

EXISTING PIER ELEVATION
 PIER #8 EAST FACE SHOWN 1:100
 PIER #3 EAST FACE SIMILAR
 MIRROR FOR WEST FACE

NOTE:
 EX CONCRETE DRAINAGE CHANNELS, SETTLEMENT PONDS AND CATCH BASIN NOT SHOWN FOR CLARITY. REFER TO SITE PLANS ON DWG 03.

SCOPE OF WORK:

- (A) PIER COLUMN REPAIR - REMOVE EXISTING CONCRETE COVER, SANDBLAST, PLACE NEW REINFORCEMENT CAGE C/W EMBEDDED CORROSION CONTROL ZINC ANODES AND PLACE NEW CONCRETE JACKET.
- (B) PIER CAP REPAIR - APPLY ACTIVATED ARC SPRAY ZINC METALLIZING TO EXISTING CONCRETE SURFACE FOR CORROSION CONTROL.
- (C) GIRDER END REPAIR - LOCAL PATCH REPAIRS "TYPE 1" TO DELAMINATED CONCRETE COVER. APPLY ACTIVATED ARC SPRAY ZINC METALLIZING FOR CORROSION CONTROL.
- (D) END DIAPHRAGM REPAIR - LOCAL PATCH REPAIRS "TYPE 2" TO DELAMINATED CONCRETE COVER. APPLY ACTIVATED ARC SPRAY ZINC METALLIZING FOR CORROSION CONTROL.
- (E) BEARING REPAIR - SANDBLAST TO REMOVE RUST. APPLY ACTIVATED ARC SPRAY ZINC METALLIZING TO SELECT METAL BEARING SURFACES FOR CORROSION CONTROL. TOUCH-UP WITH COLD-APPLIED ZINC PAINT. PROTECT BEARING ELASTOMER AND STAINLESS STEEL SLIDING SURFACE FROM DAMAGE THROUGHOUT THE WORK.
- (F) DRAINAGE MODIFICATIONS I - PROVIDE DRIP STRIPS AT SPECIFIED LOCATIONS.
- (G) DRAINAGE MODIFICATIONS II - EXTEND DECK DRAIN PIPES.
- (H) EXCAVATE AS REQUIRED TO EXPOSE PILE CAP AND BACKFILL AT WORK COMPLETION. DEMOLISH AND DISPOSE OF EXISTING CHAIN LINK ENCLOSURES AND REPLACE WITH 1220 mm HIGH CHAIN LINK FENCE C/W 900 mm WIDE GATE. DEMOLISH AND RESTORE EXISTING CONCRETE DRAINAGE CHANNEL AND EXISTING CONCRETE SETTLEMENT POND AS REQUIRED TO ACCOMMODATE TEMPORARY WORKS.

GENERAL NOTES:

- 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 REFERENCE DRAWINGS FOR DETAILS OF EXISTING CONSTRUCTION.
- WHOLE DIMENSIONS SHOWN ON THESE DRAWINGS ARE IN MILLIMETERS. DECIMAL DIMENSIONS ARE IN METRES. THE ORIGINAL BRIDGE 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 CONSULTANT PRIOR TO CONSTRUCTION.
- EXCEPT WHERE INDICATED OTHERWISE THESE DRAWINGS SHOW DETAILS FOR THE COMPLETED REHABILITATED 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.

CONSTRUCTION STAGING NOTES:

- THE EXISTING BRIDGE STRUCTURE SHALL REMAIN OPEN TO NORMAL TRAFFIC DURING THE WORK. NO LANE CLOSURES OR REDUCTION IN SERVICE TO TRAFFIC ARE PERMITTED. CONSTRUCTION ACCESS SHALL BE FROM BELOW THE BRIDGE STRUCTURE.
- ON THE BASIS OF A LOAD EVALUATION PERFORMED BY MORRISON HERSHFIELD LTD. THE REPAIRS AS DEPICTED IN THE CONTRACT DRAWINGS AND SPECIFICATIONS, INCLUDING DEPICTED PIER COLUMN CONCRETE REMOVALS, MAY BE PERFORMED WITHOUT PROVIDING SUPPLEMENTARY SHORING TO SUPPORT THE PIER CAPS. IT IS NOTED THAT THE PIER COLUMNS ARE PRIMARY LOAD-BEARING MEMBERS IN A SINGLE-LOAD-PATH STRUCTURAL SYSTEM AND A HIGH STANDARD OF CARE IS REQUIRED DURING CONSTRUCTION.
- ANY UNSOUND CONCRETE DETECTED BEYOND THE REMOVAL EXTENTS DEPICTED IN THESE DRAWINGS AND SPECIFICATIONS SHALL BE REPORTED TO THE CONTRACT ADMINISTRATOR IMMEDIATELY.

DESIGN NOTES:

- DESIGN SPECIFICATION: CAN/CSA-S6-14 "CANADIAN HIGHWAY BRIDGE DESIGN CODE"
- LIVE LOAD: CL-625 TRUCK AND CL-625 LANE LOAD
- WIND LOAD: q50 = 0.45 kPa

MATERIAL NOTES:

EXISTING CONCRETE:

- DESIGN COMPRESSIVE STRENGTH OF ORIGINAL BRIDGE CONSTRUCTION CAST-IN-PLACE CONCRETE: 27.6 MPa
- DESIGN COMPRESSIVE STRENGTH OF ORIGINAL BRIDGE CONSTRUCTION PRECAST PRESTRESSED GIRDER CONCRETE: 34.4 MPa
- STRENGTH OF IN-SITU PIER COLUMN CONCRETE BASED ON A LIMITED SAMPLE OF SURFACE REBOUND HAMMER MEASUREMENTS: 50 TO 65 MPa

CONCRETE:

- CAST-IN-PLACE CONCRETE: NORMAL WEIGHT WITH MINIMUM COMPRESSIVE STRENGTH OF 35 MPa
- EXPOSURE CLASS: C-1
- USE TYPE GU PORTLAND CEMENT.
- SPECIAL REQUIREMENTS FOR COLUMN JACKET CONCRETE:
 - o SELF-COMPACTING CONCRETE
 - o MAX AGGREGATE SIZE 10 mm
 - o SLUMP FLOW BETWEEN 550 - 650 mm
 - o ELECTRICAL RESISTIVITY < 15,000 ohm-cm
 - o LOW-SHRINKAGE CONCRETE ACCORDING TO THE DEFINITION OF CAN/CSA A23.1 CLAUSE 8.9.2

- SUBMIT PROPOSED LOCATION OF ALL CONSTRUCTION JOINTS FOR REVIEW AND ACCEPTANCE PRIOR TO PROCEEDING WITH CONSTRUCTION.
- ALL CONCRETE FINISHES TO BE PERMEABLE FORMWORK LINER FINISH, EXCEPT SOFFIT SURFACES TO BE PAPER FORMWORK LINER FINISH.

REINFORCING STEEL:

- PLAIN REINFORCING STEEL TO CAN/CSA-G30.18-M92 GRADE 400W UNLESS OTHERWISE NOTED.
- REINFORCING STEEL SPLICES TO CAN/CSA S6-14 CLASS B.
- ALL VISUALLY EXPOSED CONCRETE CORNERS SHALL HAVE A 19 mm CHAMFER UNLESS NOTED OTHERWISE.

CORROSION CONTROL SYSTEM:

- PIER COLUMNS: GALVANODE DAS ACTIVATED ZINC DISTRIBUTED ANODE SYSTEM SUPPLIED BY VECTOR CORROSION TECHNOLOGIES OR ACCEPTED EQUIVALENT.
- PIER CAP/ GIRDER ENDS/ END DIAPHRAGMS: ACTIVATED ARC SPRAY ZINC GALVANODE ASZ+ SYSTEM SUPPLIED BY VECTOR CORROSION TECHNOLOGIES OR ACCEPTED EQUIVALENT.
- BEARING TOUCH UP: COLD APPLIED ZINC PAINT - ZINGA FILM GALVANIZING SYSTEM OR ACCEPTED EQUIVALENT.

STRUCTURAL STEEL:

- STRUCTURAL SHAPES AND PLATES, MATERIAL REQUIREMENTS TO CSA G40.20-04/G40.21-04 (2009) GRADE 300W.
- WELDING SHALL CONFORM TO CURRENT AWS SPECIFICATION D1.5.

POST-INSTALLED FASTENINGS:

- INSTALLATION OF POST-INSTALLED FASTENINGS BY TRAINED PERSONNEL TO MANUFACTURER'S INSTRUCTIONS.
- USE ADHESIVE ANCHOR SYSTEMS UNLESS NOTED OTHERWISE.
- EPOXY ADHESIVE SHALL BE TWO-PART INJECTABLE ADHESIVE SPECIFICALLY DESIGNED FOR STRUCTURALLY CONNECTING ANCHORS TO EXISTING CONCRETE. BASIS OF DESIGN: HILTI HIT-HY 200.
- REINFORCING STEEL: REFER TO REINFORCING STEEL NOTES.

FLEXIBLE JOINT SEALANT:

- FLEXIBLE JOINT SEALANT SHALL BE SPECIFICALLY MANUFACTURED FOR SEALING CRACKS IN CONCRETE IN EXTERIOR APPLICATIONS AND SHALL BE SUBJECT TO REVIEW AND ACCEPTANCE BY CONTRACT ADMINISTRATOR. INSTALL TO MANUFACTURER'S SPECIFICATIONS.



PHOTO - PIER #8 EAST FACE EXISTING CONDITIONS

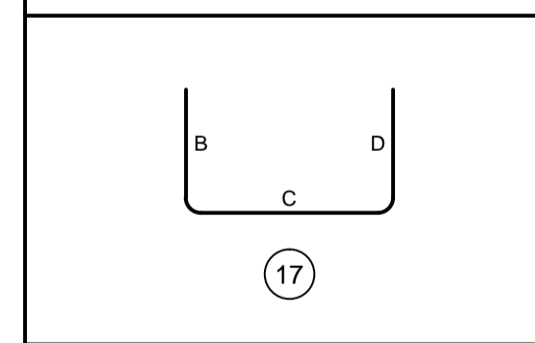
BILL OF STEEL REINFORCING

PIER COLUMN	MARK	NO. BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	O	R	MASS (kg)
	P1501	80	15M	9000	STR													
P1502	120	15M	1100	STR														207.3
P1503	256	15M	930	17		330	600											373.8
P1504	246	15M	3030	17		1050	930	1050										1170.3
TOTAL = 2881.8																		

BILL OF STEEL REINFORCING NOTES:

- * = FIELD CUT TO FIT
- ALL DIMENSIONS ARE OUT-TO-OUT OF BARS
- DIAMETER OF ALL BENDS AND DETAILS OF ALL HOOKS, UNLESS NOTED OTHERWISE, SHALL CONFORM TO THE RECOMMENDED SIZES DETAILED IN THE "REINFORCING STEEL - MANUAL OF STANDARD PRACTICE", FOURTH EDITION 2004, PUBLISHED BY THE REINFORCING STEEL INSTITUTE OF CANADA.

BENDING DIAGRAM



LAP SPLICE TABLE

HORIZONTAL		VERTICAL	
BAR	LAP LENGTH	BAR	LAP LENGTH
15M	650	15M	550

LIST OF ACRONYMS

ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
CB	CATCH BASIN
CSA	CANADIAN STANDARDS ASSOCIATION
C/W	COMPLETE WITH
EX	EXISTING
MIN	MINIMUM
NACE	NACE INTERNATIONAL, ORIGINALLY KNOWN AS THE NATIONAL ASSOCIATION OF CORROSION ENGINEERS
O/C	ON CENTRE
SPMDD	STANDARD PROCTOR MODIFIED DRY DENSITY
SSPC	THE SOCIETY FOR PROTECTIVE COATINGS
TYP	TYPICAL
W/	WITH
@	AT

LOCATION APPROVED UNDERGROUND STRUCTURES

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.

NO.	REVISIONS	DATE	BY
C	ISSUED FOR TENDER	15/03/31	DAN
B	ISSUED FOR 99% PROGRESS	15/03/13	DAN
A	ISSUED FOR 50% PROGRESS	15/02/27	DAN

MORRISON HERSHFIELD

DESIGNED BY: DAN
 CHECKED BY: SAL
 DRAWN BY: EDM
 APPROVED BY: BE
 HOR. SCALE: AS SHOWN
 VERT. SCALE: AS SHOWN
 DATE: 15/02/27

PROFESSIONAL'S SEAL
 ORIGINAL DRAWING
 SIGNED & SEALED BY:
 D. A. NEILSON
 APEGM MEMBER
 37248
 MARCH 31, 2015

THE CITY OF WINNIPEG
 PUBLIC WORKS DEPARTMENT
 ENGINEERING DIVISION

Winnipeg

NAIRN AVENUE OVERPASS
CONCRETE GIRDER AND PIER REPAIRS

SCOPE OF WORK & GENERAL NOTES

CITY DRAWING NUMBER: B121-2015-02
 SHEET 2 OF 7
 DRAWING No. 02 REV C