BILL OF EXPANSION UNITS

SITE No. 693-02

MARK	No.	DESCRIPTION	SIZE	COMPONENT MASS	MASS PER UNIT	TOTAL MASS
E1	1	Steel edge angle - completely galvanized	as detailed			55.11
		Each unit to be fabricated from:				
		Angle	L 64 x 64 x 9.5, 5 471 long, as detailed	48.090	48.09	
		Bars Mk."A2"	13 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.38	
		Bars Mk."A3"	14 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.64	
					55.11	
E2	2	Expansion unit - completely galvanized	as detailed			155.44
		Each unit to be fabricated from:				
		Roadway unit	WABO M1-shape steel rail or equivalent, as detailed			
			1 - Steel rail approx. 5 855 long	68.943	68.94	
		Plate Mk. "P6"	1 - PL 10x50 as detailed	1.242	1.24	
		Bars Mk."A2"	15 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.90	
		Bars Mk."A3"	14 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.64	
					77.72	
E3	2	Expansion unit - completely galvanized	as detailed			156.06
		Each unit to be fabricated from:				
		Roadway unit	WABO M1-shape steel rail or equivalent, as detailed			
			1 - Steel rail approx. 5 855 long	68.943	68.94	
		Plate Mk. "P7"	1 - PL 10x50 as detailed	1.548	1.55	
		Bars Mk."A2"	15 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.90	
		Bars Mk."A3"	14 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.64	
					78.03	
E4	1	Steel edge angle - completely galvanized	as detailed			55.22
		Each unit to be fabricated from:				
		Angle	L 64 x 64 x 9.5 , 5 483 long, as detailed	48.196	48.20	
		Bars Mk."A2"	13 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.38	
		Bars Mk."A3"	14 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.64	
					55.22	
E5	1	Steel edge angle - completely galvanized	as detailed			60.52
		Each unit to be fabricated from:				
		Angle	L 64 x 64 x 9.5, 5 998 long, as detailed	52.722	52.72	
		Bars Mk."A2"	15 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.90	
		Bars Mk."A3"	15 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.90	
					60.52	
E6	2	Expansion unit - completely galvanized	as detailed			170.00
		Each unit to be fabricated from:				
		Roadway unit	WABO M1-shape steel rail or equivalent, as detailed			
			1 - Steel rail approx. 6 380 long	75.125	75.13	
		Plate Mk. "P7"	1 - PL 10x50 as detailed	1.548	1.55	
		Bars Mk."A2"	16 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	4.16	
		Bars Mk."A3"	16 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	4.16	
					85.00	
E7	2	Expansion unit - completely galvanized	as detailed			169.38
		Each unit to be fabricated from:				
		Roadway unit	WABO M1-shape steel rail or equivalent, as detailed			
			1 - Steel rail approx. 6 380 long	75.125	75.13	
		Plate Mk. "P6"	1 - PL 10x50 as detailed	1.242	1.24	
		Bars Mk."A2"	16 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	4.16	
		Bars Mk."A3"	16 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	4.16	
					84.69	
						Cont. →

BILL OF EXPANSION UNITS

SITE No. 693-02

MARK	No.	DESCRIPTION	SIZE	COMPONENT MASS	MASS PER UNIT	TOTAL MASS
E8	1	Steel edge angle - completely galvanized	as detailed			60.64
		Each unit to be fabricated from:				
		Angle	L 64 x 64 x 9.5, 6 011 long, as detailed	52.837	52.84	
		Bars Mk."A2"	15 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.90	
		Bars Mk."A3"	15 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.90	
					60.64	
E9	4	Expansion unit - completely galvanized	as detailed			62.72
		Each unit to be fabricated from:				
		Horizontal plate Mk."P1"	1 - PL 10 x 130, as detailed	8.184	8.18	
		Plate Mk. "P9"	3 - PL 10 x 50, as detailed	0.196	0.59	
		Vertical plate Mk."P2"	1 - PL 6 x 195, as detailed	2.930	2.93	
		Bars Mk."A2"	3 - Nelson deformed bar anchors Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	0.78	
		Bars Mk."A3"	2 - Nelson deformed bar anchors Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	0.52	
		Plate Mk."P5"	1 - bar 10 x 40, as detailed	2.581	2.58	
		Bar Mk."A4"	1 - Nelson deformed bar anchor Type D2L, 13 ø			
			½" x 4⅛" D2L, 100 long as detailed	0.104	0.10	
					15.68	
E10	4	Expansion unit - completely galvanized	as detailed			64.52
		Each unit to be fabricated from:				
		Horizontal plate Mk."P1"	1 - PL 10 x 130, as detailed	8.184	8.18	
		Plate Mk. "P9"	3 - PL 10 x 50, as detailed	0.196	0.59	
		Vertical plate Mk."P3"	1 - PL 6 x 195, as detailed	3.378	3.38	
		Bars Mk."A2"	3 - Nelson deformed bar anchors Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	0.78	
		Bars Mk."A3"	2 - Nelson deformed bar anchors Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	0.52	
		Plate Mk."P5"	1 - bar 10 x 40, as detailed	2.581	2.58	
		Bar Mk."A4"	1 - Nelson deformed bar anchor Type D2L, 13 ø			
			½" x 4⅛" D2L, 100 long as detailed	0.104	0.10	
					16.13	
E11	1	Steel edge angle - completely galvanized	as detailed			60.52
		Each unit to be fabricated from:				
		Angle	L 64 x 64 x 9.5, 5 998 long, as detailed	52.722	52.72	
		Bars Mk."A2"	15 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.90	
		Bars Mk."A3"	15 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.90	
					60.52	
E12	1	Steel edge angle - completely galvanized	as detailed			60.64
		Each unit to be fabricated from:				
		Angle	L 64 x 64 x 9.5, 6 011 long, as detailed	52.837	52.84	
		Bars Mk."A2"	15 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.90	
		Bars Mk."A3"	15 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.90	
					60.64	
E13	1	Steel edge angle - completely galvanized	as detailed			55.11
		Each unit to be fabricated from:				
		Angle	L 64 x 64 x 9.5, 5 471 long, as detailed	48.090	48.09	
		Bars Mk."A2"	13 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.38	
		Bars Mk."A3"	14 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.64	
					55.11	
E14	1	Steel edge angle - completely galvanized	as detailed			55.22
		Each unit to be fabricated from:				
		Angle	L 64 x 64 x 9.5 , 5 483 long, as detailed	48.196	48.20	
		Bars Mk."A2"	13 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.38	
		Bars Mk."A3"	14 - Nelson deformed bar anchors, Type D2L, 13 ø			
			½" x 10⅛" D2L, 250 long as detailed	0.260	3.64	
					55.22	
						Cont. →

BILL OF EXPANSION UNITS

SITE No. 693-02

MARK	No.	DESCRIPTION	SIZE	COMPONENT MASS	MASS PER UNIT	TOTAL MASS
P4	2	Cover plate - galvanized (Abutments)	1 - PL 10 x 410, as detailed	25.929		51.86
P8	2	Cover plate - galvanized (Abutments)	1 - PL 10 x 410, as detailed	25.929		51.86
R10	12	Flat head socket cap screws	12 ø x 30 long, galvanized	0.033		0.40
X6	24	Threaded rods	16 ø x 250 long c/w 2 hex. nuts	0.380		9.12
X7	24	Threaded rods	16 ø x 550 long c/w 2 hex. nuts	0.757		18.17
L1	24	Erection angles	L 76 x 76 x 9.5, 1 546 long, as detailed	16.542		397.01
	48	Lock washers	for 16 ø threaded rod - 1 per rod Mk."X6" & "X7"	0.012		0.58
	96	Plate washers	for 16 ø threaded rod - 2 per rod Mk."X6" & "X7"	0.024		2.30
						TOTAL : 1 775.40 kg

NOTE :
1. WABO M-shape steel rails, or equivalent will be supplied by The Minister.
2. All material in the above Bill shall be galvanized in accordance with CAN/CSA-G164-M92

BILL OF PREFORMED JOINT SEAL

FOR EXPANSION JOINTS

SITE No. 693-02

LOCATION	No.	DESCRIPTION	UNIT LENGTH	TOTAL LENGTH
SU. 1	1	WABO strip seal system continuous sealing element	12 500	12 500
		Type No. SE-400 (Neoprene)		
SU. 4	1	WABO strip seal system continuous sealing element	12 500	12 500
		Type No. SE-300 (Neoprene)		

NOTES:
1. Preformed joint seal & adhesive will be supplied by the Minister.
2. Each piece of joint seal shall have no field splices

REVISIONS		
OCT31/07	R.A	AS BUILT
DATE	BY	DESCRIPTION

EXPANSION JOINT DETAILS

FOR PROPOSED 69 714 LONG R.C. BRIDGE
OVER SEINE RIVER DIVERSION
ON P.T.H. No. 59 SOUTH BOUND LANES, 10 900 ROADWAY
IN SEC. 28-8-4E

R.M. OF RITCHOT

PROVINCE OF MANITOBA — A. H. PANKRATZ — Oct 12, 2005 — REGISTERED PROFESSIONAL ENGINEER

Manitoba Transportation and Government Services
Bridges and Structures Branch

RELEASED FOR CONSTRUCTION BY:
Oct. 13/05
DIRECTOR OF BRIDGES AND STRUCTURES — DATE

DESIGN	BY: A.H.P.
	CHECKED: J.B.L.
DETAILS	BY: G.S.
	CHECKED: A.H.P.

SCALE:
SHEET No. 49
SITE No. 693-02

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