

HEATING & COOLING LEGEND	
—HWS—	HEATING WATER SUPPLY
—HWR—	HEATING WATER RETURN
—CHWS—	CHILLED WATER SUPPLY
—CHWR—	CHILLED WATER RETURN
—/—/—	STEAM SUPPLY
—□—	FLOAT & THERMOSTAT TRAP ASSEMBLY
—□—	TRAP ASSEMBLY
⊙	THERMOSTAT/TEMPERATURE SENSOR
⊕	HUMIDISTAT/HUMIDITY SENSOR
⊗	WALL MOUNTED SPEED CONTROLLER
⊖	AUTOMATIC AIR VENT
⊙	MANUAL VENT
⊖	FLOAT VENT

LINEWORK DESIGNATION	
—	NEW WORK (PIPING AND DUCTWORK)
—	EXIST. WORK TO REMAIN
—	EXIST. DUCTWORK TO BE REMOVED
—	EXISTING PIPING TO BE REMOVED
○	EXIST. SPRINKLER HEAD TO REMAIN
⊙	EXIST. SPRINKLER HEAD TO BE REMOVED

FIRE PROTECTION LEGEND	
—F—	FIRE LINE
—SP—	SPRINKLER LINE
—PREACTION-SP—	PREACTION SPRINKLER LINE
—FHC—	FIRE HOSE CABINET
○	TYPE A : UPRIGHT SPRINKLER HEAD
●	TYPE C: PENDENT SPRINKLER HEAD
⊙	TYPE D: RECESSED SPRINKLER HEAD
▽	TYPE F: SIDEWALL SPRINKLER HEAD

- GENERAL NOTES:**
- THESE DRAWINGS SHALL NOT BE USED AS INDICATION OF AS-FOUND STATUS FOR AREAS OUTSIDE SCOPE OF THIS WORK. DISTRIBUTION SHOWN IS FOR INFORMATION ONLY.
 - THESE DRAWINGS SHOW APPROXIMATE LOCATION OF MECHANICAL EQUIPMENT & ASSOCIATE COMPONENTS. EXACT LOCATION SHALL BE VERIFIED ON SITE BY CONTRACTOR DURING CONSTRUCTION.
 - CONTRACTOR SHALL VISIT THE SITE DURING TENDER PERIOD TO VERIFY EXISTING CONDITIONS. REPORT ANY DISCREPANCIES TO DEPARTMENT REPRESENTATIVES.
 - WHERE PIPES PENETRATE THE WALLS OR FLOORS, THE OPENINGS SHALL BE TO ACCOMMODATE REQUIRED RATING.
 - PRIOR TO CUTTING/DRILLING ANY EXISTING WALL/SLAB MECHANICAL CONTRACTOR SHALL SCAN OR X-RAY AREA.

VENTILATION LEGEND	
⊗	SUPPLY AIR DUCT
⊙	RETURN OR EXHAUST AIR DUCT
⊙	DENOTES - SUPPLY 105 cfm THRU TYPE 'A' DIFFUSER c/w 250 NECK
⊙	DENOTES - SUPPLY 105 cfm THRU 450x250 TYPE 'B' GRILLE
⊙	DENOTES - RETURN OR EXHAUST 105 cfm THRU 450x250 TYPE 'C' GRILLE
⊙	SQUARE S/A DIFFUSER
⊙	V.A.V. BOX C/W ATTENUATOR
⊙	V.A.V. BOX C/W ATTENUATOR & REHEAT COIL
⊙	FAN DESIGNATIONS
⊙	AIR HANDLING UNIT
⊙	ACOUSTIC DUCT LINING
⊙	TURNING VANES
⊙	FLEXIBLE DUCT
⊙	ACCESS DOOR
⊙	TAKE-OFF WITH VOLUME DAMPER
⊙	FLEXIBLE CONNECTION
⊙	FIRE OR SMOKE DAMPER
⊙	VOLUME DAMPER
⊙	BACKDRAFT DAMPER
⊙	MOTORIZED DAMPER
⊙	SPLITTER DAMPER
⊙	A - DENOTES VAV UNIT TYPE A - REFER TO SPECIFICATION
⊙	50 - DENOTES AIR QUANTITY - IN 1/s MINIMUM
⊙	250 - DENOTES AIR QUANTITY - IN 1/s MAXIMUM
⊙	100 - DENOTES AIR QUANTITY - IN 1/s
⊙	E - DENOTES TYPE OF GRILLE OR DIFFUSER - REFER TO SPECIFICATION
⊙	200x150 - DENOTES SIZE OF GRILLE OR DIFFUSER NECK DIAMETER - (mm)
⊙	RH - DENOTES REHEAT COIL - REFER TO SPECIFICATION
⊙	1 - DENOTES REHEAT COIL NUMBER

VALVES & SPECIALTIES LEGEND	
⊙	GATE VALVE
⊙	GLOBE VALVE
⊙	BALL VALVE
⊙	SUPERVISED VALVE
⊙	COMBINATION BALANCE & SHUT-OFF VALVE
⊙	CONTROL VALVE
⊙	SOLENOID VALVE
⊙	MIXING OR DIVERTER VALVE (3-WAY)
⊙	BUTTERFLY VALVE
⊙	CHECK VALVE
⊙	BASKET STRAINER
⊙	'Y' STRAINER
⊙	BACK WATER VALVE
⊙	BACK FLOW PREVENTER ASSEMBLY
⊙	FLOW SWITCH
⊙	PRESSURE SWITCH UNION
⊙	PET COCK
⊙	THERMOMETER
⊙	PRESSURE GAUGE
⊙	UNIT HEATER
⊙	WALL FIN CONVECTOR
⊙	UNINSULATED PIPE (IN SECTION)
⊙	INSULATED PIPE (IN SECTION)

PLUMBING LEGEND	
—	EXPOSED SANITARY DRAIN
—	BURIED SANITARY DRAIN
—	SANITARY VENT
—	DOMESTIC COLD WATER
—	DOMESTIC HOT WATER
—	DOMESTIC HOT WATER RECIRC.
—CA—	COMPRESSED AIR LINE
—C.O.—	CLEANOUT PLUG
—C.O.—	FLOOR CLEANOUT
—J—	PLUMBING TRAP
⊙	FLOOR DRAIN
⊙	HUB DRAIN

DRAWING LIST		
DWG NO.	DRAWING NAME	SCALE
M-100	MECHANICAL LEGENDS, SCHEDULES AND DRAWING LIST	N.T.S.
M-200	PARTIAL GROUND & PARTIAL SECOND FLOOR PLANS - PLUMBING & DRAINAGE	1:100
M-300	SCHEMATIC AND DETAILS - FIRE PROTECTION, PLUMBING & DRAINAGE	NTS
M-310	GROUND FLOOR PLAN - FIRE PROTECTION, PLUMBING & DRAINAGE	1:100
M-320	SECOND FLOOR PLAN - FIRE PROTECTION, PLUMBING & DRAINAGE	1:100
M-410D	GROUND FLOOR PLAN - HVAC DUCTWORK - EXISTING	1:100
M-420D	SECOND FLOOR PLAN - HVAC DUCTWORK - DEMOLITION	1:100
M-420	SECOND FLOOR PLAN - HVAC DUCTWORK	1:100
M-430	THIRD FLOOR PLAN - MECHANICAL ROOM - MECHANICAL	1:100
M-520D	SECOND FLOOR PLAN - HVAC PIPING - DEMOLITION	1:100
M-520	SECOND FLOOR PLAN - HVAC PIPING	1:100
M-600	MECHANICAL SECTIONS	1:50
M-801	MECHANICAL DETAILS - SHEET 1	N.T.S.
M-802	MECHANICAL DETAILS - SHEET 2	N.T.S.
M-803	MECHANICAL DETAILS - SHEET 3	N.T.S.
M-804	MECHANICAL DETAILS - SHEET 4	N.T.S.
M-805	MECHANICAL DETAILS - SHEET 5	N.T.S.

AIR HANDLING UNIT SCHEDULE																			
AH NO.24N	LOCATION SERVED: LIBRARY																		
FANS	L/S	F. sp(Pa)	V/ph	kW	BHP	RPM	CONTROL	TYPE	SIZE(mm)	BLADE TYPE /CLASS	REMARKS								
SF-24N	566.3.4	497.6	575/3	11.18	10.73	1750	VFD	DWDI	600	AIRFOIL/2									
TAG NO.	SIZE (mmxmm)	Fins/mm	CAPACITY(kW)		ROWS	Air PD Pa	Face Vel. M/SEC	ENTERING AIR TEMPERATURE		LEAVING AIR TEMPERATURE		ENTERING FLUID TEMPERATURE		LEAVING FLUID TEMPERATURE					
CC-24N	1066.8x2209.8	0.393	96	140	5	27.46	1.49	26.6	19.44	12.77	12.22	6.66	12.22						
PHC-24N	1066.8x2133.6	0.472	151.6	1	1	141.8	2.54	10	—	31.9	—	82.2	71.2						
TAG NO.	SIZE	L/S	S/A TEMP. °C	STEAM LOAD kg/hr	STEAM PRESSURE	SPACE TEMP. °C	SPACE HUMIDITY %	ABSORPTION DIST. mm											
H-1	708	13	16	ATM	22	30	280												
BAND	1	2	3	4	5	6	7	8	REMARKS										
RADIATED	82	84	81	71	65	56	40	31											
UNIT DISCHARGED	90	92	93	82	85	79	75	67											
UNIT RETURN	87	89	88	81	74	64	54	46											

VARIABLE AIR VOLUME BOX SCHEDULE					
SYMBOL	INLET SIZE (mm)	AIR FLOW(L/S) DESIGN RANGE		SIZE HxW (MM)	REMARKS
		MIN.	MAX.		
A	100	47	80	305x203	1,2,3
B	150	71	177	305x203	1,2,3
C	200	94	283	305x254	1,2,3
D	250	118	495	356x318	1,2,3
E	300	142	708	406x381	1,2,3
F	350	165	1061	508x445	1,2,3
G	400	189	1415	610x457	1,2,3

REMARKS:

- ALL VAV BOXES SHALL BE COMPLETE WITH A MINIMUM OF 1000 mm ATTENUATOR.
- VAV DDC CONTROLS SHALL BE PROVIDED BY THE CONTROLS CONTRACTOR FOR INSTALLATION BY THE VAV BOX MANUFACTURER.
- ALL BOXES SHALL BE EQUIPPED WITH TEMPERATURE SENSORS AT THE OUTLET OF THE BOX AND SHALL HAVE THE ABILITY TO COMMUNICATE THIS TEMPERATURE WITH THE BAS.

ELECTRIC HUMIDIFIER SCHEDULE						
TAG. NO.	IUNIT NO.	LOAD (kg/hr)	POWER (kW)	V/PH	AMPS	REMARKS
EH-1	AHU-24N	18	18	600/3	17	

GRILLE AND DIFFUSER SCHEDULE									
Symbol	Type	Border	Fastening	Damper	Finish Colour	Size	No. of Slots	Specialty	Comments
A	SUPPLY DIFFUSER	NOTE 2	NOTE 4	N/A	WHITE	NOTE 1	-	-	SQUARE PLAQUE
B	RETURN DIFFUSER	NOTE 2	NOTE 4	N/A	WHITE	NOTE 1	-	-	PERFORATED

REMARKS:

- REFER TO DRAWING FOR SIZE.
- FOR DRY WALL APPLICATION BORDER FRAME TYPE SF, FOR LAY-IN TILE APPLICATION BORDER FRAME TYPE LT.
- PROVIDE ALUMINUM PLASTER FRAME FOR DRYWALL APPLICATION INSTALLATION. REFER TO MECHANICAL AND ARCHITECTURAL DRAWINGS.
- FASTENING AS PER ARCHITECTURAL CEILING PLAN.

PUMP SCHEDULE											
TAG NO.	SERVICE	LOCATION	L/S	HEAD kPa	MOTOR			EFFIC. %	TYPE	SIZE	REMARKS
					V/PH	BHP	kW	RPM			
P-6NH	HEATING COIL	MECHANICAL ROOM	3.28	95.54	575/3	—	1.12	1800	60.34	IN-LINE	2x2x6
P-6NC	COOLING COIL	MECHANICAL ROOM	6.06	95.54	575/3	—	1.49	1800	52.57	BASE MOUNTED	3x2x6

REMARKS:

- NEW PUMP
- EXISTING PUMP TO BE REPLACE.

Public Works and Government Services Canada
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12412

3	ISSUED FOR BID	09 DEC 2013
2	ISSUED FOR 95% SUBMISSION	12 NOV 2013
1	ISSUED FOR 75% SUBMISSION	30 APR 2013

revision: _____ date: _____

Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

NORTH: STAMP:

A Detail No.
B No. du détail
C drawing no. - where detail required
C dessin no. - où détail exigé

project title
titre du projet
BURLINGTON ONTARIO
CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

drawing title
titre du dessin
MECHANICAL LEGENDS, SCHEDULES AND DRAWING LIST

drawn by
dessiné par AP

designed by
conçu par MG

approved by
approuvé par HK

bid offre project manager
administrateur de projets

project date
date du projet
R.061475.001

project no.
no. du projet
M-100

revision	description	date
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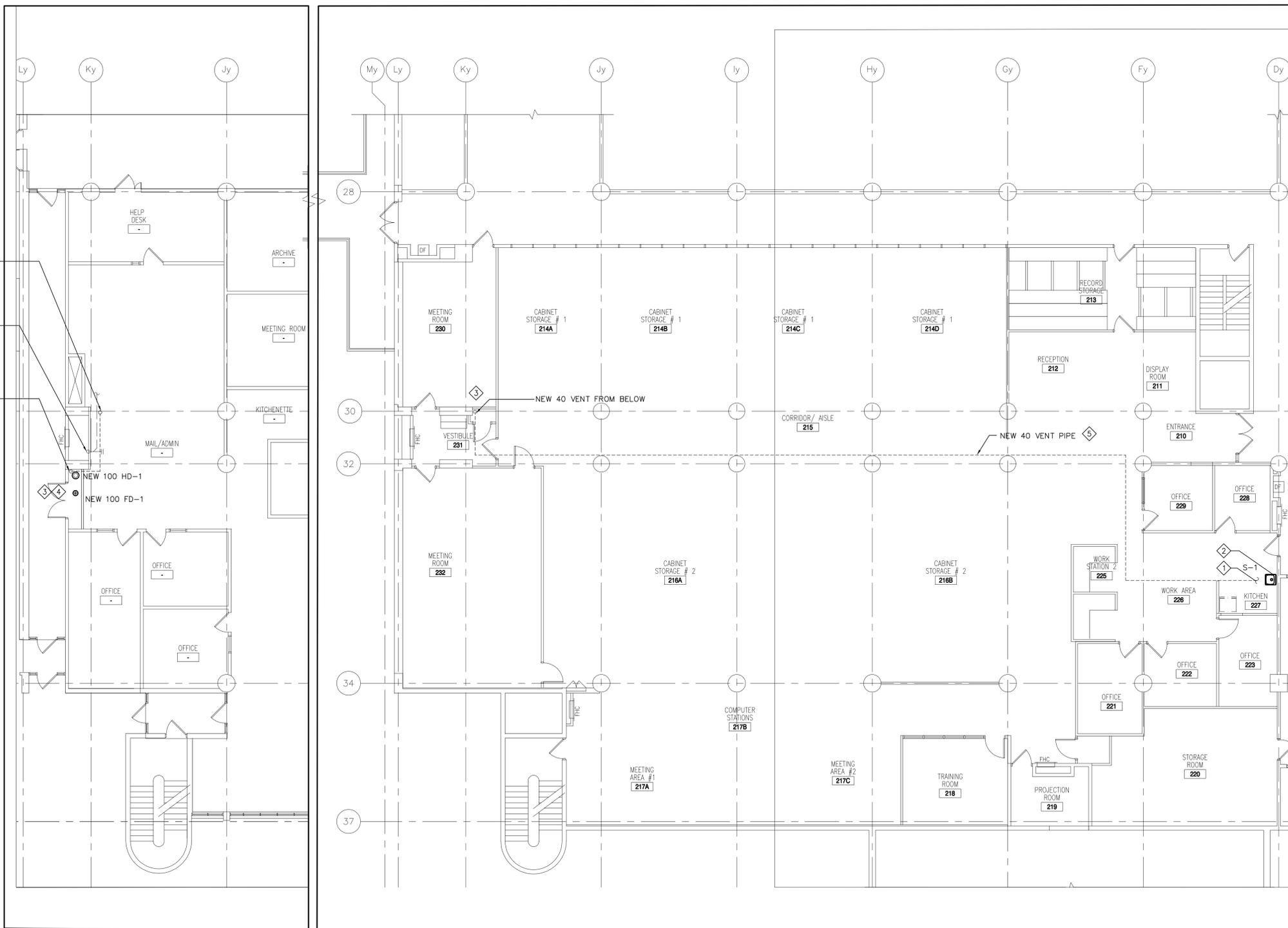
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CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

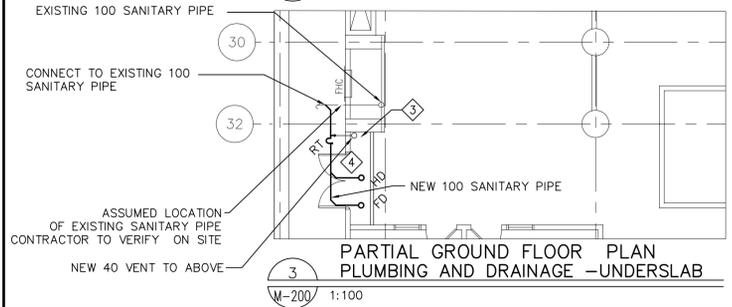
drawing title / titre du dessin
PARTIAL GROUND & SECOND FLOOR PLANS - PLUMBING & DRAINAGE

drawn by / dessiné par	IV
designed by / conçu par	MG
approved by / approuvé par	HK
bid / offre	project manager / administrateur de projets
project date / date du projet	
project no. / no. du projet	R.061475.001
drawing no. / dessin no.	M-200



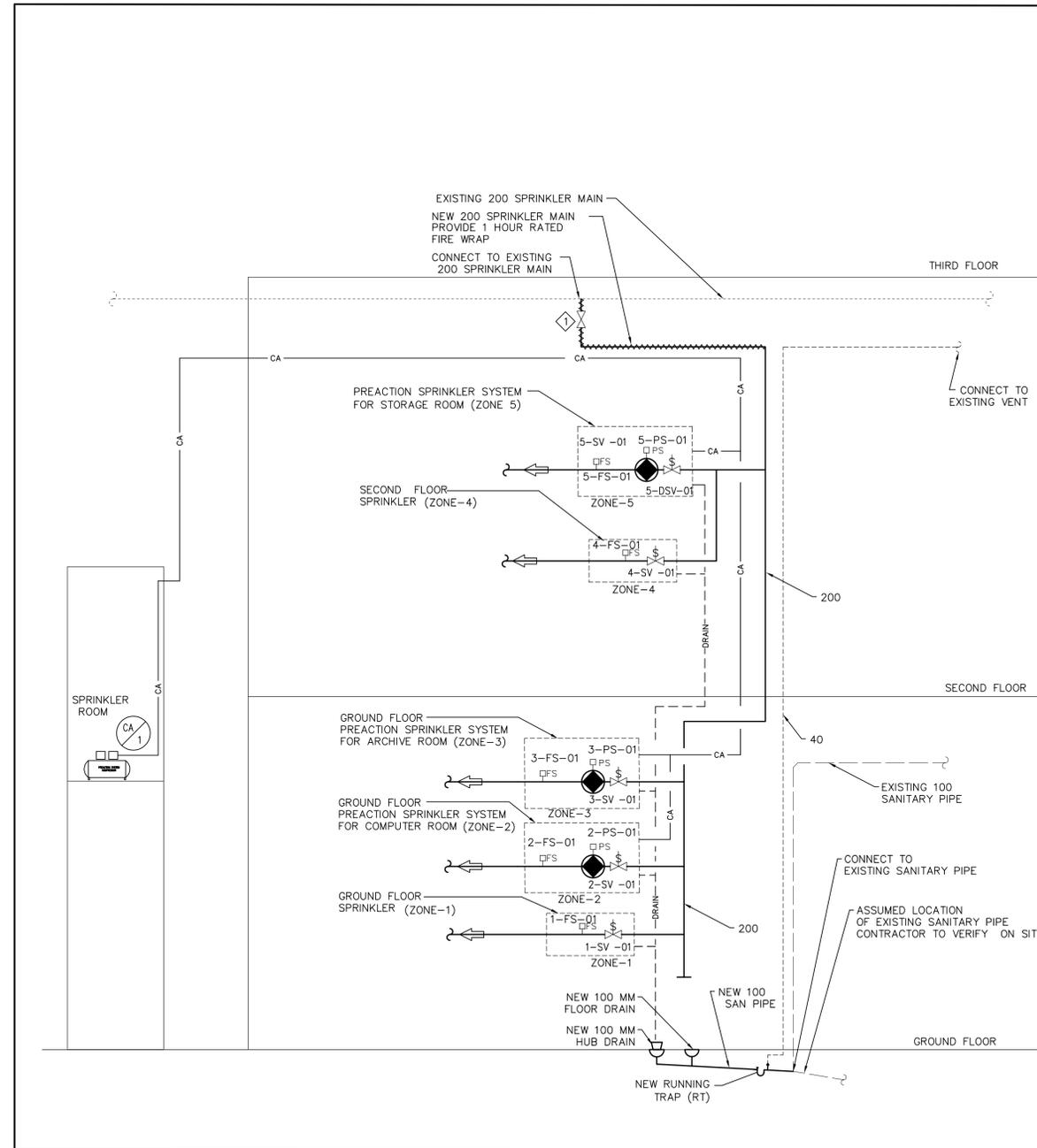
1 PARTIAL GROUND FLOOR PLAN PLUMBING AND DRAINAGE
M-200 1:100

2 PARTIAL SECOND FLOOR PLAN PLUMBING AND DRAINAGE
M-200 1:100



CONSTRUCTION NOTES:

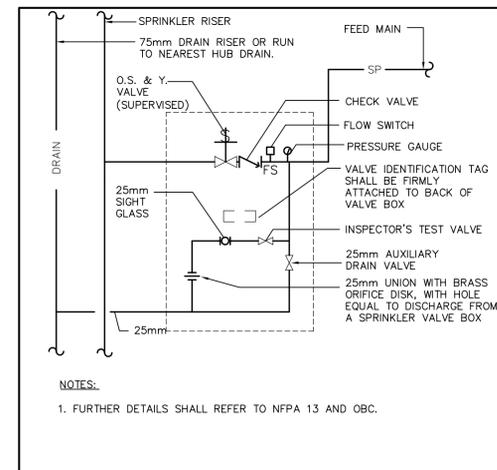
- 1. CONNECT TO EXISTING VENT SERVING KITCHEN SINK
- 2. REMOVE EXISTING KITCHEN SINK WITH IT'S ASSOCIATED PIPING. PROVIDE NEW SINK AND RECONNECT TO EXISTING DRAIN, VENT & WATER PIPE. PROVIDE NEW ISOLATING VALVE FOR WATER PIPE & TAIL PIECE FOR THE SINK.
- 3. CONCRETE FLOOR TO BE SCANNED & X-RAYED PRIOR TO ANY CORE-DRILLING. DO NOT CUT ANY REBAR. DO NOT CORE DRILL WITHOUT PRIOR APPROVAL FROM DEPARTMENTAL REPRESENTATIVE.
- 4. CUT FLOOR TO INSTALL NEW PIPING. PATCH FLOOR TO MATCH EXISTING.
- 5. CO-ORDINATE INSTALLATION WITH EXISTING & NEW DUCTWORK SPRINKLER LINE REFER TO M-320 & M-420.



1 SPRINKLER PIPING SCHEMATIC
M-300 N.T.S.

CONSTRUCTION NOTES:

- ◇ PROVIDE TEMPORARY ISOLATING VALVE TO ENSURE SPRINKLER COVERAGE REMAINS OPERATING IN THE REST OF THE BUILDING. REMOVE THE ISOLATING VALVE AFTER THE WORK IS COMPLETED.



- NOTES:**
- FURTHER DETAILS SHALL REFER TO NFPA 13 AND OBC.

2 SPRINKLER ZONE VALVE
M-300 N.T.S.

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1	ISSUED FOR BID	09 DEC 2013
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North arrow pointing North (N) and a professional engineer stamp for L. KHOE, dated Dec 9, 2013, Province of Ontario.

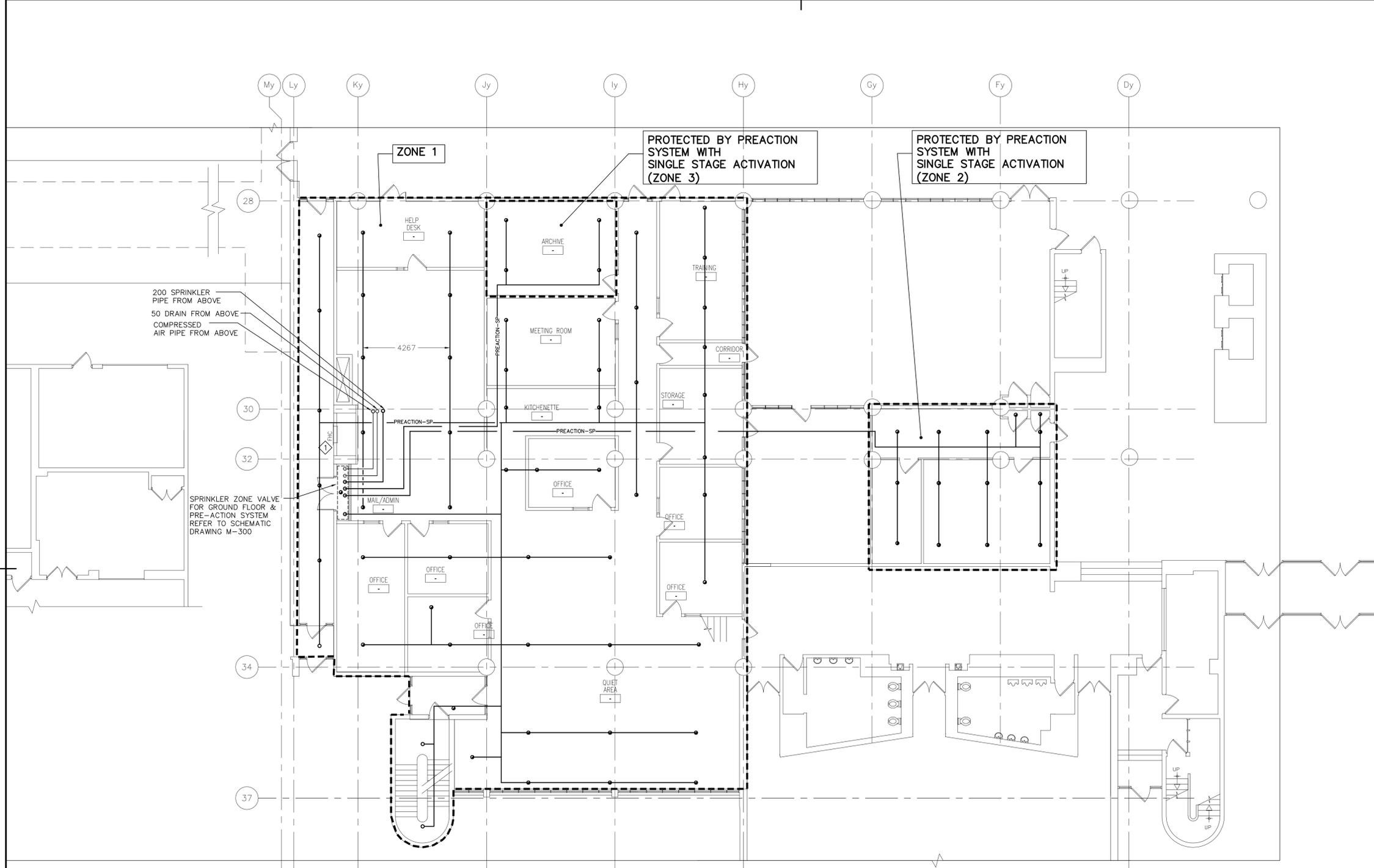
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project title / titre du projet
BURLINGTON ONTARIO
CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

drawing title / titre du dessin
SCHEMATIC & DETAILS- FIRE PROTECTION, PLUMBING & DRAINAGE

drawn by / dessiné par	IV
designed by / conçu par	MG
approved by / approuvé par	HK
bid / offre	project manager / administrateur de projets
project date / date du projet	
project no. / no. du projet	R.061475.001
drawing no. / dessiné no.	M-300



GENERAL NOTES:

1. LOCATION OF SPRINKLER HEADS SHALL BE STRICTLY COORDINATED WITH ARCHITECTURAL CEILING LAYOUT.
2. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF SPRINKLER HEADS IN CONJUNCTION WITH CEILING LIGHTS, DIFFUSER ETC.
3. DO NOT ROUTE ANY PIPING THROUGH ELECTRICAL SUBSTATION, ELEVATOR MACHINE ROOM, TELECOMMUNICATION ROOM OR ELECTRICAL CLOSETS UNLESS THOSE PIPES DIRECTLY SERVE THOSE ROOMS.
4. PROVIDE ADDITIONAL HEADS AS REQUIRED TO SUIT DUCT INSTALLATION AND CEILING MOUNTED EQUIPMENTS.
5. PROVIDE WIRE GUARDS IN ALL MECHANICAL ROOMS, TELECOMMUNICATION ROOMS, IT ROOMS, ELEVATOR MACHINE ROOMS AND WHERE SPRINKLER HEAD IS AT OR BELOW 2100 MM (8'3") FROM FLOOR.
6. PROVIDE DRAIN FOR SPRINKLER ZONE VALVE ASSEMBLY AS PER NFPA 13 . RUN DRAIN TO NEAREST HUB DRAINS.
7. CONCRETE FLOOR TO BE SCANNED & X-RAYED PRIOR TO ANY CORE-DRILLING. DO NOT CUT ANY REBAR. DO NOT CORE DRILL WITHOUT PRIOR APPROVAL FROM DEPARTMENTAL REPRESENTATIVE.
8. EXISTING MECHANICAL LAYOUT (DUCTWORK & PIPING) HAS BEEN TAKEN FROM ALL AVAILABLE INFORMATION AND SHALL NOT BE USED FOR AS-BUILT CONDITION. FOR DETAILS REFER TO DRAWING M-410D. SPRINKLER CONTRACTOR TO CHECK ON SITE AND ADJUST SPRINKLER PIPE LAYOUT TO AVOID INTERFERENCE.

CONSTRUCTION NOTES:

1. EXISTING FHC TO REMAIN.
2. COORDINATE LOCATION OF SPRINKLER PIPING WITH EXISTING HVAC SYSTEM. PIPE ROUTING SHOWN IS FOR INFORMATION ONLY.
3. FOR AREAS WITH CEILING PROVIDE TYPE D SPRINKLER HEADS (RECESSED/CONCEALED) THROUGHOUT.

THIS DRAWING MAY HAVE BEEN REDUCED.
CHECK SCALE BELOW TO DETERMINE REDUCTION.

SCALE 1:100

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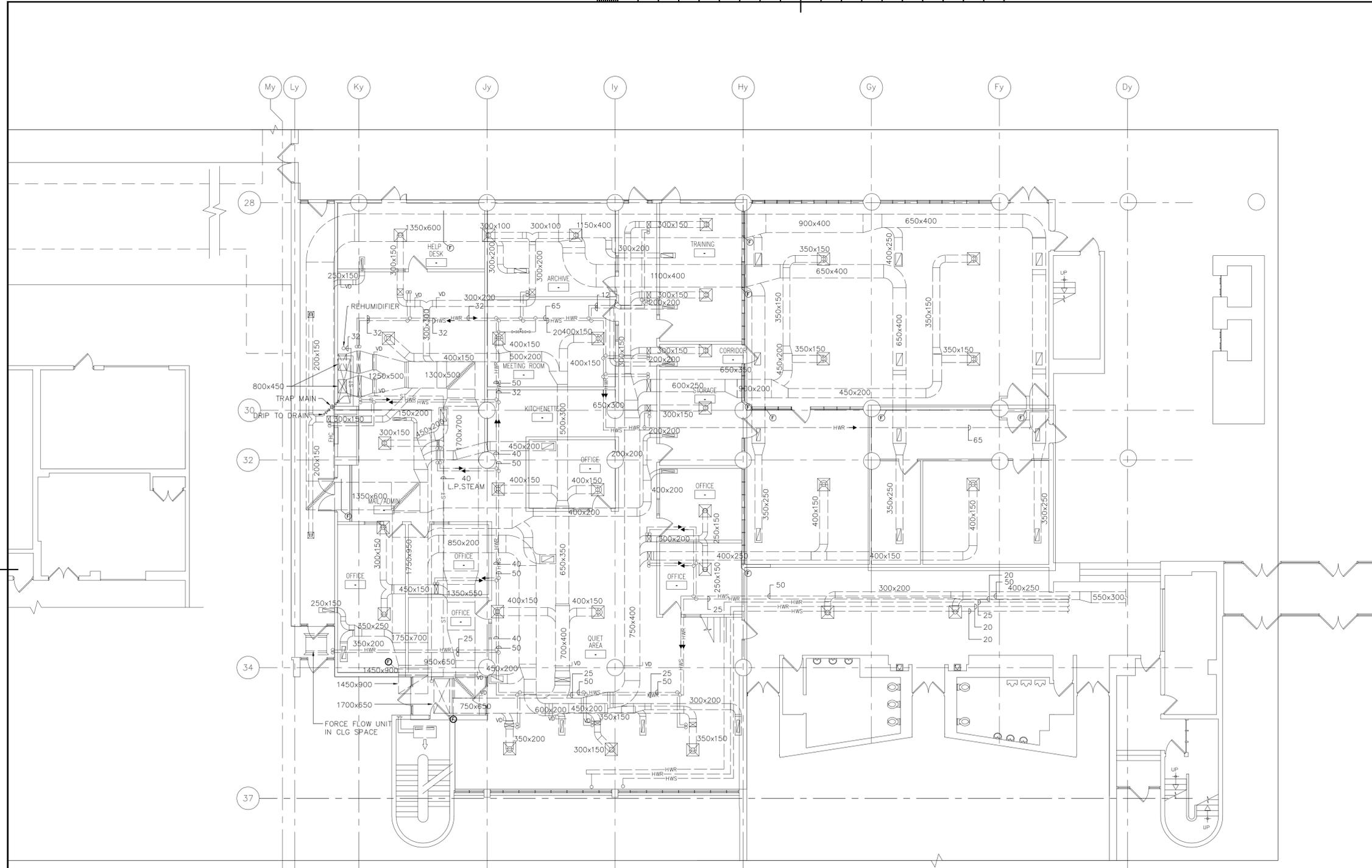
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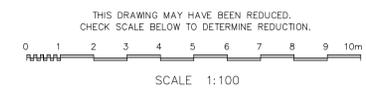
drawing title / titre du dessin
**GROUND FLOOR PLAN-
FIRE PROTECTION,
PLUMBING & DRAINAGE**

drawn by / dessiné par	IV
designed by / conçu par	MG
approved by / approuvé par	HK
bid / offre	project manager / administrateur de projets
project date / date du projet	
project no. / no. du projet	R.061475.001
drawing no. / dessiné no.	M-310



GENERAL NOTES:

1. EXISTING MECHANICAL LAYOUT (DUCTWORK & PIPING) HAS BEEN TAKEN FROM ALL AVAILABLE INFORMATION AND SHALL NOT BE USED FOR AS-BUILT CONDITION.



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BURLINGTON ONTARIO
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LIBRARY RENOVATION

drawing title / titre du dessin
GROUND FLOOR PLAN - HVAC DUCTWORK - EXISTING

drawn by / dessiné par **AP**

designed by / conçu par **MG**

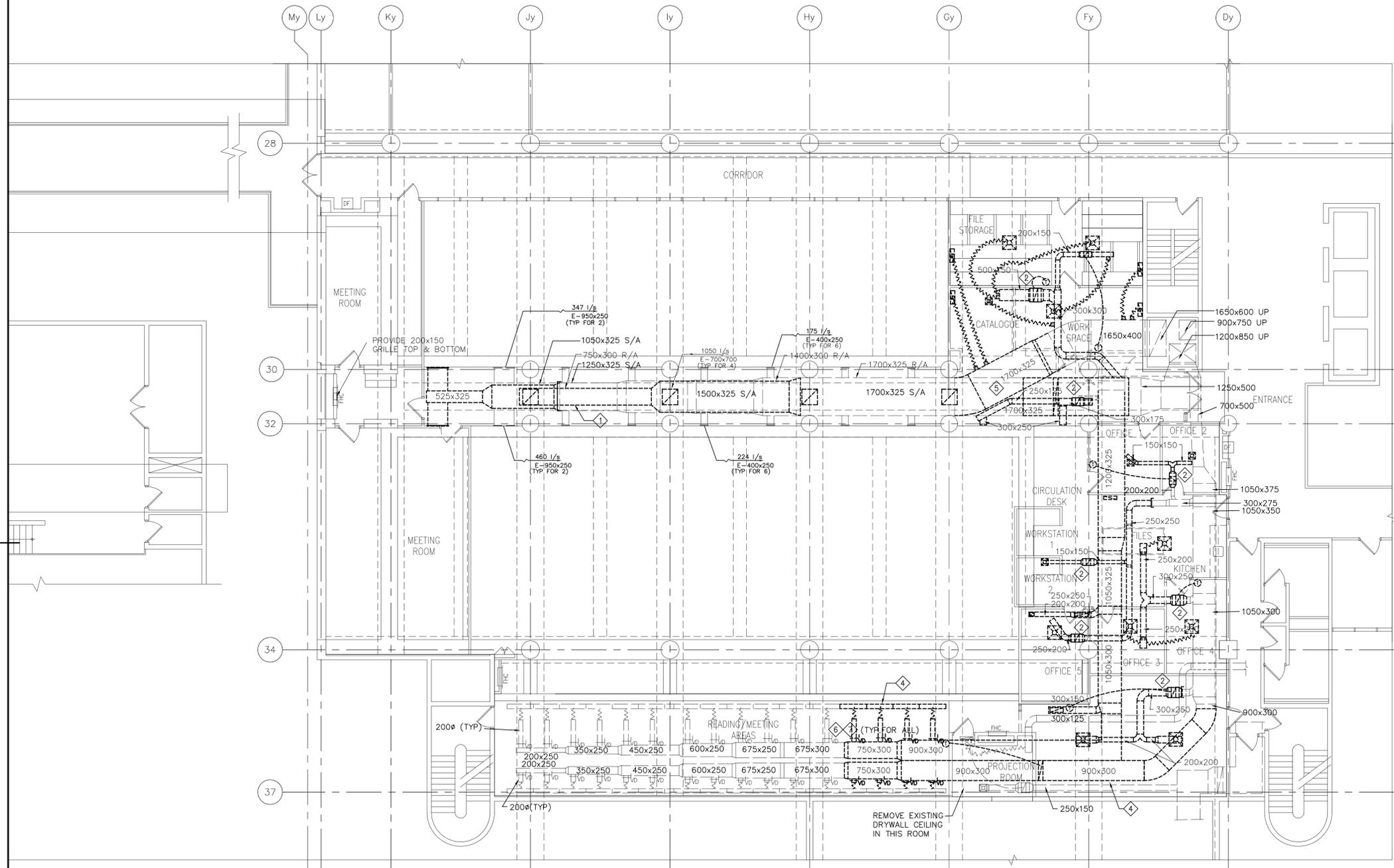
approved by / approuvé par **HK**

bid / offre project manager / administrateur de projets

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project no. / no. du projet
R.061475.001

drawing no. / dessiné no. **M-410D**

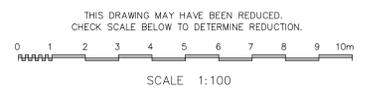


GENERAL NOTES

- MECHANICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ELECTRICAL AND ARCHITECTURAL DRAWINGS.

CONSTRUCTION NOTES

- REMOVE EXISTING R/A DUCTWORK AS INDICATED.
- REMOVE EXISTING S/A DUCTWORK c/w ASSOCIATED REHEAT COIL & DIFFUSER.
- REMOVE EXISTING S/A DUCTWORK AS INDICATED.
- REMOVE EXISTING S/A DIFFUSER & ASSOCIATED DUCTWORK.
- EXISTING S/A DUCTWORK TO REMAIN.
- CAP ALL UNUSED OPENINGS ON EXISTING DUCTWORK. BLANK SECTION SHALL BE AIR TIGHT. (TYPICAL)
- CAP BLANK-OFF WITH SHEET METAL AND SEAL. (TYPICAL)



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CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

drawing title / titre du dessin
**SECOND FLOOR PLAN-
HVAC DUCTWORK-
DEMOLITION**

drawn by / dessiné par AP

designed by / conçu par MG

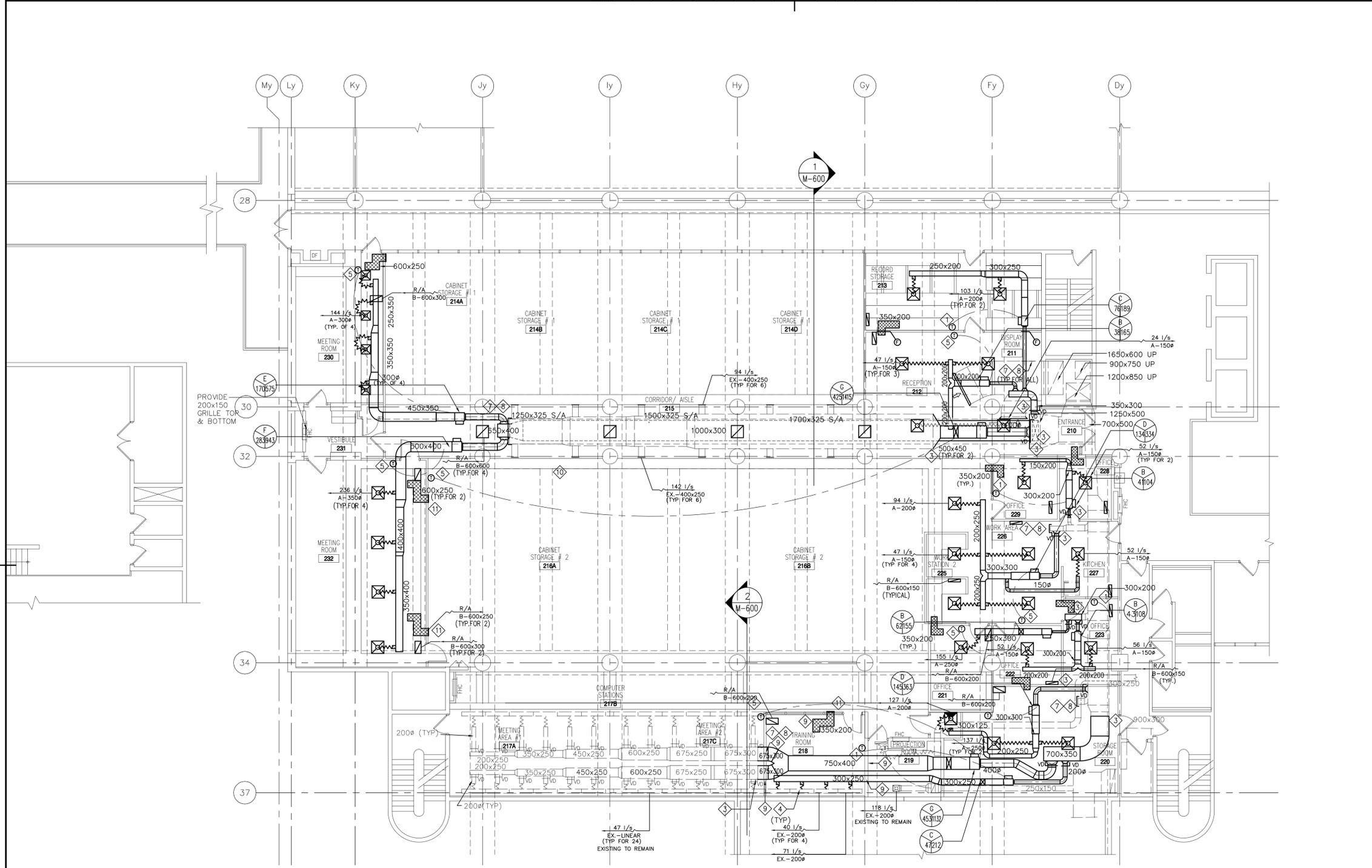
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project date / date du projet

project no. / no. du projet R.061475.001

drawing no. / dessiné no. M-420D



GENERAL NOTES

- MECHANICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ELECTRICAL AND ARCHITECTURAL DRAWINGS.

CONSTRUCTION NOTES

- CONNECT NEW THERMOSTAT TO NEW VAV BOX
- CONNECT NEW THERMOSTAT TO NEW REHEAT COIL
- CONNECT TO EXISTING
- RECONNECT EXISTING DIFFUSER TO NEW SA DUCTWORK WITH NEW 200# FLEX. SET EACH DIFFUSER TO 115cfm FLEX DUCT TO BE ACOUSTIC TYPE FLEX. MODIFIED EXISTING DIFFUSER TO ACCOMMODATE NEW WALL.
- NEW THERMOSTAT
- RESERVED
- CAP ALL UNUSED OPENINGS ON EXISTING DUCTWORK. BLANK SECTION SHALL BE AIR TIGHT.
- CAP BLANK-OFF WITH SHEET METAL AND SEAL. (TYPICAL)
- REFER TO DRAWING M-801 FOR DETAILS FOR WALL PENETRATION FOR PIPE AND DUCTWORK THROUGH WALLS ACOUSTIC.
- EXISTING S/A GRILLES TO REMAIN (TYPICAL FOR 14)
- EXPOSED TRANSFER DUCT OPENING TO OPEN ARE SHALL BE PROVIDED WITH PERFORATED R/A GRILLES

THIS DRAWING MAY HAVE BEEN REDUCED.
CHECK SCALE BELOW TO DETERMINE REDUCTION.

SCALE 1:100

consultant

Reich Petch ARCHITECTS

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2	ISSUED FOR 95% SUBMISSION	12 NOV 2013
1	ISSUED FOR 75% SUBMISSION	30 APR 2013
revision		date

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A	Detail No. No. du détail
B	drawing no. - where detail required dessin no. - où détail exigé
C	drawing no. - where detailed dessin no. - où détaillé

project title
titre du projet
BURLINGTON ONTARIO
CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD
LIBRARY RENOVATION

drawing title
titre du dessin
**SECOND FLOOR PLAN-
HVAC DUCTWORK**

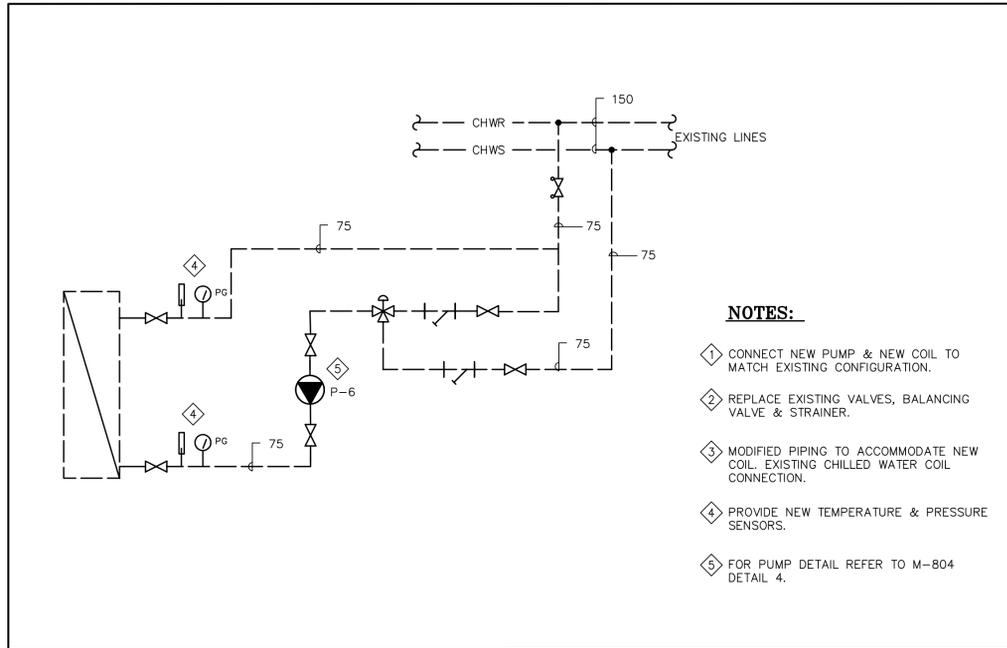
drawn by dessiné par	AP
designed by conçu par	MG
approved by approuvé par	HK

bid offer project manager
offre administrateur de projets

project date
date du projet

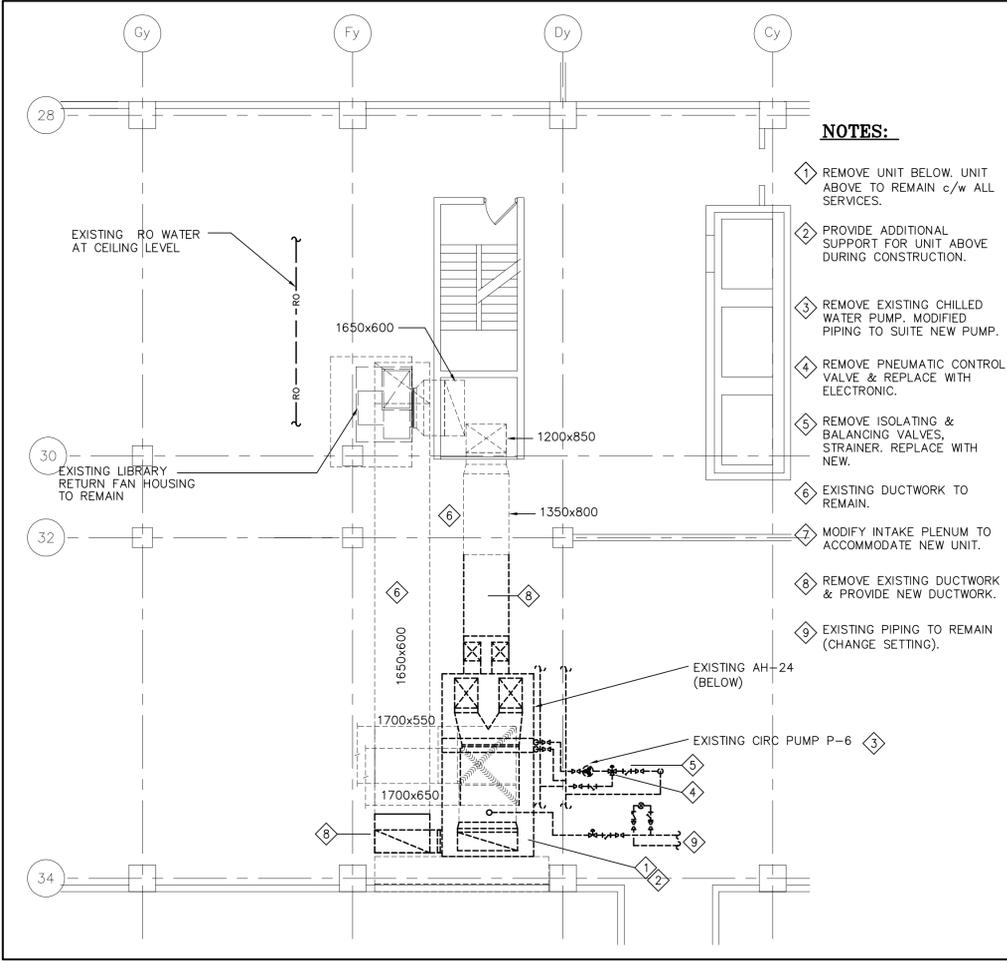
project no.
no. du projet
R.061475.001

drawing no.
dessiné no.
M-420



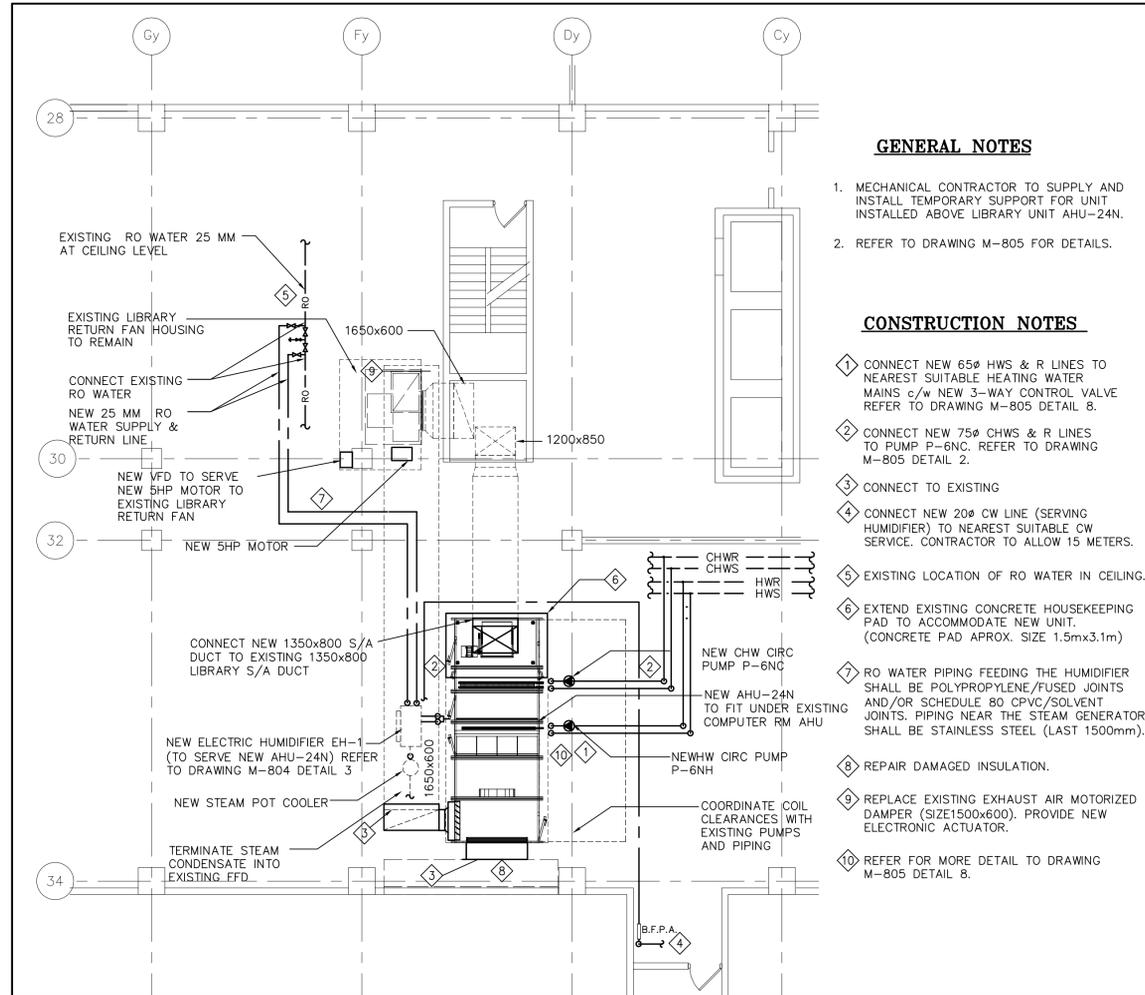
- NOTES:**
- CONNECT NEW PUMP & NEW COIL TO MATCH EXISTING CONFIGURATION.
 - REPLACE EXISTING VALVES, BALANCING VALVE & STRAINER.
 - MODIFIED PIPING TO ACCOMMODATE NEW COIL. EXISTING CHILLED WATER COIL CONNECTION.
 - PROVIDE NEW TEMPERATURE & PRESSURE SENSORS.
 - FOR PUMP DETAIL REFER TO M-804 DETAIL 4.

1 EXISTING CHILLED WATER COIL CONNECTION
M-430 NTS



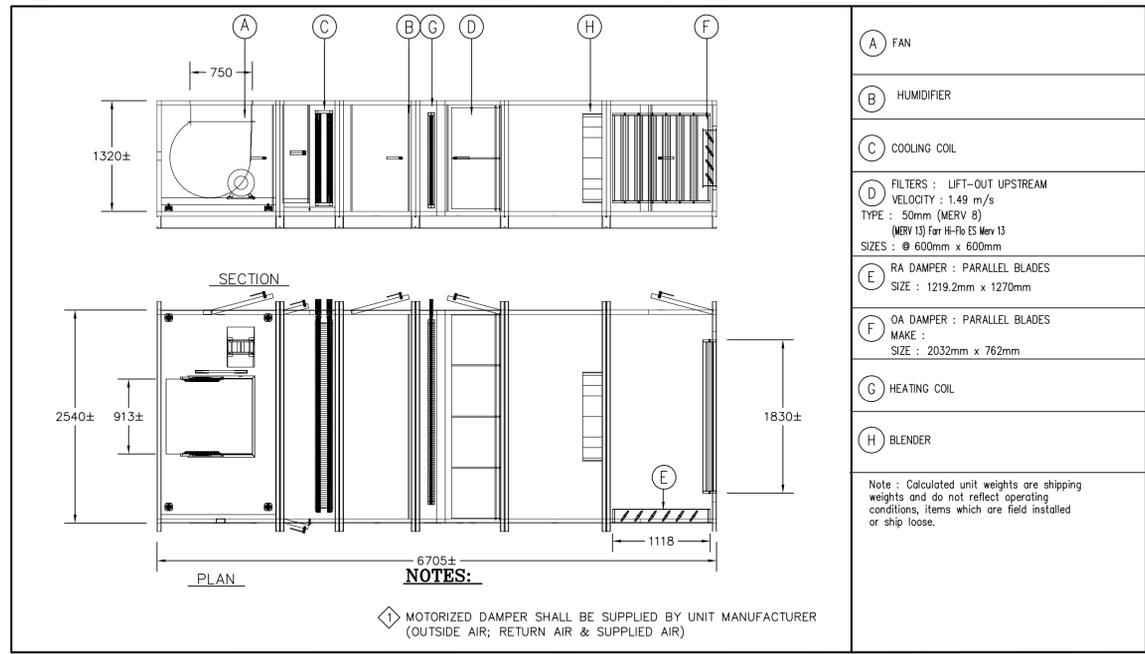
- NOTES:**
- REMOVE UNIT BELOW. UNIT ABOVE TO REMAIN c/w ALL SERVICES.
 - PROVIDE ADDITIONAL SUPPORT FOR UNIT ABOVE DURING CONSTRUCTION.
 - REMOVE EXISTING CHILLED WATER PUMP. MODIFIED PIPING TO SUITE NEW PUMP.
 - REMOVE PNEUMATIC CONTROL VALVE & REPLACE WITH ELECTRONIC.
 - REMOVE ISOLATING & BALANCING VALVES, STRAINER. REPLACE WITH NEW.
 - EXISTING DUCTWORK TO REMAIN.
 - MODIFY INTAKE PLENUM TO ACCOMMODATE NEW UNIT.
 - REMOVE EXISTING DUCTWORK & PROVIDE NEW DUCTWORK.
 - EXISTING PIPING TO REMAIN (CHANGE SETTING).

2 MECHANICAL ROOM - EXISTING & DEMOLITION LAYOUT
M-430 1:100



- GENERAL NOTES**
- MECHANICAL CONTRACTOR TO SUPPLY AND INSTALL TEMPORARY SUPPORT FOR UNIT INSTALLED ABOVE LIBRARY UNIT AHU-24N.
 - REFER TO DRAWING M-805 FOR DETAILS.
- CONSTRUCTION NOTES**
- CONNECT NEW 65Ø HWS & R LINES TO NEAREST SUITABLE HEATING WATER MAINS c/w NEW 3-WAY CONTROL VALVE. REFER TO DRAWING M-805 DETAIL 8.
 - CONNECT NEW 75Ø CHWS & R LINES TO PUMP P-6NC. REFER TO DRAWING M-805 DETAIL 2.
 - CONNECT TO EXISTING
 - CONNECT NEW 20Ø CW LINE (SERVING HUMIDIFIER) TO NEAREST SUITABLE CW SERVICE. CONTRACTOR TO ALLOW 15 METERS.
 - EXISTING LOCATION OF RO WATER IN CEILING.
 - EXTEND EXISTING CONCRETE HOUSEKEEPING PAD TO ACCOMMODATE NEW UNIT. (CONCRETE PAD APPROX. SIZE 1.5m x 3.1m)
 - RO WATER PIPING FEEDING THE HUMIDIFIER SHALL BE POLYPROPYLENE/FUSED JOINTS AND/OR SCHEDULE 80 CPVC/SOLVENT JOINTS. PIPING NEAR THE STEAM GENERATOR SHALL BE STAINLESS STEEL (LAST 1500mm).
 - REPAIR DAMAGED INSULATION.
 - REPLACE EXISTING EXHAUST AIR MOTORIZED DAMPER (SIZE 1500x600). PROVIDE NEW ELECTRONIC ACTUATOR.
 - REFER FOR MORE DETAIL TO DRAWING M-805 DETAIL 8.

3 MECHANICAL ROOM - NEW LAYOUT
M-430 1:100



- | | |
|-----|---|
| (A) | FAN |
| (B) | HUMIDIFIER |
| (C) | COOLING COIL |
| (D) | FILTERS : LIFT-OUT UPSTREAM
VELOCITY : 1.49 m/s
TYPE : 50mm (MERV 8)
MERV 13 Fan HI-Fo ES MerV 13
SIZES : Ø 600mm x 600mm |
| (E) | RA DAMPER : PARALLEL BLADES
SIZE : 1219.2mm x 1270mm |
| (F) | OA DAMPER : PARALLEL BLADES
MAKE :
SIZE : 2032mm x 762mm |
| (G) | HEATING COIL |
| (H) | BLENDER |
- Note: Calculated unit weights are shipping weights and do not reflect operating conditions, items which are field installed or ship loose.
- NOTES:**
- MOTORIZED DAMPER SHALL BE SUPPLIED BY UNIT MANUFACTURER (OUTSIDE AIR; RETURN AIR & SUPPLIED AIR)

4 NEW AHU-24N
M-430 NTS

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SCALE 1:100

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BURLINGTON ONTARIO
CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

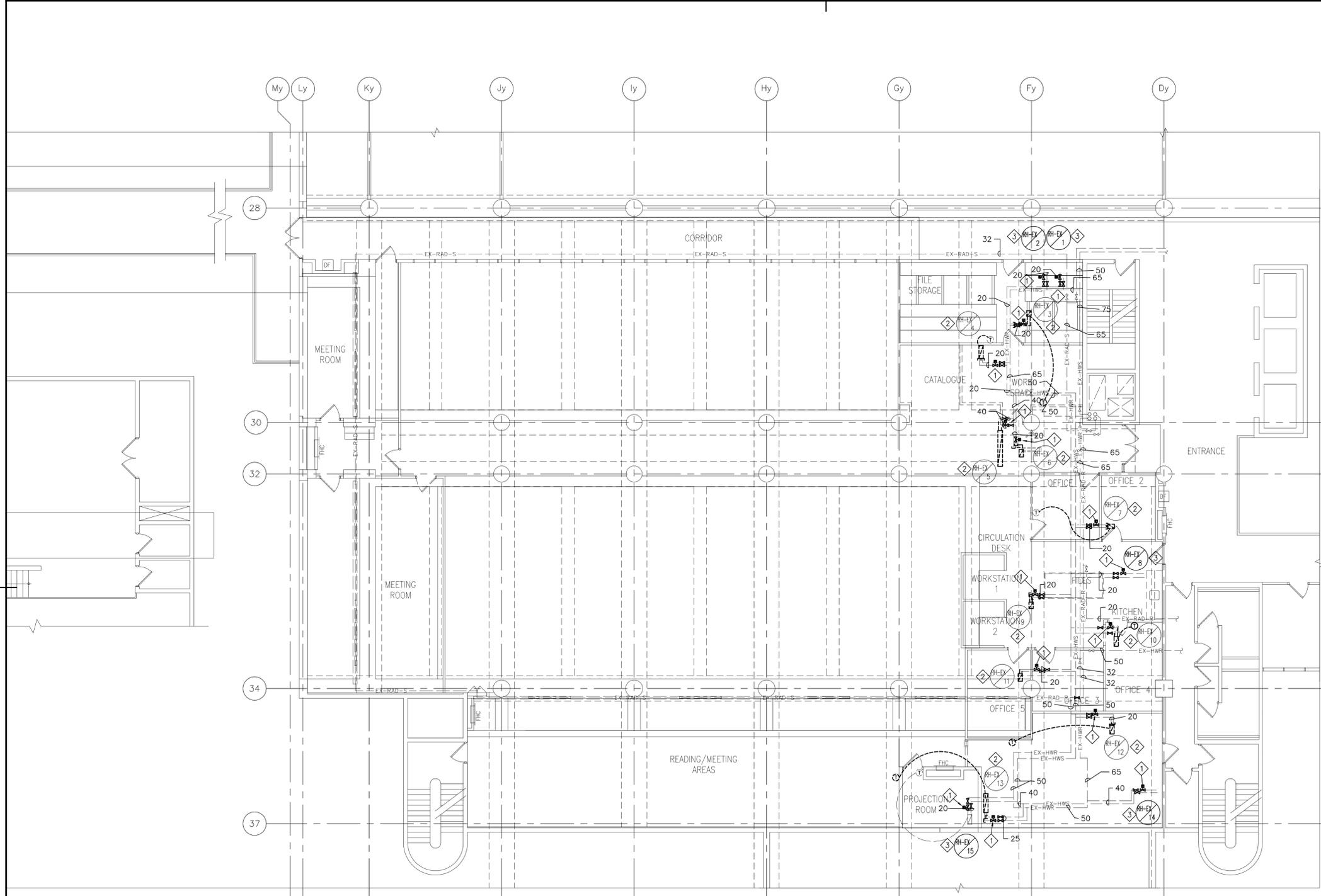
drawing title / titre du dessin
THIRD FLOOR PLAN- MECHANICAL ROOM- MECHANICAL

drawn by / dessiné par: AP
designed by / conçu par: MG
approved by / approuvé par: HK

bid / offre: project manager / administrateur de projets

project no. / no. du projet
R.061475.001

drawing no. / dessin no.: **M-430**



GENERAL NOTES

- 1. MECHANICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ELECTRICAL AND ARCHITECTURAL DRAWINGS.

CONSTRUCTION NOTES

- 1 REMOVE EXISTING PNEUMATIC CONTROL VALVE, ISOLATING & BALANCING VALVES.
- 2 REMOVE EXISTING REHEAT COIL
- 3 EXISTING REHEAT COIL TO REMAIN



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867 LAKESHORE ROAD

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drawing title / titre du dessin
**SECOND FLOOR PLAN-
HVAC PIPING-
DEMOLITION**

drawn by / dessiné par **AP**

designed by / conçu par **MG**

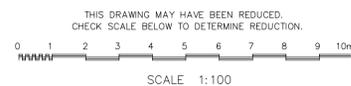
approved by / approuvé par **HK**

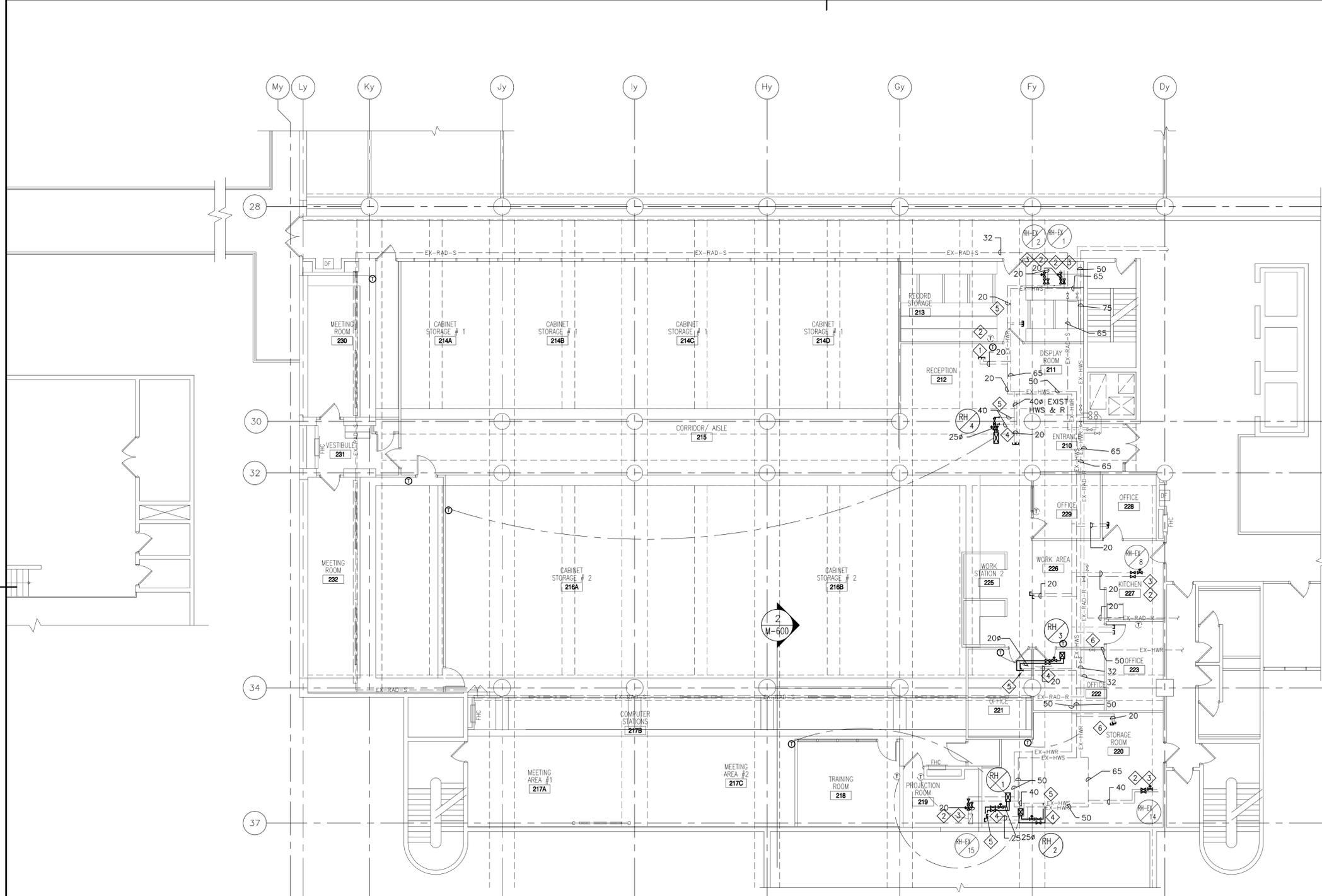
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project no. / no. du projet
R.061475.001

drawing no. / dessiné no. **M-520D**





GENERAL NOTES

- 1. MECHANICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ELECTRICAL AND ARCHITECTURAL DRAWINGS.

CONSTRUCTION NOTES

- ① CAP EXIST SERVICES
- ② RECONNECT NEW CONTROL VALVE TO EXISTING THERMOSTAT
- ③ NEW CONTROL VALVE INSTALLED ON EXISTING HWR LINE. SIZED TO MATCH EXISTING PIPE SIZE
- ④ NEW CONTROL VALVE c/w NEW HWR LINE
- ⑤ CONNECT NEW HW LINES TO EXISTING HW LINES
- ⑥ NEW VALVE INSTALLED ON EXISTING HWR LINE. SIZED TO MATCH EXISTING PIPE SIZE

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867 LAKESHORE ROAD

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drawing title / titre du dessin
**SECOND FLOOR PLAN-
HVAC PIPING**

drawn by / dessiné par **AP**

designed by / conçu par **MG**

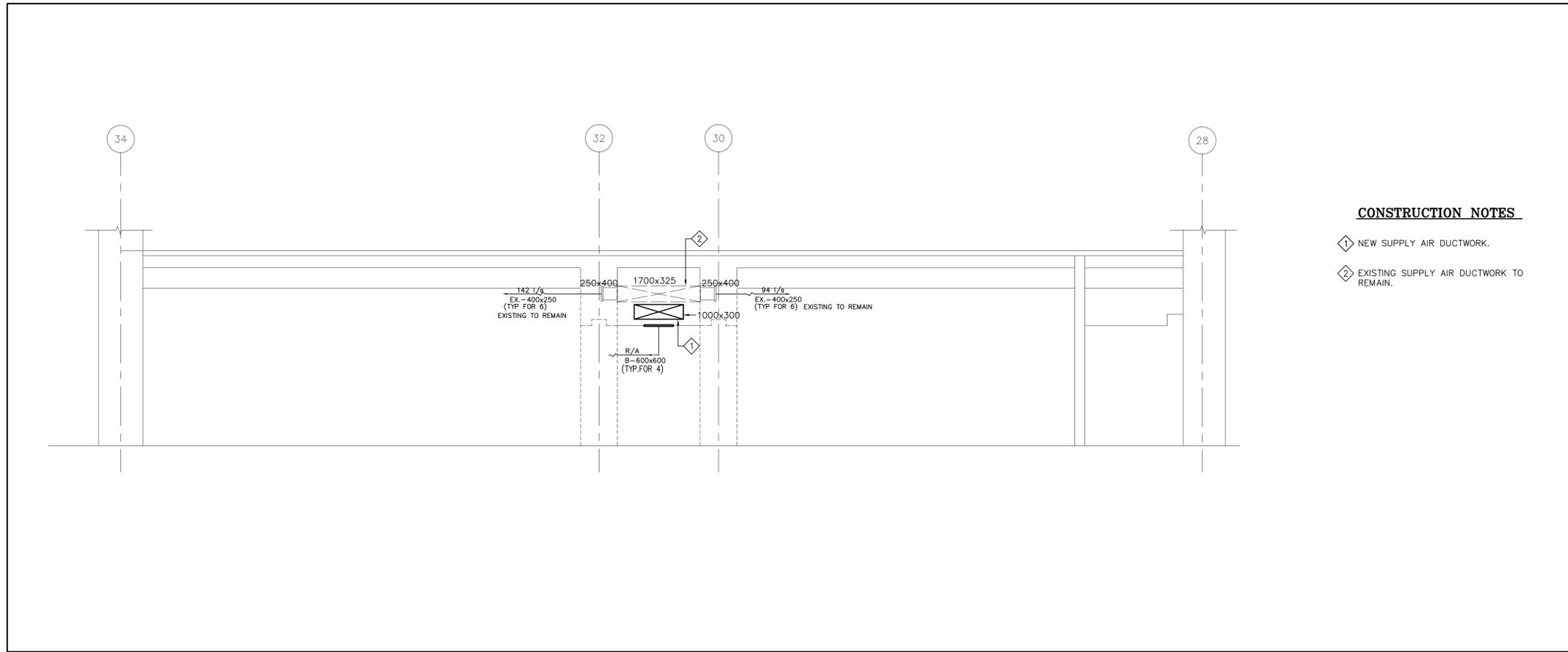
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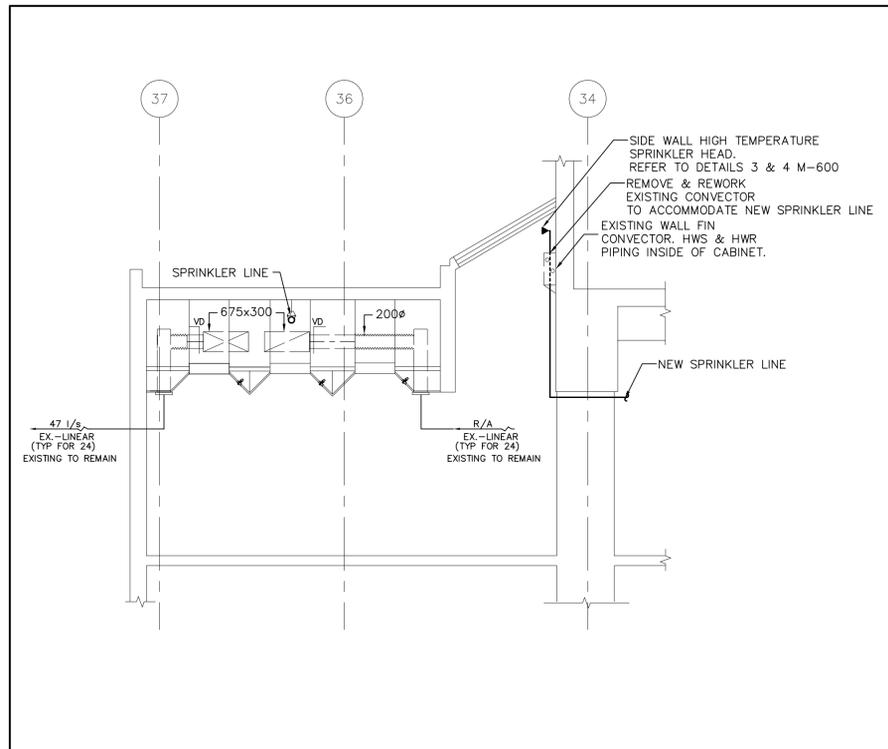
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CONSTRUCTION NOTES

- ◇ NEW SUPPLY AIR DUCTWORK.
- ◇ EXISTING SUPPLY AIR DUCTWORK TO REMAIN.

1 SECTION 1
M-600 1:50



2 SECTION 2
M-600 1:50



3 SPRINKLER PIPING IN SKYLIGHT MEETING ROOM # 230 & 232
M-600 NTS



4 SPRINKLER PIPING IN SKYLIGHT COMPUTER STATIONS # 217B
M-600 NTS

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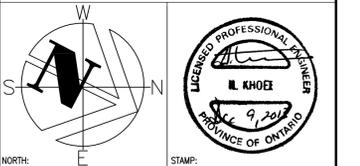
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drawing title / titre du dessin
MECHANICAL SECTIONS

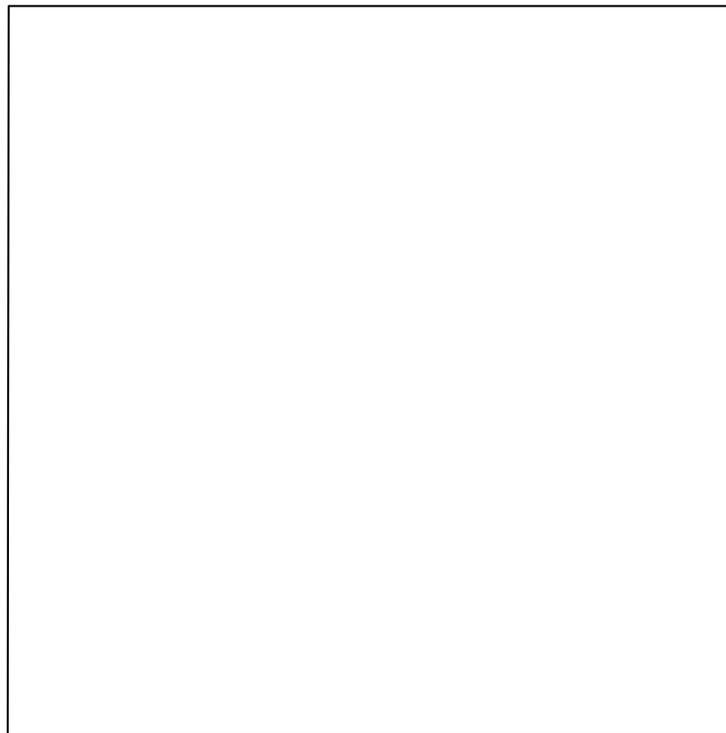
drawn by / dessiné par	AP/IV
designed by / conçu par	MG
approved by / approuvé par	HK

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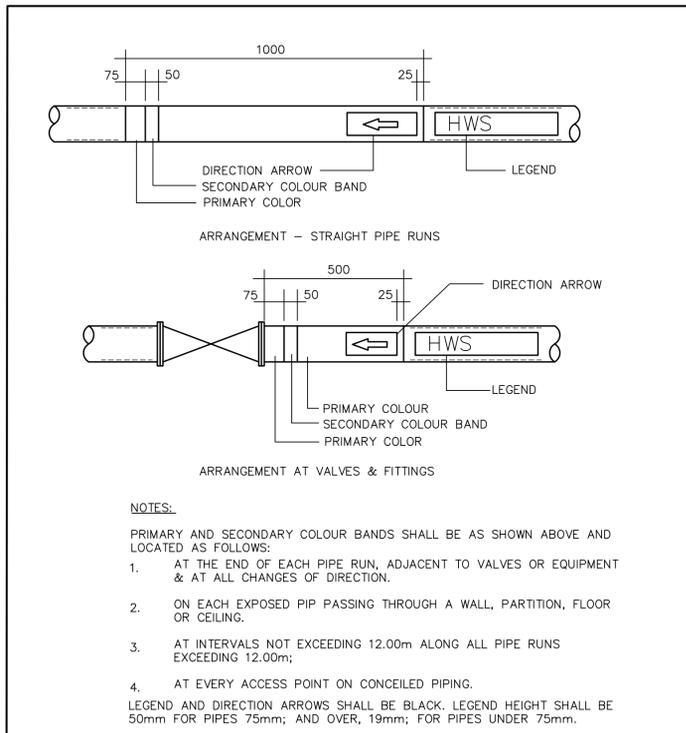
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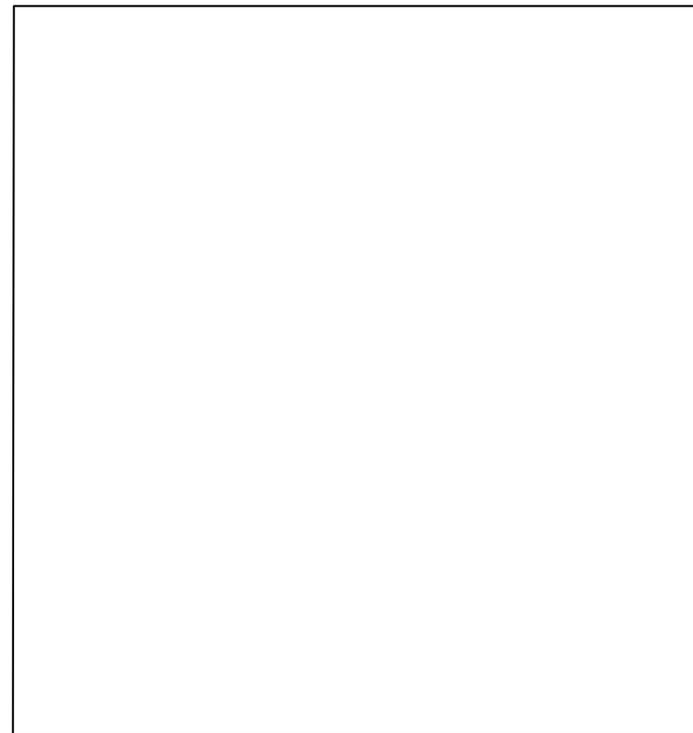
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M-600



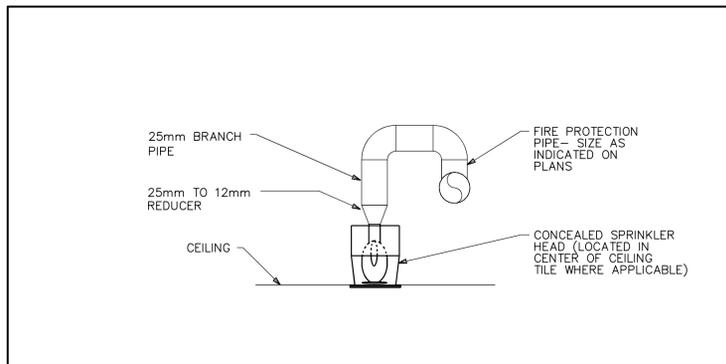
1 RESERVED
M-801 N.T.S



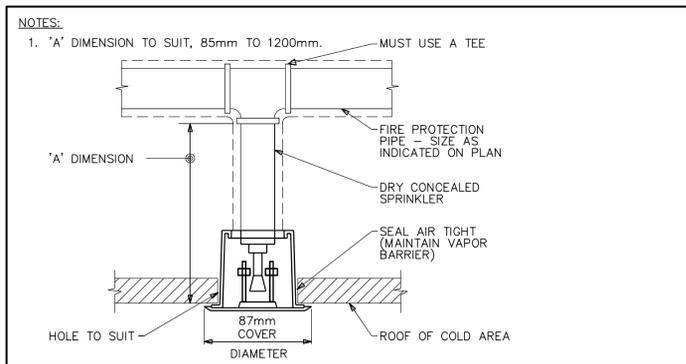
2 PIPING IDENTIFICATION LOCATION
M-801 N.T.S



3 RESERVED
M-801 N.T.S



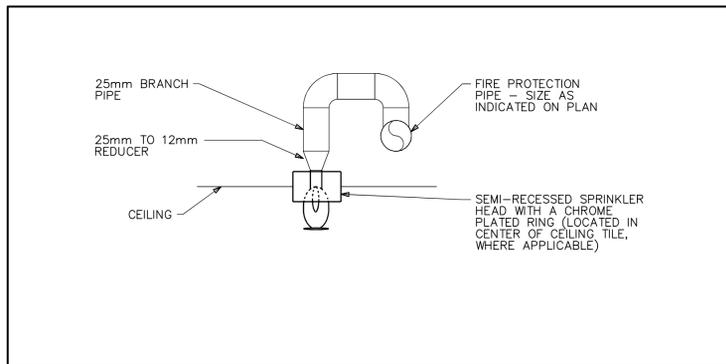
4 CONCEALED PENDANT SPRINKLER HEAD INSTALLATION DETAIL
M-801 N.T.S



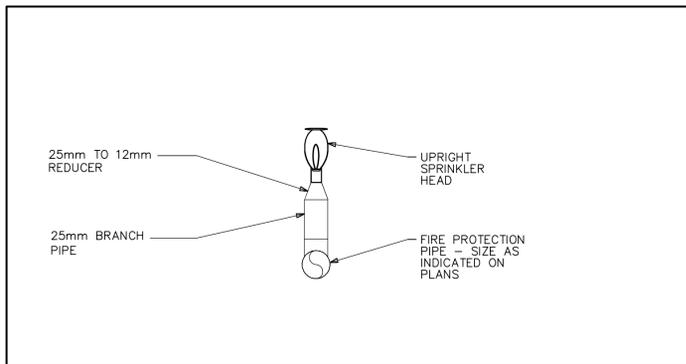
5 DRY CONCEALED PENDANT SPRINKLER HEAD INSTALLATION DETAIL
M-801 N.T.S



6 RESERVED
M-801 N.T.S



7 SEMI-RECESSED PENDANT SPRINKLER HEAD INSTALLATION DETAIL
M-801 N.T.S



8 UPRIGHT SPRINKLER HEAD INSTALLATION DETAIL
M-801 N.T.S



9 RESERVED
M-801 N.T.S



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CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

drawing title / titre du dessin
MECHANICAL DETAILS SHEET 1

drawn by / dessiné par AP

designed by / conçu par MG

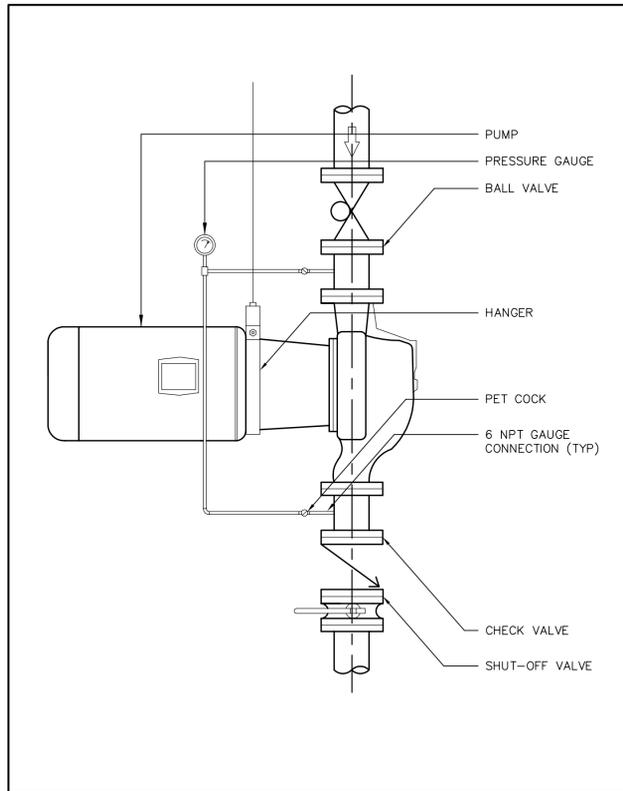
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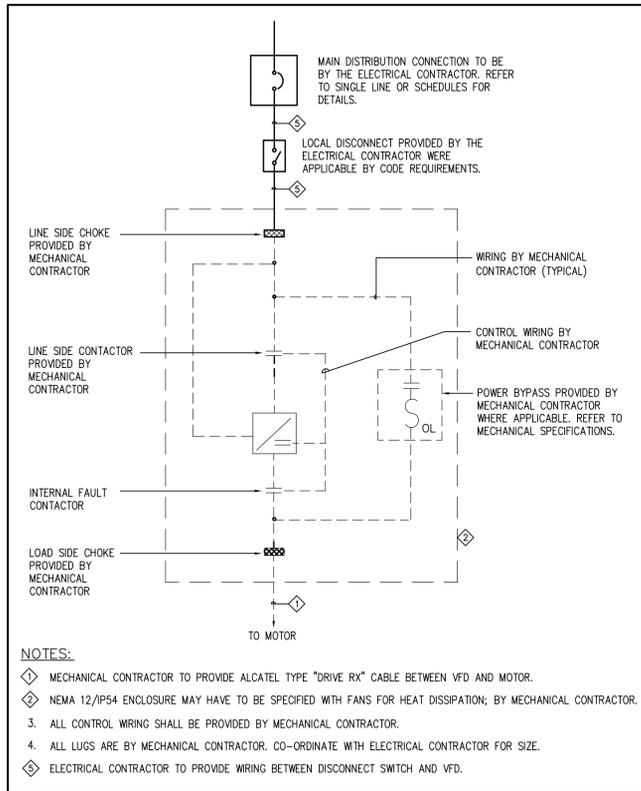
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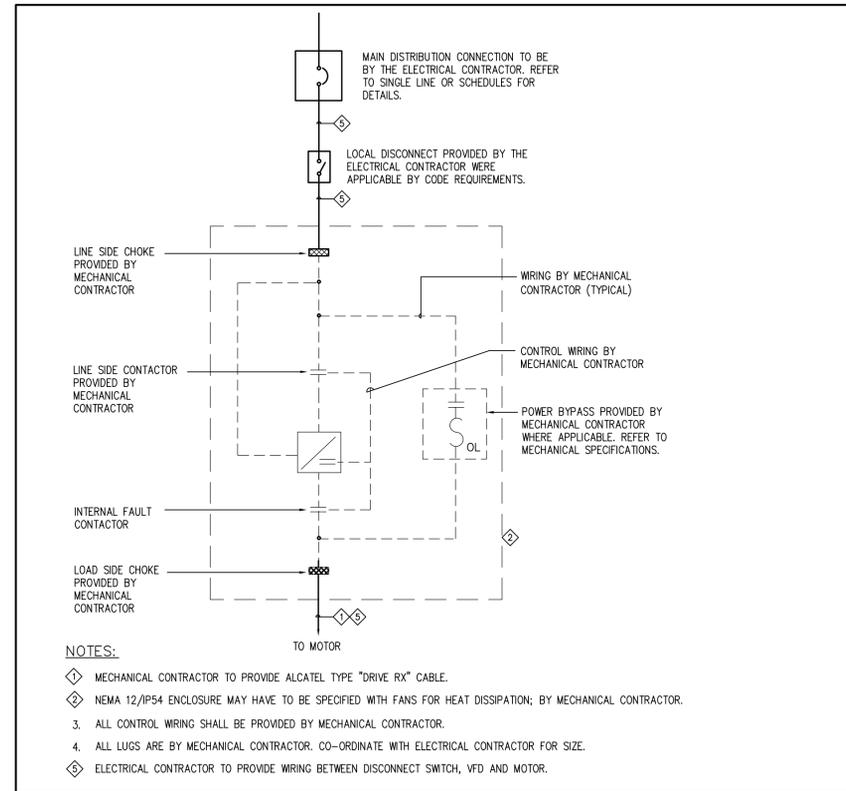
drawing no. / dessiné no. M-801



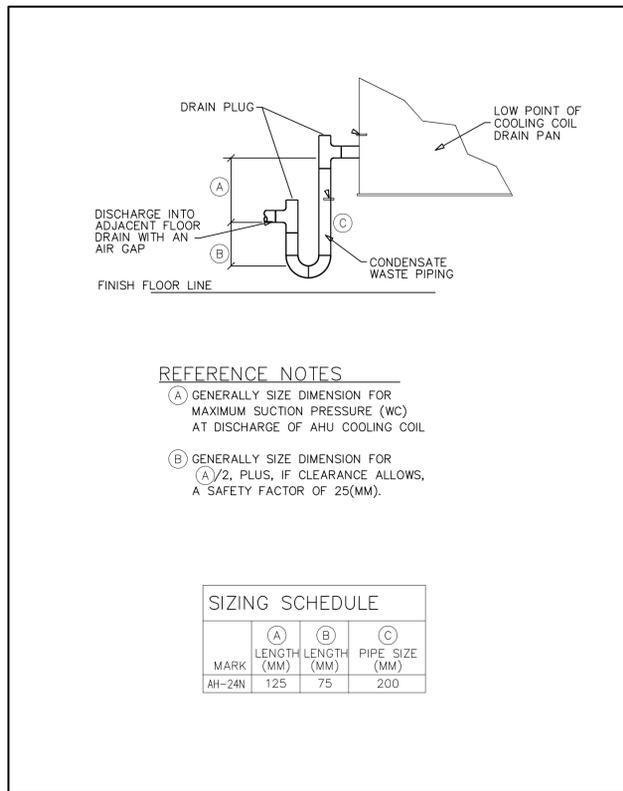
1 IN-LINE PUMP VERTICAL PIPING DETAIL
M-802 N.T.S.



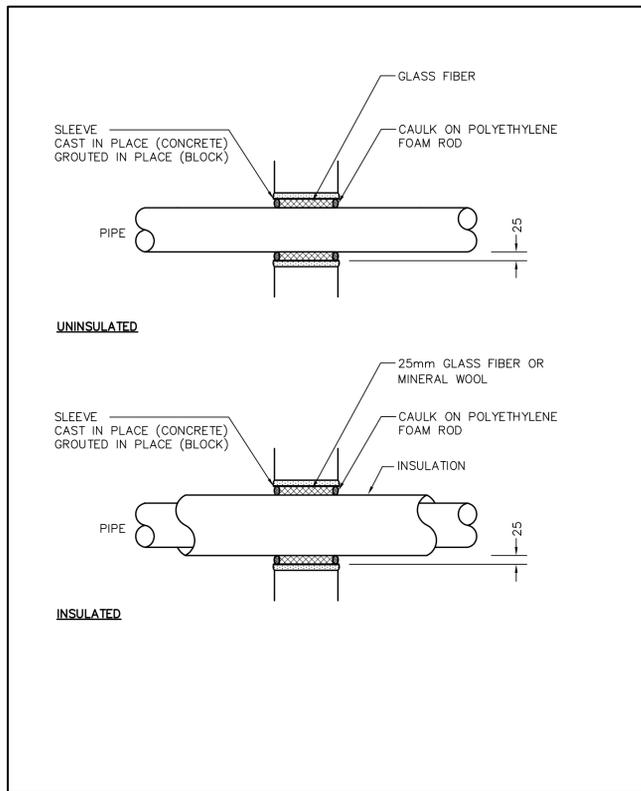
2 UNIT MOUNTED VARIABLE FREQUENCY DRIVE WIRING SCHEMATIC
M-802 N.T.S.



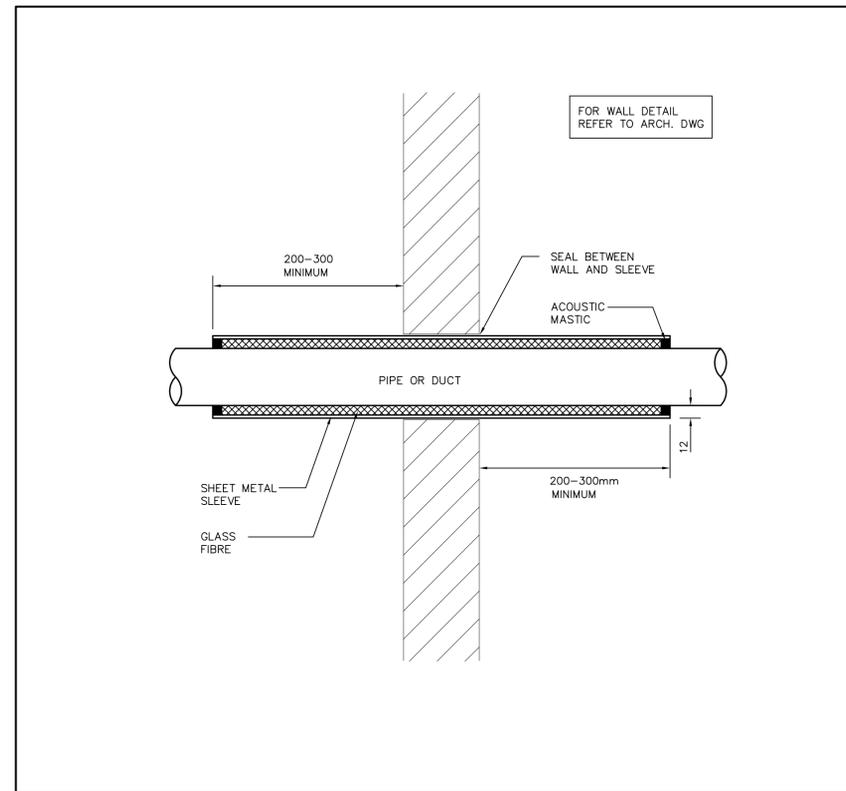
3 REMOTE MOUNTED VARIABLE FREQUENCY DRIVE WIRING SCHEMATIC
M-802 N.T.S.



4 DRAIN PAN CONDENSATE DETAIL
M-802 N.T.S.



5 WALL PENETRATION FOR PIPE FOR NON ACOUSTIC WALLS
M-802 N.T.S.



6 DUCT PENETRATION THROUGH GWB-ACOUSTIC WALL
M-802 N.T.S.



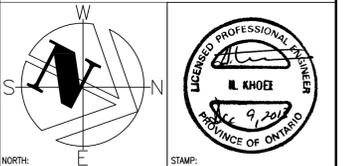
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CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

drawing title / titre du dessin
SHEET 2
MECHANICAL DETAILS

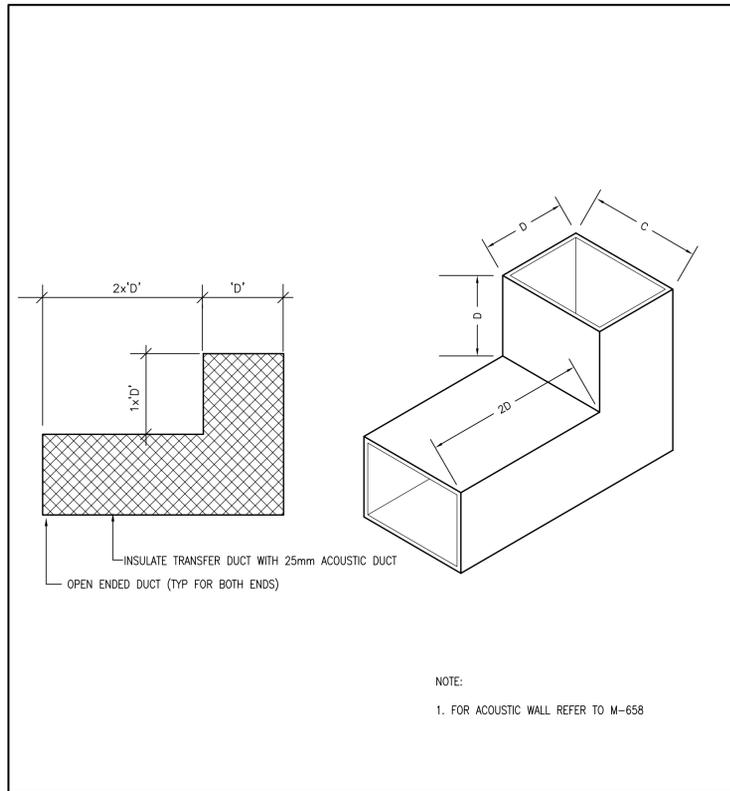
drawn by / dessiné par	AP
designed by / conçu par	MG
approved by / approuvé par	HK

bid / offre project manager / administrateur de projets

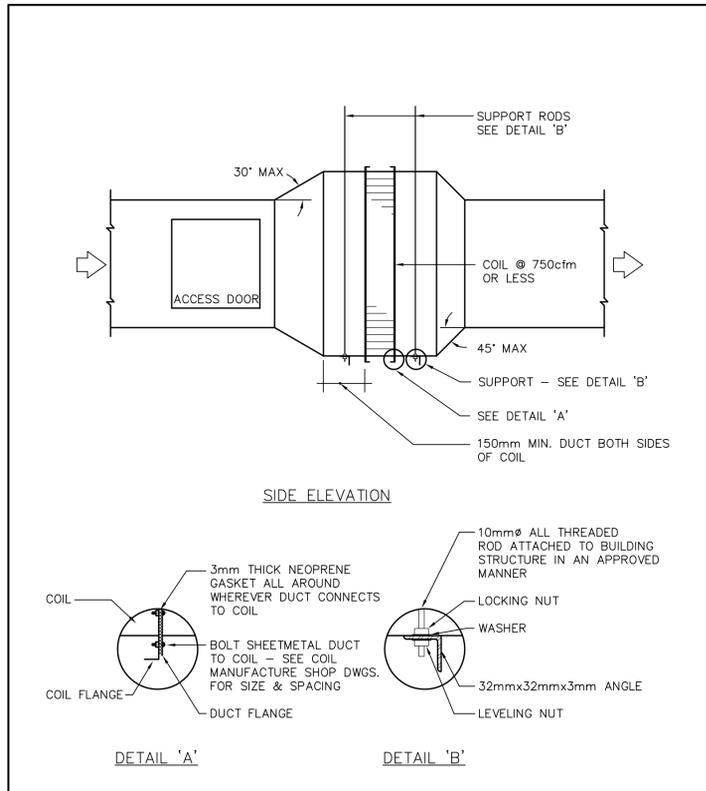
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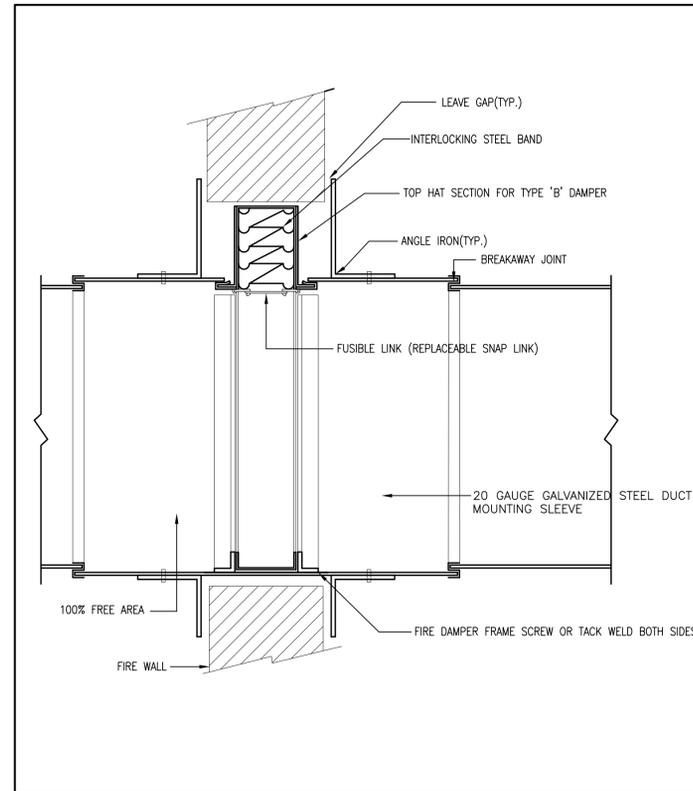
drawing no. / dessiné no.
M-802



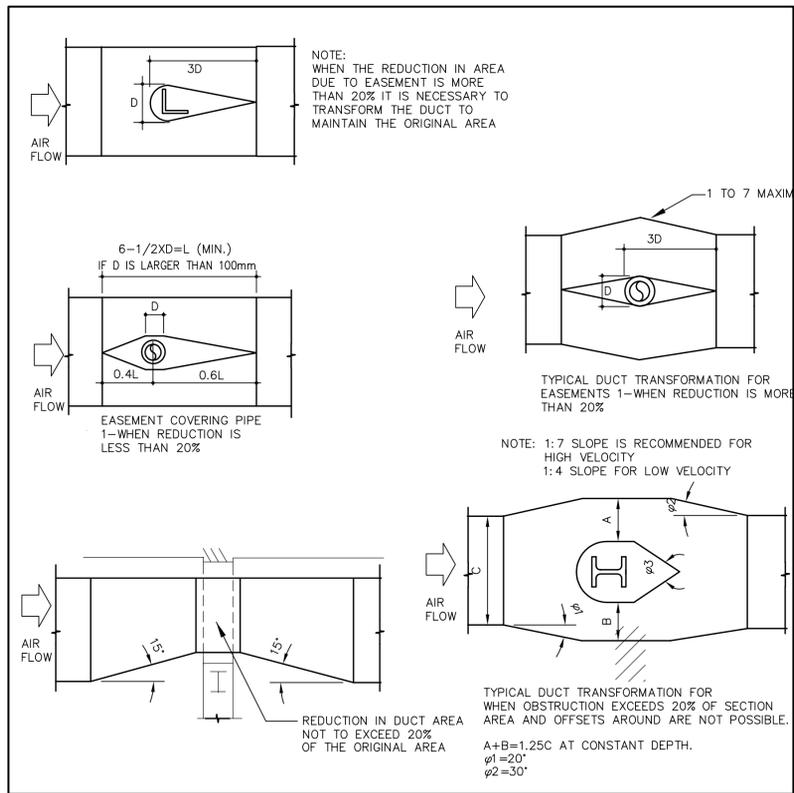
1 TRANSFER DUCT DETAIL - NON ACOUSTIC WALL
M-803 N.T.S.



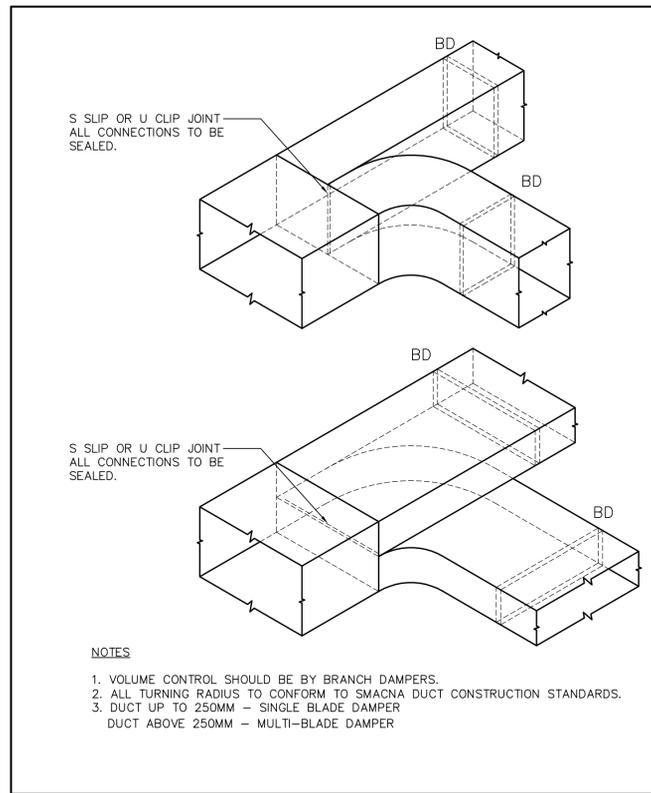
2 HOT WATER DUCT HEATER COIL DETAIL
M-803 N.T.S.



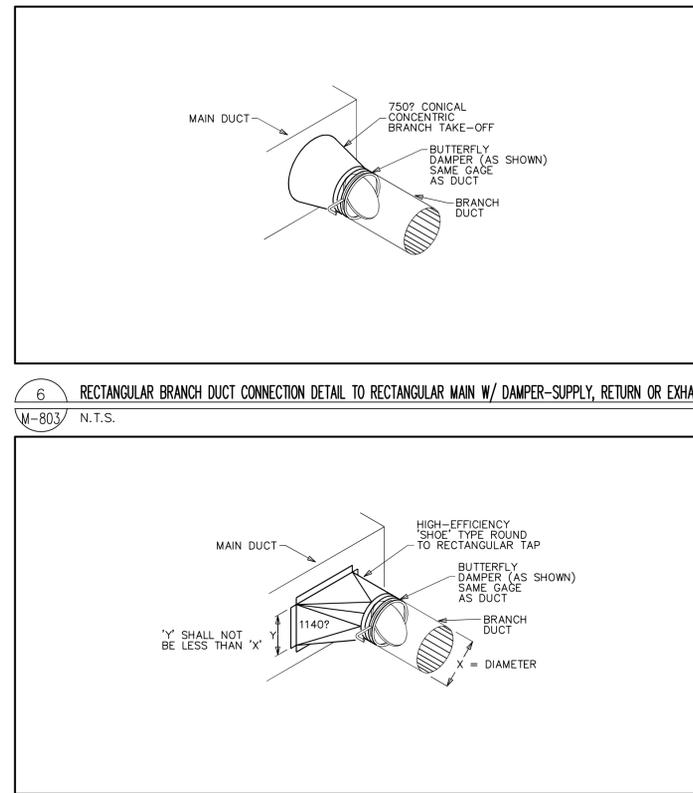
3 VERTICAL FIRE DAMPER TYPE 'B' DETAIL
M-803 N.T.S.



4 DUCTWORK WITH OBSTRUCTION
M-803 N.T.S.



5 DIVIDED FLOW BRANCHES DETAIL
M-803 N.T.S.



6 RECTANGULAR BRANCH DUCT CONNECTION DETAIL TO RECTANGULAR MAIN W/ DAMPER-SUPPLY, RETURN OR EXHAUST
M-803 N.T.S.

7 DUCT PENETRATION THRU CONCRETE SLAB
M-803 N.T.S.

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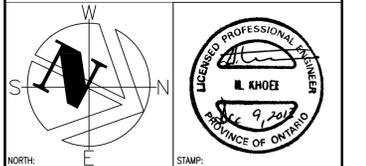
consultant

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	drawing no. - where detailed / dessin no. - où détaillé

project title / titre du projet
BURLINGTON ONTARIO
CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

drawing title / titre du dessin
SHEET 3
MECHANICAL DETAILS

drawn by / dessiné par AP

designed by / conçu par MG

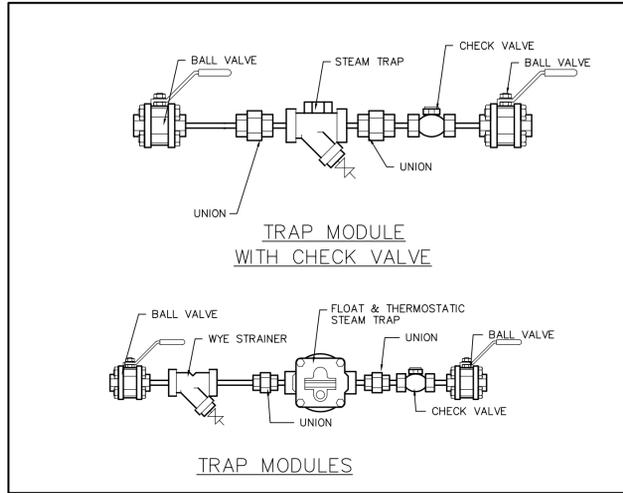
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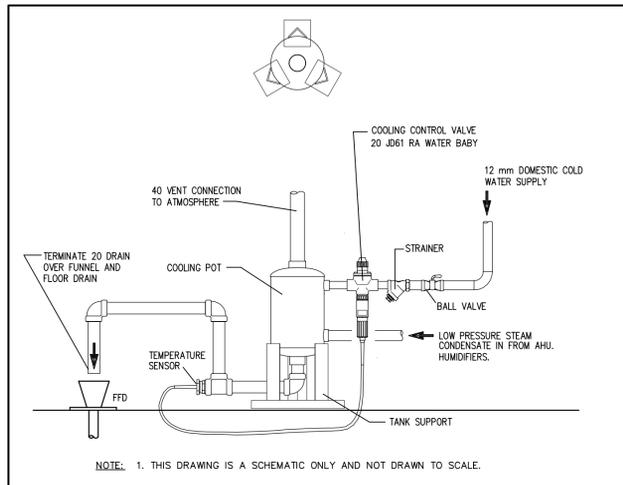
project date / date du projet

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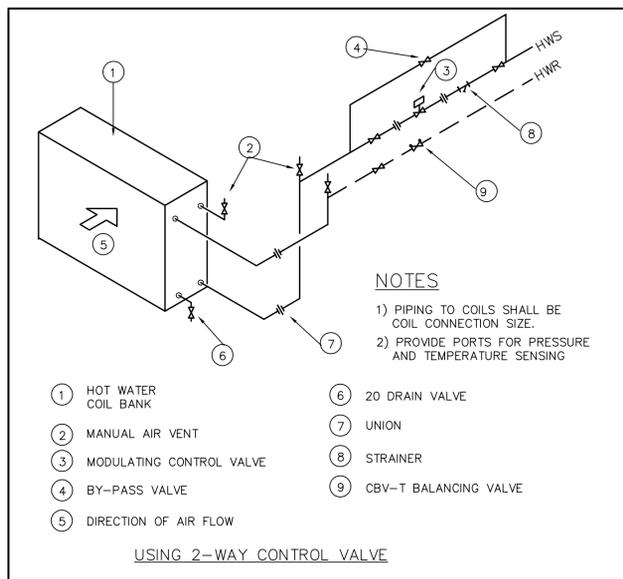
drawing no. / dessin no.
M-803



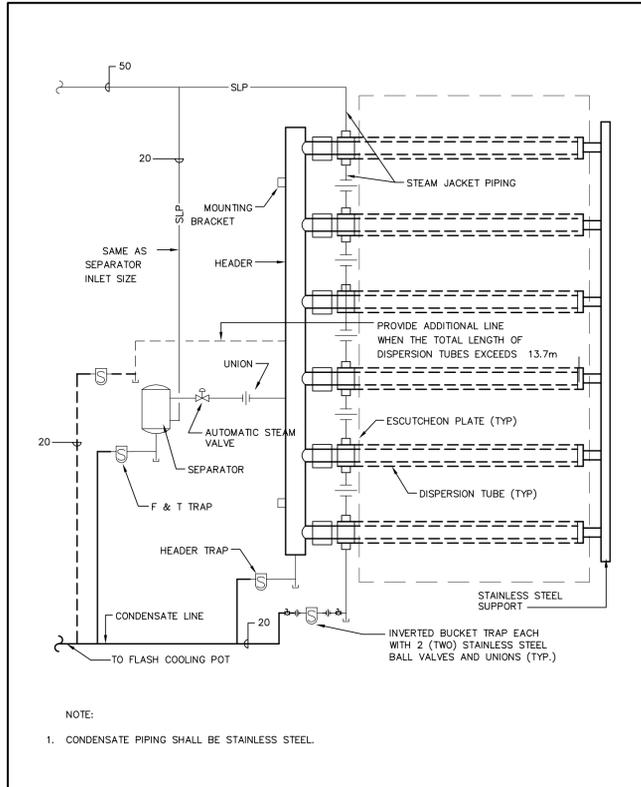
1 LOW PRESSURE STEAM DRIP POINTS
M-804 N.T.S.



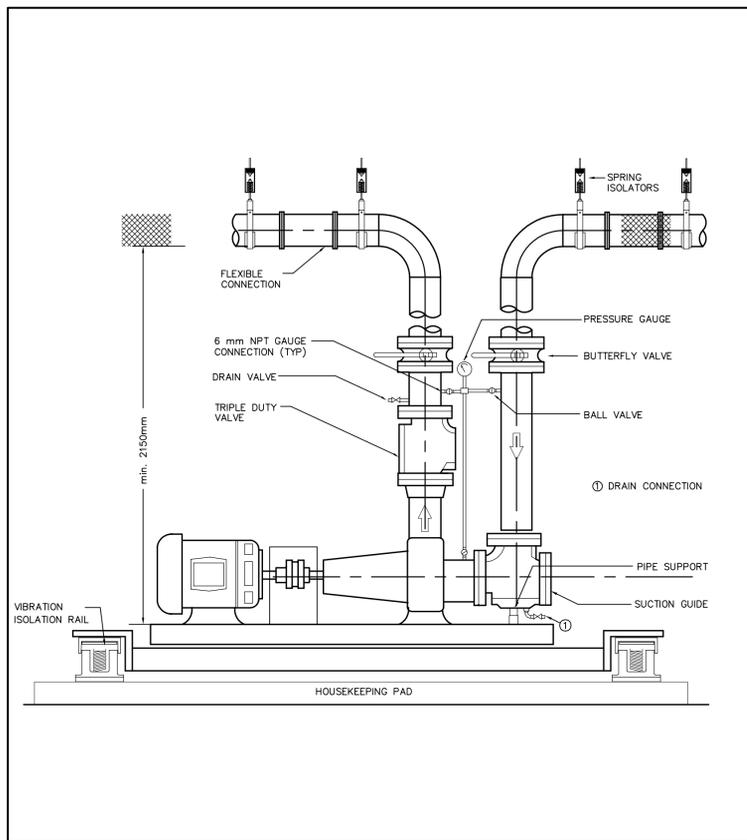
4 FLASH CONDENSER/COOLING POT PIPING DETAIL
M-804 N.T.S.



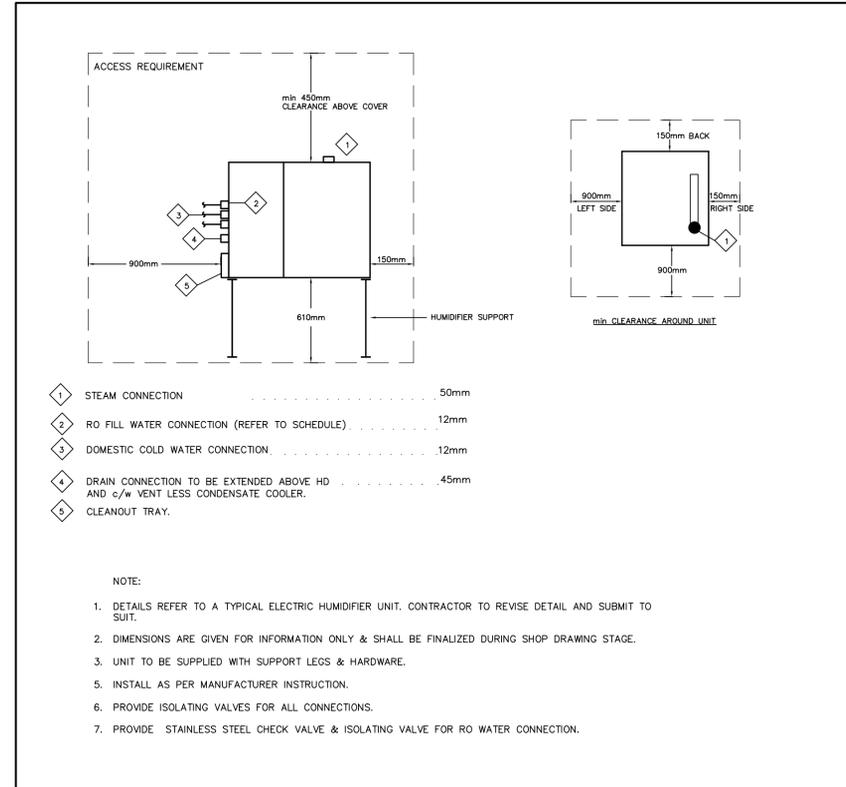
5 TYPICAL REHEAT COIL HOOK-UP DETAIL
M-804 N.T.S.



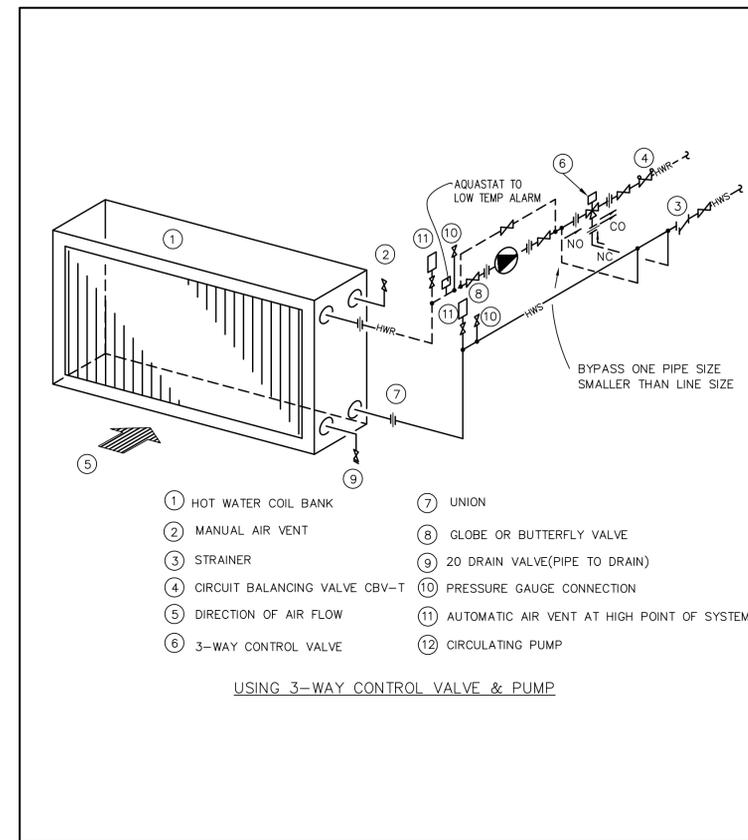
2 HUMIDIFIER DETAIL
M-804 N.T.S.



6 TYPICAL BASE MOUNTED PUMP INSTALLATION DETAIL
M-804 N.T.S.



3 ELECTRIC STEAM HUMIDIFIER DETAIL
M-804 N.T.S.



7 SINGLE HOT WATER COIL INSTALLATION DETAIL
M-804 N.T.S.

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

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(416)497.3111 fax (416)497.7210

12412

1	ISSUED FOR BID	09 DEC 2013
revision		date

Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

W
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NORTH: [Compass Rose]

LICENCED PROFESSIONAL ENGINEER
L. KHOEJ
Stamp: Dec 9 2013
PROVINCE OF ONTARIO

A Detail No.
B No. du détail
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CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

drawing title
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SHEET 4 MECHANICAL DETAILS

drawn by
dessiné par AP

designed by
conçue par MG

approved by
approuvé par HK

bid offre project manager
administrateur de projets

project date
date du projet

project no.
no. du projet
R.061475.001

drawing no.
dessiné no. M-804

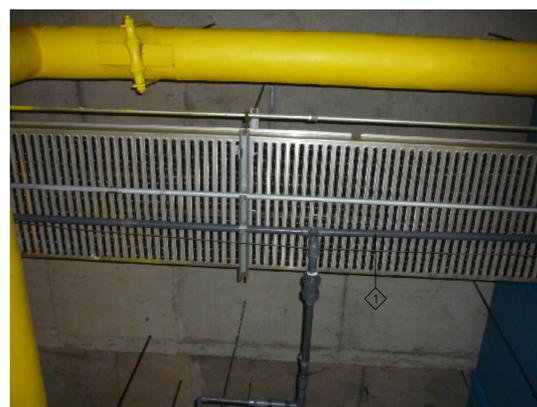


NOTES:

- ① EXISTING HUMIDIFIER TO BE REMOVED. REPLACE DUCTWORK AND RE-INSULATE.
- ② EXISTING DUCTWORK TO REMAINS.
- ③ REMOVE ASSOCIATED STEAM & CONDENSATE PIPING.

1 EXISTING STEAM HUMIDIFIER

M-805/ NTS



NOTES:

- ① CONNECT NEW HUMIDIFIER TO EXISTING RO WATER LINE. EXACT LOCATION TO BE DETERMINED ON SITE.

4 RO WATER LINE

M-805/ NTS



NOTES:

- ① REMOVE EXISTING LADDER. INSTALL NEW UNIT & RE-INSTALL LADDER AT SAME LOCATION.

6 LADDER AT PLATFORM SERVING UNIT ABOVE

M-805/ NTS



NOTES:

- ① REMOVE EXISTING CHILLED WATER PUMP AND REPLACE WITH NEW. SELECT PUMP TO MATCH EXISTING CONCRETE PAD. PROVIDE AND INSTALL NEW ISOLATING SPRINGS.
- ② NEW PUMP SHALL BE BASE MOUNTED PUMP TO MATCH EXISTING.

2 EXISTING CHILLED WATER PUMP P-6

M-805/ NTS



NOTES:

- ① EXISTING R/A DUCT TO REMAIN.
- ② LOCATE NEW ELECTRIC HUMIDIFIER BELOW R/A CLOSE TO UNIT AS POSSIBLE. FINAL LOCATION TO BE DETERMINED ON SITE.

5 EXISTING R/A DUCT

M-805/ NTS



NOTES:

- ① CONNECT NEW AH-24N HEATING COIL TO EXISTING HOT WATER LINE. EXACT LOCATION TO BE DETERMINED ON SITE DURING CONSTRUCTION.
- ② FREEZE EXISTING LINES TO MAKE NEW CONNECTION.

8 CONNECT NEW REHEAT COIL TO HWS/HWR LINES

M-805/ NTS



NOTES:

- ① REPLACE EXISTING 5HP MOTOR WITH NEW.
- ② PROVIDE NEW VFD FOR FAN.

3 EXISTING R/A FAN RF-24

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NOTES:

- ① REMOVE EXISTING PIPING SERVING EXISTING COOLING COIL.
- ② PROVIDE NEW PIPING & CONNECT TO COOLING COIL. REROUTE PIPING AS REQUIRED TO ACCOMMODATE NEW COIL.
- ③ REMOVE PNEUMATIC CONTROL VALVE & PROVIDE 3-WAY ELECTRONIC CONTROL VALVE.
- ④ RE-INSULATE PIPING AFFECTED BY THIS CHANGE & INSULATION REMOVED AS PART OF ABATEMENT.
- ⑤ REPLACE ALL EXISTING ISOLATING VALVES, BALANCING VALVES, STRAINER TO MATCH EXISTING. MODIFY PIPING IF REQUIRED.
- ⑥ FREEZE EXISTING LINES TO MAKE CHANGES.

9 EXISTING CHILLED WATER CONNECTION (3-WAY VALVE & PUMP P-6) PNEUMATIC CONTROL

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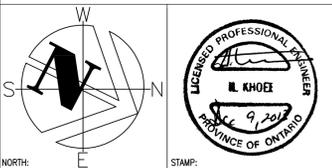
CROSSEY ENGINEERING LTD. 2255 Sheppard Avenue. E. Suite E-331 North York, On M2J 4Y1 (416)497.3111 fax (416)497.7210

12412

3	ISSUED FOR BID	09 DEC 2013
2	ISSUED FOR 95% SUBMISSION	12 NOV 2013
1	ISSUED FOR 75% SUBMISSION	30 APR 2013

revision	date
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MECHANICAL DETAILS
SHEET 5

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designed by / conçu par MG

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bid / offre project manager / administrateur de projets

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drawing no. / dessin no.
M-805