BILL OF STRUCTURAL STEEL
FOR STEEL THROUGH PLATE GIRDERS (FCM)

MARK	QTY.	DESCRIPTION	SIZE	MASS (kg) PER UNIT	TOTAL MASS (kg)
G1	1	THROUGH PLATE GIRDER (FCM)			
		– TOP PLATE	50x550x15800 LG. AS DETAILED		
		– WEB PLATE	16x1500x15800 LG. AS DETAILED		
		– BOTTOM PLATE	50x550x15800 LG. AS DETAILED		
					9243.2
G2	1	THROUGH PLATE GIRDER (FCM)			
		– TOP PLATE	50x550x15800 LG. AS DETAILED		
		– WEB PLATE	16x1500x15800 LG. AS DETAILED		
		– BOTTOM PLATE	50x550x15800 LG. AS DETAILED		
					9243.2
					TOTAL MASS (kg) = 18486.4

BILL OF STRUCTURAL STEEL
FOR STEEL FLOOR BEAMS (PM) & STRINGERS (PM)

MARK	QTY.	DESCRIPTION	SIZE	MASS (kg) PER UNIT	TOTAL MASS (kg)
FB1	2	FLOOR BEAM (PM)	W460x177, 5084 LG. AS DETAILED	849.0	1698.0
FB2	4	FLOOR BEAM (PM)	W460x177, 5580 LG. AS DETAILED	901.5	3606.0
FB3	3	FLOOR BEAM (PM)	W460x177, 5580 LG. AS DETAILED	906.1	2718.3
FB4	1	FLOOR BEAM (PM)	W460x177, 5580 LG. AS DETAILED	906.1	906.1
ST1	8	STRINGER (PM)	W250x49, 1483 LG. AS DETAILED	64.9	519.2
ST2	32	STRINGER (PM)	W250x49, 1483 LG. AS DETAILED	65.1	1822.8
ST3	8	STRINGER BEAM END (PM)	W200x100, 395 LG. AS DETAILED	14.7	117.6
					TOTAL MASS (kg) = 11388.0

BILL OF STRUCTURAL STEEL
FOR STEEL CONNECTION & CROSS-BRACING ANGLES

MARK	QTY.	DESCRIPTION	SIZE	MASS (kg) PER UNIT	TOTAL MASS (kg)
BA1	3	CROSS-BRACE ANGLE	L89x89x9.5, 5625 LG. AS DETAILED	37.9	113.7
BA2	2	CROSS-BRACE ANGLE	L89x89x9.5, 5454 LG. AS DETAILED	37.2	74.4
BA3	2	CROSS-BRACE ANGLE	L89x89x9.5, 2529 LG. AS DETAILED	28.2	56.4
BA4	8	CROSS-BRACE ANGLE	L89x89x9.5, 2700 LG. AS DETAILED	30.1	150.5
CA1	4	CONNECTION ANGLE	L203x203x19, 1500 LG. AS DETAILED	58.0	232.0
CA2	4	CONNECTION ANGLE	L203x203x19, 1500 LG. AS DETAILED	58.0	232.0
CA3	5	CONNECTION ANGLE	L203x203x19, 1500 LG. AS DETAILED	59.4	237.6
CA4	5	CONNECTION ANGLE	L203x203x19, 1500 LG. AS DETAILED	59.4	237.6
CA5	9	CONNECTION ANGLE	L203x203x19, 483 LG. AS DETAILED	20.1	180.9
CA6	9	CONNECTION ANGLE	L203x203x19, 483 LG. AS DETAILED	20.1	180.9
CA7	18	CONNECTION ANGLE	L152x152x19, 380 LG. AS DETAILED	15.9	286.2
CA8	16	CONNECTION ANGLE	L127x127x9.5, 202 LG. AS DETAILED	3.5	63.0
CA9	16	CONNECTION ANGLE	L127x127x9.5, 147 LG. AS DETAILED	2.5	40.0
CA10	16	CONNECTION ANGLE	L127x127x9.5, 147 LG. AS DETAILED	2.5	40.0
CA11	144	CONNECTION ANGLE	L127x127x9.5, 147 LG. AS DETAILED	3.3	475.2
CA12	5	CONNECTION ANGLE	L89x89x9.5, 147 LG. AS DETAILED	3.6	18.0
					TOTAL MASS (kg) = 2618.4

BILL OF STRUCTURAL STEEL
FOR BOLTS

MARK	QTY.	DESCRIPTION	MASS (kg) PER UNIT	TOTAL MASS (kg)
B1	28	25ø x65 LG. BOLT	0.5	14.0
B2	292	25ø x70 LG. BOLT	0.5	146.0
B3	168	25ø x75 LG. BOLT	0.5	84.0
B4	166	25ø x80 LG. BOLT	0.5	83.0
B5	540	25ø x85 LG. BOLT	0.5	270.0
B6	76	25ø x90 LG. BOLT	0.6	38.0
B7	265	25ø x100 LG. BOLT	0.6	132.5
B8	84	25ø x110 LG. BOLT	0.6	42.0
B9	17	36ø x615 LG. ANCHOR BOLT	8.1	137.7
				TOTAL MASS (kg) = 947.2

NOTE:
BOLT QUANITIES INCLUDE 5% OVERAGE FOR DROPPAGE / LOSS OF BOLTS DURING ERECTION.

BILL OF STRUCTURAL STEEL
FOR STEEL PLATES & MISCELLANOUS STRUCTURAL STEEL

MARK	QTY.	DESCRIPTION	SIZE	MASS (kg) PER UNIT	TOTAL MASS (kg)
KB1	4	KNEE BRACE – TO BE FABRICATED FROM:			
		– PLATE MK. P1	12x785x935 PLATE, AS DETAILED	44.3	
		– PLATE MK. P2	15x200x310 PLATE, AS DETAILED	6.8	
		– PLATE MK. P3	15x200x1085 PLATE, AS DETAILED	25.6	
				76.7	306.8
KB2	8	KNEE BRACE – TO BE FABRICATED FROM:			
		– PLATE MK. P2	15x200x310 PLATE, AS DETAILED	6.8	
		– PLATE MK. P4	15x200x1057 PLATE, AS DETAILED	25.6	
		– PLATE MK. P5	12x695x935 PLATE, AS DETAILED	36.9	
				69.3	554.4
P6	4	GUSSET PLATE	15x586x264 PLATE, AS DETAILED	15.9	31.8
P7	8	GUSSET PLATE	15x540x435 PLATE, AS DETAILED	15.9	31.8
P8	5	GUSSET PLATE	15x473x290 PLATE, AS DETAILED	31.9	31.9
P9	8	CONNECTION PLATE	15x380x485 PLATE, AS DETAILED	19.0	152.0
P10	8	SHIM PLATE	4x380x230 PLATE, AS DETAILED	2.6	20.8
P11	4	BEARING GIRDER PLATE	30x430x800 PLATE, AS DETAILED	79.0	316.0
P12	4	STIFFENER PLATE	25x250x1500 PLATE, AS DETAILED	69.8	279.2
P13	4	STIFFENER PLATE	25x250x1500 PLATE, AS DETAILED	73.5	294.0
P14	8	JACKING PLATE	20x121x428 PLATE, AS DETAILED	8.1	64.8
P15	16	BEARING KEEPER PLATE	12x215x300 PLATE, AS DETAILED	4.4	70.4
					TOTAL MASS (kg) = 2479.3

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES
UNLESS INDICATED OTHERWISE

APEGM
Certificate of Authorization
Stantec Consulting Ltd.
No. 1301

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPV. 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.

B.M. ELEV.

NO.	REVISIONS	DATE	BY
0	ISSUED FOR TENDER	13.12.23	J.M.B.

Stantec
100 - 1355 Taylor Avenue, Winnipeg MB Canada
www.stantec.com

DESIGNED BY	S.S.Y.	CHECKED BY	M.J.B.
DRAWN BY	J.A.S.	APPROVED BY	M.J.B.
HOR. SCALE: / VERTICAL:	AS NOTED	RELEASED FOR CONSTRUCTION:	
DATE	2014.03.24	DATE	

ENGINEER'S SEAL

CONSULTANT DRAWING NO.
SIII

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

GREATER WINNIPEG WATER DISTRICT
RAILWAY BRIDGE REPLACEMENT AT MILE 22.15
STEEL BILL OF MATERIALS

SHEET 13 OF 15
CAD FILE DRAWING NUMBER 32050-s-III-800.dwg
CITY DRAWING NUMBER D-13434

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Date: 2014 Mar 27 - 1:46pm Login: Reyes, Ricardo