Q-KIDS DAYCARE CENTRE

420 Webster Avenue Quesnel, BC, V2J 1A5

	LIGHTING LEGEND
	2'x4' RECESSED LED LUMINAIRE
	2'x2' RECESSED LED LUMINAIRE
	2'x4' SURFACE MOUNTED LED LUMINAIRE
	1'x4' LED WRAP LUMINAIRE
	4' LED STRIP LUMINAIRE
XH.	LED WALL MOUNTED LUMINAIRE
¤	LED SURFACE MOUNTED LUMINAIRE
Ø	LED RECESSED LUMINAIRE
DS DS	'RUNNING MAN' EXIT SIGN WALL MOUNTED DS - DOUBLE SIDED
Ø⇒DS	'RUNNING MAN' EXIT SIGN CEILING MOUNTED ◆ ARROW INDICATE DIRECTION, DS - DOUBLE SIDED
EM#	EMERGENCY LIGHT UNIT WITH TWO REMOTE LAMPS, # - EMERGENCY LIGHT UNIT NUMBER
464	TWO REMOTE EMERGENCY LIGHTS CEILING MOUNTED
44	TWO REMOTE EMERGENCY LIGHTS WALL MOUNTED
ZSB	EMERGENCY LIGHT ZONE SENSING BOX
ZSP	EMERGENCY LIGHT ZONE SENSING PANEL BY MANUFACTURER
©	PHOTO CELL
\$	SINGLE POLE SWITCH
\$3	THREE-WAY SWITCH
\$ _a	SWITCH 'a' CONTROLS LUMINAIRE 'a'
\$ _{VS-D}	WALL VACANCY SENSOR SWITCH WITH DIMMER
\$ _D	DIMMER SWITCH
DS	DAYLIGHT HARVESTING SENSOR
\$_M	LOW VOLTAGE MASTER SWITCH
\$ _v	VACANCY SENSOR SWITCH
<u> </u>	TRACK LIGHT WITH LIGHT HEADS
\$ _T	TIMER SWITCH LEVITON LTB12-1L OR EQUAL (8-12 HRS)
\$ _{os}	PIR OCCUPANCY SENSOR CEILING MOUNTED
\$\sqrt{\\$\sqrt{\sq}}\sqrt{\sq}}}}}}}}\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sq}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}	PIR VACANCY SENSOR CEILING MOUNTED
0-	POLE MOUNTED LED LUMINAIRE

POWER LEGEND				
(J)	SINGLE PHASE JUNCTION BOX			
J	SINGLE OR MULTIPLE PHASE JUNCTION BOX			
\ominus	DUPLEX RECEPTACLE			
⊖ _{HK}	HOUSEKEEPING DUPLEX RECEPTACLE NEMA 5-20R			
•	GROUND FAULT DUPLEX RECEPTACLE NEMA 5-20R			
•	DIRECT HARDWIRED CONNECTION TO DEVICE			
	MODULAR PACK POLE C/W POWER/COMMUNICATIONS OUTLETS, BACK BOXES, COVER PLATES, ETC. AS REQUIRED.			
	PANELBOARD			
	MISCELLANEOUS CABINET			
⊘ ∕	MOTOR			
	NON-FUSED DISCONNECT SWITCH			
F	FUSED DISCONNECT SWITCH			
	WIREMOLD RACEWAY			
\Diamond	RANGE RECEPTACLE NEMA 14-50R 50A			
\otimes	DRYER RECEPTACLE NEMA 14-30R 30A			
FF	ELECTRIC FORCE FLOW HEATER			
	DOOR OPERATOR PUSHBUTTON			
	•			
	ABBREVIATION LEGEND			
С	DENOTES DEVICE MOUNTED IN CEILING SPACE			
WP	WEATHER PROOF			

18" ABOVE FINISHED FLOOR

MICROWAVE

HAND DRYER

DISHWASHER

FRIDGE

DW

	FIRE ALARM LEGEND
F	FIRE ALARM MANUAL STATION
F	FIRE ALARM BELL
F⊲	FIRE ALARM HORN / BUZZER
FØ	FIRE ALARM COMBINATION HORN/STROBE
a))	FIRE ALARM STROBE LIGHT WALL MOUNTED
③	SMOKE DETECTOR
	THERMAL DETECTOR - RATE OF RISE
\rightarrow	THERMAL DETECTOR - FIXED TEMPERATURE
FACP	FIRE ALARM CONTROL PANEL
FAAN	FIRE ALARM REMOTE ANNUNCIATOR
EOL	FIRE ALARM END-OF-LINE DEVICE
DDCT	FIRE ALARM DIGITAL DUAL COMMUNICATION TRANSMITTING UNIT
DH	MAGNETIC DOOR HOLDER
(J)	JUNCTION BOX FOR FIRE ALARM SYSTEM
FIM	FIRE ALARM FAULT ISOLATION MODULE
RCM	FIRE ALARM RELAY CONTROL MODULE
IMM	FIRE ALARM INPUT MONITOR MODULE
↔	FIRE ALARM LIGHTNING ARRESTER
0	SMOKE DETECTOR - DUCT TYPE
\$ -	FIRE ALARM BEAM SMOKE DETECTOR
-)	REFLECTOR FOR FIRE ALARM BEAM SMOKE DETECTOR
TS	SPRINKLER TAMPER SWITCH
PS	SPRINKLER PRESSURE SWITCH
FS	SPRINKLER FLOW SWITCH
•	FIRE ALARM REMOTE LED INDICATION POINT
\$ _{co}	COMBINED SMOKE AND CARBON MONOXIDE DETECTOR
© _{CO}	COMBINED SMOKE AND CARBON MONOXIDE DETECTOR WITH SOUNDER BASE

CCTV & SECURITY LEGEND					
KP	KEYPAD				
CC	WINDOW / DOOR CONCEALED CONTACT				
RTE	P.I.R. REQUEST TO EXIT				
RTE	REQUEST TO EXIT PUSHBUTTON				
	PUSHBUTTON				
CR	PROX. CARD READER				
EDS	ELECTRIC DOOR STRIKE				
ML	MAGLOCK				
MS	P.I.R. MOTION SENSOR 360-DEGREE, DS9370 OR EQUAL				
(MS)	P.I.R. MOTION SENSOR 180-DEGREE				
M\$)	P.I.R. MOTION SENSOR 90-DEGREE, ISC-CDL1-WA12G, -WA-15G, -W15G OR EQUAL.				
IACP	INTRUSION ALARM CONTROL PANEL				
IAAS	INTRUSION ALARM ARMING STATION				
IAS	INTRUSION ALARM SIREN				
EM	EMERGENCY MANUAL STATION				
JB	SECURITY AND/OR ACCESS CONTROL JUNCTION BOX				
VINT	VIDEO INTERCOM				
VICS	VIDEO INTERCOM MASTER STATION				
CAM	CCTV CAMERA OUTLET, C/W BACK BOX AND CAT.6 DROP (R/I) - ROUGH-IN ONLY.				
NVR	NETWORK VIDEO RECORDER				
MSW	MANAGED SWITCH				
LSP	CAT6 DATA LINE LIGHTNING SURGE PROTECTOR				
INJ	POE INJECTOR				

	CTV & SECURITY LEGEND		COM	MUNICATIONS LEGEND				
	KEYPAD		4	TELEVISION OUTLET - WALL MOUNTED				
	WINDOW / DOOR CONCEALED CONTACT		# _{WAP}	WIRELESS ACCESS POINT OUTLET - CEILING MOUNTED, # INDICATES CAT.6 DROP QTY				
	P.I.R. REQUEST TO EXIT			COMPUTER OUTLET - WALL MOUNTED, # INDICATES CAT.6 DROP QTY				
	REQUEST TO EXIT PUSHBUTTON		◁	TELEPHONE OUTLET - WALL MOUNTED, C/W CAT.6 DROP				
	PUSHBUTTON		D	DATA CABLING PULL BOX				
	PROX. CARD READER		77777	COMM. TRAY				
	ELECTRIC DOOR STRIKE							
	MAGLOCK	ELECTRICAL DRAWING LIST						
	P.I.R. MOTION SENSOR 360-DEGREE, DS9370 OR EQUAL			E0.0 - SYMBOL LEGENDS AND DRAWING LIST				
P.I.R. MOTION SENSOR 180-DEGREE			E0.1 - PROPO	DSED SITE PLAN				
			E0.2 - SINGL	E LINE DIAGRAM AND SERVICE DETAILS				
P.I.R. MOTION SENSOR 90-DEGREE, ISC-CDL1-WA12G, -WA-15G, -W15G OR EQUAL.		E0.3 - SERVIO	CE PROFILE					
INTRUSION ALARM CONTROL PANEL			E0.4 - SITE PI	LAN EXTERIOR WORK				
			E1.0 - BASEN	MENT POWER AND LIGHTING PLAN				
	INTRUSION ALARM ARMING STATION		E2.0 - POWER PLAN					
	INTRUSION ALARM SIREN		E2.1 - LUMINAIRE SCHEDULE AND DETAILS					
EMERGENCY MANUAL STATION			E2.2 - MECHANICAL AND PANEL SCHEDULES					
EWERGENCY MANUAL STATION			E2.3 - DETAILS					
	SECURITY AND/OR ACCESS CONTROL JUNCTION BOX		E2.4 - FIRE ALARM RISER					
	VIDEO INTERCOM			E3.0 - REFLECTED CEILING PLAN				
	VIDEO INTERCOM MASTER STATION		E4.0 - SECURITY PLAN					
	CCTV CAMERA OUTLET, C/W BACK BOX AND CAT.6 DROP		E5.0 - ELECTRICAL SPECIFICATIONS					
	(R/I) - ROUGH-IN ONLY.							
	NETWORK VIDEO RECORDER							

PROJECT LEGAL DESCRIPTION

PLAN: PGP6719 DL 704 CARIBOO DISTRICT PID: 013-492-900



THE CITY OF QUESNEL 410 Kinchant Street Quesnel B.C. V2J 7J5



PROJECT NO. 00475

9		
8		
7		
6	ISSUED FOR BUILDING PERMIT AND TENDER ONLY	JUN 15/22
5	ISSUED FOR PRE-TENDER REVIEW ONLY	JUN 10/22
4	ISSUED FOR COORDINATION WITH UTILITIES R3	JUN 08/22
3	ISSUED FOR REVIEW	SEP 29/21
2	ISSUED FOR COORDINATION WITH UTILITIES	AUG 26/21
1	ISSUED FOR COORDINATION	JUL 26/21
NO.	REVISIONS	DATE

ELECTRICAL CONSULTANT:



HARBOURFRONT BUSINESS CENTRE SUITE 500 - 224 WEST ESPLANADE NORTH VANCOUVER, BC, V7M 1A4 778.997.5175 https://alegowest.ca

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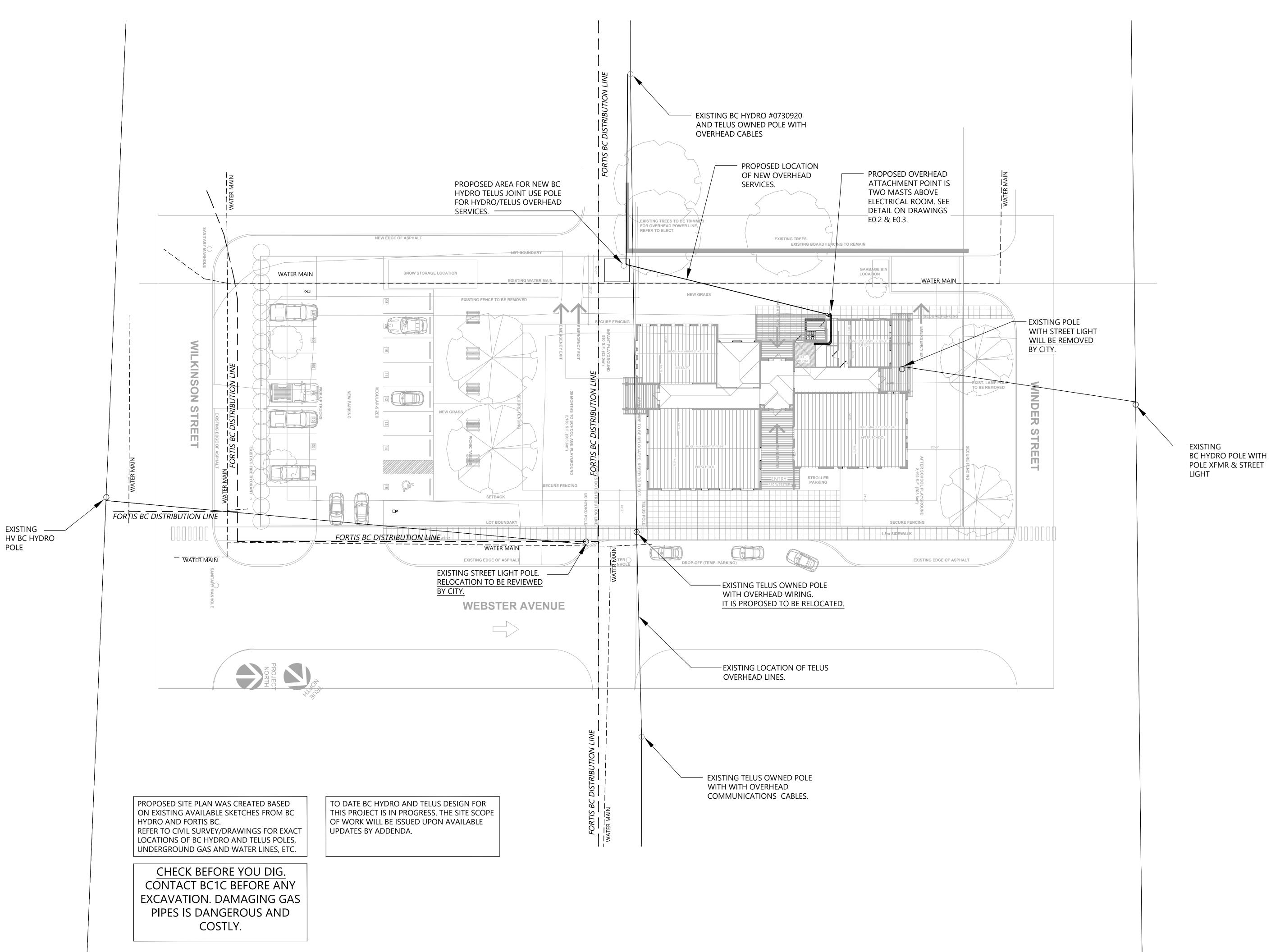
Q-KIDS DAYCARE CENTRE

420 Webster Avenue Quesnel, BC

DRAWING:

SYMBOL LEGENDS **AND DRAWING** LIST

CHECKED BY:
A.G.
SCALE:
N.T.S.







www.eclipseprojects.ca

go.eclipse@live.ca

Box 4451, QUESNEL, BC V2J 3J6

PROJECT NO. 00475

	9		
	8	ISSUED FOR BUILDING PERMIT AND TENDER ONLY	JUN 15/22
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	6	ISSUED FOR COORDINATION WITH UTILITIES R3	JUN 08/22
-	5	ISSUED FOR COORDINATION WITH UTILITIES REV.2	NOV 02/21
	4	ISSUED FOR REVIEW	SEP 29/21
	3	ISSUED FOR COORDINATION WITH UTILITIES REV.1	SEP 28/21
	2	ISSUED FOR COORDINATION WITH UTILITIES	AUG 26/21
	1	ISSUED FOR COORDINATION	JUL 26/21
-	NO.	REVISIONS	DATE

ELECTRICAL CONSULTANT:



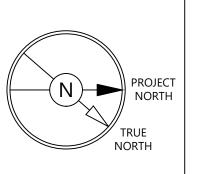
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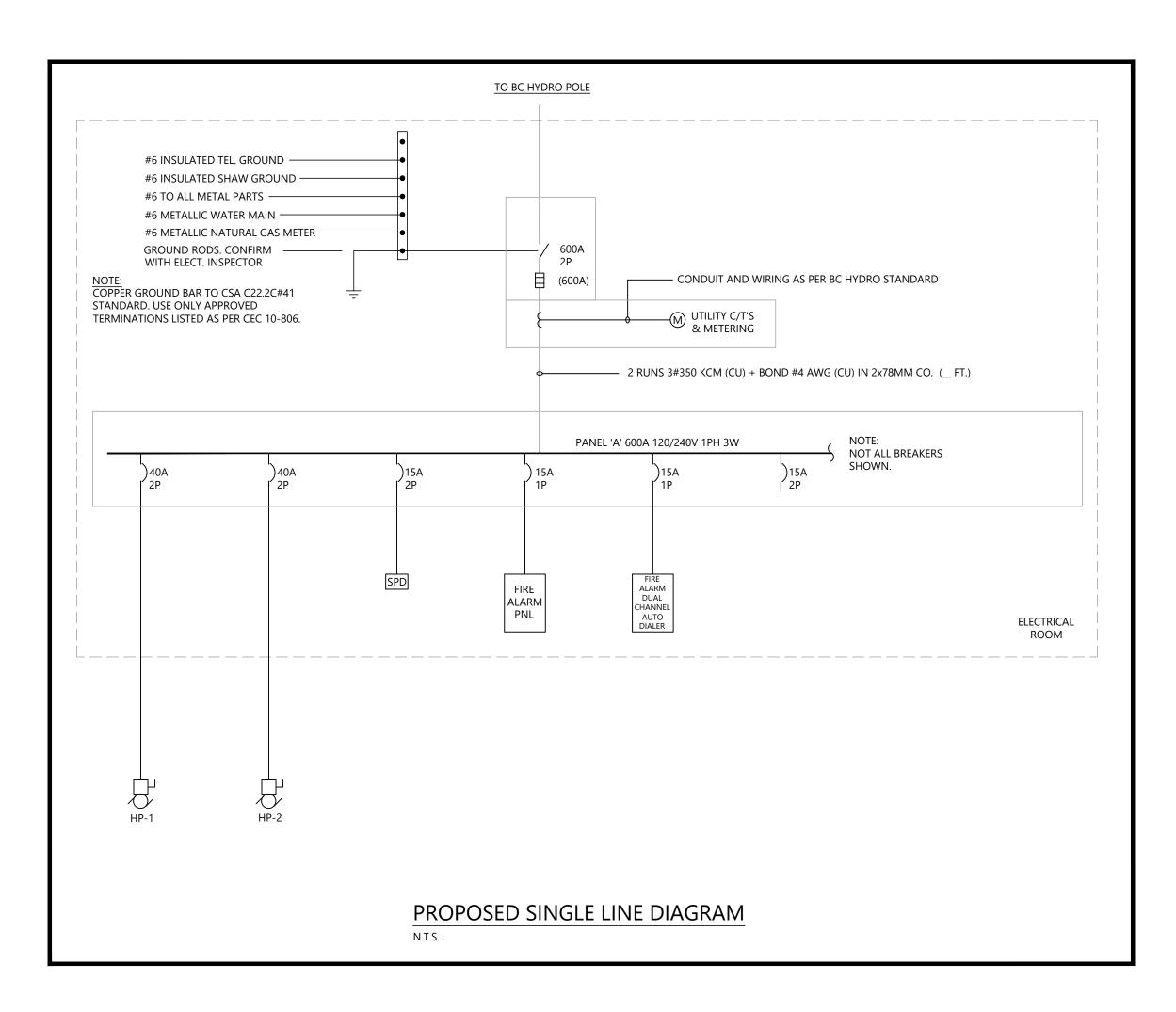
Q-KIDS DAYCARE CENTRE

420 Webster Avenue Quesnel, BC

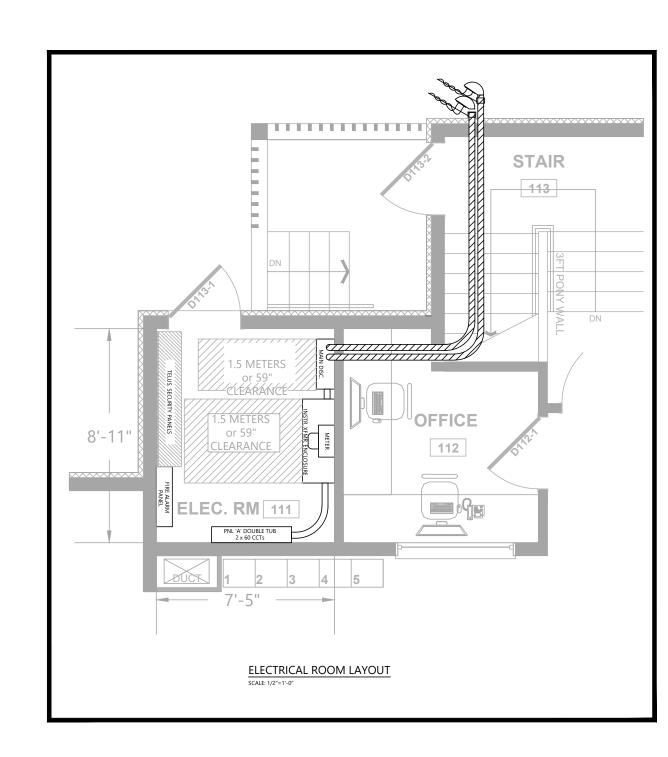
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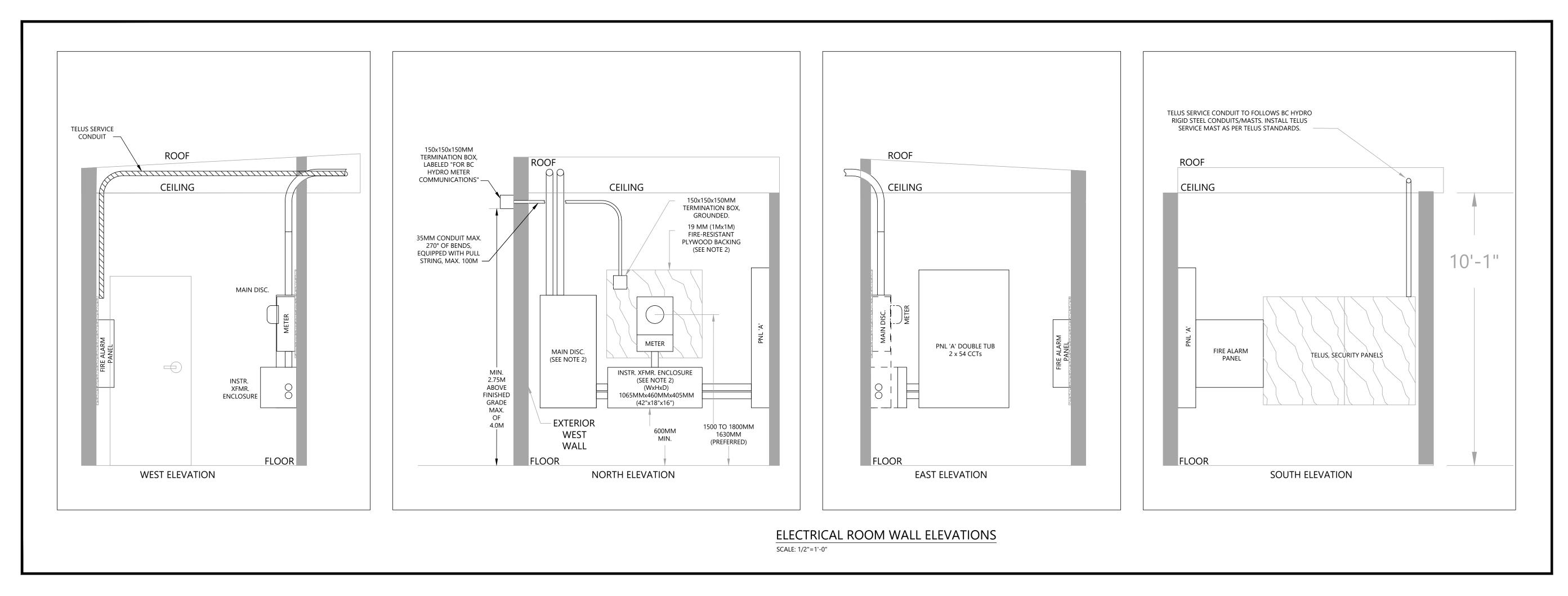
PROPOSED SITE **PLAN**

PROJECT NO.:	CHECKED BY:
2108	A.G.
DATE:	SCALE:
JULY 26, 2021	1/16" = 1' - 0"
DRAWING NO.:	



Total Building Area	=	4,759 sq. ft.	ninary Load Cal or	442.13 sq.m		
Total bulluing Area	=	4,759 Sq. It.	OI .	442.15 Sq.III		
Allowed W/sq.m	=	25 W/sq.m	11053.25 @		100%	11.05 kW
Mechanical Load						
Total Mechanical Load	=					34.42 kW
Laundry Equipment	=	7.20 kW	x	65%		4.68 kW
Kitchen Equipment						
Fridge x 3	=	3.00 kW	x	80%		2.40 kW
Microwaves x 3	=	4.32 kW	x	80%		3.46 kW
Stove x 1	=	7.68 kW	х	80%		6.14 kW
Kitchen Total Load	=					12.00 kW
Owner's Equipment	=	10.00 kW	x	100%		10.00 kW
Future Equipment	=	15.00 kW	x	100%		15.00 kW
Electrical Vehicle Charging Stations						
EVCS 1	=	7.68 kW	x	100%		7.68 kW
EVCS 2	=	7.68 kW	X	100%		7.68 kW
Total EVCSs						15.36 kW
Total Load						102.52 kW
At 120/240V/1Ph	=					427.16 Amps
At 125%	=					533.94 Amps









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PROJECT NO. 00475

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NO.	REVISIONS	DATE

ELECTRICAL CONSULTANT:

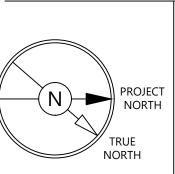


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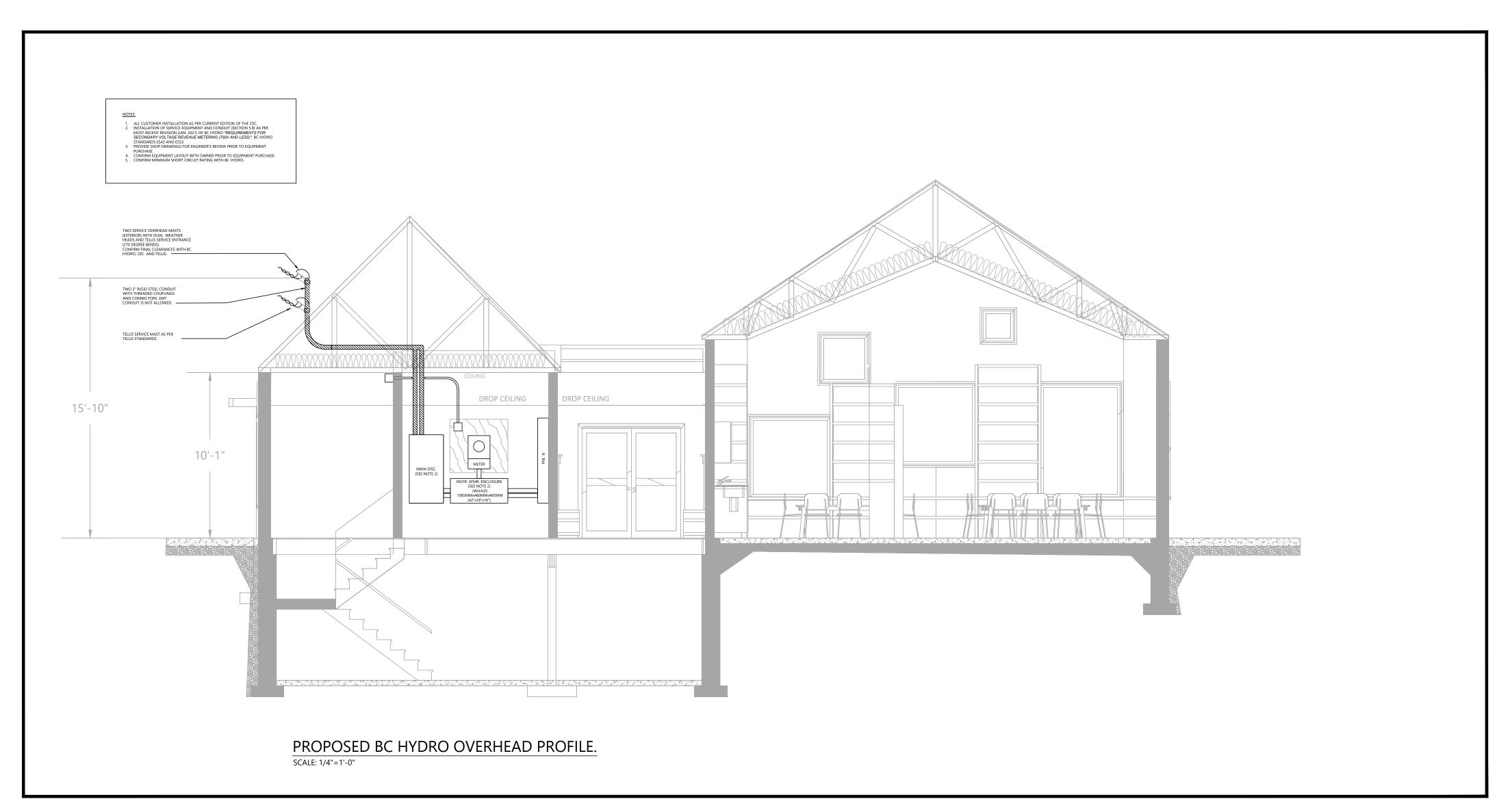
Q-KIDS DAYCARE CENTRE

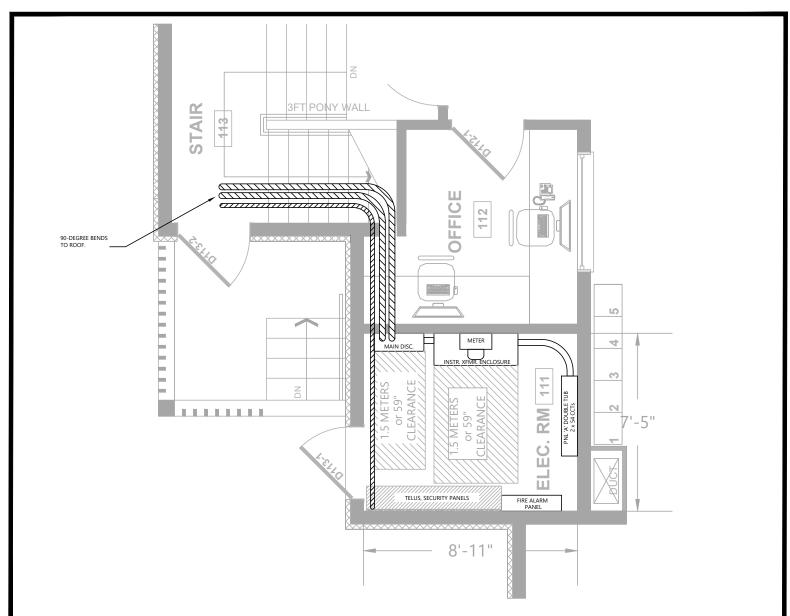
420 Webster Avenue Quesnel, BC

DRAWING:

SINGLE LINE DIAGRAM AND SERVICE DETAILS

PROJECT NO.:	CHECKED BY:
2108	A.G.
DATE: JULY 26, 2021	SCALE: AS SHOWN
DRAWING NO.:	





PROPOSED BC HYDRO OVERHEAD MAST LAYOUT SCALE: 1/4"=1'-0"





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PROJECT NO. 00475

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_	3	ISSUED FOR REVIEW	SEP 29/2
_	2	ISSUED FOR COORDINATION WITH UTILITIES	AUG 26/2
_	1	ISSUED FOR COORDINATION	JUL 26/21
-	NO.	REVISIONS	DATE

ELECTRICAL CONSULTANT:



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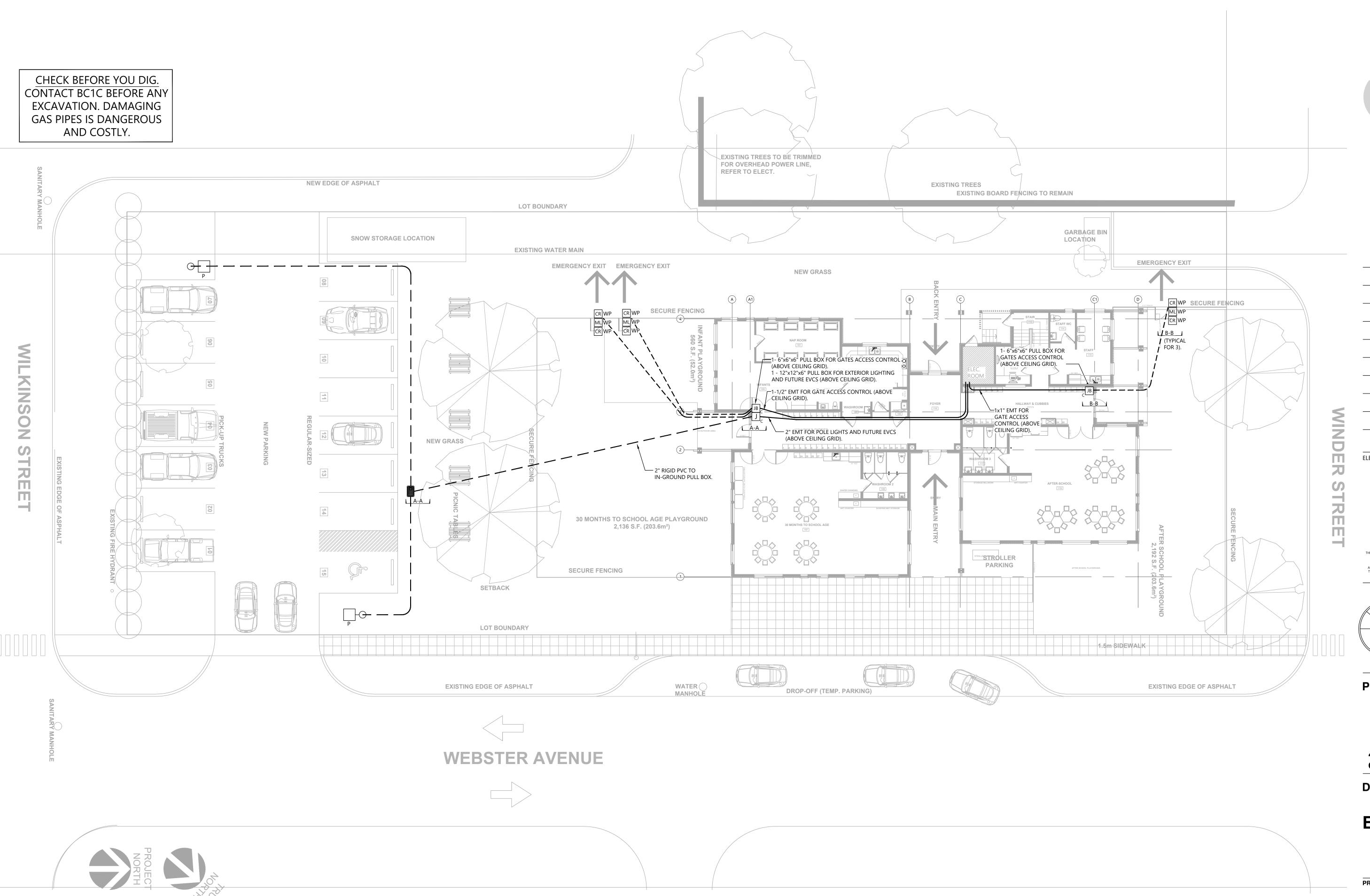
Q-KIDS DAYCARE CENTRE

420 Webster Avenue Quesnel, BC

DRAWING:

SERVICE PROFILE

PROJECT NO.:	CHECKED BY:
2108	A.G.
DATE:	SCALE:
JULY 26, 2021	1/4" = 1' - 0"
DRAWING NO.:	







Box 4451, QUESNEL, BC V2J 3J6

PROJECT NO. 00475

2 ISSUED FOR BUILDING PERMIT AND TENDER ONLY JUN 15/22 ISSUED FOR PRE-TENDER JUN 10/22 REVIEW ONLY DATE NO. REVISIONS

ELECTRICAL CONSULTANT:

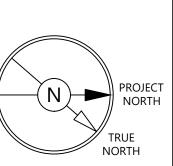


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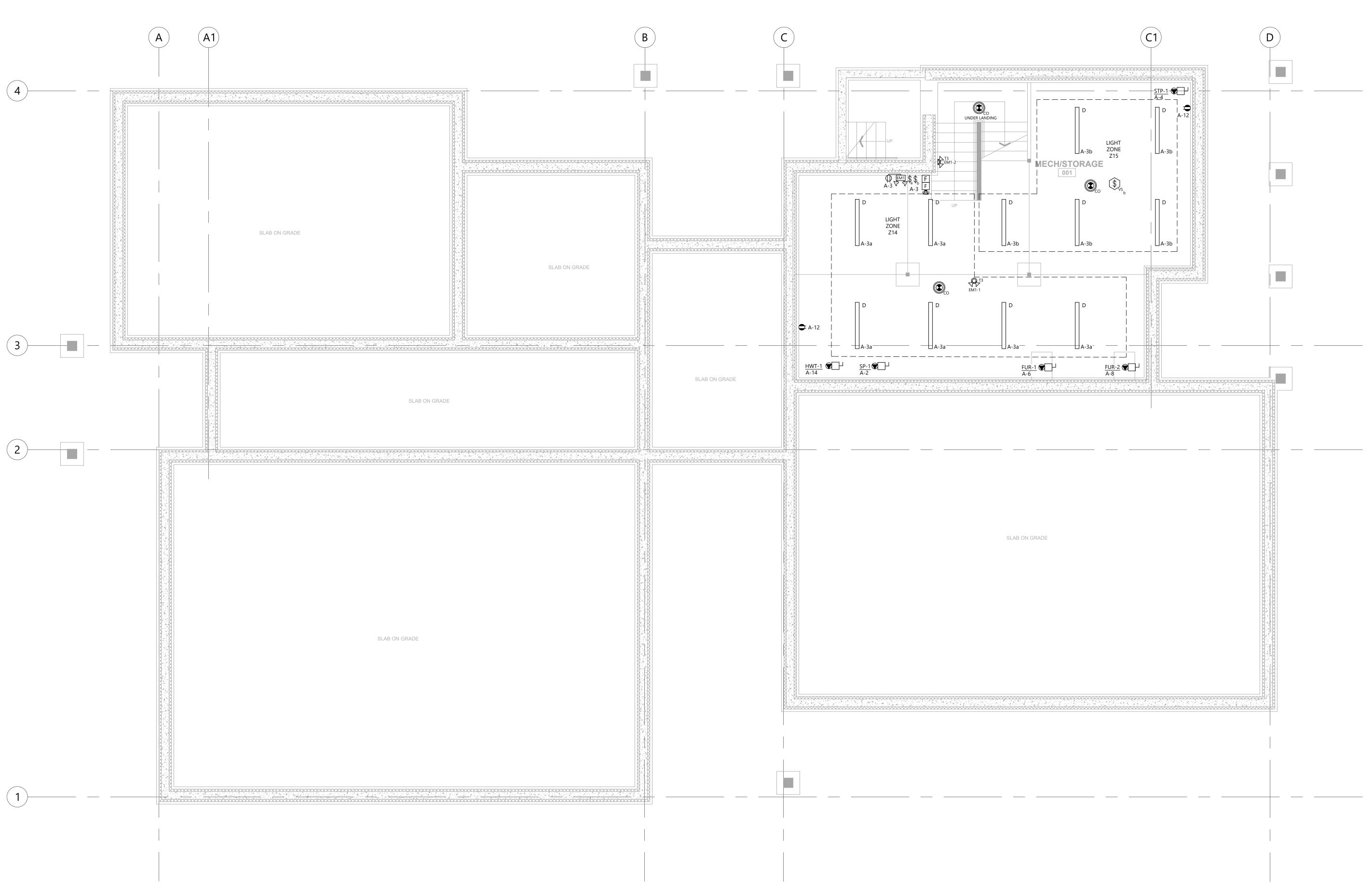
Q-KIDS DAYCARE **CENTRE**

420 Webster Avenue Quesnel, BC

DRAWING:

SITE PLAN **EXTERIOR WORK**

CHECKED BY:
A.G.
SCALE:
3/32" = 1' - 0"







	Box 4451, QUESNEL, BC V2J
1	

PROJECT NO. 00475

_	9		
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	6		
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_	1	ISSUED FOR COORDINATION	JUL 26/21
_	NO.	REVISIONS	DATE

ELECTRICAL CONSULTANT:

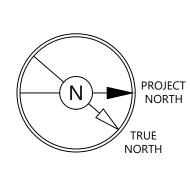


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PROJECT:

Q-KIDS DAYCARE CENTRE

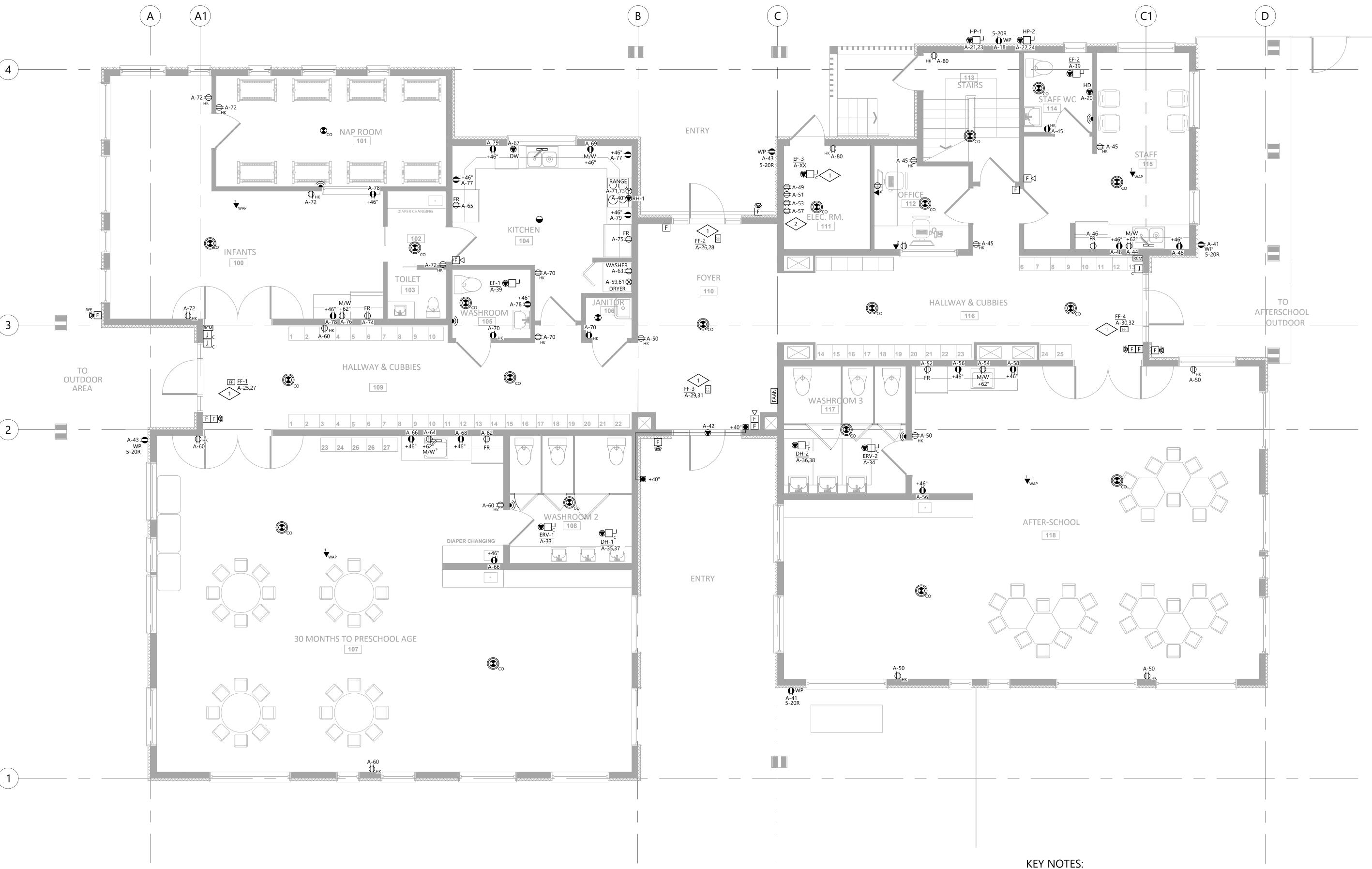
420 Webster Avenue Quesnel, BC

DRAWING:

BASEMENT POWER AND LIGHTING PLAN

CHECKED BY:
A.G.
SCALE:
1/4" = 1' - 0"

E1.0







Box 4451, QUESNEL, BC V2J 3J6

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FCT NO 00475

PROJECT NO. 00475

-	9		
_	8		
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	6		
	5		
	4	ISSUED FOR BUILDING PERMIT AND TENDER ONLY	JUN 15/22
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_	2	ISSUED FOR REVIEW	SEP 29/21
_	1	ISSUED FOR COORDINATION	JUL 26/21
-	NO.	REVISIONS	DATE

ELECTRICAL CONSULTANT:



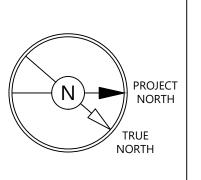
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SUITE 500 - 224 WEST ESPLANADE
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PROJECT:

Q-KIDS DAYCARE CENTRE

420 Webster Avenue Quesnel, BC

DRAWING:

REFER TO MECHANICAL DRAWINGS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT.

CONTRACTORS.

CONFIRM EXACT LOCATION OF EQUIPMENT RECEPTACLES/OUTLETS FOR COMMUNICATIONS, SECURITY AND ACCESS CONTROL WITH DIVISION 27 AND DIVISION 28

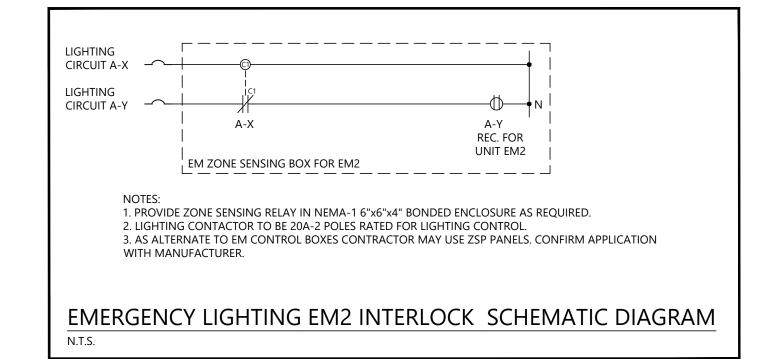
POWER PLAN

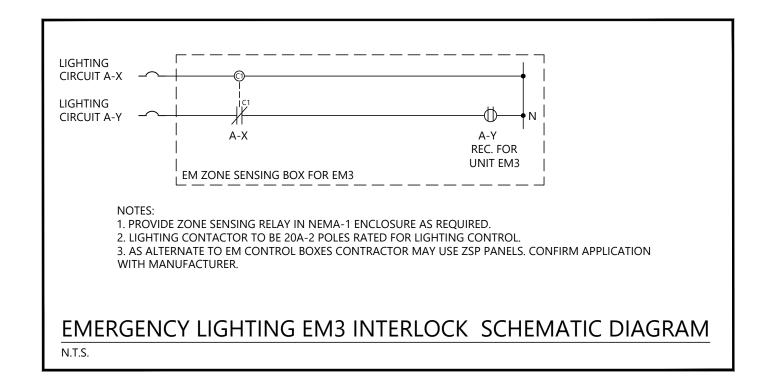
PROJECT NO.:	CHECKED BY:
2108	A.G.
DATE:	SCALE:
JULY 26, 2021	1/4" = 1' - 0"

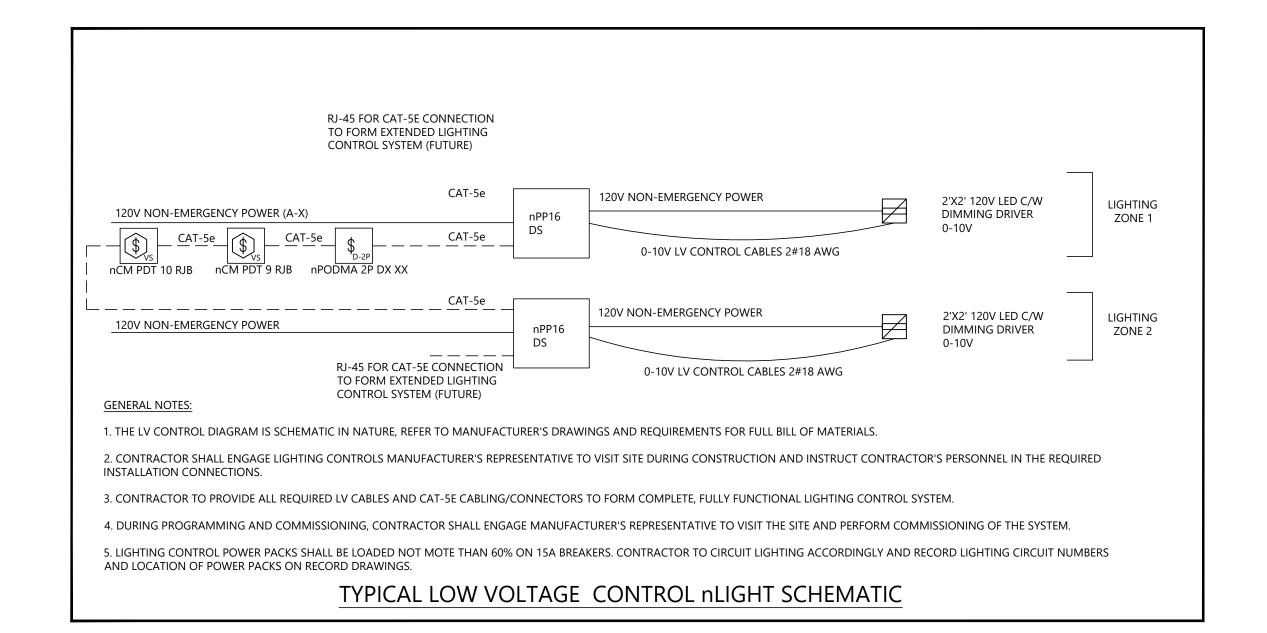
	EMERGENCY BATTERY PACK SUMMARY									
BATTERY PACK ID	LOCATION	BATTERY PACK WATTAGE CAPACITY	CONNECTED LOAD, WATTS							
EM1	MECHANICAL ROOM /STORAGE	36	28							
EM2	ELECTRICAL ROOM	144	120							
EM3	JANITOR	144	102							

	EMERGENCY LUMINAIRE SCHEDULE									
TYPE	DESCRIPTION	WATTS								
T1	READY-LITE EXTERIOR NMMP-LD7-GY-c/w WIRE GUARDS 460.0029-RL 2x5W LED									
T2	READY-LITE RM-2-LD7 2x4W LED									
Т3	READY-LITE RM-2-LD9 2x5W LED	10								
T4	READY-LITE RM-2-LD10 2x6W LED									
EM1	READY-LITE LDX12-36-AD-2-LD7 LED READY-LITE LDX12-144-AD-2-LD7 LED									
EM2										
EM3	READY-LITE LDX12-144-AD-2-LD7 LED	8								

	EXIT SIGN SCHEDULE	
TYPE/DESCRIPTION	READY-LITE CM-SS-SP-RL OR APPROVED EQUAL	







											LUMINAIRE SCHED	DULE	
Туре	Description	Lamp Type	Driver / Ballast Type	Lamps per Luminaire	Watts per Luminaire	CRI	Initial Luments	Colour Temperature (K)	Lamp Life (Hours)	Mounting	Manufacturer	Catalogue Number	Remarks
Α	2'x2' LED RECESSED	LED	120V DIM			80	4000	3500	60,000		LITHONIA	SPX 2x2 4000LM 80CRI 35K MPL MVOLT MW	
A1	2'x2' LED RECESSED	LED	120V DIM	1	35	80	4800	3500	60,000	T-BAR	LITHONIA	SPX 2x2 4800LM 80CRI 35K MPL MVOLT MW	
A2	2'x2' LED RECESSED	LED	120V DIM	1	28	80	4800	3500	60,000	DRYWALL	LITHONIA	SPX 2x2 4000LM 80CRI 35K MPL MVOLT MW C/W DGA 22	
ВА	ARCHITECTURAL PENDANT	LED	120V DIM		17.6	80	2481	3500	-	PENDANT	EUREKA LIGHTING	EXPO 74545-48 LED 35K 80 120V DV AC 60 REG C/W SWIVEL 2820-1 6MM WHITE-WHE-WH	
C	ROUND DOWNLIGHT	LED	120V DIM	1	13.6	90	1070	3500	50,000	RECESSED	JUNO	JPDZ4-DB-ALO10-SWW5WD-3500K-90CRI-JPDZ4RDNCMF-MVOLT-ZT10-WWH	
D	ARCH. STRIPLIGHT		120V DIM					3500			LITHONIA	ZL1F-L48-3000LM-MDD-MVOLT-35K-80CRI-WH	
F	OUTDOOR SCONE		120V DIM		19.5	-		3000		SURFACE		WS-W1414-BZ	
F1	MINI SECURITY LIGHT	LED	120V DIM	1	11	-	663	3500	100,000	SURFACE	ACCULITE	MSL235KUNBZMS (BRONZE WITH MOTION SENSOR)	
U2	UNDERCABINET LIGHT		120V	1		90		3000		SURFACE	LITHONIA	UCEL-24IN-30K-90CRI-WH-UCD JB-UC ERC-UC ERC24	
U3	UNDERCABINET LIGHT		120V	1	14.8					SURFACE	LITHONIA	UCEL-36IN-30K-90CRI-WH-UCD JB-UC ERC-UC ERC24	
U4	UNDERCABINET LIGHT	LED	120V	1	19.5	90	1603	3000	50,000	SURFACE	LITHONIA	UCEL-48IN-30K-90CRI-WH-UCD JB-UC ERC-UC ERC24	
Р	POLE LIGHT	LED	120V	TBD	TBD	-	9000	3000	-	POLE	SOLERA	SCSD-TBD-9000-3000K-UNV-SPD-CPL-TY4-TCO-PC-BK 12-FEET POLE	
												C/W PPB-1.8-1.8M PYRAMID PARKING LOT BASE BY FRASERWAY PREKAST LTD.	
A - Ele B - Cor C - All D - Lor E - Cor	t pricing of luminaires by manu st allowances (if any in this proj uminaire shop drawings shall b	e for fire ra tache factur ect) f	ated enclos d directly t ers, distrib or luminair	sure are o the b utors, es shal	ound all r ouilding st wholesale I include	ecess tructi ers or all ap	sed fixt ure. All suppli	tures w T-bar l ers will	here requ luminaires not be ac	iired by Code s to be suspe cepted.	e. All recessed luminai nded independently (





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+(250) 991-6416	go.eclipse@live.ca

PROJECT NO. 00475

9		
8		
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6		
5		
4		
3	ISSUED FOR BUILDING PERMIT AND TENDER ONLY	JUN 15/22
2	ISSUED FOR PRE-TENDER REVIEW ONLY	JUN 10/22
1	ISSUED FOR REVIEW	SEP 29/21
NO.	REVISIONS	DATE

ELECTRICAL CONSULTANT:



HARBOURFRONT BUSINESS CENTRE
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NORTH VANCOUVER, BC, V7M 1A4
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PROJECT:

Q-KIDS DAYCARE CENTRE

420 Webster Avenue Quesnel, BC

DRAWING:

LUMINAIRE SCHEDULE AND DETAILS

CHECKED BY:
A.G.
SCALE:
N.T.S.

						MEC	CHANIC	AL EQUIP	MENT SC	HED	ULE														
Project #2108																				•		•		•	
WEST QUE	SNEL CHILDCARE																								
LEGEND:			FPC	FACTORY F	DOVIDED	CONTROL			CENEDAL	NOTES.											+				
LEGEND. F	ELECTRICAL CONTRACTOR		CO	CO/VG GAS		CONTROL	-		GENERAL I		ANICAL DRAWII	NGS FOR ADDITION	AL FOLIIPMENT	DETAII	5										
M	MECHANICAL CONTRACTOR		TC	TIMECLOCK							RAWING NOT CO		AL EQUIT WENT	DETAIL	J.										
T-ln	THERMOSTAT - LINE VOLTAGE		PCS	PACKAGED		SYSTEM						DUITS TO BE UPSIZ	PD TO OVERCO	MF VOI	TAGE	DROP	AS RE	QUIRE	:D.		\vdash				
 Т- lv	THERMOSTAT - LOW VOLTAGE, B	Y DIV.15	S-In	SWITCH - L							IRING IS COPPE														
T-rv	THERMOSTAT - REVERSE ACTING		S-vs	SWITCH - V					EQUIPMENT												-				
T-D	THERMOSTAT - DUCT, SCR CONTR	ROLLER	S-p	SWITCH - P	RESSURE				1 UNIT SE		R-1														
VFD	VARIABLE FREQUENCY DRIVE		S-h	SWITCH - H	AND/OFF	/AUTO			2 UNIT SE																
Mag	MAGNETIC STARTER (HOA)		S-f	SWITCH - F	LOAT							6. FACTORY PROV	IDED THERMOS	TAT IS C	N UNIT										
Man	MANUAL STARTER		ОС	OCCUPANO	Y SENSOF	R (LIGHTIN	G CONTROLS :	SYSTEM)	4																
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TAG	DESCRIPTION	LOCATION	HP	WATTS	FLA	MCA	VOLTAGE	IAS	BREAKER	POL	URG	# #	# OF DUCT	E SI	ارا	E		기 5	,		_	E		1 ()	9
								РНА	3RE	l R	SOI	Ŭ	Z	WIRE		빌유		N P	! I ш	SUPPLY		JE L		STAL! ONNE	
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	+														S ≧		S		+	+ 8	1=	\mathcal{A}	- S		╁
ERV-1	HEAT RECOVERY UNIT	PRESCHOOL WASHROOM	1			9.0	120	1	15	1	PNL 'A'	A-33	2	#12	мм	E -	E	EEE	Mag	a M	+=	ETC	- M	EE	+
ERV-2	HEAT RECOVERY UNIT	AFTERSCHOOL WASHROOM	1			9.0	120	1	15	1	PNL 'A'	A-34	2		мм		E	E E	Mag	ı M	M	ETC	: М	EE	1
DH-1	DUCT HEATER	PRESCHOOL WASHROOM		3500			240	2	20	2	PNL 'A'	A-35,37	2	#12	м м	E -	М	E E		-	1-1	_ T-	D M	M E	
DH-2	DUCT HEATER	AFTERSCHOOL WASHROOM		3500			240	2	20	2	PNL 'A'	A-36,38	2	#12	м м	E -	М	E E	. -	-	1-1	_ T-	D M	ME	
HWT-1	DOMESTIC HOT WATER TANK	MECHANICAL BASEMENT				5.0	120	1	15	1	PNL 'A'	A-14	2	#12	ММ	Е -	E	E E	_	_	-	_ T-	·In M	EE	
EF-1	EXHAUST FAN	INFANT WASHROOM		80			120	1	15	1	PNL 'A'	A-39	2	#12					Man	<u> </u>			ln M		
EF-2	EXHAUST FAN	STAFF WASHROOM		80			120	1	15	1	PNL 'A'	A-39	2		ММ				Man	ı E			In M	<u>М</u> М	
RH-1	RANGE HOOD	KITCHEN				1.9	120	1	15	1	PNL 'A'	A-40	2	#12	ММ	E -	E	E E		 -		Е	\perp		_
			<u> </u>							ļ.,						_			_	4	44		\perp	/	
FUR-1	FURNACE	MECHANICAL BASEMENT			10.9		120	1	15	1 1	PNL 'A'	A-6	2		ММ					, <u> </u>			In M		
FUR-2	FURNACE	MECHANICAL BASEMENT	<u> </u>		10.9	05.0	120	1	15	1	PNL 'A'	A-8	2	#12					Mag	·		-	In M		+
HP-1	HEAT PUMP	OUTSIDE OF STAIRS	1		21.1	25.8	240	1 1	40	2	PNL 'A'	A-21,23	2		M M		E			, ⊢			In M		
HP-2	HEAT PUMP	OUTSIDE OF STAIRS	-		21.1	25.8	240	l .	40	2	PNL 'A'	A-22,24	2	#8	ММ		=	E E	Mag	M	IVI		In M		
 SP-1	SUMP PUMP	MECHANICAL BASEMENT	1/2				120	1	15	1	PNL 'A'	A-2	2	#12	мм	E -	$\frac{1}{F}$	E E	Mag	a M	+	E S-	f M	EF	+
STP-1	STORM SUMP PUMP	MECHANICAL BASEMENT	1/2				120	<u>·</u> 1	15	1 1	PNL 'A'	A-4	2	#12					—	´	-		f M		
• • •			 					•		<u> </u>	1 /,		†			_	\vdash	+	1	+	+	_ _	+		t
FF-1	FORCE FLOW HEATER	SE ENTRANCE	<u> </u>	4000			240	1	20	2	PNL 'A'	A-25,27	2	#10	E E	E -	E	E E		† E	+	EFF	C E	EE	
FF-2	FORCE FLOW HEATER	SW ENTRANCE	†	4000			240	1	20	2	PNL 'A'	A-26,28	2	#10						E		oxdot	C E		
FF-3	FORCE FLOW HEATER	NE ENTRANCE	1	4000			240	1	20	2	PNL 'A'	A-29,31	2	#10			E		_	E		E FP		E E	\Box
FF-4	FORCE FLOW HEATER	NW ENTRANCE	1	4000			240	1	20	2	PNL 'A'	A-30,32	2	#10	E E	E -	E	E E	. 🕇 -	E	TE!	EFF	C E	E E	

	PANEL A (2 TUBSx54CCTs)						LOCATION: ELECTRICAL ROOM	
OTE	DESCRIPTION	BKR	ССТ	PHASE	CCT	BKR	DESCRIPTION	NOTE
	EXIT SIGNS	15 A	1	Α	2	15 A	SP-1	
	LTG BASEMENT	15 A	3	В	4	15A	STP-1	
	LTG OFFICE AREA	15 A	5	Α	6	15A	FUR-1	
	LTG AFTERSCHOOL AREA	15 A	7	В	8	15 A	FUR-2	
	LTG INFANT AREA	15 A	9	Α	10	15A	SPARE	
	LTG PRESCHOOL AREA	15 A	11	В	12	15A	BASEMENT GFCI REC.	
	LTG EXTERIOR	15 A	13	Α	14	15 A	HWT-1	
	LTG EXTERIOR	15 A	15	В	16	15A	SPARE	
	LTG SPARE	15 A	17	A	18	20A	GFCI REC. EXTERIOR	
	LTG SPARE	15 A	19	В	20	15A	STAFF WC HAND DRYER	
		40A	21	A	22	40A		
	HP-1	2P	23	В	24	2P	HP-2	
		20A	25	A	26	20A		
	FF-1	2P	27	B	28	2P	FF-2	
		20A	29	A	30	20A		
	FF-3	2P	31	B	32	2P	FF-4	
	EVR-1	15A	33	A	34	15A	EVR-2	
	EVR-I		35		36		EVR-Z	
	DH-1	20A		В		20A	DH-2	
	FF 1 FF 2	2P	37	A	38	2P	EE 2 DIL 1	-
	EF-1, EF-2	15 A	39	В	40	15A	EF-3, RH-1	
	GFCI REC. EXTERIOR	20A	41	A	42	15A	MAIN ENTRANCE DOOR OPERATOR	
	GFCI REC. EXTERIOR	20A	43	В	44	15A	STAFF MICROWAVE REC.	
	HOUSEKEEPING REC.	15 A	45	A	46	15 A	STAFF FRIDGE REC.	
	OFFICE REC.	15 A	47	В	48	20A	STAFF COUNTERTOP GFCI REC.	
	TELUS REC.	15 A	49	Α	50	15 A	AFTERSCHOOL HOUSEKEEPING REC.	
	TRANSMITTER REC.	15 A	51	В	52	15 A	AFTERSCHOOL FRIDGE REC.	
	SECURITY REC.	15 A	53	Α	54	15 A	AFTERSCHOOL MICROWAVE REC.	
	FIRE ALARM CONTROL PANEL	15 A	55	В	56	20A	AFTERSCHOOL COUNTERTOP REC.	
	FIRE ALARM TRANSMITTER	15 A	57	Α	58	20A	AFTERSCHOOL COUNTERTOP REC.	
	KITCHEN WASHED (DDVCD	30A	59	В	60	15 A	PRE-SCHOOL HOUSEKEEPING REC.	
	KITCHEN WASHER/DRYER	2P	61	Α	62	15 A	PRE-SCHOOL FRIDGE REC.	
	KITCHEN WASHER	15 A	63	В	64	15A	PRE-SCHOOL MICROWAVE REC.	
	KITCHEN FRIDGE REC.	15 A	65	Α	66	20A	PRE-SCHOOL COUNTERTOP GFCI REC.	
	KITCHEN DISHWASHER	20A	67	В	68	15 A	PRE-SCHOOL COUNTERTOP GFCI REC.	
	KITCHEN MICROWAVE	15 A	69	Α	70	15A	HOUSEKEEPING REC.	
		40A	71	В	72	15A	HOUSEKEEPING REC.	
	KITCHEN RANGE	2P	73	A	74	15A	INFANTS FRIDGE REC.	
	KITCHEN FRIDGE REC.	15 A	75	В	76	15A	INFANTS MICROWAVE REC.	
	KITCHEN COUNTERTOP REC.	20A	77	A	78	15A	INFANTS COUNTERTOP REC.	
	KITCHEN COUNTERTOP REC.	20A	79	В	80	15A	HOUSEKEEPING REC.	
	KITCHEN COONTENTOL NEC.	40A	81	A	82	40A	11003EREEL ING REC.	
	EV-1 (FUTURE)	2P	83	В	84	2P	EV-3 (FUTURE)	
		40A	85	A	86	40A		-
	EV-2 (FUTURE)	2P				2P	EV-4 (FUTURE)	
	CDADE		87	В	88		CDADE	
	SPARE	15A	89	A	90	15A	SPARE	-
	SPARE	15A	91	В	92	15A	SPARE	
	SPARE	15A	93	A	94	15A	SPARE	-
	SPARE	15A	95	В	96	15A	SPARE	
	SPARE	15A	97	A	98	15A	SPARE	
	SPARE	15A	99	В	100	15A	SPARE	
	SPARE	15A	101	Α	102	15 A	SPARE	
	SPARE	15A	103	В	104	15 A	SPARE	
	SPARE	15A	105	Α	106	15 A	SPARE	
	SPARE	15A	107	В	108	15A	SPARE	
FRC	OM MAIN FUSED DISCONNECT SWITCH	. PROTE	CTED B	Y 600A	FUSES.			
TES:								
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PROJECT NO. 00475	

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	3	ISSUED FOR BUILDING PERMIT AND TENDER ONLY	JUN 15/2
_	2	ISSUED FOR PRE-TENDER REVIEW ONLY	JUN 10/2
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ELECTRICAL CONSULTANT:



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PROJECT:

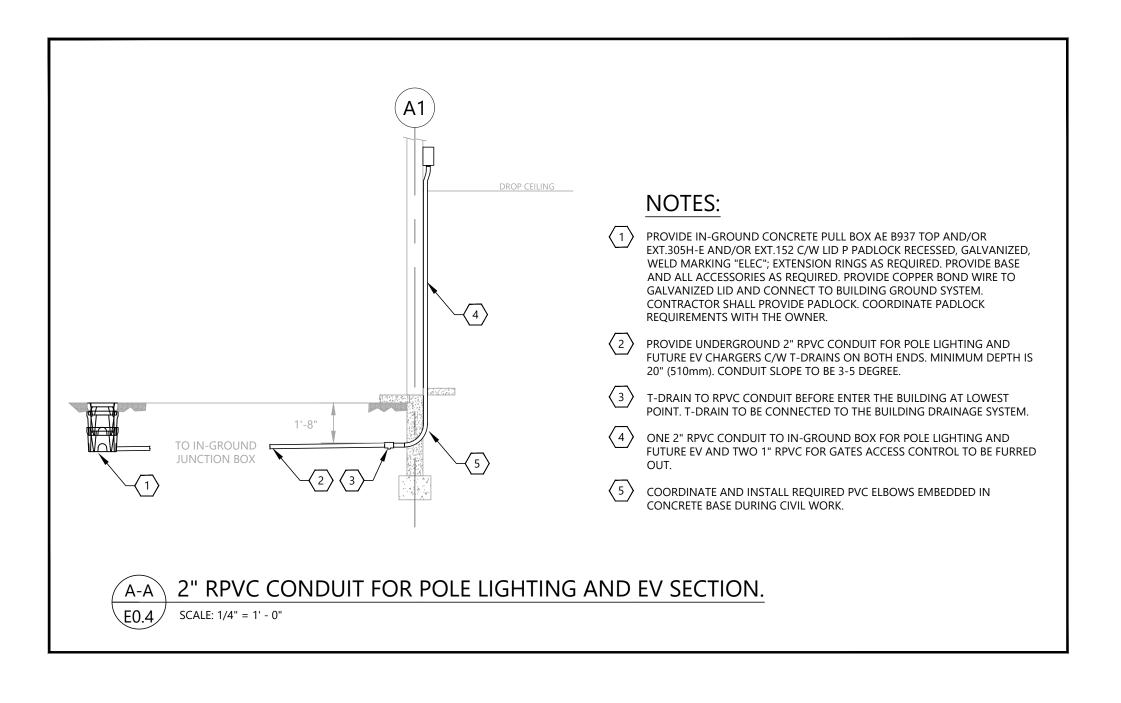
Q-KIDS DAYCARE CENTRE

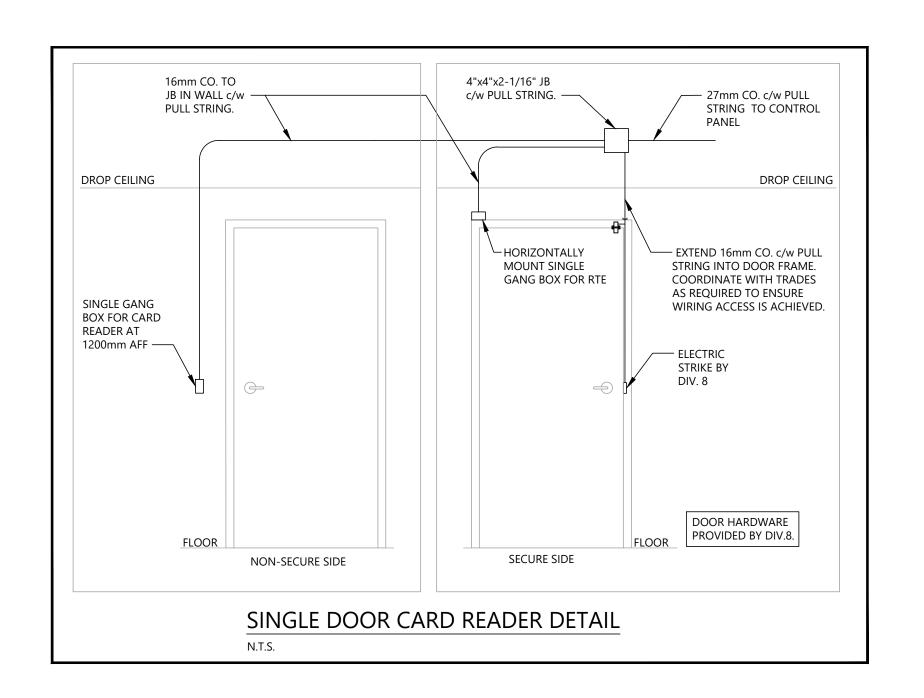
420 Webster Avenue Quesnel, BC

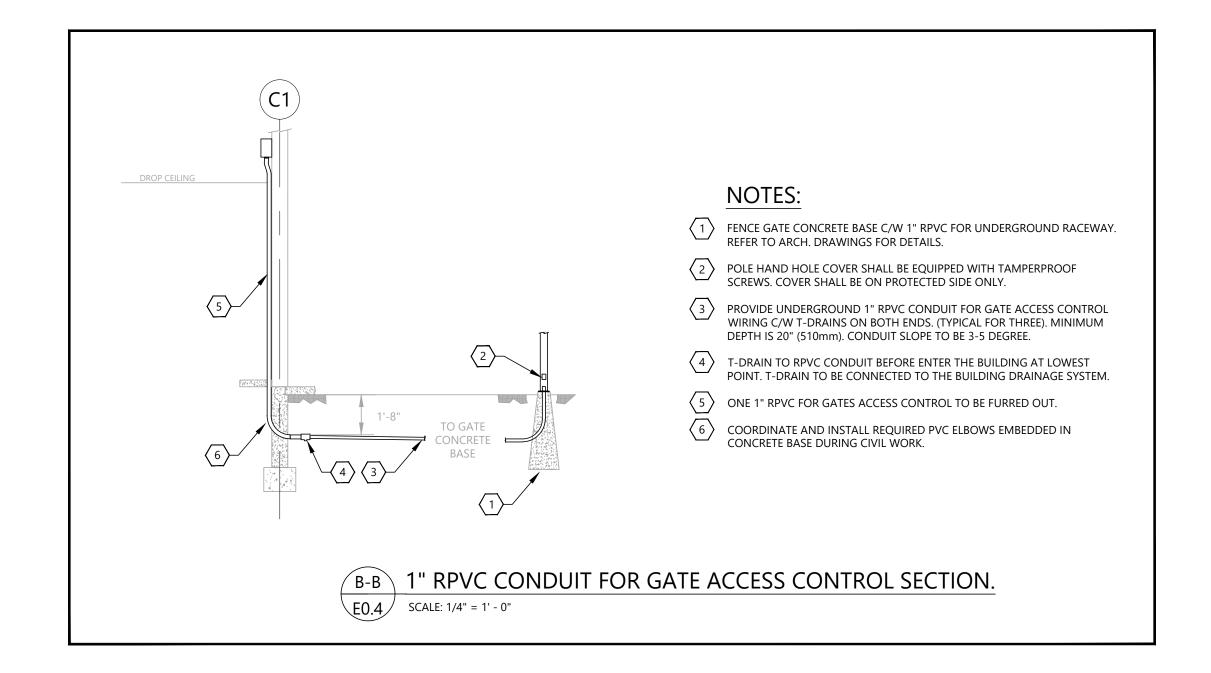
DRAWING:

MECHANICAL AND PANEL SCHEDULES

PROJECT NO.:	CHECKED BY:
2108	A.G.
DATE:	SCALE:
JULY 26, 2021	N.T.S.











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Box 4451, QUESNEL, BC V2J 3J6

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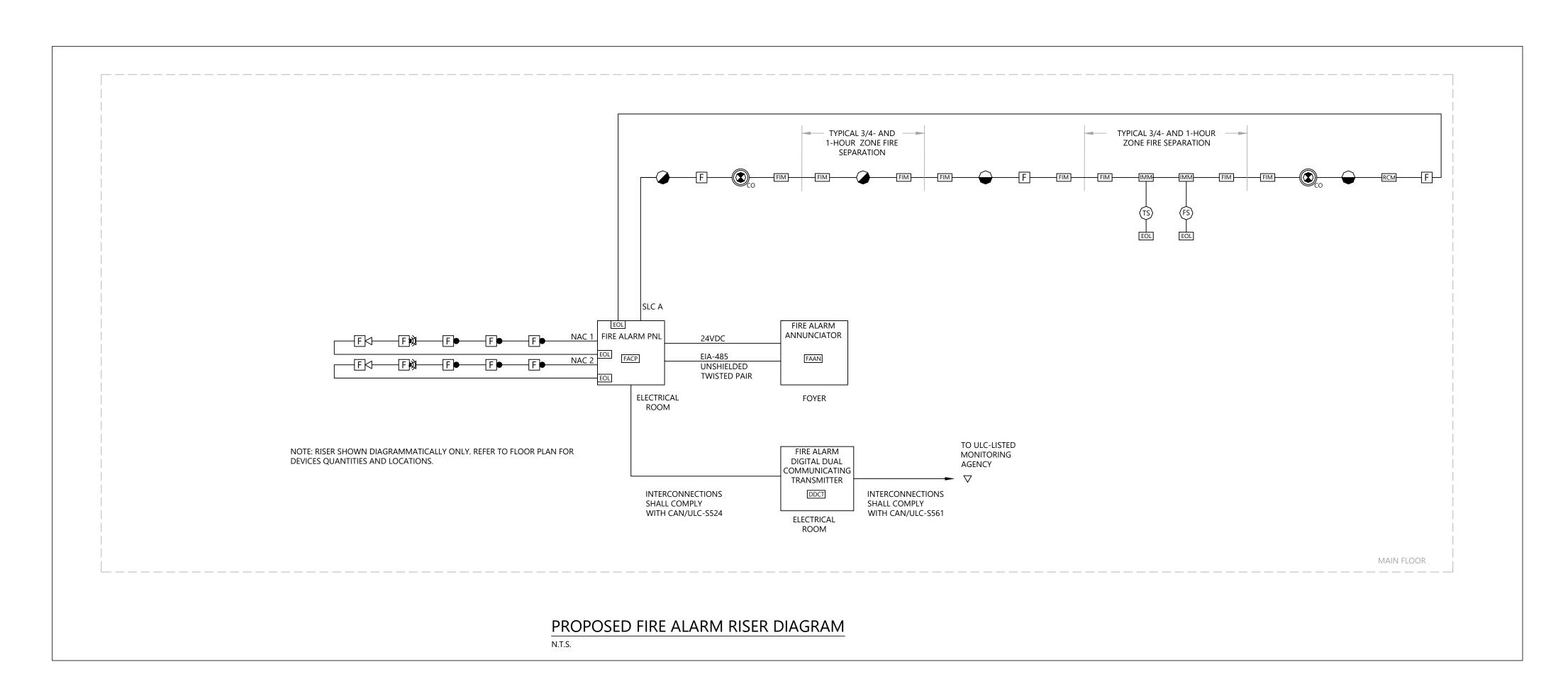
Q-KIDS DAYCARE CENTRE

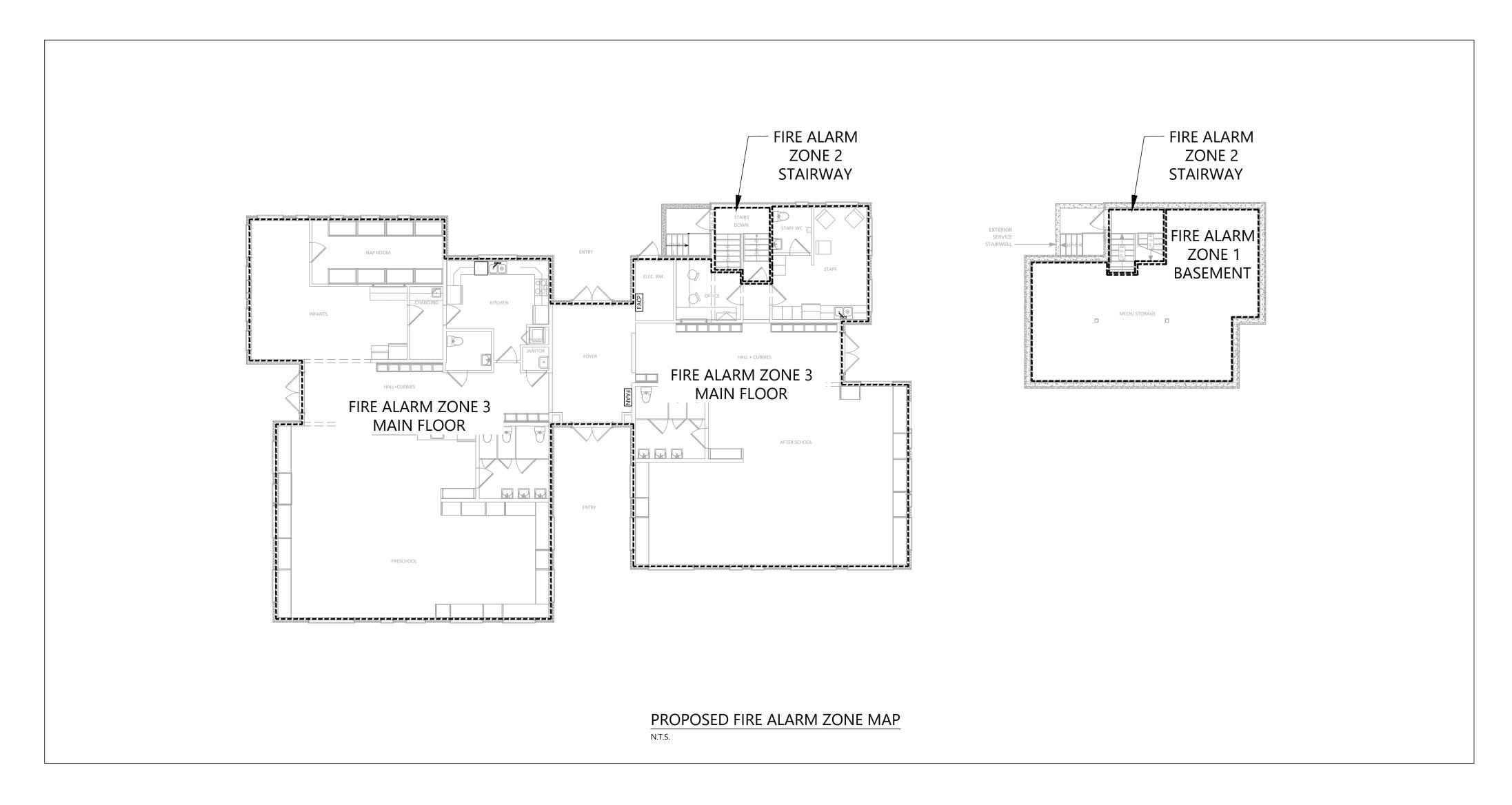
420 Webster Avenue Quesnel, BC

DRAWING:

DETAILS

PROJECT NO.:	CHECKED BY:
2108	A.G.
DATE:	SCALE:
JULY 26, 2021	AS SHOWN





FIRE ALARM DEVICE MOUNTING HEIGHTS:

MANUAL PULL STATION: 1050 MM - 1150 MM ABOVE THE FINISHED FLOOR LEVEL MEASURED FROM THE CENTRE OF THE MANUAL STATION (FROM THE CENTRE OF BACKBOX).

AUDIBLE SIGNAL DEVICES: THE TOP OF THE DEVICE SHALL NOT BE LESS THAT 2300 MM ABOVE THE FINISHED FLOOR LEVEL. WHERE CEILING HEIGHTS ALLOW; WALL MOUNTED AUDIBLE SIGNAL DEVICES SHELL BE INSTALLED AT LEAST 150 MM BELOW THE CEILING, MEASURED TO THE TOP EDGE OF THE DEVICE.

VISUAL SIGNAL DEVICES: WALL-MOUNTED STROBE LIGHT ENTIRE LENS IS NOT LESS THAN 2000 MM AND NOT MORE THAN 2400 MM ABOVE THE FINISHED FLOOR LEVEL.

THE VISUAL DISPLAYS AND OPERATING CONTROLS OF THE ANNUNCIATOR(S) AND MAIN CONTROL PANEL SHALL BE NOT LESS THAN 600 MM AND NOT MORE THAN 1800 MM ABOVE THE FINISHED FLOOR LEVEL.

REFER TO CAN/ULC-S524:2019 FOR EXACT REQUIREMENTS AND INSTALLATION.

FIRE ALARM DIGITAL DUAL COMMUNICATING TRANSMITTER:

INSTALLER TO ARRANGE FOR, COORDINATE INSTALLATION AND CONNECTION OF FIRE ALARM DIGITAL ALARM DUAL COMMUNICATIONS SIGNAL TRANSMITTING UNIT TO REMOTE N.F.P.A. APPROVED CENTRAL DEDICATED ULC LISTED

INSTALLER SHALL SUPPLY AND INSTALL ALL NECESSARY DEVICES AND WIRING TO ALLOW FOR CORRECT MONITORING OF:

- FIRE ALARM SIGNAL FIRE ALARM TROUBLE SIGNAL
- CARBON MONOXIDE TROUBLE SIGNAL

DEVICES SHALL INCLUDE BUT NOT LIMITED TO FIRE ALARM PANEL, ALL NECESSARY ADDITIONAL MODULES, RELAYS, DIGITAL ALARM COMMUNICATING TRANSMITTER, ULC-LISTED TRANSPONDER AND RECEPTACLE ON DEDICATED CIRCUIT. PROVIDE SILENT KNIGHT MODEL #5104B FIRE CONTROL COMMUNICATOR OR APPROVED ULC LISTED EQUAL ACCEPTABLE TO AUTHORITY HAVING JURISDICTION.

BREAKER FOR DIGITAL ALARM COMMUNICATING TRANSMITTER TO BE PAINTED RED c/w LAMICOID LABEL TO READ "FIRE ALARM DIGITAL ALARM COMMUNICATING TRANSMITTER - DO NOT OPERATE EXCEPT TO TEST"

INSTALLER TO ENSURE DIGITAL ALARM COMMUNICATING TRANSMITTER IS TESTED AND INSPECTED DURING THE FIRE ALARM VERIFICATION AND IS REPORTED ON THE WORKSHEETS. COORDINATE WITH MONITORING COMPANY TO ENSURE THAT THEY SUBMIT LETTER TO ENGINEER CONFIRMING THAT ALL SIGNALS NOTED ABOVE ARE BEING RECEIVED, THAT THEY ARE A ULC-LISTED COMPANY AND THAT ALL DEVICES USED ARE ULC APPROVED.

ALL WIRING BETWEEN A FIRE ALARM CONTROL PANEL AND DUAL AUTO-DIALER, AND BETWEEN DUAL AUTO-DIALER AND TELEPHONE SERVICE BOX SHALL BE MECHANICALLY PROTECTED, IN METAL RACEWAY (EMT, FLEX OR WIREMOLD 500/700 SERIES). A MINIMUM SIZE OF WIRING IS #18 AWG, THE INSTALLATION IS AS PER CAN/ULC-S561-13 (R2018), CAN/ULC-S524-2019, CEC AND AUTO-DIALER INSTALLATION MANUAL

FIRE ALARM SYSTEM DESCRIPTION:

SINGLE STAGE SYSTEM SHALL SUPERVISE WIRING, ANNUNCIATOR(S), EQUIPMENT AND DEVICES FOR ALARM INITIATION. ANNUNCIATION, AND AUDIBLE SIGNALING CONTINUOUSLY FOR OPENS, SHORTS OR GROUNDS (TROUBLE). PROVIDE EACH ALARM INITIATING DEVICE CIRCUIT WITH ILLUMINATED AND AUDIBLE ANNUNCIATION OF BOTH TROUBLE SUPERVISORY AND ALARM CONDITIONS. NON-ILLUMINATION SHALL INDICATE A NORMAL CONDITION.

SYSTEM SHALL NOT INCORPORATE A TIME DELAY FOR ANY OF THE ALARM INITIATING DEVICES. ALL ALARMS TO BE CONSIDERED AS CONFIRMED ALARM.

ACCOMPLISH DETECTION AND REPORTING OF FIRE CONDITIONS BY THE FOLLOWING BASIC METHODS:

- MANUAL STATIONS SMOKE DETECTORS
- DUCT SMOKE DETECTORS
- HEAT DETECTORS
- CARBON MONOXIDE DETECTORS

SUBDIVIDE FIRE ALARM SYSTEM INPUTS FURTHER AS FOLLOWS, FOR A MORE DEFINED INDICATION OF LOCATIONS AND NATURE OF THE FIRE ALARM OR TROUBLE CONDITIONS:

- MANUAL STATION BY ADDRESS AND LOCATION (ROOM NAME AND NUMBER)
- SMOKE AND/OR HEAT DETECTOR BY ADDRESS AND LOCATION (ROOM NAME AND NUMBER) CARBON MONOXIDE DETECTORS BY ADDRESS AND LOCATION

ALARM CONDITION TO OVERRIDE TROUBLE INDICATION, TROUBLE INDICATION TO RE-APPEAR AFTER ALARM RESET.

FIRE ALARM ZONES SHALL BE AS SHOWN ON FIRE ALARM ZONE SCHEDULE.

SELECTIVE MANUAL TESTING OF ANY DEVICE POINT IN THE SYSTEM TO DETERMINE NORMAL, TROUBLE OR ALARM

REMOTE ANNUNCIATOR(S) TO DUPLICATE ANNUNCIATION FROM THE MAIN FIRE ALARM PANEL. SYSTEM SHALL BE CAPABLE OF MANUAL OPERATION IN THE EVENT OF CENTRAL PROCESSOR MALFUNCTION. SUPPLIER SHALL INCLUDE A STATEMENT IN THE SYSTEM SHOP DRAWING SUBMITTAL EXPLAINING THE MANUAL OPERATING CAPABILITY OF THE SYSTEM. PROVIDE REDUNDANT PROCESSOR TO DUPLICATE PRIMARY PROCESSOR FUNCTION.

SEQUENCE OF OPERATION UNDER ALARM CONDITION:

- 1. ACTUATION OF ANY ALARM INITIATING DEVICE TO:
- 1. CAUSE ELECTRONIC LATCH TO LOCK-IN ALARM STATE AT MAIN CONTROL PANEL. 2. INDICATE ZONE OF ALARM AT MAIN CONTROL PANEL AND REMOTE ANNUNCIATOR.
- 3. CAUSE AUDIBLE SIGNALING DEVICES TO SOUND CONTINUOUSLY THROUGHOUT BUILDING. 4. TRANSMIT SIGNAL TO FIRE DEPARTMENT VIA ULC-LISTED MONITORING STATION.
- 5. CAUSE AIR CONDITIONING AND VENTILATION FANS TO SHUT DOWN OR TO FUNCTION TO PROVIDE REQUIRED CONTROL OF SMOKE MOVEMENT (IF EQUIPPED).

2. ACKNOWLEDGING ALARM: INDICATED AT MAIN CONTROL PANEL.

3. POSSIBLE TO SILENCE SIGNALS BY "ALARM SILENCE" SWITCH AT MAIN CONTROL PANEL, AFTER 60S PERIOD OF

4. SUBSEQUENT ALARM, RECEIVED AFTER PREVIOUS ALARM HAS BEEN SILENCED, TO RE-ACTIVATE SIGNALS.

SEQUENCE OF OPERATION UNDER ACTUATION OF CARBON MONOXIDE DETECTOR CONDITION:

- AUDIBLE SIGNALS INITIATED BY CARBON MONOXIDE DETECTOR SHALL BE A LOCALIZED TEMPORAL 4 PATTERN AS SPECIFIED IN CAN/ULC-S588-2017 STANDARD FOR GAS AND VAPOUR DETECTORS AND SENSORS. SIGNALS GENERATED BY CARBON MONOXIDE DETECTION DEVICES SHALL ACTIVATE A DISTINCTIVE CARBON MONOXIDE EVENT NOTIFICATION (REQUIRING ACKNOWLEDGEMENT) TO THE BUILDING OPERATOR VIA THE FIRE ALARM CONTROL UNIT.
- AN END-OF-LIFE SIGNAL FROM CARBON MONOXIDE DETECTOR SHALL INITIATE A TROUBLE SIGNAL AT THE CONTROL UNIT.
- EMERGENCY POWER SUPPLY SHALL PROVIDE NOT LESS THAN 12 HOURS OF CARBON MONOXIDE SIGNALING IN ADDITIONAL TO THE REQUIREMENTS OF THE FIRE ALARM SIGNALING 24 HOURS OF STANDBY LOAD PLUS THE DURATION OF RATED ALARM LOAD AS REQUIRED BY BCBC-2018, UNLESS THE SYSTEM MONITORED BY A FIRE SIGNAL RECEIVING CENTRE WITH EMERGENCY RESPONSE.

5. ACTIVATION OF ANY CARBON MONOXIDE DETECTORS SHALL:

- 1. CAUSE LOCALIZED AUDIBLE SIGNAL (ACTIVATE SOUNDER BASE) WITHIN THE AFFECTED AREA TO OPERATE; 2. NOT GENERATE SIGNALS THROUGHOUT THE BUILDING; AND
- 3. PROVIDE A LOCAL AUDIBLE INDICATION, AND A VISIBLE INDICATION THAT DESCRIBES THE PHYSICAL LOCATION OF THE ACTIVATED CARBON MONOXIDE DETECTOR ON THE FIRE ALARM ANNUNCIATOR AND CONTROL PANEL; 4. NOTIFY THE FIRE SIGNAL RECEIVING CENTRE THAT A CARBON MONOXIDE SIGNAL HAS BEEN ACTIVATED.

SEQUENCE OF OPERATION UNDER TROUBLE CONDITION:

6. TROUBLE ON SYSTEM TO:

1. INDICATE CIRCUIT IN TROUBLE AT MAIN CONTROL PANEL. 2. ACTIVATE "SYSTEM TROUBLE" INDICATION, BUZZER AND COMMON TROUBLE SEQUENCE.

8. ACKNOWLEDGING TROUBLE CONDITION TO SILENCE AUDIBLE INDICATION; WHEREAS VISUAL INDICATION TO REMAIN UNTIL TROUBLE IS CLEARED AND SYSTEM IS BACK TO NORMAL.

9. TROUBLE ON SYSTEM: SUPPRESSED DURING COURSE OF ALARM.

10. TROUBLE CONDITION ON ANY CIRCUIT IN SYSTEM NOT TO INITIATE ALARM CONDITIONS.

FIRE ALARM ZONE SCHEDULE

		IVI ZONE SCHEDOLL	
FIRE ALARM ZONE	DESCRIPTION	DEVICES	SIGNAL TYPE
1	BASEMENT MECHANICAL / STORAGE	PULL STATION, HEAT & SMOKE DETECTORS	ALARM
2	STAIRWAY	SMOKE DETECTOR	ALARM
3	MAIN FLOOR	PULL STATIONS, HEAT & SMOKE DETECTORS	ALARM
4	SPARE	-	
5	SPARE	-	

1. THE SECURITY MONITORING COMPANY IS TELUS. 2. THE CITY OF QUESNEL HAS SELECTED TELUS AS ULC LISTED FIRE ALARM MONITORING COMPANY. SUPPLY AND INSTALL

COST TO BE INCLUDED IN BID PRICE. CONTACT TELUS SECURITY FOR DETAILS.



THE CITY OF QUESNE 410 Kinchant Street Quesnel B.C. **V2J 7J5**



Box 4451, QUESNEL, BC V2J 3J6

www.eclipseprojects.ca

PROJECT NO. 00475

9		
8		
7		
6		
5		
4	ISSUED FOR BUILDING PERMIT AND TENDER ONLY	JUN 15/2
3	ISSUED FOR PRE-TENDER REVIEW ONLY	JUN 10/2
2	ISSUED FOR REVIEW	SEP 29/2
1	ISSUED FOR COORDINATION	JUL 26/2
NO.	REVISIONS	DATE

ELECTRICAL CONSULTANT:



HARBOURFRONT BUSINESS CENTRE SUITE 500 - 224 WEST ESPLANADE NORTH VANCOUVER, BC, V7M 1A4

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PROJECT:

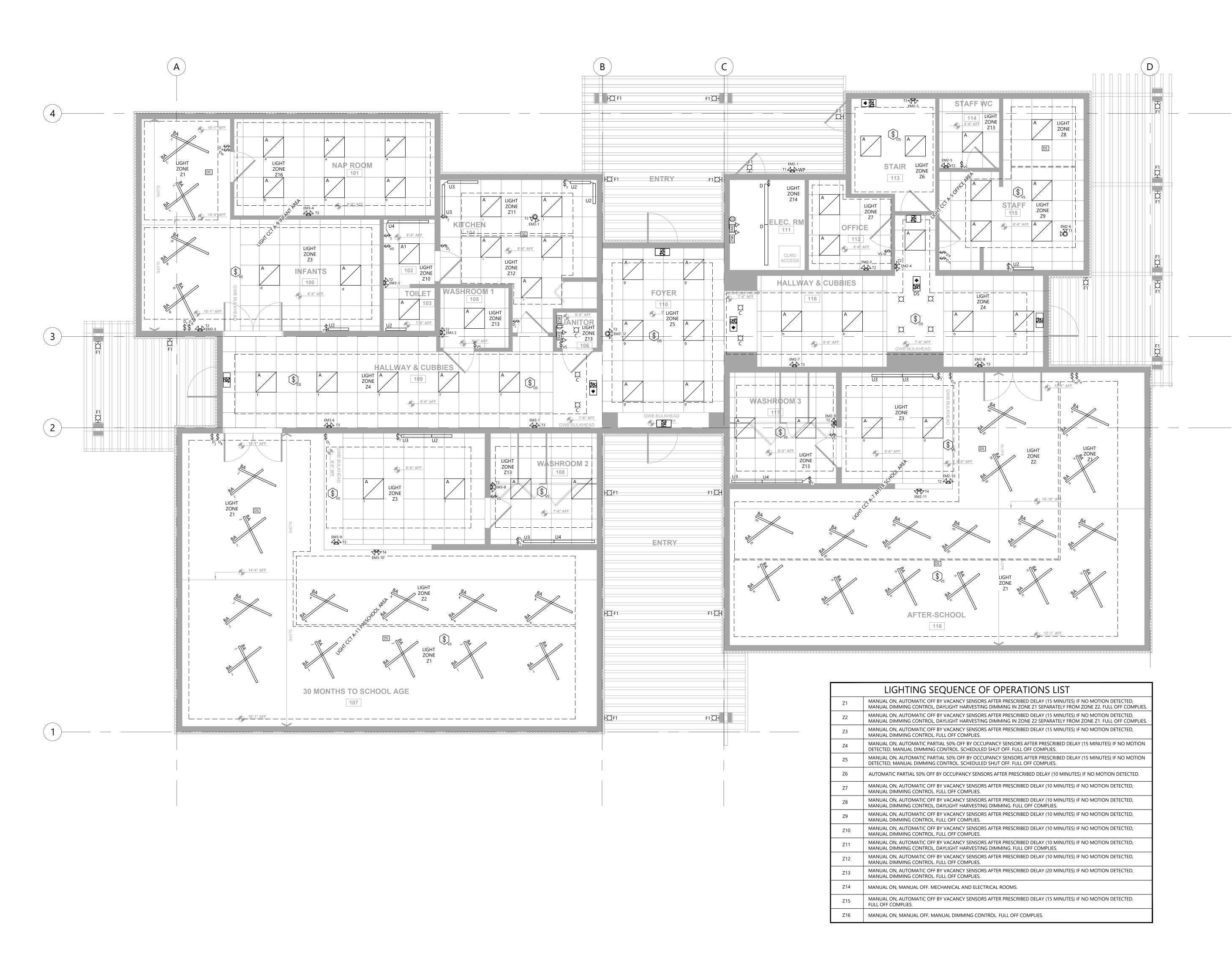
Q-KIDS DAYCARE CENTRE

420 Webster Avenue Quesnel, BC

DRAWING:

FIRE ALARM **RISER**

PROJECT NO.:	CHECKED BY:
2108	A.G.
DATE:	SCALE:
JULY 26, 2021	N.T.S.







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PROJECT NO. 00475

9		
8		
7		
6		
5		
4	ISSUED FOR BUILDING PERMIT AND TENDER ONLY	JUN 15/22
3	ISSUED FOR PRE-TENDER REVIEW ONLY	JUN 10/22
2	ISSUED FOR REVIEW	SEP 29/21
1	ISSUED FOR COORDINATION	JUL 26/21
NO.	REVISIONS	DATE

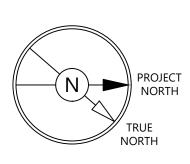
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HARBOURFRONT BUSINESS CENTRE



PROJECT:

Q-KIDS DAYCARE CENTRE

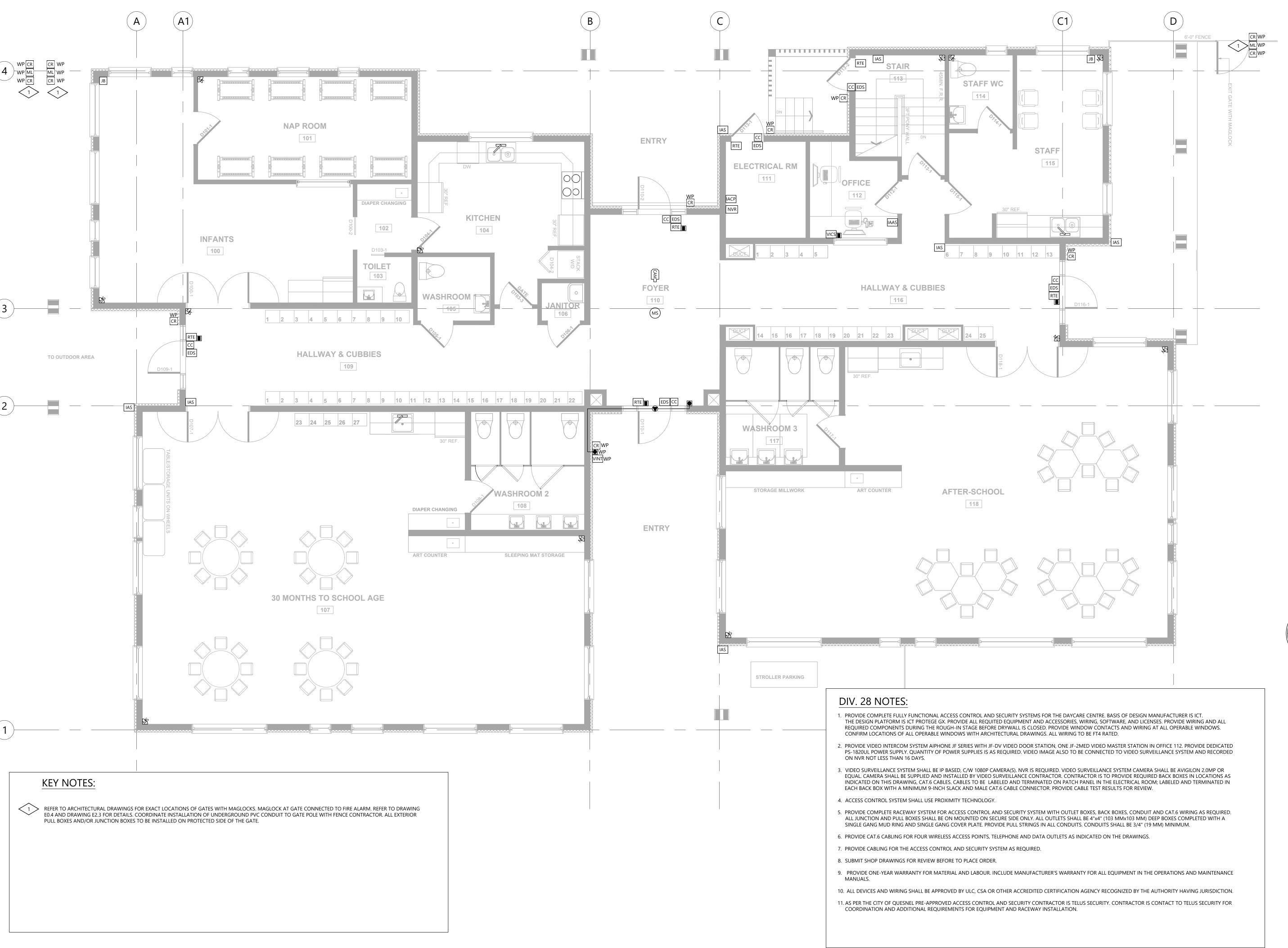
420 Webster Avenue Quesnel, BC

DRAWING:

REFLECTED **CEILING PLAN**

PROJECT NO.:	CHECKED BY:
2108	A.G.
DATE:	SCALE:
JULY 26, 2021	1/4" = 1' - 0"

E3.0







	Box 4451,	QUESNEL,	BC	V2J

+(250) 991-6416

+(250) 991-6416 v

PROJECT NO. 00475

NO.	REVISIONS	DATE
1	ISSUED FOR COORDINATION	JUL 26/21
2	ISSUED FOR REVIEW	SEP 29/2
3	ISSUED FOR PRE-TENDER REVIEW ONLY	JUN 10/2
4	ISSUED FOR BUILDING PERMIT AND TENDER ONLY	JUN 15/2
5		
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7		
8		
9		

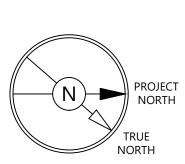
ELECTRICAL CONSULTANT:



HARBOURFRONT BUSINESS CENTRE
SUITE 500 - 224 WEST ESPLANADE
NORTH VANCOUVER, BC, V7M 1A4
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PROJECT:

Q-KIDS DAYCARE CENTRE

420 Webster Avenue Quesnel, BC

DRAWING:

POWER PLAN

CHECKED BY:
A.G.
SCALE:
1/4" = 1' - 0"

E4.0

ELECTRICAL SPECIFICATION

1.1 THE GENERAL REQUIREMENTS AND CONDITIONS OF THE CONTRACT SHALL APPLY AND GOVERN THIS SECTION OF THE SPECIFICATION.

1.2 THE CONTRACTOR SHALL VISIT THE SITE, ASCERTAIN FIELD CONDITIONS AND BECOME ACQUAINTED WITH ALL DRAWINGS BEFORE SUBMITTING A TENDER QUOTE. NO EXTRA CLAIM WILL BE ACCEPTED FOR LOSS, DAMAGE OR UNFORESEEN WORK DUE TO NON-COMPLIANCE WITH THIS REQUIREMENTS. 1.3 PROVIDE ALL ITEMS, NECESSARY LABOUR, MATERIAL, TOOLS, TRANSPORTATION, SERVICES AND DOCUMENTATION FOR THE COMPLETE FULLY FUNCTIONAL ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS AND/OR SPECIFIED HEREIN AND IN

COMPLIANCE WITH CODE. 1.4 SHOULD ANY WORK AND MATERIALS NOT SHOWN ON THE DRAWINGS AND NOT MENTIONED IN SPECIFICATIONS THAT IS OBVIOUSLY NECESSARY OR REASONABLE IMPLIED TO COMPLETE ELECTRICAL INSTALLATION AS REQUIRED, SHALL BE PROVIDED WITHOUT ADDITIONAL COST. 1.5 WHERE DOUBT FOR INTERPRETATION OF DRAWINGS OR

SPECIFICATION EXISTS, OBTAIN CLARIFICATION PRIOR TO 1.6 COVID 19. CONTRACTOR SHALL FOLLOW CCA COVID-19 STANDARD PROTOCOLS FOR ALL CANADIAN CONSTRUCTION SITES, AND ALL PERTINENT WORKSAFE BC COVID-19 RELATED

PROTOCOLS. ALL ASSOCIATED COSTS AND SCHEDULE

REQUIREMENTS SHALL BE INCLUDED IN CONTRACTOR'S BASE 1.7 COVID-19. CONTRACTOR SHALL ALLOW FOR THE LATEST EQUIPMENT DELIVERY TIMES AND BORDER ISSUES DUE TO COVID-19 RELATED SUPPLY CHAIN DISRUPTIONS. ALL COSTS AND SCHEDULE REQUIREMENTS SHALL BE INCLUDED IN

CONTRACTOR'S BASE TENDER. 2. <u>DEFINITIONS</u>

2.1 THE WORD 'CODE' SHALL MEAN 'APPLICABLE FEDERAL, PROVINCIAL AND MUNICIPAL BUILDING AND ELECTRICAL CODES. STANDARDS, RULES AND REQUIREMENTS, WORKERS' COMPENSATION BOARD REGULATIONS, MUNICIPAL BYLAWS, LOCAL FIRE DEPARTMENTS'.

2.2 THE WORD 'PROVIDE' SHALL MEAN 'SUPPLY, INSTALL, CONNECT AND TEST'

2.3 FIELD REVIEW MEANS A REVIEW OF THE WORK AT A BUILDING SITE THAT THE CONSULTANT CONSIDERS NECESSARY TO ASCERTAIN WHETHER THE WORK SUBSTANTIALLY COMPLIES WITH THE CONTRACT DOCUMENTS. FIELD REVIEWS ARE NOT AN INSPECTION OF THE WORK OR SAFETY AT THE CONTRACTOR-CONTROLLED SITE OR A SITE MANAGED BY OTHERS, NOR ARE THEY A REVIEW OF THE RELEVANT SAFETY

PROGRAM 2.4 RECORD DRAWINGS MEANS DRAWINGS PREPARED BY ELECTRICAL CONTRACTOR AS A RECORD OF WHAT WAS ACTUALLY CONSTRUCTED.

3. CODES, STANDARDS AND RULES

3.1 ALL ELECTRICAL INSTALLATION SHALL CONFORM WITH THE CURRENT EDITION OF RELEVANT BUILDING CODE, ELECTRICAL SAFETY ACT, APPLICABLE STANDARDS, RULES, AND REGULATIONS AND TO SATISFACTION OF THE AUTHORITY HAVING JURISDICTION AND DESIGN CONSULTANT. 4. FEES AND PERMITS

4.1 OBTAIN ALL APPLICABLE PERMITS AND LICENSES RELATED TO THE WORK AND PAY ALL FEES AND TAXES REQUIRED FOR THE ELECTRICAL INSTALLATION, INSPECTION AND RE-INSPECTION AS REQUIRED. INCLUDE ALL COST AND TAXES IN TENDER QUOTE. 5. <u>CERTIFICATE OF INSPECTION</u>

5.1 OBTAIN A CERTIFICATE OF INSPECTION AND APPROVAL FROM THE ELECTRICAL INSPECTION DEPARTMENT HAVING JURISDICTION OVER THE WORK. THE FINAL CERTIFICATE OF INSPECTION SHALL BE SIGNED BY THE ELECTRICAL INSPECTOR FOR THE PROJECT AND SUBMITTED TO THE CONSULTANT REFORE OCCUPANCY DOCUMENT SUBMITTAL. CONTRACTOR'S DECLARATION IS NOT ACCEPTABLE.

6. MATERIALS 6.1 ALL MATERIALS SHALL BE NEW, OF THE TYPE SPECIFIED AND APPROVED BY CSA OR OTHER ACCREDITED CERTIFICATION AGENCY RECOGNIZED BY AUTHORITY HAVING JURISDICTION. 6.2 ALL MATERIALS SHALL BE HIGH QUALITY OF COMMERCIAL GRADE OR AS SPECIFIED AND FREE FROM DEFECTS. SHOP DRAWINGS

7.1 WITHIN FIVE (5) WORKING DAYS OF AWARD OF

CONTRACT, EACH COMPLETED SHOP DRAWING SHALL BE SUBMITTED FOR CONSULTANT'S REVIEW SIGNED, STAMPED AND DATED BY BOTH GENERAL AND ELECTRICAL CONTRACTORS BEFORE MANUFACTURING AND INSTALLATION CAN PROCEED. 7.2 REVIEW OF SHOP DRAWINGS BY CONSULTANT IS FOR SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT AND FOR GENERAL ARRANGEMENT

ONLY SHOWN ON THE CONSTRUCTION DOCUMENTS. THIS REVIEW DOES NOT MEAN APPROVAL OF DETAILED DESIGN INHERENT IN SHOP DRAWINGS, RESPONSIBILITY FOR WHICH REMAINS WITH THE CONTRACTOR SUBMITTED SHOP DRAWINGS. 7.3 BY SUBMITTING SHOP DRAWINGS THE CONTRACTOR SIGNIFIES THAT SHE/HE HAS CAREFULLY REVIEWED AND VERIFIED MATERIALS, FIELD MEASUREMENTS AND RELATED FIELD CONSTRUCTION CRITERIA.

7.4 SUBMITTED SHOP DRAWINGS WITHOUT CONTRACTOR'S STAMP, DATE AND SIGNATURE WILL NOT BE REVIEWED BY CONSULTANT, AND WILL BE RETURNED WITH WORDING "NOT REVIEWED".

8. WORKMANSHIF 8.1 ONLY QUALIFIED PERSONNEL SHALL BE EMPLOYED ON THIS CONTRACT. SUPERVISION SHALL BE BY JOURNEYMEN ELECTRICIAN AND WORK CARRIED OUT BY JOURNEYMEN AND/OR REGISTERED APPRENTICES AS PER TECHNICAL SAFETY BC

RECTIFY UNACCEPTABLE MATERIAL AND/OR WORKMANSHIP TO

THE APPROVAL OF THE CLIENT'S REPRESENTATIVE AND

CONSULTANT

REGULATIONS. 8.2 THE COMPLETE ELECTRICAL INSTALLATION SHALL BE CARRIED OUT IN NEAT AND WORKMANLIKE MANNER TO THE SATISFACTION OF THE CLIENT'S REPRESENTATIVE, PROJECT ELECTRICAL INSPECTOR AND THE CONSULTANT. 8.3 THE CLIENT'S REPRESENTATIVE AND THE CONSULTANT SHALL HAVE THE RIGHT TO REJECT ANY ITEM THAT, IN THEIR OPINION, DOES NOT CONFORM TO AN ACCEPTABLE APPEARANCE AND PERFORMANCE. THE CONTRACTOR MUST

9. <u>CLEAN UP</u>

9.1 MAINTAIN ALL EQUIPMENT CLEAN DURING THE CONSTRUCTION AND AT THE COMPLETION OF THE PROJECT. 9.2 REMOVE ALL DEBRIS, SURPLUS MATERIALS AND PACKAGING FROM THE SITE PERIODICALLY, DO NOT ALLOW ACCUMULATE ON SITE.

9.3 CLEAN EXPOSED SURFACES AND RESTORE FINISH. 10. RENOVATION SPECIFICATION IN EXISTING BUILDINGS 10.1 PROVIDE FOR ALL WORKS FOR DEMOLITION AND REMODELING AS INDICATED ON THE DRAWINGS, DESCRIBED HEREIN AND AS REQUIRED.

10.2 MAINTAIN OPERATION OF ALL SYSTEMS AS REQUIRED. 10.3 INCLUDE COST OF PREMIUM TIME IN TENDER PRICE FOR WORK DURING NIGHTS, WEEKENDS OR OTHER TIME OUTSIDE OF NORMAL WORKING HOURS NECESSARY TO MAINTAIN ALL ELECTRICAL SERVICES IN OPERATIONS.

10.4 THIS CONTRACTOR SHALL CONFIRM ALL LOCATIONS AND ROUTING OF ANY EXISTING SERVICES WHICH MAY AFFECT EQUIPMENT INSTALLATION (ELECTRICAL, MECHANICAL, OTHER RELEVANT TRADES) IN THE AREA OF RENOVATION. 10.5 CONTRACTOR SHALL REWIRE, EXTEND WIRING AND RACEWAYS, SUPPORT, ETC. OR INSTALL NEW FOR ANY RELOCATED ELECTRICAL DEVICES AND SERVICES AS SHOWN ON THE DRAWINGS AND/OR AS REQUIRED

10.6 CONTRACTOR SHALL RELOCATE, EXTEND WIRING AND RACEWAYS, REWIRE, OR RE-ROUTE ALL WIRING, JUNCTION AND PULL BOXES, RACEWAYS WHICH PASSES THROUGHOUT RENOVATED AREA TO ENSURE PROPER OPERATION OF ALL ELECTRICAL SYSTEMS OUTSIDE OF RENOVATED AREA. 10.7 ALL ELECTRICAL DEVICES SHOWN ON THE DRAWINGS

SHALL BE NEW UNLESS OTHERWISE NOTED. 10.8 INCLUDE ALL COST FOR TEST AND VERIFICATION OF RELOCATED DEVICES IN TENDER QUOTE 10.9 BEGINNING OF DEMOLITION MEANS THE CONTRACTOR

ACCEPTS EXISTING CONDITIONS. 10.10 ALL MODIFIED AND NEW ELECTRICAL SYSTEMS SHALL BE FULLY FUNCTIONAL AFTER RENOVATION AND BE ACCEPTED BY THE OWNER'S REPRESENTATIVE AND THE CONSULTANT 10.11 CONTRACTOR SHALL COORDINATE AND ENSURE THAT A MINIMUM DISRUPTION OCCURS TO THE OWNER'S PRIMARY BUSINESS DURING THEIR NORMAL HOURS OF OPERATIONS. SHOULD POWER DISRUPTION OCCUR, THAT DISABLED THE FIRE ALARM SYSTEM, PROVIDE A FIRE WATCH IN AFFECTED AREAS IN ACCORDANCE WITH BC FIRE CODE AND AUTHORITY HAVING

JURISDICTION. 10.12 ALL REMOVED AND UNUSED ELECTRICAL DEVICES AND MATERIALS SHALL BE TURNED OVER TO OWNER UNLESS OTHERWISE DIRECTED.

10.13 ANY ELECTRICAL DEVICES, LUMINAIRES, ETC. DAMAGED DURING AND AFTER REMOVAL SHALL BE REPLACED WITH NEW APPROVED EQUIPMENT AT CONTRACTOR'S COST. 11. PENETRATIONS

11.1 ALL CONCRETE FLOOR AND WALL PENETRATIONS SHALL BE SCANNED AND WRITTEN PERMISSION FROM STRUCTURAL CONSULTANT SHALL BE OBTAINED REFORE COMMENCE ANY WORK FOR CORING, NOTCHING, AND DRILLING FOR ANCHORS. 11.2 ALL PENETRATION SHALL BE SEALED IN ACCORDANCE WITH CURRENT CODE. REFER TO FIRESTOPPING SECTION OF SPECIFICATION FOR PENETRATION FIRESTOPPING

11.3 BUILDING ENVELOPE PENETRATION RELATED TO ANY ELECTRICAL SYSTEMS SHALL BE FULLY WEATHERPROOF IN ACCORDANCE WITH BUILDING STANDARDS ACCEPTABLE TO AUTHORITY HAVING JURISDICTION. PROVIDE FOR REQUIRED SEALING SYSTEM AND ALL COMPONENTS (GASKETS, SEALING RINGS, COVERS, CAPS, ETC.). COORDINATE ALL REQUIREMENTS AND WORK WITH AHJ, BUILDING ENVELOPE CONSULTANT AND OTHER RELEVANT CONSULTANTS AND CONTRACTORS. ALEGO WEST DOES NOT PROVIDE CONSULTING SERVICE FOR BUILDING ENVELOPE, WATERPROOFING AND OTHER NON-ELECTRICAL

WORKS. 12. CUTTING AND PATCHING

12.1 CUTTING AND PATCHING RELATED TO ELECTRICAL INSTALLATION SHALL BE DONE BY GENERAL CONTRACTOR. 12.2 NO CUTTING OF STRUCTURAL MEMBER SHALL BE DONE WITHOUT SCANNING AND WRITTEN PERMISSION FROM ARCHITECT AND/OR STRUCTURAL CONSULTANT.

13. PROTECTION OF EQUIPMENT 13.1 CONTRACTOR IS RESPONSIBLE FOR APPROPRIATE PROTECTION OF EQUIPMENT, FURNITURE, ELECTRICAL, DATA AND FIBER OPTIC CABLES AND RACEWAYS FROM EXPOSURE TO ANY ELEMENTS PRESENT ON RENOVATION AREA (DUST, PAINT,

ETC.). 13.2 CONTRACTOR SHALL PROVIDE SUFFICIENT PROTECTION (PLASTIC COVER, TAPES, CORRUGATED PAPER WRAPS, ETC.) DURING THE CONSTRUCTION.

14. <u>GUARANTEE</u> 14.1 CONTRACTOR SHALL PROVIDE WRITTEN GUARANTEE FOR PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE FOR ALL WORK AND MATERIAL COVERED IN THE WHOLE CONTRACT (NOT FINAL ACCEPTANCE OF DIVISION 26 WORK ONLY).

14.2 ANY DEFECT IN WORKMANSHIP OR MATERIAL WHICH MAY APPEAR WITHIN ONE YEAR FROM FINAL ACCEPTANCE OF THE WORK MUST BE PROMPTLY CORRECTED: AND MATERIAL OR EQUIPMENT REPLACED, REPAIRED OR INSTALLED NEW AT NO COST TO THE OWNER. THIS IS IN ADDITION TO ANY MANUFACTURER'S WARRANTY PROVIDED FOR SUPPLY OF

MATERIALS AND EQUIPMENT. 15. COORDINATION WITH OTHER TRADES 15.1 COORDINATE ALL WORK, EQUIPMENT AND OUTLETS LOCATIONS AND SCHEDULE ELECTRICAL INSTALLATION WITH OTHER TRADES TO AVOID CONFLICTS DURING AND AFTER

INSTALLATION. 15.2 REVIEW ALL RELEVANT DOCUMENTS (DRAWINGS, SHOP DRAWINGS, INSTALLATION MANUALS, ETC.) FOR ELECTRICAL INSTALLATION (ARCHITECTURAL, MECHANICAL, STRUCTURAL, SPECIALTY, ETC.) AND COORDINATE WITH OTHER TRADES FOR POSSIBLE RESTRICTIONS OF ELECTRICAL INSTALLATION. MAINTAIN ACCESS REQUIREMENTS FOR ELECTRICAL JUNCTION AND PULL BOXES DURING AND AFTER INSTALLATION AS PER

15.3 COORDINATE WITH OTHER TRADES FOR PROPER DRAINAGE OF ELECTRICAL CONDUITS, CONDUITS AND CABLES ENTERING THE BUILDING, PENETRATING THE ROOF AND PARTITIONS.

15.4 PROVIDE TO GENERAL CONTRACTOR DIMENSIONS AND COORDINATE LOCATION FOR REQUIRED CUTTING.

16.1 SCHEDULE ALL REQUIRED SHUTDOWNS WITH THE OWNER IN ADVANCE TO MINIMIZE DISRUPTION OF OPERATIONS. 16.2 INFORM OWNER IN WRITING FOR PERMISSION IF POWER SHUTDOWN IS NECESSARY AND STATE TIME AND DURATION OF POWER INTERRUPTION OF EACH DISTRIBUTION PANEL. 16.3 CONSULT WITH OWNER AND DETERMINE THE EQUIPMENT REQUIRED TO BE ENERGIZED 24-HOURS PER DAY AND ARRANGE FOR TEMPORARY POWER SERVICES, RACEWAY AND WIRING AS NECESSARY. INCLUDE ALL COSTS IN TENDER QUOTE.

17. REQUIRED WORK OUTSIDE OF DIVISION 26 17.1 REFER TO RELEVANT SECTIONS OF GENERAL SPECIFICATION TO PERFORM WORKS EXCLUDED FROM DIVISION 26 SCOPE OF WORK, BUT REQUIRED TO COMPLETE ELECTRICAL INSTALLATION. OBTAIN DIRECTION FROM RELEVANT CONSULTANT 17.2 FOLLOWING WORK EXCLUDED FORM DIVISION 26 SCOPE OF WORK BUT REQUIRED TO BE PERFORMED IN ORDER TO **FACILITATE ELECTRICAL INSTALLATION:**

EXCAVATION AND BACKFILL,

CANNING OR X-RAYING FOR CUTTING AND CORING, LL CIVIL WORK RELATED TO ELECTRICAL INSTALLATION,
PRECAST OR/AND CAST IN PLACE CONCRETE PRODUCTS RELATED TO ELECTRICAL INSTALLATION PULL BOXES, LIGHT POLE BASES, PULL PITS, CONCRETE ADS FOR TRANSFORMERS, GENERATORS, SERVICE AND OTHER FOUIPMENT DRAINAGE EQUIPMENT RELATED TO ELECTRICAL

FIRE-RATED ENCLOSURES FOR ELECTRICAL EQUIPMENT. 18. OPERATION AND MAINTENANCE MANUALS

18.1 PROVIDE SET OF OPERATION AND MAINTENANCE MANUALS FOR ALL MATERIALS AND EQUIPMENT SPECIFIED IN THIS CONTRACT IN FORM OF HARD COVER 3-RING BINDERS WITH INDEX TAB SEPARATORS AND ONE DIGITAL COPY IN PDF **FORMAT**

18.2 THESE OPERATION AND MAINTENANCE MANUALS SHALL BE COMPLETED AND TURNED OVER TO THE OWNER NO LATER THAN APPLICATION FOR SUBSTANTIAL PERFORMANCE. 18.3 SUBMIT PDF COPY OF OPERATION AND MAINTENANCE MANUALS TO THE CONSULTANT FOR REVIEW BEFORE SUBSTANTIAL PERFORMANCE AND FINAL ACCEPTANCE OF THE PROJECT WILL BE GRANTED.

18.4 OPERATION AND MAINTENANCE MANUALS SHALL INCLUDE BUT NOT LIMITED TO: SERVICE EQUIPMENT, GENERATORS AND TRANSFER SWITCHES, DISTRIBUTION, PANELS, MOTOR CONTROL CENTRES, TRANSFORMERS, DISCONNECT SWITCHES AND STARTERS, LUMINAIRES AND LIGHTING CONTROL, EMERGENCY LIGHTING, EXIT SIGNS, FIRE ALARM, AND OTHER ELECTRICAL SYSTEMS SPECIFIED IN THIS CONTRACT, ALL LATEST REVIEWED LEGIBLE SHOP DRAWINGS, DRAWINGS FROM SUPPLIERS, TESTS AND COMMISSIONING DOCUMENTS, WIRING DIAGRAMS, INSTALLATION MANUALS, LIST OF EQUIPMENT LOCAL SUPPLIERS WITH ADDRESSES AND CONTACT INFORMATION.

19. RECORD DRAWINGS 19.1 CONTRACTOR TO MAINTAIN RECORDS OF ALL CHANGES DURING CONSTRUCTION AS DIRECTED BY SITE INSTRUCTIONS. CHANGE ORDERS, CHANGE DIRECTIVES AND OTHER CONSTRICTION DOCUMENTS AFFECTED ELECTRICAL INSTALLATION ON SITE. DRAWINGS MAY INCLUDE MEASUREMENTS, ELEVATIONS AND SIZES, UNDERGROUND CONDUIT ROUTES AND LAYOUTS IN SLABS.

19.2 CONTRACTOR'S RECORD DRAWINGS SHALL REFLECT CHANGES IN DEVICE LOCATION AND CIRCUITING COMMUNICATION DROP ADDRESSES IF HORIZONTAL CABLING INSTALLATION AND TERMINATION INCLUDED IN CONTRACT, FIRE ALARM DEVICE ADDRESSES, ALL HOME RUNS, JUNCTION AND PULL BOXES, ABANDONED RACEWAY SYSTEMS

19.3 A CLEAN SET OF RECORD DRAWINGS SHALL BE ON SITE DURING CONSTRUCTION WITH APPROVED AND INSTALLED CHANGES RECORDED. 19.4 CONSULTANT MAY REVIEW OF PROGRESS OF RECORD

DRAWINGS DURING PERIODICAL FIELD REVIEWS. 19.5 SUBMIT TWO HARDCOPY SETS OF RECORD DRAWINGS MARKED UP IN RED INK TO DIVISION 26 CONSULTANT FOR REVIEW AND DIGITAL RECORD DRAWING PRODUCTION BASED

ON CONTRACTOR'S MARK-UPS. 19.6 A HOLDBACK WILL BE AFFECTED UNTIL OPERATION AND MAINTENANCE MANUALS WITH COMPLETED MARKED UP IN RED INK RECORD DRAWINGS HAVE BEEN DELIVERED TO THE DIV. 26 CONSULTANT FOR RECORD DRAWING PRODUCTION. 20. SYSTEM TESTING

20.1 PROVIDE TEST FOR GROUNDING SYSTEM, MEGGER TESTS FOR FEEDERS, VOLTAGE DROP CHECK, POWER FACTOR READING, LOAD BALANCE TEST AT EACH DISTRIBUTION PANEL AND MAIN SERVICE DISTRIBUTION BOARD. UNBALANCED LOADS EXCEED 15 PERCENT SHALL BE RECONNECTED TO BALANCE THE LOAD. RECORD CHANGES ON RECORD DRAWINGS, RELABEL FIELD DEVICES AND SUBMIT RECORDS TO CONSULTANT WITH TEST

RESULTS. 20.2 PROVIDE LIGHTING CONTROL TESTS AS REQUIRED AND SUBMIT RESULTS TO CONSULTANT FOR REVIEW. 20.3 PROVIDE ALL TESTS FOR GENERATOR AS PER CURRENT STANDARD C282 AS REQUIRED, IF GENERATOR SPECIFIED IN THE

PROJECT. 20.4 PROVIDE AUTOMATIC TRANSFER SWITCHES COMMISSIONING REPORTS. 21. SUBSTANTIAL PERFORMANCE FIELD REVIEW

21.1 PRIOR TO REQUEST FOR SUBSTANTIAL PERFORMANCE FIELD REVIEW CONTRACTOR MUST COMPLY WITH FOLLOWING: ALL ELECTRICAL WORK HAS BEEN COMPLETED AS PER CONTRACT DOCUMENTS; FIRE ALARM SYSTEM COMPLETED, FULLY FUNCTIONAL,

VERIFICATION REPORT SUBMITTED, MONITORING COMPANY CONFIRMATION LETTER AND CERTIFICATE MERGENCY LIGHTING SYSTEM COMPLETED, FULLY UNCTIONAL, TESTED, A LETTER SUBMITTED; XIT SIGN SYSTEM COMPLETED, FULLY FUNCTIONAL, IGHTING CONTROL SYSTEM COMPLETED, FULLY NCTIONAL, TESTED, AND THE TEST/ADJUSTMENT ALL OTHER ELECTRICAL SYSTEM COMPLETED AND FULLY FUNCTIONAL; DMPLETED MARKED UP RECORD DRAWINGS AND

SUBMITTED TO CONSULTANT; 22. FINAL OCCUPANCY FIELD REVIEW

22.1 PRIOR TO REQUEST FOR FINAL OCCUPANCY FIELD REVIEW CONTRACTOR MUST COMPLY WITH FOLLOWING: FINAL ELECTRICAL INSPECTION CERTIFICATE FROM

PERATION AND MAINTENANCE MANUALS

APPLICATION. AUTHORITY HAVING JURISDICTION PROVIDED; FIRE ALARM SYSTEM COMPLETED, FULLY FUNCTIONAL, ERIFICATION REPORT SUBMITTED, MONITORING OMPANY CONFIRMATION LETTER AND CERTIFICATE MERGENCY LIGHTING SYSTEM COMPLETED, FULLY BEFORE ROUGH-IN COMPLETED. COORDINATE BOX LOCATION FUNCTIONAL, TESTED, A LETTER SUBMITTED

EXIT SIGN SYSTEM COMPLETED, FULLY FUNCTIONAL HTING CONTROL SYSTEM COMPLETED, FULLY

UNCTIONAL, TESTED, AND THE TEST/ADJUSTMENT EMERGENCY GENERATOR COMMISSIONING REPORT AS PER C-282 SUBMITTED; ETTERS OF ASSURANCE FROM SEISMIC SUPPORTING PROFESSIONAL SUBMITTED: TERS OF ASSURANCE FROM FIRESTOPPING SUPPORTING PROFESSIONAL SUBMITTED; CARBON MONOXIDE COMMISSIONING LETTER FIRE SUPPRESSION SYSTEM COMMISSIONING

22.2 ANY ADDITIONAL FIELD REVIEWS REQUIRED DUE TO SITE AND THE CONTRACTOR NOT BEING READY WILL BE CHARGED TO THE CONTRACTOR.

23. WIRING METHODS 23.1 ALL WIRES FOR ALL SYSTEMS SHALL BE COPPER WITH R90 CROSS-LINKED POLYETHYLENE INSULATION, RATED MIN. 600V. COLOUR CODED, NEW, INSTALLED IN RACEWAYS; RW90 SHALL BE USED IN UNDERGROUND RACEWAY 23.2 ALL WIRES SHALL BE SIZED AS PER CODE AND UPSIZED

(BASED ON LENGTH) TO OVERCOME VOLTAGE DROP ALLOWED PER CODE AS REQUIRED. 23.3 MINIMUM ALLOWABLE SIZE OF WIRE IS #12AWG. WIRE #8AWG AND LARGER SHALL BE STRANDED. 23.4 ALL WIRES SHALL BE PULLED IN THE SAME TIME, NOT MORE THAN THREE NEXT SIZES ARE ALLOWED IN ONE CONDUIT

DUE TO MECHANICAL PULL STRENGTH, (I.E. #12,#10,#8 OR #4,#3,#2, ETC.). USE ONLY ULC AND CSA NON-PETROLEUM BASE APPROVED PULLING LUBRICANT. 23.5 IDENTIFIED CONDUCTOR SHALL BE INSTALLED AT EVERY

CONTROL LOCATION. 23.6 ALL WIRES AND CARLES SHALL BE RATED FT4 FOR NON-COMBUSTIBLE BUILDINGS AND FT6 FOR USE IN AIR RETURN PLENUM

23.7 ARMOURED CABLE AC90 A.K.A. 'BX' MAYBE USED ONLY AS **FOLLOWING**

FROM LOCAL JUNCTION BOX TO LUMINAIRE

DAISY-CHAIN OF LUMINAIRES IS NOT ALLOWED; MAXIMUM LENGTH IS 3 METERS. FROM LOCAL JUNCTION BOX TO WALL OUTLET SHALL BE MOUNTED IN WALLS VERTICALLY ONL' HORIZONTAL INSTALLATION IS NOT ALLOWED 23.8 ARMOURED CABLES SHALL NOT BE USED FROM PANELBOARDS TO LOCAL JUNCTION BOX AS A HOME RUN.

23.9 ONLY EMT CONDUITS SHALL BE USED FOR HOME RUNS FROM PANEL BOARDS TO LOCAL JUNCTION BOXES. 23.10 RIGID STEEL GALVANIZED CONDUIT WITH GALVANIZED THREADED COUPLINGS SHALL BE USED FOR ALL MOUNTED EXPOSED UP TO 5 FEET AFF.

23.11 ELECTRICAL METAL TUBING (EMT) CONDUITS SHALL BE USED AS A RACEWAY IN SERVICE ROOMS. IN CEILING SPACE ABOVE THE SUSPENDED CEILING, IN STEEL STUD WALLS AND UNLESS OTHERWISE NOTED. MINIMUM SIZE IS 3/4" (21 MM). 23.12 EMT COUPLINGS AND CONNECTORS SHALL BE T&B SET-SCREW TYPE IN DRY LOCATIONS AND LIQUID-TIGHT TYPE IN WET LOCATIONS. 23.13 CONDUIT INSTALLED IN CONCRETE SLAB SHALL BE RIGID

GALVANIZED STEEL OR RIGID PVC ONLY. TAPE ALL JOINTS FOR ALL CONCRETE INSTALLATION. MINIMUM SIZE IS 3/4" (21 MM). USE ENT IS NOT ALLOWED. 23.14 FLEXIBLE METAL CONDUIT OF MINIMUM 1.5 FEET (460 MM) SHALL BE USED IN DRY LOCATIONS FOR FINAL CONNECTION OF

MOTORS AND OTHER VIBRATING EQUIPMENT, TRANSFORMERS AND RECESSED LUMINAIRES 23.15 LIQUID-TIGHT FLEXIBLE CONDUIT CAN BE USED FOR FINAL CONNECTION IN DRY, DAMP AND WET LOCATIONS; AND SHALL NOT BE USED WHERE IS SUBJECT TO MECHANICAL DAMAGE, FOR GENERAL PURPOSE RACEWAY AND IN LENGTHS GREATER THAN THAT ESSENTIAL FOR DEGREE OF FLEXIBILITY REQUIRED.

23.16 ALL CONDUIT SYSTEMS SHALL HAVE BONDING COPPER CONDUCTOR WITH GREEN INSULATION, SIZED AS PER CODE. 23.17 ALL RACEWAY SYSTEMS SHALL BE SECURED TO THE BUILDING STRUCTURE USING SPECIFIED FASTENERS, CLAMPS, STRAPS AND HANGERS WITH ACCORDANCE TO CODE. 23.18 UNDERGROUND RACEWAY SYSTEM OTHER THAN SERVICE ENTRANCE SHALL BE OF RIGID PVC CONDUIT WITH T-DRAIN AT

LOWEST POINT OF SLOPE. 23.19 LOCATION OF ALL EXISTING UNDERGROUND SERVICES SHALL BE CONFIRMED WITH LOCAL POWER, WATER, GAS, COMMUNICATIONS, OTHER UTILITIES AND APPROVED PERMITS SHALL BE OBTAINED BEFORE TO PROCEED WITH ANY

UNDERGROUND WORK. 23.20 CONFIRM WITH UTILITIES REQUIRED TYPE OF UNDERGROUND CONDUIT. OBTAIN EXACT LOCATION OF ALL CONDUITS FROM SUPPLY UTILITIES BEFORE INSTALLATION. ARRANGE AND OBTAIN BC HYDRO INSPECTION AND APPROVAL OF ALL UNDERGROUND CONDUIT AND TRANSFORMER PAD INSTALLATION BEFORE TO PROCEED WITH CONCRETE WORK

AND BACKFILL. INCLUDE ALL COST RELATED TO UTILITIES IN 24. BOXES FOR ELECTRICAL SYSTEMS

24.1 ALL OUTLET BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE SUITABLE FOR APPLICATION AND SIZED AS REQUIRED BY CODE

24.2 OUTLET BOXES SHALL BE GANGED AS REQUIRED. SECTIONAL BOXES SHALL NOT BE USED. DIVIDERS SHALL BE INSTALLED IN GANGED BOXES WITH DIFFERENT SYSTEMS AND VOLTAGES.

24.3 OUTLET BOXES SHALL BE SHEET METAL GALVANIZED BOXES CSA C22.2 NO.18. 24.4 LUMINAIRES AND EQUIPMENT SUPPORTING BOXES SHALL BE RATED FOR WEIGHT OF EQUIPMENT SUPPORTED. 24.5 CAST BOXES TYPE FD FERRIC ALLOY WITH CASKETED COVER BY MANUFACTURER.

24.6 POKE-THRU BOXES IN CONCRETE FLOOR SHALL BE WIREMOLD 6" OR APPROVED EQUAL. 24.7 ALL BACK BOXES SHALL MOUNT PLUMB. ADJUST OCTAGONAL BACK BOXES FOR EMERGENCY LIGHT REMOTE HEADS AT ROUGH-IN STAGE

24.8 ALL UNDERGROUND PULL BOXES SHALL CONFORM TO LOCAL UTILITY STANDARDS, SHALL BE COMPLETED WITH LIFTING HANDLES, PULLING IRONS, KNOCK-OUTS, GROUND STRAPS, CABLE BLOCKS, ETC. AS REQUIRED. 24.9 ALL EXTERIOR BOXES SHALL BE WEATHERPROOF AND

COMPLETE WITH LOCKABLE COVERS, SUITABLE FOR 24.10 SET WALL MOUNTED BOXES AT ELEVATIONS TO ACCOMMODATE MOUNTING HEIGHT INDICATED. LOCATIONS OF OUTLETS MAY BE CHANGED UP TO 5 METERS WITHOUT EXTRA CHARGE PROVIDED THAT INSTRUCTIONS FOR CHANGE ISSUED

WITH ALL SUBTRADES TO ENSURE THAT NO CONFLICT ARISES DURING OR AFTER INSTALLATION. BOXES SHALL BE ACCESSIBLE ALL THE TIME AS PER CODE.

24.11 WALL MOUNTED BOXES FOR SWITCHES, THERMOSTATS, RECEPTACLES AND SIMILAR DEVICES SHALL BE ALIGNED. 24.12 FLUSH MOUNTED OUTLET BOXES SHALL NOT BE INSTALLED BACK-TO-BACK IN WALL, SHALL BE STAGGER OR MOUNTED ON OTHER SIDE OF THE STUD. MINIMUM SEPARATION SHALL BE 600MM IN ACOUSTIC RATED WALLS AND 150MM IN NON-RATED WALLS, ANY GAPS BETWEEN FLUSH MOUNTED BOXES AND DRYWALL SHALL BE CAULKED AIRTIGHT 24.13 SUPPORT BOXES INDEPENDENTLY OF CONDUIT AND DIRECTLY TO THE STRUCTURE OR APPROVED HANGERS.

25. WIRING DEVICES 25.1 WIRING DEVICES IN FINISHED AREAS SHALL BE RECESSED MOUNTED FLUSH AND SURFACE MOUNTED FOR ALL UNFINISHED

24.14 PROVIDE SUITABLE COVER PLATES FOR ALL BOXES.

25.2 WIRING DEVICES SHALL BE HEAVY DUTY SPECIFICATION GRADE, DECORATOR STYLE, WHITE COLOUR, UNLESS OTHERWISE NOTED. SUBMIT SHOP DRAWINGS PRIOR TO INSTALL. 25.3 COVER PLATES SHALL BE STAINLESS STEEL 302/304 OR APPROVED EQUAL (UNLESS OTHERWISE NOTED) AND OF A DEPTH TO SUIT THE WALL OR CEILING FINISH. COVERS SHALL BE MOUNT FLUSH WITH WALL

25.4 EXTERIOR COVER PLATES SHALL BE SUITABLE FOR WET LOCATION, WHETHER OR NOT A PLUG IS INSERTED INTO RECEPTACLE, AND MARKED "EXTRA DUTY" 25.5 FINAL CONNECTION FROM HARDWIRED OUTLET TO OWNER'S SPECIAL EQUIPMENT SUCH AS KITCHEN EQUIPMENT MECHANICAL EQUIPMENT, ETC. SHELL BE IN FLEXIBLE CONDUIT

SUITABLE FOR LOCATION. 25.6 CONTRACTOR IS RESPONSIBLE TO OBTAIN REQUIREMENTS FOR FINAL CONNECTION FROM EQUIPMENT MANUFACTURER AND VERIFY LOCATION AND CONNECTION TYPE ON SITE PRIOR TO INSTALLATION.

26. <u>IDENTIFICATION OF ELECTRICAL EQUIPMENT AND WIRING</u> 26.1 ALL POWER DISTRIBUTION EQUIPMENT, PANELBOARDS. TRANSFORMERS, DISCONNECT SWITCHES, MOTOR CONTROL CENTRES, CONTROL EQUIPMENT, ALL FIRE ALARM FIELD DEVICES AND MODULES, ETC. SHALL BE C/W LAMACOID NAMEPLATES ATTACHED WITH SILICONE CEMENT. 26.2 NAMEPLATE MINIMUM HEIGHT OF TEXT IS 6 MM DISTRIBUTION EQUIPMENT NAMEPLATE SHALL HAVE ITEM NAME, DESIGNATION, VOLTAGE, FEEDER AND SOURCE. SUBMIT LABELLING EXAMPLES PRIOR TO ORDER FOR REVIEW.

26.3 COLOURS OF NAMEPLATES AND TEXT SHALL BE AS

FOLLOW:

UTILITY POWER: WHITE TEXT ON BLACK BACKGROUND STANDBY POWER: RED TEXT ON WHITE BACKGROUND EMERGENCY POWER: WHITE TEXT ON RED UPS POWER: WHITE TEXT ON BLUE BACKGROUND:

26.4 ALL CONDUITS AND WIRES SHALL BE LABELLED IN INDELIBLE INK AT PANEL AND ALL JUNCTION BOXES INDICATING DEVICE BEING FED, PANEL NAME AND CIRCUIT NUMBER. 26.5 ALL JUNCTION BOXES SHALL BE IDENTIFIED INSIDE ON THE COVER PLATE AND INSIDE OF THE BOX WHERE PRACTICABLE. 26.6 PROVIDE SHOCK AND ARC FLASH PROTECTION IDENTIFICATION LABELS ON ALL ELECTRICAL DISTRIBUTION EQUIPMENT IN ACCORDANCE WITH CEC 2-306, Z462-2018, IEEE 1584-2018. SUBMIT ARC FLASH INCIDENT ENERGY ANALYSIS FOR

26.7 THE SERVICE EQUIPMENT MUST BEARS EVIDENCE OF "SUITABLE FOR SERVICE ENTRANCE" 26.8 CAUTION LABEL SHALL BE APPLIED TO THE EQUIPMENT'S NAMEPLATE TO ADVISE THE USERS OF THE MAXIMUM CONTINUOUS LOADING PERMITTED AS PER CEC 2-100(4). 26.9 PROVIDE TYPEWRITTEN PANEL DIRECTORIES WITH BRANCH CIRCUIT(S) DESCRIPTION, BREAKER SIZE AND NUMBER OF POLES IF MORE THAN ONE

26.10 ALL RECEPTACLE COVER PLATES, FAN CONTROLS AND SWITCH COVER PLATES (EXCEPT LIGHT SWITCH IN PUBLIC AREA) SHALL BE LABELLED WITH PANEL NAME, CIRCUIT NUMBER(S) AND **DEDICATED EQUIPMENT NAME**

27. <u>DISTRIBUTION EQUIPMENT</u> 27.1 PROVIDE DISTRIBUTION EQUIPMENT AS SHOWN ON THE DRAWINGS, INDICATED HEREIN AND AS REQUIRED. 27.2 PROVIDE SHORT CIRCUIT COORDINATION STUDY FROM EQUIPMENT MANUFACTURER AS REQUIRED. ADJUST KILOAMPERE RATING OF EQUIPMENT BASED ON SHORT CIRCUIT AND FAULT LEVEL STUDIES PRIOR TO SUBMIT DISTRIBUTION SHOP

DRAWINGS. 27.3 PROVIDE PANELBOARDS WITH COPPER BUS: PROVIDE COPPER GROUND BUS IN EACH PANELBOARD 27.4 ALL DISTRIBUTION EQUIPMENT SHALL BE CLEARLY LABELLED WITH BREAKER/FUSES AND/OR BREAKERS IN SERIES APPLICATION FOR THE AVAILABLE FAULT CURRENT. 27.5 PANELBOARDS TO BE OF BOLT-ON CIRCUIT BREAKER TYPE, DEAD FRONT TYPE, CODE GAUGE STEEL ENCLOSURE, FINISHED FACTORY PAINT ASA GRAY 61 ENAMEL, WITH TWO MASTER KEYS

FOR EACH PANEL. 27.6 THE CONTRACTOR SHALL ARRANGE PAINTING OF DISTRIBUTION PANELBOARDS IN PUBLIC SPACE TO MATCH WALL PAINT COLOUR

27.7 PROVIDE DRIP SHIELDS OR APPLICABLE ENCLOSURE TYPE TO ADEQUATELY PROTECT EQUIPMENT FROM WATER. 27.8 DISCONNECT SWITCHES SHALL BE SWITCHMATIC HEAVY-DUTY ENCLOSED SAFETY SWITCHES OR EQUAL. DISCONNECT SWITCHES SHALL HAVE THE OPERATING HANDLE INTERLOCKED WITH THE SWITCH COVER, STEEL REINFORCED FUSE CLIPS, A QUICK-MAKE, QUICK BREAK MECHANISM AND SHALL BE HP-RATED FOR 100% LOAD. 27.9 LOCKABLE DISCONNECT SWITCHES MUST BE PROVIDED FOR ALL MECHANICAL EQUIPMENT POWER CONNECTIONS. 27.10 LOCK-ON DEVICES SHELL BE PROVIDED ON BREAKERS FOR

FOLLOWING SYSTEMS: - FIRE ALARM SYSTEM AND AUXILIARY CIRCUITS, - INTRUSION ALARM SYSTE EMERGENCY LIGHT SYSTEM.

28. PROTECTIVE DEVICES

28.1 BREAKERS SHALL BE MOULDED CASE, OF THE TRIP-FREE TYPE, THERMAL MAGNETIC WITH INSTANTANEOUS-TRIP SETTINGS, BOLT-ON TYPE, WITH VOLTAGE RATING NOT LESS THAN THAT OF THE MULTI-WIRE BRANCH CIRCUIT. 28.2 TWO- AND THREE-POLE BREAKERS SHALL HAVE SINGLE HANDLE; TIE-BAR IS PERMITTED ON EXISTING BREAKERS. 28.3 MINIMUM SHORT CIRCUIT RATING FOR 120V CIRCUIT

BREAKER IS 10,000 A, IF NOT OTHERWISE NOTED. 28.4 BREAKERS WITH SLASH RATING SUCH AS 120/240V. 208Y/120V, and 600Y/347V SHALL BE PERMITTED ON SOLIDLY

GROUNDED SYSTEM 28.5 WHERE A CIRCUIT BREAKER IS USED FOR LIGHTING CONTROL, IT SHALL BE SUITABLE FOR SUCH SWITCHING AND MARKED "SWD"

29. GROUNDING AND BONDING 29.1 PROVIDE A COMPLETE, PERMANENT AND CONTINUOUS GROUNDING AND BONDING SYSTEM. 29.2 ALL NON-CURRENT CARRYING METAL PARTS SHALL BE GROUNDED AND/OR BONDED IN ACCORDANCE WITH THE CODE.

29.3 THE BUILDING STRUCTURAL STEEL SHALL BE BONDED TO

THE GROUND SYSTEM. 29.4 EXTEND THE BASE BUILDING GROUNDING SYSTEM TO SUIT THIS PROJECT. PROVIDE OR EXTEND GROUNDING AND BONDING SYSTEM FOR DIVISION 27 AND DIVISION 28 AS PER ANSI/TIA-607-D

29.5 GROUNDING SYSTEM SHALL CONFORM TO ELECTRICAL CODE AND COMPLY WITH THE LOCAL INSPECTION DEPARTMENT 29.6 ALL DISTRIBUTION CENTRES, MOTOR CONTROL CENTRES, SWITCHGEAR, TRANSFORMERS, PANELBOARDS, SWITCHED

REQUIRING EQUIPMENT GROUND SHALL CONTAIN A GROUND

BUS SIZED FOR THE NUMBER OF CONNECTIONS REQUIRED.

30. EMERGENCY LIGHTING SYSTEM 30.1 PROVIDE EMERGENCY LIGHTING SYSTEM COMPLETE WITH BATTERY UNITS AND REMOTE EMERGENCY LED LIGHT HEADS AS SHOWN ON THE DRAWINGS AND/OR SPECIFIED HEREIN. UNIT EQUIPMENT AND REMOTE LIGHTS SHALL BE CERTIFIED TO CSA STANDARD C22.2 - NO.141. SUBMIT SHOP DRAWINGS PRIOR TO ORDERING WITH DATA REQUIRED IN SECTION 30.2. 30.2 ALL BATTERY UNITS SHALL BE COMPLETED WITH FOLLOWING FEATURES

> AUTOMATIC SELF-DIAGNOSTIC CIRCUITRY A MEANS TO INDICATE AND TEST THE OPERATING NDITION OF THE EQUIPMENT TRANSIENT VOLTAGE SURGE SUPPRESSOR ON THE SEALED 10-YEARS LONG LIFE, MAINTENANCE FREE VOLTAGE SENSITIVE DEMAND CHARGER

SEALED DUST-TIGHT TRANSFER RELAY OW VOLTAGE BATTERY DISCONNEC DUAL DIAGNOSTIC LED INDICATORS EMPERATURE COMPENSATED

FUSE PROTECTED OUTPUT CIRCUITS OV INPUT VOLTAGE, BATTERY SIZES ARE AS PER 30.3 DUAL REMOTE LIGHTS SHALL BE MR16 LED 12V, 6W

UNLESS OTHERWISE NOTED. EXTERIOR REMOTE LIGHTS SHALL BE OF WEATHERPROOF, GASKETED, POLYCARBONATE LENS, WITH TAMPER-PROOF SCREWS, NEMA-4X CERTIFIED. 30.4 ALL EMERGENCY BATTERY UNITS SHALL BE MOUNTED ON THE SPECIAL BRACKETS DESIGNED TO WITHSTAND SEISMIC FORCES. CONFIRM REQUIRED SIZE WITH MANUFACTURER BEFORE TO PLACE ORDER.

30.5 UNLESS OTHERWISE NOTED, ALL REMOTE EMERGENCY DUAL LIGHT HEADS SHALL BE MOUNTED ON CEILING AT WALL AND BE COORDINATED WITH CEILING AND WALL DETAILS. 30.6 WIRING FOR EMERGENCY REMOTE LIGHTS SHALL BE MINIMUM #12AWG. VOLTAGE DROP IN THE WIRING FEEDING REMOTE LAMPS SHALL NOT EXCEED 5% OF THE APPLIED VOLTAGE

30.7 COMPLETE INSTRUCTIONS FOR THE OPERATION AND CARE OF AN EMERGENCY UNIT EQUIPMENT THAT SHALL SPECIFY TESTING AT LEAST ONCE EVERY MONTH SHALL BE POSTED IN ELECTRICAL ROOM IN A FRAME UNDER GLASS.

31 FIRE ALARM SYSTEM 31.1 THE FIRE ALARM SYSTEM IS EXISTING. PROVIDE THE COMPLETE AND OPERATIONAL ADDRESSABLE FIRE ALARM SYSTEM WITH SUPERVISED FIRE DETECTION AND ALARM CIRCUITS AS INDICATED ON THE DRAWINGS AND/OR AS REQUIRED. THIS INCLUDES BUT NOT LIMITED TO ROUGH-INS, WIRING, ALL REQUIRED SUPERVISED DETECTION AND NOTIFICATION CIRCUITS, AUXILIARY CIRCUITS, REMOTE ANNUNCIATOR, FIRE ALARM MAP, ETC. AS REQUIRED, ACTIVE AND PASSIVE COMPONENTS, PROGRAMMING AND/OR REPROGRAMMING, TESTING, VERIFICATION AND REQUIRED

CERTIFICATES. 31.2 THE FIRE ALARM SYSTEM SHALL COMPLY WITH STANDARD CAN/ULC-S524:2019, BC BUILDING CODE 2018 AND BC ELECTRICAL CODE 2018. VERIFICATION SHALL COMPLY WITH STANDARD CAN/ULC-S537-2013. COMMUNICATION CIRCUITS AND DEVICES SHALL BE INSTALLED IN CONFORMANCE WITH STANDARD CAN/ULC-S561-13(R2018).

31.3 FIRE ALARM WIRING SHALL BE FAS105, COPPER, RATED NOT LESS THAN 300V, RED JACKET; STRANDED CONDUCTORS SHALL BE TERMINATED IN COMPRESSION CONNECTORS; CONDUCTOR SIZE SHALL BE MINIMUM #18AWG FOR DETECTION CIRCUITS AND #14AWG FOR NOTIFICATION CIRCUITS. ALL FIRE ALARM HOME RUN WIRING SHALL BE INSTALLED IN EMT

CONDUIT SYSTEM. 31.4 APPROVED FIRE ALARM CABLES CAN BE USED WITH FT RATING AS REQUIRED FOR THE PARTICULAR TYPE OF CONSTRUCTION AND FROM NEAREST HOME RUN JUNCTION BOX TO DETECTION DEVICE. 31.5 ALL FIRE ALARM INTERLOCKS WITH OTHER BUILDING

SYSTEMS AS SHOWN AND/OR AS REQUIRED SHALL BE AS PER

CAN/ULC-S576-2017, TESTED AND CLEARLY INDICATED ON THE FIRE ALARM VERIFICATION REPORT. 31.6 VERIFY ALL REQUIRED INTERLOCKS AND SEQUENCE OF OPERATIONS BEFORE FINAL PROGRAMMING 31.7 OBTAIN TRANSCRIPT/PRINTOUT OF PROGRAMING OF EXISTING FIRE ALARM SYSTEM BEFORE UPGRADE. ENSURE THAT THERE IS NO ANY HIDDEN/COVERED FIRE ALARM DEVICE CONNECTED TO EXISTING FIRE ALARM SYSTEM. CONFIRM THAT THE EXISTING FIRE ALARM SYSTEM IS OPERATIONAL PRIOR TO ANY MODIFICATIONS. REPORT TO THE CONSULTANT ANY DEFICIENCIES IN THE FIRE ALARM SYSTEM PRIOR TO COMMENCE

FULLY OPERATIONAL IF NO NOTIFICATION FROM CONTRACTOR RECEIVED. 31.8 IN ORDER FOR THE FIRE ALARM SYSTEM TO BE CONSIDERED FOR ACCEPTANCE, THE FOLLOWING HAS TO BE

1) FIRE ALARM SYSTEM IS INSTALLED AS PER APPLICABLE 2) FIRE ALARM SYSTEM IS INSTALLED AS PER THESE

WORK. THE SYSTEM ASSUMED TO BE FREE OF DEFICIENCIES AND

3) FIRE ALARM SYSTEM VERIFICATION REPORT WITHOUT DEFICIENCIES AND CERTIFICATION IS ACCEPTED AND ROVED BY THE AUTHORITY HAVING JURISDICTION AND THE ELECTRICAL CONSULTANT VERIFICATION EPORT SHELL INCLUDE IDENTIFIED SENSITIVITY

4) CERTIFICATE AND CONFIRMATION LETTER FROM ULC TO BE BLUE. MONITORING AND SIGNAL PERFORMANCE RECEIVED AND ACCEPTED.
5) WRITTEN CONFIRMATION FROM THE AUTHORITY CROSSTALK AND ATTENUATION AND BE WITHIN LIMITS HAVING JURISDICTION THAT PROPOSED VERIFICATION COMPANY IS APPROVED

31.9 REMOTE ANNUNCIATOR IS TO BE MULTI-ZONES LED INDICATOR STYLE.

32. <u>VIBRATION AND SEISMIC RESTRAINTS</u> 32.1 PROVIDE ALL REQUIRED MATERIALS AND LABOUR NECESSARY TO INSTALL SEISMIC RESTRAINTS FOR ALL ELECTRICAL EQUIPMENT, LIGHT LUMINAIRES, RACEWAY SYSTEMS, BATTERY PACK SEISMIC BRACKETS, ETC. TO CONFORM TO THE BUILDING CODE AND OTHER APPLICABLE REGULATIONS. 32.2 CONTRACTOR SHALL ENGAGE AND PAY FOR SEISMIC ENGINEER TO DESIGN, SUPERVISE INSTALLATION AND INSPECT THE SEISMIC RESTRAINTS OF THE ELECTRICAL SYSTEM COMPONENTS COVERED UNDER DIVISION 26 FOR THIS CONTRACT

32.3 THE SEISMIC ENGINEER RETAINED BY THE CONTRACTOR SHALL PROVIDE FOR THE FOLLOWING: CERTIFIED DETAILED DRAWINGS AND SPECIFICATIONS OF SFISMIC RESTRAIN

SIGNED AND SEALED LETTERS OF ASSURANCE O

PROFESSIONAL FIELD REVIEW AND COMPLIANCE. (SCHEDULE S-B AND SCHEDULE S-C) 32.4 CONTRACTOR SHALL SEND A LETTER TO THE ELECTRICAL CONSULTANT CONFIRMING ENGAGEMENT OF THE SEISMIC ENGINEER FOR THE SERVICES AS DESCRIBED IN THIS SPECIFICATION IMMEDIATE AFTER CONTACT AWARD. 32.5 SUBSTANTIAL COMPLETION WILL NOT BE CONSIDERED WITHOUT THE SUBMISSION OF THE ABOVE DOCUMENTS. 32.6 SEISMIC ENGINEER SHALL BE REGISTERED WITH ENGINEERS AND GEOSCIENTISTS OF BRITISH COLUMBIA AND SHALL HAVE A MINIMUM OF 2 YEARS OF EXPERIENCE IN THE FIELD. 32.7 SEISMIC ENGINEER SHALL HAVE ENGINEER'S PROFESSIONAL LIABILITY INSURANCE, MINIMUM AS FOLLOWS:

\$1,000,000,00 EACH LOSS \$1,000,000.00 PER POLICY PERMIT. 32.8 THE CONTRACTOR SHALL PROMPTLY SUPPLY ALL REQUIRED INFORMATION TO THE SEISMIC ENGINEER TO SUPPORT THE SEISMIC DESIGN AND SUPPORT FOR SEISMIC RESTRAINTS. 32.9 CONTRACTOR SHALL OBTAIN AND MEET DETAIL SPECIFICATION AND REQUIREMENTS FROM THE SEISMIC ENGINEER. IN NO CIRCUMSTANCES SHALL SEISMIC RESTRAINTS BE LESS STRINGENT THAN AS REQUIRED BY THE FOLLOWING

SPECIFICATION AND THE SEISMIC ENGINEER 32.10 ACCEPTABLE ANCHOR BOLT MANUFACTURERS ARE HILTI, RAMSET, UCAN. OTHER MANUFACTURERS ARE SUBJECT TO APPROVAL BY THE SEISMIC ENGINEER AND/OR AUTHORITY HAVING JURISDICTION 32.11 SLACK CABLE RESTRAINTS SHALL BE GALVANIZED OR STAINLESS STEEL STRANDED CABLE WITH CLAPS, THIMBLES, SHACKLES, AND OTHER ASSOCIATED HARDWARE 32.12 SELECT VIBRATION ISOLATORS TO PROVIDE A NATURAL FREQUENCY NOT GRATER THAT ONE THIRD OF THE EQUIPMENT

LOWEST FORCED FREQUENCY. 32.13 USE "LION" CHAIN, GALVANIZED STEEL WIRES OR AIRCRAFT CABLES FOR LUMINAIRES HANGERS. 32.14 GAUGES OR SIZES SMALLER THAN INDICATED BELOW WILL NOT BE ACCEPTED FOR SEISMIC RESTRAINTS:

1/16" DIAMETER AIRCRAFT CABLE,

32.15 PROVIDE TRANSVERSE AND LONGITUDINAL SEISMIC RESTRAINT ANCHORAGE OR BRACING TO CABLE TRAYS, CONDUIT SYSTEM AND BUSWAYS 32.16 SEISMIC RESTRAINTS SHALL BE INSTALLED AT LEAST 3" CLEAR FROM OTHER EQUIPMENT, PIPING, DUCTS AND OTHER INSTALLATION. 32.17 PROVIDE FOR VIBRATION ISOLATORS AND/OR SEISMICALLY RATED SPRING ISOLATORS OR OTHER PROVISION

FOR TRANSFORMERS AS REQUIRED

APPROVAL OF THE STRUCTURAL ENGINEER.

FOLLOWING:

32.18 PROVIDE FOR INDEPENDENT SEISMIC SUPPORT FOR LUMINAIRES AS REOUIRED. 32.19 PROVIDE FOR SEISMIC RESTRAINTS FOR GENERATOR SET FUEL DAY TANK, BATTERY AND BATTERY CHARGER, MUFFLER, CONTROL PANELS AND CABINETS, ANY OTHER COMPONENT WHICH FORMS POWER GENERATION SYSTEM. 32.20 WHERE DRILLING OF THE STRUCTURE IS REQUIRED FOR ANCHORAGE DETAILS, THE DRILLING SHALL BE SUBJECT TO THE

33. FIRESTOPPING SYSTEMS 33.1 ALL ELECTRICAL CABLES, WIRES, RACEWAYS, OUTLET BOXES, AND OTHER SIMILAR SERVICES THAT PENETRATE FIRE WALL, ASSEMBLY OR FIRE SEPARATION THAT IS REQUIRED TO HAVE A FIRE-RESISTANCE RATING SHALL BE SEALED AT THE PENETRATION BY FIRE STOP SYSTEM THAT HAS AN "FT" RATING NOT LESS THAN FIRE-RESISTANCE RATING FOR THE FIRE SEPARATION. 33.2 PROVIDE FOR FIRESTOPPING SYSTEMS IN CONCEALED SPACES AS REQUIRED BY CURRENT BUILDING CODE 33.3 ALL FIRE RESISTANCE RATED ASSEMBLIES WHICH CONTAIN PANEL BOARDS, BACK BOXES, ETC. SHALL BE WITH FIRE RATED BACKING TO MAINTAIN THE INTEGRITY OF THE FIRE RESISTANCE. 33.4 CONTRACTOR SHALL ENGAGE QUALIFIED FIRESTOPPING PROFESSIONAL ENGINEER TO PROVIDE THE DESIGN OF AND REVIEW FIRESTOPPING SYSTEM INSTALLATION. 33.5 QUALIFIED FIRESTOPPING PROFESSIONAL ENGINEER RETAINED BY THE CONTRACTOR SHALL PROVIDE FOR THE

 CERTIFIED DETAILED DRAWINGS AND SPECIFICATIONS
 OF FIRESTOPPING SYSTEMS REQUIRED FOR THIS
 PROJECT FOR ELECTRICAL SYSTEMS, 2) WRITTEN REPORTS OF FIELD REVIEWS 33.6 SIGNED AND SEALED LETTERS OF ASSURANCE OF PROFESSIONAL FIELD REVIEW AND COMPLIANCE (SCHEDULE S-B

BEFORE SUBSTANTIAL PERFORMANCE FOR ELECTRICAL SYSTEMS CAN BE GRANTED. 33.7 ALL COSTS RELATED TO THE ABOVE REQUIREMENTS SHALL BE INCLUDED IN THE CONTRACTOR BASE BID

AND SCHEDULE S-C) SHALL BE PROVIDED BY THE CONTRACTOR

34. DATA CABLING 34.1 INSTALL FOUR TWISTED PAIR, 24 GAUGE, SOLID COPPER WIRE, CATEGORY 6 INSULATED & UNSHIELDED, FROM THE COMMUNICATION PATCH PANEL TO THE WALL OR CEILING

OUTLET AS SHOWN ON THE DRAWINGS. CABLE IS TO BE CSA CERTIFIED AND BLUE JACKETED.

34.2 DATA CABLES ARE TO BE TERMINATED AS SPECIFIED IN THE EIA/TIA 568 STANDARDS, PIN CONFIGURATION 568A ON CATEGORY 6, RJ45 MODULAR JACKS. JACK MODULE COLOUR IS 34.3 ALL DATA CABLES ARE TO BE TESTED FOR CONTINUITY

SPECIFIED IN EIA/TIA BULLETIN TSB67. SUBMIT TEST RESULTS TO CONSULTANT FOR REVIEW. 35. TELEPHONE CABLING 35.1 INSTALL FOUR TWISTED PAIR, 24 GAUGE, SOLID COPPER

WIRE, CATEGORY 6 INSULATED & UNSHIELDED, FROM THE

COMMUNICATION PATCH PANEL TO THE WALL OUTLET AS SHOWN ON THE DRAWINGS. CABLE IS TO BE CSA CERTIFIED. WHITE OR GRAY JACKETED. 35.2 TELEPHONE CABLES ARE TO BE TERMINATED ON RJ-11 (4 PIN) MODULAR JACKS. WITH USOC PIN CONFIGURATION, SPARE CONDUCTORS ARE TO BE DRESSED ALONG CABLE, BEHIND FACEPLATE. JACK MODULE COLOUR IS TO BE WHITE. 35.3 HORIZONTAL RUNS OF COMMUNICATION CABLE ARE TO BE SUPPORTED USING CAT.6 J-HOOKS CONNECTED TO THE BUILDING STRUCTURE OR T-BAR CEILING SYSTEM. CADDY CABLE-CAT OR APPROVED EQUAL. 35.4 PROVIDE LABELING OF OUTLETS, CABLING AND PATCH

PANELS. 35.5 PROVIDE 40" (1000mm) SPARE CABLE AT WORKSTATION OUTLET AND 120" (3000mm) SPARE CABLE AT COMMUNICATION BACKBOARD, FOR ALL CABLES. 35.6 CONTRACTOR MUST BE A QUALIFIED INSTALLER, TRAINED AND AUTHORIZED BY AN APPROVED MANUFACTURER

35.7 PROVIDE GROUND BAR AT COMMUNICATION BACKBOARDS WITH #6 AWG, RW90, GREEN JACKETED GROUND CONDUCTOR TO BUILDING GROUND POINT. 36. SECURITY SYSTEM 36.1 PROVIDE CONDUIT, OUTLET BOXES, BACK BOXES AND WIRING AS NOTED ON THE DRAWINGS FOR A ICT PROTEGE GX

SECURITY SYSTEM.

PLENUM.

36.2 ALL OUTLETS SHALL BE 4" (100mm) SQUARE (DEEP) COMPLETE WITH A SINGLE GANG MUD RING AND SHALL ACCOMMODATE A SINGLE GANG COVERPLATE, PROVIDE A PULL STRING BETWEEN EACH OUTLET AND THE CEILING SPACE AND EACH CONDUIT. CONDUITS SHALL BE 3/4" (19mm) MINIMUM. 36.3 PROVIDE THE CABLING FOR THE INTRUSION ALARM

36.4 ALL SECURITY AND ACCESS CONTROL SYSTEMS WIRING

SHALL BE CSA APPROVED, ALL WIRES AND CABLES SHALL BE

NON-COMBUSTIBLE BUILDINGS AND FT6 FOR USE IN AIR RETURN

RATED FT1 FOR COMBUSTIBLE BUILDINGS, FT4 FOR

THE CITY OF QUESNE 410 Kinchant Street Quesnel B.C. **V2J 7J5**



Box 4451, QUESNEL, BC V2J 3J6 www.eclipseprojects.ca +(250) 991-6416 PROJECT NO. 00475

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ELECTRICAL CONSULTANT:



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PROJECT:

Q-KIDS DAYCARE CENTRE

420 Webster Avenue Quesnel. BC

DRAWING: ELECTRICAL SPECIFICATIONS

PROJECT NO.: CHECKED BY: 2108 A.G. DATE: SCALE: N.T.S. JULY 26, 2021

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