

DFO - INSTITUTE OF OCEAN SCIENCES BUILDING

CENTRAL BOILER PLANT AND HEATING SYSTEM UPGRADES

PWGSC PROJECT NUMBER 9R504 - 00

PROJECT DRAWING LIST

SHEET 1 OF 34	M-100	PROJECT DRAWING LIST (COVER SHEET)	SHEET 19 OF 34	M-409	MECHANICAL ROOM 1002 NEW PIPING PLAN AND SECTIONS
SHEET 2 OF 34	MD106	MECHANICAL ROOM 3746 DEMOLITION PLAN	SHEET 20 OF 34	MD410	MECHANICAL ROOM 1212 DEMOLITION PLAN
SHEET 3 OF 34	M-106	MECHANICAL ROOM 3746 NEW PIPING PLAN AND SECTIONS	SHEET 21 OF 34	M-410	MECHANICAL ROOM 1212 NEW PIPING PLAN AND SECTIONS
SHEET 4 OF 34	MD205	MECHANICAL ROOM 3504 DEMOLITION PLAN	SHEET 22 OF 34	M-500	S-10, S-11, S-12, AND S-13 DEMOLITION AND NEW PIPING PLAN
SHEET 5 OF 34	M-205	MECHANICAL ROOM 3504 NEW PIPING PLAN AND SECTIONS	SHEET 23 OF 34	M-501	S-1, S-2, S-3 AND S-4 DEMOLITION AND NEW PIPING PLAN
SHEET 6 OF 34	MD206	MECHANICAL ROOM 2618 DEMOLITION PLAN	SHEET 24 OF 34	M-507	S-5, S-6, AND S-7 DEMOLITION AND NEW PIPING PLAN
SHEET 7 OF 34	M-206	MECHANICAL ROOM 2618 NEW PIPING PLAN AND SECTIONS	SHEET 25 OF 34	MD508	CENTRAL BOILER PLANT DEMOLITION PLAN
SHEET 8 OF 34	MD207	MECHANICAL ROOMS 2626 AND 3609 DEMOLITION PLAN	SHEET 26 OF 34	M-508	CENTRAL BOILER PLANT NEW PIPING PLAN AND SECTIONS
SHEET 9 OF 34	M-207	MECHANICAL ROOMS 2626 AND 3609 NEW PIPING PLAN AND SECTIONS	SHEET 27 OF 34	M-600	MECHANICAL EQUIPMENT SCHEDULES
SHEET 10 OF 34	MD304	MECHANICAL ROOM 1424 DEMOLITION PLAN	SHEET 28 OF 34	E100	EXISTING AND REVISED ELECTRICAL DETAILS MECH ROOMS 3746, 3504, 2618, 3609
SHEET 11 OF 34	M-304	MECHANICAL ROOM 1424 NEW PIPING PLAN AND SECTIONS	SHEET 29 OF 34	E200	EXISTING AND REVISED ELECTRICAL DETAILS MECH ROOMS 1424, PENTHOUSE, 1236
SHEET 12 OF 34	M-321	PENTHOUSE MECHANICAL ROOM DEMOLITION AND NEW PIPING PLAN	SHEET 30 OF 34	E300	EXISTING AND REVISED ELECTRICAL DETAILS MECH ROOMS 1212, 1002, ABOVE WORKSHOPS, ABOVE WATER TUNNEL
SHEET 13 OF 34	M-401	AH-402 AND AH-403 DEMOLITION AND NEW PIPING PLAN	SHEET 31 OF 34	E400	EXISTING AND REVISED ELECTRICAL DRAWINGS MECHANICAL EQUIPMENT ABOVE ELECTRONICS SHOPS
SHEET 14 OF 34	M-402	AH-406 DEMOLITION AND NEW PIPING PLAN	SHEET 32 OF 34	E500	EXISTING AND REVISED ELECTRICAL DRAWINGS MECHANICAL SECOND FLOOR OF WORKSHOPS
SHEET 15 OF 34	M-405	AH-410 AND AH-411 DEMOLITION AND NEW PIPING PLAN	SHEET 33 OF 34	E600	EXISTING AND REVISED ELECTRICAL DRAWINGS MECHANICAL ON FIRST FLOOR OF WORKSHOPS
SHEET 16 OF 34	MD408	MECHANICAL ROOM 1236 DEMOLITION PLAN	SHEET 34 OF 34	E700	EXISTING AND REVISED ELECTRICAL DRAWINGS BOILER ROOM 5202 AND CHILLER ROOM 5203
SHEET 17 OF 34	M-408	MECHANICAL ROOM 1236 NEW PIPING PLAN AND SECTIONS			
SHEET 18 OF 34	MD409	MECHANICAL ROOM 1002 DEMOLITION PLAN			

SEQUENCE OF WORK

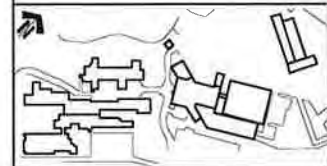
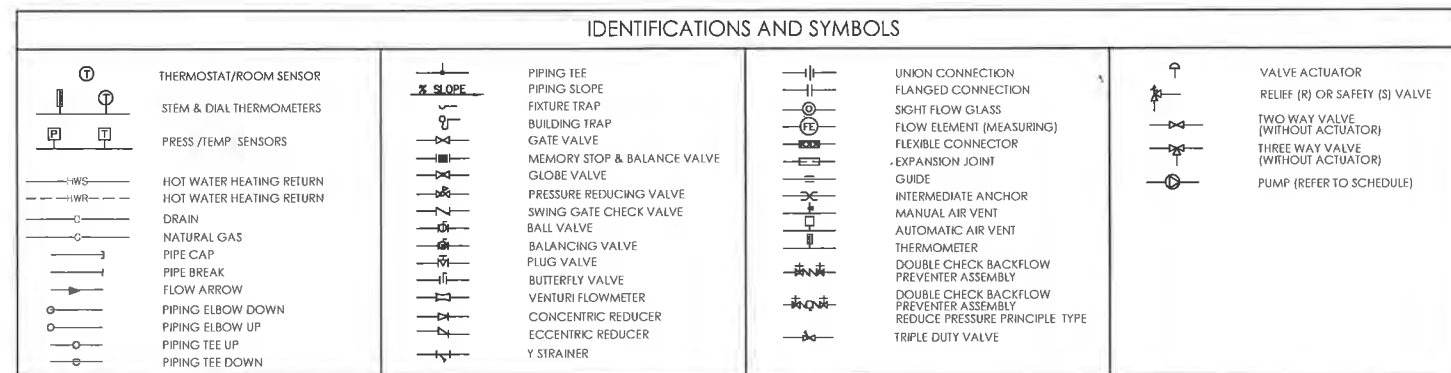
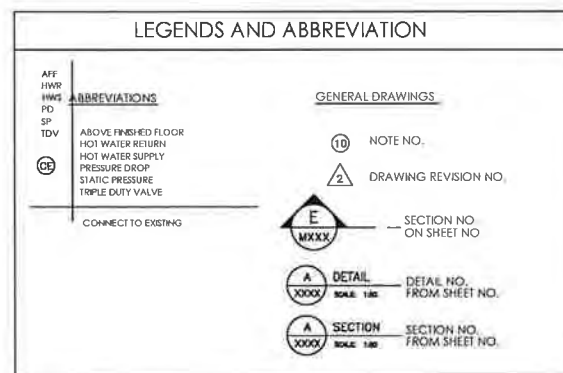
CONSTRUCT WORK IN PHASES AS INDICATED IN THE DRAWINGS AND AS SPECIFIED IN THIS SECTION. THE TIMING OF THE SUPPLY AND APPROVAL OF THE SHOP DRAWINGS FOR MAJOR EQUIPMENT AND SYSTEMS TO BE INSTALLED UNDER THIS PROJECT IS CRITICAL. REFER TO THE DETAILS UNDER THE "DELIVERY DEADLINE" NOTES IN THE EQUIPMENT SCHEDULE DRAWING (M-600) FOR THIS PROJECT.

- PHASE 1: TO BE COMPLETED PRIOR TO MARCH 28, 2016.
 - REMOVE ONE OF THE TWO EXISTING BOILER AS SPECIFIED IN THE CONTRACT DRAWINGS.
 - PURCHASE AND "INSTALL" THE 4 NEW CONDENSING BOILERS IN PLACE OF THE REMOVED BOILER PER THE INTERIM CENTRAL BOILER PLANT DRAWINGS (DRAWING M1508); NOTE THAT "INSTALLATION" IN THIS PHASE WILL NOT INCLUDE CONNECTION TO EXISTING HYDRONIC HOT WATER SYSTEM.
 - COMPLETE THE PURCHASE OF ALL EQUIPMENT AS INDICATED IN THE CONTRACT DOCUMENTS.
 - INSTALL THE VFD AND NEW POWER SUPPLIES FOR EACH PUMP MOTOR IN SEQUENCE, AND AS REQUIRED BY THE CONTRACT DOCUMENTS.
 - BEGIN WORK ON THE UPGRADES OF THE 45 SECONDARY ZONE UPGRADES AS INDICATED IN THE CONTRACT DOCUMENTS.
- PHASE 2:
 - CONTINUE AND COMPLETE ALL REMAINING WORK ASSOCIATED WITH THE UPGRADES OF THE 45 SECONDARY ZONE UPGRADES AS INDICATED IN THE CONTRACT DOCUMENTS.
 - CONTINUE ALL REMAINING WORK ASSOCIATED WITH THE INSTALLATION OF THE 4 NEW CONDENSING BOILERS IN PLACE OF THE REMOVED BOILER PER THE INTERIM CENTRAL BOILER PLANT DRAWINGS (DRAWING M-508).
- PHASE 3:
 - MAKE ALL PREPARATION NECESSARY TO MINIMIZE SYSTEM DOWN-TIME DURING SYSTEM TRANSITION FROM EXISTING BOILER TO THE NEW CONDENSING BOILER SYSTEM.
 - PERFORM AND COMPLETE SYSTEM TRANSITION.
 - COMPLETE SYSTEM COMMISSIONING AND THE TESTING AND BALANCING (TAB) OF THE HYDRONIC HOT WATER SYSTEM AS REQUIRED BY THE CONTRACT DOCUMENTS.
 - SUBSTANTIAL COMPLETION AND PROJECT CLOSEOUT.

SEPARATE PRICE SUB-SCOPES

PROVIDE SEPARATE PRICE QUOTES FOR THE FOLLOWING "SUB-SCOPES" OF THIS PROJECT:

- SUB-SCOPE 1: PROVIDE AND INSTALL 4 BOILERS PER THE APPLICABLE CONTRACT DRAWINGS AND SPECIFICATIONS SECTIONS; SPECIFICALLY DRAWINGS M-508, M-509, M-600 AND E700. PROVIDE A SEPARATE/DISTINCT LINE ITEM FOR THE CONTROLS PORTION OF THIS WORK.
- SUB-SCOPE 2: PROVIDE AND INSTALL EXPANSION TANK(S) PER THE APPLICABLE CONTRACT DRAWINGS AND SPECIFICATIONS SECTIONS; SPECIFICALLY PER THE EQUIPMENT SCHEDULE OPTIONS; (FOR ALL OPTIONS, INCLUDE PIPING TO CONNECT TO A COMMON 32mm (1- 1/4") SYSTEM CONNECTION POINT)
 - OPTION 1: SINGLE EXPANSION TANK (ACCEPTANCE VOLUME = 5,000 LITERS [1,320 GAL])
 - OPTION 2: DUAL EXPANSION TANKS (ACCEPTANCE VOLUME = 2,500 LITERS [660 GALS] EACH)
 - OPTION 3: 3 x EXPANSION TANKS (ACCEPTANCE VOLUME = 1,400 LITERS [370 GALS] EACH)
- SUB-SCOPE 3: UPGRADE OF SINGLE SECONDARY LOOP TO A 2-WAY VALVE VARIABLE FLOW SYSTEM PER CONTRACT DOCUMENTS; SPECIFICALLY:
 - ALL WORK ASSOCIATED WITH THE SECONDARY LOOP ASSOCIATED WITH HWV-104 (SERVING AH-102; HC-102) IN DRAWINGS MD106 AND M-106.
 - ALL WORK ASSOCIATED WITH THE SECONDARY LOOP ASSOCIATED WITH HWV-105 (SERVING RADIATOR ZONES) IN DRAWINGS MD-106 AND M-106.
 - PROVIDE A SEPARATE/DISTINCT LINE ITEM FOR THE CONTROLS PORTION OF THIS WORK



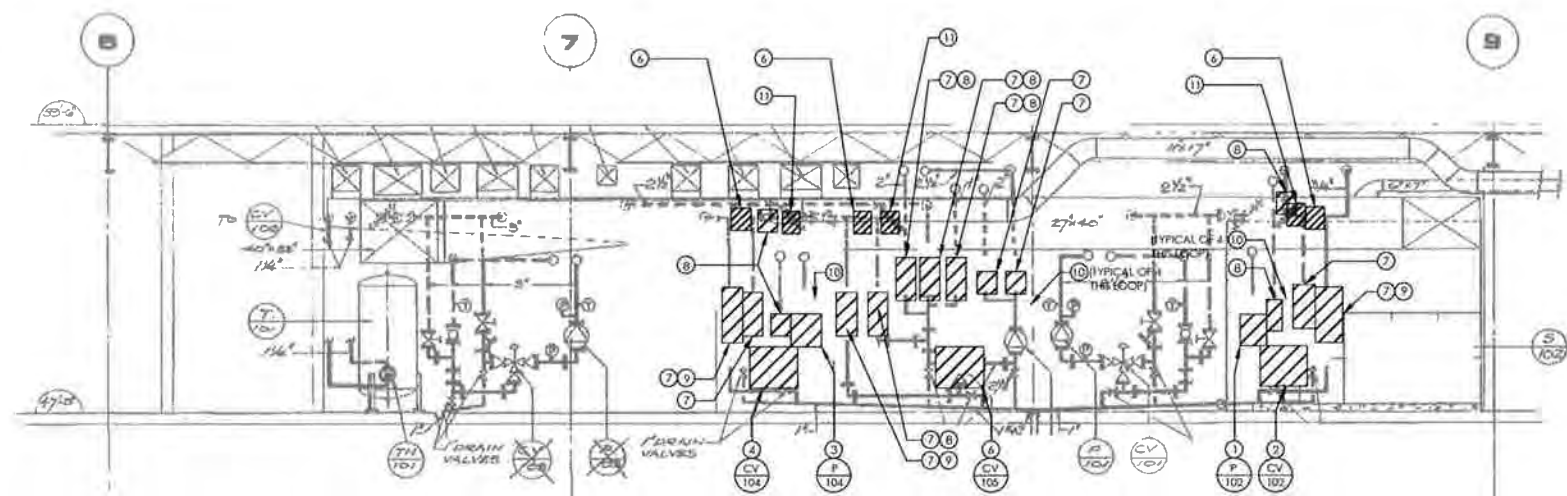
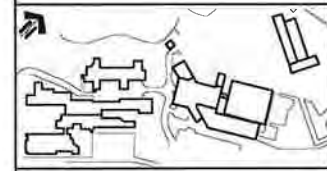
ISSUED FOR TENDER	21/12/15
DEPARTMENT OF FISHERIES AND OCEANS	

Project title/Titre du projet
9860 W SAANICH ROAD
SIDNEY BC
INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

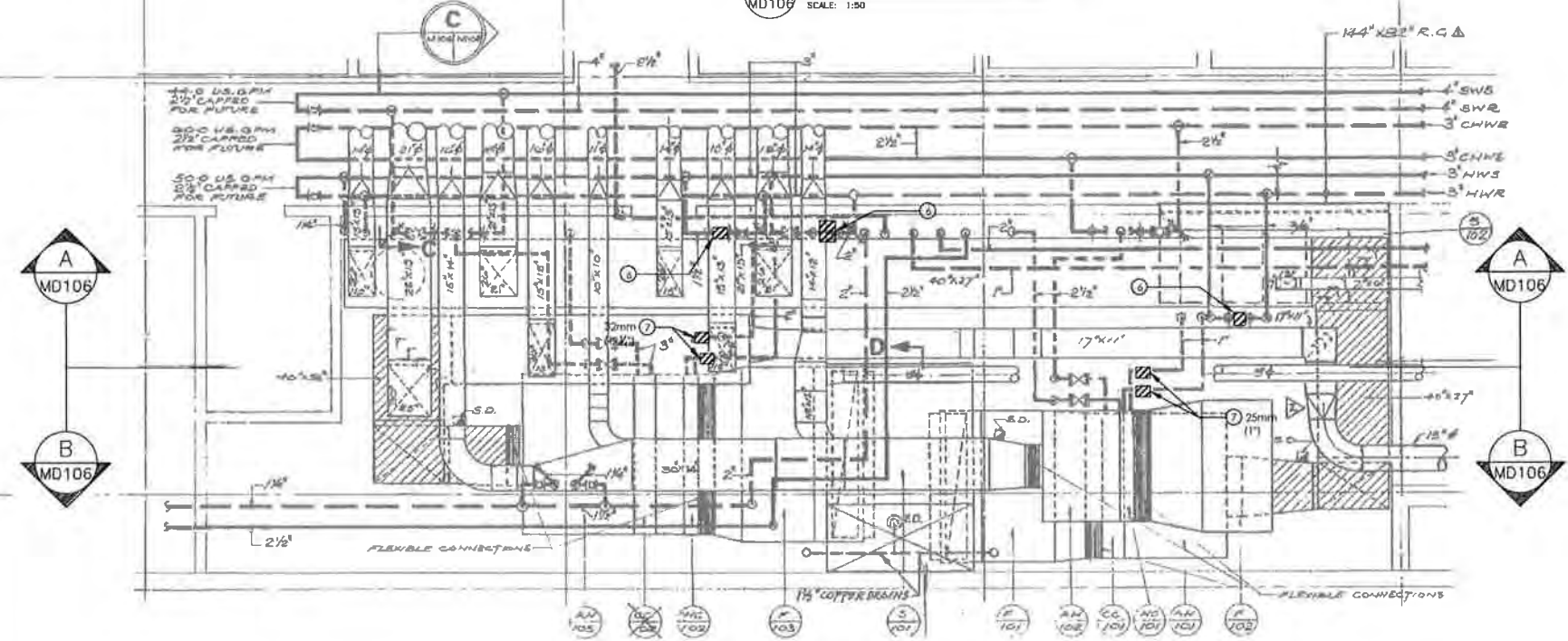
Designer/Concepteur: JAE RYU, P.ENG, P.E.
 Drawn by/Dessiné par: JAE RYU, P.ENG, P.E.
 Project Manager/Administrateur de projet: FRANCOIS LEDOUX
 Signature Manager/Administrateur des Travaux: FRANCOIS LEDOUX
 Signature Régional, Services d'ingénierie et de génie: FRANCOIS LEDOUX

Project No./No. de projet: PWGSC #: 9R504-00	Sheet/Feuille: M100	Revision no./La Révision: 00
STANTEC #: 115613307	01 OF 34	

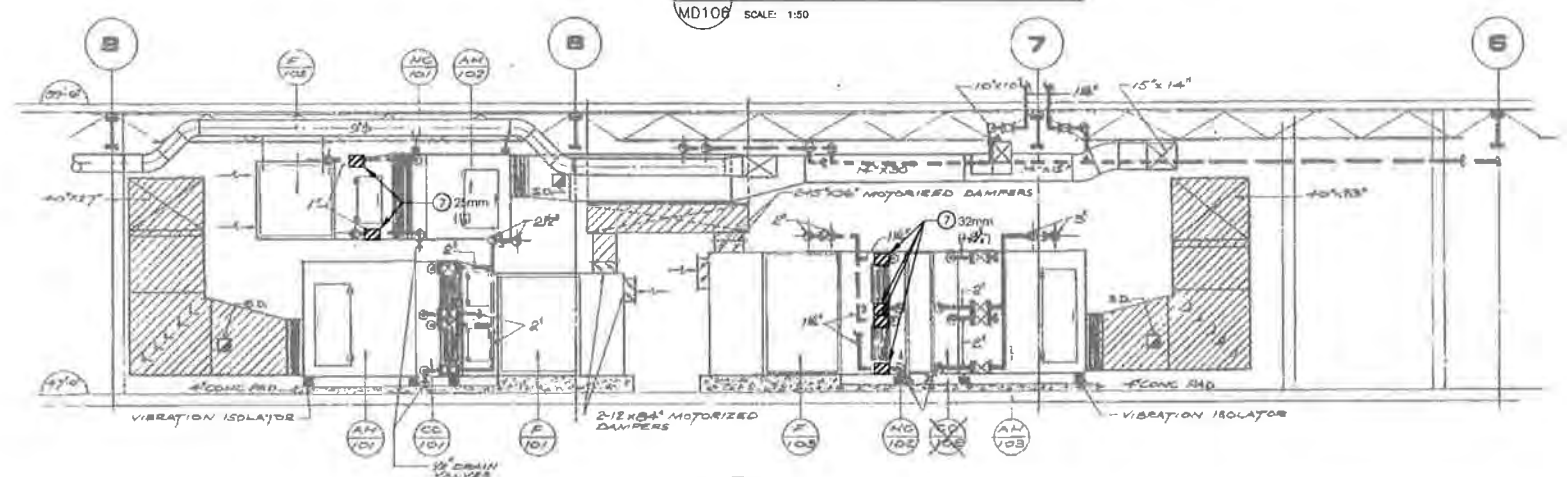




A MECHANICAL RM 3746 SECTION
 MD106 SCALE: 1:50



1 MECHANICAL RM 3746 PARTIAL PLAN
 MD106 SCALE: 1:50



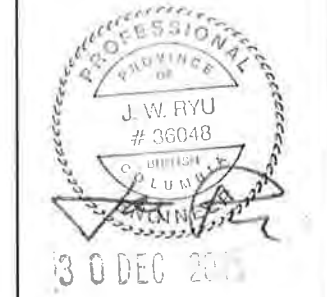
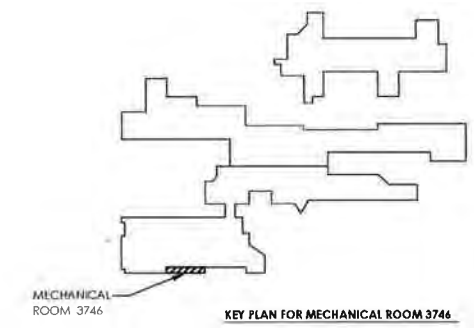
B MECHANICAL RM 3746 SECTION
 MD106 SCALE: 1:50

GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:

- 1 GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 "COMMON WORK RESULTS FOR MECHANICAL"
- 2 DEMOLITION WASTE:
 - 2.1 ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REBURNISHMENT AND REUSE OR RECYCLING
 - 2.2 HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501

SHEET NOTES:

- ① REMOVE EXISTING HW CIRCULATION PUMP (P-102) SERVING AH-102; HC-101
- ② REMOVE EXISTING 19mm (3/4") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-102) SERVING AH-102; HC-101. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- ③ REMOVE EXISTING HW CIRCULATION PUMP (P-104) SERVING AH-103; HC-102
- ④ REMOVE EXISTING 32mm (1-1/4") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-104) SERVING AH-103; HC-102. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- ⑤ REMOVE EXISTING 30mm (1 1/8") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-105) SERVING RADIATOR ZONES. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPING ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- ⑥ REMOVE AND CAP ISOLATION / COMMON PIPE SEGMENT
- ⑦ REMOVE EXISTING GATE VALVES
- ⑧ REMOVE BALANCING VALVES
- ⑨ REMOVE Y-STRAINER
- ⑩ REMOVE ALL TEMPERATURE AND PRESSURE GAUGES
- ⑪ REMOVE ALL ELBOW TYPE PRESSURE TAPS, REPLACE WITH NEW ELBOWS



0	ISSUED FOR TENDER	21/12/15
1	DESCRIPTION / Description	DATE / Date
Client / Client		

DEPARTMENT OF FISHERIES AND OCEANS

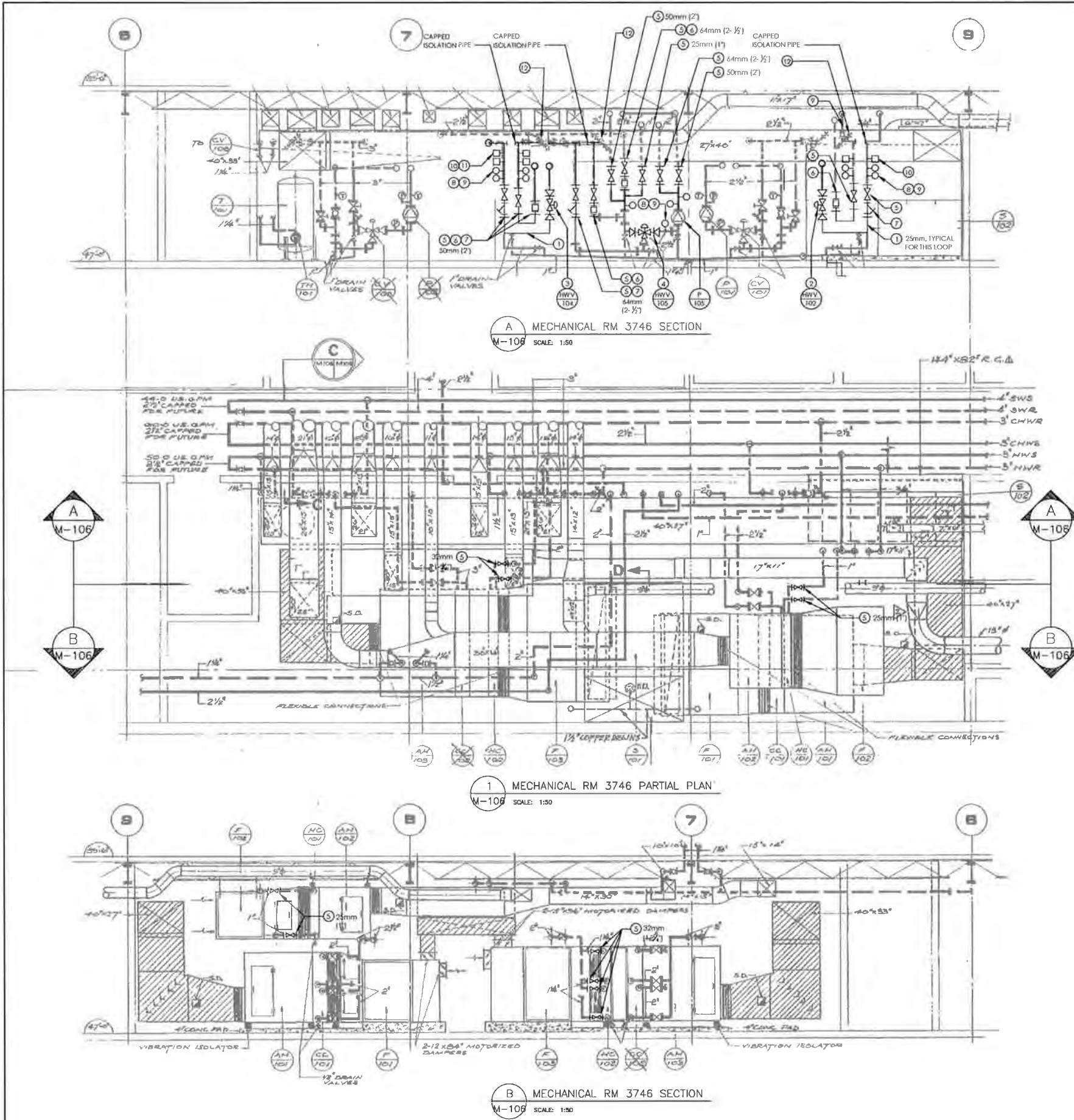
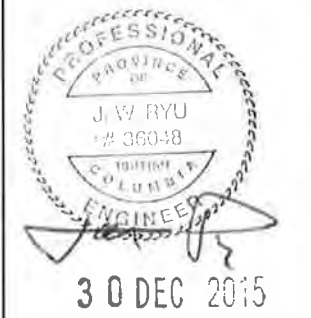
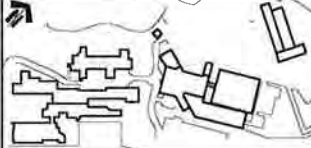
Project No./Nbre de projet
**9850 W SAANICH ROAD
 SIDNEY BC**
INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Consultant Signature / Signature
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 Drawn by/Dessiné par: JAE RYU, P.ENG, P.E.
 QCQC Project Manager/Administrateur de Projets / QCQC
 FRANCOIS LEDOUX
 Regional Manager, Mechanical and Engineering Services
 Directeur régional, Services d'architecture et de génie, TPSC

Drawing Title/Titre du dessin
**MECHANICAL ROOM
 3746 DEMOLITION PLAN**

Project No./Nbre de projet PWSC # 9R504-00 STANEC # 115615307	Sheet/Feuille MD106 02 OF 34	Revision no./Nbre de la révision 00
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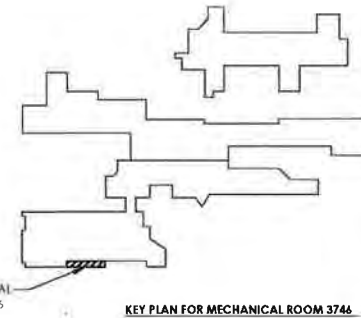


GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

- 1 GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
- 2 DRAIN LINES:
 - 2.1 MAINTAIN EXISTING DRAIN LINES FOR THE HYDRONIC LOW POINTS TO THE EXTENT POSSIBLE WHEN DRAIN LINES NEED TO BE ALTERED. PROVIDE LINES OF EQUIVALENT SIZE AND PROPERLY ROUTE TO NEAREST FLOOR DRAIN
 - 2.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
- 3 HYDRONIC PIPES, FITTINGS, COMPONENTS, AND CONTROLS:
 - 3.1 PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES, AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 232116 - "HYDRONIC SYSTEM STEEL" AND 32114 - "HYDRONIC SPECIALTIES"
 - 3.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
 - 3.3 PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4 PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DIGITAL CONTROL SYSTEM AS SHOWN AND:
 - 3.4.1 CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AI POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS
 - 3.5 PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER:
 - 3.5.1 EQUIPMENT SPECIFICATIONS
 - 3.5.2 SPEC SECT 32114 - "HYDRONIC SPECIALTIES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AI POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

SHEET NOTES:

- ① PROVIDE NEW PIPE SECTIONS AND FITTINGS AS SHOWN
- ② PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-102) SERVING AH-102; HC-101
- ③ PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-104) SERVING AH-103; HC-102
- ④ PROVIDE NEW 3-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-105) SERVING RADIATOR ZONES
- ⑤ PROVIDE NEW GATE VALVES
- ⑥ PROVIDE NEW BALANCING VALVE
- ⑦ PROVIDE NEW Y-STRAINER
- ⑧ PROVIDE NEW TEMPERATURE GAUGES (2 EACH)
- ⑨ PROVIDE NEW PRESSURE GAUGES (2 EACH)
- ⑩ PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR (2 EACH)
- ⑪ PROVIDE NEW DDC ANALOG PRESSURE SENSOR (2 EACH)
- ⑫ PROVIDE NEW ELBOWS IN PLACE OF EXISTING PRESSURE TAPS (TYPICAL FOR ALL SECONDARY LOOPS)



ISSUED FOR TENDER	01/12/15
Checked/Revised/Description	Date/Description

DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet:
9880 W SAANICH ROAD SIDNEY BC

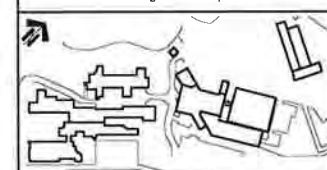
INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Consultant/Signature de l'ingénieur:
 Design/Concept par: JAE RYU, P.ENG., P.E.
 Drawn by/Dessiné par: JAE RYU, P.ENG., P.E.
 Project Manager/Administrateur de projet: FRANCIS LEDOUX
 Regional Director/Dirigeant régional: [Name Redacted]

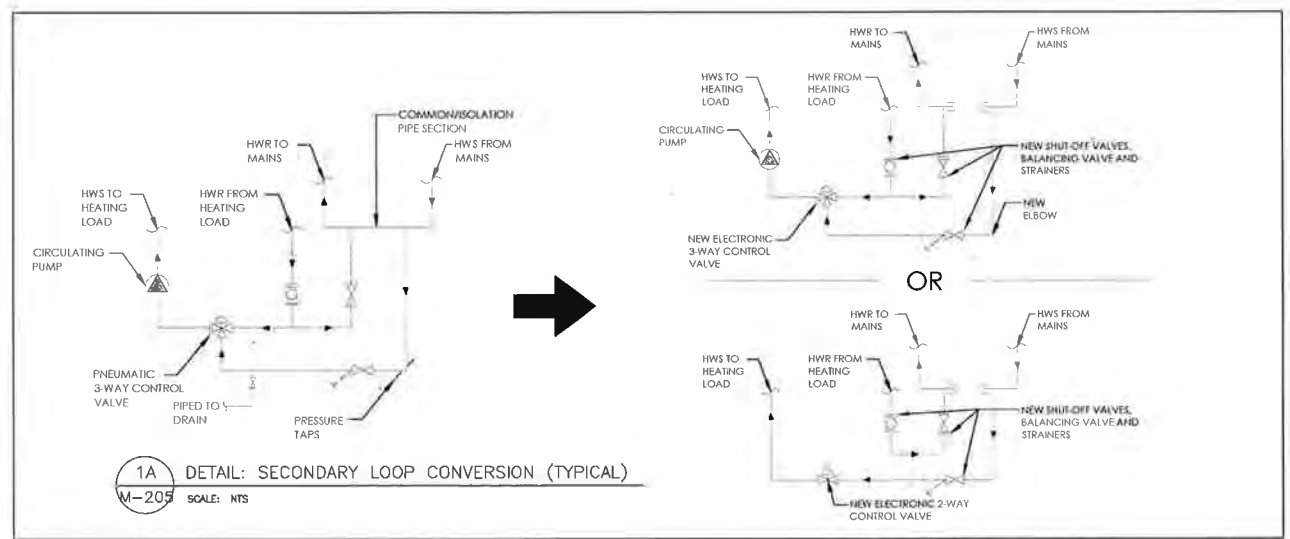
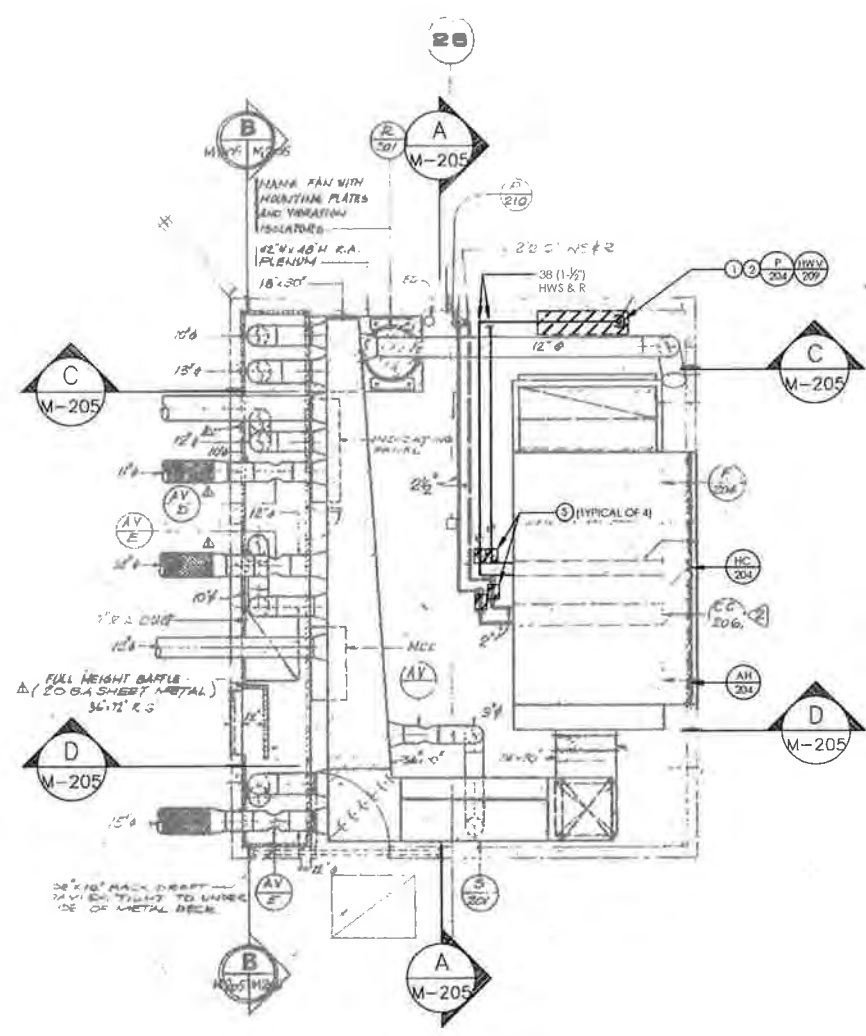
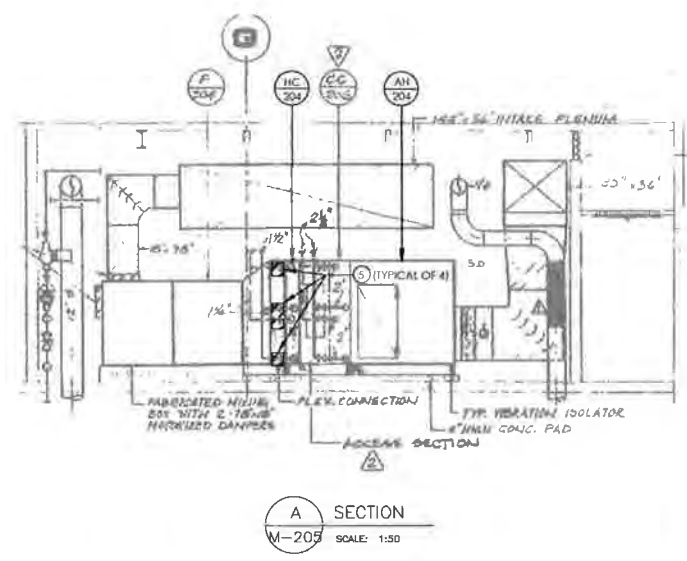
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MECHANICAL ROOM 3746 NEW PIPING PLAN AND SECTIONS

Project No./No. du projet: PWSC #: 9R504-00 STANEC #: 115615307	Sheet/Feuille: M-106 03 OF 34	Revision no./La Révision no.: 00
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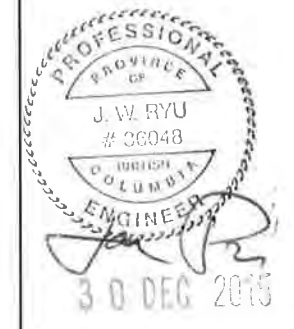
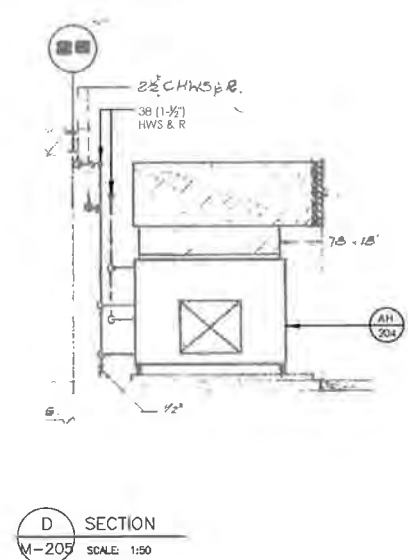
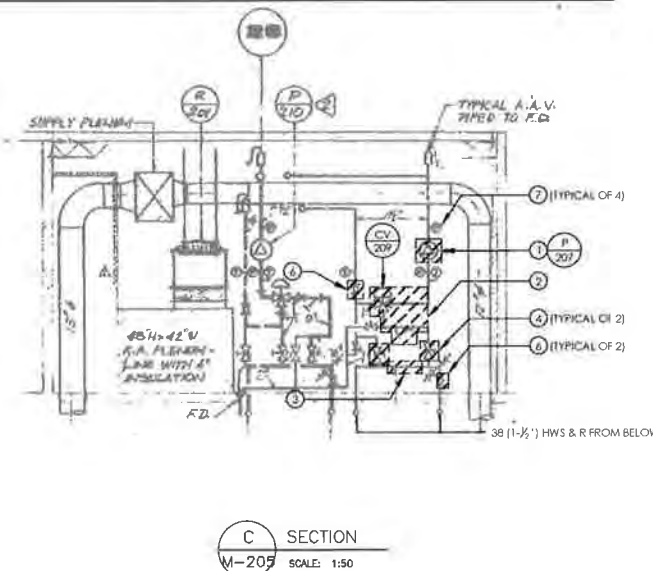
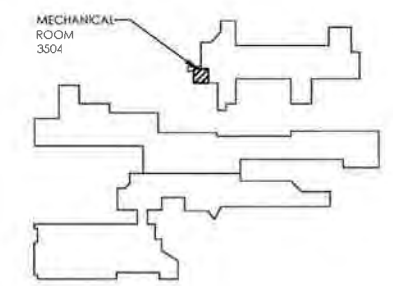




- GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:**
- GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE.
 - THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK.
 - THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED.
 - ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 "COMMON WORK RESULTS FOR MECHANICAL".
- DEMOLITION WASTE:**
- ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REFINISHMENT AND REUSE OR RECYCLING.
 - HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501.



- SHEET NOTES:**
- REMOVE EXISTING HW CIRCULATION PUMP (P-207) SERVING AH-204
 - REMOVE EXISTING 25mm (1") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-209) SERVING AH-204. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPING ASSOCIATED WITH THE PNEUMATIC ACTUATOR
 - REMOVE AND CAP ISOLATION / COMMON PIPE SEGMENT
 - REMOVE 38mm (1-1/2") EXISTING GATE VALVES
 - REMOVE 32mm (1-1/4") EXISTING GATE VALVES
 - REMOVE 38mm (1-1/2") BALANCING VALVE
 - REMOVE ALL TEMPERATURE AND PRESSURE GAUGES



ISSUED FOR TENDER	21/12/15
Description/Description	See 1/2015

DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet:
**9880 W SAANICH ROAD
SIDNEY BC**

**INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE**

Consumer Signature Only

Designed by/Conçu par: JAE RYU, P.ENG, P.E.

Drawn by/Dessiné par: JAE RYU, P.ENG, P.E.

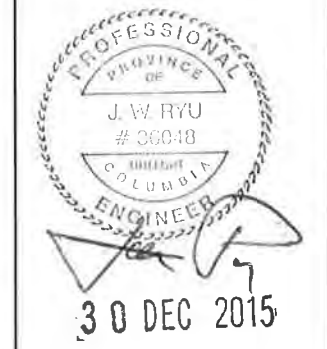
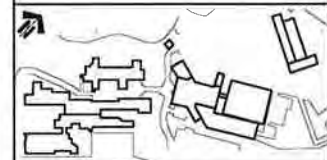
Project Manager/Adm. Incharge de Projet: FRANCOIS LEDOUX

Regional Manager, Architecture and Engineering Services / Directeur régional, Services d'architecture et de génie, TPSC

Drawing title/Titre de dessin:
MECHANICAL ROOM 3504 DEMOLITION PLAN

Project No./No. de projet: PWSSC #: 98504-00 STANREC #: 115615307	Sheet/Feuille: MD205 04 OF 34	Revision No./Le # de révis. 00
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0	ISSUED FOR TENDER	21/12/15
1	DESCRIPTION/DESCRIPTION	22/02/16

DEPARTMENT OF FISHERIES AND OCEANS

Project title / Titre du projet
**9860 W SAANICH ROAD
 SIDNEY BC**
INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Author / Signataire Orig
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 Drawn by / Dessiné par JAE RYU, P.ENG, P.E.
 Project Manager / Administrateur de Travaux / PMSC FRANÇOIS LEDOUX

Drawing file / Titre du dessin
**MECHANICAL ROOM
 3504 NEW PIPING PLAN
 AND SECTIONS**

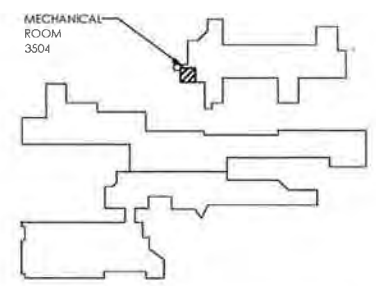
Project No. / No. du projet PWGSC #: 9R504-00 STARREC #: 115615307	Sheet / Feuille M-205 05 OF 34	Revision no. / La Révision 00
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GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

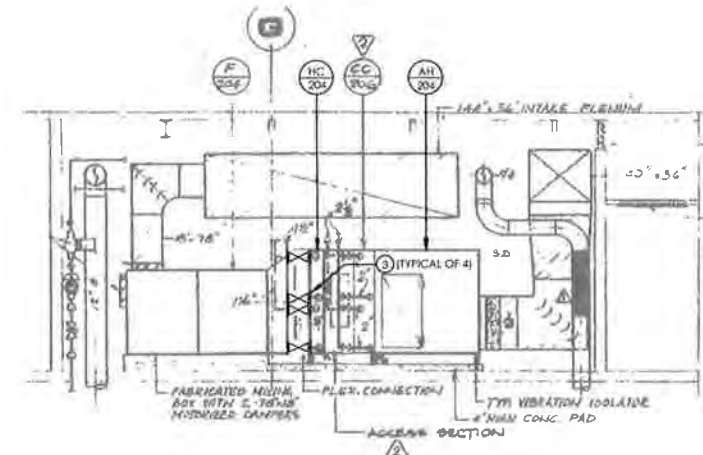
- GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
- DRAIN LINES:
 - MAINTAIN EXISTING DRAIN LINES FOR THE HYDRONIC LOW POINTS TO THE EXTENT POSSIBLE WHEN DRAIN LINES NEED TO BE ALTERED. PROVIDE LINES OF EQUIVALENT SIZE AND PROPERLY ROUTE TO NEAREST FLOOR DRAIN
 - ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
- HYDRONIC PIPES, FITTINGS, COMPONENTS, AND CONTROLS:
 - PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES, AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 232116 - "HYDRONIC SYSTEM STEEL" AND 32114 - "HYDRONIC SPECIALTIES"
 - ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
 - PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DIGITAL CONTROL SYSTEM AS SHOWN AND:
 - CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AI POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS
 - PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER:
 - EQUIPMENT SPECIFICATIONS
 - SPEC SECT 32114 - "HYDRONIC SPECIALTIES"
 - ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

SHEET NOTES:

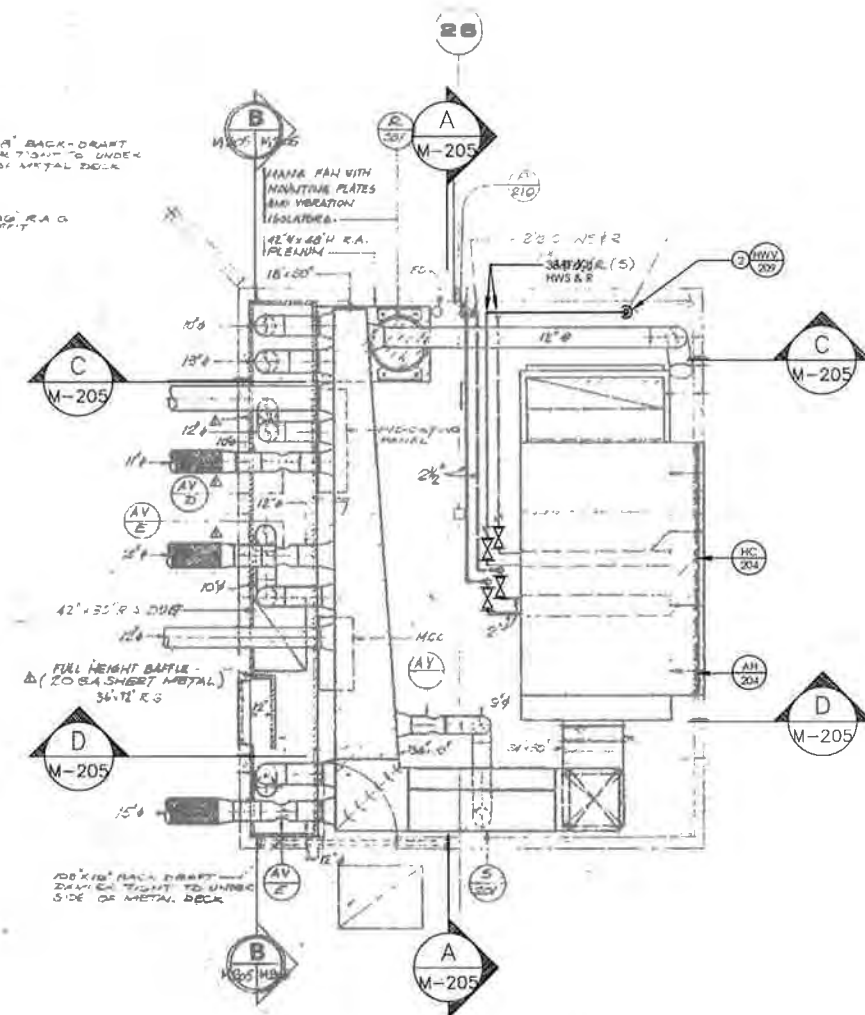
- PROVIDE NEW PIPE SECTIONS AND FITTINGS AS SHOWN
- PROVIDE NEW 2-WAY VALVE AND VALVE ACTUATOR
- PROVIDE NEW 38mm (1-1/2") GATE VALVE
- PROVIDE NEW 32mm (1-1/4") GATE VALVE
- PROVIDE NEW 38mm (1-1/2") BALANCING VALVE
- PROVIDE NEW TEMPERATURE GAUGES
- PROVIDE NEW PRESSURE GAUGES
- PROVIDE NEW Y-STRAINER
- PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR
- PROVIDE NEW ELBOWS IN PLACE OF EXISTING PRESSURE TAPS (TYPICAL FOR ALL SECONDARY LOOPS)



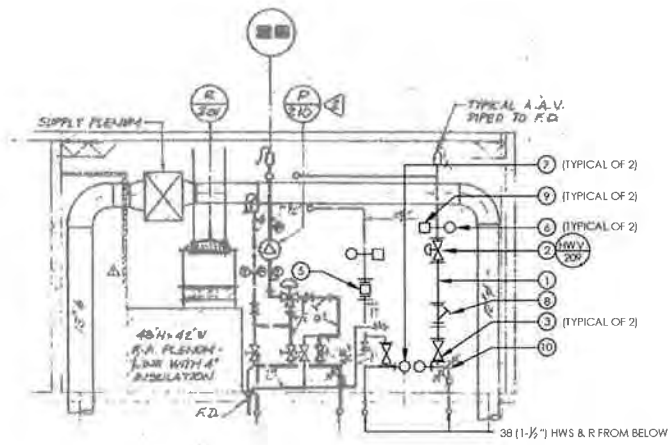
KEY PLAN FOR MECHANICAL ROOM 3504



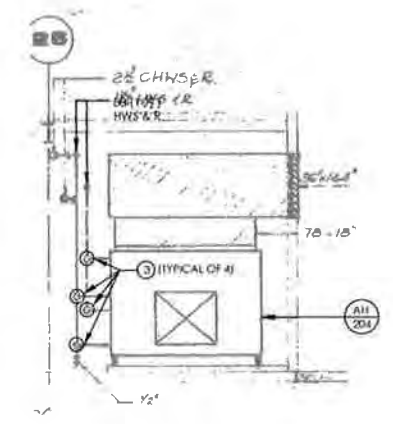
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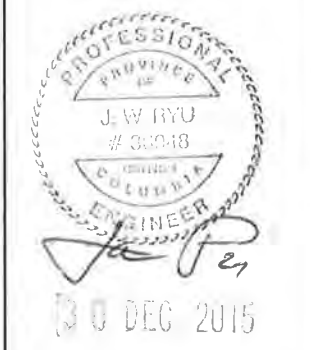
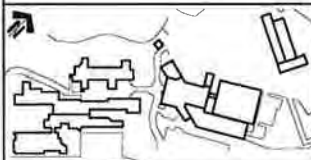


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D SECTION
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Rev.	Description/Description	Date/Date
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DEPARTMENT OF FISHERIES AND OCEANS

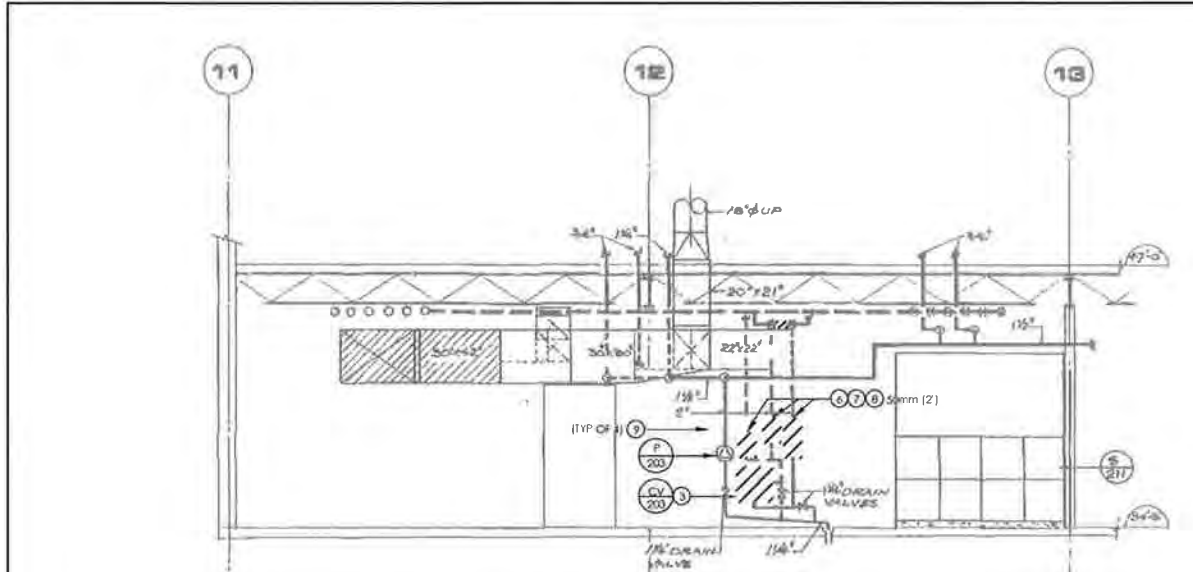
Project #/Titre du projet
**9860 W SAANICH ROAD
 SIDNEY BC**

**INSTITUTE OF OCEAN SCIENCES
 HEATING SYSTEM UPGRADE**

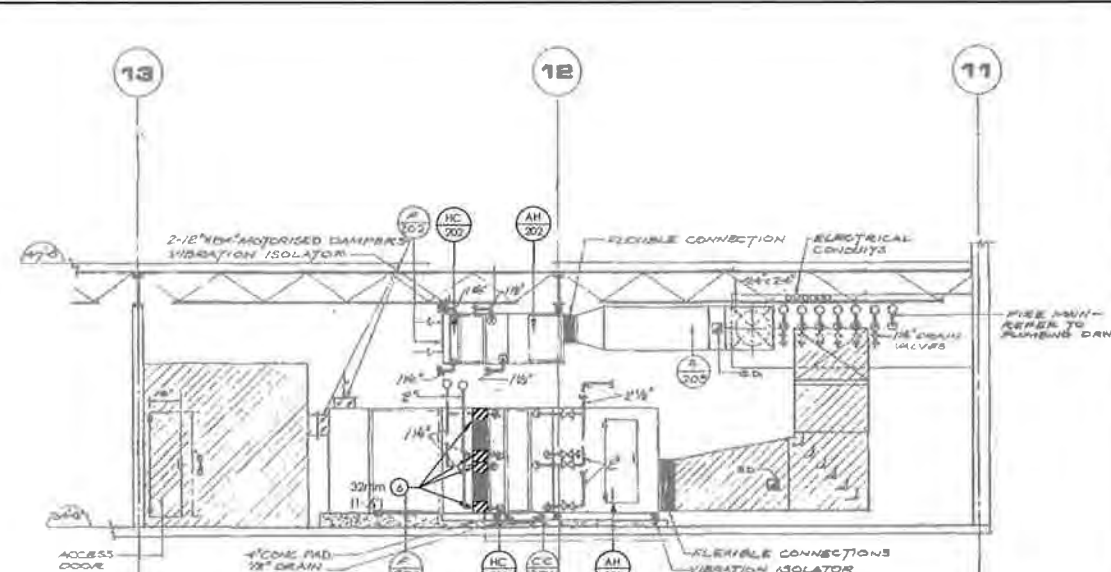
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 Designer/Concept par: JAE RYU, P.ENG, P.E.
 Drawn by/Dessiné par: JAE RYU, P.ENG, P.E.
 Project Manager/Administrateur de projet: FRANCOIS LEDOUX
 Regional Manager, Architectural and Engineering Services / Directeur régional, Services d'architecture et de génie, TPSC

**MECHANICAL ROOM
 2618 DEMOLITION PLAN**

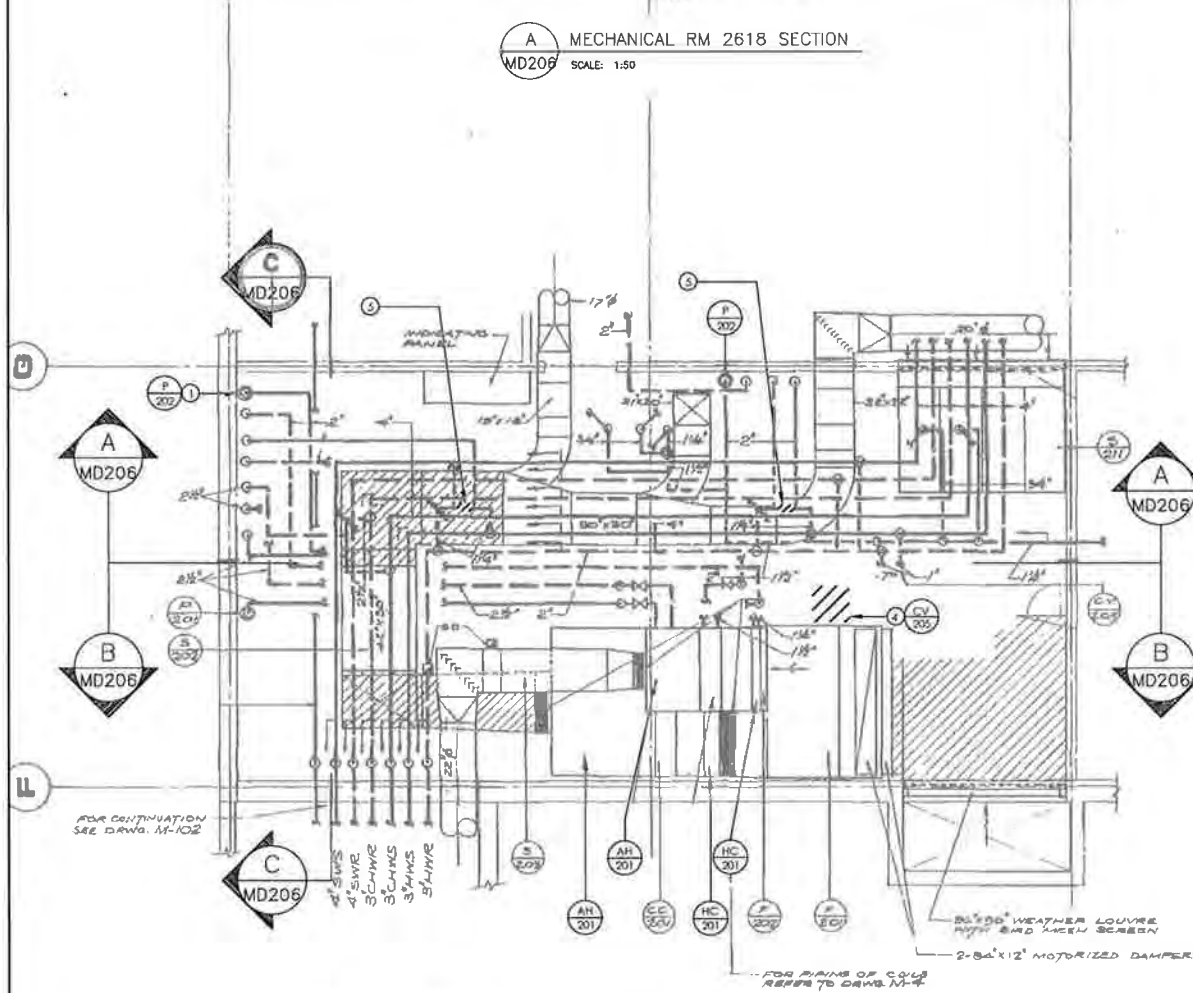
Project No./No. du projet PWOSC #: 9R504-00 SHEET #: 115615307	Sheet/Feuille MD206 06 OF 34	Revision no./La révision 00
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B MECHANICAL RM 2618 SECTION
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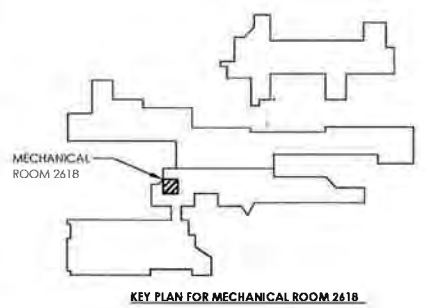
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KEY PLAN FOR MECHANICAL ROOM 2618

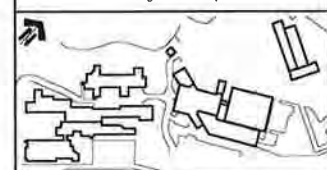
GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:

- GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED.
 - ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - COMMON WORK RESULTS FOR MECHANICAL
- DEMOLITION WASTE:
 - ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REFURBISHMENT AND REUSE OR RECYCLING
 - HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501

SHEET NOTES:

- REMOVE EXISTING HW CIRCULATION PUMP (P-202) SERVING AH-201; HC-201
- REMOVE EXISTING 38mm (1-1/2") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-202) SERVING AH-201; HC-201. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- REMOVE EXISTING 32mm (1-1/8") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-203) SERVING RADIATOR ZONES. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- REMOVE EXISTING 25mm (1") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-205) AH-202; HC-202. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- REMOVE AND CAP ISOLATION / COMMON PIPE SEGMENT
- REMOVE EXISTING GATE VALVES
- REMOVE BALANCING VALVES
- REMOVE Y-STRAINER
- REMOVE ALL TEMPERATURE AND PRESSURE GAUGES





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DEPARTMENT OF FISHERIES AND OCEANS

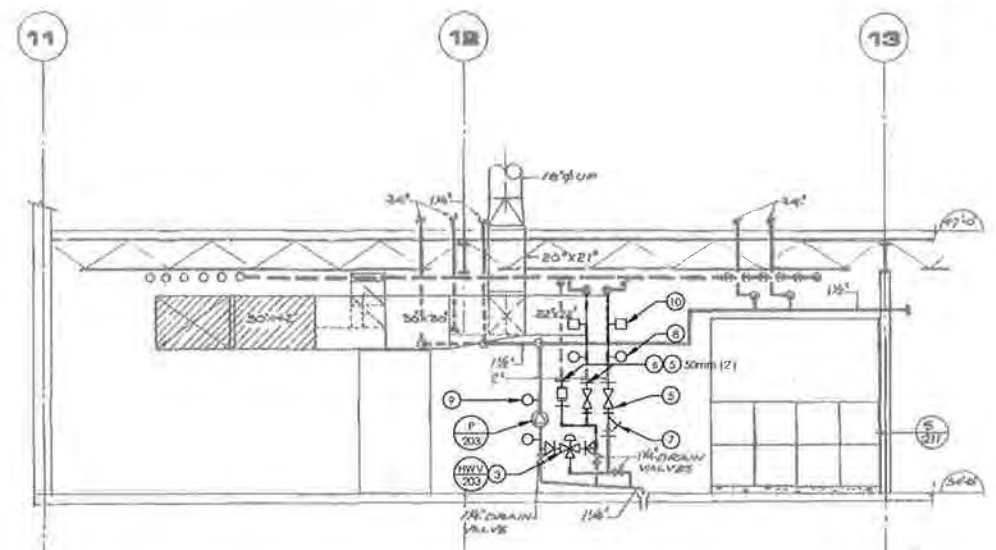
Project No./No. du projet
9860 W SAANICH ROAD
SIDNEY BC

INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

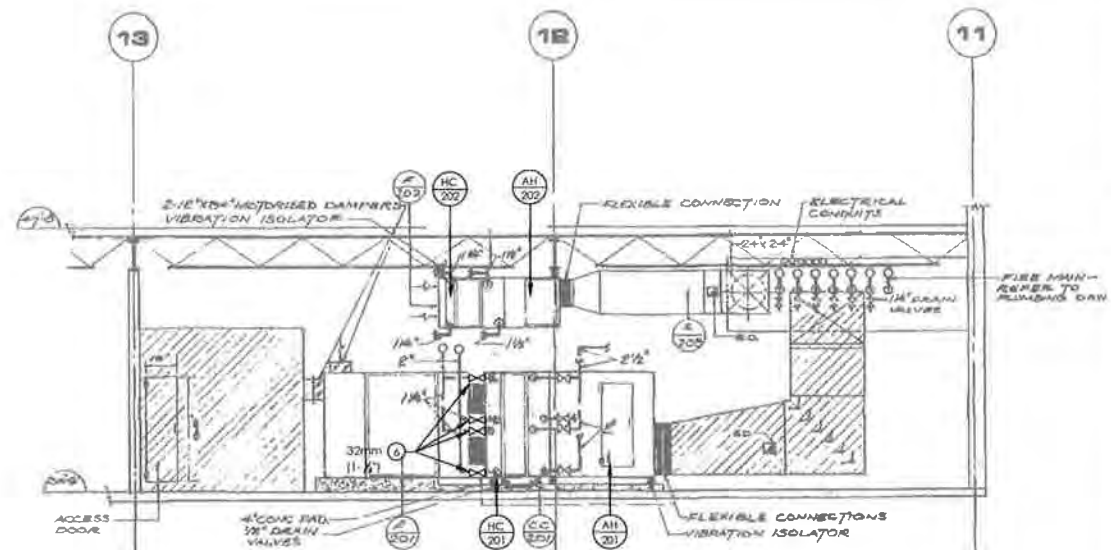
Contract Signature Only
 Designed by/Conçue par: JAE RYU, P.ENG, P.E.
 Drawn by/Dessiné par: JAE RYU, P.ENG, P.E.
 Project Engineer/Administrateur de Projets: FRANCOIS LEDOUX
 Regional Manager/Administrateur des Services Régionaux: Services d'architecture et de génie, TRSBC

Drawing Title/Titre du dessin
MECHANICAL EQUIPMENT SCHEDULE

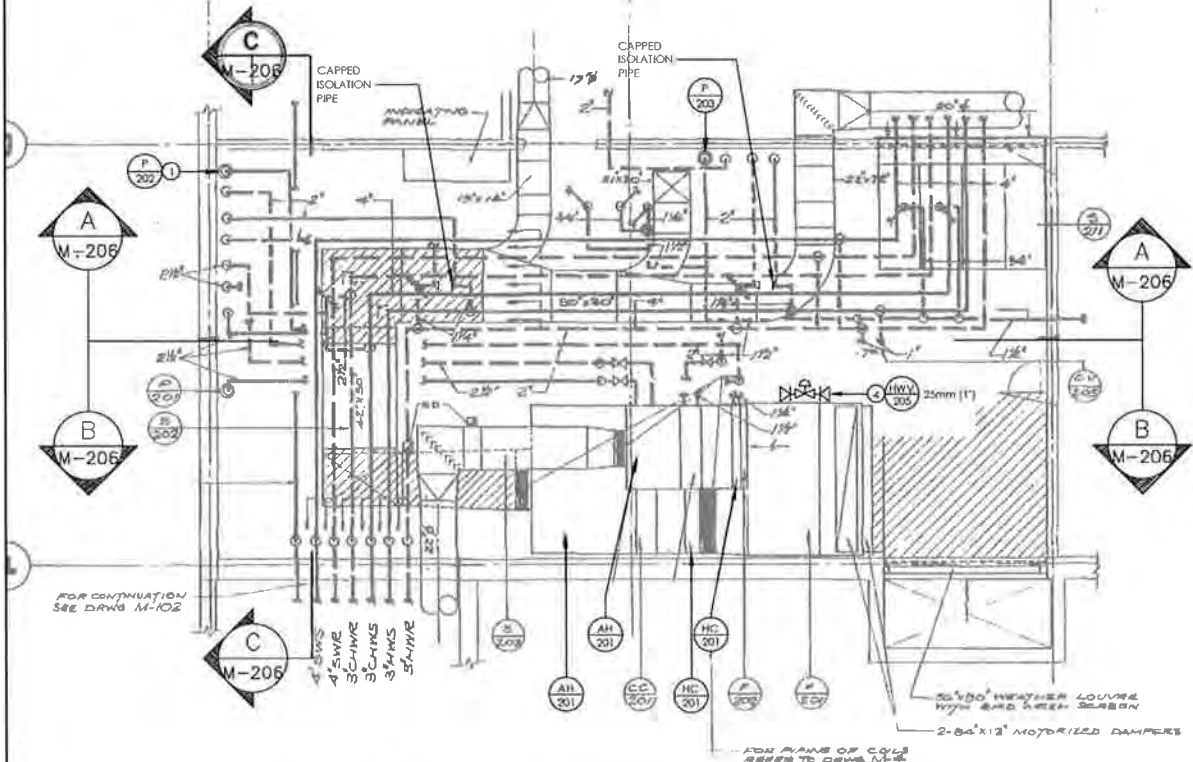
Project No./No. du projet PWGSC # 9R504-00 STANLEC # 115615307	Sheet/Feuille M-206 07 OF 34	Revision no./Le numéro de révision 00
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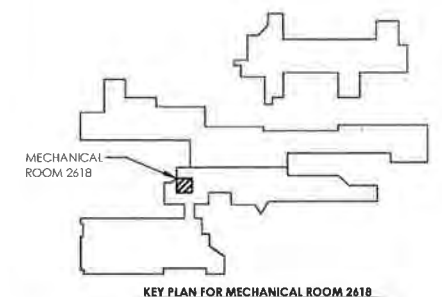
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B MECHANICAL RM 2618 SECTION
 MD206 SCALE: 1:50



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KEY PLAN FOR MECHANICAL ROOM 2618

GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

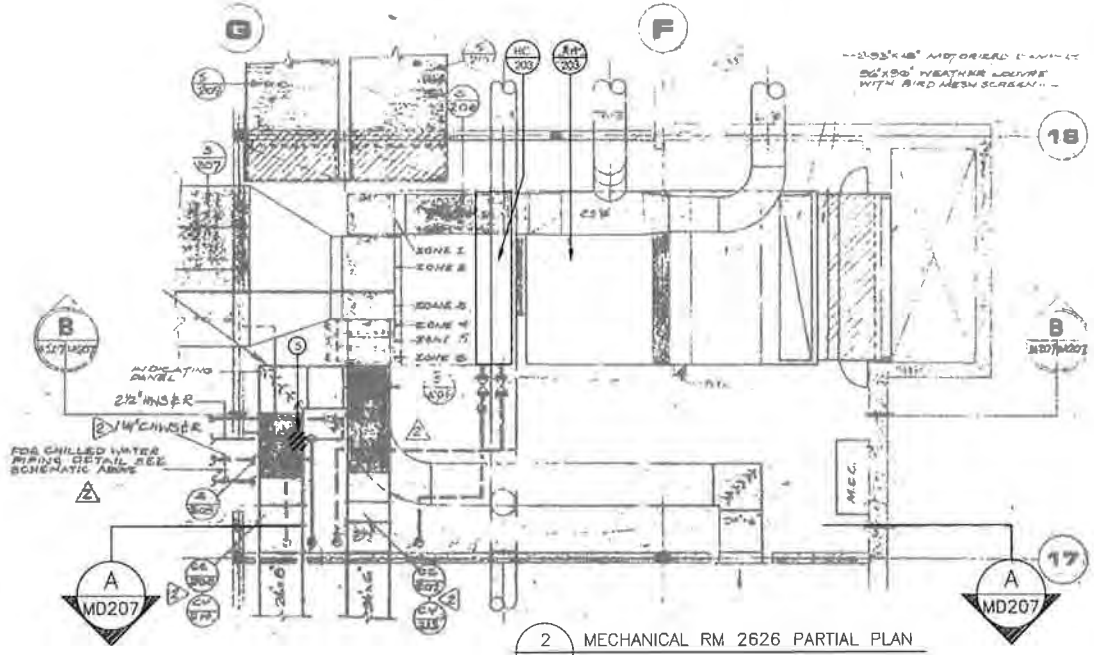
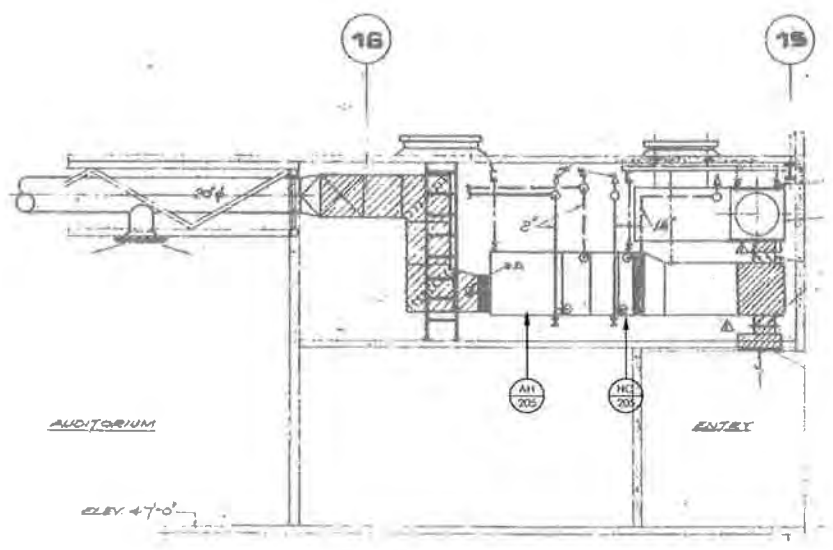
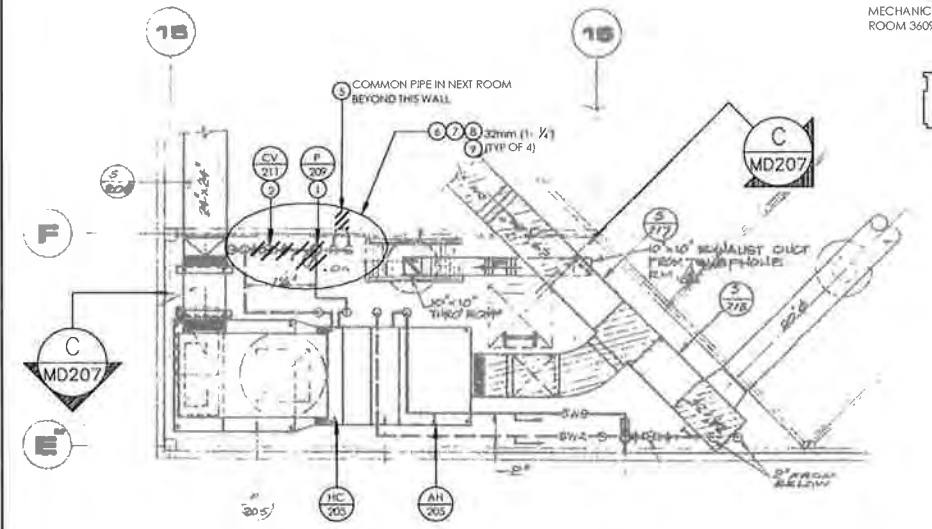
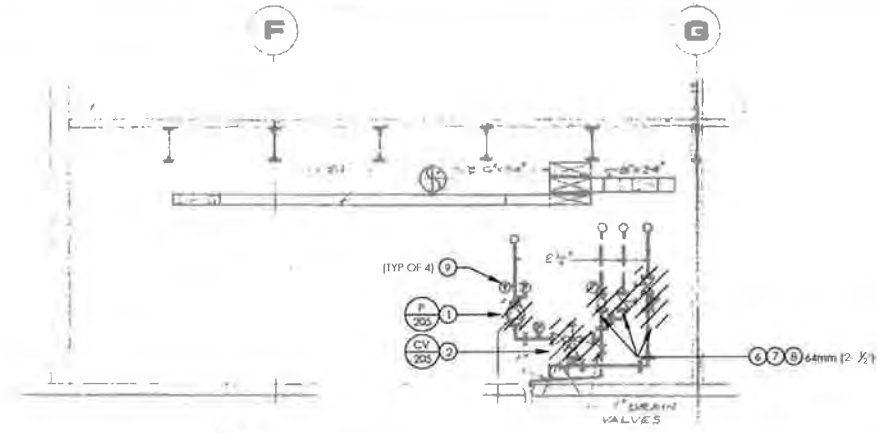
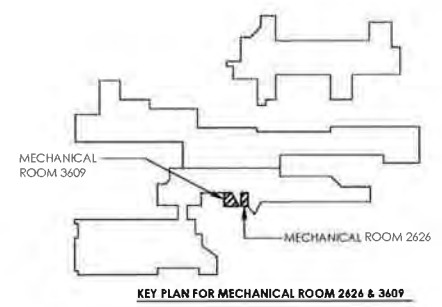
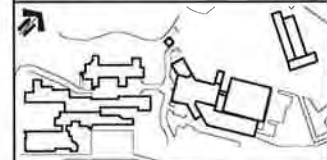
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- DRAIN LINES:
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 - ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
- HYDRONIC PIPES, FITTINGS, COMPONENTS AND CONTROLS:
 - PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES, AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 32114 - "HYDRONIC SYSTEM STEEL" AND 32114 - "HYDRONIC SPECIALTIES"
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 - CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AI POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

- PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER
 - EQUIPMENT SPECIFICATIONS
 - SPEC SECT 32114 - "HYDRONIC SPECIALTIES"
 - ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

SHEET NOTES:

- PROVIDE NEW PIPE SECTIONS AND FITTINGS AS SHOWN
- PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-201) SERVING AH-201; HC-201.
- PROVIDE NEW 3-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-203) SERVING RADIATOR ZONES
- PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-205) SERVING AH-202; HC-202
- PROVIDE NEW GATE VALVES
- PROVIDE NEW BALANCING VALVE
- PROVIDE NEW Y-STRAINER
- PROVIDE NEW TEMPERATURE GAUGES (2 EACH)
- PROVIDE NEW PRESSURE GAUGES (2 EACH)
- PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR (2 EACH)
- PROVIDE NEW DDC ANALOG PRESSURE SENSOR (2 EACH)





GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:

- 1 GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
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- 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
- 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 "COMMON WORK RESULTS FOR MECHANICAL"
2. DEMOLITION WASTE:
 - 2.1 ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE RE refurbishment AND REUSE OR RECYCLING
 - 2.2 HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501

SHEET NOTES:

- 1 REMOVE EXISTING HW CIRCULATION PUMP (P-209) SERVING AH-205; HC-205
- 2 REMOVE EXISTING 25mm (1") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-211) SERVING AH-205; HC-205. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- 3 REMOVE EXISTING HW CIRCULATION PUMP (P-205) SERVING AH-203; HC-203
- 4 REMOVE EXISTING 25mm (1") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-205) AH-203; HC-203. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- 5 REMOVE AND CAP ISOLATION / COMMON PIPE SEGMENT
- 6 REMOVE EXISTING GATE VALVES
- 7 REMOVE BALANCING VALVES
- 8 REMOVE Y-STRAINER
- 9 REMOVE ALL TEMPERATURE AND PRESSURE GAUGES



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Revision	Description / Description	Date / Date

DEPARTMENT OF FISHERIES AND OCEANS

Project title / Titre du projet
9860 W SAANICH ROAD SIDNEY BC

INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Consultant Signature Only

Designed by/Conçue par: JAE RYU, P.ENG, P.E.

Drawn by/Dessiné par: JAE RYU, P.ENG, P.E.

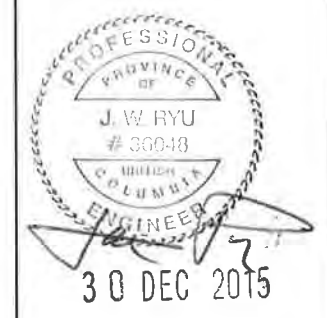
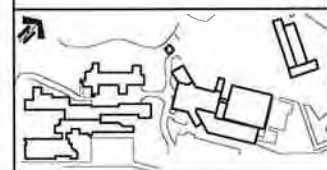
PROJECT Project Manager/Administrateur de Projets TP502: FRANCOIS LEDOUX

Regional Manager, Architecture and Engineering Services / Directeur régional, Services d'architecture et de génie, TP502:

MECHANICAL ROOMS 2626 AND 3609 DEMOLITION PLAN

Project No./No. du projet: PW504-00	Sheet/Feuille: MD207	Revision no./No. de révision: 00
STANDARD: 115615307	08 OF 34	





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DEPARTMENT OF FISHERIES AND OCEANS

Project title / titre du projet
**9860 W SAANICH ROAD
 SIDNEY BC**

INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Consultant Signature Only

Designed by/Concept par
 JAE RYU, P.ENG, P.E.

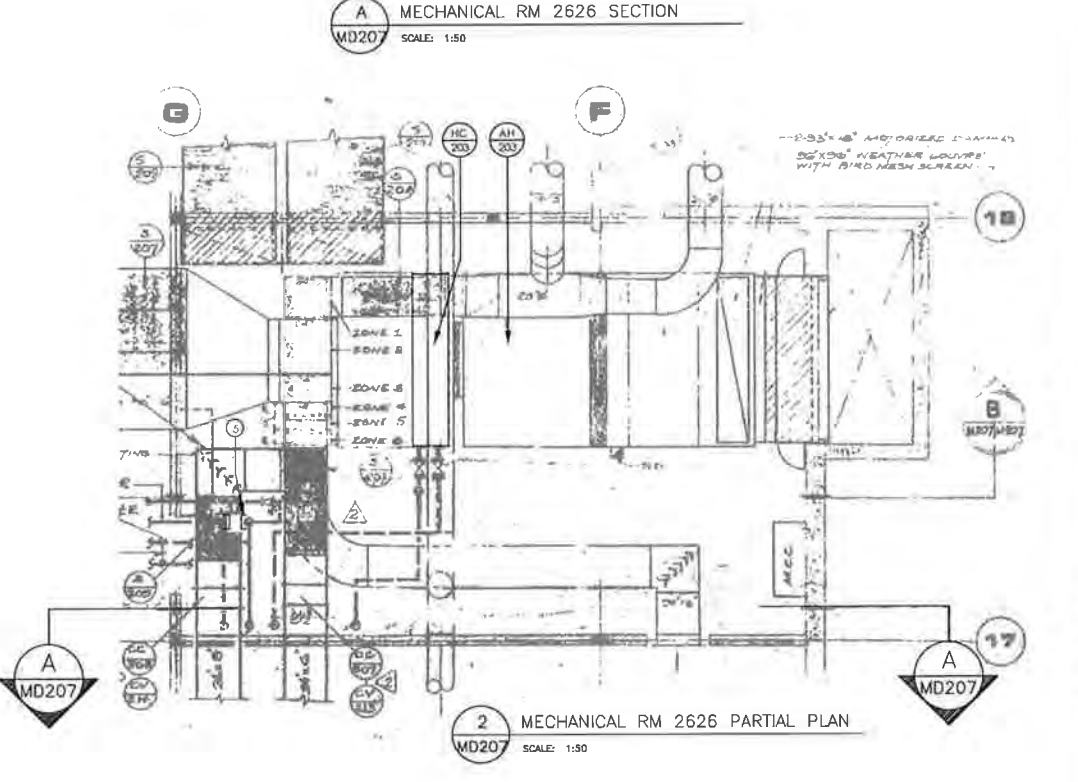
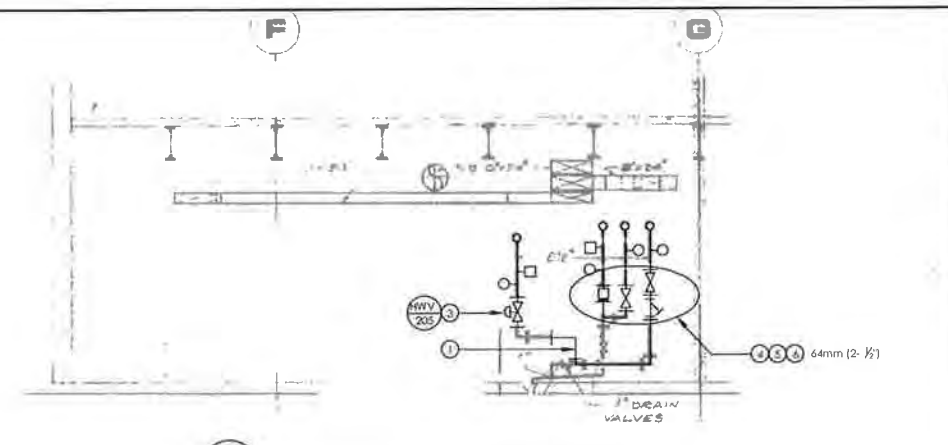
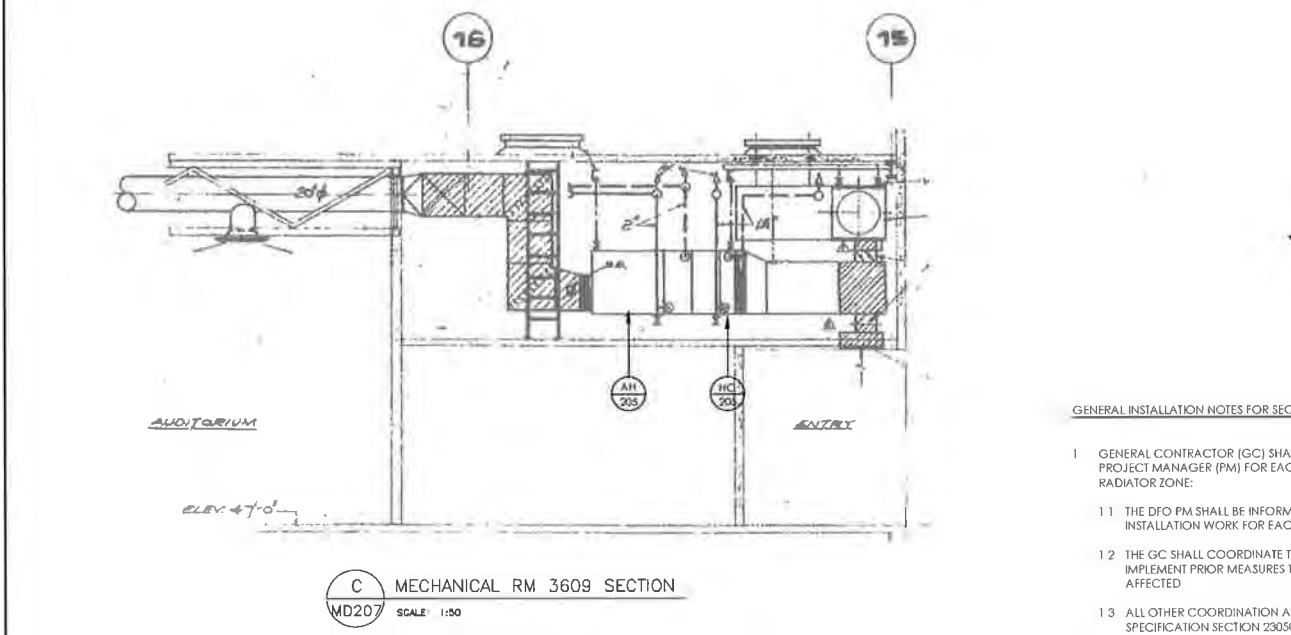
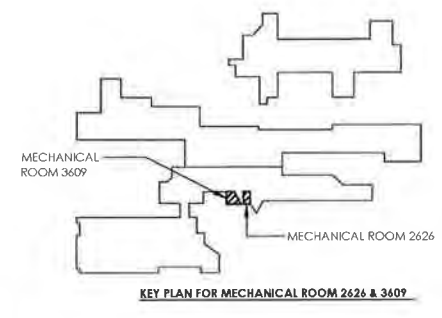
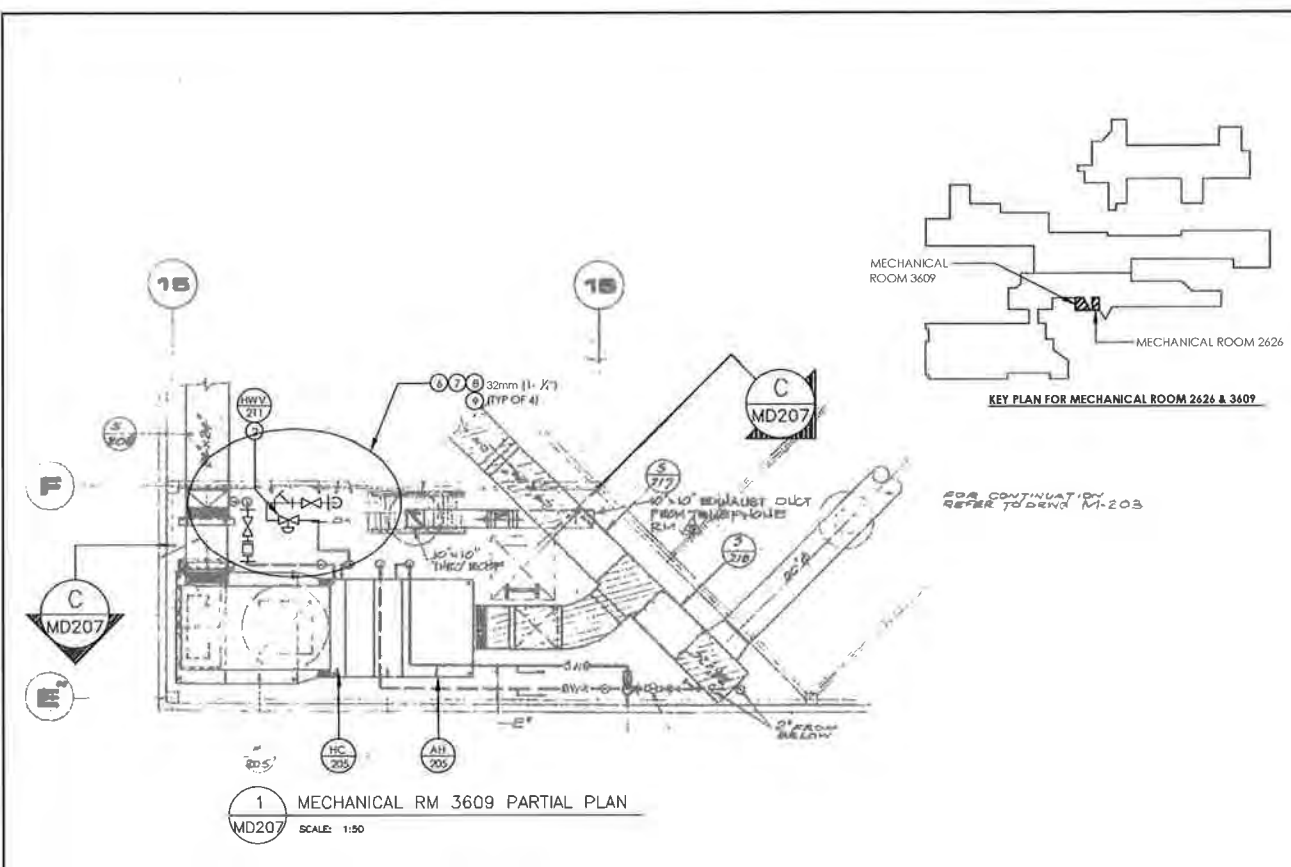
User by/Drawn par
 JAE RYU, P.ENG, P.E.

PWSSC Project Manager/Administrateur de Projets TPSSC
 FRANCOIS LEDOUX

Regional Manager, Aménagement and Engineering Services
 Directeur régional, Services d'architecture et de génie, TPSSC

Drawing title / titre du dessin
MECHANICAL EQUIPMENT SCHEDULE

Project No./No. du projet PWSSC #: 9R504-00 SIANREC #: 115615307	Sheet/Feuille M-207 09 OF 34	Revision no./La révision 00
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GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

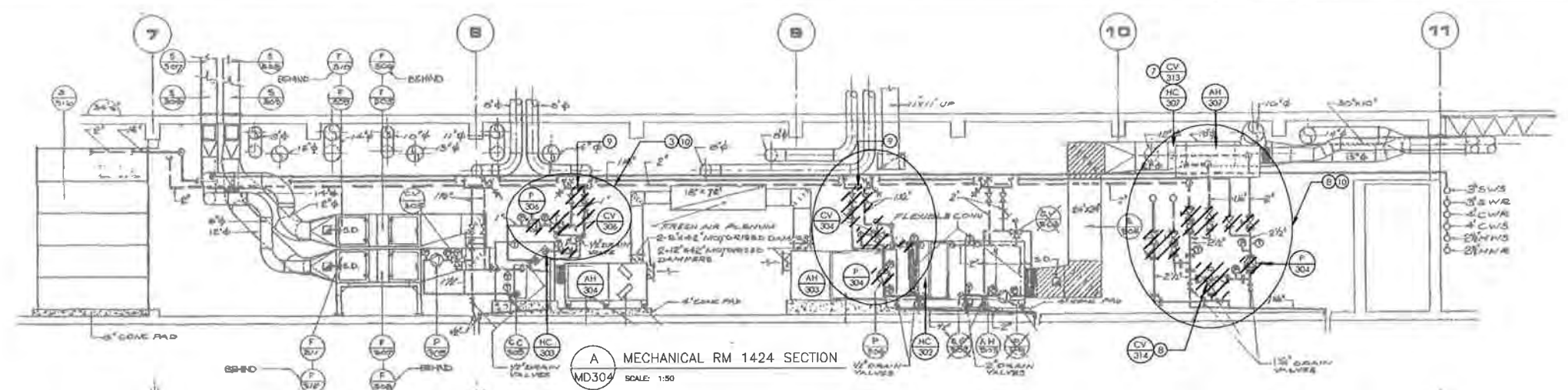
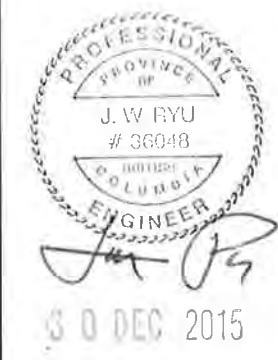
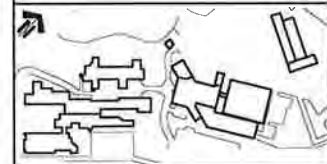
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 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
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 - 2.1 MAINTAIN EXISTING DRAIN LINES FOR THE HYDRONIC LOW POINTS TO THE EXTENT POSSIBLE WHEN DRAIN LINES NEED TO BE ALTERED. PROVIDE LINES OF EQUIVALENT SIZE AND PROPERLY ROUTE TO NEAREST FLOOR DRAIN
 - 2.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
3. HYDRONIC PIPES, FITTINGS, COMPONENTS, AND CONTROLS:
 - 3.1 PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES, AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 232116 - "HYDRONIC SYSTEM STEEL" AND 32114 - "HYDRONIC SPECIALTIES"
 - 3.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
 - 3.3 PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4 PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DIGITAL CONTROL SYSTEM AS SHOWN AND:
 - 3.4.1 CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES"

- 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
- 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS
- 3.5. PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER
 - 3.5.1. EQUIPMENT SPECIFICATIONS
 - 3.5.2. SPEC SECT 32114 - "HYDRONIC SPECIALTIES"
 - 3.4.2. ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3. CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

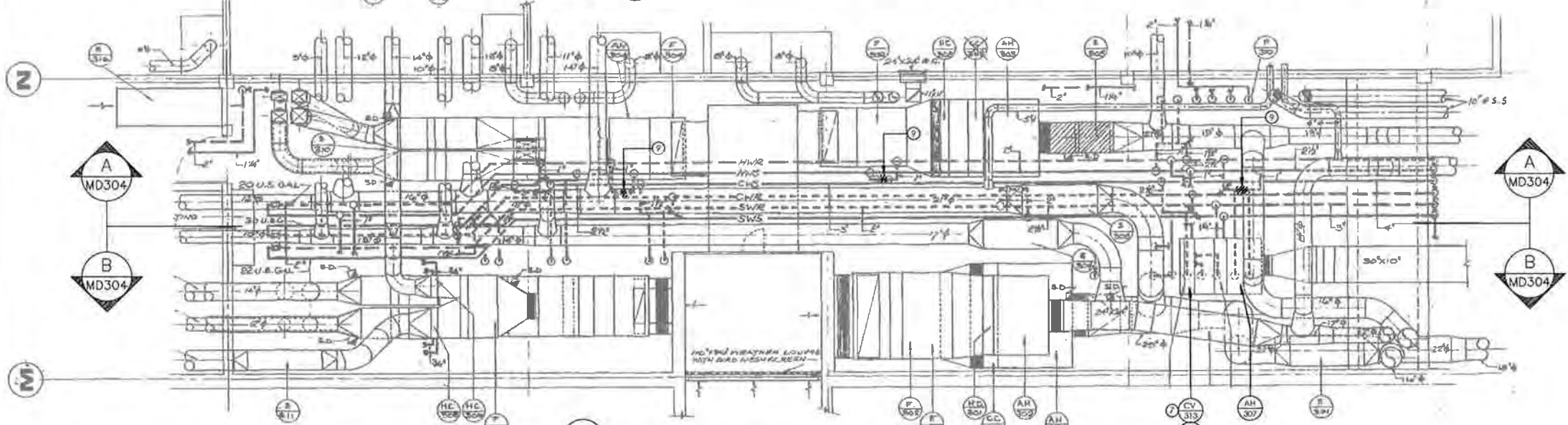
SHEET NOTES:

- ① PROVIDE NEW PIPE SECTIONS AND FITTINGS AS SHOWN
- ② PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-211) SERVING AH-203; HC-203
- ③ PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-205) SERVING AH-203; HC-203
- ④ PROVIDE NEW GATE VALVES
- ⑤ PROVIDE NEW BALANCING VALVE
- ⑥ PROVIDE NEW Y-STRAINER
- ⑦ PROVIDE NEW TEMPERATURE GAUGES (2 EACH)
- ⑧ PROVIDE NEW PRESSURE GAUGES (2 EACH)
- ⑨ PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR (2 EACH)

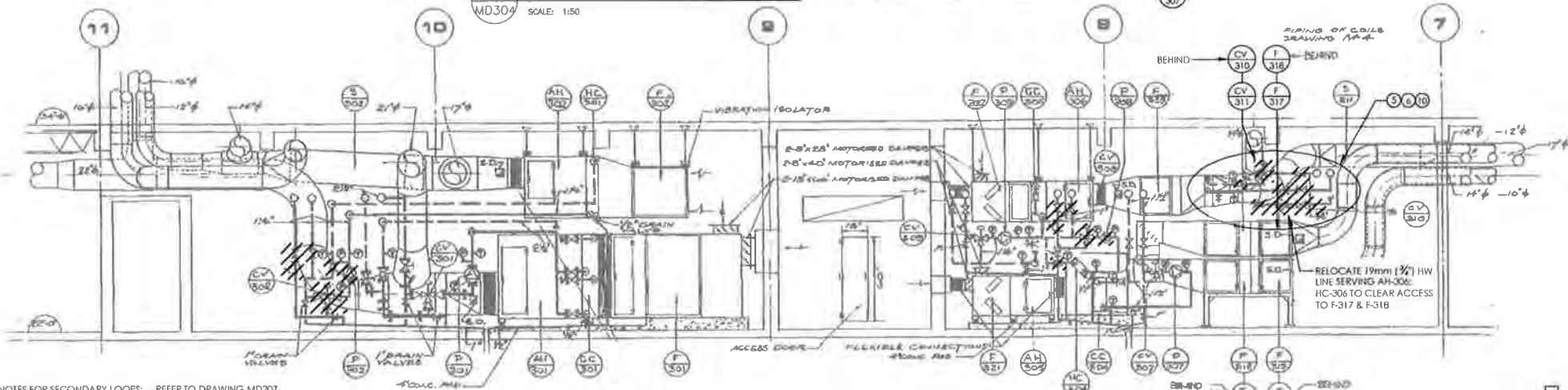




A MECHANICAL RM 1424 SECTION
 MD304 SCALE: 1:50



1 MECHANICAL RM 1424 PARTIAL PLAN
 MD304 SCALE: 1:50



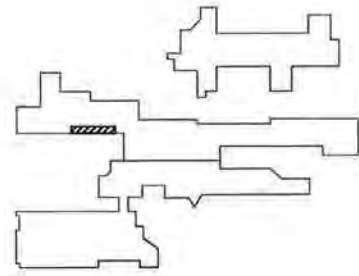
B MECHANICAL RM 1424 SECTION
 MD304 SCALE: 1:50

GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS: REFER TO DRAWING MD207

SHEET NOTES:

- 1 REMOVE EXISTING HW CIRCULATION PUMP (P-302) AND EXISTING 25mm (1") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-302) SERVING AH-302; HC-301. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- 2 REMOVE EXISTING HW CIRCULATION PUMP (P-304) AND EXISTING 25mm (1") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-304) SERVING AH-303; HC-302. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- 3 REMOVE EXISTING HW CIRCULATION PUMP (P-306) AND EXISTING 19mm (3/4") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-306) SERVING AH-304; HC-303. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- 4 REMOVE EXISTING HW CIRCULATION PUMP (P-308) AND EXISTING 19mm (3/4") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-308) SERVING AH-305; HC-304. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- 5 REMOVE EXISTING 13mm (1/2") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-310) SERVING AH-306; HC-305. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR

- 6 REMOVE EXISTING 13mm (1/2") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-311) SERVING AH-306; HC-306. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- 7 REMOVE EXISTING 19mm (3/4") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-313) SERVING AH-307; HC-307. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- 8 REMOVE EXISTING 50mm (2") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-314) SERVING RADIATOR ZONES. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- 9 REMOVE AND CAP ISOLATION / COMMON PIPE SEGMENT
- 10 REMOVE EXISTING GATE VALVES, BALANCING VALVES, Y-STRAINERS, TEMPERATURE, AND PRESSURE GAUGES ASSOCIATED WITH THIS ZONE LOOP



ISSUED FOR TENDER	21/12/15
DESCRIPTION	

DEPARTMENT OF FISHERIES AND OCEANS

9860 W SAANICH ROAD
 SIDNEY BC

**INSTITUTE OF OCEAN SCIENCES
 HEATING SYSTEM UPGRADE**

Designed by/Constaté par: JAE RYU, P.ENG, P.E.

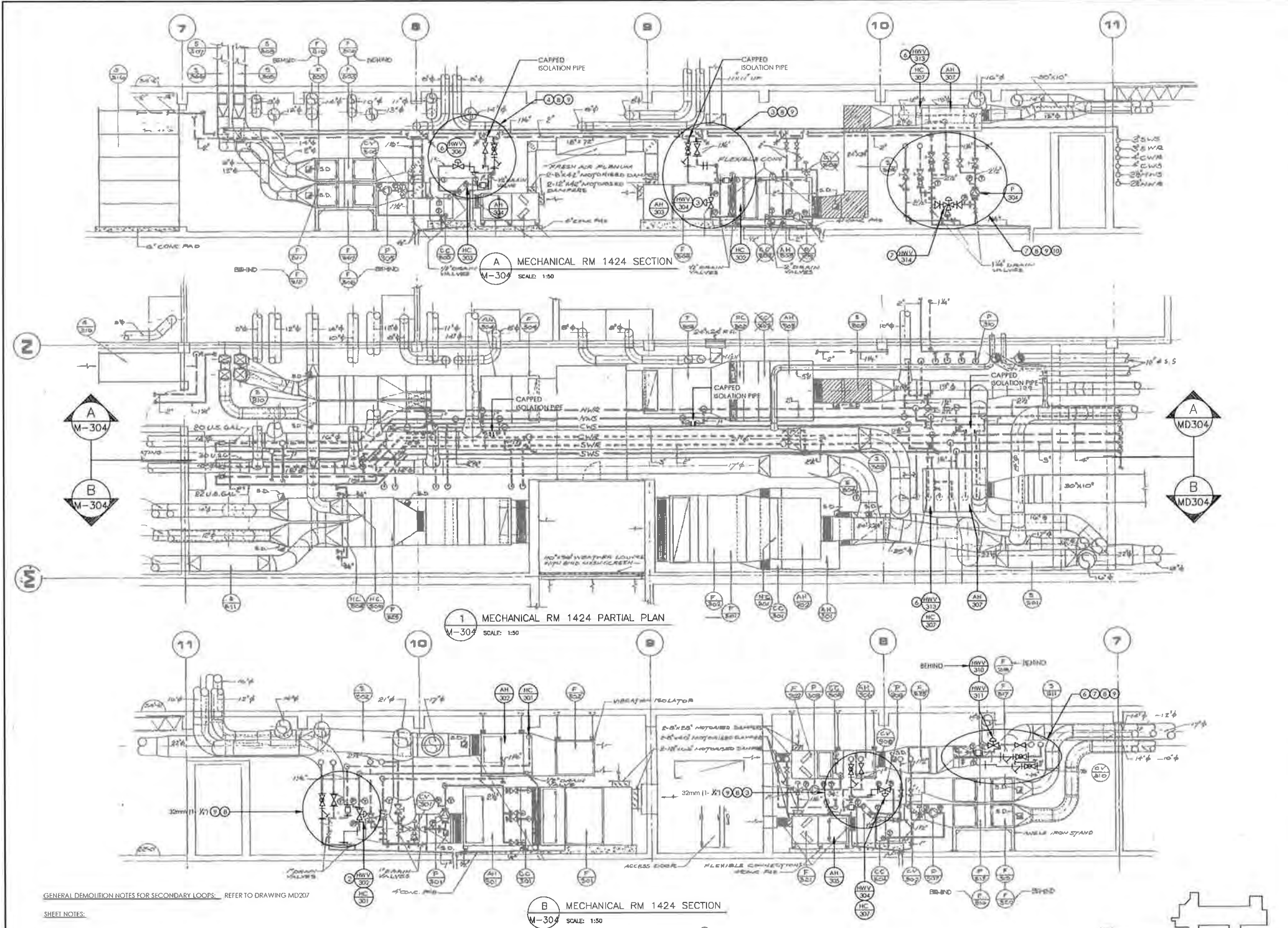
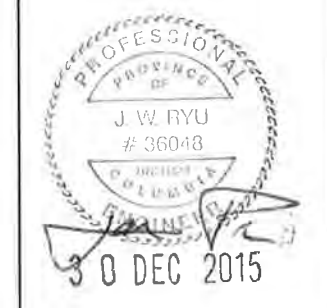
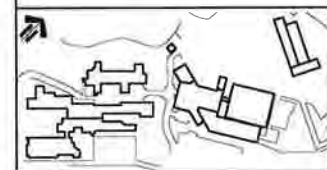
Drawn by/Dessiné par: JAE RYU, P.ENG, P.E.

Project Manager/Administrateur de projet: FRANCOIS LEDOUX

**MECHANICAL ROOM 1424
 DEMOLITION PLAN**

Project No./No. du projet: PWGSC #: 9R504-00	Sheet/Feuille: MD304	Revision No./No. de révision: 00
STANREC #: 115615307	10 OF 34	



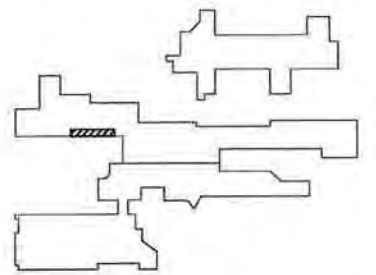


GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS - REFER TO DRAWING MD207

SHEET NOTES:

- ① PROVIDE NEW PIPE SECTIONS AND FITTINGS AS SHOWN
- ② PROVIDE NEW 25mm (1") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-302) SERVING AH-302; HC-301
- ③ PROVIDE NEW 25mm (1") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-304) SERVING AH-303; HC-302
- ④ PROVIDE NEW 19mm (3/4") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-306) SERVING AH-304; HC-303
- ⑤ PROVIDE NEW 19mm (3/4") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-308) SERVING AH-305; HC-304
- ⑥ PROVIDE NEW 13mm (1/2") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-310) SERVING AH-306; HC-305
- ⑦ PROVIDE NEW 13mm (1/2") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-311) SERVING AH-306; HC-306

- ⑧ PROVIDE NEW 19mm (3/4") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-313) SERVING AH-307; HC-307
- ⑨ PROVIDE NEW 50mm (2") HW 3-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-314) SERVING RADIATOR ZONES
- ⑩ PROVIDE NEW GATE VALVES, BALANCING VALVE, Y-STRAINER, TEMPERATURE AND PRESSURE GAUGES FOR EACH INDIVIDUAL SECONDARY ZONES
- ⑪ PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR (2 EACH)
- ⑫ PROVIDE NEW DDC ANALOG PRESSURE SENSOR (2 EACH)



ISSUED FOR TENDER	21/12/15
DESCRIPTION/DESCRIPTION	Scale/Échelle

DEPARTMENT OF FISHERIES AND OCEANS

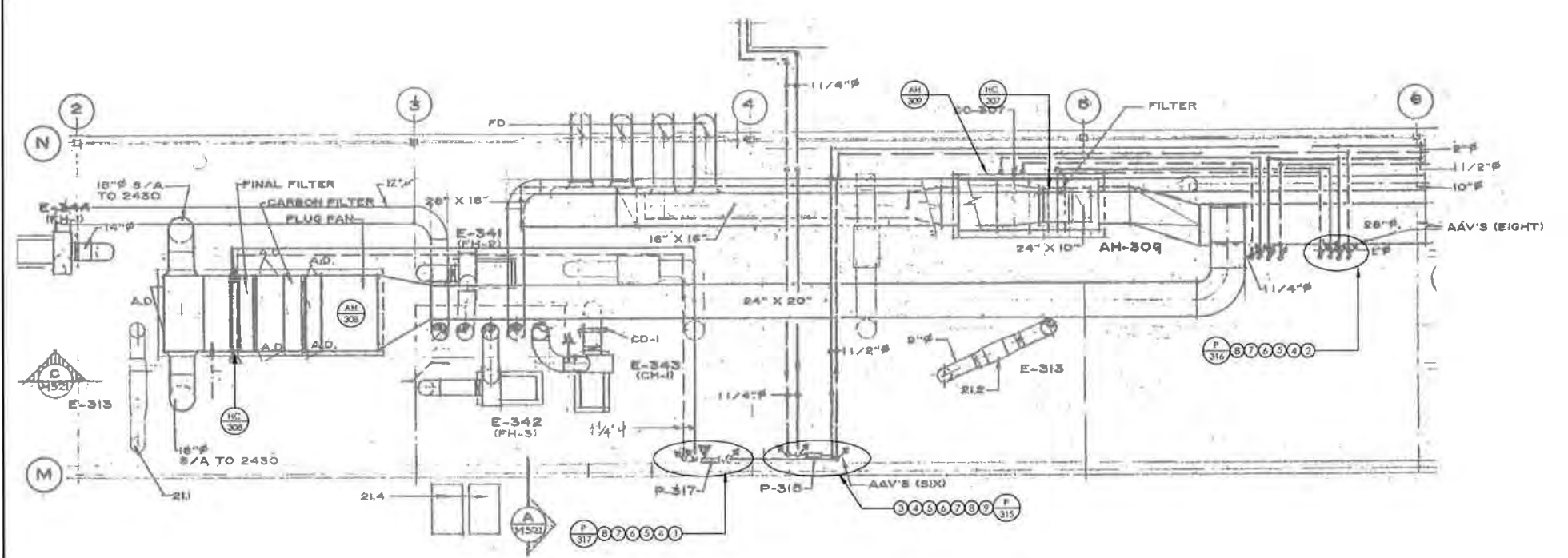
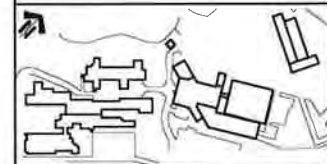
Project title/Titre du projet
**9860 W SAANICH ROAD
 SIDNEY BC**

INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Consultant Signature/Signature
 Designer/Concepteur par: JAE RYU, P.ENG, P.E.
 Drawn/Ébauché par: JAE RYU, P.ENG, P.E.
 Project Manager/Administrateur de Projet/TPSC: FRANCOIS LEDOUX
 Regional Manager/Administrateur des Opérations/Services: FRANCOIS LEDOUX
 Drawing File/Numéro de dessin:

**MECHANICAL ROOM 1424
 NEW PIPING PLAN AND SECTIONS**

Project No./No. de projet PWOSC # 9R504-00 STARR# 115615307	Sheet/Feuille M-304 11 OF 34	Revision no./Le Numéro 00
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1 OCEAN CHEMISTRY PENTHOUSE MECH RM PARTIAL PLAN
W-327 SCALE: 1:50

GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:

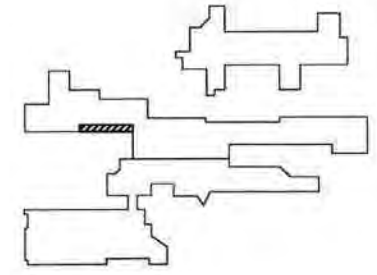
- GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - THE DFO PM SHALL BE INFORMED OF AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK.
 - THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED.
 - ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
- DEMOLITION WASTE:
 - ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REHABILITATION AND REUSE OR RECYCLING
 - HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501

GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

- GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED.
 - ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
- DRAIN LINES:
 - MAINTAIN EXISTING DRAIN LINES FOR THE HYDRONIC LOW POINTS TO THE EXTENT POSSIBLE WHEN DRAIN LINES NEED TO BE ALTERED, PROVIDE LINES OF EQUIVALENT SIZE AND PROPERLY ROUTE TO NEAREST FLOOR DRAIN
 - ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
- HYDRONIC PIPES, FITTINGS, COMPONENTS, AND CONTROLS:
 - PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES, AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 232116 - "HYDRONIC SYSTEM STEEL" AND 32114 - "HYDRONIC SPECIALTIES"
 - ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
 - PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DIGITAL CONTROL SYSTEM AS SHOWN AND:
 - CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AI POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS
 - PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER
 - EQUIPMENT SPECIFICATIONS
 - SPEC SECT 32114 - "HYDRONIC SPECIALTIES"
 - ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

SHEET NOTES:

- REMOVE EXISTING HW CIRCULATION PUMP (P-317) AND EXISTING 25mm (1") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-317) SERVING AH-308; HC-308. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES, AND REPLACE WITH NEW 25mm (1") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-317)
- REMOVE EXISTING HW CIRCULATION PUMP (P-316) AND EXISTING 19mm (3/4") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-316) SERVING AH-309; HC-307. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES, AND REPLACE WITH NEW 19mm (3/4") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-316)
- REMOVE EXISTING 25mm (1") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-315) SERVING RADIATOR ZONES. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES, AND REPLACE WITH NEW 25mm (1") HW 3-WAY VALVE (HWV-315)
- REMOVE AND CAP ISOLATION / COMMON PIPE SEGMENT
- REMOVE EXISTING GATE VALVES, BALANCING VALVES, Y-STRAINERS, TEMPERATURE, AND PRESSURE GAUGES ASSOCIATED WITH THIS ZONE LOOP
- PROVIDE NEW PIPE SECTIONS AND FITTINGS
- PROVIDE NEW GATE VALVES, BALANCING VALVE, Y-STRAINER, TEMPERATURE AND PRESSURE GAUGES FOR EACH INDIVIDUAL SECONDARY ZONES
- PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR (2 EACH)
- PROVIDE NEW DDC ANALOG PRESSURE SENSOR (2 EACH)



30 DEC 2015
Jae R

ISSUED FOR TENDER 21/12/15

DEPARTMENT OF FISHERIES AND OCEANS

9880 W SAANICH ROAD
SIDNEY BC

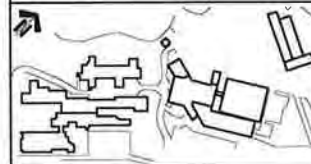
INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Customer Signature: _____
Designed by/Concept: JAE RYU, P.ENG, P.E.
Drawn by/Issued: JAE RYU, P.ENG, P.E.
PMSC Project Manager/Administrateur de Projets: FRANCOIS LEDOUX
Regional Manager, Architecture and Engineering Services / Directeur régional, Services d'architecture et de génie: TPBSC

Drawing Title/Title du dessin:
PENTHOUSE MECHANICAL ROOM DEMOLITION AND NEW PIPING PLAN

Project No./No. du projet: PWGSC #: 9R504-00
Sheet/Feuille: M-321
Revision no./No. de révision: 00
SIAMREC #: 115615307 12 OF 34





30 DEC 2015

0	ISSUED FOR TENDER	21/12/15
1	DESCRIPTION / Description	DATE / Date

DEPARTMENT OF FISHERIES AND OCEANS

Project file / Titre du projet
**9860 W SAANICH ROAD
 SIDNEY BC**

**INSTITUTE OF OCEAN SCIENCES
 HEATING SYSTEM UPGRADE**

Consultant Signature Only:
 Designed by/Concept par: JAE RYU, P.ENG, P.E.
 Drawn by/ Dessiné par: JAE RYU, P.ENG, P.E.

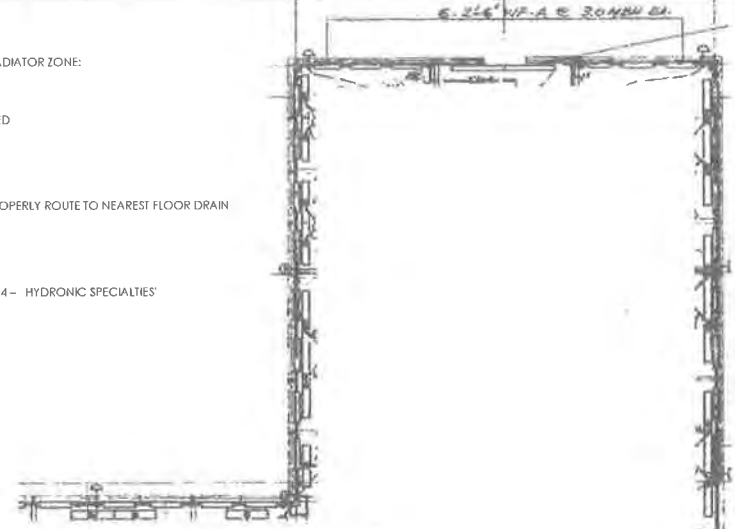
Project Manager / Gestionnaire de projet: FRANCOIS LEDOUX
 Regional Manager, Architecture and Engineering Services / Directeur régional, Services d'architecture et de génie: FRANCOIS LEDOUX

Drawing title / Titre du dessin
**AH-402 AND AH-403
 DEMOLITION AND NEW PIPING PLAN**

Project No. / No. du projet: PWGSC #: 9R504-00 STANTEC #: 115615307	Sheet / Feuille: M-401 13 OF 34	Revision no. / No. de révision: 00
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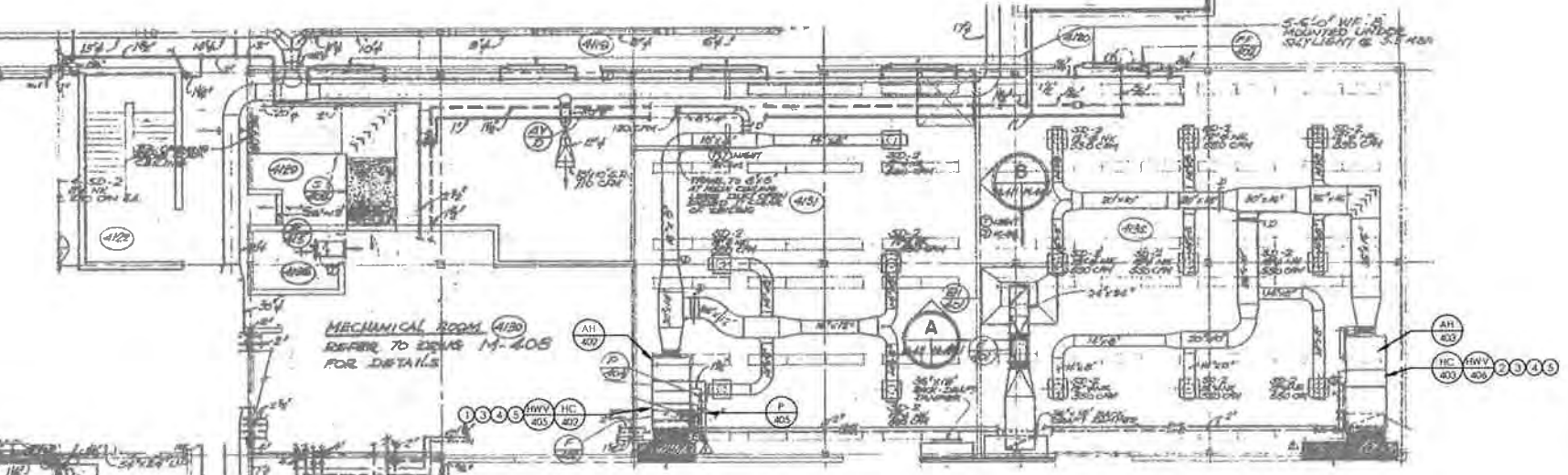
GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

1. GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
2. DRAIN LINES:
 - 2.1 MAINTAIN EXISTING DRAIN LINES FOR THE HYDRONIC LOW POINTS TO THE EXTENT POSSIBLE. WHEN DRAIN LINES NEED TO BE ALTERED, PROVIDE LINES OF EQUIVALENT SIZE AND PROPERLY ROUTE TO NEAREST FLOOR DRAIN
 - 2.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
3. HYDRONIC PIPES, FITTINGS, COMPONENTS, AND CONTROLS:
 - 3.1 PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES, AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 232116 - "HYDRONIC SYSTEM STEEL" AND 32114 - "HYDRONIC SPECIALTIES"
 - 3.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
 - 3.3 PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4 PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DIGITAL CONTROL SYSTEM AS SHOWN AND:
 - 3.4.1 CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AI POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS
 - 3.5 PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER:
 - 3.5.1 EQUIPMENT SPECIFICATIONS
 - 3.5.2 SPEC SECT 32114 - "HYDRONIC SPECIALTIES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS



GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:

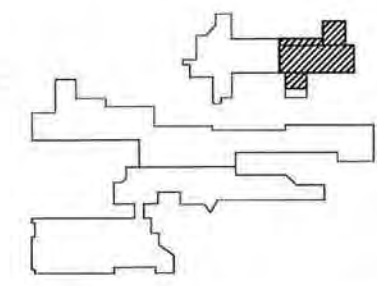
1. GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
2. DEMOLITION WASTE:
 - 2.1 ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REFURBISHMENT AND REUSE OR RECYCLING
 - 2.2 HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501.

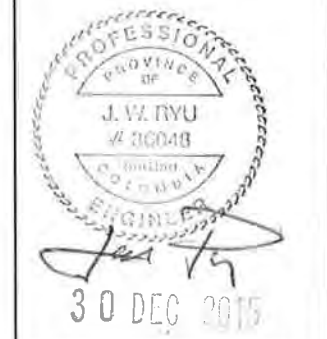
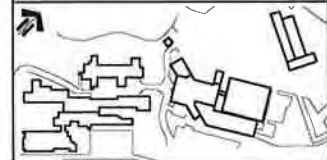


SHEET NOTES:

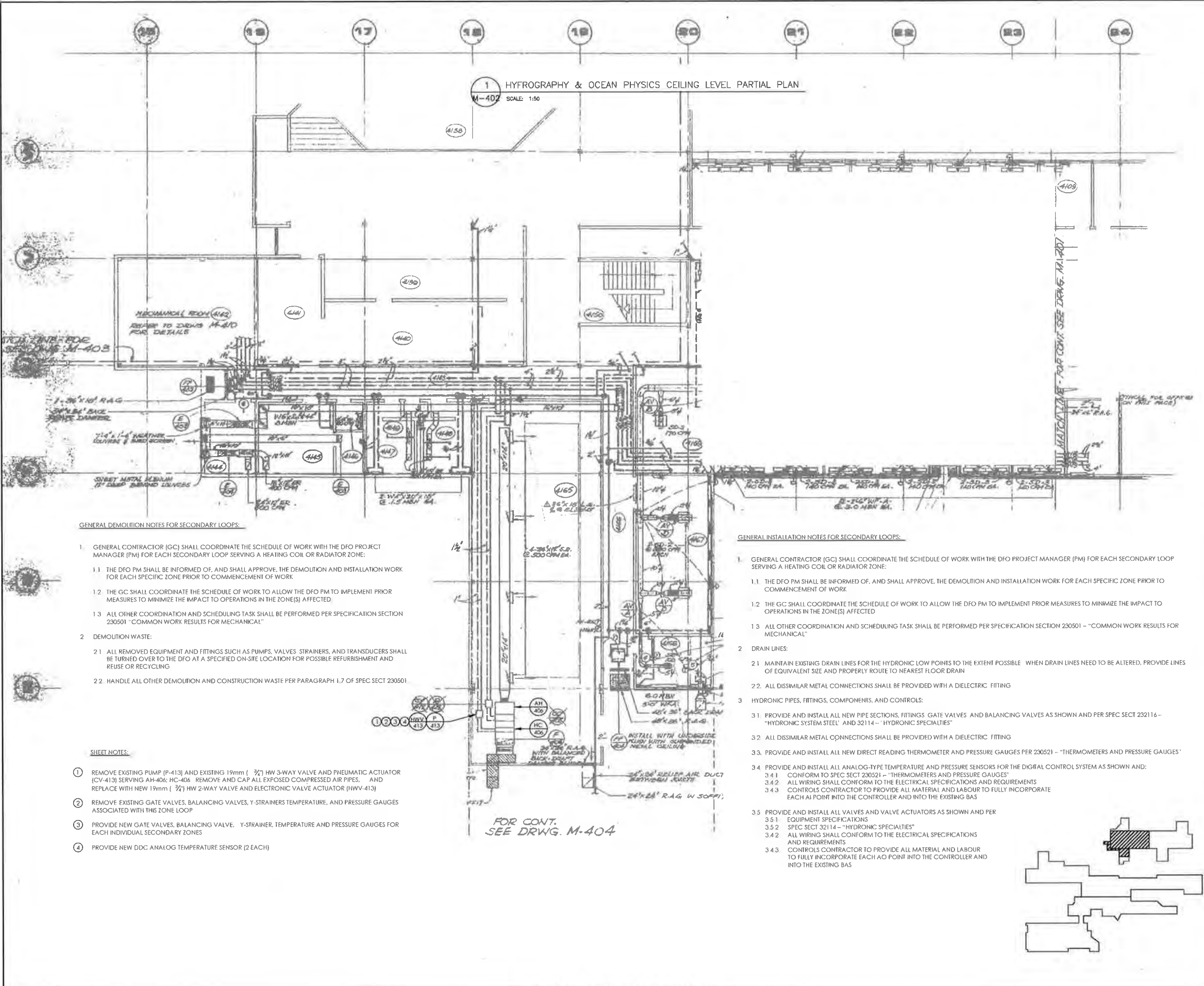
- ① REMOVE EXISTING 19mm (3/4") HW 2-WAY VALVE AND PNEUMATIC ACTUATOR (CV-405) SERVING AH-402; HC-402. REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES. AND REPLACE WITH NEW 19mm (3/4") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-405)
- ② REMOVE EXISTING 19mm (3/4") HW 2-WAY VALVE AND PNEUMATIC ACTUATOR (CV-406) SERVING AH-403; HC-403. REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES. AND REPLACE WITH NEW 19mm (3/4") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-406)
- ③ REMOVE EXISTING GATE VALVES, BALANCING VALVES, Y-STRAINERS, TEMPERATURE, AND PRESSURE GAUGES ASSOCIATED WITH THIS ZONE LOOP
- ④ PROVIDE NEW GATE VALVES, BALANCING VALVE, Y-STRAINER, TEMPERATURE AND PRESSURE GAUGES FOR EACH INDIVIDUAL SECONDARY ZONES
- ⑤ PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR (2 EACH)

1 HYDROGRAPHY & OCEAN PHYSIC CEILING LEVEL PARTIAL PLAN
 M-401 SCALE: 1:50





1 HYDROGRAPHY & OCEAN PHYSICS CEILING LEVEL PARTIAL PLAN
 M-402 SCALE: 1:50



GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:

1. GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 "COMMON WORK RESULTS FOR MECHANICAL"
2. DEMOLITION WASTE:
 - 2.1 ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REFURBISHMENT AND REUSE OR RECYCLING
 - 2.2 HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501

SHEET NOTES:

1. REMOVE EXISTING PUMP (P-413) AND EXISTING 19mm (3/4") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-413) SERVING AH-406; HC-406. REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES, AND REPLACE WITH NEW 19mm (3/4") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-413)
2. REMOVE EXISTING GATE VALVES, BALANCING VALVES, Y-STRAINERS TEMPERATURE, AND PRESSURE GAUGES ASSOCIATED WITH THIS ZONE LOOP
3. PROVIDE NEW GATE VALVES, BALANCING VALVE, Y-STRAINER, TEMPERATURE AND PRESSURE GAUGES FOR EACH INDIVIDUAL SECONDARY ZONES
4. PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR (2 EACH)

GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

1. GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 "COMMON WORK RESULTS FOR MECHANICAL"
2. DRAIN LINES:
 - 2.1 MAINTAIN EXISTING DRAIN LINES FOR THE HYDRONIC LOW POINTS TO THE EXTENT POSSIBLE. WHEN DRAIN LINES NEED TO BE ALTERED, PROVIDE LINES OF EQUIVALENT SIZE AND PROPERLY ROUTE TO NEAREST FLOOR DRAIN
 - 2.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
3. HYDRONIC PIPES, FITTINGS, COMPONENTS, AND CONTROLS:
 - 3.1 PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 232116 "HYDRONIC SYSTEM STEEL" AND 32114 "HYDRONIC SPECIALTIES"
 - 3.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
 - 3.3 PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4 PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DDC/BAS CONTROL SYSTEM AS SHOWN AND:
 - 3.4.1 CONFORM TO SPEC SECT 230521 "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS
 - 3.5 PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER
 - 3.5.1 EQUIPMENT SPECIFICATIONS
 - 3.5.2 SPEC SECT 32114 "HYDRONIC SPECIALTIES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

FOR CONT. SEE DRWG. M-404

0	ISSUED FOR TENDER	21/12/15
1	DESCRIPTION/DESCRIPTION	DATE/DATE

DEPARTMENT OF FISHERIES AND OCEANS

Project title / titre du projet
**9860 W SAANICH ROAD
 SIDNEY BC**

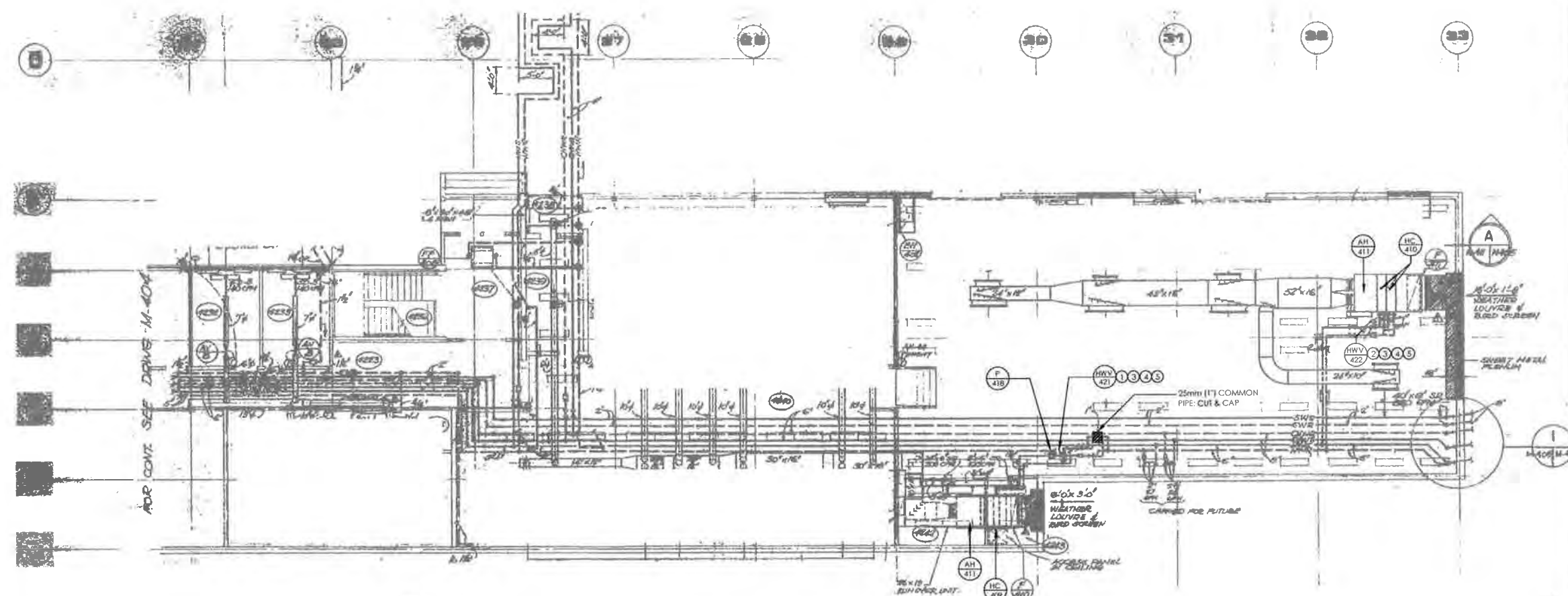
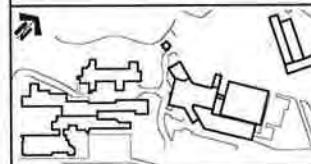
**INSTITUTE OF OCEAN SCIENCES
 HEATING SYSTEM UPGRADE**

Consultant / Signataire
 Designer / Conçoit par: JAE RYU, P.ENG, P.E.
 Drawn by / Dessiné par: JAE RYU, P.ENG, P.E.
 Project Manager / Administrateur de Projets: FRANCOIS LEDOUX
 Regional Manager, Architectural and Engineering Services / Gérant régional, Services d'architecture et de génie: FRASCO

AH-406 DEMOLITION AND NEW PIPING PLAN

Project No. / No. du projet PWGSC #: 9R504-00 STATREC #: 115615307	Sheet / Feuille M-402 14 OF 34	Revision no. / La révision 00
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I HYDROGRAPHY & OCEAN PHYSICS WORKSHOP CEILING LEVEL PARTIAL PLAN
M-405 SCALE 1/50

GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:

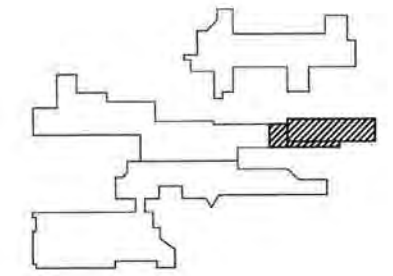
- 1 GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 "COMMON WORK RESULTS FOR MECHANICAL"
- 2 DEMOLITION WASTE:
 - 2.1 ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REFURBISHMENT AND REUSE OR RECYCLING
 - 2.2 HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501

GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

- 1 GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
- 2 DRAIN LINES:
 - 2.1 MAINTAIN EXISTING DRAIN LINES FOR THE HYDRONIC LOW POINTS TO THE EXTENT POSSIBLE WHEN DRAIN LINES NEED TO BE ALTERED, PROVIDE LINES OF EQUIVALENT SIZE AND PROPERLY ROUTE TO NEAREST FLOOR DRAIN
 - 2.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
- 3 HYDRONIC PIPES, FITTINGS, COMPONENTS, AND CONTROLS:
 - 3.1 PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES, AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 232116 - "HYDRONIC SYSTEM STEEL" AND 32114 - "HYDRONIC SPECIALTIES"
 - 3.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
 - 3.3 PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4 PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DIGITAL CONTROL SYSTEM AS SHOWN AND:
 - 3.4.1 CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AI POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS
 - 3.5 PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER
 - 3.5.1 EQUIPMENT SPECIFICATIONS
 - 3.5.2 SPEC SECT 32114 - "HYDRONIC SPECIALTIES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

SHEET NOTES:

- 1 REMOVE EXISTING PUMP (P-418) AND EXISTING 19mm (3/4") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-421) SERVING AH-411; HC-409 REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES, AND REPLACE WITH NEW 19mm (3/4") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-421)
- 2 REMOVE EXISTING 38mm (1-1/2") HW 2-WAY VALVE AND PNEUMATIC ACTUATOR (CV-422) SERVING AH-411; HC-410. REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES, AND REPLACE WITH NEW 38mm (1-1/2") HW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-422)
- 3 REMOVE EXISTING GATE VALVES, BALANCING VALVES, Y-STRAINERS, TEMPERATURE, AND PRESSURE GAUGES ASSOCIATED WITH EACH INDIVIDUAL SECONDARY ZONES
- 4 PROVIDE NEW GATE VALVES, BALANCING VALVE, Y-STRAINER, TEMPERATURE AND PRESSURE GAUGES FOR EACH INDIVIDUAL SECONDARY ZONES
- 5 PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR (2 EACH)



Jae R

PROFESSIONAL
ENGINEER
J. W. RYU
36048
COLUMBIA
30 DEC 2015

0	ISSUED FOR TENDER	21/12/15
1	Designation/Description	Date/Date

DEPARTMENT OF FISHERIES AND OCEANS

Project site / titre du projet
**9860 W SAANICH ROAD
SIDNEY BC**

INSTITUTE OF OCEAN SCIENCES

HEATING SYSTEM UPGRADE

Consultant Signature Only

Designed by/Concept par: JAE RYU, P.ENG, P.E.

Drawn by/Dessiné par: JAE RYU, P.ENG, P.E.

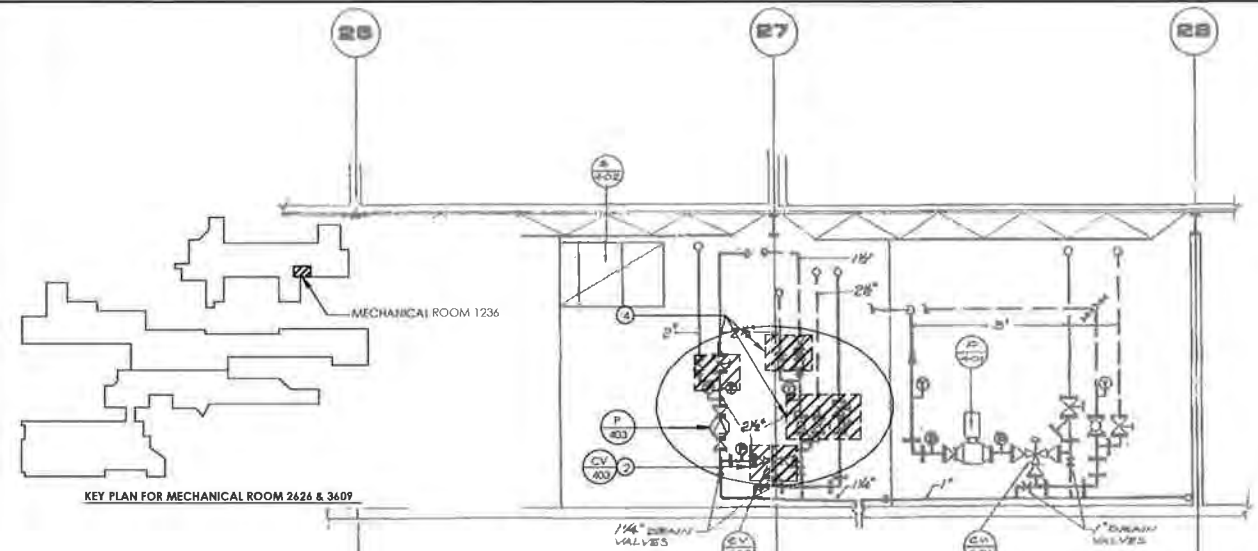
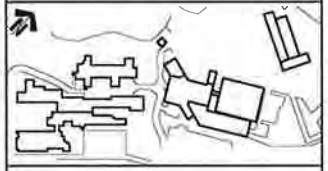
HWSC Project Manager/Administrateur de Projet /PSSE: FRANCOIS LEDOUX

Regional Manager/Administrateur des Services Régionaux /Gérant des Services Régionaux: TPBSC

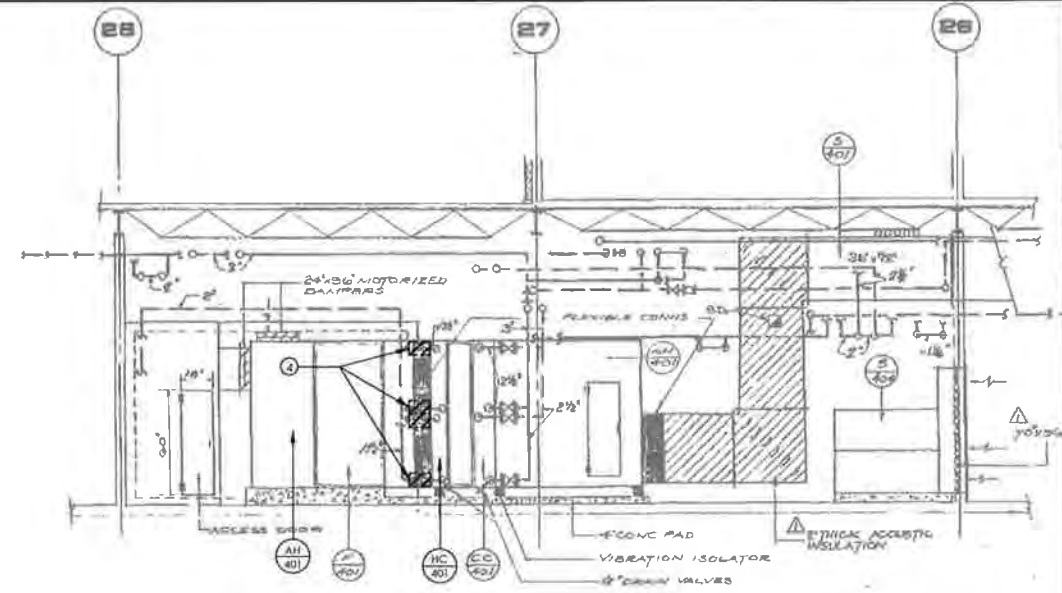
Drawing Title / titre du dessin
**AH-410 AND 411
DEMOLITION AND NEW
PIPING PLAN**

Project No./No. du projet PWSC #: 9R504-00 STANTEC #: 115615307	Sheet/Feuille M-405 15 OF 34	Revision No./No. de Révision 00
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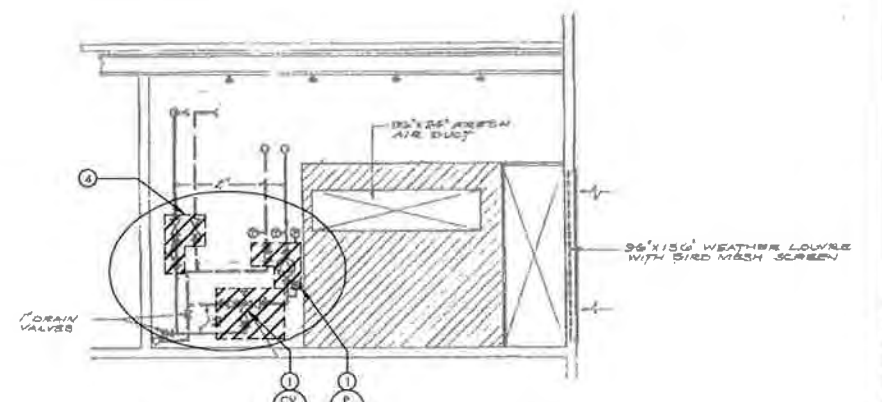




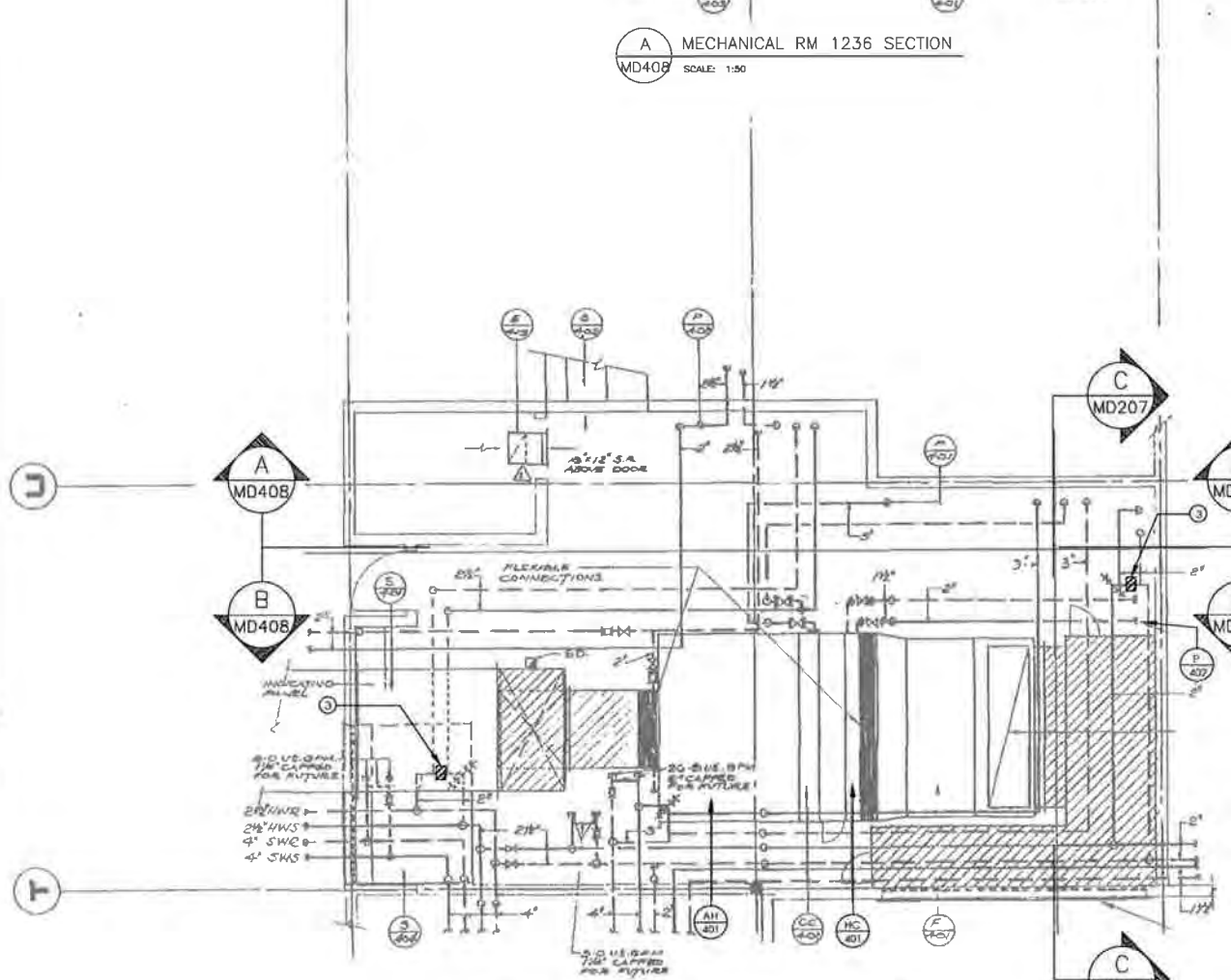
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MD408 SCALE: 1:50



B MECHANICAL RM 1236 SECTION
MD408 SCALE: 1:50



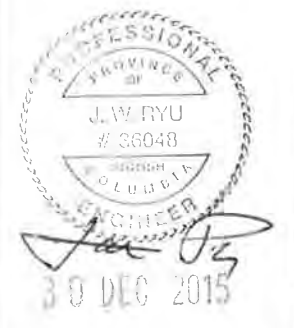
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1 MECHANICAL RM 1236 PARTIAL PLAN
MD408 SCALE: 1:50

- GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:**
- GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK.
 - THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED.
 - ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 "COMMON WORK RESULTS FOR MECHANICAL"
 - DEMOLITION WASTE:
 - ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REBURNISHMENT AND REUSE OR RECYCLING
 - HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501

- SHEET NOTES:**
- REMOVE EXISTING HW CIRCULATION PUMP (P-402) AND EXISTING 38mm (1 1/2") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-402) SERVING AH-401; HC-401. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
 - REMOVE EXISTING 25mm (1") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-205) AH-203; HC-203. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
 - REMOVE AND CAP ISOLATION / COMMON PIPE SEGMENT
 - REMOVE EXISTING GATE VALVES, BALANCING VALVES, Y-STRAINERS, TEMPERATURE AND PRESSURE GAUGES



Rev	Description/Description	Date/Date
0	ISSUED FOR TENDER	21/12/15

DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet:
**9860 W SAANICH ROAD
SIDNEY BC**

INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Designed by/Concept par:
JAE RYU, P.ENG, P.E.

Drawn by/Dessiné par:
JAE RYU, P.ENG, P.E.

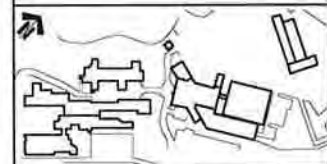
Project Manager/Administrateur de projet:
FRANCOIS LEDOUX

Regional Manager, Architecture and Engineering Services/
Généraliste régionale, Services d'architecture et de génie:
FRANCOIS LEDOUX

Drawing title/Titre du dessin:
**MECHANICAL ROOM
1236 DEMOLITION PLAN**

Project No./No. du projet: PWGSC # 98504-00 SIANREC # 115615307	Sheet/Feuille: MD408	Revision no./No. de révision: 00
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JA R

PROFESSIONAL ENGINEER
 PROVINCE OF
 J. W. RYU
 # 36048
 BRITISH COLUMBIA
 30 DEC 2015

0	ISSUED FOR TENDER	21/12/15
1	DESCRIPTION / DESCRIPTION	DATE / DATE

DEPARTMENT OF FISHERIES AND OCEANS

Project file / titre du projet
**9860 W SAANICH ROAD
 SIDNEY BC**

**INSTITUTE OF OCEAN SCIENCES
 HEATING SYSTEM UPGRADE.**

Designed by / conçu par
 JAE RYU, P. ENG. P. E.

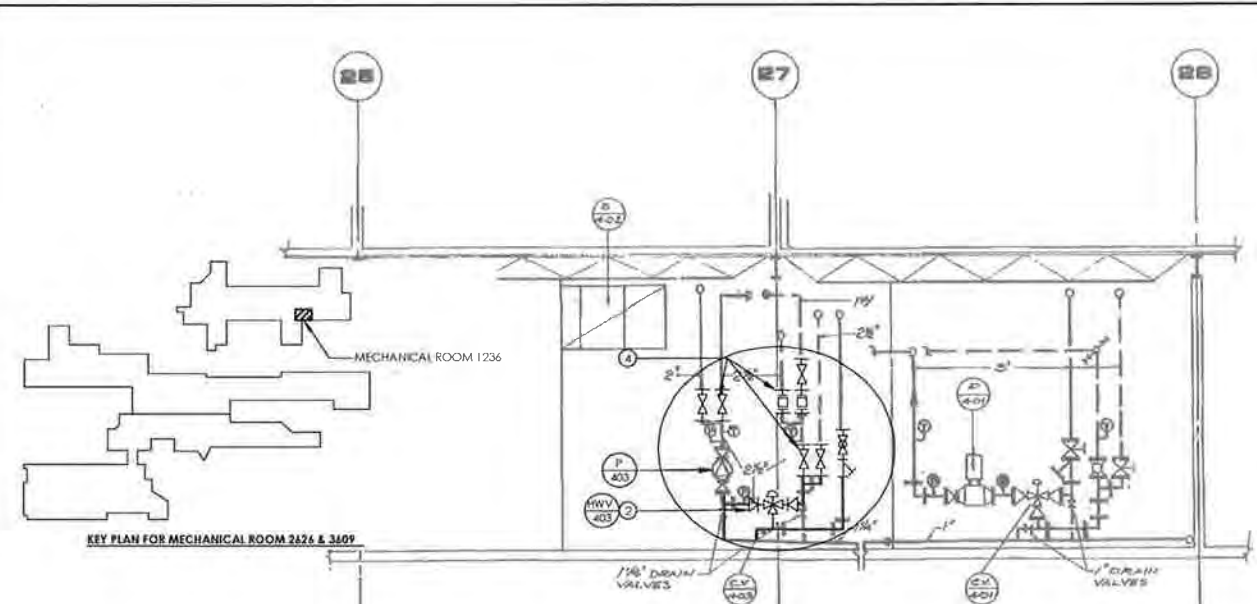
Drawn by / dessiné par
 JAE RYU, P. ENG. P. E.

PWOSC Project Manager / Administrateur de Projets / PMSC
 FRANCOIS LEDOUX

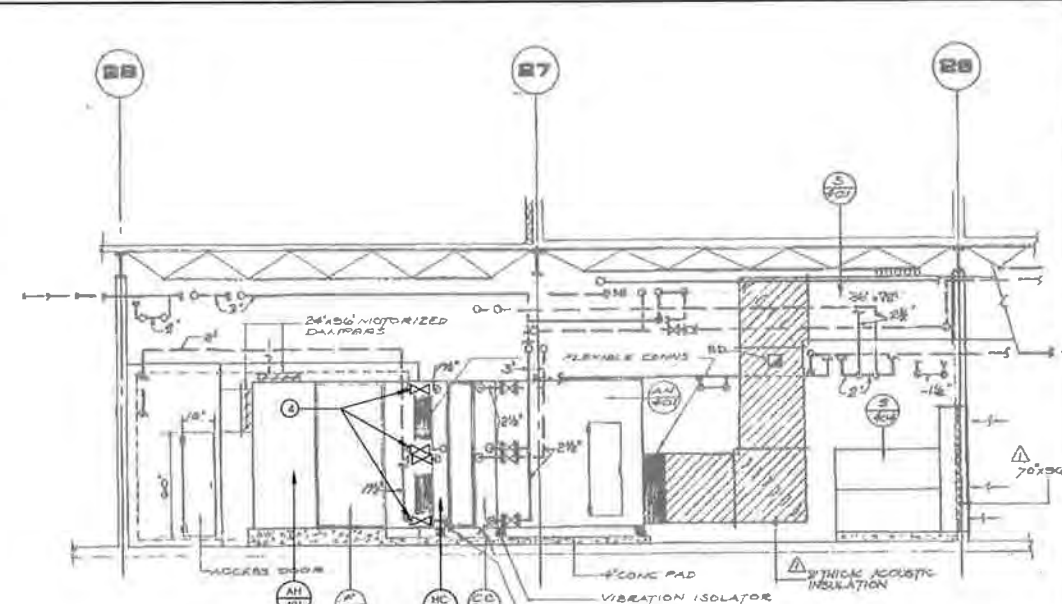
Regional Manager, Architecture and Engineering Services
 Directeur régional, Services d'architecture et de génie, TPSC

Drawing title / titre du dessin
**MECHANICAL ROOM
 1236 NEW PIPING PLAN
 AND SECTIONS**

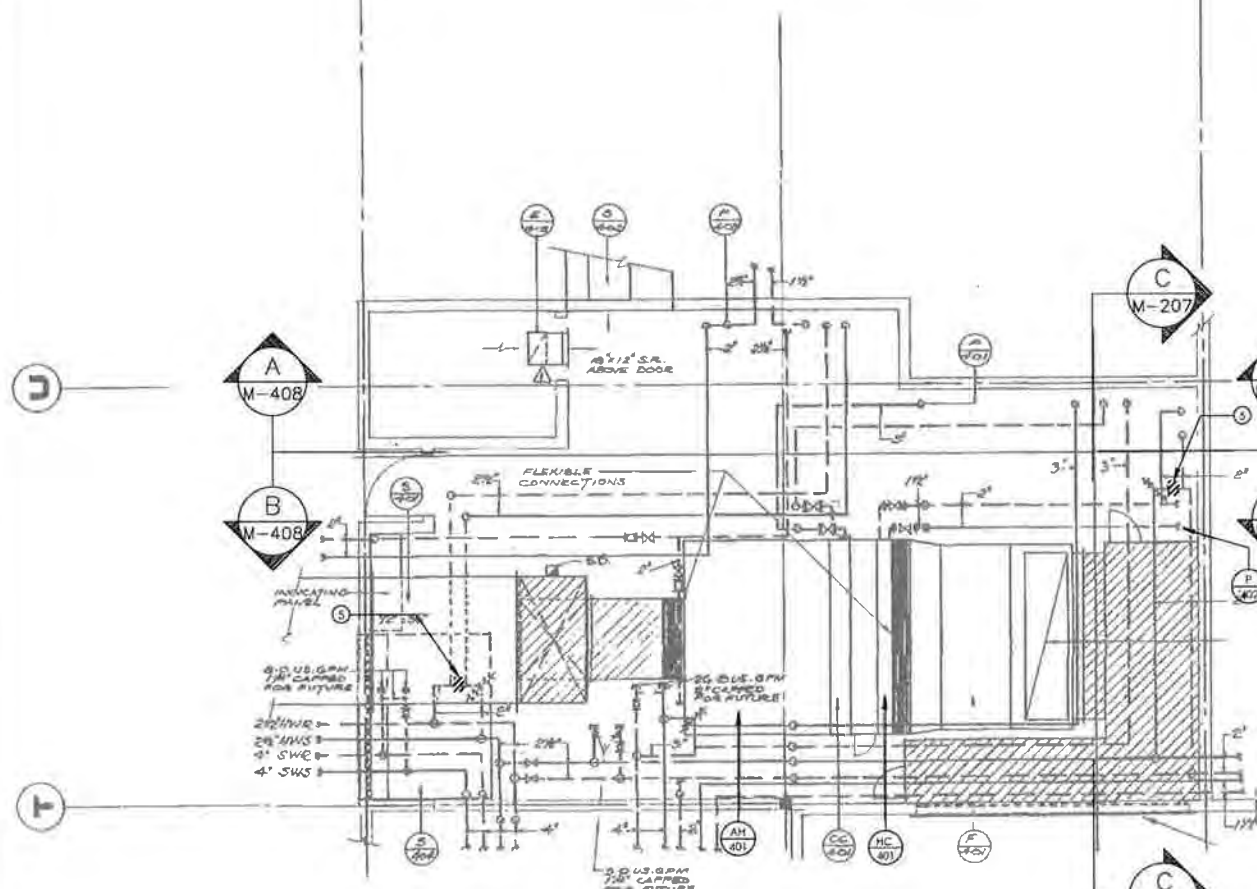
Project No. / No. du projet PWOSC #: 9R504-00 STANREC #: 115615307	Sheet / Feuille M-408 17 OF 34	Revision no. / no. de révisions 00
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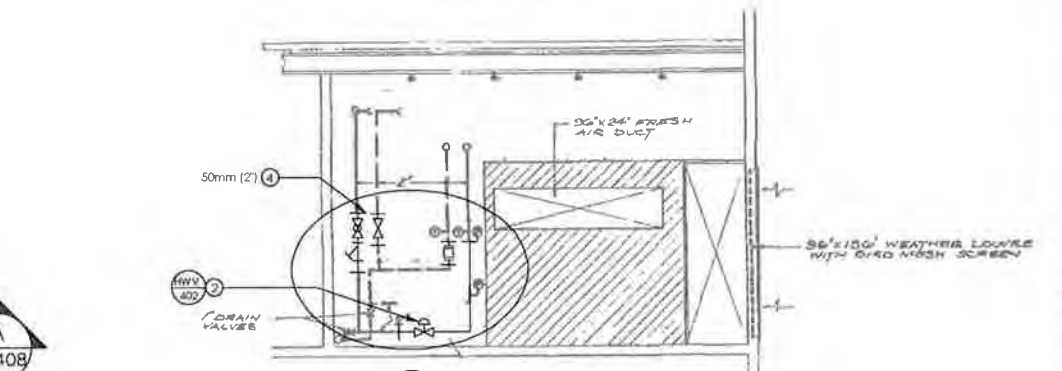
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1 MECHANICAL RM 1236 PARTIAL PLAN
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GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

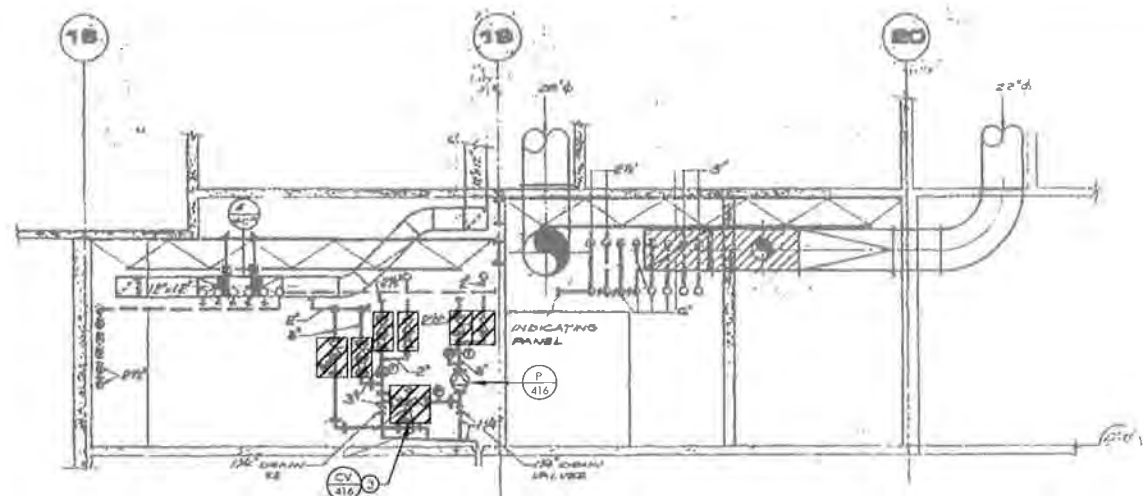
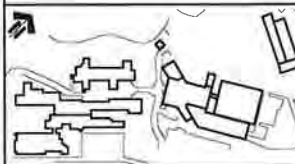
- GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - THE DFO PM SHALL BE INFORMED OF AND SHALL APPROVE THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
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- DRAIN LINES:
 - MAINTAIN EXISTING DRAIN LINES FOR THE HYDRONIC LOW POINTS TO THE EXTENT POSSIBLE. WHEN DRAIN LINES NEED TO BE ALTERED, PROVIDE LINES OF EQUIVALENT SIZE AND PROPERLY ROUTE TO NEAREST FLOOR DRAIN
 - ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
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 - PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 - "THERMOMETERS AND PRESSURE GAUGES"

- PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DIGITAL CONTROL SYSTEM AS SHOWN AND:
 - CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
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 - CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

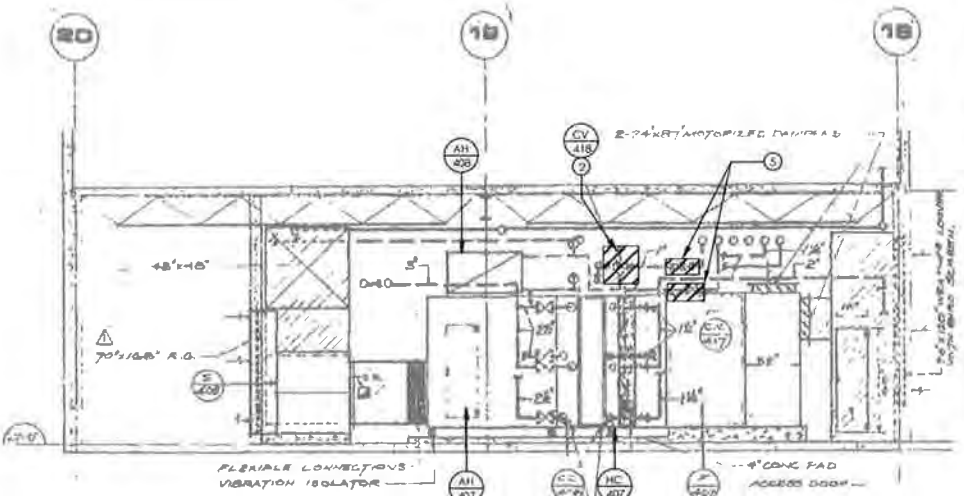
SHEET NOTES:

- PROVIDE NEW PIPE SECTIONS AND FITTINGS AS SHOWN
- PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-402) SERVING AH-401; HC-401
- PROVIDE NEW 3-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-403) SERVING RADIATOR ZONES
- PROVIDE NEW GATE VALVES, BALANCING VALVE, Y-STRAINER
- PROVIDE NEW TEMPERATURE AND PRESSURE GAUGES (2 EACH)
- PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR (2 EACH)
- PROVIDE NEW DDC ANALOG PRESSURE SENSOR (2 EACH)

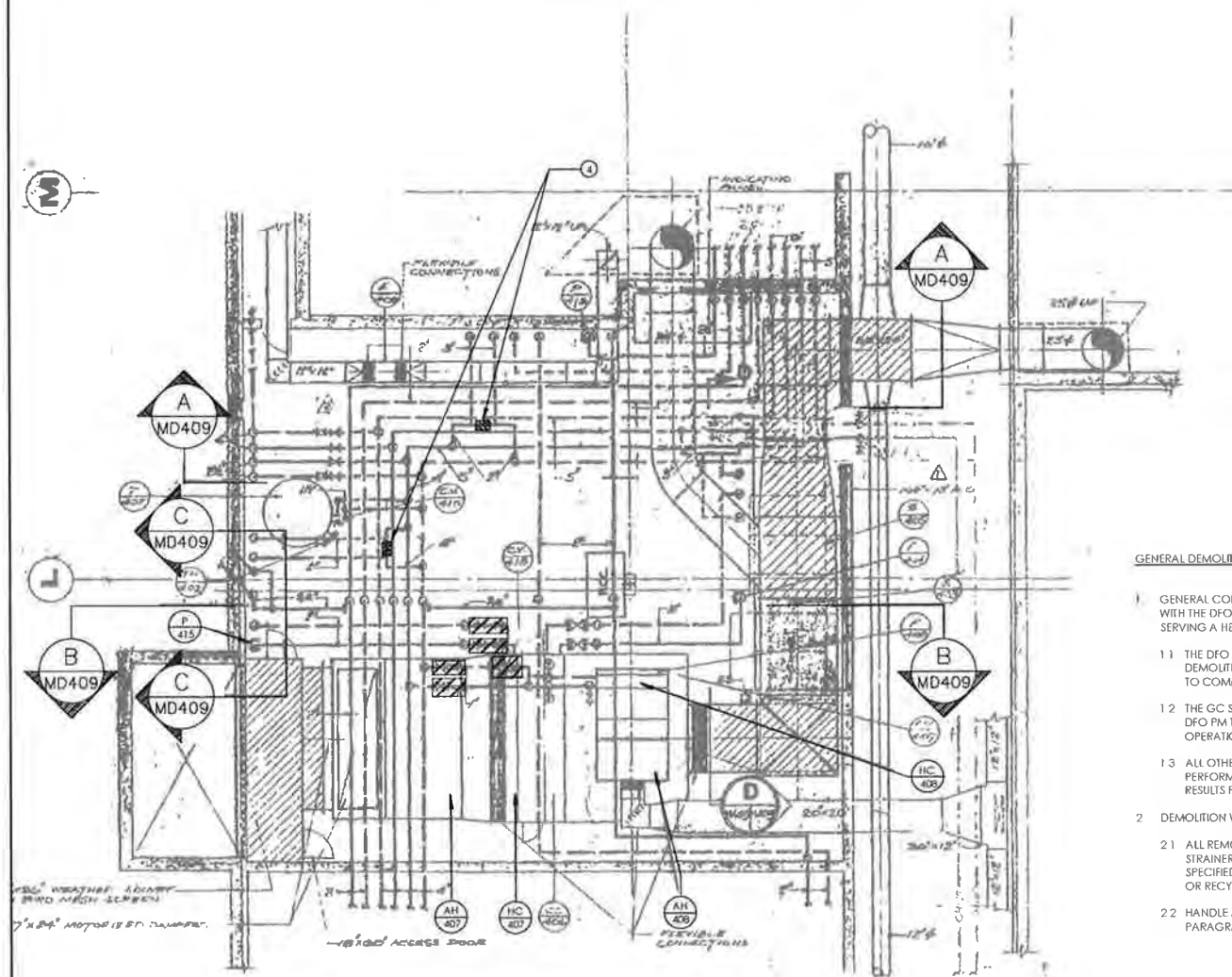




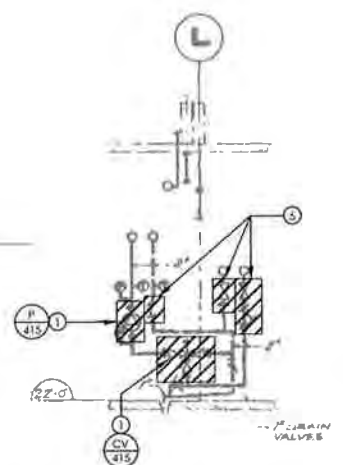
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 MD409 SCALE: 1:50



1 MECHANICAL RM 1002 PARTIAL PLAN
 MD409 SCALE: 1:50



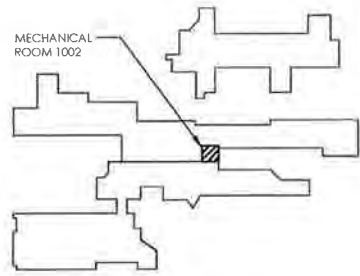
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GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:

- 1) GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
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- 2) DEMOLITION WASTE:
 - 2.1 ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REFURBISHMENT AND REUSE OR RECYCLING
 - 2.2 HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501

SHEET NOTES:

- 1) REMOVE EXISTING HW CIRCULATION PUMP (P-415) AND EXISTING 38mm (1- 1/2") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-415) SERVING AH-407; HC-407. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- 2) REMOVE EXISTING 19mm (3/4") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-418) SERVING AH-408; HC-408. REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- 3) REMOVE EXISTING 50mm (2") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-416) SERVING RADIATION ZONES. REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
- 4) REMOVE AND CAP ISOLATION / COMMON PIPE SEGMENT
- 5) REMOVE EXISTING GATE VALVES, BALANCING VALVES, Y-STRAINERS, TEMPERATURE AND PRESSURE GAUGES



KEY PLAN FOR MECHANICAL ROOM 2626 & 3609

Jan R

 3 DEC 2015

Issued For	Description/Description	Date/Date
ISSUED FOR TENDER		21/12/15

DEPARTMENT OF FISHERIES AND OCEANS

Project No./N° du projet
9860 W SAANICH ROAD SIDNEY BC

INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Designer/Concepteur par
 JAE RYU, P. ENG, P. E.

Drawn by/Dessiné par
 JAE RYU, P. ENG, P. E.

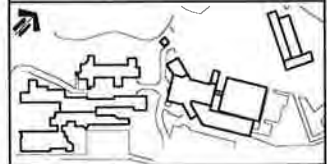
Project Manager/Administrateur de projet
 FRANCOIS LEDOUX

Regional Manager, Architectural and Engineering Services
 Directeur régional, Services d'architecture et de génie, IPSC

Drawing title/Titre du dessin
MECHANICAL ROOM 1002 DEMOLITION PLAN

Project No./N° du projet	Sheet/Feuille	Revision no./N° de révision
PWGSC #: 98504-00 STANTEC #: 115615307	MD409	00





J. W. Ryu
 PROFESSIONAL ENGINEER
 PROVINCE OF BRITISH COLUMBIA
 J. W. RYU
 # 36048
 30 DEC 2015

ISSUED FOR TENDER	21/12/15
Description/Description	Scale/Échelle
Client/Client	

DEPARTMENT OF FISHERIES AND OCEANS

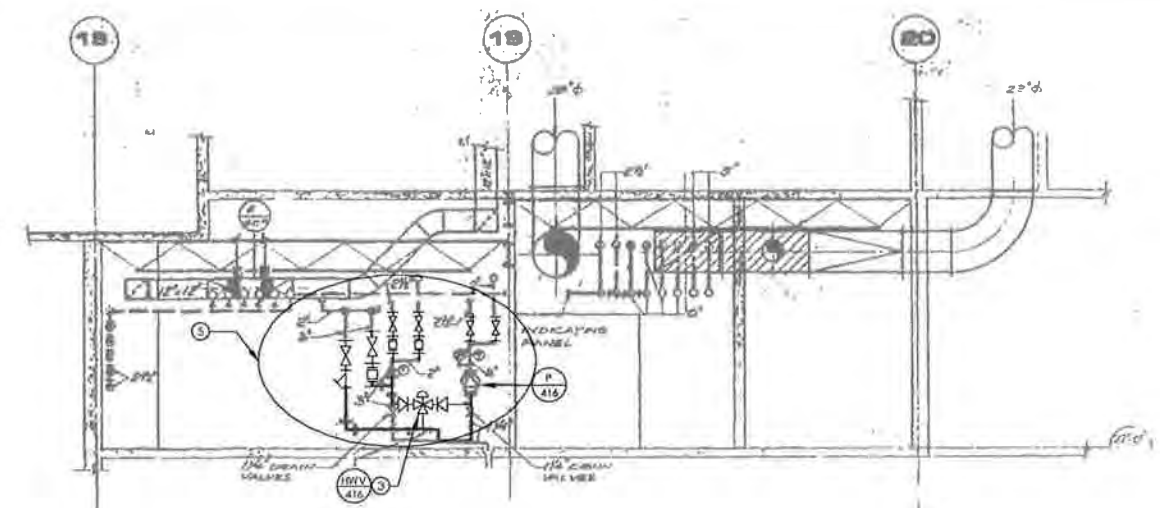
Project title/Titre du projet
9860 W SAANICH ROAD SIDNEY BC

INSTITUTE OF OCEAN SCIENCES HEATING SYSTEM UPGRADE

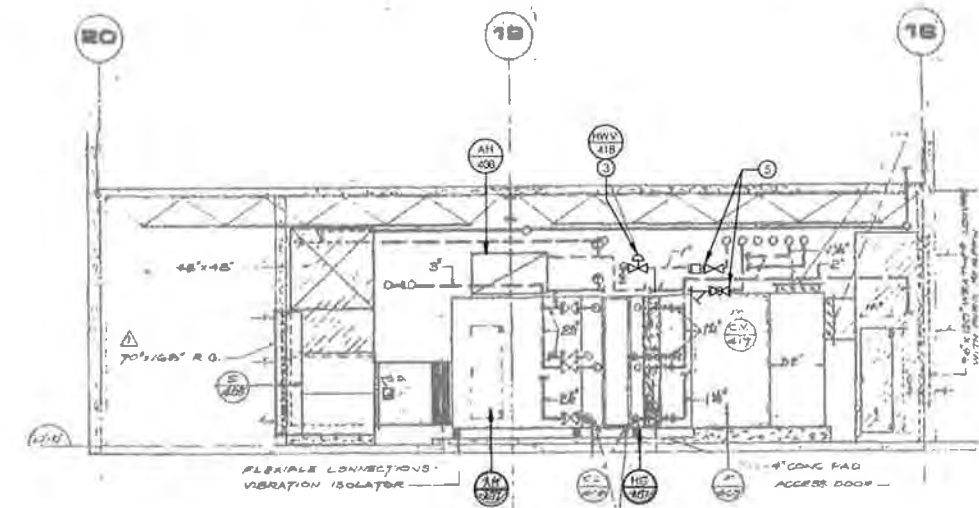
Consultant/Consultant
 Designed by/Conçu par: JAE RYU, P.ENG, P.E.
 Drawn by/Dessiné par: JAE RYU, P.ENG, P.E.
 PWSC Project Manager/Administrateur de Projets PWSC: FRANCOIS LEDOUX
 Regional Manager, Architectural and Engineering Services / Gestionnaire régional, Services d'architecture et de génie, TRAC

Drawing title/Titre du dessin
MECHANICAL ROOM 1002 NEW PIPING PLAN AND SECTIONS

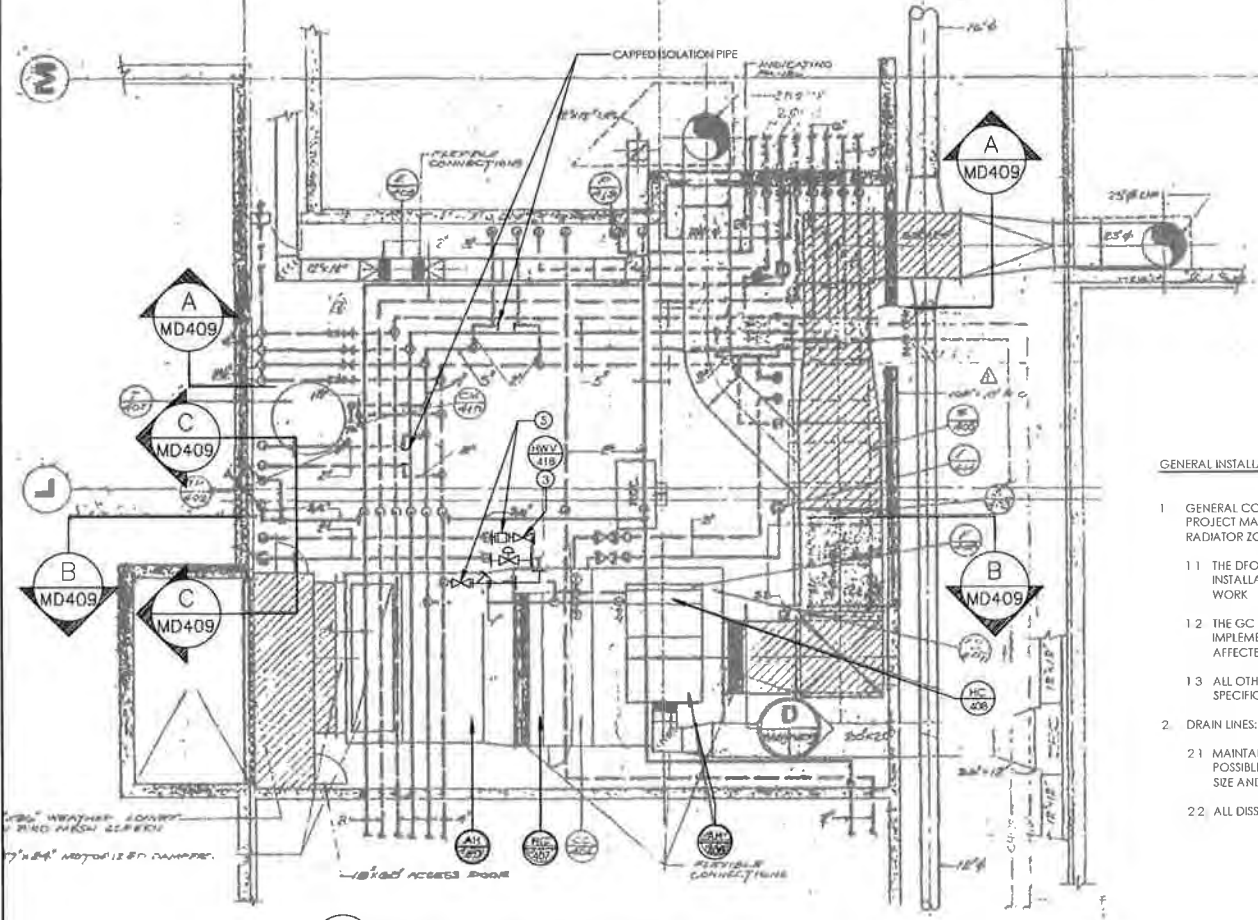
Project No./No. du projet PWSC #: 9F504-00 SIATREC #: 115615307	Sheet/Feuille M-409 19 OF 34	Revision no./Le Révision no. 00
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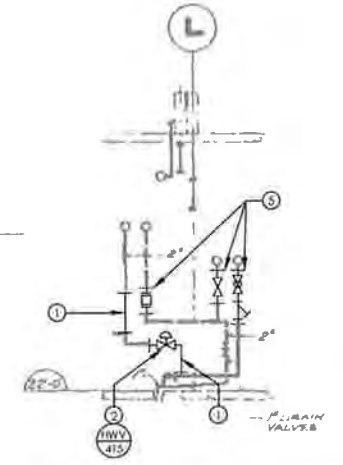
A MECHANICAL RM 1002 SECTION
 M-409 SCALE: 1:50



B MECHANICAL RM 1002 SECTION
 M-409 SCALE: 1:50



1 MECHANICAL RM 1002 PARTIAL PLAN
 M-409 SCALE: 1:50



C MECHANICAL RM 1002 SECTION
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GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

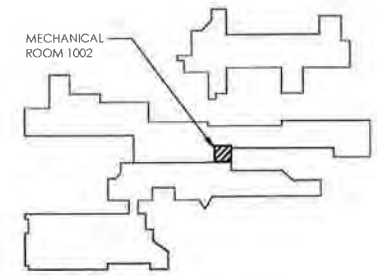
- GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
- DRAIN LINES:
 - MAINTAIN EXISTING DRAIN LINES FOR THE HYDRONIC LOW POINTS TO THE EXTENT POSSIBLE. WHEN DRAIN LINES NEED TO BE ALTERED, PROVIDE LINES OF EQUIVALENT SIZE AND PROPERLY ROUTE TO NEAREST FLOOR DRAIN
 - ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING

3 HYDRONIC PIPES, FITTINGS, COMPONENTS, AND CONTROLS:

- PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES, AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 232116 - "HYDRONIC SYSTEM STEEL" AND 32114 - "HYDRONIC SPECIALTIES"
- ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
- PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 - "THERMOMETERS AND PRESSURE GAUGES"
- PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DIGITAL CONTROL SYSTEM AS SHOWN AND:
 - CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AI POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS
- PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER:
 - EQUIPMENT SPECIFICATIONS
 - SPEC SECT 32114 - "HYDRONIC SPECIALTIES"
 - ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

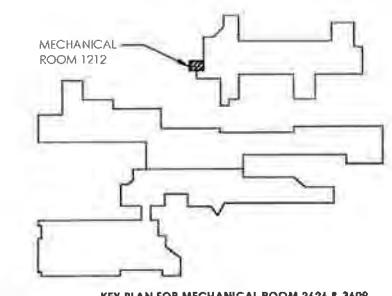
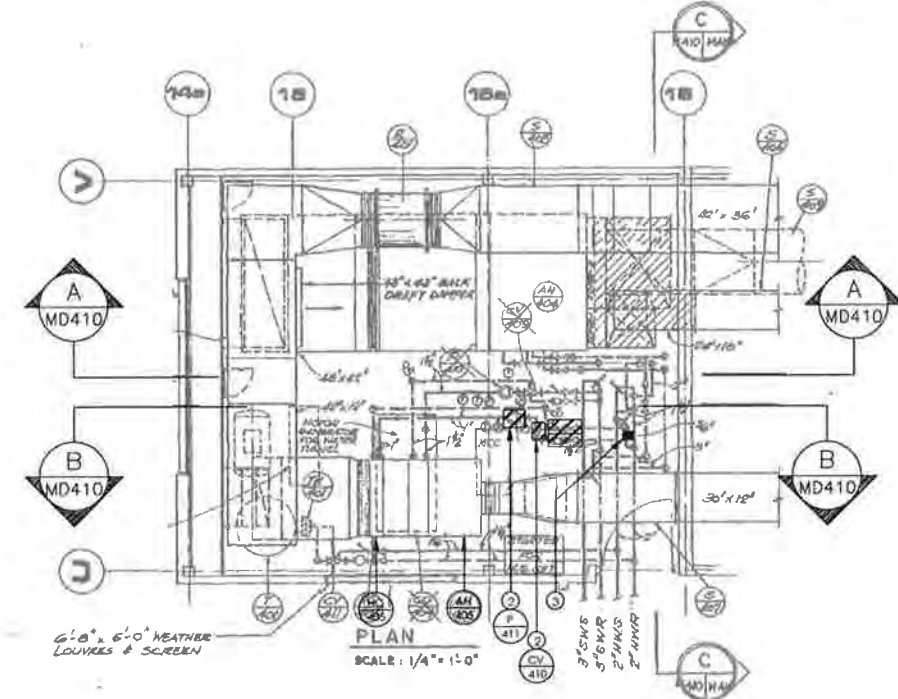
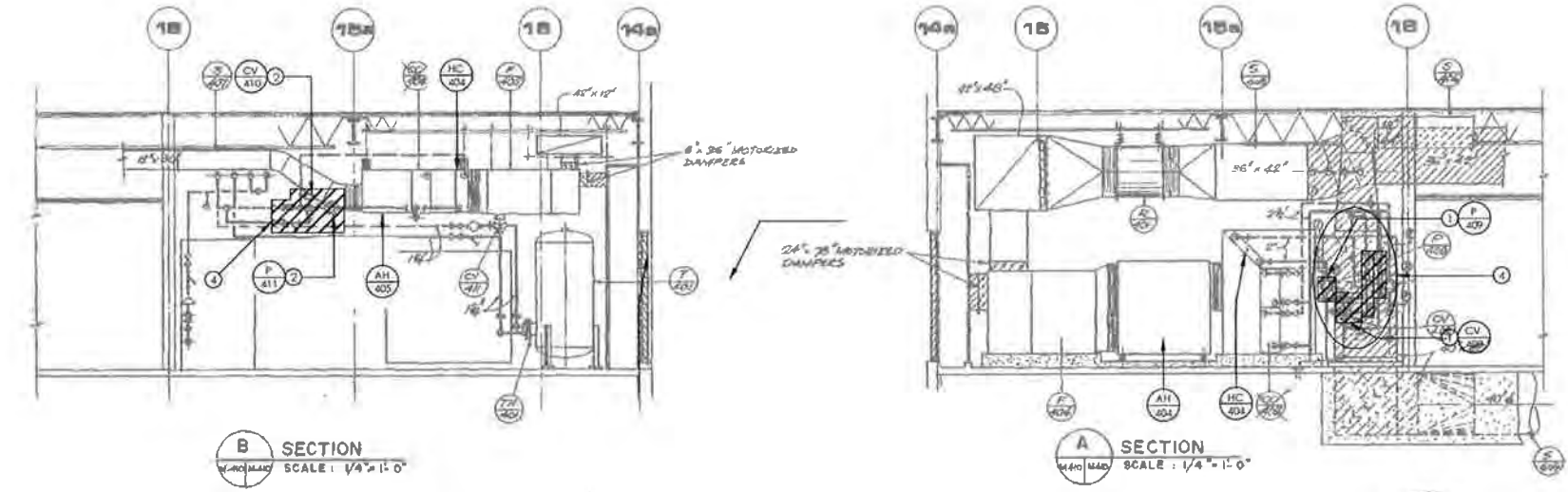
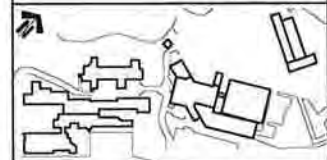
SHEET NOTES:

- PROVIDE NEW PIPE SECTIONS AND FITTINGS AS SHOWN
- PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-415) SERVING AH-407; HC-407
- PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-418) SERVING AH-408; HC-408
- PROVIDE NEW 3-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-416) SERVING RADIATOR ZONES
- PROVIDE NEW GATE VALVES, BALANCING VALVE, Y-STRAINER, TEMPERATURE AND PRESSURE GAUGES FOR EACH INDIVIDUAL SECONDARY LOOP
- PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR (2 EACH)
- PROVIDE NEW DDC ANALOG PRESSURE SENSOR (2 EACH)



KEY PLAN FOR MECHANICAL ROOM 2626 & 3609





- GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:**
1. GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE.
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK.
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED.
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 "COMMON WORK RESULTS FOR MECHANICAL"
 2. DEMOLITION WASTE:
 - 2.1 ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REFINISHMENT AND REUSE OR RECYCLING.
 - 2.2 HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501.

- SHEET NOTES:**
1. REMOVE EXISTING HW CIRCULATION PUMP (P-409) AND EXISTING 38mm (1- 1/2") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-408) SERVING AH-404; HC-404. NEATLY REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
 2. REMOVE EXISTING 19mm (3/4") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-418) SERVING AH-408; HC-408. REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES ASSOCIATED WITH THE PNEUMATIC ACTUATOR
 3. REMOVE AND CAP ISOLATION / COMMON PIPE SEGMENT
 4. REMOVE EXISTING GATE VALVES, BALANCING VALVES, Y-STRAINERS, TEMPERATURE AND PRESSURE GAUGES



30 DEC 2015
[Signature]

Issue No.	Description/Description	Date/Date
0	ISSUED FOR TENDER	21/12/15

DEPARTMENT OF FISHERIES AND OCEANS

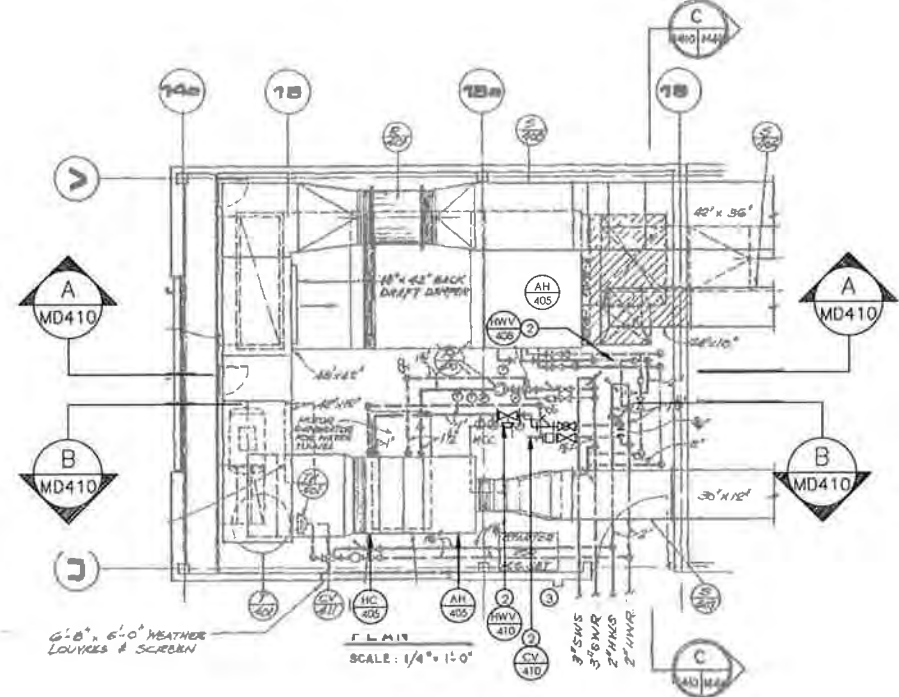
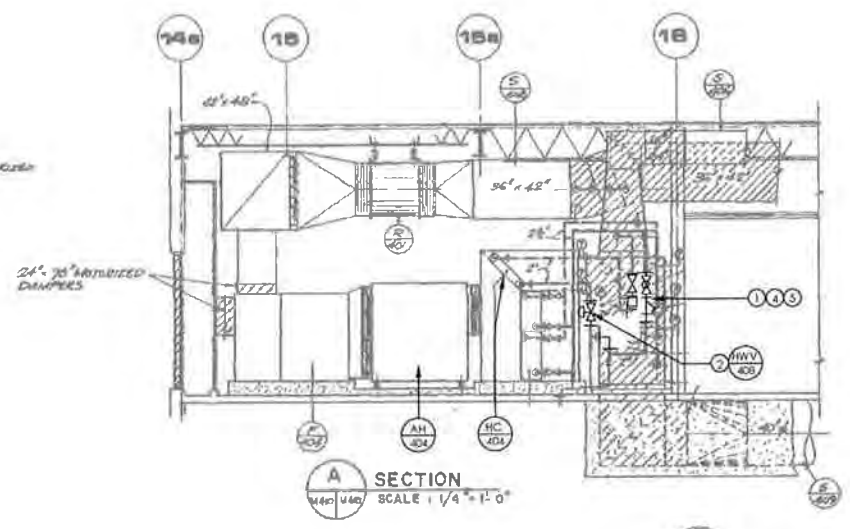
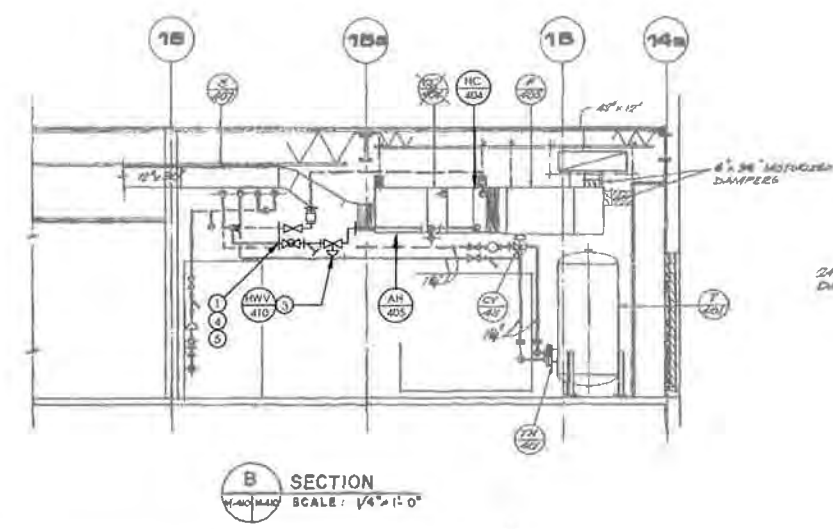
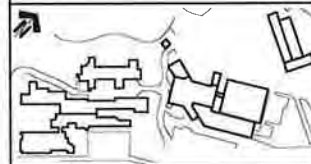
Project title/Titre du projet:
**9860 W SAANICH ROAD
 SIDNEY BC**
INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Designer/Concevoir par: JAE RYU, P.ENG, P.E.
 Drawn/ Dessiné par: JAE RYU, P.ENG, P.E.
 PWSC Project Manager / Administrateur de Travaux: FRANCOIS LEDOUX
 Regional Manager, Administration des Travaux Techniques, Bâtiments Régionaux, Section d'Architecture et de Génie, TPBC

Drawing File/Titre du Dessin:
MECHANICAL ROOM 1212 DEMOLITION PLAN

Project No./No. du projet: PWSC #: 9R504-00 SIATREC #: 115615307	Sheet/Feuille: MD410 20 OF 24	Revision no./La Révision no.: 00
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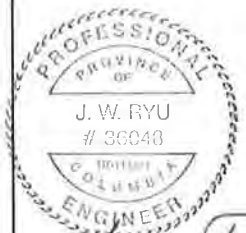


GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

- 1 GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE.
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
- 2 DRAIN LINES:
 - 2.1 MAINTAIN EXISTING DRAIN LINES FOR THE HYDRONIC LOW POINTS TO THE EXTENT POSSIBLE. WHEN DRAIN LINES NEED TO BE ALTERED, PROVIDE LINES OF EQUIVALENT SIZE AND PROPERLY ROUTE TO NEAREST FLOOR DRAIN
 - 2.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
- 3 HYDRONIC PIPES, FITTINGS, COMPONENTS, AND CONTROLS:
 - 3.1 PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES, AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 232116 - "HYDRONIC SYSTEM STEEL" AND 32114 - "HYDRONIC SPECIALTIES"
 - 3.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
 - 3.3 PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4 PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DIGITAL CONTROL SYSTEM AS SHOWN AND:
 - 3.4.1 CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AI POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS
 - 3.5 PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER:
 - 3.5.1 EQUIPMENT SPECIFICATIONS
 - 3.5.2 SPEC SECT 32114 - "HYDRONIC SPECIALTIES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

SHEET NOTES:

- ① PROVIDE NEW PIPE SECTIONS AND FITTINGS AS SHOWN
- ② PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-408) SERVING AH-404; HC-404
- ③ PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-410) SERVING AH-405; HC-405
- ④ PROVIDE NEW GATE VALVES, BALANCING VALVE, Y-STRAINER, TEMPERATURE AND PRESSURE GAUGES FOR EACH INDIVIDUAL SECONDARY LOOP
- ⑤ PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR (2 EACH)



30 DEC 2015

DEPARTMENT OF FISHERIES AND OCEANS

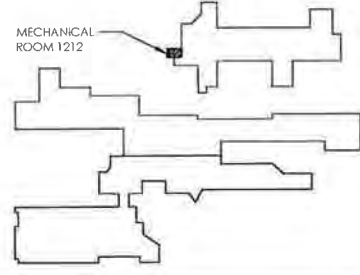
Project site / titre du projet
 9860 W SAANICH ROAD
 SIDNEY BC

**INSTITUTE OF OCEAN SCIENCES
 HEATING SYSTEM UPGRADE**

Consultant Signature / titre
 Designed by / Conçue par: JAE RYU, P. ENG., P. E.
 Drawn by / Dessiné par: JAE RYU, P. ENG., P. E.
 IMVIC Project Manager / Administrateur des Projets: FRANCOIS LEDOUX
 Regional Manager, Architectural and Engineering Services / Directeur régional, Services d'architecture et de génie, TPBSC

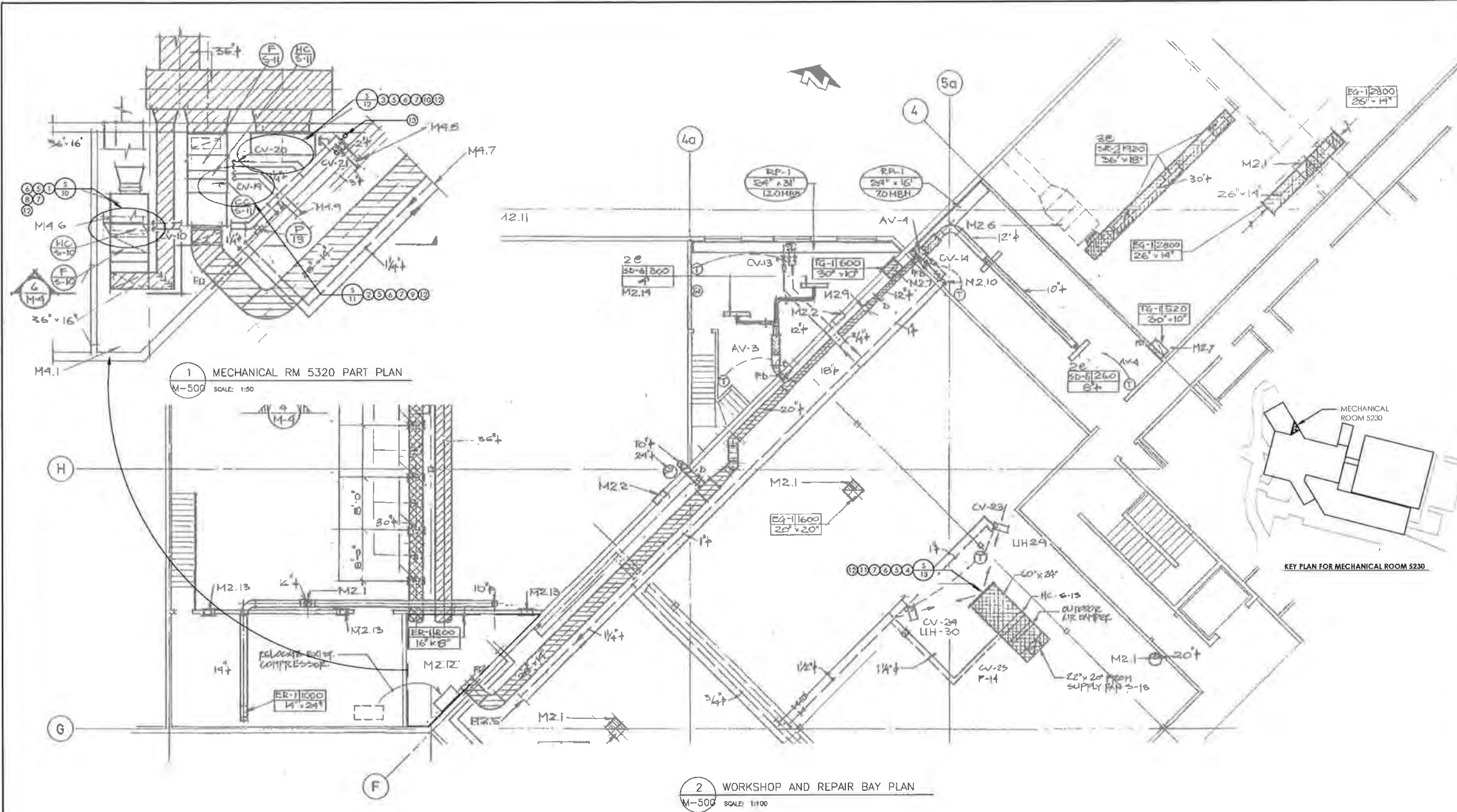
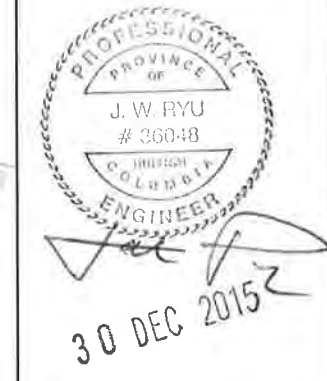
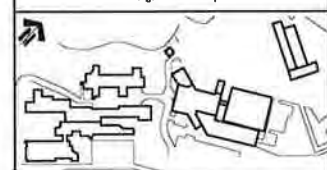
Drawing title / titre du dessin
**MECHANICAL ROOM
 1212 NEW PIPING PLAN
 AND SECTIONS**

Project No / No du projet: PWSC #: 9R504-00
 SHEET NO: 115615307
 Sheet / Feuille: **M-410**
 Revision no: 00
 21 OF 34



KEY PLAN FOR MECHANICAL ROOM 2624 & 3609





1 MECHANICAL RM 5230 PART PLAN
M-500 SCALE: 1:50

2 WORKSHOP AND REPAIR BAY PLAN
M-500 SCALE: 1:100

GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:

- GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE.
 - THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK.
 - THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED.
 - ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL".
- DEMOLITION WASTE:
 - ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSducers SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REFINISHMENT AND REUSE OR RECYCLING.
 - HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 17 OF SPEC SECT 230501.

GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

- GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE.
 - THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK.
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 - ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING.
- HYDRONIC PIPES, FITTINGS, COMPONENTS, AND CONTROLS:
 - PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES, AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 232116 - "HYDRONIC SYSTEM STEEL" AND 32114 - "HYDRONIC SPECIALTIES".

- ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING.
- PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 - "THERMOMETERS AND PRESSURE GAUGES".
- PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DIGITAL CONTROL SYSTEM AS SHOWN AND:
 - CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES".
 - ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS.
 - CONTROL CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AI POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS.
- PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER:
 - EQUIPMENT SPECIFICATIONS
 - SPEC SECT 32114 - "HYDRONIC SPECIALTIES"
 - ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - CONTROL CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS.

SHEET NOTES:

- REMOVE EXISTING HW CIRCULATION PUMP (P-10) AND EXISTING 25mm (1") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-10) SERVING S-10; HC-10. REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES.
- REMOVE EXISTING HW CIRCULATION PUMP (P-20) AND EXISTING 25mm (1") 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-20) SERVING S-11; HC-11. REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES.
- REMOVE EXISTING HW CIRCULATION PUMP (P-14) AND EXISTING 25mm (1") 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-21) SERVING S-12; HC-12. REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES.
- REMOVE EXISTING HW CIRCULATION PUMP (P-14) AND EXISTING 25mm (1") 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-25) SERVING S-13; HC-13. REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES.
- REMOVE AND CAP ISOLATION / COMMON PIPE SEGMENT.
- REMOVE EXISTING GATE VALVES, BALANCING VALVES, Y-STRAINERS, TEMPERATURE AND PRESSURE GAUGES.
- PROVIDE NEW PIPE SECTIONS AND FITTINGS AS REQUIRED.
- PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-10) SERVING S-10; HC-10.
- PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-20) SERVING S-11; HC-11.
- PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-21) SERVING S-12; HC-12.
- PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-25) SERVING S-13; HC-13.
- PROVIDE NEW GATE VALVES, BALANCING VALVE, Y-STRAINER, TEMPERATURE AND PRESSURE GAUGES FOR EACH INDIVIDUAL SECONDARY LOOP.
- PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR AT LOCATION INDICATED.

Revision No.	Description/Description	Date/Date
0	ISSUED FOR TENDER	21/12/15

DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet:
**9860 W SAANICH ROAD
SIDNEY BC**

INSTITUTE OF OCEAN SCIENCES

HEATING SYSTEM UPGRADE

Checked by/Contrôlé par: JAE RYU, P.ENG, P.E.

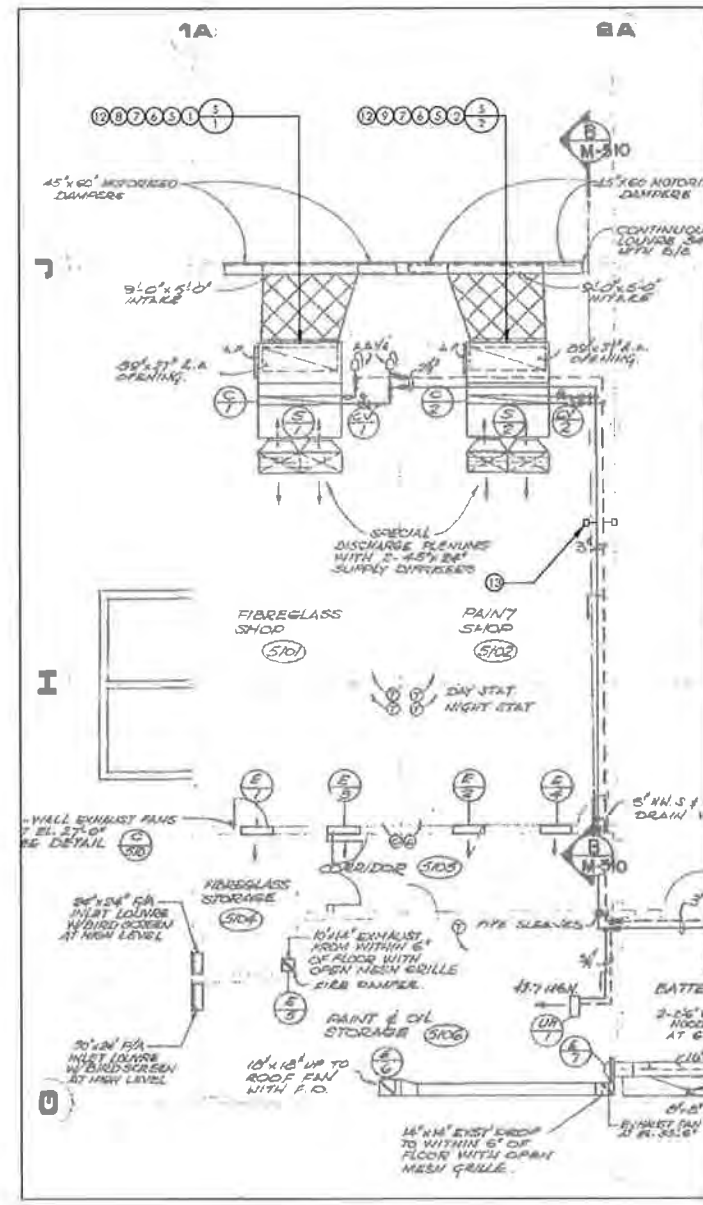
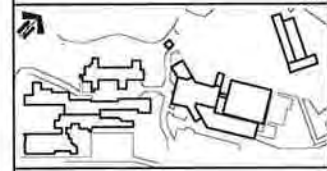
Drawn by/Dessiné par: JAE RYU, P.ENG, P.E.

FWSC Project Manager/Administrateur de Projets TPSC: FRANCOIS LEDOUX

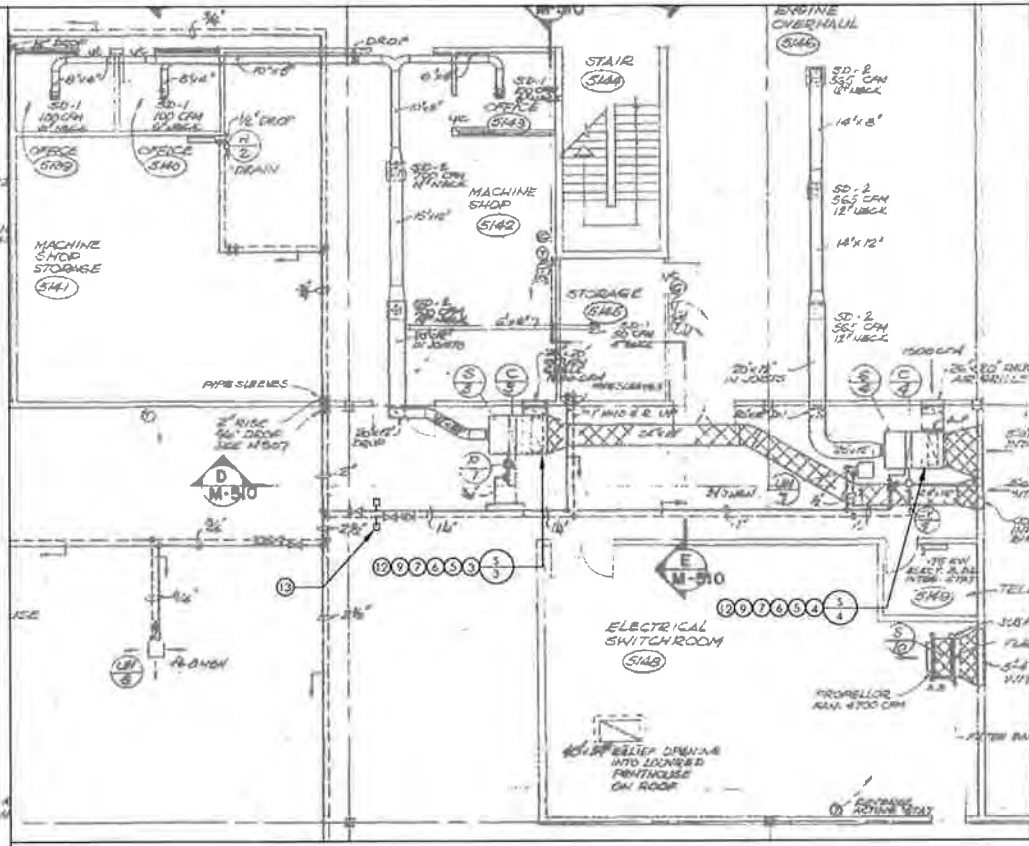
Regional Manager/Responsable des Engineering Services: Administrateur régional, Services d'ingénierie et de génie, TPSC

Drawing Title/Titre de la feuille:
**S-10, S-11, S-12, S-3
DEMOLITION AND NEW PIPING PLAN**

Project No./No. du projet: FWSC # 9R504-00 SIAMREC # 115615307	Sheet/Feuille: M-500 22 Of 34	Revision no./No. de la révision: 00
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1 FIBERGLASS AND PAINTSHOP PART PLAN
M-507 SCALE: 1:100



2 MACHINE AND ENGINE WORKSHOPS PART PLAN
M-507 SCALE: 1:100

SHEET NOTES:

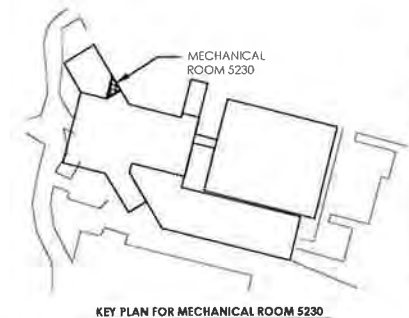
- 1 REMOVE EXISTING 50mm (2") HOT WATER 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-1) SERVING S-1; HC-1 REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES.
- 2 REMOVE EXISTING 50mm (2") HOT WATER 2-WAY VALVE AND PNEUMATIC ACTUATOR (CV-2) SERVING S-2; HC-2 REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES.
- 3 REMOVE EXISTING 38mm (1 1/2") HW 2-WAY VALVE AND PNEUMATIC ACTUATOR (CV-3) SERVING S-3; HC-3 REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES.
- 4 REMOVE EXISTING 38mm (1 1/2") 2-WAY VALVE AND PNEUMATIC ACTUATOR (CV-4) SERVING S-4; HC-4 REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES.
- 5 REMOVE AND CAP ISOLATION / COMMON PIPE SEGMENT
- 6 REMOVE EXISTING GATE VALVES, BALANCING VALVES, Y-STRAINERS, TEMPERATURE AND PRESSURE GAUGES
- 7 PROVIDE NEW PIPE SECTIONS AND FITTINGS AS REQUIRED
- 8 PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-1) SERVING S-1; HC-1
- 9 PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-2) SERVING S-2; HC-2
- 10 PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-3) SERVING S-3; HC-3
- 11 PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-4) SERVING S-4; HC-4
- 12 PROVIDE NEW GATE VALVES, BALANCING VALVE, Y-STRAINER, TEMPERATURE AND PRESSURE GAUGES FOR EACH INDIVIDUAL SECONDARY LOOP
- 13 PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR AT LOCATIONS INDICATED

GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

- 1 GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
- 2 DRAIN LINES:
 - 2.1 MAINTAIN EXISTING DRAIN LINES FOR THE HYDRONIC LOW POINTS TO THE EXTENT POSSIBLE. WHEN DRAIN LINES NEED TO BE ALTERED, PROVIDE LINES OF EQUIVALENT SIZE AND PROPERLY ROUTE TO NEAREST FLOOR DRAIN
 - 2.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
- 3 HYDRONIC PIPES, FITTINGS, COMPONENTS, AND CONTROLS:
 - 3.1 PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES, AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 23211.6 - "HYDRONIC SYSTEM STEEL" AND 3211.4 - "HYDRONIC SPECIALTIES"
 - 3.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
 - 3.3 PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4 PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DIGITAL CONTROL SYSTEM AS SHOWN AND:
 - 3.4.1 CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AI POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS
 - 3.5 PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER:
 - 3.5.1 EQUIPMENT SPECIFICATIONS
 - 3.5.2 SPEC SECT 3211.4 - "HYDRONIC SPECIALTIES"
 - 3.5.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:

- 1 GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
- 2 DEMOLITION WASTE:
 - 2.1 ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REFURBISHMENT AND REUSE OR RECYCLING.
 - 2.2 HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501



KEY PLAN FOR MECHANICAL ROOM 5230

0	ISSUED FOR TENDER	24/12/15
1	DESCRIPTION / DESCRIPTION	24/12/15

DEPARTMENT OF FISHERIES AND OCEANS

9860 W SAANICH ROAD
SIDNEY BC

INSTITUTE OF OCEAN SCIENCES

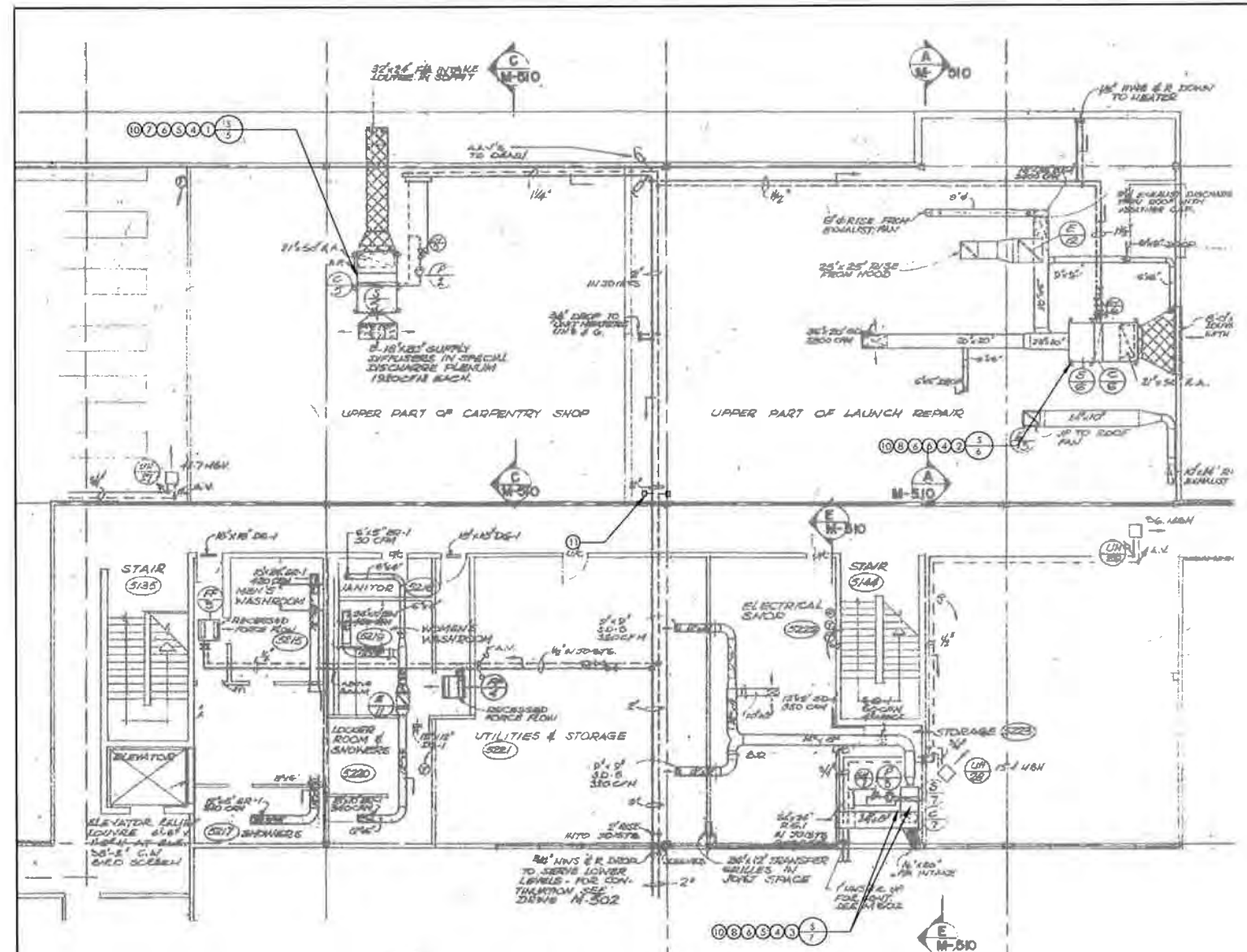
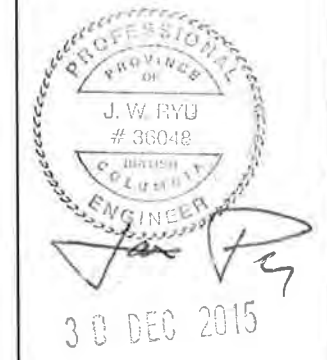
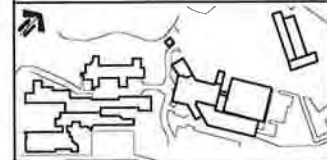
HEATING SYSTEM UPGRADE

Designed by/Concédé par: JAE RYU, P.ENG, P.E.
Drawn by/Dessiné par: JAE RYU, P.ENG, P.E.
Project Manager/Administrateur de Projet: FRANCOIS LEDOUX

**S-1, S-2, S-3, S-4
DEMOLITION AND NEW PIPING PLANS**

Project No./No. du projet: FW000 # 9R504-00	Sheet/Feuille: M-501	Revision no./No. de révisions: 00
DATE: 11/5/15/307	23 OF 34	





1 FIBERGLASS AND PAINTSHOP PART PLAN
 M-50 SCALE: 1:100

GENERAL INSTALLATION NOTES FOR SECONDARY LOOPS:

- 1 GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
- 2 DRAIN LINES:
 - 2.1 MAINTAIN EXISTING DRAIN LINES FOR THE HYDRONIC LOW POINTS TO THE EXTENT POSSIBLE. WHEN DRAIN LINES NEED TO BE ALTERED, PROVIDE LINES OF EQUIVALENT SIZE AND PROPERLY ROUTE TO NEAREST FLOOR DRAIN
 - 2.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
- 3 HYDRONIC PIPES, FITTINGS, COMPONENTS, AND CONTROLS:
 - 3.1 PROVIDE AND INSTALL ALL NEW PIPE SECTIONS, FITTINGS, GATE VALVES, AND BALANCING VALVES AS SHOWN AND PER SPEC SECT 232116 - "HYDRONIC SYSTEM STEEL" AND 32114 - "HYDRONIC SPECIALTIES"
 - 3.2 ALL DISSIMILAR METAL CONNECTIONS SHALL BE PROVIDED WITH A DIELECTRIC FITTING
 - 3.3 PROVIDE AND INSTALL ALL NEW DIRECT READING THERMOMETER AND PRESSURE GAUGES PER 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4 PROVIDE AND INSTALL ALL ANALOG-TYPE TEMPERATURE AND PRESSURE SENSORS FOR THE DIGITAL CONTROL SYSTEM AS SHOWN AND:
 - 3.4.1 CONFORM TO SPEC SECT 230521 - "THERMOMETERS AND PRESSURE GAUGES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AI POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS
 - 3.5 PROVIDE AND INSTALL ALL VALVES AND VALVE ACTUATORS AS SHOWN AND PER:
 - 3.5.1 EQUIPMENT SPECIFICATIONS
 - 3.5.2 SPEC SECT 32114 - "HYDRONIC SPECIALTIES"
 - 3.4.2 ALL WIRING SHALL CONFORM TO THE ELECTRICAL SPECIFICATIONS AND REQUIREMENTS
 - 3.4.3 CONTROLS CONTRACTOR TO PROVIDE ALL MATERIAL AND LABOUR TO FULLY INCORPORATE EACH AO POINT INTO THE CONTROLLER AND INTO THE EXISTING BAS

SHEET NOTES:

- 1 REMOVE EXISTING HW CIRCULATION PUMP (P-2) AND 25mm (1") 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-5) SERVING S-5; HC-5 REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES
- 2 REMOVE EXISTING 25mm (1") HOT WATER 2-WAY VALVE AND PNEUMATIC ACTUATOR (CV-6) SERVING S-6; HC-6 REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES
- 3 REMOVE EXISTING HW CIRCULATION PUMP (P-3) AND 38mm (1 1/2") HW 3-WAY VALVE AND PNEUMATIC ACTUATOR (CV-7) SERVING S-7; HC-7 REMOVE AND CAP ALL EXPOSED COMPRESSED AIR PIPES
- 4 REMOVE AND CAP ISOLATION / COMMON PIPE SEGMENT
- 5 REMOVE EXISTING GATE VALVES, BALANCING VALVES, Y-STRAINERS, TEMPERATURE AND PRESSURE GAUGES
- 6 PROVIDE NEW PIPE SECTIONS AND FITTINGS AS REQUIRED
- 7 PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-5) SERVING S-5; HC-5
- 8 PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-6) SERVING S-6; HC-6
- 9 PROVIDE NEW 2-WAY VALVE AND ELECTRONIC VALVE ACTUATOR (HWV-7) SERVING S-7; HC-7
- 10 PROVIDE NEW GATE VALVES, BALANCING VALVE, Y-STRAINER, TEMPERATURE AND PRESSURE GAUGES FOR EACH INDIVIDUAL SECONDARY LOOP
- 11 PROVIDE NEW DDC ANALOG TEMPERATURE SENSOR AT LOCATIONS INDICATED

GENERAL DEMOLITION NOTES FOR SECONDARY LOOPS:

- 1 GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 - "COMMON WORK RESULTS FOR MECHANICAL"
- 2 DEMOLITION WASTE:
 - 2.1 ALL REMOVED EQUIPMENT AND FITTINGS SUCH AS PUMPS, VALVES, STRAINERS, AND TRANSDUCERS SHALL BE TURNED OVER TO THE DFO AT A SPECIFIED ON-SITE LOCATION FOR POSSIBLE REFURBISHMENT AND REUSE OR RECYCLING
 - 2.2 HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501



KEY PLAN FOR LAUNCH REPAIR ROOM

ISSUED FOR TENDER	21/12/15
Description/Description	2014/2015

DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet
 9860 W SAANICH ROAD
 SIDNEY BC

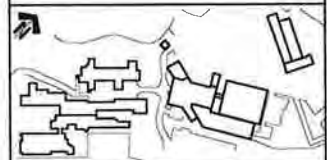
INSTITUTE OF OCEAN SCIENCES
 HEATING SYSTEM UPGRADE

Designed by/Conçu par: JAE RYU, P.ENG, P.E.
 Drawn by/Dessiné par: JAE RYU, P.ENG, P.E.
 Project Manager/Administrateur de Projets: FRANCOIS LEDOUX
 Regional Manager, Architecture and Engineering Services / Directeur régional, Services d'architecture et de génie, TPOC

Drawing title/Titre du dessin
 S-5, S-6, AND S-7
 DEMOLITION AND NEW PIPING PLANS

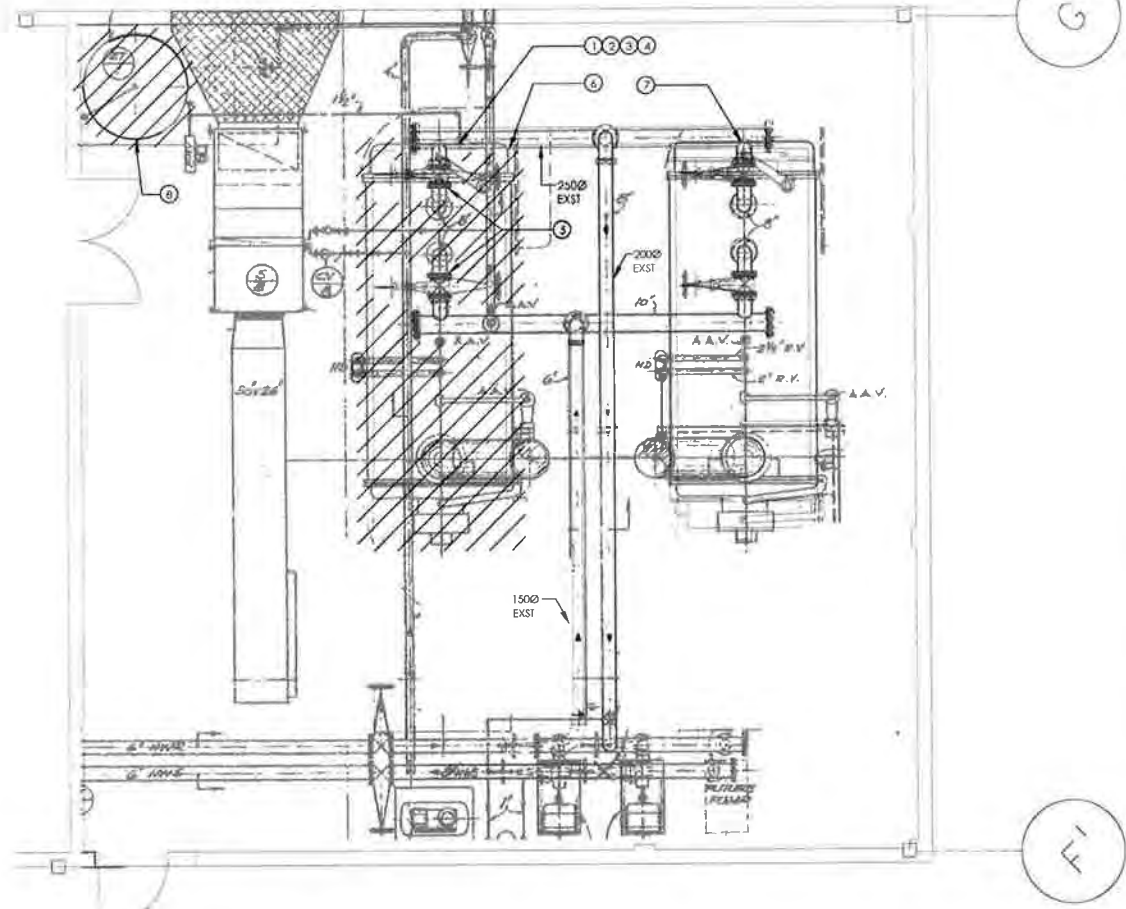
Project No./No. du projet: 9R504-00	Sheet/Feuille: M-507	Revision no./Le révision: 00
STANREC #: 115615307	24 OF 34	





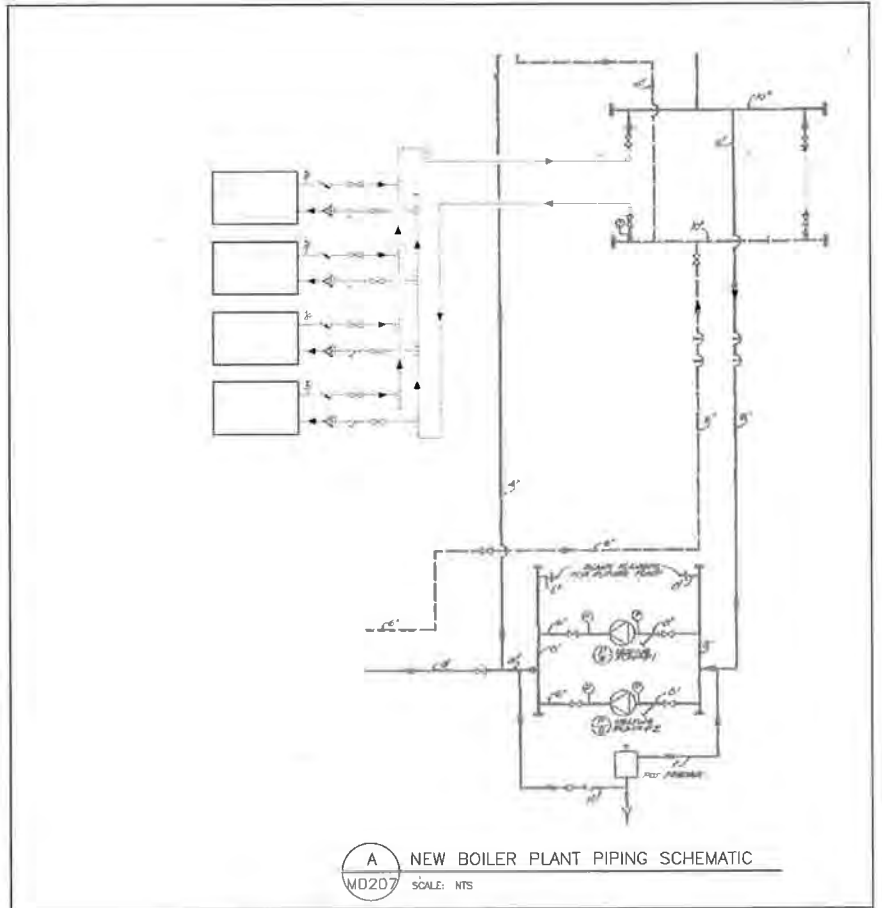
- GENERAL DEMOLITION NOTES FOR BOILER PLANT:**
- 1 GENERAL CONTRACTOR (GC) SHALL COORDINATE THE SCHEDULE OF WORK WITH THE DFO PROJECT MANAGER (PM) FOR EACH SECONDARY LOOP SERVING A HEATING COIL OR RADIATOR ZONE:
 - 1.1 THE DFO PM SHALL BE INFORMED OF, AND SHALL APPROVE, THE DEMOLITION AND INSTALLATION WORK FOR EACH SPECIFIC ZONE PRIOR TO COMMENCEMENT OF WORK
 - 1.2 THE GC SHALL COORDINATE THE SCHEDULE OF WORK TO ALLOW THE DFO PM TO IMPLEMENT PRIOR MEASURES TO MINIMIZE THE IMPACT TO OPERATIONS IN THE ZONE(S) AFFECTED
 - 1.3 ALL OTHER COORDINATION AND SCHEDULING TASK SHALL BE PERFORMED PER SPECIFICATION SECTION 230501 "COMMON WORK RESULTS FOR MECHANICAL"
 - 2 DEMOLITION WASTE:
 - 2.1 ALL REUSABLE ITEMS TO BE TREATED PER SHEET NOTES ON THIS DRAWING
 - 2.2 HANDLE ALL OTHER DEMOLITION AND CONSTRUCTION WASTE PER PARAGRAPH 1.7 OF SPEC SECT 230501

- PHASING NOTES FOR BOILER PLANT:**
- A INITIAL DEMOLITION PHASE: REMOVE ONE EXISTING BOILER PER MD508 SHEET NOTES 1 3 3 4 0
 - B INSTALLATION PHASE: ENSURE UNINTERRUPTED OPERATION OF REMAINING BOILER AT THIS PHASE
 - a INSTALL NEW VFDs AND UPGRADE POWER SUPPLY FOR THE EXISTING PRIMARY HOT WATER PUMPS PER THE MECHANICAL AND ELECTRICAL DRAWINGS. PERFORM THIS WORK IN SEQUENCE FOR ONE PUMP AT A TIME TO KEEP THE HEATING SYSTEM OPERATIONAL THROUGHOUT
 - b INSTALL NEW CONDENSING BOILERS PIPING AND APPURTENANCES PER SHEET M-508 RELATED ELECTRICAL DRAWING(S) AND SPECIFICATIONS
 - C FINAL DEMOLITION AND INSTALLATION PHASE: DEVELOP AND COORDINATE DETAILED SCHEDULE OF THIS PORTION OF THE WORK WITH THE DFO PM TO MINIMIZE IMPACT TO IOS OPERATIONS WHEN HEATING SYSTEM DOWN-TIME IS REQUIRED
 - a REMOVE EXISTING HOT WATER SYSTEM EXPANSION TANK
 - b INSTALL NEW EXPANSION TANK(S) (ET-1) PER M-508
 - c REMOVE THE ONE REMAINING BOILER PER M-508 AND SHEET NOTES 1 0 0 0 0
 - d INSTALL NEW PRIMARY LOOP BY-PASS LINE
 - e PERFORM ALL TAB AND COMMISSIONING (Cx) WORK AS PERMITTED BY AMBIENT TEMPERATURE AT THIS TIME. ALL REMAINING TAB AND Cx REQUIRING LOWER AMBIENT TEMPERATURES SHALL BE COMPLETED BY OCTOBER 31 OF 2016

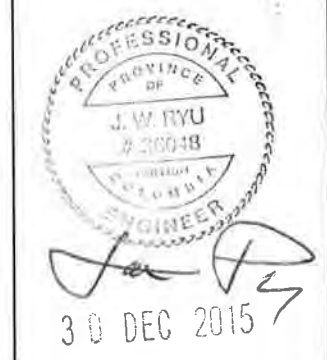
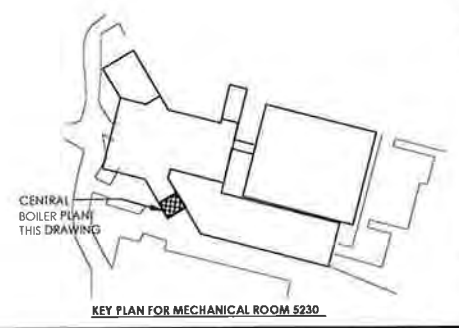


1 BOILER PLANT DEMOLITION PLAN
 MD207 SCALE: 1:50

- SHEET NOTES:**
- 1 PROPERLY CLEAN AND DE-COMMISSION THIS EXISTING BOILER FOR STORAGE
 - 2 DISMANTLE AND/OR CAP BOILER'S VENT, FUEL, ELECTRICAL AND WATER CONNECTIONS AND TRANSFER THE EXISTING BOILER TO THE EQUIPMENT STORAGE AREA ("STORAGE YARD" LOCATED ON THIS SITE) AS ASSIGNED BY THE DFO PM
 - 3 PROVIDE PROTECTIVE STEEL PLATES OVER/UNDER PARTS VULNERABLE TO DAMAGE WHEN MOVING THE EXISTING BOILER. CONTRACTOR SHALL THEN VACUUM SEAL THE BOILER IN AN APPROPRIATE SHRINK-WRAP MATERIAL SUITABLE FOR LONG-TERM MAINTENANCE OF THE VACUUM
 - 4 ALL OTHER RE-USABLE BOILER APPURTENANCES SHALL ALSO BE TRANSFERRED AND STORED IN AN ASSIGNED STORAGE AREA
 - 5 PROVIDE BLANK FLANGES FOR THE HYDRONIC HOT WATER SUPPLY AND RETURN LINES AT THE GATE VALVES INDICATED
 - 6 EXISTING 4.875 x 1.930 x 100 CONCRETE PAD BELOW BOILERS TO REMAIN
 - 7 REMAINING BOILER TO BE KEPT OPERATIONAL UNTIL NEW BOILER INSTALLATION PHASE IS COMPLETED. REFER TO PHASING NOTES THIS SHEET
 - 8 EXISTING EXPANSION TANK TO BE REMOVED AT FINAL DEMOLITION STAGE. REFER TO PHASING NOTES THIS SHEET



A NEW BOILER PLANT PIPING SCHEMATIC
 MD207 SCALE: NTS



ISSUED FOR TENDER	21/12/16
Designation/Description	Item/Date

DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet
**9860 W SAANICH ROAD
 SIDNEY BC**

**INSTITUTE OF OCEAN SCIENCES
 HEATING SYSTEM UPGRADE**

Consultant Signature Only

Designated by/Concept par: JAE RYU, P.ENG, P.E.

Drawn by/Drawn par: JAE RYU, P.ENG, P.E.

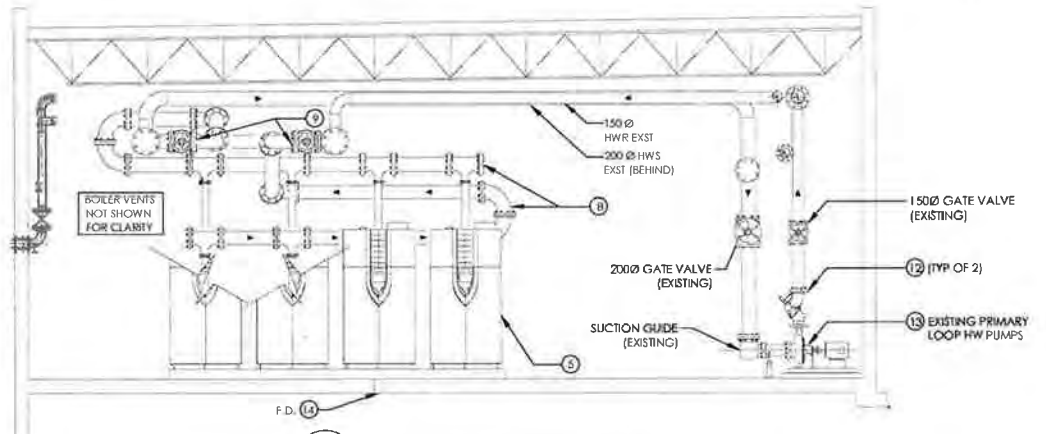
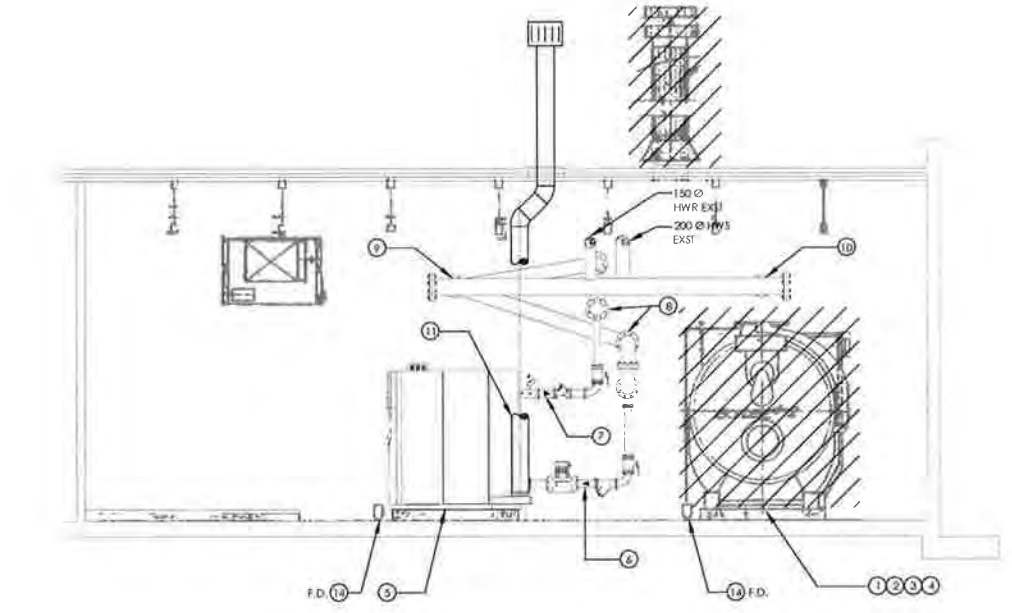
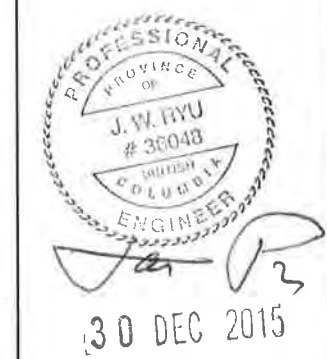
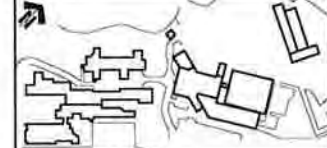
Project Manager/Administrateur de projet: FRANCOIS LEDOUX

Regional Manager, Architecture and Engineering Services / Directeur régional, Services d'architecture et de génie, TPSC

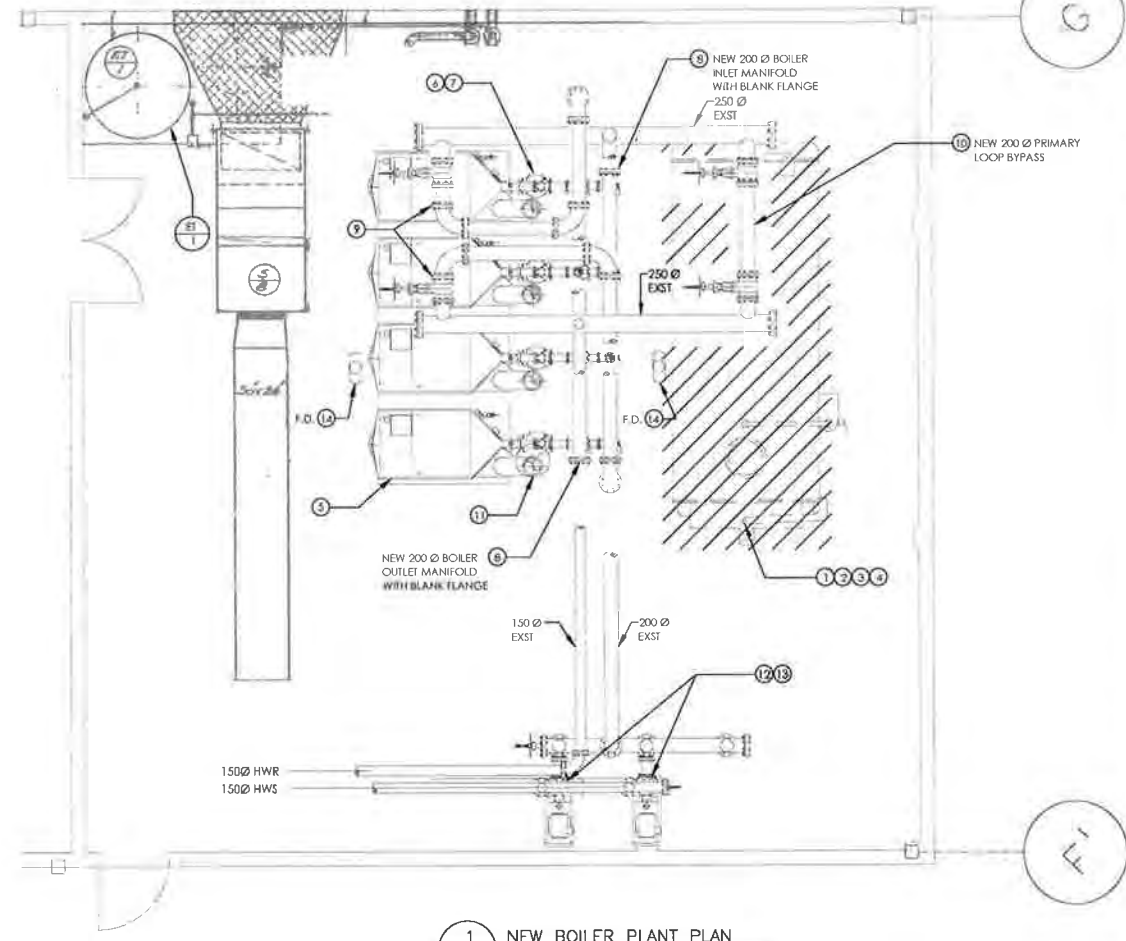
Drawing title/Titre du dessin
**CENTRAL PLANT
 DEMOLITION PLAN**

Project No./No. du projet PWSC #: 9R504-00 STANTEC #: 115615307	Sheet/Feuille MD508 25 OF 34	Revision no./La révision 00
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A NEW BOILER PLANT SECTION
 M-508 SCALE: 1:50



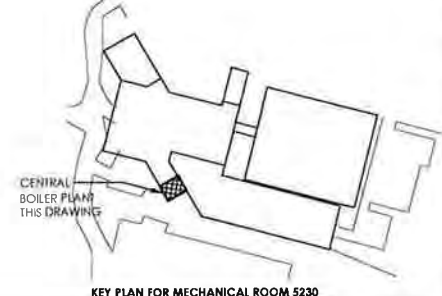
1 NEW BOILER PLANT PLAN
 M-508 SCALE: 1:50

SHEET NOTES:

- 1 PROPERLY CLEAN AND DE-COMMISSION THIS EXISTING BOILER FOR STORAGE
- 2 DISMANTLE AND/OR CAP BOILER'S VENT, FUEL, ELECTRICAL AND WATER CONNECTIONS AND TRANSFER THE EXISTING BOILER TO THE EQUIPMENT STORAGE AREA ('STORAGE YARD' LOCATED ON THIS SITE) AS ASSIGNED BY THE DFO PM.
- 3 PROVIDE PROTECTIVE STEEL PLATES OVER/UNDER PARTS VULNERABLE TO DAMAGE WHEN MOVING THE EXISTING BOILER; CONTRACTOR SHALL THEN VACUUM SEAL THE BOILER IN AN APPROPRIATE SHRINK-WRAP MATERIAL SUITABLE FOR LONG-TERM MAINTENANCE OF THE VACUUM
- 4 ALL OTHER RE-USABLE BOILER APPURTENANCES SHALL ALSO TO BE TRANSFERRED AND STORED IN AN ASSIGNED STORAGE AREA
- 5 PROVIDE AND INSTALL 4 x NEW CONDENSING BOILER (B-1) AT THE LOCATIONS INDICATED
- 6 FOR EACH CONDENSING BOILER UNIT PROVIDE THE FOLLOWING VALVES AND FITTINGS AT THE 100 INLET (LOWER) CONNECTION PIPE:
 - a BOILER PUMPS (FROM BOILER MANUFACTURER) - INTERLOCK TO RUN WHEN UNIT IS ENABLED
 - b STRAINER (MESH SIZE PER MANUFACTURER'S RECOMMENDATION), COMPLETE WITH QUICK OPEN DRAIN VALVE, ROUTE TO ADJACENT FLOOR DRAIN
 - c MANUAL SHUT-OFF BALL VALVE (INSTALL IN VERTICAL POSITION)
- 7 FOR EACH CONDENSING BOILER UNIT PROVIDE THE FOLLOWING VALVES AND FITTINGS AT THE 100 OUTLET CONNECTION PIPE:
 - a PRESSURE RELIEF VALVE (FROM BOILER MANUFACTURER)
 - b CHECK VALVE
 - c MANUAL SHUT-OFF BALL VALVE (INSTALL IN VERTICAL POSITION)
- 8 PROVIDE 200 Ø BOILER SUPPLY AND RETURN MANIFOLD, PIPE AS REVERSE RETURN AS SHOWN ON THIS SHEET AND PER SCHEMATIC ON SHEET MDS08
- 9 CONNECT NEW SUPPLY AND RETURN MANIFOLDS TO EXISTING 250 Ø MANIFOLD CONNECTIONS AS SHOWN
- 10 PROVIDE NEW 200 Ø PRIMARY LOOP B Y-PASS LINE TO THE EXISTING 250 Ø MANIFOLD CONNECTIONS AS SHOWN
- 11 PROVIDE NEW 250 Ø BOILER VENTS PER MANUFACTURER'S SPECIFICATIONS, USE EXISTING 500 Ø OPENING FOR ONE BOILER, AND PROVIDE NEW OPENING FOR THE REMAINING 3 BOILERS. PROVIDE ALL MATERIAL AND LABOUR TO INSURE PROPER WEATHER PROOFING OF ALL NEW AND EXISTING OPENINGS.
- 12 PROVIDE FOR EACH PRIMARY LOOP HOT WATER PUMPS: 2 x 150Ø COMBINATION BALANCING AND CHECK VALVE
- 13 PROVIDE FOR EACH PRIMARY LOOP HOT WATER PUMPS: 2 x VARIABLE FREQUENCY DRIVES AND ELECTRIC POWER SUPPLY UPGRADES PER EQUIPMENT SCHEDULE AND ELECTRICAL REQUIREMENTS
- 14 PROVIDE AND ROUTE ALL RELIEF VALVE DRAINS, STRAINERS, AND CONDENSATE DRAINS TO THE NEAREST FUNNEL-TYPE FLOOR DRAINS. ALL BOILER CONDENSATE DRAINS TO BE PROVIDED AND PIPED THROUGH A NEUTRALIZATION SYSTEM PRIOR TO THE FLOOR DRAINS

GENERAL INSTALLATION PHASE NOTES FOR THE BOILER PLANT:

- 1 GENERAL CONTRACTOR (GC) SHALL INSURE NORMAL FUNCTIONALITY OF THE REMAINING BOILER TO MAINTAIN NORMAL OPERATIONS OF THE HEATING PLANT.
- 2 INSTALL PUMP VFDs IN SEQUENCE TO MAINTAIN NORMAL OPERATIONS OF THE HEATING PLANT
- 3 PERFORM ALL POSSIBLE INSTALLATION WORK ASSOCIATED WITH THE NEW CONDENSING BOILERS, SUCH AS NG AND HW PIPING TO THE EXTENT THAT NORMAL OPERATION OF THE HEATING PLANT IS NOT AFFECTED
- 4 INSTALL ALL VENTS REQUIRED FOR THE CONDENSING BOILERS TO TERMINATE ABOVE THE ROOF AT THE LOCATIONS INDICATED INSURE PROPER FLASHING AND WATERPROOFING OF ALL NEW AND EXISTING ROOF PENETRATION AFTER THE NEW VENTS HAVE BEEN INSTALLED
- 5 PERFORM ALL POSSIBLE INSTALLATION WORK FOR THE SECONDARY LOOPS AS REQUIRED BY THE CONTRACT DOCUMENTS. PER THE GENERAL DEMOLITION AND INSTALLATION NOTES IN THE DRAWINGS, COORDINATE AND SCHEDULE ALL WORK WITH THE DFO PM ESPECIALLY FOR THOSE WORK THAT MAY INTERRUPT PROPER HVAC SERVICES TO THE OCCUPIED AREAS OF THE IOS COMPLEX



KEY PLAN FOR MECHANICAL ROOM 5230

0	ISSUED FOR TENDER	21/12/15
1	DATE REVISION / DESCRIPTION	DATE / QUOTE

DEPARTMENT OF FISHERIES AND OCEANS

Project title / titre du projet
**9860 W SAANICH ROAD
 SIDNEY BC**

**INSTITUTE OF OCEAN SCIENCES
 HEATING SYSTEM UPGRADE**

Consultant Signature Only
 Designed by / conçu par: JAE RYU, P.ENG, P.E.
 Drawn by / dessiné par: JAE RYU, P.ENG, P.E.
 Project Manager / Administrateur de projet: FRANCOIS LEDOUX
 Regional Manager, Architecture and Engineering Services / Directeur régional, Services d'architecture et de génie, TPSC

Drawing Title / titre de dessin
CENTRAL PLANT NEW PIPING PLAN

Project No. / No. du projet PWSC # 9R504-00 STANEC #: 115615307	Sheet / Feuille M-508 26 OF 34	Revision no. / La Révision no. 00
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MECHANICAL EQUIPMENT SCHEDULES:

Table with columns: TAG, QTY, DESCRIPTION, SERVICE, LOCATION, GROSS HEATING CAPACITY (INPUT), NET HEATING CAPACITY (OUTPUT) NON-CONDENSING / CONDENSING, MINIMUM INTERNAL WATER VOLUME, FLOWS - L/S (GPM) MINIMUM / ΔT=20°F / ΔT=40°F, ELECTRICAL, BASIS OF DESIGN, NOTES. Includes notes on boiler specifications and delivery deadlines.

Table with columns: TAG, DESCRIPTION, SERVICE, LOCATION, CONNECTION SIZE, NOMINAL MAX FLOW, NOMINAL MAX ΔP, VALVE Cv, NOTES. Lists various hot water valves (HVV-102 to HVV-25) and their specifications.

Table with columns: TAG, QTY, DESCRIPTION, SERVICE, LOCATION, ACCEPTANCE VOLUME (LITERS (GALS)), TANK VOLUME (LITERS (GALS)), DIMENSIONS (H x Ø), BASIS OF DESIGN. Includes notes on expansion tank requirements.

Table with columns: TAG, QTY, DESCRIPTION, SERVICE, LOCATION, HP, AMPS, VOLTS/Hz, NOTES. Includes notes on pump variable frequency drives.

GENERAL EQUIPMENT SCHEDULE NOTES:

- 1. THE SPECIFIC EQUIPMENT MAKE AND MODELS ARE LISTED AS A "BASIS OF DESIGN" ONLY. ALL INSTALLED EQUIPMENT SHALL BE APPROVED BY THE ENGINEER PRIOR TO PURCHASE BY THE CONTRACTOR...
2. PROJECT SPECIFIC DEADLINES FOR EQUIPMENT: THE CONTRACTOR SHALL (A) PROVIDE SHOP DRAWINGS TO THE ENGINEER; (B) COMPLETE PURCHASE ORDERS; (C) PERFORM ALL POSSIBLE DUE DILIGENCE TO INSURE DELIVERY...

GENERAL CONTROLS AND SEQUENCE OF OPERATION (SOO) REQUIREMENTS:

- 1. PUMP VFD CONTROLS:
1.1. THE VFD SHALL CONTROL PUMP SPEED TO INSURE MINIMUM FLOWS AS FOLLOWS:
1.1.1. 3.5 L/s (55 GPM) WHEN ONE BOILER IS ENABLED
1.1.2. 7 L/s (110 GPM) WHEN TWO BOILERS ARE ENABLED
1.1.3. 10.5 L/s (165 GPM) WHEN THREE BOILERS ARE ENABLED
1.1.4. 14 L/s (220 GPM) WHEN FOUR BOILERS ARE ENABLED
1.2. THE VFD SHALL OTHERWISE CONTROL PUMP SPEED TO MAINTAIN MINIMUM PRESSURES ON EACH OF THE ΔP INPUTS FROM THE SELECT ZONES WHERE PRESSURE SENSORS ARE TO BE INSTALLED UNDER THIS PROJECT...
2. THE CONDENSING BOILERS' CENTRAL CONTROLLER SHALL:
2.1. BE FULLY CAPABLE OF PERFORMING ALL LEAD, LAG, BACK-UP, AND OPTIMAL CASCADE FUNCTIONS FOR ALL 4 UNITS
2.2. BE ABLE TO COMMUNICATE WITH THE EXISTING BAS TO OBTAIN CRITICAL INPUTS SUCH AS WATER TEMPERATURES, PRESSURES, PUMP STATUS, AND OA-T TO DETERMINE OPTIMAL RETURN AND DELTA TEMPERATURES.
2.3. EACH UNIT'S ON-BOARD CONTROLLER SHALL BE CAPABLE OF STAND-ALONE OPERATION TO PROVIDE NOMINAL HEATING BASED ON ITS ON-BAS ANY INTERRUPTION OF COMMUNICATION FROM THE BAS OR THE BOILER MASTER CONTROLLER

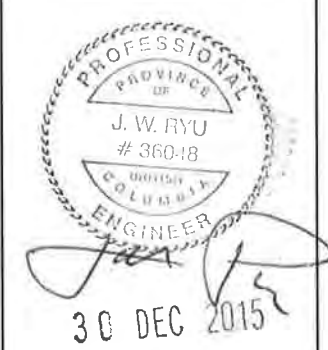
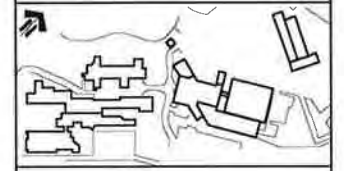


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DEPARTMENT OF FISHERIES AND OCEANS

Project title/nom du projet: 9860 W SAANICH ROAD, SIDNEY BC

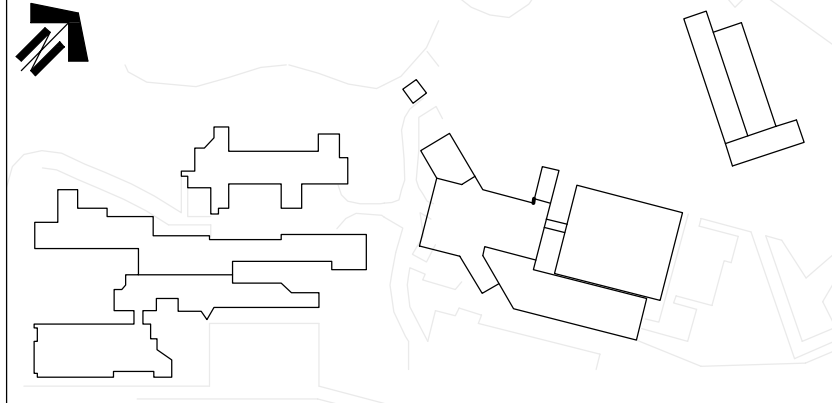
INSTITUTE OF OCEAN SCIENCES

HEATING SYSTEM UPGRADE

Contract Signature Only
Designed by/Conçue par: JAE RYU, P.ENG., P.E.
Drawn by/Dessiné par: JAE RYU, P.ENG., P.E.
PMIC Project Manager/Administrateur de Projet: 13505 FRANCOIS LEDOUX

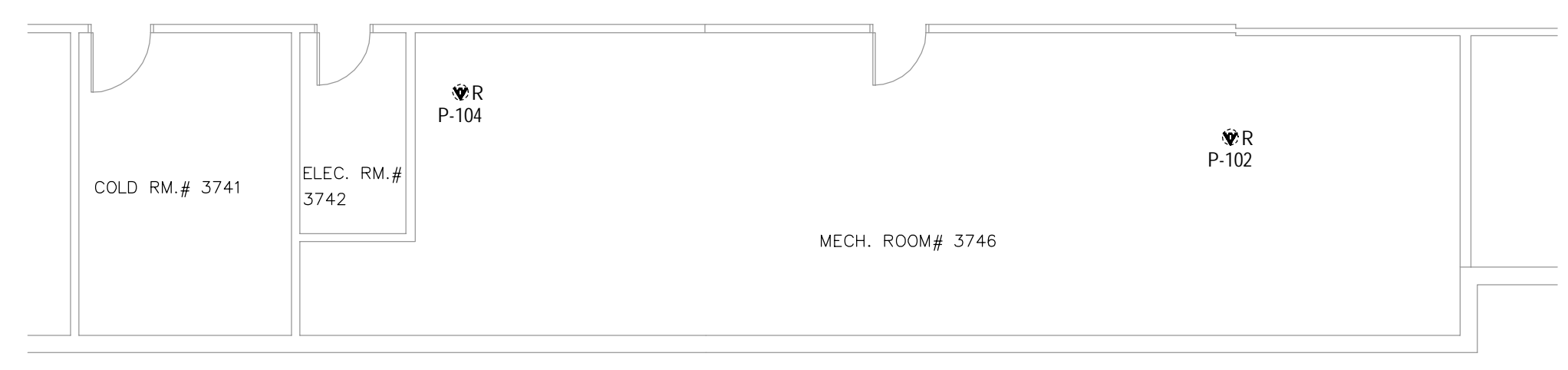
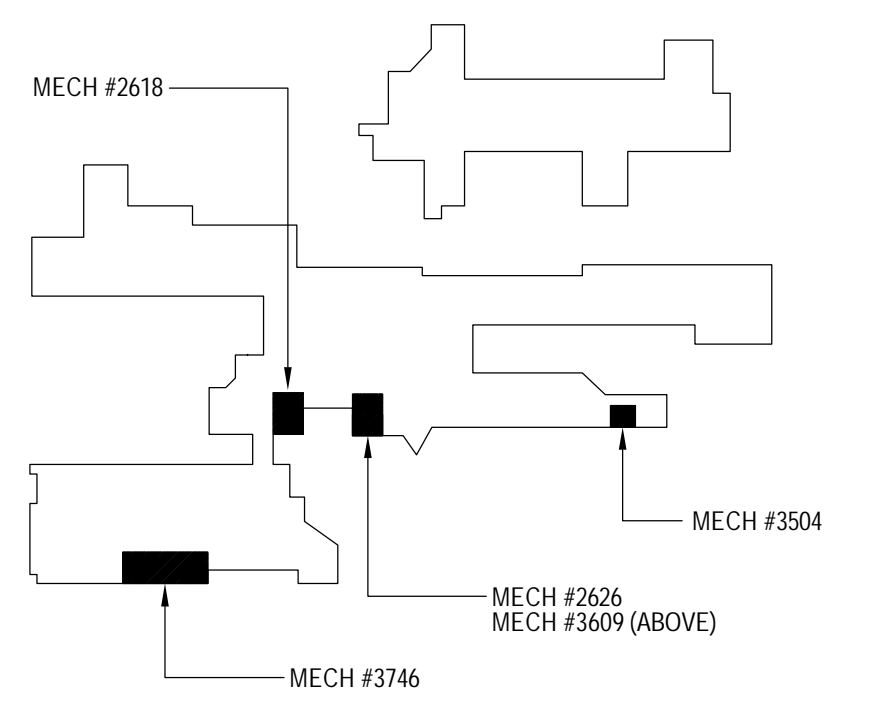
MECHANICAL EQUIPMENT SCHEDULES

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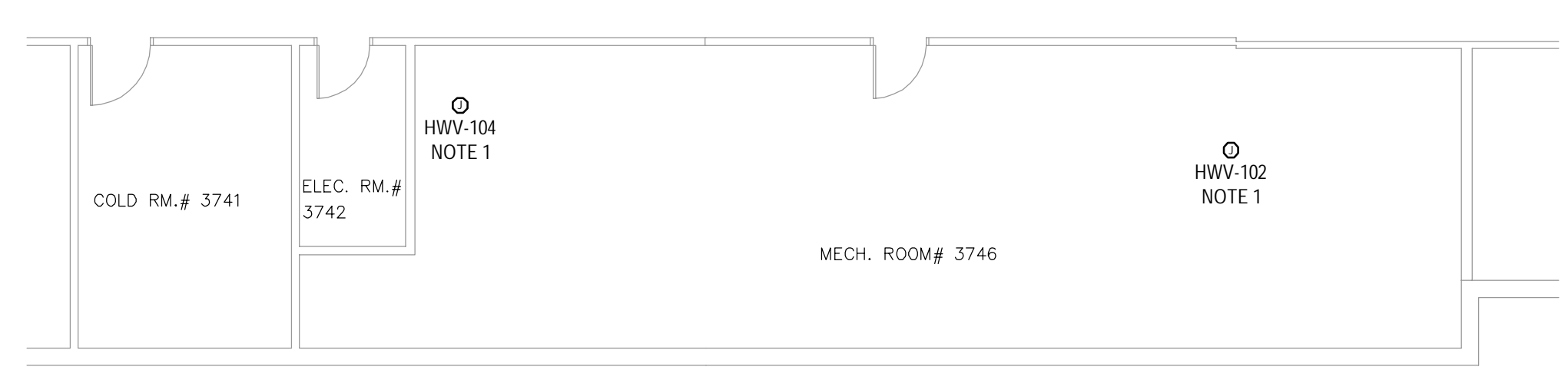


ELECTRICAL SYMBOL LEGEND	
ABBREVIATIONS	
NOTE	EQUIPMENT SHOWN DOTTED IS EXISTING AND TO REMAIN UNLESS INDICATED OTHERWISE.
R	EQUIPMENT TO BE REMOVED.
POWER	
⊙	JUNCTION BOX
⊙	MECHANICAL EQUIPMENT DIRECT CONNECTION
⊙	VFD
—	PANEL BOARD
—	CONDUIT RUN UP
—	CONDUIT RUN DOWN

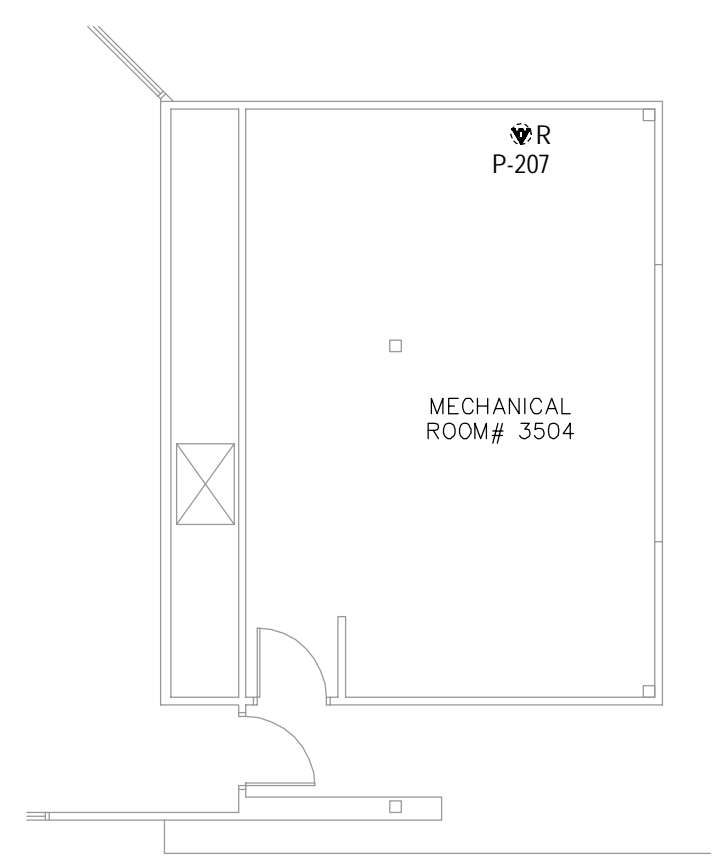
- NOTES**
- DISCONNECT EXISTING 120V, 10 RECIRCULATING PUMP AND TURN OVER TO DFO SHOPS. INSTALL NEW JUNCTION BOX AT LOCATION OF EXISTING WALL MOUNTED MOTOR DISCONNECT SWITCH AND USE AS SPICE POINT FOR POWER TO NEW MECHANICAL VALVE ACTUATORS LOCATED NEARBY. FINAL CONNECTION OF NEW VALVE ACTUATORS BY MECHANICAL. MARK VALVE ACTUATOR AND JUNCTION BOX WITH IT'S CIRCUIT NUMBER.



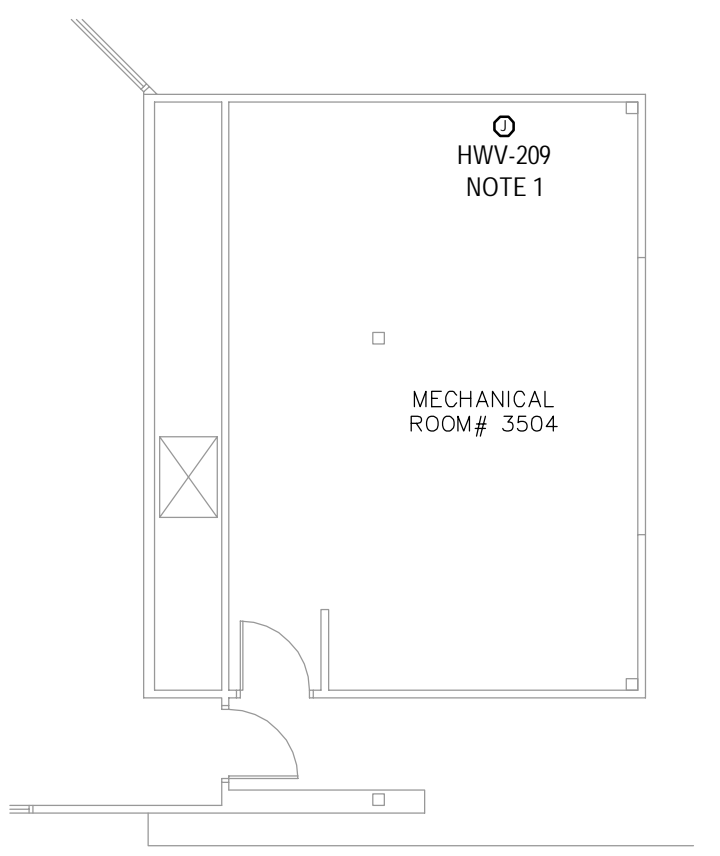
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E100



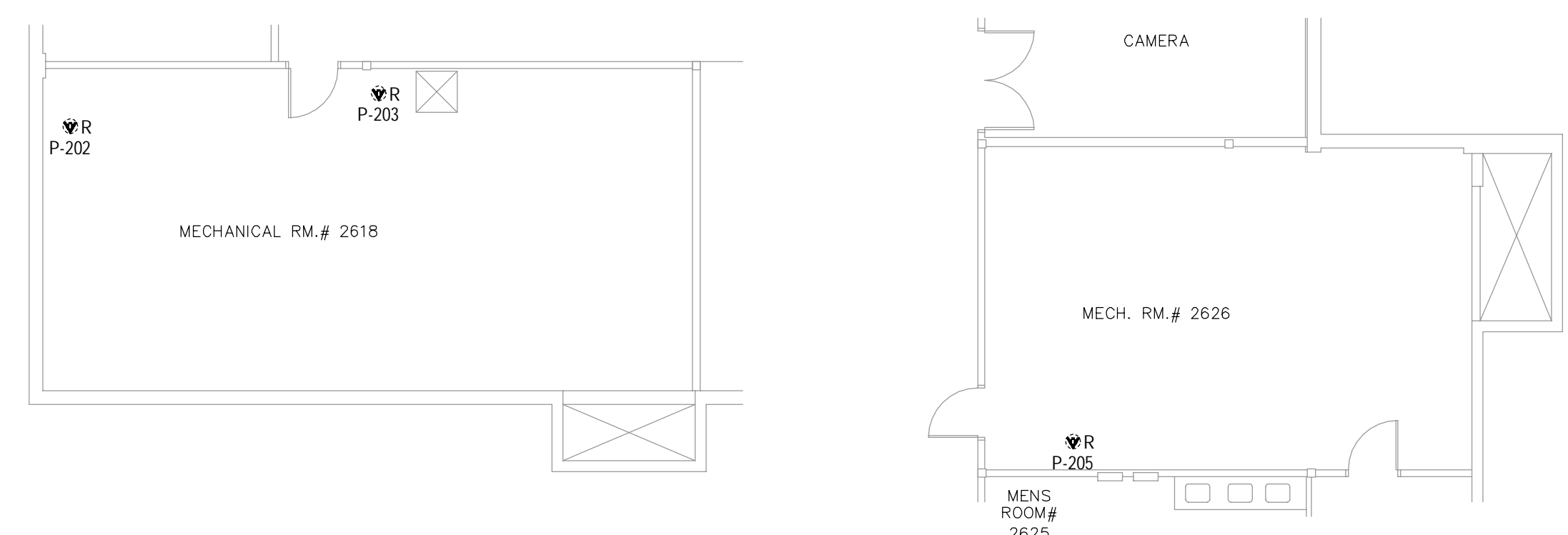
2 MECH ROOM #3746 REVISED
E100



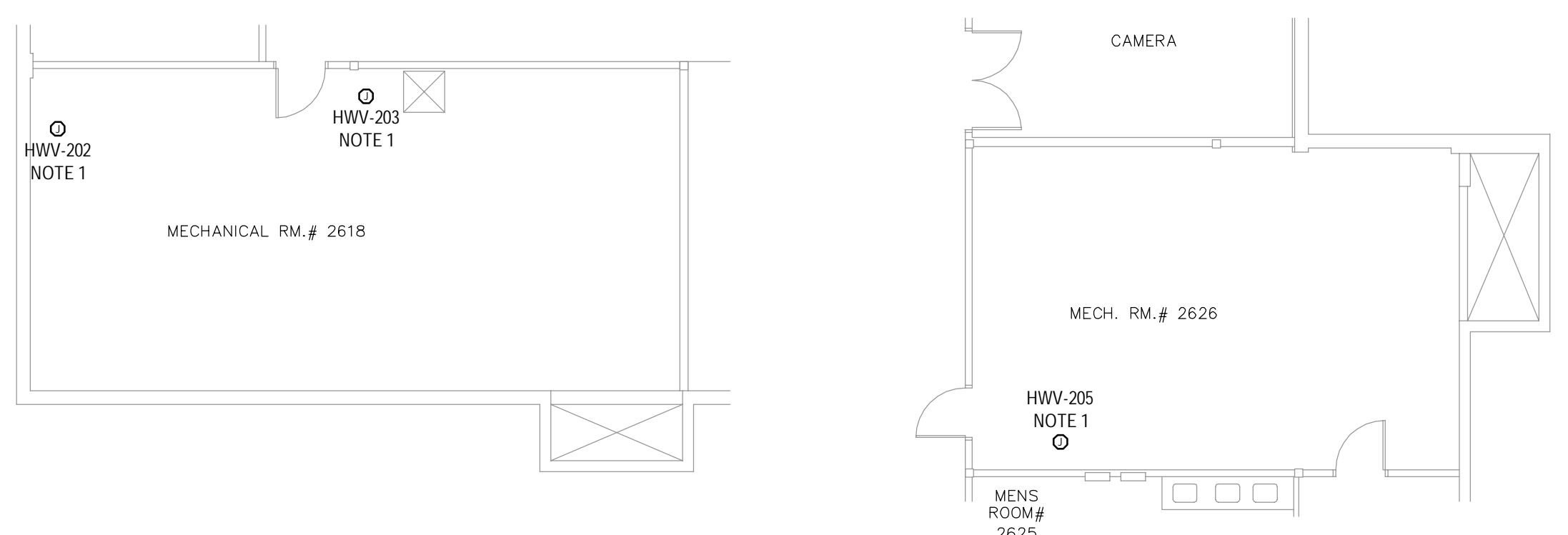
3 MECH ROOM #3504 EXISTING
E100



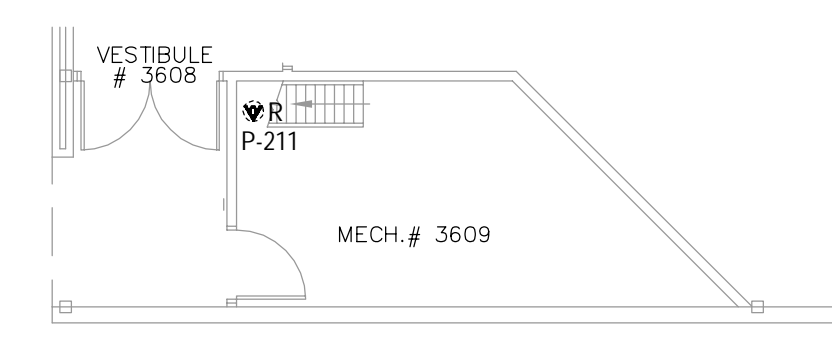
4 MECH ROOM #3504 REVISED
E100



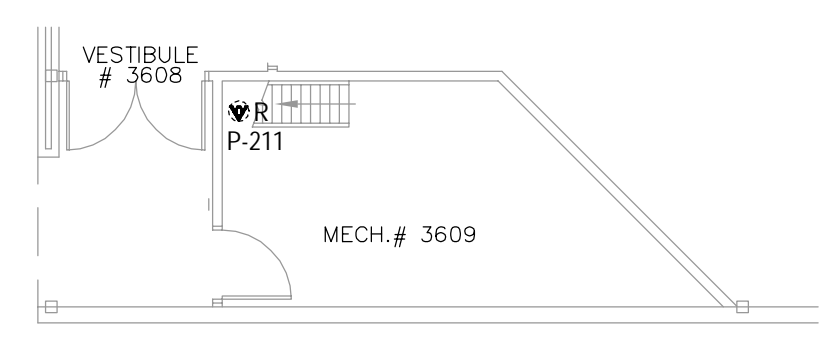
5 MECH ROOM #2618 AND 2626 EXISTING
E100



6 MECH ROOM #2618 AND 2626 REVISED
E100



7 MECH ROOM #3609 EXISTING
E100



8 MECH ROOM #3609 REVISED
E100

Revision/Revision	Description/Description	Date/Date
	ISSUED FOR TENDER	21/12/15

DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet
9860 W SAANICH ROAD SIDNEY BC

INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Consultant Signature Only

Designed by/Concept par
ROGER DUPUIS P.ENG.
Drawn by/Dessiné par
JACOB BIELING

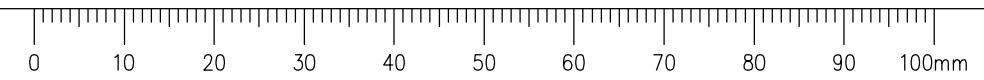
PWSC Project Manager/Administrateur de Projets TPSGC
FRANCOIS LEDOUX

Regional Manager, Architectural and Engineering Services
Gestionnaire régionale, Services d'architecture et de génie, TPSGC

Drawing title/Titre du dessin
EXISTING AND REVISED ELECTRICAL DETAILS MECH ROOMS 3746, 3504, 2618, 3609

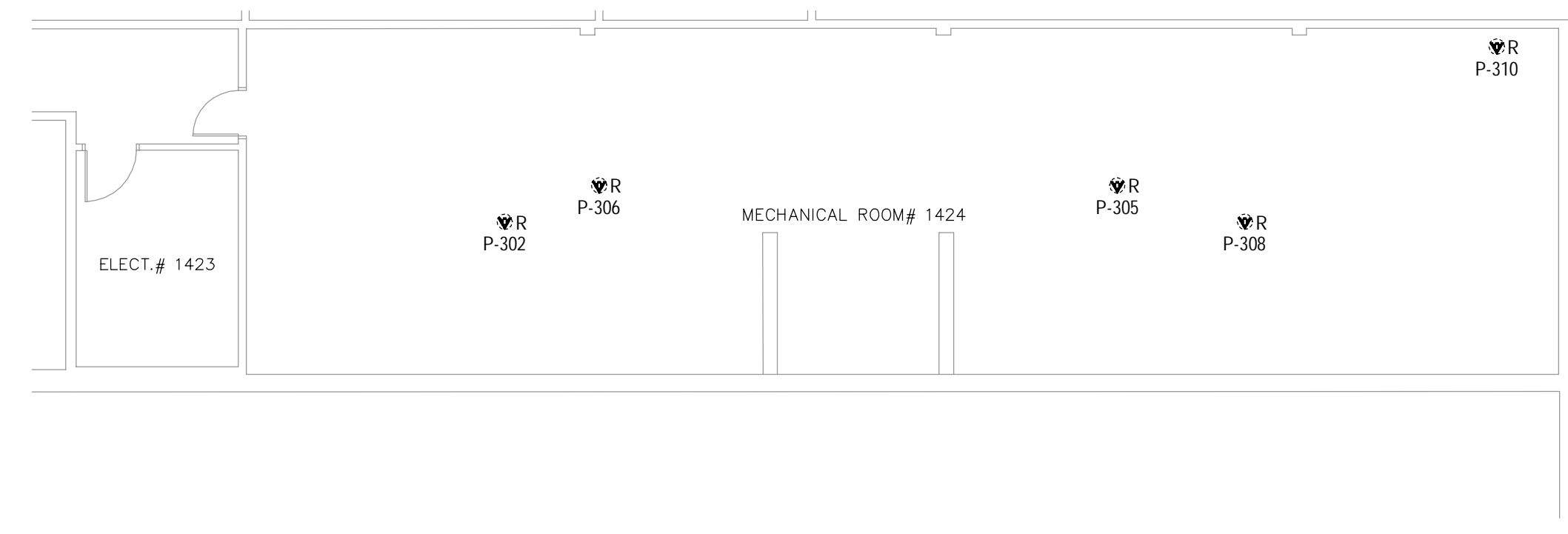
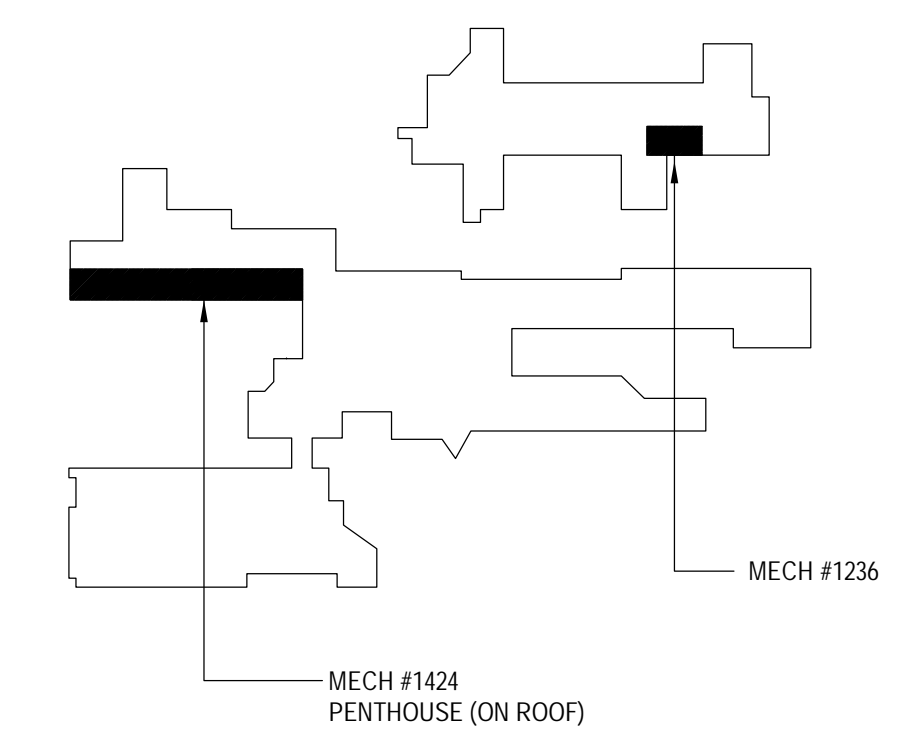
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PWSC # 9R504-00 AES # 1-15-236	E100 E700	00

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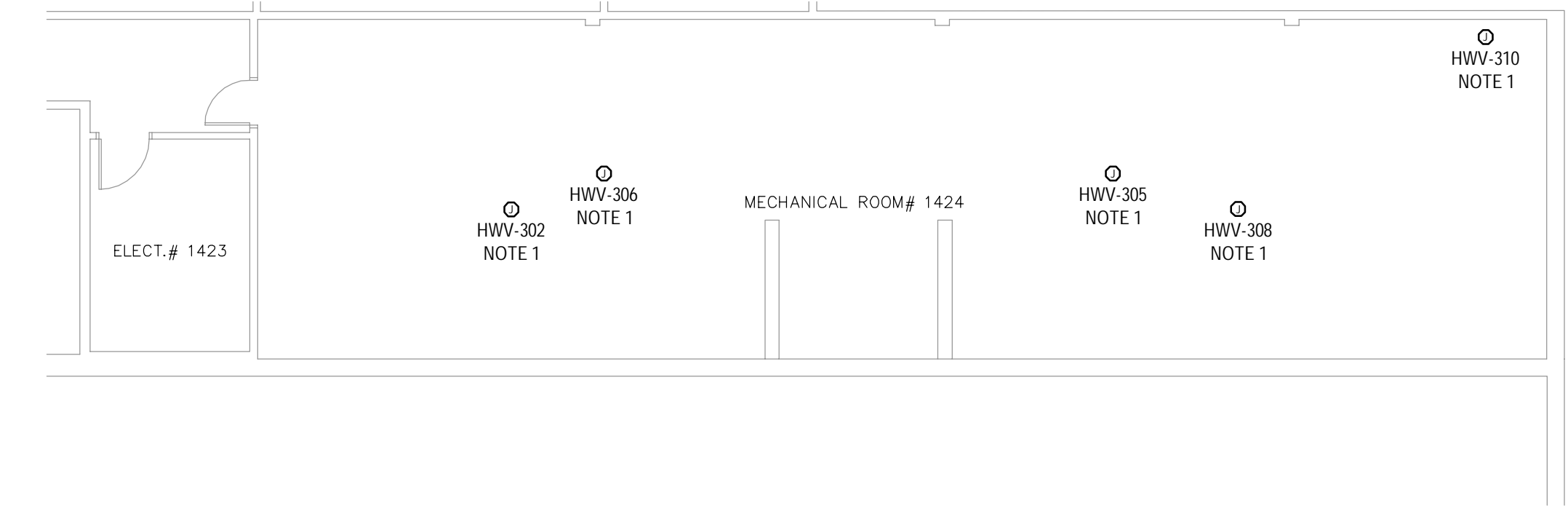


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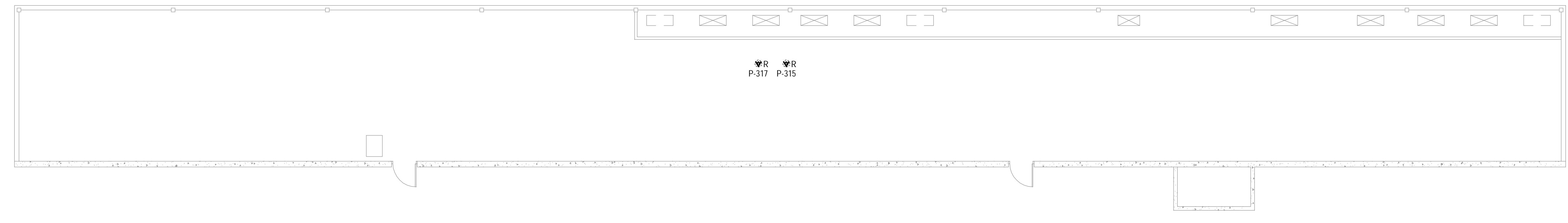
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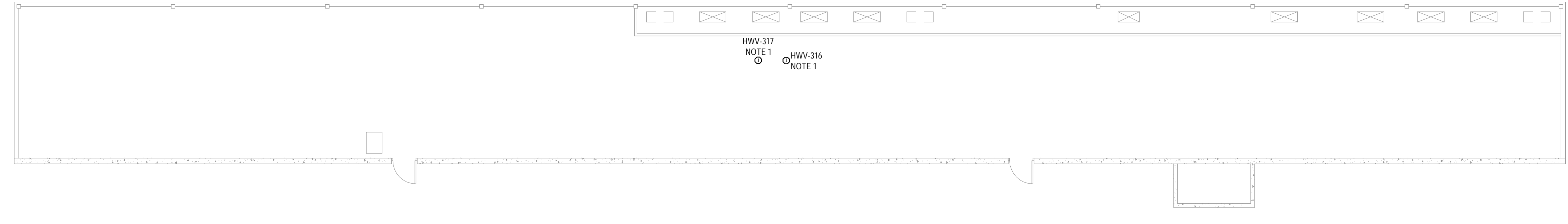
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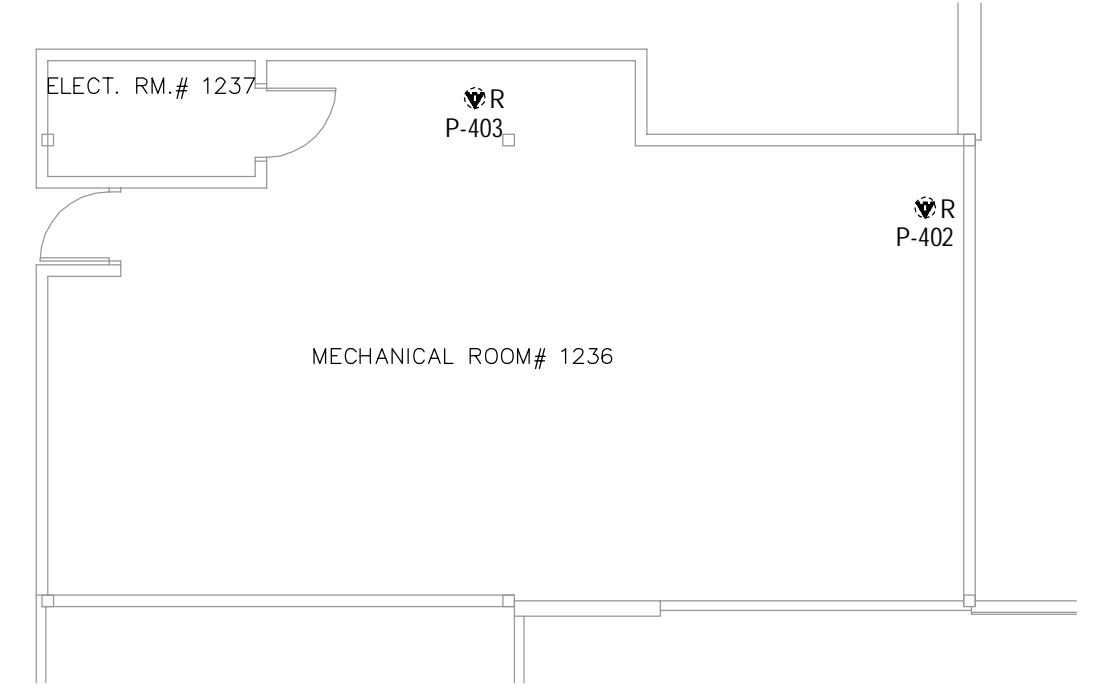
2 MECH ROOM #1424 REVISED
E200



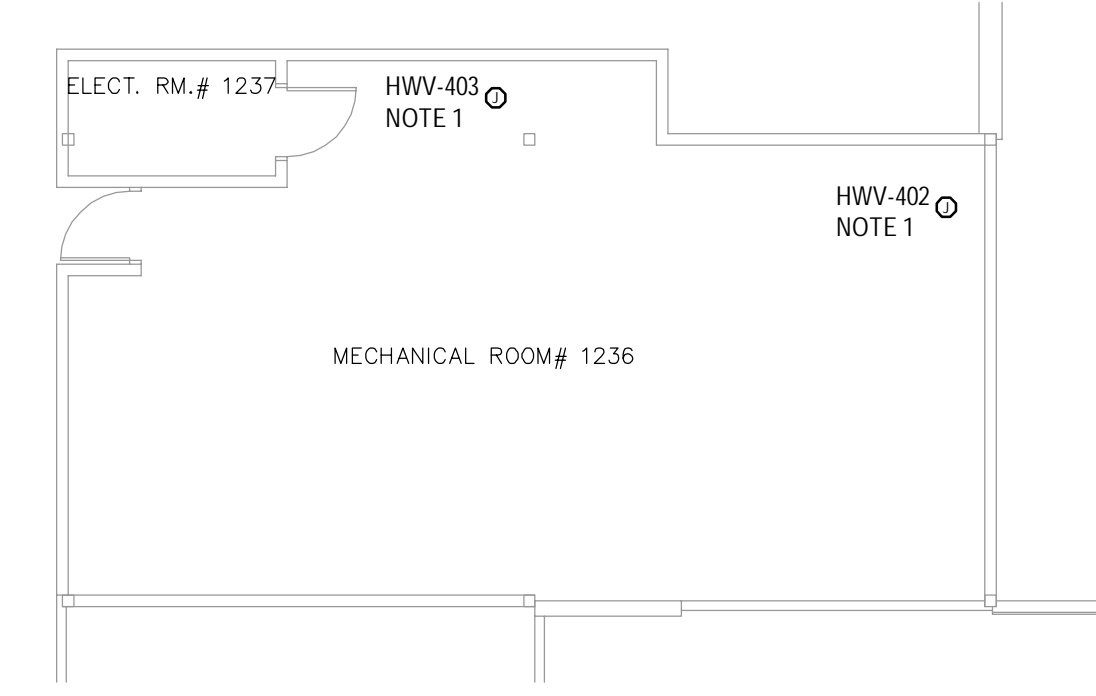
3 MECH ROOM PENTHOUSE OCEAN CHEMISTRY EXISTING
E200



4 MECH ROOM PENTHOUSE OCEAN CHEMISTRY EXISTING
E200



5 MECH ROOM #1236 EXISTING
E200



6 MECH ROOM #1236 REVISED
E200

Revision/Revision	Description/Description	Date/Date
	ISSUED FOR TENDER	21/12/15

DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet
9860 W SAANICH ROAD
SIDNEY BC

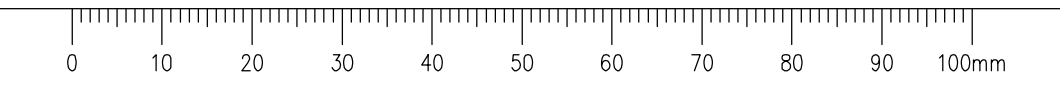
INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

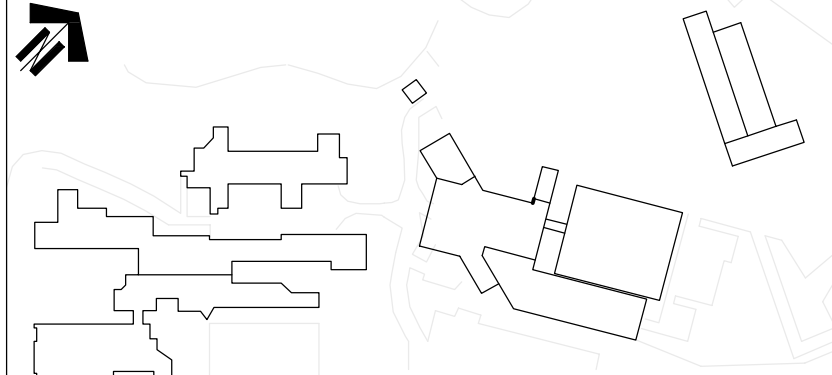
Consultant Signature Only
Designed by/Concept par
ROGER DUPUIS P.ENG.
Drawn by/Dessine par
JACOB BIELING
PWSC Project Manager/Administrateur de Projets TPSGC
FRANCOIS LEDOUX
Regional Manager, Architectural and Engineering Services
Gestionnaire régionale, Services d'architecture et de génie, TPSGC

Drawing title/Titre du dessin
EXISTING AND REVISED
ELECTRICAL DETAILS
MECH ROOMS
1424, PENTHOUSE, 1236

Project No./No. du projet PWSC #: 9R504-00 AES #1-15-236	Sheet/Feuille E200 E700	Revision no./Lo Révision no. 00
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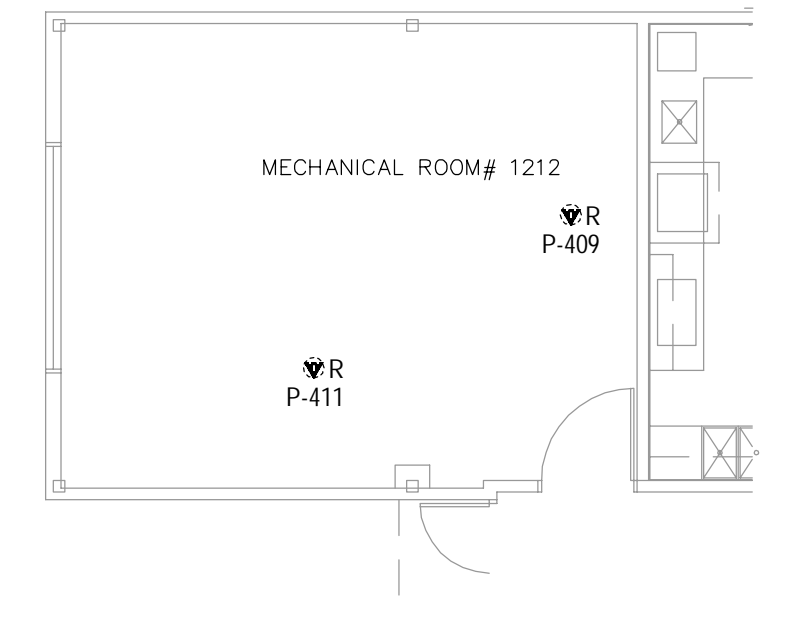
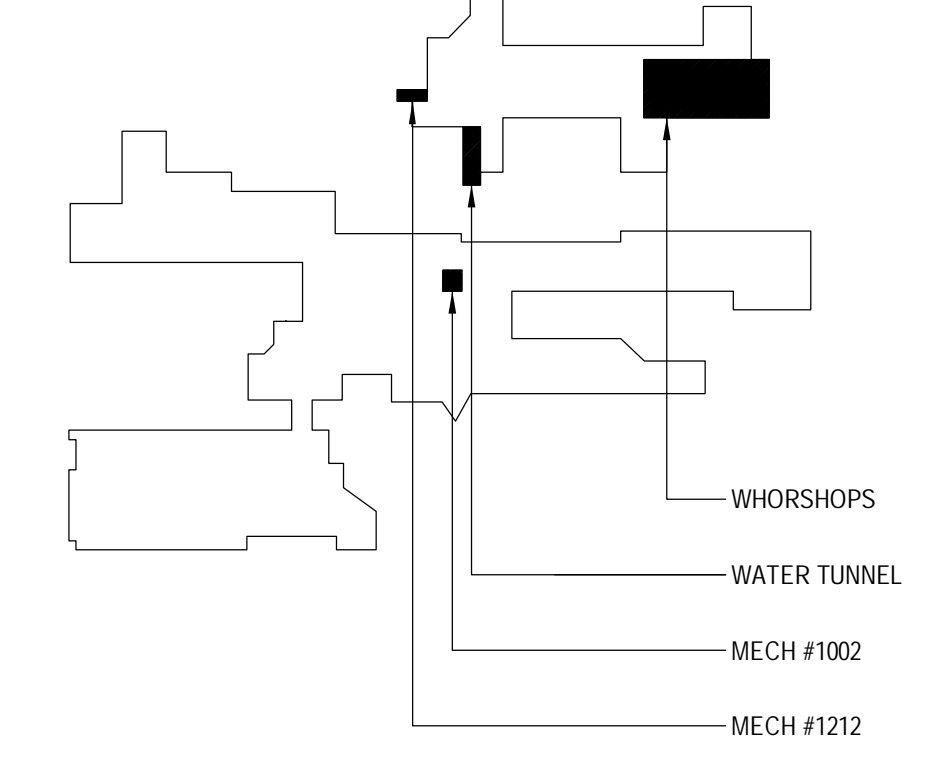
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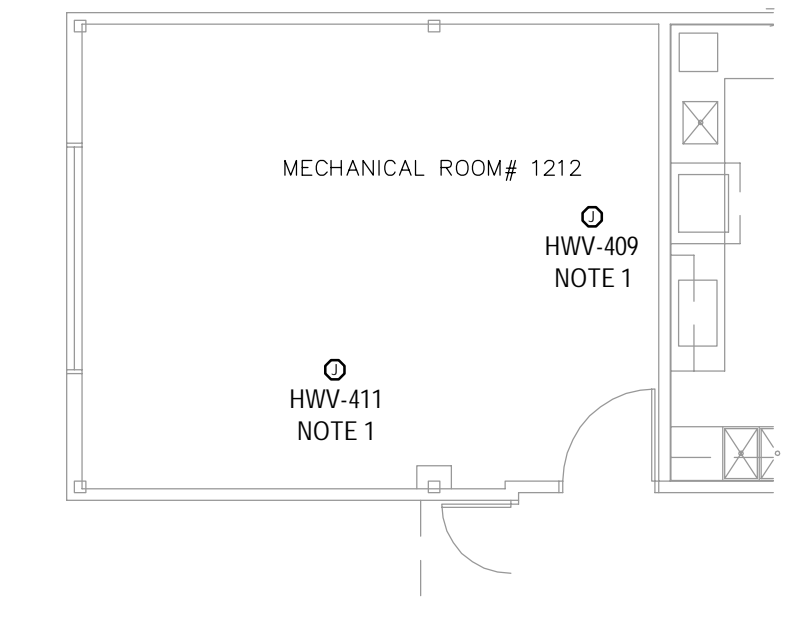


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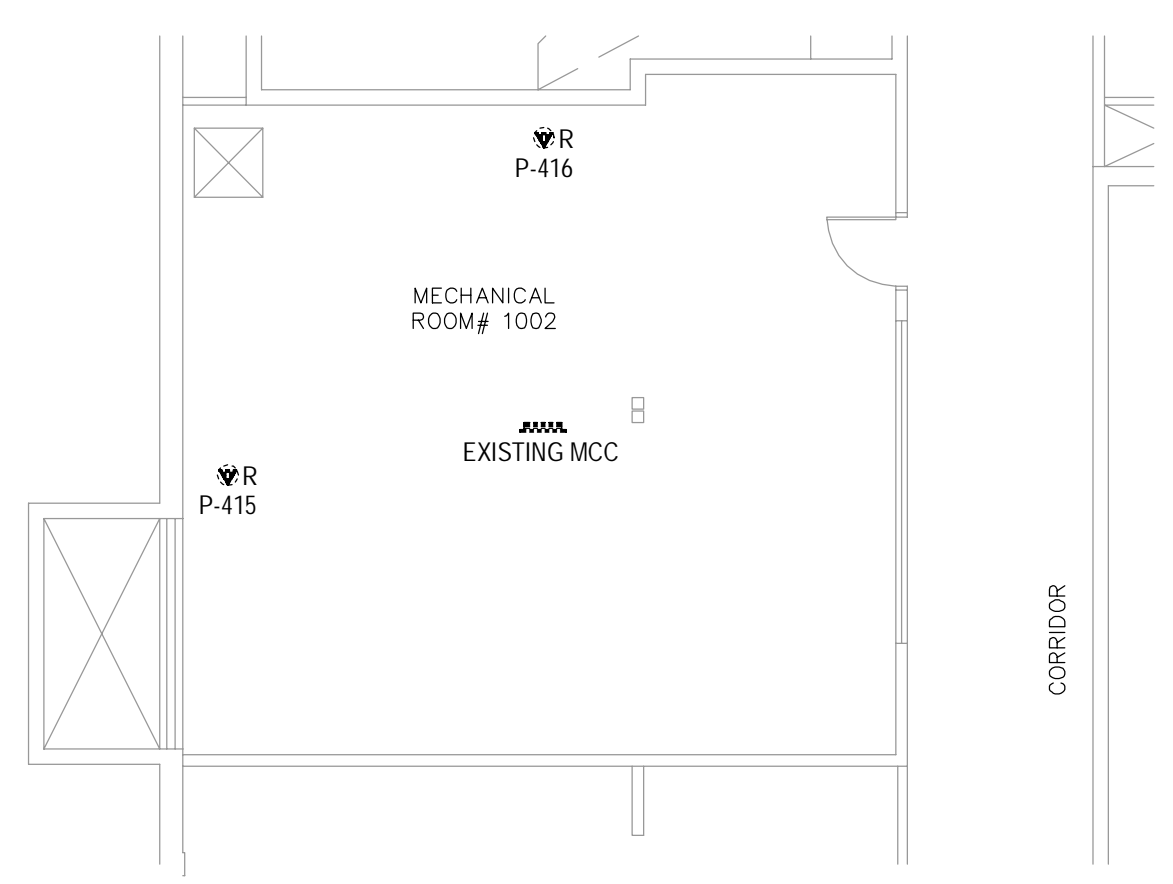
- DISCONNECT EXISTING 120V, 1Ø RECIRCULATING PUMP AND TURN OVER TO DFO SHOPS. INSTALL NEW JUNCTION BOX AT LOCATION OF EXISTING WALL MOUNTED MOTOR DISCONNECT SWITCH AND USE AS SPLICE POINT FOR POWER TO NEW MECHANICAL VALVE ACTUATORS LOCATED NEARBY. FINAL CONNECTION OF NEW VALVE ACTUATORS BY MECHANICAL. MARK VALVE ACTUATOR AND JUNCTION BOX WITH IT'S CIRCUIT NUMBER.
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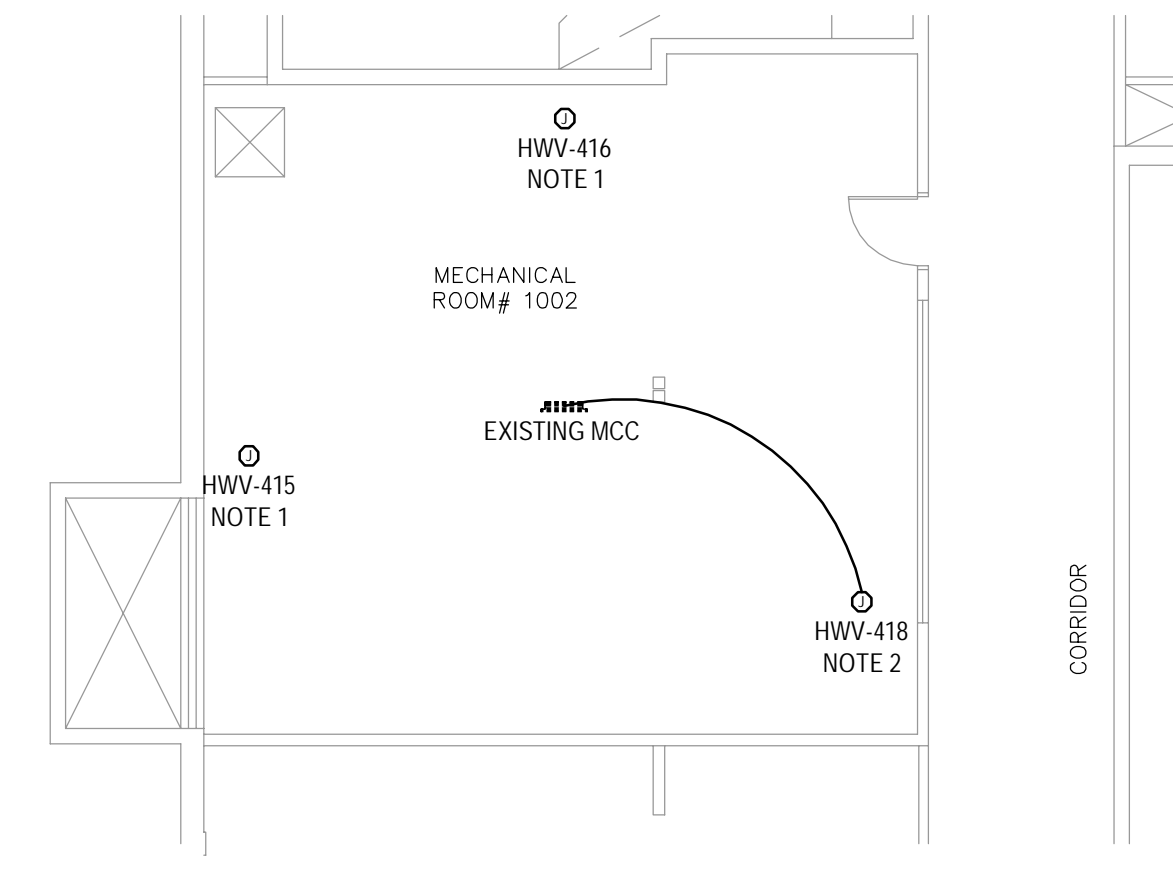
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E300 1:100



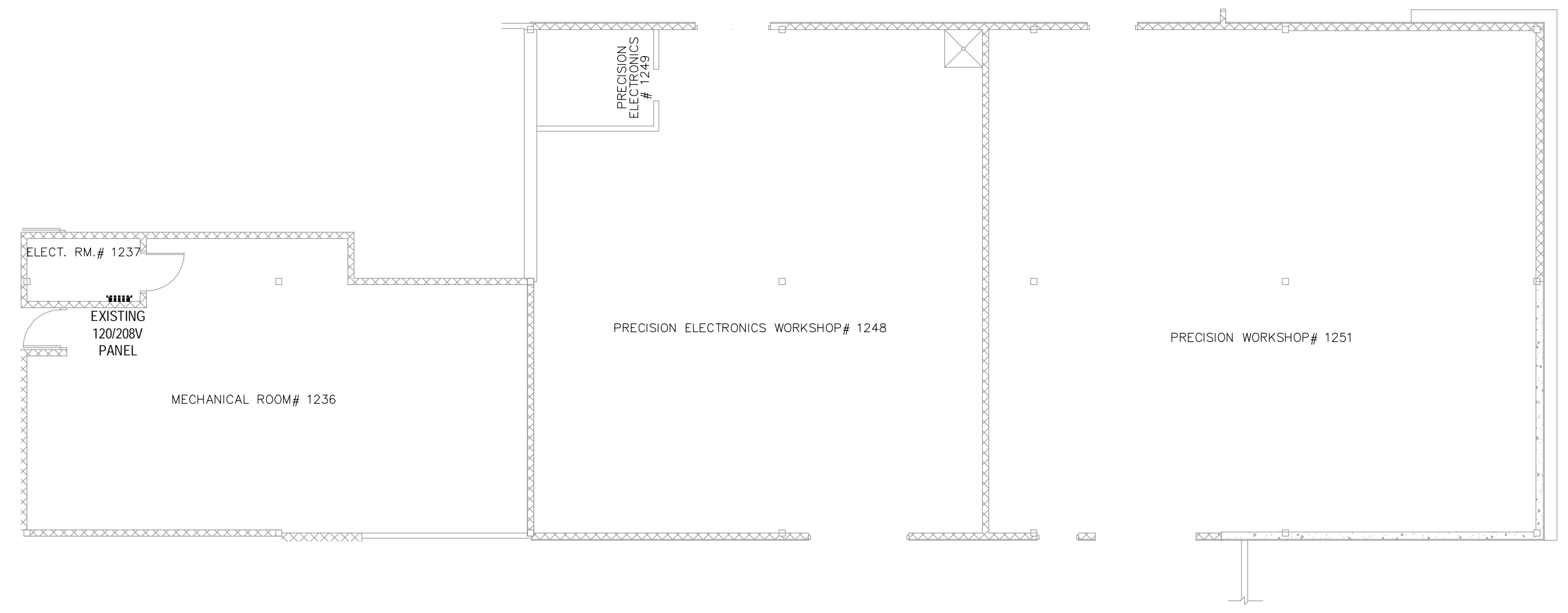
2 MECH ROOM #1212 REVISED
E300 1:100



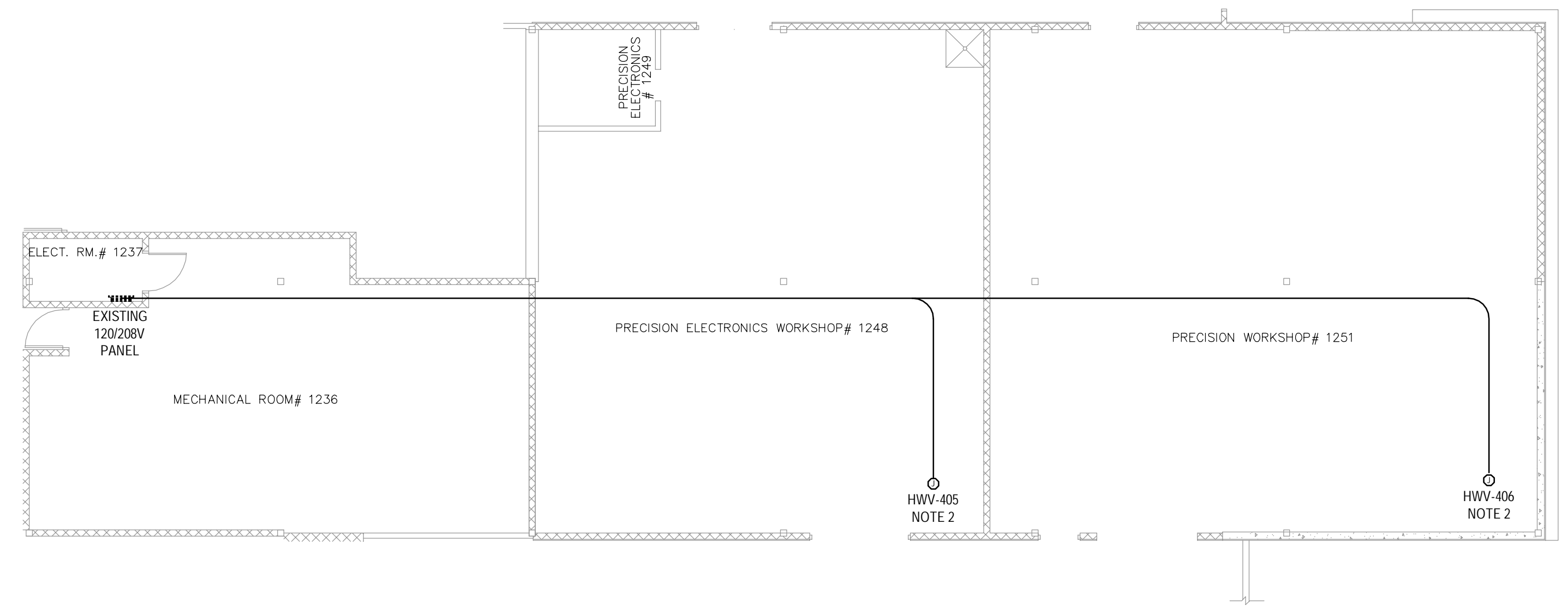
3 MECH ROOM #1002 EXISTING
E300 1:100



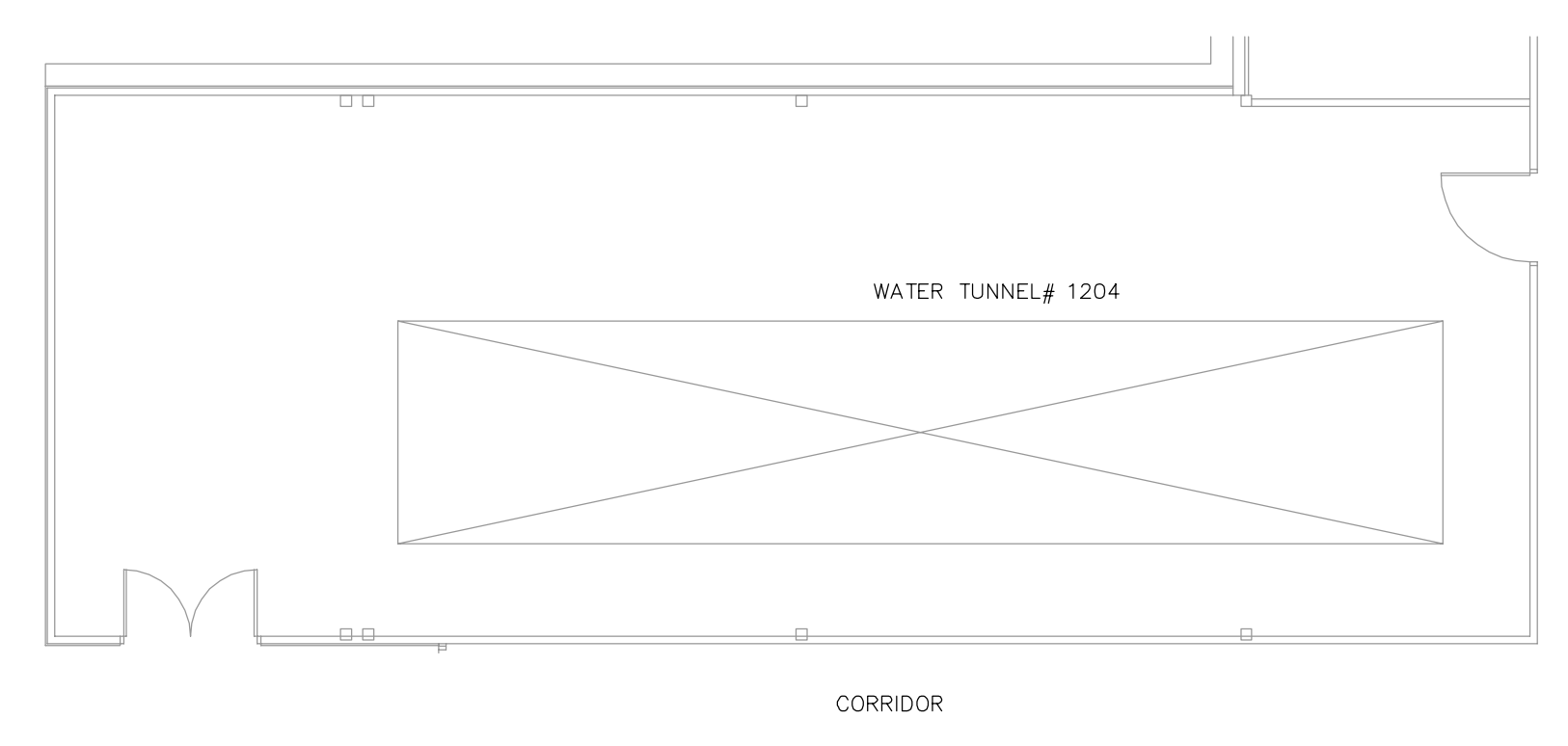
4 MECH ROOM #1002 REVISED
E300 1:100



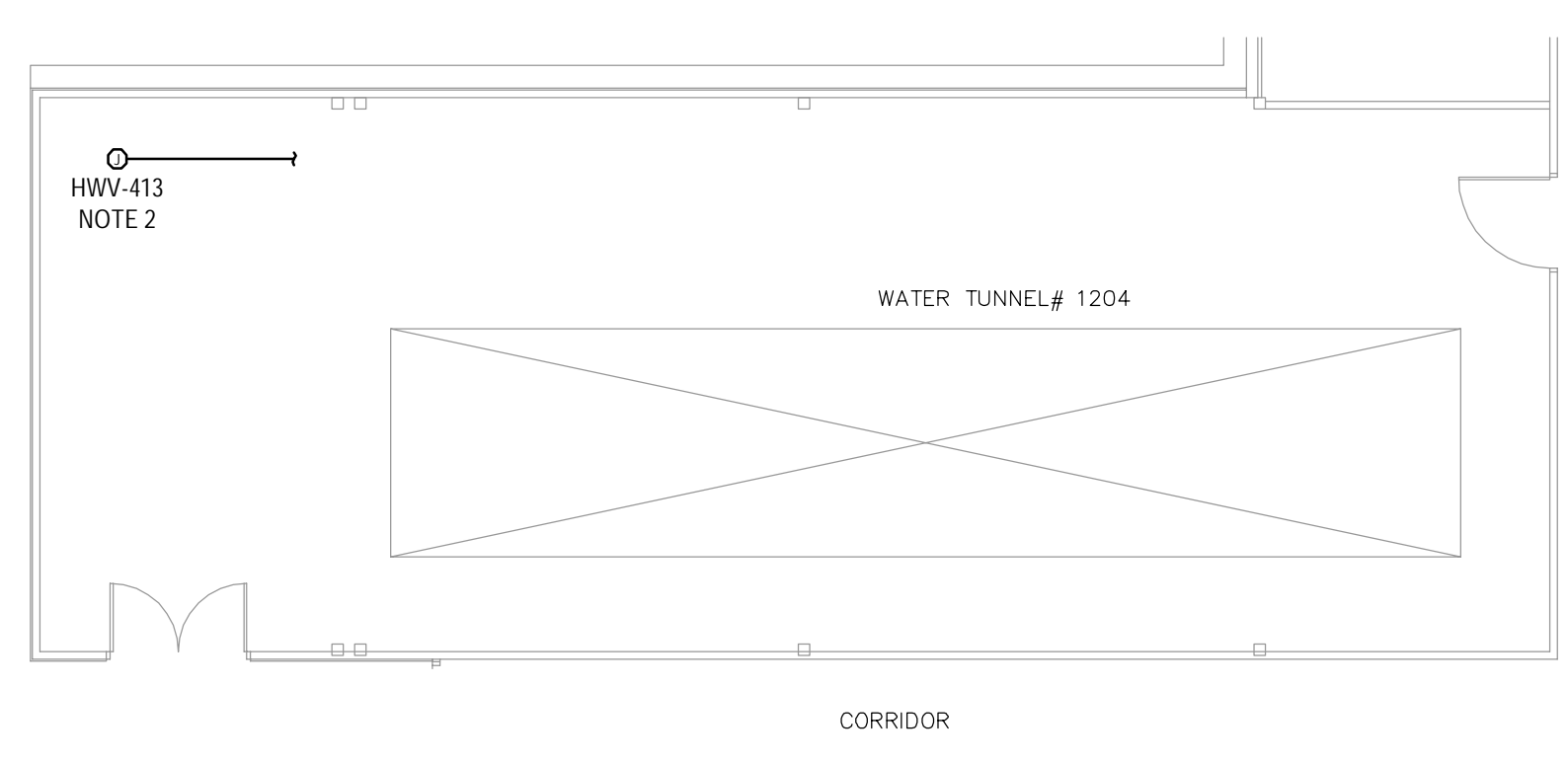
5 MECH ABOVE WORKSHOPS EXISTING
E300 1:100



6 MECH ABOVE WORKSHOPS REVISED
E300 1:100



5 MECH ABOVE WATER TUNNEL EXISTING
E300 1:100



6 MECH ABOVE WATER TUNNEL REVISED
E300 1:100

Revision/Revision	Description/Description	Date/Date
	ISSUED FOR TENDER	21/12/15

Client/client
DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet
9860 W SAANICH ROAD SIDNEY BC

INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

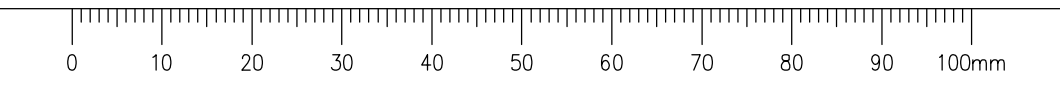
Consultant Signature Only

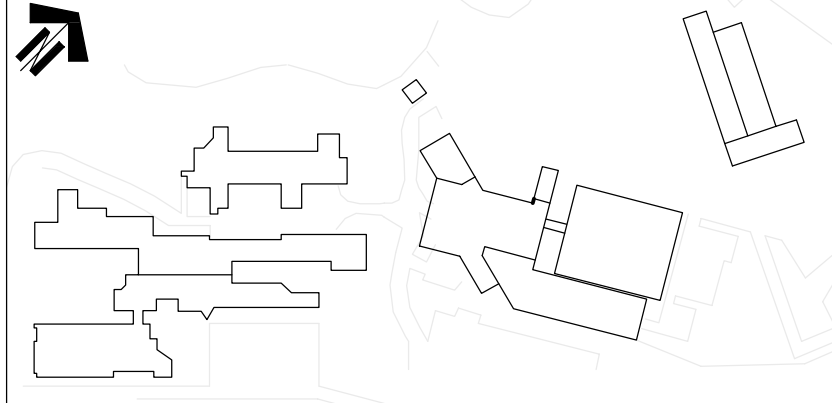
Designed by/Concept par
ROGER DUPUIS P.ENG.
Drawn by/Dessine par
JACOB BIELING
PWSC Project Manager/Administrateur de Projets TPSCG
FRANCOIS LEDOUX
Regional Manager, Architectural and Engineering Services
Gestionnaire régionale, Services d'architectural et de génie, TPSCG

Drawing title/Titre du dessin
EXISTING AND REVISED ELECTRICAL DETAILS MECH ROOMS 1212, 1002, ABOVE WORKSHOPS, ABOVE WATER TUNNEL

Project No./No. du projet PWSC # 9R504-00 AES #1-15-236	Sheet/Feuille E300 E700	Revision no./Lo Révision no. 00
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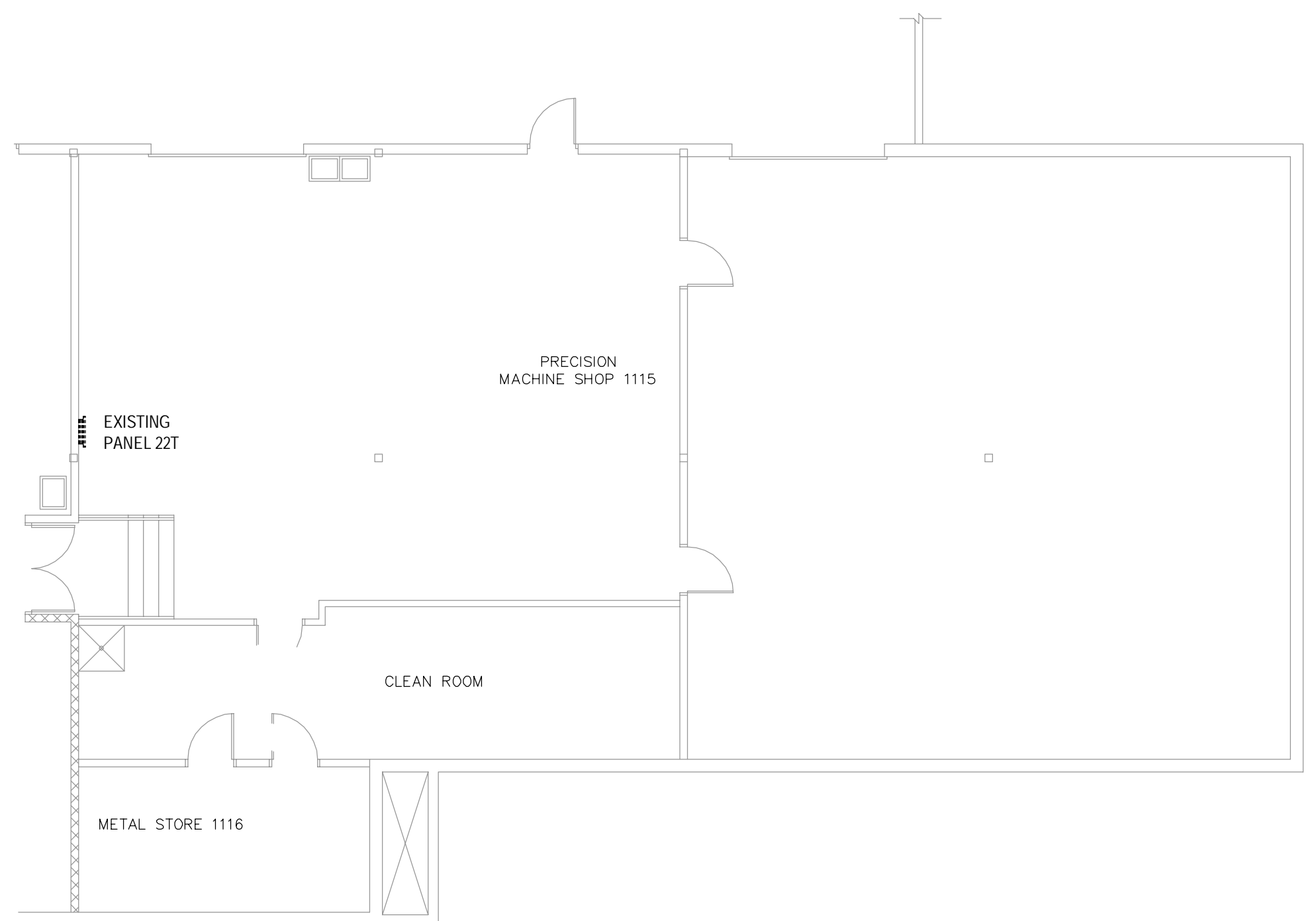
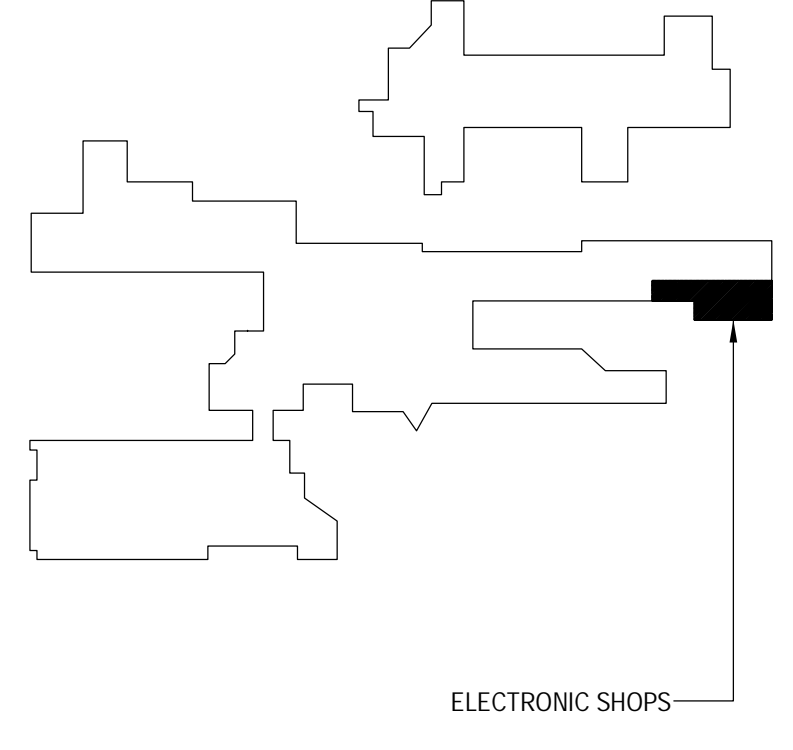
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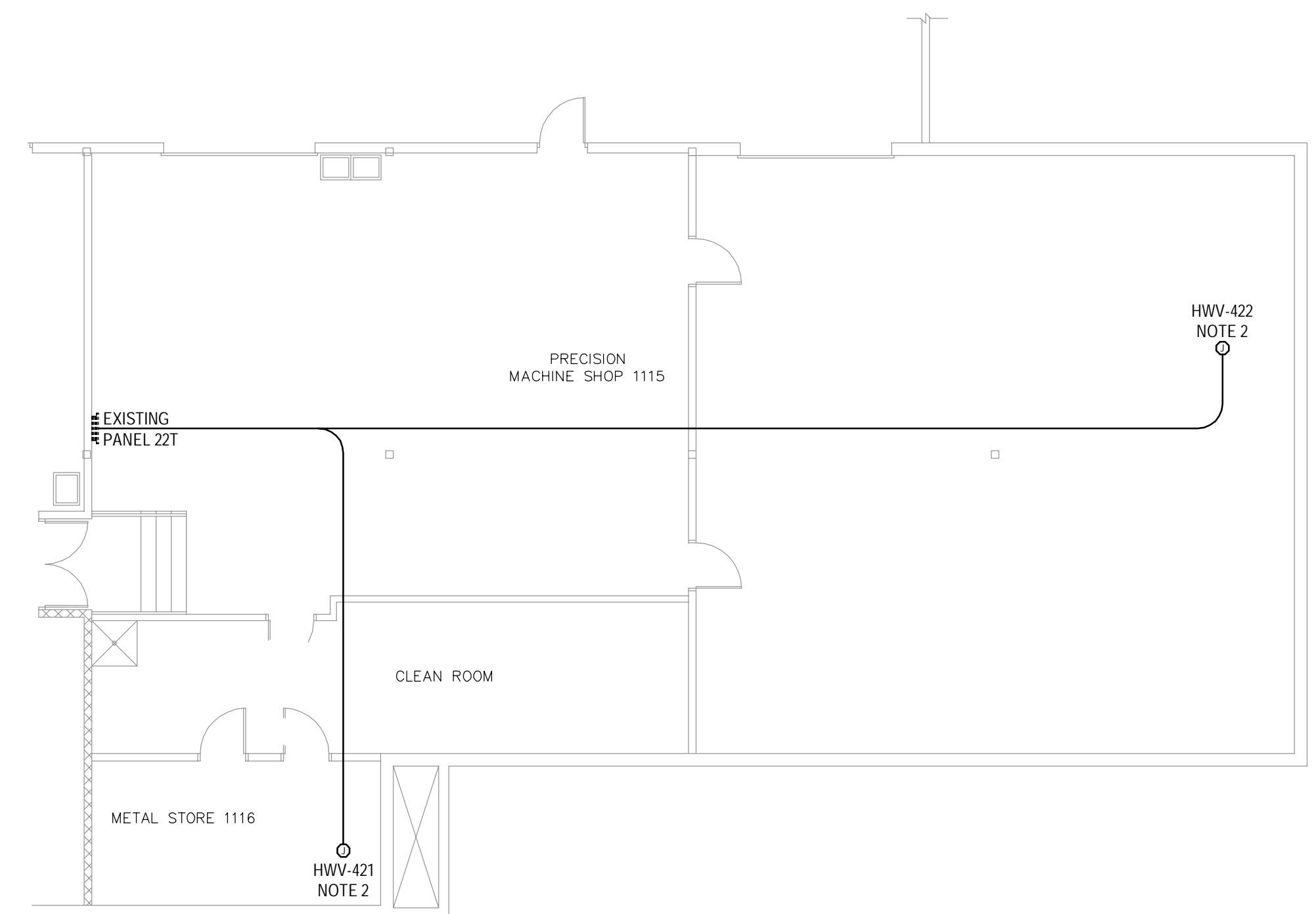


NOTES

- DISCONNECT EXISTING 120V, 1Ø RECIRCULATING PUMP AND TURN OVER TO DFO SHOPS. INSTALL NEW JUNCTION BOX AT LOCATION OF EXISTING WALL MOUNTED MOTOR DISCONNECT SWITCH AND USE AS SPLICE POINT FOR POWER TO NEW MECHANICAL VALVE ACTUATORS LOCATED NEARBY. FINAL CONNECTION OF NEW VALVE ACTUATORS BY MECHANICAL. MARK VALVE ACTUATOR AND JUNCTION BOX WITH IT'S CIRCUIT NUMBER.
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1
E400 MECH ABOVE ELECTRONICS SHOPS EXISTING
1:100



1
E400 MECH ABOVE ELECTRONICS SHOPS REVISED
1:100

Revision/Revision	Description/Description	Date/Date
	ISSUED FOR TENDER	21/12/15

Client/client

DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet
9860 W SAANICH ROAD SIDNEY BC

INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Consultant Signature Only

Designed by/Concept par
ROGER DUPUIS P.ENG.

Drawn by/Dessine par
JACOB BIELING

PWSSC Project Manager/Administrateur de Projets TPSSC
FRANCOIS LEDOUX

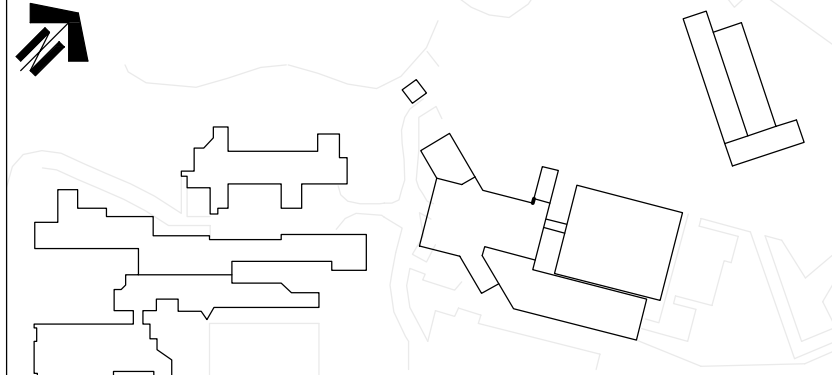
Regional Manager, Architectural and Engineering Services
Gestionnaire régionale, Services d'architecture et de génie, TPSSC

Drawing title/Titre du dessin

**EXISTING AND REVISED ELECTRICAL DRAWINGS
MECHANICAL EQUIPMENT
ABOVE ELECTRONICS SHOPS**

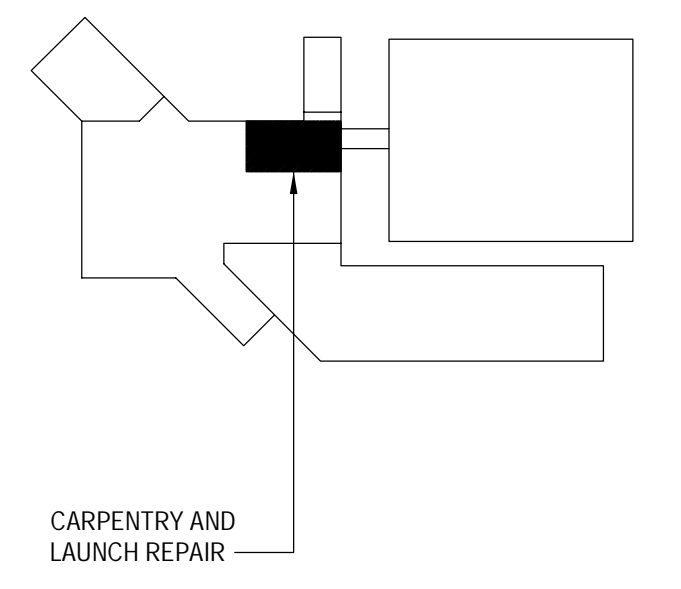
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NOTES

- DISCONNECT EXISTING 120V, 1Ø RECIRCULATING PUMP AND TURN OVER TO DFO SHOPS. INSTALL NEW JUNCTION BOX AT LOCATION OF EXISTING WALL MOUNTED MOTOR DISCONNECT SWITCH AND USE AS SPLICE POINT FOR POWER TO NEW MECHANICAL VALVE ACTUATORS LOCATED NEARBY. FINAL CONNECTION OF NEW VALVE ACTUATORS BY MECHANICAL. MARK VALVE ACTUATOR AND JUNCTION BOX WITH IT'S CIRCUIT NUMBER.
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1 ABOVE LAUNCH REPAIR BAY AND ELECTRICAL SHOPS EXISTING
E500



2 ABOVE LAUNCH REPAIR BAY AND ELECTRICAL SHOPS EXISTING
E500

Revision/Revision	Description/Description	Date/Date
	ISSUED FOR TENDER	21/12/15

Client/client
DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet
9860 W SAANICH ROAD SIDNEY BC

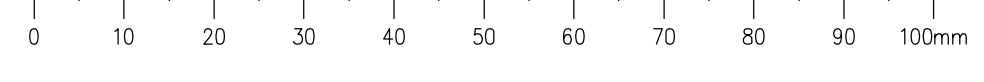
INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

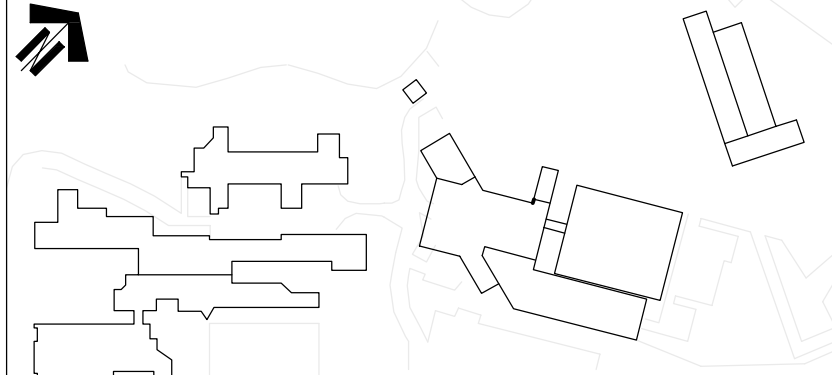
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Designed by/Concept par
ROGER DUPUIS P.ENG.
Drawn by/Dessiné par
JACOB BIELING
PWSC Project Manager/Administrateur de Projets TPSCG
FRANCOIS LEDOUX
Regional Manager, Architectural and Engineering Services
Gestionnaire régionale, Services d'architectural et de génie, TPSCG

Drawing title/Titre du dessin
EXISTING AND REVISED ELECTRICAL DRAWINGS
MECHANICAL SECOND FLOOR OF WORKSHOPS

Project No./No. du projet PWSC # 9R504-00 AES #1-15-236	Sheet/Feuille E500 E700	Revision no./Lo Révision no. 00
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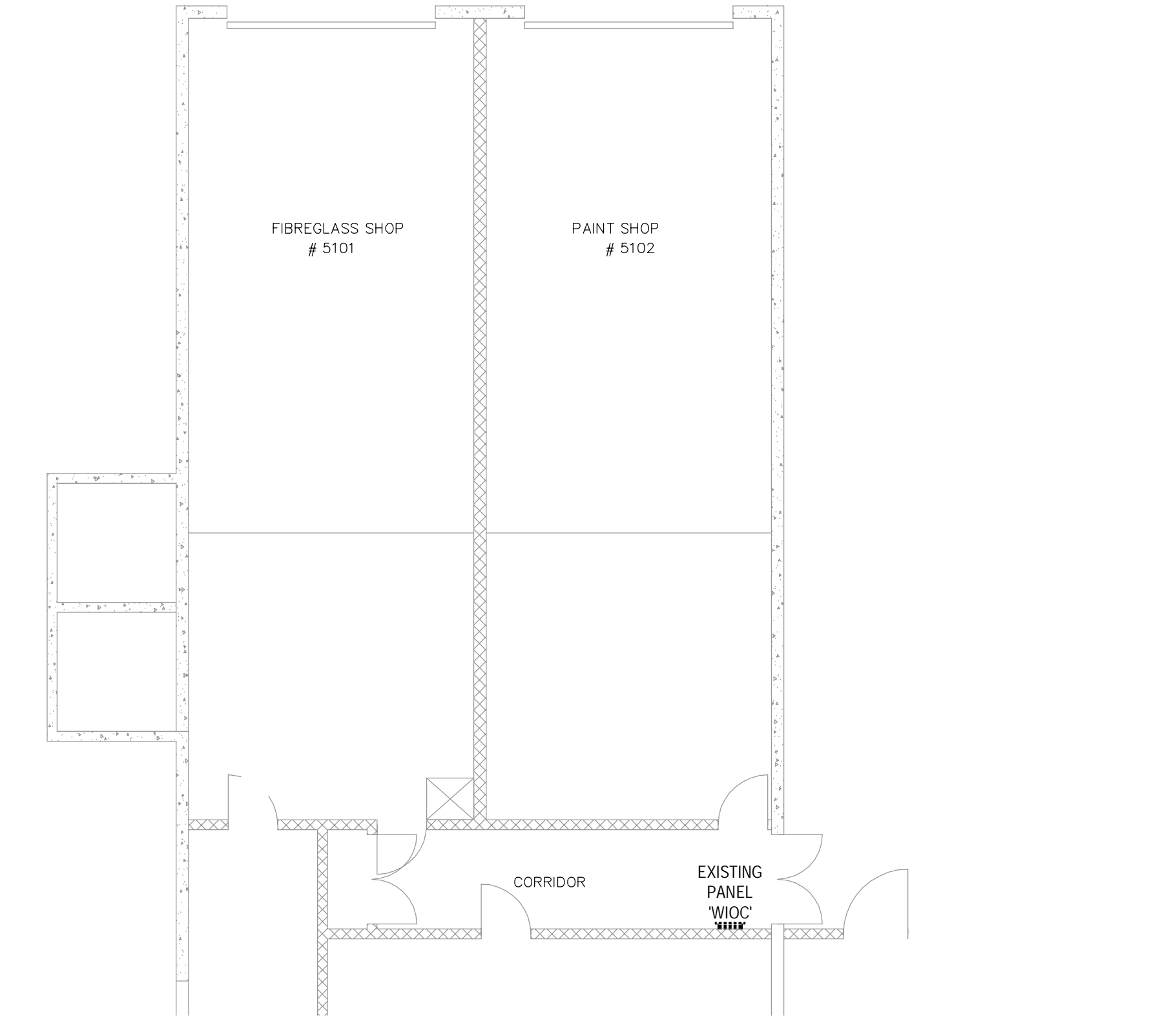
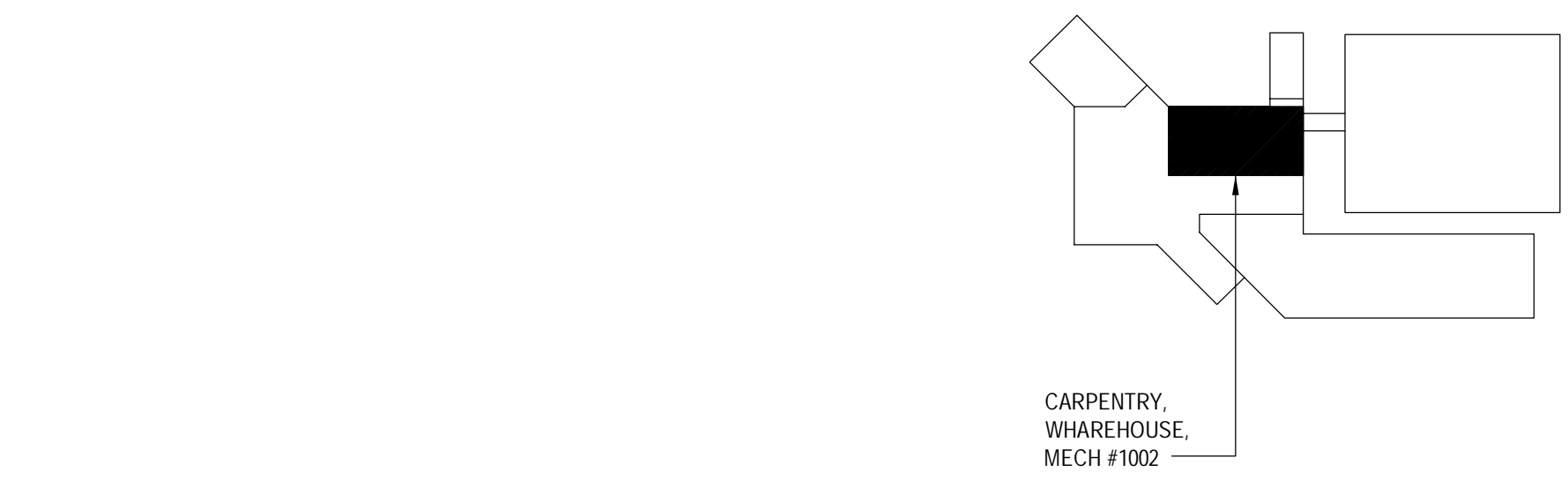
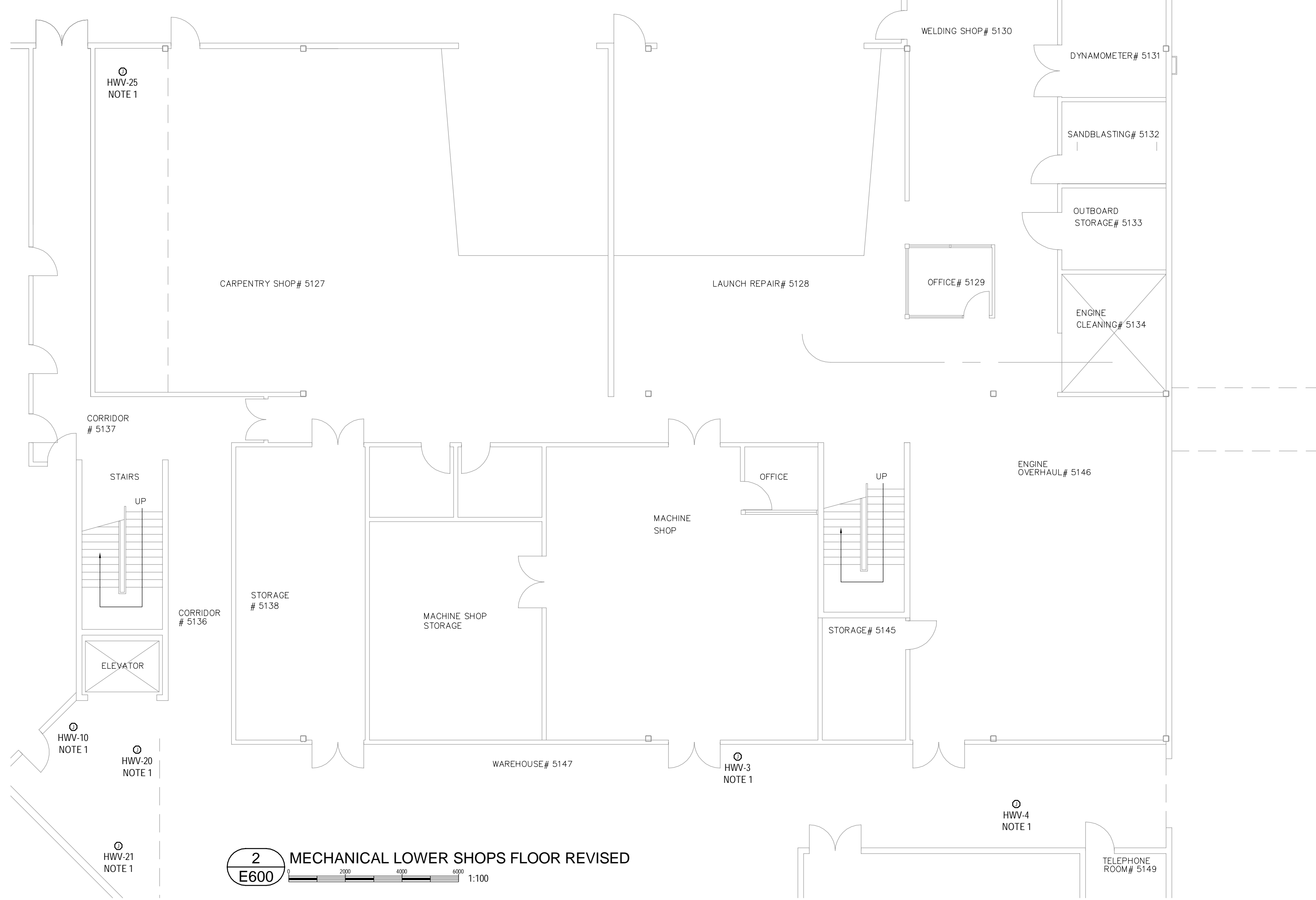
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NOTES

- DISCONNECT EXISTING 120V, 10 RECIRCULATING PUMP AND TURN OVER TO DFO SHOPS. INSTALL NEW JUNCTION BOX AT LOCATION OF EXISTING WALL MOUNTED MOTOR DISCONNECT SWITCH AND USE AS SPLICE POINT FOR POWER TO NEW MECHANICAL VALVE ACTUATORS LOCATED NEARBY. FINAL CONNECTION OF NEW VALVE ACTUATORS BY MECHANICAL. MARK VALVE ACTUATOR AND JUNCTION BOX WITH ITS CIRCUIT NUMBER.
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- NEW VALVES LOCATED ON ROOF, INSIDE EXISTING HAIR HANDLING UNITS.
- NEW 1x35mm SURFACE MOUNTED CONDUIT TO BE RUN FROM EXISTING PANEL TO WALL PENETRATION TO EXTERIOR. ALL EXTERIOR RUN IS WITHIN A CLASS 1 ZONE 2 RATED LOCATION. ALL EXTERIOR CONDUIT TO BE RIGID STEEL EQUIPPED WITH EYS SEALS AS REQUIRED. RUN ON EXISTING CONDUIT STAND OFFS TO AIR HANDLING UNITS.
- CORE THROUGH WALL FOR NEW CONDUIT ROUTE AND SEAL EDGES OF WALL PENETRATION IN WATERPROOF POLYURETHANE CAULKING. PROVIDE EYS SEAL AT EXTERIOR SIDE OF WALL AS PER CLASS 1 ZONE 2 REQUIREMENTS.



Revision/Revision	Description/Description	Date/Date
	ISSUED FOR TENDER	21/12/15

Client/client
DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet
9860 W SAANICH ROAD SIDNEY BC

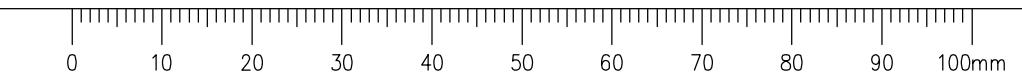
INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

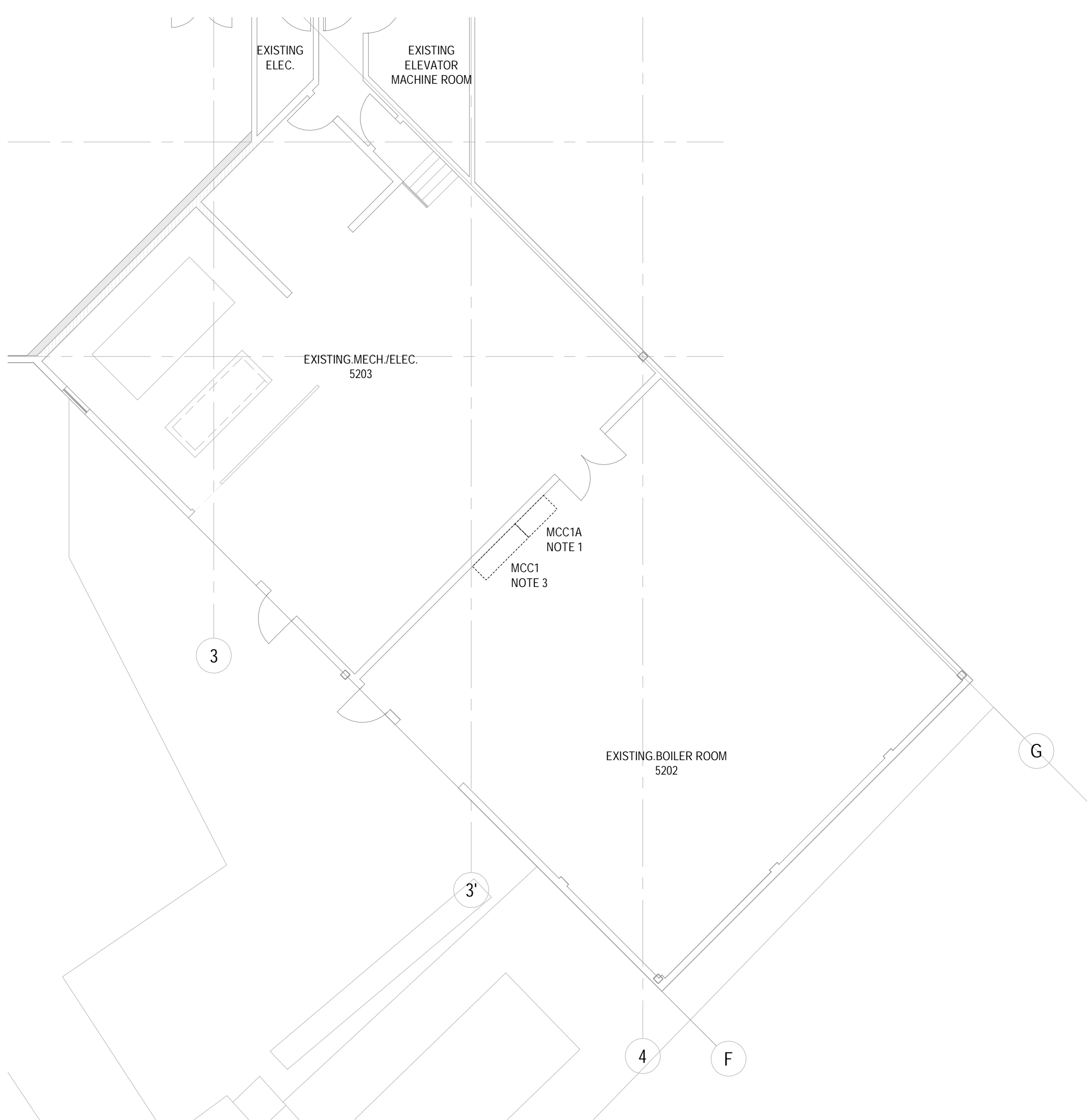
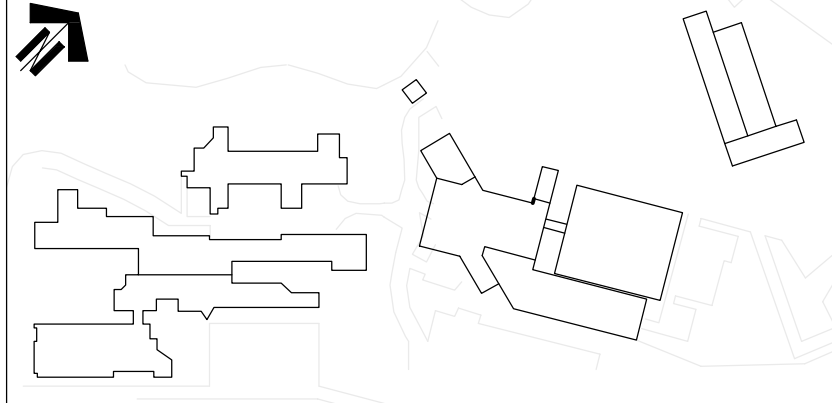
Consultant Signature Only
Designed by/Concept par
ROGER DUPUIS P.ENG.
Drawn by/Dessiné par
JACOB BELING
PWSC Project Manager/Administrateur de Projets TPSCG
FRANCOIS LEDOUX
Regional Manager, Architectural and Engineering Services
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Drawing title/Titre du dessin
EXISTING AND REVISED ELECTRICAL DRAWINGS MECHANICAL ON FIRST FLOOR OF WORKSHOPS

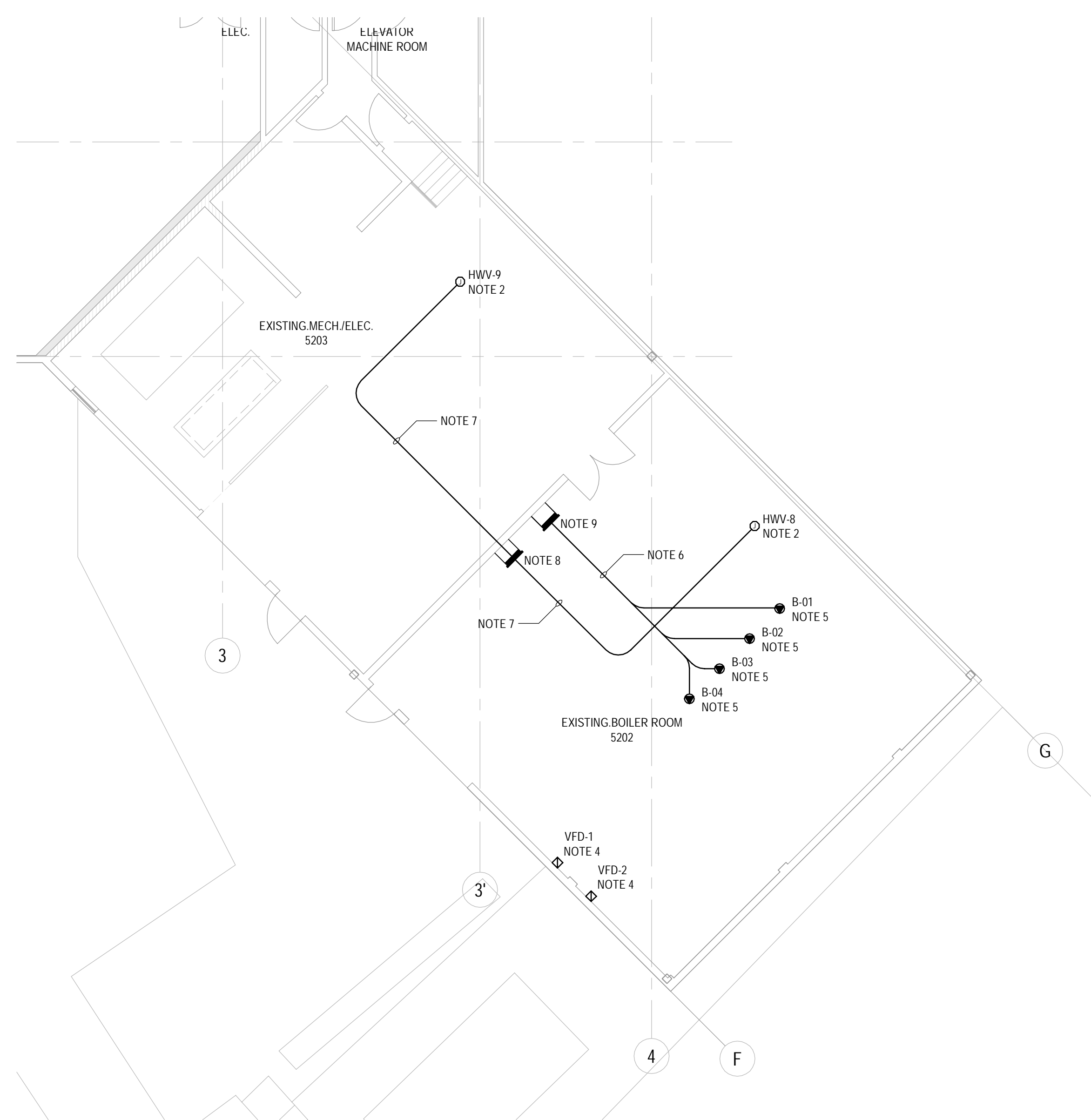
Project No./No. du projet PWSCC #: 9R504-00 AES #1-15-236	Sheet/Feuille E600 E700	Revision no./Lo Révision no. 00
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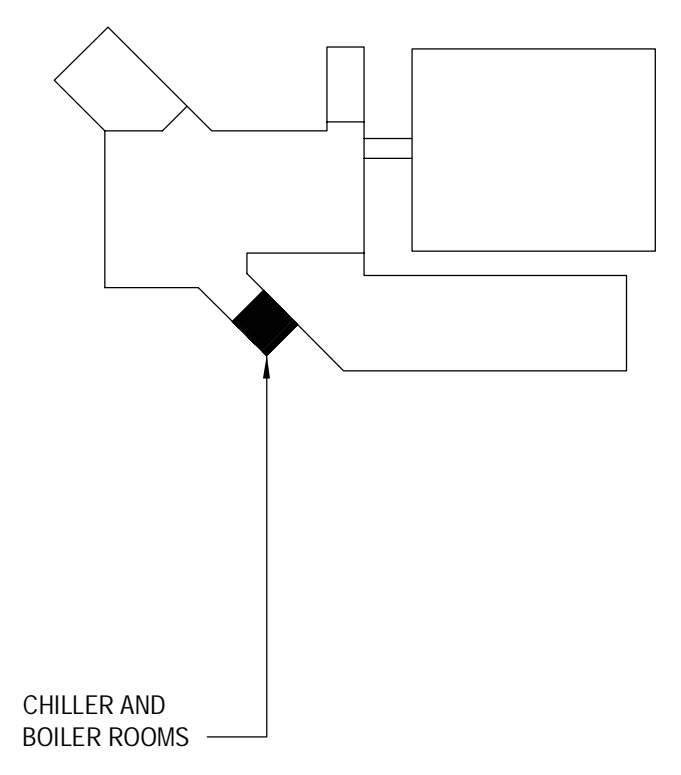




1
E700 MECHANICAL IN BOILED ROOM EXSITING



1
E700 MECHANICAL IN BOILED ROOM REVISED



CHILLER AND BOILER ROOMS

NOTES

- EXISTING 600V, 100A, 3Ø 4W EMERGENCY POWER MCC#1A, TO BE REPLACED WITH NEW PANEL BOARD IN SAME LOCATION.
- NEW VALVE ACTUATOR JUNCTION BOX AT INDICATED LOCATION. PROVIDE NEW 15A 1P BREAKER AND 2#10AWG IN 21mm EMT CONDUIT FROM EXISTING PANEL BOARD OR MCC TO NEW JUNCTION BOX. FINAL CONNECTION OF NEW VALVE ACTUATORS BY MECHANICAL. MARK VALVE ACTUATOR AND JUNCTION BOX WITH ITS CIRCUIT NUMBER.
- EXISTING 600V, 100A, 3Ø 4W MCC#1, TO BE REPLACED WITH NEW PANEL BOARD IN SAME LOCATION.
- NEW VARIABLE FREQUENCY DRIVE UNITS. MOUNT TO WALL BEHIND EXISTING 2HP, 600V HOT WATER PUMPS. CONNECT TO NEW 600V PANEL "MCC1A" VIA EXISTING IN SLAB CONDUITS/CIRCUITS. CONFIRM VFD CIRCUIT AND BREAKER REQUIREMENTS WITH MECHANICAL SHOPS DRAWINGS PRIOR TO ROUGH IN AND REVISE BREAKER SIZES AND ELECTRICAL CIRCUIT SIZE AS NEEDED AT NO ADDITIONAL COST.
- NEW GAS-FIRED CONDENSING BOILERS. CONNECT NEW BOILER POWER CIRCUIT TO NEW PANEL MCC1A VIA NEW OVERHEAD MOUNTED 1x53mm EMT CONDUIT. PROVIDE 15A, 3P BREAKER AND 4#8 WIRING TO EACH BOILER. CONFIRM BOILER CIRCUIT AND BREAKER REQUIREMENTS WITH MECHANICAL SHOPS DRAWINGS PRIOR TO ROUGH IN AND REVISE BREAKER SIZES AND ELECTRICAL CIRCUIT SIZE AS NEEDED AT NO ADDITIONAL COST.
- NEW CEILING MOUNTED 53mm EMT CONDUITS FROM NEW PANEL "MCC1A" TO NEW CONDENSING BOILERS. PROVIDE LADDER TYPE VERTICAL CABLE TRAY DROPS FROM CEILING TO EACH BOILER FOR ELECTRICAL CONTROL AND POWER WIRES.
- NEW 1x21mm EMT CONDUITS FROM NEW PANEL "MCC1" FOR NEW JUNCTION BOXES LOCATED NEAR NEW MECHANICAL ACTUATOR MOTORS.
- NEW 600V 200A 3Ø 4W 22kVAC NORMAL POWER PANEL BOARD "MCC1". CO-ORDINATE PANEL LOCATION WITH EXISTING IN SLAB AND CEILING MOUNTED CONDUITS. PANEL TO BE INSTALLED ON CHANNEL STEEL STAND OFFS FROM WALL TO ALLOW FOR INSTALLATION OVER EXISTING CONDUITS. CO-ORDINATE BREAKER LOCATIONS IN NEW PANEL WITH EXISTING LOAD FEEDER LENGTHS. REFER TO PANEL SCHEDULE "MCC1" FOR ADDITIONAL BREAKER INFORMATION.
- NEW 600V 200A 3Ø 4W 22kVAC EMERGENCY POWER PANEL BOARD "MCC1A". CO-ORDINATE PANEL LOCATION WITH EXISTING IN SLAB AND CEILING MOUNTED CONDUITS. PANEL TO BE INSTALLED ON CHANNEL STEEL STAND OFFS FROM WALL TO ALLOW FOR INSTALLATION OVER EXISTING CONDUITS. CO-ORDINATE BREAKER LOCATIONS IN NEW PANEL WITH EXISTING LOAD FEEDER LENGTHS. REFER TO PANEL SCHEDULE "MCC1A" FOR ADDITIONAL BREAKER INFORMATION. ELEVATOR CIRCUIT TO BE MOVED FROM EMERGENCY POWER TO NORMAL POWER PANEL AS INDICATED IN SCHEDULES

PANELBOARD SCHEDULE						
DESCRIPTION	BRK	POLE	CCT	POLE	BRK	DESCRIPTION
CHWP-1		3	01 02	3		CHWP-2
			03 04			
			05 06			
SPARE	15	3	07 08	3	15	SPARE
			09 10			
			11 12			
SPARE	15	3	13 14	3	15	SPARE
			15 16			
			17 18			
			19 20	3	60	ELEVATOR
			21 22			
			23 24			
			25 26			
			27 28			
			29 30			

* EXISTING BREAKER SIZE/POLE COULD NOT BE DETERMINED ON SITE WITHOUT OPENING LIVE PANELS. CONTRACTOR TO CONFIRM SIZES AND SUPPLY NEW BREAKERS.

PANELBOARD SCHEDULE						
DESCRIPTION	BRK	POLE	CCT	POLE	BRK	DESCRIPTION
HOT WATER PUMP #1	60	3	01 02	3	60	HOT WATER PUMP #2
			03 04			
			05 06			
BOILER #2 (EXISTING)		3	07 08	3		CONTROL COMPRESSOR
			09 10			
			11 12			
AHU SF-8		3	13 14	3		PANEL EMMA
			15 16			
			17 18			
SPARE	15	3	19 20			
			21 22			
			23 24			
			25 26			
			27 28			
			29 30			
B-01	15	3	31 32	3	15	B-03
			33 34			
			35 36			
B-02	15	3	37 38	3	15	B-04
			39 40			
			41 42			

* EXISTING BREAKER SIZE/POLE COULD NOT BE DETERMINED ON SITE WITHOUT OPENING LIVE PANELS. CONTRACTOR TO CONFIRM SIZES AND SUPPLY NEW BREAKERS.

Revision/	ISSUED FOR TENDER	21/12/15
Revision/	Description/Description	Date/Date
Client/client		

DEPARTMENT OF FISHERIES AND OCEANS

Project title/Titre du projet
9860 W SAANICH ROAD SIDNEY BC

INSTITUTE OF OCEAN SCIENCES
HEATING SYSTEM UPGRADE

Consultant Signature Only

Designed by/Concept par
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Drawing title/Titre du dessin
EXISTING AND REVISED ELECTRICAL DRAWINGS BOILER ROOM 5202 AND CHILLER ROOM 5203

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