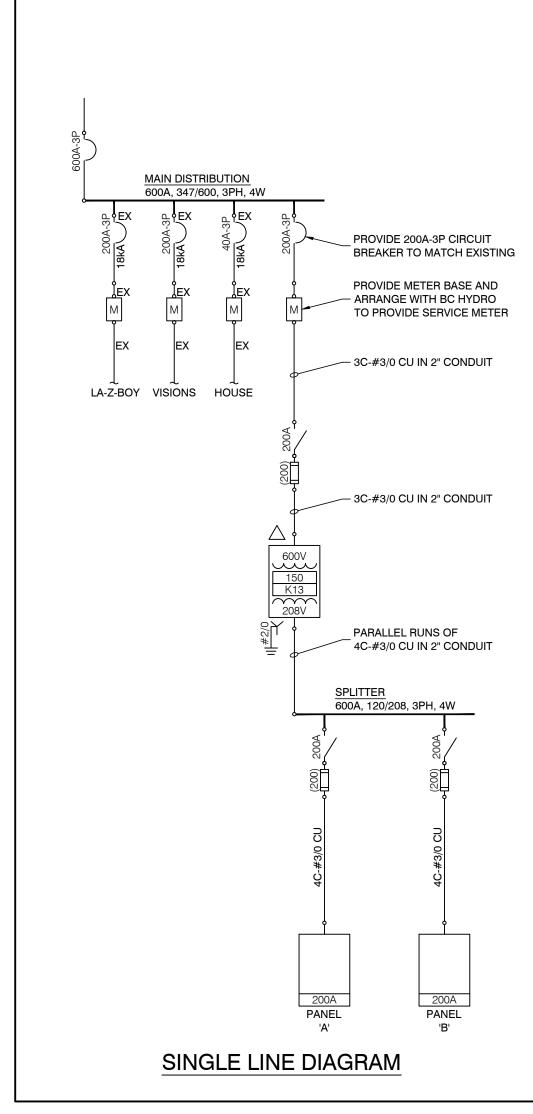
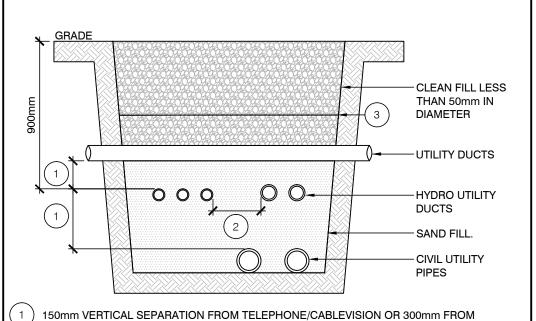


RENO SCHEDULE EX EXISTING TO REMAIN RN EXISTING TO BE REPLACED WITH NEW RM EXISTING TO BE REMOVED RL EXISTING TO BE RELOCATED AS SHOWN EXISTING TO BE REMOVED AND REINSTALLED ONCE OTHER WORK IS COMPLETE LL BY LANDLORD FORCES

LO	AD DETAILS:	
A)	PROJECT DATA AREA HEATING A/C COOLING	= 696.77 SQM = GAS = 23235 WATTS
B) -	LOAD CALCULATIONS BASIC LOAD, 696.77 SQM X 30 W/SQM REFRIGERATION ELECTRIC HEAT EQUIPMENT LOAD TOTAL AT 208V, 3PH AT 600V, 3PH	= 20903 WATTS = 45000 WATTS = 10000 WATTS = 15000 WATTS = 113235 WATTS = 314.54 AMPS = 108.98 AMPS
C)	SERVICE 108.98 AMPS AT 125%	= 136.2 AMPS
200A	, 347/600V, 3PH, 4W FROM MAIN DIS	T. IN EXISTING ELECTRICAL ROOM #1

	SYMBOL S	SCHEE	DULE
\boxtimes	CEILING LUMINAIRE (RECESSE OR SURFACE)	1	THERMOSTAT
H XX	WALL MOUNT LUMINAIRE	Θ	HUMIDISTAT
Q	PUCK LIGHT	\boxtimes	MAG STARTER
	LINEAR LUMINAIRE STRIP	100	MOTOR AND MANUAL STARTER
	1' x 4' LUMINAIRE	0	MOTOR
	2' x 2' LUMINAIRE	7	MOTOR WITH DISCONNECT
	2' x 4' LUMINAIRE		HOA MAGNETIC STARTER
	2' x 4' INDIRECT LUMINAIRE		NON-FUSED DISCONNECT
	SINGLE POLE LIGHT SWITCH	r	FUSIBLE DISCONNECT
-⊞3	THREE WAY LIGHT SWITCH		DUCT HEATER
-⊞4	FOUR WAY LIGHT SWITCH	X	MECHANICAL EQUIPMENT TAG
₩P	SINGLE POLE SWITCH WITH PILOT LIGHT	XX	SPLIT MECHANICAL EQUIPMENT TAG
⊕oc	LINE VOLTAGE OCCUPANCY SWITCH	300	BASEBOARD HEATER
LV	SWITCHING STATION	KS	ELECTRIC KICK-SPACE HEATER
OS)	CEILING OCCUPANCY SENSOR	FF	ELECTRIC FORCE FLOW HEATER
PC	PHOTOCELL	HD	HAND DRYER
TC	TIMECLOCK	\triangle	120V DIRECT CONNECTION
LC	LIGHTING CONTACTOR	(A)	208V 1PH DIRECT CONNECTION
EX	SINGLE SIDED EXIT SIGN <> ARROW(S) DENOTES DIRECTION		208V 3 PH DIRECT CONNECTION
EX	DOUBLE SIDED EXIT SIGN <> ARROW(S) DENOTES DIRECTION	∇	COMPUTER OUTLET
EX	COMBINATION EXIT SIGN WITH EM LIGHTING HEADS	$oldsymbol{ abla}$	COMMUNICATION OUTLET (DATA/VOICE)
EB1 9	EMERGENCY BATTERY PACK	∇	CABLEVISION OUTLET
$\Delta \Delta$	WALL MOUNT DOUBLE REMOTE EM HEAD	Y	TELEPHONE OUTLET
$\Delta \Delta$	CEILING MOUNT DOUBLE REMOTE EM HEAD	∇	COMPUTER OUTLET
+	DOUBLE RECEPTACLE	©	SMOKE DETECTOR
 т	TAMPER PROOF DUPLEX RECEPTACLE	©	FIXED HEAT DETECTOR
\Rightarrow	DUPLEX IG RECEPTACLE	(1)	HEAT DETECTOR
#	DUPLEX GFCI RECEPTACLE	0	DUCT SMOKE DETECTOR
#	DUPLEX SPLIT IG RECEPTACLE		FIRE ALARM PULLSTATION
#	QUADRAPLEX RECEPTACLE	2	FIRE ALARM BELL/GONG
\(\begin{array}{c}\end{array}\)	SPECIAL RECEPTACLE (SPEC AS NOTED)	(A)	FIRE ALARM BUZZER
#	QUADRAPLEX RECEPTACLE (1 NORMAL/1 IG CIRCUIT)		FIRE/SMOKE ALARM STROBE
\Diamond	RANGE RECEPTACLE	密	COMBINATION FIRE ALARM STROBE/BUZZER
0	DRYER RECEPTACLE		FIRE ALARM SPEAKER
	PANELBOARD	G	FIRE FIGHTER TELEPHONE
0	DIRECT HARD WIRED CONNECTION		MAGNETIC DOOR HOLDER
J	JUNCTION BOX		
•	PUSHBUTTON		





- WATER, STORM, SANITARY, SEWER, GAS MAINS, ETC.
- 300mm HORIZONTAL SEPARATION BETWEEN HYDRO AND TELEPHONE/CABLEVISION, 300mm SEPARATION FROM WATER, STORM, SANITARY, SEWER, GAS MAINS, ETC. MAINTAIN MINIMUM SEPARATION BETWEEN DUCTS PER C.E.C. TABLES D8A TO D16B
- PROVIDE CONTINUOUS PLASTIC WARNING TAPE ABOVE DUCTS AS PER ELECTRICAL

COORDINATE INSTALLATION WITH GENERAL CONTRACTOR, ON/OFF SITE CIVIL, HYDRO, TELEPHONE, CABLEVISION, LANDSCAPE CONSULTANT, LOCAL AUTHORITIES AND ELECTRICAL CODES. CHANGES IN CONDUIT ROUTING FROM DRAWINGS MUST BE APPROVED BY UTILITIES.

INSTALLATION OF HYDRO PRIMARY OR SECONDARY DUCTS SHALL COMPLY WITH LOCAL UTILITY STANDARDS INCLUDING TRENCHING, BACKFILL, CLEARANCES, CONCRETE ENCASEMENT, ETC.

COORDINATE UTILITY INSPECTIONS AND INSTALLATION APPROVAL OF CONDUITS, TRANSFORMER PADS, PULLBOXES, ETC. PRIOR TO BACKFILL OR CONCRETE

DUCT SECTION DETAIL

CONTRACTOR/CONSULTANT NOTES:

CONTRACT AWARDING:

ONCE CONTRACT IS AWARDED, THE ELECTRICAL CONTRACTOR SHALL SUBMIT NAME OF COMPANY, ADDRESS, PHONE NUMBER, NAME OF INTERNAL CONTACT, EMAIL ADDRESS AND NAME/PHONE NUMBER OF SITE CONTRACTOR TO THE CONSULTANT.

SITE REVIEWS:

ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE CONSULTANT MINIMUM 5 BUSINESS DAYS PRIOR TO BOARDING OF WALLS (ROUGH IN STAGE) FOR CONSULTANT SITE REVIEW. THIS REVIEW IS REQUIRED IN ADDITION TO REVIEWS PROVIDED BY LOCAL AUTHORITIES. THE CONSULTANT RESERVES THE RIGHT TO HAVE THE CONTRACTOR REMOVE ANY AND ALL BOARDING TO EXPOSE EQUIPMENT AND OR WIRING THAT THE CONSULANT DEEMS NECESSARY TO COMPLETE THE REVIEW. ALL ASSOCIATED COSTS SHALL BE BEARED BY THE CONTRACTOR SHOULD THEY FAIL TO CONTACT THE CONSULTANT PRIOR TO BOARDING.

ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE CONSULTANT MINIMUM 5 BUSINESS DAYS PRIOR TO FINAL CONSULTANT INSPECTION. THE CONTRACTOR SHALL PROVIDE CONFIRMATION THAT THE EXIT AND EMERGENCY LIGHTING IS FULLY OPERATIONAL. SHOULD LIGHTING NOT BE FULLY OPERATIONAL DURING INSPECTION, ELECTRICAL CONTRACTOR MAY BE SUBJECT TO PAY FOR ALL ADDITIONAL COSTS ASSOCIATED WITH CONSULTANT HAVING TO RETURN TO SITE AFTER COMPLETION. REFER TO FINAL OCCUPANCY REQUIREMENTS FOR ADDITIONAL INFORMATION.

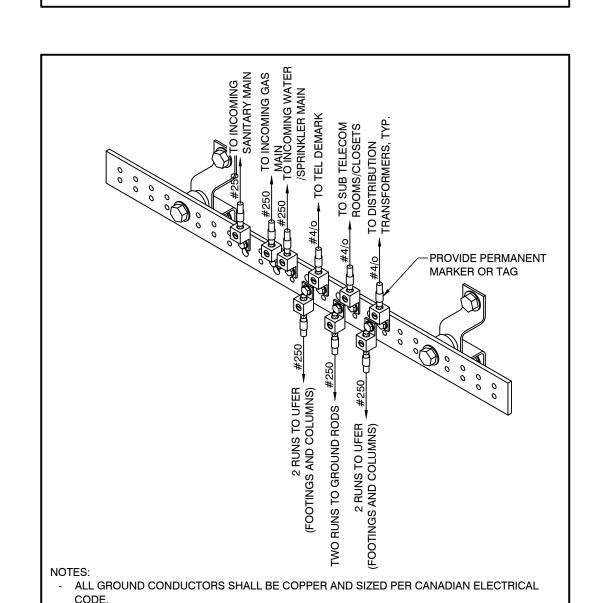
FINAL OCCUPANCY REQUIREMENTS:

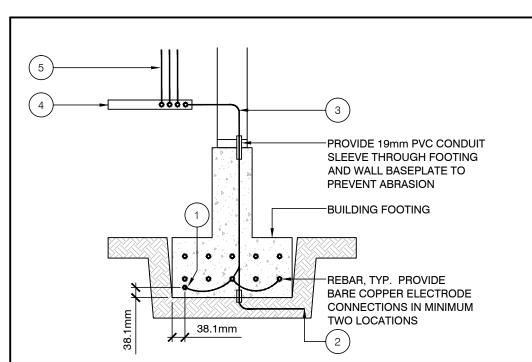
ELECTRICAL CONTRACTOR SHALL PROVIDE COPIES OF THE FOLLOWING PRIOR TO

CALLING FOR FINAL INSPECTION: FIRE ALARM VERIFICATION WORKSHEETS. TO EXPEDITE PROCESS, HANDWRITTEN VERIFICATION CHECKLIST FROM THE TECHNICIAN IS ACCEPTABLE. TYPEWRITTEN COPY OF VERIFICATION WITH CERTIFICATE CAN BE SUBMITTED SOON

- COPY OF ELECTRICAL CONTRACTOR'S ENGINEER REVIEW DOCUMENTATION PERFORMED DURING FIRE ALARM VERIFICATION (ALBERTA PROJECTS ONLY). KITCHEN FIRE SUPPRESSION TRIP TEST. COORDINATE WITH GENERAL CONTRACTOR. FIRE ALARM MONITORING LETTER (IF SPRINKLERED).
- SIGNED AND SEALED SCHEDULE 'B & C' FOR SEISMIC RESTRAINTS (WHERE APPLICABLE).
- REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.

AFTER (WITHIN 2 WEEKS OF VERIFICATION).





BUSS BAR SHALL BE COMPLETE WITH MINIMUM (5) SPARE SPACES.

BE PERMITTED.

DOUBLE LUGGING OF GROUND CONDUCTORS ON SAME SIDE OF BUSS BAR WILL NOT

MAIN BUILDING GROUND DETAIL

- 6 METERS OF BARE COPPER GROUND RUN HORIZONTALLY IN BUILDING FOOTING. ALL CONNECTIONS SHALL BE APPROVED COMPRESSION CONNECTORS (CADWELD, BURNDY, ETC.) PROVIDE COPPER CONNECTIONS TO REBAR EVERY
- PROVIDE BARE COPPER "WHIP" THROUGH 19mm PVC CONDUIT SLEEVE OUTSIDE BUILDING FOOTING. PROVIDE MINIMUM (4) 1.5M GROUND RODS SPACED 3 METERS APART AND OR GROUND PLATES AS REQUIRED TO ACHIEVE ACCEPTABLE BUILDING GROUND.
- 3 BARE COPPER GROUND EXTENDED TO GROUND BUSSING IN ELECTRICAL ROOM.
- COPPER GROUND BAR OFFSET 75mm FROM WALL +457mm A.F.F., LENGTH TO ACCOMMODATE ADDITIONAL GROUND LUGS PER ONE LINE DIAGRAM AND MINIMUM 5 SPARE. ADEQUATELY SPACE LUGS ON BUSSING, BUSS TO BE TO CSA C22.2 #41 STANDARDS WITH TERMINATIONS PER CANADIAN ELECTRICAL CODE SECTION 10-806 PROVIDE PERMINENT LABELS ON EACH LUG INDICATING DEVICE.
- PROVIDE GREEN COPPER GROUND SIZED PER C.E.C. TO INCOMING WATER MAIN SPRINKLER LINES, ELECTRICAL DISTRIBUTION, TRANSFORMERS, INCOMING TELEPHONE/CATV DEMARCATION, TELECOM SUB CLOSETS, ETC. REFER TO ONE

BUILDING GROUND DETAIL

<i>0</i> 2	03/20/17	ISSUED FOR BUILDING PERMIT
01	03/17/17	ISSUED FOR REVIEW
REV	DATE	DESCRIPTION

200 - 2764 Barnet Highway, Coquitlam, BC V3B 1B9 EDG@EDGCorp.ca www.EDGCorp.ca Phone: 604-474-4080

CONSULTANT SEAL

CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE. DRAWINGS SHALL NOT BE

1st BURNABY, BRITISH COLUMBIA V5C 3V6 E-MAIL: pjlovick@pjlovick.com fax: 604-298-6081

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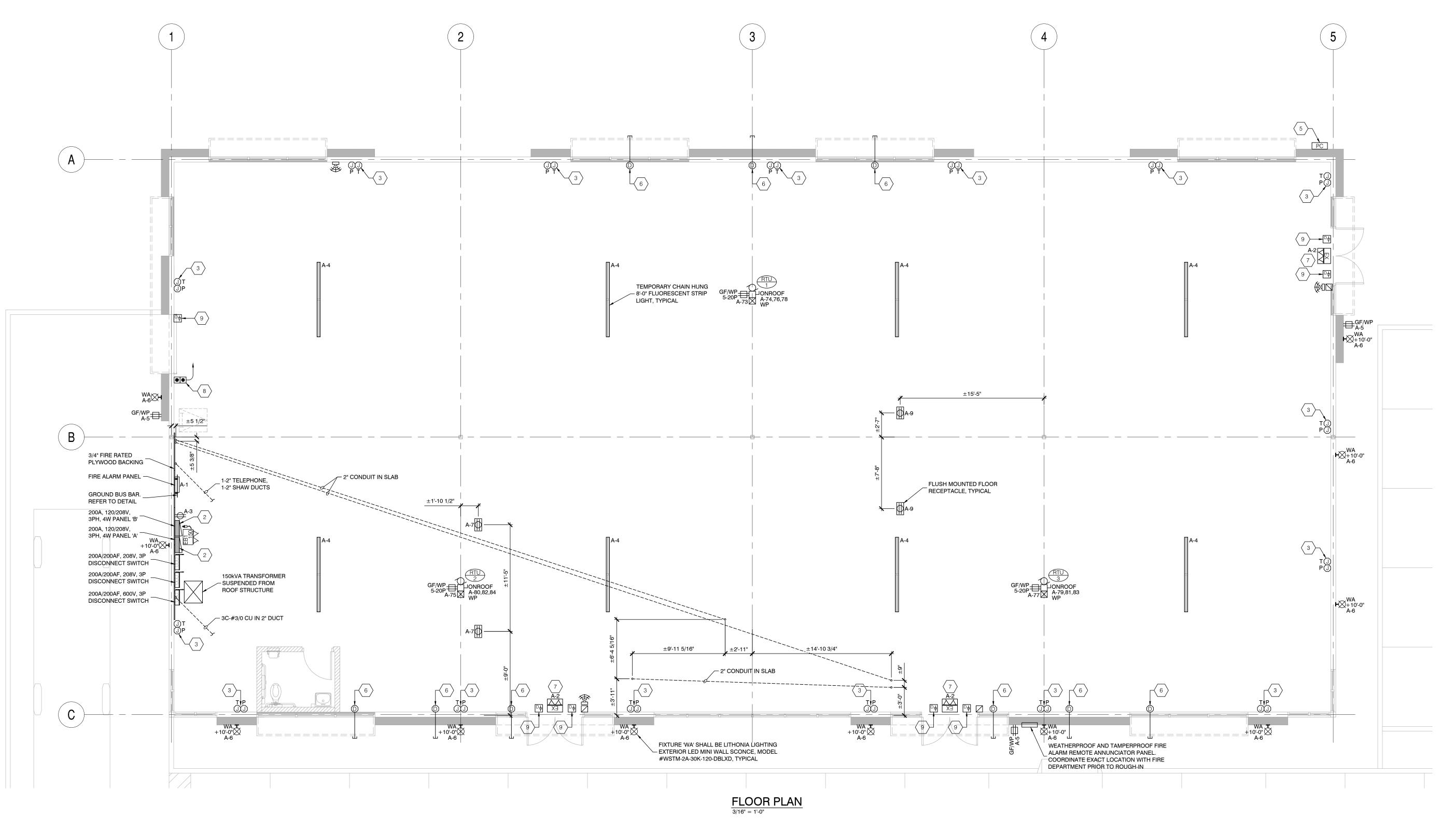
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Langley Bypass Commercial

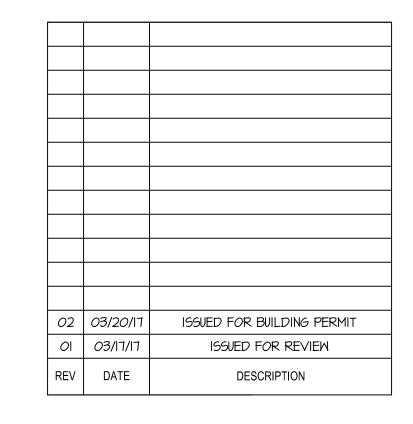
20670 LANGLEY BYPASS LANGLEY, BC

SITE SERVICING DETAILS

		+
PROJECT NUMBER	DRAWING NUMBER	
13428	EI.I	 Bypass
scale AS NOTED		 ey
DATE	REVISION	<u></u>
MAR 2017	-	La



DENOTES - NOT APPLICABLE **KEY NOTES:** $\langle\; 2\;
angle$ PROPOSED LOCATION FOR TENANT TRANSFORMER AND PANEL. CONTRACTOR TO CONFIRM EXACT LOCATION WITH TENANT/LANDLORD PRIOR TO ROUGH IN. PROVIDE 15A-1P BREAKER FOR EXIT/EM, (2) 15A-1P BREAKERS FOR LIGHTING, 15A-1P BREAKER FOR RECEPTACLE BELOW PANEL AND BREAKERS PER MECHANICAL SCHEDULE. PANEL TO BE C/W RECESS FRAME IN KIT. (2) 2-GANG MASON JUNCTION BOXES IN WALL AT +18" IN FINISHED WALLS FOR FUTURE TELECOM AND POWER OUTLETS. EXTEND A 1" CONDUIT C/W PULLSTRING FOR TELECOM AND A 1/2" CONDUIT C/W PULLSTRING FOR POWER UP INSIDE WALL TO ACCESSIBLE CEILING SPACE. PHOTOCELL MOUNTED ON NORTH FASCIA FOR EXTERIOR LIGHTING CONTROL. EXTEND A 1/2"
CONDUIT AND WIDING TO ELECTRICAL ROCK! CONDUIT AND WIRING TO ELECTRICAL ROOM. \langle 6 \rangle WEATHERPROOF OUTLET ON FASCIA FOR TENANT SIGNAGE. STUB A 1" CONDUIT C/W PULLSTRING INTO ACCESSIBLE CEILING SPACE FOR FUTURE WIRING BY OTHERS. rack 7 EXIT SIGNS TO BE COMBINATION STYLE C/W EMERGENCY HEADS. PROVIDE DEDICATED 15A-1P BREAKER AND WIRING TO TENANT PANEL. PROVIDE 120V READY-LITE RAC SERIES OR APPROVED PROVIDE 1-GANG JUNCTION BOX AND ROUGH-IN FOR MOTORIZED DOOR ACTUATOR AT +36" AFF, CONTROL WIRING BY OTHERS. PROVIDE 1/2" CONDUIT C/W PULLSTRING TO OPERATOR AS \langle 9 \rangle PROVIDE CONDUIT INFRASTRUCTURE FOR SECURITY DOOR CONTACT, EXTEND 1/2" CONDUIT TO INTERIOR SPACE. 2.0 kW RECESSED WALL MOUNTED FORCE FLOW HEATER MOUNTED +36". PROVIDE OUELLET OAC02007 347V 1Ø OR APPROVED EQUAL.



200 - 2764 Barnet Highway, Coquitlam, BC V3B 1B9 www.EDGCorp.ca EDG@EDGCorp.ca Phone: 604-474-4080

CONSULTANT SEAL

CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE. DRAWINGS SHALL NOT BE

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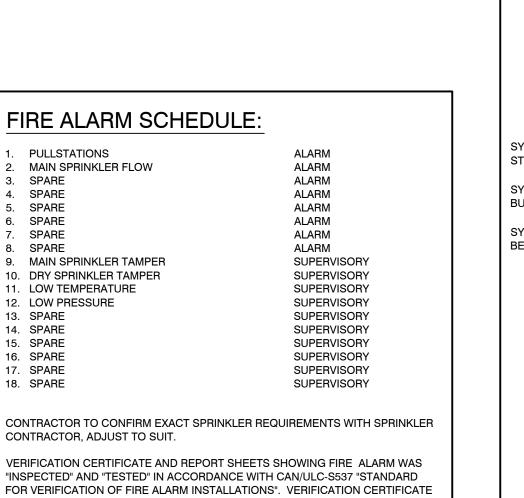
20670 LANGLEY BYPASS LANGLEY, BC

AS NOTED

MAR 2017

	FLOOR PLAN	9
PROJECT NUMBER	DRAWING NUMBER	
13428	E2.0	C
SCALE		

REVISION



ALARM

ALARM

ALARM

ALARM

ALARM

ALARM

ALARM

FIRE ALARM SCHEDULE:

. PULLSTATIONS

SPARE

SPARE

SPARE

4. SPARE

SPARE

SPARE

SPARE

14. SPARE

15. SPARE

SPARE

17. SPARE

18. SPARE

MAIN SPRINKLER FLOW

9. MAIN SPRINKLER TAMPER

CONTRACTOR, ADJUST TO SUIT.

OF INSTALLATION AND OPERATION

10. DRY SPRINKLER TAMPER

11. LOW TEMPERATURE

12. LOW PRESSURE

				IA		— ADDRES RELAY C
				IA		KITCHEI — ADDRES RELAY C SECURI
				IA	M	— ADDRES RELAY C SPRINKI
	SYNCRONIZED MONITORED STROBE CIRCUIT	SM SM	1M	IA	M	— ADDRES RELAY C
	SYNCRONIZED MONITORED BUZZER CIRCUIT	SM			D O E	ADDRES DETECT
	SYNCRONIZED MONITORED BELL CIRCUIT	SM SM				ADDRES PULLSTA
				IA	M P P	MANUAL
			24 VDC	DATA		— END OF (EOL)
INKLER		FIRE ALARM AUTODIALER	FIRE A	ΓROL		MAIN DISBOARD
WAS						
ARD FICATE		ARM RISEF	R DIA	GRAM	1 AND NO	DTES
	NTS					

MECHANICAL SCHEDULE																																
E ELECTRICAL CONTRACTOR M MECHANICAL CONTRACTOR TO TIMECLOCK 1 2 T-In THERMOSTAT - LINE VOLTAGE S-In SWITCH - WILLIAM SWITCH - LINE VOLTAGE S-In SWITCH - PRESSURE S-IN SWITCH - WARRING S-IN SWITCH - PRESSURE S-IN SWITCH - WARRING S-IN SWITCH - PRESSURE S-IN SWITCH - WARRING S-IN SWITCH - WARRING S-IN SWITCH - PRESSURE S-IN SWITCH - WARRING S-IN SWITCH - WARRING S-IN SWITCH - PRESSURE S-IN SWITCH - WARRING S-IN S	MECI	HANICAL SCHEDULE																														
M	LEGEND:										GENE	RAL NO	DTES:																			
T-IN THERMOSTAT-LINE VOLTAGE T-IV THERMOSTAT-LOW VOLTAGE T-IV THERMOSTAT-LOW VOLTAGE T-IV THERMOSTAT-LOW VOLTAGE S-IN SWITCH - VARIABLE SPEED 5 VFD VARIABLE FREQUENCY DRIVE S-P SWITCH - PRESSURE 6 Mag MACNETIC STARTER S-IN SWITCH - VARIABLE SPEED 5 WITCH - PRESSURE 6 Mag MACNETIC STARTER S-IN SWITCH - PRESSURE 8	E	ELECTRICAL CONTRACTOR	CO	CO/VG GAS SENSOR							1																					
T-IV THERMOSTAT - LOW VOLTAGE S-ht SWITCH - HUMIDITY TIMER T-IV THERMOSTAT - REVERSE ACTING S-V9 SWITCH - VARIABLE SPEED 5 VFD VARIABLE FREQUENCY DRIVE S-P SWITCH - HAND/OFF/AUTO 7 Man MANUAL STARTER S-1 SWITCH - HAND/OFF/AUTO 8 VOER CURRENT PROTECTION FEEDER EQUIPMENT RESPONSIBILITIES FEEDER EQUIPMENT RESPONSIBILITIES FOR CONTROLS NOTES NOTES RTU-1 ROOF TOP UNIT ROOF ROOF RTU-1 ROOF TOP UNIT ROOF ROOF ROOF ROOF ROOF ROOF ROOF ROO	М	MECHANICAL CONTRACTOR	TC	TIMECLOCK							2																					
T-rv THERMOSTAT - REVERSE ACTING S-vs SWITCH - VARIABLE SPEED 5	T-ln	THERMOSTAT - LINE VOLTAGE	S-In	SWITCH - LINE VOLTAGE							3																					
VFD VARIABLE FREQUENCY DRIVE S-p SWITCH - PRESSURE S-h SWITCH - HAND/OFF/AUTO S-h SWITCH - FLOAT SWITCH - HAND/OFF/AUTO S-h SWITCH - HAND/OFF/AUTO S-h SWITCH - HAND/OFF/AUTO S-h SWITCH - PRESSURE S-h SWITCH - PRESSURE S-h SWITCH - PRESSURE S-h SWITCH - HAND/OFF/AUTO S-h SWITCH - PRESSURE SWITCH - PRESSU	T-lv	THERMOSTAT - LOW VOLTAGE	S-ht	SWITCH - HUMIDITY TIMER							4																					
Mag MAGNETIC STARTER S-h SWITCH - HAND/OFF/AUTO S-f SWITCH - FLOAT S-f SWITCH - HAND/OFF/AUTO S-f SWITCH - HAND/OFF/AUTO S-f SWITCH - HAND/OFF/AUTO SWITCH - HAND/OFF/AUTO S-f SWITCH - HAND/OFF/AUTO S-f SWITCH - HAND/OFF/AUTO S-f SWITCH - HAND/OFF/AUTO	T-rv	THERMOSTAT - REVERSE ACTING	S-vs	SWITCH - VARIABLE SPEED							5																					
Man	VFD	VARIABLE FREQUENCY DRIVE	S-p	SWITCH - PRESSURE							6																					
VINT	Mag	MAGNETIC STARTER	S-h	SWITCH - HAND/OFF/AUTO							7																					
POWER REQUIREMENTS PROTECTION PROTECTI	Man	MANUAL STARTER	S-f	SWITCH - FLOAT							8																					
TAG DESCRIPTION LOCATION HP KW FLA MCA US		UNIT				POW	ER RE	QUIREN	MENTS		_			F	EEDE	₹					EQ	UIPMI	ENT R	RESPO	NSIBI	LITIES	3					
TAG DESCRIPTION LOCATION HP KW FLA MCA BUT BELLATION HP KW FLA MCA BUT BUT BELLATION HP KW FLA MCA BUT												SE						UNIT		DIS	CON	NECT	•		STAR	ΓER		С	CONTI	ROLS		1
RTU-2 ROOF TOP UNIT ROOF 26.9 208 3 40 3 3 #8 1/2" M M E E E E - E E - M M M M	TAG	DESCRIPTION		LOCATION	HP	KW	FLA	MCA	ר) ו	PHASE	BREAKER	E DELAY F	OF P	P	WIRE SIZE	SIZ	SUPPLY	INSTALL		FUSED	SUPPLY	INSTALL		TYPE	SUPPLY	INSTALL	Ĕ	TYPE	SUPPLY	INSTALL	⊢ I	NOTES
	RTU-1	ROOF TOP UNIT	ROOF					26.9	208	3	40		3	3	#8	1/2"	М	М	Е		E	Е	Е	-	Е	Е	Е	-	М	М	М	
RTU-2 ROOF TOP UNIT ROOF 26.9 208 3 40 3 3 #8 1/2" M M E E E E - E E E - M M M	RTU-2	ROOF TOP UNIT	ROOF					26.9	208	3	40		3	3	#8	1/2"	М	М	E		E	E	E	-]	E	E	E	- [М	М	М	
	RTU-2	ROOF TOP UNIT	ROOF					26.9	208	3	40		3	3	#8	1/2"	М	М	E		E	E	Е	-	E	Ē	E	-	М	М	М	
								1													\perp						_					

SHALL RELEASE ALL OF THE DOORS IN THE STAIR ENCLOSURE. EACH SMOKE DETECTOR USED FOR DOOR RELEASE SHALL BE PROVIDED WITH AN ALARM VERIFICATION FEATURE AND SHALL INDICATE A SUPERVISORY SIGNAL ONLY. C. HEAT DETECTOR: ACTIVATION OF ANY HEAT DETECTOR SHALL AUTOMATICALLY OPERATE ALL AUDIBLE AND VISUAL APPLIANCES AND PRODUCE AN ALARM SIGNAL AT THE CONTROL UNIT AND AT THE REMOTE ANNUNCIATOR(S). ALL HEAT DETECTOR ALARM SIGNALS SHALL BE AUTOMATICALLY TRANSMITTED TO REMOTE MONITORING COMPANY AS AN "ALARM" SIGNAL. D. WATER FLOW ALARMS: ACTIVATION OF A WATER FLOW ALARM SHALL AUTOMATICALLY OPERATE ALL AUDIBLE AND VISUAL APPLIANCES AND PRODUCE AN ALARM SIGNAL AT THE CONTROL UNIT AND AT THE REMOTE ANNUNCIATOR(S). EACH INDIVIDUAL WATER FLOW SWITCH SHALL HAVE A DISTINCT ADDRESS. ALL WATER FLOW ALARM SIGNALS SHALL BE AUTOMATICALLY TRANSMITTED TO REMOTE MONITORING COMPANY AS A "WATER FLOW" SIGNAL. E. VALVE TAMPER SWITCH: - INTELLIGENT ADDRESSABLE ACTIVATION OF A VALVE TAMPER SWITCH SHALL INITIATE A SUPERVISORY INPUT/OUTPUT MODULE 3 PROVIDE GROUND FAULT BREAKER ALARM AT THE SYSTEM CONTROL PANEL AND AT THE REMOTE ANNUNCIATOR(S). SUPERVISORY AUDIBLE AND VISIBLE ALARMS AT THESE IAM — ADDRESSABLE OUTPUT LOCATIONS SHALL BE DISTINCT FROM EITHER ALARM OR TROUBLE RELAY OR CONTACT FOR CONDITIONS INVOLVING THE SAME OR RELATED DEVICES. EACH INDIVIDUAL KITCHEN HOOD INTERLOCK TAMPER SWITCH SHALL HAVE A DISTINCT ADDRESS. ALL VALVE TAMPER - ADDRESSABLE OUTPUT ALARMS SHALL BE TRANSMITTED TO REMOTE MONITORING COMPANY AS A RELAY OR CONTACT FOR 'SPRINKLER SUPERVISORY" SIGNAL. SECURITY INTERLOCK — ADDRESSABLE INPUT F. DUCT SMOKE DETECTOR: RELAY OR CONTACT FOR ACTIVATION OF A DUCT SMOKE DETECTOR SHALL INITIATE A SUPERVISORY SPRINKLER DEVICE ALARM AT THE SYSTEM CONTROL PANEL AND AT THE REMOTE - ADDRESSABLE OUTPUT IZED MONITORED ANNUNCIATORS. A DUCT SMOKE DETECTOR ACTIVATION SHALL ALSO RELAY OR CONTACT FOR INITIATE AN AIR HANDLING UNIT SHUT DOWN AS REQUIRED BY NFPA 90A. CONTROLS ALL DUCT DETECTOR ALARMS SHALL BE TRANSMITTED TO REMOTE ADDRESSABLE FIRE DETECTORS MONITORING COMPANY AS A "TROUBLE" SIGNAL. G. FIRE PUMP SUPERVISORY SIGNALS: ADDRESSABLE MANUAL IN BUILDINGS WITH FIRE PUMPS, INDIVIDUAL SUPERVISORY SIGNALS SHALL BE PROVIDED FOR THE FOLLOWING CONDITIONS: NON-ADDRESSABLE MANUAL PULLSTATIONS 1. FIRE PUMP RUNNING 2. FIRE PUMP LOSS OF POWER IN ANY PHASE 3. FIRE PUMP PHASE REVERSAL — END OF LINE RESISTOR ACTIVATION OF A FIRE PUMP SUPERVISORY SIGNAL SHALL INITIATE A (EOL) SUPERVISORY ALARM AT THE SYSTEM CONTROL PANEL AND AT THE REMOTE ANNUNCIATOR(S). EACH SET OF CONTACTS IN THE FIRE PUMP 120V AC POWER FROM CONTROLLER SHALL HAVE A DISTINCT ADDRESS. ALL FIRE PUMP MAIN DISTRIBUTION

BOARD

FIRE ALARM SEQUENCE:

ACTIVATION OF ANY MANUAL PULL STATION SHALL AUTOMATICALLY OPERATE ALL AUDIBLE AND VISUAL APPLIANCES AND PRODUCE AN ALARM SIGNAL AT THE CONTROL UNIT/REMOTE ANNUNCIATOR(S). ALL MANUAL

PULL STATION SIGNALS SHALL BE AUTOMATICALLY TRANSMITTED TO

ACTIVATION OF ANY SMOKE DETECTOR SHALL START THE ALARM VERIFICATION MODE. WHEN THE SMOKE DETECTOR LATCHES INTO THE ALARM MODE THE FIRE ALARM SYSTEM SHALL AUTOMATICALLY OPERATE ALL AUDIBLE AND VISUAL APPLIANCES AND PRODUCE AN ALARM SIGNAL AT THE CONTROL UNIT AND AT THE REMOTE ANNUNCIATOR(S). ALL SMOKE DETECTOR ALARM SIGNALS SHALL BE AUTOMATICALLY TRANSMITTED TO

1. ELEVATOR RECALL - SMOKE DETECTORS AT ELEVATOR LANDINGS, IN ELEVATOR MACHINE ROOMS AND IN ELEVATOR SHAFTS SHALL ALSO RECALL THE ELEVATOR(S) TO THE DESIGNATED FLOOR OR TO THE DESIGNATED ALTERNATE FLOOR AS REQUIRED BY THE ELEVATOR

2. DOOR RELEASE - SMOKE DETECTORS USED TO SHUT SMOKE OR FIRE DOORS SHALL RELEASE THE DETECTOR'S ASSOCIATED DOOR. SMOKE DETECTORS USED TO SHUT A DOOR IN A FIRE-RATED STAIR ENCLOSURE

SUPERVISORY SIGNALS SHALL BE TRANSMITTED TO REMOTE MONITORING

BUILDINGS WITH DRY-PIPE OR PRE-ACTION SPRINKLER SYSTEMS SHALL PROVIDE A SUPERVISORY SIGNAL FOR SYSTEM HIGH AND LOW AIR

PRESSURE. ACTIVATION OF A HIGH/LOW AIR SIGNAL SHALL INITIATE A

ANNUNCIATOR(S). EACH PRESSURE SWITCH SHALL HAVE A DISTINCT ADDRESS. ALL HIGH/LOW AIR SUPERVISORY SIGNALS SHALL BE

MISSING DETECTORS, ABNORMAL DETECTOR STATUS (E.G.: DIRTY

SUPERVISORY ALARM AT THE SYSTEM CONTROL PANEL AND AT THE REMOTE

TRANSMITTED TO REMOTE MONITORING COMPANY AS A "TROUBLE" SIGNAL.

LOSS OF PRIMARY POWER, SHORT CIRCUIT, OPEN FAULTS, GROUND FAULTS,

DETECTOR, REPLACEMENT INCOMPATIBLE WITH THE DEFINED ADDRESS),

DISABLED DEVICES AND ABNORMAL CONTROL FUNCTIONS SHALL INITIATE

AUDIBLE AND VISIBLE TROUBLE SIGNALS AT THE CONTROL UNIT AND

REMOTE ANNUNCIATOR(S). AUDIBLE TROUBLE SIGNALS SHALL SOUND

UNTIL SILENCED. SILENCED TROUBLE SIGNALS SHALL BE CONTINUOUSLY INDICATED BY A TEXTUAL MESSAGE AND A TROUBLE LED UNTIL RESTORED

TO NORMAL OPERATION. THE TROUBLE LED SHALL REMAIN ILLUMINATED UNTIL ALL ABNORMAL CONDITIONS ARE CLEARED. UPON A RETURN TO

NORMAL OPERATION, THE AUDIBLE TROUBLE SIGNAL SHALL RESOUND UNTIL RESTORED TO NORMAL POSITION. SUBSEQUENT TROUBLE EVENTS SHALL RESOUND AUDIBLE TROUBLE SIGNALS UNTIL SILENCED. ALL

TROUBLE EVENTS SHALL AUTOMATICALLY BE TRANSMITTED TO REMOTE

ACTIVATE STAIR PRESSURIZATION SYSTEM, SYSTEM SHALL ALSO BE MANUALLY ACTIVATED AT THE ANNUNCIATOR PANEL WITH A KEY OPERATED

DELAYED EGRESS LOCKS - DOORS WITH DELAYED EGRESS LOCKS INSTALLED IN ACCORDANCE WITH NFPA 101 SHALL UNLOCK UPON

STAIR ENCLOSURE DOORS - STAIR DOORS THAT DO NOT PERMIT RE-ENTRY

IN ACCORDANCE WITH NFPA 101 SHALL UNLOCK UPON ACTUATION OF THE

MONITORING COMPANY AS A "TROUBLE" SIGNAL.

K. SPECIAL DOOR LOCKING ARRANGEMENTS:

ACTUATION OF THE FIRE ALARM SYSTEM.

J. SMOKE CONTROL SYSTEMS:

SWITCH.

FIRE ALARM SYSTEM.

COMPANY AS A "TROUBLE" SIGNAL.

. TROUBLE SIGNALS:

H. HIGH/LOW AIR PRESSURE SIGNALS:

REMOTE MONITORING COMPANY AS AN "ALARM" SIGNAL.

REMOTE MONITORING COMPANY AS AN "ALARM" SIGNAL.

FIRE ALARM SEQUENCE OF OPERATION

A. MANUAL PULL STATION:

B. SMOKE DETECTOR:

SAFETY CODE.

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		OR LIGHTING LOAD				0				
		R LIGHTING LOAD				1100				
AC A		G LOAD				23235				
		ENT MOTOR LOAD				0 0				
		ACLE LOAD				1900				
		ENT LOAD				400				
		WATTAGE				26635				
TOTAL						74				
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100	RC	RECEPTACLE BELOW PANEL	15A	3	В	4	15A	LIGHTING	LT	T
100	RC	OUTSIDE RECEPTACLE	15A	5	С	6	15A	EXITERIOR LIGHTING	LT	Ī
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7745	ΔΟ	RTU-3	40A	81	B	82	404	RTU-2	AC	
,, 40	1,00		3P	83	C	84	3P	5 2		

4 WIRE VIA PHOTOCELL PANEL B VOLTAGE: 208 V 3 200A, 120/208V, 3PH, 4W LOAD SUMMARY EL EXTERIOR LIGHTING LOAD LT INTERIOR LIGHTING LOAD AC AC LOAD HT HEATING LOAD

tel: 604-298-3700 Member of the AIBC Member of the SAA Member of the RAIC Member of the AAA Certified Professional Member of the NWTAA ARCHITECTURAL SEAL

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PROVIDE LOCK ON BREAKER

PROVIDE ISOLATED GROUND

3 PROVIDE GROUND FAULT BREAKER

WIRE VIA INTERIOR LIGHTING CONTACTOR

ISSUED FOR BUILDING PERMIT 01 | 03/17/17 ISSUED FOR REVIEW DESCRIPTION REV DATE

200 - 2764 Barnet Highway, Coquitlam, BC V3B 1B9

EDG@EDGCorp.ca

CONSULTANT SEAL

www.EDGCorp.ca

Phone: 604-474-4080

CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE. DRAWINGS SHALL NOT BE



BURNABY, BRITISH COLUMBIA V5C 3V6 E-MAIL: pjlovick@pjlovick.com fax: 604-298-6081

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APPROVED DH

Langley Bypass Commercial 20670 LANGLEY BYPASS LANGLEY, BC

DETAILS AND NOTES

PROJECT NUMBER DRAWING NUMBER 13428 SCALE AS NOTED REVISION MAR 2017

SPECIFICATIONS:

- PROVIDE ALL LABOUR, MATERIALS, NECESSARY FOR COMPLETE AND FULLY OPERATING
- SYSTEMS/INSTALLATIONS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN. DIVISION OF THE WORK AMONG OTHER CONTRACTORS, SUBCONTRACTORS, SUPPLIERS AND OR VENDORS IS SOLELY THE CONTRACTOR'S RESPONSIBILITY. NEITHER THE OWNER NOR CONSULTANT ASSUMES ANY RESPONSIBILITY TO ACT AS AN ARBITER TO ESTABLISH SUBCONTRACT TERMS BETWEEN SECTORS OR DISCIPLINES OF WORK. EXTRA COSTS ARISING FROM CONFLICTS OR DELAY DUE TO IMPROPER CONTRACTOR'S COORDINATION
- SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH CONTRACT DRAWINGS AND SPECIFICATIONS WHICH SHOW THE APPROXIMATE LOCATIONS OF OUTLETS AND APPARATUS. THE RIGHT IS RESERVED TO MAKE SUCH CHANGES IN LOCATION AS MAY BE NECESSARY TO MEET CONTINGENCIES OF CONSTRUCTION. NO EXTRAS WILL BE ALLOWED FOR SUCH CHANGES TO ANY PIECE OF ELECTRICAL EQUIPMENT, OUTLETS, ETC., UNLESS THE DISTANCE EXCEEDS 5000 MM.
- SHOULD ANY DISCREPANCY BETWEEN THE SPECIFICATION AND DRAWINGS LEAVE THE CONTRACTOR IN DOUBT AS TO THE TRUE INTENT AND MEANING, A RULING SHALL BE OBTAINED FROM THE CONSULTANT BEFORE THE TENDER IS SUBMITTED. IF THIS IS NOT DONE IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE MORE EXPENSIVE ALTERNATE HAS BEEN INCLUDED.
- CONTRACTOR SHALL MAKE A REASONABLE ALLOWANCE IN HIS TENDER FOR REROUTING OR MAKING GOOD ANY CONDUIT OR EQUIPMENT EXPOSED OR RENDERED USELESS
- DURING THE COURSE OF DEMOLITION OR CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE BEFORE SUBMITTING THEIR TENDERS TO EVALUATE ANY CONDITIONS THAT MIGHT ARISE DURING THE CARRYING OUT OF THESE CONTRACTS. FAILURE TO DO SO WILL NOT BE ACCEPTED AS A REASON FOR SUBMITTING A CLAIM FOR ADDITIONAL WORK.
- SOME WORKS INDICATED HEREIN AND/OR ON THE DRAWINGS MAY BE TYPICALLY EXECUTED BY OTHER TRADES. ALL WORKS INDICATED ARE PART OF THE SCOPE OF WORK, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THESE WORKS WITH OTHER TRADES. UNLESS OTHERWISE NOTED, ISSUES WHICH ARE NOT SPECIFICALLY PART OF ELECTRICAL AREA OF EXPERTISE ARE INDICATED FOR THE PURPOSE OF REFERENCE, COORDINATION AND IMPLEMENTATION UNDER OTHER RELEVANT DIVISIONS.
- PROVIDE ALL LABOUR AND MATERIAL TO CONSTITUTE ALL ELECTRICALLY RELATED CONCRETE WORKS AS INDICATED HEREIN, SHOWN ON THE DRAWINGS AND AS REQUIRED. THE CONSULTANT DOES NOT PROVIDE ENGINEERING/CONSULTING SERVICES RELATING TO BUILDING ENVELOPE, WATERPROOFING, DRAINAGE, OR OTHER NON-ELECTRICAL COMPONENTS. THIS APPLIES TO, BUT IS NOT LIMITED TO, ANY AND ALL PENETRATIONS

THROUGH THE BUILDING ENVELOPE REQUIRED FOR ELECTRICAL INSTALLATION AND OR

- ANY ELECTRICAL COMPONENT INSTALLATION WITHIN THE BUILDING ENVELOPE. .10 THE CONTRACTOR SHALL MAKE CERTAIN THAT HE HAS RECEIVED ALL ADDENDA TO THESE SPECIFICATIONS AND ALL REVISIONS TO THE DRAWINGS AND THAT ALL ADDITIONS, DELETIONS AND ALTERATIONS TO THE PROPOSED WORK HAVE BEEN INCLUDED IN THE
- .11 THESE DRAWINGS MUST BE READ IN CONJUNCTION WITH ARCHITECTURAL, ALL SUB CONSULTANTS DRAWINGS (I.E STRUCTURAL, MECHANICAL, INTERIOR DESIGNER, LANDSCAPE ETC.) AND ALL REPORTS (I.E. GEOTECHNICAL, BUILDING CODE CONSULTANTS. FIRE PROTECTION ENGINEER, ETC.). REPORT ANY CONFLICTS TO THE ELECTRICAL
- CONSULTANT FOR WRITTEN INSTRUCTIONS. .12 THE CONTRACTOR SHALL ASCERTAIN AND OBTAIN INFORMATION FROM ALL OTHER TRADES AS TO THE EXTENT AND DETAILS OF ANY ADDITIONAL ELECTRICAL WORK TO COMPLETE ALL SYSTEMS SERVED WITH ELECTRICAL POWER OR CONTROLLED ELECTRICALLY AND, WHERE NECESSARY, ALLOW IN HIS TENDER FOR SUCH WORK. NO EXTRA CLAIM WILL BE ACCEPTED FOR WORK ON SUCH SYSTEMS WHETHER THEY ARE; AS SPECIFIED IN ARCHITECTURAL, STRUCTURAL, LANDSCAPE OR MECHANICAL PLANS AND
- SPECIFICATIONS; OR PROPOSED AND ACCEPTED AS ALTERNATE SYSTEMS. .13 REFER TO MECHANICAL SPECIFICATION FOR DIVISION BETWEEN ELECTRICAL AND MECHANICAL SCOPE OF WORK (CONTROL WIRING ETC.).
- .14 THE MATERIAL AND EQUIPMENT ARE NAMED FOR THE PURPOSE OF ESTABLISHING A STANDARD OF MATERIALS AND QUALITY OF WORK TO WHICH EACH CONTRACTOR SHALL ADHERE. ALTERNATES WILL NOT BE ACCEPTED.
- .15 EACH CONTRACTOR SHALL MAINTAIN SUCH INSURANCE TO FULLY PROTECT BOTH THE CONTRACTOR AND THE OWNER FROM ANY AND ALL CLAIMS SUCH AS UNDER THE
- WORKERS' COMPENSATION ACT, ETC. .16 IN NO INSTANCE SHALL THE STANDARD ESTABLISHED BY THE CONTRACT DOCUMENTS BE REDUCED BY ANY OF THESE CODES OR REGULATIONS.
- .17 THE WORD "PROVIDE" IN THE SPECIFICATIONS AND DRAWINGS SHALL MEAN "SUPPLY, INSTALL AND WIRE.' .18 THE ARCHITECTURAL PLANS SHALL HAVE PRECEDENCE OVER THE ELECTRICAL PLANS
- WITH REFERENCE TO WALLS, FIXTURES, FINISH ETC. AND ANY ALTERATIONS NECESSARY TO SATISFY THESE PLANS SHALL BE MADE AT NOEXTRA COST .19 ALL EQUIPMENT SUPPLIED SHALL BE NEW. CSA APPROVED BEARING THE CSA SEAL AND
- BE OF COMMERCIAL SPECIFICATION GRADE QUALITY. .20 CONTRACTOR SHALL COMPLY WITH THE LATEST CANADIAN ELECTRICAL CODE, INCLUDING ALL PROVINCIAL CODES AND OTHER AMENDMENTS, AND LOCAL BY-LAWS. WHEN MULTIPLE
- CODES AND/OR REGULATIONS APPLY, FOLLOW THE MOST STRINGENT PROVISION .21 MATERIALS SHALL BEAR THE APPROVAL OF THE CANADIAN STANDARDS ASSOCIATION AND WHERE APPLICABLE, CUL, ULC OR ALTERNATELY SHALL BEAR LOCAL APPROVAL.
- .22 ALL ELECTRICAL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE PROVINCIAL BUILDING CODE, ELECTRICAL SAFETY ACT OF THE PROVINCE AND CURRENT PURSUANT REGULATION (ELECTRICAL CODE REGULATION, ELECTRICAL SAFETY BULLETINS, ETC.) AND THE CONSULTANT
- .23 WHERE REFERENCE IS MADE TO THE "CANADIAN ELECTRICAL CODE" IN THE FOLLOWING CLAUSES OF THE SPECIFICATION IT REFERS TO THE SAFETY ACT AND REGULATION AS STATED IN CLAUSE 1. .24 PRIOR TO EXECUTION OF WORK, THE CONTRACTOR SHALL OBTAIN ALL NECESSARY
- PERMITS AND LICENSES FOR COMPLIANCE WITH FEDERAL, TERRITORIAL AND MUNICIPAL LAWS AND REGULATIONS .25 THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMIT, INSPECTION AND
- RE-INSPECTION FEES. OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION .26 THE CONTRACTOR SHALL PAY FOR ALL ASSOCIATED TAXES.
- Part 2 CONTRACTOR QUALIFICATIONS AND RESPONSIBILITIES
- .1 ONLY QUALIFIED WORKMEN SHALL BE EMPLOYED ON THIS CONTRACT. SUPERVISION SHALL BE BY JOURNEYMEN ELECTRICIANS AND WORK CARRIED OUT BY JOURNEYMEN AND/OR REGISTERED APPRENTICES ONLY IN A NEAT AND WORKMANLIKE MANNER. ANY SPECIALIZED SUB-TRADE WORK SHALL BE PERFORMED BY TRADESMEN EXPERIENCED IN SUCH INSTALLATION. FINAL CONNECTIONS OF ALL ELECTRICAL SERVICES TO ALL EQUIPMENT (INCLUDING KITCHEN EQUIPMENT) SHALL BE BY THE ELECTRICAL
- CONTRACTOR AND SUBCONTRACTOR(S) SHALL BE COMPETENT IN INSTALLING THE SYSTEM(S) UNDERTAKEN AS DESCRIBED HEREIN AND IN THE ACCOMPANYING DRAWING. COMPETENCE IS HAVING THE ADEQUATE SKILL IN INSTALLING SUCH SYSTEMS AND
- RELEVANT EXPERIENCE IN INSTALLING SIMILAR SYSTEMS NOTWITHSTANDING OTHER REQUIREMENTS STIPULATED HEREIN, THE REQUIREMENT OF COMPETENCE SHALL APPLY TO ALL SYSTEMS.
- THE COMPLETE INSTALLATION SHALL BE CARRIED OUT IN NEAT AND WORKMANLIKE MANNER TO THE SATISFACTION OF THE CONSULTANT
- ESTABLISHMENT AND VERIFICATION OF DIMENSIONS, ELEVATIONS, GRADES, BOUNDARIES SHOWN ON DRAWINGS AND, REPORTING OF ANY ERRORS OR INCONSISTENCIES TO THE CONSULTANT BEFORE STARTING WORK. STARTING WORK SHALL IMPLY THAT THE CONTRACTOR HAS VERIFIED ALL ITEMS AND FOUND THEM TO BE CORRECT. ADDITIONAL COSTS ARISING OUT OF ANY SUBSEQUENT RECTIFICATIONS SHALL BE BORNE BY THE
- CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES INVOLVED TO CONFIRM THE LOCATIONS OF THE VARIOUS OUTLETS AND EQUIPMENT AND SHALL COOPERATE FULLY TO ENSURE THAT NO CONFLICT ARISES DURING THE INSTALLATION. IN CASE OF ANY DIFFERENCE OF OPINION, THE MATTER SHALL BE REFERRED TO THE CONSULTANT FOR FINAL DECISION.
- COORDINATE WITH OTHER DIVISIONS FOR POSSIBLE RESTRICTIONS ON USAGE AND PLACEMENT OF ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO: CONDUITS IN SLAB, PANELS IN WALLS, DRAINAGE OF ELECTRICAL CONDUITS ENTERING THE BUILDING, PULL PITS, UNDERGROUND AND GROUND JUNCTION AND PULL BOXES, BUILDING ENVELOPE, PENETRATIONS, SEALING METHODS, ETC.
- COORDINATE WITH OTHER DIVISIONS FOR PROPER DRAINAGE OF ELECTRICAL CONDUCTS ENTERING FROM OUTSIDE, DRAINAGE OF ELECTRICAL PULL PITS, DRAINAGE OF ALL EXTERIOR ELECTRICAL JUNCTION AND PULL BOXES, SEALING AND WATERPROOFING OF ALL ELECTRICAL PENETRATIONS; METHODS OF FIRE STOPPING, AND ENVELOPE
- OBTAIN AND REVIEW SHOP DRAWINGS, PRODUCT DATA, AND MANUFACTURER'S INSTRUCTIONS FOR EQUIPMENT PROVIDED UNDER OTHER SECTIONS, UTILITIES AND
- .10 EXACT LOCATION OF ALL EQUIPMENT AND SERVICES (I.E. FOR: MECHANICAL, ELECTRICAL, PLUMBING/DRAINAGE, HVAC, SPRINKLER, HYDRO/GAS METERS, ETC.) MUST BE CONFIRMED ON SITE BEFORE PROCEEDING WITH ROUGH-IN WORK.
- .11 VERIFICATION THAT FIELD MEASUREMENTS ARE AS INDICATED ON SHOP DRAWINGS. .12 CHECK DRAWINGS OF ALL TRADES TO VERIFY SPACE AND HEADROOM LIMITATIONS FOR WORK TO BE INSTALLED. DO NOT DEVIATE FROM THE DESIGN INTENT OR MAKE CHANGES INVOLVING EXTRA COST WITHOUT THE ARCHITECT'S/OWNER'S WRITTEN APPROVAL. .13 ENSURE THAT ANY STRUCTURE LOADED DURING THE INSTALLATION IS ADEQUATE TO
- .14 COMPLETE ALL ELECTRICAL CONNECTIONS TO EQUIPMENT AND ACCESSORIES PERTAINING TO THIS CONTRACT AND LEAVE ALL IN SATISFACTORY CONDITION.

- .15 CLEAN UP ALL DEBRIS DAILY AND REMOVE FROM THE SITE ON OR BEFORE COMPLETION
- .16 PROVIDE TEMPORARY ELECTRICAL POWER FOR THE WORK OF THE OTHER TRADES AS REQUIRED BY THE GENERAL CONTRACTOR.
- .17 ALL CUTTING AND PATCHING RELATED TO THIS TRADE SHALL BE BY THIS CONTRACTOR IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE ARCHITECTURAL SPECIFICATION.
- .18 IT SHALL REMAIN THE PREROGATIVE OF THE CLIENT OR CONSULTANT TO REJECT ANY PIECE OF EQUIPMENT FOUND UNSUITABLE; AND TO REVISE THE INTENT OF THIS SPECIFICATION BY MEANS OF NEGOTIATIONS, DRAWINGS AND SPECIFICATIONS AT THAT
- .19 THE CONTRACTOR MUST QUOTE FIRM DELIVERY TIME OF ALL MAJOR NON-STOCK ELECTRICAL ITEMS THAT MAY CAUSE DELAY IN SCHEDULING OF WORK WITH TENDER DOCUMENTS (EG. QMQB FUSIBLE SWITCHBOARD, ETC.). ALL NON-STOCK ITEMS MUST BE ORDERED NO LATER THAN TWO (2) WEEKS AFTER THE AWARD OF CONTRACT. .20 IT IS CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE DELIVERY TIME OF ITEMS
- SUPPLIED UNDER THIS DIVISION DOES NOT CAUSE A DELAY IN SCHEDULING OF THE .21 THE CONTRACTOR SHALL RECEIVE, HANDLE, STORE AND TRANSFER TO THE WORK SITE
- ALL EQUIPMENT AND MATERIAL .22 SEQUENCE ROUGH IN AND ELECTRICAL CONNECTIONS TO COORDINATE WITH
- INSTALLATION SCHEDULE AND START-UP FOR EQUIPMENT. .23 THE CONTRACTOR SHALL USE EXTREME CARE WHEN WORKING NEAR EXISTING SERVICES
- AND ANY SERVICES DISTURBED WILL BE REPLACED AT HIS COST TO THE SATISFACTION OF THE CONSULTANT .24 NO STRUCTURAL MEMBERS SHALL BE CUT, NOTCHED OR DRILLED WITHOUT FIRST
- OBTAINING WRITTEN PERMISSION FROM THE STRUCTURAL ENGINEER. .25 ALL CUTTING AND PATCHING REQUIRED SHALL BE DONE BY TRADESMEN QUALIFIED FOR SUCH WORK AND SHALL BE GOVERNED BY OTHER RELEVANT DIVISIONS. CONSULT
- ARCHITECT AND STRUCTURAL ENGINEER BEFORE COMMENCING ANY WORK. .26 THE CONTRACTOR SHALL STUDY THE ARCHITECTURAL PLANS/MILLWORK SHOP DRAWINGS AND CO-ORDINATE WITH OTHER TRADES SO THE ELEVATION OF OUTLETS WILL NOT REQUIRE ANY CUTTING OF DADOS, TILE OR CONSTRUCTION MATERIALS. FAILURE TO DO SO WILL RESULT IN RELOCATION OF THESE OUTLETS AT THE CONTRACTORS COST.

Part 3 DELIVERY, STORAGE AND HANDLING

- .1 ALL MATERIALS AND EQUIPMENT SHALL BE NEW. DELIVER AND STORE MATERIALS IN ORIGINAL, UNOPENED PACKAGING. ASSUME ALL PACKING, TRANSPORTATION, AND INSURANCE COSTS
- .2 ENSURE THAT ALL EQUIPMENT AND MATERIALS DELIVERED TO THE SITE ARE RECEIVED IN WRITING BY THE OWNER OR ITS AGENT. THE CONSULTANT IS NOT AUTHORIZED TO SIGN FOR RECEIPT OF GOODS.
- .3 STORE MATERIALS IN A SAFE AND SECURE LOCATION, AND PROTECT AGAINST DAMAGE. COORDINATE STORAGE REQUIREMENTS WITH THE GENERAL CONTRACTOR. .4 ANY EQUIPMENT THAT IS MOUNTED ON THE FLOOR, CEILING, AND WALLS DURING THE CONSTRUCTION STAGE SHALL BE PROTECTED FROM DUST. DIRT. PAINTS. AND ACCIDENTAL BREAKAGE BY ANY TRADE.

- .1 WHERE EXISTING STRUCTURE, GRADE OR PAVEMENT HAS TO BE REMOVED, ALTERED OR OTHERWISE DEFACED TO FACILITATE ELECTRICAL INSTALLATION, CONTRACTOR SHALL ARRANGE FOR BREAKING OF OPENINGS OR GROOVES IN ANY BUILDING STRUCTURE OR BREAKING OF PAVEMENT AND/OR DIGGING OF TRENCHES. ALL WORK SHALL BE REPAIRED TO ITS ORIGINAL CONDITION, ANY COST INCURRED FOR SUCH WORK SHALL BE ALLOWED FOR IN TENDER SUM.
- IRREPARABLY DAMAGED EQUIPMENT; STRUCTURES, WALLS, SURFACES ETC. SHALL BE REPLACED AT COST TO CONTRACTOR.
- .3 IF THE FINISH OF NEW EQUIPMENT, STRUCTURES, WALLS, SURFACES, ETC. IS DAMAGED BY THIS CONTRACTOR. THE CONTRACTOR. AT THE DISCRETION OF THE CONSULTANT. SHALL EITHER REPLACE OR RESTORE THE EQUIPMENT, STRUCTURES, WALLS, SURFACES, ETC. TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER.

Part 5 BASIC MATERIALS AND METHODS

- .1 THIS CONTRACTOR SHALL FIRESTOP ALL PENETRATIONS BETWEEN SERVICE SPACES AND OTHER FIRE SEPARATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE SEPARATIONS. INSTALLATION METHODS SHALL BE PERFORMED IN ACCORDANCE WITH PROVINCIAL AND LOCAL FIRE REGULATIONS. ALL CONDUITS, DUCTS, BOXES, ETC. PASSING THROUGH OR MOUNTED IN FIRE RATED WALLS, CEILINGS, FLOORS, ETC. SHALL BE FIRE STOPPED AND SEALED OR FIRE RATED IN ACCORDANCE WITH THE CURRENT EDITION OF THE BUILDING CODE
- .2 ENGAGE THE SERVICES OF SUPPORTING REGISTERED PROFESSIONAL IN THE AREA OF FIRE PROTECTION ENGINEERING. THE SCOPE OF SERVICES FOR THIS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING
- .1 SUBMIT A MODEL SCHEDULE S-B: ASSURANCE OF PROFESSIONAL DESIGN AND COMMITMENT FOR FIELD REVIEW BY SUPPORTING REGISTERED PROFESSIONAL. PROVIDE ENGINEERING AND SELECTION OF FIRESTOPPING MATERIALS AND
- INSTALLATION METHODS TO MEET THE REQUIREMENTS OF CONTRACT DOCUMENTS. .3 PRODUCE AND/OR ASSEMBLE ALL REQUIRED DOCUMENTATION/SUBMITTALS.
- .4 PROVIDE SITE REVIEWS TO ENSURE PROPER INSTALLATION OF FIRESTOPS. .5 PROVIDE FINAL SITE REVIEW AND REPORT .6 PROVIDE A MODEL SCHEDULE S-C: ASSURANCE OF PROFESSIONAL FIELD REVIEW
- AND COMPLIANCE BY SUPPORTING REGISTERED PROFESSIONAL. SERVICE PENETRATION COMPONENTS AND ASSEMBLIES, INCLUDING BACK-UP MATERIALS AND SUPPORTS SHALL BE CERTIFIED IN ACCORDANCE WITH CAN4-S115-M85, ULC-S101M-1980, UL 1479, DIN 4102 OR ASTM E814
- .4 COMBINED AND/OR BUILT-UP SITE SYSTEMS SHALL BE DESIGNED IN ACCORDANCE WITH ULI, ULC, FM, FMPA OR SWR SYSTEM RESTRICTIONS AND TECHNICAL EVALUATION AS APPROVED BY AUTHORITIES HAVING JURISDICTION.
- .5 ALL ELECTRICAL WIRES, CABLES, NON-COMBUSTIBLE RACEWAYS, OUTLET BOXES AND OTHER SIMILAR SERVICES THAT PENETRATE FIRE SEPARATION OR ASSEMBLY REQUIRED TO HAVE A FIRE RESISTANCE RATING OR FIRE SEPARATION, SHALL BE SEALED BY A FIRE STOP SYSTEM WHICH HAS AN "F" AND/OR "FT" RATING NOT LESS THAN THE REQUIRED FIRE PROTECTION RATING OF THE FIRE SEPARATION. "F" AND "FT" RATINGS WILL BE DETERMINED BY FIRE TEST METHOD ULC \$115 "FIRE TESTS OF FIRE STOP SYSTEMS". REFER TO B.C. BUILDING CODE, ARTICLE 3.1.9.1(1) AND (2), FIRE STOPPING OF SERVICE
- PENETRATION. CONTRACTOR SHALL USE MATERIALS AND METHODS AS LISTED IN "ULC LIST OF EQUIPMENT AND MATERIALS VOLUME 2, BUILDING CONSTRUCTION" (NO. 40U18 FIRE SEPARATION AND NO.40U19 FIRE STOP SYSTEM COMPONENTS). ULC LIST OF EQUIPMENT
- AND MATERIALS, FIRE STOP SYSTEMS AND COMPONENTS .7 OPENINGS AROUND ELECTRICAL WIREWAYS PASSING THROUGH SOUNDPROOF WALLS SHALL BE FILLED WITH APPROVED MATERIALS.
- .8 WHERE ANY PIECE OF ELECTRICAL EQUIPMENT (I.E. RECESSED PANELBOARDS, RECESSED EXIT SIGNS, FLUORESCENT LIGHTING, ETC.) IS AFFECTING THE INTEGRITY OF THE VAPOUR BARRIER, THE CONTRACTOR SHALL MAINTAIN THE VAPOUR BARRIER BY INSTALLING APPROVED PLASTIC BOXES AROUND EQUIPMENT DEVICES, ETC.

Part 6 CONDUIT AND WIRING:

- .1 USE HEAVY WALL RIGID P.V.C. CONDUIT WHERE BURIED, CAST IN CONCRETE AND WHERE EXPOSED UP TO 6'-0" ABOVE GRADE. USE FLEXIBLE WEATHERPROOF CONDUIT FOR CONNECTIONS TO MECHANICAL VIBRATING EQUIPMENT. .2 ALL WIRING USED THROUGHOUT SHALL BE T-90 NYLON OR R-90 COPPER RUN IN EMT
- CONDUIT UNLESS OTHERWISE SPECIFIED. DO NOT RUN ANY CONDUIT OR WIRING BELOW SLAB UNLESS SPECIFICALLY NOTED ON ELECTRICAL PLANS. ENT CONDUIT IS NOT **ACCEPTABLE** .3 ALL SERVICE FEEDERS, WIRING TO MECHANICAL EQUIPMENT AND TRANSFORMERS SHALL
- BE RW90 COPPER. .4 ALL CONDUITS SHALL RUN PARALLEL AND PERPENDICULAR TO BUILDING LINES SHALL BE
- .5 CONDUIT RUNS BELOW SLAB SHALL NOT BE PERMITTED UNLESS SPECIFICALLY NOTED ON
- .6 UNLESS NOTED AS LARGER, INSTALL AND RATE ALL CABLES AND CONDUCTORS IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE.
- UNLESS OTHERWISE SHOWN OR SPECIFIED, ALL CONDUCTORS SHALL BE 98% CONDUCTIVITY COPPER 600 VOLT "RW90" X-LINK POLYETHYLENE "XLPE" INSULATED, AND BE OF MINIMUM SIZE #12 AWG. PROVIDE CROSS-LINKED THERMOSETTING POLYETHYLENE (RW90 X-LINK) TYPE
- INSULATION FOR ALL FIRE ALARM SYSTEM CONDUCTORS. WHERE RUN IN CABLE FORM WITH OUTER JACKET, INSULATION RATING ON INDIVIDUAL CONDUCTORS TO BE 105 DEGREES C. EQUIPMENT BONDING CONDUCTORS SHALL BE INSULATED.
- .10 THE ONLY EXCEPTION TO THE ABOVE IS THAT FEEDERS FROM MAIN DISTRIBUTION TO ALL PANELBOARDS, MCC AND SUB DISTRIBUTION MAY BE ALCAN, NUAL, RW90 XLPE MINUS 40% - 600V MIN CONDUCTOR.
- .11 ALL BUILDING WIRING SHALL BE APPROVED FOR USE IN NON-COMBUSTIBLE
- .12 WHERE PERMITTED BY CODE, BX ARMOURED CABLE (AC-90) MAY BE USED. DROPS SHALL NOT EXCEED 3.0M (10'-0"). AC-90 NOT TO BE INSTALLED IN OPEN CEILINGS OR ANY OTHER EXPOSED APPLICATION.
- .13 PROVIDE SIZES OF CONDUCTORS AS REQUIRED BY C.E.C. OR AS INDICATED ON THE DRAWINGS. VOLTAGE DROP FROM PANELS TO FARTHEST DEVICE MUST NOT EXCEED 2% AT FULL LOAD. VOLTAGE DROP FROM THE MAIN DISTRIBUTION TO THE PANEL BOARD MUST NOT EXCEED 2%.

- .14 CONDUCTOR LENGTH FOR PARALLEL FEEDERS TO BE IDENTICAL.
- .15 LACE OR CLIP GROUPS OF FEEDER CONDUCTORS AT ALL DISTRIBUTION CENTRES, PULL BOXES, PANEL BOARDS AND TERMINATION POINTS. .16 ALL EXTERIOR WIRING TO BE RW90 X-LINK WITH 600 VOLT INSULATION.
- .17 WHERE TWO OR THREE CIRCUITS ARE RUN TOGETHER USING A COMMON NEUTRAL, CARE SHALL BE TAKEN TO SEE THAT EACH CIRCUIT IS CONNECTED TO A SEPARATE PHASE AND WIRES WILL BE COLOUR CODED AS SPECIFIED UNDER THE IDENTIFICATION OF
- .18 CIRCUITS SHALL BE INSTALLED AND CONNECTED TO APPROPRIATE PANELS USING INDICATED CIRCUIT DESIGNATION NUMBERS.
- .19 CONTRACTOR SHALL ENSURE THAT ALL CONDUITS AND BOXES ARE INSTALLED CONCEALED IN BRICK WORK, BLOCK WORK, FURRED OUT WALLS, STEEL STUD AND WOOD STUD WALLS, UNLESS SPECIFICALLY PERMITTED. .20 NYLON OR SIMILAR PULLING ROPE ONLY SHALL BE USED TO PULL CONDUCTORS INTO
- METALLIC AND/OR NON-METALLIC CONDUIT. .21 SUPPORT CABLES ABOVE ACCESSIBLE CEILING, USING SPRING METAL CLIPS OR METAL CABLE TIES TO SUPPORT CABLES FROM STRUCTURE. DO NOT REST CABLE ON CEILING
- PANELS. .22 INSTALLATION TO BE FREE OF OPENS AND GROUNDS. PRIOR TO ENERGIZING, MEGGER EACH FEEDER TO ENSURE SO THAT INSULATION RESISTANCE COMPLIES WITH C.E.C. REQUIREMENTS.

Part 7 GROUNDING AND BONDING

.2 THIS APPLIES TO ALL ELECTRICAL SYSTEMS, COMPONENTS OF ELECTRICAL SYSTEMS, EQUIPMENT, FIXTURES, METAL COMPONENTS, AND OTHER PARTS OF THE BUILDING AND

.1 PROVIDE A COMPLETE, PERMANENT AND CONTINUOUS GROUNDING AND BONDING

- GROUND ALL COMPONENTS OF THE ELECTRICAL SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF THE ELECTRICAL CODE, LOCAL AUTHORITIES AND, WHERE MORE STRINGENT, MANUFACTURERS REQUIREMENTS.
- .4 SECURELY AND ADEQUATELY GROUND ALL COMPONENTS OF THE ELECTRICAL SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF THE CANADIAN ELECTRICAL CODE, AND ADDITIONAL REQUIREMENTS SHOWN HEREIN, ON THE DRAWINGS AND AS REQUIRED.

THE SYSTEM SHALL CONSIST OF, BUT NOT BE LIMITED TO, GROUND ELECTRODES

(GROUND RODS, UNDERGROUND, ETC.) GROUND BUSES, CABLES AND SUPPORTS AND ALL NECESSARY MATERIALS TO PROVIDE A COMPLETE SYSTEM. .6 PROVIDE ONLY MATERIAL COMPONENTS AND ACCESSORIES OF NON-CORRODING TYPE.

Part 8 SERVICE AND DISTRIBUTION

CONDUCTORS CLAUSE

- 1 PANELBOARDS SHALL BE BOLT-ON BREAKERS C/W TYPE WRITTEN DIRECTORY (HAND WRITTEN DIRECTORIES WILL NOT BE ACCEPTED). ALTERNATE MANUFACTURERS ARE NOT ACCEPTABLE.
- .2 ALL DISTRIBUTION EQUIPMENT SHALL BE C/W LABELS SHOWING CLEARLY BREAKER-FUSES AND/OR BREAKERS / BREAKERS IN SERIES APPLICATION FOR THE AVAILABLE FAULT CURRENT.
- .3 FAULT TOLERANCE AT ANY POINT IN THE SYSTEM SHALL BE MINIMUM OF 22 KAIC UNLESS NOTED OTHERWISE. SERIES RATING OF DEVICES IS PERMITTED, CONTRACTOR SHALL SUBMIT FULL FAULT CURRENT LOAD STUDY FOR THE ENTIRE POWER SYSTEM AS PART OF THE SHOP DRAWING PROCESS. INCLUDE ALL COSTS IN BASE TENDER QUOTE. .4 BREAKERS SHALL BE SWITCHING DUTY AND MULTIPOLE BREAKERS SHALL HAVE COMMON
- TRIP MECHANISMS. ALL FUSES TO BE BUSSMAN FUSETRON DUAL ELEMENT HRC TYPE.
- .6 ALL EQUIPMENT SHALL BE OF ONE MANUFACTURER THROUGHOUT.
- ALL EQUIPMENT SHALL BE SUITABLE FOR SPRINKLER INSTALLATION IN SPRINKLERED BUILDINGS. PANELBOARDS SHALL BE EQUIPPED WITH MOLDED CASE BOLT-ON CIRCUIT BREAKERS AND SHALL BE NUMBERED WITH ODD NUMBERS ON THE LEFT AND EVEN NUMBERS ON THE RIGHT. TWO AND THREE POLE BREAKERS SHALL HAVE SINGLE HANDLE COMMON

Part 9 WIRING DEVICES

TRIPPING MECHANISMS

- .1 USE ONLY SPECIFICATION GRADE DEVICES.
- .2 ALL DEVICE BOXES INSTALLED ON THE SURFACE SHALL BE CAST FS TYPE. .3 SWITCHES SHALL BE PASS & SEYMOUR #15AC1-I IVORY (OR APPROVED EQUAL.
- RECEPTACLES SHALL BE PASS & SEYMOUR #5262-AICN IVORY (OR APPROVED EQUAL). .4 MOUNTING HEIGHTS AS NOTED OR TO LOCAL OR N.B.C. REQUIREMENTS .5 ALL PLATES TO BE STAINLESS STEEL.
- .6 ALL ELECTRICAL DEVICES (INCLUDING SWITCHES, RECEPTACLES, TELEPHONE OUTLETS, CABLE TV, ETC.) SHALL BE MOUNTED SO AS TO BE FLUSH WITH FACE OF FINISH (WHERE APPLICABLE)
- .7 ALL SWITCH AND OUTLET LOCATIONS SHALL BE COORDINATED WITH FURRING AND PIPE CHASES, ETC., TO INSURE ADEQUATE SPACE IS AVAILABLE FOR DEVICE MOUNTING.
- .8 ALL DEVICES SHALL BE OF ONE MANUFACTURER THROUGHOUT. .9 VOLTAGE AND AMPERE RATING SHALL MATCH THE APPLICATION (WHEN 20A BREAKER IS USED RECEPTACLE SHALL BE RATED 20A).
- .10 UNLESS OTHERWISE SPECIFIED, THE MOUNTING HEIGHTS FROM THE CENTER LINE OF THE ELECTRICAL DEVICE SHALL BE AS FOLLOWS:
- .2 GENERAL PURPOSE RECEPTACLE: 450mm A.F.F. 1700mm A.F.F. (MEASURED FROM TOP OF HIGHEST .3 ELECTRICAL PANEL:
- .4 FIRE ALARM PULL STATION: 1200mm A.F.F. .11 EACH WIRING DEVICE SHALL BE COMPLETE WITH MATCHING COVER PLATE SUITABLE FOR THE INSTALLATION
- .12 ALL UNUSED OUTLETS SHALL BE COMPLETE WITH BLANK COVERS. .13 INSTALL RECEPTACLES WITH GROUNDING POLE ON BOTTOM. .14 CONNECT WIRING DEVICE GROUNDING TERMINAL TO BRANCH CIRCUIT EQUIPMENT
- GROUNDING CONDUCTOR. .15 CONNECT WIRING DEVICES BY WRAPPING CONDUCTOR AROUND SCREW TERMINAL.
- .16 USE JUMBO SIZE PLATES FOR OUTLETS INSTALLED IN MASONRY WALLS. .17 INSTALL GALVANIZED STEEL PLATES ON OUTLET BOXES AND JUNCTION BOXES IN UNFINISHED AREAS, ABOVE ACCESSIBLE CEILINGS, AND ON SURFACE MOUNTED OUTLETS.
- .18 INSTALL PROTECTIVE RINGS ON ACTIVE FLUSH COVER SERVICE FITTINGS. Part 10 LUMINAIRES, LAMPS AND BALLAST .1 LUMINAIRES SHALL BE AS DETAILED IN FIXTURE SCHEDULE AND INSTALLED AS INDICATED IN LOCATIONS SHOWN. INSTALL COMPLETE WITH LAMPS, BALLAST, DIFFUSERS, HANGERS,
- GASKETS, CANOPIES AND SUPPORTS FOR A COMPLETE AND FINISHED OPERATION. FINAL LAYOUT OF LUMINAIRES SHALL BE MADE AFTER DUCTING, PIPING, AND SHELVING LAYOUTS ARE FULLY COORDINATED WITH OTHER TRADES. ALL LUMINAIRES TO BE ADEQUATELY ATTACHED DIRECTLY TO THE BUILDING STRUCTURE.
- UNLESS OTHERWISE INDICATED, BALLAST SHALL BE HIGH POWER FACTOR RAPID START SOUND RATING "A" SUITABLE FOR 120V OPERATION. 3 PROVIDE LAMPS FOR ALL FIXTURES. LAMPS SHALL BE PROVIDED AS INDICATED IN THE FIXTURE SCHEDULE, INCANDESCENT LAMPS SHALL HAVE MINIMUM 2,500 HOUR LIFE
- .4 ALL LIGHT DIFFUSERS AND LENSES SHALL HAVE A FLAME SPREAD RATING AND SMOKE DEVELOPED CLASSIFICATION (WHEN TESTED IN CONFORMANCE WITH CAN/ULC-S102.2-M)
- MEETING THE REQUIREMENTS OF SECTION 3.1 OF THE CURRENT BUILDING CODE. .5 ALL LIGHT DIFFUSERS AND LENSES SHALL FALL TO THE BOTTOM OF THE TEST APPARATUS BEFORE IGNITING WHEN TESTED IN CONFORMANCE WITH ULC-S102.3-M.

Part 11 EMERGENCY LIGHTING .1 ALL EMERGENCY LIGHTING UNITS (HEADS) SHALL BE CERTIFIED TO C.S.A. STANDARD

- C22.2NO141 AND RECOGNIZED BY SECTION 46, C.E.C. PART I. BATTERY: 12 VOLT, NICKEL CADMIUM TYPE, WITH 1/2 HOUR CAPACITY. .3 REMOTE LAMPS: 12 WATT MICRO QUARTZ TYPE.
- .4 INSTALL ALL COMPONENTS OF THE SYSTEM ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND ALL PERTINENT REGULATIONS 5 OPERATE EACH LUMINAIRE AFTER INSTALLATION AND CONNECTION. INSPECT FOR
- PROPER CONNECTION AND OPERATION. AIM AND ADJUST LUMINAIRES AS INDICATED. .6 UNLESS NOTED OTHERWISE ON DRAWINGS, THE TOTAL LOAD (LIGHTING HEAD WATTAGE) CONNECTED TO THE BATTERY SHALL OPERATE FOR A MINIMUM OF 1/2 HOUR, TO A MINIMUM OF 87.5% OF THE RATED BATTERY VOLTAGE.

- .1 EXIT SIGNS SHALL UNIVERSAL VOLTAGE, UNIVERSAL MOUNT, L.E.D. TYPE UNLESS OTHERWISE SPECIFIED. TOTAL UNIT WATTAGE SHALL NOT EXCEED 5 WATTS AS PER
- EXIT SIGNS SHALL COMPLY WITH LATEST C860 REQUIREMENTS, SELF POWERED UNITS SHALL BE CSA C22.2 CERTIFIED. .3 DIRECTIONAL ARROWS: AS INDICATED OR UNIVERSAL TYPE FOR FIELD ADJUSTMENT. .4 HOUSING: EXTRUDED ALUMINUM.
- .5 FACE: RUNNING MAN SERIES GREEN AND WHITE
- .6 MOUNTING: AS INDICATED OR UNIVERSAL, FOR FIELD SELECTION.
- .7 BATTERY: 12 VOLT, NICKEL_CADMIUM TYPE, WITH 1/2 HOUR CAPACITY. .8 INPUT VOLTAGE: UNIVERSAL. .9 SECURE EXIT SIGNS DIRECTLY TO BUILDING STRUCTURE INDEPENDENT OF OUTLET BOX.

- .10 WHERE INSUFFICIENT SPACE EXISTS FOR THE POSITIONING OF EXIT SIGNS OVER DOORS,
- THE UNITS SHALL BE MOUNTED TO THE SIDE OF DOORS AS HIGH AS PRACTICAL. .11 EXIT FIXTURES SHALL BE INSTALLED TO ALLOW CLEAR VISIBILITY OF THE UNITS AND TO THE SATISFACTION OF THE APPROPRIATE AUTHORITY.
- EXIT SIGNS SHALL BE LOCATED TO ENSURE FULL VIEW ALONG CORRIDORS, CLEAR OF ALL
- STRUCTURES AND VISIBLE WHEN DOORS ARE IN THE OPEN POSITION. .13 VERIFY THE DIRECTIONAL ARROWS REQUIRED BEFORE INSTALLING EXIT SIGNS AND
- ENSURE ALL EXIT SIGN CHEVRONS INDICATE THE REQUIRED DIRECTION. .14 PROVIDE WIRE GUARDS FOR EXIT SIGNS INSTALLED IN AREAS SUBJECT TO MECHANICAL
- DAMAGE. .15 WHERE EXIT SIGNS ARE REQUIRED TO BE INSTALLED ON T-BAR CEILINGS, THE BOX SHALL BE SECURED TO A CUSTOM METAL BAR HANGER WHICH SPANS BETWEEN THE TEES.
- PROVIDE TWO FIXTURE CHAINS SECURELY ATTACHED TO THE BAR HANGER AND TO THE DECK ABOVE THE CEILING, INDEPENDENTLY OF THE T-BAR CEILING SUSPENSION. .16 STEEL BAR HANGERS FOR MOUNTING OF EXIT FEATURES ON TEE BAR CEILINGS SHALL BE CADDY CAT. NO. 512 COMPLETE WITH CAT. NO. BHC MOUNTING CLIPS (MANUFACTURED BY
- ERICO PRODUCTS INC.) CONFIRM MOUNTING ARRANGEMENTS OF EACH TYPE OF EXIT SIGN AND, IF REQUIRED, PROVIDE A STEM MOUNTING KIT TO MOUNT EXIT SIGN NO HIGHER THAN 2400MM ABOVE
- .18 UNLESS NOTED OTHERWISE ON DRAWINGS, THE TOTAL LOAD (LIGHTING HEAD WATTAGE) CONNECTED TO THE BATTERY SHALL OPERATE FOR A MINIMUM OF 2 HOURS, TO A MINIMUM OF 87.5% OF THE RATED BATTERY VOLTAGE.

- Part 13 FIRE ALARM AND LIFE SAFETY SYSTEMS VERIFICATION .1 DELIVER TO THE ENGINEER CERTIFICATE OF APPROVAL AND FINAL INSPECTION FROM AUTHORITIES HAVING JURISDICTION PRIOR TO FINAL OCCUPANCY. THESE MUST BE
- PROVIDED THREE WORKING DAYS BEFORE ENGINEERS FINAL OCCUPANCY REVIEW. SUBMIT TO THE ENGINEER A COPY OF CERTIFICATE VERIFYING THAT EMERGENCY
- LIGHTING SYSTEM HAS BEEN TESTED UNDER FULL LOAD AS PER CODE REQUIREMENTS. SUBMIT COPIES OF FIRE ALARM VERIFICATION AND TESTING REPORT TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. THESE MUST BE PROVIDED THREE WORKING DAYS BEFORE ENGINEERS FINAL OCCUPANCY REVIEW. FIRE ALARM VERIFICATION SHALL BE
- COMPLETE WITH NEW AND EXISTING DEVICES FOR ENTIRE BUILDING. .4 SUPPLY AND INSTALL ALL FIRE ALARM DEVICES AS SHOWN ON THE DRAWINGS. ALL DEVICES SHALL BE OF SAME MANUFACTURER AND MODELS AS BASE BUILDING
- THE FIRE ALARM SYSTEM SHALL COMPLY WITH ULC STANDARDS 524 AND THE APPLICABLE CODES. VERIFICATION SHALL COMPLY WITH ULC STANDARDS 537. .6 FIRE ALARM WIRING SHALL BE MINIMUM #18 TYPE RW90 FOR DETECTION CIRCUITS AND MINIMUM #14 RW90 FOR NOTIFICATION CIRCUITS. ALL WIRING SHALL BE FREE OF

COMPONENTS. COORDINATE EXACT REQUIREMENTS WITH BASE BUILDING CONTRACTOR.

GROUNDS AND SHORTS. APPROVED FIRE ALARM CABLE CAN BE USED WITH FT RATING AS

- REQUIRED FOR PARTICULAR TYPE OF CONSTRUCTION. .7 ALL FIRE ALARM INTERLOCKS WITH OTHER EQUIPMENT (RECIRCULATING AIR EQUIPMENT MAGNETIC DOOR HOLDERS, ETC.) AS SHOWN AND/OR REQUIRED SHALL BE TESTED AND CLEARLY INDICATED ON FIRE ALARM VERIFICATION REPORT. VERIFY ALL REQUIRED INTERLOCKS AND SEQUENCE OF OPERATION WITH MECHANICAL ENGINEER BEFORE FINAL
- PROGRAMMING. FIRE ALARM VERIFICATION REPORT AND CERTIFICATE OF VERIFICATION SHALL BE
- SUBMITTED TO THE ELECTRICAL CONSULTANT FOR REVIEW AND APPROVAL. THE FOLLOWING HAS TO BE MET IN ORDER FOR F.A. SYSTEM TO BE CONSIDERED FOR
- 1. F.A. SYSTEM IS INSTALLED AS PER ALL APPLICABLE CODES.
- 2. F.A. SYSTEM IS INSTALLED AS PER THIS DRAWING AND SPECIFICATION. 3. F.A. SYSTEM IS INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS.
- 4. FIRE ALARM VERIFICATION REPORT/CERTIFICATION IS ACCEPTED AND APPROVED BY AUTHORITY HAVING JURISDICTION AND THE ELECTRICAL CONSULTANT. 5. VERIFICATION REPORT SHALL BE COMPLETE AND CERTIFICATE ISSUED ONLY WHEN
- FIRE ALARM SYSTEM HAS NO DEFICIENCIES. 6. VERIFICATION REPORT SHALL INCLUDE IDENTIFIED SENSITIVITY REPORT (CAN/ULC

Part 14 SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS

- .1 ALL MATERIALS INSTALLED SHALL BE SEISMICALLY RESTRAINED AND ATTACHED TO THE BUILDING STRUCTURE AND SHALL MEET THE REQUIREMENTS FOR POST DISASTER REQUIREMENTS OF BC BUILDING CODE. PROVIDE FOR SEISMIC DESIGN AND INSTALLATION
- TO MEET THIS REQUIREMENTS .2 ALL MATERIALS, COMPONENTS, EQUIPMENTS SHALL MEET THE REQUIREMENTS OF BC BUILDING CODE. PROVIDE FOR MANUFACTURER SEISMIC DESIGN FOR MATERIALS.
- PROVIDE ALL MATERIALS AND LABOUR NECESSARY TO SUPPLY AND INSTALL SEISMIC RESTRAINTS AND ANCHORAGE FOR ALL ELECTRICAL EQUIPMENT, LIGHT FIXTURES, BATTERY PACKS, CONDUITS, RACEWAYS, BUSS DUCTS, ETC, TO CONFORM WITH B.C. BUILDING CODE AND ALL OTHER APPLICABLE REGULATIONS.
- CONTRACTOR SHALL RETAIN AND PAY FOR A SEISMIC STRUCTURAL ENGINEER TO DESIGN AND INSPECT THE SEISMIC RESTRAINTS OF THE ELECTRICAL SYSTEM COMPONENTS COVERED UNDER THIS CONTRACT.

COMPONENTS, AND EQUIPMENT INTERNAL/EXTERNAL COMPONENTS.

- THE SEISMIC ENGINEER RETAINED BY CONTRACTOR SHALL PROVIDE FOR THE FOLLOWING .1 SUBMIT A MODEL SCHEDULE S-B: ASSURANCE OF PROFESSIONAL DESIGN AND
- COMMITMENT FOR FIELD REVIEW BY SUPPORTING REGISTERED PROFESSIONAL .2 PROVIDE ENGINEERING AND SELECTION OF SEISMIC CONTROL MATERIALS AND INSTALLATION METHODS TO MEET THE REQUIREMENTS OF CONTRACT DOCUMENTS AND APPLICABLE CODES AND REGULATIONS. THIS INCLUDES BUT IS NOT LIMITED TO
- LATERAL FORCE FOR PARTS & PORTIONS CALCULATION AND INDICATION OF ALL RELEVANT FACTORS.
- .3 ORGANIZE AND ATTEND PRE-INSTALLATION CONFERENCE MEETING. .4 THE CERTIFICATE OF THE PROFESSIONAL LIABILITY INSURANCE COVERING THIS
- AREA OF CONSULTING. .5 SUBMIT CERTIFIED SIGNED AND SEALED DETAILED DRAWINGS OF SEISMIC
- CONTROLS. .6 PRODUCE DETAILED SPECIFICATION FOR SEISMIC RESTRAINTS. .7 PROVIDE SITE REVIEWS AND REPORTS TO ENSURE PROPER INSTALLATION OF
- SEISMIC CONTROLS .8 PROVIDE FINAL SITE REVIEW AND REPORT .9 PROVIDE A MODEL SCHEDULE S-C: ASSURANCE OF PROFESSIONAL FIELD REVIEW AND COMPLIANCE BY SUPPORTING REGISTERED PROFESSIONAL (SRP). SCHEDULE C
- SHALL BE ADDRESSED WITH ECM ENGINEERING AS REGISTERED ENGINEER FOR THIS SUBSTANTIAL PERFORMANCE WILL NOT BE CONSIDERED WITHOUT THE SUBMISSION OF
- THE ABOVE DOCUMENTS. ALL OF THE ABOVE DOCUMENTS SHALL BE SUBMITTED TO THE CONSULTANT FOR FURTHER DISTRIBUTION AND FILES. SEISMIC ENGINEER SHALL BE A STRUCTURAL ENGINEER REGISTERED AS A PROFESSIONAL ENGINEER IN THE ASSOCIATION OF PROFESSIONAL ENGINEERS AND
- EXPERIENCE IN THIS FIELD. SEISMIC ENGINEER SHALL HAVE ENGINEER'S PROFESSIONAL LIABILITY INSURANCE, WITH MINIMUM VALUES OF \$1,000,000 PER CLAIM, \$2,000,000.00 AGGREGATE ANNUALLY. THIS INSURANCE SHALL COVER SEISMIC CONSULTING.

THE CONTRACTOR SHALL COOPERATE WITH THE SEISMIC ENGINEER AND PROMPTLY

GEOSCIENTISTS OF BRITISH COLUMBIA, AND SHALL HAVE A MINIMUM OF 5 YEARS

- SUPPLY SUCH INFORMATION, INCLUDING WEIGHTS OF EQUIPMENT AND BASE FRAME OR MOUNTING PLATE LAYOUTS, AS REQUESTED BY THE SEISMIC ENGINEER NECESSARY TO SUPPORT THE DESIGN AND DETAILS FOR SEISMIC RESTRAINT .10 THE CONTRACTOR SHALL NOT BE ENTITLED TO ANY ADDITIONAL COMPENSATION ARISING
- FROM THE TECHNICAL DIRECTION PROVIDED BY THE SEISMIC ENGINEER FOR SEISMIC RESTRAINT AND ANCHORAGE OF ELECTRICAL SYSTEMS .11 THE SEISMIC CERTIFICATE SHALL BE EQUIPMENT SPECIFIC, SITE SPECIFIC, AND BE SIGNED BY THE PROFESSIONAL ENGINEER REPRESENTING THE MANUFACTURER.
- .12 INSTALL ALL COMPONENTS OF THE SYSTEM ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND ALL PERTINENT REGULATIONS. .13 CONTRACTOR SHALL COORDINATE ALL WORK WITH THE MANUFACTURER AND ALL ASSOCIATED TRADES.

EQUIPMENT, PIPING, DUCTS OR OTHER INSTALLATIONS.

.14 SEISMIC RESTRAINTS SHALL BE INSTALLED AT LEAST 75MM CLEAR FROM OTHER

SYSTEMS, INDEPENDENTLY SUPPORT LIGHT FIXTURES FROM STRUCTURE.

.15 FOR TRANSFORMERS, PROVIDE VIBRATION ISOLATORS, AND SEISMICALLY RATED SPRING ISOLATORS, OR USE SNUBBERS WITH RESILIENT BUSHINGS OR OTHER PROVISION, SUCH AS TO MAINTAIN VIBRATION ISOLATION TOGETHER WITH SEISMIC RESTRAINT.

.16 FOR LUMINAIRES INSTALLED IN SUSPENDED ACOUSTICAL, METAL PAN OR COFFER CEILING

SHOWN IS FOR USE ON THE DESIGNATED PROJECT ONLY.

20670 LANGLEY BYPASS

LANGLEY, BC

SPECIFICATIONS PROJECT NUMBER DRAWING NUMBER AS NOTED REVISION

ISSUED FOR BUILDING PERMIT 01 | 03/17/17 ISSUED FOR REVIEW REV DATE DESCRIPTION

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