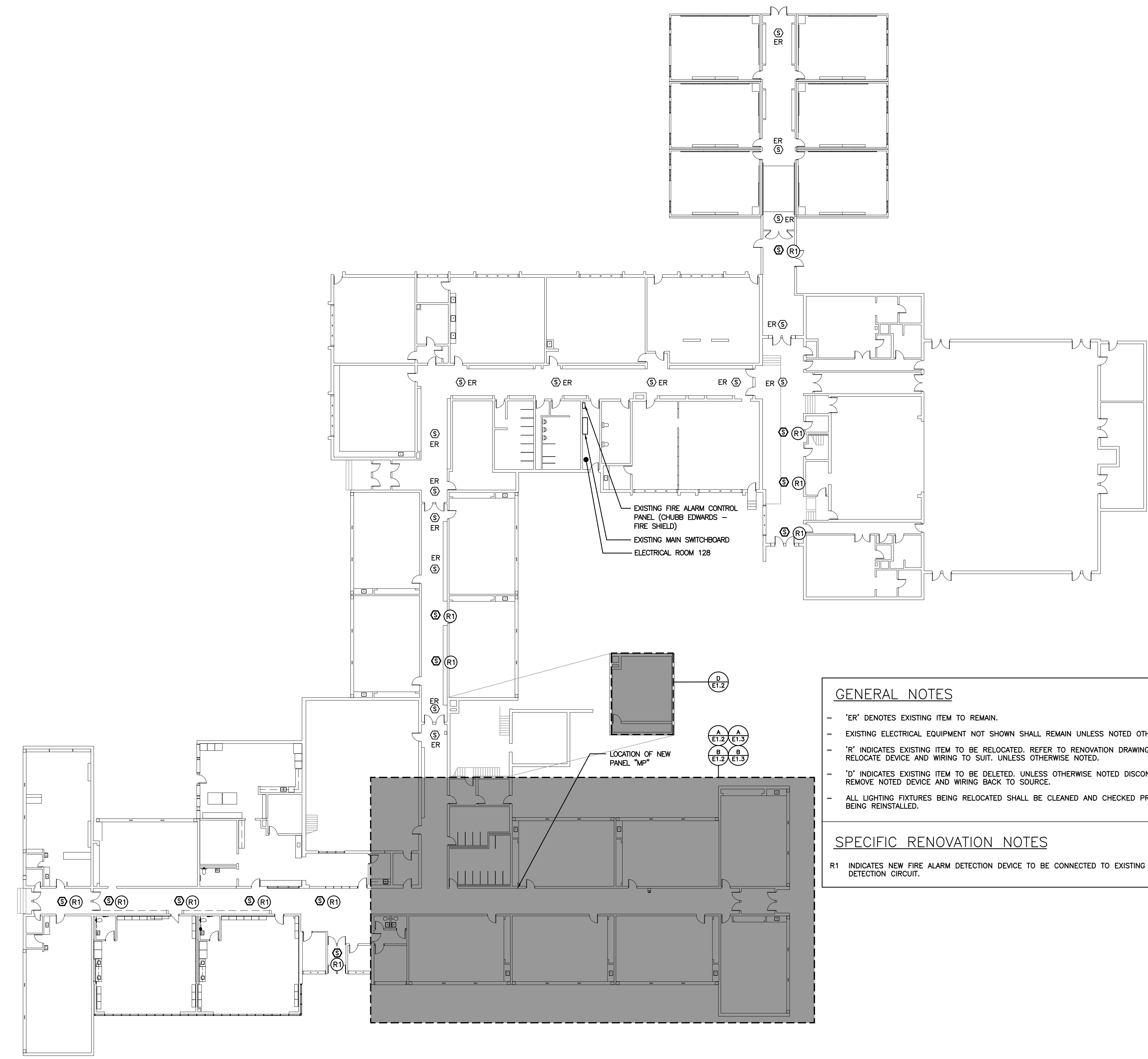


ELECTRICAL SYMBOLS		NOTE: ALL SYMBOLS MAY NOT BE USED	
LIGHTING		POWER	
	LIGHT FIXTURE TYPE AS INDICATED		WALL MOUNTED RECEPTACLE (15A-120V)
	CEILING OR WALL MOUNTED LIGHT FIXTURE TYPE AS INDICATED		WALL MOUNTED T-SLOT RECEPTACLE (20A-120V)
	WALL MOUNTED EXIT LIGHT SHADING INDICATES FACE		T-SLOT RECEPTACLE MTD. ABOVE COUNTER (20A-120V)
	SINGLE OR TWIN EMERGENCY LIGHTING FIXTURE		RECEPTACLE MTD. ABOVE COUNTER S=SPLIT (15A-120V)
	BATTERY UNIT WITH INTEGRAL EMERGENCY FIXTURE (EM-X INDICATES BATTERY UNIT TYPE, DC-X INDICATES DC CIRCUIT, AND X-X INDICATES AC SOURCE CIRCUIT)		PANEL AS INDICATED
	SINGLE POLE SWITCH (3=3 WAY, 4=4 WAY, P=PILOT LIGHT, K=KEYED, DM=DIMMER, M=MOTOR RATED)		UNFUSED DISCONNECT
	OCCUPANCY SENSOR (PASSIVE)		HAND DRYER
	KEY SWITCH		PUSH-BUTTON STATION
	CEILING MOUNTED MOTION SENSOR		JUNCTION BOX
	POWER PACK	COMMUNICATIONS	
ACCESS CONTROL			SINGLE COMPUTER OUTLET UNLESS OTHERWISE NOTED C/W 1" (27mm) C TO HANGER SYSTEM IN NEAREST CORRIDOR CEILING SPACE. WAP DENOTES WIRELESS ACCESS POINT
	ELECTRIC STRIKE, CONFIRM ROUGHIN WITH DOOR HARDWARE.		WALL MOUNTED SPEAKER (CS=COLUMN SPEAKER)
	"PUSH-TO-LOCK" BUTTON		CEILING MOUNTED SPEAKER
	EMERGENCY PUSH BUTTON STATION	GENERAL	
	"ASSISTANCE REQUIRED" DOME LIGHT WITH SOUNDER	ER	INDICATED EXISTING ITEM TO REMAIN
	"ASSISTANCE REQUIRED" INDICATOR LIGHT WITH SOUNDER	D	INDICATES EXISTING ITEM TO BE DELETED
	CLOCK AS PER SPECIFICATION	R	INDICATES EXISTING ITEM TO BE RELOCATED/IN RELOCATED POSITION
	WALL MOUNTED SPEAKER (CS=COLUMN SPEAKER)	WG	WIREGUARD
FIRE ALARM		WAP	WIRELESS ACCESS POINT
	ALARM BELL (A, B = SIGNAL CIRCUIT)	WP	WEATHER PROOF
	ALARM STROBE (A, B = SIGNAL CIRCUIT)	GF	GROUND FAULT
	HEAT DETECTOR (135 DEGREE RATE OF RISE AND FIXED TEMPERATURE)	X	NOTE INDICATOR
	END-OF-LINE RESISTOR	⊠	MECHANICAL ITEM NO.
STANDARD CIRCUITING LABELING			
		POWER PANEL LABEL CIRCUIT INDICATION SWITCH LEG (IF APPLICABLE)	



GENERAL 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 RENOVATION NOTES

R1 INDICATES NEW FIRE ALARM DETECTION DEVICE TO BE CONNECTED TO EXISTING LOCAL DETECTION CIRCUIT.

LIGHTING CONTROL SYSTEMS SEQUENCE OF OPERATION

Space Type	Room Names	Control Sequence / Control Device(s):	Control System
Classrooms	TYPICAL	Sequence: ON: Lights turned on automatically via occupancy sensor. OFF: 15 minutes after the room has been vacated, the lights will automatically turn off.	LINE VOLTAGE OCCUPANCY CONTROL SYSTEM

LED LIGHT FIXTURE SCHEDULE

Item	Manufacturer/Catalog Number	Voltage	Lamp	Mounting	Description
A	LITHONIA CAT. #7LX4-30L-FW-A12-G210-LP840	120V	LED 3234lm 4000K 30W	SURFACE	1'x4' (305mmx1220mm) LED TROFFER C/W ALUMINUM HOUSING, A12 PRISMATIC LENS, AND ELECTRONIC DRIVER.
B	LITHONIA CAT. #2TLX4-40L-FW-A12-G210-LP840	120V	LED 3946lm 4000K 32W	SURFACE	2'x4' (610mmx1220mm) LED TROFFER C/W ALUMINUM HOUSING, A12 PRISMATIC LENS, AND ELECTRONIC DRIVER.
EMERG. BATT.	BEHELLI TEMPESTA SERIES: EM-1 #TA-LED-EM-120-TB-90SP (RECESSED TBAR MOUNT) OR APPROVED EQUALS BY: EMERGLITE STANPRO DUAL-LITE READY-LITE AIMLIGHT CAT. #VP1 SERIES	X	N/A	AS NOTED	VANDAL RESISTANT LONG LIFE, SEALED BATTERY, C/W 17W LED MODULES, POLYCARBONATE BODY AND 90 MINUTE BATTERY DURATION

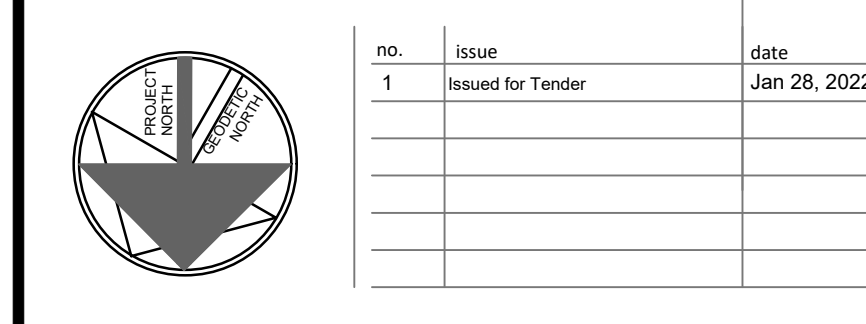
NOTES:

- 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.
- 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 SUBMITTAL.
- IF THERE ARE ANY DISCREPANCIES BETWEEN THE FIXTURE PART NUMBER AND DESCRIPTION, IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO BRING THIS TO THE ELECTRICAL CONSULTANT'S ATTENTION PRIOR TO SHOP DRAWING REVIEW.

OVERALL PLAN
SCALE: 1:250

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. © 2022 DEI & Associates Inc.

no.	revision	date
1	Issue for Tender	Jan 28, 2022



project
WARD99 STEWART AVENUE PUBLIC SCHOOL RENOVATIONS

WATERLOO REGION DISTRICT SCHOOL BOARD
145 STEWART AVE, CAMBRIDGE N1R 2V5

drawing
LEGEND, SCHEDULES AND KEY PLAN

drawing scale
AS NOTED

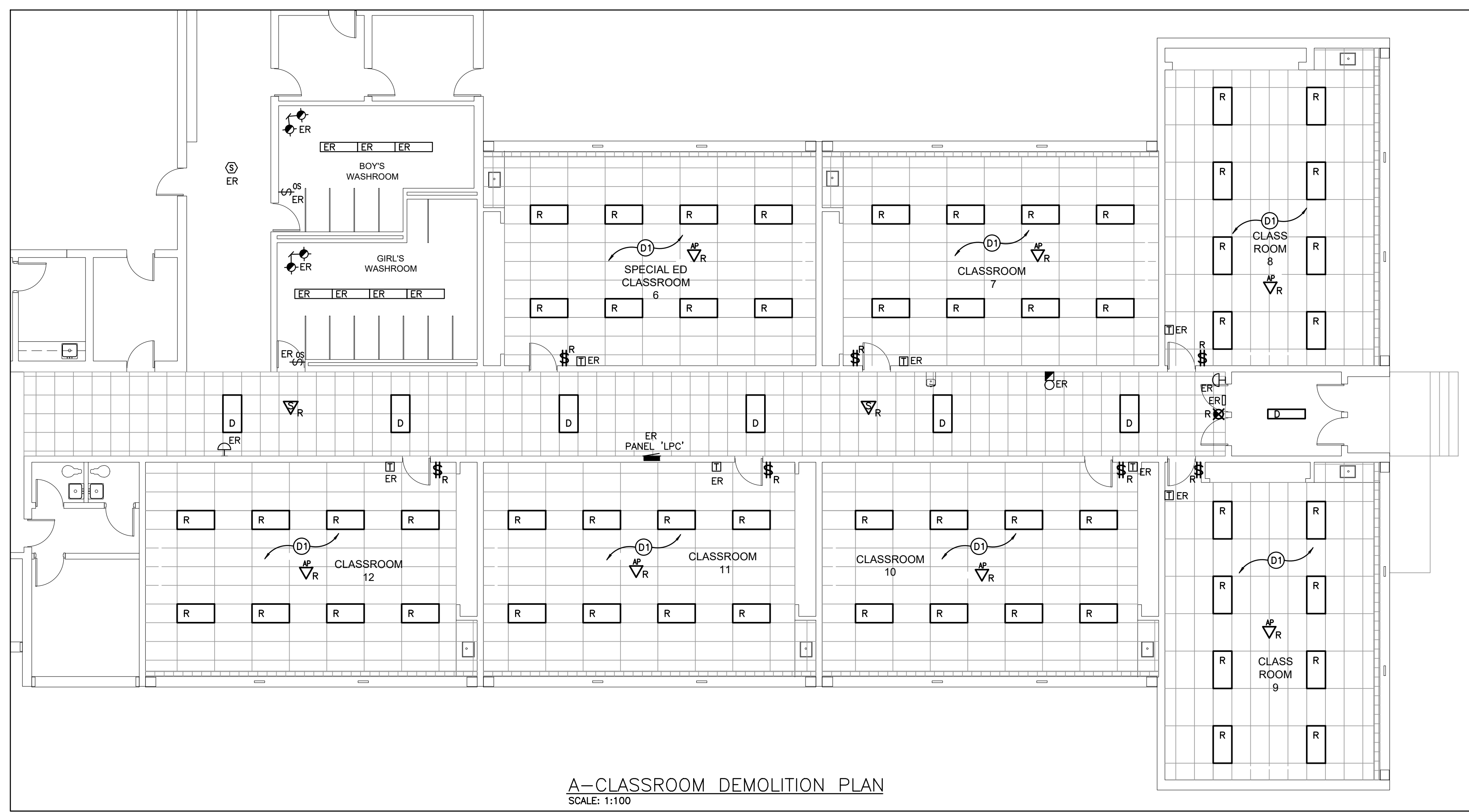
ward99 project number
21009 - STEWART

ward99 architects

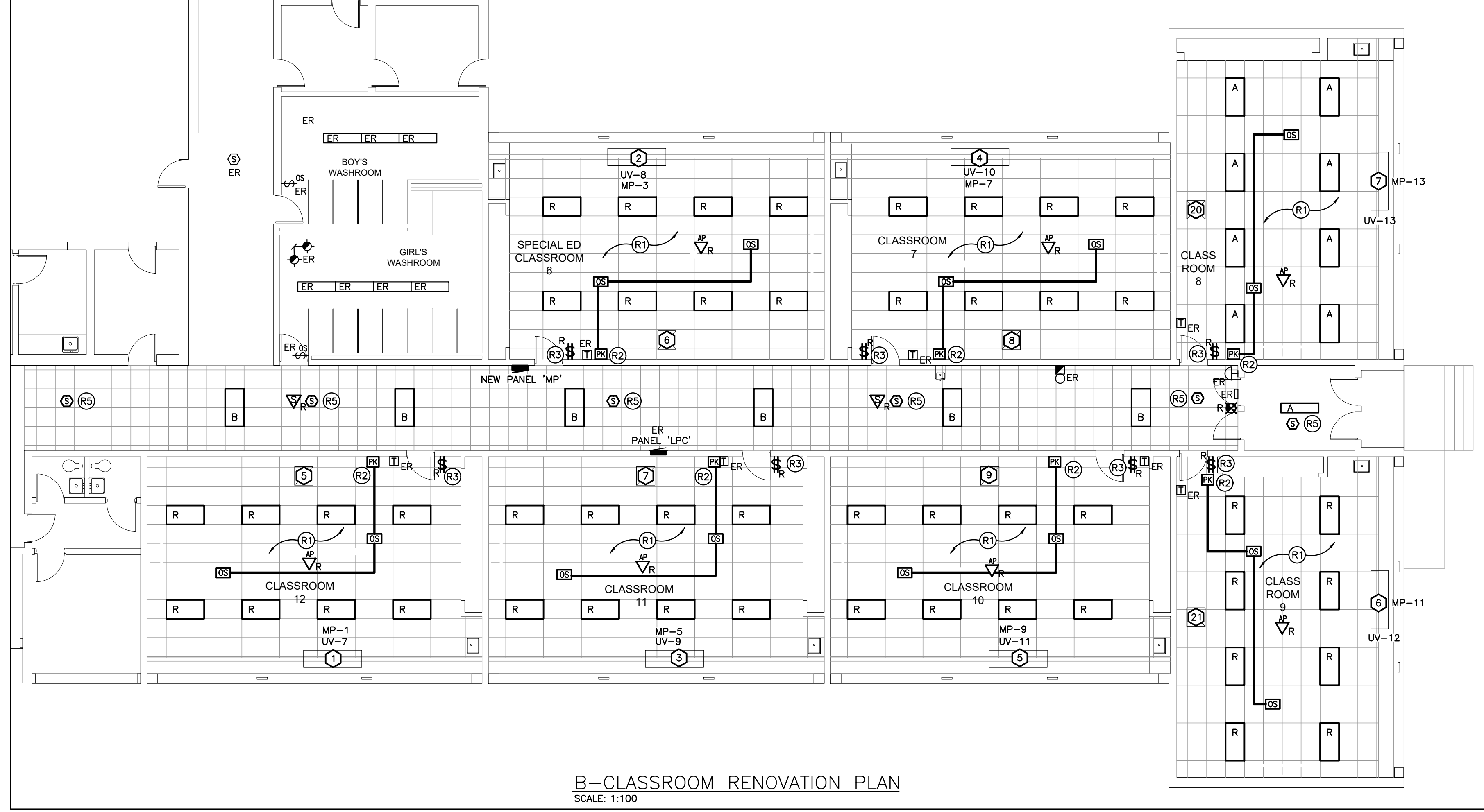
Wa RD 99

ward99 architects inc.
7500 Highway 27, Unit 27B
Vaughan ON L4H 0J2
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416-613-5680 www.ward99architects.com

drawing no.
E1.1



A-CLASSROOM DEMOLITION PLAN
SCALE: 1:100



B-CLASSROOM RENOVATION PLAN
SCALE: 1:100

GENERAL 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.

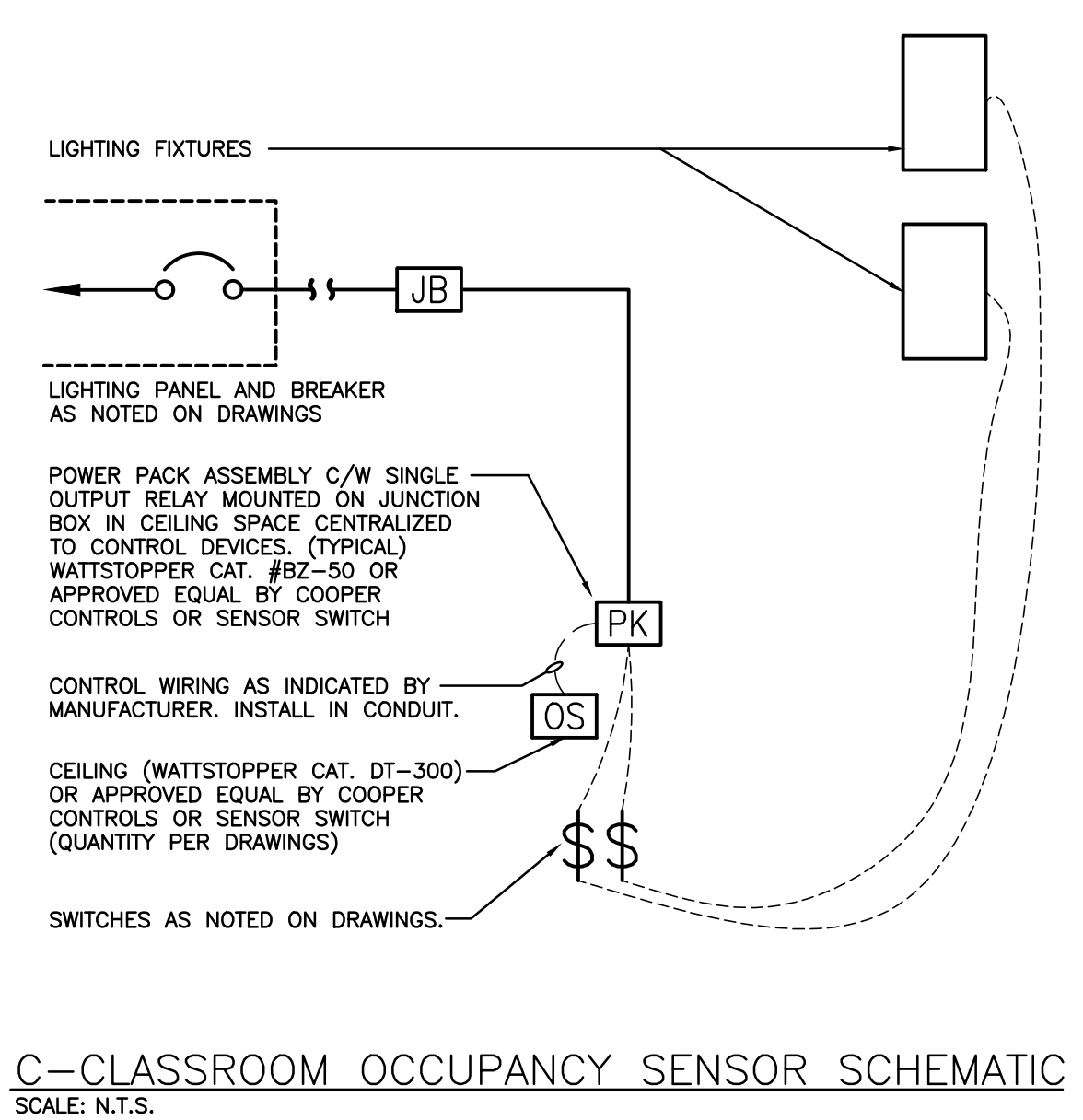
SPECIFIC DEMOLITION NOTES

- D1 CEILING WITHIN INDICATED AREA TO BE REMOVED BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR IS TO REMOVE AND REINSTALL ALL CEILING MOUNTED DEVICES. DEVICES ARE TO BE STORED IN A DRY SAFE LOCATION DURING CONSTRUCTION. FIXTURES TO BE REMOVE AND REINSTALL. EXISTING CIRCUIT AND LIGHTING CONTROLS TO REMAIN FOR CONNECTION TO NEW FIXTURES. REFER TO RENOVATION PLANS.

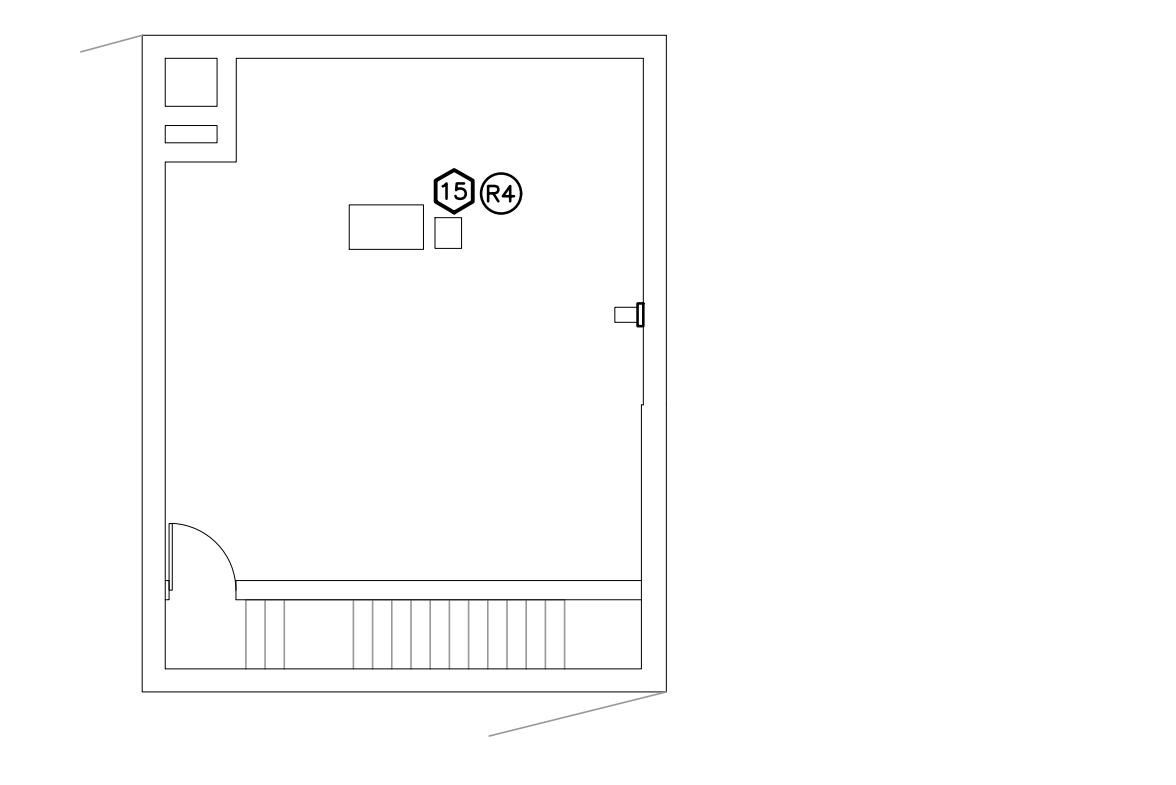
SPECIFIC RENOVATION NOTES

- R1 INDICATES FIXTURES TO BE CONNECTED TO EXISTING CIRCUIT.
- R2 INDICATES POWER PACK INSTALLED WITHIN ACCESSIBLE CEILING SPACE FOR CONTROL OF CLASSROOM LIGHTING THROUGH WALL MOUNTED TOGGLE SWITCHES. REFER TO LIGHTING CONTROL DETAILS.
- R3 MODIFY EXISTING CONTROLS TO INCLUDE NEW OCCUPANCY SENSORS AND POWER PACK. REFER TO CLASSROOM OCCUPANCY SENSOR SCHEMATIC.
- R4 INDICATES NEW VFD AND REPLACEMENT MOTOR BY MECHANICAL FOR EXISTING FAN. ELECTRICAL CONTRACTOR TO CONNECT NEW VFD TO EXISTING FAN BRANCH CIRCUIT AND PROVIDE CONNECTION WIRING FROM VFD TO REPLACEMENT FAN MOTOR. FAN MOTOR MOUNTING AND REPLACEMENT BY MECHANICAL TRADE.
- R5 INDICATES NEW FIRE ALARM DETECTION DEVICE TO BE CONNECTED TO EXISTING LOCAL DETECTION CIRCUIT.

ALL RECEPTACLES ARE TO BE TAMPER RESISTANT TYPE PER 2019 OESC CODE UPDATES - RULE 26-706.



C-CLASSROOM OCCUPANCY SENSOR SCHEMATIC
SCALE: N.T.S.



D-FAN ROOM DEMOLITION/RENOVATION
SCALE: 1:100

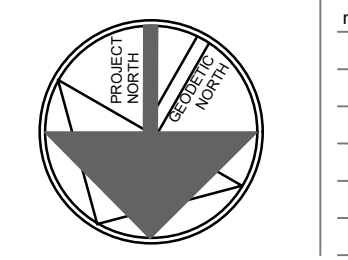
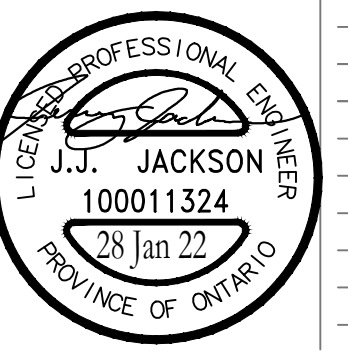


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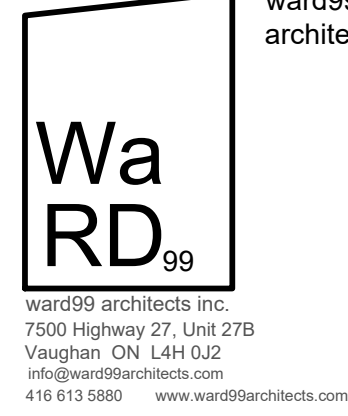
55 Northland Road, Waterloo, ON N2V 1Y8
Phone: 519-725-3555
Website: deiassociates.ca
Project Number: 21085

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1	Issued for Tender	Jan 28, 2022



project
WRDSB STEWART AVENUE PUBLIC SCHOOL RENOVATIONS
WATERLOO REGION DISTRICT SCHOOL BOARD
145 STEWART AVE. CAMBRIDGE N1R 2V5
drawing
ELECTRICAL DEMOLITION AND RENOVATION PLANS
drawing scale
AS NOTED
ward99 project number
21009 - STEWART



E1.2

ward99 architects
7500 Highway 27, Unit 27B
Vaughan ON L4H 0J2
416-613-5680 www.ward99architects.com

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 REVISED 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 ACSB 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 AND CONTROLS
 - .7 FIRE ALARM SYSTEM DEVICES
 - .8 WIRING FOR MECHANICAL EQUIPMENT
 - .9 AUXILIARY SYSTEM ROUGH-INS
 - .10 CONTRACT CLOSEOUT (MINIMUM 3% BUT NO LESS THAN \$1,500.00)
- .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.

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. #GFR15
 - .4 TAMPER RESISTANT GROUND FAULT PROTECTED T-SLOT RECEPTACLE: HUBBELL CAT. #GFR20
 - .7 OTHER RECEPTACLES WITH AMPACITY AND VOLTAGE AS INDICATED. COLOUR BY ARCHITECT.
 - .8 ACCEPTABLE ALTERNATE MANUFACTURERS INCLUDE: PASS & SEYMOUR LEVITON
 - .9 WALL MOUNTED OCCUPANCY SENSORS (PASSIVE TECHNOLOGY), OCCUPANCY SENSORS USED IN STORAGE AND SERVICE ROOMS SHALL BE EITHER:
 - .1 WATTSTOPPER CAT. #PW-100-VOLT-X (COLOUR BY ARCHITECT)
 - .2 SENSOR SWITCH CAT. #WSD-VOLT-X (COLOUR BY ARCHITECT)
 - .3 EQUAL BY COOPER CONTROLS
 - .10 WHERE NOTED ON THE DRAWINGS, THE WALL MOUNTED SWITCH STYLE OCCUPANCY SENSOR USED IN ADMINISTRATIVE OFFICES AND SEMINAR/MEETING ROOMS SHALL BE A DUAL TECHNOLOGY SWITCH WITH EITHER SINGLE OR DOUBLE RELAY (CIRCUIT) AS NOTED ON THE DRAWINGS. COLOUR TO SUIT ARCHITECT. SWITCHES SHALL BE EITHER:
 - .1 SINGLE RELAY (CIRCUIT): WATTSTOPPER CAT. #DW-100
 - .2 DUAL RELAY (CIRCUIT): WATTSTOPPER CAT. #DW-200
 - .3 APPROVED EQUAL:
 - .1 SENSOR SWITCH
 - .2 COOPER CONTROLS
- NOTE: FOR DUAL RELAY SWITCHES, PROGRAM THE SENSORY FOR 15 MINUTE OFF DELAY, ENABLED WAL-THRU, AUDIBLE ALERT ENABLED, RELAY 1 ON MODE: AUTO ON, RELAY 2 ON MODE: MANUAL ON.
- .11 PROVIDE OTHER OCCUPANCY SENSORS TO SUIT THE DETAIL(S) ON THE DRAWINGS.
 - .12 ALL SENSORS SHALL BE SET TO 5 MINUTES "DELAY TO OFF" UNLESS OTHERWISE DIRECTED.
 - .13 OCCUPANCY SENSORS:
 - .1 INSTALL POWER PACKS IN ACCESSIBLE MAINTENANCE AREAS.
 - .2 PROVIDE ACCESS DOORS IF POWER PACKS ARE INSTALLED ABOVE DRYWALL CEILINGS.
 - .3 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND AIM SENSORY IN THE CORRECT LOCATION REQUIRED FOR COMPLETE AND PROPER COVERAGE WITHIN THE RANGE OF COVERAGE AS PER THE MANUFACTURER'S RECOMMENDATIONS. THE LOCATIONS AND QUANTITIES OF SENSORS SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE ONLY THE ROOMS WHICH ARE TO BE PROVIDED WITH SENSORS. THE CONTRACTOR SHALL PROVIDE ADDITIONAL SENSORS IF REQUIRED TO PROPERLY AND COMPLETELY COVER THE RESPECTIVE ROOMS.
 - .4 IT IS THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE A PRE-INSTALLATION MEETING WITH THE MANUFACTURER'S FACTORY AUTHORIZED REPRESENTATIVE, AT THE FACILITY, TO VERIFY PLACEMENT TO SENSORS AND INSTALLATION CRITERIA.
 - .5 THE CONTRACTOR SHALL ALSO PROVIDE THE ON-SITE TRAINING NECESSARY TO FAMILIARIZE THE OWNER'S PERSONNEL WITH THE OPERATION, USE, ADJUSTMENT AND PROBLEM SOLVING DIAGNOSIS OF THE OCCUPANCY SENSING DEVICES SYSTEMS.
 - .6 UPON COMPLETION OF THE INSTALLATION, THE SYSTEM SHALL BE COMPLETELY COMMISSIONED BY THE MANUFACTURER'S FACTORY AUTHORIZED TECHNICIAN WHO WILL VERIFY ALL ADJUSTMENTS AND SENSOR PLACEMENT TO ENSURE A TROUBLE-FREE OCCUPANCY-BASED LIGHTING CONTROL. SUBMIT COMMISSIONING REPORT WITH CLOSE-OUT DOCUMENTS.
 - .14 INSTALL DEVICES IN GANG TYPE OUTLET BOX WHEN MORE THAN ONE DEVICE IS REQUIRED IN ONE LOCATION.
 - .15 SHEET STEEL UTILITY BOX COVER FOR WIRING DEVICES INSTALLED IN SURFACE MOUNTED UTILITY BOXES.
 - .16 STAINLESS STEEL, VERTICALLY BRUSHED, 1mm THICK COVER PLATES FOR WIRING DEVICES MOUNTED IN FLUSH-MOUNTED OUTLET BOXES.
 - .17 SHEET METAL COVER PLATES FOR WIRING DEVICES MOUNTED IN SURFACE-MOUNTED FS OR FD TYPE CONDUIT BOXES.
 - .18 PROTECT STAINLESS STEEL COVER PLATE FINISH WITH PAPER OR PLASTIC FILM UNTIL PAINTING AND OTHER WORK IS FINISHED.
 - .19 INSTALL SUITABLE COMMON COVER PLATES WHERE WIRING DEVICES ARE GROUPED.

FIRE ALARM SYSTEMS

- .1 INSTALLATION OF FIRE ALARM DEVICES MUST CONFORM TO ULC-S524 (LATEST EDITION).
 - .2 ALL WIRING MUST BE COLOUR CODED, SIZED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND CONFORM TO THE LATEST EDITION OF THE ELECTRICAL SAFETY CODE.
 - .3 ALL NEW FIRE ALARM DETECTION AND SIGNALING DEVICES ADDED DUE TO RENOVATIONS AND ADDITIONS SHALL BE CONNECTED TO EXISTING LOCAL ZONE OR NEW ZONE AS INDICATED.
 - .4 EQUIPMENT SHALL BE SUPPLIED AND INSTALLED AS FOLLOWS:
 - .1 AUTOMATIC ALARM INITIATING DEVICES
 - .1 MANUAL ALARM STATIONS: PULL LEVER STYLE, WALL MOUNTED SEMI-FLUSH TYPE, NON-CODED SINGLE POLE NORMALLY OPEN CONTACT FOR SINGLE STAGE, ENGLISH SIGNAGE.
 - .2 THERMAL FIRE DETECTORS: FIXED TEMPERATURE, NON-RESTORABLE, RATED 57C OR 88C AS INDICATED.
 - .3 THERMAL FIRE DETECTORS: COMBINATION FIXED TEMPERATURE AND RATE OF RISE, NON-RESTORABLE FIXED TEMPERATURE ELEMENT, SELF-RESTORING RATE OF RISE, FIXED TEMPERATURE 57C OR 88C, RATE OF RISE 8.3C PER MINUTE.
 - .4 SMOKE DETECTOR: CEILING MOUNTED, PHOTO ELECTRIC TYPE, VISUAL ALARM INDICATOR, COMPLETE WITH RELAY BASE WHERE NOTED.
 - .5 SMOKE DETECTOR: PHOTO ELECTRIC TYPE AIR DUCT TYPE WITH SAMPLING TUBES WITH PROTECTIVE HOUSING.
 - .1 PLUG-IN TYPE WITH FIXED BASE
 - .2 WIRE-IN BASE ASSEMBLY WITH INTEGRAL RED ALARM LED, AND TERMINALS FOR REMOTE ALARM LED.
- NOTE:
- .1 ANY SURFACE MOUNTED SIGNAL DEVICES MUST BE PROVIDED WITH SUITABLE BACKBOXES SUPPLIED BY THE MANUFACTURER.
 - .3 END-OF-LINE DEVICES
 - .1 END-OF-LINE DEVICES TO CONTROL SUPERVISORY CURRENT IN ALARM CIRCUITS AND SIGNALING CIRCUITS, SIZED TO ENSURE CORRECT SUPERVISORY CURRENT FOR EACH CIRCUIT. OPEN, SHORT OR GROUND FAULT IN ANY CIRCUIT WILL ALTER SUPERVISORY CURRENT IN THAT CIRCUIT, PRODUCING AUDIBLE AND VISIBLE ALARM AT MAIN CONTROL PANEL AND REMOTELY AT ANNUNCIATORS.
- .5 ONCE INSTALLATION IS COMPLETE THE MANUFACTURER'S REPRESENTATIVE MUST MAKE AN INSPECTION OF THE DEVICES INSTALLED.
 - .6 THIS TEST MUST CONFORM TO THE ONTARIO BUILDING CODE AND THE LATEST EDITION OF ULC CAN4-S537.
 - .7 ALL COSTS ASSOCIATED WITH THIS INSPECTION BY THE CONTRACTOR AND MANUFACTURER MUST BE CARRIED IN THE TENDER PRICE.
 - .8 UPON SUCCESSFUL COMPLETION OF TESTING THE MANUFACTURER MUST SUBMIT TO THE CONTRACTOR AND CONSULTANT:
 - A CERTIFICATE OF VERIFICATION
 - FIELD TECHNICIAN VERIFICATION SHEETS FOR EACH DEVICE VERIFIED (INCLUDE COPIES OF SAME IN MAINTENANCE MANUALS)
 - .9 THE TEST RESULTS ARE TO BE SUBMITTED TO THE CONSULTANT FOR REVIEW PRIOR TO ISSUING TO OWNER'S REPRESENTATIVES AND/OR AUTHORITIES HAVING JURISDICTION.

	EDWARDS
1 CONTROL PANEL: EXISTING	FIRESHIELD SERIES
CONVENTIONAL DEVICES:	
2 SMOKE DETECTORS (SYSTEM TYPE)	C2M-PCD



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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.
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1	Issued for Tender	Jan 28, 2022

project
WRDSB STEWART AVENUE PUBLIC SCHOOL RENOVATIONS
WATERLOO REGION DISTRICT SCHOOL BOARD
145 STEWART AVE, CAMBRIDGE N1R 2V5
drawing
SPECIFICATIONS
drawing scale
AS NOTED
ward99 project number
21009 - STEWART

ward99 architects drawing no. E2.1
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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 SELF-POWERED EMERGENCY LIGHTING UNITS
 - .1 EXIT LIGHTING MUST CONFORM TO CSA C22.2 No. 141 (LATEST EDITION OR CSA C860).
 - .2 LAMPS: LED 2W
 - .3 OPERATION: 25 YEARS LIFE
 - .4 EXIT UNITS ARE TO BE PROVIDED WITH THREE (3) PICTOGRAM LEGENDS INDICATING "LEFT FROM HERE", "STRAIGHT FROM HERE", AND "RIGHT FROM HERE".
 - .5 SUPPLY VOLTAGE: 120 VOLT, AC.
 - .6 BATTERY: SEALED MAINTENANCE FREE, 10 YEAR LIFE. BATTERY MUST BE CAPABLE OF SUPPLYING THE WATTAGE INDICATED FOR A MINIMUM OF 30 MINUTES.
 - .7 SIGNAL LIGHTS: "AC POWER ON" CONDITION AND "CHARGING" CONDITION.
 - .8 CABINET: FINISH: WHITE.
 - .9 AUXILIARY EQUIPMENT: TEST SWITCH.
- .3 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-WRAPPED" 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 ALIGN LUMINAIRES MOUNTED IN CONTINUOUS ROWS TO FORM STRAIGHT UNINTERRUPTED LINES.
 - .14 ALIGN LUMINAIRES MOUNTED INDIVIDUALLY PARALLEL OR PERPENDICULAR TO BUILDING GRID LINES.
 - .15 ALL LIGHTING BRANCH CIRCUITS ARE TO BE PROVIDED WITH SEPARATE NEUTRALS.
- .4 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
- .5 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)

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 FIRE ALARM SYSTEM COMPONENTS
 - .2 LUMINAIRES
 - .3 EMERGENCY BATTERY UNITS AND FIXTURES
 - .4 STARTERS, CONTACTORS, AND CONTROL DEVICES
 - .5 FIRESTOPPING MATERIALS
 - .6 HAND DRYERS
 - .7 LIGHTING CONTROL DEVICES
 - .8 WIRING DEVICES
 - .9 DISTRIBUTION EQUIPMENT
- 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:
 - FYRESLEEVE INDUSTRIES INC.
 - GENERAL ELECTRIC PENSL FIRESTOP SYSTEMS
 - INTERNATIONAL PROTECTIVE COATINGS CORP.
 - RECTORSIAL 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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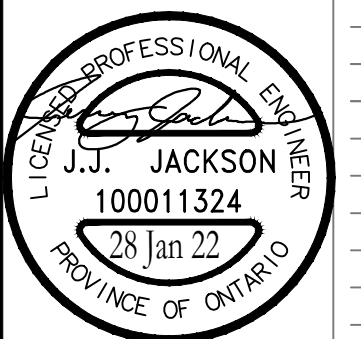
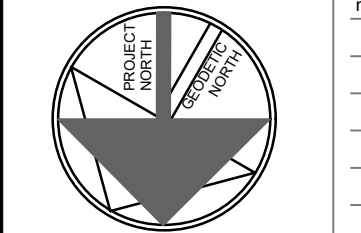


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project: WRDSB STEWART AVENUE PUBLIC SCHOOL RENOVATIONS
WATERLOO REGION DISTRICT SCHOOL BOARD
145 STEWART AVE, CAMBRIDGE N1R 2V5
drawing: SPECIFICATIONS
drawing scale: AS NOTED
ward99 project number: 21009 - STEWART

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