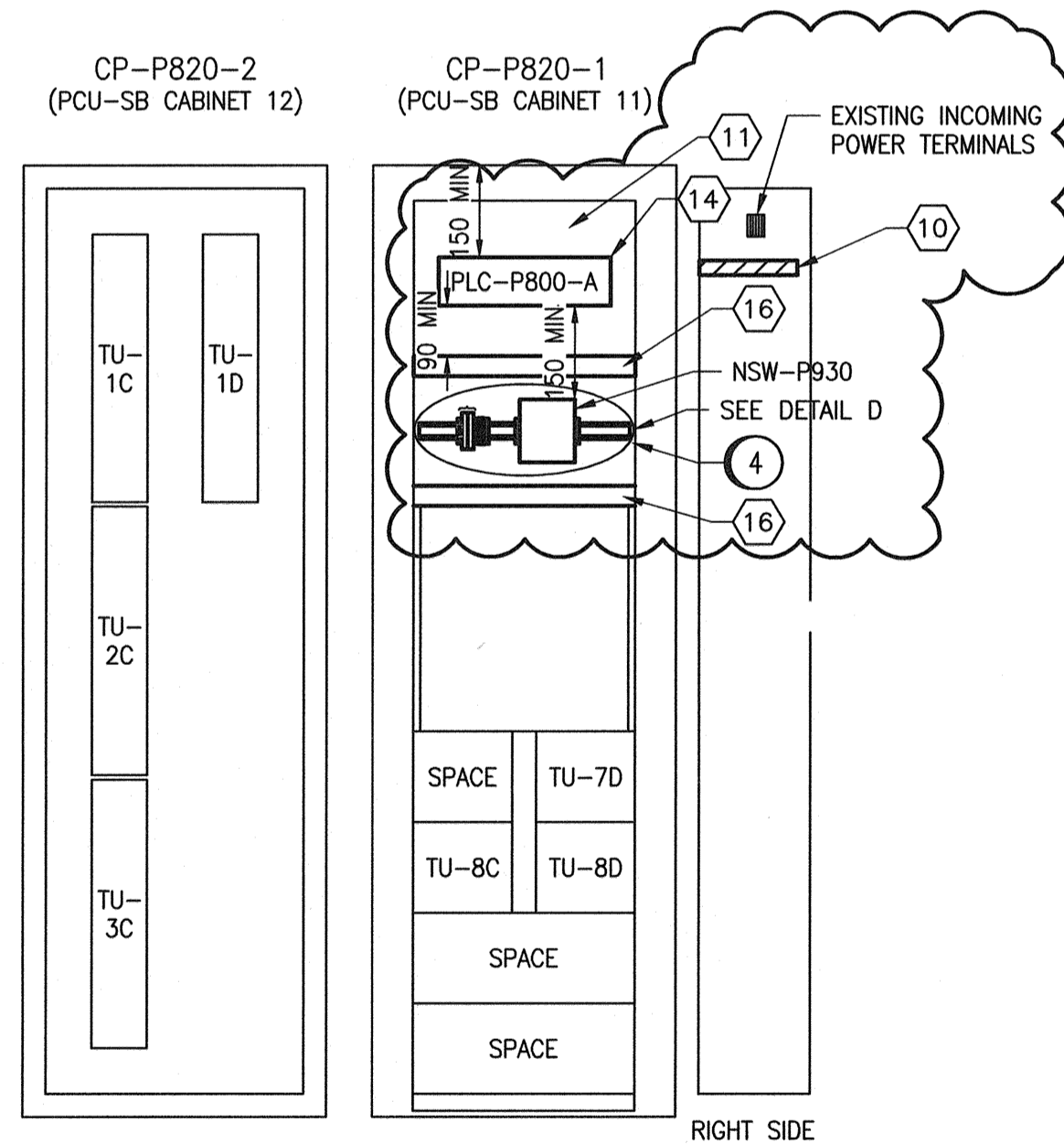
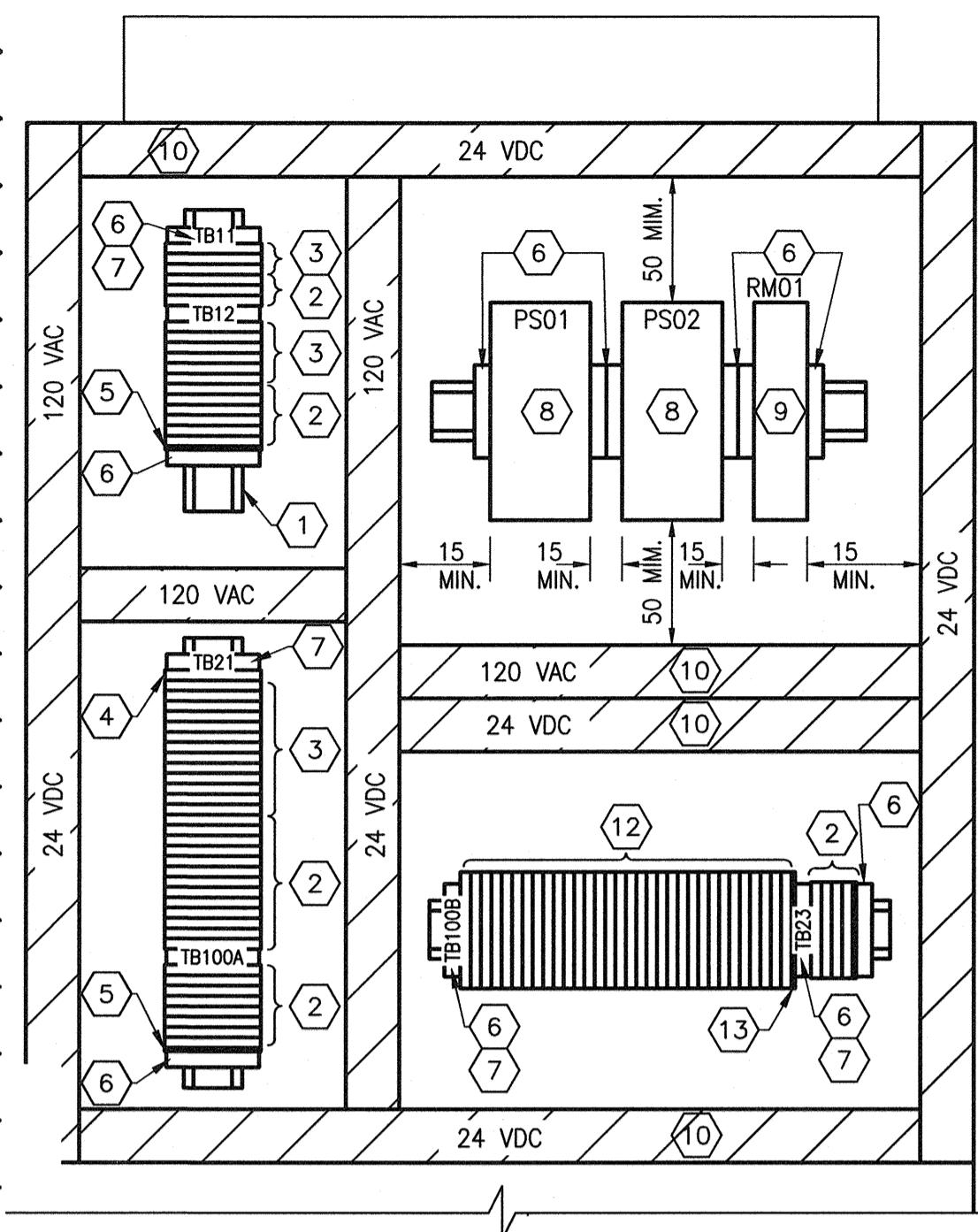


**CP-P820-1 & CP-P820-2 LAYOUT FRONT**  
SCALE: NTS



**CP-P820-1 AND CP-P820-2 LAYOUT BACK**  
SCALE: NTS



**A** **DETAIL - INTERNAL LAYOUT**  
SCALE: 1 : 4

RIO-P800-1.R0  
RACK: BME XBP 1200

PS	0	1	2	3	4	5	6	7	8	9	10	11	
BMX CPS 3020	BME CRA 312 10	BMX DAI 1604	BMX DAI 1604	BMX DAI 1604	BMX DAI 1604	BMX DAI 1604	BMX DAI 1604	BMX DAI 1604	BMX DAI 1604	SPACE (BMX XEM 010)	SPACE (BMX XEM 010)	SPACE (BMX XEM 010)	BMX XBE 1000

RIO-P800-1.R1  
RACK: BMX XBP 1200

PS	0	1	2	3	4	5	6	7	8	9	10	11	
BMX CPS 3020	BMX DDO 3202K	BMX DDO 1602	BMX DDO 1602	BMX DDO 1602	BMX DDO 1602	BMX AMI 0810	BMX AMI 0810	BMX AMI 0810	BMX AMI 0810	BMX AMO 0802	BMX AMO 0802	SPACE (BMX XEM 010)	BMX XBE 1000

**B** **DETAIL - RIO RACK CONFIGURATION**  
SCALE: NTS

**BILL OF MATERIALS**

ITEM	QTY	DESCRIPTION	MANUFACTURER	CATALOG NUMBER
1	AS REQ'D	35mm DIN RAIL	PHOENIX CONTACT	0801733
2	AS REQ'D	FEED THROUGH TERMINAL - UT 4-MTD	PHOENIX CONTACT	3046184
3	AS REQ'D	FUSED TERMINAL - UT 4 WITH FUSE PLUG-P-FU 5X20	PHOENIX CONTACT	3046142 3036806
4	AS REQ'D	POTENTIAL EARTH TERMINAL - UT 4-MTD-PE/S	PHOENIX CONTACT	3046207
5	AS REQ'D	TERMINAL END PLATE - D-UT 2,5/4 TWIN	PHOENIX CONTACT	3047141
6	AS REQ'D	TERMINAL END CLAMP - CLIFFIX 35	PHOENIX CONTACT	3022218
7	AS REQ'D	TERMINAL BLOCK MARKER - KLM-A	PHOENIX CONTACT	1004348
8	2	24 VDC POWER SUPPLY, QUINT SERIES, 10A	PHOENIX CONTACT	2866763
9	1	ORING REDUNDANCY MODULE, QUINT SERIES, 2x10A	PHOENIX CONTACT	2320173
10	AS REQ'D	NARROW SLOT WIRING DUCT AND COVER, 1.26"x2.12"	PANDUIT	F1X2L66
11	AS REQ'D	MOUNTING PANEL, WHITE ENAMEL FINISH	-	-
12	AS REQ'D	DOUBLE LEVEL FUSED TERMINAL - UTTB 4 WITH FUSE PLUG - P-FU 5X20	PHOENIX CONTACT	3044720 3036806
13	AS REQ'D	DOUBLE LEVEL TERMINAL END PLATE - D-UTTB 2,5/4	PHOENIX CONTACT	3047293
14	1	HOT STANDBY M580 RACK - AS PER DETAIL C	SCHNEIDER	-
15	2	X80 RIO RACK - AS PER DETAIL B	SCHNEIDER	-
16	2	CABLETEK HORIZONTAL CABLE MANAGER	HOFFMAN	DCHS1
17	1	RACK MOUNT ADJUSTABLE DIN RAIL FRAME	HAMMOND	RMAD19003BK
18	2	ELECTRONIC CIRCUIT PROTECTION CLASS 2 CIRCUITS ESX10-T (1A)	WEIDMULLER	6720005301
19	01	ETHERNET EXTENDED MANAGED SWITCH, DRS, 8 COPPER PORTS	SCHNEIDER	TCSESM083F23F1

**GENERAL NOTES:**

- EXISTING DCS CABINETS TO BE RE-USED TO HOUSE NEW CONTROL SYSTEM COMPONENTS. PROVIDE MODIFICATIONS TO EXISTING CABINETS AS REQUIRED TO INCORPORATE NEW CONTROL SYSTEM EQUIPMENT AND WIRING. MEASURE, CONFIRM FIT, AND ADJUST THE WORK WITHIN THE CONSTRAINTS OF THE EXISTING CONDITIONS. PROVIDE ALL MOUNTING SUPPORTS AND HARDWARE AS REQUIRED. NEW WORK IS CLOUDED.
- PROVIDE MOUNTING PANEL SECTIONS AS REQUIRED TO ALLOW FOR EXPEDITIOUS INSTALLATION WITHIN THE CABINET.
- ALL DCS TERMINATION UNITS SHOWN ARE EXISTING.
- SEE MODULE LAYOUT DRAWING FOR PLC AND RIO CONFIGURATION.
- SEE NETWORK DIAGRAM FOR NETWORK CONNECTIONS REQUIRED.
- ALL ETHERNET CABLING IS TO BE ATTACHED TO THE SIDE WALLS OF THE ENCLOSURE AND KEPT AS FAR AS POSSIBLE FROM 120VAC WIRING.
- USE PRE-MANUFACTURED IO CORDSETS TO CONNECT EXISTING TERMINATION UNITS TO PLC IO MODULES. ENSURE CORDSET LENGTHS ARE SIZED SUCH THAT CABLE SLACK IS NOT EXCESSIVE.
- PANEL REQUIRES INSPECTION BY THE OFFICE OF FIRE COMMISSIONER FOR SPECIAL ACCEPTANCE.
- SEE ACBD-P001 FOR EXISTING LAYOUT AND REMOVAL DETAILS.

**PANEL MANUFACTURE NOTES:**

- ALL POWER WIRING TO BE TEW/MTW 300V, 105°C INSULATION, STRANDED COPPER, 12 AWG OR LARGER WHERE CURRENT REQUIREMENTS DICTATE AS PER CEC REQUIREMENTS.
- ALL CONTROL WIRING TO BE TEW/MTW 300V, 105°C INSULATION, STRANDED COPPER, 16 AWG.
- ALL ANALOG WIRING TO BE 18 AWG SHIELDED TWISTED PAIR, WITH INSULATION RATED AT 300V.
- EXTERNAL COMPONENTS ARE TO BE LABELED AS SHOWN ON THE DRAWINGS.
- ALL FUSES ARE TO BE PROVIDED. IN ADDITION, TWO SPARES OF EACH FUSE SIZE ARE TO BE PROVIDED.
- TEST ALL WIRING AND COMPONENTS FOR FUNCTIONAL OPERATION, CORRECT CONNECTION, CONTINUITY AND INSULATION INTEGRITY. DOCUMENT ALL TEST RESULTS.
- ALL MAJOR COMPONENTS INSIDE THE PANEL ARE TO BE LABELED WITH LAMACOIDS IN ACCORDANCE WITH MAJOR DESCRIPTIONS ON THE DRAWINGS.
- PROVIDE WIRE BARREL FERRULES FOR ALL WIRING.
- ALL TERMINAL BLOCKS SHALL BE NUMBERED AS SHOWN IN THE DRAWINGS, COMPLETE WITH GROUP LABELING.
- ALL WIRES SHALL BE MARKED AS INDICATED ON THE DRAWINGS.
- ROUTE ALL 24VDC WIRING SEPARATE FROM 120VAC WIRING.
- JUMPER BARS SHALL BE USED INSTEAD OF WIRE JUMPERS WHERE POSSIBLE.

**SPECIFIC NOTES:**

- TIE-WRAP CORDSETS FOR TERMINATION UNITS TOGETHER ALONG SIDE OF CABINET. GROUP CORDSETS FOR ANALOG SIGNALS TOGETHER AND ENSURE A MINIMUM OF 50mm SEPARATION FROM 120 VAC WIRING. DO NOT IMPEDE ACCESS TO REMOTE IO RACKS.
- WHERE WIRES CANNOT BE RUN IN WIREWAY, INSTALL IN A NEAT AND ORDERLY MANNER ALONG SIDE OF CABINET.
- USE EXISTING MOUNTING RAILS TO MOUNT NEW MOUNTING PANELS.
- ADJUST FRAME TO SUIT INSTALLATION REQUIREMENTS.
- REPLACE ALL 0.25A FUSES ON DISCRETE INPUT TERMINATION UNITS WITH 0.125A FUSES.

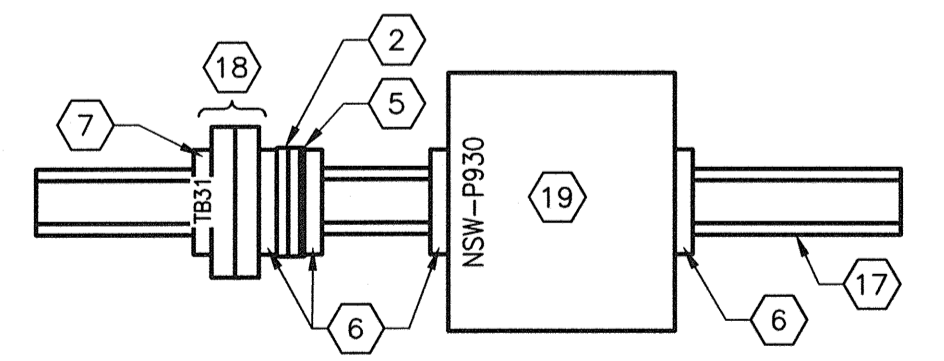
**CONNECTOR LEGEND**

- BMX FCW 303 40-WAY CONNECTOR WITH FLYING LEADS
- CORDSET - TYPE 1 SEE DWG. ADTL-A011 FOR DETAILS
- CORDSET - TYPE 2 SCHNEIDER PART No.: 990ADBLX80104
- CORDSET - TYPE 3 SCHNEIDER PART No.: 990ADBLX80101
- CORDSET - TYPE 4 SCHNEIDER PART No.: 990ADBLX80102

PLC-P800-A  
RACK: BME XBP 0800  
HSBY SFP SOCKET - RJ45: 490NAC0100

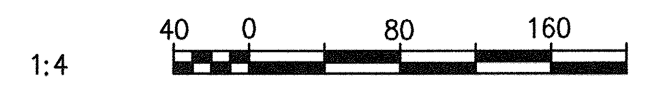
PS	0	1	2	3	4	5	6	7	
BMX CPS 3020	BME HSB 4040	BME NOC 0301	BME NOC 0321	SPACE (BMX XEM 010)	BME NOC 0301	SPACE (BMX XEM 010)	SPACE (BMX XEM 010)	SPACE (BMX XEM 010)	SPACE

**C** **DETAIL - HOT STANDBY M580 RACK CONFIGURATION**  
SCALE: NTS



**D** **DETAIL - INTERNAL LAYOUT**  
SCALE: 1 : 4

REFERENCE DRAWINGS	DESCRIPTION
1-0102-ACBD-P001	CABINET LAYOUT, DEMOLITION
1-0102-ANET-P003	NETWORK DIAGRAM
1-0102-AGAD-P001	EQUIPMENT LAYOUT, CONTROL ROOM

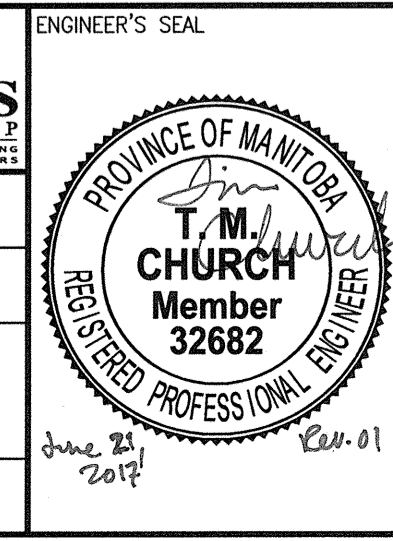


**APEGM**  
Certificate of Authorization  
SNC-Lavalin Inc.  
No. 4489

NO.	REVISIONS	DATE	DESIGN	CHECK
01	ISSUED FOR ADDENDUM 3 - 976-2016	2017/06/23	TMC	PC
00	ISSUED FOR CONSTRUCTION - 976-2016	2017/04/05	MW	TMC

**CH2MHILL.**  
SNC-LAVALIN  
DESIGNED BY: M. WANG  
DRAWN BY: M. WANG  
SCALE: AS SHOWN  
DATE: 2014/06/19  
CONSULTANT NO.: 474248

CHECKED BY: T. CHURCH  
APPROVED BY: E. RYCZKOWSKI  
ISSUED FOR CONSTRUCTION BY: J. SHUMKA  
DATE: 2017/04/05



**THE CITY OF WINNIPEG**  
WATER AND WASTE DEPARTMENT  
SOUTH END WATER POLLUTION CONTROL CENTRE  
SEWPPC UPGRADING/EXPANSION PROJECT  
AUTOMATION - CABINET LAYOUT  
PRIMARY CLARIFIERS  
CP-P820-1 AND CP-P820-2

CITY DRAWING NUMBER: 1-0102-ACBD-P001  
SHEET: 001  
REV: 01  
SIZE: A1