

SEABIRD ISLAND COMMUNITY SCHOOL CLASSROOM EXPANSION

ISSUED FOR CONSTRUCTION KICK-OFF, JUNE 2021

S1.1

AGASSIZ, B.C.

ARCHITECTURAL - David Nairne+Associates Ltd.

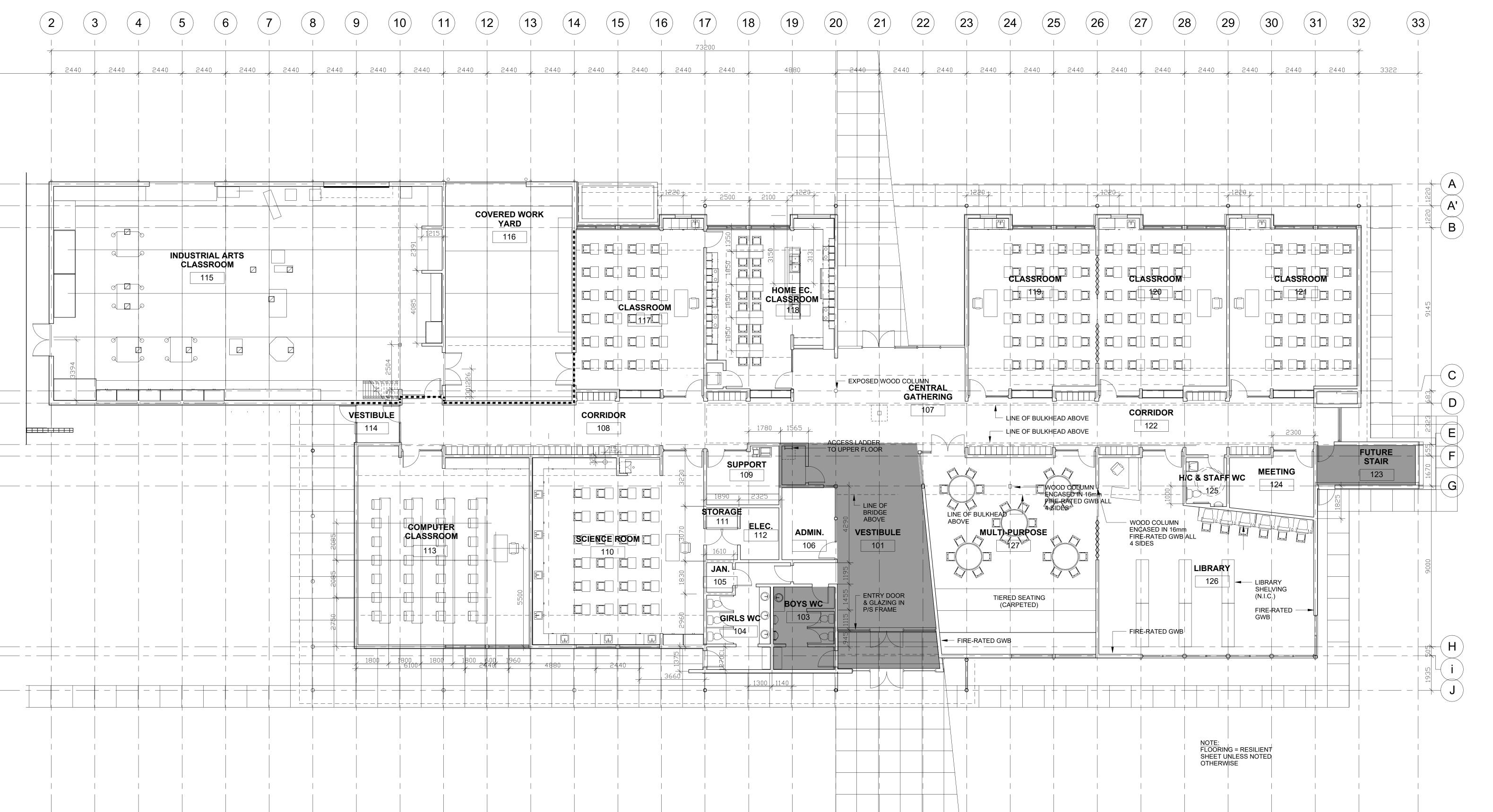
STRUCTURAL - David Nairne+Associates Ltd.

MECHANICAL - Inno Reflection ENfineering Ltd.

A101	GENERAL NOTES AND CODE SYNOPSIS - TBD
A201	EXISTING CONDITIONS - MAIN FLOOR PLAN
A202	EXISTING CONDITIONS- UPPER FLOOR PLAN
A301a	MAIN FLOOR PLAN - UPGRADES - OPTION A
A301b	MAIN FLOOR PLAN - UPGRADES - OPTION B
A302a	UPPER ROOF PLAN - UPGRADES - OPTION A
A302b	UPPER ROOF PLAN - UPGRADES - OPTION B
A303	REFLECTED CEILING PLAN - MAIN FLOOR
A304	REFLECTED CEILING PLAN - UPPER FLOOR
A401	ELEVATIONS
A501	BUILDING SECTIONS
A601	WALL SECTIONS - 1
A602	WALL SECTIONS - 2
A603	WALL SECTIONS - 3 - TBD
A701	INTERIOR ELEVATIONS - TBD
A801	MILLWORK - TBD
A901	SCHEDULES - DOOR - TBD

M01 SITE PLAN ADN TITLE SHEET
M02 L01 - ENLARGED PLAN - EXISTING + DEMO + NEW
M03.1 L02 - ENLARGE PLAN - EXISTING + DEMO
M03.2 L02 - ENLARGE PLAN - NEW
M04 MECHANICAL DETAILS / SCHEMATICS
M05 MECHANICAL SCHEDULES
M06.1 MECHANICAL SPECIFICATIONS
M06.2 MECHANICAL SPECIFICATIONS





David Nairne + Associates Ltd

Suite 250 171 West Esplanade North Vancouver BC V7M 3J9 CANADA T 604 984 3503

F 604 984 0627

ISSUED FOR CONSTRUCTION KICK-OFF 11 JUNE, 2021 14 MAY, 2021 DESIGNED BY: CHECKED BY:

DNA

SCALE:

1:100

CONSULTANT

DRAWING DATE

MARCH 2021

PROJECT NAME SEABIRD ISLAND COMMUNITY SCHOOL **CLASSROOM RENOVATION**

SEABIRD ISLAND BAND

PROJECT ADDRESS **CHOWAT ROAD**

AGASSIZ, BC

CLIENT

DRAWING TITLE

EXISTING CONDITION MAIN FLOOR PLAN

REVISION No.

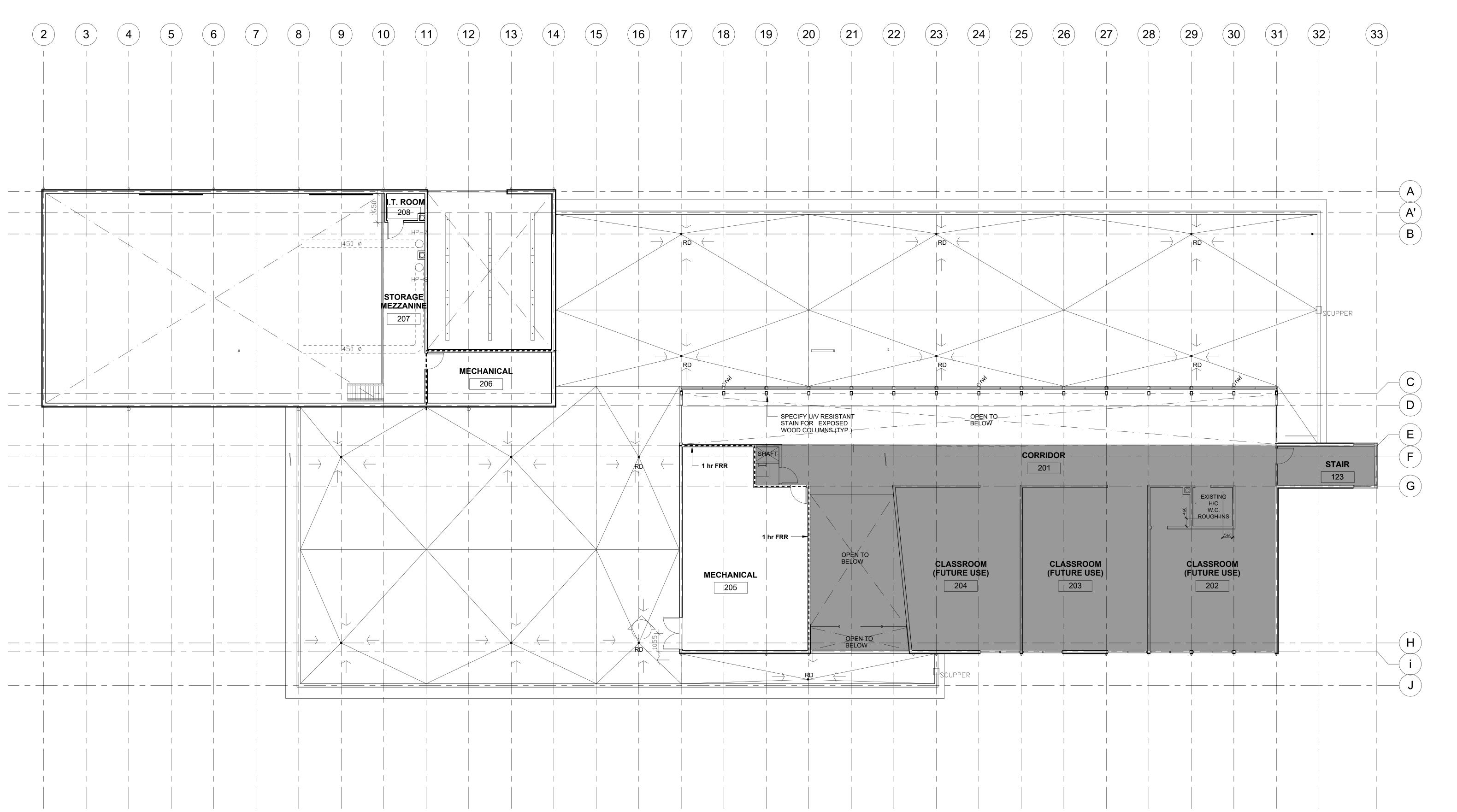
LEGEND:

DENOTES FIRE SEPARATION FS/FRR = 1 h

DENOTES AREA INCLUDED IN SCOPE OF WORK

DENOTES AREA NOT INCLUDED IN SCOPE OF WORK

5929 PROJECT NUMBER



project managers
planners
engineers
engineers

engineers architects

David Nairne + Associates Ltd

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ISSUED FOR CONSTRUCTION KICK-OFF
11 JUNE, 2021

ISSUED FOR PRELIMINARY REVIEW
14 MAY, 2021

REVISIONS

DESIGNED BY:
DNA

CHECKED BY:
DNA

PROJECT NAME
SEABIRD ISLAND
COMMUNITY SCHOOL
CLASSROOM RENOVATION
CLIENT

SEABIRD ISLAND BAND

PROJECT ADDRESS

DRAWING DATE MARCH 2021

SCALE:
1:100

CONSULTANT

CHOWAT ROAD AGASSIZ, BC

DRAWING TITLE

EXISTING CONDITION UPPER FLOOR PLAN

REVISION No.

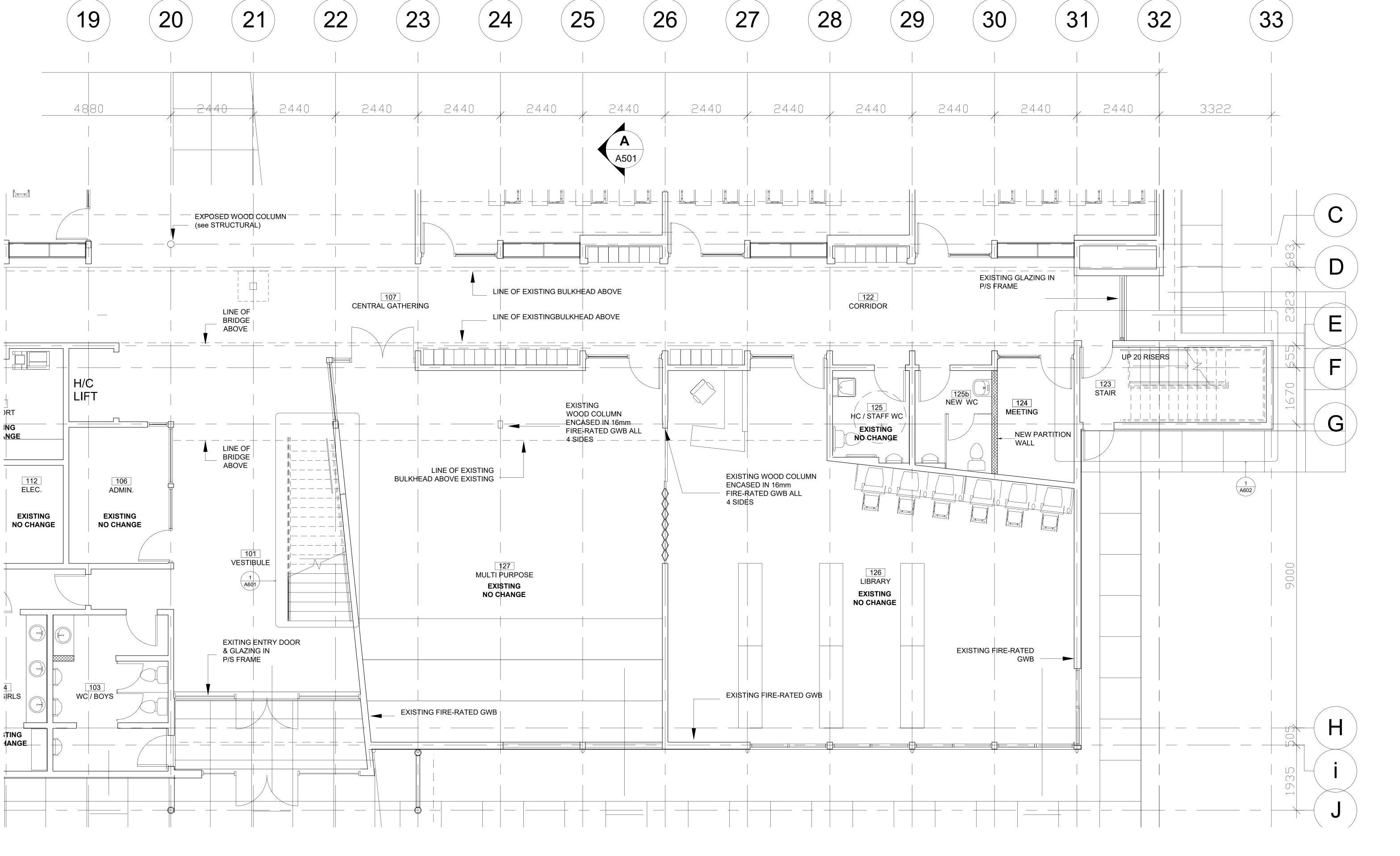
PROJECT NUMBER 5929

LEGEND:

DENOTES FIRE SEPARATION FS/FRR = 1 h

DENOTES AREA INCLUDED IN SCOPE OF WORK

DENOTES AREA NOT INCLUDED IN SCOPE OF WORK



LEGEND:

DENOTES FIRE SEPARATION FS/FRR = 1 h

DENOTES NEW WALL

DENOTES REMOVED WALL

PROJECT NUMBER 5929*** **A301a**

David Nairne + Associates Ltd

ISSUED FOR CONSTRUCTION KICK-OFF

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11 JUNE, 2021

14 MAY, 2021

DESIGNED BY:

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PROJECT NAME

CLIENT

PROJECT ADDRESS

DRAWING TITLE

OPTION A

REVISION No.

CHOWAT ROAD AGASSIZ, BC

MAIN FLOOR PLAN

SEABIRD ISLAND

COMMUNITY SCHOOL

SEABIRD ISLAND BAND

CLASSROOM RENOVATION

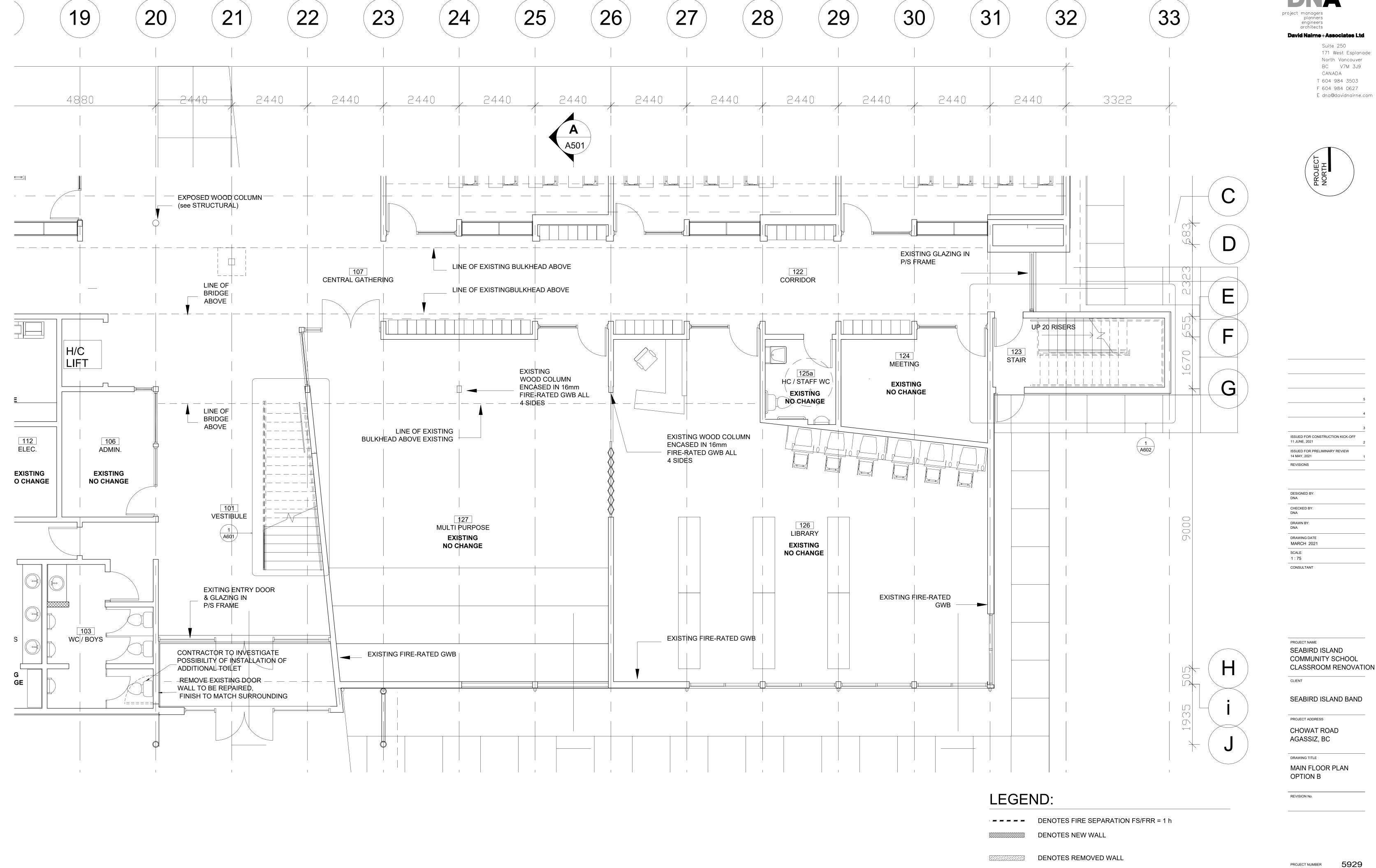
SCALE:
1:75

CONSULTANT

Suite 250

171 West Esplanade North Vancouver BC V7M 3J9 CANADA T 604 984 3503 F 604 984 0627

E dna@davidnairne.com



MAIN FLOOR PLAN - OPTION B

A301 | SCALE: 1:50

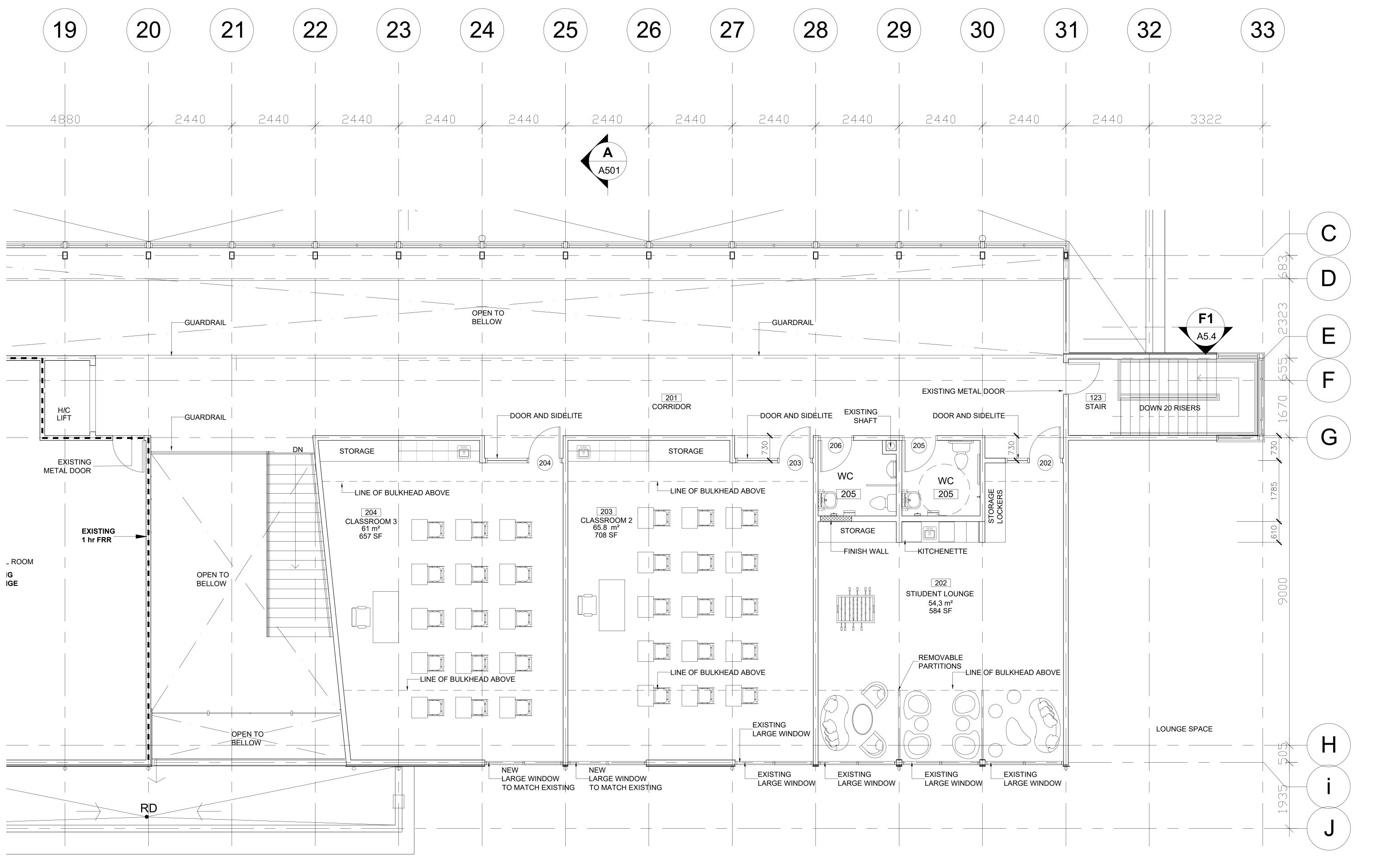
David Nairne + Associates Ltd

Suite 250 171 West Esplanade

CANADA

A301b

North Vancouver BC V7M 3J9



LEGEND:

DENOTES FIRE SEPARATION FS/FRR = 1 h

DENOTES NEW WALL

DENOTES REMOVED WALL

5929 **A302a**

David Nairne + Associates Ltd

Suite 250

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ISSUED FOR CONSTRUCTION KICK-OFF

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14 MAY, 2021

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CHECKED BY:

DRAWING DATE

MARCH 2021

PROJECT NAME

CLIENT

PROJECT ADDRESS

DRAWING TITLE

OPTION A

REVISION No.

CHOWAT ROAD AGASSIZ, BC

UPPER FLOOR PLAN

SEABIRD ISLAND

COMMUNITY SCHOOL

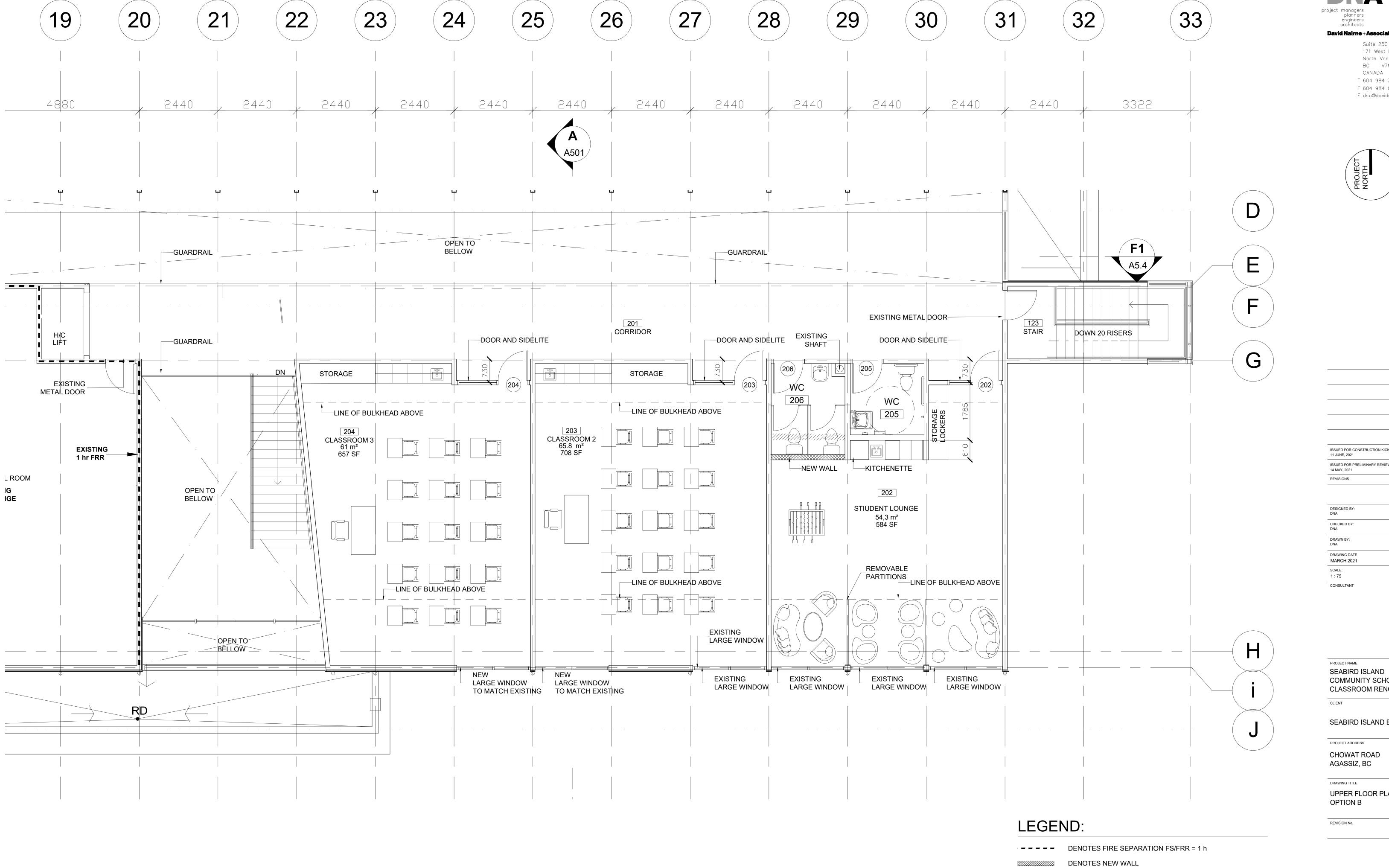
SEABIRD ISLAND BAND

CLASSROOM RENOVATION

SCALE:
1:75

CONSULTANT

171 West Esplanade North Vancouver BC V7M 3J9



project managers planners engineers architects David Nairne + Associates Ltd

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MARCH 2021

CONSULTANT

PROJECT NAME

CLIENT

PROJECT ADDRESS

DRAWING TITLE

OPTION B

REVISION No.

PROJECT NUMBER

A302b

DENOTES REMOVED WALL

CHOWAT ROAD AGASSIZ, BC

UPPER FLOOR PLAN

5929

COMMUNITY SCHOOL

SEABIRD ISLAND BAND

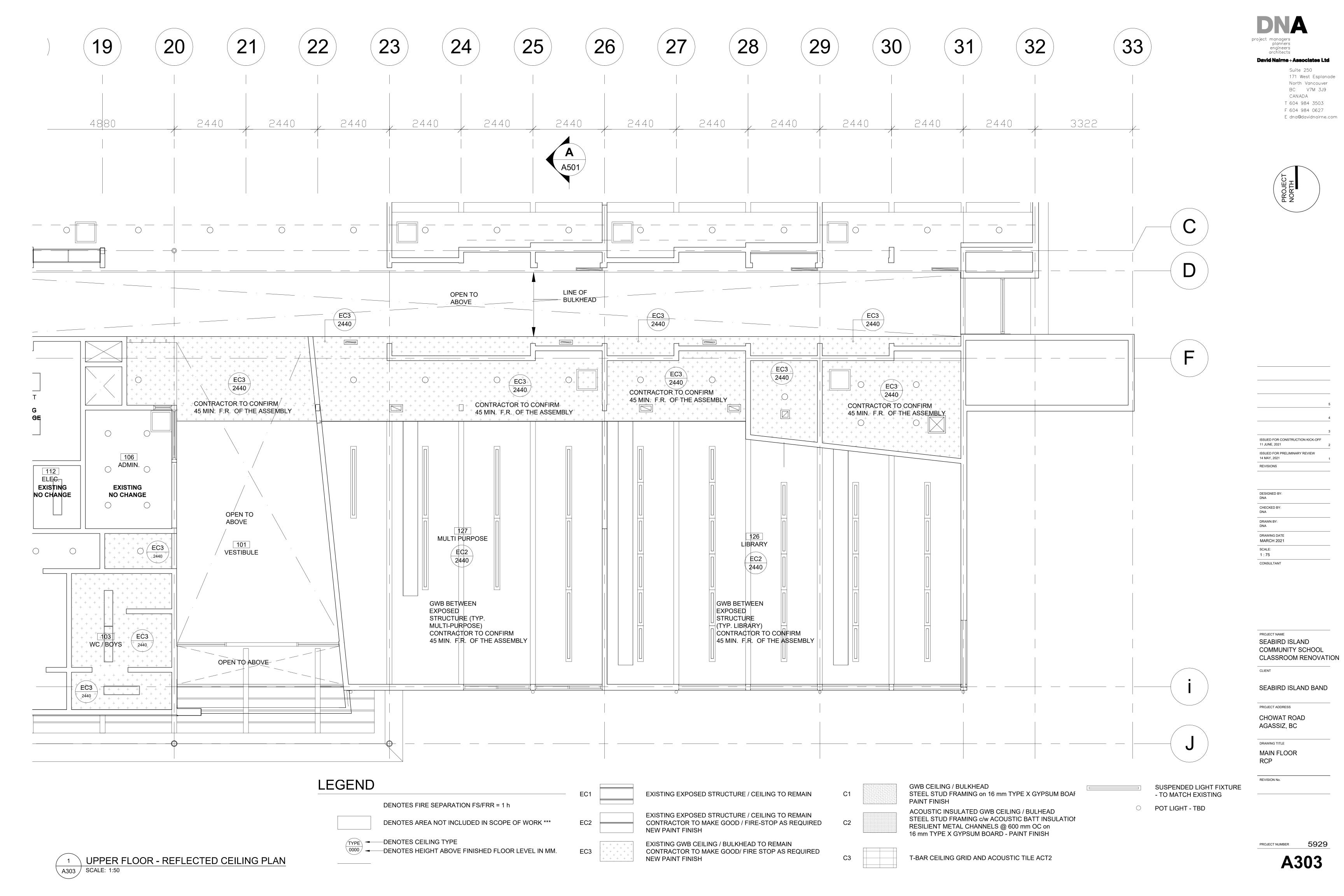
CLASSROOM RENOVATION

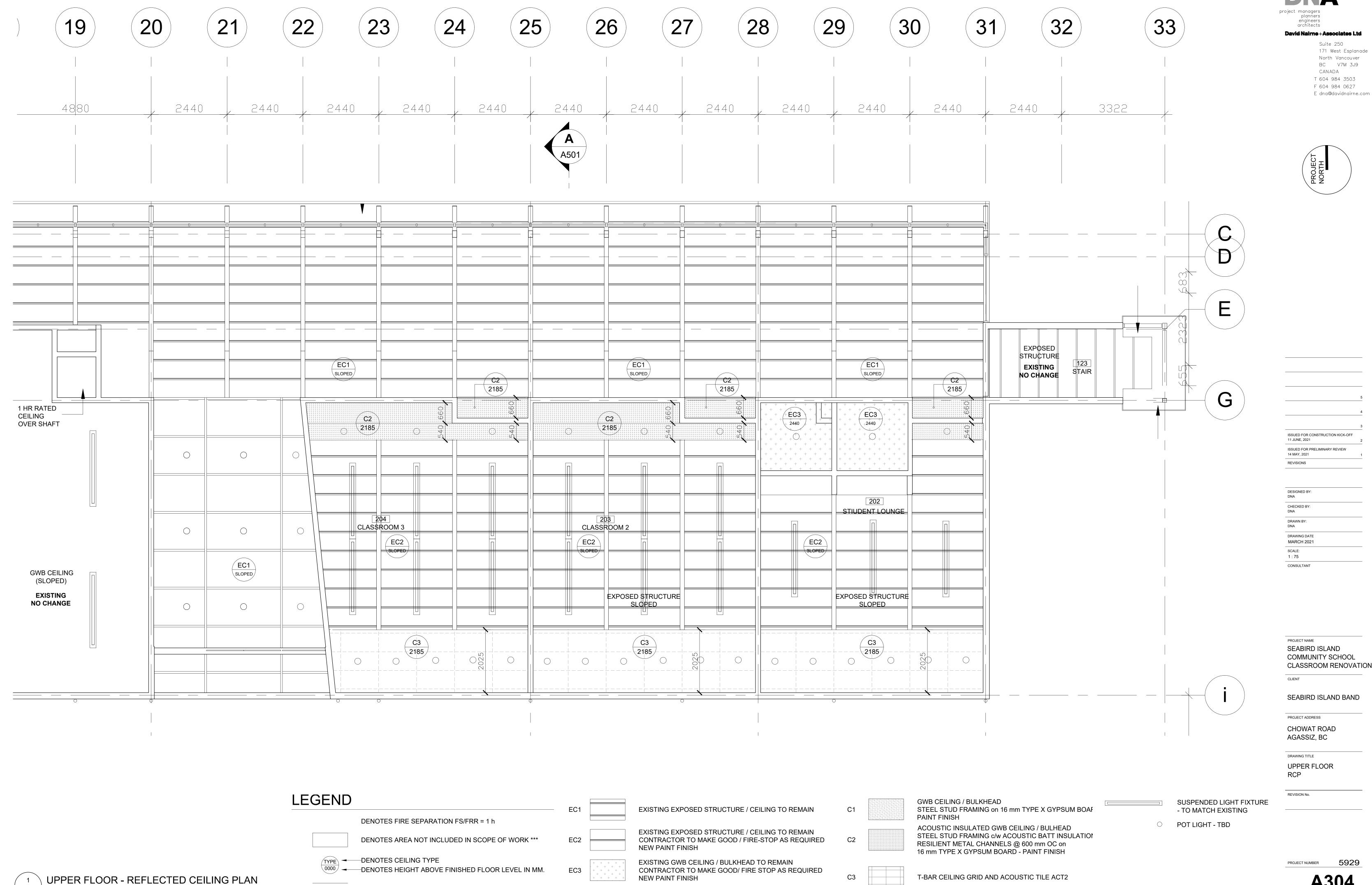
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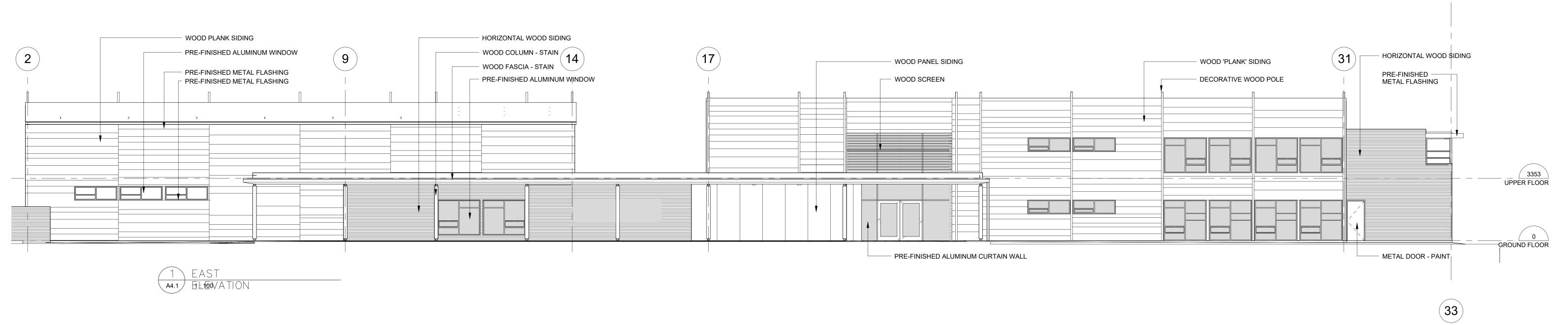
171 West Esplanade North Vancouver BC V7M 3J9

A302 SCALE: 1:75

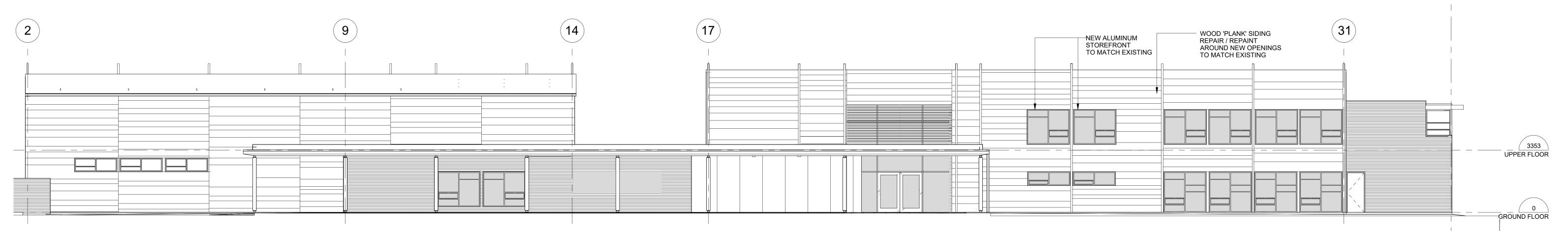




A304 | SCALE: 1:50



1 EAST ELEVATION - EXISTING CONDITION
SCALE: 1:100



1 EAST ELEVATION - CHANGES
A401 SCALE: 1:100

(33)

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ISSUED FOR CONSTRUCTION KICK-OFF 11 JUNE, 2021 ISSUED FOR PRELIMINARY REVIEW 14 MAY, 2021 DESIGNED BY: DNA CHECKED BY: DRAWN BY: DNA DRAWING DATE MARCH 2021 SCALE: 1:100 CONSULTANT

> COMMUNITY SCHOOL CLASSROOM RENOVATION CLIENT

SEABIRD ISLAND

PROJECT NAME

SEABIRD ISLAND BAND

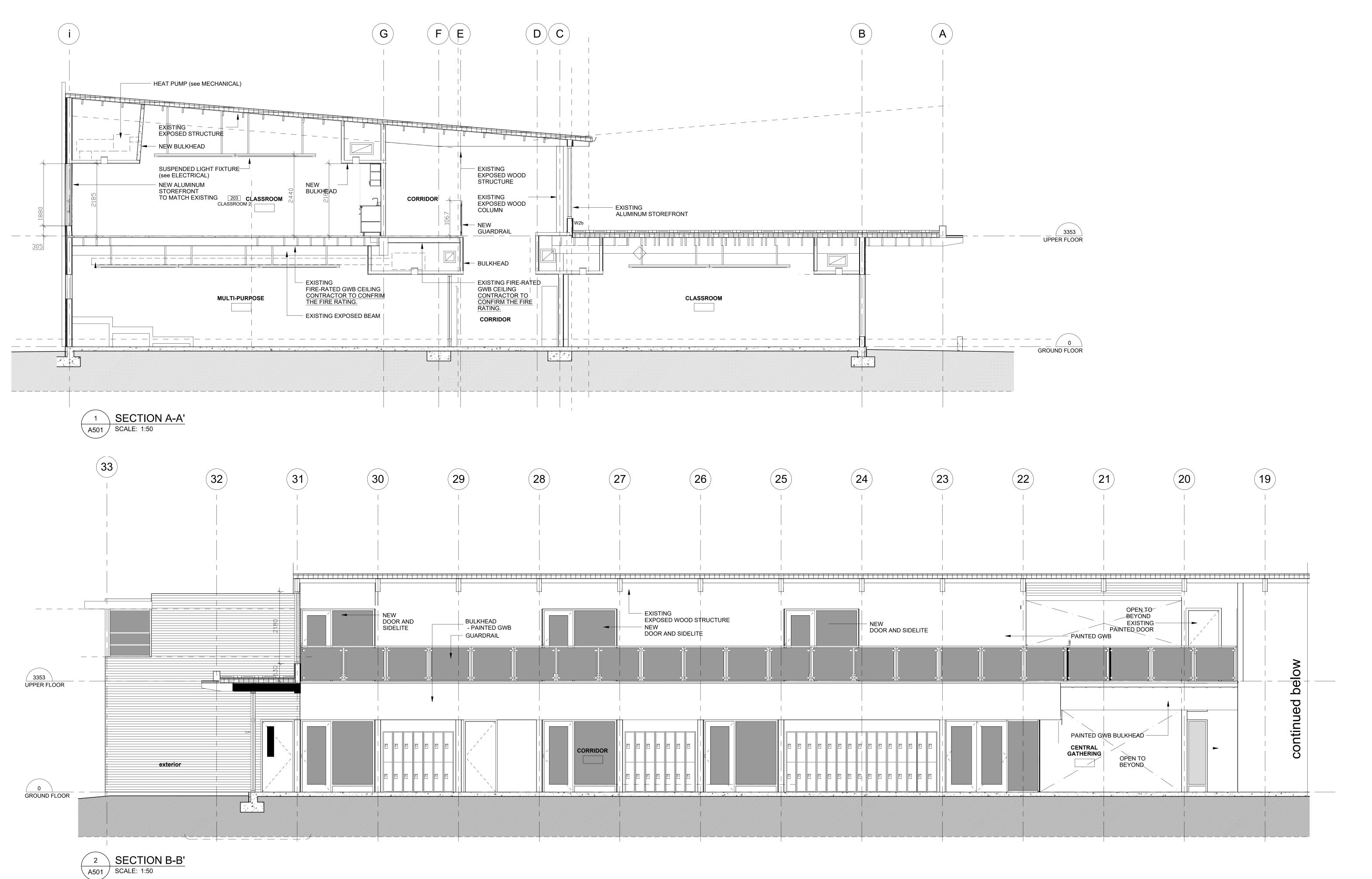
PROJECT ADDRESS CHOWAT ROAD

AGASSIZ, BC DRAWING TITLE

BUILDING ELEVATIONS

REVISION No.

PROJECT NUMBER 5929



project managers
planners
engineers

architects **David Nairme + Associates Ltd**

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SEABIRD ISLAND
COMMUNITY SCHOOL
CLASSROOM RENOVATION

ISSUED FOR CONSTRUCTION KICK-OFF

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11 JUNE, 2021

14 MAY, 2021

DESIGNED BY:

CHECKED BY:

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SCALE:
1:50

CONSULTANT

DRAWING DATE MARCH 2021

SEABIRD ISLAND BAND

PROJECT ADDRESS

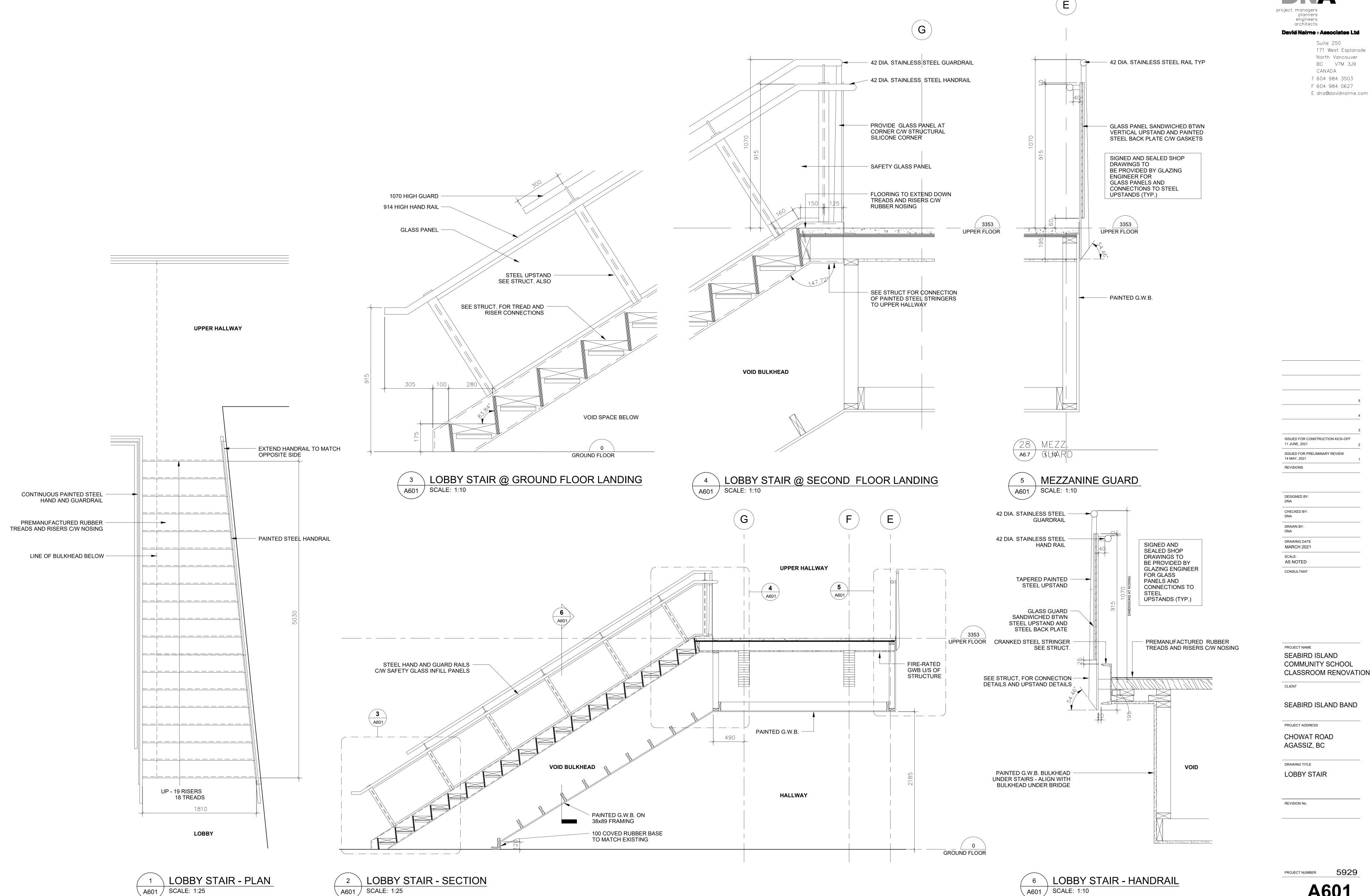
CHOWAT ROAD

AGASSIZ, BC

SECTIONS

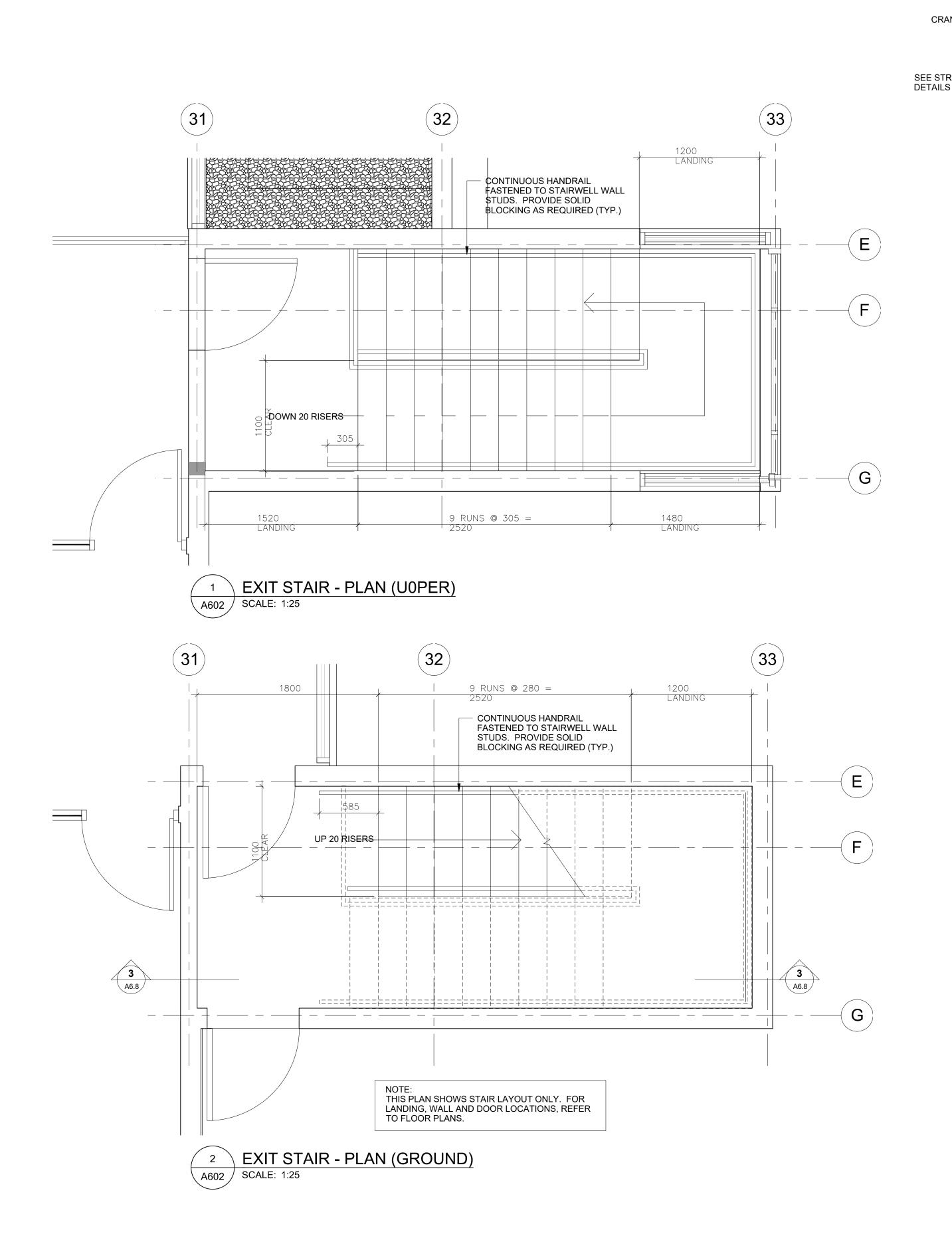
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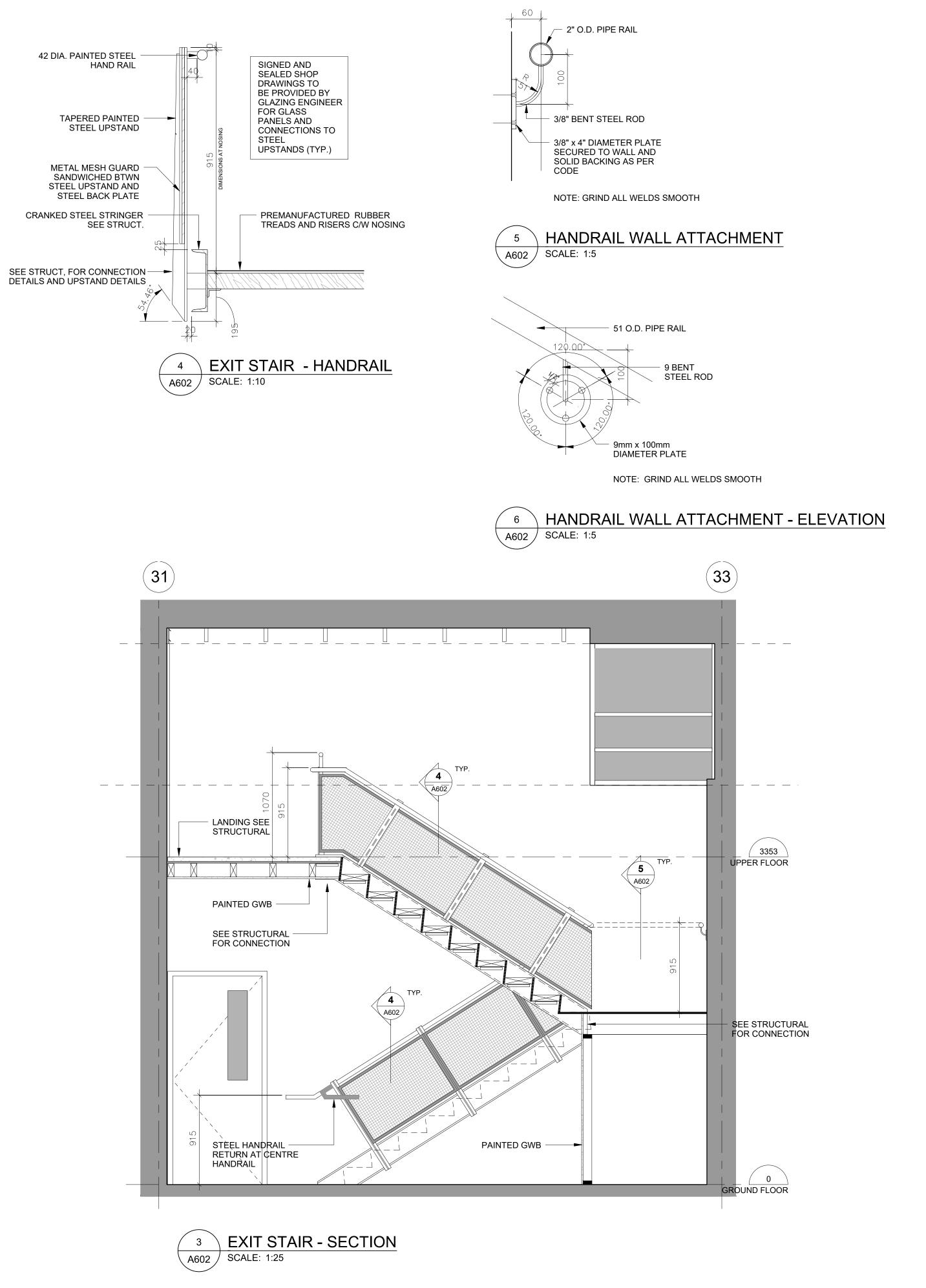
PROJECT NUMBER 5929



171 West Esplanade North Vancouver BC V7M 3J9 T 604 984 3503

CLASSROOM RENOVATION





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14 MAY, 2021 DESIGNED BY: CHECKED BY: DRAWN BY: DNA DRAWING DATE MARCH 2021 SCALE: AS NOTED CONSULTANT

ISSUED FOR CONSTRUCTION KICK-OFF

ISSUED FOR PRELIMINARY REVIEW

11 JUNE, 2021

CLIENT SEABIRD ISLAND BAND

COMMUNITY SCHOOL

CLASSROOM RENOVATION

PROJECT ADDRESS

CHOWAT ROAD AGASSIZ, BC

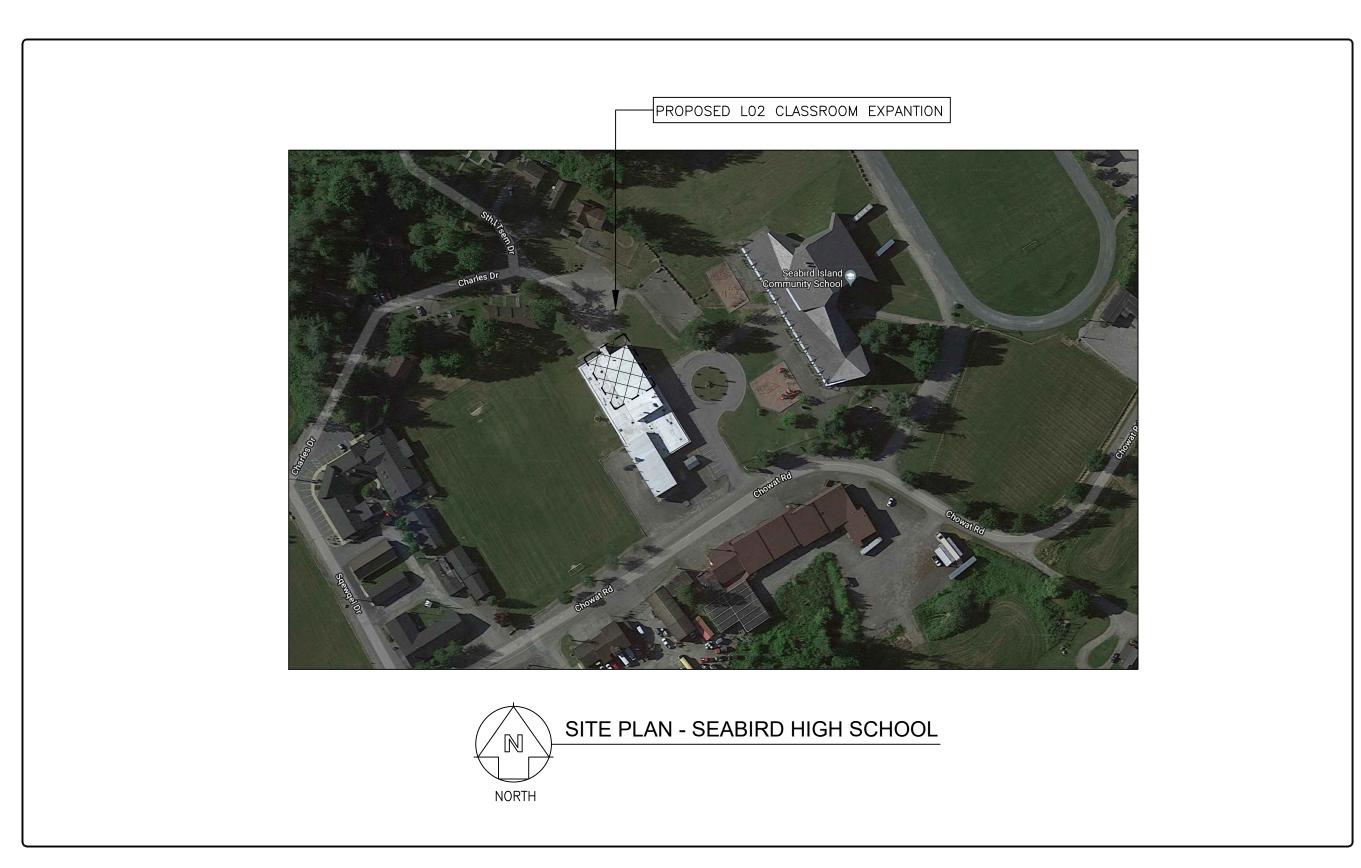
PROJECT NAME

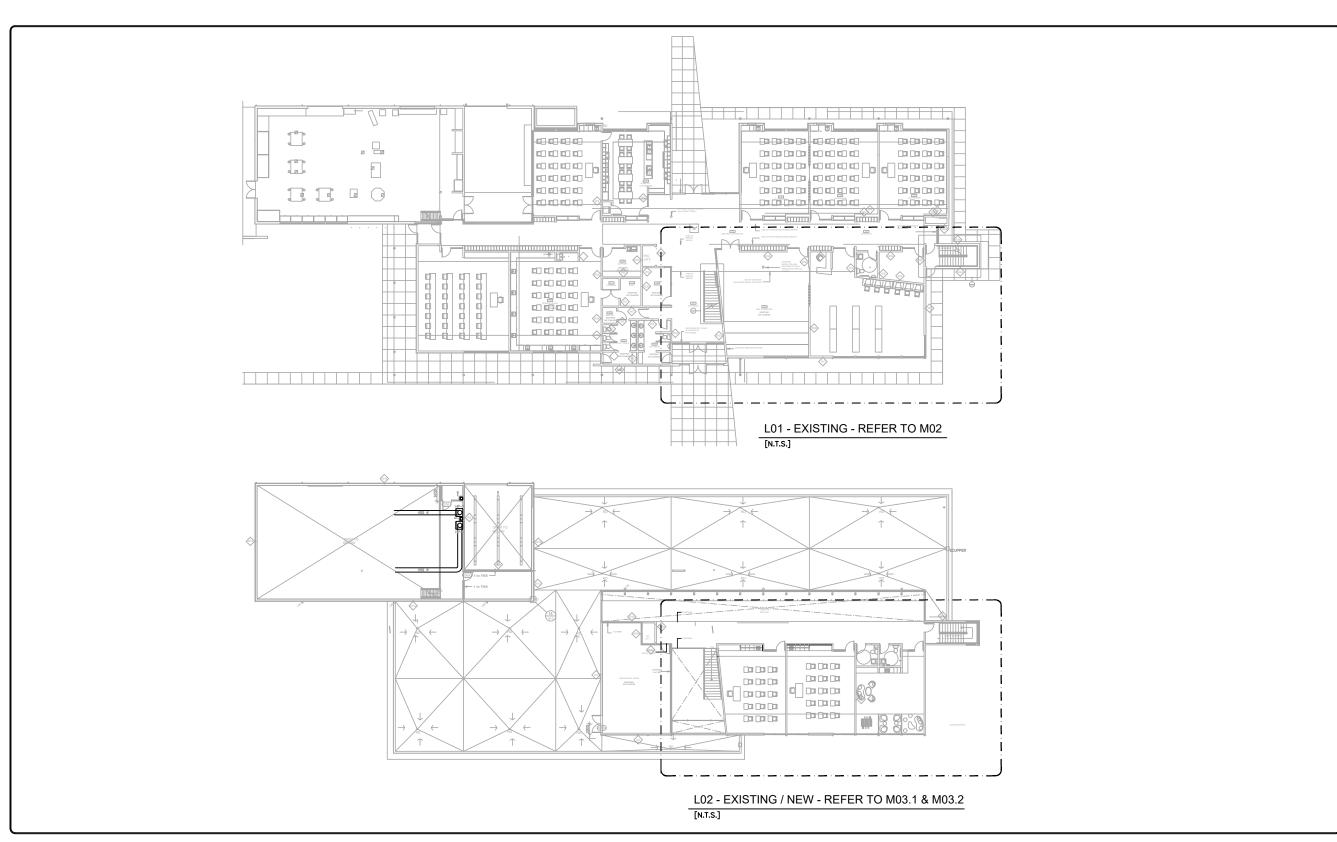
SEABIRD ISLAND

DRAWING TITLE EXIT STAIR

REVISION No.

SEABIRD ISLAND COMMUNITY SCHOOL CLASSROOM EXPANSION





SYMBOL	DESCRIPTION
1///	DEMOLITION
	SUPPLY AIR DIFFUSER
	SUPPLY AIR GRILLE
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
4144	TURNING VANES
\bowtie	DUCT INTERNAL ACOUSTIC INSULATION
///	DUCT EXTERNAL THERMAL INSULATION
#	DUCT BALANCING DAMPER — BD
	DUCT OR PIPE CAP-OFF
M	SUPPLY OR OUTDOOR AIR DUCT - UP
[\(\frac{1}{2}\)]	SUPPLY OR OUTDOOR AIR DUCT - DOWN
	RETURN AIR DUCT — UP
[2]	RETURN AIR DUCT — DOWN
	EXHAUST AIR DUCT — UP
[2]	EXHAUST AIR DUCT - DOWN
	DOMESTIC COLD WATER [DCWS]
	DOMESTIC HOT WATER [DHWS]
	DOMESTIC HOT WATER RECIRC. [DHWR]
——G——	NATURAL GAS
—-F—	FIRE
	SANITARY [SAN]
	SANITARY VENT [V]
	STORM DRAIN [STM]
	PIPE CLEAN-OUT
	PIPE CLEAN-OUT TO GRADE
—	PIPE RISE UP
	PIPE DROP DOWN
	PIPE TEE DN
_ →	DIRECTION OF FLOW
8	PLUMBING SAN VENT UP
$\frac{0}{N}$	CHECK VALVE
\square	SHUT OFF VALVE - NORMALLY OPEN
	SHUT OFF VALVE — NORMALLY CLOSE
\vdash	STRAINER
	BALANCING VALVE
1 1	UNION
<u>ئ</u>	P-TRAP
<u>ک</u>	INDIRECT DRAIN
10 (a)	
	FLOOR DRAIN - [FD]
T	DIGITAL ROOM THERMOSTAT (DDC) WALL SWITCH
<u>\$</u>	
X	EXISTING
UTR	UP TO ROOF
S/A	SUPPLY AIR
R/A	RETURN AIR
E/A	EXHAUST AIR
O/A	OUTDOOR AIR
A.F.F.L	ABOVE FINISH FLOOR LEVEL
B.F.F.L	BELOW FINISH FLOOR LEVEL
UTR	UP TO ROOF
F/B	FROM BELOW
X	EXISTING
(<u>i</u>)	DRAWING/DETAIL — TAG
	GRILLE/DIFFUSER — TAG — NECK / GRILLE SIZE
<u> </u>	FLOW RATE [CFM] EQUIPMENT/FIXTURE TAG

CIVIC ADDRESS 2821 CHOWAT ROAD, AGASSIZ, BC VOM 1AO

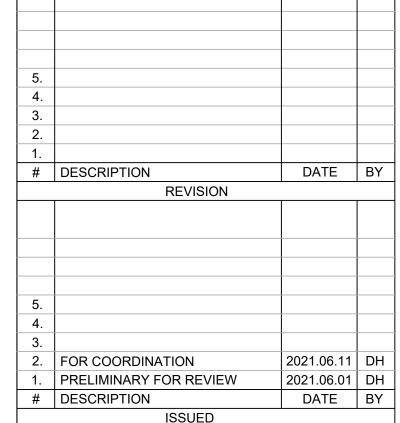
#	DESCRIPTION	SCALE
MO1	SITE PLAN & TITLE SHEET	
M02	LO1 ENLARGE PLAN - PLUMB / HVAC (EXISTING/DEMO/NEW)	AS INDICATED
M03.1	LO2 ENLARGE PLAN - PLUMB / HVAC (EXISTING/DEMO)	AS INDICATED
M03.2	LO2 ENLARGE PLAN - PLUMB / HVAC (NEW)	AS INDICATED
M04	MECHANICAL DETAILS	N.T.S.
M05	MECHANICAL SCHEDULES	N.T.S.
M06	MECHANICAL SPECIFICATIONS	N.T.S.

FIRE SUPPRESSION SYSTEM (KITCHEN HOOD)

- CLASSROOMS.
- 3. CONTRACTOR SHALL RETAIN A SEPARATE PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF BRITISH COLUMBIA TO PERFORM DETAILED SPRINKLER DESIGN & HYDRAULIC LOADS. THE DRAWINGS SHALL BE SEALED & SIGNED & C/W LETTERS OF ASSURANCE (SCHEDULES SB/CB).
- 4. SPRINKLER SHOP DRAWINGS & HYDRAULIC CALCULATION SHALL BE SUBMITTED TO THE CONSULTANTS FOR REVIEW PRIOR INSTALLATION.

FIELD REVIEWS:

- 1. CONTRACTOR SHALL REVIEW NEW MECHANICAL (PLUMBING & HVAC) SYSTEMS WITH THE MECHANICAL CONSULTANT PRIOR TO COMMENCING ANY WORK.
- 2. CONTRACTOR SHALL COORDINATE ALL SITE FIELD REVIEWS WITH THE MECHANICAL CONSULTANT FOR:
- ABOVEGROUND PLUMBING SYSTEM: WHEN ALL PLUMBING SYSTEMS HAVE BEEN INSTALLED AND TESTED AND PRIOR TO ANY PIPE INSULATION AND DRYWALL INSTALLATIONS.
- DUCT DISTRIBUTION AND EQUIPMENT INSTALLATIONS.
- FINAL FIELD REVIEWS: WHEN ALL MECHANICAL (PLUMBING & HVAC) SYSTEMS HAVE BEEN COMPLETED AND ARE FULLY OPERATIONAL.
- 3. CONTRACTOR SHALL REVIEW ANY PIPE & DUCT SLAB/WALL OPENINGS WITH THE STRUCTURAL ENGINEER PRIOR TO ANY SLAB/WALL PENETRATIONS.



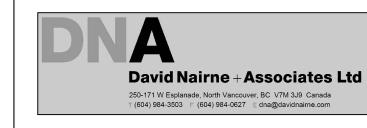
NOTES:

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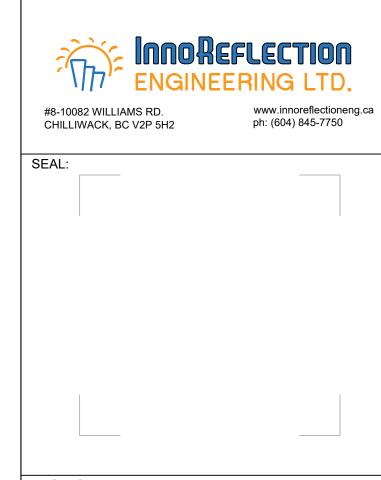
KEYPLAN:

IWO

ARCHITECT:



CONSULTANT:



PROJECT NAME:

SEABIRD ISLAND COMMUNITY SCHOOL
CLASSROOM EXPANSION
2821 Chowat Road, Agassiz, BC V0M 1A0

PROJECT #: 2021-M007
TITLE:

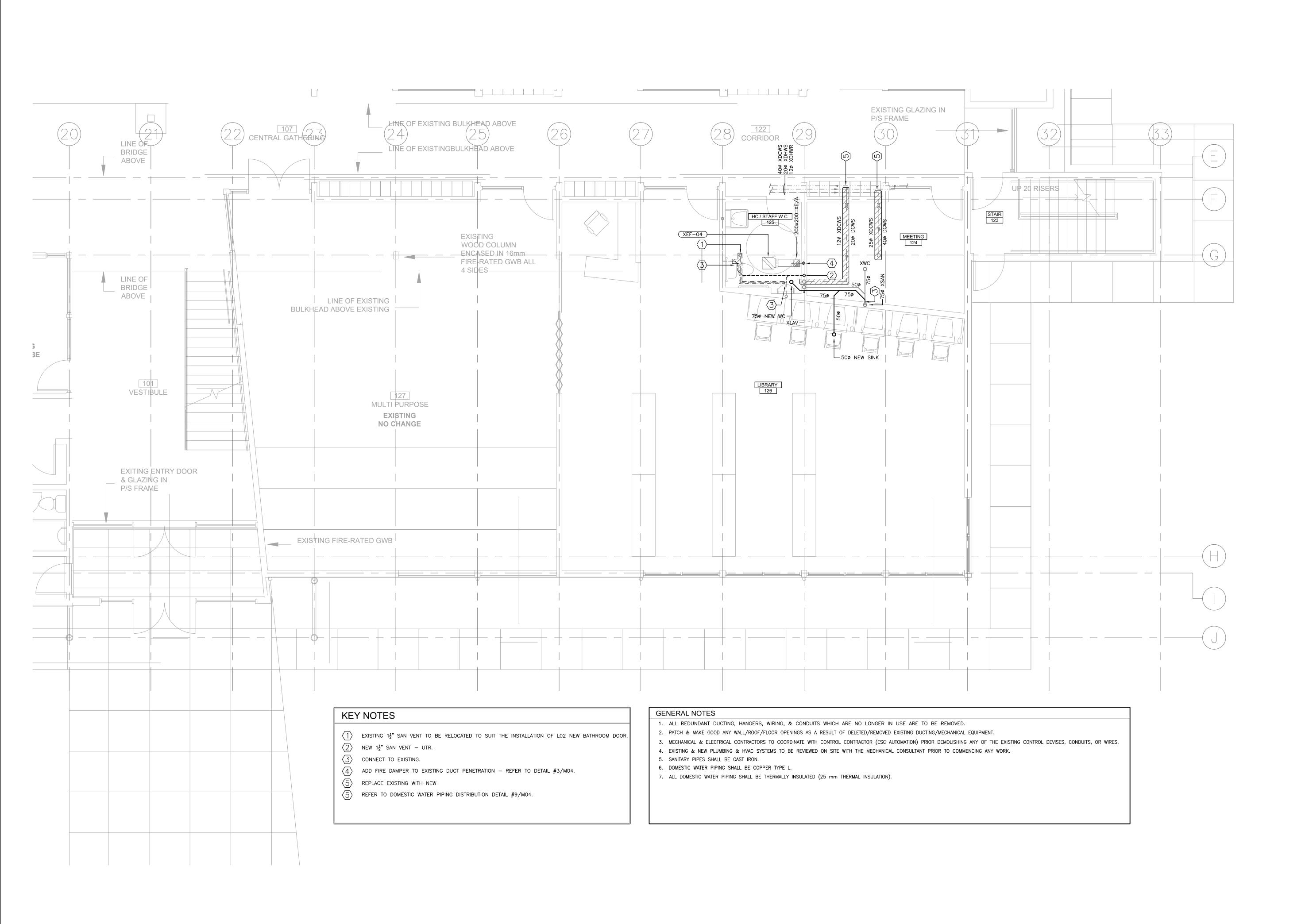
SITE PLAN & TITLE SHEET

SCALE: ---DATE: 2021.05.14
DRAWN BY: DH
DESIGNED BY: DH

CHECKED BY: DH

M0²

DWG #:



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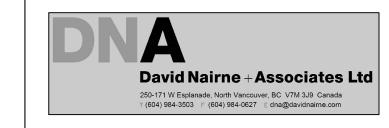
KEYPLAN:



PROJECT NORTH

OWNER:

ARCHITECT:



CONSULTANT:



#8-10082 WILLIAMS RD. CHILLIWACK, BC V2P 5H2

www.innoreflectioneng.ca ph: (604) 845-7750

SEAL:

PROJECT NAME:

SEABIRD ISLAND COMMUNITY SCHOOL CLASSROOM EXPANSION 2821 Chowat Road, Agassiz, BC V0M 1A0

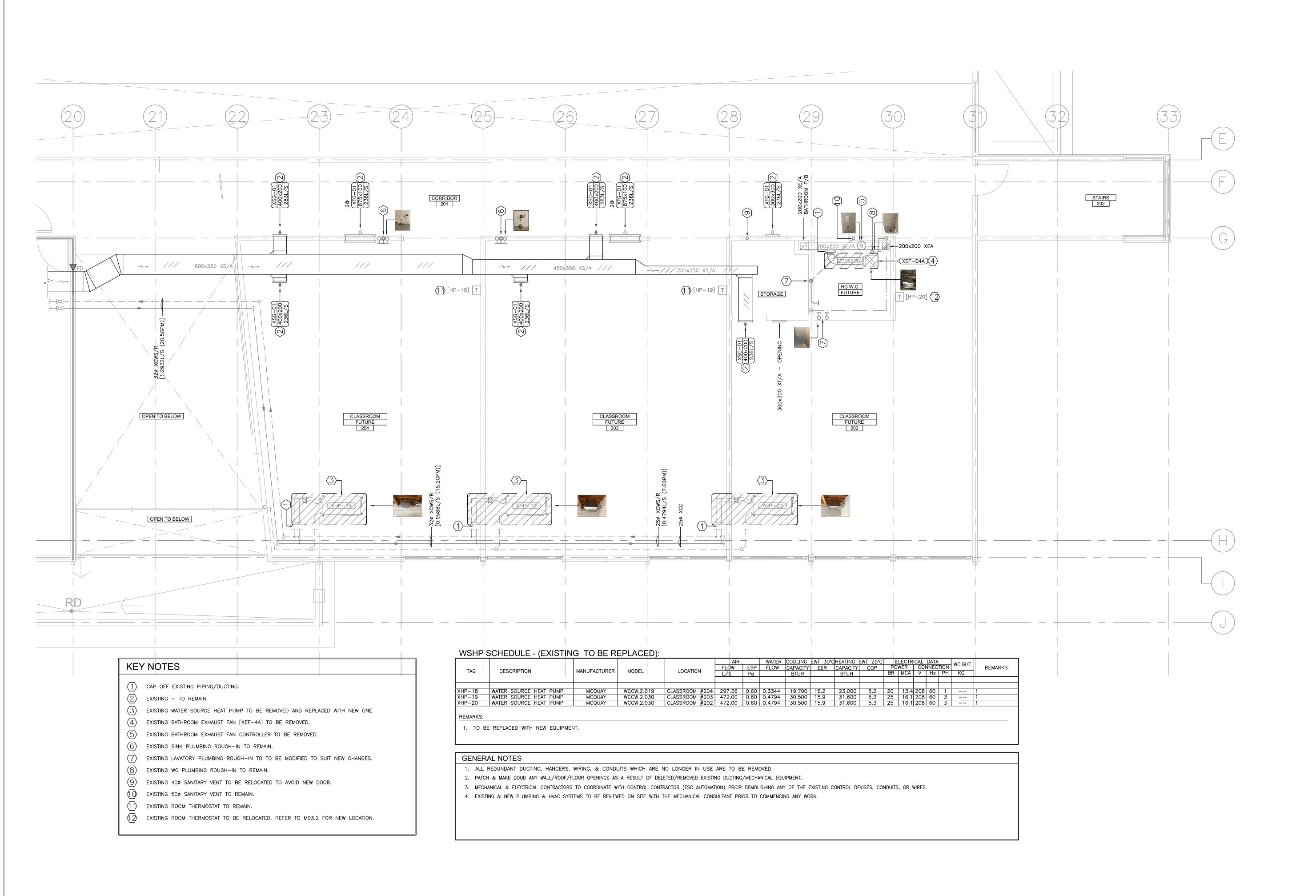
PROJECT #: 2021-M007

L01 / ENLARGE PLAN PLUMB / HVAC EXISTING / DEMO / NEW

SCALE: AS INDICATED DWG #: DATE: 2021.05.14 DRAWN BY: DH

DESIGNED BY: DH

CHECKED BY: DH



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		David Nairne + Asso		d
		250-171 W Esplanade, North Vancouver, BC ∨ ⊤ (604) 984-3503		
	CON	ISULTANT:		
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		InnoReflect Engineering		
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PROJECT NAME:

SEABIRD ISLAND COMMUNITY SCHOOL
CLASSROOM EXPANSION
2821 Chowat Road, Agassiz, BC V0M 1A0

PROJECT #: 2021-M007
TITLE:

DESIGNED BY: DH

CHECKED BY: DH

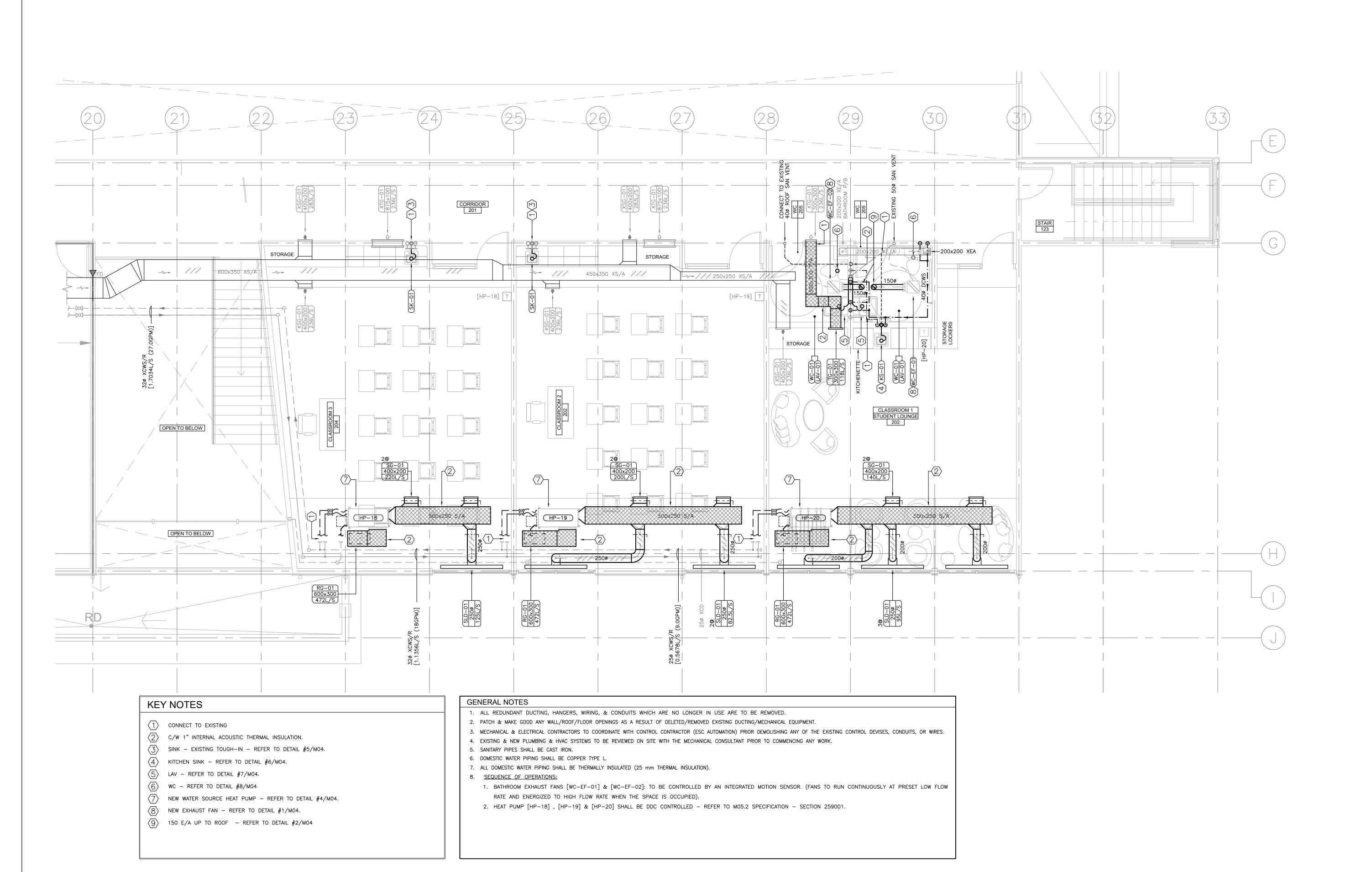
L02 / ENLARGE PLAN EXISTING / DEMO

SCALE: AS INDICATED DWG #:

DATE: 2021.05.14

DRAWN BY: DH

M03.1



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RC	CHITECT: David Nairne + Associated to the second of the s	7M 3J9 Canada	d
RC	David Nairne + Asso 250-171 W Esplanade, North Vancouver, BC V T (604) 984-3503 F (604) 984-0627 E dna@	7M 3J9 Canada	d
RC	David Nairne + Asso 250-171 W Esplanade, North Vancouver, BC V T (604) 984-3503 F (604) 984-0627 E dna@	7M 3J9 Canada davidnairne.com	d
RC	David Nairne + Asso 250-171 W Esplanade, North Vancouver, BC V T (604) 984-3503 F (604) 984-0627 E dna@	7M 3J9 Canada davidnairne.com	d
RC	DAVID NAIRNE + ASSO 250-171 W Esplanade, North Vancouver, BC V T (604) 984-3503 F (604) 984-0627 E dra@ ISULTANT: INDOREFLEC ENGINEERING	77M 3.J9 Canada davidnairne.com	
RC ON	DAVID NAIRNE + ASSO 250-171 W Esplanade, North Vancouver, BC V T (604) 984-3503 F (604) 984-0627 E dra@ ISULTANT: INDOREFLECE ENGINEERING 10082 WILLIAMS RD. WWW.ir	7M 3J9 Canada davidnairne.com	
RC ON	DAVID NAIRNE + ASSO 250-171 W Esplanade, North Vancouver, BC V T (604) 984-3503 F (604) 984-0627 E dna@ ISULTANT: INDOREFLEC ENGINEERING 10082 WILLIAMS RD. WWW.ir	7M 3J9 Canada davidnairne.com	
ON #8-CH	DAVID NAIRNE + ASSO 250-171 W Esplanade, North Vancouver, BC V 1 (604) 984-3503 F (604) 984-0627 E dna@ ISULTANT: INDOREFLEC ENGINEERING 10082 WILLIAMS RD. WWW.ir ph: (60	7M 3J9 Canada davidnairne.com	
ON #8-CH	DAVID NAIRNE + ASSO 250-171 W Esplanade, North Vancouver, BC V 1 (604) 984-3503 F (604) 984-0627 E dna@ ISULTANT: INDOREFLEC ENGINEERING 10082 WILLIAMS RD. WWW.ir ph: (60	7M 3J9 Canada davidnairne.com	
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ON #8-CH	DAVID NAIRNE + ASSO 250-171 W Esplanade, North Vancouver, BC V 1 (604) 984-3503 F (604) 984-0627 E dna@ ISULTANT: INDOREFLEC ENGINEERING 10082 WILLIAMS RD. WWW.ir ph: (60	7M 3J9 Canada davidnairne.com	
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SCALE: AS INDICATED DWG #:

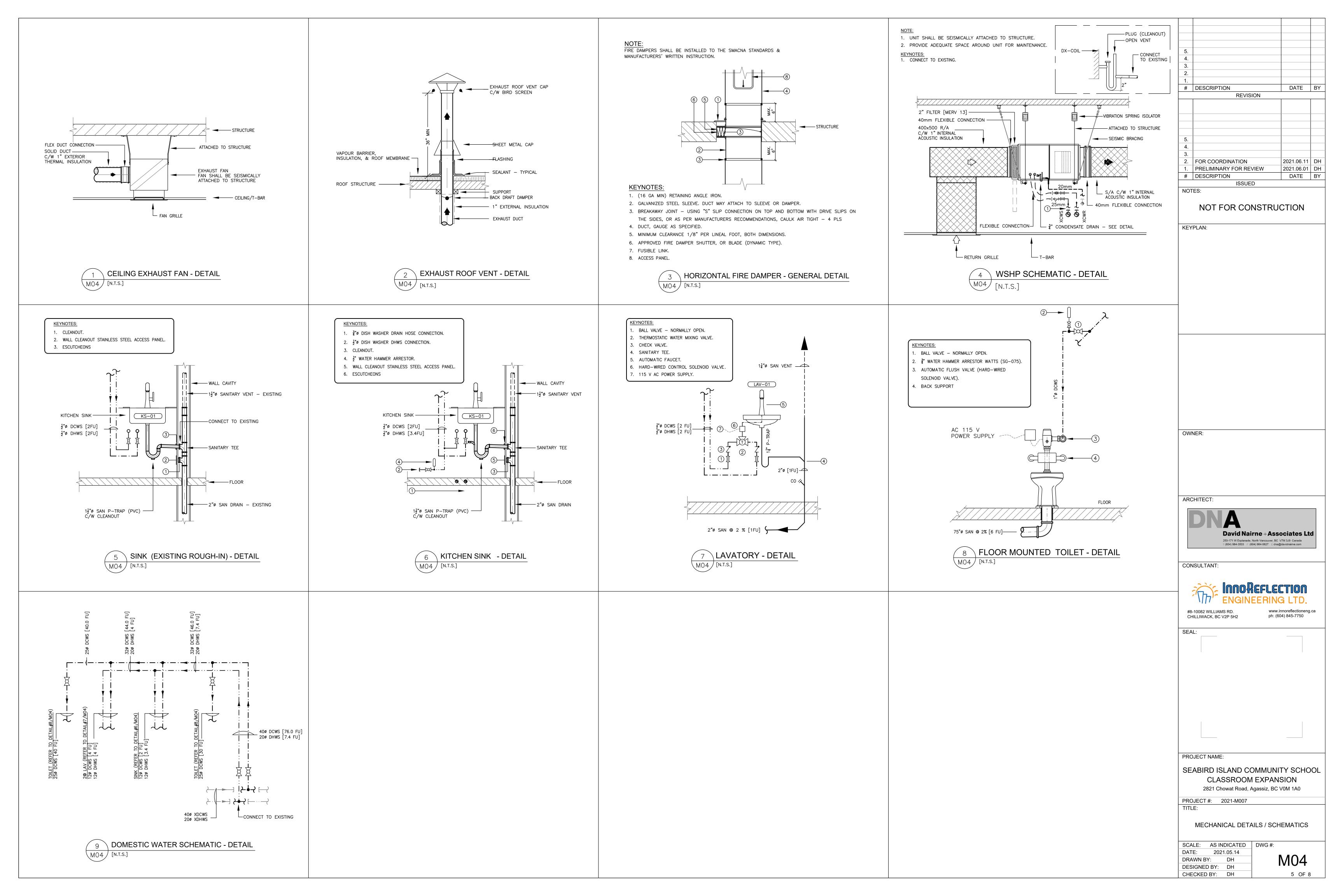
M03.2

4 OF 8

DATE: 2021.05.14

DRAWN BY: DH
DESIGNED BY: DH

CHECKED BY: DH



FANS - SCHEDULE:

TAG	DESCRIPTION	MANUFACTURER	MODEL	DUTY	LOCATION	AIR FLOW RATE	ESP	SONES	FAN SPEED	MOTOR SPEED	PC	ELEC WER	CTRICA		TA NECT	ION	WEIGHT LBS	REMARKS
						CFM	IN W.G.		RPM	RPM	HP	kW	AMPS	S V	Hz	PH	LDS	
WC-EF-01	EXHAUST FAN	PANASONIC	FV-0511VKS2	VENTILATION	HC W/C	90	0.35	0.3					0.2	115	60	1	10.1	1,2,3,4,5,6,7,8,9,10
WC-EF-02	EXHAUST FAN	PANASONIC	FV-0511VKS2	VENTILATION	W/C	90	0.35	0.3					0.2	115	60	1	10.1	1,2,3,4,5,6,7,8,9,10
													1					

REMARKS:

1. INTEGRATED MOTION SENSOR MODEL # FV-MSVK1.

7. 6" DUCT CONNECTION. 2. BUILT IN MULTI SPEED WITH TIME DELAY MODEL # VF-VS15VK1.

3. WALL SWITCH (SUPPLIED BY ELECTRICAL CONTRACTOR).

4. FAN TO RUN CONTINUOUSLY AT A PRESET LOWER LEVEL (0,50,100 CFM)

6. ECM MOTOR ENGINEERED TO RUN CONTINUOUSLY.

8. ENERGY STAR. HVI CERTIFIED.

10. CSA

5. BUILT IN DAMPER.

GRILLES & DIFFUSER SCHEDULE:

	TAG	MANUFACTURER	MODEL	SERVICE	NOMINAL SIZE (mm)	CONNECTION SIZE (mm)	FINISH	MOUNTING	REMARKS
	SG-01	E.H. PRICE	620DAL D / L / A / B12	SUPPLY	SEE DWG	SEE DWG	WHITE	SURFACE	1,2
	SLD-01	E.H. PRICE	JS215/1/B12	SUPPLY	1800	SEE DWG	WHITE	T-BAR	3,4
	RG-01	E.H. PRICE	EGG CRATE 80/F/A	EXHAUST	SEE DWG	SEE DWG	WHITE	T-BAR	
	TG-01	E.H. PRICE	630 L / A / B12	TRANSFER	SEE DWG	SEE DWG	WHITE	SURFACE	
- [

REMARKS:

DOUBLE DEFLECTION.
 ALUMINUM VOLUME DAMPER.
 LINEAR DIFFUSER.

4. C/W ENGINEERED INSULATED PLENUM.

WSHP SCHEDULE - (NEW):

					AIR		WATER	COOLING	EWT 30°C	HEATING E	WT 25°C	Е	LECTR	ICAL	DATA		DIMENSION	WEIGHT	
TAG	DECODIDATION	MANUICACTURER	MODEL	LOCATION	AIR FLOW	ESP	FLOW	CAPACITY	EER	CAPACITY	COP		WER	CO	NNEC	ION	DIVILIAZION	WEIGITI	REMARKS
TAG	DESCRIPTION	MANUFACTURER	MODEL	LOCATION	L/S	Pa	L/S	BTUH		BTUH		BR	MCA	>	Hz	PH	mm	KG	
																	WxLxH		
HP-18	WATER SOURCE HEAT PUMP	DAIKIN	WCCW.2.036	CLASSROOM	566.4	150	0.568	36,000	16.0	42,000	5.2		16.8			3	525x1150x500	165	1 TO 17
	WATER SOURCE HEAT PUMP	DAIKIN	WCCW.2.036	CLASSROOM	566.4	150	0.568	36,000	16.0	42,000	5.2	25	16.8	208	60	3	525x1150x500	165	1 TO 17
HP-20	WATER SOURCE HEAT PUMP	DAIKIN	WCCW.2.036	CLASSROOM	566.4	150	0.568	36,000	16.0	42,000	5.2	25	16.8	208	60	3	525x1150x500	165	1 TO 17

REMARKS:

- 1. R-410A.
- 2. DISCHARGE AIR: END DISCHARGE.
- 3. RETURN AIR: RIGHT HAND.
- 4. EC FAN MOTOR.
- 5. MICRO TECH III CONTROL WITH BACnet.
- 6. DIRECT DIGITAL CONTROL (DDC).
- 8. MERV 13 FILTER.
- 7. LOW LEAK 2" FILTER RACK.

- 9. DISCONNECT FUSE.
- 10. STAINLESS STEEL DRAIN PAN. 11. CLOSED CELL FOAM INSULATION.
- 12. HEAVY GAUGE GALVANIZED STEEL CABINET
- CONSTRUCTION.

 - 14. COMPRESSOR: VIBRATION ISOLATED SCROLL COMPRESSOR
 - C/W COMPRESSOR SOUND BLANKET.
- 15. C/W FLEXIBLE STAINLESS STEEL SUPPLY & RETURN
- HOSES & HOSE KITS: SUPPLY HOSE: C/W UNION ENDED WITH SHUTOFF
- VALVE, ONE PRESSURE/TEMPERATURE PORT AND
- 13. ACCESS PANEL TO COMPRESSOR, BLOWER AND MOTOR
- ASSEMBLY.
- STRAINER. RETURN HOSE: C/W SHUTOFF VALVE WITH AUTOMATIC
- FLOW LIMITING VALVE (CIRCUIT SENTRY)
- 16. C/W CONDENSATE TRAP. 17. 5 YEAR COMPRESSOR AND CIRCUIT WARRANTY.

PLUMBING FIXTURE - SCHEDULE:

TAG	DESCRIPTION	MANUFACTURER	MODEL	COLOR/FINISH	NOTES
SK-01	KITCHEN SINGLE SINK	BLANCO	401125	STAINLESS STEEL	TOPMOUNT SINGLE SINK (20"x20.5"x7")
	TRIM	GROHE	31349	OOE STAR LIGHT CHROME	1.5 GPM DUAL SPRAY PULL-OUT KITCHEN FAUCET
	WASTE			OGE STATE EIGHT STITCHE	STAINLESS STEEL SINK WASTE
	TRAP				KITCHEN SINK TRAP
	SUPPLIES	BRASSCRAFT			FAUCET CONNECTION, 1/4 TURN BALL STOP & ESCUTCHEON
KS-01	KITCHEN SINGLE SINK	BLANCO	401125	STAINLESS STEEL	TOPMOUNT SINGLE SINK (20"x20.5"x7")
	TRIM	GROHE	31349	00E STAR LIGHT CHROME	1.5 GPM DUAL SPRAY PULL-OUT KITCHEN FAUCET
	WASTE				STAINLESS STEEL SINK WASTE
	TRAP				KITCHEN SINK TRAP
	SUPPLIES	BRASSCRAFT			FAUCET CONNECTION, ¼ TURN BALL STOP & ESCUTCHEON
LAV-01	LAVATORY	AMERICAN STANDARD	0954.004EC	WHITE	WALL MOUNTED
LAV-01	SHROUD/KNEE CONTACT GUARD	AMERICAN STANDARD	0059.020EC	WHITE	WALL MOUNTED
	TRIM	AMERICAN STANDARD	702B.105	CHROME	0.5 GPM AUTOMATIC FAUCET
	IRIM		702B.103	CHROME	C/W THERMOSTATIC MIXING VALVE (605XTMV1070) C/W AC POWER SUPPLY KIT FOR MULTI CONNECTIONS (PK00.MAC)
	CARRIER	WATTS	CA-411-D-WC		FLOOR MOUNTED LAVATORY CARRIER -BACK TO BACK
	WASTE	DELTA	33T290	CHROME	
	TRAP	DELTA	33T311	CHROME	1¼" TRAP – C/W CLEANOUT
	SUPPLIES	BRASSCRAFT			FAUCET CONNECTION, 1/4 TURN BALL STOP & ESCUTCHEON
WC-01	WATER CLOSET — FLOOR MOUNTED	AMERICAN STANDARD	3461.001	WHITE	MADERA ELONGATED FLUSHOMETER TOILET - EVERCLEAN (1.28 GPF/ 4.8LPF)
	FLUSH VALVE	AMERICAN STANDARD	606B.121	CHROME	SELECTRONIC SENSOR OPERATED EXPOSED TOILET FLUSH VALVE (100-240VAC/60Hz) HARD-WIRED AC POWER FLUSH VALVE (1.28 gpf / 4.8 Lpf) C/W POWER SUPPLY KIT FOR MULTI CONNECTIONS
	SEAT	BEMIS	1955SSC	WHITE	HEAVY DUTY OPEN FRONT LESS SEAT COVER
	BACK REST- ACCESSIBLE TOILET	FRANKE	CM-16104	STAINLESS STEEL	
OTES:	OLIMA - In -		E CTAINI FCC CT	TEL CEDAINED 7	VACUUM PREAKER
. VITREOUS	0. ₂ 1	RAP PRIMER CONNECTION.	5. STAINLESS ST		VACUUM BREAKER. 9. ADA COMPLIANT
. ELONGAT		IMENT BUCKET.	6. BACKWATER VA	\ I \ / F	OVAL FUNNEL DRAIN. 10. CSA

ELECTRICAL MOTOR LIST:

UNIT #	LINIT DECODIDITION	SERVICE	LOCATION				ELECT	RICAL	DATA			ST.	ARTER	[DIS'CN	NECT	STARTER	REMARKS
ONII #	UNIT DESCRIPTION	SERVICE	LOCATION	HP	KW	AMPS	BR	MCA	VOLT	PH	HZ	S	1 \		S I	W	TYPE	REMARKS
HP-18	WATER SOURCE HEAT PUMP	HVAC	CALSSROOM				25		208	3	60	M	E	E E	: E	E	MAN	DDC
HP-19	WATER SOURCE HEAT PUMP	HVAC	CALSSROOM				25	16.8	208	3	60	M	E I	E E	: E		MAN	DDC
HP-20	WATER SOURCE HEAT PUMP	HVAC	CALSSROOM				25	16.8	208	3	60	М	ΕI	E E	E	E	MAN	DDC
WC-EF-01	EXHAUST FAN	BATHROOM VENTILATION	BATHROOM			0.2			115	1	60	E	E I	E E	EE	E	MAN	SW, 1
WC-EF-02	EXHAUST FAN	BATHROOM VENTILATION	BATHROOM			0.2			115	1	60	E	E I	E E	ΕΕ	E	MAN	SW, 1
POWER SUPPLY-PF	AUTOMATIC FLUSH VALVES	PLUMBING FIXTURES							115	1	60	E	E	E E	E E	E		1
										İ		i i		T			i	

SW | WALL SWITCH
MAN | MANUAL STARTER
HOA | MAGNETIC STARTER C/W HAND/OFF/AUTO SWITCH & AUX STATUS CONTACTS

1. | SUPPLIED & INSTALLED BY ELECTRICAL CONTRACTOR

ARCHITECT:

OWNER:

DESCRIPTION

2. FOR COORDINATION

DESCRIPTION

NOTES:

KEYPLAN:

1. PRELIMINARY FOR REVIEW

REVISION

ISSUED

NOT FOR CONSTRUCTION

DATE BY

2021.06.11 DH

2021.06.01 DH

DATE BY



CONSULTANT:



CHILLIWACK, BC V2P 5H2

SEAL:

PROJECT NAME:

SEABIRD ISLAND COMMUNITY SCHOOL CLASSROOM EXPANSION 2821 Chowat Road, Agassiz, BC V0M 1A0

PROJECT #: 2021-M007 TITLE:

MECHANICAL SCHEDULES

SCALE: AS INDICATED DWG #: DATE: 2021.05.14 DRAWN BY: DH DESIGNED BY: DH

CHECKED BY: DH

DIVISION 00 - CONTRACT REQUIREMENTS 000001 CONTRACTUAL REQUIREMENTS

DIVISION 01 - GENERAL REQUIREMENTS 011100 SUMMARY OF WORK 011500 SCHEDULING & COORDINATION

011600 GENERAL TRADES REQUIREMENTS 013300 SUBMITTAL REQUIREMENTS & PROCEDURES 017400 CLEANING

017700 CLOSEOUT REQUIREMENTS & PROCEDURES 017900 DEMONSTRATION & TRAINING OF MECHANICAL SYSTEMS

DIVISION 23 - HVAC 203100 HVAC DUCTWORK & DUCT ACCESSORIES & INSULATION

DIVISION 25 - DDC CONTROLS 250501 DDC REQUIREMENTS & CONTROLS

DIVISION 00 - CONTRACT REQUIREMENTS 000001 CONTRACTUAL REQUIREMENTS

259001 DDC SEQUENCE OF OPERATIONS

1. <u>DESCRIPTION OF WORK:</u>

- 1. Provide a complete, operational, tested and commissioned plumbing and HVAC systems for new classroom addition to meet the requirements describe herein, indicated on the drawings and in complete with the current applicable Codes, Standards and Ordinances.
- 2. Provide all labor, materials and products as specified herein and shown on the drawings as required to accomplish this work.
- 3. Provide seismic restraints for all mechanical equipment.

2. LIABILITY & RESPONSIBILITIES:

- 6. The Contractor shall assume full responsibility for any damage caused to the Owner or other Contractors by failure to perform the following duties:
- 1. Protect existing and new equipment located in the building from any damages. Contractor shall be responsible for replacing any damaged equipment caused by the sub-trades.
- 2. Examine all existing conditions on which the Work is dependent.
- 3. Examine carefully the mechanical, and electrical drawings and confirm that the work can be satisfactorily carried out as on plans.
- 3. Maintain the site and building in a clean and orderly condition at all times.
- 4. Protect work performed and areas of the existing building from damage caused by carrying out of work.
- 5. Pay particular attention to protection of building vapour barriers, waterproof membranes and existing interior and exterior surfaces. Where necessary to protect building surfaces using tarpaulins, plastic sheet, drop-cloths, etc. 6. Repair any damage caused by the work to the satisfaction of the Owner and
- 7. Be responsible for the condition of all materials and equipment supplied to
- 8. Obtain copies of the following Owner's policies and procedures, and ensure adherence to the requirements of these by all employees of the Contractor and sub-Contractors working on the site.
- 1. Harassment
- 2. Smoking

the site.

- Parking 4. Security
- 5. Safety
- 6. Criminal Record
- 9. Be responsible for security of the property and equipment within the building, where that property or equipment can be impacted by the contractor's negligence or failure to secure the building.

3. CONTRACTUAL RELATIONSHIP:

1. Contractor shall:

- 1. Perform all mechanical & electrical work related to the new ventilation system as per the tender documents, specifications, and drawings.
- 2. Act as the Prime Contractor and responsible for all trades required to carry out the work as described herein.
- 3. Obtain and pay for all necessary permits required for the work to be carried as required by the Authorities Having Jurisdiction.

4. Arrange for inspection of all Work by the authorities having jurisdiction. On

- completion of the Work, furnish final unconditional certificates of approval by the inspecting authorities. 5. Maintain \$5,000,000 insurance that will fully protect the Owner, the Contractor
- and the Contractor's sub-trades, from all claims which may arise from the Contractor's performance of the work.
- 6. Retain the following agencies and sub-Contractors to complete the Work: 1. Electrical Contractor to perform all required electrical work related to the
- installation of the new exhaust fan:
- 1. Electrical work shall meet the requirement of:
- 1. Current Edition of the Canadian Electrical Code
- 2. British Columbia Building Code 2018 3. Local Municipal Codes and By-laws
- 4. ASHRAE 90.1-2016
- 5. Provincial Electrical Inspector.
- 6. Electrical Equipment shall bear CSA and ULC Labels attesting that equipment meets the Testing Standards of these Agencies.
- 2. A Professional Seismic Engineer registered in the Province of British Columbia to ascertain that all equipment installed under this contract are adequately seismically restrained.

END OF SECTION 000001

DIVISION 01 - GENERAL REQUIREMENTS

011100 SUMMARY OF WORK

- 1. In summary, the addition of the new exhaust fan will include the supply, installation, testing and commissioning of the followings:
- 1. Plumbing (bathrooms & sinks).
- 2. Bathroom exhaust fans. (total of 2).
- 3. Replacement of the existing heat pumps (total of 3).
- 4. New HVAC ductwork distribution.
- 5. Air balancing, testing, adjusting, startup and commissioning.
- 6. Verification of systems' operation and controls.
- 7. All required related electrical works.
- 8. Operation & Maintenance Manuals and As-Built Drawings.

END OF SECTION 011100

011500 | SCHEDULING & COORDINATION 1. SCHEDULING OF WORK:

- 1. All work must be performed during regular working hours.
- 2. The Contractor shall provide to the Owner a detailed schedule describing the sequence and timing of the work. The schedule shall be approved by the Owner prior commencing any work.
- 3. All work must be performed to allow the building to function without
- interruption unless coordinated and approved by the Owner. 4. Any areas worked in during a particular shift must be cleaned to the satisfaction of the Owner and made ready for the next day's operation.

2. COORDINATION OF WORK:

- 1. Convene pre installation meeting prior to beginning of the work on site with the Owner and the Mechanical/Electrical Consultant to:
- 1. Verify project requirements.
- 2. Review installation and substrate conditions. 3. Co-ordination with other building construction subtrades.
- 4. Review manufacturer's written installation instructions and warranty
- requirements. 2. Coordinate and review with the Mechanical Consultant the proposed HVAC
- equipment and ductwork layout prior to commence any installations.
- 3. Coordinate all mechanical/electrical work with the work of other sections to
- avoid conflict. 4. Coordinate the work of all sub-trades.
- 5. Coordinate with the Owner any requirement to shutdown mechanical/electrical systems or utility services to accommodate service connections. Do not shut
- down any such services without written consent from the Owner.
- 6. Provide seismic restrains for the new exhaust fan. 7. On completion of the work, all tools and surplus and waste materials shall

be removed and the work left in a clean and perfect condition.

3. <u>SEQUENCE OF WORK:</u>

- 1. The sequence of work will be as follows:
- 1. Demolish existing HVAC system as per the mechanical drawings.
- 2. Installation of the new plumbing and HVAC systems.
- 3. Perform all related electrical works.
- 4. Coordinate with the DDC contractor for the equipment controls. 5. Perform system start—up, and commissioning of the new plumbing and
- HVAC systems. 6. Perform owner demonstration and training.

END OF SECTION 011510

011600 GENERAL TRADE REQUIREMNTS

- 1. CODES AND STANDARDS:
- 1. Install to the requirements of the 2018 British Columbia Building & National Electrical Code, the authorities having jurisdiction and all equipment manufacturers
- 2. Electrical work to the requirements of the Canadian Electrical Code and the Provincial Electrical Inspector. Electrical equipment shall bear CSA and ULC labels attesting that equipment meets the testing standards of these agencies.
- 3. WorkSafe BC Standards. 4. CSA Standards.
- 5. Provincial and Local Environmental Codes and Standards.
- 6. Conform to the requirements of the plans and specifications, authorities having jurisdiction, and all applicable related codes and regulations.

2. QUALITY ASSURANCE:

Installation:

a. All HVAC, and electrical systems must be carried out by skilled tradesman holding a valid TQ licence, or apprentices working under the supervision of a licensed tradesman. When apprentices are working, the licensed tradesman for each discipline must be on the site.

2. Rejected Work: b. Remove defective Work, whether result of poor workmanship, use of defective

- products or damage and whether incorporated in Work or not, which has been rejected by the Consultants as failing to conform to Contract Documents. Replace or re—execute in accordance with Contract Documents.
- c. Make good other Contractor's work damaged by such removals or
- replacements promptly. d. If in opinion of Consultants it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined

GUARANTEE & WARRANTY:

by Consultant.

- 1. At completion of the work the Contractor shall furnish a written warranty stating that the work executed will be free from defects and workmanship (including all parts and labour) for a period of one full year from the date of Substantial Performance.
- 2. The Contractor shall provide a written declaration that all systems are installed and operating and functioning as per the requirements of the contract documents.
- 3. The Contractor shall agree that they will at their own expense, promptly investigate any mechanical or control malfunction, and repair or replace all such defective work, and all other damages thereby which becomes defective during the time of the guarantee period.

FIELD REVIEWS, INSPECTIONS & TESTS OF THE WORK:

- 1. Notify appropriate agency and Consultants in advance of requirement for field reviews, inspections, and tests, in order that attendance can be made.
- 2. Do not conceal any installation prior to review by the consultant or the appropriate inspection authority.
- 3. Ensure 72 hours written notice is provided to each of these parties prior to requirement for an inspection of the work. This includes any pressure tests of
- 4. Provide certificates and inspection certificates received from authorities with iurisdiction, verifying that work installed conforms to necessary codes and standards.

5. INSTALLATION REQUIREMENTS:

piping, safety devices etc.

- 1. The drawings are approximately to scale. They establish a scope of work only and are not intended as detailed installation instructions. Methods of construction required to attain the scope of work indicated on the drawings, confirmation of site measurements and attaining a level of quality as described in the specification are the responsibility of the Contractor.
- 2. Installation of the new ventilation system shall confirm to the requirements of plans and specifications and shall be of institutional quality.

3. Locate distribution systems, equipment and materials to eliminate interference,

- conserve headroom and leave maximum usable space. 4. Install equipment in locations shown on the mechanical with minimum interference
- with other services or space 5. Route ducting and conduit in an orderly manner, as indicated on the drawings.
- Generally follow routes parallel and perpendicular to building structure. 6. Follow all manufacturers' recommended installation details and procedures for the
- installation, testing and commissioning of the new equipment. 7. Locate distribution systems, equipment and materials to eliminate interference,
- conserve headroom and leave maximum usable space. 8. If interference should occur the Consultant will review relocation of equipment and materials regardless of installation order. No installation shall proceed without complete coordination between all trades.
- 9. Make any necessary minor changes or additions to runs of pipes and conduits, etc..., to accommodate structural conditions without additional charge or expense
- 10. Alter location of ductwork at the direction of the Consultant without charge to the Owner, so long as the change is made before installation and does not necessitate additional materials.
- 11. No structural beams or joists shall be altered or cut to accommodate ducting and conduits without written authorization from the Structural Engineer.
- 12. Equipment shall be protected during installation: a. Equipment to be protected from debris, dust, and damages.
- b. Standing on equipment is not permitted. c. No electrical and control conduit including switchers to be attached to

6. TEMPORARY USE OF EQUIPMENT:

equipment.

- 1. Permanent systems and equipment are not to be used during construction period without prior written consent from the Owner.
- 2. Equipment used during the construction period is to be thoroughly cleaned and overhauled. Replace worn or damaged parts so equipment is in perfect condition, to the satisfaction of the Owner and the Consultant.
- 3. Temporary use of systems and equipment shall in no way affect the twelve-month guarantee on all mechanical systems installed, which comes into effect from the date of Substantial Performance.

ELECTRIC WIRING:

- 1. All electrical equipment supplied shall bear CSA label. Obtain special inspection labels required by Provincial Authority having jurisdiction for equipment that does not have a CSA label and/or a ULC label.
- 2. Conform to requirements of Canadian Electrical Code and the Provincial Electrical
- 3. Electrical contractor will provide all power wiring, connections and other electrical items required for installation and operation of the new emergency generator system and ae per the electrical drawings.

8. OPENINGS IN FIRE SEPARATIONS:

- 1. Wherever piping or conduit penetrates fire rated wall assemblies provide an installation of a fire stopping and smoke seal system. Materials used are to be asbestos—free and capable of maintaining an effective barrier against flame, smoke and gases in compliance with the requirements of CAN4-S115-M85.
- Install in accordance with the manufacturer's instructions. 2. Components shall be ULC listed.
- 3. published recommendations.
- 4. Use Sealant around single pipes and/or ducts.
- 5. Use foam for multiple pipe installation. 6. Follow manufacturer's published installation instructions precisely including field quality control after installation.
- 7. Contractor shall submit to Consultants, suitable document signed by the manufacturer or his representative, stating:
- 1. The Contractor has received sufficient installation instruction from the manufacturer or his representative
- 2. Manufacturer or his representative witnessed installation procedures on site. 8. The Contractor shall remove up to four (4) firestopping assemblies for random

inspection if requested by the Consultant, and replace at no extra cost to Owner.

1. Equipment Manufacturer's Nameplates: 1. Provide factory supplied and installed nameplate on each piece of equipment. 2. Provide registration/approval nameplates (ie. CSA, ULC, ASME) in accordance

with the requirements of authorities having jurisdiction.

- 10. BALANCING & STARTUP REPORTS: 1. Provide air balancing system and startup for the following HVAC systems: 1. Water source heat pumps: [HP-18], [HP-19] & [HP-20]
- 2. Bathroom exhaust fans: WC-EF-01 & [WC-EF-02].
- 2. Indicate in the air balance report: 1. Operating performance (Design vs Actual) of the air systems.
- 2. Inlet and outlet pressure of the supply & exhaust fans (Total system pressure drop).

3. Fan and motor RPM. END OF SECTION 011600

013300 SUBMITTAL REQUIREMENTS & PROCEDURES

1. SHOP DRAWINGS:

- 1. Provide shop drawings for the equipment listed on the mechanical schedule drawings. Shop drawings shall indicate all aspects of the construction and
- operating performance of the product proposed for supply. 2. Clear mark submittal materials using arrows, underlining or circling to show ratings, capacities and options being proposed. Cross out non-applicable
- 3. Shop drawings shall be submitted in searchable PDF format.
- and approval prior ordering:

4. All shop drawings shall be submitted to the Mechanical Consultants for review

- a. Do not order equipment or material until the consultants have reviewed,
- approved and returned shop drawings.
- b. Do not use for construction shop drawings which do not bear the Consultant's review stamp.
- 5. Shop drawings submission shall include: a. Date and revision date.
- b. Project title, number and address.
- c. Name of contractor or sub-contractor, supplier, manufacturer.
- d. Installation, operation and commissioning manuals, including wiring, controls, piping, service connection data, and motor size.
- e. Detailed drawings of base, supports, anchor bolts and mounting arrangements.

measurements and compliance with Contractor Documents

- f. Weight of major equipment.
- g. Capacities and performance characteristics.
- 2. <u>RECORD DRAWINGS:</u>

1. Maintain a set of record drawings at the site. Record drawings shall be drawn

neatly on a set of prints provided to the Contractor. Drawings are to be

maintained in an up-to-date condition at all times, recording all changes

h. Contractor's stamp certifying approval of submission, verification of field

- and deviations to the installation from those indicated on the issued for construction drawings.
- 2. Record drawings shall include, but not limited to, the following changes and shall be recorded daily: a. Size, location, arrangement, rout and extent of piping, conduit, terminal
- units, equipment, valves, etc... b. All revision drawings, supplementary drawings, change orders, addenda, site instructions, etc...
- 3. At the completion of the project, Contractor shall accurately transfer each of the changes previously recorded on the site copy to a new set of prints and a copy of the Record Drawings shall be provided to the Consultant's review. (Substantial completion will not be granted without this requirement is being
- met). 4. Contractor shall include a cash allowance [\$1,000] to update all Record
- Drawings into CADD files. 5. Once the electronic drawing files are updated, three hard copies full size with notation "As-Built Drawings" will be provided to the Contractor to date and sign. The signed hard copies will then be turned over to the Owner by the
- Contractor 6. A digital copy in PDF format of the updated record drawings will be provided to the Contractor to include in the Operation and Maintenance Manual.
- 3. OPERATING AND MAINTENANCE MANUALS: 1. Supply two copies of an Operating and Maintenance Manual for the completed installation. The Operating and Maintenance manuals are to be submitted in
- a. Hard copy shall be submitted in hard cover three ring binders. b. Digital copy shall be submitted in USB Flash Drive. 2. Operating and Maintenance Manual shall be labeled as follows:
- CLASSROOM EXPANSION"

both hard and digital copies:

3. Manuals will be indexed as follows:

Contractor and the agency preparing the manuals.

Section 1: Description of Systems: 1. Title page indicating project title and the names, addresses, telephone and fax numbers of the Owner, Mechanical Consultant, Electrical Consultant, General Contractor, Mechanical Contractor, Electrical

"SYSTEM OPERATION & MAINTENANCE MANUAL - SEABIRD COMMUNITY SCHOOL

system operation and components comprising the system. Describe

2. List of the mechanical drawings.

systems operation and sequence of control operation. Section 2: <u>Maintenance and Test Information</u> 1. Maintenance procedures and lubrication requirements, including

3. Description of the mechanical/Electrical system, including description of

preventative maintenance procedures, lubrication schedules and a belt 2. List of equipment manufacturers and suppliers and sub-contractors

used on the project.

- Section 3: TESTS, CERTIFICATIONS & REPORTS
- 1. Copies of: a. Pressure Tests.
- b. Air Balancing Report.
- c. Certificate of Guarantee-Warranty. d. Manufacturers' equipment start up reports. e. Control End to End check verification list.

f. Owner demonstration and training satisfactory report.

Section 5: <u>As-Built Drawings</u>

Section 4: Shop Drawings

- 1. Include a copy of all mechanical and control shop drawings. 2. Version included to be version given "Reviewed" status by Consultant.
- 1. Include a copy of the following As—Built Drawings: a. Mechanical and Electrical As—Built Drawings.

END OF SECTION 013300

017400 CLEANING

rubbish all times.

- 1. Obtain permits and arrange with Authorities Having Jurisdiction for disposal of waste and debris.
- 2. Contractor shall remove at their own expense all unwanted materials, equipment,
- and waste materials, on a weekly basis and dispose of off site.
- 3. Maintain areas under Contractor's control free of waste materials, debris, and
- 4. Maintain site in a clean and orderly condition on a continuous daily basis: a. Separate waste materials for reuse and recycling.
- b. Remove surplus materials, rubbish, tools and equipment.
- c. Leave work area clean at end of each day. 5. Cleaning shall be a continuous on—going duty of picking up, stacking and
- removing trash, debris, and garbage from work areas and site. 6. Maintain existing and new equipment clean and free of dust and debris all times.
- Cover and provide adequate protection for all equipment from dust and debris. 7. Thoroughly clean piping, conduit, wiring, and equipment of dirt, cuttings, and other foreign material.
- 8. Do not accumulate waste products and debris on work space or site. Periodically remove waste from work space and dispose of waste materials and debris off
- 10. Proved adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose

9. Periodically clean interior areas to provide suitable conditions for work.

- 11. Broom clean interior areas on continuous basis and continue cleaning on an as needed basis.
- 12. Control cleaning operations so that dust and other particulates will not transfer to equipment. 13. Contractor shall remove at their own expense all unwanted materials, equipment,
- 14. Maintain areas under Contractor's control free of waste materials, debris, and 15. No burning of waste materials, debris and rubbish on site will be permitted.

and waste materials, on a weekly basis and dispose of off site.

16. Provide containers for collection of waste materials and debris. Use marked separate bins for recycling.

17. Store volatile waste in covered metal containers and remove from premises at

- end of each working day. 18. Use only cleaning materials recommended by manufacturer of surface to be
- cleaned, and as recommended by cleaning material manufacturer. 19. The Owner and/or the Consultant will inspect all areas prior to handover. If the Owner/Consultant is not satisfied that the cleaning is suitable for occupancy, Contractor shall re-clean areas again to satisfy the Owner cleaning requirements.

END OF SECTION 017400 017700 CLOSEOUT REQUIREMENT & PROCEDURES

completion of the work.

- 1. PERPETRATION TO SUBSTANTIAL PERFORMANCE: 1. The Contractor shall request a final inspection to determine the state of
- 2. The request shall be made in writing, addressed to the Consultants, at least Seven (7) days in advance of the requested date of the final inspection.

3. Based on the information gathered form the inspection, a deficiency list will be

- prepared by the Consultant and sent to the Contractor to correct and complete 4. All work on the deficiency list shall be completed by the Contractor prior
- 5. Prior to requesting the inspection for Substantial Performance, the Contractor shall verify in writing that all the following items have been provided and that beneficial use of the building is available to the Owner 1. A complete list of items that are not finished, or are deficient shall be
- provided. If in the opinion of the Consultants, this list indicates the project is excessively incomplete, a substantial completion inspection will not be 2. The Contractor shall be fully responsible to accumulate all necessary data

from this sub-trades and suppliers and present it in the specified format for

the approval by the Consultants. 3. The site has been cleaned in accordance with Section [017400] — Cleanina.

Submittal Requirements:

requesting the for Substantial Performance.

- Consultant for review and approval in accordance with Section [013300] -
- a. Record and As-built Drawings. b. Operation and Maintenance Manuals. c. Guaranties and Warranties.

4. The following documents have been completed and submitted to the

6. Upon Completion of the deficiency list, the Consultant will recommend that the Owner formally accept the Work.

END OF SECTION 017700 017900 DEMONSTRATION & TRAINING OF MECHANICAL SYSTEMS

1. Contractor shall coordinate, demonstrate and run a training and instruction

session of the new emergency electrical generator system to the Owner's facility operating and maintenance personnel. 2. Training time to be a minimum of four (4) hours and include instruction on complete startup sequence of all systems and equipment and review of all

modes of operation, as indicated in the control sequence of operations.

3. The following manufacturers' representative are required to participate and assist with the demonstration and training session: a. Electrical generator. 5. The Contractor shall be responsible for determining that the demonstration and training session was satisfactory completed and provide to the Mechanical Consultant a report signed by the Owner or his representative stating that:

contract."

- 6. <u>DEMONSTRATION:</u> 1. Contractors, sub-Contractors, and manufacturers' representatives shall:
- a. Demonstrate operation for all equipment, including start—up, shut—down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.

b. Perform demonstrations not less than one (1) week prior to Substantial

"The Owner has received satisfactory demonstration and instruction in operation

and maintenance of all mechanical equipment and systems installed under this

Performance. 2. Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.

prepared to answer questions raised by training attendees; if unable to

7. TRAINING: 1. Do not start training until Functional Testing is complete. 2. Contractors, sub-Contractors, and manufacturers' representatives shall be

END OF SECTION 017900

answer during training session.

DESCRIPTION DATE BY REVISION 2021.06.11 DH FOR COORDINATION 2021.06.01 DH PRELIMINARY FOR REVIEW

NOTES:

DESCRIPTION

NOT FOR CONSTRUCTION

ISSUED

DATE BY

KEYPLAN:



PROJECT NORTH

OWNER:



SEAL:

#8-10082 WILLIAMS RD.

CHILLIWACK, BC V2P 5H2



www.innoreflectioneng.ca

ph: (604) 845-7750

PROJECT NAME

SEABIRD ISLAND COMMUNITY SCHOOL CLASSROOM EXPANSION

MECHANICAL SPECIFICATIONS

SCALE: AS INDICATED | DWG #: DATE: 2021.05.14 DH

2821 Chowat Road, Agassiz, BC V0M 1A0 PROJECT #: 2021-M007

DRAWN BY: DESIGNED BY: DH

CHECKED BY: DH

M06.1

7 OF 8

TITLE:

DIVISION 23 - HVAC

233100 HVAC DUCTWORK & DUCT ACCESSORIES

1. <u>DUCTWORK AND DUCT ACCESSORIES:</u>

1. <u>GENERAL:</u>

- 1. All ductwork on this project is classified as low pressure. Sheet metal screws may be used for fastening joints. Wrap all joints with fire and water resistive duct tape and sealant to ensure no discernible air leakage.
- 2. Maintain all ductwork installed on this project clean and free from dust and other workplace debris. If in the Consultant's opinion any ductwork installed has not been maintained in a clean condition the Contractor shall retain the services of a certified duct cleaning company to thoroughly vacuum and clean ALL outdoor, supply and return air ductwork installed.
- 3. Ducts that penetrate exterior walls assemblies must be sealed to the weather barrier using self adhesive bituminous membrane and expanding foam
- 2. <u>DUCTING</u>, <u>FITTINGS</u> & <u>ACCESSORIES</u>:

1. Ductwork:

- 1. Galvanized steel lock forming ductwork, with galvanized coating conforming to ASTM A525 G90, fabricated to the requirements of SMACNA standards for the specified classifications. All ductwork used on this project shall be clean and free of scale.
- 2. Duct Access Doors:
- 1. Access doors shall have ULC listing and shall be 450x450 unless otherwise required by duct size.
- 3. Balancing Dampers:

rod and lock screw.

- 1. Fabricated from minimum 1.6 mm thick galvanized steel, with adjustment
- 4. Backdraft Dampers:
- 1. Fabricated of aluminum with frame minimum of 20 mm thick and blades minimum 2 mm thick. Axles minimum 12 mm diameter ball bearing pressed into the frame. Blade seals to have extruded vinyl seals. Provide adjustable counterbalances. Provide backdraft dampers at inlet to any exhaust fans not provided with automatic control dampers.
- 5. Flexible Connections:
- 1. Install canvas flexible connections on inlet to all exhaust fans, and inlet and outlet of roof mounted air handling units. Ensure that flex does not impede airflow and allows movement of equipment without transmitting vibration into the ductwork.
- 6. Turning Vanes:
- 1. Airfoil type with runner channels. Provide for all square or rectangular
- duct elbows. 7. Fire Dampers:
- 1. Fire dampers shall be ULC listed and constructed to the requirements of ULC Standard S112, blade or curtain type. Fusible links to ULC Standard S505, set for operation at 72°C. Where requested by the Owner or consultant, demonstrate operation of fire dampers and re-set.

2. <u>DUCT INSULATION:</u>

- 1. Install insulation to the requirements of the latest edition of the British Columbia Insulation Contractors Association (BCICA) Standards Manual for Mechanical Insulation.
- 2. Insulation shall be installed by a skilled tradesman, holding a valid Heat and Frost Insulator certificate of Qualification and licensed in the province of British
- 3. FIRE and Smoke Rating Requirements:
- 1. Provide materials conforming to the latest edition of the "British Columbia Building Code and in accordance with CAN/ULC-S102 requirements:
- 1. Maximum flame spread rating 25
- 2. Maximum smoke developed rating 50.

4. <u>DUCT INSULATION:</u>

- 1. Insulation to be type B-2 as defined by BCICA Quality Standards specification 1502, for the following systems.
- 1. Supply Air Ductwork for Air Conditioned Systems:
- 1. Except where ducts have internal acoustic duct lining, where supply air ductwork on air conditioned systems is concealed within ceiling plenums, chases or furrings provide 25-mm (1-inch) thick external, flexible mineral fibre thermal insulation with vapour barrier to ASTM C1290, with minimum thermal R-value of 1.9 hour-deg F-ft2/BTU.

Insulation to be type B-2 as defined by BCICA Quality Standards

- specification 1502, for the following systems. 2. Exhaust Ductwork for Ventilation Systems:
- 1. Provide 25 mm (1 inch) thick external mineral fibre thermal insulation on all exhaust ductwork.
- 3. Acoustic Duct Liner (Supply, Return & Exhaust Ductwork):
- 1. Where indicated on the drawings and where required for acoustic purposes, provide acoustic duct liner with neoprene backing. Install on mechanical fasteners 300 mm centre to centre. Cut off ends of fasteners and cover with neoprene caps and provide metal Z bars to protect all edges of insulation.
- Internal Ductwork: 25 mm (1 inch) thick acoustic insulation. - External Ductwork: 50 mm (2 inch) thick acoustic insulation.
- 5. EXECUTION:
- 1. Ensure all surfaces to be covered are clean and dry.
- 2. Ensure that insulation is clean and dry during installation and application of all finishes.
- 3. Install insulation with smooth and even surfaces.
- 4. Apply insulation materials, accessories and finishes in accordance with manufacturer's recommendations.

DIVISION 25 - DDC CONTROLS

250501 DDC REQUIREMENTS & CONTROLS

- 1. Upgrade the sequence of operation of the existing DDC Controls to suit the new heat pump upgrade.
- 2. The system installed will be manufactured by Delta Controls and installed by ESC
- Automation Ltd. 3. Installation of all controls hardware, wiring and programming of software as
- installation for the mechanical systems described herein. 4. HVAC control system shall be based on Direct Digital Control, hard—wired, with

required for a completely operational, commissioned control and monitoring

- 5. System provided shall comply with the requirements of the latest version of ANSI/ASHRAE Standard 135 "Data Communication Protocol for Building Automation and Control Networks".
- 6. DDC Contractor shall coordinate the requirements of all mechanical equipment to be controlled and be responsible for the coordination and interface requirements between the Controls, and HVAC Systems, as well as existing conditions.
- 7. DDC Contractor shall coordinate with the Commissioning Agency (CA) work and
- cooperate with the Cx processes.
- 8. All new DDC controllers to be BTL listed.
- 9. All new electrical control components shall be CSA and ULC approved. 10. Provide complete dynamic color graphical user interface.
- 11. Wiring:
- 1. Provide all control wiring, whether line or low voltage, all system components, devices, actuators, relays, etc. as necessary for operation of the system.
- 2. Include for all wiring associated with the heating boilers, including low water cut-offs and high temperature limits.
- 3. All wiring shall conform to the requirements the Canadian Electrical Code.
- 4. Control wiring to be a minimum of 18 gauge, run in conduit or as plenum rated cable where described below.
- 12. For existing sites undergoing upgrades, subject to prior approval by the Owner, existing components maybe re-used such as relays, control panel enclosures, valves, damper actuators, temperature sensors, air proving switches, devices, components, wiring, conduit, etc., for line or low voltage interlocking.
- 13. Provide for inclusion of the Operation and Maintenance manual complete As-
- Built control drawings, sequences of operation, product data sheets for all newly installed products and end-to-end verification check sheets. Control drawings are to completely replace all existing control drawings for projects undergoing
- 14. Provide and install point labels / baggage tags for all connected DDC points. The labeling standard Panduit LS9 Labeller or equal.
- 15. DDC Contractor is to coordinate all shutdowns and system switchovers with the Owner prior to the activity taking place. Allow 2 weeks notice to allow adequate time for the Owner to coordinate the activity.
- 16. DDC Contractor is to include supply of any required software licences to allow the Owner to access and operate newly installed equipment.

259001 DDC SEQUENCE OF OPERATIONS

Graphics:

- 1. All DDC system points and global variables for each piece of the new mechanical equipment shall appear on the DDC graphics.
- 2. Additional points on each graphic screen may be requested by Consultant to
- facilitate ease of monitoring of the systems.
- 3. Upgrade existing DDC graphics to suit the new boiler plant upgrades.
- 2. Sequence of operation:
- 1. HEAT PUMPS [HP-18], HP-19], [HP-20]:
- 1. DDC shall interface with the each heat pump controller via BACnet IP communications.
- 2. DDC shall always monitor the status of the heat pump operation. 3. DDC shall monitor and map all BACNet objects for each heat pump
- BACNet interface.
- 4. DDC shall enable the heat pump based on the school operation schedule. 5. DDC shall run the heat pump supply fan continuously during operation
- 6. DDC shall modulate the heat pump operation to maintain the room set-point temperature as follows:
- 1. Occupied Mode: 20°C 22°C (Adjustable)
- 2. Unoccupied mode:
- Outdoor temperature is below 5°C: 14°C (Adjustable)
- 7. Alarm:
- 1. Room temperature out of range:
- Occupied Mode (High:26*, Low:18*) Unoccupied Mode (Low 10°C)
- 2. Compressor Failure.

5.			
4.			
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2.			
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#	DESCRIPTION	DATE	B,
	REVISION		
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2.	FOR COORDINATION	2021.06.11	DI
1.	PRELIMINARY FOR REVIEW	2021.06.01	DI
#	DESCRIPTION	DATE	B,
	ISSUED		
NOT	ES:		

NOT FOR CONSTRUCTION

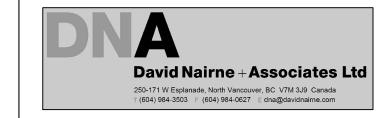
KEYPLAN:



PROJECT NORTH

OWNER:

ARCHITECT:



CONSULTANT:

निर्मित	INNOR	EFLECT ERING	rion LTD.
#8-10082 WILLIAI		www.inno	reflectioneno
CHILLIWACK, BC		ph: (604)	845-7750

PROJECT NAME:

SEABIRD ISLAND COMMUNITY SCHOOL CLASSROOM EXPANSION 2821 Chowat Road, Agassiz, BC V0M 1A0

PROJECT #: 2021-M007 TITLE:

MECHANICAL SPECIFICATIONS

SCALE: ---DATE: 2021.05.14 DRAWN BY: DH DESIGNED BY: DH CHECKED BY: DH

DWG #: M06.2