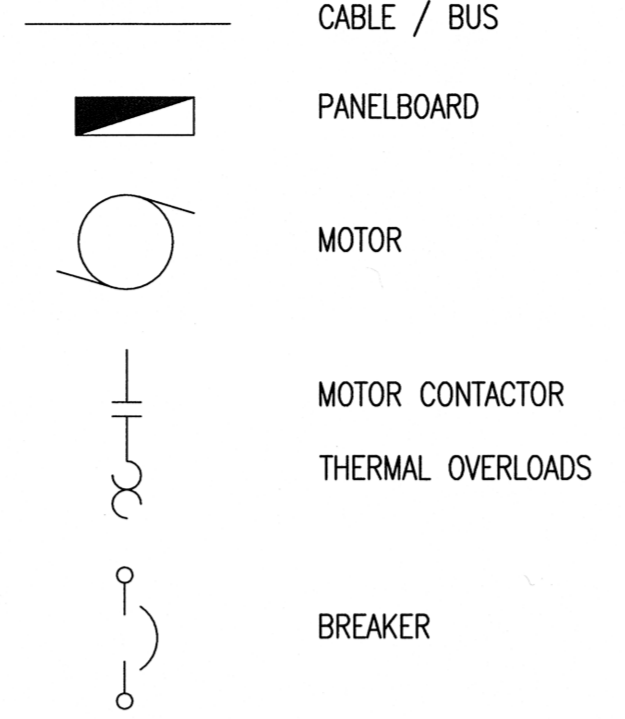


**LEGEND**



**GENERAL OVERVIEW OF THE WORK:**

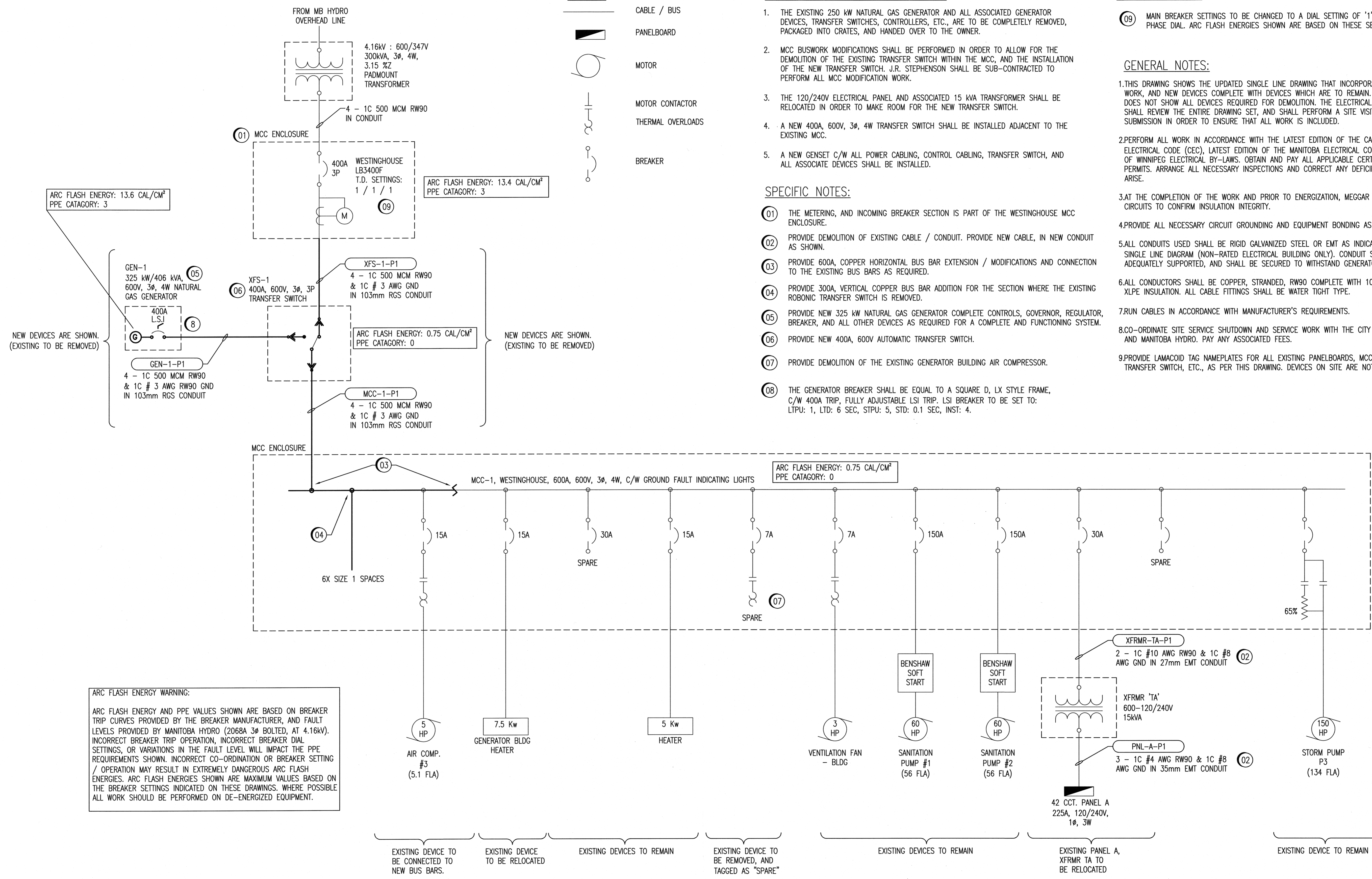
1. THE EXISTING 250 kW NATURAL GAS GENERATOR AND ALL ASSOCIATED GENERATOR DEVICES, TRANSFER SWITCHES, CONTROLLERS, ETC., ARE TO BE COMPLETELY REMOVED, PACKAGED INTO CRATES, AND HANDED OVER TO THE OWNER.
2. MCC BUSWORK MODIFICATIONS SHALL BE PERFORMED IN ORDER TO ALLOW FOR THE DEMOLITION OF THE EXISTING TRANSFER SWITCH WITHIN THE MCC, AND THE INSTALLATION OF THE NEW TRANSFER SWITCH. J.R. STEPHENSON SHALL BE SUB-CONTRACTED TO PERFORM ALL MCC MODIFICATION WORK.
3. THE 120/240V ELECTRICAL PANEL AND ASSOCIATED 15 kVA TRANSFORMER SHALL BE RELOCATED IN ORDER TO MAKE ROOM FOR THE NEW TRANSFER SWITCH.
4. A NEW 400A, 600V, 3Ø, 4W TRANSFER SWITCH SHALL BE INSTALLED ADJACENT TO THE EXISTING MCC.
5. A NEW GENSET C/W ALL POWER CABLING, CONTROL CABLING, TRANSFER SWITCH, AND ALL ASSOCIATE DEVICES SHALL BE INSTALLED.

**SPECIFIC NOTES:**

- 01 THE METERING, AND INCOMING BREAKER SECTION IS PART OF THE WESTINGHOUSE MCC ENCLOSURE.
- 02 PROVIDE DEMOLITION OF EXISTING CABLE / CONDUIT. PROVIDE NEW CABLE, IN NEW CONDUIT AS SHOWN.
- 03 PROVIDE 600A, COPPER HORIZONTAL BUS BAR EXTENSION / MODIFICATIONS AND CONNECTION TO THE EXISTING BUS BARS AS REQUIRED.
- 04 PROVIDE 300A, VERTICAL COPPER BUS BAR ADDITION FOR THE SECTION WHERE THE EXISTING ROBONIC TRANSFER SWITCH IS REMOVED.
- 05 PROVIDE NEW 325 kW NATURAL GAS GENERATOR COMPLETE CONTROLS, GOVERNOR, REGULATOR, BREAKER, AND ALL OTHER DEVICES AS REQUIRED FOR A COMPLETE AND FUNCTIONING SYSTEM.
- 06 PROVIDE NEW 400A, 600V AUTOMATIC TRANSFER SWITCH.
- 07 PROVIDE DEMOLITION OF THE EXISTING GENERATOR BUILDING AIR COMPRESSOR.
- 08 THE GENERATOR BREAKER SHALL BE EQUAL TO A SQUARE D, LX STYLE FRAME, C/W 400A TRIP, FULLY ADJUSTABLE LSI TRIP, LSI BREAKER TO BE SET TO: LTPU: 1, LTD: 6 SEC, STPU: 5, STD: 0.1 SEC, INST: 4.

**GENERAL NOTES:**

1. THIS DRAWING SHOWS THE UPDATED SINGLE LINE DRAWING THAT INCORPORATES NEW WORK, AND NEW DEVICES COMPLETE WITH DEVICES WHICH ARE TO REMAIN. THIS DRAWING DOES NOT SHOW ALL DEVICES REQUIRED FOR DEMOLITION. THE ELECTRICAL SUBCONTRACTOR SHALL REVIEW THE ENTIRE DRAWING SET, AND SHALL PERFORM A SITE VISIT PRIOR TO BID SUBMISSION IN ORDER TO ENSURE THAT ALL WORK IS INCLUDED.
2. PERFORM ALL WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE (CEC), LATEST EDITION OF THE MANITOBA ELECTRICAL CODE, AND THE CITY OF WINNIPEG ELECTRICAL BY-LAWS. OBTAIN AND PAY ALL APPLICABLE CERTIFICATES AND PERMITS. ARRANGE ALL NECESSARY INSPECTIONS AND CORRECT ANY DEFICIENCIES THAT MAY ARISE.
3. AT THE COMPLETION OF THE WORK AND PRIOR TO ENERGIZATION, MEGGAR ALL NEW CIRCUITS TO CONFIRM INSULATION INTEGRITY.
4. PROVIDE ALL NECESSARY CIRCUIT GROUNDING AND EQUIPMENT BONDING AS PER CEC.
5. ALL CONDUITS USED SHALL BE RIGID GALVANIZED STEEL OR EMT AS INDICATED ON THE SINGLE LINE DIAGRAM (NON-RATED ELECTRICAL BUILDING ONLY). CONDUIT SHALL BE ADEQUATELY SUPPORTED, AND SHALL BE SECURED TO WITHSTAND GENERATOR VIBRATIONS.
6. ALL CONDUCTORS SHALL BE COPPER, STRANDED, RW90 COMPLETE WITH 1000V 90°C XLPE INSULATION. ALL CABLE FITTINGS SHALL BE WATER TIGHT TYPE.
7. RUN CABLES IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
8. CO-ORDINATE SITE SERVICE SHUTDOWN AND SERVICE WORK WITH THE CITY OF WINNIPEG AND MANITOBA HYDRO. PAY ANY ASSOCIATED FEES.
9. PROVIDE LAMACOID TAG NAMEPLATES FOR ALL EXISTING PANELBOARDS, MCC, GENERATOR, TRANSFER SWITCH, ETC., AS PER THIS DRAWING. DEVICES ON SITE ARE NOT ALL TAGGED.



**ARC FLASH ENERGY WARNING:**  
 ARC FLASH ENERGY AND PPE VALUES SHOWN ARE BASED ON BREAKER TRIP CURVES PROVIDED BY THE BREAKER MANUFACTURER, AND FAULT LEVELS PROVIDED BY MANITOBA HYDRO (2068A 3Ø BOLTED, AT 4.16KV). INCORRECT BREAKER TRIP OPERATION, INCORRECT BREAKER DIAL SETTINGS, OR VARIATIONS IN THE FAULT LEVEL WILL IMPACT THE PPE REQUIREMENTS SHOWN. INCORRECT CO-ORDINATION OR BREAKER SETTING / OPERATION MAY RESULT IN EXTREMELY DANGEROUS ARC FLASH ENERGIES. ARC FLASH ENERGIES SHOWN ARE MAXIMUM VALUES BASED ON THE BREAKER SETTINGS INDICATED ON THESE DRAWINGS. WHERE POSSIBLE ALL WORK SHOULD BE PERFORMED ON DE-ENERGIZED EQUIPMENT.

EXISTING DEVICE TO BE CONNECTED TO NEW BUS BARS.  
 EXISTING DEVICE TO BE RELOCATED  
 EXISTING DEVICES TO REMAIN  
 EXISTING DEVICE TO BE REMOVED, AND TAGGED AS "SPARE"

**ELECTRICAL SINGLE LINE DRAWING**  
 NTS



B.M. ELEV.	FIELD BOOK #:	<b>SNC-LAVALIN INC.</b> 148 Nature Park Way Winnipeg, MB, Canada R2P 0X7 204-786-8580	ENGINEER'S SEAL
POSTED TO LBIS			
DESIGNED BY	CHECKED BY	DESIGNED BY	CHECKED BY
DRAWN BY	APPROVED BY	DRAWN BY	APPROVED BY
HOR. SCALE	RELEASED FOR CONSTRUCTION	HOR. SCALE	RELEASED FOR CONSTRUCTION
VERTICAL		VERTICAL	
DATE	DATE	DATE	DATE
00 ISSUED FOR CONSTRUCTION	08/01/18 AEO	07/04/12	
NO. REVISIONS	DATE	BY	FILENAME: 113049-47DD-0000-0001.dwg

THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT	
WINDSOR PARK WASTEWATER PUMPING STATION GENERATOR UPGRADE DIAGRAM ELECTRICAL SINGLE LINE	
CITY DRAWING NUMBER 06044	SHEET REV. SIZE 001 00 D

1044, 1046, 1048	SUPERCEDED DRAWING SET
06053	STRUCTURAL DRAWING SET
06051-06052	MECHANICAL DRAWING SET
06090-06092	ELECTRICAL DRAWING SET
06044-06049	ELECTRICAL DRAWING SET
DRAWING NUMBER	REFERENCE DRAWINGS