECT - SOUTH CONNECTING ROADWAYS
- ST. VITAL BRIDGE PROJECT - SUBSTRUCTURE
- ST. VITAL BRIDGE PROJECT - SUPERSTRUCTURE
- ST. VITAL BRIDGE PROJECT - DECK
- ST. VITAL TWIN BRIDGE OVER RED RIVER STRUCTURE REHABILITATION AND RELATED WORKS, P.D. NO. 88-1
- BALTIMORE FORCE MAIN PIPE CROSSING THE ST. VITAL BRIDGE, BID OPPORTUNITY NO. 822-2020

GENERAL

- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH CONTRACT SPECIFICATIONS.
- GEOMETRY, REINFORCEMENT AND LAYOUT OF THE EXISTING STRUCTURE ARE BASED ON EXISTING DESIGN INFORMATION AND LIMITED FIELD SURVEY DATA. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL NECESSARY DIMENSIONS SUCH THAT WORK CAN BE CONSTRUCTED AS SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION.
- CONTRACTOR TO REFER TO THE 1964 ORIGINAL CONSTRUCTION AND 1988 REHABILITATION REFERENCE DRAWINGS FOR DETAILS OF EXISTING CONSTRUCTION.
- WHOLE DIMENSIONS SHOWN ON THESE DRAWINGS ARE IN MILLIMETERS. DECIMAL DIMENSIONS ARE IN METRES. THE ORIGINAL CULVERT STRUCTURE WAS CONSTRUCTED WITH IMPERIAL UNITS OF MEASURE (HARD UNIT CONVERSION WHERE APPLICABLE).
- THE SCALES SHOWN ON THESE DRAWINGS ARE CORRECT FOR A1 SIZED DRAWING SHEETS. DO NOT DETERMINE DIMENSIONS BY SCALING OFF DRAWINGS.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXACT LOCATIONS OF ALL EXISTING ABOVE GROUND AND BELOW GROUND UTILITIES AND REPORTING ANY DISCREPANCIES OR CONFLICTS TO THE CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION.
- EXCEPT WHERE INDICATED OTHERWISE THESE DRAWINGS SHOW DETAILS FOR THE COMPLETED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF WORKERS AND THE DESIGN AND STABILITY OF ANY TEMPORARY WORKS DURING CONSTRUCTION. CONSTRUCTION METHODS REQUIRING THE TEMPORARY INSTALLATION OF SHORING, SCAFFOLDING, BRACING, ETC. SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR REVIEW AND ACCEPTANCE PRIOR TO PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF MANITOBA TO PERFORM AND TAKE RESPONSIBILITY FOR ANY SUCH DESIGNS NECESSARY TO COMPLETE THE CONSTRUCTION AND AS REQUIRED BY THE CONTRACT DOCUMENTS.

STRUCTURAL DESIGN DATA

- DESIGN SPECIFICATION: CAN/CSA-S6-19 "CANADIAN HIGHWAY BRIDGE DESIGN CODE"
- LIVE LOAD:
  - CL-625 TRUCK AND CL-625 LANE LOAD
  - SIDEWALK PEDESTRIAN AND MAINTENANCE VEHICLE LOADING PER CAN/CSA S6-19 Cl. 3.8.9 AND CLAUSE 3.8.11
  - CONCRETE BARRIER COLLISION PERFORMANCE RATING TL-4
- WIND LOAD: q_{50} = 0.45 kPa

GEOTECHNICAL DESIGN DATA

- A GEOTECHNICAL LETTER REPORT SPECIFIC TO THE ABUTMENTS OF THE ST. VITAL BRIDGE WAS PREPARED BY TREK GEOTECHNICAL TITLED ST. VITAL BRIDGE - DETAILED DESIGN ABUTMENT LATERAL EARTH PRESSURE RECOMMENDATIONS - DATED SEPT. 1, 2022
- A GEOTECHINCAL REPORT HAS BEEN PREPARED BY TREK GEOTECHNICAL TITLED ST. VITAL BRIDGE PROJECT OVER THE RED RIVER REHABILITATION SLOPE STABILITY ANALYSIS - DATED MARCH 23, 2022.

HYDRAULIC DESIGN DATA

- A HYDROTECHNICAL REPORT WAS PREPARED BY TREK GEOTECHNICAL TITLED ST. VITAL BRIDGE OVER THE RED RIVER REHABILITATION HYDROLOGIC AND HYDRAULIC ASSESSMENT - DATED MARCH 31, 2022.
- SELECT HYDRAULIC DESIGN DATA:
  - DESIGN DISCHARGE - Q0.625% = 2195 m^3/S @ EL. 230.28 m
  - SUMMER WATER LEVEL - Q50% = 140 m^3/S @ EL. 223.75 m
- FISH PASSAGE:
  - THE PROPOSED WORKS WILL NOT SUBSTANTIALLY ALTER THE GEOMETRY OF THE CREEK CROSS-SECTION, AND WILL NOT SUBSTANTIALLY AFFECT RIVER FLOWS.

ENVIRONMENTAL PROTECTION

- NO IN-STREAM WORK IS PERMITTED BETWEEN APRIL 1 AND JUNE 15.
- IMPLEMENT ENVIRONMENTAL PROTECTION MEASURES AS DESCRIBED BY THE SPECIFICATIONS.

EXISTING UTILITY PROTECTION

- SEVERAL UTILITIES ARE BURIED BELOW THE WORK ZONE AS SHOWN ON THE EXISTING CONDITIONS AND SITE PLAN DRAWING, SHEET No. 04.
- CONTRACTOR SHALL VERIFY ALL EXISTING ABOVE GROUND AND BELOW GROUND UTILITIES AND REPORT ANY DISCREPANCIES OR CONFLICTS TO THE CONTRACT ADMINISTRATOR PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING STRUCTURES AND UTILITIES BY THE CONTRACTOR'S OPERATIONS MUST BE REPAIRED BY THE CONTRACTOR AT THEIR OWN COST.
- THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION METHOD STATEMENT DEMONSTRATING ADHERENCE TO THE OPERATING CONSTRAINTS FOR WORK IN CLOSE PROXIMITY TO ALL BURIED AND OVERHEAD UTILITIES.
- EXISTING LIGHTING PACKS IN THE NORTH TUNNEL, AND FOR KINGSTON ROW AND SHURCHILL DRIVE ARE TO BE REMOVED FROM THEIR MOUNTS, TEMPORARILY SUPPORTED TO CONTINUE TO PROVIDE LIGHTING AT CHURCHILL DRIVE AND KINGSTON ROW, AND REMOUNTED TO THEIR PREVIOUS LOCATIONS AFTER CONCRETE AND STEEL REHABILITATION WORKS ARE COMPLETE.

MATERIAL NOTES

CAST-IN-PLACE CONCRETE:

ITEM	CLASS OF EXPOSURE	CEMENT TYPE	MINIMUM COMPRESSIVE STRENGTH (MPa)	NOMINAL MAX SIZE OF AGGREGATE (mm)	AIR CONTENT (%)	SPECIAL REQUIREMENTS	MINIMUM POST RESIDUAL CRACKING INDEX
BRIDGE SUPERSTRUCTURE	C-1	TYPE GU	45 @ 56 DAYS	20	5-8	SYNTHETIC FIBRES	0.15
PEDESTRIAN UNDERPASS FLOOR SLABS, SLOPE PAVING, STAIR TREAD REPAIRS	C-1	TYPE GU	35 @ 28 DAYS	20	5-8	SYNTHETIC FIBRES	0.15
ABUTMENT OVERLAY AND APPROACH SLABS	C-XL	TYPE GU	50 @ 56 DAYS	20	5-8	SYNTHETIC FIBRES	0.15
ABUTMENT BALLAST WALL AND DRAINAGE TROUGHS	C-1	TYPE GU	35 @ 28 DAYS	20	5-8	-	-
ABUTMENT VERTICAL REFACING AND BEARING PEDESTALS	C-1	TYPE GU	35 @ 28 DAYS	10	6-9	-	-

CLEAR COVER TO REINFORCING STEEL (mm) UNLESS NOTED OTHERWISE	LOCATION
50	BRIDGE SOFFIT AND PIER BEARING PEDESTALS
70	ALL OTHER STRUCTURAL COMPONENTS

- CONCRETE FINISHES - REFER TO SPECIFICATIONS
- ALL VISUALLY EXPOSED CONCRETE CORNERS SHALL HAVE A 20 mm CHAMFER UNLESS NOTED OTHERWISE.

REINFORCING STEEL

- ALL REINFORCING WITH SUFFIX "SS" SHALL BE STAINLESS STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A955M, 300 SERIES, MINIMUM GRADE 420, OF ONE OF THE UNS DESIGNATIONS: S31653, S31803, OR S32304, AS DESCRIBED IN THE SPECIFICATIONS.
- STAINLESS STEEL WELDED WIRE MESH CONFORMING TO AISI 304.
- PLAIN REINFORCING STEEL TO CAN/CSA-G30.18-M92 GRADE 400W.
- REINFORCING STEEL SPLICES TO CAN/CSA S6-19 CLASS B.
- VALUES IN TABLES SHALL BE USED UNLESS NOTED OTHERWISE.

STAINLESS STEEL LAP SPLICE TABLE		
BAR SIZE	HORIZONTAL LAP	VERTICAL LAP
16SS	750	550
19SS	900	700

BLACK STEEL LAP SPLICE TABLE		
BAR SIZE	HORIZONTAL LAP	VERTICAL LAP
15M	550	450
20M	700	550

PRECOMPRESSED FOAM JOINT FILLER

- PRECOMPRESSED FOAM JOINT FILLER SHALL BE THE EMSEAL BEJS SYSTEM, OR ACCEPTED EQUIVALENT AT LOCATIONS SPECIFIED. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

CHAIN LINK FENCE

- CHAIN LINK FENCE SHALL CONFORM TO CW 3550-R3. POSITION POSTS AS SHOWN ON THE DRAWINGS.
- FIT MESH ON THE SIDE OF THE CULVERT HEADWALLS WHERE EARTH IS RETAINED, OR ON THE SIDE OF THE FENCE FACING THE SIDEWALK.
- FIT CHAIN LINK FENCE WITH TOP RAILS AND BOTTOM RAILS. CONNECT CHAIN MESH FABRIC TO TOP AND BOTTOM RAILS BY MEANS OF CONTINUOUS SPIRAL GALVANIZED TIE-WIRE, WITH AT LEAST ONE FULL WRAP AROUND THE SUPPORTING RAIL EVERY 150 mm.
- FIELD-APPLIED GALVANIZING, TOUCH-UP, AND WELD GALVANIZING SHALL BE DONE WITH SELF-FLUXING, LOW TEMPERATURE, ZINC-BASED ALLOY RODS IN ACCORDANCE WITH ASTM A780-01. GALVALLOY OR WELCO GAL-VIZ GALVANIZING ALLOY, OR ACCEPTED EQUIVALENT.

STRUCTURAL STEEL

- STEEL SHALL CONFORM TO: 1
  - CSA G40.21, GRADE 350WT, CATEGORY 3 FOR COVER PLATES, FILLER PLATES, STIFFENERS, AND SOLE PLATES.
  - CSA G40.21, GRADE 300W FOR ALL PIER JACKING BEAM MODIFICATIONS, ABUTMENT JACKING BEAMS, SPLICE PLATES, AND JACKING PLATES.
- ALL BOLTS, NUTS, AND WASHERS SHALL BE HIGH STRENGTH CONFORMING TO ASTM STANDARD F3125 GRADE A325, TYPE 1, UNLESS NOTED OTHERWISE.
- ALL SHEAR STUDS SHALL CONFORM TO THE REQUIREMENTS OF ASTM STANDARD A108, GRADES 1018 OR 1020
- ALL SHEAR STUDS TO MEET MECHANICAL PROPERTIES OF AWS SPECIFICATIONS D1.5 TABLE 7.1 FOR TYPE B STUDS

MISCELLANEOUS METAL

- ALL MISCELLANEOUS METAL SHALL CONFORM TO CSA G40.21M, GRADE 300W.

LIST OF ACRONYMS & SYMBOLS*

N,S,E,W	COMPASS DIRECTIONS
ALT	ALTERNATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BLL	BOTTOM LOWER LAYER
BRG	BEARING
BML	BOTTOM MIDDLE LAYER
BUL	BOTTOM UPPER LAYER
CB	CATCH BASIN
CL	CENTRELINE
CSA	CANADIAN STANDARDS ASSOCIATION
C/W	COMPLETE WITH
EB	EASTBOUND
EL	ELEVATION
EX	EXISTING
FM	FEEDERMAIN
HWL	HIGH WATER LEVEL
MIN	MINIMUM
O/C	ON CENTRE
O/H	OVERHEAD
OHWL	ORDINARY HIGH WATER LEVEL
RSIC	REINFORCING STEEL INSTITUTE OF CANADA
SD	STANDARD DRAWING (CITY OF WINNIPEG STANDARD CONSTRUCTION SPECIFICATIONS)
SHLD	SHOULDER
SPMDD	STANDARD PROCTOR MODIFIED DRY DENSITY
TLL	TOP LOWER LAYER
TML	TOP MIDDLE LAYER
TUL	TOP UPPER LAYER
TS	TRAFFIC SIGNAL
TYP	TYPICAL
UNS	UNIFIED CLASSIFICATION SYSTEM
W/	WITH
WB	WESTBOUND
WL	WATER LEVEL
WM	WATER MAIN
@	AT
Ø	DIAMETER

LIST OF REINFORCING STEEL PREFIXES

AS	APPROACH SLABS
B	BARRIER & CURBS
D	DECK
DT	DRAINAGE TROUGH
NA	NORTH ABUTMENT
P	PIERS
S	STAIRS
SA	SOUTH ABUTMENT
UP	UNDERPASS

SECTION & DETAIL SYMBOLS

SECTION LETTER / DETAIL NUMBER

DRAWING No. WHERE SECTION / DETAIL IS DRAWN

DRAWING No. WHERE SECTION / DETAIL IS TAKEN

REINFORCING STEEL CODE LEGEND

1 - A2501 (1)

SUBSET No.
IDENTIFICATION No.
SIZE OF BAR
LOCATION CODE
No. OF BARS

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
MORRISON HERSHFIELD
No. 1736

TENDER No. 615-2022

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPR. U/G STRUCTURES COMMITTEE — DATE

NOTE:
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

BM 54-006 ELEV 228.166 m — Tblt. in S. face of E. Conc. pier in 1st row of Conc. piers N. of S. end of St. Vital Bridge over Red River, N. of Kingston Row, 5 m W. of E. end of Pier.

No.	REVISIONS	YY/MM/DD	BY
1	REVISED FOR ADDENDUM 2	23/01/09	BAP
0	ISSUED FOR TENDER	22/11/24	BAP

MORRISON HERSHFIELD

DESIGNED BY	TN	CHECKED BY	BAP
DRAWN BY	AH	APPROVED BY	BE
HOR SCALE		RELEASED FOR CONSTRUCTION	
VERT SCALE			
DATE	NOV 24, 2022	DATE	

PROFESSIONAL'S SEAL
PROVINCE OF MANITOBA — T.A.B. NEIRINCK — Member 37947 — 2023-01-10 — REGISTERED PROFESSIONAL ENGINEER

CONSULTANT FILE NAME
2103510-SVB DD-BR-GN.dwg

Winnipeg

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

ST. VITAL TWIN BRIDGE OVER THE RED RIVER REHABILITATION AND RELATED WORKS

BRIDGE REHABILITATION
GENERAL NOTES

CITY FILE NUMBER: B116-24- 1
SHEET 87 OF 244
DRAWING NUMBER: 87

\\EgnyteDrive\MH Cloud\Proj\2021\21035\1000-st vital bridge over red river pd\09_cad\07 sheets\structural\detailed design\2103510-SVB DD-BR-GN.dwg Last Saved: 11/25/2022 11:45 AM by TNeirinck Plotted: 1/3/2023 2:12 PM by Tim Neirinck