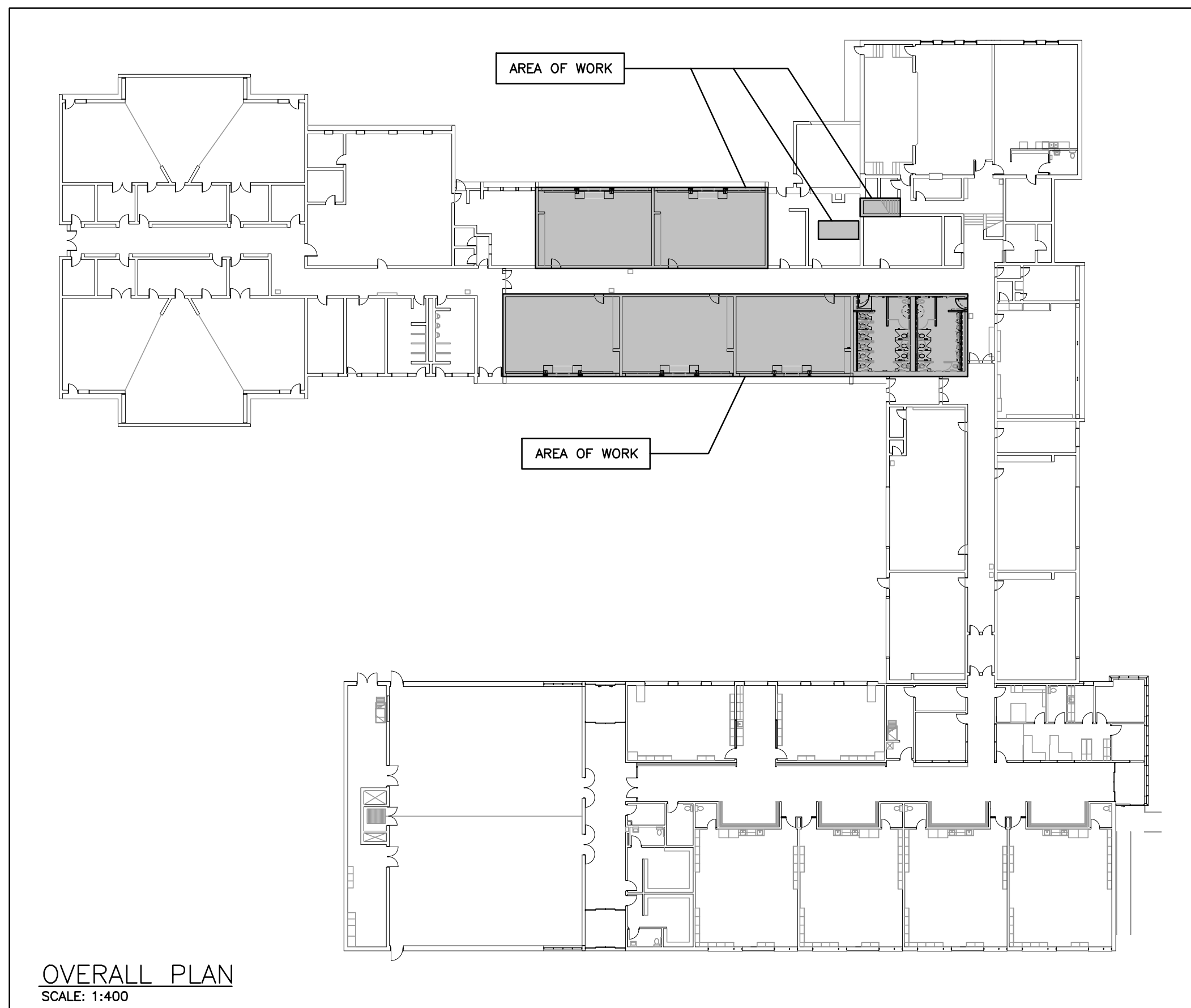


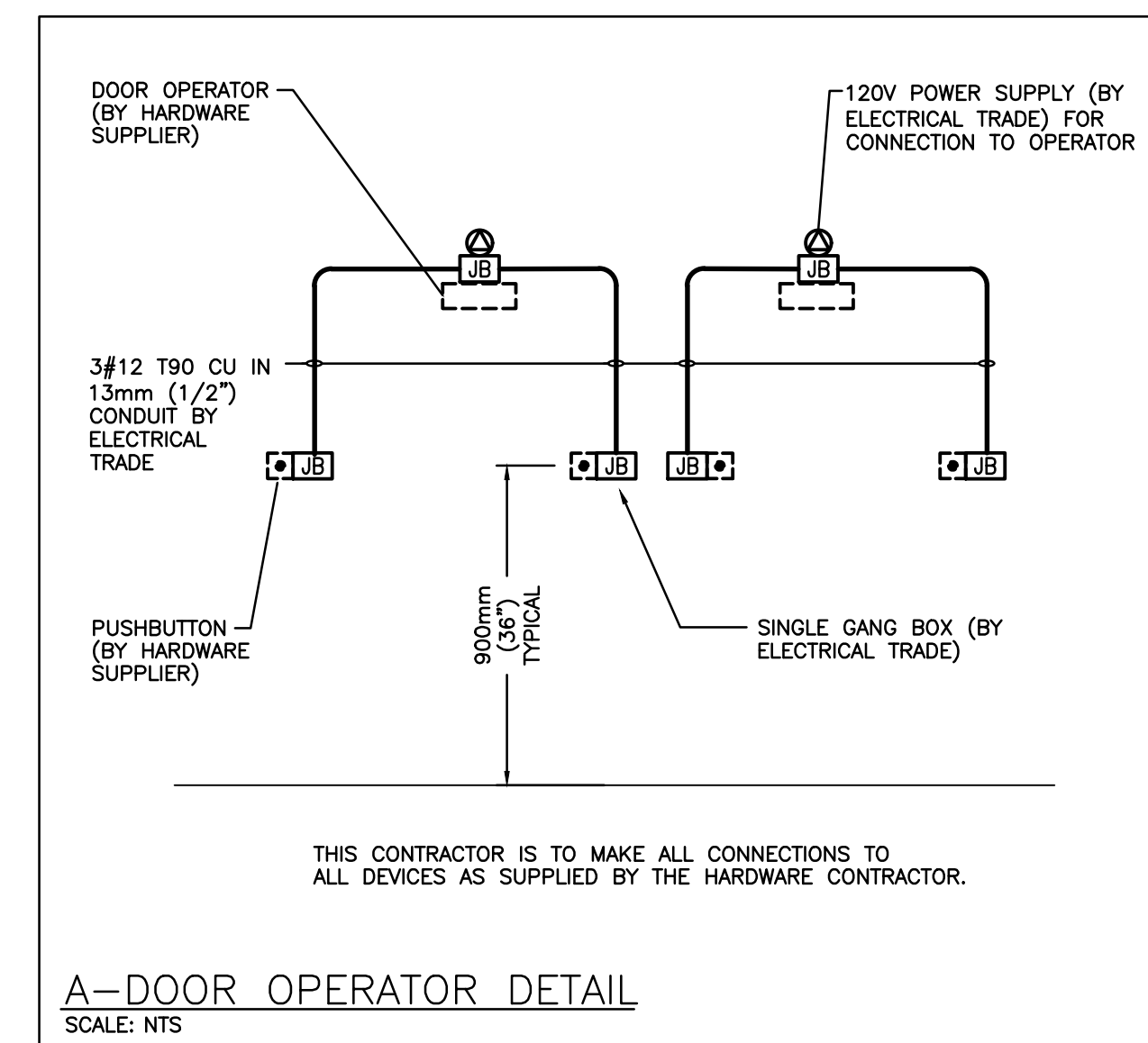
LIGHT FIXTURE SCHEDULE					
Item	Manufacturer/Catalog Number	Voltage	Lamp	Mounting	Description
A	COOPER CAT. #25NLED-LD5-23SL-LW-UNV-LB40-CD-1 LITHONIA CAT. #JLX-L24-2500LM-SEF-RDL-WD-MWLT-GZ10-40K-80CR-WH SIGNIFY CAT. #FSS2-30L-840-UNV-DM (SET TO 2500LM)	120V	LED 2453 LUMENS 4000K 21W	WALL	2' (610mm) SURFACE LED STRIP LIGHT C/W WIDE LENSED OPTICAL DISTRIBUTION AND 10% 0-10V DIMMING DRIVER.
B	LITHONIA CAT. #TLX4-3L-FW-A12-GZ10-LP840 SIGNIFY CAT. #15ML32L840-4-FA-02F-UNV-DM	120V	LED 3234 LUMENS 4000K 30W	SURFACE	1'x4' (305mmx1220mm) LED TROFFER C/W ALUMINUM HOUSING, A12 PRISMATIC LENS, AND ELECTRONIC DRIVER.
EMERG. LIGHTS (SELF-POWERED)	AIMLITE CAT #EBWL SERIES LUMACELL CAT. #LBL SERIES (OR APPROVED EQUALS BY STANDPRO (EM-2))	12V/120V	N/A	SURFACE	VANDAL RESISTANT, LONG LIFE, SEALED BATTERY, C/W 17W LED MODULES, POLYCARBONATE BODY, AND 90 MINUTE BATTERY DURATION.

NOTES:

- IF THERE ARE ANY DISCREPANCIES BETWEEN THE FIXTURE PART NUMBER AND DESCRIPTION, IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO BRING THESE TO THE ELECTRICAL CONSULTANT'S ATTENTION PRIOR TO TENDER CLOSE. NO EXTRAS WILL BE ENTERTAINED FOR FAILURE TO DO SO. FINAL FIXTURE CHARACTERISTICS AND DESCRIPTION WILL BE MARKED BY CONSULTANT AT TIME OF SHOP DRAWING REVIEW.
- WHERE NOTED ABOVE THAT FIXTURES ARE TO HAVE FINISH TO SUIT ARCHITECT THE FINISH WILL BE SELECTED FROM MANUFACTURER'S OPTIONAL COLOUR CHART (i.e. RAL COLOURS OR EQUAL). PROVIDE THIS COLOUR CHART WITH SHOP DRAWING SUBMITAL.
- LED LUMEN VALUES QUOTED FOR FIXTURES ARE TO BE CONSIDERED MINIMUM, AND AS ABSOLUTE OR DELIVERED LUMENS. LUMEN VALUES SHOULD NOT EXCEED MORE THAN 10% OF SPECIFIED OUTPUT.



ELECTRICAL SYMBOLS		NOTE: ALL SYMBOLS MAY NOT BE USED	
LIGHTING		POWER	
[Symbol]	LIGHT FIXTURE TYPE AS INDICATED	[Symbol]	WALL MOUNTED RECEPTACLE (15A-120V)
[Symbol]	BATTERY UNIT WITH INTEGRAL EMERGENCY FIXTURE (EM-X INDICATES BATTERY UNIT TYPE, DC-X INDICATES DC CIRCUIT, AND AC-X INDICATES AC SOURCE CIRCUIT)	[Symbol]	RECEPTACLE MTD, ABOVE COUNTER S=SPLIT (15A-120V)
[Symbol]	SINGLE POLE SWITCH (S=3 WAY, 4=4 WAY, P=PILOT LIGHT, K=KEYED, DM=DIMMER, M=MOTOR RATED)	[Symbol]	QUAD RECEPTACLE
[Symbol]	CEILING MOUNTED MOTION SENSOR	[Symbol]	PANEL AS INDICATED
[Symbol]	ANALOG POWER PACK	[Symbol]	DIRECT CONNECTION
FIRE ALARM		[Symbol]	HAND DRYER
[Symbol]	ALARM BELL	[Symbol]	PUSH-BUTTON STATION (QUANTITY OF BUTTONS AS PER PLANS)
[Symbol]	ALARM STROBE	[Symbol]	JUNCTION BOX
COMMUNICATIONS		[Symbol]	GENERAL
[Symbol]	COMBINATION SINGLE VOICE/ SINGLE COMPUTER OUTLET UNLESS OTHERWISE NOTED C/W 1" (27mm) C TO CABLE MANAGEMENT SYSTEM.	ER	INDICATED EXISTING ITEM TO REMAIN
[Symbol]	WIRELESS ACCESS POINT. PROVIDE 3/4" (21mm) C TO CABLE MANAGEMENT SYSTEM	D	INDICATES EXISTING ITEM TO BE DELETED
[Symbol]	CLOCK AS PER SPECIFICATIONS	R	INDICATES EXISTING ITEM TO BE RELOCATED/IN RELOCATED POSITION
[Symbol]	AUXILIARY ROUGH-IN FOR USE AS NOTED.	CLG	CEILING MOUNTED
[Symbol]	WALL MOUNTED SPEAKER (CS=COLUMN SPEAKER)	(X)	NOTE INDICATOR
		STANDARD CIRCUIT LABELING	
		POWER PANEL LABEL A-1-1 CIRCUIT INDICATION SWITCH LEG (IF APPLICABLE)	



EQUIPMENT WIRING SCHEDULE														E=ELECTRICAL M=MECHANICAL O=OTHERS			
Electrical Item	Description	Provided by	Voltage	Size (hp/kw/amps)	Phase	Magnetic	Manual	Contact	Combination	Variable	Frequency Drive	Control Device	Isolating Device	Remote Items	Interlock	Remarks	
1	EXHAUST FAN EF-6	M	120	1 HP	1												
2																	
3																	

EXISTING PANEL 'MM'		* INDICATES 33mA GROUND FAULT STYLE BREAKER	
VOLTAGE: 120/208 VOLTS PHASE: 3P, 4W MAINS: 225A NEUTRAL BUS: FULL MOUNTING: SURFACE NOTES: SCHNEIDER NQ ML DT PANEL C/W SPRINKLER HOOD			
CONDENSING UNIT CU-3	25A 1 2 40A	UNIT VENTILATOR UV-15	15A 43 44 15A UNIT VENTILATOR UV-16
CONDENSING UNIT CU-5	25A 5 6 25A	ERV-1	15A 45 46 15A SPARE
CONDENSING UNIT CU-7	20A 9 10 25A	FAN COIL FC-14A	15A 47 48 15A SPARE
CONDENSING UNIT CU-9	20A 13 14 25A	FAN COIL FC-14B	15A 49 50 15A SPARE
CONDENSING UNIT CU-11	25A 17 18 25A	ROOF MAINTENANCE REC	20A 51 52 15A SPARE
CONDENSING UNIT CU-13	25A 21 22 25A	ROOF MAINTENANCE REC	20A 53 54 15A SPARE
CONDENSING UNIT CU-15	20A 25 26 20A	ROOF MAINTENANCE REC	20A 55 56 20A STAIR LIFT
CONDENSING UNIT CU-17	20A 29 30 15A	EDH-1	15A 57 58 2P
UNIT VENTILATOR UV-5	15A 33 34 15A	WR 121 AUTO PLUMBING	*15A 59 60 15A SOUND FIELD/PROJECTOR
UNIT VENTILATOR UV-7	15A 35 36 15A	WR 121 HAND DRYER	*15A 61 62 15A SOUND FIELD/PROJECTOR
UNIT VENTILATOR UV-9	15A 37 38 15A	WR 121 DOOR OPERATOR	*15A 63 64 *15A WR 121 AUTO PLUMBING
UNIT VENTILATOR UV-11	15A 39 40 15A	WR 120/121 SINKS	*15A 65 66 *15A WR 121 AUTO PLUMBING
UNIT VENTILATOR UV-13	15A 41 42 15A	SPARE	*15A 67 68 20A WR 120 HAND DRYER
			15A 69 70 15A WR 120 DOOR OPERATOR
			15A 71 72 15A SPARE
			15A 73 74 15A SPARE
			20A 75 76 20A EXHAUST FAN EF-6
			15A 77 78
			15A 79 80
			15A 81 82
			15A 83 84

NOTE: THE INDICATED PANEL ASSEMBLY MUST HAVE AN INTERRUPTING CAPACITY OF 10,000 A PROVIDED BY EITHER FULLY RATED BREAKERS OR INTEGRATED EQUIPMENT RATING WITH THE UPSTREAM BREAKER.

**DEI**  
Consulting Engineers  
MECHANICAL | ELECTRICAL | AQUATIC

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Project Number: 23305

The contractor shall verify all dimensions and report all errors and discrepancies to the Consultant before commencement of the work. The drawings show general arrangement of services. Follow as closely as actual building construction will permit. Obtain approval for relocation of service from Consultant before commencement of the work. The drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required conditions. Drawings and specifications, etc., prepared and issued by the consultant are the property of the consultant and must be returned at the completion of the project. These documents are not to be duplicated or copied without the consent of the Consultant. Do not scale this drawing. © 2024 DEI Consulting Engineers Inc.

NOTE: THIS DRAWING IS NOT TO BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL SITE DIMENSIONS AND FOR NOTIFYING THE ARCHITECT OF ANY SITE CONDITIONS AND SITE MEASUREMENTS THAT ARE NOT CONSISTENT WITH THE DRAWINGS.

No.	Revision	Date
1	Issued for Permit/Tender	April 2, 2024
2	Issued for Construction	May 10, 2024

No. Issue Date  
1 Issued for Permit/Tender April 2, 2024  
2 Issued for Construction May 10, 2024

project  
WRDSB TAIT STREET PUBLIC SCHOOL CEILING RENOVATIONS

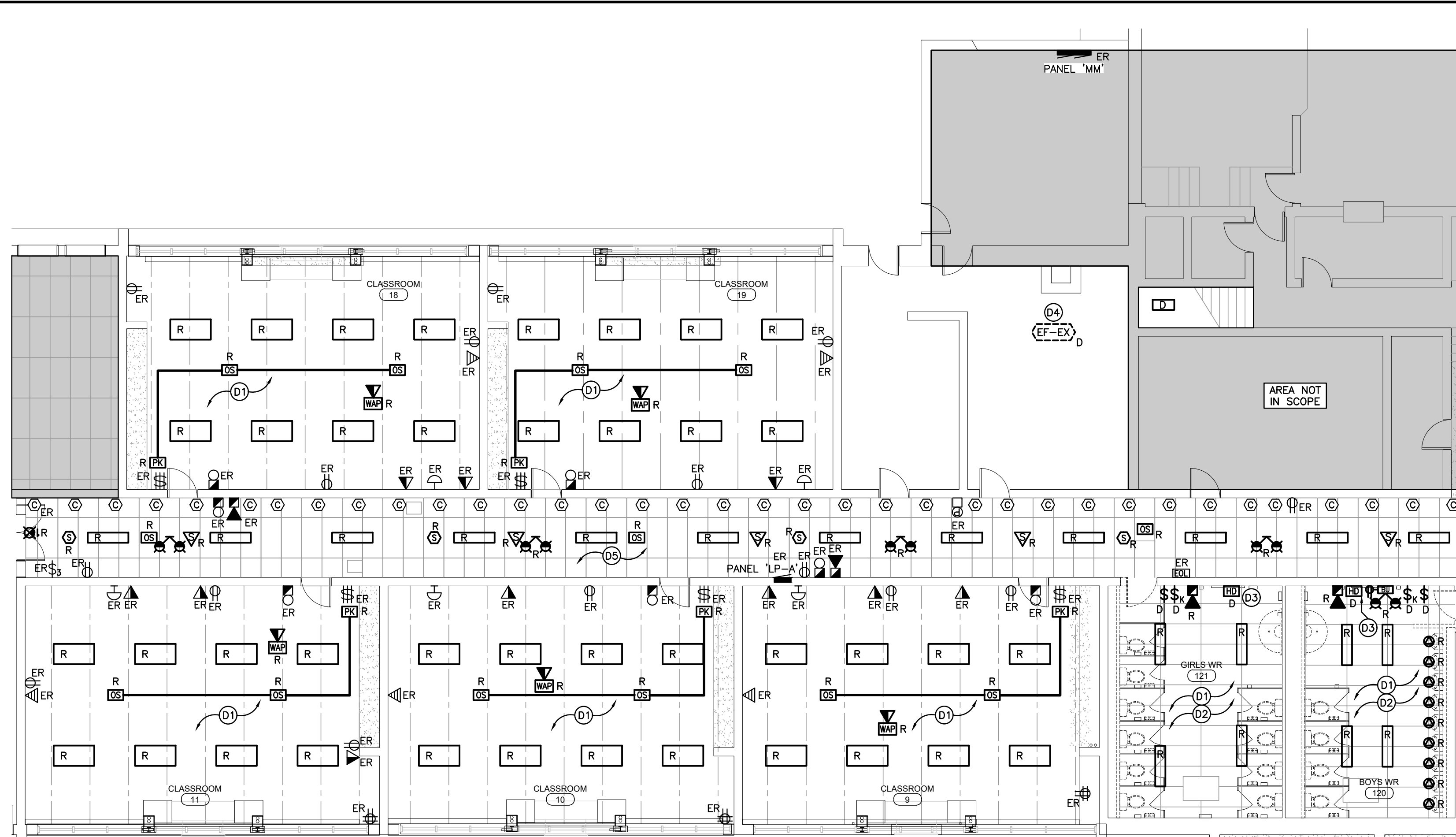
WATERLOO REGION DISTRICT SCHOOL BOARD  
184 TAIT STREET, CAMBRIDGE ON N1S 3G3

drawing  
LEGEND, DETAILS, AND SCHEDULES  
drawing scale  
AS NOTED

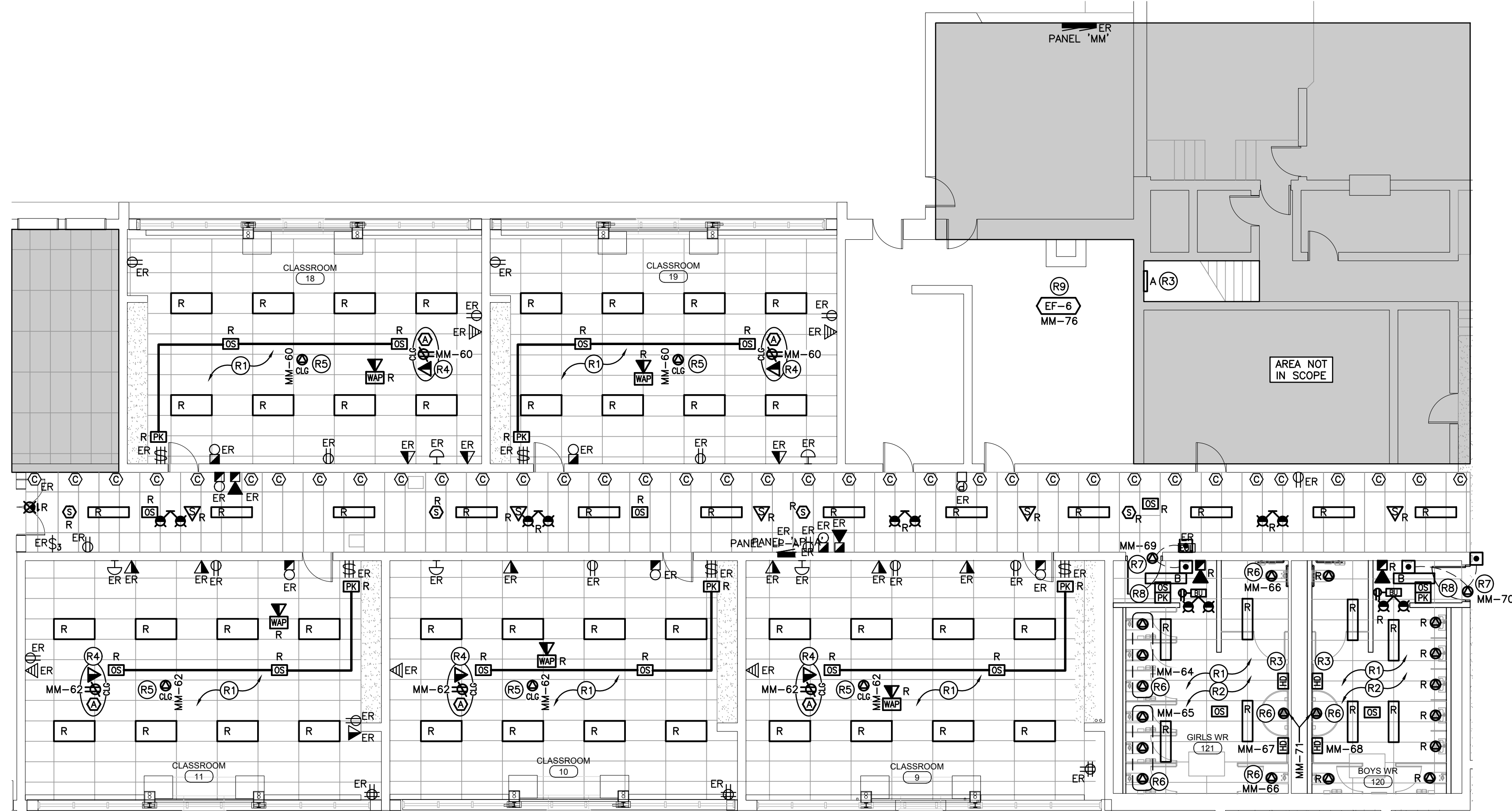
ward99 project number  
23013 - WRDSB TAIT ST CEILINGS

ward99 architects  
drawing no.  
**E101**

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info@ward99architects.com  
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A-GROUND FLOOR DEMOLITION PLAN  
SCALE: 1:100



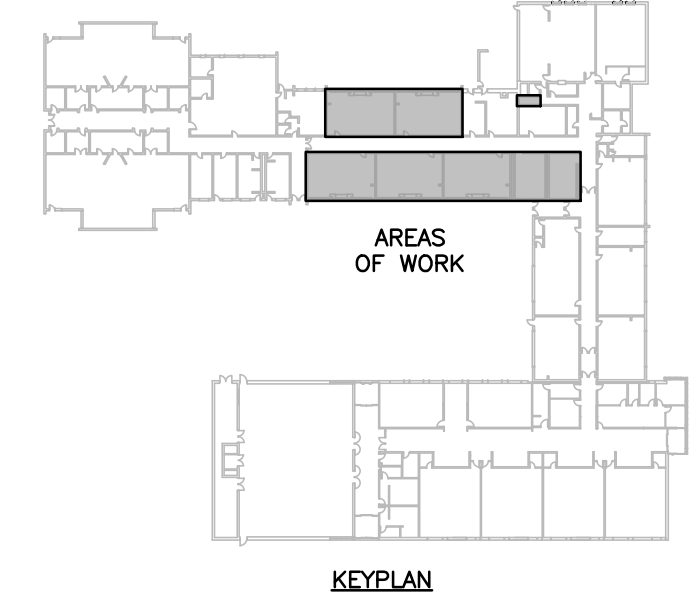
A-GROUND FLOOR RENOVATION PLAN  
SCALE: 1:100

**GENERAL DEMOLITION NOTES**

- 'ER' DENOTES EXISTING ITEM TO REMAIN.
- EXISTING ELECTRICAL EQUIPMENT NOT SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
- 'R' INDICATES EXISTING ITEM TO BE RELOCATED. REFER TO RENOVATION DRAWINGS AND RELOCATE DEVICE AND WIRING TO SUIT. UNLESS OTHERWISE NOTED.
- 'D' INDICATES EXISTING ITEM TO BE DELETED. UNLESS OTHERWISE NOTED DISCONNECT AND REMOVE NOTED DEVICE AND WIRING BACK TO SOURCE.
- ALL LIGHTING FIXTURES BEING RELOCATED SHALL BE CLEANED AND CHECKED PRIOR TO BEING REINSTALLED.

**SPECIFIC DEMOLITION NOTES**

- D1 ALL CEILING MOUNTED DEVICES ARE TO BE REMOVED TO ALLOW INSTALLATION OF NEW CEILING AND REINSTALLED PER RENOVATION PLANS. ALL UNUSED SUPPORTS ARE TO BE REMOVED, EXTEND ALL CIRCUITS AND CONDUIT AS REQUIRED.
- D2 ALL WALL MOUNTED DEVICES ARE TO BE REMOVED TO ALLOW INSTALLATION OF NEW TILING AND REINSTALLED PER RENOVATION PLANS. EXTEND ALL CIRCUITS AND CONDUIT AS REQUIRED. CONTRACTOR MUST PROVIDE VERIFICATION ON ANY FIRE ALARM DEVICES THAT HAVE BEEN DISCONNECTED.
- D3 INDICATES HAND DRYERS ARE TO BE REMOVED AND REPLACED. EXISTING CIRCUIT TO REMAIN FOR CONNECTION TO NEW DEVICE, EXTEND AS REQUIRED. REFER TO RENOVATION PLANS.
- D4 MECHANICAL EQUIPMENT IS TO BE REMOVED BY MECHANICAL TRADE. ELECTRICAL TRADE SHALL DISCONNECT AND REMOVE FEEDERS, CONDUIT, AND WIRING BACK TO SOURCE. REMOVE ASSOCIATED CONTROL DEVICE IF APPLICABLE.
- D5 ALL CEILING DEVICES WITHIN THIS CORRIDOR MAY NEED TO BE REMOVED AND RE-INSTALLED TO SUIT RENOVATION. COORDINATE ON SITE WITH MECHANICAL TRADE.



The contractor shall verify all dimensions and report all errors and discrepancies to the Consultant before commencement of the work. The drawings show general arrangement of services. Follow as closely as actual building construction will permit. Obtain approval for relocation of service from Consultant before commencement of the work. The drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required conditions. Drawings and specifications, etc., prepared and issued by the consultant are the property of the consultant and must be returned at the completion of the project. These documents are not to be duplicated or copied without the consent of the Consultant. Do not scale this drawing.  
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**GENERAL RENOVATION NOTES**

- 'ER' INDICATES EXISTING ITEM TO REMAIN.
- 'R' INDICATES EXISTING ITEM IN RELOCATED POSITION.
- ALL DEVICES SHOWN ARE NEW UNLESS OTHERWISE NOTED.
- EXISTING ELECTRICAL EQUIPMENT NOT SHOWN SHALL REMAIN UNLESS OTHERWISE NOTED.
- MAINTAIN SERVICE TO ALL EXISTING DEVICES TO REMAIN.
- REVISE PANEL DIRECTORIES TO SUIT CHANGES (TYPED).

**SPECIFIC RENOVATION NOTES**

- R1 RE-CONNECT CEILING FIXTURES AND DEVICES WITHIN THIS ROOM TO EXISTING CIRCUITS AND EXISTING CONTROLS MADE AVAILABLE DURING DEMOLITION.
- R2 RE-CONNECT WALL DEVICES WITHIN THIS ROOM TO EXISTING CIRCUITS MADE AVAILABLE DURING DEMOLITION.
- R3 CONNECT NEW DEVICE TO EXISTING CIRCUIT MADE AVAILABLE DURING DEMOLITION. EXTEND CIRCUIT AS REQUIRED.
- R4 INDICATED DEVICES ARE TO BE INSTALLED IN RECESSED BOX FOR CEILING PROJECTOR MOUNT. CONFIRM EXACT LOCATION ON SITE PRIOR TO ROUGH IN TO ENSURE PROPER DISTANCE/ORIENTATION FROM SCREEN. RECESSED PROTECTION BOX IS TO BE EQUAL TO FSR CAT. #CB-22P, SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- R5 INDICATES HARDWIRED CONNECTION FOR INSTALLATION OF CEILING MOUNTED TOPCAT SOUND FIELD. CONNECT TO NEARBY EXISTING CIRCUIT. CONTRACTOR TO COORDINATE WITH SCHOOL BOARD FOR SHOP DRAWINGS, PROVIDE RECEIPT/ACK IF REQUIRED ON FINAL SHOP DRAWINGS.
- R6 INDICATES 120V FEED TO 24VDC STEP DOWN TRANSFORMER MOUNTED ABOVE CEILING OR AT A HIGH LEVEL FOR AUTOMATIC FIXTURE(S). COORDINATE WITH MECHANICAL TRADE.
- R7 INDICATES DOOR OPERATOR. REFER TO DETAIL A/E101 FOR MORE INFORMATION.
- R8 INDICATES NOTED FIXTURE TO BE CONNECTED AND CONTROLLED WITH CORRIDOR CIRCUIT
- R9 INDICATES NEW EXHAUST FAN TO BE FED FROM EXISTING PANEL MM AS NOTED ON PLANS. COORDINATE EXACT LOCATION WITH MECHANICAL TRADE.

No.	Revision	Date
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No.	Issue	Date
1	Issued for Permit/Tender	April 2, 2024
2	Issued for Construction	May 10, 2024
3		
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project  
WRDSB TAIT STREET PUBLIC SCHOOL CEILING RENOVATIONS

WATERLOO REGION DISTRICT SCHOOL BOARD  
184 TAIT STREET, CAMBRIDGE, ON N1S 3G3

drawing  
GROUND FLOOR DEMOLITION AND RENOVATION

drawing scale  
AS NOTED

ward99 project number  
23013 - WRDSB TAIT ST CEILINGS

ELECTRICAL SPECIFICATION

GENERAL NOTES

- 1 PROVIDE LABOUR MATERIAL AND EQUIPMENT REQUIRED TO PROVIDE A COMPLETE INSTALLATION WITH QUALITY WORKMANSHIP ACCEPTABLE TO THE OWNER, ARCHITECT AND CONSULTANT.
2 OBTAIN ALL PERMITS AND PAY ALL TAXES, FEES AND OTHER COSTS INCURRED WITH THIS WORK. FILE ALL PLANS. OBTAIN NECESSARY APPROVALS, CERTIFICATES AND INSPECTIONS. SUBMIT ALL FINAL CERTIFICATES TO THE CONSULTANT.
3 COMPLY WITH RULES AND RECOMMENDATIONS OF THE BOARD OF UNDERWRITERS, ELECTRICAL SAFETY AUTHORITY, THE CANADIAN STANDARDS ASSOCIATION AND ALL REQUIREMENTS OF THE LOCAL UTILITY.
4 VISIT THE SITE BEFORE SUBMITTING TENDERS TO EVALUATE ANY SITE CONDITIONS THAT MIGHT ARISE. INCLUDE ALL SITE CONDITIONS IN TENDER, EXTRAS WILL NOT BE ACCEPTED UNLESS BELIEVED TO BE REASONABLE BY THE OWNER AND CONSULTANT.
5 CUTTING AND PATCHING SHALL BE BY THE CONTRACTOR REQUIRING TO INSTALL THE SERVICE.
6 THE DRAWINGS ARE DIAGRAMMATIC, THE SERVICES SHALL BE INSTALLED TO CONSERVE HEADROOM AND INTERFERE AS LITTLE AS POSSIBLE WITH THE FREE USE OF THE SPACES THROUGH WHICH THEY PASS.
7 SUBMIT COPIES OF SHOP DRAWINGS PDF FILES VIA EMAIL FOR ALL MAJOR EQUIPMENT. THESE WILL BE REVIEWED BY THE CONSULTANT. RESUBMIT AS OFTEN AS MAY BE FOUND NECESSARY.
8 PROVIDE ALL NECESSARY PROTECTION FOR FINISHED OR UNFINISHED WORK. ALL OPENINGS IN CONDUITS, DUCTS AND EQUIPMENT SHALL BE CAPPED TO ENSURE SERVICES ARE KEPT CLEAN WHEN NOT IN USE.
9 MAINTAIN INSURANCE TO FULLY PROTECT THE CONTRACTOR, OWNER AND CONSULTANT FROM ANY AND ALL CLAIMS SUCH AS UNDER THE WORKMEN'S COMPENSATION ACT, ETC. POST PROJECT NOTIFICATION AT THE SITE IN ACCORDANCE WITH THE MINISTRY OF LABOUR REQUIREMENTS.
10 PROVIDE STRUCTURAL SUPPORTS, PLATFORMS, SUPPORTING RODS, HANGERS, INSERTS AND BRACKETS FOR EQUIPMENT AND SERVICES. DO NOT SUPPORT SERVICES FROM STEEL DECK.
11 INSTRUCT THE OWNER'S STAFF IN THE CARE, MAINTENANCE AND OPERATION OF THE SYSTEMS.
12 WARRANTY ALL LABOUR, MATERIAL AND EQUIPMENT FOR A PERIOD OF TWO (2) YEARS AFTER FINAL ACCEPTANCE OF SYSTEM.
13 COORDINATE WITH OTHER CONTRACTORS INSTALLING EQUIPMENT OR MATERIAL AND ARRANGE EQUIPMENT IN PROPER RELATION WITH APPARATUS OF ALL OTHER TRADES.
14 PROVIDE LAMICOID TAGS FOR IDENTIFICATION OF NEW EQUIPMENT ADDED.
15 MOUNTING HEIGHTS SHALL BE AS FOLLOWS FROM FINISHED FLOOR TO CENTERLINE OF DEVICE/EQUIPMENT (UNLESS OTHERWISE NOTED):
- SWITCHES, DIMMERS AND SPEED CONTROLLERS: 1100mm (44")
- WALL RECEPTACLES:
- GENERAL: 400mm (16")
- ABOVE TOP OF COUNTERS: 100mm (4")
- IN MECHANICAL/ELECTRICAL ROOMS: 1100mm (44") (GANG WITH SWITCH).
- FIRE ALARM STROBES: 2250mm (7'-6")
16 ALL AREAS NOT AFFECTED BY RENOVATION OR DEMOLITION SHALL REMAIN AS PRESENTLY INSTALLED UNLESS OTHERWISE NOTED.
17 ALL EXISTING ELECTRICAL DEVICES, OUTLET BOXES, ETC., NOT SHOWN ON DRAWINGS OR MENTIONED IN THE FOLLOWING NOTES AND INSTALLED IN WALLS SLATED FOR DEMOLITION, SHALL BE DISCONNECTED AND REMOVED COMPLETELY IN ALL RESPECTS.
18 SUBMIT ONE COPY OF OPERATING AND MAINTENANCE INSTRUCTIONS IN A THREE RING BINDER LABELED FOR THE PROJECT COMPLETE WITH ITEMIZED SECTIONS CONTAINING PROJECT DATA, SHOP DRAWINGS, ETC. UPON ACCEPTANCE OF THE OPERATION AND MAINTENANCE MANUAL BY THE CONSULTANT PROVIDE TWO ADDITIONAL COPIES BOUND IN SEPARATE THREE RING BINDERS. A PDF FILE OF THE ENTIRE MANUAL IS TO BE PROVIDED ON A USB STICK. ONLY ONE USB STICK IS TO BE PROVIDED CONTAINING BOTH THE APPROVED MANUALS AND RECORD DRAWINGS.
19 CONTRACTOR SHALL PROVIDE 2 SETS OF REPRODUCIBLE ELECTRICAL DRAWINGS. MARK THEREON ALL CHANGES AS WORK PROGRESSES AND AS CHANGES OCCUR. THIS SHALL INCLUDE FIELD AND CONTRACT CHANGES TO ELECTRICAL SYSTEMS. IDENTIFY EACH DRAWING IN LOWER RIGHT HAND CORNER IN LETTERS AT LEAST 3mm (1/8") HIGH AS FOLLOWS: - "RECORD DRAWINGS: THIS DRAWING HAS BEEN REVISD TO SHOW ELECTRICAL SYSTEMS AS INSTALLED. (SIGNATURE OF CONTRACTOR)(DATE)". SUBMIT HARD COPY TO CONSULTANT FOR APPROVAL. WHEN RETURNED, MAKE CORRECTIONS (IF ANY) AS DIRECTED. ONCE APPROVED, SUBMIT COMPLETED REPRODUCIBLE PAPER RECORD DRAWINGS AS WELL AS A SCANNED PDF COPY FILE ON USB STICK WITH OPERATING AND MAINTENANCE MANUALS.
20 THE CONTRACTOR WILL INCLUDE REDLINES FOR EACH AND EVERY ELECTRICAL DRAWING FOR DEI & ASSOCIATES INC. TO CAD THE RECORD DRAWINGS. THE CAD DRAWING FILES WILL BE PROVIDED TO THE OWNER AS PART OF THE MAINTENANCE MANUALS.

BASIC MATERIALS

- 1 JUNCTION, OUTLET AND PULL BOXES MUST BE APPROVED TO SUIT INSTALLATION METHODS AND ENVIRONMENT.
2 CONDUIT MUST BE CONCEALED UNLESS INSTALLED IN SERVICE OR STORAGE ROOMS.
3 CONDUIT MUST BE INSTALLED PARALLEL AND PERPENDICULAR TO BUILDING LINES IN A NEAT AND WORKMANLIKE MANNER.
4 ALL FEEDER AND BRANCH CIRCUIT WIRING MUST BE COPPER, T90 RATING/STYLE RUN IN EMT CONDUIT WITH INTERNAL INSULATED GREEN GROUND WIRE UNLESS NOTED OTHERWISE. MINIMUM WIRE SIZE SHALL BE #12 AND MINIMUM CONDUIT SIZE SHALL BE 3/4" (19mm).
5 AC90 CABLE MAY BE USED FOR BRANCH CIRCUIT WIRING IN STEEL STUD WALLS AND "DROPS" IN T-BAR CEILING AREAS TO LIGHT FIXTURES AND FIRE ALARM DEVICES. LENGTH OF DROP MUST BE LIMITED TO 8'-0" (2400mm).
6 WHERE DEVICES ARE TO BE INSTALLED ON EXISTING WALLS IN FINISHED AREA, WHICH CANNOT BE FISHED, INSTALL FEEDS IN A SURFACE METAL RACEWAY EQUAL TO WIREMOLD V700 SERIES.
7 COLOUR CODE CONDUITS, BOXES AND METALLIC SHEATHED CABLES.
8 CODE WITH PLASTIC TAPE OR PAINT AT POINTS WHERE CONDUIT OR CABLE ENTERS WALL, CEILING, OR FLOOR, AND AT 15m(45") INTERVALS.
9 COLOUR BANDS MUST BE 25mm(1") WIDE AND CODED AS FOLLOWS FOR NOTED SYSTEMS.
SYSTEM COLOUR
UP TO 208V YELLOW
FIRE ALARM RED
10 THIS CONTRACTOR MUST PAINT ALL SYSTEM JUNCTION BOXES AND COVERS IN CONFORMANCE WITH THE ABOVE SCHEDULE.

DRAW BREAKDOWN

- 1 THIS CONTRACTOR MUST SUBMIT A BREAKDOWN OF THE TENDER PRICE INTO CLASSIFICATIONS TO THE SATISFACTION OF THE CONSULTANT, WITH THE AGGREGATE OF THE BREAKDOWN TOTALING THE TOTAL CONTRACT AMOUNT. EACH ITEM MUST BE BROKEN OUT INTO MATERIAL AND LABOUR COSTS. PROGRESS CLAIMS, WHEN SUBMITTED ARE TO BE ITEMIZED AGAINST EACH ITEM OF THE DRAW BREAKDOWN. THIS SHALL BE DONE IN TABLE FORM SHOWING CONTRACT AMOUNT, AMOUNT THIS DRAW, TOTAL TO DATE, % COMPLETE AND BALANCE.
2 BREAKDOWN SHALL BE AS FOLLOWS:
.1 PERMITS AND FEES
.2 MOBILIZATION (MAXIMUM 1%)
.3 DEMOLITION
.4 BRANCH CONDUITS
.5 BRANCH WIRING
.6 LIGHTING FIXTURES
.7 WIRING FOR MECHANICAL EQUIPMENT
.8 CONTRACT CLOSEOUT (MINIMUM 3% BUT NO LESS THAN \$1,000.00)
3 THE BREAKDOWN MUST BE APPROVED BY THE CONSULTANT PRIOR TO SUBMISSION OF THE FIRST DRAW.
4 BREAKDOWNS NOT COMPLYING TO THE ABOVE WILL NOT BE APPROVED.
5 BREAKDOWN MUST INDICATE TOTAL CONTRACT AMOUNT.
6 MOBILIZATION AMOUNT MAY ONLY BE DRAWN WHEN ALL REQUIRED SHOP DRAWINGS HAVE BEEN REVIEWED BY THE CONSULTANT.

SHOP DRAWINGS AND PRODUCT DATA

- 1 FURNISH COMPLETE CATALOG DATA FOR MANUFACTURED ITEMS OF EQUIPMENT TO BE USED IN THE WORK TO CONSULTANT FOR REVIEW WITHIN 30 DAYS AFTER AWARD OF CONTRACT.
2 IF MATERIAL OR EQUIPMENT IS NOT AS SPECIFIED OR SUBMITTAL IS NOT COMPLETE, IT WILL BE REJECTED BY CONSULTANT.
3 ADDITIONAL SHOP DRAWINGS REQUIRED BY THE CONTRACTOR FOR MAINTENANCE MANUALS, SITE COPIES ETC., SHALL BE PHOTOCOPIES OF THE 'REVIEWED' SHOP DRAWINGS. ALL COSTS TO PROVIDE ADDITIONAL COPIES OF SHOP DRAWINGS SHALL BE BORNE BY THE CONTRACTOR.
4 PARTIAL SUBMITTALS WILL NOT BE ACCEPTED.
5 CATALOG DATA OR SHOP DRAWINGS FOR EQUIPMENT, WHICH ARE NOTED AS BEING REVIEWED BY CONSULTANT OR HIS ENGINEER SHALL NOT SUPERSEDE CONTRACT DOCUMENTS.
6 REVIEW COMMENTS OF CONSULTANT SHALL NOT RELIEVE THIS DIVISION FROM RESPONSIBILITY FOR DEVIATIONS FROM CONTRACT DOCUMENTS UNLESS CONSULTANT'S ATTENTION HAS BEEN CALLED TO SUCH DEVIATIONS IN WRITING AT TIME OF SUBMISSION, NOR SHALL THEY RELIEVE THIS DIVISION FROM RESPONSIBILITY FOR ERRORS IN ITEMS SUBMITTED.
7 CHECK WORK DESCRIBED BY CATALOG DATA WITH CONTRACT DOCUMENTS FOR DEVIATIONS AND ERRORS.
8 SHOP DRAWINGS AND PRODUCT DATA SHALL SHOW:
.1 MOUNTING ARRANGEMENTS.
.2 OPERATING AND MAINTENANCE CLEARANCES. E.G. ACCESS DOOR SWING SPACES.
9 SHOP DRAWINGS AND PRODUCT DATA SHALL BE ACCOMPANIED BY:
.1 DETAILED DRAWINGS OF BASES, SUPPORTS, AND ANCHOR BOLTS.
.2 MANUFACTURER TEST DATA WHERE REQUESTED.
.3 MANUFACTURER TO CERTIFY AS TO CURRENT MODEL PRODUCTION.
.4 CERTIFICATION OF COMPLIANCE TO APPLICABLE CODES.
10 STATE SIZES, CAPACITIES, BRAND NAMES, MOTOR HP, ACCESSORIES, MATERIALS, GAUGES, DIMENSIONS, AND OTHER PERTINENT INFORMATION. LIST ON CATALOG COVERS PAGE NUMBERS OF SUBMITTED ITEMS. UNDERLINE APPLICABLE DATA.
11 ONCE THESE SHOP DRAWINGS ARE RETURNED 'REVIEWED' OR 'REVIEWED AS NOTED' FABRICATION, PRODUCTION, AND INSTALLATION MAY COMMENCE. NOTE: IF A SHOP DRAWING IS RETURNED 'REVIEWED' AS NOTED THIS CONTRACTOR MUST PROVIDE WRITTEN INDICATION THAT THE COMMENTS HAVE BEEN COMPLIED WITH.
12 A PARTIAL LIST OF SHOP DRAWINGS INCLUDES:
.1 LUMINAIRES
.2 FIRESTOPPING MATERIALS
.3 HAND DRYERS
WIRING DEVICES
1 GENERAL PURPOSE AC SWITCHES MUST CONFORM TO CSA C22.2 NO. 111 (LATEST EDITION).
2 15 OR 20 A, 120 V, SINGLE POLE, DOUBLE POLE, THREE-WAY, OR FOUR-WAY SWITCHES.
3 INSTALL SWITCHES IN GANG TYPE OUTLET BOX WHEN MORE THAN ONE SWITCH IS REQUIRED IN ONE LOCATION.
4 RECEPTACLES, PLUGS, AND OTHER SIMILAR WIRING DEVICES MUST CONFORM TO CSA C22.2 NO. 42 (LATEST EDITION).
5 DUPLEX RECEPTACLES, CSA TYPE 5-15 R, 125 V, 15 A, U GROUND, WITH THE FOLLOWING FEATURES:
.1 UREA MOLDED HOUSING WITH COLOUR AS SELECTED BY ARCHITECT.
.2 SUITABLE FOR NO. 10 AWG FOR BACK AND SIDE WIRING.
.3 BREAK-OFF LINKS FOR USE AS SPLIT RECEPTACLES.
.4 EIGHT BACK WIRED ENTRANCES, FOUR SIDE WIRING SCREWS.
.5 TRIPLE WIRE CONTACTS AND RIVETED GROUNDING CONTACTS.
6 ACCEPTABLE MATERIALS:
.1 TAMPER RESISTANT RECEPTACLE: HUBBELL CAT. #BR15TR
.2 TAMPER RESISTANT T-SLOT RECEPTACLE: HUBBELL CAT. #BR20TR
.3 TAMPER RESISTANT GROUND FAULT PROTECTED RECEPTACLE: HUBBELL CAT. #GFTR15
.4 TAMPER RESISTANT GROUND FAULT PROTECTED T-SLOT RECEPTACLE: HUBBELL CAT. #GFTR20
7 OTHER RECEPTACLES WITH AMPACITY AND VOLTAGE AS INDICATED. COLOUR BY ARCHITECT.
8 ACCEPTABLE ALTERNATE MANUFACTURERS INCLUDE:
PASS & SEYMOUR
LEVITON
9 INSTALL DEVICES IN GANG TYPE OUTLET BOX WHEN MORE THAN ONE DEVICE IS REQUIRED IN ONE LOCATION.
10 SHEET STEEL UTILITY BOX COVER FOR WIRING DEVICES INSTALLED IN SURFACE MOUNTED UTILITY BOXES.
11 STAINLESS STEEL, VERTICALLY BRUSHED COVER PLATES FOR WIRING DEVICES MOUNTED IN FLUSH-MOUNTED OUTLET BOXES.
12 SHEET METAL COVER PLATES FOR WIRING DEVICES MOUNTED IN SURFACE-MOUNTED FS OR FT TYPE CONDUIT BOXES.
13 PROTECT STAINLESS STEEL COVER PLATE FINISH WITH PAPER OR PLASTIC FILM UNTIL PAINTING AND OTHER WORK IS FINISHED.
14 INSTALL SUITABLE COMMON COVER PLATES WHERE WIRING DEVICES ARE GROUPED.

EQUIPMENT

- 1 HAND DRYERS
.1 HAND DRYERS WHERE NOTED ON THE DRAWINGS ARE TO BE SUPPLIED AND INSTALLED BY THIS DIVISION WITH THE FOLLOWING FEATURES:
.1 SURFACE MOUNTING.
.2 FIXED NOZZLE.
.3 WHITE FINISH WITH AUTOMATIC ACTIVATION.
.4 RATING OF 1800W (20A) AT 120V.
.5 NOVA 5
.6 APPROVED ALTERNATE: WORLD DRYER CAT. #XA5-2-974.

LIGHTING SYSTEMS

FIXTURES ARE TO BE PROVIDED AS NOTED IN THE LIGHT FIXTURE SCHEDULE C/W THE FOLLOWING FEATURES:

- 1 LED
.1 FIXTURE LED'S MUST BE TESTED IN CONFORMANCE WITH IESNA LM80 STANDARD.
.2 LED'S MUST BE SELECTED USING A BINNING ALGORITHM TO ENSURE COLOUR AND LUMEN OUTPUT OF A GIVEN FIXTURE ARE CONSISTENT, AS WELL AS MEET OR SURPASS ANSI C78.377 SPECIFICATION FOR THE RATED LIFETIME OF THE FIXTURE. COLOUR ACCURACY BETWEEN PRODUCTS MUST BE WITHIN A 2-STEP MACADAM ELLIPSE.
.3 LUMINAIRES MUST BE TESTED TO IESNA LM79 BY AN INDEPENDENT APPROVED LABORATORY.
.4 LUMINAIRES MUST BE TESTED PRIOR TO SHIPPING.
.5 LUMINAIRES MUST BE ULC CERTIFIED AND APPROVED FOR USE IN CANADA.
.6 FIXTURES MUST MAINTAIN A MINIMUM OF 90% OF THEIR INITIAL LIGHT OUTPUT FOR 60,000 HOURS. SUBMIT TEST RESULTS UPON REQUEST.
.7 LUMEN VALUES INDICATED FOR FIXTURES IN THE PROJECT DOCUMENTS ARE TO BE CONSIDERED AS 'ABSOLUTE' OR 'DELIVERED' VALUES.
.8 OTHER THAN FOR SPECIALTY FIXTURES, AND UNLESS OTHERWISE INDICATED, THE MAXIMUM DRIVER CURRENT IS TO BE 750 MA.
2 FIXTURE INSTALLATION
.1 LOCATE AND INSTALL LUMINAIRES AS INDICATED.
.2 FIXTURE SURFACE MOUNTED TO SUSPENDED CEILINGS MUST BE SECURED THROUGH CEILING ASSEMBLY TO CROSS MEMBER SUPPORTS. THESE SUPPORTS ARE TO BE STEEL CHANNELS OR ANGLES INDEPENDENTLY SECURED TO STRUCTURE USING #12 "JACK" CHAIN. EACH CHAIN MUST BE SECURED SO NO FIXTURE WEIGHT IS ADDED TO THE CEILING ASSEMBLY.
.3 PLASTER FRAMES/FLANGE KITS MUST BE PROVIDED BY THIS DIVISION FOR FIXTURES RECESSED IN PLASTER AND/OR DRYWALL CEILINGS.
.4 WHERE SPECIFIED, FIXTURES TO BE CHAIN HUNG SHALL BE HUNG USING "JACK" CHAIN WITH A CAPACITY TO SUIT THE FIXTURE WEIGHT. BRANCH CIRCUIT WIRING FEEDING THESE FIXTURES SHALL BE AC90 CABLE "TY-WAPPED" AT 36" (900mm) INTERVALS ALONG LENGTH OF DROP. FINAL APPEARANCE MUST BE NEAT AND PROFESSIONAL.
.5 INSTALL EXIT LIGHTING UNITS AS INDICATED WITH ILLUMINATED FACES AND CHEVRONS/ARROWS INDICATING PATH(S) OF EXIT.
.6 INSTALL EMERGENCY LIGHTING UNITS AND ASSOCIATED REMOTE MOUNTED FIXTURES AS INDICATED.
.7 DIRECT "HEADS" ON UNITS AND REMOTE MOUNTED FIXTURES TO ILLUMINATE PATH(S) OF EXIT.
.8 INSTALL EMERGENCY LIGHTING UNITS AND REMOTE FIXTURES AT 8' (2400mm) ABOVE FINISHED FLOOR UNLESS INDICATED OTHERWISE.
.9 PROVIDE A 15A 120V DUPLEX RECEPTACLE (CONNECT TO CIRCUIT INDICATED) ADJACENT TO UNIT.
10 CONNECT LUMINAIRES TO LIGHTING CIRCUITS AS INDICATED.
11 CONNECT EXIT FIXTURES TO EXIT LIGHTING CIRCUITS AND UNIT EQUIPMENT (IF APPLICABLE).
12 CONNECT UNIT EQUIPMENT TO CIRCUITS AS INDICATED.
13 ALL WIRING OF REMOTE EMERGENCY FIXTURES SHALL BE MINIMUM #10 T90 FOR EACH CIRCUIT AND RUN IN CONDUIT. WIRING MUST BE SIZED IN CONFORMANCE WITH MANUFACTURERS' RECOMMENDATIONS FOR DISTANCE REQUIRED.
14 ALIGN LUMINAIRES MOUNTED IN CONTINUOUS ROWS TO FORM STRAIGHT UNINTERRUPTED LINES.
15 ALIGN LUMINAIRES MOUNTED INDIVIDUALLY PARALLEL OR PERPENDICULAR TO BUILDING GRID LINES.
16 ALL LIGHTING BRANCH CIRCUITS ARE TO BE PROVIDED WITH SEPARATE NEUTRALS.
3 GUARANTEE
.1 ALL LED FIXTURES AND DRIVERS ARE TO BE COMPLETE WITH A 5 YEAR GUARANTEE.
.2 THE LABOUR REQUIRED TO REPLACE THESE DRIVERS MUST BE INCLUDED IN THE ABOVE GUARANTEE
4 TESTING/CERTIFICATION
.1 AT THE COMPLETION OF THE PROJECT AND IN THE PRESENCE OF THE CONSULTANT, TEST ALL EXIT AND EMERGENCY FIXTURES. ON COMPANY LETTERHEAD, THE CONTRACTOR IS TO PREPARE A CHART INDICATING:
- PROJECT
- DATE
- EQUIPMENT TYPE
- CERTIFICATION OF CORRECT CONNECTION
- CERTIFICATION OF CORRECT OPERATION
- DURATION OF TEST IN MINUTES (MINIMUM 30)
- ACTUAL PERIOD OF TESTING (TIME OF DAY)

FIRESTOPPING

- 1 FIRESTOPPING MATERIAL AND INSTALLATION WITHIN ANNULAR SPACE BETWEEN CONDUITS, DUCTS, AND ADJACENT FIRE SEPARATION.
2 PROVIDE MATERIALS AND SYSTEMS CAPABLE OF MAINTAINING EFFECTIVE BARRIER AGAINST FLAME, SMOKE, AND GASES.
3 COMPLY WITH THE REQUIREMENTS OF CAN4-S115-M35, AND DO NOT EXCEED OPENING SIZED FOR WHICH THEY HAVE BEEN TESTED.
4 SYSTEMS TO HAVE AN F OR FT RATING (AS APPLICABLE) NOT LESS THAN THE FIRE PROTECTION RATING REQUIRED FOR CLOSURES IN A FIRE SEPARATION. PROVIDE "FIREWRAP" BLANKET AROUND SERVICES PENETRATING FIREWALLS.
5 EXTENT OF BLANKET MUST CORRESPOND TO ULC RECOMMENDATIONS. IN GENERAL WRAP INDIVIDUAL CONDUITS WITH APPROVED FIREWRAP MATERIALS ON EACH SIDE OF FIREWALL. REFER TO ARCHITECTURAL DRAWINGS FOR FT RATINGS. PROVIDE 1 AND/OR 2 LAYERS OF FIREWRAP WITH TRANSVERSE AND LONGITUDINAL SEAMS OVERLAPPED AND/OR BUTTED (SECOND LAYER OFFSET FROM FIRST LAYER). CUT EDGES ARE TO BE SEALED WITH ALUMINUM FOIL TAPE. PROVIDE 50 MM STAINLESS STEEL BANDING AT 200 MM INTERVALS. INSTALL FIREWRAP TO MANUFACTURERS' RECOMMENDATIONS FOR PROPER FT RATING. ACCEPTABLE MANUFACTURERS ARE 3M FIREMASTER DUCTWRAP OR APPROVED EQUAL.
6 THE FIRESTOPPING MATERIALS ARE NOT TO SHRINK, SLUMP OR SAG AND BE FREE OF ASBESTOS, HALOGENS AND VOLATILE SOLVENTS.
7 FIRESTOPPING MATERIALS ARE TO CONSIST OF A COMPONENT SEALANT APPLIED WITH A CONVENTIONAL CAULKING GUN AND TROWEL.
8 FIRESTOP MATERIALS ARE TO BE CAPABLE OF RECEIVING FINISH MATERIALS IN THOSE AREAS, WHICH ARE EXPOSED AND SCHEDULED TO RECEIVE FINISHES.
9 FIRESTOPPING SHALL BE INSPECTED AND APPROVED BY LOCAL AUTHORITY PRIOR TO CONCEALMENT OR ENCLOSURE.
10 INSTALL MATERIAL AND COMPONENTS IN ACCORDANCE WITH ULC CERTIFICATION, MANUFACTURERS INSTRUCTIONS AND LOCAL AUTHORITY.
11 SUBMIT PRODUCT LITERATURE AND INSTALLATION MATERIAL ON FIRESTOPPING IN SHOP DRAWING AND PRODUCT DATA MANUAL.
12 ACCEPTABLE MANUFACTURERS:
FYRESLLEEVE INDUSTRIES INC.
GENERAL ELECTRIC PENNUL FIRESTOP SYSTEMS
INTERNATIONAL PROTECTIVE COATINGS CORP.
RECTORSAL CORPORATION (METACALK)
PROSET SYSTEMS
3M
AD SYSTEMS
HILTI
ROYAL
NOTE: 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.



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The contractor shall verify all dimensions and report all errors and discrepancies to the Consultant before commencement of the work. The drawings show general arrangement of services. Follow as closely as actual building construction will permit. Obtain approval for relocation of service from Consultant before commencement of the work. The drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required conditions. Drawings and specifications, etc., prepared and issued by the consultant are the property of the consultant and must be returned at the completion of the project. These documents are not to be duplicated or copied without the consent of the Consultant. Do not scale this drawing. © 2024 DEI Consulting Engineers Inc.

NOTE: THIS DRAWING IS NOT TO BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF ALL SITE DIMENSIONS AND FOR NOTIFYING THE ARCHITECT OF ANY SITE CONDITIONS AND SITE MEASUREMENTS THAT ARE NOT CONSISTENT WITH THE DRAWINGS.

Table with 3 columns: No., Revision, Date. Includes a circular stamp for J.J. JACKSON, PROFESSIONAL ENGINEER, 100011324, dated 5/10/24.

Table with 3 columns: No., Issue, Date. Includes a circular stamp for PROTECTIVE COATINGS NORTH.

project
WRDSB TAIT STREET PUBLIC SCHOOL CEILING RENOVATIONS

WATERLOO REGION DISTRICT SCHOOL BOARD
184 TAIT STREET, CAMBRIDGE, ON N1S 3G3
drawing
SPECIFICATIONS
drawing scale
AS NOTED
ward99 project number
23013 - WRDSB TAIT ST CEILINGS

ward99 architects logo and drawing no. E201

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