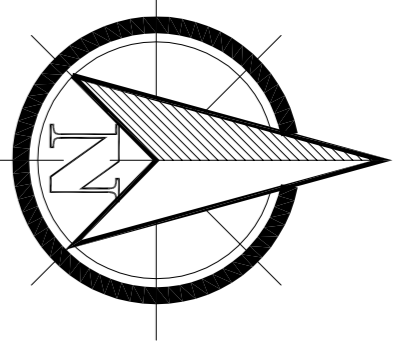
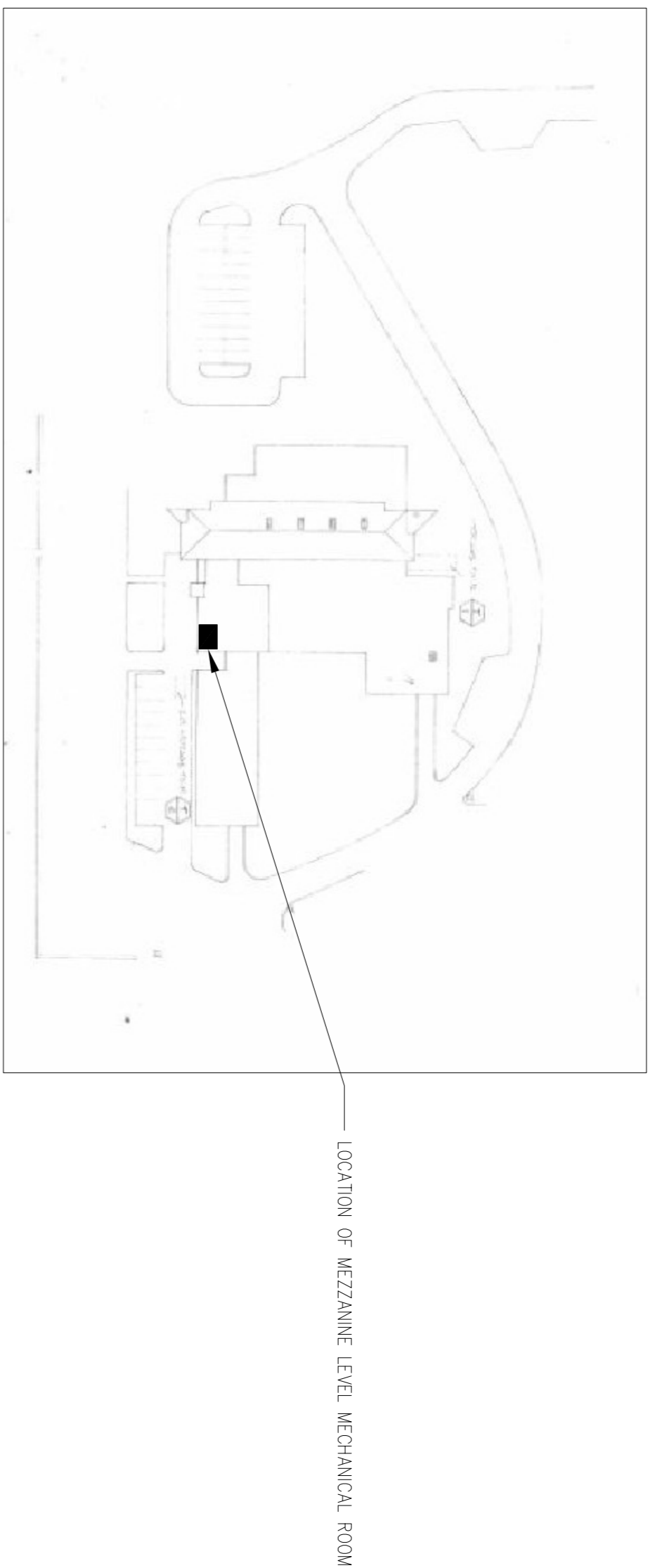


DFO – WEST VANCOUVER LABORATORY

AIR COMPRESSOR REPLACEMENT

PROJECT NUMBER: SDT19

SITE PLAN
MIS



MECHANICAL LEGEND

<p> SUPPLY OR OUTDOOR AIR DUCT UP SUPPLY OR OUTDOOR AIR DUCT DOWN RETURN AIR DUCT UP RETURN AIR DUCT DOWN EXHAUST AIR DUCT UP EXHAUST AIR DUCT DOWN ROUND DUCT UP ROUND DUCT DOWN TURNING VANES ACOUSTIC INSULATION (INTERNALLY LINED) BALANCING DAMPER BACK DRAFT DAMPER MOTORIZED DAMPER ACCESS PANEL ROOF FAN – EXHAUST AIR DUCT OR PIPE CAP-OFF SUPPLY AIR GRILLE OR DIFFUSER RETURN AIR GRILLE EXHAUST AIR GRILLE SUPPLY OUTLET RETURN OR EXHAUST INLET DOOR GRILLE - UNDERCUT TURNING VANES MANUAL DAMPER MOTORIZED DAMPER (MODULATING) </p>	<p> HWS HWR DCW DHW DHW-R SAN SI A PIPE DROP PIPE RISE PIPE TEE DOWN PIPE TEE UP PIPE UNION CAP OR PLUG FLEXIBLE CONNECTION GATE VALVE (NORMALLY OPEN) GATE VALVE (NORMALLY CLOSED) CHECK VALVE 2-WAY CONTROL VALVE BALL VALVE BALANCING VALVE PRESSURE REDUCING VALVE BUTTERFLY VALVE STRAINER BACKFLOW PREVENTOR </p>	<p> P & T RELIEF VALVE PRESSURE GAUGE THERMOMETER PUMP OPEN DRAIN HOSE-BIBB FLOOR DRAIN THERMOSTAT SENSOR EQUIPMENT / FIXTURE TYPE GENERAL NOTE EXISTING EXISTING TO BE REMOVED PCC (POINT OF CONNECTION) </p>
---	--	---

GENERAL NOTES

1. THE MECHANICAL AND PLUMBING SYSTEMS SHALL CONSIST OF ALL WORK SHOWN ON DRAWINGS, DIAGRAMS, AND AS DESCRIBED IN SPECIFICATIONS. DRAWINGS ARE GENERALLY DIAGRAMMATIC AND INTENDED TO INDICATE THE SCOPE AND GENERAL ARRANGEMENT OF WORK AND ARE NOT DETAILED INSTALLATION INSTRUCTIONS.
2. INSTALL ALL MECHANICAL WORK AS HIGH AS POSSIBLE, TIGHT TO STRUCTURE ABOVE, EXCEPT WHERE CONFLICT OCCURS WITH REQUIREMENTS LISTED UNDER SPECIFICATION (VIBRATION ISOLATION).
3. THE MECHANICAL PLANS ARE DIAGRAMMATIC IN NATURE AND DO NOT ATTEMPT TO SHOW ALL REQUIRED OFFSETS.
4. ITEMS NOTED "TYPICAL" OR "TYP" ON ANY SHEET APPLY TO THAT PARTICULAR SHEET.
5. COORDINATE WITH SPECIFICATIONS. IN CASE OF CONFLICT BETWEEN SPECIFICATIONS AND DRAWINGS THE MORE STRINGENT SHALL APPLY.
6. PROVIDE MEC CODE MINIMUM HORIZONTAL AND VERTICAL WORKING CLEARANCE FOR ALL ELECTRICAL PANELS AND EQUIPMENT OFFSET MECHANICAL WORK AS REQUIRED.
7. COORDINATE ALL MECHANICAL WORK WITH THAT OF OTHER TRADES TO ENSURE PROPER AND ADEQUATE INTERFACE OF THEIR WORK WITH THE WORK OF THIS CONTRACTOR. PROVIDE COORDINATED SHOP DRAWINGS PRIOR TO FABRICATION AND INSTALLATION.
8. VERIFY EXISTING CONDITIONS BEFORE COMMENCING ANY WORK ON A PREVIOUSLY INSTALLED EXISTING MECHANICAL SYSTEM.
9. COORDINATE EXACT LOCATIONS OF ALL TEMPERATURE SENSORS WITH CLIENT PRIOR TO INSTALLATION.
10. THE MECHANICAL CONTRACTOR SHALL INCLUDE FOR ALL PERMITS AS REQUIRED BY THE LOCAL AUTHORITY.
11. DO NOT SCALE THE DRAWINGS. OBTAIN ACCURATE MEASUREMENTS FROM SITE.
12. THE CONTRACTOR SHALL ALLOW FOR ALL AND ANY PLUMBING, TENDING OFFSETS REQUIRED TO AVOID THE EXISTING STRUCTURE, MECHANICAL OR ELECTRICAL INSTALLATIONS.

CIVIC ADDRESS

DEPARTMENT OF FISHERIES AND OCEANS
WEST VANCOUVER LABORATORY
2850 MARINE DRIVE
WEST VANCOUVER
V7V 1N0

FOR MECHANICAL CONTRACTOR

PRIOR TO COMMENCING INSTALLATION WITHIN THE BUILDING, THE MECHANICAL CONTRACTOR SHALL CHECK THE LOCATION AND INVERT ELEVATIONS OF ALL SERVICE LINES INCLUDING SANITARY, SEWER, STORM SEWER, WATER MAINS AND GAS MAINS WITH LOCAL AUTHORITIES TO INSURE THAT THESE SERVICES CAN BE INSTALLED AS SHOWN.
MINIMUM DISTANCE FROM METER VENTS TO OPERABLE WINDOWS, INTAKES OR DOORS SHALL BE 3 METERS (10 FEET).

DRAWING LIST

DWG. NO.	DESCRIPTION	SCALE
M100	COVER SHEET AND SITE PLAN	AS NOTED
M2010	MEZZANINE LEVEL MECH DEMOLITION	AS NOTED
M202	MEZZANINE LEVEL MECH ROOM NEW INSTALLATION PLAN AND SCHEMATIC	AS NOTED
M300	EQUIPMENT SCHEDULES	AS NOTED
E200	MEZZANINE LEVEL MECH ROOM ELECTRICAL LAYOUT	AS NOTED

FISHERIES AND OCEANS CANADA
REAL PROPERTY AND SAFETY AND SECURITY

RESIGNED
SIU
DRAWN
SA
CHECKED
RECOMMENDED
APPROVED

WEST VANCOUVER LABORATORY
AIR COMPRESSOR REPLACEMENT
COVER SHEET AND SITE PLAN

SCALE
AS NOTED
DATE
2016-MAR-31
DRAWING NUMBER
M100

DWG. NO.	DRAWING REFERENCES	NO.	DATE	REVISIONS

NOTES



EXISTING DUPLEX AIR COMPRESSOR TO BE REMOVED

SCALE: NTS



EXISTING DUPLEX AIR COMPRESSOR TO BE REMOVED

SCALE: NTS

GENERAL NOTES:

1. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION.
2. UNLESS OTHERWISE NOTED, OR SPECIFIED, PROVIDE ALL EQUIPMENT AND/OR MATERIALS SHOWN ON THE DRAWINGS AND IN THE SPECIFICATION.
3. THE ENGINE ELECTRICAL INSTALLATION SHALL COMPLY WITH THE LATEST ADOPTED REVISION OF PART 1 OF THE CANADIAN ELECTRICAL CODE, CURRENT EDITION OF THE SAFETY STANDARD FOR ELECTRICAL INSTALLATION AND THE B.C. PROVINCIAL AMENDMENTS TO THIS CODE AND THE NATIONAL BUILDING CODE, ALL LOCAL BYLAWS, RULES AND ORDINANCES APPLICABLE TO THIS CONTRACTOR.
4. THE CONTRACTOR WILL SHUT DOWN THE EXISTING EQUIPMENT BEFORE WORKS COMMENCE WITH THE BUILDING RMO STAFF IN ATTENDANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DRAWING OF THE SYSTEMS.
5. THE CONTRACTOR SHALL PROVIDE THE DEPARTMENTAL REPRESENTATIVE WITH AT LEAST 72 HOURS WRITTEN NOTICE OF ANY FURTHER SHUTDOWNS THAT MAY BE REQUIRED.
6. THE CONTRACTOR SHALL PROVIDE THE DEPARTMENTAL REPRESENTATIVE WITH AT LEAST 72 HOURS WRITTEN NOTICE OF ANY EQUIPMENT START-UP.
7. ANY EQUIPMENT AND/OR PIPING IDENTIFIED BY THE CLIENT SHALL BE SET ASIDE BY THE CONTRACTOR AND TURNED OVER. THE OWNER HAS FIRST REFUSAL OF ALL REDUNDANT EQUIPMENT AND PIPING.
8. ALL REDUNDANT PIPING, HANGERS, CONDUIT AND WIRING WHICH IS NO LONGER REQUIRED SHALL BE REMOVED BY THE CONTRACTOR.
9. ALL NEW AND EXISTING PIPING SHALL BE HERMETICALLY INSULATED AS PER THE SPECIFICATION.
10. ALL NEW AND EXISTING OPENINGS AROUND PIPING, CONDUITS, ARE TO BE FIRE STOPPED WHERE THEY PENETRATE THE MECHANICAL ROOM WALLS.
11. THE CONTRACTOR SHALL PROVIDE THE DEPARTMENTAL REPRESENTATIVE WITH THE MECHANICAL ROOM DEMOLITION PLAN AND THE INSULATION OR PRE-FABRICATION. THE CONTRACTOR SHALL NOT FABRICATE ANY PIPING UNLESS THE FINAL PIPING LAYOUT HAS BEEN APPROVED BY THE CONSULTANT.
12. THE CONTRACTOR SHALL PROVIDE ALL PERMITS AND CERTIFICATION AS REQUIRED BY CODE AND THE LOCAL JURISDICTION.
13. UPON COMPLETION, PRESENT TO THE DEPARTMENTAL REPRESENTATIVE A CERTIFICATE OF APPROVAL FOR ALL WORKS INCLUDING FROM THE ELECTRICAL INSPECTION DEPARTMENT HAVING JURISDICTION.
14. IF TO BE LEFT FOR A PROLONGED PERIOD OF TIME, ALL PIPING IS TO BE SEALED TO PREVENT AIRBORNE CONTAMINANTS.
15. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND BEAR THE APPROVAL OF C.S.A. OR EQUIVALENT ULG TAGS.

SCOPE OF WORKS:

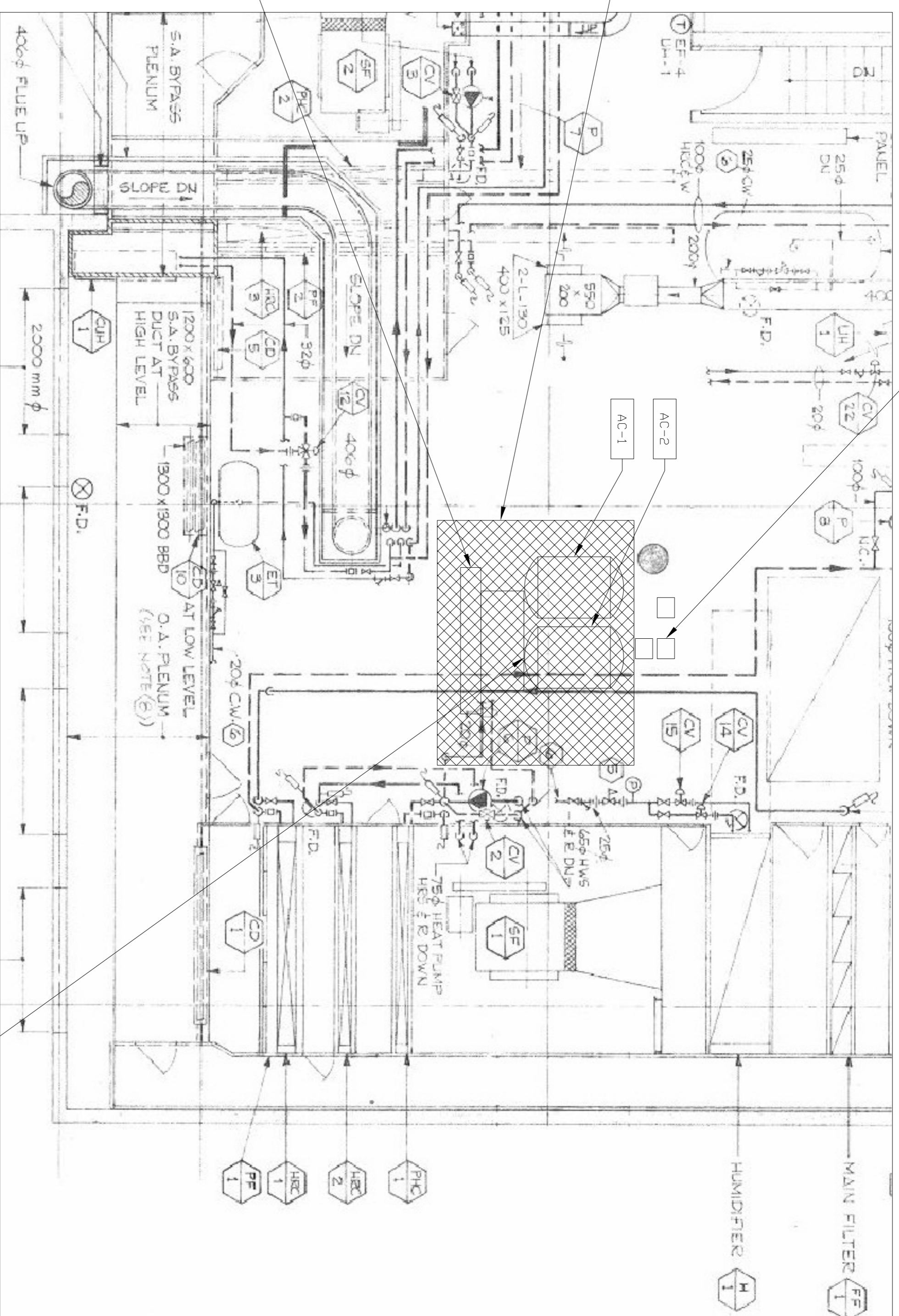
1. REMOVE EXISTING WATER COOLED DUPLEX AIR COMPRESSORS AND ASSOCIATED AIR RECEIVERS.
2. REMOVE EXISTING AC-1 & AC-2 CABLE CONNECTIONS
3. REMOVE EXISTING AC-1 & AC-2 DISCONNECT SWITCHES AND SPICE FEEDER IN DISCONNECT BOXES. PROVIDE BLANK COVER PLATE ON DISCONNECT BOX.
4. REMOVE EXISTING PIPING FROM AC-1 & AC-2 AS PER JUNCTION BOXES INSTRUCTIONS AND REQUIREMENTS.
5. TERMINATE POWER SUPPLY FROM AC-1 & AC-2 AS PER JUNCTION BOXES INSTRUCTIONS AND REQUIREMENTS.
6. TERMINATE BATTERY AND COMPRESSOR CONTROL CABLING ON AC-1 & AC-2 VFD TERMINATION BOARD.
7. PROVIDE NEW JUNCTION BOX ON SUPPORTING COLUMN ADJACENT TO AC-1 & AC-2 VFD TERMINATION BOARD.
8. PROVIDE NEW JUNCTION BOX ON SUPPORTING COLUMN ADJACENT TO AC-1 & AC-2 COMM JUNCTION BOX AND AC-1 & AC-2

(BY ESC AUTOMATION)

9. TERMINATE ALL CONTROL, COMMUNICATION WIRING IN ESC PANEL.

10. PROVIDE ALL CONTROL, RELAYS, POWER SUPPLIES, BATTERY INTERFACE CARDS, TERMINAL BLOCKS ETC AS REQUIRED.

EXISTING DUPLEX FILTERS AND DRYER TO BE RETAINED AND SERVICED UPON COMPLETION OF WORKS



MEZZANINE FLOOR PLAN DEMOLITION PLAN

SCALE: 1:50

ISOLATE VALVE AND CAP DOWN LINE WITHIN 1000MM OF NEAREST MAIN TAKE-OFF (TYP)

EXISTING DUPLEX AIR COMPRESSOR SCHEDULE

EQUIPMENT MARK	DESCRIPTION	LOCATION	SERVICE	TYPE	MANUFACTURER	ELECTRICAL	HP	AMPS	DUTY	MODEL #
AC-1	AIR COMPRESSOR	MEZZ MECH ROOM	AQUATIC TANKS	LIQUID RING, DUPLEX AIR COMPRESSOR	PETRELSS	208V//3PH/60HZ	40	208	94.4L/S @ 585KPA	PESLS552001TD
AC-2	AIR COMPRESSOR	MEZZ MECH ROOM	AQUATIC TANKS	LIQUID RING, DUPLEX AIR COMPRESSOR	PETRELSS	208V//3PH/60HZ	40	208	94.4L/S @ 585KPA	PESLS552001TD

NOTES:
VARIABLE FREQUENCY DRIVE INSTALLED TO EACH 40HP MOTOR

FISHERIES AND OCEANS CANADA
REAL PROPERTY AND SAFETY AND SECURITY

WEST VANCOUVER LABORATORY
AIR COMPRESSOR REPLACEMENT
DEMOLITION LEVEL MECH ROOM

SCALE
AS NOTED
DATE
2016-MAR-31
DRAWING NUMBER
M201D

DWG. NO.

DRAWING REFERENCES

NOTES

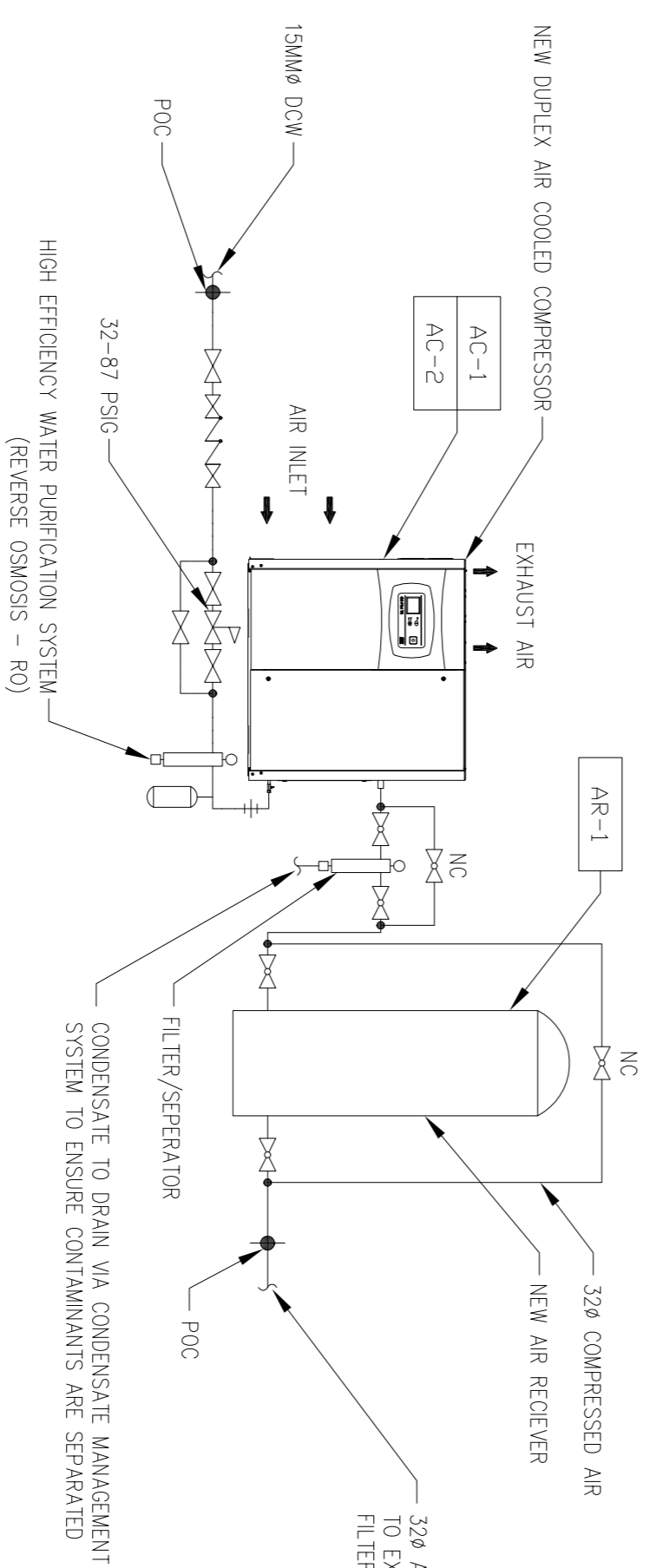
NO. DATE

REVISIONS

RESIGNED
SUI
DRAWN
SA
CHECKED
RECOMMENDED
APPROVED

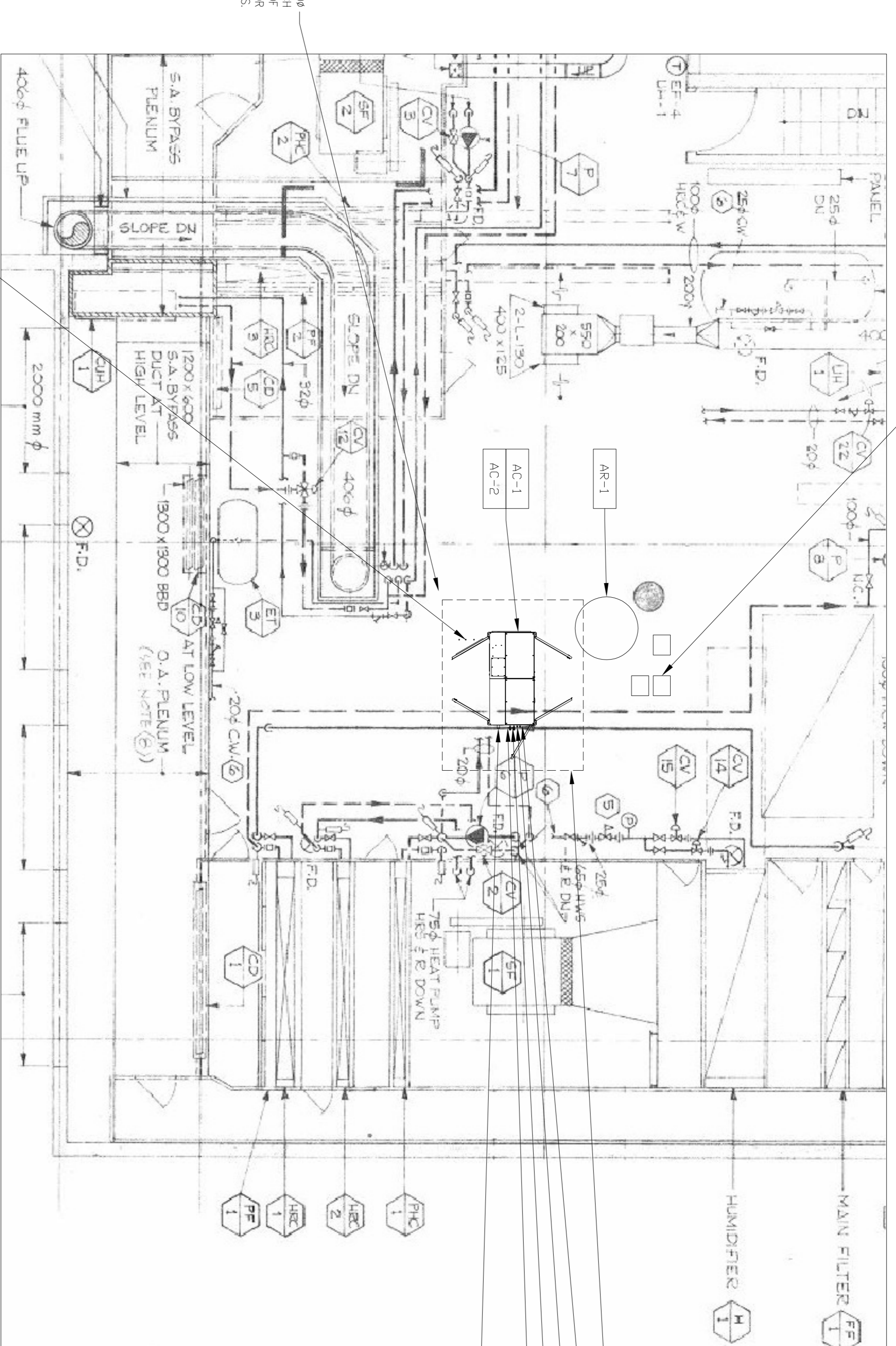
GENERAL MECHANICAL NOTES:

- PIPING AND FITTINGS**
1. ALL NEW COMPRESSED AIR PIPING SHALL MATCH THE EXISTING PIPE MATERIAL (CPVC SCH 80)
 2. ALL NEW DOMESTIC COLD WATER PIPING SHALL MATCH EXISTING (COPPER TYPE K)
 3. THE CONTRACTOR SHALL REVIEW THE PROPOSED MECHANICAL PIPING LAYOUT ON SITE WITH THE CONSULTANT PRIOR TO COMMENCING THE INSTALLATION OR BEFORE ANY WORK IS COMMENCED.
 4. ALL NEW PIPING SHALL BE INSTALLED IN ACCESSIBLE POSITIONS THAT ALLOW EASY MAINTENANCE AND REPAIR.
 5. ALL PRESSURE GAUGES SHALL BE INSTALLED SO THAT THEY ARE EASILY READABLE TO THE MAINTENANCE STAFF. ANY DEVIATION FROM THIS MUST BE APPROVED BY THE DEPARTMENTAL REPRESENTATIVE. RELOCATION OF IMPROPERLY LOCATED GAUGES WILL BE AT THE CONTRACTORS EXPENSE.
 6. THE CONTRACTOR SHALL PROVIDE ALL PERMITS AND CERTIFICATION AS REQUIRED BY CODE AND THE LOCAL JURISDICTION.
 7. ALL NEW AND EXISTING BACKFLOW PREVENTORS SHALL BE TESTED AND CERTIFIED.



PROPOSED COMPRESSED AIR SCHEMATIC

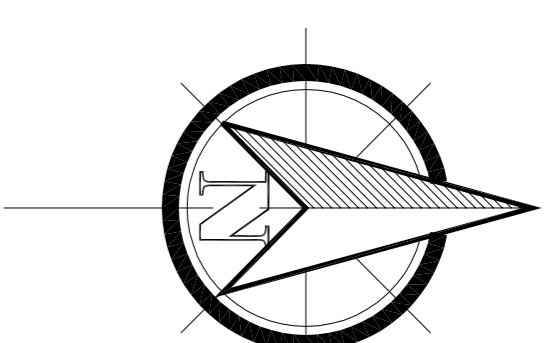
SCALE: NTS



MEZZANINE FLOOR PLAN PROPOSED LAYOUT PLAN

SCALE 1:50

EXISTING DUPLEX FILTERS AND PIPES TO BE REMOVED AND SERVICED UPON COMPLETION OF WORKS



- DASHED AREA INDICATES MAINTENANCE REQUIREMENTS
- 6# DRAIN TO NEAREST FLOOR DRAIN
- 6# DRAIN TO NEAREST FLOOR DRAIN
- 10# RO WATER INLET
- 10# RO WATER OUTLET TO NEAREST FLOOR DRAIN
- 32# AIR DELIVERY CONNECTION TO CONNECT TO EXISTING 40# AIR SUPPLY TO THE EXISTING FILTERS AND DRIVERS.

DWG. NO.	DRAWING REFERENCES	NO.	DATE	REVISIONS
<p>RESIGNED SUI DRAWN SA CHECKED RECOMMENDED APPROVED</p>				
<p>SCALE AS NOTED DATE 2016-MAR-31 DRAWING NUMBER M202</p>				
<p>FISHERIES AND OCEANS CANADA REAL PROPERTY AND SAFETY AND SECURITY</p>				
<p>WEST VANCOUVER LABORATORY AIR COMPRESSOR REPLACEMENT MEZZANINE LEVEL MECH ROOM NEW INSTALLATION PLAN AND SCHEMATIC</p>				

AIR COMPRESSOR SCHEDULE

EQUIPMENT MARK	DESCRIPTION	LOCATION	SERVICE	TYPE	CAPACITY L/S @ KPA(G)	HORSEPOWER	ELECTRICAL	COOLING SYSTEM	NOISE LEVEL (DBA)	DIMENSIONS (MM) (L X W X H)	RPM	DRIVE	WEIGHT (KG)	BASIS OF DESIGN	REMARKS
AC-1	AIR COOLED COMPRESSOR	MEZZ MECH ROOM	AQUATIC TANKS	VARIABLE SPEED DRIVE OIL FREE ROTARY SCREW AIR COMPRESSOR	94.4L/S @ 584	50	460V/3PH/60HZ	AIR	73DBA	1727X914X1651	750-3400	DIRECT	895	ENVIRONMENTAL V337	1 TD 10 INCL.
AC-2	AIR COOLED COMPRESSOR	MEZZ MECH ROOM	AQUATIC TANKS	VARIABLE SPEED DRIVE OIL FREE ROTARY SCREW AIR COMPRESSOR	94.4L/S @ 584	50	460V/3PH/60HZ	AIR	73DBA	1727X914X1651	750-3400	DIRECT	895	ENVIRONMENTAL V337	1 TD 10 INCL.

NOTES:

1. THE COMPRESSOR UNIT SHALL INCORPORATE UL/OUL LABELED ELECTRONICS INCLUDING CONTROL PANEL;
2. THE COMPRESSOR UNIT SHALL INCORPORATE HIGH EFFICIENCY VARIABLE FREQUENCY DRIVE, PREMIUM EFFICIENCY TECO DIRECT DRIVE MOTOR, TECO/PP55 MOTOR ENCLOSURE, STAINLESS STEEL SEPARATOR VESSEL AND SOFT START.
3. THE COMPRESSOR UNIT SHALL INCORPORATE A TURNDOWN RATION OF 70%.
4. THE COMPRESSOR UNIT SHALL PROVE 100% OIL-FREE COMPRESSION AND 100% OIL-FREE CONSTRUCTION.
5. THE COMPRESSOR UNIT AREND SHALL BE WATER INJECTED BRONZE SINGLE 6 FLUTE MAIN ROTOR AND CARBON FIBER COMPOSITE 11 TOOTH GATE ROTORS, SEALED GREASE LUBRICATED MAIN ROTOR BEARINGS AND WATER LUBRICATED GATE ROTOR BEARINGS.
6. PROVIDE 25MM 2-STAGE FILTER/REGULATOR COMBO ASSEMBLY INCLUDING 5-MICRON PARTICULATE FILTER ASSEMBLY AND REGULATOR AND GAUGE
7. PROVIDE COUPLE RELAYS - REMOVE ON/OFF CONTROL AND BASE LOAD SELECTOR AND POTENTIAL FREE CONTACTS KITS AND PROFIUS INTERFACE MODULE FOR REMOTE MONITORING.
8. THE COMPRESSOR UNIT SHALL INCLUDE ALL COMPONENTS TO CONNECT TO AND BE MONITORED BY THE EXISTING DELTA CONTROLS SYSTEM BY ESC AUTOMATION.
9. PROVIDE MANUFACTURERS 5-YEAR EXTENDED AREND WARRANTY
10. DELIVERY DEADLINES:
- a. SHIP DRAWINGS TO BE SUBMITTED 7 DAYS AFTER AWARD OF THIS CONTRACT.
- b. PURCHASE ORDER SHALL BE EXECUTED NO MORE THAN 2 DAYS AFTER RECEIPT OF ENGINEERS APPROVAL.

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, PROVIDE COMPLETE AND CONCISE SHOP DRAWINGS PER SPECIFICATION.

GENERAL CONTROLS AND SEQUENCE OF OPERATION (SOO) REQUIREMENTS:

2. THE COMPRESSOR UNITS' CENTRAL CONTROLLER SHALL:
 - 2.1 BE ABLE TO COMMUNICATE WITH THE EXISTING BAS
 - 2.2 EACH UNIT SHALL OPERATE UNDER THE CONTROL OF THE EXISTING BAS SYSTEM.

AIR RECEIVER SCHEDULE

EQUIPMENT MARK	LOCATION	SERVICE	STYLE	CAPACITY	DIMENSIONS	WEIGHT	ELECTRICAL	MOTOR POWER	MAX. PRESSURE	BASIS OF DESIGN	REMARKS
AR-1	MEZZ MECHANICAL ROOM	COMPRESSED AIR SYSTEM	VERTICAL TANK	1514 LITRES (400 GALLONS)	914MM DIA X 2,565MM HIGH	330KG	115V, 1 PHASE, 60HZ	115V, 1PHASE, 60HZ	1.137 MPa(G)	ENVIRONMENTAL A10055	1, 2, 3

NOTES:

1. AIR RECEIVER SHALL BE CRN REGISTERED.
2. PROVIDE TRIM PACKAGE INCLUDING PRESSURE GAUGE WITH NEEDLE VALVE, 25MM SAFETY RELIEF VALVE, ELECTRIC TIMED DRAIN (TSD), AND 1" TYPE STRAINER WITH SHUT OFF VALVE.
3. DELIVERY DEADLINES:
 - a. SHIP DRAWINGS TO BE SUBMITTED 7 DAYS AFTER AWARD OF THIS CONTRACT.
 - b. PURCHASE ORDER SHALL BE EXECUTED NO MORE THAN 2 DAYS AFTER RECEIPT OF ENGINEERS APPROVAL.

FISHERIES AND OCEANS CANADA



REAL PROPERTY AND SAFETY AND SECURITY

WEST VANCOUVER LABORATORY
AIR COMPRESSOR REPLACEMENT

EQUIPMENT SCHEDULES

SCALE AS NOTED
 DATE 2016-MAR-31
 DRAWING NUMBER M300

DESIGNED
 SA
 CHECKED
 RECOMMENDED
 APPROVED

NO. DATE REVISIONS

NOTES

DWG. NO. DRAWING REFERENCES

GENERAL ELECTRICAL NOTES:

- SCOPE OF WORKS
1. PROVIDE ALL NECESSARY LABOUR, MATERIAL, TOOLS TRANSPORTATION, SERVICES AND FACILITIES REQUIRED FOR THE COMPLETE ELECTRICAL INSTALLATION, AS SHOWN ON THE DRAWINGS AND AS SPECIFIED.
 2. PROVIDE ALL NECESSARY LABOUR, MATERIALS, EQUIPMENT, DEVICES AND APPARATUS NOT MENTIONED IN THE SPECIFICATIONS, OR SHOWN ON THE DRAWINGS AS REQUIRED FOR THE COMPLETE ELECTRICAL INSTALLATION.
- CODES AND REGULATIONS**
1. ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE, NATIONAL BUILDING CODE, RULES AND REGULATIONS OF THE LOCAL MUNICIPAL AND PROVINCIAL CODES, RULES AND REGULATIONS APPLICABLE TO MECHANICAL AND ELECTRICAL EQUIPMENT.
 2. PROVIDE ALL NECESSARY MATERIAL AND LABOUR REQUIRED TO MEET THE REQUIREMENTS OF THESE CODES, RULES AND REGULATIONS EVEN THOUGH THE WORK MAY NOT BE SHOWN ON THE DRAWINGS OR MENTIONED IN THE SPECIFICATIONS.

- EQUIPMENT GROUNDING**
1. ENCLOSURES OF EQUIPMENT, RACKWAYS, AND FIXTURES SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDING. PROVIDE CODE-SIZED (UNLESS OTHERWISE INDICATED) COPPER, INSULATED GREEN EQUIPMENT GROUND WITH ALL BRANCH AND FEEDER CIRCUIT RUNS. EQUIPMENT GROUND SHALL ORIGINATE AT PANEL BOARD GROUND BUS AND SHALL BE BONDED TO ALL SWITCH AND RECEPTACLE BOXES AND ELECTRICAL EQUIPMENT ENCLOSURES.
 2. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL AND EQUIPMENTAL GROUND CONDUCTOR.
- CONDUITS AND FITTINGS**
1. EXPOSED DUCTS SHALL BE ELECTRICAL METALLIC TUBING OR METAL FLEXIBLE CONDUIT (FLEX LITE).
 2. ALL UNDERGROUND OR CONCRETE ENCASED DUCTS SHALL BE RPVIC CONDUIT SHALL BE UNPLASTICIZED POLYVINYL CHLORIDE AND CONFORM TO CSA 22.2.2 NO. 212. COUPLERS, ADAPTERS, BENDS AND FITTINGS SHALL BE RPVIC AND CONFORM TO CSA 22.2.2 NO. 85. RPVIC CONDUIT SHALL BE INSTALLED USING CSA CERTIFIED CEMENT.
 3. EACH LOW VOLTAGE SYSTEM SHALL HAVE DEDICATED RACKWAYS THAT RUN CONTINUOUS FROM SOURCE TO DESTINATION AND BE A MINIMUM OF 18MM (EMPTY CONDUIT SHALL HAVE LABELLED PULL CORDS INSTALLED). CONDUITS SHALL BE INSTALLED WITH RAIN-TIGHT CONNECTORS IF EMT IS USED. WEATHERPROOF TECK CONNECTORS SHALL BE SUPPLIED WHERE TECK90 IS USED. EXPLOSION PROOF CONNECTORS AND GLANDS SHALL BE INSTALLED WHERE REQUIRED.
 4. ELECTRICAL AND TELEPHONE SERVICE CONDUIT AND CABLES SHALL BE INSTALLED TO BC HYDRO AND TELUS STANDARDS.

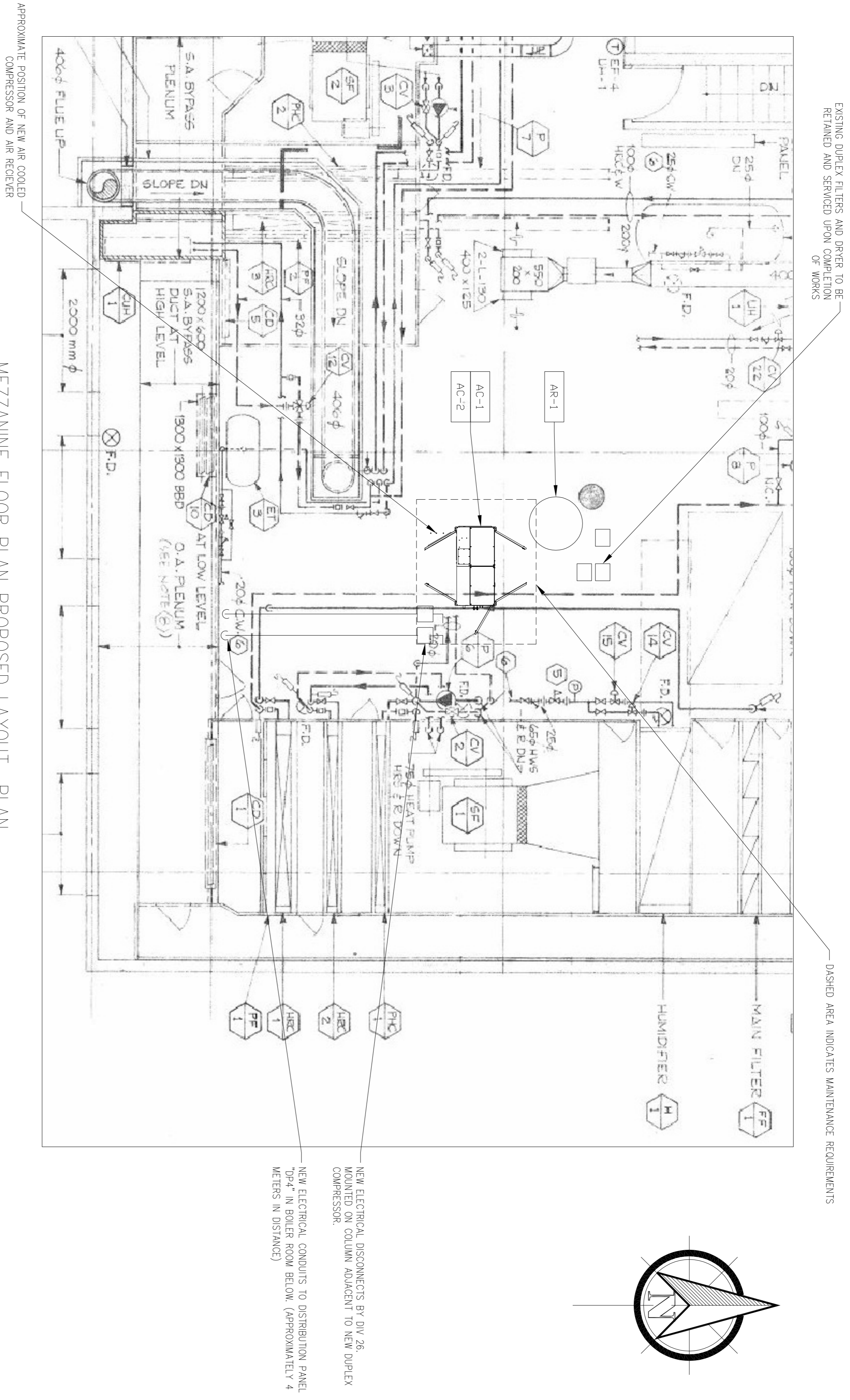
- WIRING**
- ALL CONDUCTORS SHALL BE COPPER. POWER WIRING SHALL BE RATED 600 VOLTS. RHW90 X-LINK, STRANDED COPPER AND SHALL BE INSTALLED IN CONDUIT OR INSIDE ELECTRICAL CABINETS.
- CABLES:**
1. DISTRIBUTION CABLES SHALL BE TECK 90 RATED FOR 600V TO CAN/CSA-C22.2 NO. 131. ALL CONDUCTORS SHALL BE COPPER, 250KVA, SUITABLE FOR 3 PH. 575 V SUPPLY TO EACH COMPRESSOR (TWO COMPRESSORS IN TOTAL). CONNECTORS SHALL BE WATER-TIGHT APPROVED FOR TECK CABLES. FASTENERS SHALL BE ONE HOLE ZINC TRAPS FOR CABLES 50MM AND SMALLER, AND TWO HOLE STRAPS FOR CABLES LARGER THAN 50MM. PROVIDE CHANNEL SUPPORTS IF TWO OR MORE CABLES RUN PARALLEL.

- TRANSFORMERS**
1. TRANSFORMERS SHALL BE INDOOR TYPE, SELF COOLED SINGLE OR THREE-PHASE DUAL WINDING, FULLY ENCLOSED, VENTILATED, GENERAL PURPOSE DRY TYPE, 600 OR 480 VOLTS PRIMARY / 208 VOLTS SECONDARY, 60 HERTZ, EQUIPPED WITH TWO 2.5% FULL CAPACITY TAPS ABOVE AND BELOW RATED VOLTAGE AND SHALL BE MOUNTED ON A 1000MM X 1000MM CONCRETE PAD.
 2. TRANSFORMERS SHALL HAVE COPPER OR ALUMINUM WINDINGS CLASS 'F' INSULATION GROUP, WITH TEMPERATURE RISE WHEN OPERATED CONTINUOUSLY AT FULL LOAD AND RATED FREQUENCY NOT EXCEEDING 150 DEGREE C. RISE OVER 40 DEGREE C AMBIENT, UNLESS MENTIONED OTHERWISE ON THE ONE-LINE DIAGRAM.
 3. TRANSFORMER SHALL HAVE A MINIMUM OF 10% OVERLOAD CAPACITY AT RATED VOLTAGE AND SHALL HAVE A 10 KV BILL RATING.
 4. SOUND LEVEL AT ANY LOAD SHALL NOT EXCEED 45DB WHEN TESTED IN A ROOM WITH AMBIENT SOUND LEVEL NOT EXCEEDING 24 DB. EXCESSIVELY NOISY TRANSFORMERS SHALL BE REPLACED.
 5. TRANSFORMER IMPEDANCE SHALL NOT BE LESS THAN 4% NOR GREATER THAN 5%. TRANSFORMERS SHALL CONFORM TO NEMA TR-1974, IEC 450-21 AND ALL APPLICABLE PROVINCIAL AND LOCAL CODES.
 6. TRANSFORMER SHALL NOT CONTAIN ANY PCB'S (POLYCHLORINATED BIPHENYLS)
 7. TRANSFORMER SHALL NOT BE FLOOR/WALL MOUNTED AS SHOWN ON THE DRAWINGS AND AS DIRECTED BY THE ENGINEER. FURNISH AND INSTALL ALL MOUNTING REQUIREMENTS.
 8. TRANSFORMER SHALL BE FLOOR/WALL MOUNTED AS SHOWN ON THE DRAWINGS AND AS DIRECTED BY THE ENGINEER. FURNISH AND INSTALL ALL MOUNTING REQUIREMENTS. SHEET CARRY THE WEIGHT OF THE TRANSFORMER. MAINTAIN ADEQUATE SPACING FOR VENTILATION AS RECOMMENDED BY THE MANUFACTURER AND PROVIDE NEOPRENE TYPE VIBRATION INSULATION PADS FOR EACH TRANSFORMER. VIBRATION AND SEISMIC CONTROL SHALL MEET NBC AND SUPPLEMENTARY REQUIREMENT.
 9. PROVIDE NEOPRENE TYPE VIBRATION INSULATION PADS FOR EACH TRANSFORMER. VIBRATION AND SEISMIC CONTROL SHALL MEET NBC AND SUPPLEMENTARY REQUIREMENT.
 10. CONNECTIONS TO TRANSFORMERS SHALL BE MADE WITH FLEXIBLE METALLIC CONDUIT. INSTALL GROUND CONDUCTORS IN EACH CONDUIT AND PROVIDE GROUNDING BUSHINGS AS REQUIRED.

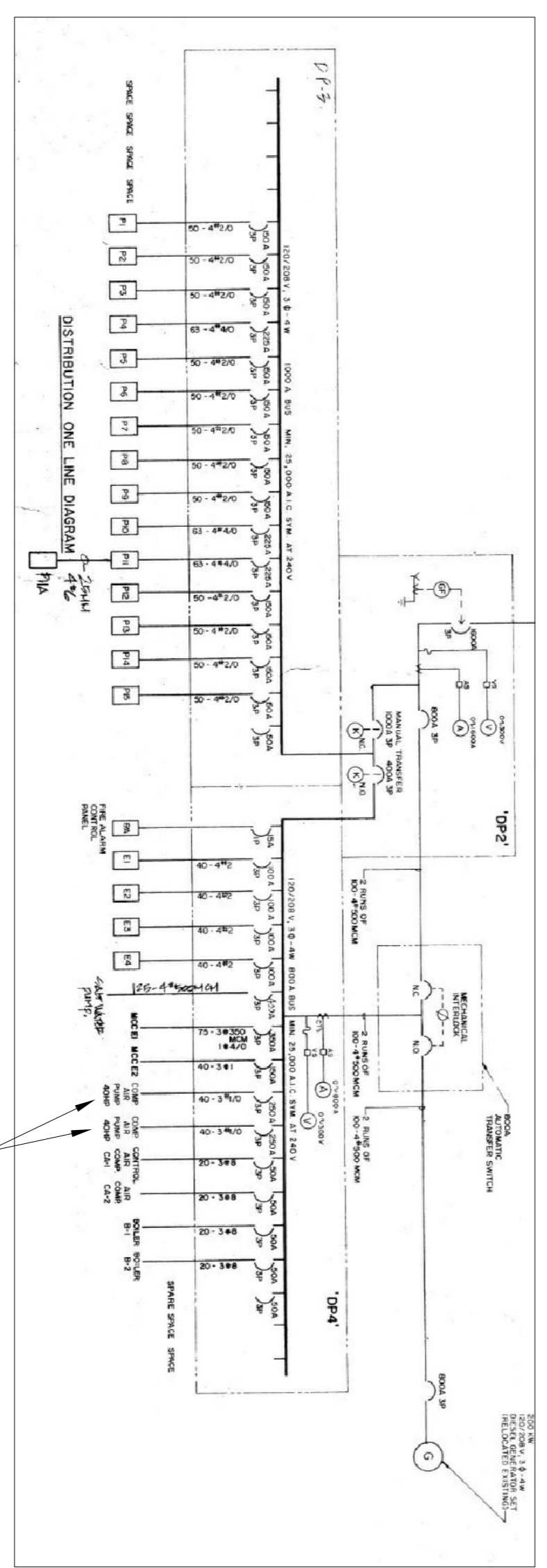
MECHANICAL EQUIPMENT SCHEDULE

UNIT No.	UNIT DESCRIPTION	LOCATION	LOAD		VOLT	PHASE	MOTOR STARTER	STARTER LOCATION	CONTROL	DISC. SWITCH	CIRCUIT No.	PANEL	BREAKER	REMARKS
			HP	KW										
AC-1	AIR COOLED COMPRESSOR	MEZZ MECH ROOM	50	-	460	3	B	3	DOC	E	-	DP4	250A (EXST)	2, 3, 4
AC-2	AIR COOLED COMPRESSOR	MEZZ MECH ROOM	50	-	460	3	B	3	DOC	E	-	DP4	250A (EXST)	2, 3, 4

- NOTES:**
1. MOTOR STARTER LETTER TYPES SHALL APPLY:
- TYPE A - MANUAL STARTER IN EEMAC 1 ENCLOSURE.
 TYPE B - MANUAL STARTER IN EEMAC 1 ENCLOSURE.
 TYPE C - COMBINATION CIRCUIT BREAKER / MAGNETIC STARTER IN MOTOR CONTROL CENTRE.
 TYPE D - COMBINATION CIRCUIT BREAKER / MAGNETIC STARTER IN MOTOR CONTROL CENTRE.
 TYPE E - WALL SWITCH.
 2. MOTOR STARTER SUFFIXES SHALL APPLY:
 - 1 - RESET AND START-STOP PUSH BUTTON ON COVER.
 - 2 - RESET AND START-STOP PUSH BUTTON ON COVER.
 - 3 - RESET AND ON-OFF SELECTOR SWITCH ON COVER.
 - 4 - PILOT LIGHT ON COVER.
 3. CONFIRM FINAL LOCATION AND POSITION OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN.



MEZZANINE FLOOR PLAN PROPOSED LAYOUT PLAN
SCALE: 1:50



DISTRIBUTION ONE LINE DIAGRAM
SCALE: 1:5

<p>DWG. NO. DRAWING REFERENCES</p>		<p>NO. DATE</p>		<p>REVISIONS</p>	
<p>FISHERIES AND OCEANS CANADA REAL PROPERTY AND SAFETY AND SECURITY</p>					
<p>WEST VANCOUVER LABORATORY AIR COMPRESSOR REPLACEMENT</p>					
<p>MEZZANINE LEVEL MECH ROOM ELECTRICAL LAYOUT</p>					
<p>SCALE: AS NOTED DATE: 2016-MAR-31 DRAWING NUMBER: E200</p>					