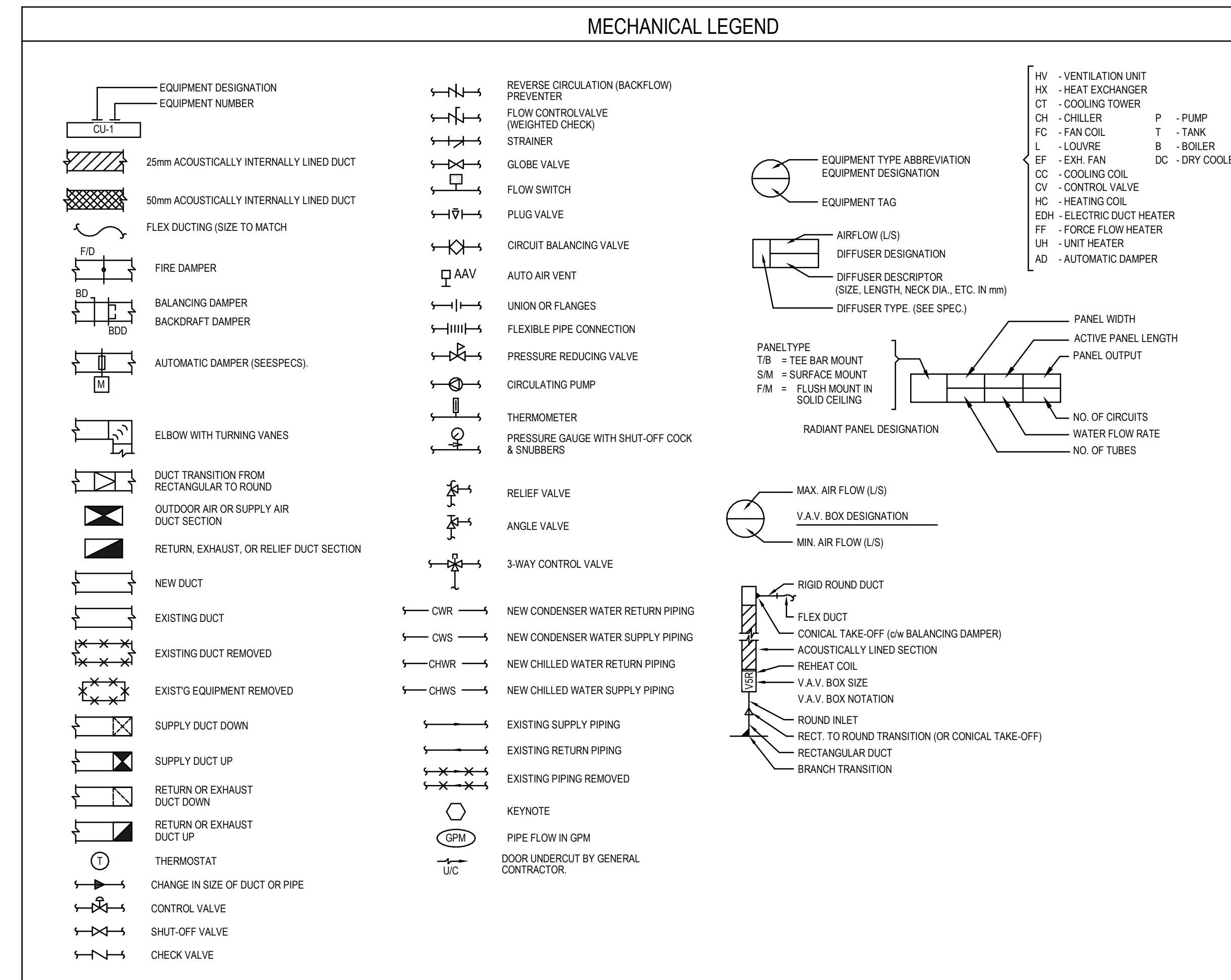


CONTRACT NUMBER : R.106124.001
 CBSA ALDERGROVE CHILLED WATER PIPING INSULATION REPAIR
 ALDERGROVE PORT OF ENTRY, 10- HIGHWAY 13 LANGLEY, BC



DRAWING LIST			
NO.	NAME	REVISION#	REVISION DATE
M-0.00	SITE PLAN, LEGEND & DRAWING LIST	3	2020-05-27
M-1.01	MAIN BUILDING MECHANICAL ROOM DEMO PLAN	3	2020-05-27
M-1.02	MAIN BUILDING MECHANICAL ROOM NEW PLAN	3	2020-05-27
M-2.01	COMMERCIAL BUILDING MECHANICAL ROOM DEMO PLAN	3	2020-05-27
M-2.02	COMMERCIAL BUILDING MECHANICAL ROOM NEW PLAN	3	2020-05-27
M-3.01	MAIN BUILDING PIPING SCHEMATIC	3	2020-05-27
M-3.02	COMMERCIAL BUILDING PIPING SCHEMATIC	3	2020-05-27
M-4.01	COMMERCIAL BUILDING SCHEDULE & DETAILS	3	2020-05-27

PROJECT SCOPE:
 1 - MAIN BUILDING - MECHANICAL ROOM - CHILLED WATER PIPING INSULATION REPAIR
 2 - COMMERCIAL BUILDING - MECHANICAL ROOM - CHILLED WATER PIPING INSULATION REPAIR



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

REAL PROPERTY SERVICES
 Pacific Region
SERVICES IMMOBILIERS
 Région de Pacifique

Design Builder

Design Builder

Seal

Consultant

Revision/	Description/Description	Date/Date
3	ISSUED FOR TENDER	2020-05-27
2	ISSUED FOR 90% DESIGN	2020-04-09
1	ISSUED FOR 60% DESIGN	2020-03-14

Client/client

CANADA BORDER SERVICES AGENCY

Project title/Titre du projet

**ALDERGROVE PORT OF ENTRY
 10 - HIGHWAY 13
 LANGLEY, BC**

CBSA - CHILLED WATER PIPING INSULATION

Consultant Signature Box Only

Designed by/Concept par
Designer

Drawn by/Dessiné par
Author

P/W/S/C: Project Manager/Administrateur de Projets TP/S/C
MARK, KAI

P/W/S/C: Regional Manager, Architectural and Engineering Services/
 Gestionnaire régional, Services d'architecture et de génie, TP/S/C
PAUL, PREETIPAL

Drawing title/Titre du dessin

SITEPLAN, LEGEND & DRAWING LIST

Project No./No. du projet	Sheet/Feuille	Revision no./La Révision no.
R.106124.001	M-0.00	3

Design Builder

Design Builder

Seal

Consultant



Revision/	Description/Description	Date/Date
3	ISSUED FOR TENDER	2020-05-27
2	ISSUED FOR 90% DESIGN	2020-04-09
1	ISSUED FOR 60% DESIGN	2020-03-14

Client/client

CANADA BORDER SERVICES AGENCY

Project title/Titre du projet

**ALDERGROVE PORT OF ENTRY
10 - HIGHWAY 13
LANGLEY, BC**

**CBSA - CHILLED WATER
PIPING INSULATION**

Consultant Signature Box Only

Designed by/Concept par

HARIRI, FARIBORZ

Drawn by/Dessiné par

Author

PW50C Project Manager/Administrateur de Projets TP50C

MARK, KAI

PW50C Regional Manager, Architectural and Engineering Services/
Gestionnaire régionale, Services d'architecture et de génie, TP50C

PAUL, PREETIPAL

Drawing title/Titre du dessin

**MAIN BUILDING
MECHANICAL ROOM
DEMO PLAN**

Project No./No. du projet

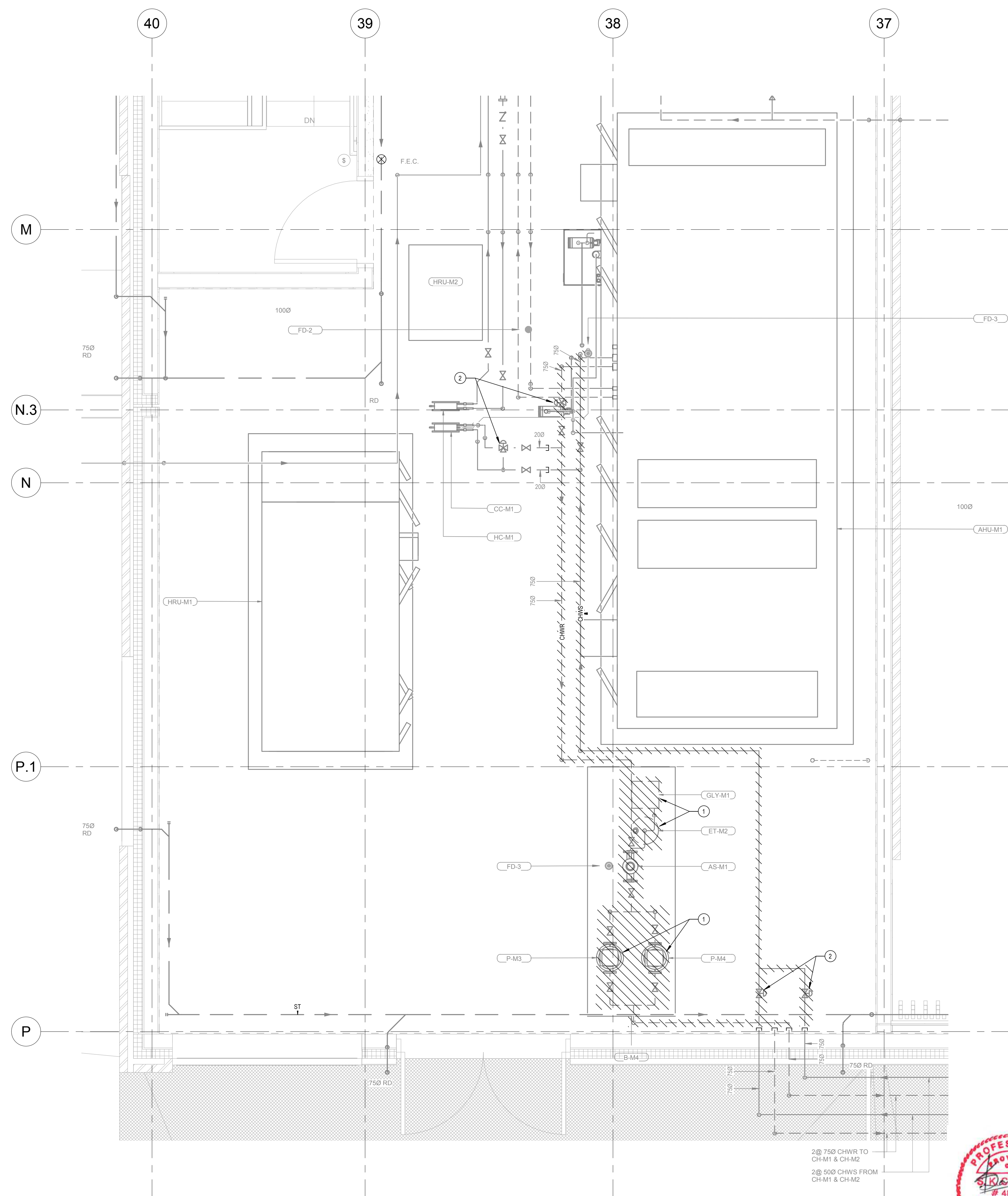
R.106124.001

Sheet/Feuille

M-1.01

Revision no./
La Révision
no.

3



1 MECHANICAL DEMO PLAN
1.25

KEYNOTES:

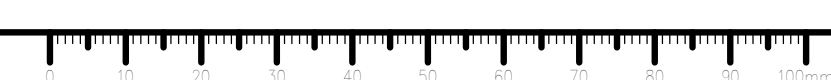
- EXISTING PUMPS, GLYCOL TANK SYSTEM AND EXPANSION TANK TO BE REMOVED AND RETAINED FOR RE-INSTALLATION. CLEAN THE EQUIPMENT BEFORE RE-INSTALLATION.
- EXISTING CONTROL VALVES AND ACTUATORS TO BE REMOVED AND RETAINED FOR RE-INSTALLATION. CLEAN THE EQUIPMENT BEFORE RE-INSTALLATION.

GENERAL NOTES:

- SCOPE OF WORK: ONLY CHILLED WATER SYSTEM.
- EXISTING HYDRONIC HOT WATER SYSTEM, GAS AND DOMESTIC WATER SYSTEM (HOT, COLD, RE-CIRC.) REMAINS AS IS AND SHALL NOT BE DISTURBED. ANY DAMAGE BECAUSE OF SCOPE OF WORK TO ALL SYSTEMS (MECHANICAL OR ELECTRICAL) WHICH ARE NOT IN THE SCOPE OF WORK SHALL BE MADE GOOD AT NO COST TO THE PROJECT.
- ALL EXISTING DDC CONTROL DEVICES TO BE REMOVED AND RETAINED FOR RE-INSTALLATION AT THE SAME LOCATION AS THE EXISTING LOCATION. CLEAN THE DEVICES BEFORE RE-INSTALLATION. COORDINATE WITH CONTROL CONTRACTOR FOR THIS SERVICE.

ELECTRICAL NOTES:

- DISCONNECT ELECTRICAL POWER CONNECTION OF EXISTING P-M3 AND P-M4 TO ACCOMMODATE REMOVAL OF PUMPS FOR MECHANICAL WORK. ENSURE TO SECURE AND PROTECT ALL THE WIRING AND CONDUIT TO RE-USE.
- AFTER COMPLETION OF THE NEW MECHANICAL INSTALLATION, RECONNECT ALL THE POWER CONNECTIONS AND COORDINATE WITH MECHANICAL FOR CONTROL WIRING TO GET MECHANICAL EQUIPMENT P-M3 AND P-M4 BRING BACK TO COMPLETE FUNCTIONALITY.



Design/Builder

Design/Builder

Seal

Consultant



Revision/	Description/Description	Date/Date
1	ISSUED FOR TENDER	2020-05-27
2	ISSUED FOR 90% DESIGN	2020-04-09
3	ISSUED FOR 95% DESIGN	2020-03-14

Client/client

CANADA BORDER SERVICES AGENCY

Project title/Titre du projet

**ALDERGROVE PORT OF ENTRY
10 - HIGHWAY 13
LANGLEY, BC**

**CBSA - CHILLED WATER
PIPING INSULATION**

Consultant Signature Box Only

Designed by/Concept par

HARIRI, FARIBORZ

Drawn by/Dessiné par

Author

PWSSC Project Manager/Administrateur de Projets TPSSC

MARK, KAI

PWSSC Regional Manager, Architectural and Engineering Services/
Gestionnaire régionale, Services d'architecture et de génie, TPSSC

PAUL, PREETIPAL

Drawing title/Titre du dessin

**MAIN BUILDING
MECHANICAL ROOM NEW
PLAN**

Project No./No. du projet

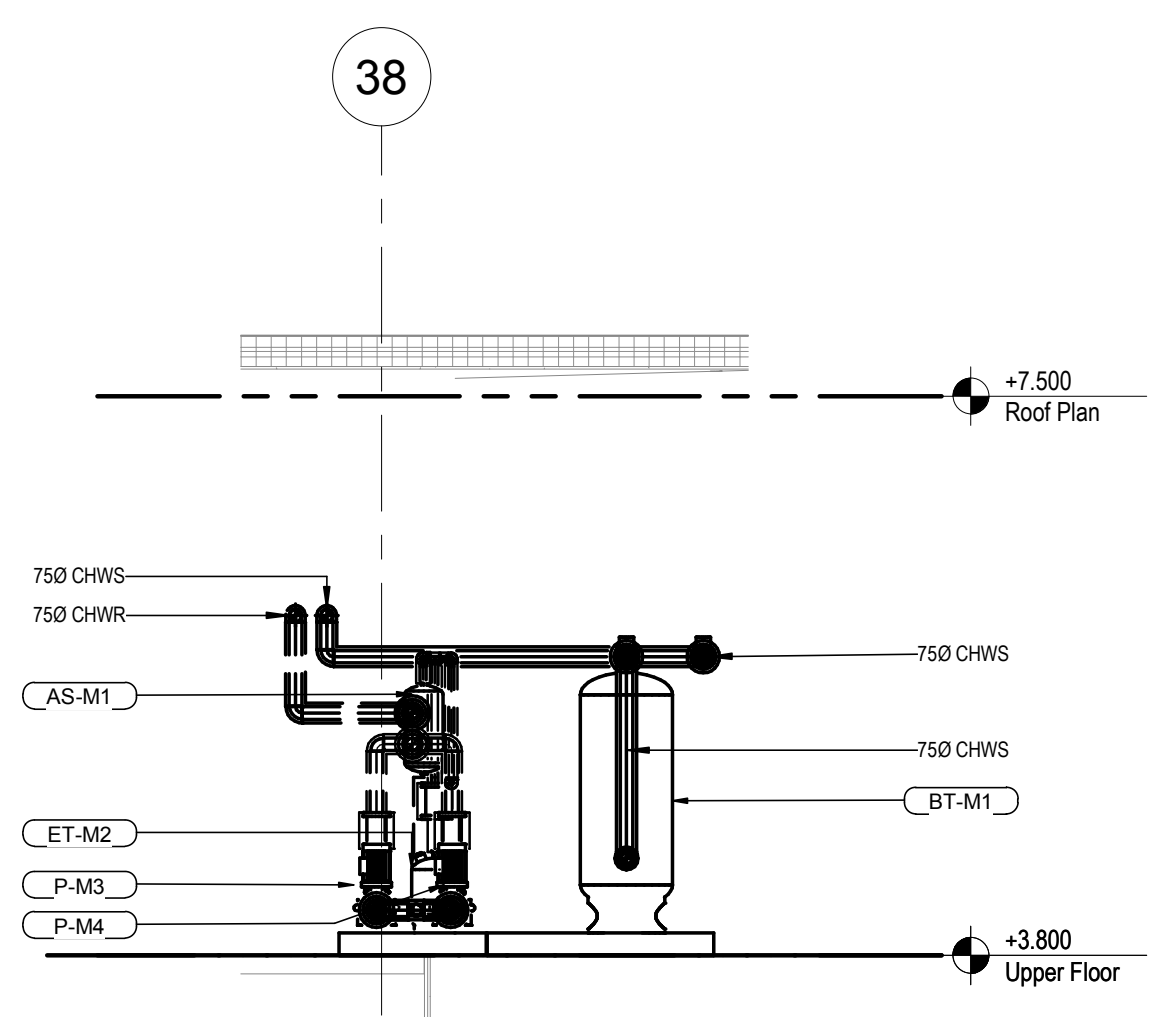
R.106124.001

Sheet/Feuille

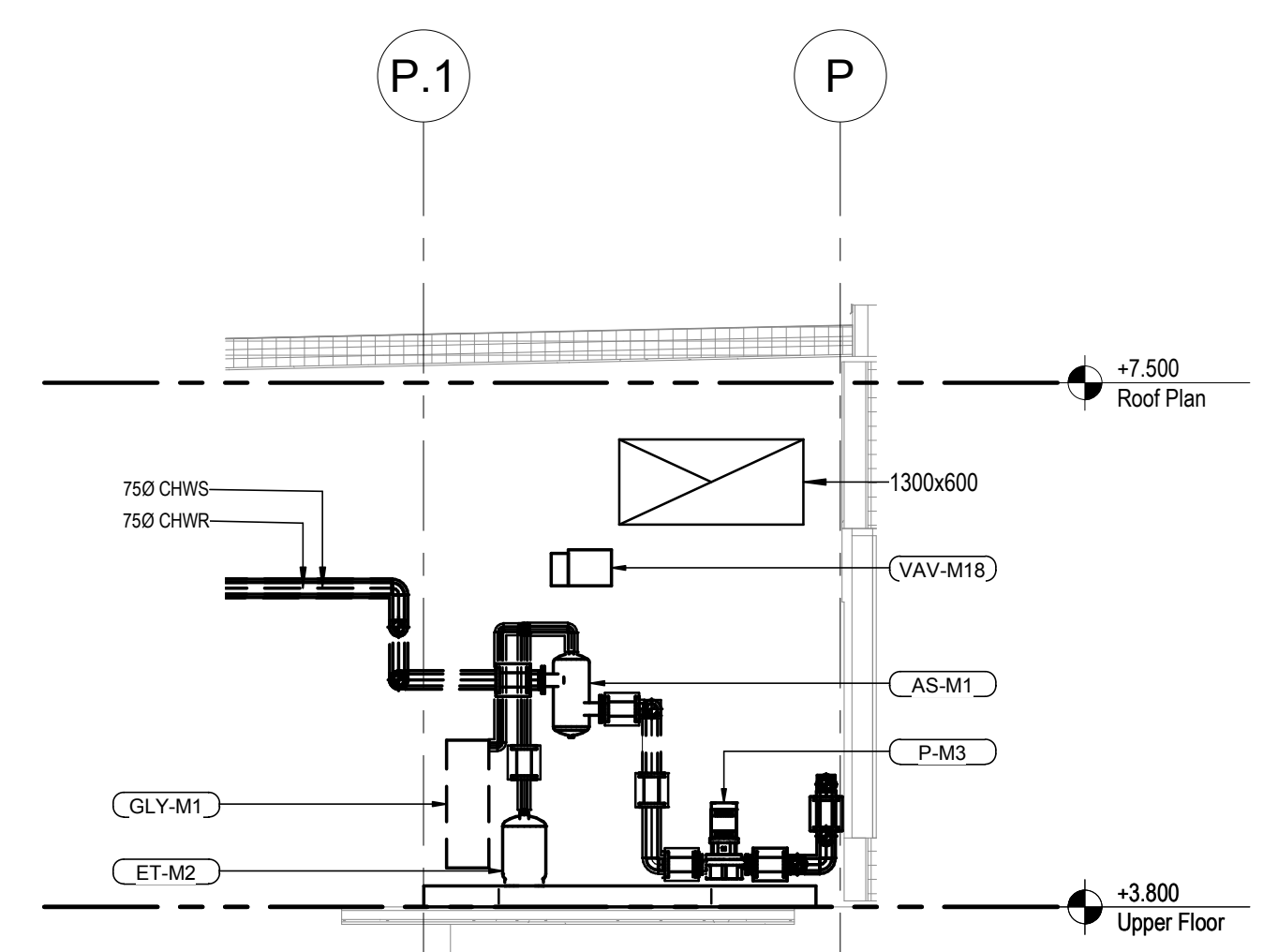
M-1.02

Revision no./
La Révision
no.

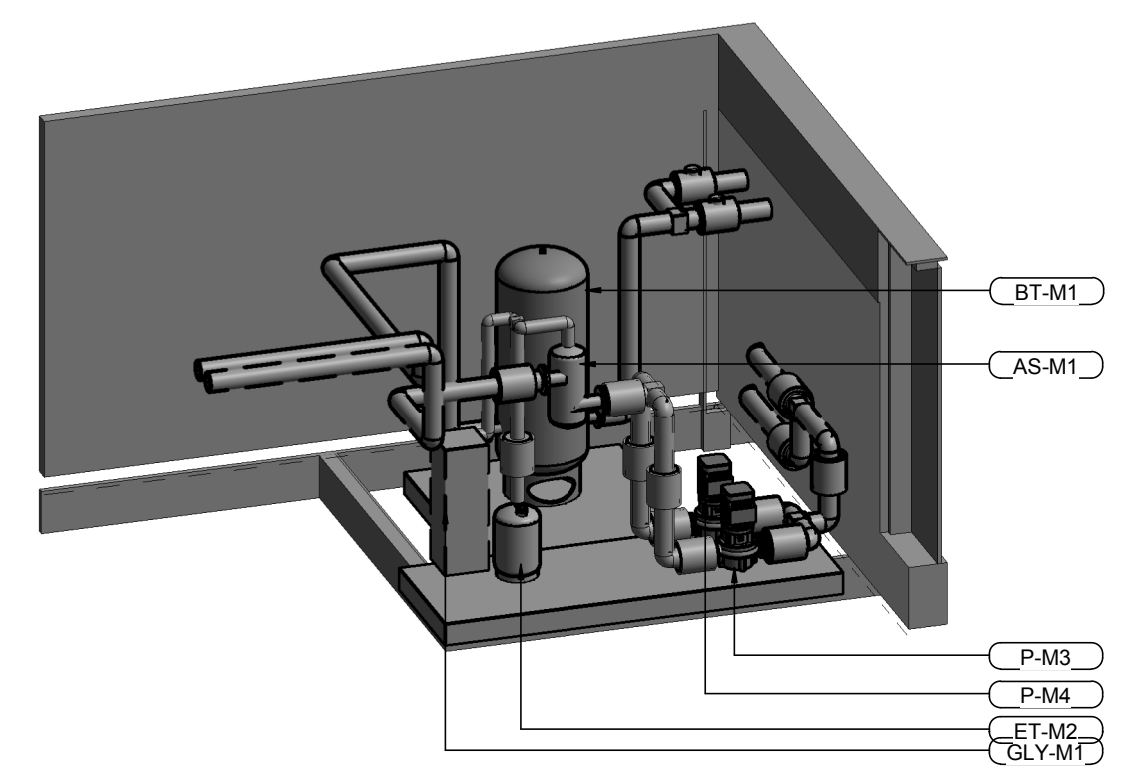
3



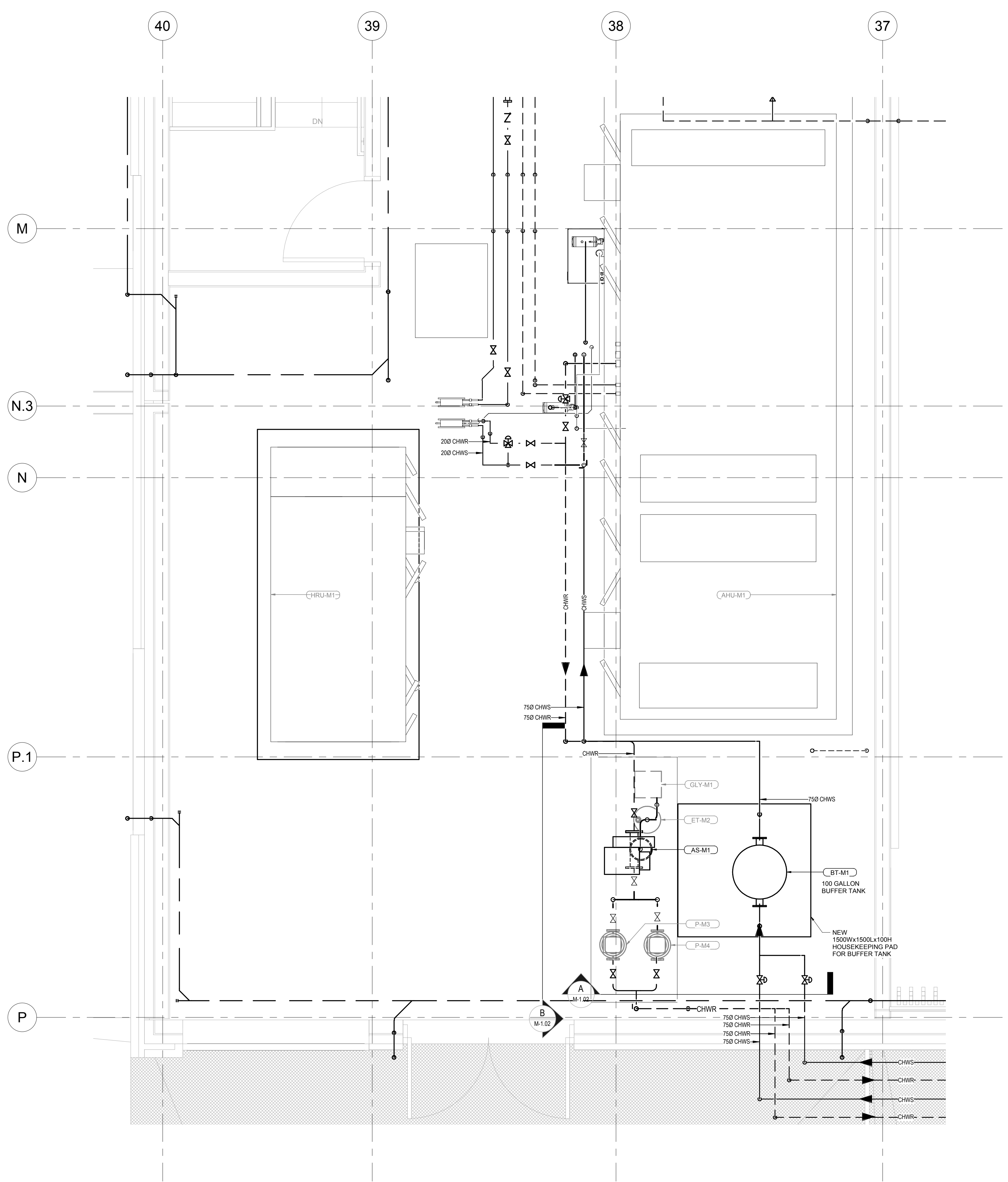
A SECTION 1
1:50



B SECTION 2
1:50



2 3D VIEW MECHANICAL ROOM



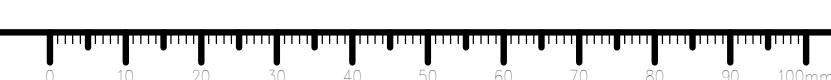
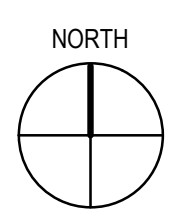
1 MECHANICAL NEW PLAN
1:25

GENERAL NOTES:

- REFER TO NOTES ON DRAWING M-1.01.

STRUCTURAL NOTES:

- PROVIDE 100 MM THICK 30MPA HOUSEKEEPING PAD FOR BUFFER TANK. REINFORCED WITH 10M BARS @ 300 O.C. AND PERIMETER EACH WAY AT MID-HEIGHT.
- DOWEL THE SLAB WITH 10M HOOKED DOWELS SPACED AT 300 EACH WAY INTO EXISTING REINFORCED SUSPENDED SLAB, WITH HILTI HIT HY 200 EPOXY, 75 MM EMBEDMENT.
- SIZE OF THE PAD ON PLAN TO BE AT LEAST 1500MM X 1500MM FOR MAIN BUILDING BUFFER TANK.



Design Builder

Design Builder

Seal

Consultant



3	ISSUED FOR TENDER	2020-06-27
2	ISSUED FOR 90% DESIGN	2020-04-09
1	ISSUED FOR 60% DESIGN	2020-03-14

Revision/	Description/Description	Date/Date
-----------	-------------------------	-----------

Client/client

CANADA BORDER SERVICES AGENCY

Project title/Titre du projet

ALDERGROVE PORT OF ENTRY
10 - HIGHWAY 13
LANGLEY, BC

CBSA - CHILLED WATER
PIPING INSULATION

Consultant Signature Box Only

Designed by/Concept par

HARIRI, FARIBORZ

Drawn by/Dessiné par

Author

PW50C Project Manager/Administrateur de Projets TP50C

MARK, KAI

PW50C Regional Manager, Architectural and Engineering Services/
Gestionnaire régionale, Services d'architectural et de génie, TP50C

PAUL, PREETIPAL

Drawing title/Titre du dessin

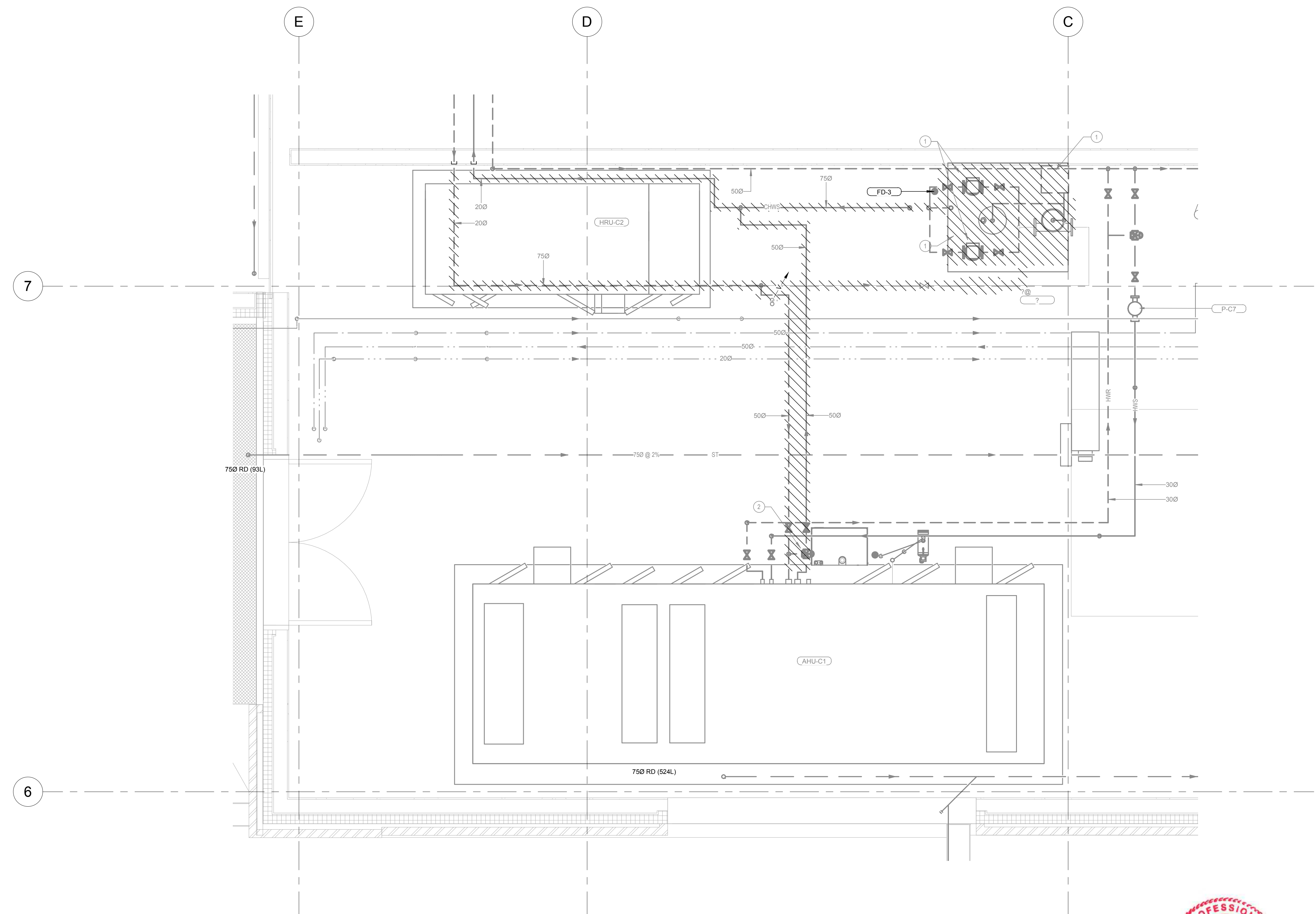
COMMERCIAL BUILDING
MECHANICAL ROOM
DEMO PLAN

Project No./No. du projet Sheet/Feuille Revision no./

R.106124.001

M-2.01

3



1 MECHANICAL DEMO PLAN
1:25

KEYNOTES:

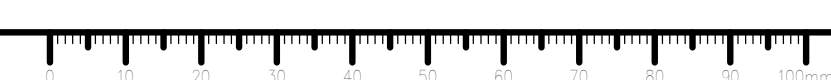
- EXISTING PUMPS, GLYCOL TANK SYSTEM AND EXPANSION TANK TO BE REMOVED AND RETAINED FOR RE-INSTALLATION. CLEAN THE EQUIPMENT BEFORE RE-INSTALLATION.
- EXISTING CONTROL VALVES AND ACTUATORS TO BE REMOVED AND RETAINED FOR RE-INSTALLATION. CLEAN THE EQUIPMENT BEFORE RE-INSTALLATION.

GENERAL NOTES:

- SCOPE OF WORK: ONLY CHILLED WATER SYSTEM.
- EXISTING HYDRONIC HOT WATER SYSTEM (HOT, COLD, RECIRC.) REMAIN AS IS AND SHALL NOT BE DISTURBED. ANY DAMAGE BECAUSE OF SCOPE OF WORK TO ALL SYSTEMS (MECHANICAL OR ELECTRICAL) WHICH ARE NOT IN THE SCOPE OF WORK SHALL BE MADE GOOD AT NO COST TO THE PROJECT.
- ALL EXISTING DDC CONTROL DEVICES TO BE REMOVED AND RETAINED FOR RE-INSTALLATION AT THE SAME LOCATION AS THE EXISTING LOCATION. CLEAN THE DEVICES BEFORE RE-INSTALLATION. COORDINATE WITH CONTROL CONTRACTOR FOR THIS SERVICE.

ELECTRICAL NOTES:

- DISCONNECT ELECTRICAL POWER CONNECTION OF EXISTING P-C3 AND P-C4 TO ACCOMMODATE REMOVAL OF PUMPS FOR MECHANICAL WORK. ENSURE TO SECURE AND PROTECT ALL THE WIRING AND CONDUIT TO RE-USE.
- AFTER COMPLETION OF THE NEW MECHANICAL INSTALLATION, RECONNECT ALL THE POWER CONNECTIONS AND COORDINATE WITH MECHANICAL FOR CONTROL WIRING TO GET MECHANICAL EQUIPMENT P-C3 AND P-C4 BRING BACK TO COMPLETE FUNCTIONALITY.



Design Builder

Design Builder

Seal

Consultant



Revision/	Description/Description	Date/Date
3	ISSUED FOR TENDER	2020-05-27
2	ISSUED FOR 90% DESIGN	2020-04-09
1	ISSUED FOR 60% DESIGN	2020-03-14

Client/client

CANADA BORDER SERVICES AGENCY

Project title/Titre du projet

ALDERGROVE PORT OF ENTRY 10 - HIGHWAY 13 LANGLEY, BC

CBSA - CHILLED WATER PIPING INSULATION

Consultant Signature Box Only

Designed by/Concept par

HARIRI, FARIBORZ

Drawn by/Dessiné par

Author

PW50C Project Manager/Administrateur de Projets TPSGC

MARK, KAI

PW50C Regional Manager, Architectural and Engineering Services/

Gestionnaire régional, Services d'architecture et de génie, TPSGC

PAUL, PREETIPAL

Drawing title/Titre du dessin

COMMERCIAL BUILDING MECHANICAL ROOM NEW PLAN

Project No./No. du projet

R.106124.001

Sheet/Feuille

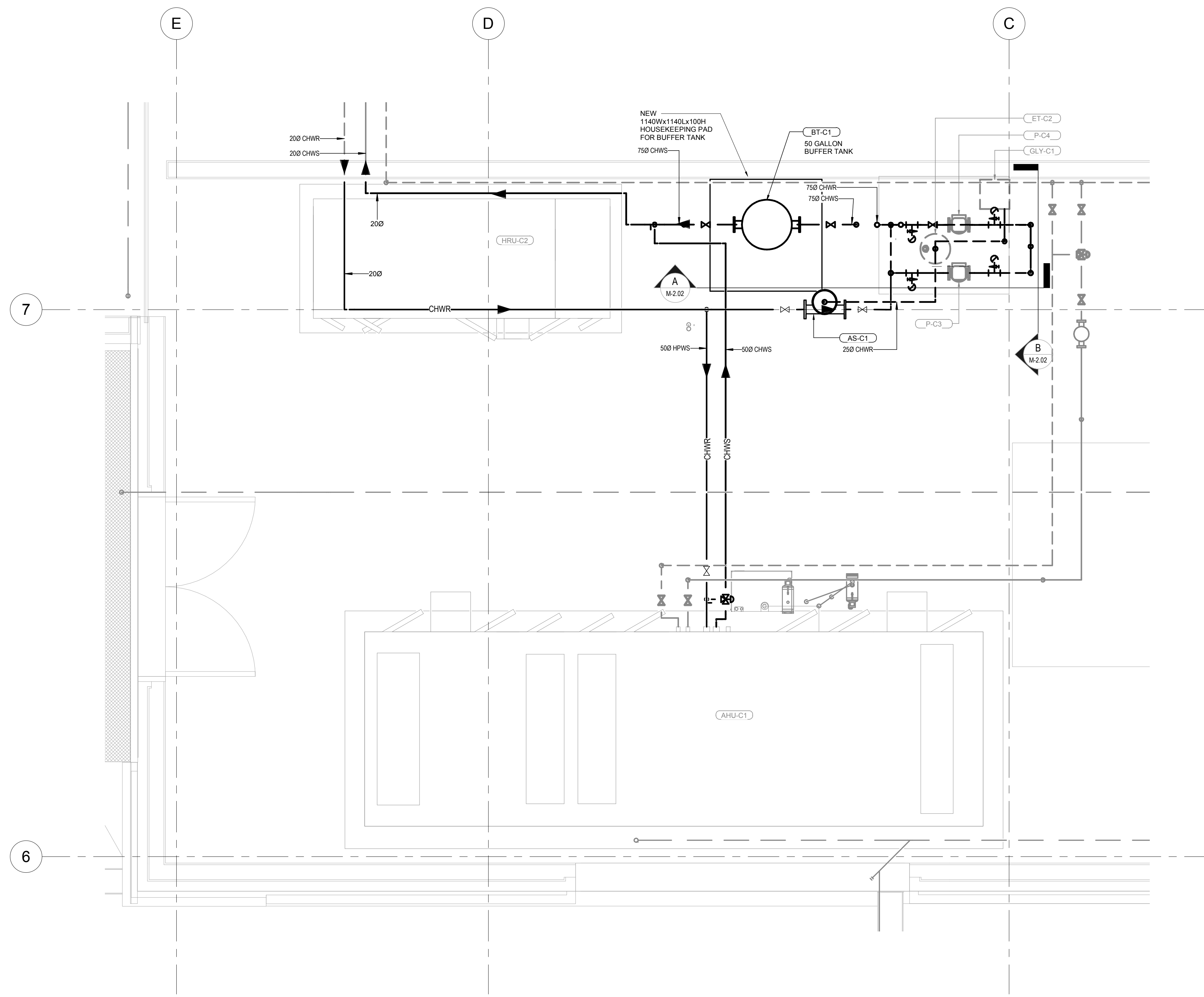
M-2.02

Revision no./

La Révision

no.

3



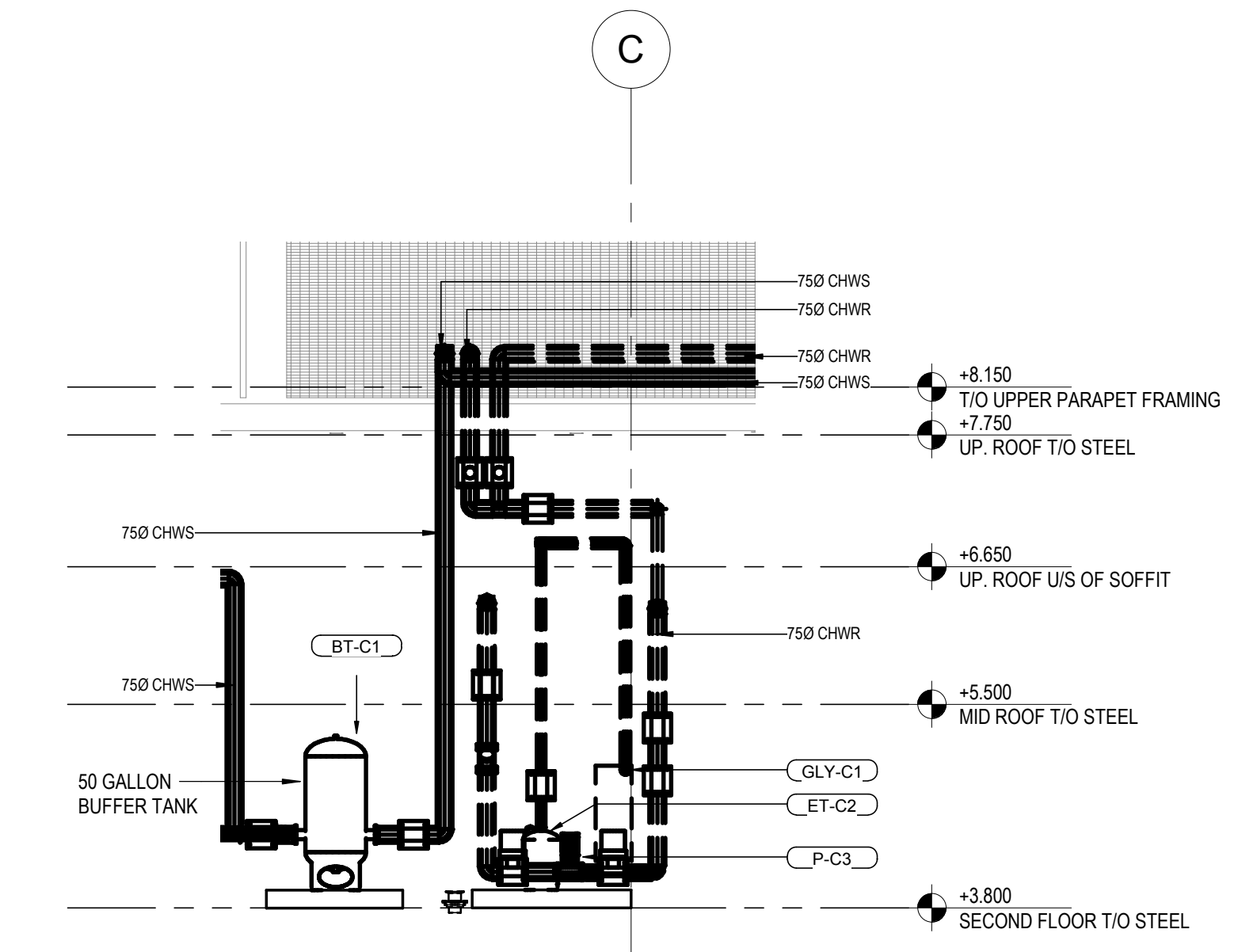
1 MECHANICAL NEW PLAN 1:25

GENERAL NOTES:

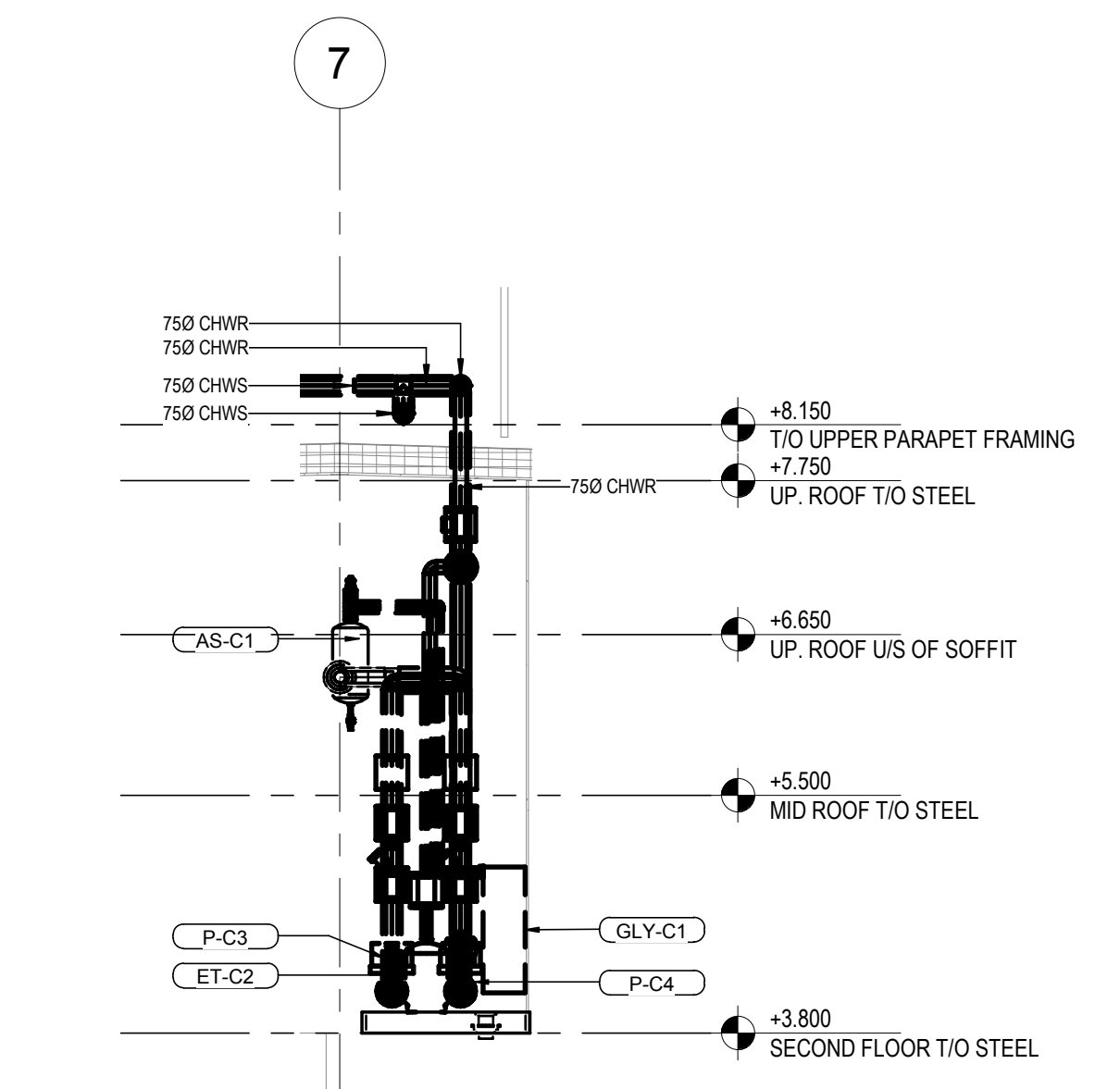
- REFER TO NOTES ON DRAWING M-2.01.

STRUCTURAL NOTES:

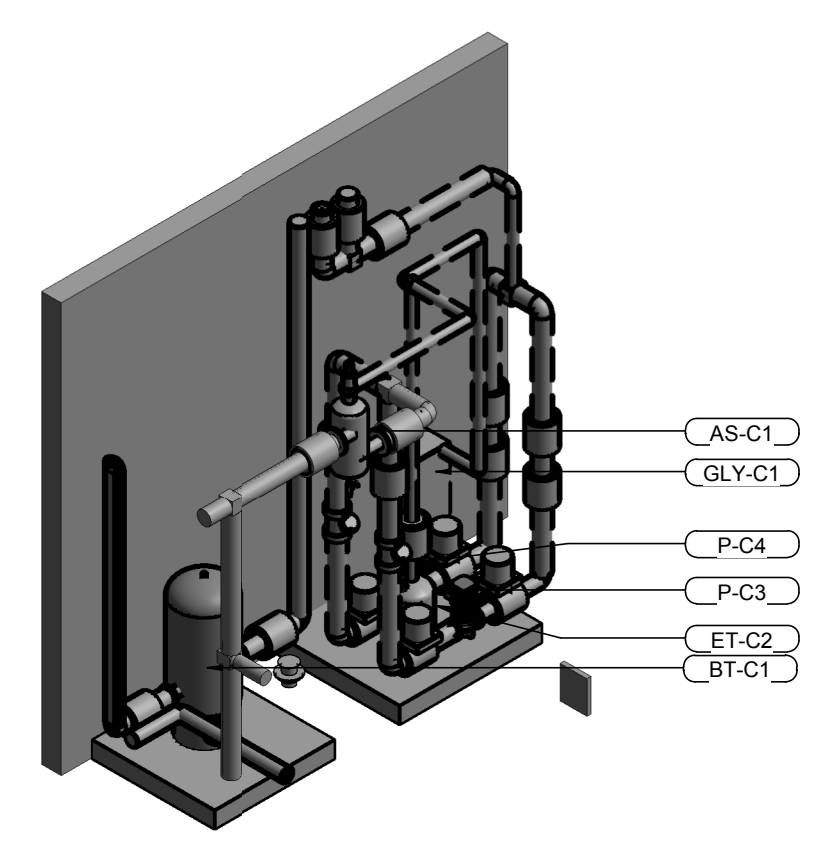
- PROVIDE 100 MM THICK 30MPa HOUSEKEEPING PAD FOR BUFFER TANK, REINFORCED WITH 10M BARS @ 300 O.C. AND PERIMETER EACH WAY AT MID-HEIGHT.
- DOWEL THE SLAB WITH 10M HOOKED DOWELS SPACED AT 300 EACH WAY INTO EXISTING REINFORCED SUSPENDED SLAB, WITH HILTI HIT HY 200 EPOXY, 75 MM EMBEDMENT.
- SIZE OF THE PAD ON PLAN TO BE AT LEAST 1140MM X 1140MM FOR COMMERCIAL BUILDING BUFFER TANK.



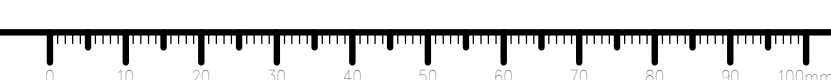
A SECTION 1 1:50



B SECTION 2 1:50



2 3D - MECHANICAL ROOM



Design Builder

Design Builder

Soil

Consultant



Revision/	Description/Description	Date/Date
3	ISSUED FOR TENDER	2020-05-27
2	ISSUED FOR 90% DESIGN	2020-04-09
1	ISSUED FOR 60% DESIGN	2020-03-14

Client/client
CANADA BORDER SERVICES AGENCY

Project title/Titre du projet
**ALDERGROVE PORT OF ENTRY
10 - HIGHWAY 13
LANGLEY, BC**

CBSA - CHILLED WATER PIPING INSULATION

Consultant Signature Box Only

Designed by/Concept par
Designer
Drawn by/Dessiné par
Author

PW5GC Project Manager/Administrateur de Projets TP5GC
MARK, KAI
PW5GC Regional Manager, Architectural and Engineering Services/
Gestionnaire régionale, Services d'architecture et de génie, TP5GC
PAUL, PREETIPAL

Drawing title/Titre du dessin

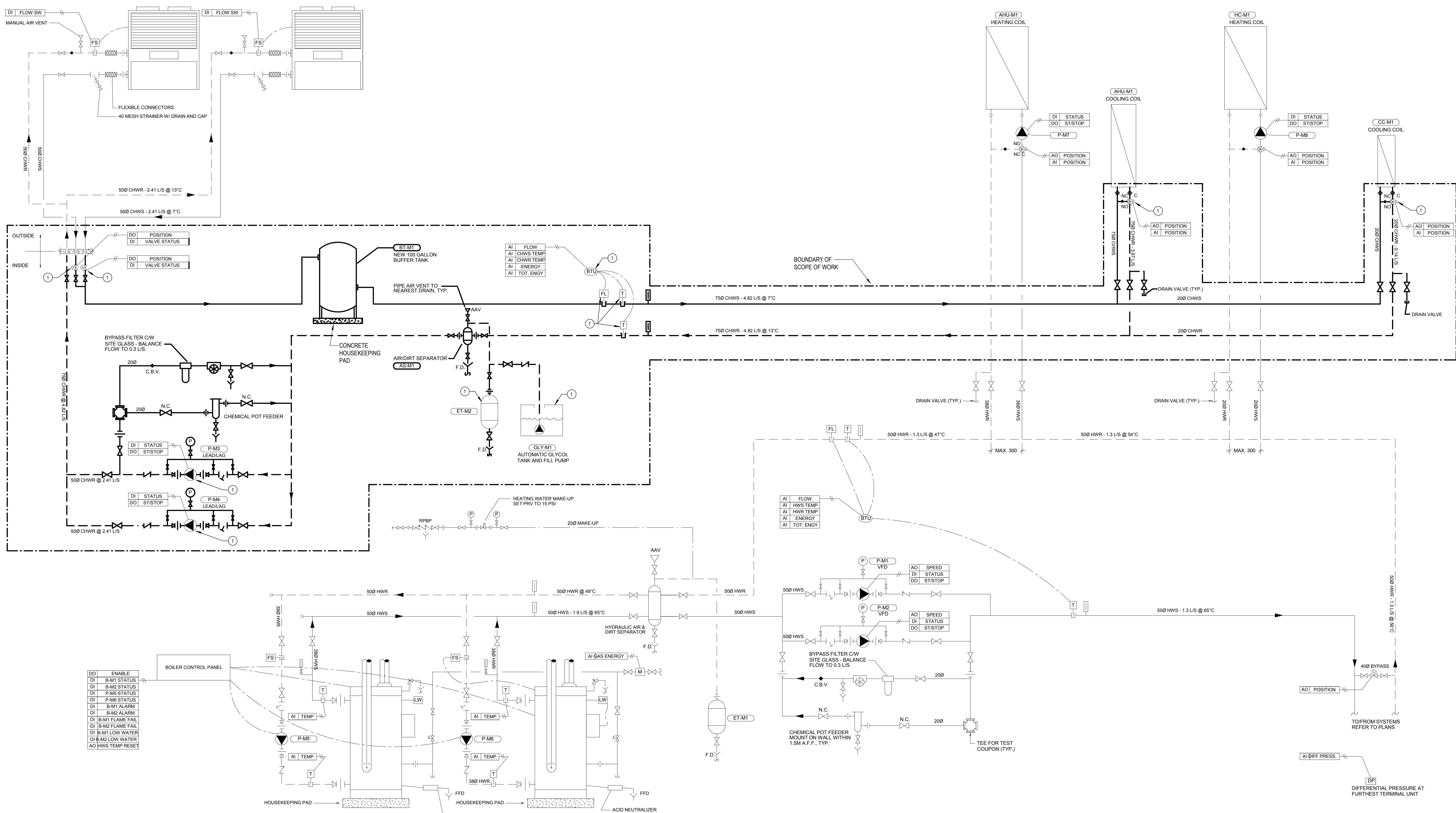
MAIN BUILDING PIPING SCHEMATIC

Project No./No. du projet R.106124.001	Sheet/Feuille M-3.01	Revision no./La Révision no. 3
--	--------------------------------	--

NOTE: SEE SEQUENCE OF OPERATIONS FOR VARIOUS CHILLER ALARMS TAKEN TO BMS

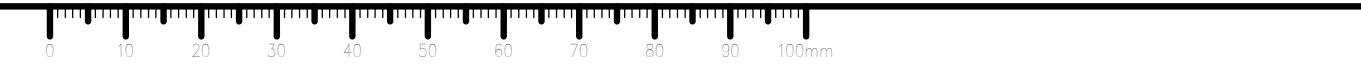
AO CHWS SETPOINT
DO ENABLE
DI CH STATUS
DI COMP. 1 STATUS
DI COMP. 2 STATUS
DI FAN 1 STATUS
DI FAN 2 STATUS
CH-M1
AIR COOLED CHILLER
TO BE ELECTRICALLY METERED - TIE METER INTO BMS FOR MONITORING

AO CHWS SETPOINT
DO ENABLE
DI CH STATUS
DI COMP. 1 STATUS
DI COMP. 2 STATUS
DI FAN 1 STATUS
DI FAN 2 STATUS
CH-M2
AIR COOLED CHILLER
TO BE ELECTRICALLY METERED - TIE METER INTO BMS



1 MAIN PORT BUILDING HEATING/COOLING WATER PIPING SCHEMATIC
NOT TO SCALE

- KEYNOTES:**
- EXISTING EQUIPMENT AND DEVICES TO BE REMOVED AND RETAINED FOR RE-INSTALLATION. CLEAN THE EQUIPMENT BEFORE RE-INSTALLATION.
- GENERAL NOTES:**
- REFER TO NOTES ON DRAWING M-1.01.



Design Builder

Design Builder

Seal

Consultant



Revision/	Description/Description	Date/Date
3	ISSUED FOR TENDER	2020-05-27
2	ISSUED FOR 90% DESIGN	2020-04-09
1	ISSUED FOR 60% DESIGN	2020-03-14

Client/client
CANADA BORDER SERVICES AGENCY

Project title/Titre du projet
**ALDERGROVE PORT OF ENTRY
10 - HIGHWAY 13
LANGLEY, BC**

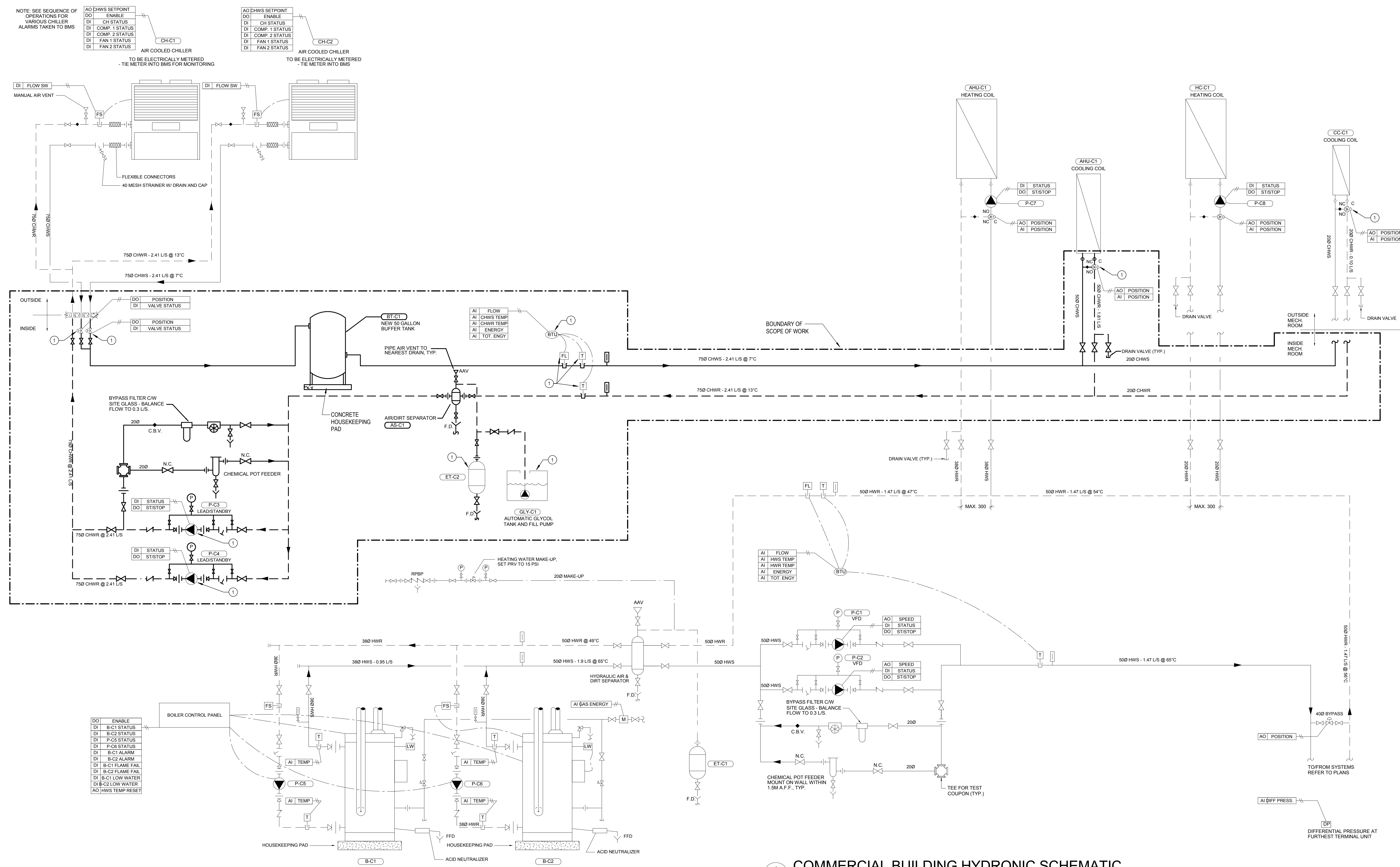
CBSA - CHILLED WATER PIPING INSULATION

Consultant Signature Box Only

Designed by/Concept par
Designer
Drawn by/Dessiné par
Author
PW50C Project Manager/Administrateur de Projets TP50C
MARK, KAI
PW50C Regional Manager, Architectural and Engineering Services/
Gestionnaire régional, Services d'architecture et de génie, TP50C
PAUL, PREETIPAL
Drawing title/Titre du dessin

COMMERCIAL BUILDING PIPING SCHEMATIC

Project No./No. du projet R.106124.001	Sheet/Feuille M-3.02	Revision no./ La Révision no. 3
--	--------------------------------	---



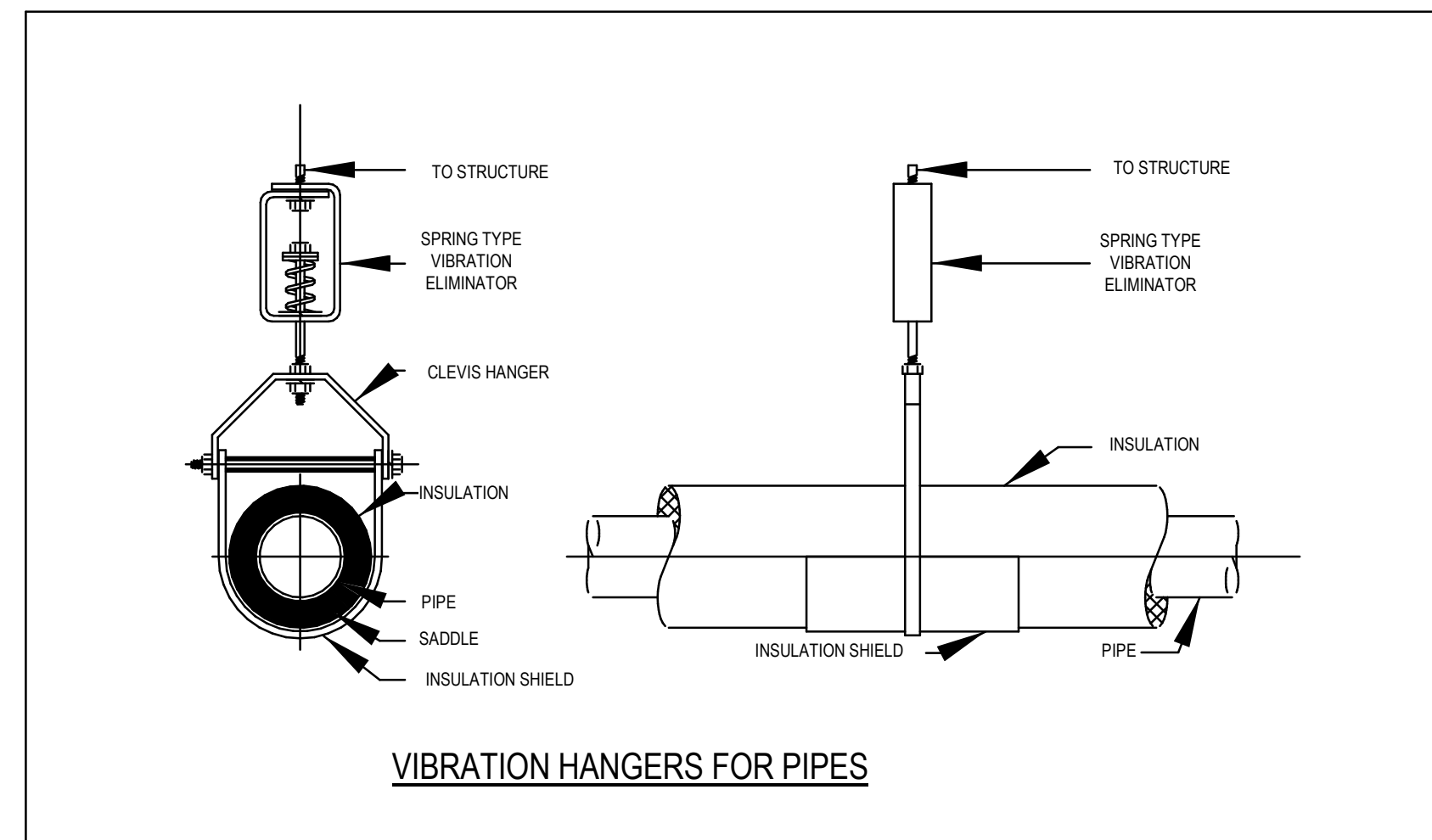
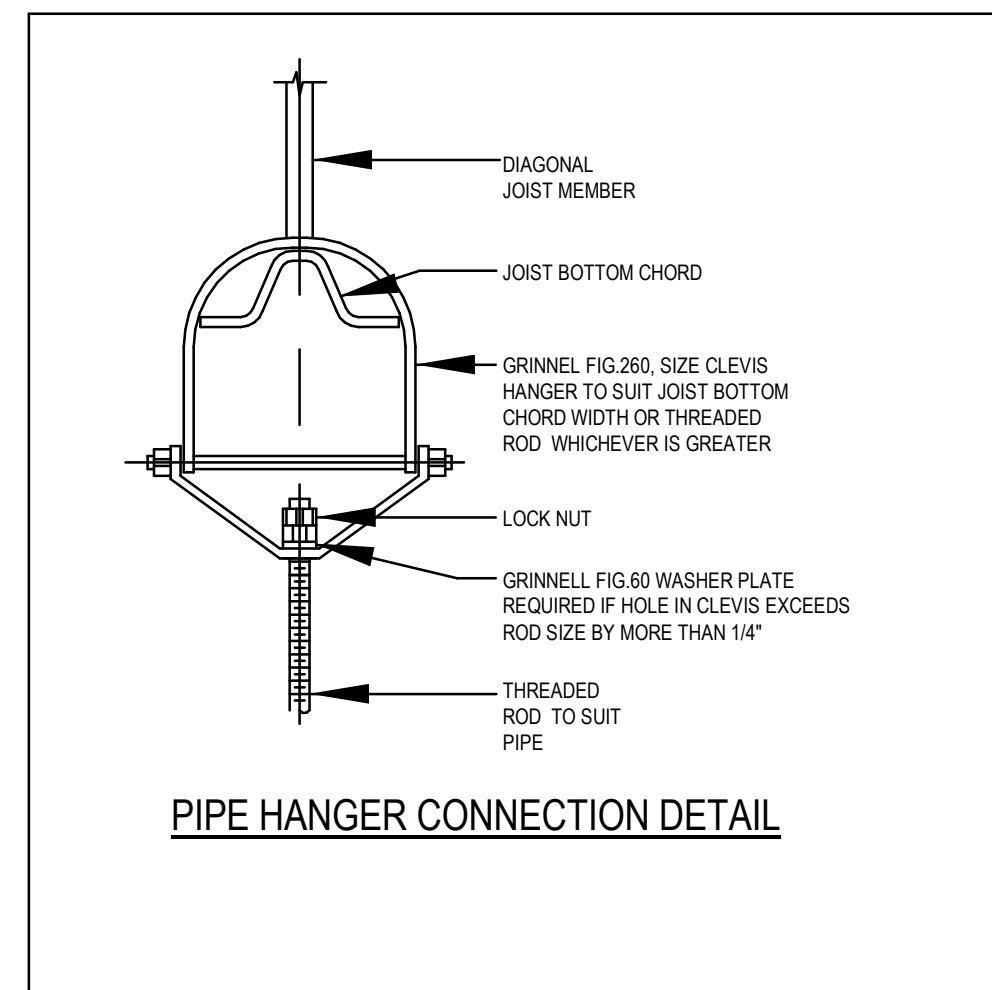
COMMERCIAL BUILDING HYDRONIC SCHEMATIC
NOT TO SCALE



BUFFER TANK											
EQUIPMENT TAG	SERVING	LOCATION	MODEL	VOLUME (L)	MAX. TEMP. C (F°)	MIN. TEMP. C (F°)	WORKING PRESSURE (PSIG)	SIZE		MAX. ALLOWABLE WEIGHT OPERATING KG	NOTES
								DIA. (MM)	H (MM)		
BT-C1	CHILLED WATER	COMMERCIAL	BTL0050F03-125N	189	20 (68)	4.4 (40)	125	500	1265	300	1 TO 8
BT-M1	CHILLED WATER	MAIN MECH....	BTL00100F03-125N	378	20 (68)	4.4 (40)	125	600	1730	550	1 TO 8

NOTES:
 1. ASEM TANK
 2. PROVIDE 1 CONNECTION ON EACH SIDE.
 3. PRE-CHARGE PRESSURE SHALL BE EQUAL TO SYSTEM PRESSURE AT TANK LOCATION.
 4. CONTRACTOR TO SET PRE-CHARGE PRESSURE.
 5. PROVIDE WITH HANDHOLE.
 6. AUTOMATIC AIR VENT.
 7. FLANGED CONNECTIONS (8").
 8. BUFFER TANK WITH UPPER CONNECTIONS.

AIR SEPARATORS					
EQUIPMENT TAG	SERVING	LOCATION	MODEL	SIZE (MM)	ACCESORIES
AS-C1	CHILLED...	COMMERCIAL	3-AS	75	C/W AUTOMATIC AIR & DIRT SEPARATOR....
AS-M1	CHILLED...	MAIN MECH....	3-AS	75	C/W AUTOMATIC AIR & DIRT SEPARATOR....



Design Builder

Design Builder

Seal



Revision/	Description/Description	Date/Date
3	ISSUED FOR TENDER	2020-06-27
2	ISSUED FOR 90% DESIGN	2020-04-09
1	ISSUED FOR 60% DESIGN	2020-03-14

Client/client
CANADA BORDER SERVICES AGENCY

Project title/Titre du projet
**ALDERGROVE PORT OF ENTRY
 10 - HIGHWAY 13
 LANGLEY, BC**
**CBSA - CHILLED WATER
 PIPING INSULATION**

Consultant Signature Box Only
 Designed by/Concept par
Designer
 Drawn by/Dessiné par
Author
 PWSC Project Manager/Administrateur de Projets TPSGC
MARK, KAI
 PWSC Regional Manager, Architectural and Engineering Services/
 Gestionnaire régionale, Services d'architecture et de génie, TPSGC
PAUL, PREETIPAL

Drawing title/Titre du dessin
**COMMERCIAL BUILDING
 SCHEDULE & DETAILS**

Project No./No. du projet R.106124.001	Sheet/Feuille M-4.01	Revision no./ La Révision no. 3
--	--------------------------------	---