



Plant Operations

DO NOT SCALE DRAWINGS.
CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

ALL DRAWINGS REMAIN THE PROPERTY OF THE UNIVERSITY OF WATERLOO AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE UNIVERSITY'S WRITTEN PERMISSION.

ALL WORK SHALL CONFORM TO THE GENERAL CONDITIONS OF THE UNIVERSITY OF WATERLOO STANDARD SPECIFICATIONS.

NO.	REVISIONS	DATE & INITIAL

PROJECT TIMELINE & SCOPE OF WORK

GENERAL CONTRACTOR TO COORDINATE THE WORK OF OWN FORCES AND ALL REQUIRED SUBTRADES TO COMPLETE THE FOLLOWING SCOPE:

- ARCHITECTURAL DEMOLITION & ALTERATION SCOPE AS OUTLINED ON ARCHITECTURAL DRAWING & SPECIFICATIONS.
- MECHANICAL SCOPE AS OUTLINED ON MECHANICAL DRAWINGS & SPECIFICATIONS.
- ELECTRICAL SCOPE AS OUTLINED ON ELECTRICAL DRAWINGS & SPECIFICATIONS.

GENERAL NOTES

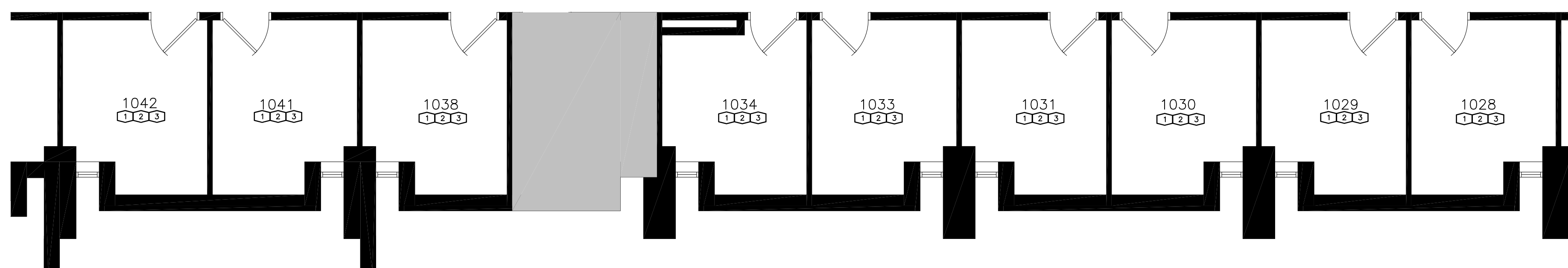
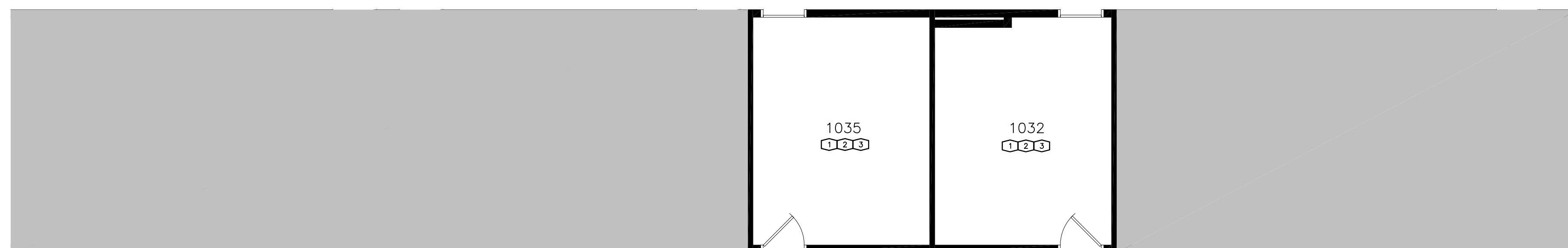
1. CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE
2. CONTRACTOR TO DISPOSE OF ALL WASTE OFF SITE
3. CONTRACTOR TO MOVE AND PROVIDE ADEQUATE PROTECTION OF ALL EXISTING FURNITURE AND WALL HUNG ACCESSORIES PRIOR & DURING CONSTRUCTION. (COORDINATE WITH UW)
4. HAZARDOUS MATERIALS ARE EXPECTED TO BE PRESENT IN AND ADJACENT TO THIS WORK AREA. REFER TO THE DESIGNATED SUBSTANCES DATABASE (EXCEL FILE) AS WELL AS THE PROJECT SPECIFIC REPORT WHEN WORKING IN AND OUTSIDE OF THE PROPOSED WORK AREA. IF SUSPECT ITEMS ARE ENCOUNTERED DURING WORK, STOP ALL WORK AND NOTIFY UW.
5. ALL DIMENSIONS ARE TAKEN FROM THE OUTSIDE OF THE GYPSUM BOARD/FACE OF BLOCK WALL.

PATCH AND MAKE GOOD SHALL BE DEFINED AS:

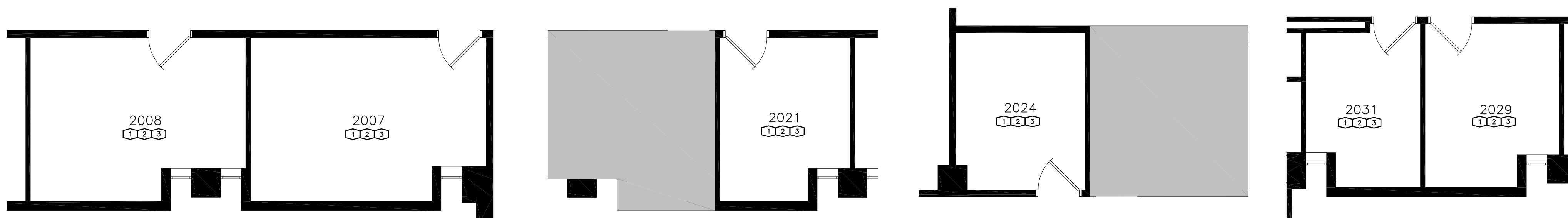
- PATCH, MATCH, AND MAKE GOOD ALL SURFACES WHERE DEMOLITION OR REMOVAL OCCURS
- PATCHING OF ALL MATERIALS, SURFACES, COLOURS, AND FINISH OF ADJACENT SHALL MATCH EXACTLY (UNLESS NOTED OTHERWISE)
- WHERE RE-PAINING IS REQUIRED, THE ENTIRE PLANE OF WALL SHALL BE PAINTED.
- PATCH, MATCH, AND MAKE GOOD SHALL ALSO APPLY TO ANY SURFACE DAMAGED THROUGH THE COURSE OF CONSTRUCTION.
- PATCH, MATCH, AND MAKE GOOD MEANS - WHEN COMPLETED, WORK HAS THE APPEARANCE OF NEW.

DEMOLITION NOTES

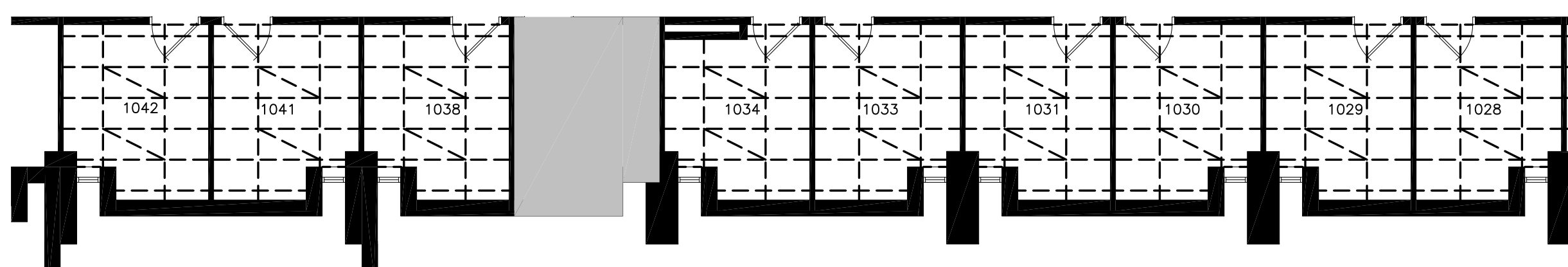
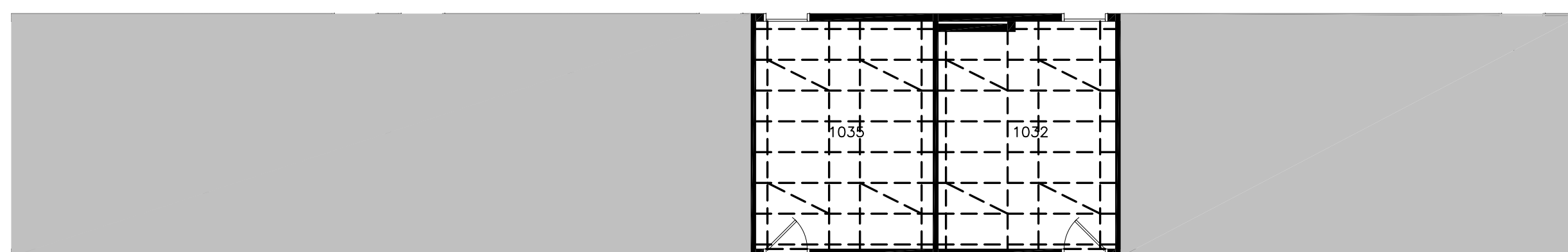
- * REFER TO PLAN FOR APPLICABLE NOTES
- ① REMOVE ALL EXISTING SHELVING, PILASTERS, COAT HOOKS, WHITEBOARDS & TACK BOARDS. DISPOSE OFF CAMPUS.
- ② REMOVE EXISTING TILE FLOOR/CARPET WITH BASE AND ADHESIVE. DISPOSE OFF CAMPUS.
- ③ REMOVE EXISTING SUSPENDED CEILING SYSTEM C/W GRID. DISPOSE OFF CAMPUS.



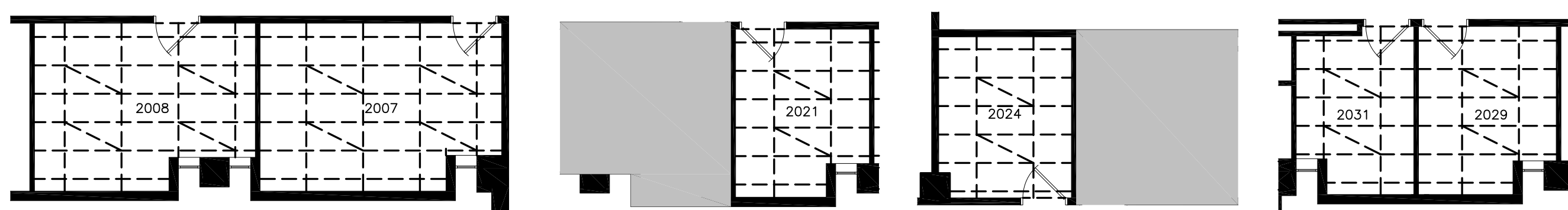
1 PARTIAL FIRST FLOOR PLAN - DEMOLITION
A3 3/16"=1'-0"



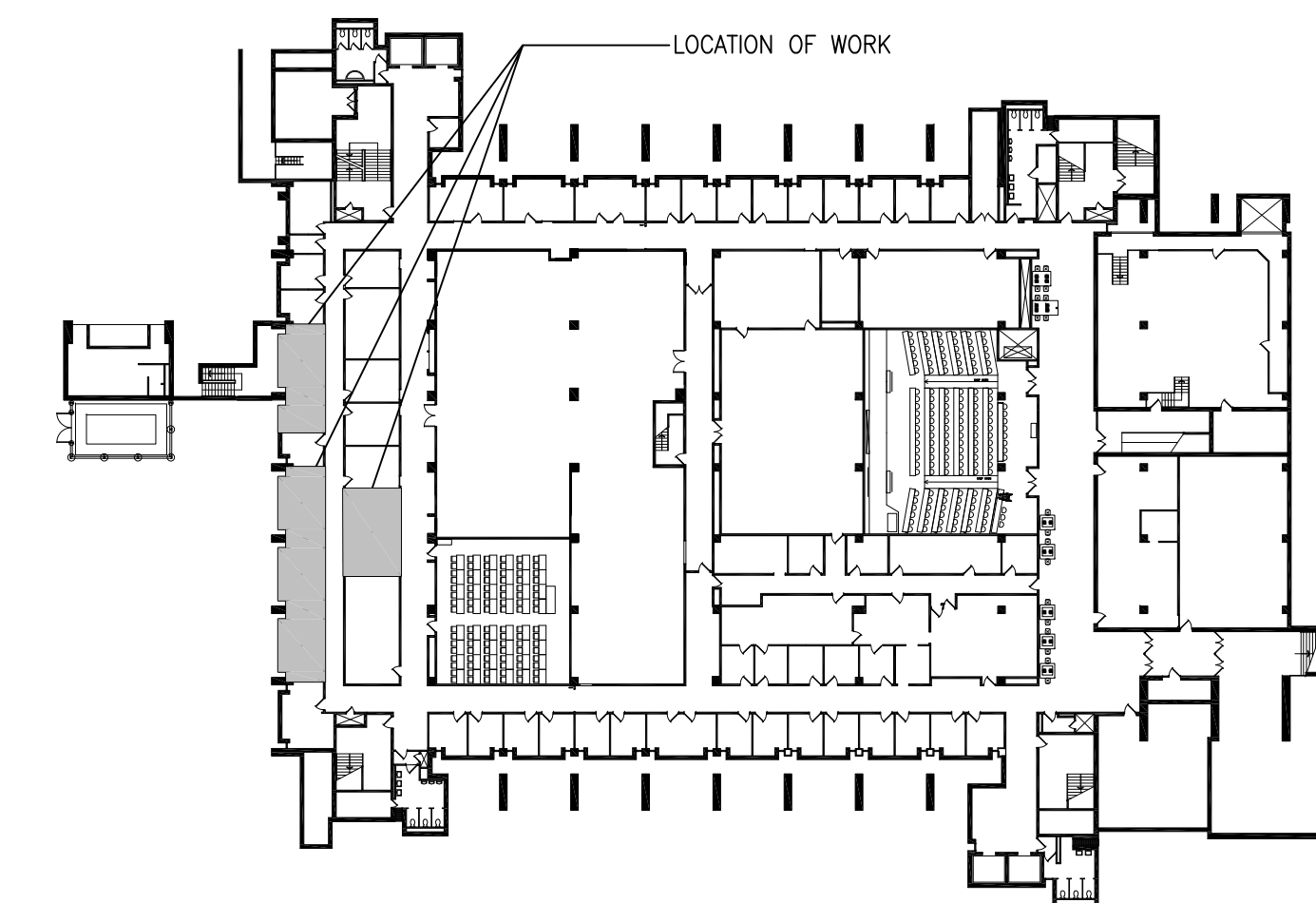
2 PARTIAL SECOND FLOOR PLAN - DEMOLITION
A3 3/16"=1'-0"



3 REFLECTED CEILING PLAN - DEMOLITION
A3 1/8"=1'-0"

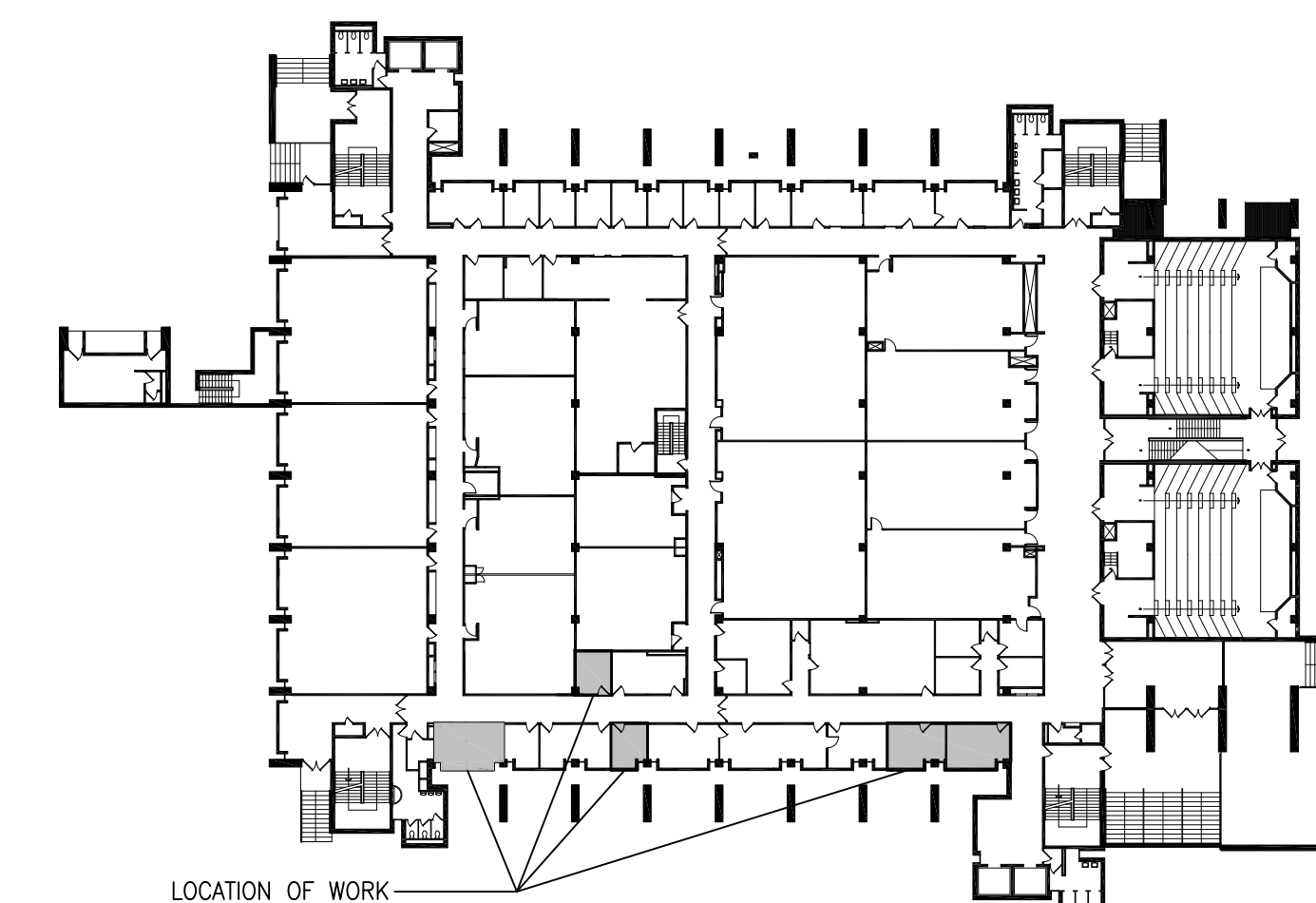


4 REFLECTED CEILING PLAN - DEMOLITION
A3 1/8"=1'-0"



MC FIRST FLOOR KEY PLAN

N.T.S.



MC SECOND FLOOR KEY PLAN

N.T.S.

CAD FILE No. 52912_A_017_01

PRINTING DATE

PLOTTING DATE

DWG. NO. 52912_A1_017_01

PROJECT
PHASE 2
RENOVATE SWING SPACE
VARIOUS ROOMS

JOB NO.	24-A	DRAWN	JF
W.R. NO.	52912	CHKD	
DATE	06/25/2024	SHEET	A3 OF 4
SCALE	3/16"=1'-0"		

BUILDING

**MATH & COMPUTER
MC
BLDG No. 017**

WATERLOO

ONTARIO



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ALTERATION NOTES

- REFER TO PLAN FOR APPLICABLE NOTES

- SUPPLY & APPLY NEW PAINT TO WALLS THROUGHOUT ROOMS AS NOTED. APPLY (1) PRIME COAT AND (2) FINISH COATS TO CREATE EVEN COVERAGE. SEE FINISH SCHEDULE FOR DETAILS.
- SUPPLY & INSTALL NEW CARPET C/W 4" CARPET BASE TO MATCH. SEE FINISH SCHEDULE FOR DETAILS.
- SUPPLY & INSTALL NEW ARMSTRONG SUSPENDED CEILING SYSTEM. NEW GRID LOCATIONS TO MATCH EXISTING UNLESS OTHERWISE NOTED. SEE FINISH SCHEDULE FOR DETAILS.

DC ROOM FINISHES

(PT) PAINT SPECIFICATION:

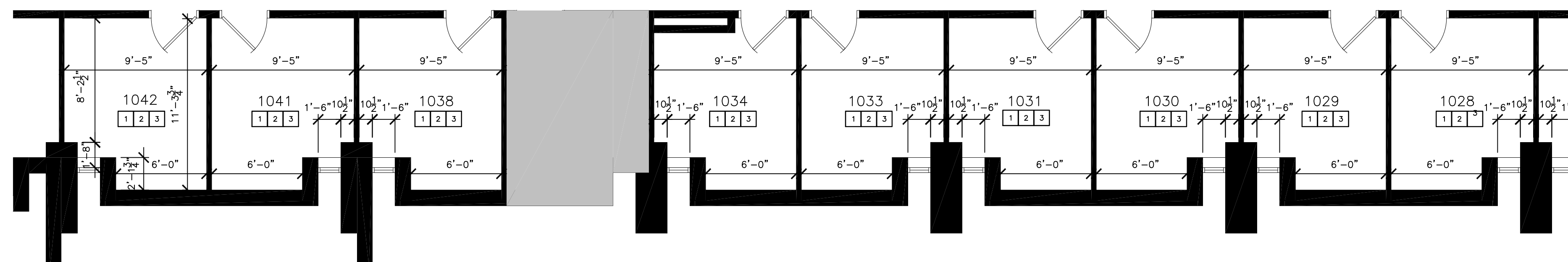
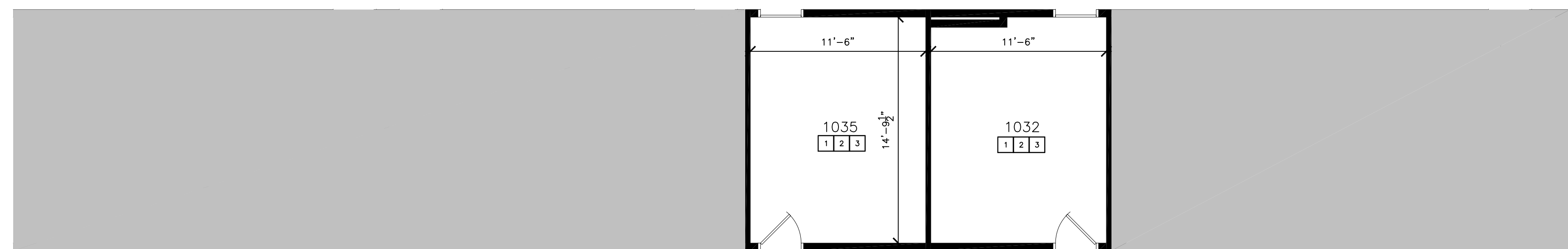
MANUFACTURER: BENJAMIN MOORE
COLOUR NAME: WHITE WISP
COLOUR CODE: 2137-70
STYLE: EGGSHELL

(CPT) CARPET SPECIFICATION:

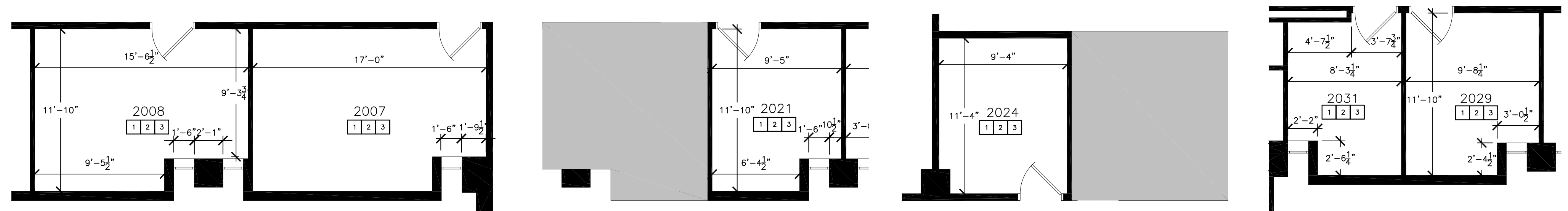
MANUFACTURER: TARKETT
PATTERN: NANO 04539
COLOUR: CHROMITE 48208
CARPET TYPE: ROLLED

(SC) SUSPENDED CEILING SYSTEM SPECIFICATION:

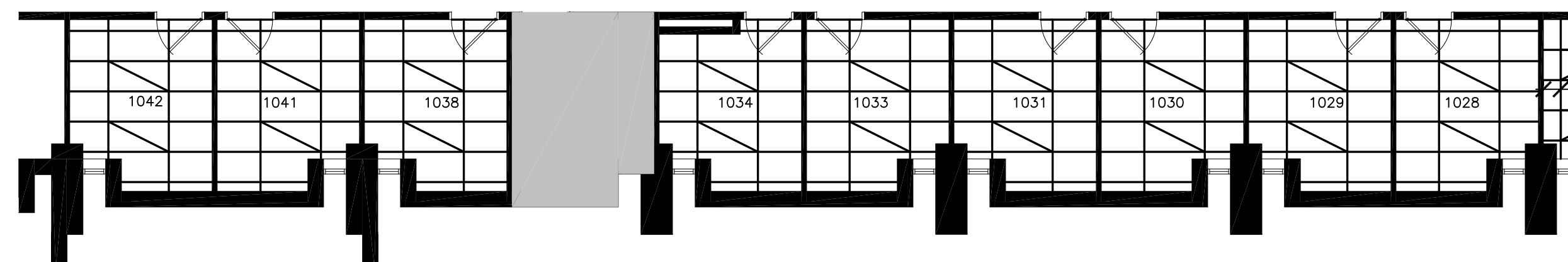
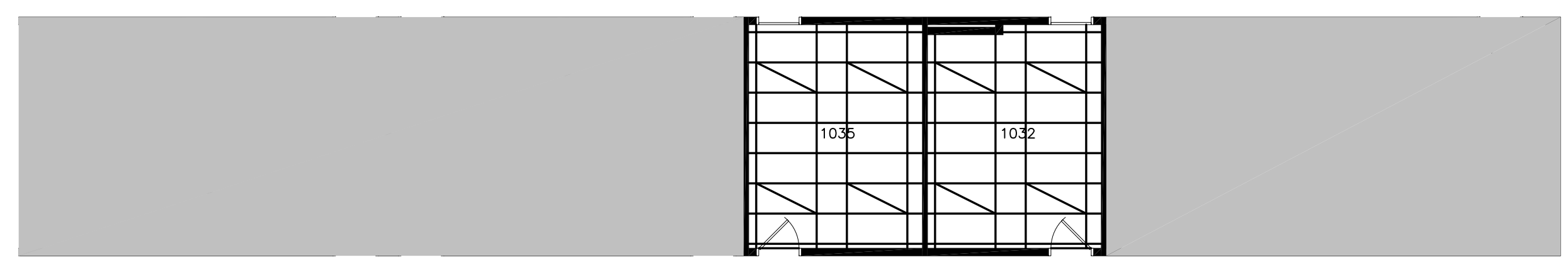
MANUFACTURER: ARMSTRONG
FACE DIMENSION: 15/16"
PROFILE TYPE: EXPOSED TEE
TILE TYPE: DUNE
TILE SIZE: 24"x48"x5/8"
EDGE: SQUARE LAY-IN



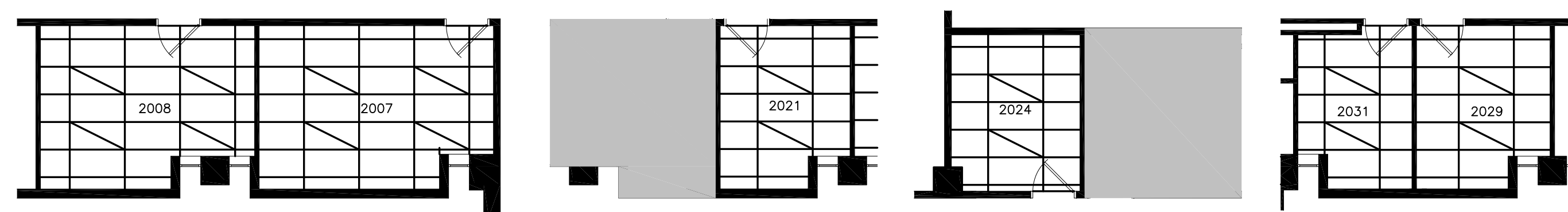
1 PROPOSED LAYOUT - ALTERATION
A4 3/16"=1'-0"



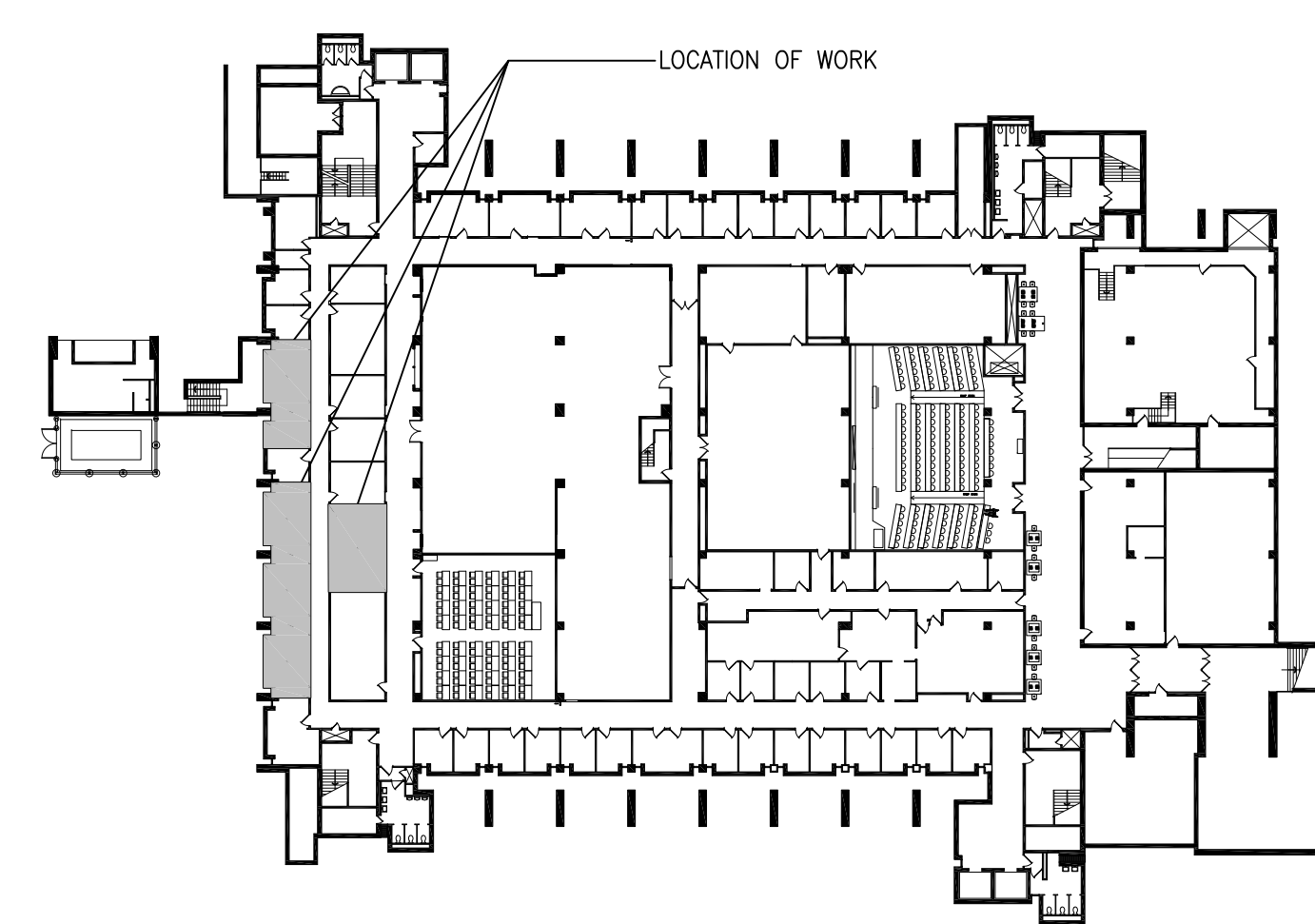
2 PROPOSED LAYOUT - ALTERATION
A4 3/16"=1'-0"



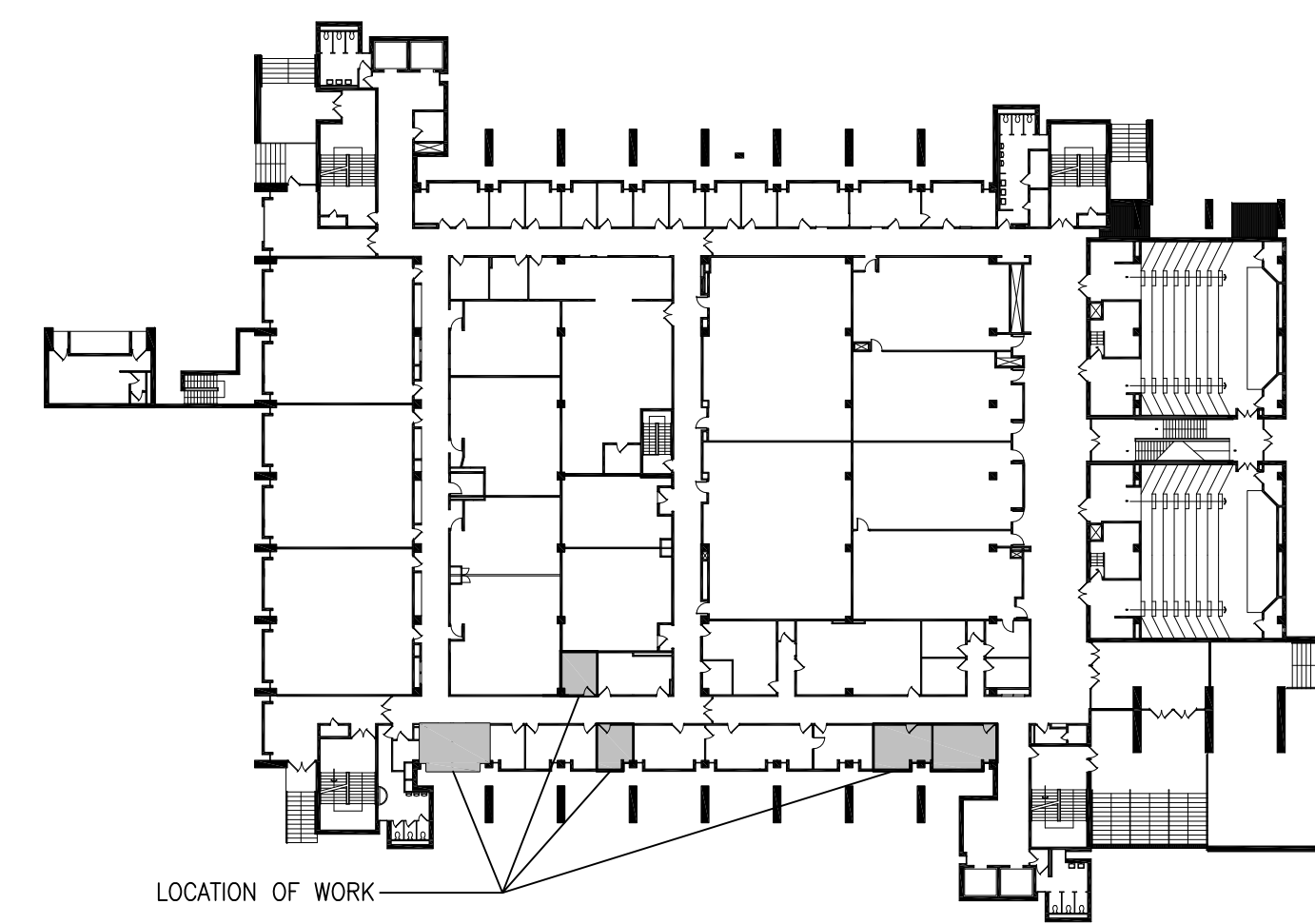
3 REFLECTED CEILING PLAN - DEMOLITION
A3 1/8"=1'-0"



4 REFLECTED CEILING PLAN - DEMOLITION
A3 1/8"=1'-0"



MC FIRST FLOOR KEY PLAN
N.T.S.



MC SECOND FLOOR KEY PLAN
N.T.S.

CAD FILE No.	52912_A_017_01		
PRINTING DATE			
PLOTTING DATE			
DWG. NO.	52912_A2_017_01		
PROJECT	PHASE 2 RENOVATE SWING SPACE VARIOUS ROOMS		
JOB NO.	24-A	DRAWN	JF
W.R. NO.	52912	CHKD	
DATE	06/25/2024	SHEET	A4 OF 4
SCALE	3/16"=1'-0"		
BUILDING	MATH & COMPUTER MC BLDG No. 017		
	WATERLOO		ONTARIO

ELECTRICAL SPECIFICATION:

GENERAL

THIS ELECTRICAL CONTRACTOR MUST OBTAIN ONTARIO ELECTRIC INSPECTION AND APPROVAL OF INSPECTION. ALL MATERIAL AND EQUIPMENT SHALL BE APPROVED TO **ALL APPLICABLE** CERTIFICATION AGENCIES ACCEPTABLE UNDER THE ELECTRIC SAFETY CODE.

- THIS CONTRACTOR SHALL:
- SUPPLY AND INSTALL ALL MATERIAL AND LABOR REQUIRED TO COMPLETE THIS INSTALLATION AS OUTLINED ON DRAWINGS AND SPECIFICATIONS.
 - VISIT THE WORK SITE AND NOTIFY THE **UNIVERSITY OF WATERLOO PLANT OPERATIONS DESIGN AND CONSTRUCTION SERVICES OFFICE** FOR CLARIFICATION REGARDING ANY ELECTRICAL CODE VIOLATIONS, UNCLEAR PORTIONS OF DRAWINGS AND SPECIFICATIONS, ERRORS OR OMISSIONS FOUND ON THE TENDER DOCUMENTS. IF NONE OF THE ABOVE ARE REPORTED IT WILL BE CONSIDERED THAT THE INSTALLATION WILL PROCEED TO COMPLETION OF THE CONTRACT, TO THE SATISFACTION OF THE ELECTRICAL INSPECTOR AND THE JOB COORDINATOR FOR THE TENDER PRICE.
 - BE RESPONSIBLE FOR ALL DAMAGE DONE TO BUILDINGS AND CONTENTS DURING THIS INSTALLATION, BEFORE PROCEEDING WITH THIS INSTALLATION THIS CONTRACTOR IS RESPONSIBLE TO PROTECT TO THE SATISFACTION OF THE JOB COORDINATOR ALL EQUIPMENT, FURNISHINGS, BOOKS AND OTHER ITEMS IN THE AREA AFFECTED BY THIS ALTERATION.
 - SUPPLY ONLY NEW MATERIAL AND EQUIPMENT FOR THIS INSTALLATION AS SPECIFIED IN MATERIAL SPECIFICATION (OR AS INDICATED ON DRAWINGS).
 - PATCH AND MAKE GOOD TO MATCH EXISTING TEXTURE, MATERIAL AND PAINT ETC. ALL BUILDING SURFACES, EQUIPMENT, ETC. DAMAGED BY THIS ALTERATION TO THE SATISFACTION OF THE JOB COORDINATOR.
 - RETURN TO UNIVERSITY OF WATERLOO CENTRAL STORES AS INSTRUCTED BY THE JOB COORDINATOR ALL MATERIAL REMOVED FROM PROJECT SITE BY THIS ALTERATION.
 - UPDATE ALL PANEL DIRECTORIES AFFECTED BY THIS ALTERATION (TYPED).
 - THIS CONTRACTOR SHALL SUBMIT TO THE UNIVERSITY OF WATERLOO AS-BUILT DOCUMENTATION THAT REFLECTS ALL CHANGES AND SITE MODIFICATIONS FOR THIS PROJECT. DOCUMENTATION TO INDICATE ALL NEW CIRCUITRY DESIGNATIONS, BE KEPT CURRENT, AND TO BE CLEARLY MARKED 'AS-BUILT COPY'. INDICATE IN RED INK ALL DEVIATIONS AND APPROVED CHANGES FROM THE CONTRACT DRAWINGS. ENSURE DOCUMENTATION IS FREE OF OBSOLETE/IRRELEVANT INFORMATION. DOCUMENTATION TO BE SUBMITTED DIGITALLY TO PROJECT COORDINATOR IN PDF FORMAT.

MATERIALS AND WORKMANSHIP

- ALL ELECTRICAL WORK SHALL CONFORM TO REQUIREMENTS OF THE LATEST ONTARIO ELECTRICAL SAFETY AND ONTARIO BUILDING CODES AND SHALL ALSO CONFORM TO THE REQUIREMENTS OF ALL OTHER AUTHORITIES HAVING JURISDICTION, AND UNIVERSITY OF WATERLOO ELECTRICAL SAFETY PROGRAM REQUIREMENTS.**
- INSTALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
- INSTALL EQUIPMENT AND MATERIALS TO PRESENT A NEAT APPEARANCE. RUN PIPING, DUCTS AND CONDUIT PARALLEL TO OR PERPENDICULAR TO BUILDING PLANES.
- SUBSTITUTION OF MATERIAL FROM THOSE SPECIFIED WILL NOT BE ALLOWED UNLESS WRITTEN PERMISSION IS RECEIVED PRIOR TO TENDER CLOSING.
- THIS CONTRACTOR SHALL SUBMIT TO THE UNIVERSITY OF WATERLOO SHOP DRAWINGS FOR ALL EQUIPMENT SUPPLIED BY THE CONTRACTOR. DOCUMENTATION TO BE SUBMITTED DIGITALLY TO PROJECT COORDINATOR IN PDF FORMAT PRIOR TO ORDERING OF ANY EQUIPMENT.**
- CONTRACTOR TO ENSURE ALL EXIT SIGNAGE, EMERGENCY LIGHTING, FIRE ALARM AND/OR EMERGENCY BATTERY UNITS REMAIN IN OPERATION DURING DEMOLITION AND BE ADEQUATELY SUPPORTED WHERE LOCATED ON A WALL OR CEILING BEING REMOVED.
- IN GENERAL, ALL ELECTRICAL DEVICES BEING DEMOLISHED ARE TO BE DISCONNECTED AND REMOVED, COMPLETE TO SOURCE, UNLESS OTHERWISE INDICATED. COORDINATE THE DEMOLITION WITH OTHER TRADE AS REQUIRED. REMOVE REDUNDANT WIRING FROM THE SITE COMPLETELY.
- THE OWNER (UW) WILL DECIDE WHICH ITEMS OR EQUIPMENT THEY WISH TO RETAIN AS THEIR PROPERTY. ELECTRICAL CONTRACTOR SHALL CAREFULLY REMOVE THESE ITEMS INTACT AND HAND OVER TO THE OWNER'S REPRESENTATIVE. THIS CONTRACTOR SHALL REMOVE ALL OTHER MATERIAL FROM THE PREMISES.
- EXISTING SERVICES WHICH PASS THROUGH THE SITE AND FEED OTHER AREAS ARE TO BE MAINTAINED AND PROTECTED OR REROUTED. TRACE EXISTING CIRCUITS WHERE NECESSARY TO DETERMINE SOURCE.
- ELECTRICAL EQUIPMENT TO BE REMOVED MUST BE ISOLATED AND DISCONNECTED AT THE SOURCE PRIOR TO REMOVAL OPERATIONS. DURING ISOLATION AND DISCONNECTION PROCEDURES DANGER TAGS MUST BE USED TO IDENTIFY ANY FEEDERS OR EQUIPMENT REMAINING ENERGIZED TO ACCOMMODATE NEW CONSTRUCTION.
- ALL DATA CABLES ARE TO BE PULLED BACK FROM DEVICES OR WALLS TO BE DEMOLISHED. THIS CONTRACTOR TO COIL CABLES NEATLY AND LEAVE THEM IN CORRIDOR CEILING SPACES OUTSIDE OF AREA OF WORK. EXISTING CABLE LABELS ARE TO BE RETAINED.
- NOTIFY THE CONSTRUCTION COORDINATOR IF THERE ARE WIRELESS ACCESS POINTS OR CAMERAS INSTALLED ON A WALL OR CEILING BEING DEMOLISHED. WIRELESS ACCESS POINTS AND CAMERAS ARE TO BE DISCONNECTED AND REMOVED BY UNIVERSITY OF WATERLOO 1ST FORCES TO REPLACE WITH NEW OR BE REINSTALLED, AS NEEDED.

CONDUIT, WIRE, BOXES, COVER PLATES AND FASTENERS

- THIS CONTRACTOR SHALL:
- PRIME AND PAINT EXPOSED RACEWAY AND BOXES ETC. TO MATCH EXISTING COLOR SCHEME, **UNLESS NOTED OTHERWISE.**
 - PAINT AND LABEL ALL POWER AND DATA JUNCTION BOX COVER PLATES TO MATCH EXISTING BUILDING COLOR SCHEME. IF NO COLOR SCHEME IS PRESENT USE THE FOLLOWING:
 - 120/208V ----- ORANGE
 - DATA ----- YELLOW
 - ALL COVER PLATES ARE TO BE LABELED WITH PANEL NUMBER AND CIRCUIT NUMBER IN A CLEAR AND LEGIBLE MANNER, WHERE THE RACEWAY IS EXPOSED THE COVER PLATES ARE TO BE TURNED IN SO THAT THE PAINT AND LABEL ARE ON THE INSIDE OF THE BOX.
 - INSTALL A GREEN GROUND WIRE OF THE SIZE REQUIRED BY ONTARIO ELECTRICAL CODE FOR ALL NEW PRIMARY AND SECONDARY POWER CIRCUITS INSTALLED WITH THIS ALTERATION.
 - INSTALL NEW WIRING ABOVE ACCESSIBLE CEILINGS IN NON-FLEXIBLE RACEWAY FOR MAIN RUNS. FLEXIBLE RACEWAY TO A MAXIMUM LENGTH OF 4.6m (15'-0") WILL BE ACCEPTABLE FOR BRANCH RUNS FROM THE MAIN RIGID RACEWAY TO DEVICES RECESSED IN DRYWALL PARTITIONS AND FOR FEEDS TO FIXTURES. NEW FEEDS TO DEVICES IN BLOCK WALLS WILL BE RUN IN RIGID RACEWAY ONLY OR AS APPROVED ON.
 - RUN ALL CONCEALED AND SURFACE MOUNTED RACEWAY **PARALLEL TO OR PERPENDICULAR TO BUILDING PLANES.**
 - ALL POWER FEEDS TO DEVICES AND EQUIPMENT IN OR ON WALLS SHALL BE FED VERTICALLY FROM ABOVE CEILING OR CEILING LINE. AT NO TIME SHALL IT BE RUN HORIZONTALLY EXCEPT AS INDICATED ON DRAWING OR ON SITE BY JOB COORDINATOR.
 - SUPPLY AND INSTALL RACEWAY AND 120 VOLT BOXES CONCEALED ABOVE CEILINGS AND IN WALL SPACES WHERE POSSIBLE. ALL EXPOSED RACEWAY AND BOXES BELOW CEILING, OR CEILING LINE, TO BE WHITE COLOURED WIREMOLD PRODUCT (OR EQUAL) UNLESS OTHERWISE NOTED ON DRAWING OR APPROVED BY ELECTRICAL DESIGNER.
 - EXTEND RACEWAY AND WIRE FROM EXISTING CIRCUIT LOCATION TO NEW DEVICE OR FIXTURE LOCATION AND CONNECT AS INDICATED ON DRAWING.
 - SUPPLY AND INSTALL COVER PLATES, BUSHINGS, AND FASTENERS ETC. AND ALL SUNDRY MATERIAL REQUIRED TO COMPLETE INSTALLATION AS REQUIRED BY THE ELECTRICAL SAFETY AUTHORITY.
 - SUPPLY AND INSTALL STAINLESS STEEL DEVICE COVER PLATE OR BLANK ABANDONING PLATE ON DEVICE BOX LOCATIONS AS DICTATED BY THE DEVICE INSTALLED, OR AS NOTED ON DRAWING OR BY JOB.
 - THE LOCATION OF OUTLETS, FIXTURES, PANELS, ETC. AS SHOWN ON THE DRAWINGS ARE APPROXIMATELY CORRECT. THE UNIVERSITY OF WATERLOO RESERVES THE RIGHT TO ALTER ANY LOCATION BY AS MUCH AS 3m (10'-0") WITHOUT INCURRING AN EXTRA, PROVIDED THEY DO SO BEFORE THE OUTLETS, FIXTURES, PANELS, ETC. ARE INSTALLED.
 - SUPPLY AND INSTALL APPROVED SIZE OF MINIMUM NO. 12 AWG **RW90/RWU90** COPPER BUILDING WIRE AS INDICATED ON DRAWING OR APPROVED BY ONTARIO ELECTRICAL SAFETY AUTHORITY.
 - DISCONNECT AND REMOVE COMPLETE ALL BOXES, RACEWAY, AND WIRE ETC. FROM EXISTING WALLS AND AREAS TO BE DEMOLISHED BY THIS ALTERATION AND TERMINATE SAFE AT SUPPLY PANEL OR REROUTE TO SUITE NEW INSTALLATION OR AS INDICATED ON DRAWING.

DEVICES

- THIS CONTRACTOR SHALL:
- MARK NEW OUTLETS WITH DYMO LECTRA TAG PEARL TAPE INDICATING PANEL AND CIRCUIT NUMBER.
 - SUPPLY AND INSTALL DEVICES RECESSED IN WALLS AND CEILINGS WHERE POSSIBLE. WHERE SURFACE MOUNTING IS REQUIRED INSTALL DEVICES IN WIREMOLD (OR EQUAL) BOXES.
 - MOUNTING HEIGHT OF DEVICES SHALL MATCH EXISTING.
 - SUPPLY AND INSTALL NEW DEVICES RECESSED MOUNTED OF THE TYPE AS SPECIFIED IN MATERIAL SPECIFICATION. COLOR OF DEVICE SHALL MATCH EXISTING DEVICES ON SITE.
 - CONNECT NEW AND EXISTING DEVICES TO CIRCUITS SHOWN ON DRAWING ENSURING THAT NO MORE THAN **SIX (6)** OUTLETS ARE CONNECTED PER CIRCUIT, OR AS INDICATED ON DRAWING.
 - ALL DEVICES TO BE COMMERCIAL GRADE, UNLESS NOTED OTHERWISE ON DRAWING.**

POWER DISTRIBUTION

- THIS CONTRACTOR SHALL:
- PROVIDE A MINIMUM OF TWO (2) WEEKS NOTICE FOR ALL REQUIRED ELECTRICAL SERVICE SHUTDOWNS.
 - THE UNIVERSITY OF WATERLOO RESERVES THE RIGHT TO BOOK ELECTRICAL SERVICE SHUTDOWNS ON WEEKENDS AND AFTER HOURS.
 - ALL FEEDER CONDUCTORS, TRANSFORMER COILS, SPLITTER BUS, AND PANEL BUS TO BE COPPER, UNLESS NOTED OTHERWISE ON DRAWING.**

FIRE STOPPING

- THIS CONTRACTOR SHALL:
- PROVIDE FIRESTOPPING MATERIAL AROUND CONDUITS, DUCTS, OR ANY PENETRATIONS OF A FIRE SEPARATION CREATED BY THIS CONTRACTOR.
 - FIRESTOPPING MATERIAL IS TO COMPLY WITH REQUIREMENTS OF CAN4-S115-M35, AND DO NOT EXCEED OPENING SIZE FOR WHICH THEY HAVE BEEN TESTED.
 - FIRE STOP MATERIAL MUST CONFORM TO REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION. CONTRACTOR TO CONFIRM PRIOR TO APPLICATION AND ENSURE MATERIAL USED IS COMPATIBLE WITH THAT USED BY OTHER TRADES ON SITE.

LIGHTING

- THIS CONTRACTOR SHALL:
- SUPPLY AND INSTALL LIGHTING FIXTURES AS SPECIFIED IN **THE LUMINAIRE SCHEDULE** COMPLETE WITH HOLLOW METAL HANGERS, LENSES, **AND** APPROVED SUPPORT BRACKETS FOR THE TYPE OF CEILING THE FIXTURE IS TO BE INSTALLED INTO.
 - INSTALL ALL NEW AND RELOCATED FIXTURES AFFECTED BY THIS ALTERATION IN ACCORDANCE WITH THE ONTARIO ELECTRICAL SAFETY INSPECTION REQUIREMENTS.
 - REWIRE NEW AND EXISTING SWITCHES AS SHOWN ON DRAWING USING EXISTING CIRCUITS, RACEWAY AND WIRING AS REQUIRED TO COMPLETE THIS INSTALLATION.
 - DISCONNECT AND REMOVE ALL BALLASTS CONTAINING HAZARDOUS PCB. THESE BALLASTS ARE TO BE RETURNED TO THE UNIVERSITY OF WATERLOO FOR PROPER DISPOSAL. **REFER TO SPECIFICATION SECTION '01 35 25 OWNER SAFETY REQUIREMENTS' FOR ADDITIONAL INFORMATION.**
 - WORK TO INCLUDE ALL LABOUR, MATERIALS, TOOLS, APPLIANCES, CONTROL HARDWARE, SENSORS, PROGRAMMING AND COMMISSIONING, WIRING, JUNCTION BOXES AND EQUIPMENT NECESSARY FOR AND INCIDENTAL TO THE DELIVERY, INSTALLATION AND FURNISHING OF A COMPLETELY OPERATIONAL STANDALONE LIGHTING CONTROL SYSTEM, AS DESCRIBED HEREIN.
 - UNLESS OTHERWISE SPECIFIED ON DRAWING OR SPECIFICATION, IF REQUIRED, THE DUAL TECHNOLOGY SENSORS COMBINING BOTH PASSIVE INFRARED AND ULTRASONIC/MICROPHONIC TECHNOLOGIES INTO ONE SENSOR SHALL BE PROVIDED AS DEFAULT.
 - ALL SWITCHES/SENSORS SHALL BE FROM ONE MANUFACTURER.
 - ALL LIGHTING CONTROL IS SUBJECT TO FUNCTIONAL TESTING. LIGHTING CONTROL DEVICES AND CONTROL SYSTEM SHALL BE TESTED TO ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED, AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THIS SECTION AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

MATERIAL SPECIFICATION

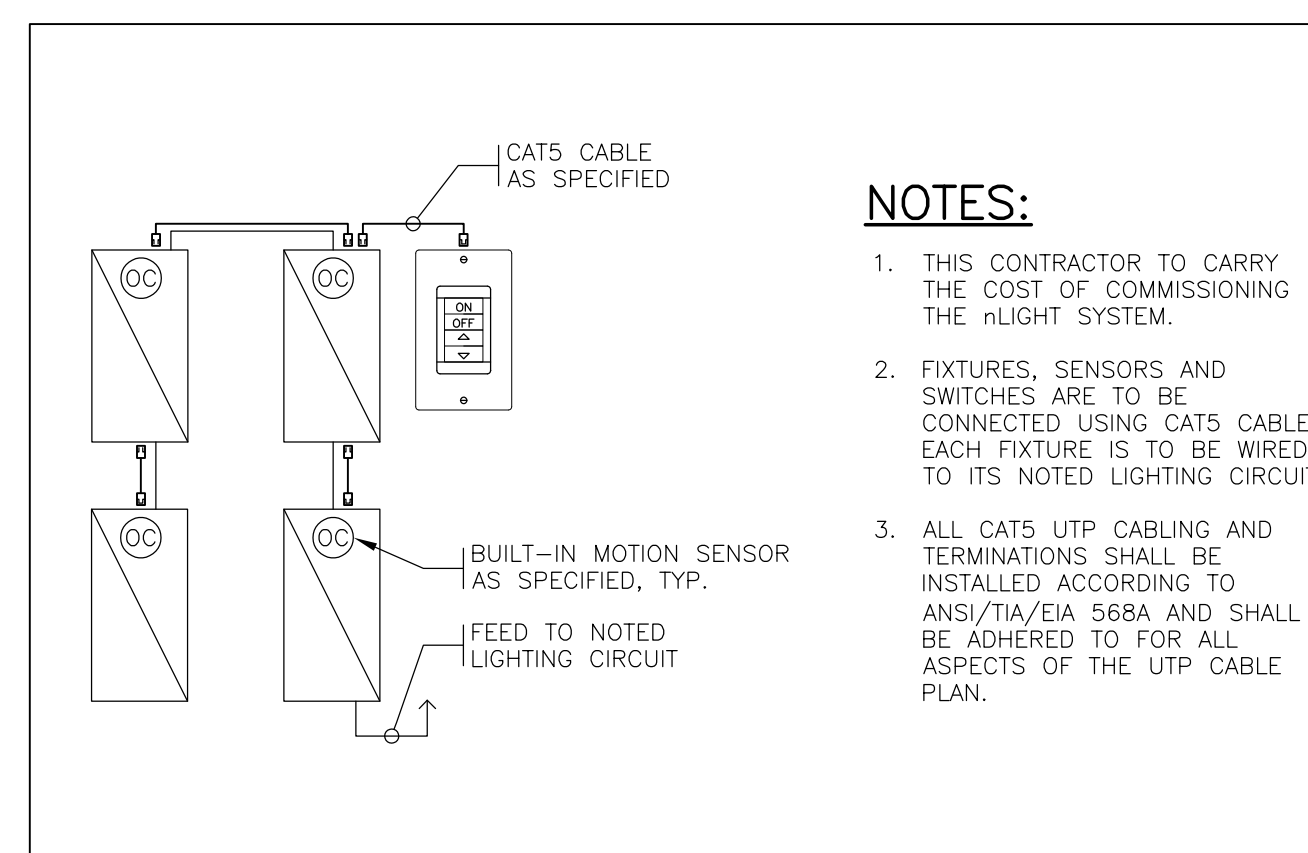
- THIS CONTRACTOR SHALL SUPPLY AND INSTALL THE FOLLOWING MATERIAL WHERE SHOWN ON DRAWING AND INDICATED HEREIN:
- DEVICES, 'ACUITYBRANDS':
 - SW1 LIGHT SWITCH, WIRED, NLIGHT CAT# 'NPODMA DX WH' (ON/OFF, RAISE/LOWER)
- NOTE ANY ALTERNATES MUST BE APPROVED IN WRITING THROUGH THE UNIVERSITY OF WATERLOO 3 BUSINESS DAYS PRIOR TO TENDER CLOSE.

AFTER TENDER CLOSING NO ALTERNATES WILL BE ALLOWED.

END OF SPECIFICATION

LUMINAIRE SCHEDULE							
TYPE	MANUFACTURER	CATALOGUE NUMBER	VOLTAGE, WATTAGE, LUMENS, & COLOUR TEMP.	MOUNTING P=POLE R=RECESSED S=SURFACE SD--SUSPENDED W=WALL	MOUNTING HEIGHT	REMARKS	
A1	LITHONIA LIGHTING	2BLT4-40L-ADSMT-EZ1-LP835-N100-NESPD7	120V, 30.50W, 4102 LUMENS, & 3500K	R	CEILING HEIGHT	2X4 TROFFER, DIM TO DARK DRIVER, C/W BUILT IN DUAL TECHNOLOGY OCCUPANCY SENSOR.	
NOTES:							
1. ANY ALTERNATES MUST BE APPROVED IN WRITING THROUGH THE UNIVERSITY OF WATERLOO THREE (3) BUSINESS DAYS PRIOR TO TENDER CLOSE.							
2. IF ALTERNATE LIGHTING FIXTURES ARE PROPOSED, CONTRACTOR MUST SUBMIT PHOTOMETRIC CALCULATIONS FOR APPROVAL C/W WITH ALTERNATE LIGHTING FIXTURES SHOP DRAWINGS AND SELECTIONS.							
3. AFTER TENDER CLOSING NO ALTERNATES WILL BE ALLOWED.							

LIGHTING CONTROL NARRATIVE SCHEDULE	
TYPE	LIGHTING CONTROL NARRATIVE
TYPICAL SPACES	
⬠	PRIVATE OFFICE - ON/OFF/DIM PUSH BUTTON + OCCUPANCY SENSOR AUTO ON/OFF. LIGHTS ARE AUTOMATICALLY TURNED ON BY OCCUPANCY SENSORS TO 50% OCCUPANCY SENSORS WILL MONITOR THE OCCUPANCY. IF NO OCCUPANCY IS DETECTED AFTER 15 MINUTES THE LIGHTS WILL DIM TO DARK. WALL SWITCH ACT AS GLOBAL ON/OFF/DIMMING OVERRIDE CONTROL.
NOTES:	
1. REFER TO DRAWING LAYOUT FOR LOCATION OF ASSOCIATED DEVICES AND ADDITIONAL NOTES.	
2. REFER TO LUMINAIRE SCHEDULE FOR ADDITIONAL INFORMATION REGARDING FIXTURE SELECTIONS.	
3. ALLOW FOR REPROGRAMMING FROM USER GROUP INPUT AFTER 6 MONTHS OF USE.	



1
E1 TYPICAL nLIGHT WIRING DIAGRAM - INTEGRATED SENSORS
N.T.S.

LEGEND

- ⬠ LIGHT FIXTURE RECESSED MOUNTED, TYPE AS SPECIFIED.
- ⊥ SINGLE POLE SWITCH, MATCH EXISTING MOUNTING HEIGHT. D=DIMMER.
- ⬠ LIGHTING CONTROL NARRATIVE TAG, REFER TO 'LIGHTING CONTROL NARRATIVE SCHEDULE'.
- ⬠ SURFACE MOUNTED PANELBOARD.
- ⊕ SPECIAL OUTLET MOUNTED 12" A.F.F. OR AS NOTED ON DRAWING.
- ▼ VOICE/DATA OUTLET FLUSH MOUNTED 12" A.F.F. OR AS NOTED ON DRAWING (ROUGH-IN ONLY).
- ⊕ SURFACE MOUNTED DEVICES (VIA 500 SERIES RACEWAY).
- ⊕ WIRELESS ACCESS POINT MOUNTED TO CEILING/STRUCTURE, SHOWN FOR REFERENCE.
- ⊥ UN-FUSED DISCONNECT SWITCH.
- E EXISTING DEVICE OR EQUIPMENT TO REMAIN.
- R REMOVE EXISTING DEVICE OR EQUIPMENT.
- N NEW DEVICE OR EQUIPMENT.

GENERAL NOTES:

- NEW CIRCUITRY NUMBERS ARE SHOWN FOR CONFIGURATION ONLY. NEW CIRCUIT NUMBERS ARE TO BE RECORDED ON AS-BUILT DRAWING.
- CONTRACTOR TO UTILIZE EXISTING BREAKERS OR SUPPLY NEW AS REQUIRED TO SUIT RECEPTACLE CONFIGURATION.
- CONTRACTOR TO PROVIDE THE FOLLOWING REPORTS AS PART OF THE PROJECT CLOSEOUT:
 - ESA REVIEW REPORT
- FOR CLARIFICATION, DATA CABLING SCOPE TO BE COMPLETED BY UNIVERSITY OF WATERLOO 1ST DEPARTMENT. COORDINATE COMPLETION OF DATA SCOPE ROUGH-IN WITH PROJECT COORDINATOR TO ENSURE 1ST IS AWARE THEY CAN PROCEED.
- REGARDING PANEL SHUTDOWNS:
 - PANEL 'LP-1C': NO MAIN BREAKER IN PANEL. PANEL FED FROM DEDICATED BREAKER IN 'TRANSFORMER STATION SS-C1' LOCATED IN ROOM 1026A.
 - PANEL 'LP-1D': NO MAIN BREAKER IN PANEL. PANEL FED FROM DEDICATED BREAKER IN 'TRANSFORMER STATION SS-D1' LOCATED IN ROOM 1045.
 - PANEL 'LP-2B': NO MAIN BREAKER IN PANEL. PANEL FED FROM DEDICATED BREAKER IN 'TRANSFORMER STATION SS-B1' LOCATED IN ROOM 1002A.
 - PANEL 'LP-2C': NO MAIN BREAKER IN PANEL. PANEL FED FROM DEDICATED BREAKER IN 'TRANSFORMER STATION SS-C1' LOCATED IN ROOM 1026A.



Plant Operations

DO NOT SCALE DRAWINGS.
CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

ALL DRAWINGS REMAIN THE PROPERTY OF THE UNIVERSITY OF WATERLOO AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE UNIVERSITY'S WRITTEN PERMISSION.
ALL WORK SHALL CONFORM TO THE GENERAL CONDITIONS OF THE UNIVERSITY OF WATERLOO STANDARD SPECIFICATIONS.

NO.	REVISIONS	DATE & INITIAL
01	ISSUED FOR TENDER	2024.10.15

CAD FILE No. 52912_E_017_01

PRINTING DATE 2024.10.11

PLOTTING DATE 2024.10.11

DWG. NO. 52912_E_017_01

PROJECT
PHASE 2
RENOVATE SWING SPACE
VARIOUS ROOMS - ELECTRICAL

JOB NO.	24-E	DRAWN	K.W.H.
W.R. NO.	52912	CHKD	H.S.
DATE	2024.08.22	SHEET	
SCALE	AS INDICATED	E1 OF 2	

BUILDING

MATH & COMPUTER
MC
BLDG No. 017

WATERLOO ONTARIO



Plant Operations

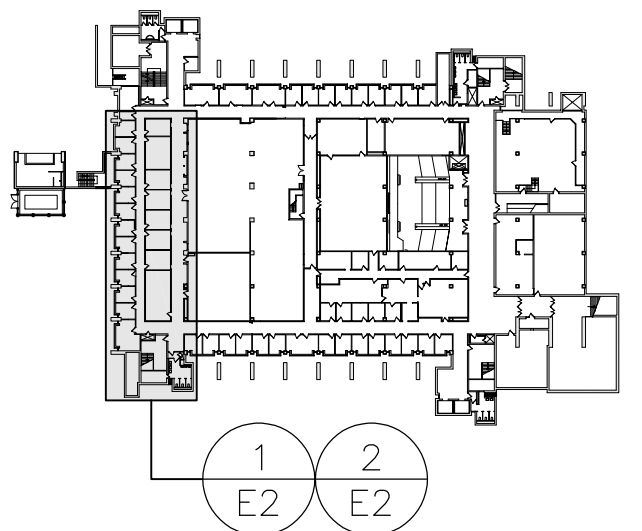
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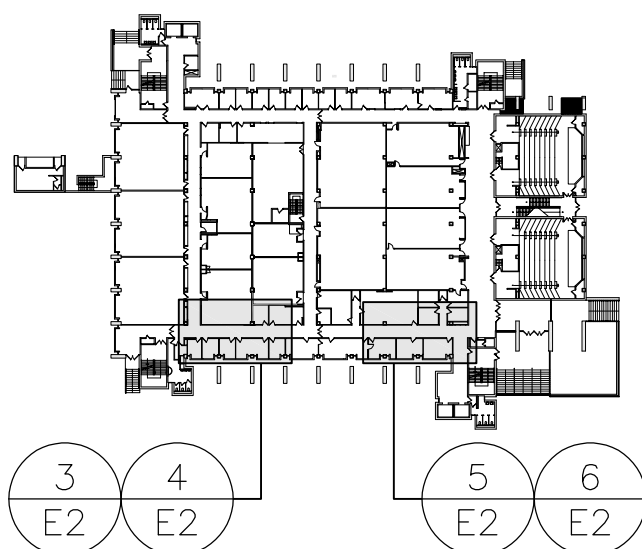
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KEY PLAN - FIRST FLOOR



KEY PLAN - SECOND FLOOR

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PRINTING DATE 2024.10.11

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PROJECT PHASE 2 RENOVATE SWING SPACE VARIOUS ROOMS - ELECTRICAL

JOB NO. 24-E DRAWN K.W.H.

W.R. NO. 52912 CHKD H.S.

DATE 2024.08.22 SHEET

SCALE AS INDICATED E2 OF 2

BUILDING

MATH & COMPUTER MC BLDG No. 017

WATERLOO ONTARIO

GENERAL NOTES:

1. FOR CLARIFICATION, THERE ARE THREE (3) WIRELESS ACCESS POINTS INSTALLED WITHIN THE PHASE 2 AREAS OF WORK FOR THIS RENOVATION (REFER TO LAYOUTS FOR LOCATIONS). IT IS TO REMOVE THESE DEVICES BEFORE DEMOLITION BEGINS, TEMPORARILY STORE, AND REINSTALL ONCE NEW CEILING GRID SYSTEMS ARE INSTALLED. ENSURE GENERAL CONTRACTOR AND CONSTRUCTION COORDINATOR ARE NOTIFIED IF THESE DEVICES ARE STILL IN PLACE WHEN DEMOLITION BEGINS.

DEMOLITION NOTES:

1 CONTRACTOR TO DISCONNECT AND REMOVE EXISTING 120V 2X4 LIGHTING FIXTURES, EXISTING CIRCUITRY TO REMAIN FOR RE-USE IN ALTERATION SCOPE. DISCONNECT AND REMOVE EXISTING RECESSED LINE VOLTAGE ON/OFF LIGHT SWITCH C/W ASSOCIATED WIRING. ENSURE WIRING FEEDING LIGHTING FIXTURES IN OTHER SPACES IS MAINTAINED. EXISTING BOX AND CONDUIT TO BE RE-USED FOR ALTERATION SCOPE, UNLESS NOTED OTHERWISE.

2 CONTRACTOR TO DISCONNECT AND REMOVE EXISTING RECESSED LINE VOLTAGE ON/OFF LIGHT SWITCH C/W ASSOCIATED WIRING. ENSURE WIRING FEEDING LIGHTING FIXTURES IN OTHER SPACES IS MAINTAINED. INSTALL BLANK COVER PLATE FOR DEVICE.

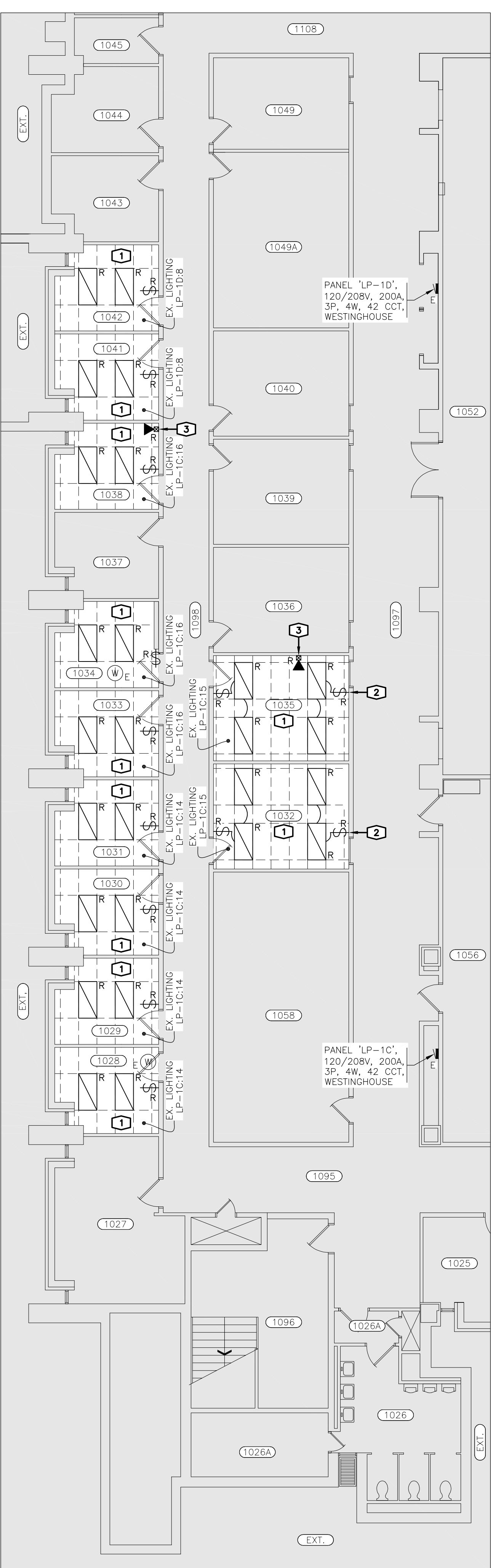
3 CONTRACTOR TO DISCONNECT AND REMOVE EMPTY SURFACE MOUNTED 500 SERIES RACEWAY AND ASSOCIATED SINGLE GANG SURFACE MOUNTED BOX. ENSURE REMOVAL IS COMPLETED BEFORE THE GENERAL CONTRACTOR PAINTS.

4 ROOM MC-2024. CONTRACTOR TO DISCONNECT AND REMOVE SURFACE MOUNTED DISCONNECT SWITCH AND ASSOCIATED RECEPTACLE, CONDUIT, AND WIRING. CONTRACTOR TO PULL WIRING BACK TO SOURCE PANEL AND MARK BREAKER AS 'SPARE', AS APPLICABLE.

ALTERATION NOTES:

1 CONTRACTOR TO SUPPLY AND INSTALL NEW 120V 2X4 LIGHTING FIXTURES IN THE SAME LOCATION AS THE REMOVED LIGHTING FIXTURES (EXCEPT FOR ROOM 2018 WHICH HAS A REDUCED LIGHTING FIXTURE QUANTITY, REFER TO LAYOUT). RECONNECT TO EXISTING CIRCUITRY MADE AVAILABLE DURING DEMOLITION SCOPE. EXTEND/CUTBACK CONDUIT AND WIRING AS REQUIRED. REFER TO 'LUMINAIRE SCHEDULE' AND 'LIGHTING CONTROL NARRATIVE SCHEDULE' ON DRAWING E1 FOR ADDITIONAL INFORMATION.

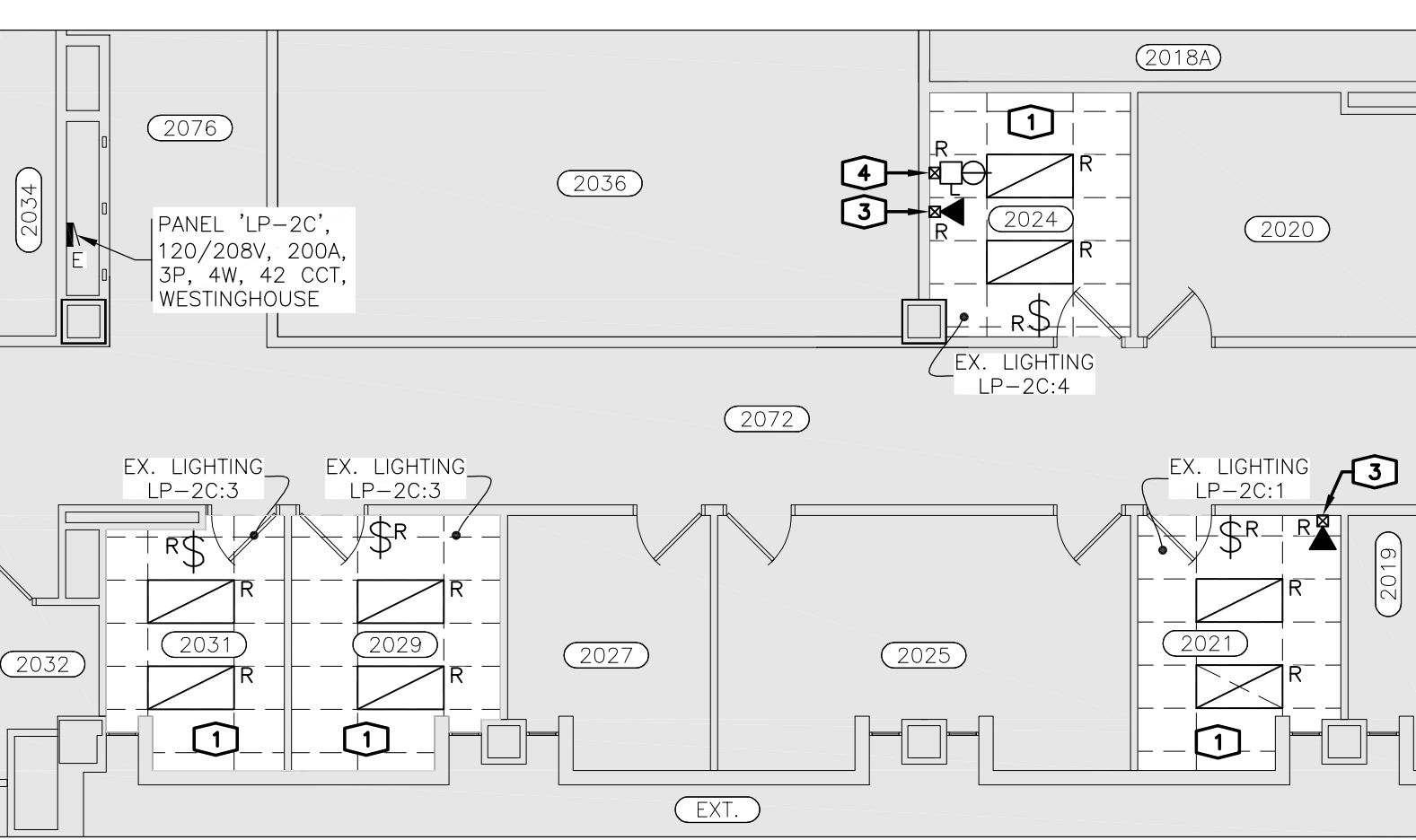
2 CONTRACTOR TO SUPPLY AND INSTALL LOCAL ON/OFF/DIMMING SWITCH, UTILIZE EXISTING DEVICE BOX MADE AVAILABLE DURING DEMOLITION SCOPE.



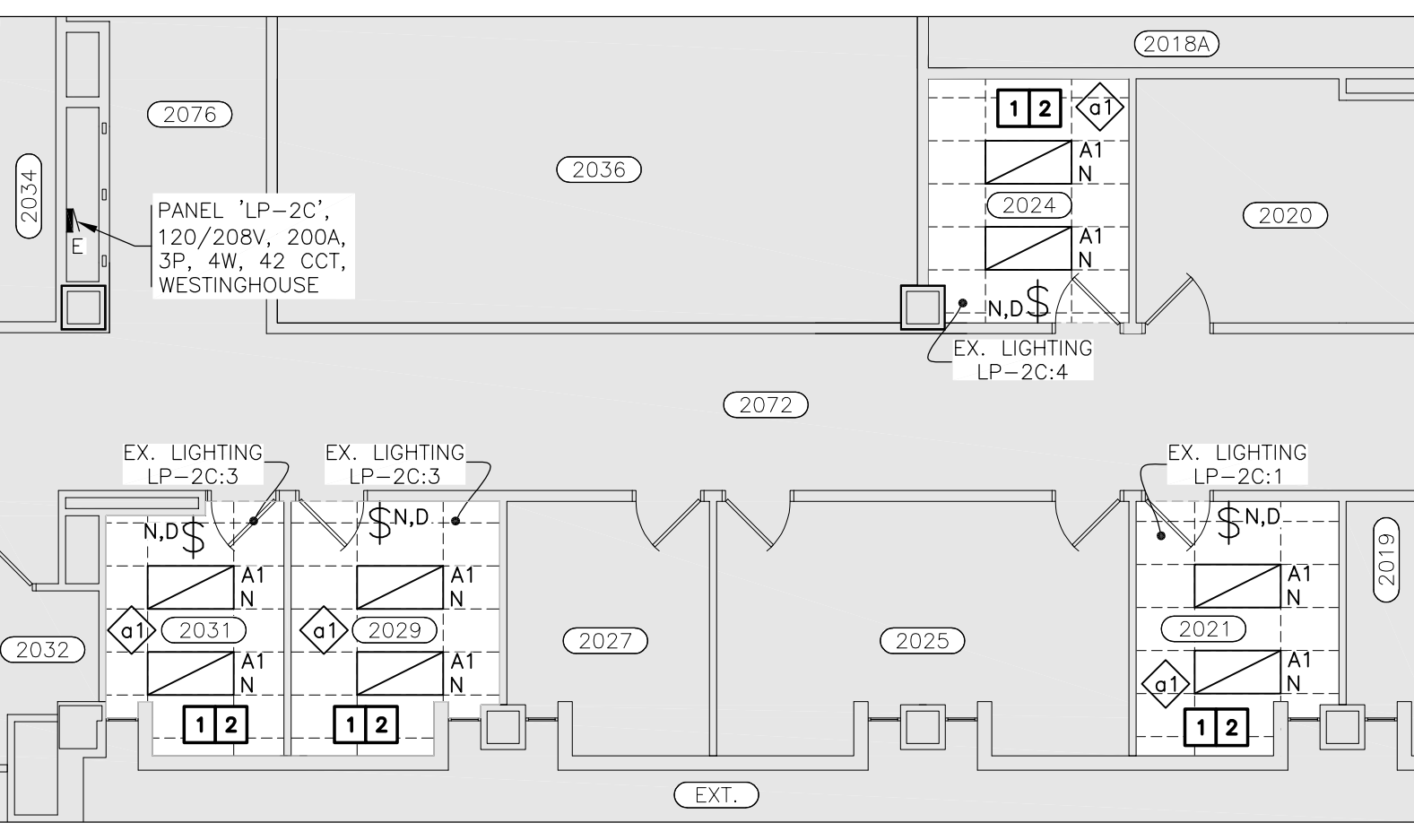
1 PARTIAL FIRST FLOOR LAYOUT - ELECTRICAL DEMOLITION PHASE 2



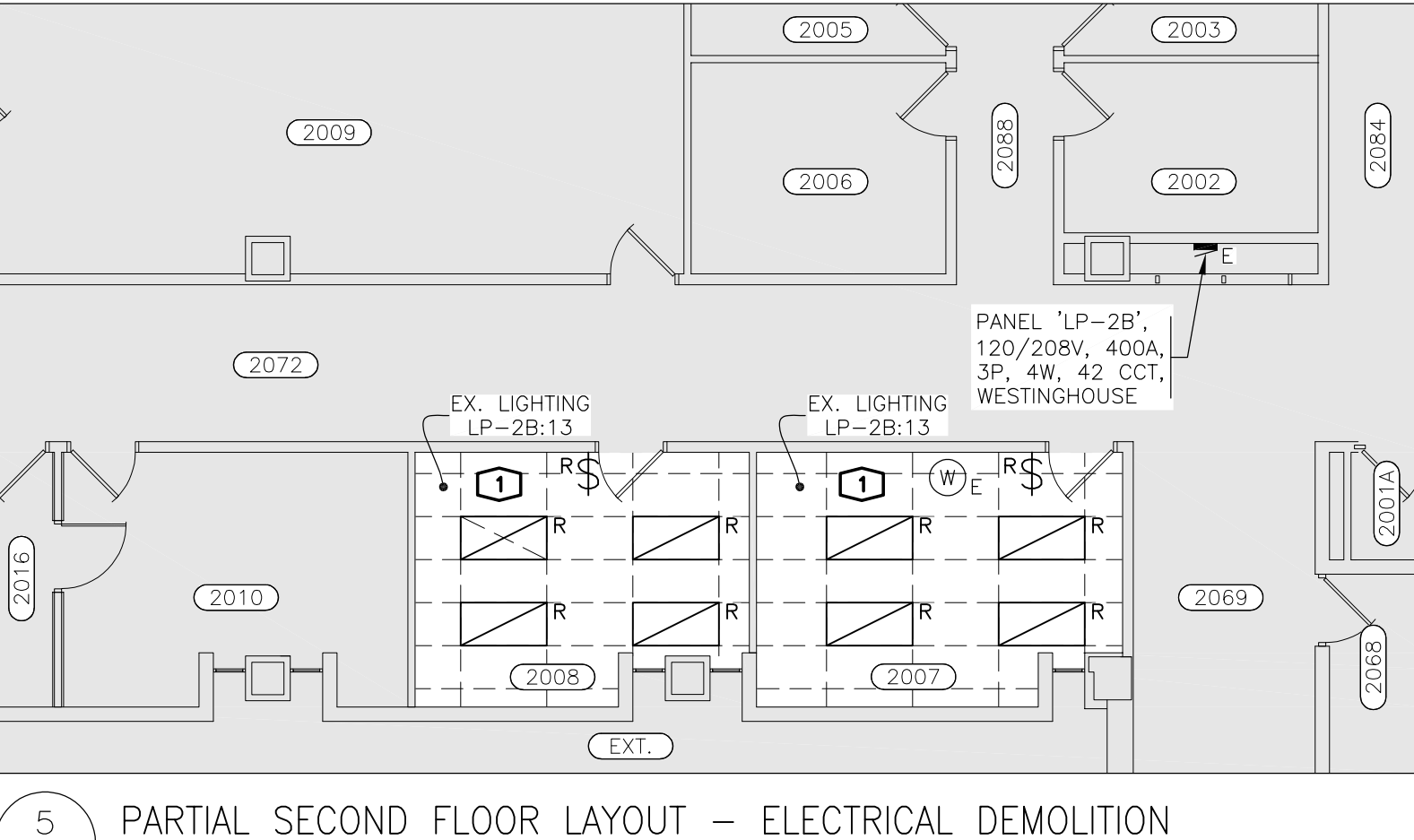
2 PARTIAL FIRST FLOOR LAYOUT - ELECTRICAL ALTERATIONS PHASE 2



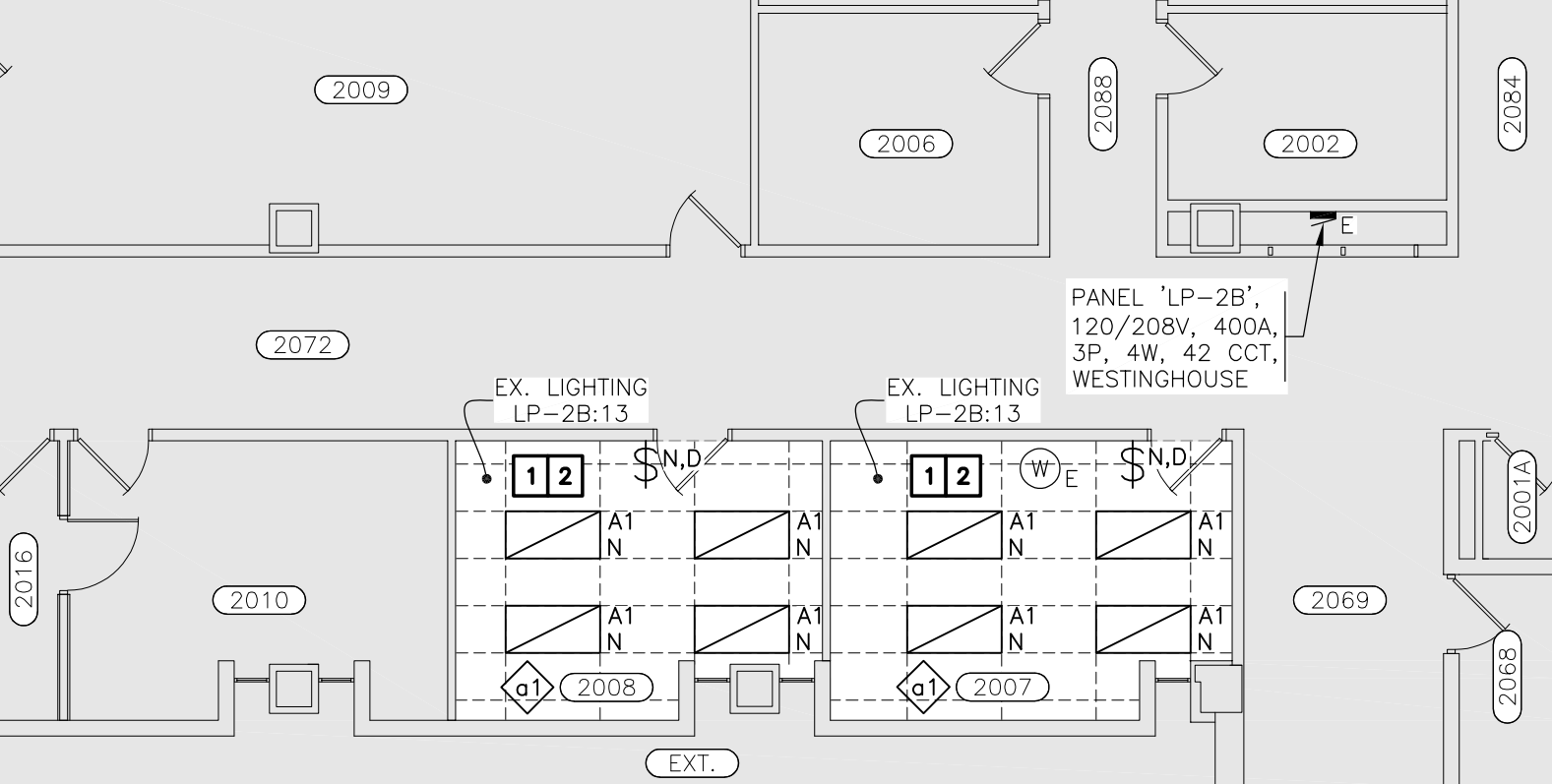
3 PARTIAL SECOND FLOOR LAYOUT - ELECTRICAL DEMOLITION PHASE 2



4 PARTIAL SECOND FLOOR LAYOUT - ELECTRICAL ALTERATIONS PHASE 2



5 PARTIAL SECOND FLOOR LAYOUT - ELECTRICAL DEMOLITION PHASE 2



6 PARTIAL SECOND FLOOR LAYOUT - ELECTRICAL ALTERATIONS PHASE 2



Plant Operations

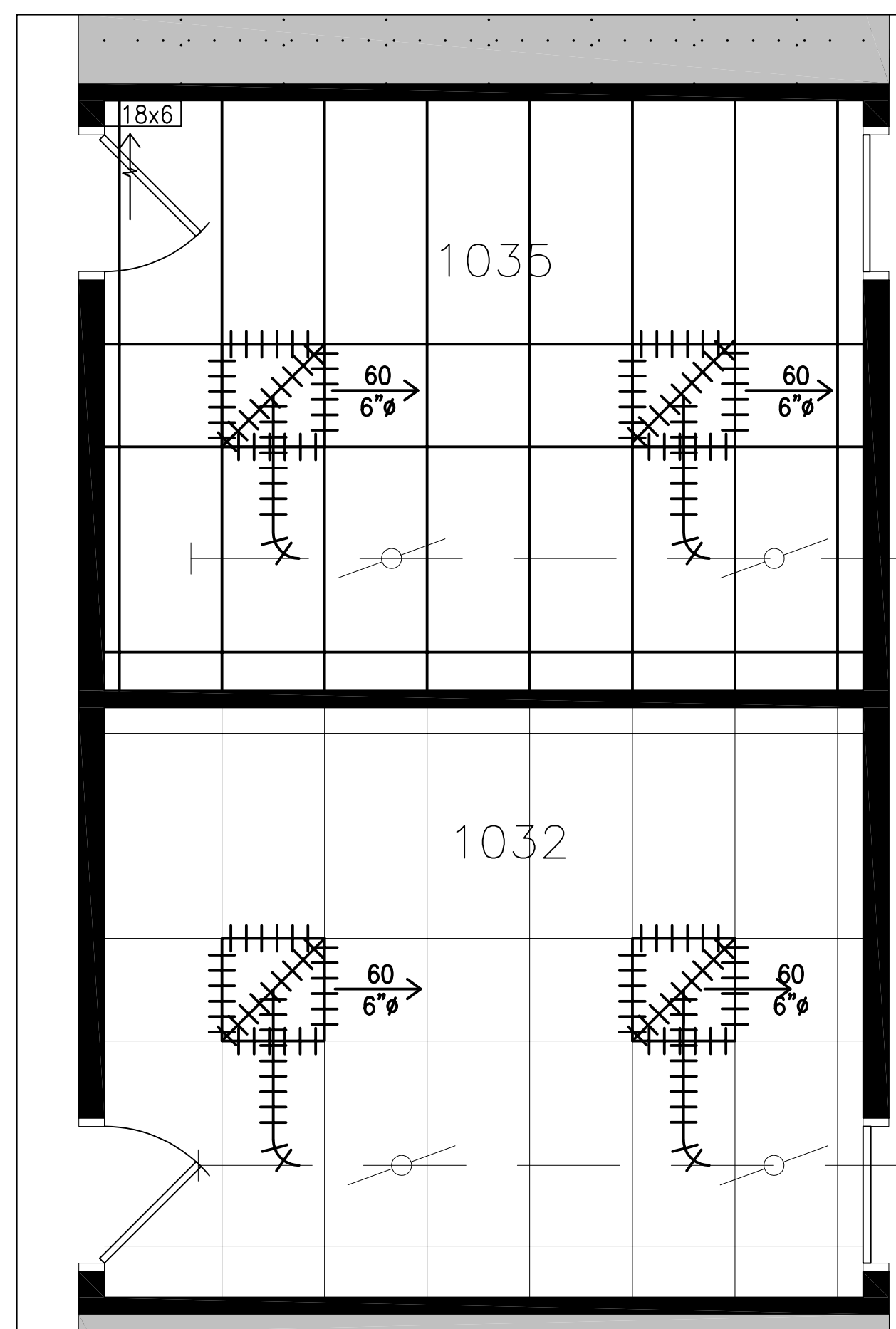
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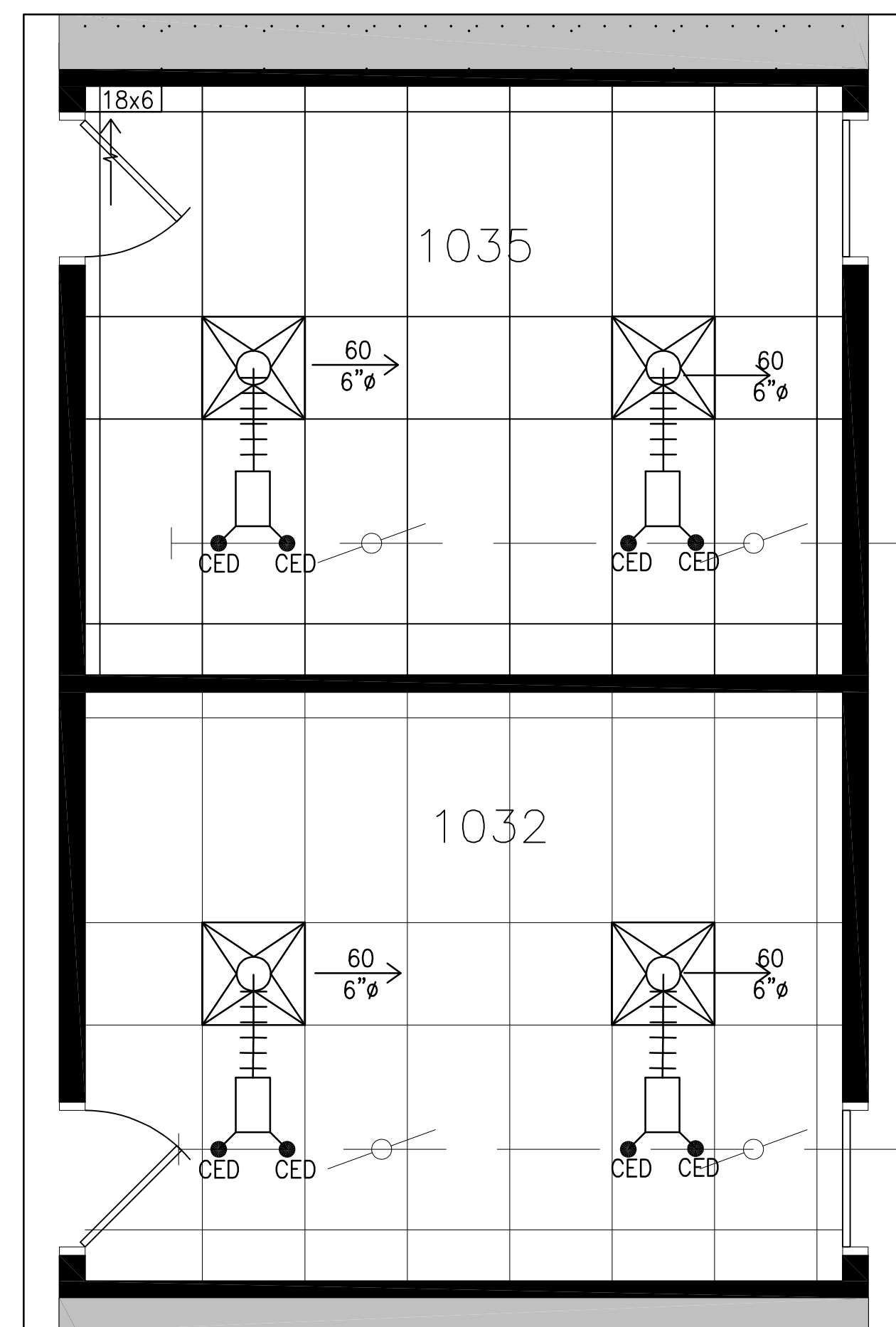
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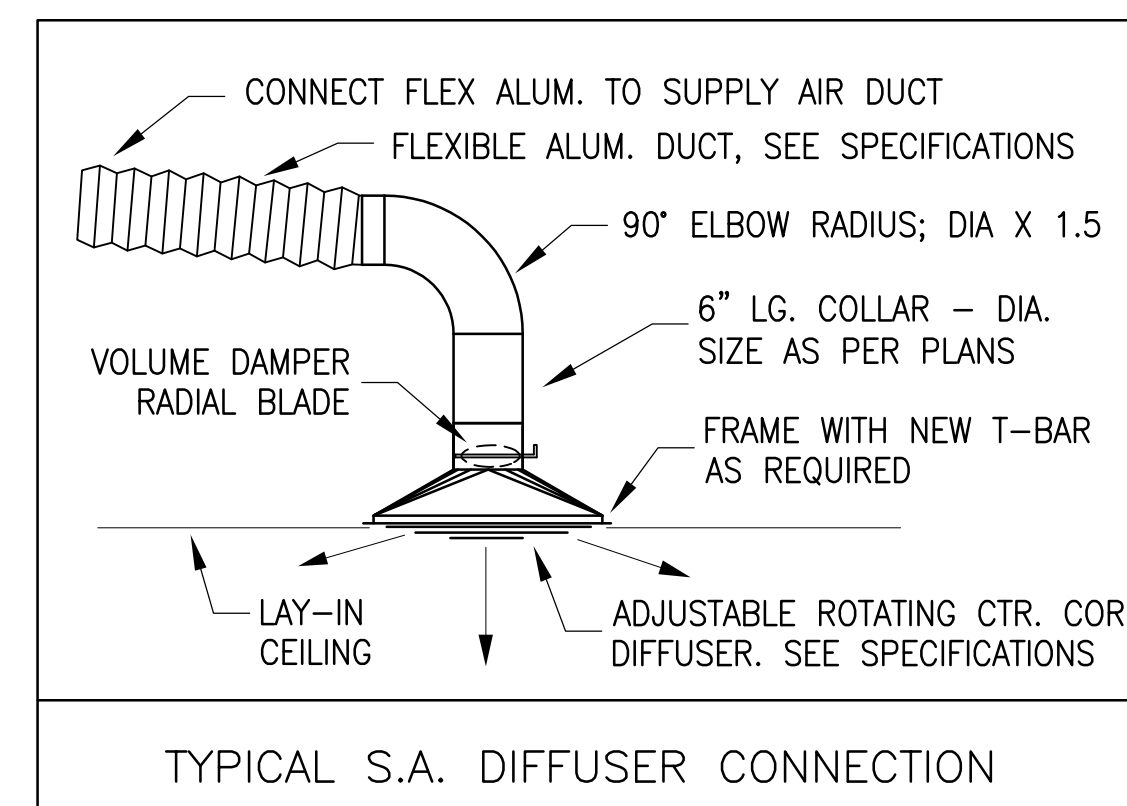
NO.	REVISIONS	DATE & INITIAL
01	ISSUED FOR TENDER	2024.09.24



1 PARTIAL 1st FLOOR PLAN – DEMOLITION
A1 3/8"=1'-0"



1 PARTIAL 1st FLOOR PLAN – NEW CONSTRUCTION
A1 3/8"=1'-0"



TYPICAL S.A. DIFFUSER CONNECTION

GENERAL SPECIFICATIONS

THIS CONTRACTOR SHALL INSPECT SITE PRIOR TO SUBMITTING TENDER FOR THIS PROJECT AND VERIFY ALL CONDITIONS AND DIMENSIONS.

THIS CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT TO THE SATISFACTION OF THE PROJECT CO-ORDINATOR ALL EQUIPMENT, BOOKS, FURNISHINGS, COMPUTERS, AND OTHER ITEMS IN THE AREA AFFECTED BY THIS PROJECT BEFORE PROCEEDING WITH ANY WORK.

THIS CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW MATERIALS TO COMPLETE THIS PROJECT AS SHOWN ON THE DRAWINGS AND AS PER SPECIFICATIONS AND LEGEND.

THIS CONTRACTOR SHALL REMOVE ALL DEBRIS FROM UNIVERSITY OF WATERLOO PROPERTY. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING GOOD AND REFINISHING TO MATCH EXISTING ANY DAMAGE DONE DURING THIS PROJECT.

ALL DIMENSIONS ARE IN INCHES. THIS CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS TO EQUIPMENT AND SERVICES.

THIS CONTRACTOR SHALL CUT AND PATCH ALL WALLS FOR THE INSTALLATION OF NEW MECHANICAL SERVICES.

THIS CONTRACTOR SHALL NOT DRILL INTO TEE LEG OF PRECAST STRUCTURAL TEES. THE UNIVERSITY OF WATERLOO WILL BE RESPONSIBLE FOR SHUTTING DOWN AND DRAINING ANY SERVICES.

THIS CONTRACTOR TO CONTACT PROJECT CO-ORDINATOR TO DETERMINE WHAT MATERIALS ARE TO BE SALVAGED AND LOCATION FOR STORAGE.

THIS CONTRACTOR SHALL SUBMIT TO THE U OF W 4 COPIES OF SHOP DRAWINGS FOR ALL EQUIPMENT SUPPLIED BY THE CONTRACTOR. DRAWINGS SHALL BE SENT TO THE PROJECT CO-ORDINATOR PRIOR TO ORDERING OF ANY EQUIPMENT. SUBMIT 3 COPIES OF "MAINTENANCE MANUALS" TO PROJECT CO-ORDINATOR, C/W THE FOLLOWING INFORMATION: MAKE, MODEL AND SERIAL NUMBER OF EACH PIECE OF EQUIPMENT. INDICATE DATE OF INSTALLATION, BUILDING AND ROOM NUMBER, LOCATION OF EACH UNIT, AND IS EQUIPMENT REQUIRED FOR YEAR ROUND OPERATION.

FIRE ALARM SHUTDOWN
GENERAL CONTRACTOR SHALL PROVIDE ALLOWANCE FOR COST INCURRED TO PROVIDE FIRE ALARM SHUTDOWN.

MATERIALS AND WORKMANSHIP

WORKMANSHIP AND INSTALLATION METHODS SHALL CONFORM TO THE BEST STANDARD PRACTICE. WORK SHALL BE PERFORMED BY CERTIFIED TRADESMEN.

INSTALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. INSTALL EQUIPMENT AND MATERIALS TO PRESENT A NEAT APPEARANCE. RUN PIPING, DUCTS AND CONDUIT PARALLEL TO OR PERPENDICULAR TO BUILDING PLANES.

SUBSTITUTION OF MATERIAL FROM THOSE SPECIFIED WILL NOT BE ALLOWED UNLESS WRITTEN PERMISSION IS RECEIVED PRIOR TO TENDER CLOSING.

THE MECHANICAL CONTRACTOR SHALL NOTIFY THE U OF W COORDINATOR CONTRACTOR OF ANY REQUIRED SHUTDOWN OF SERVICES TO PERFORM THE WORK IN THIS CONTRACT AS FOLLOWS: CONTACT U OF W PROJECT COORDINATOR TO OBTAIN SHUTDOWN PROCEDURES AND INSTRUCTIONS FOR AFFECTED SERVICES AND AFFECTED FIRE ALARM DEVICES (IE. FOR WELDING, SOLDERING AND CREATION OF DUST).

ALL SHUTDOWNS ARE TO BE CARRIED OUT THROUGH THE U OF W PROJECT COORDINATOR. PROVIDE A MINIMUM OF 2 WEEKS NOTICE.

HVAC SPECIFICATIONS
HVAC DUCTWORK
NEW DUCTWORK TO BE FABRICATED FROM PRIME QUALITY RE-SQUARED GALV. STEEL SHEET. UP TO 12" A SIDE USE NO. 26 GAUGE, FROM 13" TO 30" USE NO. 24 GAUGE, FROM 31" TO 60" USE NO. 22 GAUGE.

DUCT SHALL HAVE RE-INFORCING RIBS FORMED BY POCKET SLIP AT NOT MORE THAN 8 FEET OC. DUCTS SHALL BE SUPPORTED WITH NON-PERFORATED 1"x 1/8" GALV. STEEL BAND LOCATED NOT MORE THAN 8 FEET OC.

NEW ROUND SUPPLY AIR DUCT TO BE GALV. SPIRAL AS MANUFACTURED BY ALPHA FREE FLOW IND SINGLE WALL ROUND DUCT OF HELICAL 4 PLY SPIRAL LOCKSEAM CONST. MADE FROM G60 GALV. STEEL CONFORMING TO ASTM A525-83, WITH MACHINING FITTINGS. DUCT AND FITTINGS 24 GAUGE. ALL NEW DUCTWORK SHALL BE INSTALLED AS HIGH AS POSSIBLE TIGHT TO BOTTOM OF TEE'S OR DECK'S. INTERIOR DUCT DIMENSIONS ARE SHOWN.

FLEXIBLE DUCTING SPECIFICATIONS

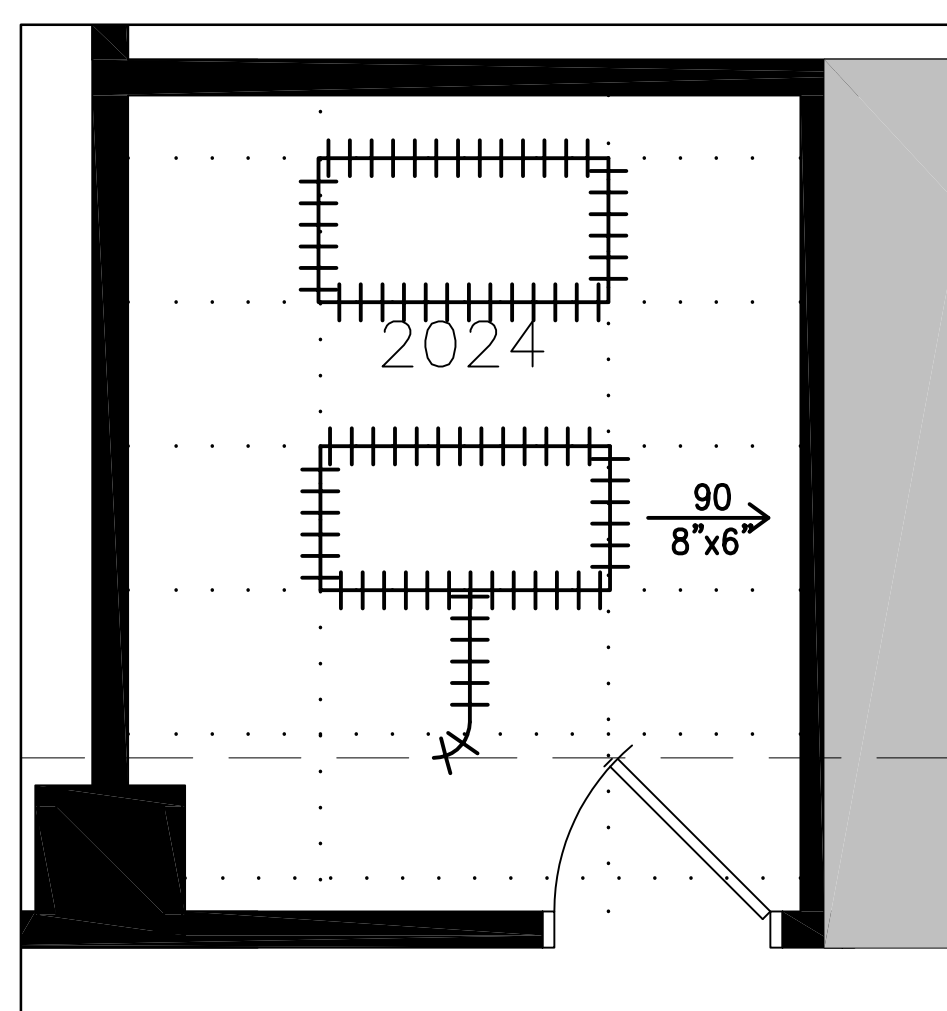
FLEX DUCT SHALL BE ALPHA FLEX SERIES # 2000 ROUND FLEXIBLE ALUMINUM DUCT AS MANUFACTURED BY ALPHA SHEET METAL OR EQUAL. MAXIMUM LENGTH OF DUCT NOT TO EXCEED 5 FEET.

DIFFUSERS & GRILLES SPECIFICATIONS
NEW SQ. SUPPLY AIR DIFFUSERS TO BE NAILOR-HART, MODEL RNSA-2, TYPE 2 "ROTATING", 24" SQ., FACE FOE T-BAR LAY-IN C/W, OPPOSED BLADE, RADIAL DAMPER MODEL4275, NECK SIZE AS PER PLANS, WHITE FINISH.

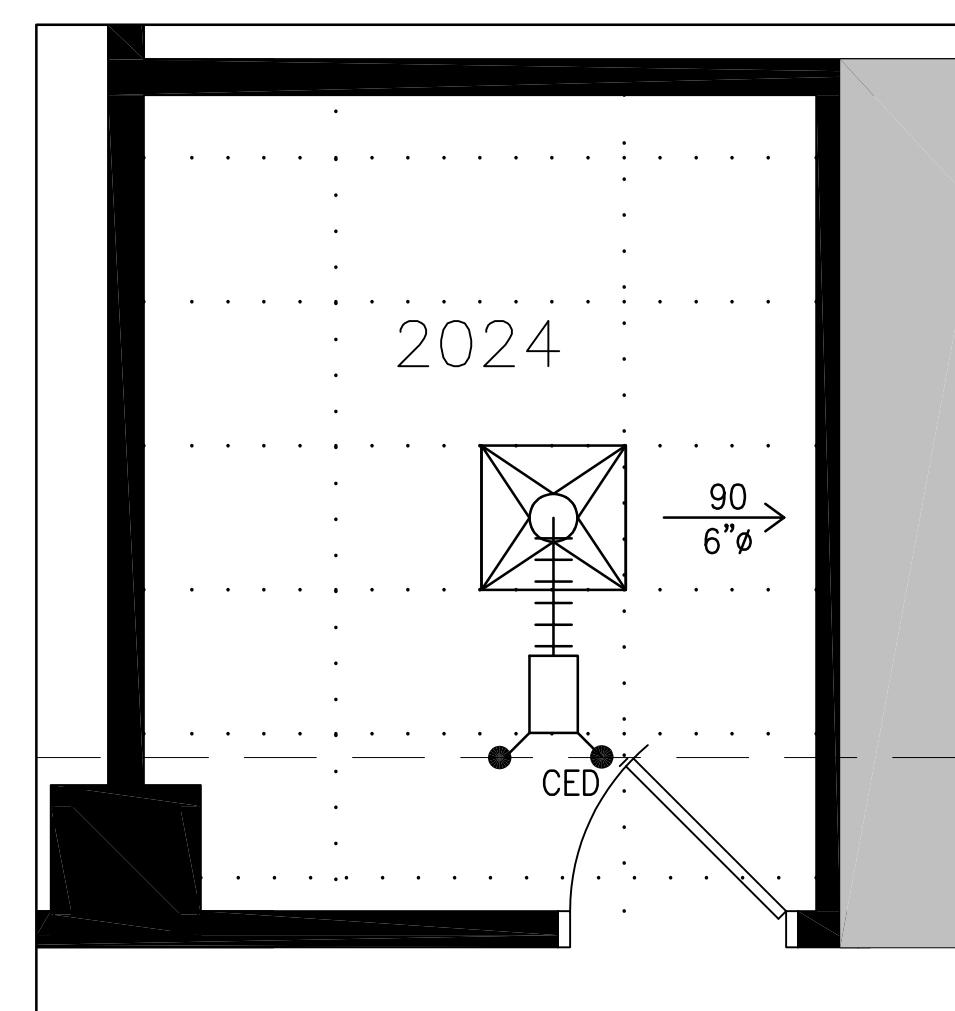
NEW RETURN AIR GRILLES TO BE NAILOR-HART, ALUMINUM EGCCRATE, MODEL 51EC, TYPE L LAY-IN T-BAR, RECTANGLE, SIZE AS PER PLANS, WITH STANDARD BORDER FRAME, WHITE FINISH. EXACT LOCATION OF GRILLES AND DIFFUSERS TO BE DETERMINED ON SITE.

BALANCING
THIS CONTRACTOR IS RESPONSIBLE TO BALANCE DIFFUSERS AND RETURN AIR GRILLE TO THE AIR QUANTITY SHOWN ON DRAWINGS. BALANCING REPORT TO BE SEND TO U OF W. USE AIR AUDIT - PH: 519-740-0871 AS AIR BALANCING SUBCONTRACTOR (OR APPROVED ALTERNATE BY U OF W) FOR THIS PROJECT.

SUBMITTALS
BALANCING CONTRACTOR AND/OR ITS REPRESENTATIVE(S) SHALL PROVIDE PRODUCT DATA SUBMITTAL SHEETS, SCHEMATICS DRAWINGS AND SEQUENCE OF OPERATION, WHICH SHALL SERVE AS THE BASIS FOR SYSTEM EVALUATION BY UW MECHANICAL DESIGNER/ENGINEER.



1 PARTIAL 2nd FLOOR PLAN – DEMOLITION
A1 3/8"=1'-0"



1 PARTIAL 2nd FLOOR PLAN – NEW CONSTRUCTION
A1 3/8"=1'-0"

LEGEND	
	SUPPLY AIR DUCTWORK
	RETURN/TRANSFER AIR DUCT
	SUPPLY AIR DIFFUSER – CFM/NECK
	RETURN AIR GRILLE
	BALANCING DAMPER
	FLEX DUCT CONNECTION
	CONNECT TO EXISTING DUCT
	EXISTING TO REMAIN
	EXISTING TO BE REMOVED

GENERAL SCOPE OF WORK (NOT IN SEQUENCE)
01. REMOVE EXISTING HVAC EQUIPMENT.
02. INSTALL NEW GRILLES AND DUCT AS REQUIRED.
03. BALANCE NEW FLOWS TO THOSE SHOWN ON DRAWINGS.

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PRINTING DATE

PLOTTING DATE

DWG. NO. 52912_M1_017_01

PROJECT
RENOVATE SWING SPACE
VARIOUS ROOMS

JOB NO.	24-M	DRAWN	DP
W.R. NO.	52912	CHKD	BM
DATE	06/25/2024	SHEET	
SCALE	AS SHOWN	M1 OF 1	

BUILDING

**MATH & COMPUTER
MC
BLDG No. 017**

WATERLOO

ONTARIO