MAIN FLOOR

SCALE:1:30

LEGEND:

- HAZARDOUS ZONE 1, GROUP IIA 'T' RATING T2C (230°C)
- HAZARDOUS ZONE 2, GROUP IIA 'T' RATING T2C (230°C)
- CATEGORY 1 (MOISTURE)
- CATEGORY 2 (CORROSIVE)
- ORDINARY (NON-HAZARDOUS)

GENERAL NOTES:

1. THE BUILDING LAYOUT IS BASED ON REFERENCE DRAWINGS RECEIVED FROM THE CITY AND BASED ON OBSERVATIONS DURING SITE VISITS. ACTUAL BUILDING AND EQUIPMENT LAYOUT MAY DIFFER FROM WHAT IS INDICATED ON ALL ELECTRICAL DRAWINGS.
2. THE DRAWINGS ARE DIAGRAMMATIC ONLY, AND DO NOT SHOW ALL DETAILS. INFORMATION INVOLVING ACCURATE MEASUREMENTS OF THE BUILDING, STRUCTURAL STEEL, EXISTING WALLS, ETC. IS TO BE TAKEN IN THE FIELD.
3. THE ELECTRICAL AREA CLASSIFICATIONS HAVE BEEN PREPARED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE CSA C22.1-18, NFPA 820 AND MANITOBA ELECTRICAL CODE.
4. THE CLASSIFICATION OF AREAS ON THESE DRAWINGS IS FOR THE SELECTION OF ELECTRICAL EQUIPMENT ONLY AND DOES NOT INDICATE THAT SUCH HAZARDS ARE NECESSARILY PRESENT. THESE DRAWINGS ALSO DO NOT ATTEMPT TO IDENTIFY IGNITION SOURCES FROM NON-ELECTRICAL EQUIPMENT.
5. MAIN FLOOR AND SUB-LEVEL 1 ARE CLASSIFIED AS ORDINARY AREA. MAIN FLOOR WILL BE PROVIDED WITH SIX (6) AIR CHANGES PER HOUR OF CONTINUOUS VENTILATION, WITH UP TO 75% RECIRCULATION IN COLD WEATHER TO CONSERVE HEAT.
6. THE AREAS IN THE MOTOR ROOM COMMINUTOR CHAMBER AND PUMP ROOM ARE BELOW PIPING, ON WHICH MOISTURE MAY CONDENSE ARE RATED A CATEGORY 1 (WET) LOCATION.
7. THE WETWELL HAS BEEN CLASSIFIED AS CATEGORY 2 (CORROSIVE) AND ZONE 1, GROUP IIA LOCATION DUE TO INADEQUATE VENTILATION AND PRESENCE OF EXPLOSSIVE GAS ATMOSPHERE.
8. THE AREA SURROUNDING THE MANHOLE HAS BEEN CLASSIFIED AS ZONE 2, GROUP IIA. THIS AREA WILL EXTEND RADIALY UPTO 3' (900MM) FROM THE MANHOLE AND 1.5' (500MM) VERTICALLY ABOVE IT.
9. TEMPERATURE RATING ('T' RATING) IS BASED ON THE PRESENCE OF 'HYDROGEN SULPHIDE' GAS/VAPOUR IN THE ATMOSPHERE WHICH HAS AN AUTOIGNITION TEMPERATURE OF 260°C AND CONSEQUENTLY 'T' RATING IS T2C (230°C).
10. ALL ELECTRICAL EQUIPMENT INSTALLED WITHIN CATEGORY 1 LOCATIONS SHALL HAVE CSA LABEL AND APPROVAL SUITABLE FOR THAT AREA.
11. ACCEPTABLE WIRING METHODS IN CATEGORY 1 LOCATIONS SHALL BE IN ACCORDANCE WITH C22.1-18 SECTION 22-200 WHICH INCLUDES BUT NOT LIMITED TO THE FOLLOWING:

- ARMOURED CABLE, ALUMINUM/COPPER SHEATHED CABLE, EXPOSED OR IN RACEWAY SHALL BE RATED FOR WET LOCATION AND IN ACCORDANCE WITH C22.1-18 RULE 12-102.
- IF WIRING IS EXPOSED TO WEATHER, IT SHALL BE LOCATED MORE THAN 1.5M HORIZONTALLY AND 2.5M VERTICALLY FROM FLOORS, DECKS, BALCONIES OR STAIRS.
- NON-METALLIC-SHEATHED CABLE OF NMW OR NMWU SHALL BE PERMITTED TO BE USED.
- ALUMINUM CONDUCTORS SHALL NOT BE USED UNLESS THE TERMINATION OR JOINT IS ADEQUATELY SEALED AGAINST INGRESS OF MOISTURE.

12. ACCEPTABLE WIRING METHODS IN ZONE 1 LOCATIONS SHALL BE IN ACCORDANCE WITH CSA C22.1 RULE 18-102 WHICH INCLUDES BUT NOT LIMITED TO THE FOLLOWING:

- THREADED RIGID METAL CONDUIT WITH CONDUIT SEALS.
- HAZARDOUS LOCATION RATED CABLES WITH ASSOCIATED CABLE GLANDS SUITABLE FOR ZONE 1 LOCATION.
- EXPLOSION PROOF BOXES, FITTINGS AND JOINTS SHALL BE THREADED FOR CONNECTION TO CONDUITS AND CABLE GLANDS. BOXES AND FITTINGS SHALL BE MARKED FOR USE IN ZONE 1 LOCATION.
- SUITABLE ADAPTERS SHALL BE USED WHERE THREAD FORMS DIFFER BETWEEN THE EQUIPMENT AND WIRING SYSTEM.
- CABLES SHALL BE INSTALLED AND SUPPORTED SO AS TO AVOID TENSILE STRESS AT THE CABLE GLANDS.

13. ACCEPTABLE WIRING METHODS IN ZONE 2 LOCATIONS SHALL BE IN ACCORDANCE WITH CSA C22.1 RULE 18-152 WHICH INCLUDES BUT NOT LIMITED TO THE FOLLOWING:

- THREADED RIGID METAL CONDUIT WITH CONDUIT SEALS.
- HAZARDOUS LOCATION RATED CABLES WITH ASSOCIATED CABLE GLANDS SUITABLE FOR ZONE 2 LOCATION.
- ARMOURED CABLE WITH OVERALL NON-METALLIC JACKET, SUCH AS TECK90 OR ACWU90.
- CONTROL AND INSTRUMENTATION CABLES WITH AN INTERLOCKING METALLIC ARMOUR AND A CONTINUOUS JACKET IN CONTROL CIRCUITS SUCH AS TYPE ACIC.
- LIQUID-TIGHT FLEXIBLE METAL CONDUIT AND CONNECTORS MARKED FOR HEAVY DUTY.
- EXPLOSION PROOF BOXES, FITTINGS AND JOINTS SHALL BE THREADED FOR CONNECTION TO CONDUIT OR CABLE GLANDS, AND BOXES AND FITTINGS SHALL BE MARKED FOR USE IN ZONE 2 LOCATIONS.
- SUITABLE ADAPTERS SHALL BE USED WHERE THREAD FORMS DIFFER BETWEEN THE EQUIPMENT AND WIRING SYSTEM.
- CABLES SHALL BE INSTALLED AND SUPPORTED SO AS TO AVOID TENSILE STRESS AT THE CABLE GLANDS.

NO.	DRAWING NUMBER	REFERENCE DRAWING TITLE

REFERENCE DRAWINGS

300 0 300 600 900 1200

SCALE: 1:30mm

ENGINEERS GEOSCIENTISTS MANITOBA
Certificate of Authorization
KGS Group
No. 245

B.M.
ELEV.

NO.	REVISIONS	DATE (YYYY/MM/DD)	BY
0	ISSUED FOR CONSTRUCTION	2023 03 24	DDW

KGS GROUP

DESIGNED BY	A. NIRMAL	CHECKED BY	DDW
DRAWN BY	R. GASPAR	APPROVED BY	DDW
SCALE: HORIZONTAL	NTS	RELEASED FOR CONSTRUCTION	
VERTICAL	NTS		
DATE	2022/09/01	DATE	

PLOT DATE: 2023 03 23

ENGINEER'S SEAL
PROVINCE OF MANITOBA
D.D. WILSON
Member
22552
2023-03-23
REGISTERED PROFESSIONAL ENGINEER

CONSULTANT DRAWING NUMBER
22-0107-004-E07.01

BID OPPORTUNITY: 864-2022

Winnipeg

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

METCALFE LIFT PUMPING STATION
2022 UPGRADES
HAZARDOUS AND WET LOCATION PLAN
MAIN FLOOR PUMP ROOM AND WETWELL

CITY DRAWING NUMBER 1-0162L-E0007-001

SHEET 58 OF 109

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