



**BENCHMARK NOTES:**  
 DRAWING COORDINATES ARE UTM NAD83 - SCALE FACTOR 0.99983  
 B.M. No.    NORTHING    EASTING    ELEVATION  
 PILE 136    5523873.734    647764.406    236.242  
 PILE 133    5523256.606    647782.387    236.056

NOTE: PILE No. 136 MAY BE REVISED PRIOR TO CONSTRUCTION. CONTRACT ADMINISTRATOR TO PROVIDE NEW ELEVATION AND COORDINATES.

MISCELLANEOUS UTM COORDINATES			
POINT I.D.	DESC.	NORTHING	EASTING
115	CENTERLINE SWALE	5524008.126	648016.271
116	CENTERLINE SWALE	5524008.868	648056.713
117	CENTERLINE SWALE	5523992.764	648090.015
118	CENTERLINE SWALE	5523978.912	648097.176
119	CENTERLINE SWALE	5523942.609	648097.389
120	CENTERLINE SWALE	5524016.753	648106.521
121	CENTERLINE SWALE	5524059.859	648029.661
122	CENTERLINE SWALE	5524060.948	647798.107
123	CENTERLINE SWALE	5524049.289	647794.613
124	CENTERLINE SWALE	5524049.990	647815.722
125	CENTERLINE SWALE	5524092.983	647746.734
126	CENTERLINE SWALE	5524100.226	647803.457
159	CENTERLINE SWALE	5523966.174	647976.119
160	CENTERLINE SWALE	5523966.896	648012.116
161	CENTERLINE SWALE	5523971.997	648017.012
162	CENTERLINE SWALE	5523998.467	647992.185
163	CENTERLINE SWALE	5523998.649	648012.901

**MISCELLANEOUS UTM COORDINATES**

POINT I.D.	DESC. / STATION	NORTHING	EASTING
78	PI	5523973.044	647906.697
79	PI	5523974.741	647907.755
80	PI	5523970.297	647914.884
81	PI	5523971.995	647915.942
82	PI	5523967.551	647923.070
83	PI	5523969.248	647924.128
84	PI	5523964.804	647931.257
85	ER 4.5R	5524067.864	647797.408
86	ER 4.5R	5524066.426	647791.209
87	ER 4.5R	5524068.807	647787.390
88	ER 4.5R	5524075.006	647785.952
90	ER 15.0R	5524092.348	647758.133
91	ER 15.0R	5524113.013	647753.339
94	ER 15.0R	5524165.447	647786.028
95	ER 15.0R	5524170.241	647806.691
97	ER 4.5R	5524160.495	647822.325
98	ER 4.5R	5524162.137	647828.644
99	ER 4.5R	5524159.232	647833.894
100	ER 4.5R	5524152.549	647835.072
101	ER 4.5R	5524104.778	647850.444
102	ER 4.5R	5524102.370	647848.542
103	ER 4.5R	5524095.489	647850.144
104	ER 4.5R	5524106.124	647857.085
105	ER 4.5R	5523988.636	647970.385
106	ER 4.5R	5523983.171	647975.755
107	PI	5523989.161	647975.610
108	ER 3.0R	5523989.427	647988.607
109	ER 3.0R	5523983.547	647993.252
110	ER 3.0R	5523977.549	647993.398
111	ER 3.0R	5523971.423	647989.017
112	PI	5523971.157	647976.019
113	ER 4.5R	5523977.155	647975.873
114	ER 4.5R	5523972.640	647970.271
127	ER 35.0R	5523930.047	647814.083
128	ER 17.0R	5523939.170	647799.744
129	ER 17.0R	5523948.837	647795.201
130	ER 35.0R	5523965.221	647797.146
131	ER 14.0R	5523958.449	647785.025
132	ER 14.0R	5523950.989	647765.292

**CLEARWELL ROADWAY CONTROL LINE**

POINT I.D.	DESC. / STATION	NORTHING	EASTING
11	PT 0+225.105	5524052.298	647828.050
89	PC 0+299.825	5524091.720	647764.812
92	PT 0+327.899	5524116.517	647759.059
93	PC 0+377.688	5524158.769	647785.398
96	PT 0+405.962	5524164.521	647810.195
29	PI 0+489.154	5524120.512	647880.793

**WATER TREATMENT PLANT ROADWAY CONTROL LINE**

POINT I.D.	DESC. / STATION	NORTHING	EASTING
1	PT 0+100.000	5523936.353	647781.608
8	PC 0+199.143	5524029.277	647816.169
10	PT 0+220.035	5524047.995	647825.368
22	PC 0+281.548	5524100.196	647857.910
32	PT 0+336.430	5524112.550	647906.069
37	PT 0+451.067	5524056.474	648006.055
41	PC 0+558.123	5524004.106	648099.429
42	PT 0+582.948	5523983.734	648111.558
43	PT 0+610.000	5523956.684	648111.949

**MIDDLE ROADWAY CONTROL LINE**

POINT I.D.	DESC. / STATION	NORTHING	EASTING
37	PT 0+451.067	5524056.474	648006.055
52	PC 0+522.595	5523995.754	647968.247
51	PT 0+533.999	5523984.910	647965.267
44	PT 0+600.000	5523918.923	647966.620

**CIRCULAR CURVE DATA**

Curve No.	C100	C101	C102	C200	C201	C300
R	103.750	36.000	23.750	18.000	18.000	19.750
Δ	11°32'34"	87°23'24"	59°55'10"	90°02'41"	90°02'41"	33°06'01"
T	10.595	34.396	13.690	18.014	18.014	5.869
E	0.529	13.791	3.663	7.466	7.466	0.854
L	20.891	54.881	16.298	28.274	28.274	11.404

COORDINATES ARE TO BACK OF CURB

**MISCELLANEOUS UTM COORDINATES**

POINT I.D.	DESC. / STATION	NORTHING	EASTING
2	START C&G	5523997.066	647799.815
3	ER 4.5R	5523994.689	647807.679
4	ER 4.5R	5523997.192	647813.814
5	ER 1.0R	5524004.569	647815.752
6	ER 1.0R	5524004.854	647817.220
7	ER 4.5R	5524010.209	647813.452
9	ER 6.0R	5524046.972	647819.973
12	ER 6.0R	5524055.059	647817.949
13	ER 6.0R	5524060.187	647821.066
14	ER 6.0R	5524062.104	647829.332
15	EDGE APPROACH	5524064.853	647840.709
16	EDGE APPROACH	5524059.047	647850.024
17	EDGE APPROACH	5524083.610	647891.828
18	ER 7.5R	5524111.422	647878.394
19	ER 7.5R	5524100.637	647877.113
20	ER 7.5R	5524098.022	647870.224
21	ER 7.5R	5524095.625	647859.891
23	ER 7.5R	5524114.104	647865.610
24	ER 7.5R	5524126.632	647865.304
30	ER 7.5R	5524122.376	647883.473
31	ER 7.5R	5524121.242	647887.601

**MISCELLANEOUS UTM COORDINATES**

POINT I.D.	DESC.	NORTHING	EASTING
33	PI	5524103.724	647913.426
34	PI	5524104.930	647928.038
35	ER 6.0R	5524060.857	647989.857
36	ER 6.0R	5524052.450	647992.014
38	PI	5524038.508	648000.464
39	PI	5524043.655	648020.530
40	ER 15.0R	5524050.807	648024.541
45	ER 15.0R	5523951.713	647947.444
46	ER 15.0R	5523959.585	647946.032
47	ER 15.0R	5523974.890	647960.722
48	ER 4.5R	5523985.766	647960.499
49	ER 4.5R	5523989.493	647958.380
50	PI	5523993.304	647952.197
53	PI	5524028.667	647968.180
54	ER 3.0R	5524026.210	647972.121
55	ER 3.0R	5524027.169	647976.254
56	ER 40.0R	5523951.560	647920.507
57	ER 40.0R	5523955.363	647902.647
58	ER 7.5R	5523961.401	647889.824

**MISCELLANEOUS UTM COORDINATES**

POINT I.D.	DESC.	NORTHING	EASTING
59	ER 7.5R	5523960.683	647887.828
60	PI	5523956.612	647885.911
61	PI	5523975.058	647846.736
62	ER 1.0R	5523979.582	647848.866
63	ER 1.0R	5523980.060	647850.197
64	PI	5523987.710	647819.866
65	ER 1.0R	5523992.234	647821.996
66	ER 1.0R	5523993.565	647821.517
67	PI	5524011.462	647821.340
68	PI	5524002.575	647835.597
69	ER 2.0R	5523995.695	647834.599
70	ER 2.0R	5523980.868	647866.086
71	ER 2.0R	5523981.808	647869.273
72	PI	5523985.930	647871.849
73	PI	5523974.083	647890.853
74	ER 2.0R	5523971.741	647889.393
75	ER 2.0R	5523968.913	647890.159
76	ER 3.0R	5523969.634	647894.673
77	PI	5523977.488	647899.569

150mm W.W.	WATERMAIN	150mm W.W.	HYDRO	ANCHOR	STANDARD
300mm I.D.S.	LAND DRAINAGE SEWER	300mm I.D.S.	M.T.S.	POLE	CONTOURS
250mm W.W.S.	WASTEWATER SEWER	250mm W.W.S.	CONCRETE	RAIL X-ING SIGNAL	DITCH
	MANHOLE		ASPHALT	RAILWAY TRACK	SLOPE
	CATCH BASIN		PROPERTY LINE	SLOPE	TRANSFORMER
	CURB INLET		SURVEY BAR		
	JUNCTIONS		ELEVATION		
	CULVERT		TREE		
	GAS		ANODE		
			CONCRETE SIDEWALK		
			FENCE		

EXISTING    LEGEND - PLAN    PROPOSED    EXISTING    LEGEND - PLAN    PROPOSED

**APECM**  
 Earth Tech Canada Inc.  
 No. 730

Certificate of Authorization

B.M. ELEV. SEE BOX ENTITLED BENCHMARK NOTES

DESIGNED BY: BC    CHECKED BY: JC  
 DRAWN BY: BC    APPROVED BY: AHL

SCALE: 1:500    RELEASED FOR CONSTRUCTION BY: R. SOROKOWSKI

00 ISSUED FOR TENDER    07/11/09    BC  
 NO. REVISIONS    DATE    BY

**CH2M HILL**  
 Frederickson Cooper  
 ARCHITECTS

**EarthTech**  
 A Tyco International Ltd. Company

ENGINEER'S SEAL  
 ORIGINAL SIGNED BY: J.N. CRANG  
 07/11/09

CONSULTANT DRAWING NO. WY-C0160

**THE CITY OF WINNIPEG**  
 WATER AND WASTE DEPARTMENT  
 ENGINEERING DIVISION

WATER TREATMENT PLANT  
 CONSTRUCTION OF ROADS  
 AND LANDSCAPING

CIVIL  
 HORIZONTAL GEOMETRY

CITY FILE NUMBER  
 SHEET OF  
 CITY DRAWING NUMBER  
 1-0601Y-A-C0160-001-000