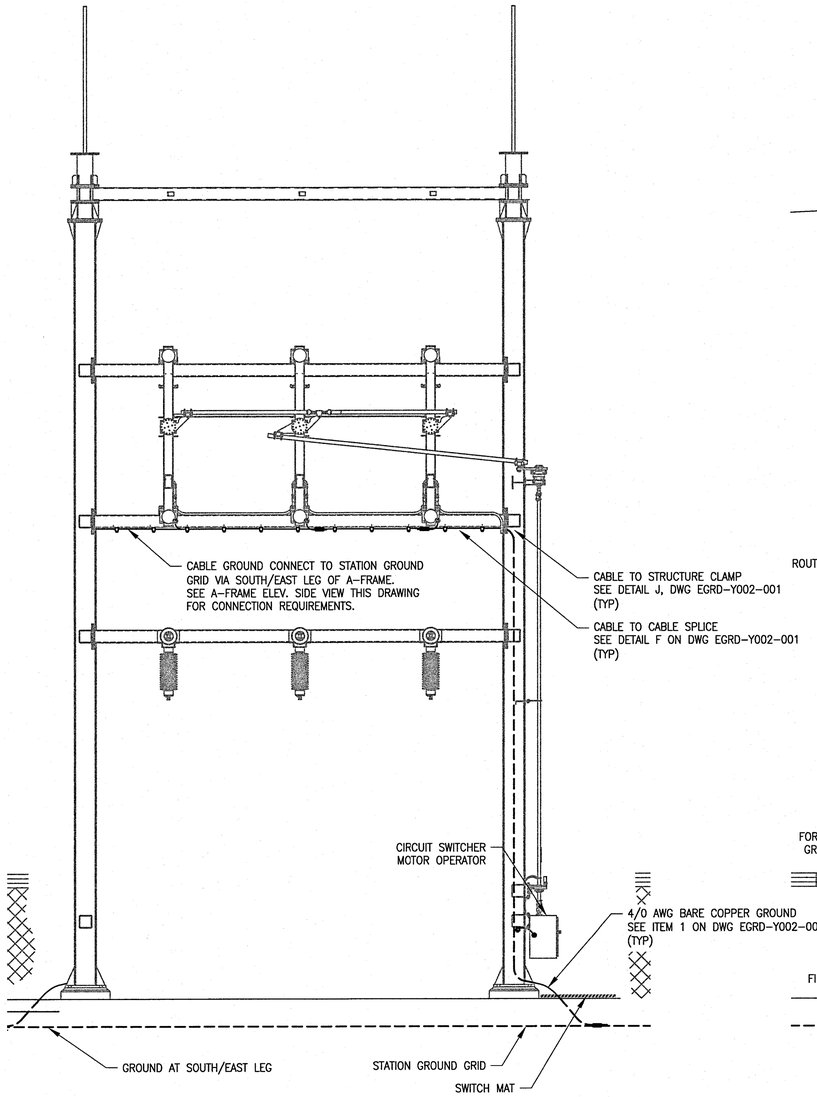
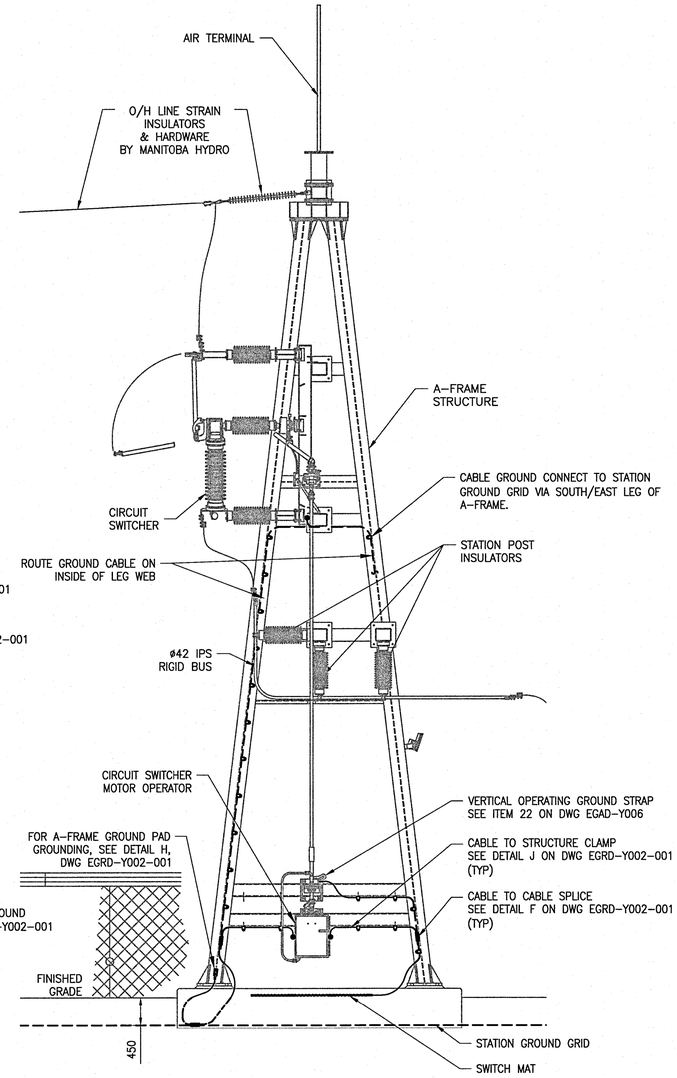
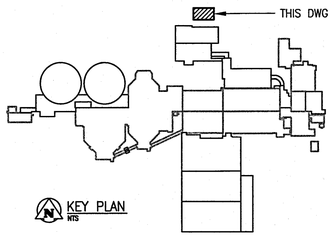
A1 SIZE – 594mm x 841mm



C SECTION
SCALE: 1:50
EGAD–Y001

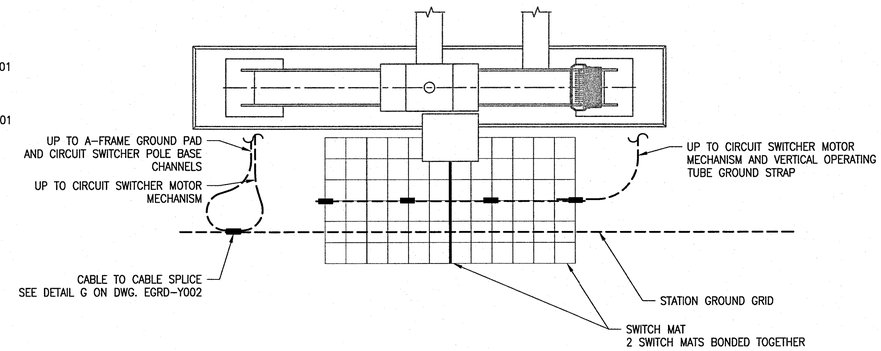


D SECTION
SCALE: 1:50
EGAD–Y001



GENERAL NOTES:

1. THE EQUIPMENT LAYOUTS, DETAILS, WIRING, AND DIMENSIONS DEPICTED ON THESE DRAWINGS ARE BASED UPON SPECIFIC EQUIPMENT TYPES AND MANUFACTURERS THAT ARE DEFINED ON THE DRAWINGS AND IN THE SPECIFICATIONS. USE OF ALTERNATIVE EQUIPMENT OTHER THAN THE "STANDARD OF ACCEPTANCE" DEFINED IS PERMITTED. HOWEVER, USE OF ALTERNATIVE EQUIPMENT BY THE CONTRACTOR IS SUBJECT TO THE CONTRACTOR HAVING RECEIVED FORMAL "APPROVED EQUAL" STATUS FOR THE EQUIPMENT IN QUESTION FROM THE ENGINEER. THE PROCESS REQUIRED TO OBTAIN FORMAL "APPROVED EQUAL" STATUS IS DEFINED AND DETAILED IN THE SPECIFICATIONS.
2. ANY CHANGES TO LAYOUTS, DETAILS, WIRING AND DIMENSIONS INCLUDING ALL ASSOCIATED COSTS ARISING FROM THE USE OF "APPROVED EQUAL" MATERIALS AND EQUIPMENT WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. USE OF "APPROVED EQUAL" EQUIPMENT SHALL RESULT IN A FULLY FUNCTIONAL INSTALLATION IN ACCORDANCE WITH THE REQUIREMENTS AND INTENT OF THE DESIGN DOCUMENTS.
3. DESIGN CHANGES NECESSITATED BY THE USE OF "APPROVED EQUAL" MATERIALS OR EQUIPMENT SHALL BE DETAILED BY THE CONTRACTOR VIA THE SHOP DRAWING SUBMITTAL PROCESS AS DESCRIBED IN THE SPECIFICATIONS AND CONSTRUCTION DOCUMENTS. ALL SUCH DRAWINGS SHALL BE PREPARED UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER REGISTERED OR LICENSED IN THE PROVINCE OF MANITOBA AND SHALL BE SEALED BY THE SAME ENGINEER.
4. INSTALL A SWITCH MESH MAT ON THE SURFACE OF THE FINISHED GRADE, BENEATH ALL MANUAL OR MOTOR OPERATED SWITCHES THAT REQUIRE AN OPERATOR TO BE IN CONTACT WITH EXPOSED METAL IN THE SUBSTATION DURING SWITCHING OPERATIONS. REFER TO DRAWING EGRD–Y001 FOR EXACT LOCATIONS.
5. THE SWITCH MESH MAT MUST BE SIZED LARGE ENOUGH TO ENSURE THE OPERATOR WILL BE STANDING ON THE MESH MAT DURING FULL OPERATION OF THE SWITCH MECHANISM.
6. INSTALL THE CENTRE LINE OF THE MESH MAT ON THE CENTRE LINE OF THE TORSION HANDLE OR HAND WHEEL MECHANISM.
7. THE SWITCH MAT SHALL NOT BE CONNECTED DIRECTLY TO THE STATION GROUND GRID.
8. 4/0 AWG EQUIPMENT GROUNDING CONDUCTOR (RISER) SHALL TERMINATE ON THE OPERATING MECHANISM HOUSING.
9. CONNECT ONE 4/0 AWG CONDUCTOR FROM THE SWITCH MAT UP THE A–FRAME LEG, CONTINUE UP AND TERMINATE TO THE SWITCH MOTOR OPERATOR AND TO THE FLEXIBLE GROUNDING STRAP SUPPLIED WITH THE SWITCH MECHANISM VERTICAL OPERATING TUBE. ENSURE SUFFICIENT SLACK TO ALLOW FOR OPERATING TUBE ROTATION. BOLT THE 4/0 AWG CONDUCTOR AND THE FLEXIBLE GROUNDING STRAP JOINT TO THE KIRK KEY INTERLOCK PLATE MOUNTING ADAPTOR.
10. THE SWITCH MAT SHALL BE INSTALLED ON TOP OF THE FINISHED GRADE OF CRUSHED STONE.
11. EQUIPMENT GROUNDING CONDUCTOR AND SWITCH MAT EXTRAFLEX RISERS ARE TO BE CLAMPED TO STRUCTURE USING THE HOLES PROVIDED ON THE A–FRAME.
12. CONNECT EQUIPMENT GROUNDING CONDUCTOR TO THE GROUND TERMINAL OF THE SURGE COUNTER ON THE SURGE ARRESTER AS SPECIFIED BY MANUFACTURER. PROVIDE ALL REQUIRED LUGS AND ACCESSORIES.
13. CONNECT EQUIPMENT GROUNDING CONDUCTOR TO THE BASES OF THE CIRCUIT SWITCHER POLE BASE CHANNEL AS SPECIFIED BY THE MANUFACTURER. PROVIDE ALL REQUIRED LUGS AND ACCESSORIES.
14. ALL CONNECTIONS BETWEEN DIS–SIMILAR METALS SHALL BE COATED WITH GLYPTAL INSULATING VARNISH. COVER ALL PORTIONS OF THE CONNECTION TO PREVENT INGRESS OF MOISTURE INTO THE JOINT. MINIMUM TWO COATS.
15. ALL EXOTHERMIC CONNECTIONS ABOVE GROUND GRADE IN THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSULATED WITH TWO LAYERS OF SELF–AMALGAMATING RUBBER TAPE FOLLOWED BY TWO LAYERS OF SCOTCH 55 ELECTRICAL TAPE FOR CORROSION PROTECTION.
16. DESIGN CHANGES NECESSITATED BY THE USE OF "APPROVED EQUAL" MATERIALS OR EQUIPMENT SHALL BE DETAILED BY THE CONTRACTOR VIA THE SHOP DRAWING SUBMITTAL PROCESS AS DESCRIBED IN THE SPECIFICATIONS AND CONSTRUCTION DOCUMENTS. ALL SUCH DRAWINGS SHALL BE PREPARED UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER REGISTERED OR LICENSED IN THE PROVINCE OF MANITOBA AND SHALL BE SEALED BY THE SAME ENGINEER.



SWITCH MAT GROUNDING DETAIL

SCALE: 1:30

REFER TO NOTES FOR DETAILS OF INSTALLATION

REFERENCE DRAWINGS	DESCRIPTION
1–0102–SFDW–002	66kV SUBSTATION, FOUNDATION SECTION
1–0102–EGAD–Y002	66kV SUBSTATION, CABLE DUCT BANK PLAN DET. & SECTIONS
1–0102–EGAD–Y001	66kV SUBSTATION, GENERAL ARRANGEMENT

1:30 300 0 600 1200

1:50 500 0 1000 2000

APEGM Certificate of Authorization
SNC-Lavalin Inc.
No. 4489

NO.	REVISIONS	DATE	DESIGN	CHECK
00	ISSUED FOR CONSTRUCTION – 976–2016	2017/04/05	CWB	CWB

CH2MHILL. SNC·LAVALIN KGS GROUP

DESIGNED BY: C. WEISS–BUNDY
CHECKED BY: C. WEISS–BUNDY
DRAWN BY: Y. KONIG
APPROVED BY: E. RYCZKOWSKI
SCALE: AS SHOWN
ISSUED FOR CONSTRUCTION BY: J. SHUMKA
DATE: 2016/04/15
DATE: 2017/04/05
CONSULTANT NO.: 474248

ENGINEER'S SEAL
PROVINCE OF MANITOBA C. L. WEISS-BUNDY Member 5001 REGISTERED PROFESSIONAL ENGINEER
2017/04/05

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT

SOUTH END WATER POLLUTION CONTROL CENTRE
SEWPCC UPGRADING/EXPANSION PROJECT
ELECTRICAL – GROUNDING LAYOUT
66 kV SUBSTATION
CIRCUIT SWITCHER AND A–FRAME DETAILS

CITY DRAWING NUMBER	SHEET	REV.	SIZE
1–0102–EGRD–Y004	001	00	A1

PLOT DATE: Mar 30, 2017 – 10:18am
FILE NAME:1–0102–EGRD–Y004.dwg

LAST SAVE: 2017/03/30 – 10:18am
PATH: P:\y AREA DRAWINGS\1–0102–EGRD–Y004.dwg