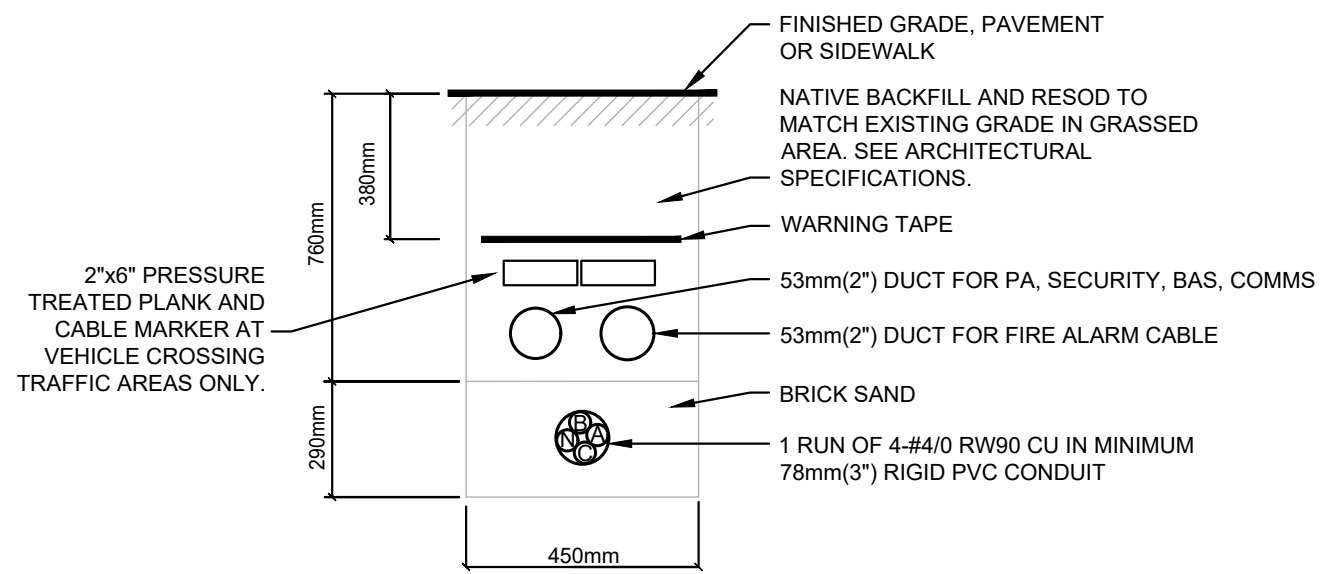
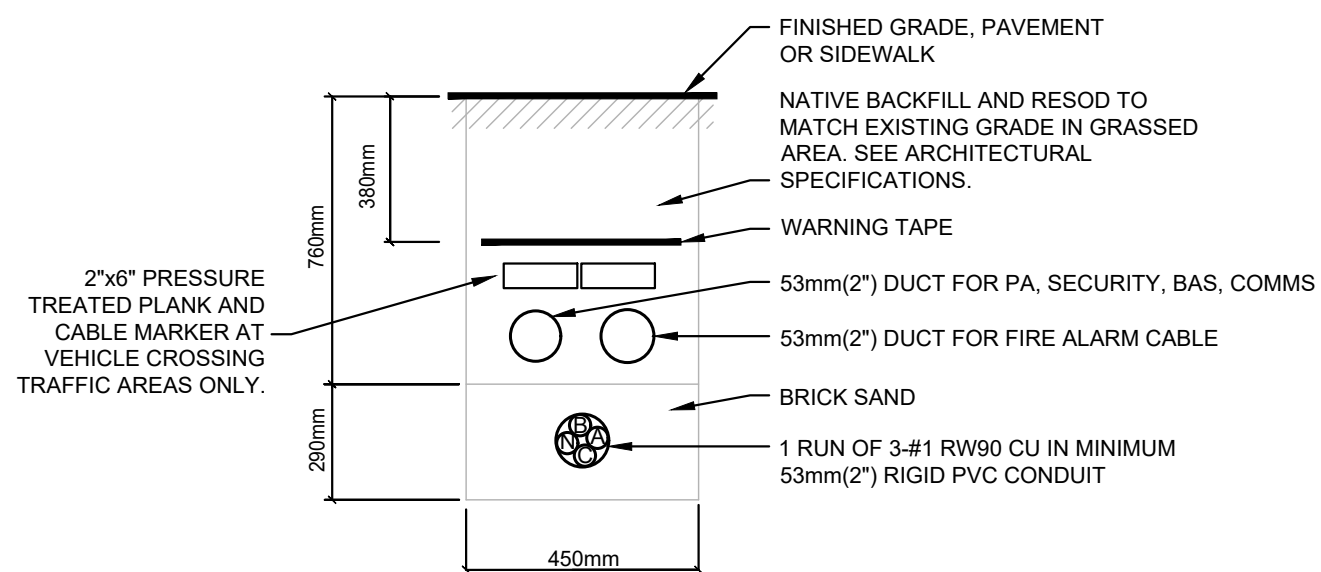


**TRENCH 3 DETAIL - LP-PORT TO PORTABLE PANEL**  
SCALE: NTS



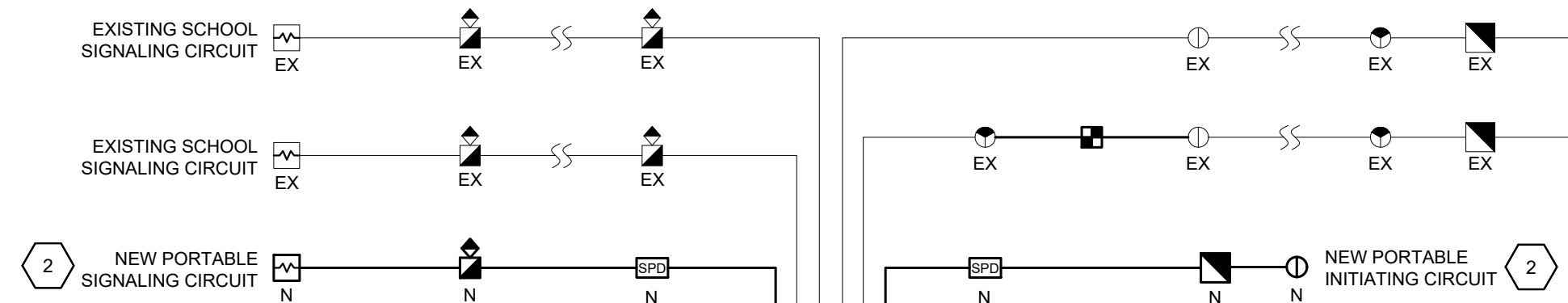
NOTES: INSTALL AS PER OESC DIAGRAM D11 DETAIL 2 AND TABLE D11A OR D11B

**TRENCH 2 DETAIL - TX-PORT TO LP-PORT**  
SCALE: NTS



NOTES: INSTALL AS PER OESC DIAGRAM D11 DETAIL 2 AND TABLE D11A OR D11B

**TRENCH 1 DETAIL - SB-1 TO TX-PORT**  
SCALE: NTS



**FIRE ALARM RISER GENERAL NOTES:**

- ALL ADDRESSABLE LOOP WIRING IS TO BE 'DCLA'. IN CLASS A/C WIRING LOOPS, THE PRIMARY AND ALTERNATE WIRING CIRCUITS SHALL BE INSTALLED IN SEPARATE RACEWAYS OR CABLE ASSEMBLIES LOCATED A MINIMUM OF 300mm APART WHEN INSTALLED VERTICALLY OR 1000mm APART WHEN INSTALLED HORIZONTALLY IN CONFORMANCE WITH CANULC-S524 REQUIREMENTS.
- LOCATE END OF LINE RESISTORS BESIDE THE LAST DEVICE AND DOCUMENT LOCATION AND PLACE INSIDE FIRE ALARM CONTROL PANEL. UPDATE AS BUILT DRAWINGS ACCORDINGLY.
- COORDINATE LENGTH, SIZE OF WIRE AND QUANTITY OF SIGNAL, INITIATION, COMMUNICATION AND CONTROL CIRCUITS AND QUANTITY OF BOOSTER PACKS WITH MANUFACTURER SHOP DRAWINGS AND WIRING DIAGRAMS.
- ALL FIRE ALARM SYSTEM WIRINGS WITHIN THE BUILDING SHALL BE RUN IN RED EMT, MINIMUM SIZE 3/4" (21mm) UNLESS OTHERWISE INDICATED. INCREASE SIZE OF CONDUIT AS REQUIRED TO MAINTAIN MAXIMUM 40% FILL.
- FIRE ALARM RISER SHOWS GENERAL DESIGN INTENT AND INTENDED FIRE ALARM LOOP CONFIGURATION. REFER TO FLOOR PLANS FOR EXACT DEVICE LOCATIONS AND QUANTITIES AND ZONE LOCATIONS AND QUANTITIES.
- PROVIDE FAULT ISOLATION MODULES AS REQUIRED BY CANULC-S524 AT ZONE BOUNDARIES AND AS REQUIRED BY MANUFACTURER.
- PROVIDE LAMACOID LABELS ON ALL ADDRESSABLE CONTROL MODULES, ADDRESSABLE MONITOR MODULES AND END OF LINE RESISTORS IDENTIFYING FIRE ALARM ZONE AND EQUIPMENT SERVED.

**PARTIAL FIRE ALARM RISER DIAGRAM**  
SCALE: N.T.S.

ELECTRICAL TAG/NAME LEGEND	
SYMBOL	DESCRIPTION
WP	WEATHERPROOF
EX	EXISTING TO REMAIN
REM	REMOVE EXISTING
REL	RELOCATE EXISTING
ER	EXISTING AS RELOCATED
N	NEW FIXTURE OR DEVICE / EQUIPMENT

ELECTRICAL LINE TYPE LEGEND	
SYMBOL	DESCRIPTION
---X---	DEMOLITION
---	EXISTING
---	NEW
---	CIRCUIT WIRE
---	TRENCH AS NOTED

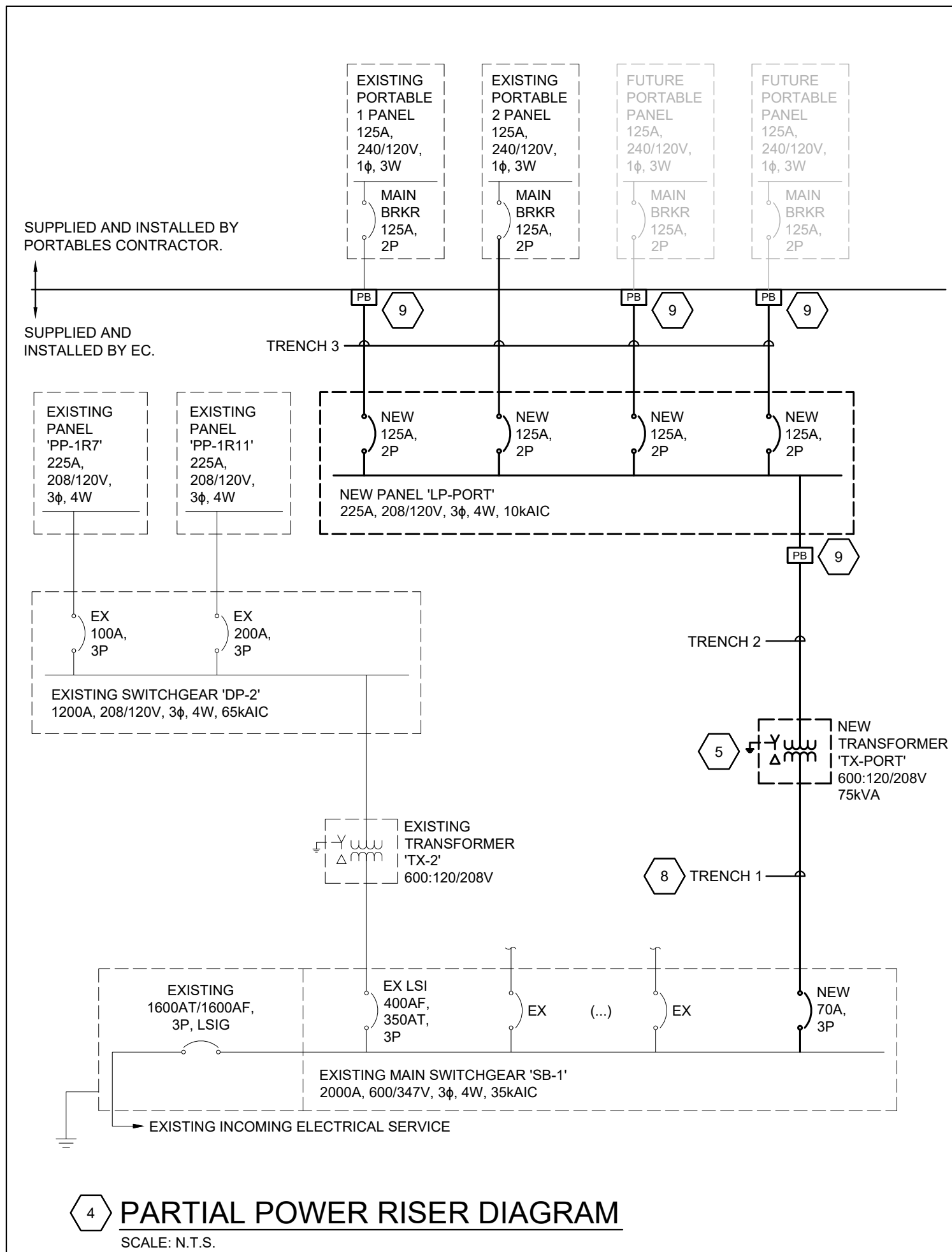
LIGHTING LEGEND	
SYMBOL	DESCRIPTION
□	RECTANGULAR LIGHT FIXTURE
♀	WALL MOUNT LIGHT FIXTURE
§ § §	SWITCH 1-GANG, 2-GANG, 3-GANG
⊙	OCCUPANCY SENSOR
a,b,c...	LIGHTING CONTROL ZONE

EQUIPMENT AND CONNECTION LEGEND	
SYMBOL	DESCRIPTION
□	ELECTRICAL PANEL
□	TRANSFORMER
□	ENCLOSED BREAKER
●	DIRECT CONNECTION
□	PULL BOX

RECEPTACLE LEGEND	
SYMBOL	DESCRIPTION
⊕	DUPLEX RECEPTACLE
⊕	GFI RECEPTACLE - OVER COUNTER
⊕	CLOCK RECEPTACLE
⊕	THERMOSTAT

COMMUNICATION LEGEND	
SYMBOL	DESCRIPTION
#D.#V	DATA OUTLET: NUMBER OF D-DATA JACKS, V-VOICE JACKS, B-BLANK
WAP	CEILING WIRELESS ACCESS POINT
⤴	DIRECTIONAL OCCUPANCY SENSOR (SECURITY SYSTEM)
PA	WALL/CEILING MOUNTED P/A SPEAKER

FIRE ALARM LEGEND	
SYMBOL	DESCRIPTION
⊕	MANUAL PULL STATION
⊕	FIXED TEMP. HEAT DETECTOR
⊕	SMOKE DETECTOR, SUBSCRIPT R RELAY BASE
⊕	AUDIBLE/VISUAL SIGNAL DEVICE WALL
⊕	END OF LINE DEVICE
⊕	SINGLE ZONE, DUAL ZONE, MULTI ZONE ADDRESSABLE MONITOR MODULES



**PARTIAL POWER RISER DIAGRAM**  
SCALE: N.T.S.

- DRAWING NOTES (INDICATED WITH HEXAGONS):**
- FOR FIRE ALARM DEVICES, PORTABLE CONTRACTOR TO PROVIDE EMPTY JUNCTION BOXES WITH EMPTY CONDUIT STUBBED INTO CEILING SPACE. EC TO PROVIDE AND INSTALL NEW DEVICES ALONG WITH WIRING BACK TO FA PANEL VIA TRENCH PULLBOX. ENSURE NEW DEVICES ARE COMPATIBLE WITH THE EXISTING SCHOOL FIRE ALARM SYSTEM AND REFER TO SPECIFICATIONS.
  - PROVIDE A NEW ADDRESSABLE FIRE ALARM ZONE TO PORTABLES FROM THE EXISTING FIRE ALARM SYSTEM.
  - ALL LIGHTING AND POWER CONNECTIONS WITHIN THE PORTABLE ARE BY OTHERS AND TREATED AS EXISTING UNLESS EXPLICITLY NOTED OTHERWISE. COORDINATE INSTALLATION AS REQUIRED FOR DEVICES IN THIS CONTRACTORS SCOPE OF WORK.
  - NEW CIRCUIT BREAKERS MUST MATCH THE MANUFACTURER, TYPE, AND KAIC RATING OF THE PANEL.
  - PROVIDE NEW WEATHERPROOF EXTERIOR RATED TRANSFORMER. COORDINATE EXACT LOCATION ON SITE WITH OWNER REP PRIOR TO INSTALL.
  - PROVIDE NEW EXTERIOR LIGHT FIXTURE ABOVE EACH NEW PORTABLE DOOR. COORDINATE EXACT LOCATION WITH PORTABLE INSTALLATION ON SITE. PROVIDE POWER CONNECTION FROM NEW LOCAL PORTABLE PANEL. ALLOW FOR 1X 120V-1P-15A CIRCUIT BREAKER AND ASSOCIATED WIRING AND CONDUIT FOR EACH LIGHT FIXTURE INSTALLED. CONTROLS INTEGRAL, REFER TO LIGHT FIXTURE SCHEDULE.
  - INDICATES MASTER PANEL 'LP-PORT'. INSTALL IN PORTABLE 2 ONLY. FEED ADJACENT PANEL AND OTHER PORTABLES FROM THIS SOURCE. COORDINATE INSTALLATION WITH PORTABLE INSTALLERS ON SITE.
  - CONDUCTORS HAVE BEEN UPSIZED FOR VOLTAGE DROP. IF PROPOSED ROUTING CHANGES SIGNIFICANTLY, RECALCULATE VOLTAGE DROP AND MODIFY CONDUCTOR SIZE AS REQUIRED TO MEET DESC.
  - EXTEND BRANCH OF FIRE ALARM AND COMMUNICATIONS CONDUITS (REFER TO TRENCH DETAIL 1 AND 2) FROM MAIN PULL BOX TO EACH PORTABLE PULL BOX, AND THEN FROM PULL BOX INTO ASSOCIATED PORTABLE.

**PORTABLE FLOOR PLAN (TYPICAL)**  
SCALE: 1:50

LIGHTING CONTROL LEGEND		
SYMBOL	DESCRIPTION	MODEL #
§	4-BUTTON DIGITAL SCENE SWITCH W/ DIMMING	nLIGHT: nPODMA 4P DX

LIGHTING FIXTURE SCHEDULE				
FIXTURE TAG	DESCRIPTION AND MODEL SERIES	INPUT	LIGHT SOURCE	MOUNTING
AA	11.5"WIDE x 9" TALL x 7" DEEP EXTERIOR WALL SCONCE C/W VISUAL COMFORT OPTIC, DARK SKY APPROVAL, INTEGRAL PHOTOCELL FOR CONTROL.  LITHONIA: WDG2 LED SERIES	120V 15W	LED 2015L 3500K 80CRI VF DISTRIBUTION	WALL
BB	24" WIDE x 48" LONG LED LOW PROFILE RECESSED LIGHT FIXTURE. NLIGHT ENABLED.  LITHONIA: BLT SERIES	120V 32W	LED 4000L 3500K 80CRI	CEILING RECESSED

NOTES:

- PROVIDE ALL NECESSARY MOUNTING HARDWARE FOR A COMPLETE INSTALLATION.
- PROGRAM THE PHOTOCELL TO CONTROL TYPE 'AA' LIGHT FIXTURE TO TURN ON OVERNIGHT.

PANEL:	<u>PORTABLE PANEL</u> <u>(BY OTHERS, EX)</u>			VOLTS:	208 / 120		MAINS:	125 Amps, Main Breaker Amps 125A					
FED FROM:	PANEL 'LP-PORT' IN PORT 2			PH/Wire:	1 / 3		A.I.C.:	Refer to Single Line					
				TYPE:	BCP		MOUNTING:	Flush					
LOAD				OCD		CCT	Ph	CCT	OCD	LOAD			
kW	Type	DESCRIPTION / LOCATION		A	P	NO.	P	A	Type	DESCRIPTION / LOCATION	kW		
0.50	REC	EX. RECEPTACLES		15	1	1	a	2	2	90	MEC	EX. UNIT VENTILATOR	6.00
0.53	REC	EX. RECEPTACLES		15	1	3	b	4					6.00
0.15	LTG	NEW EXTERIOR LIGHT FIXTURE		15	1	5	a	6				SPACE	
0.30	LTG	EX. LED LIGHTS		15	1	7	b	8				SPACE	
		SPARE				9	a	10				SPACE	
		SPARE				11	b	12				SPACE	
Phase kW	a	b	c not used	total kW	Max. Demand	11.7	kW	Notes:					
Connected Load	6.7	6.8	0.0	13.5	Min. Equip	208 V,	1 PH						
Summer Demand	5.8	5.9	0.0	11.7	100% Rated	OK	56 A						
Winter Demand	5.8	5.9	0.0	11.7	80% Rated	OK	70 A						

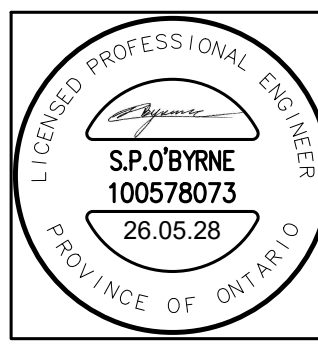
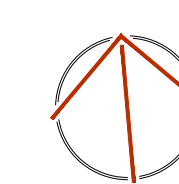
PANEL:	<b>PANEL LP-PORT</b>			VOLTS: 208 / 120			MAINS: 225 Amps, Lugs Only						
				PH/Wire: 3 / 4			A.I.C.: Refer to Single Line						
FED FROM: EXTERIOR TRANSFORMER				TYPE: BCP			MOUNTING: Flush						
LOAD				OCD		CCT	Ph	CCT	OCD		LOAD		
kW	Type	DESCRIPTION / LOCATION		A	P	NO.		NO.	P	A	Type	DESCRIPTION / LOCATION	kW
6.65	PNL	PORTABLE 1		125	2	1	a	2	2	125	PNL	PORTABLE 3 (FUTURE)	6.65
6.83	PNL					3	b	4			PNL		6.83
6.65	PNL	PORTABLE 2		125	2	5	c	6	2	125	PNL	PORTABLE 4 (FUTURE)	6.65
6.83	PNL					7	a	8			PNL		6.83
		SPACE				9	b	10				SPACE	
		SPACE				11	c	12				SPACE	
		SPACE				13	a	14				SPACE	
		SPACE				15	b	16				SPACE	
		SPACE				17	c	18				SPACE	
		SPACE				19	a	20				SPACE	
		SPACE				21	b	22				SPACE	
		SPACE				23	c	24				SPACE	
Phase kW	a	b	c	total kW		Max. Demand		46.9	kW		Notes:		
Connected Load	27.0	13.7	13.3	53.9		Min. Equip		208 V,	3 PH				
Summer Demand	23.1	23.7	0.0	46.9		100% Rated		OK	130 A				
Winter Demand	23.1	23.7	0.0	46.9		80% Rated		OK	163 A				

**KEYPLAN**

**REVISIONS**

NO.	ISSUED FOR	DATE
00	COORDINATION	26.05.20
01	PERMIT / TENDER	26.05.28

**NORTH**



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**PROJECT**

LDSB KINGSTON  
SECONDARY SCHOOL  
PORTABLES

**ADDRESS**

145 KIRKPATRICK ST,  
KINGSTON, ON, K7K 2P4

**PROJECT NO.**

CE-6470

**DRAWING TITLE**

ELECTRICAL LEGENDS,  
SCHEDULES, DETAILS, NOTES  
& RISER DIAGRAMS

**DRAWING NUMBER**

E1 OF 4

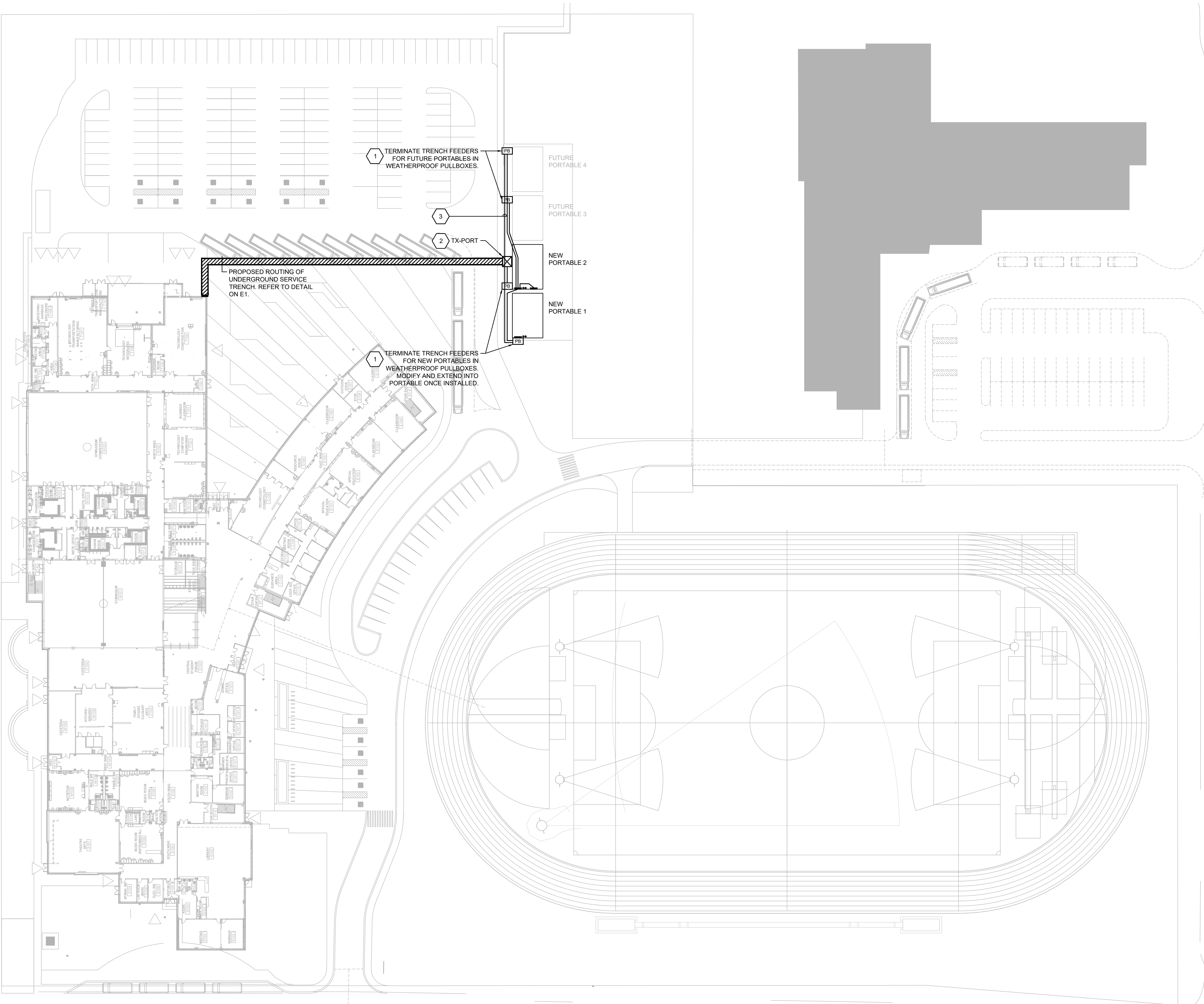


GENERAL NOTES: (APPLICABLE TO ALL DRAWINGS)

- PROTECT ALL INTERIOR AND EXTERIOR FINISHES, CEILINGS, WALLS, FLOORS, ETC FROM DAMAGE DUE TO THE WORK OF THIS DIVISION.
- INFORMATION RELATED TO EXISTING CONDITIONS IS TAKEN FROM ORIGINAL AS-BUILT DRAWINGS AND LIMITED VISUAL SITE REVIEW. CONFIRM ALL EXACT DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE CONSULTANT.
- REPAIR ANY DAMAGE CAUSED BY THE ELECTRICAL TRADE TO EXISTING BUILDINGS OR EQUIPMENT, ETC., TO THE CONSULTANT SATISFACTION. UPON COMPLETION OF THE WORK, CLEAN ALL EQUIPMENT AND REMOVE FROM THE SITE ALL ELECTRICAL DEBRIS.
- PROVIDE LEGIBLE SIGNS AND BARRIERS ON OR AROUND ALL LIVE PANELS AND EQUIPMENT DURING CONSTRUCTION TO PREVENT INJURY OR SHOCK. DISCONNECT AND/OR ISOLATE ALL ELECTRICAL EQUIPMENT EFFECTED BY WORK OF THIS DIVISION. PROVIDE AND COORDINATE DANGER TAGS WITH OWNER FOR ALL EQUIPMENT THAT WILL REMAIN ENERGIZED DURING CONSTRUCTION.
- SCHEDULE AND PHASE DEMOLITION AND NEW WORK TO REDUCE INTERFERENCE AND DOWNTIME OF EXISTING SYSTEMS. NOTIFY OWNER'S REPRESENTATIVE OF ALL DOWNTIME PRIOR TO PROCEEDING WITH WORK. MAINTAIN SERVICES TO ALL AREAS NOT UNDER CONSTRUCTION. MODIFY OR EXTEND WIRING AND CONDUIT AS REQUIRED.
- DO NOT SCALE DRAWINGS. OBTAIN ALL DIMENSIONS FROM EXISTING ARCHITECTURAL PLANS, SITE INSPECTIONS, AND MANUFACTURER'S SHOP DRAWINGS.
- PRIOR TO INSTALLATION OF DEVICES WITHIN WALLS, VERIFY THAT NO INTERFERENCES EXIST. CONFIRM ON SITE WITH OWNER AND DESIGNER FOR EXACT DEVICE LOCATIONS AND ELEVATIONS.
- CONTRACTORS SHALL VISIT THE SITE TO DETERMINE THE FULL EXTENT OF THE WORK BEFORE SUBMITTING PRICING. MAKE ALL ALLOWANCES FOR SITE CONDITIONS.
- IN THE EVENT OF A DISCREPANCY BETWEEN THE SPECIFICATIONS AND A NOTE ON THE DRAWINGS, THE DRAWING NOTES SHALL SUPERSEDE THE SPECIFICATIONS.

GENERAL DEMOLITION NOTES: (APPLICABLE TO ALL DRAWINGS)

- ALL FIXTURES AND DEVICES ARE EXISTING TO REMAIN UNLESS IDENTIFIED OTHERWISE ON THE DRAWINGS, GENERAL NOTES OR SPECIFICATIONS.
- REMOVE ALL UNUSED, ABANDONED OR REDUNDANT WIRING AND CONDUIT BACK TO SOURCE.
- RELOCATE EXISTING FIXTURE/DEVICE AS SHOWN ON DRAWINGS. EXTEND CONDUIT AND WIRING AS REQUIRED. TRACE EXISTING CIRCUITS PRIOR TO DEMOLITION. CONSULT WITH OWNER'S REPRESENTATIVE FOR ANY INTERRUPTIONS THIS MAY CAUSE DURING REMOVAL AND REINSTALLATION.
- COORDINATE WITH FACILITY MAINTENANCE DEPARTMENT FOR DISPOSAL OF REMOVED DEVICES. DISPOSE OF ALL UNWANTED DEVICES AS REQUIRED AS PER FACILITY STANDARDS.
- ELECTRICAL EQUIPMENT BEING REMOVED AND NOT BEING REUSED WILL REMAIN THE PROPERTY OF THE OWNER. EQUIPMENT THE OWNER DOES NOT WANT WILL BE DISPOSED OF BY THE CONTRACTOR. CONTRACTOR TO ENSURE ALL CONSTRUCTION WASTE, GARBAGE AND DEBRIS IS REMOVED FROM SITE AND PROPERLY DISPOSED.
- TRACE OUT ALL EXISTING CIRCUITS WITHIN THE AREA OF WORK AND LABEL PRIOR TO ANY DEMOLITION. MAINTAIN SERVICES TO AREAS NOT UNDER CONSTRUCTION.
- COORDINATE SHUTDOWN WORK AND PHASING WITH OWNER REPRESENTATIVE PRIOR TO ANY ACTIVITY. ALL WORK TO BE DONE AFTER WORK HOURS.
- CONFIRM EXACT LOCATIONS AND REQUIREMENTS WITH FINAL PORTABLE INSTALLATION DRAWINGS PRIOR TO ROUGH IN AND PROVIDE AS REQUIRED.



SITE PLAN - ELECTRICAL

SCALE: 1:500

DRAWING NOTES (INDICATED WITH HEXAGONS):

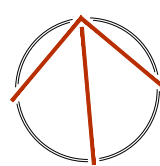
- PROVIDE WEATHERPROOF IN GRADE PULLBOX/HANDWELL WITH DIVIDERS AND SECTIONS SIZED ACCORDINGLY FOR POWER AND COMMUNICATIONS. HUBBELL QUAZITE PG SERIES OR APPROVED EQUIVALENT. PROVIDE SHOP DRAWING FOR REVIEW.
- PROVIDE CONCRETE PAD FOR TRANSFORMER AND MIN 2x BOLLARDS AT SIDES CLOSEST TO DRIVEWAY.
- EXTEND 2x 2" CONDUITS FOR FIRE ALARM AND COMMUNICATIONS FROM MAIN BUILDING TRENCH (SEE TRENCH DETAIL 1), INTO PULL BOX, THEN INTO EACH PORTABLE PULL BOX. THEN EXTEND FROM RESPECTIVE PORTABLE PULL BOX INTO PORTABLE BEING INSTALLED. COORDINATE CONDUIT STUB LOCATIONS WITH FINAL PORTABLE SHOP DRAWINGS AND ORIENTATIONS ON SITE.

KEYPLAN

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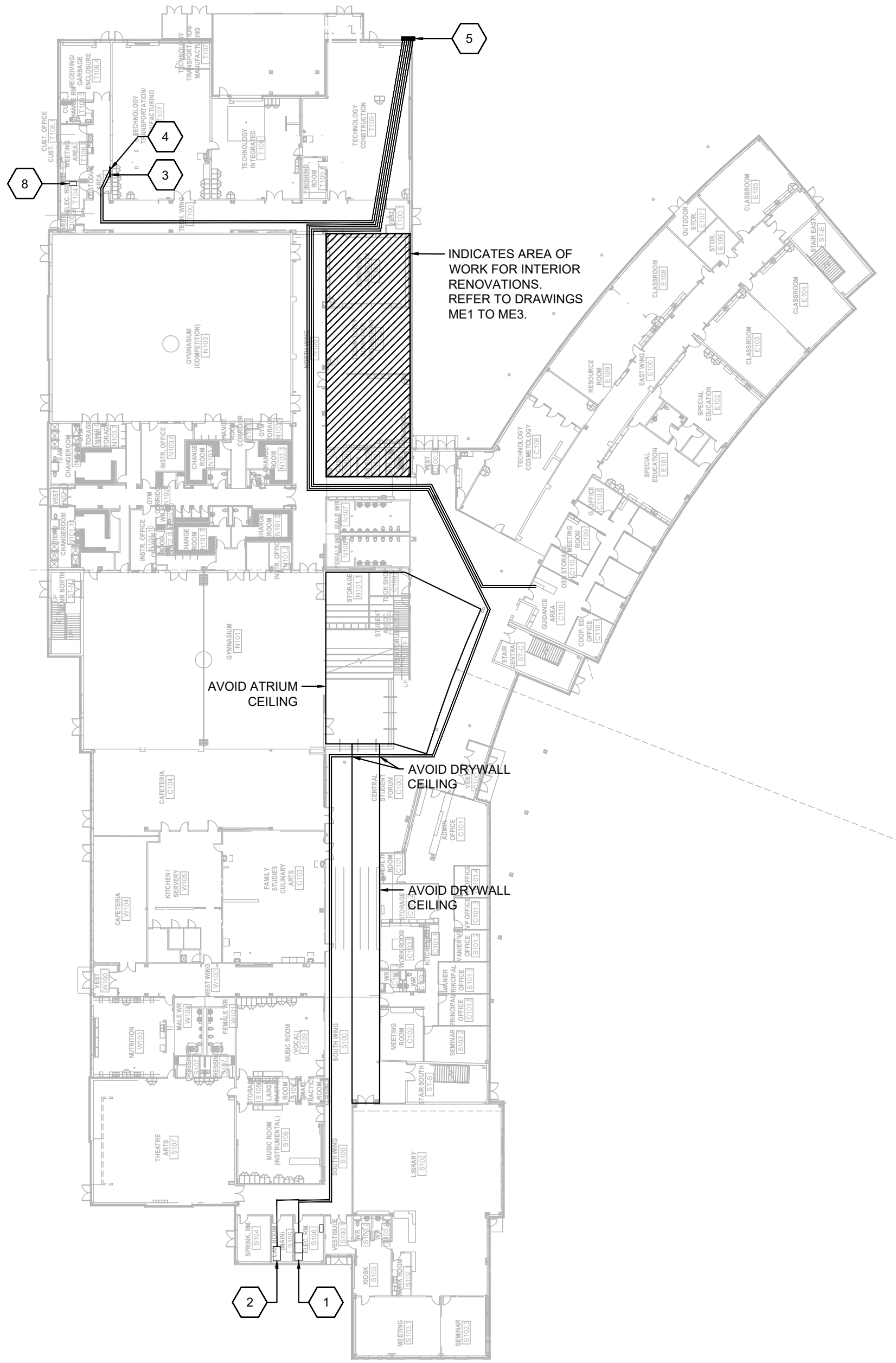
DRAWING TITLE

ELECTRICAL SITE PLAN

DRAWING NUMBER

E2 OF 4





GROUND FLOOR PLAN - ELECTRICAL

SCALE: 1:500

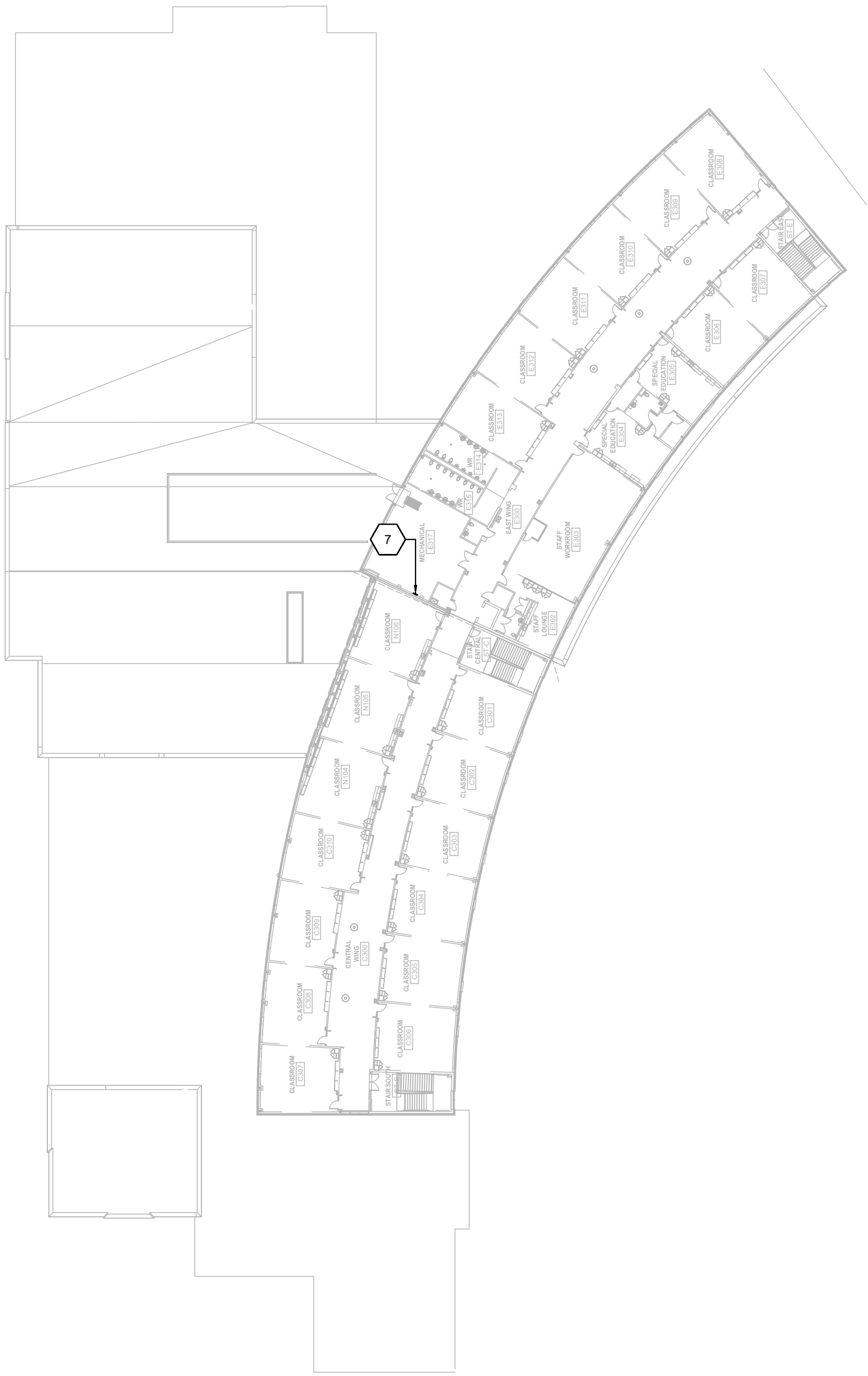
DRAWING NOTES (INDICATED WITH HEXAGONS):

1. INDICATES LOCATION OF EXISTING MAIN SWITCHGEAR PANEL SB-1. REFER TO SLD ON THIS PAGE. ROUTE FEEDER UP FROM SWITCHBOARD INTO GROUND FLOOR CEILING SPACE. FOLLOW THE ROUTING SHOWN ON THIS PLAN AND AVOID DRYWALL CEILING AS INDICATED. REFER TO CONDUCTOR SIZING ON SINGLE LINE DIAGRAM. WITHIN BUILDING, TECK90 MAY BE USED INSTEAD OF CONDUIT PRIOR TO TRANSITIONING BELOW GRADE.
2. INDICATES LOCATION OF EXISTING COMMUNICATIONS RACKS. PROVIDE CONDUIT AND CABLING FOR COMMUNICATIONS TO NEW PORTABLE. ROUTE FEEDER UP FROM SWITCHBOARD INTO GROUND FLOOR CEILING SPACE. FOLLOW THE ROUTING SHOWN ON THIS PLAN AND AVOID DRYWALL CEILING AS INDICATED.
3. INDICATES LOCATION OF FIRE ALARM CONTROL PANEL. PROVIDE CONDUIT AND CABLING FOR FIRE ALARM TO NEW PORTABLE. ROUTE FEEDER UP FROM FACP INTO GROUND FLOOR CEILING SPACE. FOLLOW THE ROUTING SHOWN ON THIS PLAN.
4. INDICATES LOCATION OF SECURITY PANEL. PROVIDE CONDUIT AND CABLING FOR SECURITY TO NEW PORTABLE. ROUTE FEEDER UP FROM PANEL INTO GROUND FLOOR CEILING SPACE. FOLLOW THE ROUTING SHOWN ON THIS PLAN.
5. PROVIDE WEATHERPROOF PULL BOXES FOR CONDUITS & DROP TO BELOW GRADE. REFER TO E1 FOR TRENCH DETAIL AND ROUTING TO NEW PORTABLE LOCATIONS.
6. INDICATES LOCATION OF PA HEAD-END. PROVIDE CONDUIT AND CABLING FOR PA SYSTEM FOR NEW PORTABLE. ROUTE FEEDER DOWN THROUGH FLOOR IN CORNER OF LAN ROOM INTO FIRST FLOOR CEILING SPACE AND FOLLOW THE ROUTING SHOWN ON THIS PLAN.
7. INDICATES LOCATION OF BAS PANEL. DROP THROUGH FLOOR WITH EXISTING COMMUNICATIONS CABLING INTO SECOND FLOOR CEILING AND ROUTE OVER TO LAN ROOM. GANG WITH PA CABLING ON SECOND FLOOR AND FOLLOW THE ROUTING SHOWN ON THIS PLAN.
8. INDICATES LOCATION OF EXISTING DISTRIBUTION PANEL DP-2, FOR REFERENCE.



SECOND FLOOR PLAN - ELECTRICAL

SCALE: 1:500



THIRD FLOOR PLAN - ELECTRICAL

SCALE: 1:500



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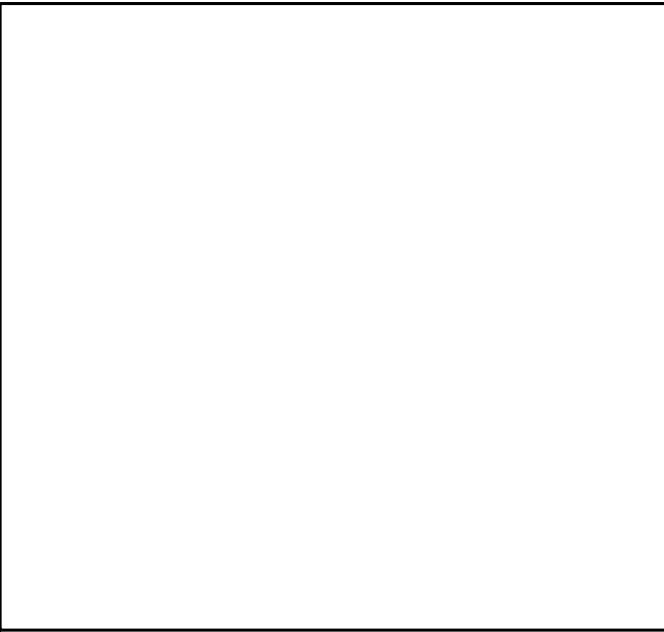
LONDON: 1385 North Routledge Park, Unit 9  
London, ON N6H 5N5 P 519.472.7640

KINGSTON: 4 Cataragui Street, Suite 100,  
Kingston, ON K7K 1Z7 P 613.900.0845

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CE-6470

DRAWING TITLE

ELECTRICAL FLOOR PLANS

DRAWING NUMBER

E3 OF 4



ELECTRICAL GENERAL REQUIREMENTS		25.	CHANGES IN THE WORK	3.	ADD AND/OR MODIFY ANNUNCIATION AS INDICATED.	PAGING SYSTEM - SCHOOLS:	DEVICES:
<u>GENERAL CONDITIONS:</u>		25.1.	CHANGES TO THE CONTRACT REQUIRING ADDITIONS TO OR DELETIONS FROM THE WORK OF THIS DIVISION SHALL BE CARRIED OUT UPON WRITTEN REQUEST OF THE CONSULTANT. EXTRAS TO THE CONTRACT OR CREDITS SHALL BE SUBMITTED WITH A COMPLETE COST BREAKDOWN AS FOLLOWS:	4.	UPGRADE OR ADD POWER SUPPLIES AND EMERGENCY BATTERY CAPACITY AS NECESSARY TO ACCOMMODATE ADDITIONS AND MODIFICATIONS WITH MINIMUM 25% SPARE CAPACITY.	1.	EXISTING PAGING SYSTEM IS BY CAREHAWK. PROVIDE ADDITIONS AND/OR MODIFICATIONS TO EXISTING PAGING SYSTEM AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.
1.	ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO ELECTRICAL SAFETY CODE, THE LOCAL ELECTRICAL SAFETY AUTHORITY INSPECTION OFFICE, THE ONTARIO BUILDING CODE, THE ONTARIO FIRE CODE AND ANY OTHER LOCAL REGULATIONS HAVING JURISDICTION OVER THE WORK OF THIS TRADE.		<ul style="list-style-type: none"><li>ITEMIZED MATERIAL LIST WITH QUANTITIES AND UNIT COSTS</li><li>ITEMIZED LABOUR COST BREAKDOWN</li><li>COPY OF QUOTATIONS FROM ALL SUPPLIERS FOR ALL EQUIPMENT</li><li>COPY OF QUOTATIONS FROM ALL SUBCONTRACTORS INCLUDING ALL OF THE REQUIREMENTS OF THIS SECTION</li><li>TOTAL MATERIAL COST</li><li>TOTAL HOURS</li><li>HOURLY RATE (REFER TO SUPPLEMENTARY CONDITIONS AND GENERAL CONTRACT)</li><li>TOTAL OVERHEAD AND PROFIT (REFER TO SUPPLEMENTARY CONDITIONS AND GENERAL CONTRACT)</li></ul>	5.	NOTIFICATION APPLIANCES:	2.	CONSULT WITH MANUFACTURER PRIOR TO SUBMISSION OF BIDS AND INCLUDE ALL THE COMPONENTS, WIRING, PROGRAMMING AND TESTING REQUIRED FOR THE ADDITIONS AND/OR MODIFICATIONS INDICATED AND TO COMPLY WITH RELEVANT CODES AND REGULATIONS.
2.	BEFORE TENDERING, EXAMINE THE SITE AND ALL DRAWINGS AND SPECIFICATIONS OF ALL TRADES AND BE FAMILIAR WITH THE WORK OF THIS TRADE. NO EXTRAS WILL BE ALLOWED FOR THE FAILURE TO DO SO.			5.1.	AUDIBLE HORNS: TO ULC STANDARD S525, RATED 90 DB AT 3 M (10 FT), 24 VDC OPERATOR, TEMPORAL PATTERN TONE GENERATION WITH SELECTABLE MINIMUM 6 DB OUTPUT REDUCTION SETTING. CEILING OR WALL MOUNTING AS INDICATED. WEATHERPROOF WHERE INDICATED OR REQUIRED. RED. AUDIBLE DEVICES IN SUITES SHALL EMIT A LOW FREQUENCY SIGNAL AS PER OBC 3.2.4.	3.	PAGING SYSTEM DEVICES:
3.	ALL ELECTRICAL WORK SHALL COMPLY WITH CSA ELECTRICAL BULLETIN APPLICABLE AT TENDERS CLOSE. WHERE SPECIFIC BULLETINS ARE NOT NAMED THEY ARE STILL CONSIDERED AN INTEGRAL PART OF THIS SPECIFICATION.	26.	ELECTRICAL PROJECT COMPLIANCE	5.2.	VISUAL STROBE: TO ULC STANDARD S526, WITH MULTI CANDELA LONG LIFE 1 HZ FLASHING STROBE WITH SYNCHRONIZED FLASH RATE, INTENSITY PROGRAMMABLE FROM THE CONTROL PANEL OR JUMPER SELECTED AS 15, 30, 75, 110 OR 185. CEILING OR WALL MOUNTING AS INDICATED. WEATHERPROOF WHERE INDICATED OR REQUIRED, RED.	3.1.	CLASSROOM MODULES: MCBRIDE BLS822-19 8" (205MM) ROUND SPEAKER, 25/70 VOLT TRANSFORMER C/W MCBRIDE MC2 WHITE SQUARE BAFFLE. PROVIDE MCBRIDE MCSV-1 CALL SWITCH (ROCKER SELECTION OF CALL OR PRIVACY) C/W STAINLESS STEEL COVER PLATE AND SINGLE GANG BACK BOX.
4.	PROVIDE ALL GROUNDING AND BONDING TO GROUND REQUIRED, REGARDLESS IF NOT SHOWN ON THE DRAWINGS. GROUNDING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO ELECTRICAL SAFETY CODE.	26.1.	PROVIDE THE FOLLOWING DOCUMENTS TO THE CONSULTANT TO ISSUE THE LETTER OF GENERAL REVIEW:	5.3.	AUDIBLE /VISUAL HORNS/STROBE COMBINATION UNIT WITH AUDIBLE HORN AND VISUAL STROBE WITH COMPLIANCE AND OPERATIONAL FEATURES AS DESCRIBED ABOVE. CEILING OR WALL MOUNTING AS INDICATED. WEATHERPROOF WHERE INDICATED OR REQUIRED.	4.	WIRING:
5.	PROVIDE ALL NEW MATERIALS HAVING CSA, CUL, WARENOCK HERSEY OR OTHER APPROVAL AGENCY LABEL AND LISTING. ALL WORKMANSHIP BY THIS TRADE SHALL BE FIRST CLASS, CONFORMING TO INDUSTRY STANDARD PRACTICES FOR SAFETY, ACCESSIBILITY, DURABILITY AND NEATNESS FOR ACCEPTANCE BY THE OWNERS' REPRESENTATIVES.	26.1.1.	ESA INSPECTION REPORT	6.	MANUAL ALARM DEVICES: TO ULC STANDARD S528B:	4.1.	WIRING FOR PAGING SYSTEM SHALL HAVE A FLAME TEST AND SMOKE DEVELOPMENT RATING OF FT6, FTA RATING IS NOT ACCEPTABLE.
6.	ARRANGE AND PAY FOR ALL PERMITS AND INSPECTION FEES REQUIRED FOR THE WORK OF THIS TRADE. SUBMIT TO THE LOCAL ELECTRICAL INSPECTION DEPARTMENT AND/OR ELECTRICAL SUPPLY AUTHORITY ANY AND ALL DRAWINGS REQUIRED FOR PERMITS, FEES, APPROVALS, EXAMINATIONS AND SERVICES.	26.1.2.	FIRE ALARM SYSTEM VERIFICATION REPORT	6.1.	MANUAL PULL STATION - ADDRESSABLE, METAL CONSTRUCTION, RED, WITH BREAK GLASS OR SPECIAL RESET ACTION AFTER ALARM.	4.2.	CONSULT WITH MANUFACTURER AND PROVIDE ALL CONDUIT AND WIRING FOR A COMPLETE SYSTEM.
7.	PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR THE WORK OF THIS TRADE. ALL CUTTING AND PATCHING SHALL BE PERFORMED BY QUALIFIED TRADES PERSONS. INCLUDE ALL COSTS OF CUTTING AND PATCHING RELATED TO THE WORK OF THIS TRADE IN THE TENDER PRICE.	26.1.3.	A SIGNED VERIFICATION LETTER FROM THE ELECTRICAL CONTRACTOR CONFIRMING THE FOLLOWING:	7.	ADDRESSABLE MODULES:	5.	ACCEPTABLE MANUFACTURERS INCLUDE: CAREHAWK.
8.	PROVIDE ALL SLEEVES, INSERTS AND HANGERS REQUIRED FOR THE ELECTRICAL WORK. TREAT ALL SLEEVES OR HOLES PIERCING ACOUSTICAL SEPARATIONS FOR INSTALLATIONS OF THE DIVISION TO MAINTAIN ACOUSTICAL RATING. ALL GAPS SHALL BE PACKED WITH ACOUSTICAL INSULATION AND SEALED AT BOTH ENDS WITH ACOUSTICAL CAULKING. PATCH ALL OPENINGS AROUND INSTALLATIONS OF THIS DIVISION PIERCING FIRE OR SMOKE SEPARATIONS WITH AN APPROVED WATERTIGHT SMOKE AND FIRE STOP SEALANT.		<ul style="list-style-type: none"><li>LIGHTING AND LIGHTING CONTROLS OPERATIONAL</li></ul>	6.2.	VANDAL GUARD WHERE INDICATED OF CLEAR LEXAN WITH LOCAL ALARM WHEN COVER LIFTED TO ACCESS PULL STATION. INCLUDE BATTERY POWER SUPPLY	6.	TESTING:
9.	PROVIDE ACCESS PANELS AS FOLLOWS: SHEET STEEL CONSTRUCTION WITH FACTORY APPLIED PRIME COAT OF PAINT, POSITIVE LATCHING SYSTEM, MINIMUM 18 GAUGE STEEL. PROVIDE HINGED DOORS FOR ALL ACCESS PANELS WITH A SIZE OF 450mm x 450mm (18" x 18") OR LARGER, WHERE THE ACCESS DOOR IS LOCATED IN A FIRE RATED ASSEMBLY OR A FIRE SEPARATION HAVING A FIRE RESISTANCE RATING. PROVIDE ACCESS DOORS WHICH ARE ULC LISTED FOR THE REQUIRED FIRE RESISTANCE RATING ALLOWED BY THE ONTARIO BUILDING CODE.	<u>CONDUCTORS &amp; RACEWAYS:</u>		7.1.	MONITOR MODULES OF SINGLE, DUAL OR MULTI-ZONE TYPE FOR CONNECTION AND SUPERVISION OF ALARM AND SUPERVISORY DEVICES AS INDICATED ON PLANS.	<u>FIRESTOPPING AND SMOKE SEAL:</u>	
10.	PROVIDE DRIP SHIELDS FOR ALL EQUIPMENT INCLUDING PANELS, TRANSFORMERS, DATA RACK, ETC MOUNTED IN SPRINKLERED AREAS.	1.	USE RW90 COPPER CONDUCTORS CSA APPROVED FOR THE APPLICATION. CONDUCTORS IN UNDERGROUND RACEWAYS TO BE RW100. SIZE THE CONDUCTORS SO THAT THE MAXIMUM BRANCH CIRCUIT VOLTAGE DROP DOES NOT EXCEED 3% MINIMUM CONDUCTOR SIZE IS #12 AWG UNLESS OTHERWISE INDICATED.	7.2.	ISOLATION MODULES TO OPEN CIRCUIT IF FAULT DETECTED.	1.	PROVIDE A ULC LISTED FIRESTOP SYSTEM TO SEAL AROUND ALL PIPING, TUBING, DUCTS, CONDUITS, ELECTRICAL WIRES AND CABLES, AND OTHER SIMILAR ELECTRICAL SERVICES WHICH PENETRATE PART OF A BUILDING ASSEMBLY REQUIRED TO HAVE A FIRE RESISTANCE RATING OR A FIRE SEPARATION. REFER TO ARCHITECTURAL DRAWINGS FOR BUILDINGS ASSEMBLY AND FIRE SEPARATION TYPES AND LOCATIONS.
11.	TOUCH-UP ALL SHOP PAINTED EQUIPMENT DAMAGED IN TRANSIT OR DURING INSTALLATION TO MATCH ORIGINAL SHOP FINISH.	2.	DESIGN IS BASED ON COPPER CONDUCTORS. ALUMINUM CONDUCTORS ARE NOT PERMITTED ON THIS PROJECT.	8.	ACCEPTABLE MANUFACTURERS INCLUDE: EST.	2.	FOR ALL PENETRATIONS THROUGH HORIZONTAL FIRE SEPARATIONS, REQUIRED TO HAVE A FIRE RESISTANCE RATING. USE FIRESTOP SYSTEMS WITH A FT RATING NOT LESS THAN THE FIRE RESISTANCE RATING FOR THE FIRE SEPARATION. THIS INCLUDES THE SEALING OF ANY SLEEVES PROVIDED FOR FUTURE USES. IN ALL OTHER LOCATIONS, USE FIRESTOP SYSTEMS WITH A F RATING NOT LESS THAN THE FIRE PROTECTION RATING REQUIRED FOR CLOSURES IN THE BUILDING ASSEMBLY. REQUIRED TO HAVE A FIRE RESISTANCE RATING, OR IN THE FIRE SEPARATION.
12.	AVOID ACCUMULATION OF DEBRIS AS THE WORK PROGRESSES. ON COMPLETION OF THE CONSTRUCTION AND PRIOR TO THE FINAL INSPECTION AND ACCEPTANCE BY THE OWNER, CLEAN UP AND REMOVE FROM THE SITE ALL SCRAP MATERIALS RESULTING FROM THE WORK OF THIS TRADE.	3.	ALL CONDUCTORS ARE TO BE INSTALLED IN RACEWAYS AS DESCRIBED BELOW:	9.	FIRE ALARM WIRING INSTALLED IN CONDUIT TO SATISFY MANUFACTURERS REQUIREMENT AND ELECTRICAL SAFETY CODE. IN HIGH RISE BUILDINGS WIRING TO BE FIRE RESISTANT OR FIRE PROTECTED IN FIRE RATED ENCLOSURE AS INDICATED ON DRAWINGS AND AS FOLLOWS: WIRING PASSING THROUGH A FLOOR AREA OR FIRE RATED SHAFT THAT SERVES FIRE OR SUPERVISORY ALARM INITIATION OR ALARM NOTIFICATION DEVICES SHALL BE MINIMUM 1 HOUR FIRE PROTECTED OR RESISTANT FROM FIRE RATED ROOM HOUSING SOURCE PANEL TO FLOOR AREA CONTAINING DEVICES SERVED. WIRING USED TO CONTROL THE OPERATION OF PRESSURIZATION, SMOKE CONTROL OR SMOKE VENTING FANS SHALL BE 2 HOUR FIRE PROTECTED OR RESISTANT FROM FIRE RATED ROOM HOUSING SOURCE PANEL TO POINT OF CONTROL OF EQUIPMENT INDICATED.	3.	BEFORE STARTING ANY WORK ON SITE, SUBMIT DETAILED SHOP DRAWINGS TO BOTH THE CONSULTANT AND THE LOCAL BUILDING INSPECTION AUTHORITY FOR THEIR REVIEW AND COMMENTS. INCLUDE:
13.	CO-ORDINATE THE WORK OF THIS TRADE WITH ALL OTHER TRADES ON THE JOB SO THAT THE WORK MAY PROGRESS WITHOUT ANY DELAY. SCHEDULE A PHASE DEMOLITION AND NEW WORK TO REDUCE INTERFERENCE AND DOWNTIME OF EXISTING SYSTEMS. NOTIFY OWNER'S REPRESENTATIVE OF ALL DOWNTIME PRIOR TO PROCEEDING WITH WORK.	3.1.	PVC CONDUIT: IN CONCRETE SLAB, UNDERGROUND BURIED, BELOW SLAB ON GRADE OR EXTERIOR EXPOSED SURFACE RACEWAYS.	10.	FIRE ALARM INSTALLATION TO ULC STANDARD S524 AND MANUFACTURERS INSTRUCTIONS:	3.1.	MANUFACTURER'S TECHNICAL PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH SPECIFIC TYPE AND LOCATION OF PENETRATION.
14.	IN AREAS WHERE SPACE IS LIMITED AND MULTIPLE TRADES ARE INSTALLING SERVICES, COORDINATE INSTALLATION OF SERVICES, PREPARE INTERFERENCE DRAWINGS PRIOR TO CONSTRUCTION TO ENSURE INSTALLATION OF ALL SERVICES IS COORDINATED.	3.2.	EMT RACEWAYS: INTERIOR SURFACE RACEWAYS, BRANCH CIRCUIT WIRING FROM PANELS, CONCEALED IN ACCESSIBLE CEILINGS AND INTERIOR WALLS OR IN INTERIOR CONCRETE BLOCK CONSTRUCTION.	10.1.	AS-BUILT DRAWINGS TO INCLUDE ALL FINAL DEVICE LOCATIONS AND ADDRESS NUMBER ON PLANS, ACCURATE ZONE BOUNDARIES ON PLANS AND RISER DIAGRAM UPDATES TO REFLECT FINAL CONNECTION ARRANGEMENTS COVERING EACH ALARM AND SUPERVISORY ZONE, SIGNAL CIRCUIT AND CONTROLLED EQUIPMENT OR DEVICE.	3.2.	CERTIFICATION THAT PROPOSED FIRESTOPPING MATERIALS AND ASSEMBLIES COMPLY WITH CAN4-115-M.
15.	PRIOR TO THE FINAL INSPECTION, CLEAN ALL ELECTRICAL EQUIPMENT. CLEAN ALL CONSTRUCTION DUST AND DIRT FROM INSTALLED EQUIPMENT AT THE END OF THE JOB. REPAIR ANY DAMAGE CAUSED BY THE ELECTRICAL TRADE TO EXISTING BUILDINGS OR EQUIPMENT, ETC TO THE CONSULTANTS SATISFACTION.	3.3.	ARMoured CABLE (BX): FOR FINAL DROPS TO FIXTURES IN CEILING SPACES. (LENGTH NOT TO EXCEED 3M IN THIS APPLICATION) AND FOR EXISTING BLOCK WALLS.	11.	FIRE ALARM VERIFICATION TO ULC STANDARD S537.	3.3.	ULC LISTINGS WITH COPIES OF ULC DATA SHEETS FOR EACH SPECIFIC TYPE AND LOCATION OF PENETRATION.
16.	UPON COMPLETION OF THE WORK, PROVIDE THE FINAL UNCONDITIONAL CERTIFICATE OF ACCEPTANCE FROM THE LOCAL ELECTRICAL SAFETY AUTHORITY INSPECTION OFFICE.	3.4.	SURFACE METAL RACEWAYS (SMR) FOR EXISTING CONSTRUCTION WHERE EXISTING WALLS AND FINISHES ARE TO REMAIN OR NEW SERVICES CANNOT BE FISHED IN EXISTING WALL.	12.	PROVIDE REPORT OF VERIFICATION OF FIRE ALARM SYSTEM TO ENGINEER ON COMPLETION OF WORK. PROVIDE CERTIFICATION OF INSTALLATION TO CANULC - S524.	3.4.	MAKE PENETRATION TYPES AND LOCATIONS ON SET OF WHITE PRINTS. AT COMPLETION OF PROJECT, TRANSFER THIS INFORMATION TO "AS-BUILT" DRAWINGS.
17.	PROVIDE A ONE YEAR GUARANTEE ON ALL MATERIALS, AND LABOUR FROM THE DATE OF ACCEPTANCE BY THE OWNER. COMPLETE ALL WARRANTY REGISTRATION DOCUMENTATION ON BEHALF OF THE BUILDING OWNER. SUBMIT COPIES OF COMPLETED DOCUMENTATION IN OPERATIONS AND MAINTENANCE MANUALS.	3.5.	OBTAIN PERMISSION FROM THE CONSULTANT PRIOR TO INSTALLATION. COLOUR AND SIZE OF RACEWAYS TO BE CONFIRMED WITH CONSULTANT FOR THE SPECIFIC APPLICATION.	<u>SECURITY SYSTEM WIRING AND RACEWAYS:</u>		1.	PROVIDE POWER WIRING FOR ELECTRICALLY OPERATED EQUIPMENT OF OTHER TRADES AS NOTED ON THE DRAWINGS OR DEFINED IN THIS SPECIFICATION. PROVIDE ALL STARTERS AND DISCONNECT SWITCHES FOR A COMPLETE AND OPERATING SYSTEM.
18.	ON MULTI-PHASE FEEDERS AND PANELS, ADJUST THE PHASE LOADING SO AS NOT TO EXCEED A PHASE IMBALANCE OF 10%, LINE TO LINE, UNDER NORMAL OPERATING CONDITIONS OF THE FEEDER OR PANEL.	4.	MINIMUM RACEWAY SIZE FOR EXTERIOR U/G BURIED APPLICATION IS 3/4" (19MM). MINIMUM BURIED DEPTH IS 36" (900MM) BELOW FINISHED GRADE.	1.	PROVIDE A COMPLETE AND TESTED SECURITY WIRING AND RACEWAY SYSTEM. SECURITY DEVICES AND CONTROL PANEL WILL BE PROVIDED BY THE TENANT.	2.	PROVIDE POWER AND WIRING TO THE ELECTRICALLY OPERATED EQUIPMENT AS DETAILED IN WIRING FOR MECHANICAL EQUIPMENT SCHEDULE. THIS LIST DOES NOT DETAIL THE SCOPE OF WORK FOR EACH PIECE OF EQUIPMENT. CO-ORDINATE WITH MECHANICAL CONTRACTOR FOR THE EXACT WORK REQUIREMENTS OF THE EQUIPMENT TO BE SUPPLIED TO THE PROJECT. DO NOT PROCEED WITH THE INSTALLATION OF ANY OF THE ELECTRICAL ROUGH-IN UNTIL THE POWER SUPPLY REQUIREMENTS AND THE POINTS OF CONNECTION HAVE BEEN ESTABLISHED FROM THE SHOP DRAWINGS FOR THE EQUIPMENT OF MECHANICAL CONTRACTOR.
19.	SUBMIT SHOP DRAWINGS IN ELECTRONIC PDF FORMAT FOR THE FOLLOWING EQUIPMENT: BREAKERS, FIRE ALARM DEVICES, EXIT AND EMERGENCY LIGHTING UNITS, ETC. THE SHOP DRAWINGS SHALL BEAR THE NAME OF THE MANUFACTURER, THE MANUFACTURERS CATALOGUE NUMBER AND THE CONSULTANT'S DESIGNATION, ALONG WITH ALL PERTINENT INFORMATION PERTAINING TO THAT SPECIFIC PIECE OF EQUIPMENT.	5.	ALL CONDUIT AND WIRING IS TO BE CONCEALED IN ALL FINISHED AREAS.	2.	PROVIDE SECURITY WIRING TO EACH DOOR LOCATION ON THE PORTABLE WALLS. THIS INCLUDES MAN DOORS, EXIT DOORS, OVERHEAD DOORS AND THE FRONT ENTRANCE DOORS. ALL WIRING TO TERMINATE IN THE SECURITY PANEL AS SHOWN ON FLOOR PLANS.	3.	PROVIDE POWER WIRING TO ALL CONTROL DEVICES SUPPLIED BY MECHANICAL CONTRACTOR AND OPERATING AT 100 VAC OR GREATER.
20.	ALL ELECTRICAL EQUIPMENT SHALL BE MOUNTED PLUMBED TRUE.	6.	ALL BRANCH BREAKERS SHALL BE THERMAL-MAGNETIC TRIP INDICATED, AMBIENT TEMPERATURE COMPENSATED AND BOLTED TO THE BUS BAR.	3.	LABEL EACH WIRE FROM EACH DOOR LOCATION IN THE SECURITY PANEL. PROVIDE A MARKED UP DRAWING INDICATING EACH DOOR WITH ITS DESIGNATION NUMBER AND THE WIRING ROUTING BACK TO THE SECURITY PANEL.	4.	PROVIDE CONTROL WIRING FOR ALL CONTROL DEVICES WITH OPERATING VOLTAGES OF THE CONTROLS GREATER THAN 100VAC.
21.	DEVICE BOXES SHOWN BACK TO BACK SHALL BE OFFSET A MINIMUM OF 305mm (12") TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS.	7.	ALL SURFACE MOUNTED EQUIPMENT SHALL BE MOUNTED ON 19 MM (3/4"), FIRE RATED, PLYWOOD BACKBOARD.	4.	TERMINATE THE SECURITY WIRING AT THE LOCK JAMB SIDE OF THE UPPER DOOR FRAME FOR EACH SINGLE DOOR. AT THE CENTRE MULLION FOR EACH PAIR OF DOUBLE DOORS, WITHIN 12" OF THE BOTTOM OF EACH OVERHEAD DOOR.	5.	PROVIDE RACEWAYS/CONDUITS FOR ALL CONTROL WIRING AS IDENTIFIED ON THE DRAWINGS FOR USE BY MECHANICAL CONTRACTOR. PROVIDE OUTLET BOXES AS DIRECTED BY MECHANICAL CONTRACTOR FOR ALL TERMINAL POINTS IN THE CONTROL SYSTEM. CO-ORDINATE WITH MECHANICAL CONTRACTOR.
22.	AS-BUILT DRAWINGS:	8.	ACCEPTABLE MANUFACTURERS FOR DISTRIBUTION EQUIPMENT INCLUDE: EATON-CUTLER HAMMER, SCHNEIDER CANADA, GENERAL ELECTRIC AND SIEMENS.	5.	WIRING FOR SECURITY SHALL BE CAT 3, 3 PAIR, 24 AWG, WIRING WITH AN FT4 FLAME TEST AND SMOKE DEVELOPMENT RATING FOR THE INSULATION JACKET WHEN EXPOSED IN THE BUILDING AND AN FT6 RATING FOR THE INSULATION JACKET WHEN CONCEALED IN A RETURN AIR CEILING PLENUM.	8.	CLOSEOUT DOCUMENTS
22.1.	MAINTAIN AN ACCURATE RECORD OF DEVIATIONS AND CHANGES FROM CONTRACT DRAWINGS WITH RED LINE MARKINGS. TRANSFER AS-BUILT MARK-UPS TO DIGITAL DRAWING FORMAT. THIS PROCESS SHOULD BE COMPLETED BEFORE THE FINAL INSPECTION BY THE CONSULTANT. SUBMIT TO THE CONSULTANT WITH THE O&M MANUALS AT COMPLETION OF THE PROJECT.	<u>COMMUNICATION RACEWAYS, CABLING, TERMINATIONS AND PATCH PANEL SYSTEM:</u>		6.	WIRE EACH DOOR LOCATION AS A HOME RUN BACK TO THE ELECTRICAL/COMPUTER ROOM IN THE TENANT SPACE. SPLICES AND JOINTS IN CABLES IS NOT PERMITTED BETWEEN THE DOOR AND THE SECURITY PANEL.	8.1.	PROVIDE CERTIFICATE OF VERIFICATION OF LIGHTING CONTROLS SYSTEM TO ENGINEER ON COMPLETION OF WORK. PROVIDE CERTIFICATION OF INSTALLATION TO CONTRACT DOCUMENTS AND REFERENCED OBC SUPPLEMENTARY STANDARD SB-10.
22.2.	FORMAT FILES TO MATCH EXACTLY THE LAYERING SYSTEM AND SYMBOLOGY OF THE CONSULTANT. BIND ALL EXTERNAL REFERENCES.	1.	PROVIDE CABLE MANAGEMENT HARDWARE IN THE CEILING SPACE ABOVE THE LIGHTING SYSTEMS. ROUTE AT HIGH LEVEL BELOW THE BUILDING ROOF JOIST/TRUSS SYSTEMS. ROUTE WIRING TO FOLLOW BUILDING LINES.	7.	SECURITY SYSTEM MOUNTING OF DEVICES, WIRING TERMINATIONS AND CONTROL PANEL ARE BY THE TENANT.		
22.3.	THE AS-BUILT DRAWINGS SHALL HAVE A VALUE OF \$5,000 UNLESS THE ELECTRICAL CONTRACT VALUE IS LESS THAN \$100,000 WHICH SHALL HAVE A \$3,000 VALUE. ONCE AS-BUILT DRAWINGS HAVE BEEN COMPLETED, SUBMITTED AND REVIEWED, PAYMENT WILL BE RELEASED. THIS VALUE IS NOT INCLUDED IN THE AMOUNT REQUIRED BY THE CONSTRUCTION LIEN ACT.	2.	PROVIDE WIRING FOR COMMUNICATIONS OUTLETS INDICATED. PROVIDE 4 PAIR, 24 AWG, SOLID COPPER, TWISTED PAIR, CATEGORY 5E CLASSIFICATION, WIRING WITH FT 4 INSULATION RATING WHERE WIRING IS EXPOSED WITHIN THE BUILDING. WHERE THE WIRING IS LOCATED IN A RETURN AIR CEILING PLENUM THE INSULATION MUST BE CLASSIFIED AS FT6 PLENUM RATED CABLE. TERMINATE THE CABLE AT THE OUTLET IN THE COMMUNICATIONS PORT WITH AN RJ45 FEMALE JACK, OUTLET FACEPLATES - NORDX/CDT, 1 PORT FLUSH OUTLET, AX100335, NORDX/CDT, 2 PORT, FLUSH OUTLET, AX100343, OR EQUAL.	8.	TEST WIRING FOR CONTINUITY FROM DOOR TO SECURITY PANEL AND PROVIDE A LETTER OF VERIFICATION THAT WIRING IS TESTED AND OPERATING PROPERLY. REPLACE ANY WIRING WHICH HAS EVIDENCE OF SHORTS, GROUNDS OR OPENS DURING THE TESTING.		
22.4.	THIS PROJECT UTILIZED THE FOLLOWING DIGITAL FORMAT(S): AUTOCAD/PDF.	3.	PROVIDE WIRING FOR DATA OUTLETS INDICATED. PROVIDE 4 PAIR, 24 AWG, SOLID COPPER, TWISTED PAIR, CATEGORY 5E CLASSIFICATION, WIRING WITH FT 4 INSULATION RATING WHERE WIRING IS EXPOSED WITHIN THE BUILDING. WHERE THE WIRING IS LOCATED IN A RETURN AIR CEILING PLENUM THE INSULATION MUST BE CLASSIFIED AS FT6 PLENUM RATED CABLE. TERMINATE THE CABLE AT THE OUTLET IN THE COMMUNICATIONS PORT WITH AN RJ45 FEMALE JACK, OUTLET FACEPLATES - NORDX/CDT, 1 PORT FLUSH OUTLET, AX100335, NORDX/CDT, 2 PORT, FLUSH OUTLET, AX100343, OR EQUAL.	<u>TRANSFORMERS:</u>			
23.	OPERATION AND MAINTENANCE INSTRUCTION MANUALS:	4.	PROVIDE ALL TESTING OF THE INSTALLED WIRING SYSTEMS TO THE REQUIREMENTS OF A CAT 5E WIRING SYSTEM FOR VOICE COMMUNICATIONS AND OF A CAT 5E FOR THE DATA COMMUNICATIONS. TESTING SHALL BE BY A FACTORY TRAINED, APPROVED AND CERTIFIED INSTALLER. PROVIDE CERTIFICATION DOCUMENTATION TO TENANT ON CLOSE OF CONTRACT.	1.	SECONDARY DISTRIBUTION TRANSFORMERS SHALL BE AS MANUFACTURED BY REX OR APPROVED EQUAL. OF THE TYPE AND VOLTAGES AS SPECIFIED BELOW, WITH KVA RATINGS AS SPECIFIED ON THE DRAWINGS.		
23.1.	PROVIDE PDF COPIES OF COMPLETE OPERATION AND MAINTENANCE INSTRUCTIONS FOR EQUIPMENT FURNISHED UNDER THIS CONTRACT. MANUAL TO BE ORGANIZED WITH BOOKMARKS IN A FORMAT TO MATCH THE SPECIFICATION SECTIONS. ONCE MANUAL IS REVIEWED AND ACCEPTED, PROVIDE PDF VERSION ON ELECTRONIC MEDIA (USB DEVICE OR AS REQUIRED BY OWNER). PROVIDE THREE HARD COPY VERSIONS IN THREE RING BINDERS, COMPLETE WITH INDEX PAGES, INDEXING TABS AND COVER IDENTIFICATION AT FRONT AND SIDE.	5.	PROVIDE AN AS-BUILT DRAWING FOR THE COMPLETE INSTALLATION WITH OUTLET REFERENCE NUMBERS INDICATED ON THE DRAWINGS AT EACH OUTLET LOCATION. PROVIDE A VOICE OUTLET AND A DATA OUTLET AT EACH TELEDATA OUTLET LOCATION INDICATED ON THE PLANS.	1.1.	ENCAPSULATED DRY TYPE: THREE PHASE - TYPE DT, 600/120/208 VAC, 3 PHASE, 60 HZ, OUTDOOR, AIR COOLED, DRY CORE WITH NEMA 4X ENCLOSURE. INSULATION SHALL BE CLASS H, 150 OC, WITH SOUND RATING OF 55 DB OR LESS. IT SHALL HAVE 4-12 10% FCN AND 2 - FCN AND 2 - FCN WITH SOLDERLESS CONNECTOR CLAMPS AS REQUIRED AND KVA RATING AS SHOWN ON DRAWINGS.		
23.2.	MANUALS SHALL INCLUDE THE FOLLOWING INFORMATION:	<u>FIRE ALARM SYSTEM - SINGLE STAGE ADDRESSABLE NON-VOICE:</u>		2.	ALL TRANSFORMERS TO BE K-13 RATED MINIMUM.		
23.2.1.	CONTACT INFORMATION OF CONSULTANTS AND CONTRACTORS,	1.	EXISTING FIRE ALARM SYSTEM IS BY EDWARDS SYSTEM TECHNOLOGY (EST). PROVIDE ADDITIONS AND/OR MODIFICATIONS TO EXISTING FIRE ALARM SYSTEM AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.	3.	COILS TO BE CONTINUOUS WIRING WITHOUT SPLICES EXCEPT FOR TAPS. COIL MATERIAL TO BE COPPER. INTERNAL COIL CONNECTIONS TO BE BRAZED OR PRESSURE TYPE (COPPER).		
23.2.2.	COMPLETE SET OF FINAL PROJECT SHOP DRAWINGS,	2.	CONSULT WITH MANUFACTURER PRIOR TO SUBMISSION OF BIDS AND INCLUDE ALL THE COMPONENTS, WIRING, PROGRAMMING AND TESTING REQUIRED FOR THE ADDITIONS AND/OR MODIFICATIONS INDICATED AND TO COMPLY WITH RELEVANT CODES AND REGULATIONS.	4.	PROVIDE COPPER GROUND BUS AND COPPER CORE GROUNDING STRAP.		
23.2.3.	EMERGENCY LIGHTING TEST FORM AND LETTER,	2.1.	MAINTAIN OR MODIFY EXISTING SEQUENCE OF OPERATION AS INDICATED FOR A FULLY OPERATIONAL SYSTEM.	5.	PROVIDE VIBRATION ISOLATORS BETWEEN THE TRANSFORMER CORE AND ENCLOSURE AND BETWEEN THE ENCLOSURE AND THE MOUNTING SURFACE OR DEVICE.		
23.2.4.	ESA LETTER OF COMPLIANCE,	2.2.	ALL NEW DEVICES AND COMPONENTS CONNECTED TO EXISTING SYSTEM SHALL BE ULC LISTED AND COMPATIBLE WITH THE EXISTING SYSTEM.	6.	TRANSFORMER CONSTRUCTION SHALL CONFORM TO CSA STANDARDS C9-M1981 AND CSA C22.2 NO. 47 AND CSA C80202.		
23.2.5.	CERTIFICATE OF SUBSTANTIAL COMPLETION,						
23.2.6.	FIRE ALARM VERIFICATION REPORT,						
23.2.7.	MANUFACTURER'S INSTALLATION INSTRUCTIONS,						
23.2.8.	MANUFACTURERS MAINTENANCE INSTRUCTIONS,						
23.2.9.	MANUFACTURER'S WARRANTIES AND GUARANTEES, AND						
23.2.10.	COPIES OF ALL TEST DATA AND VERIFICATION CERTIFICATES.						
24.	WHERE THE WORD PROVIDED IS USED IN THESE SPECIFICATIONS OR ON THE DRAWINGS, IT HAS THE MEANING: SUPPLY AND INSTALL, COMPLETE WITH ALL ASSOCIATED MOUNTING HARDWARE AND CONNECTIONS".						



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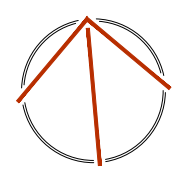
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KEYPLAN

REVISIONS		
NO.	ISSUED FOR	DATE
00	COORDINATION	26.05.20
01	PERMIT / TENDER	26.05.28



NORTH



DESIGN	BML	DRAWN	BML
CHECKED	SPO	REVIEWED	SPO

PROJECT

LDSB KINGSTON  
SECONDARY SCHOOL  
PORTABLES

ADDRESS

145 KIRKPATRICK ST,  
KINGSTON, ON, K7K 2P4

PROJECT NO.

CE-6470

DRAWING TITLE

ELECTRICAL SPECIFICATIONS

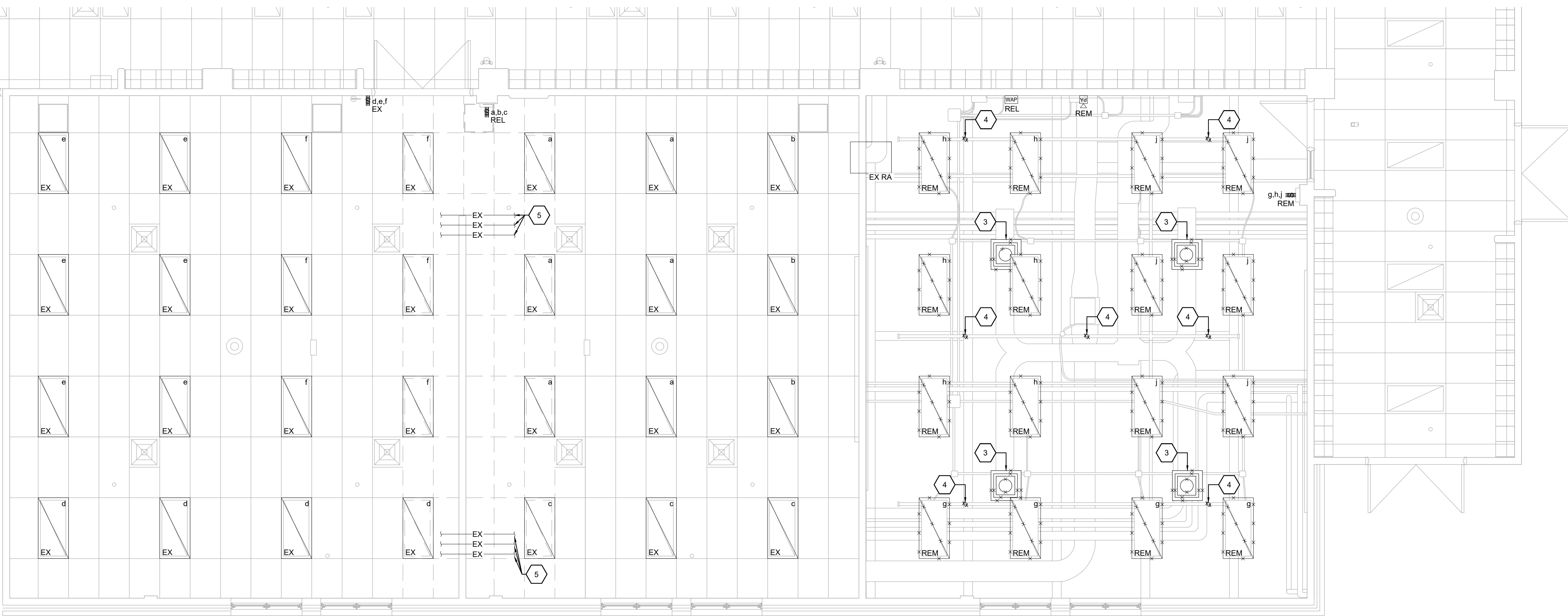
DRAWING NUMBER

E4 OF 4



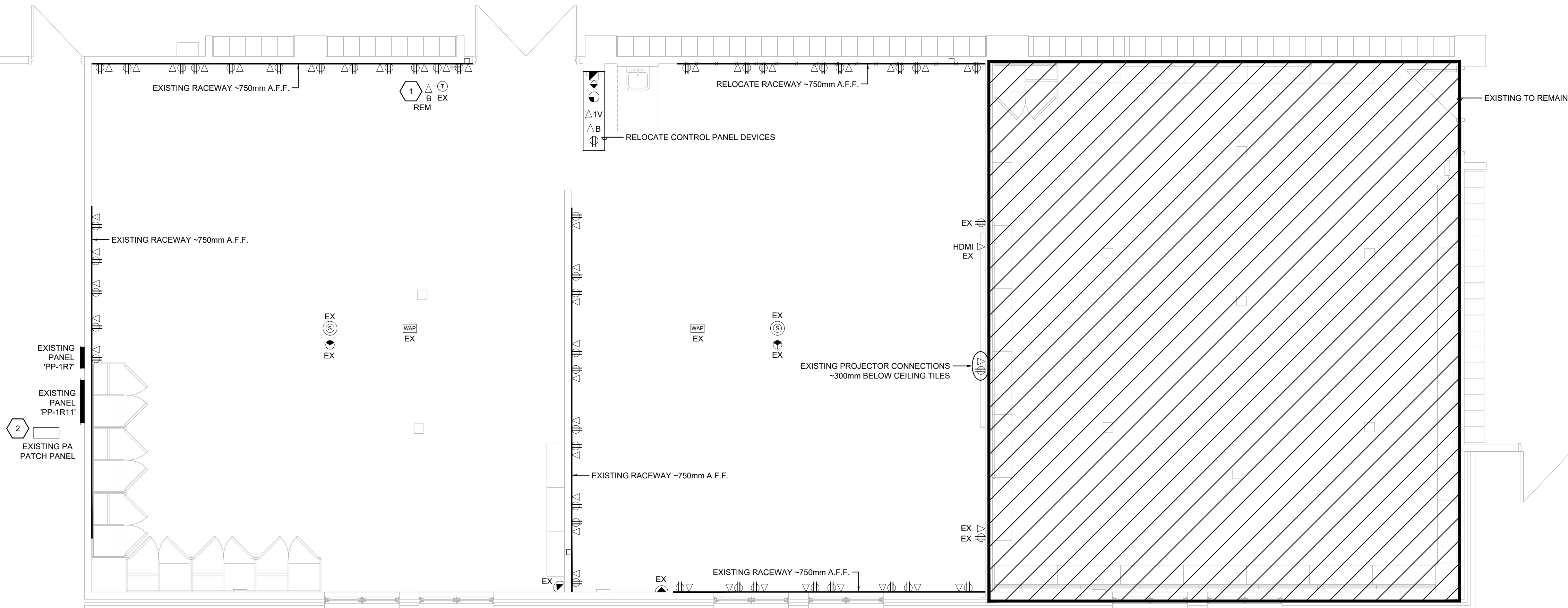
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## CEILING PLAN - REMOVALS

SCALE: 1:50



## FLOOR PLAN - REMOVALS

SCALE: 1:50

DRAWING NOTES (INDICATED WITH HEXAGONS)

1. INDICATED BLANK DATA RECEPTACLE MOUNTED ABOVE RACEWAY IS TO BE REMOVED. RACEWAY IS EXISTING TO REMAIN.
2. CARRY AN ALLOWANCE TO EXPAND THE PA PATCH PANEL IF NECESSARY.
3. REMOVE EXISTING DIFFUSER. ASSOCIATED SUPPLY DUCT TO REMAIN FOR RECONNECTION. MEASURE AND DOCUMENT AIRFLOW AT EXISTING DIFFUSER PRIOR TO ANY REMOVAL.

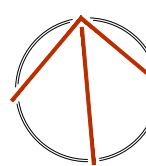
4. EXISTING UPRIGHT SPRINKLER HEAD TO BE REMOVED. EXISTING PIPING TO REMAIN FOR REPLACEMENT HEADS.
5. APPROXIMATE LOCATION OF EXISTING PIPING. REFER TO IMAGE.

## KEYPLAN

## REVISIONS

[illegible]

NORTH



DESIGN	BML/SL	DRAWN	BML/SL
CHECKED	SPO/BL	REVIEWED	SPO/BL

## PROJECT

LDSB KINGSTON  
SECONDARY SCHOOL  
INTERIOR RENOVATIONS

## ADDRESS

145 KIRKPATRICK ST,  
KINGSTON, ON, K7K 2P4

## PROJECT NO.

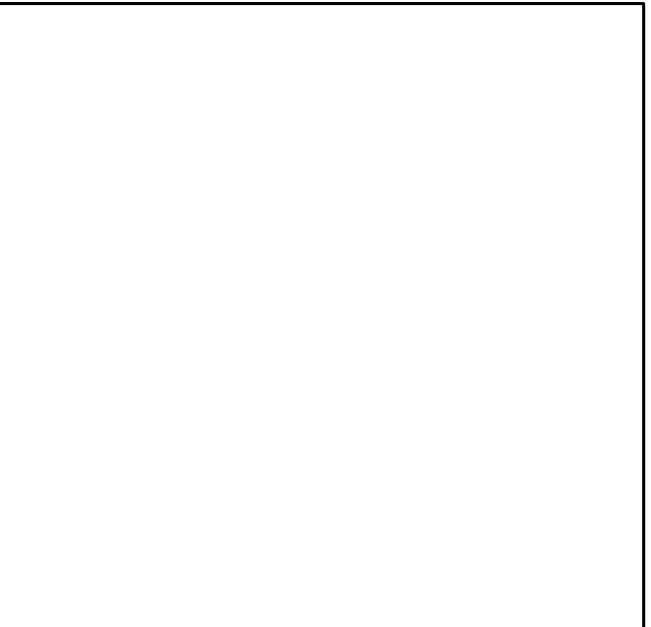
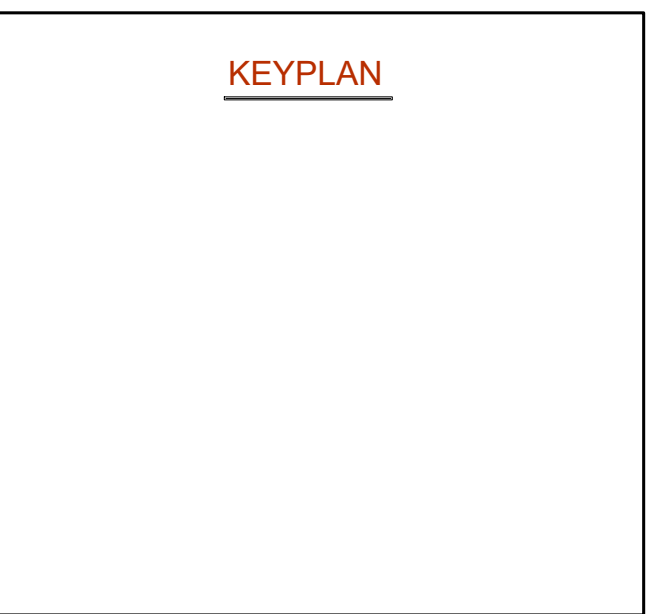
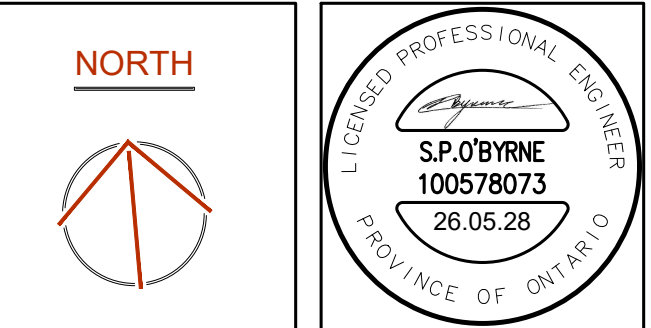
CE-6470

## DRAWING TITLE

## MECHANICAL & ELECTRICAL DEMOLITION PLANS

## DRAWING NUMBER

ME1 OF 3

[illegible]

DESIGN	BML/SL	DRAWN	BML/SL
CHECKED	SPO/BL	REVIEWED	SPO/BL

**PROJECT**

**LDSB KINGSTON  
SECONDARY SCHOOL  
INTERIOR RENOVATIONS**

ADDRESS

145 KIRKPATRICK ST,  
KINGSTON, ON, K7K 2P4

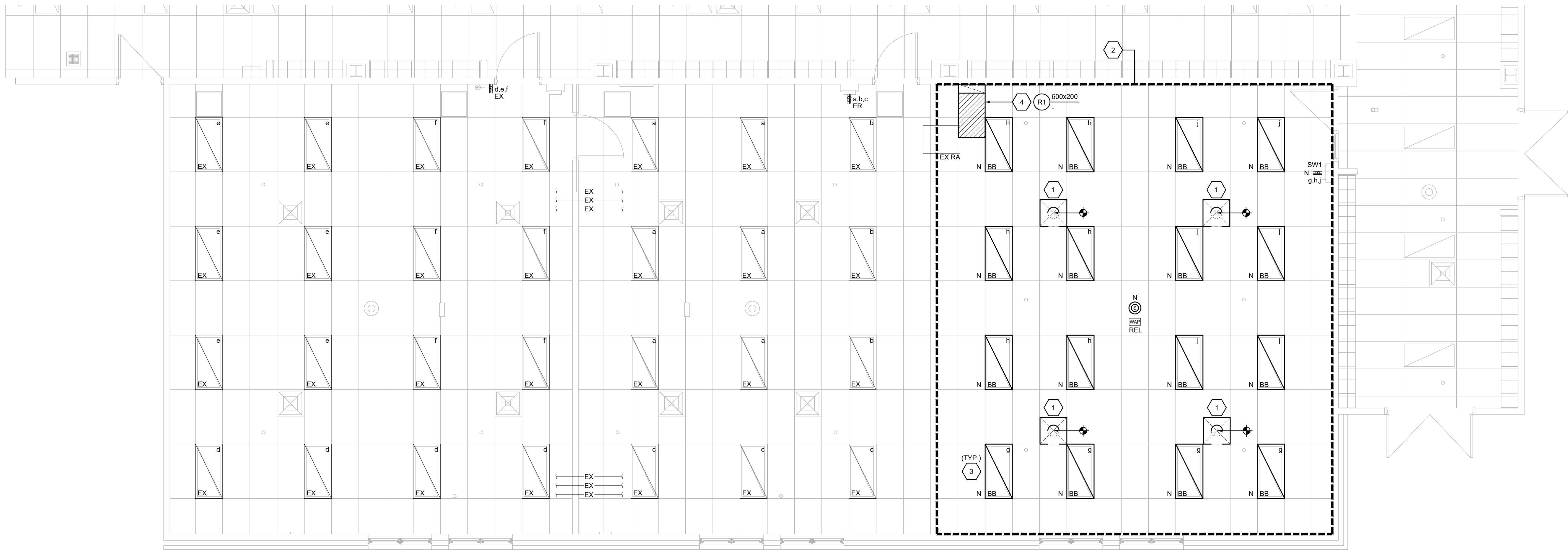
PROJECT NO.

CE-6470

<u>DRAWING TITLE</u>  <b>MECHANICAL &amp; ELECTRICAL PROPOSED PLANS</b>
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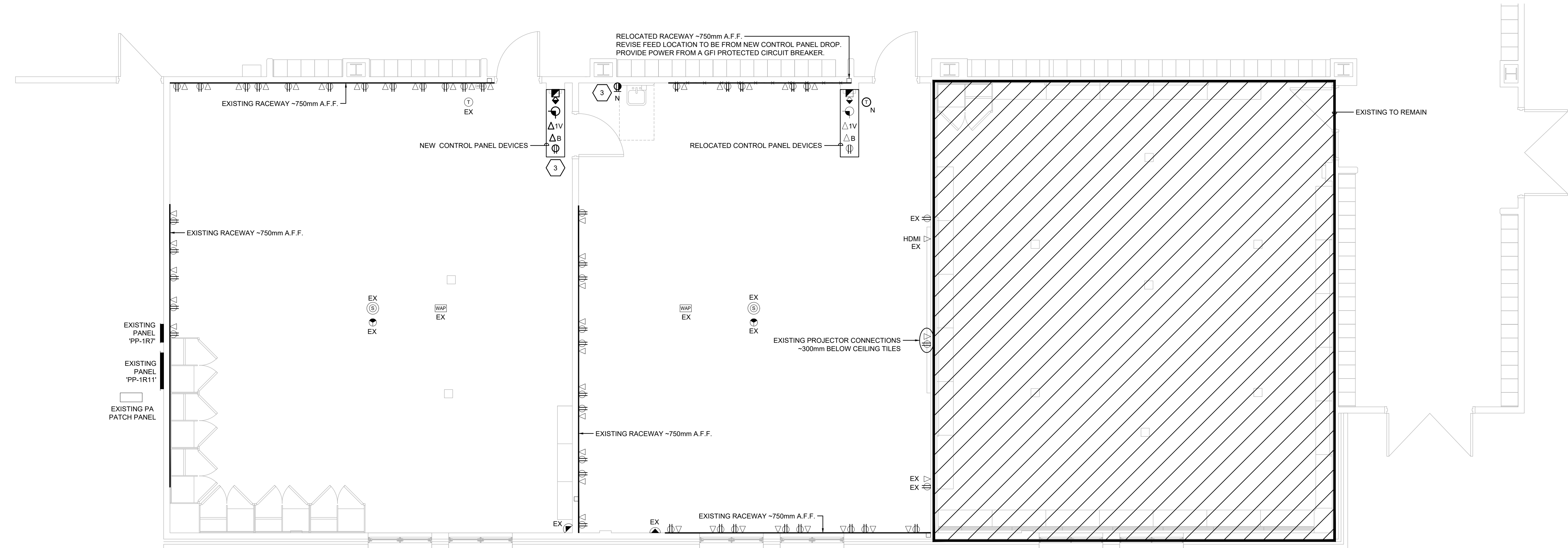
DRAWING NUMBER

ME2 OF 3



## CEILING PLAN - REVISED

SCALE: 1:50



## FLOOR PLANS - REVISED

SCALE: 1:50

### GENERAL NOTES

- COORDINATE PARTITION CONSTRUCTION WITH EXISTING HVAC PIPING AND DUCTWORK. PROVIDE WALL OPENING AND REQUIRED CLEARANCES TO ACCOMMODATE. SEAL WALL PENETRATIONS AROUND PIPING AS REQUIRED.

**DRAWING NOTES (INDICATED WITH HEXAGONS):**

- |  |  |
|--|--|
| 1. BALANCE DIFFUSER TO AIRFLOW MEASURED AT AS-FOUND CONDITIONS. EXISTING DUCTWORK TO BE EXTENDED OR MODIFIED AS REQUIRED TO FIT REPLACEMENT DIFFUSERS.             | PANEL 'PP-1R11'. ALLOW FOR EXTENSION OF WIRING TO NEW FIXTURE LOCATIONS. MATCH MOUNTING HEIGHTS OF DEVICES IN CONTROL PANEL TO EXISTING. |
| 2. PROVIDE RECESSED SPRINKLER HEADS IN THIS AREA. COORDINATE WITH CEILING GRID. EXTEND/TRIM EXISTING SPRINKLER PIPING TO ACCOMMODATE SPRINKLER HEADS AS NECESSARY. | 4. INSTALL ACOUSTICALLY LINED ELBOW USING 25mm THICK ACOUSTIC DUCT LINER. MINIMUM 1000mm (3'-3") LONG EXTENSION. REFER TO DETAIL.        |



