

RIC LED TROFFER C/W SMOOTH
% 0-10V DIMMING DRIVER, AND
LED FLAT PANEL C/W FROSTED R TEMPERATURE AND LUMEN 'ER, AND WHITE FINISH. -000K AND MEDIUM OUTPUT.
VANDAL RESISTANT BATTERY C/W OLYCARBONATE BODY, 90 MINUTE AR MOUNTING, T-BAR KIT AND
Ρ

Space Type	Control Sequence / Control Device(s):	Control System	Detail Reference
Classrooms	Sequence: ON: Lights will turn on to 50% automatically when occupancy is detected. OFF: 20 minutes after the area tied to a given room controller has been vacated, the lights will automatically turn off. MANUAL: The occupant can adjust lighting to desired level via wall station dimmer.	DIGITAL ROOM CONTROL SYSTEM	B/E1.1
Workroom	Sequence: ON: Lights turned on automatically when occupancy is detected. OFF: 10 minutes after the room has been vacated, the lights will automatically turn off. OVERRIDE: User manually adjusts on/off and that state shall remain without reverting to previous state unless sensors do not detect occupancy for extended period, whereby normal sensor operation is to resume.	DIMMING WALL SWITCH OCCUPANCY CONTROL	A/E1.1

ELECTRICAL SYMBOLS		١	NOTE: ALL SYMBOLS MAY NOT BE USED
	LIGHTING		SECURITY
X	X LIGHT FIXTURE TYPE AS INDICATED		SECURITY DETECTOR (SURFACE MOUNTED)
ENTR	CEILING RECESSED BATTERY UNIT C/W INTEGRAL EMERGENCY FIXTURE		COMMUNICATIONS
\$	SINGLE POLE SWITCH (3=3 WAY, 4=4 WAY, P=PILOT LIGHT, K=KEYED, DM=DIMMER, M=MOTOR RATED)	WAP	WIRELESS ACCESS POINT. PROVIDE 34" (21mm) C TO CABLE MANAGEMENT SYSTEM
\$°°	OCCUPANCY SENSOR (PASSIVE)		GENERAL
OS	CEILING MOUNTED MOTION SENSOR	ER	INDICATED EXISTING ITEM TO REMAI
DM	DIGITAL WALL DIMMER STATION	D	INDICATES EXISTING ITEM TO BE DELETED
PK	DIGITAL ROOM CONTROLLER	R	INDICATES EXISTING ITEM TO BE RELOCATED/IN RELOCATED POSITION
	FIRE ALARM	X	NOTE INDICATOR
\$	SMOKE DETECTOR (RL=RELAY BASE)	⟨\$\	ZONE INDICATOR

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 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.

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MECHANICAL | ELECTRICAL | AQUATIC 55 Northland Road, Waterloo, ON N2V 1Y8 Phone: 519-725-3555

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.

Website: deiassociates.ca Project Number: 24405

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WRDSB GRAND RIVER COLLEGIATE INSTITUTE #24-7692-RFT - ASBESTOS REMOVAL FOR FAMILY STUDIES RENOVATION

WATERLOO REGION DISTRICT SCHOOL BOARD 175 INDIAN RD, KITCHENER, ON N2B 2S7 drawing

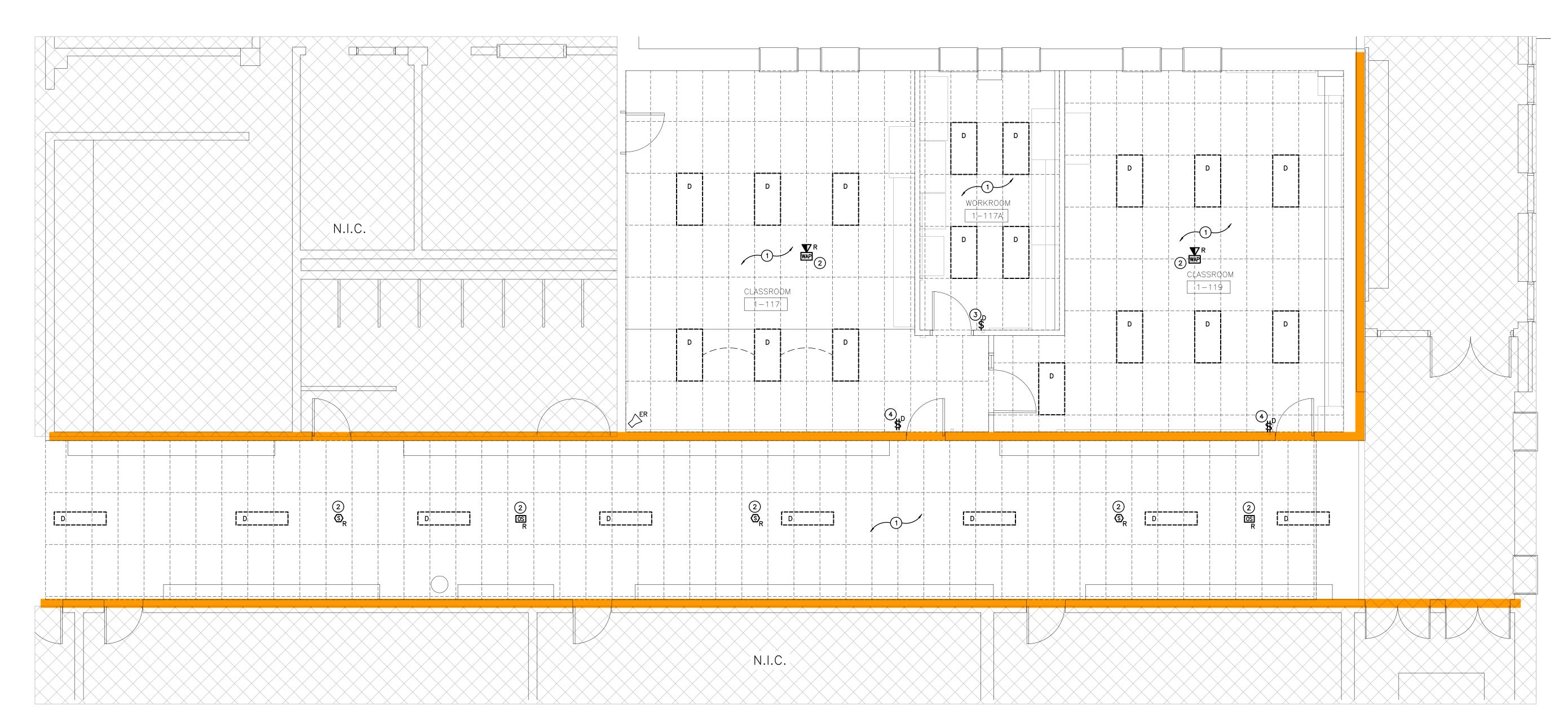
OVERALL PLAN & LEGEND

AS NOTED ward99 project number

23011 - WRDSB GRAND RIVER FAMILY STUDIES



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CLASSROOM 1-117 & 1-119 DEMOLITION PLAN SCALE: 1:50

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 DEMOLISHED. UNLESS OTHERWISE NOTED DISCONNECT AND REMOVE NOTED DEVICE AND WIRING BACK TO SOURCE.

SPECIFIC DEMOLITION NOTES

- MAINTAIN EXISTING LOCAL LIGHTING BRANCH CIRCUIT FOR RE-USE WITH NEW FIXTURES AND NEW/RELOCATED LIGHTING CONTROLS PER RENOVATION PLANS.
- 2 MAINTAIN EXISTING DEVICE FOR REINSTALLATION PER RENOVATION PLAN.
- 3 REMOVE EXISTING DEVICE. MAINTAIN EXISTING WIRING AND BACKBOX FOR REPLACEMENT DEVICE. REFER TO RENOVATION DRAWINGS FOR CONTINUATION.
- 4 EXISTING SWITCH IS TO BE REMOVED COMPLETE. PULL LINE AND LOAD SIDE WIRING UP TO ACCESSIBLE CEILING SPACE FOR CONNECTION TO NEW POWER PACK. MAINTAIN EXISTING BACKBOX FOR NEW DEVICE.

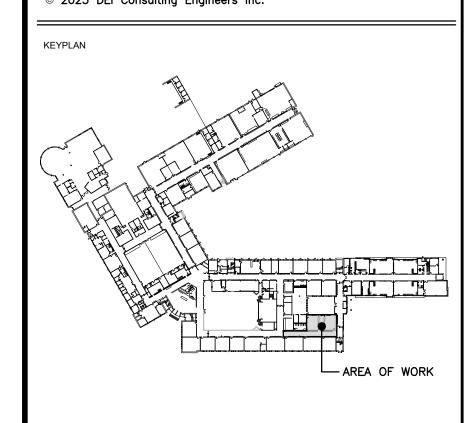
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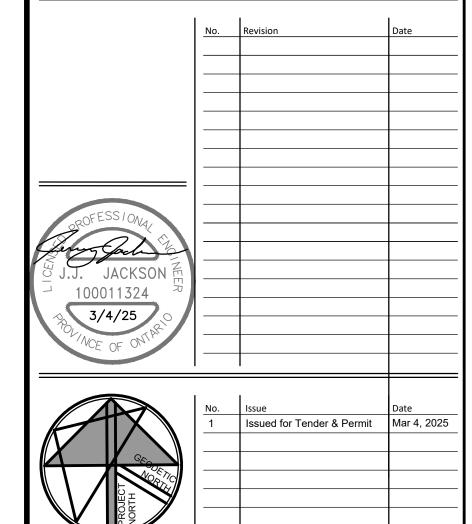
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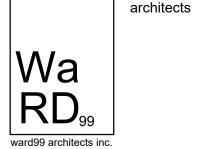
project
WRDSB GRAND RIVER COLLEGIATE INSTITUTE
#24-7692-RFT - ASBESTOS REMOVAL FOR FAMILY STUDIES RENOVATION

WATERLOO REGION DISTRICT SCHOOL BOARD 175 INDIAN RD, KITCHENER, ON N2B 2S7

drawing
ENLARGED DEMOLITION PLAN
drawing scale

AS NOTED
ward99 project number

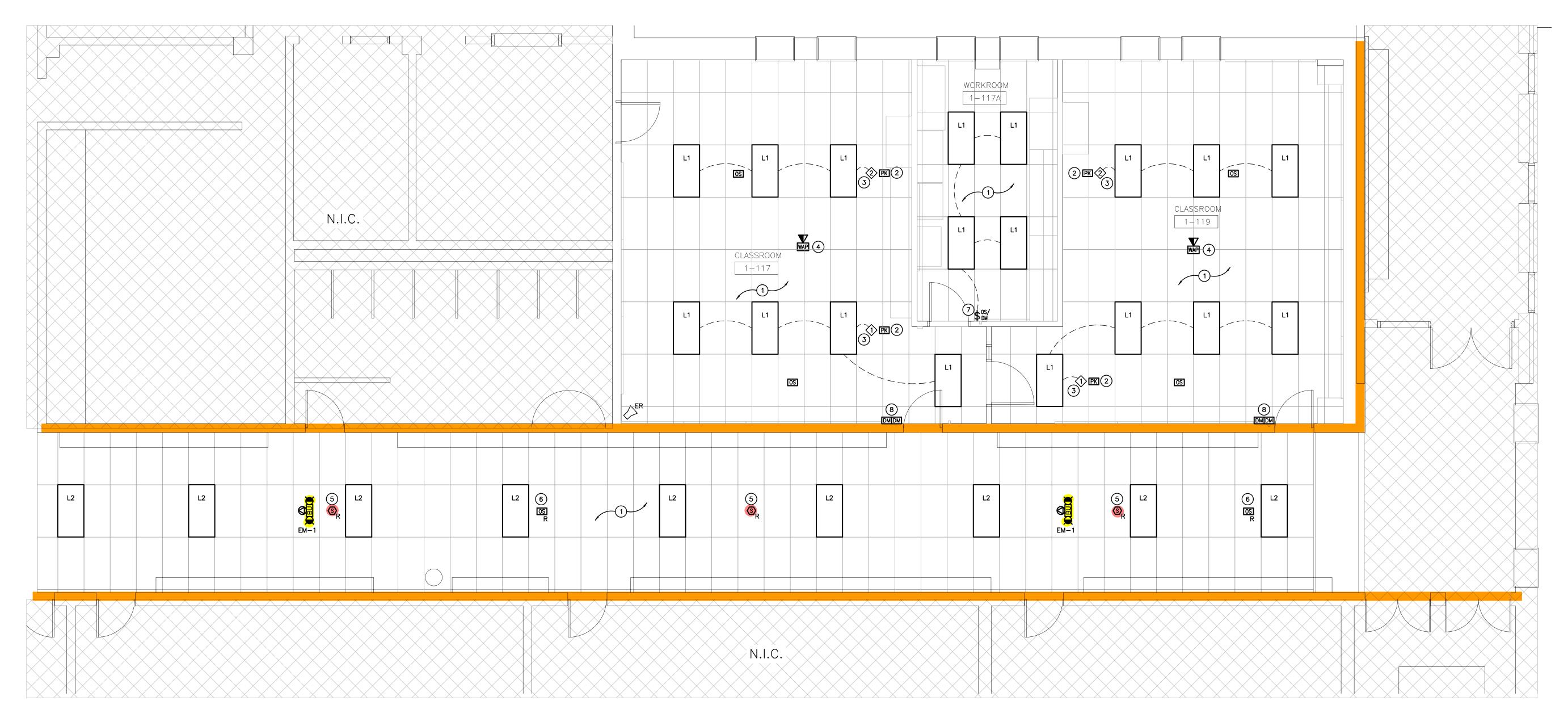
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CLASSROOM 1-117 & 1-119 RENOVATION PLAN SCALE: 1:50

BUILDING INSPECTOR TO VERIFY IF ADDITIONAL EXIT SIGNS / EMERGENCY LIGHTING IS REQUIRED.

<u>CIRCUIT LABELS</u>

PROVIDE P-TOUCH LABELS INDICATING PANEL AND CIRCUIT LABEL ON ALL LIGHT SWITCH AND LIGHTING CONTROL DEVICE FACEPLATES. INCLUDE SWITCH LEG INDICATION FOR LIGHTING CONTROLS AND SWITCHES. REFER TO SPECIFICATIONS AND DETAILS.

LP1-2-3 LP1-2-4 \$osd/osr (ON PLANS) (ON PLANS) (ON PLANS) (ON PLANS) 1. LIGHT SWITCHES ARE TO BE C/W P-TOUCH LABEL.

- 2. LABEL IS TO BE WHITE WITH TYPE-WRITTEN BLACK LETTERING AND
- PLACED CENTERLINE OF SWITCH AS SHOWN. 3. CIRCUIT DESCRIPTOR IS TO BE C/W POWER PANEL, CIRCUIT INDICATION, AND SWITCH LEG.

A-RECEPTACLE LABELLING DETAIL SCALE: 1:50

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).

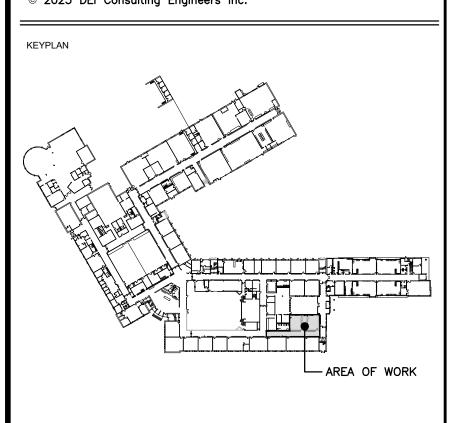
SPECIFIC RENOVATION NOTES

- FIXTURES IN INDICATED AREA ARE TO BE CONNECTED TO EXISTING CIRCUIT AND NEW/RELOCATED CONTROLS AS SHOWN.
- REWORK EXISTING LINE AND LOAD SIDE WIRING THROUGH POWER PACK TO SUIT. REFER TO B/E1.1. POWER PACK TO BE INSTALLED ABOVE ACCESSIBLE CEILING SPACE IN FINISHED AREAS.
- INDICATES CONTROL ZONE GROUPS OF LIGHT FIXTURES WITHIN EACH AREA. REFER TO LIGHTING CONTROL DETAILS AND SEQUENCE OF OPERATION.
- INDICATES EXISTING RE-USED DEVICE AND DATA DROP IN RELOCATED POSITION.
- RELOCATE EXISTING FIRE ALARM INITIATING DEVICE AND RECONNECT TO EXISTING LOCAL INITIATING CIRCUIT. RE-VERIFY PORTIONS OF ALARM SYSTEM TO CAN/ULC-S537. REFER TO SPECIFICATIONS FOR FURTHER DETAILS AND REQUIREMENTS.
- RECONNECT RELOCATED OCCUPANCY SENSOR TO EXISTING CORRIDOR LIGHTING CONTROL. EXTEND WIRING AS NECESSARY.
- PROVIDE NEW DEVICE. CONNECT TO EXISTING WIRING MADE AVAILABLE DURING DEMOLITION. MOUNT TO EXISTING BACKBOX.
- MOUNT DEVICE IN BACKBOX MADE AVAILABLE DURING DEMOLITION. PROVIDE NEW STAINLESS STEEL COVERPLATE TO SUIT NEW DEVICE.

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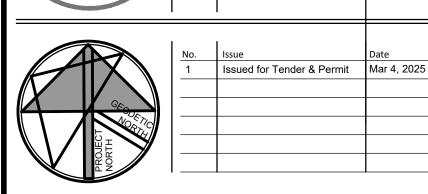




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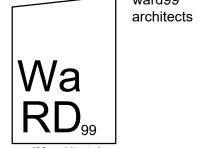
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ENLARGED RENOVATION PLAN

AS NOTED

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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
- .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 AS 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
- .10 PROVIDE STRUCTURAL SUPPORTS, PLATFORMS, SUPPORTING RODS, HANGERS, INSERTS AND BRACKETS FOR EQUIPMENT AND SERVICES. DO
- .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 ONE (1) YEAR 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.

STANDARDS ASSOCIATION AND ALL REQUIREMENTS OF THE LOCAL UTILITY.

- .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:
- ABOVE TOP OF COUNTERS: 100mm (4")
- IN MECHANICAL/ELECTRICAL ROOMS: 1100mm (44") (GANG WITH SWITCH).
 PANEL BOARDS: 1400mm (4'-8") OR AS REQUIRED BY CODE.
- TELEPHONE OUTLETS: 400mm (16") VOICE/DATA OUTLETS: 400mm (16")

NOT SUPPORT SERVICES FROM STEEL DECK.

- FIRE ÁLARM STATIONS: 1200mm (48")
- FIRE ALARM SIGNAL DEVICES: 2250mm (7'-6")
- FIRE ALARM STROBES: 2250mm (7'-6") THERMOSTAT: 1200mm (44")
- SECURITY SYSTEM MOTION DETECTORS: 300mm (12") BELOW FINISHED CEILING OR CEILING MOUNTED AS DIRECTED BY MANUFACTURER.
- SECURITY SYSTEM KEY SWITCHES: 1100mm (44")
- .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 .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 CONTRACTOR SHALL PROVIDE RED LINE RECORD DRAWINGS OF EACH AND EVERY ELECTRICAL DRAWING FOR DEI CONSULTING ENGINEERS TO CAD THE RECORD DRAWINGS. THE CAD DRAWING FILES WILL BE PROVIDED TO THE OWNER AS PART OF THE MAINTENANCE MANUALS.
- .21 THE CONTRACTOR IS TO DETERMINE GENERAL INSPECTION FEES WITH THE ELECTRICAL SAFETY AUTHORITY AND INCLUDE AS PART OF

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')
- .9 COLOUR BANDS MUST BE 25mm(1") WIDE AND CODED AS FOLLOWS FOR NOTED SYSTEMS.

SYSTEM UP TO 208V VOICE SYSTEM GREEN DATA SYSTEM ORANGE SECURITY BROWN PUBLIC ADDRESS BLACK 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:
- PERMITS AND FEES MOBILIZATION (MAXIMUM 1%)
- DEMOLITION BRANCH CONDUITS
- BRANCH WIRING LIGHTING FIXTURES
- FIRE ALARM SYSTEM
- .8 COMMISSIONING (MINIMUM 3% BUT NOT LESS THAN \$750.00)
- .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.
- 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.
- 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:
- MOUNTING ARRANGEMENTS. OPERATING AND MAINTENANCE CLEARANCES. E.G. ACCESS DOOR SWING SPACES.
- SHOP DRAWINGS AND PRODUCT DATA SHALL BE ACCOMPANIED BY: DETAILED DRAWINGS OF BASES, SUPPORTS, AND ANCHOR BOLTS.
- MANUFACTURER TEST DATA WHERE REQUESTED. MANUFACTURER TO CERTIFY AS TO CURRENT MODEL PRODUCTION.
- CERTIFICATION OF COMPLIANCE TO APPLICABLE CODES.
- .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.

.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.

- .12 A PARTIAL LIST OF SHOP DRAWINGS INCLUDES:
- LIGHTING FIXTURES LIGHTING CONTROLS
- FIRESTOPPING MATERIALS

WIRING DEVICES

<u>FIRESTOPPING</u>

- .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 THE FIRESTOPPING MATERIALS ARE NOT TO SHRINK, SLUMP OR SAG AND BE FREE OF ASBESTOS, HALOGENS AND VOLATILE SOLVENTS.
- .5 FIRESTOPPING MATERIALS ARE TO CONSIST OF A COMPONENT SEALANT APPLIED WITH A CONVENTIONAL CAULKING GUN AND TROWEL.
- .6 FIRESTOP MATERIALS ARE TO BE CAPABLE OF RECEIVING FINISH MATERIALS IN THOSE AREAS, WHICH ARE EXPOSED AND SCHEDULED TO RECEIVE FINISHES.
- .7 FIRESTOPPING SHALL BE INSPECTED AND APPROVED BY LOCAL AUTHORITY PRIOR TO CONCEALMENT OR ENCLOSURE.
- .8 INSTALL MATERIAL AND COMPONENTS IN ACCORDANCE WITH ULC CERTIFICATION, MANUFACTURERS INSTRUCTIONS AND LOCAL AUTHORITY
- .9 SUBMIT PRODUCT LITERATURE AND INSTALLATION MATERIAL ON FIRESTOPPING IN SHOP DRAWING AND PRODUCT DATA MANUAL
- .10 ACCEPTABLE MANUFACTURERS:

RECTORSEAL CORPORATION (METACAULK) PROSET SYSTEMS

STI FIRESTOF

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.

.11 ENSURE FIRESTOP MANUFACTURER REPRESENTATIVE PERFORMS ON SITE INSPECTIONS AND CERTIFIES INSTALLATION. SUBMIT INSPECTION REPORTS/CERTIFICATION AT TIME OF SUBSTANTIAL COMPLETION.

OCCUPANCY REQUIREMENTS

.1 FINAL CERTIFICATES

- .1 ELECTRICAL SAFETY AUTHORITY
- .2 FIRE ALARM VERIFICATION CERTIFICATE

READY FOR TAKEOVER

- .1 COMPLETE THE FOLLOWING TO THE SATISFACTION OF THE CONSULTANT PRIOR TO REQUEST FOR READY FOR TAKEOVER.
- .1 AS-BUILT DRAWINGS.
- .2 MAINTENANCE MANUALS. .3 SYSTEM START UP.
- .4 INSTRUCTIONS TO OWNERS.
- .5 LIGHTING CONTROL SYSTEM.
- .6 OUTLET COVER CIRCUIT LABELS.

WIRING DEVICES

- WALL MOUNTED OCCUPANCY SENSORS (PASSIVE TECHNOLOGY) WITH 0-10V DIMMING CAPABILITY, OCCUPANCY SENSORS USED IN STAFFROOMS SHALL BE EITHER:
- WATTSTOPPER CAT. #PW-311-X (COLOUR BY ARCHITECT) LEVITON CAT. #ODD10-IDX (COLOUR BY ARCHITECT)
- SENSOR SWITCH CAT. #WSX-D-X (COLOUR BY ARCHITECT)
- .2 PROVIDE OTHER OCCUPANCY SENSORS TO SUIT THE DETAIL(S) ON THE DRAWINGS.
- .3 ALL SENSORS SHALL BE SET TO 5 MINUTES "DELAY TO OFF" UNLESS OTHERWISE DIRECTED. .4 INSTALL DEVICES IN GANG TYPE OUTLET BOX WHEN MORE THAN ONE DEVICE IS REQUIRED IN ONE LOCATION.
- .5 STAINLESS STEEL, VERTICALLY BRUSHED, 1mm THICK, COVER PLATES FOR WIRING DEVICES MOUNTED IN FLUSH-MOUNTED OUTLET BOXES.
- .6 PROTECT STAINLESS STEEL COVER PLATE FINISH WITH PAPER OR PLASTIC FILM UNTIL PAINTING AND OTHER WORK IS FINISHED.
- .7 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 RELOCATED FIRE ALARM DETECTION AND SIGNALING DEVICES ADDED DUE TO RENOVATIONS SHALL BE CONNECTED TO EXISTING LOCAL
- .4 ONCE INSTALLATION IS COMPLETE THE MANUFACTURER'S REPRESENTATIVE MUST MAKE AN INSPECTION OF THE DEVICES INSTALLED.
- .5 THIS TEST MUST CONFORM TO THE ONTARIO BUILDING CODE AND THE LATEST EDITION OF ULC CAN4-S537
- .6 ALL COSTS ASSOCIATED WITH THIS INSPECTION BY THE CONTRACTOR AND MANUFACTURER MUST BE CARRIED IN THE TENDER PRICE. .7 UPON SUCCESSFUL COMPLETION OF TESTING THE MANUFACTURER MUST SUBMIT TO THE CONTRACTOR AND CONSULTANT:
- .8 THE TEST RESULTS ARE TO BE SUBMITTED TO THE CONSULTANT FOR REVIEW PRIOR TO ISSUING TO OWNER'S REPRESENTATIVES AND/OR AUTHORITIES HAVING JURISDICTION.

- FIELD TECHNICIAN VERIFICATION SHEETS FOR EACH DEVICE VERIFIED (INCLUDE COPIES OF SAME IN MAINTENANCE MANUALS)

.9 EQUIPMENT:

<u>DEVICE</u> <u>EDWARDS</u> **EXISTING CONTROL** (ADDRESSABLE) EST3

A CERTIFICATE OF VERIFICATION

LIGHTING SYSTEMS

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

- FIXTURE LED'S MUST BE TESTED IN CONFORMANCE WITH IESNA LM80 STANDARD. 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.
- LUMINAIRES MUST BE TESTED TO IESNA LM79 BY AN INDEPENDENT APPROVED LABORATORY. LUMINAIRES MUST BE TESTED PRIOR TO SHIPPING.
- LUMINAIRES MUST BE ULC CERTIFIED AND APPROVED FOR USE IN CANADA. FIXTURES MUST MAINTAIN A MINIMUM OF 90% OF THEIR INITIAL LIGHT OUTPUT FOR 60,000 HOURS. SUBMIT TEST RESULTS UPON
- REQUEST. LUMEN VALUES INDICATED FOR FIXTURES IN THE PROJECT DOCUMENTS ARE TO BE CONSIDERED AS 'ABSOLUTE' OR 'DELIVERED'
- .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
- .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 CONNECT LUMINAIRES TO LIGHTING CIRCUITS AS INDICATED.
- .6 ALIGN LUMINAIRES MOUNTED IN CONTINUOUS ROWS TO FORM STRAIGHT UNINTERRUPTED LINES.
- .7 ALIGN LUMINAIRES MOUNTED INDIVIDUALLY PARALLEL OR PERPENDICULAR TO BUILDING GRID LINES.
- .8 ALL LIGHTING BRANCH CIRCUITS ARE TO BE PROVIDED WITH SEPARATE NEUTRALS.
- .7 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

.1 DIGITAL OCCUPANCY & DAYLIGHT CONTROL SYSTEMS:

EQUIPMENT

- .1 PROVIDE ROOM BASED LIGHTING CONTROL SYSTEM.
- .2 BASIS OF DESIGN: SENSORSWITCH nLIGHT. .1 ACCEPTABLE ALTERNATES:
 - COOPER WAVELINX CAT WATTSTOPPER DLM.
- .3 ELECTRICAL DESIGN DRAWING LIGHTING SCHEMATICS ARE GENERIC AND MEANT TO SHOW INTENT OF CONTROLS APPROACH ONLY. CONTACT MANUFACTURER'S SALES AGENCY FOR LIGHTING CONTROL SYSTEM SCHEMATICS, WIRING DIAGRAMS, CONTROLS RISERS, AND INSTALLATION INSTRUCTIONS PRIOR TO BID.
- .4 ALL DEVICES HAVE RJ-45 FEMALE PORTS. MAKING NETWORK CONTROL CABLES ON SITE IS REQUIRED.
- .5 CABLING FOR SYSTEM SHALL BE CATEGORY 5E AS PER MANUFACTURER'S RECOMMENDATIONS. .1 CABLE SHALL BE 4 PAIR, 24 AWG SOLID BARE ANNEALED COPPER CONDUCTORS, ANSI/TIA/EIA-568-B.2 AND ISO/IEC 11801 CATEGORY 5E COMPLIANT.
- .2 THE JACKET SHALL BE PRINTED WITH TRU-MARK 1000' TO 0' MARKING SYSTEM, CMP (FT-6) RATED WITH OUTER SHEATH COLOUR FOR EACH LEVEL IN THE SYSTEM TO BE ACCORDING TO ADVISEMENT BY SCHOOL BOARD REPRESENTATIVE. .3 SHALL BE SUITABLE FOR USE INDOOR, RISER OR PLENUM, AND HORIZONTAL APPLICATIONS.
- .6 INSTALL THE WORK OF THIS SECTION IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS UNLESS OTHERWISE INDICATED. .7 CALIBRATE ALL SENSOR TIME DELAYS AND SENSITIVITY TO GUARANTEE PROPER DETECTION OF OCCUPANTS AND ENERGY SAVINGS. .1 ADJUST TIME DELAY SO THAT CONTROLLED AREA REMAINS LIGHTED FOR 5 MINUTES AFTER OCCUPANT LEAVES AREA.
- .8 INSTALL POWER PACKS IN ACCESSIBLE MAINTENANCE AREAS UNLESS NOTED OTHERWISE. PROVIDE ACCESS DOORS IF POWER PACKS ARE INSTALLED ABOVE DRYWALL CEILINGS.
- .9 INSTALL SENSORS IN GYM WHERE NOTED ON PLAN AT MID-HEIGHT OF WALL.

SEQUENCE OF OPERATION, (E.G. MANUAL ON, AUTO OFF. ETC.)

- .10 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE AND AIM SENSORS 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. .11 PROVIDE WRITTEN OR COMPUTER-GENERATED DOCUMENTATION ON THE COMMISSIONING OF THE SYSTEM INCLUDING ROOM BY ROOM DESCRIPTION INCLUDING:
- LOAD PARAMETERS (E.G. BLINK WARNING, ETC.)
- .12 RE-COMMISSIONING AFTER 30 DAYS FROM OCCUPANCY RE-CALIBRATE ALL SENSOR TIME DELAYS AND SENSITIVITIES TO MEET THE
- OWNER'S PROJECT REQUIREMENTS. PROVIDE A DETAILED REPORT TO THE ARCHITECT / OWNER OF RE-COMMISSIONING ACTIVITY.
- .13 INCLUDE THE FOLLOWING SUPPORT SERVICE VISITS TO SITE: PRE-WIRING VISIT ASHRAE FUNCTIONAL TESTING COORDINATION VISIT.
- FINAL SYSTEM COMMISSIONING VISIT. .14 CONTACT OWNER REPRESENTATIVES A MINIMUM OF 30 DAYS PRIOR TO COMMISSIONING OF LIGHTING CONTROLS:
- .1 DALE WIDEMAN, PROJECT COORDINATOR, DALE_WIDEMAN@WRDSB.CA

SENSOR PARAMETERS, TIME DELAYS, SENSITIVITIES, AND DAYLIGHTING SETPOINTS

- .15 FACTORY COMMISSIONING .1 UPON COMPLETION OF THE INSTALLATION. THE SYSTEM SHALL BE COMMISSIONED BY THE MANUFACTURER'S FACTORY
- AUTHORIZED REPRESENTATIVE WHO WILL VERIFY A COMPLETE FULLY FUNCTIONAL SYSTEM. THE ELECTRICAL CONTRACTOR SHALL PROVIDE BOTH THE MANUFACTURER AND THE ELECTRICAL ENGINEER WITH TEN WORKING DAYS WRITTEN NOTICE OF THE SYSTEM STARTUP AND ADJUSTMENT DATE.
- UPON COMPLETION OF THE SYSTEM COMMISSIONING THE FACTORY-AUTHORIZED TECHNICIAN SHALL PROVIDE THE PROPER TRAINING TO THE OWNER'S PERSONNEL ON THE ADJUSTMENT AND MAINTENANCE OF THE SYSTEM. .4 FACTORY COMMISSIONING SHALL INCLUDE FUNCTIONAL TESTING AND DOCUMENTATION OF THE CONTROL SYSTEM CONFORMING TO THE "FUNCTIONAL TESTING" REQUIREMENTS INCLUDED IN THE CURRENT ASHRAE STANDARD. THIS COST SHALL BE INCLUDED IN
- THE TENDER PRICE.
- .16 CABLING INSTALLATION CABLING CONTRACTOR IS TO ADHERE TO ALL STANDARDS, REGULATIONS AND DOCUMENTS LISTED FOLLOWING.
- ALL PRODUCTS INSTALLED MUST MEET OR EXCEED ALL LOCAL, PROVINCIAL, AND FEDERAL BUILDING, FIRE, HEALTH, SAFETY AND
- THE RESPONSIBILITY OF THIS SUB-CONTRACTOR IS TO INCLUDE BUT NOT BE LIMITED TO:
- SUPPLY AND INSTALLATION OF DATA CABLING TO EVERY DIGITAL LIGHTING CONTROL DEVICE AS PER MANUFACTURER'S RECOMMENDATIONS

MAXIMUM OF 13 MM (1/2) FOR, ENHANCED CATEGORY 5.

- TERMINATION OF DATA CABLING AS PER MANUFACTURER'S RECOMMENDATIONS. .6 GENERAL INSTALLATION PRACTICES SHALL BE AS FOLLOWS: SUPPLY AND INSTALL CABLING TO LOCATIONS AS DETAILED ON FLOOR PLAN(S). THE CABLING CONTRACTOR SHALL USE THE CABLING SUPPORT SYSTEM (SUPPLIED BY OTHERS) TO DISTRIBUTE THE CABLES THROUGHOUT THE FACILITY. WHERE THE CABLES LEAVE THE CABLE SUPPORT SYSTEM AND EXTEND TO THE TERMINATION POINT THEY SHALL USE THE CONDUIT
- PROVIDED OR CABLE MANAGEMENT SYSTEM. ANY HORIZONTAL EXPOSED CABLE MUST BE INSTALLED IN SURFACE RACEWAYS EQUAL TO WIREMOLD SERIES 500/700 ALL CABLES AND COMPONENTS TO BE INSTALLED AND TERMINATED IN ACCORDANCE WITH CSA, ANSI/EIA/TIA-568 AND ITS' AMENDMENTS AS WELL AS UL GUIDELINES. PARTICULAR ATTENTION MUST BE GIVEN TO MAINTAINING THÉ INTEGRITY OF THE

WHEN TERMINATING COPPER CABLES REMOVE ONLY ENOUGH CABLE JACKET TO PERFORM TERMINATION, UNTWIST PAIRS A

- PAIR TWISTS, BEND RADIUS AND ENSURING PROPER DISTANCE IS KEPT FROM FLUORESCENT LIGHT FIXTURES, ELECTRICAL CABLES, OR ANY OTHER SOURCE OF EMI.
- THE MAXIMUM HORIZONTAL RUN LENGTH IS NOT TO EXCEED 457 M (1,500'). AVOID SCRAPING, DENTING, OR OTHERWISE DAMAGING CABLES, BEFORE, DURING OR AFTER INSTALLATION. THE CABLING CONTRACTOR WITHOUT ANY ADDITIONAL COMPENSATION SHALL REPLACE DAMAGED CABLES.
- AND FUTURE MOVES. BUSH, REAM AND REMOVE ANY SHARP PROJECTIONS ON ALL CONDUITS PRIOR TO INSTALLATION OF COMMUNICATIONS

PFRMIT # 25 1075

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 drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required Drawings and specifications, etc., prepared and issued by the consultant are the property of the consultant and must be

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Do not scale this drawing.

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NOTE: THIS DRAWING IS NOT TO BE SCALED. THE CONTRACTOR

DIMENSIONS AND FOR NOTIFYING THE ARCHITECT OF ANY SITE

IS RESPONSIBLE FOR THE VERIFICATION OF ALL SITE

CONSISTENT WITH THE DRAWINGS.

CONDITIONS AND SITE MEASUREMENTS THAT ARE NOT

MECHANICAL | ELECTRICAL | AQUATIC

JACKSON 100011324 3/4/25 Mar 4, 2025 ssued for Tender & Permit

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#24-7692-RFT - ASBESTOS REMOVAL FOR FAMILY STUDIES RENOVATION ENSURE THAT ALL CABLE LENGTHS ARE SUFFICIENT TO ALLOW FOR SLACK, VERTICAL RUNS, WASTAGE, CONNECTORIZATION

> **ELECTRICAL SPECIFICATIONS** drawing scale AS NOTED ward99 project number 23011 - WRDSB GRAND RIVER FAMILY STUDIES drawing no.

> > Vaughan ON L4H 0J2