# GOVERNMENT OF CANADA Multi Purpose Training Facility Mechanical Renovation REGINA, SASKATCHEWAN



# ISSUED FOR TENDER, DECEMBER 19, 2016

# **ARCHITECTURAL**

NUMBER TEN ARCHITECTURAL GROUP - 310 - 115 BANNATYNE AVE. - WINNIPEG, MB, R3B 0R3

A1.0 TITLE SHEET

A1.1 MAIN FLOOR DEMOLITION PLAN

A1.2 MAIN FLOOR CONSTRUCTION PLAN

A1.3 SECOND FLOOR CONSTRUCTION PLAN

### STRUCTURAL

BBK STRUCTURAL ENGINEERS, BROWNLEE BEATON KREKE - 3611 PASQUA STREET - REGINA, SK, S4S 6W8

S1 MASONRY OPENINGS

## **MECHANICAL**

R J ENGLAND CONSULTING LTD. - 400-4010 PASQUA STREET - REGINA, SK, S4S 7B9

M-0 MECHANICAL LEGEND AND SCHEDULES

M-1 MECHANICAL DEMOLITION PLAN EAST

M-2 MECHANICAL DEMOLITION PLAN WEST

M-3 MECHANICAL MAIN FLOOR VENTILATION EAST

M-4 MECHANICAL MAIN FLOOR VENTILATION WEST

M-5 MECHANICAL SECOND FLOOR VENTILATION

M-6 MECHANICAL HEATING PLAN EAST AND SECTION VIEW

M-7 MECHANICAL HEATING PLAN WEST

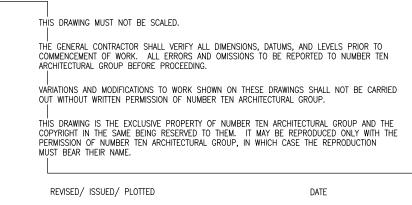
M-8 MECHANICAL DETAILS - STEAM & HYDRONICS

M-9 MECHANICAL DETAILS - VENTILATION

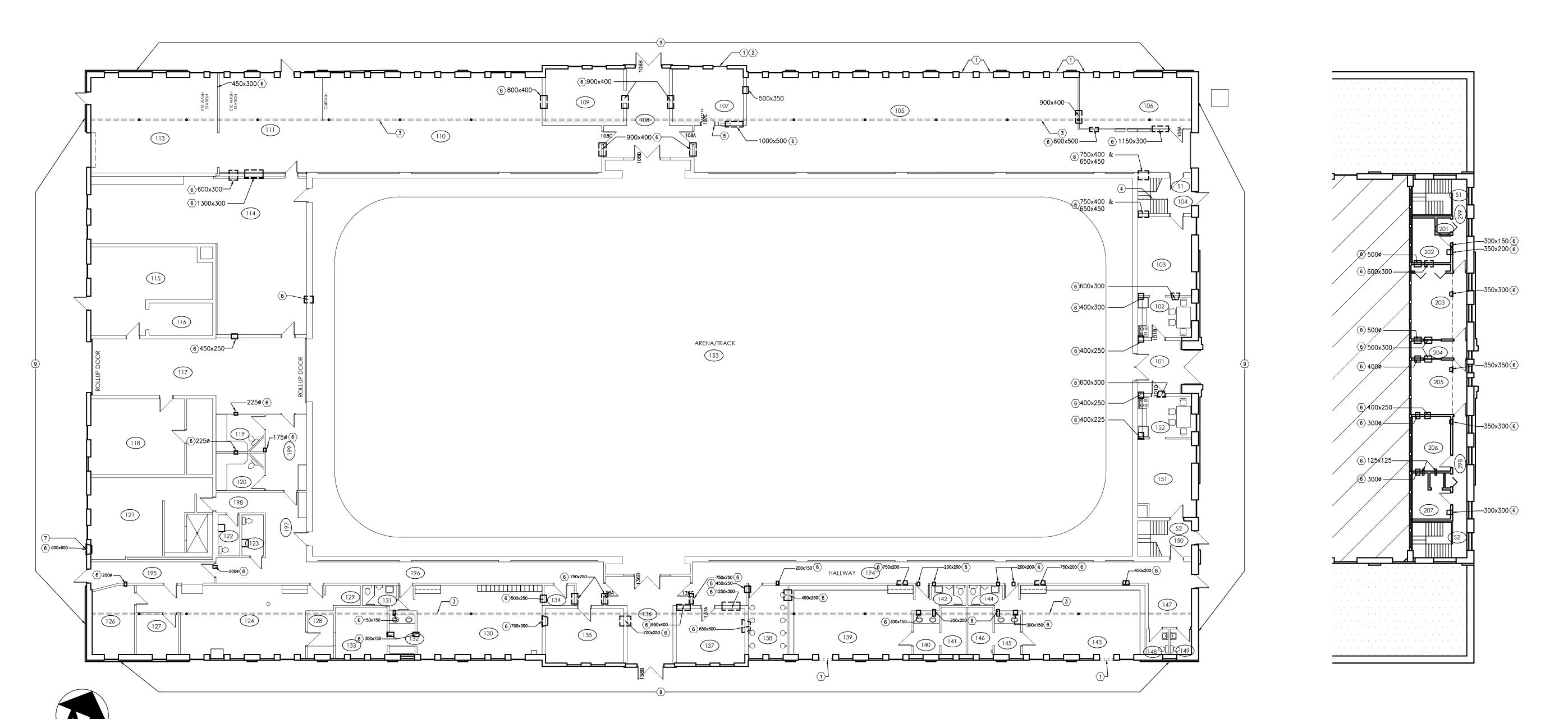
## ELECTRICAL

RITENBURG & ASSOCIATES LTD. CONSULTING ELECTRICAL ENGINEERS - #200-2222 ALBERT ST. - REGINA, SK, S4P 2V2

- E1 ELECTRICAL POWER & SYSTEMS PLAN & SYMBOL SCHEDULE
- E2 ELECTRICAL POWER & SYSTEMS PLAN & SYMBOL SCHEDULE
- E3 ELECTRICAL DISTRIBUTION AND SECOND FLOOR PLAN AND MOTOR & EQUIPMENT SCHEDULE



CLIENT REVIEW	10-21-
CLILINI INLVILVA	
CLIENT REVIEW / PRICING	12-02-
ISSUED FOR TENDER	12-19-



? DEMOLITION KEY NOTE EXISTING WALLS TO BE REMOVED EXISTING WALLS TO REMAIN EXISTING DOOR & FRAME TO BE REMOVED EXISTING DOOR & FRAME TO REMAIN

**DEMOLITION PLAN LEGEND:** 

**DEMOLITION GENERAL NOTES:** CONFIRM ALL ITEMS TO BE RETURN TO OWNER PRIOR TO DEMOLITIO PATCH & MAKE GOOD SURFACES AFFECTED BY DEMOLITION AND/OR NEW CONSTRUCTION READY TO RECEIVE NEW FINISHES INCLUDING MECHANICAL AND ELECTRICAL OPENINGS. PATCH AND MAKE GOOD EXISTING SURFACES SCHEDULED TO REMAIN AS REQUIRED TO RECEIVE NEW FINISH. WHERE NO FINISHES ARE SPECIFIED, MATCH ADJACENT EXISTING FINISH.

ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND EXISTING CONDITIONS ARE TO BE REPORTED TO NUMBER TEN. PATCH, REPAIR & PAINT ALL WALL OPENINGS WHERE DUCTS HAVE BEEN DEMOLISHED

PROVIDE STEEL ANGLE LINTELS AT NEW MASONRY OPENINGS. PROVIDE NEW WALL OPENINGS WHERE NEW DUCTWORK PENETRATES. PATCH, REPAIR & PAINT AS REQUIRED. REFER TO MECHANICAL AND STRUCTURAL DRAWINGS FOR LOCATIONS. STORE AND PROTECT FROM DAMAGE ALL MATERIAL TO BE REINSTALLED.

COORDINATE ALL DEMOLITION, CONSTRUCTION, SALVAGE, RE-USE, ETC WITH MECHANICAL, ELECTRICAL, & STRUCTURAL.

**DEMOLITION KEY NOTES:** 

1) DEMOLISH EXISTING WINDOW TO ALLOW FOR INSTALLATION OF NEW MECHANICAL LOUVER. EXPAND EXISTING MASONRY OPENING TO BE 990 WIDE X 2235 HIGH  $\langle \overline{3} \rangle$  LINE OF BEAM ABOVE

 $\overline{\langle 4 \rangle}$  Demolish existing wall and door below stair.

number TEN architectural group

204 942.0981

architecture = interior design = planning

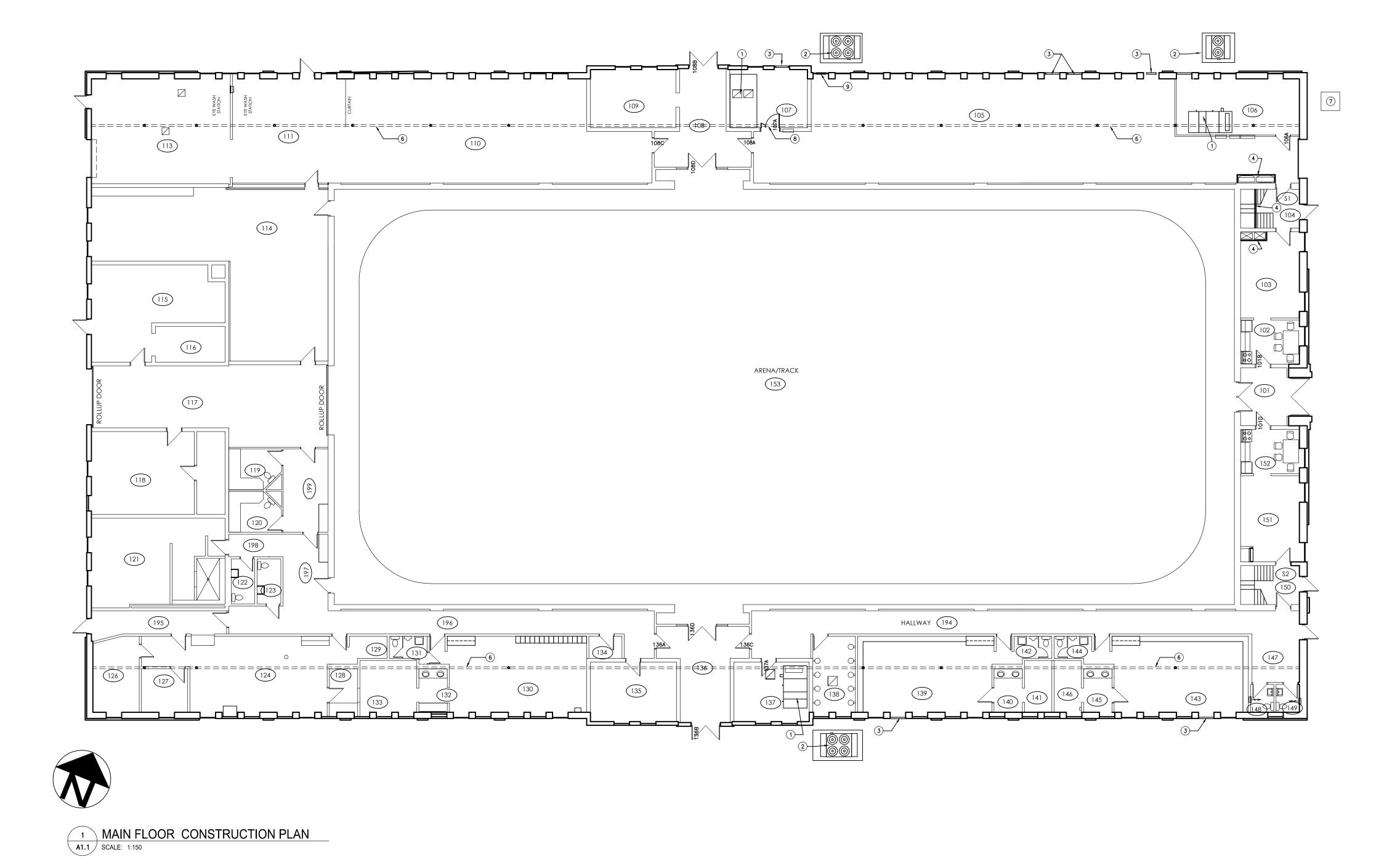
GOVERNMENT OF CANADA Multi Purpose Training Facility Mechanical Renovation

Regina, SK.

MAIN FLOOR DEMOLITION PLAN

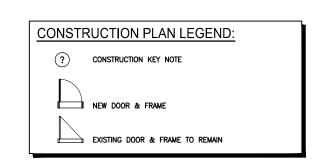
PART SECOND FLOOR DEMOLITION PLAN
SCALE: 1:150

MAIN FLOOR DEMOLITION PLAN
SCALE: 1:150



THIS DRAWING MUST NOT BE SCALED. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUMS, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED TO NUMBER TEN ARCHITECTURAL GROUP BEFORE PROCEEDING. VICTURE OF THE PERMISSION OF NUMBER TEN ARCHITECTURAL GROUP. I HIS DRAWING IS THE EXCLUSIVE PROPERTY OF NUMBER TEN ARCHITECTURAL GROUP AND THE COPYRIGHT IN THE SAME BEING RESERVED TO THEM. IT MAY BE REPRODUCED ONLY WITH THE PERMISSION OF NUMBER TEN ARCHITECTURAL GROUP, IN WHICH CASE THE REPRODUCTION MUST BEAR THEIR NAME.

REVISED/ ISSUED/ PLOTTED DATE 10-21-2016 CLIENT REVIEW CLIENT REVIEW / PRICING 12-02-2016 ISSUED FOR TENDER 12-19-2016



**GENERAL NOTES:**  CONFIRM ALL ITEMS TO BE RETURN TO OWNER PRIOR TO DEMOLITION PATCH & MAKE GOOD SURFACES AFFECTED BY DEMOLITION AND/OR NEW CONSTRUCTION READY TO RECEIVE NEW FINISHES INCLUDING MECHANICAL AND ELECTRICAL OPENINGS. PATCH AND MAKE GOOD EXISTING SURFACES SCHEDULED TO REMAIN AS REQUIRED TO RECEIVE NEW FINISH. WHERE NO FINISHES ARE SPECIFIED, MATCH ADJACENT EXISTING FINISH.

 ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND EXISTING CONDITIONS ARE TO BE REPORTED TO NUMBER TEN. PATCH, REPAIR & PAINT ALL WALL OPENINGS WHERE DUCTS HAVE BEEN DEMOLISHED PROVIDE NEW WALL OPENINGS WHERE NEW DUCTWORK PENETRATES. PATCH, REPAIR & PAINT AS REQUIRED. REFER TO MECHANICAL AND STRUCTURAL DRAWINGS FOR LOCATIONS.

 STORE AND PROTECT FROM DAMAGE ALL MATERIAL TO BE REINSTALLED. COORDINATE ALL DEMOLITION, CONSTRUCTION, SALVAGE, RE-USE, ET WITH MECHANICAL, ELECTRICAL, & STRUCTURAL. PAINT ALL EXPOSED DUCTWORK IN OCCUPIED AREAS.

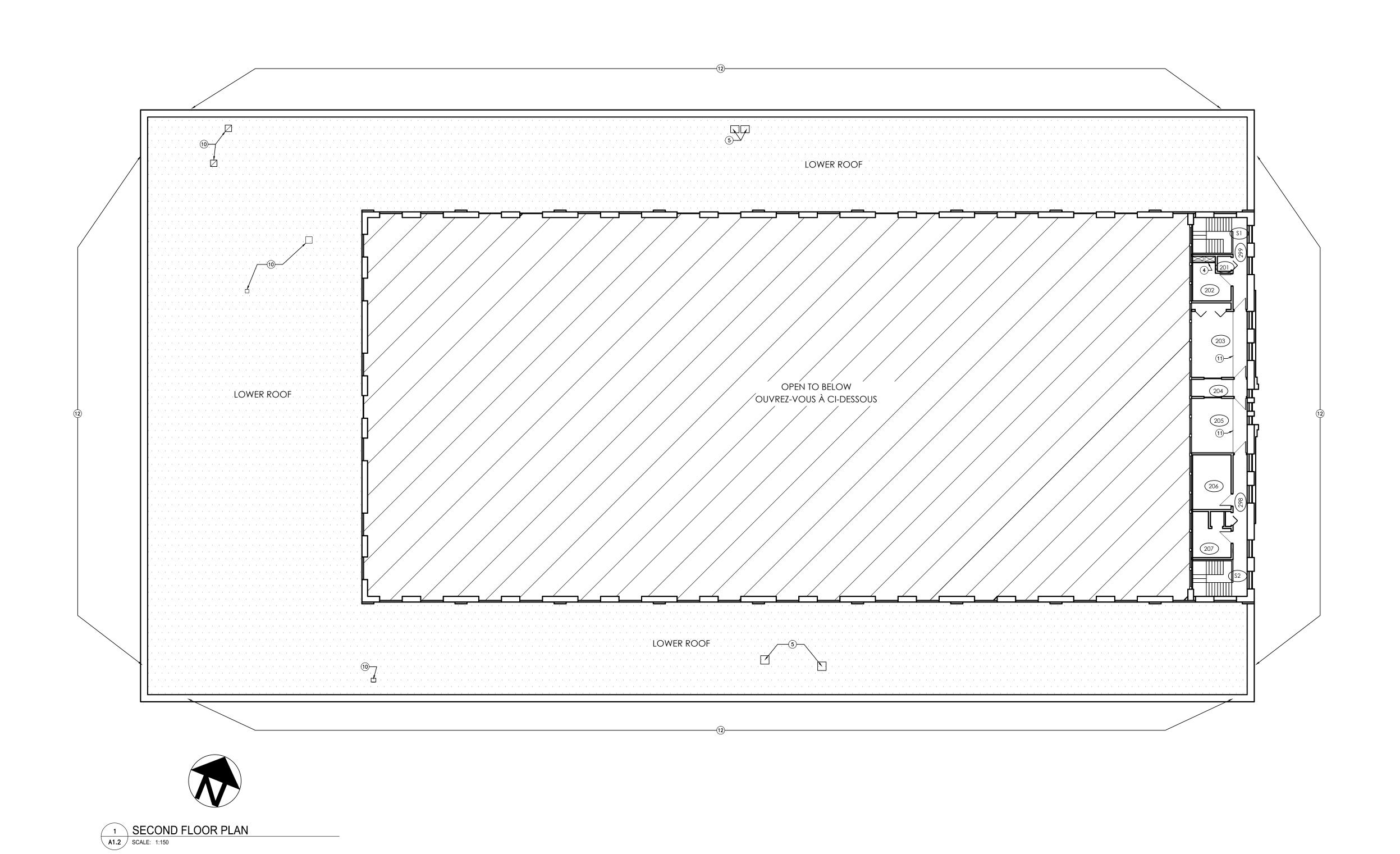
CONSTRUCTION KEY NOTES 2 NEW CONDENSING UNIT C/W CONCRETE PAD - REFER TO MECHANICAL DRAWINGS. 3 NEW LOUVER IN EXISTING WINDOW OPENING - REFER TO MECHANICAL DRAWINGS. 4 1 HOUR RATED SHAFT WALL DUCT ENCLOSURE. PAINTED, C/W RUBBER COVE BASE. 5 NEW GOOSENECK THROUGH ROOF. PATCH AND MAKE GOOD ROOFING AS REQUIRED. REFER TO STRUCTURAL AND MECHANICAL. (6) LINE OF EXISTING STEEL BEAM 7) EXISTING TRANSFORMER. 8 NEW HOLLOW METAL DOOR AND FRAME 9 EXISTING LOUVER TO REMAIN; PROVIDE INSULATED CAP. RE. MECHANICAL (10) EXISTING GOOSENECK THROUGH ROOF (11) LINE OF EXISTING BULKHEAD EXISTING ATTIC VENTS; APPROXIMATELY 40
LOCATIONS AROUND PERIMETER OF BUILDING
-INFILL WALL OPENING WITH 16 G.W.B., 38 STEEL
STUDS, & 12 EXTERIOR G.W.B., INSTALL FLUSH
WITH EXISTING INTERIOR WALL SURFACE. PAINT TO
MATCH EXISTING.
-CAULK AROUND PERIMETER OF EXTERIOR G.W.B. TO
SEAL TO EXISTING WALL.
-INSTALL SOMM RIGID INSULATION. SEAL AROUND
INSULATION WITH EXPANDING FOAM INSULATION.
-CLOSE OFF EXISTING LOUVER WITH SHEET METAL
BACK PAN. INSTALL IN EXISTING OPENING. PAINT
TO MATCH EXISTING AND CAULK PERIMETER.



GOVERNMENT OF CANADA Multi Purpose Training Facility Mechanical Renovation Regina, SK.

MAIN FLOOR CONSTRUCTION PLAN





THIS DRAWING MUST NOT BE SCALED. I GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUMS, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED TO NUMBER TEN ARCHITECTURAL GROUP BEFORE PROCEEDING. I VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THESE DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION OF NUMBER TEN ARCHITECTURAL GROUP. I HIS DRAWING IS THE EXCLUSIVE PROPERTY OF NUMBER TEN ARCHITECTURAL GROUP AND THE COPYRIGHT IN THE SAME BEING RESERVED TO THEM. IT MAY BE REPRODUCED ONLY WITH THE PERMISSION OF NUMBER TEN ARCHITECTURAL GROUP, IN WHICH CASE THE REPRODUCTION MUST BEAR THEIR NAME.

REVISED/ ISSUED/ PLOTTED DATE 10-21-2016 CLIENT REVIEW CLIENT REVIEW / PRICING 12-02-2016 ISSUED FOR TENDER

CONSTRUCTION PLAN LEGEND: ? CONSTRUCTION KEY NOTE NEW DOOR & FRAME EXISTING DOOR & FRAME TO REMAIN

GENERAL NOTES:

CONFIRM ALL ITEMS TO BE RETURN TO OWNER PRIOR TO DEMOLITIC

PATCH & MAKE GOOD SURFACES AFFECTED BY DEMOLITION AND/OR NEW CONSTRUCTION READY TO RECEIVE NEW FINISHES INCLUDING MECHANICAL AND ELECTRICAL OPENINGS.

PATCH AND MAKE GOOD EXISTING SURFACES SCHEDULED TO REMAIN AS REQUIRED TO RECEIVE NEW FINISH. WHERE NO FINISHES ARE SPECIFIED, MATCH ADJACENT EXISTING FINISH. ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND EXISTING CONDITIONS ARE TO BE REPORTED TO NUMBER TEN. PATCH, REPAIR & PAINT ALL WALL OPENINGS WHERE DUCTS HAVE BEEN DEMOLISHED

PROVIDE NEW WALL OPENINGS WHERE NEW DUCTWORK PENETRATES. PATCH, REPAIR & PAINT AS REQUIRED. REFER TO MECHANICAL AND STRUCTURAL DRAWINGS FOR LOCATIONS. STORE AND PROTECT FROM DAMAGE ALL MATERIAL TO BE REINSTALLED.

COORDINATE ALL DEMOLITION, CONSTRUCTION, SALVAGE, RE-USE, ETC WITH MECHANICAL, ELECTRICAL, & STRUCTURAL. PAINT ALL EXPOSED DUCTWORK IN OCCUPIED AREAS.

CONSTRUCTION KEY NOTES NEW AIR HANDLING UNIT — REFER TO MECHANICAL DRAWINGS. REFER TO STRUCTURAL FOR CONCRETE PAD

NEW CONDENSING UNIT C/W CONCRETE PAD

REFER TO MECHANICAL DRAWINGS.

NEW LOUVER IN EXISTING WINDOW OPENING

REFER TO MECHANICAL DRAWINGS.

1 HOUR RATED SHAFT WALL DUCT ENCLOSURE.

PAINTED, C/W RUBBER COVE BASE.

5) NEW GOOSENECK THROUGH ROOF, PATCH AND MAKE GOOD ROOFING AS REQUIRED. REFER TO STRUCTURAL AND MECHANICAL. (6) LINE OF EXISTING STEEL BEAM 7 EXISTING TRANSFORMER. 8 NEW HOLLOW METAL DOOR AND FRAME

9 EXISTING LOUVER TO REMAIN; PROVIDE INSULATED CAP. RE. MECHANICAL (10) EXISTING GOOSENECK THROUGH ROOF (11) LINE OF EXISTING BULKHEAD

(12) EXISTING ATTIC VENTS; APPROXIMATELY 40
LOCATIONS AROUND PERIMETER OF BUILDING
-INFILL WALL OPENING WITH 16 G.W.B., 38 STEEL
STUDS, & 12 EXTERIOR G.W.B.. INSTALL FLUSH
WITH EXISTING INTERIOR WALL SURFACE. PAINT TO
MATCH EXISTING.
-CAULK AROUND PERIMETER OF EXTERIOR G.W.B. TO
SEAL TO EXISTING WALL.
-INSTALL 50mm RIGID INSULATION. SEAL AROUND
INSULATION WITH EXPANDING FOAM INSULATION.
-CLOSE OFF EXISTING LOUVER WITH SHEET METAL
BACK PAN. INSTALL IN EXISTING OPENING. PAINT
TO MATCH EXISTING AND CAULK PERIMETER.

number TEN architectural group

204 942.0981

architecture = interior design = planning

GOVERNMENT OF CANADA Multi Purpose Training Facility Mechanical Renovation

Regina, SK.

SECOND FLOOR CONSTRUCTION PLAN

### DRAWING SPECIFICATIONS

#### <u>DIVISION 1 — GENERAL REQUIREMENTS</u>

### 1.1 General Notes

.1 General Specifications — National Building Code of Canada 2010. Contractor shall read Structural drawings in conjunction with Architectural, Mechanical, and Electrical drawings. Unless noted otherwise, typical details apply throughout. All dimensions in millimetres.

### 1.2 Discrepancies

.1 Report any discrepancies to the Consultant before proceeding with the work.

### 1.3 Mechanical Openings

.1 Refer to mechanical drawings to confirm size and locations of all openings. Notify Consultant prior to proceeding if conditions differ significantly between drawings.

### 1.4 Existing Construction

.1 All information concerning existing construction has been taken from original drawings and site measurements. Contractor to confirm on site all existing dimensions, elevations and details prior to commencing work. Should information differ significantly from those shown, consult the Consultant prior to proceeding. All existing construction altered or damaged during course of work to be made good to match.

1.5 Shop Drawings

.1 Contractor to submit paper or pdf copies of premanufactured structural materials to the Consultant for review prior to fabrication.

1.6 Temporary Works
1.6 Temporary Works
2.1 Contractor is responsible for the design, construction and maintenance of all temporary works as may be required during the course of construction. Temporary works include, but are not limited to, shoring, scaffolding and bracing required to stabilize the structure until permanent structure is in place. Contractor to engage professional design services where required to comply with applicable Code requirements.

### <u>DIVISION 5 - METALS</u>

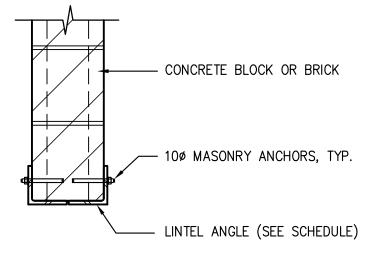
### 5.1 Structural Steel

- .1 Structural size shapes, bar size shapes and welded shapes to CSA G40.20/G40.21—13, 350 MPa Weldable Grade. .2 Paint for primer as per CGSB L-GP-40d, or CISC/CPMA Standard 1073a. All primer to be grey unless approved
- .3 Fabrication and erection to CAN/CSA S16—14 and CISC Code of Standard Practice.

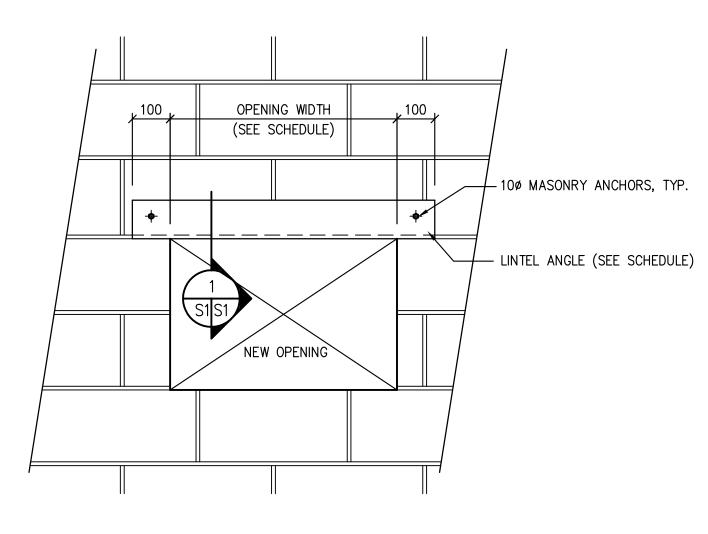
5.2 Anchors: Sizes as detailed on drawings, Standard embedment and installation as per Manufacturers Specifications. .1 Injection Adhesive Anchors for hollow or grout filled masonry to be Hilti HIT—HY 70 or approved alternate c/w specified rod, washer and nut.

CONCRETE BLOCK LINTEL SCHEDULE							
OPENING WIDTH	BLOCK ABOVE OPENING	LINTEL SIZE					
0 TO 300	0 - 600	NONE					
300 - 1500	NONE	NONE					
300 - 1500	200 - 600	2 – L102x102x9.5					

BRICK LINTEL SCHEDULE							
OPENING WIDTH	BRICK ABOVE OPENING	LINTEL SIZE					
0 TO 300	0 - 600	2 – L89x89x6.35					
300 - 1800	0 - 1000	2 – L102x102x9.5					
300 - 900	1000 - 4000	2 - L102x102x9.5					









1. ENSURE ANGLES ARE INSTALLED PRIOR TO CUTTING OPENINGS.

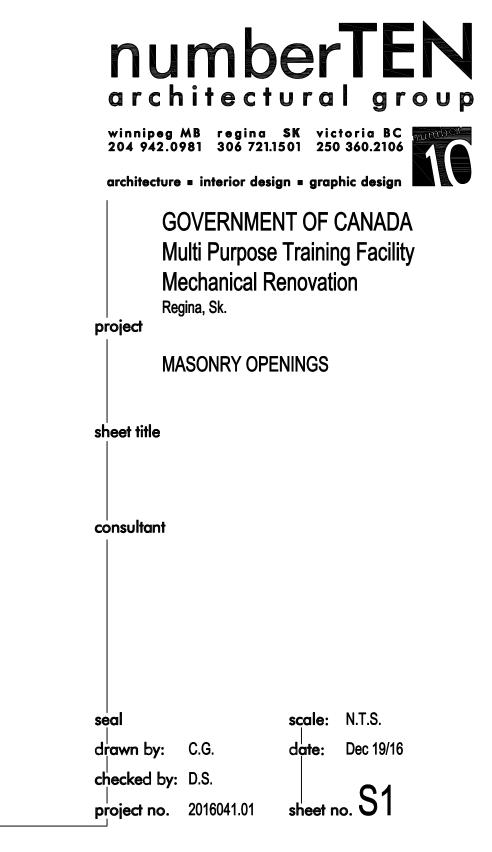


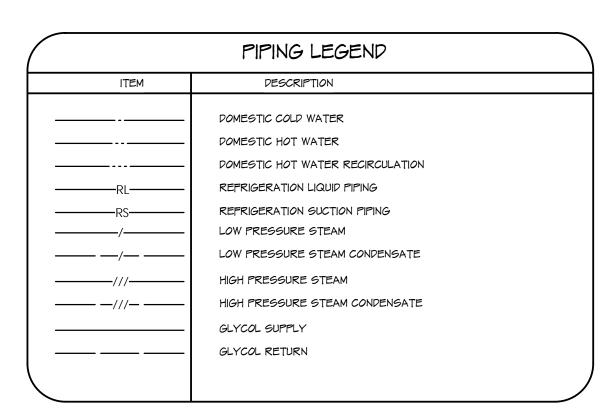
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REVISION NO.	DESCRIPTION	REVISED/ISSUED/PLOTTED
1	Issued for Owners Review	08/11/1
2	Owner Review/Cost Estimate	02/12/1
3	Issued for Tender	12/19/1

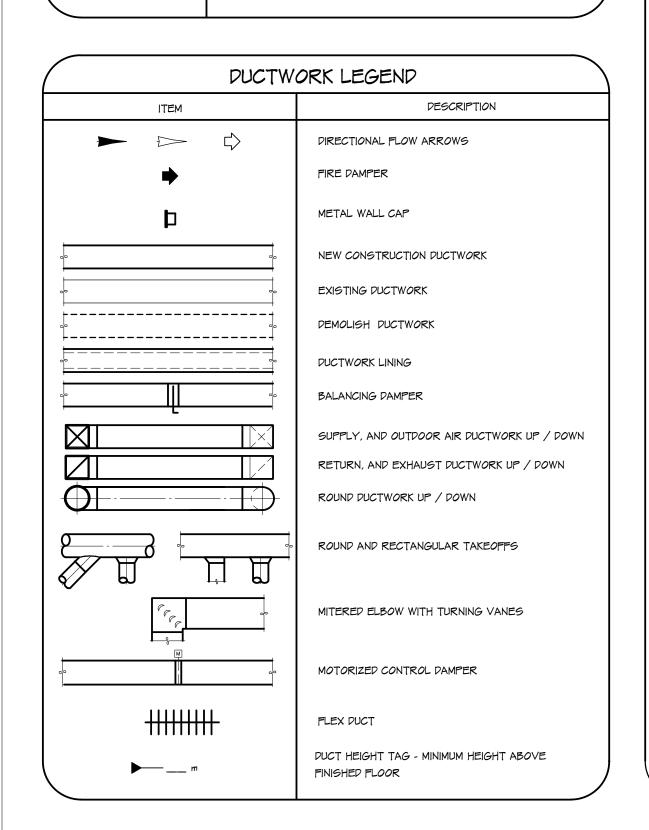








PIPING SYMBOL LEGEND								
ITEM	DESCRIPTION							
<b>─</b> ⋈	— GATE VALVE							
<u></u> ₩	- BALL VALVE							
<u> </u>	BUTTERFLY VALVE	BUTTERFLY VALVE						
<u> </u>	_ CHECK VALVE							
	BACKFLOW PREVENTER							
	PRESSURE REDUCING VALVE							
	— GLOBE VALVE							
<del>- V</del>	_ STRAINER							
	— UNION							
<b>—</b>	- FLOW DIRECTION INDICATOR							
<del></del> 3	CAP							
	CONNECT NEW TO EXISTING							
<del>᠆᠆᠆</del> ᡐᠬᢇ᠊᠊ᢒ	PIPE DROP							
	PIPE RISE							
	PIPE TEE							
× <sub>1-1+</sub> 1	PIPE ELBOW							
·	PIPE CONTINUATION							
MAV AAVA								
<u> </u>	AIR VENTS - MANUAL AND AUTOMATIC							
<del>                                      </del>	PIPE ANCHOR AND GUIDES							
<u> </u>	— STEAM TRAP - FLOAT AND THERMOSTATIC							
-	— STEAM TRAP - BUCKET							
—————————————————————————————————————	— STEAM TRAP - THERMOSTATIC							
rkŽ	VACUUM BREAKER							



FIR	E PROTECTION LEGEND
EQUIPMENT-	
	FIRE HOSE CABINET  FIRE EXTINGUISHER  FIRE EXTINGUISHER 2/W SEMI-RECESSED CABINET  FIRE EXTINGUISHER 2/W FULL RECESSED CABINET

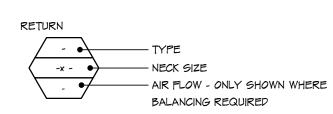
# MECHANICAL EQUIPMENT MECHANICAL EQUIPMENT TAG WATER / GAS METER HORIZONTAL UNIT HEATER THERMOSTAT / THERMOSTAT WITH GUARD

# SUPPLY - NECK SIZE

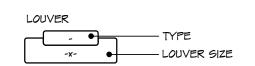
S-I SUPPLY AIR GRILLE - TUTTLE & BAILEY MODEL "A54", ALUMINUM CONSTRUCTION, DOUBLE DEFLECTION, INDIVIDUALLY ADJUSTABLE BLADES WHITE FINISH. 20mm (3/4") SPACING BETWEEN BLADES, INSTALL IN DUCT END WITH CONCEALED MOUNTING DETAIL AS PER MANUFACTURER'S DIRECTIONS, INCLUDING ANGLE IRON AND SCREWS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

GRILLE AND DIFFUSER SCHEDULE

- 5-2 SUPPLY AIR GRILLE TUTTLE & BAILEY MOPEL "A52", ALUMINUM CONSTRUCTION, 20mm (3/4") SPACING BETWEEN BLADES. INCLUDES MULTI-LOUVER DAMPER. INSTALL IN DUCT WITH CONCEALED MOUNTING DETAIL AS PER MANUFACTURER'S DIRECTIONS, INCLUDING ANGLE IRON AND SCREWS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 9-3 CEILING DIFFUSER TUTTLE & BAILEY MODEL "TII00", 300x300, STEEL CONSTRUCTION, PLAQUE DIFFUSER, ROUND COLLAR, LT FRAME, WHITE FINISH.
- S-4 AS S-2 EXCEPT DIFFUSER SIZE TO BE 600x600.



R-I RETURN AIR GRILLE - TUTTLE & BAILEY MODEL "A700" ALUMINUM CONSTRUCTION, FIXED BARS SPACED 20mm (3/4") APART AT 35° DEFLECTION, 31mm (1 1/4") WIDE BORDER. WHITE FINISH. INSTALL IN DUCT END WITH CONCEALED MOUNTING DETAIL AS PER MANUFACTURER'S DIRECTIONS, INCLUDING ANGLE IRON AND SCREWS PER MANUFACTURER'S INSTALLATION



- L-I LOUVER, AIROLITE MODEL "KOOF" SIGHTPROOF LOUVRE WITH 50mm (2") BLADE SPACING. FLANGED LOUVRE. EXTRUDED ALUMINUM, 126mm  $(6^{II})$  DEPTH. MINIMUM 61% FREE AREA. MAXIMUM PRESSURE DROP 25 kP3 @ 3 m/s (0.1" @ 580 FPM) VELOCITY OVER FREE AREA. STANDARD CHANNEL FRAME. SEAL AND INSULATE AROUND PERIMETER.
- L-2 AS L-I WITH FLANGED FRAME INSTEAD OF CHANNEL FRAME.

### GENERAL NOTES

- FLEXIBLE DUCTWORK IS ONLY TO BE USED ABOVE FINISHED CEILINGS IN CELING SPACE. FLEXIBLE DUCTWORK IS TO BE NO LONGER THAN 1200mm, AND TO BE INSTALLED SUCH THAT CUMULATIVE CHANGES IN DIRECTION DO NOT EXCEED 90°
- DUCT RUN-OUTS TO DIFFUSERS ARE TO BE THE SAME SIZE AS THE DIFFUSER INLET UNLESS SPECIFICALLY NOTED OTHERWISE.
- THERMOSTATS ARE NOT TO BE LOCATED BEHIND DOORS.
- PRIOR TO STARTING ANY WORK ON SITE, THE CONTRACTOR IS TO REVIEW TYPE, SIZE, AND LOCATION OF ALL EXISTING DIFFUSERS SHOWN ON THE DRAWINGS AS EXISTING. REVIEW ANY DISCREPANCIES WITH THE CONSULTANT PRIOR TO STARTING WORK.
- PROVIDE A STAINLESS STEEL COVER PLATE AT LOCATIONS WHERE THERMOSTATS HAVE BEEN RELOCATED FROM OR REMOVED.
- CLEAN VISIBLE SURFACES OF ALL EXISTING DIFFUSERS BEING REBALANCED.
- IN RUNNING ANY NEW PIPING AND DUCTWORK, ENGURE THAT ACCESS TO EQUIPMENT IS MAINTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT, ATTIC ACCESS HATCHES, FLOOR ACCESS OPENINGS, AND CLEANOUTS.

### MECHANICAL EQUIPMENT SCHEDULE - NEW EQUIPMENT

AHU-2 AIR HANDLING UNIT, JOHNSON CONTROLS MODEL "SOLUTION-XTI-42x64". AIRFLOW 1,850 L/s @ 398 P3 EXTERNAL STATIC PRESSURE (3,920 CFM @ 1.6" ESP). 50mm (2") PLEATED 30% MERV & FILTERS. PROVIDE HINGED ACCESS DOORS FOR ACCESSING ALL SECTIONS OF UNIT, INCLUDING SPACE BETWEEN HEATING AND COOLING COILS. 2" FOAM INSULATION, 2043 OUTER AND INNER CASING ALONG ENTIRE UNIT

GLYCOL HEATING COIL: HEATING CAPACITY 25 KW (37 MBH), FLOW RATE 0.29 L/s (4.6 GPM) EWT/LWT: 32°C/60°C (130°F/140°F). WATER PRESSURE DROP 900 Pa (0.41 H2O). FLUID: 30% PROPYLENE GLYCOL. EAT/LAT: 17°C/28°C (62°F/82°F).

DX COOLING COIL: COOLING CAPACITY 42 kW (144 MBH) TOTAL COOLING, 27 kW (91 MBH) SENSIBLE COOLING, EAT DB/WB: 24°C/18°C (76°F/65°F), LAT DB/WB: 12°C/11°C (53°F/52°F). INCLUDE STAINLESS STEEL DRAIN PAN BENEATH COIL.

FAN MOTOR: 3 HP, 208V/3ph/60Hz, 1,800 RPM, DIRECT DRIVE, FLA II.8 A. INCLUDE VARIABLE FREQUENCY DRIVE, PREWIRED AND MOUNTED ON CABINET. SOUND OUTPUT AT SUPPLY FAN: 77 B @ 125 Hz, 82 B @ 500 Hz, 79 B @ 2,000 Hz. UNIT IS SINGLE POINT CONNECTION. FAN 2/W I" SPRING ISOLATORS AND STRUCTURAL SUPPORT. DIMENSIONS: 2,794mm L x 1,370mm W x 1,200mm H (110" x 54" x 48"), 950 kg (2,096 lbs), INCLUDING 6" FORMED STEEL BASE RAIL AROUND PERIMETER. MOUNT ON ANGLE IRON STAND 500mm

(20") ABOVE FLOOR. STAND TO ALLOW FOR ACCESS BENEATH UNIT. UNIT TO BE DISASSEMBLED AND INSTALLED IN SECTIONS IF NECESSARY TO ALLOW UNIT TO BE BROUGHT INTO THE FAN ROOM, CONTRACTOR TO INSTALL PLENUM MIXING BOX AT END OF AHU TO CONNECT RETURN AIR AND OUTDOOR AIR.

AHU-3 AIR HANDLING UNIT, JOHNSON CONTROLS MOPEL "SOLUTION-XTI-42x60". AIRFLOW 2,080 L/5 @ 308 P2 EXTERNAL STATIC PRESSURE (4,410 CFM @ 1.6" ESP). 50mm (2") PLEATED 30% MERV & FILTERS. PROVIDE HINGED ACCESS DOORS FOR ACCESSING ALL SECTIONS OF UNIT, INCLUDING SPACE BETWEEN HEATING AND COOLING COILS, 2" FOAM INSULATION, 2049 OUTER AND INNER CASING ALONG ENTIRE UNIT.

GLYCOL HEATING COIL: HEATING CAPACITY 29 KW (97 MBH), FLOW RATE 0.32 L/s (5 GPM) EWT/LWT: 82°C/60°C (180°F/140°F). WATER PRESSURE DROP 1.2 kP3 (0.4' H20). FLUID: 30% PROPYLENE GLYCOL. EAT/LAT: 17°C/28°C (62°F/82°F) DX COOLING COIL: COOLING CAPACITY 46 KW (157 MBH) TOTAL COOLING, 29 KW (99 MBH) SENSIBLE COOLING, EAT DB/WB: 24°C/18°C (76°F/65°F), LAT DB/WB: 12°C/11°C (53°F/52°F).

INCLUDE STAINLESS STEEL DRAIN PAN BENEATH COIL.

FAN MOTOR: 3 HP, 208V/3ph/60Hz, 1,800 RPM, DIRECT DRIVE, FLA 11.8 A. INCLUDE VARIABLE FREQUENCY DRIVE, PREWIRED AND MOUNTED ON CABINET. SOUND OUTPUT AT SUPPLY FAN: 75 B @ 125 Hz, 83 B @ 500 Hz, 80 B @ 2,000 Hz. UNIT IS SINGLE POINT CONNECTION. FAN a/w I" SPRING ISOLATORS AND STRUCTURAL SUPPORT. DIMENSIONS: 2,794mm L x 1,524mm W x 1,220mm H (110" x 60" x 48"), 1,007 kg (2,2211bs), INCLUDING 6" FORMED STEEL BASE RAIL AROUND PERIMETER. MOUNT ON ANGLE IRON STAND 500mm

(20") ABOVE FLOOR. STAND TO ALLOW FOR ACCESS BENEATH UNIT. UNIT TO BE DISASSEMBLED AND INSTALLED IN SECTIONS IF NECESSARY TO ALLOW UNIT TO BE BROUGHT INTO THE FAN ROOM. CONTRACTOR TO INSTALL PLENUM MIXING BOX AT END OF AHU TO CONNECT RETURN AIR AND OUTDOOR AIR.

AHU-4 AIR HANDLING UNIT, JOHNSON CONTROLS MOPEL "SOLUTION-XTI-54x60". AIRFLOW 3,238 L/s @ 435 P3 EXTERNAL STATIC (6,860 CFM @ 1.75" ESP). 50mm (2") PLEATED 30% MERV 8 FILTERS. PROVIDE HINGED ACCESS DOORS FOR ACCESSING ALL SECTIONS OF UNIT, INCLUDING SPACE BETWEEN HEATING AND COOLING COILS. 2" FOAM INSULATION, 2042 OUTER AND INNER

GLYCOL HEATING COIL: HEATING CAPACITY 66 kW (227 MBH), FLOW RATE 0.76 L/s (12 GPM) EWT/LWT: 82°C/60°C (180°F/140°F). WATER PRESSURE DROP 2.7 kP3 (0.0 H20). FLUID: 30% PROPYLENE GLYCOL. EAT/LAT: 17°C/28°C (62°F/82°F). DX COOLING COIL: COOLING CAPACITY 72 KW (246.5 MBH) TOTAL COOLING, 47 KW (159 MBH) SENSIBLE COOLING. EAT DB/WB: 24°C/18°C (76°F/65°F), LAT DB/WB: 11°C/11°C (51°F /51°F).

INCLUDE STAINLESS STEEL DRAIN PAN BENEATH COIL FAN MOTOR: 5 HP, 208V/3ph/60Hz, 1,800 RPM, DIRECT DRIVE, FLA 16.7A. INCLUDE VARIABLE FREQUENCY DRIVE, PREWIRED AND MOUNTED ON CABINET. SOUND OUTPUT AT SUPPLY FAN: 80

B @ 125 Hz, 83 B @ 500 Hz, 79 B @ 2,000 Hz. UNIT IS SINGLE POINT CONNECTION. FAN 2/W I" SPRING ISOLATORS AND STRUCTURAL SUPPORT. DIMENSIONS: 2,870mm L x 1,524mm W x 1,524mm H (113" x 60" x 60"), 1,220 kg (2,691 lbs), INCLUDING 6" FORMED STEEL BASE RAIL AROUND PERIMETER. MOUNT ON ANGLE IRON STAND 500mm (20") ABOVE FLOOR. STAND TO ALLOW FOR ACCESS BENEATH UNIT. UNIT TO BE PISASSEMBLED AND INSTALLED IN SECTIONS IF NECESSARY TO ALLOW UNIT TO BE BROUGHT INTO THE FAN ROOM. CONTRACTOR TO INSTALL PLENUM MIXING BOX AT END OF AHU TO CONNECT RETURN AIR AND OUTDOOR AIR.

RF-2 RETURN AIR FAN. PENNBARRY MODEL "SXIGGBC" DUCT MOUNTED AXIAL FAN. AIRFLOW 1,860 L/5 @ 124 P3 (3,920 CFM @ 0.60"). BELT DRIVEN, ALUMINUM CONSTRUCTION. PHYSICAL DIMENSIONS 840mm L x 710mm T x 1040mm W (33" x 28" x 41"), 62 kg (137 lbs). MOUNT FROM SPRING HANGER VIBRATION ISOLATOR. INCLUDE SOUND INSULATION. MOTOR: SINGLE SPEED, 2 HP,

208V/3ph/60Hz, 1505 RPM. RF-3 RETURN AIR FAN. PENNBARRY MODEL "SXI65BC" DUCT MOUNTED AXIAL FAN. AIRFLOW 2,082 L/s @ 124 P3 (4,410 CFM @ 0.50"). BELT DRIVEN, ALUMINUM CONSTRUCTION. PHYSICAL DIMENSIONS 840mm L x 710mm T x 1040mm W (33" x 28" x 41"), 65 kg (144 lbs). MOUNT FROM SPRING HANGER VIBRATION ISOLATOR. INCLUDE SOUND INSULATION. MOTOR: SINGLE SPEED, 2 HP,

RF-4 RETURN AIR FAN. PENNBARRY MOPEL "SX226BC" DUCT MOUNTED AXIAL FAN. AIRFLOW 3,238 L/s @ 140 P3 (6,860 CFM @ 0.60"). BELT DRIVEN, ALUMINUM CONSTRUCTION. PHYSICAL DIMENSIONS 914mm L x 838mm T x 1,194mm W (36" x 33" x 47"), III kg (245 lbs). MOUNT FROM SPRING HANGER VIBRATION ISOLATOR. INCLUDE SOUND INSULATION. MOTOR: SINGLE SPEED, 3 HP, 208V/3ph/60Hz, 906 RPM.

CU-2 CONPENSING UNIT JOHNSON CONTROLS MOPEL "JI2YCC00A2AAE4". 44 kW (149 MBH) TOTAL COOLING CAPACITY. 28°C (82°F) AMBIENT DRY BULB. SATURATED SUCTION TEMPERATURE 6°C (42°F). REFRIGERANT R410-A. 208V/3ph/60Hz, MINIMUM CIRCUIT AMPACITY 56.5 A, MAXIMUM OVER CURRENT PROTECTION 70 A. SINGLE POINT ELECTRICAL CONNECTION. CONNECT REFRIGERANT PIPING TO UNIT WITH METRAFLEX MODEL "RAF" CONNECTORS. TYPE 3.11 TYPE 3.04 STAINLESS STEEL CORRUGATED HOSE, 3.04 STAINLESS STEEL DOUBLE BRAID. DIMENSIONS: 1,270mm H x 1,500mm L x 812mm W (50" x 59" x 32") 226 kg (500 lbs). INCLUDES HOT GAS BYPASS. INSTALL AS PER MANUFACTURER'S REQUIRED CLEARANCES. INCLUDE HAIL GUARDS. BAS CONTROLLER: SIMPLICITY SE CONTROL.

CU-3 CONDENSING UNIT JOHNSON CONTROLS MODEL "JIGYCCOOAZAAE4". 49 kW (166 MBH) TOTAL COOLING CAPACITY. 28°C (82°F) AMBIENT DRY BULB. SATURATED SUCTION TEMPERATURE 6°C (42°F). REFRIGERANT R410-A. 208V/3ph/60Hz, MINIMUM CIRCUIT AMPACITY 64.7 A, MAXIMUM OVER CURRENT PROTECTION 80 A. SINGLE POINT ELECTRICAL CONNECTION. CONNECT REFRIGERANT PIPING TO UNIT WITH METRAFLEX MODEL "RAF" CONNECTORS. TYPE B.I. TYPE 304 STAINLESS STEEL CORRUGATED HOSE, 304 STAINLESS STEEL DOUBLE BRAID. DIMENSIONS: 1,143mm H x 1,500mm L x 1,624mm W (45" x 59" x 64") 415 kg (914 lbs). INCLUPES HOT GAS BYPASS. INSTALL AS PER MANUFACTURER'S REQUIRED CLEARANCES. INCLUPE HAIL GUARDS. BAS CONTROLLER: SIMPLICITY SE CONTROL.

CU-4 CONDENSING UNIT JOHNSON CONTROLS MODEL "J25YCC00A2AAE4". 30 kW (270 MBH) TOTAL COOLING CAPACITY. 28°C (82°F) AMBIENT DRY BULB. SATURATED SUCTION TEMPERATURE 6°C (42°F). REFRIGERANT R410-A. 208V/3ph/60Hz, MINIMUM CIRCUIT AMPACITY 120.3 A, MAXIMUM OVER CURRENT PROTECTION 150 A. SINGLE POINT ELECTRICAL CONNECTION, CONNECT REFRIGERANT PIPING TO UNIT WITH METRAFLEX MODEL "RAF" CONNECTORS. TYPE B.I.I TYPE 304 STAINLESS STEEL CORRUGATED HOSE, 304 STAINLESS STEEL DOUBLE BRAID. DIMENSIONS: 1,270mm H x 1,500mm L x 1,624mm W (50" x 50" x 64") 430 kg (945 lbs). INCLUDES HOT GAS BYPASS. INSTALL AS PER MANUFACTURER'S REQUIRED CLEARANCES. INCLUDE HAIL GUARDS. BAS CONTROLLER: SIMPLICITY SE CONTROL.

HX-I HEAT EXCHANGER BELL & GOSSETT MODEL "BPX" BRAZED PLATE TYPE. STEAM SIDE: FLOW RATE 0.03 L/s (0.411 GPM), INLET PRESSURE 14 KP3 (2 psi). GLYCOL SIDE: FLOW RATE 0.63 L/s (10 GPM) EWT/LWT: 82°C/60°C (180°F/140°F), WATER PRESSURE DROP 0 KPa (3' H2O). TOTAL HEAT EXCHANGED 50 KW (200 MBH). PHYSICAL DIMENSIONS: 310mm H x IIImm W x 57mm D (12.2" × 4.37" × 2.26") WEIGHT: 2.7 kg (6 lbs).

HX-2 AS HX-I

P-I PUMP, BELL & GOSSETT "ECOCIRC XL 55-45". PART NUMBER 104306. CAST IRON BODY WITH STAINLESS STEEL SHAFT AND IMPELLER. FLOW RATE: 1.26 L/s @ 110 kP2 (20 GPM @37'). PUMP TO COME WITH VFD INCLUPED. PROPORTIONAL PRESSURE CONTROL. PUMP TO BE MONITORED BY BMS. MOTOR: 1/2 HP, 208V/lph/60Hz, AMP RANGE: 0.2 - 2 A. FLUID: 30% PROPYLENE GLYCOL.

AS-I AIR SEPARATOR TACO MODEL "4904". PRESSURE DROP TO BE LESS THEN 1.4 kP2 (0.2 psi). 100mm (4") CONNECTION SIZE. DIMENSIONS: 280mm D X 508mm H X 533mm AT CONNECTIONS (11" x

ET-I EXPANSION TANK BELL & GOSSETT MODEL "B-35LA" DIAPHRAGM TYPE TANK. BLADDER SHALL BE HEAVY DUTY BUTYL RUBBER. TANK VOLUME 38 L (10 ga). DIMENSIONS: 254mm (10") DIAMETER x 048mm (38") HEIGHT WEIGHT 20 kg (65 lbs).

TK-I GLYCOL FEED TANK. AXIOM INDUSTRIES MODEL "SFI00". TANK VOLUME 208 L (55 pal). INCLUDES COVER, PUMP SUCTION HOSE WITH INLET STRAINER. PRESSURE PUMP WITH THERMAL CUT-OUT, AND LOW LEVEL PUMP CUT-OUT. PUMP SHALL BE CAPABLE OF RUNNING DRY WITHOUT DAMAGE INTEGRAL PRESSURE SWITCH AND CHECK VALVE. POWER SUPPLY IIGV/Iph/60Hz,

DS-2 DUCT SILENCER. VIBRO-ACOUSTICS MODEL "ERT-LI0727". SILENCER TO BE ELBOW AND TRANSITION PIECE. SEE DRAWING FOR DUCT CONNECTION DIMENSIONS. CONTRACTOR TO CONFIRM LENGTH AND HEIGHT OF SILENCER BEFORE ORDERING. PRESSURE DROP NOT TO EXCEED 72 Pa ( 0.29"). SILENCER MUST ACHIEVE NC-30 TO NC-35. SILENCER CONSTRUCTION SHALL AT LEAST MATCH THAT OF DUCTWORK. OUTER CASING SHALL BE GOO GALVANIZED STEEL, 18 GAUGE. INNER PERFORATED LINER SHALL BE GOO GALVANIZED STEEL, 22 GAUGE.

DS-3 DUCT SILENCER. VIBRO-ACOUSTICS MODEL "XE-LI0727". SILENCER TO BE ELBOW AND TRANSITION PIECE. SEE DRAWING FOR DUCT CONNECTION DIMENSIONS. CONTRACTOR TO CONFIRM LENGTH AND HEIGHT OF SILENCER BEFORE ORDERING. PRESSURE DROP NOT TO EXCEED 72 P3 ( 0.20"). SILENCER MUST ACHIEVE NC-30 TO NC-35. SILENCER CONSTRUCTION SHALL AT LEAST MATCH THAT OF DUCTWORK. OUTER CASING SHALL BE GOO GALVANIZED STEEL, 18 GAUGE. INNER PERFORATED LINER SHALL BE GOO GALVANIZED STEEL, 22 GAUGE.

DS-4 DUCT SILENCER. VIBRO-ACOUSTICS MODEL "DXE-LI9727". SILENCER TO BE ELBOW AND TRANSITION PIECE. SEE DRAWING FOR DUCT CONNECTION DIMENSIONS. CONTRACTOR TO CONFIRM LENGTH AND HEIGHT OF SILENCER BEFORE ORDERING. PRESSURE DROP NOT TO EXCEED 72 Pa ( 0.29"). SILENCER MUST ACHIEVE NC-30 TO NC-35. SILENCER CONSTRUCTION SHALL AT LEAST MATCH THAT OF DUCTWORK. OUTER CASING SHALL BE GOO GALVANIZED STEEL, 18 GAUGE. INNER PERFORATED LINER SHALL BE GOO GALVANIZED STEEL, 22 GAUGE.

EF-6 EXHAUST FAN. PENNBARRY MODEL "ZIZIS-TDA" INLINE CABINET FAN. AIRFLOW 425 L/5 @ 62 P3 (900 CFM @ 0.25"). MOUNT FROM SPRING HANGER VIBRATION ISOLATOR. MOTOR: 115V/60Hz/3ph; 3.6A, 344 W, 1050 RPM. 5 SONES. INCLUDE SPEED CONTROLLER. PHYSICAL DIMENSIONS: 600mm W x 350mm D x 350mm H (24"x14"x14")23 kg (52 lbs).

UH-9 MODINE MODEL HS-175 HORIZONTAL UNIT HEATER. 43.5 kW (176 MBH) HEATING CAPACITY AT 14 kP3 (2 PSIG) STEAM PRESSURE. 1/3 HP 820 RPM MOTOR AT 115V/Iph/60Hz. 1265 LPS (2690 CFM). LOUVERED AIR DIFFUSER WITH INDIVIDUALLY ADJUSTABLE BLADES. WEIGHT 76 kg (166 LBS).

CUR-I SCHWANK MODEL 3000 SERIES AIR CURTAIN FOR PLACEMENT ON EXISTING OVERHEAD DOOR (APPROXIMATELY 8 w x 10 h WITH SIZE TO BE VERIFIED ON SITE BY CONTRACTOR PRIOR TO ORDERING). 4 MOTORS AT 0.5 HP EACH - SINGLE ELECTRICAL FEED TO UNIT AT 208V/lph/60Hz. 4 BLOWERS. 22.9 M/S (4500 FPM) MAXIMUM AIR VELOCITY. 71 JB MAXIMUM NOISE. WEIGHT APPROXIMATELY 185 kg (400 LB).

FX-I WALL MOUNT FIRE EXTINGUISHER. NATIONAL FIRE EQUIPMENT MODEL WBDL-ABC340WH 6 LB. 3A-40BC STORED PRESSURE DRY CHEMICAL FIRE EXTINGUISHER. 13-16 SECONDS DISCHARGE TIME. IIOMM DIAMETER AND 410MM HIGH. COMPLETE WITH WALL MOUNTING BRACKET.

### EXISTING MECHANICAL EQUIPMENT SCHEDULE

DESCRIPTION

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REVISION NO. DESCRIPTION

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R. J. ENGLAND CONSULTING LTD. BEFORE PROCEEDING.

0 OWNER REVIEW/COST ESTIMATE

1 ISSUED FOR TENDER

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REVISED/ ISSUED/ PLOTTED

DECEMBER 19, 2016

DECEMBER 2, 2016

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AHU-I EXISTING AIR HANDLING UNIT TO REMAIN

EF-I EXISTING EXHAUST FAN TO REMAIN

EF-2 EXISTING EXHAUST FAN TO REMAIN

EF-3 EXISTING EXHAUST FAN TO REMAIN

EF-4 EXISTING EXHAUST FAN TO REMAIN

EF-7 EXISTING EXHAUST FAN TO REMAIN

EF-8 EXISTING EXHAUST FAN TO REMAIN

EF-10 EXISTING EXHAUST FAN TO REMAIN

EF-II EXISTING EXHAUST FAN TO REMAIN

EF-12 EXISTING EXHAUST FAN TO REMAIN

EF-13 EXISTING EXHAUST FAN TO REMAIN EF-14 EXISTING EXHAUST FAN TO REMAIN

EF-IG EXISTING EXHAUST FAN TO REMAIN EF-16 EXISTING EXHAUST FAN TO REMAIN

CR-I EXISTING CONDENSATER RECEIVER TO REMAIN

CR-2 EXISTING CONDENSATER RECEIVER TO REMAIN CR-3 EXISTING CONDENSATER RECEIVER TO REMAIN

FF-I EXISTING STEAM HEATER TO REMAIN

FF-2 EXISTING STEAM HEATER TO REMAIN

FF-3 EXISTING STEAM HEATER TO REMAIN FF-4 EXISTING STEAM HEATER TO REMAIN

FF-6 EXISTING STEAM HEATER TO REMAIN

FF-II EXISTING STEAM HEATER TO REMAIN FF-14 EXISTING STEAM HEATER TO REMAIN

FF-17 EXISTING STEAM HEATER TO REMAIN

FF-18 EXISTING STEAM HEATER TO REMAIN FF-22 EXISTING STEAM HEATER TO REMAIN

FF-23 EXISTING STEAM HEATER TO REMAIN

CR-II EXISTING UNIT HEATER TO REMAIN

UH-I EXISTING UNIT HEATER TO REMAIN

UH-2 EXISTING UNIT HEATER TO REMAIN UH-3 EXISTING UNIT HEATER TO REMAIN

UH-5 EXISTING UNIT HEATER TO REMAIN

UH-6 EXISTING UNIT HEATER TO REMAIN UH-8 EXISTING UNIT HEATER TO REMAIN

UH-10 EXISTING UNIT HEATER TO REMAIN

UH-II EXISTING UNIT HEATER TO REMAIN

UH-12 EXISTING UNIT HEATER TO REMAIN UH-13 EXISTING UNIT HEATER TO REMAIN

UH-14 EXISTING UNIT HEATER TO REMAIN UH-15 EXISTING UNIT HEATER TO REMAIN

UH-20 EXISTING UNIT HEATER TO REMAIN

UH-21 EXISTING UNIT HEATER TO REMAIN

UH-22 EXISTING UNIT HEATER TO REMAIN

UH-23 EXISTING UNIT HEATER TO REMAIN UH-24 EXISTING UNIT HEATER TO REMAIN

EH-I EXISTING ELECTRIC FORCE FLOW TO REMAIN EH-2 EXISTING ELECTRIC FORCE FLOW TO REMAIN

DRAWING LIST - MECHANICAL

MAIN FLOOR VENTILATION EAST

MAIN FLOOR VENTILATION WEST SECOND FLOOR VENTILATION

DETAILS - STEAM & HYDRONICS

HEATING PLAN EAST AND SECTION VIEW

LEGENDS AND SCHEDULES DEMOLITION PLAN EAST

DEMOLITION PLAN WEST

HEATING PLAN WEST

DETAILS - VENTILATION

AC-I EXISTING SPLIT SYSTEM AIR CONDITIONER TO REMAIN





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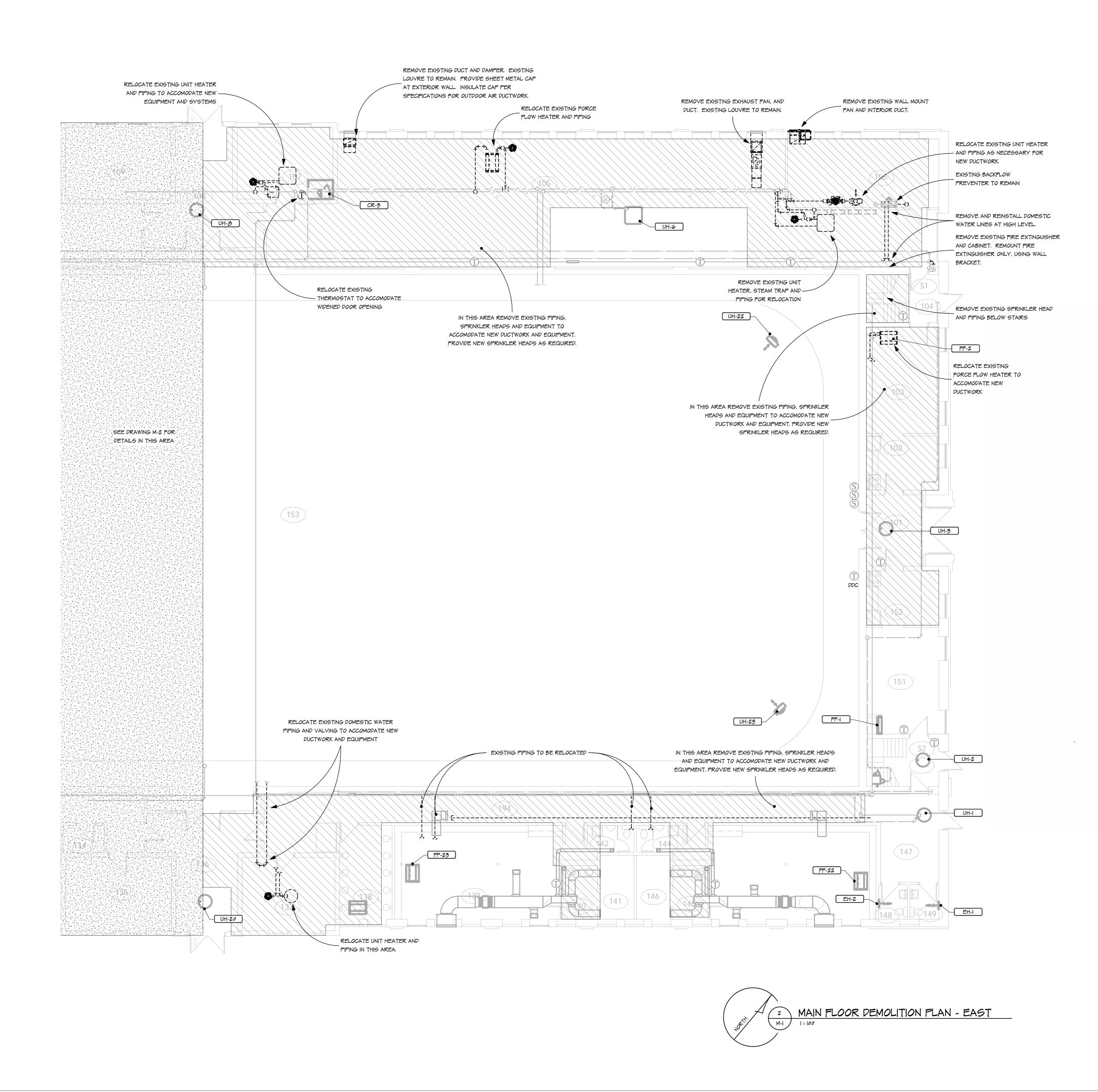
GOVERNMENT OF CANADA Multi Purpose Training Facility Mechanical Renovation

Regina, SK.

**MECHANICAL** 

LEGENDS AND SCHEDULES

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GOVERNMENT OF CANADA Multi Purpose Training Facility

Regina, SK.

MECHANICAL

DEMOLITION PLAN EAST

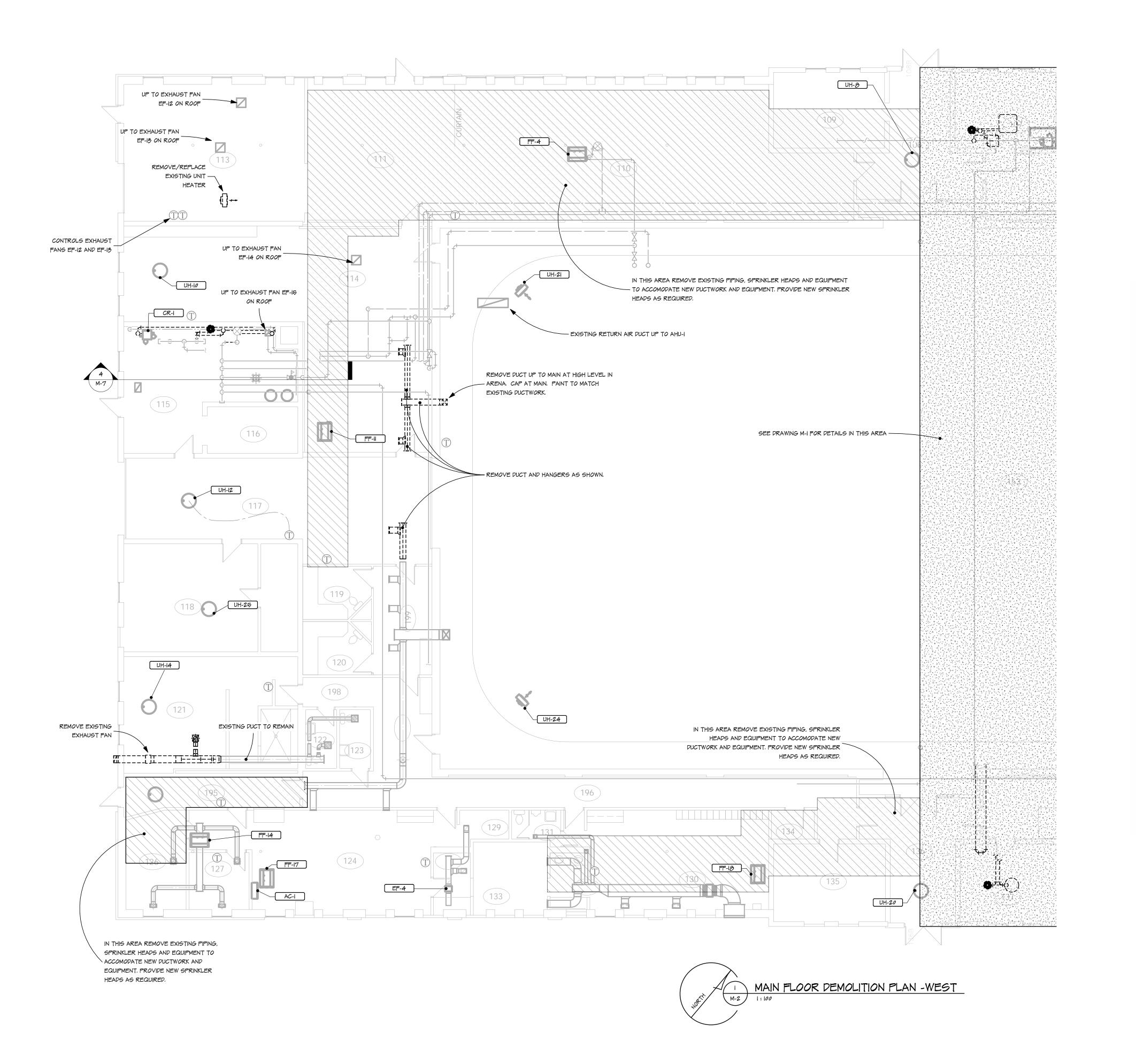
Mechanical Renovation

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project

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project no. 05.004.F



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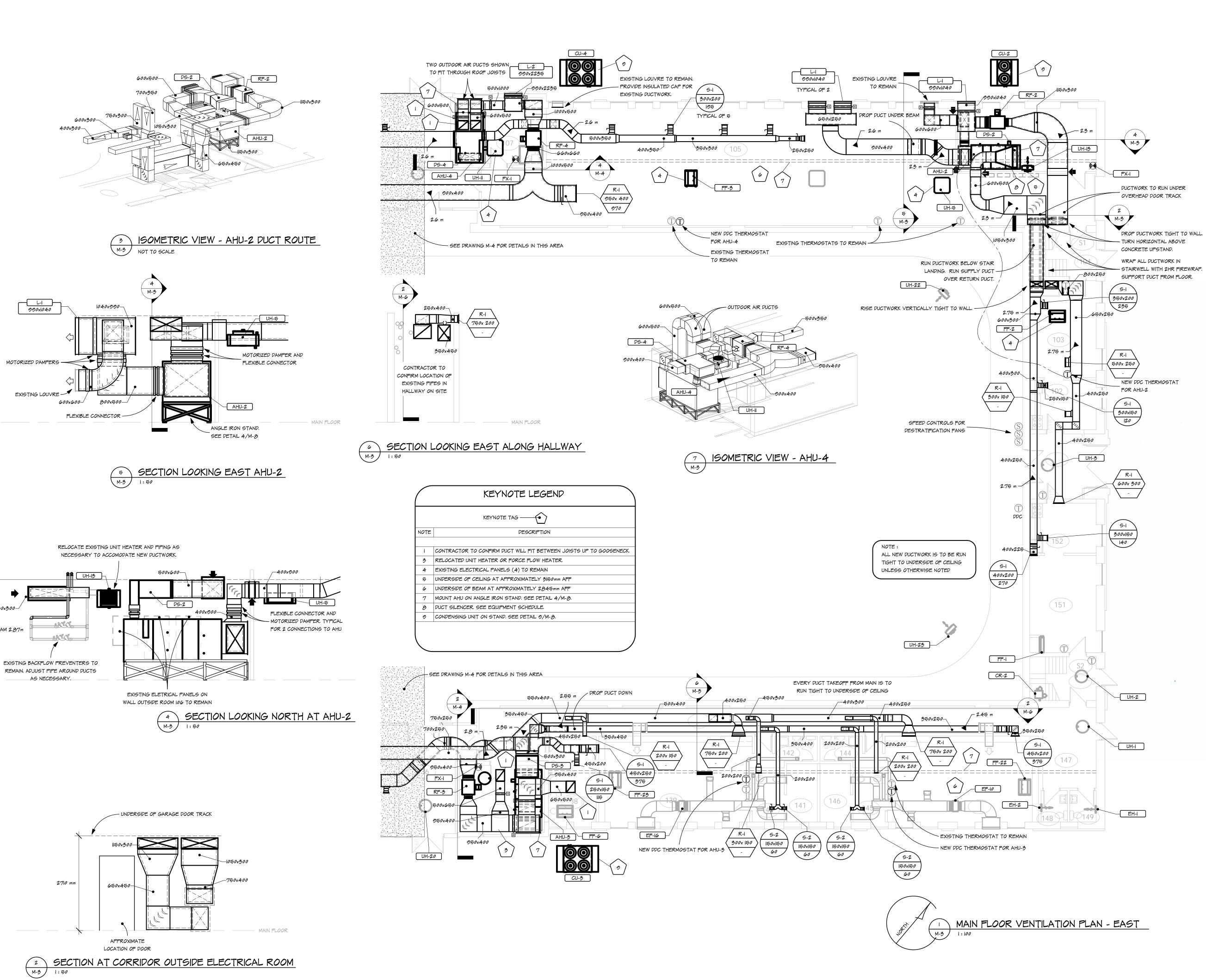
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MECHANICAL

DEMOLITION PLAN WEST

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Regina, SK.

MECHANICAL

MAIN FLOOR VENTILATION EAST

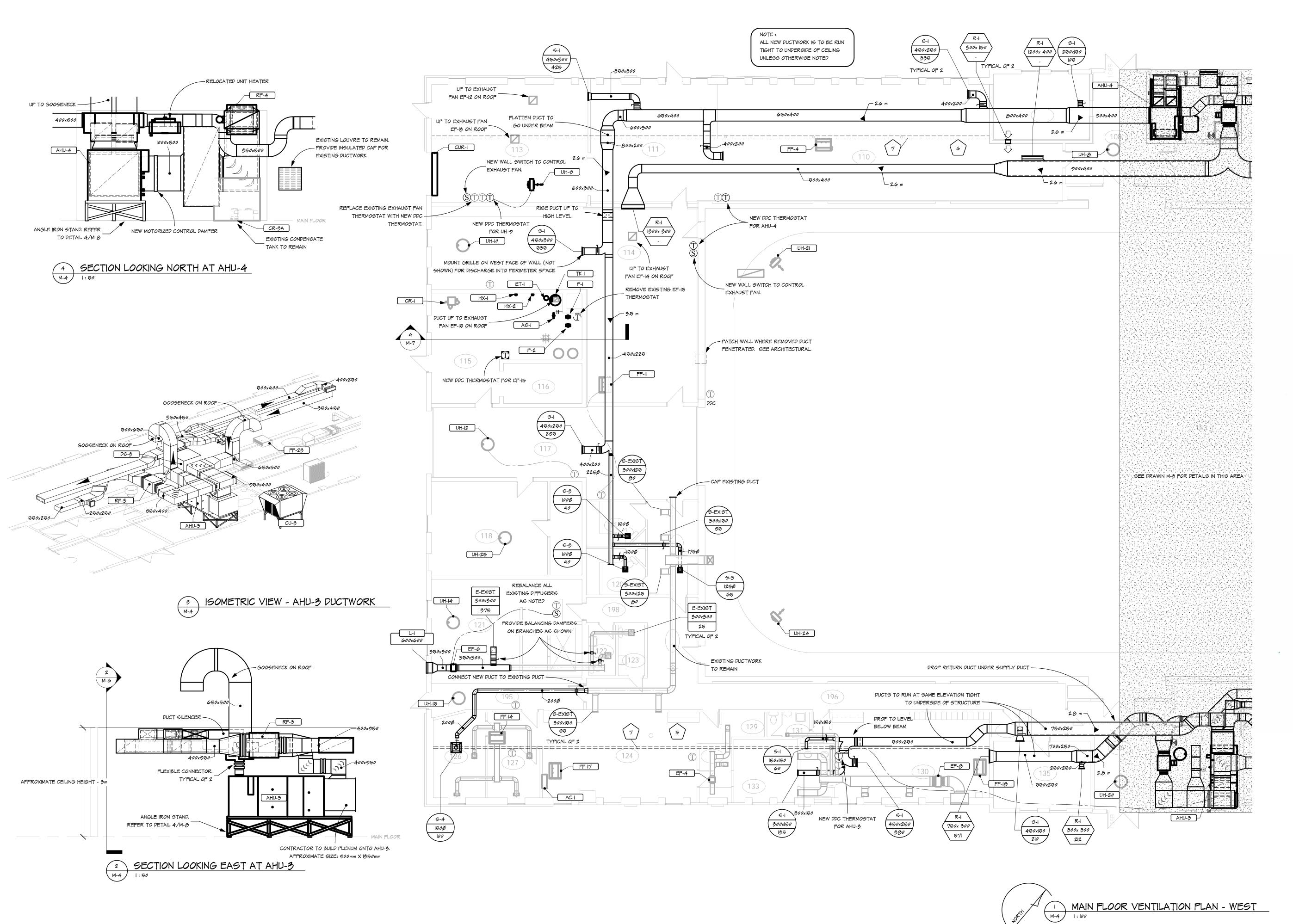
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2016.12.05

drawn by: RJE/JDB checked by: RJE sheet no. M-3 project no. 05.004.F

UNDERSIDE OF STEEL BEAM 2.87m

MAIN FLOOR



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project

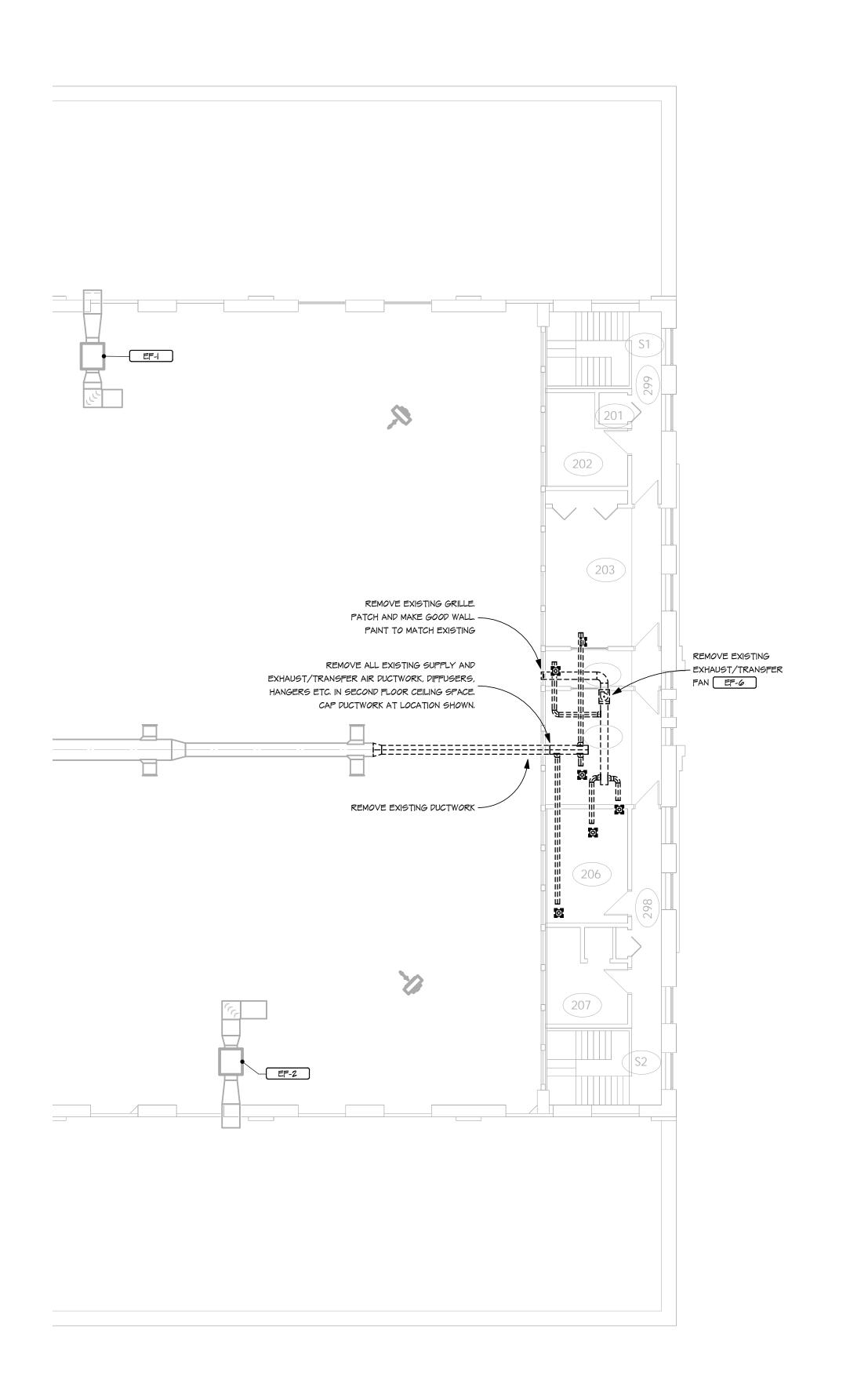
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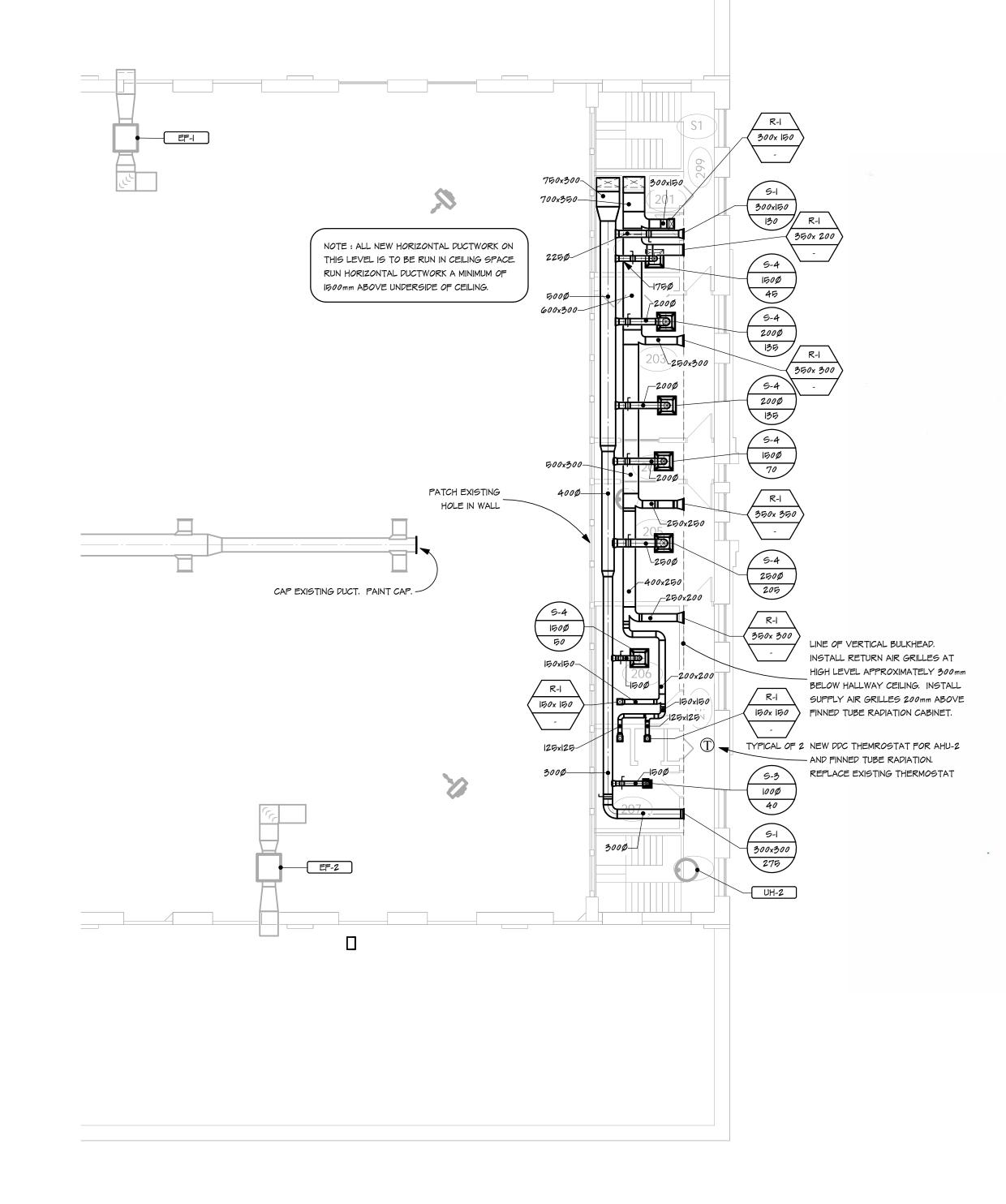
MAIN FLOOR VENTILATION WEST

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SECOND FLOOR

| SECOND FLOOR

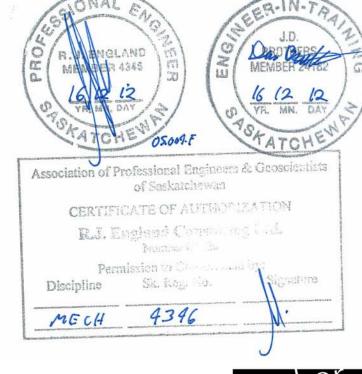
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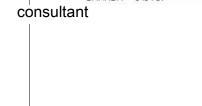
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Regina, SK. project

MECHANICAL

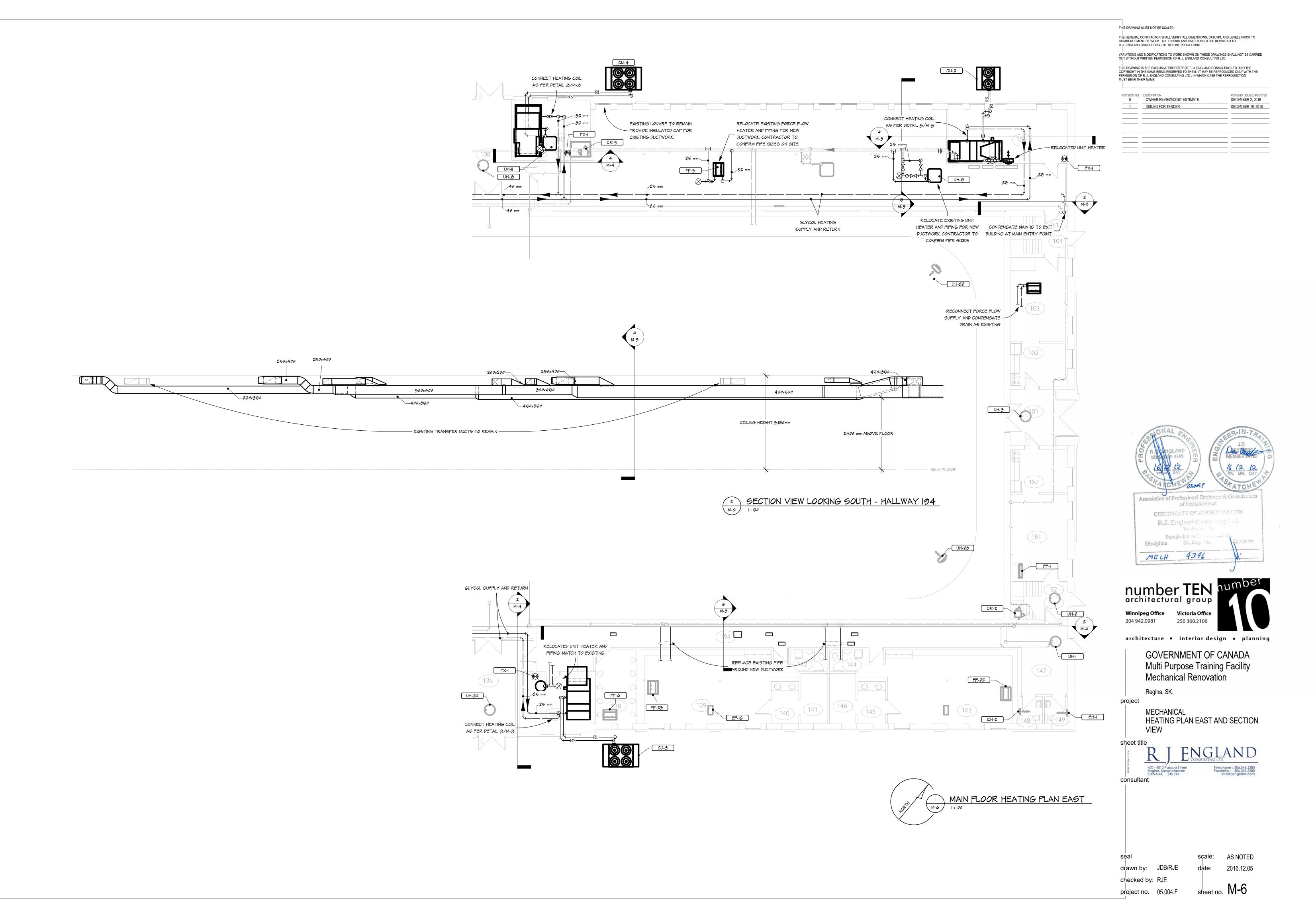
SECOND FLOOR VENTILATION

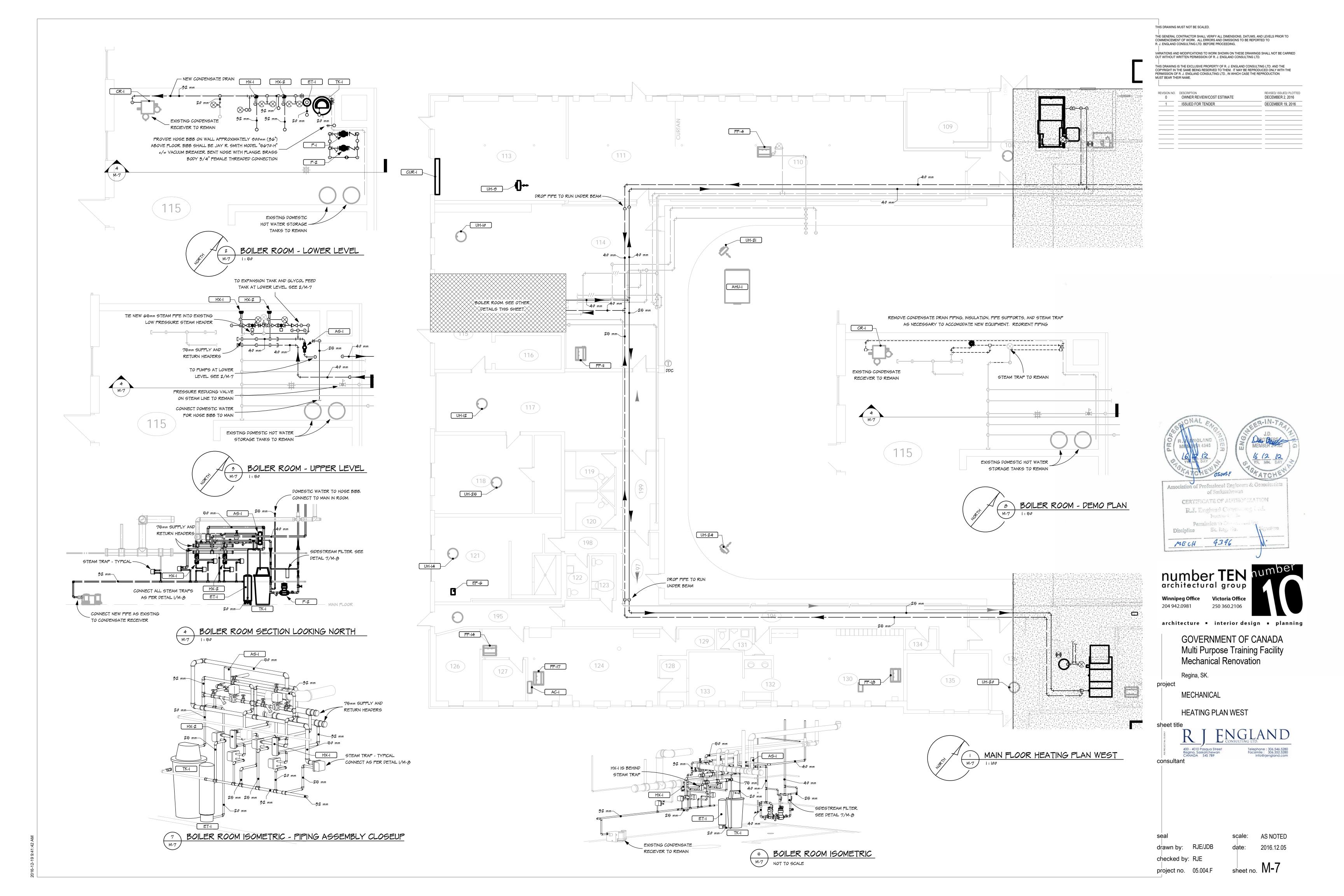


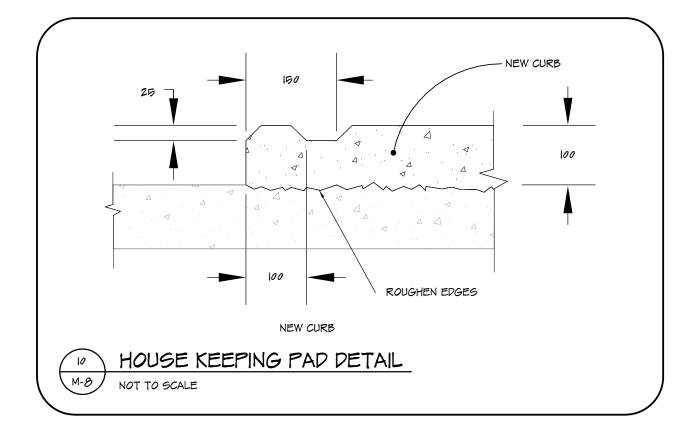
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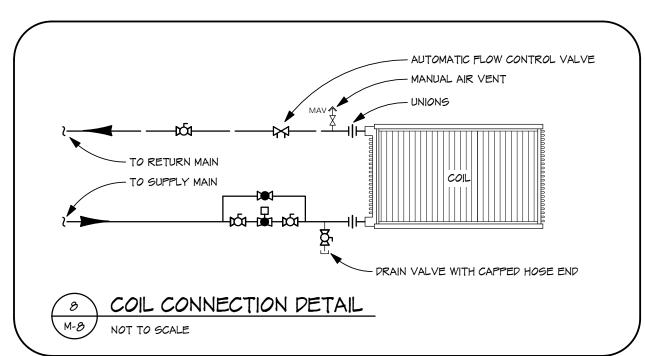
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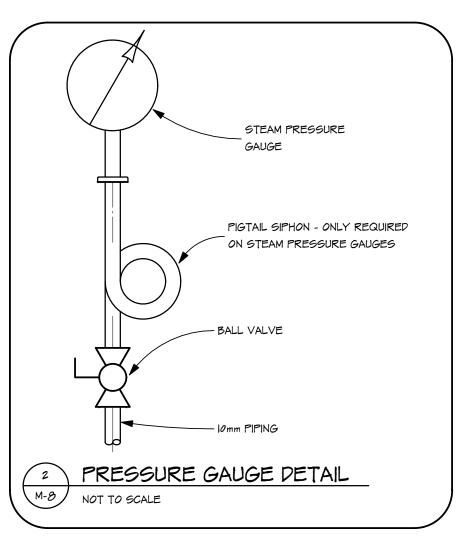


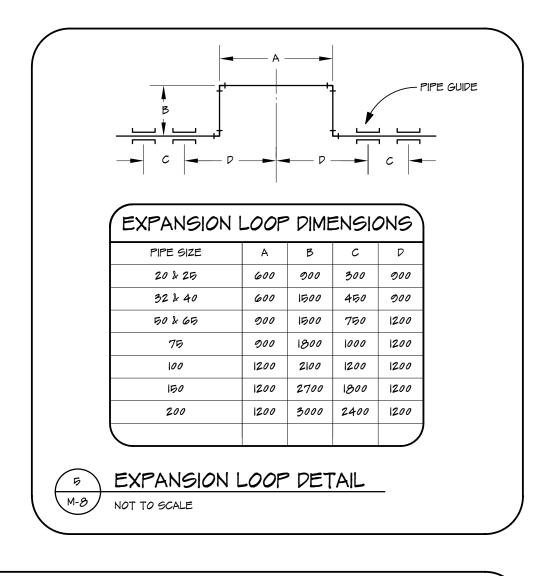


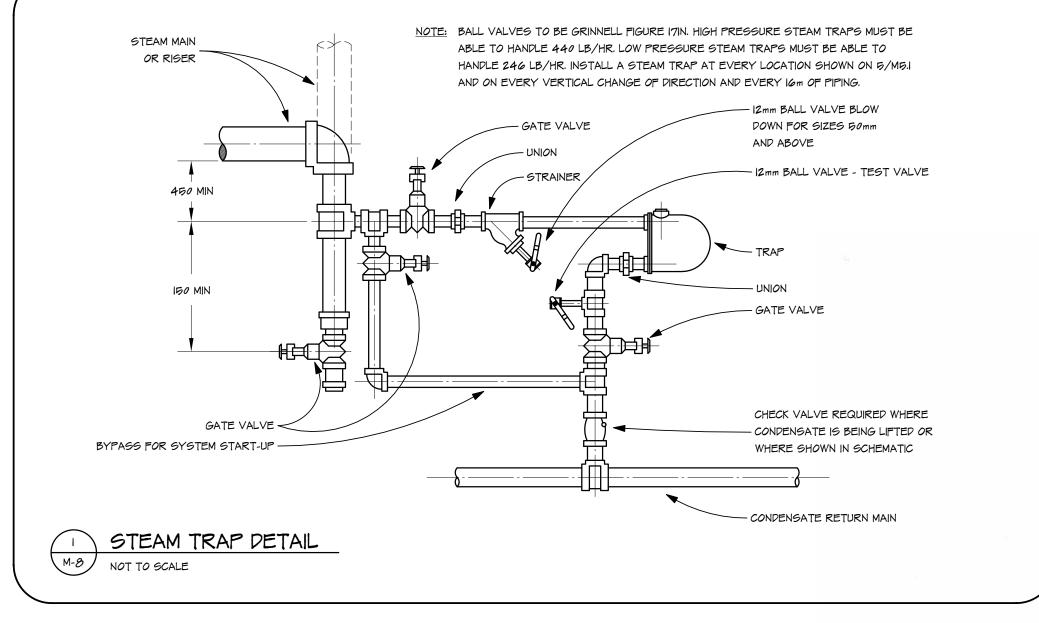


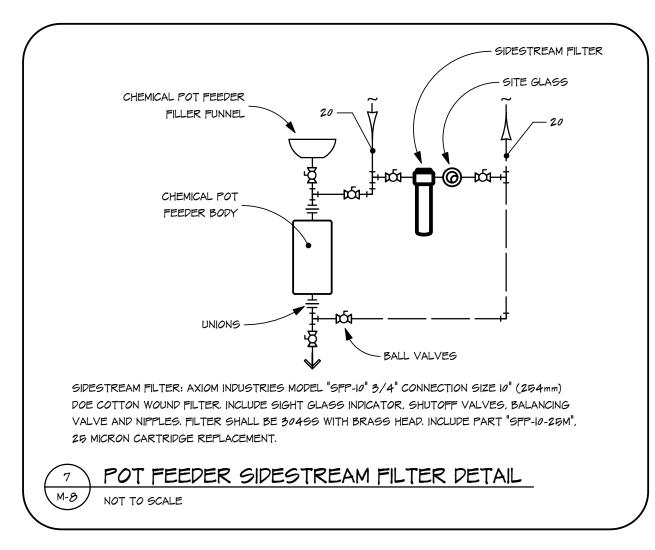


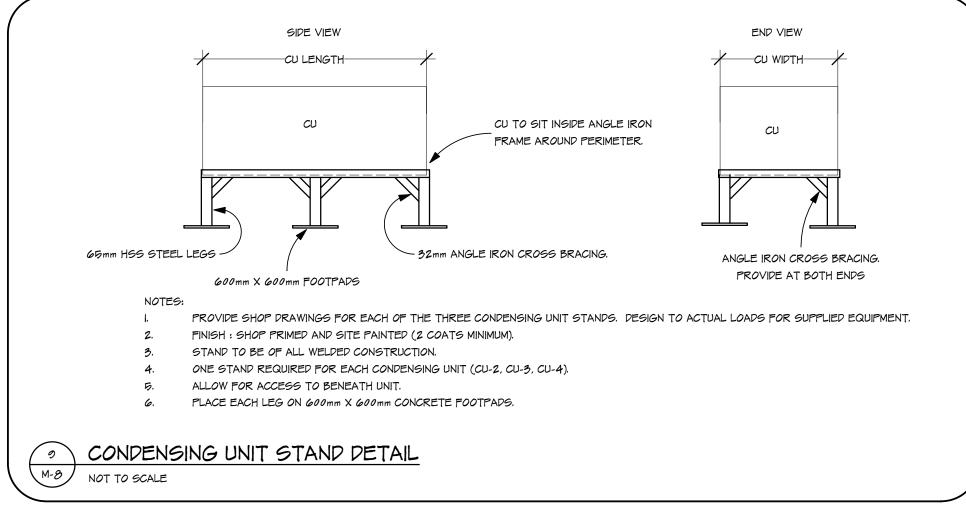


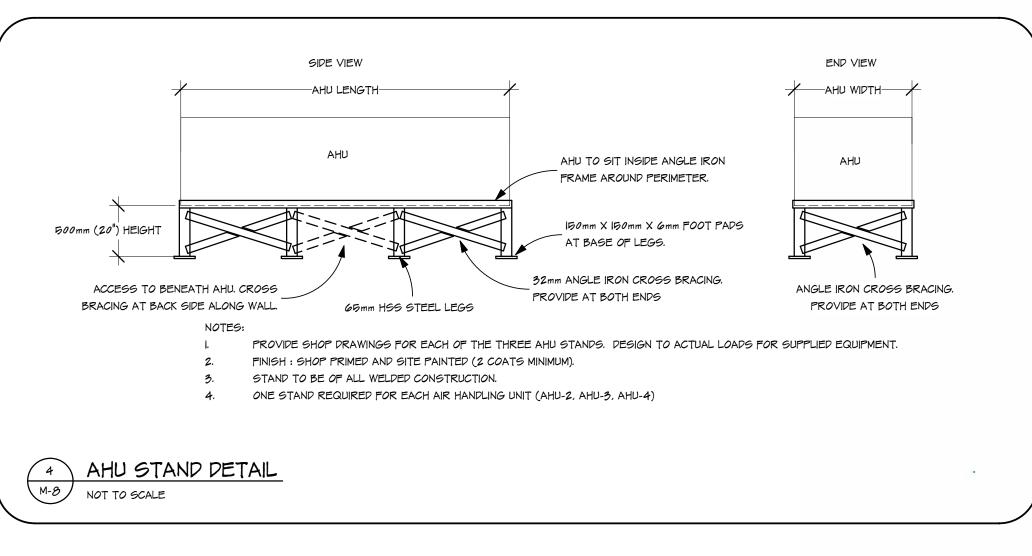


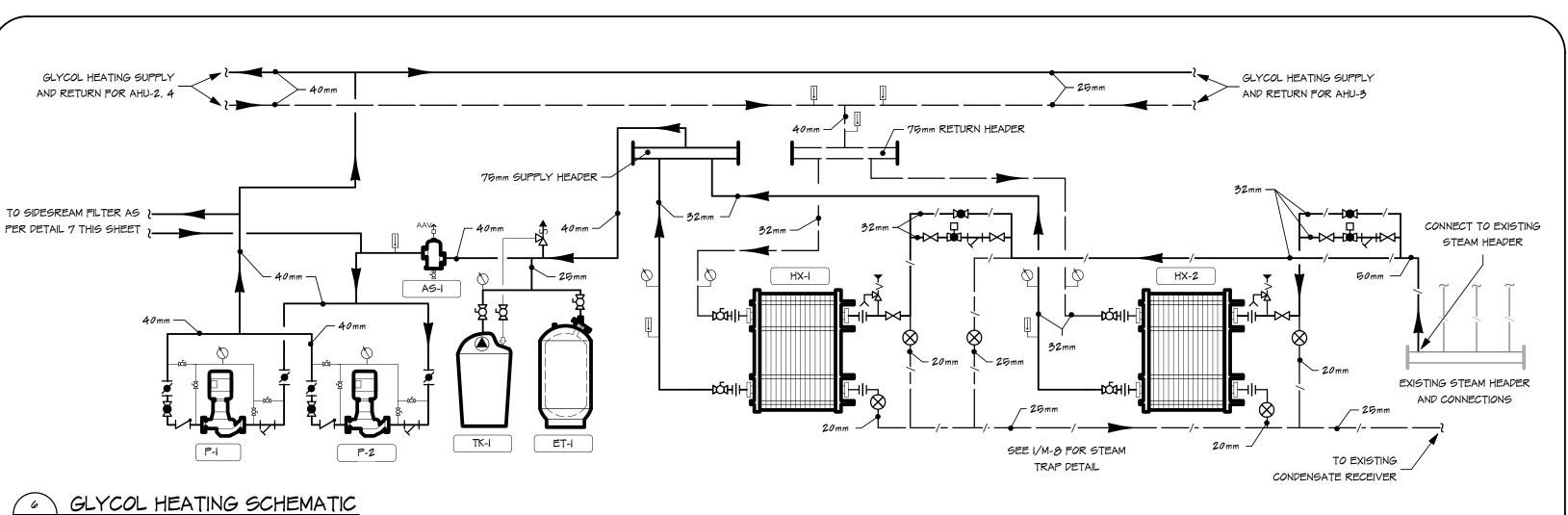


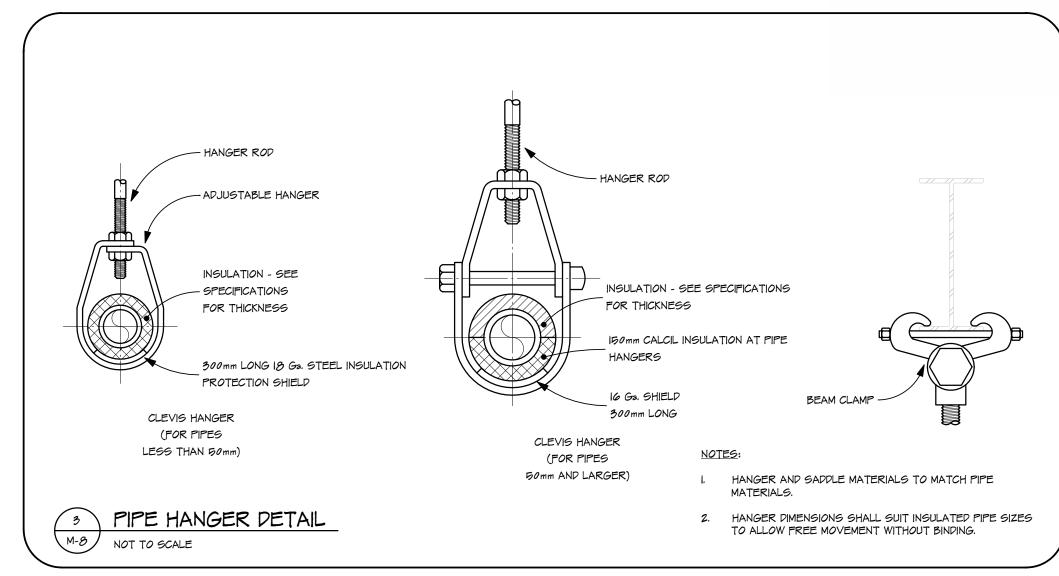


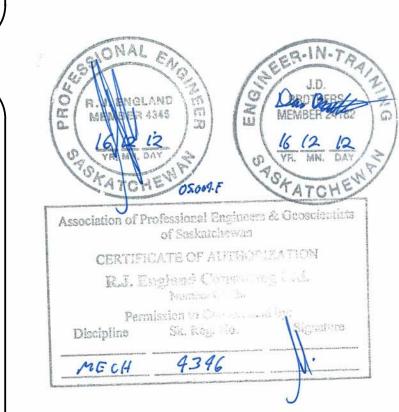












MUST BEAR THEIR NAME.

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THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUMS, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED TO R. J. ENGLAND CONSULTING LTD. BEFORE PROCEEDING.

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REVISED/ ISSUED/ PLOTTED DECEMBER 2, 2016

DECEMBER 19, 2016



architecture • interior design • planning

**GOVERNMENT OF CANADA** Multi Purpose Training Facility Mechanical Renovation

Regina, SK. project

MECHANICAL

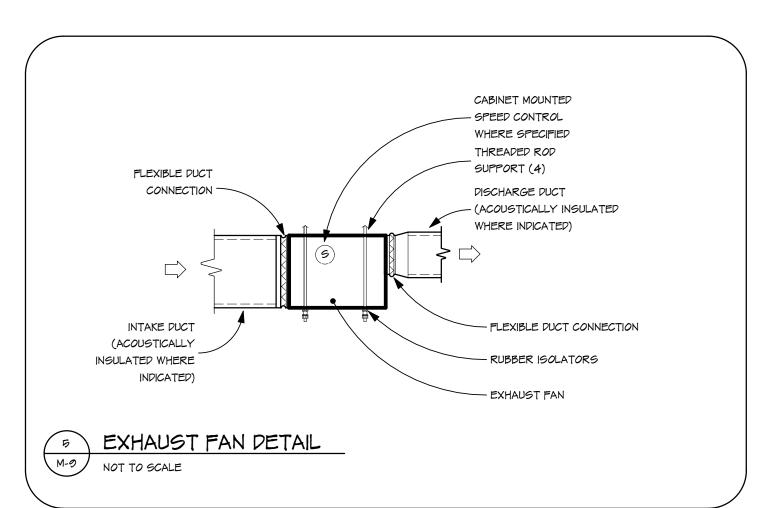
DETAILS - STEAM & HYDRONICS

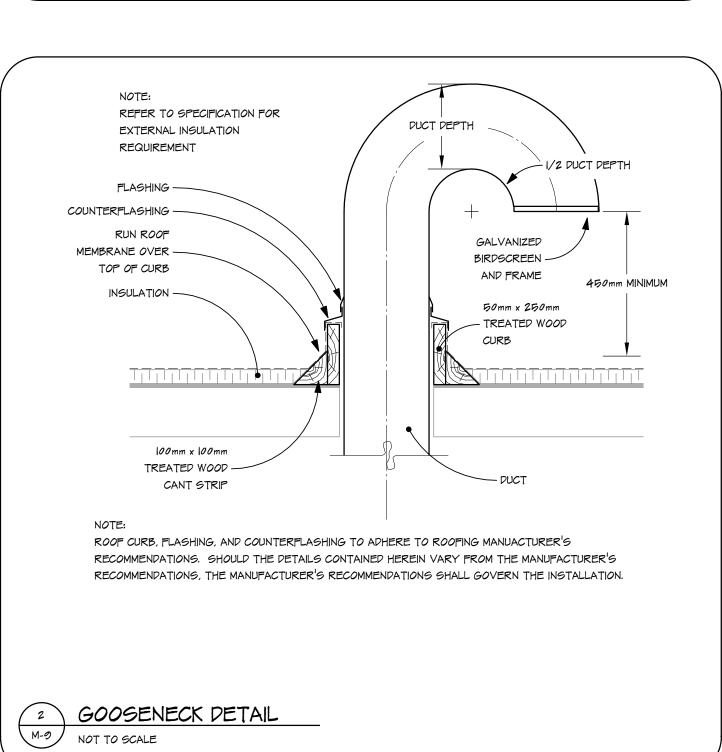
project no. 05.004.F

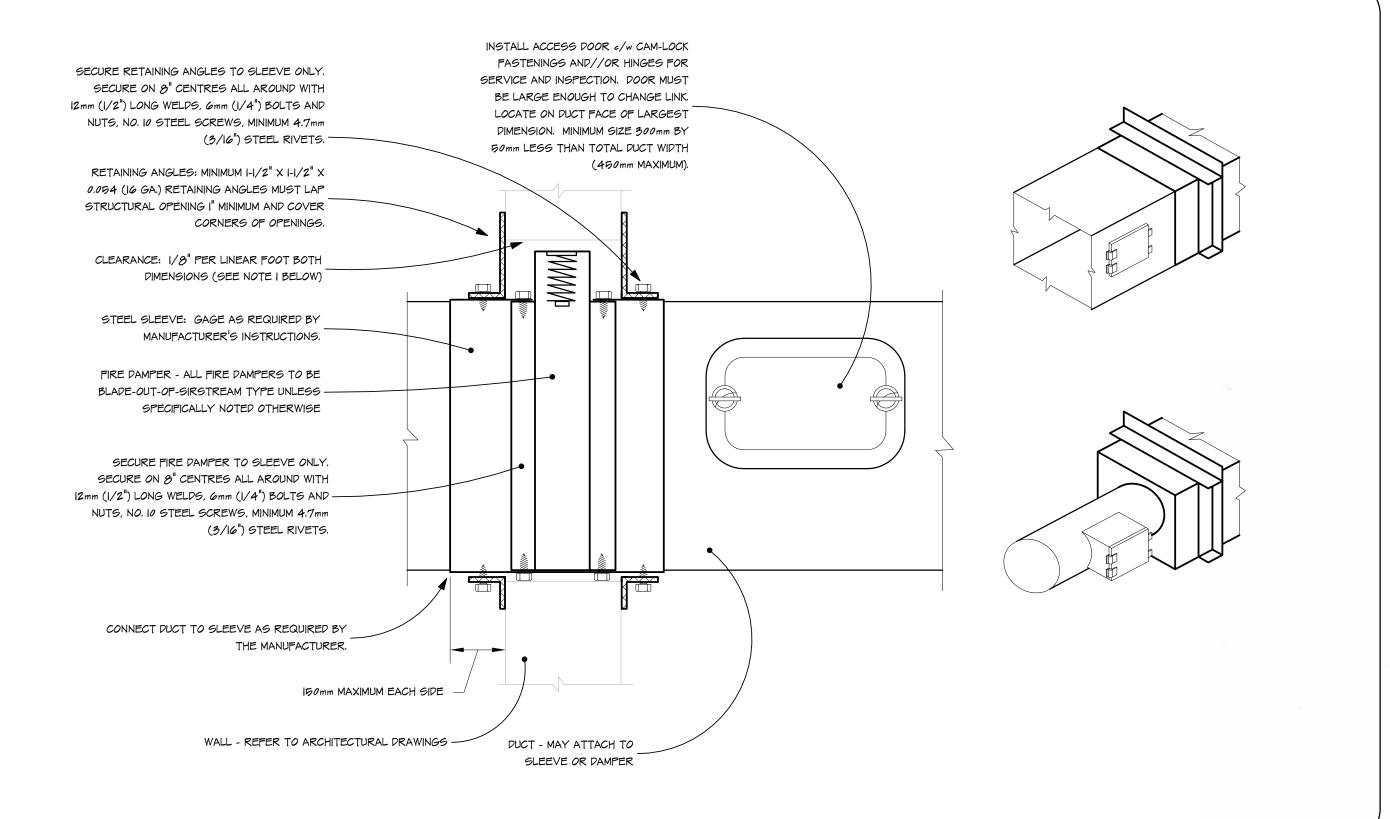
consultant

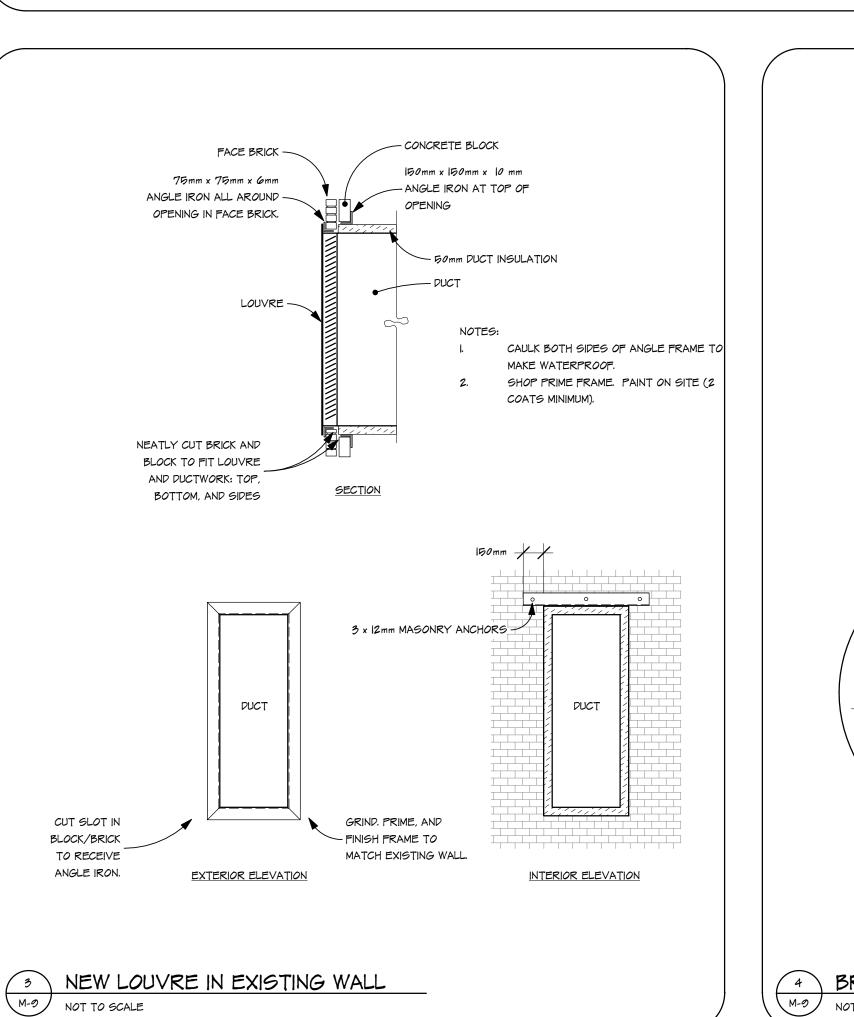
drawn by: RJE/JDB 2016.12.05 checked by: RJE

M-8 NOT TO SCALE









I. POSITION OF FIRE DAMPER

FUSIBLE LINKS

2. CAULKING

VERTICAL POSITION IS SHOWN. HORIZONTAL INSTALLATION IS SIMILAR EXCEPT

NO CAULKING IS REQUIRED ON FIRE DAMPERS OR FIRE DAMPER RETAINING ANGLES.

CLEARANCE REQUIREMENTS FOR DAMPER SLEEVES WITHIN A WALL OPENING IS BASED ON I/8 INCH PER FOOT OF WIDTH (OR HEIGHT) UNLESS OTHERWISE STATED

THE BOTTOM OF THE OPENING, AND NEED NOT BE CENTRED. (FRACTIONAL DIMENSIONS SHALL BE TAKEN AS THE NEXT LARGEST WHOLE FOOT).

IN THE MANUFACTURER'S LISTING OF THE ASSEMBLY. THE SLEEVE MAY REST ON

FOR EXAMPLE: A 30 INCH X 24 INCH FIRE DAMPER SLEEVE IS INSTALLED IN A WALL

THE SLEEVE IS RETAINED IN THE WALL OPENING BY THE USE OF STEEL RETAINING

THE DIMENSIONS REQUIRED FOR THE OPENING SHALL BE THOSE REMAINING AFTER THE OPENING HAS BEEN FRAMED AND FIRE RESISTIVE MATERIALS PROVIDED WHERE

REQUIREMENTS FOR FIRE RESISTIVE MATERIALS USED IN THE CONSTRUCTED WALL

ANGLES. THESE MUST OVER-LAP THE EDGE OF THE FRAMING BY A MINIMUM OF

25mm (1") BEYOND ALL MATERIAL IN THE OPENING. THE MINIMUM WIDTH OF THE

RETAINING ANGLE WOULD BE 1-5/8 INCHES IN THE ABOVE EXAMPLE.)

REQUIRED. THE FIRE RESISTIVE MATERIALS SHALL BE EQUAL TO THE

SO THAT A CONTINUOUS RATING EXISTS AT THE WALL PENETRATION.

THE FIRE DAMPER MANUFACTURERS' INSTALLATION DETAILS AND

INSTRUCTIONS AS TESTED AND APPROVED BY UL MUST BE USED IN LIEU OF

INCLUDE A COPY OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

THE DETAILS NOTED HEREIN WHERE APPLICABLE. MAINTENANCE MANUAL TO

OPENING. THE OPENING SHALL BE 30-3/8 INCHES WIDE (1/8 INCH X 3 FEET) BY

WITH SPRING. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR

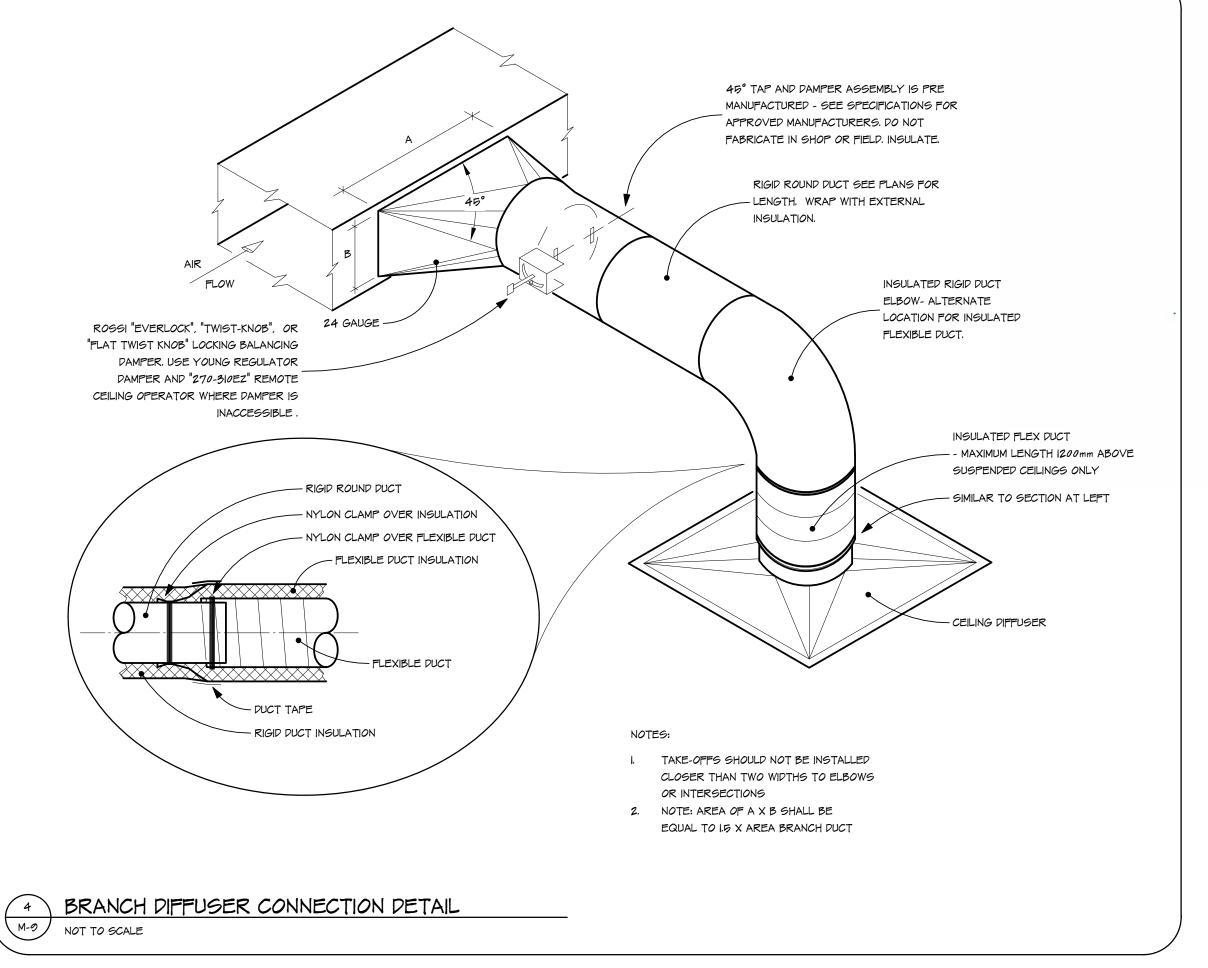
3. FIRE DAMPER SLEEVE CLEARANCE WITHIN WALL OPENING.

24-1/2 INCHES HIGH (1/8 INCH X 2 FEET.)

4. MANUFACTURERS' INSTALLATION DETAILS

M-9 NOT TO SCALE

FIRE DAMPER DETAIL





THIS DRAWING MUST NOT BE SCALED.

MUST BEAR THEIR NAME.

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\_\_\_\_ \_\_\_\_ \_\_\_\_

I FERRING TO SHALL VERIFY ALL DIMENSIONS, DATUMS, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED TO R. J. ENGLAND CONSULTING LTD. BEFORE PROCEEDING.

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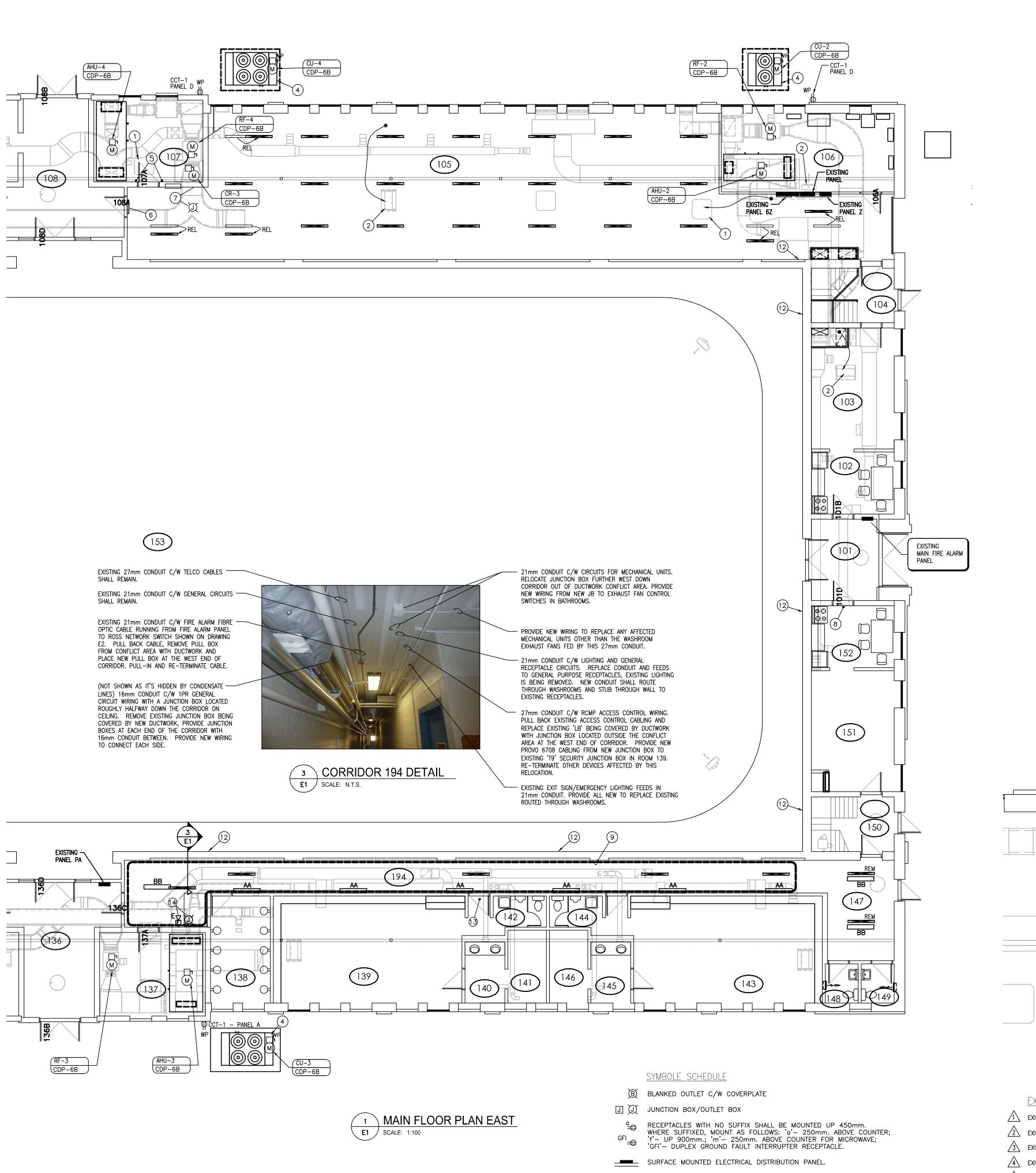
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DECEMBER 19, 2016

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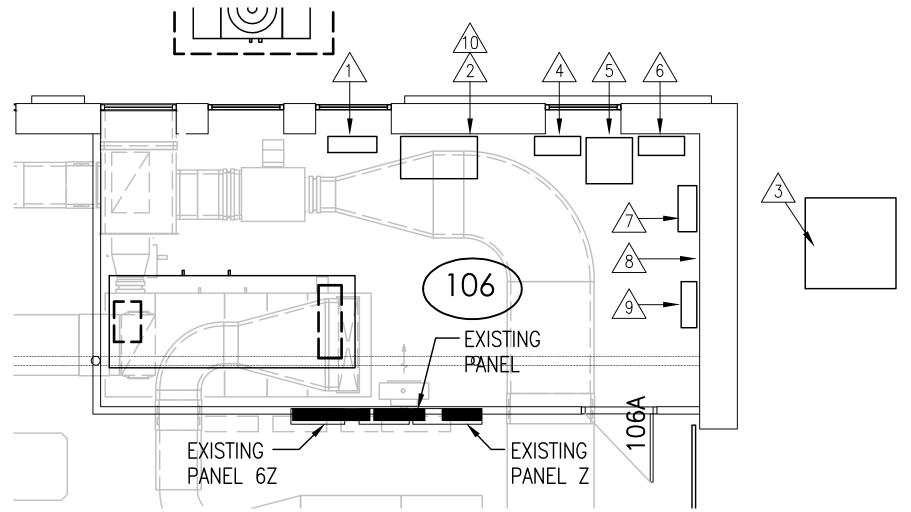


**DEMOLITION KEY NOTES:** 

- 1 TAKE DOWN LIGHT FIXTURES THAT ARE IN CONFLICT WITH THE INSTALLATION OF THE NEW DUCTWORK AND STORE IN A SAFE LOCATION TO AVOID DAMAGE.
  RE-INSTALL FIXTURES AS CLOSE AS POSSIBLE TO THE EXISTING LOCATION AND RECONNECT TO EXISTING LIGHTING CIRCUITS.
- DISCONNECT EXISTING FANS THAT ARE BEING REMOVED AND REMOVE ALL ASSOCIATED CONDUIT AND WIRING BACK TO THE SOURCE.
- WHERE NEW DUCTWORK IS LOCATED BELOW AN EXISTING JUNCTION BOX THE CONTRACTOR SHALL INTERCEPT THE EXISTING WIRING AND PROVIDE NEW ACCESSIBLE JUNCTION BOXES ADJACENT TO THE NEW DUCTWORK. PROVIDE NEW WIRING BETWEEN JUNCTION BOXES AND RECONNECT TO EXISTING CIRCUITS.
- WHERE NEW DUCTWORK IS LOCATED BELOW AN EXISTING FIRE ALARM JUNCTION BOX OR DETECTOR, THE CONTRACTOR SHALL PROVIDE NEW ACCESSIBLE JUNCTION BOXES ADJACENT TO THE NEW DUCTWORK. PROVIDE NEW WIRING FROM THE FIRE ALARM DEVICE BACK TO THE FIRE ALARM PANEL. SPLICING OF FIRE ALARM WIRING WILL NOT BE ACCEPTED. ALL DEVICES AFFECTED BY THE RENOVATION SHALL BE RE-VERIFIED BY THE MANUFACTURERS REPRESENTATIVE.
- 5 WHERE NEW DUCTWORK PASSES THROUGH ANY WALL PARTITION THAT HAS SURFACE MOUNTED OR RECESSED CONDUITS AND WIRING THE CONTRACTOR SHALL INTERCEPT THE EXISTING WIRING AND PROVIDE NEW ACCESSIBLE JUNCTION BOXES ADJACENT TO THE NEW DUCTWORK. PROVIDE NEW WIRING BETWEEN JUNCTION BOXES AND RECONNECT TO EXISTING CIRCUITS.
- WHERE WALL MOUNTED EXIT SIGNS, EMERGENCY LIGHTS AND FIRE ALARM SIGNAL DEVICE VISABILITY IS AFFECTED BY THE NEW DUCTWORK, THE CONTRACTOR SHALL ADJUST THE DEVICES TO MAINTAIN PROPER VISIBILITY.
- 7) WHERE NEW DUCTWORK IS LOCATED BELOW AN EXISTING WIRELESS MODUM THE CONTRACTOR SHALL PROVIDE NEW ACCESSIBLE JUNCTION BOXES ADJACENT TO THE NEW DUCTWORK AND RELOCATE THE WIRELESS MODUM AND PULL BACK THE EXISTING CABLE AND RE-CONNECT.

### <u>DRAWING NOTE:</u>

- ① DISCONNECT EXISTING UNIT HEATER AND RECONNECT AT NEW LOCATION. EXTEND BRANCH CIRCUITRY TO NEW LOCATION AS SHOWN.
- ② DISCONNECT EXISTING FORCE FLOW HEATER AND RECONNECT AT NEW LOCATION. EXTEND BRANCH CIRCUITRY TO NEW LOCATION AS SHOWN.
- (3) DISCONNECT EXISTING UNIT HEATER AND CONNECT NEW UNIT HEATER TO EXISTING BRANCH CIRCUITRY.
- RUN NEW FEEDERS AT GRADE AND PROVIDE UNISTRUT SUPPORT MOUNTED TO THE CONDENSER PAD BETWEEN UNIT AND THE EXTERIOR WALL. STUB INTO BUILDING AT FLOOR LEVEL AND RISE UP TO THE CEILING AND RUN SURFACE MOUNTED BACK TO THE DISTRIBUTION. PROVIDE A WEATHER TIGHT SEAL AT THE WALL PENETRATION AND FIRE STOPPING WHERE FEEDERS PASS THROUGH A FIRE RATED WALL. DRILLING INTO EXTERIOR BRICK WILL NOT BE ACCEPTED. LIMIT DRILLING TO MORTAR JOINTS.
- (5) EXISTING DOOR BEING WIDENED, RELOCATE EXISTING LIGHT SWITCH, LINE VOLTAGE THERMOSTAT CONTROL, CONDENSATE RECEIVER CR-3A DISCONNECT, GENERAL CIRCUITRY CONDUIT/LB FITTING, AND GENERAL PURPOSE RECEPTACLE.
- (6) EXISTING EXIT SIGN AND EXIT SIGN'S FEED/JB LOCATIONS ARE IN CONFLICT WITH NEW DUCTWORK. PROVIDE NEW JUNCTION BOX SOUTH OF CONFLICT AREA, PROVIDE NEW CONDUIT/CABLE TO RELOCATED EXIT SIGN LOCATION TO THE NORTH OF EXISTING INSTALLATION.
- (7) EXISTING CONDUIT THROUGH WALL AND CEILING MOUNTED JUNCTION BOX ARE IN CONFLICT WITH NEW DUCTWORK. REROUTE CONDUIT AND PROVIDE NEW JUNCTION BOX.
- (8) RELOCATE EXISTING EMERGENCY LIGHTING FROM CONFLICT AREA WITH NEW DUCTWORK.
- (9) ENTIRE CEILING WILL NO LONGER BE ACCESSIBLE DUE TO NEW DUCTWORK INSTALLATION. REMOVE EXISTING LIGHT FIXTURES IN CORRIDOR. WALL MOUNTED EMERGENCY LIGHTING SHALL BE LOWERED BELOW NEW DUCTWORK AND LOCATED TO ACCOMMODATE NEW LIGHT FIXTURES. EXISTING CONDUITS AND JUNCTION BOXES RUNNING THROUGH THIS AREA SHALL BE REMOVED AND RELOCATED AS PER E1/DETAIL 3. PROVIDE NEW CONNECTION FROM EXIT SIGNS TO AREA LIGHTING TO REPLACE ANY REMOVED CONNECTIONS FROM DEMOLISHED LIGHT FIXTURES.
- (10) REMOVE EXISTING LIGHT FIXTURE AND RELOCATE EXISTING JUNCTION BOX.
- (1) LOWER EXIT SIGN AS REQUIRED TO ACCOMMODATE NEW DUCTWORK.
- MOUNT NEW MECHANICAL FEEDER CONDUITS ALONG THIS WALL AS POSSIBLE. COORDINATE WITH EXISTING CONDUITS IN THIS AREA. PROVIDE FIRE STOPPING WHERE FEEDERS PASS THROUGH A FIRE RATED WALL.
- (3) APPROXIMATE LOCATION OF 'T9' 200mm X 200mm RCMP SECURITY JUNCTION BOX.
- (14) PROVIDE NEW JUNCTION BOX IN ROOM 138 TO REPLACE EXISTING FIRE ALARM JUNCTION BOX. PROVIDE NEW SIGNAL DEVICE FEED FROM MAIN FIRE ALARM PANEL TO EXISTING HORN/STROBE, AND RE-TERMINATE ALL DEVICES AFFECTED BY THIS RELOCATION.
- (15) EXISTING LIGHTS ARE FED FROM ABOVE DRYWALL CEILING WITH JUNCTION BOX AT FIXTURE POKING THROUGH. REMOVE EXISTING FIXTURE JUNCTION BOX, PROVIDE NEW EMT TO NEW LOCATION, AND PROVIDE NEW FIXTURE JUNCTION BOX POKING THROUGH CEILING. PROVIDE NEW WIRING FROM LOCAL PANEL TO LIGHT FIXTURE.
- (6) RELOCATE EXISTING EXIT SIGN TO ACCOMMODATE NEW DUCTWORK.



### PARTIAL MAIN FLOOR PLAN **E1** / SCALE: 1:50

10 UTILIZE EXISTNG SPACE IN MAIN DISTRIBUTION FOR NEW CDP BREAKER. REFER TO

SINGLE LINE DRAWING FOR BREAKER AND FEEDER SIZE.

### EXISTING ELECTRICAL ROOM DRAWING NOTES

- 1 EXISTING MAIN SERVICE MEETERING CABINET
- $\angle 2$  existing main service 600a–120/208V CDP shall remain. Refer to schematic detail.
- 3 EXISTING EXTERIOR PAD MOUNTED TRANSFORMER.
- 4 EXISTING 120/208V PANEL 'A' SHALL REMAIN. REFER TO SCHEMATIC DETAIL.
- 5\ EXISTING 75kVA TRANSFORMER SHALL REMAIN.
- 6 EXISTING 347/600V PANEL '6A' SHALL REMAIN.
- $\overline{/7}$  NEW 120/208V CDP-6B. REFER TO SCHEMATIC DETAIL.
- 8 EXISTING PLYWOOD BACKBOARD.

MOLDED CASE TYPE CIRCUIT BREAKER, 15 AMP UNLESS OTHERWISE NOTED

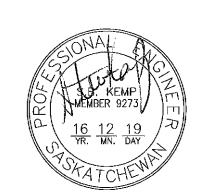
☐n MOTOR DISCONNECT SWITCH. SUFFIX 'WP' — WEATHERPROOF.

FINAL LOCATIONS ON SITE.

MOTOR CONNECTION, SEE MECHANICAL DRAWINGS FOR DETAILS & CO-ORDINATE

9\ EXISTING TELCO CABINET SHALL REMAIN.

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number TEN architectural group

> **GOVERNMENT OF CANADA** Multi Purpose Training Facility Mechanical Renovation

architecture = interior design = planning

ELECTRICAL POWER & SYSTEMS PLAN & SYMBOL SCHEDULE

Regina, SK.

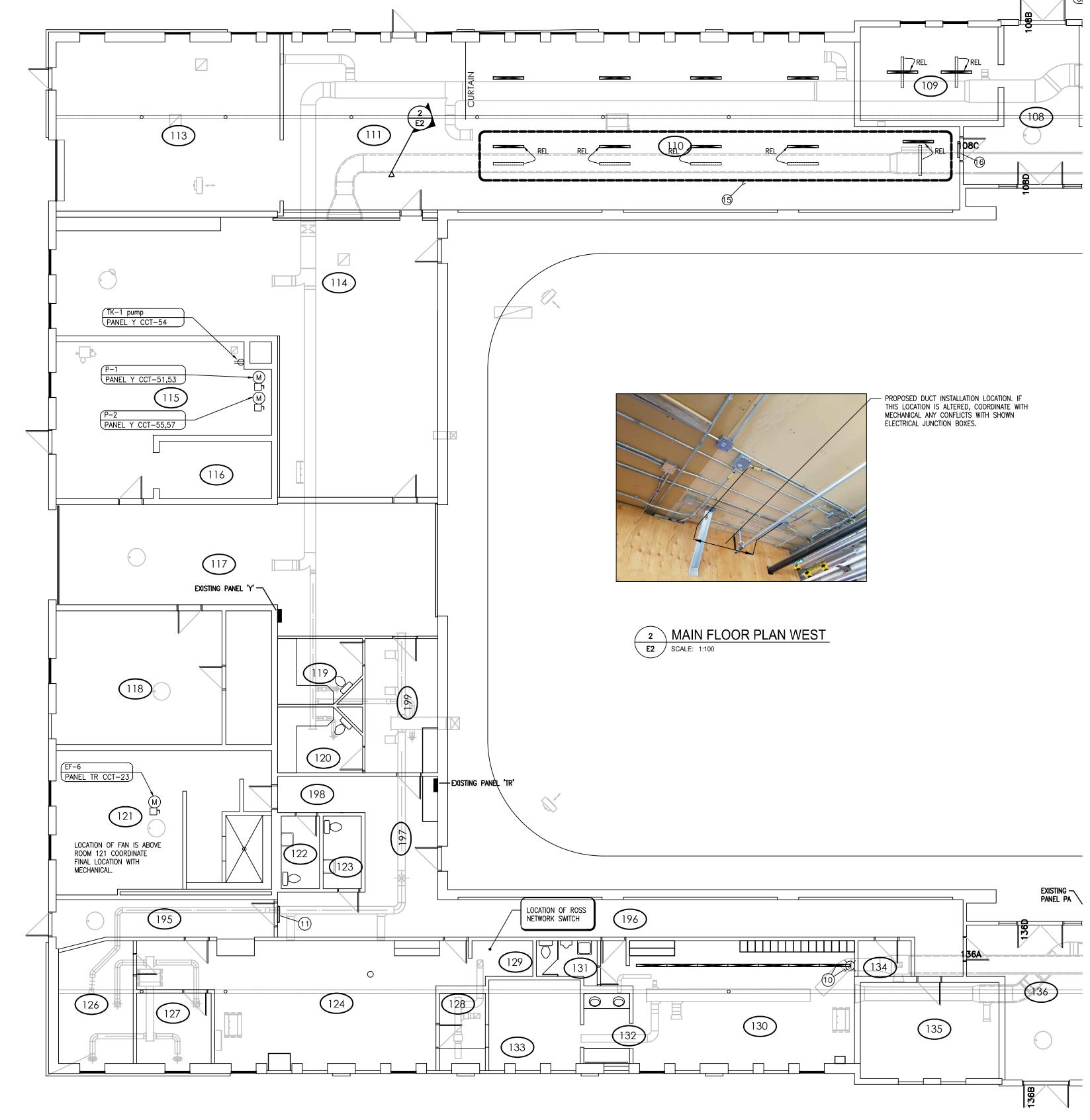


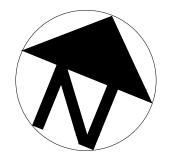
#200-2222 Albert Street, Regina, SK S4P 2V2 P: (306) 569-1303 F: (306) 569-1307 Email: ral@ritenburg.com

AS NOTED

### DRAWING NOTE:

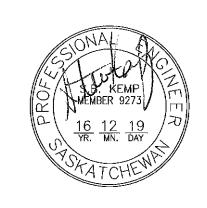
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- (16) RELOCATE EXISTING EXIT SIGN TO ACCOMMODATE NEW DUCTWORK.





MAIN FLOOR PLAN WEST **E2** SCALE: 1:100

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number TEN architectural group 204 942.0981

architecture = interior design = planning **GOVERNMENT OF CANADA** 

Multi Purpose Training Facility

Mechanical Renovation Regina, SK.

**ELECTRICAL POWER & SYSTEMS** PLAN & SYMBOL SCHEDULE



RF-3 CDP-6B

Ritenburg & Associates Ltd Consulting Electrical Engineers #200-2222 Albert Street, Regina, SK S4P 2V2 P: (306) 569-1303 F: (306) 569-1307 Email: ral@ritenburg. com

checked by: SBK

### MOTOR & EQUIPMENT SCHEDULE

	Item	Description	H.P.	Volt	ø	F.L.A. M.	C.A Starter: Size	Starter Location	Brkr	Feeder	Panel	Notes
Equip Cct #	AHU-2	AIR HANDLING UNIT	3	208	3	11.8	VFD		20A-3P	3 #12 + #12 INS. BOND IN 21C.	CDP-6B	SEE NOTE 4
	RF-2	RETURN AIR FAN	2	208	3		FVNR	ADJACENT TO UNIT	15A-3P	3 #12 + #12 INS. BOND IN 21C.	CDP-6B	SEE NOTE 2
TAG INDICATES												
EQUIPMENT LOCATION	AHU-3	AIR HANDLING UNIT	3	208	3	11.8	VFD		20A-3P	3 #8 + #12 INS. BOND IN 21C.	CDP-6B	SEE NOTE 4
ON PLAN	RF-3	RETURN AIR FAN	2	208	3		FVNR	ADJACENT TO UNIT	15A-3P	3 #10 + #12 INS. BOND IN 21C.	CDP-6B	SEE NOTE 2
	AHU-4	AIR HANDLING UNIT	5	208	3	16.7	VFD		30A-3P	3 #10 + #10 INS. BOND IN 21C.	CDP-6B	SEE NOTE 4
	RF-4	RETURN AIR FAN	3	208	3		FVNR	ADJACENT TO UNIT	15A-3P	3 #12 + #12 INS. BOND IN 21C.	CDP-6B	SEE NOTE 2
			_									
	P-1	GLYCOL PUMP	.5	208	1		VFD		15A-2P	2 #12 + #12 INS. BOND IN 21C.	PANEL 'Y'	SEE NOTE 4, NOTE 7
	D 0	OLYGOL BUMB	-	000	4		VFD		15A-2P	2 #12 + #12 INS. BOND IN 21C.	DANEL N	
	P-2	GLYCOL PUMP	.5	208	-		VFD		IDA-ZP	2 #12 + #12 INS. BUND IN 21C.	PANEL 'Y'	SEE NOTE 4, NOTE 7
	TK-1 pump	PUMP	FR.	115	1				15A-1P	2 #12 + #12 INS. BOND IN 21C.	PANEL 'Y'	PROVIDE DUPLEX RECEPTACLE ADJACENT
	ik i pamp	1 0 111	1111	110					10/1 11		IANELI	TO UNIT SEE NOTE 7.
	EF-6	EXHAUST FAN (ABOVE ROOM 121)		115	1	3	6		15A-1P	2 #12 + #12 INS. BOND IN 21C.	PANEL 'TR'	PROVIDE DISCONNECT AT UNIT. SEE NOTE 7
										" "		
	CU-2	CONDENSER UNIT FOR AHU-2		208	3	56	.5		70A-3P	3 #4 + #4 INS. BOND IN 21C.	CDP-6B	SINGLE POINT CONNECTION. SEE NOTE 3
	CU-3	CONDENSER UNIT FOR AHU-3		208	3	64	.7		80A-3P	3 #2 + #2 INS. BOND IN 41C.	CDP-6B	SINGLE POINT CONNECTION. SEE NOTE 3
	CU-4	CONDENSER UNIT FOR AHU-4		208	3	12	0.3		150A-3P	3 #1/0 + #1/0 INS. BOND IN 53C.	CDP-6B	SINGLE POINT CONNECTION. SEE NOTE 3
	1111 0	LINIT LICATED	4 /7	100					454 40	0 #40 + #40 INC DOND IN 040	DANE: 202	
	UH-9	UNIT HEATER	1/3	120	1				15A-1P	2 #10 + #12 INS. BOND IN 21C.	PANEL 'D'	
	CUR-1	AIR CURTAIN	4 X.5	208	1				50A-2P	2 #3 + #10 INS. BOND IN 35C.	CDP-6B	SINGLE POINT CONNECTION. SEE NOTE 6
	OOIN-1	AII OOMAII	7 7.3	200	1				JUN-ZI	2 #0 1 #10 H3. BOND H 330.	ODF-0D	SHOLL FORT CONTLCTION. SLL NOTE 0

### MECHANICAL EQUIPMENT SCHEDULE NOTES

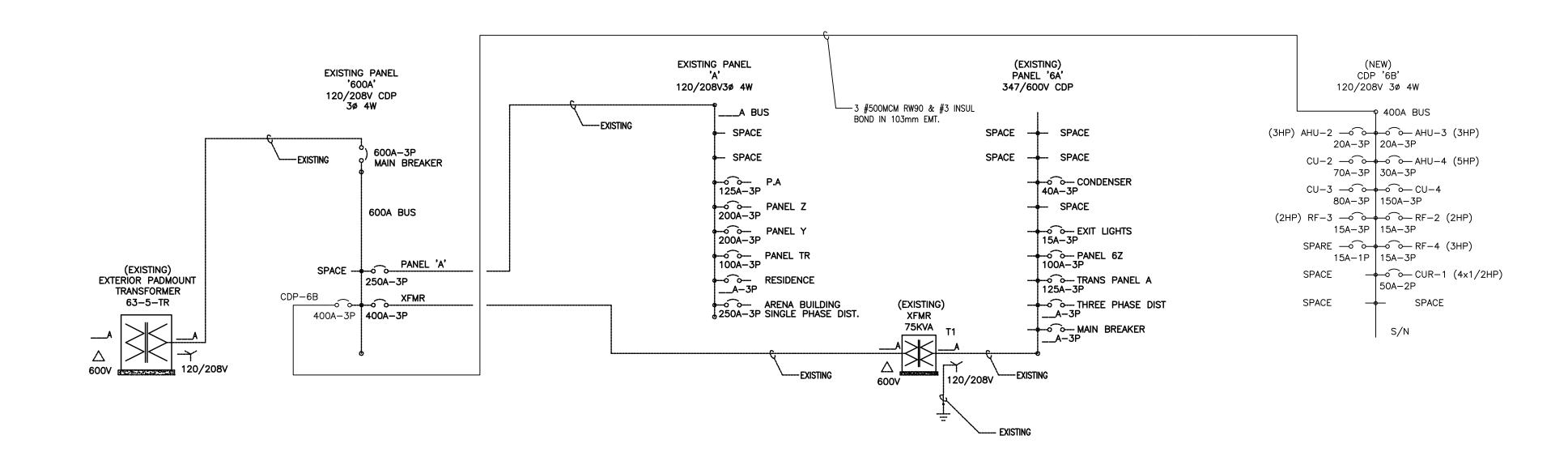
- 1. UNIT IS COMPLETE WITH STARTER LOCATED IN CONTROL PANEL BY MECHANICAL CONTRACTOR.
- 2. ELECTRICAL CONTRACTOR SHALL PROVIDE STARTER. COORDINATE WITH MECHANICAL EQUIPMENT SHOP
- 3. PROVIDE A WEATHERPROOF DISCONNECT AT UNIT. PROVIDE A GFIC DUPLEX RECEPTACLE MOUNTED UP 900mm ABOVE FINISHED GRADE ON THE BUILDING ADJACENT TO CONDENSER UNIT.
- 4. UNIT IS COMPLETE WITH PACKAGED VFD BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL PROVIDE WIRING TO VFD AND FROM VFD TO MOTOR.
- 5. PROVIDE A FIRE ALARM RELAY MODULE AND INTERCONNECT TO THE AIR HANDLING UNIT SUPPLY AND RETURN FAN VFD'S FOR SHUT UNIT DOWN OF THE AIR HANDLING UNIT UPON ACTIVATION OF THE FIRE ALARM SYSTEM.
- 6. UNIT IS C/W STARTERS AND CONTROL PANEL FOR SINGLE POINT CONNECTION. ALL FOUR MOTORS RUN AT THE SAME TIME.
- 7. PROVIDE NEW BREAKERS IN EXISTING PANELS.

### NOTE

CONDUCTOR/CONDUIT SIZES SHOWN IN THE EQUIPMENT SCHEDULE ARE MINIMUM SIZES. FEEDERS SHALL BE ADJUSTED ACCORDINGLY TO LIMIT VOLTAGE DROP TO A MAXIMUM OF 3%.
 PROVIDE DISCONNECTS AT UNITS AS INDICATED ON THE DRAWINGS.

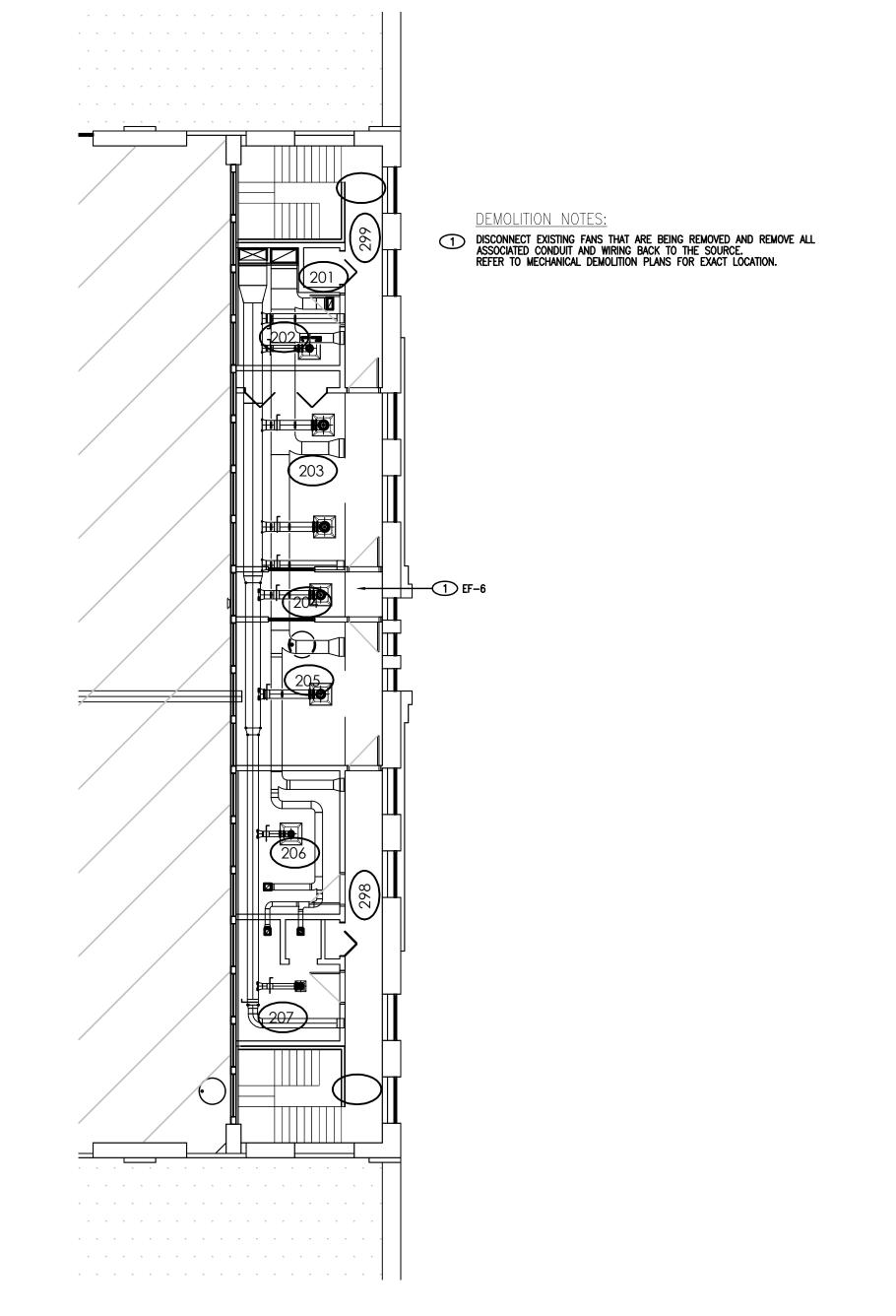
### ABBREVIATION LEGEND

VFD - VARIABLE FREQUENCY DRIVE FVNR - FULL VOLTAGE NON-REVERSING STARTER SEP. COMB. - SEPARATE COMBINATION STARTER/DISCONNECT TP. SW.- THERMAL SWITCH WITH PILOT LIGHT 10 MAG - SINGLE PHASE MAGNETIC STARTER/DISCONNECT



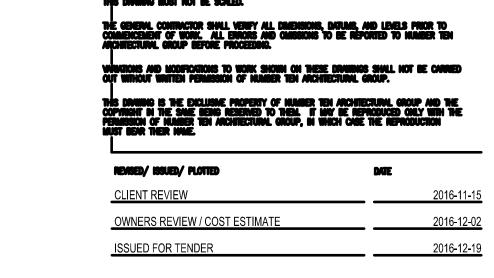






SECOND FLOOR PLAN

SCALE: 1:100





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ELECTRICAL DISTRIBUTION AND SECOND FLOOR PLAN AND MOTOR & EQUIPMENT SCHEDULE



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