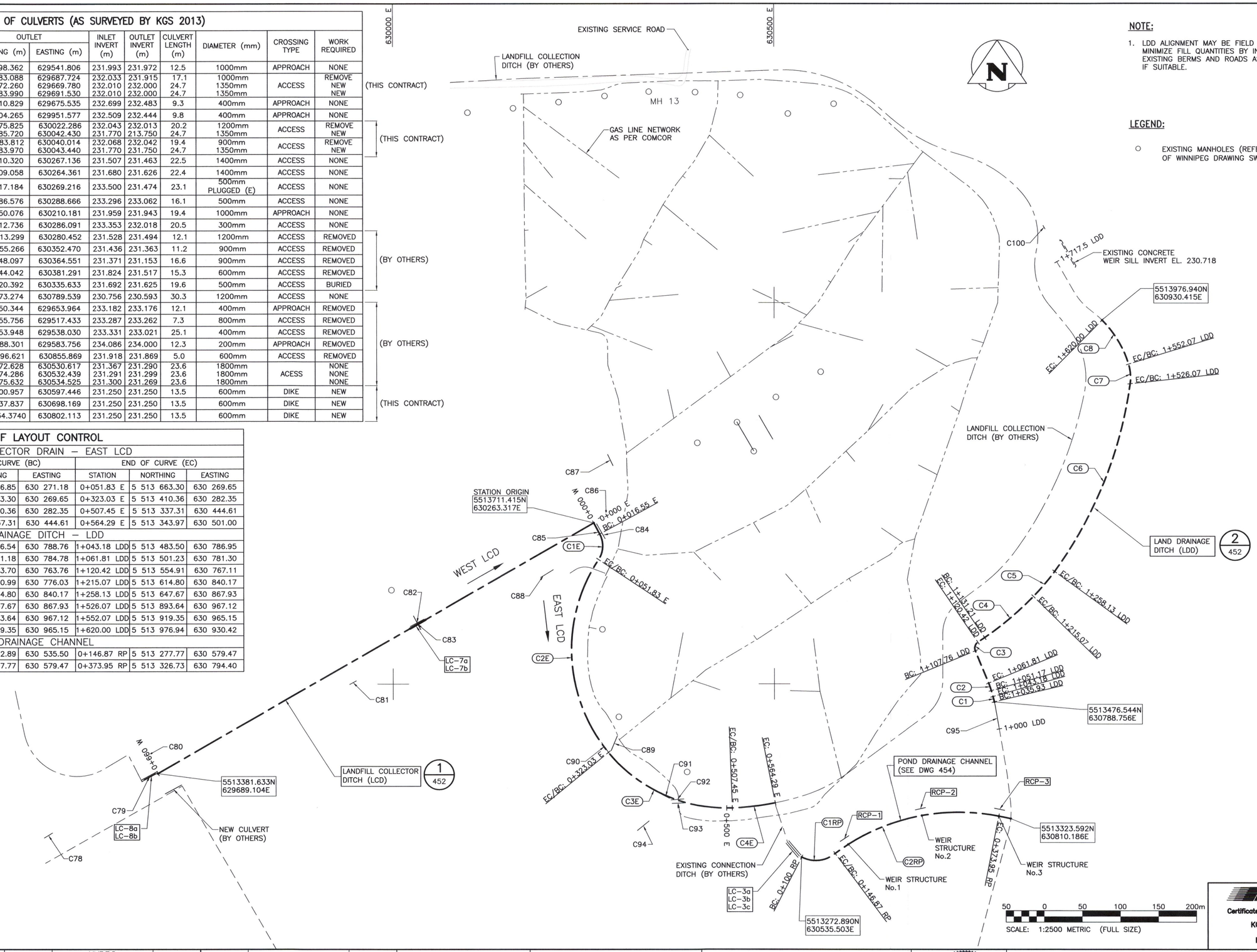
TABLE OF CULVERTS (AS SURVEYED BY KGS 2013)

CULVERT	INLET		OUTLET		INLET INVERT (m)	OUTLET INVERT (m)	CULVERT LENGTH (m)	DIAMETER (mm)	CROSSING TYPE	WORK REQUIRED	
	NORTHING (m)	EASTING (m)	NORTHING (m)	EASTING (m)							
C78	5513304.837	629552.490	5513298.362	629541.806	231.993	231.972	12.5	1000mm	APPROACH	NONE	
C79	5513374.967	629672.625	5513383.088	629687.724	232.033	231.915	17.1	1000mm	ACCESS	REMOVE	(THIS CONTRACT)
LC–8a	5513374.050	629668.780	5513372.260	629669.780	232.010	232.000	24.7	1350mm		NEW	
LC–8b	5513385.770	629690.570	5513383.990	629691.530	232.010	232.000	24.7	1350mm		NEW	
C80	5513402.953	629680.403	5513410.829	629675.535	232.699	232.483	9.3	400mm	APPROACH	NONE	
C81	5513499.601	629942.989	5513504.265	629951.577	232.509	232.444	9.8	400mm	APPROACH	NONE	
C82	5513585.307	630040.162	5513575.825	630022.286	232.043	232.013	20.2	1200mm	ACCESS	REMOVE	(THIS CONTRACT)
LC–7a	5513573.414	630021.000	5513585.720	630042.430	231.770	213.750	24.7	1350mm		NEW	
C83	5513574.532	630022.966	5513583.812	630040.014	232.068	232.042	19.4	900mm	ACCESS	REMOVE	
LC–7b	5513571.660	630022.010	5513583.970	630043.440	231.770	231.750	24.7	1350mm		NEW	
C84	5513690.857	630278.327	5513710.320	630267.136	231.507	231.463	22.5	1400mm	ACCESS	NONE	
C85	5513689.370	630274.939	5513709.058	630264.361	231.680	231.626	22.4	1400mm	ACCESS	NONE	
C86	5513726.925	630290.120	5513717.184	630269.216	233.500	231.474	23.1	500mm PLUGGED (E)	ACCESS	NONE	
C87	5513801.070	630281.700	5513786.576	630288.666	233.296	233.062	16.1	500mm	ACCESS	NONE	
C88	5513639.936	630193.672	5513650.076	630210.181	231.959	231.943	19.4	1000mm	APPROACH	NONE	
C89	5513431.616	630294.048	5513412.736	630286.091	233.353	232.018	20.5	300mm	ACCESS	NONE	
C90	5513423.153	630273.507	5513413.299	630280.452	231.528	231.494	12.1	1200mm	ACCESS	REMOVED	(BY OTHERS)
C91	5513350.224	630362.443	5513355.266	630352.470	231.436	231.363	11.2	900mm	ACCESS	REMOVED	
C92	5513349.223	630381.080	5513348.097	630364.551	231.371	231.153	16.6	900mm	ACCESS	REMOVED	
C93	5513343.467	630365.996	5513344.042	630381.291	231.824	231.517	15.3	600mm	ACCESS	REMOVED	
C94	5513308.073	630320.451	5513320.392	630335.633	231.692	231.625	19.6	500mm	ACCESS	BURIED	
C95	5513443.435	630794.747	5513473.274	630789.539	230.756	230.593	30.3	1200mm	ACCESS	NONE	
C96	5513538.650	629657.226	5513550.344	629653.964	233.182	233.176	12.1	400mm	APPROACH	REMOVED	(BY OTHERS)
C97	5513849.502	629521.251	5513855.756	629517.433	233.287	233.262	7.3	800mm	ACCESS	REMOVED	
C98	5513865.534	629560.244	5513853.948	629538.030	233.331	233.021	25.1	400mm	ACCESS	REMOVED	
C99	5513896.602	629592.884	5513888.301	629583.756	234.086	234.000	12.3	200mm	APPROACH	REMOVED	
C100	5514101.026	630853.338	5514096.621	630855.869	231.918	231.869	5.0	600mm	ACCESS	REMOVED	
LC–3a	5513291.107	630515.040	5513272.628	630530.617	231.367	231.290	23.6	1800mm	ACESS	NONE	
LC–3b	5513292.449	630516.981	5513274.286	630532.439	231.291	231.299	23.6	1800mm		NONE	
LC–3c	5513294.184	630518.716	5513275.632	630534.525	231.300	231.269	23.6	1800mm		NONE	
RCP–1	5513293.553	630586.163	5513300.957	630597.446	231.250	231.250	13.5	600mm	DIKE	NEW	(THIS CONTRACT)
RCP–2	5513334.959	630684.989	5513337.837	630698.169	231.250	231.250	13.5	600mm	DIKE	NEW	
RCP–3	5513337.036	630788.733	5513334.3740	630802.113	231.250	231.250	13.5	600mm	DIKE	NEW	

TABLE OF LAYOUT CONTROL

LANDFILL COLLECTOR DRAIN – EAST LCD

CURVE No.	RADIUS	BEGINING OF CURVE (BC)			END OF CURVE (EC)		
		STATION	NORTHING	EASTING	STATION	NORTHING	EASTING
C1E	36.626	0+016.55 E	5 513 696.85	630 271.18	0+051.83 E	5 513 663.30	630 269.65
C2E	213.033	0+051.83 E	5 513 663.30	630 269.65	0+323.03 E	5 513 410.36	630 282.35
C3E	200.000	0+323.03 E	5 513 410.36	630 282.35	0+507.45 E	5 513 337.31	630 444.61
C4E	356.667	0+507.45 E	5 513 337.31	630 444.61	0+564.29 E	5 513 343.97	630 501.00
LAND DRAINAGE DITCH – LDD							
C1	170.810	1+035.93 LDD	5 513 476.54	630 788.76	1+043.18 LDD	5 513 483.50	630 786.95
C2	91.358	1+051.17 LDD	5 513 491.18	630 784.78	1+061.81 LDD	5 513 501.23	630 781.30
C3	9.278	1+107.76 LDD	5 513 543.70	630 763.76	1+120.42 LDD	5 513 554.91	630 767.11
C4	420.000	1+131.21 LDD	5 513 560.99	630 776.03	1+215.07 LDD	5 513 614.80	630 840.17
C5	300.000	1+215.07 LDD	5 513 614.80	630 840.17	1+258.13 LDD	5 513 647.67	630 867.93
C6	545.000	1+258.13 LDD	5 513 647.67	630 867.93	1+526.07 LDD	5 513 893.64	630 967.12
C7	59.800	1+526.07 LDD	5 513 893.64	630 967.12	1+552.07 LDD	5 513 919.35	630 965.15
C8	138.204	1+552.07 LDD	5 513 919.35	630 965.15	1+620.00 LDD	5 513 976.94	630 930.42
POND DRAINAGE CHANNEL							
C1RP	40.000	0+100.00 RP	5 513 272.89	630 535.50	0+146.87 RP	5 513 277.77	630 579.47
C2RP	270.000	0+146.87 RP	5 513 277.77	630 579.47	0+373.95 RP	5 513 326.73	630 794.40



150 WM	WATERMAIN	150 WM		HYDRO						
	HYDRANT			M.T.S.						
	VALVE			PROPERTY LINE						
300 LDS	LAND DRAINAGE SEWER	300 LDS		SURVEY BAR						
250 WWS	WASTE WATER SEWER	250 WWS		LIGHT STANDARD						
	MANHOLE			HYDRO POLE						
	CATCH BASIN			GUY WIRE						
	CURB INLET			SIGN						
	JUNCTIONS			BUSH LINE						
	CULVERT			FENCE						
	GAS		231.334	ELEVATION	(32.231)					
EXISTING	LEGEND–PLAN	PROPOSED	EXISTING	LEGEND–PLAN	PROPOSED	EXISTING	LEGEND–PROFILE	PROPOSED		

COWLEGEND

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. XX–XXX
ELEV. XXX.XXX

NO.	REVISIONS	DATE	BY
0	BID OPPORTUNITY AND CONSTRUCTION	04/05/15	

KGS GROUP
CONSULTING ENGINEERS & PROJECT MANAGERS
WINNIPEG (204) 896–1209
THUNDER BAY (807) 345–2233

DESIGNED BY jS | CHECKED BY RDS
DRAWN BY MO | APPROVED BY TK
HOR. SCALE: 1:5,000 VERTICAL: 1:5,000 | RELEASED FOR CONSTRUCTION:
DATE 03/03/15 | DATE

ENGINEER'S SEAL
PROVINCE OF MANITOBA
A. J. KULUK
May 6, 15
REGISTERED ENGINEER

CONSULTANT DRAWING NO.
13–0107–015–DWG02

APEGM
Certificate of Authorization
KGS Group
No. 245

Winnipeg
THE CITY OF WINNIPEG
WATER & WASTE DEPARTMENT

BRADY LANDFILL–
SURFACE WATER MANAGEMENT–PHASE 2
LANDFILL COLLECTOR DITCH (LCD) AND LAND DRAINAGE DITCH (LDD) ALIGNMENT CONTROL

SHEET 02 OF 06
CAD FILE DRAWING NUMBER
CITY DRAWING NUMBER
SWD–D–450