

ELECTRICAL LINE TYPE LEGEND	
SYMBOL	DESCRIPTION
	DEMOLITION
	EXISTING
	NEW

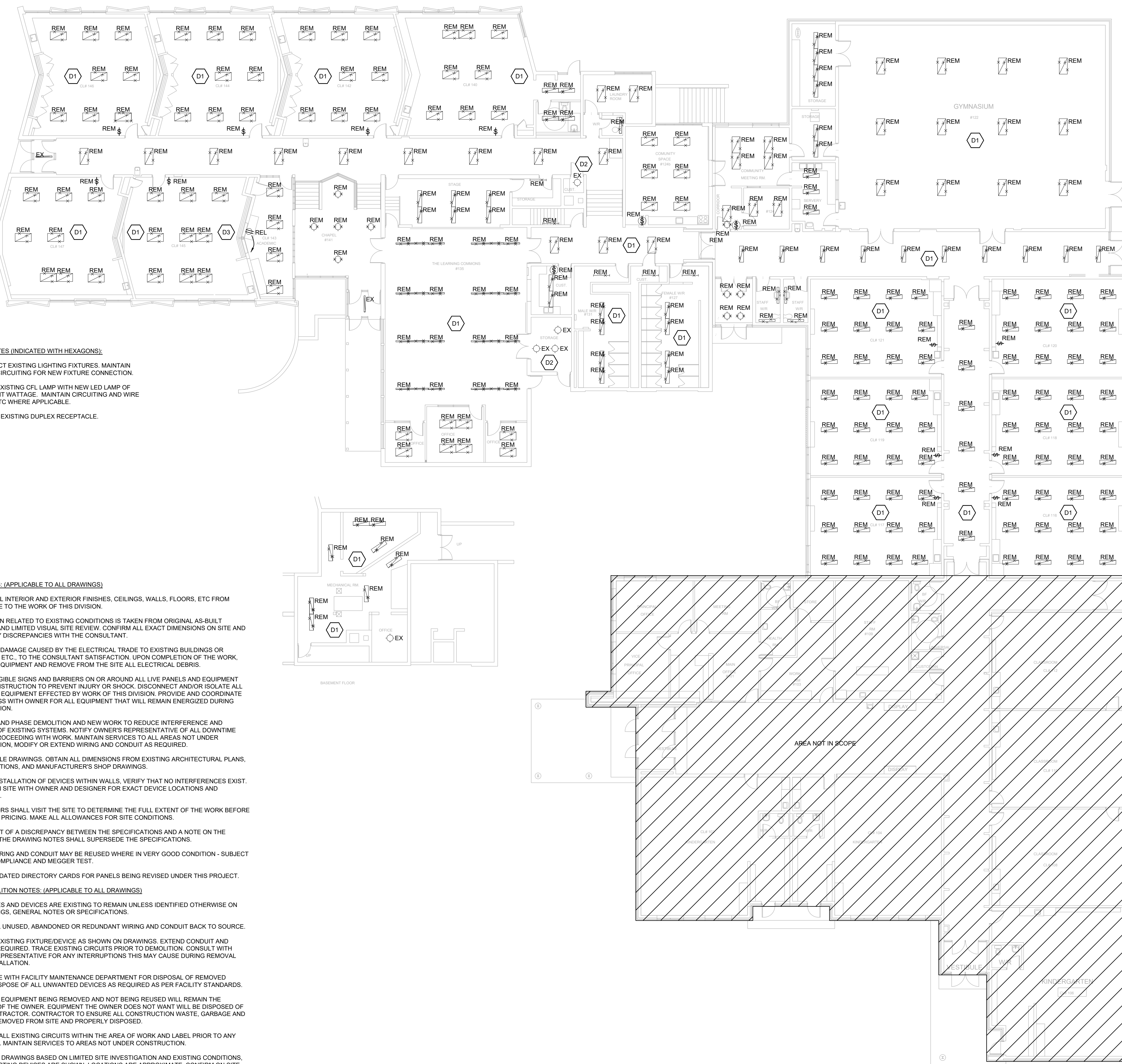
FIRE ALARM LEGEND	
SYMBOL	DESCRIPTION
	REMOTE ASPIRATION SMOKE DETECTOR
	DUCT SMOKE DETECTOR

EQUIPMENT AND CONNECTION LEGEND	
SYMBOL	DESCRIPTION
	ELECTRICAL PANEL
	DISCONNECT
	CONNECTION TO MOTOR OR MOTORIZED PIECE OF EQUIPMENT
	MAGNETIC STARTER / CONTACTOR
	COMBINATION STARTER / CONTACTOR
	MANUAL MOTOR SWITCH
	DIRECT CONNECTION
	TIME CLOCK
	ELECTRICAL THERMOSTAT
	RELAY

RECEPTACLE LEGEND	
SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE
	GFI RECEPTACLE

LIGHTING LEGEND	
SYMBOL	DESCRIPTION
	WALL MOUNT LINEAR LIGHT FIXTURE
	RECTANGULAR LIGHT FIXTURE
	LINEAR LIGHT FIXTURE
	CEILING OR PENDANT LIGHT FIXTURE
	POT LIGHT/LAMP HOLDER
	DIMMER SWITCH NLIGHTAIR: IPDOLA DX WH G2

ELECTRICAL TAG/NAME LEGEND	
SYMBOL	DESCRIPTION
WP	WEATHERPROOF
EX	EXISTING TO REMAIN
REM	REMOVE EXISTING
REL	RELOCATE EXISTING
ERL	EXISTING RELOCATED



- DEMOLITION NOTES (INDICATED WITH HEXAGONS):**
- D1 DISCONNECT EXISTING LIGHTING FIXTURES. MAINTAIN EXISTING CIRCUITING FOR NEW FIXTURE CONNECTION.
 - D2 REPLACE EXISTING CFL LAMP WITH NEW LED LAMP OF EQUIVALENT WATTAGE. MAINTAIN CIRCUITING AND WIRE GUARDS ETC WHERE APPLICABLE.
 - D3 RELOCATE EXISTING DUPLEX RECEPTACLE.

- 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 WITH THE CONSULTANT.
 - REPAIR ANY DAMAGE CAUSED BY THE ELECTRICAL TRADE TO EXISTING BUILDINGS OR EQUIPMENT, ETC. TO THE CONSULTANT'S 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.
 - EXISTING WIRING AND CONDUIT MAY BE REUSED WHERE IN VERY GOOD CONDITION - SUBJECT TO CODE COMPLIANCE AND MEGGER TEST.
 - PROVIDE UPDATED DIRECTORY CARDS FOR PANELS BEING REVISED UNDER THIS PROJECT.

- 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.
 - DEMOLITION DRAWINGS BASED ON LIMITED SITE INVESTIGATION AND EXISTING CONDITIONS. NOT ALL EXISTING DEVICES ARE SHOWN. LOCATIONS ARE APPROXIMATE. CONFIRM ON SITE WITH EXISTING CONDITIONS ALL DEVICE LOCATIONS AND TYPES. BRING ANY DISCREPANCIES BETWEEN THIS DRAWING AND ACTUAL SITE CONDITIONS TO THE ATTENTION OF THE CONSULTANT. INCLUDE REMOVAL AND REPLACEMENT IN PRICE SUBMITTED.
 - REMOVE ALL EXISTING DEVICES SHOWN ON THIS DRAWING UNLESS INDICATED OTHERWISE.
 - ALL EXISTING DEVICES AND EQUIPMENT IN HATCHED AREAS ARE TO REMAIN.

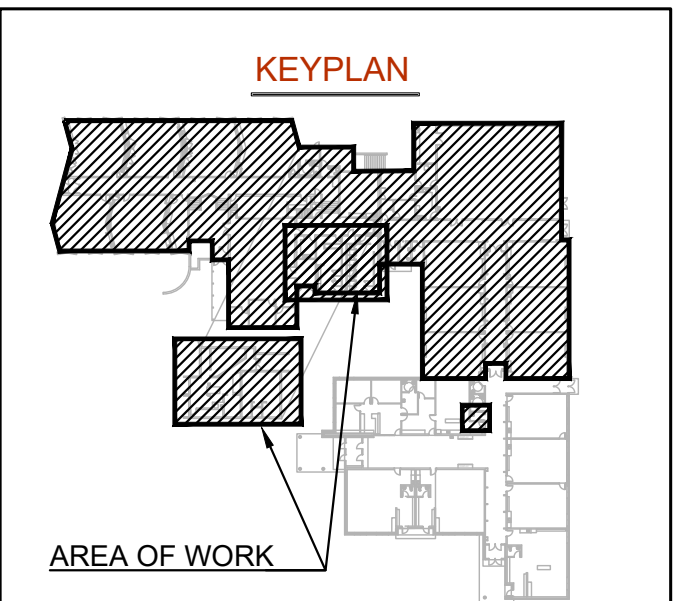
Callidus Engineering
We Make Buildings Work

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

KITCHENER: 210-137 Glasgow Street, Office #141
Kitchener, ON N2G 4X8 P 519.472.7640

W www.callidus.ca E info@callidus.ca



REVISIONS

NO.	ISSUED FOR	DATE
00	50% PROGRESS SUBMISSION	26.01.21
01	90% PROGRESS SUBMISSION	26.02.04
02	TENDER SUBMISSION	26.03.03

NORTH

LICENSED PROFESSIONAL ENGINEER
A. D. DIRKS
100502627
2016-03-03
PROVINCE OF ONTARIO

DESIGN	ADM	DRAWN	ADM
CHECKED	AD	REVIEWED	AD

PROJECT
ST. ANNE CAMBRIDGE

ADDRESS
127 ELGIN ST. NORTH,
CAMBRIDGE, ON

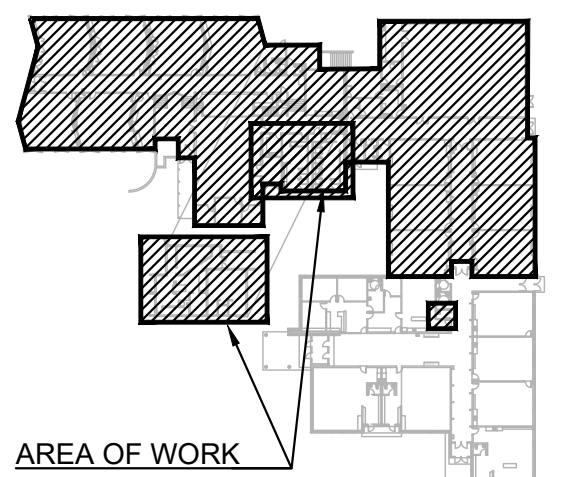
PROJECT NO.
CE-6380

DRAWING TITLE
LIGHTING DEMOLITION
LAYOUT, NOTES AND
LEGENDS

DRAWING NUMBER
E1 OF 5

FLOOR PLAN - LIGHTING DEMOLITION
SCALE: 1:150

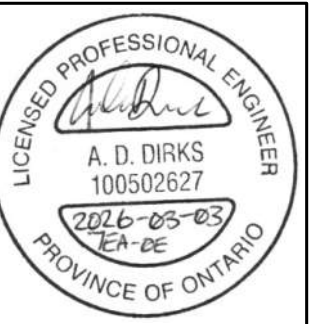
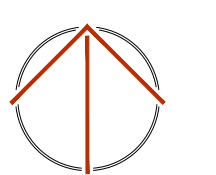
KEY PLAN



REVISIONS

NO.	ISSUED FOR	DATE
00	50% PROGRESS SUBMISSION	26.01.21
01	90% PROGRESS SUBMISSION	26.02.04
02	TENDER SUBMISSION	26.03.03

NORTH



DESIGN	ADM	DRAWN	ADM
CHECKED	AD	REVIEWED	AD

PROJECT

ST. ANNE CAMBRIDGE

ADDRESS

127 ELGIN ST. NORTH,
CAMBRIDGE, ON

PROJECT NO.

CE-6380

DRAWING TITLE

FLOOR PLAN - PROPOSED
LIGHTING LAYOUT SCHEDULES
AND NOTES

DRAWING NUMBER

E2 OF 5



DRAWING NOTES (INDICATED WITH HEXAGONS):

- REPLACE EXISTING CFL LAMP WITH NEW LED LAMP OF EQUIVALENT WATTAGE. MAINTAIN CIRCUITING AND WIRE GUARDS ETC WHERE APPLICABLE.
- PROVIDE NEW DIMMER SWITCH AS INDICATED.
- RELOCATE EXISTING DUPLEX RECEPTACLE AS INDICATED. EXTEND EXISTING WIRING AS REQUIRED TO SUIT NEW RECEPTACLE LOCATION.

LIGHTING FIXTURE SCHEDULE

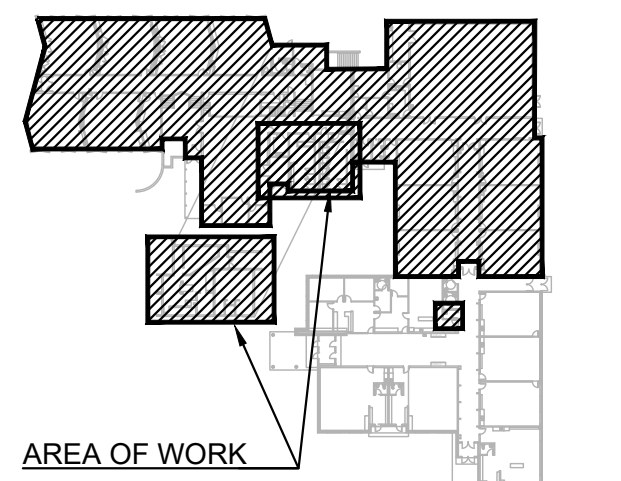
FIXTURE TAG	DESCRIPTION AND MODEL SERIES	INPUT	LIGHT SOURCE	MOUNTING
AA	2X4 BACK LIT LED FIXTURE C/W SMOOTH ACRYLIC LENS, SELECTABLE LUMEN OUTPUT 4000/5000/6000 80 CRI, SELECTABLE COLOUR TEMPERATURE, 0-10V DIMMING, SURFACE MOUNT KIT LITHONIA: CPX 2X4 AL08 80CRI SWW7 ASWM MVOLT NLTAIR2	120V 35W	LED 4000L 4000K 80CRI	SURFACE
AB	1X4 BACK LIT LED FIXTURE C/W SMOOTH ACRYLIC LENS, SELECTABLE LUMEN OUTPUT 2500/3200/4000 80 CRI, SELECTABLE COLOUR TEMPERATURE, 0-10V DIMMING, SURFACE MOUNT KIT LITHONIA: CPX 1X4 AL07 80CRI SWW7 ASWM MVOLT NLTAIR2	120V 35W	LED 3200L 4000K 80CRI	SURFACE
AC	4' LED INDUSTRIAL LED FIXTURE C/W 4000 LUMEN OUTPUT 80 CRI, 4000K, SMOOTH ACRYLIC FROSTED CONTOURED DIFFUSE LENS DAY-BRITE: FSI 4 40L 840 UNV	120V 30W	LED 4086L 4000K 80CRI	SUSPENDED
AD	4' LED INDUSTRIAL LED FIXTURE C/W 4000 LUMEN OUTPUT 80 CRI, 4000K, SMOOTH ACRYLIC FROSTED CONTOURED DIFFUSE LENS DAY-BRITE: FSI 4 40L 835 UNV	120V 30W	LED 4086L 4000K 80CRI	SURFACE
BA	2X4 BACK LIT LED FIXTURE C/W SMOOTH ACRYLIC LENS, SELECTABLE LUMEN OUTPUT 4000/5000/6000 80 CRI, SELECTABLE COLOUR TEMPERATURE, 0-10V DIMMING, SURFACE MOUNT KIT. LITHONIA: CPX 2X4 AL08 80CRI SWW7 ASWM MVOLT NLTAIR2	120V 35W	LED 5000L 4000K 80CRI	SURFACE
BB	1X4 BACK LIT LED FIXTURE C/W SMOOTH ACRYLIC LENS, SELECTABLE LUMEN OUTPUT 2500/3200/4000 80 CRI, SELECTABLE COLOUR TEMPERATURE, 0-10V DIMMING, LITHONIA: CPX 1X4 AL07 80CRI SWW7 ASWM MVOLT NLTAIR2	120V 25W	LED 3200L 4000K 80CRI	RECESSED
BC	2X4 BACK LIT LED FIXTURE C/W SMOOTH ACRYLIC LENS, SELECTABLE LUMEN OUTPUT 2500/3200/4000 80 CRI, SELECTABLE COLOUR TEMPERATURE, 0-10V DIMMING, LITHONIA: CPX 2X4 AL07 80CRI SWW7 ASWM MVOLT NLTAIR2	120V 35W	LED 3200L 4000K 80CRI	RECESSED
EA	6 INCH LED DOWNLIGHT C/W 4800 LUMEN OUTPUT, 90CRI, 4000K WIDE DISTRIBUTION 0-10V DIMMING WHITE TRIM FIMISH LIGHTOLIER: 6R R 48 940 W Z10U C6L R DL WH	120V 35W	LED 4800L 3500K 90CRI	RECESSED
EB	6 INCH LED DOWNLIGHT C/W 2000 LUMEN OUTPUT, 90CRI, 4000K WIDE DISTRIBUTION 0-10V DIMMING WHITE TRIM FIMISH LIGHTOLIER: 6R R 20 940 W Z10U C6L R DL WH	120V 15W	LED 2000L 4000K 90CRI	RECESSED
FF	4' WALL MOUNTED LED DIRECT/INDIRECT FIXTURE C/W 3000 LUMEN OUTPUT 80CRI 4000K CURVED LINEAR FACETED REFRACTOR LENS, PIR OCCUPANCY SENSOR, WHITE FINISH. LITHONIA: WL4 30L MVOLT EZ1 LP840 NLTAIR2 NES7	120V 28W	LED 3000L 4000K 80CRI	SURFACE WALL MATCH EXISTING MOUNTING HEIGHT
GG	SUSPENDED LED FIXTURE C/W 7500 LUMEN OUTPUT 90 CRI, 4000K 0-10V DIMMING ACRYLIC DIFFUSER, 75% DOWNLIGHT LEDALITE: 24 G5 L A A G 12 E D T N NN A1 24	120V 33W	LED 7500L 4000K 90CRI	SUSPENDED MATCH EXISTING FIXTURE HEIGHT
HH	2X4 LED SUSPENDED HIGHBAY FIXTURE C/W 18,000 LUMEN OUTPUT, 80 CRI, 4000K, WIDE ISTRIBUTION. DAY-BRITE: FBZ 18L 840 UNV W S	120V 101W	LED 17,000L 4000K 80CRI TYPE # DIST.	SUSPENDED, MATCH MOUNTING HEIGHT OF EXISTING FIXTURES.

- NOTES:**
- PROVIDE ALL NECESSARY MOUNTING HARDWARE FOR A COMPLETE INSTALLATION.
 - COORDINATE WITH ARCHITECTURAL CEILING PLAN TO CONFIRM CEILING MATERIAL AND MOUNTING TYPE.
 - FIXTURES TO BE SET TO 4000K AND MEDIUM LUMEN OUTPUT SELECTION.

FLOOR PLAN - PROPOSED LIGHTING LAYOUT

SCALE: 1:150

KEYPLAN

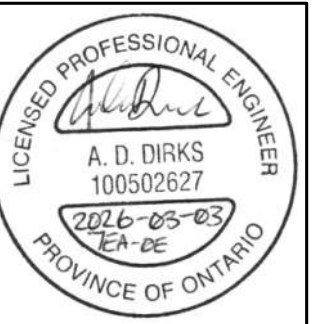
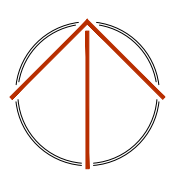


AREA OF WORK

REVISIONS

NO.	ISSUED FOR	DATE
00	50% PROGRESS SUBMISSION	26.01.21
01	90% PROGRESS SUBMISSION	26.02.04
02	TENDER SUBMISSION	26.03.03

NORTH



DESIGN	ADM	DRAWN	ADM
CHECKED	AD	REVIEWED	AD

PROJECT

ST. ANNE CAMBRIDGE

ADDRESS

127 ELGIN ST. NORTH,
CAMBRIDGE, ON

PROJECT NO.

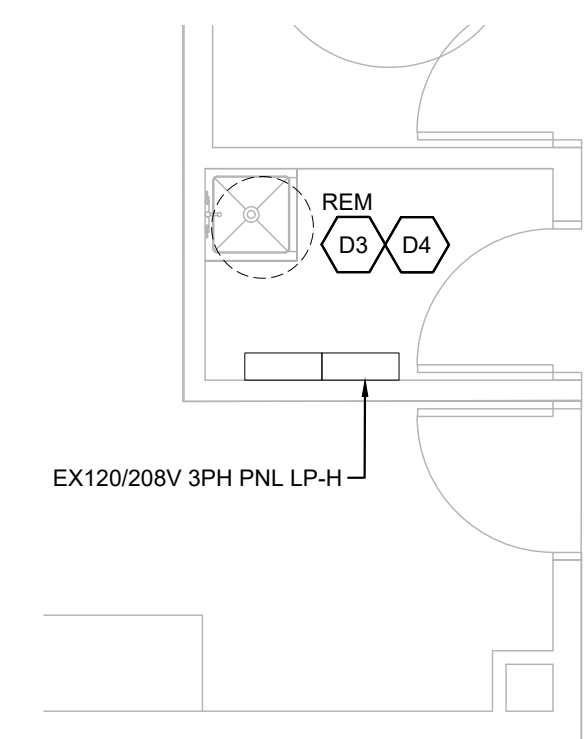
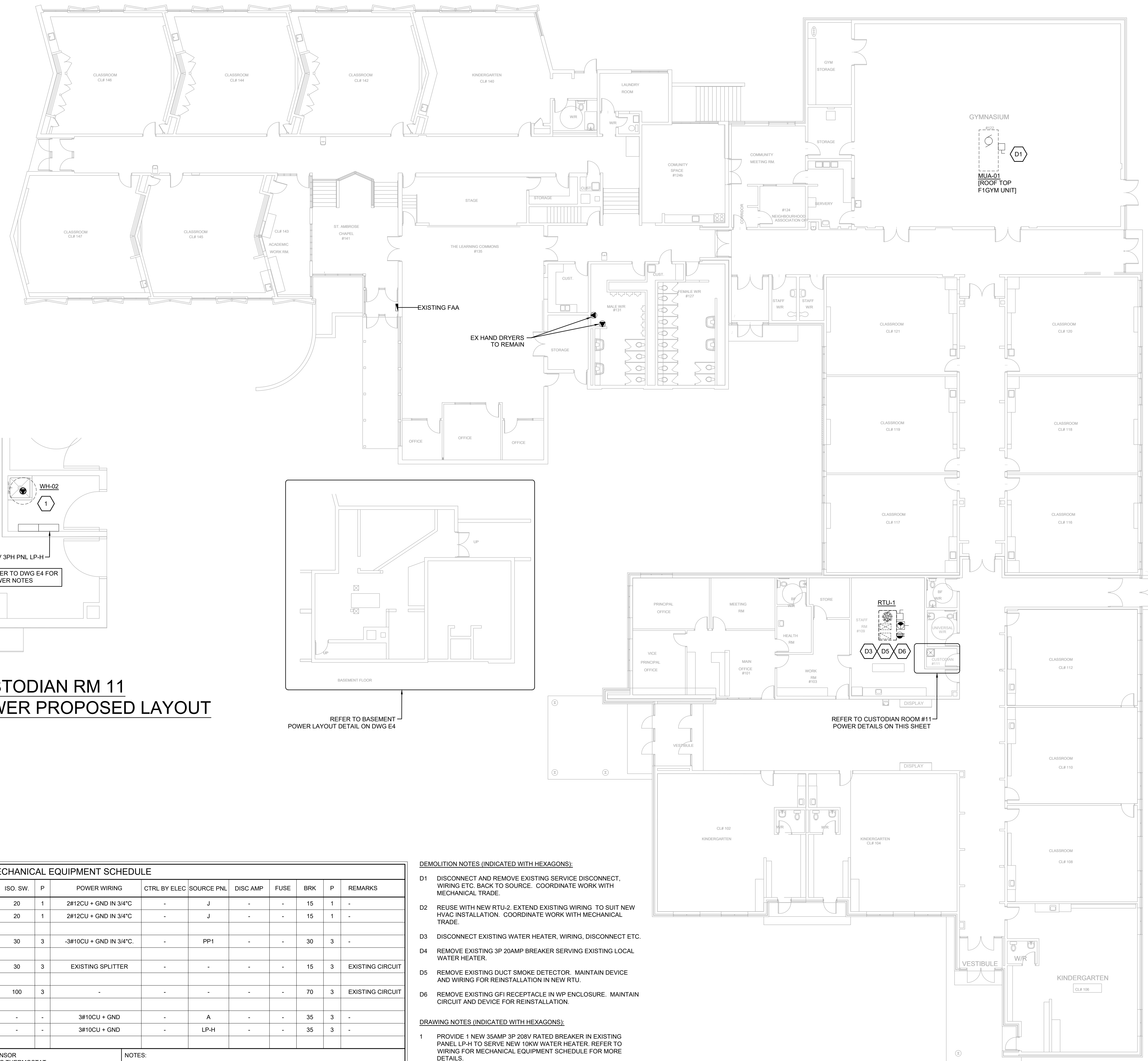
CE-6380

DRAWING TITLE

GROUND FLOOR - DEMOLITION
AND PROPOSED POWER
LAYOUT SCHEDULES AND
NOTES

DRAWING NUMBER

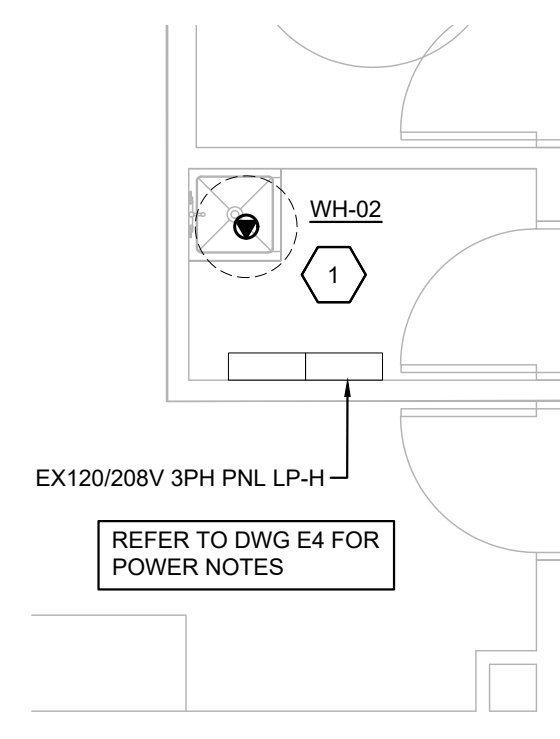
E3 OF 5



PLAY

**CUSTODIAN RM 11
POWER DEMOLITION LAYOUT**

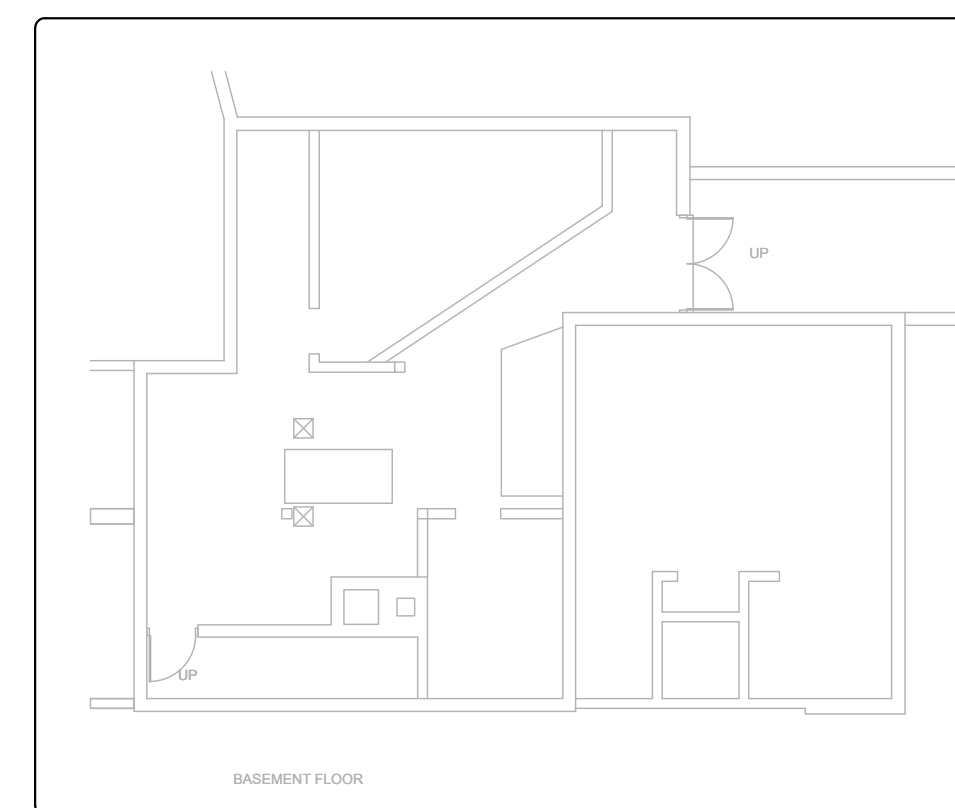
SCALE: 1:50



PLAY

**CUSTODIAN RM 11
POWER PROPOSED LAYOUT**

SCALE: 1:50



REFER TO BASEMENT
POWER LAYOUT DETAIL ON DWG E4

WIRING FOR MECHANICAL EQUIPMENT SCHEDULE												
LABEL	DESCRIPTION	LOCATION	VOLT	PH	HP	WATTS	MCA	ISO. SW.	P	POWER WIRING	CTRL BY ELEC	REMARKS
B-101	BOILER	BASEMENT	120	1	-	-	5.4	20	1	2#12CU + GND IN 3/4"C	-	J
B-102	BOILER	BASEMENT	120	1	-	-	5.4	20	1	2#12CU + GND IN 3/4"C	-	J
MUA-01	MAKE-UP AIR	ROOF	208	3	-	-	18.85	30	3	-3#10CU + GND IN 3/4"C	-	PP1
P-01/P-02	PUMP	BASEMENT	208	3	-	-	10.6	30	3	EXISTING SPLITTER	-	-
RTU-01	ROOF TOP UNIT	ROOF	208	3	-	-	56	100	3	-	-	EXISTING CIRCUIT
WH-01	WATER HEATER	BASEMENT	208	3	-	10000	-	-	-	3#10CU + GND	-	A
WH-02	WATER HEATER	CUSTODIAN RM	208	3	-	10000	-	-	-	3#10CU + GND	-	LP-H

ABBREVIATIONS:		NOTES:	
CONT	CONTACTOR, SIZE AS INDICATED	OS	OCCUPANCY SENSOR
COMB	COMBINATION DISCONNECT & STARTER	RAT	REVERSE ACTING THERMOSTAT
FVNR	FULL VOLTAGE NON REVERSING STARTER	REL	RELAY
HOA	HAND OFF AUTO SWITCH C/W ON PILOT LIGHT	RFB	REMOTE PUSH BUTTON OFF
MAN	MANUAL MOTOR SWITCH C/W PILOT LIGHT	SW	LIGHT SWITCH
		TC	7 DAY PROGRAMMABLE TIMECLOCK
		TS	TIMER SWITCH
		WP	WEATHER PROOF

1.	INSTALL ALL WIRING IN CONDUIT WITH SHORT LENGTH LIQUID TIGHT FLEX TO MOTOR OR VIBRATING EQUIPMENT.
2.	WIRE THROUGH TC OR RAT SUPPLIED BY MECHANICAL TRADE.

DEMOLITION NOTES (INDICATED WITH HEXAGONS):

- D1 DISCONNECT AND REMOVE EXISTING SERVICE DISCONNECT, WIRING ETC. BACK TO SOURCE. COORDINATE WORK WITH MECHANICAL TRADE.
- D2 REVISE WITH NEW RTU-2. EXTEND EXISTING WIRING TO SUIT NEW HVAC INSTALLATION. COORDINATE WORK WITH MECHANICAL TRADE.
- D3 DISCONNECT EXISTING WATER HEATER, WIRING, DISCONNECT ETC.
- D4 REMOVE EXISTING 3P 20AMP BREAKER SERVING EXISTING LOCAL WATER HEATER.
- D5 REMOVE EXISTING DUCT SMOKE DETECTOR. MAINTAIN DEVICE AND WIRING FOR REINSTALLATION IN NEW RTU.
- D6 REMOVE EXISTING GFI RECEPTACLE IN WP ENCLOSURE. MAINTAIN CIRCUIT AND DEVICE FOR REINSTALLATION.

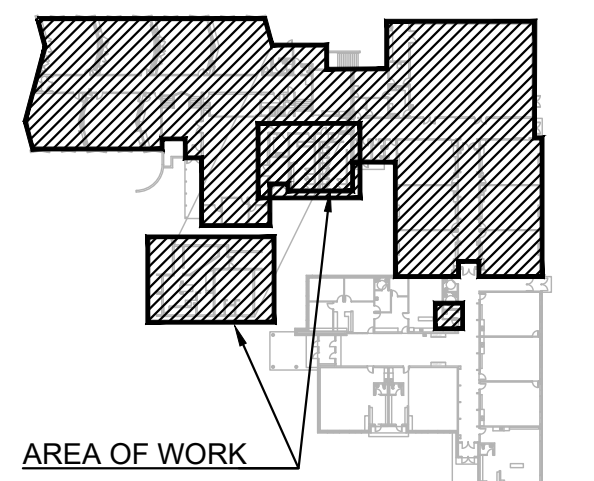
DRAWING NOTES (INDICATED WITH HEXAGONS):

- 1 PROVIDE 1 NEW 35AMP 3P 208V RATED BREAKER IN EXISTING PANEL LP-H TO SERVE NEW 10KW WATER HEATER. REFER TO WIRING FOR MECHANICAL EQUIPMENT SCHEDULE FOR MORE DETAILS.

GROUND FLOOR - POWER DEMOLITION LAYOUT

SCALE: 1:150

KEYPLAN

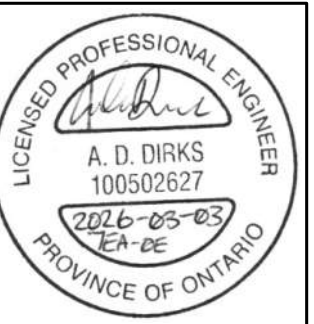
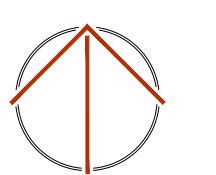


AREA OF WORK

REVISIONS

NO.	ISSUED FOR	DATE
00	50% PROGRESS SUBMISSION	26.01.21
01	90% PROGRESS SUBMISSION	26.02.04
02	TENDER SUBMISSION	26.03.03

NORTH



DESIGN	ADM	DRAWN	ADM
CHECKED	AD	REVIEWED	AD

PROJECT

ST. ANNE CAMBRIDGE

ADDRESS

127 ELGIN ST. NORTH,
CAMBRIDGE, ON

PROJECT NO.

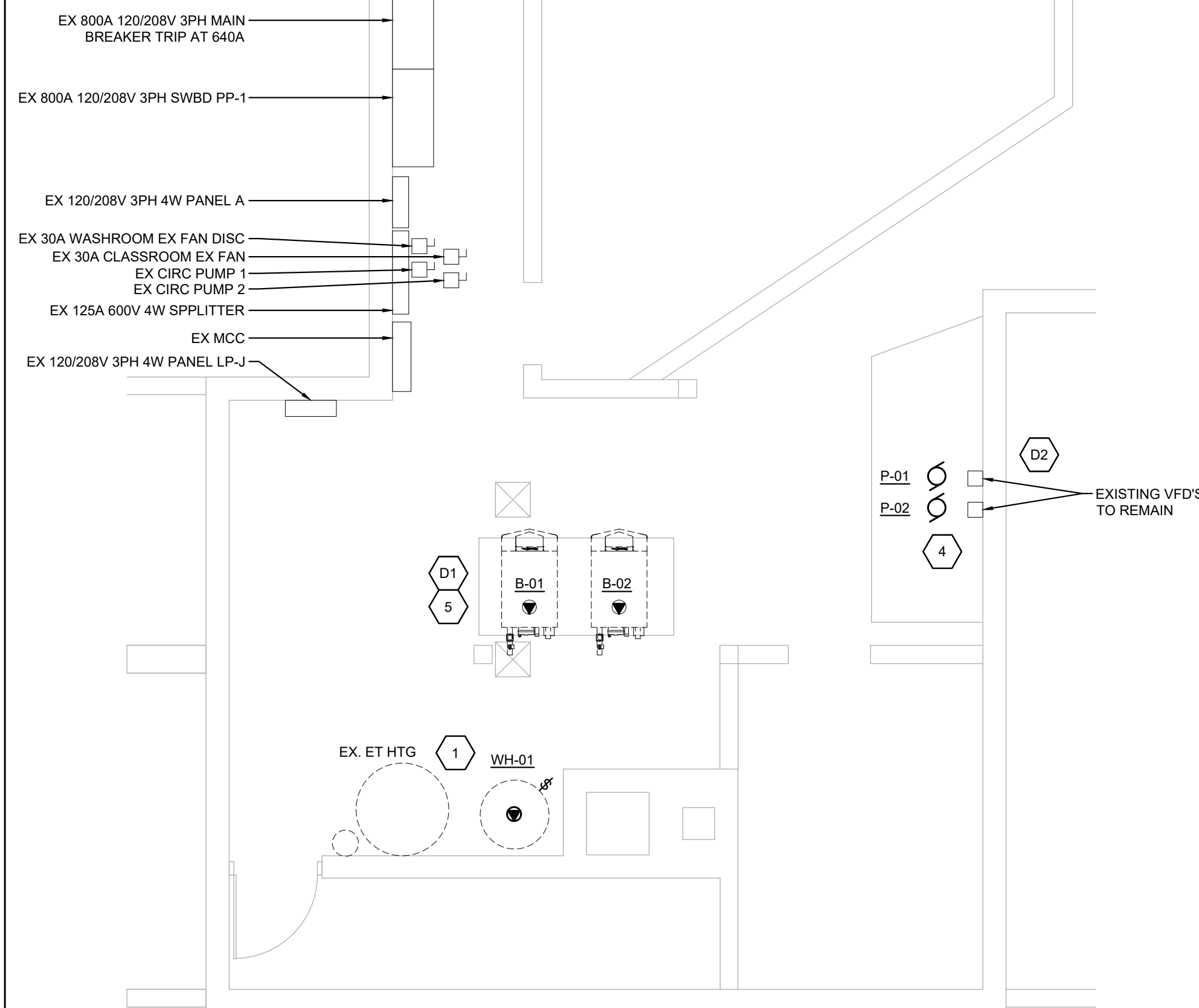
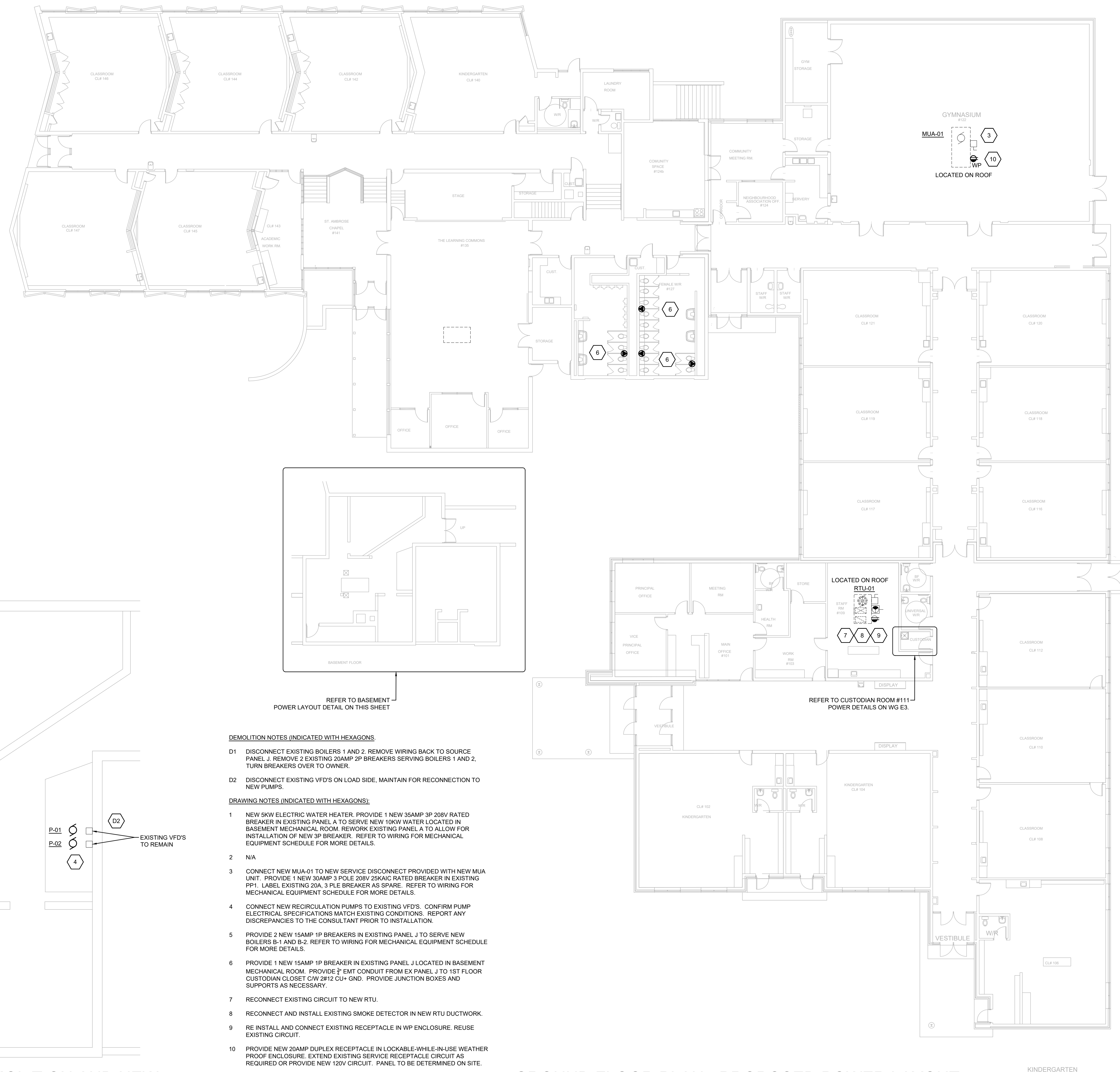
CE-6380

DRAWING TITLE

GROUND FLOOR AND
BASEMENT - PROPOSED POWER
LAYOUT AND NOTES

DRAWING NUMBER

E4 OF 5



DEMOLITION NOTES (INDICATED WITH HEXAGONS)

D1 DISCONNECT EXISTING BOILERS 1 AND 2. REMOVE WIRING BACK TO SOURCE PANEL J. REMOVE 2 EXISTING 20AMP 3P BREAKERS SERVING BOILERS 1 AND 2. TURN BREAKERS OVER TO OWNER.

D2 DISCONNECT EXISTING VFD'S ON LOAD SIDE, MAINTAIN FOR RECONNECTION TO NEW PUMPS.

DRAWING NOTES (INDICATED WITH HEXAGONS)

- NEW 5KW ELECTRIC WATER HEATER. PROVIDE 1 NEW 35AMP 3P 208V RATED BREAKER IN EXISTING PANEL A TO SERVE NEW 10KW WATER LOCATED IN BASEMENT MECHANICAL ROOM. REWORK EXISTING PANEL A TO ALLOW FOR INSTALLATION OF NEW 3P BREAKER. REFER TO WIRING FOR MECHANICAL EQUIPMENT SCHEDULE FOR MORE DETAILS.
- N/A
- CONNECT NEW MUA-01 TO NEW SERVICE DISCONNECT PROVIDED WITH NEW MUA UNIT. PROVIDE 1 NEW 30AMP 3 POLE 208V 25KVAIC RATED BREAKER IN EXISTING PP1. LABEL EXISTING 20A, 3 PLE BREAKER AS SPARE. REFER TO WIRING FOR MECHANICAL EQUIPMENT SCHEDULE FOR MORE DETAILS.
- CONNECT NEW RECIRCULATION PUMPS TO EXISTING VFD'S. CONFIRM PUMP ELECTRICAL SPECIFICATIONS MATCH EXISTING CONDITIONS. REPORT ANY DISCREPANCIES TO THE CONSULTANT PRIOR TO INSTALLATION.
- PROVIDE 2 NEW 15AMP 1P BREAKERS IN EXISTING PANEL J TO SERVE NEW BOILERS B-1 AND B-2. REFER TO WIRING FOR MECHANICAL EQUIPMENT SCHEDULE FOR MORE DETAILS.
- PROVIDE 1 NEW 15AMP 1P BREAKER IN EXISTING PANEL J LOCATED IN BASEMENT MECHANICAL ROOM. PROVIDE 3' EMT CONDUIT FROM EX PANEL J TO 1ST FLOOR CUSTODIAN CLOSET C/W 2#12 CU-GND. PROVIDE JUNCTION BOXES AND SUPPORTS AS NECESSARY.
- RECONNECT EXISTING CIRCUIT TO NEW RTU.
- RECONNECT AND INSTALL EXISTING SMOKE DETECTOR IN NEW RTU DUCTWORK.
- RE INSTALL AND CONNECT EXISTING RECEPTACLE IN WP ENCLOSURE. REUSE EXISTING CIRCUIT.
- PROVIDE NEW 20AMP DUPLEX RECEPTACLE IN LOCKABLE-WHILE-IN-USE WEATHER PROOF ENCLOSURE. EXTEND EXISTING SERVICE RECEPTACLE CIRCUIT AS REQUIRED OR PROVIDE NEW 120V CIRCUIT. PANEL TO BE DETERMINED ON SITE.

BASEMENT - POWER LAYOUT- DEMOLITION AND NEW

SCALE: 1:50

GROUND FLOOR PLAN - PROPOSED POWER LAYOUT

SCALE: 1:150

ELECTRICAL GENERAL REQUIREMENTS

GENERAL CONDITIONS:

- 1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO ELECTRICAL SAFETY CODE...
2. BEFORE TENDERING, EXAMINE THE SITE AND ALL DRAWINGS AND SPECIFICATIONS OF ALL TRADES...
3. ALL ELECTRICAL WORK SHALL COMPLY WITH CSA ELECTRICAL BULLETINS APPLICABLE AT TENDER CLOSE...
4. PROVIDE ALL GROUNDING AND BONDING TO GROUND REQUIRED, REGARDLESS IF NOT SHOWN ON THE DRAWINGS...
5. PROVIDE ALL NEW MATERIALS HAVING CSA, CUL, WARNOCK HERSEY OR OTHER APPROVAL AGENCY LABEL AND LISTING...
6. ARRANGE AND PAY FOR ALL PERMITS AND INSPECTION FEES REQUIRED FOR THE WORK OF THIS TRADE...
7. PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR THE WORK OF THIS TRADE...
8. PROVIDE ALL SLEEVES, INSERTS AND HANGERS REQUIRED FOR THE ELECTRICAL WORK...
9. PROVIDE ACCESS PANELS AS FOLLOWS: SHEET STEEL CONSTRUCTION WITH FACTORY APPLIED PRIME COAT OF PAINT...
10. TOUCH-UP ALL SHOP PAINTED EQUIPMENT DAMAGED IN TRANSIT OR DURING INSTALLATION TO MATCH ORIGINAL SHOP FINISH...
11. AVOID ACCUMULATION OF DEBRIS AS THE WORK PROGRESSES...
12. CO-ORDINATE THE WORK OF THIS TRADE WITH ALL OTHER TRADES ON THE JOB...
13. IN AREAS WHERE SPACE IS LIMITED AND MULTIPLE TRADES ARE INSTALLING SERVICES...
14. PRIOR TO THE FINAL INSPECTION, CLEAN ALL ELECTRICAL EQUIPMENT...
15. UPON COMPLETION OF THE WORK, PROVIDE THE FINAL UNCONDITIONAL CERTIFICATE OF ACCEPTANCE...
16. PROVIDE A ONE YEAR GUARANTEE ON ALL MATERIALS, AND LABOUR FROM THE DATE OF ACCEPTANCE...
17. ON MULTI-PHASE FEEDERS AND PANELS, ADJUST THE PHASE LOADING SO AS NOT TO EXCEED A PHASE IMBALANCE OF 10%...
18. SUBMIT SHOP DRAWINGS IN ELECTRONIC PDF FORMAT FOR THE FOLLOWING EQUIPMENT: BREAKERS, FIRE ALARM DEVICES, EXIT AND EMERGENCY LIGHTING UNITS, ETC...
19. ALL ELECTRICAL EQUIPMENT SHALL BE MOUNTED PLUMBED TRUE...
20. DEVICE BOXES SHOWN BACK TO BACK SHALL BE OFFSET A MINIMUM OF 305MM (12") TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS...
21. AS-BUILT DRAWINGS:
21.1. MAINTAIN AN ACCURATE RECORD OF DEVIATIONS AND CHANGES FROM CONTRACT DRAWINGS WITH RED LINE MARKINGS...
21.2. FORMAT FILES TO MATCH EXACTLY THE LAYERING SYSTEM AND SYMBOLOLOGY OF THE CONSULTANT...
21.3. 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...
21.4. THIS PROJECT UTILIZED THE FOLLOWING DIGITAL FORMAT(S): AUTOCAD/PDF.
22. OPERATION AND MAINTENANCE INSTRUCTION MANUALS:
22.1. PROVIDE PDF COPIES OF COMPLETE OPERATION AND MAINTENANCE INSTRUCTIONS FOR EQUIPMENT FURNISHED UNDER THIS CONTRACT...
22.2. MANUALS SHALL INCLUDE THE FOLLOWING INFORMATION:
22.2.1. CONTACT INFORMATION OF CONSULTANTS AND CONTRACTORS...
22.2.2. COMPLETE SET OF FINAL PROJECT SHOP DRAWINGS...
22.2.3. ESA LETTER OF COMPLIANCE...
22.2.4. CERTIFICATE OF SUBSTANTIAL COMPLETION...
22.2.5. FIRE ALARM VERIFICATION REPORT...
22.2.6. MANUFACTURER'S INSTALLATION INSTRUCTIONS...
22.2.7. MANUFACTURER'S MAINTENANCE INSTRUCTIONS...
22.2.8. MANUFACTURER'S WARRANTIES AND GUARANTEES, AND COPIES OF ALL TEST DATA AND VERIFICATION CERTIFICATES.
23. WHERE THE WORD PROVIDE IS USED IN THESE SPECIFICATIONS OR ON THE DRAWINGS, IT HAS THE MEANING 'PROVIDE AND INSTALL COMPLETE WITH ALL ASSOCIATED MOUNTING HARDWARE AND CONNECTIONS'.
24. CHANGES IN THE WORK
24.1. 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...
24.1.1. ITEMIZED MATERIAL LIST WITH QUANTITIES AND UNIT COSTS
24.1.2. ITEMIZED LABOUR COST BREAKDOWN
24.1.3. COPY OF QUOTATIONS FROM ALL SUPPLIERS FOR ALL EQUIPMENT
24.1.4. COPY OF QUOTATIONS FROM ALL SUBCONTRACTORS INCLUDING ALL OF THE REQUIREMENTS OF THIS SECTION
24.1.5. TOTAL MATERIAL COST
24.1.6. TOTAL HOURS

- 26. ELECTRICAL PROJECT COMPLIANCE
26.1. PROVIDE THE FOLLOWING DOCUMENTS TO THE CONSULTANT TO ISSUE THE LETTER OF GENERAL REVIEW:
26.1.1. ESA INSPECTION REPORT
26.1.2. FIRE ALARM SYSTEM VERIFICATION REPORT
26.1.3. A SIGNED VERIFICATION LETTER FROM THE ELECTRICAL CONTRACTOR CONFIRMING THE FOLLOWING:
• LIGHTING AND LIGHTING CONTROLS OPERATIONAL
• SMOKE ALARM AND CO DETECTORS HAVE BEEN VERIFIED OPERATIONAL.
CONDUCTORS & RACEWAYS:
USE RW90 COPPER CONDUCTORS CSA APPROVED FOR THE APPLICATION...
27. DESIGN IS BASED ON COPPER CONDUCTORS. ALUMINUM CONDUCTORS ARE NOT PERMITTED ON THIS PROJECT.
28. ALL CONDUCTORS ARE TO BE INSTALLED IN RACEWAYS AS DESCRIBED BELOW:
28.1. PVC CONDUIT: IN CONCRETE SLAB, UNDERGROUND BURIED, BELOW SLAB ON GRADE OR EXTERIOR EXPOSED SURFACE RACEWAYS.
28.2. EMT RACEWAYS: INTERIOR SURFACE RACEWAYS, BRANCH CIRCUIT WIRING FROM PANELS, CONCEALED IN ACCESSIBLE CEILINGS AND INTERIOR WALLS OR IN INTERIOR CONCRETE BLOCK CONSTRUCTION.
28.3. ARMORED CABLE (BX): FOR FINAL DROPS TO FIXTURES IN CEILING SPACES...
28.4. SURFACE METAL RACEWAYS (SMR): FOR EXISTING CONSTRUCTION WHERE EXISTING WALLS AND FINISHES ARE TO REMAIN OR NEW SERVICES CANNOT BE FISHED IN EXISTING WALL.
28.5. OBTAIN PERMISSION FROM THE CONSULTANT PRIOR TO INSTALLATION...
29. MINIMUM RACEWAY SIZE FOR EXTERIOR U/G BURIED APPLICATION IS 3/4" (19MM), MINIMUM BURIED DEPTH IS 36" (900MM) BELOW FINISHED GRADE.
30. ALL CONDUIT AND WIRING IS TO BE CONCEALED IN ALL FINISHED AREAS.
DEVICES:
SWITCHES:
30.1. SPEC GRADE, RATED 20 AMP, 125 VAC, SINGLE POLE, SINGLE THROW...
30.2. SPEC GRADE, RATED 15 AMP, 347 VAC, SINGLE POLE, SINGLE THROW...
30.3. SPEC GRADE, RATED 20 AMP, 347 VAC, SINGLE POLE, SINGLE THROW...
30.4. MANUFACTURERS: HARVEY HUBBELL, LEVITON, LEGRAND, LUTRON.
31. RECEPTACLES:
31.1. SPEC GRADE, DUPLEX, RATED 20 AMP, 125 VAC, T-SLOT EEMAC 5-20R CONFIGURATION...
31.2. GROUND FAULT INTERRUPTING, CLASS A DUPLEX, RATED 20 AMP, 125 VAC...
31.3. EXTERIOR GROUND FAULT INTERRUPTING, CLASS A DUPLEX, RATED 15 AMP...
32. COVER PLATES:
32.1. BRUSHED STAINLESS STEEL IN ALL FINISHED AREAS.
32.2. GALVANIZED STEEL COVERPLATES, FOR SURFACE MOUNTED DEVICES IN UNFINISHED AREAS.
32.3. COVERPLATES TO BE OF THE SAME MANUFACTURER AS THE DEVICES...
32.4. FOR OUTDOOR APPLICATIONS, PROVIDE WEATHER PROOF WHOLE IN USE COVERPLATES...
COLOUR OF DEVICES: WHITE
33. STARTERS: FULL VOLTAGE, MAGNETIC STARTERS WITH COIL VOLTAGE AS REQUIRED BY THE PIECE OF EQUIPMENT BEING CONTROLLED...
33.1. MANUFACTURERS: ALLEN BRADLEY, SQUARE D, FURNAS, KLOCKNER-MOELLER
HEAVY DUTY EQUIPMENT ISOLATING DISCONNECTS: SIZE DISCONNECTING DEVICES FOR THE CURRENT CARRYING CAPACITIES OF THE EQUIPMENT TO BE ISOLATED...
33.1. DUST FREE OR STANDARD - EEMAC TYPE 1.
33.2. OUTDOOR OR DAMP LOCATION - EEMAC TYPE 3R.
33.3. FOR DIRECT EXPOSURE TO WATER UNDER PRESSURE- EEMAC TYPE 4.
33.4. FOR HIGH DUST CONCENTRATION OF NON-IGNITABLE DUST- EEMAC TYPE 12.
33.5. MANUFACTURERS: CUTLER HAMMER - EATON, SCHNEIDER CANADA, SIEMENS
34. ALL DEVICES OF THE SAME TYPE, SIZE AND RATING ARE TO BE OF THE SAME MANUFACTURER THROUGHOUT THE PROJECT.
FIRE ALARM SYSTEM - SINGLE STAGE ADDRESSABLE NON-VOICE:
35. EXISTING FIRE ALARM SYSTEM IS BY MIRCROM, PROVIDE ADDITIONS AND/OR MODIFICATIONS TO EXISTING FIRE ALARM SYSTEM AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.
36. 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.
36.1. MAINTAIN OR MODIFY EXISTING SEQUENCE OF OPERATION AS INDICATED FOR A FULLY OPERATIONAL SYSTEM.
36.2. ALL NEW DEVICES AND COMPONENTS CONNECTED TO EXISTING SYSTEM SHALL BE ULC LISTED AND COMPATIBLE WITH THE EXISTING SYSTEM.
37. ADD AND/OR MODIFY ANNUNCIATION AS INDICATED.
38. UPGRADE OR ADD POWER SUPPLIES AND EMERGENCY BATTERY CAPACITY AS NECESSARY TO ACCOMMODATE ADDITIONS AND MODIFICATIONS WITH MINIMUM 25% SPARE CAPACITY.
39. DUCT TYPE SMOKE DETECTOR WITH ADDRESSABLE PHOTO-ELECTRIC HEAD MOUNTED IN SEALED DUCT MOUNTED HOUSING WITH TRANSPARENT COVER AND AIR INLET SAMPLING TUBE INSERTED INTO DUCT ACROSS WIDTH WITH SEPARATE RELIEF AIR TUBE INTO DUCT...
40. REMOTE ASPIRATION SMOKE DETECTOR WITH ADDRESSABLE PHOTOELECTRIC HEAD AND AIR SAMPLING FAN MOUNTED IN SEALED DUCT MOUNTED HOUSING WITH TRANSPARENT COVER AND AIR INLET SAMPLING TUBE MOUNTED IN AREA OF DETECTION WITH REMOTE TEST INLET OUTSIDE OF TEST AREA AS INDICATED ON PLANS.

- 41. ADDRESSABLE MODULES:
41.1. MONITOR MODULES OF SINGLE, DUAL OR MULTI-ZONE TYPE FOR CONNECTION AND SUPERVISION OF ALARM AND SUPERVISORY DEVICES AS INDICATED ON PLANS.
41.1. CONTROL MODULES WITH BUILT IN RELAY FOR CONTROL AND SIGNALLING OF DEVICES AND EQUIPMENT AS INDICATED ON PLANS, FIRE ALARM SCHEDULE, RISER AND NOTES.
41.2. ISOLATION MODULES TO OPEN CIRCUIT IF FAULT DETECTED.
42. CONVENTIONAL FIRE DETECTORS: (USE WHERE INDICATED DUE TO ENVIRONMENTAL CONDITIONS)
42.1. MOISTURE RESISTANT EXPLOSION PROOF HEAT DETECTOR: TO ULC S530 STANDARD FOR HEAT ACTUATED FIRE DETECTORS FOR FIRE ALARM SYSTEMS...
ACCEPTABLE MANUFACTURERS INCLUDE: MIRCROM.
43. FIRE ALARM WIRING INSTALLED IN CONDUIT TO SATISFY MANUFACTURERS REQUIREMENT AND ELECTRICAL SAFETY CODE...
44. FIRE ALARM INSTALLATION TO ULC STANDARD S524 AND MANUFACTURERS INSTRUCTIONS.
44.1. AS-BUILT DRAWINGS TO INCLUDE ALL FINAL DEVICE LOCATIONS AND ADDRESS NUMBER ON PLANS...
45. FIRE ALARM VERIFICATION TO ULC STANDARD S537 FOR SCOPE SHOWN ON DRAWINGS.
46. PROVIDE REPORT OF VERIFICATION OF FIRE ALARM SYSTEM TO ENGINEER ON COMPLETION OF WORK...
WIRING FOR OTHER TRADES:
1. PROVIDE POWER WIRING FOR ELECTRICALLY OPERATED EQUIPMENT OF OTHER TRADES AS NOTED ON THE DRAWINGS...
2. PROVIDE POWER AND WIRING TO THE ELECTRICALLY OPERATED EQUIPMENT AS DETAILED IN WIRING FOR MECHANICAL EQUIPMENT SCHEDULE...
3. PROVIDE POWER WIRING TO ALL CONTROL DEVICES SUPPLIED BY MECHANICAL CONTRACTOR...
4. PROVIDE CONTROL WIRING FOR ALL CONTROL DEVICES WITH OPERATING VOLTAGES OF THE CONTROLS GREATER THAN 100VAC.
5. PROVIDE RACEWAYS/CONDUITS FOR ALL CONTROL WIRING AS IDENTIFIED ON THE DRAWINGS...
RENOVATIONS ON EXISTING BUILDING:
1. RENOVATIONS SHALL BE MADE ON THE EXISTING BUILDING AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN...
2. NEW CONDUCTORS SHALL BE INSTALLED TO THE NEAREST OUTLET AS REQUIRED FOR EQUIPMENT THAT IS RELOCATED...
3. PROVIDE NEW BREAKERS WHERE REQUIRED IN EXISTING PANELS TO PICK-UP ADDITIONAL CIRCUITS INDICATED ON THE DRAWINGS.
4. PROVIDE NEW BREAKERS WHERE REQUIRED IN EXISTING PANELS TO PICK-UP ADDITIONAL CIRCUITS INDICATED ON THE DRAWINGS.
5. ALL EXISTING LUMINAIRES THAT ARE RELOCATED SHALL BE REMOVED, CHECKED, SERVICED, CLEANED, AND RE-LAMPED PRIOR TO RE-INSTALLATION...
6. COORDINATE WITH MECHANICAL DRAWINGS AND SAFELY DISCONNECT AND REMOVE ALL MOTOR/MECHANICAL EQUIPMENT BEING DEMOLISHED...
FIRESTOPPING AND SMOKE SEAL:
1. PROVIDE A ULC LISTED FIRESTOP SYSTEM TO SEAL AROUND ALL PIPING, TUBING, DUCTS, CONDUITS, ELECTRICAL WIRES AND CABLES...
2. FOR ALL PENETRATIONS THROUGH HORIZONTAL FIRE SEPARATIONS...
3. BEFORE STARTING ANY WORK ON SITE, SUBMIT DETAILED SHOP DRAWINGS TO BOTH THE CONSULTANT AND THE LOCAL BUILDING INSPECTION AUTHORITY...
3.1. MANUFACTURER'S TECHNICAL PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH SPECIFIC TYPE AND LOCATION OF PENETRATION.
3.2. CERTIFICATION THAT PROPOSED FIRESTOPPING MATERIALS AND ASSEMBLIES COMPLY WITH CAN4-115-M.
3.3. ULC LISTINGS WITH COPIES OF ULC DATA SHEETS FOR EACH SPECIFIC TYPE AND LOCATION OF PENETRATION.
3.4. MAKE PENETRATION TYPES AND LOCATIONS ON SET OF WHITE PRINTS AT COMPLETION OF PROJECT...

Callidus Engineering logo and contact information for London, Kingston, and Kitchener offices.

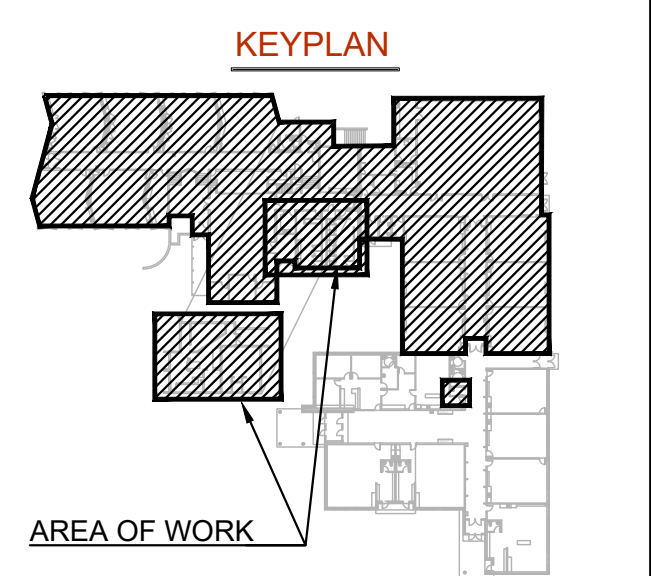


Table with 3 columns: NO., ISSUED FOR, DATE. Contains revision entries for progress submissions and tender submission.

Table with 3 columns: NO., ISSUED FOR, DATE. Contains revision entries for progress submissions and tender submission.

NORTH arrow and a professional engineer's seal for A. D. DIRKS, 100502627, dated 2016-09-03.

Table with 4 columns: DESIGN, ADM, DRAWN, ADM. Checked/Reviewed status for each role.

PROJECT information: ST. ANNE CAMBRIDGE.

ADDRESS information: 127 ELGIN ST. NORTH, CAMBRIDGE, ON.

PROJECT NO. information: CE-6380.

DRAWING TITLE information: ELECTRICAL SPECIFICATIONS.

DRAWING NUMBER information: E5 OF 5.