R.H. CORNISH P.S.
INTERIOR ALTERATIONS
DURHAM DISTRICT SCHOOL BOARD
494 QUEEN STREET,
PORT PERRY, ON L9L 1K2

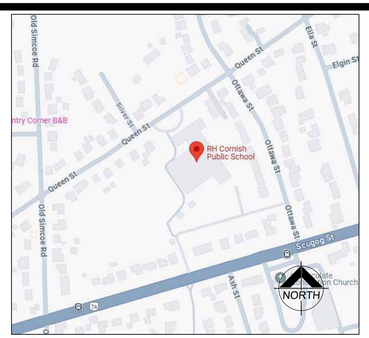
LIST OF DRAWINGS

ARCHITECTURAL

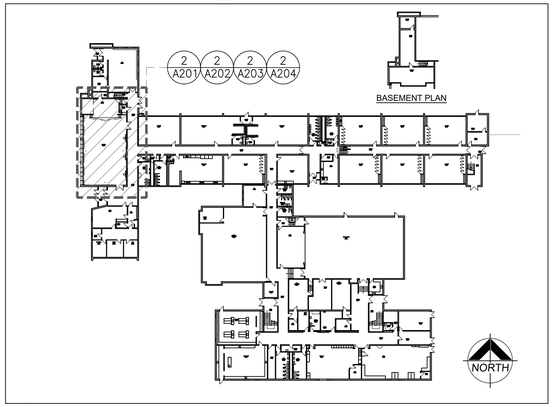
STRUCTURAL

MECHANICAL

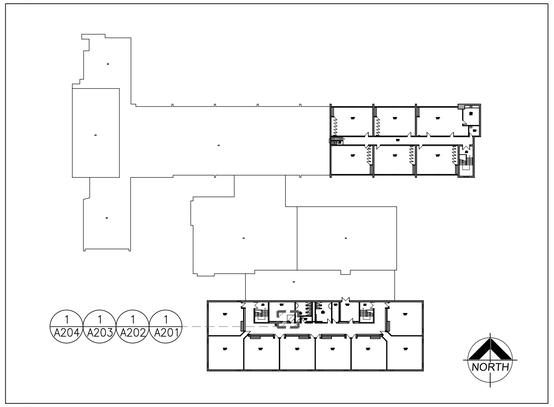
ELECTRICAL



3 A000 LOCATION PLAN
N.T.S.



2 A000 GROUND FLOOR KEY PLAN
N.T.S.



1 A000 SECOND FLOOR KEY PLAN
N.T.S.

CONSULTANTS

ARCHITECTURAL/STRUCTURAL:

BARRY BRYAN ASSOCIATES
Architects
Engineers
Project Managers
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Web : http://www.giallonardoeng.com

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dyneng@rogers.com

NAME OF CONSULTANT : BARRY BRYAN ASSOCIATES
CERTIFICATE OF PRACTICE NUMBER : 5192
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(Toronto) (905) - 427 - 4495
FAX : (905) - 666 - 5256

NAME OF PROJECT :
R.H. CORNISH PUBLIC SCHOOL INTERIOR ALTERATIONS
DURHAM DISTRICT SCHOOL BOARD (253 m²)

LOCATION OF PROJECT :
494 QUEEN STREET, PORT PERRY, ON L9L 1K2

DATE :
JANUARY 2025

Ontario Building Code Data Matrix
Part 11 - Renovation of Existing Building

			OBC Reference
11.00	Building Code Version:	O. Reg. 332/12 Last Amendment: O. Reg. 89/23	
11.01	Project Type:	☐ Addition ☑ Renovation ☐ Addition and Renovation ☐ Change of use Description -	[A] 1.1.2.
11.02	Major Occupancy Classification:	Occupancy: A2 / - / - ; Use: ASSEMBLY - ELEMENTARY SCHOOL / - / -	3.1.2.1.(1)
11.03	Superimposed Major Occupancies:	☐ Yes ☑ No Description -	3.2.2.7
11.04	Building Area (m²)	Description / Existing / New / Total: GROUND FL 4252 M² - 4252 M² SECOND FL 1569 M² - 1569 M² - - - - Total= 5821 M² - 5821 M²	[A] 1.4.1.2.
11.05	Building Height	2 Storeys above grade, 10± (m) Above grade 1 Storeys below grade	[A] 1.4.1.2 & 3.2.1.1
11.06	Number of streets/ fire fighter access:	3 street(s)	3.2.2.10 & 3.2.5
11.07	Building Size:	☐ Small ☑ Medium ☐ Large ☐ > Large	T.11.2.1.1.B.-N.
11.08	Existing Building Classification:	Change in Major Occupancy: ☐ Yes ☑ Not Applicable (no change of major occupancy) Construction Index: 6 Hazard Index: 4 Importance Category: ☐ Low ☐ Normal ☐ High ☑ Post-disaster	11.2.1 T11.2.1.1A T11.2.1.1B to N, 4.2.1(3) & 5.2.2.1.(2)
11.09	Renovation Type:	☑ Basic Renovation ☐ Extensive Renovation	11.3.3.1 & 11.3.3.2
11.10	Occupant Load:	Floor Level/ Area / Occupancy Type / Based On * / Occup. Load (NEW)815: GROUND FL 4252 M² ASSEMBLY - - SECOND FL 1569 M² - - - *OCCUPANCY BASED ON 25 STUDENTS PER CLASS AND STAFF BASED ON OFFICES/LIBRARY, 1 TEACHER PER CLASS AND CUSTODIAL SPACES	3.1.17
11.11a	Plumbing Fixture Requirements:	Ratio: Male/Female = 50:50 Except as noted otherwise Floor level/ Area / Occupant Load / OBC Reference / Fixtures Required / Fixtures Provided: GROUND FL 4252 M² 815 7.4 16F/14F 23F/24M/11UNI (1 NEW UNISEX WASHROOM ON FLOOR 2 ALL OTHERS ARE EXISTING) SECOND FL 1569 M²	3.7.4
11.11b	Plumbing Fixture Requirements: cont.	Floor level/ Area (Repeated) / B.F. Fixture Required / B.F. Fixture Provided / Uni. Fixture Required / Uni. Fixtures Provided: GROUND FL 4252 M² 1 1 - EXISTING 1 1 - EXISTING SECOND FL 1569 M² 0 0 0 0	Tables 3.8.2.3.A and 3.8.2.3.B
11.12	Barrier-free Design:	☑ Yes ☐ No Explanation _____	11.3.3.2.(2)
11.13	Reduction in Performance Level:	Structural ☑ No ☐ Yes By Increase in occupant load: ☑ No ☐ Yes By change of major occupancy: ☑ No ☐ Yes Plumbing ☑ No ☐ Yes Sewage - system: ☑ No ☐ Yes	11.4.2.1 11.4.2.2 11.4.2.3 11.4.2.4 11.4.2.5
11.14	Compensating Construction:	☐ Yes ☑ No _____ Structural ☑ No ☐ Yes By Increase in occupant load: ☑ No ☐ Yes By change of major occupancy: ☑ No ☐ Yes Plumbing ☑ No ☐ Yes Sewage - system: ☑ No ☐ Yes Extension of Combustible Construction: ☑ No ☐ Yes	11.4.2.1 11.4.2.2 11.4.2.3 11.4.2.4 11.4.2.5 11.4.2.6 11.4.2.7
11.15	Compliance Alternatives Proposed:	☑ No ☐ Yes _____	11.5.1.
11.16	Notes:	RENOVATION OF ONE EXISTING GYM BECOMING 2 CLASSROOMS PLANNED FOR 25 STUDENTS EACH. EXISTING WASHROOM FACILITIES EXCEEDS MINIMUM AMOUNT REQUIRED FOR 815 OCCUPANTS (ORIGINAL OCCUPANT LOAD OF 765). **(253 m²)**	11.5.1

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1	ISSUED FOR CLIENT REVIEW	NOV. 27 2024	BBA
2	ISSUED FOR CLIENT 30% REVIEW	DEC. 09 2024	BBA
3	ISSUED FOR CLIENT 60% REVIEW	DEC. 24 2024	BBA
4	ISSUED FOR PERMIT & TENDER	MAR. 04 2025	BBA

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494 QUEEN STREET,
PORT PERRY, ONTARIO
DURHAM DISTRICT SCHOOL BOARD

DRAWING:
OVERALL KEY PLAN, LOCATION PLAN & LIST OF DRAWINGS

BBA
BARRY BRYAN ASSOCIATES
Architects
Engineers
Project Managers
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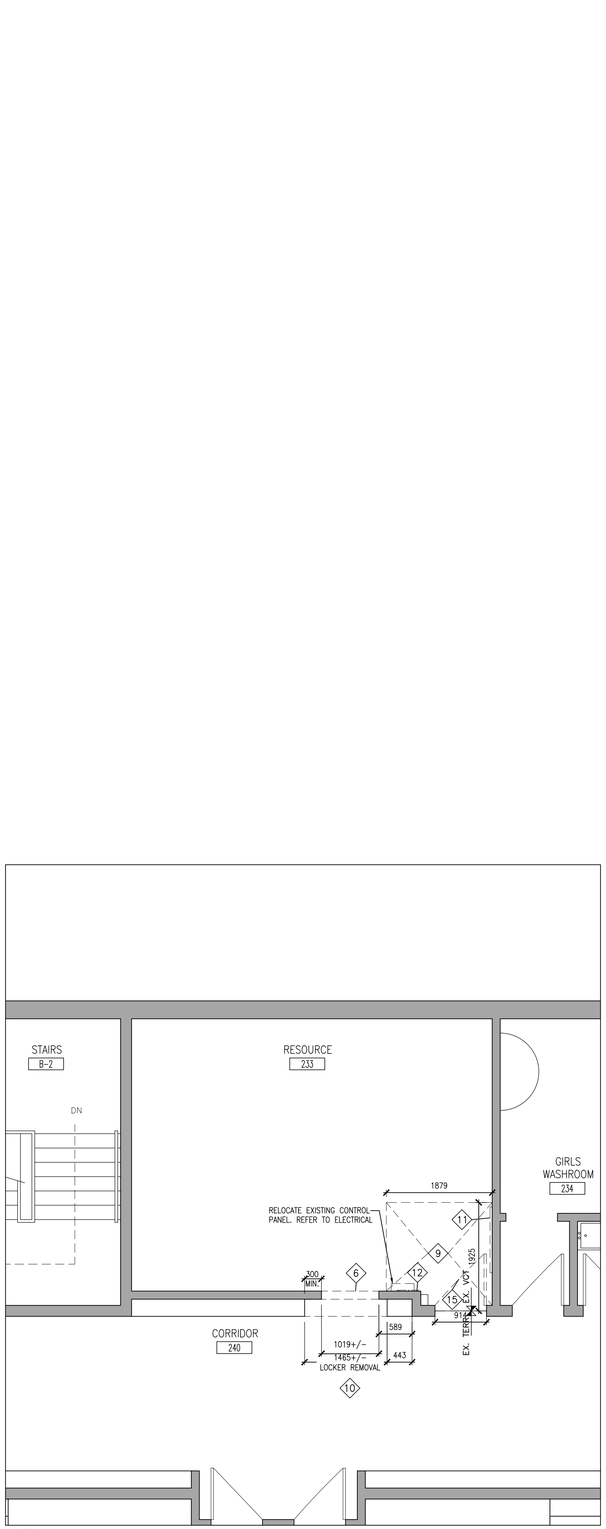
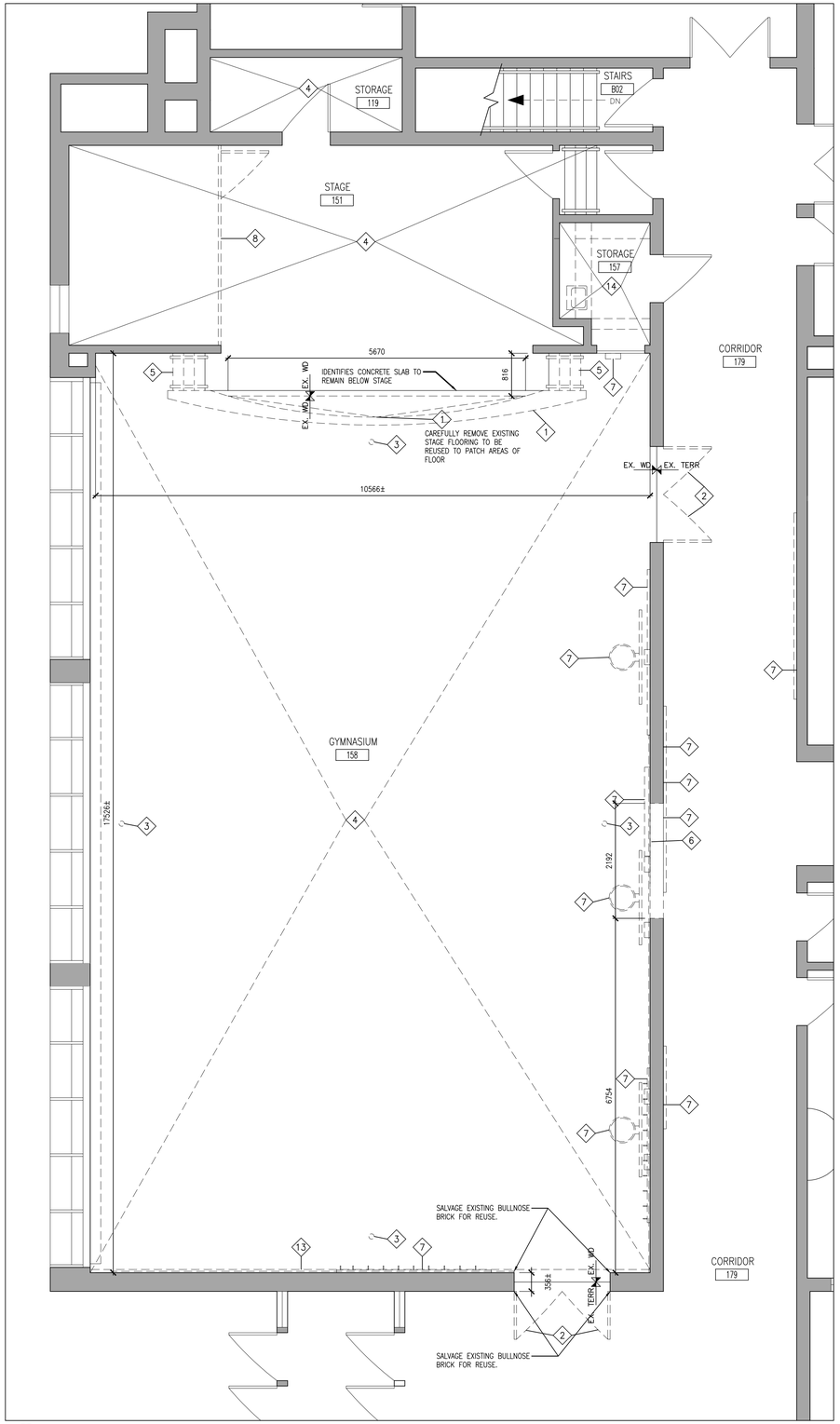
ONTARIO ASSOCIATION OF ARCHITECTS
CASSANDRA ERIN CAUTIUS
LICENCE
8891

DESIGN BY: JM	DOC. CONTROL DATE:
DRAWN BY: JM	% COMPLETE:
CHECKED BY: CM	INITIAL:
DATE: NOV. 2024	
SCALE:	
FILE: 24189 A000	

PROJECT NO: **24189**
DRAWING NO: **A000**



2 A201 PART SECOND FLOOR DEMOLITION PLAN
1:50



1 A201 PART GROUND FLOOR DEMOLITION PLAN
1:50

TYPICAL DEMOLITION NOTES

1. SITE VERIFY ALL DIMENSIONS AND CONDITIONS.
2. ALL WORK TO BE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE.
3. COMPLY WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT REGULATIONS FOR CONSTRUCTION PROJECTS.
4. PROVIDE PROTECTION IN LOCATIONS APPROVED BY THE OWNER AND CONSULTANT SO AS NOT TO DAMAGE EXISTING STRUCTURE, LANDSCAPE OR PART THEREOF.
5. COMPLETE ALL DEMOLITION WORK NECESSARY TO COMPLETE THE RENOVATIONS AS SHOWN AND AS REQUIRED. DEMOLITION OF BUILDING ELEMENTS INCLUDES BUT NOT LIMITED TO COMPLETE REMOVAL OF ALL ASSOCIATED FIXTURES, FITTINGS, HARDWARE, FASTENERS, EQUIPMENT AND ACCESSORIES UNLESS NOTED OTHERWISE.
6. PROVIDE ALL SHORING AS REQUIRED. SHORING SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER. CONTRACTOR TO SUBMIT STAMPED SHORING DESIGN FOR REVIEW PRIOR TO INSTALLATION.
7. NOTIFY CONSULTANT OF LOAD BEARING MEMBERS OR ASSEMBLIES IDENTIFIED OR DISCOVERED DURING WORK AND NOT INDICATED ON DRAWINGS. DO NOT PROCEED WITH REMOVALS WITHOUT PRIOR REVIEW BY THE CONSULTANT.
8. PROVIDE TEMPORARY SUPPORT OF PIPES, DUCTS AND ELECTRICAL CHASES AS REQUIRED FOR SAFE REMOVAL. EXISTING AND PROPOSED SUPPORTS ARE TO REVIEWED BY THE CONSULTANT PRIOR TO THE REMOVAL OF ANY COMPONENTS WHICH MAY FALL, OR CAUSE OTHERS TO FALL.
9. MAINTAIN ALL WORK AREAS AND ALL STORAGE AREAS CLEAN AND ORDERLY AT ALL TIMES INCLUDING EXISTING AREAS THAT REMAIN IN OPERATION DURING CONSTRUCTION. DUST CONTROL MEASURES ARE TO BE IN PLACE AT ALL TIMES AND NOISY WORK SHALL BE COORDINATED AROUND PROGRAM EVENTS.
10. REMOVAL OF EXISTING FLOOR FINISHES IS TO INCLUDE COMPLETE REMOVAL OF BASE AND ALL MORTAR AND ADHESIVES AND PREPARATION OF EXISTING SUBSTRATES TO RECEIVE NEW FLOORING, SATISFACTORY TO THE MANUFACTURER OF NEW FLOOR FINISHES. ALLOW FOR LEVELING OF SLABS.
11. DEMOLITION INCLUDES ALL ASSOCIATED MECHANICAL AND ELECTRICAL SERVICES, EQUIPMENT, FITTINGS, FIXTURES, HANGERS, BRACKETS, TRIM AND ACCESSORIES AS REQUIRED TO COMPLETE THE WORK.
12. MAINTAIN EXISTING FIRE HOSE CABINETS AND FIRE RATINGS.
13. REMOVAL OF DOORS AND FRAMES IS TO INCLUDE REMOVAL OF ALL HARDWARE.
14. REMOVAL ALL PROTRUSIONS IN FLOOR SLAB AND GRIND DOWN TO FLOOR LEVEL.
15. CLEAN, PATCH / REPAIR ALL EXISTING SURFACES TO REMAIN TO RECEIVE NEW FINISHES. ALLOW FOR REMOVAL OR SCARIFICATION OF EXISTING PAINT FINISH ON WALLS THAT ARE TO RECEIVE NEW WALL TILE FINISH. REMOVE ALL MORTAR, ADHESIVES AND RUST AS REQUIRED TO PREPARE EXISTING SUBSTRATES TO RECEIVE NEW PAINT FINISHES.
16. DISCONNECT AND CAP OFF ALL SERVICES PRIOR TO DEMOLITION.
17. DISPOSE OF MATERIALS OFF SITE.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING STRUCTURE OR FINISHES SHOWN TO REMAIN AND REPAIR / REPLACE SAME TO THE SATISFACTION OF THE OWNER AND CONSULTANT.
19. BUILDING TO BE SECURED BY THE G.C. AT ALL TIMES.
20. REFER TO THE HAZARDOUS BUILDING MATERIALS ASSESSMENT REPORT.

DEMOLITION NOTES

1. CAREFULLY REMOVE EXISTING WOOD STAGE INCLUDING INTEGRATED LIGHTING. SALVAGE WOOD FOR PATCHING AS REQUIRED. ALL OTHER ITEMS TO BE DISPOSED TO EXTENT SHOWN AND AS REQUIRED TO COMPLETE NEW WORK. PATCH, REPAIR AND MAKE GOOD ALL SURFACES.
2. REMOVE AND DISPOSE OF EXISTING DOOR & FRAME. PATCH, REPAIR AND MAKE GOOD ALL AFFECTED SURFACES.
3. REMOVE AND DISPOSE EXISTING FLOOR MOUNTED NET ANCHORS. PATCH, REPAIR AND MAKE GOOD ALL AFFECTED SURFACES.
4. SAND AND PREPARE EXISTING WOOD FLOORING AND STAIRS FOR REFINISH. MAKE GOOD ALL AFFECTED SURFACES.
5. REMOVE AND DISPOSE OF EXISTING STAIRS INCLUDING RAILINGS AT EXTENTS SHOWN AND TO COMPLETE NEW WORK. PATCH REPAIR AND MAKE GOOD ALL AFFECTED SURFACES
6. REMOVE AND DISPOSE OF EXISTING MASONRY BLOCK WALL TO EXTENT SHOWN AND AS REQUIRED TO COMPLETE NEW WORK. PATCH, REPAIR AND MAKE GOOD ALL SURFACES.
7. REMOVE AND DISPOSE ALL EXISTING ACCESSORIES INCLUDING BASKETBALL NETS, PA SPEAKER, PROJECTOR SCREEN, WOOD COAT HOOKS, CHALKBOARDS AND WALL MATT VELCRO STRIPS. PATCH, REPAIR AND MAKE GOOD ALL AFFECTED SURFACES TO REMAIN.
8. REMOVE AND DISPOSE OF EXISTING FENCING. PATCH REPAIR AND MAKE GOOD ALL AFFECTED SURFACES.
9. REMOVE AND DISPOSE EXISTING VCT FLOORING AND WALL BASE. PREPARE EXISTING SURFACES TO RECEIVE NEW FLOORING AND BASE AS SCHEDULED.
10. REMOVE AND DISPOSE EXISTING LOCKERS AND LOCKER CURB AT EXTEND SHOWN. PATCH, REPAIR AND MAKE GOOD ALL AFFECTED SURFACES TO REMAIN.
11. CAREFULLY REMOVE WALL MOUNTED HOOK AND STORE TEMPORARILY TO BE REINSTALLED FOLLOWING CONSTRUCTION. PATCH REPAIR AND MAKE GOOD ALL AFFECTED SURFACES.
12. REMOVE AND TERMINATE EXISTING EXPOSED CONDUIT AND PHONE PANEL. PATCH REPAIR AND MAKE GOOD ALL AFFECTED SURFACES.
13. ABATE EXISTING WALL MOUNTED PANELS AS NOTED ON REFERENCED DSS REPORT. PATCH REPAIR AND MAKE GOOD ALL AFFECTED SURFACES
14. REMOVE AND DISPOSE OF EXISTING MILLWORK CABINETS, SHELVING AND SINK. PATCH REPAIR AND MAKE GOOD ALL AFFECTED SURFACES. REFER TO MECHANICAL.
15. REMOVE AND DISPOSE OF EXISTING DOOR, PATCH, REPAIR AND MAKE GOOD ALL AFFECTED SURFACES.

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4	ISSUED FOR PERMIT & TENDER	MAR. 04 2025	BBA

NO.	REVISIONS	DATE	BY

PROJECT:

R.H. CORNISH P.S
INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO

DURHAM DISTRICT SCHOOL BOARD

DRAWING:

PART GROUND FLOOR DEMOLITION PLANS

BBA

BARRY BRYAN ASSOCIATES
Architects
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ONTARIO ASSOCIATION OF ARCHITECTS
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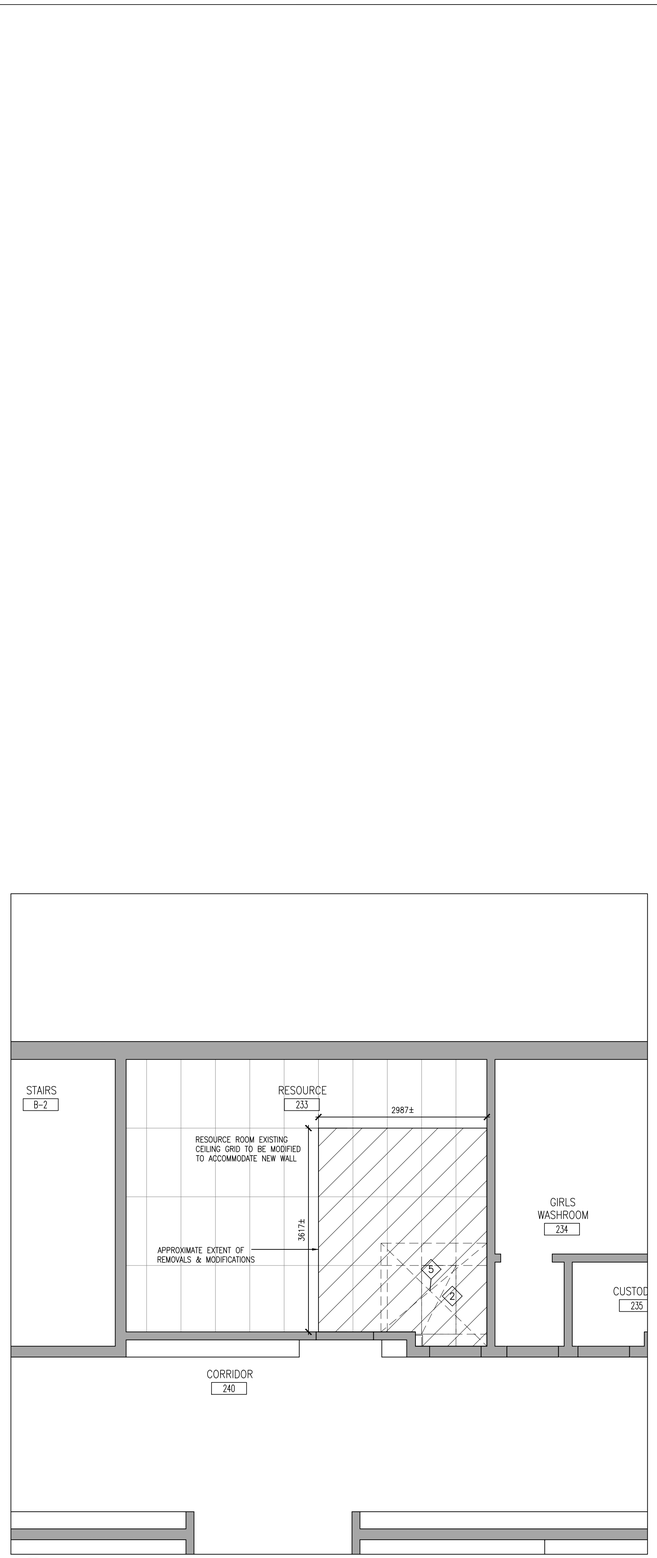
8891

DESIGN BY: EBM	DOC. CONTROL DATE:
DRAWN BY: JM	% COMPLETE:
CHECKED BY: --	INITIAL:
DATE: OCT. 2024	
SCALE: AS NOTED	
FILE: 24189 A201	

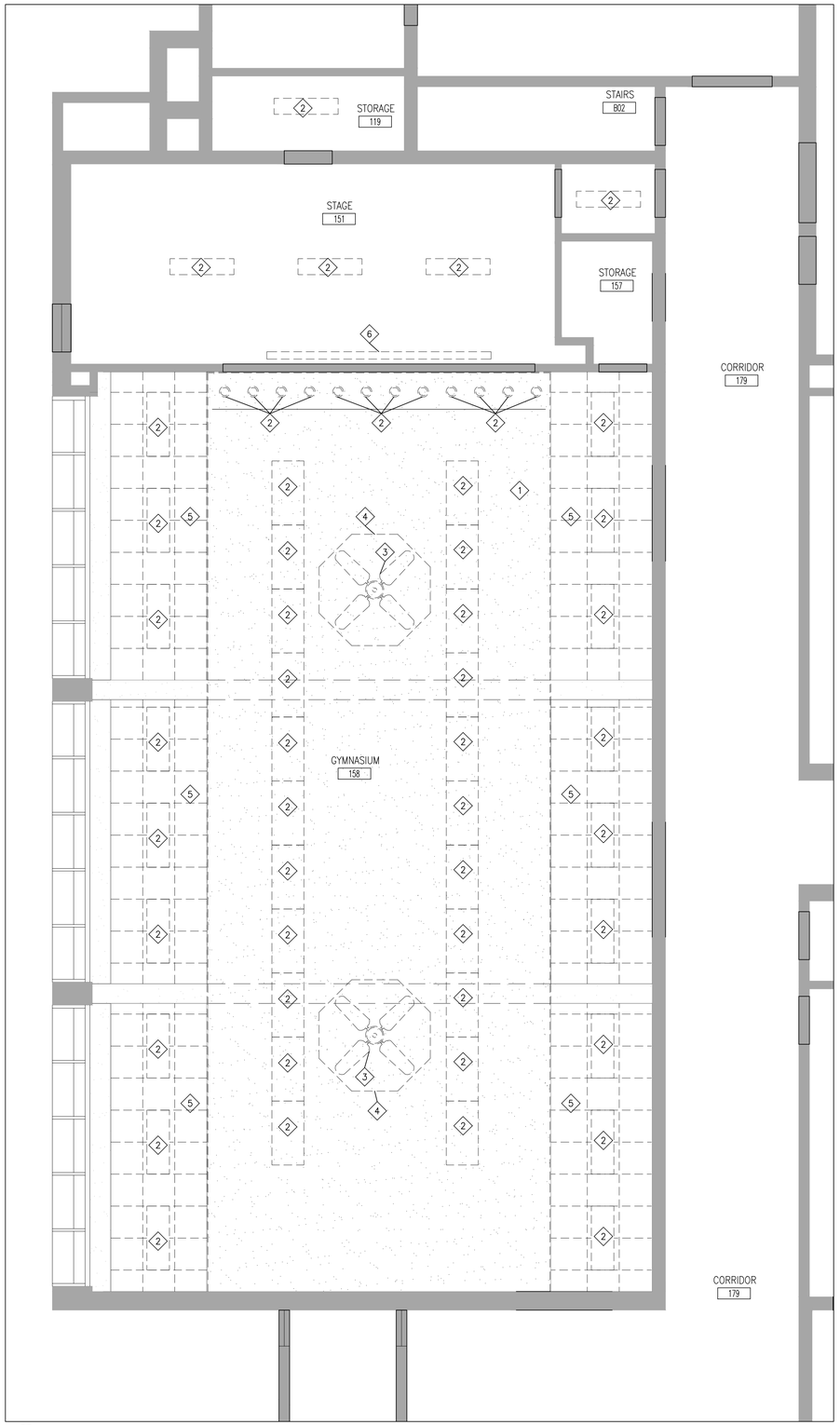
PROJECT NO: **24189**

DRAWING NO: **A201**



2 A202 PART SECOND FLOOR REFLECTED CEILING DEMOLITIONPLAN

1:50



1 A202 PART GROUND FLOOR REFLECTED CEILING DEMOLITION PLAN

1:50

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10. REMOVAL OF EXISTING FLOOR FINISHES IS TO INCLUDE COMPLETE REMOVAL OF BASE AND ALL MORTAR AND ADHESIVES AND PREPARATION OF EXISTING SUBSTRATES TO RECEIVE NEW FLOORING, SATISFACTORY TO THE MANUFACTURER OF NEW FLOOR FINISHES. ALLOW FOR LEVELING OF SLABS.
11. DEMOLITION INCLUDES ALL ASSOCIATED MECHANICAL AND ELECTRICAL SERVICES, EQUIPMENT, FITTINGS, FIXTURES, HANGERS, BRACKETS, TRIM AND ACCESSORIES AS REQUIRED TO COMPLETE THE WORK.
12. MAINTAIN EXISTING FIRE HOSE CABINETS AND FIRE RATINGS.
13. REMOVAL OF DOORS AND FRAMES IS TO INCLUDE REMOVAL OF ALL HARDWARE.
14. REMOVAL ALL PROTRUSIONS IN FLOOR SLAB AND GRIND DOWN TO FLOOR LEVEL.
15. CLEAN, PATCH / REPAIR ALL EXISTING SURFACES TO REMAIN TO RECEIVE NEW FINISHES. ALLOW FOR REMOVAL OR SCARIFICATION OF EXISTING PAINT FINISH ON WALLS THAT ARE TO RECEIVE NEW WALL TILE FINISH. REMOVE ALL MORTAR, ADHESIVES AND RUST AS REQUIRED TO PREPARE EXISTING SUBSTRATES TO RECEIVE NEW PAINT FINISHES.
16. DISCONNECT AND CAP OFF ALL SERVICES PRIOR TO DEMOLITION.
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19. BUILDING TO BE SECURED BY THE G.C. AT ALL TIMES.
20. REFER TO THE HAZARDOUS BUILDING MATERIALS ASSESSMENT REPORT.

DEMOLITION NOTES

1. REMOVE AND DISPOSE OF EXISTING FIBRE CEILING, REFER TO DSSR REPORT FOR POSSIBLE ABATEMENT REQUIREMENTS. PATCH, REPAIR AND MAKE GOOD ALL SURFACES.
2. REMOVE AND DISPOSE OF EXISTING LIGHT FIXTURE. PATCH, REPAIR AND MAKE GOOD ALL AFFECTED SURFACES TO REMAIN. REFER TO ELECTRICAL.
3. REMOVE AND DISPOSE EXISTING CEILING FAN. PATCH, REPAIR AND MAKE GOOD ALL AFFECTED SURFACES TO REMAIN. REFER TO ELECTRICAL.
4. REMOVE AND DISPOSE OF EXISTING FAN CAGE. PATCH, REPAIR AND MAKE GOOD ALL AFFECTED SURFACES TO REMAIN. REFER TO ELECTRICAL.
5. REMOVE AND DISPOSE OF EXISTING ACOUSTIC CEILING TILE AND GRID TO EXTENT SHOWN TO COMPLETE NEW WORK. PATCH, REPAIR AND MAKE GOOD ALL AFFECTED SURFACES TO REMAIN.
6. REMOVE AND DISPOSE OF EXISTING PROJECTOR SCREEN. PATCH, REPAIR AND MAKE GOOD ALL AFFECTED SURFACES TO REMAIN.

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DURHAM DISTRICT SCHOOL BOARD

DRAWING:

PART REFLECTED CEILING DEMOLITION PLAN

BBA

BARRY BRYAN ASSOCIATES

Architects
Engineers
Project Managers

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PROJECT NO: **24189**

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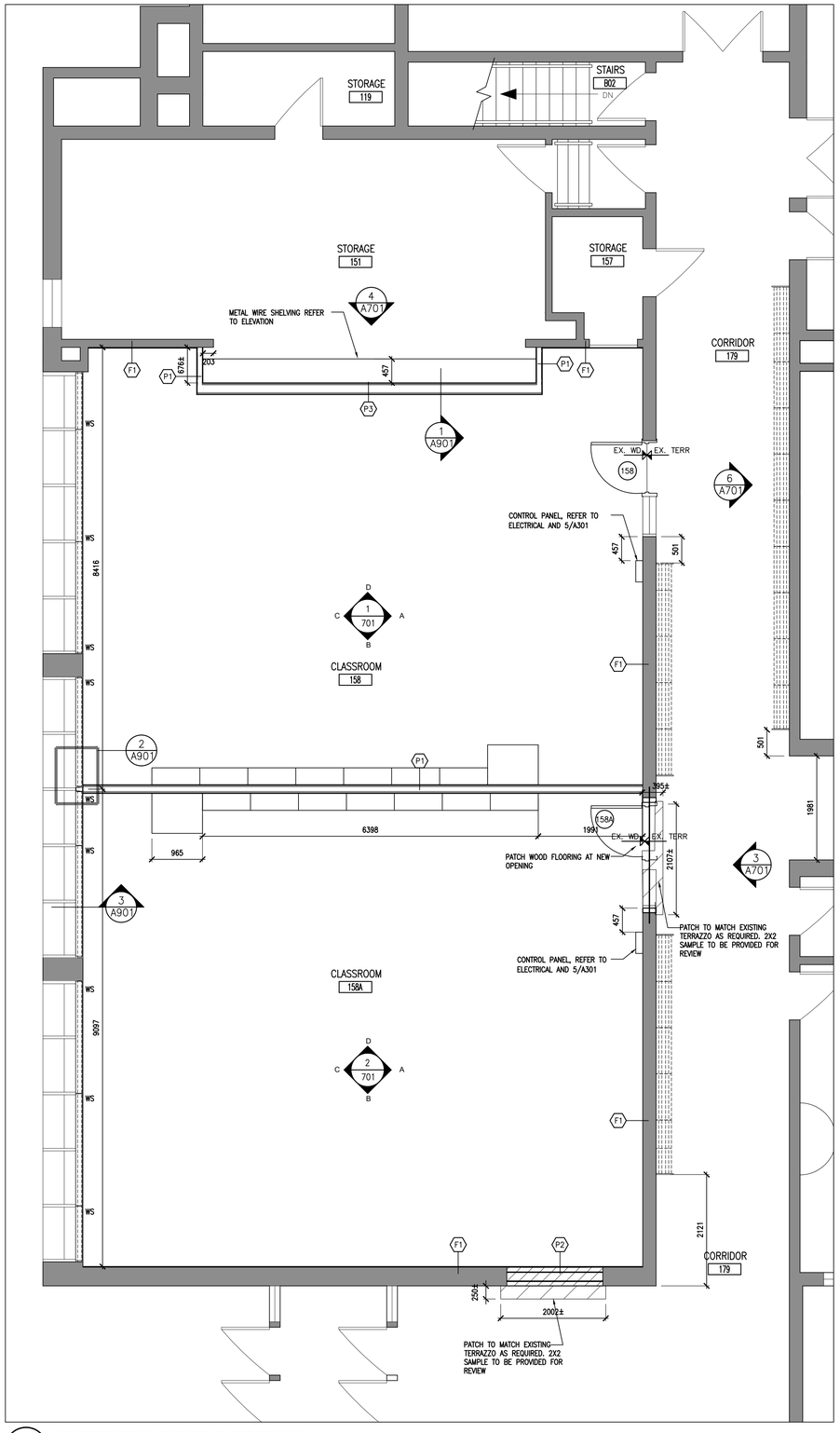
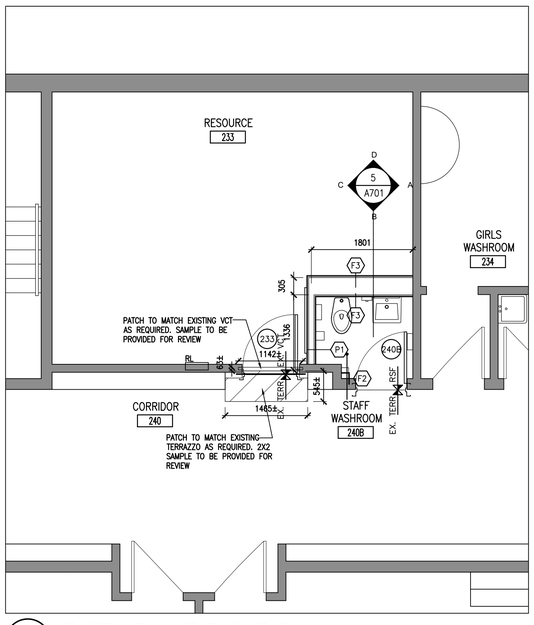


1 A203 PART GROUND FLOOR PLAN
1:50



2 A203 PART SECOND FLOOR PLAN
1:50

FLOOR PLAN NOTATION LEGEND

- ROOM / RM# — ROOM NAME & NUMBER
- W# — WALL / PARTITION TYPE
- D# — DOOR NUMBER
- DO — BARRIER FREE DOOR OPERATOR
- FEC — FIRE EXTINGUISHER CABINET
- FHC — FIRE HOSE CABINET
- WORK N.I.C.
- FF2 / FF1 — FLOOR FINISH TYPE (SEE ALSO ROOM FINISH SCHEDULE)
- F.R.R. — FIRE RESISTANCE RATING
- 1 / A200 — WALL SECTION REFERENCE
- D / C 1 A901 A / B — INTERIOR ELEVATION REFERENCE NUMBER

PARTITION TYPE SCHEDULE

NOTE: WASHROOMS TO HAVE MOISTURE RESISTANT GWB

P1
16mm GYPSUM BOARD
19mm PLYWOOD
92mm METAL STUDS @ 400 O.C.
SOUND INSULATION BATTS
19mm PLYWOOD
16mm GYPSUM BOARD
WALL TO TERMINATE AT UNDERSIDE OF DECK

P2
100MM BRICK TO MATCH EXISTING
100MM BRICK TO MATCH EXISTING
100MM BRICK TO MATCH EXISTING
*ASSUMED

NOTE: BLOCKING BETWEEN STUDS AT SHELVING ANCHOR POINTS

P3
16mm GYPSUM BOARD
19mm PLYWOOD
152mm METAL STUDS @ 305 O.C.
SOUND INSULATION BATTS
19mm PLYWOOD
16mm GYPSUM BOARD
WALL TO TERMINATE AT UNDERSIDE OF DECK

FURRING TYPE SCHEDULE

F1
16mm GYPSUM BOARD
LAMINATED TO SUBSTRATE
WALL TO TERMINATE 305MM MINIMUM ABOVE ACOUSTIC CEILING

F2
16mm GYPSUM BOARD
FURRING CHANNELS @ 400 O.C.
WALL TO TERMINATE AT 305MM MINIMUM ABOVE CEILING

NOTE: WASHROOMS TO HAVE MOISTURE RESISTANT GWB

F3
16mm GYPSUM BOARD
19mm PLYWOOD
92mm METAL STUDS @ 400 O.C.
SOUND INSULATION BATTS
WALL TO TERMINATE AT UNDERSIDE OF DECK

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3	ISSUED FOR CLIENT 60% REVIEW	DEC. 24 2024	BBA
4	ISSUED FOR PERMIT & TENDER	MAR. 04 2025	BBA

NO.	REVISIONS	DATE	BY

PROJECT:

R.H. CORNISH P.S
INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO

DURHAM DISTRICT SCHOOL BOARD

DRAWING:

PART FLOOR PLANS & STRUCTURAL NOTES

BBA

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Project Managers

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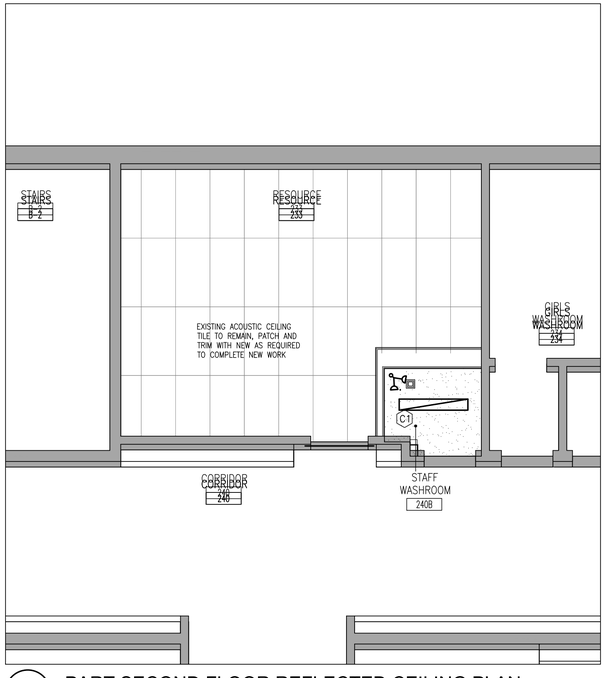
DESIGN BY:	BBA	DOC. CONTROL DATE:	
DRAWN BY:	JM	% COMPLETE:	
CHECKED BY:	--	INITIAL:	
DATE:	OCT. 2024		
SCALE:	AS NOTED		
FILE:	24189 A203		

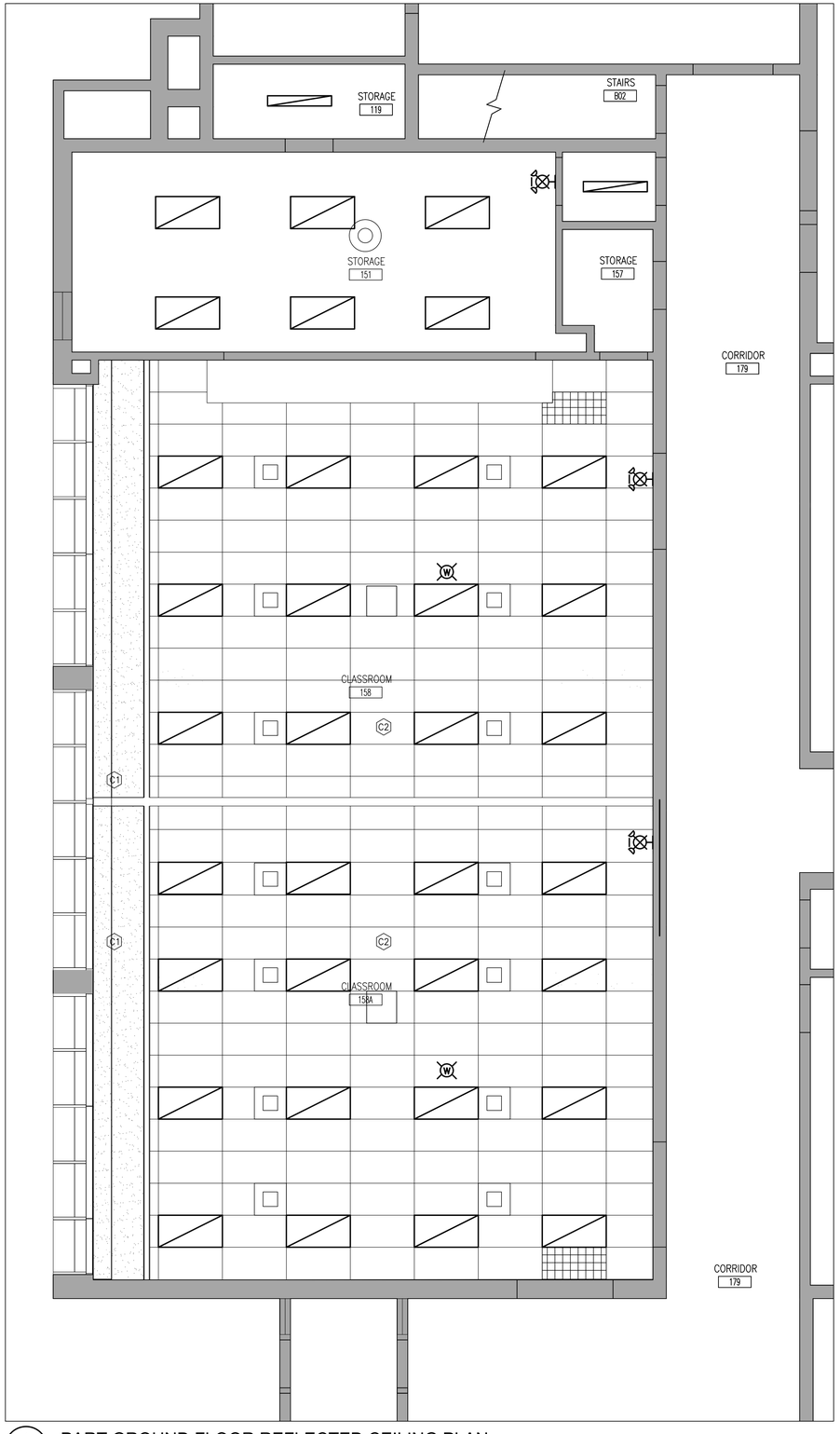
PROJECT NO: **24189**

DRAWING NO: **A203**



2 A204 PART SECOND FLOOR REFLECTED CEILING PLAN

1:50



1 A204 PART GROUND FLOOR REFLECTED CEILING PLAN

1:50

TYPICAL DEMOLITION NOTES

1. SITE VERIFY ALL DIMENSIONS AND CONDITIONS.
2. ALL WORK TO BE IN ACCORDANCE WITH THE ONTARIO BUILDING CODE.
3. COMPLY WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT REGULATIONS FOR CONSTRUCTION PROJECTS.
4. PROVIDE PROTECTION IN LOCATIONS APPROVED BY THE OWNER AND CONSULTANT SO AS NOT TO DAMAGE EXISTING STRUCTURE, LANDSCAPE OR PART THEREOF.
5. COMPLETE ALL DEMOLITION WORK NECESSARY TO COMPLETE THE RENOVATIONS AS SHOWN AND AS REQUIRED. DEMOLITION OF BUILDING ELEMENTS INCLUDES BUT NOT LIMITED TO COMPLETE REMOVAL OF ALL ASSOCIATED FIXTURES, FITTINGS, HARDWARE, FASTENERS, EQUIPMENT AND ACCESSORIES UNLESS NOTED OTHERWISE.
6. PROVIDE ALL SHORING AS REQUIRED. SHORING SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER. CONTRACTOR TO SUBMIT STAMPED SHORING DESIGN FOR REVIEW PRIOR TO INSTALLATION.
7. NOTIFY CONSULTANT OF LOAD BEARING MEMBERS OR ASSEMBLIES IDENTIFIED OR DISCOVERED DURING WORK AND NOT INDICATED ON DRAWINGS. DO NOT PROCEED WITH REMOVALS WITHOUT PRIOR REVIEW BY THE CONSULTANT.
8. PROVIDE TEMPORARY SUPPORT OF PIPES, DUCTS AND ELECTRICAL CHASES AS REQUIRED FOR SAFE REMOVAL. EXISTING AND PROPOSED SUPPORTS ARE TO REVIEWED BY THE CONSULTANT PRIOR TO THE REMOVAL OF ANY COMPONENTS WHICH MAY FALL, OR CAUSE OTHERS TO FALL.
9. MAINTAIN ALL WORK AREAS AND ALL STORAGE AREAS CLEAN AND ORDERLY AT ALL TIMES INCLUDING EXISTING AREAS THAT REMAIN IN OPERATION DURING CONSTRUCTION. DUST CONTROL MEASURES ARE TO BE IN PLACE AT ALL TIMES AND NOISY WORK SHALL BE COORDINATED AROUND PROGRAM EVENTS.
10. REMOVAL OF EXISTING FLOOR FINISHES IS TO INCLUDE COMPLETE REMOVAL OF BASE AND ALL MORTAR AND ADHESIVES AND PREPARATION OF EXISTING SUBSTRATES TO RECEIVE NEW FLOORING, SATISFACTORY TO THE MANUFACTURER OF NEW FLOOR FINISHES. ALLOW FOR LEVELING OF SLABS.
11. DEMOLITION INCLUDES ALL ASSOCIATED MECHANICAL AND ELECTRICAL SERVICES, EQUIPMENT, FITTINGS, FIXTURES, HANGERS, BRACKETS, TRIM AND ACCESSORIES AS REQUIRED TO COMPLETE THE WORK.
12. MAINTAIN EXISTING FIRE HOSE CABINETS AND FIRE RATINGS.
13. REMOVAL OF DOORS AND FRAMES IS TO INCLUDE REMOVAL OF ALL HARDWARE.
14. REMOVAL ALL PROTRUSIONS IN FLOOR SLAB AND GRIND DOWN TO FLOOR LEVEL.
15. CLEAN, PATCH / REPAIR ALL EXISTING SURFACES TO REMAIN TO RECEIVE NEW FINISHES. ALLOW FOR REMOVAL OR SCARIFICATION OF EXISTING PAINT FINISH ON WALLS THAT ARE TO RECEIVE NEW WALL TILE FINISH. REMOVE ALL MORTAR, ADHESIVES AND RUST AS REQUIRED TO PREPARE EXISTING SUBSTRATES TO RECEIVE NEW PAINT FINISHES.
16. DISCONNECT AND CAP OFF ALL SERVICES PRIOR TO DEMOLITION.
17. DISPOSE OF MATERIALS OFF SITE.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING STRUCTURE OR FINISHES SHOWN TO REMAIN AND REPAIR / REPLACE SAME TO THE SATISFACTION OF THE OWNER AND CONSULTANT.
19. BUILDING TO BE SECURED BY THE G.C. AT ALL TIMES.
20. REFER TO THE HAZARDOUS BUILDING MATERIALS ASSESSMENT REPORT.

RCP LEGEND

- DIFFUSER REFER TO MECHANICAL
- LIGHT FIXTURE REFER TO ELECTRICAL
- EXHAUST GRILL. REFER TO MECHANICAL
- EMERGENCY LIGHT. REFER TO ELECTRICAL
- WIFI RECEIVER. REFER TO ELECTRICAL
- PROJECTOR. REFER TO ELECTRICAL
- AIR RETURN REFER TO MECHANICAL
- C1 — 16MM NEW SUSPENDED MOISTURE RESISTANT GYPSUM BOARD CEILING
- C2 — 1220X610 ACOUSTIC CEILING PANEL SYSTEM

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FILE: 24189 A204	

PROJECT NO: **24189**

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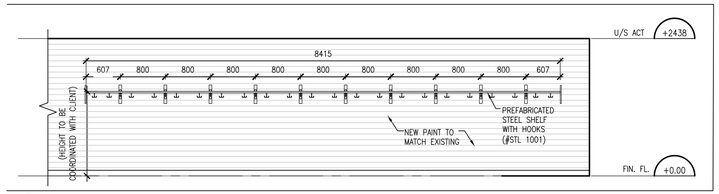

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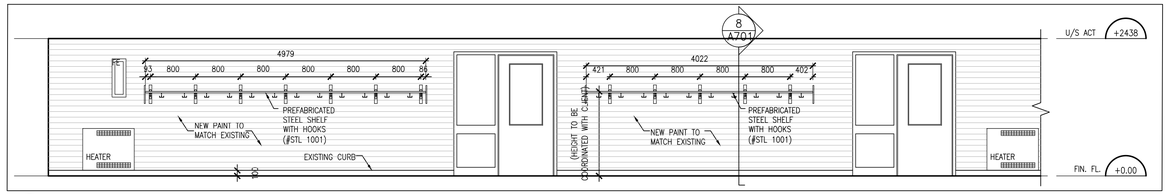

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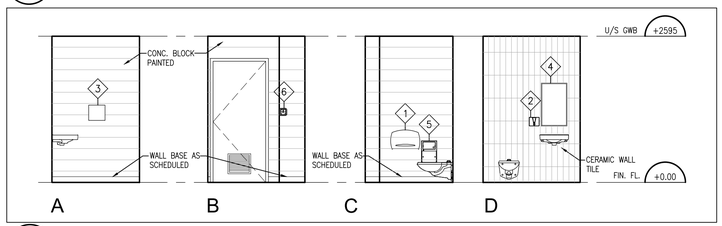

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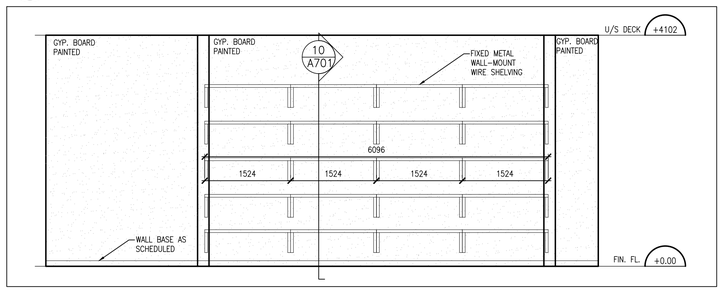

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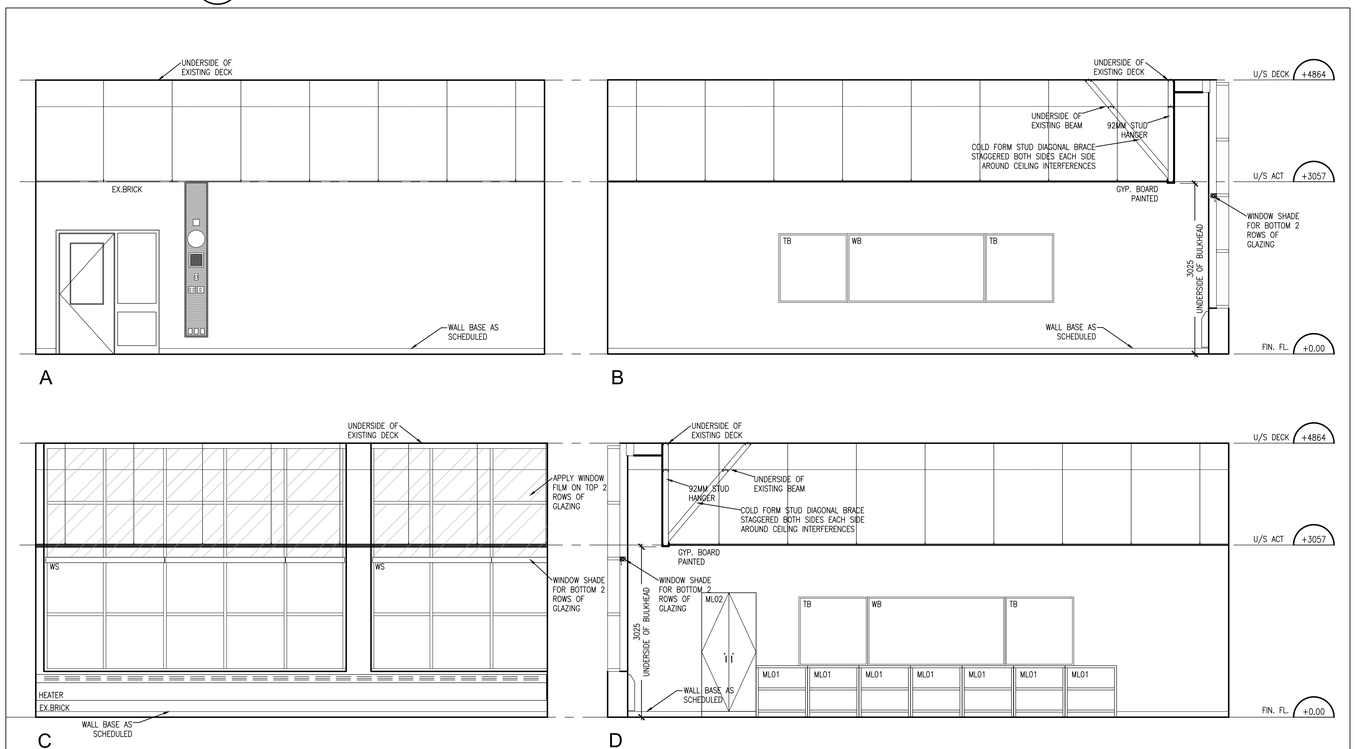

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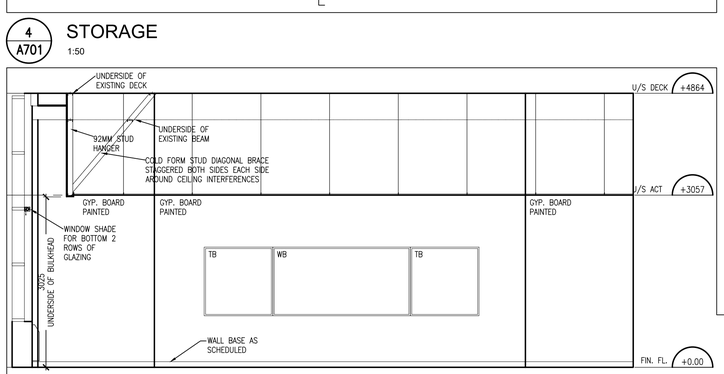

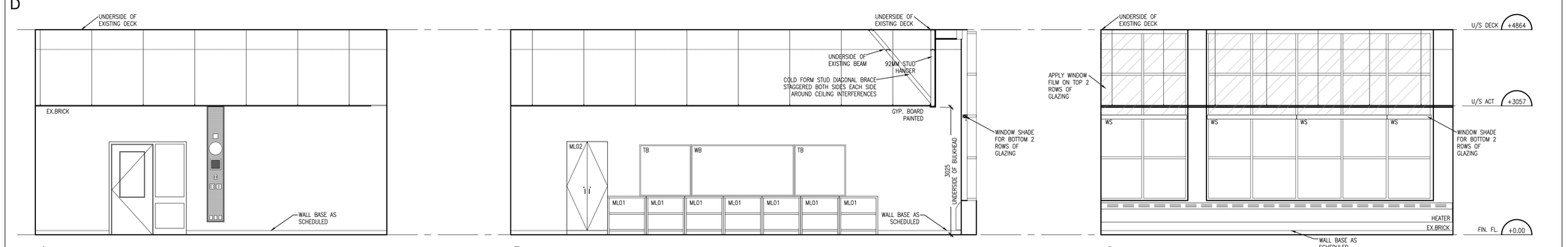

1 / A701 CLASSROOM 158
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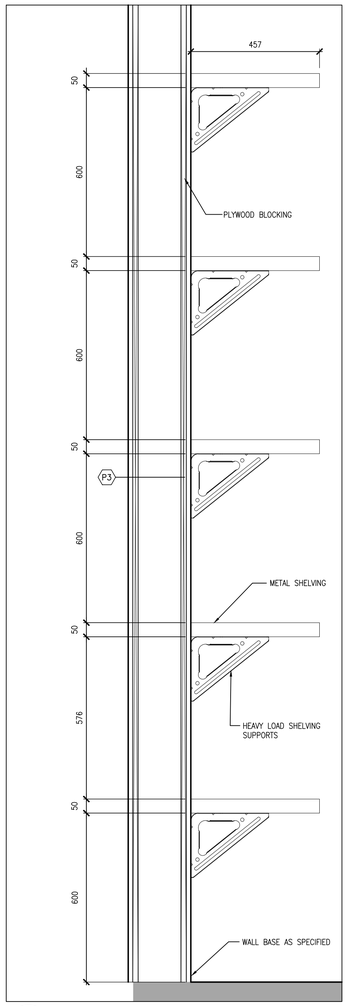

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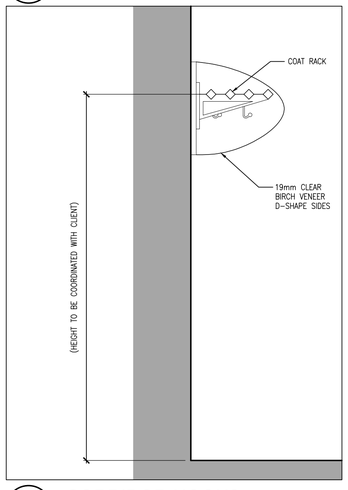

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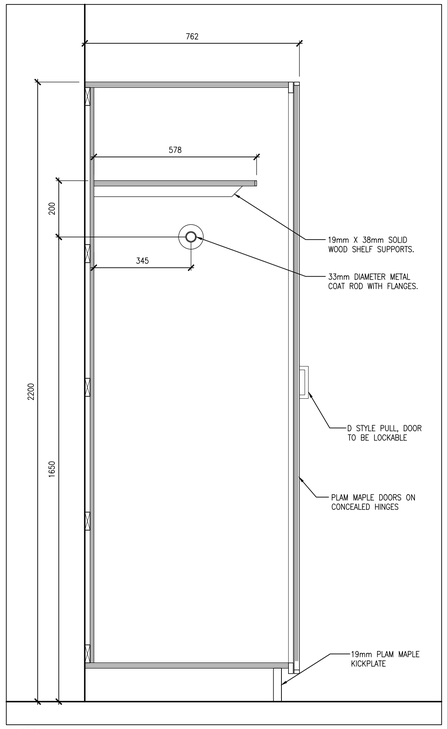

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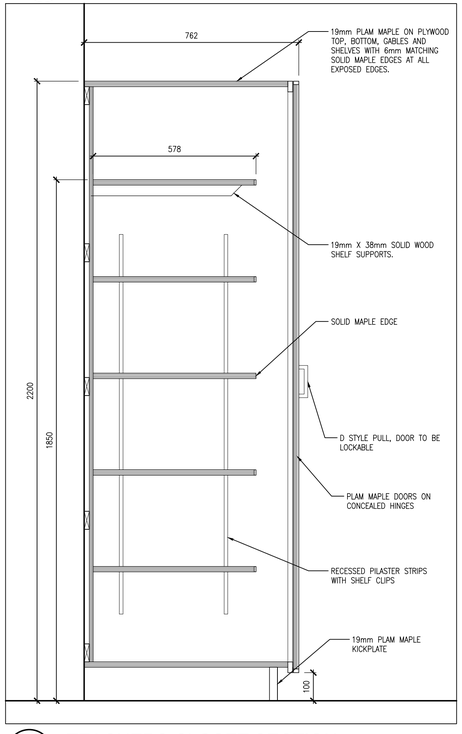

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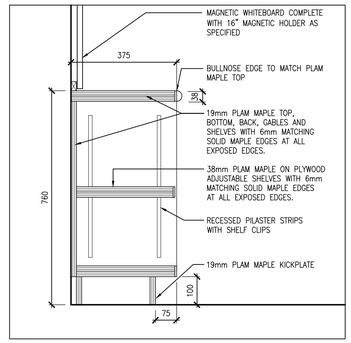

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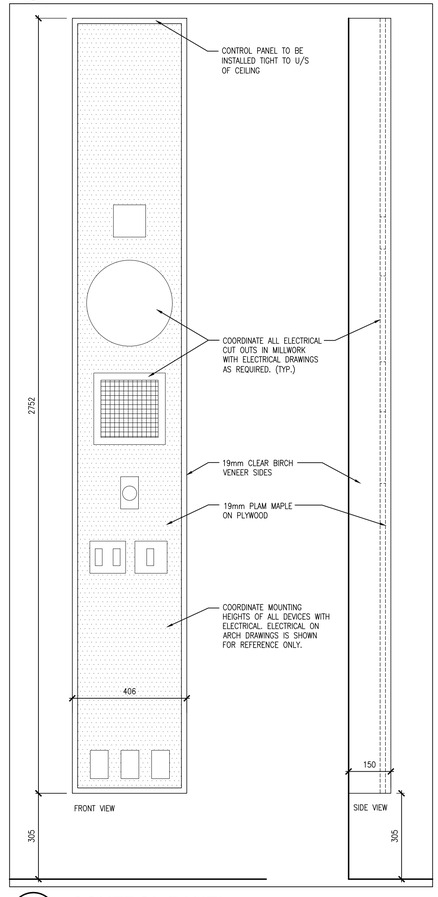

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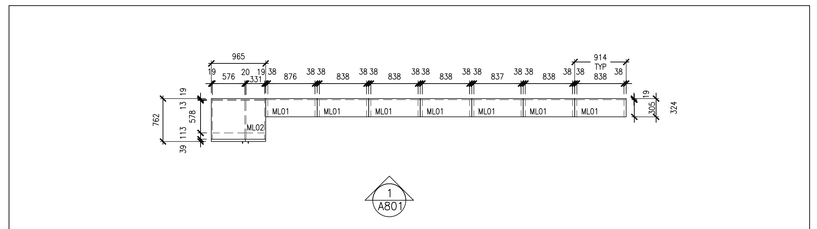

2 A801 MILLWORK PLAN
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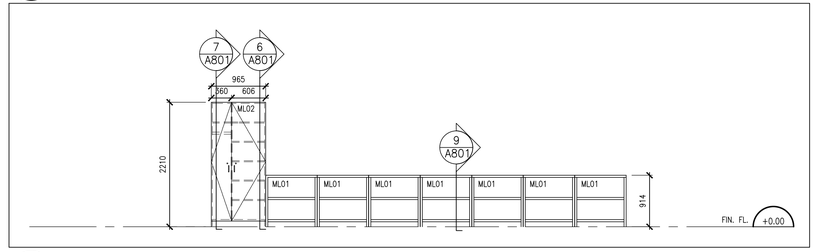

1 A801 MILLWORK ELEVATION
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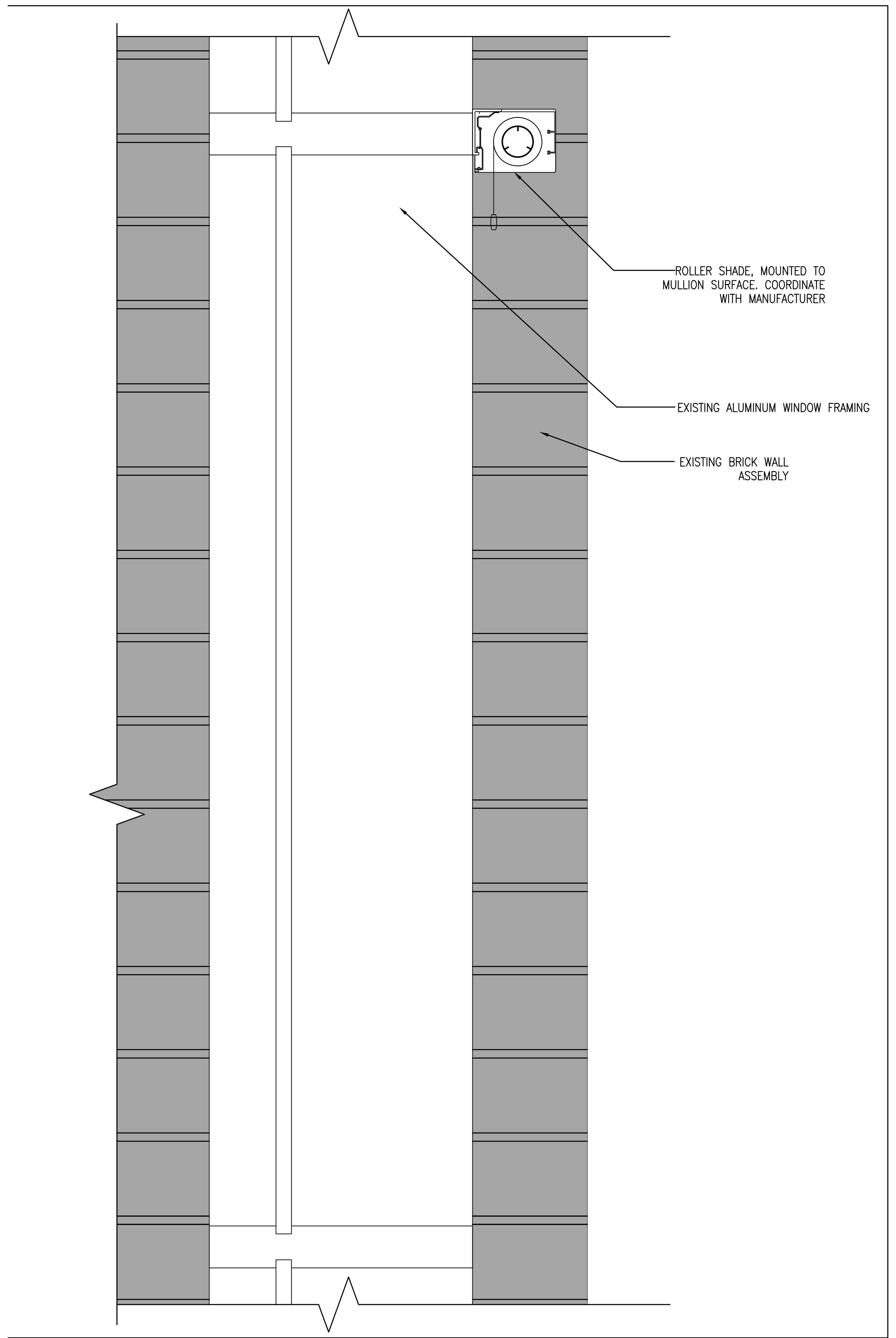
DRAWING NO: **A801**



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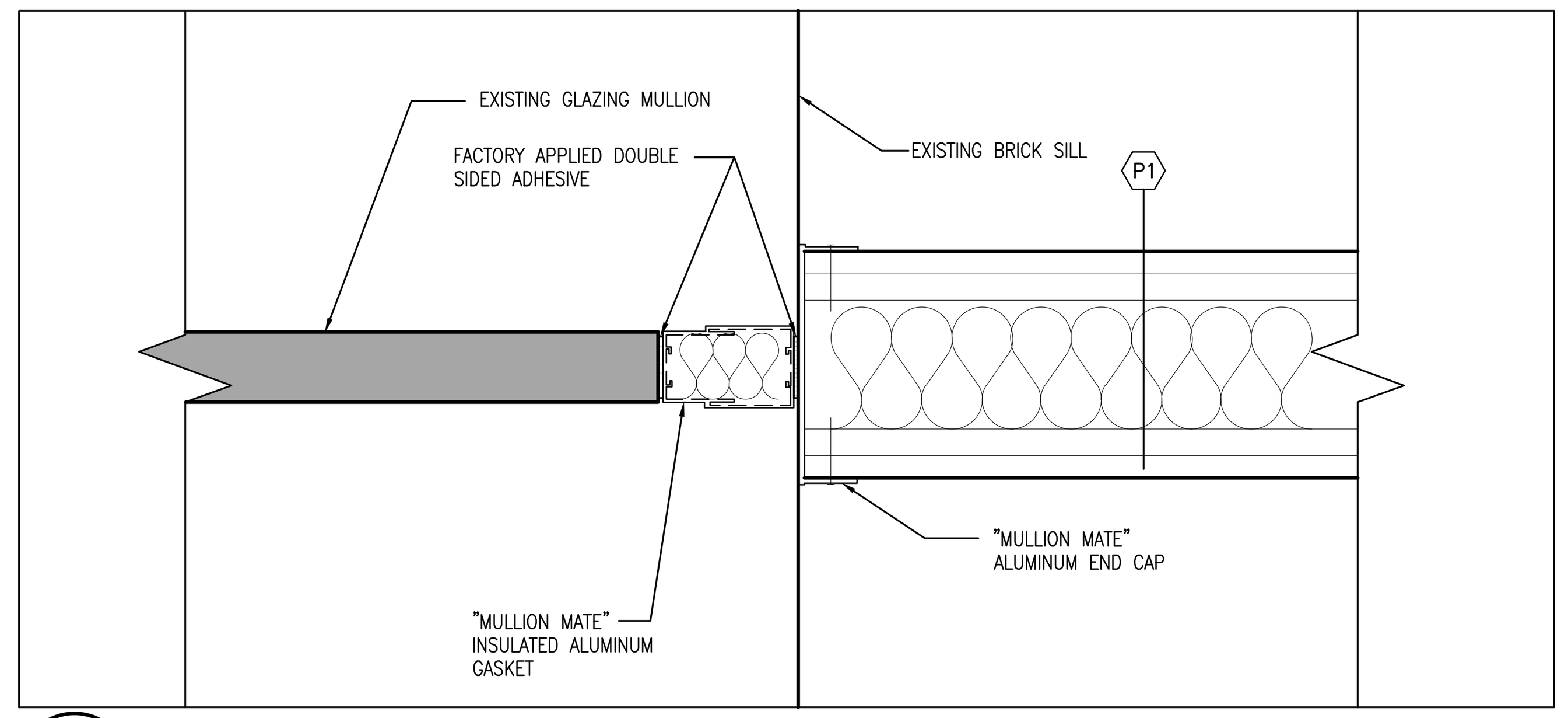

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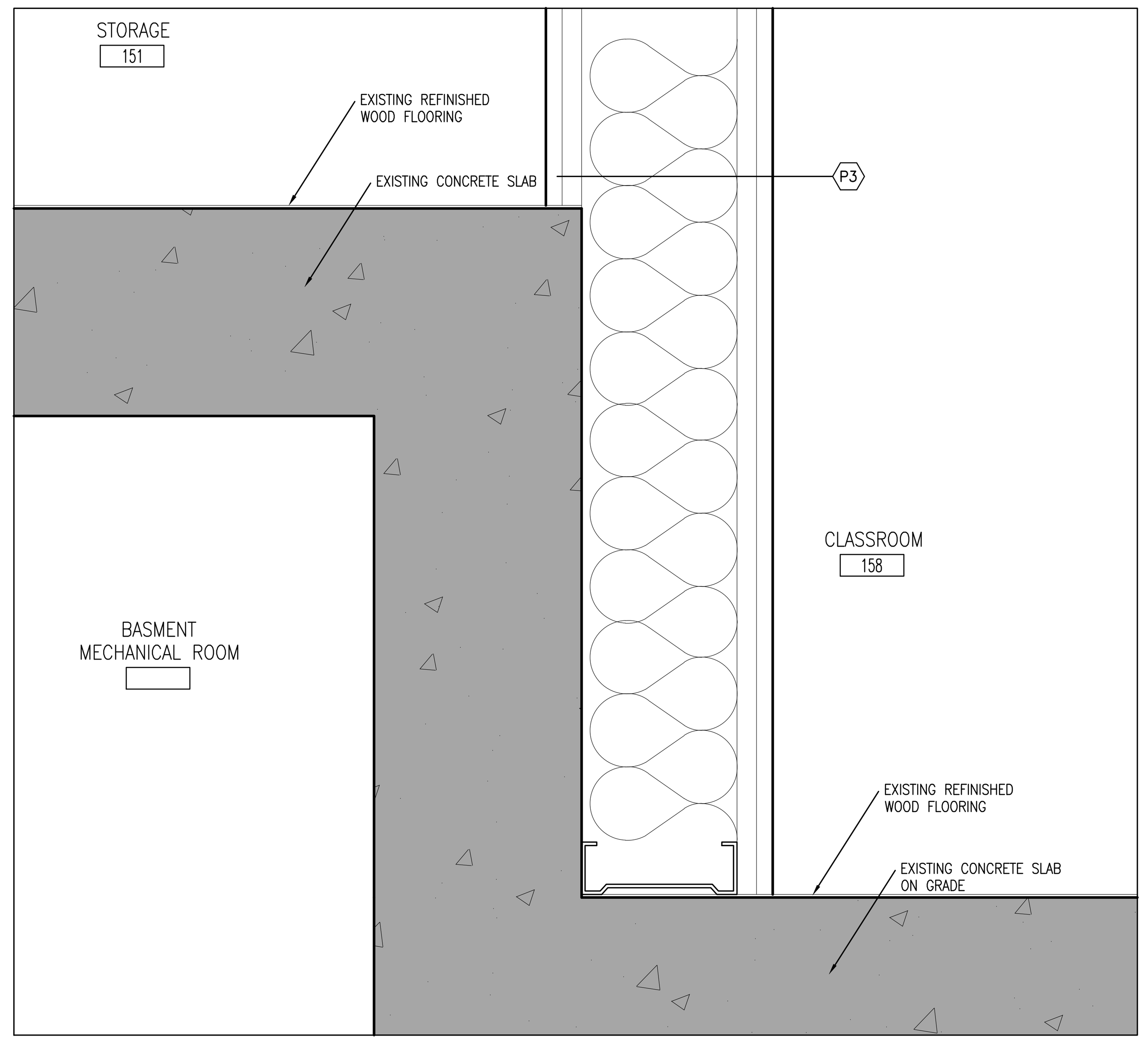

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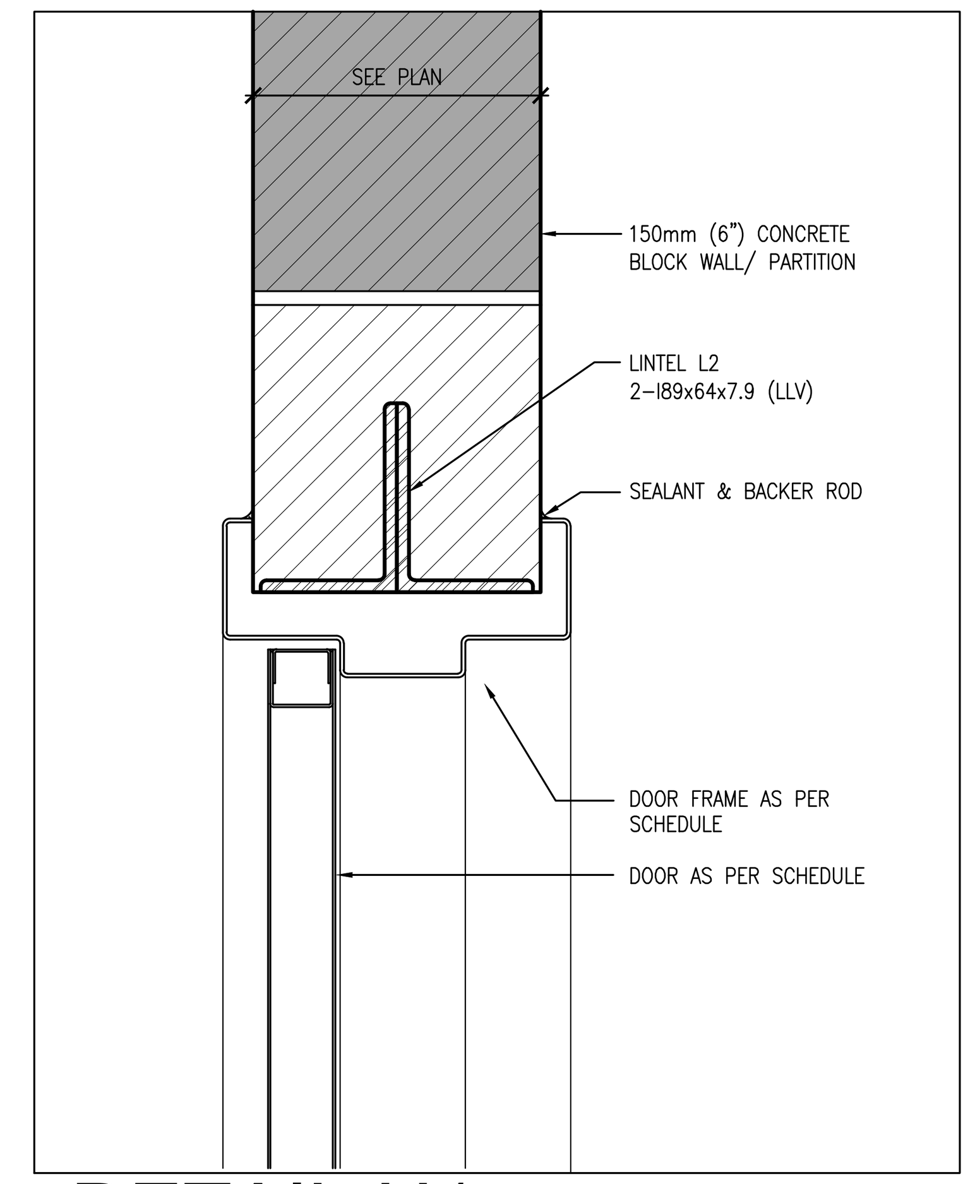
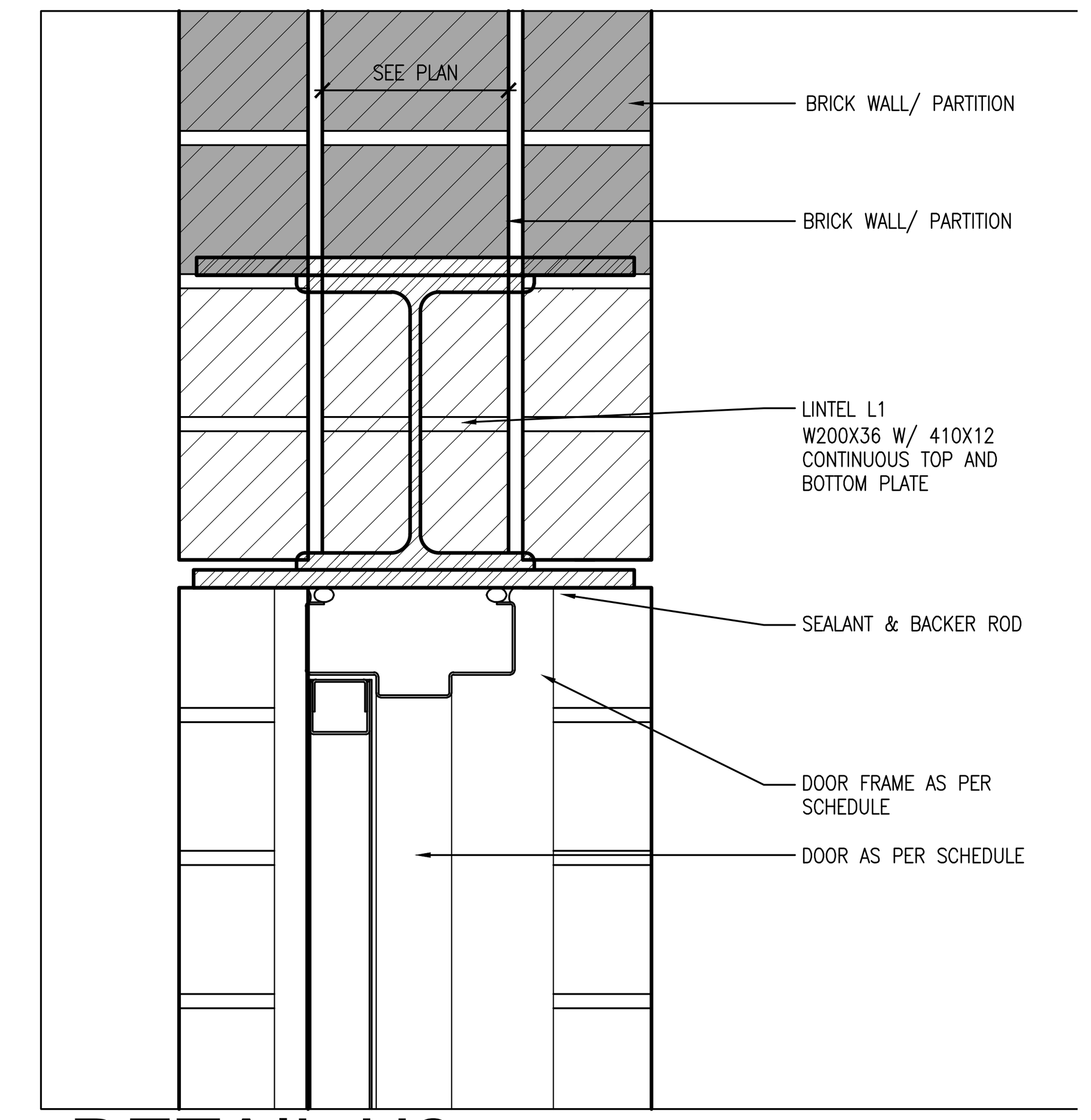


DETAIL H1



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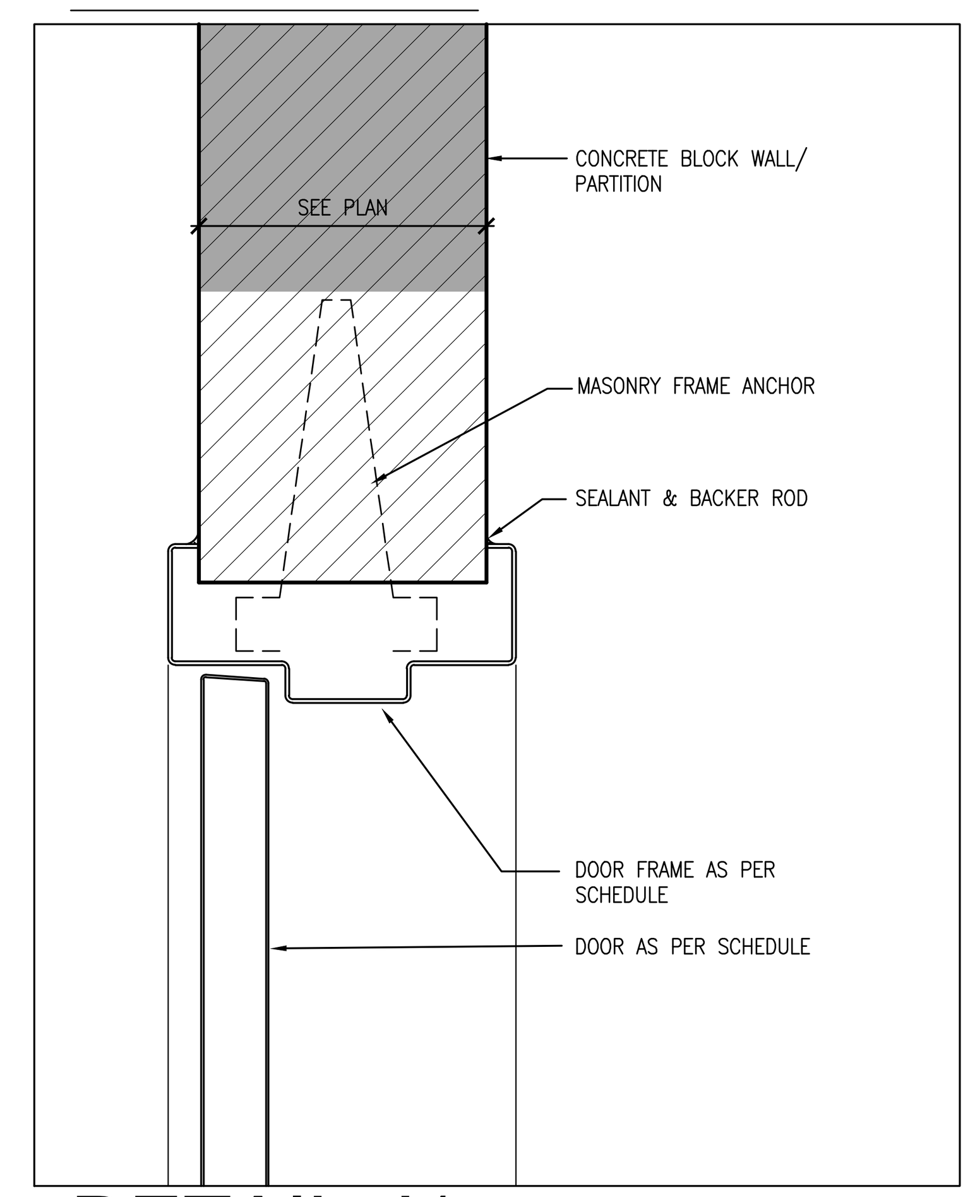

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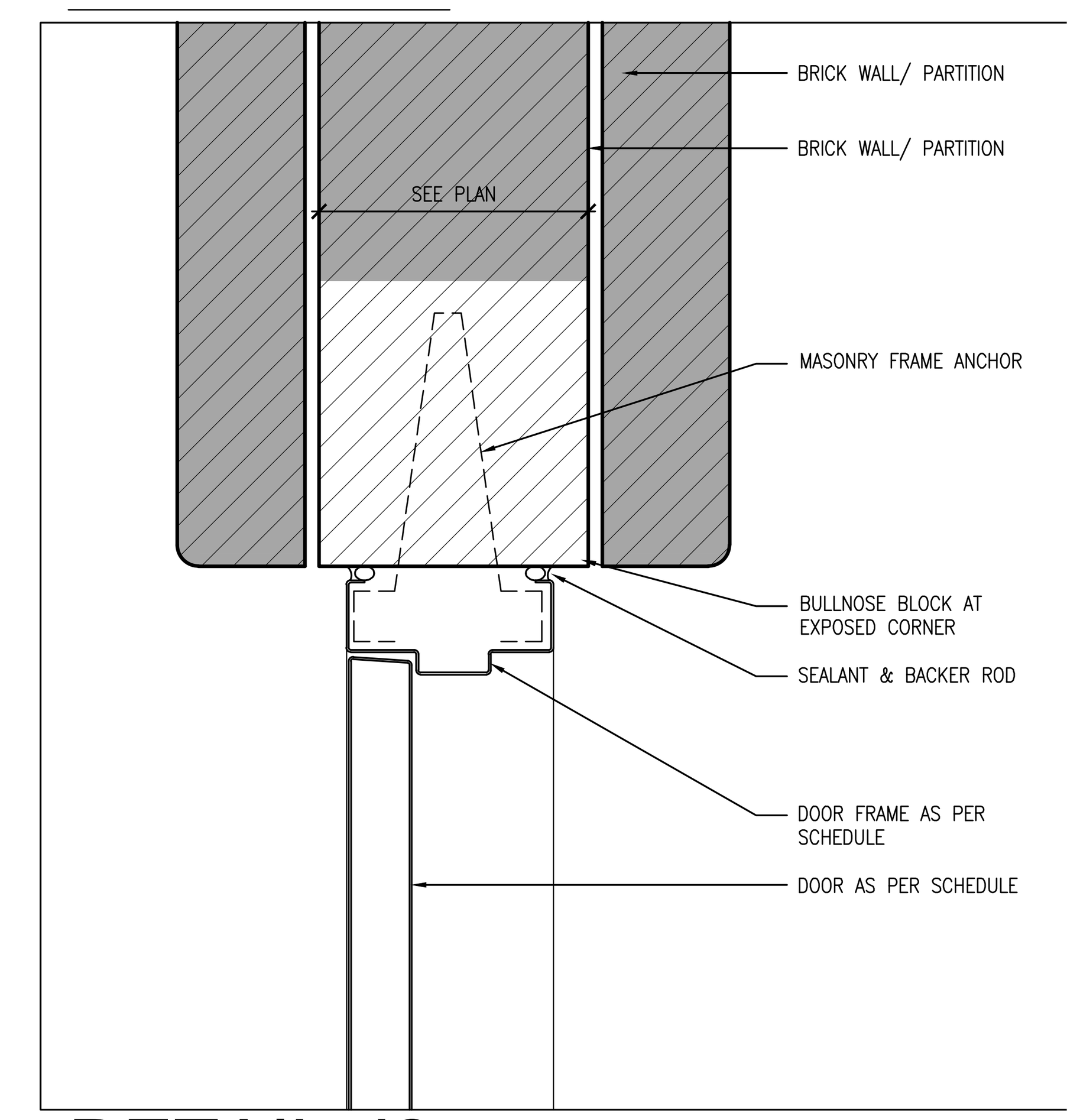
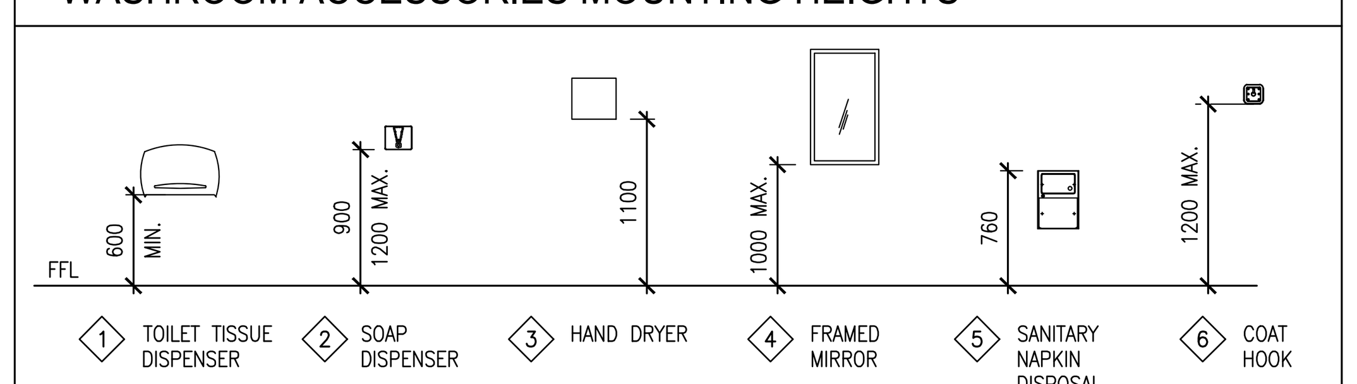


DETAIL J2

ROOM SCHEDULE

	ROOM NO.	ROOM NAME		FLOOR	BASE	WALLS NORTH	WALLS EAST	WALLS SOUTH	WALLS WEST	CEILING	CEILING HEIGHT	REV.	REMARKS
GROUND FLOOR	158	CLASSROOM	MAT.	CONC	–	GWB	BRK	GWB	–	ACT	3057	–	EXISTING WOOD FLOORS TO BE SANDED AND REFINISHED
			FIN.	EX.WD	RB	PT	–	PT	–	–	–	–	
			COL.	EX.WD	RB	PT1	–	PT1	–	–	–	–	
	158A	CLASSROOM	MAT.	CONC	–	GWB	BRK	GWB	–	ACT	3057		EXISTING WOOD FLOORS TO BE SANDED AND REFINISHED
			FIN.	EX.WD	RB	PT	–	PT	–	–	–		
			COL.	EX.WD	RB	PT1	–	PT1	–	–	–		
	151	STORAGE	MAT.	CONC	–	BRK	GWB	GWB	BRK	WD	4102		EXISTING WOOD FLOORS TO BE SANDED AND REFINISHED
			FIN.	EX.WD	RB	–	PT	PT	–	PT	–		
			COL.	EX.WD	RB	–	PT1	PT1	–	PT2	–		
	151	STORAGE VESTIBULE	MAT.	CONC	–	BRK	BRK	GWB	GWB	GWB	3048		EXISTING WOOD STAIRS TO BE SANDED AND REFINISHED
			FIN.	EX.TERR	EX.TERR	–	–	PT	PT	PT	–		
			COL.	EX.TERR	EX.TERR	–	–	PT1	PT1	PT2	–		
	157	STORAGE	MAT.	CONC	–	GWB	GWB	GWB	GWB	GWB	3048		
			FIN.	EX.TERR	EX.TERR	PT	PT	PT	PT	PT	–		
			COL.	EX.TERR	EX.TERR	PT1	PT1	PT1	PT1	PT2	–		
	179	CORRIDOR	MAT.	CONC	–	–	–	–	BRK	ACT	–		TERRAZZO PATCH AND REPAIR IS TO BE FROM GRID LINE TO GRID. PT3 TO MATCH EXISTING CORRIDOR PAINT
			FIN.	EX.TERR	EX.TERR	–	–	–	PT	–	–		
			COL.	EX.TERR	EX.TERR	–	–	–	PT3	–	–		
SECOND FL	233	RESOURCE	MAT.	CONC	–	BLK	BLK/GWB	BLK/GWB	BLK	ACT	2595		PATCH NEW ENTRANCE WITH VCT TO MATCH EXISTING
			FIN.	EX.VCT	RB	PT	PT	PT	PT	–	–		
			COL.	EX.VCT	RB	PT1	PT1	PT1	PT1	–	–		
	240B	STAFF WASHROOM	MAT.	CONC	–	GWB	BLK	BLK	GWB	GWB	2595		
			FIN.	RSF	RB	CT	PT	PT	CT	PT	–		
			COL.	RSF	RB	CT	PT1	PT1	PT1	PT2	–		
	240	CORRIDOR	MAT.	CONC	–	BLK	–	–	–	ACT	2598		TERRAZZO PATCH AND REPAIR IS TO BE FROM GRID LINE TO GRID. PT3 TO MATCH EXISTING CORRIDOR PAINT
			FIN.	EX.TERR	EX.TERR	PT	–	–	–	–	–		
			COL.	EX.TERR	EX.TERR	PT3	–	–	–	–			

WASHROOM ACCESSORIES MOUNTING HEIGHTS

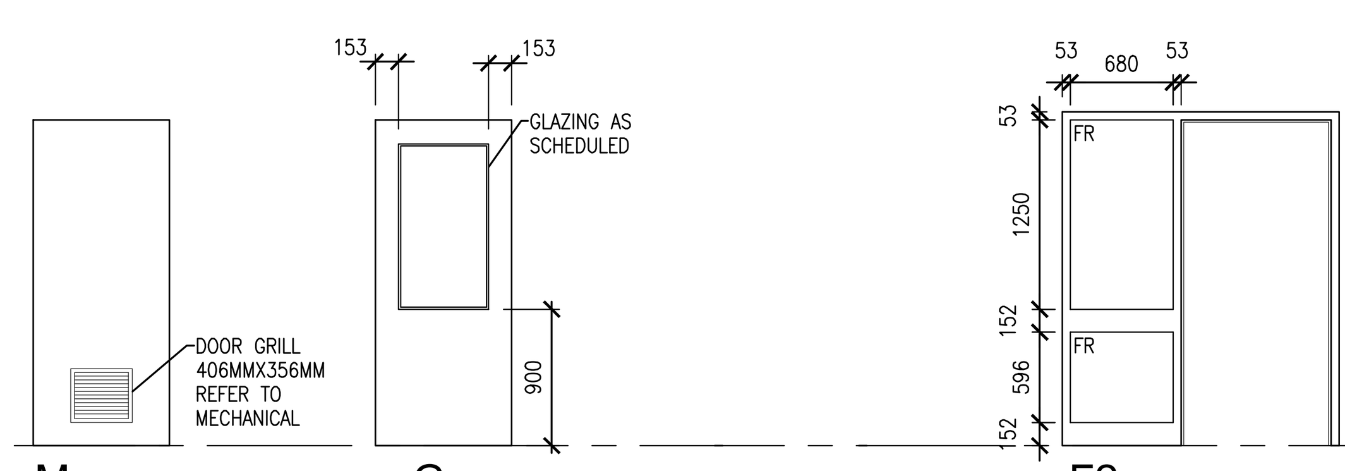


ABBREVIATION LEGEND

ACT	ACOUSTIC CEILING TILE
CT	CERAMIC TILE
EX	EXISTING
GWB	GYPSUM BOARD
HM	HOLLOW METAL
PT	PAINT
BRK	BRICK
TERR	TERRAZZO
CB	CONCRETE BLOCK
FE	FIRE EXTINGUISHER
WS	WINDOW SHADE

GENERAL NOTES

1. PREPARE DOORS AND FRAMES FOR ELECTRONIC HARDWARE WHERE INDICATED. CONDUITS SHALL BE CONCEALED IN FRAMES.
2. CONTRACTOR TO SITE VERIFY ALL DOOR SIZES PRIOR TO ORDERING.



DOOR TYPES

DOOR AND FRAME SCHEDULE REFER TO SPECIFICATIONS FOR DETAILS

ROOM NAME	DOOR NO.	DOOR SIZE AND THICKNESS	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	DOOR GLASS	FRAME TYPE	FRAME DETAIL HEAD	FRAME DETAIL JAMB	FRAME MATERIAL	FRAME FINISH	FIRE RATING	BALL BEARING HINGE	CONTINUOUS HINGE	CLOSER	DOOR STOP	THRESHOLD	KICK PLATE	DOOR OPERATOR	PANIC DEVICE	LOCKSET	LATCHSET	PRIVACY W/ INDICATOR	ELECTRIC STRIKE	SWEEP	DOOR PULL	PUSH TO LOCK	DROP BOLT			REMARKS
CLASSROOM 158	158	965x2150x45	G	WD	VENEER	FR	F2	H2	J2	PS	PT4	45MIN	●		●	●		●													
CLASSROOM 158A	158A	965x2150x45	G	WD	VENEER	FR	F2	H2	J2	PS	PT4	45MIN	●		●	●		●													
STAFF WASHROOM 240B	240B	MATCH EXISTING OPENING	M	HM	PT4	–	EX.	–	–	PS	PT4	45MIN	●		●	●		●					●								RED/GREEN OCCUPIED LOCKABLE HARDWARE TO BE USED
RESOURCE 233	233	965x2150x45	G	WD	VENEER	FR	F1	H1	J1	PS	PT4	45MIN	●		●	●		●													

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Ignite Learning

NO.	ISSUES	DATE	BY
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NO.	REVISIONS	DATE	BY

PROJECT:

R.H. CORNISH P.S INTERIOR ALTERATIONS

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DURHAM DISTRICT SCHOOL BOARD

DRAWING:

SCHEDULES AND DETAILS

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DESIGN BY: BBA	DOC CONTROL: DATE:
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FILE: 24189 A901	
PROJECT NO: 24189	DRAWING NO: A901

GENERAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, LATEST EDITION.
2. COMPLY WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT/REGULATIONS FOR CONSTRUCTION PROJECTS.
3. INSTALL HOARDING, DUST CONTROL/PROTECTION, COVERED WALKWAYS AND FENCING IN ACCORDANCE WITH ONTARIO BUILDING CODE, CANADIAN CONSTRUCTION SAFETY REQUIREMENTS, ALL MUNICIPAL BY-LAWS, STANDARDS, OCCUPATIONAL HEALTH AND SAFETY ACT AND THESE DOCUMENTS/SPECIFICATIONS.
4. SITE VERIFY ALL DIMENSIONS, LEVELS AND EXISTING CONDITIONS AND IMMEDIATELY NOTIFY THE CONSULTANT OF ANY DISCREPANCIES.
5. KEEP THE SITE THROUGHOUT THE WORK AREA IN A CLEAN AND ORDERLY CONDITION AT ALL TIMES TO THE SATISFACTION OF THE OWNER.
6. INSTALL ALL MANUFACTURED ITEMS IN STRICT ACCORDANCE WITH THE MANUFACTURERS PRINTED INSTRUCTIONS AND THE REVIEWED SHOP DRAWINGS.
7. ALL INTERIOR FINISHES SHALL MEET FLAME SPREAD AND SMOKE DEVELOPED CLASSIFICATIONS AS REQUIRED BY THE ONTARIO BUILDING CODE.
8. THE LATEST EDITION OF ALL CODES AND STANDARDS SHALL BE USED.
9. OBEY ALL FEDERAL, PROVINCIAL AND MUNICIPAL LAWS, ACTS, STATUTES, REGULATIONS, ORDINANCES AND BY-LAWS WHICH COULD, IN ANY WAY, PERTAIN TO THE WORK OUTLINED IN THE CONTRACT, OR TO ANY EMPLOYEE OF THE CONTRACTOR. SATISFY ALL STATUTORY REQUIREMENTS IMPOSED BY THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS MADE THEREUNDER, ON A CONTRACTOR, AND CONTRACTOR AND/OR EMPLOYER WITH RESPECT TO OR ARISING OUT OF THE PERFORMANCE OF THE CONTRACTORS OBLIGATIONS UNDER THIS CONTRACT.
10. NOTIFY THE OWNER SHOULD ANY HAZARDOUS CONDITION BECOME APPARENT.
11. PROVIDE SAFEGUARD AND PROTECTION AGAINST FIRE IN ACCORDANCE WITH THE CURRENT FIRE CODES AND REGULATIONS.
12. COMPLY WITH FEDERAL, PROVINCIAL AND MUNICIPAL REGULATIONS PERTAINING TO WORK TIME RESTRICTIONS, WASTE, AIR, SOLID WASTE, CHEMICAL WASTE, SANITARY WASTE, SEDIMENT AND NOISE POLLUTION.
13. TAKE SPECIAL CARE TO PREVENT ACCUMULATION OF MOISTURE ON MATERIALS AND WITHIN PACKAGING DURING DELIVERY, STORAGE AND HANDLING TO PREVENT DEVELOPMENT OF MOLD AND MILDEW ON PACKAGING AND PRODUCTS.
14. NO SMOKING IS PERMITTED ON THE PROJECT SITE.

SHOP DRAWINGS & SUBMITTALS

1. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE CONSULTANT FOR REVIEW DIGITAL COPIES OF SHOP DRAWINGS, INCLUDING FABRICATION DETAILS, PLANS, DETAILS, THICKNESS, ANCHORAGE, FINISHES, ELEVATIONS, HARDWARE, AND INSTALLATION FOR DOORS, WINDOWS, MISC. METALS, STEEL MEMBERS, CONNECTIONS, ANCHORS, DOOR HARDWARE SCHEDULE, PAINT DRAW DOWNS, FINISHED MATERIAL SAMPLES, EQUIPMENT, AND ALL OTHER PRODUCTS REQUIRED.
2. REFER TO GENERAL CONDITIONS OF THE CONTRACT.
3. PROVIDE MAINTENANCE MANUALS.

CONSTRUCTION FACILITIES

1. PROVIDE CONSTRUCTION FACILITIES IN ORDER TO EXECUTE THE WORK EXPEDITIOUSLY. REMOVE, RESTORE SITE AND SURFACES AFTER USE.
2. PROVIDE AND MAINTAIN REQUIRED ACCESS TO PROJECT SITE AND ADJACENT AREAS AS REQUIRED BY THE OWNER.
3. HEIGHT, WIDTH AND WEIGHT RESTRICTIONS MUST BE VERIFIED PRIOR TO BRINGING EQUIPMENT INTO THE WORK AREA.
4. PROVIDE SCAFFOLDING IN ACCORDANCE WITH CSA S269.2-M AND SAFETY REGULATIONS OF THE PROVINCE OF ONTARIO.
5. PROVIDE NECESSARY SCREENS, COVERS AND HOARDINGS.
6. HOISTS AND CRANES SHALL BE CERTIFIED FOR USE AND OPERATED BY QUALIFIED OPERATORS.
7. OBEY AND ENFORCE ALL PARKING AND VEHICLE RESTRICTIONS AND SPEED LIMITS.
8. PROVIDE SANITARY FACILITIES FOR WORK FORCE IN ACCORDANCE WITH GOVERNING REGULATIONS AND ORDINANCES.
9. BE RESPONSIBLE FOR SECURITY OF SITE, EQUIPMENT, TOOLS AND MATERIALS.
10. MAINTAIN THE BUILDING IN A SECURE AND WEATHERPROOF CONDITION AT ALL TIMES DURING CONSTRUCTION.

DEMOLITION/REMOVALS

1. KEEP THE SPREAD OF DUST TO OTHER AREAS AND ADJACENT PROPERTIES AND EQUIPMENT TO A MINIMUM BY USE OF WATER SAWS AND INSTALLING AND MAINTAINING DUST TARPAULINS AS DIRECTED AND APPROVED BY THE OWNER.
2. REFER TO ASBESTOS SURVEY, 13071 R.H. Cornish PS, 20221114, Limited DSUB Report AND 13253 RH Cornish PS, 20241018, Limited DSUB Report PREPARED BY PARASOL ENVIRONMENTAL INC. DATED NOVEMBER 14, 2022 AND OCTOBER 18, 2024.
3. COMPLETE ALL WORK INCLUDING ABATEMENT AND DISPOSAL OF ACM'S AND OTHER DESIGNATED SUBSTANCES IN ACCORDANCE WITH THE MUNICIPALITY OF PORT PERRY, MINISTRY OF LABOUR AND MINISTRY OF ENVIRONMENT REQUIREMENTS AND PROCEDURES.
4. SALVAGE EXISTING BRICK AND EXISTING WOOD FLOORING FOR REUSE.
5. REMOVE EXISTING CEILINGS FOR EXTENT SHOWN AND AS REQUIRED. HAND OVER REDUNDANT HVAC DIFFUSERS AND GRILLES TO OWNER FOR REUSE. PROVIDE NEW CEILING TRIM AND GRID SYSTEM TO MATCH EXISTING WHERE REQUIRED TO MAKE GOOD EXISTING CEILINGS.

MASONRY

1. DO MASONRY WORK IN ACCORDANCE WITH CAN/CSA A371 EXCEPT WHERE SPECIFIED ELSEWHERE
2. PROVIDE TEMPORARY BRACING OF MASONRY WORK UNTIL PERMANENT LATERAL SUPPORT IS IN PLACE.
3. MATERIALS SHALL BE KEPT CLEAN AND DRY.
4. CEMENTITIOUS MATERIALS AND AGGREGATES SHALL BE STORED IN ACCORDANCE WITH REQUIREMENTS OF CAN/CSA A23.1
5. KEEP MASONRY DRY USING SECURE WATERPROOF NON-STAINING COVERINGS THAT EXTEND OVER WALLS AND DOWN SIDES SUFFICIENT TO PROTECT WALLS FROM SNOW, RAIN AND DIRT UNTIL MASONRY WORK IS COMPLETE AND PROTECTED BY FLASHINGS OR OTHER PERMANENT CONSTRUCTION.
6. CONCRETE BLOCK: MODULAR, TO CSA A165.1 STANDARD CONCRETE MASONRY UNITS.
7. PLAIN MASONRY UNITS: H/15/A/M CONCRETE.
8. SPECIAL UNITS, CORNER BLOCKS, FILLERS, BOND BEAMS AND LINTEL BLOCKS AS MAY BE REQUIRED.
9. ALL EXPOSED BLOCK CORNERS SHALL BE BULLNOSE.
10. MASONRY REINFORCING: BLOCK-LOK "BLOCK-TRUS" HEAVY DUTY HOT DIP GALVANIZED WITH 4.7mm SIDE AND 3.9mm CROSS RODS IN WIDTHS 50mm LESS THAN WALL THICKNESS. INSTALL MASONRY REINFORCING IN BOTTOM 2 BED JOINTS AND AT 400mm C/C VERTICALLY IN REMAINDER OF WALL. USE FABRICATED CORNERS AND TEE SECTIONS FOR CONTINUOUS REINFORCEMENT AT CORNERS AND INTERSECTING WALLS. DO NOT PASS REINFORCING THROUGH MASONRY CONTROL JOINTS.
11. MORTAR MATERIALS, AGGREGATE, HYDRATED LIME TO CONFORM TO CSA A179; CEMENT: NORMAL PORTLAND TO CAN-3-A5-93 OR MASONRY CEMENT TO CAN3-A8-93.
12. CEMENT: NORMAL PORTLAND CEMENT TO CAN--A5 OR CAN 3-A8.
13. WATER SHALL BE CLEAN, POTABLE AND FREE OF DELETERIOUS AMOUNTS OF ACID, ALKALIS OR ORGANIC MATERIALS.
14. TYPE 'S' MORTAR SHALL BE USED FOR ALL MASONRY WORK.
15. MORTAR COLOUR SHALL BE NATURAL GREY.
16. CONCRETE FILL TO BE 20 MPa IN ACCORDANCE WITH CAN3-A23. 1-94.

STRUCTURAL STEEL

1. ALL MATERIAL SHALL CONFORM TO CSA G40.21 GRADE 300W. HOLLOW STRUCTURAL STEEL MEMBERS SHALL BE GRADE 350W.
2. FABRICATION, ERECTION AND WORKMANSHIP SHALL CONFORM TO CSA S16.1.
3. ALL WELDING SHALL CONFORM TO CSA W59 AND SHALL BE PERFORMED BY A WELDER QUALIFIED UNDER CSA W47.
4. ALL STEEL MEMBERS SHALL BE PAINTED WITH ONE SHOP APPLIED COAT OF GREY PRIMER. SPOT PRIME ALL WELDED AREAS.
5. REMOVE PAINT FILM FROM ALL STEEL SURFACES TO BE WELDED. SPOT PRIME AS REQUIRED.
6. ALL CONNECTIONS SHALL BE WELDED, USING E480XX ELECTRODES OR BOLTED USING ASTM A325 HIGH STRENGTH BOLTS. USE ONLY BOLTED CONNECTIONS WHERE SHOWN ON THE DRAWINGS. NO WELDING TO PLANT STEEL WILL BE ALLOWED.
7. THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE CONSULTANT FOR REVIEW ERECTION DIAGRAMS AND SHOP DRAWINGS, STEEL MEMBERS, CONNECTIONS, ANCHORS, ELEVATIONS, DETAILS, AND FINISHES.
8. ALL SHOP DRAWINGS MUST BE REVIEWED AND STAMPED BY A PROFESSIONAL ENGINEER IN THE PROVINCE OF ONTARIO.
9. EPOXY ANCHORS: HILTI HVA EPOXY ADHESIVE ANCHORS 303/316 STAINLESS STEEL UNLESS NOTED OTHERWISE.

METAL STUD FRAMING

1. ALL MATERIALS AND WORKMANSHIP TO CSA A82.31
2. NON BEARING STEEL STUD FRAMING: ASTM C645, ROLL FORMED GALVANIZED SHEET STEEL, MINIMUM 0.036" THICKNESS.
3. TRACKS: ASTM C645
4. HARDWARE: SELF TAPPING SHEET METAL SCREWS.

ROUGH CARPENTRY

1. STRUCTURAL LUMBER TO CSA 086.
2. ALL MATERIAL SHALL BE IDENTIFIED BY GRADE STAMP OF AN ASSOCIATION OR APPROVED GRADING AGENCY, STRUCTURAL LUMBER SHALL BE GRADE MARKED TO CSA 0141.
3. FRAMING LUMBER: SPF 2
4. STUDS: SPF STUD GRADE
5. PANEL MATERIALS TO CSA 0121, TIGHT FACED, SELECT GRADE, THICKNESS AS NOTED, SQUARE EDGE.
6. INTERIOR PANELS: EXTERIOR GRADE D. FIR PLYWOOD G1S
7. FASTENINGS FOR EXTERIOR WORK: NAILS, BOLTS STEEL STRAPS AND WELDED CONNECTIONS TO BE HOT DIP GALVANIZED AND CONFORM TO CSA 086.
8.
9. ANCHOR BOLTS MINIMUM 10mm DIAMETER COMPLETE WITH NUTS AND OVERSIZED WASHERS.
10. TIMBER TO TIMBER CONNECTIONS IN SAME PLANE SHALL BE MADE WITH APPROVED JOIST HANGERS OR FRAMING ANCHORS.
11. PROVIDE LATERAL RESTRAINT AT ALL BEARING LOCATIONS AND ONE ROW OF BRIDGING AT ALL MIDSPANS UNLESS NOTED OTHERWISE.

FINISH CARPENTRY

1. ALL MILLWORK SHALL BE IN ACCORDANCE WITH AWMAC STANDARD DETAILS AND SPECIFICATIONS.
2. SOFTWOOD LUMBER: CAN/CSA O141. UNLESS SPECIFIED OTHERWISE, S4S, MOISTURE CONTENT 19% OR LESS. NLGA STANDARD GRADING RULES FOR CANADIAN LUMBER. AWMAC CUSTOM PREMIUM GRADE, MOISTURE CONTENT AS SPECIFIED.
3. HARDWOOD LUMBER: TO NHLA REQUIREMENTS, MOISTURE CONTENT OF 6% MAXIMUM, MAPLE SPECIES, AWMA CUSTOM GRADE. BENCH SLATS: CLEAR GRADE MAPLE.
4. DOUGLAS FIR PLYWOOD (DFP): TO CSA O121-M89 STANDARD CONSTRUCTION. FORESTRY STEWARDSHIP COUNCIL (FSC) CERTIFIED. UREA-FORMALDEHYDE FREE.
5. CANADIAN SOFTWOOD PLYWOOD (CSP): TO CSA O151-04, STANDARD CONSTRUCTION. FORESTRY STEWARDSHIP COUNCIL (FSC) CERTIFIED. UREA-FORMALDEHYDE FREE.
6. HARDWOOD VENEERED PLYWOOD: TO CSA O115, OF THICKNESS INDICATED, TYPE II SELECT GRADE MAPLE, WHERE TRANSPARENT FINISH IS REQUIRED AND SOLID GRADE WHERE PAINT FINISH IS REQUIRED. GOOD TWO SIDES FOR WORK WITH TWO SIDES EXPOSED TO VIEW; GOOD ONE SIDE FOR WORK WITH ONE SIDE EXPOSED TO VIEW. USE PARTICLE BOARD CORE WITH TYPE I BOND.
7. PARTICLEBOARD: TO ANSI A208.1. FORESTRY STEWARDSHIP COUNCIL (FSC) CERTIFIED. UREA-FORMALDEHYDE FREE.
8. MEDIUM DENSITY FIBREBOARD (MDF): TO ANSI A208.2-02, DENSITY 640-800 KG/M3. FORESTRY STEWARDSHIP COUNCIL (FSC) CERTIFIED. UREA-FORMALDEHYDE FREE.

2.1 PLASTIC LAMINATE

9. PLASTIC LAMINATE FACING SHEET: ANSI/NEMA LD 3-2005 HIGH-PRESSURE DECORATIVE LAMINATES (HPDL) PF-S AND GP-S; BACKING SHEET: BK GRADE BY MANUFACTURER OF FACING SHEET. CORE: CAN3-0188.1M, GRADE R. LAMINATING ADHESIVE: CAN3-0112 SERIES M. CORE SEALER: CLEAR WATER RESISTANT SYNTHETIC RESIN SEALER. COLOURS, PATTERN, GLOSS AND TEXTURE WILL BE SELECTED BY CONSULTANT FROM FULL RANGE OF PRODUCTS BY ONE OF THE FOLLOWING:
   - 9.1. FORMICA,
   - 9.2. ARBORITE,
   - 9.3. NEVAMAR
   - 9.4. WILSONART.
10. UP TO THREE (3) COLOURS AND PATTERNS WILL BE SELECTED BY THE CONSULTANT.
11. ROUGH HARDWARE: BOLTS, LAG SCREWS, ANCHORS, NAILS AND EXPANSION SHIELDS REQUIRED TO SECURE THIS PORTION OF WORK. ROUGH HARDWARE HOT DIP GALVANIZED CONFORMING TO LATEST EDITION OF CAN/CSA-G164. ALL FASTENERS USED IN DAMP OR WET AREAS TO BE SUITABLE FOR USE IN CORROSIVE ENVIRONMENT. USE HOT DIPPED GALVANIZED OR OTHER MATERIAL APPROVED BY THE CONSULTANT.
12. NAILS AND STAPLES: TO CSA B111, GALVANIZED TO CAN/CSA G164.
13. WOOD SCREWS: TO CSA B 35.4 PLAIN TYPE AND SIZE TO SUIT APPLICATION.
14. STAINLESS STEEL HARDWARE: TYPE 316 STAINLESS STEEL FOR EXPOSED OR WET LOCATIONS, TAMPER PROOF.
15. SPLINES: WOOD OR METAL TO SUIT APPLICATION.
16. ADHESIVE: RECOMMENDED BY MANUFACTURER, WATERPROOF TYPE, MAXIMUM VOC LIMIT 30 G/L SCAQMD RULE 1168 - ADHESIVES AND SEALANTS APPLICATIONS.

FIREPROOFING

1. SUBMIT FOR REVIEW, PROPOSALS FOR SPRAY FIREPROOFING FOR NEW AND EXISTING FLOOR ASSEMBLIES TO PROVIDE A MINIMUM 45 MINUTE FIRE RESISTANCE RATING.
2. PROPOSALS SHALL BE BASED ON U.L.C. APPROVED ASSEMBLIES OR RELATED DESIGNS USING ACCEPTED FIREPROOFING DESIGN CRITERIA.
3. SPRAY FIREPROOFING SHALL CONFORM TO U.L.C.S101 AND CAN4 S102.
4. MATERIAL SHALL BE ULC LISTED AND LABELLED CEMENTITIOUS FIREPROOFING.
5. MATERIAL SHALL NOT CRACK OR DELAMINATE WHEN SUBSTRATE TO WHICH IT IS APPLIED IS SUBJECT TO A DEFLECTION OF 1/360 OF THE SPAN.
6. PRIME SUBSTRATE AND APPLY FIREPROOFING IN THICKNESS REQUIRED TO ACHIEVE THE REQUIRED FIRE RESISTANCE RATING, IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.

SEALANTS

1. ALL SEALANT MATERIAL SHALL BE ASBESTOS FREE.
2. SUBMIT WHMIS DATA SHEETS FOR REVIEW AND APPROVAL.
3. SEAL ALL JOINTS BETWEEN DISIMILAR MATERIALS AND SURFACES.
4. SEALANT SHALL BE TREMCO MONO OR EQUIVALENT.
5. BACKER ROD: SEALTIGHT ETHAFOAM BY WR MEADOWS OR EQUIVALENT. SIZED 30-50% LARGER THAN JOINT.
6. PRIMERS AS RECOMMENDED BY SEALANT MANUFACTURER.
7. CLEAN AND PRIME SUBSTRATES AND INSTALL BACKER ROD AND SEALANT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. SEALANTS SHALL COMPY WITH THE FOLLOWING STANDARDS;
   - 8.1. ASTM C834-14 STANDARD SPECIFICATION FOR LATEX SEALANTS
   - 8.2. ASTM C920-14A STANDARD SPECIFICATION FOR ELASTOMERIC JOINT SEALANTS
   - 8.3. ASTM C1184-14 STANDARD SPECIFICATION FOR STRUCTURAL SILICONE SEALANTS
   - 8.4. ASTM C1193-13 STANDARD GUIDE FOR USE OF JOINT SEALANTS
   - 8.5. ASTM C1311-14 STANDARD SPECIFICATION FOR SOLVENT RELEASE SEALANTS

HOLLOW METAL DOORS AND FRAMES

1. DOORS: 18 GAUGE, WIPE COAT GALVANIZED STEEL,
2. FRAMES: 16 GAUGE PRESSED STEEL, WIPE COAT GALVANIZED, FORMED TO PROFILES SHOWN
3. FRAME ANCHORS: TO SUIT, MIN 18 GAUGE GALV STEEL C/W HARDWARE. PROVIDE SIX (6) JAMB ANCHORS AND TWO (2) BASE ANCHORS FOR EACH FRAME
4. PRIMER: TO CGSB 1-GP-181
5. WELDING: TO CSA W59
6. BLANK, MORTICE, REINFORCE, DRILL AND TAP DOORS AND FRAMES TO RECEIVE TEMPLATED HARDWARE AS REQUIRED
7. FIRE LABELS: METAL, RIVETTED
8. FIT INTERIOR FRAMES WITH RUBBER BUMPERS, GLYN JOHNSON GJ64
9. STEEL FIRE RATED DOORS AND FRAMES: LABELLED AND LISTED BY AN ORGANIZATION ACCREDITED BY STANDARDS COUNCIL OF CANADA IN CONFORMANCE WITH CAN4-S104 NFPA 252 FOR RATINGS SPECIFIED OR INDICATED.
10. PROVIDE FIRE LABELED FRAMES FOR OPENINGS REQUIRING FIRE PROTECTION RATINGS. TEST PRODUCTS IN CONFORMANCE WITH CAN4-S104, ASTM E152 OR NFPA 252 AND LISTED BY NATIONALLY RECOGNIZED AGENCY HAVING FACTORY INSPECTION SERVICES
11. PROVIDE FIRE LABELED DOORS FOR THOSE OPENINGS REQUIRING FIRE PROTECTION RATINGS, AS SCHEDULED. TEST SUCH PRODUCTS IN CONFORMANCE WITH CAN4-S104 ASTM E 152 NFPA 252 AND LIST BY NATIONALLY RECOGNIZED AGENCY HAVING FACTORY INSPECTION SERVICE AND CONSTRUCT AS DETAILED IN FOLLOW-UP SERVICE PROCEDURES/FACTORY INSPECTION MANUALS ISSUED BY LISTING AGENCY TO INDIVIDUAL MANUFACTURERS

GLASS AND GLAZING

1. FIRE RATED GLASS:
   - 1.1. MATERIAL: FIRE PROTECTIVE SAFETY LAMINATED GLASS CERAMIC WITH HOSE STREAM, FIRE RATING AS INDICATED.
   - 1.2. CONFORMING TO ULC 104 & ULC 106
   - 1.3. PRODUCT AND MANUFACTURER:
     - 1.3.1. PYRAN PLATINUM L AS MANUFACTURED BY SCHOTT TECHNICAL GLASS SOLUTIONS
     - 1.3.2. KERALITE SELECT L AS MANUFACTURED BY VETROTECH SAINT-GOBAIN NORTH AMERICA INC
     - 1.3.3. FIRELITE PLUS PREMIUM AS MANUFACTURED BY NIPPON GLASS.
   - 1.4. DESIGN REQUIREMENTS:
     - 1.4.1. THICKNESS: 8 MM THICK.
     - 1.4.2. WEIGHT: 19.5 KG/M2
     - 1.4.3. SOUND TRANSMISSION RATING: 36 STC.
     - 1.4.4. APPEARANCE: NEUTRAL COLOURATION FREE OF AMBER TINTS.
     - 1.4.5. FIRE RATING: FIRE RATED FROM 20-180 MINUTES WITH HOSE STREAM.
     - 1.4.6. IMPACT SAFETY RATING: MEET CPSC 16 CFR 1201 CATEGORY I & II.
     - 1.4.7. CRADLE TO CRADLE CERTIFICATION: MUST BE C2C SILVER CERTIFIED.
     - 1.4.8. POLISHED FINISH.
     - 1.4.9. ANZI Z97 IMPACT SAFETY FILMED AND LAMINATED
     - 1.4.10. ENVIRONMENTAL IMPACT: MANUFACTURING PROCESS AND FINAL COMPOSITION FREE FROM TOXINS OR HAZARDOUS HEAVY METALS.
   - 1.5. EACH PIECE OF FIRE-RATED GLAZING MATERIAL SHALL BE LABELED WITH A PERMANENT LOGO INCLUDING NAME OF PRODUCT, MANUFACTURER, TESTING LABORATORY AND FIRE RATING.
   - 1.6. ACCESSORIES
     - 1.6.1. GLAZING ACCESSORIES: MANUFACTURER RECOMMENDED FIRE RATED GLAZING ACCESSORIES AS FOLLOWS:
     - 1.6.2. GLAZING TAPE: CLOSED CELL POLYVINYL CHLORIDE (PVC) FOAM, PEMKO MANUFACTURING COMPANY, FG3000S90 OR UNIFAX CORPORATION FIBERFRAX ALUMINO-SILICATE FIBER GLAZING TAPE.
     - 1.6.3. SETTING BLOCKS: CALCIUM SILICATE OR HARDWOOD.
     - 1.6.4. CLEANERS, PRIMERS, SEALERS: TYPE RECOMMENDED BY MANUFACTURER OF GLASS AND GASKETS.

FINISH HARDWARE

1. REFER TO ATTACHED PORT PERRY H.S - GYM RENOVATION HARDWARE SCEDULE-1

GYPSUM BOARD

1. COMPLY WITH REQUIREMENTS OF CSA A82.30 AND CSA A82.31
2. PLAIN GYPSUM BOARD; CSA A82.27 STANDARD, FOR NON-RATED APPLICATIONS. 1219mm WIDE X MAXIMUM PRACTICAL LENGTH, TAPERED EDGES, THICKNESS AS INDICATED.
3. LIGHTWEIGHT STEEL FRAMING FOR EXTERIOR WALLS TO ASTM A446.
4. NON-LOAD-BEARING CHANNEL STUD FRAMING TO ASTM C645, ROLL FORMED GALVANIZED SHEET STEEL.
5. SCREWS: CASE HARDENED SELF DRILLING NO. 6 GAUGE DRYWALL SCREWS TO CSA A82.31
6. JOINT TAPE: 50mm WIDE PERFORATED PAPER.
7. JOINT FILLER AND TOPPING: CASEIN, VINYL OR ACRYLIC BASE.
8. CASING BEADS; 20 GAUGE SHEET STEEL G20 FINISH, ASTM A525, PERFORATED,
9. ACOUSTIC INSULATION: FIBREGLAS OR MINERAL WOOL.

CERAMIC TILE

1. INSTALLATION OF CERAMIC TILE SHALL CONFORM TO INSTALLATION MANUAL 200, "CERAMIC TILE", BY THE TERRAZZO, TILE AND MARBLE ASSOCIATION OF CANADA (TTMAC) AND THE MANUFACTURER'S DIRECTIONS.
2. SUBMIT FULL RANGE OF MANUFACTURERS STANDARD SHAPES AND COLOURS FOR SELECTION BY THE CONSULTANT.
3. DELIVER, STORE AND HANDLE MATERIALS IN ACCORDANCE WITH MANUFACTURERS DIRECTIONS.
4. CERAMIC WALL TILE: DALTILE (AMERICAN OLEAN) COLOR STORY WALL 4 X 16, UP TO 4 COLOURS TO BE SELECTED FROM FULL RANGE OF OFFERING. GLOSSY.
5. SETTING COMPOUND: MAPEI KERAPOXY OR FLEXTILE FLEX-EPOXY 100.
6. GROUT: MAPEI KERAPOXY GROUT OR FLEXTILE FLEX-EPOXY 200.
7. MORTAR BED: 1 PART PORTLAND CEMENT, 4 PARTS SAND AND 1 PART WATER, WITH MINIMUM 1/10 PART LATEX ADHESIVE.
8. LAYOUT WALL WITH 1/16" JOINTS.
9. INSTALL WALL TILES IN PATTERN AS DETAILED OR DIRECTED BY THE CONSULTANT.
10. CLEAN WALL TILES.

ACOUSTICAL CEILING

1. ACOUSTIC UNITS FOR SUSPENDED CEILING SYSTEM: TO CAN/CGSB-92.1-M89 AND ASTM E 1264-14
2. ACOUSTIC PANELS: ARMSTRONG CORTEGA SQUARE LAY-IN CLASS A WET FORMED MINERAL FIBRE WITH FLAME SPREAD RATING OF 25 OR LESS AND NRC RANGE OF 0.55, WHITE NON DIRECTIONAL FISSURED PATTERN, 610 X 1219 X 16mm.
3. SUBMIT DUPLICATE 300 X 300mm SAMPLES OF EACH TYPE OF ACOUSTICAL UNITS.
4. SUSPENSION SYSTEM: TO ASTM A641. DONN DX, 15/16 WIDE, BAKED WHITE ENAMEL INTERLOCKING TEE GRID.
5. COMPONENTS: ALL MAIN BEAMS AND CROSS TEES SHALL BE COMMERCIAL QUALITY HOT-DIPPED GALVANIZED STEEL AS PER ASTM C635/C635M-07. MAIN BEAMS AND CROSS TEES SHALL BE DOUBLE-WEB STEEL CONSTRUCTION WITH TYPE EXPOSED FLANGE DESIGN. EXPOSED SURFACES CHEMICALLY CLEANSED, CAPPING PRE-FINISHED GALVANIZED STEEL IN BAKED POLYESTER PAINT. MAIN BEAMS AND CROSS TEES SHALL HAVE ROTARY STITCHING.
6. STRUCTURAL CLASSIFICATION: INTERMEDIATE DUTY SYSTEM, ASTM C635/C635M-07.
7. ATTACHMENT DEVICES: SIZE FOR FIVE TIMES DESIGN LOAD INDICATED IN ASTM C635, TABLE 1, DIRECT HUNG UNLESS OTHERWISE INDICATED.
8. WIRE FOR HANGERS AND TIES: ASTM A641, CLASS 1 ZINC COATING, SOFT ANNEALED, WITH A YIELD STRESS LOAD OF AT LEAST TIME THREE DESIGN LOAD, BUT NOT LESS THAN 12 GAUGE.
9. SOUND BLANKETS: 65mm SOUND ATTENUATION BATTS FIBREGLAS CANADA
10. CO-ORDINATE CEILING WORK TO ACCOMMODATE COMPONENTS OF OTHER SECTIONS TO BE BUILT INTO ACOUSTICAL CEILING INCLUDING MECHANICAL AND ELECTRICAL WORK.

WOOD FLOORING

1. REMOVE, CUT PATCH AND REPAIR EXISTING WOOD FLOORING AS REQUIRED. USE EXISTING PRODUCT REMOVED FROM OTHER AREAS TO PATCH THE FLOORING AS REQUIRED AND AS FOLLOWS.
2. SPECIES: KILN DRIED HARD MAPLE GRADE TO CANADIAN LUMBERMENS' ASSOCIATION (CLA) GRADING RULES FOR CANADIAN HARDWOOD FLOORING.
3. PATTERN: TO MATCH EXISTING.
4. SIZES OF UNITS: TO MATCH EXISTING.
5. MOISTURE CONTENT: 6-9%.
6. THRESHOLD: OF SAME SPECIES AND GRADE AS WOOD FLOORING, 2" WIDE X FULL WIDTH OF OPENING.
7. FINISH: CLEAR URETHANE TO CAN/CGSB-1.175.
8. ADHESIVE: TO CAN/CGSB-71.27, RESILIENT ELASTOMERIC, COMPATIBLE WITH SUBSTRATE AND FLOORING

RESILIENT FLOORING AND BASE

1. RESILIENT SHEET FLOORING: RSF:
   SHAW CONTRACT OR EQUIVALENT
   VITALITY TONES - PEP UP 00112 5MM THICK
2. RESILIENT BASE: 100mm HIGH THERMOPLASTIC RUBBER, NOT LESS THAN 3.0mm GAUGE WITH PREFORMED INTERNAL AND EXTERNAL CORNERS. BASE AT RESILIENT TILE SHALL HAVE STANDARD TOE.
   - .1 JOHNSONITE DURACOVE DC RUBBER WALL BASE OR APPROVE EQUAL.
   - .2 UP TO 2 COLOURS SHALL BE SELECTED BY CONSULTANT FROM MANUFACTURERS FULL RANGE OF COLOURS.
3. PRIMERS, ADHESIVES AND CAULKING: NON-FLAMMABLE, SOLVENT FREE, WATERPROOF, RECOMMENDED BY FLOORING MANUFACTURER FOR SPECIFIC MATERIAL ON APPLICABLE SUBSTRATE, ABOVE GRADE.
4. SUB-FLOOR FILLER AND LEVELER SHALL BE WHITE, PREMIXED LATEX COMPATIBLE WITH FLOORING PRODUCTS AND ADHESIVE AS RECOMMENDED BY FLOORING MANUFACTURER FOR SPECIFIC FLOOR TYPE.
5. SEALER: TO CAN/CGSB25.20, TYPE 2-WATER BASED TYPE RECOMMENDED BY FLOORING MANUFACTURER.
6. PRIOR TO INSTALLATION OF THIS SECTION, CAREFULLY INSPECT THE INSTALLED WORK OF ALL OTHER TRADES AND VERIFY THAT ALL SUCH WORK IS COMPLETE TO THE POINT WHERE THIS INSTALLATION MAY PROPERLY COMMENCE.
7. ENSURE CONCRETE FLOORS ARE DRY, BY USING TEST METHODS RECOMMENDED BY TILE MANUFACTURER.
8. REMOVE SUB-FLOOR RIDGES AND BUMPS. FILL LOW SPOTS, CRACKS, JOINTS, HOLES AND OTHER DEFECTS WITH SUB-FLOOR FILLER.
9. REMOVE ALL SUBSTANCE AND MATERIALS AFFECTING ADHESIVE BOND. VACUUM CLEAN FLOORS.
10. CLEAN FLOOR AND APPLY FILLER; TROWEL AND FLOAT TO LEAVE SMOOTH, FLAT HARD SURFACE. PROHIBIT TRAFFIC UNTIL FILLER IS CURED AND DRY.
11. PRIME OR SEAL SUBSTRATE TO FLOORING AND ADHESIVE MANUFACTURERS INSTRUCTIONS.
12. PROVIDE HIGH VENTILATION RATE, WITH MAXIMUM OUTSIDE AIR, DURING INSTALLATION, AND FOR 48 HOURS AFTER INSTALLATION. WHENEVER POSSIBLE VENTILATE DIRECTLY TO THE OUTSIDE. DO NOT ALLOW CONTAMINATED AIR TO RECIRCULATE THROUGH THE BUILDING VENTILATION SYSTEM.
13. INSTALL TRANSITION STRIPS AT ALL UNPROTECTED EDGES AND CHANGES IN MATERIALS UNLESS OTHERWISE NOTED.
14. INSTALL RESILIENT BASE WITH MINIMUM NUMBER OF JOINTS.
15. REMOVE EXCESS ADHESIVE FROM RESILIENT FLOOR COVERINGS, BASE AND ADJACENT FINISHED SURFACES AS THE WORK PROGRESSES.
16. CLEAN, SEAL FLOOR AND BASE SURFACES TO MANUFACTURERS INSTRUCTIONS.
17. PROTECT NEW FLOORS UNTIL TIME OF FINAL INSPECTIONS.

PAINT

1. ALL PAINTING SHALL BE IN ACCORDANCE WITH THE MASTER PAINTERS INSTITUTE (MPI) ARCHITECTURAL SPECIFICATION MANUAL.
2. PAINT MATERIALS AND MANUFACTURERS LISTED IN LATEST EDITION OF MPI APPROVED PRODUCTS LIST (APL) ARE ACCEPTABLE FOR USE ON THIS PROJECT.
3. PROVIDE PAINT PRODUCTS MEETING MPI "ENVIRONMENTALLY FRIENDLY" E2 OR E3 RATINGS BASED ON VOC (EPA METHOD 24) CONTENT LEVELS.
4. STORE ALL PAINT MATERIALS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINISTRY OF LABOUR.
5. CLEAN AND PREPARE ALL SURFACES PRIOR TO PAINTING IN ACCORDANCE WITH MPI AND PAINT MANUFACTURERS INSTRUCTIONS.
6. TEST ALL SURFACES FOR MOISTURE. DO NOT PAINT WHEN MOISTURE CONTENT EXCEEDS 12%.
7. PAINT ALL NEW MATERIALS AND SURFACES
8. PAINT SCHEDULE: COLOUR WILL BE SELECTED BY THE CONSULTANT FROM FULL RANGE OF MANUFACTURERS COLOUR CHARTS
9. STANDARD OF ACCEPTANCE:
   - 9.1. WALLS: NO DEFECTS VISIBLE FROM A DISTANCE OF 1000 MM AT 90 DEGREES TO SURFACE.
   - 9.2. FINAL COAT TO EXHIBIT UNIFORMITY OF COLOUR AND UNIFORMITY OF SHEEN ACROSS FULL SURFACE AREA.
10. DELIVER TO EXTRA MATERIALS FROM SAME PRODUCTION RUN AS PRODUCTS INSTALLED. PACKAGE PRODUCTS WITH PROTECTIVE COVERING AND IDENTIFY WITH DESCRIPTIVE LABELS.
    - 10.1. QUANTITY: PROVIDE ONE FOUR LITRE CAN OF EACH TYPE AND COLOUR OF PRIMER STAIN FINISH COATING. IDENTIFY COLOUR AND PAINT TYPE IN RELATION TO ESTABLISHED COLOUR SCHEDULE AND FINISH SYSTEM.
11. INTERIOR PAINTING SYSTEMS
    - 11.1. METAL FABRICATIONS: INT 5.3A LATEX G5 SEMI-GLOSS FINISH
    - 11.2. GALVANIZED METAL (INTERIOR DOORS, FRAMES): INT 5.3A LATEX G5 SEMI-GLOSS FINISH
    - 11.3. WOOD CLEAR POLYURETHANE FINISH: INT 6.3K POLYURETHANE VARNISH G6 GLOSS FINISH.
    - 11.4. GYPSUM BOARD WALLS : INT 9.2A LATEX G3 EGGSHELL FINISH OVER LATEX SEALER.
    - 11.5. GYPSUM BOARD: CEILINGS AND BULKHEADS: INT 9.2A LATEX G2 VELVET FINISH OVER LATEX SEALER.
12. ALL OTHER SURFACES NOT NOTED ABOVE: HIGH PERFORMANCE FINISH SUITABLE FOR COMMERCIAL AND INSTITUTIONAL ENVIRONMENT AND IN ACCORDANCE WITH MPI PAINTING MANUAL.

WASHROOM ACCESSORIES

1. INSTALL WASHROOM ACCESSORIES IN ACCORDANCE WITH THE ONTARIO BUILDING CODE REQUIREMENTS FOR BARRIER FREE ACCESS, AND CAN/CSA B651-M.
2. ALL WASHROOM ACCESSORIES SHALL HAVE STAINLESS STEEL FINISH AND CONCEALED TAMPERPROOF FASTENINGS UNLESS NOTED OTHERWISE.
3. TPD: TOILET TISSUE DISPENSER: SUPPLIED BY OWNER, INSTALLED BY CONTRACTOR.
4. SD: SOAP DISPENSER: LIQUID WALL MOUNTED SOAP DISPENSER.SUPPLIED BY OWNER, INSTALLED BY CONTRACTOR.
5. HAND DRYER: WORLD DRYER SLIMDRI AUTOMATIC TOUCHLESS HAND DRYER SURFACE MOUNTED ADA COMPLIANT WHITE ALUMINUM, 120-240V.
6. FRAMED MIRROR: BOBRICK B-1658 1830.
7. SND: SANITARY NAPKIN DISPOSAL: SUPPLIED BY OWNER, INSTALLED BY CONTRACTOR
8. COLLAPSIBLE COAT HOOK: BOBRICK B-983

WINDOW SHADES

1. ROLLER SHADE SYSTEM SHALL BE MULLION SURFACE MOUNTED ABOVE GLAZING FRAME MANUALLY OPERATED SOLAR SHADES.
2. BASIS OF DESIGN PRODUCTS: LEGRAND SHADING SYSTEMS SOLARFECTIVE TELESHADE (TS)
3. HARDWARE - MANUALLY CONTROLLED SHADES. CHAIN OPERATED WITH INFINITE POSITIONING. LEFT OR RIGHT HAND OPERATION AND BANDING AS APPLICABLE TO PROJECT CONDITIONS.
   - 3.1. DRIVE ASSEMBLY: MUST ALLOW FINGERTIP CONTROL AND INCLUDE A BUILT-IN SHOCK ABSORBER SYSTEM TO PREVENT CHAIN BREAKAGE UNDER NORMAL OPERATING CONDITIONS. FACTORY SET FOR SIZE AND TRAVEL OF SHADES. CAPABLE OF BEING FIELD ADJUSTED FROM THE EXTERIOR OF THE SHADE UNIT WITHOUT HAVING TO DISASSEMBLE THE HARDWARE.
   - 3.2. DRIVE CHAIN: NO. 10 STAINLESS STEEL BEAD CHAIN FORMED IN A CONTINUOUS LOOP. THE CHAIN SHALL HAVE PASSED A 40KG LOAD TEST. CHAIN MAY BE POSITIONED AT EITHER, OR BOTH ENDS OF THE SHADE WITHOUT DISASSEMBLY OF THE SHADE UNIT.
   - 3.3. CHILD SAFE CHAIN RETAINERS.
   - 3.4. COUNTER BALANCING MECHANISM DESIGNED TO OFFSET THE WEIGHT OF THE SHADE AND GIVE FINGERTIP CONTROL.
4. ASSEMBLY
   - 4.1. FULLY FACTORY ASSEMBLED SHADE UNITS CONSISTING OF 1 SHADE BRACKETS, SHADE TUBE, EXTRUDED ALUMINUM FASCIA, HEMBAR AND FABRIC AS SPECIFIED. FACTORY MODIFY HOUSINGS WHERE NECESSARY TO BYPASS COLUMNS AND OTHER OBSTRUCTIONS.
   - 4.2. END BRACKETS: 2 PIECE MOLDED ABS CONSTRUCTION WITH NYLON DRIVE SPROCKET. BRACKET COLOUR COORDINATED WITH FASCIA COLOUR.
   - 4.3. SHADE TUBE; MINIMUM 1.52 MM THICK EXTRUDED ALUMINUM WITH 3 EQUALLY SPACED CONTINUOUS STIFFENING FINS, NON-SAG DESIGN, MAXIMUM DEFLECTION UNDER FULL LOAD OF FABRIC L/700.
   - 4.4. FASCIA: ONE PIECE EXTRUDED ALUMINUM 1.7 MM THICKNESS COMPLETE WITH THREE CONTINUOUS SCREW FLUTES. ANODIZED. COLOUR AS SELECTED BY THE CONSULTANT. EXTRUDED ALUMINUM SNAP LOCK FASCIA WHICH CONTINUOUSLY FITS ON THE END AND CENTER BRACKETS AS A ONE-PIECE SECTION.
   - 4.5. HEMBAR: EXTRUDED ALUMINUM WITH MATCHING PLASTIC END FINIALS.
5. SHADE MOUNTING SYSTEM
   - 5.1. EXTRUDED ALUMINUM BRACKET DESIGNED TO ACCEPT PREASSEMBLED SHADE SYSTEM. BRACKETS SHALL BE USED TO FACILITATE THE ALIGNMENT WITH SHADE OPENING.
   - 5.2. MODULAR CONSTRUCTION: SHADES MUST BE REMOVABLE AS A COMPLETE MODULAR UNIT WITHOUT ANY COMPONENT DISASSEMBLY REQUIRED.
6. ALUMINUM FINISH: EXPOSED ALUMINUM: BAKED ENAMEL, COLOUR TO BE SELECTED BY THE CONSULTANT. UNEXPOSED ALUMINUM: MILL FINISH.
7. SHADE FABRIC
   - 7.1. SUN CONTROL FABRIC: DIMENSIONALLY STABLE SHADE FABRIC.
   - 7.2. ACCEPTABLE PRODUCTS: 3% OPEN AREA:
   - 7.3. PHIFER SHEERWEAVE, STYLE 4600 OR APPROVED EQUIVALENT.
   - 7.4. COLOUR: TO BE SELECTED BY THE CONSULTANT FROM FULL RANGE OF MANUFACTURER'S STANDARDS.
   - 7.5. PERFORMANCE: FABRIC SHALL HANG FLAT, WITHOUT BUCKLING OR DISTORTION. EDGE, WHERE TRIMMED, SHALL HANG TRUE AND STRAIGHT, WITHOUT SHIFTING SIDEWAYS MORE THAN 3 MM IN EITHER DIRECTION DUE TO WARP DISTORTION OR WEAVE DESIGN.
   - 7.6. FABRIC SHALL BE CERTIFIED BY AN INDEPENDENT LABORATORY TO PASS THE SMALL SCALE VERTICAL BURN REQUIREMENTS TEST ULC S109 AND NFPA 701.
8. FINISHED ASSEMBLIES SHALL BE SQUARE, TRUE TO SIZE AND FREE FROM DISTORTION, TWIST OR OTHER DEFECTS THAT COULD AFFECT THEIR STRENGTH, OPERATION OR APPEARANCE.
9. FACTORY APPLIED FINISH SHALL BE UNIFORM, SMOOTH AND WITHOUT BLEMISHES.
10. THE FABRIC SHALL BE COLOUR FAST, RETAIN ITS SHAPE, NOT BE AFFECTED BY MOISTURE OR HEAT, AND SHALL BE NON-FLAMMABLE. CUT FABRIC TO ELIMINATE GLARE AND REFLECTION FROM SHINING SURFACES WHILE MAINTAINING EXTERIOR VIEW. THE TOP OF THE FABRIC SHALL BE RETAINED IN THE RECESSED SPLINE OF THE SHADE ROLLER AND THE BOTTOM OF THE FABRIC SHALL BE RETAINED BY THE HEM BAR.

WINDOW FILM

1. BASES OF 3M GLASS SUN CONTROL FINISHES, OR APPROVED ALTERNATIVE
2. DESIGN PATTERN: TO MATCH VITRO PACIFICA GLASS
   - 2.1. VISIBLE LIGHT TRANSMITTED: 42%
   - 2.2. VISIBLE LIGHT REFLECTION (EXTERIOR): 5%
   - 2.3. VISIBLE LIGHT REFLECTION (INTERIOR): 5%
3. PROVIDE (2) SAMPLES FOR ARCHITECT REVIEW
4. FOLLOW MANUFACTURER RECOMMENDATION FOR INSTALLATION

MAGNETIC WHITE BOARD

1. BASES OF DESIGN: ASI GROUP CANADA INC. 980111408-29
2. MAGNETIC WITH ALUMINUM FRAME
3. INCLUDE MAGNETIC ACCESSORY CUP
4. GLOSSY WHITE FINISH

BULLETIN BOARD

1. BASES OF DESIGN: ASI GROUP CANADA INC. 980401406
2. TAN CORK 1/4" HARDBOARD
3. ALUMINUM FRAME

METAL SHELVING

1. BASES OF DESIGN: ULINE WALL-MOUNT WIRE SHELVING OR APPROVED ALTERNATE
2. OPEN WIRE DESIGN
3. INCLUDE MOUNTING HARDWARE
4. CHROME FINISH TO RESIST RUST AND CORROSION
5. 60"X18"X14"

DO NOT SCALE THE DRAWINGS.

CHECK AND VERIFY ALL DIMENSIONS AT THE SITE.

DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY THE CONSULTANT.

DDSB
Ignite Learning

NO.	ISSUES	DATE	BY
1	ISSUED FOR REVIEW	NOV. 27 2024	BBA
2	ISSUED FOR CLIENT 30% REVIEW	DEC. 09 2024	BBA
3	ISSUED FOR CLIENT 60% REVIEW	DEC. 24 2024	BBA
4	ISSUED FOR PERMIT & TENDER	MAR. 04 2025	BBA

NO.	REVISIONS	DATE	BY

PROJECT:

R.H. CORNISH P.S INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO
DURHAM DISTRICT SCHOOL BOARD

DRAWING:

SPECIFICATIONS

BBA

BARRY BRYAN ASSOCIATES
Architects
Engineers
Project Managers

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ONTARIO ASSOCIATION OF ARCHITECTS
CASSANDRA ERIN CAUTIUS
LICENCE
8891

DESIGN BY: BBA	DOC CONTROL: DATE:
DRAWN BY: JM	% COMPLETE:
CHECKED BY: --	INITIAL:
DATE: OCT. 2024	
SCALE: AS NOTED	
FILE: 24189 A902	

PROJECT NO: **24189**

DRAWING NO: **A902**

GENERAL

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST EDITION OF ALL RELEVANT CODES AND STANDARDS.
2. CONFORM TO OWNER'S GENERAL SPECIFICATIONS INCLUDING ALL SAFETY REQUIREMENTS.
3. SITE VERIFY ALL DIMENSIONS AND LEVELS.
4. KEEP THE SITE THROUGHOUT THE WORK AREA IN A CLEAN AND ORDERLY CONDITION AT ALL TIMES TO THE SATISFACTION OF THE OWNER.
5. ALL STRUCTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH OTHER CONSULTANTS DRAWINGS.

DEMOLITION NOTES

1. PROVIDE PROTECTION AS REQUIRED TO PREVENT DAMAGE TO THE EXISTING STRUCTURE AND/OR ADJACENT EQUIPMENT. PROTECT ALL EXISTING FINISHES, FRAMES AND PROPERTY.
2. SAW CUT, REMOVE AND DISPOSE OF EXISTING DEMOLISHED MATERIALS OFF-SITE, AS REQUIRED TO COMPLETE THE WORK. REMOVAL OF ALL ACM IS BY OTHERS.
3. KEEP THE WORK AND STAGING AREAS CLEAN AND ORDERLY AT ALL TIMES AND FREE FROM RUBBLE AND DEBRIS.
4. NOTIFY CONSULTANT OF ANY LOAD BEARING MEMBERS OR ASSEMBLIES DISCOVERED OR IDENTIFIED DURING WORK WITH EXCESSIVE DETERIORATION BEYOND WHAT IS NOT INDICATED ON THE DRAWINGS. DO NOT PROCEED WITH REMOVAL WITHOUT PRIOR REVIEW BY THE CONSULTING STRUCTURAL ENGINEER.
5. ALL BUILDING MATERIALS TO BE REMOVED FROM THE BUILDING SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS SPECIFIED OTHERWISE AND SHALL BE REMOVED FROM THE SITE.
6. COVER ALL LOADED TRUCKS LEAVING THE DEMOLITION SITE.
7. CARRY OUT SAFETY MEASURES AS PER THE CONSTRUCTION SAFETY ASSOCIATION OF ONTARIO ACT AND REGULATIONS FOR DEMOLITION.
8. THE ONTARIO OCCUPATIONAL HEALTH AND SAFETY MANUAL APPLIES TO THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE TO PERFORM ALL WORK IN ACCORDANCE WITH O.H.S.A.
9. CONTRACTOR SHALL KEEP CLEAR AND NOT INHIBIT THE USE OF BUILDING FIRE ROUTE AND ALL HYDRANTS DURING THE ENTIRE DEMOLITION WORK.
10. REPORT ANY DOUBTFUL UNFORESEEN AND/OR UNEXPECTED SITE CONDITIONS TO THE ENGINEER PRIOR TO PROCEEDING.

STRUCTURAL STEEL

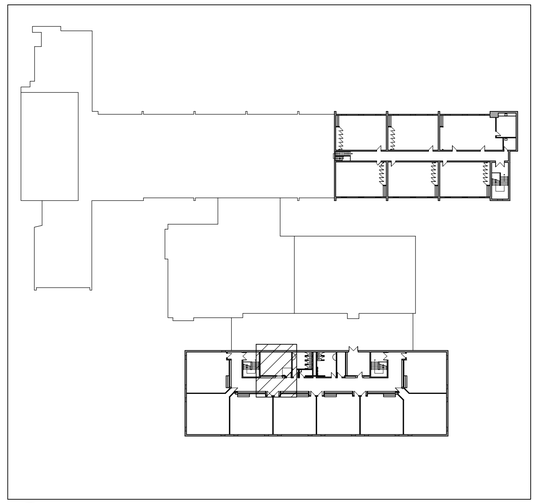
1. ALL STRUCTURAL STEEL HSS AND W SECTIONS TO BE G40.21M-350W CLASS C. ALL OTHERS TO BE G40.21M-300W.
2. DESIGN FORCES INDICATED ON DRAWINGS FOR STRUCTURAL STEEL WORK ARE UN-FACTORED FORCES UNLESS NOTED OTHERWISE.
3. ALL CONNECTIONS TO BE DESIGNED BY FABRICATOR UNLESS NOTED OTHERWISE. ALL BEAM CONNECTIONS TO BE STANDARD SHEAR CONNECTIONS IN COMPLIANCE WITH CISC, UNLESS NOTED OTHERWISE.
4. PROVIDE SHOP DRAWINGS OF COMPONENTS AND CONNECTIONS DESIGNED BY THE FABRICATOR'S ENGINEER. DRAWINGS SHALL BE SIGNED AND SEALED BY THAT ENGINEER.
5. FABRICATOR'S ENGINEER MUST BE LICENSED IN THE PROVINCE OF ONTARIO.
6. ALL ERECTION BOLTS SHALL BE ASTM GRADE A325 MINIMUM, AND SHALL BE DESIGNED BY STEEL FABRICATOR'S ENGINEER FOR TRANSFER OF ALL LOADS.
7. BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF TWO BOLTS IN EACH CONNECTION PIECE AND DESIGNED AS BEARING CONNECTIONS U.N.O.
8. FABRICATOR'S ENGINEER SHALL DESIGN TOP PLATES AND THEIR CONNECTIONS TO FULLY TRANSFER VERTICAL AND HORIZONTAL LOADS AS WELL AS MOMENTS WHEN REQUIRED PER CISC STANDARDS.
9. FABRICATION, ERECTION AND WORKMANSHIP SHALL CONFORM TO CSA S16.1.
10. ALL WELDING SHALL CONFORM TO CSA W59 AND SHALL BE PERFORMED BY A WELDER QUALIFIED UNDER CSA W47.
11. ALL STRUCTURAL STEEL SHALL BE PAINTED WITH ONE SHOP APPLIED COAT OF PRIMER. SPOT PRIME ALL WELDED AREAS.
12. REMOVE PAINT FILM FROM ALL STEEL SURFACES TO BE WELDED. SPOT PRIME AS REQUIRED.
13. ALL WELDED CONNECTIONS SHALL BE WITH E49XX ELECTRODES.
14. DO NOT CUT OR CORE ANY OPENINGS IN ANY STRUCTURAL STEEL MEMBERS WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER.
15. WHERE A STRUCTURAL STEEL SHAPE SHOWN ON THE DRAWINGS IS UNAVAILABLE, A SHAPE OF EQUAL OR GREATER SECTION PROPERTIES AND STRUCTURAL CAPACITY SHALL BE SUBSTITUTED, UPON APPROVAL BY OWNER AND CONSULTANT AT NO EXTRA COST.
16. ALL EXPOSED STEEL SHALL BE HOT DIP GALVANIZED.

TEMPORARY WORKS

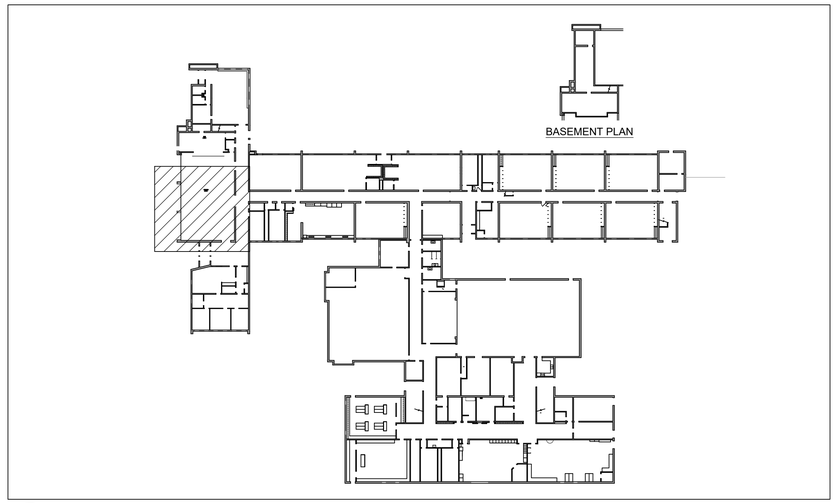
1. THE CONTRACTOR SHALL DESIGN, PROVIDE, ERECT, MAINTAIN REMOVE AND ASSUME FULL AND SOLE RESPONSIBILITY FOR ALL TEMPORARY WORKS REQUIRED FOR THE SAFE AND COMPLETE EXECUTION OF THE WORKS.
2. IN THE EXECUTION OF THE TEMPORARY WORKS AND FOR THE DURATION OF THE CONTRACT, THE CONTRACTOR SHALL MAKE ADEQUATE PROVISION FOR ALL LIKELY CONSTRUCTION LOADING AND PROVIDE SUFFICIENT BRACING AND PROPS TO KEEP THE WORKS IN PLUMB AND ALIGNMENT AND FREE FROM EXCESSIVE DEFLECTION.
3. ACCESS OF HEAVY CONSTRUCTION EQUIPMENT AND ACCUMULATION OF CONSTRUCTION MATERIALS ON THE FLOORS ARE NOT PERMITTED, UNLESS SUCH HAVE BEEN CATERED FOR IN THE CONTRACTOR'S TEMPORARY WORK DESIGN TO THE SATISFACTION OF THE ARCHITECT.
4. SUBMIT SHOP DRAWINGS FOR ALL TEMPORARY WORKS FOR REVIEW BEFORE FABRICATION COMMENCES. SHOP DRAWINGS SHALL BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO.

MASONRY

1. MASONRY WORK IN ACCORDANCE WITH CAN/CSA A370 AND CAN/CSA A371 EXCEPT WHERE SPECIFIED OTHERWISE.
2. ONLY TYPE 'S' MORTAR SHALL BE USED, MINIMUM STRENGTH SHALL BE 12.4 MPa AT 28 DAYS.
3. GROUT (PEA GRAVEL) AT BOND BEAMS AND GROUTED HOLLOW BLOCKS TO BE A MINIMUM OF 20MPa COMPRESSIVE STRENGTH AT 28 DAYS. IN ACCORDANCE WITH CAN3-A23.1
4. MORTAR FOR EXPOSED EXTERIOR MASONRY SHALL BE AIR ENTRAINED.
5. PROVIDE LATERAL RESTRAINT AT TOP OF NON-LOAD BEARING BLOCK PARTITIONS AS INDICATED ON TYPICAL DETAILS.
6. PROVIDE VERTICAL WALL REINFORCING FOR FULL HEIGHT OF LIFT, CONTINUOUS FROM FLOOR TO FLOOR/ROOF, WITH CLASS B LAPS.
7. MASONRY WORK SHALL CONFORM TO CAN3-S304 AND ITS REFERENCED DOCUMENTS, INCLUDING:
   - A. CONCRETE BLOCK TO CSA-A165.1, TYPE H15/A, SEE ARCH. DWGS. FOR FIREWALL REQUIREMENTS UNLESS NOTED OTHERWISE. (BASED ON NET AREA) - H 15/C FOR FIREWALL.
   - B. MORTAR TO CSA-A179M, TYPE 'S' FOR ALL WALLS.
   - C. GROUT TO CSA-A179-M.
   - D. MASONRY WIRE REINFORCING TO CSA-G30.14.
   - E. REINFORCING BARS TO CSA-G30.18-M-400 MPa.
   - F. WELDED REINFORCING BARS TO CSA-G30.18-400 MPa.
   - G. CONNECTION TO CAN/CSA A370.
   - H. PRACTICE TO CAN/CSA A371.
8. STRUCTURAL DRAWINGS INDICATE ONLY LOAD-BEARING WALLS.
9. SUBMIT EVIDENCE OF MORTAR AND GROUT STRENGTH. FIELD CONTROL AND TESTING SHALL COMPLY WITH REQUIREMENTS OF CLAUSE 5 OF CAN3-304.
10. PROVIDE TEMPORARY BRACING OF MASONRY WORK UNTIL PERMANENT LATERAL SUPPORT IS IN PLACE.
11. PROVIDE LINTELS OVER ALL OPENINGS IN MASONRY WALLS. SEE LINTEL SCHEDULE FOR REQUIREMENTS.
12. REFER TO TYPICAL DETAILS FOR BOND BEAM AND BEARING REQUIREMENTS AT FLOORS AND ROOFS.
13. MINIMUM STANDARD LAP LENGTH:
    - WIRE REINF. - 200mm(8")
    - 10M BARS - 400mm(16")
    - 15M BARS - 600mm(24")
    - 20M BARS - 800mm(32")
14. UNLESS NOTED OTHERWISE, PROVIDE 2-15M VERTICAL BARS FULL HEIGHT AT:
    A. UNSUPPORTED ENDS OF WALLS
    B. EACH SIDE OF CONTROL JOINTS
15. PROVIDE CLEANOUT PORT AT BOTTOM OF EACH GROUTED CORE WHEN REQUIRED BY ENGINEER. DO NOT CLOSE PORT OR PLACE GROUT UNTIL CORE AND STEEL HAVE BEEN INSPECTED.
16. FILL CELLS CONTAINING VERTICAL REINFORCING AND BOLTS WITH GROUT VIBRATE OR PUDDLE TO FILL CELLS COMPLETELY.
17. FILL CELLS IN 1500mm (60") LIFTS MAXIMUM OR BETWEEN BOND BEAMS, WHICHEVER IS LESS, UNLESS SPECIAL PROVISIONS ARE MADE TO ENSURE FULL GROUT COLUMNS HAVE BEEN MADE TO THE SATISFACTION OF THE ENGINEER.
18. CONTROL JOINTS SHALL BE INSTALLED AT MAXIMUM SPACING OF 6000mm(20'-0"), IF NOT OTHERWISE SHOWN ON ARCHITECTURAL DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
19. FILL BLOCK CORES UNDER ALL BEAMS, JOISTS AND OTHER CONCENTRATED POINT LOADS WITH CONCRETE GROUT. GROUT SHALL EXTEND A MINIMUM OF 600mm (24") BELOW LOAD.
20. CONTROL JOINTS AND EXPANSION JOINTS SHALL BE CONTINUED THROUGH BOND BEAMS IF NOT OTHERWISE SHOWN.
21. NO MASONRY WORK SHALL BE PERMITTED WITH TEMPERATURE BELOW 5° CELSIUS, UNLESS PROVISIONS ARE MADE FOR HEATING THE MATERIALS AND PROTECTING THE WORK.
22. SET BASE PLATES ON MASONRY ON MIN. 25MPa NON-SHRINK GROUT FOR LEVELING.
23. FIRST COURSE OF MASONRY TO BE LAID IN A FULL BED OF MORTAR. ALL OTHER COURSES TO BE LAID WITH MORTAR AT FACE SHELL BED AND HEAD JOINTS.
24. POCKETS FOR STEEL BEAMS AND JOISTS SHALL BE GROUTED SOLID AND THE WALL MADE GOOD AFTER



4 S201 SECOND FLOOR KEY PLAN
NTS



2 S201 GROUND FLOOR KEY PLAN
NTS

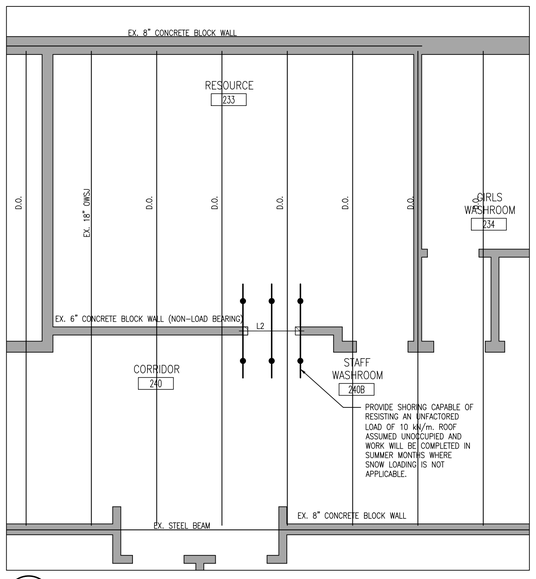
DESIGN LOADS:

LIVE LOAD: 1.00 kPa
SNOW LOAD: 2.67 kPa
ASSUMED DEAD LOAD: 2.00 kPa
IMPORTANCE FACTOR = 1.5 (HIGH)
Ss = 2.4 kPa
Sr = 0.4 kPa

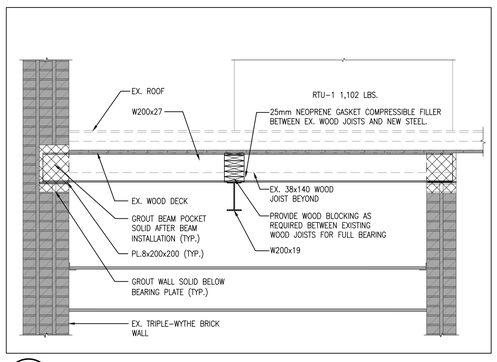
CONTRACTOR IS TO CONFIRM AND REPORT THE EXISTING ROOF FRAMING AND WALL COMPOSITIONS FOR THE GYMNASIUM TO BBA FOR REVIEW PRIOR TO DEMOLITION

LINTEL SCHEDULE

MARK	SIZE	DETAIL
L1	W200+36 C/W 320x12 CONTINUOUS TOP & BOTTOM PLATE	
L2	2-L89x64x7.9	64 LEGS HORIZ
NOTES	1. CONNECT ANGLES AT 600 C/C BY WELDING OR BOLTING FOR ANGLES WITH A TOTAL LENGTH OF 1800 OR MORE. USE 16ø BOLTS OR 6X50 LONG WELDS. 2. 150 MIN. BEARING LENGTH AT EACH END.	



3 S201 PART ROOF FRAMING PLAN
1:50



5 S201 SECTION
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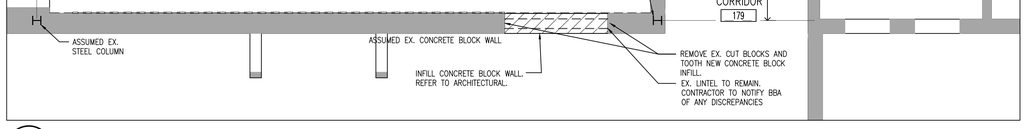

1 S201 PART ROOF FRAMING PLAN
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DDSB Ignite Learning

NO.	ISSUES	DATE	BY
1	ISSUED FOR REVIEW	NOV. 27 2024	BBA
2	ISSUED FOR CLIENT 30% REVIEW	DEC. 09 2024	BBA
3	ISSUED FOR CLIENT 60% REVIEW	DEC. 24 2024	BBA
4	ISSUED FOR PERMIT & TENDER	MAR. 04 2025	BBA

NO.	REVISIONS	DATE	BY

PROJECT:

R.H. CORNISH P.S INTERIOR ALTERATIONS

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DURHAM DISTRICT SCHOOL BOARD

DRAWING:

PART ROOF FRAMING PLANS

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LICENSED PROFESSIONAL ENGINEER
March 04, 2025
D. P. MCLAUGHLIN
100161883
PROVINCE OF ONTARIO

DESIGN BY: JM	DOC. CONTROL DATE:
DRAWN BY: JM	% COMPLETE:
CHECKED BY: --	INITIAL:
DATE: OCT. 2024	
SCALE: AS NOTED	
FILE: 24189 A203	

PROJECT NO: **24189**

DRAWING NO: **S201**

GENERAL SPECIFICATIONS

1. GENERAL

1.1. ALL WORK PERFORMED SHALL BE IN ACCORDANCE WITH LATEST EDITION OF THE ONTARIO BUILDING CODE, CSA, ASHRAE, NFPA, ETC. WHERE CODES/STANDARD ARE PRESENT FORM MULTIPLE SOURCES, THE MOST STRINGENT SHALL BE UTILIZED.

1.2. THE FOLLOWING SPECIFICATIONS FORM AN ESSENTIAL PART OF THE CONTRACT DOCUMENTS. REFER AND COORDINATE WITH ALL OTHER DIVISIONS, SECTIONS AND SPECIFICATIONS TO PROVIDE A COMPLETE AND OPERATIONAL INSTALLATION.

1.3. FOR THE PURPOSE OF THESE SPECIFICATIONS, DRAWINGS AND CONTRACT DOCUMENTS, THE WORD 'PROVIDE' REFERS TO THE SUPPLY, INSTALLATION AND TESTING OF THE RESPECTIVE EQUIPMENT/COMPONENTS.

1.4. CONTRACTOR IS TO REPORT ALL APPARENT DISCREPANCIES BETWEEN DRAWINGS AND SPECIFICATIONS OF ALL DIVISIONS PRIOR TO TENDER SUBMISSION. NO EXCEPTIONS WILL BE GIVEN TO CONTRACTORS WHO DO NOT COMPLETELY UNDERSTAND THE SCOPE OF WORK.

1.5. ALL DIV.23 WORK SHALL BE COORDINATED AND SCHEDULED WITH ALL OTHER DIVISIONS.

1.6. THIS CONTRACTOR SHALL VISIT THE SITE AND COMPLETELY INVESTIGATE AND UNDERSTAND THE EXISTING CONDITIONS AND THEIR RELATION TO THE DESIGN DRAWINGS/DOCUMENTS. NO CONSIDERATION WILL BE GIVEN TO THE CONTRACTOR FOR ANY HINDRANCES TO THE MECHANICAL INSTALLATION FROM SITE CONDITIONS WHICH EXISTED PRIOR TO TENDER SUBMISSION. AS SUCH AND WHERE REQUIRED, THE CONTRACTOR SHALL PROVIDE INTERFERENCE DRAWINGS AND SHALL SUBMIT THEM TO THE CONSULTANT FOR REVIEW.

1.7. PROVIDE NEW MATERIALS AND EQUIPMENT OF ACCEPTABLE QUALITY THAT ARE MANUFACTURED IN CANADA OR THE UNITED STATES AND BEAR THE APPROVAL OF RECOGNIZED NORTH AMERICAN STANDARD ASSOCIATIONS SUCH AS CSA, ASME, ETC. THE CONTRACTOR SHALL MAXIMIZE THE UTILIZATION OF CANADIAN EQUIPMENT, MATERIALS, ETC.

1.8. ALL EQUIPMENT, MATERIALS, ETC. SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS.

1.9. THE MECHANICAL DRAWINGS DISPLAY A GENERAL DESIGN AND INSTALLATION. THEREFORE THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE CONSULTANT PRIOR TO INSTALLATION.

1.10. THESE DRAWINGS HAVE BEEN PREPARED FOR DIV.23 AND DO NOT ACCURATELY DISPLAY ALL ELECTRICAL, STRUCTURAL AND ARCHITECTURAL ELEMENTS. REFER TO OTHER DIVISION'S DRAWINGS FOR CLARIFICATION.

1.11. IN NO CASE SHALL THESE DRAWINGS BE SCALED. ALL ROUGH-IN'S SHALL BE COORDINATED WITH OTHER DIVISIONS.

1.12. DO NOT PROCEED WITH WORK OUTSIDE THE SCOPE OF THE DESIGN DRAWINGS AND SPECIFICATIONS WITHOUT WRITTEN CONSENT FROM THE OWNER. THIS APPLIES TO ALL DIV.23 CHANGE NOTICES AS ISSUED BY THE CONSULTANT.

1.13. IN REGARDS TO DIV.23 CHANGE NOTICES, CONTRACTOR SHALL PROVIDE A BREAKDOWN INCLUDING, BUT NOT LIMITED TO, MATERIALS, LABOUR, MARK-UP, ETC. QUOTATIONS SHALL BE BASED ON ALLPRISER FOR EQUIPMENT AND THE MECHANICAL CONTRACTORS OF AMERICA, SMACNA, AND NATIONAL ELECTRICAL CONTRACTORS FOR LABOUR RATES.

1.14. WHERE EQUIPMENT HAS BEEN PRE-PURCHASED, DIV.23 SHALL ACCEPT ALL RESPONSIBILITY FOR EQUIPMENT DELIVERY, INSTALLATION, TESTING AND WARRANTY, SIMILAR TO AS IF THE EQUIPMENT WAS PURCHASED BY DIV.23.

1.15. THE CONTRACTOR SHALL WARRANTY ALL MATERIALS, EQUIPMENT, INSTALLATION AND QUALITY OF WORKMANSHIP FOR A MINIMUM OF ONE (1) YEAR UNLESS OTHERWISE NOTED.

1.16. IT IS THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO PAY FOR ALL CHARGES AND DAMAGES ASSOCIATED WITH EQUIPMENT THAT IS NOT PROVIDED AS SPECIFIED AND INCLUDES NOT MEETING THE MANUFACTURER'S RATINGS, PUBLISHED DATA AND/OR THE APPLICABLE GOVERNING STANDARDS.

1.17. THE CONTRACTOR MAY SUBMIT FOR ALTERNATE MATERIALS AND EQUIPMENT ONLY WHEN THE SPECIFIED ARE NOT AVAILABLE OR WILL ADVERSELY IMPACT THE COMPLETION SCHEDULE. THE CONTRACTOR SHALL COMPENSATE THE CONSULTANT FOR THEIR TIME REQUIRED TO REVIEW THE ALTERNATE SUBMITTALS.

2. SUBMITTALS

2.1. THE CONTRACTOR SHALL SUBMIT THREE (3) HARD COPIES OF MECHANICAL SHOP DRAWINGS TO THE CONSULTANTS FOR REVIEW. ELECTRONIC SUBMISSION OF SHOP DRAWINGS SHALL BE DEEMED ACCEPTABLE UPON APPROVAL FROM CONSULTANT. THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH THE DOCUMENT SUBMITTAL PROCESS.

2.2. ALL SHOP DRAWINGS SUBMITTED FOR REVIEW MUST BEAR THE REVIEW STAMP OF THE MECHANICAL CONTRACTOR. SHOP DRAWINGS THAT DO NOT BEAR THE CONTRACTOR'S STAMP WILL, WITHOUT QUESTION, BE REJECTED BY THE CONSULTANT.

2.3. SHOP DRAWINGS SHALL INCLUDE ALL INFORMATION REQUIRED FOR THE CONSULTANT TO PERFORM A REASONABLE REVIEW OF THE SUBMITTALS AS THEY PERTAIN TO THE MECHANICAL DESIGN DRAWINGS AND SPECIFICATIONS.

2.4. SHOP DRAWINGS SHALL HAVE THE SAME IDENTIFYING NUMBER AS NOTED IN THE MECHANICAL DRAWINGS.

2.5. PROVIDE SHOP DRAWINGS WITH TECHNICAL SUBMITTALS ON ALL TYPES OF INSULATION TO BE INSTALLED.

2.6. THE CONTRACTOR SHALL MAINTAIN ON SITE ONE (1) RECORD OF MECHANICAL DRAWINGS THAT SHALL INDICATE WITH RED LINES ALL PROJECT CONDITIONS, LOCATIONS, CONFIGURATIONS AND ANY OTHER CHANGES OR DEVIATIONS WHICH MAY VARY FROM THE ORIGINAL CONTRACT DOCUMENTS AND DRAWINGS. IN ADDITION, THIS SET SHALL INCLUDE REVISIONS AS A RESULT OF ALL ADDENDAS, CHANGE NOTICES, SITE INSTRUCTIONS, ETC. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT TO THE OWNER AND ENGINEER ONE (1) COPY EACH OF A HARDCOPY AND ELECTRONIC COPY (PDF) FOR REVIEW. ONE (1) SET OF BOTH COPIES SHALL ALSO BE INCLUDED IN THE CLOSEOUT DOCUMENT PACKAGE.

2.7. TWO (2) COPIES OF OPERATION AND MAINTENANCE MANUALS SHALL BE SUBMITTED TO THE CONSULTANT FOR REVIEW UPON PROJECT COMPLETION. THE MANUALS SHALL CONTAIN THE FOLLOWING WHERE APPLICABLE:
- DESCRIPTION OF EACH SYSTEM
- DESCRIPTION OF EACH MAJOR COMPONENT OF SYSTEM
- ALL SHOP DRAWINGS WITH APPROVAL STAMPS
- EQUIPMENT MANUFACTURER'S INSTALLATION AND OPERATION MANUALS AND SPARE PARTS LIST
- WIRING DIAGRAMS
- LUBRICATION SCHEDULE
- EQUIPMENT IDENTIFICATION LIST WITH SERIAL NUMBERS
- VALVE TAG SCHEDULES AND FLOW DIAGRAMS
- FINAL AND REVIEWED BALANCING REPORTS (AIR AND WATER)
- WATER TREATMENT PROCEDURE AND TESTS
- CONTROL DRAWINGS AND SEQUENCES OF OPERATION
- AS-BUILT DRAWINGS (HARDCOPY AND ELECTRONIC)
- WARRANTY DOCUMENTATION

3. EXECUTION

3.1. PERIODIC INSPECTIONS OF THE WORK WILL BE CONDUCTED OVER THE COURSE OF THE PROJECT. ALL REPORTED DEFICIENCIES SHALL BE RECTIFIED BY THE CONTRACTOR IN A TIMELY FASHION. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR NOT MEETING THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

3.2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL INSPECTIONS WITH CITY AND/OR MUNICIPAL OFFICIALS AND ALL OTHER AUTHORITIES HAVING JURISDICTION.

3.3. IN REGARDS TO TEMPORARY SERVICES, PROVIDE, AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION, TEMPORARY FIRE PROTECTION SYSTEMS. REFRAIN FROM USING INSTALLED SYSTEMS FROM THE CONTRACT DOCUMENTS AS A TEMPORARY SERVICES. THIS SHALL APPLY TO ALL MECHANICAL SYSTEMS INCLUDING HVAC, PLUMBING AND DRAINAGE, ETC.

GENERAL SPECIFICATIONS

3.4. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING, PATCHING AND RESTORATION. WHERE REQUESTED, THE CONTRACTOR SHALL CONTRACT THE SERVICES OF THE BASE BUILDING TRADES AT DIV.23 EXPENSE.

3.5. PROVISIONS SHALL BE MADE FOR THE PROTECTION OF DIV.23 WORK UNTIL THE COMPLETION OF THE PROJECT. THIS MAY INCLUDE, BUT NOT LIMITED TO, COVERING OF EQUIPMENT OPENINGS AND DUCTWORK, PLUMBING FIXTURES, FLOOR DRAINS, ETC.

3.6. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL MAKE ALL FINAL ADJUSTMENTS TO EQUIPMENT AS WELL AS REMOVE ALL PROTECTION. ALL INSTALLATIONS SHALL BE CLEANED THOROUGHLY AND TESTED FOR PROPER OPERATION. CHANGE ALL AIR AND WATER FILTERS AS REQUIRED.

3.7. IN REGARDS TO INTERRUPTION OF SERVICES, THE CONTRACTOR SHALL CARRY OUT THEIR WORK IN A MANNER THAT CAUSES THE LEAST DISTURBANCE TO THE OWNER. PROVIDE NOTIFICATION TO THE OWNER IN WRITING WITH AT LEAST 72 HOURS OF THE SCHEDULED INTERRUPTION.

3.8. ARRANGE AND PAY FOR THE SAFE DISPOSAL OF REMOVED ITEMS AS SPECIFIED. PROVIDE PROOF OF SAFE DISPOSAL FOR ITEMS SUCH AS HVAC REFRIGERANT. COORDINATE THE TIME AND METHOD OF DISPOSAL WITH THE OWNER. FOR EXAMPLE, CLEARLY INDICATE THE ROUTE THAT WILL BE TAKEN FROM THE INSIDE OF THE BUILDING TO THE OUTDOORS, AS WELL AS THE STORAGE LOCATION OUTDOORS IF APPLICABLE.

3.9. WHERE COMPONENTS ARE TO BE REUSED, THE CONTRACTOR SHALL CLEAN AND TEST THE COMPONENT TO ENSURE PROPER OPERATION. THE CONSULTANT SHALL BE NOTIFIED IN THE EVENT THERE IS A DEFICIENCY WITH THE COMPONENT.

3.10. PERFORM WORK SO AS TO CAUSE MINIMAL DISTURBANCE TO OWNER AND/OR ADJACENT AREAS. MINIMIZE DUST AND NOISE AND PROVIDE TEMPORARY AIR FILTERS ON AIR HANDLING SYSTEMS AFFECT BY THE AREA OF WORK. ALL COSTS ASSOCIATED WITH DAMAGES AS A RESULT OF THE MECHANICAL INSTALLATION SHALL BE COVERED BY DIV.23. MAINTAIN SAFETY STANDARDS AND PROVIDE ADEQUATE SIGNAGE FOR BOTH WORKERS AND OCCUPANTS.

3.11. WHERE CUTTING OR CORE DRILLING OF THE EXISTING CONCRETE STRUCTURE IS REQUIRED, THE MECHANICAL CONTRACTOR SHALL CONTRACT THE SERVICES OF AN EXPERIENCED AND REPUTABLE COMPANY TO CARRY OUT X-RAYING. THE RESULTS SHALL BE SUBMITTED TO THE BASE BUILDING STRUCTURAL ENGINEER AND NOT CUTTING OR CORING SHALL TAKE PLACE UNTIL WRITTEN APPROVAL IS RECEIVED. THE CONTRACTOR SHALL PROVIDE A WRITTEN REQUEST TO PERFORM X-RAYING WITH AT LEAST 72 HOURS IN ADVANCE.

4. IDENTIFICATION OF MECHANICAL SERVICES

4.1. PROVIDE SMS WRAP-MARK ON ALL PIPE COVERINGS WITH FLOW ARROW AND ALTERNATING WORDING. COVERING COLOURS SHALL MATCH BASE BUILDING. IN THE CASE WHERE THERE IS NO EXISTING STANDARD, INDUSTRY STANDARDS SHALL BE FOLLOWED.

4.2. USE STENCILS AND STENCIL PAINT ON DUCTWORK AND DUCTWORK INSULATION WITH BLACK CAPITALIZED LETTERS 2" (50 MM) HIGH AND SOLID BLACK FLOW ARROWS.

4.3. IDENTIFICATION OF PIPING AND DUCTWORK SHALL BE PROVIDED AT THE FOLLOWING LOCATIONS:
- AT LEAST ONCE IN EACH ROOM
- AT EACH PIECE OF EQUIPMENT
- AT EACH BRANCH CLOSE TO THE CONNECTION POINT AT MAIN
- AT NOT GREATER INTERVALS OF 50 FT. (15 M) ON STRAIGHT RUNS OF EXPOSED PIPING AND DUCTWORK.
- AT ENTRY AND LEAVING POINT TO PIPE AND DUCT CHASES, OR OTHER CONCEALED SPACES
- BOTH SIDES WHERE PIPING AND DUCTWORK PASSES THROUGH WALL, PARTITIONS AND FLOORS
- ON VERTICAL PIPES AND DUCTS APPROXIMATELY 6 FT. (1800 MM) A.F.F.
- BEHIND EACH ACCESS DOOR AND PANEL

4.4. PROVIDE IDENTIFICATION FOR PIPING CONTAINING ELECTRICAL HEAT TRACING.

4.5. TAG ALL VALVES, EXCEPT SMALL VALVES ISOLATING EQUIPMENT, WITH BRASS TAGS AND HIGH DIE-STAMPED BLACK LETTERS ATTACHED TO VALVES WITH 4" BRASS CHAINS.

4.6. PROVIDE IDENTIFICATION FOR ALL NEW EQUIPMENT, STARTERS AND REMOTE CONTROL DEVICES WITH LAMACOID LABELS ENGRAVED WITH WHITE LETTERING AND A BLACK BACKGROUND. THE MINIMUM LETTERING SIZE SHALL BE 3/8" (10 MM).

5. ACCESS DOORS AND PANELS

5.1. PROVIDE ADEQUATE ACCESS TO CONCEALED EQUIPMENT AND COMPONENTS THAT REQUIRE ACCESS FOR MAINTENANCE, ADJUSTMENT AND INSPECTION. PROVIDE MARKING TO THE OWNER'S SATISFACTION THE LOCATIONS WHERE CONCEALED EQUIPMENT IS LOCATED.

5.2. ENSURE THAT THE SIZE OF THE DOOR COMPLIES WITH THE MANUFACTURER'S SUGGESTED ACCESS REQUIREMENTS.

5.3. COORDINATE ALL ACCESS DOOR AND PANEL SIZES AND LOCATIONS WITH ARCHITECT/INTERIOR DESIGNER.

6. FLASHING, CURBS AND CONCRETE

6.1. FLASHING SHALL BE CARRIED OUT AS SHOWN ON ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS AT THE EXPENSE OF DIV.23.

6.2. ALL CURBS REQUIRED FOR MECHANICAL EQUIPMENT SHALL BE CARRIED OUT AS SHOWN ON ARCHITECTURAL AND/OR MECHANICAL DRAWINGS AT THE EXPENSE OF DIV.23. CURBS SHALL BE INSTALLED AT LEAST 14" ABOVE THE ROOF LEVEL.

6.3. PREMANUFACTURED EQUIPMENT CURBS SHALL BE SUPPLIED BY THE EQUIPMENT MANUFACTURER.

6.4. PROVIDE 4" (100 MM) THICK CONCRETE HOUSEKEEPING PADS WHERE INDICATED ON ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS.

7. FIRESTOPPING

7.1. PROVIDE FIRE STOPPING SYSTEMS AND PRODUCTS FOR ALL DUCTS, PIPING, ETC. PENETRATING FIRE SEPARATIONS THAT ARE ULC LISTED AND COMPLY WITH CAN4-S115S AND THE AUTHORITIES HAVING JURISDICTION.

7.2. MAINTAIN ALL FLOOR AND WALL FIRE RATINGS TO COMPLY WITH BASE BUILDING STANDARDS AND THE AUTHORITIES HAVING JURISDICTION.

8. PIPE, DUCT AND EQUIPMENT INSTALLATION

8.1. INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT TO PROVIDE ADEQUATE CLEARANCES FOR SERVICING AS WELL AS MAXIMUM USABLE SPACE FOR ALL OTHER DIVISIONS.

8.2. INSTALL PIPING AND DUCTWORK STRAIGHT, IN A NEAT AND CLEAN FASHION AND TIGHT TO STRUCTURES ABOVE (UNLESS OTHERWISE NOTED).

8.3. TAKE MEASURES TO PROTECT COPPER PIPING CORROSION FROM CONTACT WITH DISSIMILAR METALS.

9. HANGERS AND SUPPORTS

9.1. PROVIDE HANGER SYSTEMS FOR ALL DUCTWORK, PIPING AND EQUIPMENT TO RENDER A SAFE AND FUNCTIONAL INSTALLATION. HANGER RODS SHALL BE ATTACHED DIRECTLY TO THE STRUCTURE AND IN NO WAY SHALL BE ATTACHED TO OTHER MECHANICAL COMPONENTS OR CEILING SYSTEMS. WHERE COMPONENTS ARE TO BE SUSPENDED BETWEEN JOISTS OR BEAMS, PROVIDE AUXILIARY STEEL CHANNELS TO SUIT.

9.2. FOR GENERAL CONDITIONS, PROVIDE ROUND STEEL THREADED RODS CONFORMING TO ASTM A-36. WHERE SPECIAL CONDITIONS EXIST, SUCH AS HIGH HUMIDITY OR EXPOSURE TO ELEMENTS, PROVIDE HANGER COMPONENTS TO SUIT.

9.3. IN REGARDS TO ALL PIPING, PROVIDE SUPPORTS AT CONNECTION (SUCH AS HUB) AND AT EVERY CHANGE IN DIRECTION.

10. STRUCTURAL AND SEISMIC

10.1. WHERE THERE IS NO STRUCTURAL DIVISION AS PART OF THE PROJECT, IT SHALL

GENERAL SPECIFICATIONS

BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO PROVIDE STRUCTURAL REINFORCING FOR ALL DIV.23 INSTALLATIONS. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A LICENSED PROFESSIONAL ENGINEER WHO IS TO PROVIDE A DESIGN BEARING THEIR PROFESSIONAL SEAL. THE CONTRACTOR SHALL APPLY FOR BUILDING PERMIT AND ASSUME ALL RESPONSIBILITY AND COST FOR THE PERMIT PROCESS. UPON COMPLETION OF WORK, CONTRACTOR SHALL SUBMIT A LETTER FROM THE STRUCTURAL ENGINEER COMPLETE WITH PROFESSIONAL SEAL TO INDICATE THAT THE WORK HAS BEEN COMPLETED TO THE ONTARIO BUILDING CODE, ALL OTHER RELEVANT CODES AND STANDARDS AND TO THE AUTHORITIES HAVING JURISDICTION.

10.2. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE THE REQUIREMENTS FOR SEISMIC BRACING AND SUPPORTS WITH STRUCTURAL DRAWINGS. DIV.23 SHALL CONTRACT THE SERVICES OF A LICENSED PROFESSIONAL ENGINEER TO DESIGN SUPPORTS AND BRACING IN ACCORDANCE WITH ALL CURRENT CODES AND THAT MATCHES THE REQUIREMENT OF THE LOCATION IN WHICH THE SYSTEMS ARE BEING INSTALLED. UPON COMPLETION OF THE PROJECT, SEISMIC ENGINEER SHALL PROVIDE A LETTER BEARING THEIR PROFESSIONAL SEAL INDICATING THAT THE INSTALLATION MEETS THE SEISMIC DESIGN DOCUMENT AND CONFORMS TO THE BUILDING CODE AND THE AUTHORITIES HAVING JURISDICTION.

11. ELECTRICAL

11.1. ALL ELECTRICAL MOTORS, STARTERS, CONTACTORS, DISCONNECT SWITCHES AND CONTROL DEVICES FOR DIV.23 WORK SHALL BE PROVIDED BY DIV.23.

11.2. DIV.26 SHALL BE RESPONSIBLE FOR POWERING LOAD SIDE OF STARTERS AND CONTACTORS, POWER FOR ELECTRICAL HEAT TRACING AND CONTROLS, LINE SIDE POWER TO LOOSE STARTERS AND DISCONNECTS.

11.3. ALL LOW VOLTAGE WIRING AND CONNECTION IS TO BE PROVIDED BY THE MECHANICAL CONTRACTOR.

11.4. WHERE THERE IS NO DIV.26 (ELECTRICIAN) AS PART OF THE PROJECT, THE MECHANICAL CONTRACTOR SHALL CONTRACT THE SERVICES OF A LICENSED ELECTRICAL CONTRACTOR AND OBTAIN THE APPROPRIATE INSPECTIONS AND APPROVALS FOR THE INSTALLATION OF ALL ELECTRICAL WORK REQUIRED FOR MECHANICAL SYSTEMS.

12. PROJECT CLOSEOUT

12.1. PRIOR TO THE ISSUING OF A PROJECT COMPLETION NOTICE OR A SIGN-OFF LETTER, THE FOLLOWING DOCUMENTS, AT A MINIMUM, MUST BE PROVIDED TO THE ENGINEER FOR REVIEW:
- AIR BALANCING REPORT
- NFPA-13 LETTER
- APPLICABLE SYSTEM/EQUIPMENT TESTING REPORT

HVAC SPECIFICATIONS

1. PROVIDE ALL LABOUR AND MATERIALS TO SUPPLY AND INSTALL THE DUCTWORK AND SHEET METAL SYSTEMS AS INDICATED ON MECHANICAL DRAWINGS. THIS INCLUDES INSTALLING THE DUCTWORK, ACCESSORIES, ASSOCIATED ITEMS AND ALL NECESSARY CONNECTIONS TO OUTLETS, INLETS AND EQUIPMENT TO PROVIDE A COMPLETE SYSTEM.

2. UNLESS OTHERWISE NOTED, FABRICATE ALL DUCTWORK SYSTEMS, INCLUDING DUCTWORK, HOUSINGS, DAMPERS AND ACCESS DOORS, WITH GALVANIZED STEEL SHEET METAL MEETING ASTM A653 AND A924. CONSTRUCTION OF THE DUCTWORK SYSTEMS SHALL BE IN STRICT ACCORDANCE WITH SMACNA, SMACNA DUCT CLEANLINESS AND ASHRAE. ALL DUCTWORK SHALL BE SMOOTH ON THE INSIDE AND SHALL BE FREE FROM RATTLING OR VIBRATION. DUCTWORK NOT MEETING THESE STANDARDS WILL BE REPLACED AT NO EXTRA CHARGE TO THE OWNER.

3. CONSTRUCT DUCTWORK AND SEAL ACCORDING TO THE APPROPRIATE SMACNA STANDARDS. LOW PRESSUE DUCTWORK SHALL BE CONSTRUCTED WITH THE ONE (1) INCH PRESSURE CLASSIFICATION AND ALL OTHER DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE THREE (3) INCH CLASSIFICATION. DUCT PRESSURES SHALL BE CLASSIFIED AS FOLLOWS:

3.1. LOW: DUCT PRESSURES (LOW) OF 1/2" TO 2" W.C. AND NOT EXCEEDING AN AIR VELOCITY OF 2000 FPM.

3.2. MEDIUM: DUCT PRESSURES EXCEEDING 2" W.C. OR AND AIR VELOCITY OF 2000 FPM.

3.3. THREE INCH: ALL VARIABLE AIR VOLUME (VAV) SUPPLY AIR DUCT SYSTEMS AND AIR DUCTWORK SYSTEMS EXPOSED TO THE OUTDOORS.

4. FLEXIBLE DUCTWORK

4.1. PROVIDE, WHERE INDICATED ON MECHANICAL DRAWINGS, FLEXIBLE DUCTWORK EQUAL TO FLEXMASTER TRIPLE LOCK ALUMINUM DUCTWORK. THE PRESSURE RATING OF THE DUCTWORK SHALL MATCH THE DUCTWORK SYSTEM TO WHICH IT IS ATTACHED. MATCH THE DUCTWORK SIZE TO THE CONNECTION OUTLET OF THE AIR TERMINAL.

4.2. SECURE FLEXIBLE DUCTWORK USING GEAR CLAMPS WITH AN ADJUSTING WORM DRIVE TYPE SCREW. SEAL AROUND CONNECTION WITH DUCT TAPE TO OBTAIN THE APPROPRIATE SMACNA SEAL CLASS.

4.3. MAXIMUM LENGTH OF FLEXIBLE DUCTWORK PERMITTED IN LOW PRESSURE SYSTEMS IS 10'-0" AND 4'-0" IN ALL OTHER HIGHER PRESSURE SYSTEMS.

5. ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS. CONTRACTOR TO TAKE INTO ACCOUNT DUCT LINERS, ETC. WHEN PERFORMING TAKE-OFFS.

6. MAKE ALL DUCT CONNECTIONS, CONCENTRIC AND ECCENTRIC TRANSITIONS, ETC., IN ACCORDANCE WITH SMACNA.

7. PROVIDE DUCT ACCESS DOORS AT LOCATIONS AS SHOWN ON DRAWINGS, AS WELL AS AT THE LINKAGE SIDE OF AUTOMATIC DAMPERS, FIRE DAMPERS AND ANY OTHER SERVICE, BALANCE OR CONTROL DEVICE REQUIRING PERIODIC MAINTENANCE. THE DOORS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA AND SHALL MATCH THE PRESSURE RATING OF THE DUCTWORK SYSTEM TO WHICH IT IS BEING INSTALLED.

8. PROVIDE FLEXIBLE CONNECTIONS AT THE INLET AND OUTLET CONNECTION FOR EACH FAN BETWEEN DUCTWORK AND INLET AND OUTLET COLLARS. FLEXIBLE CONNECTIONS SHALL BE CONSTRUCTED OF NON-COMBUSTIBLE NEOPRENE COATED FIBERGLASS FABRIC. FOR OUTDOOR CONNECTIONS, PROVIDE A CONNECTOR THAT IS SUITABLE FOR EXPOSURE TO SUNLIGHT AND THE ELEMENTS.

9. PROVIDE FIRE DAMPERS WHERE INDICATED ON MECHANICAL DRAWINGS. ALL DAMPERS SHALL BE SELECTED TO SUIT THE RATING OF THE FLOOR OR WALL ASSEMBLY IN WHICH IT WILL BE INSTALLED. FIRE DAMPERS SHALL BE ULC LISTED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, NFPA 90A AND THE AUTHORITIES HAVING JURISDICTION. TYPE A FIRE DAMPERS ARE PERMITTED FOR NON-DUCTED TRANSFER DUCTWORK. TYPE B FIRE DAMPERS SHALL BE USED IN ALL OTHER CASES UNLESS OTHERWISE NOTED.

9.1. REMOVABLE DUCT SECTIONS FOR FIRE AND SMOKE DAMPER ACCESS: WHERE A MINIMUM 12"X12" ACCESS PANEL CAN NOT BE INSTALLED ON DUCTWORK, A REMOVABLE DUCTWORK SECTION FOR DAMPER INSPECTION AND MAINTENANCE SHALL BE PROVIDED. REMOVABLE DUCTWORK SECTION TO FUNCTION WITHOUT THE USE OF TOOLS AND SHALL NOT BE MORE THAN 4" AWAY FROM THE FIRE DAMPER SLEEVE BREAK AWAY CONNECTION.

10. MANUAL BALANCING DAMPERS INSTALLED IN DUCTWORK NOT EXCEEDING 12" ON THE LONGEST SIDE SHALL BE CONSTRUCTED AS PER SMACNA. PROVIDE OPPOSED BLADE DAMPERS WHERE THE DIMENSION OF THE LONGEST SIDE OF THE DUCTWORK EXCEEDS 12", OPPOSED BLADE DAMPERS SHALL BE OF GALVANIZED STEEL CONSTRUCTION WITH LOCK SCREWS AT OPPOSITE ENDS. PROVIDE BALANCING DAMPERS WHERE SHOWN ON DRAWING AS WELL AS ON BRANCHES OFF OF MAIN DUCTWORK WITH ADEQUATE ACCESS.

11. PROVIDE ALL DIFFUSERS, REGISTERS, GRILLES, ETC. OF TYPE AND SIZE AS INDICATED ON MECHANICAL DRAWINGS. CONFIRM ALL AIR TERMINAL COLOURS WITH ARCHITECT/INTERIOR DESIGNER, REGARDLESS OF SPECIFICATION ON MECHANICAL DRAWINGS. MECHANICAL CONTRACTOR IS TO COORDINATE INSTALLATION OF DOOR GRILLES WITH ARCHITECTURAL DRAWINGS AND GENERAL CONTRACTOR.

12. PROVIDE DUCTWORK INSULATION AND LINERS WHERE NOTED ON MECHANICAL DRAWINGS, AS PER THE FOLLOWING:

12.1. ACOUSTIC LINING:

12.1.1. DUCT LINING SHALL COMPLY WITH NFPA 90A AND DUCT LINER MATERIALS STANDARD OF THE THERMAL INSULATION MANUFACTURER'S ASSOCIATION.

12.1.2. RECTANGULAR DUCTWORK: PROVIDE ONE INCH (1") THICK ACOUSTIC LINING EQUAL TO JOHNS MANVILLE LINACOUSTIC RC COMPLETE WITH PERMACOTE ACRYLIC ANTI-MICROBIAL COATING.

12.1.3. SPIRAL DUCTWORK: PROVIDE ONE INCH (1") THICK ACOUSTIC LINING EQUAL TO JOHNS MANVILLE SPINACOUSTIC PLUS ROUND DUCT LINER SYSTEM COMPLETE WITH PERMACOTE ANTI-MICROBIAL COATING.

12.1.4. PROVIDE ACOUSTIC LINING AS SPECIFIED ON ALL SUPPLY, RETURN AND EXHAUST FAN EQUIPMENT FOR 10'-0" (3.0 M) FROM THE INLET/OUTLET.

12.2. THERMAL INSULATION

12.2.1. PROVIDE THERMAL INSULATION WHERE NOTED ON MECHANICAL DRAWINGS. INSULATE ALL DUCTWORK LEAVING OR ENTERING THE BUILDING FOR THE FIRST 6 FT. FROM THE BUILDING PENETRATION WITH 2" OF THERMAL INSULATION.

12.2.2. RECTANGULAR DUCTWORK: PROVIDE ONE INCH (1") JOHNS MANVILLE SERIES 814 SPIN-GLAS FIBER GLASS DUCT BOARD INSULATION WITH FSK FACING. IMPALE ON MECHANICALLY FASTENED PINS LOCATED AT NOT MORE THAN 12" ON CENTRE, AND SECURE WITH SPEED WASHERS.

12.2.3. RIGID ROUND (SPIRAL) DUCTWORK: PROVIDE ONE INCH (1") JOHNS MANVILLE MICROLITE EQ FSK FIBER GLASS DUCT WRAP INSULATION WHERE INDICATED ON DRAWINGS. ADHERE INSULATION TO DUCT SURFACE AND LAP ALL EDGES AT LEAST 2". SEAL JOINTS WITH 4" WIDE ALUMINUM FOIL TAPE.

12.2.4. FLEXIBLE DUCTWORK: PROVIDE ONE INCH (1.25") JOHNS MANVILLE FLEX-GLAS EQ FLEXIBLE DUCTWORK INSULATION WITH FSK FACING. LAP JOINTS AND SEAL WITH 4" WIDE ALUMINUM FOIL TAPE.

12.2.5. WHERE DUCTWORK IS INSTALLED OUTSIDE THE BUILDING OR EXPOSED TO THE ELEMENTS, PROVIDE TWO INCHES (2") OF THERMAL INSULATION, BUTT JOINTS TIGHTLY TOGETHER AND SEAL WASHERS, BREAKS AND JOINTS WITH SELF-ADHERING FOUR INCHES (4") WIDE PLAIN ALUMINUM TAPE, OR ADHERE FOIL WITH CHILDERS CP82 OR BAKELITE 230-39 ADHESIVE.

12.3. JACKETING

12.3.1. RECOVER ALL DUCTWORK OUTSIDE THE BUILDING OR EXPOSED TO THE ELEMENTS WITH ALUMINUM JACKETING TO ASTM B209 WITH MOISTURE BARRIER, THICKNESS 0.50MM SHEET, STUCCO EMBOSSED FINISH, JACKET BANDING AND MECHANICAL SEALS 12MM WIDE AND 0.5MM THICK STAINLESS STEEL.

13. HVAC BALANCING

13.1. PROVIDE BALANCING OF ALL AIR AND WATER SYSTEMS AS INDICATED ON MECHANICAL DRAWINGS. THE BALANCING CONTRACTOR SHALL HAVE A MINIMUM

HVAC SPECIFICATIONS

OF FIVE (5) YEARS EXPERIENCE AND BE NEBB CERTIFIED. ALL BALANCING, TESTING ADJUSTING AND REPORTING SHALL BE CARRIED OUT IN ACCORDANCE WITH NEBB, PROCEDURAL STANDARDS FOR TESTING, ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS. WHERE APPLICABLE, THE MECHANICAL CONTRACTOR SHALL CONTRACT THE SERVICES OF THE BASE BUILDING APPROVED TAB CONTRACTOR.

13.2. PERFORM TESTING AND BALANCING PROCEDURES ON EACH SYSTEM ACCORDING TO THE CURRENT EDITION OF THE NEBB STANDARDS. MARK EQUIPMENT AND BALANCING DEVICE SETTING WITH PAINT OR OTHER SUITABLE PERMANENT IDENTIFICATION MATERIAL TO SHOW FINAL SETTINGS.

13.3. BALANCE AIRFLOW AND HYDRONIC FLOW QUANTITIES WITHIN +/- 10% OF THE DESIGN CRITERIA. IN THE EVENT THAT A CONDITION OR DEFICIENCY IS PREVENTING THE ACCEPTANCE RANGE FROM BEING ACHIEVED, IT SHALL BE NOTED WITH DESCRIPTION ON THE TAB REPORT. UPON COMPLETION, SUBMIT A FINAL TAB REPORT TO THE CONSULTANT FOR REVIEW.

14. CONTROLS

14.1. PROVIDE ALL CONTROLS, WIRING, CONDUIT, ACCESSORIES, ETC. AND INTERLOCK WITH EQUIPMENT/STARTERS AS INDICATED ON DRAWINGS.

14.2. WHEN INSTALLED IN CEILING PLENUMS, CABLE MAY BE FREE-AIR, UNLESS OTHERWISE NOTED, PROVIDING THE WIRING IS FT-6 PLENUM RATED.

14.3. WHEN INSTALLED IN OPEN AREAS, PROVIDE EMT CONDUIT, FITTINGS, MOUNTING ACCESSORIES, ETC. TO DELIVER A NEAT AND CLEAN INSTALLATION.

14.4. MOUNTING HEIGHTS:

14.4.1. OCCUPANT ADJUSTABLE: MOUNT AT 3'-11" (1200 MM) A.F.F.
14.4.2. NON-AJUSTABLE (SENSOR ONLY): MOUNT AT 5'-0" (1500 MM) A.F.F.

**CONFIRM MOUNTING HEIGHTS WITH CONSULTANT PRIOR TO INSTALLATION.

14.5. COORDINATE INSTALLATION OF ALL CONTROL DEVICES/SENSORS WITH ARCHITECTURAL DRAWINGS.

14.6. INSTALL CONTROL DEVICES/SENSORS CLEAR OF DIMMERS SO AS TO AVOID INTERFERENCE.

14.7. THE MECHANICAL CONTRACTOR SHALL TEST ALL CONTROLS/INTERLOCKS FOR GOOD OPERATION PRIOR TO PROJECT CLOSE-OUT. PROVIDE A REPORT FOR REVIEW TO THE ENGINEER INDICATING DEFICIENCIES.

14.8. WIRE ALL DEVICES TO THEIR RESPECTIVE MAGNETIC STARTERS AND PROVIDE POWER TO DIV.23 CONTROL PANELS FROM NEAREST AND MOST SUITABLE ELECTRICAL PANEL.

14.9. CONTRACT THE SERVICES OF THE BASE BUILDING APPROVED CONTROLS CONTRACTOR WHERE APPLICABLE.

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NO.	ISSUES	DATE	BY
1	ISSUED FOR REVIEW	DEC. 23 2024	GG
2	ISSUED FOR PERMIT AND TENDER	FEB. 24 2025	GG

NO.	REVISIONS	DATE	BY

PROJECT:
R.H. CORNISH P.S INTERIOR ALTERATIONS

494 QUEEN STREET,
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LICENSED PROFESSIONAL ENGINEER
2025-02-24
R.GIALLONARDO
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PROVINCE OF ONTARIO

DESIGN BY: JH	DOC CONTROL: DATE:
DRAWN BY: GG	% COMPLETE:
CHECKED BY: RG	INITIAL:
DATE: DECEMBER 2024	
SCALE: AS SHOWN	
FILE:	

PROJECT NO: **24-176**
DRAWING NO: **M-1.1**

HYDRONIC SYSTEMS SPECIFICATIONS

1. PRODUCTS

1.1. PIPE

1.1.1. PROVIDE SCHDULE 40 (NPS) STEEL PIPE CONFORMING TO ASTM-A53/A53M, GRADE B

1.2. PIPE JOINTS

1.2.1. FOR NPS 2"ø AND SMALLER, USE SCREWED FITTING WITH PTFE TAPE OR LEAD-FREE PIPE DOPE.
1.2.2. FOR NPS 2-1/2"ø AND OVER: WELDED FITTINGS AND FLANGES TO CAN/CSA-W48.
1.2.3. ROLL GROOVED: RIGID COUPLINGS TO CSA B242.
1.2.4. FLANGES: PLAIN ASME B16.1, RAISED FACE, SLIP-ON OR WELD NECK TO ASME B16.5.
1.2.5. ORIFICE FLANGES: SLIP-ON RAISED FACE, 2100 kPa.
1.2.6. FLANGE GASKETS TO AWWA C111
1.2.7. PIPE THREAD SHALL BE TAPERED.
1.2.8. BOLTS AND NUTS TO ASME B18.2.1 AND ASME B18.2.2.
1.2.9. ROLL GROOVED COUPLING GASKETS: NPS 2"ø TO 8"ø, TYPE EHP, EPDM HIGH PERFORMANCE, -40°C TO 120°C FOR CONTINUOUS OPERATION.

1.3. FITTINGS

1.3.1. SCREWED FITTINGS SHALL BE MALLEABLE IRON CONFORMING TO ASME B16.3, CLASS 150.

1.3.2. PIPE FLANGES AND FLANGED FITTINGS:
1.3.2.1. CAST IRON TO ASME B16.1, CLASS 125
1.3.2.2. STEEL TO ASME B16.5

1.3.3. BUTT-WELDED FITTINGS, STEEL, TO ASME B16.9.

1.3.4. UNIONS SHALL BE MALLEABLE IRON CONFORMING TO ASTM-A47/A47M AND ASME B16.3.

1.3.5. FITTINGS FOR ROLL GROOVED PIPING, MALEABLE IRON TO ASTM-A47/A47M, DUCTILE IRON TO ASTM-A536.

1.4. VALVES

1.4.1. CONNECTIONS:

1.4.1.1. NPS 2"ø AND SMALLER: SCREWED ENDS.
1.4.1.2. NPS 2-1/2"ø AND LARGER: FLANGED OR GROOVED ENDS.

1.4.2. GATE VALVES TO MSS-SP-70 AND MSS-SP-80 FOR ISOLATING EQUIPMENT, CONTROL VALVES, ETC.

1.4.2.1. NPS 2"ø AND SMALLER: BRONZE, CLASS 125 RISING STEM, SOLID WEDGE DISC.
1.4.2.2. NPS 2-1/2"ø AND OVER: CAST IRON, RISING STEM, SOLID WEDGE DISC, LEAD FREE BRONZE TRIM.

1.4.3. BUTTERFLY VALVES TO MSS-SP-67 FOR ISOLATING CELLS OR SECTIONS OF MULTIPLE COMPONENT EQUIPMENT. FOR NPS 2-1/2"ø AND OVER: LUG TYPE OR GROOVED ENDS.

1.4.4. GLOBE VALVES TO MSS-SP-80 AND 85 FOR THROTTLING, FLOW CONTROL AND EMERGENCY BYPASS.

1.4.4.1. NPS 2"ø AND SMALLER: BRONZE, WITH PLUG DISC.
1.4.4.2. NPS 2-1/2"ø AND OVER: CAST IRON, COMPOSITION BRONZE DISC AND BRONZE TRIM.

1.4.5. BALANCING FOR TAB

1.4.5.1. NPS 2"ø AND SMALLER: COPPER ALLOY BODY THREADED, 2.1 MPa RATING, GLOBE STYLE, SELF SEALING MEASURING PORTS FOR TEMPERATURE AND PRESSURE PROBES, LOCKING TAMPER PROOF SETTING, WITH PLUG DISC. COMBINATION BALANCING VALVE, STRAINER AND DRAIN BALL VALVE MAY ALSO BE USED IN LIEU OF STANDARD VALVE.
1.4.5.2. NPS 2-1/2"ø AND OVER: DUCTILE IRON BODY, FLANGED OR GROOVED CONNECTIONS, 1700 kPa RATING MINIMUM, GLOBE STYLE, SELF-SEALING MEASUREMENT PARTS FOR TEMPERATURE OR PRESSURE PROBES, LOCKING TAMPER PROOF SETTING.

1.4.6. DRAIN VALVES: BRONZE, GATE, CLASS 125 NON-RISING STEM, SOLID WEDGE DISC.

1.4.7. SWING CHECK VALVES TO MSS-SP-71

1.4.7.1. NPS 2"ø AND SMALLER: BRONZE, CLASS 125 SWING WITH COMPOSITION DISC.
1.4.7.2. NPS 2-1/2"ø AND OVER: CAST IRON, FLANGED OR GROOVED ENDS.

1.4.8. BALL VALVES: FOR NPS 2"ø AND SMALLER, USE SCREWED END BALL VALVES CONSTRUCTED OF CAST HIGH TENSILE BRONZE CONFORMING TO ASTM-B16 OR ASTM-B62. SCREWED ENDS SHALL CONFORM TO ANSI-B1.20.1 WITH HEX SHOULDERS. BALL SHALL BE REPLACEABLE AND CONSTRUCTED OF EITHER STAINLESS STEEL OR HARD CHROME.

2. INSTALLATION OF PIPEWORK

2.1. EXECUTION

2.1.1. MAKE ALL CONNECTIONS TO EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.

2.1.2. PROVIDE VALVES AND UNIONS AT CONNECTION FOR MAINTENANCE/REPLACEMENT PURPOSES.

2.1.3. PROVIDE DRAINS AT SYSTEM LOW POINTS, EQUIPMENT AND ISOLATING SECTIONS. INSTALL NPS 3/4"ø GATE OR GLOBE VALVE WITH HOSE END MALE THREAD, CAP AND CHAIN.

2.1.4. PROVIDE AUTOMATIC AIR VENTS AT SYSTEM HIGH POINTS COMPLETE WITH ISOLATING VALVE.

2.2. CLEARANCES: PROVIDE THE REQUIRED CLEARANCES AROUND EQUIPMENT, PIPING, SYSTEMS, ETC. TO RENDER THE NECESSARY SPACE REQUIREMENTS FOR SERVICE, INSPECTION, OPERATION, REPLACEMENT AND MAINTENANCE. REFER TO ALL MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR REQUIRED AND RECOMMENDED CLEARANCES.

2.3. DIELECTRIC FITTINGS: WHERE DISSIMILAR METALS ARE JOINED, PROVIDE DIELECTRIC ISOLATING FITTINGS (COMPLETE WITH THERMOPLASTIC LINER), UNIONS OR BRONZE VALVES.

2.4. PIPEWORK INSTALLATION

2.4.1. SCREWED FITTING CONNECTIONS SHALL BE COMPLETE WITH PIPE DOPE OR TEFLON TAPE.

2.4.2. PROTECT ALL SYSTEM OPENINGS DURING CONSTRUCTION TO PREVENT THE ENTRY OF FOREIGN MATERIAL.

2.4.3. INSTALL ALL PIPING, EQUIPMENT, ETC. TO BE PARALLEL OR PERPENDICULAR WITH BUILDING LINES.

2.4.4. PROPERLY REAM AND REMOVE SCALE AND FOREIGN MATERIAL PRIOR TO ASSEMBLY.

HYDRONIC SYSTEMS SPECIFICATIONS

2.4.5. VALVES

2.4.5.1. INSTALL ALL VALVES IN ACCESSIBLE LOCATIONS FOR MAINTENANCE WITHOUT REMOVING ADJACENT PIPING.
2.4.5.2. USE BALL OR BUTTERFLY VALVES AT BRANCH TAKE-OFFS FOR ISOLATING PURPOSES EXCEPT WHERE OTHERWISE SPECIFIED.
2.4.5.3. INSTALL BUTTERFLY VALVES ON CHILLED WATER AND RELATED CONDENSER WATER SYSTEMS ONLY.
2.4.5.4. INSTALL BALL VALVES FOR GLYCOL SERVICE.
2.4.5.5. USE CHAIN OPERATORS ON VALVES NPS 2-1/2"ø AND LARGER WHERE INSTALLED MORE THAN 2400 MM ABOVE FLOOR IN MECHANICAL ROOMS.

2.4.6. CHECK VALVES

2.4.6.1. INSTALL SILENT CHECK VALVES ON DISCHARGE OF PUMPS AND IN VERTICAL PIPES WITH DOWNWARD FLOW AND ELSEWHERE INDICATED.
2.4.6.2. INSTALL SWING CHECK VALVES IN HORIZONTAL LINES ON DISCHARGE OF PUMPS AND ELSEWHERE AS INDICATED.

2.4.7. WHERE PIPING PASSES THROUGH MASONRY, FIRE-RATED ASSEMBLIES, FOUNDATION WALLS, POURED WALLS, ETC., PROVIDE PIPE SLEEVES CONSTRUCTED OF SCHEDULE 40 BLACK STEEL PIPE. ALLOW FOR 0.25" OF CLEARANCE BETWEEN INSIDE OF SLEEVE AND OUTSIDE OF PIPE/INSULATION. SEAL WITH A FIRE RETARDANT AND WATERPROOF NON HARDENING MASTIC. WHERE SLEEVE IS INSTALLED IN A FIRE RATED ASSEMBLY, PROVIDE FIRESTOPPING CONFORMING TO ULC.

2.4.8. PROVIDE ESCUTCHEON PLATES ON PIPING PASSING THROUGH FINISHED WALLS, FLOOR AND CEILINGS.

2.4.9. PROPERLY FLUSH AND CLEAN SYSTEM AND REMOVE ALL FOREIGN MATTER PRIOR TO SYSTEM STARTUP. PREPARATORY TO ACCEPTANCE, CLEAN AND REFURBISH EQUIPMENT AND LEAVE IN OPERATING CONDITION, INCLUDING REPLACEMENT OF FILTERS IN PIPING SYSTEMS.

2.4.10. PRESSURE TEST SYSTEM AND MONITOR FOR PRESSURE LOSS FOR A MINIMUM OF 4 HOURS, UNLESS OTHERWISE SPECIFIED.

2.5. HANGERS AND SUPPORTS

2.5.1. UTILIZE PIPE HANGERS AND SUPPORTS CONSTRUCTED OF GALVANIZED STEEL.

2.5.2. INSTALL HANGERS SO THAT RODS ARE VERTICAL. ENSURE LOAD EQUALIZATION WITH ROD ADJUSTMENT.

2.5.3. FOR RISER CLAMPS, PROVIDE GALVANIZED BLACK CARBON STEEL, ULC LISTED OR FM APPROVED WHERE REQUIRED. BOLTS AND NUTS SHALL CONFORM TO ASTM-A307 AND ASTM-A563, RESPECTIVELY.

2.5.4. FOR BASE-MOUNTED EQUIPMENT, PROVIDE CONCRETE HOUSE-KEEPING PADS 4" TALL AND 6" OF SPACE AROUND EQUIPMENT AND CHAMFERED EDGES.

2.5.5. HANGER SPACING

2.5.5.1. PROVIDE HANGERS AT SPACING INDICATED BELOW AND AT EVERY JOINT AND CHANGE OF DIRECTION.

2.5.5.2. PROVIDE HANGERS FOR VARIOUS PIPE SIZES AT THE FOLLOWING SPACING: 1-1/4"ø - 1.8 m, 1-1/2"ø - 2.4 m AND 2"ø - 2.7 m.

2.6. PIPING INSULATION

2.6.1. PROVIDE PIPING INSULATION FOR THE HYDRONIC SYSTEMS AS FOLLOWS:

2.6.1.1. HEATING WATER (HWS/HWR): TYPE 'A', UP TO 1"ø - 1" THICK, 1-1/4"ø AND LARGER - 1-1/2" THICK.
2.6.1.2. CHILLED WATER (CHWS/CHWR): TYPE 'A', UP TO 1"ø - 1" THICK, 1-1/4"ø AND LARGER - 1-1/2" THICK. RECOVER WITH PVC JACKETING AS SPECIFIED BELOW.
2.6.1.3. CONDENSER WATER (OUTDOOR, CWS/CWR): TYPE 'A', ALL SIZES - 1" THICK. RECOVER WITH PVC JACKETING AS SPECIFIED BELOW.

2.6.2. TYPE 'A': JOHNS MANVILLE MICRO-LOK FIBRE GLASS PIPE INSULATION COMPLETE WITH JACKET AND VAPOUR RETARDER. CONNECT SECTIONS OF INSULATION WITH SELF-ADHESIVE BUTT STRIPS SUPPLIED BY THE INSULATION MANUFACTURER.

2.6.3. WHERE NOTED, RECOVER INSULATION WITH HEAVY-GAUGE UV-RESISTANT PVC FITTINGS, COVER AND JACKETING EQUAL TO JOHNS MANVILLE ZESTON 300 SERIES.

2.6.4. PROVIDE PRE-FORMED INSULATION FOR FITTINGS AND VALVES.

3. SYSTEM CHEMICAL TREATMENT

3.1. PROVIDE SYSTEM CHEMICAL TREATMENT AFTER THE SYSTEM HAS BEEN CLEANED AND STARTED UP IN ACCORDANCE WITH THE MECHANICAL SPECIFICATIONS. THIS CONTRACTOR SHALL PAY FOR AND CONTRACT THE SERVICES OF THE BASE BUILDING CHEMICAL TREATMENT CONTRACTOR TO CARRY OUT THE CHEMICAL TREATMENT PROCESS.

PLUMBING SPECIFICATIONS

1. PROVIDE PLUMBING SYSTEMS AS PER DRAWINGS, SPECIFICATIONS, THE LATEST EDITION OF THE ONTARIO BUILDING CODE, MUNICIPAL BY-LAWS AND THE AUTHORITY HAVING JURISDICTION. THE TERM "SYSTEMS" REFERS TO ALL PIPING, FITTINGS, SUPPORTS, CURBS, ACCESSORIES, ETC.

2. ALL ITEMS REQUIRED FOR PLUMBING SYSTEMS SHALL BE CSA APPROVED UNLESS OTHERWISE NOTED.

3. CLEANING, FLUSHING AND DISINFECTING OF DOMESTIC WATER PIPING

3.1. FOLLOW PROCEDURES AS OUTLINED IN THE LATEST EDITION OF STANDARD AWWA C651. ENSURE THAT THE METHODS COMPLY WITH LOCAL BY-LAWS.

3.2. PREVENT CONTAMINATING MATERIAL FROM ENTERING THE SYSTEM DURING STORAGE, CONSTRUCTION AND REPAIR.

3.3. REMOVE AND FLUSH ALL FOREIGN MATTER THAT HAS ENTERED THE PIPING.

3.4. PROTECT THE EXISTING DISTRIBUTION SYSTEM FROM BACKFLOW DUE TO HYDROSTATIC PRESSURE AND DISINFECTION PROCEDURES.

3.5. CHLORINATE RESIDUAL CONTAMINATION THAT MAY REMAIN AND FLUSH THE CHLORINATED WATER WHEN COMPLETE. FOLLOWING THIS, DETERMINE THE BACTERIOLOGICAL QUALITY OF THE WATER BY LABORATORY TESTING. CONNECT THE WATER SYSTEM ONLY WHEN TEST RESULTS INDICATE AN APPROVED AND DISINFECTED SYSTEM.

4. PIPING INSULATION

4.1. PROVIDE PIPING INSULATION FOR PLUMBING SYSTEMS AS FOLLOWS:

- DCW: TYPE 'A', FOR ALL PIPE SIZES 1" THICK
- DHW(R): TYPE 'A', UP TO 2"ø - 1" THICK, 2-1/2"ø AND UP - 1-1/2" THICK
- CD (HORIZONTAL): TYPE 'A', 1/2"ø THROUGHOUT

4.2. TYPE 'A': JOHNS MANVILLE MICRO-LOK FIBER GLASS PIPE INSULATION COMPLETE WITH JACKET AND VAPOUR RETARDER. CONNECT SECTIONS OF INSULATION WITH BUTT STRIPS SUPPLIED BY THE INSULATION MANUFACTURER.

4.3. FOR NEW EXPOSED PIPING INSTALLED INDOORS AND/OR IN MECHANICAL ROOMS, RECOVER INSULATION WITH HEAVY-GAUGE PVC FITTINGS, COVER AND JACKETING EQUAL TO JOHNS MANVILLE ZESTON 300 SERIES.

4.4. PROVIDE INSULATION ON PIPES GOING THROUGH FIRE RATED FLOORS AND WALLS, AND FIT TIGHT TO THE FIRE STOP MATERIAL.

4.5. HEATING WATER PIPING SHALL HAVE GLASS FIBRE PIPE INSULATION.

5. MAKE ALL PIPING AND ELECTRICAL CONNECTION TO PUMPS AND MOTOR ASSEMBLIES AS SPECIFIED. REFER TO PUMP SCHEDULE (WHERE APPLICABLE).

6. PIPING MATERIALS (SEE BELOW FOR MATERIALS SPECIFICATIONS)

6.1. DCW AND DHW(R)
6.1.1. ABOVE GROUND: TYPE 1
6.1.2. UNDERGROUND: TYPE 2

6.2. SANITARY & STORM DRAINAGE PIPING
6.2.1. ABOVE GROUND: TYPE 3, TYPE 4, TYPE 6 (WHERE PERMITTED)
6.2.2. UNDERGROUND: TYPE 4 (2"ø MIN.), TYPE 5, TYPE 7

6.3. VENT PIPING
6.3.1. ABOVE GROUND: TYPE 3, TYPE 4, TYPE 6 (WHERE PERMITTED)
6.3.2. UNDERGROUND: TYPE4, TYPE 5, TYPE 7

TYPE 1: TYPE L HARD DRAWN COPPER TUBING WITH WROUGHT COPPER FITTINGS AND LEAD-FREE SOLDER, CONTAINING LESS THAN .02 PERCENT LEAD, CONFORMING TO ASTM B32.

TYPE 2: TYPE K SOFT ANNEALED COPPER TUBING WITH NO JOINTS.

TYPE 3: TYPE DWV COPPER TUBE AND FITTINGS WITH 95:5 TIN:ANTIMONY SOLDER JOINTS.

TYPE 4: CAST IRON PIPING AND FITTINGS COMPLYING WITH CAN/CSA-B70. FOR MECHANICAL JOINTS ABOVE GRADE, USE NEOPRENE OR BUTYL RUBBER COMPRESSION GASKETS TO CAN/CSA-B70 WITH STAINLESS STEEL CLAMPS. FOR MECHANICAL JOINTS BELOW GRADE, USE MISSION HEAVYWEIGHT COUPLINGS FOR HUB AND SPIGOT CONNECTIONS, PROVIDE NEOPRENE GASKET TO CAN/CSA-B70 AND COLD CAULKING COMPOUNDS. DO NOT USE HUB AND SPIGOT FOR ABOVE GROUND APPLICATIONS.

TYPE 5: IPEX RING-TITE PVC SDR 35 SEWER PIPE IN COMPLIANCE WITH CSA B182.2 AND CSA B182.7. LATERALS WILL BE IPEX RING-TITE PVC SDR 28 IN COMPLIANCE WITH CSA B182.2.

TYPE 6: IPEX XFR PIPING AND FITTINGS COMPLYING WITH CSA B181.2, SCHEDULE 40 WITH A FLAME SPREAD RATING OF NOT GREATER THAN 25 AND A SMOKE DEVELOPED CLASSIFICATION OF LESS THAN 50.

TYPE 7: ROYAL ABS-DWV PIPING AND FITTINGS CERTIFIED TO CSA B181.1.

7. VALVES

7.1. PROVIDE ASTM DOMESTIC WATER VALVES TO THE FOLLOWING KITZ FIGURE NUMBERS:

7.1.1. GATE VALVES
7.1.1.1. 2"ø AND SMALLER: SOLDERED, 1400 kPa [200psi] W.O.G. FIG. 44
7.1.1.2. 2-1/2"ø AND LARGER: FLANGED, 1400 kPa [200psi] W.O.G. FIG. 44

7.1.2. GLOBE VALVES
7.1.1.1. 2"ø AND SMALLER: SOLDERED, 2070 kPa [300 psi], W.O.G. FIG. 10 WITH SUITABLE COMPOSITION DISC.
7.1.1.2. 2-1/2"ø AND LARGER: FLANGED, 1400 kPa [200 psi], W.O.G. FIG. 76

7.1.2. STANDARD CHECK VALVES
7.1.1.1. 2"ø AND SMALLER: SOLDERED, 2070 kPa [300 psi], W.O.G. FIG. 23
7.1.1.2. 2-1/2"ø AND LARGER: FLANGED, 1400 kPa [200 psi], W.O.G. FIG. 78

7.1.2. BALL VALVES
7.1.1.1. 2"ø AND SMALLER: BALL VALVES MAY BE PROVIDED AS A SUBSTITUTE FOR GATE AND GLOBE VALVES. PROVIDE BALL VALVES WITH BRASS OR BRONZE BODY, CHROME PLATED SOLID BALL, PTFE SEATS AND SEALS AND FULL PORT, KITZ FIG. 59

7.2. PROVIDE ISOLATION VALVES FOR DOMESTIC HOT AND COLD WATER SYSTEMS AT MAIN PIPING, BRANCH PIPING AND AT FIXTURES AND EQUIPMENT.

8. VERIFY ALL SITE CONDITIONS AFTER CONTRACT AWARD TO ENSURE THAT PIPING INVERTS ARE SUFFICIENT FOR THE RUNS SHOWN ON MECHANICAL DRAWINGS. REPORT DISCREPANCIES TO ENGINEER IMMEDIATELY.

9. CARRY OUT TESTING ON ALL SYSTEMS INCLUDING SANITARY DRAINAGE SYSTEMS, STORM DRAINAGE SYSTEMS AND DOMESTIC WATER SYSTEMS AS PER PART 7.3.6 OF THE ONTARIO BUILDING CODE AND THE AUTHORITIES HAVING JURISDICTION. TESTS MAY INCLUDE, BUT ARE NOT LIMITED TO, A WATER TEST, BACKFLOW TEST, PRESSURE TEST, BALL TEST AND FINAL TEST.

10. MAKE PROVISIONS FOR MAINTAINING THE SEAL OF ALL HUB DRAINS, FLOOR DRAINS, ETC., IN ACCORDANCE WITH THE ONTARIO BUILDING CODE. WHERE MECHANICAL OR ELECTRICAL DEVICES ARE USED, THE MINIMUM TUBING SIZE SHALL BE 3.8".

11. PROVIDE FIRESTOPPING AT ALL FIRE-RATED WALL AND FLOOR ASSEMBLIES AS PER THE 'GENERAL SPECIFICATIONS'.

12. COORDINATE EXACT LOCATIONS OF ALL PLUMBING FIXTURES WITH ALL TRADES AND ARCHITECTURAL/INTERIOR DESIGN DRAWINGS. DO NOT SCALE MECHANICAL DRAWINGS.

13. WHERE PLUMBING FIXTURES ARE SPECIFIED, THE CONTRACTOR SHALL PROVIDE ALL ACCESSORIES AND APPURTENANCES TO PROVIDE A FULL AND COMPLETE INSTALLATION OF THE RESPECTIVE FIXTURE. THIS MAY INCLUDE, BUT IS NOT LIMITED TO, STOP VALVES, RISER PIPING, ESCUTCHEON PLATES, ETC.

14. PROVIDE VENTING SYSTEMS IN ACCORDANCE WITH PART 7 OF THE ONTARIO BUILDING CODE.

NATURAL GAS PIPING SPECIFICATIONS

1. GENERAL

1.1. PROVIDE A COMPLETE AND OPERATING NATURAL GAS SYSTEM IN ACCORDANCE WITH CAN/CSA B149.1, THE ONTARIO BUILDING CODE AND THE AUTHORITIES HAVING JURISDICTION.

1.2. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND PAYMENT OF PERMITS WITH ALL PARTIES INCLUDING THE LOCAL GAS UTILITY COMPANY.

2. PRODUCTS

2.1. PIPE AND FITTINGS

2.1.1. PROVIDE SEAMLESS SCHEDULE 40 BLACK STEEL PIPING CONFORMING TO ASTM A53/A53M. FOR 1/2"ø TO 2"ø, ENDS SHALL BE SCREWED, AND FOR 2-1/2"ø AND GREATER, ENDS SHALL BE PLAIN.

2.1.2. FOR SIZES 1/2" TO 2"ø USE MALLEABLE IRON SCREWED FITTINGS TO ANSI B16.3, MALLEABLE IRON UNIONS TO ASTM A47M, AND SCHEDULE 40 NIPPLES TO AST A53.

2.1.3. ALL PIPING AND FITTINGS FOR SIZES 2-1/2"ø AND GREATER SHALL BE WELDED IN ACCORDANCE WITH CSA W47.1.

2.1.4. MANUAL SHUTOFF VALVES SHALL BE FULL PORT, FORGED BRASS BALL VALVE WITH TWO PIECE BODY CONSTRUCTION COMPLETE WITH CGA 3.16 APPROVAL, CRN NUMBER AND LEVER HANDLE.

3. EXECUTION

3.1. INSTALL ALL APPLIANCES AND EQUIPMENT IN ACCORDANCE WITH CAN/CSA B149.1 AND THE MANUFACTURER'S WRITTEN RECOMMENDATIONS, TECHNICAL BULLETINS, DATASHEETS AND INSTALLATION INSTRUCTIONS.

3.2. SLOPE PIPING DOWN IN DIRECTION TO FLOW TO LOW POINTS.

3.3. INSTALL DRIP POINTS AT LOW POINTS COMPLETE WITH BLOWDOWN VALVE, 3/4" MINIMUM SIZE, SCREWED AND CAPPED.

3.4. ALL PIPING SHALL BE REAMED AND CLEANED FOR BOTH SCALE AND DIRT ON THE INSIDE AND OUTSIDE OF PIPING.

3.5. PROVIDE GAS PIPING SYSTEM SO AS TO MINIMIZE THE AMOUNT OF PIPE DISMANTLING FOR EQUIPMENT REMOVAL.

3.6. ALL VALVES SHALL BE INSTALLED WITH STEMS IN THE UPRIGHT OR HORIZONTAL POSITION.

3.7. TEST, ADJUST, PURGE AND CLEAN ALL SYSTEMS IN ACCORDANCE WITH CAN/CSA B149.1 AND CAN/CSA B149.2.

3.8. IDENTIFY ALL PIPING SYSTEMS IN ACCORDANCE WITH CAN/CSA B149.1. ALL ABOVE GROUND PIPING OUTSIDE THE BUILDING SHALL BE PRIMED AND PAINTED YELLOW THROUGHOUT. INDOOR ABOVE GROUND PIPING MAY BE PAINTED, PROVIDED WITH YELLOW BANDING OF MIN. WIDTH 1", OR PROVIDED WITH PIPE MARKINGS AS PER THE GENERAL SPECIFICATIONS. IDENTIFICATION MARKINGS SHALL NOT EXCEED 20 FT.

3.9. PROVIDE PIPE SUPPORT AND SPACING AS PER PART 6 OF CAN/CSA B149.1.

3.10. FOR INSTALLATION ON ROOF, PROVIDE PIPING SUPPORTS EQUAL TO MIFAB CXP RUBBER SUPPORTS COMPLETE WITH PIPE STRAP CLAMPS.

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1	ISSUED FOR REVIEW	DEC. 23 2024	GG
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NO.	REVISIONS	DATE	BY

PROJECT:

R.H. CORNISH P.S INTERIOR ALTERATIONS

494 QUEEN STREET,
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LICENCE PROFESSIONAL ENGINEER
2025-02-24
R.GIALLONARDO
100152400
PROVINCE OF ONTARIO

DESIGN BY: JH	DOC. CONTROL DATE:
DRAWN BY: GG	% COMPLETE:
CHECKED BY: RG	INITIAL:
DATE: DECEMBER 2024	
SCALE: AS SHOWN	
FILE:	

PROJECT NO: **24-176**

DRAWING NO: **M-1.2**

PLUMBING LEGEND

EX.SAN	EXISTING ABOVE GROUND SANITARY DRAINAGE PIPING
EX.SAN	EXISTING UNDERGROUND SANITARY DRAINAGE PIPING
SAN	ABOVE GROUND SANITARY DRAINAGE PIPING
SAN	UNDERGROUND SANITARY DRAINAGE PIPING
EX.STM	EXISTING ABOVE GROUND STORM DRAINAGE PIPING
EX.STM	EXISTING UNDERGROUND STORM DRAINAGE PIPING
STM	ABOVE GROUND STORM DRAINAGE PIPING
STM	UNDERGROUND STORM DRAINAGE PIPING
EX.V	EXISTING ABOVE GROUND VENT PIPING
EX.V	EXISTING UNDERGROUND VENT PIPING
V	ABOVE GROUND VENT PIPING
V	UNDERGROUND VENT PIPING
EX.CD	EXISTING CONDENSATE DRAINAGE PIPING
CD	CONDENSATE DRAINAGE PIPING
	EXISTING DOMESTIC COLD WATER PIPING
	DOMESTIC COLD WATER PIPING
	EXISTING DOMESTIC HOT WATER PIPING
	DOMESTIC HOT WATER PIPING
	EXISTING DOMESTIC HOT WATER RETURN PIPING
	DOMESTIC HOT WATER RETURN PIPING
EX.G	EXISTING GAS PIPING
C	LOW PRESSURE GAS PIPING
HPG	HIGH PRESSURE GAS PIPING
	EXISTING PIPING/EQUIPMENT TO BE REMOVED
SSSS	HEAT TRACING ON PIPE
	CONTINUATION OF DUCTWORK/PIPING
	GAS COCK VALVE
FD FFD	FLOOR DRAIN/FUNNEL FLOOR DRAIN
HD	HUB DRAIN
AD	AREA DRAIN
RD	ROOF DRAIN
CB	CATCH BASIN
CO	BURIED CLEANOUT
CO	EXPOSED CLEANOUT
	SANITARY 'P' TRAP
	PIPE UP
	PIPE DOWN
VTR	VENT THROUGH ROOF
CAP	CAP ON PIPING
7	DRAWING NOTE
	ISOLATION VALVE
	PIPING DROPDOWN
	WATER METER

HVAC LEGEND

	EXISTING DUCTWORK/EQUIPMENT
	EXISTING DUCTWORK/EQUIPMENT TO BE REMOVED
	NEW RIGID DUCTWORK
	EXISTING FLEXIBLE DUCTWORK
	NEW FLEXIBLE DUCTWORK
	SUPPLY AIR DUCTWORK UP
	SUPPLY AIR DUCTWORK DOWN
	RETURN AIR DUCTWORK UP
	RETURN AIR DUCTWORK DOWN
S/A	'SUPPLY AIR'
R/A	'RETURN AIR'
E/A	'EXHAUST AIR'
O/A	'OUTSIDE AIR'
T/A	'TRANSFER AIR'
F/D	'FIRE DAMPER'
BD	'BALANCING DAMPER'
BDD	'BACKDRAFT DAMPER'
M/D	'MOTORIZED DAMPER'
	SQUARE SUPPLY AIR DIFFUSER
	SUPPLY AIR GRILLE
	RETURN AIR GRILLE
	SLOT DIFFUSER
T	THERMOSTAT
H	HUMIDISTAT
C	CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE DETECTOR
	ZONE SENSOR
	WALL SWITCH
A–6"ø / 150CFM	DIFF TYPE/SIZE / AIR CAPACITY
TYP.	'TYPICAL'
X–XX	EQUIPMENT TAG
CTE	'CONNECT TO EXISTING'
	FAN–POWERED TERMINAL UNIT
	VAV TERMINAL UNIT
	CABINET EXHAUST FAN
	INLINE EXHAUST FAN
	ELECTRIC DUCT HEATER
	CIRCULAR EXHAUST FAN
	BASEBOARD HEATER
	FORCE FLOW HEATER
	UNIT HEATER
	DUCTWORK WITH ACOUSTIC OR THERMAL INSULATION (SEE SPECS.)
	DUCTWORK WITH ACOUSTIC INSULATION
	DUCTWORK WITH THERMAL INSULATION
	CONTINUATION OF DUCTWORK/PIPING
	EXISTING CONTROL WIRING
	NEW CONTROL WIRING
	SPIN–ON DUCT CONNECTION WITH BALANCING DAMPER
7	DRAWING NOTE
	ROUND SUPPLY AIR DIFFUSER
	LOUVERED FACE SUPPLY/RETURN GRILLE
CAP	CAP ON DUCTWORK
	BRANCH ON DUCTWORK

PIPING LEGEND

EX.HWS	EXISTING HEATING WATER SUPPLY
EX.HWR	EXISTING HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
EX.CHWS	EXISTING CHILLED WATER SUPPLY
EX.CHWR	EXISTING CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
EX.CWS	EXISTING CONDENSER WATER SUPPLY
EX.CWR	EXISTING CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
REFL	REFRIGERANT LIQUID LINE
REFS	REFRIGERANT SUCTION LINE
	3–PORT CONTROL VALVE
	2–WAY CONTROL VALVE
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
CBV	CIRCUIT BALANCING VALVE
	BALL VALVE
	SAFETY RELIEF VALVE
	STRAINER
	UNION
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
N.O.	'NORMALLY OPEN'
N.C.	'NORMALLY CLOSED'
	PRESSURE GAUGE
	THERMOMETER
	AQUASTAT
PRV	PRESSURE REDUCING VALVE
VB	VACUUM BREAKER
	BACKFLOW PREVENTER
FS	FLOW SWITCH
AAV	AUTOMATIC AIR VENT
LWCO	LOW WATER CUT–OFF
	PLUG/COCK VALVE
	BUTTERFLY VALVE
	TEST PORT
	PUMP
CAP	CAP ON PIPING
7	DRAWING NOTE
	ISOLATION VALVE
A B C	A – HEATER REFERENCE TAG B – ACTIVE LENGTH (MM) C – HEAT OUTPUT (KW)

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NO.	REVISIONS	DATE	BY

PROJECT:

R.H. CORNISH P.S
INTERIOR ALTERATIONS

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LICENSED PROFESSIONAL ENGINEER
2025–02–24
R.GIALLONARDO
100152400
PROVINCE OF ONTARIO

DESIGN BY: JH	DOC CONTROL DATE:
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PROJECT NO: **24-176**

DRAWING NO: **M-1.3**

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURES SPECIFICATION	PIPE CONNECTION TRAP	COLD WATER	HOT WATER	DRAIN	VENT
WC1	WALL MOUNTED TOILET – VITREOUS CHINA – FOR FLUSHOMETER – EXPOSED – AUTOMATIC AMERICAN STANDARD 2257101.020 TOILET – AFWALL MILLENNIUM FLOWISE, TOILET, WALL–HUNG WITH WALL OUTLET, TOILET OPERATES IN THE RANGE OF 4.2 TO 6.0 LPF (1.1 – 1.6 GPF), WHITE FINISH VITREOUS CHINA, ELONGATED BOWL. CENTOCO 1500STSCCFE–001 SEAT – FAST–N–LOCK, FOR ELONGATED BOWL, OPEN FRONT, POLYPROPYLENE, TOILET SEAT, LESS SEAT COVER, AND PLASTIC COMMERCIAL CHECK HINGES, WHITE FINISH, FAST–N–LOCK MOUNTING SYSTEM TAKES THE GUESS WORK OUT WHEN TIGHTENING THE HARDWARE. THE SPECIALLY DESIGNED FASTENERS IN CLICK" WHEN THE APPROPRIATE TORQUE IS REACHED. THE BOLT AND NUT MATERIAL SHALL BE STAINLESS STEEL SLOAN SL–ROYAL 111–1.28 FLUSH VALVE – ROYAL MANUAL EXPOSED WATER CLOSET FLUSHOMETER, HIGH EFFICIENCY 4.8 LPF (1.28 GPF), 38 MM (1–1/2") SPUD COUPLING FOR TOP SPUD TOILET, CONSTRUCTED FROM SEMI–RED BRASS, POLISHED CHROME FINISH, CHLORAMINE RESISTANT PERMEX SYNTHETIC RUBBER DIAPHRAGM, METAL OSCILLATING HANDLE WITH TRIPLE SEAL HANDLE PACKING, FLUSH TUBE FOR 292 MM (11–1/2") ROUGH–IN, ADJUSTABLE TAILPIECE, 25 MM (1") I.P.S. SCREWDRIVER BAK–CHEK ANGLE CONTROL STOP WITH FREE SPINNING VANDAL–RESISTANT STOP CAP, DUAL–FILTERED FIXED BYPASS, SWEAT SOLDER ADAPTER KIT WITH COVER TUBE, HIGH BACK PRESSURE VACUUM BREAKER, LNLET LOCATED RIGHT OF VALVE, 25 MM (1") SUPPLY PIPE, CAST WALL FLANGE WITH SET SCREW, NON–HOLD–OPEN, NO EXTERNAL VOLUME ADJUSTMENT, FIXED VOLUME ACCURACY IS CONTROLLED BY CID TECHNOLOGY, 103 – 552 KPA (15 – 80 PSI) OPERATING WATER PRESSURE. WATTS ISCA–101–L/R–M11 CARRIER – CLOSET CARRIER, ADJUSTABLE FOR STANDARD AND WHEELCHAIR HEIGHT, 102 MM (4") NO HUB WASTE, 51 MM (2") NO HUB VENT CONNECTIONS, TILING FRAME. CHAMPION MI–XHUB COUPLING – NEOPRENE RUBBER, SHIELDED TRANSITION COUPLING, UNSIZED PIPE, FOUR CLAMPS FOR 2" TO 4" PIPESIZE, SIX CLAMPS FOR 5" TO 15" PIPESIZE, TYPE 304 STAINLESS STEEL CLAMPS, TYPE 304 AISI STAINLESS STEEL EYELETS.	75ø	25ø	–	75ø	38ø
L1	WALL MOUNT BASIN – AUTOMATIC FAUCET AMERICAN STANDARD 9134001EC.020 BASIN – DECORUM, WALL–HUNG LAVATORY, VITREOUS CHINA, EVERCLEAN ANTIMICROBIAL SURFACE, WHITE FINISH, CENTER HOLE ONLY. AMERICAN STANDARD 0059.020EC SHROUD/KNEE GUARD – VITREOUS CHINA KNEE CONTACT GUARD. MOEN MODEL 8894 SINGLE–HANDLE ADA METERING LAVATORY FAUCET – CHROME PLATED, METERING FAUCET, LEVER STYLE HANDLE, SINGLE HOLE CENTERSET, CYCLE TIME FROM 5–60 SECONDS, 0.5 GPM (1.9 LPM) FLOW RATE, SELF CONTAINED METERING MECHANISM, MULTI–STREAM LAMINAR FLOW. LAWLER 570–86820 MIXING VALVE – POINT OF USE, THERMOSTATIC MASTER WATER MIXING CONTROL VALVE, LEAD FREE BRASS BODY CONSTRUCTION, NICKEL PLATED FINISH, 1.9 – 30 LPM (0.5 – 8 GPM) RANGE FOR FLOWRATE, 11 LPM (3 GPM) TEMPERED FLOWRATE @ 5 PSI PRESSURE DROP, 4–7/8" (124 MM) HEIGHT, 3/8" MNPT (9.5 MM) INLET, 95–115 °F OUTLET WATER TEMPERATURE RANGE, 3/8" MNPT (9.5 MM) OUTLET, INTERNAL CHECKS, OFFERS CHOICE OF TEMPERATURE SETTINGS FROM 95° THROUGH 115 °F., 125 PSI MAX HYDROSTATIC PRESSURE, ±20% PRESSURE VARIATION, 7 GPM FLOWRATE @ 45 PSI. WATTS WCA–411 CARRIER – WCA–411/WCA–411–WC, LAVATORY CARRIER, FOR CONCEALED ARM CARRIER, ADJUSTABLE ARMS, EPOXY COATED CAST IRON. PROVIDE FIXTURE DRAIN AND P–TRAP EQUAL TO MCGUIRE 155A AND MCGUIRE 8872C, HEAVY DUTY LOOSE KEY ANGLE STOPS, FLEXIBLE RISERS AND ALL OTHER ACCESSORIES REQUIRED FOR A FULL AND COMPLETE INSTALLATION.	32ø	12ø	12ø	32ø	32ø
FD	FLOOR DRAIN WATTS FD–100NH–C–A5–1 FLOOR DRAIN – EPOXY COATED CAST IRON, FLOOR DRAIN, ADJUSTABLE ROUND 6 MM (1/4") THICK TOP, NO–HUB OUTLET, 127 MM (5") DIAMETER NICKEL BRONZE STRAINER, ANCHOR FLANGE, TRAP PRIMER TAPPING, REVERSIBLE MEMBRANE CLAMP, COLLAR WITH PRIMARY AND SECONDARY WEEPHOLES, 52 CM^2 (8 SQ. IN) FREE AREA.	75ø	–	–	75ø	38ø
TSP	FLOW ACTIVATED TRAP PRIMER PPP PR01–500 TRAP PRIMER – FLOW ACTIVATED TRAP PRIMER, C68020 LEAD FREEBRASS, 0.1 LPM (0.25 GPM), 1/2" FNPT (12 MM) INLET, 1/2" FIP (12 MM) OUTLET, NEOPERL CHECK VALVE, GREY PVC CHECK VALVE ADAPTER, STAINLESS STEEL SCREEN.	–	12ø	–	–	–

NOTES:

1. REFER TO INTERIOR DESIGNER'S DRAWINGS FOR SPECIFICATIONS OF PLUMBING FIXTURES NOT LISTED ON MECHANICAL DRAWINGS.

FAN SCHEDULE

TAG	MANU.	MODEL	LOCATION	SERVICE	CAP. (L/S)	ESP (IN.WG.)	RPM	DRIVE	TYPE	MOTOR (HP)	V/PH/HZ	STARTER	WEIGHT (KG)	REMARKS
EF–10	CARNES	VEBK08	ROOF	WASHROOM EXHAUST	342	0.500"	1750	BELT	DOWN BLAST	1/4 (L1)	120/1/60	MATCH EXISTING CONDITIONS	38.6	DOWNBLAST ROOF MOUNTED EXHAUST FAN C/W BIRDSCREEN, AND ROOF CURB ADAPTOR. OPERATION SCHEDULE TO MATCH EXISTING CONDITIONS.

NOTES:

1. COOK FANS ACCEPTABLE AS ALTERNATE.
2. ALL MOTORS, STARTERS, CONTACTORS, DISCONNECT SWITCHES AND CONTROL DEVICES SHALL BE PROVIDED BY DIV.23 AND INSTALLED BY DIV.26.
3. ALL LOW VOLTAGE WIRING TO BE PROVIDED BY DIV.23.

ROOFTOP UNIT SCHEDULE

TAG	MANU.	MODEL	NOMINAL TONNAGE	HEATING				COOLING				SUPPLY FAN			FRESH AIR (L/S)	FILTER	V/PH/HZ	MCA (A)	MOCP (A)	WEIGHT (KG)	MOUNTING ARRANGEMENT	REMARKS
				INPUT (MBH)	OUTPUT (MBH)	MAX TEMP RISE (°C)	STAGES	TOTAL CAP. (KW)	SENS. CAP. (KW)	EDB/ EWB (°C)	LDB/ LWB (°C)	S/A (L/S)	ESP (IN.WG.)	HP								
RTU–1	LENNOX	LGX102S5MM1J	8.5	180.0	144.0	33.3	2	29.9	22.1	26.7/19.4	14.7/13.9	1604	0.8	2.0	382	MERV 8	575/3/60	16	20	500	SIDE DISCHARGE	PACKAGED HEATING AND COOLING ROOFTOP UNIT C/W STAINLESS STEEL HEAT EXCHANGER, MANUFACTURER SUPPLIED 18" ROOF CURB, ECONOMIZER AND BAROMETRIC RELIEF DAMPER, BACNET CARD AND DISCONNECT SWITCH. THERMOSTAT PROVIDED BY BASE BUILDING CONTROLS CONTRACTOR. INCLUDE FOR PROGRAMING, GRAPHICS AND SEQUENCES OF TWELVE (12) BAS POINTS. ACTUAL BAS POINTS TO BE COORDINATED DURING CONSTRUCTION. INSTALL UNIT IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

NOTES:

1. ALL MOTORS, STARTERS, CONTACTORS, DISCONNECT SWITCHES AND CONTROL DEVICES SHALL BE PROVIDED BY DIV.23 AND INSTALLED BY DIV.26.
2. ALL LOW VOLTAGE WIRING TO BE PROVIDED BY DIV.23.
3. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
4. SETUP, TESTING AND COMMISSIONING SHALL BE CARRIED OUT BY THE EQUIPMENT MANUFACTURER AT NO EXTRA COST TO THE CLIENT.
5. SUBMIT ALL REPORTS TO ENGINEER FOR REVIEW.
6. NEW ROOFTOP UNITS SHALL BE CONNECTED TO BAS FOR CONTROL AND MONITORING. BAS CONTRACTOR TO INCLUDE FOR ALL CONDUIT, WIRING, BAS INTEGRATION, GRAPHICS, PROGRAMMING, ETC.

HYDRONIC WALLFIN HEATER SCHEDULE

REF.	MANU.	ELEMENT MODEL	CONFIG.	ROWS	ENCLOSURE MODEL	HEATING OUTPUT DENSITY @ 18°C ENTERING AIR TEMP. (W/M)	HEATING WATER			CONNECTION SIZE (MM)		TOTAL CAPACITY (KW)	REMARKS
							FLOW RATE (L/S)	EWT (°C)	LWT (°C)	SUPPLY	RETURN		
A	SIGMA	44C075	SLOPE TOP ENCLOSURE	2	SWE–18S	1435	SEE FLOOR PLANS	82.2	71.1	19	19	9.3	ENCLOSURE LENGTH SHALL BE FIELD CUT TO SPAN WALL TO WALL, ACTIVE ELEMENT LENGTH AS SPECIFIED ON DRAWINGS. STEEL CONSTRUCTION, OPEN INLET, STAMPED LOUVER OUTLET. PROVIDE INSULATION ON ALL INACTIVE SECTIONS.
B	SIGMA	44C075	SLOPE TOP ENCLOSURE	2	SWE–18S	1435	SEE FLOOR PLANS	82.2	71.1	19	19	11.8	ENCLOSURE LENGTH SHALL BE FIELD CUT TO SPAN WALL TO WALL, ACTIVE ELEMENT LENGTH AS SPECIFIED ON DRAWINGS. STEEL CONSTRUCTION, OPEN INLET, STAMPED LOUVER OUTLET. PROVIDE INSULATION ON ALL INACTIVE SECTIONS.

NOTES:

1. REFER TO MECHANICAL PLANS AND DETAILS FOR LOCATION AND PIPING CONNECTIONS.
2. CONFIRM ALL FINISHES WITH ARCHITECT/INTERIOR DESIGNER.
3. ACCESS DOORS AS REQUIRED FOR PIPING CONNECTIONS. REFER TO FLOOR PLANS FOR VALVE LOCATIONS.

DIFFUSER SCHEDULE

TAG	MAKE/MODEL	FINISH	REMARKS
A	EH PRICE MODEL SCD 24/24 SQUARE S/A DIFFUSER	–	3–CONE SQUARE SUPPLY DIFFUSER, STEEL CONSTRUCTION FOR T–BAR LAY–IN. SIZE NECK AS INDICATED ON DRAWING.
B	EH PRICE MODEL RCD ROUND CONE S/A DIFFUSER	–	3–POSITION ADJUSTABLE FLOW. PROVIDE BALANCE DAMPER AT DIFFUSER. SIZE AS INDICATED ON DRAWINGS.
C	EH PRICE MODEL 80 EGG CRATE GRILLE	–	1/2"x1/2"x1/2" ALUMINUM GRID CORE FOR DUCT MOUNTING. SIZE AS INDICATED ON DRAWINGS.
D	EH PRICE MODEL 530 LOUVERED GRILLE	–	LOUVERED FACE RETURN GRILLE, STEEL CONSTRUCTION, 45° DEFLECTION, 3/4" BLADE SPACING, FOR SURFACE MOUNTING, BLADES PARALLEL TO LONG DIMENSION. SIZE AS INDICATED ON DRAWING.
E	EH PRICE MODEL 530 LOUVERED GRILLE	–	LOUVERED FACE RETURN GRILLE, STEEL CONSTRUCTION, 45° DEFLECTION, 3/4" BLADE SPACING, FOR SURFACE MOUNTING C/W OPPOSED BLADE DAMPER, FRONT BLADES PARALLEL TO LONG DIMENSION. SIZE AS INDICATED ON DRAWING.
F	EH PRICE MODEL 80 EGG CRATE GRILLE	–	1/2"x1/2"x1/2" ALUMINUM GRID CORE FOR DUCT MOUNTING C/W OPPOSED BLADE DAMPER. SIZE AS INDICATED ON DRAWINGS.

NOTES:

1. SIZE ALL GRILLES, DIFFUSERS, ETC. AS PER MECHANICAL DRAWINGS.
2. CONFIRM ALL FINISHES WITH ARCHITECT/INTERIOR DESIGNER.

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INTERIOR ALTERATIONS

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LICENCE OF ONTARIO — LICENSED PROFESSIONAL ENGINEER — 2025-02-24 — R.GIALLONARDO — 100152400

DESIGN BY: JH	DOC CONTROL DATE:
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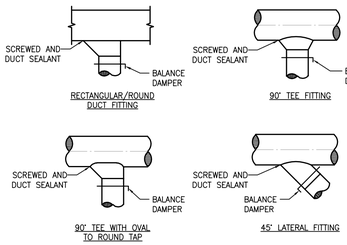
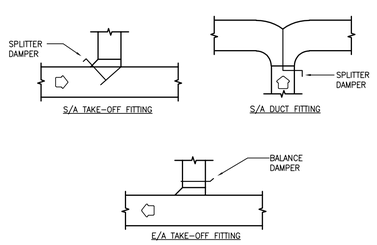
FILE:	

PROJECT NO: **24-176**

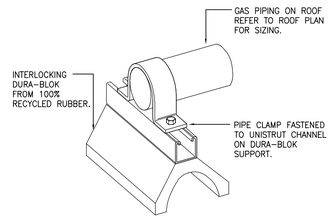
DRAWING NO: **M-1.4**



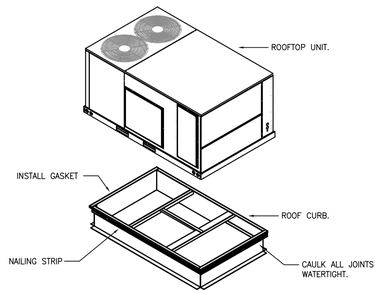
1 M-1.5 **ROUND DUCTWORK FITTING DETAIL**
NTS



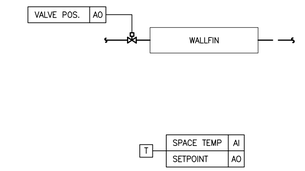
2 M-1.5 **DUCTWORK FITTING DETAIL**
NTS



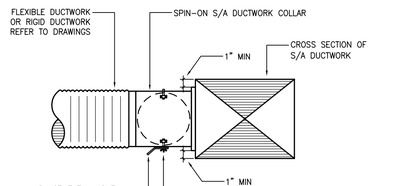
3 M-1.5 **GAS PIPING ON ROOF SUPPORT DETAIL**
NTS



4 M-1.5 **ROOF CURB INSTALLATION DETAIL**
NTS



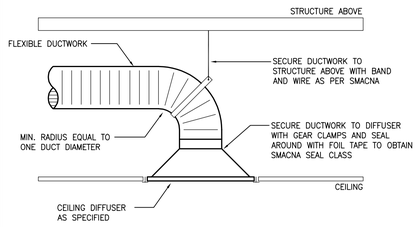
5 M-1.5 **WALLFIN HEATER CONTROL SCHEMATIC**
NTS



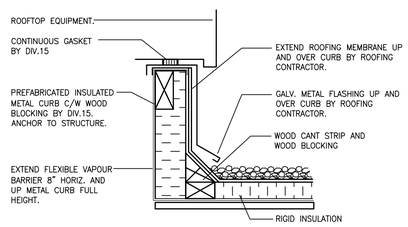
NOTES:

1. SEAL ALL DUCT CONNECTIONS AS PER SMACNA AND MECHANICAL SPECIFICATIONS.
2. ADJUST AIR VOLUMES AS PER DESIGN AND LOCK DAMPER IN PLACE.

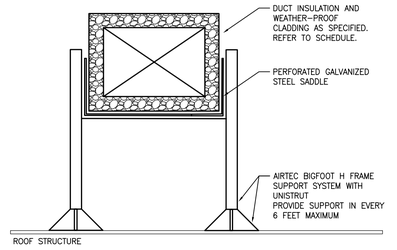
6 M-1.5 **SPIN-IN DUCT COLLAR CONNECTION DETAIL**
NTS



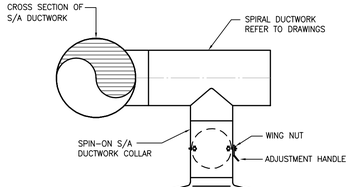
7 M-1.5 **DIFFUSER SUPPORT DETAIL**
NTS



8 M-1.5 **ROOF CURB DETAIL**
NTS



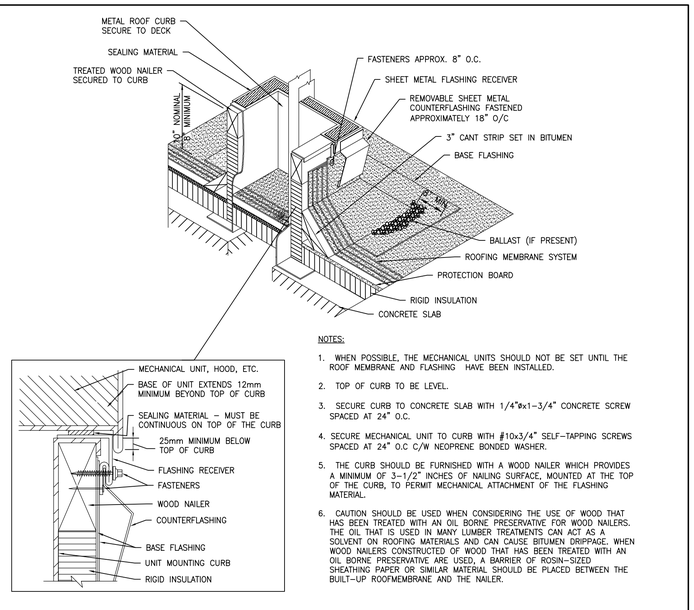
9 M-1.5 **DUCTWORK SUPPORT ON ROOF DETAIL**
NTS



NOTES

1. SEAL ALL DUCT CONNECTIONS AS PER SMACNA AND MECHANICAL SPECIFICATIONS.
2. ADJUST AIR VOLUMES AS PER DESIGN AND LOCK DAMPER IN PLACE.

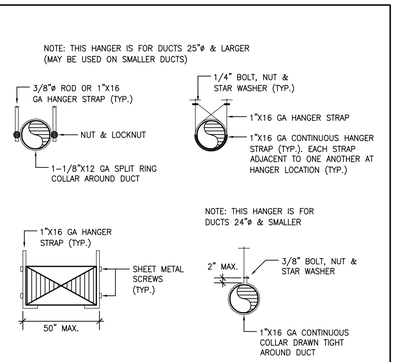
3 M-1.5 **ROUND DIFFUSER CONNECTION DETAIL**
NTS



NOTES:

1. WHEN POSSIBLE, THE MECHANICAL UNITS SHOULD NOT BE SET UNTIL THE ROOF MEMBRANE AND FLASHING HAVE BEEN INSTALLED.
2. TOP OF CURB TO BE LEVEL.
3. SECURE CURB TO CONCRETE SLAB WITH 1/4"ø x 1-3/4" CONCRETE SCREW SPACED AT 24" O.C.
4. SECURE MECHANICAL UNIT TO CURB WITH #10 x 3/4" SELF-TAPPING SCREWS SPACED AT 24" O.C C/W NEOPRENE BONDED WASHER.
5. THE CURB SHOULD BE FURNISHED WITH A WOOD NAILER WHICH PROVIDES A MINIMUM OF 3-1/2" INCHES OF NAILING SURFACE, MOUNTED AT THE TOP OF THE CURB, TO PERMIT MECHANICAL ATTACHMENT OF THE FLASHING MATERIAL.
6. CAUTION SHOULD BE USED WHEN CONSIDERING THE USE OF WOOD THAT HAS BEEN TREATED WITH AN OIL BORNE PRESERVATIVE FOR WOOD NAILERS. THE OIL THAT IS USED IN MANY LUMBER TREATMENTS CAN ACT AS A SOLVENT ON ROOFING MATERIALS AND CAN CAUSE BITUMEN DRIPPAGE. WHEN WOOD NAILERS CONSTRUCTED OF WOOD THAT HAS BEEN TREATED WITH AN OIL BORNE PRESERVATIVE ARE USED, A BARRIER OF ROSIN-SIZED SHEATHING PAPER OR SIMILAR MATERIAL SHOULD BE PLACED BETWEEN THE BUILT-UP ROOFMEMBRANE AND THE NAILER.

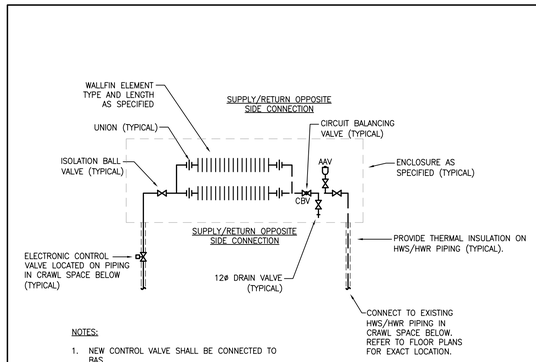
10 M-1.5 **RAISED CURB AIR HANDLING UNIT INSTALLATION DETAIL**
NTS



NOTES:

1. ATTACHMENTS TO OVERHEAD STRUCTURE SHALL BE MADE IN ACCORDANCE WITH STRUCTURAL ENGINEERS REQUIREMENTS AND WEIGHT LIMITATIONS. ALL ATTACHMENT METHODS TO STRUCTURE SHALL BE SUBMITTED TO STRUCTURAL ENGINEER FOR REVIEW.
2. PROVIDE SWAY AND SEISMIC BRACING FOR TWICE THE CODE REQUIREMENTS (WHERE REQUIRED).

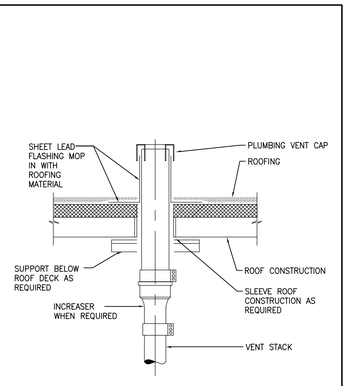
6 M-1.5 **DUCT HANGERS DETAIL**
NTS



NOTES:

1. NEW CONTROL VALVE SHALL BE CONNECTED TO BAS.
2. ENCLOSURE TO BE C/W PANELS AS REQUIRED FOR ACCESS TO VALVES.

12 M-1.5 **WALLFIN C/W ENCLOSURE PIPING DETAIL**
NTS



2 M-1.5 **PLUMBING VENT THROUGH ROOF DETAIL**
NTS

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1	ISSUED FOR REVIEW	DEC. 23 2024	GG
2	ISSUED FOR PERMIT AND TENDER	FEB. 24 2025	GG

NO.	REVISIONS	DATE	BY

PROJECT:

R.H. CORNISH P.S
INTERIOR ALTERATIONS

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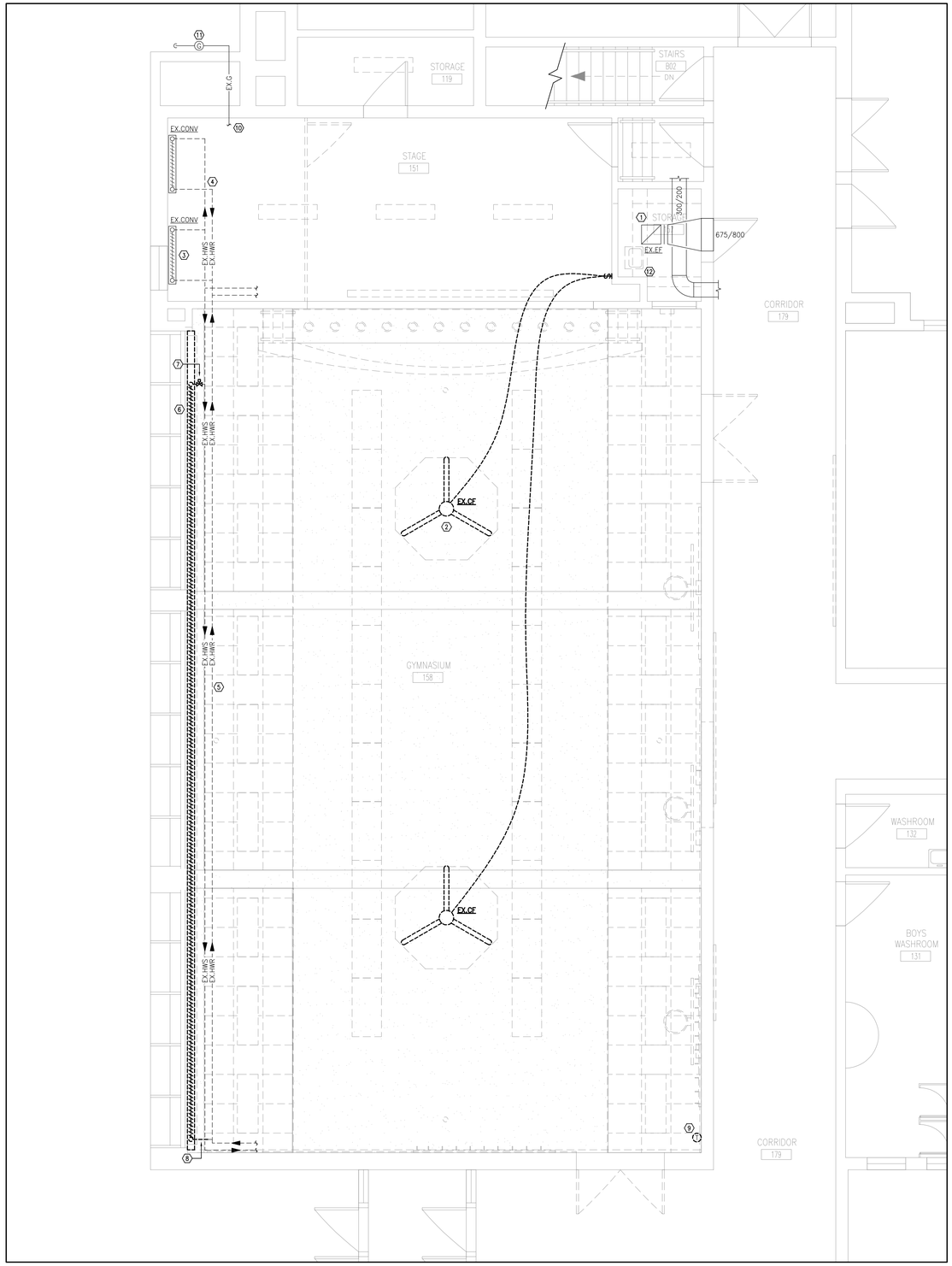
LICENSED PROFESSIONAL ENGINEER 2025-02-24 R.GIALLONARDO 100152400 PROVINCE OF ONTARIO

DESIGN BY: JH	DOC. CONTROL DATE:
DRAWN BY: GG	% COMPLETE:
CHECKED BY: RG	INITIAL:
DATE: DECEMBER 2024	
SCALE: AS SHOWN	
FILE:	

PROJECT NO: **24-176**

DRAWING NO: **M-1.5**



1 M-2.1 PART GROUND FLOOR PLAN - HVAC DEMOLITION
1:50

HVAC NOTES

1. EXISTING EXHAUST FAN SERVING SPACE ABOVE STORAGE ROOM TO REMAIN.
2. EXISTING CEILING FAN, ASSOCIATED CONTROL WIRING AND FAN SWITCH TO BE REMOVED AND DISPOSED OF (TYPICAL).
3. EXISTING CABINET CONVECTOR UNIT TO REMAIN (TYP-2).
4. EXISTING HWS/HWR PIPING AT HIGH LEVEL IN MECHANICAL ROOM ON FLOOR BELOW.
5. EXISTING HWS/HWR PIPING IN CRAWL SPACE BELOW.
6. EXISTING HYDRONIC WALLFIN HEATER AND ASSOCIATED ENCLOSURE AND VALVES TO BE REMOVED AND DISPOSED OF.
7. EXISTING HWS PIPING AND CONTROL VALVE TO BE REMOVED BACK TO MAIN IN CRAWL SPACE BELOW.
8. EXISTING HWR PIPING TO BE REMOVED BACK TO MAIN IN CRAWL SPACE BELOW.
9. EXISTING THERMOSTAT TO BE REMOVED AND RETAINED FOR REINSTALLATION WHERE SHOWN ON NEW HVAC PLANS.
10. EXISTING GAS PIPING ENTERING MECHANICAL ROOM BELOW TO REMAIN (TYPICAL).
11. EXISTING GAS METER TO REMAIN.
12. EXISTING SINK TO BE REMOVED AND DISPOSED OF. CAP ALL DRAINAGE AND PLUMBING SERVICES IN WALL.

HVAC DEMOLITION NOTES

1. WHERE COMPONENTS ARE TO BE REUSED, THE CONTRACTOR SHALL CLEAN AND TEST THE COMPONENT TO ENSURE PROPER OPERATION. THE CONSULTANT SHALL BE NOTIFIED IN THE EVENT THERE IS A DEFICIENCY WITH THE COMPONENT.
2. PERFORM DEMOLITION WORK SO AS TO CAUSE MINIMAL DISTURBANCE TO OWNER AND/OR ADJACENT AREAS. MINIMIZE DUST AND NOISE AND PROVIDE TEMPORARY AIR FILTERS ON AIR HANDLING SYSTEMS AFFECT BY THE AREA OF WORK. ALL COSTS ASSOCIATED WITH DAMAGES AS A RESULT OF THE MECHANICAL DEMOLITION SHALL BE COVERED BY DIV.23. MAINTAIN SAFETY STANDARDS AND PROVIDE ADEQUATE SIGNAGE FOR BOTH WORKERS AND OCCUPANTS.
3. THE MECHANICAL DRAWINGS DISPLAY A GENERAL DESIGN AND INSTALLATION. THEREFORE, IF REQUIRED, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE CONSULTANT PRIOR TO INSTALLATION.
4. THESE DRAWINGS HAVE BEEN PREPARED FOR DIV.23 AND DO NOT ACCURATELY DISPLAY ALL ELECTRICAL, STRUCTURAL AND ARCHITECTURAL ELEMENTS. REFER TO OTHER DIVISION'S DRAWINGS FOR CLARIFICATION.
5. THIS CONTRACTOR SHALL VISIT THE SITE AND COMPLETELY INVESTIGATE AND UNDERSTAND THE EXISTING CONDITIONS AND THEIR RELATION TO THE DESIGN DRAWINGS/DOCUMENTS. NO CONSIDERATION WILL BE GIVEN TO THE CONTRACTOR FOR ANY HINDRANCES TO THE MECHANICAL INSTALLATION FROM SITE CONDITIONS WHICH EXISTED PRIOR TO TENDER SUBMISSION. AS SUCH AND WHERE REQUIRED, THE CONTRACTOR SHALL PROVIDE INTERFERENCE DRAWINGS AND SHALL SUBMIT THEM TO THE CONSULTANT FOR REVIEW.

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PROJECT:
R.H. CORNISH P.S
INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO
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PART GROUND FLOOR PLAN - HVAC DEMOLITION

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LICENCED PROFESSIONAL ENGINEER
2025-02-24
R.GIALLONARDO
100152400
PROVINCE OF ONTARIO

DESIGN BY: JH	DOC. CONTROL DATE:
DRAWN BY: GG	% COMPLETE:
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DATE: DECEMBER 2024	
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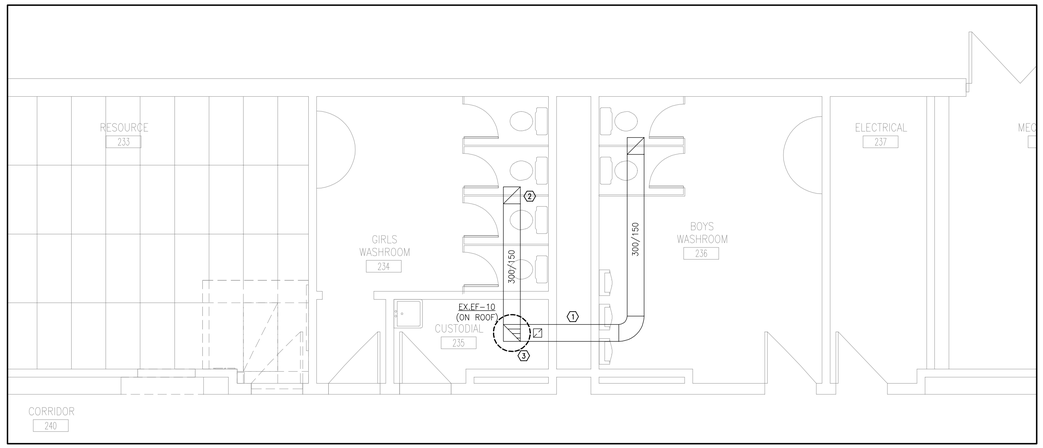
PROJECT NO: **24-176**
DRAWING NO: **M-2.1**



1
M-2.2

PART SECOND FLOOR PLAN - HVAC DEMOLITION

1:50

HVAC NOTES

1. EXISTING EXHAUST DUCTWORK IN CEILING SPACE TO REMAIN (TYPICAL).
2. EXISTING E/A GRILLE TO REMAIN (TYPICAL).
3. EXISTING EXHAUST FAN ON ROOF TO BE REMOVED AND DISPOSED OF. EXISTING ROOF CURB AND GRAVITY BACKDRAFT DAMPER TO REMAIN, PREPARE EXISTING ROOF CURB FOR NEW FAN.

HVAC DEMOLITION NOTES

1. WHERE COMPONENTS ARE TO BE REUSED, THE CONTRACTOR SHALL CLEAN AND TEST THE COMPONENT TO ENSURE PROPER OPERATION. THE CONSULTANT SHALL BE NOTIFIED IN THE EVENT THERE IS A DEFICIENCY WITH THE COMPONENT.
2. PERFORM DEMOLITION WORK SO AS TO CAUSE MINIMAL DISTURBANCE TO OWNER AND/OR ADJACENT AREAS. MINIMIZE DUST AND NOISE AND PROVIDE TEMPORARY AIR FILTERS ON AIR HANDLING SYSTEMS AFFECT BY THE AREA OF WORK. ALL COSTS ASSOCIATED WITH DAMAGES AS A RESULT OF THE MECHANICAL DEMOLITION SHALL BE COVERED BY DIV.23. MAINTAIN SAFETY STANDARDS AND PROVIDE ADEQUATE SIGNAGE FOR BOTH WORKERS AND OCCUPANTS.
3. THE MECHANICAL DRAWINGS DISPLAY A GENERAL DESIGN AND INSTALLATION. THEREFORE, IF REQUIRED, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE CONSULTANT PRIOR TO INSTALLATION.
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PART SECOND FLOOR PLAN - HVAC DEMOLITION

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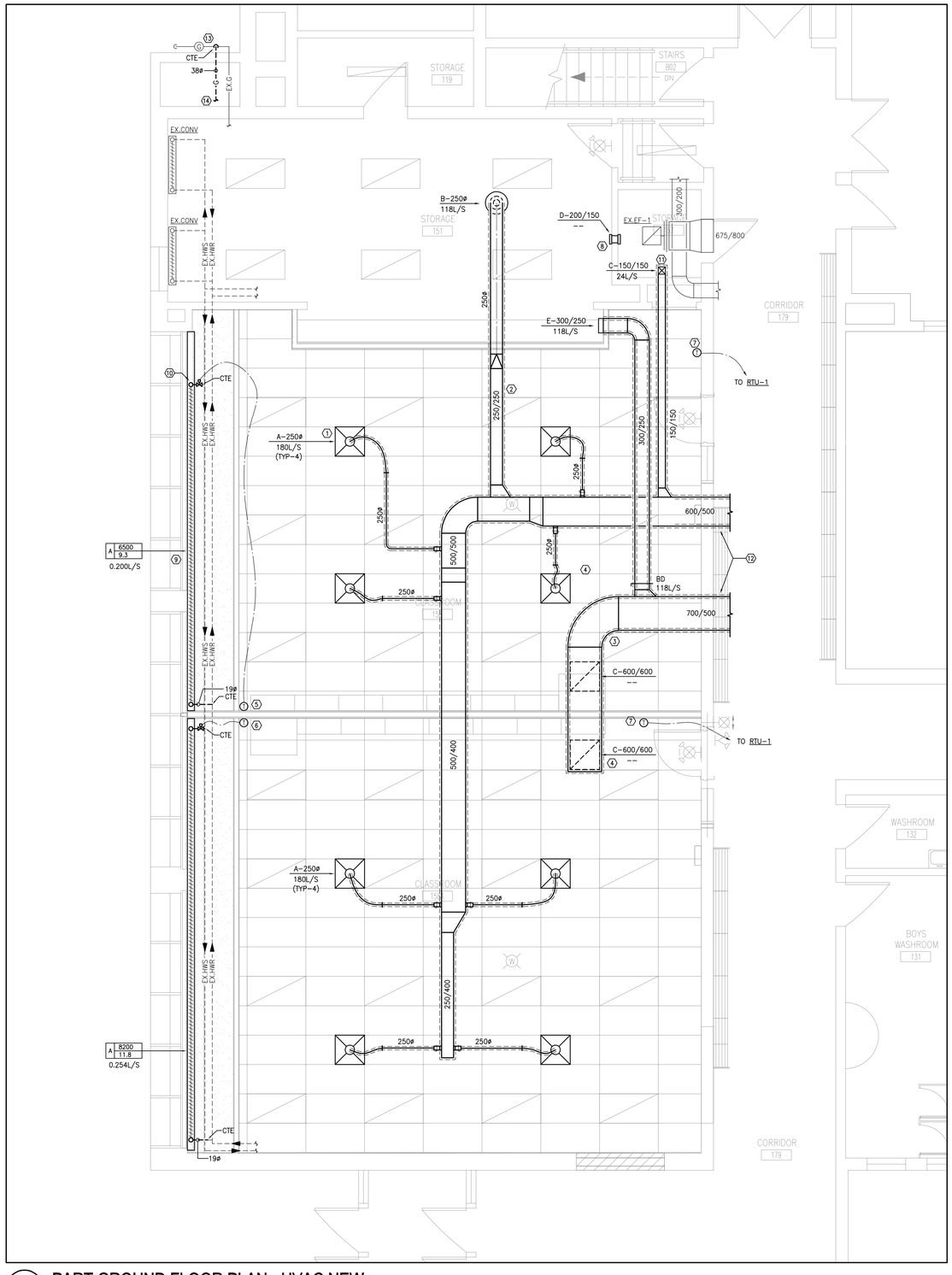
PROJECT NO: **24-176**

DRAWING NO: **M-2.2**



1 M-2.3 PART GROUND FLOOR PLAN - HVAC NEW

1:50

HVAC NOTES

1. PROVIDE NEW S/A DIFFUSER AS SPECIFIED (TYPICAL).
2. PROVIDE NEW S/A DUCTWORK C/W THERMAL AND ACOUSTIC INSULATION WHERE SHOWN (TYPICAL).
3. PROVIDE NEW R/A DUCTWORK C/W THERMAL AND ACOUSTIC INSULATION WHERE SHOWN (TYPICAL).
4. PROVIDE NEW R/A GRILLE AS SPECIFIED (TYPICAL).
5. PROVIDE NEW TEMPERATURE SENSOR TO MATCH BASE BUILDING SERVING NEW WALLFIN HEATER. BAS CONTRACTOR TO INCLUDE FOR ALL CONDUIT, WIRING, BAS INTEGRATION, GRAPHICS, PROGRAMMING, ETC.
6. NEW LOCATION OF EXISTING TEMPERATURE SENSOR SERVING NEW WALLFIN HEATER. BAS CONTRACTOR TO INCLUDE FOR ALL CONDUIT, WIRING, BAS INTEGRATION, GRAPHICS, PROGRAMMING, ETC.
7. PROVIDE NEW THERMOSTAT TO MATCH BASE BUILDING SERVING NEW RTU. BAS CONTRACTOR TO INCLUDE FOR ALL CONDUIT, WIRING, BAS INTEGRATION, GRAPHICS, PROGRAMMING, ETC. THERMOSTATS IN EACH CLASSROOM SHALL BE TEMPERATURE AVERAGING.
8. PROVIDE NEW T/A GRILLE AS SPECIFIED BETWEEN STORAGE 151 AND STORAGE 157.
9. PROVIDE NEW HYDRONIC WALLFIN HEATER AS SPECIFIED. PROVIDE NEW HWS/HWR PIPING, VALVES, ETC. AS PER MECHANICAL DETAILS. CONNECT TO EXISTING HWS/HWR PIPING IN CRAWL SPACE WHERE SHOWN. ENCLOSURE LENGTH SHALL SPAN WALL TO WALL. INTERLOCK NEW CONTROL VALVE WITH EXISTING BAS REFER TO DETAILS (TYPICAL).
10. NEW 19ø HWS/HWR PIPING DOWN TO CRAWL SPACE BELOW (TYPICAL).
11. NEW SUPPLY DUCTWORK DROPPING DOWN FROM SERVICE SPACE ABOVE C/W SUPPLY GRILLE IN CEILING OF STORAGE SPACE.
12. NEW S/A AND R/A DUCTWORK THROUGH WALL TO ROOF.
13. CONTRACTOR TO CONFIRM EXISTING METER CAPACITY TO DETERMINE METER/REGULATOR UPGRADES. COORDINATE ALL WORK WITH LOCAL UTILITY COMPANY, PAY FOR ALL ASSOCIATED FEES AND OBTAIN PERMITS AS REQUIRED. ALL CHARGES SHALL BE PAID BY DIV.23 AND BILLED BACK TO OWNER AT COST. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH CSA B149 AND TSSA.
14. NEW GAS PIPING ON ROOF. REFER TO ROOF PLAN FOR CONTINUATION.

GENERAL HVAC NOTES

1. THE MECHANICAL DRAWINGS DISPLAY A GENERAL DESIGN AND INSTALLATION. THEREFORE, IF REQUIRED, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE CONSULTANT PRIOR TO INSTALLATION.
2. THESE DRAWINGS HAVE BEEN PREPARED FOR DIV.23 AND DO NOT ACCURATELY DISPLAY ALL ELECTRICAL, STRUCTURAL AND ARCHITECTURAL ELEMENTS. REFER TO OTHER DIVISION'S DRAWINGS FOR CLARIFICATION.
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4. ALL WORK WITHIN CRAWL SPACE TO BE COMPLIANT WITH DDSB REQUIREMENT AND STANDARDS. CONTRACTOR TO COMPLETE ASSESSMENTS AS REQUIRED PRIOR TO ENTRY.

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INTERIOR ALTERATIONS

494 QUEEN STREET,
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DURHAM DISTRICT SCHOOL BOARD

DRAWING:

PART GROUND FLOOR PLAN - HVAC NEW

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LICENCED PROFESSIONAL ENGINEER
2025-02-24
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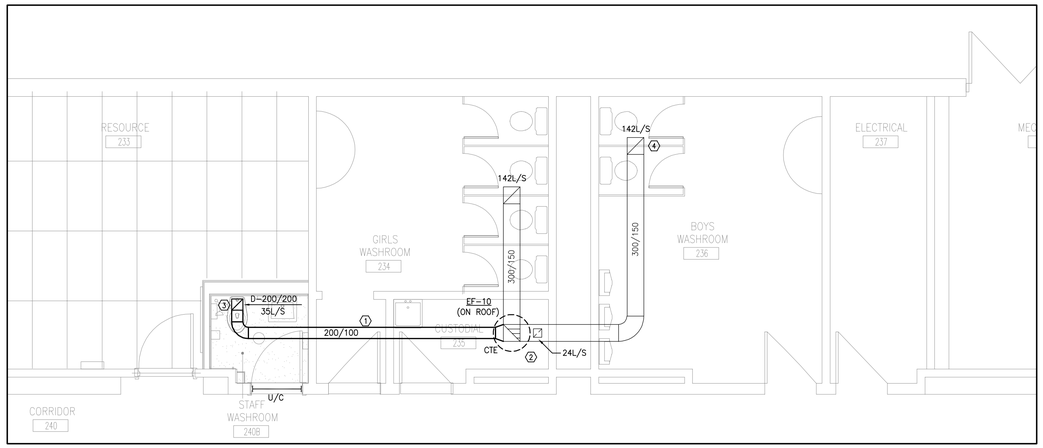
PROJECT NO: **24-176**

DRAWING NO: **M-2.3**



1 M-2.4

PART SECOND FLOOR PLAN - HVAC NEW

1:50

HVAC NOTES

1. PROVIDE NEW E/A DUCTWORK IN CEILING SPACE. CONNECT TO EXISTING WHERE SHOWN (TYPICAL).
2. PROVIDE NEW ROOF MOUNTED EXHAUST FAN C/W BIRDSCREEN. MOUNT FAN ON EXISTING ROOF CURB C/W CURB ADAPTOR AS REQUIRED.
3. PROVIDE NEW E/A GRILLE AS SPECIFIED.
4. BALANCE EXISTING E/A GRILLES AS SHOWN (TYPICAL).

GENERAL HVAC NOTES

1. THE MECHANICAL DRAWINGS DISPLAY A GENERAL DESIGN AND INSTALLATION. THEREFORE, IF REQUIRED, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE CONSULTANT PRIOR TO INSTALLATION.
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INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO
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DRAWING:

PART SECOND FLOOR PLAN - HVAC NEW

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LICENCED PROFESSIONAL ENGINEER
2025-02-24
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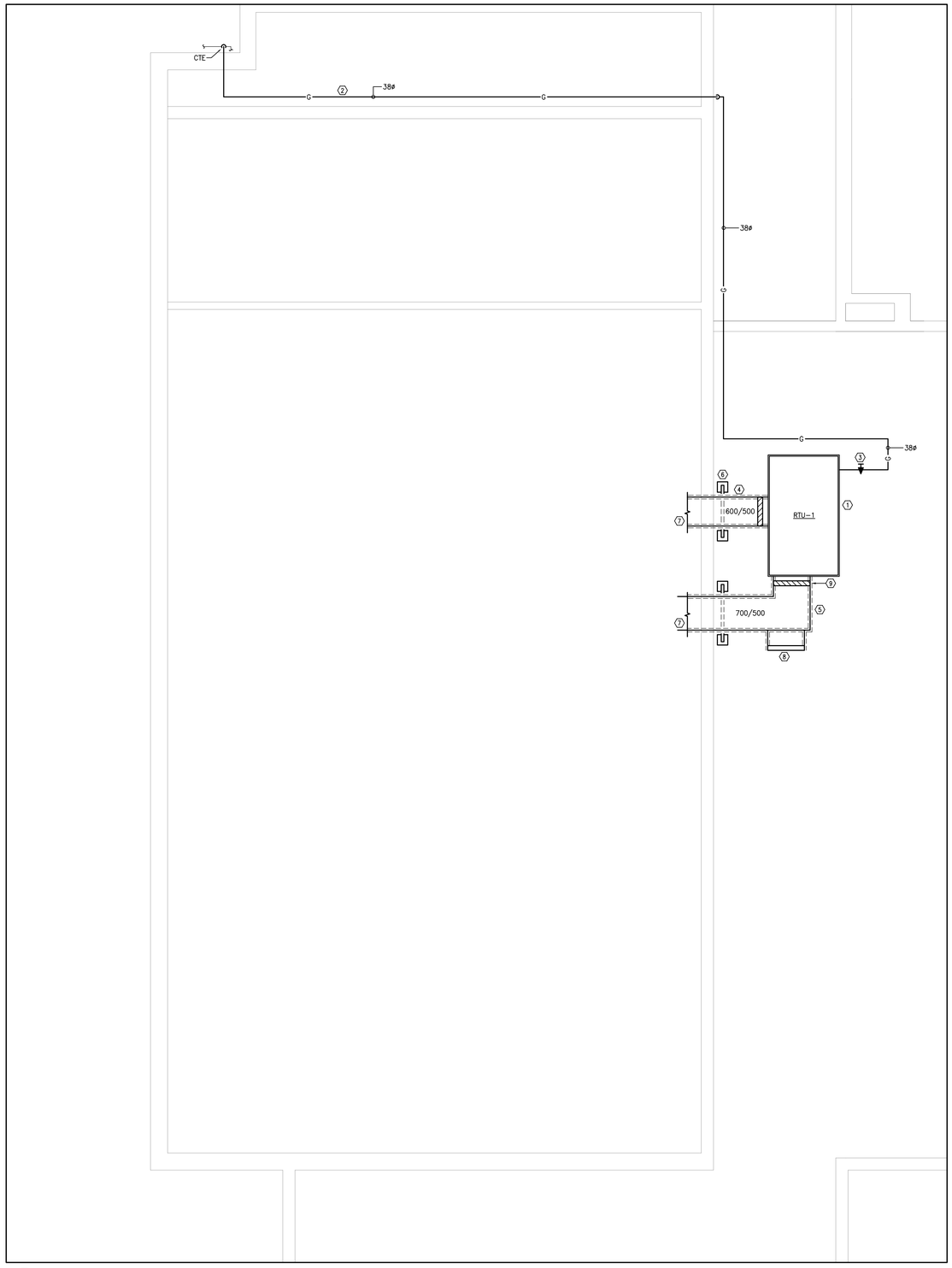
PROJECT NO: **24-176**

DRAWING NO: **M-2.4**



1 M-2.5 PART ROOF PLAN - HVAC NEW
1:50

HVAC NOTES

1. PROVIDE NEW GAS-FIRED/ELECTRIC PACKAGED HEATING/COOLING ROOFTOP UNIT AS SPECIFIED ON ROOF C/W MANUFACTURER SUPPLIED ROOF CURB. SUPPLY AND RETURN DUCTWORK SHALL BE HORIZONTAL DISCHARGE. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR HORIZONTAL DUCTED APPLICATION.
2. NEW GAS PIPING ON ROOF C/W SUPPORTS AS SPECIFIED. REFER TO DETAILS.
3. CONNECT NEW GAS PIPING TO RTU C/W GAS COCK AND DIRT LEG IN ACCORDANCE WITH CSA B149.
4. NEW ACOUSTICALLY LINED S/A DUCTWORK C/W THERMAL INSULATION AND JACKETING AS SPECIFIED (TYPICAL).
5. NEW ACOUSTICALLY LINED R/A DUCTWORK C/W THERMAL INSULATION AND JACKETING AS SPECIFIED (TYPICAL).
6. PROVIDE DUCTWORK SUPPORT EQUAL TO EATON DURA-BLOK B-LINE SERIES SUPPORT SYSTEM INCLUDING H-FRAME AND UNISTRUT SYSTEM C/W GALVANIZED STEEL SADDLES. SPACE SUPPORTS AT MIN. 6 FT. AND ENSURE BOTTOM OF DUCTWORK IS MIN. 24" ABOVE ROOF (TYPICAL).
7. PROVIDE NEW DUCTWORK THROUGH EXTERIOR WALL TO MATCH BASE BUILDING. ANNULAR SPACE AROUND PENETRATION SHALL BE INSULATED AND SEALED WEATHER-TIGHT.
8. CONTRACTOR TO INSTALL MANUFACTURER SUPPLIED BAROMETRIC RELIEF DAMPER. REFER TO MANUFACTURER INSTALLATION INSTRUCTIONS.
9. PROVIDE FLEXIBLE DUCTWORK CONNECTION SUITABLE FOR OUTDOOR INSTALLATION (TYPICAL).

GENERAL HVAC NOTES

1. THE MECHANICAL DRAWINGS DISPLAY A GENERAL DESIGN AND INSTALLATION. THEREFORE, IF REQUIRED, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE CONSULTANT PRIOR TO INSTALLATION.
2. THESE DRAWINGS HAVE BEEN PREPARED FOR DIV.23 AND DO NOT ACCURATELY DISPLAY ALL ELECTRICAL, STRUCTURAL AND ARCHITECTURAL ELEMENTS. REFER TO OTHER DIVISION'S DRAWINGS FOR CLARIFICATION.
3. THIS CONTRACTOR SHALL VISIT THE SITE AND COMPLETELY INVESTIGATE AND UNDERSTAND THE EXISTING CONDITIONS AND THEIR RELATION TO THE DESIGN DRAWINGS/DOCUMENTS. NO CONSIDERATION WILL BE GIVEN TO THE CONTRACTOR FOR ANY HINDRANCES TO THE MECHANICAL INSTALLATION FROM SITE CONDITIONS WHICH EXISTED PRIOR TO TENDER SUBMISSION. AS SUCH AND WHERE REQUIRED, THE CONTRACTOR SHALL PROVIDE INTERFERENCE DRAWINGS AND SHALL SUBMIT THEM TO THE CONSULTANT FOR REVIEW.

Giallonardo — Engineering Inc.
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Woodbridge, ON
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DDSB Ignite Learning

NO.	ISSUES	DATE	BY
1	ISSUED FOR REVIEW	DEC. 23 2024	GG
2	ISSUED FOR PERMIT AND TENDER	FEB. 24 2025	GG

NO.	REVISIONS	DATE	BY

PROJECT:

R.H. CORNISH P.S
INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO
DURHAM DISTRICT SCHOOL BOARD

DRAWING:

PART ROOF PLAN
- HVAC NEW

BBA
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Engineers
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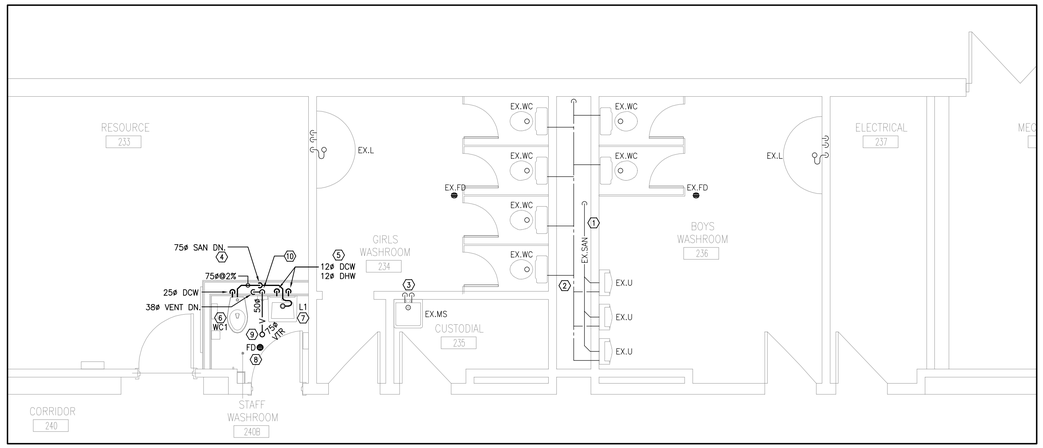
LICENSED PROFESSIONAL ENGINEER
2025-02-24
R.GIALLONARDO
100152400
PROVINCE OF ONTARIO

DESIGN BY: JH	DOC. CONTROL DATE:
DRAWN BY: GG	% COMPLETE:
CHECKED BY: RG	INITIAL:
DATE: DECEMBER 2024	
SCALE: AS SHOWN	
FILE:	

PROJECT NO: **24-176**

DRAWING NO: **M-2.5**



1
M-3.1

PART SECOND FLOOR PLAN - PLUMBING AND DRAINAGE NEW

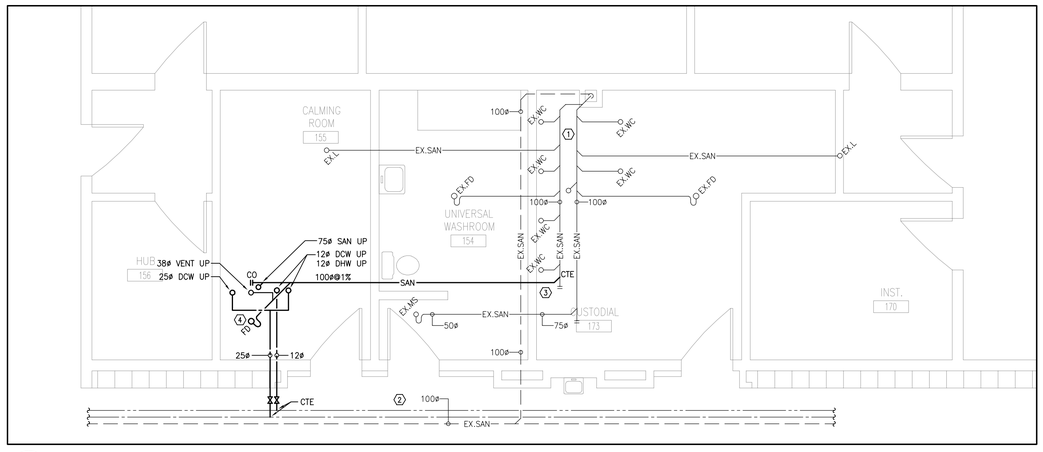
1:50

DRAINAGE DRAWING NOTES

1. EXISTING SANITARY DRAINAGE PIPING IN CHASE SERVING URINALS TO REMAIN (TYPICAL).
2. EXISTING DCW PIPING IN CHASE SERVING EXISTING WATER CLOSETS AND URINALS TO REMAIN (TYPICAL).
3. EXISTING DCW/DHW AND DRAINAGE PIPING FROM BELOW SERVING EXISTING SINK/LAV TO REMAIN.
4. PROVIDE NEW SANITARY DRAINAGE PIPING WHERE SHOWN. CONNECT TO EXISTING IN CEILING SPACE BELOW (TYPICAL).
5. PROVIDE NEW DCW/DHW PIPING WHERE SHOWN IN CHASE. CONNECT TO NEW FIXTURES, SIZE AS INDICATED ON FLOOR PLAN.
6. PROVIDE NEW WATER CLOSET AS SPECIFIED.
7. PROVIDE NEW LAVATORY AS SPECIFIED.
8. PROVIDE NEW FLOOR DRAIN AS SPECIFIED C/W NEW TRAP SEAL PRIMING. PROVIDE ACCESS PANEL AS REQUIRED TO TRAP SEAL PRIMER.
9. NEW VENT PIPING INSTALLATION IN CEILING SPACE. PROVIDE NEW 75ø VTR WHERE INDICATED. MAINTAIN MINIMUM 10 FOOT CLEARANCE TO ALL FRESH AIR INTAKES.
10. DISTRIBUTE VENT PIPING TO PLUMBING FIXTURES IN ACCORDANCE WITH THE ONTARIO BUILDING CODE.

GENERAL NOTES

1. ALL EXISTING SERVICES SHOWN ARE A GENERAL REPRESENTATION ONLY OF ACTUAL ONSITE CONDITIONS. CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING SERVICES PRIOR TO CONSTRUCTION AND REPORT ALL DISCREPANCIES TO ENGINEER IN A TIMELY MANNER.
2. PROVIDE VENTING SYSTEMS IN ACCORDANCE WITH PART 7 OF THE NATIONAL PLUMBING CODE.
3. PROVIDE ADEQUATE ACCESS FOR ALL EQUIPMENT, VALVES, ETC. LOCATED BEHIND WALLS AND CEILINGS. REFER TO SPECIFICATIONS.
4. PROVIDE TRAP PRIMING AND ASSOCIATED EQUIPMENT AS SPECIFIED AND/OR REQUIRED. ENSURE THAT TRAP PRIMER MECHANISM IS INSTALLED IN AN ACCESSIBLE LOCATION.
5. PROVIDE APPROPRIATE MEANS FOR FIRESTOPPING FOR ALL PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES.
6. PATCH ALL FLOOR/WALL PENETRATIONS FROM REMOVED PIPING/EQUIPMENT TO BASE BUILDING STANDARDS.



2
M-3.1

PART GROUND FLOOR PLAN - PLUMBING AND DRAINAGE NEW

1:50

DRAINAGE DRAWING NOTES

1. EXISTING SANITARY DRAINAGE PIPING TO REMAIN (TYPICAL).
2. EXISTING DCW/DHW PIPING IN CORRIDOR TO REMAIN (TYPICAL).
3. PROVIDE NEW SANITARY DRAINAGE PIPING WHERE SHOWN. CONNECT TO EXISTING MAIN IN CEILING SPACE (TYPICAL).
4. PROVIDE NEW DCW/DHW PIPING UP TO FLOOR ABOVE. CONNECT TO EXISTING AT MAIN IN GROUND FLOOR CORRIDOR C/W NEW ISOLATION VALVES (TYPICAL).

GENERAL NOTES

1. ALL EXISTING SERVICES SHOWN ARE A GENERAL REPRESENTATION ONLY OF ACTUAL ONSITE CONDITIONS. CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING SERVICES PRIOR TO CONSTRUCTION AND REPORT ALL DISCREPANCIES TO ENGINEER IN A TIMELY MANNER.
2. PROVIDE VENTING SYSTEMS IN ACCORDANCE WITH PART 7 OF THE NATIONAL PLUMBING CODE.
3. PROVIDE ADEQUATE ACCESS FOR ALL EQUIPMENT, VALVES, ETC. LOCATED BEHIND WALLS AND CEILINGS. REFER TO SPECIFICATIONS.
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5. PROVIDE APPROPRIATE MEANS FOR FIRESTOPPING FOR ALL PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES.
6. PATCH ALL FLOOR/WALL PENETRATIONS FROM REMOVED PIPING/EQUIPMENT TO BASE BUILDING STANDARDS.

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PROJECT:

R.H. CORNISH P.S
INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO
DURHAM DISTRICT SCHOOL BOARD

DRAWING:

PART SECOND FLOOR PLAN - PLUMBING AND DRAINAGE NEW

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LICENSED PROFESSIONAL ENGINEER
2025-02-24
R.GIALLONARDO
100152400
PROVINCE OF ONTARIO

DESIGN BY: JH	DOC CONTROL DATE:
DRAWN BY: GG	% COMPLETE:
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DATE: DECEMBER 2024	
SCALE: AS SHOWN	
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PROJECT NO: **24-176**

DRAWING NO: **M-3.1**

ELECTRICAL SPECIFICATION

1. EXAMINE THE EXISTING SITE CONDITION TOGETHER WITH THE PROPOSED WORK AND THE WORK OF ALL OTHER TRADES TO DETERMINE THE COMPLETE EXTENT OF RENOVATIONS TO THE EXISTING BUILDING. INCLUDE IN THE TENDER PRICE FOR THE TOTAL SCOPE OF WORK INCLUDING BUT NOT LIMITED TO CUTTING, PATCHING, REMOVING, REROUTING OF ALL EXISTING ELECTRICAL EQUIPMENT AND WIRING TO SUCCESSFULLY EXECUTE ALL WORK DESCRIBED.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE 2012 ONTARIO BUILDING CODE, PROVINCIAL ELECTRICAL SAFETY CODE, C.S.A. STANDARD, U.L.C., N.F.P.A., O.S.H.A., AND ALL OTHER APPLICABLE CODES AS REQUIRED.
3. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH BASE BUILDING STANDARDS.
4. OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS. ALL REQUIRED PERMITS SHALL BE SUBMITTED TO THE LANDLORD PRIOR TO COMMENCING THE WORK.
5. ALL WORK SHALL BE INSTALLED IN A CO-ORDINATED MANNER WITH ALL TRADES.
6. DRAWINGS SHALL NOT BE SCALED FOR MEASUREMENTS.
7. ALL INTERRUPTIONS OF SERVICES TO ANY PART OF THE BUILDING SHALL BE EXECUTED ONLY WITH PRIOR APPROVAL AND ARRANGEMENTS WITH THE BUILDING OWNER OR REPRESENTATIVE, MINIMUM 48HRS. NOTICE REQUIRED. INCLUDE FOR ALL PREMIUM TIME REQUIRED FOR INTERRUPTIONS OF SERVICES, AND REQUIRED TIE-INS TO EXISTING SERVICES.
8. PROVIDE ALL MATERIALS, EQUIPMENT AND LABOUR NECESSARY TO PERFORM THE COMPLETE WORK AS INDICATED.
9. DAMAGE TO ANY SYSTEM OCCURRING DURING EXECUTION OF THE WORK SHALL BE RECTIFIED AT THE CONTRACTORS EXPENSE.
10. ALL NEW EQUIPMENT SHALL BE IDENTIFIED WITH LAMACOID PLATES. BLACK BACKGROUND WITH WHITE LETTERING. WORDING ON ALL LAMACOID PLATES SHALL BE APPROVED BY THE CONSULTANT AND THE BUILDING OWNER PRIOR TO ENGRAVING.
11. PROVIDE A FULLY ITEMIZED BREAKDOWN OF ALL MATERIALS, EQUIPMENT AND LABOUR FOR SUBMISSIONS OF ALL CHANGES TO THE CONTRACT. CONTRACTOR SHALL UTILIZE NECA 1 LABOUR RATES, AND TRADE PRICES. WORK ASSOCIATED WITH ANY CHANGES TO THE CONTRACT SHALL NOT PROCEED WITH-OUT WRITTEN APPROVAL.
12. PRIOR TO INSTALLATION OF ANY DEVICES, THE CONSULTANT AND OR INTERIOR CONSULTANT SHALL HAVE THE RIGHT TO CHANGE LOCATIONS OF OUTLETS WITHIN 3 METERS (10 FEET) WITH-OUT ANY EXTRA COST TO THE OWNER.
13. PERFORM ALL WORK REQUIRED TO THE FIRE ALARM SYSTEM AS INDICATED. RETAIN THE FORCES OF THE LANDLORD TO PERFORM FINAL CONNECTIONS, TESTING AND VERIFICATION OF ALL WORK. DEVICES SHALL MATCH THE EXISTING SYSTEM IN CHARACTERISTICS AND TYPES. VERIFY IN ACCORDANCE WITH ULC 524 AND LOCAL AUTHORITIES HAVING JURISDICTION VERIFY F/A BELL CIRCUITS TO ENSURE PROPER OPERATION & COVERAGE.
14. SUBMIT SHOP DRAWINGS, FIVE (5) COPIES FOR ALL MAJOR EQUIPMENT. SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED FOR ACCEPTANCE BY THE APPROPRIATE TRADE PRIOR TO STAMPED "REVIEWED" BY THE CONSULTANT.
15. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION SCHEDULE.
16. LOCATIONS OF ALL FLOOR PENETRATIONS, INCLUDING CORE DRILLING AND SAW CUTTING SHALL BE APPROVED ON SITE BY THE INTERIOR DESIGNER, BUILDING OWNER REPRESENTATIVE, AND STRUCTURAL ENGINEER. OBTAIN ALL NECESSARY APPROVALS PRIOR TO BATT-SCAN AND DRILLING. SUBMIT BATT-SCAN RESULTS FOR LANDLORDS APPROVAL AND OBTAIN 48HRS PRIOR PERMISSION TO COMMENCE CORE DRILLING. INCLUDE FOR ALL COSTS.
17. PROVIDE THE LANDLORD AND TENANT WITH A 1-YEAR WRITTEN WARRANTY FOR ALL LABOUR, MATERIALS AND EQUIPMENT SUPPLIED IN THIS CONTRACT. WARRANTY SHALL COMMENCE AT SUCH TIME THAT THE CONSULTANT DEEMS THE WORK IS ACCEPTABLE.
18. ALL POWER WIRING AND SUPPLY OF STARTERS FOR MECHANICAL EQUIPMENT SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED. ALL CONTROL WIRING AND CONTROL DEVICES SHALL BE PROVIDED BY MECHANICAL CONTRACTOR. CONFIRM AND CO-ORDINATE ALL POWER CHARACTERISTICS WITH MECHANICAL CONTRACTOR PRIOR TO PROCESSING SHOP DRAWINGS AND EQUIPMENT ORDERING.
19. PROVIDE ALL ACCESS DOORS WHERE REQUIRED TO SERVICE ALL NEW AND EXISTING EQUIPMENT. ACCESS PANELS SHALL BE EQUAL TO LEHAGE AND SHALL BE COMPATIBLE WITH CEILING/WALL TYPE AND FINISH. ACCESS DOORS SHALL BE RECESSED TYPE WITH A DRYWALL INFILL. ELECTRICAL SERVICES ARE TO BE CO-ORDINATED TO MINIMIZE THE NUMBER OF ACCESS LOCATIONS. CO-ORDINATE LOCATION AND SIZES WITH THE CONSULTANT. SUBMIT DRAWING(S) TO THE CONSULTANT FOR REVIEW INDICATING SIZE AND LOCATION OF ALL ACCESS LOCATIONS PRIOR TO PROCEEDING WITH THE INSTALLATION.
20. ALL LUMINAIRES SHALL BE CLEANED AT THE COMPLETION OF THE PROJECT.
21. OBTAIN AND PAY FOR A CAD DISK DRAWING FILES AND ONE SET OF WHITE PRINTS. MARK WHITE PRINTS TO CLEARLY INDICATE THE INSTALLED WORK. AFTER THE WHITE PRINTS HAVE BEEN REVIEWED BY THE CONSULTANT, TRANSFER ALL INFORMATION, COMMENTS AND REVISIONS ONTO THE AS-BUILT CAD FILES. SUBMIT THE COMPLETED RECORD DRAWINGS AND THE CAD FILES TO THE CONSULTANT, WITH ONE SET OF PRINTS TO THE LANDLORD.
22. UPON COMPLETION OF THE WORK, PROVIDE A COPY OF THE LOCAL HYDRO CERTIFICATE, AND FIRE ALARM VERIFICATION. SUBMIT RECORDS TO GENERAL CONTRACTOR AND LANDLORD.
23. PROVIDE TYPE WRITTEN PANELBOARD DIRECTORIES FOR ALL NEW PANELS AND ALL EXISTING PANELS AFFECTED BY THIS RENOVATION.
24. ALL EQUIPMENT AND MATERIALS SHALL BE NEW, UN-USED AND C.S.A. APPROVED.
25. ALL WIRING SHALL BE INSTALLED IN CONDUIT. ARMOURED "BX" CABLE MAY BE USED TO A MAXIMUM OF 3 METERS (10 FEET) FOR FLEXIBLE LIGHTING, SWITCHED LEGS, EMERGENCY REMOTE HEADS AND EXIT SIGNS.
26. ALL WIRING SHALL BE COPPER, MINIMUM # 12 AWG RW90.
27. MINIMUM SIZE OF CONDUIT SHALL BE 20ø (3/4") EMT UNLESS OTHERWISE NOTED. INSTALLATION OF CONDUITS SHALL BE PARALLEL TO BUILDING STRUCTURE. RUN CONDUITS CONCEALED IN ALL FINISHED AREAS.
28. PROVIDE COPPER GROUND WIRE IN ALL CONDUIT FOR BRANCH AND FEEDER CIRCUITS.
29. PROVIDE NYLON PULLSTRINGS IN ALL EMPTY CONDUIT.
30. PROVIDE FLEXIBLE METAL CONDUIT FOR ALL CONNECTIONS TO MOTORS, TRANSFORMERS AND GENERATORS.
31. INDEPENDENTLY SUPPORT FROM BUILDING STRUCTURE WITH APPROVED CHAINS ALL NEW SURFACE AND RECESSED LUMINAIRES.
32. PROVIDE A SEPARATE NEUTRAL CONDUCTOR FOR EACH CIRCUIT DO NOT SHARE NEUTRALS.
33. ALL PENETRATIONS THROUGH FLOORS AND FIRE RATED WALLS SHALL BE PACKED AND SEALED WITH APPROVED FIRE MATERIAL AND SILICON SEALANT.
34. WHERE A MANUFACTURER IS NOT SPECIFIED, THE PRODUCTS SHALL BE OF SAME MANUFACTURER AS BASE BUILDING.
35. PROVIDE DIMMERS AS INDICATED. DIMMERS SHALL SUIT THE TYPE AND SIZE OF LOAD. PROVIDE DE-BUZZING COILS FOR ALL NEW DIMMERS.
36. DIMMERS SHALL BE " LUTRON NOVA T " SERIES UNLESS OTHERWISE NOTED.
37. ALL DEVICES AND COVERPLATES SHALL BE PASS & SEYMOUR MODULAR DECORA TYPE. SPECIFICATION GRADE COLOUR TO INTERIOR CONSULTANTS SELECTION. SUBMIT COLOUR SAMPLES.
38. ALL SURFACE FLOOR OUTLETS SHALL BE CANADIAN ELECTRICAL RACEWAYS INC. SERIES 4000 OR WELLMARK EQUAL. COLOUR SHALL BE BLACK.
39. WHERE SWITCHES, DIMMERS, AND RECEPTACLES ARE SHOWN SIDE BY SIDE, PROVIDE GANGED COVERPLATES. GANGED DIMMERS SHALL BE DE-RATED AND INSTALLED AS PER MANUFACTURES INSTRUCTIONS.
40. ENSURE THAT ALL NEUTRALS OF ALL TRANSFORMERS ARE GROUNDED TO THE BUILDING GROUND SYSTEM IN ACCORDANCE WITH TABLE 16A/16B OF THE O.H.E.S.C.
41. ALL TRANSFORMERS, DISTRIBUTION PANELS, AND PANELBOARDS SHALL BE COMPLETE WITH COPPER BUS (OR WINDINGS), AND 200 % RATED NEUTRALS.
42. ALL FUSES SHALL BE HRC TYPE " J " WITH TIME DELAY.
43. CIRCUITING SHOWN FOR GROUPING PURPOSES ONLY. VERIFY EXACT CIRCUITS AVAILABLE AND PROVIDE NEW CIRCUITS AND BREAKERS AS REQUIRED. BALANCE LOADS WITH-IN 10ø ACROSS PHASES, SUBMIT TEST REPORT FOR REVIEW BY THE CONSULTANT.
44. CO-ORDINATE ALL EQUIPMENT SUPPLIED BY OTHER TRADES TO ENSURE VOLTAGE AND AMPERAGE COMPATIBILITY WITH DESIGN DOCUMENTS PRIOR TO EQUIPMENT BEING ORDERED.
45. PROVIDE TEMPORARY ELECTRICAL POWER AND LIGHTING AS REQUIRED BY THE GENERAL CONTRACTOR OR CONSTRUCTION MANAGER. CO-ORDINATE REQUIREMENTS FOR PHASING OF WORK.

1 / E-1 ELECTRICAL SPECIFICATION
SCALE: N.T.S.

LEGEND

SYMBOL	DESCRIPTION
A	NEW LUMINAIRE. TYPE AS NOTED.
	EXISTING LUMINAIRE TO BE REMOVED.
	TRACK LIGHTING C/W NUMBER OF FIXTURES INDICATED.
	FLUORESCENT STRIP LIGHT.
	CEILING MOUNTED (RECESSED OR SURFACE) LUMINAIRE.
	CEILING MOUNTED (RECESSED OR SURFACE) LUMINAIRE.
	WALL MOUNTED LUMINAIRE.
	COMBINATION CEILING MOUNTED EXIT SIGN C/W FACES, ARROWS AND ADJUSTABLE EMERGENCY HEADS.
	WALL MOUNTED EXIT SIGN C/W FACES AND ARROWS AS INDICATED.
$	SINGLE POLE LINE VOLTAGE SWITCH.
$3	3 WAY LIGHT LINE VOLTAGE SWITCH.
$F	EXHAUST FAN SWITCH C/W PILOT LIGHT.
	LIGHTING OCCUPANCY SENSOR. PASSIVE INFRARED C/W OVERRIDE SWITCH.WALL MOUNTED.
	LIGHTING OCCUPANCY SENSOR. PASSIVE INFRARED C/W OVERRIDE SWITCH. CEILING OR WALL MOUNTED AS SHOWN ON PLAN.
D	DIMMER SWITCH. (RATING AND TYPE TO SUIT LOAD). N LIGHT OR EQUAL.
	WALL MOUNTED DUPLEX RECEPTACLE.
	WALL MOUNTED SPLIT RECEPTACLE.
GFI	WALL MOUNTED DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER.
	WALL MOUNTED SINGLE RECEPTACLE VOLTAGE AND AMP AS INDICATED.
	WALL MOUNTED QUAD RECEPTACLE.
	WALL MOUNTED CABLE T.V OUTLET. PROVIDE CABLE T.V. JACK, AND COAXIAL CABLE BACK TO I.T. SERVER ROOM.
	WALL MOUNTED TELEPHONE OUTLET.
F	FURNITURE MOUNTED DATA OUTLET.
	WALL MOUNTED DATA OUTLET.
	WALL MOUNTED COMBINATION TELEPHONE/DATA OUTLET.
	CEILING MOUNTED WI-FI UNIT.
	POWER POLE WITH DEVICES AS SHOWN.
	DIRECT CONNECTION TO EQUIPMENT AS INDICATED.
	MOTOR CONNECTION.
	UNFUSED DISCONNECT SWITCH.
	PANEL (RECESSED OR SURFACE).
	TRANSFORMER.
	FIRE ALARM SMOKE DETECTOR.
	FIRE ALARM HEAT DETECTOR.
	FIRE ALARM PULL STATION.
	SURFACE FIRE ALARM HORN.
	SURFACE FIRE ALARM HORN/STROBE.
EOL	FIRE ALARM END OF LINE RESISTER.
B	SURFACE EMERGENCY LIGHTING BATTERY UNIT C/W LUMINAIRE(S).
	EMERGENCY LIGHTING REMOTE HEADS DOUBLE, AND SINGLE AS NOTED.
	RECESSED EMERGENCY LIGHTING REMOTE HEAD-ADJUSTABLE.
P	RECESSED PAGING SPEAKER.
S	RECESSED AUDIO/VISUAL SPEAKER.
KP	SECURITY KEYPAD.
KS	SECURITY KEY SWITCH.
	SECURITY MOTION SENSOR.
CR	SECURITY CARD READER.
DA	SECURITY DOOR CONTACT.
ES	SECURITY ELECTRIC STRIKE.
	SECURITY MOTION SENSOR
	SECURITY CAMERA.
DR.	PUSH BUTTON DOOR RELEASE.
N-1	DENOTES REFER TO NOTE N-1.
O/C	DENOTES OVER COUNTER
E	DENOTES EXISTING TO REMAIN.
6 / E-1	DENOTES REFER TO DETAIL#6 ON DRAWING #E-1.

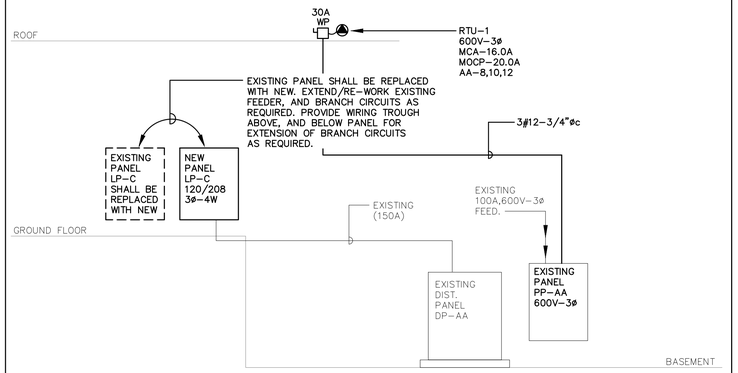
2 / E-1 ELECTRICAL LEGEND
SCALE: N.T.S.

DRAWING LIST

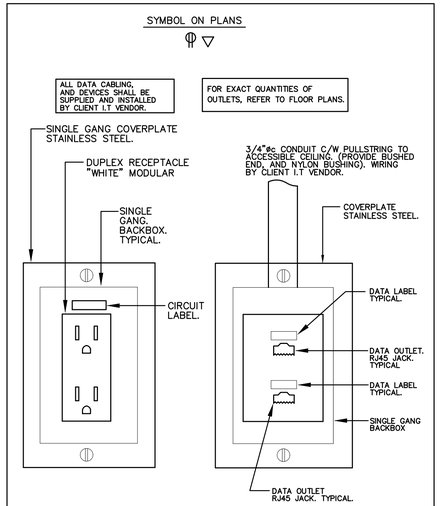
DWG. No.	DESCRIPTION
E-1	ELECTRICAL SPEC., LEGEND, DRAWING LIST, AND DETAILS
E-2	VICINITY PLANS ELECTRICAL
E-3	BASEMENT PLAN ELECTRICAL
E-4	PART GROUND FLOOR LIGHTING PLAN ELECTRICAL
E-5	PART GROUND FLOOR POWER & SYSTEMS PLAN ELECTRICAL
E-6	PART GROUND FLOOR LIGHTING DEMOLITION PLAN ELECTRICAL
E-7	PART GROUND FLOOR POWER & SYSTEMS DEMOLITION PLAN ELECTRICAL
E-8	PART SECOND FLOOR ELECTRICAL PLANS

3 / E-1 DRAWING LIST
SCALE: N.T.S.

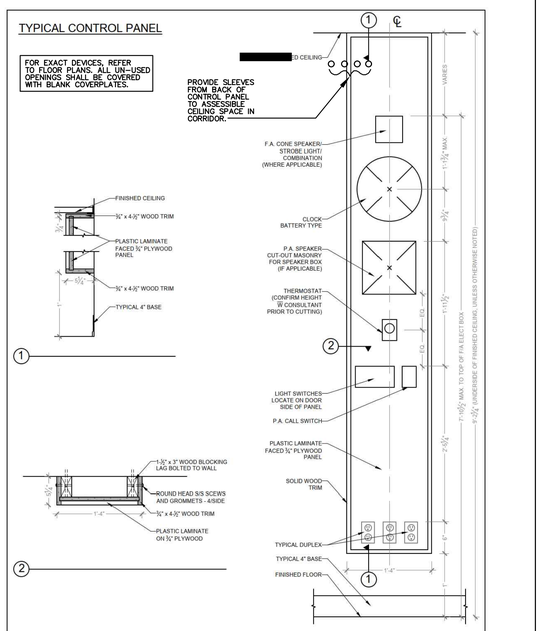
LINETYPE LEGEND:
LINETYPE DENOTES: EXISTING
LINETYPE DENOTES: NEW BY ELECTRICAL CONTRACTOR.
LINETYPE DENOTES: EXISTING TO BE REMOVED BY ELECTRICAL CONTRACTOR.



4 / E-1 ELECTRICAL SINGLE LINE DIAGRAM
SCALE: N.T.S.



5 / E-1 TYPICAL WALL OUTLET DETAIL
SCALE: N.T.S.



6 / E-1 CLASSROOM CONTROL PANEL DETAIL
SCALE: N.T.S.

CHECK AND VERIFY ALL DIMENSIONS AT THE SITE.

DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY THE CONSULTANT.

DDSB Ignite Learning

NO.	ISSUES	DATE	BY
1	ISSUED FOR REVIEW	DEC 16 2024	TM
2	RE-ISSUED FOR REVIEW	DEC 20 2024	TM
3	ISSUED FOR PERMIT & TENDER	FEB 24 2025	TM

NO.	REVISIONS	DATE	BY

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DURHAM DISTRICT SCHOOL BOARD

DRAWING:
ELECTRICAL SPEC; LEGEND, DRAWING LIST, AND DETAILS

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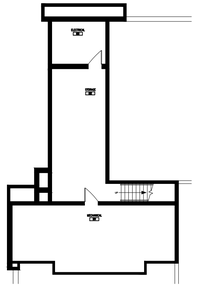
LICENSED PROFESSIONAL ENGINEER D.E.TOMINGAS 90236233 FEB24/2025 PROVINCE OF ONTARIO

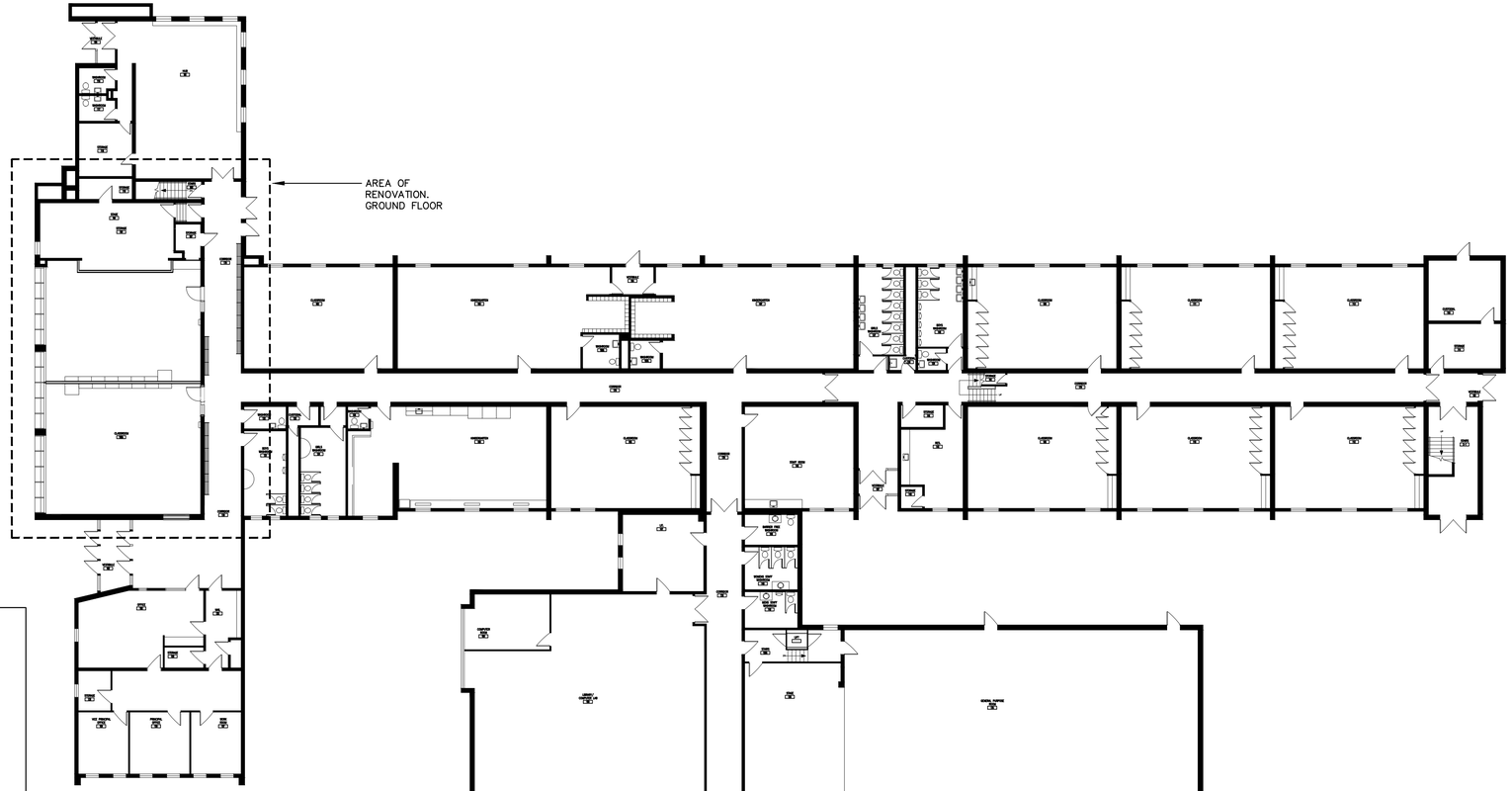
24 046

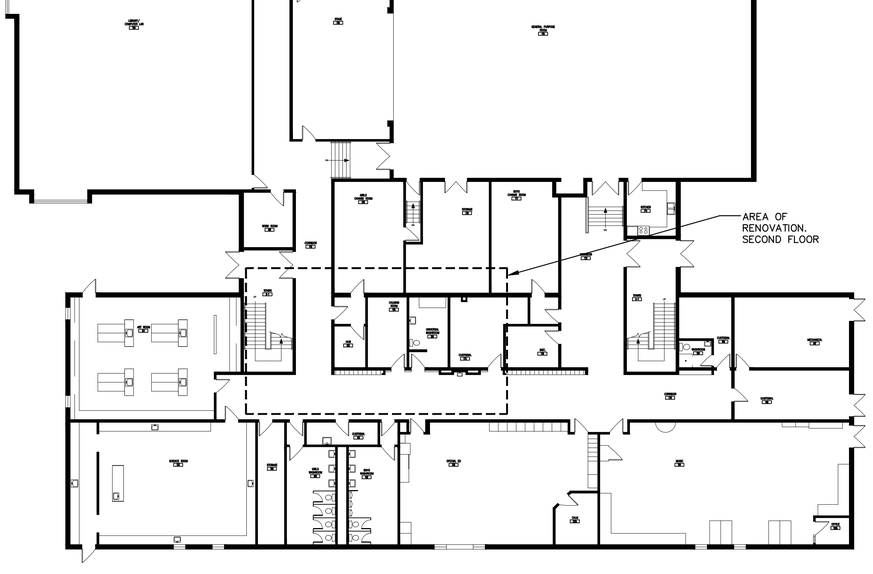
DESIGN BY: TM	DOC. CONTROL DATE:
DRAWN BY: STAFF	% COMPLETE:
CHECKED BY: TM	INITIAL:
DATE: OCTOBER 2024	
SCALE: N.T.S.	
FILE:	

PROJECT NO: **24046**
DRAWING NO: **E-1**



BASEMENT PLAN





GROUND FLOOR PLAN

PANEL : LP–2B			SURFACE □ FLUSH ■			
120/208V ■ 347/600V □			1ø – 3W □ 3ø – 4W ■			
100A □ 225A ■	400A □		TYPE : FPE NBLP			
LOCATION : 2ND FLOOR CORRIDOR			NEW □ EXISTING ■			
DESCRIPTION	**BRKR . SIZE**	**CCT NO.**	**PH .**	**CCT NO.**	**BRKR . SIZE**	**DESCRIPTION**
LIGHTING CORRIDOR	15A	1	A	2	15A	BAS POWER
RECEPTACLE CUSTODIAN ROOM	15A	3	B	4	15A	LIGHTING
LIGHTING	15A	5	C	6	15A	SPARE
LIGHTING	15A	7	A	8	15A	LIGHTING
LIGHTING ROOM 25	15A	9	B	10	15A	LIGHTING ROOM 30
RECEPTACLE–GFI STAFF W/R–240B	15A	11	C	12		SPACE
LIGHTING ROOM 27	15A	13	A	14	15A	LIGHTING ROOM 29
SPACE		15	B	16		SPACE
LIGHTING ROOM 26	15A	17	C	18	15A	LIGHTING
LIGHTING	15A	19	A	20	15A	SPARE
CONVECTORS	15A	21	B	22	15A	RECEPTACLES
CONVECTORS	15A	23	C	24	15A	SPARE
CONVECTORS	15A	25	A	26	15A	RECEPT ROOM 32
EXISTING	15A	27	B	28	15A	RECEPTACLES
EXISTING	15A	29	C	30	15A	RECEPTACLES
EXISTING	15A	31	A	32	15A	RECEPTACLES
EXISTING	15A	33	B	34	15A	RECEPT STORAGE
RECEPT ROOMS 25/26/27	15A	35	C	36	15A	LIGHTING ROOM 29
RECEPT ROOMS 25/26/27	15A	37	A	38	15A	EXISTING
COMPUTER	15A	39	B	40	20A	BOYS HAND DRYER
COMPUTER	20A	41	C	42	20A	GIRLS HAND DRYER

LINETYPE LEGEND:

15A–LINETYPE DENOTES: EXISTING

15A–LINETYPE DENOTES: NEW BY ELECTRICAL CONTRACTOR.

1 / E–2 PANEL SCHEDULE LP–2B

SCALE: N.T.S.

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NO.	ISSUES	DATE	BY
1	ISSUED FOR REVIEW	DEC 16 2024	TM
2	RE–ISSUED FOR REVIEW	DEC 20 2024	TM
3	ISSUED FOR PERMIT & TENDER	FEB 24 2025	TM

NO.	REVISIONS	DATE	BY

DYNAMIC DESIGNS AND ENGINEERING INC.
111 Hodgson Ave. Kettleby, Ontario L7B 0C7
Tel. (905) 841-7278
dyneng@rogers.com

PROJECT:

R.H. CORNISH P.S
INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO

DURHAM DISTRICT SCHOOL BOARD

DRAWING:

VICINITY PLANS
ELECTRICAL

BBA
BARRY BRYAN ASSOCIATES
Architects
Engineers
Project Managers
250 Water Street
Suite 201
Whitby, Ontario
L1N 0G5
Tel: (905) 666-5252
Fax: (905) 666-5256
e-mail: bba@bba-archeng.com

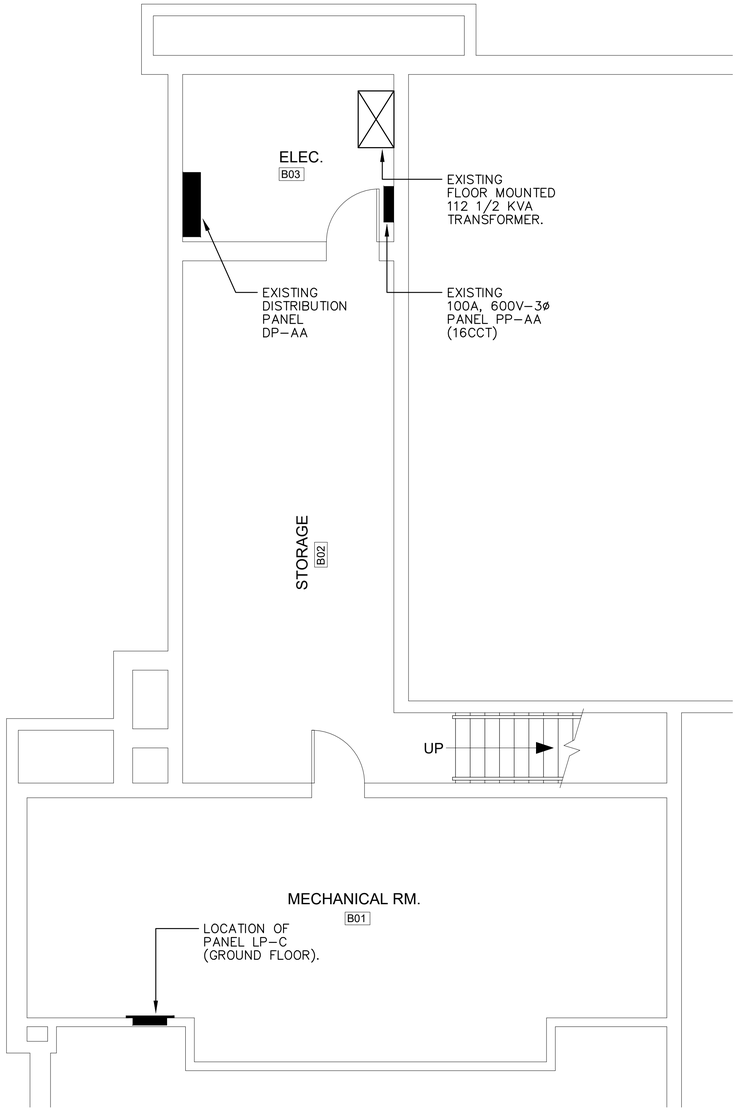
LICENSED PROFESSIONAL ENGINEER
D.E.TOMINGAS
90236233
FEB24/2025
PROVINCE OF ONTARIO

24 046

DESIGN BY: TM	DOC. CONTROL: DATE:
DRAWN BY: STAFF	% COMPLETE:
CHECKED BY: TM	INITIAL:
DATE: OCTOBER 2024	
SCALE: N.T.S.	
FILE:	

PROJECT NO: **24046**

DRAWING NO: **E-2**



PANEL : PP-AA			**SURFACE** ■ **FLUSH** □			
120/208V □ **347/600V** ■			**1ø - 3W** □ **3ø - 4W** ■			
100A ■ **225A** □	**400A** □		**TYPE : G.E "A" SERIES 11**			
LOCATION : BASEMENT ELECTRICAL ROOM			**NEW** □ **EXISTING** ■			
DESCRIPTION	**BRKR. SIZE**	**CCT NO.**	**PH**	**CCT NO.**	**BRKR. SIZE**	**DESCRIPTION**
	15A	1	A	2	15A	
PUMP #1		3	B	4		PUMP #2
	3P	5	C	6	3P	
SPACE		7	A	8	20A	
		9	B	10		RTU-1 (ROOF MOUNTED)
		11	C	12	3P	
		13	A	14		SPACE
		15	B	16		SPACE

LINETYPE LEGEND:

15A-LINETYPE DENOTES: EXISTING

15A-LINETYPE DENOTES: NEW BY ELECTRICAL CONTRACTOR.

1 / E-3 PANEL SCHEDULE PP-AA

SCALE: N.T.S.

CHECK AND VERIFY ALL DIMENSIONS AT THE SITE.

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DYNAMIC DESIGNS AND ENGINEERING INC.
111 Hodgson Ave. Kettleby, Ontario L7B 0C7
Tel. (905) 841-7278
dyneng@rogers.com

PROJECT:

R.H. CORNISH P.S
INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO

DURHAM DISTRICT SCHOOL BOARD

DRAWING:

BASEMENT PLAN
ELECTRICAL

BBA
BARRY BRYAN ASSOCIATES
Architects
Engineers
Project Managers
250 Water Street
Suite 201
Whitby, Ontario
L1N 0G5
Tel: (905) 666-5252
Fax: (905) 666-5256
e-mail: bba@bba-arcneng.com

LICENSED PROFESSIONAL ENGINEER
D.E.TOMINGAS
90236233
FEB24/2025
PROVINCE OF ONTARIO

24 046

DESIGN BY: TM	DOC. CONTROL: DATE:
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CHECKED BY: TM	INITIAL:
DATE: OCTOBER 2024	
SCALE: 1:50	
FILE:	

PROJECT NO: **24046**

DRAWING NO: **E-3**

NOTES:

N-1 ELECTRICAL CONTRACTOR SHALL ALLOW FOR CHAIN SUPPORT/SUSPEND OF ALL NEW & RELOCATED LUMINAIRES THROUGH-OUT THIS RENOVATION. SUSPEND/SUPPORT FROM BUILDING STRUCTURE UTILIZING TENSO CHAIN. (4-POINTS LUMINAIRE, 2-POINTS BUILDING STRUCTURE).

N-2 FOR EXACT LOCATIONS, MOUNTING HIEGHTS, AND EXACT MOUNTING DETAILS REFER TO INTERIOR CONSULTANTS/ARCHITECTURAL DRAWINGS, SPEC., AND DETAILS.

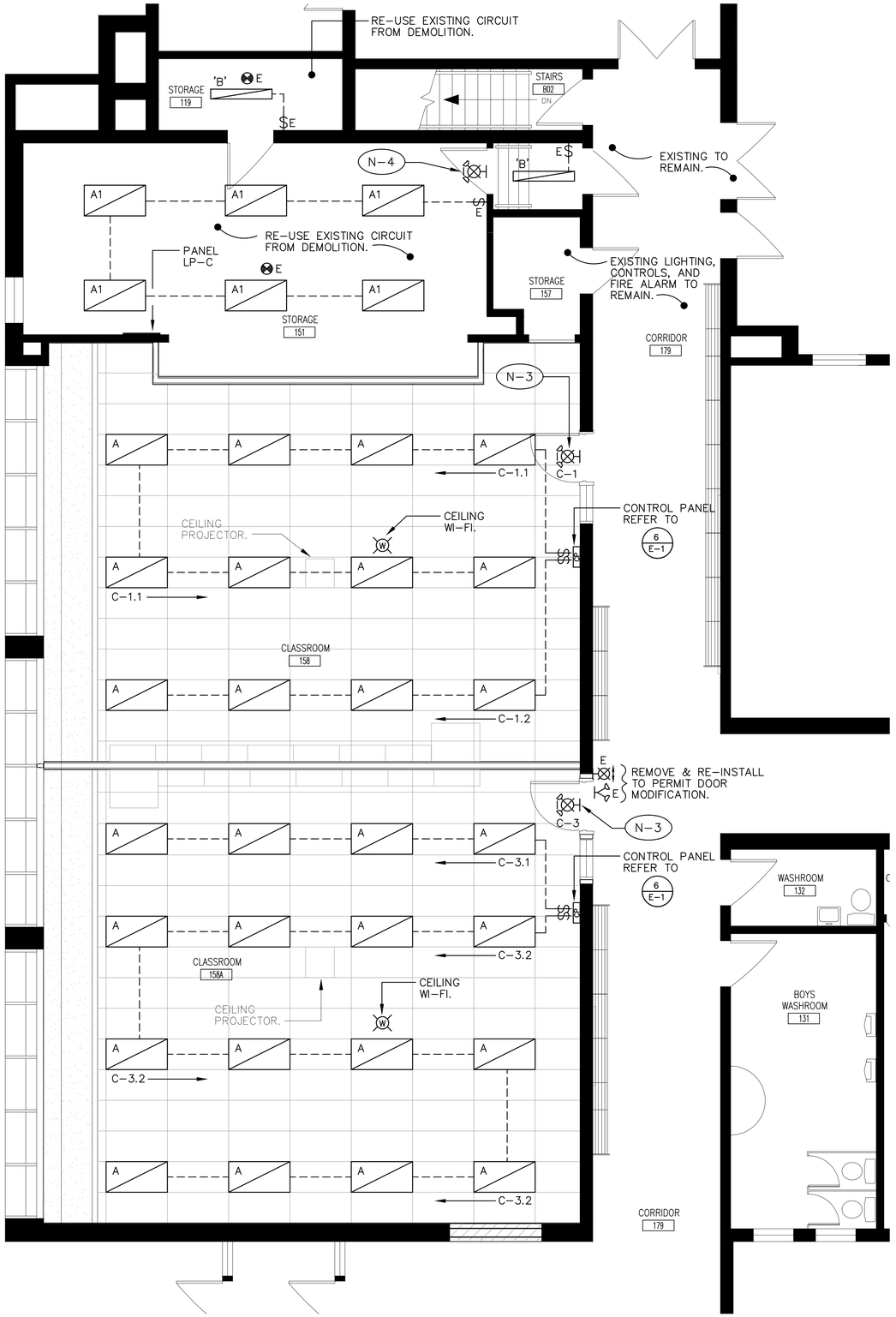
N-3 COMBINATION EXIT LIGHT (RUNNING MAN-PICTOGRAM)/EMERGENCY ADJUSTABLE LIGHTING HEADS. PROVIDE LUMACELL #LSC-1280-W-2-LD10-120V. CONNECT TO EXISTING EXIT LIGHT CIRCUIT (120V).

N-3 EXISTING EXIT LIGHT SHALL BE REPLACED WITH NEW COMBINATION EXIT LIGHT (RUNNING MAN-PICTOGRAM)/EMERGENCY ADJUSTABLE LIGHTING HEADS. PROVIDE LUMACELL #LSC-1280-W-2-LD10-120V. CONNECT TO EXISTING EXIT LIGHT CIRCUIT (120V).

LUMINAIRE SCHEDULE

TYPE	LAMP	DESCRIPTION	MANUFACTURER
'A'	42 WATT LED 3500K	RECESSED (2 X 4) T-BAR LED FLAT PANEL LUMINAIRE. 120V.	COOPER LIGHTING METALUX #24FP4735C
'A1'	42 WATT LED 3500K	SUSPENDED (2 X 4) LED FLAT PANEL LUMINAIRE. SURFACE KIT, AND SUSPENSION KIT. 120V.	COOPER LIGHTING METALUX #24FP4735C/#FPSUR24/ #FPSUS24-B
'B'	33 WATT LED 3500K	SURFACE 4'-0" LONG LED LINEAR STRIP LIGHT C/W LENS. 120V.	COOPER LIGHTING METALUX #4SNX-SL3-LW-UNV-CC83-CDI-U
'C'	38 WATT LED 3500K	RECESSED (1 X 4) DRYWALL LED FLAT PANEL LUMINAIRE. 120V.	COOPER LIGHTING METALUX #14FP4235C/#DF-14W-U

1 / E-4 LUMINAIRE SCHEDULE
SCALE: N.T.S.



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Tel. (905) 841-7278
dyneng@rogers.com

PROJECT:
R.H. CORNISH P.S
INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO

DURHAM DISTRICT SCHOOL BOARD

DRAWING:
PART GROUND FLOOR LIGHTING PLAN ELECTRICAL

BBA
BARRY BRYAN ASSOCIATES
Architects
Engineers
Project Managers
250 Water Street
Suite 201
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Tel: (905) 666-5252
Fax: (905) 666-5256
e-mail: bba@bba-archeng.com

LICENSED PROFESSIONAL ENGINEER
D.E.TOMINGAS
90236233
FEB24/2025
PROVINCE OF ONTARIO

24 046

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SCALE: 1:50	
FILE:	

PROJECT NO: **24046**

DRAWING NO: **E-4**

NOTES:

N–1 FOR EXACT LOCATIONS, MOUNTING HIEGHTS, AND EXACT MOUNTING DETAILS REFER TO INTERIOR CONSULTANTS/ARCHITECTURAL DRAWINGS, SPEC., AND DETAILS.

N–2 NEW FIRE ALARM HORN/STROBE TO MATCH EXISTING TYPE, AND CHARACTERISTICS. CO–ORDINATE EXACT REQUIREMENTS (DEVICE, WIRING, TIE–IN POINT, VERIFICATION) WITH BASEBUILDING FIRE ALARM SYSTEM VERIFYING AGENT. ELECTRICAL CONTRACTOR SHALL CARRY THE COSTS OF THE BASEBUILDING FIRE ALARM SYSTEM VERIFYING AGENT. SUBMIT FIRE ALARM VERIFICATION/CERTIFICATE AT COMPLETION OF WORK.

N–3 EXISTING RECEPTACLE, AND COVERPLATE SHALL BE REPLACED WITH NEW DECORA TYPE RECEPTACLE, AND STAINLESS STEEL COVERPLATE. FOR PARTITIONS BEING LAMINATED, PROVIDE EXTENSION RINGS AS REQUIRED.

PANEL : LP–C — SURFACE ☐ FLUSH ■ — 120/208V ■ 347/600V ☐ — 1ø – 3W ☐ 3ø – 4W ■ — 100A ☐ 225A ■ 400A ☐ — TYPE : SQUARE D — **LOCATION : STORAGE ROOM 151** — NEW ■ EXISTING ☐ TO REPLACE EXISTING PANEL LP–C

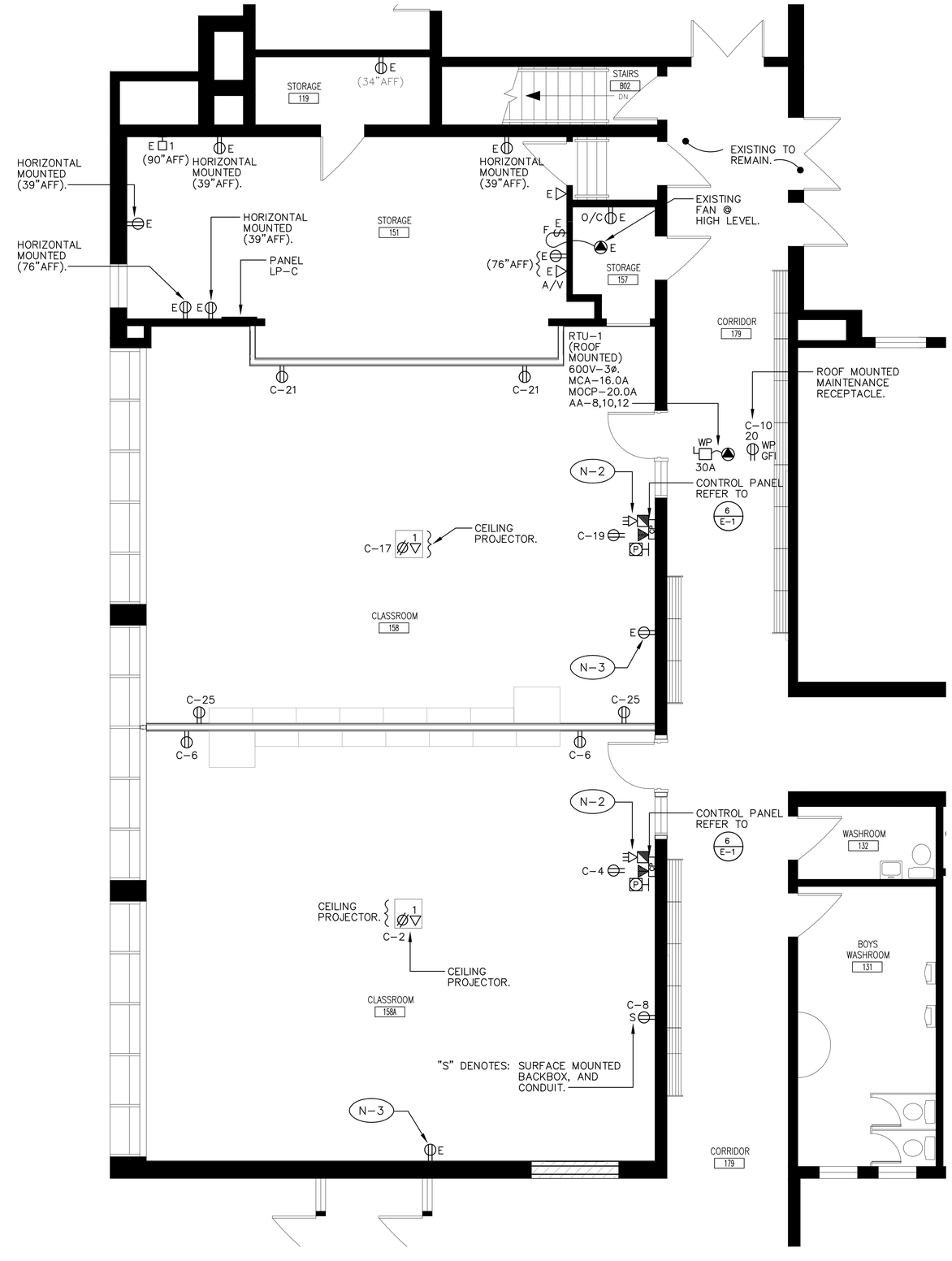
	DESCRIPTION	BRKR . SIZE	CCT NO.	PH .	CCT NO.	BRKR . SIZE	DESCRIPTION	
	LIGHTING/EXIT–EMERG CLASSROOM 158	15A	1	A	2	15A	CEILING PROJECTOR CLASSROOM 158A	
	LIGHTING/EXIT–EMERG CLASSROOM 158A	15A	3	B	4	15A	RECEPT CONTROL PNL CLASSROOM 158A	
✳	STORAGE ROOM LIGHTS	15A	5	C	6	15A	RECEPTACLES (2) CLASSROOM 158A	
✳	RECEPT	15A	7	A	8	15A	RECEPTACLE (1) CLASSROOM 158A	
✳	RECEPT	15A	9	B	10	20A	ROOF RECEPTACLE–GFI ADJACENT RTU–1	
✳	RECEPT	15A	11	C	12		SPACE	
✳	RECEPT	15A	13	A	14			
✳	EXISTING EQUIPMENT	15A	15	B	16			
	CEILING PROJECTOR CLASSROOM 158	15A	17	C	18	15A	OFFICE RECEPT	✳
	RECEPT CONTROL PNL CLASSROOM 158	15A	19	A	20		SPACE	
	RECEPTACLES (2) CLASSROOM 158	15A	21	B	22	15A	OFFICE LIGHTS	✳
✳	EQUIPMENT ROOM 23	15A	23	C	24	15A	STORAGE–CEILING	✳
	RECEPTACLES (2) CLASSROOM 158	15A	25	A	26	15A	SPARE	
	SPACE		27	B	28	15A		
			29	C	30	15A		
			31	A	32	15A		
			33	B	34	15A		
			35	C	36	15A		
			37	A	38	15A		
			39	B	40	15A		
			41	C	42	15A		

✳ DENOTES: CIRCUITS TRANSFERRED FROM PREVIOUS PANEL LP–B

EXISTING PANEL SHALL BE REPLACED WITH NEW. ELECTRICAL CONTRACTOR SHALL INVESTIGATE ALL CIRCUITS TO DETERMINE WHICH CIRCUITS ARE ACTIVE. ALL ACTIVE CIRCUITS SHALL BE TRANSFERRED TO NEW PANEL, AND DOCUMENTED ON PANEL DIRECTORY.

1 / E–5 PANEL SCHEDULE LP–C

SCALE: N.T.S.



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DYNAMIC DESIGNS AND ENGINEERING INC.
111 Hodgson Ave. Kettleby, Ontario L7B 0C7
Tel. (905) 841-7278
dyneng@rogers.com

PROJECT:
R.H. CORNISH P.S
INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO

DURHAM DISTRICT SCHOOL BOARD

DRAWING:
PART GROUND FLOOR POWER & SYSTEMS PLAN ELECTRICAL

BARRY BRYAN ASSOCIATES
Architects
Engineers
Project Managers
250 Water Street
Suite 201
Whitby, Ontario
L1N 0G5
Tel: (905) 666-5252
Fax: (905) 666-5256
e-mail: bba@bba-arcneng.com

LICENSED PROFESSIONAL ENGINEER D.E.TOMINGAS 90236233 FEB24/2025 PROVINCE OF ONTARIO

24 046

DESIGN BY: TM	DOC. CONTROL: DATE:
DRAWN BY: STAFF	% COMPLETE:
CHECKED BY: TM	INITIAL:
DATE: OCTOBER 2024	
SCALE: 1:50	
FILE:	

PROJECT NO: **24046**

DRAWING NO: **E-5**

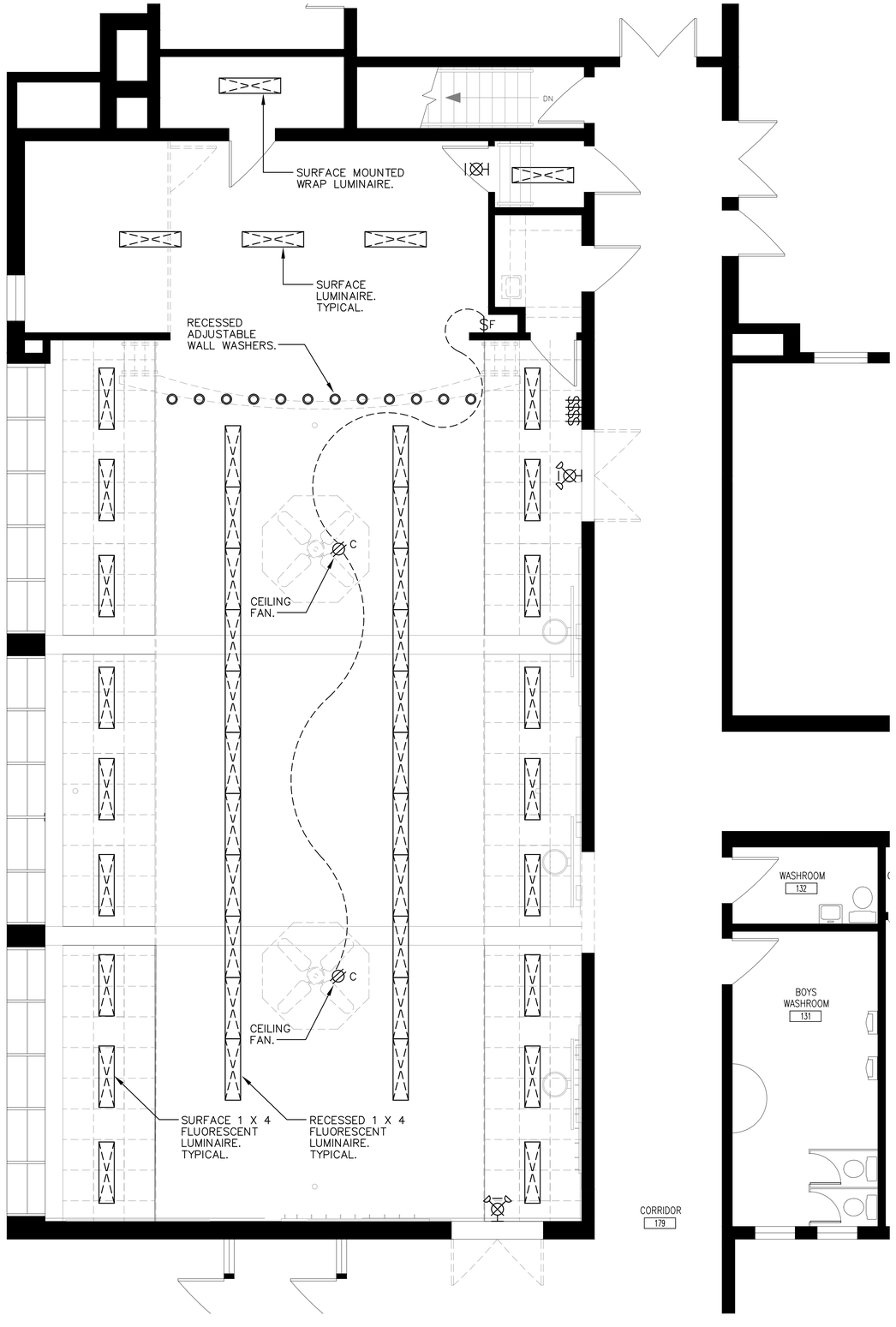
NOTES:

N-1 COMPLETE EXTENT OF DEMOLITION IS NOT SHOWN. TENDERERS SHALL REVIEW THE SITE TOGETHER WITH THE DOCUMENTS OF ALL OTHER TRADES TO DETERMINE THE COMPLETE EXTENT OF DEMOLITION. MAKE ALLOWANCES FOR ANY NEW OR EXISTING SERVICES, DEVICES, OR EQUIPMENT RELOCATIONS NECESSARY TO COMPLETE THE WORK. ALLOW FOR ALL COSTS.

N-2 EXISTING DEVICES BEING REMOVED SHALL BE REMOVED C/W ALL ASSOCIATED BACKBOXES, WIRING AND CONDUIT BACK TO ASSOCIATED PANELBOARD/ CEILING MOUNTED JUNCTION BOX.

N-3 ALL DEMOLISHED MATERIALS AND EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED ENTIRELY FROM THE SITE UNLESS OTHERWISE NOTED.

N-4 ALL DEVICES, CONNECTIONS, AND LUMINAIRES INDICATED SHALL BE REMOVED C/W ALL ASSOCIATED CONDUIT, AND WIRING.



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PROJECT:
R.H. CORNISH P.S
INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO

DURHAM DISTRICT SCHOOL BOARD

DRAWING:
PART GROUND FLOOR
LIGHTING
DEMOLITION PLAN
ELECTRICAL

BBA
BARRY BRYAN ASSOCIATES
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PROJECT NO: **24046**

DRAWING NO: **E-6**

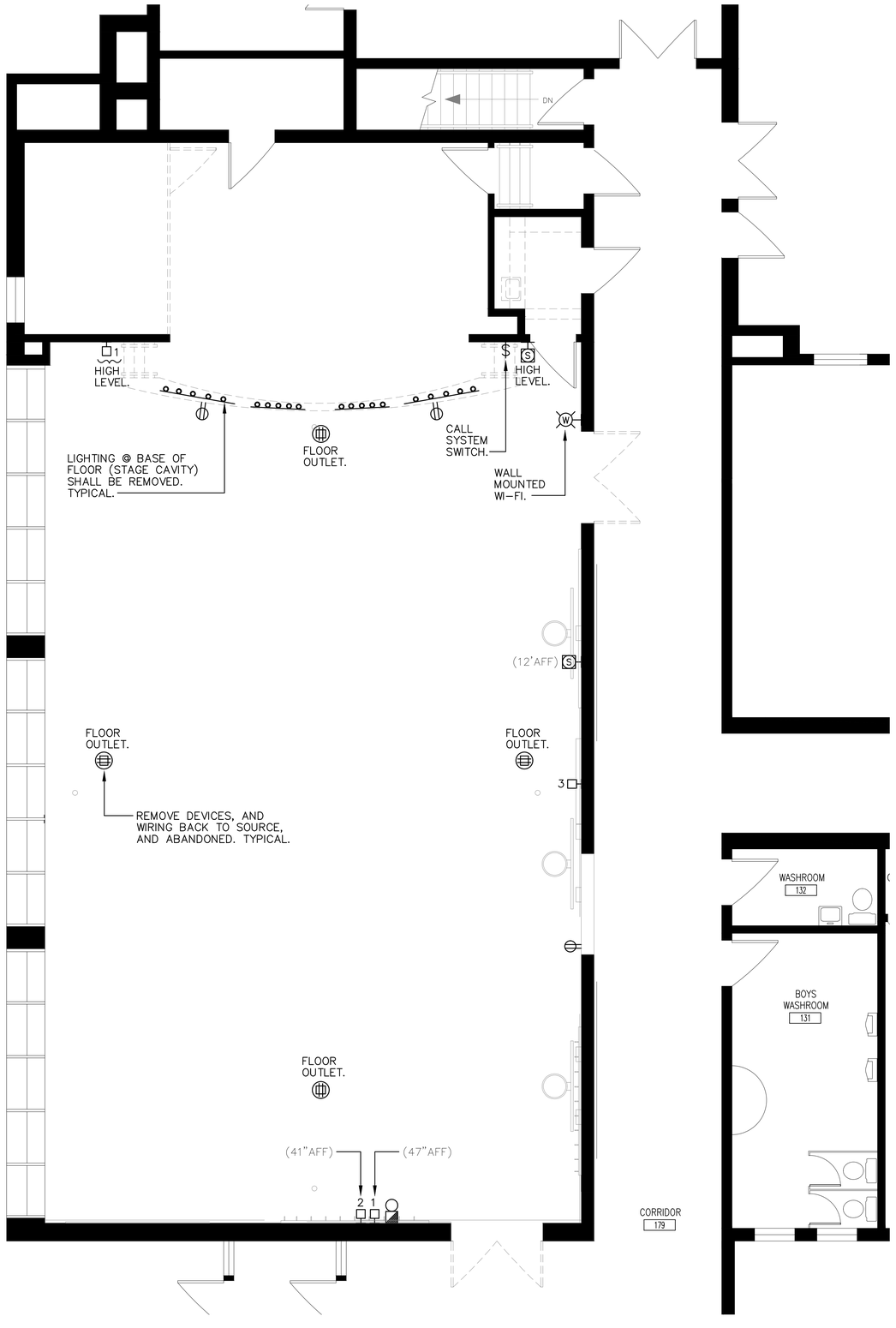
NOTES:

N-1 COMPLETE EXTENT OF DEMOLITION IS NOT SHOWN. TENDERERS SHALL REVIEW THE SITE TOGETHER WITH THE DOCUMENTS OF ALL OTHER TRADES TO DETERMINE THE COMPLETE EXTENT OF DEMOLITION. MAKE ALLOWANCES FOR ANY NEW OR EXISTING SERVICES, DEVICES, OR EQUIPMENT RELOCATIONS NECESSARY TO COMPLETE THE WORK. ALLOW FOR ALL COSTS.

N-2 EXISTING DEVICES BEING REMOVED SHALL BE REMOVED C/W ALL ASSOCIATED BACKBOXES, WIRING AND CONDUIT BACK TO ASSOCIATED PANELBOARD/ CEILING MOUNTED JUNCTION BOX.

N-3 ALL DEMOLISHED MATERIALS AND EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED ENTIRELY FROM THE SITE UNLESS OTHERWISE NOTED.

N-4 ALL DEVICES, AND CONNECTIONS INDICATED SHALL BE REMOVED C/W ALL ASSOCIATED CONDUIT, AND WIRING.



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PROJECT:
R.H. CORNISH P.S
INTERIOR ALTERATIONS

494 QUEEN STREET,
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DURHAM DISTRICT SCHOOL BOARD

DRAWING:
PART GROUND FLOOR
POWER & SYSTEMS
DEMOLITION PLAN
ELECTRICAL

BBA
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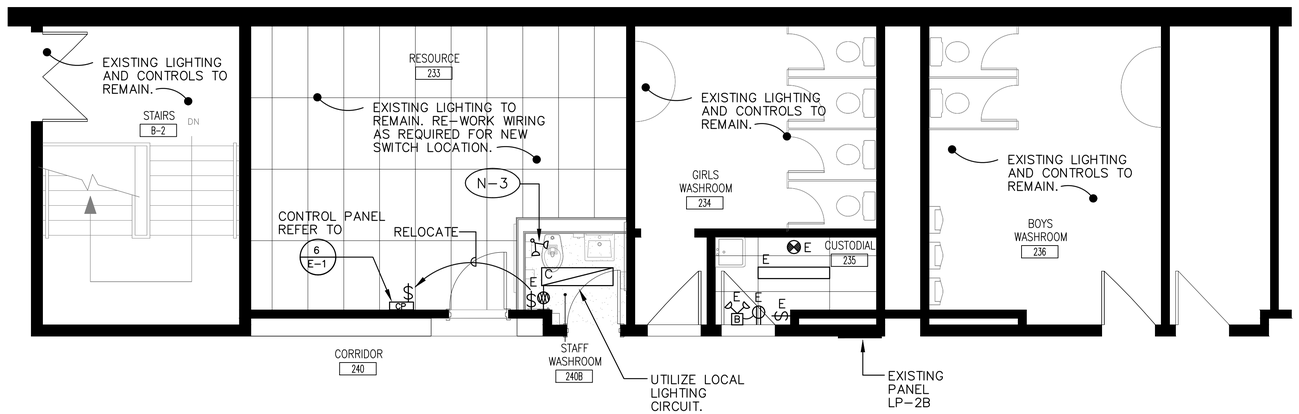
PROJECT NO: **24046**

DRAWING NO: **E-7**



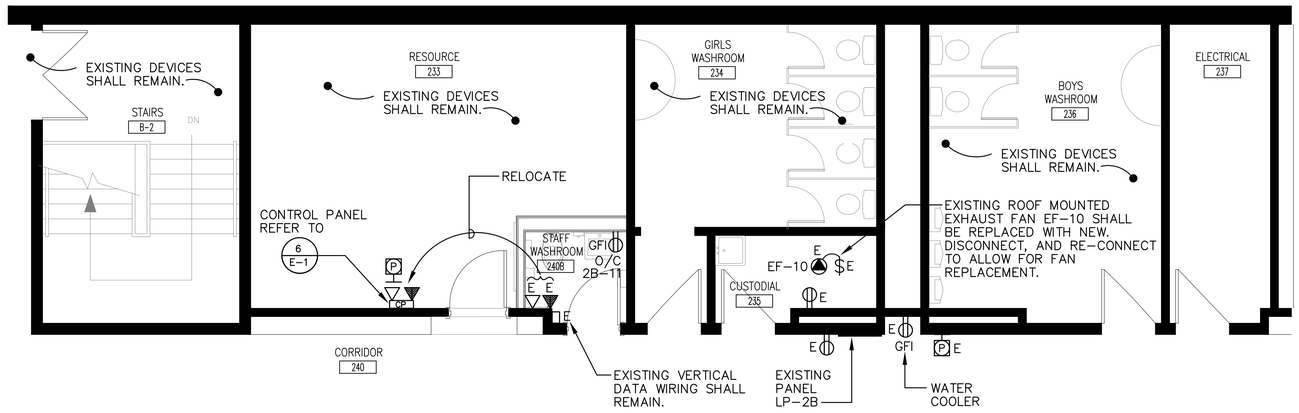
1 E-8 PART SECOND FLOOR LIGHTING PLAN-ELECTRICAL
SCALE: 1:50

NOTES:

N-1 ELECTRICAL CONTRACTOR SHALL ALLOW FOR CHAIN SUPPORT/SUSPEND OF ALL NEW & RELOCATED LUMINAIRES THROUGH-OUT THIS RENOVATION. SUSPEND/SUPPORT FROM BUILDING STRUCTURE UTILIZING TENSO CHAIN. (4-POINTS LUMINAIRE, 2-POINTS BUILDING STRUCTURE).

N-2 FOR EXACT LOCATIONS, MOUNTING HIEGHTS, AND EXACT MOUNTING DETAILS REFER TO INTERIOR CONSULTANTS/ARCHITECTURAL DRAWINGS, SPEC., AND DETAILS.

N-3 EMERGENCY LIGHTING ADJUSTABLE REMOTE HEADS. PROVIDE LUMACELL #MQM-2-LD10-W. CONNECT TO NEAREST EMERGENCY LIGHTING BATTERY UNIT. ENSURE MIN. 30 MINUTES BACK-UP.



2 E-8 PART SECOND FLOOR POWER & SYSTEMS PLAN-ELECTRICAL
SCALE: 1:50

NOTES:

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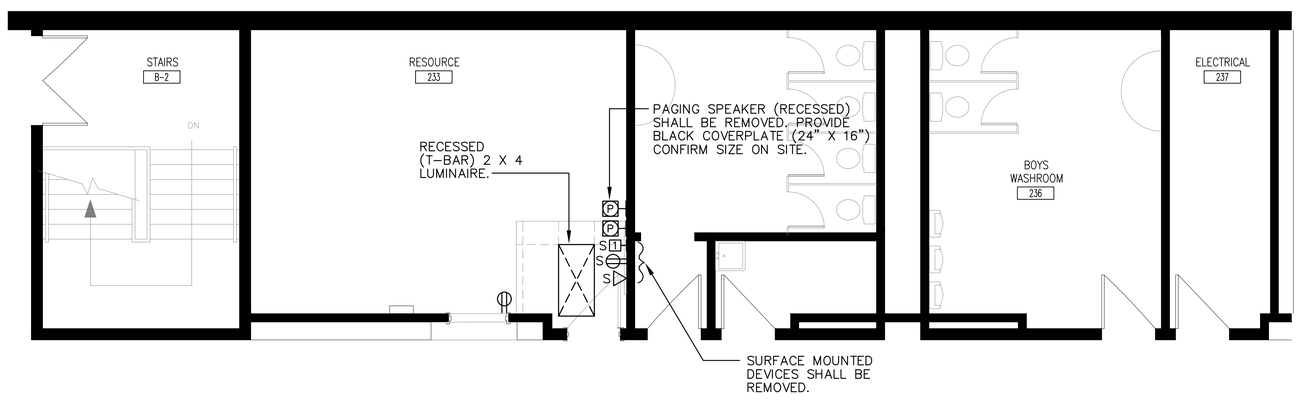

3 E-8 PART SECOND FLOOR DEMOLITION PLAN-ELECTRICAL
SCALE: 1:50

NOTES:

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N-2 EXISTING DEVICES BEING REMOVED SHALL BE REMOVED C/W ALL ASSOCIATED BACKBOXES, WIRING AND CONDUIT BACK TO ASSOCIATED PANELBOARD/ CEILING MOUNTED JUNCTION BOX.

N-3 ALL DEMOLISHED MATERIALS AND EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED ENTIRELY FROM THE SITE UNLESS OTHERWISE NOTED.

N-4 ALL DEVICES, CONNECTIONS, AND LUMINAIRES INDICATED SHALL BE REMOVED C/W ALL ASSOCIATED CONDUIT, AND WIRING.

DDSB Ignite Learning

NO.	ISSUES	DATE	BY
1	ISSUED FOR REVIEW	DEC 16 2024	TM
2	RE-ISSUED FOR REVIEW	DEC 20 2024	TM
3	ISSUED FOR PERMIT & TENDER	FEB 24 2025	TM

NO.	REVISIONS	DATE	BY

DYNAMIC DESIGNS AND ENGINEERING INC.
111 Hodgson Ave. Kettleby, Ontario L7B 0C7
Tel. (905) 841-7278
dyneng@rogers.com

PROJECT:
R.H. CORNISH P.S
INTERIOR ALTERATIONS

494 QUEEN STREET,
PORT PERRY, ONTARIO

DURHAM DISTRICT SCHOOL BOARD

DRAWING:
PART SECOND FLOOR ELECTRICAL PLANS

BBA
BARRY BRYAN ASSOCIATES
Architects
Engineers
Project Managers
250 Water Street
Suite 201
Whitby, Ontario
L1N 0G5
Tel: (905) 666-5252
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LICENSED PROFESSIONAL ENGINEER
D.E.TOMINGAS
90236233
FEB24/2025
PROVINCE OF ONTARIO

24 046

DESIGN BY: TM	DOC. CONTROL: DATE:
DRAWN BY: STAFF	% COMPLETE:
CHECKED BY: TM	INITIAL:
DATE: OCTOBER 2024	
SCALE: 1:50	
FILE:	

PROJECT NO: **24046**

DRAWING NO: **E-8**

Rivett Architectural Hardware Ltd.

Door Listing

R.H CORNISH - INTERIOR ALTER. - 494 QUEEN ST. PORT PERRY, ON

Schedule **200737**

Date **Jan 27/25**

Door Number	Set Number
158	1
158A	1
233	3
240B	2

Rivett Architectural Hardware Ltd.

Hardware Schedule

R.H CORNISH - INTERIOR ALTER. - 494 QUEEN ST. PORT PERRY, ON

Schedule 200737
Date Jan 27/25

Set # 1

1 SGLE. DR. # 158 CORRIDOR 179 TO CLASSROOM 158 RH
1 SGLE. DR. # 158A CORRIDOR 179 TO CLASSROOM 158A RH

2 - 965 x 2150 x 45 x PSF x WD DR x 45 MIN RATED

	Qty			
: :	6	EA	HINGE	BB1168-114 X 101-NRP-626
: :	2	EA	CLASSROOM SECUR WITH INDICATOR	L9071P X 03B X IS-LOC X 626
: :	2	EA	CLOSER	4040XP X 689
: :	2	EA	SURFACE STOP	904S X 630
: :	2	EA	KICKPLATE	190S X 203 X 914 X 630

Set # 2

1 SGLE. DR. # 240B CORRIDOR 240 TO STAFF WASHROOM 240B RH

1 - EXISTING FRAME REMAINS SUPPLY HM DOOR TO MATCH

	Qty			
: :	3	EA	HINGE	BB1168-114 X 101- 626
: :	1	EA	PRIVACY WITH INDICATOR	L9040 X 03B X OS-OCC X 626
: :	1	EA	CLOSER	4040XP X DEL X 689
: :	1	EA	WALL STOP	232W X 626
: :	1	EA	KICKPLATE	190S X 203 X 863 X 630

Set # 3

1 SGLE. DR. # 233 CORRIDOR 240 TO RESOURCE ROOM 233 RH

1 - 965 x 2150 x 45 x PSF x WD DR x 45 MIN RATED

	Qty			
: :	3	EA	HINGE	BB1168-114 X 101- 626
: :	1	EA	CLASSROOM LOCK	L9070P X 03B X 626
: :	1	EA	CLOSER	4040XP X 689
: :	1	EA	WALL STOP	232W X 626
: :	1	EA	KICKPLATE	190S X 203 X 914 X 630

Parasol Environmental Inc.

125-1860 Appleby Line, Unit # 14,
Burlington, Ontario L7L 7H7

Limited Designated Substance Survey Report

R.H. Cornish Public School

494 Queen Street, Port Perry, Ontario

Prepared for

Durham District School Board
400 Taunton Road East, Whitby, Ontario

October 21, 2024
Parasol Project No: 13253

Executive Summary

Parasol Environmental Inc. (Parasol) was retained by the Durham District School Board to conduct a Limited Designated Substance Survey within R.H. Cornish Public School located at 494 Queen Street, Port Perry, Ontario. The purpose of the survey was to record the presence, location, condition and quantities of Designated Substances and Hazardous Materials within the surveyed area that may be disturbed during the planned renovation. Additional information is provided to document corrective measures necessary to ensure that remedial action occurs applying the proper abatement procedures, if necessary.

The survey was completed by Brad Panzer of Parasol on October 8, 2024.

The following table summarizes the Designated Substances and Hazardous Materials observed within the surveyed area.

Designated Substance or Hazardous Material	Findings	Recommendation
Asbestos	No known major sources were identified.	No recommendations are warranted as no asbestos was observed.
Benzene	No major sources were identified.	No recommendations are warranted as no benzene products were observed.
Lead	Low-level lead concentrations were found to be present in the following materials: • Off-white paint • Grey paint Lead of varying concentrations is also suspected to be present in the following items: • Solder on pipe fittings	Stabilize the following materials: • Remove flaking and peeling off-white and grey paint using EACC Low-Level Lead Guideline
Mercury	Mercury vapour is presumed to be present within all fluorescent light tubes.	If removed, the fluorescent lights are to be kept sealed and intact, which will prevent direct skin contact and the inhalation of mercury vapour.
Silica	Crystalline silica is suspected to be present within: • Masonry and mortar, • Concrete (poured or pre-cast)	The removal or disturbance of material suspected to contain crystalline silica are to follow procedures outlined in the MOL document *"Guideline - Silica on Construction Projects"*, dated September 2004.
Polychlorinated Biphenyls (PCBs)	T8 light fixtures observed contain non-PCB electronic ballasts.	If disturbed, compare fluorescent light fixture's ballast to the Environment Canada Document, *"PCB Identification of Lamp Ballasts Containing PCBs"* dated August 1991. If the ballast does not contain a label that states "PCB Free" or the serial code that does not identify it as "PCB Free" then the ballast should be presumed to contain PCBs and disposed of accordingly.

Designated Substance or Hazardous Material	Findings	Recommendation
Mould	No major sources were identified.	No recommendations are warranted as no mould or water-damaged building materials were observed.
Other Designated Substances	The following Designated Substances are not likely to be found in the area assessed: • Acrylonitrile • Arsenic • Coke Oven Emission • Ethylene Oxide • Isocyanates • Vinyl Chloride	No recommendations are warranted as none were observed.

Before any renovation activities, perform an intrusive investigation for concealed Designated Substances and sample building materials that were not previously tested and may be disturbed as part of the renovation. In addition, consideration should be given to mechanical, electrical and structural components that pass beyond the rooftop into the building and may be impacted by the project. Further, consideration of the known or suspected asbestos-containing materials within the building should be assessed that may be disrupted during the renovation.

This executive summary is to be read in conjunction with the remainder of the report.

TABLE OF CONTENTS

1.0 Introduction

1.1 Background

Parasol Environmental Inc. (Parasol) was retained by the Durham District School Board to conduct a Limited Designated Substance Survey within R.H. Cornish Public School located at 494 Queen Street, Port Perry, Ontario. The purpose of the survey was to record the presence, location, condition and quantities of Designated Substances and Hazardous Materials within the surveyed area that may be disturbed during the planned renovation. Additional information is provided to document corrective measures necessary to ensure that remedial action occurs using the proper abatement procedures, if necessary.

The survey was completed by Brad Panzer of Parasol on October 8, 2024.

2.0 Regulatory Framework

The following Acts, Regulations, Guidelines and documents were utilized for the survey and the preparation of this report:

1. *Occupational Health and Safety Act R.S.O. 1990, c. O.1.*
   - I. *Ontario Regulation 278/05- Designated Substances – Asbestos on Construction Projects and in Buildings and Repair Operations.*
   - II. *Ontario Regulation 490/09- Designated Substances*.
   - *III. Ontario Regulation 833 – Control of Exposure to Biological or Chemical Agents.*
   - *IV. Ontario Regulation 213/91 – Construction Projects*
2. Ministry of Labour (MOL) Document, "*Guideline - Lead on Construction Projects"*, September 2004.
3. Environmental Abatement Council of Canada (EACC) *"Lead Guideline for Construction, Renovation, Maintenance or Repair"*, October 2014.
4. Ministry of Labour (MOL) Document, "*Guideline - Silica on Construction Projects"*, September 2004.
5. Environment Canada Document, *"PCB Identification of Lamp Ballasts Containing PCBs"* August 1991.
6. Canadian Construction Association (CCA), "*Mould Guidelines for the Canadian Construction Industry*", 2018.
7. Environmental Abatement Council of Canada (EACC) "*Mould Abatement Guidelines - Edition 3"*, 2015.
8. Ontario Ministry of Labour (MOL), *Alert: Mould in Workplace Buildings*, ISSN: 1195-5228, December 2000.
9. Environmental Abatement Council of Canada (EACC) *"Pre-Construction Designated Substances and Hazardous Materials Assessments Guideline for Construction, Renovation and Demolition Projects"* 2021.

Ontario Regulation 490/09 – *Designated Substances* defines the eleven (11) Designated Substances, establishes the requirements for workplaces containing these materials, which include the health and safety responsibilities, control programs to minimize worker's exposures, and sets out the maximum exposure concentrations.

The control and management of asbestos in Ontario are further prescribed by Ontario Regulation *278/05- Designated Substances – Asbestos on Construction Projects and in Buildings and Repair Operations*.

The major components of O. Reg 278/05 require that an asbestos survey record be completed for buildings or private residences with more than four units, and an asbestos management program be established for the asbestos-containing materials present within these buildings. The regulation also states the frequency in which a building material must be sampled, and defines an asbestos-containing material. The current definition of asbestos-containing material in Ontario is having 0.5% or greater fibrous silicate asbestos content by dry weight. Further, the Regulation divides asbestos-containing material into friable material (a material, when dry, can be crumbled, pulverized, or powdered by hand pressure, or is crumbled, pulverized,

or powdered) and non-friable material. In addition, the Regulation also defines the minimum measures and procedures for the repair or removal of asbestos-containing materials. Due to the limited scope of this survey, this report does not meet all the requirements of O. Reg. 278/05 and additional asbestos-containing materials may be present within the building that are not noted within this report. Within this report, building materials are separated into the typical applications of asbestos-containing materials.

Section 30 of the Occupational Health and Safety Act requires an Owner to determine and list Designated Substances present at a project site before beginning work. Further, this information must be included in tender documents, and the Owner and Constructor must ensure that each prospective contractor and subcontractor receive a copy of the information before entering into a binding contract. Otherwise, the Owner is liable to the constructor and every contractor and subcontractor who suffers any loss or damage as a result of the failure. The same liability applies to the Constructor regarding their contractors and subcontractors. This report meets the requirements of Section 30 of the Act.

Section 6, subsection 3 of O. Reg 213/91 requires that a Notice of Project be filed with the Ministry of Labour before beginning a project and the document requires the constructor to remark if any Designated Substance will be used, handled, or disturbed on the project. The information provided in this report can be used for the Notice of Project.

Based on the Environmental Abatement Council of Canada (EACC) *"Lead Guideline for Construction, Renovation, Maintenance or Repair"*, dated October 2014, and for this report, paints, mortar, or surface coatings containing less than or equal to 0.1% lead by weight (1000 µg/g or 1000 mg/kg or 1000 ppm lead) are considered low-level lead paints, mortars, or surface coatings. Paints, mortars, or surface coatings containing greater than 0.1% lead by weight (1000 µg/g, or 1000 mg/kg, or 1000 ppm) but less than 0.5% lead by weight (5000 µg/g, or 5000 mg/kg, or 5000 ppm lead) are considered lead-containing paints, mortars, or surface coatings. Paints, mortars, or surface coatings containing equal to or greater than 0.5% lead by weight (5000 µg/g, or 5000 mg/kg, or 5000 ppm lead) are considered lead-based paints, mortars, or surface coatings.

3.0 Methodology and Scope

3.1 Scope of Assessment

The survey was limited to Location B01-Mechanical Room as illustrated on the attached drawing. The scope of the assessment was carried out in all accessible areas on a non-intrusive basis. Areas that were inaccessible at the time of the survey are listed in Section 3.11.

For this assessment, the following Designated Substances, as defined under *Ontario Regulation 490/09-Designated Substances* made under the *Occupational Health and Safety Act R.S.O. 1990, c. O.1* were assessed for as they are typically found in buildings and building material:

1. Asbestos
2. Benzene
3. Lead
4. Mercury
5. Silica

In addition to the above-noted Designated Substances, Parasol personnel also documented the presence of the following hazardous materials, which have similar Regulations that outline the management, handling and disposal of the material.

1. Polychlorinated Biphenyls
2. Mould

For this assessment, the following Designated Substances, as defined under *Ontario Regulation 490/09-Designated Substances* made under the *Occupational Health and Safety Act R.S.O. 1990, c. O.1*, were not assessed as they would not be found in building materials that may be disturbed as part of this project and typically only found in industrial or manufacturing settings.

1. Acrylonitrile

2. Arsenic
3. Coke Oven Emission
4. Ethylene Oxide
5. Isocyanates
6. Vinyl Chloride

No additional comments will be made regarding these materials within this report unless the Owner or the Owner Representative notifies Parasol of the use of these materials within the building.

3.2 Methodology

The assessment was completed largely on a visual basis at ground level and representative checks were made above ceilings with the aid of a six-foot (6FT) step ladder. Locations and building materials present above this height were considered to be inaccessible. In addition, due to the non-intrusive nature of the assessment, materials concealed above solid ceiling finishes, within wall cavities, and below floor grade may be present that are not documented within this report. Designated Substances should be presumed to be present within these locations and all necessary precautions should be followed when accessing these spaces.

3.3 Asbestos

Representative bulk samples of building materials were collected in the frequency required under Table 1, Subsection 3(3) of *Ontario Regulation 278/05- Designated Substances – Asbestos on Construction Projects and in Buildings and Repair Operations*. Samples were submitted to EMC Scientific Inc., an independent, NVLAP accredited laboratory for analysis. The bulk samples were analyzed using Polarized Light Microscopy (PLM) and dispersion staining techniques in accordance with the EPA 600/R-93/116 *Method for the Determination of Asbestos in Bulk Building Materials*. If a material was determined to be asbestos-containing, the laboratory was instructed to cease analysis of the remaining samples in the Sample Set.

The locations and conditions of the asbestos-containing materials identified within the building are detailed in this report. The condition criteria were evaluated using The Public Works and Government Services Canada (PWGSC) document *Public Services and Procurement Canada Asbestos Management Standard* updated June 1, 2019, which were then used to form recommendations for the asbestos-containing material present within the surveyed area.

The condition of the asbestos-containing material was assessed as follows:

Condition	Non-Friable	Friable
GOOD	• Material intact and stable • Minor cracks may be present on the surface	• Material is intact, with no signs of damage or delamination. • Up to 1% of sprayed fireproofing has visible damage. • Mechanical insulation is completely covered in jacketing, with no penetrations or exposed insulation.
FAIR	• Criteria not used	• Jacket insulation is missing • Minor damage (cuts, tears, or nicks) to jacketed insulation. • Insulation is exposed but not showing surface disintegration. • Missing insulation ranges from minor to none.
POOR	• Material is broken, lifted, damaged, or deteriorated	• Damage cannot be easily repaired • More than 1% of sprayed fireproofing is damaged, delaminated, or deteriorated.

Condition	Non-Friable	Friable
		• The original insulation jacket is missing, damaged, deteriorated, or delaminated. • Insulation is exposed and significant areas have been dislodged.

3.4 Excluded Asbestos-Containing Building Materials

Due to the non-intrusive basis of the survey, the following building materials, if present, were excluded from the survey but should be considered asbestos-containing until proven otherwise: roofing materials, refractory brick in boilers and incinerators, fire door core insulation, elevator brakes, mastics, high voltage wiring, heat shields within light fixtures, mechanical packing and gaskets, insulation or vermiculite inside wall cavities or concealed spaces, insulations within mechanical units or ducts, wall finishes concealed behind visible wall finishes, window and door glazing/caulking compounds, flooring material concealed beneath visible flooring and/or concealed beneath existing sub-floors, ceramic tile grout and mortar/adhesive concealed behind ceramic tiles, and sub-grade materials.

3.5 Benzene

No samples of building materials suspected of containing benzene were collected. If above or below grade fuel tanks were present within the assessed area, they were noted within the appropriate findings section.

3.6 Lead

Representative bulk samples of the most prevalent painted finishes and/or masonry mortar suspected of containing lead that is to be disturbed as part of the project were collected at the time of the assessment. A small area of the mortar or paint and subsurface layers were collected by scraping the material down to the substrate to which they are applied. Paint finishes of limited applications were not collected. Samples were submitted to EMSL Canada Inc. (EMSL), an ELLAP accredited laboratory. The paint or mortar samples were analyzed using Flame Atomic Absorption Spectrometry in accordance with EPA Method SW 846 3050B/7000B *Flame Atomic Absorption Spectrophotometry*. Results of the analysis were reported by the laboratory as the percentage of lead by weight of the total sample (% by wt.) or the mass of lead by the mass of the total sample (mg/kg).

The condition of painted surfaces and/or masonry mortar is also detailed in this report. A visual assessment of the mortar or paint for signs of cracking, chipping, flaking, bubbling and deterioration due to friction were noted and were assessed as GOOD, FAIR or POOR based on the degree and extent of deterioration.

The remainder of the suspect lead-containing material (lead piping, masonry mortar, copper pipes soldering joints, wiring connectors, electric cable sheathing, batteries, and lead sheeting) were noted if present.

3.7 Mercury

A visual inspection was completed based on the age, appearance, and historical uses of suspect mercury-containing equipment, building materials, or products to identify their locations and quantities. Suspect mercury-containing equipment was not dismantled nor were samples collected for the determination of mercury content.

3.8 Silica

A visual inspection of building materials suspected of containing crystalline silica (e.g., concrete, cement, tile, brick, masonry, mortar) was completed based on the historical use of suspect silica-containing materials in certain materials. Samples of building material were not collected for the determination of the presence or absence of crystalline silica.

3.9 Mould Contamination

A visual inspection to note the extent of surface mould growth and water-damaged building materials was completed within the assessed areas. No sampling for mould spore concentration, or destructive testing

to identify concealed mould growth or water damage, was completed. Surface discolouration, material degradation, or suspect mould growth were noted.

3.10 Polychlorinated Biphenyls

A visual inspection for polychlorinated biphenyls (PCBs) was completed on a select number of accessible fluorescent light ballasts present within the assessed areas. If available, information was collected from the ballasts' label and compared to the information in the Environment Canada Document, *"PCB Identification of Lamp Ballasts Containing PCBs"*, dated August 1991. It is important to note that due to safety precautions, the light fixtures were not opened to obtain the manufacturer's details as the fixtures were not de-energized. If visual confirmation of PCB content within the ballast could not be made, it was assumed that light fixtures in areas constructed before 1980 and did not have T8 style fluorescent light fixtures are PCB-containing until proven otherwise.

Information from electrical equipment, transformers specifically, was limited to the exterior labels, or nameplates, a review of maintenance records, and the age of the building to determine PCB content. No dielectric fluids were collected at the time of the assessment.

Caulking and sealants were not sampled or analyzed for PCB content. It should be assumed that if the material was installed before 1980, it contains PCBs until proven otherwise.

Dry-type transformers and fluorescent light ballasts with T8 style lights are presumed to be free of PCBs.

3.11 Inaccessible Locations

At the time of the survey the following locations were inaccessible:

1. N/A

4.0 Existing Reports and Drawings

The following reports were provided to Parasol and the information presented within these reports was utilized in the preparation of this report.

1. Detailed Asbestos-Containing Building Materials Survey Report – Maple Environmental Inc. January 2018 (Maple Project No. 16312-074)
2. Limited Designated Substance Survey Report – Parasol Environmental Inc. November 11, 2022 (Parasol Project No: 13071)

Detailed drawings were provided by the client and can be found in Appendix B.

5.0 Findings

The results of the visual identification and the bulk sampling completed during the duration of the survey are summarized below. The materials are divided into typical building material applications. The Laboratory Certificate of Analysis for the bulk samples collected while on site are presented in Appendix A.

5.1 Building Information

A summary of pertinent building details specific to the surveyed area is provided in the table below. Information is based on onsite observations, and interviews conducted as well as the provided prior reports.

Building Element	Details
Date of Construction & Additions	1953-Original Building, 1956, 1960, 1971-Additions
Number of Floors	2 plus Basement
Total Area	63,197 SF
Roof Type	Built-up
Floors	Concrete
Walls	Concrete, Brick

Building Element	Details
Ceilings	N/A
HVAC	Suspended Heaters
Structure	Concrete

The following section summarizes the findings of the assessment and provides a general description of the hazardous materials identified and their locations.

5.2 Asbestos

5.2.1 Building Materials Not Observed

At the time of the survey, the following building materials, which are known to historically contain asbestos were not observed and therefore are not discussed further within the report.

1. Sprayed Fireproofing
2. Acoustic Ceiling Tiles
3. Texture Coat Finishes
4. Plaster Finishes
5. Drywall Finishes
6. Vermiculite
7. Vinyl Floor Tiles
8. Vinyl Sheet Flooring
9. Transite Cement Products
10. Caulking

5.2.2 Insulations

Non-asbestos-containing insulations were observed to be present on mechanical systems throughout the surveyed area.

5.2.2.1 Fitting Insulation

Fitting insulation present within the surveyed area was observed to be fibreglass and PVC; materials not suspected to contain asbestos.

5.2.2.2 Straight Insulation

Straight insulation present within the surveyed area was observed to be fibreglass and PVC; materials not suspected to contain asbestos.

5.2.2.3 Duct Insulation

Ducts present within the surveyed area were observed to be externally insulated with fibreglass; a building material not suspected to contain asbestos, or were not insulated.

5.2.2.4 Mechanical Equipment Insulation

Mechanical equipment (hot water tanks, boilers, suspended heaters) within the surveyed area was observed to not be externally insulated.

5.2.3 Vermiculite

No loose-fill vermiculite was observed to be present within the surveyed area at the time of the assessment. However, as the survey was non-destructive, loose-fill vermiculite may be present within the voids of the masonry blocks, which is a historical application of vermiculite. Precaution should be taken if the masonry block is to be disturbed.

5.2.4 Other

- Cementitious parging material was observed within the surveyed area and applied around the perimeter of a wall mounted hatch. Analysis of Sample Set S01A-C determined that the samples do not contain asbestos.

- Mortar associated with brick finishes was observed surveyed area and limited to the North wall. Previous sampling (Sample Set 13071 S18A-C) determined that the samples do not contain asbestos.

5.3 Benzene

No products suspected of containing benzene were identified within the surveyed area.

5.4 Lead

Results of the lead in paint chips are presented in the table below. The Certificate of Analysis is attached in Appendix A.

Sample No	Sample Location	Description	Substrate	Result	Lead Class	Condition
Pb-01	B01-Mechanical Room	Off-white Paint	Walls and Deck	<0.0082%	Low-Level Lead	Peeling and Flaking Throughout, POOR
Pb-02	B01-Mechanical Room	Grey Paint	Concrete Floor	0.052%	Low-Level Lead	Minor Peeling, FAIR

As noted in the EACC guidelines, results above 0.1% are considered elevated and specific procedures apply to the removal or disturbance of these materials.

The following building materials were observed to be present within the assessed area and are suspected to contain lead:

1. Solder on pipe fittings

5.5 Mercury

5.5.1 Lamps

Mercury vapour is presumed to be present within all fluorescent light tubes.

5.5.2 Devices and Equipment

Thermostatic switches within the assessed areas were not observed to have liquid mercury present.

It is important to note that equipment present within the assessed area was not dismantled to verify the presence or absence of mercury within. As such, concealed mercury-containing devices may be present that are not noted within this report. Caution should be taken when dismantling this equipment as mercury-containing components should be assumed to be present.

5.6 Silica

The following building materials were observed to be present within the assessed area and are presumed to contain crystalline silica:

1. Masonry and mortar
2. Concrete (poured or pre-cast)

5.7 PCBs

5.7.1 Light Fixtures

Light fixtures observed within the surveyed area were observed to contain T8 lights, which contain electronic ballast and do not contain PCBs.

5.7.2 Transformers

Transformers were not observed to be present within the surveyed area.

5.8 Mould

No obvious visible mould growth and water damage were observed to be present within the surveyed area.

6.0 Conclusions and Recommendations

Based on the results of the bulk sampling and visual identification, the following Designated Substances and Hazardous Materials are known and/or assumed to be present within the surveyed area:

1. Lead
2. Mercury
3. Silica
4. PCBs

Parasol proposes the following recommendations:

6.1 General Recommendations

6.1.1 Lead

Based on the results of the bulk sampling and the visual identification, low-level lead concentrations (less than or equal to 0.1% lead by weight (1000 µg/g or 1000 mg/kg or 1000 ppm lead)) were found to be present in the following building materials: off-white paint and grey paint.

Low-level lead guidelines only apply if they meet the following criteria:

1. The paint and substrate are not disturbed in an aggressive manner (grinding, cutting or blasting) or not heated where fumes are produced (welding or torching),
2. Dust control and suppression procedures are utilized so that the TWA (10 mg/m^3) for particulates not otherwise specified (PNOS) is not exceeded and airborne lead concentrations are kept below 0.05 mg/m^3,and,
3. Washing facilities are available for workers to wash hands and faces.

Removal or disturbance of paints and brick mortar is to follow the procedures outlined in the EACC document *"Lead Guideline for Construction, Renovation, Maintenance or Repair"*, October 2014.

6.1.2 Mercury

Mercury vapour is present within fluorescent lights.

When removing the fluorescent lights, the materials are to be handled carefully to ensure they are kept sealed and intact, which will prevent direct skin contact and the inhalation of mercury vapour. Mercury is to be disposed of per Ontario Regulation 347 if greater than five kilograms (5 kg) is produced within a month.

6.1.3 Silica

Crystalline silica is suspected to be present within the masonry and mortar and concrete (poured or pre-cast) within the assessed area.

The removal or disturbance of material suspected to contain crystalline silica should follow procedures outlined in the MOL document "*Guideline - Silica on Construction Projects*", dated September 2004.

6.1.4 PCBs

The light fixtures observed at the time of the assessment contain T8 lights, which are known to contain non-PCB electronic ballasts.

If the fluorescent light fixtures are to be disturbed as part of the project, they should be disassembled and the information on the ballast compared to the Environment Canada Document, *"PCB Identification of Lamp Ballasts Containing PCBs"* dated August 1991. If the ballast does not contain a label that states "PCB Free" or the serial code that does not identify it as "PCB Free" then the ballast should be presumed to contain PCBs and disposed of accordingly.

6.1.5 Mould

No visible mould growth or water-damaged building materials were observed within the assessed area. If mould growth is discovered as part of the renovation project, then the material should be removed following the Environmental Abatement Council of Canada (EACC) "*Mould Abatement Guidelines - Edition 3"*, dated 2015. Further, a qualified Health and Safety professional should be consulted to inspect and verify the proper removal of the building materials.

6.2 Remedial Recommendations

The following remedial work should be completed regardless of the planned renovation.

6.2.1 Lead

The following paint and/or masonry mortar should be stabilized if they are to remain:

Location	Description	Remedial Recommendations
B01-Mechanical Room	Off-white paint on concrete walls and deck in POOR condition	Remove peeling and flaking off-white paint using EACC Low-Level Lead Guideline
B01-Mechanical Room	Grey paint on concrete floor in FAIR condition	Remove peeling grey paint using EACC Low-Level Lead Guideline

Low-level lead guidelines only apply if they meet the following criteria:

1. The paint and substrate are not disturbed in an aggressive manner (grinding, cutting or blasting) or not heated where fumes are produced (welding or torching),
2. Dust control and suppression procedures are utilized so that the TWA (10 mg/m^3) for particulates not otherwise specified (PNOS) is not exceeded and airborne lead concentrations are kept below 0.05 mg/m^3,and,
3. Washing facilities are available for workers to wash hands and faces.

7.0 Statement of Limitations

The information and recommendations detailed in this report were carried out by trained professional and technical staff following generally accepted engineering and scientific work practices and procedures. Recommendations provided in this report have been generated in accordance with accepted industry guidelines and practices. These guidelines and practices are considered acceptable as of the date of this report.

During the preparation of this report, Parasol relied on information provided by the client, which includes reports and test results prepared by other consultants, the history and use of the site supplied by on-site personnel, and testing services provided by independent laboratories. Parasol has not made any independent verification of the provided information.

The collection of samples at the location noted was consistent with the scope of work agreed upon with the person or entity to whom this report is addressed and the information obtained concerning prior site investigations. As conditions between samples may vary, the potential remains for the presence of unknown additional contaminants for which there were no known indicators.

Information provided in this report by Parasol is intended for the client's use only. Parasol will not provide results or information to any party unless disclosure by Parasol is required by law. Any use by a third party of reports or documents authored by Parasol or any reliance by a third party on or decisions made by a third party based on the findings described in said documents is the sole responsibility of such third parties. Parasol accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

Please contact the undersigned regarding the information presented within this report.

Sincerely,

Brad Panzer, Senior Project Manager
Parasol Environmental Inc.

Appendix A
Laboratory Certificate of Analysis

emcscientific
INCORPORATED

Laboratory Analysis Report

To:

Brad Panzer
Parasol Environmental
125–1860 Appleby Line, Unit #14
Burlington, Ontario
L7L 7H7

EMC LAB REPORT NUMBER: A110336
Job/Project Name: RH Cornish P.S.
Job No: 13253
Analysis Method: Polarized Light Microscopy – EPA 600
Number of Samples: 3
Date Received: Oct 9/24
Date Analyzed: Oct 17/24
Date Reported: Oct 17/24
Analyst: Jayoda Perera
Reviewed By: Chengming Li

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
S-01A	A110336-1	Cementitious wall parging/ B01-mechanical room	Grey, cementitious material	**ND**			100
S-01B	A110336-2	Cementitious wall parging/ B01-mechanical room	Grey, cementitious material	**ND**			100
S-01C	A110336-3	Cementitious wall parging/ B01-mechanical room	Grey, cementitious material	**ND**			100

Note:
1. Bulk samples are analyzed using Polarized Light Microscopy (PLM) and dispersion staining techniques. The analytical procedures are in accordance with EPA 600/R-93/116 method.
2. The results are only related to the samples analyzed. **ND** = None Detected (no asbestos fibres were observed), **NA** = Not Analyzed (analysis stopped due to a previous positive result).
3. This report may not be reproduced, except in full without the written approval of EMC Scientific Inc. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.
4. The Ontario Regulatory Threshold for asbestos is 0.5%. The limit of quantification (LOQ) is 0.5%.

EMSL Canada Inc.
2756 Slough Street, Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com torontolab@emsl.com

EMSL Canada Or	552416059
CustomerID:	55PAEN75
CustomerPO:	13233
ProjectID:	

Attn: **Brad Panzer**
Parasol Environmental Inc.
125-1860 Appleby Line
Unit 14
Burlington, ON L7L 7H7

Phone: (416) 579-1284
Fax:
Received: 10/9/2024 09:00 AM
Collected: 10/8/2024

Project: **RH Cornish P.S. / 13233**

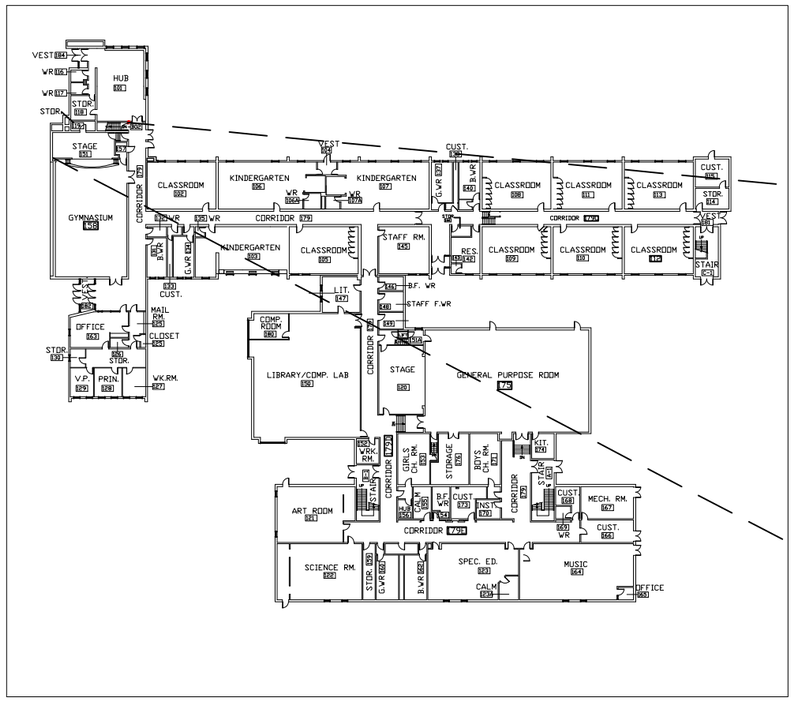
Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

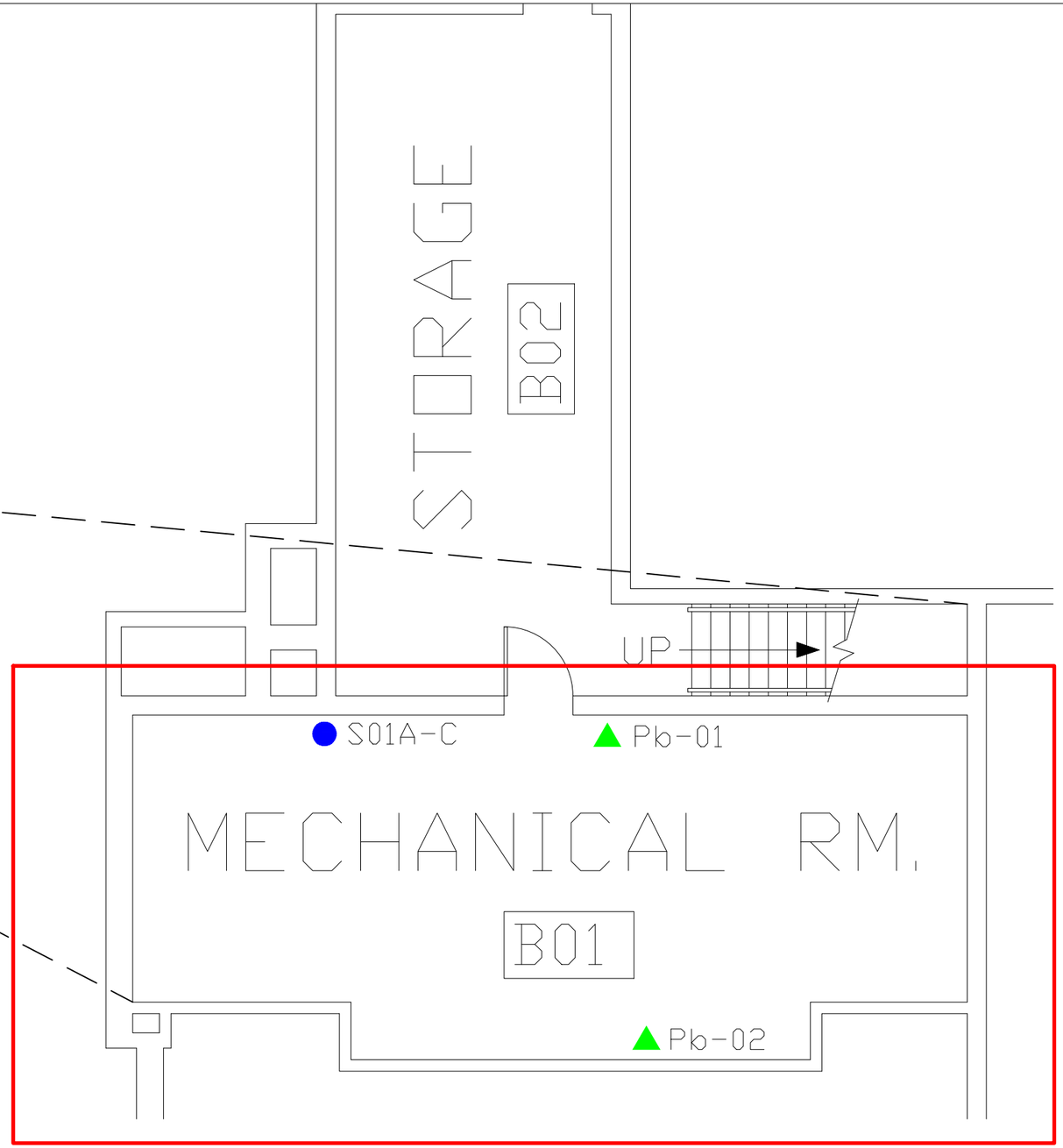
Client SampleDescription	*Collected*	*Analyzed*	*Weight*	*RDL*	*Lead Concentration*
Pb-01	10/8/2024	10/9/2024	0.2451 g	0.0082 % wt	<0.0082 % wt
552416059-0001	Site: Off-white paint / B01-Mechanical Room				
Pb-02	10/8/2024	10/9/2024	0.2444 g	0.0082 % wt	0.052 % wt
552416059-0002	Site: Grey paint / B01-Mechanical Room				

Rowena Fanto, Lead Supervisor
or other approved signatory

Initial report from 10/17/2024 09:08:20

Appendix B
Site Drawing





TITLE	LEGEND		CONFIRMED & SUSPECTED ACM		DRAWING NO	DRAWN BY:
Limited Designated Substance Survey Basement Floor Plan	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	DSR-01	B. PANZER
CLIENT	⊘	NO ACCESS			SCALE	PARASOL PROJECT NO
Durham District School Board	●	ASBESTOS SAMPLE LOCATION			NTS	13253
LOCATION	▲	LEAD SAMPLE LOCATION			DATE	
R.H. Cornish Public School 494 Queen Street Port Perry, Ontario	▭	SURVEY AREA			October 21, 2024	

Parasol Environmental Inc.

Parasol Environmental Inc.

125-1860 Appleby Line, Unit # 14,
Burlington, Ontario L7L 7H7

Limited Designated Substance Survey Report

R.H. Cornish Public School

494 Queen Street, Port Perry, Ontario

Prepared for

Durham District School Board
400 Taunton Road East, Whitby, Ontario

November 11, 2022
Parasol Project No: 13071

Executive Summary

Parasol Environmental Inc. (Parasol) was retained by the Durham District School Board to conduct a Limited Designated Substance Survey within R.H. Cornish Public School located at 494 Queen Street, Port Perry, Ontario. The purpose of the survey was to record the presence, location, condition and quantities of Designated Substances and Hazardous Materials within the surveyed area that may be disturbed during the planned ventilation upgrade and general classroom renovation projects. Additional information is provided to document corrective measures necessary to ensure that remedial action occurs applying the proper abatement procedures, if necessary.

The survey was completed by Brad Panzer of Parasol on October 24, 2022.

The following table summarizes the Designated Substances and Hazardous Materials observed within the surveyed area.

Designated Substance or Hazardous Material	Findings	Recommendation
Asbestos	Confirmed and suspected asbestos-containing materials were identified as follows: Friable Asbestos • Mechanical Insulations Non-Friable Asbestos • Vinyl Floor Tiles • Vinyl Floor Tile Mastic • Transite Cement Distinctive Asbestos • Acoustic Ceiling Tiles • Drywall Finishes	The following remedial work is necessary to comply with Ontario Regulation 278/05: • Repair or remove parging cement fitting insulation using Type 2 abatement procedures • Remove acoustic ceiling tiles using Type 2 abatement procedures • Remove transite cement ceiling panel using Type 1 abatement procedures
Benzene	No major sources were identified.	No recommendations are warranted as no benzene products were observed.
Lead	Low-level lead concentrations were found to be present in the following materials: • Beige paint • White paint • Dark blue paint • Grey paint • Red truss paint • Masonry block mortar Lead-containing concentrations were found to be present in the following materials: • Mauve paint • Yellow paint Lead of varying concentrations is also suspected to be present in the following items: • Batteries in Emergency Lighting	Stabilize the following materials: • Remove flaking paint using EACC Class 1 or 2A Guidelines

Designated Substance or Hazardous Material	Findings	Recommendation
	• Ceramic Floor and Wall Tile Glazing • Solder on pipe fittings • Wiring Connectors • Electric Cable Sheathing	
Mercury	Mercury vapour is presumed to be present within all fluorescent light tubes.	If removed, the fluorescent lights are to be kept sealed and intact, which will prevent direct skin contact and the inhalation of mercury vapour.
Silica	Crystalline silica is suspected to be present within: • Ceramic tiles and grout, • Masonry and mortar, • Concrete (poured or pre-cast)	The removal or disturbance of material suspected to contain crystalline silica are to follow procedures outlined in the MOL document *"Guideline - Silica on Construction Projects"*, dated September 2004.
Polychlorinated Biphenyls (PCBs)	Suspect PCB-containing products observed include: • T12 light fixtures	If disturbed, compare fluorescent light fixture's ballast to the Environment Canada Document, *"PCB Identification of Lamp Ballasts Containing PCBs"* dated August 1991. If the ballast does not contain a label that states "PCB Free" or the serial code that does not identify it as "PCB Free" then the ballast should be presumed to contain PCBs and disposed of accordingly.
Mould	No major sources were identified.	No recommendations are warranted as no mould or water-damaged building materials were observed.
Other Designated Substances	The following Designated Substances are not likely to be found in the area assessed: • Acrylonitrile • Arsenic • Coke Oven Emission • Ethylene Oxide • Isocyanates • Vinyl Chloride	No recommendations are warranted as none were observed.

Before any renovation activities, perform an intrusive investigation for concealed Designated Substances and sample building materials that were not previously tested and may be disturbed as part of the renovation. In addition, consideration should be given to mechanical, electrical and structural components that pass beyond the rooftop into the building and may be impacted by the project. Further, consideration of the known or suspected asbestos-containing materials within the building should be assessed that may be disrupted during the renovation.

This executive summary is to be read in conjunction with the remainder of the report.

TABLE OF CONTENTS

1.0 Introduction

1.1 Background

Parasol Environmental Inc. (Parasol) was retained by the Durham District School Board to conduct a Limited Designated Substance Survey within R.H. Cornish Public School located at 494 Queen Street, Port Perry, Ontario. The purpose of the survey was to record the presence, location, condition and quantities of Designated Substances and Hazardous Materials within the surveyed area that may be disturbed during the planned ventilation upgrade and general classroom renovation projects. Additional information is provided to document corrective measures necessary to ensure that remedial action occurs using the proper abatement procedures, if necessary.

The survey was completed by Brad Panzer of Parasol on October 24, 2022.

2.0 Regulatory Framework

The following Acts, Regulations, Guidelines and documents were utilized for the survey and the preparation of this report:

1. *Occupational Health and Safety Act R.S.O. 1990, c. O.1.*
   - I. *Ontario Regulation 278/05- Designated Substances – Asbestos on Construction Projects and in Buildings and Repair Operations.*
   - II. *Ontario Regulation 490/09- Designated Substances*.
   - *III. Ontario Regulation 833 – Control of Exposure to Biological or Chemical Agents.*
   - *IV. Ontario Regulation 213/91 – Construction Projects*
2. Ministry of Labour (MOL) Document, "*Guideline - Lead on Construction Projects"*, September 2004.
3. Environmental Abatement Council of Canada (EACC) *"Lead Guideline for Construction, Renovation, Maintenance or Repair"*, October 2014.
4. Ministry of Labour (MOL) Document, "*Guideline - Silica on Construction Projects"*, September 2004.
5. Environment Canada Document, *"PCB Identification of Lamp Ballasts Containing PCBs"* August 1991.
6. Canadian Construction Association (CCA), "*Mould Guidelines for the Canadian Construction Industry*", 2018.
7. Environmental Abatement Council of Canada (EACC) "*Mould Abatement Guidelines - Edition 3"*, 2015.
8. Ontario Ministry of Labour (MOL), *Alert: Mould in Workplace Buildings*, ISSN: 1195-5228, December 2000.
9. Environmental Abatement Council of Canada (EACC) *"Pre-Construction Designated Substances and Hazardous Materials Assessments Guideline for Construction, Renovation and Demolition Projects"* 2021.

Ontario Regulation 490/09 – *Designated Substances* defines the eleven (11) Designated Substances, establishes the requirements for workplaces containing these materials, which include the health and safety responsibilities, control programs to minimize worker's exposures, and sets out the maximum exposure concentrations.

The control and management of asbestos in Ontario are further prescribed by Ontario Regulation *278/05- Designated Substances – Asbestos on Construction Projects and in Buildings and Repair Operations*.

The major components of O. Reg 278/05 require that an asbestos survey record be completed for buildings or private residences with more than four units, and an asbestos management program be established for the asbestos-containing materials present within these buildings. The regulation also states the frequency in which a building material must be sampled, and defines an asbestos-containing material. The current definition of asbestos-containing material in Ontario is having 0.5% or greater fibrous silicate asbestos content by dry weight. Further, the Regulation divides asbestos-containing material into friable material (a

material, when dry, can be crumbled, pulverized, or powdered by hand pressure, or is crumbled, pulverized, or powdered) and non-friable material. In addition, the Regulation also defines the minimum measures and procedures for the repair or removal of asbestos-containing materials. Due to the limited scope of this survey, this report does not meet all the requirements of O. Reg. 278/05 and additional asbestos-containing materials may be present within the building that are not noted within this report. Within this report, building materials are separated into the typical applications of asbestos-containing materials.

Section 30 of the Occupational Health and Safety Act requires an Owner to determine and list Designated Substances present at a project site before beginning work. Further, this information must be included in tender documents, and the Owner and Constructor must ensure that each prospective contractor and subcontractor receive a copy of the information before entering into a binding contract. Otherwise, the Owner is liable to the constructor and every contractor and subcontractor who suffers any loss or damage as a result of the failure. The same liability applies to the Constructor regarding their contractors and subcontractors. This report meets the requirements of Section 30 of the Act.

Section 6, subsection 3 of O. Reg 213/91 requires that a Notice of Project be filed with the Ministry of Labour before beginning a project and the document requires the constructor to remark if any Designated Substance will be used, handled, or disturbed on the project. The information provided in this report can be used for the Notice of Project.

Based on the Environmental Abatement Council of Canada (EACC) *"Lead Guideline for Construction, Renovation, Maintenance or Repair"*, dated October 2014, and for this report, paints, mortar, or surface coatings containing less than or equal to 0.1% lead by weight (1000 µg/g or 1000 mg/kg or 1000 ppm lead) are considered low-level lead paints, mortars, or surface coatings. Paints, mortars, or surface coatings containing greater than 0.1% lead by weight (1000 µg/g, or 1000 mg/kg, or 1000 ppm) but less than 0.5% lead by weight (5000 µg/g, or 5000 mg/kg, or 5000 ppm lead) are considered lead-containing paints, mortars, or surface coatings. Paints, mortars, or surface coatings containing equal to or greater than 0.5% lead by weight (5000 µg/g, or 5000 mg/kg, or 5000 ppm lead) are considered lead-based paints, mortars, or surface coatings.

3.0 Methodology and Scope

3.1 Scope of Assessment

The survey was limited to the anticipated ventilation upgrade and general classroom renovation project areas as illustrated on the architectural drawings provided by the client. The survey was completed on an "addition by addition" approach, to delineate surfacing building materials (plaster, drywall, mortars) based on the year of construction. The scope of the assessment was carried out in all accessible areas on a non-intrusive basis. Areas that were inaccessible at the time of the survey are listed in Section 3.11.

For this assessment, the following Designated Substances, as defined under *Ontario Regulation 490/09-Designated Substances* made under the *Occupational Health and Safety Act R.S.O. 1990, c. O.1* were assessed for as they are typically found in buildings and building material:

1. Asbestos
2. Benzene
3. Lead
4. Mercury
5. Silica

In addition to the above-noted Designated Substances, Parasol personnel also documented the presence of the following hazardous materials, which have similar Regulations that outline the management, handling and disposal of the material.

1. Polychlorinated Biphenyls
2. Mould

For this assessment, the following Designated Substances, as defined under *Ontario Regulation 490/09-Designated Substances* made under the *Occupational Health and Safety Act R.S.O. 1990, c. O.1*, were not

assessed as they would not be found in building materials that may be disturbed as part of this project and typically only found in industrial or manufacturing settings.

1. Acrylonitrile
2. Arsenic
3. Coke Oven Emission
4. Ethylene Oxide
5. Isocyanates
6. Vinyl Chloride

No additional comments will be made regarding these materials within this report unless the Owner or the Owner Representative notifies Parasol of the use of these materials within the building.

3.2 Methodology

The assessment was completed largely on a visual basis at ground level and representative checks were made above ceilings with the aid of a six-foot (6FT) step ladder. Locations and building materials present above this height were considered to be inaccessible. In addition, due to the non-intrusive nature of the assessment, materials concealed above solid ceiling finishes, within wall cavities, and below floor grade may be present that are not documented within this report. Designated Substances should be presumed to be present within these locations and all necessary precautions should be followed when accessing these spaces.

3.3 Asbestos

Representative bulk samples of building materials were collected in the frequency required under Table 1, Subsection 3(3) of *Ontario Regulation 278/05- Designated Substances – Asbestos on Construction Projects and in Buildings and Repair Operations*. Samples were submitted to EMC Scientific Inc., an independent, NVLAP accredited laboratory for analysis. The bulk samples were analyzed using Polarized Light Microscopy (PLM) and dispersion staining techniques in accordance with the EPA 600/R-93/116 *Method for the Determination of Asbestos in Bulk Building Materials*. If a material was determined to be asbestos-containing, the laboratory was instructed to cease analysis of the remaining samples in the Sample Set.

The locations and conditions of the asbestos-containing materials identified within the building are detailed in this report. The condition criteria were evaluated using The Public Works and Government Services Canada (PWGSC) document *Public Services and Procurement Canada Asbestos Management Standard* updated June 1, 2019, which were then used to form recommendations for the asbestos-containing material present within the surveyed area.

The condition of the asbestos-containing material was assessed as follows:

Condition	Non-Friable	Friable
GOOD	• Material intact and stable • Minor cracks may be present on the surface	• Material is intact, with no signs of damage or delamination. • Up to 1% of sprayed fireproofing has visible damage. • Mechanical insulation is completely covered in jacketing, with no penetrations or exposed insulation.
FAIR	• Criteria not used	• Jacket insulation is missing • Minor damage (cuts, tears, or nicks) to jacketed insulation. • Insulation is exposed but not showing surface disintegration. • Missing insulation ranges from minor to none.

Condition	Non-Friable	Friable
POOR	• Material is broken, lifted, damaged, or deteriorated	• Damage cannot be easily repaired • More than 1% of sprayed fireproofing is damaged, delaminated, or deteriorated. • The original insulation jacket is missing, damaged, deteriorated, or delaminated. • Insulation is exposed and significant areas have been dislodged.

3.4 Excluded Asbestos-Containing Building Materials

Due to the non-intrusive basis of the survey, the following building materials, if present, were excluded from the survey but should be considered asbestos-containing until proven otherwise: roofing materials, refractory brick in boilers and incinerators, fire door core insulation, elevator brakes, mastics, high voltage wiring, heat shields within light fixtures, mechanical packing and gaskets, insulation or vermiculite inside wall cavities or concealed spaces, insulations within mechanical units or ducts, wall finishes concealed behind visible wall finishes, window and door glazing/caulking compounds, flooring material concealed beneath visible flooring and/or concealed beneath existing sub-floors, ceramic tile grout and mortar/adhesive concealed behind ceramic tiles, and sub-grade materials.

3.5 Benzene

No samples of building materials suspected of containing benzene were collected. If above or below grade fuel tanks were present within the assessed area, they were noted within the appropriate findings section.

3.6 Lead

Representative bulk samples of the most prevalent painted finishes and/or masonry mortar suspected of containing lead that is to be disturbed as part of the project were collected at the time of the assessment. A small area of the mortar or paint and subsurface layers were collected by scraping the material down to the substrate to which they are applied. Paint finishes of limited applications were not collected. Samples were submitted to EMSL Canada Inc. (EMSL), an ELLAP accredited laboratory. The paint or mortar samples were analyzed using Flame Atomic Absorption Spectrometry in accordance with EPA Method SW 846 3050B/7000B *Flame Atomic Absorption Spectrophotometry*. Results of the analysis were reported by the laboratory as the percentage of lead by weight of the total sample (% by wt.) or the mass of lead by the mass of the total sample (mg/kg).

The condition of painted surfaces and/or masonry mortar is also detailed in this report. A visual assessment of the mortar or paint for signs of cracking, chipping, flaking, bubbling and deterioration due to friction were noted and were assessed as GOOD, FAIR or POOR based on the degree and extent of deterioration.

The remainder of the suspect lead-containing material (lead piping, copper pipes soldering joints, wiring connectors, electric cable sheathing, batteries, and lead sheeting) were noted if present.

3.7 Mercury

A visual inspection was completed based on the age, appearance, and historical uses of suspect mercury-containing equipment, building materials, or products to identify their locations and quantities. Suspect mercury-containing equipment was not dismantled nor were samples collected for the determination of mercury content.

3.8 Silica

A visual inspection of building materials suspected of containing crystalline silica (e.g., concrete, cement, tile, brick, masonry, mortar) was completed based on the historical use of suspect silica-containing materials in certain materials. Samples of building material were not collected for the determination of the presence or absence of crystalline silica.

3.9 Mould Contamination

A visual inspection to note the extent of surface mould growth and water-damaged building materials was completed within the assessed areas. No sampling for mould spore concentration, or destructive testing to identify concealed mould growth or water damage, was completed. Surface discolouration, material degradation, or suspect mould growth were noted.

3.10 Polychlorinated Biphenyls

A visual inspection for polychlorinated biphenyls (PCBs) was completed on a select number of accessible fluorescent light ballasts present within the assessed areas. If available, information was collected from the ballasts' label and compared to the information in the Environment Canada Document, *"PCB Identification of Lamp Ballasts Containing PCBs"*, dated August 1991. It is important to note that due to safety precautions, the light fixtures were not opened to obtain the manufacturer's details as the fixtures were not de-energized. If visual confirmation of PCB content within the ballast could not be made, it was assumed that light fixtures in areas constructed before 1980 and did not have T8 style fluorescent light fixtures are PCB-containing until proven otherwise.

Information from electrical equipment, transformers specifically, was limited to the exterior labels, or nameplates, a review of maintenance records, and the age of the building to determine PCB content. No dielectric fluids were collected at the time of the assessment.

Caulking and sealants were not sampled or analyzed for PCB content. It should be assumed that if the material was installed before 1980, it contains PCBs until proven otherwise.

Dry-type transformers and fluorescent light ballasts with T8 style lights are presumed to be free of PCBs.

3.11 Inaccessible Locations

At the time of the survey the following locations were inaccessible:

1. B02 – Stair to Basement

It should be presumed that asbestos-containing materials are present within these locations until proven otherwise.

4.0 Existing Reports and Drawings

The following reports were provided to Parasol and the information presented within these reports was utilized in the preparation of this report.

1. Detailed Asbestos-Containing Building Materials Survey Report – Maple Environmental Inc. January 2018 (Maple Project No. 16312-074)

Detailed drawings were provided by the client and can be found in Appendix B.

5.0 Findings

The results of the visual identification and the bulk sampling completed during the duration of the survey are summarized below. The materials are divided into typical building material applications. The Laboratory Certificate of Analysis for the bulk samples collected while on site are presented in Appendix A.

5.1 Building Information

A summary of pertinent building details specific to the surveyed area is provided in the table below. Information is based on onsite observations, and interviews conducted as well as the provided prior reports.

Building Element	Details
Date of Construction & Additions	1953-Original Building, 1956-Addition, 1960-Addition, 1971-Addition
Number of Floors	2 plus Basement
Total Area	63,197 SF

Building Element	Details
Roof Type	Built-up
Floors	Terrazzo, Vinyl Floor Tiles, Vinyl Sheet Flooring, Concrete, Wood
Walls	Brick, Masonry Block, Drywall, Smooth Plaster, Ceramic Tile, Tectum Panels, Transite
Ceilings	Lay-in Ceiling Tiles, Drywall, Smooth Plaster, Rough Plaster, Wood, Transite, Tectum Panels
HVAC	Forced Air, Radiators, Unit Ventilators
Structure	Wood, Concrete, Steel
Exterior Cladding	Brick, Metal

The following section summarizes the findings of the assessment and provides a general description of the hazardous materials identified and their locations.

5.2 Asbestos

5.2.1 Building Materials Not Observed

At the time of the survey, the following building materials, which are known to historically contain asbestos were not observed and therefore are not discussed further within the report.

1. Sprayed Fireproofing
2. Vermiculite

5.2.2 Acoustic Ceiling Tiles

The following acoustic ceiling tiles were observed to be present at the time of the survey:

Tile Number	Sample Number	Description	Locations	Asbestos Content	Notes
AT-01	NA	2'x4' Pinhole and Random Fleck	Throughout Survey Area	NA	Date Stamped (12/08/2005)
AT-02	Previously Sampled (759-19A-C)	1'x1' Large and Small Hole (Brown Interior)	Throughout Survey Area	ND	Constructed from pressed wood
AT-03	**Previously Sampled (759-18A, A1031-09)**	**1'x1' Large and Small Hole (White Interior)**	**Location #179C, 243**	**2% AM**	**6 Tiles POOR, remainder GOOD**
AT-04	Previously Sampled (759-20A-C, A1031-08)	1'x1' Flat White	Throughout Survey Area	ND	-
AT-05	NA	2'x4' Pinhole and Widthwise Fissures	Location #142	NA	Date Stamped (03/28/1998)
AT-06	S11A-C	2'x4' Flat with Pinholes	Location #143	ND	-

Tile Number	Sample Number	Description	Locations	Asbestos Content	Notes
AT-07	NA	2'x4' Flat White Gypsum	Location #234, 236	NA	Constructed from Gypsum – non-ACM
AT-08	Previously Sampled (231-14A-C, 231-17A-C)	2'x4' Small Pinholes and Widthwise Fissures	Location #235	ND	-
AT-09	NA	2'x4' Textured Pinhole	Location #151A, 156, 173	NA	Date Stamped (10/30/2010)

ND= None Detected, NA= Not Applicable, CH= Chrysotile Asbestos, AM= Amosite Asbestos

Brown ceiling tile mastic associated with AT-02, AT-03 and AT-04 was previously sampled by Others (Sample Set 16312-074 S12A-C) and determined to not contain asbestos.

5.2.3 Texture Coat Finishes

1953-Original Building

Rough texture coat finish was observed to be applied to walls and limited to Locations #116-Washroom and 117-Washroom within the 1953 original building survey area. Samples Set S20A-C determined that the samples do not contain asbestos.

5.2.4 Plaster Finishes

1953-Original Building

Smooth plaster was observed to be applied to walls and ceilings throughout the 1953 original building survey area. Analysis of Sample Set S17A-G determined that the samples do not contain asbestos.

1956-Building Addition

Smooth plaster was observed to be applied to walls and ceilings throughout the 1956 building addition survey area. Analysis of Sample Set S07A-G determined that the samples do not contain asbestos.

1960-Building Addition

Smooth plaster was observed to be applied to walls, ceilings and bulkheads throughout the 1960 building addition survey area. Analysis of Sample Set S04A-E determined that the samples do not contain asbestos.

1971-Building Addition

Rough plaster was observed to be applied to ceilings within the 1971 building addition survey area and limited to Location #179D-Corridor. Analysis of Sample Set S16A-C determined that the samples do not contain asbestos.

5.2.5 Drywall Finishes

1953-Original Building

Drywall with joint compound applied to gypsum board was observed within the 1953 original building survey area as wall finishes. Analysis of Sample Set S19A-E determined that the samples do not contain asbestos.

1956-Building Addition

Drywall with joint compound applied to gypsum board was observed throughout the 1956 building addition survey area as wall and bulkhead finishes. Analysis of Sample S06A was determined to contain **1% Chrysotile asbestos**. The remaining samples were not analyzed due to the stop positive confirmation. *Ontario Regulation 278/05*, requires a material to be considered as asbestos-containing if one or more samples within the set is determined to contain asbestos. Therefore, all drywall with joint compound

applied within the 1956 building addition survey area is considered to be asbestos-containing. Drywall finishes were observed in GOOD condition at the time of the assessment.

1960-Building Addition

Drywall with joint compound applied to gypsum board was observed throughout the 1960 building addition survey area as wall and bulkhead finishes. Analysis of Sample S03A was determined to contain **0.5% Chrysotile asbestos**. The remaining samples were not analyzed due to the stop positive confirmation. *Ontario Regulation 278/05*, requires a material to be considered as asbestos-containing if one or more samples within the set is determined to contain asbestos. Therefore, all drywall with joint compound applied within the 1960 building addition survey area is considered to be asbestos-containing. Drywall finishes were observed in GOOD condition at the time of the assessment.

1971-Building Addition

Drywall with joint compound applied to gypsum board was observed throughout the 1971 building addition survey area as wall, ceiling and bulkhead finishes. Analysis of Sample S13A was determined to contain **1% Chrysotile asbestos**. The remaining samples were not analyzed due to the stop positive confirmation. *Ontario Regulation 278/05*, requires a material to be considered as asbestos-containing if one or more samples within the set is determined to contain asbestos. Therefore, all drywall with joint compound applied within the 1971 building addition survey area is considered to be asbestos-containing. Drywall finishes were observed in GOOD condition at the time of the assessment.

5.2.6 Insulations

Friable asbestos-containing insulations and non-asbestos-containing insulations were observed to be present on mechanical systems throughout the surveyed area.

5.2.6.1 Fitting Insulation

Asbestos-containing Parging Cement was observed to be present of pipe fittings and insulation seams within the surveyed area. Previous sampling performed by Others (16113 S01A-C, 13432 5A-C & A1031-01) determined that the material contains **25-80% Chrysotile asbestos**. At the time of the current assessment, Parging Cement was observed to be in FAIR to GOOD condition.

The remaining fitting insulation present within the surveyed area was observed to be Armaflex, fibreglass, and PVC; materials not suspected to contain asbestos.

5.2.6.2 Straight Insulation

Layered paper insulation, commonly referred to as “Cellulose” was observed to be applied to pipe straights within the surveyed area. Previous sampling performed by Others (A1031-07 & 16312-074 S02A-C) determined that the material does not contain asbestos.

The remaining straight insulation present within the surveyed area was observed to be Armaflex, fibreglass, and PVC; materials not suspected to contain asbestos.

5.2.6.3 Duct Insulation

Ducts present within the surveyed area were observed to be externally insulated with fibreglass; a building material not suspected to contain asbestos, or were not insulated.

5.2.6.4 Mechanical Equipment Insulation

Mechanical equipment (air handling units) within the surveyed area was observed to not be externally insulated.

Radiators were observed to be externally insulated with Styrofoam; a building material not suspected to contain asbestos or were not insulated.

5.2.7 Vermiculite

No loose-fill vermiculite was observed to be present within the building at the time of the assessment. However, as the survey was non-destructive, loose-fill vermiculite may be present within the voids of the

masonry blocks, which is a historical application of vermiculite. Precaution should be taken if the masonry block is to be disturbed.

5.2.8 Vinyl Floor Tiles

The following vinyl floor tiles were observed to be present at the time of the survey:

Tile Number	Sample Number	Description	Locations	Asbestos Content	Notes
VFT-01	Previously Sampled (16312-074 S20A-C)	12”x12” Off-White with Grey Flecks	Location #214, 216, 218, 239	ND	-
		Black Mastic		ND	
VFT-02	Previously Sampled (231 04A-C)	12”x12” White with Sparse Grey Fleck	Throughout Survey Area	ND	-
		Black Mastic		ND	
VFT-03	**Previously Sampled (16312-074 S14A-C)**	**12”x12” Beige Streak**	**Location #111, 112, 113, 215, 216**	**1% CH**	**Limited to closets – GOOD Condition**
		Black Mastic		ND	
VFT-04	**Previously Sampled (16312-074 S13A-C)**	**12”x12” White**	**Location #112**	**2% CH**	**GOOD Condition**
		Black Mastic		ND	
VFT-05	S05A-C	12”x12” Cream with Brown Streaks	Location #111, 113	ND	-
		Black Mastic		ND	
VFT-06	Previously Sampled (16312-074 S10A-C)	12”x12” Light Brown with White Fleck	Throughout Survey Area	ND	-
		Black Mastic		ND	
VFT-07	**Previously Sampled (231 15A-C)**	**12”x12” Light Green with White Streaks**	**Location #108**	**1.4%CH**	**GOOD Condition**
		Black Mastic		ND	
VFT-08	**Presumed**	**9”x9” Grey**	**Location #144**	**CH**	**GOOD Condition**
VFT-09	Previously Sampled (16312-074 S08A-C)	12”x12” Light Grey Fleck	Throughout Survey Area	ND	-
		Black Mastic		ND	
VFT-10	**S14A-C**	**12”x12” Yellow with White Streaks**	**Location #233**	**1%CH**	**GOOD Condition**
		Black Mastic		ND	

Tile Number	Sample Number	Description	Locations	Asbestos Content	Notes
VFT-11	**Previously Sampled (16312-074 S19A-C)**	**12”x12” Beige with Brown and White Streaks**	**Location #237**	**1%CH**	**GOOD Condition**
		Black Mastic		ND	
VFT-12	Previously Sampled (231-06A-C)	12”x12” Beige with Black Specks	Location #156, 173	ND	-
VFT-13	Previously Sampled (231-10A-C)	12”x12” Blue Grey Fleck	Location #174, 175	ND	-
		Black Mastic		ND	
VFT-14	Previously Sampled (16312-074 S17A-C)	12”x12” Pale Orange Fleck	Location #151A	ND	-
		Black Mastic		ND	
VFT-15	NA	24”x24” Beige with Brown and White Fleck	Location #101	NA	New-Recently Installed
VFT-16	**Previously Sampled (16312-074 S03A-C)**	12”x12” Off-White with Beige Fleck	Location #102	ND	**GOOD Condition**
		Black Mastic		**1%CH**	
VFT-17	S21A-C	12”x12” Light Grey with Sparse Dark Fleck	Location #105	ND	GOOD Condition
		Black Mastic		ND	

ND= None Detected, NA= Not Applicable, CH= Chrysotile Asbestos, AM= Amosite Asbestos

As VFT-16 cannot be removed without disturbing the asbestos-containing mastic, the tile is deemed asbestos-containing and if removed, applicable asbestos abatement procedures apply.

5.2.9 Vinyl Sheet Flooring

The following vinyl sheet flooring types were observed to be present at the time of the survey:

Sheet Flooring Number	Sample Number	Description	Locations	Asbestos Content	Notes
VSF-01	NA	Grey Sparkle	Location #121, 122	NA	New

ND= None Detected, NA= Not Applicable, CH= Chrysotile Asbestos, AM= Amosite Asbestos

5.2.10 Transite Cement Products

Transite cement products were observed to be present in the form of 2’x2’ perforated panels applied as wall and ceiling finishes within the surveyed area. Transite cement panels were observed to be mechanically fastened to walls and ceilings and limited to Locations #101, 145 and 158

No samples of the transite cement products were collected as sampling could disrupt the integrity of the material. Transite cement products typically contain **Chrysotile or Amosite asbestos** of varying percents. Visual identification is typically reliable for identifying transite cement products; however, a non-asbestos-containing equivalent of transite cement products is manufactured. At the time of the current assessment, transite cement panels were observed to be in POOR to GOOD condition.

5.2.11 Caulking

The following caulking types were observed to be present at the time of the survey:

Number	Sample Number	Description	Locations	Asbestos Content	Notes
CK-01	S15A-C	Grey, hard	Throughout Survey Area	-	Applied to ducts

ND= None Detected, NA= Not Applicable, CH= Chrysotile Asbestos, AM= Amosite Asbestos

5.2.12 Other

1953-Original Building

- Mortar associated with brick finishes was observed within the 1953 original building survey area. Analysis of Sample Set S18A-C determined that the samples do not contain asbestos.
- Mortar associated with masonry block finishes was observed within the 1953 original building survey area. Analysis of Sample Set S22A-C determined that the samples do not contain asbestos.

1956-Building Addition

- Mortar associated with brick finishes was observed within the 1956 building addition survey area. Analysis of Sample Set S08A-E determined that the samples do not contain asbestos.
- Mortar associated with masonry block finishes was observed within the 1956 building addition survey area. Analysis of Sample Set S10A-C determined that the samples do not contain asbestos.
- Vinyl board was observed within the 1956 building addition survey area. The material is applied as backsplash within several classrooms. Analysis of Sample Set S09A-C determined that the samples do not contain asbestos.

1960-Building Addition

- Mortar associated with masonry block finishes was observed within the 1960 building addition survey area. Analysis of Sample Set S01A determined that the sample contains <0.5 Chrysotile asbestos. As per Ontario Regulation 278/05, building materials deemed “asbestos-containing” must contain 0.5% or more asbestos content by dry weight. It was determined that the remaining samples (S01B-E) do not contain asbestos. Therefore, Sample Set S01A-E is considered to not contain asbestos.

1971-Building Addition

- Mortar associated with masonry block finishes was observed within the 1971 building addition survey area. Analysis of Sample Set S12A-G determined that the samples do not contain asbestos.

Building Exterior

- Mortar associated with brick finishes was observed throughout the exterior of the building. Analysis of Sample Set S23A-C and 24A-C determined that the samples do not contain asbestos.

5.3 Benzene

No products suspected of containing benzene were identified within the surveyed area.

5.4 Lead

Results of the lead in paint chips and/or masonry mortar are presented in the table below. The Certificate of Analysis is attached in Appendix A.

Sample No	Sample Location	Description	Substrate	Result	Lead Class	Condition
Pb-01	238-Custodial	Beige Paint	Walls	<0.0080%	Low-Level Lead	Flaking, FAIR
Pb-02	243-Corridor	White Paint	Walls	0.014%	Low-Level Lead	GOOD
Pb-03	215-Classroom	Dark Blue Paint	Walls	0.088%	Low-Level Lead	GOOD
Pb-04	113-Classroom	Mortar	Masonry Block	<40mg/Kg	Low-Level Lead	GOOD
Pb-05	**142-Resource**	**Mauve Paint**	**Upper Walls**	**0.23%**	**Lead-Containing**	**Flaking, FAIR**
Pb-06	**143-Storage**	**Yellow Paint**	**Walls**	**0.14%**	**Lead-Containing**	**Flaking, FAIR**
Pb-07	228-Classroom	Grey Paint	Walls	<0.0080%	Low-Level Lead	GOOD
Pb-08	120-Stage	Red Paint	Steel Truss	0.038%	Low-Level Lead	GOOD
Pb-09	151-Stage	Beige Paint	Wood Deck	0.040%	Low-Level Lead	GOOD
Pb-10	240-Corridor	Mortar	Masonry Block	<40mg/Kg	Low-Level Lead	GOOD

As noted in the EACC guidelines, results above 0.1% are considered elevated and specific procedures apply to the removal or disturbance of these materials.

The following building materials were observed to be present within the assessed area and are suspected to contain lead:

1. Batteries in Emergency Lighting
2. Ceramic Floor and Wall Tile Glazing
3. Solder on pipe fittings
4. Wiring Connectors
5. Electric Cable Sheathing

5.5 Mercury

5.5.1 Lamps

Mercury vapour is presumed to be present within all fluorescent light tubes.

5.5.2 Devices and Equipment

Thermostatic switches within the assessed areas were not observed to have liquid mercury present.

It is important to note that equipment present within the assessed area was not dismantled to verify the presence or absence of mercury within. As such, concealed mercury-containing devices may be present that are not noted within this report. Caution should be taken when dismantling this equipment as mercury-containing components should be assumed to be present.

5.6 Silica

The following building materials were observed to be present within the assessed area and are presumed to contain crystalline silica:

1. Ceramic tiles and grout
2. Masonry and mortar
3. Concrete (poured or pre-cast)

5.7 PCBs

5.7.1 Light Fixtures

Light fixtures observed within the surveyed area were observed to contain a combination of T8 and T12 lights. T8 lights contain electronic ballast and do not contain PCBs. T12 light ballasts have the potential to contain PCBs.

5.7.2 Transformers

Transformers were not observed to be present within the surveyed area.

5.8 Mould

No obvious visible mould growth and water damage were observed to be present within the surveyed area.

6.0 Conclusions and Recommendations

Based on the results of the bulk sampling and visual identification, the following Designated Substances and Hazardous Materials are known and/or assumed to be present within the surveyed area:

1. Asbestos
2. Lead
3. Mercury
4. Silica
5. PCBs

Parasol proposes the following recommendations:

6.1 General Recommendations

6.1.1 Asbestos

Based on the results of the bulk sampling and visual identification, the following asbestos-containing building materials were identified:

1. Acoustic Ceiling Tiles
2. Drywall Finishes
3. Mechanical Insulations
4. Vinyl Floor Tiles
5. Vinyl Floor Tile Mastic
6. Transite Cement Products

Due to the presence of asbestos-containing materials within the building, the Asbestos Management Program must be updated and maintained for the building.

Perform a reassessment survey of asbestos-containing materials on an annual basis (minimum requirement).

Before any renovation activities, perform an intrusive investigation for concealed asbestos-containing materials and sample building materials that were not previously tested and may be disturbed as part of the renovation.

Before completing any renovation or alteration, all asbestos-containing material that may be disturbed as part of the project should be removed following Ontario Regulation 278/05.

6.1.2 Asbestos Abatement Procedures

The removal of non-friable asbestos-containing material (vinyl floor tiles, vinyl floor tile mastic, transite) is to be completed using Type 1 asbestos abatement procedures provided that the material is wetted and non-powered hand tools are used. If power tools are required then Type 3 asbestos abatement procedures apply.

The removal of less than seven and a half square meters ($7.5m^2$) of acoustic ceiling tiles require the use of Type 1 asbestos abatement procedures provided that it is removed without being broken, cut, drilled, abraded, ground, sanded or vibrated. Any quantity greater requires the use of Type 2 asbestos abatement procedures.

Removal of less than one square meter ($1m^2$) of drywall is to be completed using Type 1 asbestos abatement procedures. If greater than one square meter ($1m^2$) of drywall is to be disturbed then Type 2 asbestos abatement procedures apply.

Depending on the condition, geometry and size, the removal of mechanical insulations are to be completed using Type 2, Glove Bag or Type 3 asbestos abatement procedures.

6.1.3 Lead

Based on the results of the bulk sampling and the visual identification, low-level lead concentrations (less than or equal to 0.1% lead by weight (1000 µg/g or 1000 mg/kg or 1000 ppm lead)) were found to be present in the following building materials: beige paint, white paint, dark blue paint, grey paint, red paint on truss and masonry block mortar.

Low-level lead guidelines only apply if they meet the following criteria:

1. The paint and substrate are disturbed in a non-aggressive manner or not heated,
2. Dust control and suppression procedures are utilized so that the TWA (10 mg/m^3) for particulates not otherwise specified (PNOS) is not exceeded, and,
3. Washing facilities are available for workers to wash hands and faces.

Based on the results of the bulk sampling and the visual identification, lead-containing concentrations (greater than 0.1% lead by weight (1000 µg/g, or 1000 mg/kg, or 1000 ppm) but less than 0.5% lead by weight (5000 µg/g, or 5000 mg/kg, or 5000 ppm lead) were found to be present in the following building materials: mauve paint and yellow paint.

Removal or disturbance of paints and brick mortar is to follow the procedures outlined in the EACC document *"Lead Guideline for Construction, Renovation, Maintenance or Repair"*, October 2014.

6.1.4 Mercury

Mercury vapour is present within fluorescent lights.

When removing the fluorescent lights, the materials are to be handled carefully to ensure they are kept sealed and intact, which will prevent direct skin contact and the inhalation of mercury vapour. Mercury is to be disposed of per Ontario Regulation 347 if greater than five kilograms (5 kg) is produced within a month.

6.1.5 Silica

Crystalline silica is suspected to be present within the ceramic tiles and grout, masonry and mortar, and concrete (poured or pre-cast) within the assessed area.

The removal or disturbance of material suspected to contain crystalline silica should follow procedures outlined in the MOL document "*Guideline - Silica on Construction Projects*", dated September 2004.

6.1.6 PCBs

If the fluorescent light fixtures are to be disturbed as part of the project, they should be disassembled and the information on the ballast compared to the Environment Canada Document, *"PCB Identification of Lamp Ballasts Containing PCBs"* dated August 1991. If the ballast does not contain a label that states "PCB Free" or the serial code that does not identify it as "PCB Free" then the ballast should be presumed to contain PCBs and disposed of accordingly.

6.1.7 Mould

No visible mould growth or water-damaged building materials were observed within the assessed area. If mould growth is discovered as part of the renovation project, then the material should be removed following the Environmental Abatement Council of Canada (EACC) "*Mould Abatement Guidelines - Edition 3"*, dated 2015. Further, a qualified Health and Safety professional should be consulted to inspect and verify the proper removal of the building materials.

6.2 Remedial Recommendations

The following remedial work should be completed regardless of the planned renovation.

6.2.1 Asbestos

The following remedial work is necessary if the asbestos-containing building materials are to remain:

Location	Description and Quantity	Remedial Recommendations
101-Hub	1 Transite Ceiling Panel in POOR condition	Remove using Type 1 Asbestos Abatement Procedures
109-Classroom	1 Parging Cement Fitting in FAIR condition (located below sink)	Repair or remove using Type 2 Asbestos Abatement Procedures
179C-Corridor	7 Parging Cement Fittings in FAIR condition (above 2nd ceiling-limited access)	Repair or remove using Type 2 Asbestos Abatement Procedures
	3 Acoustic Ceiling Tiles in POOR condition	Remove using Type 2 Asbestos Abatement Procedures
243-Corridor	3 Acoustic Ceiling Tiles in POOR condition	Remove using Type 2 Asbestos Abatement Procedures

6.2.2 Lead

The following paint and or brick mortar should be stabilized if they are to remain:

Sample Location	Description	Remedial Recommendations
142-Resource	Mauve Paint on Upper Wall	Remove flaking paint using EACC Class 1 or 2A Guidelines
143-Storage	Yellow paint on Walls	Remove flaking paint using EACC Class 1 or 2A Guidelines

Low-level lead guidelines only apply if they meet the following criteria:

1. The paint and substrate are disturbed in a non-aggressive manner or not heated,

2. Dust control and suppression procedures are utilized so that the TWA (10 mg/m^3) for particulates not otherwise specified (PNOS) is not exceeded, and,
3. Washing facilities are available for workers to wash hands and faces.

7.0 Statement of Limitations

The information and recommendations detailed in this report were carried out by trained professional and technical staff following generally accepted engineering and scientific work practices and procedures. Recommendations provided in this report have been generated in accordance with accepted industry guidelines and practices. These guidelines and practices are considered acceptable as of the date of this report.

During the preparation of this report, Parasol relied on information provided by the client, which includes reports and test results prepared by other consultants, the history and use of the site supplied by on-site personnel, and testing services provided by independent laboratories. Parasol has not made any independent verification of the provided information.

The collection of samples at the location noted was consistent with the scope of work agreed upon with the person or entity to whom this report is addressed and the information obtained concerning prior site investigations. As conditions between samples may vary, the potential remains for the presence of unknown additional contaminants for which there were no known indicators.

Information provided in this report by Parasol is intended for the client's use only. Parasol will not provide results or information to any party unless disclosure by Parasol is required by law. Any use by a third party of reports or documents authored by Parasol or any reliance by a third party on or decisions made by a third party based on the findings described in said documents is the sole responsibility of such third parties. Parasol accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

Please contact the undersigned regarding the information presented within this report.

Sincerely,

Brad Panzer, Senior Project Manager
Parasol Environmental Inc.

Appendix A
Laboratory Certificate of Analysis

emcscientific
INCORPORATED

Laboratory Analysis Report

To:

Brad Panzer
Parasol Environmental
125–1860 Appleby Line, Unit #14
Burlington, Ontario
L7L 7H7

EMC LAB REPORT NUMBER: A84990
Job/Project Name: R.H. Cornish PS
Job No: 13071
Analysis Method: Polarized Light Microscopy – EPA 600
Number of Samples: 97
Date Received: Oct 26/22 **Date Analyzed:** Nov 4/22 **Date Reported:** Nov 4/22
Analyst: Jayoda Perera
Reviewed By: Malgorzata Sybydlo, *Laboratory Manager*

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
S-01A	A84990-1	Masonry block mortar/243 –corridor	Grey, textured cementitious material	**Chrysotile**	**<0.5**		100
S-01B	A84990-2	Masonry block mortar/214 – classroom	Grey, cementitious material	**ND**			100
S-01C	A84990-3	Masonry block mortar/215 – classroom	Grey, cementitious material	**ND**			100
S-01D	A84990-4	Masonry block mortar/112 – classroom	Grey, cementitious material	**ND**			100
S-01E	A84990-5	Masonry block mortar/113 – classroom	Grey, cementitious material	**ND**			100
S-03A	A84990-6	DJC/214 – classroom	Beige, joint compound	**Chrysotile**	**0.5**		99.5
S-03B	A84990-7	DJC/215 – classroom	NA	**NA**			
S-03C	A84990-8	DJC/112 – classroom	NA	**NA**			
S-03D	A84990-9	DJC/113 – classroom	NA	**NA**			
S-03E	A84990-10	DJC/113 – classroom	NA	**NA**			
S-04A	A84990-11	Smooth plaster/238 – custodial	2 Phases: a) White, plaster b) Light grey, plaster	 **ND** **ND**			 100 100

EMC LAB REPORT NUMBER: A84990
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Analyst: Jayoda Perera

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
S-04B	A84990-12	Smooth plaster/238 – custodial	2 Phases: a) White, plaster b) Light grey, plaster	 **ND** **ND**			 100 100
S-04C	A84990-13	Smooth plaster/238 – custodial	2 Phases: a) White, plaster b) Light grey, plaster	 **ND** **ND**			 100 100
S-04D	A84990-14	Smooth plaster/179C– corridor	2 Phases: a) White, plaster b) Light grey, plaster	 **ND** **ND**			 100 100
S-04E	A84990-15	Smooth plaster/179C– corridor	2 Phases: a) White, plaster b) Light grey, plaster	 **ND** **ND**			 100 100
S-05A	A84990-16	VFT-05/113 – classroom	2 Phases: a) Off white, vinyl floor tile b) Black, mastic	 **ND** **ND**			 100 100
S-05B	A84990-17	VFT-05/113 – classroom	2 Phases: a) Off white, vinyl floor tile b) Black, mastic	 **ND** **ND**			 100 100
S-05C	A84990-18	VFT-05/113 – classroom	2 Phases: a) Off white, vinyl floor tile b) Black, mastic	 **ND** **ND**			 100 100
S-06A	A84990-19	DJC/216 – classroom	Beige, joint compound	**Chrysotile**	**1**		99
S-06B	A84990-20	DJC/217 – classroom	NA	**NA**			
S-06C	A84990-21	DJC/218 – classroom	NA	**NA**			

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Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
S-06D	A84990-22	DJC/108 – classroom	NA	**NA**			
S-06E	A84990-23	DJC/110 – classroom	NA	**NA**			
S-07A	A84990-24	Smooth plaster/217 – classroom	2 Phases: a) White, plaster b) Light grey, plaster	 **ND** **ND**			 100 100
S-07B	A84990-25	Smooth plaster/219 – classroom	2 Phases: a) White, plaster b) Light grey, plaster	 **ND** **ND**			 100 100
S-07C	A84990-26	Smooth plaster/218 – classroom	2 Phases: a) White, plaster b) Light grey, plaster	 **ND** **ND**			 100 100
S-07D	A84990-27	Smooth plaster/108 – classroom	2 Phases: a) White, plaster b) Light grey, plaster	 **ND** **ND**			 100 100
S-07E	A84990-28	Smooth plaster/110 – classroom	2 Phases: a) White, plaster b) Light grey, plaster	 **ND** **ND**			 100 100
S-07F	A84990-29	Smooth plaster/179C – corridor	2 Phases: a) White, plaster b) Light grey, plaster	 **ND** **ND**			 100 100
S-07G	A84990-30	Smooth plaster/144 – storage	2 Phases: a) White, plaster b) Light grey, plaster	 **ND** **ND**			 100 100
S-08A	A84990-31	Brick mortar/243 – corridor	Grey and red, cementitious material	**ND**			100

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Analyst: Jayoda Perera

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
S-08B	A84990-32	Brick mortar/243 – corridor	Grey and red, cementitious material	**ND**			100
S-08C	A84990-33	Brick mortar/243 – corridor	Grey and red, cementitious material	**ND**			100
S-08D	A84990-34	Brick mortar/179C – corridor	Grey, cementitious material	**ND**			100
S-08E	A84990-35	Brick mortar/179C – corridor	Grey, cementitious material	**ND**			100
S-09A	A84990-36	Vinyl board/218 – classroom	3 Phases: a) Beige, vinyl flooring b) Black, vinyl backing c) Brown, mastic	 **ND** **ND** **ND**		 10 60	 90 40 100
S-09B	A84990-37	Vinyl board/218 – classroom	3 Phases: a) Beige, vinyl flooring b) Black, vinyl backing c) Brown, mastic	 **ND** **ND** **ND**		 10 60	 90 40 100
S-09C	A84990-38	Vinyl board/218 – classroom	3 Phases: a) Beige, vinyl flooring b) Black, vinyl backing c) Brown, mastic	 **ND** **ND** **ND**		 10 60	 90 40 100
S-10A	A84990-39	Masonry block mortar/143 – storage	Grey, cementitious material	**ND**			100
S-10B	A84990-40	Masonry block mortar/143 – storage	Grey, cementitious material	**ND**			100
S-10C	A84990-41	Masonry block mortar/143 – storage	Grey, cementitious material	**ND**			100
S-11A	A84990-42	AT-06/143 – storage	Grey, ceiling tile	**ND**		75	25
S-11B	A84990-43	AT-06/143 – storage	Grey, ceiling tile	**ND**		75	25

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Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
S-11C	A84990-44	AT-06/143 – storage	Grey, ceiling tile	**ND**		75	25
S-12A	A84990-45	Masonry block mortar/B-2 stairs	Grey, textured cementitious material	**ND**			100
S-12B	A84990-46	Masonry block mortar/240 – corridor	Grey, textured cementitious material	**ND**			100
S-12C	A84990-47	Masonry block mortar/240 – corridor	Grey, textured cementitious material	**ND**			100
S-12D	A84990-48	Masonry block mortar/230 – classroom	Grey, textured cementitious material	**ND**			100
S-12E	A84990-49	Masonry block mortar/121 – art room	Grey, cementitious material	**ND**			100
S-12F	A84990-50	Masonry block mortar/179E – corridor	Grey, cementitious material	**ND**			100
S-12G	A84990-51	Masonry block mortar/171 – boys change room	Grey, cementitious material	**ND**			100
S-13A	A84990-52	DJC/240 – corridor	Beige, joint compound	**Chrysotile**	**1**		99
S-13B	A84990-53	DJC/240 – corridor	NA	**NA**			
S-13C	A84990-54	DJC/225 – classroom	NA	**NA**			
S-13D	A84990-55	DJC/230 – classroom	NA	**NA**			
S-13E	A84990-56	DJC/121 – art room	NA	**NA**			
S-13F	A84990-57	DJC/179E – corridor	NA	**NA**			
S-13G	A84990-58	DJC/120 – stage	NA	**NA**			
S-14A	A84990-59	VFT-10/233 – resource	2 Phases:				

EMC LAB REPORT NUMBER: A84990
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Analyst: Jayoda Perera

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
			a) Beige, vinyl floor tile b) Black, mastic	**Chrysotile** **ND**	**1**		99 100
S-14B	A84990-60	VFT-10/233 – resource	2 Phases: a) NA b) Black, mastic	 **NA** **ND**			 100
S-14C	A84990-61	VFT-10/233 – resource	2 Phases: a) NA b) Black, mastic	 **NA** **ND**			 100
S-15A	A84990-62	CK-01/151A – stair	Grey, caulking	**ND**			100
S-15B	A84990-63	CK-01/151A – stair	Grey, caulking	**ND**			100
S-15C	A84990-64	CK-01/151A – stair	Grey, caulking	**ND**			100
S-16A	A84990-65	Rough plaster/179D – corridor	Light grey, plaster	**ND**			100
S-16B	A84990-66	Rough plaster/179D – corridor	Light grey, plaster	**ND**			100
S-16C	A84990-67	Rough plaster/179D – corridor	Light grey, plaster	**ND**			100
S-17A	A84990-68	Smooth plaster/158 – gym	2 Phases: a) White, plaster b) Grey, plaster	 **ND** **ND**			 100 100
S-17B	A84990-69	Smooth plaster/158 – gym	2 Phases: a) White, plaster b) Grey, plaster	 **ND** **ND**			 100 100
S-17C	A84990-70	Smooth plaster/158 – gym	2 Phases: a) White, plaster b) Grey, plaster	 **ND** **ND**			 100 100

EMC LAB REPORT NUMBER: A84990
Client's Job/Project Name/No.: R.H. Cornish PS
Analyst: Jayoda Perera

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
S-17D	A84990-71	Smooth plaster/119 – storage	2 Phases: a) White, plaster b) Grey, plaster	 **ND** **ND**			 100 100
S-17E	A84990-72	Smooth plaster/101 – HUB	2 Phases: a) White, plaster b) Grey, plaster	 **ND** **ND**			 100 100
S-17F	A84990-73	Smooth plaster/102 – classroom	White, plaster	**ND**			100
S-17G	A84990-74	Smooth plaster/105 – classroom	2 Phases: a) White, plaster b) Grey, plaster	 **ND** **ND**			 100 100
S-18A	A84990-75	Brick mortar/158 – gym	Grey, cementitious material	**ND**			100
S-18B	A84990-76	Brick mortar/158 – gym	Grey, cementitious material	**ND**			100
S-18C	A84990-77	Brick mortar/151 – stage	Grey, cementitious material	**ND**			100
S-19A	A84990-78	DJC/101 – HUB	White, joint compound	**ND**			100
S-19B	A84990-79	DJC/101 – HUB	White, joint compound	**ND**			100
S-19C	A84990-80	DJC/101 – HUB	White, joint compound	**ND**			100
S-19D	A84990-81	DJC/102 – classroom	White, joint compound	**ND**			100
S-19E	A84990-82	DJC/102 – classroom	White, joint compound	**ND**			100
S-20A	A84990-83	Rough texture finish/116 – washroom	Grey, textured cementitious material	**ND**		1	99
S-20B	A84990-84	Rough texture finish/116 – washroom	Grey, textured cementitious material	**ND**		1	99

EMC LAB REPORT NUMBER: A84990
Client's Job/Project Name/No.: R.H. Cornish PS
Analyst: Jayoda Perera

Client's Sample ID	Lab Sample No.	Description/Location	Sample Appearance	SAMPLE COMPONENTS (%)			
				Asbestos Fibres		Non-asbestos Fibres	Non-fibrous Material
S-20C	A84990-85	Rough texture finish/117 – washroom	Grey, textured cementitious material	**ND**		1	99
S-21A	A84990-86	VFT-17/105 - classroom	2 Phases: a) Grey, vinyl floor tile b) Black, mastic	 **ND** **ND**			 100 100
S-21B	A84990-87	VFT-17/105 - classroom	2 Phases: a) Grey, vinyl floor tile b) Black, mastic	 **ND** **ND**			 100 100
S-21C	A84990-88	VFT-17/105 - classroom	2 Phases: a) Grey, vinyl floor tile b) Black, mastic	 **ND** **ND**			 100 100
S-22A	A84990-89	Masonry block mortar/145 – staff room	Grey, cementitious material	**ND**			100
S-22B	A84990-90	Masonry block mortar/145 – staff room	Grey, cementitious material	**ND**			100
S-22C	A84990-91	Masonry block mortar/145 – staff room	Grey, cementitious material	**ND**			100
S-23A	A84990-92	Brick mortar/exterior	Grey and red, cementitious material	**ND**			100
S-23B	A84990-93	Brick mortar/exterior	Grey and red, cementitious material	**ND**			100
S-23C	A84990-94	Brick mortar/exterior	Grey and red, cementitious material	**ND**			100
S-24A	A84990-95	Brick mortar/exterior	Grey, cementitious material	**ND**			100
S-24B	A84990-96	Brick mortar/exterior	Grey, cementitious material	**ND**			100
S-24C	A84990-97	Brick mortar/exterior	Grey, cementitious material	**ND**			100

EMC LAB REPORT NUMBER: A84990
Client's Job/Project Name/No.: R.H. Cornish PS
Analyst: Jayoda Perera

Note:
1. Bulk samples are analyzed using Polarized Light Microscopy (PLM) and dispersion staining techniques. The analytical procedures are in accordance with EPA 600/R-93/116 method.
2. The results are only related to the samples analyzed. **ND** = None Detected (no asbestos fibres were observed), **NA** = Not Analyzed (analysis stopped due to a previous positive result).
3. This report may not be reproduced, except in full without the written approval of EMC Scientific Inc. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.
4. The Ontario Regulatory Threshold for asbestos is 0.5%. The limit of quantification (LOQ) is 0.5%.
5. Vinyl floor tiles may contain very fine asbestos fibres which the PLM method cannot detect. TEM analysis may be necessary to confirm the absence of asbestos.

EMSL Canada Inc.
2756 Slough Street, Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com torontolab@emsl.com

EMSL Canada Or	552216351
CustomerID:	55PAEN75
CustomerPO:	13071
ProjectID:	

Attn: **Brad Panzer**
Parasol Environmental Inc.
125-1860 Appleby Line
Unit 14
Burlington, ON L7L 7H7

Phone: (416) 579-1284
Fax:
Received: 10/26/2022 09:00 AM
Collected:

Project: **D.H. Cornish P.S. / 13071**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Analyzed*	*Weight*	*Lead Concentration*
Method Blank				<0.008 % wt
Pb-01	*552216351-0001*	10/27/2022	0.2491 g	<0.0080 % wt
Site: 238 - Custodial / Beige Paint				
Pb-02	*552216351-0002*	10/27/2022	0.2564 g	0.014 % wt
Site: 243 - Corridor / White Paint				
Pb-03	*552216351-0003*	10/27/2022	0.1125 g	0.088 % wt
Site: 215 - Classroom / Dark Blue Paint				
Pb-05	*552216351-0005*	10/27/2022	0.2572 g	0.23 % wt
Site: 143 - Resource / Mauve Paint				
Pb-06	*552216351-0006*	10/27/2022	0.2491 g	0.14 % wt
Site: 143 - Storage / Yellow Paint				
Pb-07	*552216351-0007*	10/27/2022	0.2525 g	<0.0080 % wt
Site: 228 - Classroom / Grey Paint				
Pb-08	*552216351-0008*	10/27/2022	0.1458 g	0.038 % wt
Site: 120- Stage / Red Paint on Truss				
Pb-09	*552216351-0009*	10/27/2022	0.2452 g	0.040 % wt
Site: 151 - Stage / Beige Paint				

Rowena Fanto, Lead Supervisor
or other approved signatory

* Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.

Samples analyzed by EMSL Canada Inc. Mississauga, ON AIHA-LAP, LLC - ELLAP #196142

Initial report from 11/02/2022 09:02:58

EMSL Canada Inc.
2756 Slough Street, Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com torontolab@emsl.com

EMSL Canada Or	552216351
CustomerID:	55PAEN75
CustomerPO:	13071
ProjectID:	

Attn: **Brad Panzer**
Parasol Environmental Inc.
125-1860 Appleby Line
Unit 14
Burlington, ON L7L 7H7

Phone: (416) 579-1284
Fax:
Received: 10/26/2022 09:00 AM
Collected:

Project: **D.H. Cornish P.S. / 13071**

Test Report: Lead in Soils by Flame AAS (SW 846 3050B/7000B)*

Client SampleDescription	*Collected*	*Analyzed*	*Weight*	*RDL*	*Lead Concentration*
Pb-04		10/31/2022	0.5028 g	40 mg/Kg	<40 mg/Kg
552216351-0004	Site: 113 - Classroom / Masonry Block Mortar				
Pb-10		10/31/2022	0.5075 g	40 mg/Kg	<40 mg/Kg
552216351-0010	Site: 240 - Corridor / Masonry Block Mortar				

Rowena Fanto, Lead Supervisor
or other approved signatory

* Analysis following Lead in Soil/Solids by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 40 mg/kg based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.

Samples analyzed by EMSL Canada Inc. Mississauga, ON AIHA-LAP, LLC - ELLAP #196142

Initial report from 11/02/2022 09:03:04

EMSL Canada Inc.
2756 Slough Street, Mississauga, ON L4T 1G3
Phone/Fax: (289) 997-4602 / (289) 997-4607
http://www.EMSL.com torontolab@emsl.com

EMSL Canada Or	552216351
CustomerID:	55PAEN75
CustomerPO:	13071
ProjectID:	

Attn: **Brad Panzer**
Parasol Environmental Inc.
125-1860 Appleby Line
Unit 14
Burlington, ON L7L 7H7

Phone: (416) 579-1284
Fax:
Received: 10/26/2022 09:00 AM
Collected:

Project: **D.H. Cornish P.S. / 13071**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Analyzed*	*Weight*	*Lead Concentration*
Method Blank				<0.008 % wt

QUALITY CONTROL DATA, C-Lead by FLAA

	ACCURACY						PRECISION	
MATRIX SPIKE/ MATRIX SPIKE DUPLICATE	**SPK CONC. ppm**	**MS ppm**	**%MS**	**MSD ppm**	**%MSD**	**ACP %MS**	**RPD**	**ACP %RPD**
Lead	5	10	101.0			86.2-110.9		

AUDIT DATA	**LAB. RECEIVING #**	**LAB Sample ID**	**LAB BATCH ID**	**QC STD #**	**ANALYZED**
	552200001	552200001-0753	55Q221027-CHIP2		10/27/2022

	ACCURACY						PRECISION	
LABORATORY CONTROL STANDARD/DUPLICATE	**SPK CONC. ppm**	**LCS ppm**	**%LCS**	**LCSD ppm**	**%LCSD**	**ACP %LCS**	**RPD**	**ACP %RPD**
Lead	4.113648	4.0	97.4			80.-114.9		
Weight	0.18	0.1848	102.7					

AUDIT DATA	**LAB ID**	**LAB BATCH ID**	**QC STD #**	**ANALYZED**
	LABORATORY CONTROL STANDARD (LCS)	55Q221027-CHIP2		10/27/2022

	RESULTS		***PRECISION***	
DUPLICATE	**Sample ppm**	**Duplicate ppm**	**RPD**	**ACP %RPD**
Lead	4.9	4.8	5.9	0.-8.5

AUDIT DATA	**LAB. RECEIVING #**	**LAB Sample ID**	**LAB BATCH ID**		**ANALYZED**
	552200001	552200001-0753	55Q221027-CHIP2		10/27/2022

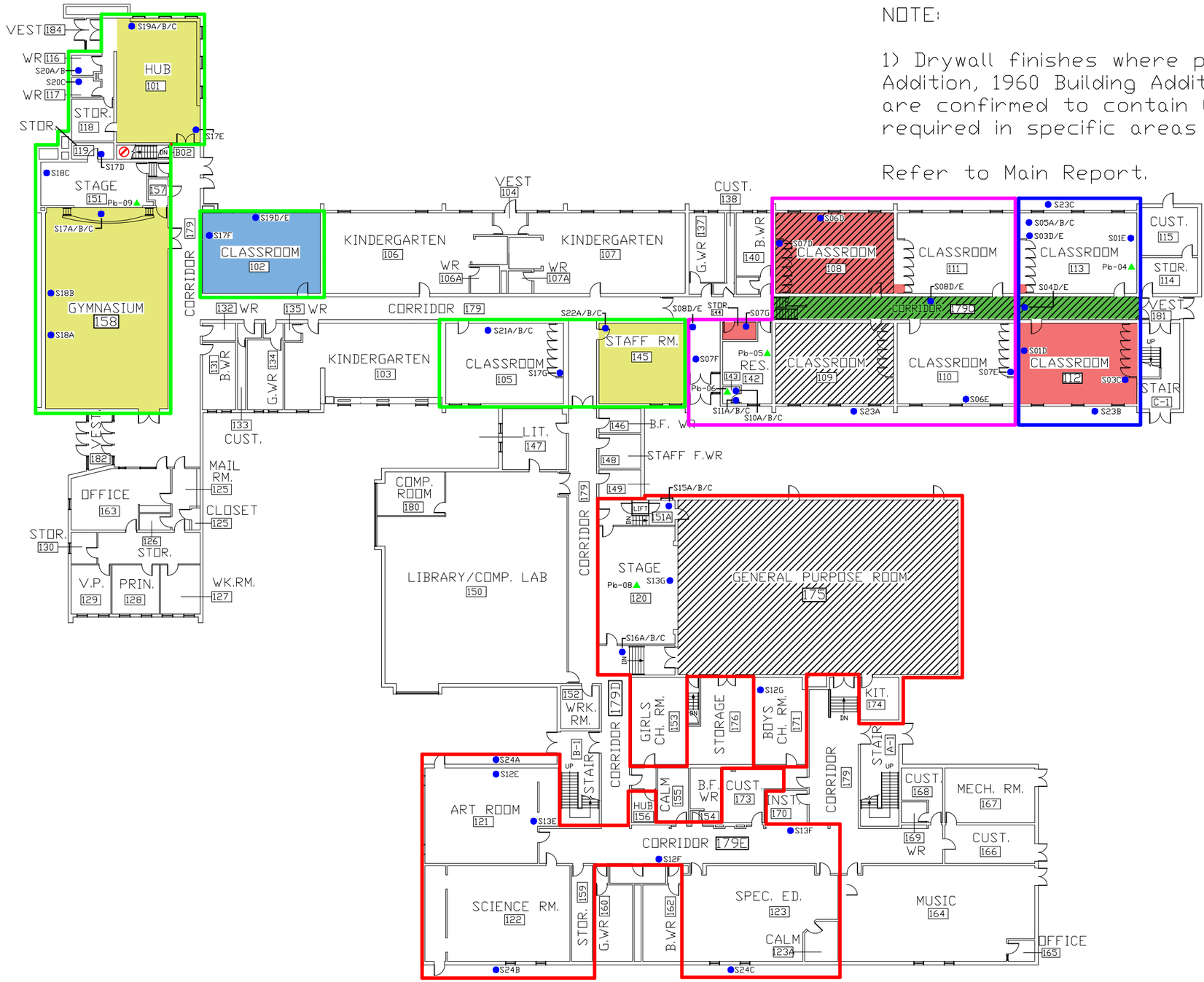
Rowena Fanto, Lead Supervisor
or other approved signatory

* Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.008% wt based on the minimum sample weight per our SOP. "<" (less than) result signifies the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. Definitions of modifications are available upon request.

Samples analyzed by EMSL Canada Inc. Mississauga, ON AIHA-LAP, LLC - ELLAP #196142

Initial report from 11/02/2022 09:02:58

Appendix B
Site Drawing



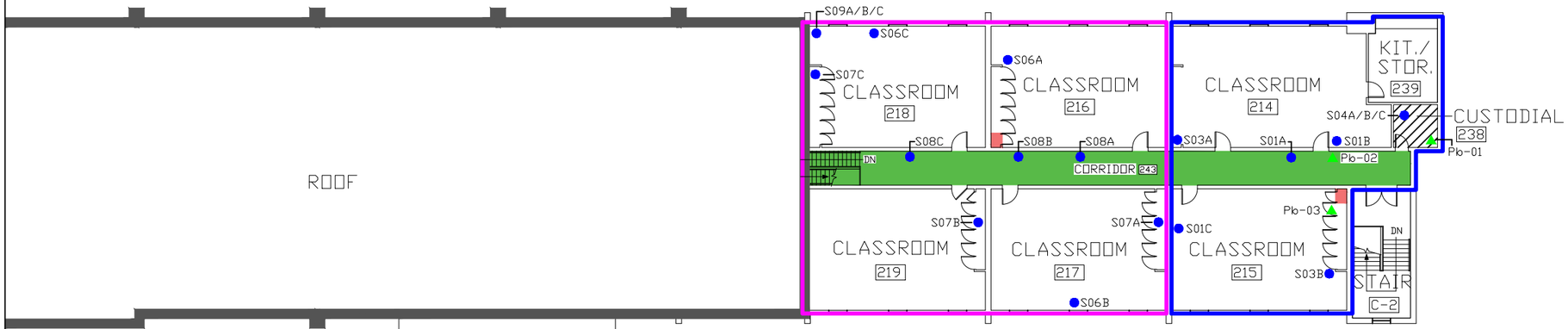
NOTE:

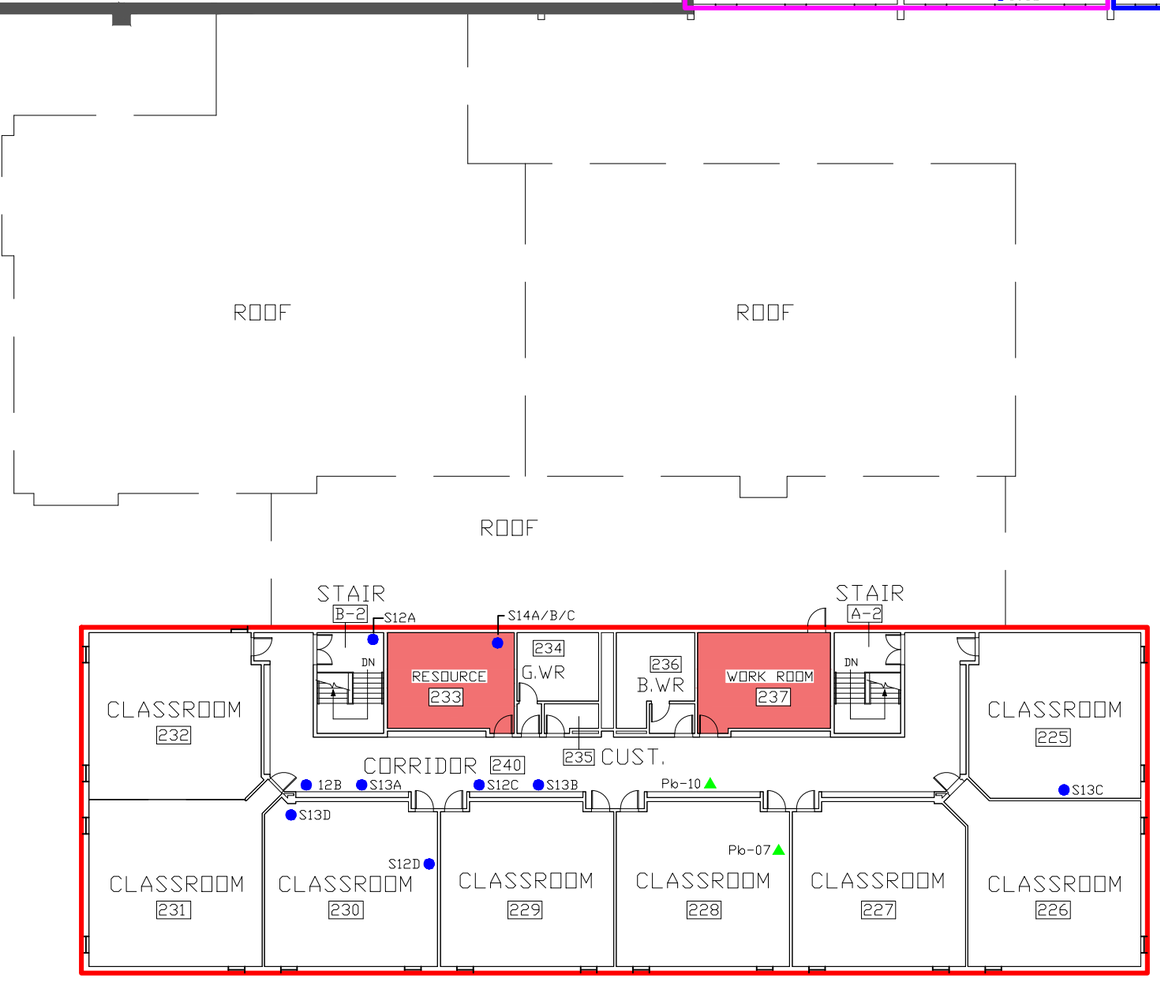
1) Drywall finishes where present within the 1956 Building Addition, 1960 Building Addition and 1971 Building Addition are confirmed to contain Chrysotile asbestos. Sampling is required in specific areas to prove non-ACM.

Refer to Main Report.

TITLE	LEGEND		CONFIRMED & SUSPECTED ACM		DRAWING NO	DRAWN BY:
Limited Designated Substance Survey First Floor Plan	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	DSR-01	B. PANZER
CLIENT	●	ASBESTOS SAMPLE LOCATION		VINYL FLOOR TILES	SCALE	PARASOL PROJECT NO
Durham District School Board	▲	LEAD SAMPLE LOCATION		VINYL FLOOR TILE MASTIC	NTS	13071
LOCATION	⊘	NO ACCESS		TRANSITE CEMENT (WALL & CEILING PANELS)	DATE	
R.H. Cornish Public School 494 Queen Street Port Perry, Ontario		SURVEY AREA - 1953 ORIGINAL BUILDING		ACOUSTIC CEILING TILES	November 11, 2022	
		SURVEY AREA - 1956 BUILDING ADDITION		MECHANICAL INSULATIONS (PARGINNG CEMENT)		
		SURVEY AREA - 1960 BUILDING ADDITION	NOTE	DRYWALL FINISHES		
		SURVEY AREA - 1971 BUILDING ADDITION				

Parasol Environmental Inc.





NOTE:

1) Drywall finishes where present within the 1956 Building Addition, 1960 Building Addition and 1971 Building Addition are confirmed to contain Chrysotile asbestos. Sampling is required in specific areas to prove non-ACM.

Refer to Main Report.

TITLE	LEGEND		CONFIRMED & SUSPECTED ACM		DRAWING NO	DRAWN BY:
Limited Designated Substance Survey Second Floor Plan	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	DSR-02	B. PANZER
CLIENT	●	ASBESTOS SAMPLE LOCATION		VINYL FLOOR TILES	SCALE	PARASOL PROJECT NO
Durham District School Board	▲	LEAD SAMPLE LOCATION		VINYL FLOOR TILE MASTIC	NTS	13071
LOCATION	⊘	NO ACCESS		TRANSITE CEMENT (WALL & CEILING PANELS)	DATE	
R.H. Cornish Public School 494 Queen Street Port Perry, Ontario		SURVEY AREA - 1953 ORIGINAL BUILDING		ACOUSTIC CEILING TILES	November 11, 2022	
		SURVEY AREA - 1956 BUILDING ADDITION		MECHANICAL INSULATIONS (PARGINNG CEMENT)		
		SURVEY AREA - 1960 BUILDING ADDITION	NOTE	DRYWALL FINISHES		
		SURVEY AREA - 1971 BUILDING ADDITION				

Parasol Environmental Inc.