

DESIGN BASIS LOAD

ESTIMATED MECHANICAL LOAD	= 110 KVA
ESTIMATED LIGHTING LOAD	= 4 KVA
ESTIMATED AREA LOADS	= 5 KVA
ESTIMATED MISCELLANEOUS LOADS	= 10 KVA
TOTAL	= 129 KVA

FAULT CURRENT CALCULATION

* 225KVA TRANSFORMER: Z=1.8%
* 75KVA TRANSFORMER: Z=3%

600V SYSTEM SHORT CIRCUIT AMPACITY	$\frac{1}{\sqrt{3}} \left(\frac{1.8\%}{225KVA} \right) 600V = 12kA$	PROVIDE 14kA MINIMUM
208V SYSTEM SHORT CIRCUIT AMPACITY	$\frac{1}{\sqrt{3}} \left(\frac{3\%}{75KVA} \right) 208V = 6.9kA$	PROVIDE 10kA MINIMUM

* THIS IMPEDANCE VALUE IS BASED ON THE VALUE PROVIDED UNDER THE MANITOBA HYDRO ELECTRICAL CODE, 11TH EDITION.
* CONTRACTOR AND MANUFACTURER TO ENSURE ALL FUSES AND BREAKERS ARE AN APPROVED CSA SERIES TESTED COMBINATION.

FEEDER CABLE SCHEDULE

TYPE	DESCRIPTION	LOCATION USE
1	4C #20 AWG AL ACW90 + GROUND	DIRECT BURIED
2	3C #10 AWG CU TECK90 + GROUND	ARMORED
3	3C #1 AWG AL RW90 + GROUND	CONDUIT
4	4C #10 AWG CU RW90 + GROUND	
5	3C #12 AWG RW90 + GROUND	
6	4C #4 AWG AL RW90 + GROUND	ARMORED
7	24C #20 AWG AL RW90 + GROUND	ARMORED
8	2C #10 AWG CU TECK90 ARMORED + GROUND	
9	#40 AWG STRANDED BARE CU WIRE + GROUND	DIRECT BURIED

- #### GENERAL NOTES:
- REFER TO THE PANEL SCHEDULES FOR ADDITIONAL LOADS.
 - COORDINATE ALL BREAKER AND FEEDER SIZES WITH THE MECHANICAL SHOP DRAWING MSCP AND FLA VALUES PRIOR TO ORDERING AND INSTALLING NEW EQUIPMENT.
- #### KEYNOTES:
- PROVIDE A LITTLE JRS FUSE NEMA 3R CUSTOMER SERVICE TERMINATION ENCLOSURE (CSTE) COMPLETE WITH 200A SERVICE ENTRANCE BREAKER AND METERING SECTION. MOUNT METER TO MB HYDRO STANDARDS.
 - CABLES ARE TO BE DIRECT BURIED AS PER DIAGRAM D10, DETAIL 1 AND RATED FOR 20A AT 70°C AS PER TABLE D10B IN THE 2015 CANADIAN ELECTRICAL CODE.
 - COORDINATE WITH MANITOBA HYDRO TO PROVIDE A NEW 200A OVERHEAD SERVICE.
 - PROVIDE A MINIMUM OF 20% SPARE PHYSICAL SPACE IN PANEL MDP AND PANEL CDP.

SUPPLY: 208V 3Ø 4W
MAINS AMPACITY: 60
INCOMING: BREAKER LUGS
MAIN BREAKER REQUIRED: YES NO
MAIN BREAKER AMPS: 50
BUS MATERIAL: COPPER ALUMINUM
BUS AND BREAKER RATING: 10kA

NAME PLATE: PANEL ' K1 '

REV/CCT	VA	P	BKR	A	B	C	BKR	P	VA	CCT/REV
1	—	1	15	•	•	•	25	2	4000	2
3	—	1	15	•	•	•	20	1	—	4
5	—	1	15	•	•	•	20	1	—	6
9	—	1	15	•	•	•	—	—	—	10
11	—	1	15	•	•	•	25	2	4000	12
13	—	1	15	•	•	•	—	—	—	14
15	—	1	15	•	•	•	—	—	—	16
17	—	—	—	•	•	•	—	—	—	18
LOAD 'A' LOAD 'B' LOAD 'C'										
2,000 4,000 4,000										

LOCATION: KIOSK
MOUNTING: SURFACE FLUSH
MANUFACTURER:
MODEL NO:
BREAKER: PLUG-IN BOLT-ON
SPD: YES NO
SERVICE ENTRANCE RATED: YES NO

SUPPLY: 208V 3Ø 4W
MAINS AMPACITY: 60
INCOMING: BREAKER LUGS
MAIN BREAKER REQUIRED: YES NO
MAIN BREAKER AMPS: 50
BUS MATERIAL: COPPER ALUMINUM
BUS AND BREAKER RATING: 10kA

NAME PLATE: PANEL ' K2 '

REV/CCT	VA	P	BKR	A	B	C	BKR	P	VA	CCT/REV
1	—	1	15	•	•	•	25	2	4000	2
3	—	1	15	•	•	•	20	1	—	4
5	—	1	15	•	•	•	20	1	—	6
7	—	1	15	•	•	•	—	—	—	8
9	—	1	15	•	•	•	—	—	—	10
11	—	1	15	•	•	•	25	2	4000	12
13	—	1	15	•	•	•	—	—	—	14
15	—	1	15	•	•	•	—	—	—	16
17	—	—	—	•	•	•	—	—	—	18
LOAD 'A' LOAD 'B' LOAD 'C'										
2,000 4,000 4,000										

LOCATION: KIOSK
MOUNTING: SURFACE FLUSH
MANUFACTURER:
MODEL NO:
BREAKER: PLUG-IN BOLT-ON
SPD: YES NO
SERVICE ENTRANCE RATED: YES NO

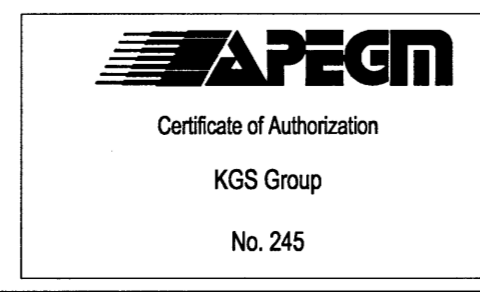
SUPPLY: 208V 3Ø 4W
MAINS AMPACITY: 400
INCOMING: BREAKER LUGS
MAIN BREAKER REQUIRED: YES NO
MAIN BREAKER AMPS:
BUS MATERIAL: COPPER ALUMINUM
BUS AND BREAKER RATING: 10kA

NAME PLATE: PANEL ' B '

REV/CCT	VA	P	BKR	A	B	C	BKR	P	VA	CCT/REV
1	—	—	—	•	•	•	—	—	—	2
3	9000	3	35	•	•	•	15	2	1000	4
5	—	—	—	•	•	•	—	—	—	6
7	1176	1	15	•	•	•	15	2	1000	8
9	696	1	15	•	•	•	15	2	1500	10
11	1176	1	15	•	•	•	15	2	2000	12
13	696	1	15	•	•	•	15	2	2000	14
15	800	1	15	•	•	•	15	1	660	16
17	800	1	15	•	•	•	15	1	—	18
19	800	1	15	•	•	•	15	1	—	20
21	800	1	15	•	•	•	15	1	—	22
23	800	1	15	•	•	•	20	1	—	24
25	—	1	20	•	•	•	20	1	—	26
27	—	1	15	•	•	•	15	1	—	28
29	—	1	15	•	•	•	15	1	—	30
31	—	1	15	•	•	•	15	1	—	32
33	3500	2	30	•	•	•	15	1	—	34
35	—	—	—	•	•	•	20	1	—	36
37	3000	2	20	•	•	•	20	1	—	38
39	—	—	—	•	•	•	20	1	—	40
41	1500	2	15	•	•	•	15	1	—	42
LOAD 'A' LOAD 'B' LOAD 'C'										
12,204 11,901 11,901										

LOCATION: HHW BUILDING GARAGE
MOUNTING: SURFACE FLUSH
MANUFACTURER:
MODEL NO:
BREAKER: PLUG-IN BOLT-ON
SPD: YES NO
SERVICE ENTRANCE RATED: YES NO

REV/CCT	VA	P	BKR	A	B	C	BKR	P	VA	CCT/REV
2	—	—	—	•	•	•	20	1	—	44
4	432	1	15	•	•	•	20	1	—	46
6	864	1	15	•	•	•	20	1	—	48
8	700	1	15	•	•	•	20	1	—	50
10	—	1	15	•	•	•	15	1	—	52
12	516	1	15	•	•	•	15	1	—	54
14	—	1	15	•	•	•	15	1	—	56
16	—	1	15	•	•	•	15	1	—	58
18	—	1	15	•	•	•	15	1	—	60
20	—	1	15	•	•	•	—	—	—	62
22	—	1	15	•	•	•	—	—	—	64
24	—	1	15	•	•	•	—	—	—	66
26	—	1	15	•	•	•	—	—	—	68
28	—	1	15	•	•	•	—	—	—	70
30	—	1	15	•	•	•	—	—	—	72
32	850	1	15	•	•	•	—	—	—	74
34	—	—	—	•	•	•	—	—	—	76
36	950	2	15	•	•	•	—	—	—	78
38	—	—	—	•	•	•	—	—	—	80
40	—	—	—	•	•	•	—	—	—	82
42	—	—	—	•	•	•	—	—	—	84
LOAD 'A' LOAD 'B' LOAD 'C'										
12,204 11,901 11,901										



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.	
DESIGNED BY	CLS
CHECKED BY	CLS
DRAWN BY	SDC
APPROVED BY	CLS
HOR. SCALE:	AS NOTED
VERTICAL:	AS NOTED
ISSUED FOR TENDER	17/03/14
NO. REVISIONS	DATE BY
0	17/03/14 CLS
1	16/08/17

KGS GROUP CONSULTING ENGINEERS

ENGINEER'S SEAL: CLS SARARAS 32618

DESIGNED BY: CLS
CHECKED BY: CLS
DRAWN BY: SDC
APPROVED BY: CLS

HOR. SCALE: AS NOTED
VERTICAL: AS NOTED

RELEASED FOR CONSTRUCTION: CLS

CONSULTANT PROJECT NO.: 16-0107-010

THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT

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

SHEET 28 OF 41
COMPUTER FILE NAME: 16-0107-010
CONSULTANT DRAWING NUMBER: E03

SINGLE LINE DIAGRAM AND PANEL SCHEDULES