

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
①	THERMOSTAT/TEMPERATURE SENSOR
②	HUMIDISTAT/HUMIDITY SENSOR
③	WALL MOUNTED SPEED CONTROLLER
□A.A.V.	AUTOMATIC AIR VENT
MANV	MANUAL VENT
□F.V.	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
105 cfm A-2500	DENOTES - SUPPLY 105 cfm THRU TYPE 'A' DIFFUSER c/w 250 NECK
105 cfm B-450x250	DENOTES - SUPPLY 105 cfm THRU 450x250 TYPE 'B' GRILLE
105 cfm C-450x250	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
① ②	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	50 - DENOTES AIR QUANTITY - IN 1/s MINIMUM
250	250 - DENOTES AIR QUANTITY - IN 1/s MAXIMUM
100	100 - DENOTES AIR QUANTITY - IN 1/s
E	E - DENOTES TYPE OF GRILLE OR DIFFUSER-REFER TO SPECIFICATION
200x150	200x150-DENOTES SIZE OF GRILLE OR DIFFUSER NECK DIAMETER - (mm)
RH 1	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 SHEDULE														
AH NO.24N		LOCATION SERVED: LIBRARY												
FANS	L/S	E. sp(Pa)	V/ph	kW	BHP	RPM	CONTROL	TYPE	SIZE (mm)	BLADE TYPE /CLASS	REMARKS			
SF-24N	5663.4	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 TEMPRATURE		LEAVING AIR TEMPRATURE		ENTERING FLUID TEMPRATURE	LEAVING FLUID TEMPRATURE	
			SENS.	TOTAL				Db	DegC	Wb	DegC	DegC	DegC	
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	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						
REMARKS														
1. FOR UNIT WEIGHT REFER TO UNIT LAYOUTS.														
2. MINIMUM OUTSIDE AIR SET POINT FOR AIR HANDING UNIT TO BE SET AT 1415.8L/s														
3. UNIT SHALL BE PROVIDED WITH MARINE LIGHTS AND A 20A 120V POWER OUTLET FOR TOOLS.														
4. UNIT TO BE PROVIDED WITH VARIABLE SPEED DRIVE.														
5. UNIT TO BE PROVIDED WITH MERV 8 & MERV 13 FILTERS, MOTORIZED DAMPERS ON E/A, MIN. O/A, FREE COOLING O/A, BLENDER.														
6. FAN AND MOTOR SHALL BE SELECTED BASED IN LOADED FILTERS (ADDITIONAL 248 Pa FOR PRE-FILTER, 248 Pa FOR FINAL FILTER) AND WET COIL CONDITION.														
7. UNIT LOCATED IN MECHANICAL ROOM ABOVE LIBRARY.														
8. UNIT MUST BE SHIPPED AND INSTALLED IN SECTIONS TO FIT ENTRANCE DOORWAYS AND SERVICE ELEVATORS.														
9. MECHANICAL CONTRACTOR TO RETAIN THE SERVICE OF ELECTRICAL CONTRACTOR TO REWIRE UNIT ON SITE.														
10. FAN : DWDI AIRFOIL/2 RPM : 1611 T.S.P. : 982.72 Pa MOTOR : 15 HP, ODP Prem-Eff, 575/3/60 RPM : 1750 (GROUNDED SHAFT) ISOLATORS : OS DEF : 50mm														

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:						
1. ALL VAV BOXES SHALL BE COMPLETE WITH A MINIMUM OF 1000 mm ATTENUATOR.						
2. VAV DDC CONTROLS SHALL BE PROVIDED BY THE CONTROLS CONTRACTOR FOR INSTALLATION BY THE VAV BOX MANUFACTURER.						
3. 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:									
1. REFER TO DRAWING FOR SIZE.									
2. FOR DRY WALL APPLICATION BORDER FRAME TYPE SF, FOR LAY-IN TILE APPLICATION BORDER FRAME TYPE LT.									
3. PROVIDE ALUMINUM PLASTER FRAME FOR DRYWALL APPLICATION INSTALLATION. REFER TO MECHANICAL AND ARCHITECTURAL DRAWINGS.									
4. FASTENING AS PER ARCHITECTURAL CEILING PLAN.									

PUMP SCHEDULE										
TAG NO.	SERVICE	LOCATION	L/S	HEAD kPa	MOTOR			EFFIC. %	TYPE	SIZE
P-6NH	HEATING COIL	MECHANICAL ROOM	3.28	95.54	575/3	-	1.12	1800	60.34	IN-LINE
P-6NC	COOLING COIL	MECHANICAL ROOM	6.06	95.54	575/3	-	1.49	1800	52.57	BASE MOUNTED
REMARKS:										
1 NEW PUMP										
2 EXISTING PUMP TO BE REPLACE.										



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Services gouvernementaux Canada

consultant



ARCHITECTS

1867 YONGE ST, STE 1100, TORONTO ON CANADA M4S 1Y5
T 416 480 2020 F 416 480 1881

consultant

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ENGINEERING
LTD.



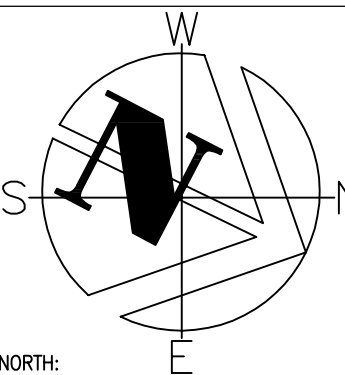
2255 Sheppard Avenue. E.
Suite E-331
North York, On M2J 4Y1
(416)497.3111 fax (416)497.7210

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project title
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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
conç par

MG

approved by
approuvé par

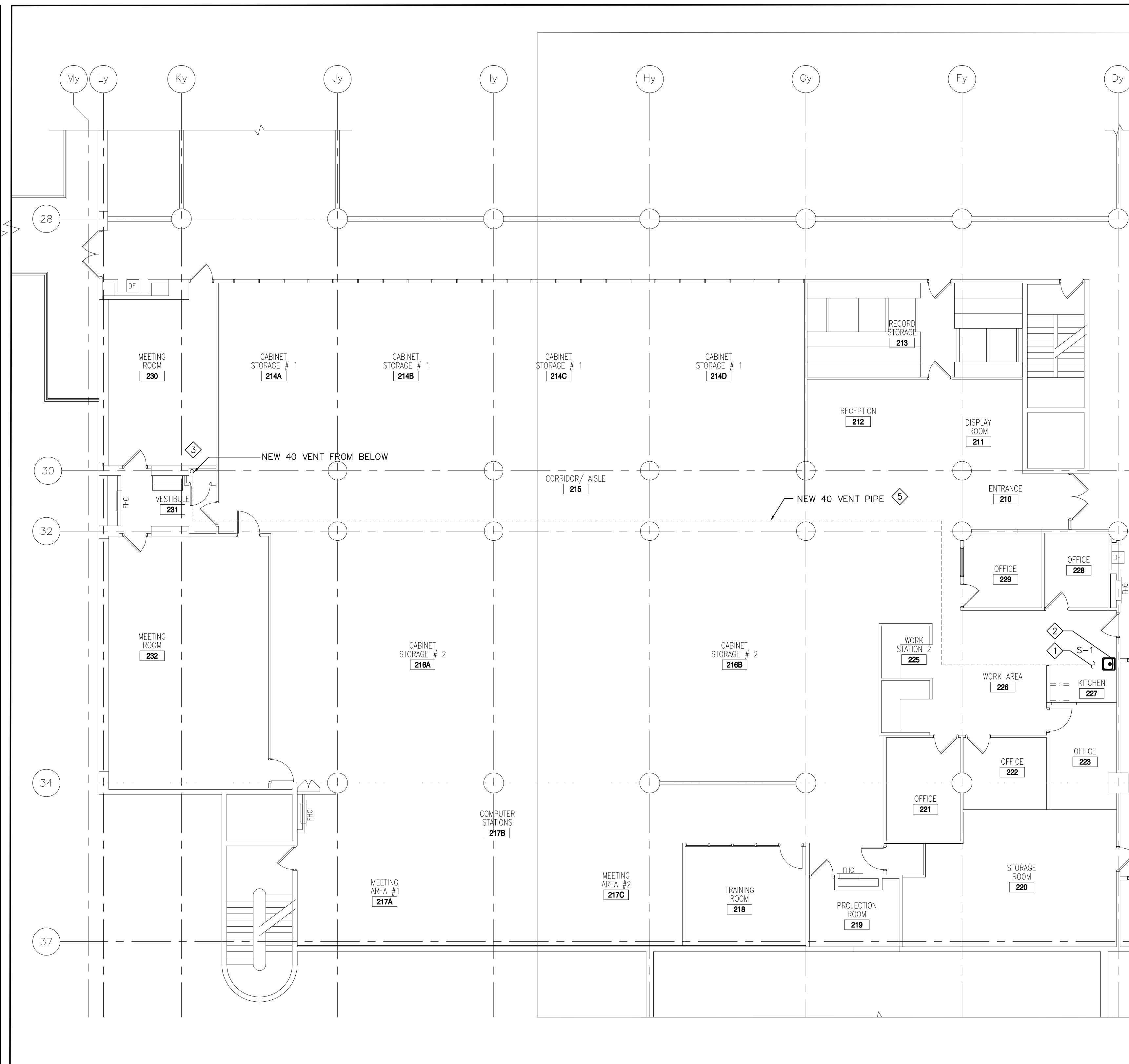
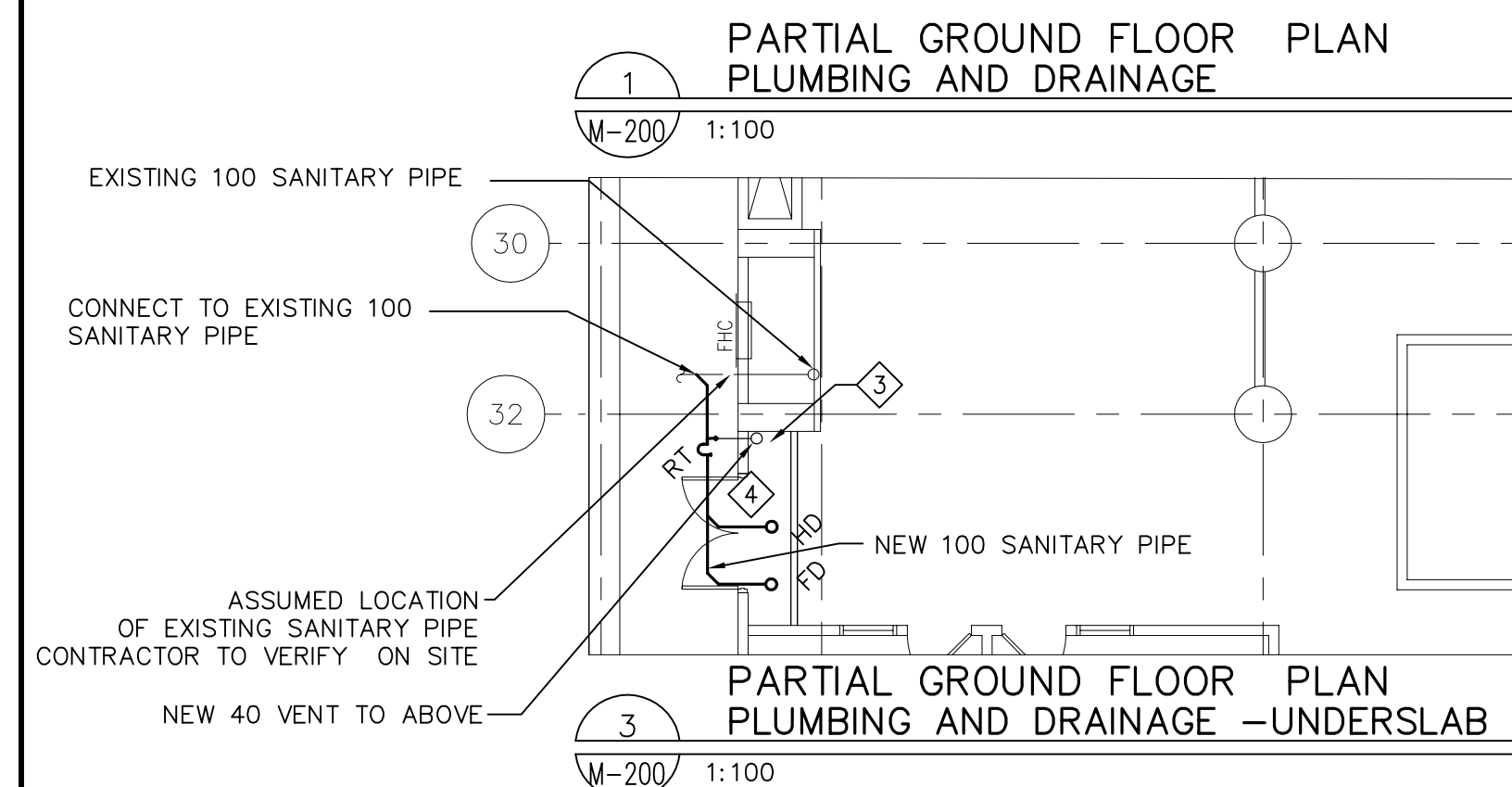
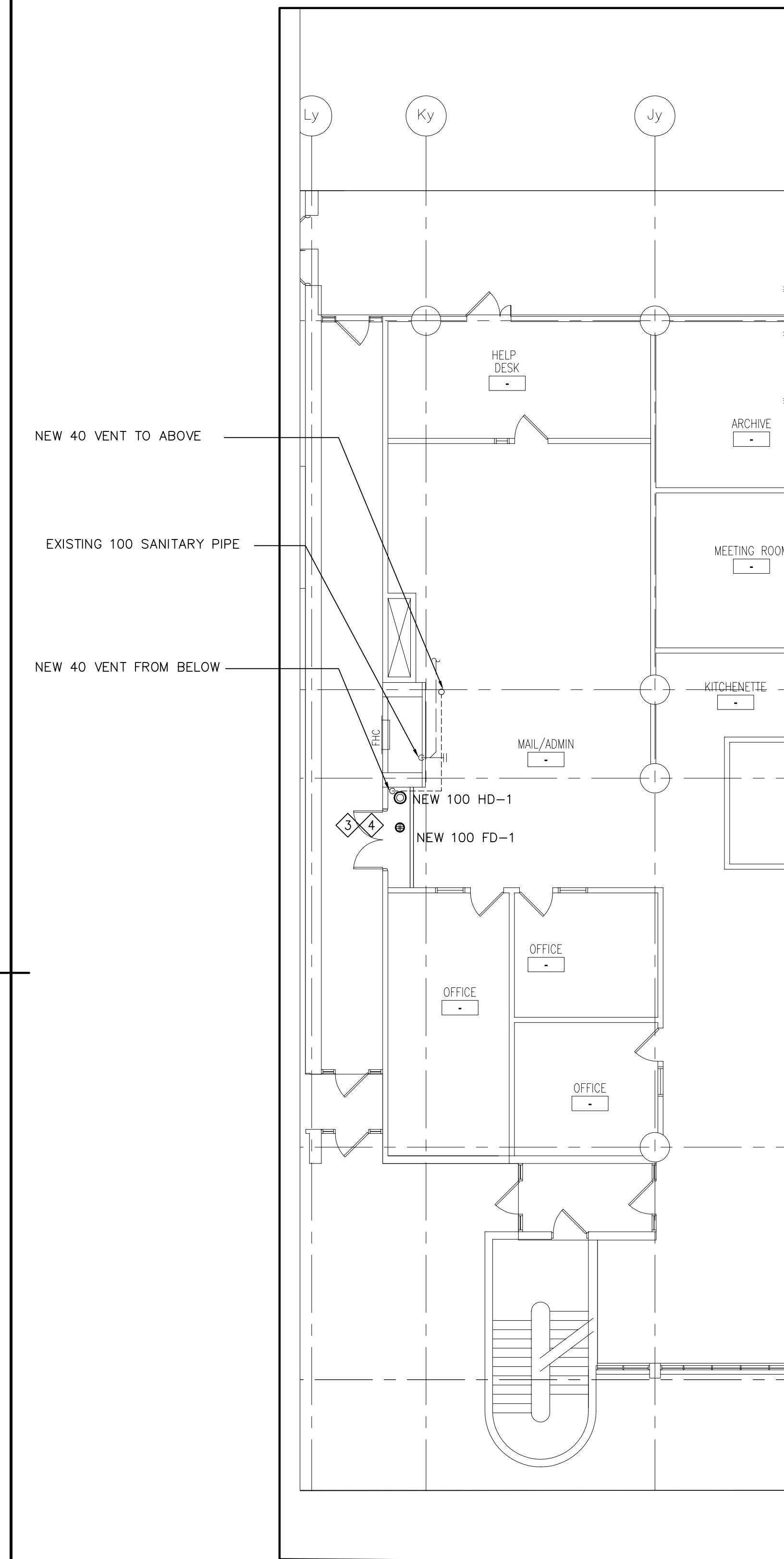
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offreproject manager
administrateur
de projetsproject date
date du projetproject no.
no. du projet

R.061475.001

drawing no.
dessiné no.

M-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.

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

consultant



1867 YONGE ST., STE 1100, TORONTO ON CANADA M4S 1Y5
T 416 480 2020 F 416 480 1881

consultant

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LTD.

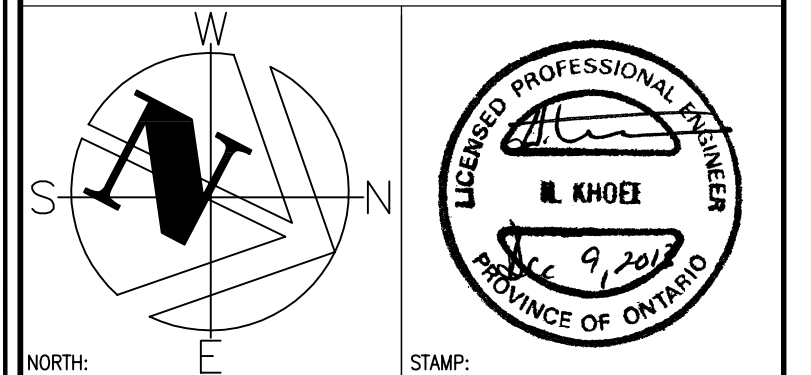


2255 Sheppard Avenue. E.
Suite E-331
North York, On M2J 4Y1
(416)497.3111 fax (416)497.7210

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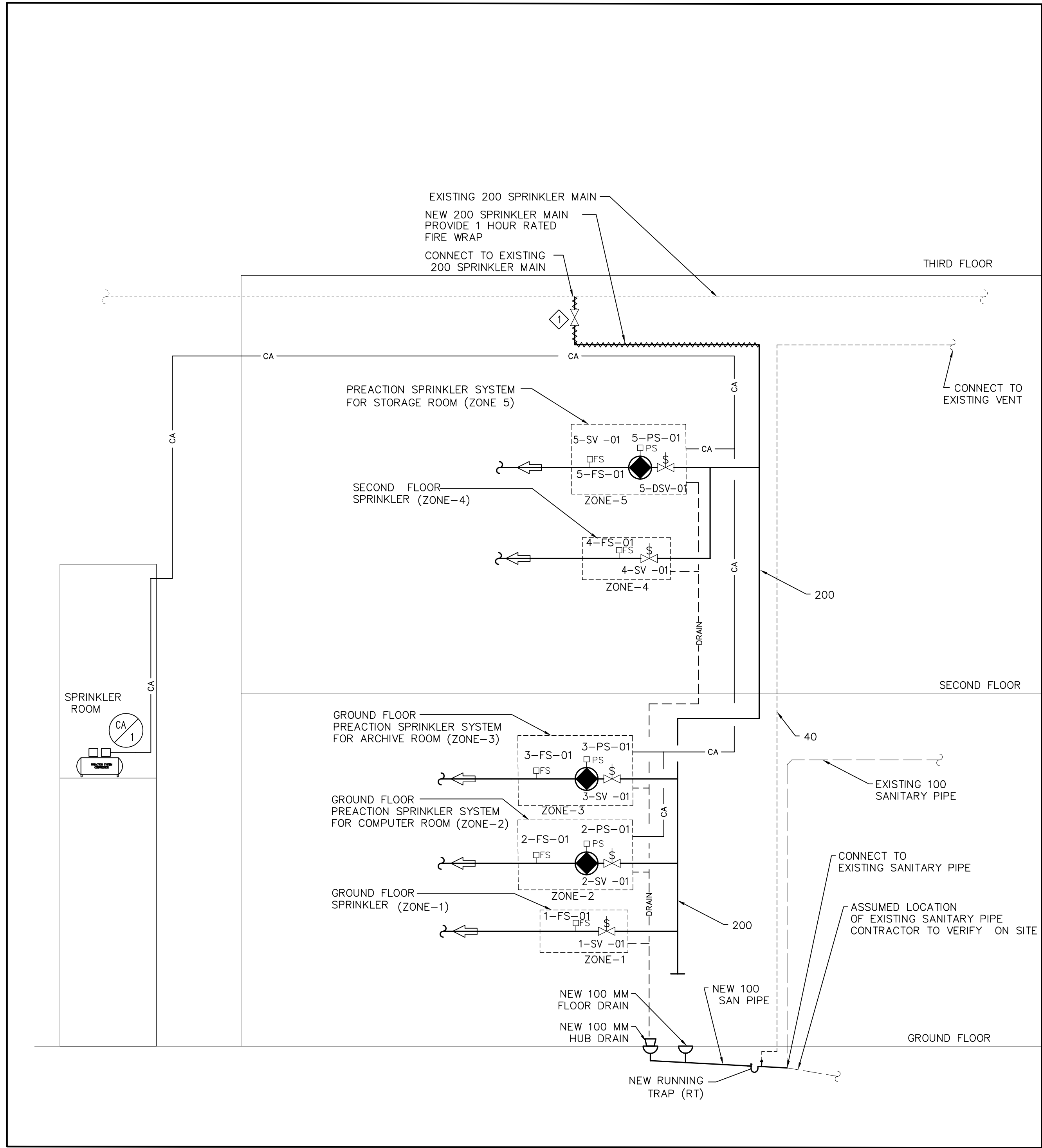
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CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

drawing title
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PARTIAL GROUND &
SECOND FLOOR PLANS-
PLUMBING & DRAINAGE

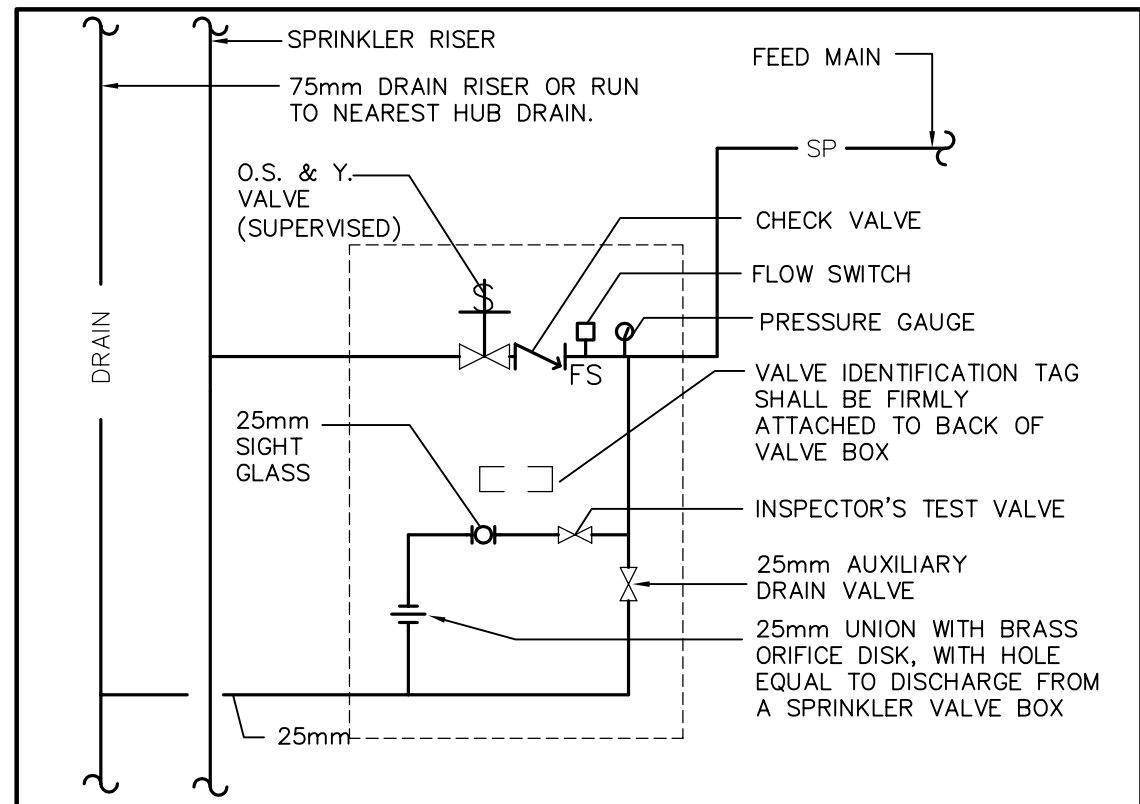
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approved by approuvé par	HK
bid offre	project manager administrateur de projets
project date date du projet	
project no. no. du projet	R.061475.001
drawing no. dessiné no.	M-200



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

CONSTRUCTION NOTES:

- 1 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:
1. FURTHER DETAILS SHALL REFER TO NFPA 13 AND OBC.

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

consultant



1417 YONGE ST., STE 1100 TORONTO ON CANADA M4T 1Y5
T 416 444 2424 F 416 444 1441

consultant

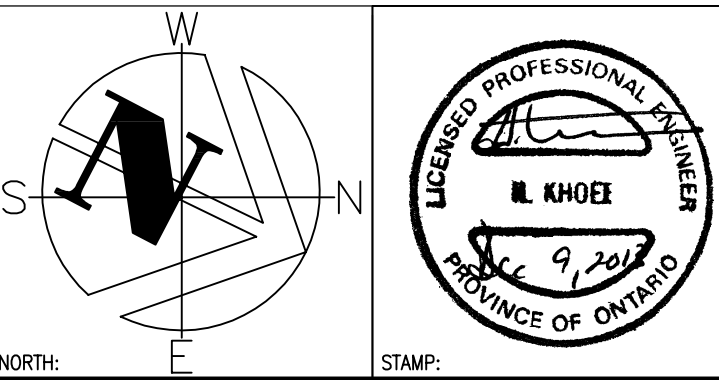
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LTD.

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

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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
conçue par MG

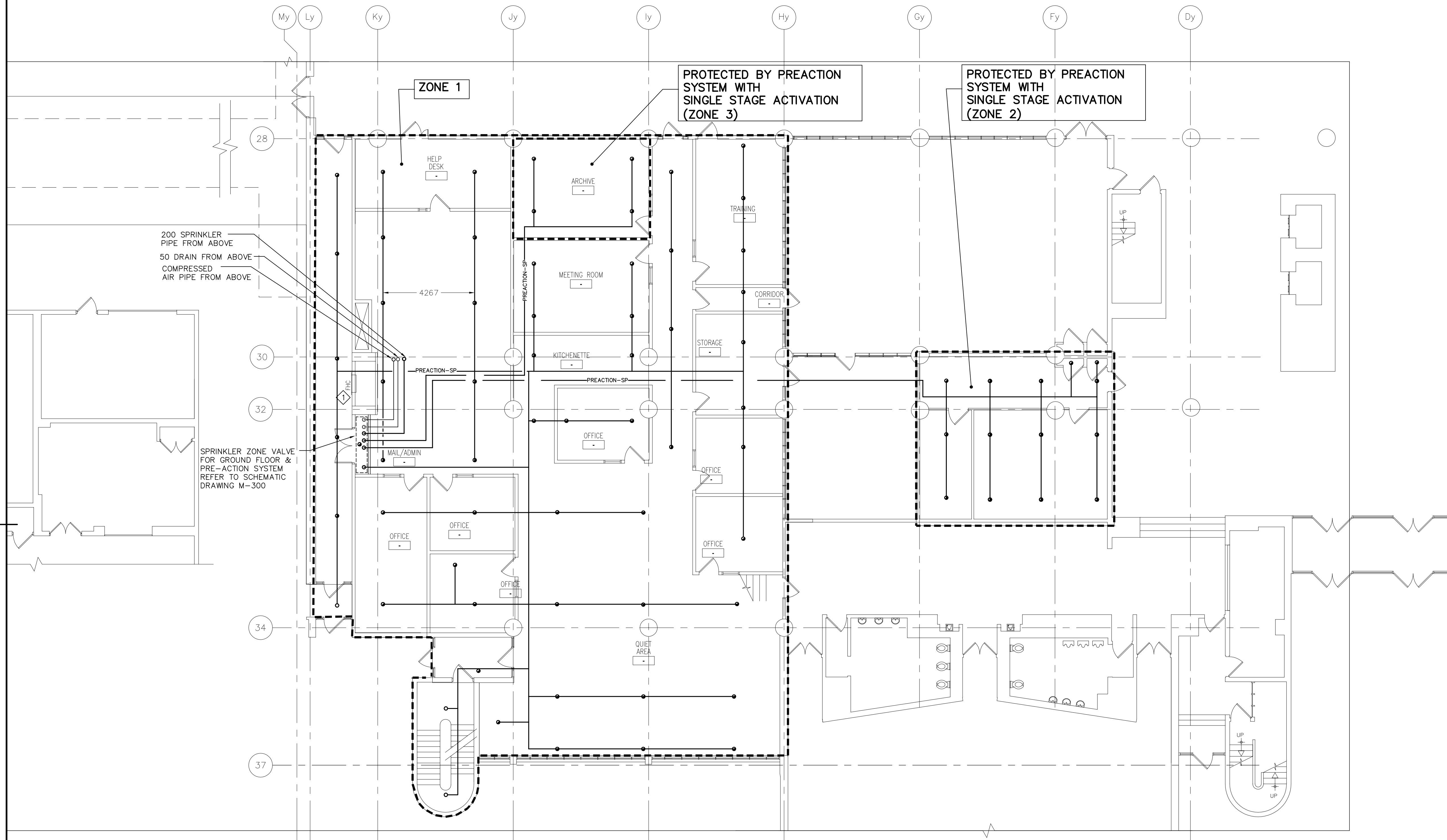
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de projets

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.

0 1 2 3 4 5 6 7 8 9 10m

SCALE 1:100

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1867 YONGE ST., STE 1100, TORONTO, ON CANADA M4S 1Y5
T 416 480 2020 F 416 480 1881

consultant

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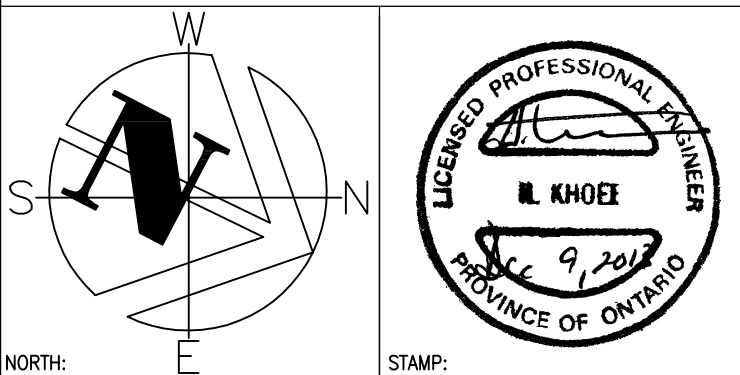


2255 Sheppard Avenue. E.
Suite E-331
North York, On M2J 4Y1
(416)497.3111 fax (416)497.7210

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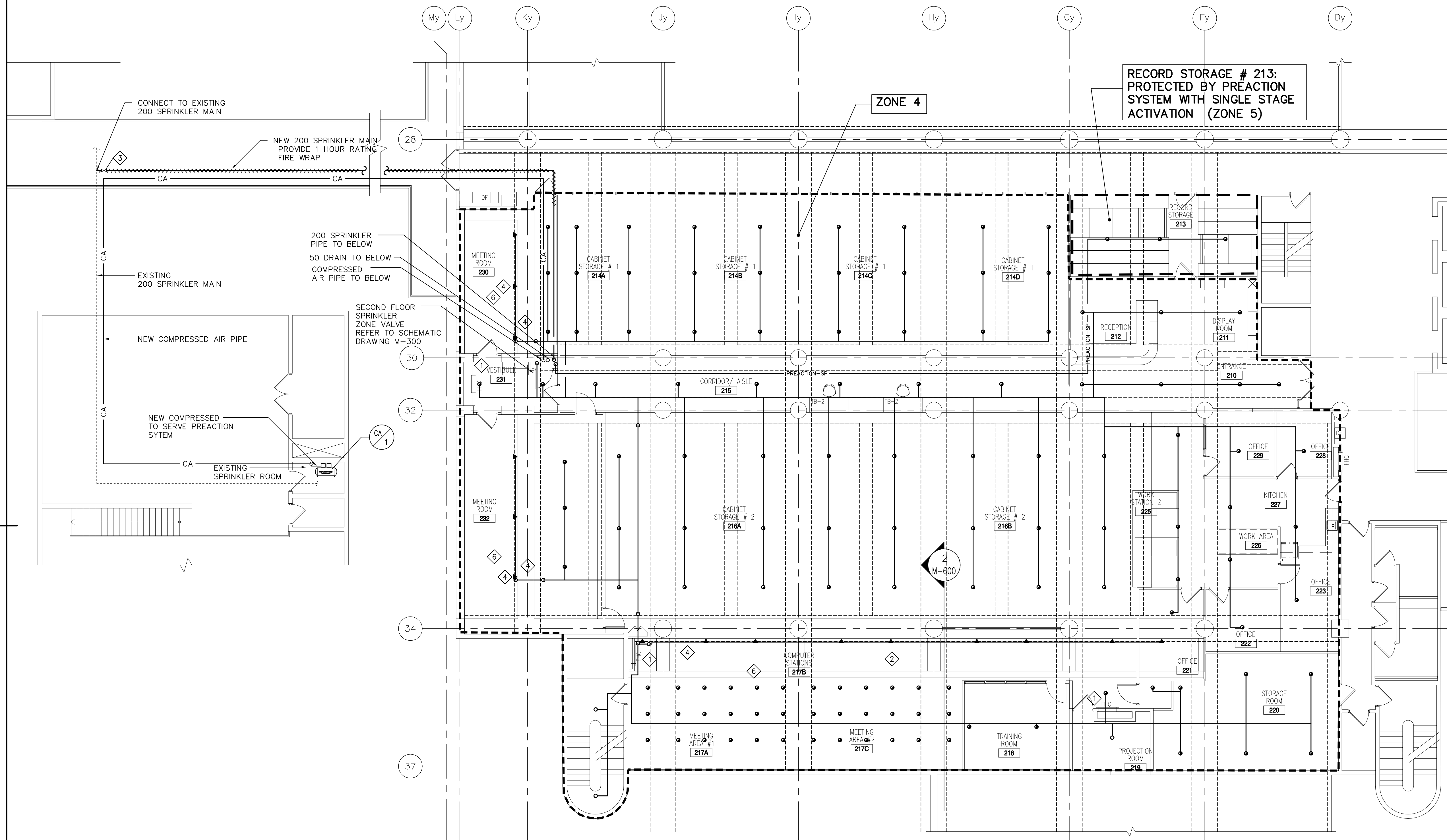
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BURLINGTON ONTARIO
CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

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

drawn by dessiné par	IV
designed by conc 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. 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. 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.
7. ALLOW ADDITIONAL 10 SPRINKLER HEADS IN THE CONTRACT PRICE, TO ACCOMMODATE DUCT & LIGHT FIXTURE INTERFERENCE AND SITE CONDITION.

CONSTRUCTION NOTES:

1. EXISTING FHC TO REMAIN.
2. PROVIDE HIGH TEMPERATURE SPRINKLER HEADS. SPRINKLER HEADS AT SKYLIGHTS SHALL BE WHITE COLOUR.
3. 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.
4. EXPOSED PIPE.

HAZARD CLASSIFICATION:

OFFICE & MEETING ROOM : LIGHT HAZARD

STORAGE ROOM : ORDINARY HAZARD GROUP 2

MECHANICAL & ELECTRICAL ROOM : ORDINARY HAZARD GROUP 1

CABINET STORAGE AREA/ HIGH DENSITY SHELVING SYSTEMS : ORDINARY HAZARD GROUP 2

RECORD STORAGE # 213:
PROTECTED BY PREACTION
SYSTEM WITH SINGLE STAGE
ACTIVATION (ZONE 5)

ZONE 4



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

consultant



ARCHITECTS

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consultant

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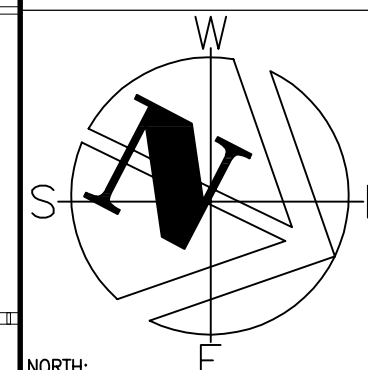
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(416)497.3111 fax (416)497.7210

12412

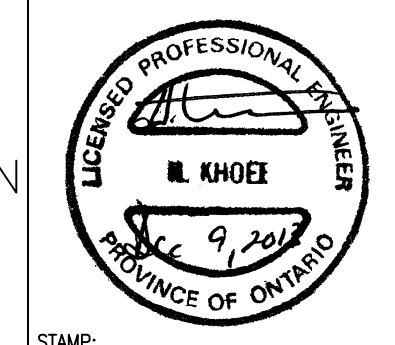
3	ISSUED FOR BID	09 DEC 2013
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1	ISSUED FOR 75% SUBMISSION	30 APR 2013

revision	date
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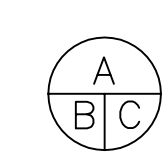
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NORTH:



STAMP:



- 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-
FIRE PROTECTION,
PLUMBING & DRAINAGE**

drawn by
dessiné par

IV

designed by
conçue par

MG

approved by
approuvé par

HK

bid
offreproject manager
administrateur
de projetsproject date
date du projetproject no.
no. du projet

R.061475.001

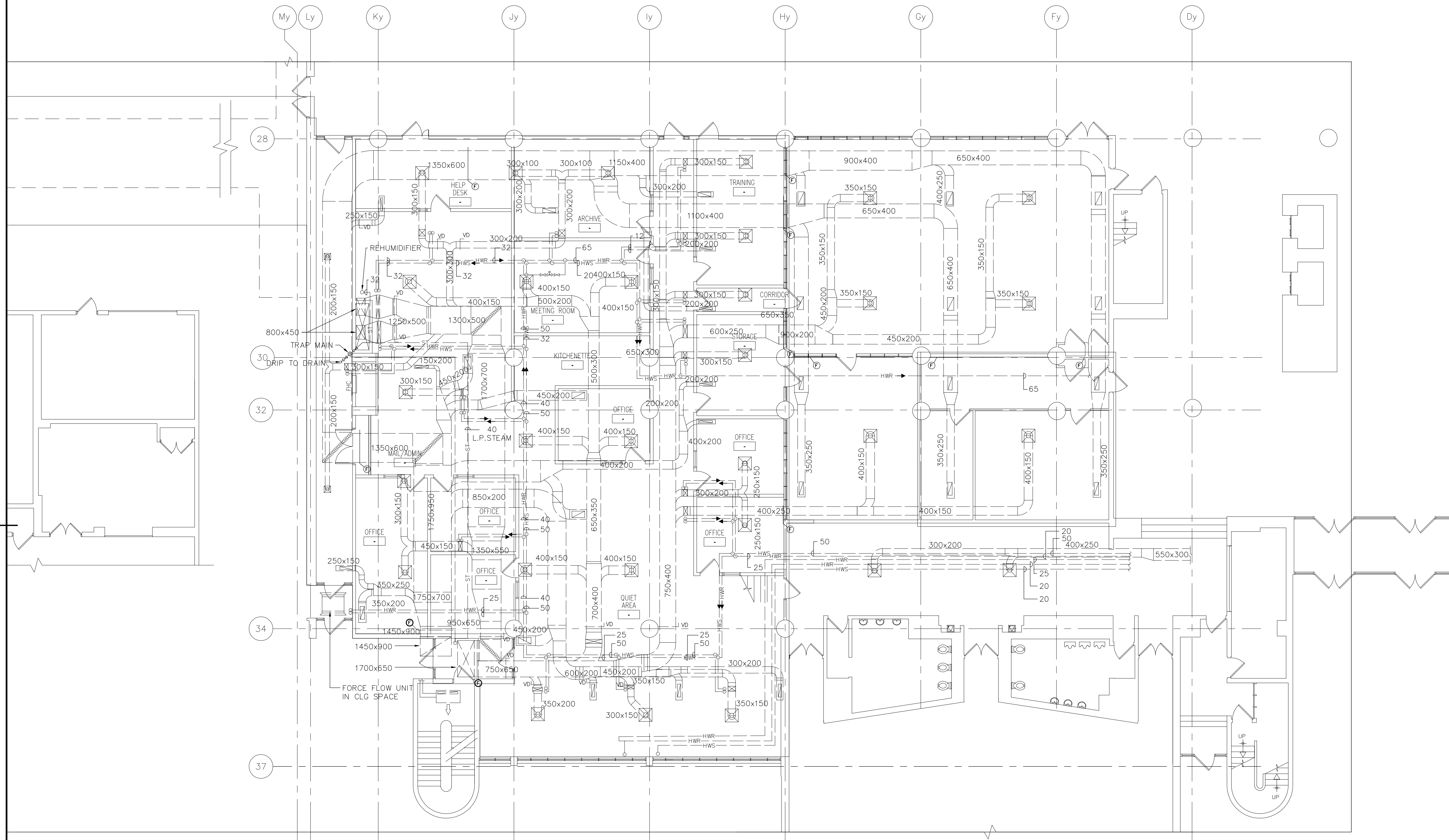
drawing no.
dessiné no.

M-320

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

0 1 2 3 4 5 6 7 8 9 10m

SCALE 1:100

**GENERAL NOTES:**

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

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

0 1 2 3 4 5 6 7 8 9 10m

SCALE 1:100

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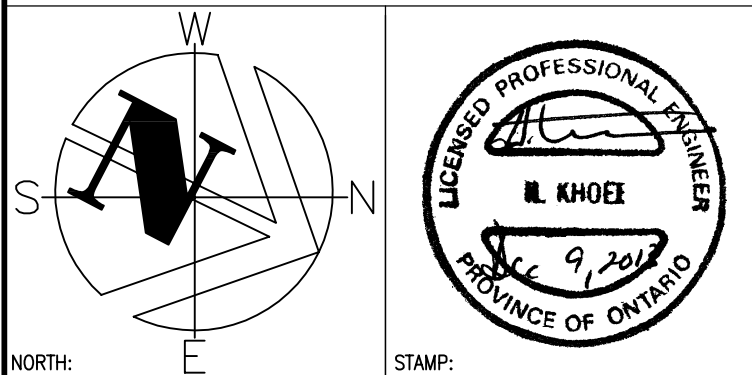


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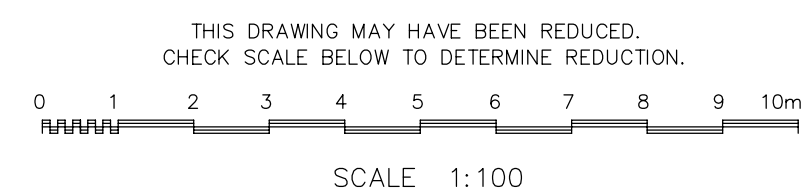
project title
titre du projet
BURLINGTON ONTARIO
CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

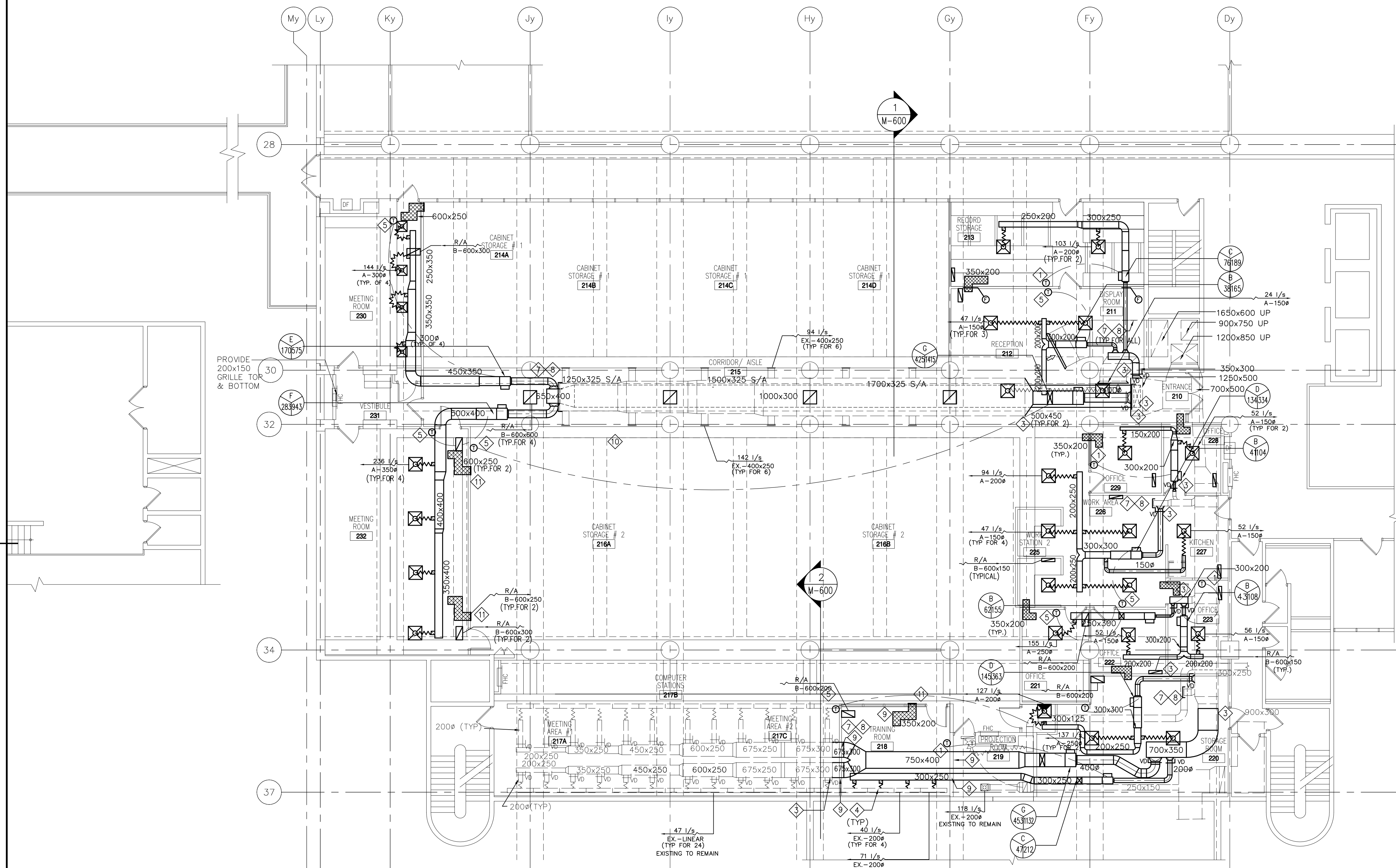
LIBRARY RENOVATION

drawing title
titre du dessin

**GROUND FLOOR PLAN-
HVAC DUCTWORK-
EXISTING**

drawn by dessiné par	AP
designed by conc 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-410D



**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 200R 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

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0 1 2 3 4 5 6 7 8 9 10m

SCALE 1:100

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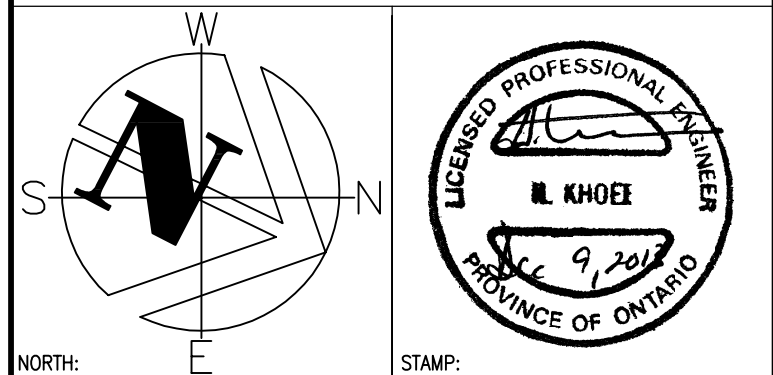
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	drawing no. - where detailed dessin no. - où détaillé

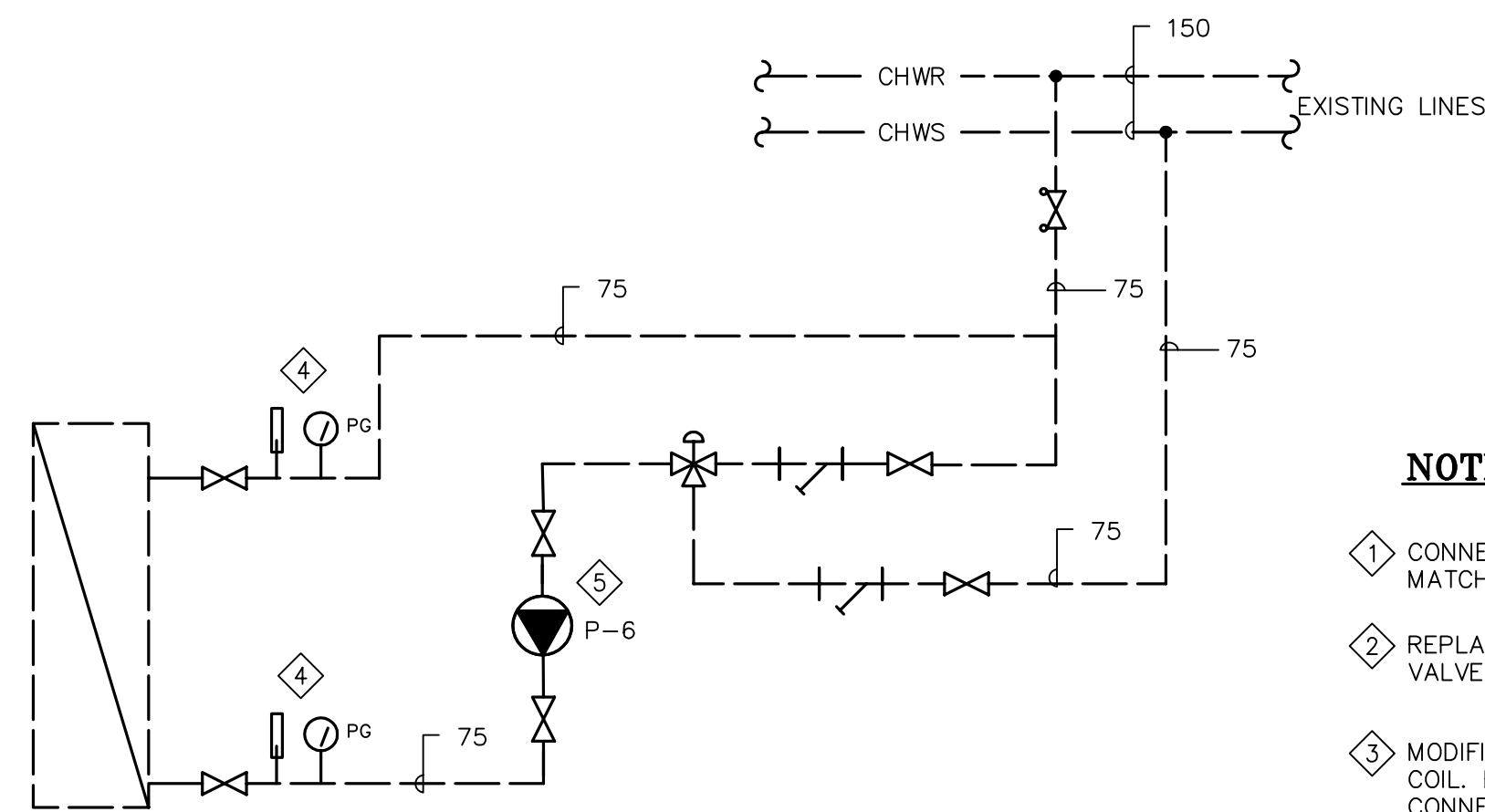
project title
titre du projet
BURLINGTON ONTARIO
CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATIONdrawing title
titre du dessin**SECOND FLOOR PLAN-
HVAC DUCTWORK**drawn by
dessiné par APdesigned by
conçue par MGapproved by
approuvée par HKbid
offre project manager
administrateur de projetsproject date
date du projetproject no.
no. du projet

R.061475.001

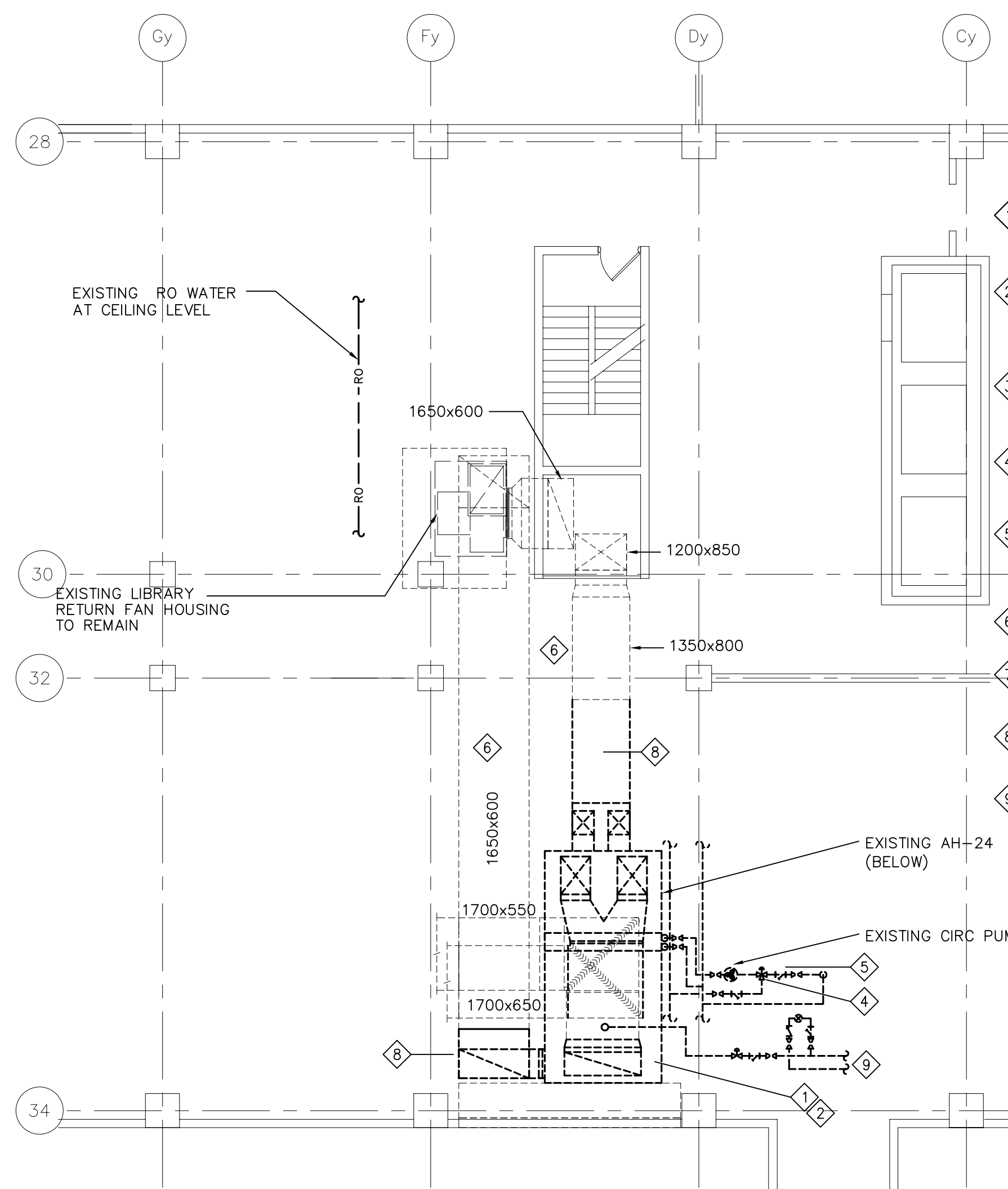
drawing no.
dessiné no.

M-420

**NOTES:**

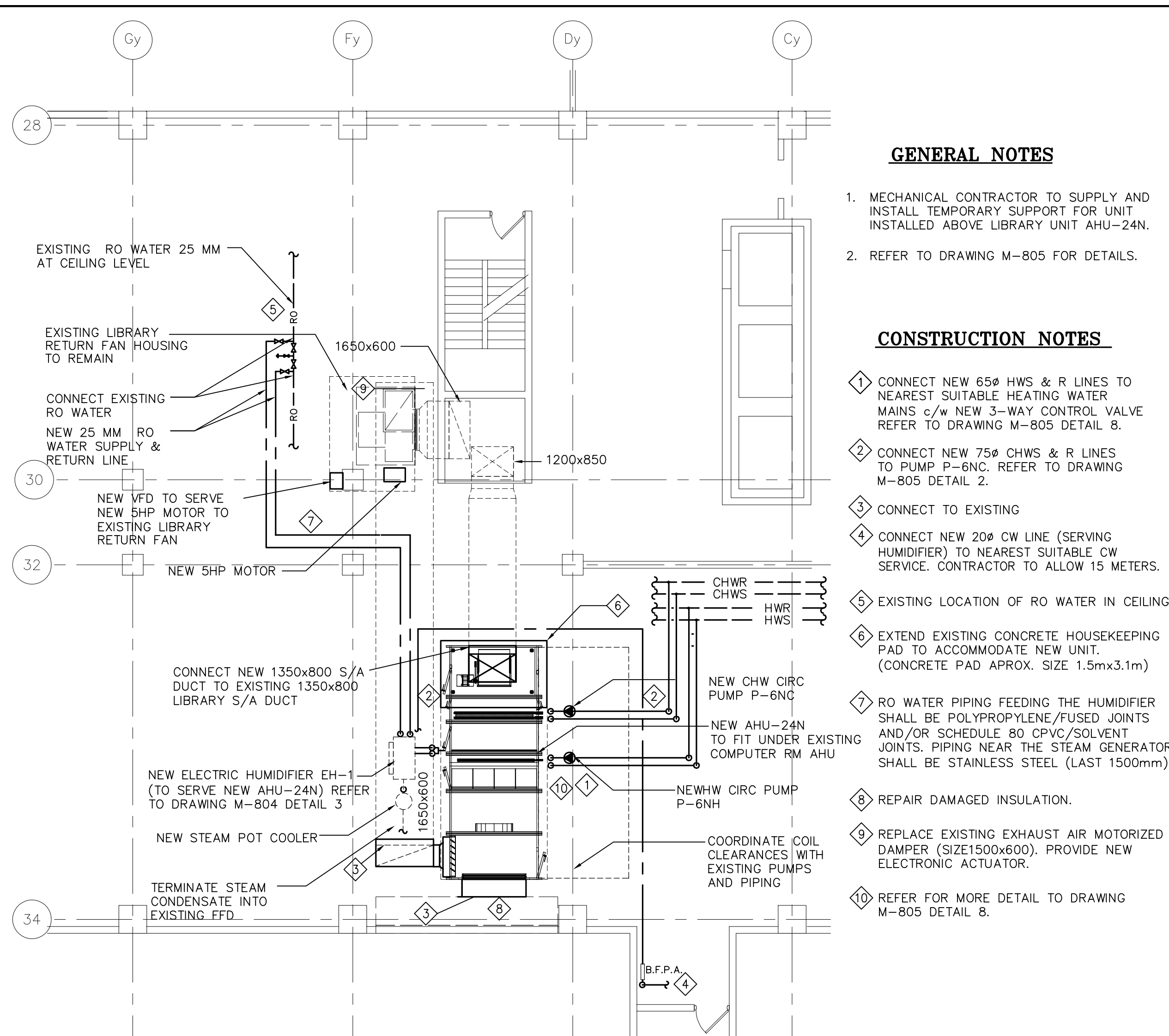
- 1 CONNECT NEW PUMP & NEW COIL TO MATCH EXISTING CONFIGURATION.
- 2 REPLACE EXISTING VALVES, BALANCING VALVE & STRAINER.
- 3 MODIFIED PIPING TO ACCOMMODATE NEW COIL. EXISTING CHILLED WATER COIL CONNECTION.
- 4 PROVIDE NEW TEMPERATURE & PRESSURE SENSORS.
- 5 FOR PUMP DETAIL REFER TO M-804 DETAIL 4.

1 EXISTING CHILLED WATER COIL CONNECTION
M-430 NTS

**NOTES:**

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

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

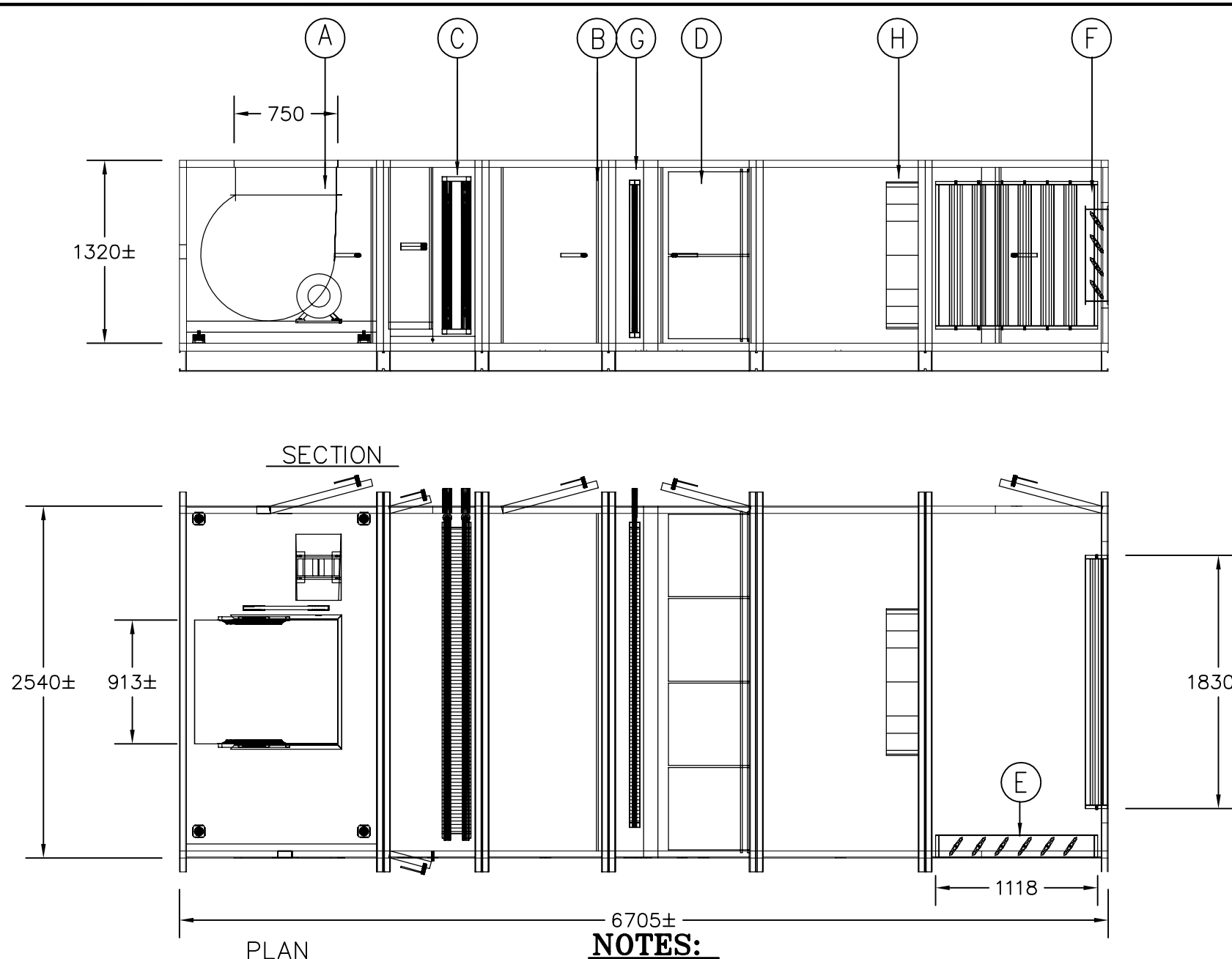
**GENERAL NOTES**

1. MECHANICAL CONTRACTOR TO SUPPLY AND INSTALL TEMPORARY SUPPORT FOR UNIT INSTALLED ABOVE LIBRARY UNIT AHU-24N.
2. REFER TO DRAWING M-805 FOR DETAILS.

CONSTRUCTION NOTES

- 1 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.
- 2 CONNECT NEW 75Ø CHWS & R LINES TO PUMP P-6NC. REFER TO DRAWING M-805 DETAIL 2.
- 3 CONNECT TO EXISTING
- 4 CONNECT NEW 20Ø CW LINE (SERVING HUMIDIFIER) TO NEAREST SUITABLE CW SERVICE. CONTRACTOR TO ALLOW 15 METERS.
- 5 EXISTING LOCATION OF RO WATER IN CEILING.
- 6 EXTEND EXISTING CONCRETE HOUSEKEEPING PAD TO ACCOMMODATE NEW UNIT. (CONCRETE PAD APPROX. SIZE 1.5m x 3.1m)
- 7 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).
- 8 REPAIR DAMAGED INSULATION.
- 9 REPLACE EXISTING EXHAUST AIR MOTORIZED DAMPER (SIZE 1500x600). PROVIDE NEW ELECTRONIC ACTUATOR.
- 10 REFER FOR MORE DETAIL TO DRAWING M-805 DETAIL 8.

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

**NOTES:**

- 1 MOTORIZED DAMPER SHALL BE SUPPLIED BY UNIT MANUFACTURER (OUTSIDE AIR; RETURN AIR & SUPPLIED AIR)

(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-Po ES Rev 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.

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0 1 2 3 4 5 6 7 8 9 10m
SCALE 1:100

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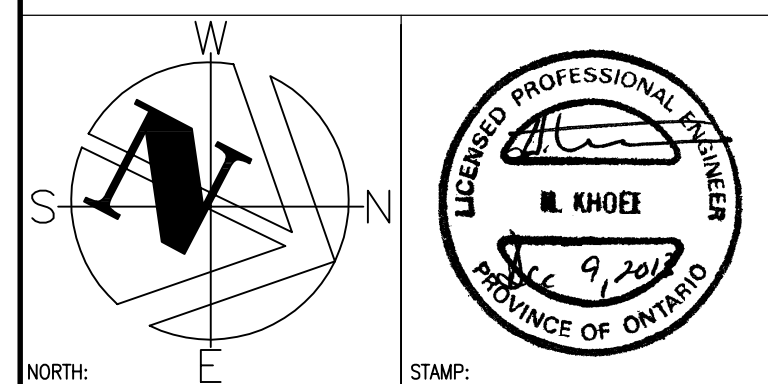
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	drawing no. - where detailed dessin no. - où détaillé

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

LIBRARY RENOVATIONdrawing title
titre du dessin**THIRD FLOOR PLAN-
MECHANICAL ROOM-
MECHANICAL**drawn by
dessiné par

AP

designed by
conç par

MG

approved by
approuvé par

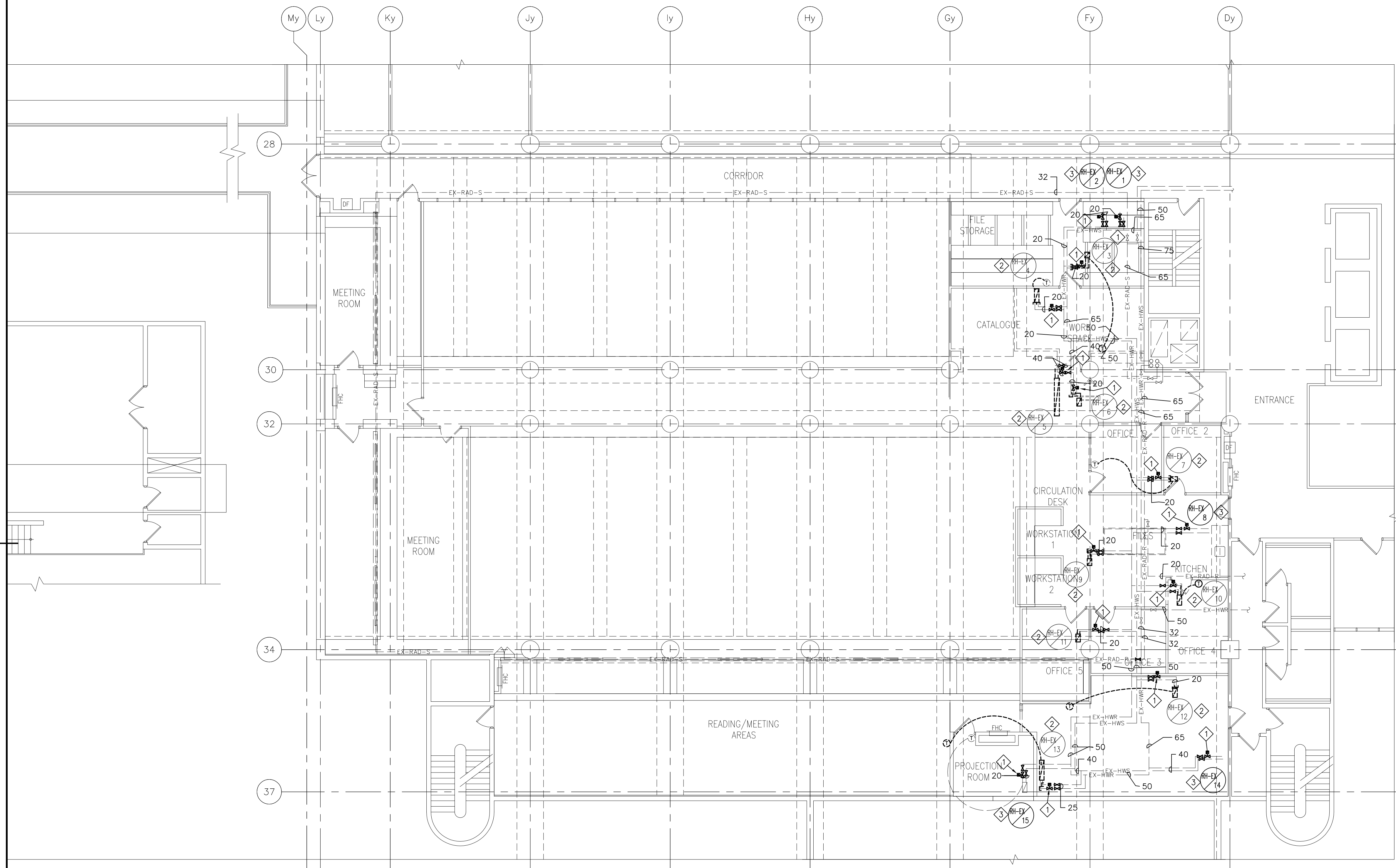
HK

bid
offreproject manager
administrateur
de projetsproject date
date du projetproject no.
no. du projet

R.061475.001

drawing no.
dessiné 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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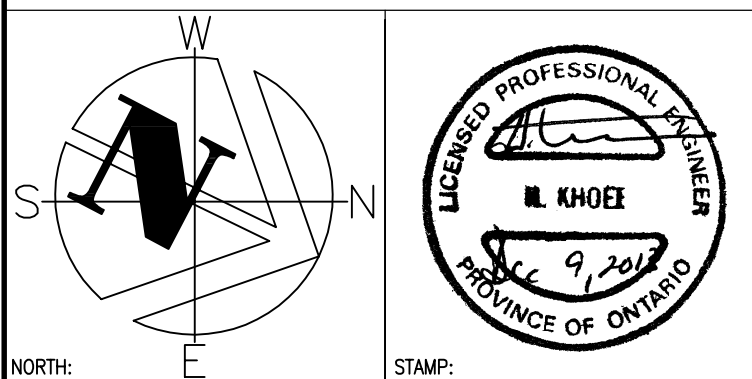
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project title
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BURLINGTON ONTARIO
CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

drawing title
titre du dessin

**SECOND FLOOR PLAN-
HVAC PIPING-
DEMOLITION**

drawn by
dessiné par

AP

designed by
conçue par

MG

approved by
approuvé par

HK

bid

offre

project manager
administrateur
de projets

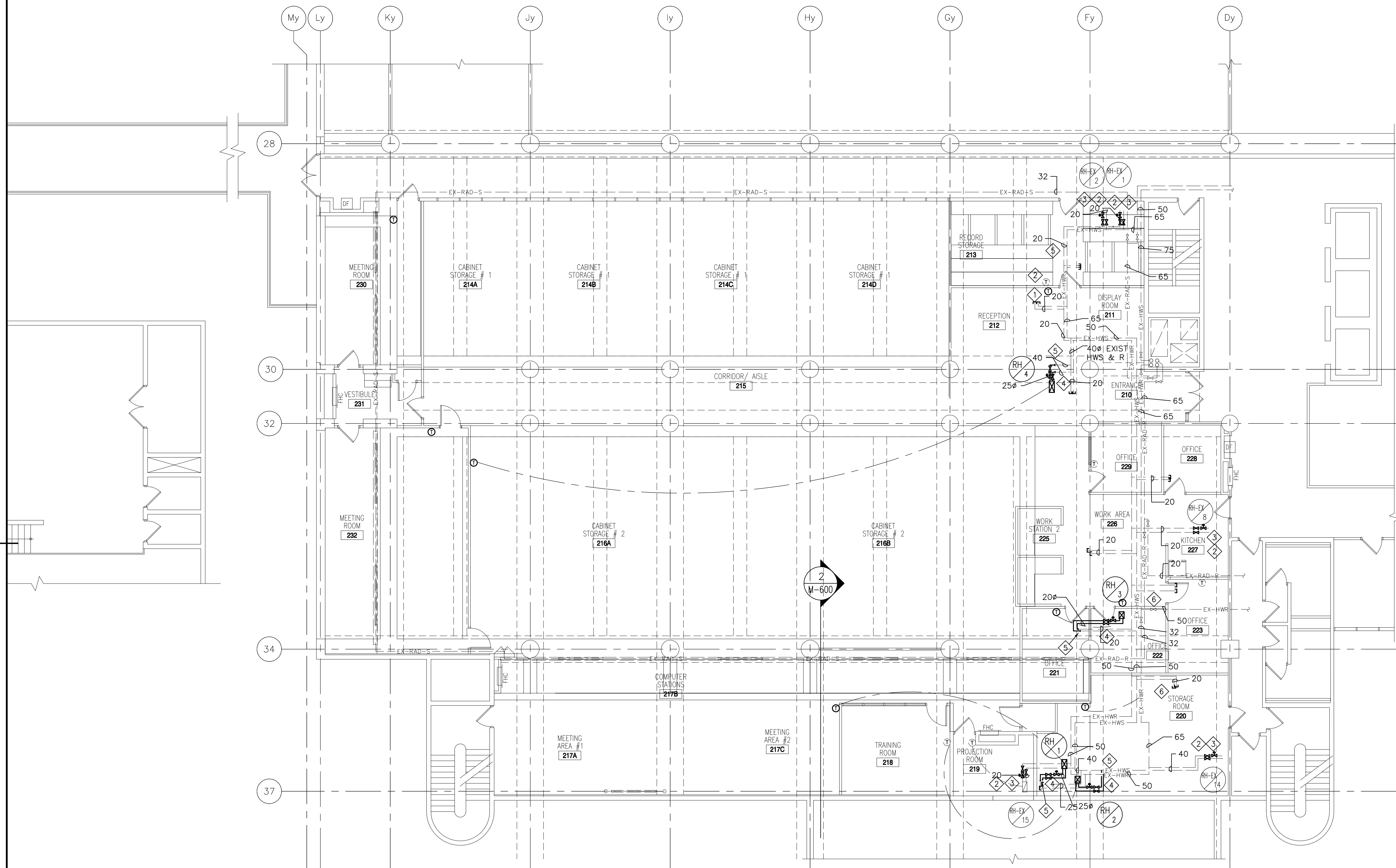
project date
date du projet

project no.
no. du projet

R.061475.001

drawing no.
dessiné no.

M-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

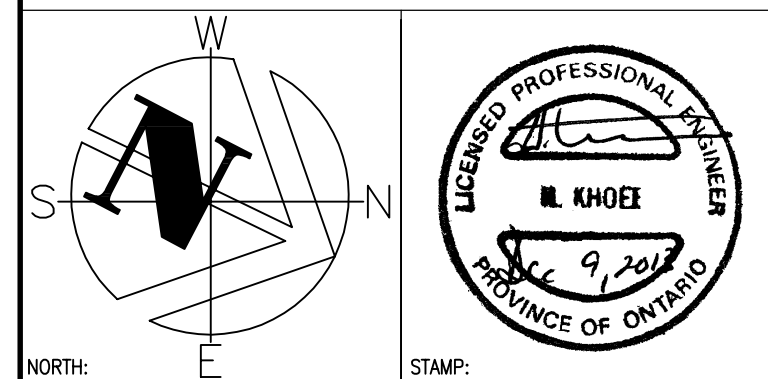
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project title
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CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

drawing title
titre du dessin

**SECOND FLOOR PLAN-
HVAC PIPING**

drawn by
dessiné par AP

designed by
conçu par MG

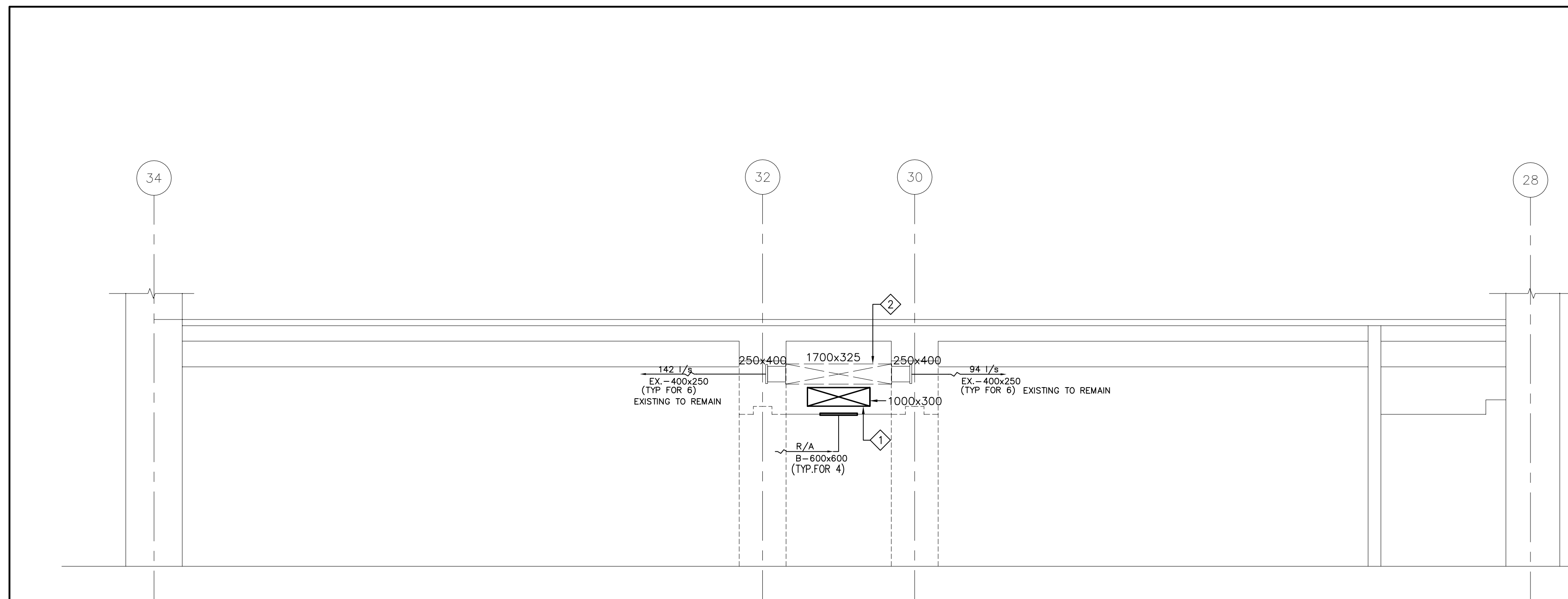
approved by
approuvé par HK

bid
offre project manager
administrateur
de projets

project date
date du projet

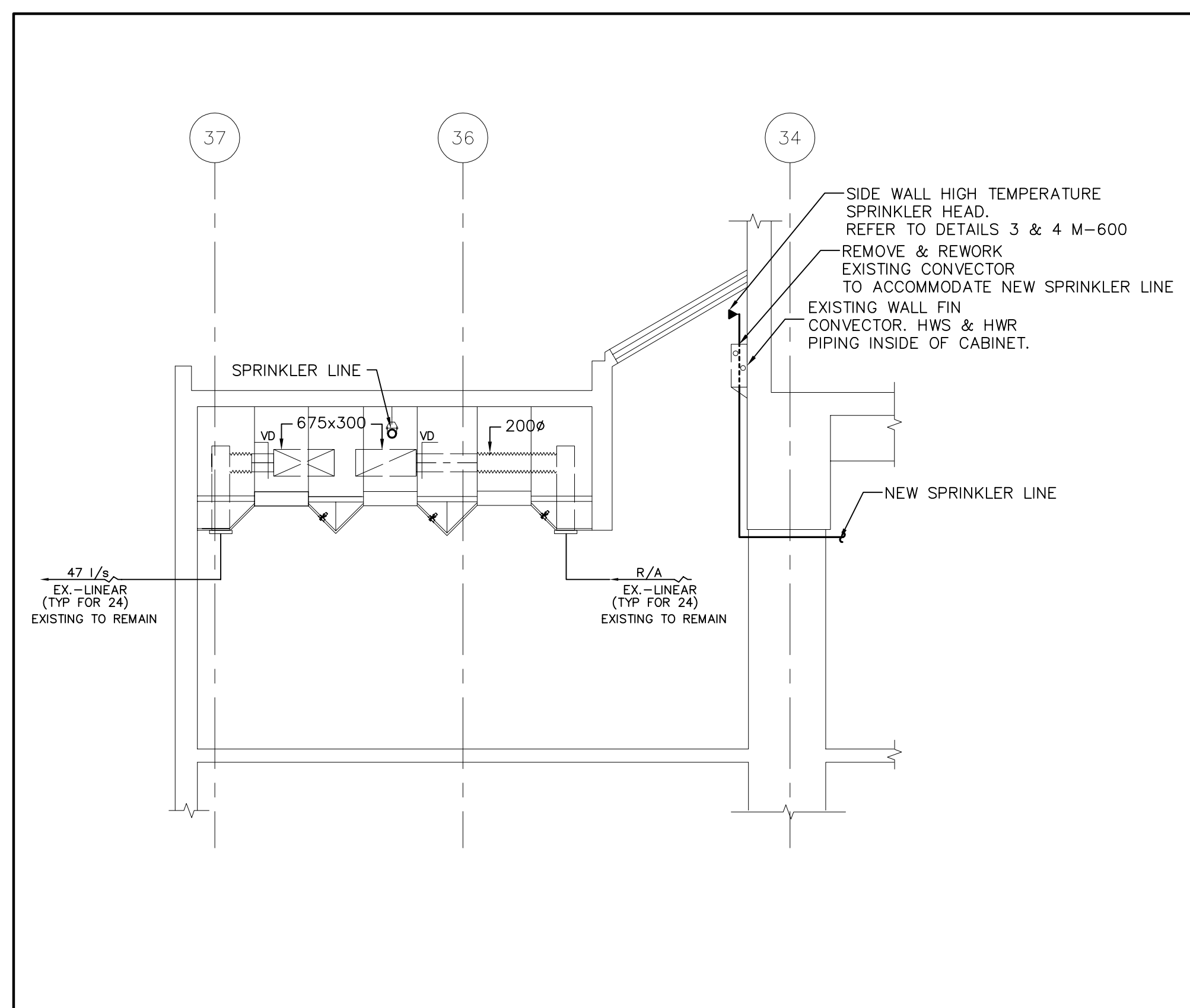
project no.
no. du projet
R.061475.001

drawing no.
dessiné no. **M-520**

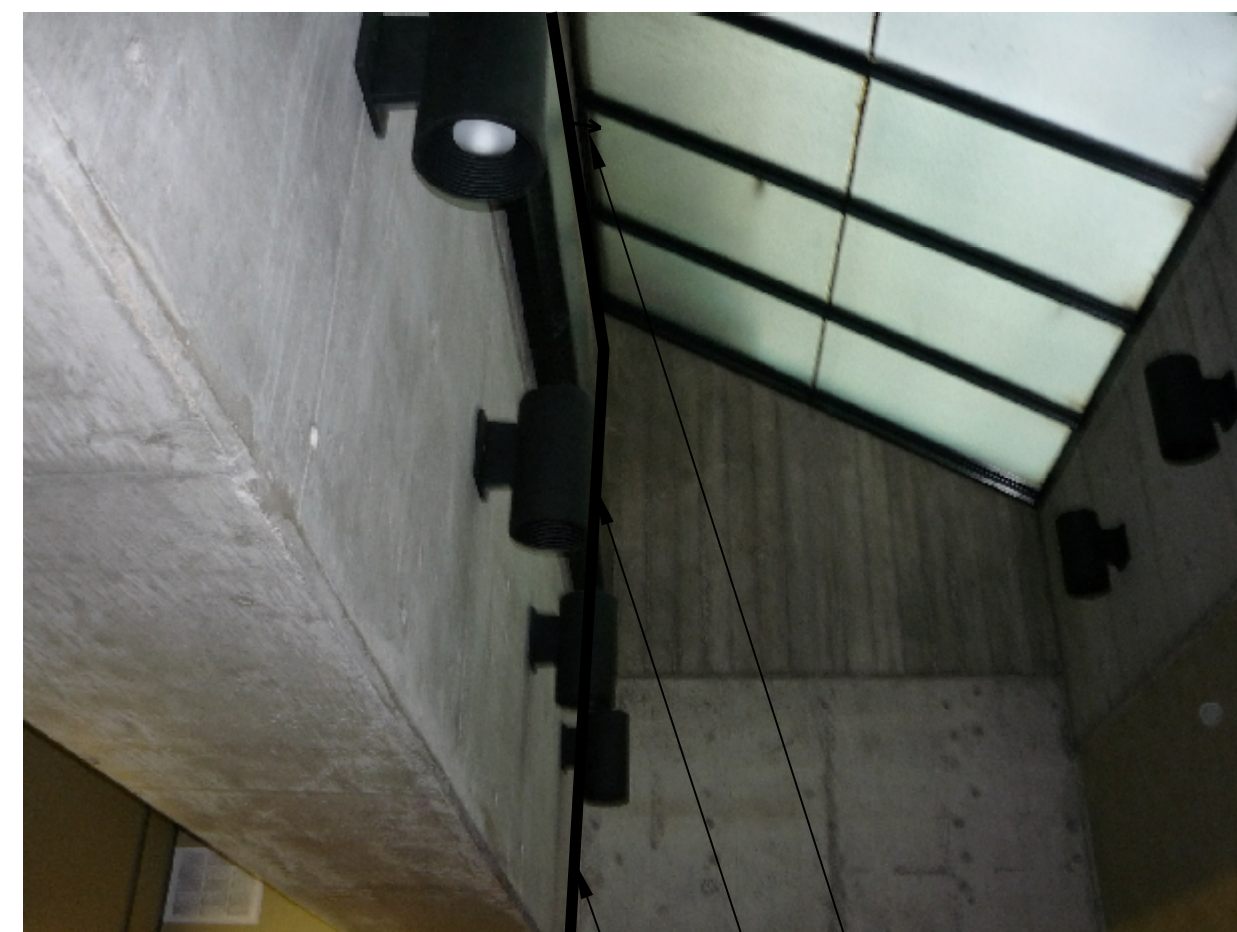
**CONSTRUCTION NOTES**

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

1 SECTION 1
M-600 1:50

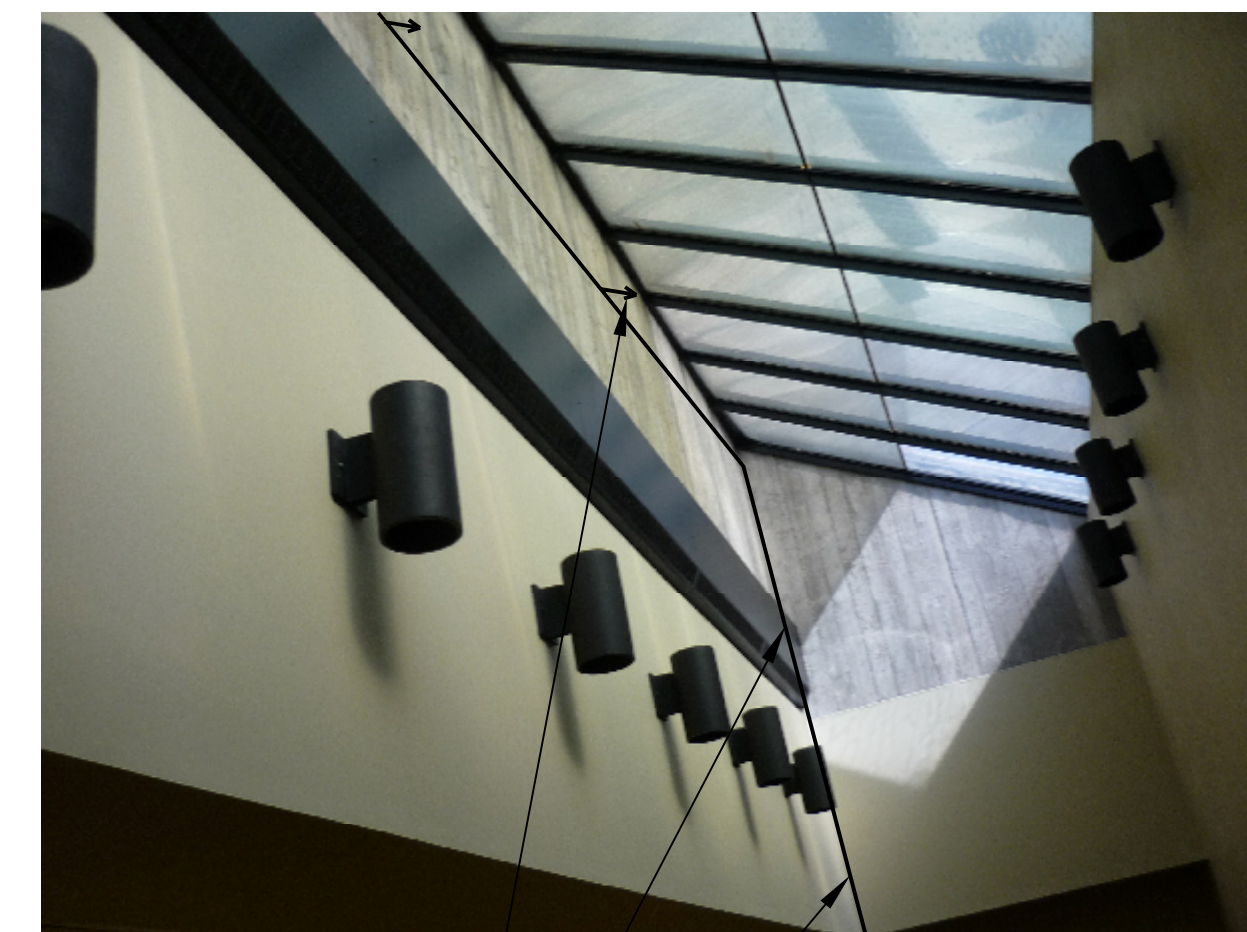


2 SECTION 2
M-600 1:50



- SIDE WALL SPRINKLER
- REMOVE & REWORK EXISTING HEATING EQUIPMENT TO ACCOMMODATE NEW SPRINKLER PIPE.
- EXPOSED PIPE

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



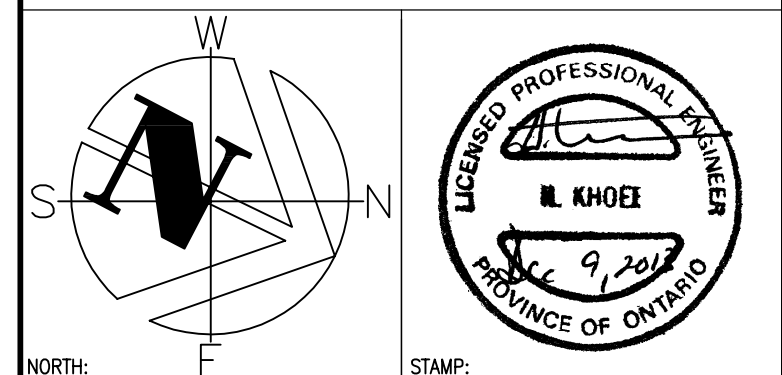
- SIDE WALL SPRINKLER
- REMOVE & REWORK EXISTING HEATING EQUIPMENT TO ACCOMMODATE NEW SPRINKLER PIPE.
- EXPOSED PIPE

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



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CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

drawing title
titre du dessin

**MECHANICAL
SECTIONS**

drawn by
dessiné par AP/IV

designed by
conc par MG

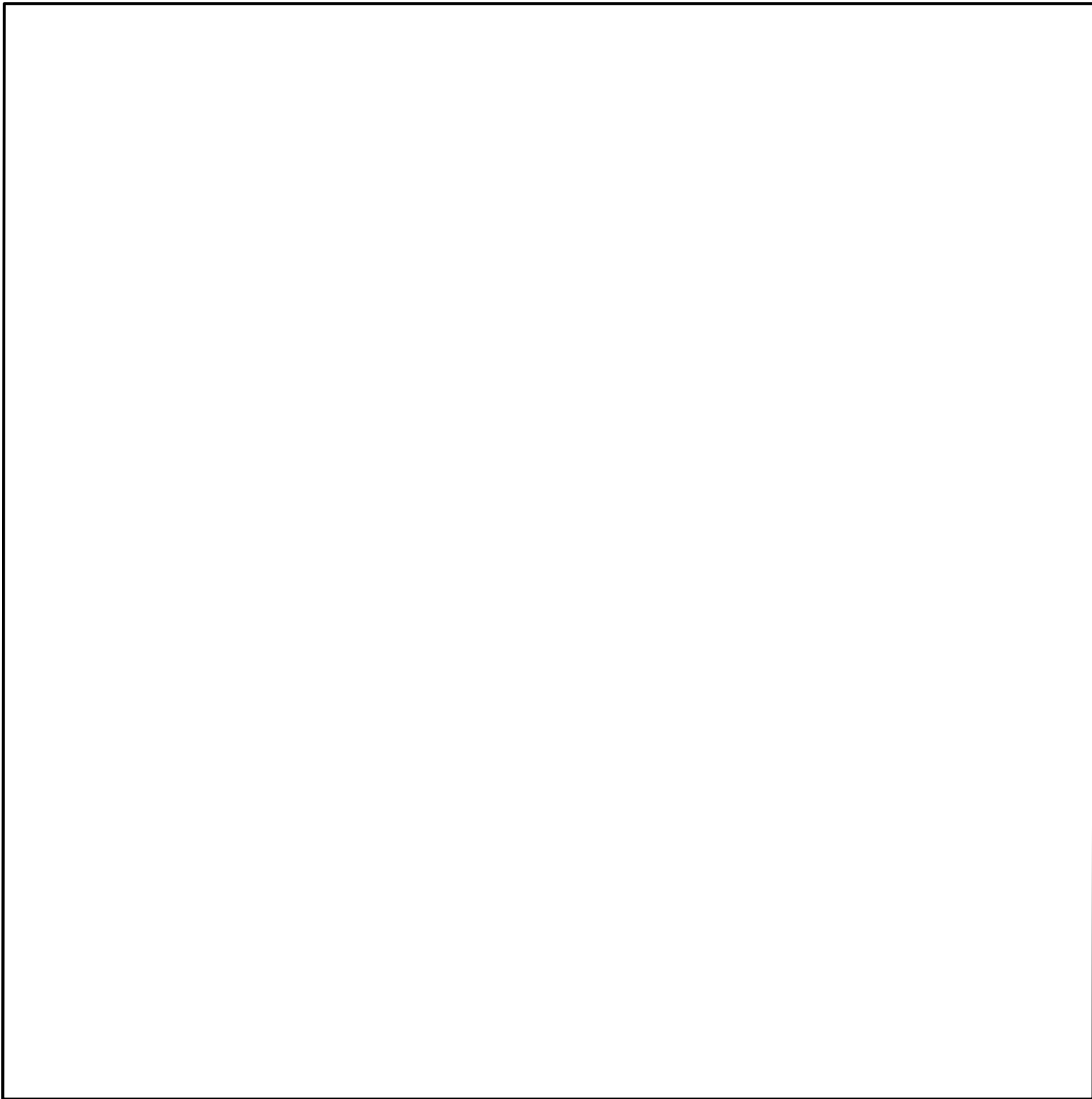
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administrateur
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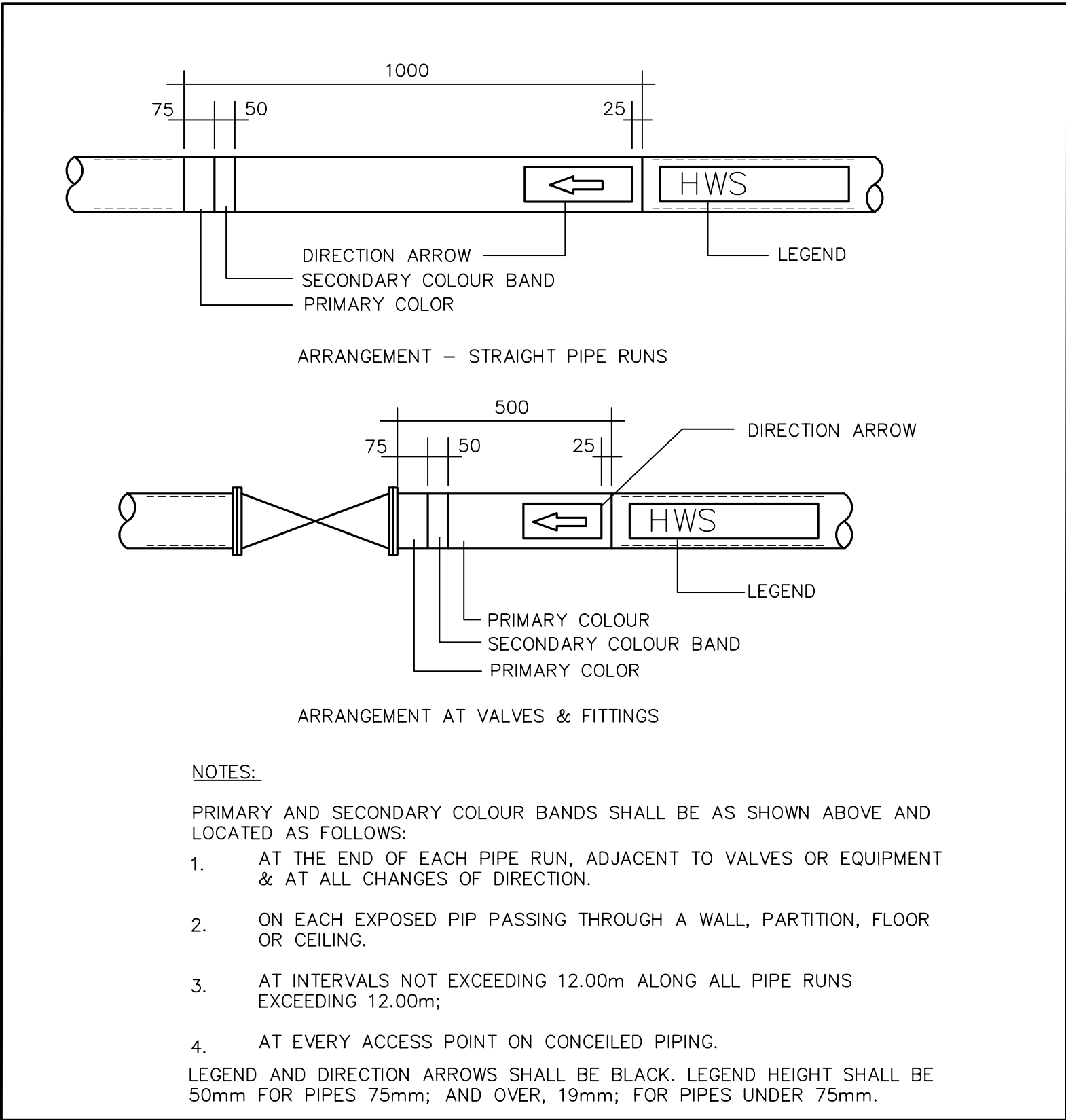
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date du projet

project no.
no. du projet
R.061475.001

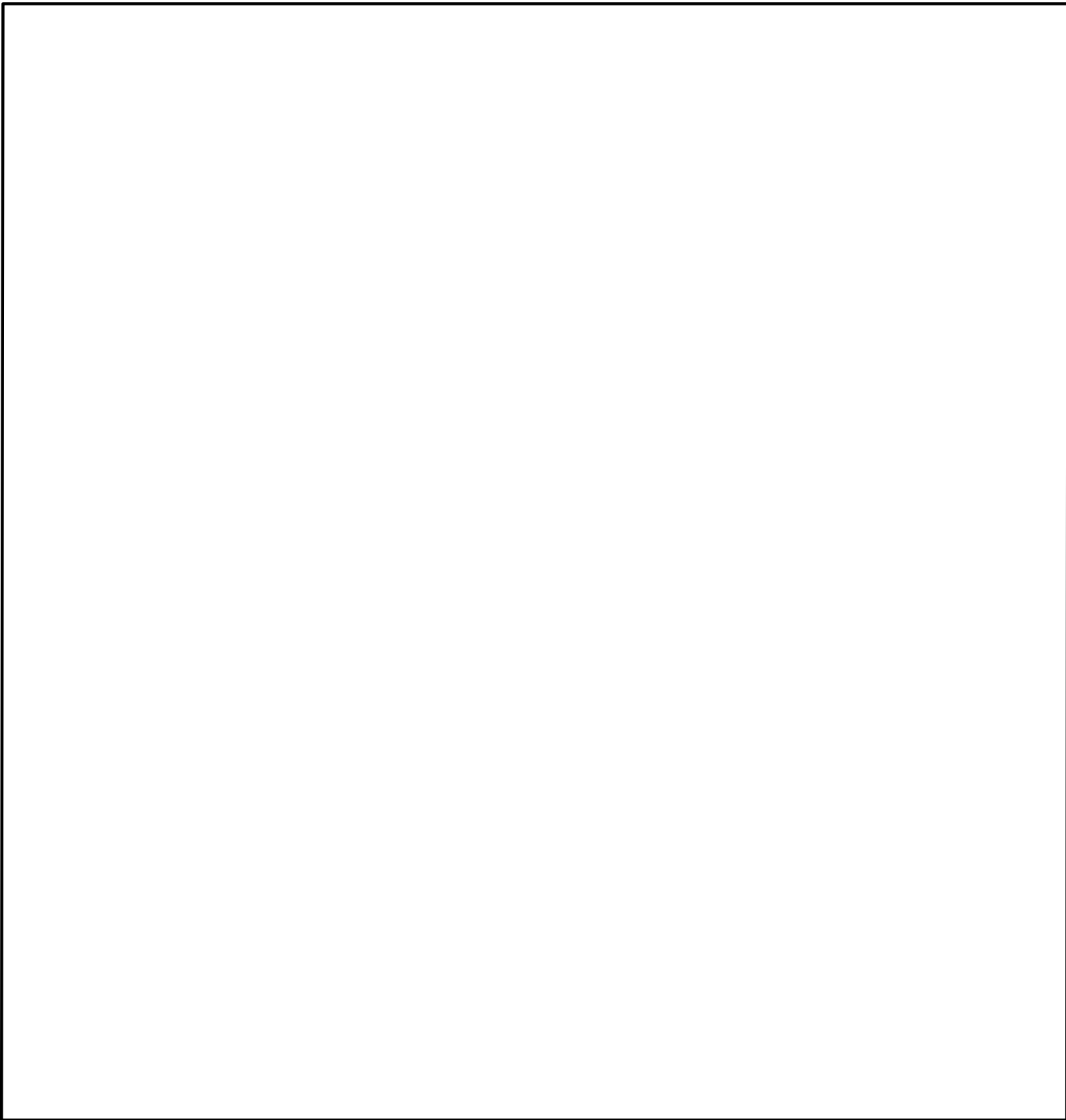
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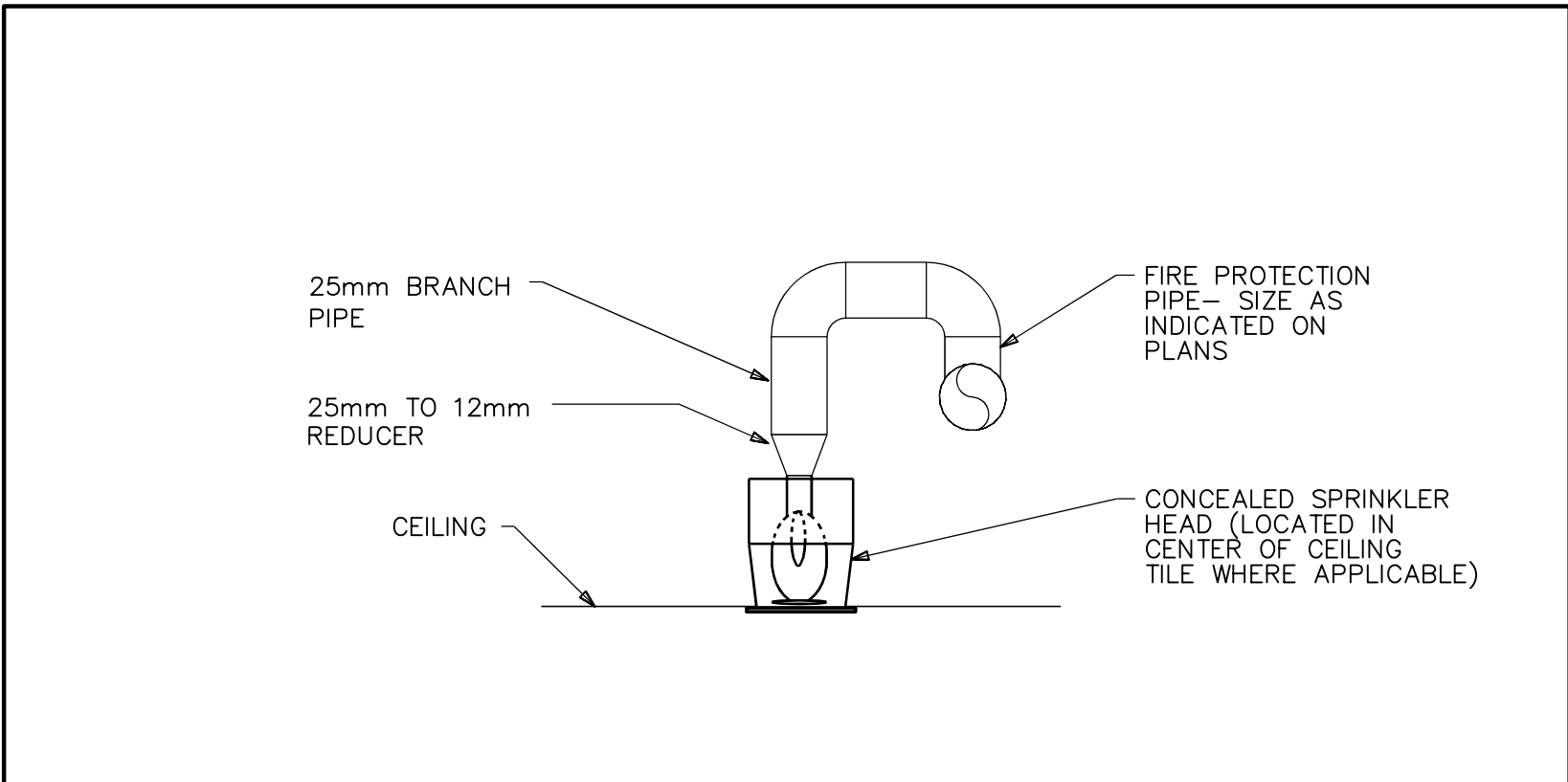
1 RESERVED
M-801 N.T.S



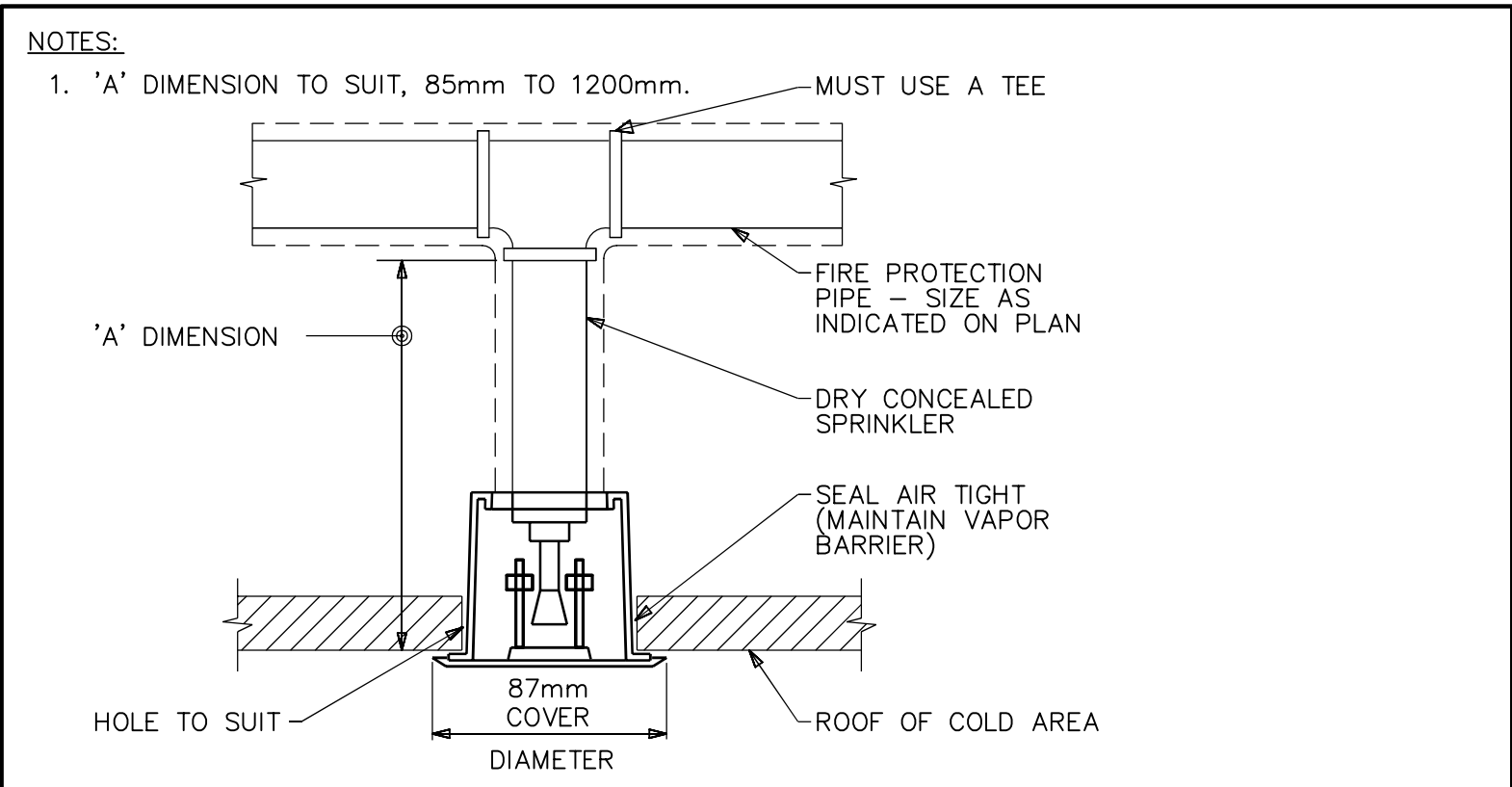
2 PIPING IDENTIFICATION LOCATION
M-801 N.T.S



3 RESERVED
M-801 N.T.S



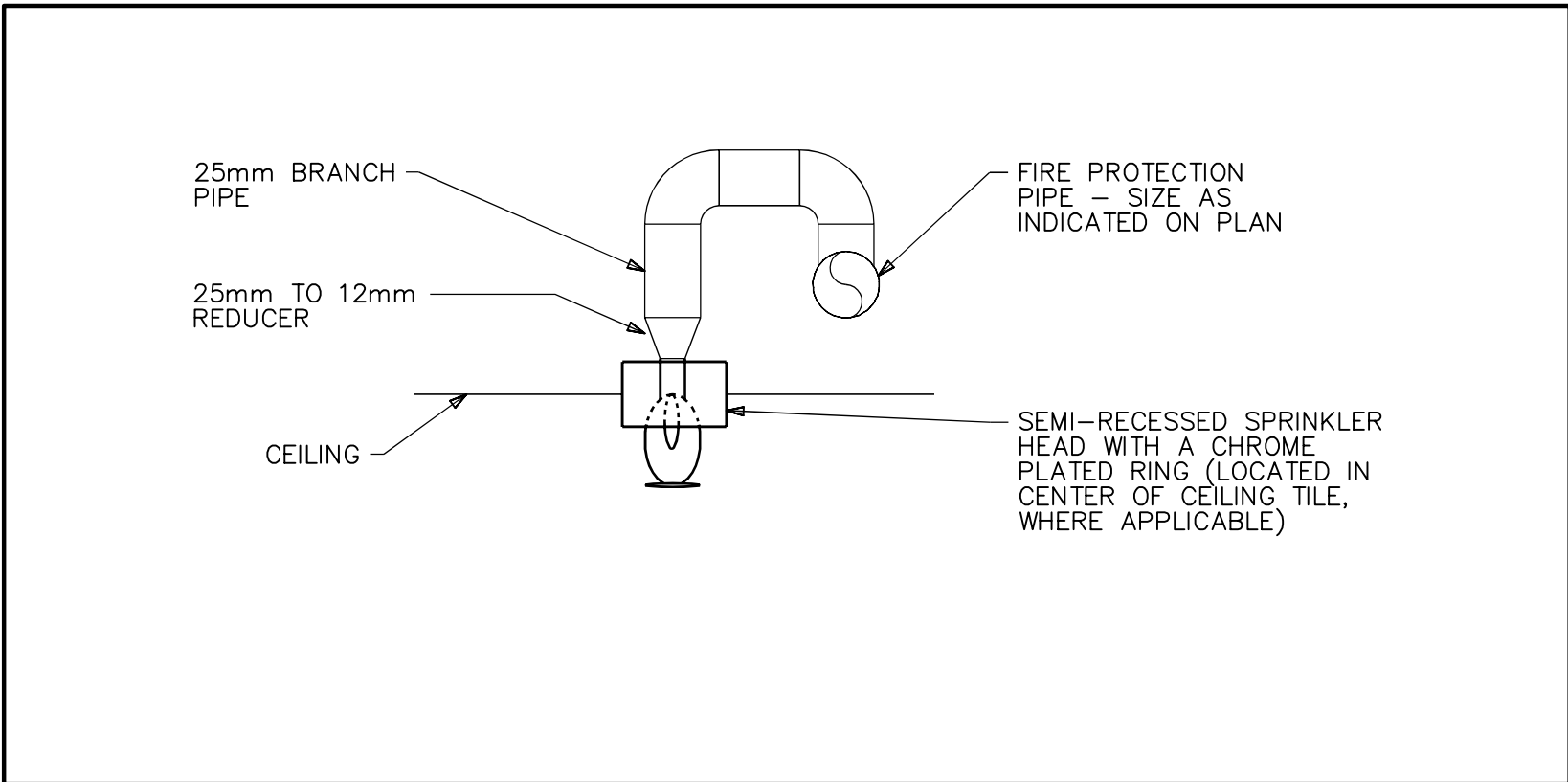
4 CONCEALED PENDANT SPRINKLER HEAD INSTALLATION DETAIL
M-801 N.T.S



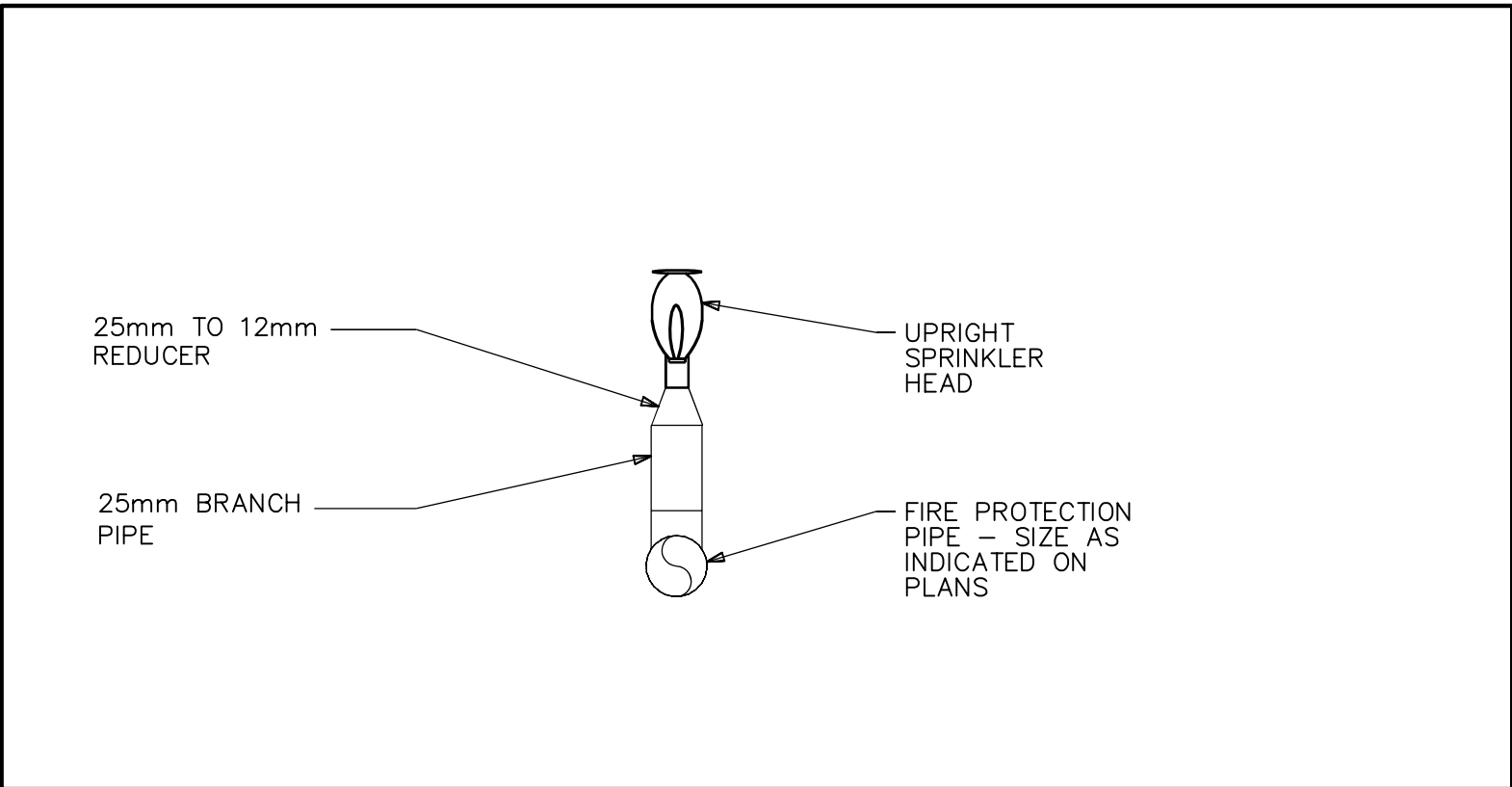
5 DRY CONCEALED PENDANT SPRINKLER HEAD INSTALLATION DETAIL
M-801 N.T.S



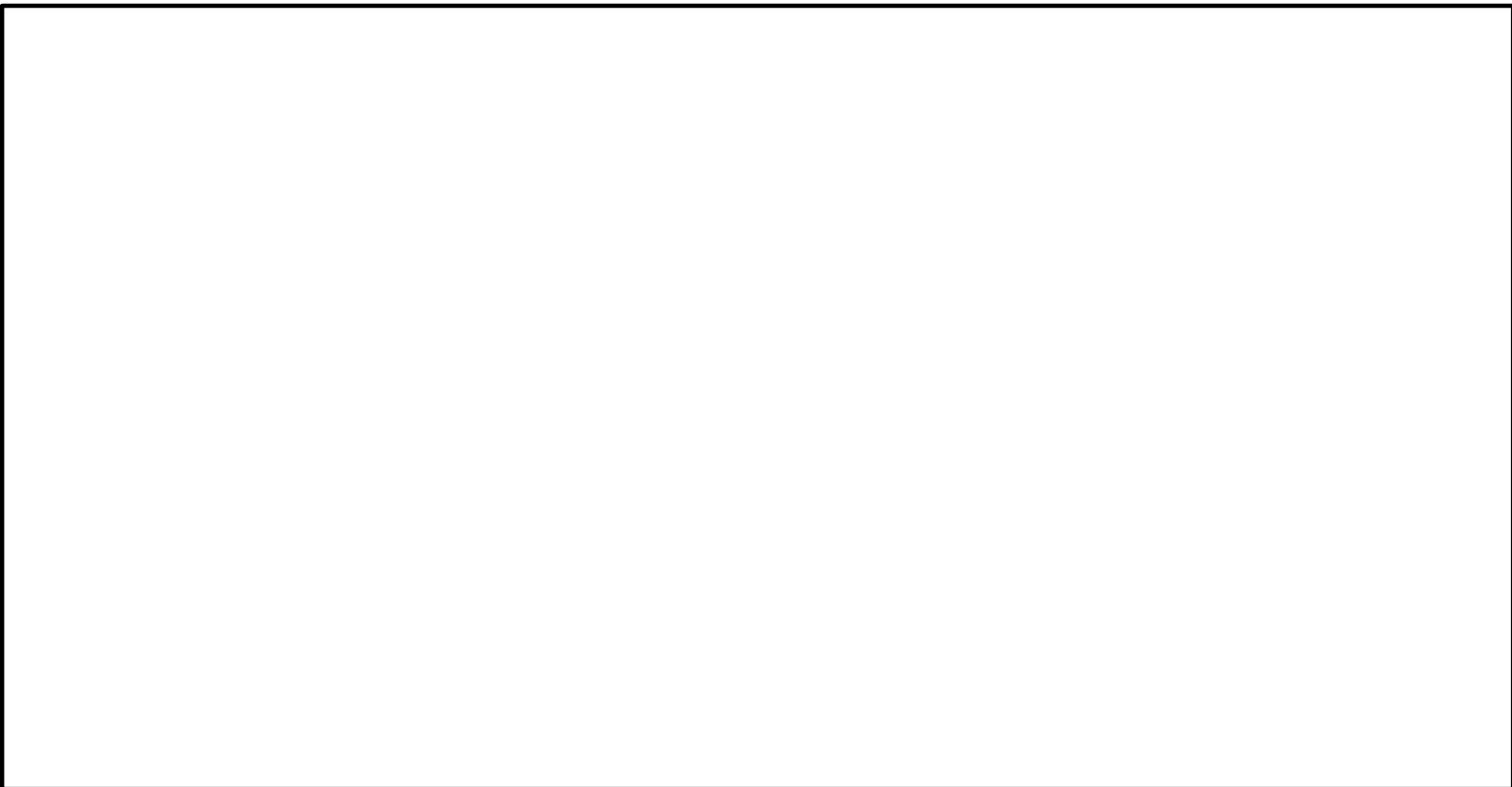
6 RESERVED
M-801 N.T.S



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

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

consultant

ARCHITECTS

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T 416 480 2020 F 416 480 1881

consultant

CROSSEY ENGINEERING LTD.

2255 Sheppard Avenue. E.
Suite E-331
North York, On M2J 4Y1
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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

MECHANICAL DETAILS
SHEET 1

drawn by
dessiné par

designed by
conç par

approved by
approuvé par

bid
offre

project date
date du projet

project no.
no. du projet

drawing no.
dessiné no.

AP

MG

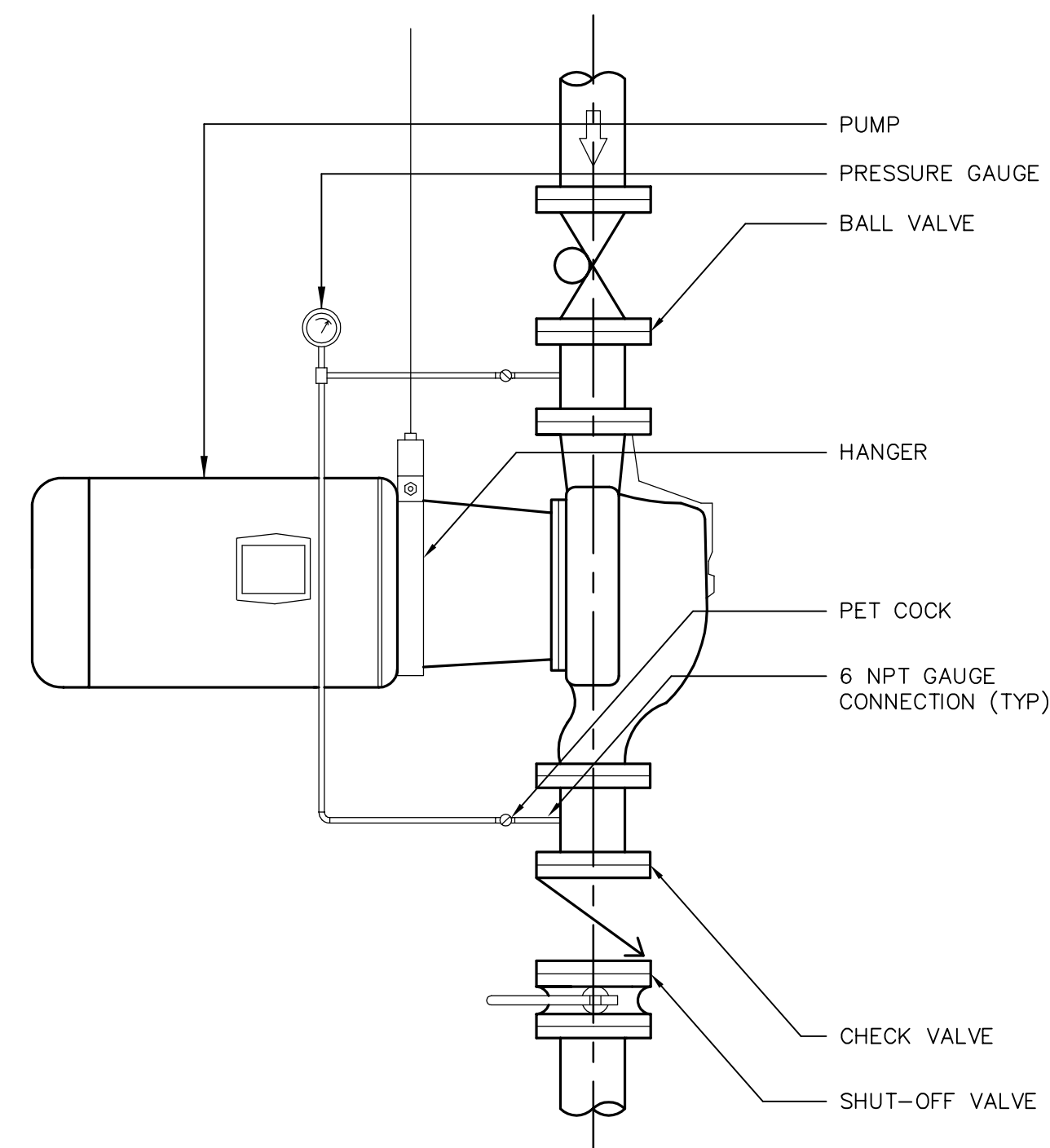
HK

project manager
administrateur de projets

R.061475.001

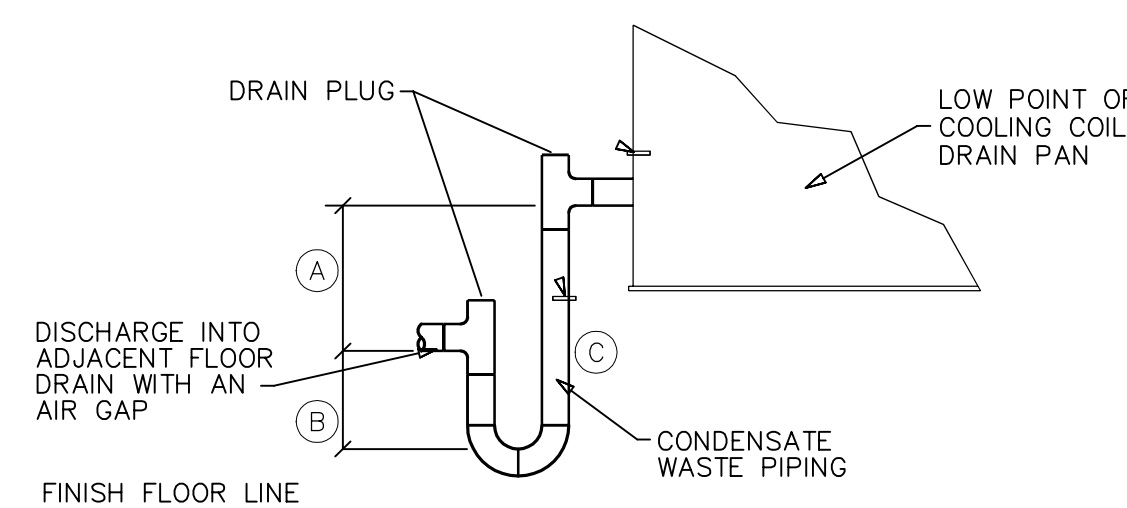
M-801

GSC-A1 DATE PLOTTED: PLOT SCALE: CAD FILE:



1 IN-LINE PUMP VERTICAL PIPING DETAIL

M-802 N.T.S.



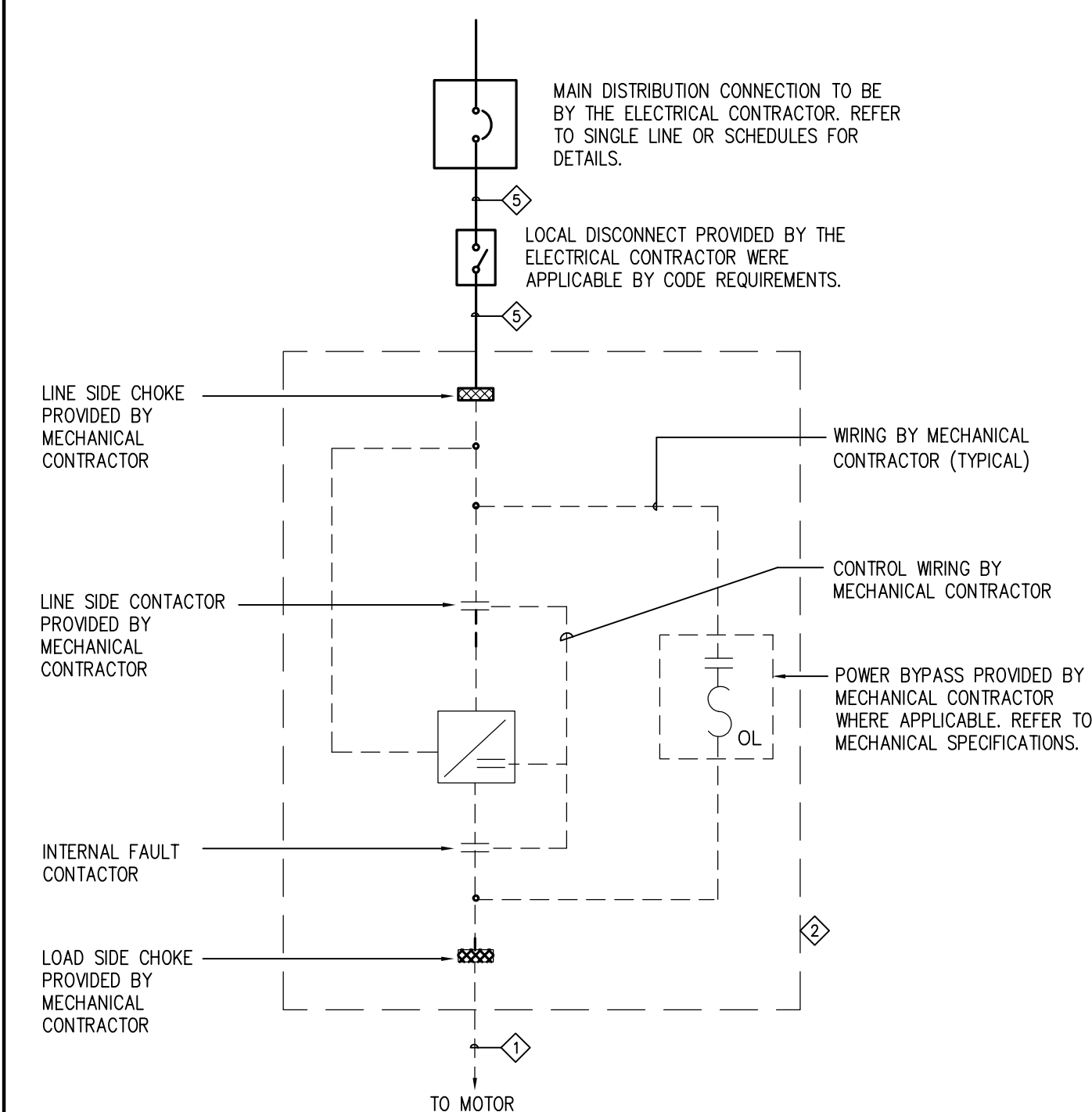
REFERENCE NOTES

- (A) GENERALLY SIZE DIMENSION FOR MAXIMUM SUCTION PRESSURE (WC) AT DISCHARGE OF AHU COOLING COIL
- (B) GENERALLY SIZE DIMENSION FOR (A)/2, PLUS, IF CLEARANCE ALLOWS, A SAFETY FACTOR OF 25(MM).

SIZING SCHEDULE			
MARK	A LENGTH (MM)	B LENGTH (MM)	C PIPE SIZE (MM)
AH-24N	125	75	200

4 DRAIN PAN CONDENSATE DETAIL

M-802 N.T.S.

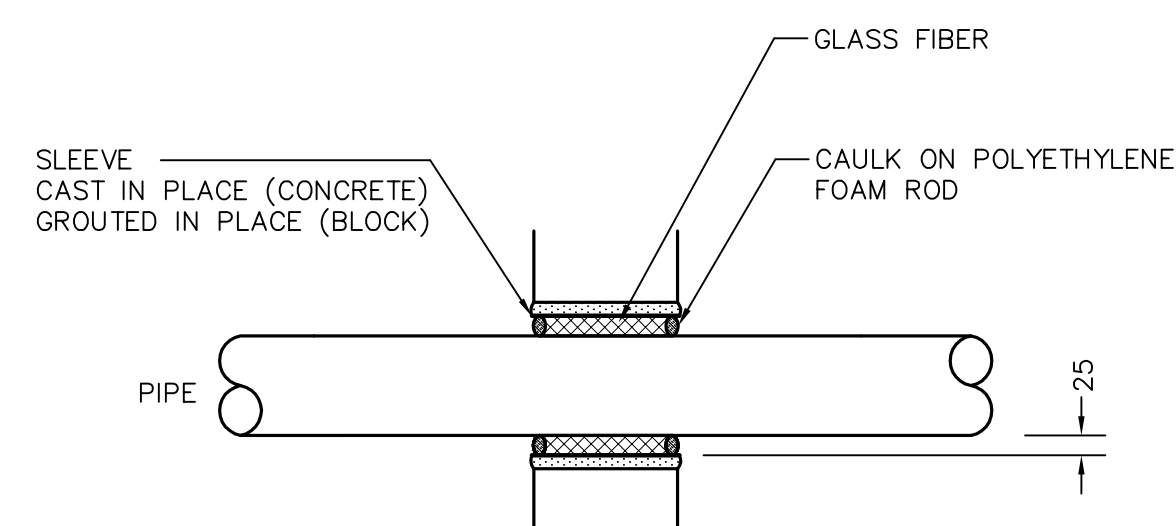


NOTES:

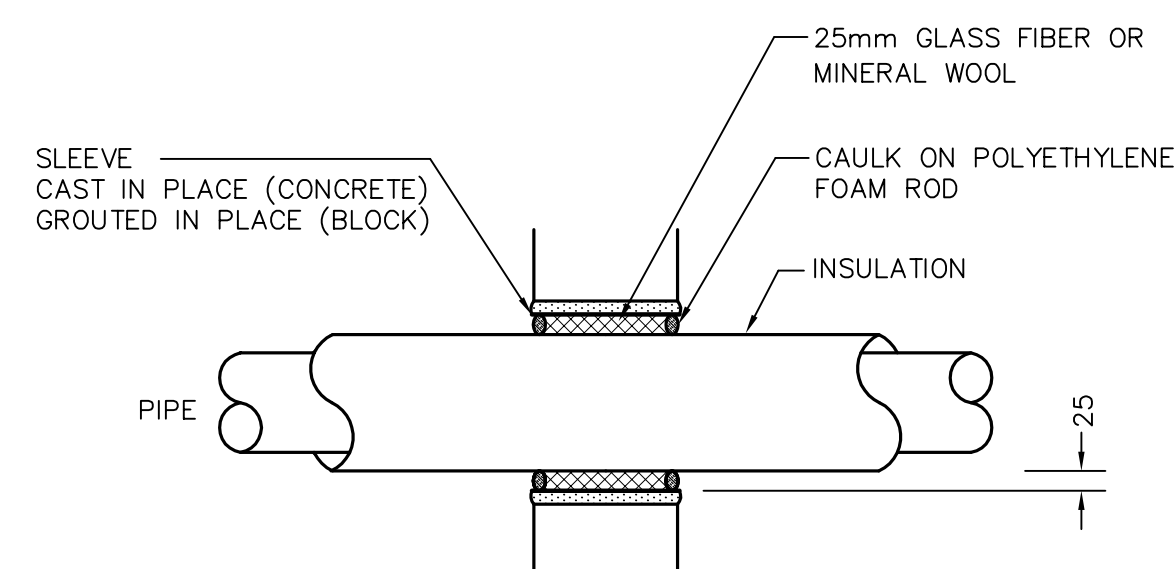
- 1 MECHANICAL CONTRACTOR TO PROVIDE ALCATEL TYPE "DRIVE RX" CABLE BETWEEN VFD AND MOTOR.
- 2 NEMA 12/IP54 ENCLOSURE MAY HAVE TO BE SPECIFIED WITH FANS FOR HEAT DISSIPATION; BY MECHANICAL CONTRACTOR.
3. ALL CONTROL WIRING SHALL BE PROVIDED BY MECHANICAL CONTRACTOR.
4. ALL LUGS ARE BY MECHANICAL CONTRACTOR. CO-ORDINATE WITH ELECTRICAL CONTRACTOR FOR SIZE.
- 5 ELECTRICAL CONTRACTOR TO PROVIDE WIRING BETWEEN DISCONNECT SWITCH AND VFD.

2 UNIT MOUNTED VARIABLE FREQUENCY DRIVE WIRING SCHEMATIC

M-802 N.T.S.



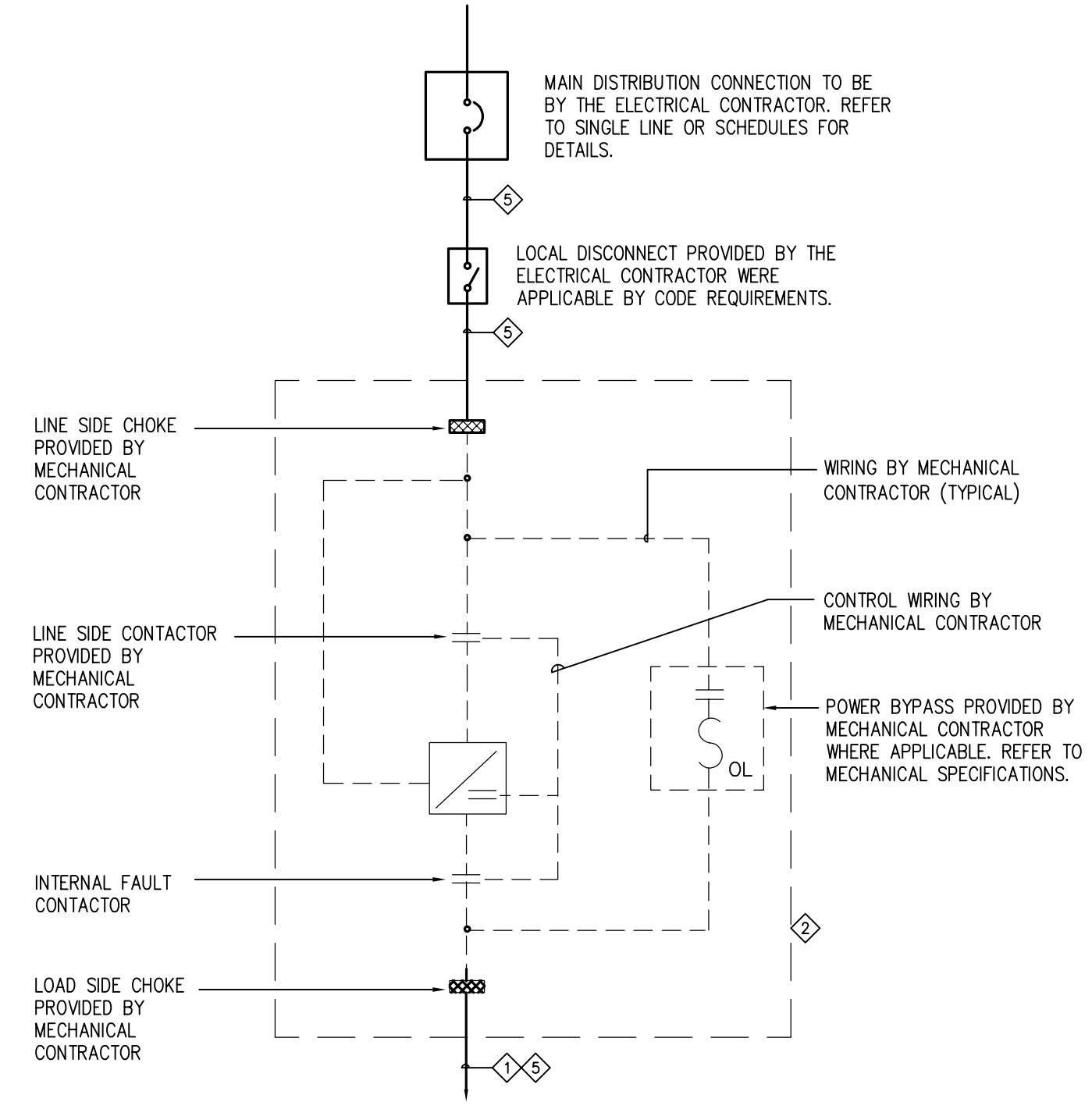
UNINSULATED



INSULATED

5 WALL PENETRATION FOR PIPE FOR NON ACOUSTIC WALLS

M-802 N.T.S.

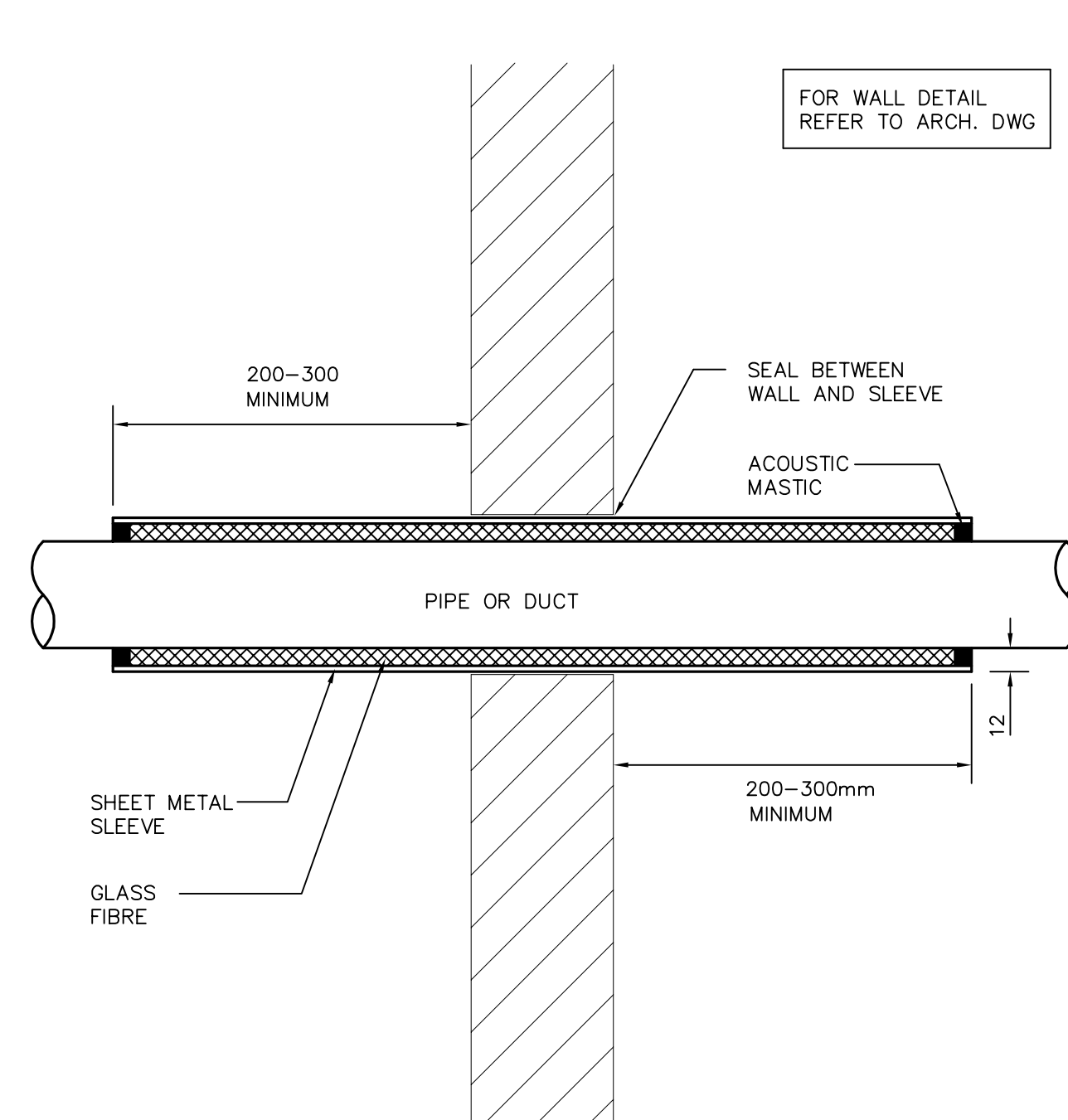


NOTES:

- 1 MECHANICAL CONTRACTOR TO PROVIDE ALCATEL TYPE "DRIVE RX" CABLE.
- 2 NEMA 12/IP54 ENCLOSURE MAY HAVE TO BE SPECIFIED WITH FANS FOR HEAT DISSIPATION; BY MECHANICAL CONTRACTOR.
3. ALL CONTROL WIRING SHALL BE PROVIDED BY MECHANICAL CONTRACTOR.
4. ALL LUGS ARE BY MECHANICAL CONTRACTOR. CO-ORDINATE WITH ELECTRICAL CONTRACTOR FOR SIZE.
- 5 ELECTRICAL CONTRACTOR TO PROVIDE WIRING BETWEEN DISCONNECT SWITCH, VFD AND MOTOR.

3 REMOTE MOUNTED VARIABLE FREQUENCY DRIVE WIRING SCHEMATIC

M-802 N.T.S.



6 DUCT PENETRATION THROUGH GWB-ACOUSTIC WALL

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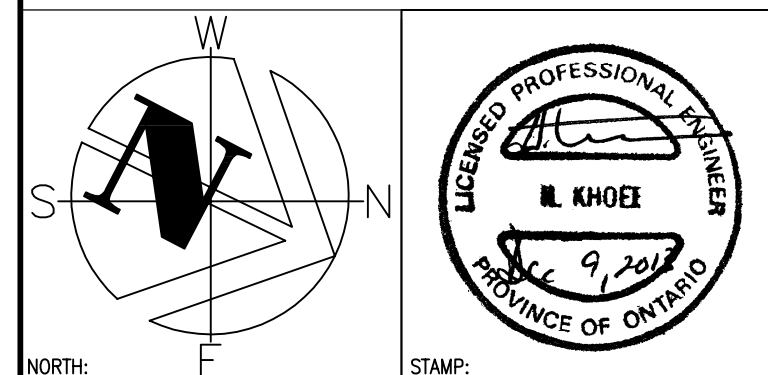
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1	ISSUED FOR BID	09 DEC 2013
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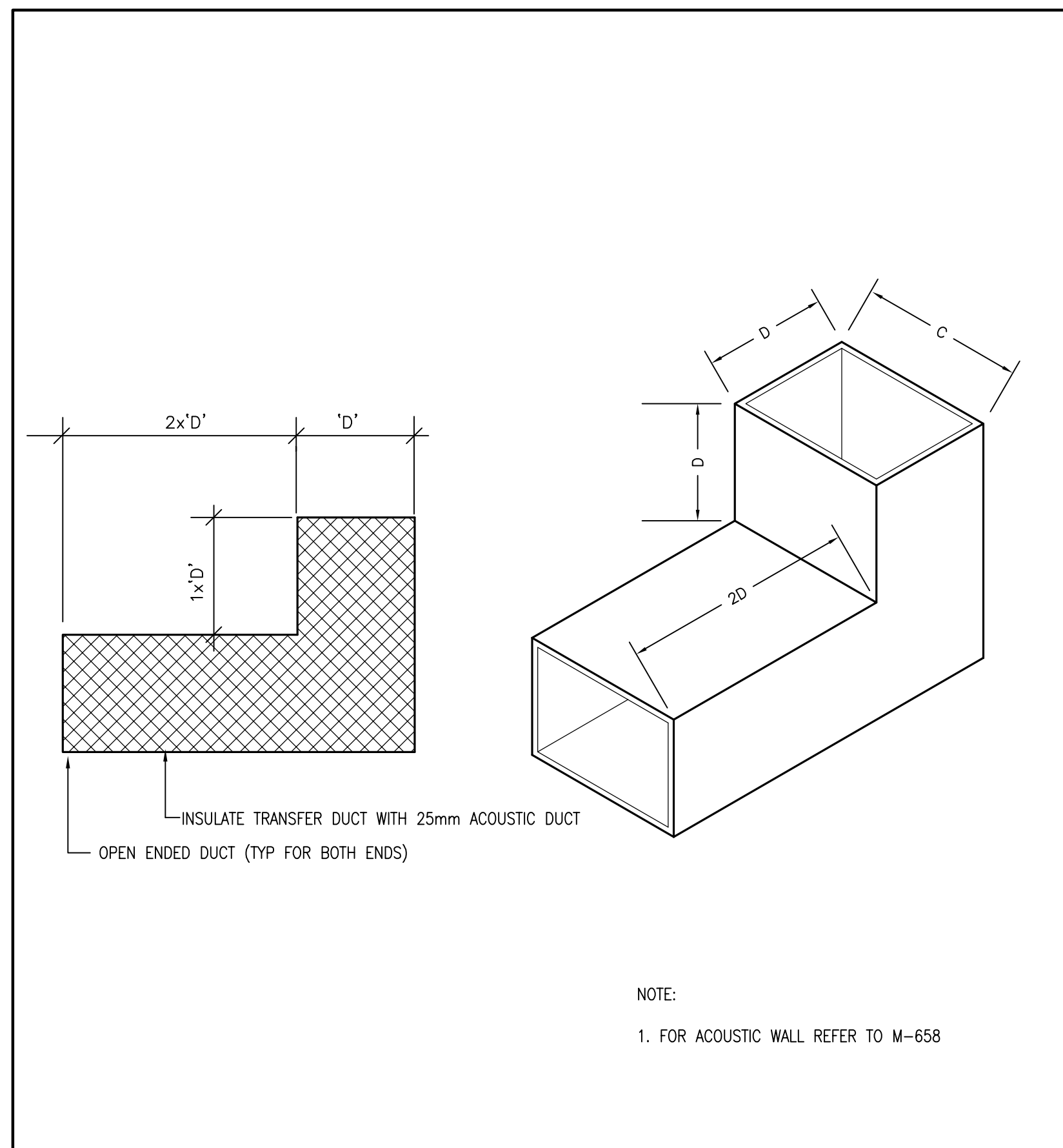


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B	No. du détail
C	drawing no. - where detail required dessin no. - où détail exigé
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project title
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BURLINGTON ONTARIO
CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

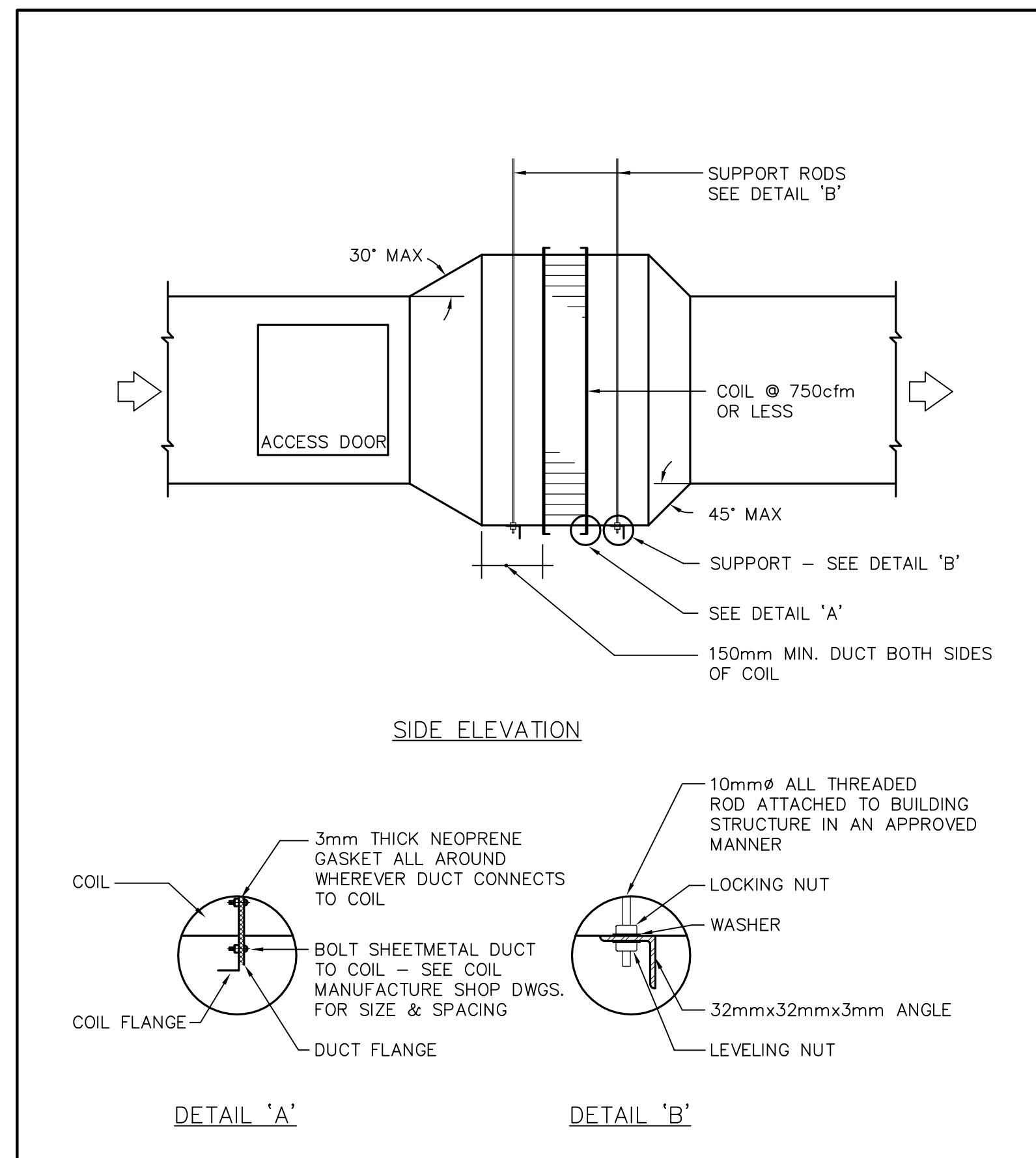
LIBRARY RENOVATION

drawing title
titre du dessinSHEET 2
MECHANICAL DETAILSdrawn by
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offre project manager
administrateur
de projetsproject date
date du projetproject no.
no. du projet
R.061475.001drawing no.
dessiné no. M-802



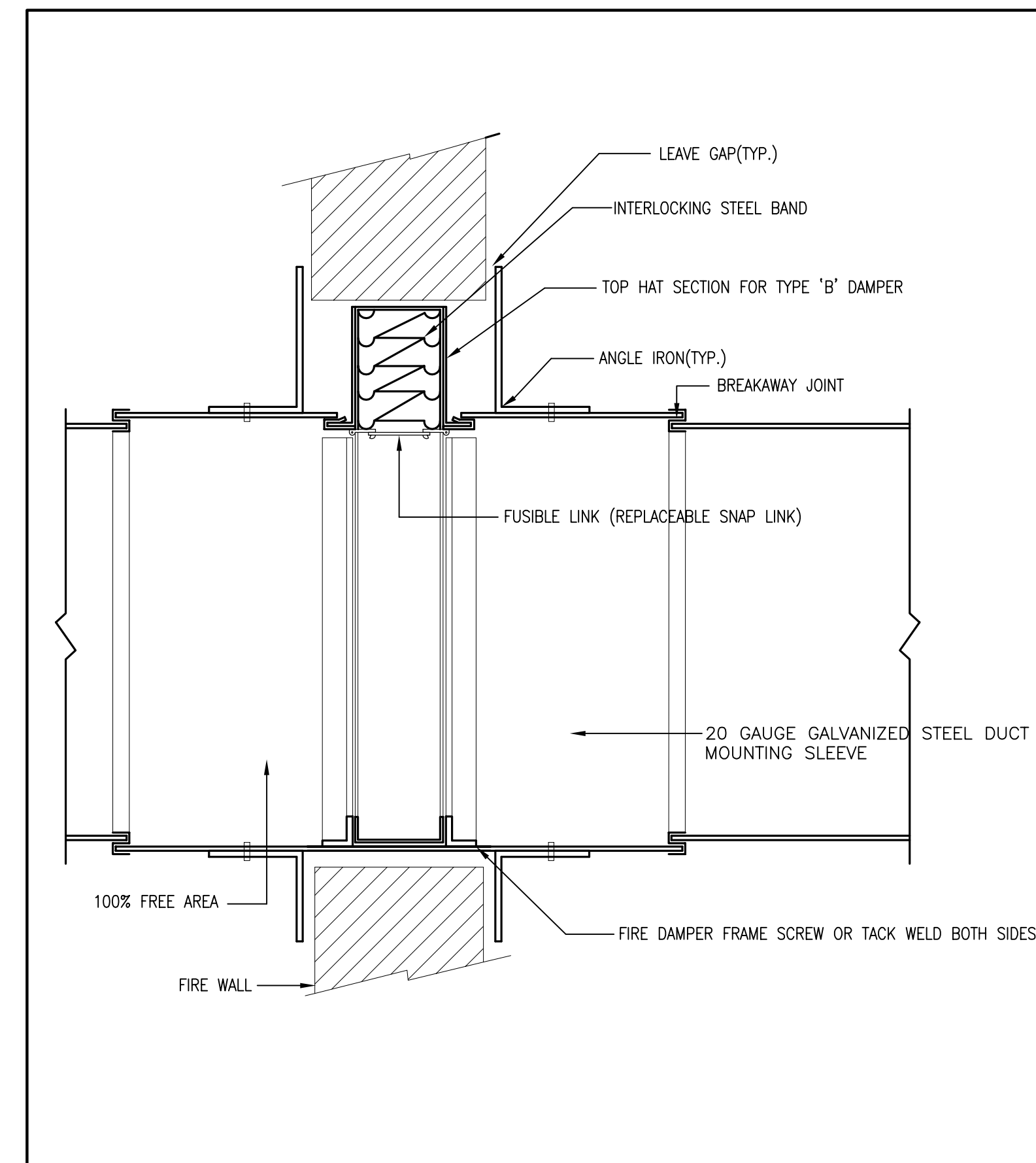
1 TRANSFER DUCT DETAIL - NON ACOUSTIC WALL

M-803/ N.T.S.



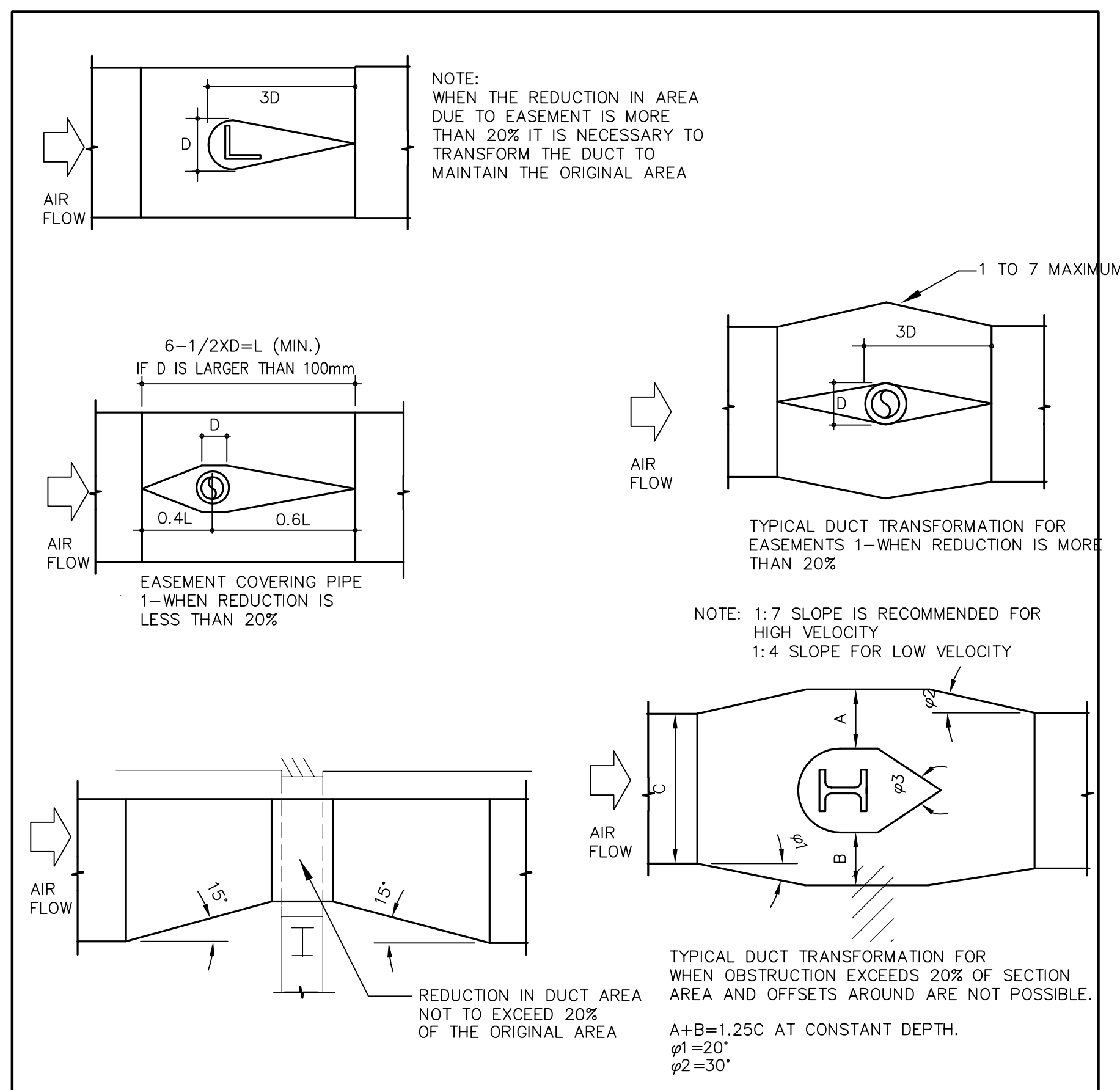
2 HOT WATER DUCT HEATER COIL DETAIL

M-803/ N.T.S.



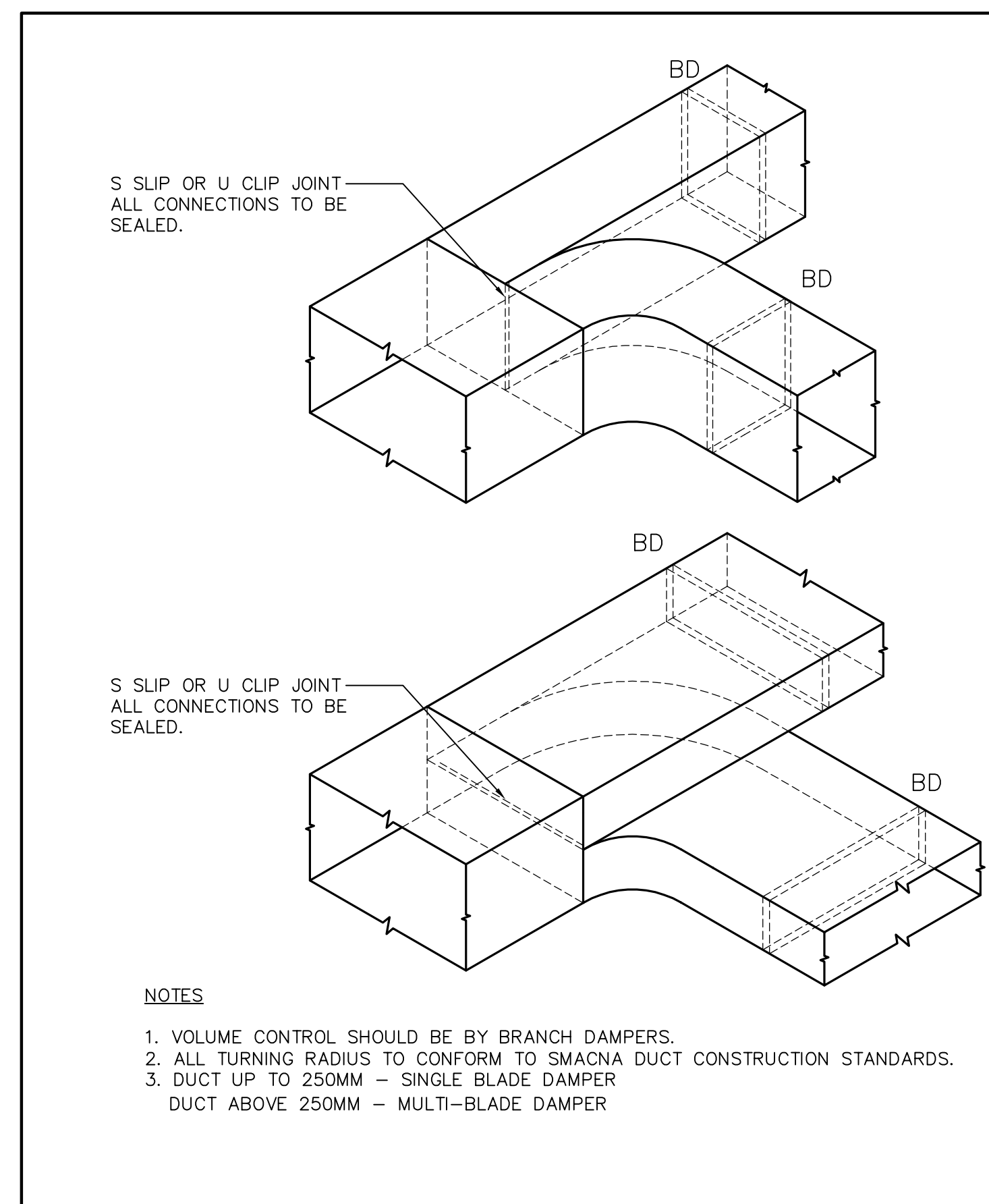
3 VERTICAL FIRE DAMPER TYPE 'B' DETAIL

M-803/ N.T.S.



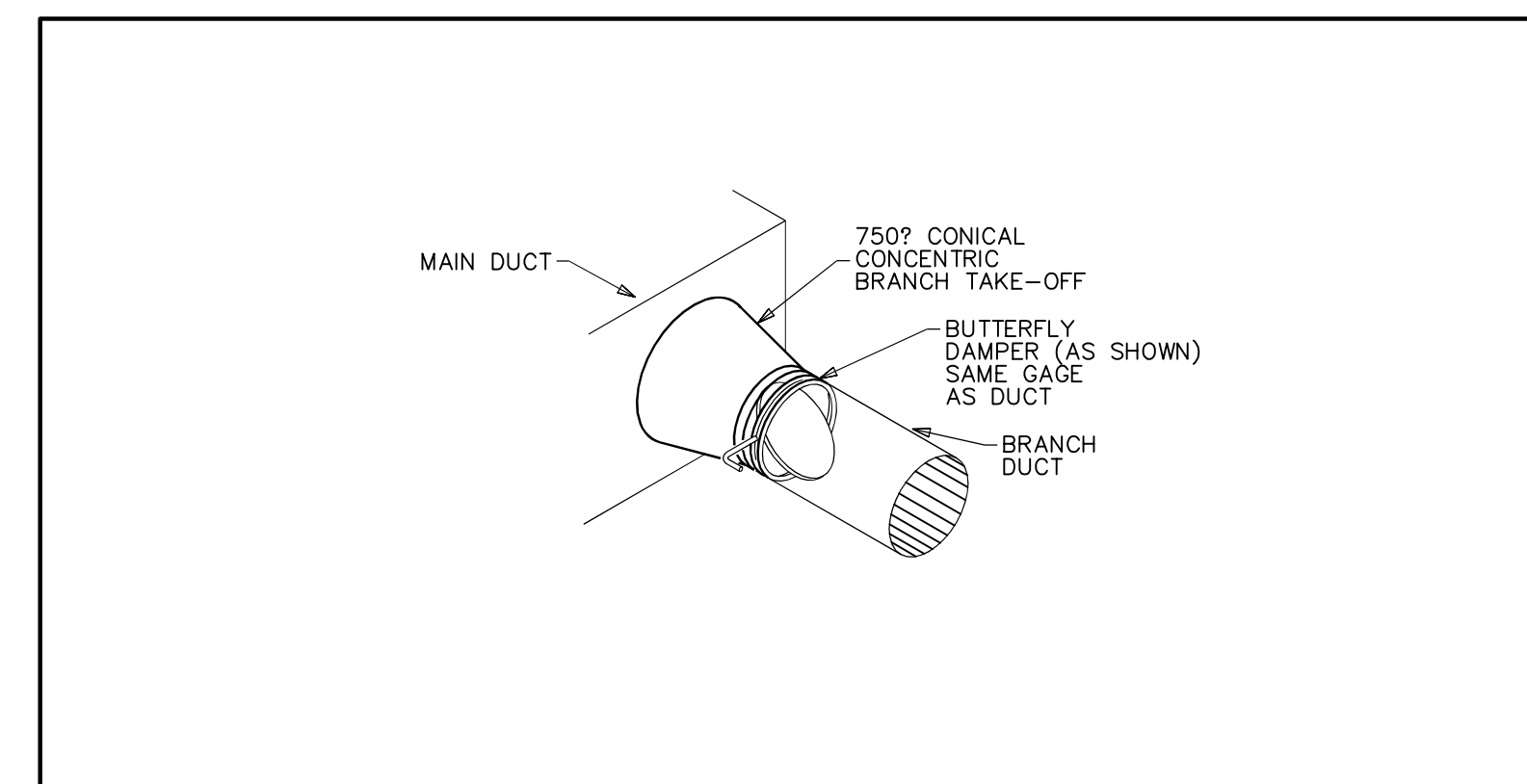
4 DUCTWORK WITH OBSTRUCTION

M-803/ N.T.S.



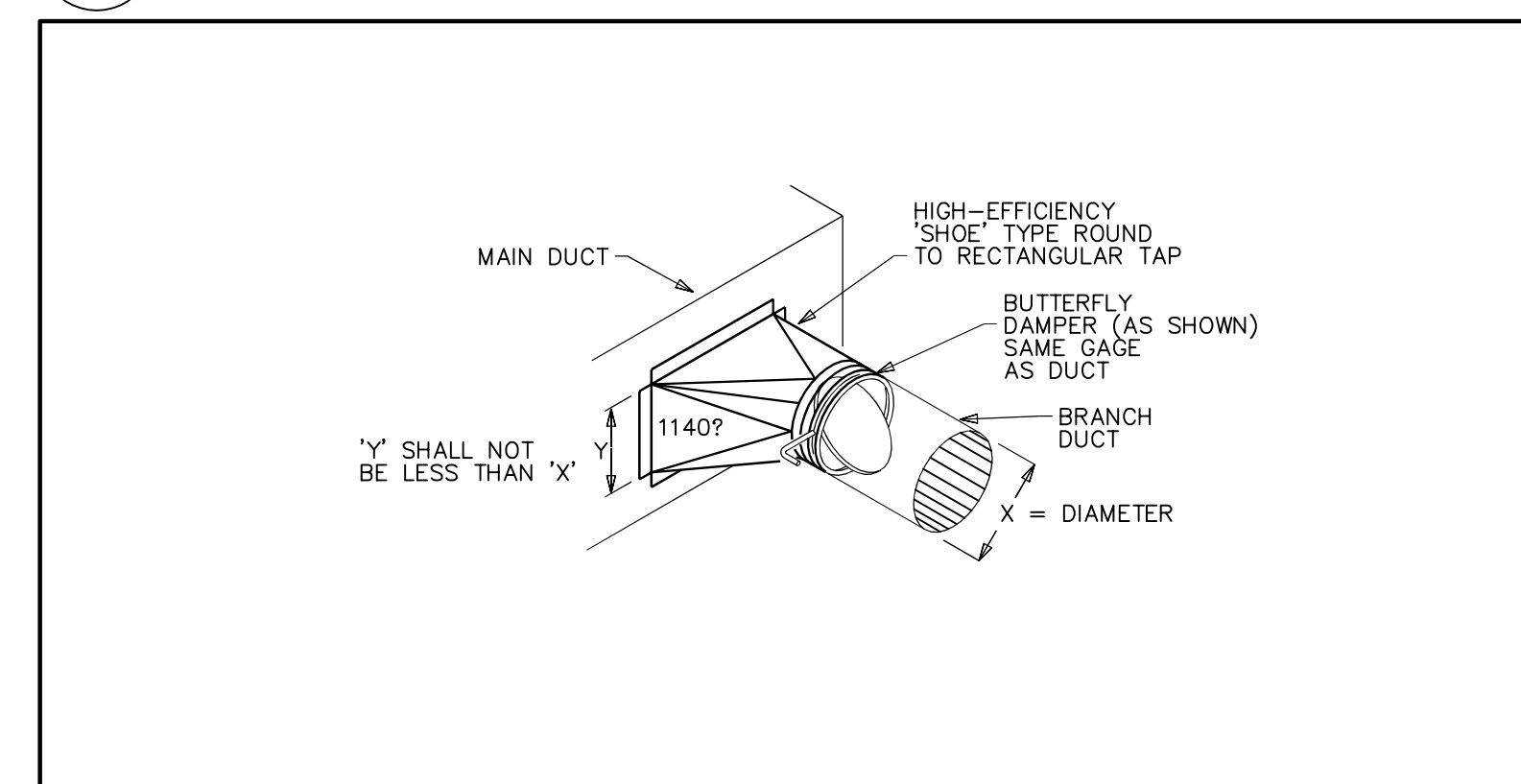
5 DIVIDED FLOW BRANCHES DETAIL

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

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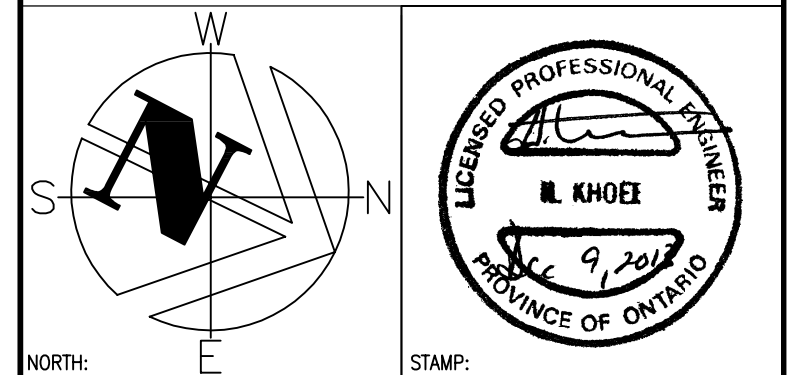
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BURLINGTON ONTARIO
CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

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drawing title
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SHEET 3
MECHANICAL DETAILS

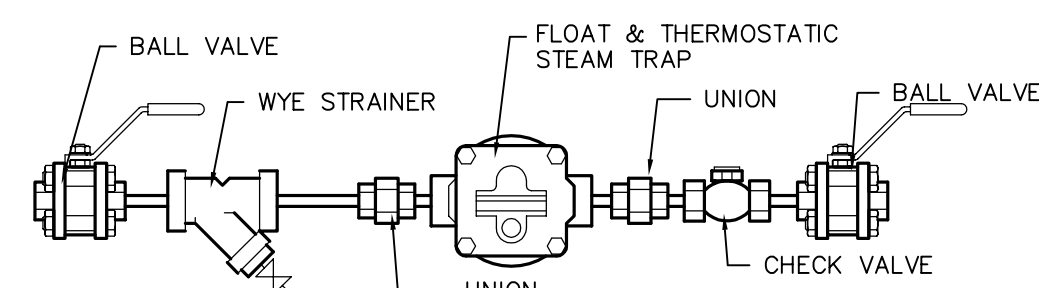
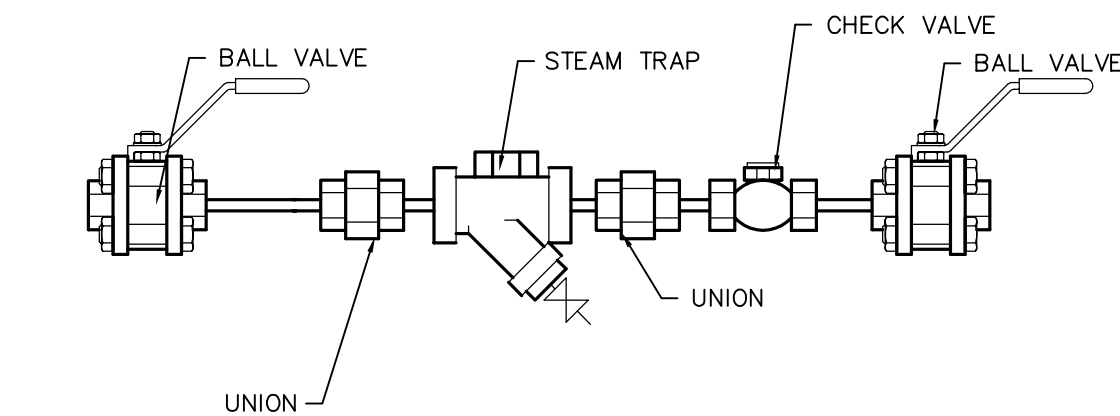
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administrateur
de projets

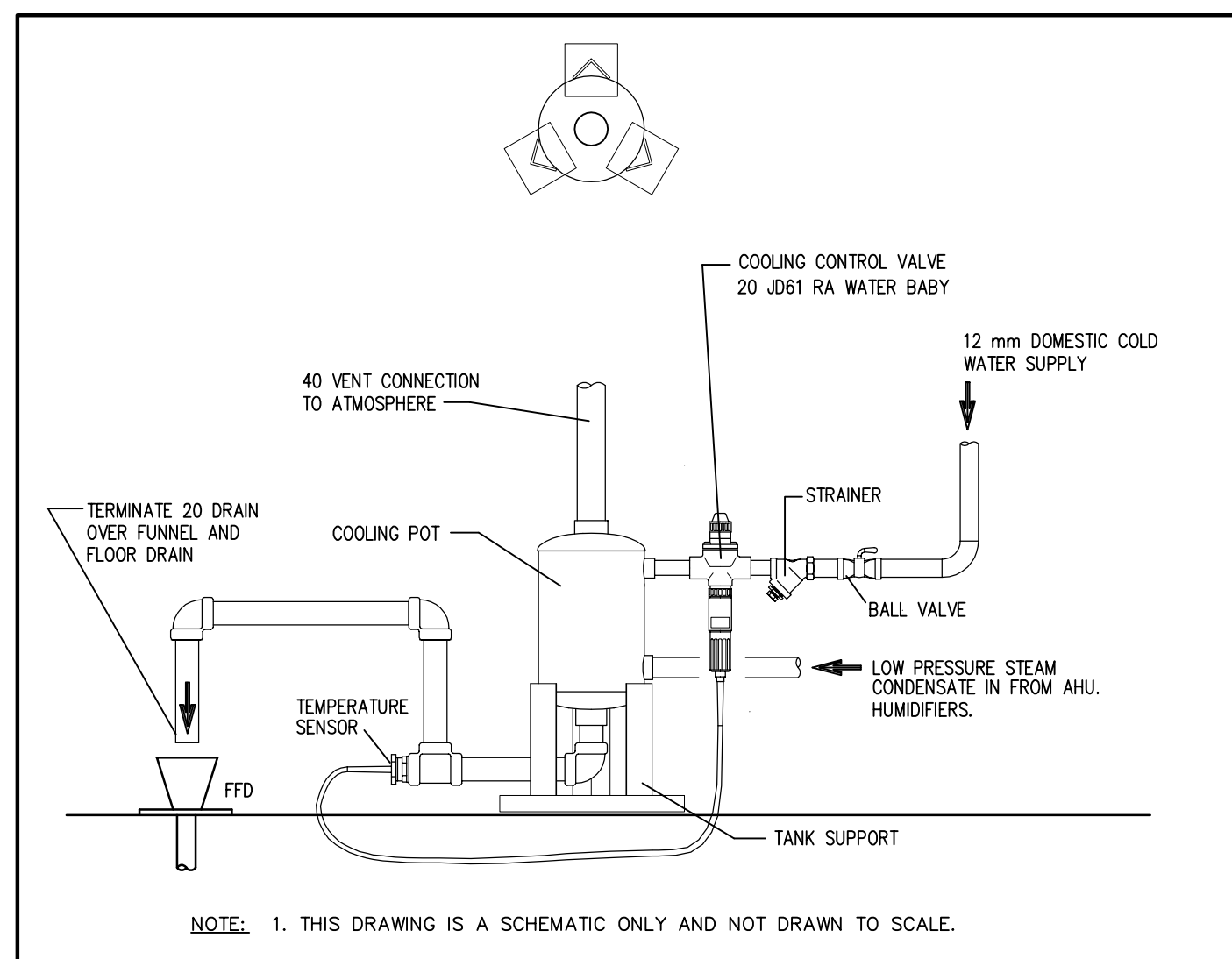
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date du projet

project no.
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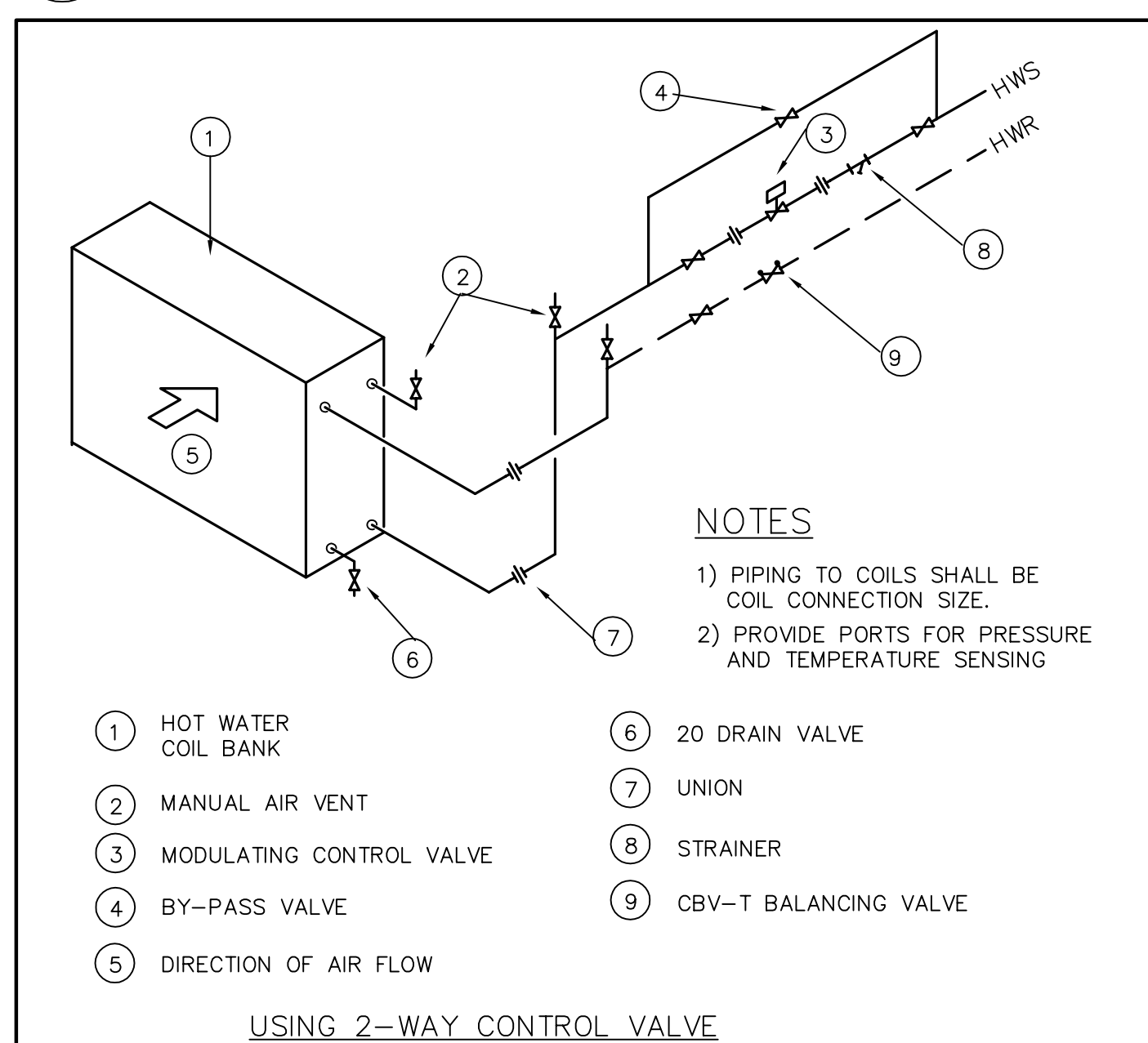
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dessiné no.
M-803



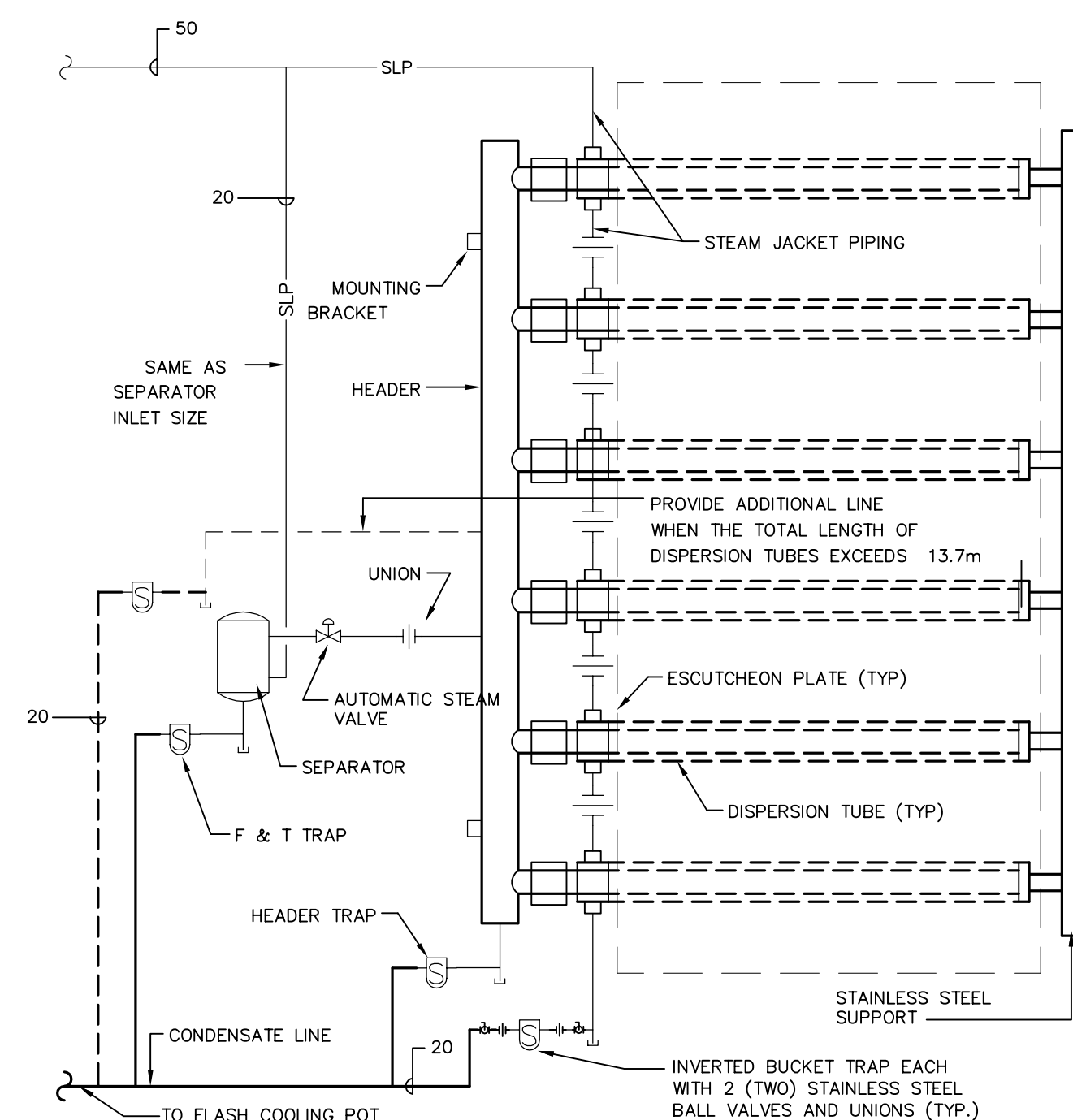
1 LOW PRESSURE STEAM DRIP POINTS
M-804 N.T.S.



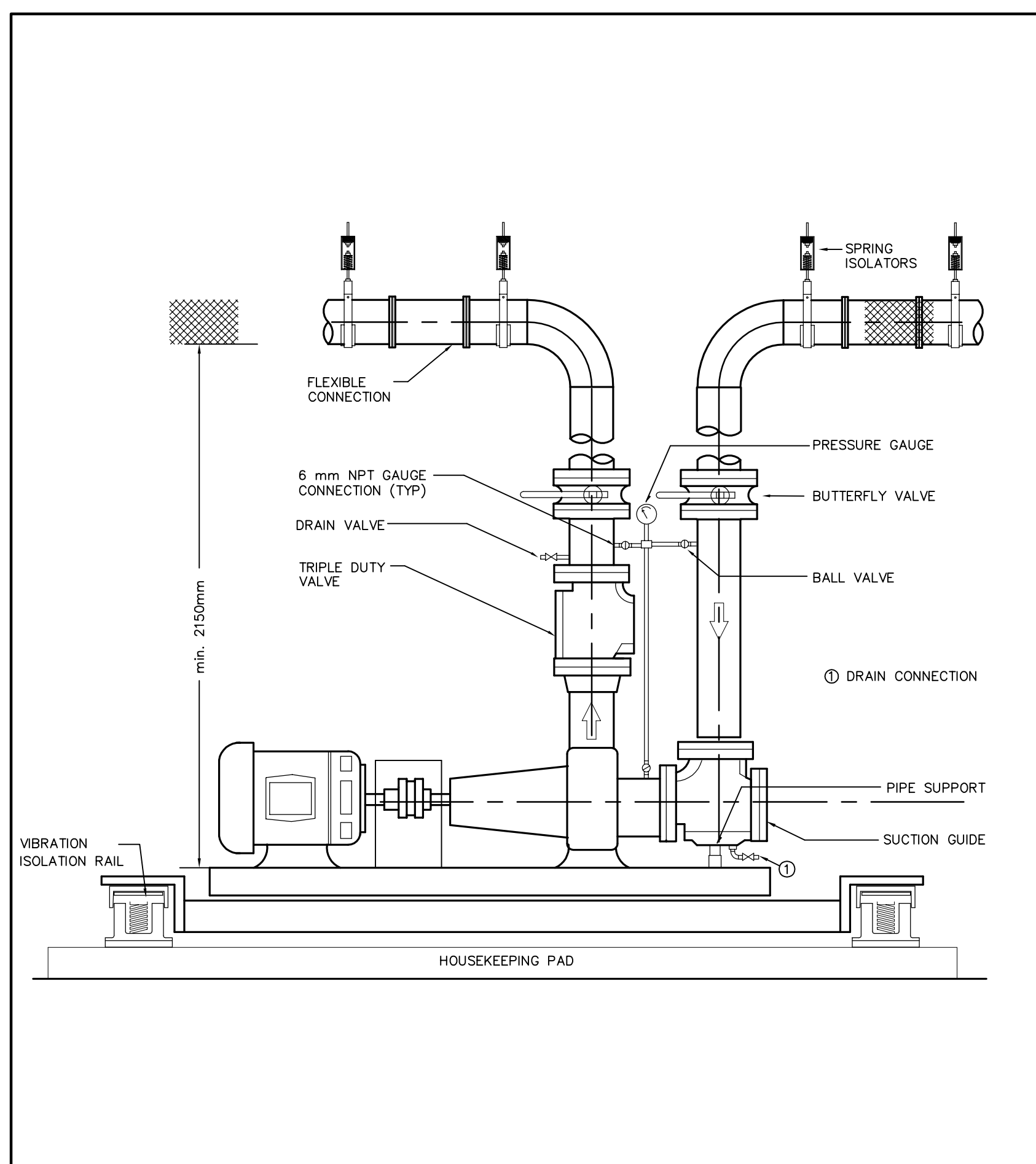
4 FLASH CONDENSER/COOLING POT PIPING DETAIL
M-804 N.T.S.



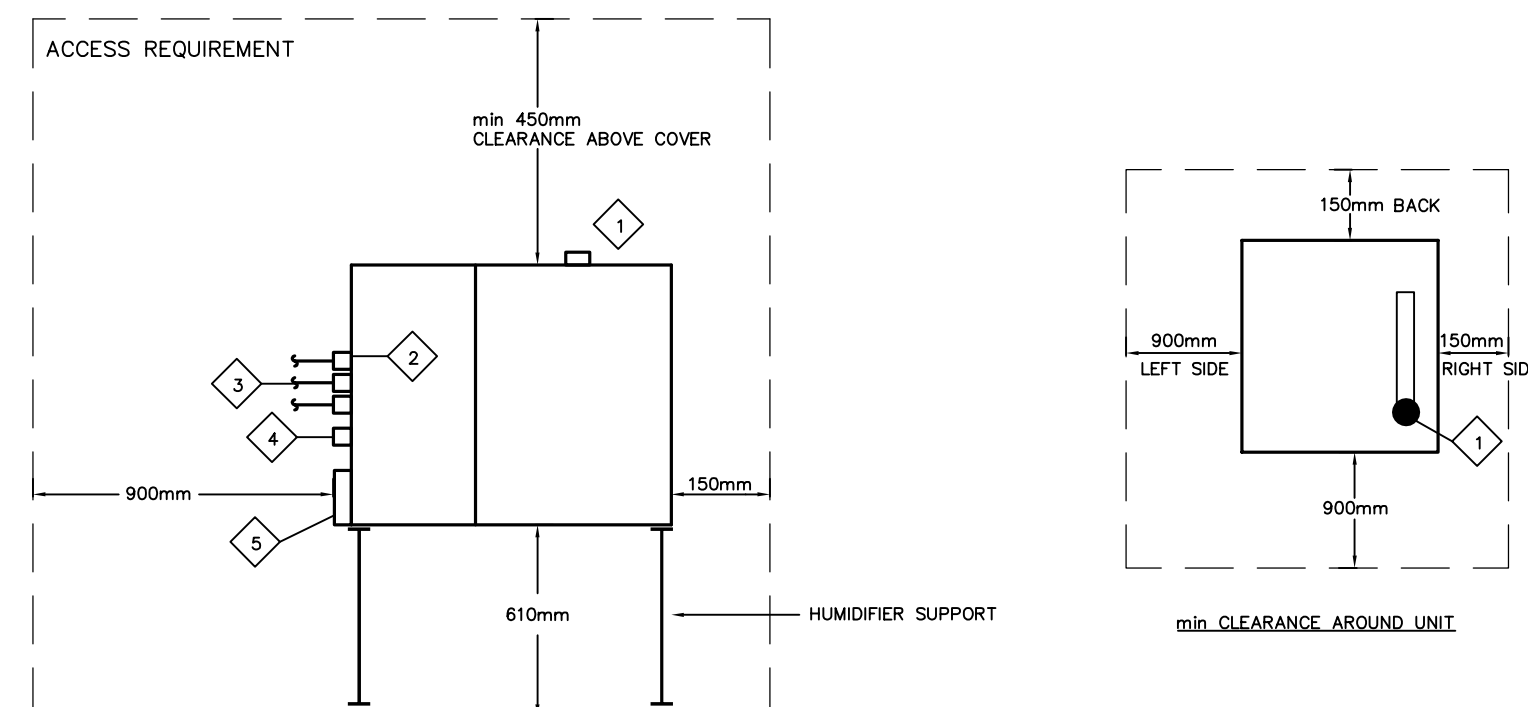
5 TYPICAL REHEAT COIL HOOK-UP DETAIL
M-804 N.T.S.



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



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

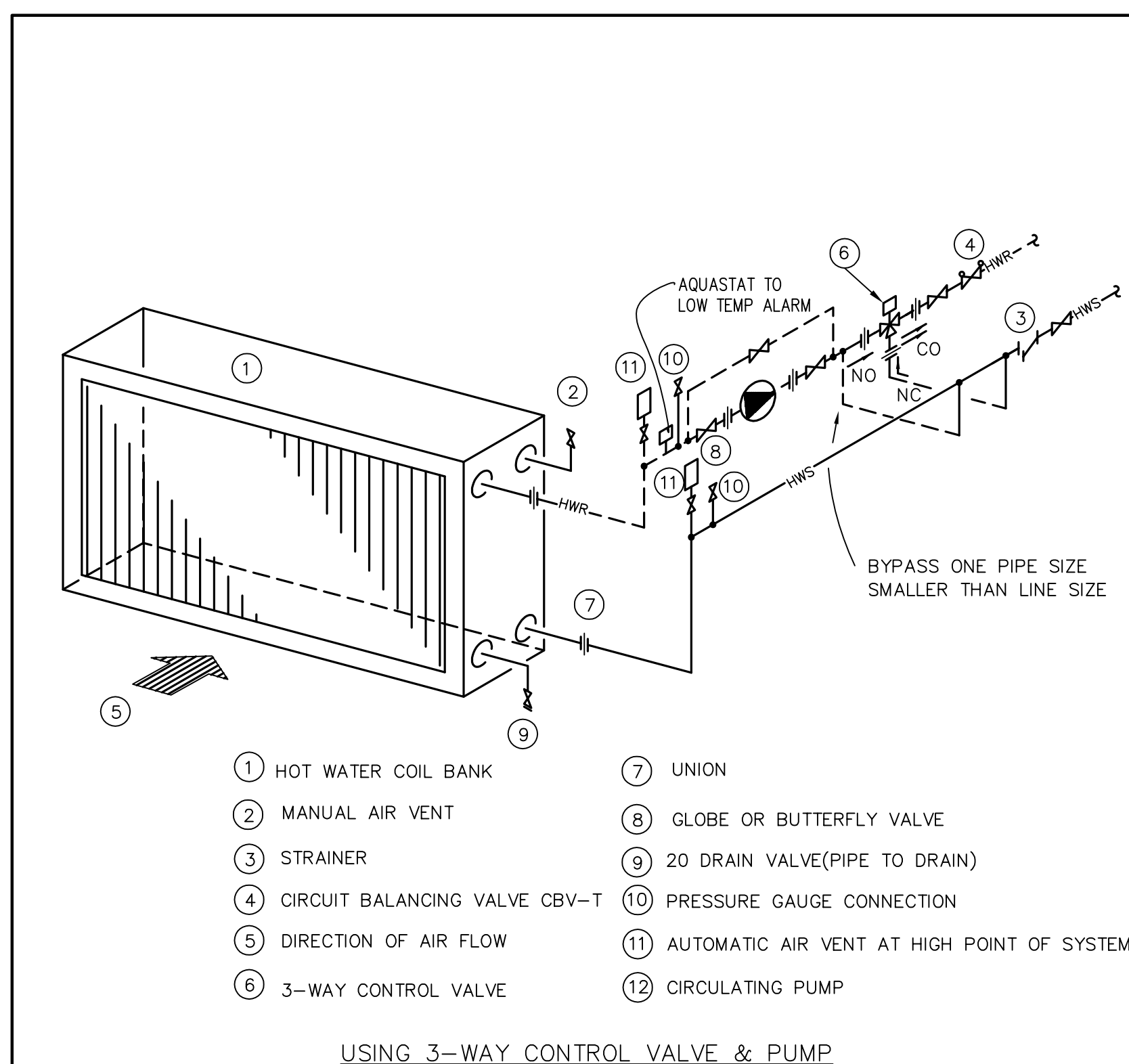


- 1 STEAM CONNECTION 50mm
2 RO FILL WATER CONNECTION (REFER TO SCHEDULE) 12mm
3 DOMESTIC COLD WATER CONNECTION 12mm
4 DRAIN CONNECTION TO BE EXTENDED ABOVE HD 45mm
5 CLEANOUT TRAY.

NOTE:

- DETAILS REFER TO A TYPICAL ELECTRIC HUMIDIFIER UNIT. CONTRACTOR TO REVISE DETAIL AND SUBMIT TO SUIT.
- DIMENSIONS ARE GIVEN FOR INFORMATION ONLY & SHALL BE FINALIZED DURING SHOP DRAWING STAGE.
- UNIT TO BE SUPPLIED WITH SUPPORT LEGS & HARDWARE.
- INSTALL AS PER MANUFACTURER INSTRUCTION.
- PROVIDE ISOLATING VALVES FOR ALL CONNECTIONS.
- PROVIDE STAINLESS STEEL CHECK VALVE & ISOLATING VALVE FOR RO WATER CONNECTION.

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



7 SINGLE HOT WATER COIL INSTALLATION DETAIL
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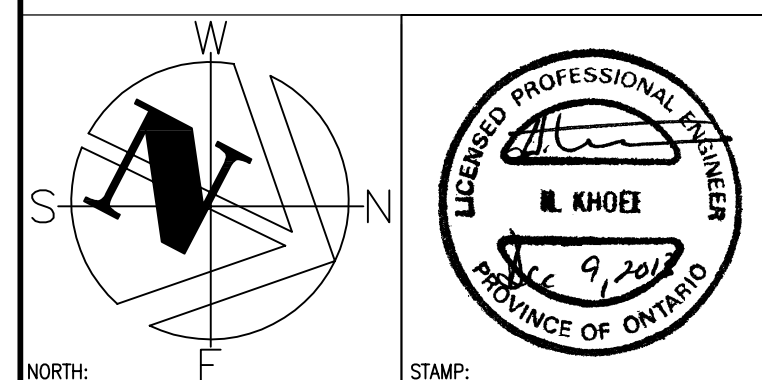
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1	ISSUED FOR BID	09 DEC 2013
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CANADA CENTRE FOR INLAND WATERS
867 LAKESHORE ROAD

LIBRARY RENOVATION

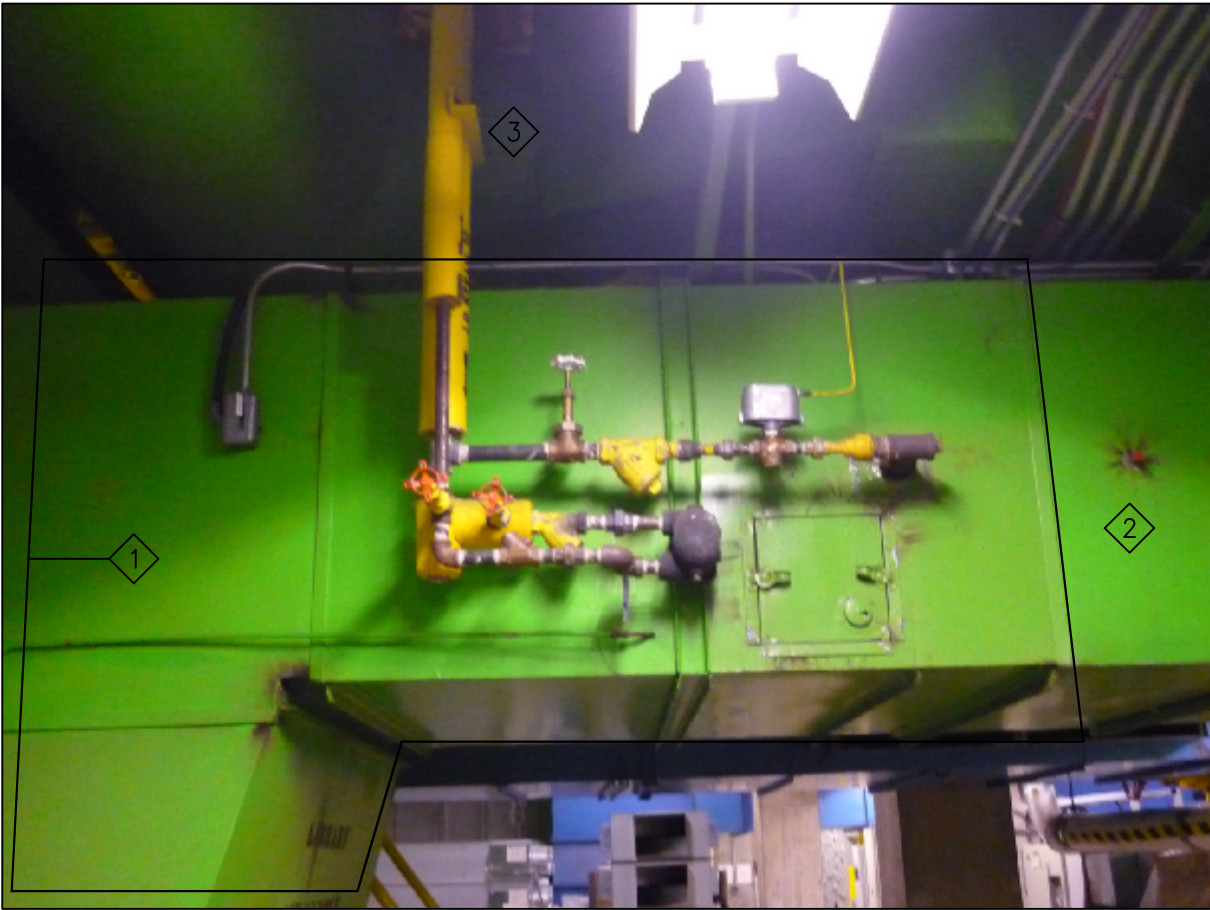
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titre du dessin

SHEET 4
MECHANICAL DETAILS

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offre project manager
administrateur de projetsproject date
date du projet

project no.
no. du projet
R.061475.001

drawing no.
dessiné par
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

M-805/ NTS



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.

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

M-805/ NTS

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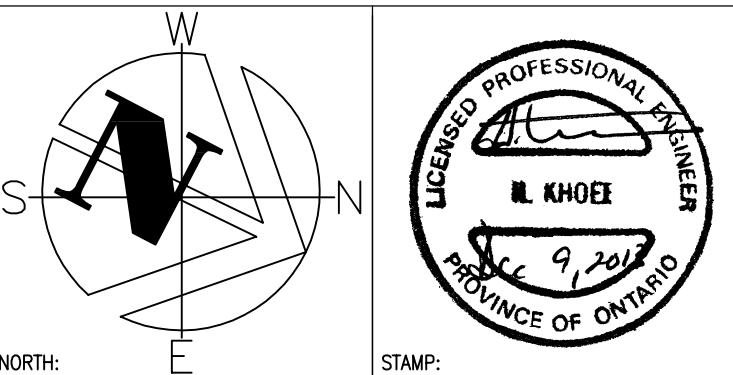
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2	ISSUED FOR 95% SUBMISSION	12 NOV 2013
1	ISSUED FOR 75% SUBMISSION	30 APR 2013

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867 LAKESHORE ROAD

LIBRARY RENOVATION

drawing title
titre du dessin

MECHANICAL DETAILS
SHEET 5

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