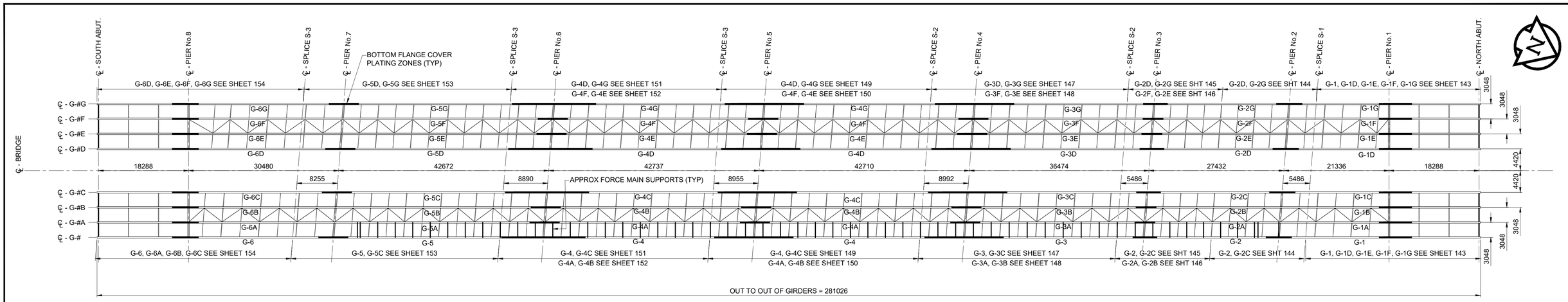
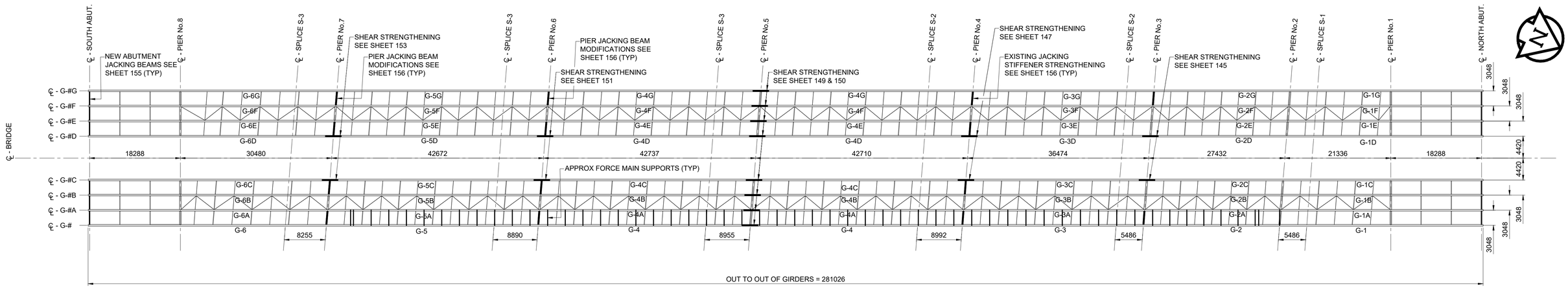
ISO A1 - 594mm x 841mm



GIRDER BOTTOM FLANGE STRENGTHENING PLAN

SCALE 1:400



GIRDER WEB AND JACKING BEAM STRENGTHENING PLAN

SCALE 1:400

FUTURE JACKING LOADS

LOCATION	LOAD EFFECT	JACK 1 - MEDIAN	JACK 2	JACK 3	JACK 4	JACK 5	JACK 6 - SIDEWALK
NORTH ABUT.	UNFACTORED PERMANENT DEAD LOAD (KN/JACK)	335	-11	81	84	15	346
	FACTORED PERMANENT DEAD LOAD (KN/JACK)	502	-16	121	126	22	519
PIER No. 1	UNFACTORED PERMANENT DEAD LOAD (KN/JACK)	1060	94	281	339	179	1030
	FACTORED PERMANENT DEAD LOAD (KN/JACK)	1590	140	421	508	269	1545
PIER No. 2	UNFACTORED PERMANENT DEAD LOAD (KN/JACK)	1119	111	314	361	202	1093
	FACTORED PERMANENT DEAD LOAD (KN/JACK)	1679	166	471	541	303	1639
PIER No. 3	UNFACTORED PERMANENT DEAD LOAD (KN/JACK)	1446	187	443	495	290	1460
	FACTORED PERMANENT DEAD LOAD (KN/JACK)	2169	281	665	742	435	2190
PIER No. 4	UNFACTORED PERMANENT DEAD LOAD (KN/JACK)	1851	279	603	648	397	1872
	FACTORED PERMANENT DEAD LOAD (KN/JACK)	2777	418	905	972	595	2808
PIER No. 5	UNFACTORED PERMANENT DEAD LOAD (KN/JACK)	FIXED PIER					
	FACTORED PERMANENT DEAD LOAD (KN/JACK)						
PIER No. 6	UNFACTORED PERMANENT DEAD LOAD (KN/JACK)	1974	305	650	693	427	1998
	FACTORED PERMANENT DEAD LOAD (KN/JACK)	2961	457	976	1040	641	2996
PIER No. 7	UNFACTORED PERMANENT DEAD LOAD (KN/JACK)	1736	249	554	604	360	1772
	FACTORED PERMANENT DEAD LOAD (KN/JACK)	2604	374	831	905	540	2658
PIER No. 8	UNFACTORED PERMANENT DEAD LOAD (KN/JACK)	1095	106	296	362	188	1114
	FACTORED PERMANENT DEAD LOAD (KN/JACK)	1643	159	444	543	282	1670
SOUTH ABUT.	UNFACTORED PERMANENT DEAD LOAD (KN/JACK)	328	-9	77	87	15	328
	FACTORED PERMANENT DEAD LOAD (KN/JACK)	492	-13	116	130	23	491

REHABILITATION JACKING:

1. TO REPLACE ANY ONE BEARING DEVICE, ALL GIRDERS ON THE CARRIAGEWAY BEING JACKED AT THE SUBSTRUCTURE IN QUESTION MUST BE CONCURRENTLY JACKED.
2. IT IS ANTICIPATED THAT THERE ARE STRESSES LOCKED IN THE EXISTING STEEL GIRDERS. JACKING PLANS SHALL BE DEVELOPED TO ADDRESS LOCKED IN STRESS AND POTENTIAL GIRDER MOVEMENT DURING JACKING.
3. EACH JACK USED FOR JACKING SHALL BE POSITIONED BELOW EACH DIAPHRAGM JACKING PLATE AND UNDER THE JACKING STIFFENER LOCATIONS SHOWN ON DRAWINGS 123 TO 136. 1
4. DURING CONSTRUCTION JACKING SHALL ONLY BE COMPLETED FOLLOWING COMPLETE DECK REMOVAL AS CERTAIN JACKING BEAMS REQUIRE STRENGTHENING IN ACCORDANCE WITH THE PLANS ABOVE.
5. DURING REHABILITATION MAXIMUM JACKING HEIGHT IS 6mm.

FUTURE JACKING:

1. FUTURE JACKING OF SUPERSTRUCTURE SHALL ONLY BE COMPLETED WITH STRUCTURE CLOSED TO LIVE LOAD.
2. JACKING BEAMS HAVE BEEN STRENGTHENED TO ALLOW FOR A JACKING LOAD OF 1.5 TIMES THE SERVICE DEAD LOAD OF THE SUPERSTRUCTURE AT EACH JACK LOCATION.
3. DURING FUTURE JACKING ALL JACKING POINTS, WITHIN THE CARRIAGEWAY BEING JACKED, MUST BE JACKED CONCURRENTLY AT THE SUBSTRUCTURE IN QUESTION
4. DURING FUTURE JACKING MAXIMUM JACKING HEIGHT IS 6MM
5. JACKING POINTS SHOWN ON DRAWINGS 123 TO 136.
6. REFER TO TABLE FOR FUTURE JACKING LOADS.

GENERAL NOTES:

1. ALL DIMENSIONS ARE CORRECT TO 40 °F (4.44 ° C) IN ACCORDANCE WITH THE ORIGINAL STRUCTURE DRAWINGS. ACTUAL LENGTH DUE TO CAMBER, SUPER ELEVATION, AND ROADWAY PROFILE ARE NOT INCLUDED. CONTRACTOR TO VERIFY DIMENSIONS WITH FIELD MEASUREMENTS PRIOR TO FABRICATION OF STRUCTURAL STEEL.
2. GIRDER IDENTIFICATION MARKS USED IN THESE DRAWINGS MATCH THE GIRDER MARKS FROM THE ORIGINAL STRUCTURE DRAWING SET.
3. ALL GIRDER COVER PLATE PLACEMENT SHALL BE PERFORMED WHILE THE DECK IS REMOVED FROM THE STRUCTURE.
4. SCHEMATIC STRENGTHENING LAYOUT PLAN FOR SOUTHBOUND AND NORTHBOUND CARRIAGEWAY PROVIDED ABOVE.
5. ALL AREAS OF EXISTING STRUCTURAL STEEL TO BE STRENGTHENED SHALL BE BLAST CLEANED AND WASHED TO BE FREE OF CONTAMINANTS PRIOR TO INSTALLATION OF GIRDER STRENGTHENING PLATES.
6. GIRDER STRENGTHENING PLATES SHALL BE POSITIONED AGAINST FLANGES AND SECURELY FASTENED PRIOR TO FIELD DRILLING OF BOLT HOLES.
7. ALL BOLT HOLES TO BE FIELD DRILLED. HOLES MAY BE SHIFTED SLIGHTLY TO AVOID CONFLICTS WITH EXISTING GIRDER STRUCTURAL STEEL AS REQUIRED. ALIGN NEW BOLT HOLES WITH EXISTING WHERE APPLICABLE.
8. HOLES THROUGH GIRDER STRENGTHENING STEEL AND EXISTING GIRDER TO BE DRILLED SIMULTANEOUSLY.
9. MINIMUM BOLT SPACING IS 70 mm. MINIMUM EDGE DISTANCE IS 38 mm.
10. AREAS OF EXISTING SHEAR STUDS TO BE REMOVED AND REPLACED. FOR LAYOUT AND DETAILS SEE DRAWINGS 157 TO 160.

ERECTION:

1. THE CONTRACTOR IS RESPONSIBLE FOR MEANS OF MAINTAINING GIRDERS IN CORRECT ALIGNMENT UNTIL THE DECK HAS BEEN CAST AND HAS OBTAINED ITS SPECIFIED STRENGTH.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF TEMPORARY WORK PLATFORMS HANGING FROM BOTTOM FLANGE OR FROM BRACKETS SUPPORTED ON GIRDER VERTICAL STIFFENERS AT LOCATIONS WHERE BOTTOM FLANGE COVER PLATES REQUIRED.

NON-DESTRUCTIVE TESTING:

1. WELD INSPECTION TO BE CARRIED OUT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS ON FIELD WELDS.

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
MORRISON HERSHFIELD
No. 1736

TENDER No. 615-2022

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 1	22/12/13	BAP
0	ISSUED FOR TENDER	22/11/24	BAP

MORRISON HERSHFIELD

DESIGNED BY	TN	CHECKED BY	JM
DRAWN BY	AH	APPROVED BY	BE
HOR SCALE	1:400	RELEASED FOR CONSTRUCTION	
VERT SCALE			
DATE	NOV 24, 2022	DATE	

PROFESSIONAL'S SEAL
PROVINCE OF MANITOBA
T.A.B. NEIRINCK
Member
37947
2022-12-13
REGISTERED PROFESSIONAL ENGINEER

CONSULTANT FILE NAME
2103510-SVB DD-BR-GIRDER01.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
GIRDER STRENGTHENING LAYOUT

CITY FILE NUMBER: B116-24-56
SHEET 142 OF 244
DRAWING NUMBER: 142

X:\Proj\2021\21035100-St Vital Bridge over Red River PD\09. CAD\07 Sheets\Structural\Detailed Design\2103510-SVB DD-BR-GIRDER01.dwg Last Saved: 12/13/2022 10:15 AM by AScott Plotted: 12/13/2022 10:16 AM by Allan Scott