

GENERAL NOTES:

- CONTRACTOR TO INCLUDE ALL REQUIRED SITE WORK IN THEIR BID. INCLUDE TRENCHING, EARTH REMOVAL, AND CONCRETE REMOVAL. REPAIR ALL AREAS AFFECTED AFTER TRENCHING AND CABLING HAS BEEN INSTALLED. PROVIDE NEW CONCRETE AND PAVING OVER TRENCH ALONG THE DRIVEWAY AND WALKWAYS. PROVIDE NEW SOD / LAWN WORK TO COMPLETELY REPAIR EXISTING FACILITIES. WORK TO BE COMPLETE IN ACCORDANCE WITH CITY STANDARD SPECIFICATIONS.
- PERFORM A COMPLETE SURVEY OF THE SITE, MARK ALL SYSTEMS AND SERVICES PRIOR TO TRENCHING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE REPAIR AND COSTS ASSOCIATED WITH ANY DAMAGES TO EXISTING SYSTEMS. THIS DRAWING DOES NOT SHOW ALL EXISTING BURIED STRUCTURES AND SERVICES. HAND DIG OR WATER WASH EXCAVATE AROUND EXISTING SERVICES WHERE APPLICABLE. MAKE ALLOWANCES.
- ALL GROUND ITEMS OR DEVICES SHOWN ON THIS DRAWING ARE NEW AND ARE TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.
- PERIMETER BURIED GROUND CONDUCTORS AND GROUND RODS SHALL BE LAID IN UNDISTURBED NATIVE SOIL OR MECHANICALLY COMPACTED SOIL.

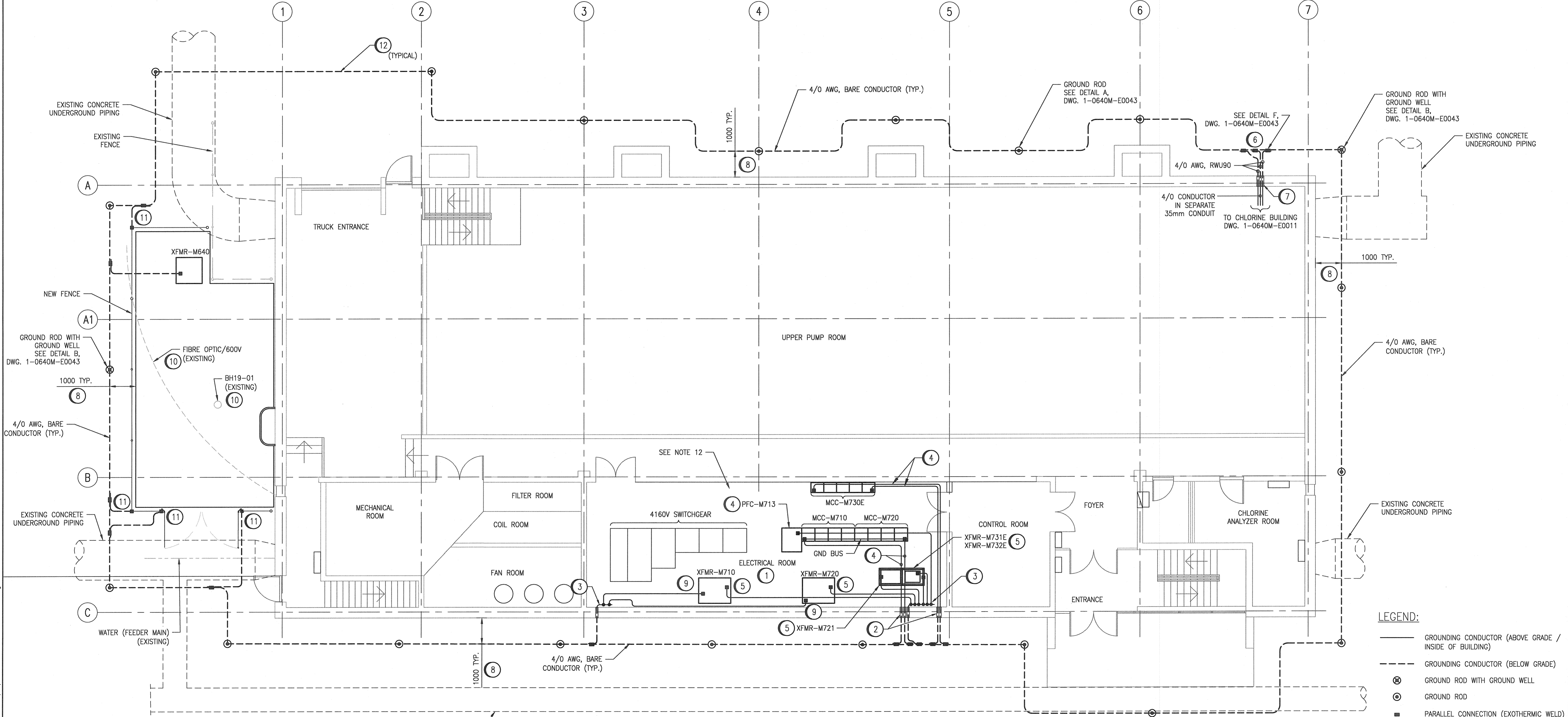
- ALL GROUNDING CONDUCTOR SHALL BE STRANDED, SOFT DRAWN COPPER, UNLESS NOTED OTHERWISE.
- ALL CABLING SHALL BE PHYSICALLY PROTECTED BY DIRECT BURIAL OR SURFACE RUN CONDUIT. EXPOSED CONDUCTORS ARE NOT ACCEPTABLE.
- FOR INSIDE OF BUILDING CONDUIT RUNS CONFINED WITHIN THE ELECTRICAL ROOM, EMT MAY BE USED. FOR ANY CONDUITS EXITING THE ELECTRICAL ROOM, RIGID THREADED ALUMINUM CONDUIT SHALL BE USED.
- ALL GROUNDING WIRES / CABLES ROUTED ABOVE GROUND SHALL BE RUN IN CONDUIT. SIZE CONDUITS IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE.
- GROUND RODS, AND PERIMETER GROUND CABLING IS SHOWN AT APPROXIMATE LOCATIONS (ON THIS DRAWING). SURVEY, COORDINATE AND CONFIRM ANY BURIED SYSTEMS. AVOID DAMAGE TO EXISTING SYSTEMS.
- THE AREA AROUND THE BUILDING MAY CONTAIN RUBBLE AND DEBRIS WHICH MAY IMPEDE GROUND ROD INSTALLATION. THE CONTRACTOR SHALL ALLOW FOR 10 SPARE GROUND RODS TO ACCOUNT FOR AREA WHERE GROUND RODS WILL NOT PENETRATE THE SOIL.

- REFER TO ASBESTOS REPORTS IN APPENDIX B. ASBESTOS IS PRESENT IN AND/OR PRESUMED TO BE PRESENT IN (BUT NOT LIMITED TO) THE FOLLOWING:
 PIPING : RAIN WATER LEADER (SWEAT WRAP PIPE INSULATION & PARING OVER FIBREGLASS)
 HEATING WATER SUPPLY/RETURN (PARING OVER FIBREGLASS)
 FLOOR : PLASTER (CERAMIC TILES)
 ADHESIVE/MASTIC (CERAMIC TILES)
 WALL : VERMICULITE INSULATION (MASONRY)
 PLASTER (PREFORMED BLOCK & CERAMIC TILES)
 ADHESIVE/MASTIC (CERAMIC TILES)
- PUMPHOUSE ELECTRICAL ROOM IS CLASSIFIED AS AN INDOOR STATION DUE TO THE PRESENCE OF MEDIUM VOLTAGE TRANSFORMERS IN THE ROOM. ALL EQUIPMENT MUST BE GROUNDING AND BONDED IN ACCORDANCE WITH SECTION 36 OF THE CANADIAN ELECTRIC CODE.

CONSTRUCTION NOTES:

- NOT ALL ELECTRICAL EQUIPMENT ARE SHOWN. REFER TO DRAWING 1-0640M-E0039 FOR COMPLETE LAYOUT.
- CORE DRILL HOLES AT ELEVATION APPROXIMATELY 2500mm ABOVE FINISHED FLOOR FOR CONDUIT PENETRATIONS. PROVIDE ROXTEC WEATHERPROOF SEAL ON ALL WALL PENETRATIONS. SEE DETAIL C, DWG. 1-0640M-E0043 FOR TYPICAL DETAIL OF CONDUIT ENTRY TO BUILDING.
- SYSTEM GROUND CONDUCTOR TO BE MOUNTED ON THE WALL AT APPROXIMATELY 2500mm ABOVE FLOOR. SEE DETAIL A AND B ON DWG. 1-0640M-E0044 FOR EQUIPMENT GROUNDING CONNECTION.
- CONNECT THE MCCS AND PFC-M713 GROUND BUSES TO THE BUILDING SERVICE GROUNDING SYSTEM. PROVIDE 4/0 AWG GREEN INSULATED, STRANDED, SOFT DRAWN COPPER CONDUCTOR RUN IN 35mm EMT CONDUIT (FOR INTERIOR) AND TRANSITION TO RIGID PVC CONDUIT (FOR EXTERIOR AND UNDERGROUND ROUTING).
- PROVIDE GROUND CONNECTION FROM SYSTEM GROUND TO NEW TRANSFORMER'S XO TERMINAL.

- PROVIDE GROUND CONNECTION FROM PERIMETER GROUND INTO MAIN PUMPING STATION AND ROUTE TO CHLORINE BUILDING ELECTRICAL AREA. SEE DETAIL G, DWG. 1-0640M-E0043 FOR ENTRY INTO BUILDING. REFER TO DWG. 1-0640C-E0011 FOR CABLE ROUTING IN CHLORINE ELECTRICAL ROOM AREA.
- CORE DRILL HOLES AT ELEVATION APPROXIMATELY 500mm ABOVE FINISHED FLOOR FOR CONDUIT PENETRATION.
- MAINTAIN 1000mm SPACING BETWEEN PERIMETER GROUND CABLE AND BUILDING EXTERIOR WALL.
- PROVIDE GROUND CONNECTION FROM SYSTEM GROUND TO TRANSFORMER ENCLOSURE.
- MODIFY EXISTING FIBRE OPTIC FEEDER AND BH19-01 TO ACCOMMODATE NEW PERIMETER GROUNDING (IF REQUIRED).
- PROVIDE BONDING AT THE CORNER POST AND DOOR POSTS OF THE CONDENSER FENCE FROM THE PERIMETER GROUND.
- CUT, PATCH AND REPAIR CONCRETE AND ASPHALT IN ORDER TO ROUTE THE GROUND WIRE, AND INSTALL GROUND RODS AT THE LOCATIONS SHOWN ON THE DRAWINGS.

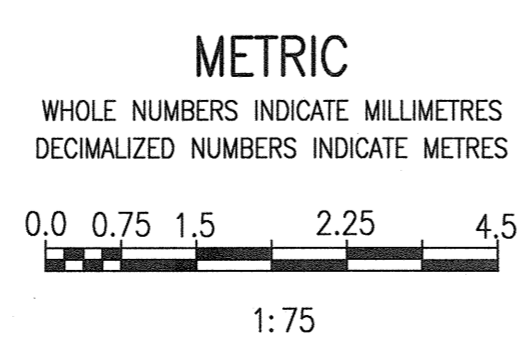


PLAN ABOVE ELEVATION 233.020
SCALE: 1 : 75

LEGEND:

- GROUNDING CONDUCTOR (ABOVE GRADE / INSIDE OF BUILDING)
- - - GROUNDING CONDUCTOR (BELOW GRADE)
- ⊗ GROUND ROD WITH GROUND WELL
- ⊙ GROUND ROD
- PARALLEL CONNECTION (EXOTHERMIC WELD)
- EQUIPMENT GROUND CONNECTION

1-0640M-E0044	ELECTRICAL GROUNDING RISER DIAGRAM
1-0640M-E0043	ELECTRICAL GROUNDING INSTALLATIONS DETAILS
1-0640M-E0039	ELECTRICAL EQUIPMENT PLAN, ELECTRICAL & CONTROL ROOMS
DRAWING NUMBER	REFERENCE DRAWINGS



00	ISSUED FOR TENDER AND CONSTRUCTION	2019/10/18	SLJ	KS
NO.	REVISIONS	DATE	DESIGN	CHECK

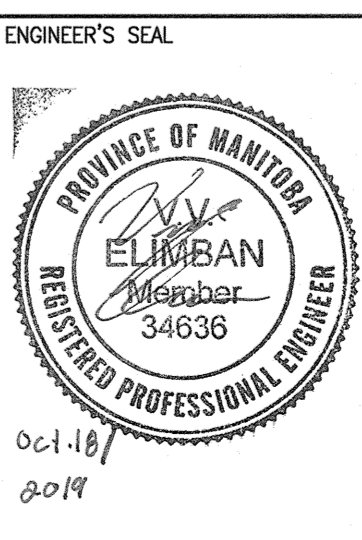
SNC-LAVALIN

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DATE: 2019/04/17

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ISSUED FOR CONSTRUCTION BY: A. WEISS
DATE: 2019/10/18

CONSULTANT NO.:



THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

MCPHILLIPS PUMPING STATION
ELECTRICAL AND HVAC UPGRADES, MCC REPLACEMENT
ELECTRICAL GROUNDING LAYOUT
MAIN FLOOR PLAN

CITY DRAWING NUMBER: 1-0640M-E0045
SHEET: 001
REV: 00
SIZE: A1