



MECHANICAL MOTORLIST

				EQUIPMENT							DISCONNECT				STARTER				CONTROL					
EQUIP. TAG	QUANTITY	EQUIPMENT DESCRIPTION	LOCATION	SUPPLIED	KW	MCA	FLA	A	VOLTAGE	PHASE	SUPPLIED	INSTALLED	WIRED	LOCATION	TYPE	SUPPLIED	INSTALLED	WIRED	LOCATION	TYPE	SUPPLIED	INSTALLED	WIRED	NOTES
		AIR CURTAINS																						
ACH-1	4	AIR CURTAIN	GROUND FLOOR	MECH	0.87	5	-	-	230	1	ELEC	ELEC	ELEC	1	INT	MECH	MECH	MECH	1	I	MECH	MECH	MECH	1,2,6
ACH-2	4	AIR CURTAIN	GROUND FLOOR	MECH	0.87	5	-	-	230	1	ELEC	ELEC	ELEC	1	INT	MECH	MECH	MECH	1	I	MECH	MECH	MECH	1,2,6
		AIR CONDITIONING UNIT																						
AC-1	1	SPLIT DX AIR CONDITIONING UNIT - INDOOR UNIT	ELECTRICAL ROOM	MECH	-	1	-	-	208	1	ELEC	ELEC	ELEC	1	INT	MECH	MECH	ELEC	1	T	MECH	MECH	MECH	1,2
CU-1	1	SPLIT DX AIR CONDITIONING UNIT - OUTDOOR UNIT	OUTSIDE	MECH	-	18	-	-	208	1	ELEC	ELEC	ELEC	1	INT	MECH	MECH	ELEC	1	T	MECH	MECH	MECH	1,2
		AIR HANDLING UNITS																						
AHU-1	1	NRC AIR HANDLER	GROUND FLOOR	MECH	0.75	28.2	-	-	208	3	ELEC	ELEC	ELEC	1	INT	MECH	MECH	ELEC	1	T	MECH	MECH	MECH	1,2
AHU-2	1	NRC AIR HANDLER	GROUND FLOOR	MECH	0.75	28.2	-	-	208	3	ELEC	ELEC	ELEC	1	INT	MECH	MECH	ELEC	1	T	MECH	MECH	MECH	1,2
AHU-3	1	NRC AIR HANDLER	GROUND FLOOR	MECH	0.75	28.2	-	-	208	3	ELEC	ELEC	ELEC	1	INT	MECH	MECH	ELEC	1	T	MECH	MECH	MECH	1,2
		GAS FIRED DOMESTIC HOT WATER TANK																						
DHW-T-1	1	GAS FIRED DOMESTIC HOT WATER TANK	REFER TO DRAWINGS	MECH	-	-	-	5	120	1	ELEC	ELEC	ELEC	1	-	-	-	-	-	T	MECH	MECH	MECH	1,2
		ELECTRIC BASEBOARD HEATERS																						
EBB-1	1	WASHROOM ELECTRIC BASEBOARD HEATER	UNIVERSAL W/R	MECH	0.5	-	-	-	120	1	ELEC	ELEC	ELEC	1	-	-	-	-	-	ET	ELEC	ELEC	ELEC	
EBB-2	1	WASHROOM ELECTRIC BASEBOARD HEATER	W/R	MECH	0.5	-	-	-	120	1	ELEC	ELEC	ELEC	1	-	-	-	-	-	ET	ELEC	ELEC	ELEC	
EBB-3	1	MECHANICAL ROOM ELECTRIC BASEBOARD HEATER	MECHANICAL ROOM 106	MECH	1.5	-	-	-	120	1	ELEC	ELEC	ELEC	1	-	-	-	-	-	ET	ELEC	ELEC	ELEC	
		FANS																						
EF-1	1	WASHROOM EXHAUST FAN	UNIVERSAL W/R	MECH	0.0176	-	-	-	120	1	ELEC	ELEC	ELEC	1	INT	MECH	MECH	ELEC	1	WS	MECH	MECH	MECH	1,2,3
EF-2	1	WASHROOM EXHAUST FAN	W/R	MECH	0.0176	-	-	-	120	1	ELEC	ELEC	ELEC	1	INT	MECH	MECH	ELEC	1	WS	MECH	MECH	MECH	1,2,3
CF-1	8	CEILING FAN	INTEGRATION AREA CEILING	MECH	0.75	-	-	-	208	3	ELEC	ELEC	ELEC	1	INT	MECH	MECH	ELEC	1	WS	MECH	MECH	MECH	1,2
		PUMPS																						
P-1	1	DOMESTIC RECIRCULATION PUMP	REFER TO DRAWINGS	MECH	0.115	-	-	-	120	1	ELEC	ELEC	ELEC	1	INT	MECH	MECH	ELEC	1	AQ	MECH	MECH	MECH	1,2
		MISC EQUIPMENT																						
		CIRCUIT FOR NEW CONTROLS	MECHANICAL ROOM 106	MECH	-	-	-	-	120	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
		MOTORIZED DAMPERS	REFER TO DRAWINGS	MECH	-	-	-	-	120	1	-	-	-	-	-	-	-	-	-	-	-	-	-	
		FIRE PROTECTION																						
		SPRINKLER ZONE VALVES	MECHANICAL ROOM 106	MECH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SPRINKLER TAMPER SWITCHES	MECHANICAL ROOM 106	MECH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		SPRINKLER FLOW SWITCHES	MECHANICAL ROOM 106	MECH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		MISC PLUMBING																						
		ELECTRONIC SENSOR FAUCETS	REFER TO DRAWINGS	MECH	-	-	-	-	120	1	-	-	-	-	-	-	-	-	-	-	-	-	-	5
		ELECTRONIC SENSOR FLUSH VALVES	REFER TO DRAWINGS	MECH	-	-	-	-	120	1	-	-	-	-	-	-	-	-	-	-	-	-	-	5

SUPPLIER / INSTALL / WIRE CODES

M = MECHANICAL
E = ELECTRICAL
G = GENERAL CONTRACTOR

STARTER CODES

MAN = MANUAL STARTER
MAG = MAGNETIC STARTER W/ HDA
SWITCH W/ AUX. CONTACTS
MRR = MOTOR RATED RELAY, 24 VAC COIL
& MOTOR PROTECTION SWITCH
PCS = PACKAGED CONTROL SYSTEM
VSD = VARIABLE SPEED DRIVE
RVS = REDUCED VOLTAGE STARTER
WS = WALL SWITCH
CP = CONTROL PANEL
INT = CONTROL IS INTEGRAL TO UNIT (BY MANUFACTURER)

CONTROL DEVICE CODES

BMS = BLDG MANAGEMENT SYSTEM
ES = END SWITCH
ET = LINE VOLTAGE T'STAT
FA = FIRE ALARM
FS = FLOW SWITCH
GS = GAS SENSOR
I = INTERLOCK, SEE NOTES
LS = LEVEL SWITCH
PS = PRESSURE SWITCH
TC = TIME CLOCK
T = LOW VOLTAGE T'STAT OR SENSOR
TS = TAMPER SWITCH
VS = VARIABLE SPEED SWITCH
WS = WALL SWITCH
FAP = FIRE ALARM PANEL
AQ = AQUASTAT

LOCATION CODES

1 = AT OR NEAR MOTOR
2 = MOTOR CONTROL CENTRE
3 = EQUIPMENT ROOM
4 = ELECTRICAL ROOM
5 = AS SHOWN ON DRAWINGS

MISCELLANEOUS CODES

FFCP = FIRE FIGHTERS CONTROL PANEL

GENERAL NOTES

1. ALL FIRE ALARM DEVICES WIRED BY ELECTRICAL
2. PCS EQUIPMENT REQUIRES SINGLE SOURCE POWER CONNECTION, UNLESS NOTED OTHERWISE
3. CP, VSD EQUIPMENT REQUIRES POWER WIRING TO AND FROM CONTROL PANEL TO CONTROLLED EQUIPMENT - ALL WIRED BY ELECTRICAL

NOTES

1. ALL DISCONNECTS ARE TO S, I AND C BY ELECTRICAL
2. SINGLE POINT CONNECTION UNIT
3. INTERLOCK WITH WASHROOM LIGHTING
4. UNIT C/W VFD TO BE SUPPLIED WITH A MANUAL BYPASS.
5. 120V POWER SUPPLY TO CONNECT TO LOW VOLTAGE TRANSFORMER PROVIDED BY DIV. 15.
6. INTERLOCK UNIT TO OPERATE WHEN DOOR OPENS



3	ISSUED FOR TENDER	2018.03.27
2	ISSUED FOR 100% CD REVIEW	2018.03.14
1	ISSUED FOR 90% CD REVIEW	2018.02.22
Revision/ Révision	Description/Description	Date/Date

Client/client

Project title/Titre du projet
5071 WEST SAANICH ROAD
VICTORIA, BC, CANADA

NRC HERZBERG
ASTRONOMY AND ASTROPHYSICS
ATP INTEGRATION FACILITY

Consultant Signature Only

Designed by/Concept par
A.O./F.L.

Drawn by/Dessiné par
N.Y.

PWGSC Project Manager/Administrateur de Projets TPSCG

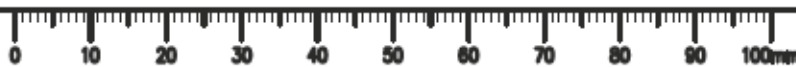
PATRICK TROUNG

Regional Manager, Architectural and Engineering Services
Gestionnaire régional, Services d'architectural et de génie, TPSCG
PREETIPAL PAUL

Drawing title/Titre du dessin

MECHANICAL MOTOR LIST

Project No./No. du projet R.077596.001	Sheet/ Feuille WM02 OF 11	Revision no./ La Révision no. 3
--	---------------------------------	--



AIR CONDITIONING UNIT

EQUIPMENT TAG		QTY	SERVICE	LOCATION		MANUFACTURER	EVAP. MODEL	TOTAL CLG CAP (kW)	EFFY (SEER)	AIR FLOW (LPS) WET COIL	EVAP WEIGHT (LBS)	ELEC. (V/PH/HZ)	COND. MODEL NO.	COND. WEIGHT (LBS)	COND. ELEC (V/PH/HZ)	OUTDOOR AIR TEMP. (DEG.C)			RM SETPOINT			NOTES
EVAPORATOR	CONDENSER			EVAPORATOR	CONDENSER											WINTER DB	SUMMER DB	SUMMER WB	DEG F	RH %		
AC-1	CU-1	1	ELECTRICAL ROOM	ELECTRICAL ROOM	OUTSIDE	MITSUBISHI	PCA-A24KA4	3.5	16.8	316	32	208/1/60	PUY-A24NH4A	163	208/1/60	-7.2	23.3	17.2	24	50	ALL	
NOTES:																						
				1. UNITS TO BE SINGLE POINT POWER CONNECTION				4. PROVIDE 3/4" COPPER CONDENSATE DRAIN				7. REFRIGERANT AND SUCTION LINE SIZES BY MANUFACTURER.				10. PROVIDE INTERFACE WITH DDC SYSTEM				EVAP:		INDOOR UNIT
				2. PROVIDE WALL MOUNTED PROGRAMMABLE THERMOSTAT.				5. PROVIDE FILTER.				8. INDOOR UNIT POWER BY OUTDOOR UNIT				11. PROVIDE LOW AMBIENT KIT				COND:		OUTDOOR UNIT
				3. NOT USED				6. PROVIDE PACKAGED CONDENSATE PUMP. (120 V CONNECTION)				9. PROVIDE MOUNTING BASE.										

PLUMBING ROUGH-IN SCHEDULE

EQUIPMENT TAG	DESCRIPTION/TYPE	ROUGH-IN CONNECTIONS (MM)					REMARKS
		WASTE	VENT	COLD WATER	HOT WATER	STORM WATER	
FD-1	MECH ROOM FLOOR DRAIN	4"	2"	-	-	-	ALL
HB-1	MECHANICAL ROOM HOSE BIB	-	-	3/4"	-	-	ALL
LAV-1	Basin Wall Hung	1-1/4"	1-1/4"	1/2"	1/2"	-	ALL
WC-1	Water Closet/Wall Hung Or Floor Mounted	3"	1-1/2"	1-1/2"	-	-	ALL
NOTES:							
1. REFER TO ARCHITECTURAL DRAWINGS FOR INSTALLATION DETAILS.							

FAN SCHEDULE

EQUIPMENT TAG	SERVICE	LOCATION	TYPE	MANUFACTURER	MODEL	AIR FLOW (L/s)	(in wg)	FAN RPM	DRIVE TYPE	MOTOR (kW)	POWER V/PH/HZ	SOUND LEVEL SONES (db)	REMARKS
CF-1	CEILING FAN	CEILING	POWERPOIL	BIG ASS FANS	POWERPOIL X2.0	-	-	113	DIRECT	0.75	208/3/60	-	1,2,5,6
EF-1	UNIVERSAL W/R	CEILING	CEILING MOUNTED	GREENHECK	SP-A90	45	0.25	900	DIRECT	0.02	120/1/60	1.1	2,3,4
EF-2	W/R	CEILING	CEILING MOUNTED	GREENHECK	SP-A90	45	0.25	900	DIRECT	0.0	120/1/60	1.1	2,3,4
NOTES:													
				1. 3M (10FT) FAN DIAMETER				3. ACOUSTIC LINED CABINET				5. C/W WITH MANUFACTURER CONTROLLER	
				2. REFER TO MOTOR LIST FOR ELECTRICAL REQUIREMENTS				4. C/W BACKDRAFT DAMPER				6. C/W MANUFACTURER RECOMMENDED MOUNTING OPTION	

DIFFUSERS AND GRILLES SCHEDULE

EQUIPMENT TAG	DESCRIPTION/TYPE	MANUFACTURER	SERVICE	MODEL NUMBER	NOTES
DG-1	DOOR GRILLE	E.H. PRICE	TRANSFER AIR	STGI	1
SD-1	SUPPLY AIR GRILLE	E.H. PRICE	SUPPLY AIR	520 SERIES	1
RD-1	RETURN AIR GRILLE	E.H. PRICE	RETURN/EXHAUST AIR	530 SERIES	1
NOTES:					
1. CONTRACTOR TO REVIEW MOUNTING DETAILS AND INSTALLATION PRIOR TO CONSTRUCTION					

ELECTRIC AIR CURTAIN SCHEDULE

EQUIPMENT TAG	QTY	LOCATION	MANUFACTURER	TYPE	MOUNTING TYPE	MODEL	MAX AIR FLOW (LPS)	MOTOR (HP)	MAX AMP	AIR COIL EAT (DEG C)	AIR COIL LAT (DEG C)	DP WEIGHT (KG)	ELEC (V/PH/CYC)	WEIGHT (kg)	REMARKS
ACH-1	4	OVERHEAD DOOR	BIDDLE	ELECTRIC HEATER	WALL MOUNTED	IndAC2 ST-250-A-1R	3120	0.87	5	-4	21	124	230/1/60	124	ALL
ACH-2	4	OVERHEAD DOOR	BIDDLE	ELECTRIC HEATER	BIDDLE	IndAC2 ST-250-A-1L	3120	0.87	5	-4	21	124	230/1/60	124	ALL
NOTES:															
				1. C/W GRILLES AND CLEANABLE AIR FILTERS				3. DOOR CONTACT SWITCH (INTERLOCK W/ DOOR)				C/W MANUFACTURER RECOMMENDED COUPLINGS, WALL BRACKETS, FLOOR PLATE AND MOUNTING ACCESSORIES FOR VERTICAL INSTALLATION			
				2. C/W FACTORY B-TOUCH CONTROL PANEL (1 TOTAL TO CONTROL ALL)				4. OUTDOOR TEMPERATURE SENSOR				6. C/W CORRECTIVE HEAT & IMPULSE PREDICTION SYSTEM (CHIPS)			

DOMESTIC WATER HEATER (GAS FIRED)

EQUIPMENT TAG	LOCATION	MANUFACTURER	MODEL	FUEL TYPE	INPUT (MBH)	(kW)	TANK CAPACITY (L)	THERMAL EFFICIENCY	RECOVERY CAPACITY LPHMPS @ TEMP RISE 56C	POWER (V/PH/HZ)	OPERATING WEIGHT (KG)	NOTES	
DHWT-1	REFER TO DRAWINGS	AO SMITH	BTB-300A	PROPANE	300	88	451	96%	2179	5	120/1/60	765	ALL
NOTES:													
1. PROVIDE DRAIN PAN AND CONNECT 40MM DIA. DRAIN TO NEAREST SINK UPSTREAM OF P-TRAP							5. UL APPROVED EQUIPMENT						
2. TEMPERATURE AND PRESSURE RELIEF VALVES							6. C/W EXPANSION TANK						
3. CERTIFIED MAX 150 PSI WORKING PRESSURE							7. PROVIDE VENT KIT						
4. TEMPERATURE LIMITING CONTROL													

PUMPS

EQUIPMENT TAG	QTY	DESCRIPTION	LOCATION	TYPE	MANUFACTURER	MODEL	FLOW (L/S)	HEAD (EA) (kPa)	MOTOR (W)	MOTOR (RPM)	POWER (V/PH/HZ)	WEIGHT (kg)	NOTES
P-1	1	DOMESTIC RECIRCULATION PUMP	REFER TO DRAWINGS	IN-LINE VERTICAL	ARMSTRONG	ASTRO 250 SS	0.1	45	83	1800	120/1/60	5	ALL
NOTES:													
				1. ALL BRONZE CONSTRUCTION				3. FOR DOMESTIC USE					
				2. HIGH EFFICIENCY MOTOR				4. COMPLETE WITH AQUASTAT					

PLUMBING FIXTURE SCHEDULE

~~WC-1 TOILET - FLOOR MOUNTED - FLUSHMETER - ELECTRONIC - EXPOSED - NO TOUCH - MACHINED~~

1. BOWL:
AMERICAN STANDARD MADERA FLOWISE RIGHT HEIGHT ELONGATED #3461.001.020 HET TOILET, 419 MM HIGH, VITREOUS CHINA WITH EVERCLEAN ANTIMICROBIAL SURFACE WHICH INHIBITS THE GROWTH OF STAIN AND ODOR CAUSING BACTERIA MOLD AND MILDOW, ELONGATED BOWL, WHITE FINISH, FLOOR MOUNTED, SIPHON JET FLUSH ACTION, OPERATES IN THE RANGE OF 4.2 L TO 6 L (1.1 US GAL TO 1.6 US GAL) PER FLUSH, CONDENSATE CHANNEL, 305 MM X 254 MM (12" X 10") WATER SURFACE, SIPHON JET FLUSH ACTION, CONDENSATE CHANNEL, ELONGATED BOWL, 54 MM (2-1/8") FULLY GLAZED INTERNAL TRAPWAY, FLOOR OUTLET, BOLT CAPS, 38 MM (1-1/2") DIA. TOP SPUD.

2. VALVE:
SLOAN ROYAL OPTIMA #ROYAL OPTIMA 111 ES-S-CP, EXPOSED FLUSHMETER FOR TOP SPUD TOILET, POLISHED CHROME FINISH, 6 L (1.6 US GAL) FACTORY SET FLOW, QUIET ACTION "PERMEX" DIAPHRAGM TYPE WITH DUAL FILTER BY-PASS, INFRARED SENSOR LOCATED ON A 125 MM X 125 MM (4-15/16" X 4-15/16") STAINLESS STEEL PLATE, SOLENOID OPERATED FLUSH CONTROLLER CIRCUITRY, COURTESY FLUSH ELECTRONIC OVER-RIDE BUTTON, V.P. SMOOTH DESIGN STOP CAP ON BAK-CHEK ANGLE STOP (SCREWDRIVER OPERATED), FLUSH TUBE FOR 292 MM (11-1/2") ROUGH-IN, HIGH PRESSURE VACUUM BREAKER, SENSOR LOCATED ABOVE THE TOILET, 5 VA POWER REQUIRED PER UNIT. SENSOR TO CLEAR TOILET SEAT COVER.

3. SEAT:
CENTOCO #820STS.001 TOILET SEAT, EXTRA HEAVY DUTY, FOR ELONGATED BOWL, OPEN FRONT, SOLID PLASTIC, WITH COVER, STAINLESS STEEL CHECK HINGES, METAL FLAT WASHERS STAINLESS STEEL POSTS AND NUTS.

4. FLANGE:
PROVIDE FLOOR FLANGE, (SAME MATERIAL AS THE CONNECTING PIPE DRAIN), WITH ALL BRASS BOLTS AND WITH RUBBER GASKET.

LAV-1 - STAINLESS STEEL COUNTERTOP SINK - BARRIER FREE

1. BASIN:

FRANKE COMMERCIAL V1821 SERIES #V1821/5/1 BASIN, WITHOUT OVERFLOW, CENTER HOLE ONLY, 533 MM X 457 MM X 127 MM (21" X 18" X 5") HIGH, OVAL, GRADE 18-10 18 GA. (1.2 MM) TYPE 304 STAINLESS STEEL, MIRROR FINISHED RIM, SELF-RIMMING / DROP-IN, BACK FAUCET LEDGE, UNDERCOATED TO REDUCE CONDENSATION AND RESONANCE, MOUNTING KIT PROVIDED. PROVIDE BASIN RIM SEALANT.

2. TRIM:

• SLOAN OPTIMA #ETF-610/ETF-1024-A ELECTRONIC FAUCET, CHROME PLATED, CENTER HOLE ONLY, CAST BRASS, WITH VANDAL RESISTANT 8.3 LPM (2.2 GPM), AERATOR SPRAY OUTLET, INFRARED SENSOR WITH SCREW ADJUSTABLE RANGE, UNDER COUNTER FILTERED SOLENOID VALVE WITH SERVICEABLE STRAINER FILTER, MODULE CONTROL ASSEMBLY HOUSED IN SPLASH PROOF JUNCTION BOX, 24VAC 50/60HZ, VANDAL PROOF BOX.

• SLOAN #EL-154, BOX MOUNT HARD WIRED TRANSFORMER, 120 VAC/ 24 VAC, 50 VA. SLOAN #BOT, THERMOSTATIC MIXING VALVE, SOLID BIMETAL (BRONZE, BRASS, STAINLESS STEEL), HOT LIMIT STOP SET TO A MAXIMUM OF 43 °C (109.4 °F), SCREWDRIVER ADJUSTMENT TEMPERATURE DIAL WITH SCALE: COLD-HOT.

• PROVIDE TEE, ADAPTORS AND FLEX. COPPER TUBING TO SUIT INSTALLATION

3. DRAIN:

• MCGUIRE #PRODRAINWC OFFSET OPEN GRID DRAIN, CAST BRASS ONE PEEC TOP, 17 GA. (1.5 MM) MM TUBULAR 32 MM (1-1/4") TAILPIECE, LESS OVERFLOW HOLES, SUPPLY PROVIDE FAUCET SUPPLIES, CHROME PLATED FINISH ALL METAL CONSTRUCTION, LIGHT DUTY RESIDENTIAL ANGLE STOPS, ESCUTCHEONS AND FLEXIBLE METAL RISERS, LOW LEAD.

• PROVIDE P-TRAP, CHROME PLATED, ADJUSTABLE ALL METAL CONSTRUCTION, 32 MM (1-1/4") SIZE, AND ESCUTCHEON.

• MCGUIRE PROWRAP #PW2000WC SANITARY COVERING VANDAL-RESISTANT, FLEXIBLE SEAMLESS MOULDED CLOSED-CELL PVC RESIN, FORMULATED WITH ANTI-MICROBIAL ADDITIVE TO LIMIT THE GROWTH OF FUNGUS AND BACTERIA, TO EXPOSED PIPING (TO PROTECT AGAINST HEAT/CONTUSIONS) AS PER LOCAL CODES.

****SEE ARCHITECTURAL DRAWINGS FOR ROUGH IN HEIGHTS****

FD-1 - FLOOR DRAIN

1. JAY R. SMITH #2450 04-B-FBS-M FLOOR DRAIN, FABRICATED STEEL BODY WITH GALVANIZED COATING INSIDE AND OUTSIDE AND CAST IRON GATE AND STAINLESS STEEL PORTED BUCKET, WITH MESH SCREEN AND LIFT BAR, CAULK OUTLET , FLAT BOTTOM STRAINER AND DUCTILE IRON GRATE

FD-2 - WASHROOM FLOOR DRAIN

1. JAY R. SMITH #2005 04-A-P050 1/2"- G -316 FLOOR DRAIN, DUCO CAST IRON BODY WITH FLASHING COLLAR AND ADJUSTABLE STRAINER HEAD DJUSTABLE 8-1/2" (215MM) DIAMETER TOP, 4" (100MM) OUTLET , SEDIMENT BUCKET, VANDAL PROOF GRATE, SATIN FINISH TOP, SEEPAGE HOLES, CF8M (EQUIVALENT TO TYPE 316) STAINLESS STEEL

MR-1 - HOSE BIB - EXTERIOR - NON FREEZE

1. JAY R. SMITH #55090T-WC-W-E-NB BOX TYPE WALL HYDRANT, 1/4 TURN NON-D RIP, CERAMIC CARTRIDGE, 3/4" (19MM) NON FREEZE WALL TYPE WITH BRONZE NICKEL FACE AND STAINLESS STEEL BOX WITH FULL 180 DEG HINGED LOCKING, COVER OPENING BOX, SELF-DRAINING INTEGRAL VACUUM BREAKER, OPERATING KEYS , ADJUSTABLE WALL CLAMP , "WATER" ON COVER, UNION ELBOW - 3/4" NPT, NICKEL BRONZE BOX FACE.

MR-2 - HOSE BIB - INTERIOR

1. JAY R. SMITH #5670, BRASS BODY WITH MACHINED BRASS VANDAL RESISTANT LOCK SHIELD BONNET, REMOVABLE WHEEL HANDLE, 3/4" (19MM) NPT FEMALE THREADED INLET AND 3/4" (19MM) HOSE CONNECTION.

PE-1 - EMERGENCY SHOWER & EYE/FACE WASH STATION

• HAWS MODEL 8300-8309 COMBINATION SHOWER AND EYE/FACE WASH SHALL INCLUDE A STAINLESS STEEL 11" (27.9 CM) ROUND BOWL, AN AXION MSR EYE/FACE WASH HEAD SHALL FEATURE INVERTED DIRECTIONAL LAMINAR FLOW WHICH ACHIEVES ZERO VERTICAL VELOCITY• SUPPLIED BY AN INTEGRAL 3.7 GPM FLOW CONTROL UNIT SHALL ALSO INCLUDE THE AXION MSR HYDRODYNAMIC DESIGNED ABS PLASTIC SHOWERHEAD WITH 20 GPM FLOW CONTROL, CHROME-PLATED BRASS STAY-OPEN BALL VALVE EQUIPPED WITH STAINLESS STEEL BALL AND STEM, AND CHROME-PLATED BRASS IN-LINE 50 X 50 MESH WATER STRAINER. UNIT SHALL ALSO INCLUDE SCHEDULE 40 HOT-DIPPED GALVANIZED STEEL PIPE AND FITTINGS, POWDER-COATED CAST-IRON 9" (22.9 CM) DIAMETER FLOOR FLANGE, SELF-ADHESIVE HIGH VISIBILITY SAFETY GREEN AND BRIGHT YELLOW STRIPES, UNIVERSAL SIGN, AND 1-1/4" NPT SUPPLY.

• HAWS THERMOSTATIC MIXING VALVE MODEL 9201E AXION EMERGENCY TEMPERING VALVE

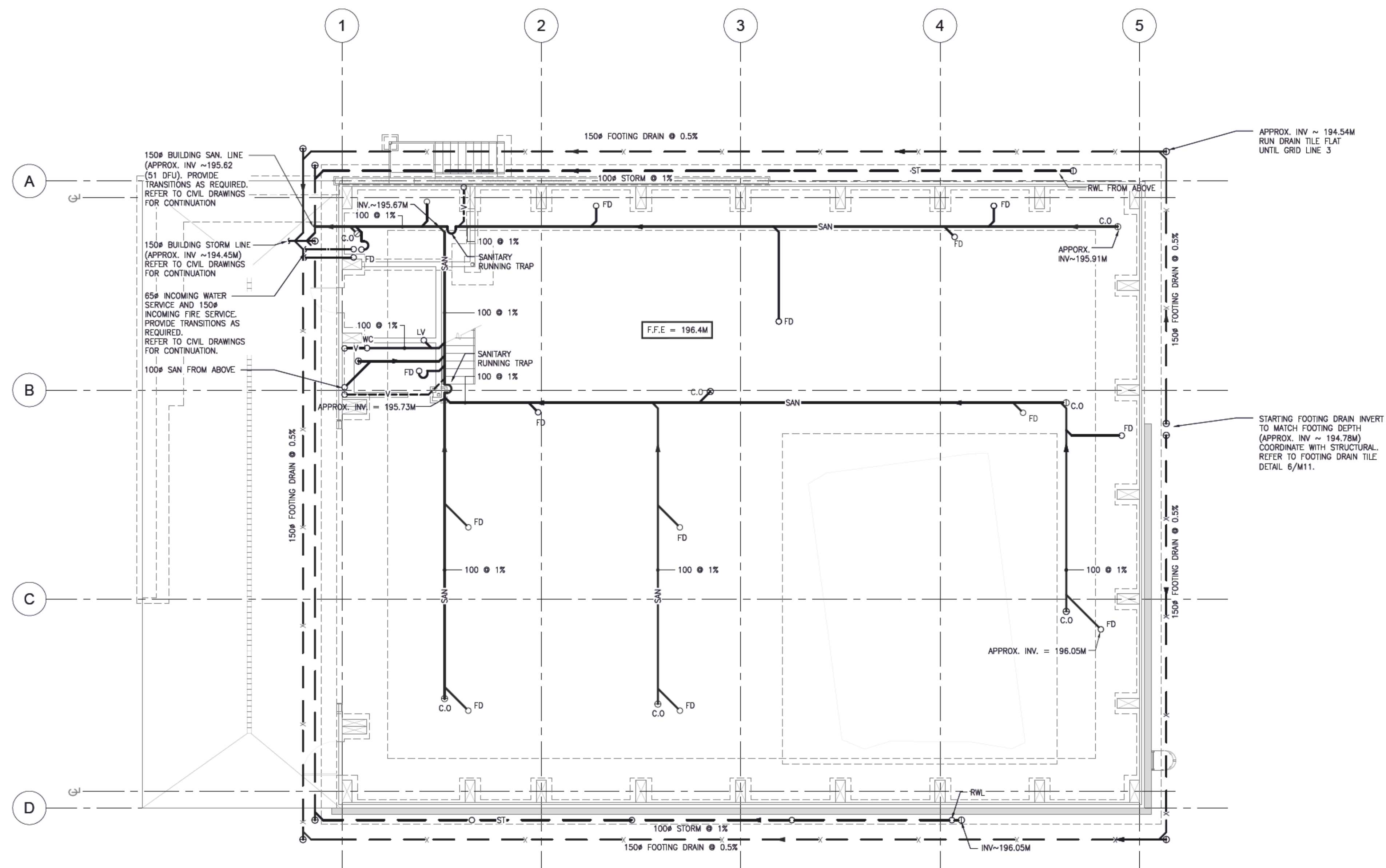
AIR HANDLING UNIT

TAG	AHU-1	AHU-2	AHU-3
QUANTITY	1	1	1
LOCATION	NORTH SIDE	EAST SIDE	SOUTH SIDE
SERVICE	NRC	NRC	NRC
MANUFACTURER	TRANE	TRANE	TRANE
SYSTEM TYPE	UNITARY	UNITARY	UNITARY
TINNAGE	5.0	5.0	5.0
MODEL	YSC 060G	YSC 060G	YSC 060G
FAN			
NORMAL VOLUME (LPS)	945	945	945
MINIMUM OUTDOOR AIR (CFM)	425	425	425
EXTERNAL STATIC (Pa)	125	125	125
TOTAL STATIC (Pa)	1745	1745	1745
MOTOR (W)	745.7	745.7	745.7
POWER SUPPLY	208/3/60	208/3/60	208/3/60
HEATING SECTION			
FUEL TYPE	PROPANE	PROPANE	PROPANE
CAPACITY (kW)	31.3	31.3	31.3
INPUT CAPACITY (kW)	38.2	38.2	38.2
OUTPUT CAPACITY (kW)	32.2	32.2	32.2
NO. BURNERS	3.0	3.0	3.0
STAGES	1.0	1.0	1.0
AIR PRESSURE DROP (IN. WG)	-	-	-
MAX AIR VELOCITY (FPM)	800.0	800.0	800.0
EAT (DEG. C)	7.2	7.2	7.2
LAT (DEG. C)	35.0	35.0	35.0
GAS PIPE CONNECTION SIZE (IN.)	1/2	1/2	1/2
DX COILING SECTION			
SENSIBLE CAPACITY (kW)	14	14	14
TOTAL CAPACITY (kW)	18	18	18
AIR PRESSURE DROP (IN. WG)	-	-	-
MAX AIR VELOCITY (FPM)	500	500	500
EAT DB (DEG. C)	-8	-8	-8
EAT WB (DEG. C)	-18	-18	-18
LAT DB (DEG. C)	24	24	24
LAT WB (DEG. C)	14	14	14
REFRIGERANT TYPE	R-410	R-410	R-410
FILTERS			
MAIN FILTER	500x750x50	500x750x50	500x750x50
DIMENSIONS			
WEIGHT (KG)	362.0	362.0	362.0
LXWXH (INCH)			
REMARKS			
NOTES:			
1. 100% ECONDMIZER CAPABILITY			
2. ALL HDA AND VSD STARTER ARE TO BE FACTORY INSTALLED AND BE INSTALLED IN NEMA 4 RATED ENCLOSURES.			
3. 100% OUTDOOR AIR WITH RETURN AIR RECIRCULATION TO PREVENT HEATING COIL FREEZING SIZED AT 30% OF UNIT AIRFLOW.			
4. SINGLE POINT POWER CONNECTION TO UNIT (EXCEPT LIGHTING)			
5. LIGHTING TO BE PROVIDED ON SEPARATE 120V CIRCUIT.			



3	ISSUED FOR TENDER	2018.0

- FOUNDATION GENERAL NOTES:**
1. REFER TO CIVIL DRAWINGS FOR ALL CONNECTION POINTS FOR MECHANICAL SERVICES. THIS CONTRACTOR SHALL MAKE ALL REQUIRED CONNECTIONS.
 2. CONFIRM ALL INVERTS FOR SERVICES PRIOR TO LAY-OUT OF THE SERVICE ROUTING. ADJUST AS REQUIRED.
 3. INVERT LEVELS ARE INDICATIVE ONLY. CONTRACTOR TO INSTALL SANITARY PIPING TO MAINTAIN MINIMUM SLOPE AS PER PLUMBING CODE.



1 FOUNDATION PLAN
WM04 1 : 100



3	ISSUED FOR TENDER	2018.03.27
2	ISSUED FOR 100% CD REVIEW	2018.03.14
1	ISSUED FOR 90% CD REVIEW	2018.02.22
Revision/ Version	Description/Description	Date/Date

Project title/Titre du projet
**5071 WEST SAANICH ROAD
VICTORIA, BC, CANADA**

**NRC HERZBERG
ASTRONOMY AND ASTROPHYSICS
ATP INTEGRATION FACILITY**

Consultant Signature Only

Designed by/Concept par
A.O. / E.L.

Drawn by/Dessine par
N.Y.

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

Drawing title/Titre du dessin

FOUNDATION PLAN

Project No./No. du
projet
R.077596.001

Sheet/ Feuille

WM04

Revision no./
La Révision
no. **3**



1. REFER TO CIVIL DRAWINGS FOR ALL CONNECTION POINTS FOR MECHANICAL SERVICES. THIS CONTRACTOR SHALL MAKE ALL REQUIRED CONNECTIONS.
2. CONFIRM ALL INVERTS FOR SERVICES PRIOR TO LAY-OUT OF THE SERVICE ROUTING. ADJUST AS REQUIRED.
3. PROVIDE TRAP PRIMERS FOR FLOOR DRAINS.
4. COORDINATE EXACT MOUNTING HEIGHTS AND LOCATIONS OF ALL PLUMBING FIXTURES WITH THE CASEWORK AND ARCHITECTURAL DRAWINGS.
5. ALL PIPING SHALL BE INSTALLED ON THE WARM SIDE OF THE BUILDING INSULATION, UNLESS OTHERWISE NOTED ON THE DRAWING.
6. PROVIDE VENTS FROM ALL PROPANE GAS REGULATORS TO THE EXTERIOR OF THE BUILDING IN COPPER PIPING.
7. PROVIDE MAIN ISOLATION VALVES INTO ALL WASHROOMS, AND DISTINCT FIXTURE AREAS AND AS SHOWN ON THE PLANS.
8. FLOOR DRAINS QUANTITIES AND LOCATIONS TO BE COORDINATED WITH ARCHITECTS.

1. THIS BUILDING IS TO BE FULLY SPRINKLERED TO MEET NFPA 13 REQUIREMENTS. ALL AREAS TO BE SPRINKLERED.
2. FIRE SUPPRESSION SYSTEM INFORMATION SHOWN ON THESE PLAN ARE FOR GENERAL SCOPE OF WORK AND COORDINATION DURING DESIGN.
3. THE SYSTEM IS A DESIGN BUILD CONTRACT AS OUTLINED HERE AND IN THE SPECIFICATION. ALL SPRINKLER DESIGN AND WORK TO BE IN ACCORDANCE WITH NFPA-13 REQUIREMENT.
4. THE DESIGN BUILD CONTRACTOR SHALL RETAIN ON BEHALF OF THE OWNER A REGISTERED PROFESSIONAL ENGINEER IN THE PROVINCE OF BRITISH COLUMBIA, FOR THE COMPLETE DESIGN IN ACCORDANCE WITH ALL CODES AND ORDINANCES. THE DESIGN BUILD CONTRACTOR'S ENGINEER SHALL BE THE "REGISTERED PROFESSIONAL OF RECORD" FOR THE FIRE SUPPRESSION SYSTEMS (PART 5 OF THE LETTERS OF ASSURANCE.)
5. THE BUILDING CODE REPORT FORMS AN INTEGRAL PART OF THE FIRE SUPPRESSION SYSTEM AND SHALL FORM PART OF THIS CONTRACTOR'S SCOPE OF WORK RELATED TO THE FIRE SUPPRESSION.
6. SPRINKLER HEADS ARE TO BE COORDINATED WITH NFPA PROVIDE SCHED DRAWINGS FOR ACCESS PANELS INCLUDING LOCATION WITH RESPECT TO SPRINKLERS, LIGHTING AND DIFFUSER/GRILLES.
7. PROVIDE ALL ANCHILLARY DEVICES AND BAFFLES REQUIRED TO MEET NFPA STANDARDS. EXPOSED PIPING WILL BE MADE READY FOR PAINTING AS SPECIFIED IN THE PAINTING SPECIFICATIONS.
8. CONTRACTOR TO PROVIDE FIRE EXTINGUISHERS TO MEET NFPA 10 REQUIREMENTS UNLESS OTHERWISE DIRECTED BY THE AUTHORITIES HAVING JURISDICTION.

- ① 40# DCW FROM ABOVE AND 40# VENT TO ABOVE SERVING WATER CLOSET.
- ② 20# DCW & 15 DHW FROM ABOVE. 30 SAN DOWN AND 30 VENT UP.
- ③ PROVIDE DRIP TRAYS FOR PIPING RUNNING ABOVE ELECTRICAL PANELS. PIPE Drip TRAY TO FLOOR.
- ④ CONNECT PROPANE LINE TO AIR HANDLER C/W ISOLATION VALVE, DRIP LEG, PRESSURE REGULATOR VALVE AND SEISMIC GAS SHUT OFF VALVE
- ⑤ 50# DCW UP, 20 DHW UP AND 15 DHWR FROM ABOVE



3	ISSUED FOR TENDER	2018.03.27
2	ISSUED FOR 100% CD REVIEW	2018.03.14
1	ISSUED FOR 90% CD REVIEW	2018.02.22
Revision / Revision	Description/Description	Date/Date
Client/client		

Project title/Titre du projet
**5071 WEST SAANICH ROAD
VICTORIA, BC, CANADA**

**NRC HERZBERG
ASTRONOMY AND ASTROPHYSICS
ATP INTEGRATION FACILITY**

Consultant Signature Only

Designed by/Concept par
A.O. / F.L.

Drawn by/Dessiné par
N.Y.

PWGSC Project Manager/Administrateur de Projets TPSGC

PATRICK TROUNG

Regional Manager, Architectural and Engineering Services 3000

Gestionnaire régionale, Services
PREETIPAL PAUL

Drawing title/Titre du dessin

PLUMBING AND FIRE PROTECTION PLAN

Project No./No. du
projet
R.077596.001

Sheet/ Feuille

WM05

OF 11

Revision no./ La Révision no.	3
-------------------------------------	----------



3	ISSUED FOR TENDER	2018.03.27
2	ISSUED FOR 100% CD REVIEW	2018.03.14
1	ISSUED FOR 90% CD REVIEW	2018.02.22
Revision/ Révision	Description/Description	Date/Date

Client/client

Project title/Titre du projet
**5071 WEST SAANICH ROAD
VICTORIA, BC, CANADA**

**NRC HERZBERG
ASTRONOMY AND ASTROPHYSICS
ATP INTEGRATION FACILITY**

Consultant Signature Only

Designed by/Concept par
A.O./F.L.

Drawn by/Dessiné par
N.Y.

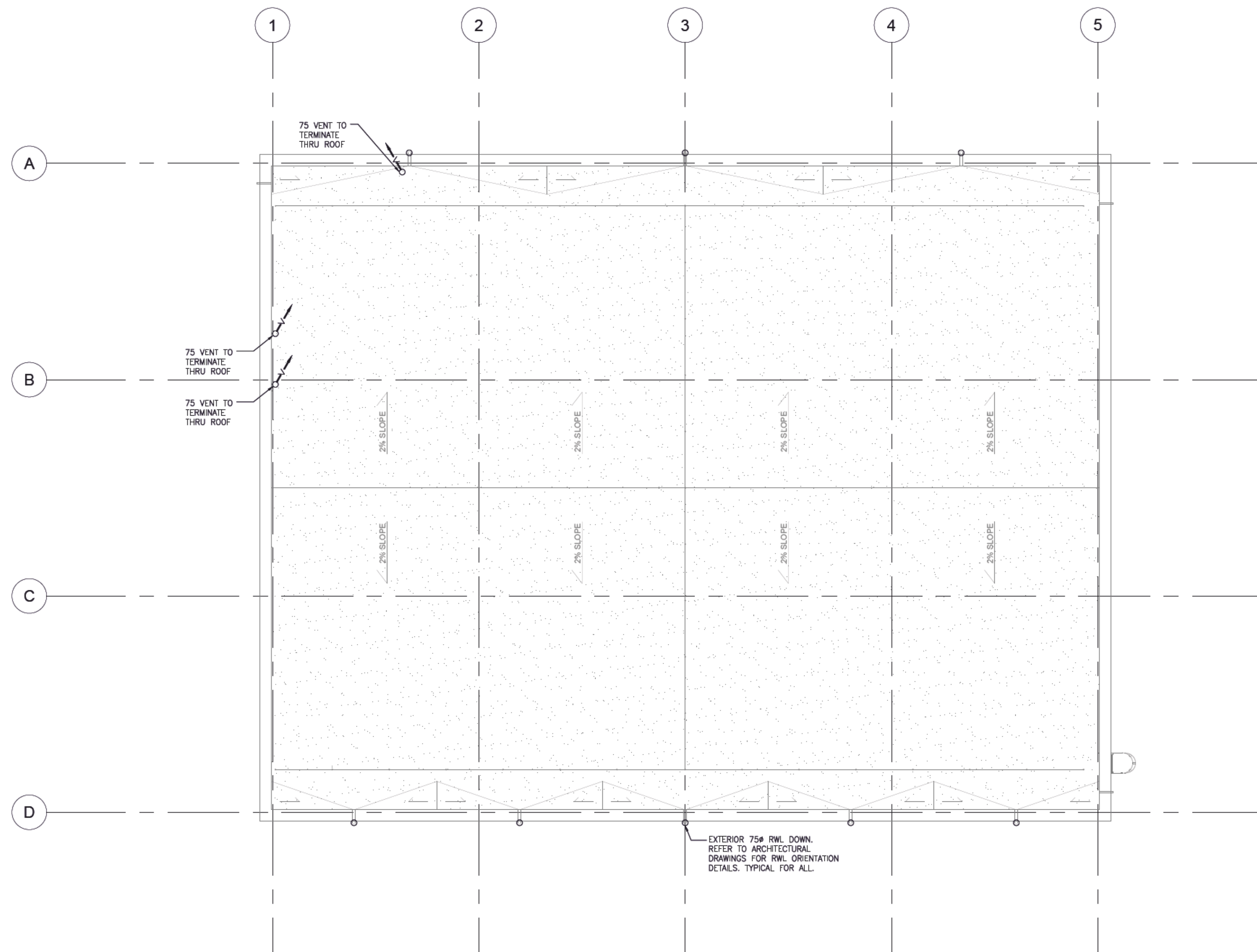
PWGSC Project Manager/Administrateur de Projets TPSCG
PATRICK TROUNG

Regional Manager, Architectural and Engineering Services
Gestionnaire régionale, Services d'architecture et de génie, TPSCG
PREETIPAL PAUL

Drawing title/Titre du dessin

PLUMBING ROOF PLAN

Project No./No. du projet R.077596.001	Sheet/ Feuille WM06 OF 11	Revision no./ La Révision no. 3
---	--	---

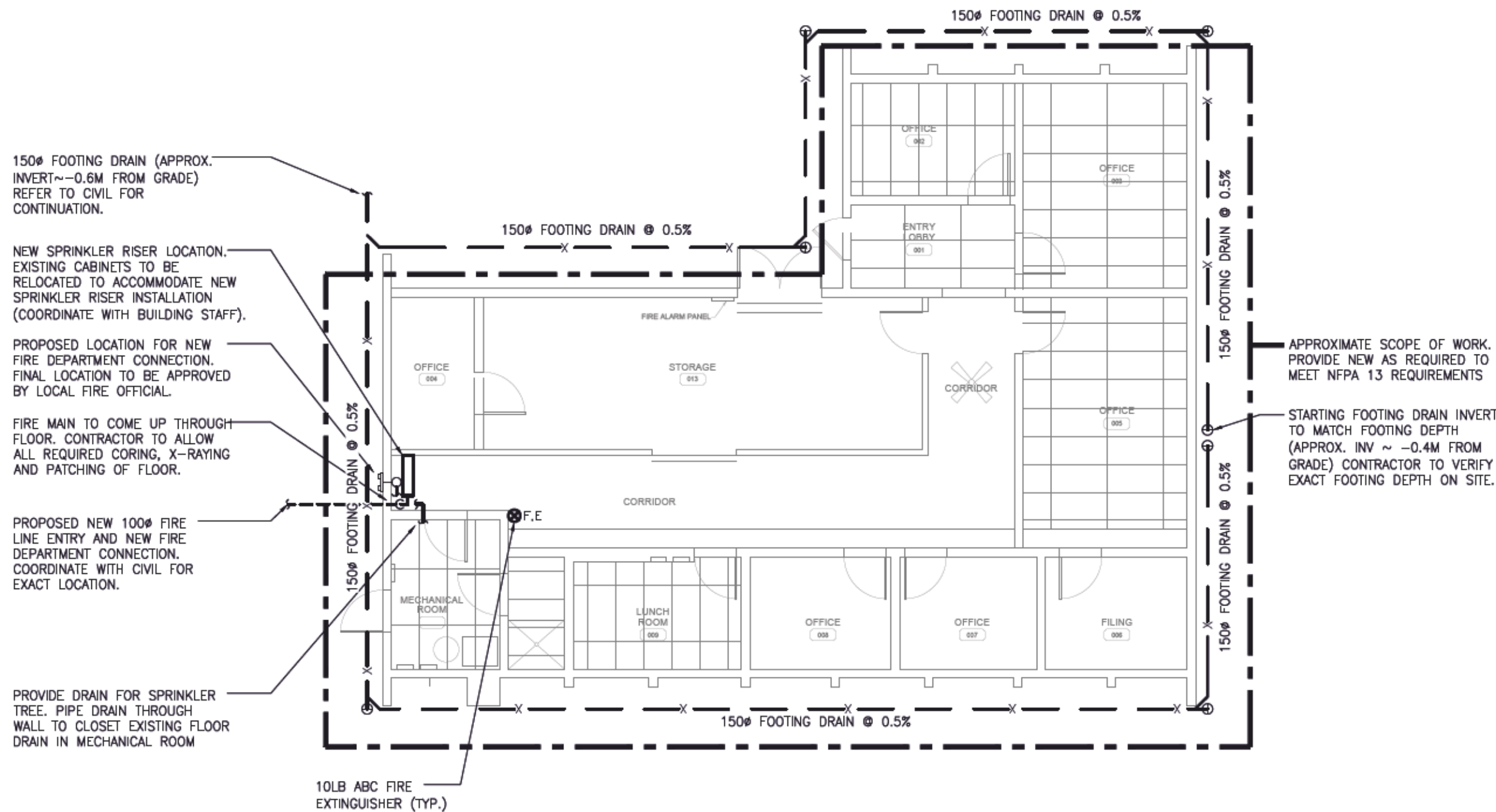


1 PLUMBING ROOF PLAN
WM06 1:100



FIRE PROTECTION NOTES

1. FIRE SUPPRESSION SYSTEM INFORMATION SHOWN ON THESE PLAN ARE FOR GENERAL SCOPE OF WORK AND COORDINATION DURING DESIGN. THE SYSTEM IS A DESIGN BUILD CONTRACT AS OUTLINED HERE AND IN THE SPECIFICATION. ALL SPRINKLER DESIGN AND WORK TO BE IN ACCORDANCE WITH NFPA-13 REQUIREMENT.
2. THE DESIGN BUILD CONTRACTOR SHALL RETAIN ON BEHALF OF THE OWNER A REGISTERED PROFESSIONAL ENGINEER IN THE PROVINCE OF BRITISH COLUMBIA, FOR THE COMPLETE DESIGN IN ACCORDANCE WITH ALL CODES AND STANDARDS. THE CONTRACTOR'S ENGINEER SHALL BE THE "REGISTERED PROFESSIONAL OF RECORD" FOR THE FIRE SUPPRESSION SYSTEMS (PART 5 OF THE LETTERS OF ASSURANCE.)
3. THE BUILDING CODE REPORT FORMS AN INTEGRAL PART OF THE FIRE SUPPRESSION SYSTEM AND SHALL FORM PART OF THIS CONTRACTOR'S SCOPE OF WORK RELATED TO THE FIRE SUPPRESSION. REFER TO THE DETAILS IN PARTICULAR TO THE AREAS OF SPRINKLERS REQUIRED AS ALTERNATE SOLUTIONS.
4. SPRINKLER HEADS ARE TO BE COORDINATED WITH LIGHTING.
5. PROVIDE ALL ANCILLARY DEVICES AND BAFFLES REQUIRED TO MEET NFPA STANDARDS. EXPOSED PIPING WILL BE MADE READY FOR PAINTING AS SPECIFIED IN THE PAINTING SPECIFICATIONS.
6. LOCATION OF FIRE EXTINGUISHERS TO BE CO-ORDINATED ON SITE WITH ARCHITECT PRIOR TO INSTALLATION.
7. CONTRACTOR TO PROVIDE FIRE EXTINGUISHERS TO MEET NFPA 10 REQUIREMENTS UNLESS OTHERWISE DIRECTED BY THE AUTHORITIES HAVING JURISDICTION.
8. SPRINKLER LINES IN BE INSTALLED EXPOSED IN OPEN CONCRETE CEILINGS AREAS (UPRIGHT SPRINKLER HEADS) AND ABOVE T-BAR IN T-BAR CEILING AREAS (PENDANT TYPE SPRINKLER HEAD).



1 SITE SERVICES BUILDING FIRE PROTECTION PLAN

WM07 1:100



3	ISSUED FOR TENDER	2018.03.27
2	ISSUED FOR 100% CD REVIEW	2018.03.14
1	ISSUED FOR 90% CD REVIEW	2018.02.22
Revision/	Description/Description	Date/Date

Client/client

Project title/Titre du projet
**5071 WEST SAANICH ROAD
VICTORIA, BC, CANADA**

**NRC HERZBERG
ASTRONOMY AND ASTROPHYSICS
ATP INTEGRATION FACILITY**

Consultant Signature Only

Designed by/Concept par
A.O./F.L.

Drawn by/Dessiné par
N.Y.

PWGSC Project Manager/Administrateur de Projets TPSCG
PATRICK TROUNG

Regional Manager, Architectural and Engineering Services
Gestionnaire régionale, Services d'architecture et de génie, TPSCG
PREETIPAL PAUL

Drawing title/Titre du dessin

**SITE SERVICES BUILDING FIRE
PROTECTION PLAN**

Project No./No. du projet R.077596.001	Sheet/ Feuille WM07 OF 11	Revision no./ La Révision no. 3
---	--	---

HVAC GENERAL NOTES:

- INTERLOCK EXHAUST FANS EF-1 AND EF-2 TO WASHROOM LIGHTING. CONTRACTOR TO COORDINATE WITH ELECTRICAL.
- AHU-1, AHU-2 AND AHU-3 TO BE INSTALLED ON 100MM CONCRETE HOUSEKEEPING PADS.
- PROVIDE AND INSTALL BALANCING DAMPERS FOR ALL SUPPLY AIR GRILLES
- ALL DUCTWORK EXPOSED TO OUTDOOR ENVIRONMENT TO BE FULLY INSULATED AND WEATHERPROOFED. REFER TO SPECIFICATION FOR DETAILS.
- AIR CURTAINS ACH-1 AND ACH-2 TO BE INTERLOCKED WITH OVERHEAD DOOR. ADJUST AIR DISCHARGE DISTANCE TO 5M.
- AVERAGE OF ALL THERMOSTATS TO BE MEASURED TO CONTROL ALL AIR HANDLERS IN CONJUNCTION.
- MAIN SUPPLY AIR DUCTWORK TO BE SUPPORTED FROM COLUMNS/STRUCTURAL BRACING. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS

DRAWING NOTES:

- INSTALL CONDENSATE PUMP FOR AC-1, RUN CONDENSATE DRAIN TO MECHANICAL ROOM FLOOR DRAIN.
- AIR CURTAINS TO BE INSTALLED VERTICALLY (STACKED). CONTRACTOR TO FOLLOW MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES FOR INSTALLATION.
- WASHROOM EXHAUST TO TERMINATE COMPLETE WITH EXHAUST WALL CAP.
- PROVIDE CONTROLLER TO TAKE THE AVERAGE TEMPERATURE OF ALL THREE THERMOSTATS AND PROVIDE RESULT TO ALL THREE AHUS. ALL THREE UNITS SHALL OPERATE BASED ON THE SAME AVERAGE TEMPERATURE.
- MOTORIZED DAMPER TO BE NORMALLY CLOSED. DAMPERS TO FULLY OPEN UPON FAILURE OF ANY ONE AHU OR IN CASE OF POWER FAILURE.
- MOUNT CEILING EXHAUST FAN AND DUCTWORK BELOW CEILING



Revision/Revisión	Description/Description	Date/Date
3	ISSUED FOR TENDER	2018.03.27
2	ISSUED FOR 100% CD REVIEW	2018.03.14
1	ISSUED FOR 90% CD REVIEW	2018.02.22

Project title/Titre du projet
**5071 WEST SAANICH ROAD
VICTORIA, BC, CANADA**

**NRC HERZBERG
ASTRONOMY AND ASTROPHYSICS
ATP INTEGRATION FACILITY**

Consultant Signature Only

Designed by/Concept par
A.O./F.L.

Drawn by/Dessiné par
N.Y.

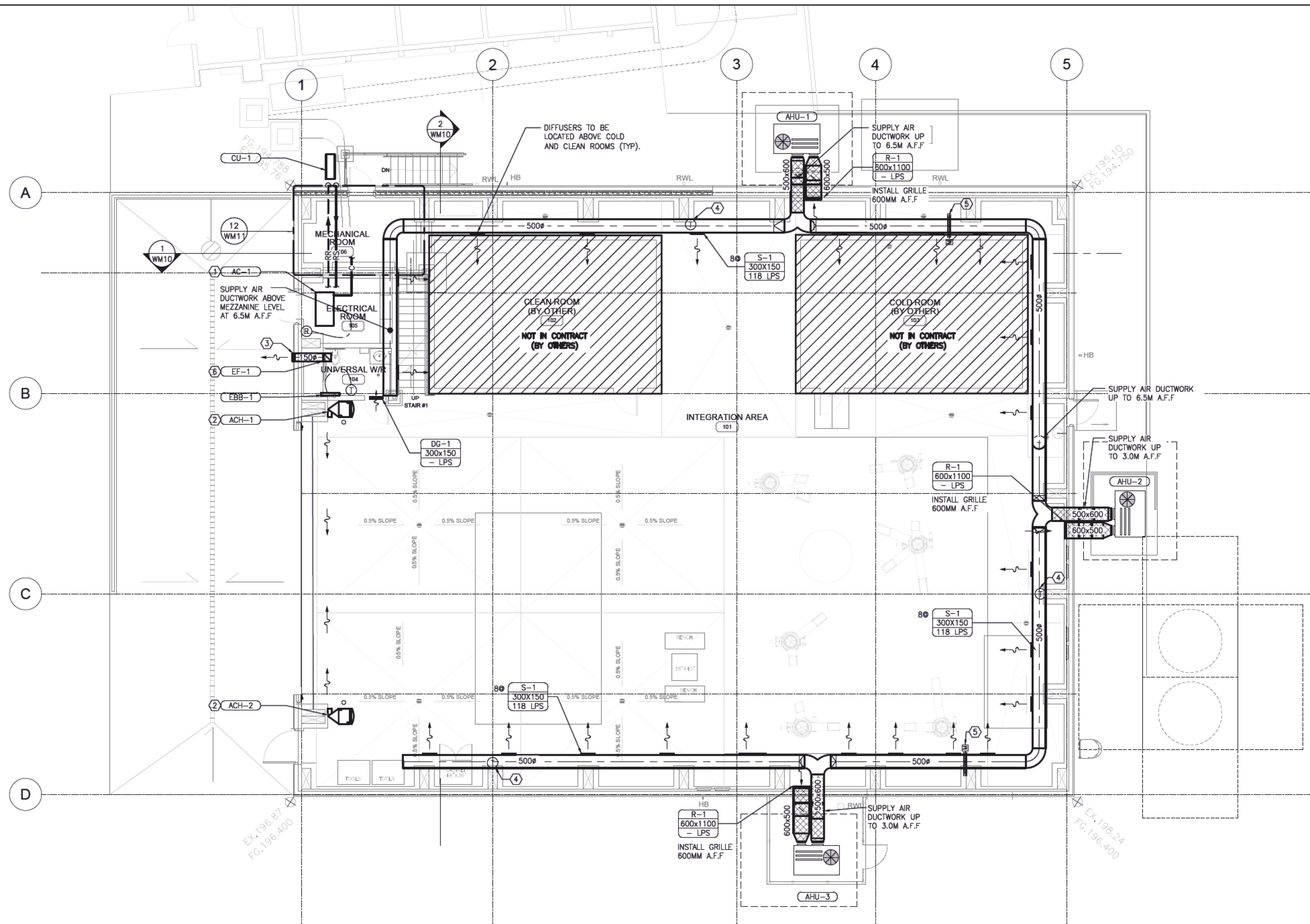
PWGS&C Project Manager/Administrateur de Projets TPS&C
PATRICK TROUNG

Regional Manager, Architectural and Engineering Services
Gestionnaire régionale, Services d'architectural et de génie, TPS&C
PREETIPAL PAUL

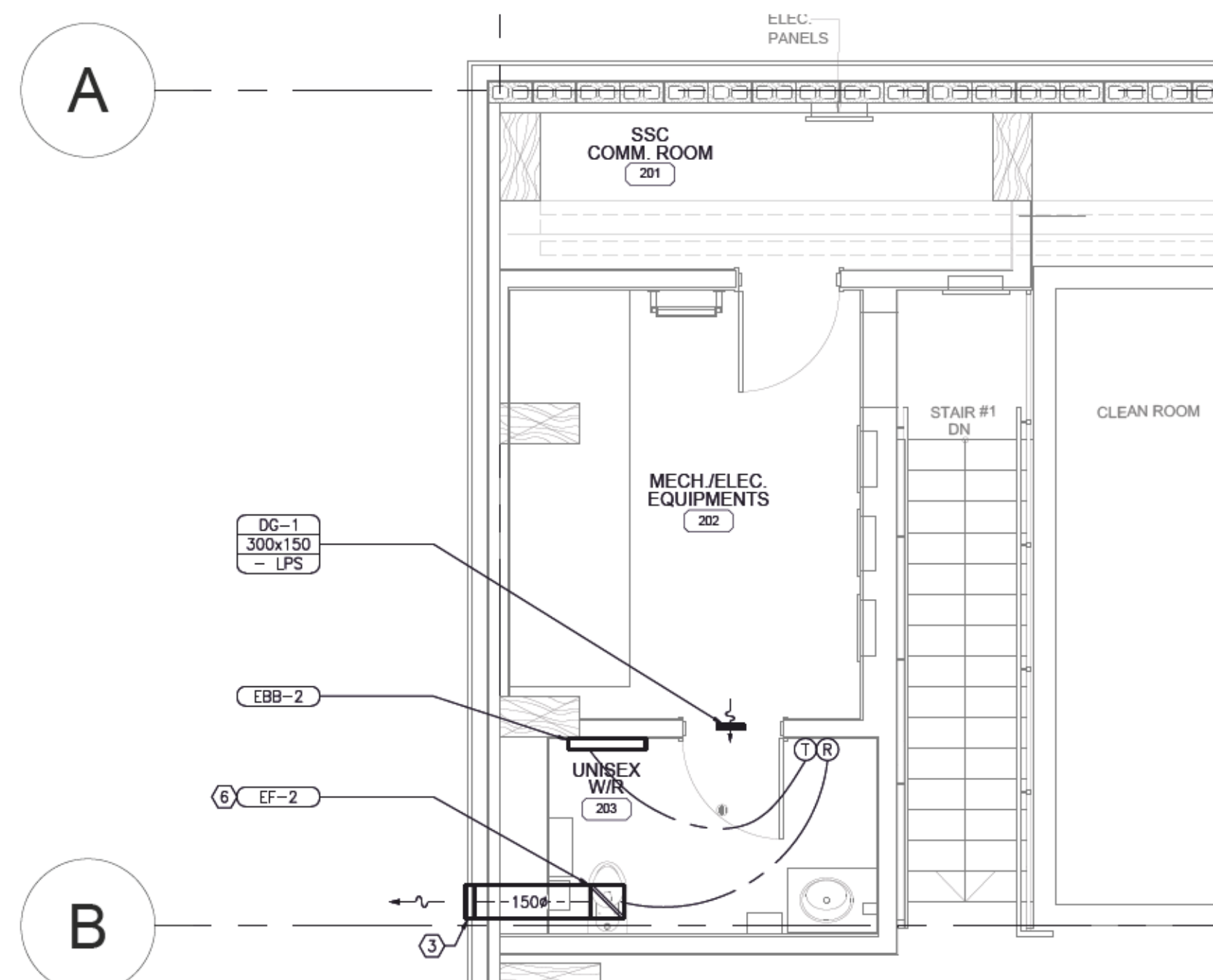
Drawing title/Titre du dessin

**HVAC GROUND FLOOR AND
MEZZANINE PLAN**

Project No./No. du projet	Sheet/ Feuille	Revision no./ La Révision no.
R.077596.001	WM08 OF 11	3

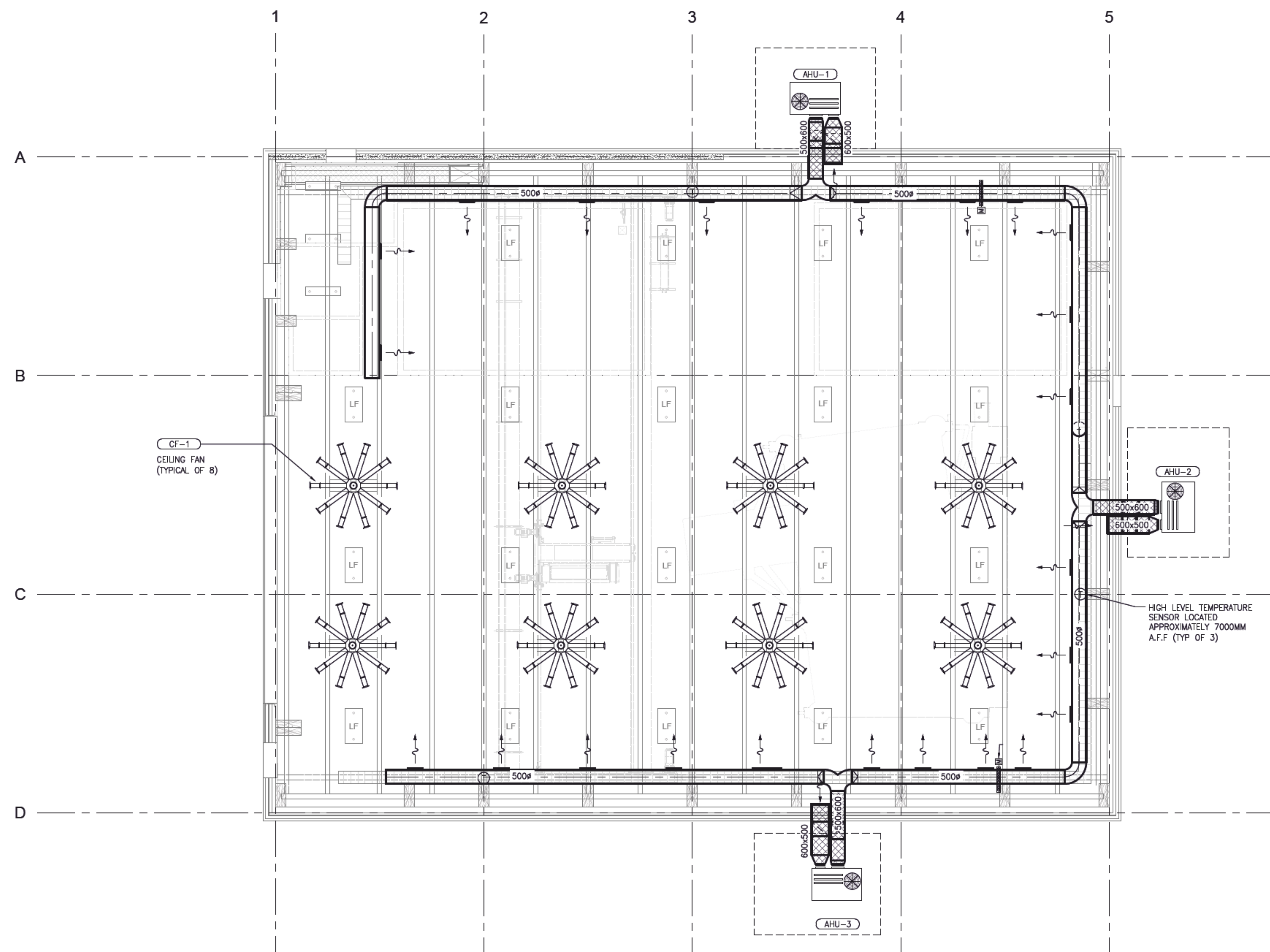


1 HVAC GROUND FLOOR PLAN
WM08 1:100



2 HVAC MEZZANINE PLAN
WM08 1:100





1 HVAC REFLECTED CEILING PLAN
WM09 1:100



3	ISSUED FOR TENDER	2018.03.27
2	ISSUED FOR 100% CD REVIEW	2018.03.14
1	ISSUED FOR 90% CD REVIEW	2018.02.22
Revision/ Révision	Description/Description	Date/Date

Client/client

Project title/Titre du projet
5071 WEST SAANICH ROAD
VICTORIA, BC, CANADA

**NRC HERZBERG
ASTRONOMY AND ASTROPHYSICS
ATP INTEGRATION FACILITY**

Consultant Signature Only

Designed by/Concept par
A.O./F.L.

Drawn by/Dessiné par
N.Y.

PWSSC Project Manager/Administrateur de Projets TPSSC
PATRICK TROUNG

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

Drawing title/Titre du dessin

HVAC REFLECTED CEILING PLAN

Project No./No. du projet R.077596.001	Sheet/ Feuille WM09 OF 11	Revision no./ La Révision no. 3
---	--	---



Revision/	Description/Description	Date/Date
3	ISSUED FOR TENDER	2018.03.27
2	ISSUED FOR 100% CD REVIEW	2018.03.14
1	ISSUED FOR 90% CD REVIEW	2018.02.22

Client/client

Project title/Titre du projet
5071 WEST SAANICH ROAD
VICTORIA, BC, CANADA

**NRC HERZBERG
ASTRONOMY AND ASTROPHYSICS
ATP INTEGRATION FACILITY**

Consultant Signature Only

Designed by/Concept par
A.O./F.L.

Drawn by/Dessiné par
N.Y.

PWGSC Project Manager/Administrateur de Projets TPSCG

PATRICK TROUNG
Regional Manager, Architectural and Engineering Services
Gestionnaire régionale, Services d'architectural et de génie, TPSCG

PREETIPAL PAUL

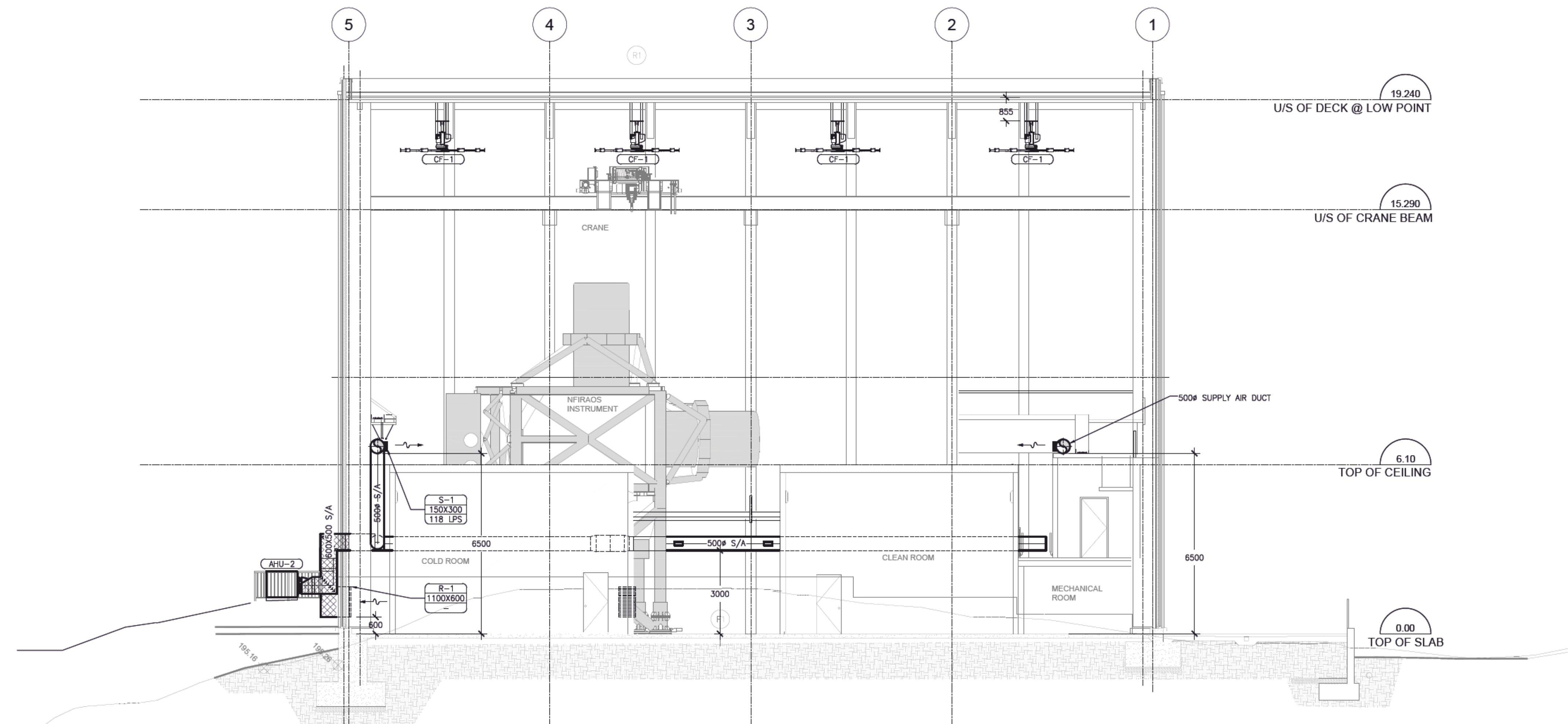
Drawing title/Titre du dessin

MECHANICAL SECTIONS

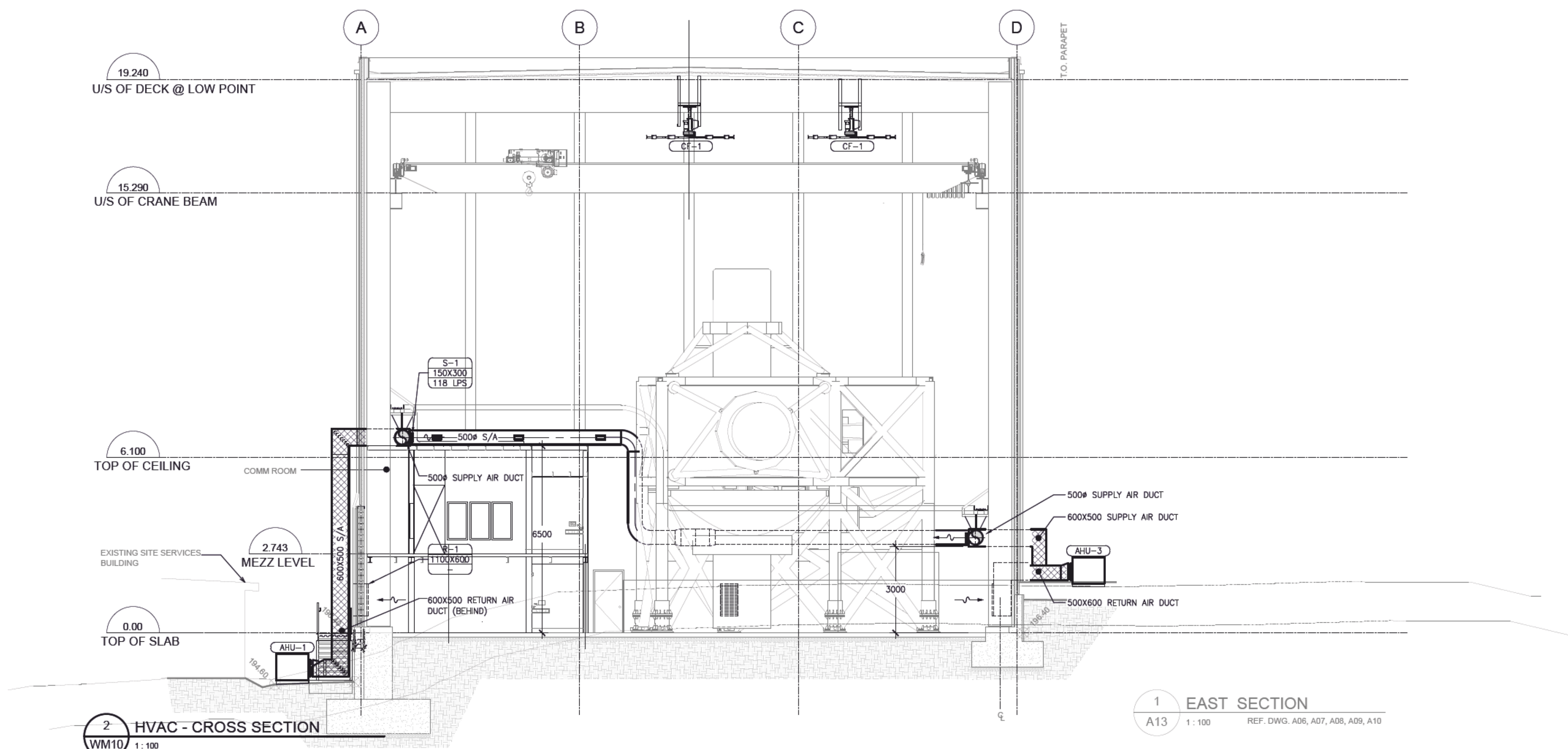
Project No./No. du
projet
R.077596.001

Sheet/Feuille
WM10
OF 11

Revision no./
La Révision
no.
3



1 HVAC - LONGITUDINAL SECTION
WM10 1:100



2 HVAC - CROSS SECTION
WM10 1:100

1 EAST SECTION
A13 1:100 REF. DWG. A06, A07, A08, A09, A10

