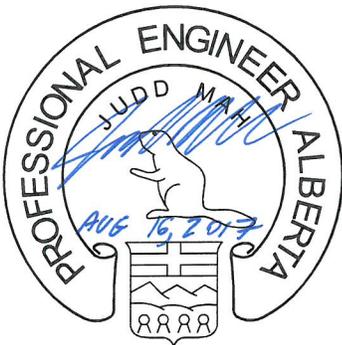
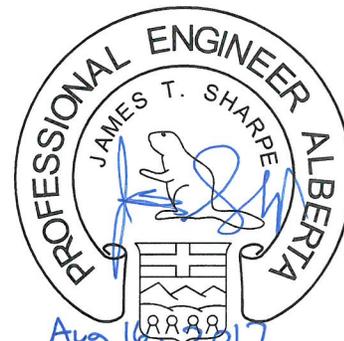


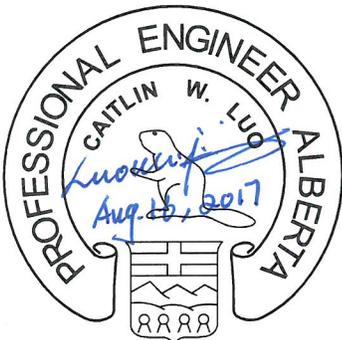
**TECHNICAL SPECIFICATIONS**  
**FOR THE**  
**EDMONTON MAXIMUM SECURITY INSTITUTION**  
**AIR HANDLER, HEATING, AND PIPING REPLACEMENT**  
**AUGUST 2017**



Judd Mah, P.Eng.  
Mechanical Engineer



James Sharpe, P.Eng.  
Electrical Engineer



Caitlin Luo, P.Eng.  
Structural Engineer

<b>ASSOCIATED ENGINEERING</b>	
<b>QUALITY MANAGEMENT SIGN-OFF</b>	
Signature:	<u> Hans Wolf </u>
Date:	<u> 16 Aug 2017 </u>

**APEGA Permit to Practice P 3979**

Prepared by Associated Engineering Alberta Ltd.  
CONFIDENTIALITY AND © COPYRIGHT

These documents are for the sole use of the Engineer, and of the Owner, Contractor, Subcontractors and Suppliers having a Contract for the execution of the Work covered in the Contract Documents, in whole or in part. The Contract Documents contain proprietary and confidential information that shall not be reproduced in any manner or disclosed to or discussed with any other parties without the express written permission of the Engineer. Information in these documents is to be considered the intellectual property of the Engineer in accordance with Canadian copyright law.

## TABLE OF CONTENTS

## PAGES

### DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

Section 00 01 07 - Seals Page	1
Section 00 01 10 - Table of Contents	6
Section 00 01 15 - List of Drawings	3

### DIVISION 01 - GENERAL REQUIREMENTS

Section 01 11 00 - Summary of Work	10
Section 01 14 00 - Work Restrictions	3
Section 01 21 00 - Allowances	1
Section 01 29 00 - Payment Procedures	3
Section 01 31 19 - Project Meetings	3
Section 01 32 16.07 - Construction Progress Schedule - Bar (GANTT) Chart	4
Section 01 33 00 - Submittal Procedures	4
Section 01 35 13 - Security Requirements	8
CPIC Form	1
Section 01 35 29.06 - Health and Safety Requirements	3
Section 01 35 43 - Environmental Procedures	3
Section 01 41 00 - Regulatory Requirements	2
Section 01 45 00 - Quality Control	3
Section 01 51 00 - Temporary Utilities	3
Section 01 52 00 - Construction Facilities	3
Section 01 56 00 - Temporary Barriers and Enclosures	2
Section 01 61 00 - Common Product Requirements	4
Section 01 71 00 - Examination and Preparation	1
Section 01 73 00 - Execution	2
Section 01 74 11 - Cleaning	2
Section 01 74 21 - Construction/Demolition Waste Management and Disposal	3
Section 01 77 00 - Closeout Procedures	2
Section 01 78 00 - Closeout Submittals	7
Section 01 79 00 - Demonstration and Training	2

---

Section 01 91 13 - General Commissioning (CX) Requirements	9
Section 01 91 31 - Commissioning (CX) Plan	7
Commissioning Plan	103
Section 01 91 33 - Commissioning (CX) Forms	2
Section 01 91 41 - Commissioning (CX) Training	6
Section 01 91 51 - Building Management Manual (BMM)	4
 <b>DIVISION 02 - EXISTING CONDITIONS</b>	
Section 02 41 13 - Selective Demolition	3
Section 02 82 00 - Asbestos Removal	15
Hazardous Building Material Assessment Report	87
Section 02 83 00 - Lead Abatement	9
Section 02 83 01 - Removal and Disposal of Lead Products	2
Section 02 84 00 - PCB Ballast Removal	4
Section 02 87 00 - Mercury Products Removal	2
 <b>DIVISION 03 - CONCRETE</b>	
Section 03 10 00 - Concrete Forming and Accessories	2
Section 03 20 00 - Concrete Reinforcing	3
Section 03 30 00 - Cast-In-Place Concrete	5
 <b>DIVISION 04 - MASONRY</b>	
Section 04 04 25 - Masonry Units	1
 <b>DIVISION 05 - METALS</b>	
Section 05 12 23 - Structural Steel and Miscellaneous Metals	4
Section 05 50 10 - Metal Fabrications	2
 <b>DIVISION 06 – WOOD, PLASTICS AND COMPOSITES</b>	
Section 06 10 00 – Rough Carpentry	2

## **DIVISION 07 - THERMAL AND MOISTURE PROTECTION**

Section 07 21 00 - Thermal Insulation	4
Section 07 26 00 - Vapour Retarders	2
Section 07 27 00 - Air Barriers	3
Section 07 52 11 - Modified Bitumen Membrane Roofing	5
Section 07 62 00 - Sheet Metal Flashing and Trim	2
Section 07 81 16 - Cementitious Fireproofing	4
Section 07 84 00 - Firestopping	6
Original Fire Rating Drawings	2
Section 07 92 00 - Joint Sealants	5

## **DIVISION 08 - OPENINGS**

Section 08 11 13 - Standard Metal Doors and Frames	4
Section 08 31 13 - Access Doors and Frames	3
Section 08 70 00 - Hardware	4
Section 08 91 26 - Door Louvres	3

## **DIVISION 09 – PAINTING AND FINISHES**

Section 09 21 16 - Gypsum Board Assemblies	4
Section 09 51 13 - Acoustic Panel Ceilings	3
Section 09 65 13 - Resilient Base and Accessories	2
Section 09 70 50 - Resinous Flooring	4
Section 09 91 00 - Painting	5

## **DIVISION 10 - SPECIALTIES**

Section 10 44 16.19 - Fire Extinguishers and Safety Blankets	4
--------------------------------------------------------------	---

## **DIVISION 22 - PLUMBING**

Section 22 05 00 - Common Work Results for Plumbing	5
Section 22 11 16 - Domestic Water Piping	8
Section 22 13 17 - Drainage Waste and Vent Piping - Cast Iron and Copper	3
Section 22 13 18 - Drainage Waste and Vent Piping - Plastic	3

Section 22 30 05 - Domestic Water Heaters	6
Section 22 42 01 - Plumbing Specialties and Accessories	11

**DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING (HVAC)**

Section 23 05 00 - Common Work Results For HVAC	6
Section 23 05 01 - Use of HVAC Systems During Construction	1
Section 23 05 05 - Installation of Pipework	6
Section 23 05 13 - Common Motor Requirements for HVAC Equipment	5
Section 23 05 16 - Expansion Fittings and Loops for HVAC	3
Section 23 05 17 - Pipe Welding	5
Section 23 05 19 - Meters and Gauges For HVAC Piping	4
Section 23 05 19.01 - Thermometers and Pressure Gauges - Piping Systems	4
Section 23.05 23.01 - Valves - Bronze	7
Section 23 05 23.02 - Valves - Cast Iron	8
Section 23 05 23.03 - Valves - Cast Steel	6
Section 23 05 23.05 - Butterfly Valves	6
Section 23 05 29 - Hangers and Supports For HVAC Piping and Equipment	9
Section 23 05 48 - Vibration and Seismic Controls For HVAC Piping and Equipment	6
Section 23 05 53.01 - Mechanical Identification	6
Section 23 05 93 - Testing, Adjusting and Balancing For HVAC	10
Section 23 07 13 - Duct Insulation	6
Section 23 07 15 - Thermal Insulation For Piping	9
Section 23 08 01 - Performance Verification Mechanical Piping Systems	3
Section 23 08 02 - Cleaning and Start-up of Mechanical Piping Systems	4
Section 23 11 23 - Facility Natural Gas Piping	5
Section 23 21 14 - Hydronic Specialties	5
Section 23 21 23 - Hydronic Pumps	5
Section 23 23 00 - Refrigerant Piping	6
Internal Service Directive 318-4	10
Section 23 33 00 - Air Duct Accessories	4
Section 23 33 14 - Dampers - Balancing	3
Section 23 33 15 - Dampers - Operating	4
Section 23 33 16 - Dampers - Fire and Smoke	4

Section 23 33 46 - Flexible Ducts	5
Section 23 34 00 - HVAC Fans	9
Section 23 36 00 - Air Terminal Units	4
Section 23 37 13 - Diffusers, Registers and Grilles	3
Section 23 37 20 - Louvres, Intakes and Vents	3
Section 23 51 00 - Breeching, Chimneys and Stacks	3
Section 23 52 00 - Heating Boilers	9
Section 23 55 01 - Duct Heaters	4
Section 23 65 10 - Condensers	5
Section 23 73 11 - Air Handling Units - Packaged	8
Section 23 74 00 - Packaged Outdoor HVAC Equipment	9
Section 23 81 23 - Computer Room Air Conditioning	7
Section 23 82 21 - Incremental Heating and Cooling Units	4
Section 23 82 33.02 - Commercial Heating Terminals	4

## **DIVISION 25 - INTEGRATED AUTOMATION**

Section 25 01 11 - EMCS: Start-up, Verification and Commissioning	6
Section 25 01 12 - EMCS: Training	3
Section 25 05 01 - EMCS: General Requirements	9
Section 25 05 02 - EMCS: Submittals and Review Process	4
Section 25 05 03 - EMCS: Project Record Documents	3
Section 25 05 54 - EMCS: Identification	2
Section 25 05 60 - EMCS: Field Installation	9
Section 25 08 20 - EMCS: Warranty and Maintenance	4
Section 25 10 01 - EMCS: Local Area Network (LAN)	2
Section 25 10 02 - EMCS: Operator Work Station (OWS)	11
Section 25 30 01 - EMCS: Building Controllers	9
Section 25 30 02 - EMCS: Field Control Devices	15
Section 25 90 01 - EMCS: Site Requirements, Applications and Systems Sequences of Operation	28

## **DIVISION 26 - ELECTRICAL**

Section 26 05 00 - Common Work Results for Electrical	7
Shutdown Strategy	1
Section 26 05 01 - Electrical Field Inspection and Testing	10
Section 26 05 21 - Wires and Cables (0-1000 V)	2
Section 26 05 28 - Grounding - Secondary	4
Section 26 05 31 - Splitters, Junction, Pull Boxes and Cabinets	3
Section 26 05 32 - Outlet Boxes, Conduit Boxes and Fittings	2
Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings	4
Section 26 12 16.01 - Dry Type Transformers Up to 600 V Primary	4
Section 26 24 16.01 - Panelboards Breaker Type	4
Section 26 28 21 - Moulded Case Circuit Breakers	2
Section 26 28 23 - Disconnect Switches - Fused and Non-Fused	1
Section 26 29 01 - Contactors	2
Section 26 29 10 - Motor Starters to 600V	5

## **DIVISION 28 - ELECTRONIC SAFETY AND SECURITY**

Section 28 31 01 - Fire Alarms	8
Existing Fire Alarm Drawings	18

**END OF DOCUMENT**

**DRAWINGS APPENDED**

**Drawing No.    Title**

**General**

G1	COVER SHEET LIST TABLE
G2	SITE ACCESS BASEMENT/TUNNEL PLAN
G3	SITE ACCESS MAIN FLOOR PLAN
G4	SITE ACCESS MECHANICAL ROOM & ROOF PLAN

**Architectural**

A1	CEILING PLANS AND DETAILS
A2	PLAN AND SECTION DETAILS
A3	PLAN AND SECTION DETAILS

**Structural**

S1	STRUCTURAL AHU SUPPORTS
S2	STRUCTURAL AHU SUPPORTS
S3	STRUCTURAL PENETRATION FILL

**Mechanical**

M1	MECHANICAL LEGEND
M2	AB BLOCK TUNNEL DEMOLITION PLAN
M3	CD BLOCK TUNNEL DEMOLITION PLAN
M4	GH BLOCK TUNNEL DEMOLITION PLAN
M5	EF BLOCK TUNNEL DEMOLITION PLAN
M6	AB BLOCK UNIT OFFICES AND MAIN FLOOR CELL BLOCK
M7	CD BLOCK UNIT OFFICES AND MAIN FLOOR CELL BLOCK
M8	GH BLOCK UNIT OFFICES AND MAIN FLOOR CELL BLOCK
M9	EF BLOCK UNIT OFFICES AND MAIN FLOOR CELL BLOCK
M10	GYM AREA AND PILL ROOM DEMOLITION PLAN
M11	ADMISSION, DISCHARGE, CONTACT AND VISITATION
M12	EXECUTIVE SERVICES DEMOLITION PLAN
M13	PROGRAM OFFICES DEMOLITION PLAN
M14	ENGINEERING, MAINTENANCE, LAUNDRY AND EDUCATION
M15	SEGREGATION AND DISASSOCIATION BLOCK
M16	WEST MECHANICAL ROOM NORTH DEMOLITION PLAN
M17	WEST MECHANICAL ROOM SOUTH DEMOLITION PLAN
M18	EAST MECHANICAL ROOM DEMOLITION PLAN
M19	WEST ROOF PLAN DEMOLITION & NEW
M20	EAST ROOF PLAN DEMOLITION & NEW
M21	PLUMBING PLAN NORTH WEST
M22	PLUMBING PLAN SOUTH EAST
M23	PLUMBING PLAN WEST
M24	PLUMBING PLAN SOUTH WEST
M25	AB BLOCK TUNNEL HEATING AND CONTROLS
M26	CD BLOCK TUNNEL HEATING AND CONTROLS

---

<b><u>Drawing No.</u></b>	<b><u>Title</u></b>
M27	GH BLOCK TUNNEL HEATING AND CONTROLS
M28	EF BLOCK TUNNEL HEATING AND CONTROLS
M29	GYM AREA HEATING AND CONTROLS
M30	HEALTHCARE HEATING AND CONTROLS
M31	ADMISSION, DISCHARGE, CONTACT AND VISITATION
M32	EXECUTIVE SERVICES HEATING AND CONTROLS
M33	FOOD SERVICES HEATING AND CONTROLS
M34	CORCAN AREA HEATING AND CONTROLS
M35	ENGINEERING, MAINTENANCE, LAUNDRY AND EDUCATION
M36	SEGREGATION AND DISASSOCIATION BLOCK
M37	SEGREGATION AND DISASSOCIATION BLOCK
M38	AB BLOCK TUNNEL VENTILATION PLAN
M39	CD BLOCK TUNNEL VENTILATION PLAN
M40	GH BLOCK TUNNEL VENTILATION PLAN
M41	EF BLOCK TUNNEL VENTILATION PLAN
M42	AB BLOCK UNIT OFFICES LOWER LEVEL AND 1ST FLOOR CELL
M43	CD BLOCK UNIT OFFICES LOWER LEVEL AND 1ST FLOOR CELL
M44	GH BLOCK UNIT OFFICES LOWER LEVEL AND 1ST FLOOR CELL
M45	EF BLOCK UNIT OFFICES LOWER LEVEL AND 1ST FLOOR CELL
M46	GYM AREA & PSYCHOLOGY VENTILATION PLAN
M47	CONTACT & VISITATION VENTILATION PLAN
M48	FOOD SERVICES VENTILATION PLAN
M49	ENGINEERING, MAINTENANCE, LAUNDRY AND EDUCATION
M50	AB BLOCK UNIT OFFICES UPPER LEVEL AND 2ND FLOOR CELL
M51	CD BLOCK UNIT OFFICES UPPER LEVEL AND 2ND FLOOR CELL
M52	EF BLOCK UNIT OFFICES UPPER LEVEL AND 2ND FLOOR CELL
M53	GH BLOCK UNIT OFFICES UPPER LEVEL AND 2ND FLOOR CELL
M54	SEGREGATION AND DISASSOCIATION BLOCK
M55	SEGREGATION AND DISASSOCIATION BLOCK
M56	SEGREGATION AND DISASSOCIATION BLOCK
M57	WEST MECHANICAL ROOM NORTH NEW CONSTRUCTION
M58	WEST MECHANICAL ROOM SOUTH NEW CONSTRUCTION
M59	EAST MECHANICAL ROOM NEW CONSTRUCTION
M60	SECTIONS 1
M61	SECTIONS 2
M62	DETAILS 1
M63	DETAILS 2
M64	DETAILS 3
M65	DETAILS 4
M66	SCHEDULES 1
M67	SCHEDULES 2
M68	SCHEDULES 3

**Drawing No.**    **Title**

**Electrical**

E1	SYMBOLS AND LEGEND
E2	OVERALL SITE PLAN
E3	WEST BUILDING PLAN EQUIPMENT LAYOUT
E4	EAST BUILDING PLAN EQUIPMENT LAYOUT
E5	UPPER LEVEL EAST AND WEST
E6	BLOCKS 'A', 'B', 'C', 'D' 'E', 'F', 'G' AND 'H' LOWER
E7	SINGLE LINE DIAGRAM MCC #1
E8	SINGLE LINE DIAGRAM MCC #2
E9	SINGLE LINE DIAGRAM MCC #3
E10	SINGLE LINE DIAGRAM MCC #4
E11	SINGLE LINE DIAGRAM MCC #5
E12	SINGLE LINE DIAGRAM MCC #6
E13	SINGLE LINE DIAGRAM MCC #7
E14	SINGLE LINE DIAGRAM MCC #8 & MCC #10
E15	MCC LAYOUT ELEVATIONS MCCs 1, 2, 3 & 4
E16	MCC LAYOUT ELEVATIONS MCCs 5, 6, 7 & 8
E17	MCC LAYOUT ELEVATION MCCs 9 & 9A
E18	LOWER LEVEL AND 1ST FLOOR CELL FIRE ALARM LAYOUT
E19	UPPER LEVEL AND 2ND FLOOR CELL FIRE ALARM LAYOUT
E20	SEGREGATION AND DISASSOCIATION BLOCK
E21	BLOCKS 'A', 'B', 'C', 'D' 'E', 'F', 'G' AND 'H'
E22	DISTRIBUTION PANEL SCHEDULES PANELS A3, C3, E3, AND G3
E23	DISTRIBUTION PANEL SCHEDULE PANEL MR5
E24	EQUIPMENT LOAD SCHEDULE - SHEET 1 of 2
E25	EQUIPMENT LOAD SCHEDULE - SHEET 2 of 2

**END OF DOCUMENT**