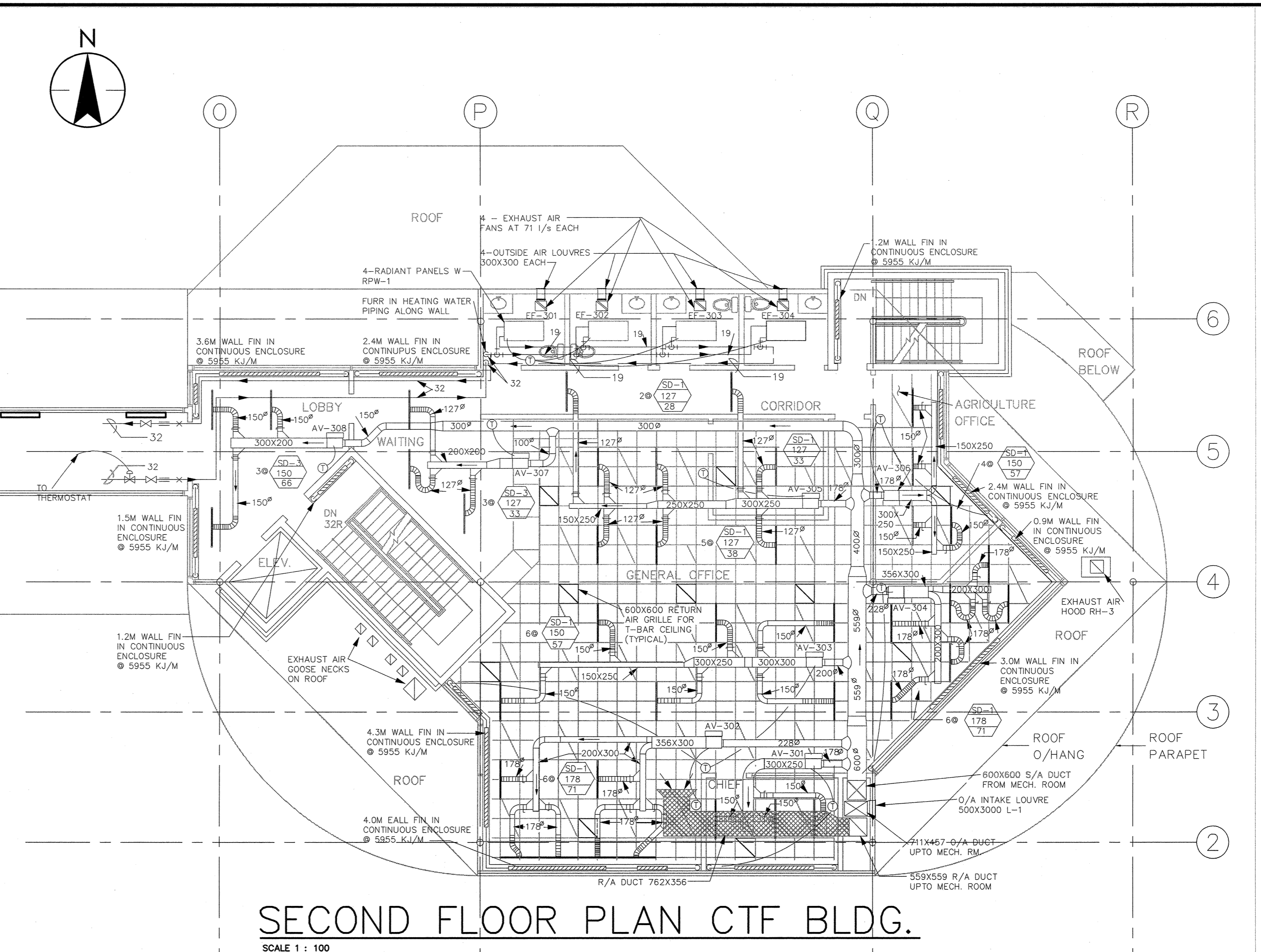
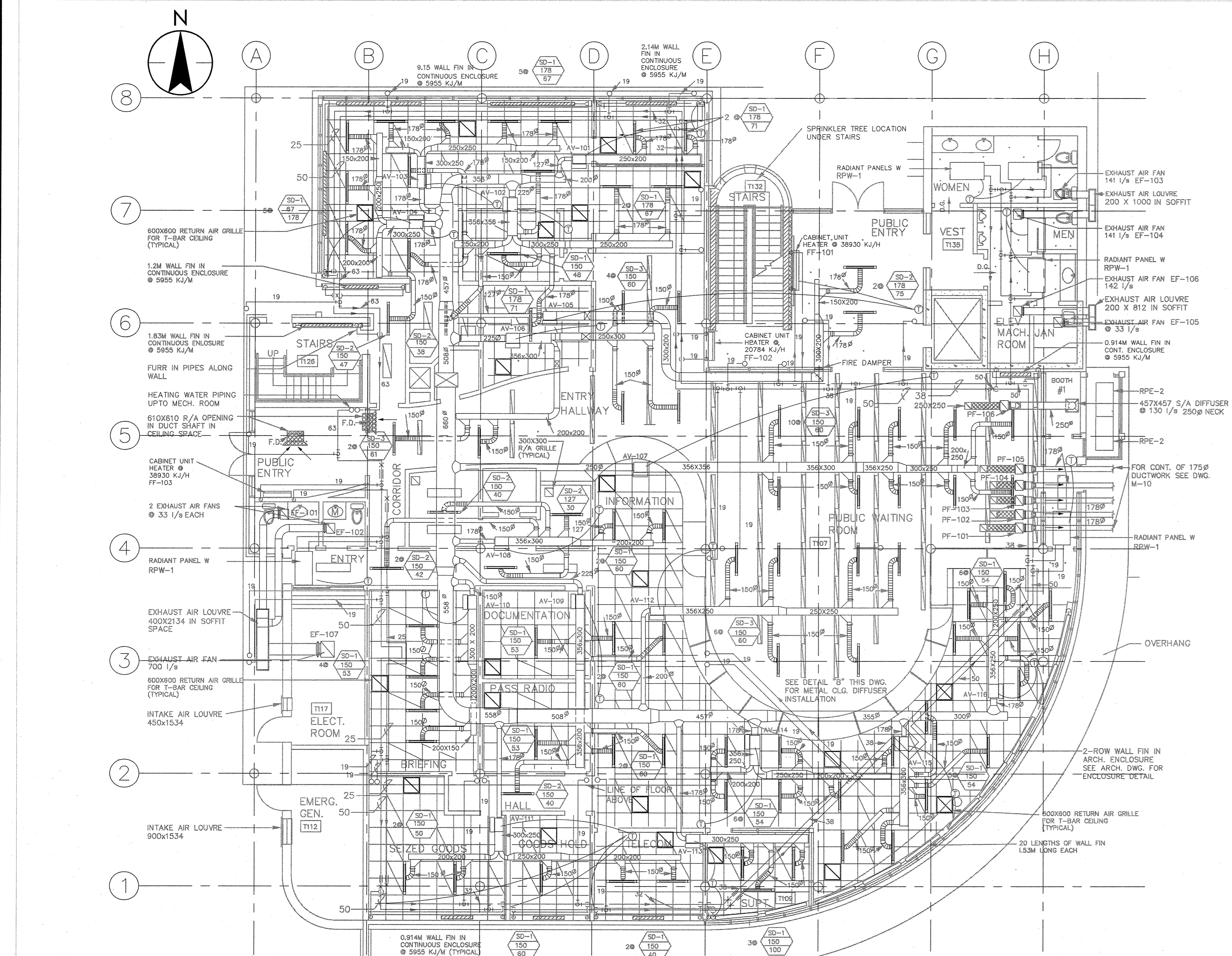


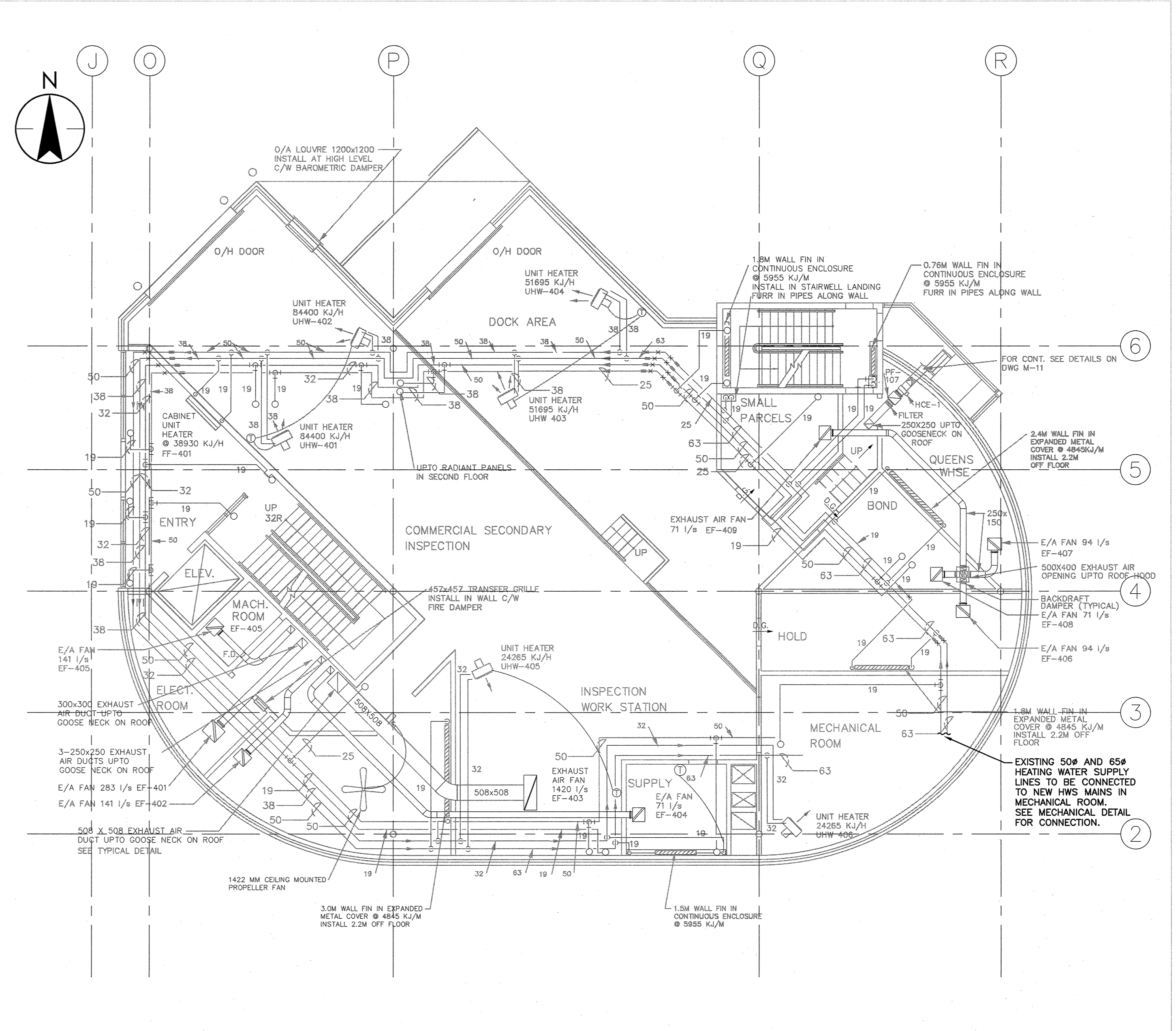
SECOND FLOOR PLAN ITF BLDG.
SCALE 1 : 100



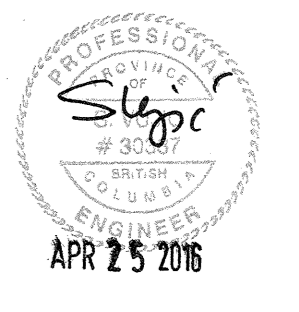
SECOND FLOOR PLAN CTF BLDG.
SCALE 1 : 100



MAIN FLOOR PLAN ITF BLDG.
SCALE 1 : 100



MAIN FLOOR PLAN CTF BLDG.
SCALE 1 : 100



Revision	Description/Description	Date/Date
3	ISSUED FOR TENDER	Apr 25, 2016
2	ISSUED FOR 90% REVIEW	Mar 16, 2016
1	ISSUED FOR 50% REVIEW	Feb 19, 2016

Client/client
**CBSA
(CANADA BORDER
SERVICES AGENCY)**

Project title/Titre du projet
**HUNTINGDON, BC
LAND BORDER
FACILITY**

Consultant Signature Box Only

Designed by/Concept par
KZ/SV

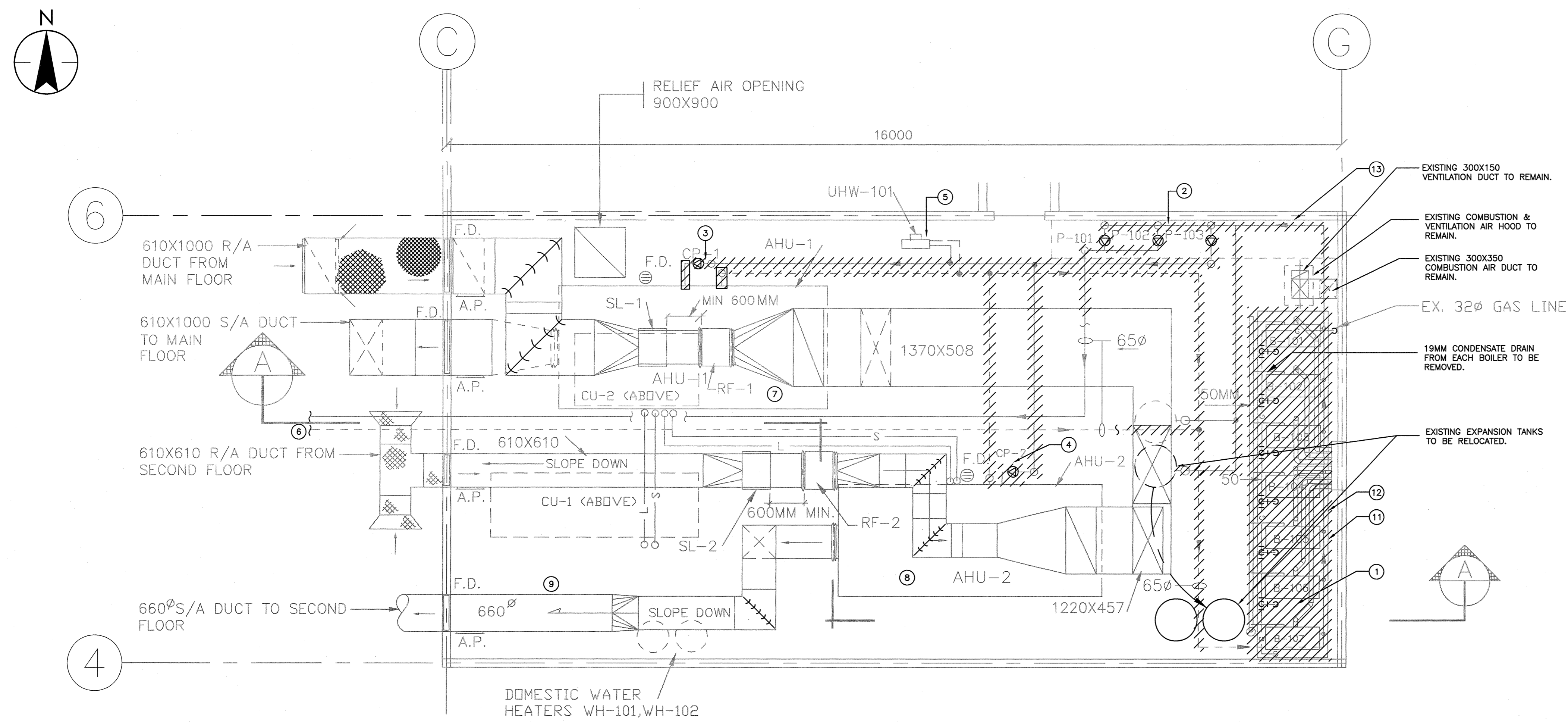
Drawn by/Designé par
FE/KZ

PWSSC Project Manager/Administrateur de Projets TPS/SC
JERRY CHEN

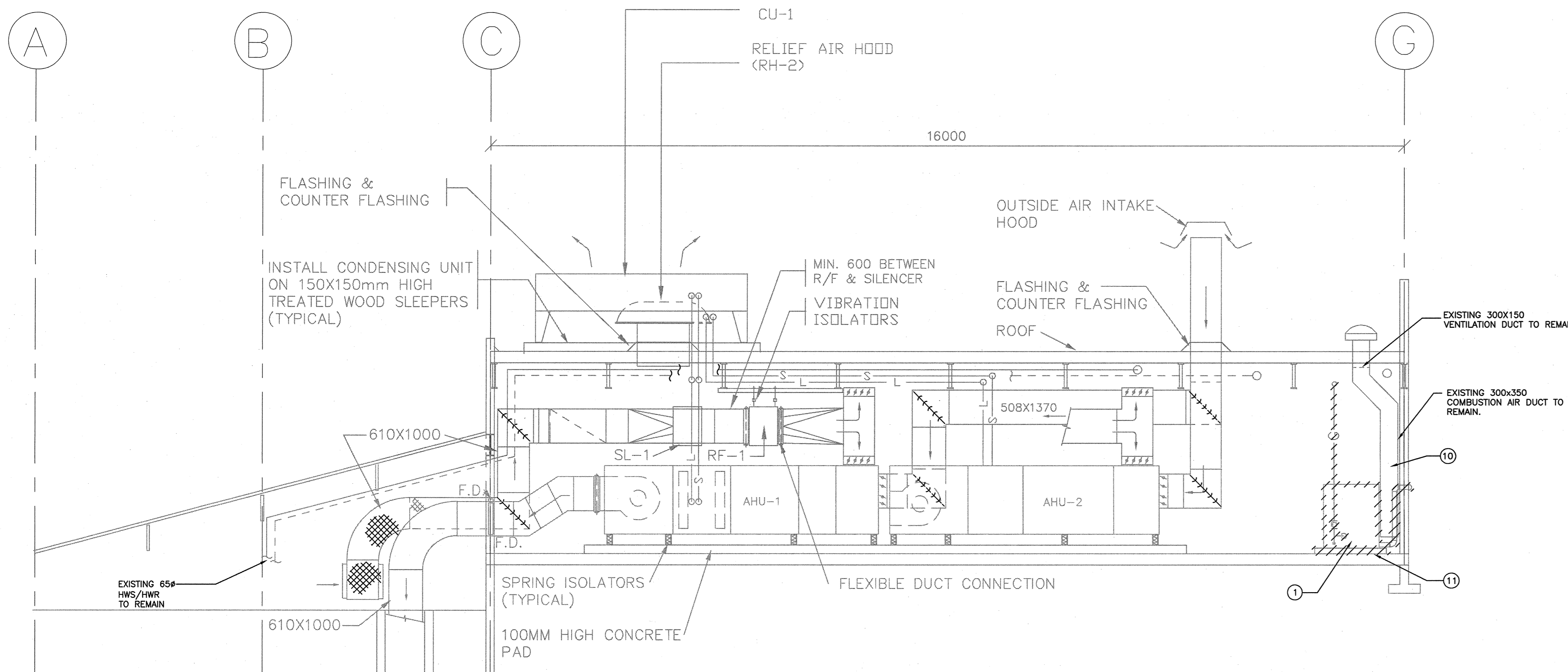
Professional Engineer
Gestionnaire régional, Services d'architecture et de génie, TPS/SC
PHILIP FUNG

Drawing title/Titre du dessin
**EXISTING DEMOLITION PLAN
SECOND FLOOR PLAN - ITF BLDG
MAIN FLOOR PLAN - CTF BLDG**

Project No./No. du projet #R.078416.001	Sheet/Feuille M-101 2 OF 10	Revision no./ La Révision no. 3
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I.T.F. MECHANICAL ROOM PLAN
SCALE 1 : 50



SECTION A-A
SCALE 1 : 50

KEY NOTES

- 1 EXISTING HEATING BOILERS WITH ASSOCIATED PIPES, VENTS, DRAIN LINES, CONTROL WIRING, POWER WIRING ETC. TO BE REMOVED AND REPLACED WITH NEW.
- 2 EXISTING CIRCULATION PUMPS C/W ASSOCIATED PIPES, POWER AND CONTROL WIRING, HOUSEKEEPING PAD TO BE REMOVED AND REPLACED WITH NEW PUMPS.
- 3 EXISTING CIRCULATION PUMPS C/W ASSOCIATED PIPES, POWER/CONTROL WIRING, VALVES ETC. FOR AHU-1 HEATING COIL TO BE REMOVED AND REPLACED WITH NEW ONE.
- 4 EXISTING CIRCULATION PUMP C/W ASSOCIATED PIPES, POWER/CONTROL WIRING VALVES ETC. FOR AHU-2 HEATING COIL TO BE REMOVED AND REPLACED WITH NEW ONE.
- 5 EXISTING UNIT HEATER TO REMAIN AND TO BE RECONNECTED TO UPGRADED HWS/HWR MAINS.
- 6 EXISTING 65# HWS/HWR MAIN TO REMAIN
- 7 EXISTING AHU-1 TO REMAIN
- 8 EXISTING AHU-2 TO REMAIN
- 9 ALL EXISTING DUCTS, REFRIGERANT TUBES ETC. CONNECTED TO EXISTING AHU-1 AND AHU-2 TO REMAIN
- 10 EXISTING COMBUSTION AIR DUCTS TO REMAIN
- 11 EXISTING HOUSEKEEPING PAD TO BE REMOVED. CONTRACTOR TO PATCH/REPAIR DAMAGED FLOOR AND MAKE IT GOOD TO MATCH EXISTING.
- 12 CONTRACTOR TO PATCH/REPAIR ALL DAMAGED FLOORS, WALLS, WALL OPENINGS, CEILING, ROOF OPENINGS AND MAKE IT GOOD TO MATCH EXISTING CONDITION.
- 13 EXISTING WATER TREATMENT EQUIPMENT TO REMAIN AND BE CONNECTED TO NEW HEATING BOILER SYSTEM. SEE SCHEMATIC FOR DETAIL.



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3	ISSUED FOR TENDER	Apr.25.2016
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1	ISSUED FOR 50% REVIEW	Feb.19.2016

CBSA
(CANADA BORDER SERVICES AGENCY)

Project Title/Titre du projet

HUNTINGDON, BC
LAND BORDER FACILITY

Consultant Signature Box Only

Designed by/Concept par

KZ/SV

Drawn by/Dessiné par

FE/KZ

PWOSC Project Manager/Administrateur de Projets TP50C

JERRY CHEN

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

PHILIP FUNG

ACCN

Drawn Title/Titre du dessin

EXISTING DEMOLITION PLAN
ITF MECHANICAL ROOM PLAN

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

#R.078416.001

M-102

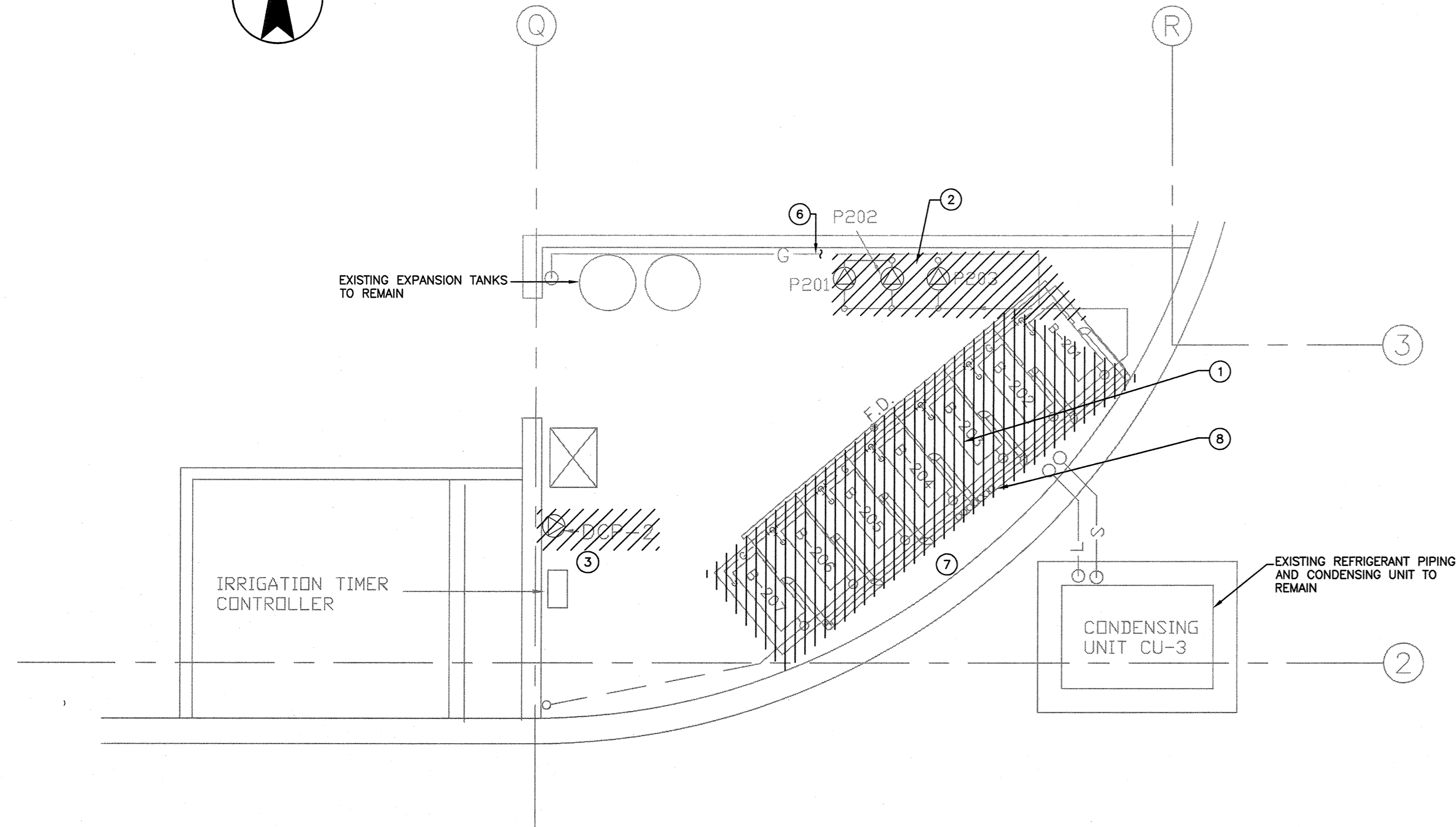
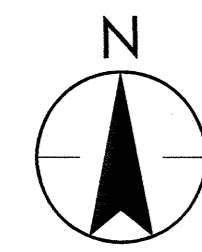
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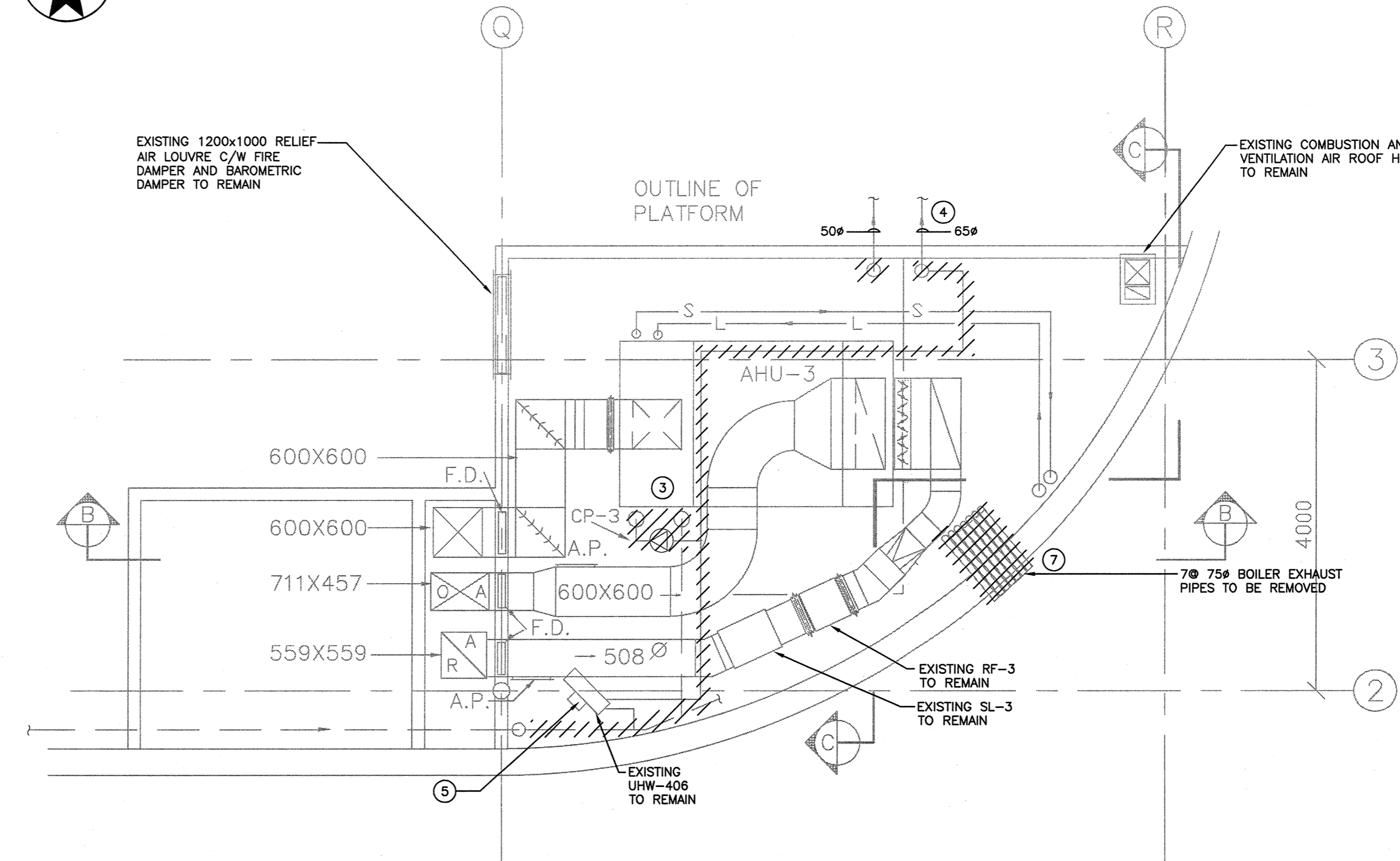
KEY NOTES

- ① EXISTING HEATING BOILERS WITH ASSOCIATED PIPES, VENTS, DRAIN LINES, CONTROL WIRING, POWER WIRING ETC. TO BE REMOVED AND REPLACED WITH NEW BOILERS.
- ② EXISTING CIRCULATION PUMPS C/W ASSOCIATED PIPES, POWER AND CONTROL WIRING, HOUSEKEEPING PAD TO BE REMOVED AND REPLACED WITH NEW PUMPS.
- ③ EXISTING CIRCULATION PUMPS C/W ASSOCIATED PIPES, POWER/CONTROL WIRING, VALVES ETC. FOR AHU-3 HEATING COIL TO BE REMOVED AND REPLACED WITH NEW ONE.
- ④ EXISTING 50# AND 65# HWS PIPES TO BE RE-CONNECTED TO THE NEW HEATING WATER MAIN IN MECHANICAL ROOM.
- ⑤ EXISTING UNIT HEATER TO REMAIN AND TO BE RECONNECTED TO UPGRADED HWS/HW MAINS.
- ⑥ EXISTING GAS LINE TO BE RECONNECTED TO NEW BOILERS. REFER TO DRAWINGS M-102 FOR CONTINUATION.
- ⑦ CONTRACTOR TO PATCH/REPAIR ALL DAMAGED FLOORS, WALLS, WALLS OPENINGS ETC AND MAKE GOOD TO MATCH EXISTING.
- ⑧ EXISTING HOUSEKEEPING PAD TO BE REMOVED. CONTRACTOR TO PATCH/REPAIR DAMAGED FLOOR AND MAKE IT GOOD TO MATCH EXISTING.



C.T.F. MECHANICAL ROOM PLAN LOW LEVEL

SCALE 1 : 50



C.T.F. MECHANICAL ROOM PLAN HIGH LEVEL

SCALE 1 : 50



Revision/Revision	Description/Description	Date/Date
3	ISSUED FOR TENDER	Apr-25-2016
2	ISSUED FOR 99% REVIEW	Mar-16-2016
1	ISSUED FOR 50% REVIEW	Feb-19-2016

Client/client

**CBSA
(CANADA BORDER
SERVICES AGENCY)**

Project Title/Titre du projet

**HUNTINGDON, BC
LAND BORDER
FACILITY**

Consultant Signature Box Only

Designed by/Concept par

KZ/SV

Drawn by/Dessiné par

FE/KZ

PWSC Project Manager/Administrateur de Projets TP50C

JERRY CHEN

PHILIP FUNG

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

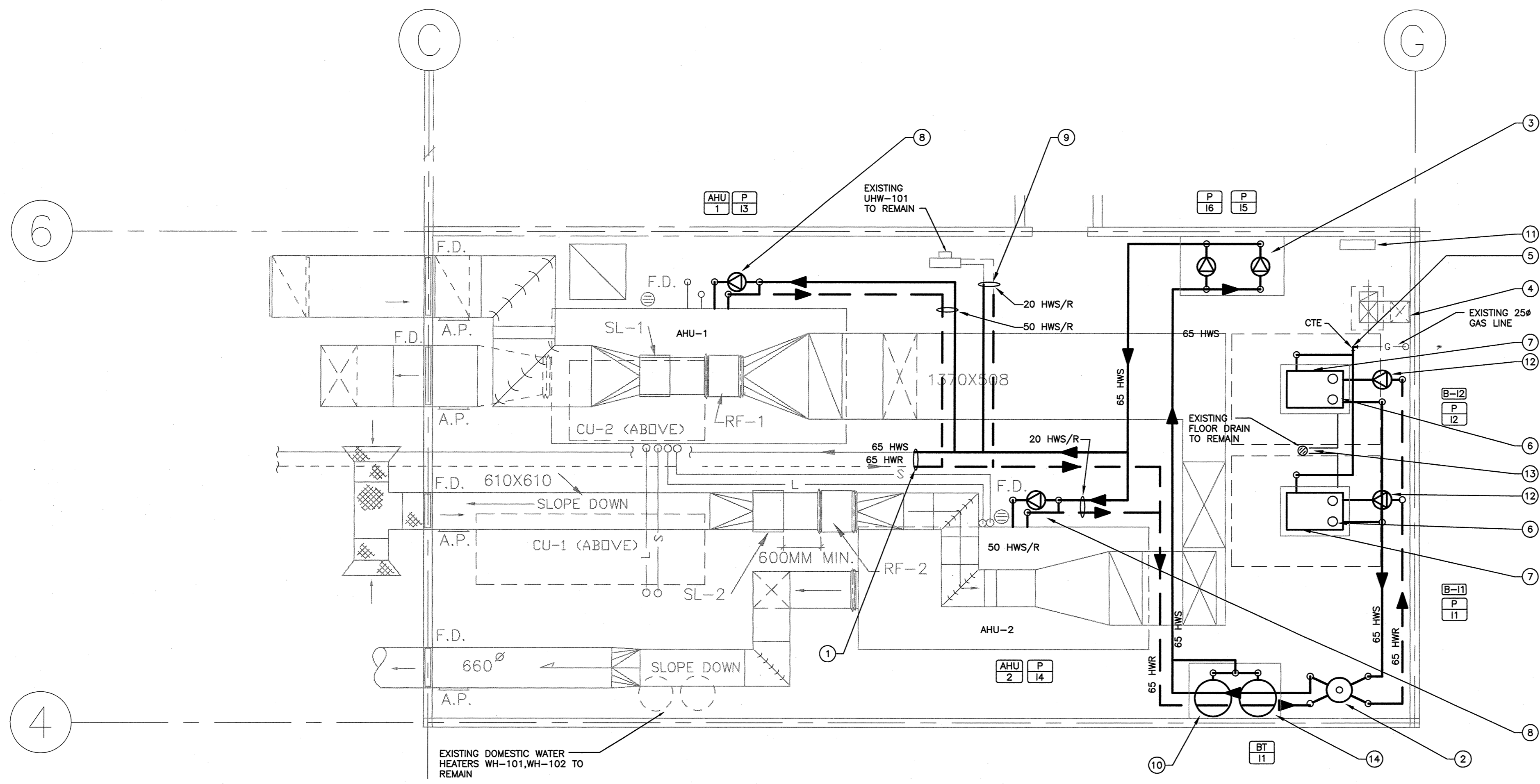
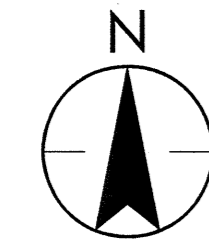
Drawing Title/Titre de dessin

EXISTING DEMOLITION PLAN
CTF MECHANICAL ROOM PLAN

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

#R.078416.001 M-103 3
4 OF 10

M:\1126\sectors\112615348\01_mechanical_room_plan - 10-EXISTING DEMOLITION-CTF MECHANICAL ROOM PLAN - 10-EXISTING DEMOLITION-CTF MECHANICAL ROOM PLAN



- ### KEY NOTES
- NEW 65# HWS/R PIPES TO BE CONNECTED EXISTING HWS/R MAIN AT HIGH LEVEL C/W SHUT OFF VALVE, BALANCE VALVE, INSULATION ETC.. EXACT LOCATION TO BE VERIFIED ON SITE.
 - PRIMARY AND SECONDARY HEADER (DIA. 350#mm, WEIGHT: 100 Kg) TO BE INSTALLED C/W INSULATION, SHUT OFF VALVE, AUTO AIR VALVE ETC. FOR HEATING WATER SYSTEM, SEE SCHEMATIC FOR DETAIL.
 - SECONDARY CIRCULATION PUMPS FOR THE HEATING SYSTEM C/W VFD CONTROL SYSTEM ON HOUSEKEEPING PAD (MIN. 100mm HIGH).
 - EXISTING COMBUSTION AIR DUCT TO REMAIN.
 - 25# GAS LINE (#2 PSI) TO BE CONNECTED TO THE EXISTING GAS LINE C/W SHUT OFF VALVE, PRV REGULATOR ETC. COMPLYING WITH REQUIREMENTS OF GAS CODE B149.1-05 FOR NEW BOILERS.
 - 150mm S.S. (CATEGORY IV) FLUE UP TO ROOF TO BE TERMINATED @ 600mm A.F.R. FOR BOILER (TYP.). 150mm CPVC COMBUSTION AIR DUCT UP TO ROOF C/W GOOSE NECK AND INSECT SCREEN, MIN. 1.50 m AWAY FROM THE FLUE. SEE BOILER MANUFACTURER'S MANUAL FOR DETAIL REQUIREMENTS.
 - CONDENSING BOILER (B1000 BY RBI) C/W NEUTRALIZED DRAIN BOX, DDC CONTROL SYSTEM ETC. TO BE INSTALLED ON HOUSEKEEPING PAD (1100X800X100mm, LxWxD) DIM: 900mmx900mmx1800mm (DxWxH) WEIGHT: 600 Kg
 - IN-LINE CIRCULATION PUMP TO BE INSTALLED C/W CHECK VALVE, SHUT OFF VALVE, THREE-WAY CONTROL VALVE, ETC TO THE HEATING COIL OF EXISTING AHU C/W DDC CONTROL SYSTEM (TYP.). SEE SCHEMATIC DRAWINGS FOR DETAIL.
 - EXISTING 20# HWS/R PIPES TO BE CONNECTED TO THE NEW HWS/R MAIN AT HIGH LEVEL C/W SHUT OFF VALVE, BALANCE VALVE, INSULATION ETC.. EXACT LOCATION TO BE VERIFIED ON SITE.
 - EXISTING TWO EXPANSION TANKS TO BE RELOCATED AND RECONNECTED TO THE NEW HWS MAIN AT HIGH LEVEL C/W SHUT OFF VALVE (NORMAL OPEN), INSULATION ETC.. EXACT LOCATION TO BE VERIFIED ON SITE. SEE SCHEMATIC FOR DETAIL.
 - EXISTING WATER TREATMENT EQUIPMENT TO REMAIN AND TO BE RECONNECTION TO THE NEW HWS MAIN AT HIGH LEVEL C/W SHUT OFF VALVE, INSULATION ETC.. EXACT LOCATION TO BE VERIFIED ON SITE. SEE SCHEMATIC DRAWINGS FOR DETAIL REQUIREMENTS.
 - PRIMARY CIRCULATION PUMPS FOR THE HEATING SYSTEM C/W VFD CONTROL SYSTEM ON HOUSEKEEPING PAD (MIN. 100mm HIGH).
 - 20mm CONDENSATE DRAIN TO BE CONNECTED TO THE NEAREST FLOOR DRAIN FROM THE NEUTRALIZED DRAIN BOX OF CONDENSING BOILER. (TYP.)
 - NEW HOUSEKEEPING PAD. DIMENSION: 1500mmx900mmx100mm (LxWxD) REFER TO DETAIL # 7 ON DRAWING M-401.

NEW CONSTRUCTION – I.T.F. MECHANICAL ROOM PLAN
SCALE 1 : 50



Revision/Revisión	Description/Description	Date/Date
3	ISSUED FOR TENDER	Apr-25-2016
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1	ISSUED FOR 50% REVIEW	Feb-19-2016

Client/client
**CBSA
(CANADA BORDER
SERVICES AGENCY)**

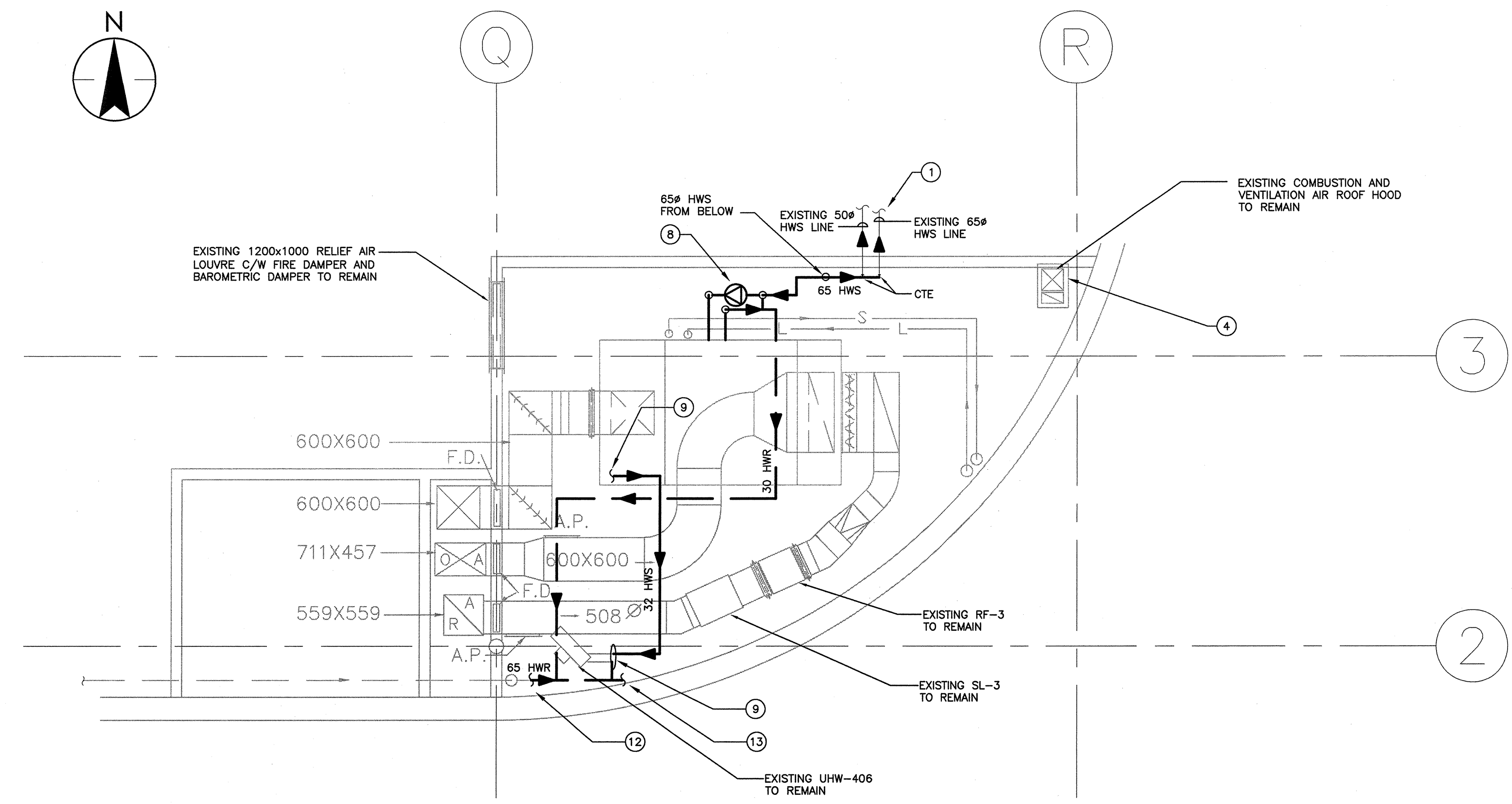
Project title/Titre du projet
**HUNTINGDON. BC
LAND BORDER
FACILITY**

Consultant Signature Box Only
Designed by/Concept par
KZ/SV
Drawn by/Dessiné par
FE/KZ
PWOSC Project Manager/Administrateur de Projets TPSOC
JERRY CHEN

PWOSC Regional Manager, Architectural and Engineering Services/
Gestionnaire régional, Services d'architecture et de génie, TPSOC
PHILIP FUNG

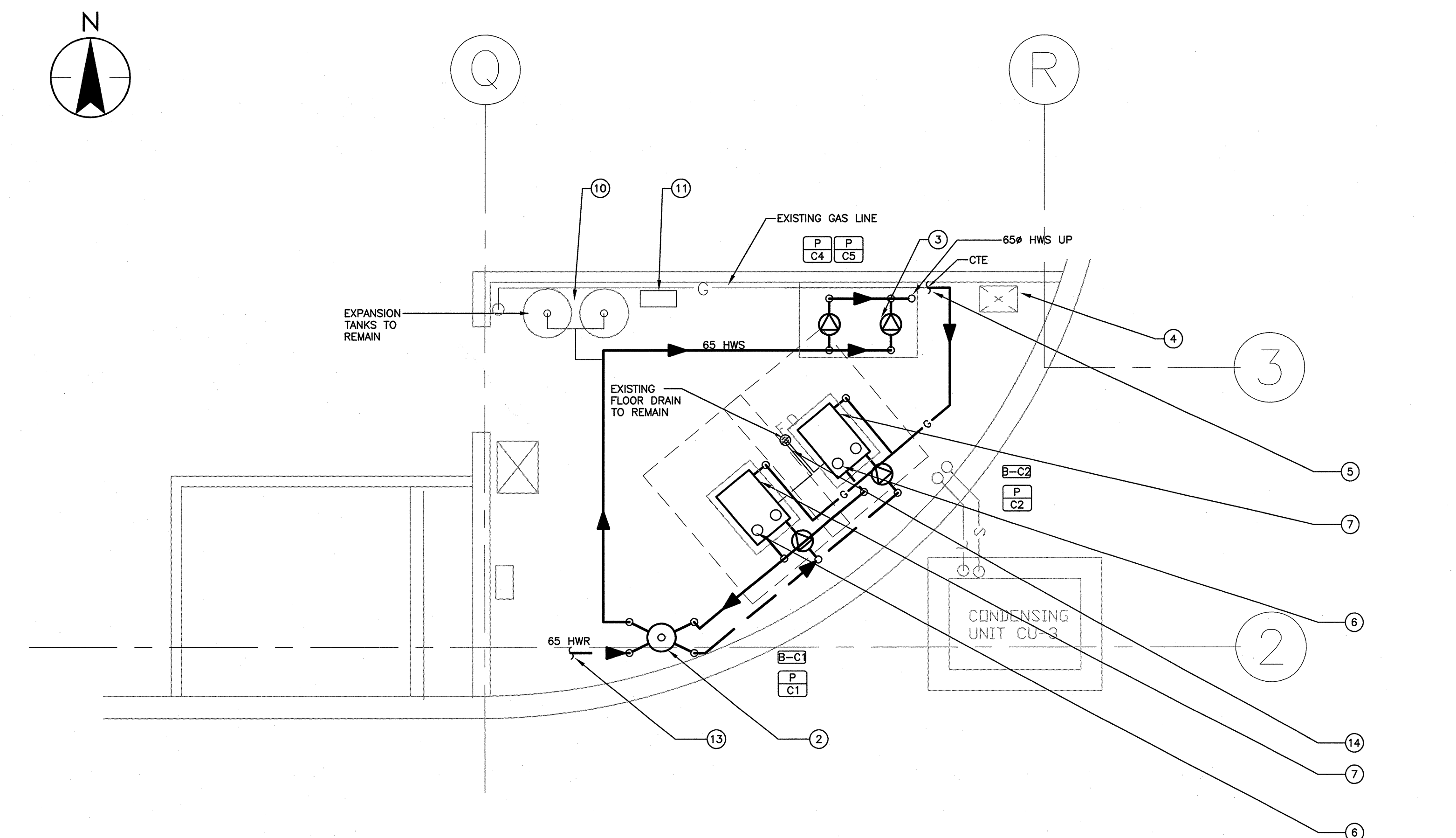
Drawing title/Titre de dessin
ITF MECHANICAL ROOM PLAN

Project No./No. du projet	Sheet/Feuille	Revision no./ La Révision no.
#R.078416.001	M-201 5 OF 10	3



NEW CONSTRUCTION - C.T.F. MECHANICAL ROOM PLAN-HIGH LEVEL

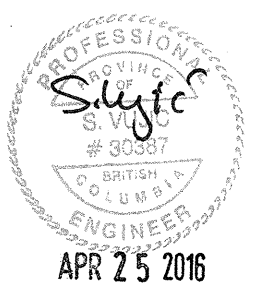
SCALE 1 : 50



- KEY NOTES**
- NEW 65# HWS PIPE TO BE CONNECTED TO EXISTING HWS MAIN AT HIGH LEVEL C/W SHUT OFF VALVE, BALANCE VALVE, INSULATION ETC.. EXACT LOCATION TO BE VERIFIED ON SITE.
 - PRIMARY AND SECONDARY HEADER (DIA. 350mm, WEIGHT: 100 kg) TO BE INSTALLED C/W INSULATION, SHUT OFF VALVE, AUTO AIR VALVE ETC. FOR HEATING WATER SYSTEM, SEE SCHEMATIC FOR DETAIL.
 - SECONDARY CIRCULATION PUMPS FOR THE HEATING SYSTEM C/W VFD CONTROL SYSTEM ON HOUSEKEEPING PAD (MIN. 100mm HIGH).
 - EXISTING COMBUSTION AIR DUCT TO REMAIN.
 - 25# GAS LINE (#2 PSI) TO BE CONNECTED TO THE EXISTING GAS LINE C/W SHUT OFF VALVE, PRV REGULATOR ETC. COMPLYING WITH REQUIREMENTS OF GAS CODE B149.1-05 FOR NEW BOILERS.
 - 150mm S.S. (CATEGORY M) FLUE UP TO ROOF TO BE TERMINATED @ 800mm A.F.R. FOR BOILER (TYP.), 150mm CPVC COMBUSTION AIR DUCT UP TO ROOF C/W GOOSE NECK AND INSECT SCREEN, MIN. 1.50 m AWAY FROM THE FLUE. SEE BOILER MANUFACTURER'S MANUAL FOR DETAIL REQUIREMENTS.
 - CONDENSING BOILER (B1000 BY RB) C/W NEUTRALIZED DRAIN BOX, DDC CONTROL SYSTEM ETC. TO BE INSTALLED ON HOUSEKEEPING PAD (1100X800X100mm, LxWxD) DIM: 900mmx600mmx1800mm (DxWxH) WEIGHT: 600 Kg
 - IN-LINE CIRCULATION PUMP TO BE INSTALLED C/W CHECK VALVE, SHUT OFF VALVE, THREE-WAY CONTROL VALVE, ETC FOR THE HEATING COIL OF EXISTING AHU C/W DDC CONTROL SYSTEM (TYP.). SEE SCHEMATIC DRAWINGS FOR DETAIL.
 - EXISTING 32# HWS/R PIPES TO BE CONNECTED TO THE NEW HWS/R MAIN AT HIGH LEVEL C/W SHUT OFF VALVE (NORMAL OPEN), INSULATION ETC. FOR EXISTING UH. EXACT LOCATION TO BE VERIFIED ON SITE.
 - EXISTING TWO EXPANSION TANKS TO REMAIN AND RECONNECTED TO THE NEW HWS MAIN AT HIGH LEVEL C/W SHUT OFF VALVE, INSULATION ETC.. EXACT LOCATION TO BE VERIFIED ON SITE.
 - EXISTING WATER TREATMENT EQUIPMENT TO REMAIN AND TO BE RECONNECTED TO HWS MAIN AT HIGH LEVEL C/W SHUT OFF VALVE, INSULATION ETC.. EXACT LOCATION TO BE VERIFIED ON SITE. SEE SCHEMATIC DRAWINGS FOR DETAIL REQUIREMENTS.
 - NEW 65# HWR PIPES TO BE CONNECTED EXISTING HWR MAIN AT HIGH LEVEL C/W SHUT OFF VALVE, INSULATION ETC.. EXACT LOCATION TO BE VERIFIED ON SITE.
 - NEW 65# HWR PIPE.
 - 20mm CONDENSATE DRAIN TO BE CONNECTED TO THE NEAREST FLOOR DRAIN FROM THE NEUTRALIZED DRAIN BOX OF CONDENSING BOILER. (TYP.)

NEW CONSTRUCTION - C.T.F. MECHANICAL ROOM PLAN-LOW LEVEL

SCALE 1 : 50



Revision/Revision	Description/Description	Date/Date
3	ISSUED FOR TENDER	Apr-25-2016
2	ISSUED FOR 99% REVIEW	Mar-16-2016
1	ISSUED FOR 50% REVIEW	Feb-19-2016

Client/client
CBSA (CANADA BORDER SERVICES AGENCY)

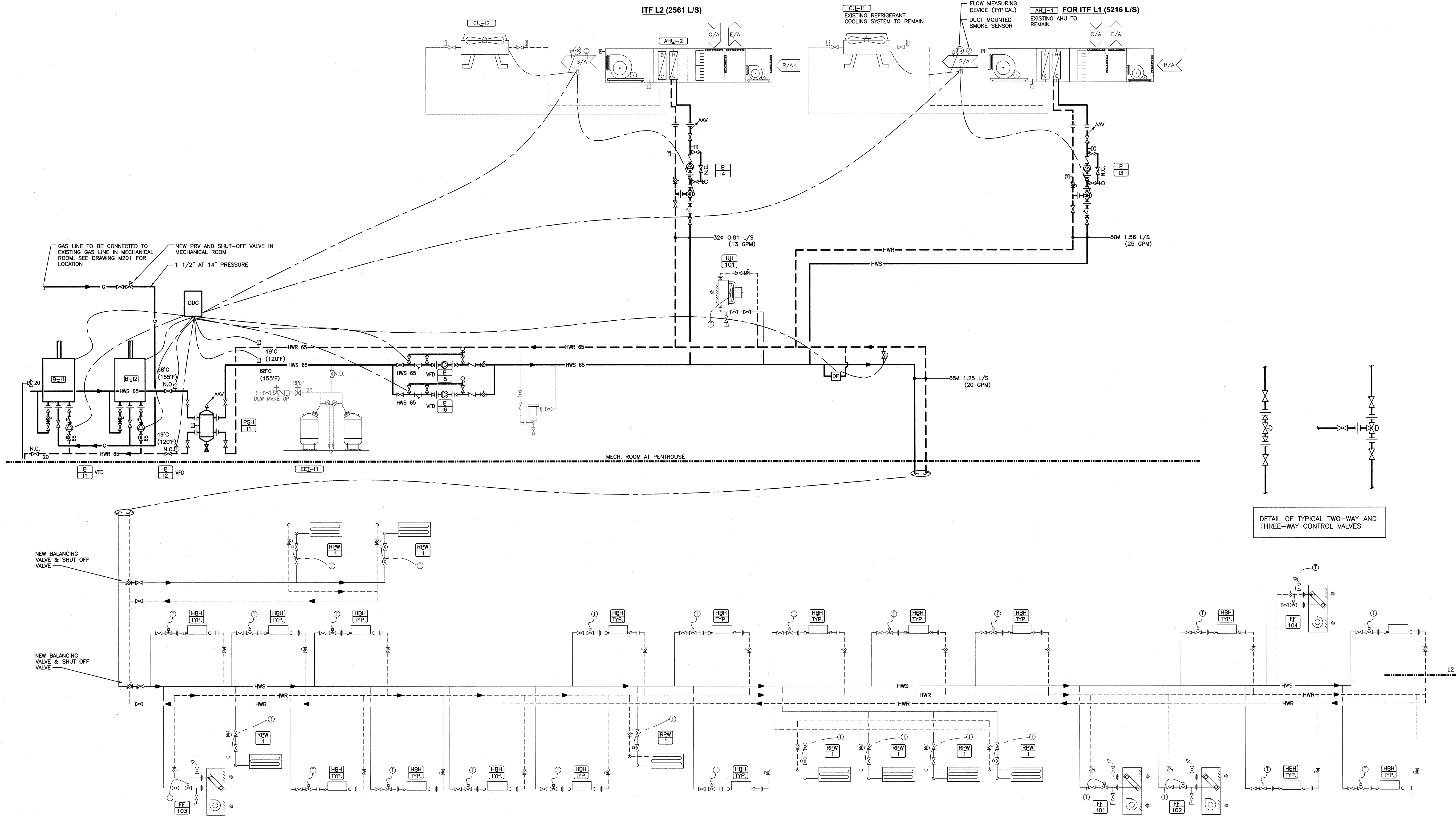
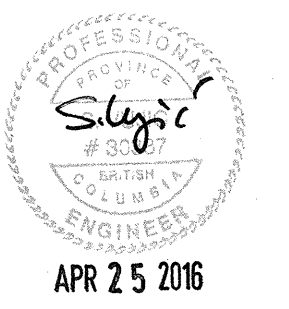
Project title/Titre du projet
HUNTINGDON, BC LAND BORDER FACILITY

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Designed by/Concept par
KZ/SV
Drawn by/Dessiné par
FE/KZ
PWSC Project Manager/Administrateur de Projets TPSGC
JERRY CHEN
PHILIP FUNG
PHILIP FUNG
Drawing title/Titre du dessin

CTF MECHANICAL ROOM PLAN

Project No./No. du projet	Sheet/Feuille	Revision no./Lo. Révision no.
#R.078416.001	M-202	3

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MECHANICAL HEATING/COOLING SCHEMATIC (ITF)
SCALE: N.T.S.

Revision/Description	Date/Date
3 ISSUED FOR TENDER	Apr-25-2016
2 ISSUED FOR 99% REVIEW	Mar-16-2016
1 ISSUED FOR 50% REVIEW	Feb-19-2016

Client/Client
CBSA (CANADA BORDER SERVICES AGENCY)

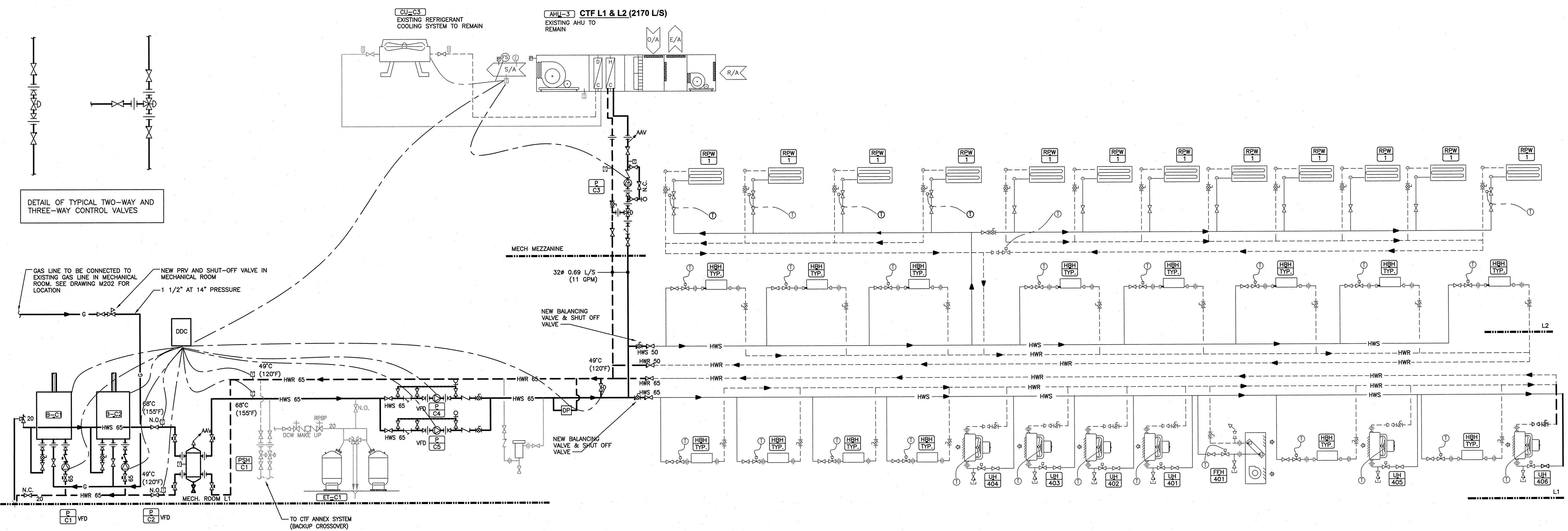
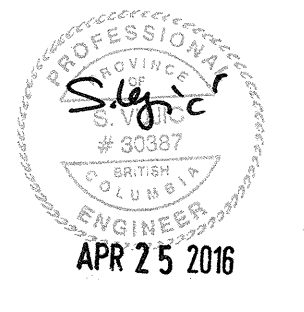
Project title/Titre du projet
HUNTINGDON, BC LAND BORDER FACILITY

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KZ/SV
Drawn by/Dessiné par
FE/KZ
PWGSC Project Manager/Administrateur de Projets TPSSC
JERRY CHEN
PWGSC Regional Manager, Architectural and Engineering Services/
Contrôleur régional, Services d'architecture et de génie, TPSSC
PHILIP FUNG A.C.M.A.C.

Drawing title/Titre du dessin
ITF MECHANICAL HEATING AND COOLING SCHEMATIC

Project No./No. du projet	Sheet/Feuille	Revision no./La Révision no.
#R.078416.001	M-301 7 of 10	3

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DETAIL OF TYPICAL TWO-WAY AND THREE-WAY CONTROL VALVES

MECHANICAL HEATING/COOLING SCHEMATIC (CTF)
SCALE: N.T.S.

3	ISSUED FOR TENDER	Apr-25-2016
2	ISSUED FOR 99% REVIEW	Mar-16-2016
1	ISSUED FOR 50% REVIEW	Feb-19-2016
Revision/	Description/Description	Date/Date

Client/client
CBSA (CANADA BORDER SERVICES AGENCY)

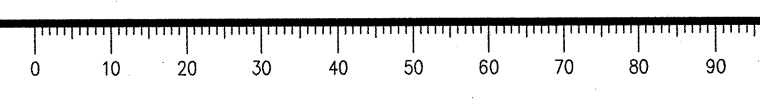
Project title/Titre du projet
HUNTINGDON, BC LAND BORDER FACILITY

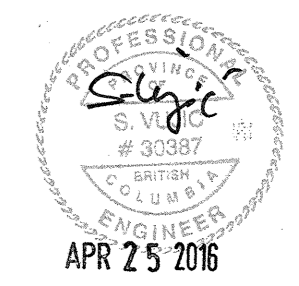
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FE/KZ
PWSSC Project Manager/Administrateur de Projets TPSGC
JERRY CHEN
PWSSC Regional Manager, Architectural and Engineering Services/
Gestionnaire régionale, Services d'architecture et de génie, TPSGC
PHILIP FUNG

Drawing title/Titre du dessin
CTF MECHANICAL HEATING AND COOLING SCHEMATIC

Project No./No. du projet #R.078416.001	Sheet/Feuille M-302 8 of 10	Revision no./ La Révision no. 3
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3	ISSUED FOR TENDER	Apr.25.2016
2	ISSUED FOR 99% REVIEW	Mar.16.2016
1	ISSUED FOR 50% REVIEW	Feb.19.2016

Revision/Description	Date/Date
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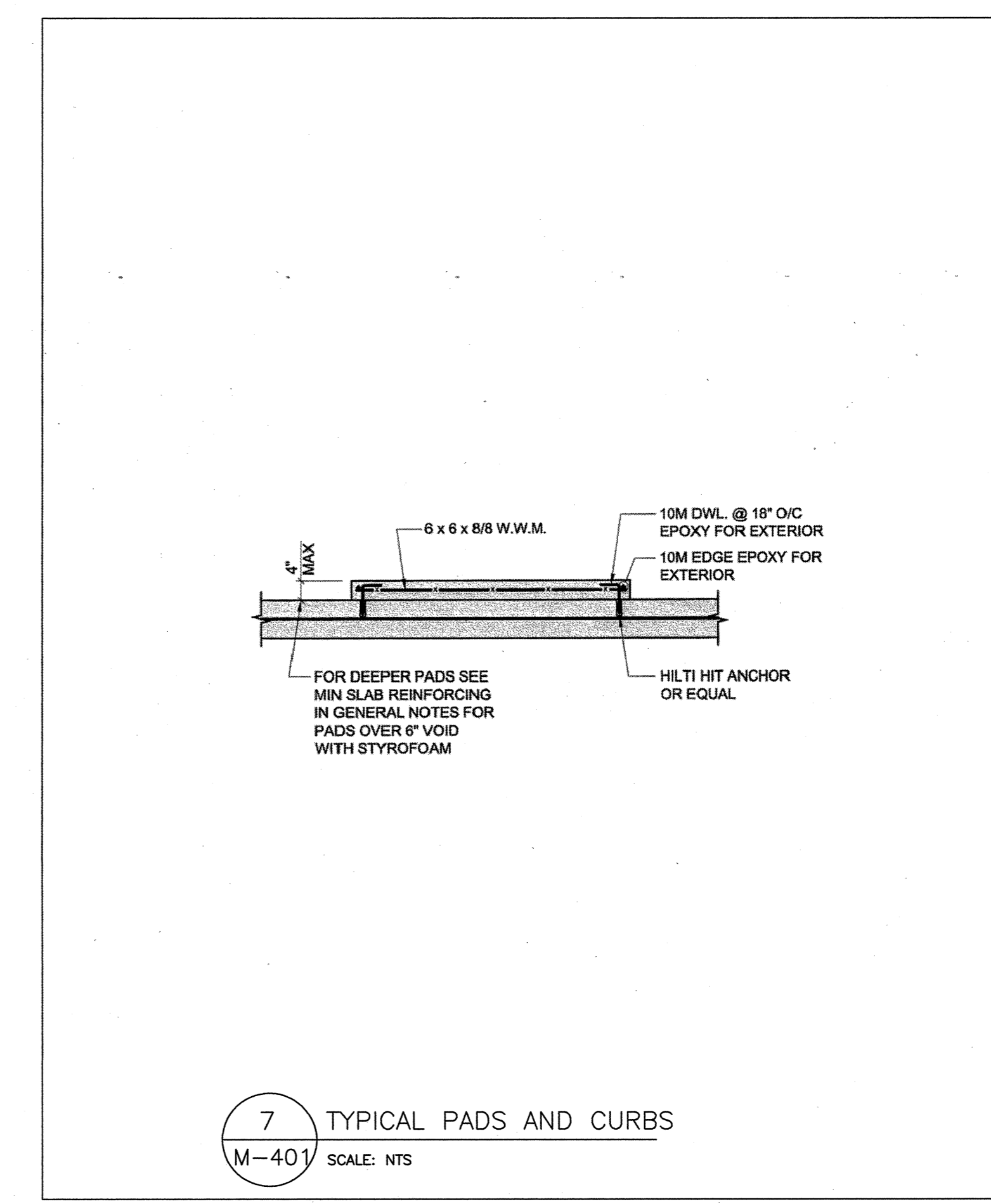
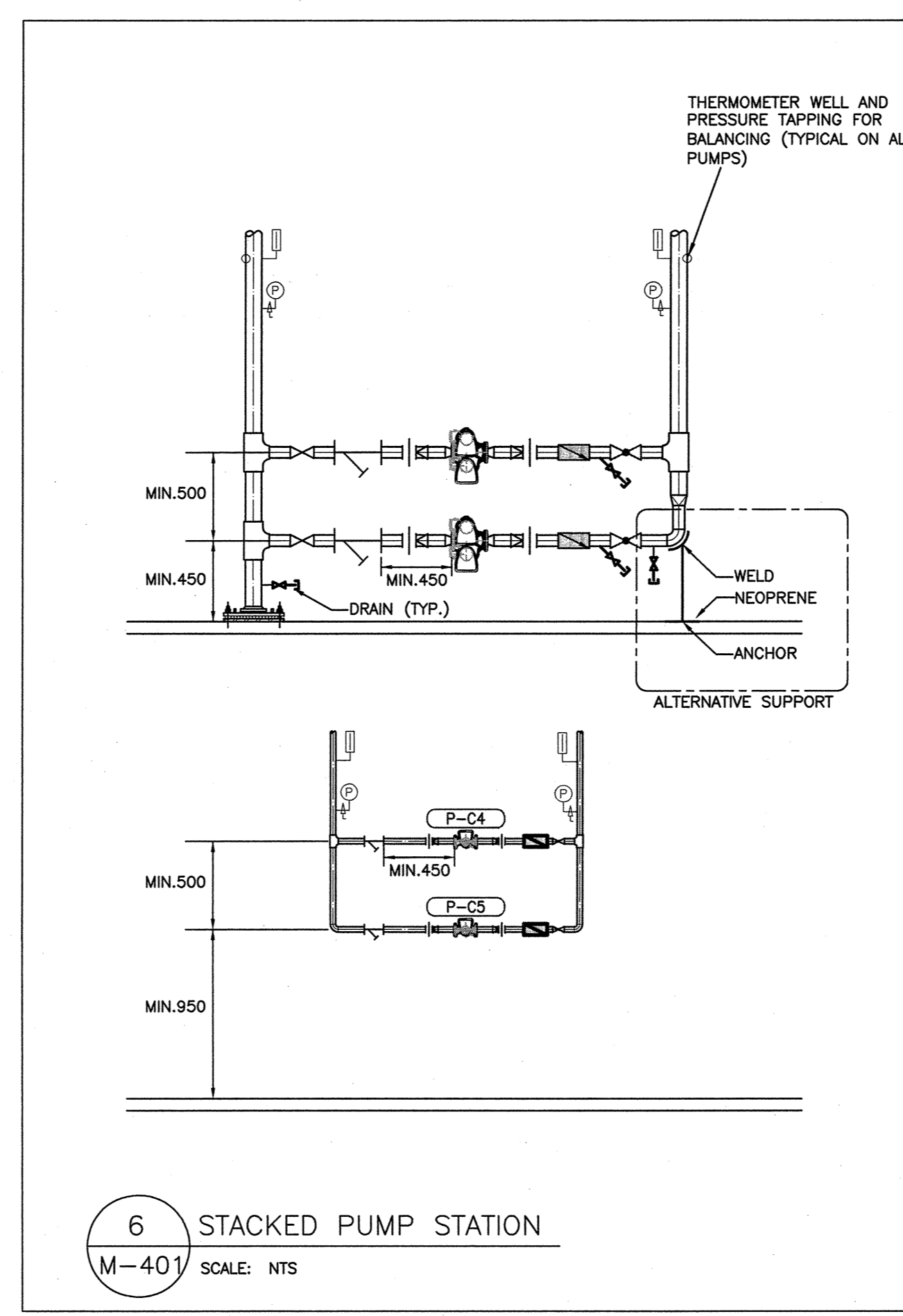
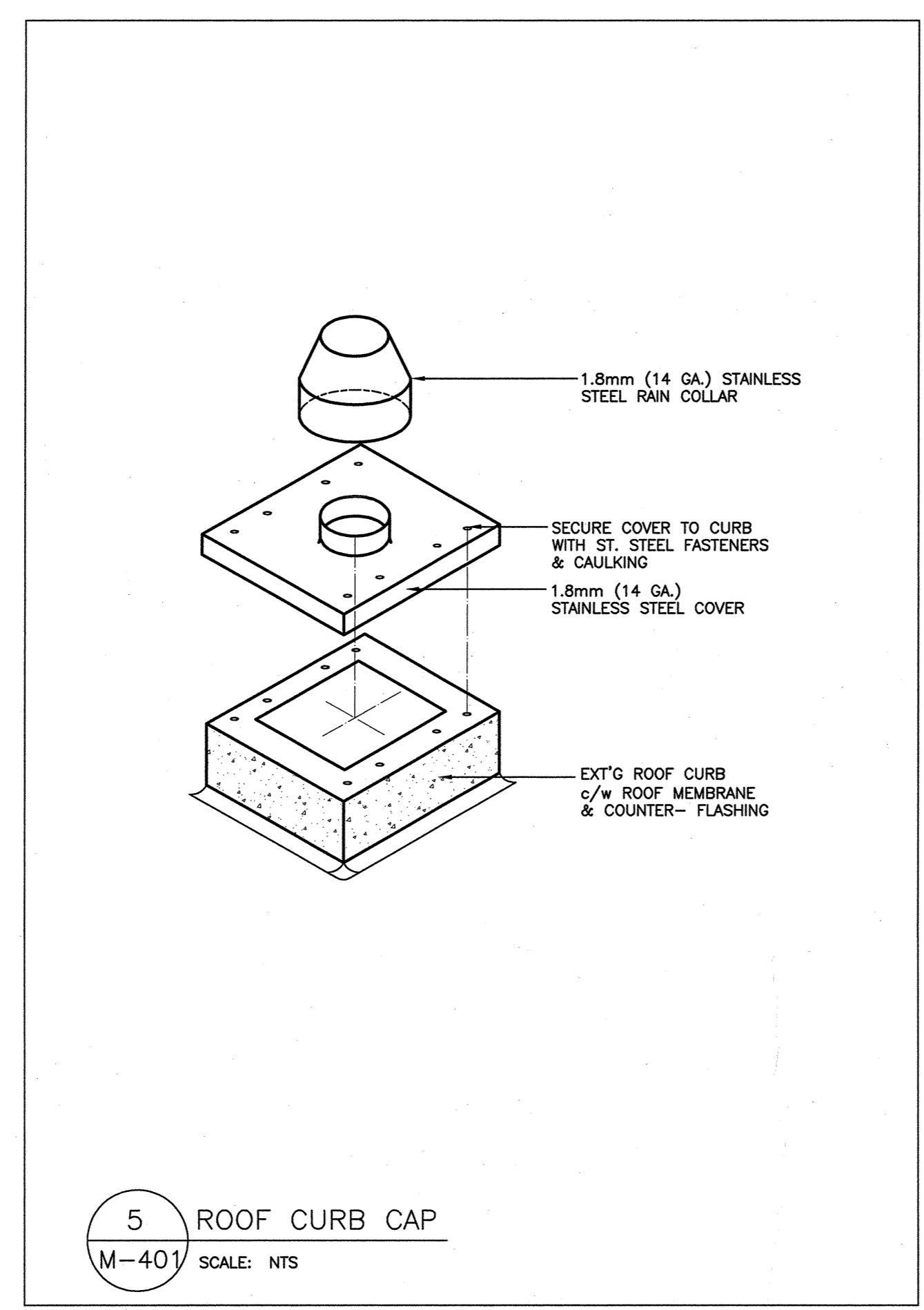
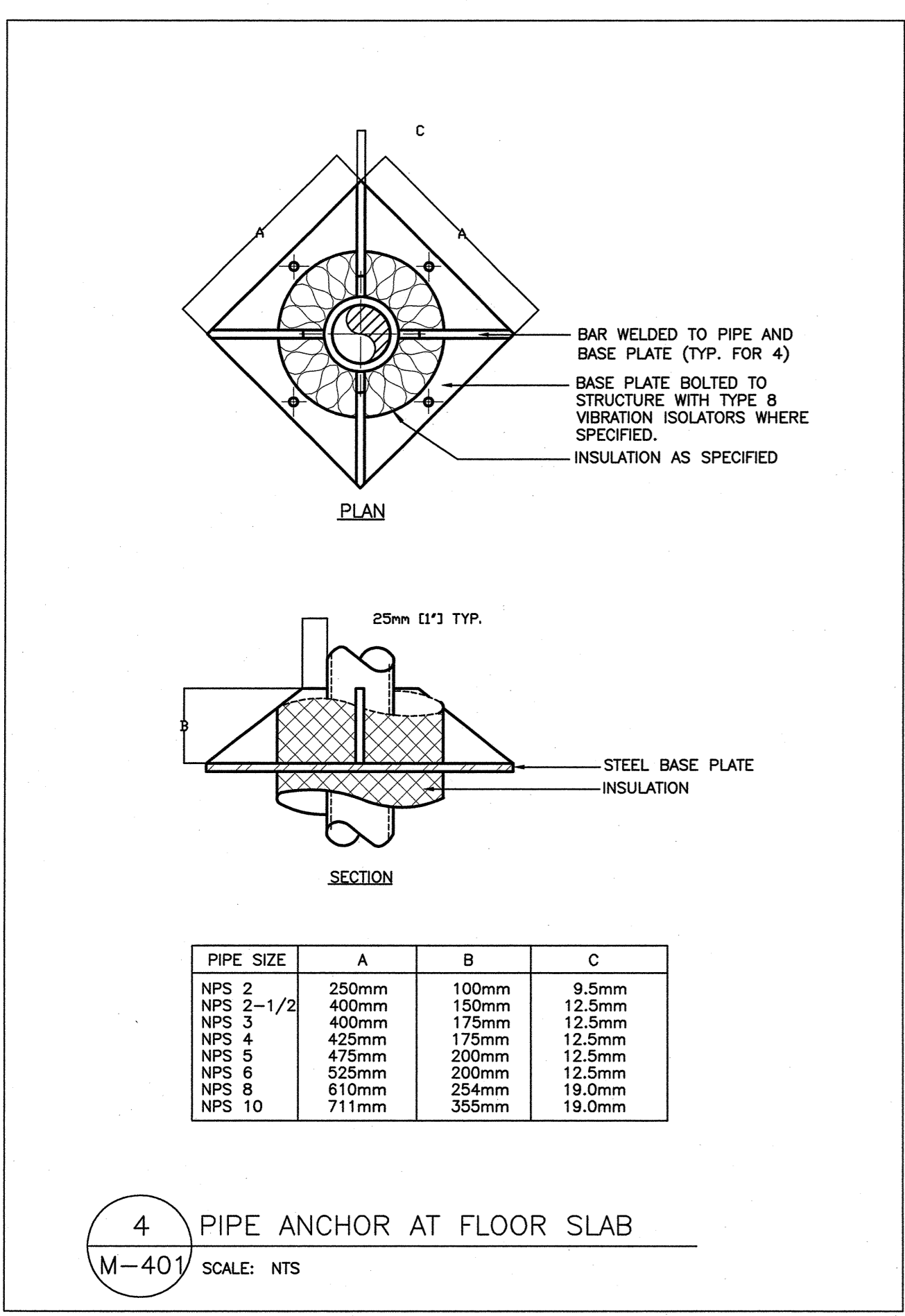
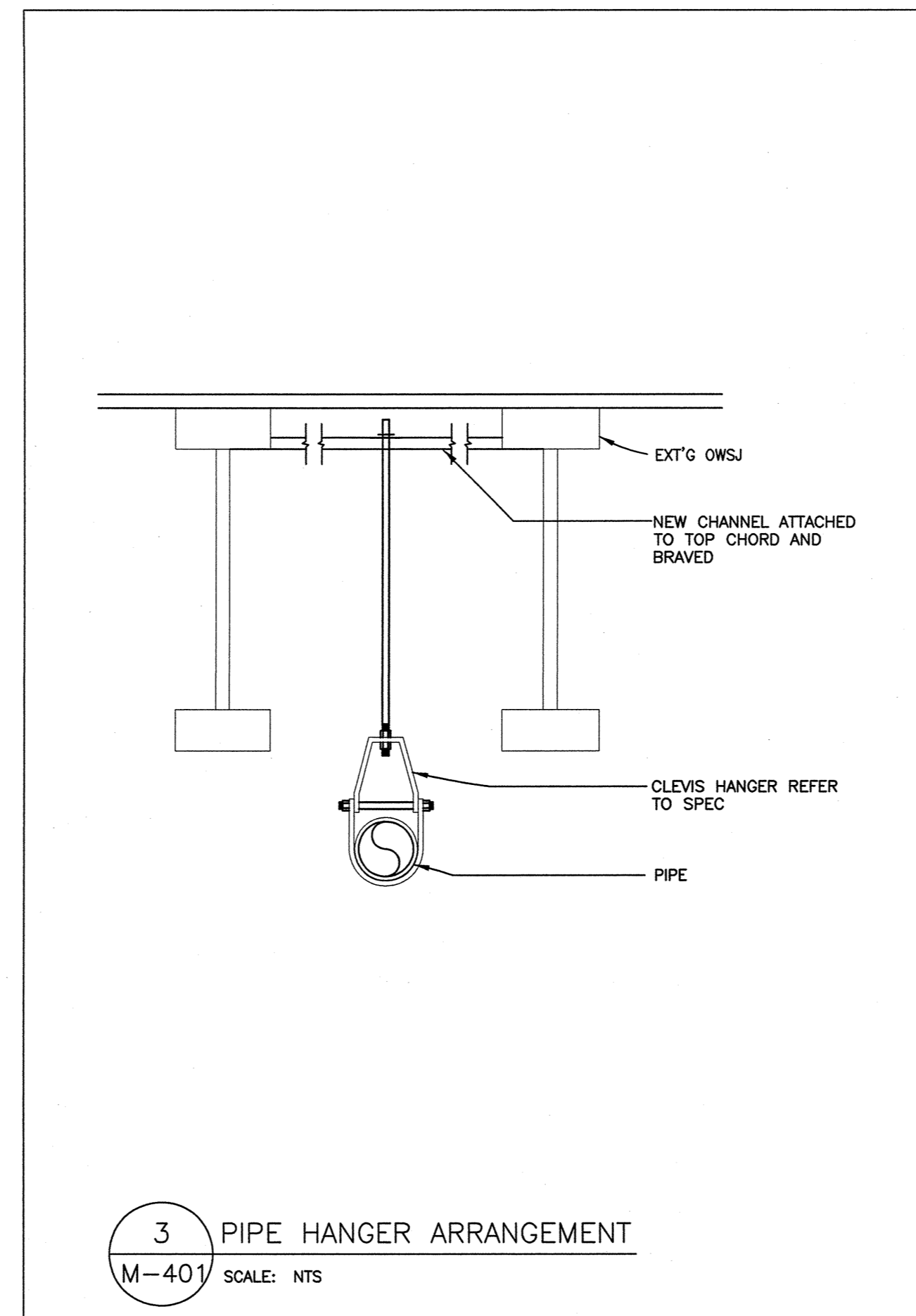
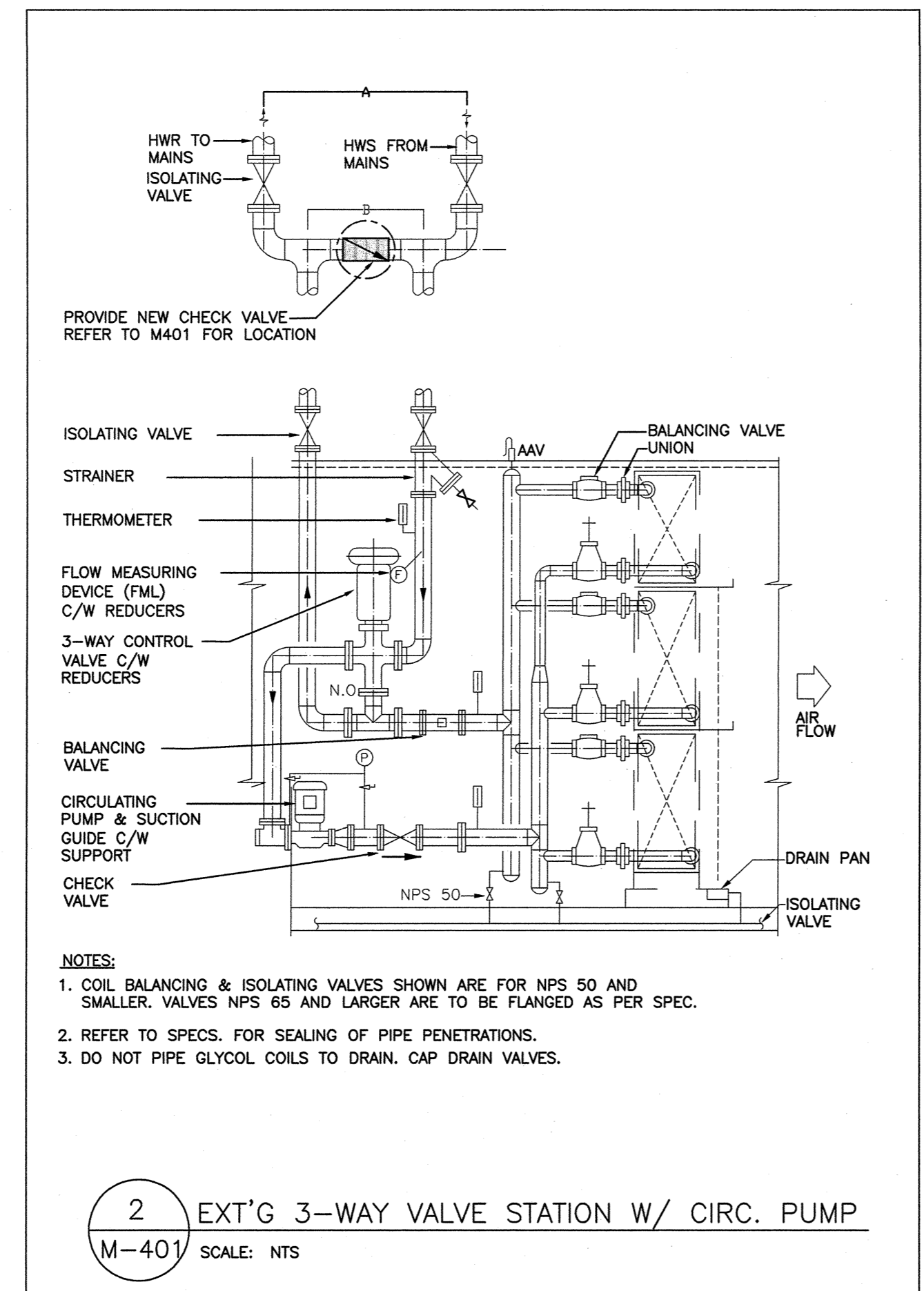
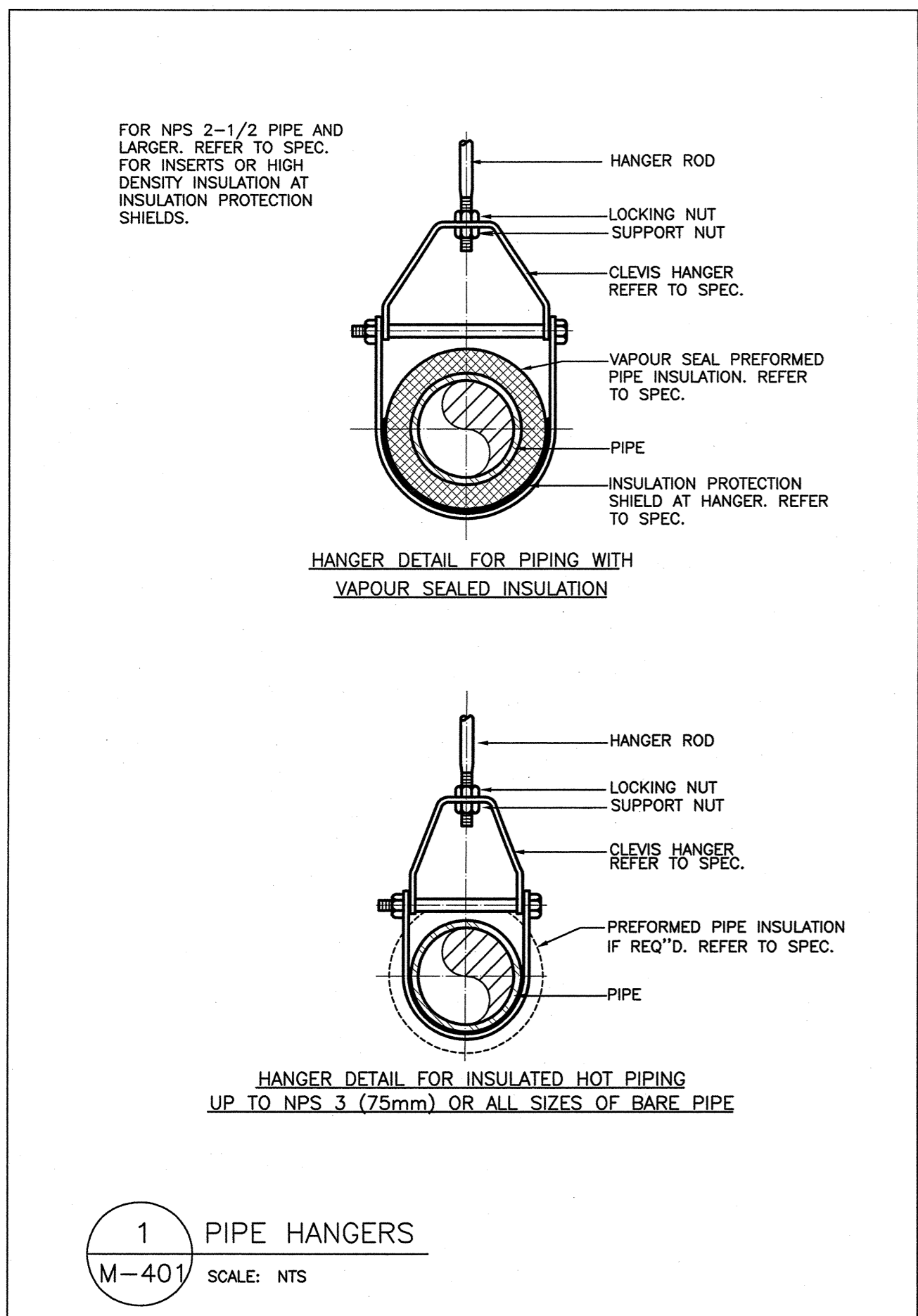
Client/client
CBSA (CANADA BORDER SERVICES AGENCY)

Project title/Titre du projet
HUNTINGDON, BC LAND BORDER FACILITY

Consultant Signature Box Only
Designed by/Concept par
KZ/SV
Drawn by/Designé par
FE/KZ
PWSC Project Manager/Administrateur de Projets TPSGC
JERRY CHEN
Project Regional Manager, Architectural and Engineering Services
Gestionnaire régionale Services d'architectural et de génie TPSGC
PHILIP FUNG *AC/FJG*

Drawing title/Titre du dessin
MECHANICAL DETAILS

Project No./No. du projet #R.078416.001	Sheet/Feuille M-401 9 OF 10	Revision no./ La Révision no. 3
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EXISTING AIR HANDLING UNIT SCHEDULE														
UNIT NO.	NAME	SERVICE	CFM (L/S)	AIR ESP PA (INCH)	MODEL	FLA	MOTOR KW (HP)	VOLTS	PHASE	TYPE	COOLING CAP KW (MBH)	HEATING INPUT KW (MBH)	MANUFACTURER	NOTES
AHU-1	SUPPLY FAN	HVAC SYSTEM AT L1 OF ITF	10600 (3215)	-	-		7.5 (10)	575	3	INDOOR UNIT	75.3 (257)	125 (426)		1
	RETURN FAN		6520 (3066)	-	-		1.5 (2)	208	3	INDOOR UNIT		---		
AHU-2	SUPPLY FAN	HVAC SYSTEM AT L2 OF ITF	5900 (2767)	-	-		7.5 (10)	575	3	INDOOR UNIT	41 (140)	53.4 (182)		1
	RETURN FAN		4010 (1886)	-	-		0.75 (1)	208	3	INDOOR UNIT		---		
AHU-3	SUPPLY FAN	HVAC SYSTEM AT L2 OF CTF	5150 (2421)	-	-		7.5 (10)	575	3	INDOOR UNIT	33.4 (114)	63 (215)		1
	RETURN FAN		3280 (1542)	-	-		0.75 (1)	208	3	INDOOR UNIT		---		

NOTES:
1. EXISTING AIR HANDLING UNIT TO REMAIN IN SERVICE.

NEW PUMP SCHEDULE												
UNIT NO.	SERVICE	MAKE	MODEL	TYPE	FLOW RATE L/S (GPM)	HEAD PRESSURE M (FT)	ELECTRICAL V/PH/Hz	POWER Watts (HP)	SPEED (RPM)	NOTES		
P-11	PRIMARY HWS CIRCULATION PUMP	ARMSTRONG	4380 1506-003.0		3.4 (54)	15.2 (50)	208/3/60	2237 (3)		1,2,4,5,6,7,8		
P-12	PRIMARY HWS CIRCULATION PUMP	ARMSTRONG	4380 1506-003.0		3.4 (54)	15.2 (50)	208/3/60	2237 (3)		1,2,4,5,6,7,8		
P-13	AHU-1 HWS PUMP	ARMSTRONG	E12.2 CI		1.26 (20)	12.2 (50)	115/1/60	298 (0.4)		2,4,6,7,8		
P-14	AHU-2 HWS PUMP	ARMSTRONG	E12.2 CI		0.83 (10)	12.2 (50)	115/1/60	298 (0.4)		2,4,6,7,8		
P-15	SECONDARY LOOP HWS CIRCULATION PUMP	ARMSTRONG	4380 1506-003.0		3.4 (54)	21.3 (70)	208/3/60	2237 (3)		1,2,4,5,6,7,8		
P-16	SECONDARY LOOP HWS CIRCULATION PUMP	ARMSTRONG	4380 1506-003.0		3.4 (54)	21.3 (70)	208/3/60	2237 (3)		1,2,4,5,6,7,8		
P-C1	PRIMARY HWS CIRCULATION PUMP	ARMSTRONG	4380 1506-003.0		3.4 (54)	15.2 (50)	208/3/60	2237 (3)		1,2,4,5,6,7,8		
P-C2	PRIMARY HWS CIRCULATION PUMP	ARMSTRONG	4380 1506-003.0		3.4 (54)	15.2 (50)	208/3/60	2237 (3)		1,2,4,5,6,7,8		
P-C3	AHU-3 HWS PUMP	ARMSTRONG	E12.2 CI		0.83 (10)	12.2 (50)	115/1/60	298 (0.4)		2,4,6,7,8		
P-C4	SECONDARY LOOP HWS CIRCULATION PUMP	ARMSTRONG	4380 1506-003.0		3.4 (54)	21.3 (70)	208/3/60	2237 (3)		1,2,4,5,6,7,8		
P-C5	SECONDARY LOOP HWS CIRCULATION PUMP	ARMSTRONG	4380 1506-003.0		3.4 (54)	21.3 (70)	208/3/60	2237 (3)		1,2,4,5,6,7,8		

NOTES:
1. W/ VFD CONTROL PANEL.
2. REFER TO MECHANICAL SPEC. FOR DETAIL INFORMATION.
3. TO BE PROVIDED BY THE BOILER'S MANUFACTURER.
4. TO BE COMPLIED WITH ASHRAE 90.1-2010 REQUIREMENTS.
5. PROVIDE FLO-TREX VALVE AND SUCTION GUIDE TO MATCH.
6. PROVIDE BALANCING VALVE.
7. MAX. WATER TEMPERATURE IS 180 F.
8. MAX. WATER PRESSURE IS 150 PSI.
9. TO BE SUITABLE FOR DOMESTIC HOT WATER SYSTEM.

NEW BOILER SCHEDULE														
UNIT NO.	SERVICE	MAKE	MODEL	FUEL	HEATING INPUT KW (MBH)	HEATING OUTPUT KW (MBH)	ELECTRICAL V/PH/Hz	BOILER WATER SIDE P.D. M (FT)	SUPPLY TEMP C (F)	RETURN TEMP C (F)	EFF. (%)	FLUE OUTLET DIAMETER	EQUALS	NOTES
B-11/B-12	HEATING	RBI	IB1000	NATURAL GAS	293 (1000)	278 (950)	115/1/60	6 (20)	88.3 (155)	48.8 (120)	95%	150#	SEE SPEC	1,2,3,4,5,6,7
B-C1/B-C2	HEATING	RBI	IB1000	NATURAL GAS	293 (1000)	278 (950)	115/1/60	6 (20)	88.3 (155)	48.8 (120)	95%	150#	SEE SPEC	1,2,3,4,5,6,7

NOTES:
1. C/W DURABLE S.S. HEAT EXCHANGER.
2. W/ DDC CONTROL SYSTEM AND BACNET INTERFACE.
3. CONDENSING BOILER C/W COMMON SUPPLY/RETURN WATER HEADER.
4. W/ NEUTRALIZED BOX FOR CONDENSATE DRAIN OF BOILER.
5. PROVIDE 150# (6") PREFABRICATED S.S. VENT (CLASSIFIED AS TYPE IV FLUTE) FOR EACH BOILERS AS PER REQUIREMENTS OF MANUFACTURER'S MANUAL.
6. C/W 2011 MODULATING GAS BURNER FOR NG.
7. PROVIDE 150# (6") CPVC COMBUSTION AIR DUCT FOR EACH BOILERS AS PER REQUIREMENTS OF MANUFACTURER'S MANUAL.

EXISTING EXPANSION TANK SCHEDULE												
UNIT #	SERVICE	MAKE	MODEL	TANK VOLUME LITRES (GALLONS)	ACCEP. VOLUME LITRES (GALLONS)	HEIGHT MM (INS)	DIAMETER MM (INS)	SYS. CONNECTION MM (INS)	WEIGHT KG (LBS)	NOTES		
ET-11	HW LOOP TO ITF BUILDING	-	-	-	-	-	-	25# (1#)	-	1,2,4		
ET-C1	HW LOOP TO CTF BUILDING	-	-	-	-	-	-	25# (1#)	-	1,2,4		

NOTES : 1. EXPANSION TANK TO C/W SEISMIC ATTACHMENT POINTS.
2. C/W REPLACEABLE BLADDER AND INSPECTION PORT.
3. TO BE SUITABLE FOR DOMESTIC POTABLE WATER SYSTEM.
4. TO BE COMPLIED WITH ASME.
5. SEE PLUMBING DRAWING FOR DETAIL (AS PER MANUFACTURER'S RECOMMENDATION)

EXISTING HYDRONIC RADIANT CEILING PANEL SCHEDULE												
UNIT NO.	SERVICE	MAKE	MODEL	HWS/R TEMP C (F)	QUANTITY	HEATING CAPACITY KW (MBH)	WATER FLOW L/S (GPM)	NOTES				
RPW-1	SEE EXISTING MECH DRAWINGS	-	-	68.3-48.8 (155-120)	-	0.50 (1.7)	0.032 (0.5)	1,2				

NOTES:
1. WITH WALL MOUNTED T-STAT.
2. C/W CEILING MOUNTED KITS FOR INSTALLATION.

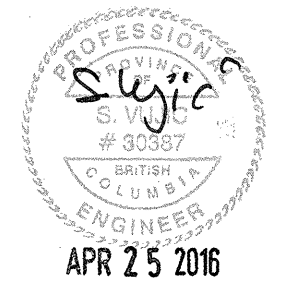
NEW ELECTRIC BASEBOARD HEATER SCHEDULE					
UNIT NO.	SERVICE	MODEL	HEATING CAPACITY	VOLTS/PH/Hz	NOTES
EBB-1	HEATING	BY DIV. 26	1.0 KW	208/1/60	1,2

NOTES:
1. WITH WALL MOUNTED T-STAT.
2. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR EXACT LOCATION WITH QUANTITY OF 10.

HEATING WATER PIPE SIZING (IRON PIPE)					
PIPE SIZE (INCH)	PIPE SIZE (MM)	MAXIMUM FLOW RATE (GPM)	MAXIMUM FLOW RATE (L/S)	NOTES	
3/4	20	3.3	0.21	-	
1	25	6.4	0.40	-	
1 1/4	32	13.2	0.83	-	
1 1/2	40	20	1.26	-	
2	50	39	2.46	-	
2 1/2	65	63	3.97	-	
3	75	112	7.07	-	
4	100	228	14.38	-	

NEW PRIMARY SECONDARY HEADER SCHEDULE						
UNIT NO.	SERVICE	MAKE	MODEL	WATER FLOW L/S (GPM)	PIPE SIZE (MM)	NOTES
PSH-11	PRIMARY SECONDARY HEATING LOOP	CALEFFI	NA549062A	4 (63)	65# (2-1/2")	1,2
PSH-C1	PRIMARY SECONDARY HEATING LOOP	CALEFFI	NA549062A	4 (63)	65# (2-1/2")	1,2

NOTES:
1. WITH AIR AND DIRT SEPARATOR, DRAIN AND INSULATION.
2. WITH ASME AND CRN CERTIFICATION.



Revision/Modification	Description/Description	Date/Date
3	ISSUED FOR TENDER	Apr-25-2016
2	ISSUED FOR 99% REVIEW	Mar-16-2016
1	ISSUED FOR 50% REVIEW	Feb-19-2016

Client/client
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Project title/Titre du projet
HUNTINGDON. BC LAND BORDER FACILITY

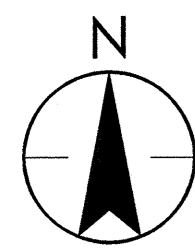
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PWSC Project Manager/Administrateur de Projets TPSC
JERRY CHEN
PWSC Regional Manager, Architectural and Engineering Services / Gestionnaire Régionale, Services d'Architecture et de Génie, Projets
PHILIP FUNG *Acting*

Drawing title/Titre du dessin
MECHANICAL EQUIPMENT SCHEDULE

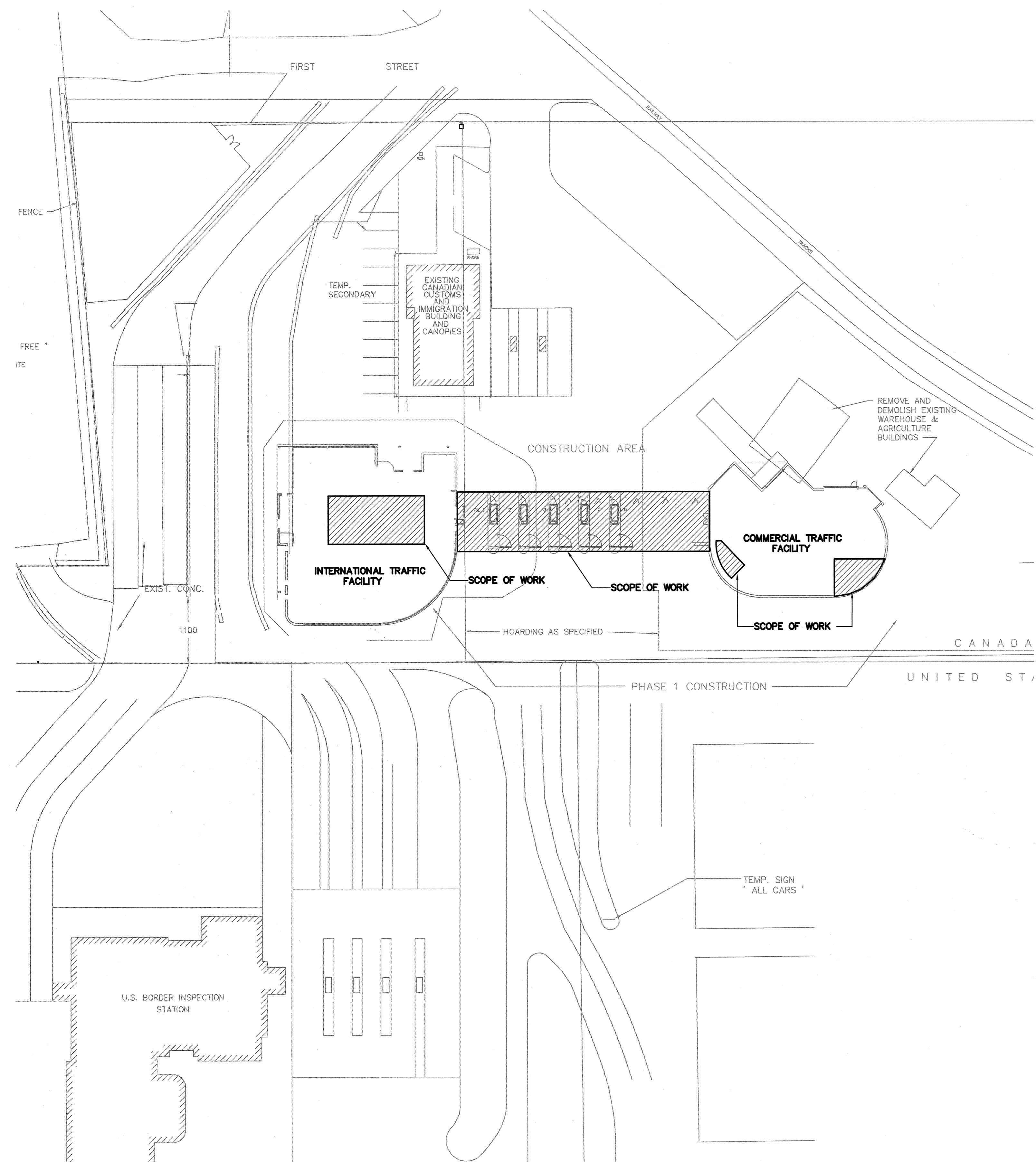
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COMMERCIAL TRAFFIC & INTERNATIONAL TRAFFIC LAND BORDER FACILITY BOILER REPLACEMENT, HUNTINGDON B.C.



1 SITE PLAN
E-001 1:400

POWER PLAN SYMBOLS	
	DUPLEX 5-15R RECEPTACLE
	DUPLEX 5-15R RECEPTACLE C/W INTEGRAL GFCI PROTECTION
	DUPLEX 5-20R RECEPTACLE, T-SLOT
	TWO DUPLEX 5-15R RECEPTABLES
	SPECIAL RECEPTACLE (TYPE AS INDICATED)
	CEILING MOUNTED JUNCTION BOX
	WALL MOUNTED JUNCTION BOX
	POWER PANELBOARD
	MOTOR
	MOTOR c/w DISCONNECT SWITCH
	COMBINATION DISCONNECT AND MAGNETIC MOTOR STARTER
	DISCONNECT SWITCH

GENERAL SYMBOLS	
	NOTE REFERENCE
	EQUIPMENT REFERENCE
	REVISION NUMBER
	WIRING HOME RUN

SCOPE OF WORK	
1.	ELECTRICAL CONTRACTOR (EC) PROVIDES ELECTRICAL CONNECTIONS TO BOILERS AND PUMPS NOT THE EQUIPMENT ITSELF.
2.	REMOVE AND REPLACE PANEL "E2C" FROM 40A 12 CIRCUIT PANEL TO 42CCT 100A PANEL.
3.	PROVIDE NEW 30KVA TRANSFORMER AND 100A 42 CCT PANEL TO SUPPLY 10 BASEBOARD HEATERS ON THE BRIDGE.

ABBREVIATIONS	
EX	EXISTING DEVICE TO REMAIN
RE	REMOVE EXISTING DEVICE
RP	REPLACE EXISTING DEVICE WITH NEW DEVICE
RL	RELOCATE EXISTING DEVICE
ER	EXISTING DEVICE IN RELOCATED POSITION
GF	GROUND FAULT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
TYP	TYPICAL
WP	WEATHERPROOF

DRAWING LIST	
E-001	ELECTRICAL SYMBOLS & DRAWING LIST
E-002	ITF and CTF MECHANICAL ROOM DEMOLITION PLAN
E-003	ITF MECHANICAL ROOM & ITF LEVEL 1 & 2 POWER LAYOUT
E-004	CTF MAIN FLOOR POWER LAYOUT
E-005	MOTORIZED, PANEL SCHEDULES & SINGLE LINE DIAGRAM



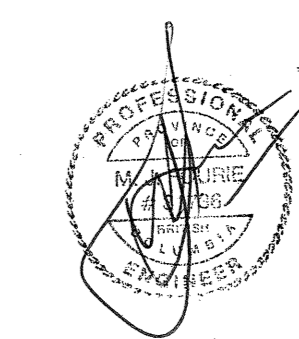
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1	ISSUED FOR 50% REVIEW	FEB.19.2016

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(CANADA BORDER
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LAND BORDER
FACILITY**

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PWSC Project Manager/Administrateur de Projets TPSGC
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Gestionnaire régionale, Services d'architecture et de génie, TPSGC
DAVID FUNG, Acting

Project No./No. du projet	Sheet/Faute	Revision no./ La Révision no.
R.078416.001	E-001 OF	3



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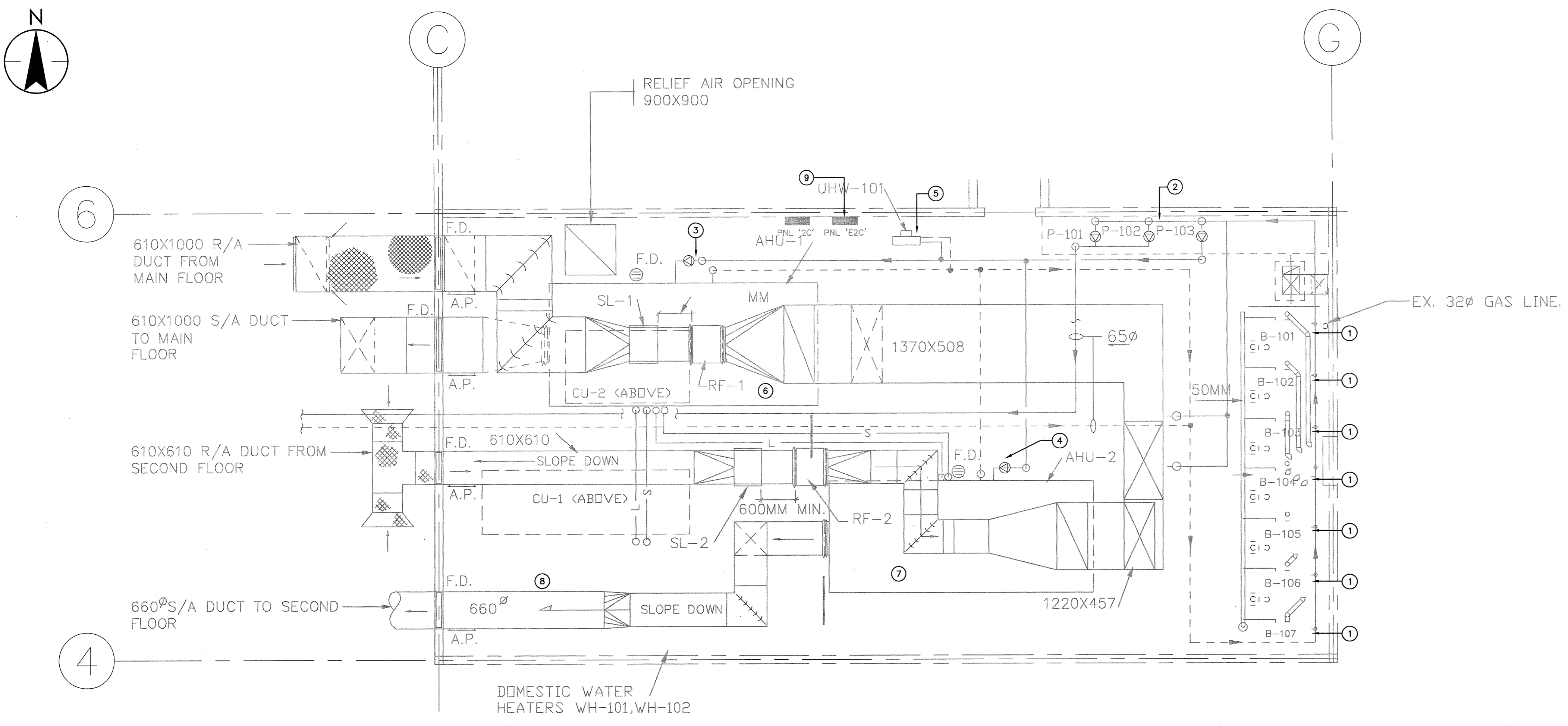


GENERAL DEMOLITION NOTES

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH INTERIOR & MECHANICAL DRAWINGS. REPORT ANY DISCREPANCY TO ENGINEER.
2. CLEAN UP AND REMOVE ALL UNUSED WIRING CABLES AND ASSOCIATED CONNECTIONS. COORDINATE WITH OWNER REPRESENTATIVE AND VERIFY EXISTING CABLES ARE UNUSED PRIOR TO CUTTING AND DISCONNECT CABLES.
3. FIRE STOP FLOOR AND WALL PENETRATION TO COMPLY WITH CODES.
4. REWIRE EXISTING LIGHTING AND ELECTRICAL THAT ARE AFFECTED BY THIS CONSTRUCTION.
5. MECHANICAL CONTRACTOR(MC) WILL REMOVE THE EQUIPMENT, ELECTRICAL CONTRACTOR (EC) IS TO COORDINATE WITH MECHANICAL CONTRACTOR(MC), DISCONNECT ALL THE WIRING AND REMOVE ANY REDUNDANT CONDUIT AND WIRING.

DEMOLITION NOTES

- ① EXISTING HEATING BOILERS WITH ASSOCIATED ELECTRICAL COMPONENTS TO BE REMOVED AND REPLACED WITH NEW BOILERS. REFER TO DRAWING E003 FOR NEW INSTALLATION.
- ② EXISTING CIRCULATION PUMPS C/W ASSOCIATED ELECTRICAL COMPONENTS TO BE REMOVED AND REPLACED WITH NEW BOILERS. REFER TO DRAWING E003 FOR NEW INSTALLATION.
- ③ EXISTING CIRCULATION PUMPS C/W ASSOCIATED ELECTRICAL COMPONENTS TO BE REMOVED AND REPLACED WITH NEW BOILERS. REFER TO DRAWING E003 FOR NEW INSTALLATION.
- ④ EXISTING CIRCULATION PUMP C/W ASSOCIATED ELECTRICAL COMPONENTS TO BE REMOVED AND REPLACED WITH NEW BOILERS. REFER TO DRAWING E003 FOR NEW INSTALLATION.
- ⑤ EXISTING UNIT HEATER TO REMAIN.
- ⑥ EXISTING 65# HWS/HWR MAIN TO REMAIN
- ⑦ EXISTING AHU-1 TO REMAIN
- ⑧ EXISTING AHU-2 TO REMAIN
- ⑨ EXISTING 120/208V, 3# 40A, 12CCT PANEL E2C TO BE REMOVED AND REPLACED WITH NEW PANEL 120/208V, 3# 70A, 42 CCT.



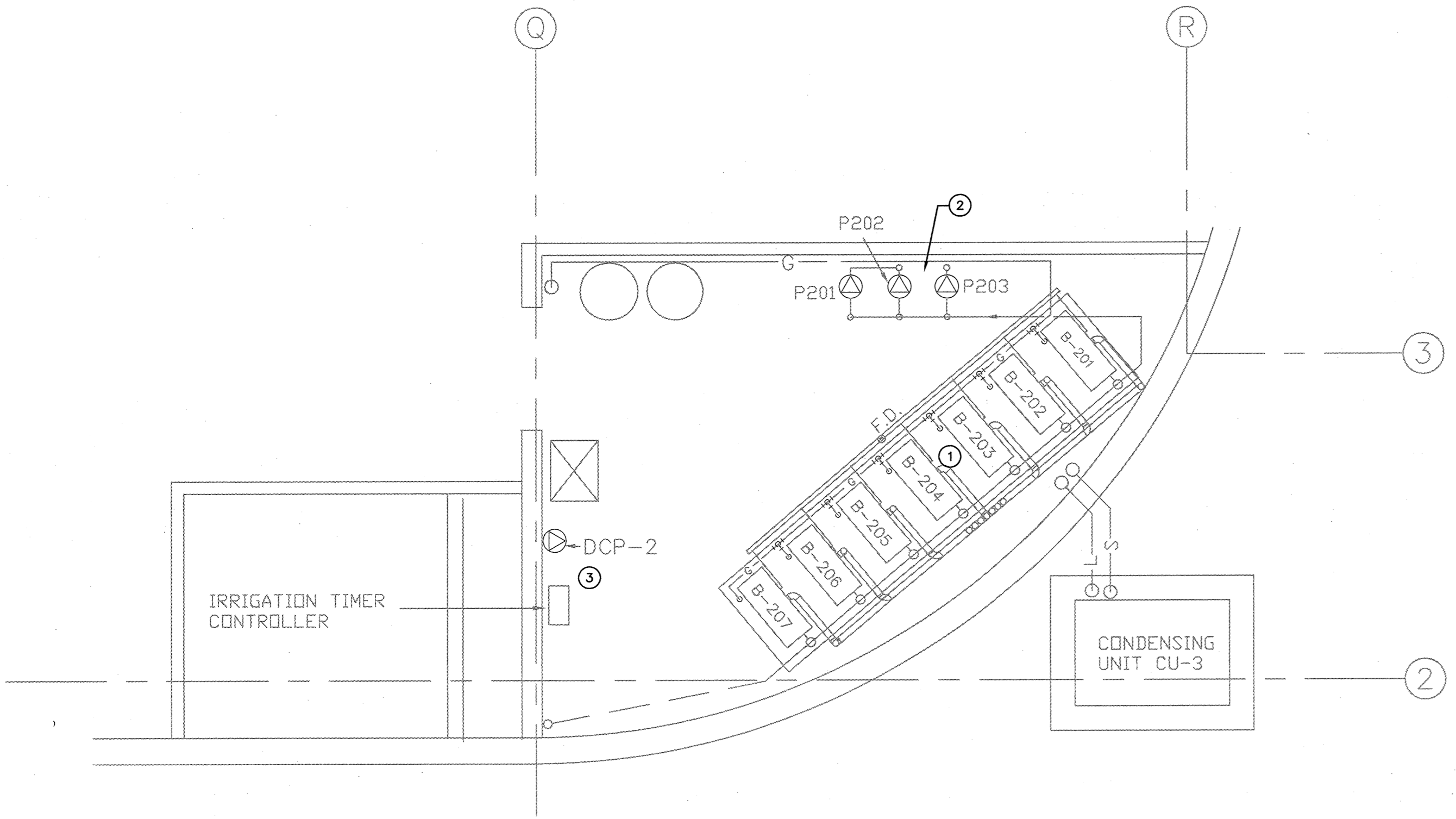
1 ITF MECHANICAL ROOM DEMOLITION PLAN
E002 1:50

GENERAL DEMOLITION NOTES

1. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH INTERIOR & MECHANICAL DRAWINGS. REPORT ANY DISCREPANCY TO ENGINEER.
2. CLEAN UP AND REMOVE ALL UNUSED WIRING CABLES AND ASSOCIATED CONNECTIONS. COORDINATE WITH OWNER REPRESENTATIVE AND VERIFY EXISTING CABLES ARE UNUSED PRIOR TO CUTTING AND DISCONNECT CABLES.
3. FIRE STOP FLOOR AND WALL PENETRATION TO COMPLY WITH CODES.
4. REWIRE EXISTING LIGHTING AND ELECTRICAL THAT ARE AFFECTED BY THIS CONSTRUCTION.
5. MECHANICAL CONTRACTOR(MC) WILL REMOVE THE EQUIPMENT, ELECTRICAL CONTRACTOR (EC) IS TO COORDINATE WITH MECHANICAL CONTRACTOR(MC), DISCONNECT ALL THE WIRING AND REMOVE ANY REDUNDANT CONDUIT AND WIRING.

DEMOLITION NOTES

- ① EXISTING HEATING BOILERS WITH ASSOCIATED ELECTRICAL COMPONENTS TO BE REMOVED AND REPLACED WITH NEW. REFER TO DRAWING E004 FOR NEW INSTALLATION.
- ② EXISTING CIRCULATION PUMPS C/W ASSOCIATED ELECTRICAL COMPONENTS TO BE REMOVED AND REPLACED WITH NEW. REFER TO DRAWING E004 FOR NEW INSTALLATION.
- ③ EXISTING CIRCULATION PUMPS C/W ASSOCIATED ELECTRICAL COMPONENTS TO BE REMOVED AND REPLACED WITH NEW. REFER TO DRAWING E004 FOR NEW INSTALLATION.



2 CTF MECHANICAL ROOM DEMOLITION PLAN
E002 1:50

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CBSA (CANADA BORDER SERVICES AGENCY)

Project title/Titre du projet

HUNTINGDON, BC LAND BORDER FACILITY

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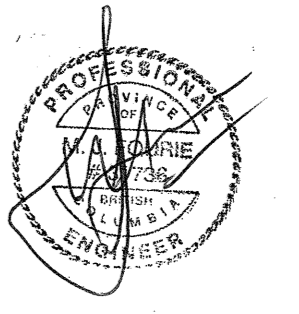
PWGC Project Manager/Administrateur de Projets TPSGC
JERRY CHEN

PWGC, Regional Manager, Architectural and Engineering Services, Gestionnaire régionale, Services d'architecture et de génie, TPSGC
PHILIP FUNG *Attying*

Drawing title/Titre du dessin

ITF & CTF BUILDING DEMOLITION PLAN

Project No./No. du projet R.078416.001	Sheet/Feuille E-002	Revision no./La Révision no. 3
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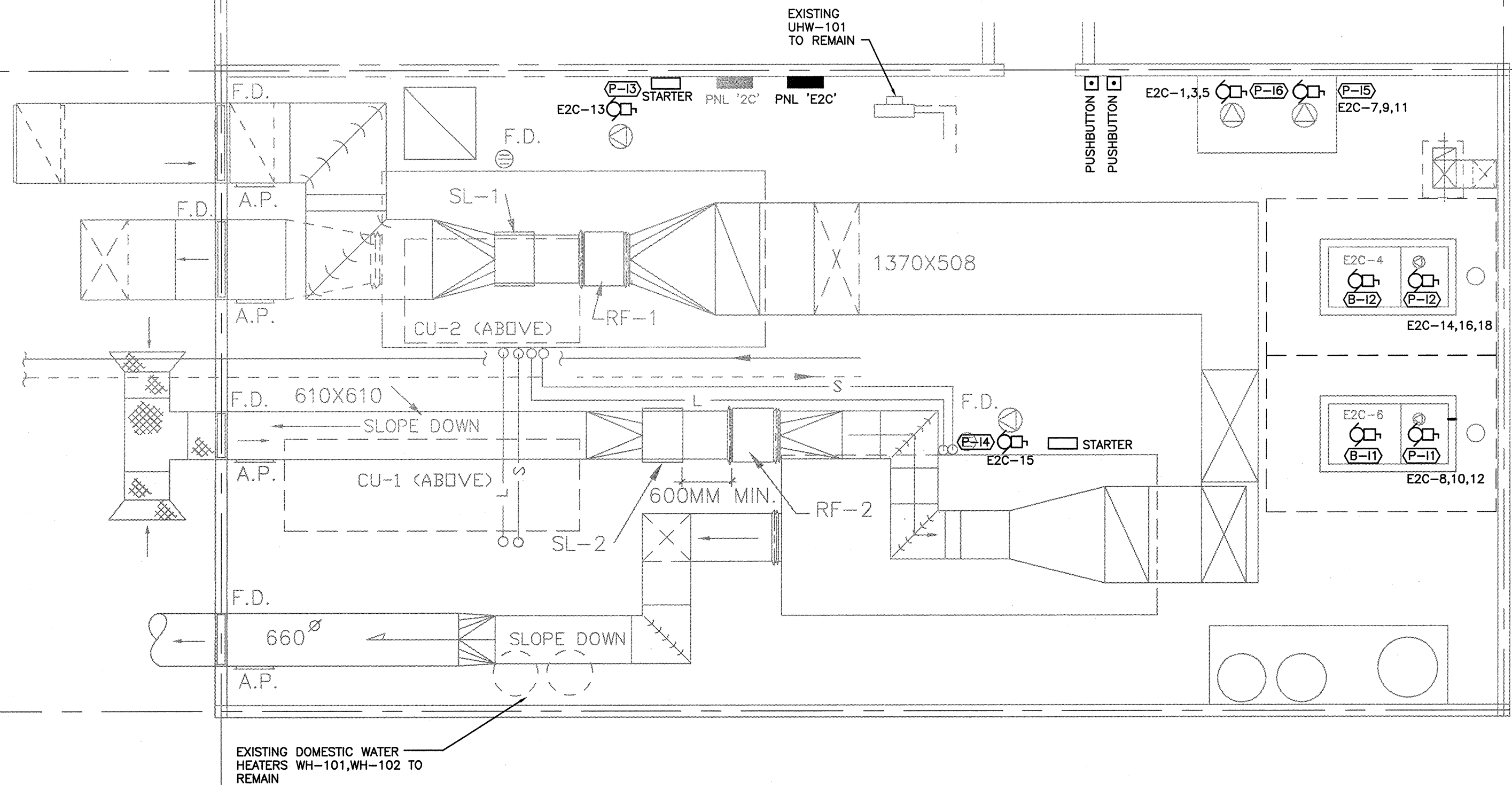
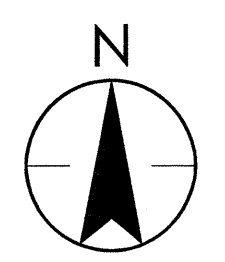
Project title/Titre du projet
HUNTINGDON, BC LAND BORDER FACILITY

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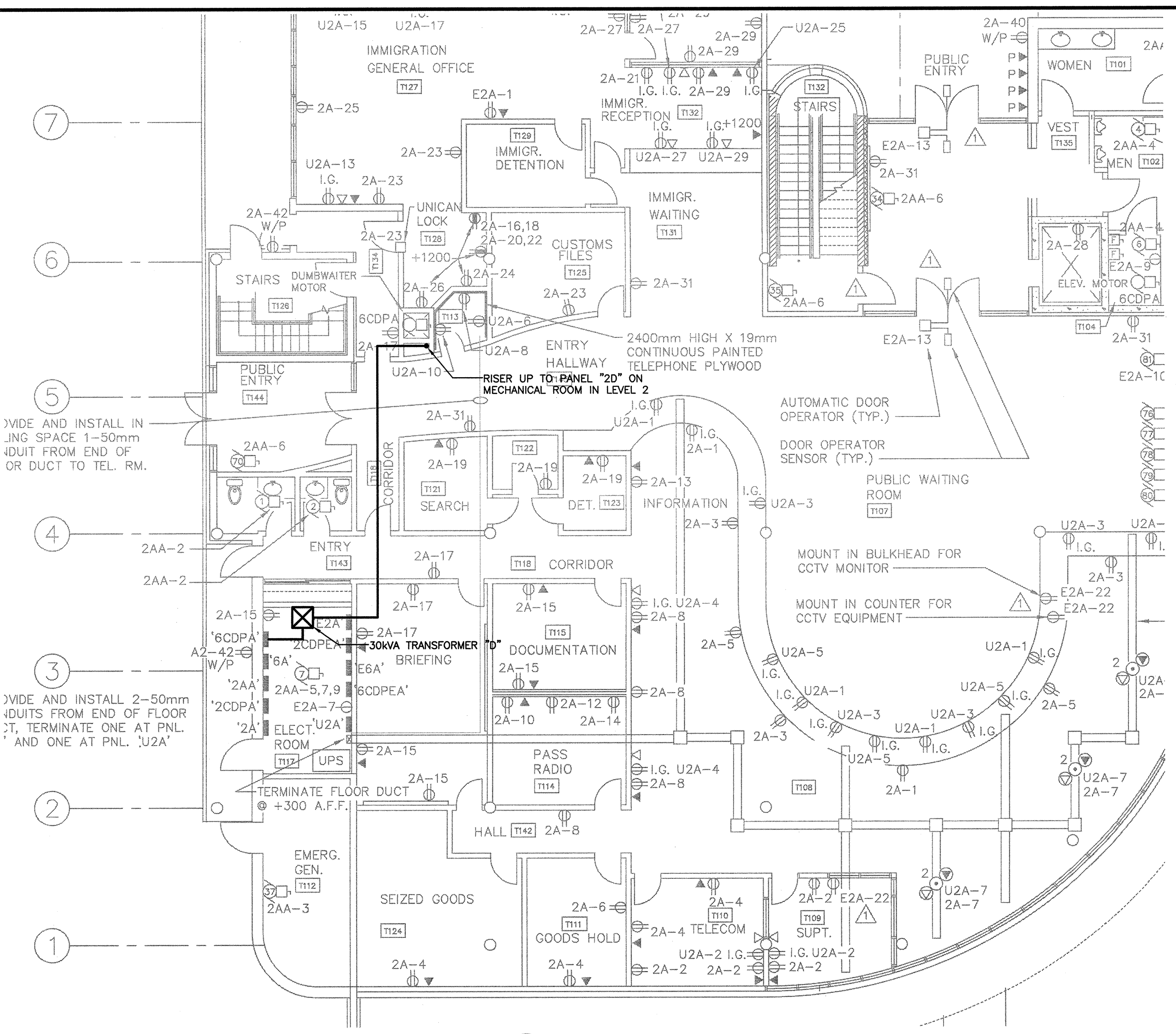
PWGC Project Manager/Administrateur de Projets IPGSC
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Drawing title/Titre du dessin
ITF MECHANICAL ROOM POWER LAYOUT

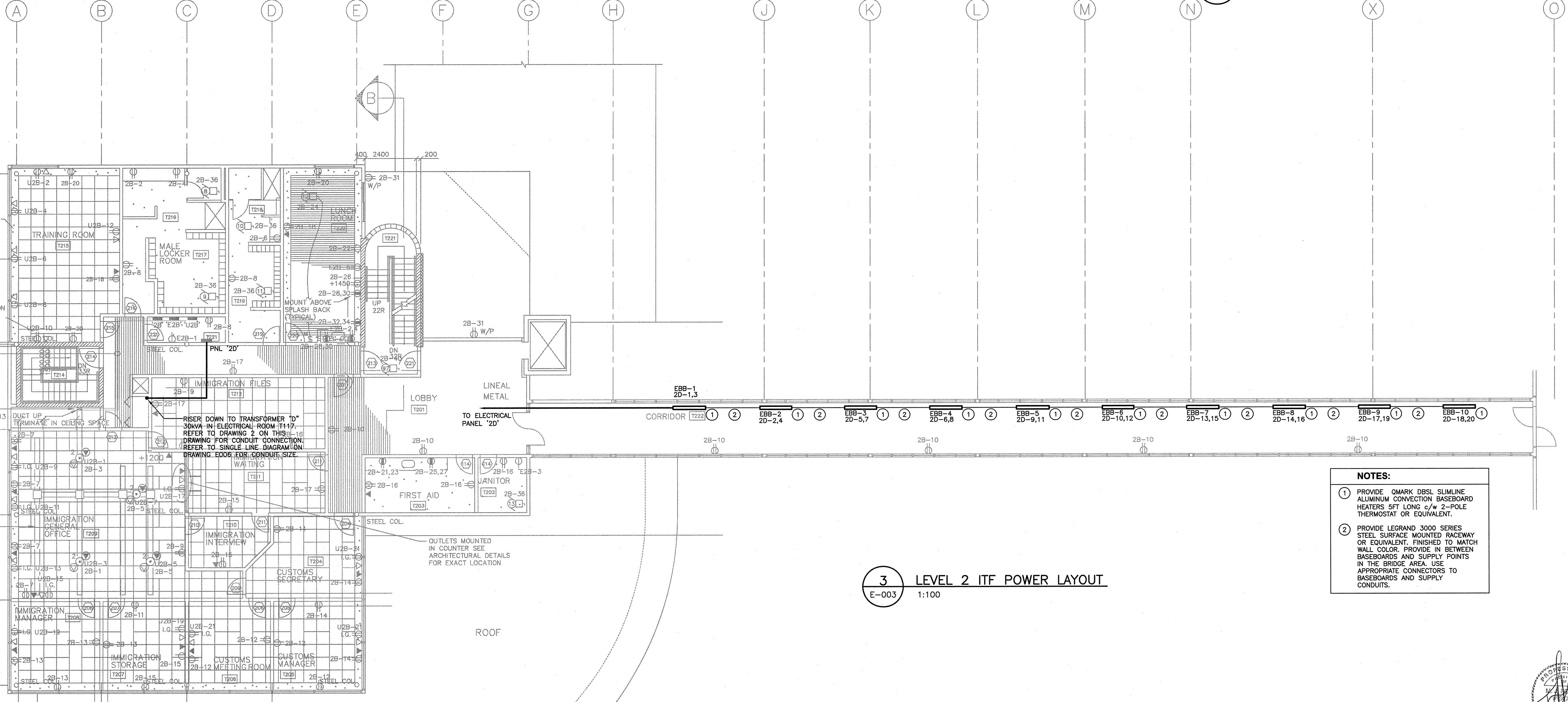
Project No./No. du projet R.078416.001	Sheet/Feuille E-003 OF	Revision no./La Révision no. 3
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1 ITF LEVEL 3 MECHANICAL ROOM POWER LAYOUT
E-003 1:50



2 LEVEL 1 ITF POWER LAYOUT
E-003 1:100



3 LEVEL 2 ITF POWER LAYOUT
E-003 1:100

NOTES:
① PROVIDE QMAR DBSL SLIMLINE ALUMINUM CONVECTION BASEBOARD HEATERS 5FT LONG c/w 2-POLE THERMOSTAT OR EQUIVALENT.
② PROVIDE LEGRAND 3000 SERIES STEEL SURFACE MOUNTED RACEWAY OR EQUIVALENT. FINISHED TO MATCH WALL COLOR. PROVIDE IN BETWEEN BASEBOARDS AND SUPPLY POINTS IN THE BRIDGE AREA. USE APPROPRIATE CONNECTORS TO BASEBOARDS AND SUPPLY CONDUITS.



PWGC - B1 - 70741000



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