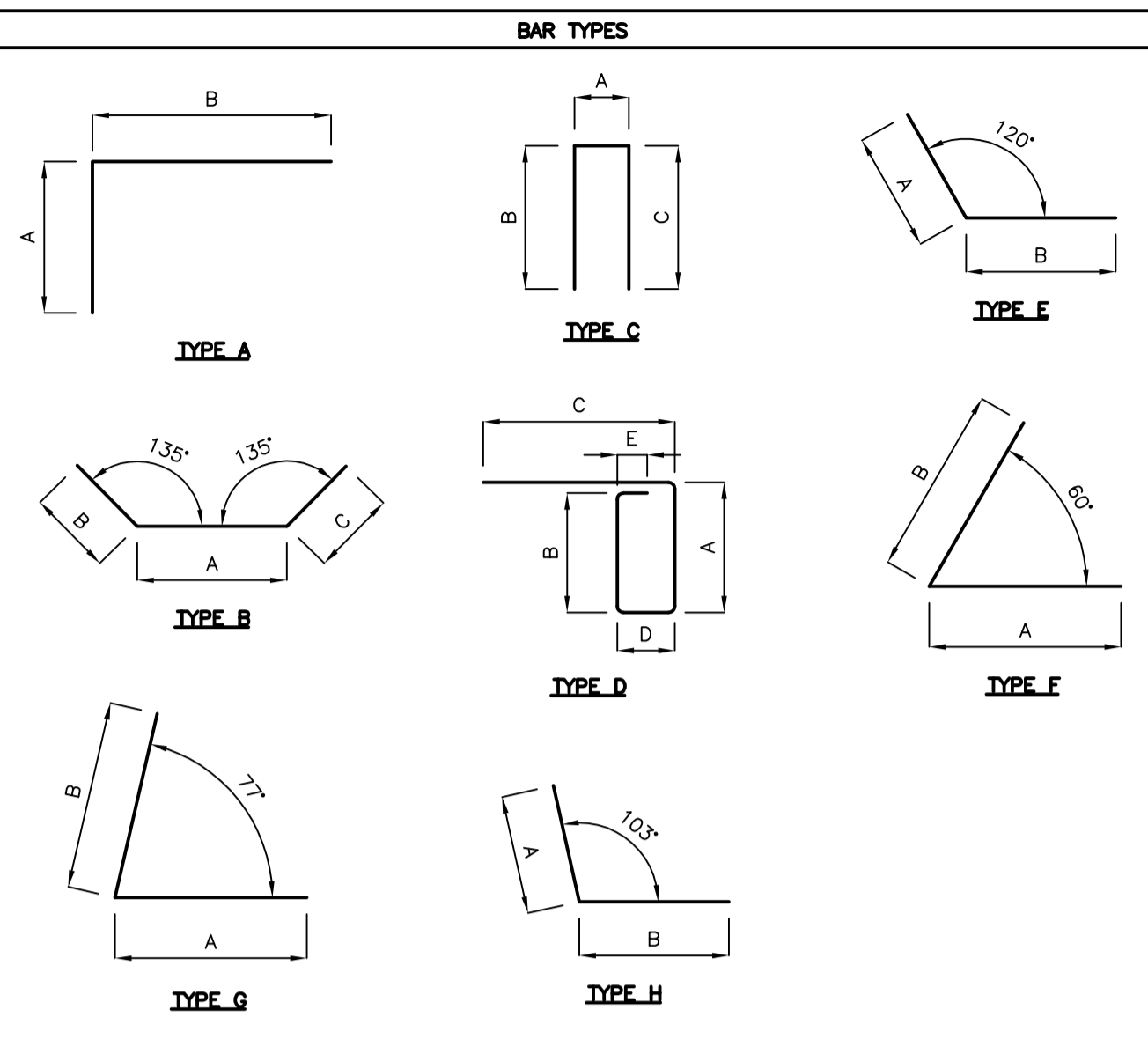


BILL OF REINFORCING STEEL

CULVERT																	
STRAIGHT BARS				BENT BARS													
MARK	QTY.	LENGTH (mm)	MASS (kg)	MARK	QTY.	LENGTH (mm)	MASS (kg)	MARK	QTY.	TYPE	A	B	C	D	E	LENGTH (mm)	MASS (kg)
1501	386	3520	2133.2	2009	1	745	1.8	1001	293	C	220	600	600			1420	326.6
1502	86	12100	1633.7	2010	443	3535	3687.9	1002	13	D	900	800	800	275	100	2175	29.3
1503	52	10000	816.4	2011	150	2285	807.2	1003	13	C	275	600	600			1475	15.1
1504	46	9100	657.2	2015	2	1115	5.3	1004	13	C	230	600	600			1430	14.6
1505	58	10800	983.4	2016	2	1990	9.4	1005	13	D	900	800	800	230	100	2830	28.9
1506	52	11000	898.0	2017	4	2860	26.9										
1507	12	6250	117.8					1509	153	B	960	600	600			2160	518.9
1508	58	7000	637.4	2501	139	3400	1855.0	1510	22	E	600	600				1200	41.4
1512	20	1820	57.1	2502	1	3170	12.4	1511	22	F	600	600				1200	41.4
1513	12	13000	244.9	2503	1	2825	11.1	1514	52	A	600	800				1400	114.3
1518	18	10800	305.2	2504	1	2480	9.7	1515	22	H	600	600				1200	41.1
1519	18	11500	325.0	2505	1	2130	8.4	1516	142	B	1030	600	600			2230	497.2
1520	40	11200	703.4	2506	1	1785	7.0	1517	22	G	600	600				1200	41.1
1521	40	11100	697.1	2507	1	1440	5.7										
1522	12	10200	192.2	2508	1	1090	4.3	2012	155	A	1850	1150				3000	1095.1
1523	10	9200	144.4	2509	1	745	2.9	2013	143	A	2550	1150				3700	1246.0
1524	24	3600	135.6	2510	293	2735	3145.3	2014	151	A	2370	600				2970	1056.1
1525	24	4600	173.3	2511	16	6250	392.5										
2001	293	3400	2346.1					2512	298	A	2370	820				3190	3731.2
2002	1	3170	7.5														
2003	3	2825	20.0														
2004	1	2480	5.8														
2005	3	2130	15.0														
2006	1	1785	4.2														
2007	3	1440	10.2														
2008	1	1090	2.6														
TOTAL MASS OF REINFORCING STEEL																32098.4 kg	



STRAIGHT BARS				RETAINING WALL							
MARK	QTY.	LENGTH (mm)	MASS (kg)	MARK	QTY.	TYPE	A	B	C	LENGTH (mm)	MASS (kg)
1526	54	5860	496.8	1006	138	C	220	600	600	1420	153.8
1527	72	6860	775.5								
2015	62	3535	516.1	2021	163	A	700	1335		2035	781.2
2016	71	2535	423.9	2516	41	A	1100	1785		2885	464.3
2017	71	1535	256.7								
2018	21	2395	118.4								
2019	24	1895	107.1								
2020	24	1445	81.7								
2513	40	2395	376.0								
2514	47	1895	349.6								
2515	47	1445	266.6								
TOTAL MASS OF REINFORCING STEEL											5167.7 kg

NOTES:

- ALL DIMENSIONS GIVEN ARE OUT TO OUT, EXCEPT RADI. RADI ARE INSIDE DIMENSIONS.
- ALL REINFORCING STEEL SHALL BE DEFORMED STEEL UNLESS NOTED OTHERWISE.
- LIKE BARS SHALL BE BUNDLED, SECURELY TIED AND IDENTIFIED AS TO MARK AND SITE NO. BY APPROPRIATE MEANS. ALL OTHER ITEMS TO BE IDENTIFIED IN A SIMILAR FASHION.

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 Date: 2017 Jul 15 10:49:56 Login: Gail, 1768



LOCATION APPROVED UNDERGROUND STRUCTURES

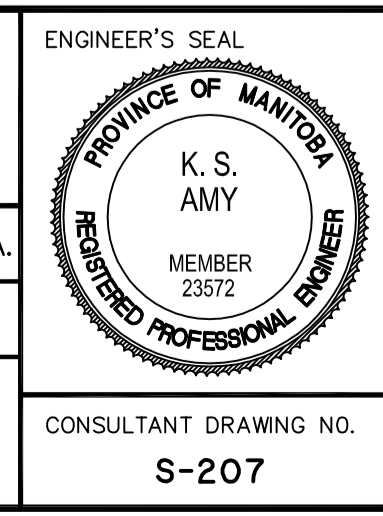
SUPV. U/G STRUCTURES COMMITTEE DATE _____

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	11.07.15	K.S.A.

Stantec Consulting Ltd.
 905 Waverley Street, Winnipeg, Manitoba
 Tel 204-489-5900 Fax 204-453-9012

DESIGNED BY: K.S.A.	CHECKED BY: V.M.M. / K.S.A.
DRAWN BY: J.M.B.	APPROVED BY: K.S.A.
HOR. SCALE: VERTICAL:	RELEASED FOR CONSTRUCTION: DATE
DATE: 09.12.11	DATE: _____



THE CITY OF WINNIPEG
 PUBLIC WORKS DEPARTMENT
 ENGINEERING DIVISION

WWARP PART I
 KENASTON BOULEVARD EXTENSION - N.B. LANES
 NORTH TOWN ROAD TO BISHOP GRANDIN BOULEVARD
 CONCRETE CULVERT EXTENSION
 REINFORCING BILL OF MATERIAL

SHEET 57 OF 65
 CAD FILE DRAWING NUMBER 04840s-207-727.dwg
 CITY DRAWING NUMBER C375-II-19

CONSULTANT DRAWING NO. S-207