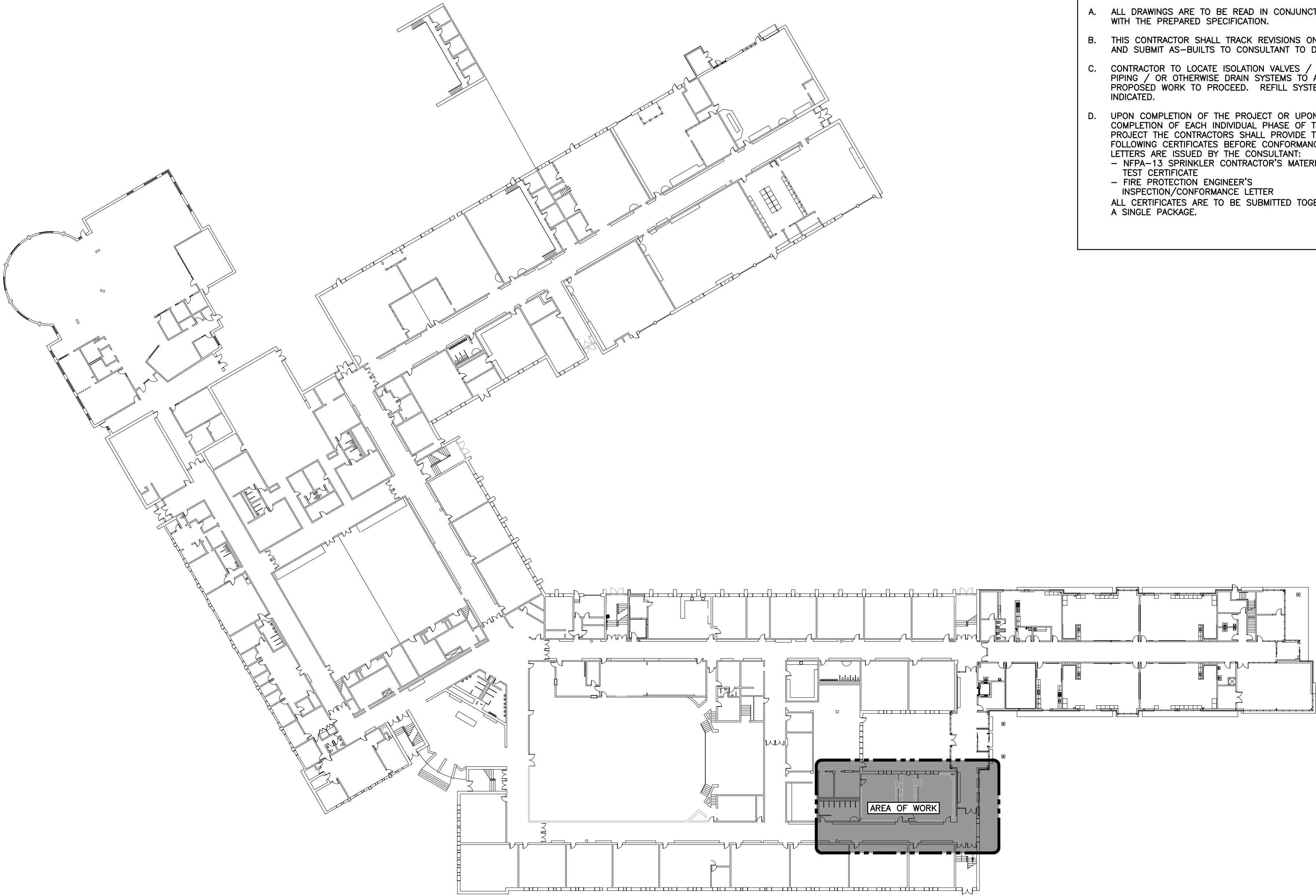


GENERAL NOTES

- A. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PREPARED SPECIFICATION.
- B. THIS CONTRACTOR SHALL TRACK REVISIONS ON SITE AND SUBMIT AS-BUILTS TO CONSULTANT TO DIGITIZE.
- C. CONTRACTOR TO LOCATE ISOLATION VALVES / FREEZE PIPING / OR OTHERWISE DRAIN SYSTEMS TO ALLOW PROPOSED WORK TO PROCEED. REFILL SYSTEMS AS INDICATED.
- D. UPON COMPLETION OF THE PROJECT OR UPON COMPLETION OF EACH INDIVIDUAL PHASE OF THE PROJECT THE CONTRACTORS SHALL PROVIDE THE FOLLOWING CERTIFICATES BEFORE CONFORMANCE LETTERS ARE ISSUED BY THE CONSULTANT:
- NFPA-13 SPRINKLER CONTRACTOR'S MATERIAL & TEST CERTIFICATE
- FIRE PROTECTION ENGINEER'S INSPECTION/CONFORMANCE LETTER
ALL CERTIFICATES ARE TO BE SUBMITTED TOGETHER IN A SINGLE PACKAGE.

MECHANICAL LEGEND

Item	Description	Item	Description	Item	Description
—EX— . —	EXISTING POTABLE COLD WATER	—EX—HWS—	EXISTING HEATING WATER SUPPLY	◆	PENDENT HEAD
—EX— . . .	EXISTING POTABLE HOT WATER	—EX—HWR—	EXISTING HEATING WATER RETURN	○	UPRIGHT PENDENT HEAD
—EX—	EXISTING POTABLE HOT WATER RECIRC.	—	TEE CONNECTION	◆	CONCEALED PENDENT HEAD
—EX—G—	EXISTING GAS PIPING	—C—	PIPE DOWN	▷	SIDEWALL HEAD
—EX—S— . —	EXISTING POTABLE SOFT COLD WATER	—O—	PIPE UP	▷	NON-FREEZE SIDEWALL HEAD
				●	WINDOW SPRINKLER HEAD



GROUND FLOOR

KEY PLAN
SCALE: N.T.S.

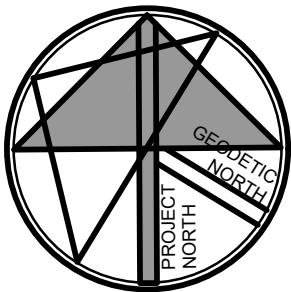
The contractor shall verify all dimensions and report all errors and discrepancies to the Consultant before commencement of the work. The drawings show general arrangement of services. Follow as closely as actual building construction will permit. Obtain approval for relocation of service from Consultant 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. © 2025 DEI Consulting Engineers Inc.



Consulting Engineers
MECHANICAL | ELECTRICAL | AQUATIC

55 Northland Road, Waterloo, ON N2V 1Y8
Phone: 519-725-3555
Website: deiassociates.ca
Project Number: 24405

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.



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

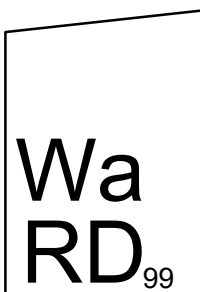
KEYPLAN & LEGEND

drawing scale

AS NOTED

ward99 project number

23011 - WRDSB GRAND RIVER FAMILY STUDIES



ward99 architects inc.
7500 Highway 27, Unit 27B
Vaughan ON L4H 0J2
info@ward99architects.com
416-613-5880 www.ward99architects.com

drawing no.

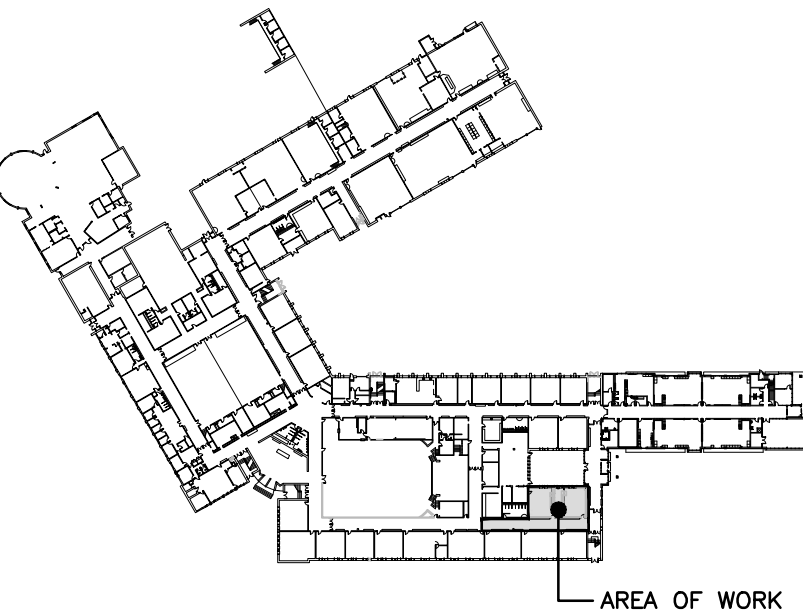
M1.1





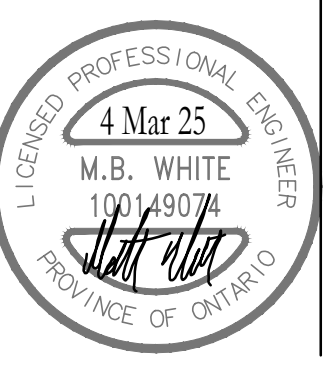
- EXISTING MECHANICAL ITEMS NOT SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
 - EXISTING MECHANICAL ITEMS SHOWN BUT NOT NOTED AS BEING REMOVED OR RENOVATED SHALL REMAIN AS PRESENTLY INSTALLED AND OPERATING.
- THIS CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ON SITE ALL LOCATIONS AND SIZES OF ALL SERVICES & EQUIPMENT PRIOR TO THE COMMENCEMENT OF WORK.
- ALL OPENINGS THAT RESULT FROM THE REMOVAL OF EQUIPMENT OR SERVICES SHALL BE NEATLY PATCHED WITH NEW OR NEW MATERIALS TO SUIT EXISTING CONSTRUCTION.
 - PLUMBING WORKS ARE NOT INDICATED OR IDENTIFIED. REMOVE ALL REDUNDANT VENTS WHILE MAINTAINING INTEGRITY OF EXISTING SYSTEMS TO REMAIN.
 - REMOVAL OF EXISTING PIPING, OR DUCT SYSTEMS INCLUDES REMOVAL OF ALL HANGERS, INSULATION, FITTINGS, ETC.
 - MAINTAIN INTEGRITY OF EXISTING SYSTEMS THAT ARE TO REMAIN OR BE MODIFIED.
 - INSTALL NEW SYSTEM OR SERVICES WHERE REQUIRED TO MAINTAIN SYSTEM OPERATION PRIOR TO DEMOLITION OF EXISTING SERVICES.
 - THIS CONTRACTOR IS TO REMOVE & REPLACE CEILING AS REQUIRED FOR REMOVAL/REPLACEMENT OF SERVICES.

KEYPLAN



55 Northland Road, Waterloo, ON N2V 1Y8
Phone: 519-725-3555
Website: deiaassociates.ca
Project Number: 24405

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.

[illegible]

No.	Issue	Date
1	Issued for Tender & Permit	Mar 4, 2025

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

GROUND FLOOR PART PLANS - DEMOLITION

drawing scale
AS NOTED

AS NOTED

ward99 project numbe

ward99
architects

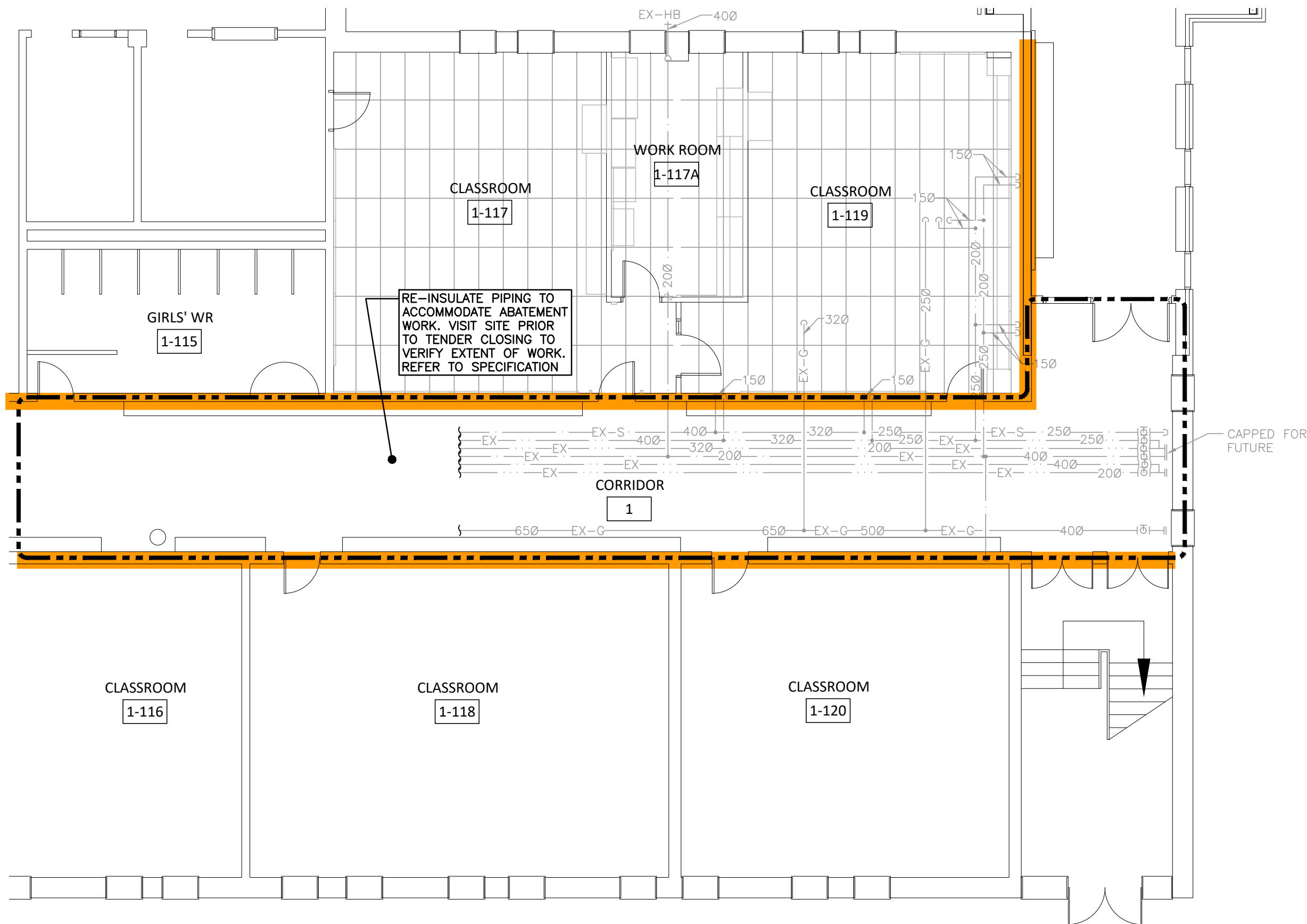
drawing no



ward99 architects inc.
7500 Highway 27, Unit 27B
Vaughan ON L4H 0J2
info@ward99architects.com
416 613 5880 www.ward99architects.com

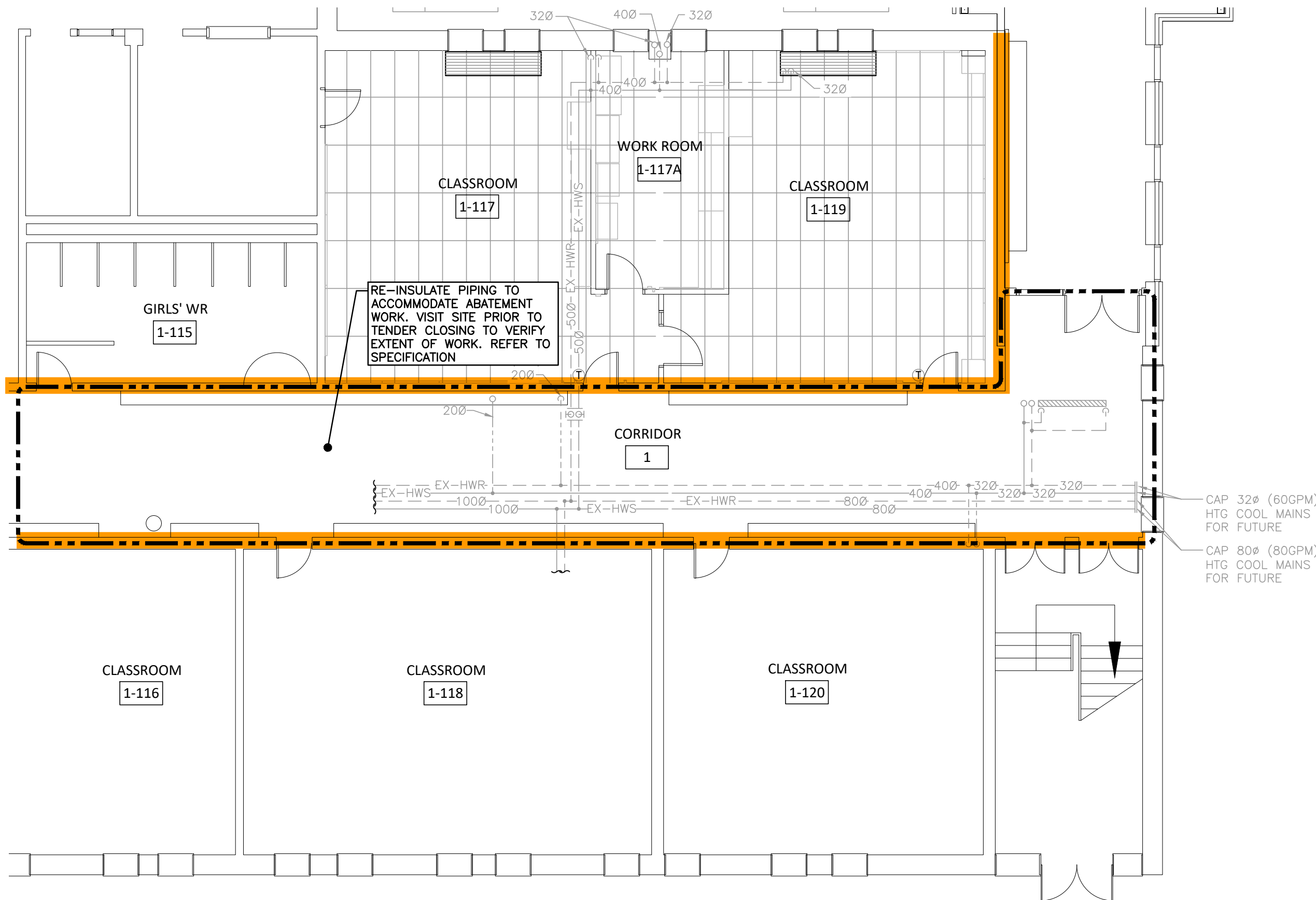


M2.1



GROUND FLOOR PART PLAN – PIPING RENOVATION
SCALE: 1:100

PLASTIC PIPE PERMITTED PROVIDED FSR NOT MORE THAN 25, PROPERLY FIRESTOPPED AND NOT WITHIN A CEILING RETURN AIR PLENUM.



GROUND FLOOR PART PLAN – HEATING RENOVATION
SCALE: 1:100

GENERAL RENOVATION NOTES

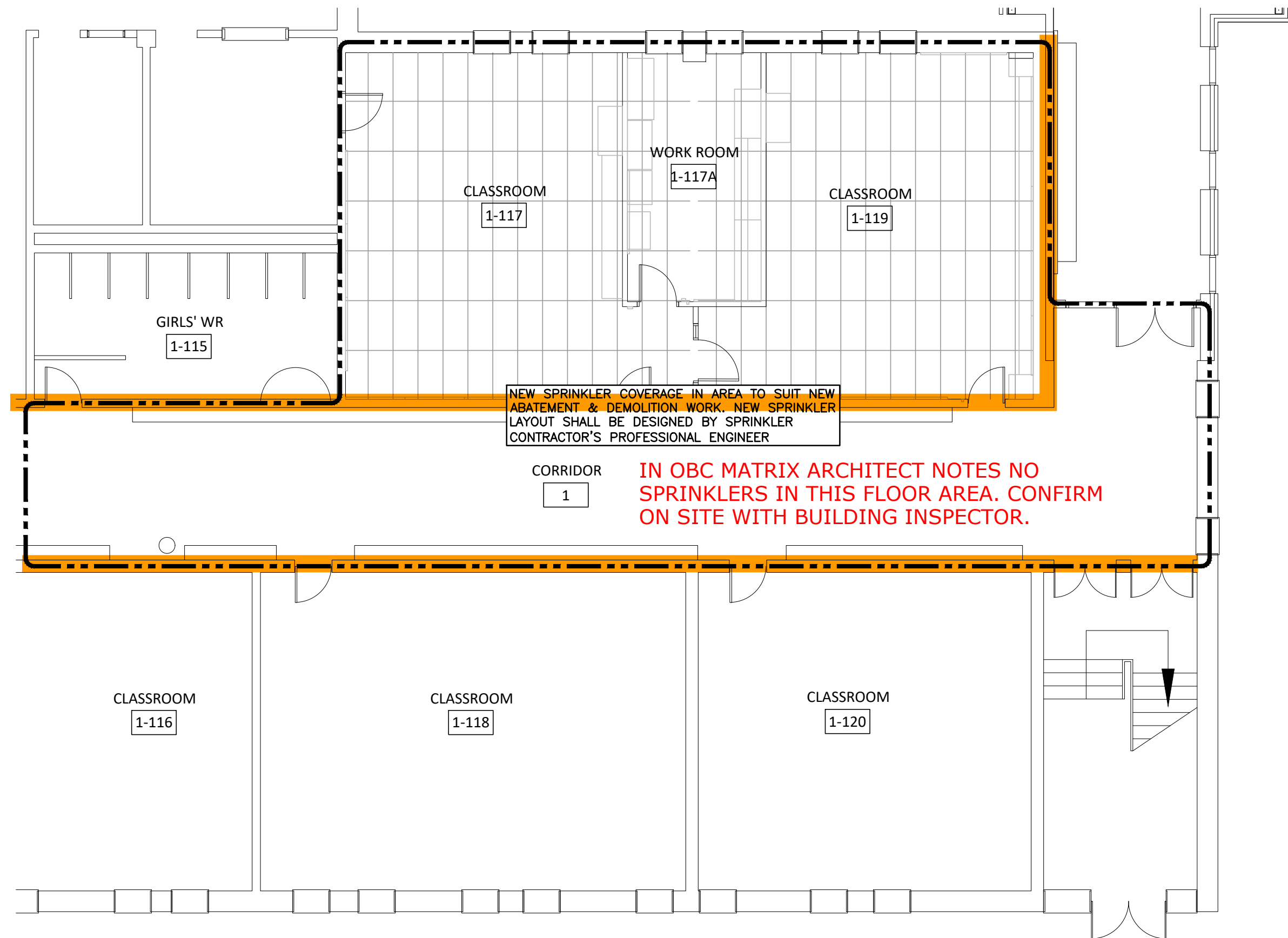
- PIPE AND DUCT INSULATION IS TO BE INSTALLED AT ALL EXISTING DUCTS, PIPES, ELBOWS, FITTINGS, ETC. WHERE ABATEMENT REMOVED THE INSULATION AND WHERE EXISTING DUCTS, PIPE ELBOWS, FITTINGS, ETC. ARE REMAINING AS PRESENTLY INSTALLED. CONTRACTOR TO REVIEW ON SITE FOR QUANTITY & SIZES.
- CONTRACTOR TO LOCATE ISOLATION VALVES AND DRAIN SYSTEMS TO ALLOW PROPOSED WORK TO PROCEED. REFILL SYSTEMS AS INDICATED. FLUSHING, CLEANING, & REFILLING WITH CLEAN WATER & CHEMICAL TO WATER TREATMENT CONTRACTOR REQUIREMENTS.
- FREEZE OR DRAIN EXISTING PIPING AS REQUIRED TO FACILITATE CONTRACT WORK.

GENERAL SPRINKLER NOTES

- SUBMIT PRELIMINARY DESIGN & HYDRAULIC CALCULATIONS STAMPED BY A PROFESSIONAL ENGINEER, AND MANUFACTURERS' PRODUCT SHEETS FOR SHOP DRAWING SUBMISSION AS SPECIFIED PRIOR TO COMMENCING WORK.
- ENSURE DESIGN MEETS OR EXCEEDS PRESENT NFPA 13 STANDARDS. ENSURE SPRINKLER SYSTEMS ARE INSTALLED TO NFPA 13 STANDARDS. UPON COMPLETION, SPRINKLER CONTRACTOR TO PROVIDE REPRODUCIBLE DRAWING (AT 1/8"=1'-0" SCALE) AND HYDRAULIC CALCULATIONS OF AS-BUILT CONDITION.
- SPRINKLER CONTRACTOR'S 'PROFESSIONAL ENGINEER' TO PROVIDE O.B.C. AND NFPA REQUIRED INSPECTION AND CERTIFICATION.
- REFER TO ARCHITECTURAL DRAWINGS FOR REFLECTED CEILING PLAN.
- PROVIDE SPRINKLER HEAD TYPES AS FOLLOWS:
 - PROVIDE UPRIGHT HEADS WITHIN 12" OF EXPOSED DECK THROUGHOUT EXPOSED STRUCTURE AREAS. PROVIDE HEAD GUARDS IN AREAS WHERE HEADS ARE BELOW 8'-0" & STORAGE ROOMS.
 - PROVIDE CONCEALED PENDENT HEADS IN CEILINGS OF UNSUPERVISED AREAS (CORRIDORS). COVER PLATE FINISH SELECTED BY CONSULTANT.
 - PROVIDE SEMI-RECESSED HEADS IN ALL OTHER CEILING AREAS (CLASSROOMS, OFFICES, SEMINAR RMs, etc.). HEAD & ESCUTCHEON FINISH SELECTED BY CONSULTANT.
 - SPRINKLER HEADS TO BE IN CENTRELIN OF CEILING TILE. MINIMUM 150mm (6") FROM EDGE.
 - FINAL NUMBER AND LOCATION OF SPRINKLER HEADS TO BE DETERMINED BY CONTRACTOR'S HYDRAULIC CALCULATIONS AND APPROVED DRAWINGS.
 - SPRINKLER PIPING TO BE COORDINATED WITH OTHER SERVICES PRIOR TO INSTALLATION.
 - SPRINKLER CONTRACTOR TO VISIT SITE AND EVALUATE EXISTING CONDITIONS PRIOR TO TENDER CLOSING. INCLUDE ALL MODIFICATIONS IN TENDER PRICE.
 - EXISTING SPRINKLER SYSTEM TO BE RENOVATED/MODIFIED TO SUIT NEW LAYOUT. CONTRACTOR IS RESPONSIBLE TO SURVEY EXISTING SYSTEMS FOR CREATION OF SHOP DWGS.
- PROVIDE SPRINKLER HEADS UNDER ALL DUCTWORK AND EQUIPMENT OVER 1200mm WIDE.
- COMMISSIONING OF INTEGRATED TESTING OF FIRE PROTECTION AND LIFE SAFETY SYSTEM.
 - SPRINKLER CONTRACTOR TO PROVIDE SERVICES WITH THE FIRE COMMISSIONING AGENT (FCA) TO MEET THEIR REQUIREMENTS OF ADMINISTRATION, VERIFICATION, AND FINAL SIGNOFF TO THE LOCAL AUTHORITIES AND CONSULTANT. THE FCA IS BEING RETAINED BY THE ELECTRICAL CONTRACTOR, HOWEVER, THIS CONTRACTOR'S WORK TO SATISFY THE FCA REQUIREMENTS SHALL BE INCLUDED IN THE TENDER PRICE.
 - PERFORM ALL WORK IN ACCORDANCE WITH NFPA 15.
 - RETURN SPRINKLER/STANDPIPE SYSTEM TO NORMAL OPERATION ON COMPLETION OF TESTING

FIRESTOPPING REQUIRED FOR ANY NEW SERVICE PENETRATIONS THROUGH FIRE SEPARATIONS.

REVIEW FIRESTOPPING REQUIREMENTS WITH BUILDING INSPECTOR ON SITE.



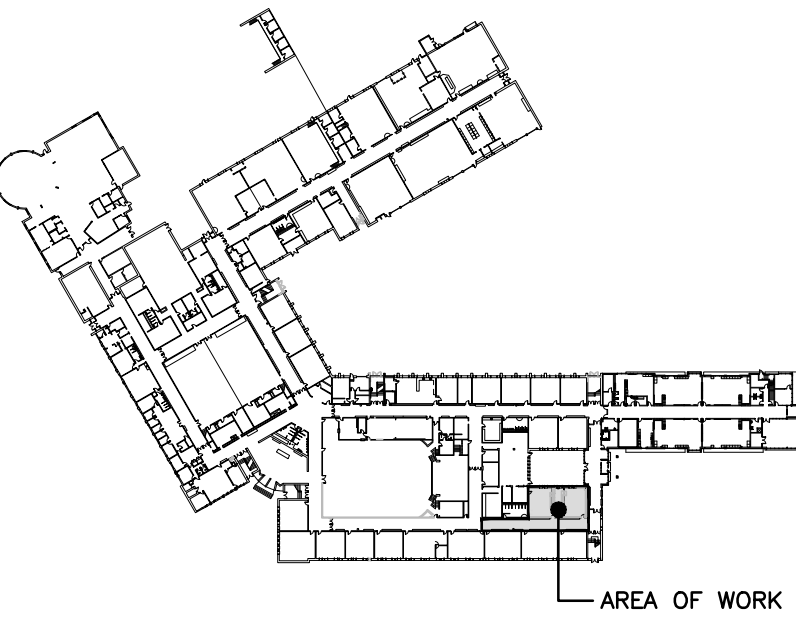
GROUND FLOOR PART PLAN – SPRINKLER RENOVATION
SCALE: 1:100

SPRINKLER SYSTEM TO BE DESIGNED, INSTALLED AND TESTED AS PER NFPA 13 AND APPLICABLE O.F.C. AND O.B.C. REQUIREMENTS

EXISTING SPRINKLER SYSTEM MAY REQUIRE ALTERATIONS TO SUIT THE PROPOSED RENOVATIONS. RE-VERIFICATION BY A QUALIFIED SPRINKLER INSTALLER REQUIRED.

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. © 2025 DEI Consulting Engineers Inc.

KEYPLAN



DEI
Consulting Engineers
MECHANICAL | ELECTRICAL | AQUATIC

55 Northland Road, Waterloo, ON N2V 1Y8
Phone: 519-725-3555
Website: deiconsultants.ca
Project Number: 24405

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		

4 Mar 25
M.B. WHITE
100149074
PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

No.	Issue	Date
1	Issued for Tender & Permit	Mar 4, 2025

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
GROUND FLOOR PART PLANS - RENOVATION

drawing scale
AS NOTED

ward99 project number
23011 - WRDSB GRAND RIVER FAMILY STUDIES

ward99 architects

Wa RD₉₉

ward99 architects Inc.
7500 Highway 27, Unit 27B
Vaughan ON L4H 0J2
info@ward99architects.com
416-613-5880 www.ward99architects.com

drawing no.
M3.1

MECHANICAL SPECIFICATION

PART A GENERAL NOTES

3. PROVIDE LABOUR, MATERIAL, MATERIALS AND EQUIPMENT REQUIRED TO PROVIDE A COMPLETE INSTALLATION WITH QUALITY WORKMANSHIP ACCEPTABLE TO OWNER AND CONSULTANT.
4. OBTAIN ALL PERMITS AND PAY ALL TAXES, FEES, AND OTHER COSTS INCURRED WITH THIS WORK. FILE ALL PLANS, OBTAIN ALL NECESSARY APPROVALS, CERTIFICATES, SUBMIT ALL FINAL CERTIFICATES TO THE CONSULTANT, COMPLY WITH RULES AND RECOMMENDATIONS OF THE BOARD OF FIRE UNDERWRITERS, THE CANADIAN GAS ASSOCIATION, THE LOCAL BUILDING CODE, AND ALL REQUIREMENTS OF THE LOCAL UTILITY COMPANY AND BY-LAWS. POST BUILDING PERMIT AT SITE IN ACCORDANCE WITH O.B.C. REQUIREMENTS.
5. 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.
6. COORDINATE WITH OTHER CONTRACTORS INSTALLING EQUIPMENT OR MATERIAL AND ARRANGE EQUIPMENT IN PROPER RELATION WITH ALL OTHER TRADES. ENSURE SYSTEMS ARE SERVICEABLE.
7. CUTTING AND PATCHING SHALL BE BY THE CONTRACTOR REQUIRED TO INSTALL THE SERVICE.
8. 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.
9. PROVIDE TWO MARKED COPIES OF "AS-BUILT DRAWINGS" SHOWING THE SYSTEM AS INSTALLED, PROVIDE UPDATED DIGITAL CAD FILES IN ADDITION TO THE MARKED COPIES. THE DIGITAL AND HARD COPY RECORD DRAWINGS SHALL BE PROVIDED TO THE OWNER AS PART OF THE MAINTENANCE MANUALS.
10. THE MECHANICAL SYSTEMS OF THIS BUILDING MUST ACHIEVE THE ENERGY EFFICIENCY LEVELS BY CONFORMING TO ANSI/ASHRAE/IESNA 90.1 "ENERGY STANDARD FOR BUILDINGS EXCEPT LOW-RISE RESIDENTIAL BUILDINGS" AND CHAPTER 2 OF DIVISION 3 OF SB-10 PRESCRIPTIVE METHOD FROM THE ONTARIO BUILDING CODE.
11. ALL EQUIPMENT AND MATERIAL SHALL BE NEW. REPLACE ALL DAMAGED EQUIPMENT.
12. MATERIAL AND EQUIPMENT ARE NAMED IN THE SPECIFICATION TO ESTABLISH AN ACCEPTABLE STANDARD OF MATERIALS AND THE QUALITY OF WORKMANSHIP BY WHICH TO ADHERE.
13. SUBMIT SHOP DRAWINGS ELECTRONICALLY FOR ALL EQUIPMENT. THESE WILL BE REVIEWED BY THE CONSULTANT. RESUBMIT AS OFTEN AS MAY BE FOUND NECESSARY. SUBMIT ONE COMPLETE SUBMISSION INDEXED AND LABELED FOR THIS PROJECT.
14. PROVIDE ALL NECESSARY PROTECTION FOR FINISHED OR UNFINISHED WORK. ALL OPENINGS IN PIPES, DUCTS AND EQUIPMENT SHALL BE CAPPED TO ENSURE SERVICES ARE KEPT CLEAN WHEN NOT IN USE.
15. MAINTAIN INSURANCE TO FULLY PROTECT THE CONTRACTOR, OWNER AND CONSULTANT FROM ANY AND ALL CLAIMS SUCH AS UNDER THE WORKERS COMPENSATION ACT, ETC. POST PROJECT NOTIFICATION AT THE SITE IN ACCORDANCE WITH THE MINISTRY OF LABOUR REQUIREMENTS.
16. PROVIDE STRUCTURAL SUPPORTS, PLATFORMS, SUPPORTING RODS, HANGERS, INSERTS AND BRACKETS FOR EQUIPMENT AND SERVICES. DO NOT SUPPORT SERVICES FROM STEEL DECK.
17. INSTRUCT THE OWNER'S STAFF IN THE CARE, MAINTENANCE AND OPERATION OF THE SYSTEMS.
18. SUBMIT THREE (3) COPIES OF OPERATING AND MAINTENANCE INSTRUCTIONS IN A 3 RING BINDER LABELED FOR THE PROJECT.
19. ALL SURPLUS AND WASTE MATERIALS SHALL BE PROMPTLY REMOVED FROM THE PREMISES.
20. ALL AREAS NOT AFFECTED BY RENOVATION OR DEMOLITION SHALL REMAIN AS PRESENTLY INSTALLED UNLESS NOTED OTHERWISE.
21. THE OWNER WILL DECIDE WHICH ITEMS OR EQUIPMENT SLATED FOR REMOVAL THAT THEY WISH TO RETAIN AS THEIR PROPERTY AND THIS CONTRACTOR SHALL REMOVE ALL OTHER MATERIALS FROM THE PREMISES.
22. PROVIDE LAMICOD TAGS FOR IDENTIFICATION OF NEW EQUIPMENT ADDED.
23. ALL ELECTRICAL LINE AND LOW VOLTAGE WIRING WHICH IS TO BE PROVIDED BY THE MECHANICAL CONTRACTOR AS SPECIFIED ELSEWHERE HEREIN SHALL BE RUN IN EMT CONDUIT TO STANDARDS OF THE ELECTRICAL DIVISION.
24. WARRANTY ALL MATERIAL AND EQUIPMENT FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF SYSTEM.
25. PIPE SLEEVES
PROVIDE SCHEDULE 40 STEEL PIPE SLEEVES AT POINTS WHERE PIPES PASS THROUGH MASONRY, CONCRETE OR FIRE RATED ASSEMBLIES AND AS INDICATED. GROUT SLEEVES IN PLACE. MINIMUM 6 MM (1/4") CLEARANCE ALL AROUND, BETWEEN SLEEVE AND UNINSULATED PIPE OR BETWEEN SLEEVE AND INSULATION. CAULK BETWEEN SLEEVE AND PIPE IN FOUNDATION WALLS AND BELOW GRADE FLOORS WITH WATERPROOF FIRE RETARDANT NON-HARDENING MASTIC, WHERE SLEEVES PASS THROUGH WALLS OR FLOORS. PROVIDE SPACE FOR FIRESTOPPING, WHERE PIPES PASS THROUGH FIRE RATED WALLS, FLOORS, PARTITIONS, AND CEILING. MAINTAIN FIRE RATING INTEGRITY. ENSURE NO CONTACT BETWEEN COPPER TUBE OR PIPE AND FERROUS SLEEVE. FILL FUTURE-USE SLEEVES WITH LINE PLASTER OR OTHER EASILY REMOVABLE FILLER, COAT EXPOSED EXTERIOR SURFACES OF FERROUS SLEEVES WITH HEAVY APPLICATION OF ZINC RICH PAINT TO CGSB 1-GP-181M+AMOT-MAR-78.

PART B DEMOLITION NOTES

1. THIS PROJECT IS ONE OF A RETROFIT NATURE IN PART, AND WILL REQUIRE SOME DEMOLITION. ALLOW FOR ALL REMEDIAL WORK IN AREAS INDICATED ON THE DRAWINGS AND AS GENERALLY DEFINED IN THE RELEVANT SECTIONS OF THE SPECIFICATIONS.
2. THE SCOPE OF WORK IS ESSENTIALLY THE SELECTED DISCONNECTION AND/OR REMOVAL OF SERVICES AND/OR EQUIPMENT, PIPING, DUCTWORK ETC. AS INDICATED OR REQUIRED TO COMPLETE THE WORK.
3. THIS DIVISION IS TO LAISE WITH THE OWNERS OR CONSULTANT FOR EQUIPMENT BEING REMOVED THAT MAY BE SUITABLE FOR REUSE TO THAT SPECIFIED OR HANDED OVER TO THE OWNER.
4. THIS DIVISION TO TAKE FULL RESPONSIBILITY FOR ANY SPECIAL TOOLS OR EQUIPMENT REQUIRED TO DISASSEMBLE OR REMOVE MATERIAL FROM BUILDING.
5. THE GENERAL EXECUTION OF THE DEMOLITION IS TO BE CARRIED OUT IN A CLEAN AND EFFICIENT MANNER.
6. DEMOLITION OF EXISTING CEILING, WALLS ETC., TO FACILITATE REMOVAL OF EXISTING SERVICES OR EQUIPMENT OR INSTALLATION OF NEW TO BE KEPT TO A MINIMUM AND THEN RESTORED TO MATCH EXISTING.
7. ALL OPENINGS OR HOLES CREANED BY REMOVAL OF EXISTING MECHANICAL SYSTEMS WHICH ARE NOT BEING REUSED ARE TO BE PATCHED WITH THE SAME MATERIAL SURROUNDING SURFACES.
8. PROTECT ALL EXISTING FURNISHINGS MATERIALS AND EQUIPMENT. ANY DAMAGE OCCURRING AS A RESULT OF THE WORK OF THIS DIVISION SHALL BE REPAIRED OR REPLACED AT THE EXPENSE OF THIS DIVISION.
9. WHERE WORK INVOLVES BREAKING INTO OR CONNECTING TO EXISTING SERVICES, CARRY OUT WORK AT TIMES DIRECTED BY THE OWNERS IN AN EXPEDIENT MANNER WITH MINIMUM DISRUPTION TO THE FACILITY AND SYSTEMS DOWNTIME.
10. WHERE UNKNOWN SERVICES ARE ENCOUNTERED, IMMEDIATELY ADVISE CONSULTANT AND CONFIRM FINDINGS IN WRITING.
11. WHERE THE LOCATION OF ANY SERVICES HAS BEEN SHOWN ON THE PLANS, SUCH INFORMATION IS NOT GUARANTEED. IT IS THIS DIVISION'S RESPONSIBILITY TO VERIFY LOCATIONS, INVERT ELEVATIONS, AND THE DEPTH OF ANY TRENCHES. IF AFTER MOVING ON SITE, SHOULD FOR ANY REASON THE INFORMATION OBTAINED NECESSITATES CHANGES IN PROCEDURE OR DESIGN, ADVISE THE CONSULTANT AT ONCE. IF VERIFICATION OF EXISTING CONDITIONS IS NOT DONE AT THE OUTSET AND ANY PROBLEMS ARISE, THE RESPONSIBILITY FOR SAME IS ENTIRELY THIS DIVISION'S.
12. DISCONNECT AND/OR REMOVE EQUIPMENT PIPING, DUCTWORK, ETC. AS INDICATED.
13. CAP AND CONCEAL ALL REDUNDANT AND OBSOLETE CONNECTIONS.
14. PROVIDE A LIST OF EQUIPMENT TO BE REMOVED TO THE OWNER, FOR HIS ACCEPTANCE OF SAME. REMOVE ALL EQUIPMENT FROM SITE WHICH THE OWNER DOES NOT RETAIN.
15. MAINTAIN EQUIPMENT TO BE RETAINED BY OWNER ON SITE WHERE DIRECTED BY CONSULTANT.
16. REMOVAL OF ALL PARTS OF THE WORK MUST BE COMPLETED WITHIN THE CONFINES OF THE WORK AREA AND IN SUCH A WAY AS THE DUST PRODUCED AND RISK TO INJURY OF WILL NOT ADVERSELY AFFECT THE BUILDING USERS.
17. DEMOLISHED AREAS OF THE EXISTING BUILDING WILL REMAIN IN THEIR CURRENT USE IN SOME CASES. DEMOLITION IN THESE AREAS MUST BE KEPT TO THE MINIMUM REQUIRED TO COMPLETE THE WORK.
18. DEMOLITION SHALL TAKE PLACE WITHIN AREAS ISOLATED FROM ALL OTHER AREAS WITH APPROPRIATE HOARDING, SCAFFOLDING, NETTING, FENCING OR OTHER MEANS OF SECURITY BETWEEN BUILDING USERS AND THE WORK.
19. CO-ORDINATE MAKING SAFE ELECTRICAL DEVICES, CAPPING PLUMBING AND REMOVAL OF FIXTURES PRIOR TO COMMENCEMENT OF DEMOLITION.
20. ALL PIPING AND EQUIPMENT TO BE REMOVED AND/OR ABANDONED SHALL BE DRAINED PRIOR TO CAPPING AND/OR ABANDONING. DISPOSAL OF ALL LIQUIDS SHALL BE TO THE APPROVAL OF AUTHORITY OF HAVING JURISDICTION AND/OR PROVINCIAL REGULATIONS.
21. DRAIN ALL EXISTING PIPING AND DRAINAGE SYSTEMS INCLUDING ALL RELATED EQUIPMENT AS REQUIRED TO FACILITATE SYSTEM RENOVATIONS.
22. DISPOSAL OF EXISTING SYSTEM SHALL BE TO THE REQUIREMENTS OF THE LOCAL AND/OR PROVINCIAL REGULATIONS.

PART C PLUMBING NOTES

1. CODES AND REGULATIONS
SANITARY, SOIL WASTE, VENT, AND ALL WATER PIPING SHALL CONFORM AND BE INSTALLED TO THE ONTARIO PLUMBING CODE AND THE CANADIAN PLUMBING CODE, LATEST EDITION. ALL GAS PIPING SHALL CONFORM TO THE CANADIAN GAS CODE AND THE LOCAL GAS DISTRIBUTORS REQUIREMENTS.
2. TESTING
WATER PIPING: ALL WATER PIPING SHALL BE TESTED TO 150 PSI. PRESSURE FOR NOT LESS THAN FOUR HOURS WITHOUT A LOSS IN PRESSURE.
3. VALVES
ISOLATION VALVES: HOT AND COLD WATER BRONZE BODY, CLASS 150, STAINLESS STEEL BALL, FULL PORT, PTFE SEAT AND PACKING, STEEL LEVER HANDLE. MILWAUKEE BA-455, CRANE, TOYO CHECK VALVE, HOT AND COLD WATER SIZES 1/2" DIAMETER TO 2" DIAMETER CRANE FIG. 1342, OR EQUAL JENKINS, BRONZE SWING CHECK, SOLDER ENDS. CRANE FIG. 29 OR EQUAL JENKINS VERTICAL LIFT CHECK VALVE, SCREWED ENDS ON VERTICAL PIPING.
4. DRAIN VALVES
DRIP COCKS: SUPPLY AND INSTALL 1/2" DIAMETER MUELLER OR EQUAL DRAIN VALVES AT EQUAL OR LOW POINTS IN THE WATER SYSTEMS TO COMPLETELY DRAIN THE SYSTEMS. ALL DRAIN COCKS SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS.
5. PIPE INSULATION
INSULATE ALL DOMESTIC HOT AND COLD WATER PIPING AND STORM PIPING ABOVE GRADE. WITH 1" (FOR PIPING UNDER 1 1/2" DIAMETER) OR 1 1/2" (FOR PIPING 1 1/2" DIAMETER AND HIGHER) FIBERGLASS INSULATION WITH VAPOUR BARRIER. INSTALL AS PER MANUFACTURERS RECOMMENDATIONS. RECOVER EXPOSED PIPING WITH 6 OZ. CANVAS JACKET AND TWO COATS LAGGING ADHESIVE.

PART D SPRINKLER NOTES

1. CODES AND REGULATIONS:
ALL SPRINKLER PIPING, SPACING AND EQUIPMENT SHALL CONFORM TO THE ONTARIO BUILDING CODE, NFPA-13 AND THE AUTHORITIES HAVING JURISDICTION.
2. TESTING
PIPING SHALL BE TESTED TO NFPA-13 REQUIREMENTS.
3. PRODUCTS
PIPE AND FITTINGS:
50 MM (2") AND SMALLER: SCHEDULE 40 STEEL PIPE WITH SCREWED FITTINGS.
65 MM (2 1/2") AND LARGER: SCHEDULE 10 STEEL PIPE WITH VICTAULIC FITTINGS.
PIPE HANGERS:
ULC LISTED FOR FIRE PROTECTION SERVICES.
4. SPRINKLER HEADS:
GENERAL: TO NFPA-13 AND ULC LISTED FOR FIRE SERVICES.
5. ENGINEERING DESIGN CRITERIA
DESIGN SYSTEM IN ACCORDANCE WITH ONTARIO FIRE MARSHALL, LOCAL AUTHORITY HAVING JURISDICTION, OWNERS, UNDERWRITERS AS REQUIRED, AND NFPA 13, USING FOLLOWING PARAMETERS:
HAZARD TO SUIT OCCUPANCY.
PIPE SIZE AND LAYOUT:
HYDRAULIC DESIGN OR PIPE SCHEDULE SIZING DESIGN.
SPRINKLER HEAD LAYOUT: TO NFPA 13 OR AS DIRECTED BY AUTHORITIES HAVING JURISDICTION, AND/OR AS INDICATED.
6. WATER SUPPLY:
CONDUCT FLOW AND PRESSURE TEST OF WATER SUPPLY IN VICINITY OF PROJECT TO OBTAIN CRITERIA FOR BASES OF DESIGN IN ACCORDANCE WITH NFPA 13. INDICATE LOCATION AND FLOW ON SHOP DRAWINGS.
7. ZONING:
SYSTEM ZONING AS INDICATED IN ACCORDANCE WITH NFPA 13.
8. PROVIDE COMPLETE DRAWINGS AND CALCULATIONS STAMPED BY A QUALIFIED PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO.
9. PROFESSIONAL ENGINEER SHALL PROVIDE ON SITE REVIEW AND CERTIFICATION FOR LOCAL BUILDING CODE REVIEW.
10. INSTALLATION: INSTALL, INSPECT AND TEST TO ACCEPTANCE IN ACCORDANCE WITH ANSI/NFPA-13. TESTING TO BE WITNESSED BY AUTHORITY HAVING JURISDICTION. SPACE HANGERS AND SUPPORT OF SPRINKLER PIPING IN ACCORDANCE WITH NFPA REGULATIONS. PROTECT EXPOSED WORK: DO NOT COVER OR CONCEAL PIPING ACCESSORIES OR WORK PRIOR TO INSPECTION AND APPROVAL BY AUTHORITIES HAVING JURISDICTION. ADJUST EQUIPMENT TO SATISFACTION OF AUTHORITY HAVING JURISDICTION AND CONSULTANT. PROTECT EQUIPMENT DURING PAINTING. REPLACE DAMAGED AND PAINTED OR COORDINATE THE SPRINKLER PIPING AND EQUIPMENT WITH THAT OF OTHER TRADES ON THE JOB. MAINS AND BRANCHES SHALL BE RUN SO AS NOT TO INTERFERE WITH BUILDING'S STRUCTURE, MECHANICAL OR ELECTRICAL INSTALLATIONS. GUARANTEE THAT THE SYSTEMS AND EQUIPMENT BE INSTALLED IN ACCORDANCE WITH ALL LOCAL AND PROVINCIAL BY-LAWS AND THE RULES AND REGULATIONS OF THE INSURANCE UNDERWRITERS AND THE BUILDING CODE OF ONTARIO.

PART E HYDRONIC HEATING

1. HEATING WATER PIPING:
SCHEDULE 40 STEEL PIPE TO ASTM 53, GRADE B
PIPING NPS 1" AND UNDER SHALL BE MALLEABLE IRON 150 LB SCREWED FITTINGS WITH PULVERIZED LEAD PASTE.
PIPING NPS 1½" AND OVER SHALL BE VICTALUIC
2. PIPE INSULATION:
INSULATE ALL HEATING WATER PIPING WITH 1½" FIBERGLASS INSULATION WITH VAPOUR BARRIER. INSTALL AS PER MANUFACTURERS RECOMMENDATIONS. RECOVER EXPOSED PIPING WITH PVC JACKET.
3. FILLING OF SYSTEM
REFILL SYSTEM WITH CLEAN WATER ADDING WATER TREATMENT AS SPECIFIED.
THIS CONTRACTOR SHALL CONTACT WATER TREATMENT SUPPLIER AND CO-ORDINATE WATER TREATMENT OF NEW SYSTEM.
4. EXISTING SYSTEM DRAINAGE
DRAIN EXISTING HOT HYDRONIC SYSTEM AS REQUIRED TO FACILITATE SYSTEM RENOVATIONS.
DISPOSAL OF EXISTING SYSTEM SHALL BE TO THE REQUIREMENTS OF THE LOCAL AND/OR PROVINCIAL REGULATIONS.

PART G HEATING, AIR CONDITIONING, AND VENTILATION NOTES

1. DUCTWORK TO BE CONSTRUCTED TO SMACNA STANDARDS, MEDIUM STATIC PRESSURE WITH LEAKAGE RATE OF 5% MAXIMUM, FABRICATED IN ACCORDANCE WITH RECOMMENDATIONS OF SMACNA AND ASHRAE. SEAL ALL TRANSVERSE AND LONGITUDINAL JOINTS WITH DUCT SEALER.
2. ROUND AND OVAL DUCTS: FACTORY FABRICATED, SPIRAL WOUND, WITH MATCHING FITTINGS AND SPECIALS TO SMACNA. TRANSVERSE JOINTS UP TO 900 MM (36"): SLIP TYPE WITH TAPE AND SEALANTS.
3. SQUARE AND RECTANGULAR DUCTS: TO SMACNA. TRANSVERSE JOINTS, LONGEST SIDE UP TO AND INCLUDING 750 MM (30"): SMACNA PROPRIETARY DUCT JOINTS.
4. DAMPERS
ALL DAMPERS TO BE TO SMACNA RECOMMENDATIONS AS MINIMUM ACCEPTABLE STANDARD. SPLITTER DAMPERS OF SAME MATERIAL AS DUCT BUT ONE SHEET METAL THICKNESS HEAVIER WITH APPROPRIATE STIFFENING, CUT AIRFLOW SHAPE, PIANO HINGE PIVOT, WITH CONTROL ROD WITH LOCKING DEVICE AND POSITION INDICATOR ON EXTERIOR OF DUCT. SINGLE BLADE BALANCING ROUND AND RECTANGULAR, MAXIMUM 100MM (4") HIGH, OR SAME MATERIAL AS DUCT BUT ONE SHEET METAL THICKNESS HEAVIER (MINIMUM 16 GAUGE), V-GROOVE STIFFENED WITH LOCKING QUADRANT. MULTI-LEAF OPPOSED BLADE DAMPERS DESIGNED TO SMACNA DETAILS, SELF-LUBRICATING NYLON BEARINGS, SHAFT EXTENSION TO ACCOMMODATE INSULATION THICKNESS, WITH LOCKING QUADRANT. MANUFACTURED ADJUSTABLE EXTRACTORS TO BE WITH ADJUSTMENT ROD. ACCEPTABLE PRODUCTS: TITUS, NAILOR OR EQUAL.
5. TURNING VANES
SMALL ARC AIRFOIL HOLLOW VANES IN SUPPLY DUCT ELBOW WHERE CENTERLINE RADIUS IS LESS THAN 1 1/4 TIMES TURNING DIMENSION OF DUCT.
6. FLEXIBLE DUCTWORK
METALLIC ALUMINUM FLEXIBLE DUCTWORK MANUFACTURED BY FLEXMASTER LTD., OR EQUAL BETWEEN BRANCH DUCTS AND GRILLES, REGISTERS AND DIFFUSERS. MAXIMUM LENGTH SHALL BE 6'-0".
7. REFRIGERANT PIPING
STREAMLINE ARC COPPER TUBING HARD TEMPER AS MANUFACTURED BY MUELLER BRASS OR EQUAL.
ELBOW AND FITTINGS SHALL BE STREAMLINE WROUGHT COPPER SOLDER TYPE. ALL JOINTS SHALL BE MADE WITH SIL-FOS SILVER BRAZING. PURGE SYSTEM WITH NITROGEN DURING SOLDERING AFTER COMPLETION THE ENTIRE PIPING SYSTEM SHALL BE PRESSURE TESTED AND CLEARED.
8. ACOUSTIC DUCT LINER
RIGID DUCT LINER 1" THICK 36 KG/M WITH NEOPRENE LINER GLUED AND PINNED TO INSIDE SURFACE OF DUCTWORK. MINIMUM 3.0M (10') FROM ALL AIR HANDLERS AND WHERE SHOWN ON DRAWINGS. SEAL ALL EXPOSED EDGES. DUCT SIZING REPRESENTS CLEAR INSIDE DIMENSIONS.
9. DUCTWORK INSULATION
ON THE LAST 5'-0" OF ALL EXHAUST DUCTS, INCLUDING PLENUM AND ALL AIR INTAKE DUCTWORK, FIBERGLASS FOIL FACED RIGID DUCT INSULATION 1" THICK TYPE PF-335-3/4 LB. DENSITY WITH RFFRK FACING, GLUE AND PIN AS PER MANUFACTURERS RECOMMENDATIONS.
ON ALL OUTDOOR AIR DUCTWORK, FIBERGLASS FOIL FORCED RIGID DUCT INSULATION 3" THICK TYPE PF-335-3/4 LB DENSITY WITH RFFRK FACING, GLUE AND PIN.
RECOVER ALL EXTERIOR DUCTWORK WITH TWO COATS OF MASTIC SEALER AND 28 GAUGE PREFINISHED METAL FLASHING WITH CROSSBREAKS AND STANDING SEAMS AND BUTTONHOOK JOINTS. COLOUR TO MATCH BUILDING FLASHINGS.
10. SYSTEM BALANCING
BALANCE AIR AND WATER SYSTEMS USING NEBB CERTIFIED FIRM AND AS PER NEBB REQUIREMENTS TO WITHIN 5% OF TOTAL SYSTEM CAPACITY. PROVIDE 3 COPIES OF BALANCING REPORTS C/W SYSTEM SCHEMATICS. BALANCE AFFECTED SYSTEMS ONLY. PROVIDE PRE-BALANCING VALUES UPON AWARD OF CONTRACT (AND BEFORE COMMENCEMENT OF ANY DEMOLITION). PROVIDE REPORT FOR CONSULTANT REVIEW. RE-BALANCING SHALL TAKE PLACE AFTER APPROVAL FROM CONSULTANT (AND PRIOR TO COMMENCEMENT OF DEMOLITION).

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 indicated on the drawings. The contractor will be responsible for 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.

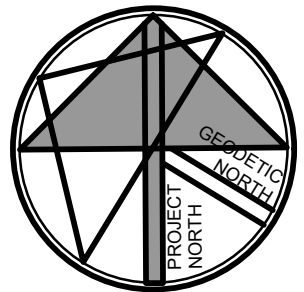
Drawings and specifications, etc., prepared and issued by the Consultant are the property of the consultant and must be returned at the completion of the project. These documents are not to be duplicated or copied without the consent of the Consultant.

Do not scale this drawing.

© 2025 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.

[illegible]

No.	Issue	Date
1	Issued for Tender & Permit	Mar 4, 2025

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

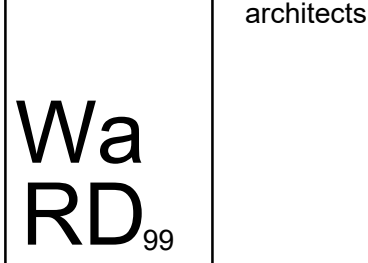
WATERLOO REGION DISTRICT SCHOOL BOARD
175 INDIAN RD. KITCHENER, ON N2B 2S7

MECHANICAL SPECIFICATION

drawing scale
AS NOTED

ward99 project number

ward99 drawing no.



ward99 architects inc.
7500 Highway 27, Unit 27B
Vaughan ON L4H 0J2
info@ward99architects.com
416 613 5880 www.ward99architects.com

drawing no.

ward99
architects

M4.1

