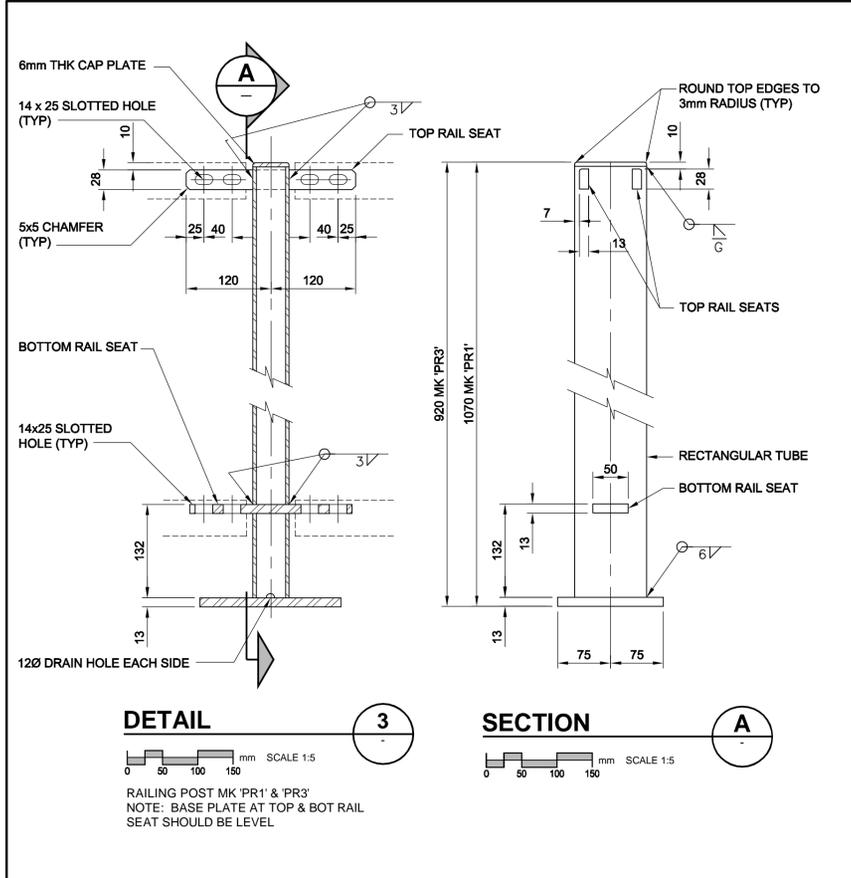


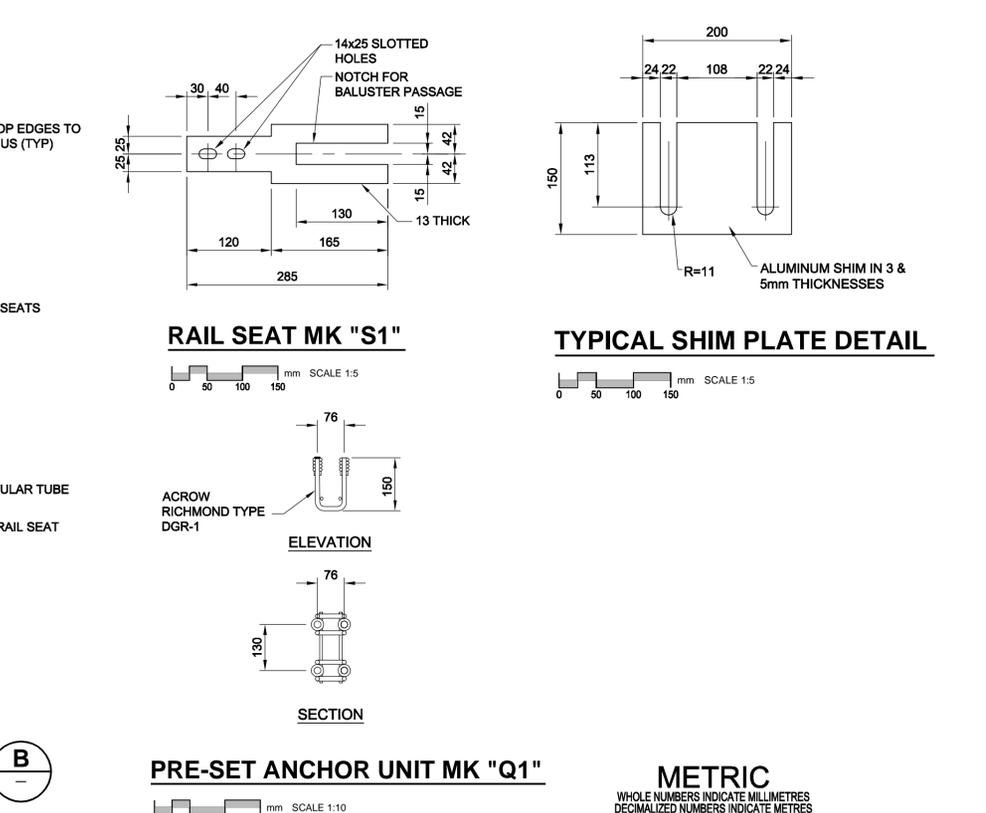
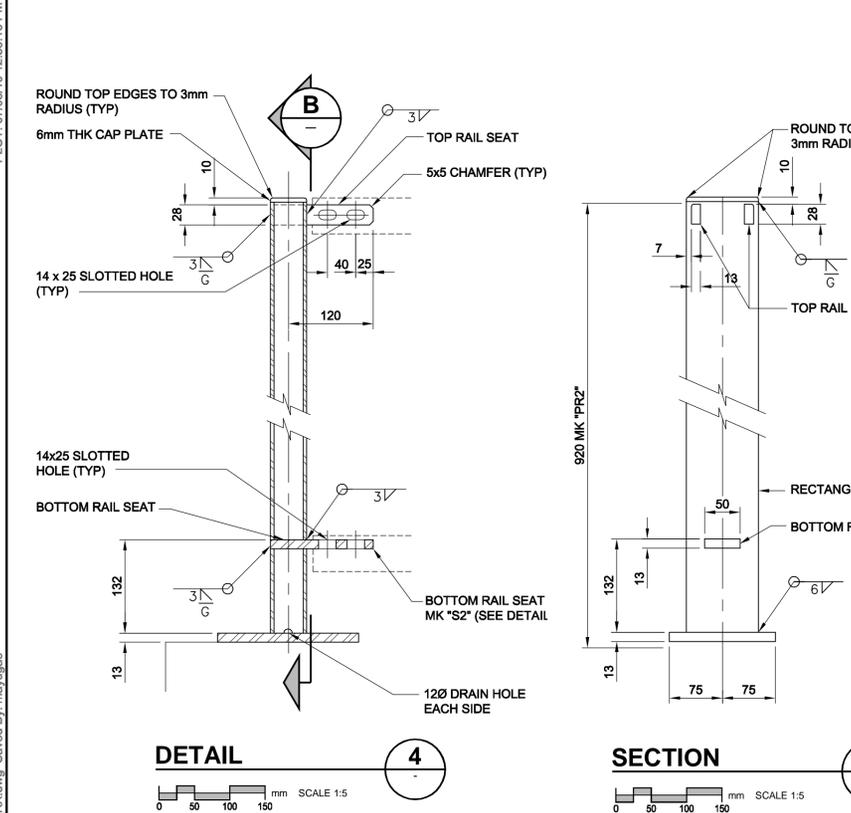
A1 SIZE 23.4" x 33.1" (594mm x 841mm)



BILL OF MISCELLANEOUS ALUMINUM FOR ALUMINUM PEDESTRIAN RAILPOSTS					
TYPE	QTY	DESCRIPTION	MASS PER UNIT	TOTAL MASS	
PR1	30	POST		175.50	
		EACH UNIT TO BE FABRICATED FROM: ALUMINUM			
		1 RECTANGULAR TUBE	51x102x4.8x1054 LONG	3.87	
		2 TOP RAIL SEATS	13x28x240 LONG	0.46	
		1 BOTTOM RAIL SEAT	13x50x240 LONG	0.41	
		1 BASE PLATE	13x150x200 LONG	1.03	
		1 CAP PLATE	6x51x102 LONG	0.08	
		TOTAL		5.85	
PR2	4	POST		21.92	
		EACH UNIT TO BE FABRICATED FROM: ALUMINUM			
		1 RECTANGULAR TUBE	51x102x4.8x904 LONG	3.32	
		2 TOP RAIL SEATS	13x28x146 LONG	0.60	
		1 BOTTOM RAIL SEAT MK "S2"	13x50x146 AS DETAILED	0.45	
		1 BASE PLATE	13x150x200 LONG	1.03	
		1 CAP PLATE	6x51x102 LONG	0.08	
		TOTAL		5.48	
PR3	4	POST		21.20	
		EACH UNIT TO BE FABRICATED FROM: ALUMINUM			
		1 RECTANGULAR TUBE	51x102x4.8x904 LONG	3.32	
		2 TOP RAIL SEATS	13x28x240 LONG	0.46	
		1 BOTTOM RAIL SEAT	13x50x240 LONG	0.41	
		1 BASE PLATE	13x150x200 LONG	1.03	
		1 CAP PLATE	6x51x102 LONG	0.08	
		TOTAL		5.30	
Q1	38	PRE-SET ANCHORS	ACROW RICHMOND TYPE DGR-1 OR EQUIVALENT FOR PEDESTRIAN RAILPOSTS (AS DETAILED)	2.92	110.96
			C/W 4 HHS A325M BOLTS, 190x70 LONG, WITH PLATE & LOCK WASHERS-COMPLETLY GALVANIZED		
		TOTAL MASS			329.58 kg

BILL OF MISCELLANEOUS ALUMINUM FOR ALUMINUM PEDESTRIAN HANDRAIL PANELS					
TYPE	QTY	DESCRIPTION	MASS PER UNIT	TOTAL MASS	
A	2	HANDRAIL PANEL		20.92	
		EACH UNIT TO BE FABRICATED FROM:			
		2 RAIL CHANNELS	51x102x1040 LONG	3.09	
		9 BALUSTERS	13x25x791 LONG	6.24	
		1 PLATE	6x78x897 LONG	1.13	
		TOTAL		10.46	
B	2	HANDRAIL PANEL		20.52	
		EACH UNIT TO BE FABRICATED FROM:			
		1 RAIL CHANNEL	51x102x974 LONG	2.89	
		9 BALUSTERS	13x25x791 LONG	6.24	
		1 PLATE	6x78x897 LONG	1.13	
		TOTAL		10.26	
C	4	HANDRAIL PANEL		137.16	
		EACH UNIT TO BE FABRICATED FROM:			
		1 RAIL CHANNEL (BENT)	51x102x2370 LONG	7.13	
		21 BALUSTERS	13x25x941 LONG (CUT TO SUIT)	17.34	
		1 PLATE (BENT)	6x78x2205 LONG	2.78	
		1 RAIL CHANNEL	51x102x2370 LONG	7.04	
		TOTAL		34.29	
D	28	HANDRAIL PANEL		760.48	
		EACH UNIT TO BE FABRICATED FROM:			
		2 RAIL CHANNELS	51x102x2370 LONG	7.04	
		21 BALUSTERS	13x25x941 LONG	17.34	
		1 PLATE	6x78x2205 LONG	2.78	
		TOTAL		27.16	
	144	ALUMINUM SHIM PLATE	150x200x3 AS DETAILED	0.21	30.24
	72	ALUMINUM SHIM PLATE	150x200x5 AS DETAILED	0.35	25.20
		TOTAL MASS			1010.84 kg
	204	SS FLATHEAD SOCKET CAP SCREWS 13Ø x30 LONG C/W SS NUT, PLATE & LOCK WASHERS		0.08	16.32

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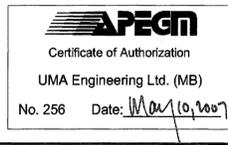
BILL OF MISCELLANEOUS ALUMINUM FOR ALUMINUM PEDESTRIAN HANDRAIL PANELS					
TYPE	QTY	DESCRIPTION	MASS PER UNIT	TOTAL MASS	
A	2	HANDRAIL PANEL		20.92	
		EACH UNIT TO BE FABRICATED FROM:			
		2 RAIL CHANNELS	51x102x1040 LONG	3.09	
		9 BALUSTERS	13x25x791 LONG	6.24	
		1 PLATE	6x78x897 LONG	1.13	
		TOTAL		10.46	
B	2	HANDRAIL PANEL		20.52	
		EACH UNIT TO BE FABRICATED FROM:			
		1 RAIL CHANNEL	51x102x974 LONG	2.89	
		9 BALUSTERS	13x25x791 LONG	6.24	
		1 PLATE	6x78x897 LONG	1.13	
		TOTAL		10.26	
C	4	HANDRAIL PANEL		137.16	
		EACH UNIT TO BE FABRICATED FROM:			
		1 RAIL CHANNEL (BENT)	51x102x2370 LONG	7.13	
		21 BALUSTERS	13x25x941 LONG (CUT TO SUIT)	17.34	
		1 PLATE (BENT)	6x78x2205 LONG	2.78	
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		TOTAL		34.29	
D	28	HANDRAIL PANEL		760.48	
		EACH UNIT TO BE FABRICATED FROM:			
		2 RAIL CHANNELS	51x102x2370 LONG	7.04	
		21 BALUSTERS	13x25x941 LONG	17.34	
		1 PLATE	6x78x2205 LONG	2.78	
		TOTAL		27.16	
	144	ALUMINUM SHIM PLATE	150x200x3 AS DETAILED	0.21	30.24
	72	ALUMINUM SHIM PLATE	150x200x5 AS DETAILED	0.35	25.20
		TOTAL MASS			1010.84 kg
	204	SS FLATHEAD SOCKET CAP SCREWS 13Ø x30 LONG C/W SS NUT, PLATE & LOCK WASHERS		0.08	16.32

NOTES:

- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING No. 15 AND THE SPECIFICATIONS.
- ALUMINUM EXTRUSIONS SHALL CONFORM TO ASTM B221, ALLOY 6351-T6. ALUMINUM PLATES SHALL CONFORM TO ASTM B221, ALLOY 5083.
- STAINLESS STEEL HEXAGONAL HEAD CAP SCREWS SHALL MEET THE ASTM A276, TYPE 304 REQUIREMENTS.
- M.I.G. WELDING PROCESS SHALL BE USED.
- RAIL POST SHALL BE SET VERTICAL.
- ANTI-SEIZE COATING TO BE SUPPLIED BY THE GENERAL CONTRACTOR AND APPLIED TO ALL THREADED COMPONENTS WHEN BEING ASSEMBLED, I.E. LPS-3- MANUFACTURED BY HOLT-LLOYD (CANADA) LTD. MARKUM ONTARIO.
- THE MISCELLANEOUS ALUMINUM CONTRACTOR SHALL PAINT THE BOTTOM SURFACE OF SHIMS, (THE SURFACES IN CONTACT WITH CONCRETE), WITH TWO COATS OF ALKALI RESISTANT BITUMINUS PAINT, EACH COAT BEING 1mm IN THICKNESS.
- SS DENOTES STAINLESS STEEL.
- ALL SLOTTED HOLES MUST BE FINISHED SMOOTH AND TRUE.
- CONTRACTOR TO SUPPLY SAMPLE PANEL AND RECEIVE APPROVAL OF THE CONTRACT ADMINISTRATOR PRIOR TO FABRICATION OF THE REMAINDER. THE APPROVED SAMPLE SHALL BECOME THE STANDARD FOR ACCEPTANCE OF ALL PANELS.

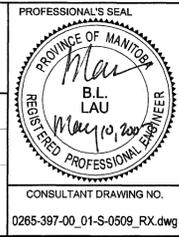
BID OPPORTUNITY NO. 349-2007

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NO.	REVISIONS	YYMMDD	BY
0	ISSUED FOR CONSTRUCTION	07/05/10	DJH

DESIGNED BY	BL	CHECKED BY	SBB
DRAWN BY	CPK	APPROVED BY	BUB
HOR. SCALE	AS NOTED	RELEASED FOR CONSTRUCTION	
VERT. SCALE	AS NOTED	DATE	07/03/23



THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
TRANSPORTATION ENGINEERING DIVISION

HAMILTON AVENUE BRIDGE REHABILITATION
PEDESTRIAN HANDRAIL DETAILS II

CITY DRAWING NUMBER: B133-07-16
SHEET 16 OF 30
DRAWING No. 16
REV 0