

### EQUIPMENT SCHEDULE

The design is based on the equipment listed here and noted in Equipment Schedule Tables. Refer to Section 23 05 00 for responsibilities when utilizing equipment that differs from the basis of design.

**FIRE DAMPERS:** ULC listed types as noted on drawings. Dampers to be installed in strict accordance with manufacturer's recommendations and authority having jurisdiction.

**FIRE EXTINGUISHER CABINET FEC-1:** National Fire Equipment Ltd. Model 102RS-SS semi-recessed stainless steel cabinet with glass in door, complete with ABC dry chemical fire extinguisher with 2-A: 10-B:C rating.

**FIRE EXTINGUISHER CABINET FEC-2:** National Fire Equipment Ltd. Model 102RS-SUR-SS surface mounted stainless steel cabinet with glass in door, complete with ABC dry chemical fire extinguisher with 2-A: 10-B:C rating.

**WALL HUNG FIRE EXTINGUISHER:** 4.5 kg (10 lb) ABC dry chemical fire extinguisher with 4-A: 60-B:C rating c/w wall bracket.

**CARBON DIOXIDE FIRE EXTINGUISHER:** 4.5 kg (10 lb) Carbon dioxide fire extinguisher with 10BC rating c/w wall bracket.

### GRILLES & DIFFUSERS:

S-1: E.H. Price Model SPD 600 x 600, square plaque diffuser complete with equalizing grid. Installation to suit ceiling type (T-bar installation, drywall installation complete with frame, duct mounted when open to structure). Finish: off white baked enamel.

S-2: Existing diffuser to remain as is. Rebalance as indicated on drawings and schedules.

S-3: E.H. Price Model SPD 300 x 300, square plaque diffuser complete with equalizing grid. Installation to suit ceiling type (T-bar installation, drywall installation complete with frame, duct mounted when open to structure). Finish: off white baked enamel.

S-4: Price Model 22, supply grille complete with a curved border style and front blades parallel to the long dimension. Mount grille on duct and adjust blades to throw 45 degrees in all four directions. Finish: Custom, as selected by Architect.

S-5: E.H. Price Adjusta Slot AS Series linear slot diffuser complete with matched plenum. Diffuser to be suspended from structure in same plane as dropped ceilings. Diffuser to be 1220mm (4"), refer to diffuser tag for slot quantity and size. Connect to diffuser with hard duct complete with transition to match diffuser inlet.

Supply Air Terminal Unit Schedule										
Tag	Location	Serves	Airflow			Flow Control	RHC	Associated Equipment	Control Sequence	Notes
			Unocc.	Min	Max					
SUPPLY VALVES - MAIN FLOOR										
SV1.36	148	147	15	60	100	VAV	RHC1.36	EV1.32	B	1, 3
SV1.36A	148	148	20	52	130	VAV	RHC1.36A	EV1.31	A	3, 4
SV1.38	152	152	17	44	110	VAV	RHC1.38	EV1.35	B	2, 3
SV1.40	153	157	24	64	159	VAV	RHC1.40	MD1.1	C	2, 3
SV1.41	153	153	59	158	396	VAV	RHC1.41	EV1.40	B	2, 3
SV1.42	153	154	17	44	110	VAV	RHC1.42	MD1.1	C	2, 3
SV1.43			To be removed from service							5
SV1.44	161		23	60	150	VAV	RHC1.44	MD1.1	C	2, 3
SV1.46	Exist	Exist	Exist	Exist	Exist	VAV	RHC1.44		Exist	2, 3
SUPPLY VALVES - SECOND FLOOR										
SV2.3	205	205	18	48	120	VAV	RHC2.03	SV2.3, EV2.5	C	3, 4
SV2.4	204	204	57	151	377	VAV	RHC2.04	SV2.4, EV2.4	B	3, 4
SV2.5	205	205	36	96	240	VAV	RHC2.5	SV2.5, EV2.5	C	2, 3
SV2.5A	205	205	55	147	366	VAV	RHC2.5A	SV2.5A, EV2.5	C	2, 3
SV2.6	205	205	54	144	360	VAV	RHC2.6	SV2.6, EV2.5	C	2, 3
SV2.7			To be removed from service							5
SV2.7A	216	210	13	35	86	VAV	RHC2.7A	SV2.7A, EV2.6	C	2, 3
SV2.7B	216	206	18	48	120	VAV	RHC2.7B	SV2.7B, EV2.6	C	2, 3
SV2.8	214	211, 213, 214	36	94	234	VAV	RHC2.8	SV2.8, EV2.6	C	2, 3
SV2.8A	216	216	15	38	95	VAV	RHC2.8A	SV2.8A, EV2.6	C	2, 3
SV2.9	214	214, 215	25	66	165	VAV	RHC2.9	SV2.9, EV2.6	C	2, 3
SV2.9A	214	214	31	82	204	VAV	RHC2.9A	SV2.9A, EV2.6	C	2, 3
SV2.10	214	214	31	82	204	VAV	RHC2.10	SV2.10, EV2.6	C	2, 3
SV2.10A	214	214	43	113	282	VAV	RHC2.10A	SV2.10A, EV2.6	C	2, 3
SV2.11	214	214	29	76	188	VAV	RHC2.11	SV2.11, EV2.6	C	2, 3
SV2.12	214	214	49	130	324	VAV	RHC2.12	SV2.12, EV2.6	C	2, 3
SV2.13	214	214	27	72	180	VAV	RHC2.13	SV2.13, EV2.6	C	2, 3
SV2.14	214	214	36	96	240	VAV	RHC2.14	SV2.14, EV2.6	C	2, 3
SV2.15A	214	214	21	56	140	VAV	RHC2.15A	SV2.15A, EV2.6	C	2, 3

- Refer to Specification Section 25 90 01 for corresponding zone control sequence
- 1 Provide new thermostat or relocate existing noted for demolition.
  - 2 Revise thermostat location to new location indicated.
  - 3 Rebalance existing VAV box and commission new VAV box sequence.
  - 4 Reuse existing thermostat in current location.
  - 5 Demolish VAV box and revise controls graphics and sequences to suit.

**LINEAR/MODULAR RADIANT PANELS:** TWA Linear/Modular Panels consisting of extruded aluminum planks with integral tube saddles and tongue and groove connections. Panels shall be held together with aluminum cross channels and spring clips installed at factory. Circulation tubing to be 5/8" diameter copper, mechanically fastened to the aluminum panels and complete with a non-hardening heat transfer paste between the tubing and the aluminum saddle. All

pipng return bends to be factory installed. Finish shall be electrostatically applied epoxy powder paint. Capacities, flow rates, lengths and arrangements shall be as noted in schedule below. Installation of radiant panels to be done in strict accordance with manufacturer's recommendations. Lengths and widths to be confirmed by the mechanical contractor prior to delivery. All panels to be installed to allow for expansion and contraction of panels. Based on an entering temperature of 93 deg.C (200 deg. F), and a temperature drop of 11.1 deg.C (20 deg.F). Output derated for 30% glycol solution. Mechanical contractor to install all necessary hangers, insulation, and trim pieces.

**Type 'A':** 610 wide four pass linear panel to match existing. Panel to be installed in T-Bar ceiling, contractor to site measure requirements. Total output to be 466 watts/meter.

### WALK-IN FREEZER COOLING:

Evaporator (AC-2): Medium profile unit cooler, electrical 575V/60/1 phase, 3 (three) fans at 1/3 HP each, total FLA 2.1, MCA 2.3, Max. Fuse 15A. Capacity at -29 deg.C (-20 deg. F) entering temperature and 5.6 deg.C. (10 deg. F) temperature drop to be 13.4 Kilowatts (45,600 BTUH). Refrigerant to be an hydro-fluorocarbon (HFC), like R407A. Unit to have EC motors for efficient operation. Defrost: Unit to be designed and manufactured to use hot gas defrost complete with hot gas loop drain pan. Design based on Keeprite Model KMP348LH-SSA.

**Condensing Unit (CU-2):** Electrical: 575V/60/3 phase, RLA 15.6, LRA 100, MCA 22.3. Capacity at 80 deg. F ambient temperature and -20 deg. F. Saturated suction temperature to be 13.3 Kilowatts (45,200 BTUH). Mount unit in crawlspace, suspended from structure with vibration

isolation. Design based on Keeprite Model KEZ-line KEZ130L8-1 T5B with compressor model ZF41K5E-TFE.

Exhaust Valve Terminal Unit Schedule										
Tag	Location	Serves	Airflow			Flow Control	Associated Equipment	Control Sequence	Notes	
			Unocc.	Min	Max					
EXHAUST VALVES - MAIN FLOOR										
EV1.31	147	148	18	48	120	VAV	SV1.36a	A	1	
EV1.32	148	147	9	24	60	VAV	SV1.36	B	1	
EV1.35	152	152	15	40	100	VAV	SV1.38	B	1	
EV1.36	162	154, 156, 162	60	60	390	VAV	SV1.40, SV1.42, SV1.44	B	3	
EV1.37			To be removed from service					n/a	2	
EV1.39			To be removed from service					n/a	2	
EV1.40	153	153	110	294	735	VAV	SV1.41	B	1	
EV1.41			To be removed from service					n/a	2	
EV1.42			To be removed from service					n/a	2	
EV1.43			To be removed from service					n/a	2	
EV1.44			To be removed from service					n/a	2	
EXHAUST VALVES - SECOND FLOOR										
EV2.3			Removed from service					n/a	2	
EV2.4	205	205	51	136	340	VAV	SV2.4, EV2.4	B	1	
EV2.5	-	205	100	100	800	VAV	SV2.3 TO SV2.6	B	3	
EV2.6	214	205	400	400	2100	VAV	SV2.7A to SV2.15A	B	3	
EV2.6a			To be removed from service					n/a	2	
EV2.6b			To be removed from service					n/a	2	
EV2.7			To be removed from service					n/a	2	
EV2.8			To be removed from service					n/a	2	
EV2.9			To be removed from service					n/a	2	
EV2.10			To be removed from service					n/a	2	
EV2.11			To be removed from service					n/a	2	
EV2.42			To be removed from service					n/a	2	

- 1 Rebalance existing air valve and commission new sequence with associated supply valve.
- 2 Demolish existing air valve and revise controls graphics and sequences to suit.
- 3 Demolish existing air valve, install new air valve, revise graphics and sequences as specified.

Silencer Schedule																	
Tag	Location	Silencer Cross Section (W x H) mm	Silencer Length mm	Silencer Configuration	Airflow				Minimum Required Attenuation								
					Airflow		Velocity FPM	Max Pres. Drop Pa	Octave Band								
					L/S	(CFM)			63	125	250	500	1k	2k	4k	8k	
SIL-1	Room 214	1000x450 and 2@900x300	3000	T Configuration	2100	(4452)	890	20	0.08	5	8	20	35	50	50	37	24
SIL-2	Room 205	600 x 350	2500	Elbow	730	(1548)	663	20	0.08	5	8	20	35	50	50	37	24
SIL-3	Room 162	450 x 300	2300	Elbow	390	(827)	551	20	0.08	5	8	20	35	50	50	37	24

### DEDICATED AIR CONDITIONING UNITS

Mitsubishi Electric wall mounted cassette room air conditioner. Unit to be complete with all mounting hardware, multi-directional air flow, auto air swing vanes, drain water lift mechanism, super quiet operation, filter and microprocessor controls, including DDC interface controller. Provide 12-mm diameter drain line from unit to nearest mop sink or equipment drain. Unit to utilize an HFC refrigerant like R410a. Unit to be complete with option for ultra low ambient operation down to -40 Deg.C. Capacity control to be by variable compressor speed. Unit to have 2 years parts and 7 year compressor warranty. Unit to be controlled from thermostat supplied with system.

Indoor Evaporator shall be matched to air conditioning unit. Mount condensing unit on roof complete with concrete patio blocks and vibration isolating pads. Capacity control to be by variable compressor speed.

**SERVER ROOM COOLING UNIT (AC-1 / CU-1):** EVAPORATOR AC-1: Unit shall provide 1.11 - 3.6 kW (3.8 - 12.2 MBH) of cooling. Power shall be 208-230V/60/1 phase. Maximum fuse: 15 Amps. Min. circuit ampacity: 1.0. Unit fan shall supply 68 l/s on low speed, 188 l/s on high speed. SEER: 21. CONDENSING UNIT CU-1: Power shall be 208-230V/60/1 phase. Maximum fuse: 15 Amps. MCA: 12. Sound 46 dB. Sample product: Mitsubishi Electric Model MUY-GE09NA.

**TUBULAR INLINE EXHAUST FANS:** Fan shall be a Cook Model CIC belt driven tubular centrifugal floor mounted inline fan. Fan shall have centrifugal wheel AMCA rated for air and sound performance. Units shall be complete with flexible duct connections. Mount on elevated stand from floor complete with spring isolation. Ensure that manufacturers requirements for straight length of duct inlet and outlet are achieved. Controls and fan to be recommissioned once revisions are complete.

**EX-31 (Storage Room):** Model 210 CIC, 1230 RPM, 2360 l/s (5000 cfm) airflow at 373 Pa (1.5") external static pressure. Motor: 2.49 kW (3 HP), 600V/60/3 phase.

**EXHAUST AIR VALVE:** Accutrol H-AVC5000 low pressure drop electronic pressure independent variable volume air valve with a compression section, two airflow control surfaces, factory-mounted digital vortex airflow measuring device factory-mounted standard speed electric actuator, integral access panel and integrated high performance closed-loop feedback controller with native BACnet. Maximum operating pressure drop to be 50 Pa at design flow. Radiated NC level to be less than 30 at maximum flow of valve. Refer to Valve Schedule for size and airflow. Valve to utilize vortex shedding airflow sensing method or equivalent.

### FIRE RATED DUCT WRAP:

Flexible high temperature insulation rated to 2192°F (1200°C) that is fully encapsulated in FSP facing. The duct enclosure system shall be listed by ULC per ASTM E 2336, CAN/ULC S144 and ISO 6944 for 1-, 2- and 3-hour rating and zero clearance to combustibles, and tested per ASTM E84 for a flame/smoke rating less than 25/50. Insulation shall have a nominal thickness of 1-1/2 inches (38 mm) and density of 6 lbs/ft3 (96 kg/m3). Insulation shall have a R-Value of 7.3 at 75°F. Installation shall be in strict accordance to manufacturers published installation instructions, ULC Listings, and shop drawings. Install dimpled aluminum recovering jacket. Design is based on Firemaster FastWrap XL.

### GENERAL MECHANICAL NOTES

COORDINATE ALL WORK WITH OTHER TRADES AND SITE CONDITIONS.

RUN PIPING AS HIGH AS POSSIBLE TO ALLOW MAXIMUM CLEARANCES.

ALL PLUMBING PIPING BRANCH LINES ARE 1/2"Ø (12mm) UNLESS NOTED OTHERWISE.

PLUMBING VENTING AS PER LOCAL CODES AND REQUIREMENTS.

INSTALL AIR VENTS WITH QUARTER TURN ISOLATION BALL VALVE AT ALL HIGH POINTS IN THE HEATING SYSTEM PIPING.

ALL RUNOUTS TO REHEAT COILS, RADIANT PANELS, OR WALL-FIN RADIATION TO BE 3/4"Ø (19mm) UNLESS NOTED OTHERWISE.

REFER TO DETAILS FOR EQUIPMENT CONNECTIONS.

ALL DUCTWORK SHOWN DOUBLE LINE INSIDE PERIMETER OF DUCT IS TO BE COMPLETE WITH 1" (25mm) INTERNAL INSULATION, ALL OTHER DUCTWORK IS TO BE C/W 1" (25mm) EXTERNAL INSULATION SIZES INCLUDE INTERNAL INSULATION WHERE APPLICABLE.

ALL FITTINGS ON INTERNALLY INSULATED DUCTWORK ARE TO BE C/W INTERNAL INSULATION, ALL OTHERS ARE TO BE EXTERNALLY INSULATED.

ALL SUPPLY AIR AND EXHAUST AIR BRANCH DUCTS TO GRILLES AND DIFFUSERS ARE TO BE C/W BALANCE DAMPERS IN BRANCH DUCT NEAR MAIN.

RUN DUCTS AS HIGH AS POSSIBLE TO PROVIDE MAXIMUM CLEARANCES.

PROVIDE ACCESS DOORS FOR ACCESS TO ALL MOTORIZED DAMPERS, FIRE DAMPERS, COILS, CONTROL DEVICES, AND TO FACILITATE DUCT CLEANING.

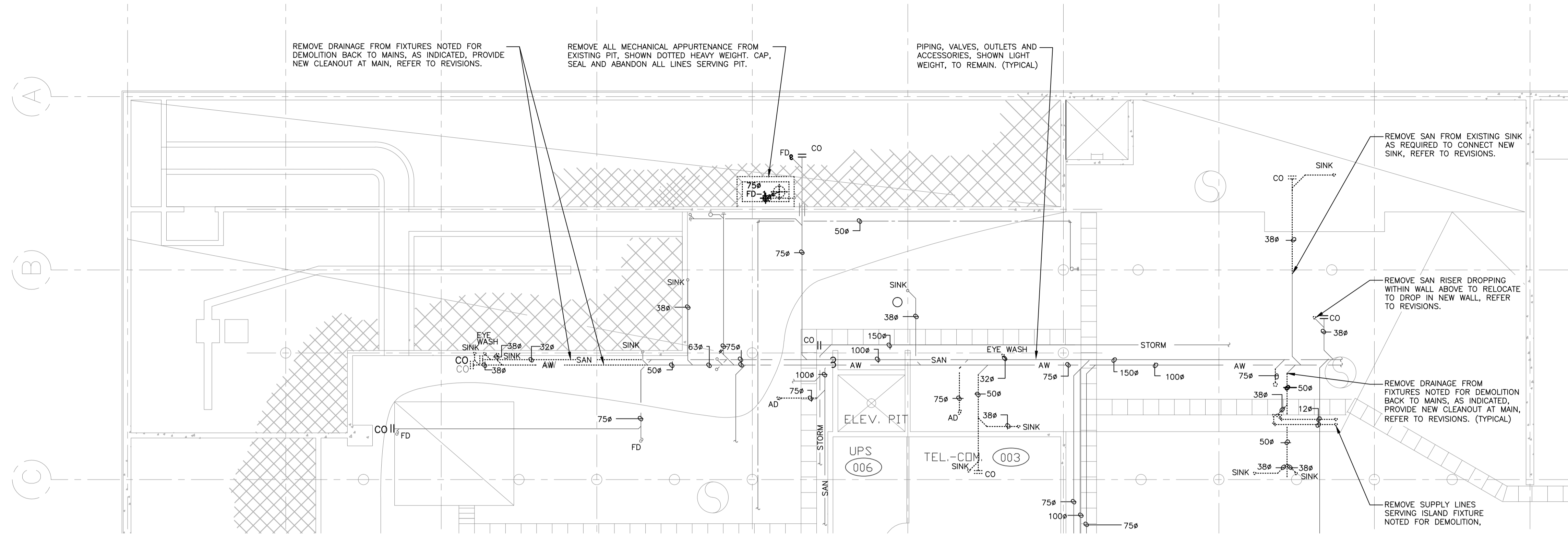
PROVIDE TURNING VANES IN ELBOWS.

### LEGEND

---	CHW	DOMESTIC COLD HARD WATER
---	S	DOMESTIC COLD SOFT WATER
---	DST	DISTILLED WATER
---	---	DOMESTIC HOT SOFT WATER
---	---	DOMESTIC HOT RECIRC WATER
---	---	DOMESTIC TEMPERED SUPPLY
---	---	DOMESTIC TEMPERED RECIRC
---	O2	OXYGEN
---	N2	NITROGEN
---	HE	HELIUM
---	AW	LABORATORY ACID WASTE
---	VAC	HOUSE VACUUM
---	HW	HEATING WATER SUPPLY
---	HWR	HEATING WATER RETURN
---	D	EQUIPMENT DRAIN LINE
---	---	PUMPED DRAIN LINE
---	---	SHOP GRADE COMPRESSED AIR
---	G.C.AIR	GAS CHROMA GRADE COMPRESSED AIR
---	L.AIR	LABORATORY QUALITY COMPRESSED AIR
---	NAS	NATURAL GAS
---	SAN	SANITARY WASTE - ABOVE GRADE
---	SAN-BELOW	SANITARY WASTE - BELOW GRADE
---	VENT	SANITARY VENT
---	STORM	STORM DRAIN - ABOVE GRADE
---	STORM-BELOW	STORM DRAIN - BELOW GRADE
---	RO	REVERSE OSMOSIS WATER
---	---	ISOLATION VALVE
---	---	BALL VALVE
---	---	GLOBE VALVE
---	---	CHECK VALVE (WITH FLOW DIRECTION)
---	---	TWO-WAY AUTOMATIC CONTROL VALVE
---	---	THREE-WAY AUTOMATIC CONTROL VALVE
---	---	HOSE BIBB C/W ISOLATION, CAP & CHAIN
---	---	WYE STRAINER
---	---	CIRCUIT BALANCE VALVE
---	---	AUTOMATIC FLOW RESTRICTOR
---	---	UNION
---	---	FLEX CONNECTOR
---	---	CLEANOUT
---	---	FLOOR DRAIN
---	---	ROOF DRAIN
---	---	PIPE DOWN
---	---	PIPE UP
---	---	PRESSURE GAUGE/SENSOR
---	---	TEMPERATURE GAUGE/SENSOR
---	---	EXISTING SUPPLY LINES TO REMAIN, SHOWN SOLID LIGHT WEIGHT.
---	---	EXISTING RETURN LINES TO REMAIN, SHOWN DASHED LIGHT WEIGHT.
---	---	EXISTING ABOVE GRADE SAN AND STORM LINES TO REMAIN, SHOWN DASHED LIGHT WEIGHT.
---	---	EXISTING BELOW GRADE SAN AND STORM LINES TO REMAIN, SHOWN DASHED LIGHT WEIGHT.
---	---	EXISTING LINES TO BE REMOVED OR RELOCATED AS NOTED, SHOWN DOTTED HEAVY WEIGHT.
---	---	PIPE AND ROUND DUCT SIZE
---	---	RECTANGULAR DUCT SIZE
---	---	OVAL DUCT SIZE

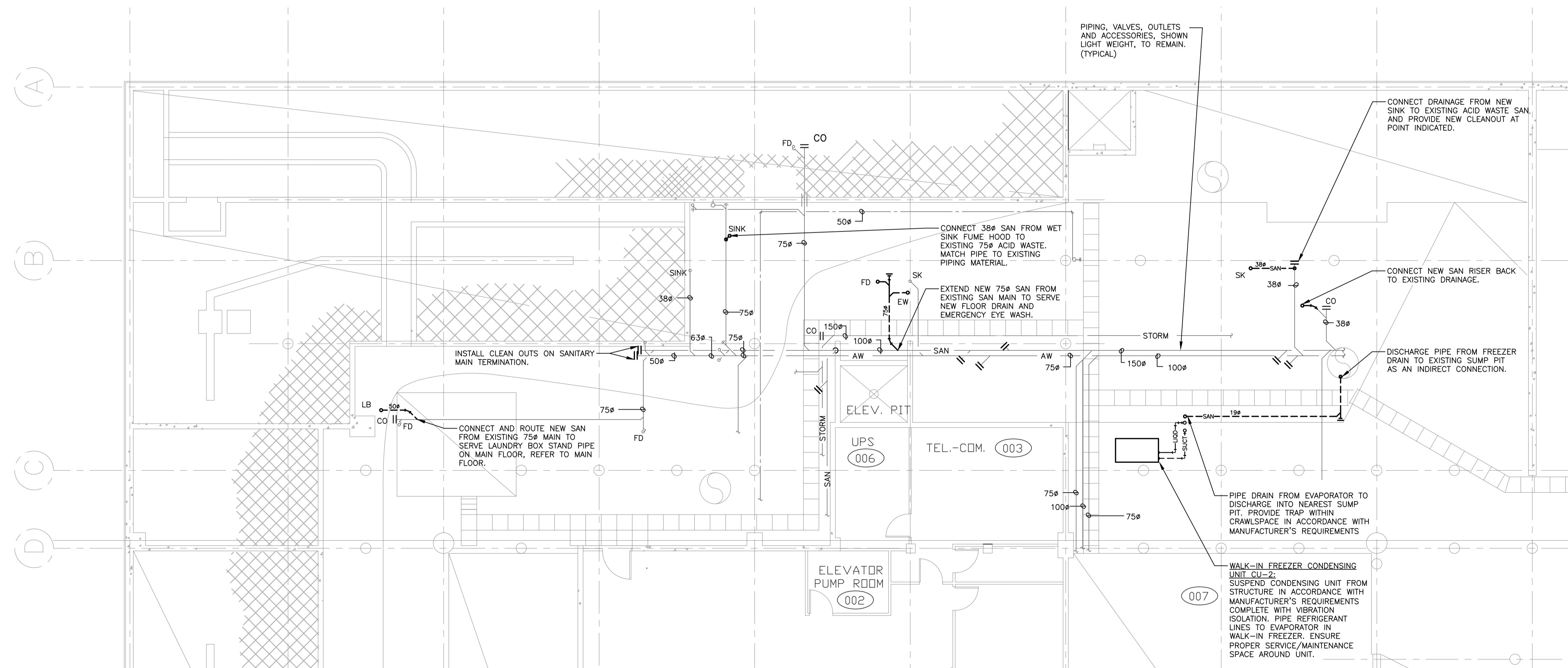
[Symbol]	MOTORIZED DAMPER
[Symbol]	FIRE DAMPER
[Symbol]	SMOKE DAMPER W/ ACTUATOR
[Symbol]	90° ELBOW, PROVIDE TURNING VANES. SPECIFIED VANES ARE NOT SHOWN ON DRAWINGS
[Symbol]	MANUAL BALANCING DAMPER
[Symbol]	INTERNALLY INSULATED DUCT
[Symbol]	EXTERNALLY INSULATED DUCT, UNLESS SPECIFICALLY NOTED OTHERWISE
[Symbol]	EXISTING DUCT TO REMAIN, SHOWN SOLID LIGHT WEIGHT
[Symbol]	EXISTING DUCT TO BE RELOCATED OR REMOVED, SHOWN DOTTED HEAVY WEIGHT
[Symbol]	SUPPLY DUCT UP OR SECTION
[Symbol]	SUPPLY DUCT DOWN
[Symbol]	RETURN DUCT UP OR SECTION
[Symbol]	RETURN DUCT DOWN
[Symbol]	EXHAUST DUCT UP OR SECTION
[Symbol]	EXHAUST DUCT DOWN
[Symbol]	FIRE EXTINGUISHER IN CABINET
[Symbol]	FIRE EXTINGUISHER C/W WALL BRACKET
[Symbol]	TEMPERATURE SENSOR/THERMOSTAT
[Symbol]	PLUMBING FIXTURE AND TYPE: WC=WATER CLOSET, L=LAVATORY, UR=URINAL,





1 PLUMBING DEMOLITION – PARTIAL CRAWLSPACE PLAN  
M2.1 1:100

**GENERAL DEMOLITION NOTE:**  
EXCEPT WHERE SPECIFICALLY NOTED TO REMAIN, EXISTING LAB EQUIPMENT AND ALL ASSOCIATED PIPING, DUCTWORK, CONTROLS, VALVES AND ACCESSORIES SHALL BE REMOVED FROM THE RENOVATED SPACE. LAB OUTLETS AND LAB EQUIPMENT OUTLINES HAVE BEEN IDENTIFIED BASED ON RECORD DRAWINGS. ALL COMPONENTS ASSOCIATED WITH EQUIPMENT BEING REMOVED FROM SERVICE SHALL BE REMOVED FROM THE SPACE BACK TO SYSTEMS REMAINING IN OPERATION OR AS INDICATED ON DRAWINGS. PRIOR TO REMOVING SYSTEMS, THE CONTRACTOR SHALL CONFIRM ON SITE ALL SYSTEMS THAT ARE TO REMAIN IN OPERATION AND IDENTIFY ALL SYSTEMS THAT WILL BE TEMPORARILY DISRUPTED TO ACCOMPLISH WORK. CONTRACTOR SHALL WORK WITH THE DEPARTMENTAL REPRESENTATIVE TO IDENTIFY ALL SYSTEMS REMAINING IN OPERATION AND MINIMIZE DISRUPTION TO THOSE SYSTEMS.



2 PLUMBING REVISIONS – PARTIAL CRAWLSPACE PLAN  
M2.1 1:100



Association of Professional Engineers & Geoscientists of Saskatchewan  
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Number C981  
Permission to Consult Held by:  
Discipline: Mech. Sk. Reg. No. 6093 Signature: E. W. COOKE

DO NOT SCALE DRAWINGS

Revision/Revision	Description/Description	Date/Date
0	ISSUED FOR TENDER	2016-03-11

Project title/Titre du projet

**INTERIOR FIT-UP  
REGINA, SASKATCHEWAN**

Approved by/Approve par

Designed by/Concept par

Drawn by/Dessine par

Project Manager/Administrateur de Projets

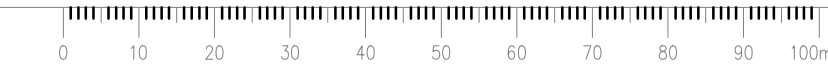
Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'ingénierie

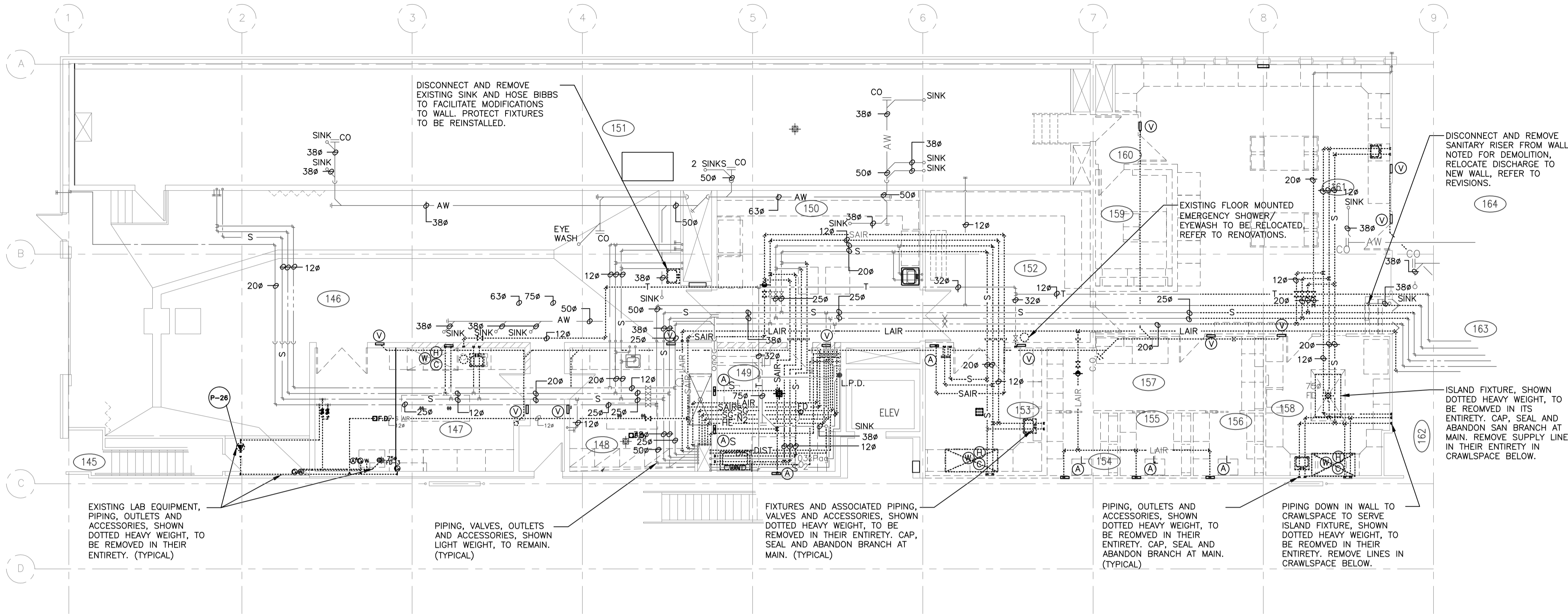
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Drawing title/Titre du dessin

**CRAWLSPACE FLOOR PLAN  
PLUMBING DEMOLITION  
AND REVISIONS**

Project No./No. du projet	Sheet/ Feuille	Revision no./ La Révision no.
13/2015	M2.1	0

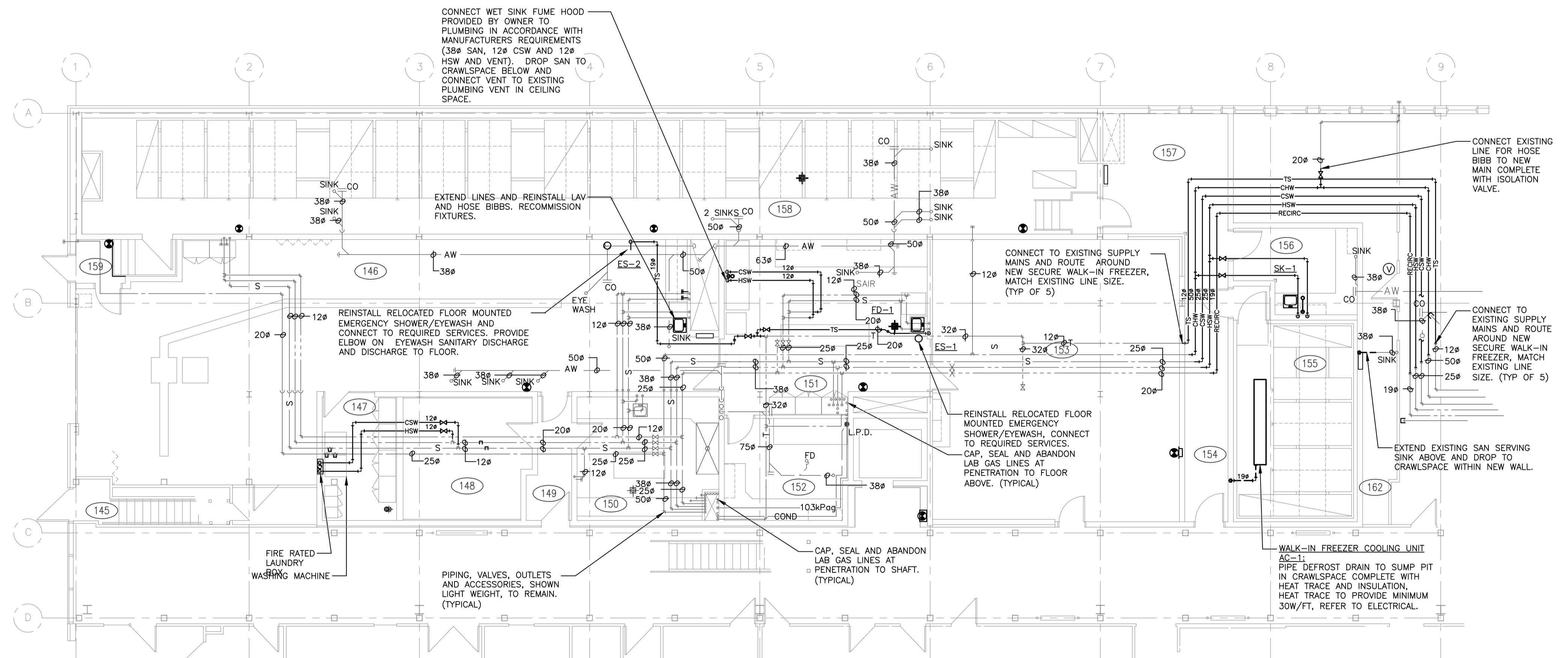




- EXISTING LAB OUTLETS**
- (A) LAB AIR
  - (S) SERVICE AIR
  - (A) GAS CHROM. QUALITY AIR
  - (C) COLD SOFT WATER
  - (CS) COLD HARD WATER
  - (H) HOT SOFT WATER
  - (D) DISTILLED WATER
  - (W) ACID WASTE
  - (T) STEAM
  - (V) CENTRAL VACUUM
  - (H) CHILLED WATER SUPPLY
  - (R) CHILLED WATER RETURN
  - (O) OXYGEN
  - (H) HYDROGEN
  - (HP) HIGH PURITY HELIUM
  - (HE) HELIUM
  - (HN) HIGH PURITY NITROGEN
  - (N) NITROGEN
  - (CD) CARBON DIOXIDE

1 PLUMBING DEMOLITION - MAIN FLOOR PLAN  
M2.2 1:100

**GENERAL DEMOLITION NOTE:**  
EXCEPT WHERE SPECIFICALLY NOTED TO REMAIN, EXISTING LAB EQUIPMENT AND ALL ASSOCIATED PIPING, DUCTWORK, CONTROLS, VALVES AND ACCESSORIES SHALL BE REMOVED FROM THE RENOVATED SPACE. LAB OUTLETS AND LAB EQUIPMENT OUTLINES HAVE BEEN IDENTIFIED BASED ON RECORD DRAWINGS. ALL COMPONENTS ASSOCIATED WITH EQUIPMENT BEING REMOVED FROM SERVICE SHALL BE REMOVED FROM THE SPACE BACK TO SYSTEMS REMAINING IN OPERATION OR AS INDICATED ON DRAWINGS. PRIOR TO REMOVING SYSTEMS, THE CONTRACTOR SHALL CONFIRM ON SITE ALL SYSTEMS THAT ARE TO REMAIN IN OPERATION AND IDENTIFY ALL SYSTEMS THAT WILL BE TEMPORARILY INTERRUPTED TO ACCOMPLISH WORK. CONTRACTOR SHALL WORK WITH THE DEPARTMENTAL REPRESENTATIVE TO IDENTIFY ALL SYSTEMS REMAINING IN OPERATION AND MINIMIZE DISRUPTION TO THOSE SYSTEMS.



2 PLUMBING REVISIONS - MAIN FLOOR PLAN  
M2.2 1:100

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Revision/Revision	Description/Description	Date/Date
0	ISSUED FOR TENDER	2016-03-11

Project title/Titre du projet

**INTERIOR FIT-UP  
REGINA, SASKATCHEWAN**

Approved by/Approve par

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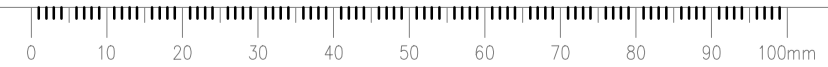
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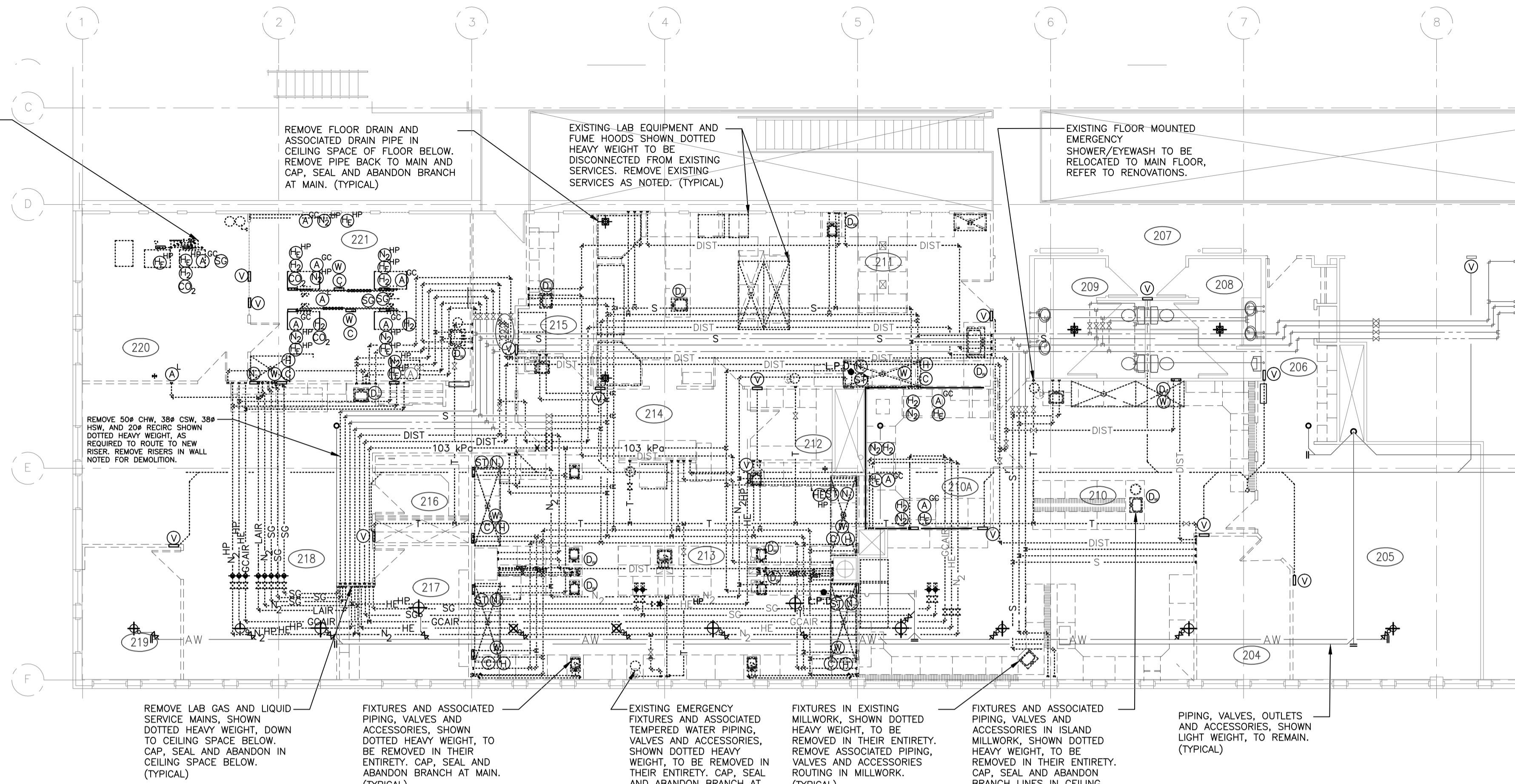
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**MAIN FLOOR PLAN  
PLUMBING: DEMOLITION  
AND REVISIONS**

Project No./No. du projet	Sheet/ Feuille	Revision no./ La Révision no.
13/2015	M2.2	0



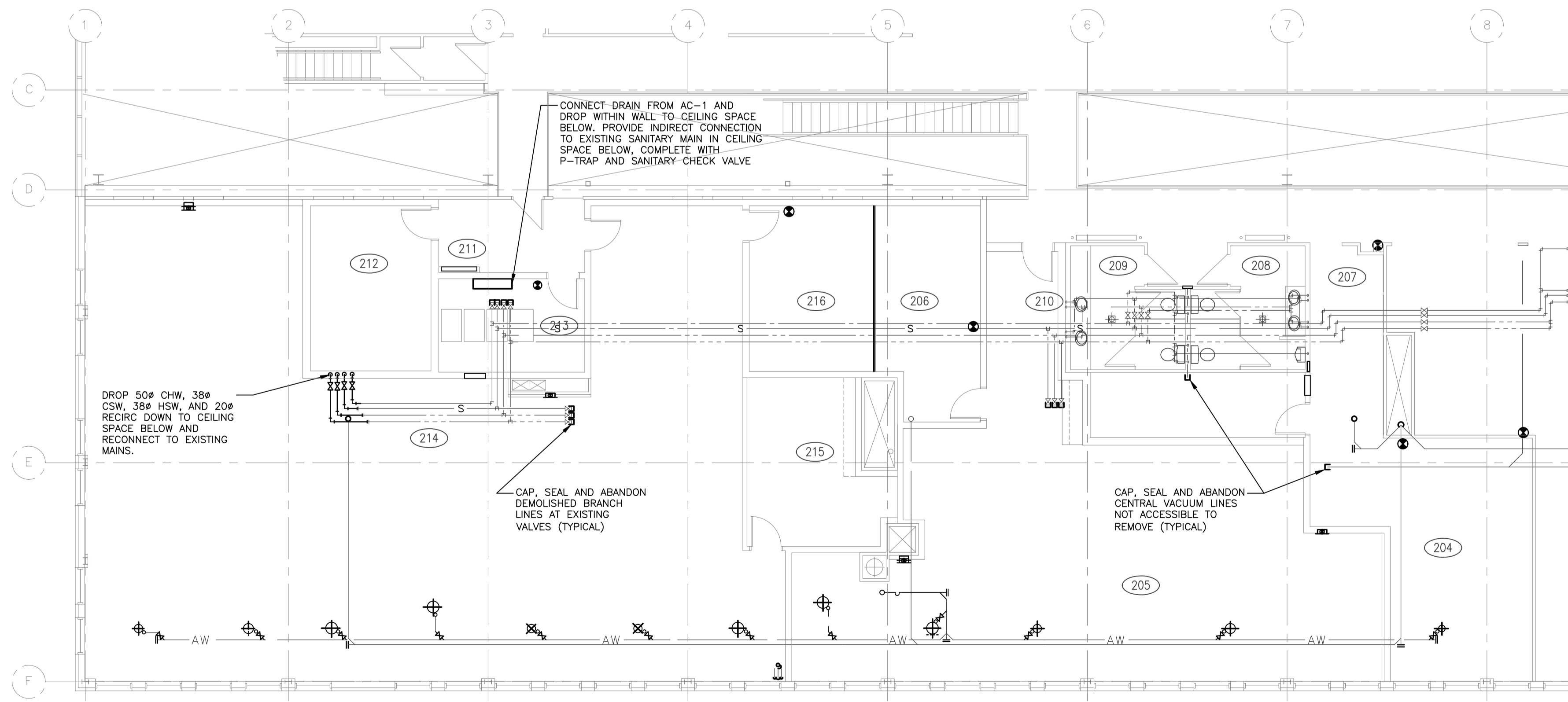
EXISTING LAB EQUIPMENT, PIPING, OUTLETS AND ACCESSORIES, SHOWN DOTTED HEAVY WEIGHT, TO BE REMOVED IN THEIR ENTIRETY, WHERE SERVED FROM BELOW, REMOVE PIPES BACK TO CEILING SPACE BELOW AND CAP, SEAL AND ABANDON IN CEILING SPACE. (TYPICAL)



**EXISTING LAB OUTLETS**

- (A) LAB AIR
- (A) SERVICE AIR
- (A) GC
- (C) COLD SOFT WATER
- (C) COLD HARD WATER
- (H) HOT SOFT WATER
- (W) DISTILLED WATER
- (W) ACID WASTE
- (ST) STEAM
- (V) CENTRAL VACUUM
- (H) CHILLED WATER SUPPLY
- (H) CHILLED WATER RETURN
- (O) OXYGEN
- (H) HYDROGEN
- (H) HIGH PURITY HELIUM
- (H) HELIUM
- (H) HIGH PURITY NITROGEN
- (N) NITROGEN
- (C) CARBON DIOXIDE

1 PLUMBING DEMOLITION – SECOND FLOOR PLAN  
M2.3 1:100



2 PLUMBING REVISIONS- SECOND FLOOR PLAN  
M2.3 1:100



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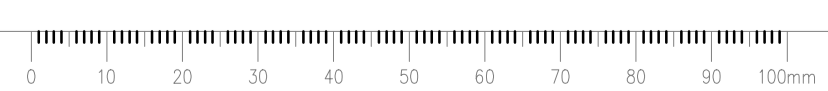
Revision/Revision	Description/Description	Date/Date
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**INTERIOR FIT-UP  
REGINA, SASKATCHEWAN**

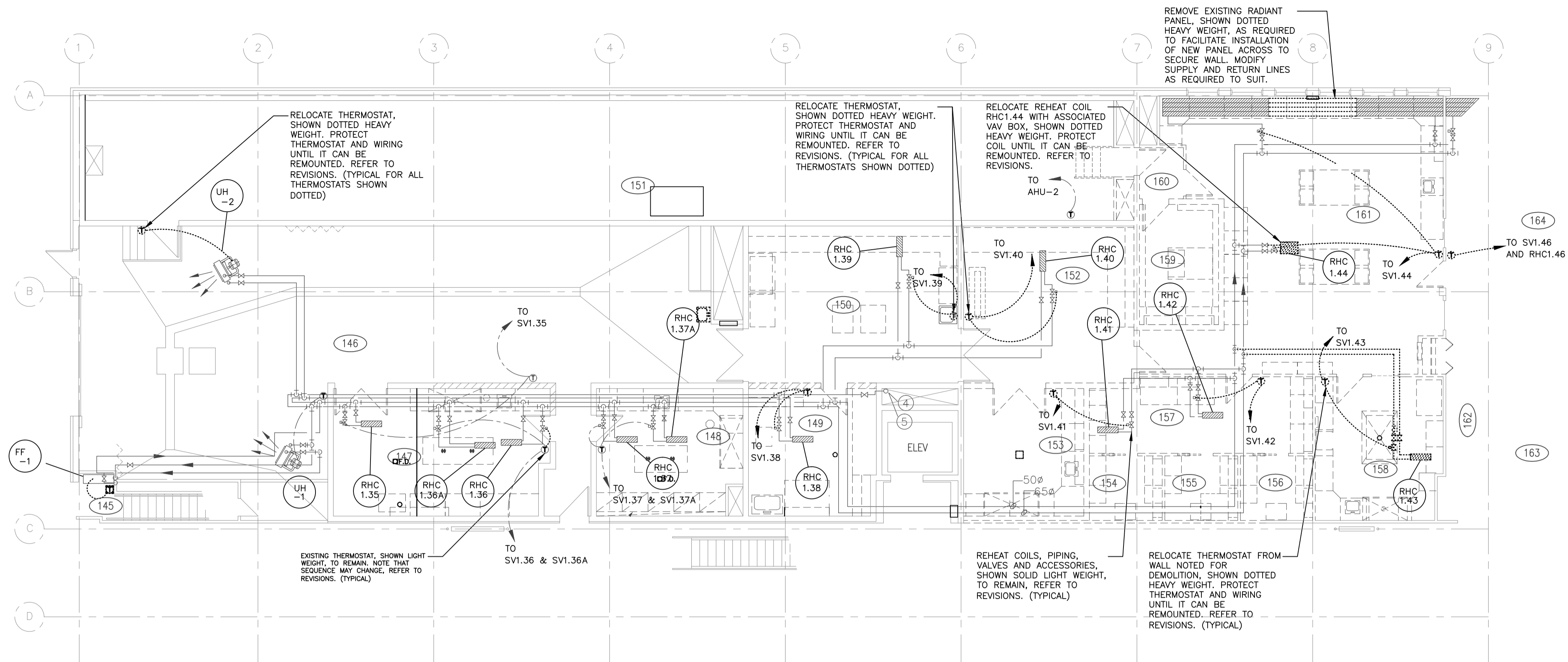
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**SECOND FLOOR PLAN  
PLUMBING: DEMOLITION  
AND REVISIONS**

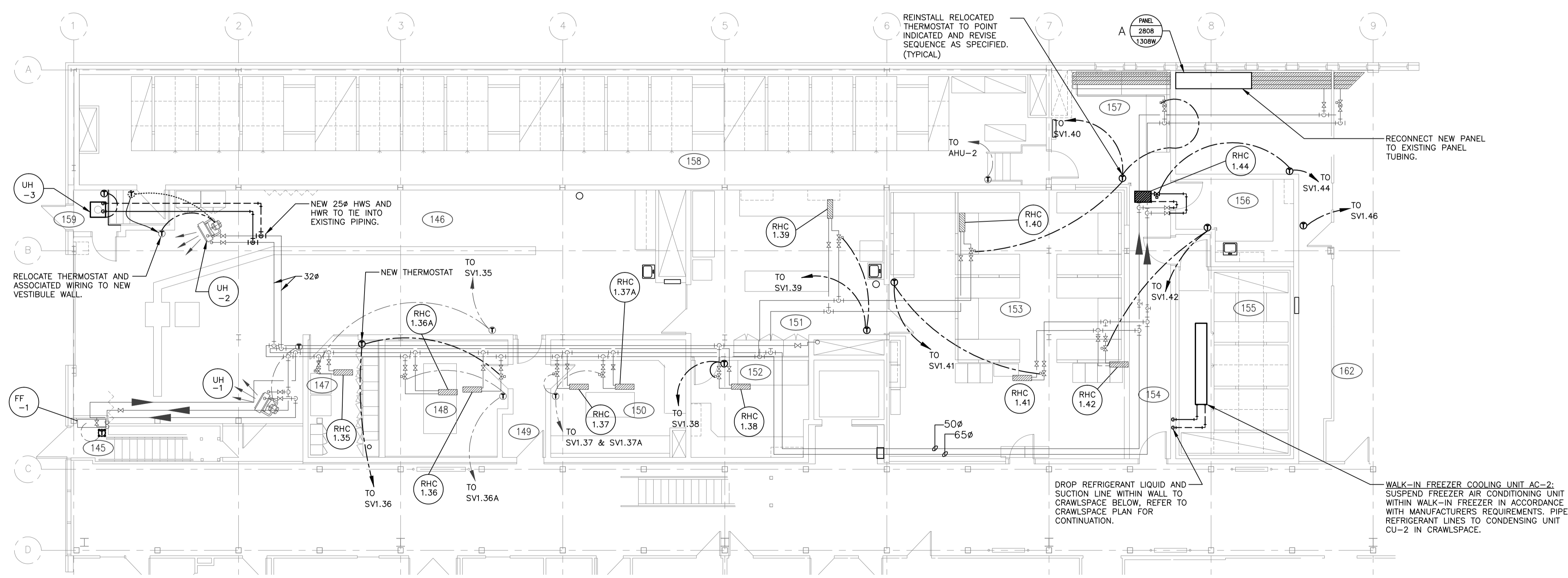
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13/2015	M2.3	0



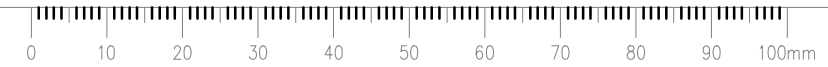




1 HEATING DEMOLITION - MAIN FLOOR PLAN  
M3.1 1:100



2 HEATING REVISIONS - MAIN FLOOR PLAN  
M3.1 1:100



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**INTERIOR FIT-UP  
REGINA, SASKATCHEWAN**

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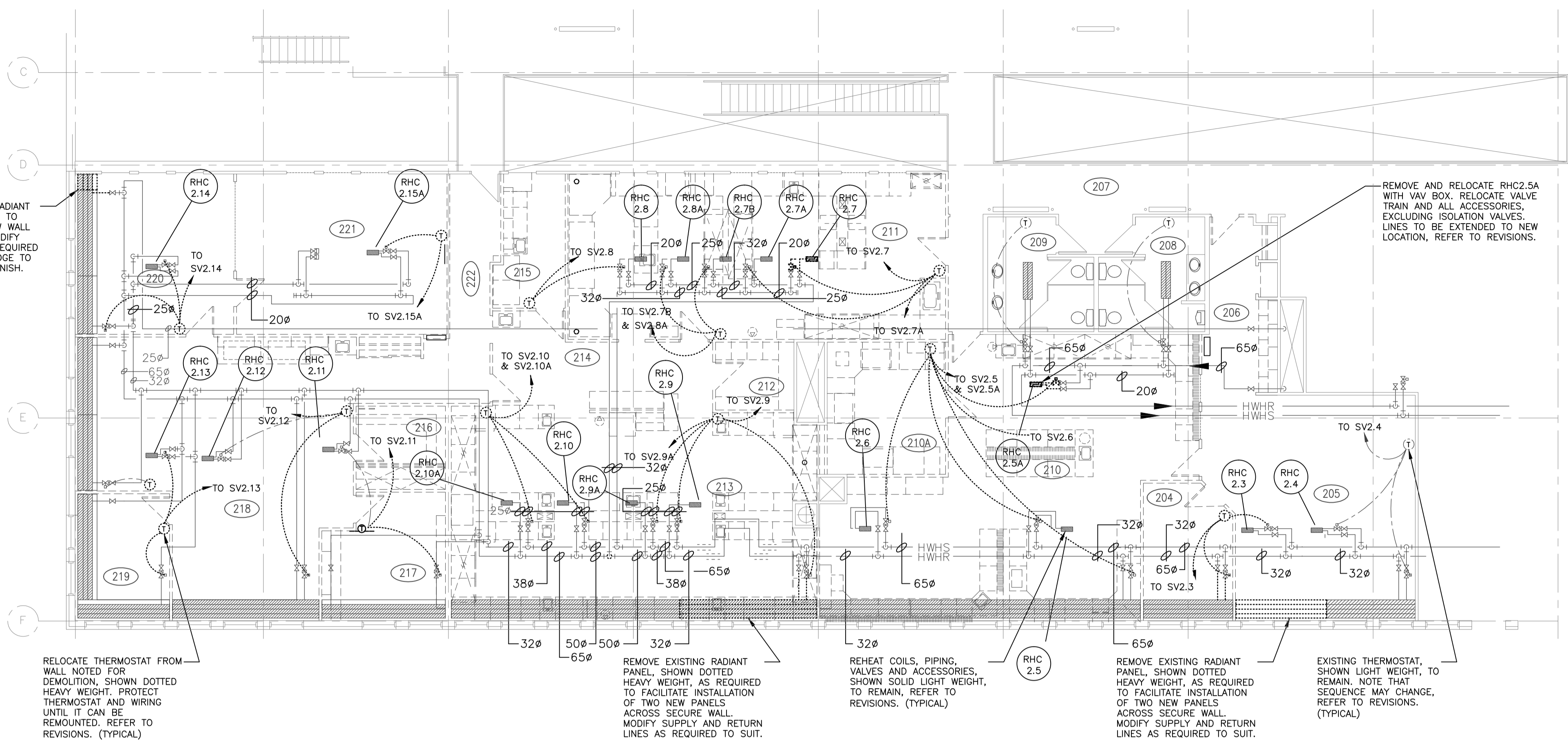
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**MAIN FLOOR PLAN  
HEATING DEMOLITION  
HEATING REVISIONS**

Project No./No. du projet	Sheet/ Feuille	Revision no./ La Révision no.
13/2015	M3.1	0

MODIFY EXISTING RADIANT PANEL AND TUBING TO ACCOMMODATE NEW WALL CONSTRUCTION. MODIFY SUPPLY LINE AS REQUIRED TO SUIT. PANEL EDGE TO MEET NEW WALL FINISH.



REMOVE AND RELOCATE RHC2.5A WITH VAV BOX. RELOCATE VALVE TRAIN AND ALL ACCESSORIES, EXCLUDING ISOLATION VALVES. LINES TO BE EXTENDED TO NEW LOCATION, REFER TO REVISIONS.

RELOCATE THERMOSTAT FROM WALL NOTED FOR DEMOLITION, SHOWN DOTTED HEAVY WEIGHT. PROTECT THERMOSTAT AND WIRING UNTIL IT CAN BE REMOUNTED, REFER TO REVISIONS. (TYPICAL)

REMOVE EXISTING RADIANT PANEL, SHOWN DOTTED HEAVY WEIGHT, AS REQUIRED TO FACILITATE INSTALLATION OF TWO NEW PANELS ACROSS SECURE WALL. MODIFY SUPPLY AND RETURN LINES AS REQUIRED TO SUIT.

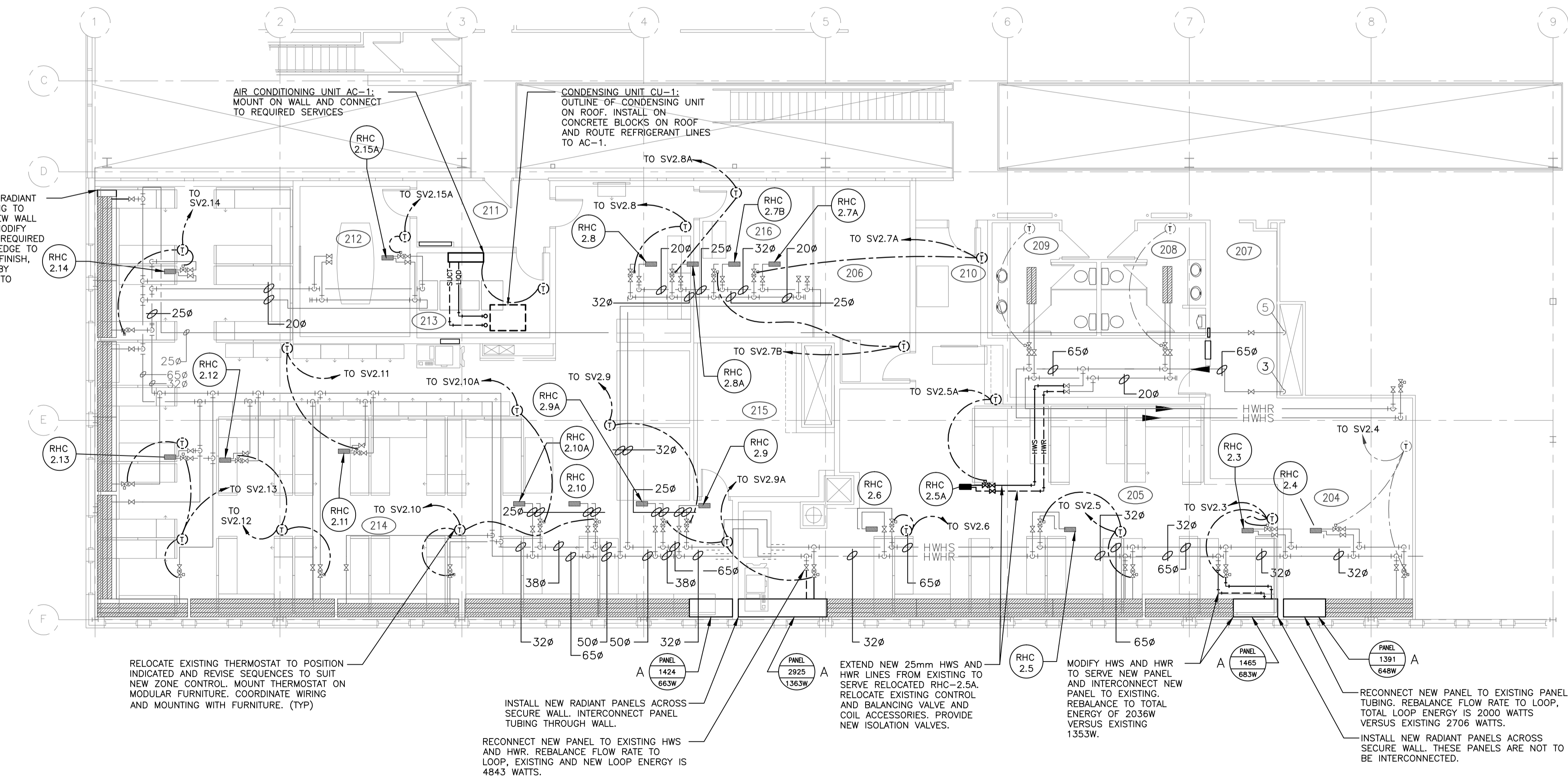
REHEAT COILS, PIPING, VALVES AND ACCESSORIES, SHOWN SOLID LIGHT WEIGHT, TO REMAIN, REFER TO REVISIONS. (TYPICAL)

REMOVE EXISTING RADIANT PANEL, SHOWN DOTTED HEAVY WEIGHT, AS REQUIRED TO FACILITATE INSTALLATION OF TWO NEW PANELS ACROSS SECURE WALL. MODIFY SUPPLY AND RETURN LINES AS REQUIRED TO SUIT.

EXISTING THERMOSTAT, SHOWN LIGHT WEIGHT, TO REMAIN. NOTE THAT SEQUENCE MAY CHANGE, REFER TO REVISIONS. (TYPICAL)

1 HEATING DEMOLITION - SECOND FLOOR PLAN  
M3.2 1:100

MODIFY EXISTING RADIANT PANEL AND TUBING TO ACCOMMODATE NEW WALL CONSTRUCTION. MODIFY SUPPLY LINE AS REQUIRED TO SUIT. PANEL EDGE TO MEET NEW WALL FINISH, FINISHING STRIP BY GENERAL, REFER TO ARCHITECTURAL...



RELOCATE EXISTING THERMOSTAT TO POSITION INDICATED AND REVISE SEQUENCES TO SUIT NEW ZONE CONTROL. MOUNT THERMOSTAT ON MODULAR FURNITURE. COORDINATE WIRING AND MOUNTING WITH FURNITURE. (TYP)

INSTALL NEW RADIANT PANELS ACROSS SECURE WALL. INTERCONNECT PANEL TUBING THROUGH WALL.

RECONNECT NEW PANEL TO EXISTING HWS AND HWR. REBALANCE FLOW RATE TO LOOP, EXISTING AND NEW LOOP ENERGY IS 4843 WATTS.

EXTEND NEW 25mm HWS AND HWR LINES FROM EXISTING TO SERVE RELOCATED RHC-2.5A. RELOCATE EXISTING CONTROL AND BALANCING VALVE AND COIL ACCESSORIES. PROVIDE NEW ISOLATION VALVES.

MODIFY HWS AND HWR TO SERVE NEW PANEL AND INTERCONNECT NEW PANEL TO EXISTING. REBALANCE TO TOTAL ENERGY OF 2036W VERSUS EXISTING 1353W.

RECONNECT NEW PANEL TO EXISTING PANEL TUBING. REBALANCE FLOW RATE TO LOOP, TOTAL LOOP ENERGY IS 2000 WATTS VERSUS EXISTING 2706 WATTS.

INSTALL NEW RADIANT PANELS ACROSS SECURE WALL. THESE PANELS ARE NOT TO BE INTERCONNECTED.

2 HEATING REVISIONS - SECOND FLOOR PLAN  
M3.2 1:100



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**INTERIOR FIT-UP  
REGINA, SASKATCHEWAN**

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**SECOND FLOOR PLAN  
HEATING DEMOLITION  
HEATING REVISIONS**

Project No./No. du projet

Sheet/ Feuille

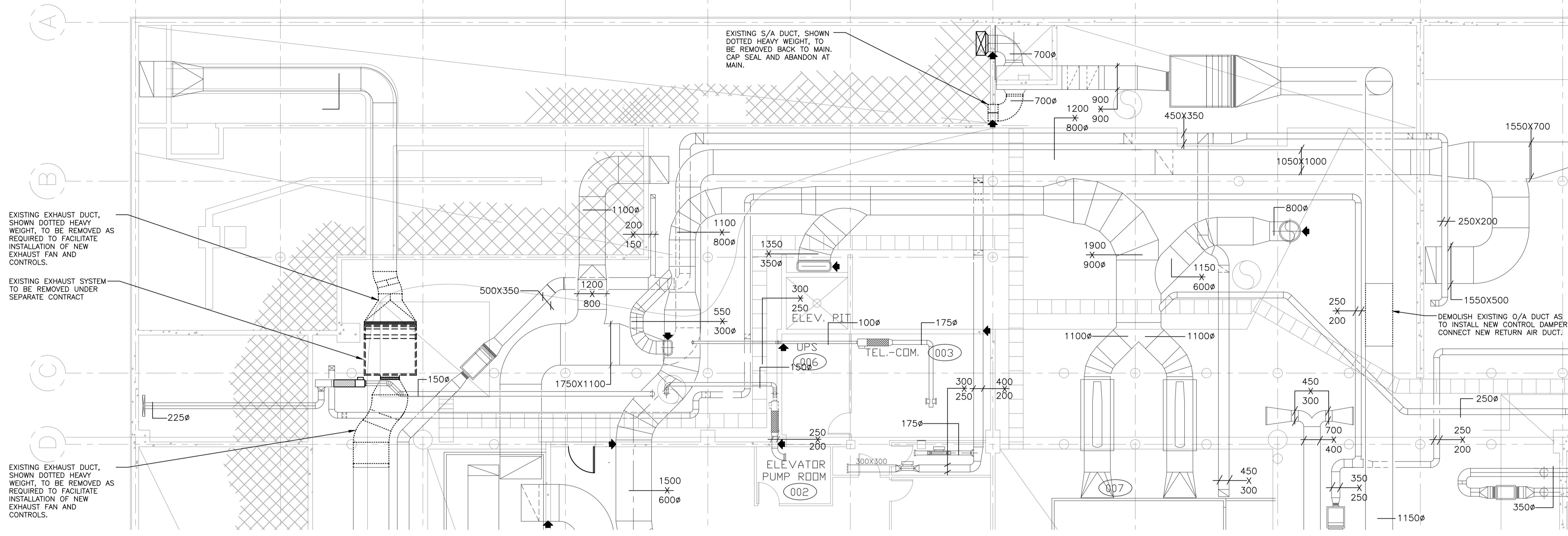
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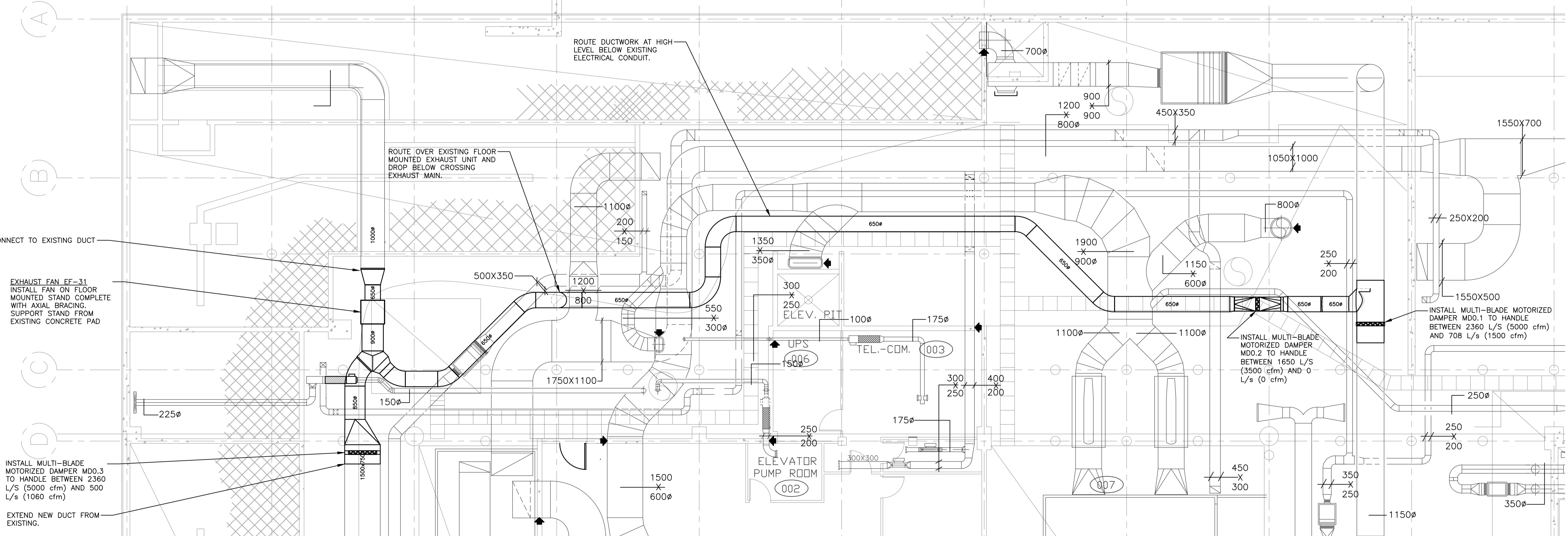
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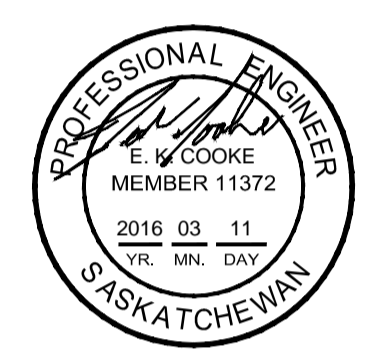
1 VENTILATION DEMOLITION PLAN - CRAWLSPACE  
M4.1 1:100



2 VENTILATION REVISION PLAN - CRAWLSPACE  
M4.1 1:100

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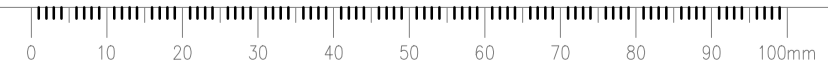
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REGINA, SASKATCHEWAN**

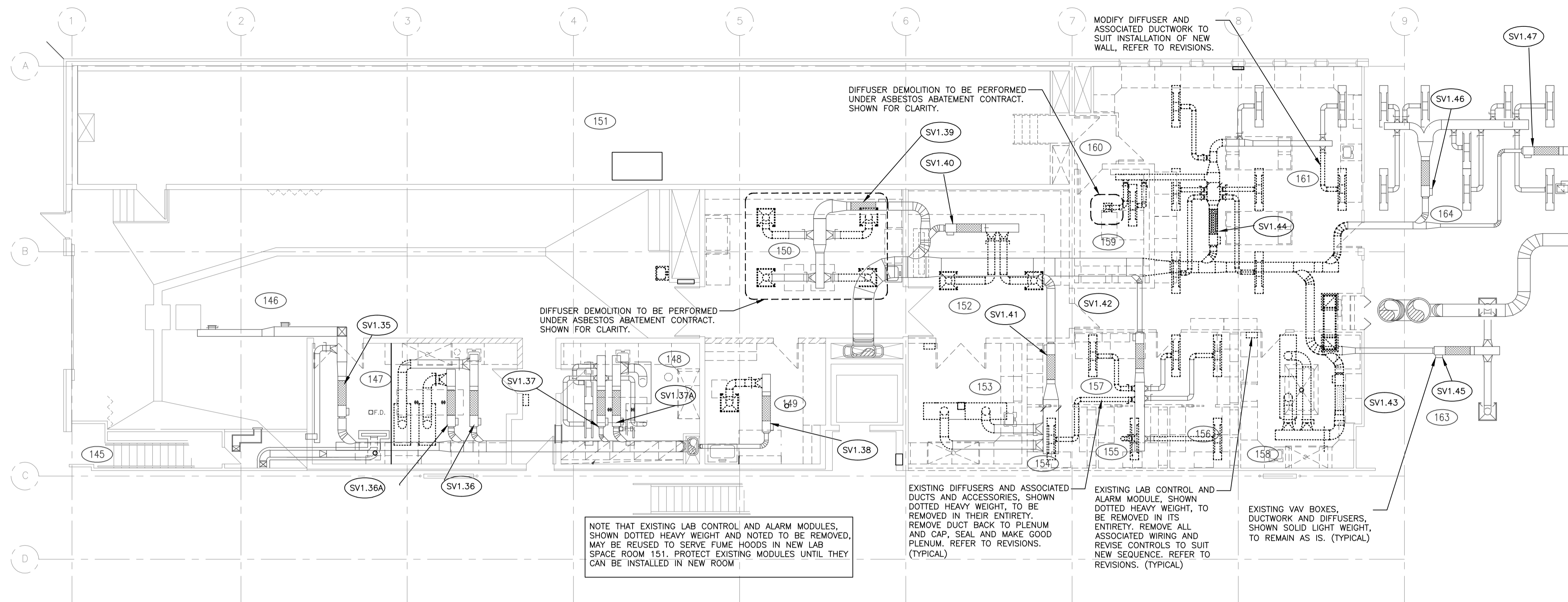
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**CRAWLSPACE PLAN  
VENTILATION DEMOLITION  
VENTILATION REVISIONS**

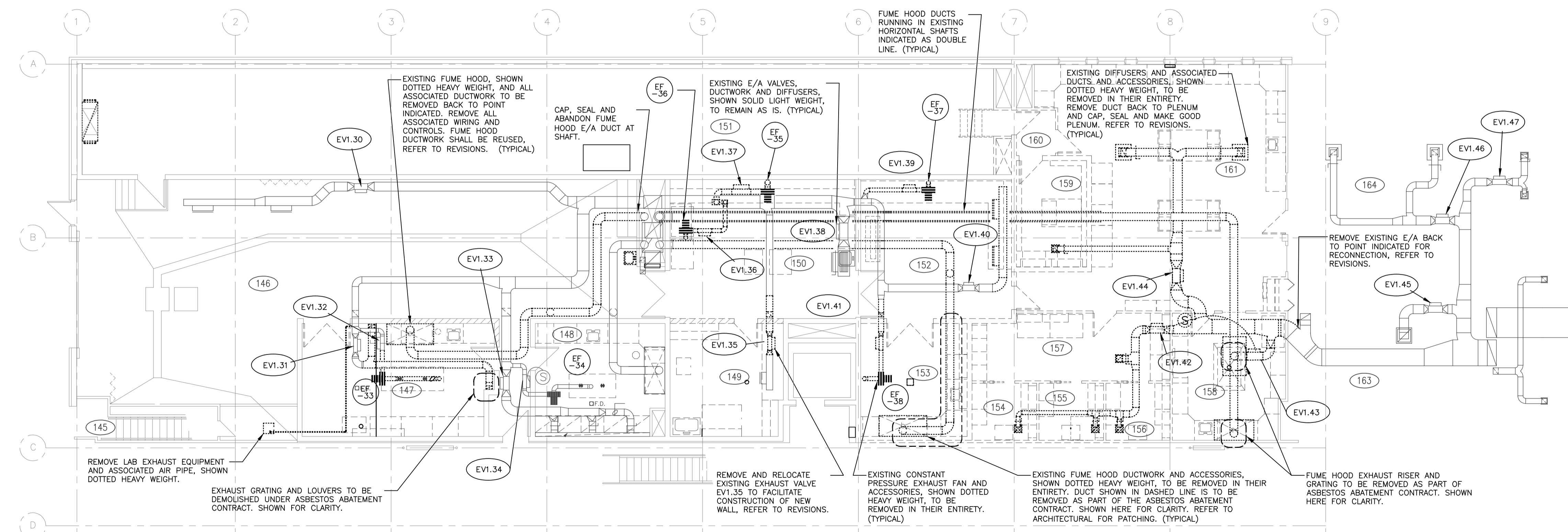
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13/2015	M4.1	0







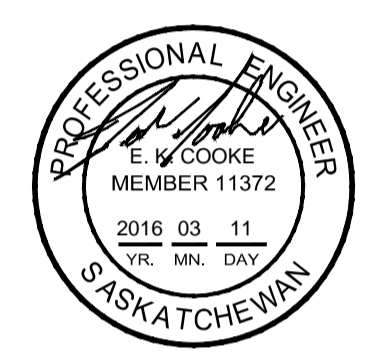
1 S/A DEMOLITION PLAN - MAIN FLOOR  
M4.2 1:100



2 E/A DEMOLITION - MAIN FLOOR PLAN  
M4.2 1:100

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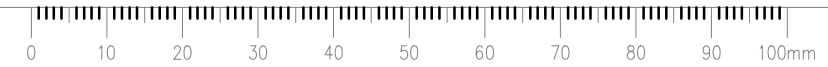
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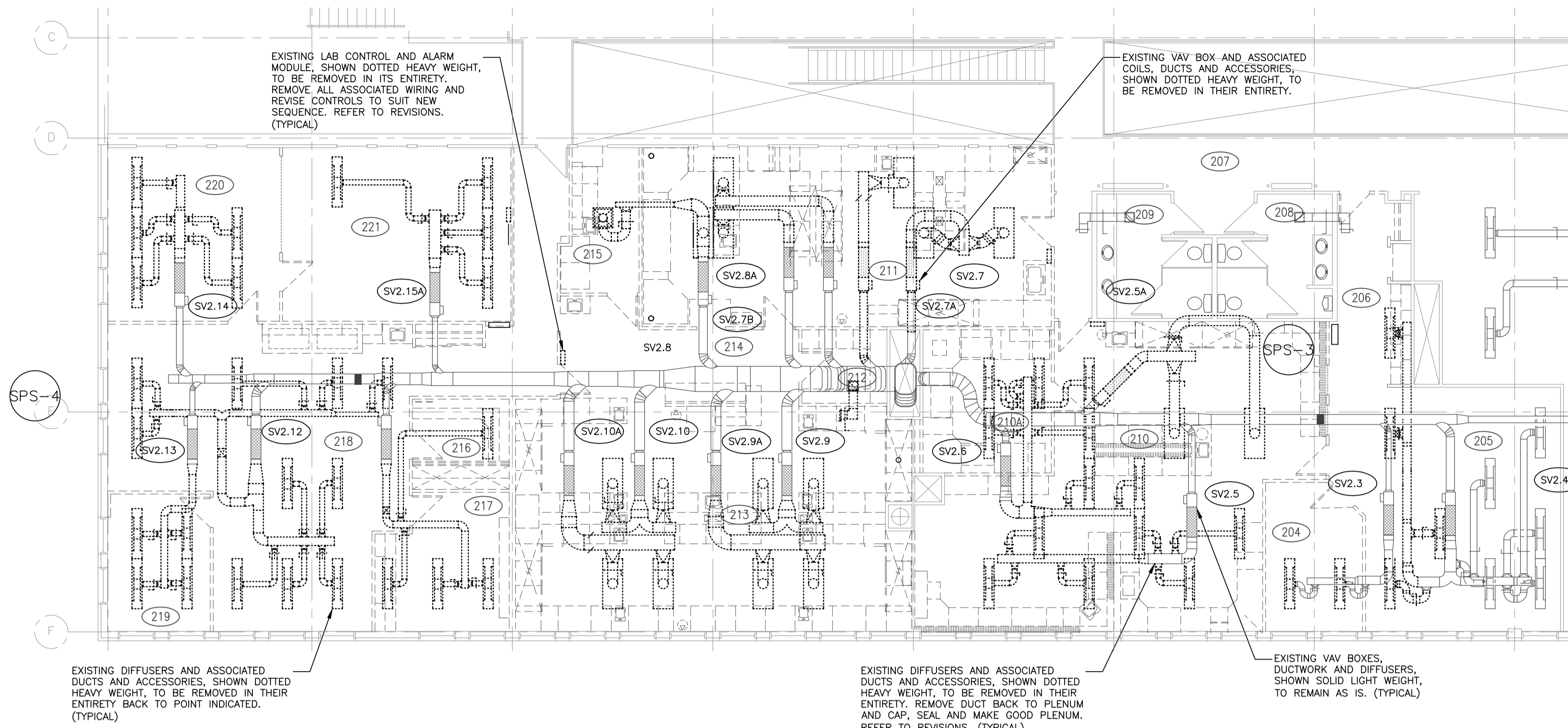
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**MAIN FLOOR PLAN  
VENTILATION DEMOLITION**

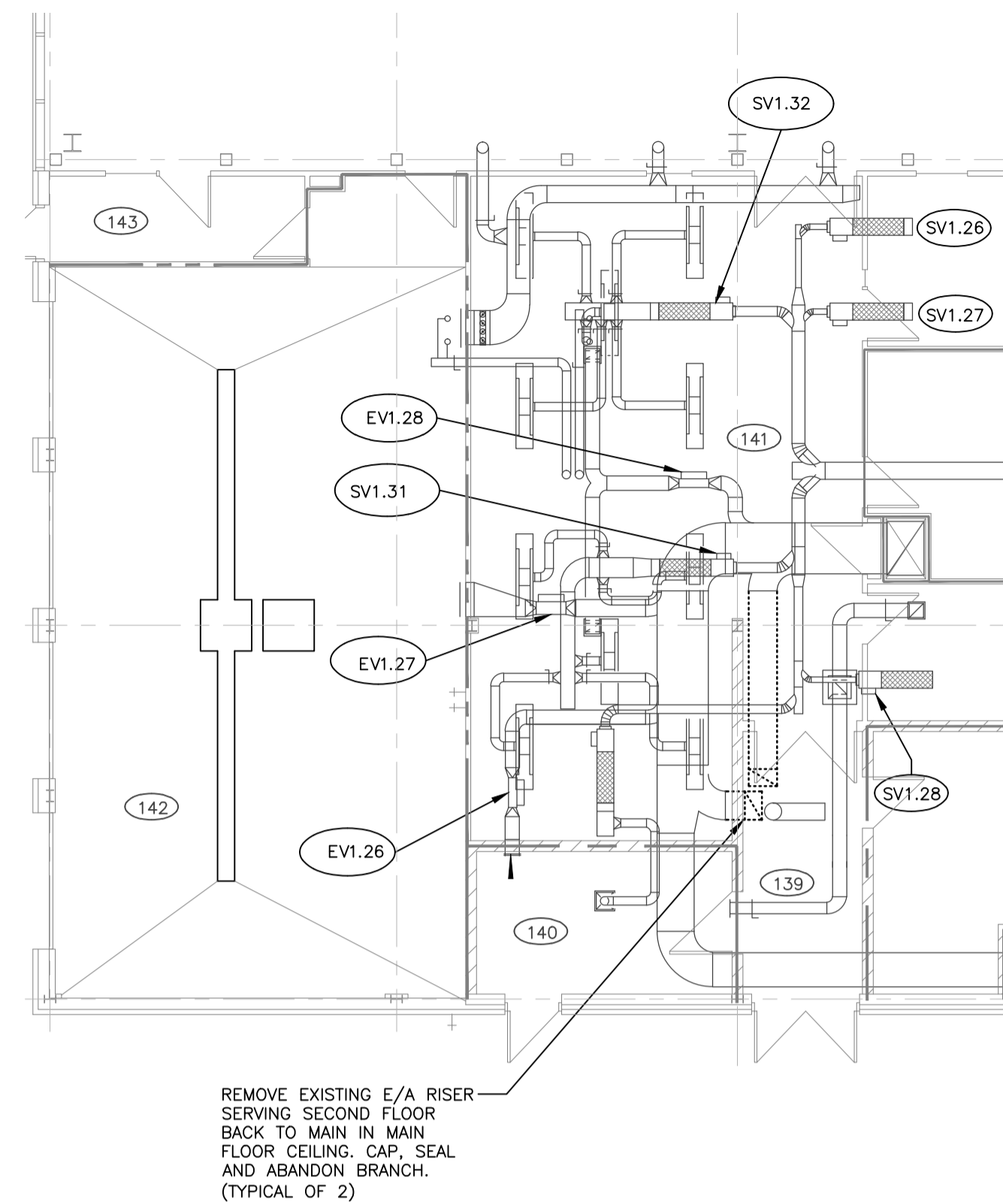
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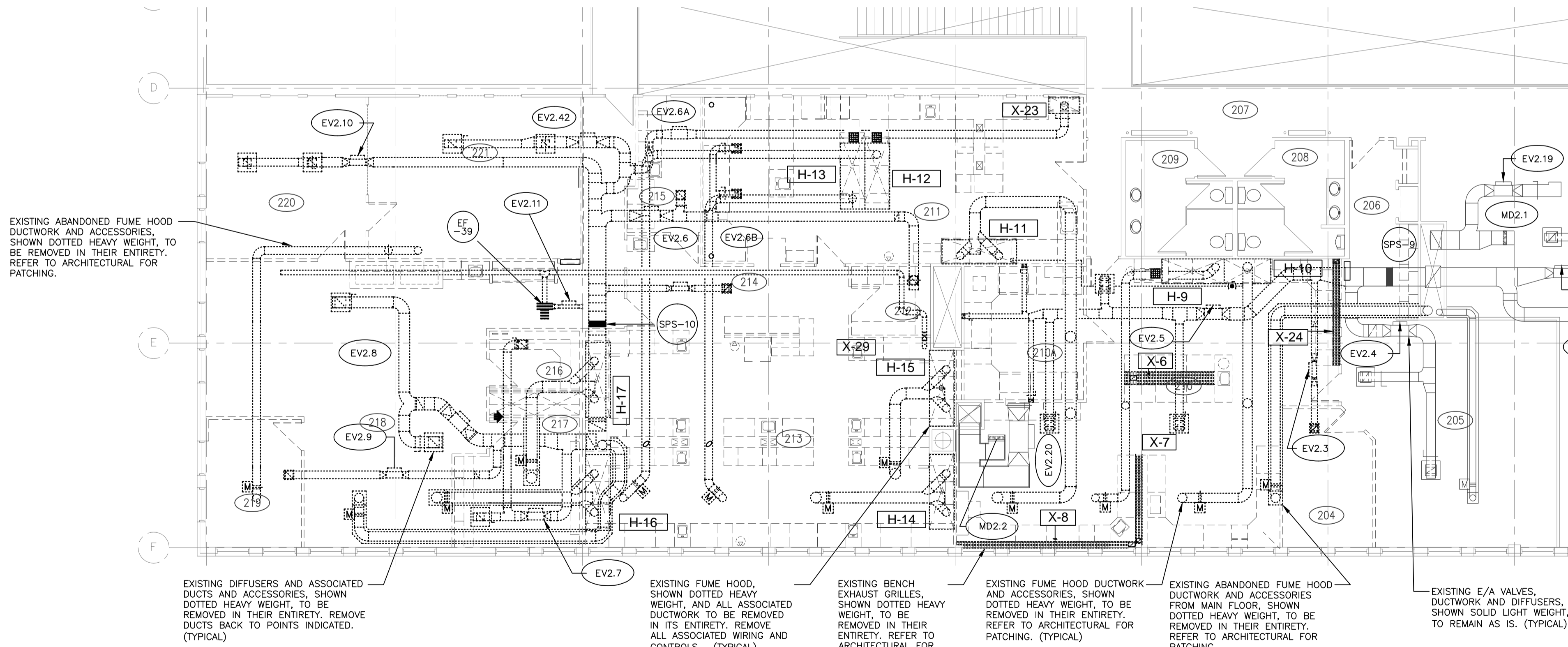




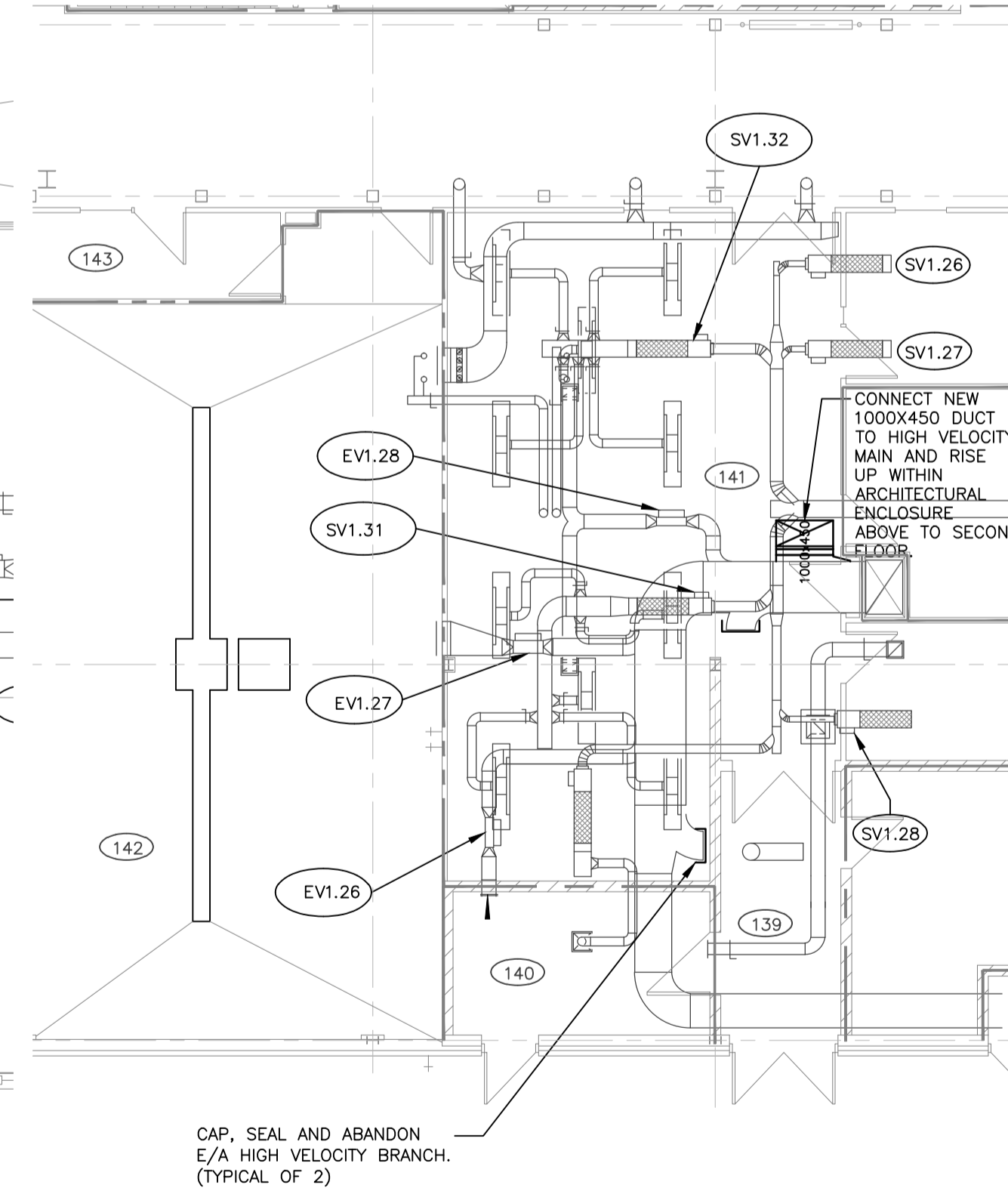
1 S/A DEMOLITION - SECOND FLOOR PLAN  
M4.3 1:100



3 VENT DEMOLITION - PARTIAL MAIN FLOOR PLAN  
M4.3 1:100



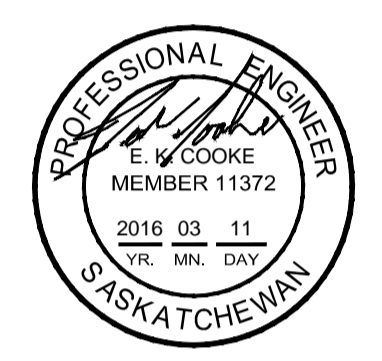
2 E/A DEMOLITION - SECOND FLOOR PLAN  
M4.3 1:100



4 VENT REVISIONS - PARTIAL MAIN FLOOR PLAN  
M4.3 1:100

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**INTERIOR FIT-UP  
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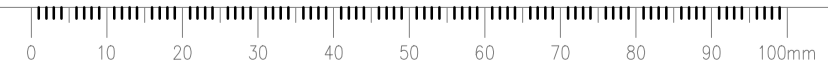
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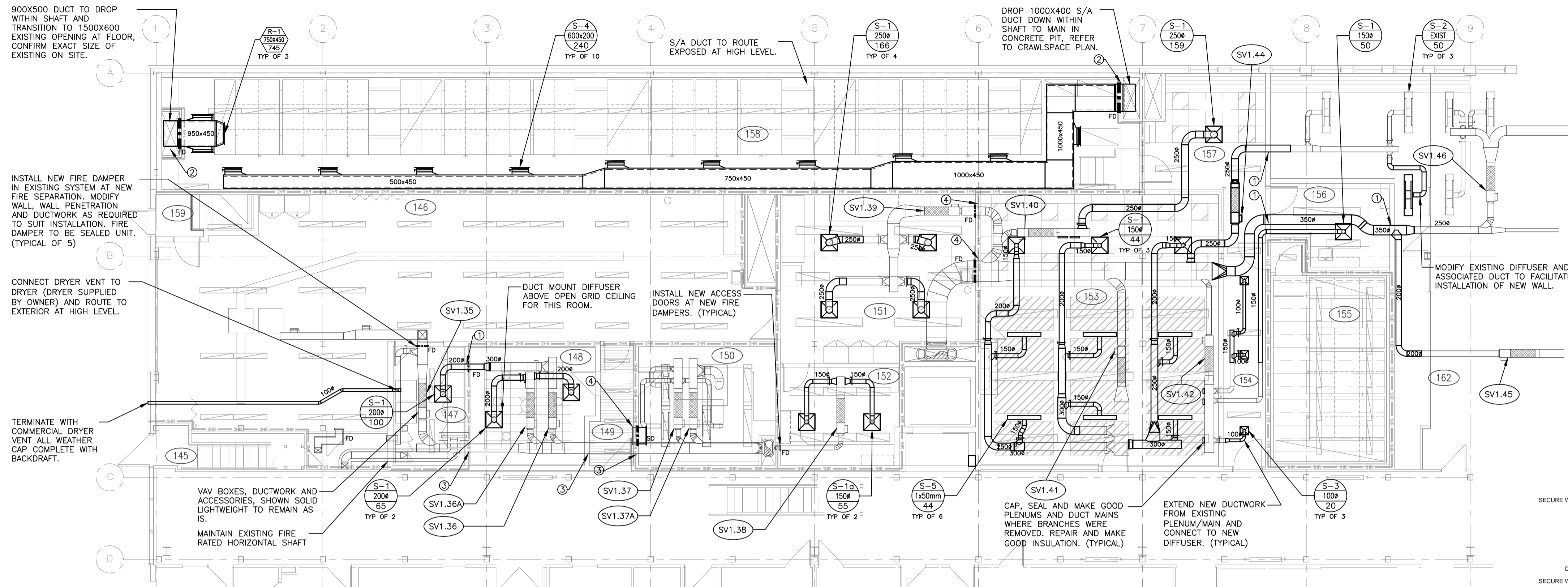
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**SECOND FLOOR PLAN  
VENTILATION DEMOLITION**

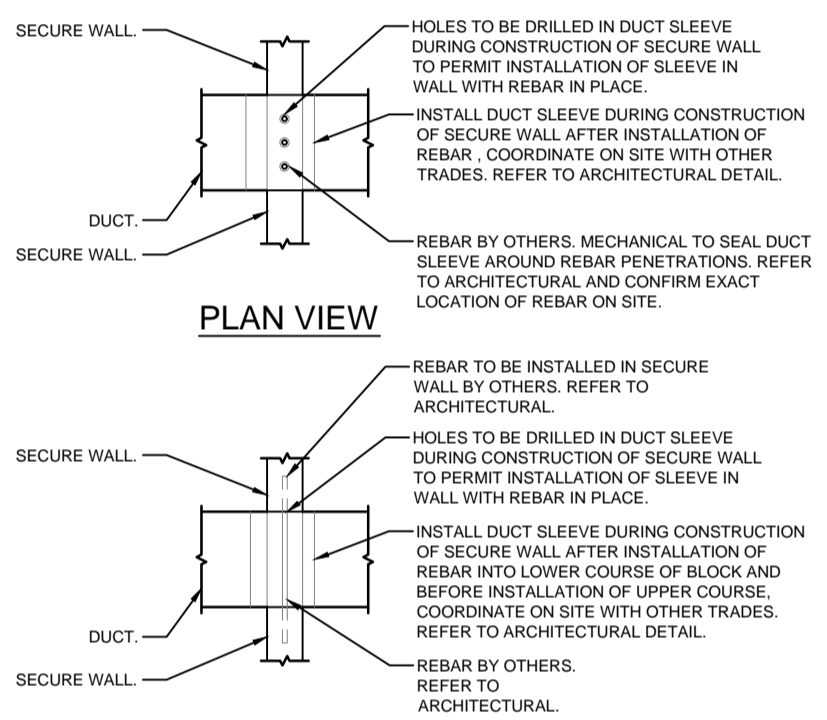
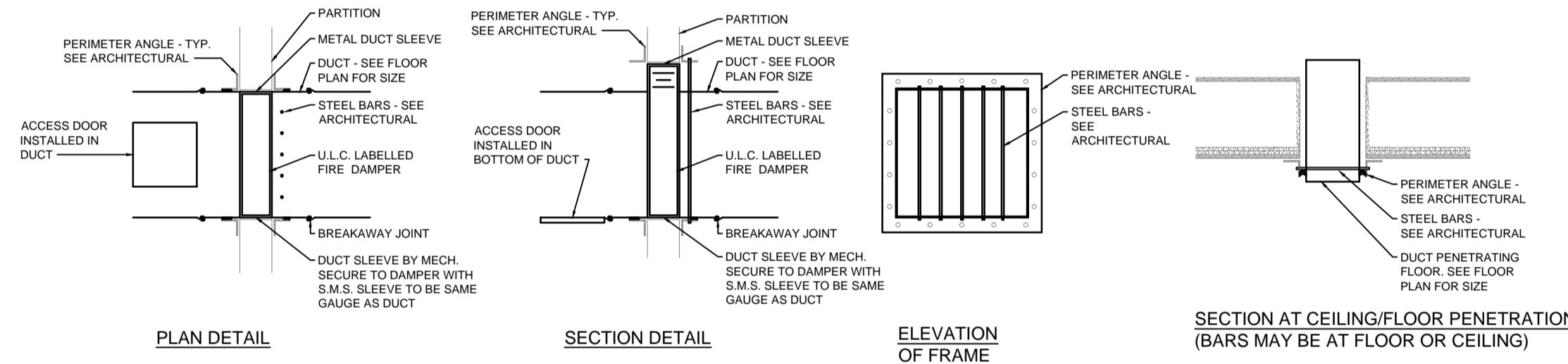
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- KEYNOTES**
- DUCT PENETRATING SECURE WALL TO BE COMPLETE WITH SECURITY BARS. REFER TO APPROPRIATE DETAIL.
  - DUCT RISING WITHIN SHAFT TO SECURE SPACE TO BE COMPLETE WITH SECURITY BARS AT FLOOR, REFER TO APPROPRIATE DETAIL.
  - EXISTING DUCT PENETRATING SECURE WALL TO BE MODIFIED AS REQUIRED TO INSTALL SECURITY BARS. REFER TO APPROPRIATE DETAIL.
  - EXISTING DUCT PENETRATING SECURE WALL TO BE MODIFIED AS REQUIRED TO INSTALL SECURITY BARS AND FIRE OR FIRE/SMOKE DAMPER, REFER TO APPROPRIATE DETAIL.

**1 S/A REVISIONS - MAIN FLOOR PLAN**  
M4.4 1:100

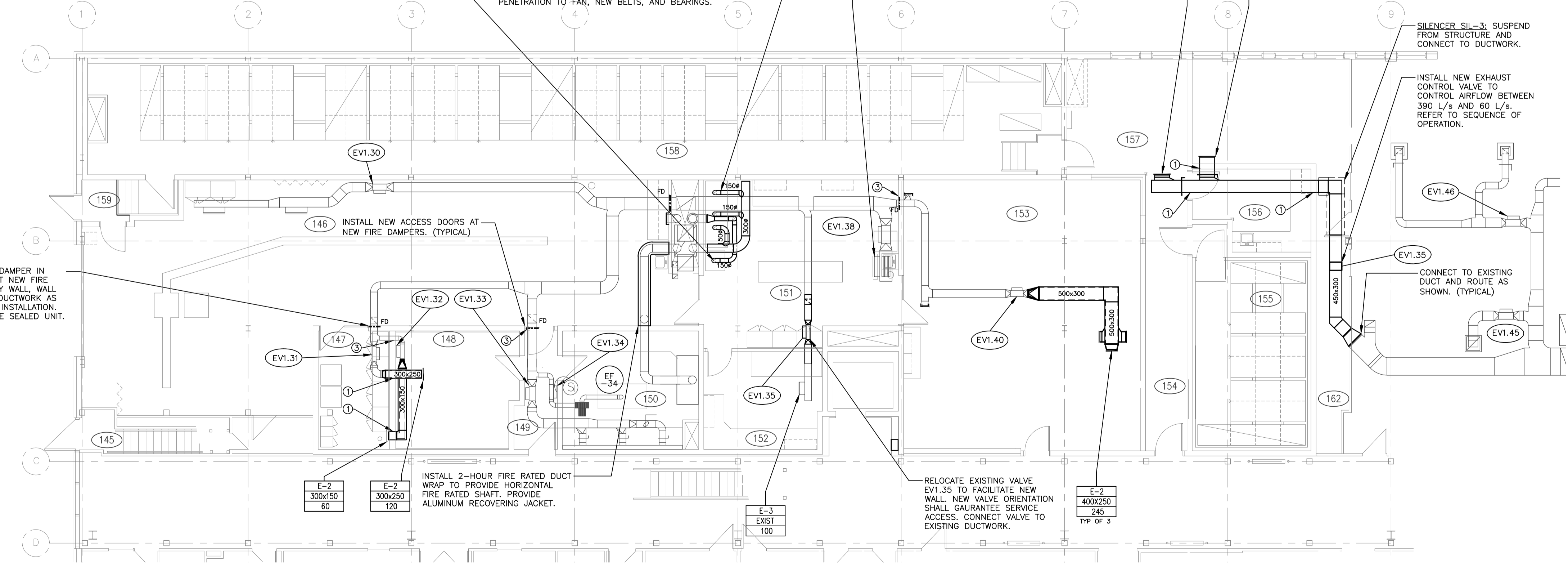


**CYANOACRYLATE (CA) CHAMBER:**  
PLACE CA CHAMBER (HOOD SUPPLIED BY OWNER) AND CONNECT EXHAUST DUCTS TO FUME HOOD EXHAUST FOR EXISTING FAN EF-7. REBALANCE EF-7 TO SUIT MANUFACTURER'S AIRFLOW REQUIREMENTS AT HOOD, APPROXIMATELY 60 L/s. REFURBISH EXHAUST FAN EF-7 COMPLETE WITH NEW DUCT FROM ROOF PENETRATION TO FAN, NEW BELTS, AND BEARINGS.

**WET SINK FUME HOOD:**  
PLACE FUME HOOD (HOOD SUPPLIED BY OWNER) AND CONNECT EXHAUST DUCTS (3 CONNECTIONS) TO FUME HOOD EXHAUST FOR EXISTING FAN EF-6. REBALANCE EF-6 TO SUIT MANUFACTURER'S AIRFLOW REQUIREMENTS FOR NEW EXHAUST FUME HOOD, STATED AS 60-100FPM. BALANCING SHALL TARGET 90 FPM AT HOOD FACE OR APPROXIMATELY 220 L/s THROUGH FACE OPENING. REFURBISH EXHAUST FAN EF-6 COMPLETE WITH NEW DUCT FROM ROOF PENETRATION TO FAN, NEW BELTS, AND BEARINGS.

**SECURITY BAR DETAIL FOR PENETRATIONS WITH FIRE/SMOKE SEPARATION**

**SECURITY BAR DETAIL FOR DUCTS WITHOUT FIRE DAMPERS**



**2 E/A REVISIONS - MAIN FLOOR PLAN**  
M4.4 1:100



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REGINA, SASKATCHEWAN**

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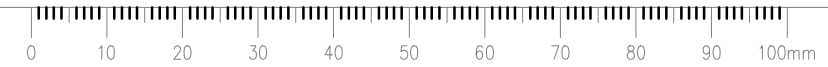
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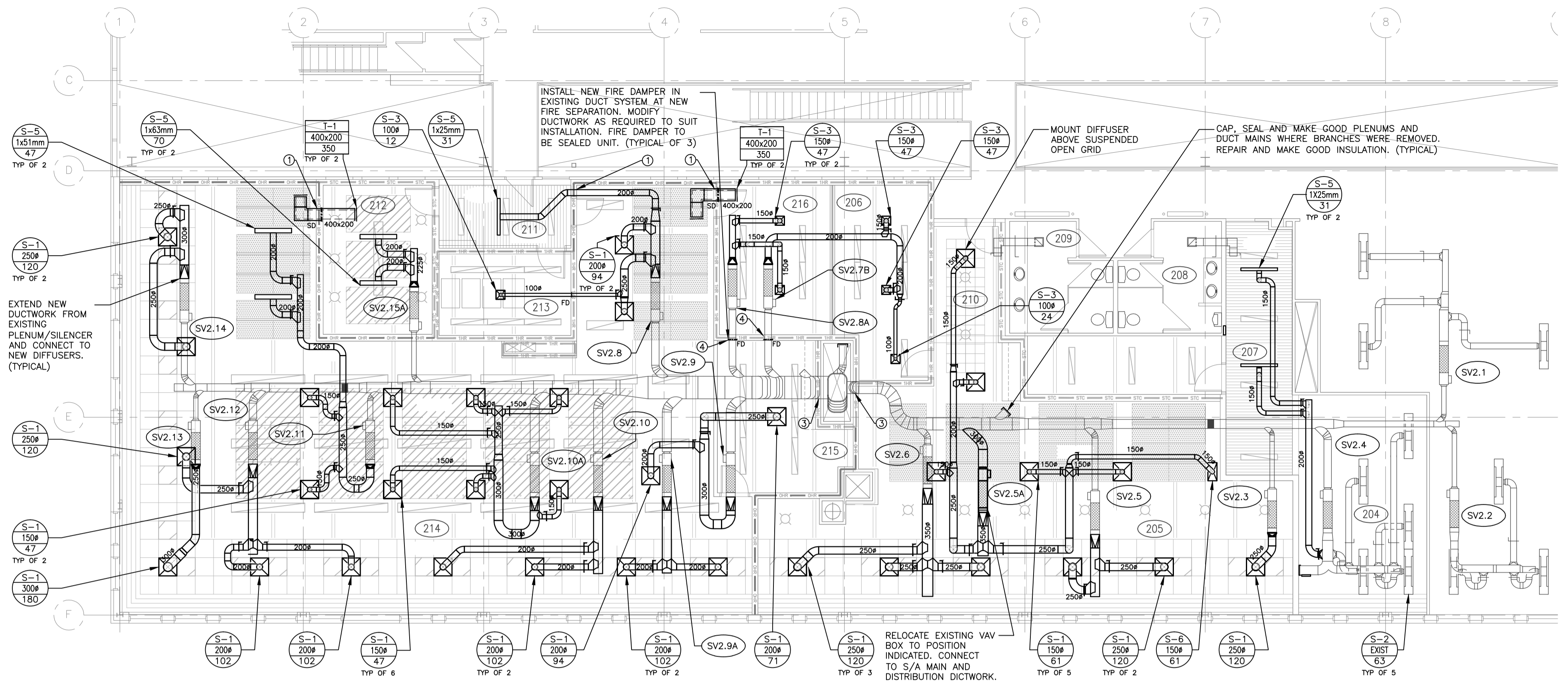
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**MAIN FLOOR PLAN  
VENTILATION REVISIONS**

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13/2015	M4.4	0

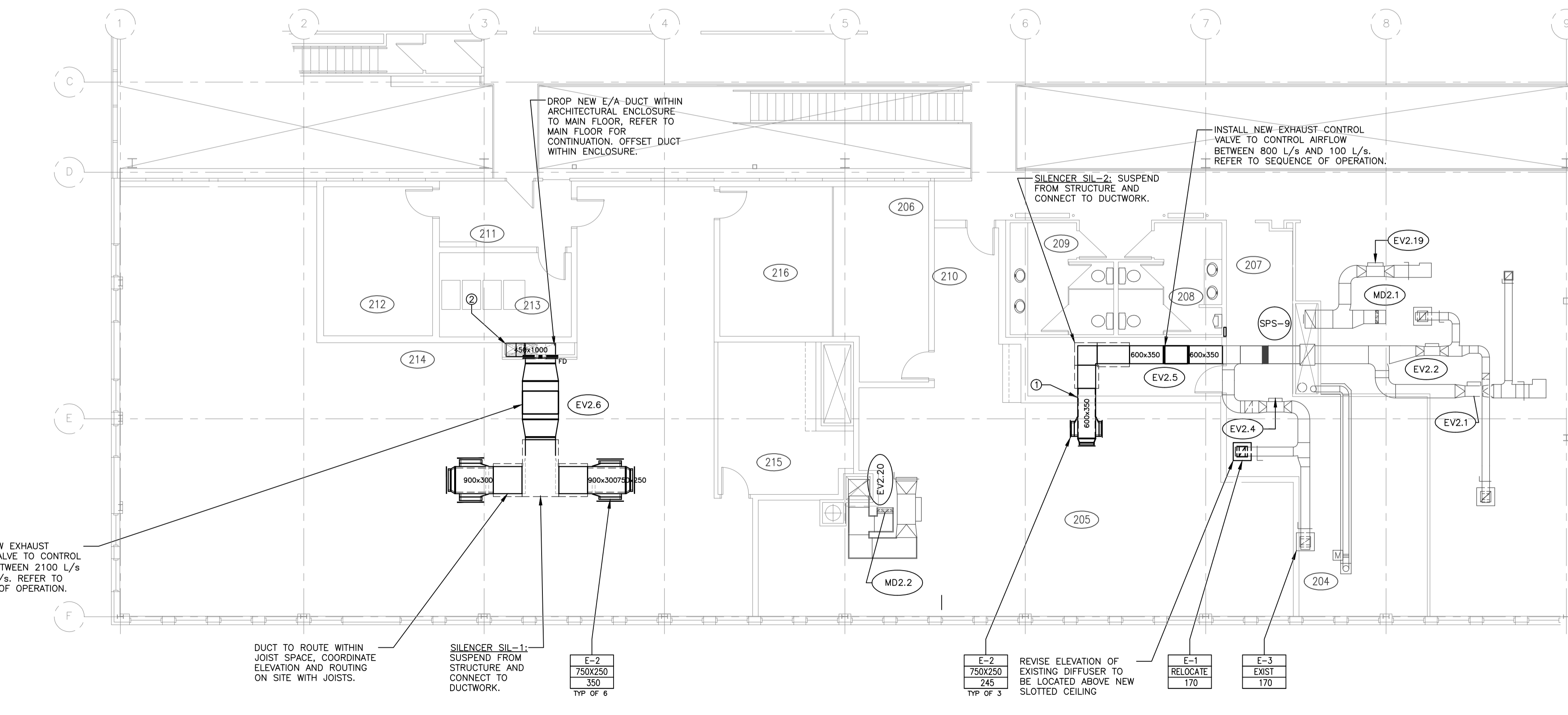






1 S/A REVISIONS – SECOND FLOOR PLAN  
M4.5 1:100

- KEYNOTES**
- DUCT PENETRATING SECURE WALL TO BE COMPLETE WITH SECURITY BARS, REFER TO APPROPRIATE DETAIL.
  - DUCT RISING WITHIN SHAFT TO SECURE SPACE TO BE COMPLETE WITH SECURITY BARS AT FLOOR, REFER TO APPROPRIATE DETAIL.
  - EXISTING DUCT PENETRATING SECURE WALL TO BE MODIFIED AS REQUIRED TO INSTALL SECURITY BARS, REFER TO APPROPRIATE DETAIL.
  - EXISTING DUCT PENETRATING SECURE WALL TO BE MODIFIED AS REQUIRED TO INSTALL SECURITY BARS AND FIRE OR FIRE/SMOKE DAMPER, REFER TO APPROPRIATE DETAIL.



2 E/A REVISIONS – SECOND FLOOR PLAN  
M4.5 1:100

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**SECOND FLOOR PLAN**  
**VENTILATION REVISIONS**

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