



ELECTRICAL SINGLE LINE DRAWING  
 NTS

NOTES:

- PERFORM ALL WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE CANADIAN ELECTRICAL CODE (CEC) AND THE CITY OF WINNIPEG ELECTRICAL BY-LAW. OBTAIN AND PAY ALL APPLICABLE CERTIFICATES AND PERMITS. ARRANGE ALL NECESSARY INSPECTIONS AND CORRECT ANY DEFICIENCIES THAT MAY ARISE.
- AT THE COMPLETION OF THE WORK AND PRIOR TO ENERGIZATION, MEGGAR ALL CIRCUITS TO CONFIRM INSULATION INTEGRITY.
- PROVIDE ALL NECESSARY CIRCUIT GROUNDING AND EQUIPMENT BONDING AS PER CEC.
- ALL CONDUIT SHALL BE THREADED CONDUIT C/W WATER TIGHT FITTINGS.
- ALL CONDUCTORS SHALL BE COPPER THROUGHOUT WITH RW90, 1000V 90°C XLPE INSULATION INSTALLED IN THREADED CONDUIT, RA90 (CORFLEX), OR TECK 90 CABLES. ALL CABLE FITTINGS SHALL BE WATER TIGHT TYPE.
- RUN CABLES IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS INCLUDING MEASURES TO AVOID SHEATH CURRENTS. GROUND SHEATHS AT CSTE GROUND POINT ONLY. DO NOT GROUND SHEATHS AT BOTH CABLE ENDS. PROVIDE PHYSICAL PROTECTION FOR ALL CABLE ENTRY INTO BUILDING.
- MAIN BREAKER TO BE SET TO PROVIDE A LONG TIME PICK-UP OF 1.0, AND AN INSTANTANEOUS OF AT LEAST 4.0 TIMES FRAME RATING.
- STARTERS ARE EQUIPPED WITH SEQUENTIAL START CONTROLS TO PREVENT SIMULTANEOUS STARTING.
- THE CSTE SHALL BE WALL MOUNTED ON THE EXTERIOR SOUTH WALL OF THE EXISTING FLOOD STATION.
- THE EXISTING FLOOD STATION TRANSFORMER BANK AND ASSOCIATED SECONDARY WIRING INTO THE STATION IS TO BE REMOVED IN ITS ENTIRETY.
- THE EXISTING FLOOD STATION 120/240V OVERHEAD SERVICE COMPLETE WITH METER SOCKET IS TO BE REMOVED. THE EXISTING 200A DISCONNECT (FEEDING PANEL '2A') IS TO BE FED FROM THE NEW MAIN SERVICE CDP '6A'.
- THE EXISTING 600V, 3Ø, FLOOD PUMP BREAKERS (4 INDIVIDUAL WALL MOUNTED BREAKERS) COMPLETE WITH CABLES AND CONDUIT TO STARTERS ARE TO BE REMOVED. PROVIDE NEW RW90 CABLE IN CONDUIT, OR TECK 90 CABLE FROM NEW CDP '6A' TO INDIVIDUAL EXISTING STARTERS.
- THE EXISTING LIFT STATION 600V OVERHEAD SERVICE, 600V, 400A MAIN DISCONNECT, SPLITTER BOX, MOTOR STARTERS, CABLE TROUGH, CONTROL TRANSFORMER, 100A DISCONNECTS, 30A DISCONNECT, INDICATING LIGHTS (ADJACENT TO CONTROL PANEL) ARE TO BE REMOVED.
- COORDINATE ALL SERVICE REMOVALS WITH MANITOBA HYDRO. COORDINATE INSTALLATION OF NEW 600V SERVICE TRANSFORMER AND SECONDARY CABLE INSTALLATION TO NEW CSTE WITH MANITOBA HYDRO.
- PARALLEL SERVICE GROUND ELECTRODES TO CONSIST OF 3-19x3048 (3/4"x10") COPPER CLAD STEEL GROUND RODS WITH #3/0 AWG BARE COPPER WIRE INTERCONNECTIONS BETWEEN THE RODS AND THE CSTE GROUND LUG. ADEQUATELY PROTECT GROUND CONDUCTOR CONNECTION FROM THE CSTE TO THE GROUND ELECTRODES WITH PVC CONDUIT. ALL BELOW GRADE CONNECTIONS SHALL BE VIA CADWELDS. INSTALL GROUND RODS IN A COUNTERPOISE ARRANGEMENT WITH A 3000mm (10') SEPARATION ADJACENT TO THE FLOOD STATION CSTE. PROVIDE PVC ACCESS WELLS OVER EACH GROUND ROD. (THOMPSON LIGHTNING PROTECTION #GWP-1224; 610x318 (24"x12.5").
- SUPPLY AND INSTALL AN UNDERGROUND CONNECTION FROM THE CSTE TO THE FLOOD PUMPING STATION AND FROM THE CSTE TO THE LIFT STATION. INSTALL CABLES BASED ON THE ARRANGEMENT NOTED AND PROVIDE SAND BED AND COVERING COMPLETE WITH TREATED PROTECTIVE PLANKING AND WARNING TAPE ALONG THE ENTIRE UNDERGROUND RUN. CABLE BURIAL TO BE AT A MINIMUM DEPTH OF 762mm (30") WITH 76mm (3") OF SAND ABOVE AND BELOW CABLES AND PLANKING ON TOP OF THE SAND. WARNING TAPE TO BE AT 152mm (6") BELOW GRADE.
- CABLE ENTRY AT THE FLOOD PUMP AND LIFT STATION TO BE PROTECTED WITH A METAL COVER PLATE FROM 152mm BELOW GRADE UP TO THE POINT OF ENTRY.
- SUPPLY AND INSTALL A NEW CDP '6A' INSIDE THE FLOOD PUMP STATION AT THE SOUTH WALL. CDP SHALL BE SQUARE D I-LINE HCR-U NEMA 3R SERIES, C/W TIN PLATED COPPER BUS, OR EQUAL BY CUTTLER HAMMER, SIEMENS.
- SUPPLY AND INSTALL A NEW CDP '6B' INSIDE THE LIFT STATION AT THE LOCATION OF THE REMOVED MAIN INCOMING ELECTRICAL EQUIPMENT. CDP SHALL BE SQUARE D I-LINE HCM NEMA 3R SERIES OR EQUAL BY CUTTLER HAMMER, SIEMENS.
- SUPPLY AND INSTALL NEW FEEDERS, NEW MAGNETIC MOTOR STARTERS (LOCKABLE IN THE OFF POSITION), COMPLETE WITH CONTROLS, AND WIRING IN EXISTING LIFT STATION. RE-USE AND CONNECT EXISTING PUMP CONTROL PANEL.
- SUPPLY AND INSTALL #3/0 AWG COPPER RA90 GROUNDING CONDUCTOR FROM THE FLOOD STATION WATER SERVICE PIPE TO CDP '6A' GROUND BUS.
- SUPPLY AND INSTALL #1 AWG COPPER RA90 GROUNDING CONDUCTOR FROM THE LIFT STATION WATER SERVICE PIPE TO CDP '6B' GROUND BUS.
- SUPPLY AND INSTALL LAMACOID NAMEPLATES WITH PANEL IDENTIFICATION, VOLTAGE, PHASE INSCRIBED, AND PLACED ON THE COVER OF ALL PANELS, AND CDPS. THIS INCLUDES, PANEL '2A', PANEL '2B', CDP '6A', AND CDP '6B'.
- SUPPLY AND INSTALL NEW BRANCH WIRING FROM THE CDP TO EXISTING AND NEW DEVICES AS SHOWN USING TECK 90 COPPER CABLE WITH WATER TIGHT FITTINGS THROUGHOUT.

DRAWING NUMBER	REFERENCE DRAWINGS
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B.M. ELEV.	FIELD BOOK #:	SNC-LAVALIN Engineers & Constructors		SNC-LAVALIN 200-1600 Ross Avenue Winnipeg, Manitoba Canada R3J 3K7	
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**THE CITY OF WINNIPEG**  
 WATER AND WASTE DEPARTMENT

ASH FLOOD PUMP AND LIFT STATION  
 ELECTRICAL SERVICE ENTRANCE  
 AND DISTRIBUTION DETAILS

CITY DRAWING NUMBER: 1-????A-F-E0001  
 SHEET: 001  
 REV: 01  
 SIZE: D