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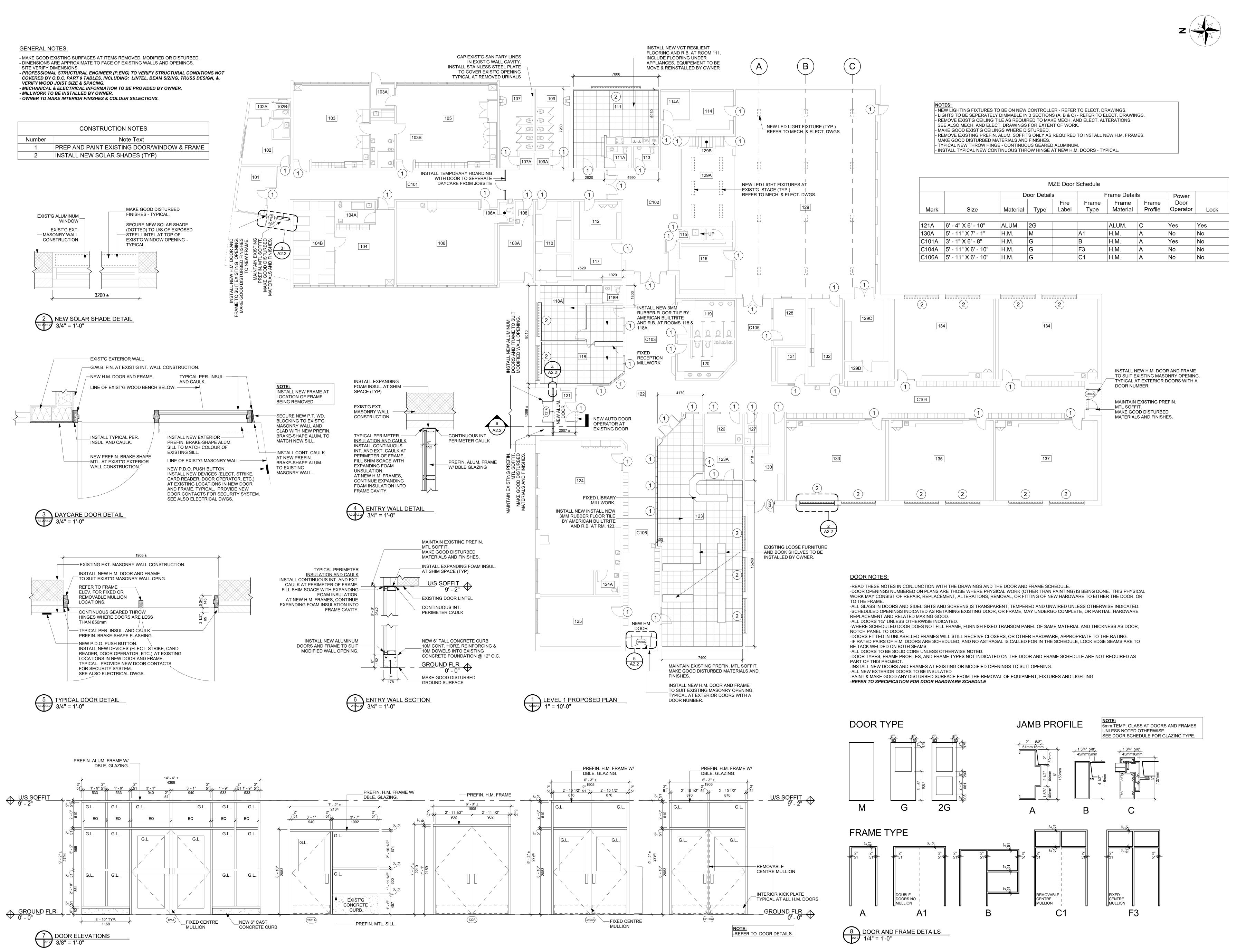
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ELEMENTARY SCHOOL

Conseil Scolaire Viamonde
621 Quaker Road, Welland, ON, L3C 3H1

**A2.2** 

#### LIGHTING FIXTURE SCHEDULE

#### GENERAL NOTES:

- 1. CONTRACTOR IS TO INCLUDE FOR ALL ACCESSORIES AS REQUIRED FOR A FULL AND COMPLETE INSTALLATION. PARTS NUMBERS SHOWN ARE GENERALLY FOR FIXTURE ONLY. REFER TO ARCHITECTURAL CEILING SCHEDULE FOR CEILING TYPES AND PROVIDE REQUIRED ACCESSORIES (IE DRYWALL FLANGE KIT, ETC). DISCREPANCIES BETWEEN THE DESCRIPTION AND PART NUMBER SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO SUBMITTING A BID.
- 2. THE CONTRACTOR IS TO ALLOW FOR NORMAL DELIVERY ON FIXTURES (6-8 WEEKS FROM ACCEPTANCE OF SHOP DRAWINGS). FIXTURES FROM A QUICK SHIP PROGRAM WILL BE NOTED WHERE APPLICABLE. CONTRACTOR IS TO SUBMIT SHOP DRAWINGS FOR FIXTURES AS SOON AS POSSIBLE TO AVOID DELAY OF THE PROJECT. ALTERNATES WILL NOT BE ACCEPTED TO EXPEDITE A SCHEDULE.
- 3. PENDANT AND LINEAR FIXTURES SHOWN AS END TO END ARE TO BE ORDERED AS CONTINUOUS RUN FIXTURES UNLESS SPECIFICALLY NOTED OTHERWISE. FIXTURES ARE GENERALLY LISTED AS A MODULE TO CLARIFY THE LUMENS OR THE BALLAST AND LAMP REQUIRED FOR EACH MODULE. FIXTURE RUN LENGTHS SHALL BE AS SHOWN ON THE PLANS. DISCREPANCIES BETWEEN THE FIXTURE DESCRIPTION AND PLAN SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO SUBMITTING A BID.
- 4. CONTRACTOR SHALL SUPPLY TO OWNER AND/OR CONSULTANT ANY DOCUMENTATION AS REQUIRED FOR OWNER TO APPLY FOR ENERGY INCENTIVES INCLUDING BUT NOT LIMITED TO BILLS OF SALE, ETC.
- 5. ALL FIXTURES ARE TO HAVE SHOP DRAWINGS SUBMITTED TO THE CONSULTANT PRIOR TO ORDERING FOR GENERAL REVIEW. CONTRACTOR MUST INCLUDE SHOP DRAWINGS FOR ALL LAMPS BEING INSTALLED WITH
- 6. DIMMERS SHALL BE (0-10V) UNLESS SPECIFIED OTHERWISE. DIMMERS SHALL BE COMPLETE WITH ON/OFF BUTTON AND SEPERATE SLIDER TO ALLOW THE DIMMING LEVEL TO REMAIN. DIMMERS INCORPORATING SLIDE TO OFF ARE NOT ACCEPTABLE UNLESS NOTED. ELV TYPE DIMMER WHERE REQUIRED SHALL COMPATIBLE WITH LIGHT FIXTURE AND BE CAPABLE OF 0-100% OPERATION. DIMMER SHALL BE BY LUTRON OR APPROVED EQUAL
- 7. FIXTURES BEING SUBMITTED AS AN APPROVED EQUAL ARE TO BE SUBMITTED TO THE CONSULTANT FOR APPROVAL NO LESS THAN 5 BUSINESS DAYS BEFORE CLOSING. SUBMITTALS SHALL BE CLEARLY LABELLED AND INCLUDE COMPLETE FIXTURE CUTS STATING INCLUDED OPTIONS, ACCESSORIES AND FIXTURE EFFICIENCY. SUBMITTALS NOT MEETING THIS CRITERIA WILL BE REJECTED. IES FILES FOR FIXTURES MUST HAVE AN IES LAB CERTIFICATION.

	ITEM	DESCRIPTION
	Α	1220mm (4'-0") LED STRIP LIGHT. 120V, ELECTRONIC DIMMING DRIVE (10%, 0-10V) 3500K, 80CRI.
		LIGHTONIA LIGHTING CAT No.: ZL1D L4B 7000LM FST MVOLT 35K 800 OR APPROVED EQUAL.
	В	LED HIGH BAY FIXTURE. 120V, ELECTRONIC DIMMING DRIVER (10%, 0-10V) 4000K, 80CRI.
		LIGHTONIA LIGHTING CAT No.: IBG 18000LM SEF ATL WD 40K 80CRI WGX OR APPROVED EQUAL.

#### SENSOR NOTES AND SCHEDULE

#### GENERAL NOTES

- 1. ALL DEVICES AND SENSORS ARE TO HAVE SHOP DRAWINGS SUBMITTED TO THE CONSULTANT FOR REVIEW AND COMMENT PRIOR TO ORDERING.
- 2. ALL SENSORS ARE TO BE IN COMPLIANCE WITH NEMA WD 7-2011. ANY SENSORS NOT IN COMPLIANCE WILL BE REJECTED.
- 5. PROVIDE ALL SENSORS, POWER PACKS AND RELAY UNITS AS REQUIRED FOR A COMPLETE INSTALLATION. PASSIVE INFRARED SENSOR, ULTRASONIC AND MULTI TECHNOLOGY OCCUPANCY SENSORS SHALL BE AS NOTED BELOW (REFER TO PLANS FOR DEVICE LAYOUT). PART NUMBERS SHOWN ARE GENERAL, FOR DEVICE ONLY.
- 4. THIS CONTRACTOR SHALL ALLOW FOR ON SITE ADJUSTMENTS OF TIME
- 5. FINAL PLACEMENT OF SENSORS SHALL BE CONFIRMED ON SITE WITH ALL PIPING, DUCTWORK, EQUIPMENT, ETC. PRIOR TO ROUGH—IN, TO ENSURE CLEAR VIEW OF THE ENTRANCE DOOR AND THE OVERALL SPACE. THIS CONTRACTOR TO REFER TO AND FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR PLACEMENT LOCATIONS AND SENSOR COVERAGE
- 6. CEILING MOUNTED SENSORS SHALL BE AT AT CEILING LEVEL WHERE CEILING EXISTS. WHERE CEILING IS NOT PRESENT SENSORS TO BE MOUNTED AT HEIGHT OF PARTITIONS. WALL/CORNER MOUNTED SENSORS SHALL BE MOUNTED 10'-0" A.F.F. WALL STATION SENSORS SHALL BE AS PER SPECIFICATIONS AND STANDARD SWITCH LOCATIONS. ALL MOUNTING HEIGHTS ARE TO BE CONFIRMED ON SITE AND ADJUSTED ACCORDINGLY TO ENSURE PROPER COVERAGE.
- 7. APPROVED ALTERNATE BY: WATTSTOPPER, LUTRON, H-MOSS, SENSORSWITCH. SENSORS BEING SUBMITTED AS EQUALS SHALL MEET SPECIFIED CAPABILITIES, COVERAGE(S), SENSITIVITY ADJUSTMENT, TIME DELAYS, ETC. AS OUTLINED ABOVE AND AS PER SPECIFICATIONS. SHALL AN ALTERNATE FAIL TO MEET INTENT OF DESIGN, CONTRACTOR WILL BE RESPONSIBLE TO PROVIDE ADDITIONAL SENSORS AND OR PARTS TO MEET INTEND OF DESIGN AND FUNCTIONALITY.
- 8. ELECTRICAL CONTRACTOR SHALL ALLOW FOR TRAINING AND EXPLANATION OF CONTROLLED SYSTEMS TO END USER.
- 9. ELECTRICAL CONTRACTOR TO ENGAGE THIRD PARTY FOR FUNCTIONAL TESTING OF LIGHTING CONTROL DEVICES AND CONTROL SYSTEM AND PROVIDE CERTIFICATE OF ACCEPTANCE TO ENGINEER UPON COMPLETION PRIOR TO OCCUPANCY.

ITEM	DESCRIPTION
OS-1	WALL MOUNTED, DUAL—TECH, SINGLE LEVEL SENSOR IN AREAS AS SHOWN. SENSOR TO BE SET FOR VACANCY MODE FOR MANUAL 'ON' VIA BUILT—IN PUSH BUTTON AND AUTOMATIC 'OFF' AFTER PRESET TIME.  ACUITY nLIGHT CAT No.: nWV PDT 16 OR APPROVED EQUAL.
0S-2	CEILING MOUNTED, 360° FIELD OF VIEW, DUAL—TECH SENSOR, MOUNTED AS SHOWN AND CONNECTED TO LIGHTS WITH 30 MINUTE DELAY  ACUITY nLIGHT CAT No.: nCM PDT OR APPROVED EQUAL.

FIRE ALA	ADM			
S <sub>P</sub>	PHOTOELECTRIC TYPE SMOKE DETECTOR			
SR PHOTOELECTRIC TYPE SMOKE DETECTOR WIT RELAY BASE.  PHOTOELECTRIC TYPE SMOKE ALARM, 120VA WITH BATTERY BACKUP, INTERCONNECTED AS SHOWN				
			(S) <sub>ID</sub>	PHOTOELECTRIC TYPE DUCT SMOKE DETECTOR
<b>⊕</b> <sub>R</sub>	RATE OF RISE AND 57°C FIXED TEMPERATURE HEAT DETECTOR			
<b>⊕</b> <sub>F</sub>	92°C FIXED TEMPERATURE HEAT DETECTOR			
F	MANUAL PULL STATION			
ESV	ELECTRIC SUPERVISED VALVE			
FS	FLOW SWITCH			
PS PRESSURE SWITCH				
FIRE ALARM SIGNALLING APPLIANCE - HOR	FIRE ALARM SIGNALLING APPLIANCE - BELL			
	FIRE ALARM SIGNALLING APPLIANCE - HORN			
	FIRE ALARM SIGNALLING APPLIANCE - STROBE			
FIRE ALARM SIGNALLING APPLIANCE — COMBINATION HORN AND STROBE WALL/COLUMN MOUNT  FIRE ALARM SIGNALLING APPLIANCE — COMBINATION HORN AND STROBE CEILING MOUNT  FIRE ALARM DOOR RELEASE DEVICE				
		Š	FIRE ALARM SPEAKER - WALL/COLUMN MOUNT	
		Sc FIRE ALARM SPEAKER - CEILING MOUNT		
FIRE FIGHTERS HANDSET	FIRE FIGHTERS HANDSET			
FAA FIRE ALARM ANNUNCIATOR PANEL				
FACP	FIRE ALARM CONTROL PANEL			
<b>⊘</b> co	FIRE ALARM — CARBON MONOXIDE DETECTOR			
<b>∆</b> <sub>CO₂</sub>	FIRE ALARM - CARBON DIOXIDE DETECTOR			
SD/FD	SMOKE OR FIRE DAMPER CONNECT TO FIRE ALARM SYSTEM AND POWER			

LIGHTING FIXTURES				
	SURFACE OR RECESS MOUNTED LIGHTING FIXTURES. LETTER DENOTES TYPE			
	SURFACE OR RECESS MOUNTED LIGHTING FIXTURES ON AN EMERGENCY OR NIGHT LIGHT CIRCUIT. LETTER DENOTES TYPE.			
ДД	SURFACE OR RECESS MOUNTED LIGHTING FIXTURES. LETTER DENOTES TYPE.			
SURFACE OR RECESS MOUNTED LIGHTING FIXTURES ON AN EMERGENCY OR NIGHT LIGHT CIRCUIT. LETTER DENOTES TYPE.				
WALL OR COLUMN MOUNTED LIGHTING FIXTURES. LETTER DENOTES TYPE.				
極原	WALL OR COLUMN MOUNTED LIGHTING FIXTURES ON AN EMERGENCY OR NIGHT LIGHT CIRCUIT. LETTER DENOTES TYPE.			
Ι	SURFACE MOUNTED STRIP FLUORESCENT LIGHTING FIXTURE.			
B-1-2	LIGHTING CIRCUITING NOTE. B-PANELBOARD I.D., 1-BRANCH CIRCUIT, 2-LOCAL (SWITCH) CIRCUIT.			
HA SWITCH. SINGLE-POLE, SINGLE-THROW				
RC ROOM CONTROLLER FOR LIGHTING CONTROL				
CEILING MOUNTED OCCUPANCY SENSOR				
€ WALL MOUNTED OCCUPANCY SENSOR				
₩ <u>B</u> -1-2	TYPICAL SWITCH NOTES. CIRCUITING: B-PANELBOARD I.D., 1-BRANCH CIRCUIT,2-LOCAL (SWITCH) CIRCUIT. XX-SUBSCRIPT(S): D-DIMMING, P-PILOT LIGHT, 3-THREE WAY, 4-FOUR WAY, OS-OCCUPANCY SENSOR, VS-VACANCY SENSOR			

	POWER L	_AYOUT
	라	DISCONNECT SWITCH (DS)
H A	⊠ <sub>r</sub>	COMBINATION STARTER (CS)
	$\boxtimes$	MAGNETIC STARTER (MG)
C	D'	MANUAL STARTER (MS)
		POWER PANEL - EXISTING
R		POWER PANEL - NEW
E	M	POWER TRANSFORMER
		ELECTRIC HEATING EQUIPMENT
	$\bigcirc$	EQUIPMENT SUPPLIED BY OTHERS REQUIRING ELECTRICAL POWER CONNECTION REFER TO EQUIPMENT SCHEDULE
	$\bigcirc$	EQUIPMENT SUPPLIED BY OWNER REQUIRING ELECTRICAL POWER CONNECTION REFER TO OWNER EQUIPMENT SCHEDULE
	0	MECHANICAL EQUIPMENT/MOTOR REQUIRING ELECTRICAL POWER
BE	₩	ALL MODES OF OPERATION OF EQUIPMENT SO NOTED TO BE SHUT DOWN BY THE ALARM CONDITION OF THE FIRE ALARM CONTROL PANEL.
	•	PUSH BUTTON
	•••	PUSH BUTTON STATION
	•	THERMOSTAT
	T	TIME CLOCK
INT	J	JIFFY POLE
	<b>(A)</b>	120V HARDWIRE CONNECTION
		208V, 1¢ HARDWIRE CONNECTION
		208V, 3ø HARDWIRE CONNECTION
	<b>△</b>	600V, 3ø HARDWIRE CONNECTION
₹	JB	JUNCTION BOX
	H	HAND DRYER
ER	6	FLOOR BOX

	TY, ACCESS CONTROL, CCTV
	AREA TYPE BREAK GLASS DETECTOR
	SINGLE-PANE TYPE BREAK GLASS DETECTOR
00	DOOR CONTACT
•	ROLL-UP OR OVERHEAD DOOR DOOR CONTACT
마	MOTION DETECTOR
Œ	PHOTO-ELECTRIC BEAM SOURCE
	PHOTO-ELECTRIC BEAM REFLECTOR
N	SECURITY SYSTEM ALARM SIGNAL
□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□	
C	CARD READER
ES	ELECTRIC STRIKE
ELR	ELECTRIC LATCH RETRACTION
K	ELECTRONIC KEY PAD
MAG	MAGNETIC LOCK
OCC	OCCUPIED LIGHT CAMDEN LED ANNUNCIATOR CM-AF-500
PTR	PUSH TO RELEASE
PTL	PUSH TO LOCK CAMDEN PUSHBUTTON CM-400/8
REX	REQUEST TO EXIT
SP	SCRAMBLE PAD
W	HANDS FREE SWITCH CAMDEN SUREWAVE CM-324/3

# THIS LEGEND REPRESENTS THE SYMBOLS COMMONLY USED. NOT ALL SYMBOLS MAY APPEAR ON THE DRAWINGS. SHOULD A SYMBOL BE FOUND ON THE DRAWING AND NOT APPEARING ON THE LEGEND, THE CONTRACTOR SHALL SUBMIT A QUESTION TO HAVE THE SYMBOL CLARIFIED IN AN ADDENDUM PRIOR TO SUBMITTING A BID. ABBREVIATIONS

DENOTES 5-20R DEVICE

AUTOMATIC DOOR OPENER

ABOVE COUNTER

AE	APPROVED EQUAL
AFF	ABOVE FINISHED FLOOR
AN	FIRE ALARM ANNUNCIATOR
BED	RECEPTACLE DEDICATED FOR PATIENT BED
ВН	BASEBOARD HEATER
СВ	CIRCUIT BREAKER
ER	EXISTING TO BE RELOCATED
EX	EXISTING TO REMAIN
FH	FORCED-AIR HEATER
GFI EQUIPMENT SO NOTED TO BE SUPPLIED W	
HSKP	HOUSEKEEPING
JB	JUNCTION BOX
PD	POWER DOOR
R	RELAY WITH AUXILIARY CONTACTS
REL	RELOCATED ITEM IN NEW LOCATION
REM	EXISTING TO BE REMOVED IN IT'S ENTIRETY
Т	TRANSFORMER
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
W	WALL MOUNT - VERIFY HEIGHT
WP	EQUIPMENT SO NOTED TO BE SUPPLIED WITH THE MANUFACTURER'S WEATHER-PROOFING OPTION(S)

#### DEMOLITION NOTES

- THE CONTRACTOR SHALL ARRANGE TO TOUR THE FACILITY WITH MAINTENANCE STAFF PRIOR TO SUBMITTING A BID ON THE PROJECT.
- 2. DURING THE CONTRACTORS SITE TOUR THEY SHALL BECOME FAMILIAR WITH THE EXISTING BUILDING CONSTRUCTION AND THE LOCATIONS OF THE EXISTING COMMUNICATION CLOSETS, LOCAL POWER PANELS, FIRE ALARM AND OTHER SYSTEMS BEING WORKED ON AS PART OF THIS CONTRACT.

KEYNOTE - SEE KEYNOTE No. 3 ON DRAWINGS

KEYNOTE - SEE KEYNOTE No. 3 ON DRAWINGS

- 3. THE CONTRACTOR AND MAINTENANCE STAFF SHALL OPEN EXISTING PANELS AND SYSTEMS TO BECOME FAMILIAR WITH THE EXISTING SYSTEMS AND TO DETERMINE THE FULL SCOPE OF WORK REQUIRED TO CARRY OUT THE PROJECT. THE CONTRACTOR SHALL PROVIDE NEW BREAKERS, DATA/VOICE COMPONENTS, FIRE ALARM DEVICES, LIGHTING SYSTEM COMPONENTS, ETC TO FACILITATE A COMPLETE AND FUNCTIONING SYSTEM AT PROJECT COMPLETION.
- 4. THE CONTRACTOR SHALL MEASURE OFF ANY DISTANCES NOT INDICATED FOR HOME RUNNING NEW SERVICES (POWER, FIRE ALARM, SECURITY ETC) AND INCLUDE MATERIALS AND LABOUR REQUIRED IN THEIR BID PRICE
- 5. COORDINATE ALL DEMOLITION WITH GENERAL CONTRACTOR. EVERY EFFORT HAS BEEN MADE TO OUTLINE THE DEMOLITION SCOPE OF WORK, HOWEVER THE DEMOLITION DRAWINGS REPRESENT ONLY THE GENERAL LOCATION AND NUMBER OF FITTINGS, FIXTURES, DEVICES, EQUIPMENT ETC. TO ASSIST IN EVALUATING THE DEMOLITION SCOPE OF WORK. DRAWINGS ARE BASED ON PREVIOUS AS—BUILTS OR FIELD EVALUATIONS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE DURING THE TENDER PERIOD TO DETERMINE THE EXACT SCOPE OF DEMOLITION WORK, QUANTITIES AND THOROUGHLY UNDERSTAND THE SITE CONDITIONS FOR CARRYING OUT THE SAME. REQUESTS FOR EXTRAS DUE TO FAILURE TO PROPERLY EVALUATE THE CONDITIONS THAT AFFECT DEMOLITION SCOPE OF WORK WILL NOT BE CONSIDERED.
- 6. SHOULD THE CONTRACTOR ENCOUNTER ANY ASBESTOS DURING THE WORK, THEY SHALL STOP WORK AND NOTIFY THE OWNER IMMEDIATELY.
- 7. THE CONTRACTOR SHALL PATCH, REPAIR AND RESTORE FIRE—SEPARATIONS AS REQUIRED FOR INSTALLATION OF ELECTRICAL RACEWAYS AND OUTLETS IN WALLS AND EXTERIOR WALLS.
- THE CONTRACTOR SHALL SUBMIT QUESTIONS IN WRITING 5 DAYS PRIOR TO TENDER CLOSING TO ALLOW FOR QUESTIONS TO BE FORMALLY ANSWERED IN AN ADDENDUM.
- 9. UNLESS EXISTING CIRCUITS NUMBERS ARE INDICATED ON THE DEMOLITION PLANS, ALL CIRCUITS SHOWN ON THE NEW LAYOUTS ARE NEW CIRCUITS. EXCEPTIONS TO THIS INCLUDE CIRCUITS SHOWN ON THE DEMOLITION PLAN AND AGAIN ON THE NEW LAYOUT. THE CIRCUIT SHOWN BOTH TIMES IS EXISTING AND LOCALIZED IN THE AREA OF WORK. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING FOR ALL NEW CIRCUITS: NEW CONDUIT, WIRING, BREAKERS, SUPPORTS, BACKBOXES, FACEPLATES, RECEPTACLES, ETC FOR A COMPLETE
- 10. EXISTING CIRCUITS BEING REUSED WILL BE INDICATED BY A CIRCUIT NUMBER (IE 2A15) OR A GENERIC NUMBER (IE CCT7). CCT 7 INDICATES THAT THE LIGHTING OR DEVICE IS TO BE CONNECTED TO 1 OF 7 EXISTING CIRCUITS IN THE AREA THAT HAS BECOME FREE AFTER DEMOLITION. THE CONTRACTOR SHALL BALANCE LOADS AND SHUFFLE BREAKERS AFTER THE PANEL LOADS HAVE BEEN CONNECTED TO EQUALLY LOAD EACH PHASE.
- WHERE EXISTING LIGHTING CIRCUITS HAVE BEEN REUSED, CONTRACTOR SHALL VERIFY EXISTING VOLTAGE OF CIRCUITS PRIOR TO SUBMITTING ANY SHOP DRAWINGS OR ORDERING OF FIXTURES, SENSORS, CONTROLS, ETC. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES IN FIXTURE VOLTAGE AND EXISTING CIRCUIT VOLTAGE.

#### GENERAL NOTES

- 1. THE ELECTRICAL DRAWINGS REPRESENT A PORTION OF THE CONTRACT. THE CONTRACTOR IS TO FAMILIARIZE THEMSELVES WITH ALL OF THE DRAWINGS IN THE PACKAGE AS SOME WORK MAY BE SHOWN ON OTHER DRAWINGS IN THE PACKAGE. CONTRACTOR IS TO DETERMINE FULL EXTENT OF PROJECT PRIOR TO SUBMITTING BID.
- 2. THE DRAWINGS ARE NOT TO BE SCALED FOR INSTALLATION PURPOSES. ALL MEASUREMENTS ARE TO BE OBTAINED FROM ARCHITECTURAL PLANS, ELEVATIONS, SHOP DRAWINGS OR BE OBTAINED FROM FIELD MEASUREMENTS.
- 3. CONTRACTOR IS TO REVIEW ARCHITECTURAL DRAWINGS AND PROVIDE ALL NECESSARY PARTS AND ACCESSORIES AND FIRESTOPPING AS REQUIRED TO CONFORM WITH ARCHITECTURAL FIRE RATINGS.
- 4. CONTRACTOR IS TO REMOVE ALL EXISTING DEAD AND ABANDONED CONDUIT AND WRING BACK TO SOURCE. WHERE NOT POSSIBLE TO REMOVE EXISTING CONDUIT, CONDUIT IS TO BE LEFT BEHIND AND EXISTING WIRE IS TO BE REMOVED AND REPLACED WITH A PULL ROPE.
- 5. CONTRACTOR IS TO PROVIDE ELECTRONIC CAD
  'AS-BUILT' DRAWINGS IN DWG AND PDF FORMAT AT
  THE COMPLETION OF THE PROJECT. CAD FILES ARE TO
  BE AUTOCAD 2010.
- 6. UNLESS NOTED OTHERWISE ALL WIRING SHALL BE IN CONDUIT AND CONCEALED IN WALLS AND CEILING SPACES. BX IS PERMITTED IN SPECIAL CIRCUMSTANCES AND SHORT DROPS FROM JUNCTION BOXES TO LIGHT FIXTURES, REFER TO SPECIFICATIONS. CONDUIT RUNS ARE TO BE PARALLEL TO WALL STUDS AND DROP FROM JUNCTION BOXES MOUNTED IN THE CEILING SPACE. HORIZONTAL RUNS IN WALLS WILL ONLY BE ACCEPTED UNDER SPECIAL CIRCUMSTANCES (IE OFFSET TO AVOID STRUCTURAL ABOVE) WITH WRITTEN APPROVAL FROM THE OWNER/CONSULTANT.
- 7. UNLESS SPECIFICALLY NOTED AS "CABLING BY OTHERS", THE CONTRACTOR SHALL INCLUDE FOR ALL CABLING TO DEVICES, OUTLETS, ETC AS SHOWN FOR A COMPLETE AND FUNCTIONING SYSTEM(S).
- 8. CONTRACTOR IS TO MAINTAIN POWER AND COMMUNICATION CIRCUITS IN AREAS OUTSIDE OF THE CONSTRUCTION AREA. PROVIDE TEMPORARY CONNECTIONS AS REQUIRED, COORDINATE WITH OWNER.
- 9. EQUIPMENT BEING REMOVED AND NOT BEING REUSED REMAIN THE PROPERTY OF THE OWNER AND IS TO BE STORED ON SITE. ANY EQUIPMENT THE OWNER DEEMS NO INTEREST IN IS TO BE DISPOSED OF IN A LAWFUL AND SAFE MANNER BY THIS TRADE.
- 10. CONTRACTOR IS TO REFER TO ARCHITECTURAL PLANS AND CEILING LAYOUTS TO VERIFY THAT NO INTERFERENCES EXIST PRIOR TO THE INSTALLATION OF FIXTURES AND DEVICES IN WALLS AND CEILINGS.

#### DRAWING LIST

E000 GENERAL NOTES, LEGENDS, SCHEDULES &

- DRAWING LIST
  E050 SPECIFICATIONS
- E100 DEMOLITION FIRE ALARM PLAN
- E101 DEMOLITION LIGHTING PLAN
- E102 DEMOLITION POWER PLAN
- E200 PROPOSED FIRE ALARM PLAN
- E201 PROPOSED POWER PLAN
- E202 PROPOSED LIGHTING PLAN
- E500 DETAILS

FIRE ALARM TESTING.

E501 DETAILS

CONTRACTOR IS TO RETAIN AND COORDINATE WITH CLIENT SECURITY SYSTEM PROVIDER (CHUBB) FOR WORK ALTERING OR ADDING TO THE EXISTING SECURITY SYSTEM AND WORK INVOLVING FIRE ALARM MONITORING, CONNECTIONS AND

CONTRACTOR TO INSTALL NEW FIRE ALARM SYSTEM ALONGSIDE THE EXISTING SIMPLEX ALARM SYSTEM. DEMOLITION OF THE EXISTING FIRE ALARM SYSTEM IS NOT TO PROCEED UNTIL NEW FIRE ALARM SYSTEM HAS BEEN TESTED AND COMMISSIONED.

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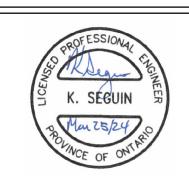
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Notes:

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lo. Revision Date By



Sea



roject
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ELEMENTARY SCHOOL

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GENERAL NOTES, LEGENDS,
SCHEDULES & DRAWING LIST

Drawn By: JC	Designed By: SJ	Approved By: KS	Date:	B 2024
Project No. 24-003		Scale	<b>.</b>	
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- GENERAL
- THIS SPECIFICATION SHALL APPLY TO AND GOVERN ALL WORK OF DIVISION 16. THE ELECTRICAL CONTRACTOR SHALL BE A SUBCONTRACTOR TO THE GENERAL CONTRACTOR AND HIS BID SHALL BE TENDERED DIRECTLY TO THE GENERAL CONTRACTOR. THE CONTRACTOR SHALL SUPPLY, INSTALL, WIRE AND CONNECT ALL EQUIPMENT, ACCESSORIES, DEVICES ETC SHOWN UNLESS SPECIFICALLY NOTED OTHERWISE. SHOULD THE CONTRACTOR BE UNSURE, THEY ARE TO SUBMIT A QUESTION 3 WORKING DAYS PRIOR TO TENDER CLOSE TO HAVE AN ADDENDUM ISSUED TO CLARIFY THE DEVICE, EQUIPMENT OR WORK SCOPE IN
- IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN ALL DRAWINGS AND SPECIFICATIONS PRIOR TO TENDER SUBMITTAL. ELECTRICAL DRAWINGS ARE TO READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL MECHANICAL DRAWINGS. ANY DISCREPANCIES BETWEEN THESE SPECIFICATIONS AND THE DRAWINGS THAT CAUSES DOUBT AS TO THE TRUE MEANING OF INTENT OF THE DRAWINGS AND SPECIFICATIONS. A RULING SHALL BE OBTAINED FROM THE ENGINEER PRIOR TO TENDER SUBMITTAL. NO ALLOWANCE WILL BE MADE FOR FAILURE TO DO SO. IF CLARIFICATION CAN NOT BE OBTAINED IN TIME, THE CONTRACTOR SHALL INCLUDE FOR THE MORE COSTLY INSTALLATION
- <u>LIABILITY INSURANCE:</u> OBTAIN AND CARRY PROPER INSURANCE TO FULLY PROTECT BOTH THE OWNER AND HIMSELF FROM ANY AND ALL CLAIMS DUE TO ACCIDENTS, MISFORTUNES, ACTS OF GOD, ETC.
- 1.4. <u>CODES, PERMITS AND INSPECTION</u>
  - 1.4.1. BE RESPONSIBLE FOR AND OBTAIN ALL PERMITS, INSPECTION, ETC., AS REQUIRED BY ALL AUTHORITIES HAVING JURISDICTION OVER THIS WORK AND PAY FOR ALL FEES RELATED TO SAME
  - 1.4.2. DELIVER ALL PERMITS TO THE ENGINEER AS SOON AS THEY BECOME AVAILABLE.
- 1.5. <u>CLOSE OUT DOCUMENTS AND AS-BUILT DRAWINGS:</u>
  - 1.5.1. THE CONTRACTOR SHALL SUBMIT AN ENQUIRY TO THE ARCHITECT/OWNER TO OBTAIN THE FINAL ROOM NAMES AND NUMBERS TO BE USED IN ALL THE CLOSE OUT DOCUMENTS, REPORTS, FIRE ALARM/NURSE CALL PROGRAMMING, PANEL SCHEDULES ETC. FAILURE TO USE THE FINAL NAMES AND NUMBERS WILL REQUIRE THE CONTRACTOR TO REPLACE DOCUMENTATION/REPROGRAM AS REQUIRED AT THEIR EXPENSE. THEY SHALL KEEP A SEPARATE SET OF WHITE PRINTS ON THE SITE AND NOTE ALL CHANGES AND DEVIATIONS FROM THE ORIGINAL DESIGN. DEVICES ETC NOTED AS "EX" (EXISTING) AND "REL" RELOCATED ARE TO HAVE THE CIRCUIT TRACED AND DESIGNATED. ON THE DRAWINGS. DEVICES ETC DESIGNATED AS CONNECT TO EXISTING CIRCUIT IN AREA ARE TO HAVE THE CIRCUIT INDICATED ON THE PLANS. PROVIDE AS-BUILT DRAWINGS IN AUTOCAD FORMAT (MIN RELEASE 2010), PDF FORMAT AND (2) TWO SETS OF THESE PLANS SHOWING ALL AS-BUILT CONDITIONS TO THE OWNER AT THE COMPLETION OF THIS CONTRACT AND BEFORE APPLYING FOR FINAL PAYMENT. (INCLUDE IN-SLAB CONDUIT RUNS). SHOULD NO MARKUPS BE REQUIRED TENDER AND/OR SEALED PLANS BY THE ENGINEER WILL NOT BE ACCEPTED
  - 1.5.2. CLOSE OUT BINDERS SHALL BE PROVIDED WITH ALL TEST RESULTS WARRANTY LETTERS AND SHOP DRAWINGS. A PDF COPY SHALL BE PROVIDED ALONG WITH THE HARD COPY VERSIONS. PDF VERSION SHALL BE ASSEMBLED VERSIONS WHERE POSSIBLE. SHOULD A DOCUMENT REQUIRE SCANNING. IT SHALL BE PROVIDED IN HIGH RESOLUTION AND BE CLEARLY LEGIBLE. ILLEGIBLE DOCUMENTS WILL NOT BE ACCEPTED
- 1.6. <u>CODES AND STANDARDS</u>: (CURRENT EDITIONS)
- 1.6.1. DO COMPLETE INSTALLATION IN ACCORDANCE WITH C.S.A C22.1 EXCEPT WHERE SPECIFIED OTHERWISE
- 1.6.2. COMPLY WITH C.S.A. ELECTRICAL BULLETINS IN FORCE AT TIME OF TENDER SUBMISSION, WHILE NOT IDENTIFIED AND SPECIFIED BY NUMBER N THIS DIVISION, ARE TO BE CONSIDERED AS FORMING PART OF RELATED C.S.A. PART II STANDARD
- 1.6.3. DO OVERHEAD AND UNDERGROUND SYSTEMS IN ACCORDANCE WITH C.S.A. C22.3 NO. 1 EXCEPT WHERE SPECIFIED OTHERWISE.
- 1.6.4. ABBREVIATIONS FOR ELECTRICAL TERMS: TO C.S.A. Z85.
- 1.6.5. COMPLY ALSO WITH THE FOLLOWING CODES: 1.6.5.1. ONTARIO ELECTRICAL SAFETY CODE
- 1.6.5.2. NATIONAL BUILDING CODE
- 1.6.5.3. ONTARIO BUILDING CODE
- 1.6.5.4. LOCAL HYDRO UTILITY REQUIREMENTS 1.6.5.5. CAN/ULC S524, S537 AND S1001
- VISITING THE SITE: VISIT THE SITE OF THE PROJECT AND BECOME FAMILIAR WITH THE SITE CONDITIONS. REPORT ANY DEVIATION AND/OR CONFLICTS BETWEEN TENDER DOCUMENTS AND SITE CONDITIONS PRIOR TO SUBMITTING
- 1.8. LOCATION OF OUTLETS: CHANGE LOCATION OF OUTLETS, EQUIPMENT AT NO EXTRA COST OR CREDIT, PROVIDING DISTANCE DOES NOT EXCEED 10'-0" (3m) AND INFORMATION IS GIVEN BEFORE INSTALLATION.
- CUTTING AND PATCHING: PROVIDE ALL CUTTING, PATCHING AND PAINTING FOR ELECTRICAL WORK, UNLESS NOTED OTHERWISE.
- EQUIPMENT AND MATERIAL: ALL EQUIPMENT AND MATERIAL, UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE NEW AND WITHOUT BLEMISH OR ALL MATERIAL AND EQUIPMENT SHALL BEAR U.L.C. OR C.S.A.
- 1.11. WARRANTY: WARRANT ALL WORK AND APPARATUS INSTALLED UNDER THIS CONTRACT FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF SAME BY THE
- MAINTENANCE OF SERVICE: PROVIDE ALL LABOUR AND MATERIALS NECESSARY D ENSURE THAT POWER, LIGHTING AND ALL OTHER MISCELLANEOUS ELECTRICAL SERVICES ARE MAINTAINED IN FULL OPERATING CONDITION, IN ALI AREAS OF THE EXISTING BUILDING, DURING THE CONSTRUCTION PERIOD. DISCONNECT, MOVE, RELOCATE, AND RECONNECT CONDUIT AND WIRING AS NECESSARY TO ACCOMMODATE THE NEW WORK AND MECHANICAL INSTALLATION.
- 1.13. CLEANING 1.13.1. DO FINAL CLEANING.
- 1.13.2. AT TIME OF FINAL CLEANING, CLEAN EQUIPMENT SURFACES THAT HAVE BEEN EXPOSED TO CONSTRUCTION DUST AND DIRT. 1.13.3. VACUUM INSIDE OF ALL PANEL BOARDS, ETC., ON COMPLETION OF THE PROJECT
- 1.14. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES
  - 1.14.1. SUBMIT SHOP DRAWINGS, PRODUCT DATA AND/OR SAMPLES FOR ALL EQUIPMENT, POWER DISTRIBUTION, POWER DEVICES, COMMUNICATIONS DEVICES. RACEWAY. LIGHT FIXTURES. EMERGENCY LIGHTING. ETC. THE DRAWINGS ARE TO BE REVIEWED AND STAMPED BY BOTH THE GENERAL AND ELECTRICAL CONTRACTOR PRIOR TO SUBMITTAL.
  - 1.14.2. SHOP DRAWINGS SHALL INCLUDE ALL RELEVANT ACCESSORIES AND LAYOUTS WHERE REQUESTED.
  - 1.14.3. SHOP DRAWINGS THAT ARE ILLEGIBLE AND OF POOR QUALITY WILL BE
  - 1.14.4. SHOP DRAWINGS WILL BE REVIEWED AND RETURN MARKED "REVIEWED", "REVIEWED AS MODIFIED" OR "REVISE AND RESUBMIT". THE DRAWING REVIEW DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR TS ACCURACY OR FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.

1.14.5. INSTALLATION OF ANY EQUIPMENT SHALL NOT START UNTIL AFTER

FINAL REVIEW OF SHOP DRAWINGS BY THE CONSULTANT HAS BEEN

- 1.14.6. INCOMPLETE OR INCORRECT SHOP DRAWINGS THAT ARE REJECTED. WHICH ADVERSELY CAUSE OR RESULT IN ANY DELAY OF THE DELIVER SCHEDULE OF ANY EQUIPMENT SHALL BE THE CONTRACTORS
- RESPONSIBILITY 1.14.7. IF INCORRECT SHOP DRAWINGS ARE SUBMITTED AND REJECTED ANY SUBSEQUENT DELIVERY DELAY WILL RESULT IN THE CONTRACTOR PROVIDING TEMPORARY FACILITIES UNTIL SAID EQUIPMENT IS DELIVERED
- 1.14.8. PROVIDE SPACE FOR SHOP DRAWING REVIEW STAMPS FOR THE CONTRACTOR AND CONSULTANT. THIS SPACE SHALL BE CLEAR OF ALL TECHNICAL INFORMATION AND SHALL NOT BE ON THE BACK OF ANY
- 1.14.9. SUBMIT SHOP DRAWINGS IN DIGITAL (PDF) FORMAT.

AND INSTALLED AT NO EXTRA COST TO THE OWNER

- 1.14.10. ONE (1) ORIGINAL COPY IN DIGITAL FORMAT (PDF) WILL BE RETURNED. ALL COPIES REQUIRED BY TRADES, SUPPLIERS OR OTHER CONSULTANTS WILL BE PROVIDED AND/OR PRINTED BY THE CONTRACTOR.
- 1.14.11. FAILURE TO SUBMIT SHOP DRAWINGS WILL NOT RELIEVE THIS CONTRACTOR FROM ENSURING THAT ALL INSTALLED EQUIPMENT MEETS THE INTEND OF DESIGN DOCUMENTS. ALL COSTS ASSOCIATED WITH ANY ISSUES ASSOCIATED WITH ALTERNATE OR NOT SUBMITTED EQUIPMENT WILL THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.
- 1.14.12. SHOP DRAWING SUBMITTAL SHALL BE (BUT NOT LIMITED TO) FOR ANY EQUIPMENT AS LISTED;
  - 1.14.12.1. HIGH VOLTAGE EQUIPMENT
  - 1.14.12.2. SWITCHBOARD, METER CENTERS, PANEL BOARDS 1.14.12.3. FIRE ALARM SYSTEMS
  - 1.14.12.4. LUMINAIRES INCLUDING LAMPS AND BALLASTS 1.14.12.5. LIGHTING CONTROLS

- 1.14.12.6. EMERGENCY BATTERY UNITS AND FIXTURES
- 1.14.12.7. ELECTRICAL HEATERS 1.14.12.8. SECURITY SYSTEM
- 1.14.12.9. MASTER CLOCK AND PROGRAM
- 1.14.12.10.INTERCOM SYSTEM
- 1.14.12.11. PUBLIC ADDRESS SYSTEM 1.14.12.12. MILLWORK
- DRAW BREAKDOWNS: 1.15.1. THIS CONTRACTOR <u>MUST</u> SUBMIT A BREAKDOWN OF THE TENDER PRICE
- INTO SEPARATE CLASSIFICATION TO THE SATISFACTION OF THE CONSULTANT AND TOTALING THE TOTAL CONTRACT AMOUNT. EACH ITEM IS TO BE BROKEN INTO MATERIAL AND LABOUR COSTS. 1.15.2. PROGRESS DRAWS, WHEN SUBMITTED, ARE TO BE ITEMIZED AGAINST EACH OF THE DRAW BREAKDOWNS AND SHALL BE IN TABLE FORM

IDENTIFYING CONTRACT AMOUNT, AMOUNT OF THIS DRAW, TOTAL TO

- DATE, PERCENTAGE COMPLETE AND BALANCE. 1.15.3. BREAKDOWN SHALL FOLLOW, BUT NOT BE LIMITED TO;
- 1.15.3.1. PERMITS AND FEE

1.14.12.13. DEVICES

- 1.15.3.2. MOBILIZATION
- 1.15.3.3. DEMOLITION 1.15.3.4. DISTRIBUTION EQUIPMENT (IE. SWITCHBOARDS, PANELBOARDS,
- 1.15.3.5. INCOMING FEEDERS AND CONDUITS 1.15.3.6. BRANCH WIRING CONDUITS
- 1.15.3.7. BRANCH WIRING
- 1.15.3.8. MECHANICAL EQUIPMENT WIRING 1.15.3.9. FIRE ALARM DEVICES
- 1.15.3.10. FIRE ALARM WIRING
- 1.15.3.11. FIRE ALARM VERIFICATION AND CERTIFICATION 1.15.3.12. EXIT AND EMERGENCY LIGHTING
- 1.15.3.13. LIGHTING
- 1.15.3.14. LIGHTING CONTROLS
- 1.15.3.15. VOICE AND COMMUNICATION CONDUITS
- 1.15.3.16. VOICE AND COMMUNICATION WIRING AND TERMINATIONS 1.15.3.17. ACCESS CONTROL AND SECURITY
- 1.15.3.18. MISCELLANEOUS AND SPECIALTY EQUIPMENT (IE. PUBLIC
- ADDRESS, SOUND, ETC.) 1.15.4. ABOVE BREAKDOWN MUST BE APPROVED BY THE CONSULTANT PRIOR O SUBMISSION OF THE FIRST DRAW, MOBILIZATION AMOUNT MAY ONLY BE DRAWN WHEN ALL REQUIRED SHOP DRAWINGS HAVE BEEN REVIEWED
- REVISIONS TO CONTRACT:

BY THE CONSULTANT

- 1.16.1. PROVIDE ITEMIZED LISTS OF MATERIALS/ASSOCIATED COSTS, LABOUR RATE/LABOUR FOR EACH ITEM, COPY OF MANUFACTURERS INVOICE, IF REQUESTED, FOR EACH ITEM GIVEN CHANGE NOTICE.
- ROOF AND WALL OPENINGS: 1.17.1. LOCATION OF CONDUITS PASSING THROUGH ROOF AND WALLS TO BE COORDINATED WITH DIVISION 15. ALL OPENINGS TO BE MADE
- SCHEDULE OF CONSTRUCTION 1.18.1. CONSULT GENERAL DIVISION FOR SCHEDULE OF CONSTRUCTION BEFORE
- COMMENCING WORK AND COORDINATE DETAILS WITH ENGINEER, OWNER AND ALL TRADES DURING CONSTRUCTION. 1.19. <u>DIRECTORIES AND LABELLING</u>:
- OF ENGRAVED LAMACOID NAMEPLATES HAVING BLACK BACKGROUND WITH WHITE LETTERS. FASTEN NAMEPLATES TO DEVICE USING SELF-TAPPING, COUNTERSUNK SCREWS. TAPE-TYPE NAMEPLATES WILL NOT BE ACCEPTED. 1.19.2. ALL RECEPTACLE COVER PLATES SHALL BE LABELED WITH TAPE-TYPE NAMEPLATES. THE LABEL SHALL INDICATE THE PANEL DESIGNATION

1.19.1. IDENTIFY ALL ELECTRICAL EQUIPMENT. IDENTIFICATION SHALL CONSIST

- AND CIRCUIT NUMBER. (IE A19). TAPE SHALL BE NEATLY TRIMMED ON EACH END AND PLACED PLUMB AND LEVEL ON THE FACE PLATE LABELS SHALL HAVE A NEAT, CLEAN AND PROFESSIONAL APPEARANCE ABELS NOT TRIMMED OR POORLY POSITIONED WILL NOT BE ACCEPTED. 1.19.3. ALL PANELS WITH CIRCUITS ADDED OR REMOVED SHALL HAVE NEW
- COMPUTER GENERATED PANEL SCHEDULES PLACED IN THEM. SCHEDULE SHALL INDICATE PANEL DESIGNATION, WHERE PANEL IS FED FROM. VOLTAGE. PHASE, BRANCH CIRCUIT NUMBERS, BREAKER AMPERAGE AND CIRCUIT DESCRIPTION.
- 1.20.1. GROUND ALL EQUIPMENT IN ACCORDANCE WITH CODE REQUIREMENTS
- AND AS INDICATED. 1.20.2. GROUNDING CONDUCTORS: COPPER, INSULATED (GREEN); SIZE PER
- 1.20.3. GROUNDING LUGS, CONNECTORS: APPROVED GROUNDING TYPE. 1.20.4. ALL GROUND CONDUCTORS #8AWG OR SMALLER SHALL BE RUN IN EMT. FIREPROOFING:
- 1.21.1. WHERE CABLES PASS THROUGH FLOORS OR FIRE RATED WALLS, PACK SPACE BETWEEN WIRING AND SLEEVE FULL WITH APPROVED RATED FIRE STOPS AND SEAL WITH CAULKING COMPOUND CONFORMING TO CGSB 19-GP-9Ma.
- 1.22. MOUNTING HEIGHTS: 1.22.1. MOUNTING HEIGHT OF EQUIPMENT IS FROM FINISHED FLOOR TO CENTRELINE OF EQUIPMENT UNLESS SPECIFIED OR INDICATED
- 1.22.2. IF MOUNTING HEIGHT OF EQUIPMENT IS NOT SPECIFIED OR INDICATED, VERIFY BEFORE PROCEEDING WITH INSTALLATION
- 1.22.3. INSTALL ELECTRICAL EQUIPMENT AS SPECIFIED IN THE OBC FOR BARRIER FREE DESIGN. IF NOT NOTED, INSTALL AT FOLLOWING CENTERLINE HEIGHTS:
  - 1.22.3.1. LOCAL SWITCHES: 3'-5" (1050mm). 1.22.3.2. WALL RECEPTACLES:
  - 1.22.3.2.1. GENERAL: 1'-6" (450mm).

  - 1.22.3.2.2. ABOVE TOP OF CONTINUOUS BASEBOARD HEATER: 10"
  - (250mm) 1.22.3.2.3. ABOVE TOP OF COUNTERS OR COUNTER SPLASH BACKS: 6" (150mm).
- 1.22.3.2.4. MECHANICAL ROOMS: 3'-5" (1050mm). 1.22.3.3. PANELBOARDS: AS REQUIRED BY CODE OR AS INDICATED.
- 1.22.3.4. TELEPHONE AND INTERPHONE OUTLETS: 1'-6" (450mm)
- 1.22.3.5. TELEVISION OUTLETS: 1'-6" (450mm) 1.22.3.6. FIRE ALARM PULL STATIONS: 3'-9" (1150mm).
- 1.23.1. MEASURE PHASE CURRENT TO PANELBOARDS WITH NORMAL LOADS (LIGHTING) OPERATING AT TIME OF ACCEPTANCE. ADJUST BRANCH
- CIRCUIT CONNECTIONS AS REQUIRED TO OBTAIN BEST BALANCE OF CURRENT BETWEEN PHASES AND RECORD CHANGES. 1.23.2. MEASURE PHASE VOLTAGES AT LOADS AND ADJUST TRANSFORMER TAPS TO WITHIN 2% OF RATED VOLTAGE OF EQUIPMENT.
- 1.23.3. SUBMIT, AT COMPLETION OF WORK, REPORT LISTING PHASE AND NEUTRAL CURRENTS ON PANELBOARDS, DRY-CORE TRANSFORMERS AND MOTOR CONTROL CENTRES, OPERATING UNDER NORMAL LOAD. STATE HOUR AND DATE ON WHICH EACH LOAD WAS MEASURED, AND VOLTAGE
- AT TIME OF TEST. CONDUIT AND CABLE INSTALLATION: 1.24.1. INSTALL CONDUIT AND SLEEVES PRIOR TO POURING OF CONCRETE SLEEVES THROUGH CONCRETE: SCHEDULE 40 STEEL PIPE, SIZED FOR
- FREE PASSAGE OF CONDUIT, AND PROTRUDING 2" (50mm). 1.24.2. IF PLASTIC SLEEVES ARE USED IN FIRE RATED WALLS OR FLOORS, REMOVE BEFORE CONDUIT INSTALLATION.
- 1.24.3. INSTALL CABLES, CONDUITS AND FITTINGS TO BE EMBEDDED OR PLASTERED OVER, NEATLY AND CLOSE TO BUILDING STRUCTURE SO FURRING CAN BE KEPT TO MINIMUM.
- 1.25.1. THE FOLLOWING ARE DEFINITIONS OF WORDS FOUND IN THE SPECIFICATION AND ON ASSOCIATED DRAWINGS: 1.25.1.1. "CONCEALED" - HIDDEN FROM NORMAL SIGHT IN FURRED IN SPACES, SHAFTS, CEILING SPACES, WALLS, UNDERFLOOR AND
  - 1.25.1.2. "EXPOSED" ALL ELECTRICAL WORK EXPOSED TO BUILDING OCCUPANTS. WIRE AND CABLING SHALL BE IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
  - 1.25.1.3. "PROVIDE" (AND ALL TENSES OF "PROVIDE") SUPPLY,

- INSTALL, WIRE AND CONNECT COMPLETE. 1.25.1.4. "INSTALL" (AND ALL TENSES OF "INSTALL") INSTALL WIRE AND CONNECT COMPLETE, PRODUCTS AND SERVICES
- 1.25.1.5. "SUPPLY" SUPPLY ONLY
- 1.25.1.6. "OR APPROVED EQUAL" MATERIAL OR EQUIPMENT PROPOSED BY THE CONTRACTOR IN LIEU OF THAT SPECIFIED AS APPROVED BY THE CONSULTANT. MATERIAL OR EQUIPMENT SHALL MEET OR EXCEED THE SAME QUALITY, MATERIAL,
- EFFICIENCY, ETC AS THE SPECIFIED PRODUCTS. 1.25.1.7. "AS INDICATED" AS SHOWN ON DRAWINGS AND/OR NOTED IN
- 1.26.1. THE CONTRACTOR SHALL REVIEW THE PHASING AS INDICATED ON ALL PLANS. THIS INCLUDES ARCHITECTURAL, MECHANICAL PLANS ETC IN THE ENTIRE DRAWING PACKAGE
- 1.26.2. THE CONTRACTOR SHALL INCLUDE FOR TEMPORARY CONNECTIONS AS REQUIRED TO FACILITATE THE WORK. 1.26.3. THE CONTRACTOR SHALL INCLUDE FOR ALL WEEKEND AND PREMIUM TIME REQUIRED TO FACILITATE THE PHASING AS INDICATED IN THE
- <u>PRODUCTS</u>
- ELECTRICAL EQUIPMENT

PLANS PACKAGE.

- 2.1.1. EQUIPMENT SHALL HAVE 1.0m (39") CLEARANCE IN FRONT OF SAID
- 2.1.2. ELECTRICAL EQUIPMENT RATED AT 1200A AND OVER SHALL HAVE 1.5m (59") CLEARANCE IN FRONT OF SAID EQUIPMENT.
- 2.1.3. ALL EQUIPMENT INSTALLED IN SPRINKLERED AREAS ARE TO BE COMPLETE WITH DRIP SHIELDS.
- 2.2.1. BOLT-ON MOLDED CASE CIRCUIT BREAKER, FULL MODULE (I.E.. 1"MINIMUM WIDTH), QUICK-MAKE, QUICK-BREAK TYPE, FOR MANUAL AND AUTOMATIC OPERATION WITH TEMPERATURE COMPENSATION FOR 400C AMBIENT. (MINI-BREAKERS NOT ACCEPTABLE)
- 2.2.2. MAGNETIC INSTANTANEOUS TRIP ELEMENTS IN CIRCUIT BREAKERS, TO OPERATE ONLY WHEN THE VALUE OF CURRENT REACHES SETTING. 2.3.1. ALL CONDUCTORS SHALL BE COPPER UNLESS INDICATED OTHERWISE.
- 2.3.2. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #8 AND LARGER SHALL BE STRANDED. 2.3.3. CONDUCTORS SHALL BE SIZED #12 AWG MINIMUM, EXCEPT FOR CONTROL CIRCUITS WHERE #14 AWG MINIMUM SIZE IS PERMITTED. FEEDER SIZES AS INDICATED.
- 2.3.4. PANEL FEEDER LENGTHS SHALL BE CONTRACTOR VERIFIED FOR LENGTH OF PROPOSED INSTALLATION PATH SO AS NOT TO EXCEED 3% VOLTAGE DROP ON INSTALLATION. FEEDERS EXCEEDING THE LENGTH OF THE ALLOWABLE AMPACITY SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BEGINNING ANY ROUGH-INS.
- 2.3.5. SIZE CONDUCTORS FOR A 2% MAXIMUM VOLTAGE DROP FROM OVERCURRENT DEVICE TO FARTHEST OUTLET.
- 2.3.6. CONDUCTOR INSULATION RATED FOR 600V MINIMUM UNLESS STATED OTHERWISE. 2.3.7. CONDUCTOR TYPES:
  - 2.3.7.1. TW75, TWU TO C.S.A. #C22.2 NO. 75
  - 2.3.7.2. RW90, RWU90 (XLPE) TO C.S.A. #C22.2 NO. 38
  - 2.3.7.3. TW75, RW90 (XLPE) INSIDE BUILDING. 2.3.7.4. TWU, RWU90 (XLPE) - CONDUCTORS DIRECT BURIED OR IN
- CONDUIT OUTSIDE BUILDING. 2.3.7.5. BX (ARMOURED CABLE) IS ONLY PERMITTED FOR LIGHT FIXTURE DROPS IN ACCOUSTIC CEILINGS (MAX LENGTH 5'-0"), AND MAY BE USED IN HOLLOW PARTITIONS FOR SWITCH OF SUSPENDED CEILING FOR FIXTURE DROPS ONLY. ANY DROPS SHALL NOT EXCEED 3.0m (10'-0"). AC-90 (BX ARMOURED CABLE) IS NOT TO BE INSTALLED IN OPEN CEILINGS OR ANY OTHER EXPOSED APPLICATION. ALL CABLES ARE TO BE PROPERLY FASTENED TO BUILDING STRUCTURE IN A NEAT AND PROFESSIONAL MANNER. EXCESSIVE USE OF AC-90. IN THE OPINION OF THE ENGINEER, WILL REQUIRE ELECTRICAL CONTRACTOR TO REPLACE ALL NEW WIRING WITH PROPER CONDUIT AND WIRE AT CONTRACTORS EXPENSE.
- - 2.4.1. SUPPORT EQUIPMENT, CONDUIT OR CABLES USING CLIPS, SPRING-LOADED BOLTS, CABLE CLAMPS DESIGNED AS ACCESSORIES TO 2.4.2. INSTALL FASTENINGS AND SUPPORTS AS REQUIRED FOR EACH TYPE OF EQUIPMENT CABLES AND CONDUIT AND IN ACCORDANCE WITH
- MANUFACTURER'S INSTALLATION.
- 2.5.1. RIGID, GALVANIZED STEEL THREADED CONDUIT TO C.S.A. C22.2, NO. 45, SIZE AS INDICATED.
- 2.5.2. ELECTRICAL METALLIC TUBING (EMT) WITH COUPLINGS AND EXPANDED ENDS AS REQUIRED, TO C.S.A. C22.2, NO. 83, SIZE AS INDICATED. RIGID PVC (UNPLASTICIZED) CONDUIT FOR EXPOSED, ABOVE GROUND
- WORK, TO C.S.A. C22.2, NO. 211.2, SIZE AS INDICATED. FLEXIBLE PVC IS NOT PERMITTED. 2.5.4. FLEXIBLE METAL CONDUIT AND LIQUID-TIGHT FLEXIBLE METAL CONDUIT
- TO C.S.A. C22.2, NO. 56. 2.5.5. EMT CONDUIT FITTINGS, IE. CONNECTORS, COUPLINGS, TO C.S.A. C22.2, NO. 18, ZINC-PLATED STEEL/MALLEABLE IRON CONSTRUCTION. ALI CONNECTIONS AND COUPLINGS TO BE SET SCREW TYPE, IE. CONCRETE
- 2.5.6. CONDUIT SIZES SHALL BE A MINIMUM OF 3/4" AND CONFORM TO ELECTRICAL SAFETY CODE. WHERE SIZES ARE INDICATED AND THEY
- EXCEED CODE, THEY SHALL NOT BE REDUCED. 2.5.7. USE RIGID, GALVANIZED STEEL, THREADED CONDUIT WHERE CONDUIT IS SUBJECT TO MECHANICAL INJURY.

2.5.8. RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES.

2.5.9. USE EMT FOR ALL WIRING FROM OUTLET BOX TO SOURCE. 2.5.10. INSTALL NYLON FISH WIRE IN EMPTY CONDUITS AND TERMINATE UNDER SCREW LEAVING 12' SLACK. TAG FISH WIRE IDENTIFYING SYSTEM.

2.5.11. DO NOT LOCATE CONDUITS LESS THAN 3" (75 MM) PARALLEL TO

- STEAM OR HOT WATER LINES WITH A MINIMUM OF 1" (25 MM) AT 2.5.12. IN-SLAB CONDUIT: LOCATE TO SUIT REINFORCING STEEL. INSTALL IN
- CENTRE 1/2 OF SLAB. 2.5.13. PROVIDE AND INSTALL 4-38mm (4 1-1/2") SPARE CONDUITS UP TO CEILING SPACE FROM EACH FLUSH MOUNTED ELECTRICAL PANEL. TERMINATE IN 300mm X 300mm (12"x12") JUNCTION BOXES IN
- ACCESSIBLE CEILING SPACE. 2.6. <u>JUNCTION AND PULL BOXES</u> 2.6.1. WELDED STEEL CONSTRUCTION WIRE SCREW-ON FLAT COVERS FOR
  - SURFACE MOUNTING. 2.6.2. COVERS WITH 1" (25 MM) MINIMUM EXTENSION ALL AROUND, FOR FLUSH-MOUNTED PULL AND JUNCTION BOXES. 2.6.3. INSTALL PULL BOXES IN CONDUIT RUNS SO AS NOT TO EXCEED 30 M

OF CONDUIT RUN OR THE EQUIVALENT OF TWO (2) 90° BENDS BETWEEN

OUTLET AND CONDUIT BOXES: 2.7.1. ALL LIGHTING FIXTURES, RECEPTACLES AND OTHER WIRING DEVICES FOR ANY CONDUIT SYSTEM SHOWN SHALL BE PROVIDED WITH AN OUTLET

PULL BOXES.

2.7.3. WALL OUTLET BOXES SHALL BE:

- 2.7.2. 4" (102 MM) OCTAGON OR SQUARE OUTLET BOXES OR LARGER, COMPLETE WITH FITTINGS FOR LIGHTING FIXTURES AND AS REQUIRED FOR SPECIAL DEVICES.
- 2.7.3.1. NO. 1104 SERIES, FLUSH MOUNTED IN DRYWALL PARTITIONS, 2.7.3.2. MBS SERIES MASONRY BOXES (GALVANIZED STEEL) FLUSH
- 2.7.3.3. GANG BOXES SHALL BE USED AT LOCATIONS WHERE DEVICES ARE GROUPED. PROVIDE BARRIERS AS REQUIRED. 2.7.3.4. BLANK COVER PLATES FOR BOXES WITHOUT WIRING DEVICES. **WIRING DEVICES:**

MOUNTED IN MASONRY WALLS (BLOCK WALLS).

- 2.8.1. SUPPLY AND INSTALL WIRING DEVICES AS INDICATED COMPLETE WITH COVERPLATES. MANUALLY OPERATED, GENERAL PURPOSE, SPECIFICATION GRADE, TOTALLY ENCLOSED BODY, RATED 120V, 20 AMPERES MINIMUM OR AS REQUIRED BY CIRCUIT COMPLETE WITH WHITE DECORATIVE DESIGNER SERIES TOGGLE. (ROCKER)
- 2.8.3. RECEPTACLES: 3 WIRE, U-GROUND TYPE, PREMIUM SPECIFICATION

- GRADE COMPLETE WITH SCREW-TYPE TERMINALS, DOUBLE CONTACTS, RIVETED GROUND CONTACTS, BREAK-OFF LINKS FOR SPLIT RECEPTACLES AND WHITE MOLDED HOUSING. RECEPTACLES WITHIN 1.5m OF A SINK ARE TO BE PROTECTED BY GFI. EXTERIOR RECEPTACLES ARE TO BE GFI AND INCLUDE "EXTRA DUTY IN USE" WEATHERPROOF COVER. HUBBELL CAT No. MM420C.
- 2.8.4. OTHER RECEPTACLES WITH AMPACITY AND VOLTAGE AS INDICATED. 2.8.5. <u>PRODUCTS:</u> DEVICES TO BE HUBBELL MANUFACTURE, STYLE LINE SERIES:
- 2.8.5.1. LIGHT SWITCH (STYLE LINE DECORATOR SERIES):
- 2.8.5.1.1. 20A-120V SINGLE POLE WHITE DS120W 2.8.5.1.2. 20A-120V 3-WAY WHITE - DS320W
- 2.8.5.1.3. 20A-120V 4-WAY WHITE DS420W 2.8.5.1.4. 20A-347V SINGLE POLE WHITE - COOPER AH18221W
- 2.8.5.1.5. 20A-347V 3-WAY WHITE COOPER AH18223W 2.8.5.2. RECEPTACLES (STYLE LINE DECORATOR SERIES):
- 15A-125V DUPLEX WHITE DR15WHI
- 2.8.5.2.2. 20A-125V DUPLEX WHITE DR20WHI 2.8.5.2.3. 15A-125V GFCI DUPLEX - GF15WLA
- 2.8.5.2.4. 20A-125V GFCI DUPLEX GF20WLA 2.8.5.3. TAMPER RESISTANT RECEPTACLES (STYLE LINE DECORATOR
- 2.8.5.3.1. 15A-125V DUPLEX WHITE DR15WHITR
- 2.8.5.3.2. 20A-125V DUPLEX WHITE DR20WHITR 2.8.5.3.3. 15A-125V GFCI DUPLEX - GFTR15W 2.8.5.3.4. 20A-125V GFCI DUPLEX - GFTR20W
- 2.8.5.4. USB RECEPTACLE (STYLE LINE DECORATOR SERIES) 2.8.5.4.1. 15A-125V USB DUPLEX WHITE, 5A USB A/C -
- 2.8.5.5. WALL PLATES (STYLE LINE): STANDARD SIZE WHITE NYLON; 2.8.5.5.1. 1-GANG - NP26W
- 2.8.5.5.2. 2-GANG NP262W 2.8.5.5.3. 3-GANG - NP263W
- 2.8.5.5.4. 4-GANG NP264W, ETC. 2.8.5.6. WALL PLATES (STYLE LINE): STANDARD SIZE STAINLESS;
- 2.8.5.6.1. 1-GANG SS26 2.8.5.6.2. 2-GANG - SS262
- 2.8.5.6.3. 3-GANG SS263 2.8.5.6.4. 4-GANG - SS264, ETC.]

2.8.6. ACCEPTABLE MANUFACTURER PASS & SEYMOUR AND COOPER

<u>LIGHTING</u> MANUFACTURER'S OPERATIONAL TESTS:

FIXTURES IN A ROW

- 3.1.1. TEST FIXTURE FOR ACCEPTANCE OF LAMP MADE TO MAXIMUM TOLERANCE AS REQUIRED IN A.N.S.I. STANDARDS. 3.1.1.1. TEST FIXTURES WITH RATED LAMPS FOR STARTING AND
  - 3.1.1.2. CHECK WIRING FOR AGREEMENT WITH DESIGN CIRCUIT.
- 3.1.1.3. TEST FOR SHORT CIRCUITS AND IMPROPER GROUNDS. 3.2. HANGERS AND FITTINGS 3.2.1. SUPPORT FIXTURES AS SHOWN ON THE DRAWINGS, LEVEL, PLUMB AND
  - TRUE WITH THE STRUCTURE AND OTHER EQUIPMENT, AND IN A HORIZONTAL OR VERTICAL POSITION AS INTENDED. 3.2.2. WALL OR SIDE BRACKET MOUNTED FIXTURE HOUSINGS SHALL BE RIGIDLY INSTALLED AND ADJUSTED TO GIVE A NEAT FLUSH FIT TO THE SURFACE ON WHICH IT IS MOUNTED.
  - 3.3.1. SUPPORT FIXTURES BY HANGERS AND MOUNTING ARRANGEMENTS WHICH WILL NOT CAUSE THE FIXTURE FRAME, HOUSING, SIDES OR LENS FRAME TO BE DISTORTED; OR PREVENT COMPLETE ALIGNMENT OF SEVERAL
  - 3.3.2. MOUNTING METHODS FOR FIXTURES ON OR IN SUSPENDED CEILINGS ARE TO BE AS FOLLOWS: 3.3.3. WHERE LIGHTING FIXTURES ARE RECESSED INTO SUSPENDED CEILINGS THESE FIXTURES ARE TO BE SUPPORTED INDEPENDENTLY OF THE
  - SECURED SEPARATELY TO THE STRUCTURE ABOVE SO THAT NO WEIGHT FALLS ON THE CEILING SUSPENSION SYSTEM. 3.3.4. IN NO CASE WILL REINFORCEMENT OF THE CEILING SUSPENSION SYSTEM

CFILING USING #12 JACK CHAIN HANGERS. FACH CHAIN IS TO BI

- BE CONSIDERED TO BE ADEQUATE SUPPORT FOR THE LIGHTING WHERE CROSS MEMBER SUPPORTS ARE REQUIRED ABOVE THE CEILING TO PROVIDE SUPPORT POINTS, THESE ARE TO BE STEEL CHANNELS OR
- ANGLES. INSTALLATION: 3.4.1. INSTALLATION OF ALL LIGHTING EQUIPMENT SHALL COMPLY WITH THE RELEVANT SECTIONS OF THE ONTARIO ELECTRICAL SAFETY CODE. 3.4.2. CLUSTER OF RECESSED FIXTURES SHALL BE WIRED WITH BX90 OR R90 WIRE IN FLEXIBLE STEEL CONDUIT TO ADJACENT OUTLET BOXES PLACED
- ABOVE THE FINISHED CEILING. WITHIN REACH OF THE FIXTURE HOLES MAIN HOME RUNS TO BE EMT FROM JUNCTION BOX AT CLUSTER OF FIXTURES TO PANEL. 3.4.3. AT THE COMPLETION OF CONSTRUCTION AND ACCEPTANCE OF WORK, ALL LIGHTING FIXTURES SHALL BE CLEAN, COMPLETE WITH ALL
- OPERATING LAMP(S). 3.4.4. FIXTURES AS SHOWN ON THE ELECTRICAL DRAWINGS ARE APPROXIMATE LOCATIONS ONLY. INSTALLATION OF FIXTURES SHALL BE IN ACCORDANCE WITH REFLECTED CEILING PLANS, DETAILS AND/OR FIELD
- INSTRUCTIONS ISSUED BY THE ARCHITECT. 3.4.5. ALL 347V FIXTURES TO HAVE LOCAL DISCONNECT TO COMPLY WITH THE ONTARIO ELECTRICAL SAFETY CODE.
- 3.4.6. UPON COMPLETION CLEAN LIGHTING REFLECTORS, LENSES AND OTHER LIGHTING SURFACES THAT HAVE BEEN EXPOSED TO CONSTRUCTION 3.4.7. THE MOUNTING HEIGHTS OF BUILDING MOUNTED FIXTURES SHALL BE CONFIRMED PRIOR TO ROUGH-IN. REVIEW ARCHITECTURAL PLANS/ELEVATIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN PLANS AND INDICATED MOUNTING

NECESSARY ACCESSORIES AND PROVIDED WITH THE REQUIRED

- HEIGHTS IN SCHEDULES/PLANS BETWEEN METRIC AND IMPERIAL DESIGNATED HEIGHTS.
- EXISTING FIRE ALARM SYSTEM 4.1. GENERAL
  - 4.1.1. THE EXISTING FIRE ALARM SYSTEM IS OF SIMPLEX MANUFACTURE TYPE 4005 AND IS TO BE REMOVED IN ITS ENTIRETY. 4.1.2. PROVIDE NEW CONVENTIONAL TYPE FIRE ALARM SYSTEM OF SIMPLEX MANUFACTURE TYPE 4007ES. NEW SYSTEM AND DEVICES SHALL BE
  - ULC LISTED, LABELED AND SUPPLIED BY SINGLE MANUFACTURER THROUGHOUT THE PROJECT. 4.1.2.1. OTHER ACCEPTABLE MANUFACTURERS, EDWARDS, MIRCOM TO BE SUBMITTED FOR APPROVED EQUAL.
  - 4.1.3. ALL FIRE DETECTION AND SIGNALING DEVICES SHALL BE CONNECTED TO ZONES AS INDICATED ON PLANS. 4.1.4. SUPPLY AND INSTALL ADDITIONAL THERMAL DETECTORS, MANUAL PULL STATIONS. FIRE BELLS AND SMOKE DETECTORS, ALL AS SHOWN ON DRAWINGS. DEVICES WITH RELAY CONTACTS SHALL BE COMPLETE WITH WIRING BACK TO ASSOCIATED AUXILIARY SYSTEM (IE NURSECALL, DOOR
  - 4.1.5. WIRE NEW AND RELOCATED DEVICES INTO FIRE ALARM ZONE IN THIS 4.1.6. ALL NEW WIRING FOR ALARM SYSTEM SHALL BE MINIMUM #14 RW90 RUN IN CONCEALED CONDUIT.

COMPANY TO VERIFY THAT ALL NEW AND EXISTING FIRE ALARM

DEVICES WITHIN SCOPE OF WORK AREA HAVE BEEN WIRED AND ARE

OPERATING PROPERLY. PROVIDE A CERTIFICATE OF VERIFICATION AND

OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS", TO VERIFY THAT THE

HOLD OPENS, ELEVATOR SMOKE DETECTORS, ETC).

TEST REPORT. ELECTRICAL CONTRACTOR TO PROVIDE ASSISTANCE TO TESTING COMPANY AS REQUIRED BY THEM. INCLUDE ALL COSTS IN TENDER PRICE.

4.1.8. SYSTEM TO BE INSTALLED IN ACCORDANCE WITH CAN/ULC S-524

4.1.7. FLECTRICAL CONTRACTOR IS TO ENGAGE AN APPROVED TESTING

4.1.9. TESTS AND VERIFICATION TO BE PERFORMED IN ACCORDANCE WITH CAN/ULC-S537 (CURRENT EDITION). 4.1.10. WHERE FIRE PROTECTION AND LIFE SAFETY SYSTEMS, AND SYSTEMS WITH FIRE PROTECTION AND LIFE SAFETY FUNCTIONS ARE INTEGRATED WITH EACH OTHER; THE SYSTEMS SHALL BE TESTED AS A WHOLE IN ACCORDANCE WITH CAN/ULC-S1001, "INTEGRATED SYSTEMS TESTING

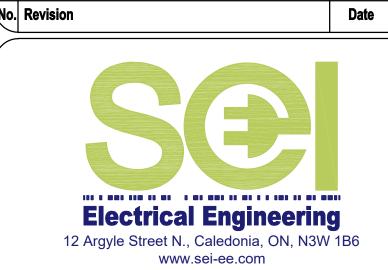
(CURRENT EDITION) AND OFC-410(M).

4.1.11. PROVIDE 3/4" OCONDUIT DIRECTLY TO TELEPHONE BACKBOARD FOR TELEPHONE LINE AND CONNECTION BY MONITOR COMPANY. 4.1.12. PROVIDE AND INSTALL LAMACOID GRAPHICS BESIDE MAIN CONTROL PANEL AND ANNUNCIATOR PANEL.

SYSTEMS HAVE BEEN PROPERLY INTEGRATED.

- 4.1.13. PROVIDE OPERATION AND MAINTENANCE DATA FOR FIRE ALARM
- 4.1.14. ARRANGE AND PAY FOR ON-SITE LECTURES AND DEMONSTRATIONS BY FIRE ALARM EQUIPMENT MANUFACTURER TO TRAIN OPERATIONAL PERSONNEL IN USE AND MAINTENANCE OF FIRE ALARM SYSTEM.
- 4.1.15. INCLUDE FOR ALL COSTS INVOLVED FROM BOTH MANUFACTURERS AND THE ELECTRICAL CONTRACTOR'S WORK IN TOTAL TENDER PRICE FROM THE ELECTRICAL CONTRACTOR
- 4.1.16. VERIFY FIRE ALARM SYSTEM OF THE ENTIRE BUILDING AND PROVIDE A CERTIFICATE OF VERIFICATION AND TEST REPORT. VERIFICATION TO BE COMPLETED PRIOR TO REMOVAL OF THE EXISTING SYSTEM.
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K. SEGUIN Mar 25/24

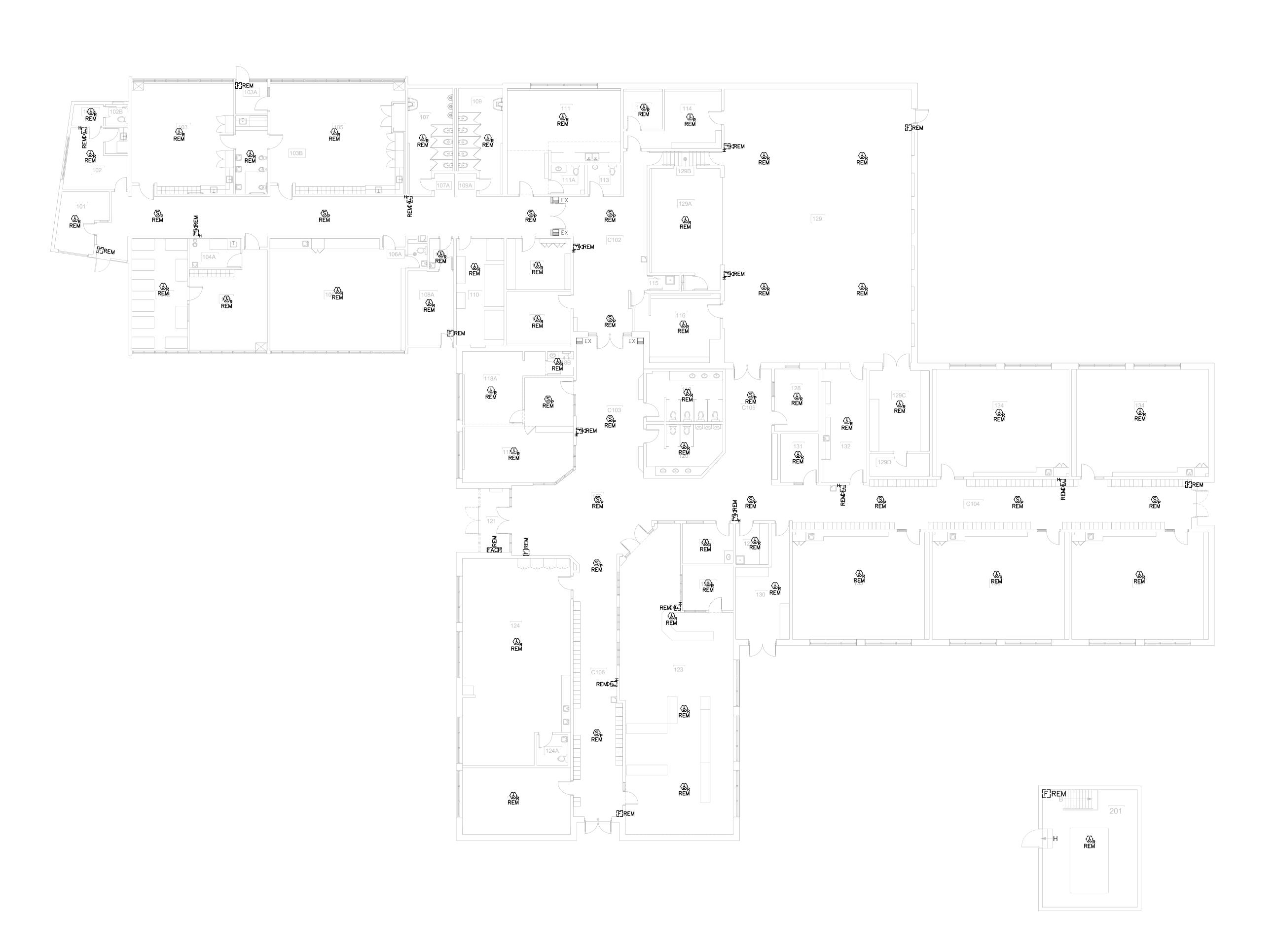
621 QUAKER ROAD, WELLAND, ON, L3C 3H1

**ELEMENTARY SCHOOL** 

**NOUVEL HORIZON** 

**SPECIFICATIONS** 

**FEB 2024** Project No. Scale 24-003



DEMOLITION PENTHOUSE FA PLAN (1)
SCALE: 1/8"=1'-0"

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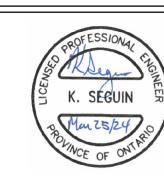
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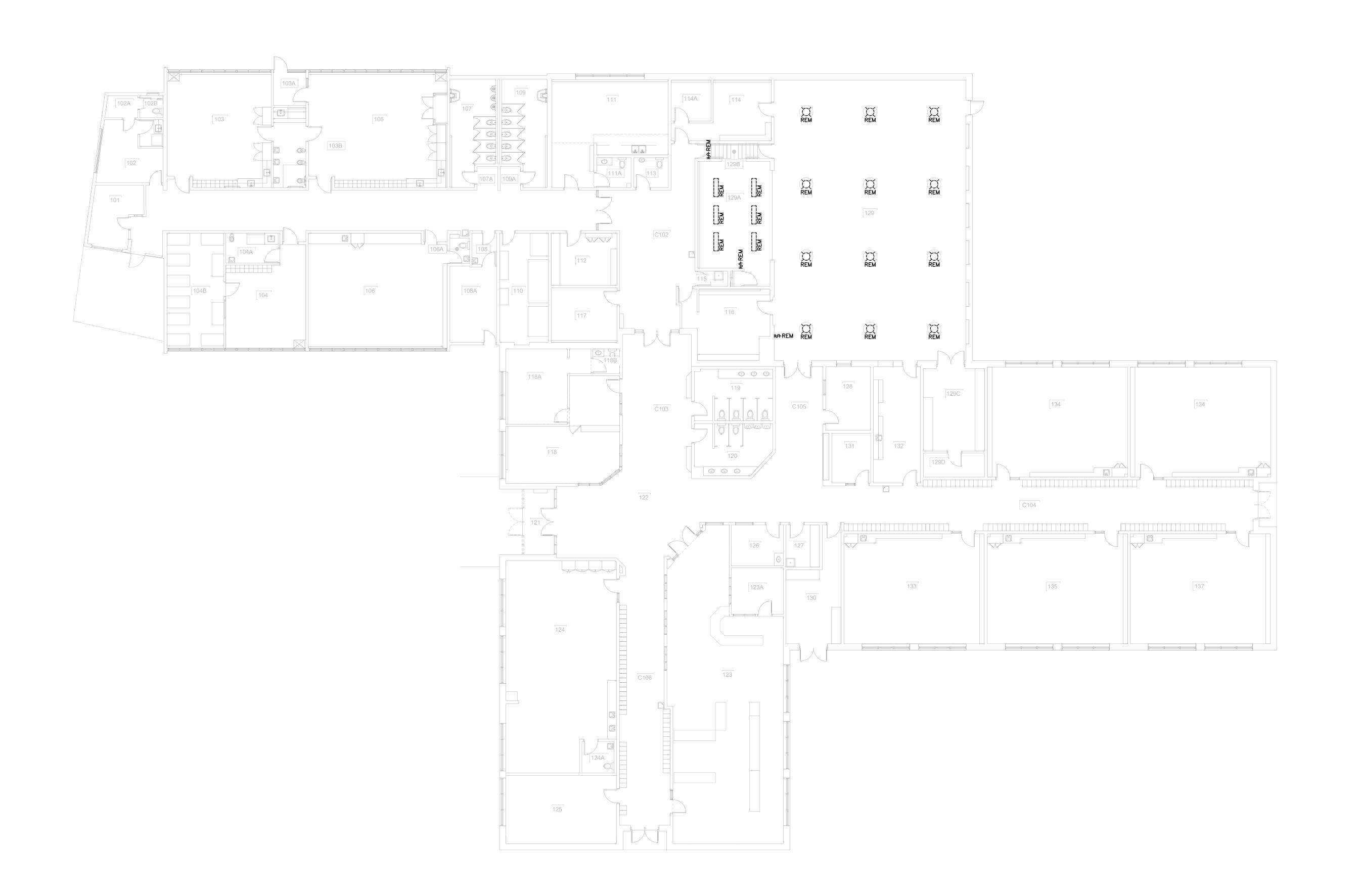


**NOUVEL HORIZON ELEMENTARY SCHOOL** 

621 QUAKER ROAD, WELLAND, ON, L3C 3H1

DEMOLITION FIRE ALARM PLAN

Drawn By: JC	Designed By: SJ	Approved By: KS	Date: FEB 2024
Project No. 24-003		Scale 3/32"	'=1'-0"
Drawing No.		Sheet	Revision
<b>E-100</b>		3 of 1	0   0 ]

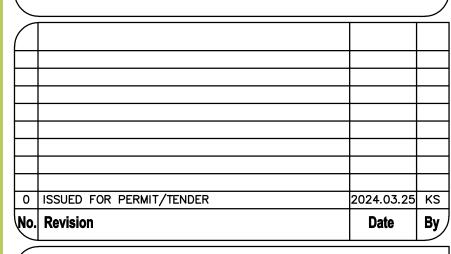


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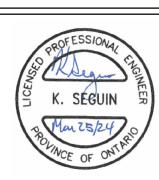
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Sea

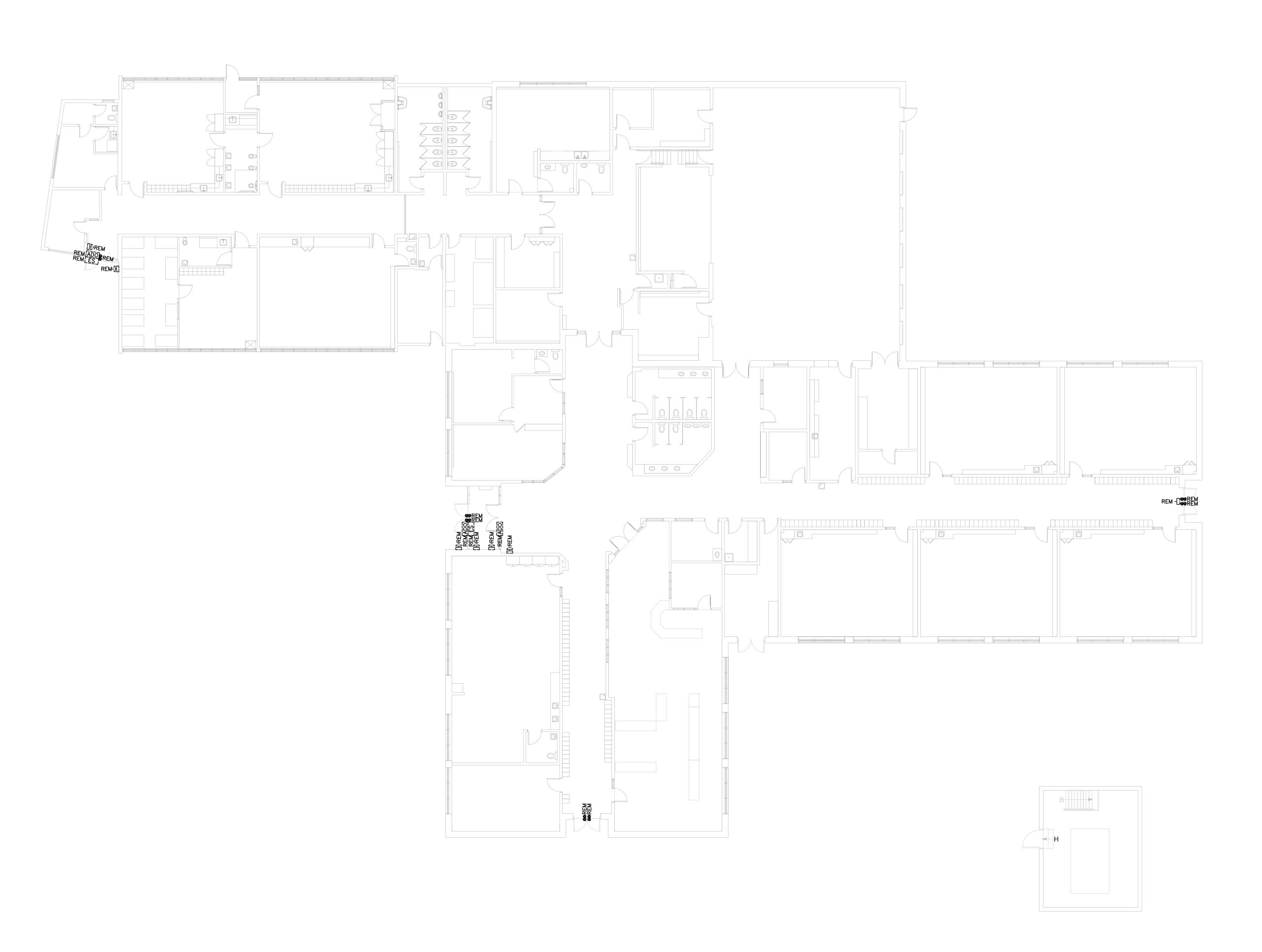


NOUVEL HORIZON
ELEMENTARY SCHOOL

621 QUAKER ROAD, WELLAND, ON, L3C 3H1

DEMOLITION
LIGHTING PLAN

Drawn By: JC	Designed By: SJ	Approved By: KS	Date: FEB 2024
Project No. 24-003		Scale 3/32"=1'-0"	
Drawing No.		Sheet	Revision
E	-101	4 of 1	0 0



PROPOSED PENTHOUSE POWER PLAN 1

SCALE: 1/8"=1'-0"

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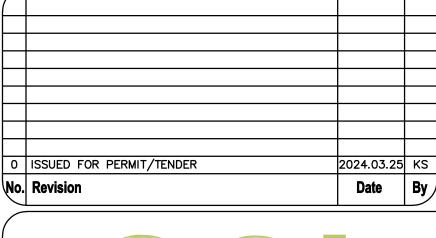
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Notes:

Notes:

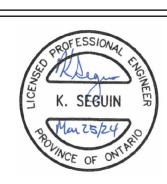
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Seal



NOUVEL HORIZON
ELEMENTARY SCHOOL

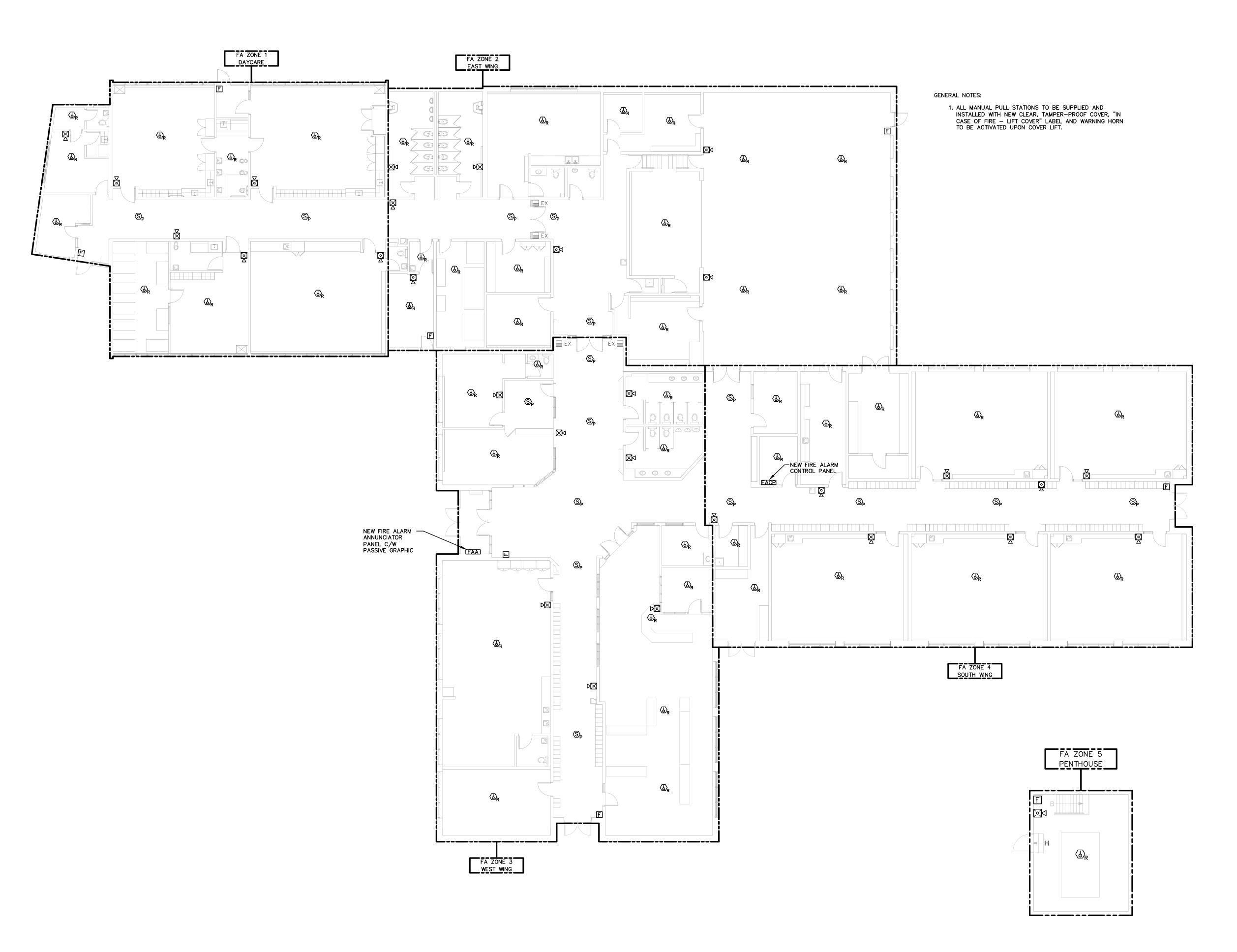
621 QUAKER ROAD, WELLAND, ON, L3C 3H1

Title

DEMOLITION

POWER PLAN

Drawn By: JC	Designed By: SJ	Approved By: KS	Date: FEB 2024	
Project No.	4-003	Scale 3/32"=1'-0"		
Drawing No.	Drawing No. <b>E-102</b>		Revision 0	



PROPOSED PENTHOUSE FA PLAN 1

SCALE: 1/8"=1'-0"

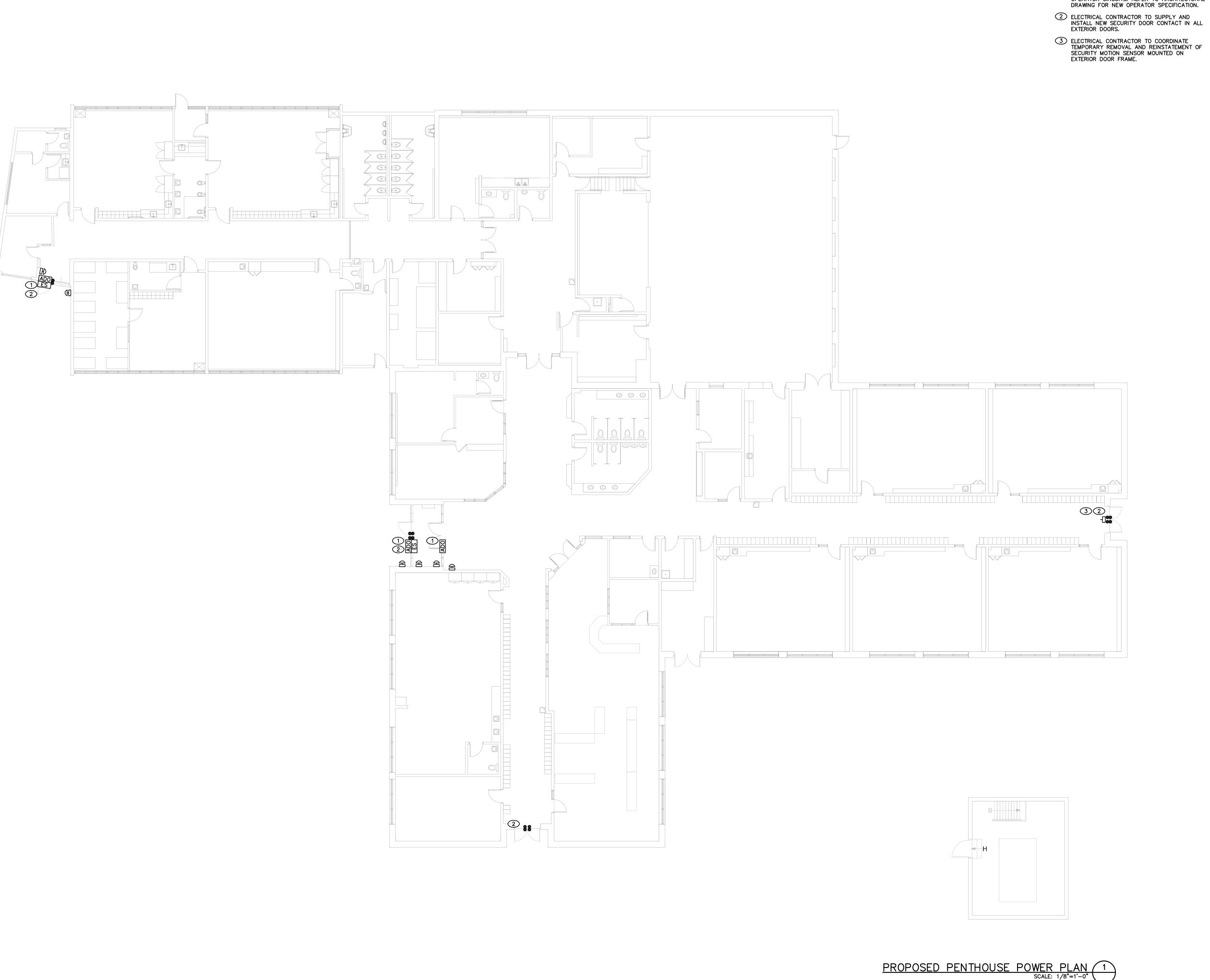
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E-200

6 of 10



DRAWING NOTES:

- 1 ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL NEW REPLACEMENT AUTOMATIC DOOR OPERATOR AND PUSHBUTTONS, REUSE EXISTING OPERATOR CIRCUITS. REFER TO ARCHITECTURAL DRAWING FOR NEW OPERATOR SPECIFICATION.
- 3 ELECTRICAL CONTRACTOR TO COORDINATE TEMPORARY REMOVAL AND REINSTATEMENT OF SECURITY MOTION SENSOR MOUNTED ON EXTERIOR DOOR FRAME.

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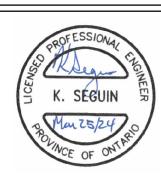
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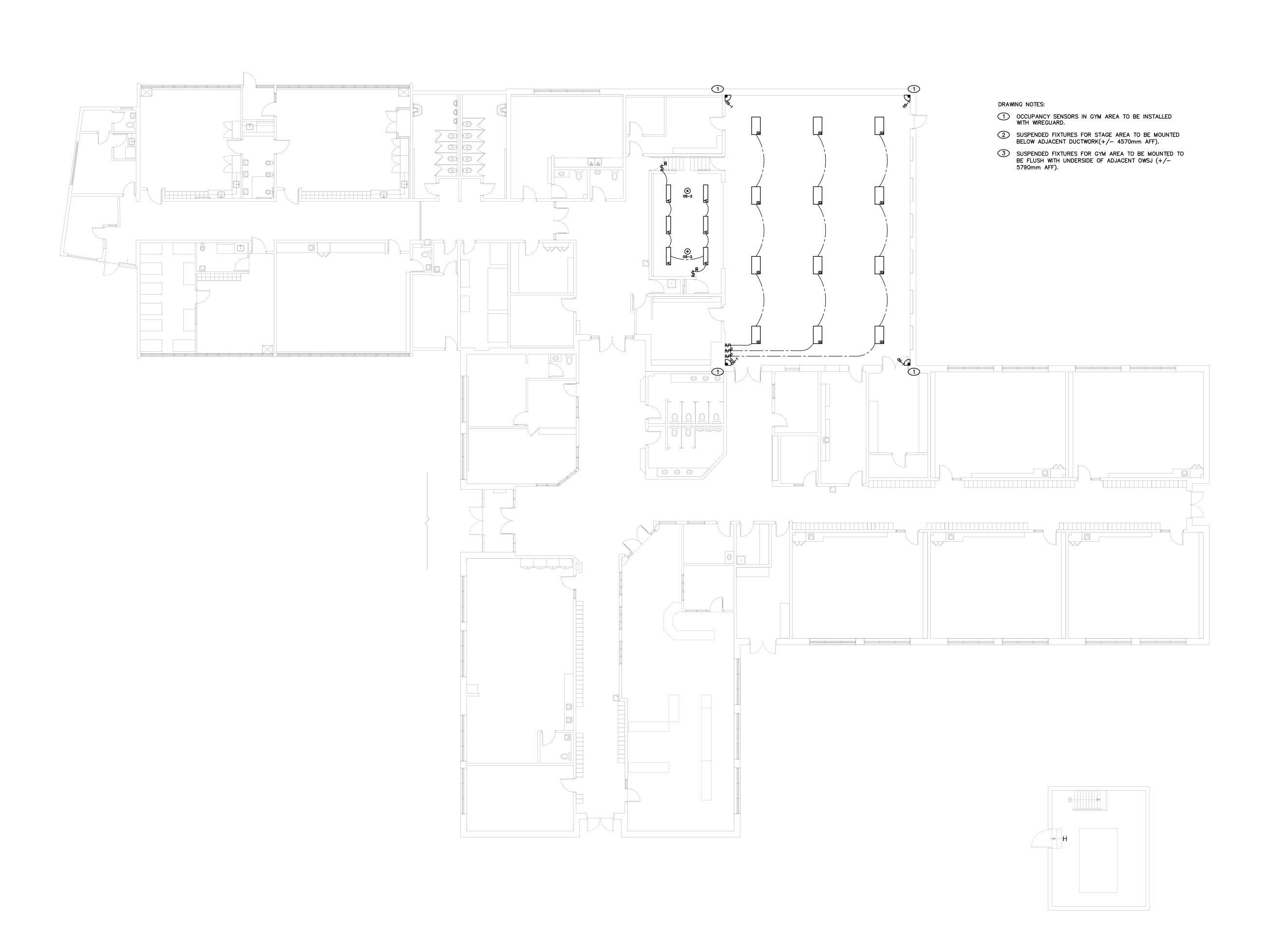


**NOUVEL HORIZON ELEMENTARY SCHOOL** 

621 QUAKER ROAD, WELLAND, ON, L3C 3H1

PROPOSED POWER PLAN

Drawn By: JC	Designed By: SJ	Approved By: KS	Date: FEB 2024
Project No. 24-003		Scale 3/32"=1'-0"	
Drawing No. <b>E-201</b>		Sheet 7 of 1	Revision



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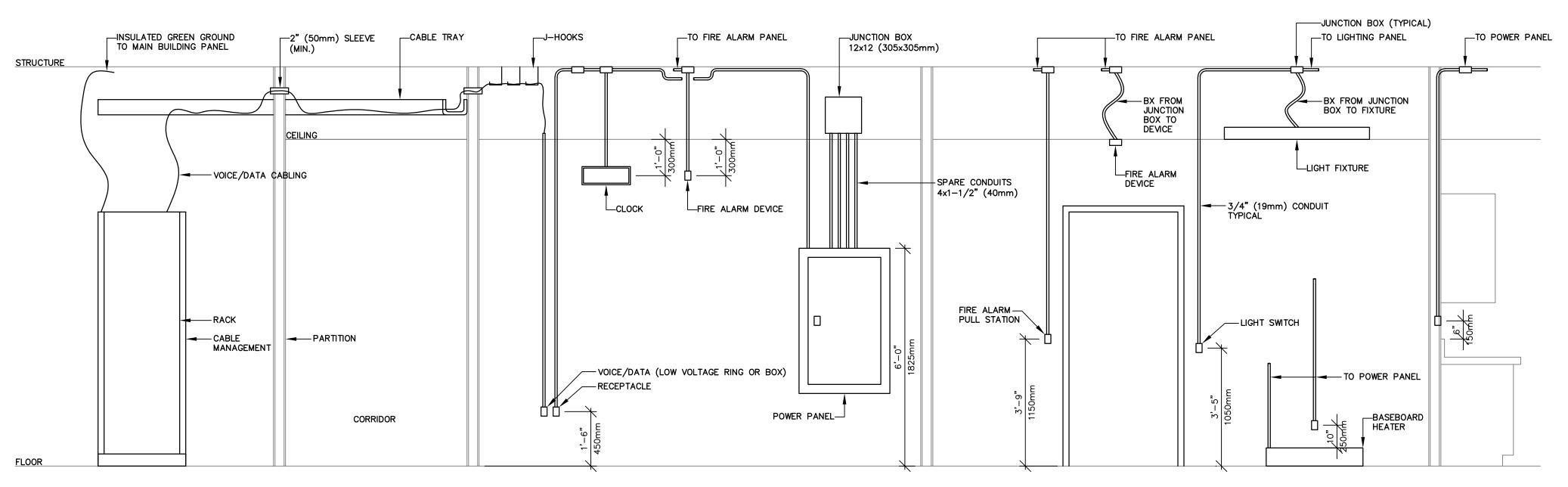


NOUVEL HORIZON
ELEMENTARY SCHOOL

621 QUAKER ROAD, WELLAND, ON, L3C 3H1

PROPOSED
LIGHTING PLAN

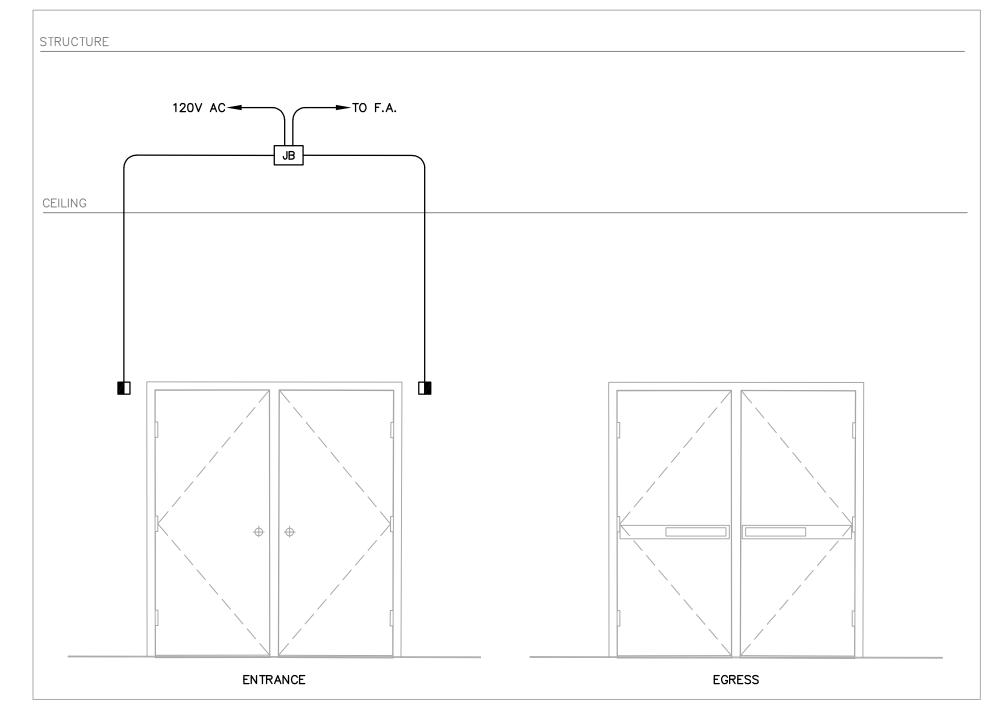
Drawn By: JC	Designed By: SJ	Approved By: KS	Date: FEB 2024	
Project No. 24-003		Scale 3/32"=1'-0"		
Drawing No.		Sheet		Revision
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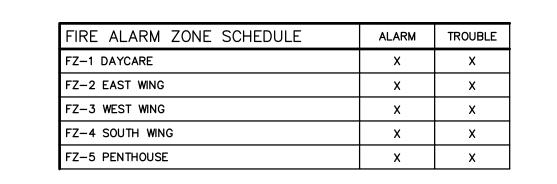


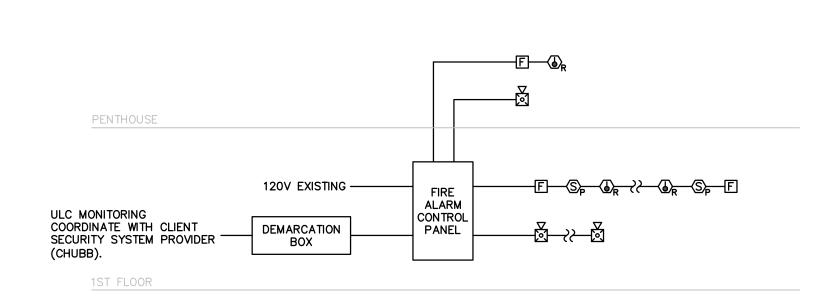
#### **DETAIL NOTES:**

- A. DETAIL IS APPLICABLE FOR DEVICES SHOWN ON PLANS. ALL THE DEVICES INDICATED IN THE DETAIL MAY NOT OCCUR ON THE PLANS.
- B. CONDUIT SHALL BE PROVIDED IN ALL CASES UNLESS DENOTED AS BX OR AS ALLOWED IN THE SPECIFICATIONS.
- C. ALL CONDUITS FOR LOW VOLTAGE CABLING AND WIRING SHALL HAVE BUSHINGS INSTALLED TO PREVENT CHAFFING OF WIRE(S).
- D. ALL CONDUITS ARE TO GO DIRECTLY FROM THE OUTLET BOX UP THE WALL INTO THE CEILING SPACE. NO HORIZONTAL RUNS OF CONDUIT, OR GROUPING OF CONDUITS WITH OTHER SERVICES IN CLOSE PROXIMITY.
- E. CONDUITS ARE TO HAVE PULL ROPES INSTALLED AND LEFT BEHIND TO ALLOW THE PULLING OF ADDITIONAL SERVICES IN THE FUTURE.
- F. ALL BREACHES IN WALLS ARE TO BE FIRESTOPPED TO MAINTAIN THE FIRE SEPARATIONS.
- G. PROVIDE SUPPORTS FOR ALL CEILING MOUNTED ELEMENTS (IE CHAIN HANGERS FOR FIXTURES ETC.) DEVICES SHALL NOT BE SUPPORTED BY A CEILING TILE.

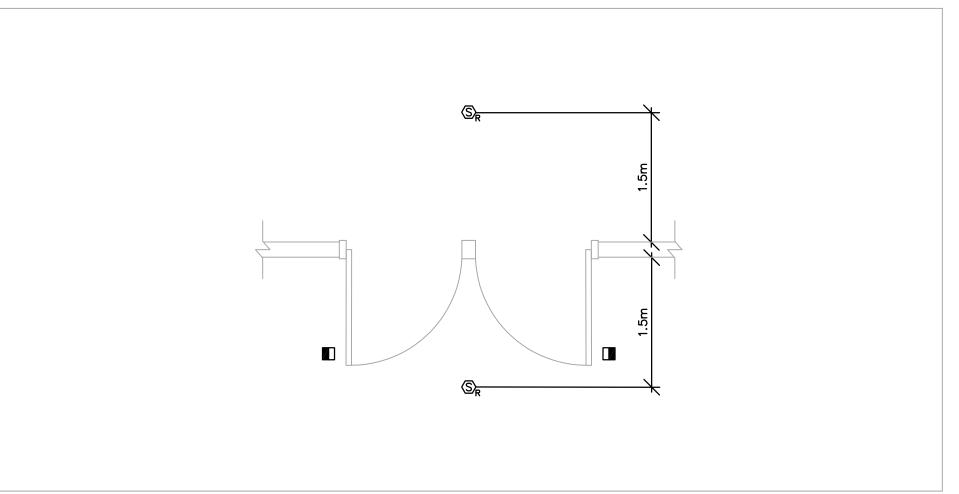








PROPOSED FIRE ALARM RISER DIAGRAM 3
SCALE: NTS



#### DETAIL NOTES:

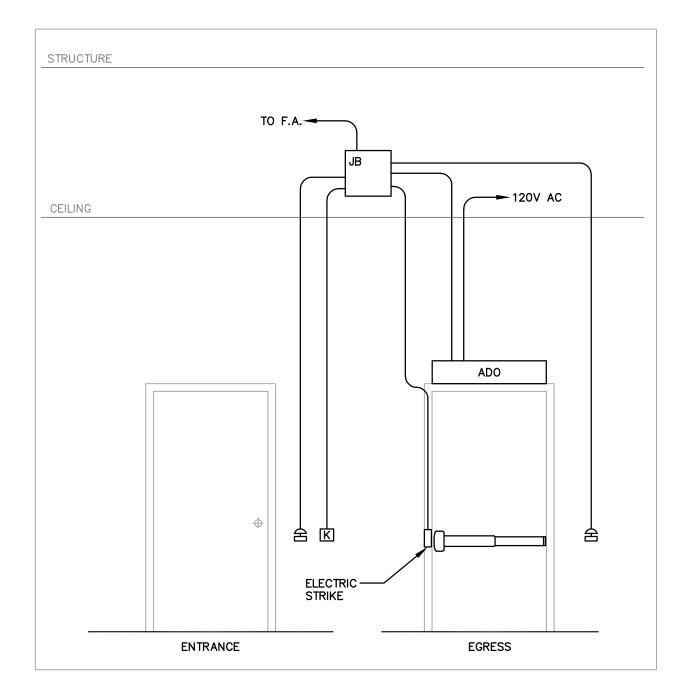
1. EXISTING MAGNETIC DOOR HOLDERS TO BE RECONNECTED TO NEW FIRE ALARM SYSTEM. MAGNETIC DOOR HOLDERS TO RELEASE UPON FIRE ALARM ACTIVATION.

2. SMOKE DETECTORS TO BE INSTALLED WITHIN 1500mm.

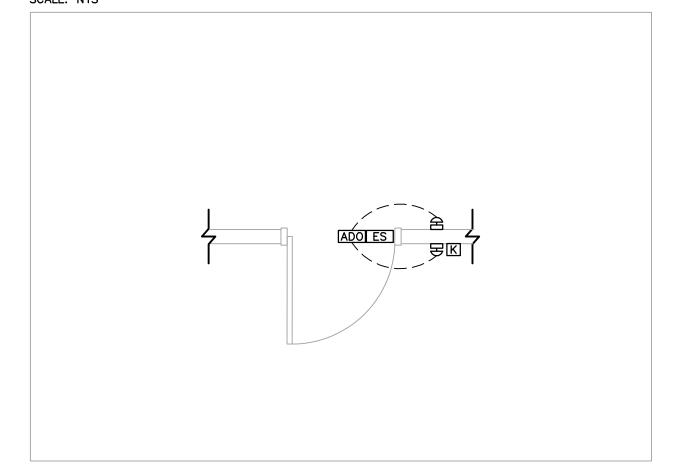
HOLD OPEN DOOR DETAIL 1
SCALE: NTS

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FEB 2024 Project No. Scale **AS NOTED** 24-003 E-500 9 of 10



DOOR DETAIL
SCALE: NTS

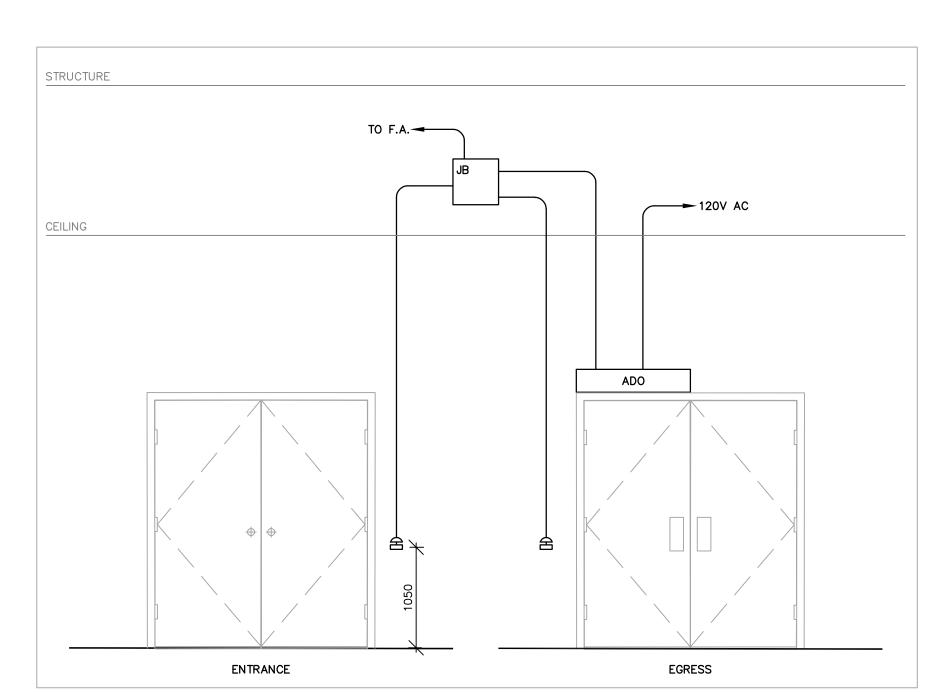


# FLOOR PLAN DOOR DETAIL SCALE: NTS NOTES:

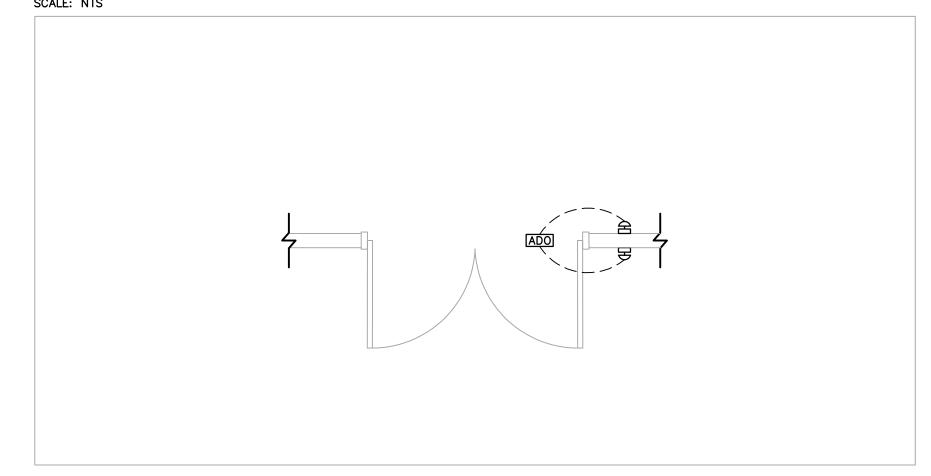
A. PROVIDE AND INSTALL ADO. REFER TO ARCHITECTURAL DRAWINGS FOR ADO MODEL SPECIFICATION.

DAY CARE DOOR DETAIL 3
SCALE: NTS

B. KEYSWITCH "OFF", "DAY", AND "NIGHT" MODES TO BE INSTALLED ADJACENT TO DOOR.



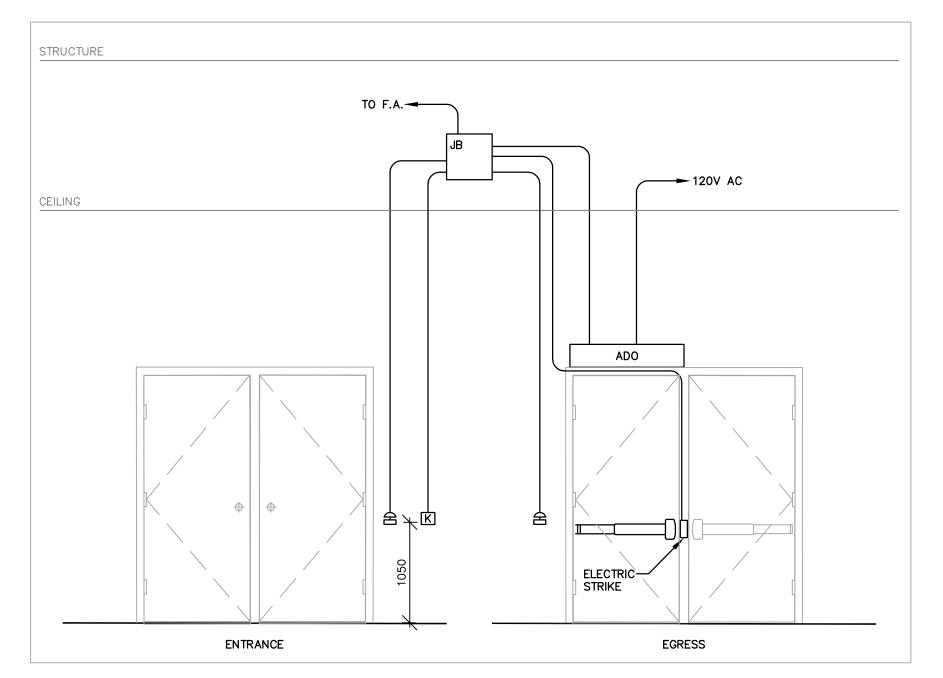
DOOR DETAIL
SCALE: NTS



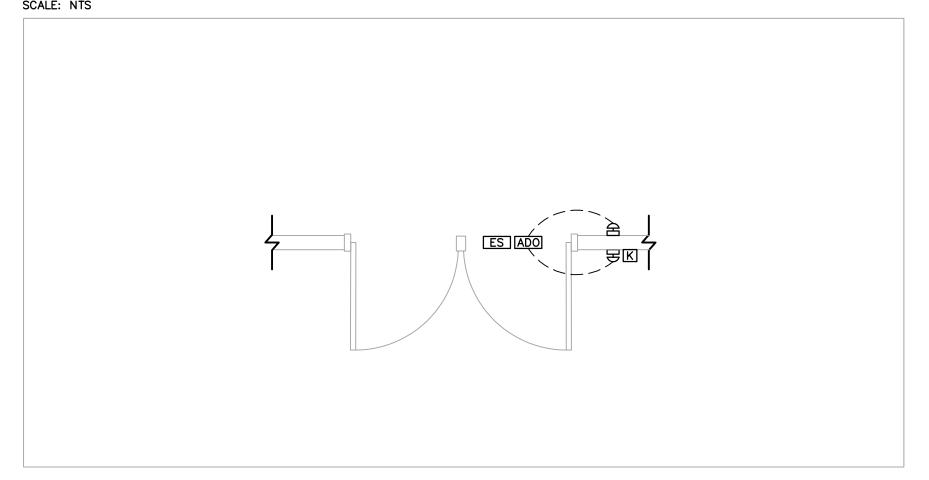
# FLOOR PLAN DOOR DETAIL SCALE: NTS NOTES:

- A. PROVIDE AND INSTALL ADO. REFER TO ARCHITECTURAL DRAWINGS FOR ADO MODEL SPECIFICATION.
- B. KEYSWITCH "OFF", "DAY", AND "NIGHT" MODES TO BE INSTALLED ADJACENT TO DOOR.

FRONT INTERIOR DOOR DETAIL 2
SCALE: NTS



## DOOR DETAIL SCALE: NTS



### FLOOR PLAN DOOR DETAIL SCALE: NTS

- A. PROVIDE AND INSTALL ADO. REFER TO ARCHITECTURAL DRAWINGS FOR ADO MODEL SPECIFICATION.
- B. KEYSWITCH "OFF", "DAY", AND "NIGHT" MODES TO BE INSTALLED ADJACENT TO DOOR.

