

CB	RATIONAL COEFFICIENT	AREA (AC)	INTENSITY (IN/HR)	INTENSITY (25 YR)	Q (5 YR) CFS	Q (25 YR) CFS	PIPE NO. (DOWNS TREAM)	PIPE DIA.	Q CAPACITY (CFS)	Q (5 YR) CFS (REQ +/-)	Q (25 YR) CFS (REQ +/-)
MH01	N/A	N/A	3.52	4.99	N/A	N/A	WWS1	200	1.27	N/A	N/A
MH02	N/A	N/A	3.52	4.99	N/A	N/A	WWS2	200	1.27	N/A	N/A
MH03	N/A	N/A	3.52	4.99	N/A	N/A	LDS11	250	2.00	N/A	N/A
MH04	0.95	0.750	3.52	4.99	2.51	3.56	LDS03	250	9.05	-1.86	-4.50
MH05	0.95	0.592	3.52	4.99	1.96	2.81	LDS04	450	7.01	5.00	4.16
MH06	0.95	0.585	3.52	4.99	1.96	2.77	LDS05	450	6.40	6.34	6.32
MH07	0.95	0.193	3.52	4.99	0.65	0.91	LDS02	250	2.07	0.50	1.16
MH08	0.95	0.404	3.52	4.99	1.35	1.92	LDS09	375	4.98	0.63	-1.19
MH09	0.95	N/A	3.52	4.99	N/A	N/A	LDS12	250	2.00	N/A	N/A
CB01	0.95	0.017	3.52	4.99	0.06	0.08	LDS07	250	1.94	1.94	1.92
CB02	0.95	N/A	3.52	4.99	N/A	N/A	LDS05	450	6.40	6.40	6.39
CB03	0.95	0.276	3.52	4.99	0.92	1.31	LDS01	250	2.00	1.08	0.69
CB04	0.95	0.486	3.52	4.99	1.63	2.30	LDS08	250	2.07	0.44	-0.23
CB05	0.45	0.004	3.52	4.99	1.41	2.03	LDS10	250	2.07	0.64	0.04
CB06	0.35	0.643	3.52	4.99	0.79	1.12	CL1	250	2.07	1.28	0.95

DESIGN DRAINAGE CATCHMENT AREA IS 4.850 ACRES (1.9627 ha)
 PRE-CONSTRUCTION "C" VALUE PROVIDED BY THE CITY OF WINNIPEG IS 0.10
 TIME OF CONCENTRATION ESTIMATED AT 15 MINUTES (900 SECONDS)
 ALLOWABLE 5 YR SITE RUNOFF IS 1.707 CFS

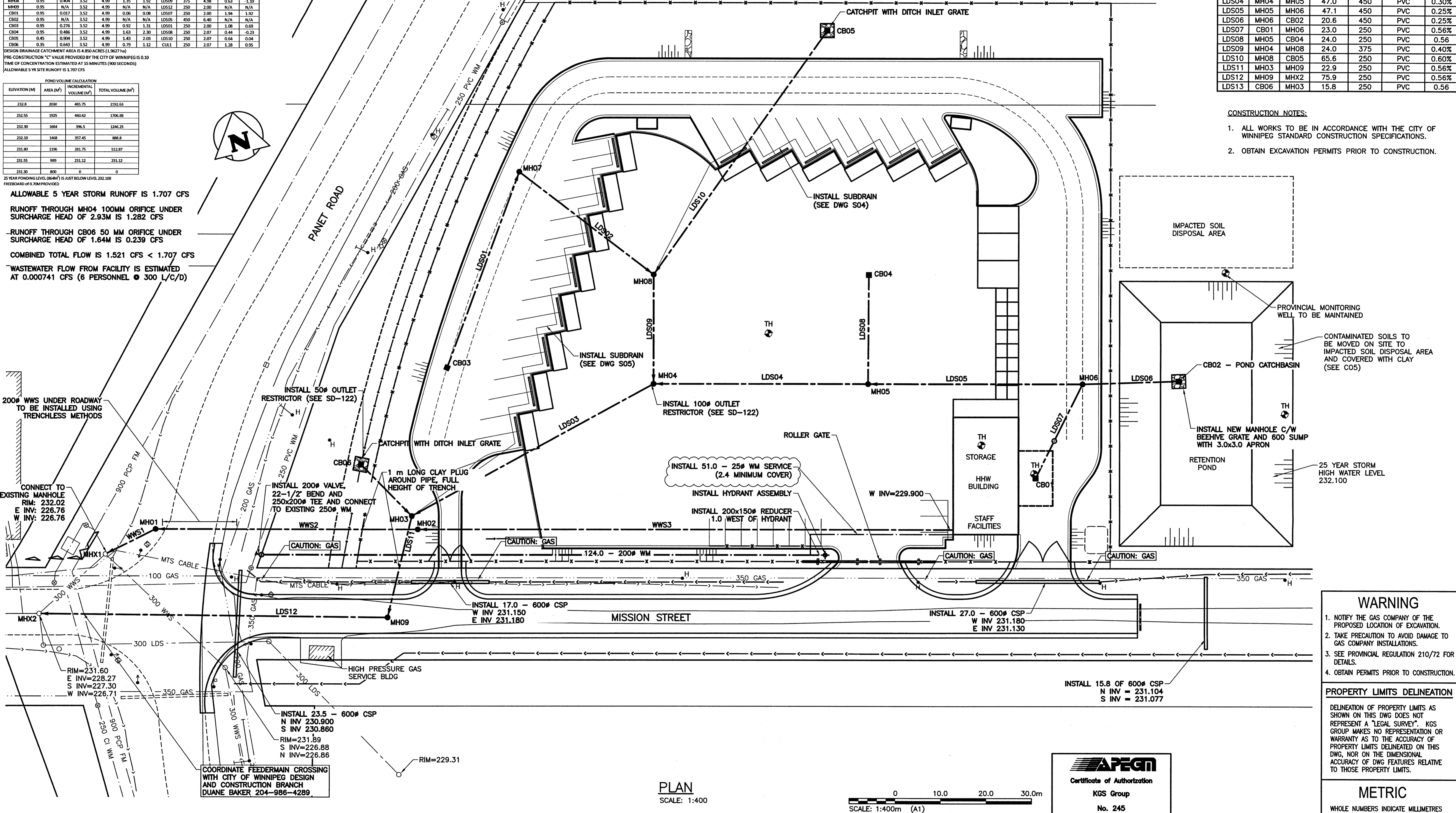
ELEVATION (M)	AREA (M ²)	INCREMENTAL VOLUME (M ³)	TOTAL VOLUME (M ³)
232.8	2030	465.75	2192.63
232.55	3525	460.62	1706.88
232.30	5664	396.5	1246.25
232.10	7468	357.45	888.8
231.80	1196	281.75	512.87
231.55	989	231.12	231.12
231.30	870	0	0

25 YEAR PONDING LEVEL (86MM) IS 81ST BELOW LEVEL 232.100
 FREEBOARD OF 0.70M PROVIDED

ALLOWABLE 5 YEAR STORM RUNOFF IS 1.707 CFS
 RUNOFF THROUGH MH04 100MM ORIFICE UNDER SURCHARGE HEAD OF 2.93M IS 1.282 CFS
 RUNOFF THROUGH CB06 50 MM ORIFICE UNDER SURCHARGE HEAD OF 1.64M IS 0.239 CFS
 COMBINED TOTAL FLOW IS 1.521 CFS < 1.707 CFS
 WASTEWATER FLOW FROM FACILITY IS ESTIMATED AT 0.000741 CFS (6 PERSONNEL @ 300 L/C/D)

SEWER PIPE INFORMATION CHART						
ID	FROM	TO	LENGTH	DIA	MATERIAL	SLOPE
WWS1	MHX1	MH01	11.8	200	PVC	0.75%
WWS2	MH01	MH02	57.4	200	PVC	0.75%
WWS3	MH02	BLDG	117.3	200	PVC	0.75%
LDS01	CB03	MH07	45.7	250	PVC	0.56%
LDS02	MH07	MH08	37.1	250	PVC	0.60%
LDS03	MH03	MH04	60.3	250	PVC	0.56%
LDS04	MH04	MH05	47.0	450	PVC	0.30%
LDS05	MH05	MH06	47.1	450	PVC	0.25%
LDS06	MH06	CB02	20.6	450	PVC	0.25%
LDS07	CB01	MH06	23.0	250	PVC	0.56%
LDS08	MH05	CB04	24.0	250	PVC	0.56%
LDS09	MH04	CB04	24.0	375	PVC	0.40%
LDS10	MH08	CB05	65.6	250	PVC	0.60%
LDS11	MH03	MH09	22.9	250	PVC	0.56%
LDS12	MH09	MHX2	75.9	250	PVC	0.56%
LDS13	CB06	MH03	15.8	250	PVC	0.56%

- CONSTRUCTION NOTES:
- ALL WORKS TO BE IN ACCORDANCE WITH THE CITY OF WINNIPEG STANDARD CONSTRUCTION SPECIFICATIONS.
 - OBTAIN EXCAVATION PERMITS PRIOR TO CONSTRUCTION.



- WARNING**
- NOTIFY THE GAS COMPANY OF THE PROPOSED LOCATION OF EXCAVATION.
 - TAKE PRECAUTION TO AVOID DAMAGE TO GAS COMPANY INSTALLATIONS.
 - SEE PROVINCIAL REGULATION 210/72 FOR DETAILS.
 - OBTAIN PERMITS PRIOR TO CONSTRUCTION.

PROPERTY LIMITS DELINEATION

DELINEATION OF PROPERTY LIMITS AS SHOWN ON THIS DWG DOES NOT REPRESENT A "LEGAL SURVEY". KGS GROUP MAKES NO REPRESENTATION OR WARRANTY AS TO THE ACCURACY OF PROPERTY LIMITS DELINEATED ON THIS DWG, NOR ON THE DIMENSIONAL ACCURACY OF DWG FEATURES RELATIVE TO THOSE PROPERTY LIMITS.

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES

150 WM	WATER MAIN	150 WM	HYDRO	150 WM	WATER MAIN	150 WM
+	HYDRANT	+	M.T.S.	+	HYDRANT, VALVE	+
⊙	VALVE	⊙	CONCRETE	⊙	LAND DRAINAGE SEWER	⊙
---	LAND DRAINAGE SEWER	---	ASPHALT	---	WASTE WATER SEWER	---
---	WASTE WATER SEWER	---	SIDEWALK	---	Q PROFILE	---
○	MANHOLE	○	PLANNING	□	NORTH/WEST GUTTER	□
□	CATCH BASIN	□	PROPERTY LINE	○	SOUTH/EAST GUTTER	○
▽	CURB INLET	▽	SURVEY BAR	◇	N/W, S/E R'S	◇
+	JUNCTIONS	+	DITCH	⊖	N/W, S/E TOP/CURB	⊖
---	CULVERT	---	ELEVATION	△	NORTH/WEST DITCH	△
---	GAS	---		▽	SOUTH/EAST DITCH	▽
---	EXISTING	---	LEGEND-PLAN	---	LEGEND-PROFILE	---
---	LEGEND-PLAN	---	PROPOSED	---	PROPOSED	---

LOCATION APPROVED UNDERGROUND STRUCTURES			
SUPV. U/G STRUCTURES COMMITTEE	DATE	B.M. ELEV.	
		33-014	
		231.421m	

KGS GROUP CONSULTING ENGINEERS	
DESIGNED BY	CHECKED BY
PP	POW
DRAWN BY	APPROVED BY
SAG	PAH
HOR. SCALE:	VERTICAL:
1:400	---
REISSUED FOR TENDER	DATE
1	17/04/27
ISSUED FOR TENDER	DATE
0	17/03/23
NO. REVISIONS	DATE

APEGM
 Certificate of Authorization
 KGS Group
 No. 245

ENGINEER'S SEAL
 P.K. PAWLUK
 Member
 2355

THE CITY OF WINNIPEG
 WATER AND WASTE DEPARTMENT

PROJECT TITLE
 4R WINNIPEG DEPOT
 EAST WINNIPEG COMMUNITY RESOURCE
 RECOVERY CENTRE

UNDERGROUND UTILITIES
 AND LAND DRAINAGE SEWER

SHEET OF
 05 OF 41

COMPUTER FILE NAME
 16-0107-010

CONSULTANT DRAWING NUMBER
 C04

CONSULTANT PROJECT NO.
 16-0107-010

17/04/27 (Rev. 12/20/04) - Tel: 972-2222 - Fax: 972-2222 - Email: 17/04/27 (Rev. 12/20/04)