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1 WARDEN BASEMENT HYDRONIC HEATING PLAN  
M300 SCALE: 1:150

GENERAL NOTES:

1. SUPPLY AND INSTALL ALL FIRE STOPPING MATERIAL AND ENSURE THAT ALL FIRE PENETRATIONS ARE PROTECTED AS REQUIRED BY THE ALBERTA BUILDING CODE AND THE LOCAL AUTHORITIES.
2. ENSURE THAT ALL PIPING CLEARS STRUCTURAL FOUNDATIONS.
3. CONTRACTOR SHALL ENSURE AND MAINTAIN HOUSEKEEPING ON SITE. COORDINATE WITH GENERAL CONTRACTOR.
4. CONTRACTOR TO CLEAN ALL NEW AND EXISTING HEATING PIPING. MAKE SURE THAT ACCUMULATION OF SCALE DURING CLEANING SHOULD BE AVOIDED. REMOVE THE ACCUMULATED SCALE.
5. REPLACE EXISTING PNEUMATIC THERMOSTATS AND CONTROL VALVES WITH NEW DOC EQUIVALENTS AS INDICATED. ALL THERMOSTATS ARE TO BE LABELED ACCORDING TO THE EQUIPMENT (TAG) IT SERVING.
6. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS.
7. COORDINATE LOW VOLTAGE CONTROLS TRANSFORMERS WITH ELECTRICAL.
8. CONTRACTOR TO VERIFY ON SITE THE TIE-IN POINT OF THE EXISTING SERVICES.
9. EXISTING TERMINAL HEATING DEVICES TO REMAIN.
10. CONTRACTOR SHALL MAKE ANY AND ALL PROVISIONS FOR TEMPORARY HEATING AS REQUIRED. COORDINATE SCHEDULING OF WORK WITH GENERAL CONTRACTOR.
11. CLEAN ALL NEW AND EXISTING HYDRONIC PIPING; MAKE NECESSARY PROVISIONS FOR ACCUMULATION OF SCALE DURING CLEANING.



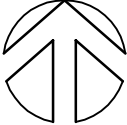
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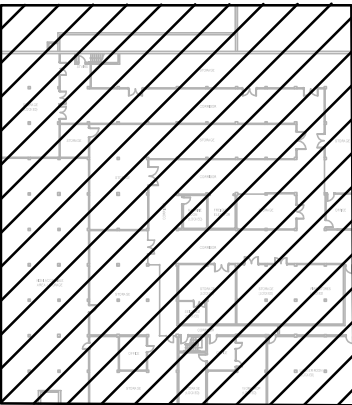
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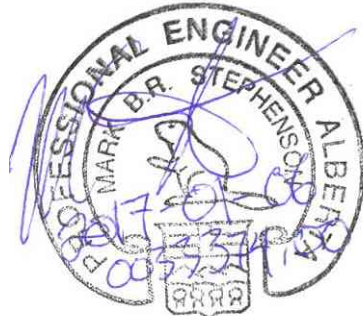
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PROJECT  
NORTH



WARDEN BASEMENT  
KEY PLAN



Revision/	Description/Description	Date/Date
4.	ISSUED FOR BP / TENDER	17-01-11
3.	ISSUED FOR TENDER	16-11-07
2.	ISSUED FOR 99% REVIEW	16-06-10
1.	ISSUED FOR 50% REVIEW	16-05-16

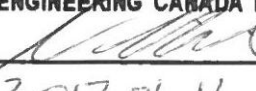
Client/client
 Parks Canada Agency
Western and Northern Region
L'Agence Parcs Canada
Ouest et Nord du Canada

Project title/Titre du projet  
**Banff National Park  
Banff, Alberta**  
**PCA - MAINTENANCE  
BANFF COMPOUND  
REHABILITATION**

Approved by/Approuvé par MS
Designed by/Concept par MS
Drawn by/Dessiné par KC/AS
Project Manager/Administrateur de Projets KT
Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'ingénierie
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Drawing title/Titre du dessin  
**WARDEN BASEMENT  
HYDRONIC HEATING PLAN**

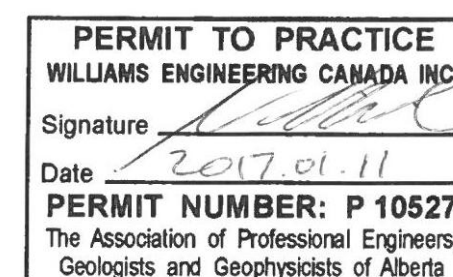
Project No./No. du projet	Sheet/Feuille	Revision no./ La Révision no.
33374.00	M300	4

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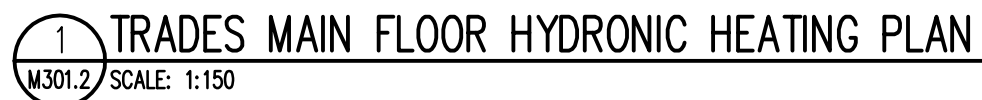




- 1 CONNECT EXISTING CONVECTORS TO CREATE NEW HEATING ZONE.
- 2 -
- 3 EXISTING GAS UP THROUGH ROOF TO AHU ABOVE.  
(TYPICAL)





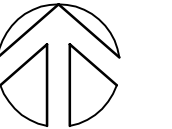




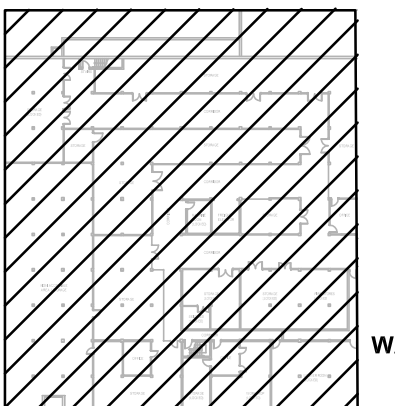


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Fax: (403) 262-9075  
info@williamsengineering.com  
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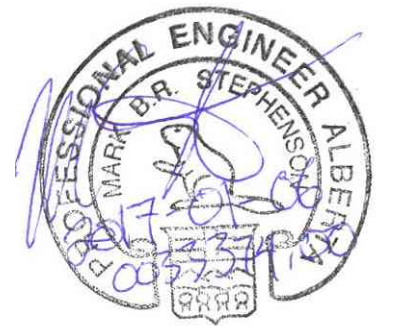
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NORTH



WARDEN BASEMENT  
KEY PLAN



Revision/	Description/Description	Date/Date
4.	ISSUED FOR BP / TENDER	17-01-11
3.	ISSUED FOR TENDER	16-11-07
2.	ISSUED FOR 99% REVIEW	16-06-10
1.	ISSUED FOR 50% REVIEW	16-05-16

Revision/	Description/Description	Date/Date
Client/client		
	Parks Canada Agency	L'Agence Parcs Canada
	Western and Northern Region	Ouest et Nord du Canada

Project title/Titre du projet  
**Banff National Park  
Banff, Alberta**  
**PCA - MAINTENANCE  
BANFF COMPOUND  
REHABILITATION**

Approved by/Approuvé par MS
Designed by/Concept par MS
Drawn by/Dessiné par KC
Project Manager/Administrateur de Projets KT
Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'ingénierie
Scale: AS SHOWN

Drawing title/Titre du dessin  
**WARDEN COMPOUND BLDG.  
BASEMENT  
HVAC PLAN**

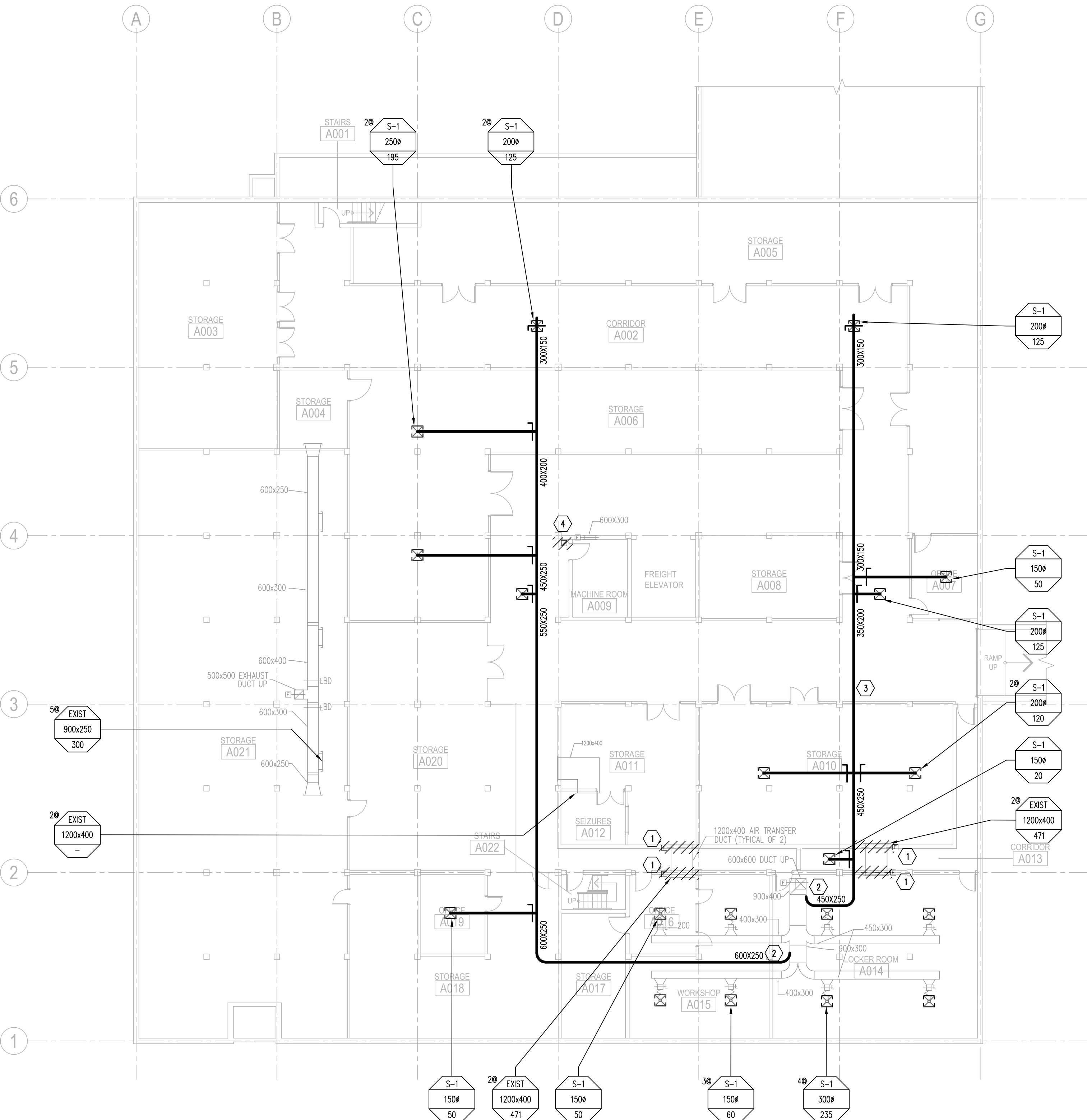
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33374.00	M400	4

#### KEYNOTES:

- 1 DEMOLISH EXISTING FIRE DAMPER, PATCH AND RESTORE EXISTING DUCTWORK; COORDINATE WITH ARCHITECTURAL.
- 2 CUT IN NEW BRANCH FROM EXISTING SUPPLY DUCT; REBALANCE SYSTEM TO AIRFLOWS SHOWN.
- 3 RUN NEW SUPPLY DUCT TIGHT TO U/S STRUCTURE; OFFSET AS NEEDED TO AVOID STRUCTURAL ELEMENTS.
- 4 DEMOLISH EXISTING OPEN-ENDED 300X300 E/A DUCT (DIMENSIONS APPROXIMATE) UP TO ROOFTOP EXHAUST FAN; COORDINATE PATCHING AND FIRESTOPPING WITH ARCHITECTURAL.

#### GENERAL NOTES:

1. SUPPLY AND INSTALL ALL FIRE STOPPING MATERIAL AND ENSURE THAT ALL FIRE PENETRATIONS ARE PROTECTED AS REQUIRED BY THE ALBERTA BUILDING CODE AND THE LOCAL AUTHORITIES.
2. EXISTING FIRE DAMPERS AT SLAB PENETRATIONS ARE TO REMAIN.
3. PROVIDE BALANCING DAMPER FOR ALL S/A BRANCH OUTLET DUCT TO DIFFUSER / GRILLE.
4. CONTRACTOR TO VERIFY ON SITE EXACT LOCATION OF MECHANICAL SERVICES; ROUTE NEW DUCTWORK AND LOCATE GRILLES TO SUIT EXISTING CONDITIONS; COORDINATE WITH ARCHITECTURAL.
5. EXISTING LINE VOLTAGE THERMOSTATS SERVING HYDRONIC AND GAS FIRED UNIT HEATERS ARE TO REMAIN.
6. CONTRACTOR TO VERIFY ON SITE THE TIE-IN POINT OF THE EXISTING MECHANICAL SERVICES.
7. CONTRACTOR TO COORDINATE LOW VOLTAGE CONTROLS TRANSFORMERS WITH ELECTRICAL.
8. EXISTING MECHANICAL TO REMAIN UNLESS OTHERWISE NOTED.
9. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS.
10. SELECT GRILLES AND DIFFUSERS TO SUIT CEILING CONDITIONS (T-BAR/DRYWALL/FREE). VERIFY ON SITE.
11. COORDINATE DIFFUSER PLACEMENT WITH EXISTING LIGHTING AND SPRINKLER HEAD; COORDINATE INSTALLATION WITH ARCHITECTURAL. TYPICAL FOR ALL.
12. DUCT PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE PROVIDED WITH APPROVED FIRE DAMPER.



1 WARDEN BASEMENT HVAC PLAN  
M400 SCALE: 1:150

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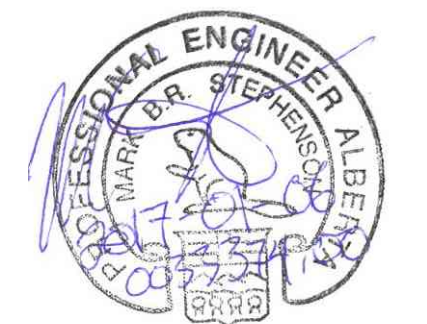








- 1 RE-USE EXISTING DUCT AND DIFFUSERS.
- 2 NOT USED.
- 3 CONNECT TO EXISTING.
- 4 REPLACE EXISTING DAMAGED FIRE DAMPER WITH NEW UNIT.
- 5 CUT IN NEW BALANCING DAMPER AND BALANCE TO AIRFLOW NOTED.
- 6 DEMOLISH EXISTING FAN COIL AND SERVE EXISTING DUCTWORK AND DIFFUSERS FROM BASE BUILDING AIR SYSTEM.
- 7 EXISTING DUCT COLLECTION SYSTEM (NOT SHOWN) IN WOOD SHOP, NOT IN CONTRACT.
- 8 DEMOLISH EXISTING TRANSFER FAN.
- 9 DEMOLISH EXISTING TRANSFER FAN AND PROVIDE NEW WASHROOM EXHAUST FAN DISCHARGING THROUGH ROOF TO GOOSENECK, INTERLOCK FAN WITH LIGHT SWITCH.
- 10 1504 INSULATED E/A DUCT DISCHARGING UP THROUGH ROOF C/W BACKDRAFT DAMPER, GOOSENECK & INSECT SCREEN.



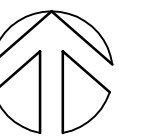
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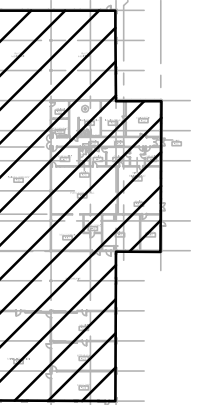


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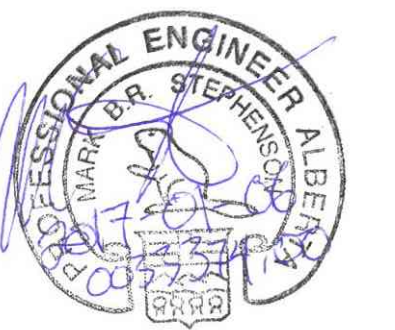
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MAINTENANCE  
GARAGE BLDG



Revision/	Description/Description	Date/Date
4.	ISSUED FOR BP / TENDER	17-01-11
3.	ISSUED FOR TENDER	16-11-09
2.	ISSUED FOR 99% REVIEW	16-06-10
1.	ISSUED FOR 50% REVIEW	16-05-16

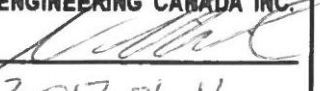
Client/client	
 Parks Canada Agency	L'Agence Parcs Canada
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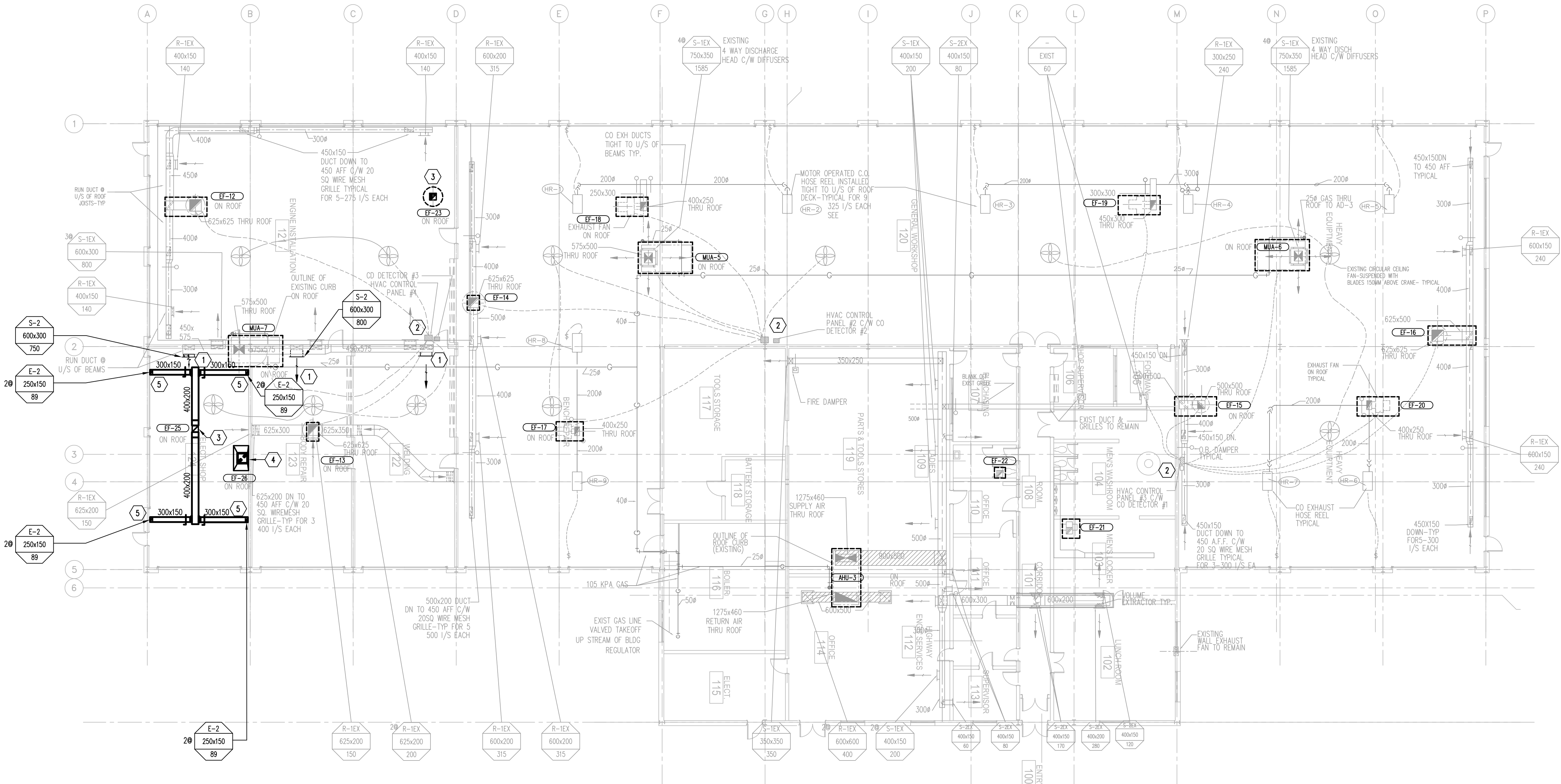
Project title/Titre du projet  
**Banff National Park  
Banff, Alberta**  
**PCA - MAINTENANCE  
BANFF COMPOUND  
REHABILITATION**

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Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'ingénierie	
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Drawing title/Titre du dessin	

MAINTENANCE GARAGE BLDG.  
HVAC PLAN

Project No./No. du projet	Sheet/Feuille	Revision no./ La Révision no.
33374.00	M402	4

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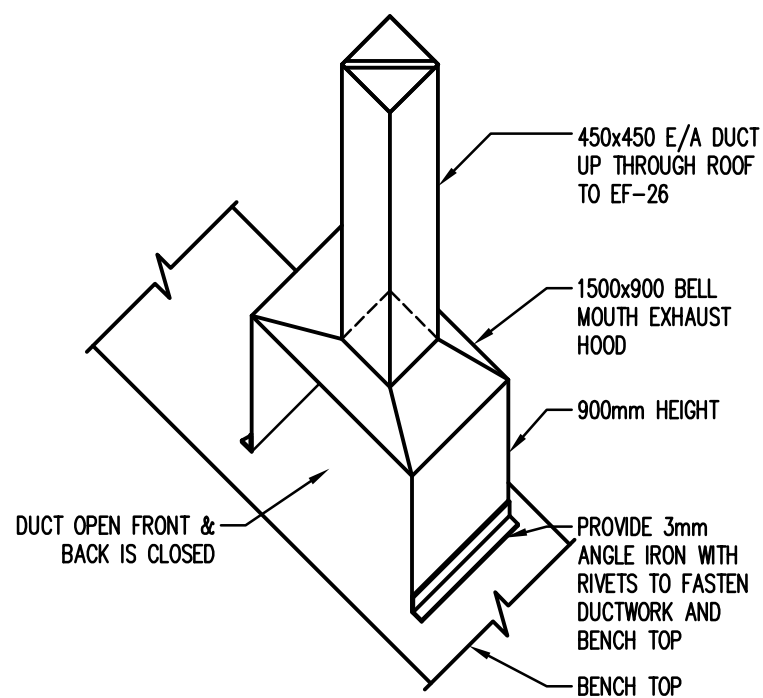
1 MAINTENANCE GARAGE MECHANICAL PLAN  
M402 / SCALE: 1:150

#### GENERAL NOTES:

- SUPPLY AND INSTALL ALL FIRE STOPPING MATERIAL AND ENSURE THAT ALL FIRE PENETRATIONS ARE PROTECTED AS REQUIRED BY THE ALBERTA BUILDING CODE AND THE LOCAL AUTHORITIES.
- PROVIDE BALANCING DAMPER FOR ALL S/A BRANCH OUTLET DUCT TO DIFFUSER / GRILLE.
- ALL THERMOSTATS ARE TO BE LABELED ACCORDING TO THE EQUIPMENT (TAG) IT SERVING.
- CONTRACTOR TO VERIFY ON SITE EXACT LOCATION OF MECHANICAL SERVICES.
- SELECT GRILLES & DIFFUSERS TO SUIT CEILING CONDITIONS (T-BAR/DRYWALL/FREE/DUCT MOUNTED), VERIFY ON SITE.
- DEMOLISH EXISTING EF's AND REPLACE WITH NEW SPECIFIED UNITS.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS.
- EXISTING HYDRONIC SYSTEM AND DEVICES NOT SHOWN, NOT INCLUDED IN THIS BUILDING.

#### KEYNOTES:

- REPLACE DUCT DIFFUSER/GRILLE WITH NEW UNIT. PROVIDE BALANCING DAMPER.
- EXISTING CO AND NO DETECTOR SYSTEM IS TO BE MAINTAINED AND INTERLOCKED WITH NEW HVAC CONTROLS; REFER TO DIV. 25 SPECIFICATIONS.
- 400x400 THROUGH ROOF; REFER DETAIL TERMINATION IN M702; CONTROL NEW EXHAUST FAN VIA 4H WOUND TIMER ON WALL.
- 900x1500 BELL MOUTH EXHAUST HOOD TO BE LOCATED ABOVE THE PAINT BENCH. TRANSITION TO 450x450 E/A DUCT UP THROUGH ROOF. SEE DETAIL 2/M402 FOR CLARITY. CONTROL NEW EXHAUST FAN VIA 4H WOUND TIMER ON WALL.
- 300x150 E/A DUCT DOWN TO 450mm A.F.F. PROVIDE TWO GRILLES, ONE AT HIGH LEVEL AND ONE AT LOW LEVEL, COMPLETE WITH BALANCING DAMPER ON EACH GRILLE.
- 400x400 UP THROUGH ROOF.
- PROVIDE PRE-MANUFACTURED ROOF CURB.

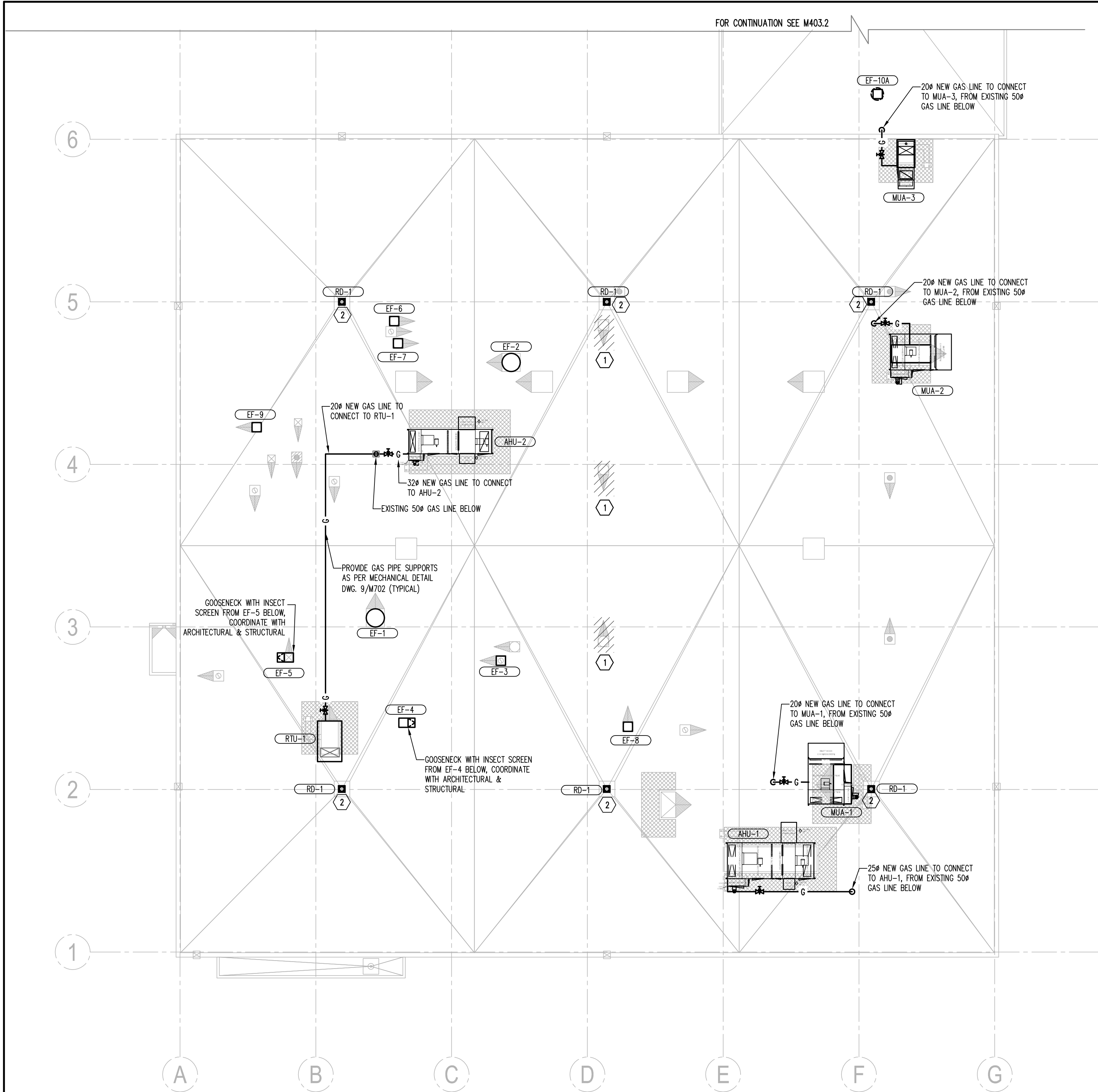


2 PAINT BOOTH EXHAUST HOOD DETAIL  
M402 / SCALE: NTS





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1 WARDEN ROOF MECHANICAL PLAN  
M403.1 SCALE: 1:150

GENERAL NOTES:

1. ALL NEW ROOF CURBS TO BE MINIMUM 200mm ABOVE LEVEL OF NEW ROOF. TYPICAL FOR AIR HANDLING UNIT, MAKE-UP AIR UNIT, EXHAUST FAN, ETC.
2. CONTRACTOR SHALL ENSURE TO MAINTAIN HOUSEKEEPING ONSITE. COORDINATE WITH GENERAL CONTRACTOR.
3. ALL PIPING PENETRATION ON ROOF TO BE WATERPROOF. REFER MECHANICAL DETAILS IN DRAWING M702.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS.
5. CONTRACTOR TO VERIFY ON SITE EXACT LOCATION OF MECHANICAL SERVICES.
6. COORDINATE LOW VOLTAGE CONTROLS TRANSFORMERS WITH ELECTRICAL.
7. EXTEND VENT PIPES, ROOF DRAIN LEADERS, GOOSENECKS, etc. AS NEEDED TO ACCOMMODATE NEW ROOFING AND CURBS; COORDINATE WITH THE GENERAL CONTRACTOR.
8. ROOF DRAIN IS 100mm BODIES TYPICAL. CONNECT TO EXISTING STORM DISTRIBUTION, COORDINATE WITH ROOFING CONTRACTOR TO ACCOMMODATE THICKNESS OF NEW ROOF.
9. NOT ALL ROOF PENETRATIONS SHOWN, INCLUDING BOILER FLUES, GAS VENTS, etc.
10. CONTRACTOR TO COORDINATE WITH STRUCTURAL AND ARCHITECT FOR ANY CHANGE OF EQUIPMENT WEIGHT AND CUTTING OF ROOF AND STRUCTURE.

KEYNOTES:

- 1 DEMOLISH EXISTING FAN. PATCH EXISTING OPENING.
- 2 REPLACE ROOF DRAIN WITH NEW UNIT. CONNECT TO EXISTING ROOF 100# DRAINAGE LINE.



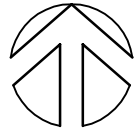
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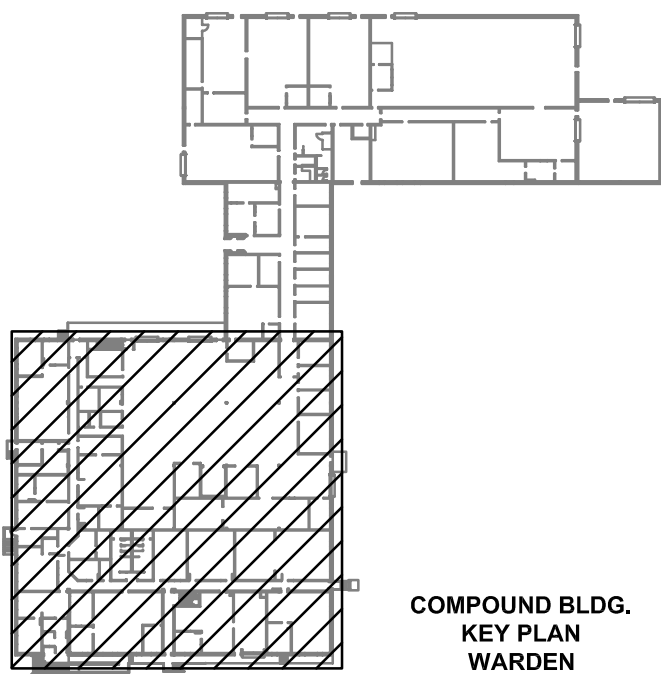
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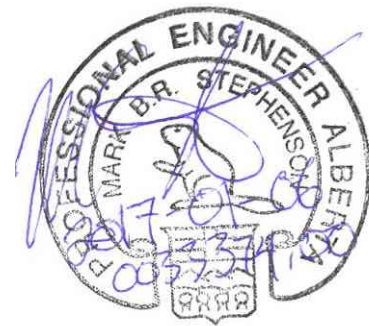
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COMPOUND BLDG.  
KEY PLAN  
WARDEN



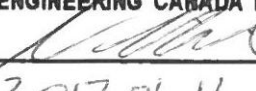
Revision/	Description/Description	Date/Date
4.	ISSUED FOR BP / TENDER	17-01-11
3.	ISSUED FOR TENDER	16-11-07
2.	ISSUED FOR 99% REVIEW	16-06-10
1.	ISSUED FOR 50% REVIEW	16-05-16

Client/client	
 Parks Canada Agency	L'Agence Parcs Canada
Western and Northern Region	Ouest et Nord du Canada

Project title/Titre du projet  
**Banff National Park  
Banff, Alberta**  
**PCA - MAINTENANCE  
BANFF COMPOUND  
REHABILITATION**

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Drawn by/Dessine par KC
Project Manager/Administrateur de Projets KT
Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'ingénierie
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WARDEN ROOF  
MECHANICAL PLAN

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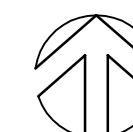
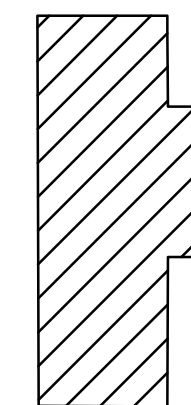
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PROJECT  
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MAINTENANCE  
GARAGE BLDG



Revision/ Revision	Description/Description	Date/Date
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Parks Canada  
Agency

L'Agence Parcs  
Canada

Western and Northern Region

Ouest et Nord  
du Canada

**Banff National Park**  
**Banff, Alberta**

## PCA - MAINTENANCE BANFF COMPOUND REHABILITATION

Approved by/Approuve par  
MS

Designed by/Concept par	MS
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Drawn by/Dessine par  
KC

Project Manager/Administrateur de Projets  
KT

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

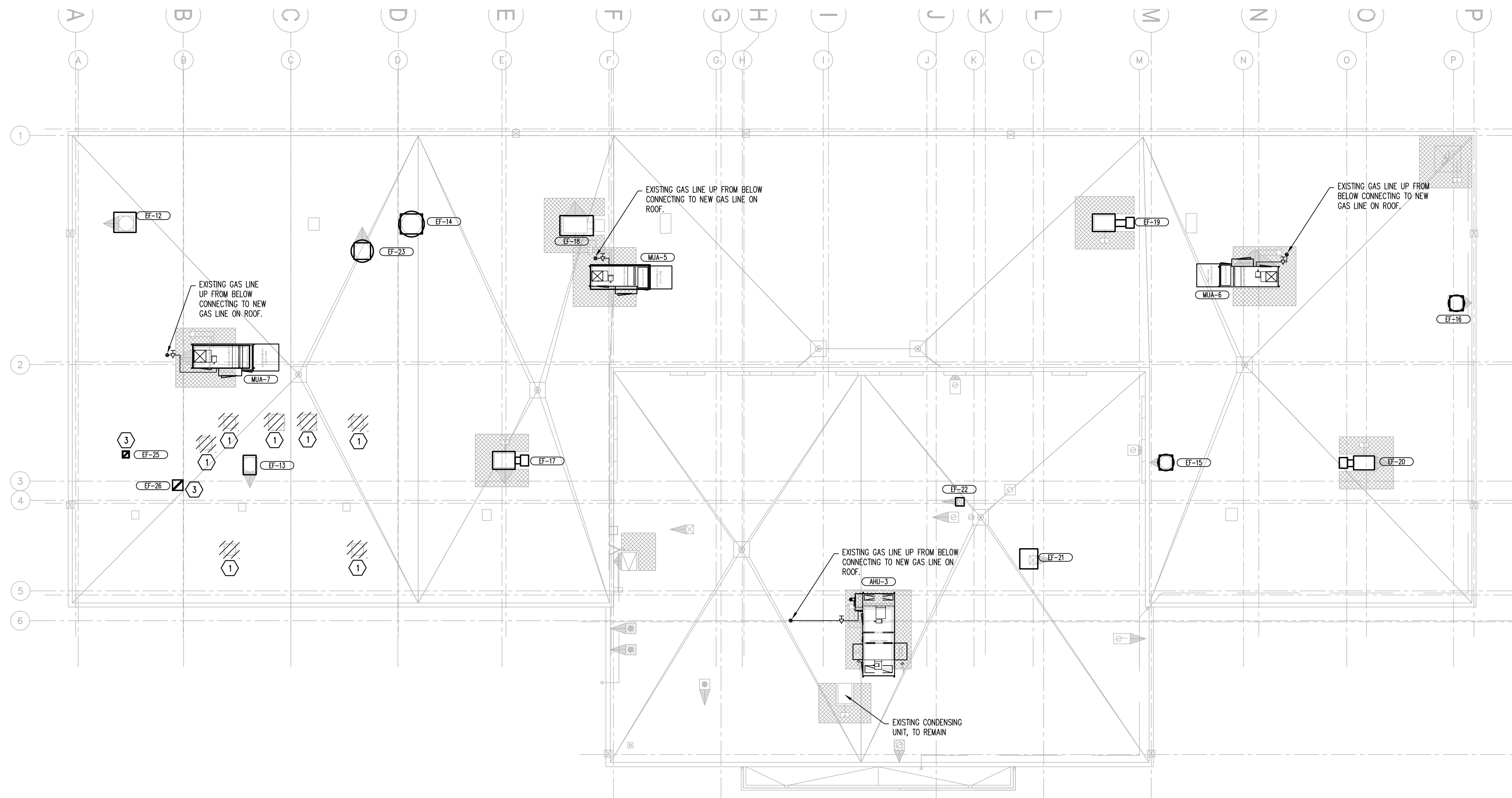
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Drawing title/Titre du dessin

## MAINTENANCE GARAGE ROOF MECHANICAL PLAN

Project No./No. du projet	Sheet/Feuille	Revision no./ La Révision
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1 MAINTENANCE GARAGE ROOF MECHANICAL PLAN  
M404 SCALE: 1:150

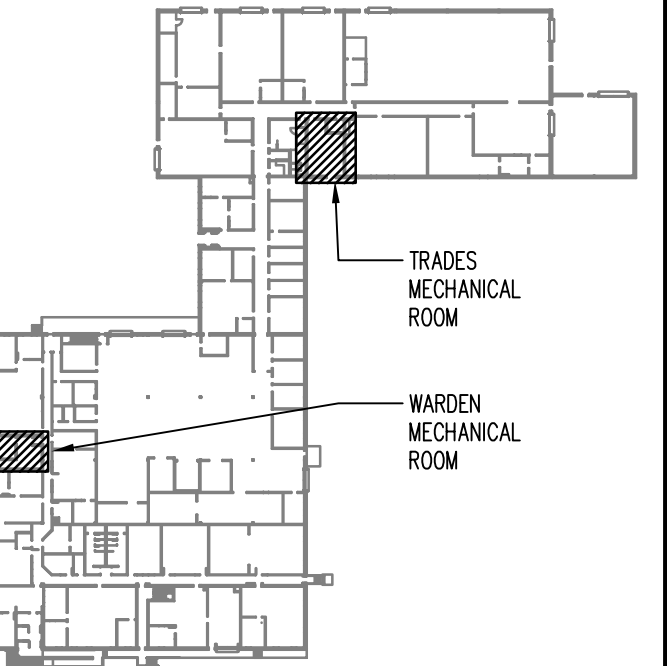
KEYNOTES:

1. ALL NEW ROOF CURBS TO BE MINIMUM 200mm ABOVE LEVEL OF NEW ROOF. TYPICAL FOR AIR HANDLING UNIT, MAKE-UP AIR UNIT, EXHAUST FAN, ETC.
2. ENSURE THAT ALL DUCT AND MECHANICAL EQUIPMENT CLEARS STRUCTURAL MEMBERS.
3. CONTRACTOR SHALL ENSURE TO MAINTAIN HOUSEKEEPING ON-SITE. COORDINATE WITH GENERAL CONTRACTOR.
4. ALL MECHANICAL PENETRATION ON ROOF TO BE WATERPROOF. REFER MECHANICAL DETAILS IN DRAWING M702.
5. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS.
6. CONTRACTOR TO VERIFY ON SITE EXACT LOCATION OF MECHANICAL SERVICES.
7. COORDINATE LOW VOLTAGE CONTROLS TRANSFORMERS WITH ELECTRICAL.
8. EXTEND VENT PIPES, ROOF DRAIN LEADERS, GOOSENECKS etc. AS NEEDED TO ACCOMMODATE NEW ROOFING AND CURBS. COORDINATE WITH THE GENERAL CONTRACTOR.
9. NOT ALL ROOF PENETRATIONS SHOWN, INCLUDE BOILER FLUES, GAS VENTS, etc.
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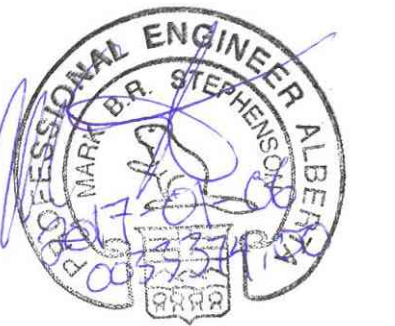
- 1 DEMOLISH EXISTING FANS/RELIEF HOODS. PATCH EXISTING OPENING.







COMPOUND BLDG.  
KEY PLAN



Revision/	Description/Description	Date/Date
4.	ISSUED FOR BP / TENDER	17-01-11
3.	ISSUED FOR TENDER	16-11-07
2.	ISSUED FOR 99% REVIEW	16-06-10
1.	ISSUED FOR 50% REVIEW	16-05-13

Revision/	Description/Description	Date/Date
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Client/client	
Parks Canada Agency	L'Agence Parcs Canada
Western and Northern Region	Ouest et Nord du Canada

Project title/Titre du projet  
**Banff National Park  
Banff, Alberta**  
**PCA - MAINTENANCE  
BANFF COMPOUND  
REHABILITATION**

Approved by/Approuvé par  
AP

Designed by/Concept par  
AB

Drawn by/Dessiné par  
MP

Project Manager/Administrateur de Projets  
KT

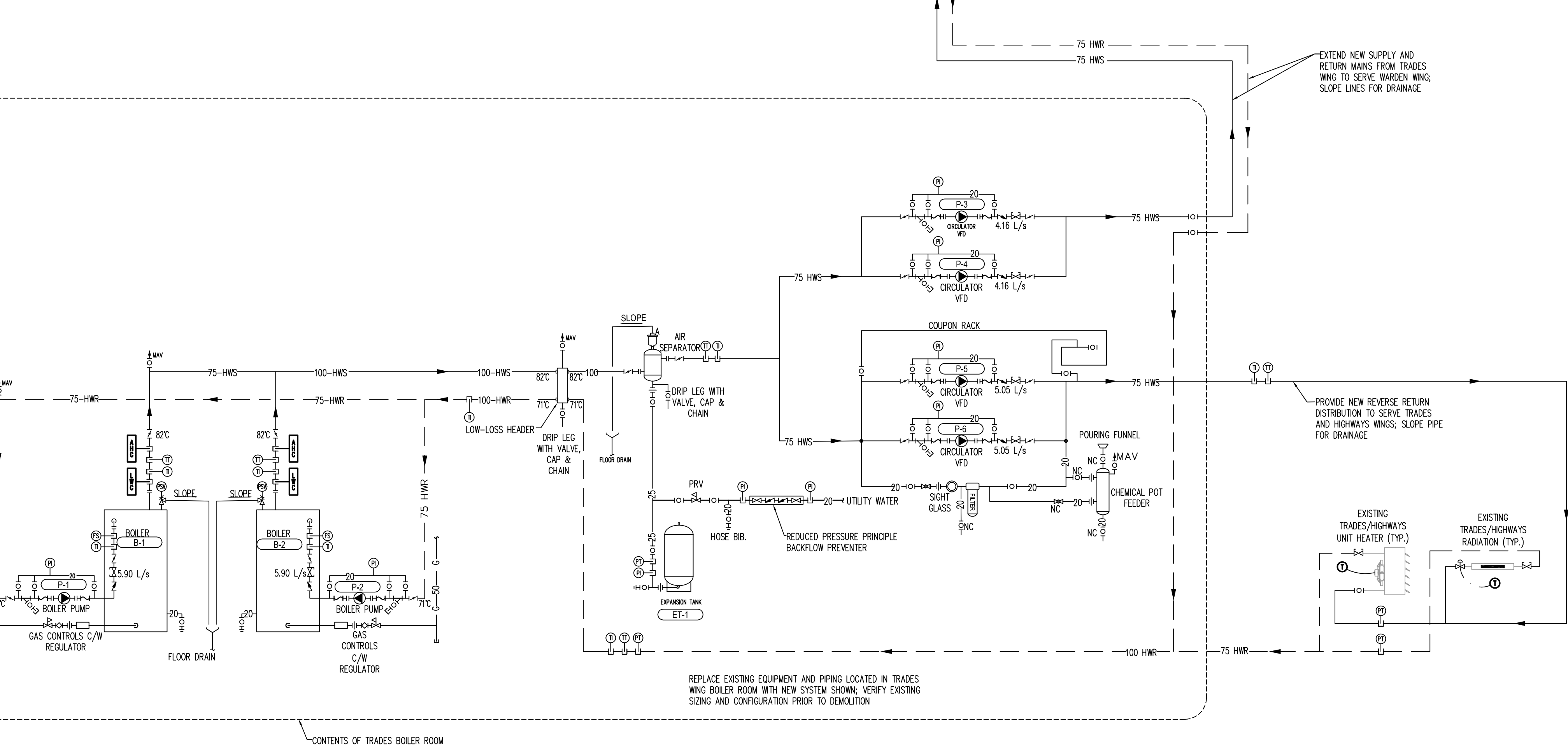
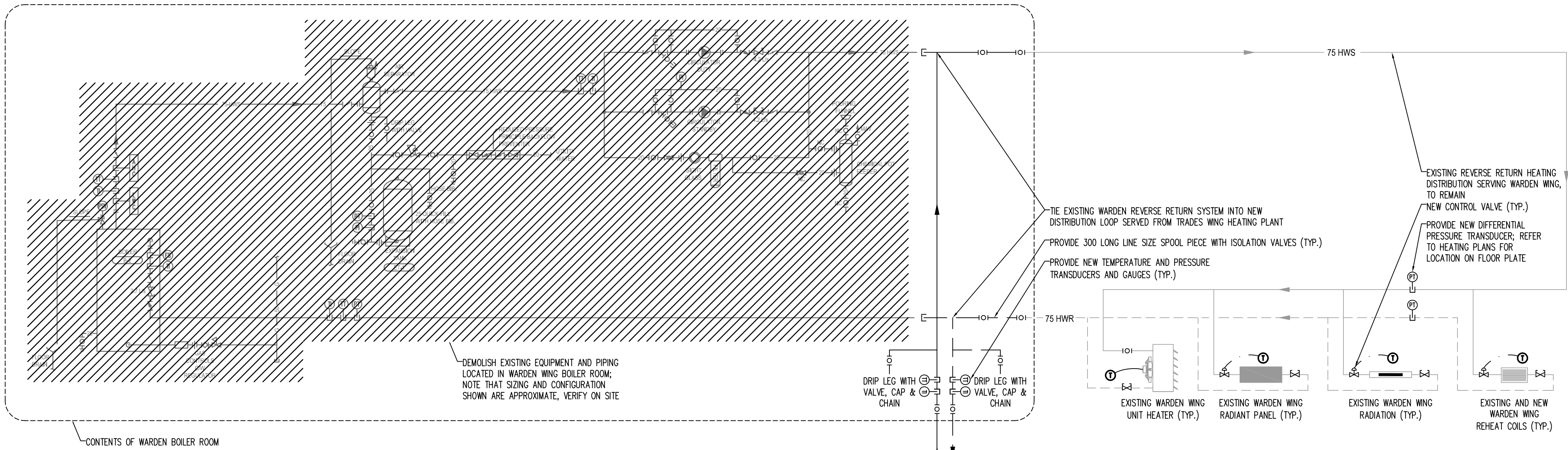
Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'ingénierie

Scale:  
AS SHOWN

Drawing title/Titre du dessin

**HYDRONIC HEATING  
SCHEMATIC**

Project No./No. du projet 33374.00	Sheet/Feuille M600	Revision no./ La Révision no. 4
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1 HYDRONIC HEATING SCHEMATIC  
M600 SCALE: N.T.S.

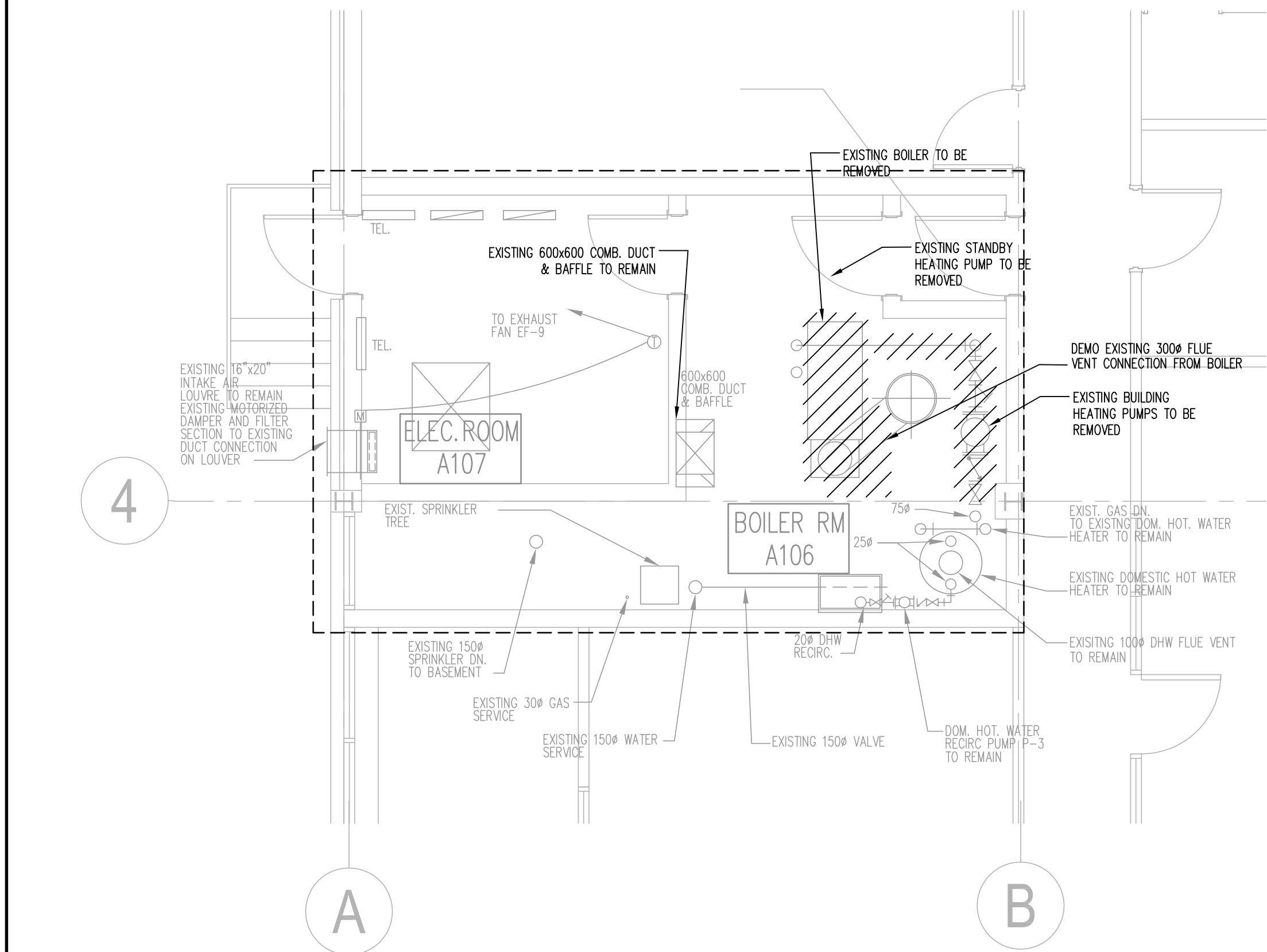
GENERAL NOTES:

- NOT ALL AIR VENTS AT CHANGES IN ELEVATION SHOWN; REFER TO SPECIFICATIONS FOR FURTHER INSTALLATION REQUIREMENTS.
- NOT ALL EXISTING EQUIPMENT AND SYSTEMS ARE SHOWN; VERIFY ON SITE AS REQUIRED.
- COORDINATE PHASING OF WORK WITH GENERAL CONTRACTOR; MINIMIZE DISRUPTION TO OCCUPANTS AND PROVIDE TEMPORARY HEAT AS REQUIRED.
- FLows INDICATED ARE TO SERVE EXISTING SYSTEM; HYDRONIC EQUIPMENT HAS BEEN SELECTED TO ACCOMMODATE FUTURE INCREASE TO HEATING SYSTEM LOAD.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS.

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WILLIAMS ENGINEERING CANADA INC.  
Signature  
Date 2017.01.11  
PERMIT NUMBER: P 10527  
The Association of Professional Engineers,  
Geologists and Geophysicists of Alberta



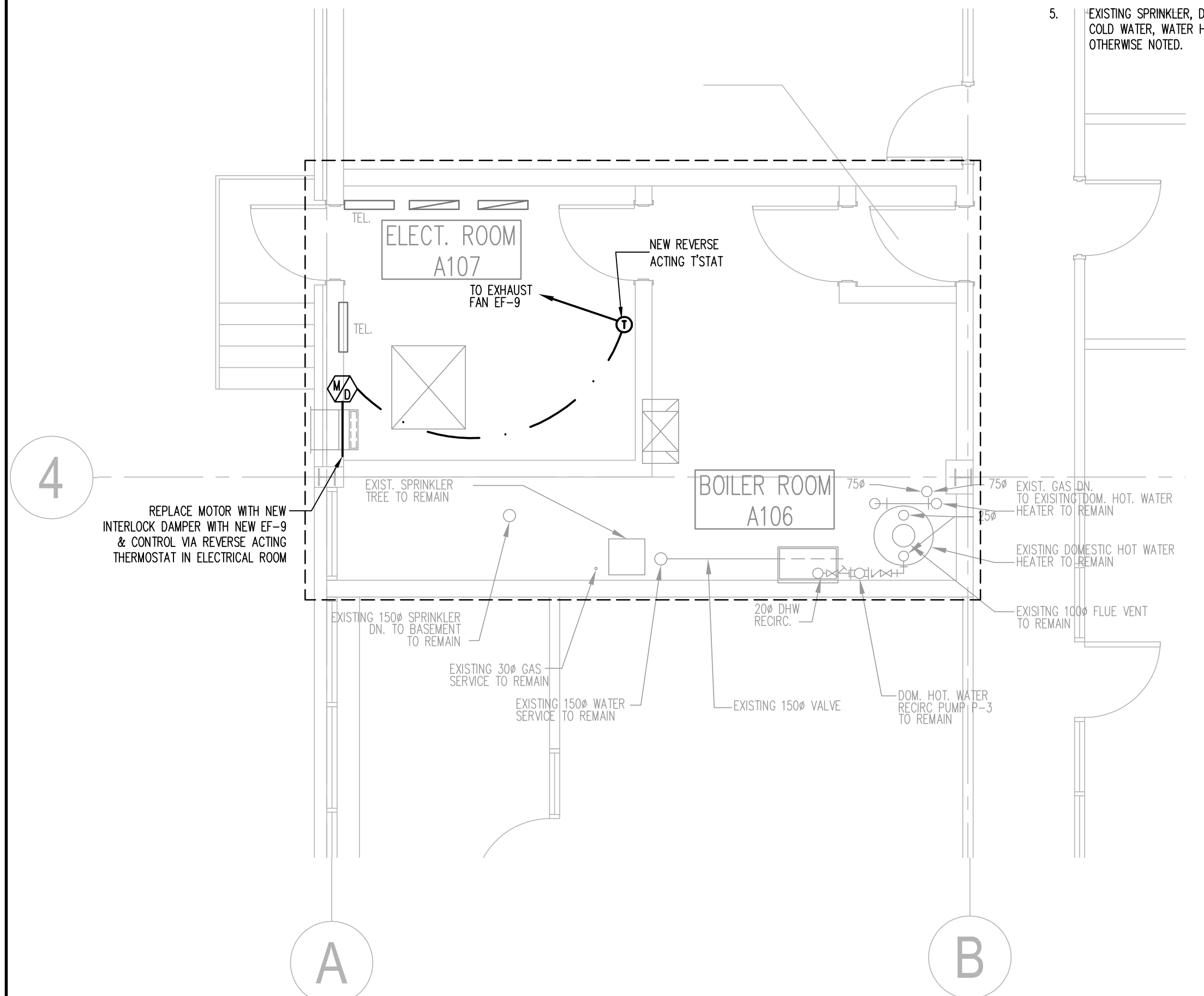
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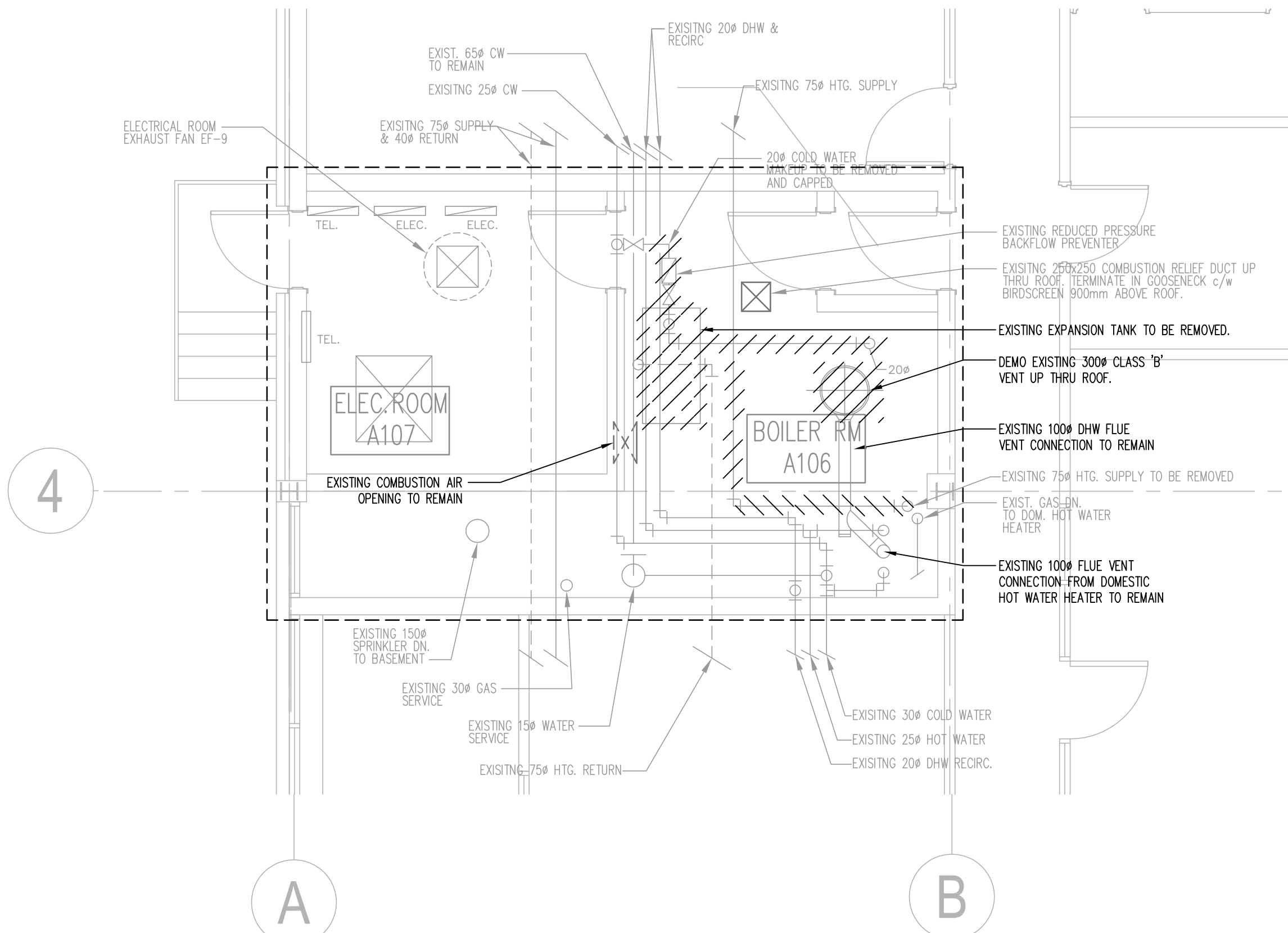
1 WARDEN MAIN FLOOR (LOWER LEVEL) MECHANICAL DEMOLITION PLAN  
M700 SCALE: 1:50

GENERAL NOTES:

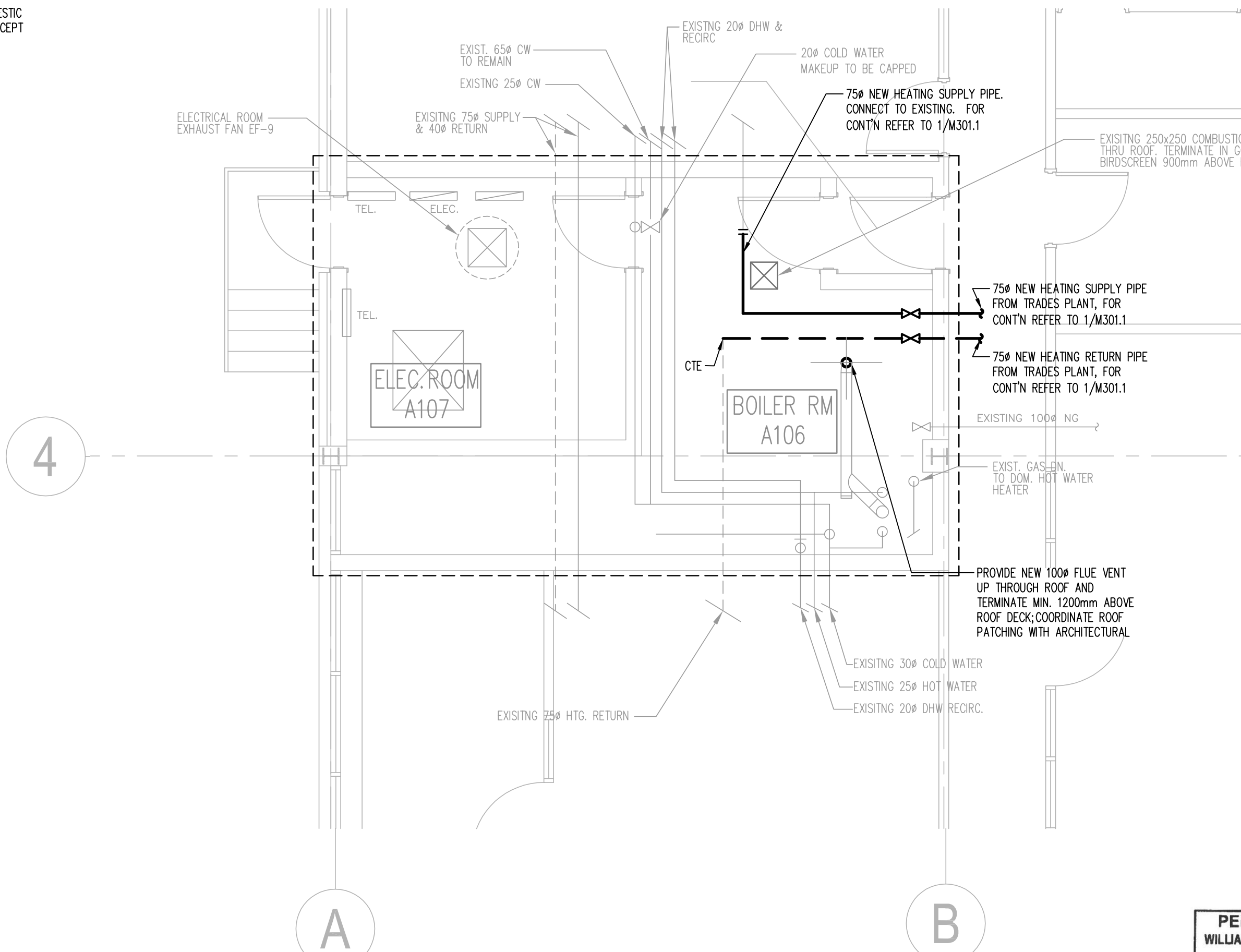
1. ALL DUCT AND PIPE OPENINGS, NOT BEING RECONNECTED FOR NEW CONSTRUCTION, ARE TO BE CAPPED OFF.
2. CONTRACTOR TO VERIFY ONSITE ACTUAL DIMENSIONS AND LOCATION OF ALL MECHANICAL SERVICES.
3. COORDINATE PHASING OF WORK WITH GENERAL CONTRACTOR; MINIMIZE DISRUPTION TO OCCUPANTS AND PROVIDE TEMPORARY HEAT AS REQUIRED.
4. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATIONS AND THE GENERAL REQUIREMENTS.
5. EXISTING SPRINKLER, DOMESTIC HOT WATER, DOMESTIC COLD WATER, WATER HEATER, etc. TO REMAIN EXCEPT OTHERWISE NOTED.



3 WARDEN MAIN FLOOR (LOWER LEVEL) NEW MECHANICAL PLAN  
M700 SCALE: 1:50

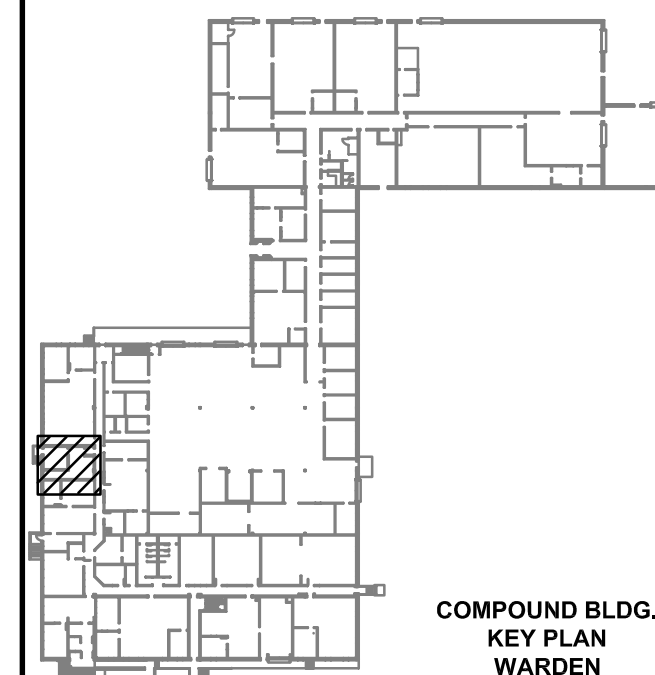


2 WARDEN MAIN FLOOR (UPPER LEVEL) MECHANICAL DEMOLITION ROOM PLAN  
M700 SCALE: 1:50



4 WARDEN MAIN FLOOR (UPPER LEVEL) NEW MECHANICAL ROOM PLAN  
M700 SCALE: 1:50

PERMIT TO PRACTICE  
WILLIAMS ENGINEERING CANADA INC.  
Signature: [Signature]  
Date: 2017.01.11  
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Revision/	Description/Description	Date/Date
4.	ISSUED FOR BP / TENDER	17-01-11
3.	ISSUED FOR TENDER	16-11-07
2.	ISSUED FOR 99% REVIEW	16-06-10
1.	ISSUED FOR 50% REVIEW	16-05-16

Client/client	
Parks Canada Agency	L'Agence Parcs Canada
Western and Northern Region	Ouest et Nord du Canada

Project title/Titre du projet  
**Banff National Park  
Banff, Alberta**  
**PCA - MAINTENANCE  
BANFF COMPOUND  
REHABILITATION**

Approved by/Approuvé par  
MS

Designed by/Concept par  
MS

Drawn by/Dessiné par  
KC/AS

Project Manager/Administrateur de Projets  
KT

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

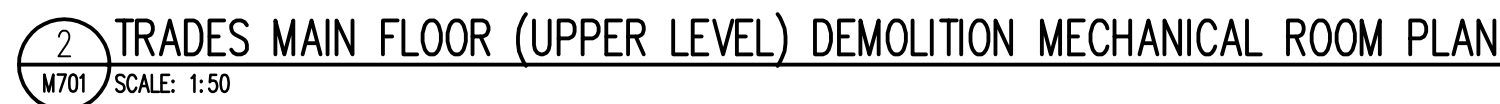
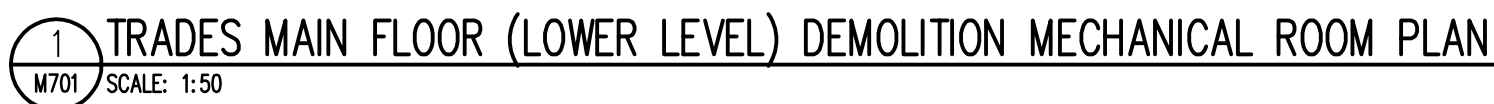
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Drawing title/Titre du dessin

**WARDEN COMPOUND BLDG.  
MAIN FLOOR  
MECHANICAL ROOM DETAILS**

Project No./No. du projet	Sheet/Feuille	Revision no./Révision no.
33374.00	M700	4





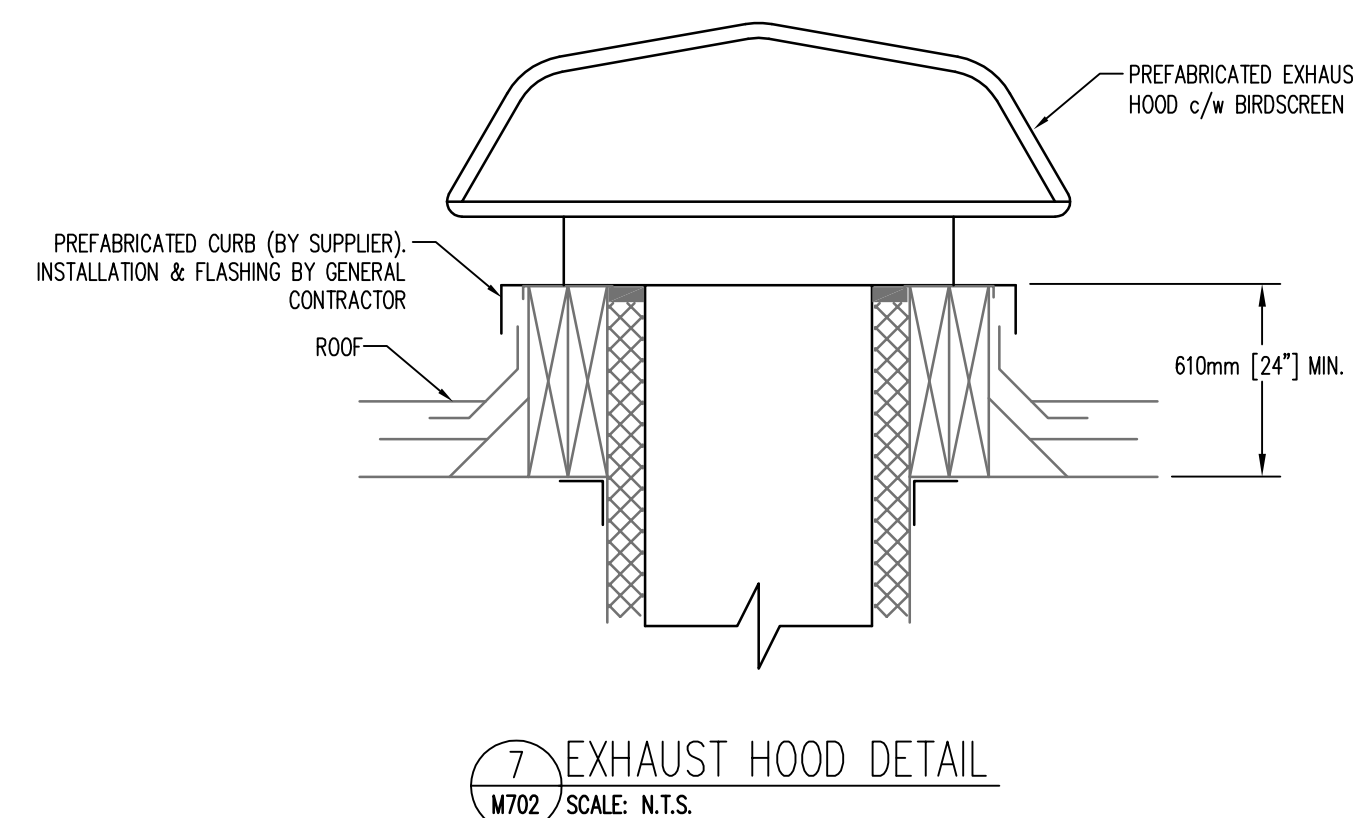
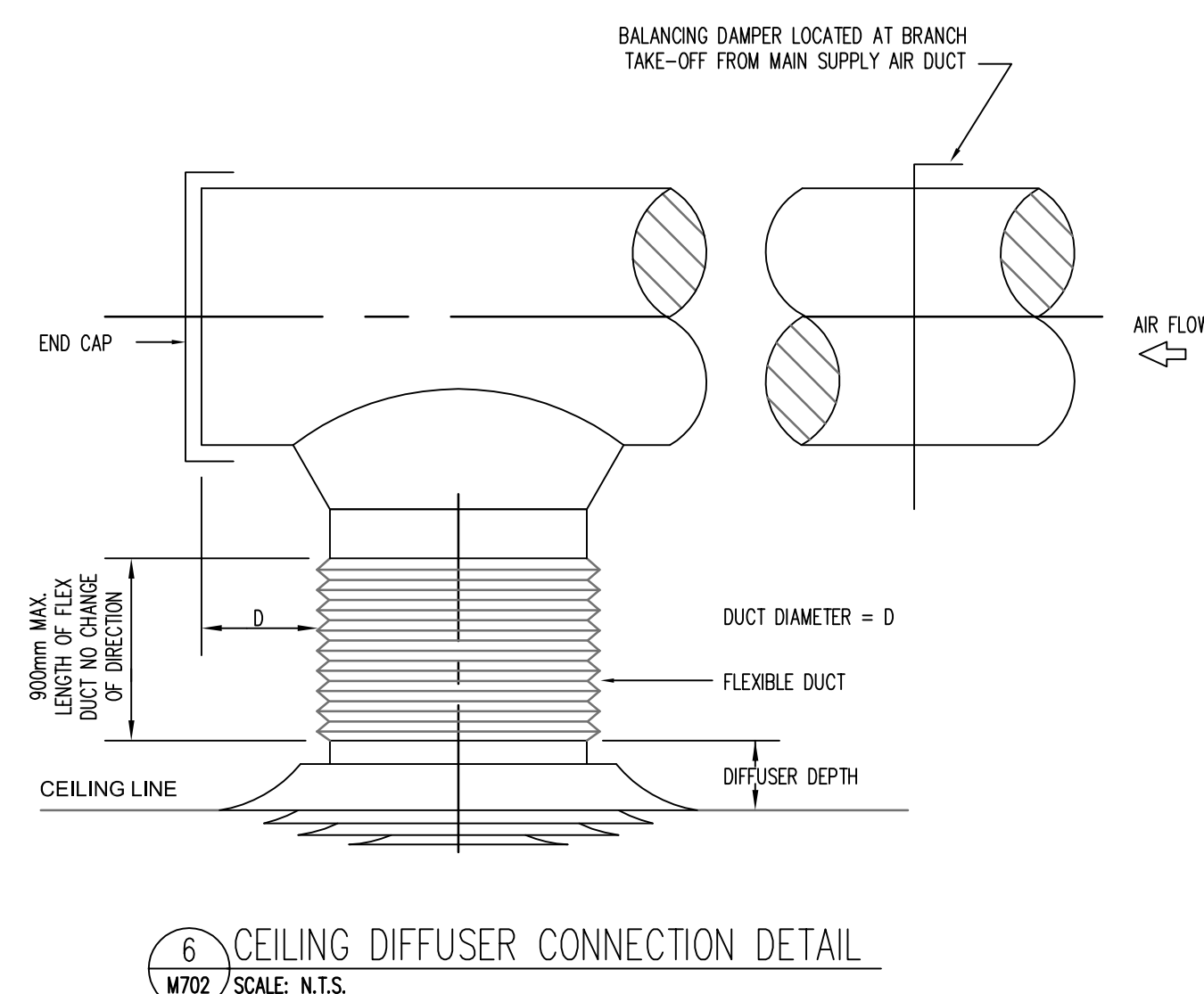
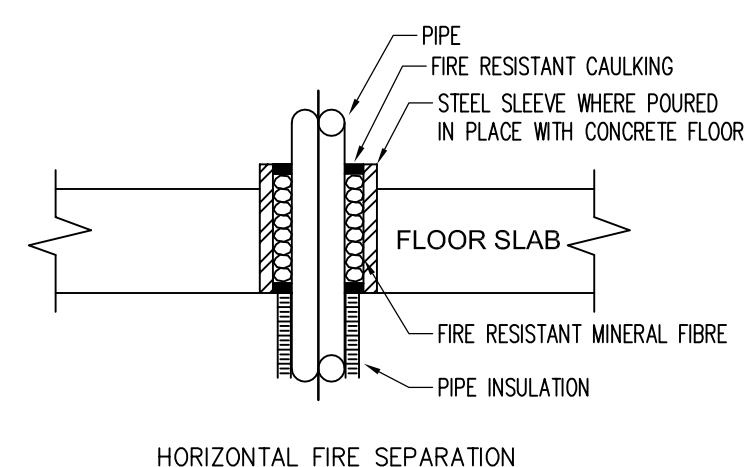
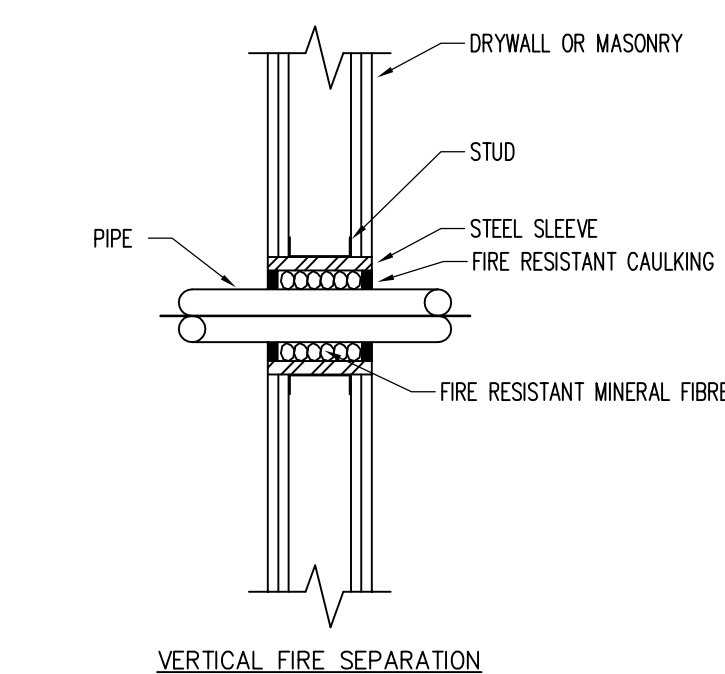
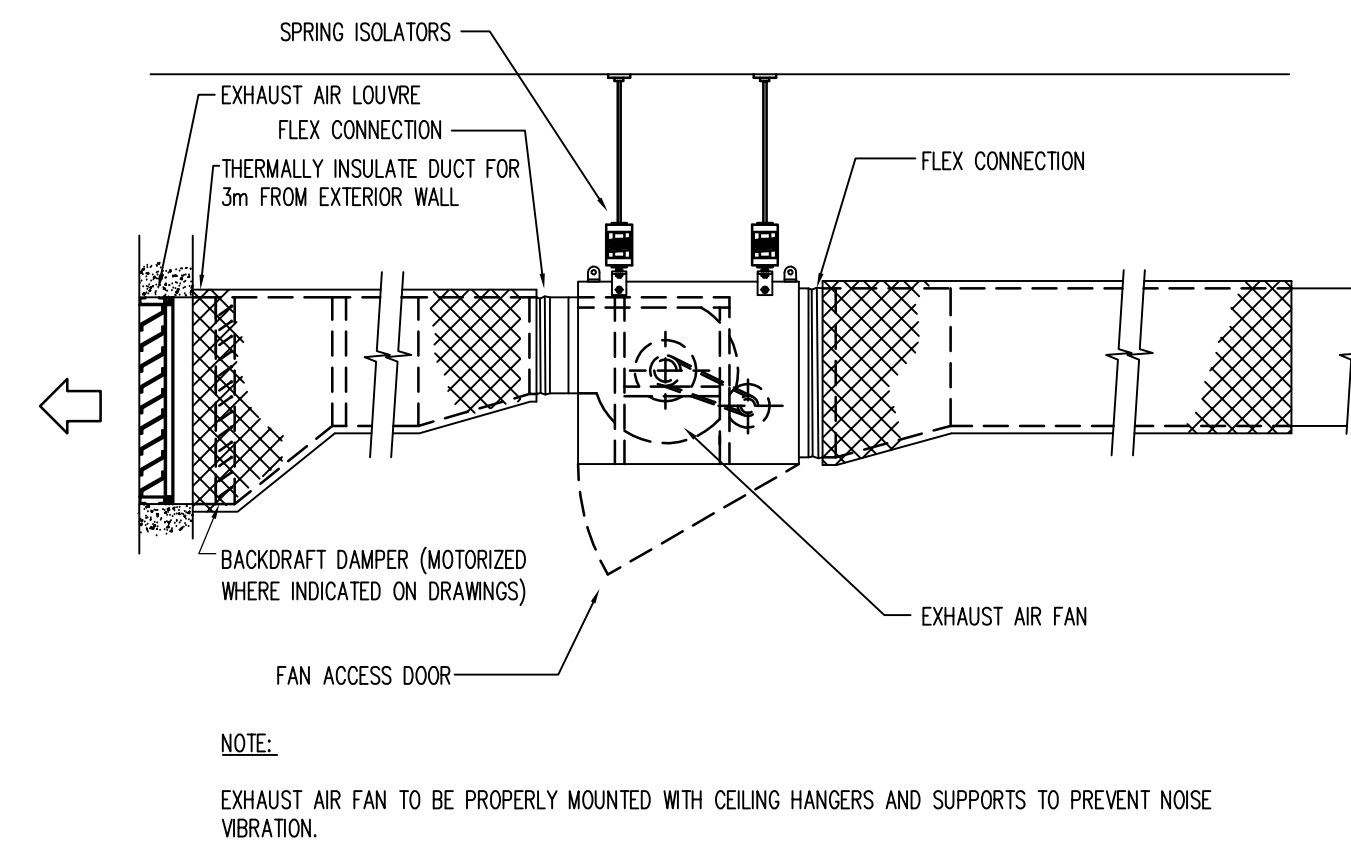
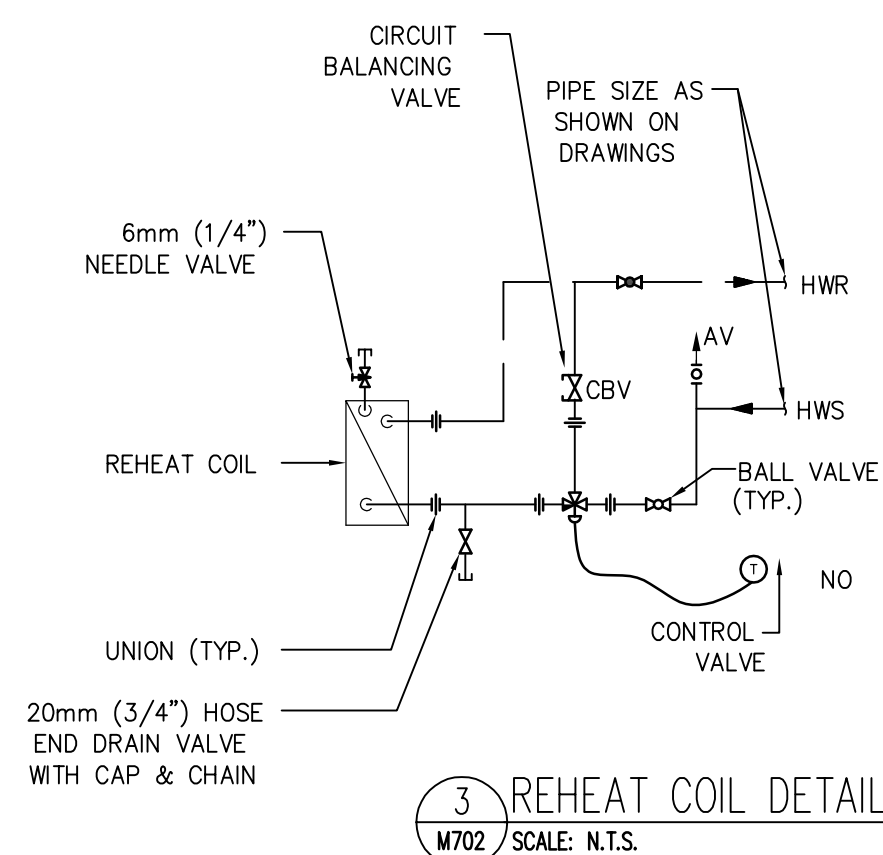
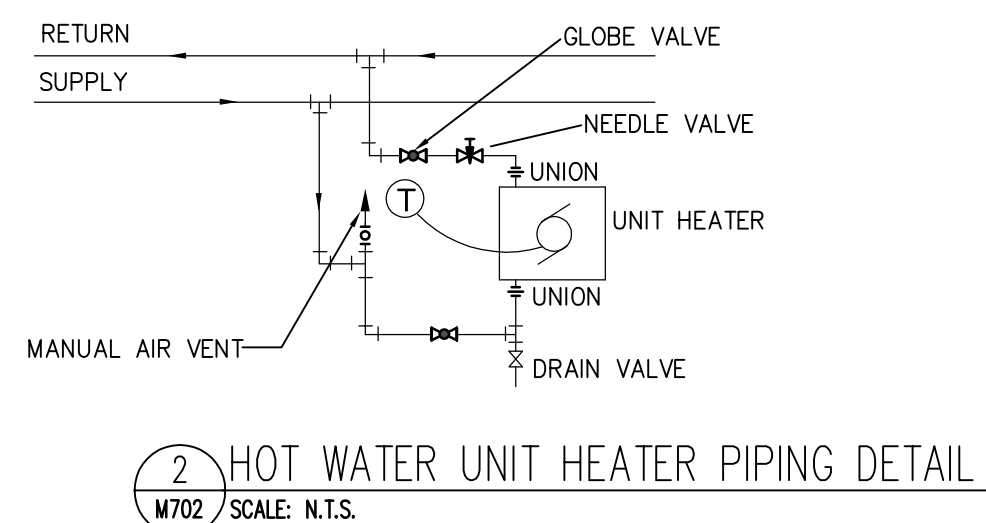
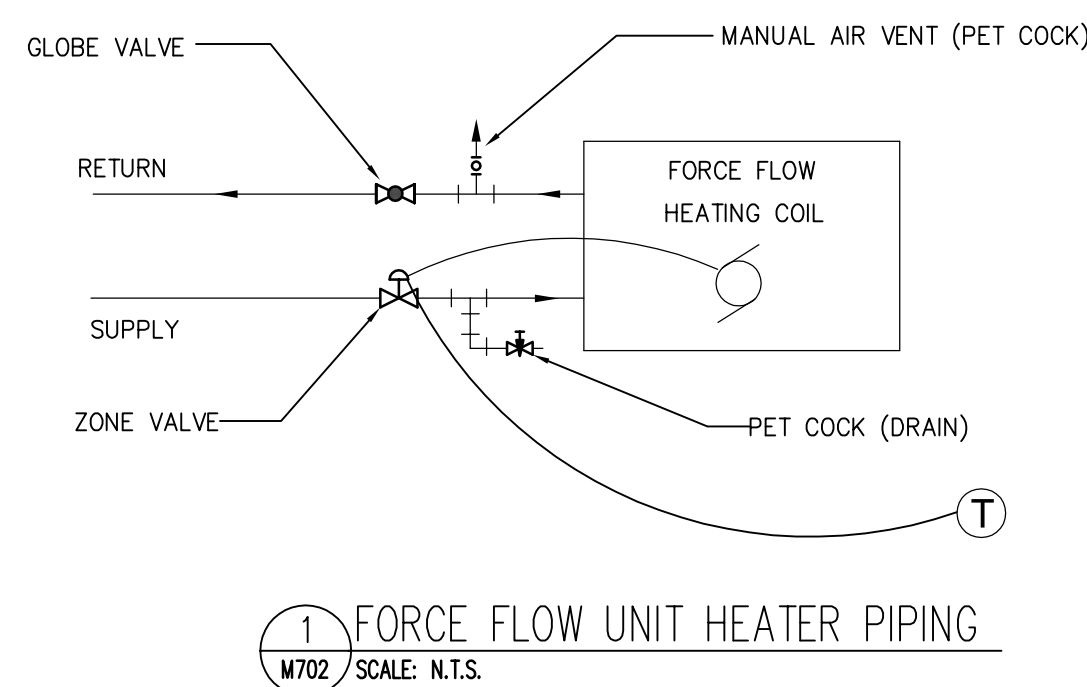
- ## KEYNOTES:
- 1 75 HWS UP TO CONNECT TO HIGH LEVEL PIPE, FOR CONTINUATION SEE 4/M701. FROM P-3&4.
  - 2 75 HWS UP TO CONNECT TO HIGH LEVEL PIPE, FOR CONTINUATION SEE 4/M701. FROM P-5&6.
  - 3 75 HWS UP TO CONNECT TO HIGH LEVEL PIPE, FOR CONTINUATION SEE 4/M701. HOT WATER HEATING DISTRIBUTION TO TRADES WING.
  - 4 75 HWS UP TO CONNECT TO HIGH LEVEL PIPE, FOR CONTINUATION SEE 4/M701. HOT WATER HEATING DISTRIBUTION WARDEN WING.
  - 5 PROVIDE 100mm THICK CONCRETE PAD FOR ALL EQUIPMENT. (TYPICAL)
  - 6 175H FLUE VENT UP, SEE 4/M701 FOR CONTINUATION.
  - 7 75 HWR UP TO CONNECT TO HIGH LEVEL PIPE, FOR CONTINUATION SEE 4/M701. HOT WATER RETURN PIPE TO P-1 & 2, AND B-1 & 2.
  - 8 75 HWS UP TO CONNECT TO HIGH LEVEL PIPE, SEE 4/M701 FOR CONTINUATION. HOT WATER HEATING SUPPLY PIPES FROM B-1 & B-2.
  - 9 25 PIPE DOWN TO CONNECT TO THE EXPANSION TANK, FOR CONTINUATION SEE 3/M701.
  - 10 75 HWS DOWN TO CONNECT TO P-3 & P-4, FOR CONTINUATION SEE 3/M701.
  - 11 75 HWS DOWN TO CONNECT TO P-5 & P-6, FOR CONTINUATION SEE 3/M701.
  - 12 175H FLUE VENT, FROM B-1, CONNECT TO EXISTING MAIN FLUE VENT RISER.
  - 13 EXISTING MAIN FLUE VENT RISER UP THROUGH ROOF.
  - 14 175H FLUE VENT, FROM B-2, CONNECT TO EXISTING MAIN FLUE VENT RISER.
  - 15 75 HWS DOWN TO CONNECT TO P-3 & P-4, FOR CONTINUATION SEE 3/M701. HWS DISTRIBUTION TO WARDEN WING.
  - 16 75 HWS DOWN TO CONNECT TO P-5 & P-6, FOR CONTINUATION SEE 3/M701. HWS DISTRIBUTION TO TRADES WING.
  - 17 75 HWS DOWN TO CONNECT TO P-1, FOR CONTINUATION SEE 3/M701.
  - 18 75 HWS DOWN TO CONNECT TO P-2, FOR CONTINUATION SEE 3/M701.
  - 19 75 HWS DOWN TO CONNECT TO B-1, FOR CONTINUATION SEE 3/M701.
  - 20 75 HWS DOWN TO CONNECT TO B-2, FOR CONTINUATION SEE 3/M701.
  - 21 50 NG, CONNECT FROM EXISTING 75 NG, DOWN TO B-1.
  - 22 50 NG, CONNECT FROM EXISTING 75 NG, DOWN TO B-2.

Revision no./  
La Révision  
no. **4**

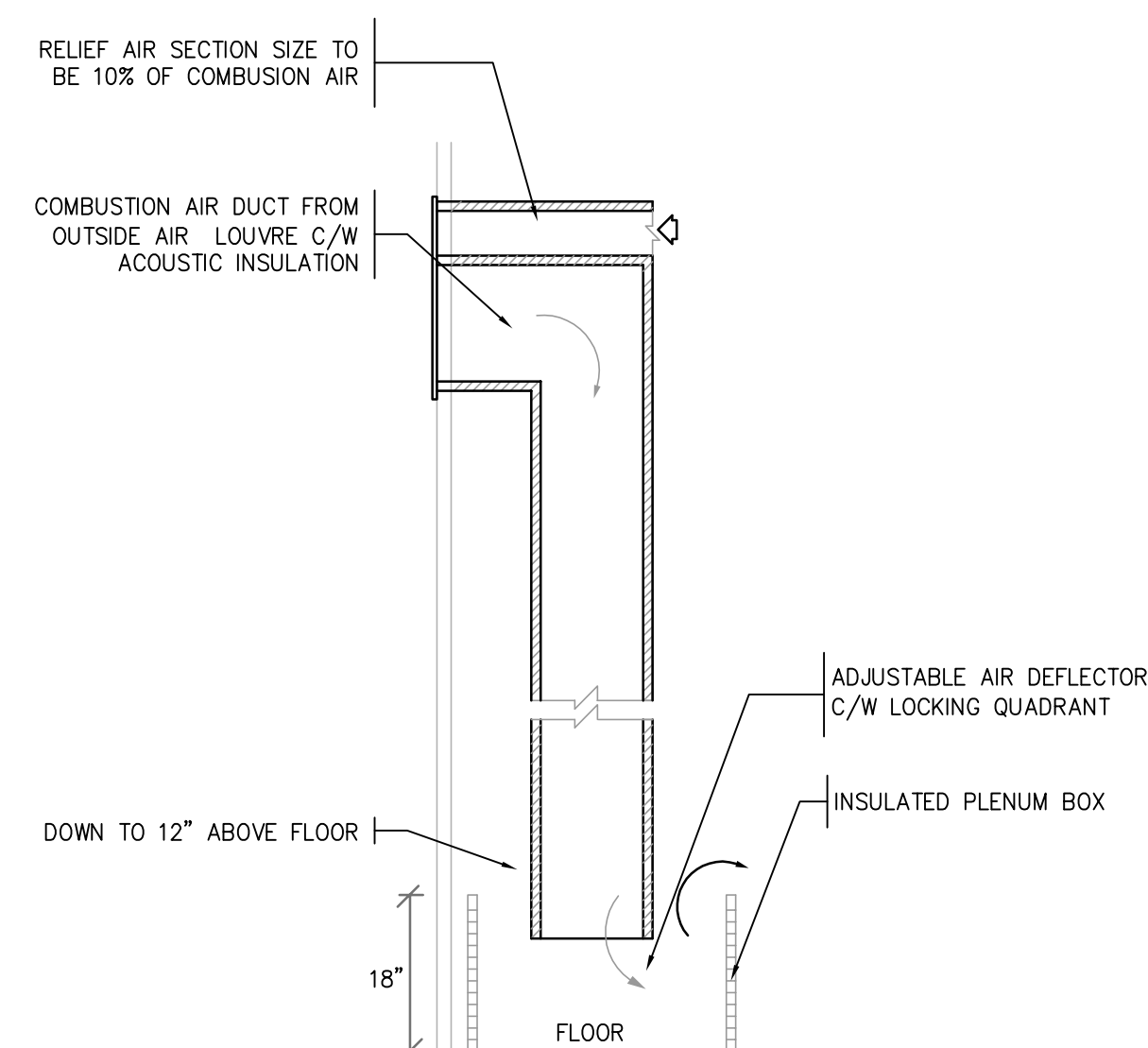
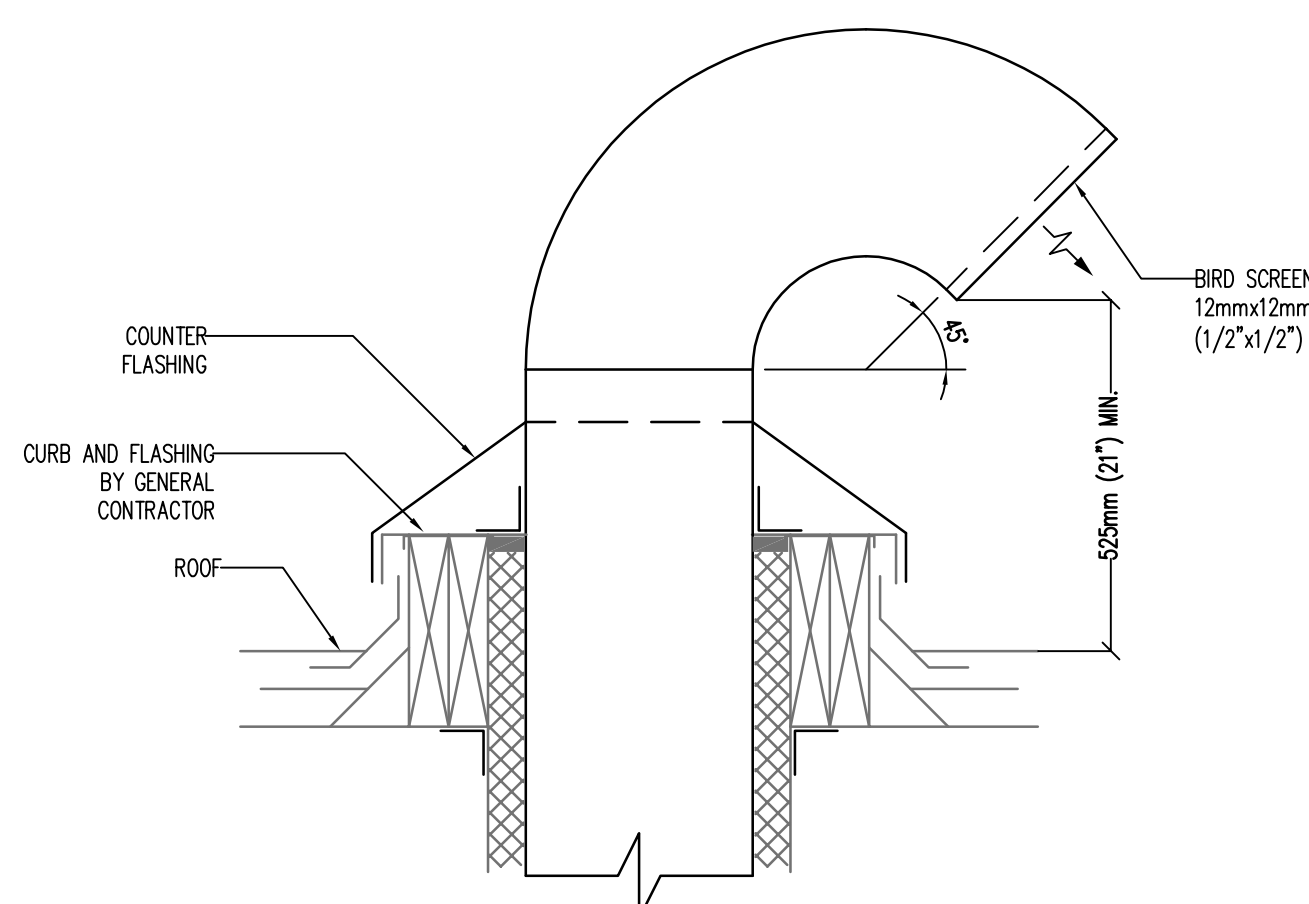
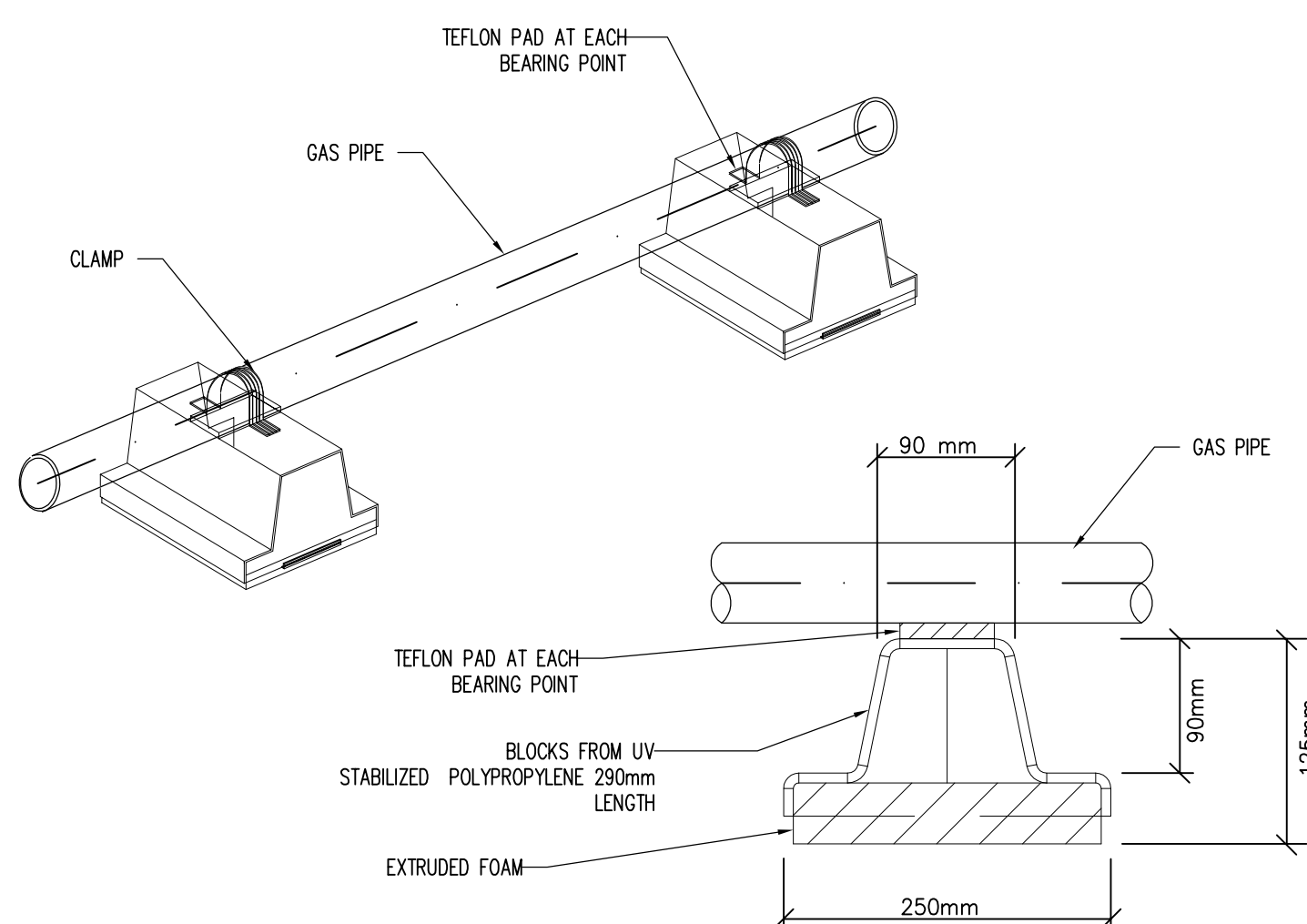
**PERMIT TO PRACTICE**  
**WILLIAMS ENGINEERING CANADA INC.**  
Signature \_\_\_\_\_  
Date 2017.01.11  
**PERMIT NUMBER: P 10527**  
The Association of Professional Engineers,  
Geologists and Geophysicists of Alberta





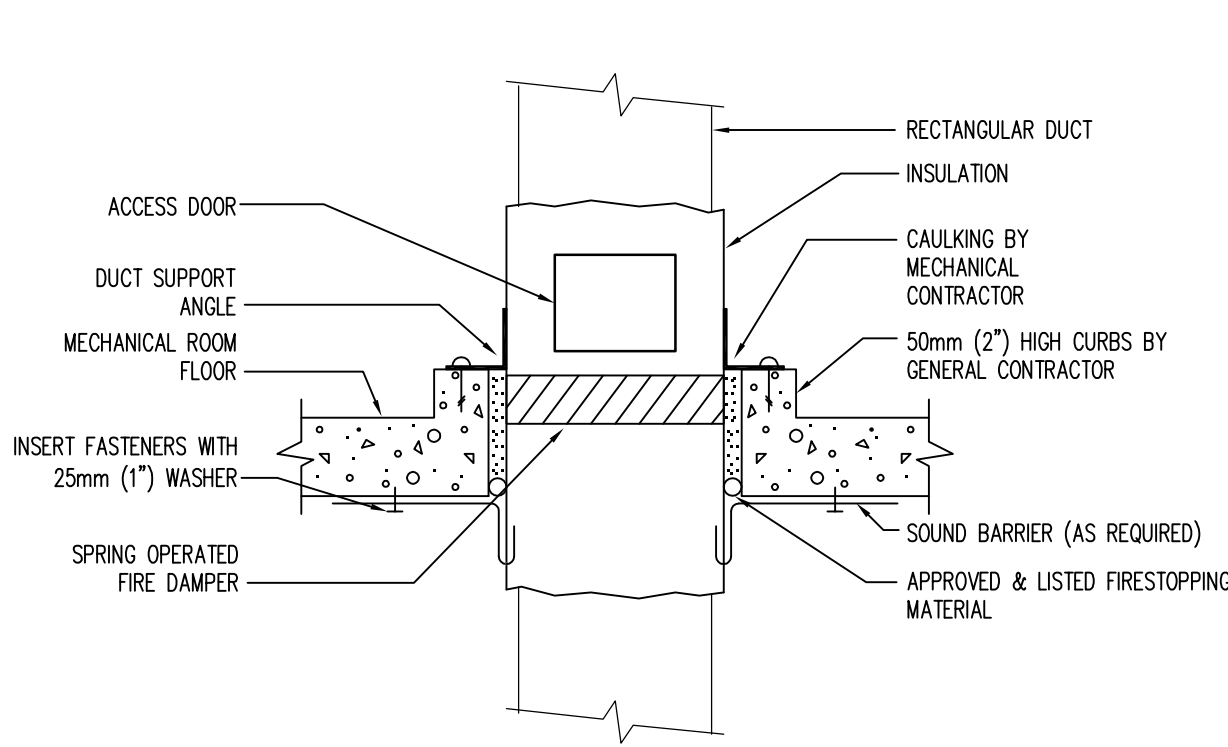


1. ALLOW MINIMUM OF 200mm HIGH CURBS ABOVE NEW ROOF DECK LEVEL. COORDINATE WITH THE ARCHITECT.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS.

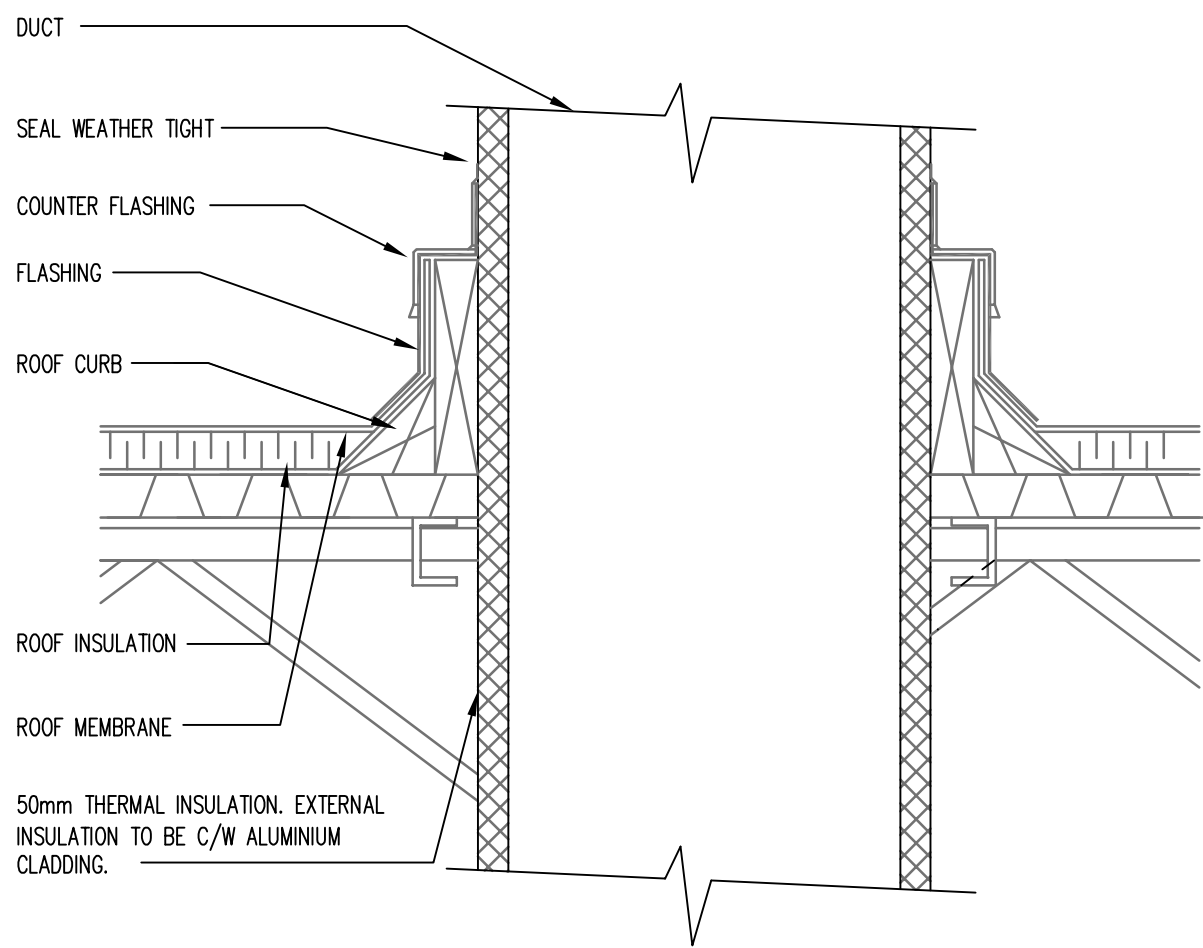




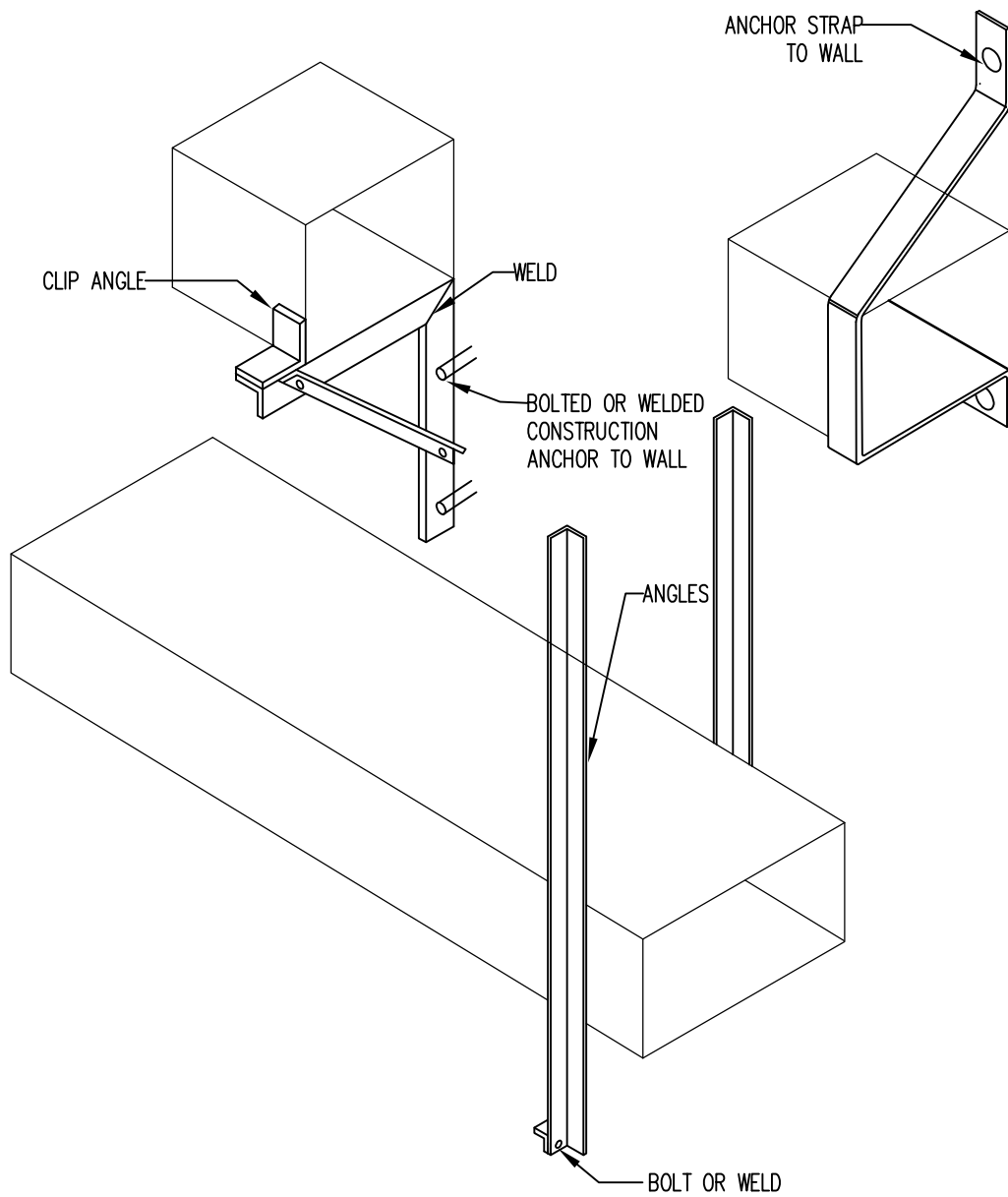
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1 RECTANGULAR DUCT THRU FLOOR DETAIL  
M703 / SCALE: N.T.S.



2 DUCT PENETRATION THRU ROOF DETAIL  
M703 / SCALE: N.T.S.

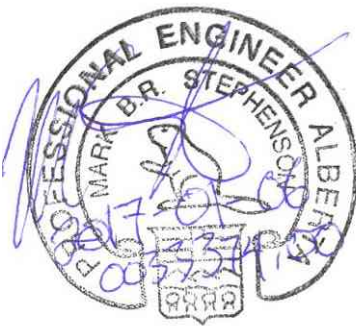


3 TYPICAL DUCT SUPPORTED ON WALL DETAIL  
M703 / SCALE: N.T.S.

GENERAL NOTES:

1. ALLOW MINIMUM OF 200mm HIGH CURBS ABOVE NEW ROOF DECK LEVEL. COORDINATE WITH THE ARCHITECT.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS..

PERMIT TO PRACTICE  
WILLIAMS ENGINEERING CANADA INC.  
Signature: *[Signature]*  
Date: 2017.01.11  
PERMIT NUMBER: P 10527  
The Association of Professional Engineers,  
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Revision/	Description/Description	Date/Date
4.	ISSUED FOR BP / TENDER	17-01-11
3.	ISSUED FOR TENDER	16-11-07
2.	ISSUED FOR 99% REVIEW	16-06-10
1.	ISSUED FOR 50% REVIEW	16-05-16

Client/client	
Parks Canada Agency Western and Northern Region	L'Agence Parcs Canada Ouest et Nord du Canada

Project title/Titre du projet  
**Banff National Park  
Banff, Alberta**  
**PCA - MAINTENANCE  
BANFF COMPOUND  
REHABILITATION**

Approved by/Approuvé par MS
Designed by/Concept par MS
Drawn by/Dessiné par KC
Project Manager/Administrateur de Projets KT
Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'ingénierie
Scale: AS SHOWN

Drawing title/Titre du dessin  
**MECHANICAL DETAILS 2**

Project No./No. du projet	Sheet/Feuille	Revision no./Révision no.
33374.00	M703	4

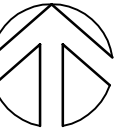




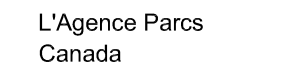




**WILLIAMS**  
**ENGINEERING**  
CANADA

PROJECT  
NORTH

Revision/ Revision	Description/Description	Date/Date
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Ouest et Nord  
du Canada

## Banff National Park

### Banff, Alberta

## CA - MAINTENANCE BANFF COMPOUND REHABILITATION

Designed by/Concept par  
MSProject Manager/Administrateur de Projets  
KT

Scale:

AS SHOWN

Drawing title/Titre du dessin

MECHANICAL SCHEDULES 2

[illegible]

TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	TYPE	WEIGHT (kg)	FUEL	CAPACITY (kW)		MAX. OPERATING PRESSURE (kPa)	ELECTRICAL (VOLT/PH/Hz)	BLOWER MOTOR (HP)	REMARKS
								INPUT	OUTPUT				
B-1	TRADES BOILER	BUILDING HEATING	BURNHAM	MPC 9	MULTI-PASS CAST IRON	2116	NATURAL GAS	486.1	377.6	552	208/3/60	0.75	CW LINKAGELESS BURNER, BOILER CONTROLLER AND BACNET GATEWAY, LOW WATER CUTOFF, BOILER PUMP STARTER
B-2	TRADES BOILER ROOM	BUILDING HEATING	BURNHAM	MPC 9	MULTI-PASS CAST IRON	2116	NATURAL GAS	486.1	377.6	552	208/3/60	0.75	CW LINKAGELESS BURNER, BOILER CONTROLLER AND BACNET GATEWAY, LOW WATER CUTOFF, BOILER PUMP STARTER

TAG	MANUFACTURER	MODEL	TYPE	FINISH	MOUNTING	REMARKS
S-1	E.H. PRICE	600x600/SCD/31/3C/B12	SQUARE CONE DIFFUSER	B12	T-BAR / DRYWALL / FREE	4-WAY, COLOR BY ARCHITECT.
S-2	E.H. PRICE	600x300/620D/FL/AB12	SUPPLY GRILLE	B12	DUCT / SIDEWALL / FREE	COLOR BY ARCHITECT.
R-1	E.H. PRICE	80F/A	EGGCRATE RETURN GRILLE	B12	T-BAR	COLOR BY ARCHITECT.
R-2	E.H. PRICE	520F/L/A/B12	RETURN AIR GRILLE	B12	DUCT / SIDEWALL / FREE	COLOR BY ARCHITECT.
E-1	E.H. PRICE	80F/A	EGGCRATE EXHAUST GRILLE	B12	T-BAR	COLOR BY ARCHITECT.
E-2	E.H. PRICE	90F/H/L/A/B12	EXHAUST GRILLE	B12	DUCT	HEAVY DUTY RETURN GRILLE, C/W 50 THICK FILTER MEDIA.
L-1	E.H. PRICE	635F/L/A/B12	EXHAUST LOUVER	B12	EXTERIOR WALL	C/W INSECT SCREEN, COLOR BY ARCHITECT.
T-1	E.H. PRICE	520D/F/L/A/B12	TRANSFER AIR GRILLE	B12	DRYWALL	4-WAY C/W BALANCING DAMPER, COLOR BY ARCHITECT.

REFERENCE	FUNCTION	MANUFACTURER / MODEL NUMBER	DESCRIPTION
FE-1	FIRE EXTINGUISHER	NATIONAL FIRE EQUIPMENT / WBDL-ABC340WH	WALL MOUNT FIRE EXTINGUISHER. 5 LB. 3A-40BC STORED PRESSURE DRY CHEMICAL FIRE EXTINGUISHER. 13-15 SECONDS DISCHARGE TIME. 110mm DIAMETER AND 410mm HIGH. COMPLETE WITH WALL MOUNTING BRACKET.
FE-2	FIRE EXTINGUISHER IN CABINET	NATIONAL FIRE EQUIPMENT / WBDL-ABC340WH / CE-950-3 (CABINET)	RECESSED FIRE EXTINGUISHER AND CABINET. 5 LB. 3A-40BC STORED PRESSURE DRY CHEMICAL FIRE EXTINGUISHER. 13-15 SECONDS DISCHARGE TIME. 110mm DIAMETER AND 410mm HIGH. COMPLETE WITH RECESSED WALL MOUNTING CABINET FOR 150mm WALL. CABINET FINISH: WHITE BAKED ENAMEL
FE-3	FIRE EXTINGUISHER	NATIONAL FIRE EQUIPMENT ABC100W/D	WALL MOUNT FIRE EXTINGUISHER. 10 LB. DRY CHEMICAL FIRE EXTINGUISHER COMPLETE WITH WALL MOUNTING BRACKET. ULC RATING 6A-80BC

TAG	MAKE	MODEL	TYPE	AIR				FLUID				NOTES
				AIRFLOW (L/s)	EAT (°C)	LAT (°C)	MAX. PRESSURE DROP (Pa)	FLUID RATE (L/s)	EWT (°C)	LWT (°C)	MAX. PRESSURE DROP (kPa)	
RH-1	ENGINEERED AIR	(EXISTING)	EXISTING	564	12.8	23.9	45	0.16	82.2	71.1	2.2	EXISTING REHEAT COIL TO REMAIN
RH-2	ENGINEERED AIR	(EXISTING)	EXISTING	705	12.8	23.9	45	0.20	82.2	71.1	2.2	EXISTING REHEAT COIL TO REMAIN
RH-3	ENGINEERED AIR	ENG12x24x	NEW	620	12.8	23.9	45	0.17	82.2	71.1	2.2	
RH-4	ENGINEERED AIR	(EXISTING)	EXISTING	552	12.8	23.9	45	0.16	82.2	71.1	2.2	EXISTING REHEAT COIL TO REMAIN
RH-5	ENGINEERED AIR	(EXISTING)	EXISTING	728	12.8	23.9	45	0.21	82.2	71.1	2.2	EXISTING REHEAT COIL TO REMAIN
RH-6	ENGINEERED AIR	ENG9x12x	NEW	162	12.8	23.9	45	0.05	82.2	71.1	2.2	
RH-7	ENGINEERED AIR	(EXISTING)	EXISTING	752	12.8	23.9	45	0.22	82.2	71.1	2.2	EXISTING REHEAT COIL TO REMAIN
RH-8	ENGINEERED AIR	ENG9x12x	NEW	230	12.8	23.9	45	0.07	82.2	71.1	2.2	
RH-9	ENGINEERED AIR	(EXISTING)	EXISTING	752	12.8	23.9	45	0.22	82.2	71.1	2.2	EXISTING REHEAT COIL TO REMAIN
RH-10	ENGINEERED AIR	(EXISTING)	EXISTING	1139	12.8	23.9	45	0.33	82.2	71.1	2.2	EXISTING REHEAT COIL TO REMAIN
RH-11	ENGINEERED AIR	(EXISTING)	EXISTING	224	12.8	23.9	45	0.06	82.2	71.1	2.2	EXISTING REHEAT COIL TO REMAIN
RH-12	ENGINEERED AIR	ENG9x12x	NEW	228	12.8	23.9	45	0.09	82.2	71.1	2.2	

TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	TYPE	DIMENSIONS (mm)			WEIGHT (kg)	VOLUME (L)	ACCEPTANCE VOLUME (L)	RATED PRESSURE (kPa)	REMARKS
						LENGTH	WIDTH	HEIGHT					
ET-1	TRADES BOILER ROOM	HEATING	AMTROL	AX-180V	EXPANSION	-	6100	1426	125	340.7	128.7	861	VERTICAL BLADDER TYPE EXPANSION TANK, HEAVY GAUGE STEEL CONSTRUCTION WITH POWDER COAT FINISH

TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	TYPE	DIMENSIONS (mm)			MOUNTING	CAPACITY (W/m)	EWT (°C)	LWT (°C)	REMARKS
						LENGTH	WIDTH	HEIGHT					
A	WARDEN	OFFICES	(EXISTING)	(EXISTING)	LINEAR PANEL	VARIABLE	600	-	T-BAR	421	82.2	71.1	EXISTING RADIANT PANEL TO REMAIN
B	WARDEN	CEILING PLENUM	(EXISTING)	(EXISTING)	BARE FIN	VARIABLE	-	-	FREE	1153	82.2	71.1	EXISTING BARE FIN TO REMAIN
C	HIGHWAYS / TRADES	OFFICES	(EXISTING)	(EXISTING)	BASEBOARD CONVECTOR	VARIABLE	-	450	WALL HUNG	1441	82.2	71.1	EXISTING BASEBOARD TO REMAIN

TAG	LOCATION	SERVICE	MANUFACTURER	MODEL	TYPE	FLUID	HEAT CAPACITY (kW)	FLUID				EAT (°C)	MOTOR RPM	MOTOR (HP)	ELECTRICAL (VOLT/PH/Hz)	REMARKS
								FLOW (L/s)	EWt (°C)	LWt (°C)	PD (kPa)					
CH-1	WARDEN	STAIRS A124	(EXISTING)	(EXISTING)	CABINET	WATER	6.3	0.136	82.2	71.1	(EXISTING)	16.0	(EXISTING)	(EXISTING)	115/160	EXISTING WALL MOUNT, LOUVERED FRONT INLET AND OUTLET, REMOTE LINE VOLTAGE THERMOSTAT
CH-2	WARDEN	STAFF ENTRY A112	(EXISTING)	(EXISTING)	CABINET	WATER	10.5	0.226	82.2	71.1	(EXISTING)	16.0	(EXISTING)	(EXISTING)	115/160	EXISTING WALL MOUNT, LOUVERED FRONT INLET AND OUTLET, REMOTE LINE VOLTAGE THERMOSTAT
CH-3	WARDEN	ENTRY A101	(EXISTING)	(EXISTING)	CABINET	WATER	8.9	0.192	82.2	71.1	(EXISTING)	16.0	(EXISTING)	(EXISTING)	115/160	EXISTING WALL MOUNT, LOUVERED FRONT INLET AND OUTLET, REMOTE LINE VOLTAGE THERMOSTAT
CH-4	WARDEN	VEST A119	(EXISTING)	(EXISTING)	CABINET	WATER	12.1	0.261	82.2	71.1	(EXISTING)	16.0	(EXISTING)	(EXISTING)	115/160	EXISTING WALL MOUNT, LOUVERED FRONT INLET AND OUTLET, REMOTE LINE VOLTAGE THERMOSTAT
CH-5	HIGHWAYS	CORRIDOR B101	(EXISTING)	(EXISTING)	CABINET	WATER	16.0	0.344	82.2	71.1	(EXISTING)	16.0	(EXISTING)	(EXISTING)	115/160	EXISTING WALL MOUNT, LOUVERED FRONT INLET AND OUTLET, REMOTE LINE VOLTAGE THERMOSTAT
UH-1	WARDEN	RESCUE EQUIPMENT SHOP A127	(EXISTING)	(EXISTING)	HORIZONTAL	WATER	18.6	0.401	82.2	71.1	(EXISTING)	16.0	(EXISTING)	(EXISTING)	115/160	EXISTING, WITH REMOTE LINE VOLTAGE THERMOSTAT
UH-2	TRADES	CARPENTER SHOP B128	(EXISTING)	(EXISTING)	HORIZONTAL	WATER	39.5	0.852	82.2	71.1	(EXISTING)	16.0	(EXISTING)	(EXISTING)	115/160	EXISTING, WITH REMOTE LINE VOLTAGE THERMOSTAT
UH-3	TRADES	CARPENTER SHOP B128	(EXISTING)	(EXISTING)	HORIZONTAL	WATER	39.5	0.852	82.2	71.1	(EXISTING)	16.0	(EXISTING)	(EXISTING)	115/160	EXISTING, WITH REMOTE LINE VOLTAGE THERMOSTAT
UH-4	TRADES	100A VESTIBULE	(EXISTING)	(EXISTING)	HORIZONTAL	WATER	39.5	0.852	82.2	71.1	(EXISTING)	16.0	(EXISTING)	(EXISTING)	115/160	EXISTING, WITH REMOTE LINE VOLTAGE THERMOSTAT

1. CONTRACTOR TO VERIFY ON SITE ACTUAL MECHANICAL DIMENSIONS AND EQUIPMENT CAPACITY. COORDINATE WITH THE ARCHITECT / BLDG. OPERATOR.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE MECHANICAL SPECIFICATION AND THE GENERAL REQUIREMENTS.
3. REFER TO DIFFUSER AND LOUVER TAGS ON PLANS FOR NECK SIZES AND GRILLE SIZES.

**PERMIT TO PRACTICE**  
**WILLIAMS ENGINEERING CANADA INC.**  
 Signature [Signature]  
 Date 2017.01.11  
**PERMIT NUMBER: P 10527**  
 The Association of Professional Engineers,  
 Geologists and Geophysicists of Alberta

