MARKS	NO BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	M	O	R	SHAPE	MASS (kg)
CATCH BASIN ROOF SLAB																				
R1601X	128	16	440	STR																87.41
R1602X	16	16	1 240	STR																30.79
R1603X	32	16	380	STR																18.87
R1604X	32	16	1 000	STR																49.66
R1605X	16	16	2 065	10	480	2450	480										1560	780		51.28
R1606X	32	16	310	STR																15.40
R1607X	32	16	1 180	STR																58.60
R1608X	32	16	1 030	STR																51.15
																			TOTAL MASS: CATCH BASIN ROOF SLAB (kg)	363.17
ROADWAY MEDIAN BARRIER																				
M1601X	34	16	1 800	14		835	130	835				830					300			94.98
M1601X (1)	2	16	1 630	14		745	140	745				740					320			5.06
M1601X (2)	2	16	1 490	14		660	170	660				650					345			4.62
M1601X (3)	2	16	1 420	14		605	210	605				600					380			4.41
M1601X (4)	2	16	1 270	14		510	250	510				505					405			3.94
M1601X (5)	2	16	1 890	14	450	355	280	355	450			340					490			5.87
M1601X (6)	2	16	1 775	14	450	270	335	270	450			260					490			5.51
M1601X(7)	2	16	1 830	14	525	190	400	190	525			180					490			5.68
M1601X(8)	6	16	1 910	17		710	490	710												17.79
M1602X	398	16	520	27			380	140				90		150			530			321.20
M1602X(1)	4	16	1 045	X3	235	450	360					200					440			6.49
M1602X(2)	4	16	1 135	X3	235	520	380					190					425			7.05
M1602X(3)	4	16	1 190	X3	235	600	355					160					390			7.39
M1602X(4)	4	16	1 285	X3	235	680	370					144					380			7.98
M1602X(5)	4	16	995	17		760	235													6.18
M1602X(6)	20	16	1 075	17		840	235													33.37
M1603X	40	16	1 350	2	150	1050					150									83.81
M1604X (1)	40	16	2 830	STR																175.69
M1604X(2)	30	16	4 830	STR																224.88
M1605X	34	16	1 325	X3	235	750	340					195								69.92
M1606X	18	16	2 790	T1	140	755	500	755	500		140									77.94
M1607X	8	16	2 670	T1	140	695	500	695	500		140									33.15
M1608X	8	16	970	16		380	250	340				195		280						12.04
M1609X	8	16	2 390	T1	140	555	500	555	500		140									29.67
M1610X	8	16	965	17		620	345													11.98
M1611X	18	16	1 325	16		235	750	340				195		280						37.02
M1612X	8	16	910	STR																11.30
M1613X	4	16	1 000	STR																6.21
M1614X	8	16	1 200	9		1200						205					1100	850		14.90
M1615X	4	16	1 060	STR																6.58
M1616X	2	16	1 290	STR																4.00
M1617X	4	16	1 910	STR																11.86
M2501X	28	25	600	STR																66.75
																			TOTAL MASS: ROADWAY MEDIAN BARRIER (kg)	1 415.20

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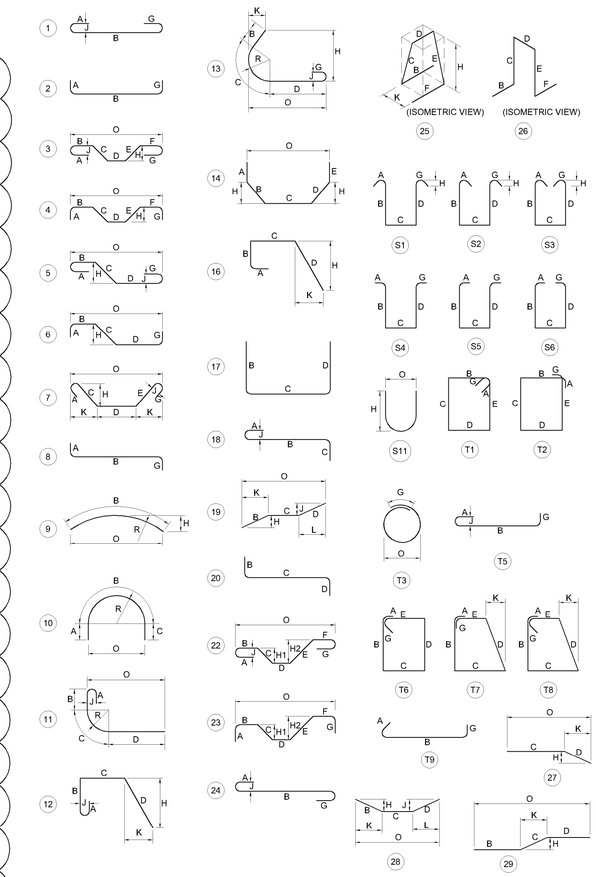
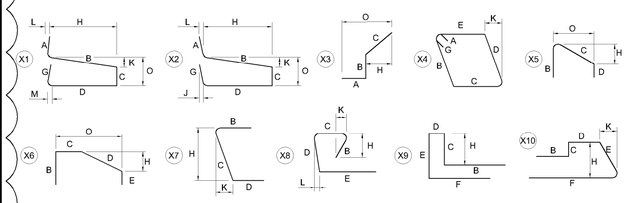
MARKS	NO BARS	SIZE	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	L	M	O	R	SHAPE	MASS (kg)
FERMOR UNDERPASS STRUCTURE																				
U1601X	62	16	3 045	17		195	2850													293.00
U1602X	32	16	6 910	STR																343.18
U1603X	4	16	8 080	X7		600	6880	600				5850		3650						50.16
U1604X	40	16	1 440	17		300	240	900												89.40
U1605X	40	16	1 325	20		300	425	600												82.26
U1606X	4	16	2 790	X5		900	990	900				530					838			17.32
U1607X	2	16	7 700	STR			700	700				594		371						23.90
U1608X	54	16	5 450	2	450	5000														456.75
U1609X	54	16	9 350	2	450	8900														783.60
U1610X	238	16	5 000	STR																1 846.88
U1611X	238	16	8 900	STR																3 287.45
U1612X	8	16	7 755	STR																96.29
U1613X	7	16	6 170	STR																67.03
U1614X	6	16	7 390	STR																68.82
U1615X	8	16	6 260	STR																77.72
U1616X	7	16	8 255	STR																89.68
U1617X	7	16	6 670	STR																72.46
U1618X	6	16	7 890	STR																73.47
U1619X	7	16	6 760	STR																73.44
U1620X	7	16	6 340	STR																68.88
U1621X	7	16	7 640	STR																83.00
U1622X	6	16	6 230	STR																58.01
U1623X	7	16	7 740	STR																84.09
U1624X	7	16	6 840	STR																74.31
U1625X	7	16	8 140	STR																88.43
U1626X	6	16	6 730	STR																62.67
U1627X	7	16	8 240	STR																89.52
U1628X	22	16	5 350	STR																182.67
U1629X	22	16	7 115	STR																242.93
U1630X	22	16	7 180	STR																245.15
U1631X	22	16	5 455	STR																186.26
U1632X	6	16	7 050	STR																65.65
U1633X	6	16	5 920	STR																55.13
U1634X	5	16	7 325	STR																56.84
U1635X	6	16	7 385	STR																68.77
U1636X	6	16	7 550	STR																70.31
U1637X	6	16	6 420	STR																59.78
U1638X	5	16	7 825	STR																60.72
U1639X	6	16	7 885	STR																73.43
U1640X	6	16	6 475	STR																60.30
U1641X	6	16	7 590	STR																70.68
U1642X	5	16	5 985	STR																46.44
U1643X	6	16	6 600	STR																61.46
U1644X	6	16	6 975	STR																64.95
U1645X	6	16	8 090	STR																75.33
U1646X	5	16	6 485	STR																50.32
U1647X	6	16	7 100	STR																66.12
U1648X	80	16	2 000	T2	180	350	470	350	470		180									248.32
U1649X	30	16	7 960	STR																370.62
U1650X	82	16	1 610	T7		700	210	700						70						204.90
U1651X	82	16	2 085	X3	600	1010	475					270								265.35
U1652X	82	16	3 310	17			2000	1310												421.24
U1901X	490	19	2 630	14			400	1830	400			1295					1695			2 880.24
U2501X(1)	217	25	8 850	17		450	7950	450												7 629.95
U2501X(2)	2	25	8 670	17		450	7770	450												68.89
U2501X(3)	2	25	8 425	17		450	7525	450												66.95
FERMOR UNDERPASS STRUCTURE CONTINUED ON NEXT SHEET, CHROMX MASS THIS SHEET: (kg)																				22 521.41
TOTAL MASS OF CHROMX = 24 299.78 kg																				

1



A.C.I. - TYPICAL BAR BENDS



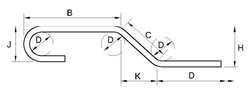
SPECIAL BAR BENDS

NOTES:

1. ALL DIMENSIONS ARE OUT-TO-OUT OF A BAR EXCEPT 'A' AND "G" ON STANDARD 180° AND 135° HOOKS.
2. "J" DIMENSION ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE, OTHERWISE STANDARD HOOKS ARE TO BE USED.
3. ON TRUSS BARS "J" WILL BE KEPT EQUAL TO OR LESS THAN "H". WHERE "J" CAN EXCEED "H" IT SHOULD BE SHOWN.

4. THE STIRRUPS "H" DIMENSION SHOULD BE SHOWN ONLY WHERE NECESSARY TO FIT WITHIN CONCRETE.
5. CRITICAL DIMENSIONS ARE TO BE IDENTIFIED WHERE BARS ARE TO BE BENT MORE ACCURATELY THAN STANDARD BENDING TOLERANCES.
6. ON TYPE T3 "G" DIMENSION IS EQUAL TO CLASS C SPLICE.
7. FIGURES SHOWN IN CIRCLES SHOW TYPES.
8. ALL BAR BENDS OTHER THAN THE TYPES SHOWN ABOVE MUST BE DESIGNATED TYPE "X".

UNLESS OTHERWISE NOTED DIAMETER "D" IS THE SAME FOR ALL HOOKS AND BENDS ON A BAR.



ENLARGED VIEW SHOWING BAR BENDING DETAILS

APEGM
Certificate of Authorization
Dillon Consulting Limited (MB)
No. 1789 Date: 2018/02/09

NO.	REVISIONS	DATE	BY
1	ADDENDUM #5	18/03/16	DRA
0	ISSUED FOR TENDER	18/02/09	DRA

DILLON CONSULTING

DESIGNED BY	DRA	CHECKED BY	SSR
DRAWN BY	MG / DB	APPROVED BY	MBL
HOR. SCALE	AS SHOWN	RELEASED FOR CONSTRUCTION	
VERTICAL	AS SHOWN		
DATE	2018/02/09	DATE	

ENGINEER'S SEAL
PROVINCE OF MANITOBA
D.R.C. AMORIM
Member 33215
REGISTERED PROFESSIONAL ENGINEER

CONSULTANT PROJECT NUMBER
17-5932

Winnipeg
THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

FERMOR AVENUE BRIDGE OVER SEINE RIVER
BRIDGE REHABILITATION, PEDESTRIAN-CYCLIST UNDERPASS STRUCTURE AND ROADWORKS FROM ST. ANNE'S ROAD TO ARCHIBALD STREET

PEDESTRIAN-CYCLIST UNDERPASS
REINFORCING STEEL SCHEDULE 3 OF 6

CITY DRAWING NUMBER U-243-2017-CS-085
SHEET 085 OF 100
CONSULTANT DRAWING NUMBER CS-085

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