

ADDENDUM NUMBER: ONE

ISSUED BY: SEPW Architecture Inc.
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PROJECT: NEW POLICE BUILDING
ONION LAKE, SASKATCHEWAN

This Addendum forms part of the Contract Documents and amends the original Drawings and Specifications dated 2015-09-24, previous Addenda if applicable and as noted below. This Addendum consists of 4 pages and attached Specifications and Attachments as listed below. Ensure that all parties are aware of all items included in this Addendum.

The following revised or additional Specifications and Attachments accompany and form an integral part of this Addendum:

Section No.	Title
10 11 23	Tackboards

Attachment
1. Mechanical Appendix PI PV Forms
2. Electrical performance verification and product information forms.
3. AR1 Millwork Detail

A-1-1 REF. SECTION 01 91 33 COMMISSIONING (CX) FORMS

1. Add mechanical Appendix PI PV Forms to the end of Section 01 91 33.
2. Add electrical performance verification and product information forms to the end of Section 01 91 33.

A-1-2 REF. SECTION 05 50 00 METAL FABRICATIONS

1. Delete 2.9 Corner Guards.

A-1-3 REF. SECTION 07 27 00 AIR AND VAPOUR BARRIERS

1. Revise 2.3.1 as follows: Add “.6 W.R. Meadows Sealtight Air-Shield”
2. Revise 2.3.1 as follows: Add “.7 W.R. Meadows Sealtight Air-Sheild XLT”
3. Revise 2.4.1 as follows: Add “.3 Vapro Shield Wrapshield SA”

A-1-4 REF. SECTION 08 71 00 DOOR HARDWARE

1. Revise Door 104B as follows: Remove “w/integral hold open”.

2. Revise Door 141 as follows: Add “non-removable pins”.
3. Revise Door 147A as follows: Add “1 door viewer”.
4. Revise Door 147B as follows: Add “1 door viewer”.
5. Revise Door 201A as follows: Delete “2 chain stops” and Add “2 closers”.

A-1-5 REF. SECTION 08 90 10 DOOR, FRAME AND HARDWARE SCHEDULE

1. Revise Door 113A to read as follows: “Keyed on Room 113 side. Electric strike”.

A-1-6 REF. SECTION 09 06 01 ROOM FINISH SCHEDULE

1. Add “RECESSED ENTRANCE MAT” to Room 113

A-1-7 REF. SECTION 09 91 23 INTERIOR PAINTING

1. Revise 2.5 as follows: Add “.9 Room identification numbers: .1 High gloss epoxy siloxane, abrasion resistant, departmental representative to select colour from manufacturer’s standard range, dry film thickness: 3-7 mils per coat.”
2. Add 3.6 ROOM IDENTIFICATION NUMBERS
 - .1 Prep surface and paint in accordance with manufacturers written instructions.
 - .2 Acceptable Products
 - .1 PPG PSX 700
 - .2 Approved alternate.
 - .3 Schedule:
 - .1 Identification numbers in rooms: 148, 149, 150, 152, 153, 154, 155

A-1-8 REF. SECTION 10 11 23 TACKBOARDS

1. Add this section to the specifications.

A-1-9 REF. SECTION 10 21 13.13 METAL TOILET PARTITIONS

1. Revise 2.1.1.1.3 to read as follows: “Finish: All steel surfaces to be undercoated with an iron phosphate treatment suitable for final finish. Paint finish shall be a powder coating, baked on to provide a uniform smooth protective finish. Departmental representative to select colour from manufacturer’s standard range of colours.”
2. Revise 2.1.1.3 to read as follows: “Headrail: Extruded anodized aluminum, thickness 1.5mm. Outer flanges shall fit over the pilaster and be supported at the wall. Attached to wall and pilasters with manufacturer’s fittings. All joints in headrails shall be made at a pilaster.”

A-1-10 REF. SECTION 10 26 00 WALL AND CORNER GUARDS

1. Revise 3.6.1.1 to read as follows: "Room 121"

A-1-11 REF. SECTION 10 28 10 TOILET AND BATH ACCESSORIES

1. Revise 2.2 Components as follows: Add ".15 Shelf: stainless steel, satin finish, 405mm long, 125mm wide, hemmed front edge. Acceptable material: Bobrick B-295 or approved alternate."
2. Revise 3.2 Schedule as follows: Under 3.2.2 Add ".10 1 Shelf"
3. Revise 3.2 Schedule as follows: Under 3.2.4 Add ".10 1 Shelf"
4. Revise 3.2 Schedule as follows: Under 3.2.5 Revise .7 to include 2 feminine napkin disposal bins.
5. Revise 3.2 Schedule as follows: Under 3.2.10 Add ".6 1 feminine napkin disposal bin"

A-1-12 REF. SECTION 22 42 01 PLUMBING SPECIALTIES & ACCESSORIES

1. Revise 2.2.2.2 as follows: Add ".6 Cover for Finished Concrete Floor: Polished nickel bronze with recessed cover for filling with terrazzo, vandal-proof locking screws."

A-1-13 REF. DRAWING A2.2 SERVICE SPACE PLAN, WINDOW, DOOR & FRAME TYPES

1. Add the following note: "Window frame dimensions shown are the overall dimensions of the windows including any required brick moulds."

A-1-14 REF. DRAWING A2.4 LARGE SCALE PLANS

1. Delete "POLYCARBONATE CORNER MIRROR" note from Room 147 on drawing 1/A2.4.

A-1-15 REF. DRAWING A4.2, A4.3, A4.4 SECTION DETAILS

1. Revise details as follows: Delete J-Trim from bottom of metal cladding.

A-1-16 REF. DRAWING A4.12 DETAILS

1. Provide 200x13x200 embedded plate, c/w 4-12 diameter x 125 long nelson studs, at steel service stair to concrete slab connection points as required.

A-1-17 REF. DRAWING A6.2 MILLWORK DETAILS

1. Revise detail B21 as indicated in sketch AR1.

A-1-18 REF. DRAWING AS1.1 PILING PLAN

1. Revise pile mark located at the intersection of grid line 3 and H from P406 to P403.
2. Delete pile mark P406 from pile schedules 2/S1.1 and 3/S1.1.

A-1-19 REF. GENERAL QUESTIONS

1. Q: Request for Induroshine Polishing System to be including as an equivalent system.
A: Polished concrete specifications are prescriptive. If the products associated with this system meet the specifications then it is acceptable.
2. Q: Section 10 26 00 2.3 asks for Corner Guards and specifies the quantity as 3 etc. However, section 05 50 00 2.9 also calls for corner guards. Is Division 10 or Division 5 to supply these?
A: Division 10.
3. Q: Canadian Locker Company indicated that they have gun lockers with security locks that are all keyed differently but master keying is not available.
A: The gun lockers provided must meet the specifications.
4. Q: Drawings S1.1 shows both timber and concrete piles. The pile mark numbers are repeated under both timber and concrete schedules? Are there some of each type of pile and how do you discern between the types? Can we choose either type?
A: Piles may be bid on either pile schedule 2/S1.1 - Typical Friction Pile Detail, or 3/S1.1 – Driven Timber Pile Detail. Refer to geotechnical report S2091 by Clifton Associates Ltd. For extent of expected sleeving requirements if drilled cast in place option is taken.

END OF ADDENDUM NO. 1

PART 1 General

1.1 REFERENCES

- .1 Aluminum Association (AA).
 - .1 DAF 45-03, Designation System for Aluminum Finishes.
- .2 Underwriters' Laboratories of Canada (ULC).
 - .1 CAN/ULC-S102-M88 (R2000), Surface Burning Characteristics of Building Materials and Assemblies.
 - .2 CAN/ULC-S706-02, Wood Fibre Thermal Insulation for Buildings.

1.2 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet.
- .3 Shop Drawings:
 - .1 Indicate location, type, size, panel arrangement, backing, hardware, anchor or mounting details, frame or trim and accessories.
- .4 Samples:
 - .1 Submit tackboard covering samples for colour selection.

1.3 QUALITY ASSURANCE

- .1 Regulatory Requirements:
 - .1 Surface burning characteristics of materials: listed and labelled by an organization accredited by Standards Council of Canada.
- .2 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .3 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

PART 2 Products

2.1 ACCEPTABLE MANUFACTURERS

- .1 CP Distributors Ltd.
- .2 Shanahan's Building Specialties Limited

2.2 MATERIALS / COMPONENTS

- .1 Tackboards.
 - .1 12.7mm total thickness.
 - .2 Facing: Fabric, to CAN/ULC-S102-M88, manufacturer's standard tweed pattern, exposed edges for trim installation.
 - .1 Colour: (CP Distributors) 007 Puritan Grey or approved equivalent.
 - .3 Fabric adhesive: manufacturer's standard type.
 - .4 Core panel: 11 mm high-density wood fibreboard to CAN/ULC-S706.
 - .5 Trim: clear anodized satin finish, visible fasteners not allowed. Trim all panels except panels installed in display cases.
- .2 Joint reinforcement: concealed mechanical jointing system to provide straight, rigid, continuously supported, tight butt, flush joints at surface.
- .3 Anchor clips, brackets and fasteners: concealed type recommended by manufacturer for fixed mounting.
- .4 Tackboard trim:
 - .1 Perimeter trim or frame of manufacturer's standard sections appropriate for installation conditions.
 - .2 Extruded aluminum: Aluminum Association alloy AA6063-T5, minimum 1.5 mm wall thickness, clear anodized finish.
- .5 Display Rail (Map Rail): Extruded clear anodized aluminum rail, complete with 50 mm x 6.4 mm thick cork insert tackstrip.

2.3 FABRICATION

- .1 Fabricate tackboard panels to sizes indicated. Dimensions on drawings are nominal. Panels may be 64 mm larger than sizes noted to suit standard trim.
- .2 Factory fit assemblies too large for shipment to site in one piece; disassemble for delivery and site assembly.

PART 3 Execution

3.1 INSTALLATION

- .1 Install in accordance with manufacturer's instructions, parallel to floor with uniform vertical surface, plumb and level, to provide rigid, secure surface.
- .2 Install trim around panels. Make mitres and joints to hair-line fit, free of rough edges. Use concealed brackets to reinforce and hold joints tight and flush. No exposed fasteners permitted. Overlap trim 6 mm onto panels.
- .3 Mechanical attachment:
 - .1 To concrete or solid masonry use lag screw and expansion bolts or screws and fibre plugs as appropriate for stresses involved.

- .2 To hollow masonry use toggle bolts or equivalent.
- .3 To wood or sheet metal use screws. Secure into backing in stud walls.

3.2 CLEANING

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Clean surfaces after installation using manufacturer's recommended cleaning procedures.
- .3 Clean aluminum with damp rag and approved non-abrasive cleaner.

END OF SECTION

Mechanical Component Form Index		
Section 1: Air Moving Equipment		
Form	Equipment	Reference
CFM1.1	Air Handling Unit AHU-1	Provided in Specifications
CFM1.2	Air Handling Unit AHU-2	Similar to CFM1.1
CFM1.3	Packaged Energy Recovery Unit ERV-1	Provided in Specifications
CFM1.4	Exhaust Fan EF-1	Provided in Specifications
CFM1.5	Exhaust Fan EF-2	Similar to CFM1.4
CFM1.6	Exhaust Fan EF-3	Similar to CFM1.4
CFM1.7	Exhaust Fan EF-4	Similar to CFM1.4
CFM1.8	Exhaust Fan EF-5	Similar to CFM1.4
CFM1.9	Exhaust Fan EF-6	Similar to CFM1.4
CFM1.10	Exhaust Fan EF-7	Similar to CFM1.4
CFM1.11	Exhaust Fan EF-8	Similar to CFM1.4
CFM1.12	Exhaust Fan EF-9	Similar to CFM1.4
CFM1.13	Exhaust Fan EF-10	Similar to CFM1.4
Section 2: Hydronic Equipment		
Form	Equipment	Reference
CFM2.1	Pump P-1a and P-1b	Provided in Specifications
CFM2.2	Pump P-2a and P-2b	Similar to CFM2.1
CFM2.3	Pump P-3	Similar to CFM2.1
CFM2.4	Pump P-4	Similar to CFM2.1
CFM2.5	Pump P-5	Similar to CFM2.1
CFM2.6	Boilers	Not Provided
Section 3: Terminal Heating Units		
Form	Equipment	Reference
CFM3.1	Cabinet Unit Heater CUH-1	Provided in Specifications
CFM3.2	Cabinet Unit Heater CUH-2	Similar to CFM3.1
CFM3.3	Cabinet Unit Heater CUH-3	Similar to CFM3.1
CFM3.4	Unit Heater UH-1	Similar to CFM3.1
CFM3.5	Unit Heater UH-2	Similar to CFM3.1
CFM3.6	Unit Heater UH-3	Similar to CFM3.1

Mechanical Component Form Index		
CFM3.7	Infloor Manifolds	Provided in Specifications
Section 4: New Terminal Boxes		
Form	Equipment	Reference
CFM4.1	VAV Box, VAV-101	Provided in Specifications
CFM4.2	VAV Box, VAV-102	Similar to CFM4.1
CFM4.3	VAV Box, VAV-103	Similar to CFM4.1
CFM4.4	VAV Box, VAV-104	Similar to CFM4.1
CFM4.5	VAV Box, VAV-105	Similar to CFM4.1
CFM4.6	VAV Box, VAV-106	Similar to CFM4.1
CFM4.7	VAV Box, VAV-107	Similar to CFM4.1
CFM4.8	VAV Box, VAV-108	Similar to CFM4.1
CFM4.9	VAV Box, VAV-109	Similar to CFM4.1
CFM4.10	VAV Box, VAV-110	Similar to CFM4.1
CFM4.11	VAV Box, VAV-111	Similar to CFM4.1
CFM4.12	VAV Box, VAV-112	Similar to CFM4.1
CFM4.13	VAV Box, VAV-113	Similar to CFM4.1
Section 5: Air Conditioning Equipment		
Form	Equipment	Reference
CFM5.1	Air Conditioning Unit CU-2	Provided in Specifications
CFM5.2	Air Conditioning Unit CU-3	Similar to CFM5.1
CFM5.3	Package Cooling AC-1	Provided in Specifications
Section 6: Miscellaneous		
Form	Equipment	Reference
CFM6.1	Silencers	Provided in Specifications
CFM6.2	System Fill	Not Provided
CFM6.3	Expansion Tank ET-1	Not Provided
CFM6.4	Expansion Tank ET-2	Not Provided
Section 7: Plumbing		
Form	Equipment	Reference
CFM7.1	Domestic Water Heater	Not Provided
CFM7.2	Plumbing Fixtures	Not Provided

Project Name: New Police Building - Onion Lake, Saskatchewan	Project #: 24/2014
	Component Form #: CFM1.1

Component Verification Form		<i>Section:</i>
<i>System:</i> HVAC	<i>Equipment:</i> Central Air Handling Unit	<i>Tag:</i> AHU-1

INSTALLED EQUIPMENT DATA:

Manufacturer	
Type	INDOOR AIR HANDLING UNIT
Model Number	
Serial Number	

LOCATION DATA:

Building	
Area Served	
Floor Located	2ND FLOOR
Room	201

PERFORMANCE DATA:

	Specified	Shop Drawings	Required Modification	Installed
Supply Fan:				
Fan Size & Type	9.5" FC Class II		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Air Flow	800 L/s (1,696 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
T.S.P.	991 Pa (3.98 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.S.P.	374 Pa (1.50 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Fan RPM			-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Fan Static Efficiency			-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Size	3.73 kW (5.00 hp)	(0.00 hp)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor RPM	1750 RPM		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Efficiency	Premium		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Voltage / Phase	200/3		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Return Fan:				
Fan Size & Type	9.5" FC Class II		-	
Air Flow	800 L/s (1,696 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
T.S.P.	500 Pa (2.01 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.S.P.	249 Pa (1.00 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Fan RPM			-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Fan Static Efficiency			-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Size	2.24 kW (3.00 hp)	(0.00 hp)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor RPM	1750 RPM		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Efficiency	Premium		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Voltage / Phase	200/3		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Heat Wheel:				
Air Flow	800 L/s (1,696 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Sensible Effectiveness (balanced)	76.8%		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Latent Effectiveness (balanced)	72.6%		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Size	0.37 kW (0.50 hp)	(0.00 hp)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor RPM	1750 RPM		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Voltage / Phase	230/3		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Defrost Control	VFD Motor		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Heating Coil:				
Air Flow	800 L/s (1,696 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.A.T.	-40.00 C (-40.00 F)	(32.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
L.A.T.	48.90 C (120.02 F)	(32.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
A.P.D.	72 Pa (0.29 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Water Flow	1.24 L/s (20 GPM)	(0 GPM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Medium	30% Propylene Glycol		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.W.T.	71.10 C (159.98 F)	(32.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
L.W.T.	54.40 C (129.92 F)	(32.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
W.P.D.	14.94 kPa (5.00 ft.w.c.)	(0.00 ft.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Energy Exchanged	81.50 kW (278 MBH)	(0 MBH)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014			
		Component Form #: CFM1.1			
Component Verification Form		<i>Section:</i>			
<i>System:</i> HVAC	<i>Equipment:</i> Central Air Handling Unit	<i>Tag:</i> AHU-1			
INSTALLED EQUIPMENT DATA:		LOCATION DATA:			
Manufacturer		Building			
Type	INDOOR AIR HANDLING UNIT	Area Served			
Model Number		Floor Located			
Serial Number		Room			
		2ND FLOOR			
		201			
PERFORMANCE DATA:					
	Specified	Shop Drawings	Required Modification	Installed	
Cooling Coil:					
Air Flow	800 L/s (1,696 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
E.A.T. DB	29.20 C (84.56 F)	(32.00 F)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
E.A.T. WB	20.00 C (68.00 F)	(32.00 F)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
L.A.T. DB	11.90 C (53.42 F)	(32.00 F)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
A.P.D.	157 Pa (0.63 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Suction Temperature	7.20 C (44.96 F)	(32.00 F)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Total Energy Exch.	23.90 kW (82 MBH)	(0.0 MBH)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Sensible Energy Exch.	15.80 kW (54 MBH)	(0.0 MBH)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Refrigerant	R-410A (HFC)		-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Compressors	2		-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Lead Capacity Control	Variable Speed		-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Lag Capacity Control	on/off		-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Comments					
SIGN-OFFS:					
Contractor:	_____			Date:	_____
Engineer:	_____			Date:	_____
CxA:	_____			Date:	_____
Component Verification Form		<i>Section:</i>			
<i>System:</i> HVAC	<i>Equipment:</i> Central Air Handling Unit	<i>Tag:</i> AHU-1			
<i>Prepared By:</i> HDA Engineering Ltd.		Regina, Sk, (306) 525-9815			

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014		
		Component Form #: CFM1.2		
Component Verification Form				
<i>System:</i> HVAC	<i>Equipment:</i> Indoor Air Handling Unit	<i>Section:</i> AHU-2		
INSTALLED EQUIPMENT DATA:		LOCATION DATA:		
Manufacturer		Building		
Type		Area Served		
Model Number		Floor Located		
Serial Number		Room		
		2ND FLOOR		
		201		
PERFORMANCE DATA:				
Supply Fan:	Specified	Shop Drawings	Required Modification	Installed
Fan Size & Type	20" AF Class II	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Air Flow	2,698 L/s (5,720 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
T.S.P.	1,322 Pa (5.31 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.S.P.	747 Pa (3.00 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Fan Static Efficiency		-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Size	7.46 kW (10.00 hp)	(0.00 hp)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Efficiency	Premium	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Voltage / Phase	200/3	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Return Fan:				
Fan Size & Type	18.25" AF Class II	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Air Flow	2,698 L/s (5,720 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
T.S.P.	515 Pa (2.07 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.S.P.	498 Pa (2.00 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Fan Static Efficiency		-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Size	5.60 kW (7.50 hp)	(0.00 hp)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Efficiency	Premium	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Voltage / Phase	200/3	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Heating Coil:				
Air Flow	2,698 L/s (5,720 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.A.T.	-1.10 C (30.02 F)	(32.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
L.A.T	24.90 C (76.82 F)	(32.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
A.P.D.	25 Pa (0.10 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Water Flow	1.18 L/s (19 GPM)	(0 GPM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.W.T.	71.10 C (159.98 F)	(32.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
L.W.T.	54.40 C (129.92 F)	(32.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
W.P.D.	3.88 kPa (1.30 ft.w.c.)	(0.00 ft.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Energy Exchanged	80.40 kW (274 MBH)	(0 MBH)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014			
		Component Form #: CFM1.2			
Component Verification Form					
<i>System:</i> HVAC		<i>Equipment:</i> Indoor Air Handling Unit			
		<i>Section:</i> AHU-2			
INSTALLED EQUIPMENT DATA:		LOCATION DATA:			
Manufacturer		Building			
Type		Area Served			
Model Number		Floor Located			
Serial Number		Room			
		2ND FLOOR			
		201			
PERFORMANCE DATA:					
	Specified	Shop Drawings	Required Modification	Installed	
Cooling Coil:					
Air Flow	2,698 L/s (5,720 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
E.A.T. DB	29.20 C (84.56 F)	(32.00 F)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
E.A.T. WB	19.20 C (66.56 F)	(32.00 F)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
L.A.T. DB	12.00 C (53.60 F)	(32.00 F)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
A.P.D.	229 Pa (0.92 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Suction Temperature	7.20 C (44.96 F)	(32.00 F)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Total Energy Exch.	71.50 kW (244 MBH)	(0.0 MBH)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Sensible Energy Exch.	53.10 kW (181 MBH)	(0.0 MBH)	-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Refrigerant	R-410A (HFC)		-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Compressors	2		-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Lead Capacity Control	Variable Speed		-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Lag Capacity Control	on/off		-	Eng: <input type="checkbox"/>	Con: <input type="checkbox"/>
Comments					
SIGN-OFFS:					
Contractor:				Date:	
Engineer:				Date:	
CxA:				Date:	
<small>Prepared By: HDA Engineering Ltd. Regina, Sk, (306) 525-9815</small>					

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014	
		Component Form #: CFM1.3	
<i>Component Verification Form</i>		<i>Section:</i>	
<i>System:</i> HVAC	<i>Equipment:</i> Packaged Energy Recovery Unit	<i>Tag:</i> ERV-1	
INSTALLED EQUIPMENT DATA:		LOCATION DATA:	
Manufacturer		Building	
Type	Energy Recovery Unit	Area Served	
Model Number		Floor Located	
Serial Number		Room	
PERFORMANCE DATA:			
	Specified	Shop Drawings	
	Required Modification	Installed	
Supply Fan:			
Fan Size & Type	FC	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Air Flow	1,100 L/s (2,332 CFM)	(0 CFM)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
T.S.P.	558 Pa (2.24 in.w.c.)	(0.00 in.w.c.)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.S.P.	249 Pa (1.00 in.w.c.)	(0.00 in.w.c.)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Fan RPM		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Fan Static Efficiency		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Size	2.24 kW (3.00 hp)	(0.00 hp)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor RPM	1750 RPM	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Efficiency	Premium	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Voltage / Phase	208/3	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Return Fan:			
Fan Size & Type	FC	-	
Air Flow	1,100 L/s (2,332 CFM)	(0 CFM)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
T.S.P.	558 Pa (2.24 in.w.c.)	(0.00 in.w.c.)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.S.P.	249 Pa (1.00 in.w.c.)	(0.00 in.w.c.)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Fan RPM		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Fan Static Efficiency		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Size	2.24 kW (3.00 hp)	(0.00 hp)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor RPM	1750 RPM	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Efficiency	Premium	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Voltage / Phase	208/3	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Energy Recovery			
Air Flow	1,100 L/s (2,332 CFM)	(0 CFM)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Sensible Effectiveness (summer balanced)	64.5%	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Latent Effectiveness (summer balanced)	0.0%	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Sensible Effectiveness (winter balanced)	65.5%	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Latent Effectiveness (winter balanced)	0.0%	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Summer Energy Exch.	(0 MBH)	(0 MBH)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Winter Energy Exch.	(0 MBH)	(0 MBH)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Defrost energy Exch.	(0 MBH)	(0 MBH)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Defrost Control	Bypass Damper	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014
		Component Form #: CFM1.3
Component Verification Form		<i>Section:</i>
<i>System:</i> HVAC	<i>Equipment:</i> Packaged Energy Recovery Unit	<i>Tag:</i> ERV-1
INSTALLED EQUIPMENT DATA:		LOCATION DATA:
Manufacturer	<input type="text"/>	Building
Type	Energy Recovery Unit	Area Served
Model Number		Floor Located
Serial Number		Room
		AHU-2
		2ND FLOOR
		201
PERFORMANCE DATA:		
	Specified	Shop Drawings
		Required Modification
		Installed
Comments		
SIGN-OFFS:		
Contractor:	_____	Date: _____
Engineer:	_____	Date: _____
CxA:	_____	Date: _____
Component Verification Form		<i>Section:</i>
<i>System:</i> HVAC	<i>Equipment:</i> Packaged Energy Recovery Unit	<i>Tag:</i> ERV-1
<i>Prepared By:</i> HDA Engineering Ltd.		Regina, Sk, (306) 525-9815

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014		
		Component Form #: CFM1.4		
<i>Component Verification Form</i>		<i>Section:</i>		
<i>System:</i> HVAC	<i>Equipment:</i> EXHAUST FAN	<i>Tag:</i> EF-1		
INSTALLED EQUIPMENT DATA:		LOCATION DATA:		
Manufacturer	<input type="text"/>	Building		
Type	<input type="text"/>	Area Served		
Model Number	<input type="text"/>	Floor Located		
Serial Number	<input type="text"/>	Room		
		Room 129		
		Room 129		
		Room 129		
PERFORMANCE DATA:				
Fan:	Specified	Shop Drawings	Required Modification	Installed
Fan Type	Centrifugal	BI	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Air Flow	288 L/s (611 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.S.P.	125 Pa (0.50 in.w.c.)	(0.00 in.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Sound	3.0 Sones		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Size	0.19 kW (0.25 hp)	(0.00 hp)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Efficiency	Premium		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Voltage / Phase	120/1		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Type	Standard		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Options:				
Insulation Lining	13mm		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Backdraft Damper	Yes		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Isolators	Spring		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Comments				
SIGN-OFFS:				
Contractor:	_____	Date:	_____	
Engineer:	_____	Date:	_____	
CxA:	_____	Date:	_____	
<i>Prepared By:</i> HDA Engineering Ltd.		<small>Regina, Sk, (306) 525-9815</small>		

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014		
		Component Form #: CFM2.1		
Component Verification Form		<i>Section:</i>		
<i>System:</i> HVAC	<i>Equipment:</i> HYDRONIC PUMPS	<i>Tag:</i> P-1A/1B		
INSTALLED EQUIPMENT DATA:		LOCATION DATA:		
Manufacturer		Building		
Type		Area Served		
Model Number		Floor Located		
Serial Number		Room		
		Heating System		
		Main Floor		
		Room 134		
PERFORMANCE DATA:				
	Specified	Shop Drawings	Required Modification	Installed
Fan:				
Pump Size	1-1/2 x 1-1/2		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Flow	3.78 L/s (60 US gpm)	(0 US gpm)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Fluid	Prop Glycol 30%		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Head	149.40 kPa (50.03 ft.w.c.)	(0.00 ft.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Pump Efficiency			-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Size	1.49 kW (2.00 hp)	(0.00 hp)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Efficiency	Premium		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Voltage / Phase	208/3		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Options:				
Motor Control	Inverter Duty		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
	VFD		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Comments				
SIGN-OFFS:				
Contractor:		Date:		
Engineer:		Date:		
CxA:		Date:		
<i>Prepared By:</i> HDA Engineering Ltd.		<small>Regina, Sk, (306) 525-9815</small>		

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014		
		Component Form #: CFM3.1		
Component Verification Form		Section:		
System: HVAC	Equipment: UNIT HEATER	Tag: CUH-1		
INSTALLED EQUIPMENT DATA:		LOCATION DATA:		
Manufacturer		Building		
Type		Area Served		
Model Number		Floor Located		
Serial Number		Room		
		Room 101		
		Main Floor		
		Room 101		
PERFORMANCE DATA:				
	Specified	Shop Drawings	Required Modification	Installed
Supply Fan:				
Fan Size & Type	FC		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Air Flow	708 L/s (1,501 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Motor Size	0.19 kW (0.25 hp)	(0.00 hp)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Voltage / Phase	115/1	115/1	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Heating Coil:				
Air Flow	708 L/s (1,501 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.A.T.	15.60 C (60.08 F)	(32.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Water Flow	0.24 L/s (3.80 GPM)	(0 GPM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Medium	30% Prop. Glycol		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
E.W.T.	51.70 C (125.06 F)	(32.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
L.W.T.	40.60 C (105.08 F)	(32.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
W.P.D.	3.59 kPa (1.20 ft.w.c.)	(0.00 ft.w.c.)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Energy Exchanged	10.90 kW (37 MBH)	(0 MBH)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Options:				
Cabinet Arrangement	20		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Output is Derated	Yes		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Comments				
SIGN-OFFS:				
Contractor:	_____		Date:	_____
Engineer:	_____		Date:	_____
CxA:	_____		Date:	_____
<i>Prepared By:</i> HDA Engineering Ltd.		Regina, Sk, (306) 525-9815		

Project Name: New Police Building - Onion Lake, Saskatchewan	Project #: 24/2014
	Component Form #: CFM3.7

Component Verification Form		<i>Section:</i>
<i>System:</i> HVAC	<i>Equipment:</i> IN-FLOOR MANIFOLD	<i>Tag:</i> n/a

INSTALLED EQUIPMENT DATA:		LOCATION DATA:	
Manufacturer	<input type="text"/>	Building	<input type="text"/>
Type	<input type="text"/>	Area Served	Building
Model Number	<input type="text"/>	Floor Located	Main Floor
Serial Number	<input type="text"/>	Room	Various

PERFORMANCE DATA:			Specified	Shop Drawings	Required Modification	Installed
Manifold	Serving	Circuits				
MF-1	102	1	0.079 L/s (1.25 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-1	103	1	0.031 L/s (0.49 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-1	104	2	0.075 L/s (1.18 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-1	105	1	0.042 L/s (0.66 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-1	107, 110	3	0.182 L/s (2.89 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-1	109	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-2	106	1	0.069 L/s (1.10 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-2	107	4	0.245 L/s (3.89 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-3	112	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-3	114	1	0.052 L/s (0.83 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-3	115	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-3	116	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-4	117	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-4	118, 119	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-4	122, 123	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-4	125	1	0.033 L/s (0.52 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-4	126	1	0.051 L/s (0.81 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-4	127	2	0.111 L/s (1.76 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-5	128	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-5	129	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-5	130	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-5	131	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-5	132	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MF-5	136	1	0.032 L/s (0.50 US gpm)		(0.00 US gpm)	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
						Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
						Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
						Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
						Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
						Eng: <input type="checkbox"/> Con: <input type="checkbox"/>

Comments

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014
		Component Form #: CFM3.7
<i>Component Verification Form</i>		
<i>System:</i> HVAC	<i>Equipment:</i> IN-FLOOR MANIFOLD	<i>Section:</i> <i>Tag:</i> n/a
INSTALLED EQUIPMENT DATA:		LOCATION DATA:
Manufacturer		Building
Type		Area Served
Model Number		Floor Located
Serial Number		Room
		Building
		Area Served
		Floor Located
		Room
		Building
		Area Served
		Floor Located
		Room
PERFORMANCE DATA:		
Specified	Shop Drawings	Required Modification
Installed		
SIGN-OFFS:		
Contractor:		Date: _____
Engineer:		Date: _____
CxA:		Date: _____
<i>Prepared By:</i> HDA Engineering Ltd.		
Regina, Sk, (306) 525-9815		

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014	
		Component Form #: CFM4.1	
<i>Component Verification Form</i>			<i>Section:</i>
<i>System:</i> HVAC	<i>Equipment:</i> Variable Volume Box		<i>Tag:</i> VAV-101
INSTALLED EQUIPMENT DATA:		LOCATION DATA:	
Manufacturer		Building	
Type		Area Served	Room 106
Model Number		Floor Located	Main Floor
Serial Number		Room	Room 105
PERFORMANCE DATA:			
Supply Fan:	Specified	Shop Drawings	Required Modification
Inlet Size	125 mm 5 in.	0 in.	-
Maximum Airflow	115 L/s (244 CFM)	(0 CFM)	-
Min. Occ. Airflow	58 L/s (123 CFM)	(0 CFM)	-
Min. Unocc. Airflow	35 L/s (74 CFM)	(0 CFM)	-
			Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
			Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
			Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
			Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Comments			
SIGN-OFFS:			
Contractor:		Date:	
Engineer:		Date:	
CxA:		Date:	
<i>Prepared By:</i> HDA Engineering Ltd.		Regina, Sk, (306) 525-9815	

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014		
		Component Form #: CFM5.1		
Component Verification Form				
<i>System:</i> HVAC		<i>Equipment:</i> Packaged Cooling Equipment		
		<i>Tag:</i> CU-2		
INSTALLED EQUIPMENT DATA:		LOCATION DATA:		
Manufacturer	<input type="text"/>	Building		
Type	<input type="text"/>	Area Served		
Model Number	<input type="text"/>	Floor Located		
Serial Number	<input type="text"/>	Room		
		AHU-1		
		ROOF		
		ROOF		
PERFORMANCE DATA:				
	Specified	Shop Drawings	Required Modification	Installed
Main Unit				
Voltage / Phase	208/3	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Full Load Amps	35	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
MAX Circuit Ampacity	39	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Overcurrent Prot.	50	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Refrigerant	HFC	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Compressors	2	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Load Mod. On Lead	Hot Gas Bypass	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Load Mod on Lag	On/Off	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Comments				
SIGN-OFFS:				
Contractor:	_____			Date: _____
Engineer:	_____			Date: _____
CxA:	_____			Date: _____
<i>Prepared By:</i> HDA Engineering Ltd.		Regina, Sk, (306) 525-9815		

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014		
		Component Form #: CFM5.3		
Component Verification Form		Section:		
System: HVAC	Equipment: Packaged Cooling Equipment	Tag: AC-1		
INSTALLED EQUIPMENT DATA:		LOCATION DATA:		
Manufacturer		Building		
Type		Area Served		
Model Number		Floor Located		
Serial Number		Room		
		Room 111		
		Main Floor / Roof		
		Room 111 / Roof		
PERFORMANCE DATA:				
	Specified	Shop Drawings	Required Modification	Installed
Indoor Unit				
Air Flow	300 L/s (636 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Entering Air Dry Bulb	22.20 C (71.96 F)	(0.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Entering Air Wet bulb	14.80 C (58.64 F)	(0.00 F)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Total Cooling	3.52 kW (12 MBH)	(0 MBH)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
% Sensible	95%	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Voltage / Phase	208/1	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Input	2270 Watts	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Breaker	15A	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Refrigerant	HFC (R410A)	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Outdoor Unit CU-3				
Voltage / Phase	208/1	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Full Load Amps	18	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Overcurrent Prot.	30	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Refrigerant	HFC (R410A)	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Accessories				
Filter Width	100mm	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Filter Efficiency	Merv 8	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Condensate Lift Pump	Yes	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Warranty	6 yr compressor	-	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Comments				
SIGN-OFFS:				
Contractor:	_____		Date:	_____
Engineer:	_____		Date:	_____
CxA:	_____		Date:	_____
<i>Prepared By:</i> HDA Engineering Ltd.		<i>Regina, Sk, (306) 525-9815</i>		

Project Name: New Police Building - Onion Lake, Saskatchewan		Project #: 24/2014		
		Component Form #: CFM6.1		
Component Verification Form				
<i>System:</i> HVAC	<i>Equipment:</i> Silencer	<i>Section:</i> SIL-1		
INSTALLED EQUIPMENT DATA:		LOCATION DATA:		
Manufacturer		Building		
Type		Area Served		
Model Number		Floor Located		
Serial Number		Room		
		Room 106 Main Floor		
PERFORMANCE DATA:				
	Specified	Shop Drawings	Required Modification	Installed
Supply Fan:				
Length	1200 mm 48 in.	0 in.	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Inlet Size	200x300 (8"x12")		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Airflow	61 L/s (129 CFM)	(0 CFM)	-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Configuration	Z - configuration		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Attenuation - 63 Hz	6		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Attenuation - 125 Hz	12		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Attenuation - 250 Hz	23		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Attenuation - 500 Hz	35		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Attenuation - 1 kHz	39		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Attenuation - 2kHz	40		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Attenuation - 4kHz	34		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Attenuation - 8kHz	23		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Outer Casing	22 ga. Galvanized		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Inner Casing	22 ga. Perforated Galv.		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Media	fiberglass		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Media Liner	no		-	Eng: <input type="checkbox"/> Con: <input type="checkbox"/>
Comments				
SIGN-OFFS:				
Contractor:	_____	Date:	_____	
Engineer:	_____	Date:	_____	
CxA:	_____	Date:	_____	
<i>Prepared By:</i> HDA Engineering Ltd.		Regina, Sk, (306) 525-9815		



Ritenburg & Associates Ltd.
Consulting Electrical Engineers

Owner:
Project Name:
RAL File No:
Owner File No:

Section:

Item: **BREAKER PANELBOARD**

LOCATION DATA:

Floor _____ Room _____ Panel ID _____

EQUIPMENT DATA:

Manufacturer	_____	Bus Amperage/Bracing	_____
Model Number	_____	c/w TVSS Unit	___ Yes ___ No
Volt/Phase/Wire	_____		
No. of Circuits	_____	Match Installed	___ Yes ___ No

STATIC CHECKS:

DATE / CHECKED BY: _____

Enclosure Details

Mounting _____
EEMAC Enclosure Type _____
Door Type _____
Drip Hood ___ Yes ___ No

Door Lock ___ Yes ___ No

Feeder Details

Wire Size _____
Ground Wire Type & Size _____

Wire Insulation _____
Conduit Size _____

Branch Breaker

Mounting ___ Bolt In ___ Plug In
Branch Wires Labelled ___ Yes ___ No
GFCI Breakers Labelled ___ Yes ___ No

Branch Lugs Torqued ___ Yes ___ No
Neutral Wires Labelled ___ Yes ___ No
GFCI Breakers Tested ___ Yes ___ No

Auxiliary Components

Main Breaker _____ A
Main Lugs Torqued ___ Yes ___ No
Bus Type ___ Copper ___ Aluminum

Interrupting Capacity _____ KA
Isolated Ground Bar ___ Yes ___ No

Miscellaneous

Conduit Skirting ___ Yes ___ No
Spare Conduits ___ Yes ___ No
Exterior Clean ___ Yes ___ No
Interior Clean ___ Yes ___ No

Lamecoid Accurate ___ Yes ___ No
Breaker Filler Pieces Installed ___ Yes ___ No
Circuit Directory Installed ___ Yes ___ No
Top Connectors Sealed ___ Yes ___ No

OPERATION CHECKS:

DATE / MEASURED BY: _____

Measured Values

Amperage

Line A _____ Amps
Line B _____ Amps
Line C _____ Amps

Voltage

AB _____ Volts
BC _____ Volts
CA _____ Volts

SIGN-OFFS:

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Ritenburg & Associates Ltd.
Consulting Electrical Engineers

Owner:
Project Name:
RAL File No:
Owner File No:

Section:

Item: **CDP PANELBOARD**

LOCATION DATA:

Floor _____ Room _____ Panel ID _____

EQUIPMENT DATA:

Manufacturer	_____	Bus Amperage/Bracing	
Model Number	_____	c/w TVSS Unit	___ Yes ___ No
Volt/Phase/Wire	_____		
No. of Breakers	_____	Match Installed	___ Yes ___ No

STATIC CHECKS:

DATE / CHECKED BY: _____

Enclosure Details

Mounting	___ Flush ___ Surface ___ Padmount	
3mm Sheet Steel	___ Yes ___ No	Phosphated ___ Yes ___ No
Door Type	_____	Painted & Touched-up ___ Yes ___ No
Drip Hood	___ Yes ___ No	Door Lock ___ Yes ___ No

Feeder Details

Wire Size	_____	Wire Insulation	_____
Ground Wire Type & Size	_____	Conduit Size	_____

Branch Breaker

Mounting	___ Bolt In ___ Plug In	Branch Lugs Torqued	___ Yes ___ No
Branch Wires Labelled	___ Yes ___ No	Neutral Wires Labelled	___ Yes ___ No

Auxiliary Components

Bus Type ___ Copper ___ Aluminum

Miscellaneous

Conduit Skirting	___ Yes ___ No	Lamecoid Accurate	___ Yes ___ No
Spare Conduits	___ Yes ___ No	Breaker Filler Pieces Installed	___ Yes ___ No
Exterior Clean	___ Yes ___ No	Top Connectors Sealed	___ Yes ___ No
Interior Clean	___ Yes ___ No		

OPERATION CHECKS:

DATE / MEASURED BY: _____

Measured Values

Amperage		Voltage	
Line A	_____ Amps	AB	_____ Volts
Line B	_____ Amps	BC	_____ Volts
Line C	_____ Amps	CA	_____ Volts

SIGN-OFFS:

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Ritenburg & Associates Ltd.
Consulting Electrical Engineers

Owner:
Project Name:
RAL File No:
Owner File No:

Item: **EQUIPMENT RACK**

LOCATION DATA:

Floor _____ Room _____ Panel ID _____

EQUIPMENT RACK:

Manufacturer _____ Match Installed ___ Yes ___ No
Series _____
Model Number _____

STATIC CHECKS:

DATE / CHECKED BY: _____

Components Installed

19-inch mounting rails ___ Yes ___ No
42U Rack Units ___ Yes ___ No
152mm Side Channels ___ Yes ___ No
2-Ring horizontal managers ___ Yes ___ No
2 - Shelves ___ Yes ___ No
6-Outlet Power Bar ___ Yes ___ No
12-foot Shielded Cord Set ___ Yes ___ No
Integral on/off Switch ___ Yes ___ No
15A Breaker Reset ___ Yes ___ No
EMI/RFI Filtering ___ Yes ___ No
Ground Lug Terminated ___ Yes ___ No

Fibre Patch Panel - Qty: _____
Data Patch Panel - Qty: _____

Min Clearance - Front: 914mm ___ Yes ___ No
Min Clearance - Back: 1067mm ___ Yes ___ No
Min Clearance - Side: 762mm ___ Yes ___ No

Cabling

Fibre Cable: Type: _____ Size: _____ Colour: _____
Data Cables: Category: _____ Size: _____ Colour: _____

Connectors:

Fibre Connectors Type: _____ Size: _____ Colour: _____
Data Connectors Category: _____ Size: _____ Colour: _____

OPERATION CHECKS:

Cable installation and testing:

Installed and Certified by:
Company: _____ Name: _____ Date: _____

Labeling info provided by Owner ___ Yes ___ No Rack layout info provided ___ Yes ___ No
Patch Cords Supplied ___ Yes ___ No by Owner:
Cable Test Report Submitted ___ Yes ___ No All Cables Passed Tests: ___ Yes ___ No

SIGN-OFFS:

Contractor: _____ Signature: _____ Date: _____
Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Ritenburg & Associates Ltd.
Consulting Electrical Engineers

Owner: _____
Project Name: _____
RAL File No: _____
Owner File No: _____

Item: **DISCONNECT SWITCHES**

LOCATION DATA:

Floor _____ Room _____ Equipment: _____

EQUIPMENT DATA:

Manufacturer _____
Model Number _____
Volt/Phase/Amperage _____
Horsepower _____ Match Installed Yes No

STATIC CHECKS:

DATE / CHECKED BY: _____

Elevator Main Disconnect Switch

Fusible Switch Yes No
Volt/Phase _____
Pole/Wire _____
Switch Amperage - 60A Yes No
Fuse Amperage - 35A Yes No

Enclosure Details

Mounting Flush Surface
EEMAC Enclosure Type _____
Padlockable Yes No
Label Yes No

Elevator Cab Light Main Disconnect Switch

Breaker Switch Yes No
Volt/Phase _____
Pole/Wire _____
Switch Amperage - 15A Yes No

Enclosure Details

Mounting Flush Surface
EEMAC Enclosure Type _____
Padlockable Yes No
Label Yes No

SIGN-OFFS:

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Ritenburg & Associates Ltd.
Consulting Electrical Engineers

Owner: _____
Project Name: _____
RAL File No: _____
Owner File No: _____

Item: _____

EXIT LIGHT

FIXTURE TYPE: _____ **Number Installed:** _____

EQUIPMENT DATA: _____ **DATE / CHECKED BY:** _____

Manufacturer _____

Catalogue Number _____

Fixture Type _____

Housing _____

Voltage _____

Lamp Wattage _____

Lamp Type _____

Lettering Type _____

Number of Faces _____

Circuit _____

Mounting _____

Nexus Compatible _____

Options _____

Match Installed Yes No

SIGN-OFFS:

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Ritenburg & Associates Ltd.
Consulting Electrical Engineers

Owner:
Project Name:
RAL File No:
Owner File No:

Section:

Item: **F/A COMPONENTS**

EQUIPMENT DATA:

Manufacturer _____ Match Installed Yes No
System _____

STATIC CHECKS:

DATE / CHECKED BY: _____

System Devices	Model Number	Match installed
Manual Pull Stations		<input type="checkbox"/> Yes <input type="checkbox"/> No
Smoke Detectors		<input type="checkbox"/> Yes <input type="checkbox"/> No
Monitor Modules		<input type="checkbox"/> Yes <input type="checkbox"/> No
Control Modules		<input type="checkbox"/> Yes <input type="checkbox"/> No
Relay Modules		<input type="checkbox"/> Yes <input type="checkbox"/> No
Fault Isolator Modules		<input type="checkbox"/> Yes <input type="checkbox"/> No
Power Supply		<input type="checkbox"/> Yes <input type="checkbox"/> No
Annunciator Panel		<input type="checkbox"/> Yes <input type="checkbox"/> No
Wall Speakers & Speaker Strobes		<input type="checkbox"/> Yes <input type="checkbox"/> No

SIGN-OFFS:

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Ritenburg & Associates Ltd.
Consulting Electrical Engineers

Owner:
Project Name:
RAL File No:
Owner File No:

Section:

Item:

GROUNDING

STATIC CHECKS:

DATE / CHECKED BY: _____

Grounded Systems

Communications	___ Yes	___ No
Switchboard	___ Yes	___ No
Transformers	___ Yes	___ No
Lay-in Trays	___ Yes	___ No
Feeder Conduits	___ Yes	___ No
Green Insul. on Branch Conduits	___ Yes	___ No

Miscellaneous

Riser	_____
Ground Bus	_____

SIGN-OFFS:

Contractor:		Signature: _____	Date: _____
Consultant:	Ritenburg & Associates Ltd.	Signature: _____	Date: _____



Ritenburg & Associates Ltd.
Consulting Electrical Engineers

Owner:
Project Name:
RAL File No:
Owner File No:

Item:

LIGHTING

FIXTURE TYPE: _____ **Number Installed:** _____

EQUIPMENT DATA: _____ **DATE / CHECKED BY:** _____

Manufacturer _____

Catalogue Number _____

Voltage _____

Lamp Type _____

Lamp Wattage _____

Number of Lamps _____

Ballast Type _____

Size _____

Mounting _____

Diffuser _____

Options _____

Match Installed ___ Yes ___ No

SIGN-OFFS:

Contractor: _____ Signature: _____ Date: _____

Cx Rep: _____ Signature: _____ Date: _____



Ritenburg & Associates Ltd.
Consulting Electrical Engineers

Owner: _____
Project Name: _____
Location: _____
RAL File No: _____
Owner File No: _____

Section: _____

Item: **LV PANELS**

LOCATION DATA:

Floor: _____ Room: _____ ID: _____

EQUIPMENT DATA:

Manufacturer _____ Match Installed Yes No
System _____
Model Number _____ Relay Capacity: _____ Relays: _____

STATIC CHECKS:

DATE / CHECKED BY: _____

Components Installed

Intelligent Card	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Data-Line	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Photo Control Package	<input type="checkbox"/> Yes	<input type="checkbox"/> No	BMS Interface Module	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Networking Modules	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Photo-control Module	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Power Supply Units	<input type="checkbox"/> Yes	<input type="checkbox"/> No	OCC Sensors	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Digital Switches w/ Pilot Light	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Photo Sensors (Indoor)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Relays w/ Pilot Light Switch	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Photo Sensors (Outdoor)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Channel Bushbuttons	<input type="checkbox"/> Yes	<input type="checkbox"/> No			

Panel Installation

Power supply terminated	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Operating manuals provided	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Panel relays terminated	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Remote relays terminated	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Class 2 wiring terminated	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
Lamecoid Identification	<input type="checkbox"/> Yes	<input type="checkbox"/> No			

OPERATION CHECKS:

Programming and Start-up

Start-up and programming verified by:
Company: _____ Name: _____ Date: _____

Control Devices:

LV Switching conforms to drawings	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Indoor Photo Sensors Operational	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Outdoor Photo Sensors Operational	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Occupancy Sensors Operational	<input type="checkbox"/> Yes	<input type="checkbox"/> No

SIGN-OFFS:

Contractor: _____ Signature: _____ Date: _____
Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Ritenburg & Associates Ltd.
Consulting Electrical Engineers

Owner:
Project Name:
RAL File No:
Owner File No:

Item: **MOTOR STARTER**

LOCATION DATA:

Floor _____ Room _____ ID _____

EQUIPMENT DATA:

Manufacturer _____	Thermal Protection _____ Yes ___ No ___
Model Number _____	Panel/Cct Fed From _____
Starter Volt/Phase/Wire _____	Starter Size _____
Starter Type _____	Match Installed _____ Yes ___ No ___

STATIC CHECKS:

DATE / CHECKED BY: _____

Motor Protection Switch

Type _____ Fuse ___ Breaker ___ Pilot Lights Checked _____ Yes ___ No ___
Size _____

Overload Elements

Overload Correctly Sized _____ Yes ___ No ___ Amperage Range _____ Amps

Motor Data

Service Factor _____	Full Load Current _____ Amps
Motor Volt/Phase/Wire _____	Motor Horsepower _____ HP
Motor Design Type _____	Motor Code _____
Motor Insulation _____	Motor Locked Rotor Current _____ Amps
Cable Distance to Drive _____	Motor RPM _____ RPM

Enclosure Details

Mounting _____ Flush ___ Surface ___
EEMAC Enclosure Type _____
Door Type _____
Drip Hood _____ Yes ___ No ___ Door Lock _____ Yes ___ No ___

Miscellaneous

Exterior Clean _____ Yes ___ No ___	Top Connectors Water Tight _____ Yes ___ No ___
Interior Clean _____ Yes ___ No ___	Conduit Connectors Sealed _____ Yes ___ No ___
Indicating Lights Operate _____ Yes ___ No ___	Ground Wire Type & Size _____ Type ___ AWG ___
Hand/Off/Auto Switch _____ Yes ___ No ___	Phase Rotation Confirmed _____ Yes ___ No ___
Air Filters Present _____ Yes ___ No ___	Operation Manual Included _____ Yes ___ No ___
Air Filters Changed Pre-Startup _____ Yes ___ No ___	Record of VFD Settings _____ Yes ___ No ___

OPERATION CHECKS:

DATE / MEASURED BY: _____

Starter Operation

Manual Operation Checked _____ Yes ___ No ___	Auto Operation Checked _____ Yes ___ No ___
Disconnect Function Checked _____ Yes ___ No ___	Fire Alarm Shutdown Checked _____ Yes ___ No ___
VFD Display Calibrated _____ Yes ___ No ___	Auto Restart Checked _____ Yes ___ No ___
Motor RPM Verified _____ Yes ___ No ___	Owner Training Completed _____ Yes ___ No ___

Measured Values

Amperage

Line A _____ Amps
Line B _____ Amps
Line C _____ Amps

Voltage

AB _____ Volts
BC _____ Volts
CA _____ Volts
AN _____ Volts
BN _____ Volts
CN _____ Volts

Motor Terminal Waveforms Taken _____ Yes ___ No ___

Acceleration Time _____

Deceleration Time _____

Output Pulse Risetime _____

Speed Control -10VDC 4-20mA +/-10VDC

Skip Frequencies _____

Carries Frequency _____

Maximum Speed _____

Minimum Speed _____

Speed Display % Hz

SIGN-OFFS:

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Ritenburg & Associates Ltd.
Consulting Electrical Engineers

Owner:
Project Name:
Location:
Owner File No:

Item: **Wiring Devices**

STATIC CHECKS:

DATE / CHECKED BY: _____

Receptacles location and operation confirmation

Duplex Receptacles (5-15R)	_____ Yes	_____ No
Single Receptacles (5-15R)	_____ Yes	_____ No
T-Slot Receptacles (5-20R)	_____ Yes	_____ No
Tamper resistant safety Receptacles (5-15R)	_____ Yes	_____ No
GFCI (Safe-Lock - 5mA Ground Fault)	_____ Yes	_____ No

Switches location and operation confirmation

120V Switches (SPST, 15A)	_____ Yes	_____ No
120V Pilot Light Switches (SPST - 15A)	_____ Yes	_____ No
Fractional HP/KW Manual Starters	_____ Yes	_____ No
120V Illuminated Switches	_____ Yes	_____ No
120V Fluorescent Dimmer Switches	_____ Yes	_____ No

Comments:

SIGN-OFFS:

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Owner:
Project Name:
RAL File No:
Owner File No:

Activities, Checks and Tests by the Electrical Contractor

- Verify the products used meet the requirements of the electrical specifications and complies with the shop drawings.
- Perform the installation and performance tests according to the Canadian Electrical Code, manufacturer's recommendations and Specifications.
- Confirm that the panelboard has been securely fastened and mounted on unistrut and / or plywood backboards (where required by the specifications).
- Confirm that all feeder and branch circuit conductors are properly sized, terminated with the proper torque, identified as required by the Specifications. Ensure that the panelboard, panelboard feeders & branch wiring have been Megger tested. Panel phase and branch wiring colour & circuit number must correspond.
- Ensure that trip rating of each breaker have been engraved on handle.
- Mark all lugs and terminals that have been torqued with red lacquer or marker.
- Ensure that the branch circuits and their breakers are correctly matched.
- Ensure that the panelboards lamecoid tag conforms to the drawings & Specification.
- Ensure that all sections of the Contractor Start-up and Testing Sheet(s) are signed or initialed and dated.
- Complete record drawings.
- Conduct Owner training on the operation and maintenance of the panelboards.
- Ensure that all parts of this commissioning form and performance checks have been completed. Enter into the notes areas of any unfinished work or problems encountered during installation or commissioning.

Notes: _____

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Owner:
Project Name:
RAL File No:
Owner File No:

Activities, Checks and Tests by the Electrical Contractor

- Verify the products used meet the requirements of the specifications and comply with the shop drawings.
- Perform the installation in accordance with the manufacturer's recommendations and in accordance with the specifications and drawings.
- Conduct testing of the cabling system in accordance the standards outlined in the specifications.
- Confirm termination of all vertical and horizontal copper cable.
- Confirm termination of all fibre cable.
- All fibre and copper cables are provided with service loops at the equipment racks and BIX blocks.
- In all wall or pac pole drops, a 300mm cable slack is provided before entering wall or pac pole suspended in the ceiling.
- Confirm identification of equipment and all tagging is completed in accordance with the specifications and Owner's requirements.
- Confirm management of all vertical and horizontal cables, including installation of waterfalls at equipment racks.
- Confirm velcor straps are used. Cable ties are unacceptable.
- Confirm grounding within the Data/Com Rooms in accordance with the requirements of the Canadian Electrical Code, specifications and drawings, including bonding of the equipment racks, conduit stubs and cable trays.
- Confirm clearances at the equipment racks.
- Each equipment racks is supplied with a floor mounting base, fibre and copper patch panels, cable managers, power bar, and shelves.
- Confirm equipment racks are secured to floor.
- Confirm power to server equipment is energized and polarity of all wiring devices is checked.
- Supply and turn-over to Owner the fibre and copper patch cords in the quantities, types and lengths noted in the specifications.
- Submit cable test reports, include copies or CD disk in the Operating and Maintenance Manual.
- Conduct Owner training on the layout and installation of this system.
- Ensure that all parts of this commissioning form and performance checks have been completed. Enter into the notes areas of any unfinished work or problems encountered during installation or commissioning.

Notes: _____

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Owner:
Project Name:
RAL File No:
Owner File No:

Activities, Checks and Tests by the Electrical Contractor

- Verify the products used meet the requirements of the electrical specifications and complies with the shop drawings.
- Perform the installation and performance tests according to the Canadian Electrical Code, manufacturer's recommendations and Specifications.
- Confirm that the disconnect switches has been securely fastened.
- Confirm that all feeder and branch circuit conductors are properly sized, terminated with the proper torque, identified as required by the Specifications.
- Mark all lugs and terminals that have been torqued with red lacquer or marker.
- Ensure that the branch circuits and their fuses are correctly matched.
- Ensure that the disconnect switches lamecoid tags conforms to the drawings & Specification.
- Ensure that all sections of the Contractor Start-up and Testing Sheet(s) are signed or initialed and dated.
- Complete record drawings.
- Conduct Owner training on the operation and maintenance of the panelboards.
- Ensure that all parts of this commissioning form and performance checks have been completed. Enter into the notes areas of any unfinished work or problems encountered during installation or commissioning.

Notes: _____

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Owner:
Project Name:
RAL File No:
Owner File No:

Activities, Checks and Tests by the Electrical Contractor

- Verify the products used meet the requirements of the electrical specifications and complies with the shop drawings (if provided).
- The installation is completed in accordance with the Canadian Electrical Code, specifications and manufacturer's recommendations.
- Confirm that all conductors for supply and control are properly sized, terminated with proper torque.
- Confirm exit lighting clearly indicate the means of egress and are visible in all public areas.
- Confirm exit light fixtures are connected to a dedicated emergency circuit as indicated on the floor plans.
- Ensure that exit light circuit breaker is locked in on position.
- Confirm complete illumination of the EXIT signs.
- Perform functional & other tests (as applicable) required by the Specifications, the Manufacturer or the Design Consultant.
- Conduct Owner training in regards to the operation and maintenance of the emergency exit lighting.
- Ensure that all parts of this commissioning form and performance checks have been completed. Enter into the notes areas of any unfinished work or problems encountered during installation or commissioning.

Notes: _____

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Owner:
Project Name:
RAL File No:
Owner File No:

Activities, Checks and Tests by the Electrical Contractor

- Verify the products used meet the requirements of the electrical specifications and complies with the shop drawings.
- Complete installation and wiring of all components of the fire alarm system in accordance with the manufacturer's recommendations, specifications, and in accordance with the National Standard of Canada/Underwriters' Laboratory of Canada Standards CAN/ULC-S524-M06 "Standard for the Installation of Fire Alarm Systems".
- Complete the inspection and testing of the fire alarm system in accordance with the National Standard of Canada/Underwriters' Laboratory of Canada Standards CAN/ULC-S536-04 "Standard for the Inspection and Testing of Fire Alarm Systems".
- Complete the verification of the fire alarm system in accordance with the National Standard of Canada/Underwriters' Laboratory of Canada Standards CAN/ULC-S537-04 "Standard for the Verification of Fire Alarm System Installations".
- Confirm fire alarm system connected to a dedicated circuit with breaker lock-on device on branch breaker.
- Fire alarm control panel is fed with mineral insulated cable, or is provided with 1-hour rating on feeder to the fire alarm panel.
- Initiate alarm from each breakglass station.
- Initiate an alarm from each smoke detector and heat detector by initiating an alarm using a magnet, artificial smoke, or by jumping out device in case of fixed temperature heat detectors. The method to activate a detector shall be confirmed by the manufacturer's verification agent.
- Initiate an alarm from the sprinkler system by testing flow within a floor control zone valve.
- Conduct an open circuit tests at various points on the Class B tolerant loops. Initiate an alarm from various points on the open circuit.
- Initiate an alarm to check supervisory and control functions at the fire alarm control and annunciator panel.
- Check correctness of identification of annunciator zones and device mapping at the annunciator.
- Initiate one test alarm to central supervisory station after notice of test is given.
- Check operation of all auxiliary contacts and devices, and verify that auxiliary control door holders, fan shut-down, elevator homing, etc, is fully operational.
- Perform functional and other tests (as applicable) as required by the Specifications, the Manufacturer or the Consultant.
- Check operation of fire alarm audible and visual signal appliances in public areas.
- Record sound levels for fire alarm signal devices within public areas.
- Confirm signal to the municipal fire department in accordance with the requirements of the 2010 National Building Code.
- Submit manufacturer's fire alarm certificate of verification and fire alarm test report.
- Confirm spared devices are provided to the owner as required by the Specifications.
- Complete record drawings.

Performance Checks
FIRE ALARM

- Conduct Owner training on the operation and maintenance of the fire alarm system.
- Ensure that all parts of this commissioning form and performance checks have been completed. Enter into notes areas of any unfinished areas or problems encountered during installation or commissioning.

Notes: _____

Contractor: Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Owner:
Project Name:
RAL File No:
Owner File No:

Activities, Checks and Tests by the Electrical Contractor

- Verify the products used meet the requirements of the electrical specifications and complies with the shop drawings (if provided).
- Perform tests that are required by the Canadian Electrical Code, ANSI/NETA standard's, manufacturer's recommendations and Specifications.
- All electrical equipment and wiring grounded in accordance with the Canadian Electrical Code, and local inspection authority's rules and regulations.
- The ground bus in each switchboard, transformer, motor control centre, etc., connected to the grounding network by two AWG #3/0 bare copper conductors.
- All motors with flexible connections have separate insulated ground wire run bridging the flexible connections with the ground wire run back to the nearest junction box or motor control centre.
- Exposed copper cleaned to a bright surface, and finished with two coats of clean, insulating varnish.
- Where bonds are covered with soil, the conductors are to be coated with anti-corrosion compound "Kopr-Shield" (Thomas & Betts Co.) before compression connector is applied. All bonding done with 'C' tap and lug compression connectors.
- All grounding connectors, conductor and terminations checked and approved by the Consultant prior to concealment by fill or architectural finishes.
- The main grounding electrode or system shall have a fall-of-potential test. Refer to IEEE Standard 81. Five ohms is the maximum allowable resistance between the main grounding electrode and ground.
- Determine resistance between main grounding system and all major electrical equipment frames, system neutral and any floating neutrals. Any resistance values greater than 0.5 ohm shall be examined.
- Ensure that all parts of this commissioning form and performance checks have been completed. Enter into the notes areas of any unfinished work or problems encountered during installation or commissioning.

Notes: _____

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Owner:
Project Name:
RAL File No:
Owner File No:

Activities, Checks and Tests by the Electrical Contractor

- Verify the products used meet the requirements of the electrical specifications and complies with the shop drawings.
- Perform the installation and performance tests according to the Canadian Electrical Code, specifications, and manufacturer's recommendations.
- Confirm that all circuit conductors for supply and control are properly sized, terminated with proper torque, identified as required by the Specifications.
- Confirm proper ballast and voltage ratings are installed within the fixtures.
- Confirm correct lamps are provided for the fixture in accordance with the specifications and manufacturer's requirements. Ensure lamp colour temperatures and colour rendering index (CRI) are in accordance with the requirements of the specifications.
- Confirm fixtures are clean, proper fit of lenses and fixture trims.
- Confirm installation of switches, occupancy sensors and photocells.
- Adjust coverage and time delay-off to all wall and ceiling occupancy sensors.
- Complete record drawings for layout of lighting, circuit identification and control.
- Conduct Owner training in regards to the operating and maintenance of lighting fixtures, including the type of lamps installed, lamp and ballast replacement, ballast warranties, and general maintenance of the fixtures.
- Ensure that all parts of this commissioning form and performance checks have been completed. Enter into the notes areas of any unfinished work or problems encountered during installation or commissioning.

Notes: _____

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Owner:
Project Name:
RAL File No:
Owner File No:

Activities, Checks and Tests by the Electrical Contractor

- Verify the products used meet the requirements of the electrical Specification and complies with the shop drawings.
- Perform the installation and performance tests according to the Canadian Electrical Code, ANSI/NETA standards, manufacturer's recommendations and Specification.
- Confirm that all line voltage and class II wiring for supply and control are properly sized, terminated, identified as required by the specifications.
- Day-light sensors installed for interior perimeter lighting.
- Exterior photo-sensors installed for exterior lighting.
- Low voltage power packs are installed and locations marked on as-built drawings.
- Verify and adjust photo control sensitivity for interior and exterior lighting.
- Occupancy sensors interconnected to switches as shown on drawings.
- Provide record of occupancy sensor and photocell programming.
- Aim and adjust photo controls to optimize function.
- Conduct Owner training in regards to the operation, programming and maintenance of the lighting control system.
- Complete record drawings.
- Ensure that all parts of this commissioning form and performance checks have been completed. Enter into the notes areas of any unfinished work or problems encountered during installation or commissioning.

Notes: _____

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Owner:
Project Name:
RAL File No:
Owner File No:

Activities, Checks and Tests by the Electrical Contractor

- Verify the products used meet the requirements of the electrical Specification and complies with the shop drawings.
- Perform the installation and performance tests according to the Canadian Electrical Code, ANSI/NETA standards, manufacturer's recommendations and Specification.
- Confirm that the overcurrent protection device is correctly sized and has been securely fastened.
- Confirm that all supply and load feeders are properly sized, terminated with the proper torque, identified as required by the Specification. Ensure that the supply and load feeders have been Megger tested.
- Mark all lugs and terminals that have been torqued with red lacquer or marker.
- Ensure that all sections of the Contractor Start-up and Testing Sheet(s) are signed or initialed and dated.
- Complete record drawings
- Conduct Owner training on the operation and maintenance of the overcurrent protective equipment.
- Ensure that all parts of this commissioning form and performance checks have been completed. Enter into the notes areas of any unfinished work or problems encountered during installation or commissioning.

Notes: _____

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Owner:
Project Name:
RAL File No:
Owner File No:

Activities, Checks and Tests by the Electrical Contractor

- Verify the products used meet the requirements of the electrical specifications and complies with the shop drawings.
- Perform the installation and performance tests according to the Canadian Electrical Code, manufacturer's recommendations and Specifications.
- Confirm that the panelboard has been securely fastened and mounted on unistrut and / or plywood backboards (where required by the specifications).
- Ensure panel interior is at the correct depth from the tub or wall face. Confirm that the nuts securing the interior to the tub bolts / tub are properly tightened.
- Confirm that all feeder and branch circuit conductors are properly sized, terminated with the proper torque, identified as required by the Specifications. Ensure that the panelboard, panelboard feeders & branch wiring have been Megger tested. Panel phase and branch wiring colour & circuit number must correspond.
- Mark all lugs and terminals that have been torqued with red lacquer or marker.
- Ensure that the branch circuits and their breakers are correctly matched.
- Ensure that the panelboards lamecoid tag conforms to the drawings & Specification.
- Insert final typewritten panel directory and provide breaker lock-on devices as per Specification.
- Operate the PTT test feature if GFCI breakers are in the panelboard.
- Ensure that all sections of the Contractor Start-up and Testing Sheet(s) are signed or initialed and dated.
- Complete record drawings.
- Conduct Owner training on the operation and maintenance of the panelboards.
- Ensure that all parts of this commissioning form and performance checks have been completed. Enter into the notes areas of any unfinished work or problems encountered during installation or commissioning.

Notes: _____

Contractor: _____ Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd. Signature: _____ Date: _____



Owner:
Project Name:
RAL File No:
Owner File No:

Activities, Checks and Tests by the Electrical Contractor

- Verify the products used meet the requirements of the electrical specifications and complies with the shop drawings.
- Perform the installation and performance tests according to the Canadian Electrical Code, manufacturer's recommendations and Specifications.
- Test receptacles for polarity.
- Test GFCI Receptacles with an appropriate ground fault tester.
- Verify panel directories and circuit identification indicated on the record drawings are consistent and correct.
- Record drawings are completed, indicating actual location of devices and circuit identification.
- Ensure that all parts of this commissioning form and performance checks have been completed. Enter into the notes areas of any unfinished work or problems encountered during installation or commissioning.

Notes:

Contractor:

Signature: _____ Date: _____

Consultant: Ritenburg & Associates Ltd.

Signature: _____ Date: _____

100X62X6 STEEL ANGLE (PAINT). ANCHOR TO BLOCK WITH 45mm LONG BUGLE HEADED TORX MASONRY SCREWS @ 305mm O.C. (TYP.) PREP ANGLE TO COUNTERSINK SCREWS.

100X62X6 STEEL ANGLE (PAINT). ANCHOR TO BLOCK WITH 45mm LONG BUGLE HEADED TORX MASONRY SCREWS @ 305mm O.C. (TYP.) PREP ANGLE TO COUNTERSINK SCREWS.

25X20 STEEL GLASS STOPS ATTACHED WITH SECURITY SCREWS (TYP.)

LAMINATED GLASS UNIT DISK

125X6 STEEL PLATE SCREWED THROUGH PLYWOOD TO STEEL ANGLES BELOW.

75X62X6 STEEL ANGLE ANCHORED BLOCK WITH 45mm LONG BUGLE HEADED TORX MASONRY SCREWS @ 305mm O.C. (TYP.) PREP ANGLE TO COUNTERSINK SCREWS.

PL-2 TOP AND EDGE

19mm PLYWOOD TOP

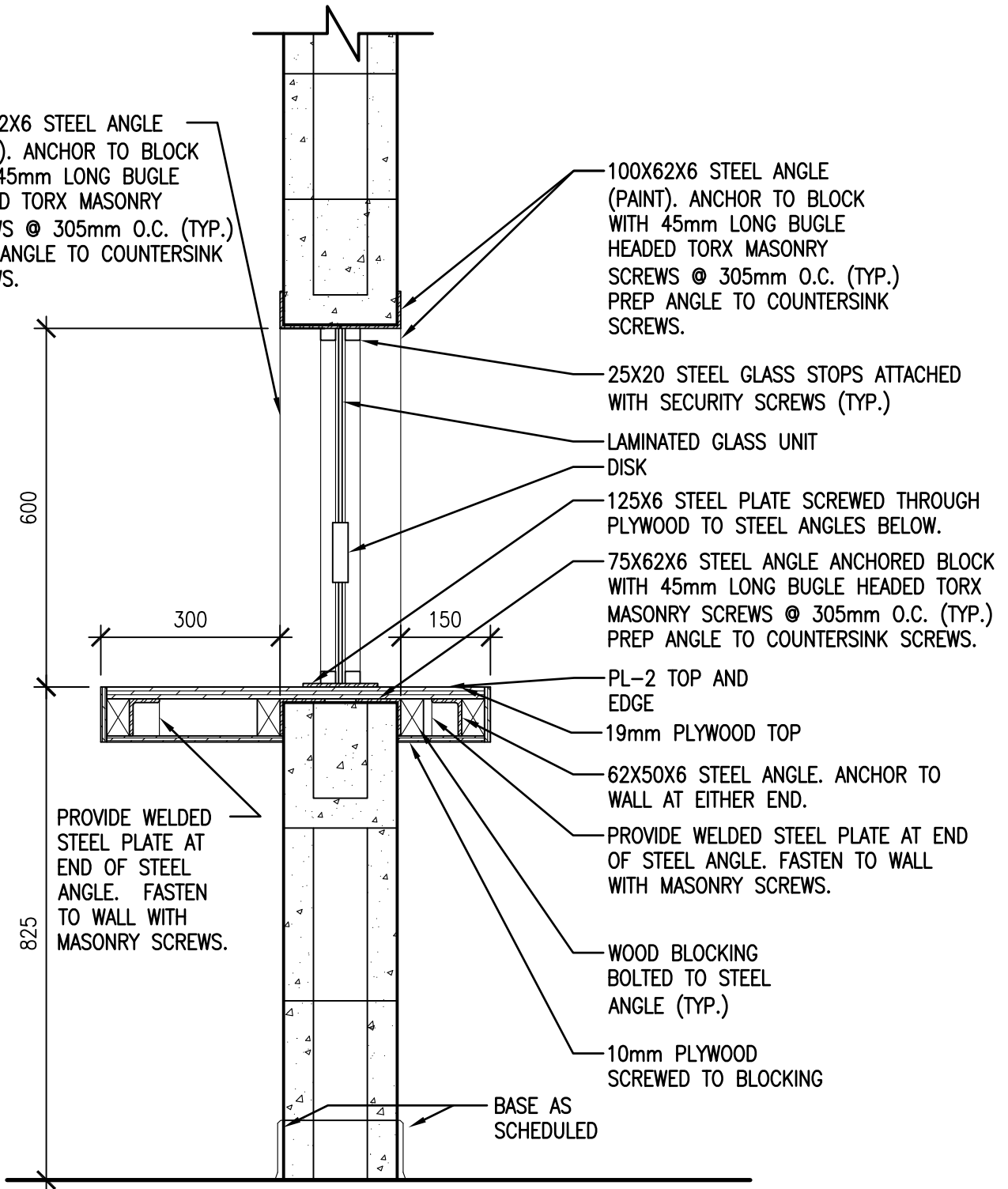
62X50X6 STEEL ANGLE. ANCHOR TO WALL AT EITHER END.

PROVIDE WELDED STEEL PLATE AT END OF STEEL ANGLE. FASTEN TO WALL WITH MASONRY SCREWS.

WOOD BLOCKING BOLTED TO STEEL ANGLE (TYP.)

10mm PLYWOOD SCREWED TO BLOCKING

BASE AS SCHEDULED



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2015/11/10 X:\SEPW PROJECT FILES\2014\24-2014 RCMP ONION LAKE\ACAD\WORKING DRAWINGS\AR SHEETS\PLOT FILES\AR1 MILLWORK DETAIL



SEPW Architecture Inc.

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PROJECT TITLE
**NEW POLICE BUILDING
 ONION LAKE, SASKATCHEWAN**

DATE
2015.11.10

PROJECT NO.
24/2014

SCALE
AS NOTED

DRAWING NO.

DRAWING TITLE
MILLWORK DETAIL

DRAWN
NO

AR1

CHECKED
DE