

**ADDENDUM # 2**

<b>Project</b>	TA Blakelock High School Renovations	<b>Project No.</b>	2215-B
<b>Location</b>	1160 Rebecca Street, Oakville, ON	<b>Date of Issue</b>	2024 04 19
<b>Owner</b>	Halton District School Board	<b>File</b>	2215/7.1.3

This Addendum forms part of the Contract Documents and amends the original Drawings and Specifications, dated 2024 04 11, and all preceding Addenda, as noted below.

Ensure all parties submitting bids are aware of all items included in this Addendum. Read, interpret and coordinate the items contained herein with the Contract Documents and include all related costs as part of the Bid Price. Acknowledge receipt of this Addendum by inserting its number on the Bid Form. Failure to do so may subject the bidder to disqualification.

This Architectural Addendum consists of 3 pages + noted attachments.

**A2-1 ARCHITECTURAL DRAWINGS****1. Drawing A102 Interior Elevations**

.1 Millwork reference changed on Elevation 1 on Drawing 3/A102.

**2. Drawing A103 Interior Elevations**

.1 Millwork reference changed on Elevation 1 on Drawing 2/A103.

**3. Drawing A106 Millwork Details**

.1 Counter tops in Millwork MD01, MD01a, MD02, MD02a were revised to epoxy.

.2 Millwork detail MD01d was added to the drawing.

.3 Notes for Door-2 and Door-3 were revised.

**A2-2 ABATEMENT ADDENDUM NO.1**

.1 Refer to attached Abatement Addendum No.1.

.2 Time & Material & Unit Rates Designated Substances Abatement Specifications pages.

**A2-3 MECHANICAL ADDENDUM NO.1**

.1 Refer to attached Mechanical Addendum No.01.

#### **A2-4 ELECTRICAL ADDENDUM NO.1**

.1 Refer to attached Electrical Addendum No.01.

#### **A2-5 BIDDERS QUESTIONS**

1. Q: Documents do not note bid validity, please provide bid validity period.

A: The validity period is 90 days.

2. Q: The documents do not provide construction start and end date, please provide construction schedule

A: The dates are noted on drawing A002.

3. Q: We have multiple tender closings in the week of April 29th , can you please extend the closing date by 1 week to May 8th

A: Unfortunately, due to required project timelines this is not possible.

4. Q: The design is very different for the piping on the VRF system bringing all the pipes up to the roof instead of daisy chaining them in the building. Cost of install will be much higher as it is laid out on the prints. Please advise if the intent is to install the refrigerant piping as noted on the drawings

A: The intent is to install individual or dedicated refrigerant pipes as indicated. The ceiling space is very congested with not a lot of room and so dedicated refrigerant mains may not work. The current layout can be further reviewed with the successful bidder during construction.

5. Q: In 6400 under warranty, an AWMAC GIS is specified if this is still required who is responsible for covering these costs?

A: Specs allow 2 year warranty in lieu of AWMAC. Whichever option, it is millwork contractor's cost.

6. Q: Can you please provide the melamine colour for the cabinets so we can price accordingly, Hardrock Maple was discussed. Can we base our pricing on this?

A: Melamine colour to be or equivalent to TAFISA, Mojave TFL: L546 (A). HPL: (AT)

7. Q: Regarding Door 3 is this door one piece with a routed cutout for the glass to be silicone?

A: The door includes 4mm tempered glass glazing (GL-3). Include glazing stop on one side.

8. Q: Regarding Door 2 it is going to be hard to find 3mm PVC wide enough for the 35mm thick door, these will also require fillers between the cabinets as it will hit the other cabinet. Would you consider a 3/4 door being there not that large and don't require a door lock set?

A: Edge banding to be HPL to match face.

9. Q: spec notes Flame Retardant and Chemical Resistant high-pressure decorative laminate are these required for this project and if so where are these used

A: They will not be required in this project.

10. Q: The two phases that will be handed over after school starts, are there any restrictions on the hours that can be worked on-site?

A: Work can take place between 7am until 11pm 7 days a week. If longer hours after 11pm are needed, the HDSB can accommodate.

11. Q: Who is responsible for fill to remove and replace at new underground plumbing locations?

A: This work to be done under mechanical sub-contractor's contract. Work to include pipe bed and any required new material.

12. Q: Who is doing Mech. and Elec. cutting and patching for Mech. and Elec. rough ins.

A: Each trade to undertake their own cutting and patching to suit their own rough ins. For example, new HVAC duct penetrations through new or existing wall to be done by mech. sub-contract including and required masonry infill. Similarly elec. conduit penetrations through existing or new walls to be cored or sleeved by electrical subcontractor sub-contract.

END OF ADDENDUM #2

Key Plan N.T.S.

No.	Revisions	Date
4	ISSUED FOR ADDENDUM 2	2024-04-19
3	ISSUED FOR PERMIT	2024-04-19
2	ISSUED FOR BIDS	2024-04-09
1	ISSUED FOR PERMIT	2024-03-22
No.	Issue	Date

General Contractor shall check and verify all dimensions and report all errors and omissions to the Architect. Do not scale the drawings. Drawings shall not be used for construction purposes until issued by the Architect for construction.



Drawing Title:

**INTERIOR ELEVATIONS**

Scale: 1:50 Date: 2024 02 08

Drawn by: \_\_\_\_\_ Checked by: \_\_\_\_\_

Job No. 2215-B Drawing No. A102

**1 CHEMISTRY CLASSROOM RM E101**  
 A102 1:50

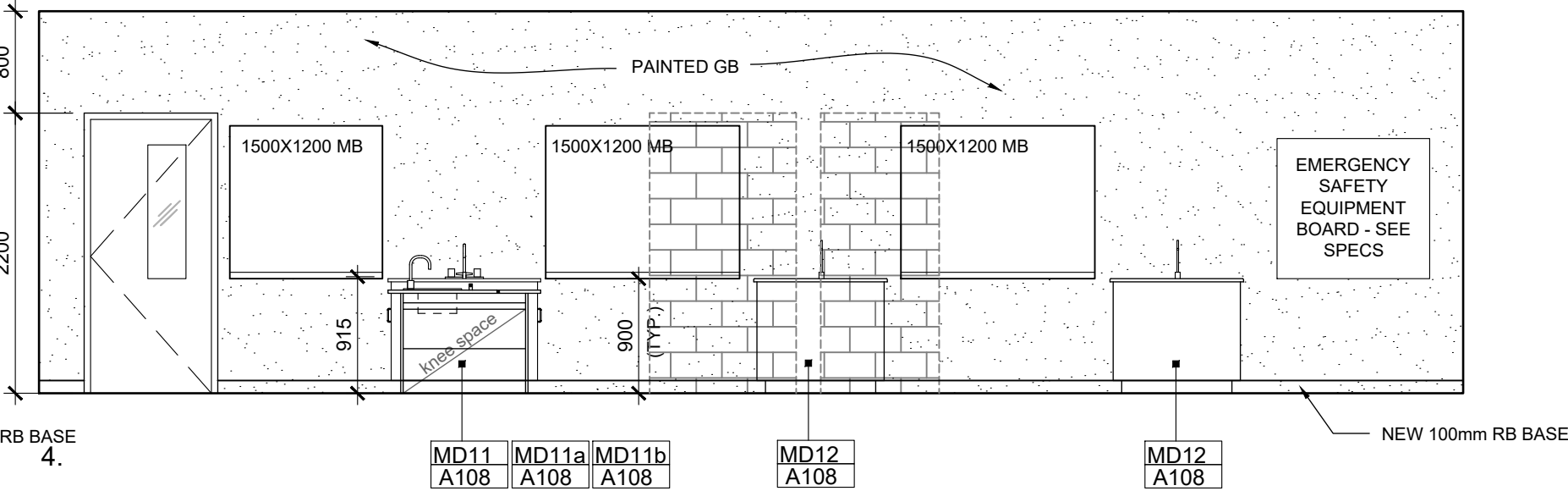
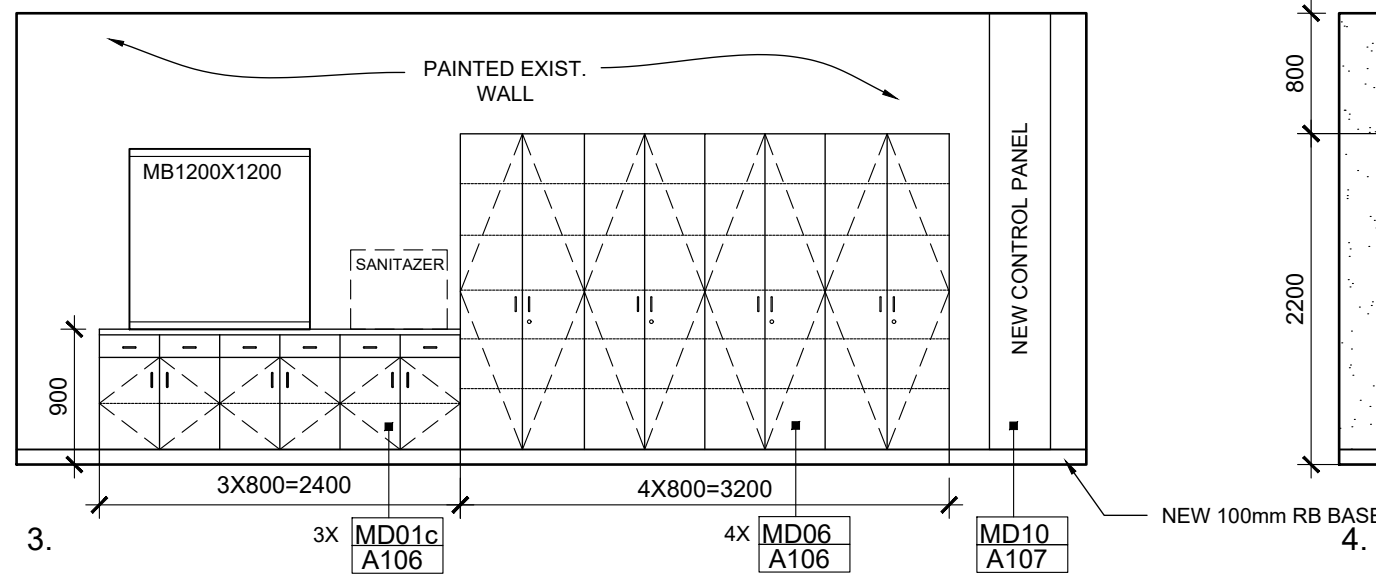
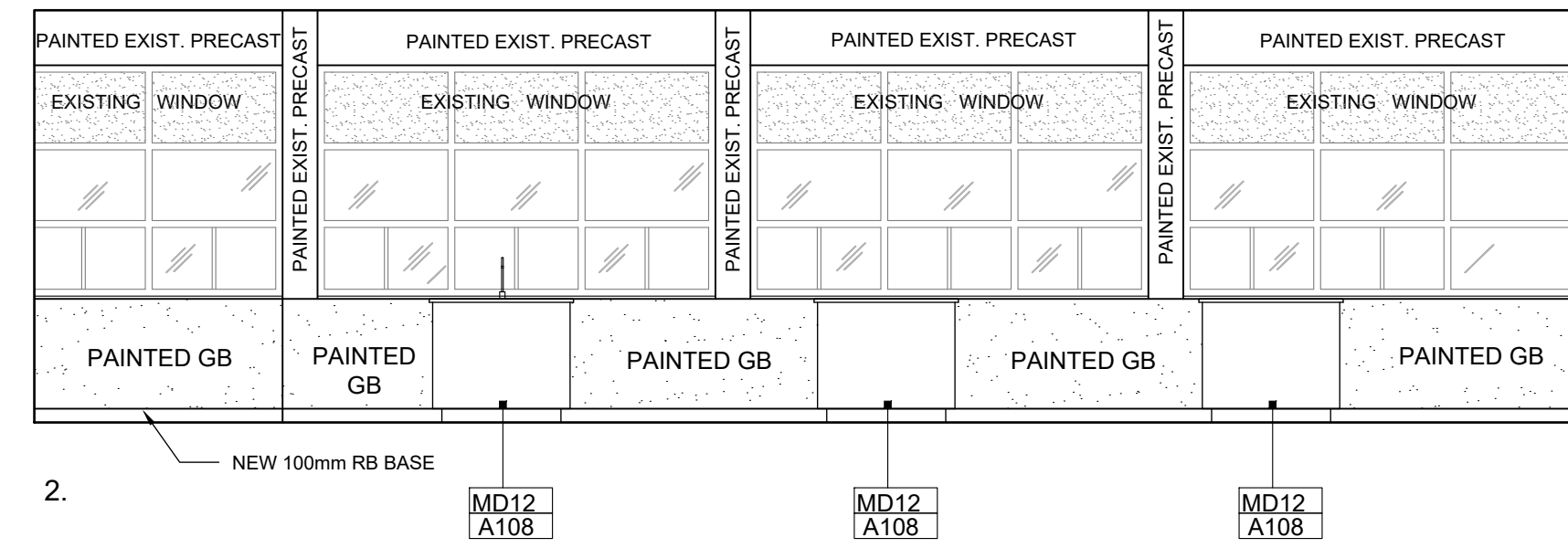
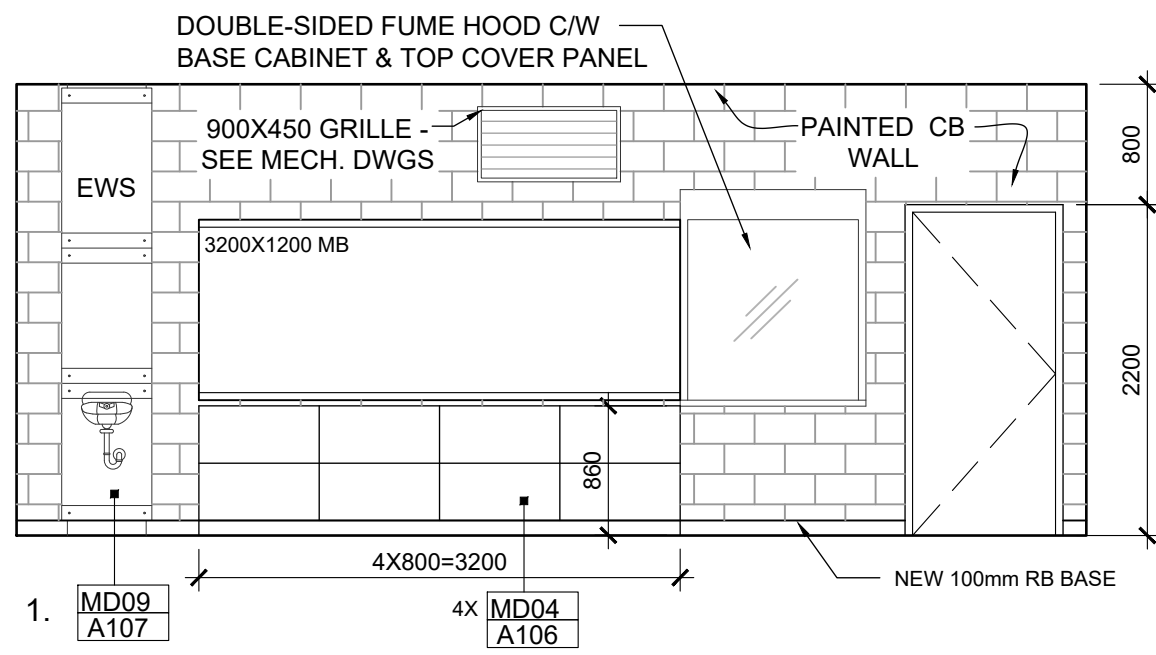
**2 CHEMISTRY/BIO. PREP. ROOM RM E102**  
 A102 1:50

**3 SCIENCE/PHYSICS CLASSROOM RM E104**  
 A102 1:50

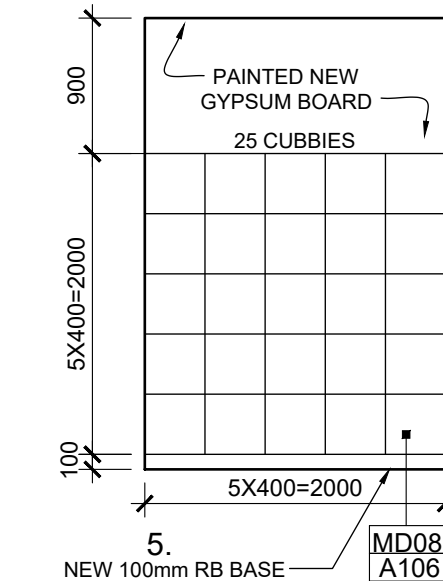
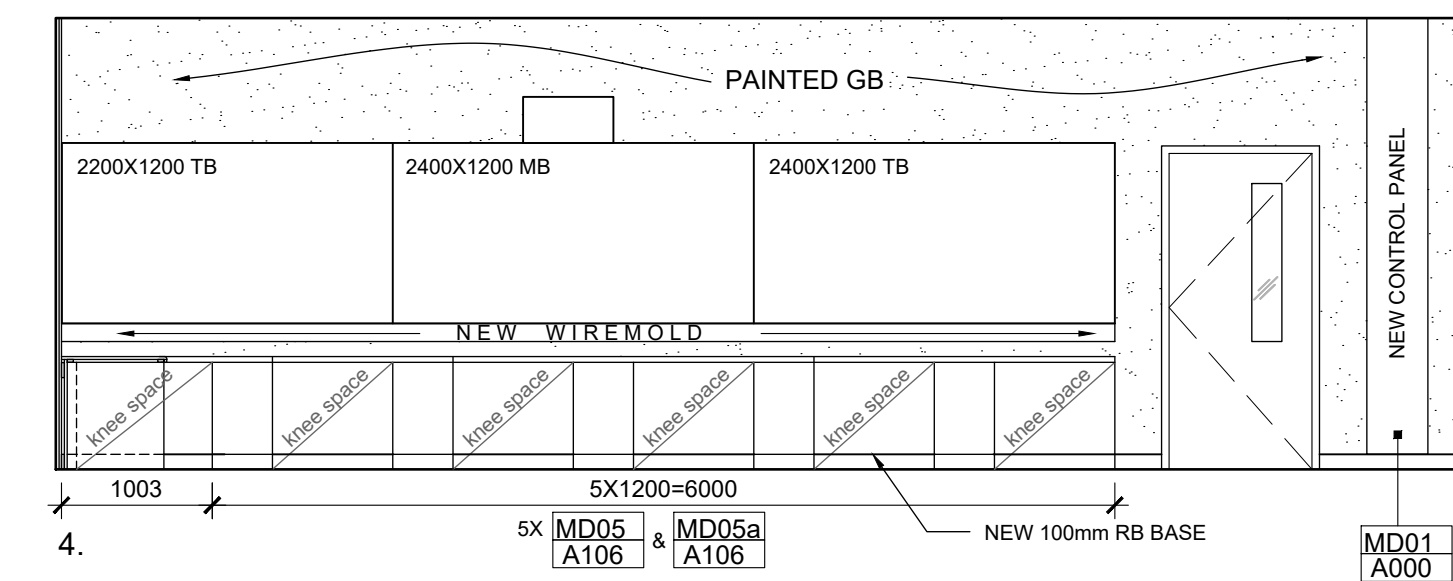
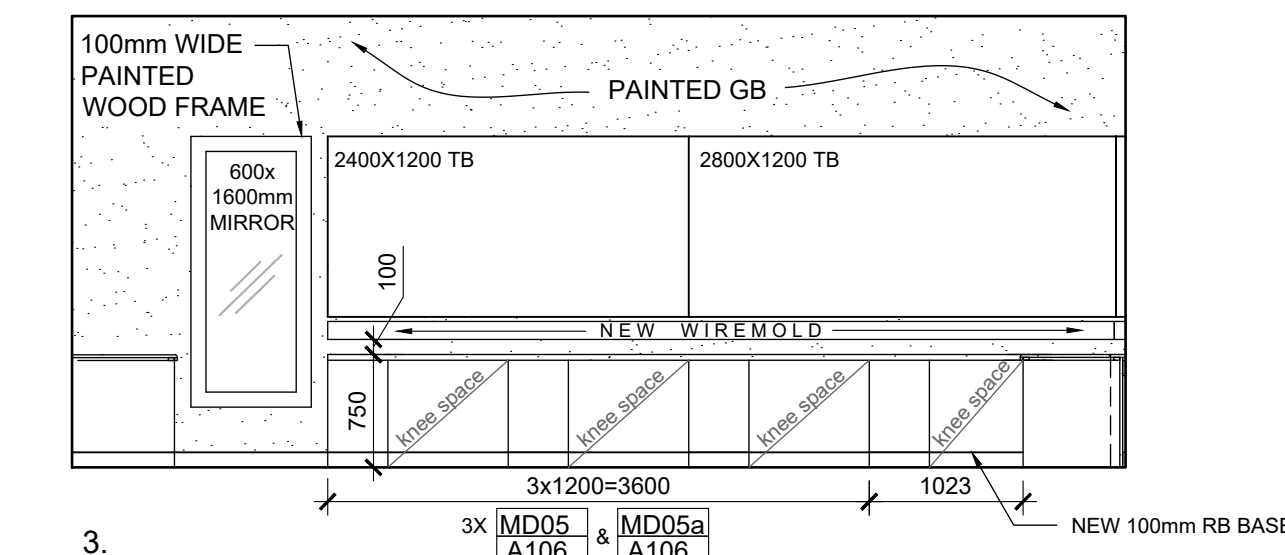
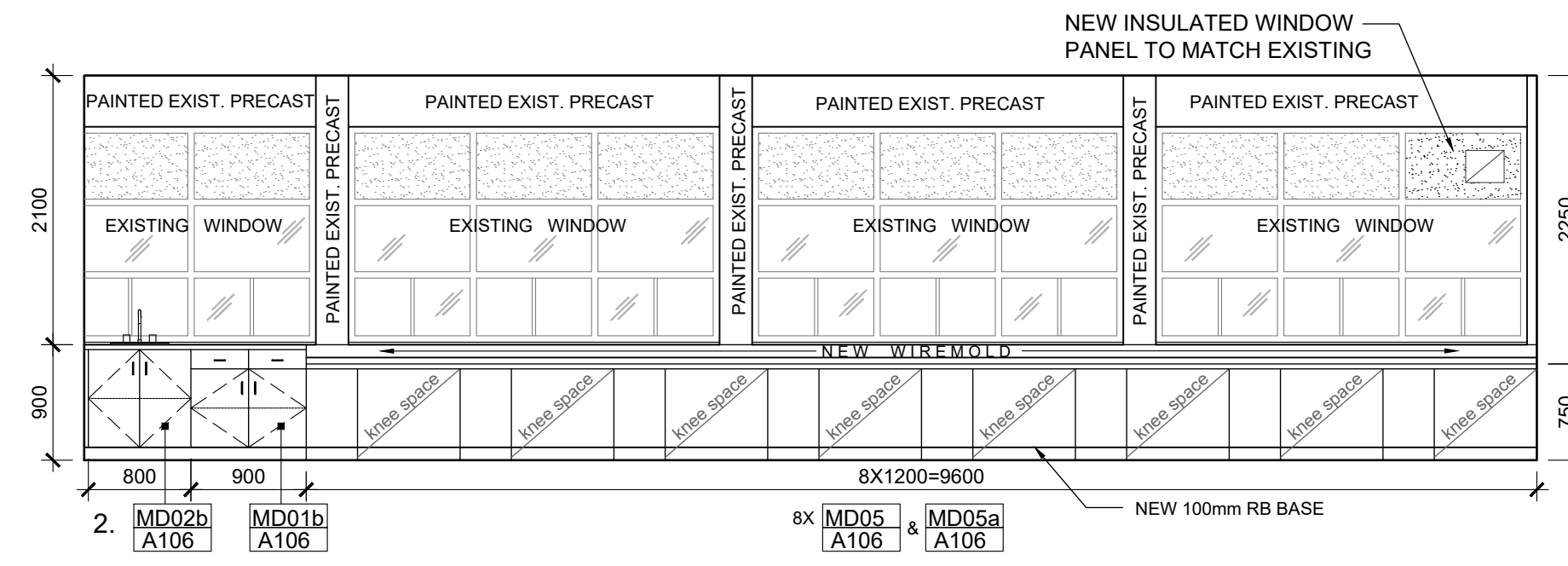
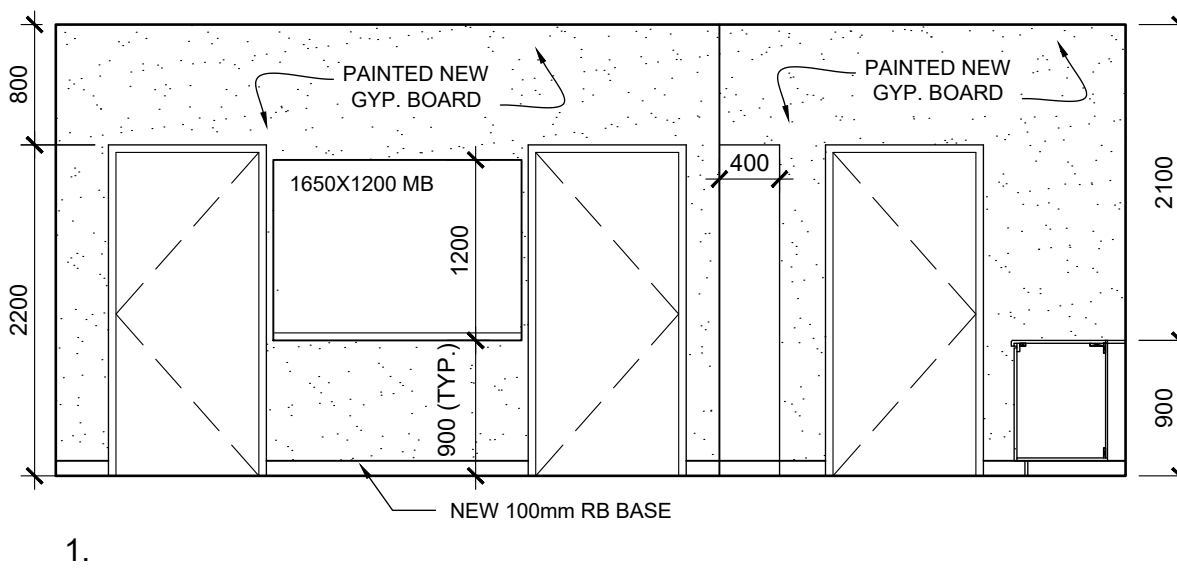
**4 SCIENCE PREP. ROOM RM E104A**  
 A102 1:50

**5 CHEM./BIO. PREP. ROOM RM E116**  
 A102 1:50

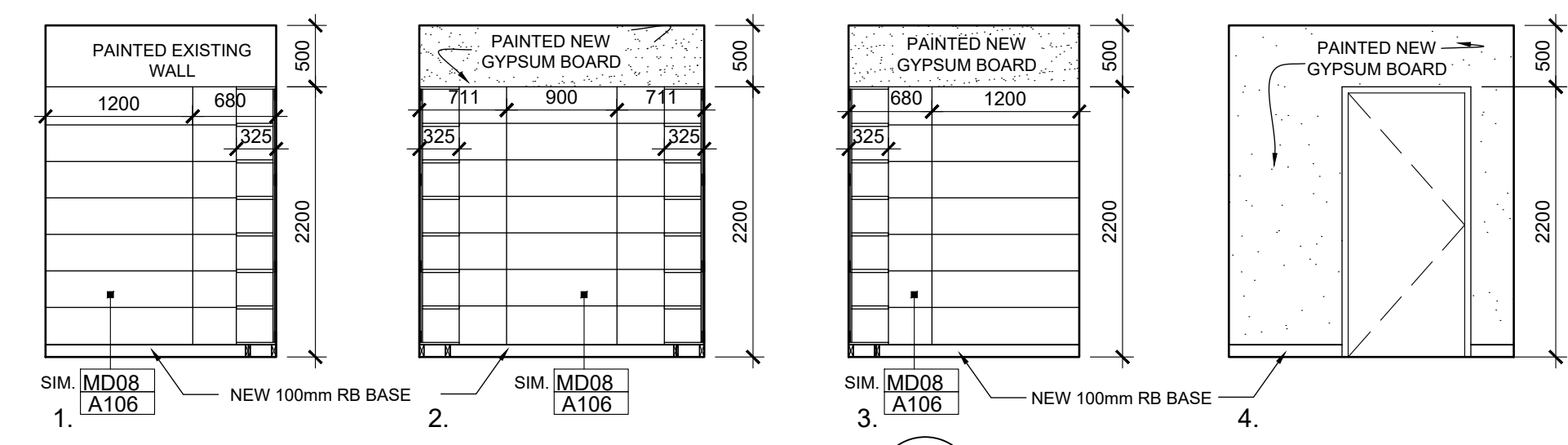
**6 SCIENCE PREP. ROOM RM E118A**  
 A102 1:50



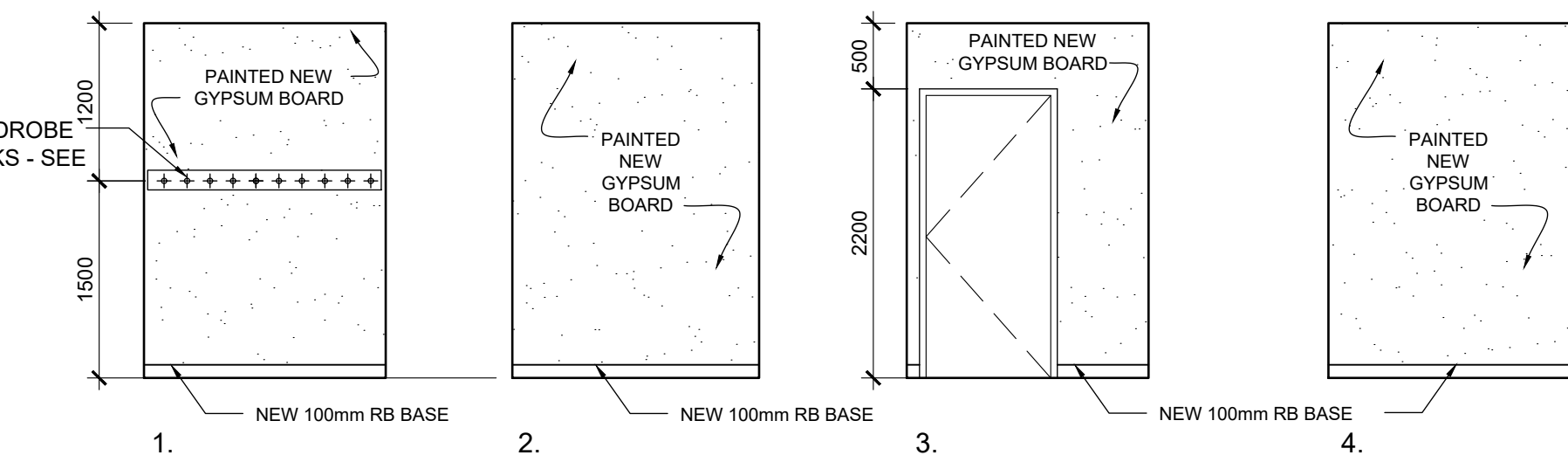
1 CHEMISTRY CLASSROOM RM E117  
A103 1:50



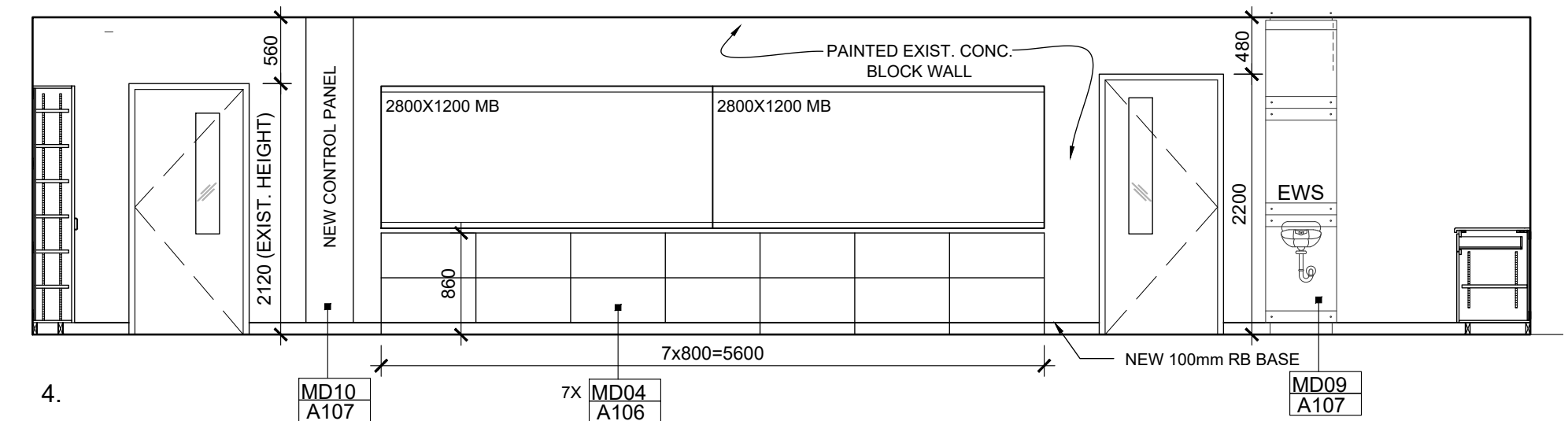
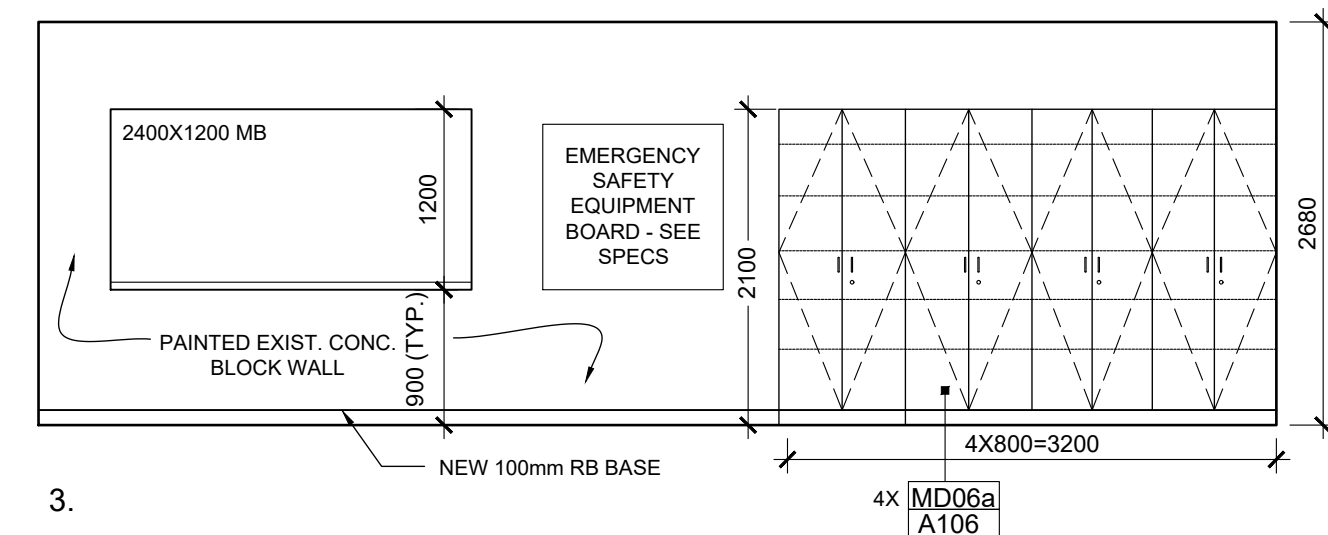
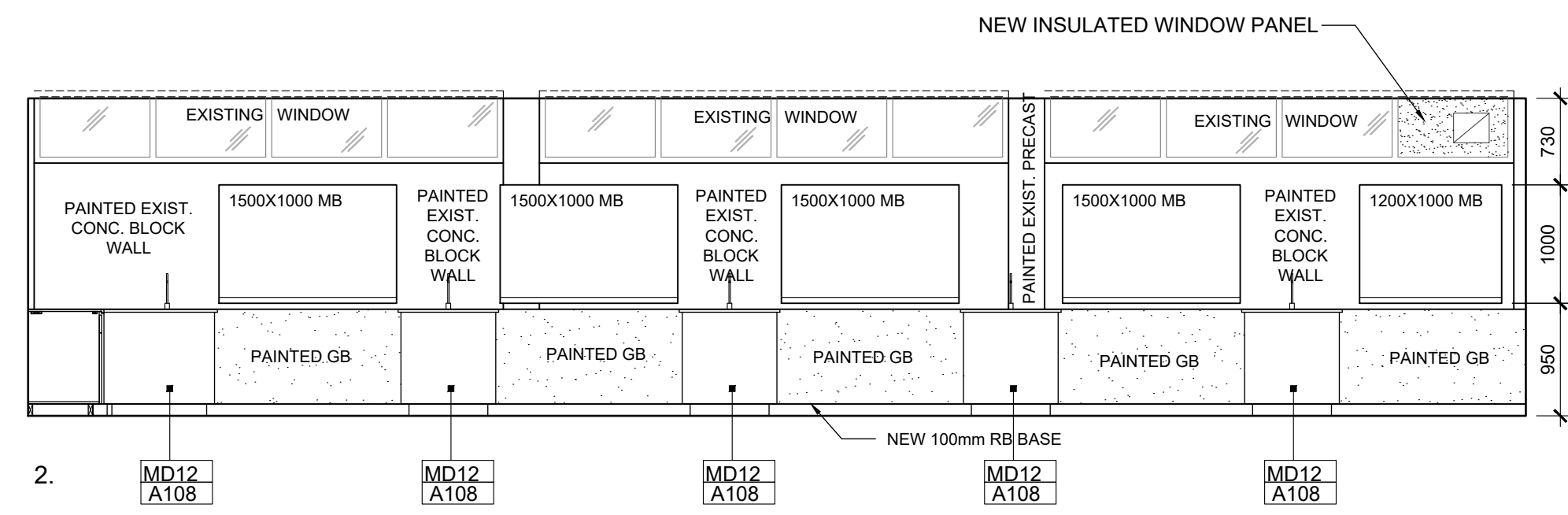
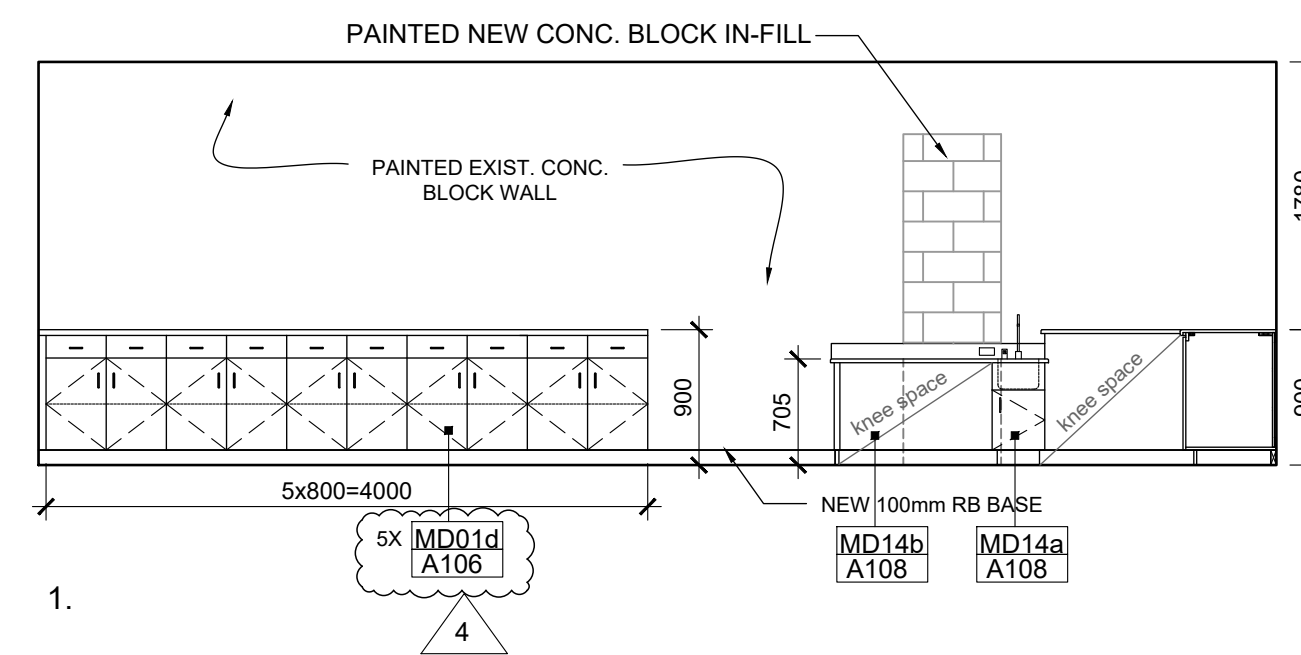
3 FASHION CLASSROOM RM E214 (OPTION "A")  
A103 1:50



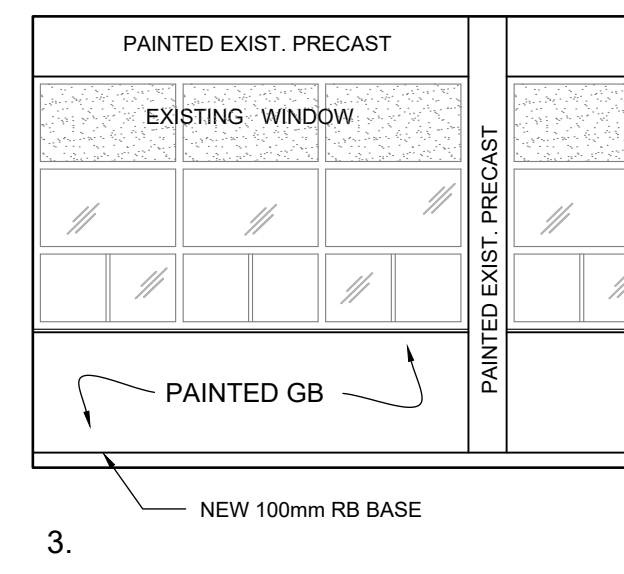
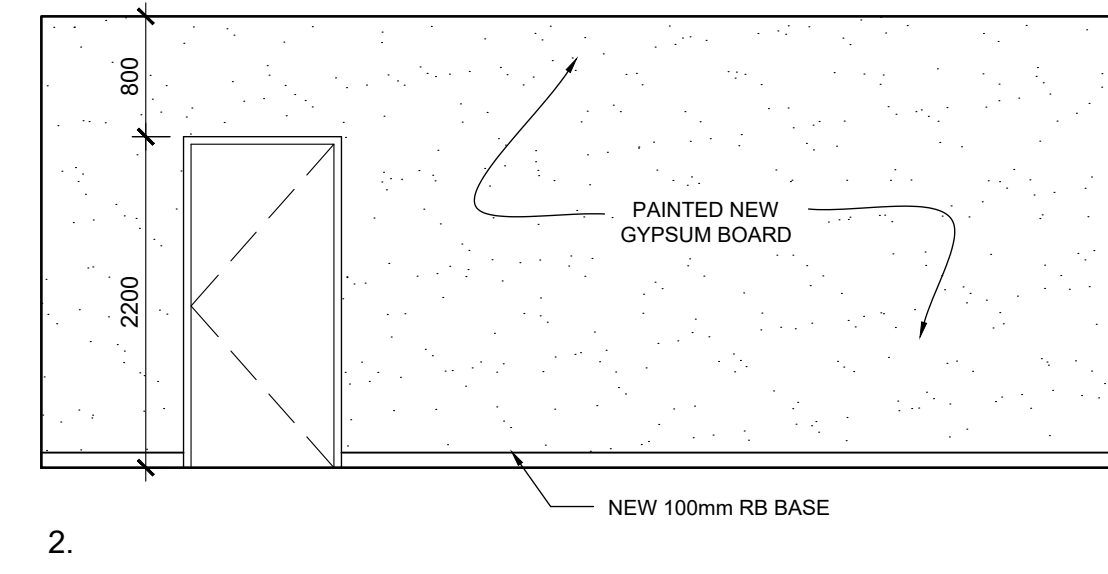
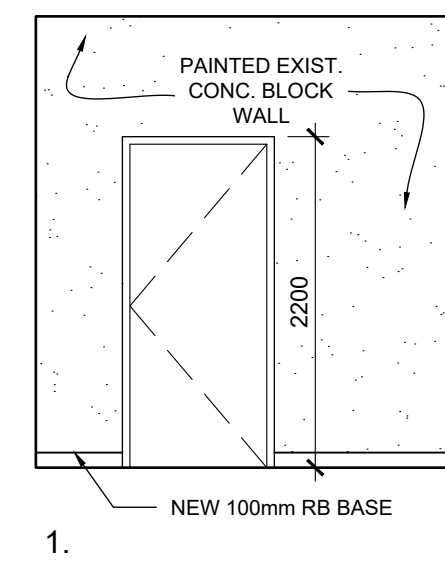
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A103 1:50



5 FASHION CLASSROOM CHANGEROOM RM E214B  
A103 1:50



2 GENERAL SCIENCE CLASSROOM RM S117  
A103 1:50



6 FASHION CLASSROOM PREP ROOM RM E213  
A103 1:50

Key Plan N.T.S.

No.	Revisions	Date
4	ISSUED FOR ADDENDUM 2	2024-04-19
3	ISSUED FOR PERMIT	2024-04-19
2	ISSUED FOR BIDS	2024-04-09
1	ISSUED FOR PERMIT	2024-03-22
No.	Issue	Date

General Contractor shall check and verify all dimensions and report all errors and omissions to the Architect. Do not scale the drawings. Drawings shall not be used for construction purposes until issued by the Architect for construction.



Drawing Title:

INTERIOR ELEVATIONS

Scale: 1:50 Date: 2024 02 08

Drawn by: Checked by:

Job No. Drawing No.

2215-B

A103

**T. A. BLAKELOCK H.S. RENOVATIONS**

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 Oakville, ON

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**sn/der**

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Structural Consultants  
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 300 York Boulevard  
 Hamilton, Ontario, L8R 3K6  
 Tel: 905-333-9119

Mechanical and Electrical Consultants  
**EXP**  
 1266 S. Service Rd.  
 Stoney Creek, Ontario, L8E 5R9  
 Tel: 905-525-6069

Key Plan N.T.S.

No.	Revisions	Date
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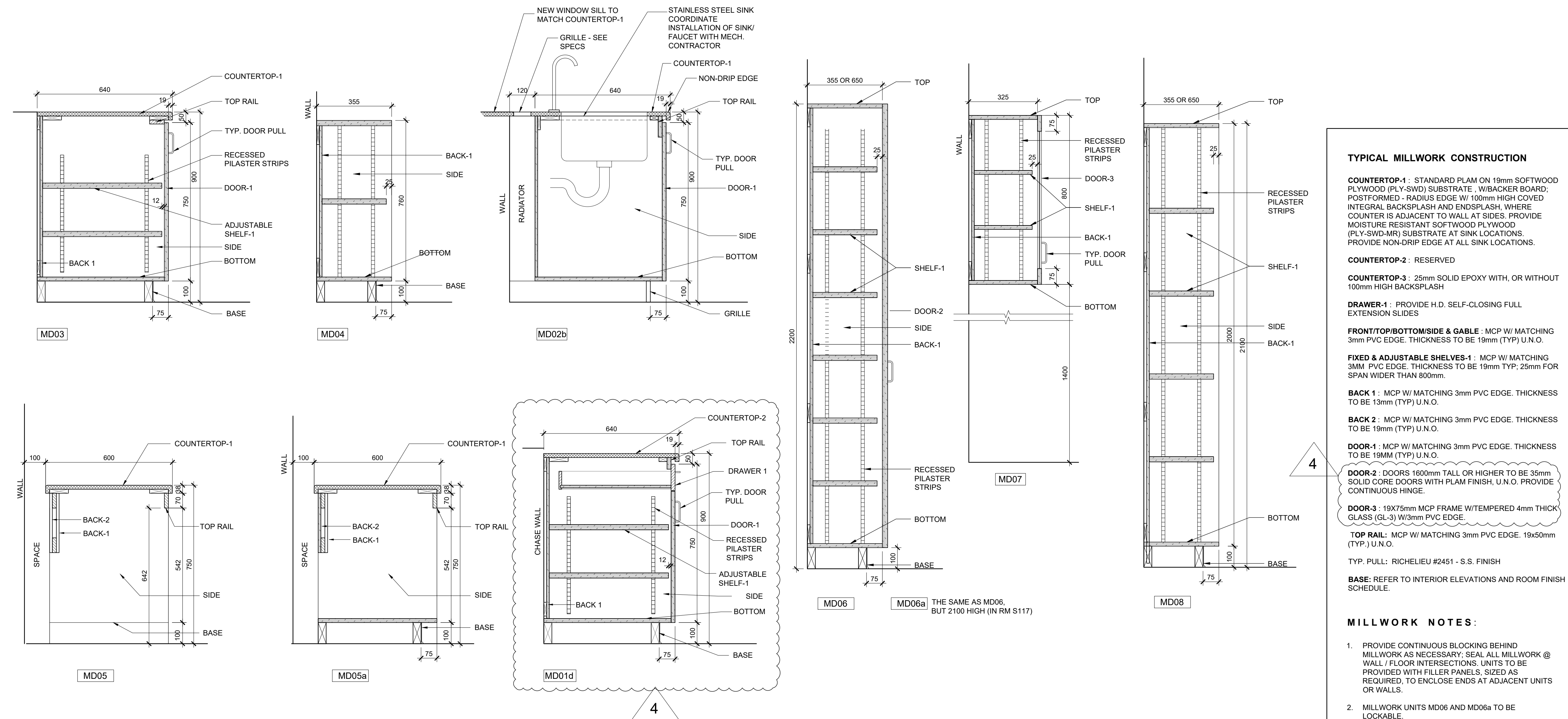
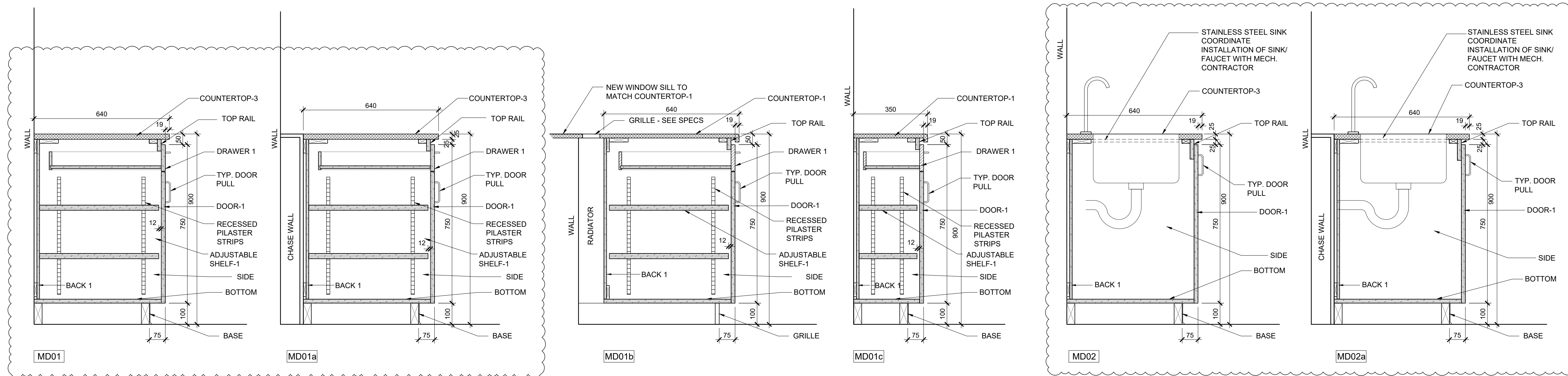
Drawing Title:

**MILLWORK DETAILS**

Scale: 1:10 Date: 2024 03 12

Drawn by: \_\_\_\_\_ Checked by: \_\_\_\_\_  
 Job No. \_\_\_\_\_ Drawing No. \_\_\_\_\_

**2215-B A106**



**TYPICAL MILLWORK CONSTRUCTION**

**COUNTERTOP-1:** STANDARD PLAM ON 19mm SOFTWOOD PLYWOOD (PLY-SWD) SUBSTRATE. W/BACKER BOARD, POSTFORMED - RADIUS EDGE W/ 100mm HIGH COVERED INTEGRAL BACKSPLASH AND ENDSPLASH, WHERE COUNTER IS ADJACENT TO WALL AT SIDES. PROVIDE MOISTURE RESISTANT SOFTWOOD PLYWOOD (PLY-SWD-MR) SUBSTRATE AT SINK LOCATIONS. PROVIDE NON-DRIP EDGE AT ALL SINK LOCATIONS.

**COUNTERTOP-2:** RESERVED

**COUNTERTOP-3:** 25mm SOLID EPOXY WITH, OR WITHOUT 100mm HIGH BACKSPLASH

**DRAWER-1:** PROVIDE H.D. SELF-CLOSING FULL EXTENSION SLIDES

**FRONT/TOP/BOTTOM/SIDE & GABLE:** MCP W/ MATCHING 3mm PVC EDGE. THICKNESS TO BE 19mm (TYP) U.N.O.

**FIXED & ADJUSTABLE SHELVES-1:** MCP W/ MATCHING 3MM PVC EDGE. THICKNESS TO BE 19mm TYP; 25mm FOR SPAN WIDER THAN 800mm.

**BACK 1:** MCP W/ MATCHING 3mm PVC EDGE. THICKNESS TO BE 13mm (TYP) U.N.O.

**BACK 2:** MCP W/ MATCHING 3mm PVC EDGE. THICKNESS TO BE 19MM (TYP) U.N.O.

**DOOR-1:** MCP W/ MATCHING 3mm PVC EDGE. THICKNESS TO BE 19MM (TYP) U.N.O.

**DOOR-2:** DOORS 1600mm TALL OR HIGHER TO BE 35mm SOLID CORE DOORS WITH PLAM FINISH, U.N.O. PROVIDE CONTINUOUS HINGE.

**DOOR-3:** 19X75mm MCP FRAME W/TEMPERED 4mm THICK GLASS (GL-3) W/3mm PVC EDGE.

**TOP RAIL:** MCP W/ MATCHING 3mm PVC EDGE. 19x50mm (TYP.) U.N.O.

**TYP. PULL:** RICHELIEU #2451 - S.S. FINISH

**BASE:** REFER TO INTERIOR ELEVATIONS AND ROOM FINISH SCHEDULE.

**MILLWORK NOTES:**

- PROVIDE CONTINUOUS BLOCKING BEHIND MILLWORK AS NECESSARY; SEAL ALL MILLWORK @ WALL / FLOOR INTERSECTIONS. UNITS TO BE PROVIDED WITH FILLER PANELS, SIZED AS REQUIRED, TO ENCLOSE ENDS AT ADJACENT UNITS OR WALLS.
- MILLWORK UNITS MD06 AND MD06a TO BE LOCKABLE.

## TENDER ADDENDUM FORM

Addendum No. 1

Arcadis Project No.: 30217738

Date: April 15, 2024

Project Name: T.A. Blakelock High School

Issued To: All Tenderers

Issued By: Jean Daigle – Arcadis Canada Inc.

Receipt of this Addendum is to be recorded on the Tender Form.

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This addendum forms part of the Tender Documents and amends the original Project Tender.

### SECTION 00 82 00 – DESIGNATED SUBSTANCES ABATEMENT SPECIFICATIONS

#### 1.2 OUTLINE OF WORK

Delete Sections 1.2.10 and replace with the following:

*1.2.10 Work in Work Areas 1, 2 and 3 will be performed as one mobilization. Work in Work Area 4 (if required) will be performed as a separate mobilization.*

Delete Sections 1.2.14, 1.2.15, 1.2.16 and 1.2.17 and replace with the following:

#### 1.2.14 **Work Area 3 – Room 113**

- .1 Room numbers shown on drawings attached to this specification do not always correspond with room numbers shown on architectural, structural, mechanical, and electrical drawings. All drawings must be reviewed together to limit issues that may arise from room number discrepancies.*
- .2 Prepare the areas indicated above and on the attached floor plans for a Type 2/Glovebag asbestos removal operation.*
- .3 Supply and install scaffolding, in accordance with all applicable regulations, in order to provide sufficient and safe access to the work areas.*
- .4 Carefully remove and retain lay-in acoustic T-bar ceiling tiles, as required, to access piping inside ceiling cavity. Ceiling tiles are to be re-installed following completion of remedial work.*
- .5 Using glovebags, remove and dispose as asbestos waste, all asbestos-containing thermal insulation applied to pipe straight sections and pipe fittings. For costing purposes, allow for the removal of thermal insulation from fifteen (15) pipe fittings and the removal of thermal insulation from ten (10) linear metres of pipe straights.*

#### 1.2.15 **Work Area 4 – To Be Determined**

- .1 Prepare locations pre-determined by the mechanical sub-contractor for Type 2 Enclosure and Glovebag asbestos abatement operations.*
- .2 Supply and install scaffolding, in accordance with all applicable regulations, in order to provide sufficient and safe access to the work areas.*

- .3 *Remove and dispose, as asbestos waste, accessible asbestos-containing thermal insulation from select piping to allow for removal of piping, modifications to mechanical systems and mechanical tie-ins. The mechanical sub-contractor will clearly mark all locations for thermal insulation removals.*
- .4 *For costing purposes allow for two workers over a 10-hour shift (including travel time) per mobilization. Allow for one (1) separate mobilization.*
- 1.2.16 *Thermal insulation on pipe fittings contains 40% to 80% chrysotile asbestos. Pipe straight thermal insulation ("air-cell" type) contains 36% to 65% chrysotile asbestos. Pipe straight thermal insulation ("anti-sweat" type) contains 35% chrysotile asbestos. Acoustic ceiling tiles contain 0.75% chrysotile asbestos. Vinyl floor tiles contain 1.2% to 25.5% chrysotile asbestos. Joint compounds on select gypsum board applications contains 1.5% to 2.3% chrysotile asbestos.*
- 1.2.17 *All waste is to be removed from the site and disposed. Asbestos waste disposal bins are not to be left on the owner's property unless fully enclosed with an integral metal roof system and locked. Disposal bins must be removed immediately on completion of work.*
- 1.2.18 **Schedule**
  - .1 *Mobilization* *To be determined*
  - .2 *Complete Work and Demobilize* *To be determined*

Delete the following Drawings:

30217738-1 - Locations of Work Areas First Floor Plan  
30217738-2 - Locations of Work Areas First and Second Floor Plan

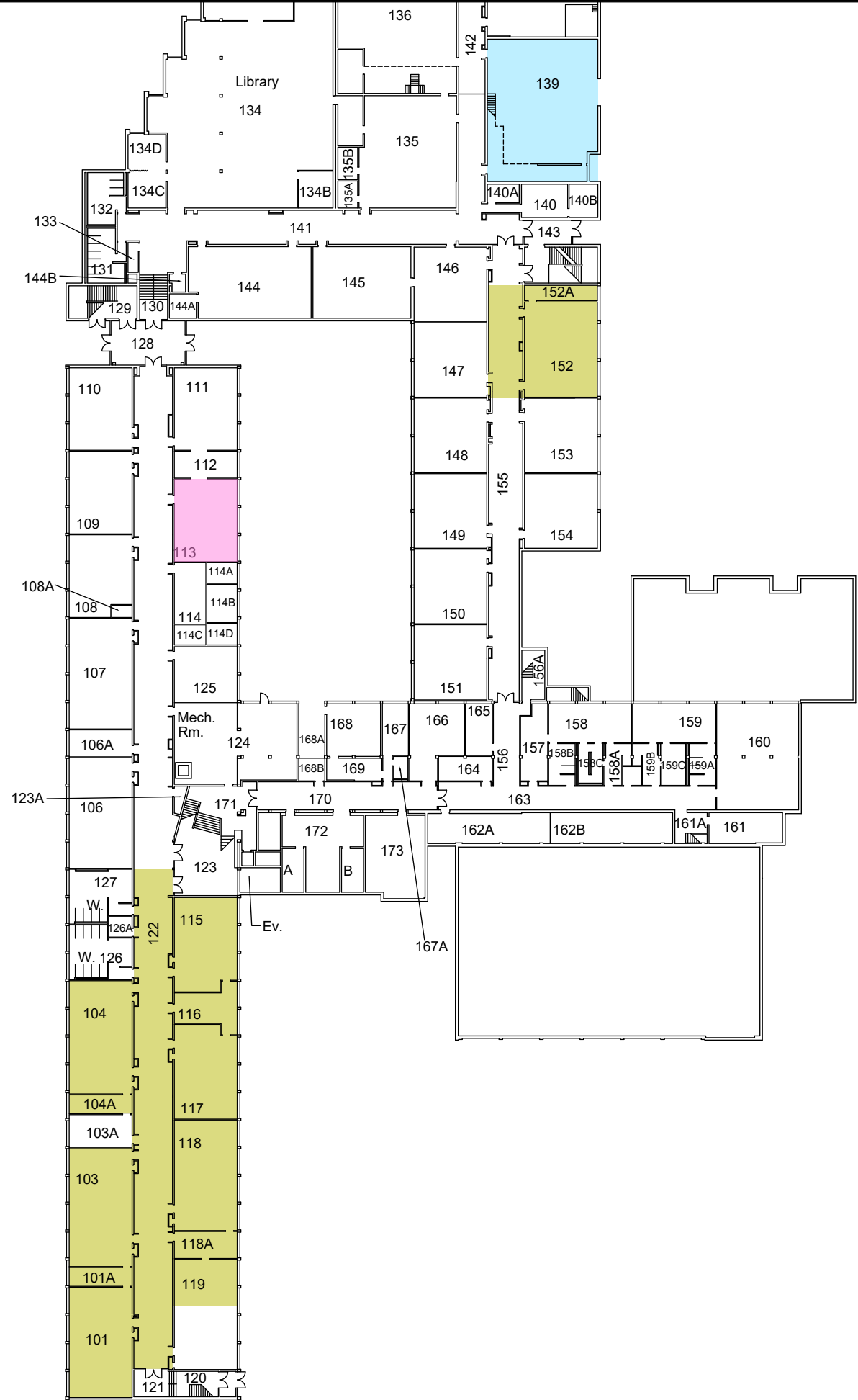
Replace with the following attached Drawings:

30217738-1 - Revised Locations of Work Areas First Floor Plan  
30217738-2 - Revised Locations of Work Areas First and Second Floor Plan

**End of Addendum**



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 XREFS: IMAGES: PROJECTNAME: ---



**LEGEND:**

- 112 FUNCTIONAL SPACE
- WORK AREA 1
- WORK AREA 2
- WORK AREA 3

**NOTES:**

- 1.

**REVISIONS:**

No.	Date:	By:	Revisions

**REFERENCE:**

- 1.



HALTON DISTRICT SCHOOL BOARD  
**DESIGNATED SUBSTANCES ABATEMENT SPECIFICATIONS**

T. A. BLAKELOCK HIGH SCHOOL  
 1160 REBECCA STREET, OAKVILLE, ONTARIO

REVISED LOCATIONS OF WORK AREAS

FIRST FLOOR PLAN

Drawn By: B.R	Approved By: J.D	Project No: 30217738
Date: APRIL 2024	Scale: N.T.S	Drawing No: 30217738-1



**LEGEND:**

- 273 FUNCTIONAL SPACE
- WORK AREA 1

**NOTES:**

- 1.

**REVISIONS:**

No.	Date:	By:	Revisions

**REFERENCE:**

- 1.



HALTON DISTRICT SCHOOL BOARD  
**DESIGNATED SUBSTANCES ABATEMENT SPECIFICATIONS**  
 T.A. BLAKELOCK HIGH SCHOOL  
 1160 REBECCA STREET, OAKVILLE, ONTARIO  
 REVISED LOCATIONS OF WORK AREAS  
 FIRST AND SECOND FLOOR PLAN

Drawn By: B.R	Approved By: J.D	Project No: 30217738
Date: APRIL 2024	Scale: N.T.S	Drawing No: 30217738-2

**TIME AND MATERIAL AND UNIT RATES  
DESIGNATED SUBSTANCES ABATEMENT SPECIFICATIONS**

**T.A. Blakelock High School**

The following chargeout rates for supervision, labour, equipment, consumables, materials and services form part of this submission and may be used to establish costs for additional work approved by the Owner. The rates provided include delivery to the site, administrative costs, burden, overhead and profit.

**Labour**

Resource	Units	\$ Regular	\$ 1 <sup>st</sup> Overtime	2 <sup>nd</sup> Overtime
Supervision	Per hr	\$	\$	\$
Abatement Worker	Per hr	\$	\$	\$
	Per hr	\$	\$	\$
	Per hr	\$	\$	\$
	Per hr	\$	\$	\$

Regular rates will be applied at all times other than that defined below:

\_\_\_\_\_

\_\_\_\_\_

Labour rates include for all costs associated with placing labour on the work site as well as an allowance for small tools and miscellaneous consumables not specifically identified below.

**Equipment**

Equipment	Units	\$
HEPA Vacuum c/w Bags	day	\$
Negative Air Machine c/w Filters	day	\$
Airless Paint Sprayer c/w Hoses, Nozzles, etc.	day	\$
Pressure Washer c/w Hoses, Nozzles, etc.	day	\$
Portable Shower c/w Hoses, Fittings, Filter, Sump Pump, etc.	day	\$
GFI Panel c/w Extension Cords	day	\$
PAPR Respirators c/w Battery Pack, Charger, etc.	day	\$
Ladder, 6, 8 and 10 foot	day	\$

**TIME AND MATERIAL AND UNIT RATES  
DESIGNATED SUBSTANCES ABATEMENT SPECIFICATIONS**

**T.A. Blakelock High School**

<b>Equipment</b>	<b>Units</b>	<b>\$</b>
Baker Scaffold c/w Braces, Casters, Rails, Planks	day	\$
Standard Scaffold c/w Braces, Casters, Rails, Planks	day	\$
Lift Equipment – Scissor Lift	day	\$
Lift Equipment – Zoom Boom	day	\$

Discount to be applied for      Weekly Rate      \_\_\_\_\_%

   Monthly Rate      \_\_\_\_\_%

Note that small tools not listed above are to be supplied, as required, without additional costs.

**Materials**

**Removal of asbestos-containing thermal insulation on piping systems - Inclusive of removal and disposal and all other applicable costs in accordance with Type 2/Glovebag abatement procedures specified in the Designated Substances Abatement Specifications.**

<b>PIPE INSULATION OUTSIDE DIAMETER</b>	<b>*FITTING (EACH)</b>	<b>**STRAIGHTS (PER METRE)</b>
25 mm to 100 mm	\$	\$
100 mm to 150 mm	\$	\$
150 mm to 250 mm	\$	\$
250 mm to 350 mm	\$	\$
350 mm to 450 mm	\$	\$

\*      Fitting:              Includes elbows, tees or other individual applications of asbestos-containing insulating cement.

\*\*      Straights:           Includes all in-line applications of asbestos-containing thermal insulation other than elbows, tees, valves and flanges which are to be charged as fittings (i.e., hangers, couplings, bevels, etc., are not subject to a separate charge as fittings).

**TIME AND MATERIAL AND UNIT RATES  
DESIGNATED SUBSTANCES ABATEMENT SPECIFICATIONS**

**T.A. Blakelock High School**

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**Removal of asbestos-containing cement piping - Inclusive of removal and disposal and all other applicable costs in accordance with Type 1 abatement procedures specified in the Designated Substances Abatement Specifications.**

PIPE OUTSIDE DIAMETER	(PER LINEAR METRE)
25 mm to 100 mm	\$
100 mm to 150 mm	\$
150 mm to 250 mm	\$
250 mm to 350 mm	\$
350 mm to 450 mm	\$

**Other Asbestos Removal Work - Inclusive of removal and disposal and all other applicable costs in accordance with various asbestos abatement procedures specified in the Designated Substances Abatement Specifications.**

MATERIAL / ABATEMENT TYPE	Units	\$
Gypsum board with asbestos joint compounds / Type 2	m <sup>2</sup>	\$
Asbestos adhesives / Type 2	m <sup>2</sup>	\$

CONSUMABLES	Units	\$
Rip-proof Polyethylene	90 m <sup>2</sup>	\$
6 mil Polyethylene	90 m <sup>2</sup>	\$
10 mil Polyethylene	90 m <sup>2</sup>	\$
2" Duct Tape	50 m	\$
Disposable Suit (Tyvek)	each	\$
PAPR Filters	pair	\$

**TIME AND MATERIAL AND UNIT RATES  
 DESIGNATED SUBSTANCES ABATEMENT SPECIFICATIONS**

**T.A. Blakelock High School**

CONSUMABLES	Units	\$
HEPA Filters for Half-face	pair	\$
Disposal Bags	each	\$
6" Safe-T-Strip Glovebag c/w Straps, Tools	each	\$

Note that miscellaneous materials and consumables not listed above are to be supplied, as required, without additional costs.

**Services**

Services provided by third parties, as approved by the Owner, including disposal, scaffold erection, electrical and other trades, etc., will be charged at cost plus \_\_\_\_\_ percent (\_\_\_%) which includes administration, overhead and profit.

**Disposal**

Transport and disposal of small quantities of asbestos waste generated during work in addition to the main scope per 25 kg bag \$\_\_\_\_\_ each.



## Mechanical Addendum No. 01

**EXP Project:** ALL-22020201-A0 TA Blakelock HS Interior Renovation & Accessibility Upgrades, Phase II, 1160 Rebecca St, Oakville, ON L6L 1Y9

**Date:** April 19, 2024

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**Prepared By:** EXP Services Inc.

### Requirements:

The addendum forms part of the Contract Documents and amends the original Specifications and Drawings, as noted below.

Ensure that all parties submitting bids are aware of all items included in this Addendum.

This Addendum consists of two (2) pages plus appended documents.

### Amendments to Drawings

#### 1. Drawing M003 – MECHANICAL SPECIFICATIONS

- .1 Drawing is issued with this addendum. Modifications include, but are not limited to the following:
- .2 **Refer to Section 7 – Duct Accessories**
  - .1 **ADD** Item 7.6, Combined fire/smoke dampers to read:  
"7.6 COMBINATION FIRE/SMOKE DAMPERS
    - A. Manufacturer: ruskin, greenheck, price, nailor
    - B. Combination fire/smoke dampers, complete with sleeves and operators, designed and tested to meet both ul555 requirements for fire dampers and ul555s for leakage class 1 rated smoke dampers. Provide with end switches. Construct frame from 1.6mm (16 gauge) galvanized steel. construct single piece construction air foil blades from 2.0mm (14 gauge) galvanized steel, with stainless steel sleeve bearings, square plated steel axles and concealed linkages. Use stainless steel spring. Design for operator mounted out of the air stream. Equip with 120 degrees c (250 degree f) snap disc. Design for operator mounted out of air stream. Provide damper actuators for complete cul listed and tested damper assembly.
    - C. Use only fire damper assemblies tested in accordance with can4 s92m "standard method of fire test of fire damper assemblies" and listed in most recent ulc "list of equipment and materials" or by another recognized independent testing and certification agency acceptance to the consultant. Label each damper to indicate compliance with these requirements.
    - D. Links shall comply with ulc s505 "standard for fusible links for fire protection service".
    - E. Fabricate all dampers from galvanized steel except in copper,

stainless steel or aluminum duct systems. In these systems, use all stainless steel construction.

- F. Fire protection ratings of damper assemblies shall comply with Ontario building code requirements for fire resistance ratings of the fire separations through which the protected openings pass. Provide an approval label, stating the fire rating, from a recognized independent testing laboratory acceptable to the consultant, on each assembly.
- G. Provide with each damper, detailed installation instructions. Include illustrations and adequate information to attain proper and safe installation of the smoke/fire damper assembly.
- H. Damper to come complete with optional 120V to 24V transformer and duct smoke detector. Electrical division to wire components.”

2. **Drawing M101 – PROPOSED PLUMBING & DRAINAGE PLAN**

- .1 Drawing is issued with this addendum. Modifications include, but are not limited to the following:
- .2 **Refer to 4/M101 – AREA 3 (FLOOR BELOW) – PROPOSED P&D:**
  - .1 **ADD** Note 3 calling for reinsulating of existing piping under asbestos abatement.
  - .2 **ADD** Items not captured on drawings; Modifications to include, but are not limited to the following:
    - .1 Provide and install one (1) Deionizing filter cartridge system for the sink “S-1” in Chemistry/Bio Prep Room E102. Deionizing filter cartridge shall be installed on the DCW branch pipe, upstream of the sink, and within the millwork.
    - .2 Provide and install one (1) Deionizing filter cartridge system for the sink “S-1” in Chemistry/Bio Prep Room E116. Deionizing filter cartridge shall be installed on the DCW branch pipe, upstream of the sink, and within the millwork.
    - .3 Deionizing filter cartridge system shall be Pure Aqua model #RCD-20BB as per enclosed or equal in performance and compatibility.

3. **Drawing M202 – PROPOSED HVAC PLAN**

- .1 Drawing is issued with this addendum. Modifications include, but are not limited to the following:
- .2 **Refer to Exterior 1/M201 – AREA 1 PROPOSED HVAC:**
  - .1 **ADD** Two (2) combination fire smoke damper to duct crossing into existing corridor from fume hood.



# Ion Exchange Cartridge Units

Softening or Deionizing Cartridges

RC-6500  
SERIES

Due to the requirements of high quality water in many industries, Pure Aqua has developed the RC-6500 Series. The Pure Aqua RC-6500 Series ion exchange filters provide high quality water in low volumes for specialized uses.

## Ion Exchange Applications

- ◆ Laboratories
- ◆ Solution preparation
- ◆ Glassware washing
- ◆ Analytical tests
- ◆ Dental offices
- ◆ Sterilizers
- ◆ RO pretreatment (softener)
- ◆ RO post treatment (DI)
- ◆ Drinking water treatment
- ◆ Water re-use
- ◆ Wastewater treatment
- ◆ Process separation/recovery
- ◆ Cosmetics

### Compact, Low Volume, Deionizers or Softeners for High Quality Water



Quality light indicator

### Top Quality Deionizer Resins

Manufactured according to the highest quality standard. High quality resin of uniform size and stability provides higher quality water.

### Attractive Functional Design

Intelligently designed in blue. Four models are available: RC-10, RC-10BB, RC-20 and RC-20BB and are designed for point of use application. Regeneration service can be provided by your local Pure Aqua dealer.

### Corrosion Proof Housing

All plastic construction provides sturdy, corrosion proof and attractive housing.



RCD-20BB

RCD-10BB

# Ion Exchange Cartridge Units

## Softening or Deionizing Cartridges

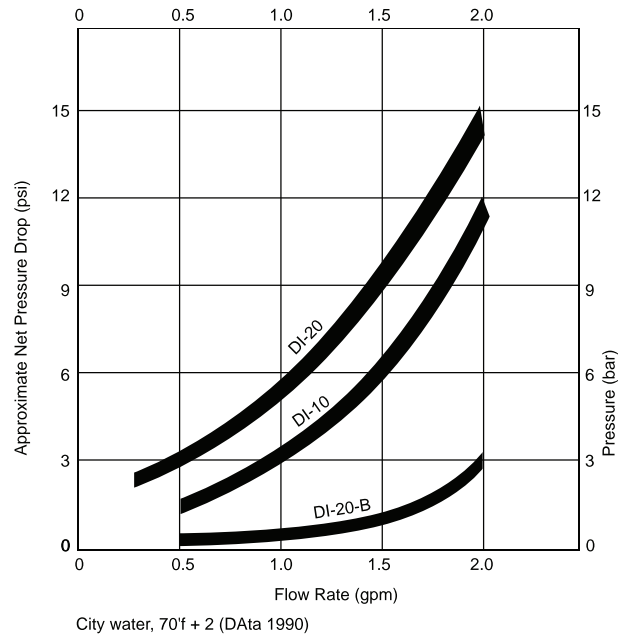
# RC-6500 SERIES

### Mixed Bed Deionization Cartridges

The cartridges have been developed in response to the requirements for deionized water in many industries. They are manufactured using resin that has been subjected to additional post production steps to minimize the total organic carbon (TOC) level.

These high-capacity semi conductor grade resin cartridges are ideal for use in pharmaceutical and medical laboratories, cosmetic and circuit board printing applications.

The cartridges are available in four sizes, flow rates and capacities. They are convenient and cost effective for many applications where low levels of total organic carbon (TOC) and total dissolved solids are required.



Model #	RCS Models (Softening Ion Exchange Systems)				RCD Models (Deionizing Ion Exchange Systems)			
	RCS-10	RCS-20	RCS-10BB	RCS-20BB	RCD-10	RCD-20	RCD-10BB	RCD-20BB
Housing Model	H-1034-BL	H-2034-BL	BBH-1010	BBH-201	H-1034-BL	H-2034-BL	BBH-1010	BBH-201
Housing Size	2.5"x10"	2.5"x20"	4.5"x10"	4.5"x20"	2.5"x10"	2.5"x20"	4.5"x10"	4.5"x20"
Cartridge Model	SFT-10	SFT-20	SFT-10-B	SFT-20-B	DI-10	DI-20	DI-10-B	DI-20-B
Cartridge Size	2.5"x10"	2.5"x20"	4.5"x10"	4.5"x20"	2.5"x10"	2.5"x20"	4.5"x10"	4.5"x20"
Capacity (Grains)	750	1000	1500	4500	450	900	1050	2350
Flow Range (GPM)	0.3	0.5	0.8	1.25	0.3	0.5	0.8	1.25
Max. Inlet Press. (psi)	90	90	90	90	90	90	90	90
Temp. Range (°F)	45 to 100	45 to 100	45 to 100	45 to 100	45 to 100	45 to 100	45 to 100	45 to 100
Diameter (Inch)	5 1/3	5 1/3	8	8	5 1/3	5 1/3	8	8
Height (Inch)	13	28	13	28	13	28	13	28
Weight (Lbs)	8	15	22	28	8	15	22	28

Pure Aqua also supplies: Custom Engineered Solutions, Multimedia Pretreatment, Activated Carbon Pretreatment, Water Conditioning, Chemical Dosing Systems, Ultraviolet (UV) Sterilizers and Ozonation Systems.



## PURE AQUA, INC.®

Water Treatment and Reverse Osmosis Systems

sales@pureaqua.com | +1 (714)432-9996  
www.pureaqua.com | +1 (844)309-7501





Authorized Dealer:

## HVAC SPECIFICATIONS

- 4. HYDRONIC SPECIALTIES**
- 4.1 AIR VENTS**
- A. MANUAL TYPE: SHORT VERTICAL SECTIONS OF 2" (50 MM) DIAMETER PIPE TO FORM AIR CHAMBER, WITH 3 MM BRASS NEEDLE VALVE AT TOP OF CHAMBER
- B. FLOAT TYPE:
- MANUFACTURERS: ARMSTRONG, AMTROL, TACO
  - BRASS OR SEMI-STEEL BODY, COPPER, POLYPROPYLENE, OR SOLID NON-METALLIC FLOAT, STAINLESS STEEL VALVE AND VALVE SEAT; SUITABLE FOR SYSTEM OPERATING TEMPERATURE AND PRESSURE; WITH ISOLATING VALVE.
- 4.2 STRAINERS**
- A. SIZE 2" (50 MM) AND UNDER:
- MANUFACTURERS: SARCO SB, CRANE, ARMSTRONG, COLTON
- B. SCREWED BRASS OR IRON BODY FOR 175 PSI (1200 KPA) WORKING PRESSURE, Y PATTERN WITH 0.8 MM STAINLESS STEEL PERFORATED SCREEN.
- 4.3 RELIEF VALVES**
- A. MANUFACTURERS: SARCO, WATTS, BELL & GOSSETT, CONBRAC
- B. BRONZE BODY, TEFLON SEAT, STAINLESS STEEL STEM AND SPRINGS, AUTOMATIC, DIRECT PRESSURE ACTUATED, CAPACITIES ASME CERTIFIED AND LABELLED.
- 5. REFRIGERATION PIPING & SPECIALTIES**
- 5.1 PIPING**
- A. COPPER TUBING: ASTM B280, TYPE ACR HARD DRAWN OR ANNEALED.
- FITTINGS: ASME B16.22 WROUGHT COPPER.
  - JOINTS: BRAZE, AWS A5.8 BCUP SILVER/PHOSPHORUS/COPPER ALLOY WITH MELTING RANGE 640 TO 805 DEGREES C.
- B. COPPER TUBING TO 22 MM OD: ASTM B88, TYPE K, ANNEALED.
- FITTINGS: ASME B16.26 CAST COPPER.
  - JOINTS: FLARED.
- C. PIPE SUPPORTS AND ANCHORS:
- CONFORM TO ASME B31.5.
  - HANGERS FOR PIPE SIZES 13 TO 38 MM: MALLEABLE IRON ADJUSTABLE SWIVEL, SPLIT RING.
  - HANGERS FOR PIPE SIZES 50 MM AND OVER: CARBON STEEL, ADJUSTABLE, CLEVIS.
  - MULTIPLE TRAPEZOID HANGERS: STEEL CHANNELS WITH WELDED SPACERS AND HANGER RODS.
  - WALL SUPPORT FOR PIPE SIZES TO 75 MM: CAST IRON HOOK.
  - WALL SUPPORT FOR PIPE SIZES 100 MM AND OVER: WELDED STEEL BRACKET AND WROUGHT STEEL CLAMP.
  - VERTICAL SUPPORT: STEEL RISER CLAMP.
  - FLOOR SUPPORT: CAST IRON ADJUSTABLE PIPE SADDLE, LOCK NUT, NIPPLE, FLOOR FLANGE, AND CONCRETE PIER OR STEEL SUPPORT.
  - COPPER PIPE SUPPORT: CARBON STEEL RING, ADJUSTABLE, COPPER PLATED.
  - HANGER RODS, MILD STEEL THREADED BOTH ENDS, THREADED ONE END, OR CONTINUOUS THREADED.
  - INSERTS: MALLEABLE IRON CASE OF GALVANIZED STEEL SHELL AND EXPANDER PLUG FOR THREADED CONNECTION WITH LATERAL ADJUSTMENT, TOP SLOT FOR REINFORCING RODS, LUGS FOR ATTACHING TO FORMS; SIZE INSERTS TO SUIT THREADED HANGER RODS.
- 5.2 REFRIGERANT INSULATION: CLOSED-CELL ELASTOMERIC**
- MANUFACTURER: ARMACELL AP ARMAFLEX
- COMPLIANCE: ASTM C534, ASTM E84, UL-C-S102, NFPA 90A, ASTM D1056
- THERMAL CONDUCTIVITY: 0.235 BTU-in/hr-Sq-Ft = F AT 50 F (0.034 W/mk AT 10 C)
- PERMEABILITY: 0.05 PERM-IN
- MAXIMUM FLAME SPREAD INDEX: 25
- MAXIMUM SMOKE DEVELOPMENT INDEX: 50
- WATER ABSORPTION: 0.2% BY VOLUME
- MAXIMUM SERVICE TEMPERATURE: 220 F (105 C)
- MINIMUM SERVICE TEMPERATURE: -297 F (-183 C)
- FOR OUTDOOR USE: PAINT INSULATION WITH ARMAFLEX WB STANDARD WHITE FINISH; PIGMENTED LATEX. VOC < 50 G/L.
- 5.3 REFRIGERANT INSULATION VICES**
- INSULATE ALL REFRIGERANT SUCTION AND HOT GAS PIPING AND FITTINGS. INSULATE LIQUID LINES WHERE EXPOSED TO EXTERIOR CONDITIONS. INSULATION SHALL FIT PIPE. THICKNESS SHALL BE AS FOLLOWS: 1/2" (13 MM) THICK FOR PIPE 1" (25 MM) O.D. AND SMALLER; 3/4" (20 MM) THICK FOR PIPE 1-1/8" (28 MM) TO 2" (50 MM) O.D.; 1" (25 MM) THICK FOR PIPES 2-1/8" (54 MM) O.D. AND LARGER
- SLIP INSULATION ON TO TUBING BEFORE TUBING SECTIONS AND FITTINGS ARE ASSEMBLED. KEEP SLITTING OF INSULATION TO A VERY MINIMUM. SEAL ALL JOINTS IN THE INSULATION WITH ARMAFLEX 520 BLV. INSULATE FLEXIBLE PIPE CONNECTORS.
- ON INSULATION EXPOSED OUTSIDE THE BUILDING, PLACE "SLIT" JOINT SEAMS ON BOTTOM OF PIPE AND PROVIDE TWO COATS OF ARMAFLEX WB FINISH. EXTEND INSULATION THROUGH PIPE SUPPORT CLAMPS. PROVIDE A 6" (150 MM) LONG, 20 GAUGE (1.1 MM) GALVANIZED STEEL SLEEVE AROUND PIPE INSULATION AT EACH SUPPORT
- 5.4 MOISTURE AND LIQUID INDICATORS**
- A. INDICATORS: SINGLE PORT TYPE, UL LISTED, WITH COPPER OR BRASS BODY, FLARED OR SOLDER ENDS, SIGMA GLASS, COLOUR CODED PAPER MOISTURE INDICATOR WITH REMOVABLE ELEMENT CARTRIDGE AND PLASTIC CAP; FOR MAXIMUM WORKING PRESSURE OF 3450 KPA, AND MAXIMUM TEMPERATURE OF 93 DEGREES C.
- 5.5 VALVES**
- A. BALL VALVES:
- TWO PIECE BOLTED FORGED BRASS BODY WITH TEFLON BALL SEALS AND COPPER TUBE EXTENSIONS, BRASS BONNET AND SEAL CAP, CHROME PLATED BALL, STEM WITH NEOPRENE RING STEM SEALS; FOR MAXIMUM WORKING PRESSURE OF 3450 KPA AND MAXIMUM TEMPERATURE OF 149 DEGREES C.
- B. SERVICE VALVES:
- FORGED BRASS BODY WITH COPPER STUDS, BRASS CAPS, REMOVABLE VALVE CORE, INTEGRAL BALL CHECK VALVE, FLARED OR SOLDER ENDS, FOR MAXIMUM PRESSURE OF 3450 KPA.
- 5.6 STRAINERS**
- A. STRAIGHT LINE OR ANGLE LINE TYPE:
- BRASS OR STEEL SHELL, STEEL CAP AND FLANGE, AND REPLACEABLE CARTRIDGE, WITH SCREEN OF STAINLESS STEEL WIRE OR MONEL REINFORCED WITH BRASS; FOR MAXIMUM WORKING PRESSURE OF 2960 KPA.
- B. STRAIGHT LINE, NON-CLEANABLE TYPE:
- STEEL SHELL, COPPER PLATED FITTINGS, STAINLESS STEEL WIRE SCREEN, FOR MAXIMUM WORKING PRESSURE TO SUIT APPLICATION.
- 5.7 CHECK VALVES**
- A. GLOBE TYPE:
- CAST BRONZE OR FORGED BRASS BODY, FORGED BRASS CAP WITH NEOPRENE SEAL, BRASS GUIDE AND DISC RODS, PHOSPHOR-BRONZE OR STAINLESS STEEL SPRING, TEFLON SEAT DISC; FOR MAXIMUM WORKING PRESSURE OF 2930 KPA AND MAXIMUM TEMPERATURE OF 149 DEGREES C.
- B. STRAIGHT THROUGH TYPE:
- BRASS BODY AND DISC, PHOSPHOR-BRONZE OR STAINLESS STEEL SPRING, NEOPRENE SEAT; FOR MAXIMUM WORKING PRESSURE OF 3450 KPA AND MAXIMUM TEMPERATURE OF 93 DEGREES C.
- 5.8 PRESSURE REGULATORS**
- A. BRASS BODY, STAINLESS STEEL DIAPHRAGM, DIRECT ACTING, ADJUSTABLE OVER 0 TO 550 KPA RANGE, FOR MAXIMUM WORKING PRESSURE OF 3100 KPA.
- 5.9 PRESSURE RELIEF VALVES**
- A. STRAIGHT THROUGH OR ANGLE TYPE; BRASS BODY AND DISC, NEOPRENE SEAT, FACTORY SEALED AND STAMPED WITH ASME UL AND NATIONAL BOARD CERTIFICATION NB; FOR STANDARD 1620 KPA SETTING; SELECTED TO ASHRAE 15.

## HVAC SPECIFICATIONS

- 5.10 FILTER-DRIVERS**
- A. REPLACEABLE CARTRIDGE ANGLE TYPE:
- SHELL: ARI 710, UL LISTED, BRASS, REMOVABLE CAP, FOR MAXIMUM WORKING PRESSURE OF 2410 KPA.
  - FILTER CARTRIDGE: PLEATED MEDIA WITH INTEGRAL END RINGS, STAINLESS STEEL SUPPORT.
  - FILTER DRIVER CARTRIDGE: PLEATED MEDIA WITH SOLID CORE SIEVE WITH ACTIVATED ALUMINA.
  - WAX REMOVAL CARTRIDGE: MOULDED BONDED CORE OF ACTIVATED CHARCOAL WITH INTEGRAL GASKETS.
- B. PERMANENT STRAIGHT THROUGH TYPE:
- ARI 710, UL LISTED, STEEL SHELL WITH MOULDED DESICCANT FILTER CORE, FOR MAXIMUM WORKING PRESSURE OF 2410 KPA.
- 5.11 SOLENOID VALVES**
- A. VALVE: ARI 760, PILOT OPERATED, COPPER OR BRASS OR STEEL BODY AND INTERNAL PARTS, SYNTHETIC SEAT, STAINLESS STEEL STEM AND FLINGER ASSEMBLY, INTEGRAL STRAINER, WITH FLARED, SOLDER, OR THREADED ENDS; FOR MAXIMUM WORKING PRESSURE OF 3450 KPA. STEM TO PERMIT MANUAL OPERATION IN CASE OF COIL FAILURE.
- B. COIL ASSEMBLY: UL 429, UL LISTED, REPLACEABLE WITH MOULDED ELECTROMAGNETIC COIL, MOISTURE AND FUNGUS PROOF, WITH SURGE PROTECTOR AND COLOUR CODED LEAD WIRES, INTEGRAL JUNCTION BOX WITH PILOT LIGHT.
- C. ELECTRICAL CHARACTERISTICS: 120 VOLTS, SINGLE PHASE, 60 HZ.
- 5.12 EXPANSION VALVES**
- A. ANGLE OR STRAIGHT THROUGH TYPE: ARI 750; DESIGN SUITABLE FOR REFRIGERANT: BRASS BODY, INTERNAL OR EXTERNAL EQUALIZER, BLEED HOLE, SUPERHEAT SETTING, REPLACEABLE INLET STRAINER, WITH NON-REPLACEABLE CAPILLARY TUBE AND REMOTE SENSING BULB AND REMOTE BULB WELL.
- B. SELECTION: EVALUATE REFRIGERANT PRESSURE DROP THROUGH SYSTEM TO DETERMINE AVAILABLE PRESSURE. WHERE PRESSURE IS SELECTED FOR MAXIMUM LOAD AT DESIGN OPERATING PRESSURE AND MINIMUM 6 DEGREES C SUPERHEAT, SELECT TO AVOID BEING UNDERZIZED AT FULL LOAD AND EXCESSIVELY OVERZIZED AT PART LOAD.
- 5.13 RECEIVERS**
- A. INTERNAL DIAMETER 150 MM AND SMALLER:
- ARI 495, UL LISTED, STEEL, BRAZED; 2760 KPA MAXIMUM PRESSURE RATING; WITH TAPPINGS FOR INLET, OUTLET, AND PRESSURE RELIEF VALVE.
- B. INTERNAL DIAMETER OVER 150 MM:
- ARI 495, WELDED STEEL, TESTED AND STAMPED TO ASME SEC 8B; 2760 KPA WITH TAPPINGS FOR INLET, OUTLET AND VALVES, PRESSURE RELIEF VALVE, AND MAGNETIC LIQUID LEVEL INDICATOR.
- 5.14 FLEXIBLE CONNECTORS**
- A. CORRUGATED STAINLESS STEEL HOSE WITH SINGLE LAYER OF STAINLESS STEEL EXTERIOR BRAIDING, MINIMUM 230 MM LONG WITH COPPER TUBE ENDS; FOR MAXIMUM WORKING PRESSURE 3450 KPA.
- 6. HVAC DUCTWORK**
- 6.1 HVAC DUCTWORK - GENERAL:**
- A. INSTALL AND SEAL DUCTS TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
- B. SUPPORT ALL DUCTWORK FROM STRUCTURAL MEMBERS, WHERE STRUCTURAL BEARINGS DO NOT EXIST, SUSPEND STRAPPING OR HANGERS FROM STEEL CHANNELS OR ANGLES. PROVIDE SUPPLEMENTARY STRUCTURAL MEMBERS.
- C. DO NOT BREAK CONTINUITY OF INSULATION VAPOUR BARRIER BY HANGERS OR RODS.
- D. DUCT SIZES ARE INSIDE CLEAR DIMENSIONS. FOR LINED DUCTS, MAINTAIN SIZES INSIDE LINING.
- E. PROVIDE OPENINGS IN DUCT WORK WHERE REQUIRED TO ACCOMMODATE THERMOMETERS AND CONTROLLERS. PROVIDE PILOT TUBE OPENINGS WHERE REQUIRED FOR TESTING OF SYSTEMS, COMPLETE WITH METAL CAN WITH SPRING DEVICE OR SCREW TO ENSURE AGAINST AIR LEAKAGE, WHERE OPENINGS ARE PROVIDED IN INSULATED DUCTWORK, INSTALL INSULATION MATERIAL INSIDE A METAL RING.
- F. BALANCING DAMPERS SHALL BE INSTALLED ON BRANCHES AS PER LOCATIONS SHOWN ON THE DRAWINGS AND AS PER THE REQUIREMENTS OF NEBB AND ASHRAE LISTING/MEASURING STANDARDS.
- G. PROVIDE DRAIN IN EVERY FRESH AIR INTAKE AND EXHAUST PLENUM.
- H. DUCTWORK SHALL BE LEAK TESTED IN ACCORDANCE WITH THE SMACNA "HVAC AIR DUCT LEAKAGE TEST MANUAL". THE MAXIMUM PERMITTED DUCT LEAKAGE SHALL BE DETERMINED BY MULTIPLYING THE LEAKAGE FACTOR FROM PARAGRAPH 2.4 ABOVE BY THE SURFACE AREA OF THE DUCTWORK IN THE TEST ZONE.
- 6.2 MATERIALS**
- A. RIGID HVAC DUCTS, CASINGS AND FITTINGS:
- ASTM A653 GALVANIZED STEEL SHEET, LOCK FORM QUALITY, G90 ZINC COATING (0.90 OZ/FT<sup>2</sup>) TO ASTM A90. SHEETS FREE OF PITS, BUSTERS, SILVERS, AND UNGALVANIZED SPOTS.
- B. ALUMINUM DUCTS, DRYER VENTS:
- ASTM B209; ALUMINUM SHEET; ALLOY 3003-H14. ALUMINUM CONNECTORS AND BAR STOCK; ALLOY 6061-16 OR OF EQUIVALENT STRENGTH.
- 6.3 DUCT SEALING**
- SEAL DUCTWORK IN ACCORDANCE WITH SMACNA SEALING REQUIREMENT AS FOLLOWS:
- A. SEAL CLASS A: ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS AND DUCT WALL PENETRATIONS
- B. SEAL CLASS B: ALL TRANSVERSE JOINTS AND LONGITUDINAL SEAMS
- C. SEAL CLASS C: ALL TRANSVERSE JOINTS
- 6.4 DUCTWORK FABRICATION**
- A. ALL DUCTWORK SHALL BE CONSTRUCTED TO WITHSTAND 1-1/2 TIMES FAN PRESSURE AT SHUT-OFF AND 2" (500 PA) MINIMUM.
- B. FABRICATE AND SUPPORT TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, AND AS INDICATED. PROVIDE DUCT MATERIAL, GAUGES, REINFORCING, AND SEALING FOR OPERATING PRESSURES INDICATED IN ACCORDANCE WITH RECOMMENDATIONS OF ASHRAE AND SMACNA.
- C. JOINTS AND REINFORCEMENTS:
- TO SMACNA AND ASHRAE
  - MAY BE MADE WITH THE DUCTMATE SYSTEM OR NEXUS SYSTEM. SYSTEM COMPONENTS SHALL BE MADE OF STANDARD CATALOGUE MANUFACTURE AS SUPPLIED BY DUCTMATE INDUSTRIES, INC. OR NEXUS INC.
- D. CONSTRUCT TEES, BENDS, AND ELBOWS WITH RADIUS OF NOT LESS THAN 1-1/2 TIMES WIDTH OF DUCT ON CENTRELINES. WHERE NOT POSSIBLE AND WHERE RECTANGULAR BENDS ARE USED, PROVIDE AIR FOIL TURNING VANES, WHERE ACOUSTICAL LINING IS INDICATED. PROVIDE TURNING VANES OF PERFORATED METAL WITH GLASS FIBRE INSULATION.
- E. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE WHEREVER POSSIBLE; MAXIMUM 30 DEGREES DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM.
- F. FABRICATE CONTINUOUSLY WELDED ROUND AND OVAL DUCT FITTINGS TWO GAUGES HEAVIER THAN DUCT GAUGE ON CENTRELINES. WHERE NOT POSSIBLE, JOINTS: MINIMUM 80 MM CEASED SLIP JOINT, BRAZED OR ELECTRIC WELDED. PRIME COAT WELDED JOINTS.
- G. PROVIDE STANDARD 45-DEGREE LATERAL WYE TAKEOFFS. ALTERNATIVE 90-DEGREE CONICAL TEE CONNECTIONS MAY BE USED ONLY WHERE SPECIFICALLY INDICATED.
- 6.5 FLEXIBLE DUCTWORK**
- A. MANUFACTURER: THERMAFLEX M-KC
- B. FLEXIBLE DUCTWORK CONFORMING TO UNDERWRITERS LABORATORIES LISTED AS CLASS 1 AIR DUCT, UL STANDARD 181 AND CUL S110 WITH NO LIMITATIONS TO 14 FEET RUNS.
- C. CONFORMS TO NFPA 90A AND 90B.
- D. HEAVY WOVEN AND COATED FIBERGLASS CLOTH CORE.
- E. GREENGUARD CERTIFIED.
- F. FIBERGLASS INSULATING BLANKET AND LOW PERMEABILITY OUTER VAPOUR BARRIER OF FIBERGLASS REINFORCED METALLIZED FILM LAMINATE.
- G. 20/50 FLAME/SMOKE SPREAD RATING.
- H. 0.05 PERM VAPOUR TRANSMISSION RATING

## HVAC SPECIFICATIONS

- 7. DUCT ACCESSORIES**
- 7.1 AIR TURNING DEVICES / RECTANGULARS**
- A. TURNING VANES IN RECTANGULAR DUCT ELBOWS SHALL BE DOUBLE WALLED, MULTI-BLADE VANES WITH BLADES ADJUSTED IN SHORT DIMENSION; STEEL CONSTRUCTION; WITH INDIVIDUALLY ALIGNED BLADES. MOUNTING STRAPS, ACCEPTABLE PRODUCTS: DURO-DYNE "DURO VANE RAIL", HART & COOLEY "DUCTURN", DYN-AIR TURTLE AND BULLY.
- B. VOLUME EXTRACTORS: GANG OPERATED CURVED BLADES, ADJUSTABLE FROM FULL OPEN TO FULL CLOSED POSITIONS. UNITS SHALL BE FACTORY ASSEMBLED, FABRICATED FROM 14 GA. AND 22 GA. (2 AND 9 MM) STEEL, WITH BLADES ON 1" (25 MM) CENTRES, AND NO. 2 OR NO. 3 OPERATORS TO SUIT APPLICATION.
- C. ACCEPTABLE MANUFACTURERS: EH PRICE MODEL A61 INDICATED. KRUEGER MODEL EX-8, DURO-DYNE, DYN-AIR.
- 7.2 BACKDRAFT DAMPERS**
- A. GRAVITY BACKDRAFT DAMPERS, SIZE 18" X 18" (450 X 450 MM) OR SMALLER, PROVIDED WITH AIR MOVING EQUIPMENT; AIR MOVING EQUIPMENT MANUFACTURERS STANDARD CONSTRUCTION.
- B. MULTI-BLADE, PARALLEL ACTION GRAVITY BALANCED BACKDRAFT DAMPERS: 1/16" (1.5 MM) THICK GALVANIZED STEEL, OR, WITH CENTRE PIVOTED BLADES OF MAXIMUM 6" (150 MM) WIDTH, WITH FELT OR FLEXIBLE VINYL SEALED EDGES. LINKED TOGETHER IN RATTLE-FREE MANNER WITH 90 DEGREE STOP, STEEL BALL BEARINGS, AND PLATED STEEL PIVOT PIN; ADJUSTMENT DEVICE TO PERMIT SETTING FOR VARYING DIFFERENTIAL STATIC PRESSURE.
- C. ACCEPTABLE MANUFACTURERS: EH PRICE.
- 7.3 VOLUME CONTROL DAMPERS**
- A. FABRICATE TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, AND AS INDICATED.
- B. SPLITTER DAMPERS:
- MATERIAL: SAME GAUGE AS DUCT TO 24" (600 MM) SIZE IN EITHER DIRECTION, AND TWO GAUGES HEAVIER FOR SIZES OVER 24" (600 MM).
  - BLADE: FABRICATE OF 1/8" THICK GALVANIZED SHEET METAL TO STREAMLINE SHAPE, SECURED WITH CONTINUOUS HINGE OR ROD.
  - OPERATOR: MINIMUM 24" (600 MM) DIAMETER ROD IN SELF ALIGNING, UNIVERSAL JOINT ACTION, FLANGED BUSHING WITH SET SCREW.
- C. SINGLE LEAF DAMPERS: FABRICATED FROM MINIMUM 20 GAUGE (1.0 MM) GALVANIZED STEEL, SUITABLY REINFORCED TO PREVENT VIBRATION AND FITTED WITH INDICATING REGULATOR. DURO-DYNE, LAWSON & TAYLOR, DYN-AIR.
- D. MULTI-BLADE OPPOSED ACTION DAMPERS: FABRICATED FROM 16 GAUGE (1.6 MM) GALVANIZED STEEL, MOUNTED IN SEPARATE CHANNEL FRAMES, REINFORCED TO PREVENT VIBRATION, AND FITTED WITH OPPOSED ACTION LINKAGE HARDWARE. DURO-DYNE "OPAK" BLADE KIT, LAWSON & TAYLOR, DYN-AIR.
- E. END BEARINGS: EXCEPT IN ROUND DUCTWORK 12" (300 MM) AND SMALLER, PROVIDE END BEARINGS. ON MULTIPLE BLADE DAMPERS, PROVIDE OIL-IMPREGNATED NYLON OR SINTERED BRONZE BEARINGS.
- F. QUADRANTS:
- PROVIDE LOCKING, INDICATING QUADRANT REGULATORS ON SINGLE AND MULTI-BLADE DAMPERS.
  - ON INSULATED DUCTS MOUNT QUADRANT REGULATORS ON STAND-OFF MOUNTING BRACKETS, BASES, OR ADAPTERS.
  - WHERE ROD LENGTHS EXCEED 30" (750 MM) PROVIDE REGULATOR AT BOTH ENDS.
- G. ACCEPTABLE MANUFACTURERS: DURO-DYNE, DYN-AIR, PRICE, LAWSON & TAYLOR
- 7.4 FIRE DAMPERS**
- A. MANUFACTURERS: PRICE, RUSKIN, NALOR
- B. FIRE DAMPERS SHALL BE UL LISTED, LABELLED, OR WARNOCK-HERSEY LABEL, MEET ALL REQUIREMENTS OF NFPA 90A, AND CONSTRUCTED AND RATED IN CONFORMANCE WITH:
- CAN-592-MB2, "STANDARD FOR FIRE DAMPERS", WHEN USED IN A FIRE SEPARATION OF NOT MORE THAN 2 HOURS, AND WHICH IS NOT A FIREWALL.
  - CAN-5104-M80, "STANDARD METHOD FOR FIRE TESTS OF DOOR ASSEMBLIES", WHEN USED IN A FIRE SEPARATION OF MORE THAN 2 HOURS, OR USED IN A FIREWALL.
  - CAN-592-2-M84, "FIRE TEST OF CEILING FIRESTOP FLAP ASSEMBLIES", WHEN USED IN A CEILING FIRE SEPARATION.
- C. FIRE DAMPERS SHALL BE GALVANIZED STEEL CHANNEL FRAME CURTAIN TYPE GALVANIZED STEEL INTERLOCKING BLADES, MINIMUM 22 GAUGE (0.9 MM) GALVANIZED STEEL ENCLOSURE, AND 160F (71C) FUSIBLE LINK STANDARD.
- D. FIRE DAMPERS FOR HORIZONTAL INSTALLATION IN VERTICAL DUCTWORK SHALL BE OPERATED BY A STAINLESS STEEL CLOSURE SPRING AND LATCH.
- E. FIRE DAMPER CONFIGURATION SHALL BE LOW RESISTANCE TYPE B WITH BLADES LOCATED OUTSIDE OF THE AIR STREAM FOR RECTANGULAR DUCTWORK, AND TYPE C FOR ROUND OR OVAL DUCTWORK.
- F. CEILING FIRE DAMPERS SHALL BE UL LABELLED, FOR FIRE RATED MEMBRANE TYPE CEILINGS, GALVANIZED STEEL CONSTRUCTION WITH HEAT RETARDANT BLANKET (NON-ASBESTOS) WITH STANDARD 160F (71C) FUSIBLE LINK.
- G. THERMAL BLANKET SHALL BE UL LABELLED, FOR FIRE RATED MEMBRANE TYPE CEILINGS, TO COMPLETELY ENSHROUD CEILING PENETRATION.
- H. FIRE DAMPERS IN STAINLESS STEEL DUCTWORK SHALL BE OF ALL STAINLESS STEEL CONSTRUCTION.
- I. FUSIBLE LINKS: UL 33, SEPARATE AT 160F (71C) WITH ADJUSTABLE LINK STRAPS FOR COMBINATION FIRE/BALANCING DAMPERS.
- 7.5 FIRE DAMPERS (DYNAMIC)**
- A. DYNAMIC FIRE DAMPERS TESTED, CONSTRUCTED AND LABELLED IN ACCORDANCE WITH THE LATEST EDITION OF UL STANDARD 555. DAMPERS SHALL HAVE A FIRE RATING OF 1-1/2 HOURS OR 3 HOURS AND SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF NFPA90A.
- B. EACH DAMPER SHALL INCLUDE A 165F (74C) FUSIBLE LINK AND SHALL BE LABELLED FOR USE IN DYNAMIC SYSTEMS. THE DAMPER SHALL BE RATED FOR DYNAMIC CLOSURE AT 2000FFM (10.16M/S) AND 4 INCHES W.G. (1 KPA) STATIC PRESSURE AND SHALL BE RATED TO CLOSE WITH AIRFLOW IN EITHER DIRECTION.
- C. EACH DYNAMIC FIRE DAMPER SHALL INCLUDE A STEEL SLEEVE AND MOUNTING ANGLES FURNISHED BY THE DAMPER MANUFACTURER TO ENSURE APPROPRIATE INSTALLATION. SUBMITTALS INFORMATION SHALL INCLUDE THE FIRE PROTECTION RATING, MAXIMUM VELOCITY/PRESSURE RATINGS AND THE MANUFACTURER'S UL INSTALLATION INSTRUCTIONS. THE DAMPERS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S UL INSTALLATION INSTRUCTIONS.
- D. ACCEPTABLE PRODUCT: RUSKIN DDB22/DDB23, NCA, VENTEX, PRICE, CORNOLLED AIR.
- 7.6 COMBINATION FIRE/SMOKE DAMPERS**
- A. MANUFACTURERS: RUSKIN, GREENHECK, PRICE, NALOR
- B. COMBINATION FIRE/SMOKE DAMPERS, COMPLETE WITH SLEEVES AND OPERATORS, DESIGNED AND TESTED TO MEET BOTH UL555 REQUIREMENTS FOR FIRE DAMPERS AND UL555S FOR LEAKAGE CLASS 1 RATED SMOKE DAMPERS. PROVIDE WITH END SWITCHES. CONSTRUCT FRAME FROM 1.6MM (1/16 GAUGE) GALVANIZED STEEL. CONSTRUCT SINGLE PIECE CONSTRUCTION AIR FOIL BLADES FROM 2.0MM (1/16 GAUGE) GALVANIZED STEEL WITH STAINLESS STEEL SLEEVE BEARINGS, SQUARE PLATED STEEL AXLES AND CONCEALED LINKAGES. USE STAINLESS STEEL SPRING. DESIGN FOR OPERATOR MOUNTED OUT OF THE AIR STREAM. CONFORM TO UL STANDARD 207. PROVIDE A SNAP DISC. DESIGN FOR OPERATOR MOUNTED OUT OF AIR STREAM. PROVIDE DAMPER ACTUATORS FOR COMPLETE CUL LISTED AND TESTED DAMPER ASSEMBLY.
- C. USE ONLY FIRE DAMPER ASSEMBLIES TESTED IN ACCORDANCE WITH CAN4 S92
- M "STANDARD METHOD OF FIRE TEST OF FIRE DAMPER ASSEMBLIES" AND LISTED IN MOST RECENT ULC "LIST OF EQUIPMENT AND MATERIALS" OR BY ANOTHER RECOGNIZED INDEPENDENT TESTING AND CERTIFICATION AGENCY ACCEPTANCE TO THE CONSULTANT. LABEL EACH DAMPER TO INDICATE COMPLIANCE WITH THESE REQUIREMENTS.
- D. LINKS SHALL COMPLY WITH ULC 5505 "STANDARD FOR FUSIBLE LINKS FOR FIRE PROTECTION SERVICE".
- E. FABRICATE ALL DAMPERS FROM GALVANIZED STEEL EXCEPT IN COPPER, STAINLESS STEEL OR ALUMINUM DUCT SYSTEMS. IN THESE SYSTEMS, USE ALL STAINLESS STEEL CONSTRUCTION.
- F. FIRE PROTECTION RATINGS OF DAMPER ASSEMBLIES SHALL COMPLY WITH ONTARIO BUILDING CODE REQUIREMENTS FOR FIRE RESISTANCE RATINGS OF THE FIRE SEPARATIONS THROUGH WHICH THE PROTECTED OPENINGS PASS. PROVIDE AN APPROVAL LABEL, STATING THE FIRE RATING, FROM A

## HVAC SPECIFICATIONS

- RECOGNIZED INDEPENDENT TESTING LABORATORY ACCEPTABLE TO THE CONSULTANT, ON EACH ASSEMBLY.
- G. PROVIDE WITH EACH DAMPER, DETAILED INSTALLATION INSTRUCTIONS. INCLUDE ILLUSTRATIONS AND ADEQUATE INFORMATION TO ATTAIN PROPER AND SAFE INSTALLATION OF THE SMOKE/FIRE DAMPER ASSEMBLY.
- H. DAMPER TO COME COMPLETE WITH OPTIONAL 120V TO 24V TRANSFORMER AND DUCT SMOKE DETECTOR. ELECTRICAL DIVISION TO WIRE COMPONENTS.
- 7.6 DUCT ACCESS DOORS**
- A. FABRICATE TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, AND AS INDICATED.
- B. FABRICATION: RIGID AND CLOSE-FITTING OF GALVANIZED STEEL WITH SEALING GASKETS AND QUICK FASTENING LOCKING DEVICES. FOR INSULATED DUCT WORK, INSTALL MINIMUM 1" (25 MM) THICK INSULATION WITH SHEET METAL COVER.
- LESS THAN 12" (300 MM ) SQUARE: SECURE WITH SASH LOCKS.
  - UP TO 18" (450 MM) SQUARE: PROVIDE TWO HINGES AND TWO SASH LOCKS.
  - UP TO 24" X 48" (600 X 1200 MM): THREE HINGES AND TWO COMPRESSION LATCHES WITH 1/200 MM INSIDE HANDLES.
- C. LARGER SIZES: PROVIDE AN ADDITIONAL HINGE.
- C. ACCESS DOORS WITH SHEET METAL SCREW FASTENERS ARE NOT ACCEPTABLE.
- D. ACCEPTABLE MANUFACTURER: ACUDOOR, DURO-DYNE, DYN-AIR, NALOR, KRUEGER
- 7.7 DUCT TEST HOLES**
- A. PROVIDE TEST PORTS TO SUIT INTENDED APPLICATION, (IE. INSULATED/UNINSULATED DUCT, ROUND/RECTANGULAR DUCT).
- B. TEMPORARY TEST HOLES: CUT OR DRILL IN DUCTS AS REQUIRED. CAP WITH NEAT PATCHES, NEOPRENE PLUGS, THREADED PLUGS, OR THREADED OR TWIST-ON METAL CAPS.
- C. PERMANENT TEST HOLES: FACTORY FABRICATED, AIR TIGHT FLANGED FITTINGS WITH SCREW CAP. PROVIDE EXTENDED NECK FITTINGS TO CLEAR INSULATION.
- D. ACCEPTABLE MANUFACTURERS: AIR POWER CO..
- 7.8 FLEXIBLE DUCT CONNECTIONS**
- A. FABRICATE TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, AND AS INDICATED.
- MIL-C-20686B PARA. 4.4.3, 4.4.4 (OIL AND HYDRO CARBON RESISTANCE)
  - UL CERTIFIED NFPA 701 TESTS FOR FLAME PROPAGATION OF FABRICS AND FILM.
  - 10/120 ASTM E84 FLAME/SMOKE RATING.
  - 40F TO 250F CONTINUOUS TEMPERATURE RANGE.
  - 5 WHITE WOVEN FIBERGLASS COLOUR
  - GALVANIZED STEEL CONFORMING TO ASTM-A-525 G 60 OR BETTER
- B. ACCEPTABLE MANUFACTURERS: DURO-DYNE, DDFDC.
- 7.9 HANGERS AND SUPPORTS**
- A. FABRICATE STRAP HANGERS TO SAME MATERIAL AS DUCT. HANGER CONFIGURATION TO SMACNA DETAILS. 20" (500 MM) IS MAXIMUM DUCT SIZE TO BE SUPPORTED BY STRAP HANGERS.
- B. ROD AND ANGLE HANGERS: GALVANIZED STEEL TO SMACNA DETAILS.
- C. HANGER ATTACHMENTS: MANUFACTURED CONCRETE INSERTS, EXPANSION SHIELDS AND BOLTED STEEL CLAMPS. DO NOT WELD RODS TO STEEL DECKS OR USE POWDER ACTUATED FASTENERS.
- 7.10 ACOUSTIC LINING**
- MANUFACTURER: ARMACELL AP ARMAFLEX SA
- COMPLIANCE: ASTM C54, ASTM E84, UL-C-102, NFPA 90A, ASTM C1534, ASTM D1056
- THICKNESS: 25mm (1") THICK
- THERMAL CONDUCTIVITY: 0.245 BTU-in/hr-Sq-Ft = F AT 75 F (0.0353 W/mk AT 24 C)
- PERMEABILITY: 0.05 PERM-IN
- MAXIMUM FLAME SPREAD INDEX: 25
- MAXIMUM SMOKE DEVELOPMENT INDEX: 50
- WATER ABSORPTION: 0.2% BY VOLUME
- MAXIMUM SERVICE TEMPERATURE: 180 F (82 C)
- MINIMUM SERVICE TEMPERATURE: -30 F (34 C)
- EROSION RESISTANCE: ASTM C1071.
- 7.11 DUCT SEALANT**
- A. GENERAL: LOW VOC, WATER BASED SEALANT, NON-TOXIC, NON-COMBUSTIBLE, NON-FLAMMABLE, AND TESTED IN ACCORDANCE WITH CAN4/ULC-S102. FLAME SPREAD SHALL NOT EXCEED 25 AND SMOKE DEVELOPED SHALL NOT EXCEED 50.
- B. ACCEPTABLE PRODUCTS: MULTI-PURPOSE DUCT SEALANT AS MANUFACTURED BY TRANS CONTINENTAL EQUIPMENT, DURO DYNE SWB DUCT SEALER, IRON SEAL AS SUPPLIED BY ALPHA SHEET METAL CO., OR UNI-GRIP DUCT SEALER FROM UNITED MCGILL CORPORATION.
- 7.12 ELECTRONIC DAMPER ACTUATORS**
- A. MANUFACTURED, BRAND LABELED OR DISTRIBUTED BY BELIMO OR APPROVED EQUIVALENT.
- B. SIZE FOR TORQUE REQUIRED FOR DAMPER SEAL AT LOAD CONDITIONS.
- C. COUPLING: V-BOLT DUAL NUT CLAMP WITH A V-SHAPED, TOOTHED CRADLE.
- D. MOUNTING: ACTUATORS SHALL BE CAPABLE OF BEING MECHANICALLY AND ELECTRICALLY PARALLELED TO INCREASE TORQUE IF REQUIRED.
- E. OVERLOAD PROTECTION: ELECTRONIC OVERLOAD OR DIGITAL ROTATION-SENSING CIRCUITRY WITHOUT THE USE OF END SWITCHES TO PREVENT ANY DAMAGE TO THE ACTUATOR DURING A STALL CONDITION.
- F. FAIL-SAFE OPERATION: MECHANICAL, SPRING-RETURN MECHANISM.
- G. POWER REQUIREMENTS (SPRING RETURN): 120 V AC, MAXIMUM 10 VA AT 24-V AC OR 6 W AT 24-V DC.
- H. PROPORTIONAL ACTUATORS SHALL BE FULLY PROGRAMMABLE. CONTROL INPUT, POSITION FEEDBACK AND RUNNING TIME SHALL BE FACTORY OR FIELD PROGRAMMABLE BY USE OF EXTERNAL COMPUTER SOFTWARE DIAGNOSTIC FEEDBACK SYSTEM. PROVIDES INDICATIONS OF HUNTING OR OSCILLATION, MECHANICAL OVERLOAD AND MECHANICAL TRAVEL. PROGRAMMING SHALL BE THROUGH AN EEPROM WITHOUT THE USE OF ACTUATOR MOUNTED SWITCHES.
- I. TEMPERATURE RATING: -22 TO +122F (-30 TO +50C)
- J. HOUSING: MINIMUM REQUIREMENT NEMA TYPE 2 MOUNTED IN ANY ORIENTATION.
- K. AGENCY LISTING: ISO 9001, CULUS, AND CSA C22.2 NO. 24-93.
- L. THE MANUFACTURER SHALL WARRANT ALL COMPONENTS FOR A PERIOD OF 5 YEARS FROM THE DATE OF PRODUCTION, WITH THE FIRST TWO YEARS UNCONDITIONAL.
- 8 TESTING, ADJUSTING, BALANCING**
- 8.1 PREPARATION**
- A. PROVIDE INSTRUMENTS REQUIRED FOR TESTING, ADJUSTING, AND BALANCING
- B. PROVIDE INSTRUMENTS AVAILABLE TO CONSULTANT TO FACILITATE SPOT CHECKS DURING TESTING.
- C. PROVIDE ADDITIONAL BALANCING DEVICES AS REQUIRED.
- 8.2 INSTALLATION TOLERANCES**
- A. AIR HANDLING SYSTEMS: ADJUST TO WITHIN PLUS OR MINUS 5 PERCENT OF DESIGN FOR SUPPLY SYSTEMS AND PLUS OR MINUS 5 PERCENT OF DESIGN FOR RETURN AND EXHAUST SYSTEMS.
- B. AIR OUTLETS AND INLETS: ADJUST TOTAL TO WITHIN PLUS 5 PERCENT AND MINUS 5 PERCENT OF DESIGN TO SPACE. ADJUST OUTLETS AND INLETS IN SPACE TO WITHIN PLUS OR MINUS 5 PERCENT OF DESIGN.
- C. HYDRONIC SYSTEMS: ADJUST TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN.
- 8.3 ADJUSTING**
- A. ENSURE RECORDED DATA REPRESENTS ACTUAL MEASURED OR OBSERVED CONDITIONS.
- B. PERMANENTLY MARK SETTINGS OF VALVES, DAMPERS, AND OTHER ADJUSTMENT DEVICES ALLOWING SETTINGS TO BE RESTORED. SET AND LOCK MEMORY STOPS.
- C. AFTER ADJUSTMENT, TAKE MEASUREMENTS TO VERIFY BALANCE HAS NOT BEEN DISRUPTED OR THAT SUCH DISRUPTION HAS BEEN RECTIFIED.
- D. LEAVE SYSTEMS IN PROPER WORKING ORDER, REPLACING BELT GUARDS, CLOSING ACCESS DOORS, CLOSING DOORS TO ELECTRICAL SWITCH BOXES, AND RESTORING THERMOSTATS TO SPECIFIED SETTINGS.
- E. AT FINAL INSPECTION, RECHECK RANDOM SELECTIONS OF DATA RECORDED IN

## HVAC SPECIFICATIONS

- REPORT, RECHECK POINTS OR AREAS AS SELECTED AND WITNESSED BY THE OWNER.
- F. CHECK AND ADJUST SYSTEMS APPROXIMATELY SIX MONTHS AFTER FINAL ACCEPTANCE AND SUBMIT REPORT.
- 9.4 AIR SYSTEM PROCEDURE**
- A. ADJUST AIR HANDLING MULTI-ZONE DAMPER DISTRIBUTION SYSTEMS TO PROVIDE REQUIRED OR DESIGN SUPPLY, RETURN, AND EXHAUST AIR QUANTITIES AT SITE ALTITUDE. ADJUST EAV DISTRIBUTION SYSTEM TO PROVIDE REQUIRED OR DESIGN SUPPLY, RETURN, OUTDOOR AIR, AND EXHAUST AIR QUANTITIES AT SITE ALTITUDE.
- B. MAKE AIR QUANTITY MEASUREMENTS IN DUCTS BY PITOT TUBE TRAVERSE OF ENTIRE CROSS-SECTIONAL AREA OF DUCT.
- C. MEASURE AIR QUANTITIES AT AIR INLETS AND OUTLETS.
- D. ADJUST DISTRIBUTION SYSTEM TO OBTAIN UNIFORM SPACE TEMPERATURES FREE FROM OBJECTIONABLE DRAFTS AND NOISE.
- E. USE BRANCH VOLUME CONTROL DAMPERS AND SPLITTERS TO REGULATE AIR QUANTITIES. DEVICES AT AIR OUTLETS MAY BE USED ONLY TO THE EXTENT THAT ADJUSTMENTS DO NOT CREATE OBJECTIONABLE AIR MOTION OR SOUND LEVELS.
- F. VARY TOTAL SYSTEM AIR QUANTITIES BY ADJUSTMENT OF FAN SPEEDS. ADJUST AIRFLOW TO DESIGN QUANTITY. PROVIDE DRIVE CHANGES AS REQUIRED. MAKE ALLOWANCES FOR LOADING OF FILTERS TO 50% OF MANUFACTURERS' RECOMMENDATIONS FOR FINAL PRESSURE AT FANS WITH FIRED SPEED DRIVES AND TO 100% OF MANUFACTURERS' RECOMMENDATIONS FOR FINAL PRESSURE AT FANS WITH VARIABLE SPEED DRIVES.
- G. PROVIDE SYSTEM SCHEMATIC WITH REQUIRED AND ACTUAL AIR QUANTITIES RECORDED AT EACH OUTLET OR INLET.
- H. MEASURE STATIC AIR PRESSURE CONDITIONS ON AIR SUPPLY UNITS, INCLUDING FILTER AND COIL. PRESSURE DROPS, AND TOTAL PRESSURE ACROSS THE FAN.
- I. ADJUST OUTSIDE AIR AUTOMATIC DAMPERS, OUTSIDE AIR, RETURN AIR, AND EXHAUST DAMPERS FOR DESIGN CONDITIONS.
- J. MEASURE TEMPERATURE CONDITIONS ACROSS OUTSIDE AIR, RETURN AIR, AND EXHAUST DAMPERS TO CHECK LEAKAGE.
- K. WHERE MODULATING DAMPERS ARE PROVIDED, TAKE MEASUREMENTS AND BALANCE AT EXTREME CONDITIONS. BALANCE VARIABLE VOLUME SYSTEMS AT MAXIMUM AIR FLOW RATE, FULL COOLING, AND AT MINIMUM AIR FLOW RATE, FULL HEATING.
- L. CHECK MULTI-ZONE UNITS FOR MOTORIZED DAMPER LEAKAGE. ADJUST AIR QUANTITIES WITH MIXING DAMPERS SET FIRST FOR COOLING, THEN HEATING, THEN MODULATING.
- 10.5 WATER SYSTEM PROCEDURE**
- A. ADJUST WATER SYSTEMS TO PROVIDE REQUIRED OR DESIGN QUANTITIES.
- B. USE CALIBRATED VENTURI TUBES, ORIFICES, OR OTHER METERED FITTINGS AND PRESSURE GAUGES TO DETERMINE FLOW RATES FOR SYSTEM BALANCE. WHERE FLOW METERING DEVICES ARE NOT INSTALLED, BASE FLOW BALANCE ON TEMPERATURE DIFFERENCE ACROSS VARIOUS HEAT TRANSFER ELEMENTS IN THE SYSTEM.
- C. ADJUST SYSTEMS TO PROVIDE SPECIFIED PRESSURE DROPS AND FLOWS THROUGH HEAT TRANSFER ELEMENTS PRIOR TO THERMAL TESTING. PERFORM BALANCING BY MEASUREMENT OF TEMPERATURE DIFFERENTIAL IN CONJUNCTION WITH AIR BALANCING.
- D. EFFECT SYSTEM BALANCE WITH AUTOMATIC CONTROL VALVES FULLY OPEN TO HEAT TRANSFER ELEMENTS.
- E. EFFECT ADJUSTMENT OF WATER DISTRIBUTION SYSTEMS BY MEANS OF BALANCING COCKS, VALVES, AND FITTINGS. DO NOT USE SERVICE OR SHUT-OFF VALVES FOR BALANCING UNLESS INDEXED FOR BALANCE POINT.
- F. WHERE AVAILABLE PUMP CAPACITY IS LESS THAN TOTAL FLOW REQUIREMENTS OR INDIVIDUAL SYSTEM PARTS, FLOW IN ONE PART MAY BE SIMULATED BY TEMPORARY RESTRICTION OF FLOW TO OTHER PARTS.

Client  
Halton District School Board  
2050 Guelph Line  
Burlington, Ontario

## T.A. BLAKELOCK H.S. RENOVATION

1160 Rebecca Street, Oakville, ON  
L6L 1Y9

Architect

sn/der

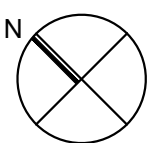
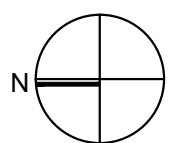
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Mechanical and Electrical Consultants  
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Tel: 905-523-6069

Key Plan N.T.S.



Project North True North

No.	Revisions	Date
4.	Mechanical Addendum No. 01	2024 04 17

**T.A. BLAKELOCK H.S.  
 RENOVATION**

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Project North True North

No. Revisions Date

No.	Revisions	Date
4.	Mechanical Addendum No. 01	2024 04 17
3.	Issued for Bids	2024 04 09
2.	Issued for Permit	2024 03 21
1.	Issued for Progress	2024 03 12
No.	Issue	Date

General Contractor shall check and verify all dimensions and report all errors and omissions to the Architect. Do not scale the drawings. Drawings shall not be used for construction purposes until issued by the Architect for construction.

Drawing Title:  
**PROPOSED PLUMBING  
 & DRAINAGE PLAN**

Scale: AS NOTED Date: 02/01/2024

Drawn by: C.M. Checked by: W.D.

Job No. Drawing No.

2215B

M101

**DRAWING NOTES**

- 1 ABOVE GROUND SANITARY PIPING FROM PLUMBING FIXTURES SHALL BE CONCEALED WITHIN ARCHITECTURAL KNEE WALL AND MILLWORK. CONNECT TO SURFACE-MOUNTED ACID NEUTRALIZING TANK, THEN DROP TO BURIED AS INDICATED. ALL PIPING UPSTREAM OF NEUTRALIZATION TANK SHALL BE ACID RESISTANT PVC, REFER TO MECHANICAL DETAILS.
- 2 DROP CONCEALED GAS, DCW, & DHW PIPING DOWN TO ARCHITECTURAL KNEE WALL AND DISTRIBUTE TO ALL PLUMBING FIXTURES & GAS TURRETS. REFER TO MECHANICAL DETAILS.
- 3 LOCATION OF NATURAL GAS SHUTOFF BUTTON. INSTALL IN GENERAL CONTRACTOR SUPPLIED AND INSTALLED MILLWORK/MODULAR CONTROL PANEL. REFER TO ELECTRICAL DRAWING E301 AND COORDINATE EXACT LOCATION WITH GENERAL CONTRACTOR
- 4 LOCATION OF FUME HOOD DRAIN, INSTALL PIPING ABOVE GRADE IN FUME HOOD CABINET C/W ACID RESISTANT P-TRAP. PENETRATE THROUGH FUME HOOD SIDEWALL TO MILLWORK AND CONNECT TO PIPING UPSTREAM OF ACID NEUTRALIZATION TANK.
- 5 CONNECT 15# DCW AND GAS TO NEW FUME HOOD (SUPPLIED & INSTALLED BY GENERAL DIVISION) AS PER MANUFACTURER'S INSTRUCTIONS. PIPING SHALL BE CONCEALED.
- 6 DROP 15# DCW & DHW PIPING CONCEALED WITHIN WALL. CONNECT TO SINK IN PREP ROOM E102 CONCEALED WITHIN MILLWORK.
- 7 NEW FUNNEL FLOOR DRAIN TO BE INSTALLED CONCEALED IN MILLWORK C/W TRAP SEAL PRIMER, PROVIDE SLOPED 2% GRAVITY CONDENSATE PIPING FROM EACH UNIT VENTILATOR IN THE SAME ROOM TO TERMINATE AT DRAIN WITH 25mm AIR GAP. CONDENSATE PIPE DROPS SHALL BE CONCEALED IN WALL OR WITH CUSTOM STEEL PIPE CHASE PAINTED TO MATCH WALL. REFER TO HVAC DRAWINGS FOR HUV LOCATIONS.

**DRAWING NOTES**

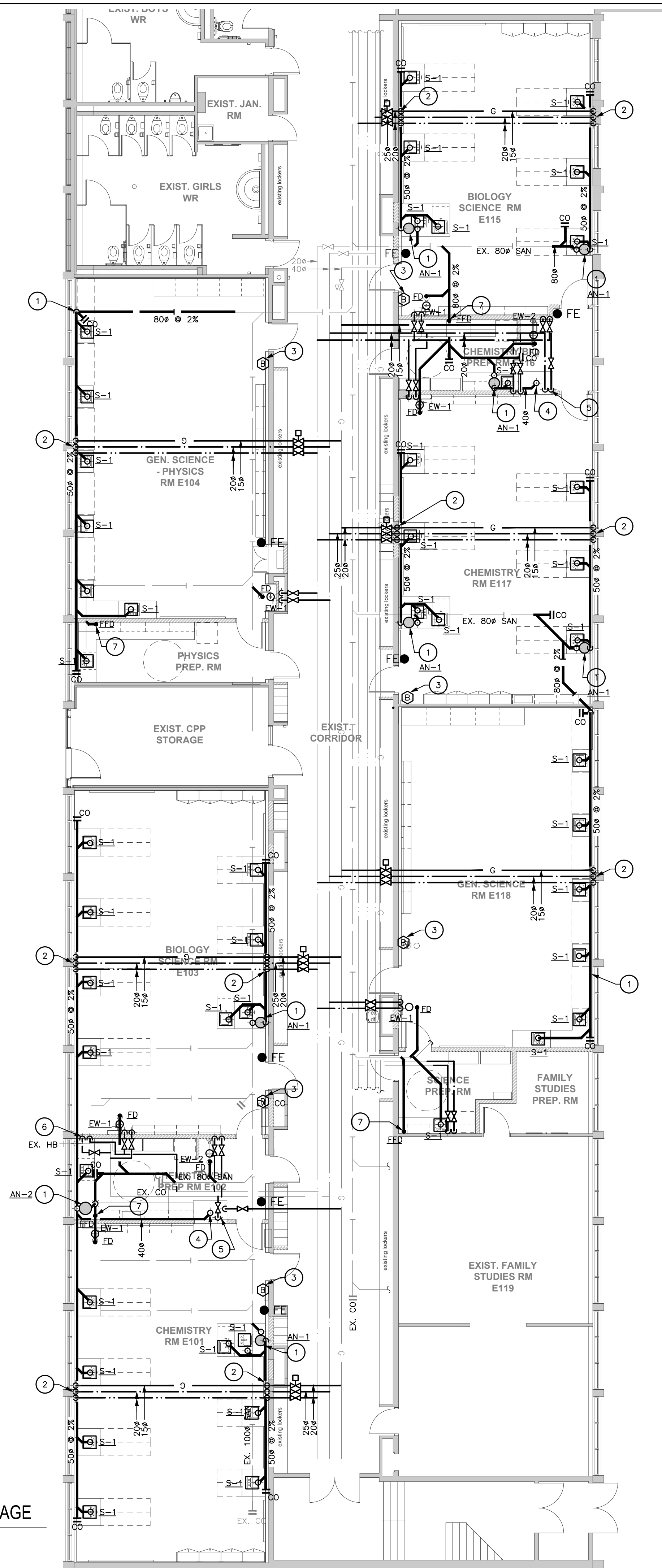
- 1 CONNECT TO EXISTING MAINS IN CORRIDOR. VERIFY EXACT LOCATIONS ON SITE.
- 2 DROP ABOVE GROUND SANITARY SERVING NEW SINK TO BURIED IN INDICATED LOCATION AND CONNECT TO EXISTING BURIED SANITARY LINE C/W STACK CLEANOUT. LOCATE EXACT EXISTING SANITARY LINE LOCATION BEFORE EXECUTING THIS WORK. REPORT TO ENGINEER OF ANY CONCERNS. NEW SINK SHALL BE VENTED TO NEAREST EX. PLUMBING VENT ON THIS FLOOR.
- 3 APPLY INSULATION TO EXISTING PIPE UNDERGOING ABATEMENT. COORDINATE WITH DEMOLITION CONTRACTOR FOR FULL EXTENT OF REINSULATION.

**DRAWING NOTES**

- 1 DROP CONCEALED GAS, DCW, & DHW PIPING DOWN TO ARCHITECTURAL KNEE WALL AND DISTRIBUTE TO ALL PLUMBING FIXTURES & GAS TURRETS. REFER TO MECHANICAL DETAILS.
- 2 LOCATION OF NATURAL GAS SHUTOFF BUTTON TO BE INSTALLED WITHIN MODULAR CONTROL PANEL (SEE ELECTRICAL DRAWINGS). WIRE TO NORMALLY OPEN SOLENOID VALVE IN CORRIDOR. REFER TO MECHANICAL SPECIFICATIONS.

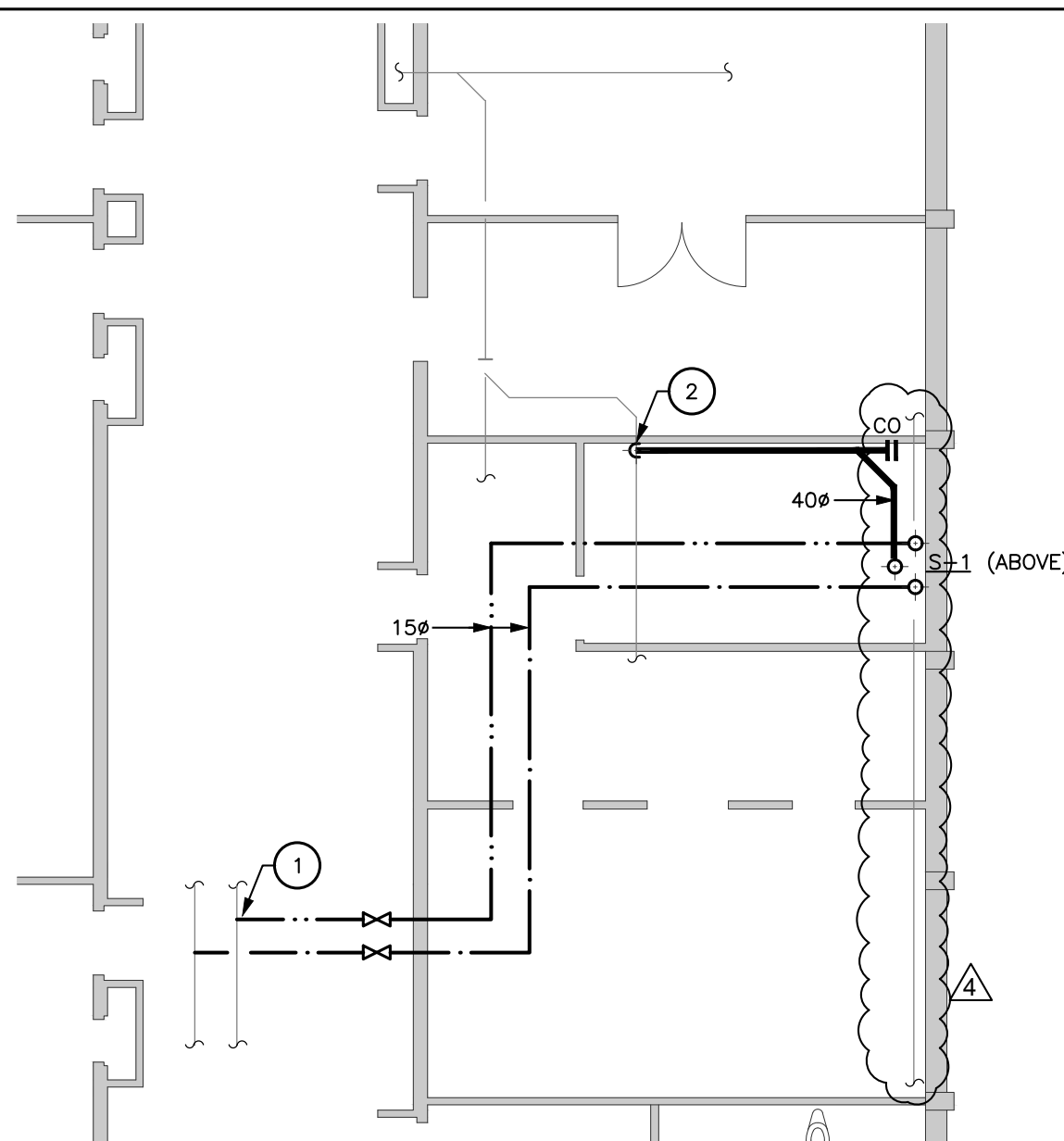
**AREA 1 - PROPOSED PLUMBING & DRAINAGE**

M101 1:100



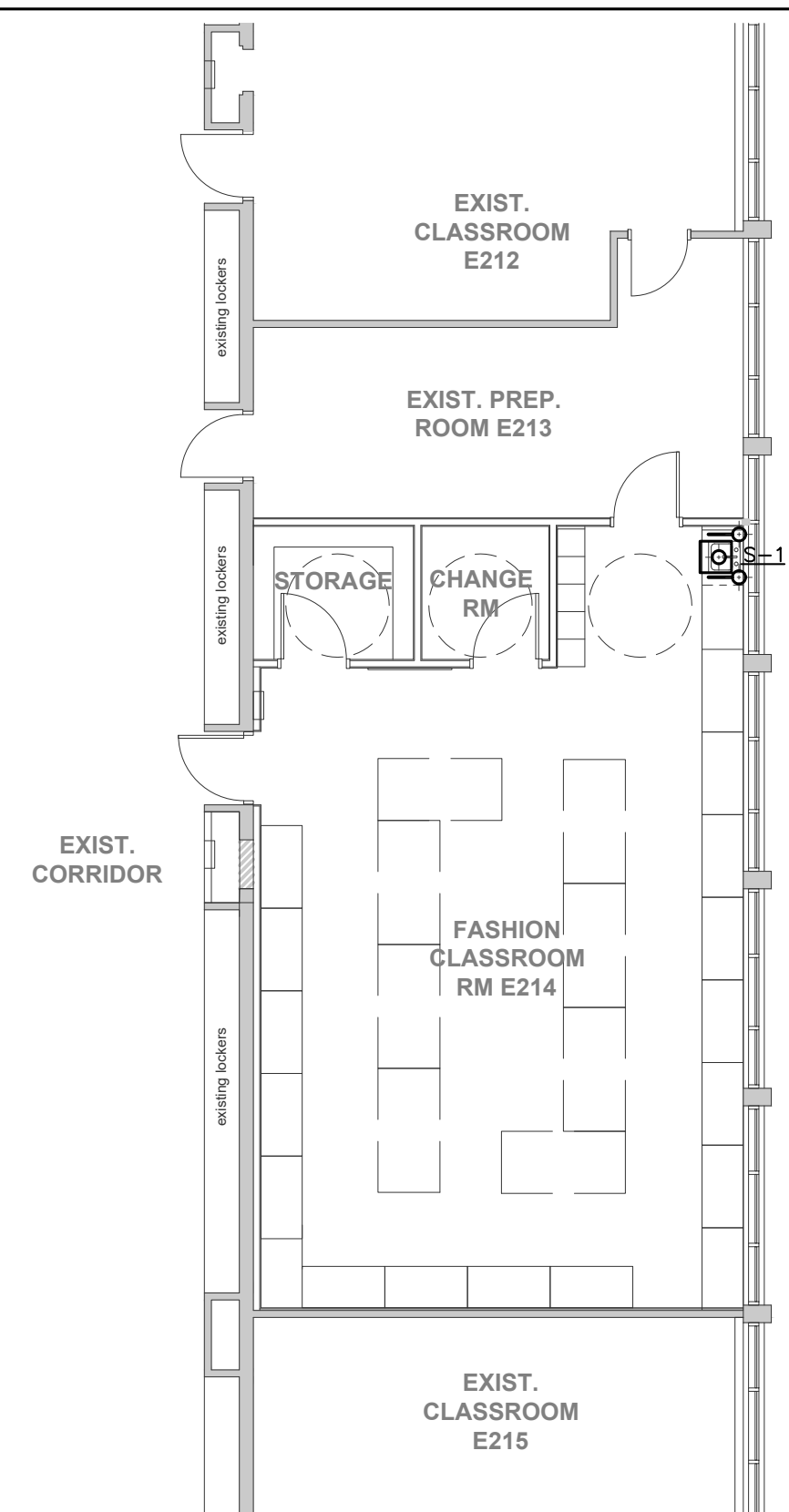
**AREA 3 (FLOOR BELOW) - PROPOSED P&D**

M101 1:100



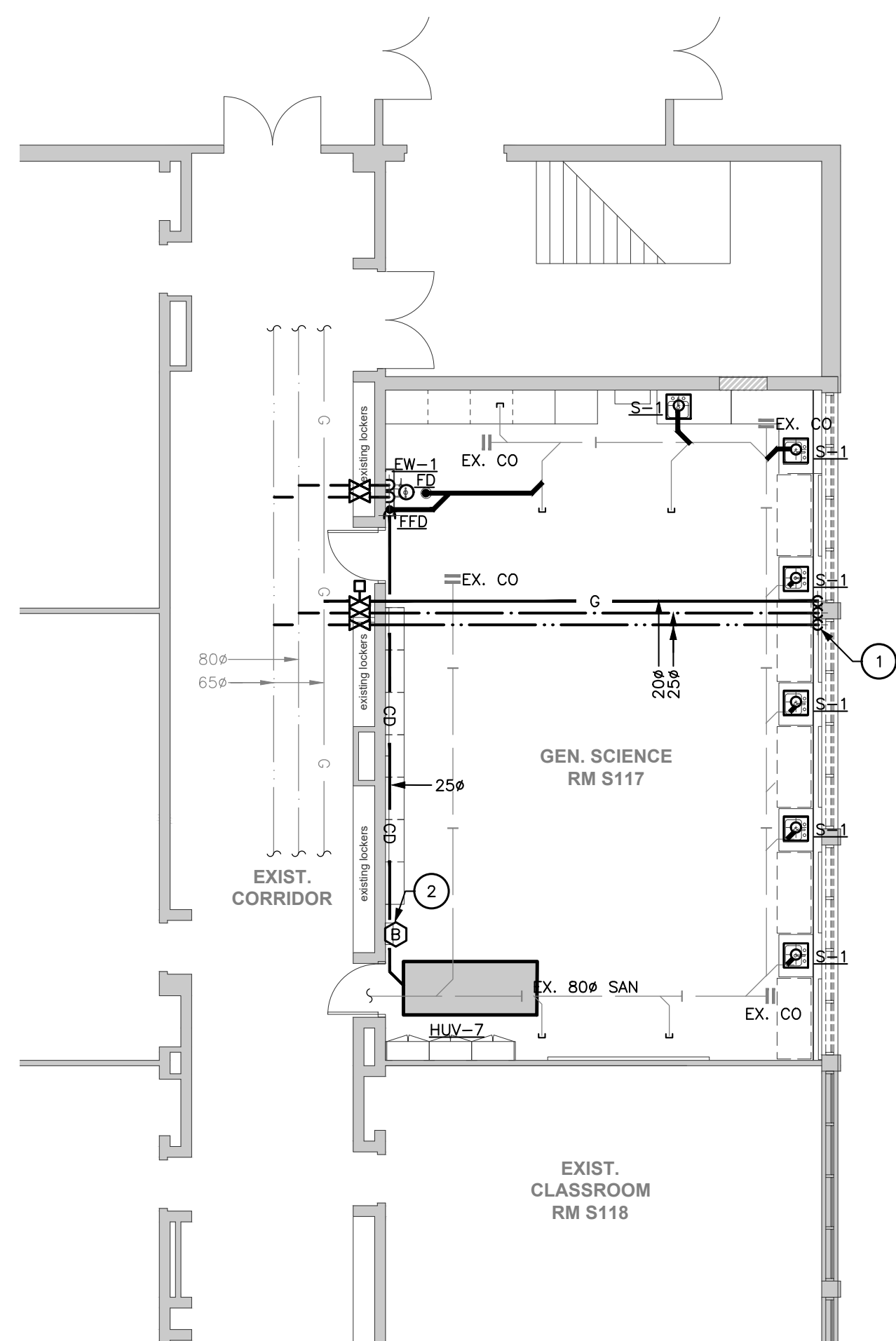
**AREA 3 - PROPOSED PLUMBING & DRAINAGE (LEVEL 1)**

M101 1:100



**AREA 2 - PROPOSED PLUMBING & DRAINAGE**

M101 1:100







## Electrical Addendum No. 01

**EXP Project:** ALL-22020201-A0 TA Blakelock HS Interior Renovation & Accessibility Upgrades, Phase II, 1160 Rebecca St, Oakville, ON L6L 1Y9

**Date:** April 17, 2024

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**Prepared By:** EXP Services Inc.

### **Requirements:**

The addendum forms part of the Contract Documents and amends the original Specifications and Drawings, as noted below.

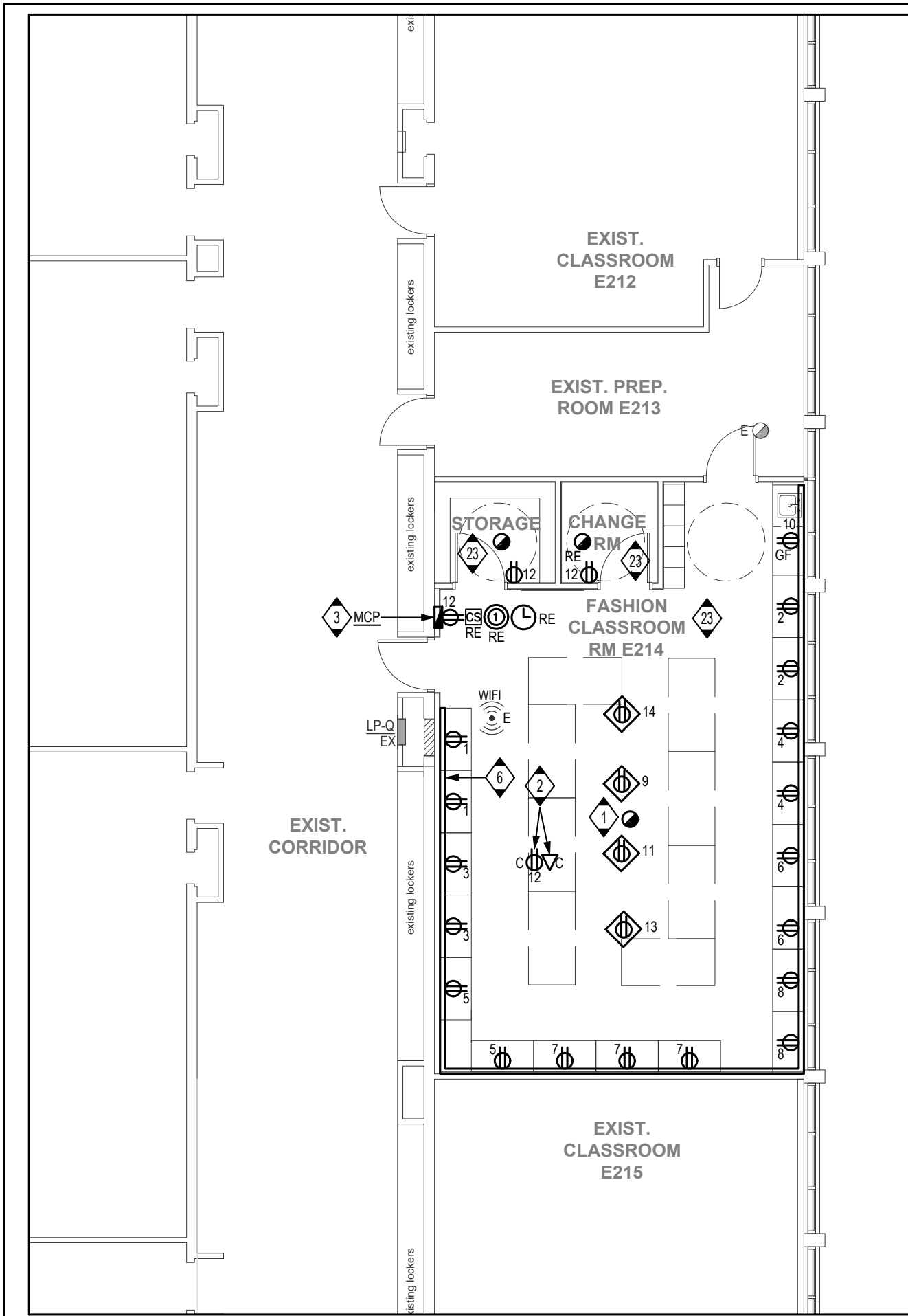
Ensure that all parties submitting bids are aware of all items included in this Addendum.

This Addendum consists of one (1) page plus appended documents.

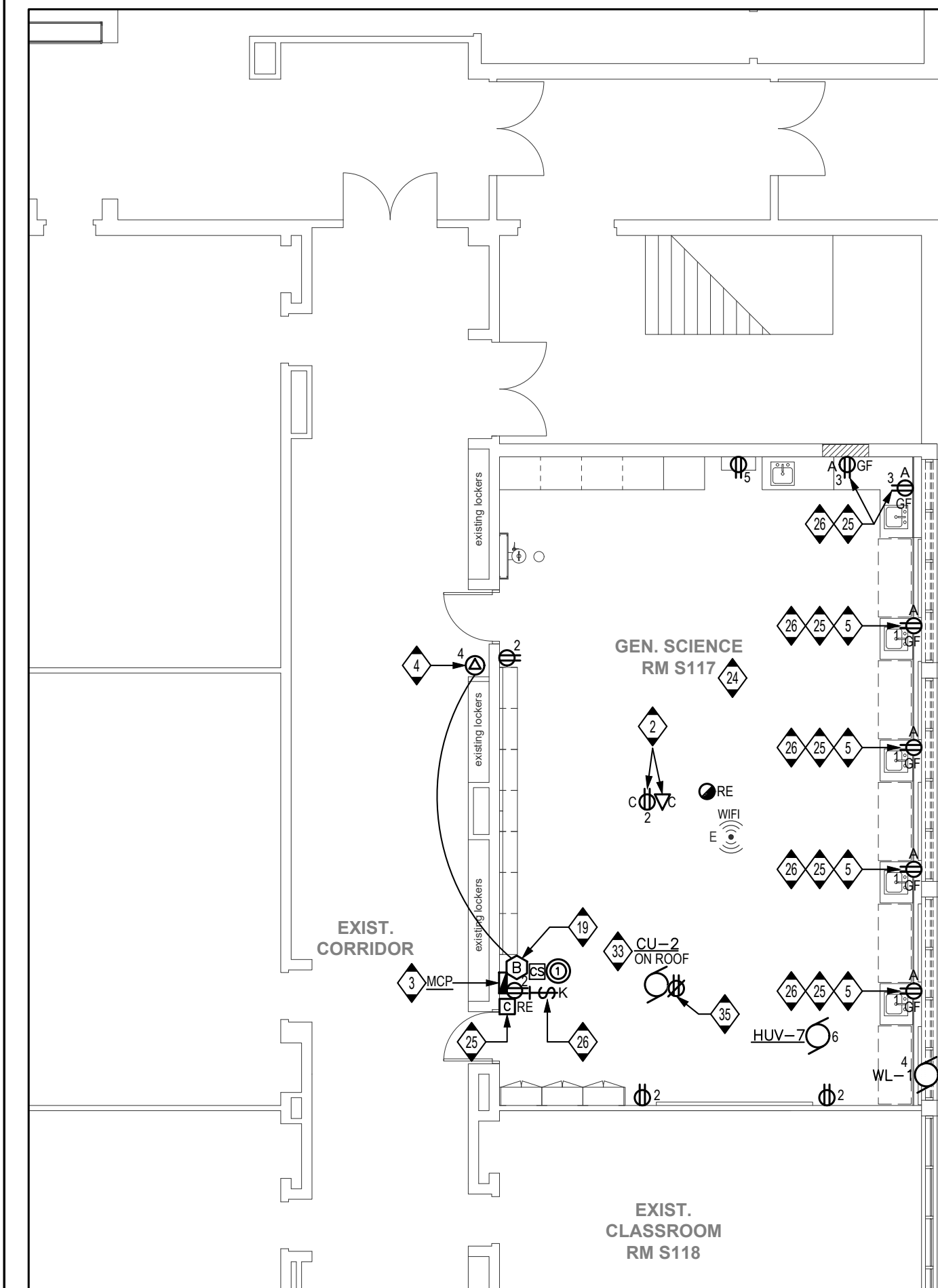
### **Amendments to Drawings**

1. **Drawing E301 – LEVEL 0 & 1 POWER & SYSTEMS RENOVATION PLANS**
  - .1 Drawing is issued with this addendum. Modifications include, but are not limited to the following:
  - .2 **Refer to 1/E301 – AREA 1 – RENOVATION POWER:**
    - .1 **ADD** Note 37 which reads:  
"PROVIDE 120V POWER TO COMBINATION SMOKE FIRE DAMPER (CSFD).  
REVIEW CSFD SHOP DRAWINGS PRIOR TO ROUGH-IN, LOW VOLTAGE TRANSFORMER AND DUCT SMOKE DETECTOR TO BE SUPPLIED WITH THE UNIT COORDINATE WITH MECHANICAL CONTRACTOR. CONNECT SMOKE DETECTOR TO THE CLOSETS FIRE ALARM ZONE. UPON ACTIVATION OF THE DETECTOR THE CSFD TO CLOSE AN ALARM NOTIFICATION SHALL BE INDICATED ON THE FIRE ALARM PANEL"

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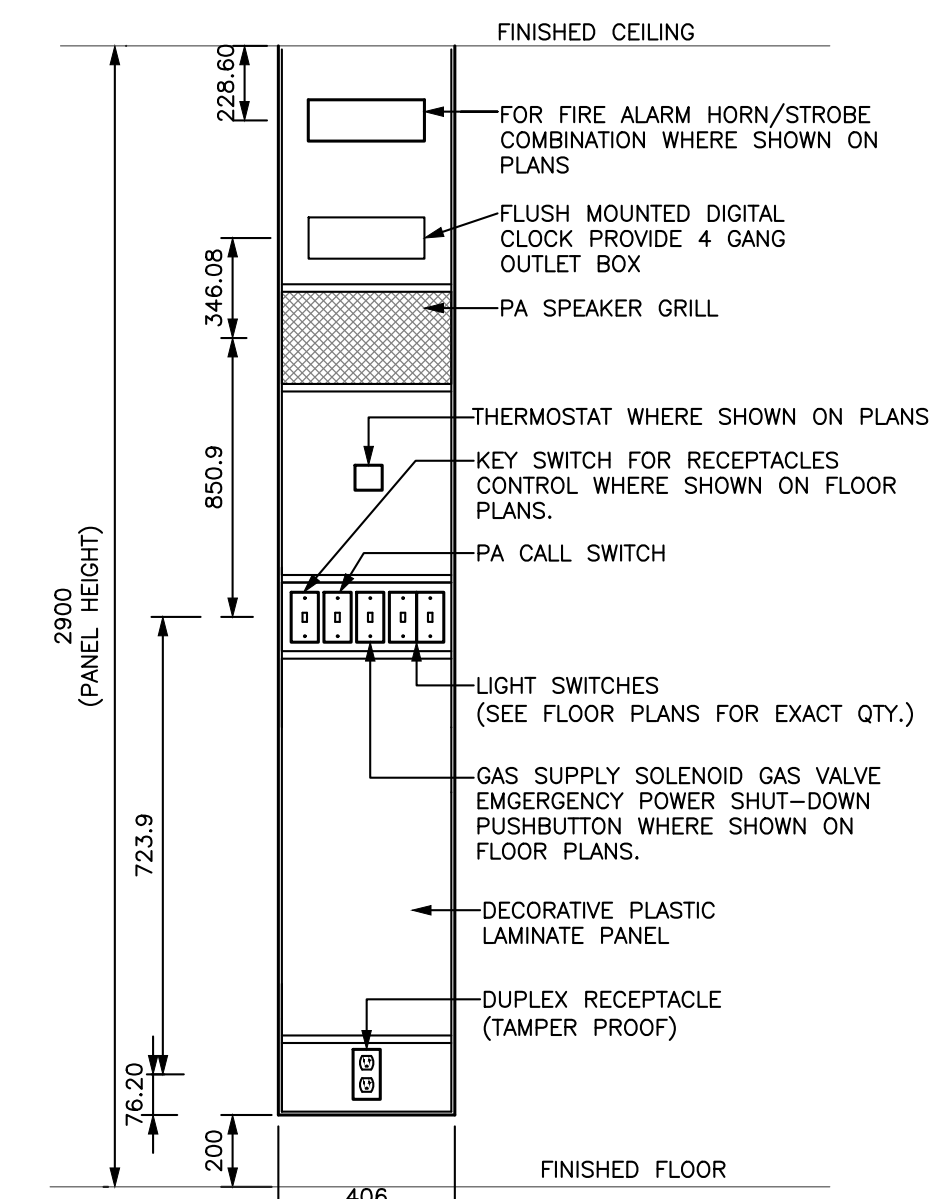
**3** AREA 3 - RENOVATION POWER  
E301 1:100



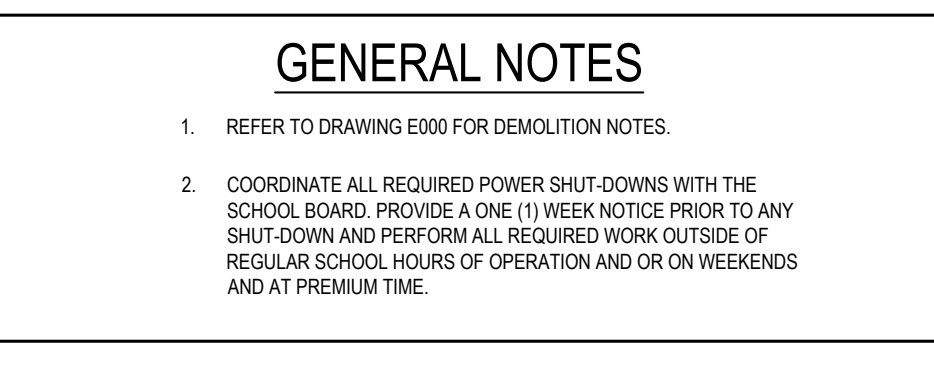
**2** AREA 2 - RENOVATION POWER  
E301 1:100

**DRAWING NOTES**

- 1 PROVIDE FOUR (4) POWER DROP PULLEY AT INDICATED LOCATION COORDINATE WITH ARCHITECT FOR EXACT LOCATION.
- 2 FOR CEILING MOUNTED PROJECTOR, CONFIRM EXACT LOCATION WITH GENERAL CONTRACTOR PRIOR TO ROUGH-INS. PROJECTOR SUPPLIED AND INSTALLED BY THE GENERAL CONTRACTOR.
- 3 MODULAR CONTROL PANEL BY GENERAL CONTRACTOR, REFER TO TYPICAL MILLWORK/MODULAR CONTROL PANEL DETAIL ON THIS DRAWING FOR ELECTRICAL SCOPE OF WORK ASSOCIATED WITH THIS PANEL.
- 4 MECHANICAL DIVISION SUPPLIED AND INSTALLED GAS SUPPLY SOLENOID VALVE IN CEILING SPACE. RUN AND CONNECT A 120V BRANCH CIRCUIT TO VALVE THROUGH MECHANICAL DIVISION SUPPLIED AND INSTALLED PUSHBUTTON AS SHOWN ON PLANS. PROVIDE A FIRE ALARM CONTROL RELAY (FACR) AND INTERLOCK WITH GAS VALVE POWER SUPPLY FOR AUTOMATIC POWER SHUT-OFF ON FIRE ALARM ACTIVATION. REFER TO DRAWING NOTE NO. 19 ON THIS DRAWING.
- 5 MOUNT FACING UP, ON TOP OF WINDOW SILL. REFER TO ARCHITECTURAL FOR DETAILS.
- 6 RECESSED RACEWAY ALONG WALL COMPLETE WITH DUPLEX RECEPTACLES AS SHOWN. CONFIRM EXACT TOTAL LENGTH ON SITE PRIOR TO ORDERING.
- 7 RUN A 120V BRANCH CIRCUIT AND CONNECT TO PREWIRED JUNCTION BOX INTEGRAL TO THE FUME HOOD LOCATED ON TOP OF FUME HOOD.
- 8 PROVIDE A NEW 15A-2P BREAKER IN AVAILABLE SPACES OR REMOVE EXISTING BREAKERS MADE SPARE FROM DEMOLITION IN EXISTING PANEL AND CONNECT NEW BREAKER TO NEW HUV UNIT.
- 9 UNLESS OTHERWISE INDICATED, ALL BRANCH CIRCUIT NUMBERS SHOWN IN THIS ROOM ARE FROM EXISTING RELOCATED PANEL "LP-E102". REUSE EXISTING SPARE BREAKERS AND EXISTING BREAKERS MADE SPARE FROM THE DEMOLITION OR PROVIDE NEW BREAKERS AS REQUIRED.
- 10 EXISTING RELOCATED LAB RECEPTACLES CONTROL CONTACTOR FROM EXISTING PREP. ROOM E102 FOR CIRCUITS Nos. 10, 11 AND 12 FROM EXISTING RELOCATED PANEL "LP-E102".  
REPLACE EXISTING LAMACOID NAMEPLATE WITH NEW WITH THE INSCRIPTION "BENCH RECEPTACLES CIRCUITS Nos. 10, 11 AND 12, BIOLOGY SCIENCE ROOM E102". REFER TO TYPICAL LAB RECEPTACLES CONTROL WIRING DIAGRAM ON THIS DRAWING.
- 11 EXISTING RELOCATED LAB RECEPTACLES CONTROL CONTACTOR FROM EXISTING PREP. ROOM E102 FOR CIRCUITS Nos. 14, 15 AND 16 FROM EXISTING RELOCATED PANEL "LP-E102".  
REPLACE EXISTING LAMACOID NAMEPLATE WITH NEW WITH THE INSCRIPTION "BENCH RECEPTACLES CIRCUITS Nos. 14, 15 AND 16, BIOLOGY SCIENCE ROOM E102". REFER TO TYPICAL LAB RECEPTACLES CONTROL WIRING DIAGRAM ON THIS DRAWING.
- 12 KEY SWITCH FOR LAB RECEPTACLES IN CHEMISTRY ROOM E102. MOUNT IN MILLWORK/MODULAR CONTROL PANEL. WIRE PER TYPICAL LAB RECEPTACLES CONTROL WIRING DIAGRAM ON THIS DRAWING. CONFIRM EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- 13 KEY SWITCH FOR LAB RECEPTACLES IN BIOLOGY SCIENCE ROOM E103. MOUNT IN MILLWORK/MODULAR CONTROL PANEL. WIRE PER TYPICAL LAB RECEPTACLES CONTROL WIRING DIAGRAM ON THIS DRAWING. CONFIRM EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- 14 UNLESS OTHERWISE INDICATED, ALL BRANCH CIRCUIT NUMBERS SHOWN IN THIS ROOM ARE FROM EXISTING RELOCATED PANEL "LP-E118". REUSE EXISTING SPARE BREAKERS AND EXISTING BREAKERS MADE SPARE FROM THE DEMOLITION OR PROVIDE NEW BREAKERS AS REQUIRED.
- 15 EXISTING RELOCATED LAB RECEPTACLES CONTROL CONTACTOR FROM EXISTING PREP. ROOM E105 FOR CIRCUITS Nos. 13 AND 15 FROM EXISTING RELOCATED PANEL "LP-E118".  
REPLACE EXISTING LAMACOID NAMEPLATE WITH NEW WITH THE INSCRIPTION "BENCH RECEPTACLES CIRCUITS Nos. 13 AND 15, GENERAL SCIENCE PHYSICS ROOM E104". REFER TO TYPICAL LAB RECEPTACLES CONTROL WIRING DIAGRAM ON THIS DRAWING.
- 16 KEY SWITCH FOR LAB RECEPTACLES CONTROLS IN CHEMISTRY ROOM E105. MOUNT IN MILLWORK/MODULAR CONTROL PANEL AND WIRE PER TYPICAL LAB RECEPTACLES CONTROL WIRING DIAGRAM ON THIS DRAWING. CONFIRM EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- 17 EXISTING RELOCATED LAB RECEPTACLES CONTROL CONTACTOR FROM EXISTING PREP. ROOM E105 FOR CIRCUITS Nos. 1 AND 5 FROM EXISTING RELOCATED PANEL "LP-U".  
REPLACE EXISTING LAMACOID NAMEPLATE WITH NEW WITH THE INSCRIPTION "BENCH RECEPTACLES CIRCUITS Nos. 1 AND 5 GENERAL SCIENCE ROOM S117". REFER TO TYPICAL LAB RECEPTACLES CONTROL WIRING DIAGRAM ON THIS DRAWING.
- 18 UNLESS OTHERWISE INDICATED, ALL BRANCH CIRCUIT NUMBERS SHOWN IN THIS ROOM ARE FROM EXISTING RELOCATED PANEL "LP-E118". REUSE EXISTING SPARE BREAKERS AND EXISTING BREAKERS MADE SPARE FROM THE DEMOLITION OR PROVIDE NEW BREAKERS AS REQUIRED.
- 19 EXISTING RELOCATED LAB RECEPTACLES CONTROL CONTACTOR FROM EXISTING PREP. ROOM E102 FOR CIRCUITS Nos. 19 AND 21 FROM EXISTING RELOCATED PANEL "LP-E118".  
REPLACE EXISTING LAMACOID NAMEPLATE WITH NEW WITH THE INSCRIPTION "BENCH RECEPTACLES CIRCUITS Nos. 19 AND 21 GENERAL SCIENCE ROOM E119". REFER TO TYPICAL LAB RECEPTACLES CONTROL WIRING DIAGRAM ON THIS DRAWING.
- 20 KEY SWITCH FOR LAB RECEPTACLES IN CHEMISTRY ROOM E118. MOUNT IN MILLWORK/MODULAR CONTROL PANEL AND WIRE PER TYPICAL LAB RECEPTACLES CONTROL WIRING DIAGRAM ON THIS DRAWING.
- 21 EXISTING RELOCATED LAB RECEPTACLES CONTROL CONTACTOR FROM EXISTING PREP. ROOM E105 FOR CIRCUITS Nos. 22, 23 AND 24 FROM EXISTING RELOCATED PANEL "LP-E118".  
REPLACE EXISTING LAMACOID NAMEPLATE WITH NEW WITH THE INSCRIPTION "BENCH RECEPTACLES CIRCUITS Nos. 22, 23 AND 24 CHEMISTRY ROOM E117". REFER TO TYPICAL LAB RECEPTACLES CONTROL WIRING DIAGRAM ON THIS DRAWING.
- 22 KEY SWITCH FOR LAB RECEPTACLES CONTROLS IN BIOLOGY SCIENCE ROOM E115. MOUNT IN MILLWORK/MODULAR CONTROL PANEL AND WIRE PER TYPICAL LAB RECEPTACLES CONTROL WIRING DIAGRAM ON THIS DRAWING. CONFIRM EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN.
- 23 WIRE NEW EXHAUST FAN EF-1 TO EXISTING PANEL LP-D. CIRCUIT No. 9-11.
- 24 WIRE NEW EXHAUST FAN EF-2 TO EXISTING RELOCATED PANEL LP-E118. CIRCUIT No. 25-27.
- 25 WIRE NEW CONDENSING UNIT CU-1 TO A NEW 80A-3P BREAKER IN EXISTING PANEL DP-E. REFER TO DRAWING E100 FOR EXISTING PANEL DP-E LOCATION.
- 26 WIRE NEW CONDENSING UNIT CU-2 TO A NEW 35A-2P BREAKER IN EXISTING PANEL DP-F. REFER TO DRAWING E100 FOR EXISTING PANEL DP-F LOCATION.
- 27 MOUNT RECEPTACLE ADJACENT CU-1 AND WIRE TO A NEW 20A-1P BREAKER IN EXISTING PANEL LP-BB. REFER TO DRAWING E100 FOR EXISTING PANEL LP-BB LOCATION.
- 28 MOUNT RECEPTACLE ADJACENT CU-2 AND WIRE TO A NEW 20A-1P BREAKER IN EXISTING PANEL LP-BB. REFER TO DRAWING E100 FOR EXISTING PANEL LP-BB LOCATION.
- 29 MODIFY AND EXTEND EXISTING P.A. AND CLOCK SYSTEMS WIRING ARE REQUIRED AND RE-CONNECT TO RELOCATED SPEAKER. CALL SWITCH AND CLOCK. TYPICAL FOR ALL EXISTING RELOCATED SPEAKERS, CALL SWITCHES AND CLOCKS.
- 30 PROVIDE 120V POWER TO COMBINATION SMOKE FIRE DAMPER (CSFD). REVIEW CSFD SHOP DRAWINGS PRIOR TO ROUGH-IN. LOW VOLTAGE TRANSFORMER AND DUCT SMOKE DETECTOR TO BE SUPPLIED WITH THE UNIT COORDINATE WITH MECHANICAL CONTRACTOR. CONNECT SMOKE DETECTOR TO THE CLOSEST FIRE ALARM ZONE. UPON ACTIVATION OF THE DETECTOR THE CSFD TO CLOSE AN ALARM NOTIFICATION SHALL BE INDICATED ON THE FIRE ALARM PANEL.
- 31 UNLESS OTHERWISE INDICATED, ALL BRANCH CIRCUIT NUMBERS SHOWN IN THIS ROOM ARE FROM EXISTING PANEL "LP-U". REUSE EXISTING SPARE BREAKERS AND EXISTING BREAKERS MADE SPARE FROM THE DEMOLITION OR PROVIDE NEW BREAKERS AS REQUIRED.

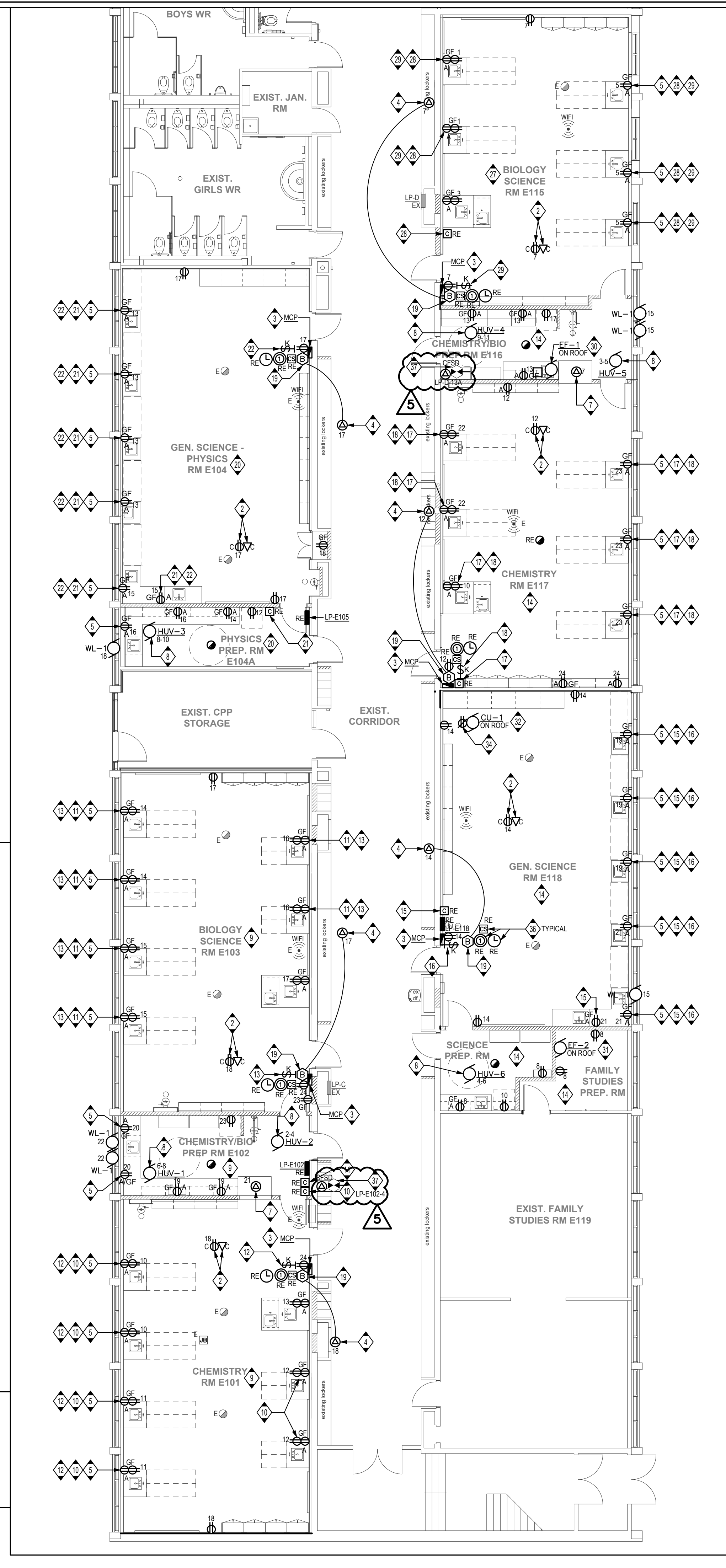


**4** TYPICAL MILLWORK/MODULAR CONTROL PANEL DETAIL  
E301 N.T.S.



**1** AREA 1 - RENOVATION POWER  
E301 1:100

- GENERAL NOTES**
1. REFER TO DRAWING E000 FOR DEMOLITION NOTES.
  2. COORDINATE ALL REQUIRED POWER SHUT-DOWNS WITH THE SCHOOL BOARD. PROVIDE A ONE (1) WEEK NOTICE PRIOR TO ANY SHUT-DOWN AND PERFORM ALL REQUIRED WORK OUTSIDE OF REGULAR SCHOOL HOURS OF OPERATION AND/OR ON WEEKENDS AND AT PREMIUM TIME.



Key Plan N.T.S.



Project North True North

No.	Revisions	Date
5	ISSUED FOR ADDENDUM 01	2024.04.16
4	ISSUED FOR BIDS	2024.04.09
3	ISSUED FOR PERMIT	2024.03.21
2	ISSUED FOR PROGRESS	2024.02.23
1	ISSUED FOR PROGRESS	2024.02.15
No.	Issue	Date

General Contractor shall check and verify all dimensions and report all errors and omissions to the Architect. Do not scale the drawings. Drawings shall not be used for construction purposes until issued by the Architect for construction.