3D ISOMETRIC VIEW(S)
FOR PRESENTATION ONLY

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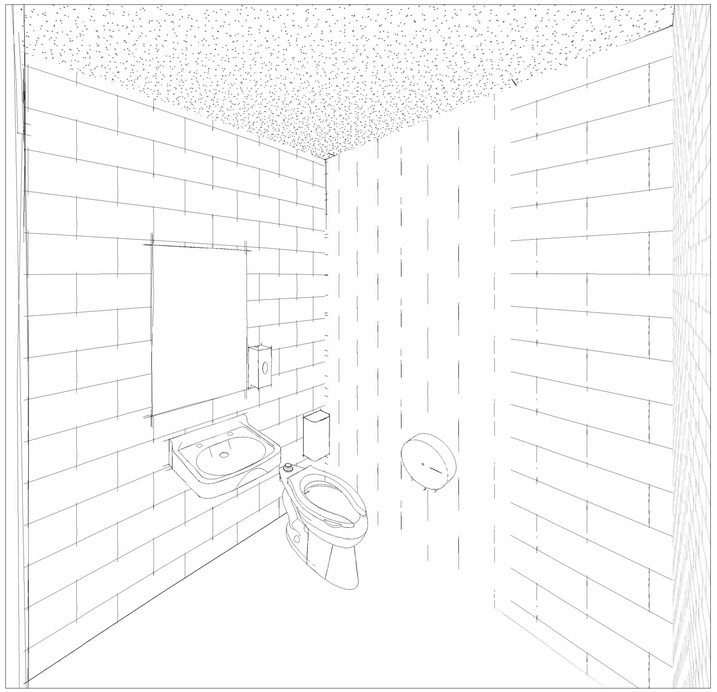
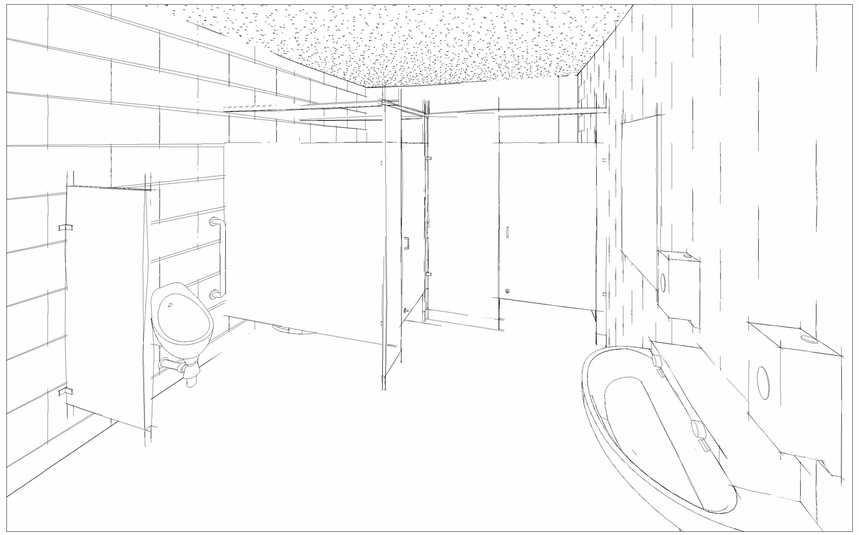
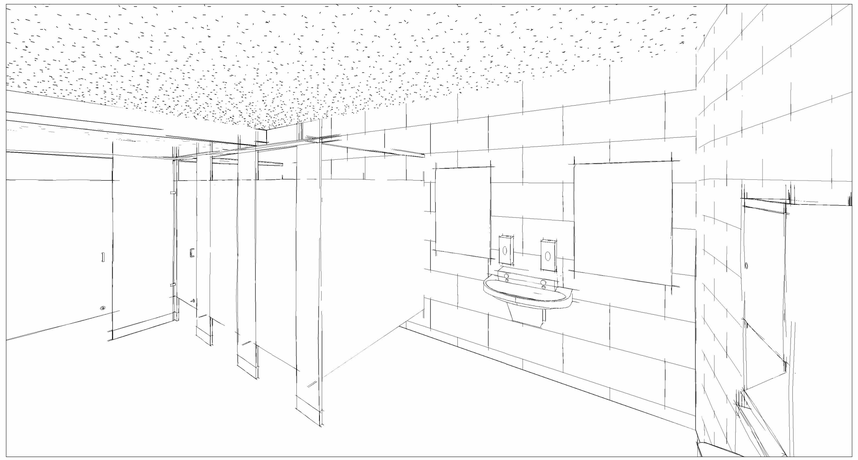


STAFF WASHROOM



BOYS WASHROOM



GIRLS WASHROOM

HWDSB

P02125 - Lake Avenue Elementary School

Washrooms & Changerooms Renovations

157 Lake Ave N, Hamilton ON

AMRA J ARCHITECTS INC.

E & M Consulting Engineers Inc.

MTE

project number: 24-28

DRAWING NO.: A0.01

DRAWING LIST

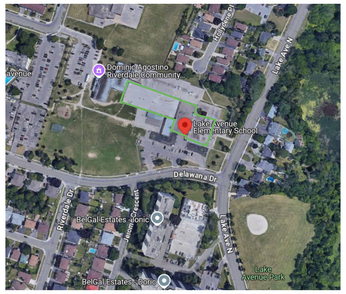
SHEET	ARCHITECTURAL DRAWINGS
A0.01	COVER PAGE
A1.01	SITE LOCATION, OBC MATRIX, GENERAL NOTES, LEGENDS, SCHEDULES
A1.02	KEY PLAN & STANDARDS
A1.03	DEMOLITION PLAN & NOTES
A1.04	PROPOSED PLAN, CEILING PLAN, LEGENDS
A2.01	INTERIOR ELEVATIONS, SECTIONS, SECTION DETAILS, SCHEDULES, DOOR & DOOR FRAME TYPE

	MECHANICAL DRAWINGS
M0-00	MECHANICAL LEGEND & DRAWING LIST
M1-00	PLUMBING SYSTEMS - DEMOLITIONPLAN
M1-01	HVAC SYSTEMS - DEMOLITION PLAN
M2-00	PLUMBING SYSTEMS- NEW ENLARGED PLAN
M2-01	HVAC SYSTEMS- NEW ENLARGED PLAN
M3-00	DETAIL
M4-00	MECHANICAL SPECIFICATIONS
ME1-00	MECHANICAL & ELECTRICAL SCHEDULES

	ELECTRICAL DRAWINGS
E0-00	ELECTRICAL LEGEND & DRAWING LIST
E1-01	ENLARGED PLANS DEMO - ELECTRICAL
E2-01	ENLARGED PLANS NEW - ELECTRICAL
E3-00	ELECTRICAL SPECIFICATIONS
ME1-00	MECHANICAL & ELECTRICAL SCHEDULES

	STRUCTURAL DRAWINGS
S1.0	GENERAL NOTES
S2.0	FRAMING PLAN WASHROOMS & CHANGEROOMS
S3.0	MASONRY SCHEDULES & TYPICAL DETAILS

Z:\Drawings\24-28 P02125 Lake Avenue Gym Washroom Renovations\24-28 DRAWINGS\24-28 Lake Ave Elementary School Washrooms & Changerooms Reno.rvt



SITE LOCATION

SCALE: N.T.S.

PARTITION SCHEDULE

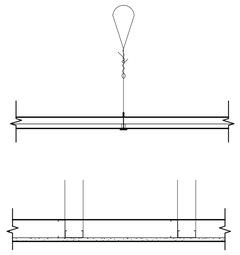
NEW PARTITIONS TO THE UNDERSIDE OF EXISTING STRUCTURAL SLAB ABOVE UNLESS NOTED OTHERWISE

P1 • +/- 3800MM HEIGHT 140MM CONCRETE BLOCK

P2 • +/- 3800MM HEIGHT 90MM CONCRETE BLOCK

P3 • +/- 3800MM HEIGHT 190MM CONCRETE BLOCK

CEILING SCHEDULE



ACT1 • 610 x 1220 ACOUSTIC CEILING TILES

GB1 • 64 STEEL STUD FRAMING @ 400MM O.C.
• 13 GYPSUM BOARD

REFLECTED CEILING PLAN LEGEND

REFER TO ELECTRICAL AND MECHANICAL DRAWINGS FOR DETAILED FIXTURE INFORMATION.

305 X 1220 (1'X4') LED FLAT PANEL LIGHITNG FIXTURE

NEW 610 X 1220 ACOUSTIC CEILING TILES IN SUSPENDED PREFINISHED METAL GRID

NEW GYPSUM BOARD CEILING

NEW DIFFUSER

NOTE:
1. LIGHT FIXTURES TO BE CENTRED WITHIN ROOMS UNLESS DIMENSIONED OTHERWISE, TYPICAL
2. DIMENSIONS ARE TAKEN TO THE CENTRE OF LIGHT FIXTURES, TYPICAL

Name of Practice:
AMRA J Architects Inc.
63 Stowbridge Cres.
Ancaster, ON
L9G 5E1
info@aja.design
905-920-5121
Name of Project:
P02125 Lake Avenue Elementary School Washroom & Changeroom Renovations

Location:
157 Lake Avenue North, Hamilton, ON, L8E 1L5

Date: 11/20/2024

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

			Building Code Reference [1]
11.00	Building Code Version:	O. Reg. 332/12 Last Amendment O. Reg. 191/14	
11.01	Project Type:	☐ Addition ☒ Renovation ☐ Addition and renovation ☐ Change of use Description: Interior Renovation of Existing Changerooms and Shower Rooms	[A] 1.1.2.
11.02	Major Occupancy Classification:	Occupancy: A-2 Use: Elementary School	3.1.2.1.(1)
11.03	Superimposed Major Occupancies:	☒ No ☐ Yes Description:	3.2.2.7.
11.04	Building Area (m^2) *Insert additional lines as needed*	Description: Existing School — Existing 5,480, New 0, Total 5,480	[A] 1.4.1.2.
11.05	Building Height	1 Storeys above grade — Existing (m) Above grade 0 Storeys below grade	[A] 1.4.1.2. & 3.2.1.1.
11.06	Number of Streets/ Firefighter access	Existing 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: - Hazard Index: - Importance Category : ☐ Low ☐ Normal ☐ High ☐ Post-disaster	11.2.1.1. T 11.2.1.1A T 11.2.1.1B 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 *Insert additional lines as needed*	Floor Level/Area: 1 storey – 5,480 — Occupancy Type: A-2 — Based On: persons — Occupant Load (Persons): 810	3.1.17.
11.11	Plumbing Fixture Requirements *Insert additional lines as needed*	Ratio: 30 males per fixture, 26 females per fixture Floor Level/Area: 1 — Occupant Load: 405 M — OBC Reference: 3.7.4.3.(14) — Fixtures Required: 14 — Fixtures Provided: 22 (18 Ex, 4 New) Floor Level/Area: 1 — Occupant Load: 405 F — OBC Reference: 3.7.4.3.(14) — Fixtures Required: 16 — Fixtures Provided: 19 (15 Ex, 4 New)	3.7.4.
11.12	Barrier-free Design:	☒ Yes ☐ No	11.3.3.2.(2)
11.13	Reduction in Performance Level:	Structural: ☒ No ☐ Yes — 11.4.2.1. By Increase in occupant load: ☒ No ☐ Yes — 11.4.2.2. By change of major occupancy: ☒ No ☐ Yes — 11.4.2.3. Plumbing: ☒ No ☐ Yes — 11.4.2.4. Sewage-systems: ☒ No ☐ Yes — 11.4.2.5. Extension of combustible construction: ☒ No ☐ Yes — 11.4.2.6.	
11.14	Compensating Construction:	☒ No ☐ Yes Structural: ☒ No ☐ Yes - — 11.4.3.1, 11.4.3.2, Increase in occupant load: ☒ No ☐ Yes - — 11.4.3.3, Change of major occupancy: ☒ No ☐ Yes - — 11.4.3.4, Plumbing: ☒ No ☐ Yes - — 11.4.3.5, Sewage systems: ☒ No ☐ Yes - — 11.4.3.6, Extension of combustible construction: ☒ No ☐ Yes - — 11.4.3.7.	
11.15	Compliance Alternatives Proposed:	☒ No ☐ Yes -	11.5.1.
11.16	Notes: *Insert additional lines as needed*	The scope of work is renovation of the existing change rooms and shower rooms to provide addtional washrooms. The total area of renovation is 159 Sq. M. There is no change in occupant load and occupancy classification	11.5.1.

1 *All references are to Division B of the OBC unless preceded by [A] for Division A and [C] for Division C.*

SYMBOL LEGEND

- 0 — STRUCTURAL GRID
- ELEVATION NAME — ELEVATION REFERENCE
- 1 / A01 SIM — SECTION REFERENCE
- 1 / A100 SIM — DETAIL REFERENCE
- 2 / 1 A100 3 / 4 — EXTERIOR ELEVATION REFERENCE
- 1-B / 1-A A100 1-C / 1-D — INTERIOR ELEVATION REFERENCE
- EL. — SPOT ELEVATION
- ? — DEMOLITION / CONSTRUCTION TAG
- ROOM NAME 101 — ROOM TAG
- D100 — DOOR TAG
- W1 — WALL TAG
- C1 XXX — CEILING TAG
- W1 — WINDOW / SCREEN TAG
- 1i — FLOOR TAG
- R1 — ROOF TAG
- # — REVISION TAG

ABBREVIATION LEGEND

STANDARDS

A.F.F.	ABOVE FINISHED FLOOR
c/w	COMPLETE WITH
DN	DOWN
EL.	ELEVATION
EX.	EXISTING
EXP.	EXPOSED
FIN.	FINISHED
FTG	FOOTING
G.C.	GENERAL CONTRACTOR
GL	GRID LINE
G/R	GUARDRAIL
H/R	HANDRAIL
H.D.G.	HOT DIPPED GALVENIZED
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
SIM.	SIMILAR
STRU.	STRUCTURE
T/	TOP OF
TYP.	TYPICAL
u/s	UNDERSIDE

MATERIAL

ACT	ACOUSTICAL CEILING TILE
CAR	CARPET
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
GB	GYPSUM BOARD
GW	GEORGIAN WIRE
HM	HOLLOW METAL
INT	INTEGRAL
PT	PAINT
RB	RUBBER BASE
SC	SOLID CORE
SHT	SHEET
S.S.	STAINLESS STEEL
ST	STAIN
TG	TEMPERED GLASS
VCT	VINYL COMPOSITE TILE

WASHROOM ABBREVIATIONS

CH	COAT HOOK
CT #	CERAMIC TILE (NUMBER SUFFIX DENOTES COLOUR OF TILE, REFER TO LEGEND)
HD	HAND DRYER (SEE ELECTRICAL DWGS)
PTD	PAPER TOWEL DISPENSER
SD	SOAP DISPENSER
TPD	TOILET PAPER DISPENSER
GB1	HORIZONTAL GRAB BAR
GB2	L - SHAPED GRAB BAR
GB3	VERTICAL GRAB BAR
ND	NAPKIN DISPOSAL
MR	MIRROR
TD	TRASH DISPOSAL
PS	PRIVACY SCREEN
SH	SHELF
WB	WATER BOTTLE FILLER
ADO	AUTOMATIC DOOR OPERATOR
FD	FLOOR DRAIN (REFER TO MECH)
EPCB	EPOXY COVE BASE C/W CAP

GENERAL NOTES & SPECIFICATIONS

THE PROJECT SCOPE INCLUDES PARTIAL RENOVATION OF THE EXISTING SCHOOL AT 157 LAKE AVE N, HAMILTON ON, AS REQUIRED TO PROVIDE MORE STUDENTS WASHROOMS. THE GENERAL CONTRACTOR SHALL BE AWARE THAT 157 LAKE AVE NORTH IS AN OCCUPIED SCHOOL, AND THAT ALL WORK IN THE CORRIDORS AND LOBBIES WILL BE UNDERTAKEN AFTER SCHOOL HOURS IN ORDER TO MINIMIZE DISRUPTION TO STUDENTS AND STAFF.

THE CONTRACTOR SHALL NOTE THAT THE APPROX. TOTAL AREA OF WORK IS 140 SQ. M. (70 SQ. M FOR THE BASE BID AND 70 SQ. M FOR THE ALTERNATIVE COST 1). THE CONTRACTOR SHALL REFER TO ALL DRAWINGS INCLUDING STRUCTUAL, MECHANICAL, ELECTRICAL, ARCHITECTURAL & THE GENERAL NOTES FOR THE FULL SCOPE OF WORK.

THE PROJECT SCOPE INCLUDES PARTIAL INTERIOR RENOVATIONS IN THE EXISTING GIRLS CHANGEROOM & BOYS CHANGEROOM TO ADD MORE STUDENTS WASHROOM AND TWO NEW SINGLE USE WASHROOMS AS REQUIRED.

THE GENERAL CONTRACTOR SHALL MAINTAIN AT ALL TIMES DURING CONSTRUCTION A MINIMUM OF TWO PATHS OF EXIT, AND SHALL CONDUCT CONSTRUCTION IN A MANNER SUCH THAT THERE ARE MINIMAL TO NO DISTURBANCE TO THE DAY-TO-DAY OPERATION OF THE SCHOOL.

ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE LATEST EDITION OF THE LOCAL, PROVINCIAL AND FEDERAL CONSTRUCTION AND BUILDING CODES, THE NATIONAL FIRE CODE, THE OCCUPATIONAL HEALTH AND SAFETY ACT, AND ANY OTHER AUTHORITIES HAVING JURISDICTION.

THE GENERAL CONTRACTOR SHALL COMPLY WITH ALL THE REQUIREMENTS WITH RESPECT TO CONSTRUCTION PROCEDURES, INSURANCE, SECURITY, BUILDING ACCESS, LIFE SAFETY & FIRE REGULATIONS, SECURITY CLEARANCES OF EMPLOYEES, HOISTING, GARBAGE REMOVAL, ETC., AS SET OUT BY THE SCHOOL BOARD/CLIENT AND INSTRUCTIONS TO BIDDERS.

THE CONTRACTOR SHALL READ THE DRAWINGS PROVIDED IN CONJUNCTION WITH SPECIFICATIONS & INSTRUCTIONS ON THE BID DOCUMENTS. ANY DISCREPANCIES OR OMISSIONS ON ANY DRAWINGS OR SPECIFICATIONS ARE TO BE REPORTED TO THE CONSULTANT PRIOR TO COMMENCEMENT OF WORK.

THE GENERAL CONTRACTOR IS RECOMMENDED TO FAMILIARIZE THEMSELVES WITH EXISTING SITE CONDITIONS DURING DESIGNATED SITE VISIT DATE OR OTHERWISE OBTAIN INFORMATION REQUIRED TO SUBMIT A FIRM QUOTATION. CONTRACTORS WILL NOT BE ALLOWED TO VISIT THE SITE PRIOR TO OR AFTER THE DESIGNATED SITE VISIT DATE.

ALL DIMENSIONS ARE CLEAR UNLESS OTHERWISE NOTED, CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO CONSTRUCTION AND REPORT DISCEPANCIES TO CONSULTANT PRIOR TO MAKING MODIFICATIONS TO SUIT EXISTING SITE CONDITIONS.

ALL MATERIALS SPECIFIED ARE TO BE INSTALLED, FINISHED & SEALED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS & SPECIFICATIONS.

ALL MATERIALS SHALL BE AS SPECIFIED. CONTRACTOR MUST OBTAIN WRITTEN APPROVAL FROM ARCHITECT FOR ANY MATERIAL OR FINISH SUBSTITUTES OR ALTERNATIVES.

ALL MATERIALS AS SUPPLIED AND INSTALLED IN THIS PROJECT MUST MEET THE SMOKE/FLAME SPREAD RATING AS SPECIFIED IN THE BUILDING CODE.

THE CONTRACTOR SHALL ENSURE ALL AREAS ARE SEALED AGAINST DUST & SECURED WITH SAFETY WALLS/HOARDING. DAMAGES TO EXISTING MATERIALS, WINDOWS, FURNISHINGS, EQUIPMENT, BASE BUILDING FINISHES WITHIN AND OUTSIDE THE "AREA OF WORK" WILL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR TO REPLACE WITHOUT ADDITIONAL COSTS.

THE "AREA OF WORK" IS DEFINED AS THE IMMEDIATE AREAS WHERE DEMOLITION AND NEW CONSTRUCTION OCCURS BUT MAY NOT BE COMPLETELY LIMITED TO THE AREA DEFINED WITHIN.

THE CONTRACTOR IS REPONSIBLE FOR THE SUPPLY AND INSTALLATION OF ANY MATERIALS NOT SPECIFICALLY INDICATED BUT REASONABLY IMPLIED AND NECESSARY FOR COMPLETION OF WORK WITH NO ADDITIONAL COSTS UNDER HIS OR HER CONTRACT.

TO MINIMIZE DUST TRAVEL, ALL SUPPLY AIR DIFFUSERS & EXHAUST AIR GRILLED TO BE SEALED IN AREAS OF DEMOLITION AND CONSTRUCTION.

THE CONTRACTOR SHALL PATCH AND REPAIR AND/OR SKIM COAT AT DAMAGES, PUNCTURES, AND OTHER IRREGULARITIES ON EXISTING WALLS, FLOORS, AND CEILINGS. WHERE DAMAGES ARE EXISTING OR CAUSED BY DEMOLITION. THE CONTRACTOR SHALL ENSURE A SMOOTH AND EVEN SURFACE TO THE SATISFACTION OF THE ARCHITECT, IN PREPARATION FOR NEW FINISH APPLICATIONS AS SPECIFIED.

THE CONTRACTOR IS TO COORDINATE ANY WATER/ELECTRICITY SHUTOFF WITH THE OWNER AT LEAST 72 HOURS IN ADVANCE TO WORK COMMENCING.

IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN ALL SHORING AND TEMPORARY BRACING AS PER O.REG 213/91 AND THE CONTRACTOR SHALL RETAIN AN ENGINEER AS REQUIRED. ANY NEW OPENINGS WITHIN THE EXISTING BLOCK WALLS WILL REQUIRE TEMPORARY SHORING.

DEMOLITION

DEMOLISH AND REMOVE ALL WALLS, FLOORING, CEILINGS, DOORS CW/ DOOR FRAMES, TOILET PARTITIONS, WASHROOM & SHOWER ACCESSORIES, SINKS, AND COUNTERTOPS AS INDICATED ON THE DEMOLITION DRAWINGS. REPAIR AND RESTORE ALL AFFECTED EXISTING SURFACES.

NEW CONSTRUCTION

THE NEW CONSTRUCTION SCOPE INCLUDES RENOVATING EXISTING BOYS AND GIRLS CHANGEROOM TO CREATE A GROUP WASHROOM WITH BARRIER-FREE STALLS, 2 NEW SINGLE USE WASHROOMS, AND TO ADD A STORAGE ROOM AS SHOWN ON THE PROPOSED FLOOR PLANS. THE GENERAL CONTRACTOR SHALL FIELD-VERIFY ALL DIMENSIONS BEFORE THE START OF CONSTRUCTION AND TO INFORM ARCHITECT FOR ANY DESCRIPANCIES BEFORE THE START OF THE CONSTRUCTION.

INSTALL 3M™ CRYSTAL GLASS FINISHES, 7725SE-324 FILM ON EXISTING WINDOW SCREENS AS SHOWN IN THE PLANS. CONTRACTOR TO SITE VERIFY SIZE OF EXISTING SCREENS.

DRAWING LEGEND

- EXISTING
- AREA OF WORK
- GYPSUM BOARD PARTITIONS
- MASONRY
- BRICK
- EXISTING WALL TO REMAIN
- EXISTING TO BE DEMOLISHED
- DOORS TO BE DEMOLISHED
- EXISTING DOORS TO REMAIN
- NEW DOORS

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	25/03/25
0	ISSUED FOR BUILDING PERMIT	25/02/28

REVISIONS

SEAL:

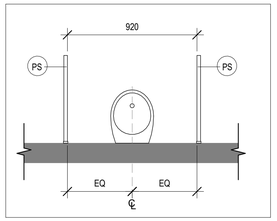
HWDSB

AMRA J ARCHITECTS INC.

project title:
P02125 - Lake Avenue Elementary School
Washrooms & Changerooms Renovations

drawing title:
SITE LOCATION, OBC MATRIX, GENERAL NOTES, LEGENDS, SCHEDULES

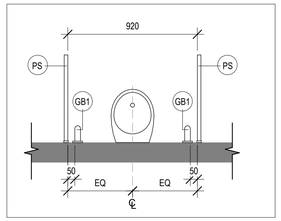
drawn: RMC	scale: As indicated
date: 11/2024	project number: 24-28
checked: AJ	DRAWING NO: A1.01
date: 12/2024	Revision: 2



TYP. URINAL STALL PLAN DETAIL

SCALE: 1 : 20

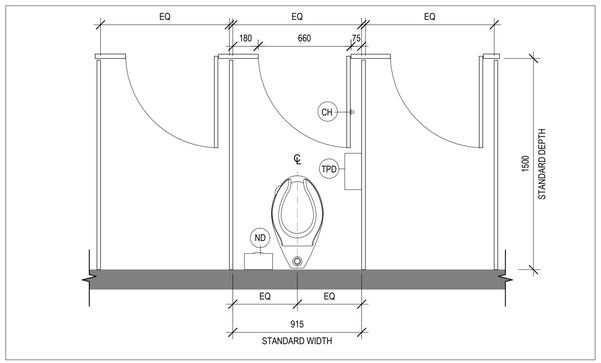
6 A1.02



TYP. BF URINAL STALL PLAN DETAIL

SCALE: 1 : 20

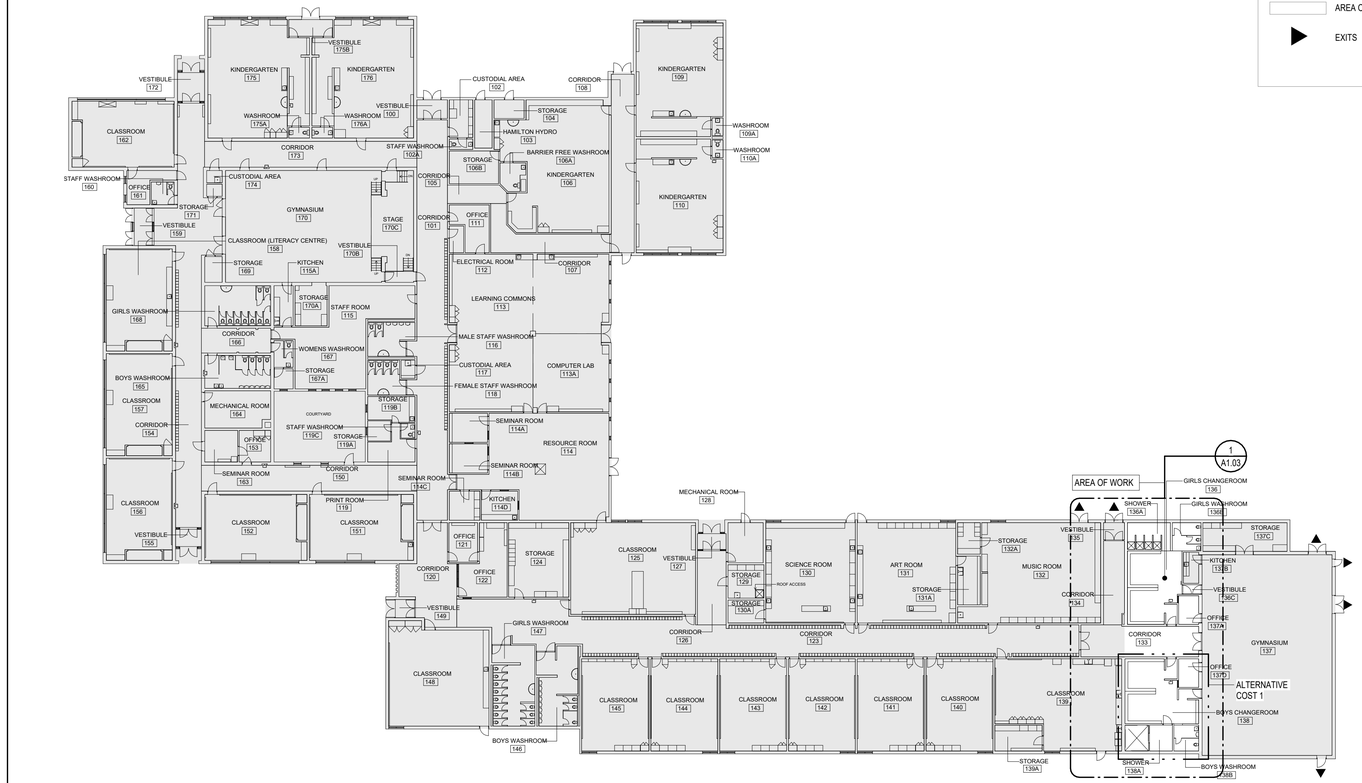
5 A1.02



TYPICAL WASHROOM STALL PLAN DETAIL

SCALE: 1 : 20

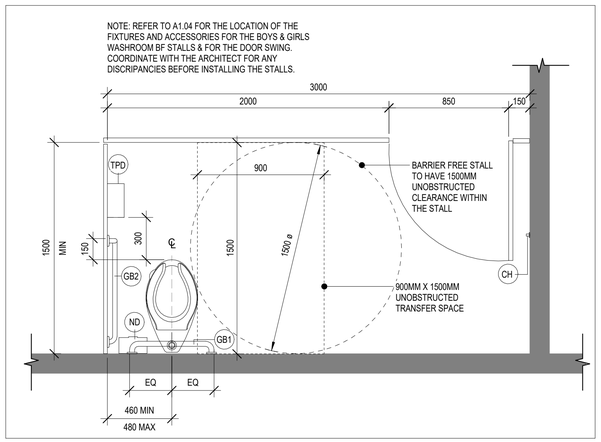
4 A1.02



KEY PLAN

SCALE: 1 : 300

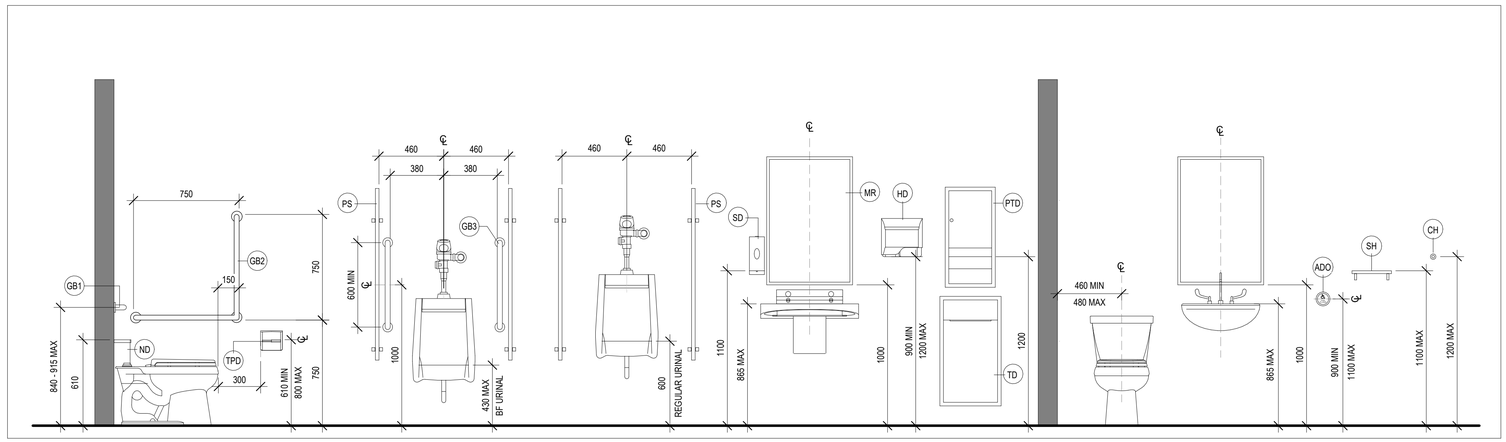
1 A1.02



TYPICAL BF STALL PLAN DETAIL

SCALE: 1 : 20

3 A1.02



TYPICAL WASHROOM FIXTURES MOUNTING HEIGHT

SCALE: 1 : 20

2 A1.02

KEYPLAN LEGEND

- EXISTING
- AREA OF WORK
- EXITS

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	25/03/25
0	ISSUED FOR BUILDING PERMIT	25/02/28

REVISIONS

SEAL:

HWDSB

AMRA J ARCHITECTS INC.

project title:
P02125 - Lake Avenue Elementary School
Washrooms & Changerooms Renovations

drawing title:
KEY PLAN & STANDARDS

drawn: RMC	scale: As indicated
date: 02/19/25	project number: 24-28
checked: AJ	DRAWING NO: A1.02
date: 12/2024	Revison 2

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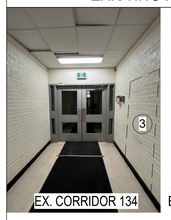
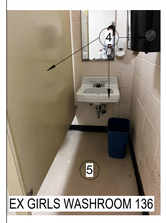
DEMOLITION NOTES	
Number	Description
1	REMOVE EXISTING MASONRY WALLS & DOORS C/W/ DOOR FRAME AS APPLICABLE.
2	REMOVE AND SALVAGE EXISTING WALL MTD BENCHES & EXISTING SHELVES C/W/ HOOKS. COORDINATE WITH CLIENT FOR THE STORAGE AND REINSTALLATION.
3	MAKE WALL OPENING AS REQUIRED FOR THE ENTRANCE TO THE NEW GROUP WASHROOMS/ NEW DOOR. REFER TO STRUCTURAL DESIGN FOR NEW LINTEL.
4	REMOVE ALL EXISTING PLUMBING FIXTURES C/W WASHROOM PARTITIONS & SALVAGE ALL EXISTING ACCESSORIES INCLUDING BUT NOT LIMITED TO SOAP DISPENSERS, PAPER TOWEL DISPENSERS, GRAB BARS, AND NAPKIN DISPOSAL. REFER TO MECHANICAL DWGS FOR THE PLUMBING DEMOLITION
5	REMOVE EXISTING VCT FLOORING AND RUBBER BASE.
6	REMOVE EXISTING ACT C/W/ EXISTING LIGHTS & DIFFUSERS. COORDINATE WITH MECHANICAL AND ELECTRICAL DEMOLITION.
7	REMOVE EXISTING GB CEILING C/W EXISTING LIGHT FIXTURES.
8	REMOVE EXISITNG WALL TILES C/W/ EXISTING SHOWER FIXTURES AS APPLICABLE. CAREFUL NOT TO DAMAGE EXISTING MASONRY WALL AFFECTED AND MAKE GOOD FOR PAINT FINISH.
9	REMOVE EXISTING FLOOR TILES.
10	CAREFULLY REMOVE EXISTING DOOR & FRAME AND PREPARE OPENING FOR MASONRY INFILL.
11	REMOVE EXISTING DRINKING FOUNTAIN.
12	CAREFULLY REMOVE EXISTING DOOR & FRAME. CAREFUL NOT TO DAMEGE EXISTING WALL AND OTHER ADJACENT SURFACES.
13	AT THE AREA OF WHICH EXISTING PIPES HAS BEEN REMOVED, PATCH AND REPAIR EXISTING FLOORING AS REQUIRED. (REFER TO MECHANICAL DWGS)
14	SALVAGE EXISTING CEILING TILE/ CEILING TILES AS REQUIRED FOR THE REMOVAL OF EXISTING PIPE. (REFER TO MECHANICAL DWGS) CORRDINATE WITH THE CLIENT FOR THE STORAGE AND REINSTALLATION.
15	CAREFULLY REMOVE EXISTING BULKHEAD.
16	CAREFULLY REMOVE EXISTING VCT BASE AND PREPARE AREA TO RECEIVE NEW VCT BASE.
17	REVIEW MECHANICAL DESIGN FOR THE EXTENT OF OPENINGS TO BE FILLED AFTER REMOVAL OF EXISTING SERVICES AND SIZE/LOCATION OF NEW OPENINGS

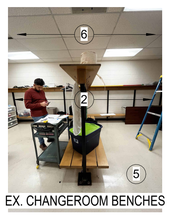
EXISTING PHOTOS FOR REFERENCE

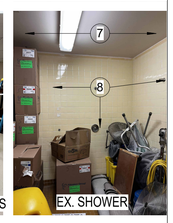

EX. CORRIDOR 134


EX. CHANGEROOM BENCHES

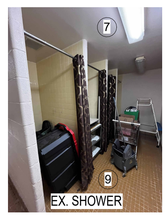

EX. G. CHANGEROOM 136 ENTRANCE FROM GYM


EX GIRLS WASHROOM 136

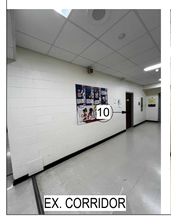

EX. CHANGEROOM BENCHES


EX. SHOWER


EX. WASHROOM


EX. SHOWER


EX. G. CHANGEROOM 136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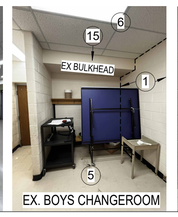
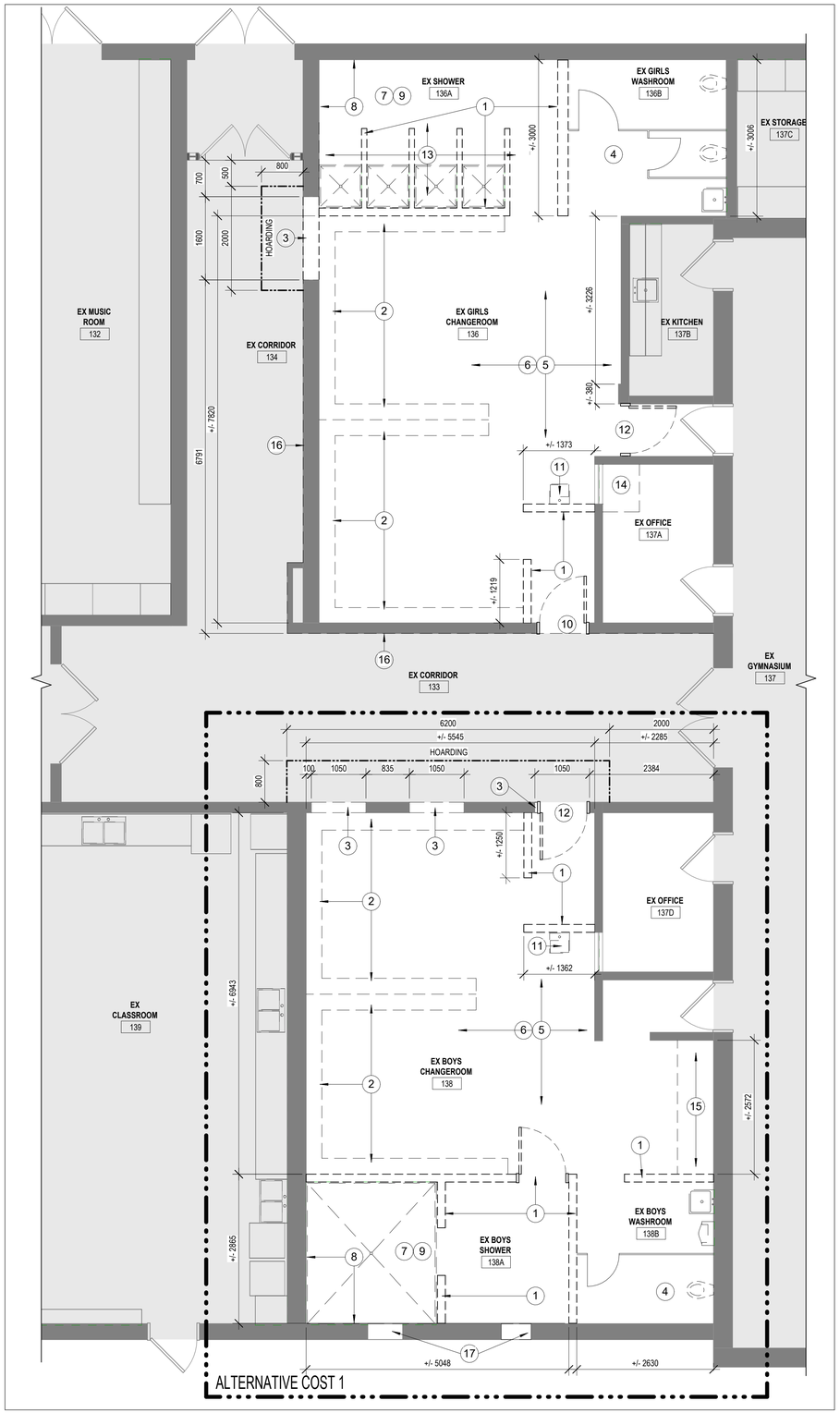


EX. BOYS CHANGEROOM


EX. BOYS WASHROOM



ALTERNATIVE COST 1

DEMOLITION PLAN
SCALE: 1 : 50

1
A1.02

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	25/03/25
0	ISSUED FOR BUILDING PERMIT	25/02/28

REVISIONS

SEAL:

HWDSB

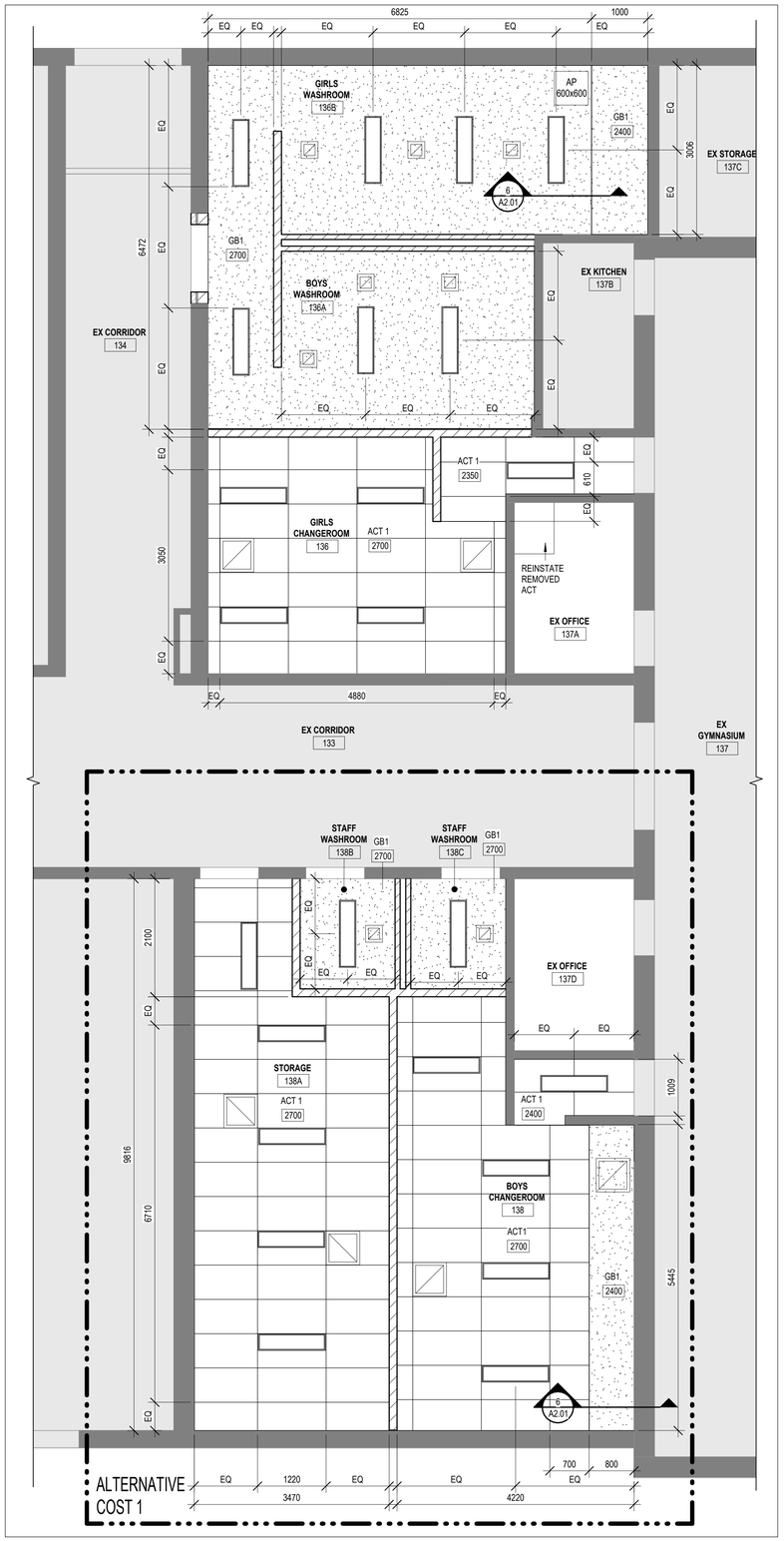
AMRA J ARCHITECTS INC.

project title:
P02125 - Lake Avenue Elementary School
Washrooms & Changerooms Renovations

drawing title:
DEMOLITION PLAN & NOTES

drawn: RMC
scale: As indicated
date: 02/18/25
project number: 24-28
checked: AJ
date: 12/2024
DRAWING NO: A1.03
2
Revision

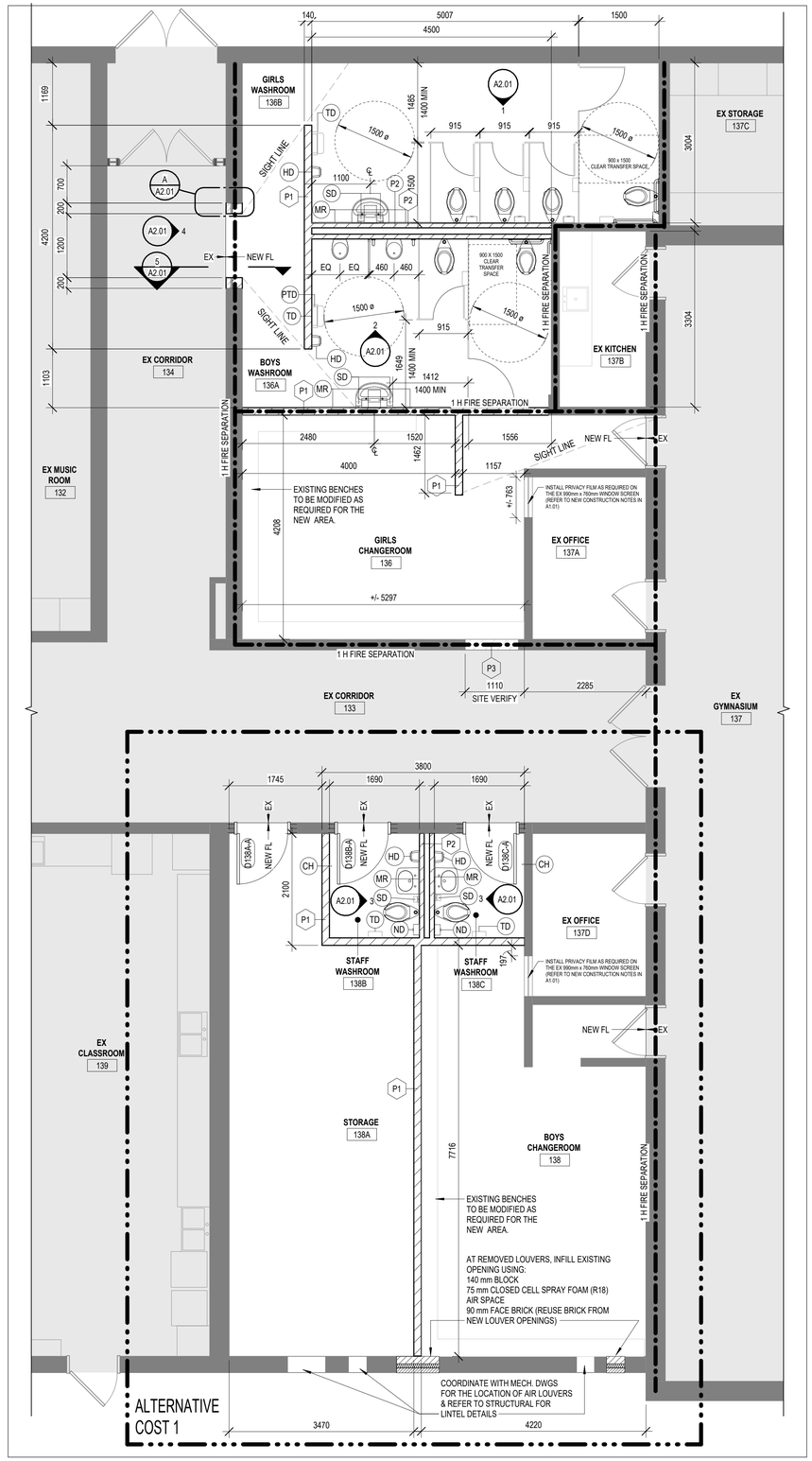
Z:\Drawings\24-28 P02125 Lake Avenue Gym Washroom Renovations\24-28 DRAWINGS\24-28 Lake Ave.Elementary School Washrooms & Changerooms Reno.rvt



PROPOSED REFLECTED CEILING

SCALE: 1 : 50

2 A2.01



PROPOSED NEW FLOOR PLAN

SCALE: 1 : 50

1 A1.02

WASHROOM GENERAL NOTES

REFER TO TYPICAL WASHROOM STALL PLANS AND WASHROOM FIXTURES TYPICAL MOUNTING HEIGHTS IN DRAWING A1.01 FOR DIMENSIONS & DETAILED INFORMATION

REFER TO WASHROOM PLANS FOR GRAB BARS & ACCESSORY LOCATIONS (TYP. IN ALL WASHROOM STALLS U.N.O.)

REFER TO SPECIFICATION BOOK FOR THE WASHROOM ACCESSORIES AND FINISHES.

SEE MECHANICAL AND ELECTRICAL DRAWINGS AND COORDINATE ANY DISCREPANCIES BEFORE CONSTRUCTION

CONSTRUCTION NOTES

EXISTING BLOCK WALL TO BE FIRE RATED AS REQUIRED FOR 1 HOUR FIRE SEPARATION

AT REMOVED LOUVERS, INFILL EXISTING OPENING USING:
140 mm BLOCK
75 mm CLOSED CELL SPRAY FOAM (R18)
AIR SPACE
90 mm FACE BRICK (REUSE BRICK FROM NEW LOUVER OPENINGS)

ACCESS PANEL AP

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	25/03/25
0	ISSUED FOR BUILDING PERMIT	25/02/28

REVISIONS

SEAL:

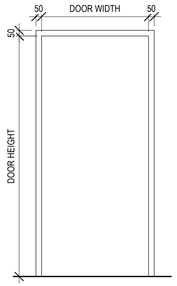
HWDSB

AMRA J ARCHITECTS INC.

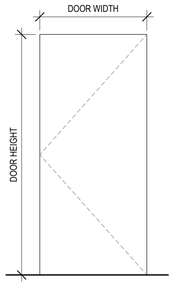
project title:
P02125 - Lake Avenue Elementary School
Washrooms & Changerooms Renovations

drawing title:
PROPOSED PLAN, CEILING PLAN, LEGENDS

drawn: RMC
scale: As indicated
date: 11/14/24
project number: 24-28
checked: AJA
date: 12/2024
DRAWING NO: A1.04
Revision: 2



DOOR FRAME TYPE
SCALE: 1 : 25



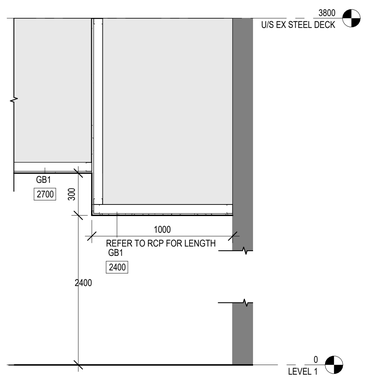
DOOR TYPE
SCALE: 1 : 25

DOOR SCHEDULE

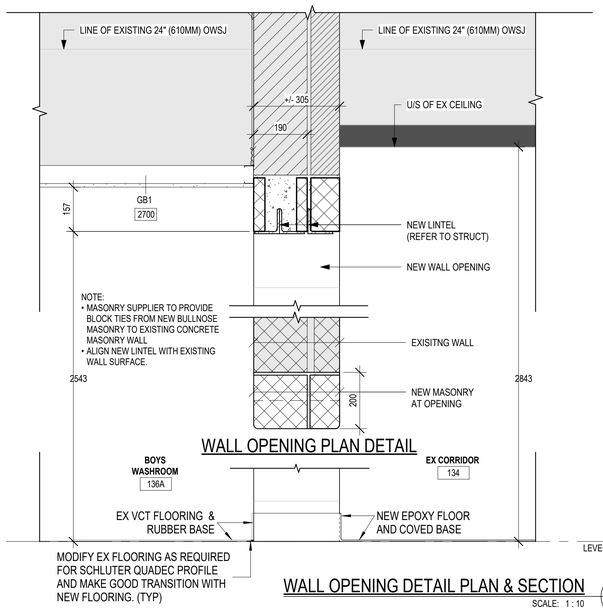
DIVISION	TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	GLAZING	F.R.R. (MIN)	HARDWARE & REMARKS
D138A-A	A	950	2135	45	HM	PTD	F1	HM	PTD	N/A	45	REFER TO SPEC BOOK
D138B-A	A	950	2135	45	HM	PTD	F1	HM	PTD	N/A	45	REFER TO SPEC BOOK
D138C-A	A	950	2135	45	HM	PTD	F1	HM	PTD	N/A	45	REFER TO SPEC BOOK

ROOM FINISH SCHEDULE

ROOM NO.	ROOM NAME	FLOOR FINISH	BASE FINISH	WALL FINISH	CEILING FINISH	CEILING HEIGHT	COMMENTS
136	GIRLS CHANGEROOM	VCT	RB	PT	ACT	2700	
136A	BOYS WASHROOM	EPOXY	EPCB	PT	GB	2700	
136B	GIRLS WASHROOM	EPOXY	EPCB	PT	GB	2700	
138	BOYS CHANGEROOM	VCT	RB	PT	ACT	2700	
138A	STORAGE	VCT	RB	PT	ACT	2700	
138B	STAFF WASHROOM	EPOXY	EPCB	PT	GB	2700	
138C	STAFF WASHROOM	EPOXY	EPCB	PT	GB	2700	
REPLACE EXISTING VCT BASE IN CORRIDORS 133 & 134 TO MATCH EXISTING.							

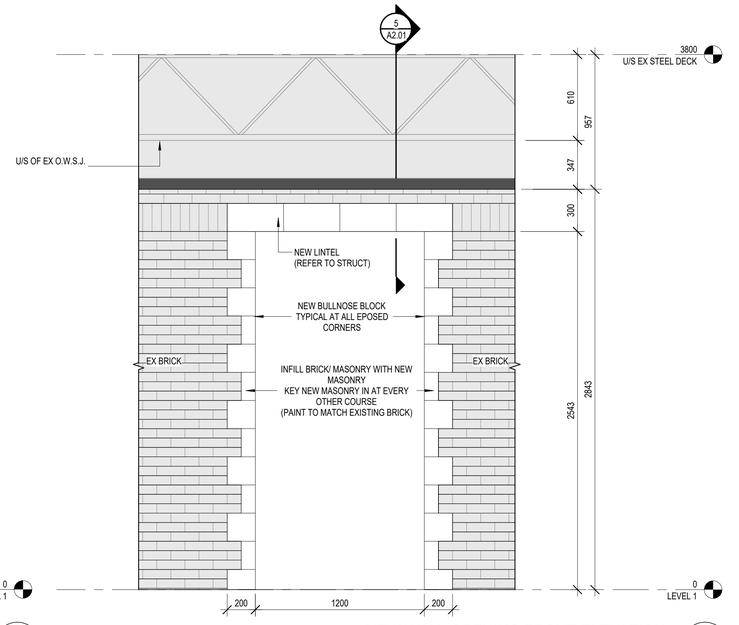


SECTION AT GIRLS WASHROOM
SCALE: 1 : 20
6 A1.04

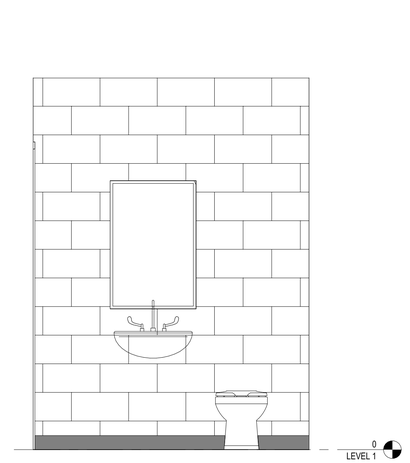


WALL OPENING PLAN DETAIL

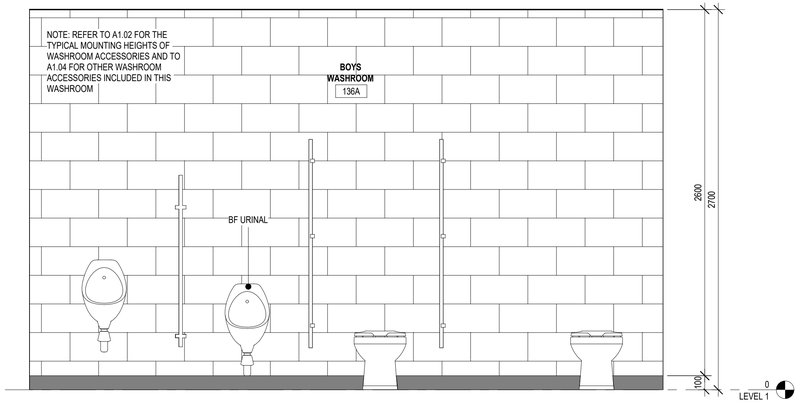
WALL OPENING DETAIL PLAN & SECTION
SCALE: 1 : 10
5 A1.04



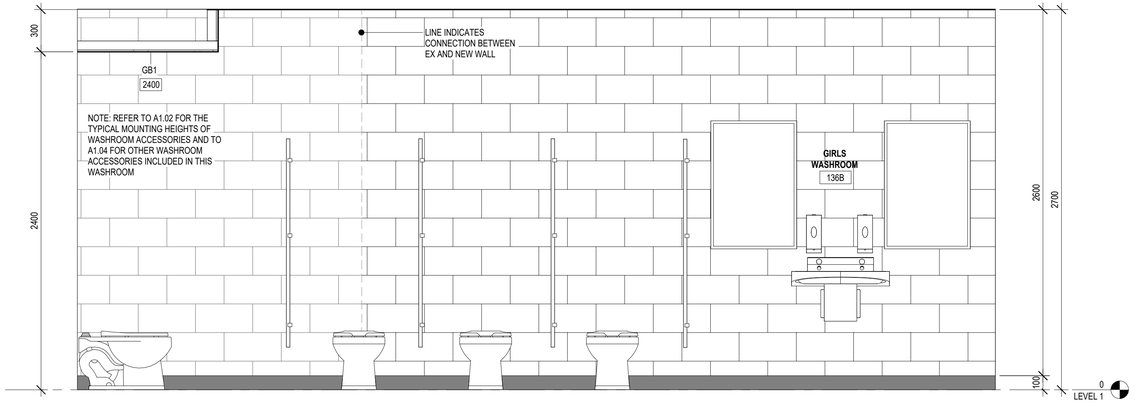
NEW WALL OPENING FRONT ELEVATION
SCALE: 1 : 20
4 A1.04



TYPICAL STAFF WASHROOM INTERIOR ELEV
SCALE: 1 : 20
3 A1.04



BOYS WASHROOM INTERIOR ELEV
SCALE: 1 : 20
2 A1.04



GIRLS WASHROOM INTERIOR ELEV
SCALE: 1 : 20
1 A1.04

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	25/03/25
0	ISSUED FOR BUILDING PERMIT	25/02/28

REVISIONS

SEAL:

HWDSB

AMRA J ARCHITECTS INC.

project title:
P02125 - Lake Avenue Elementary School
Washrooms & Changerooms Renovations

drawing title:
INTERIOR ELEVATIONS, SECTIONS, SECTION DETAILS, SCHEDULES, DOOR & DOOR FRAME TYPE

drawn: RMC
scale: As indicated
date: 12/13/24
project number: 24-28
checked: AJ
date: 12/2024
DRAWING NO: A2.01
2 Revision

MECHANICAL LEGEND

VENTILATION LEGEND

	SOUND INSULATION
SL	SILENCER
	FLEXIBLE CONNECTION
DN	DUCT OFFSET
BD	BALANCING DAMPER
FD	FIRE DAMPER
SD	SPLITTER DAMPER
BDD	BACKDRAFT DAMPER
MD	MOTORIZED DAMPER
	SUPPLY DUCT SECTION
	RETURN DUCT SECTION
	SUPPLY DIFFUSER
	EXHAUST GRILLE
D–XXX / 0	DIFFUSER DESIGNATION AND L/S
G–XXX / 0	GRILLE DESIGNATION AND L/S
	CAPPED END DUCT
	DUCT REDUCER/ENLARGER
	TRANSITION ☐ TO ◯ ROUND
CO	CARBON MONOXIDE DETECTOR
	AIR FLOW
	DUCT REDUCER
	AIR FLOW DIRECTIONS

ABBREVIATIONS

EF	–	EXHAUST FAN
SF	–	SUPPLY FAN
CF	–	CEILING FAN
WL	–	WEATHER LOUVRE
CU	–	CONDENSING UNIT
FCU	–	FAN COIL UNIT
MUA	–	MAKE UP AIR
AC	–	AIR CONDITIONING
ERV	–	ENERGY RECOVERY VENTILATOR
BS	–	BRANCH SELECTOR
LT	–	LINT TRAP
VAV	–	VARIABLE AIR VOLUME
BF	–	BOOSTER FAN
VRF	–	VARIABLE REFRIGERANT FLOW
UH	–	UNIT HEATER
DS	–	DUCT SUPPORT
SD	–	SMOKE DETECTOR
GEN E/A	–	GENERAL EXHAUST AIR
SA E/A	–	SANITARY EXHAUST AIR CFM
SA	–	SUPPLY AIR
RA	–	RETURN AIR
EA	–	EXHAUST AIR
CFSD	–	COMBINATION SMOKE AND FIRE DAMPER
DG	–	DOOR GRILLE

PIPING LEGEND

HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
GS	GLYCOL WATER RETURN
GR	GLYCOL WATER RETURN
CD	EQUIPMENT CONDENSATE DRAIN LINE
G	NATURAL GAS
S	SUCTION LINE
L	LIQUID LINE
V	VENT LINE
F	FIRE LINE
CA	COMPRESSED AIR
D	DRAIN PIPE
SP	SPRINKLER PIPE
X	PIPE ANCHOR
	PIPE GUIDE OR SLEEVE
	EXPANSION COMPENSATOR c/w GUIDES
	BOTTOM TAKE–OFF
	TOP TAKE–OFF
	ELBOW UP
	ELBOW DOWN
	VALVE – SEE SPECIFICATIONS
	UNION CONNECTION
	FLANGED CONNECTION
	PLUG CAP
	FLEXIBLE CONNECTION
	THERMOMETER
PG	PRESSURE GAUGE
AV	AIR VENT
AAV	AUTOMATIC AIR VENT
FS	FLOW SWITCH
T	THERMOSTAT
T_G	THERMOSTAT w/GUARD
H	HUMIDITY SENSOR
S	FAN CONTROLLERS/SWITCHES
	CABINET HEATERS "CH" (C…)
	CONTINUOUS CONVECTORS "WF" (X…)
	RADIANT PANELS "RP" (R…)
TS	TEMPERATURE SENSOR
FR–?	FIRE RISER
FCR–?	FAN COIL RISER

ABBREVIATIONS

AFF	–	ABOVE FINISHED FLOOR
GPM	–	GALLONS PER MINUTE
(HP)	–	HIGH PRESSURE
MGSV	–	MASTER GAS SOLENOID VALVE
EXP	–	EXPANSION TANK
GT	–	GLYCOL TANK
HPR	–	HEATING PIPE RISER
LWCO	–	LOW WATER CUT OFF
TS	–	TEMPERATURE SENSOR
PS	–	PRESSURE SENSOR
SIM	–	SNOW MELTING
HE	–	HEAT EXCHANGER
B	–	BOILER
DHWH	–	DOMESTIC HOT WATER HEATER
DHST	–	DOMESTIC WATER STORAGE TANK
BAS	–	BUILDING AUTOMATION SYSTEM
RFH	–	RADIANT FLOOR HEATING
GM	–	REMOTE READING GAS METER
CFSD	–	COMBINATION FIRE AND SMOKE DAMPER

PLUMBING

x	STORM DRAIN ABOVE GRADE (STM)
	SANITARY ABOVE GRADE (SAN)
STM	STORM DRAIN BURIED (STM)
SAN	SANITARY BURIED (SAN)
W	WEEPING TILE
	DOMESTIC COLD WATER (DCW)
	DOMESTIC HOT WATER (DHW)
	DOMESTIC HOT WATER RECIRC (DHWR)
T	DOMESTIC TEMPERED WATER (TW)
T	DOMESTIC TEMPERED WATER RECIRC (TWR)
GS	GLYCOL SUPPLY
GR	GLYCOL RETURN
C	CONDENSATE
E	EXPANSION
CO	CLEANOUT(ABOVE FLOOR)
CO	CLEANOUT(UNDERGROUND)
D	AREA DRAIN
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
HD	HUB DRAIN
RD	ROOF DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER c/w CABINET
HSH	SHOWER (HANDICAPPED)
SH	SHOWER
	RUNNING TRAP
NFHB	NON– FREEZE HOSE BIBB
HB	HOSE BIBB
	PIPE REDUCER
P–1	PUMP AND DESIGNATION
XXXX	KITCHEN EQUIPMENT IDENTIFICATION
PR–?	PLUMBING RISER

ABBREVIATIONS

HS	–	HOSE STATION
FHC	–	FIRE HOSE CABINET
RWL	–	RAIN WATER LEADER
WC	–	WATER CLOSET
WCH	–	WATER CLOSET (HANDICAPPED)
L	–	LAVATORY
LH	–	LAVATORY (HANDICAPPED)
S	–	STAINLESS STEEL SINK
MS	–	MOP SINK
HS	–	HAIR SINK
FLRS	–	FLOOR SINK
HBT	–	BATH TUB (HANDICAPPED)
EEW	–	EMERGENCY EYE WASH
INV. ELEV.	–	INVERT ELEVATION
OBV. ELEV.	–	OBVERT ELEVATION
BFP	–	APPROVED BACKFLOW PREVENTOR
TSP	–	TRAP SEAL PRIMER
SEP	–	SEWAGE EJECTOR PUMP
GINT	–	GREASE INTERCEPTOR
SINT	–	SOLID INTERCEPTOR
SP	–	STORM EJECTOR PUMP
TD	–	TRENCH DRAIN
HBS	–	HOSE BIBB STATION
WM	–	WATER METER
BFP	–	BACKFLOW PREVENTOR
FCO	–	FLOOR CLEAN OUT
DCW	–	DOMESTIC COLD WATER
DHW	–	DOMESTIC HOT WATER
DHWR	–	DOMESTIC HOT WATER RECIRC
DTW	–	DOMESTIC TEMPERED WATER
DTWR	–	DOMESTIC TEMPERED WATER RECIRC

SPRINKLER LEGEND

	UPRIGHT SPRINKLER
	PENDANT SPRINKLER
	UPRIGHT SPRINKLER w/GUARD
	PENDANT SPRINKLER w/GUARD
	UPRIGHT HI–TEMP. SPRINKLER
	PENDANT HI–TEMP. SPRINKLER
	UPRIGHT HI–TEMP. SPRINKLER w/GUARD
	PENDANT HI–TEMP. SPRINKLER W/GUARD
	DRY PENDANT SPRINKLER
	DRY PENDANT SPRINKLER w/GUARD
	RECESSED SPRINKLER
	CONCEALED SPRINKLER
	HORIZONTAL SIDEWALL SPRINKLER
	EXTENDED COVERAGE SIDEWALL SPRINKLER
FS	FLOW SWITCH
PS	PRESSURE SWITCH OR SENSOR
M M	APPROVED DOUBLE CHECK VALVE BACKFLOW PREVENTOR ASSEMBLY
M	ELECTRICALLY MONITORED SHUT–OFF VALVE
	CHECK VALVE
	ALARM CHECK VALVE
	SPRINKLER RISER
	SIAMESE FIRE DEPT. CONNECTION
	WATER GONG
	FIRE LINE
	HORIZONTAL SIDEWALL SPRINKLER W/GUARD

VALVE LEGEND

	VALVE – SEE SPEC
	CHECK VALVE
	STRAINER
	PRESSURE REDUCING VALVE (PRV)
	LOCK SHIELD VALVE
TCV	2–WAY CONTROL VALVE (TCV)
TCV	3–WAY CONTROL VALVE (TCV)
R	RELIEF VALVE
CBV	CIRCUIT BALANCE VALVE (CBV)
	PLUG VALVE
SV	SOLENOID VALVE
NC	NORMALLY CLOSED VALVE

MISCELLANEOUS ABBREVIATIONS

EX	–	EXISTING TO REMAIN.
ER	–	EXISTING TO BE RELOCATED.
RE	–	RELOCATED DEVICE AT NEW LOCATION
R	–	EXISTING TO BE REMOVED
N	–	EXISTING TO BE REPLACED WITH NEW
	–	ITEMS TO BE PERMANENTLY OR TEMPORARY DEMOLISHED. SEE DRAWING NOTES FOR DETAILS

LEGEND NOTES:

1. THESE ARE STANDARD LEGENDS. ALL SYMBOLS MAY NOT NECESSARILY BE USED ON THESE DRAWINGS.

LIST OF DRAWINGS

M0–00	MECHANICAL LEGEND AND DRAWING LIST
M1–00	PLUMBING SYSTEM – DEMOLITION PLAN
M1–01	HVAC SYSTEM – DEMOLITION PLAN
M2–00	PLUMBING SYSTEM – NEW ENLARGED PLAN
M2–01	HVAC SYSTEM – NEW ENLARGED PLAN
M3–00	DETAILS.
M4–00	MECHANICAL SPECIFICATIONS.
ME–00	MECHANICAL AND ELECTRICAL SCHEDULE.

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	2025–03–24
1	ISSUED FOR PERMIT	2025–02–25
B	PROGRESS SUBMISSION	2025–02–04
A	PROGRESS SUBMISSION	2025–01–10

REVISIONS

24098

Seal

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HWDSB

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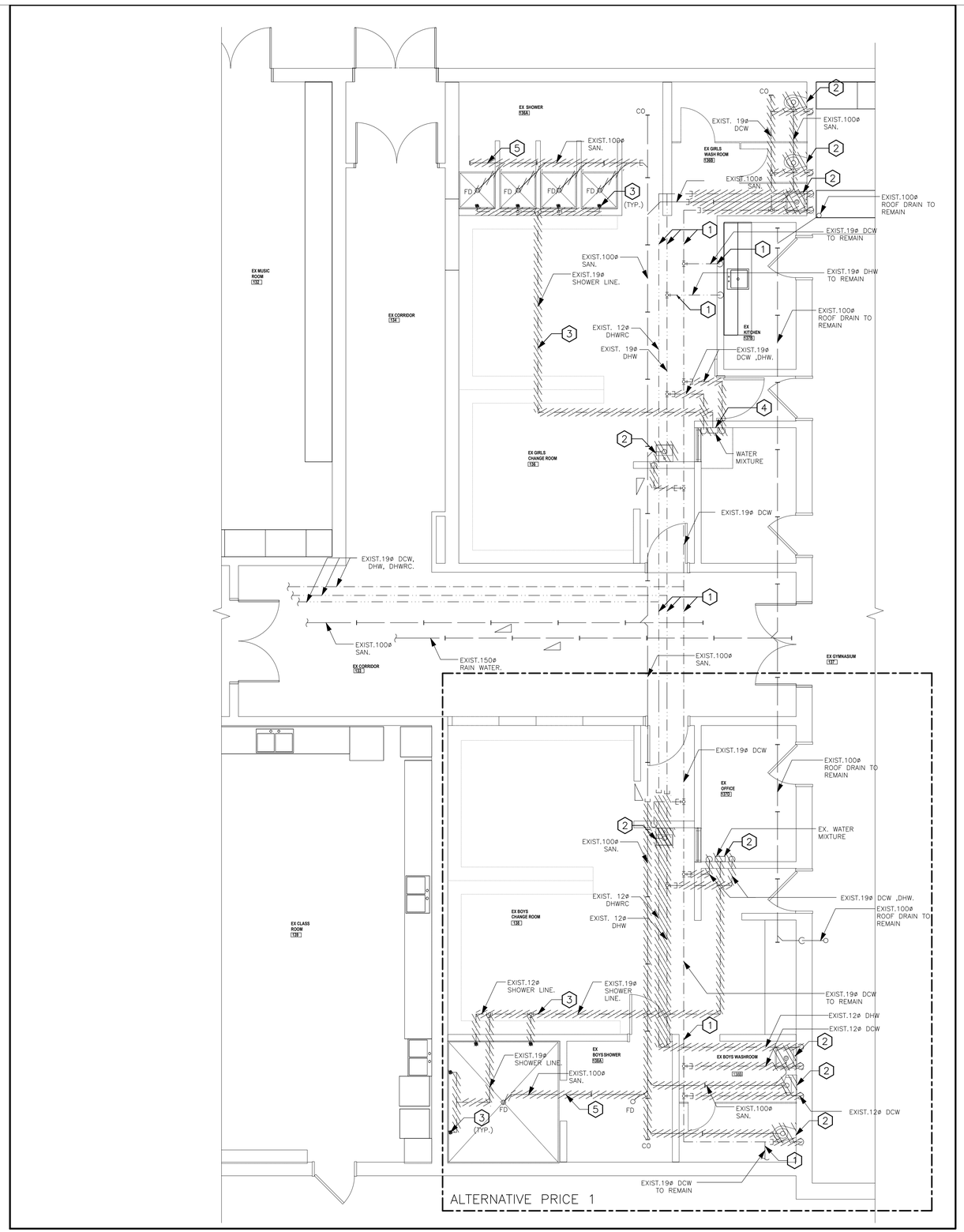
project title:
HAMILTON - WENTWORTH DISTRICT SCHOOL BOARD
P02125 - LAKE AVENUE ELEMENTARY SCHOOL RENOVATIONS.
WASHROOMS & CHANGEROOMS RENOVATIONS

Drawing Title:
MECHANICAL LEGEND AND DRAWING LIST

drawn:
date:
scale:
project number: 24-21
checked:
date:
DRAWING NO: M0-00
Revision



A M1-00 PLUMBING SYSTEMS-DEMOLITION PLAN

SCALE- 1:50

DRAWING NOTES DEMO: GENERAL

A). RETAIN A LOCATION SERVICE PRIOR TO EXCAVATION TO TRACE ALL SERVICES BURIED.

B). THIS DRAWING DOES NOT SHOW ALL HIDDEN OR CONCEALED PIPING, DUCTS, PLUMBING AND EQUIPMENT TO BE REMOVED. IT IS SUGGESTED TO CONTRACTOR VISIT THE SITE AND MAKE THEIR OWN EVALUATION AND ESTIMATE OF THE EXTENT AND MAGNITUDE OF THE WORK INVOLVED PRIOR TO SUBMITTING THE BID.

C). ALLOW FOR RELOCATION OF EXISTING SERVICES AS REQUIRED TO ACCOMMODATE THIS WORK.

D). REMOVE ALL DEBRIS AND CLEAN FROM SITE DAILY.

MECHANICAL NOTES:

1. EXISTING PIPES TO REMAIN AS IS.
2. REMOVE SANITARY FIXTURES AS SHOWN. CAP PIPES TO SUIT.
3. EXISTING SHOWERS AND PIPE LINE SHALL BE REMOVE THEIR ENTIRETY.EXISTING PIPES SHALL BE CAP AS REQUIRED.
4. EXISTING WATER MIXTURE SHALL BE REMOVED IN ITS ENTIRETY. EXISTING PIPES SHALL BE CAP AS REQUIRED.
5. EXISTING FLOOR DRAIN SANITARY PIPE SHALL BE REMOVED THEIR ENTIRETY.PIPES SHALL BE CAP AS REQUIRED.

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	2025-03-24
1	ISSUED FOR PERMIT	2025-02-25
B	PROGRESS SUBMISSION	2025-02-04
A	PROGRESS SUBMISSION	2025-01-10

REVISIONS

24098

Seal KS

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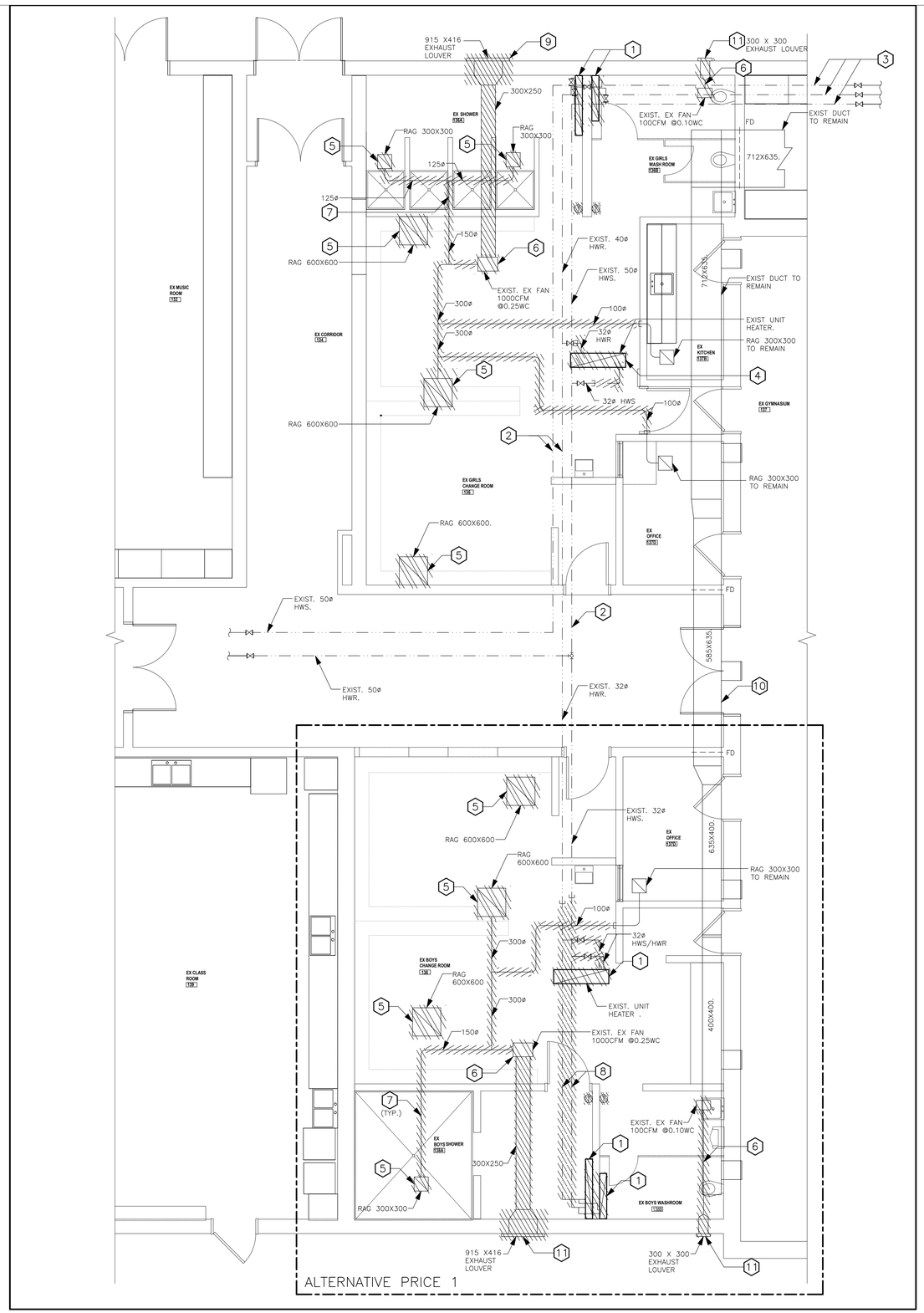
HWDSB

AMRA J ARCHITECTS INC.
www.aja.design I info@aja.design I 905.920.5121

project title:
HAMILTON - WENTWORTH DISTRICT SCHOOL BOARD
P02125 - LAKE AVENUE ELEMENTARY SCHOOL RENOVATIONS.
WASHROOMS & CHANGEROOMS RENOVATIONS

Drawing Title:
PLUMBING SYSTEM - DEMOLITION PLAN

drawn: MH	scale: AS SHOWN
date: 01/2025	project number: 24-21
checked: KS	DRAWING NO: M1-00
date: 01/2025	Revision



A M1-01 HVAC SYSTEMS–DEMOLITION PLAN

SCALE– 1:50

DRAWING NOTES DEMO: GENERAL

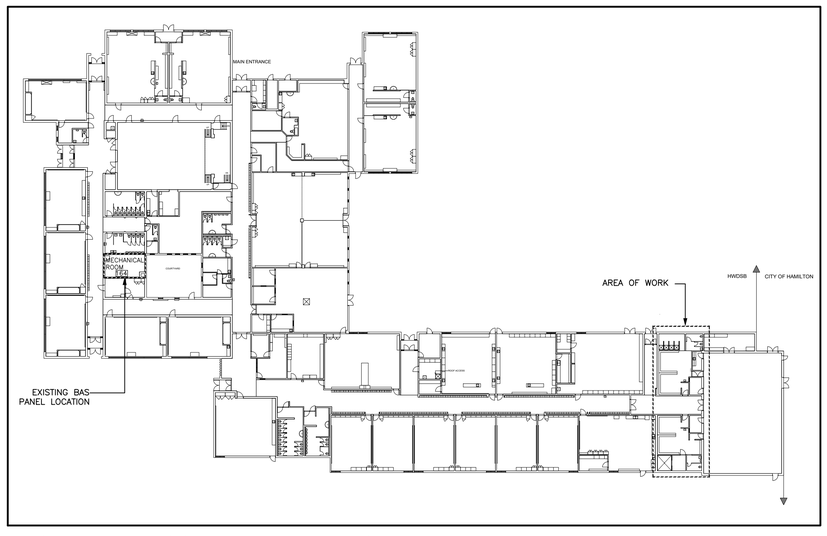
A). RETAIN A LOCATION SERVICE PRIOR TO EXCAVATION TO TRACE ALL SERVICES BURIED.

C). NOT ALL DEMOLITION ITEMS HAVE BEEN SHOWN ON DRAWINGS, IT IS SUGGESTED TO VISIT JOB SITE AND EVALUATE EXTENT OF THE DEMOLITION PRIOR TO BIDDING.

B). PRIOR TO DEMOLISHING EXISTING DIFFUSERS AND DUCTS, RETAIN A BALANCING CONTRACTOR TO OBTAIN THE CURRENT AIR FLOW INFORMATION OF EXISTING DIFFUSERS AND SUBMIT INFORMATION TO THE CONSULTANT.

MECHANICAL NOTES:

1. DEMOLISH EXISTING UNIT HEATER COMPLETE WITH HWS/HWR PIPING AND THERMOSTAT. CAP HWS/HWR PIPES WHERE REQUIRED FOR NEW CABINET HEATERS. COORDINATE WITH THE ELECTRICAL CONTRACTOR TO REMOVE EXISTING ELECTRICAL POWER CONNECTION UP TO THE PANEL.
2. EXISTING PIPES TO REMAIN AS IS.
3. LOCATE THE EXISTING PIPE ROUTE PRIOR TO DEMOLISH AND CAP WHERE REQUIRED.
4. EXISTING CABINET HEATER SHALL BE REMOVED IN ITS ENTIRETY. PIPES SHALL BE REMOVED AND CAP AS NECESSARY.
5. REMOVE EXISTING EXHAUST GRILLE TO BE REPLACED WITH NEW. REFER THE NEW DRAWING FOR REQUIRED CHANGES.
6. EXISTING EXHAUST FAN AND DUCT SHALL BE REMOVED ITS ENTIRETY. ALLOW PRICE TO CAP EXISTING DUCT WHERE REQUIRED. COORDINATE WITH THE ELECTRICAL CONTRACTOR TO REMOVE EXISTING POWER CONNECTION UP TO THE PANEL.
7. REMOVE THE EXISTING DUCTS AS MARKED. SEE NEW DRAWINGS FOR REQUIRED CHANGES.
8. REMOVE THE EXISTING HOT WATER SUPPLY AND RETURN PIPES AS MARKED. SEE NEW DRAWINGS FOR REQUIRED CHANGES.
9. REMOVE THE EXISTING LOUVER TO BE REPLACED WITH NEW. REFER THE NEW DRAWING FOR REQUIRED CHANGES.
10. EXISTING DUCT TO REMAIN AS IS.
11. REMOVE EXISTING LOUVER. COORDINATE WITH ARCHITECTURAL AND STRUCTURAL DIVISIONS TO PATCH WALL OPENINGS. SEE NEW DRAWING FOR NEW LOUVER SIZES AND LOCATIONS.



B M1-01 OVERALL FLOOR PLAN – EXISTING

SCALE– 1:500

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	2025-03-24
1	ISSUED FOR PERMIT	2025-02-25
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A	PROGRESS SUBMISSION	2025-01-10

REVISIONS

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HWDSB

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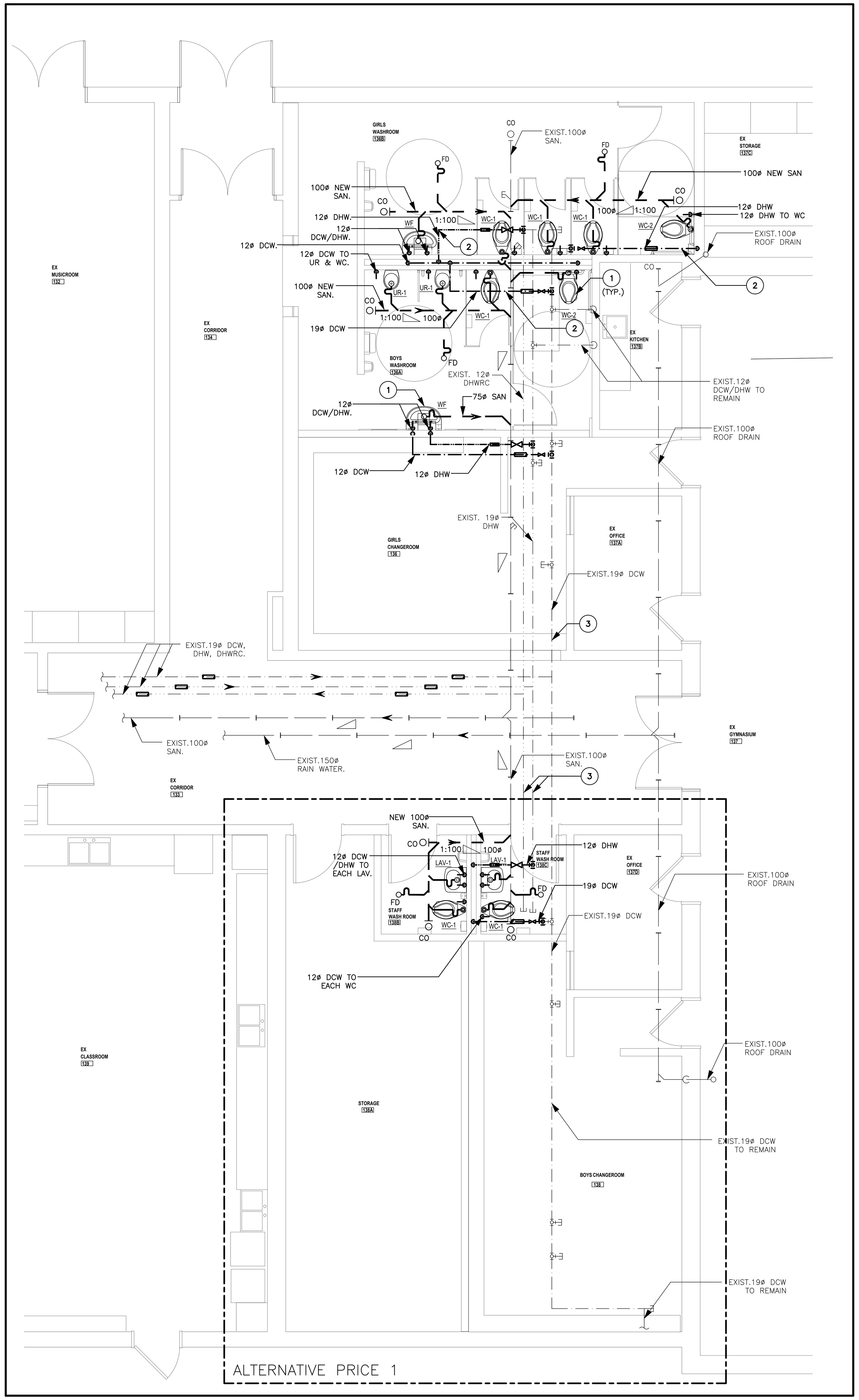
project title:
HAMILTON - WENTWORTH DISTRICT SCHOOL BOARD
P02125 - LAKE AVENUE ELEMENTARY SCHOOL RENOVATIONS.
WASHROOMS & CHANGEROOMS RENOVATIONS

Drawing Title:
HVAC SYSTEM - DEMOLITION PLAN

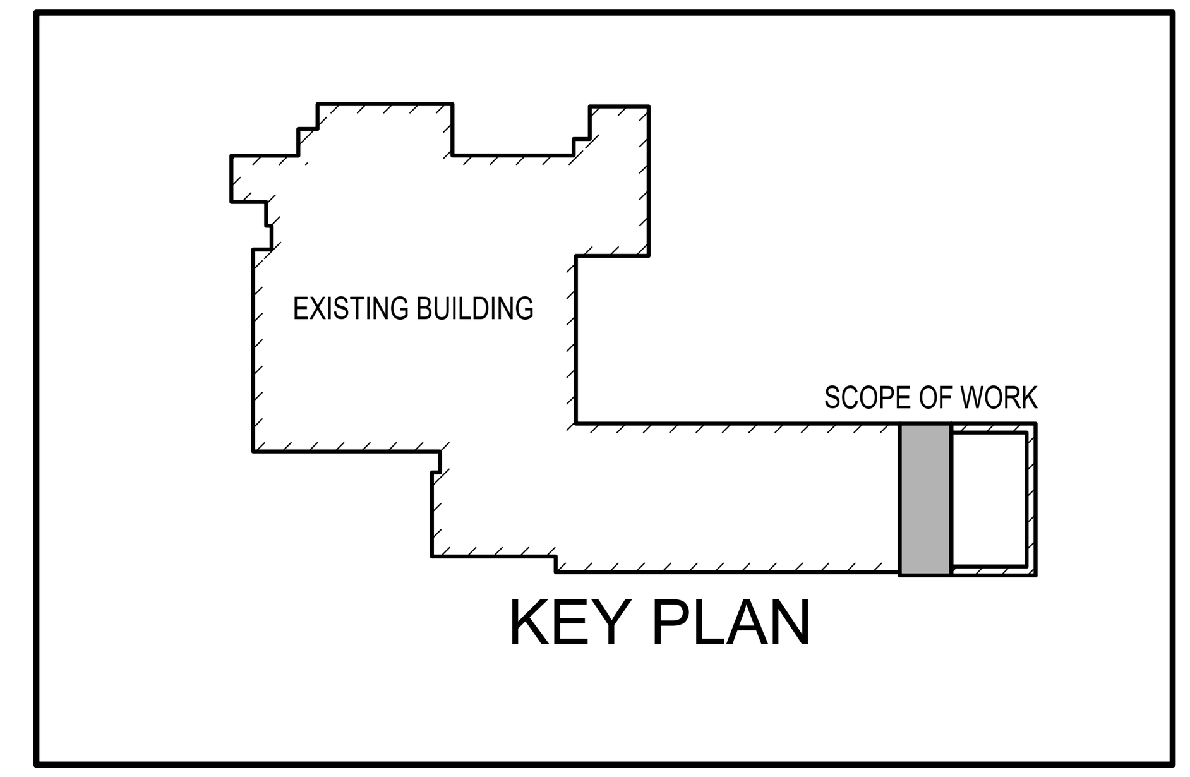
drawn: MH	scale: AS SHOWN
date: 01/2025	project number: 24-21
checked: KS	DRAWING NO: M1-01
date:	Revision



A
M1-00

PLUMBING SYSTEMS–NEW ENLARGED PLAN

SCALE– 1:50



PLUMBING GENERAL NOTES:

A) ALL PLUMBING WORK TO CONFORM TO ONTARIO BUILDING CODE, ONTARIO WATER REGULATION ACT No. 615/64, CONSTRUCTION SAFETY ACT AND REGULATIONS OF THE CITY AND LOCAL AUTHORITIES.

B) ALL SANITARY DRAINS TO BE INSTALLED BURIED (MIN. 300mm BELOW FIN. FLOOR) AND SLOPED AS SHOWN UNLESS OTHERWISE NOTED.

C) COORDINATE PIPE INSTALLATION WITH ELECTRICAL CONDUITS, DUCT & STRUCTURAL MEMBERS. OFFSET PIPES AS REQUIRED.

D) CONTRACTOR TO FIELD VERIFY WORKSITE CONDITIONS.

E) PROVIDE ACCESS DOOR FOR EACH WATER VALVE INSTALLED IN CONCEALED SPACES.

F) DO NOT INSTALL DHW & DCW PIPES IN EXPOSED EXTERIOR OR PERIMETER WALLS.

G) SANITARY DRAINAGE AND VENT PIPES ABOVE GRADE SHALL BE CERTIFIED TO CAN/CSA–B181.2 "PVC DRAIN, WASTE, AND VENT PIPE AND PIPE FITTINGS"

H) DOMESTIC HOT AND COLD WATER PIPES SHALL BE TYPE "L" HARD COPPER TUBING WITH SOLDERED FITTINGS.

I) INSULATE ALL NEW DOMESTIC WATER PIPES WITH MINIMUM 50 mm THICK INSULATION. COVER EXPOSED PIPES WITH PVC JACKETS.

J) PRIOR TO ANY INSTALLATION SURVEY THE EXISTING SPACE AND NOTE DOWN ALL EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT UNDERGROUND AND BURIED CABLES AND CONDUITS WITH THE ASSISTANCE OF A LOCATION SERVICE.

PLUMBING DRAWING NOTES (NEW)

1. PROVIDE COMPLETE SANITARY PLUMBING FIXTURES & PIPING AS SHOWN ON THIS DRAWING.
2. CONNECTED TO THE EXISTING SERVICE LINE AS SHOWN WITH REQUIRED INSULATION. PROVIDE NEW SHUTOFF VALVE IN DCW/DHW PIPE FOR NEW FIXTURES.
3. EXISTING DCW/DHW PIPING TO REMAIN AS IS. ALLOW PRICE FOR REPLACING PIPE INSULATION OF EXISTING PIPES WHERE DAMAGED OR MISSING WITH IN THE AREA OF NEW SCOPE.

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE DESCRIPTION	MANUFACTURER	CONNECTION SIZE			
			DCW	DHW	SANITARY	VENT
WC–1	WATER CLOSET	AMERICAN STANDARD MADERA™ FloWise® 15" HEIGHT ELONGATED with EVERCLEAN® PRESSURE–ASSISTED 6L TOILET 3451.001 ELONGATED 15" (381MM) BOWL ONLY,TOP SPUD WITH 2 BOLT CAPS.	25ø	–	75ø	40ø
	FLUSH VALVE	DELTA MODEL 81T201 FLUSH VALVE FOR 1–1/2" TOP SPUD WATER CLOSET MAXIMUM 292MM(11–1/2") FROM CENTERLINE OF VALVE INLET TO TOP OF WATER CLOSET,1"FIP/COPPER SWEAT INLET ADAPTOR FOR ANGLE CHECK STOP WITJ PROTECTING CAP ADJUSTABLE 121MM ±11MM INLET/VALVE OUTLET CENTERS, C/W COVER TUBE AND SS WALL FLANGE.	25ø	–	–	–
	WATERCLOSET SEAT	HEAVY DUTY SOLID PLASTIC SEAT CENTOCO #500STSCC (HEAVY–DUTY, OPEN FRONT, LESS COVER FOR ELONGATED BOWL.)	–	–	–	–
WC–2	BARRIER FREE WATER CLOSET	AMERICAN STANDARD MADERA™ FloWise® 15" HEIGHT ELONGATED with EVERCLEAN® PRESSURE–ASSISTED 6L TOILET 3451.001ELONGATED 17" (431.8MM) BOWL ONLY,TOP SPUD WITH 2 BOLT CAPS.	25ø	–	75ø	40ø
	FLUSH VALVE	DELTA MODEL 81T201 FLUSH VALVE FOR 1–1/2" TOP SPUD WATER CLOSET MAXIMUM 292MM(11–1/2") FROM CENTERLINE OF VALVE INLET TO TOP OF WATER CLOSET,1"FIP/COPPER SWEAT INLET ADAPTOR FOR ANGLE CHECK STOP WITJ PROTECTING CAP ADJUSTABLE 121MM ±11MM INLET/VALVE OUTLET CENTERS, C/W COVER TUBE AND SS WALL FLANGE.	25ø	–	–	–
	WATERCLOSET SEAT	HEAVY DUTY SOLID PLASTIC SEAT CENTOCO #500STSCC (HEAVY–DUTY, OPEN FRONT, LESS COVER FOR ELONGATED BOWL.)	–	–	–	–
LAV–1	LAVATORY	'AMERICAN STANDARD' LUCERNE™ WALL–HUNG LAVATORY MODEL No. 0355.027 FOR EXPOSED BRACKET SUPPORT, FAUCET HOLES ON 102MM (4") CENTERS	–	–	32ø	32ø
	FAUCET	DELTA MIXING METERING HANDWASH FAUCET MODEL No. 86T1153	12ø	12ø	–	–
	DRAIN AND P–TRAP	'OS&B' 19HOLE GRID p.o BODY ASSEMBLY 17 GAUGE TAILPIECE DRAIN, ZURN SEMI–CAST P–TRAPS WITH WALL BEND PRODUCT NUMBER Z8700–PC CHROME–PLATED CAST BRASS (COPPER ALLOY) BODY P–TRAP WITH CLEANOUT	–	–	32ø	–
	THERMOSTATIC MIXING VALVE	HAWS MODEL No. 9201H OR EQUIVALENT	–	–	–	–
UR–1	URINAL	'AMERICAN STANDARD' WASHBROOK® FloWise® UNIVERSAL URINAL WITH EVERCLEAN 6590.001 TOP SPUD	19ø	–	50ø	40ø
	FLUSH VALVE	SLOAN MODEL 186–0.5 FLUSHOMETER EXPOSED URINAL FLUSHOMETER FOR ¾" TOP SPUD URINALS.	19ø	–	–	–
	ACCESSORIES	DRAIN, P–TRAP, ALL ACCESSORIES AND WALL MOUNTING BRACKET.	–	–	32ø	–
WF	WASHING FOUNTAIN	BRADLEY BRADMATE™ WASHFOUNTAINS S93–574, ONTARIO BUILDING CODE HEIGHT, INFRARED, NAVIGATOR® THERMOSTATIC MIXING ASSEMBLY (HOT & COLD SUPPLIES). 120VAC/12VDC PLUG IN ADAPTER, PLUGS INTO A STANDARD GFCI PROTECTED ELECTRICAL OUTLET.	12ø	12ø	40ø	32ø
FD	FLOOR DRAIN	WATTS FD–100–C–A 125mm NICKEL BRONZE STRAINER	–	–	3"ø	–

NOTES:
1. INCLUDING ALL ACCESSORIES, TRAP SEAL PRIMERS ETC.
2. POWER CONVERTERS ACTUAL QUANTITIES HAVE NOT BEEN GIVEN ACCURATELY.
3. ALL PIPING SHALL BE CONCEALED WITHIN WALLS
4. PROVIDE SHOCK STOPS ON HOT/COLD WATER SUPPLIES TO ALL FIXTURE GROUPS.
5. ALL VENTING SHALL CONFIRM TO OBC PART 7. INCREASE VENT SIZING AS REQUIRED WHERE TOTAL VENT LENGTH EXCEEDS SIZES LISTED ABOVE.

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project title:
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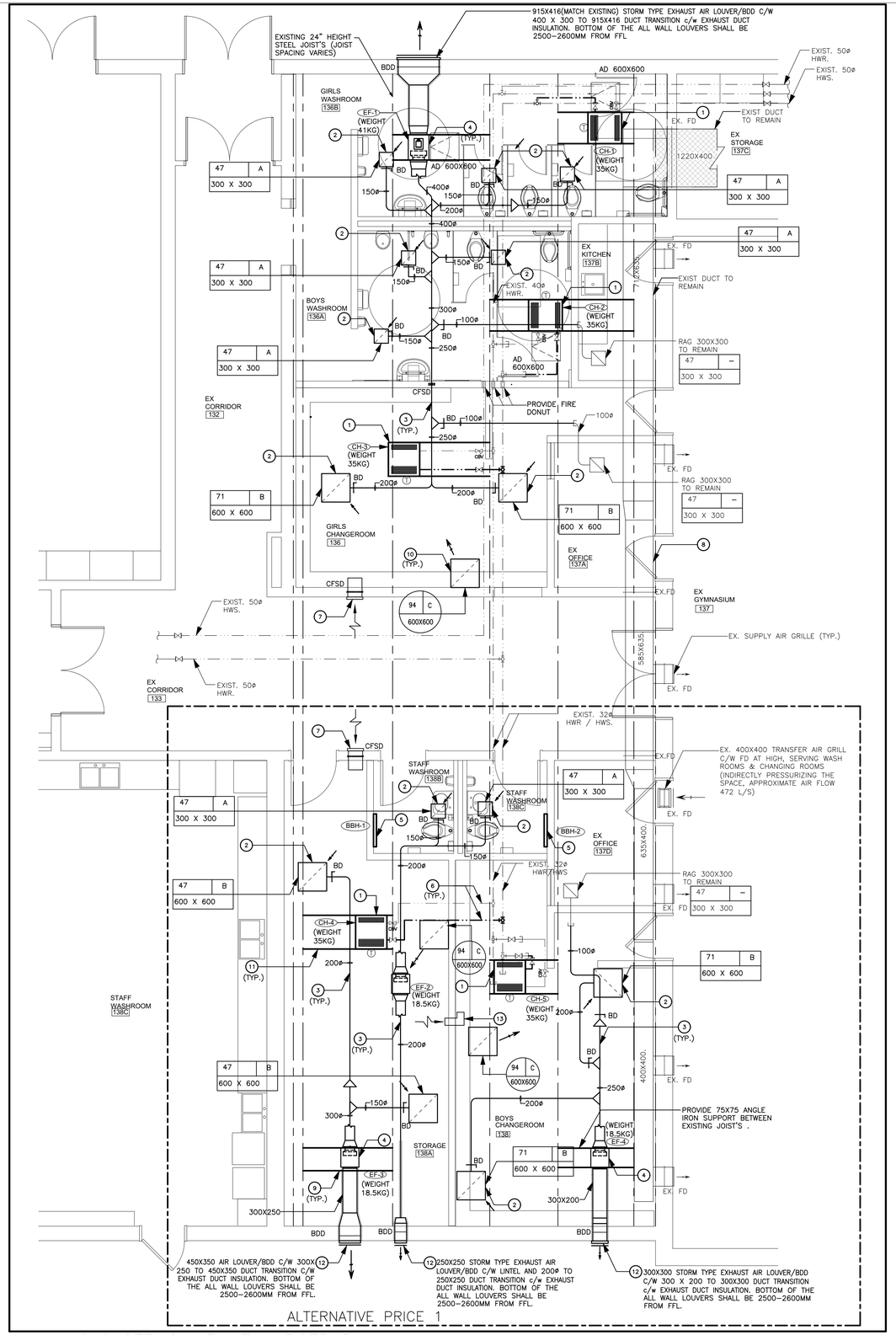
P02125 - LAKE AVENUE ELEMENTARY SCHOOL RENOVATIONS.
WASHROOMS & CHANGEROOMS RENOVATIONS

Drawing Title:
PLUMBING SYSTEM - NEW ENLARGED PLAN

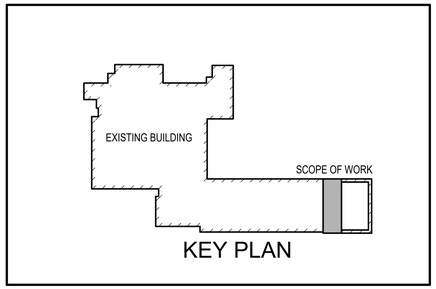
drawn: MH
date: 01/2025
scale: AS SHOWN
project number: 24-21
checked: KS
date:
DRAWING NO: M2-00
Revision



HVAC SYSTEMS-NEW ENLARGED PLAN

A / M2-01

SCALE- 1:50



GENERAL NOTES:

A) COORDINATE DUCT INSTALLATIONS WITH PIPES, ELECTRICAL LIGHTING & BUILDING STRUCTURE.

B) ALL MECHANICAL DUCTWORK AND PIPE WORK SHALL BE CONCEALED IN CEILING SPACES, BETWEEN JOISTS OR IN BULKHEADS.

C) PROVIDE RETURN AIR GRILLES IN CEILING WHERE NOTED.

D) PROVIDE BALANCING DAMPERS AT ALL AIR SUPPLY TAKE OFFS: –
1) AT BRANCH DUCT OFF OF THE MAIN TRUNK.
2) IN DRYWALL AREAS, PROVIDE DAMPERS AT GRILLE WITH APPROVED LOCKING DEVICES TO ENGINEER'S APPROVAL.

E) CUTTING FOR DUCTS SHALL BE DONE BY THIS CONTRACTOR. OBTAIN APPROVAL PRIOR TO CUTTING OPENINGS IN ANY WALL, STRUCTURE, FLOOR AND ROOF.

F) COORDINATE LOCATION OF EACH S.A. & R.A. (SUPPLY & RETURN AIR) GRILLE AND EXISTING RETURN AIR GRILLE ON SITE PRIOR TO CUTTING AND ROUGH-IN.

G) INSULATE ALL SUPPLY AIR DUCT ON COMPLETE RUN. INSULATE EXHAUST AIR DUCTS MIN. 6' FROM WALLS OR ROOF. REFER TO SPECIFICATIONS.

H) COORDINATE LOCATION OF EACH DIFFUSER AND GRILLE IN CEILING WITH LIGHT FIXTURES.

I) ALL DUCT WORK SIZES SHOWN ARE OUTSIDE DIMENSIONS. UNLESS SPECIFICALLY NOTED ON PLANS. ADDITIONAL CLEARANCE WILL NEED TO BE ACCOUNTED FOR EXTERNALLY INSULATED DUCT.

DRAWING NOTES NEW:

1. SUPPLY & INSTALL TWO NEW FAN POWERED HYDRONIC CEILING CONCEALED UNIT HEATERS AS SHOWN. CEILING CONCEALED UNIT HEATERS SHALL BE INSTALLED IN CEILING SPACE. NEW INSULATED 20ømm(3/4") HWS/HWR PIPES SHALL BE CONNECTED TO UNIT HEATERS FROM THE MAIN PIPES IN THE CEILING. SUPPLY AND INSTALL NEW CIRCUIT BALANCING VALVES FOR HWR. ALSO PROVIDE SHUTOFF VALVES FOR HWS/HWR PIPES.REFER TO THE CABINET UNIT HEATER SPECIFICATION IN THE MECHANICAL SCHEDULE.
2. PROVIDE NEW EXHAUST AIR GRILLE AS SHOWN.
3. TO PROVIDE NEW EXHAUST AIR DUCTS AT THIS APPROXIMATE LOCATIONS AS SHOWN. AND CONNECTED TO NEW EXHAUST AIR GRILLES.
4. A NEW INLINE DUCTED EXHAUST FAN SHALL BE INSTALLED AND CONNECTED TO THE EXHAUST DUCT LOCATED IN THE CEILING, AS SHOWN. REFER TO THE EXHAUST FAN SPECIFICATIONS IN THE MECHANICAL SCHEDULE.
5. SUPPLY AND INSTALLATION OF NEW BASEBOARD HEATER AS SHOWN. REFER TO THE BASEBOARD UNIT SPECIFICATION IN THE MECHANICAL SCHEDULE.
6. SUPPLY AND INSTALLATION OF NEW 20MM DIA. HOT WATER SUPPLY AND RETURN PIPE LINES TO CONNECT THE NEW CABINET HEATERS AS SHOWN.
7. PROVIDE 300MMX200MM TRANSFER DUCT WITH A COMBINATION FIRE AND SMOKE DAMPER.
8. EXISTING DUCT TO REMAIN AS IS. ALLOW FOR PRICE TO REPLACING DUCT INSULATION OF EXISTING DUCTS WHERE DAMAGE OR MISSING WITH IN THE AREA OF NEW SCOPE.
9. PROVIDE NEW 75X75 ANGLE IRON BETWEEN EXISTING JOIST'S TO SUPPORT NEW INLINE FANS. SPRING BASE ISOLATORS C/W FAN SHALL BE BOLTED TO NEW ANGLE IRON. ANGLE IRON SHALL BE PRIMED & PAINTED. TYPICAL FOR ALL NEW INLINE FANS.
10. PROVIDE NEW SUPPLY AIR GRILLE AS SHOWN.
11. PROVIDE NEW 75X75 ANGLE IRON BETWEEN EXISTING JOIST'S TO SUPPORT NEW UNIT HEATERS. ANGLE IRON SHALL BE PRIMED & PAINTED. TYPICAL FOR ALL NEW UNIT HEATERS.
12. NEW LOUVER LOCATIONS AND SIZES. COORDINATION WITH ARCHITECTURAL AND STRUCTURAL FOR WALL OPENINGS AND LINTELS.
13. PROVIDE 200MMX150MM TRANSFER DUCT AS SHOWN.

GRILLE AND DIFFUSER SCHEDULE

TAG	MODEL MANUF.	MODEL	SERVICE	SIZE (MM)	FINISH	BORDER	REMARKS
A	E.H. PRICE	80 SERIES	RETURN/EXHAUST GRILLE	300X300	B-12	(7)	SIZE REFER TO DRAWING
B	E.H. PRICE	80 SERIES	RETURN/EXHAUST GRILLE	600X600	B-12	(7)	SIZE REFER TO DRAWING
C	E.H. PRICE	80 SERIES	CEILING SUPPLY GRILLE	600x600	B-12	(7)	SIZE REFER TO DRAWING
D							

NOTE :
(1) ALUMINUM DAMPERS ARE REQUIRED FOR ALL ALUMINUM GRILLES AND DIFFUSERS.
(2) UP TO 100 CFM = 6"ø NECK; 100 CFM to 225 CFM = 8"ø ; 225 CFM to 380 CFM = 10"ø NECK
(3) ALL DIFFUSERS AND GRILLES RATED AT NC30 OR LESS.
(4) EACH GRILLE AND DIFFUSER SHALL HAVE BALANCING DAMPER.
(5) COLOR SHALL BE SELECTED BY THE CLIENT.
(6) COORDINATE WITH THE GENERAL CONTRACTOR FOR GRILLS INSTALLATION.
(7) REFER TO ARCH. DRAWING FOR BOARDER TYPE.

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REVISIONS

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project title:
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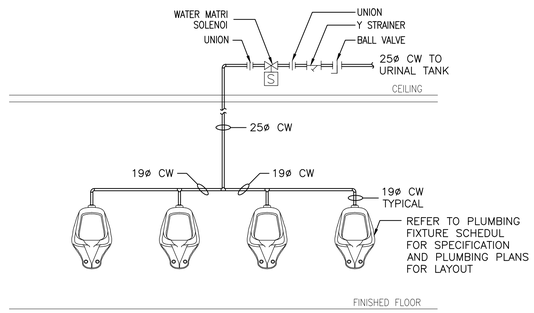
P02125 - LAKE AVENUE ELEMENTARY SCHOOL RENOVATIONS.
WASHROOMS & CHANGEROOMS RENOVATIONS

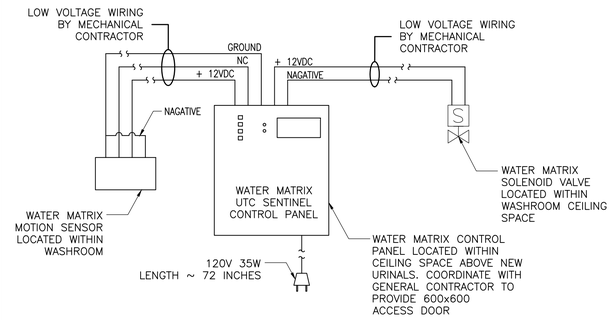
Drawing Title:
HVAC SYSTEM - NEW ENLARGED PLAN

drawn: MH
date: 01/2025
scale: AS SHOWN
project number: 24-21
checked: KS
date:
DRAWING NO: M2-01
Revision



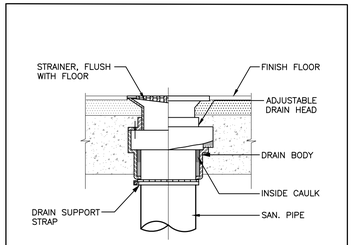
NOTE:
MAXIMUM OF FOUR URINALS PER
SOLENOID VALVE AND CONTROL PANEL

1 TYPICAL URINAL PIPING SCHEMATIC
NTS

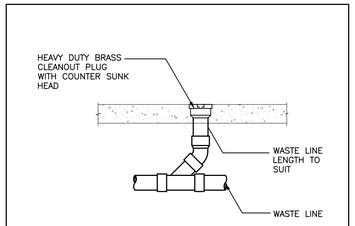


NOTE:
1. MAXIMUM OF FOUR URINALS PER SOLENOID VALVE AND CONTROL PANEL.
2. PLUMBING CONTRACTOR TO CARRY WATER MATRIX AS A SUB CONTRACTOR.
3. WATER MATRIX CONTACT INFO:
PHONE: (905) 850-8080 OR 1-1800-668-4420

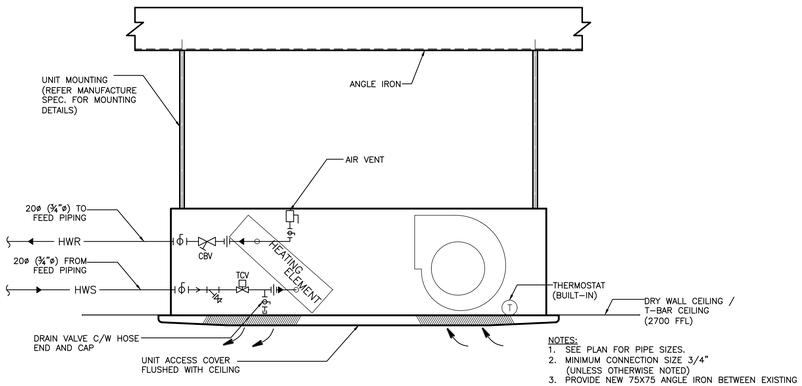
2 WATER MATRIX FLUSH SYSTEM WIRING DIAGRAM.
NTS



3 FLOOR DRAIN DETAIL
NTS

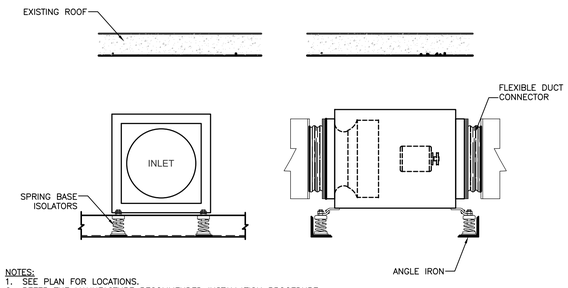


4 CLEANOUT DETAIL
NTS



NOTES:
1. SEE PLAN FOR PIPE SIZES.
2. MINIMUM CONNECTION SIZE 3/4"
(UNLESS OTHERWISE NOTED)
3. PROVIDE NEW 75X75 ANGLE IRON BETWEEN EXISTING
JOIST'S(OWSJ) TO SUPPORT NEW UNIT HEATERS.

5 CEILING MOUNTED CABINET UNIT HEATER DETAIL .
NTS



NOTES:
1. SEE PLAN FOR LOCATIONS.
2. REFER THE MANUFACTURE RECOMMENDED INSTALLATION PROCEDURE.
3. PROVIDE NEW 75X75 ANGLE IRON BETWEEN EXISTING JOISTS(OWSJ)
TO SUPPORT NEW INLINE FANS. SPRING BASE ISOLATORS C/W FAN
SHALL BE BOLTED TO NEW ANGLE IRON. ANGLE IRON SHALL BE
PRIME & PAINTED. TYPICAL FOR ALL NEW INLINE FANS.

6 INLINE EXHAUST FAN MOUNTING DETAIL .
NTS

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RENOVATIONS.
WASHROOMS & CHANGEROOMS
RENOVATIONS

Drawing Title:
DETAIL

drawn: MH
date:
scale: NTS
project number: 24-21
checked: KS
date: 12/2024
DRAWING NO: M3-00
0 Revision

MECHANICAL SPECIFICATIONS

A GENERAL CONDITIONS

1.1 GENERAL

.1 THE WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, THE ONTARIO WATER RESOURCES ACT, THE MINISTRY OF LABOUR, THE CITY OF HAMILTON AND ALL CODES HAVING JURISDICTION, WHICH ARE TO BE CONSIDERED AN INTEGRAL PART OF THESE SPECIFICATIONS. THE GENERAL CONDITIONS OF THE ARCHITECTURAL SPECIFICATIONS ARE HEREBY MADE PART OF THESE SPECIFICATIONS.

.2 ALL LABOUR, MATERIALS, EQUIPMENT, FEES, PERMITS AND CHARGES TO PERFORM THE OPERATIONS FOR THE COMPLETE INSTALLATION OF THE PLUMBING, PIPING, VENTILATION AND HEATING WORK, AS INDICATED ON THE DRAWINGS.

.3 VISIT THE JOB SITE AND EXAMINE ALL EXISTING CONDITIONS WHICH AFFECT THE WORK.

.4 PAY FOR AND OBTAIN ALL REQUIRED PERMITS, FEES. LICENCES, CERTIFICATES OF INSPECTION, ETC. PROVIDE AND SUBMIT REQUIRED DRAWINGS TO THE AUTHORITIES HAVING JURISDICTION. ALL WORK SHALL BE IN ACCORDANCE WITH LAWS AND OF THE AUTHORITIES HAVING JURISDICTION. PROVIDE THE EQUIPMENT WITH APPLICABLE CGA, CSA AND ULC LABELS.

.5 CONFORM TO THE ONTARIO BUILDING CODE, CSA STANDARDS, MINISTRY OF ENVIRONMENT (MOE), LOCAL BY-LAWS AND AUTHORITIES HAVING JURISDICTION.

.6 CO-ORDINATE WITH OTHER TRADES REGARDING THE LOCATIONS OF EQUIPMENT, CONTROL DEVICES, LOCATIONS, DISTRIBUTION SYSTEM, ETC.

.7 SCHEDULE WORKING HOURS WITH THE OWNER.

.8 THE CONTRACTOR IS TO LOCATE THE EXACT DIMENSIONS AND POSITIONS OF OPENINGS AND HOLES WHERE CUTTING MAY BE REQUIRED IN FLOORS, ROOFS, CEILINGS AND/OR WALLS FOR THE PASSAGE OF PIPES, DUCTS, ETC. WHERE CUTTING, PATCHING IS NECESSARY, IT SHALL BE DONE BY THE MECHANICAL.

.9 CONNECTIONS INTO EXISTING SYSTEMS TO BE MADE AT TIME APPROVED BY OWNER. REQUEST WRITTEN APPROVAL OF TIME WHEN CONNECTIONS CAN BE MADE. BE RESPONSIBLE FOR DAMAGE TO EXISTING PLANT BY THIS WORK.

.10 CLEAN INTERIOR AND EXTERIOR OF ALL SYSTEMS. VACUUM INTERIOR OF DUCTWORK AND AIR HANDLING UNITS. IN PREPARATION FOR FINAL ACCEPTANCE, CLEAN AND REFURBISH ALL EQUIPMENT AND LEAVE IN OPERATING CONDITION INCLUDING REPLACEMENTS OF ALL FILTERS IN ALL SYSTEMS.

.11 FOR ALL CONCEALED VALVES AND VOLUME DAMPERS, PROVIDE ACCESS DOORS AND ARRANGE THESE DOORS TO BE INSTALLED BY THE RESPECTIVE TRADES SUCH AS MAINTENANCE INSTRUCTIONS FROM THE MANUFACTURER.

.12 PROVIDE MANUFACTURER RECOMMENDED SPACE FOR SERVICING, DISASSEMBLY AND REMOVAL OF EQUIPMENT AND COMPONENTS. PIPE EQUIPMENT DRAINS TO NEAREST DRAIN.

.13 PROVIDE SCHEDULE 40 PIPE SLEEVES AT POINTS WHERE PIPES PASS THROUGH MASONRY, CONCRETE OR FIRE RATED ASSEMBLIES. SLEEVE SIZES: MINIMUM 6 MM CLEARANCE ALL AROUND, BETWEEN SLEEVE AND UNINSULATED PIPEOR BETWEEN SLEEVES AND PIPE IN FOUNDATION WALLS AND BELOW GRADE FLOORS WITH WATERPROOF FIRE RETARDANT NON-HARDENING MASTIC. WHERE SLEEVES PASS THROUGH WALLS OR FLOORS, PROVIDE SPACE FOR FIRE STOPPING. WHERE PIPES/DUCTS PASS THROUGH FIRE RATED WALLS, FLOORS AND PARTITIONS, MAINTAIN

.14 SUPPLY TOOLS, EQUIPMENT AND PERSONNEL TO DEMONSTRATE AND INSTRUCT OPERATING AND MAINTENANCE PERSONNEL IN OPERATING, CONTROLLING, ADJUSTING, TROUBLE-SHOOTING AND SERVICING OF ALL SYSTEMS AND EQUIPMENT DURING REGULAR WORK HOURS, PRIOR TO ACCEPTANCE.

.15 GUARANTEE IN WRITING FOR THE MATERIAL AND WORKMANSHIP INCLUDING THE MANUFACTURER'S GUARANTEE FOR THE PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE.

.16 CERTIFY IN WRITING FOR ALL WORK COMPLETED IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS. SUBMIT AS-BUILT DRAWINGS WHERE REVISIONS

.17 WHERE THESE STANDARDS ARE SUPERCEDED BY PUBLISHED LOCAL MUNICIPAL STANDARDS AND DESIGN CRITERIA, THE MUNICIPAL STANDARDS SHALL APPLY. THESE STANDARDS APPLY TO ALL PHASES OF THE WORK.

1.2 DESCRIPTION OF WORK

1. SELECTIVE DEMOLITION WORK.
2. RENOVATION OF WASH ROOM PLUMBING SYSTEMS.
3. RENOVATION OF WASH ROOM AND MUSIC ROOM HVAC SYSTEMS.
4. OTHER MISCELLANEOUS WORK AS SHOWN ON DRAWING.

1.3 SHOP DRAWINGS

SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:

.1 HVAC EQUIPMENT INCLUDING HEATERS.
.2 AIR GRILLE.
.3 PLUMBING FIXTURES DESIGNATED.

1.4.1 STANDARDS OF MATERIAL AND EQUIPMENT

MATERIAL AND EQUIPMENT ARE SPECIFICALLY DESCRIBED AND NAMED IN THIS SPECIFICATION AS EITHER BASE BID, BASE BID ALTERNATES AND ACCEPTABLE PRODUCTS.

.2 WHERE THE TERM "ACCEPTABLE PRODUCTS" IS USED, THE BID MAY BE BASED ON ANY OF THE ACCEPTABLE PRODUCTS.

.3 WHERE THE "BASE BID" SPECIFICATION IS USED, THE BID MUST BE BASED ON THE SPECIFIED EQUIPMENT. THE "ALTERNATE PRODUCTS" SHALL BE LISTED ON THE SUPPLEMENTARY TENDER FORM WITH THE COST SAVING (IF ANY), AND THE OWNER SHALL HAVE THE FINAL OPTION OF ACCEPTING OR REJECTING ALTERNATE EQUIPMENT.

.4 IF THIS DIVISION STATES THE USE OF "ALTERNATE PRODUCTS", THE BIDDER SHALL HAVE MADE ALLOWANCE IN HIS SAVINGS FOR ANY STRUCTURAL OR ELECTRICAL CHANGES NECESSARY, AND SAID CHANGES SHALL BE AT THE EXPENSE OF THIS DIVISION.

1.5 INTERRUPTION OF EXISTING SERVICES

.1 ALL INTERRUPTIONS OF EXISTING MECHANICAL SYSTEMS MUST BE APPROVED BY AND CO-ORDINATED WITH THE OWNER.

.2 DISRUPTION OF NORMAL OPERATIONS WILL NOT BE ALLOWED. ALL INTERRUPTIONS SHALL OCCUR AFTER THE CLOSE OF NORMAL HOURS. PREMIUM TIME TO BE INCLUDED IN THE TENDER PRICE.

1.6 SLEEVES, CUTTING, PATCHING AND FIRE STOPPING

.1 INSTALL SLEEVES AND FRAMES FOR PIPING AND SIMILAR EQUIPMENT TO BE BUILT INTO THE BUILDING AS THE CONSTRUCTION PROGRESSES. IF THESE ARE NOT INSTALLED AT THE TIME OF CONSTRUCTION, THE COST OF CUTTING AND PATCHING AT A LATER DATE, WILL BE AT THE EXPENSE OF THIS CONTRACTOR.

.2 THE PRIME MECHANICAL CONTRACTOR IS RESPONSIBLE FOR THE CUTTING AND PATCHING OF ALL HOLES AND OPENINGS UP TO AND INCLUDING 200 mm (8") DIAMETER.

.3 THE PRIME MECHANICAL CONTRACTOR IS TO LOCATE THE EXACT POSITIONS AND DIMENSIONS OF LARGER OPENINGS FOR CUTTING BY THE GENERAL DIVISION.

.4 THE PRIME MECHANICAL CONTRACTOR IS RESPONSIBLE FOR THE SUPPLY AND INSTALLATION OF APPROVED FIRE STOPPING FOR ALL NEW MECHANICAL PENETRATIONS THROUGH BOTH EXISTING AND NEW FIRE SEPARATIONS. VERIFY ALL FIRE SEPARATIONS WITH THE ARCHITECTURAL DRAWINGS. FIRE STOPPING IS TO BE RATED TO MATCH AND MAINTAIN THE INTEGRITY OF THE RATED ASSEMBLY.

1.7 RECORD DRAWINGS AND EQUIPMENT MANUALS

.1 AS THE PROJECT PROGRESSES, RECORD, ON A SET OF WHITE PRINTS, ALL ADDENDA, CHANGES TO AND DEVIATIONS FROM THE PLANS MADE DURING THE CONSTRUCTION PERIOD. ALSO, RECORD THE LOCATION OF ALL DIFFUSERS, GRILLES AND OTHER MECHANICAL EQUIPMENT.

.2 MAKE THESE PROGRESS RECORD DRAWING WHITE PRINTS AVAILABLE TO THE CONSULTANTS FOR THEIR REVIEW AT ALL TIMES DURING THE CONSTRUCTION PERIOD.

.3 AT THE CONCLUSION OF THE PROJECT, TRANSFER ALL RECORD DRAWING INFORMATION ONTO AUTOCAD RELEASE 2010 OR LATER TO A UNIVERSAL SERIAL BUS STICK (USB).

.4 THE CONSULTANT SHALL PROVIDE TO THE CONTRACTOR A USB CONTAINING GRAPHIC (ELECTRONIC) REPRESENTATION OF THE DRAWINGS. A RELEASE FORM "TRANSFER OF OF FILES ON ELECTRONIC MEDIA" WILL BE PROVIDED BY THE CONSULTANT TO THE CONTRACTOR FOR SIGNING IN ORDER TO RECEIVE AND USE THE ELECTRONIC FILES.

.5 BEFORE SUBSTANTIAL PERFORMANCE OF THE CONTRACT, COMPLY WITH THE FOLLOWING:

.1 PROVIDE USB CONTAINING ALL UPDATED RECORD DRAWING INFORMATION AS SPECIFIED HEREIN.

.2 PROVIDE TWO (2) SETS OF EQUIPMENT DATA SHEETS AND/OR MANUFACTURER'S MAINTENANCE MANUALS COVERING EACH SYSTEM AND ITS COMPONENTS IN ACCORDANCE WITH REQUIREMENTS OF EACH APPROPRIATE SECTION. THEY ALL SHALL BE SUBMITTED ELECTRONICALLY IN A USB.

B. BALANCING IDENTIFICATION AND START-UP

1 IDENTIFICATION IS TO BE CARRIED OUT BY THE RESPECTIVE TRADE WITH NAME TAGS IDENTIFYING THE USE OR SERVICE OF ALL NEW MAIN VALVES AND NEW EQUIPMENT.

2 CLEAN ALL NEW EQUIPMENT AND OTHER INSTALLATIONS.

3 PROVIDE MAINTENANCE INSTRUCTIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

4 SUBMIT TWO (2) COPIES OF MANUFACTURER'S MAINTENANCE MANUALS TO OWNER FOR ALL NEW EQUIPMENT.

5 PROVIDE AN ELECTRONIC COPY OF THE AIR BALANCING REPORT TO OWNER.

6 AIR BALANCING SHALL BE DONE BY PROFESSIONAL TESTING AND BALANCING FIRM. AIR QUANTITIES OF EACH OUTLET SHALL BE AS INDICATED ON THE DRAWINGS. THE AIR BALANCING REPORT SHALL SHOW THE QUANTITIES, VELOCITIES, AND AREA OF EACH OUTLET, TYPE AND MODEL NUMBER OF FANS AND MOTORS INSTALLED, ACTUAL AIR DELIVERED BY THE FAN WITH TOTAL STATIC PRESSURE AND VOLTAGE DRAWN BY THE MOTORS. ADJUST AND RETEST THE SYSTEMS TO THE SATISFACTION OF THE PROJECT CO-ORDINATOR. PROVIDE AN ADDITIONAL COPY OF THE AIR BALANCING REPORT TO THE MECHANICAL CONSULATANT.

7 APPLICATION TOLERANCES: HVAC SYSTEMS: PLUS 5%, MINUS 5%

8 AIR SYSTEMS: TO TAB STANDARDS OF AABC.

9 THE HVAC CONTRACTOR SHALL CO-OPERATE WITH TAB AGENCY, PROVIDE REQUIRED PERSONNEL ATTENDANCE AND AT NO ADDITIONAL COST, CHANGE OR ADJUST THE SHEAVES, MOTOR AND BELTS IF NECESSARY TO ACHIEVE THE SPECIFIED AIR VOLUME.

10 SUBMIT THREE (3) COPIES OF TAB REPORT WITH SCHEMATICS FOR ENGINEERS APPROVAL.

C VENTILATION

.1 VENTILATION MATERIALS

ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND FREE FROM DEFECTS, CSA APPROVED.

.2 AIR DISTRIBUTION

ALL DUCTWORK SHALL BE FABRICATED TO SMACNA DUCT MANUAL STANDARDS, SECTION NO. 1, AND AS FOLLOWS

.3 MATERIAL AND THICKNESS

DUCTWORK SHALL BE FABRICATED FROM BEST QUALITY LOCK-FORMING GALVANIZED STEEL SHEETS AS MANUFACTURED BY STELCO OR DOFASCO OF THE FOLLOWING THICKNESS:

SIZE OF DUCT	GAUGE OF SHEET STEEL
300 OR LESS IN WIDTH OR DEPTH OF UP TO 200 DIAMETER	NO.26 US
325 TO 750 IN WIDTH OR DEPTH OF 225 TO 550 DIAMETER	NO.24 US
750 TO 1350 IN WIDTH OR DEPTH	NO.22 US

.4 CONSTRUCTION

LONGITUDINAL SEAMS SHALL BE MADE WITH PITTSBURGH LOCK OR BUTTON PUNCH SEAMS IN ALL SIZES. ALL DUCTWORK SHALL BE CROSS BROKEN OR BEADED 12" O.C. FOR RIGIDITY.

DUCTS SHALL HAVE PLAIN "S" SLIPS ON THE LONG SIDES, AND DRIVE CLEATS ON THE SHORT SIDES, FOLDED OVER TO PREVENT AIR LEAKAGE. MINIMUM END JOINT SPACING IS 3000mm

ALL BENDS OR ELBOWS SHALL BE MADE WITH A RADIUS OF NOT LESS THAN 1-1/2 TIMES THE WIDTH OF THE DUCT. WHERE IT IS NOT POSSIBLE, TURNING VANES SHALL BE USED. VANES SHALL BE OF SINGLE VANE CONSTRUCTION WITH SPACE UP TO 600 WIDTH AND

80mm SPACING OVER 600

.5 HANGERS

DUCTWORK SHALL HAVE SUBSTANTIAL HANGERS ATTACHED TO STRUCTURE WITH CONCRETE INSERTS TO SECURE THE DUCTS IN PLACE AND PREVENT VIBRATION. NO CADDY CLIPS OR PLUMBERS TAPE PERMITTED FOR HANGING DUCTS.

HORIZONTAL DUCTWORK UP TO 725 WIDE SHALL BE SUPPORTED BY GALVANIZED 25mm 16 GAUGE OR HEAVIER HANGERS PLACED NOT OVER 1800mm APART, WITH ENDS TURNED UNDER THE DUCT. SECURE TO DUCT WITH SHEET METAL SCREWS, TWO (2) PER SIDE, AND ONE (1) IN BOTTOM.

HORIZONTAL DUCTWORK OVER 750 mm WIDE SHALL REST ON GALVANIZED ANGLE IRON SUPPORTS OR UNISTRUT CHANNELS, WITH ROD HANGERS AT 1800mm SPACING AS FOLLOWS:

DUCT SIZE	ROD	ANGLE
750 TO 1225	6mm	40mm X 40mm X 3mm

.6 DUCT SEALING

ALL JOINTS DURING MANUFACTURE OF LOW VELOCITY DUCTWORK SHALL BE SEALED WITH 3-M, HIGH VELOCITY SEALER, TOUGH BOND OR DURO DYNE S-2H.V. SEALER ON THE FACES OF THE JOINTS AND AFTER CLEATS HAVE BEEN INSTALLED.

.7 BALANCING DAMPERS

PROVIDE BALANCING DAMPERS IN DUCTWORK WHERE SHOWN AND WHERE REQUIRED FOR PROPER ADJUSTMENT OF AIR QUANTITIES. OPEN AND CLOSED POSITIONS MUST BE CLEARLY MARKED.

.1 SPLITTER DAMPERS: SHALL BE AIRFOIL SHAPE DOUBLE THICKNESS ON GAUGE HEAVIER THAN DUCT WITH LOCKING QUADRANT ON EXTERIOR OF DUCT.

.2 SINGLE BLADE ROUND BUTTERFLY U.S. 22 GA THICK WITH LOCKING QUADRANT.

.3 MULTI-LEAF OPPOSED BLADE DAMPERS DESIGNED TO SMACNA DETAILS WITH LOCKING QUADRANT.

.8 DUCT INSULATION

COMPONENTS OF INSULATION SYSTEM TO HAVE MAXIMUM FLAME SPREAD RATING OF 25 AND MAXIMUM SMOKE DEVELOPED RATING OF 50 IN ACCORDANCE WITH CAN/ULC-S102 MATERIALS TO BE TESTED IN ACCORDANCE WITH ASTM C411.

PROVIDE CAN/CGSB-51.10, RIGID MINERAL FIBRE BOARD; CGSB 51-GP-52MA VAPOUR BARRIER, JACKET AND FACING MATERIAL INSULATION ON RECTANGULAR DUCTING LARGER THAN 300x150 SIZE FOR SUPPLY AIR DUCTING, FROM FAN TO SUPPLY GRILLE.

THICKNESS: ONE 25 MM LAYER ON SUPPLY AIR DUCTS. INSTALL IN ACCORDANCE WITH ANSI/NFPA 90A AND ANSI/NFPA 90B.

PROVIDE 25mm THICKNESS MINERAL FIBRE BLANKET WITH RRFRK FACING TO CAN/CGSB-51.11 ON ROUND AND RECTANGULAR SUPPLY AIR DUCTWORK UP TO 300x150 SIZE.

JACKETS:
INDOOR EXPOSED: ULC LISTED PLAIN WEAVE COTTON FABRIC.
OUTDOOR: GLASSFAB MEMBRANE FINISHED WITH TWO (2) COATS BAKELITE #110-14.

INSULATE:
ALL SUPPLY AIR DUCTWORK INCLUDING DUCTS IN CEILING RETURN AIR PLENUMS.

DO NOT INSULATE:
RETURN AIR DUCTS, ACOUSTICALLY LINED DUCTS

D PIPE AND FITTINGS - PRODUCTS

1.1 PLUMBING & DRAINAGE

.1 PIPE MATERIALS

.1 SOIL, VENT AND RAINWATER LEADERS NOT BURIED 3" (80 MM) AND LARGER:
.1 CLASS 4000 CAST IRON SHALL BE CERTIFIED TO CSA B70 - MECHANICAL JOINT.

.2 DRAINAGE VENTS AND WASTES 2-1/2" (65 MM) AND SMALLER:
.1 CLASS 4000 CAST IRON SHALL BE CERTIFIED TO CAN/CSA B70-M91 - MECHANICAL JOINT.
.2 DRAINAGE COPPER PIPE DWV SHALL COMPLY WITH ASTM B306 - SOLDER JOINTS.
.3 SCHEDULE 40 GALVANIZED STEEL - THREADED JOINTS.

.3 ALL BURIED DRAINAGE PIPING WITHIN BUILDING;
.1 CLASS 4000 CAST IRON SHALL BE CERTIFIED TO CAN/CSA B70-M91 - MECHANICAL JOINT.
.2 DWV PLASTIC PIPE ABS AND SOLVENT WELD, 4" (100 MM) AND SMALLER.
.3 PVC SDR, 6" (150 MM) AND LARGER.

1.2 STEEL PIPE AND FITTINGS

.1 SERVICE: HOT WATER HEATING.

.2 PIPING: CONTINUOUS WELDED SCHEDULE 40 ASTM-A120 FOR SCREWED PIPING AND MECHANICAL JOINTS AND ASTM-A53 FOR WELDING.

.3 JOINTS:
.1 15 MM TO 65 MM CLASS 150 MI THREADED UNIONS, CLASS 150 DART PATTERN MI THREADED BRASS TO IRON GROUND SEAT.

.4 VALVES:
.1 ALL INSULATED VALVES SHALL HAVE EXTENDED NECKS OR SHAFTS WHERE THE THICKNESS OF THE INSULATION INTERFERES WITH THE OPERATING HANDLE.

.2 BALL:
.1 15 MM TO 50 MM CLASS 150 STANDARD PORT BRONZE BODY BRONZE FITTED SCREWED ENDS PTFE SEATS AND PACKING, LEVER HANDLE.

ACCEPTABLE PRODUCTS:
.1 CRANE 9202
.2 JENKINS 201J
.3 NEWMAN-HATTERSLEY 1969
.4 VICTAULIC 726
.5 MILWAUKEE BA-200

.3 CHECK:
.1 15 MM TO 65 MM CLASS 125 BRONZE BODY, SCREWED ENDS, SWING DISC, SCREW-ON CAP.

ACCEPTABLE PRODUCTS:
.1 CRANE 37/1707
.2 JENKINS 4092
.3 MILWAUKEE 509
.4 NEWMAN-HATTERSLEY A60

.4 STRAINERS:
.1 15 mm TO 50 mm CAST IRON 'Y' BODY PATTERN, SCREWED ENDS AND CAP WITH BRASS PLUG, STAINLESS STEEL SCREEN WITH 0.125 PERFORATIONS FOR WATER SERVICE.

ACCEPTABLE PRODUCTS:
.1 SARCO
.2 ITT

1.3 COPPER PIPE AND FITTINGS

.1 SERVICE: ALL DOMESTIC WATER PIPING

.2 PIPING: PLAIN END TYPE "L" HARD DRAWN COPPER.

.3 FITTINGS: SOLDER END WROUGHT COPPER.

.4 JOINTS: ALL DOMESTIC HOT AND COLD POTABLE WATER PIPING SHALL BE JOINED USING 95/5 SOLDER CONTAINING NO LEAD COMPOUNDS (95% TIN/5% ANTIMONY). NON-POTABLE WATER PIPING SHALL BE JOINED USING A STANDARD 50/50 TIN/LEAD COMPOUND SOLDER.

.5 VALVES:
.1 BALL: 15 MM TO 65 MM FULL PORT BRASS OR BRONZE BODY, BRONZE FITTED SOLDER ENDS, PTFE SEATS AND PACKING, LEVER HANDLE.

.2 ACCEPTABLE PRODUCTS:
.1 CRANE F9222
.2 JENKINS 902
.3 APOLLO 77FLF-200
.4 NIBCO 585-80-LF

E PLUMBING FIXTURES - PRODUCTS

PLUMBING FIXTURES

.1 CONNECTIONS TO FIXTURES:
.1 TRAP AND VENT EACH FIXTURE, ACCORDING TO THE PLUMBING CODE.

.2 SUPPLY AND INSTALL THE PLUMBING FIXTURES WITH ALL REQUIRED FITTINGS:

F PIPES AND FITTINGS - EXECUTION

1.1 PIPING INSTALLATION

.1 PROVIDE ALL NECESSARY PIPING INCLUDING FITTINGS AND UNIONS TO COMPLETE SYSTEMS SHOWN. CUT PIPES TRUE AND SQUARE, REAM FILE ENDS TO SMOOTH SURFACE, ALL TO PIPE MANUFACTURER'S AND ACCEPTED TRADE STANDARDS. FITTINGS SHALL BE OF EQUIVALENT BORE AS PIPE, OF EQUAL STRENGTH AND WEIGHT. INSTALL PIPING TO MANUFACTURER'S SPECIFICATIONS AND PUBLISHED DIRECTIONS. INSTALL PIPING TO CONFORM TO ONTARIO BUILDING CODE (CHAPTER 7).

.2 INSTALL ABOVE GROUND PIPING TO CLEAR OTHER PIPING, INSULATION, OBSTRUCTIONS, ACCESS DOORS AND CONTROLS. TAKE BRANCHES OFF MAINS WITH FITTINGS AND 45° AND 90 °ELBOWS. LOCATE VALVES FOR EACH OPERATION. LOCATE CLEANOUTS IN ACCESSIBLE LOCATIONS TO APPROVAL AND TO SUIT ACCESS.

.3 DO NOT USE FERROUS PIPING, FITTINGS, BUSHINGS, NIPPLES OR PLUGS IN COPPER PIPING. PROVIDE DIELECTRIC BUSHINGS AT CONNECTIONS TO FERROUS MATERIALS OR EQUIPMENT ON WATER SYSTEMS.

.4 SUPPLY AND INSTALL FLANGES, UNIONS OR COMPRESSION FITTINGS ON EQUIPMENT SIDE OF SHUT-OFF VALVES IN PIPING CONNECTIONS TO EQUIPMENT, TANKS AND FIXTURES SO SAME CAN BE DISCONNECTED FOR SERVICE. FLANGES AND UNIONS SHALL BE OF SAME MATERIAL AS PIPING.

.5 CO-ORDINATE ROUTING OF PIPING WITH OTHER TRADES. PROVIDE INTERFERENCE DRAWINGS AS REQUIRED.

.6 REFER TO MANUFACTURER'S INSTALLATION DRAWINGS.

.7 INSTALL SYSTEMS SO THAT THEY CAN BE THOROUGHLY DRAINED AND ALL AIR ELIMINATED.

.8 DURING WELDING OR SOLDERING PROCEDURES, PROVIDE A FIRE RETARDANT CLOTH, MAT OR BLANKET TO PROTECT THE STRUCTURE, AND ADEQUATE FIRE PROTECTION EQUIPMENT AT ALL LOCATIONS WHERE WORK IS BEING DONE.

.9 PLUG AND/OR CAP ALL PIPE OPENINGS/FITTINGS DURING CONSTRUCTION.

.10 CAST IRON PIPE TO HAVE ANTHES RUBBER GASKET MECHANICAL JOINTS, PC4 COLD CAULKING COMPOUND HUB AND SPIGOT JOINTS, CAULKED LEAD JOINTS WITH OAKUM AND SOFT PIG LEAD, OR BIBBY BISEAL. CONFINED SPACES TO BE MECHANICAL JOINTS.

.11 THREADED PIPE JOINTS TO BE TRUE AND ROUND WITH FULL CUT THREADS, ENDS REAMED AND FILED WITH ALL BURRS REMOVED IRON TO IRON WITH A FILLER OF GRAPHITE AND OIL.

.12 SOLDER JOINTS SHALL BE CAREFULLY CLEANED WITH EMERY CLOTH. USE "SILFOS" SILVER SOLDER FOR BURIED PIPING. SEE SECTION 15700 FOR TYPE OF SOLDER TO BE USE ON VARIOUS PIPING SYSTEMS.

.13 MAKE JOINTS IN COPPER PIPING WITH 95/5 TIN/ANTIMONY SOLDER WITH NON-CORROSIVE SOLDERING FLUX. CLEAN, REAM AND THOROUGHLY TIN EACH JOINT AND REMOVE EXCESS SOLDER AND FLUX.

.14 GRADING: UNLESS OTHERWISE NOTED, DRAINAGE AND WASTE SHALL GRADE DOWN IN THE DIRECTION OF FLOW, AS FOLLOWS:
.1 UP TO AND INCLUDING 3" (80 MM): 1/4" IN 1 FOOT (1:50).
.2 4" (100 MM) AND LARGER: 1/8" IN 1 FOOT (1:100).

.15 GRADE VENT PIPING UP FROM FIXTURES SO IT IS SELF DRAINING.

.16 IN ADDITION TO TESTS REQUIRED BY LOCAL AUTHORITIES, TEST PIPING AND DRAINS IN THE PRESENCE OF CONSULTANT AS HEREINAFTER DESCRIBED.

.17 NOTIFY THE CONSTRUCTION MANAGER IN WRITING AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO START OF TESTS. FAILURE TO DO SO MAY REQUIRE TEST TO BE RE-DONE.

.18 PERFORM TESTS BEFORE APPLICATION OF PIPE INSULATION AND COVERING. TEST BURIED AND CONCEALED PIPING BEFORE BACKFILLING OR CONCEALING IN STRUCTURE. PROTECT EQUIPMENT AND PARTS NOT CAPABLE OF WITHSTANDING TEST PRESSURE DURING TESTS. MAKE LEAKS TIGHT WHILE SYSTEMS ARE STILL UNDER TEST. IF THIS IS IMPOSSIBLE, REMOVE AND RE-FIT DEFECTIVE PARTS. CAULKING OF THREADED JOINTS OR WELDS WILL NOT BE PERMITTED.

.19 AFTER LEAKS HAVE BEEN REPAIRED, REPEAT TESTS AS OFTEN AS NECESSARY, AND TO ENSURE TIGHTNESS OF EACH SYSTEM.

.20 INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION COMPLETE WITH SWING JOINTS, EXPANSION LOOPS, AND ANCHORS AS NECESSARY. SILVER SOLDER EACH JOINT IN EXPANSION LOOPS WHERE USED.

.21 PRESSURE TEST HOT WATER HEATING PIPING WITH 150 PSI (1034 KPA) FOR NOT LESS THAN FOUR (4) HOURS WITHOUT DECREASE IN PRESSURE.

1.2 PIPE HANGERS

.1 ALL HORIZONTAL PIPING SHALL BE SUPPORTED AT LEAST EVERY 10'-0" (3000 MM), EXCEPT FOR PIPE 1-1/4" (32 MM) AND SMALLER WHERE 8'-0" (2400 MM) SPACING IS REQUIRED. PIPE HANGERS FOR COPPER PIPING SHALL BE ADJUSTABLE CLEVIS TYPE ANVIL FIG. 260 COMPLETE WITH INSULATION SHIELD SIMILAR TO ANVIL FIG. 168. HANGER ROD SHALL BE STEEL WITH COPPER NUT. CLEVIS HANGERS TO BE OUTSIDE PIPE INSULATION. BETWEEN THE SHIELD AND THE PIPE, INSTALL A SECTION OF HIGH DENSITY INSULATION EQUAL TO FOAMED GLASS (3.75 TO 5.0 LB DENSITY MATERIAL) COMPLETE WITH CONTINUOUS VAPOUR BARRIER. EXTEND HIGHER DENSITY INSULATION 2" (50 MM) BEYOND SHIELD. PIPE HANGERS AND SUPPORTS SHALL BE SECURED TO BEAMS, STEEL JOISTS, WALLS, FLOORS, ETC. DO NOT SUPPORT FROM METAL DECK.

.2 ALL HANGERS AND RODS SHALL BE OF A SIZE AND WEIGHT TO SAFELY SUPPORT THE PIPING SYSTEM.

.3 ALL HANGER RODS SHALL BE RUST RESISTANT GALVANIZED DIPPED.

.4 ACCEPTABLE PRODUCTS: ANVIL, MYATT, TAYLOR

1.3 PIPING INSULATION

.1 INSULATION SHALL CONFORM TO ASHRAE STANDARD 90.1 (LATEST EDITION).

.2 ALL NEW PIPING AND FITTINGS SHALL BE INSULATED WITH INORGANIC GLASS FIBRES, BONDED WITH A THERMOSETTING RESIN COMPLETE WITH SELF SEALING LAP, "ASJ" ALL SERVICE JACKET AND 3" (80 MM) WIDE "ASJ" BUTT STRIPS.

.3 DOMESTIC COLD AND HOT WATER PIPING INSULATION THICKNESS TO BE 1/2" (15 MM) FOR PIPE SIZES 1/2" TO 3" (13 MM TO 80 MM), COMPLETE WITH VAPOUR BARRIER, USING INSULATION K FACTOR .24 AT 75'F (24'C).

.4 HOT WATER HEATING PIPING INSULATION THICKNESS TO BE 1" (25 MM) FOR PIPE SIZES 1/2" TO 3" (13 MM TO 80 MM), 1 1/2" (40 MM) THICK FOR PIPES SIZES 4" (100 MM) AND LARGER COMPLETE WITH VAPOUR BARRIER, USING INSULATION K FACTOR .24 AT 75'F (24'C).

.5 ACCEPTABLE PRODUCTS: KNAUF, MANVILLE SCHULLER INTERNATIONAL, MANSON

.6 ALL INSULATION SHALL BE APPLIED OVER A CLEAN, DRY SURFACE, AFTER ALL PRESSURE TESTING HAS BEEN CARRIED OUT AND REVIEWED BY THE CONSULTANT.

.7 INSTALL INSULATION SHIELDS SUPPLIED BY MECHANICAL DIVISION.

.8 THE INSULATION JOINTS SHALL BE BUTTED TIGHTLY. ADHERE THE VAPOUR BARRIER JACKET LAP WITH VAPOUR BARRIER ADHESIVE AND ADHERE THE 3" (80 MM) WIDE BUTT JOINT STRIPS OVER ALL END JOINTS WITH ADHESIVE TO ENSURE CONTINUOUS VAPOUR BARRIER. INSULATE ALL FITTINGS UP TO 2" (50 MM) WITH MITRE-CUT PIECES OF INSULATION AND PRESSURE-SENSITIVE, COLOUR-MATCHING TAPE. ALL EXPOSED FITTINGS 2" (50 MM) AND LARGER SHALL HAVE PRE-MOLDED "PVC" INSULATING FITTINGS COVERS.

.9 ALL EXPOSED INSULATED PIPING AND FITTINGS SHALL BE FINISHED WITH A FIRE RETARDANT PVC JACKET.

.10 NO ADDITIONAL FINISH NEED BE APPLIED TO CONCEALED PIPING.

G BAS SYSTEM

1. USE EXISTING BAS SYSTEM AND ADD ADDITIONAL INFRASTRUCTURE REQUIRED AS NECESSARY. CONTACT BAS SYSTEM SUPPLIER MENTION ON ME1-00 DRAWING.
2. SEE ME1-00 DRAWING FOR THE SEQUENCE OF CONTROL.
3. ALL WIRES IN CEILING SPACE SHALL BE PLENUM RATED.
4. ALL EXPOSED WIRES SHALL BE IN EMT CONDUITS.

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	2025-03-24
1	ISSUED FOR PERMIT	2025-02-25
B	PROGRESS SUBMISSION	2025-02-04
A	PROGRESS SUBMISSION	2025-01-10

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project title:
HAMILTON - WENTWORTH DISTRICT SCHOOL BOARD
P02125 - LAKE AVENUE ELEMENTARY SCHOOL RENOVATIONS.
WASHROOMS & CHANGEROOMS RENOVATIONS

Drawing Title:
SPECIFICATIONS

drawn: MH	scale: AS SHOWN
date: 01/2025	project number: 24-21
checked: KS	DRAWING NO: M4-00
date: 01/2025	0 Revision

UNIT HEATER SCHEDULE (HYDRONICS)

TAG	AREA SERVED	MANUFACTURE	MODEL NUMBER	ARRANGEMENT NUMBER	DIMENSION (L X D X H)	HEATING MBH	GPM	COIL PRESSURE DROP FT. WG	AIR FLOW CFM	MOTOR HP	RPM	MOTOR AMPS	# OF FANS	POWER	ELECTRICAL WIRING INSTRUCTION
CH-1/CH-2/CH-4	R-136A/R-136B/ R-138A	ENGINEERED AIR	CUH-1	24	660X711X241	16.10	1.62	1.52	185	1/25	1050	0.6	1	115/1/60	DIV. 26 TO WIRE UNIT COMPLETELY. ALL CONTROL WIRING BY MECHANICAL DIVISION. CONTROL VALVE TO BE PROVIDED BY THE BAS SUPPLIER AND WIRE TO THE FOR ON/OFF.
CH-3/CH-5	R-138/R-136	ENGINEERED AIR	CUH-3	24	660X711X241	21.45	2.17	3.57	300	1/25	1050	0.6	1	115/1/60	

NOTES

1. EWT=180^{0}F, ΔT= 20^{0}F
2. THE UNIT TO BE SELECTED WITH BUILT-IN THERMOSTAT.
3. UNIT HEATER COLOR SHALL BE SELECTED BY ARCHITECT. ALLOW FOR FACTORY FINISH FINAL COAT.

EXHAUST FAN SCHEDULE

TAG	AREA SERVED	MANUFACTURER AND MODEL NUMBER	VOLUME L/S (CFM)	EXTERNAL SP (PASCAL)	FAN RPM	WALL OPENING SIZE (MM)	WEIGHT WITH ACC'S (LBS)	REMARKS	WIRING FOR MECHANICAL EQUIPMENT SCHEDULE						ROOM STARTER TYPE	REMOTE CONTROL DEVICE	ELECTRICAL WIRING SCOPE
									MOTOR								
									SIZE (HP)	V/PH/HZ	MOTOR RPM	FLA (AMPS)	MCA	MOCP			
EF-1	R-136/R-136A/R-136B/R-137A /R-137B	GREENHECK SQ-130	472 (1000)	125	1140	-	91		1/3	115/1/60	1140	7.2	-	15	MAG. STARTER HOA	BAS	DIV. 26 TO PROVIDE MAGNETIC STARTER C/W HAND/OFF/AUTO SWITCH & PILOT LIGHTS AND WIRE UNIT COMPLETELY THROUGH DISCONNECT SWITCH SUPPLIED BY MECHANICAL DIVISION. ALL CONTROL WIRING TO BAS BY MECHANICAL DIVISION. BAS SHALL ENABLE DISABLE AND MONITOR STATUS OF THE FAN. ALL STARTERS SHALL BE LOCATED IN STORAGE ROOM 138A BY THE ELECTRICAL CONTRCTOR.
EF-2	R-138A	GREENHECK SQ-90-VG	94 (200)	100	1300	-	35		1/6	115/1/60	-	2.8	-	15	MAG. STARTER HOA	BAS	
EF-3	STAFF WASHROOMS	GREENHECK SQ-90-VG	94 (200)	100	1300	-	35		1/6	115/1/60	-	2.8	-	15	MAG. STARTER HOA	BAS	
EF-4	R-138B	GREENHECK SQ-90-VG	189 (400)	100	1300	-	34		1/6	115/1/60	-	2.8	-	15	MAG. STARTER HOA	BAS	

NOTES:
1. MOTOR WITH CSA APPROVAL
2. SWITCH, NEMA-1, JUNCTION BOX MOUNTED & WIRED
3. GRAVITY OPERATED BACK DRAFT DAMPER
4. COATED WITH PERMATECTOR, CONCRETE GRAY-RAL 7023, FAN AND ATTACHED ACCESSORIES. ALUMINUM WHEEL MATERIAL
5. ISOLATORS & BRACKETS, SPRING HANGING KIT(S) FOR INDOOR FANS

MECHANICAL SCHEDULE - BASEBOARD ELECTRIC HEATER

TAG	MANUFACTURER	MODEL	LOCATION	TYPE	QTY.	FINISH/ COLOUR	CAPACITY (KW)	POWER (V/ø/HZ)	ELECTRICAL WIRING SCOPE
BBH 1	OUELLET	OFM0502	STAFF WASHROOM (138B)	OFM	1	STANDARED	0.5	120V/1PH	DIV. 26 TO WIRE UNIT COMPLETELY THROUGH DISCONNECT SWITCH SUPPLIED BY MECHANICAL DIVISION.
BBH 2	OUELLET	OFM0502	STAFF WASHROOM (138B)	OFM	1	STANDARED	0.5	120V/1PH	

NOTES,

1. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
2. OR APPROVED EQUIVALENT AS OUTLINED IN THE SPECIFICATIONS
3. BUILT IN THERMOSTAT
4. DISCONNECT SWITCH

BUILDING AUTOMATION SYSTEM

INCLUDE IN PRICE TO RETAIN SCHOOL BOARDS BAS SYSTEM PROVIDER (SIEMENS CANADA- JAKE RENDULIC ACCOUNT EXECUTIVE 1577 NORTH SERVICE ROAD EAST, L6H 0H6, OAKVILLE, ON MOBILE: 905-541-7433 EMAIL: JAKE.RENDULIC@SIEMENS.COM) TO CONTROL NEW CABINET HEATERS AND EXHAUST FANS. ALL CONTROL WIRING AND CONDUITS SHALL BE INCLUDED.

BAS PROVIDER SHALL DETERMINE ADDITIONAL SUB PANELS OR ANY OTHER UPGRADES REQUIRED AND PRICE ACCORDINGLY.

BAS POINT LIST

1. CH-1,2,3,4,5 CABINET HEATERS - ON/OFF CONTROL OF THE VALVE. VALVE SHALL BE SUPPLIED BY THE BAS SUPPLIER FOR MECHANICAL CONTRACTOR TO INSTALL.
2. EF-1,2,3,4- ON/OFF/STATUS SIGNALS. SUPPLY AND INSTALL A FLOW SENSOR IN EXHAUST DUCT BY THE BAS SUPPLIER.
3. BAS SHALL ENABLE DISABLE & MONITOR STATUS OF THE FAN. ALL STARTERS SHALL BE LOCATED IN STORAGE ROOM 138A BY THE ELECTRICAL CONTRACTOR.

NOMENCLATURE (APPLICABLE ONLY FOR THIS DRAWING)

MCA	-	MINIMUM CIRCUIT AMPACITY
MFA	-	MAXIMUM FUSE AMPACITY
BIS	-	BUILT-IN START
TS	-	THERMOSTAT
HP	-	HORSEPOWER
DISC	-	DISCONNECT
BAS	-	BUILDING AUTOMATION SYSTEM
FRAC	-	FRACTIONAL HORSEPOWER

LEGEND FOR MECHANICAL EQUIPMENT WIRING SCHEDULE

AM	-	ACTUATOR MOTOR
APS	-	AIR PROVING SWITCH
AST	-	AQUASTAT
BAS	-	BUILDING AUTOMATION SYSTEM
BIS	-	BUILT IN START
C1	-	EEMAC-1 TYPE DISC. SWITCH
C2	-	EEMAC-2 TYPE DISC. SWITCH
C3R	-	EEMAC-3R TYPE DISC. SWITCH
C4	-	EEMAC-4 TYPE DISC. SWITCH
C12	-	EEMAC-12 TYPE DISC. SWITCH
COMB	-	COMBINATION MAGNETIC STARTER
CP	-	CONTROL PANEL
CSR	-	CURRENT SENSING RELAY
CT	-	CONTROL TRANSFORMER
CWSV	-	COLD WATER SOLENOID VALVE
DISC	-	DISCONNECT
DM	-	DAMPER MOTOR
DMSW	-	DAMPER MOTOR SWITCH
DVR	-	DOUBLE VOLTAGE RELAY
FA	-	FIRE ALARM SYSTEM CONNECTION
FL	-	FLOAT SWITCH
FLA	-	FULL LOAD RUNNING AMPERES
FPU	-	FIELD PROCESSOR UNIT BY DIV. 15900*
FPU/SS	-	START/STOP CONTROL OUTPUT FROM FPU*
FPU/ST	-	MOTOR RUNNING STATUS INPUT TO FPU*
FRAC	-	FRACTIONAL HORSEPOWER
FS	-	FLOW SWITCH
GSV	-	GAS SOLENOID VALVE
HP	-	HORSEPOWER
HOA	-	HAND/OFF/AUTO SWITCH IN STARTER COVER
HUM	-	HUMIDISTAT
HWSV	-	HOT WATER SOLENOID VALVE
IRS	-	INFRARED SENSOR
KMSW	-	KEY OPERATED MOMENTARY CONTACT SWITCH
KSW/PL	-	KEY SWITCH(15A, 120V,SPST, LOCK TYPE C/W PILOT LIGHT)
LS	-	LEVEL SWITCH
LWCO	-	LOW WATER CUT OFF
MAG	-	MAGNETIC STARTER
MAN	-	MANUAL STARTER
MCA	-	MINIMUM CIRCUIT AMPS
MCC	-	MOTOR CONTROL CENTRE
MFA	-	MAXIMUM FUSE AMPACITY
MOCP	-	MAXIMUM OVER CURRENT PROTECTION
MVS	-	MONITORED VALVE SWITCH
ODT	-	OFF DELAY TIMER
PB	-	PUSHBUTTON ON/OFF SWITCH IN STARTER COVER
PL	-	PILOT LIGHT IN STARTER COVER
PLG	-	PLUG
PS	-	PRESSURE SWITCH
RPB	-	REMOTE STOP/START PUSHBUTTON
RPL	-	REMOTE PILOT LIGHT
SD	-	SMOKE DETECTOR (DUCT TYPE)
SS	-	SPEED SWITCH
SLS & PL	-	SELECTOR SWITCH AND PILOT LIGHT
SV	-	SOLENOID VALVE
SW	-	HP RATED TOGGLE SWITCH
T	-	THERMOSTAT OR TEMPERATURE SENSING UNIT
TC	-	TEMPERATURE CONTROLLER
TI	-	TIMER (INTERVAL)
T7	-	TIMER (7-DAY)
TRS	-	THERMOSTAT REVERSING SWITCH
TS	-	THERMOSTAT
TOA	-	TEST/OFF/AUTO SWITCH IN COVER (SPRING RETURN TEST TO OFF)
VM	-	VALVE MOTOR
VFD (VSD)	-	VARIABLE FREQUENCY (OR SPEED) DRIVE

No.	DESCRIPTION	DATE
	REVISIONS	
2	ISSUED FOR TENDER	2025-03-24
1	ISSUED FOR PERMIT	2025-02-25
B	PROGRESS SUBMISSION	2025-02-04
A	PROGRESS SUBMISSION	2025-01-10

24098

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HWDSB

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project title:
HAMILTON - WENTWORTH DISTRICT SCHOOL BOARD
P02125 - LAKE AVENUE ELEMENTARY SCHOOL RENOVATIONS.
WASHROOMS & CHANGEROOMS RENOVATIONS

Drawing Title:
MECHANICAL & ELECTRICAL SCHEDULES

drawn: MH	scale: AS SHOWN
date: 01/2025	project number: 24-21
checked: KS	DRAWING NO: ME1-00
date:	Revision

ELECTRICAL LEGEND

POWER & DISTRIBUTION SYSTEMS

- UTILITY DISCONNECT.
- DELTA STAR POWER TRANSFORMER.
- CIRCUIT BREAKER.
- CIRCUIT BREAKER. (DRAW OUT TYPE).
- CIRCUIT BREAKER. (DRAW OUT TYPE) WITH MICROPROCESSOR BASED TRIP UNIT.
- FUSED DISCONNECT.
- NON FUSED DISCONNECT.
- HI OR LOW VOLTAGE FUSE.
- CUSTOMER OR UTILITY ENERGY METER.
- ELECTRICAL GROUND.
- LIGHTNING, ARRESTORS(03) AND GROUND.
- PANELBOARD (SURFACE MOUNT).
- PANELBOARD (RECESSED MOUNT).
- ENCLOSED BUS ASSEMBLY.
- CABLE TRAY (LADDER OR TROUGH)

RECEPTACLE/DIRECT CONNECTIONS

- 120V, 2P, 3W, 15A DUPLEX RECEPTACLE (CSA #5 SERIES).
- 120V, 2P, 3W, 15A SPLIT TYPE DUPLEX RECEPTACLE.
- 120V, 2P, 3W, 15/20A T-SLOT TYPE DUPLEX RECEPTACLE. CSA#5 SERIES FOR OFFICE AND GENERAL AREAS.
- 120V, 2P, 3W, 15A FOUR PLEX RECEPTACLE 2. DUPLEXES UNDER COMMON PLATE).
- 120V, 2P, 3W, 15A DUPLEX RECEPTACLE WITH USB CHARGING PORT.
- 120V, 2P, 3W SINGLE RECEPTACLE (CSA #5 SERIES).
- 250V, 2P, 3W SINGLE RECEPTACLE (CSA #6 SERIES).
- 125/250V, 3P, 4W SINGLE RECEPTACLE (CSA #14 SERIES).
- 250VDC/600VAC, 3P, 4W SINGLE RECEPTACLE (CSA #L17 SERIES).
- 1 PHASE, 3W DIRECT CONNECTION (L, N, G) OR (L1, L2, G).
- 3 PHASE, 4W DIRECT CONNECTION (L1, L2, L3, G).
- 3 PHASE, 5W DIRECT CONNECTION (L1, L2, L3, N, G).
- 1 PHASE, 4W DIRECT CONNECTION (L1, L2, N, G).
- FLOOR FLUSH MOUNTED OUTLET BOX C/W THREE(3) 120V, 2P, 3W, 15A DUPLEX RECEPTACLE, TWO(2) DATA OUTLETS.
- FLOOR FLUSH MOUNTED OUTLET BOX C/W TWO(2) 120V, 2P, 3W, 15A DUPLEX RECEPTACLE
- MODULAR SYSTEM FURNITURE POWER & COMMUNICATION CABLING CONNECTION POINT OUTLET BOX. SUBSCRIPT 'F' DENOTES FLUSH MOUNTED IN FLOOR.
- FLOOR MOUNTED STATIC GROUNDING RECEPTACLE
- HAND DRYER
- THERMOSTAT.
- MAGNETIC DOOR HOLD OPEN DEVICE.

NOTES

1. DIRECT CONNECTION VOLTAGE INFORMATION INDICATION BY CIRCUIT No.
2. UNLESS NOTED OTHERWISE MOUNTING HEIGHT OF ALL OUTLETS IS 455mm (18") A.F.F.
3. UNLESS NOTED OTHERWISE (IE: 30A, 20A) ALL RECEPTACLES/DIRECT CONNECTIONS RATED FOR 15A.

MISCELLANEOUS

- ROOM MODULAR CONTROL PANEL.
- NURSE CALL MASTER CONTROL WITH HANDSET
- NURSE CALL DOME LIGHT (WALL MOUNTED).
- NURSE CALL DOME LIGHT (CEILING MOUNTED).
- PUSH BUTTON
- BELL

KITCHEN/LAUNDRY APPLICANCES

- 15A, 120V–1ø DUPLEX RECEPTACLE FOR DISHWASHER, LOCATED AS PER ARCHITECTURAL DRAWINGS.
- 15A, 120V–1ø DUPLEX RECEPTACLE FOR FRIDGE, LOCATED AS PER ARCHITECTURAL DRAWINGS.
- 15A, 120V–1ø DUPLEX RECEPTACLE FOR UNDER–COUNTER FRIDGE, LOCATED AS PER ARCHITECTURAL DRAWINGS.
- 15A, 120V–1ø DUPLEX RECEPTACLE FOR KITCHEN HOOD, LOCATED AS PER ARCHITECTURAL DRAWINGS.
- 30A, 120V/208V–1ø(14–30R) RECEPTACLE FOR DRYER, LOCATED AS PER ARCHITECTURAL DRAWINGS.
- 15A, 120V–1ø DUPLEX RECEPTACLE FOR WASHER, LOCATED AS PER ARCHITECTURAL DRAWINGS.
- 15A, 120V–1ø DUPLEX RECEPTACLE FOR WASHER, AND 30A, 120/280V–1ø(14–30R) RECEPTACLE FOR DRYER. LOCATED AS PER ARCHITECTURAL DRAWINGS.
- 50A, 120V/208V–1ø(14–50R) RECEPTACLE FOR STOVE, LOCATED AS PER ARCHITECTURAL DRAWINGS.
- 20A, 120V–1ø DUPLEX RECEPTACLE FOR MICROWAVE, LOCATED AS PER ARCHITECTURAL DRAWINGS.
- 20A, 120V–1ø DIRECT CONNECTION FOR BUILT–IN OVEN, LOCATED AS PER ARCHITECTURAL DRAWINGS.
- 15A, 120V/208V–1ø DUPLEX RECEPTACLE FOR EXHAUST FAN, LOCATED AS PER ARCHITECTURAL DRAWINGS.
- 40A, 120V/208V–1ø DIRECT CONNECTION FOR BUILT–IN COOKTOP, LOCATED AS PER ARCHITECTURAL DRAWINGS.

COMMUNICATION SYSTEMS

- W◀1F–2 — COMBINATION DATA/TELEPHONE OUTLET.
  - SECOND DIGIT (NUMBER 2.") INDICATES QUANTITY OF TELEPHONE CABLES AND TELEPHONE JACKS IN OUTLET.
  - FIRST DIGIT (NUMBER 1.") INDICATES QUANTITY OF DATA CABLES AND DATA JACKS IN OUTLET. IF FIRST DIGIT INCLUDES A SUFFIX "F", IT INDICATES "FITLINXX" DATA CABLE AND OUTLET.
  - ALL JACKS UNDER ONE(1) COMMON PLATE. REFER TO FLOOR PLANS FOR CABLE AND JACKS QUANTITIES.
  - SUBSCRIPT "W" INDICATES C/W VOICE JACK FOR WALL MOUNTED TELEPHONE AT 1500mm A.F.F.
  - SUBSCRIPT "P" INDICATES PAY TELEPHONE.
- DATA OUTLET – COMPUTER OR PRINTER.
- TELEPHONE – SUBSCRIPT "P" INDICATES PAY TELEPHONE.
- COMBINATION MULTI–FUNCTION COMMUNICATION OUTLET.
- WIRELESS ACCESS POINT

INTERCOM SYSTEM

- INTERCOM MASTER STATION
- INTERCOM STATION

PAGING AND SOUND SYSTEM

- RECESSED CEILING MOUNTED SPEAKER.
- COMBINATION WALL MOUNTED SPEAKER AND TALK–LISTEN PRIVACY SWITCH.
- SPEAKER MOUNTED IN ROOM MODULAR CONTROL PANEL.
- RECESSED WALL MOUNTED SPEAKER.
- RECESSED CEILING MOUNTED SPEAKER COMPLETE WITH HANDSFREE MIC. AND INTERCONNECTED TO WALL MOUNTED EMERGENCY PULLCORD ALARM DEVICE.
- SURFACE WALL MOUNTED SPEAKER.
- SURFACE CEILING MOUNTED SPEAKER.
- P.A. CALL SWITCH OR HANDSET.
- ADMINISTRATIVE CONSOLE UNIT OUTLET.
- LOCAL VOLUME CONTROLLER.
- AMPLIFIER.
- MICROPHONE OUTLET

TELEVISION AND A.V.

- TELEVISION OUTLET.
- AUDIO/VIDEO STATION

CLOCK SYSTEM

- CLOCK RECEPTACLE. 120V, 15A, 1–GANG RECESSED SINGLE RECEPTACLE

MECHANICAL WIRING SYSTEMS

- MECHANICAL EQUIPMENT/MOTOR.
- DISCONNECT SWITCH (UNFUSED). SUBSCRIPT INDICATES SIZE. SUBSCRIPT 'N' INDICATES COMPLETE WITH SOLID NEUTRAL.
- DISCONNECT SWITCH (FUSED). SUBSCRIPT INDICATES FUSE RATING, SUBSCRIPT 'N' INDICATES COMPLETE WITH SOLID NEUTRAL.
- MANUAL STARTER COMPLETE WITH PILOT LIGHT.
- MAGNETIC STARTER & HAND/OFF/AUTO SWITCH.
- COMBINATION MAGNETIC STARTER.
- TIME SWITCH.

FIRE ALARM SYSTEM

- MANUAL PULL STATION C/W PROTECTIVE 9VDC BATTERY OPERATED LEXAN COVER.
- HEAT DETECTOR. COMBINATION, FIXED 57°C AND RATE OF RISE. SUBSCRIPT 'X' INDICATES 88°C FIXED TEMPERATURE.
- HEAT DETECTOR. FIXED ONLY (57°C) SUBSCRIPT 'X' INDICATES 88°C RATING.
- SMOKE DETECTOR. IONIZATION TYPE. SUBSCRIPT "R" INDICATES RELAY BASE.
- 120V LOCAL SMOKE ALARM CEILING MOUNTED. IONIZATION TYPE.
- 120V LOCAL SMOKE ALARM WITH STROBE.
- CARBON MONOXIDE.
- COMBINATION SMOKE/CARBON MONOXIDE/STROBE.
- AIR DUCT TYPE SMOKE DETECTOR.
- FSD — COMBINATION FIRE & SMOKE DAMPER
- REMOTE INDICATING LIGHT. SUBSCRIPT INDICATES FAN SYSTEM.
- FIRE ALARM HORN.
- FIRE ALARM BELL.
- FIRE ALARM STROBE
- COMBINATION FIRE HORN/STROBE LIGHT.
- SUPERVISED VALVE – SPRINKLER. SUBSCRIPT 'P' DENOTES STANDPIPE.
- SPRINKLER FLOW SWITCH.
- SPRINKLER LOW PRESSURE SWITCH.
- MAGNETIC DOOR HOLD OPEN DEVICE.
- RECESSED FIRE ALARM SPEAKER (CEILING MOUNTED).
- RECESSED FIRE ALARM SPEAKER AND STROBE (CEILING MOUNTED).
- FIRE ALARM SPEAKER (WALL MOUNTED).
- FIRE ALARM SPEAKER AND STROBE (WALL MOUNTED).
- SURFACE FIRE ALARM SPEAKER (CEILING MOUNTED).
- SURFACE FIRE ALARM SPEAKER AND STROBE (CEILING MOUNTED).
- FIREFIGHTER HANDSET.
- FIRE ALARM ZONE DEMARCATION
- F.A.Z.1. — FIRE ALARM ZONE. NUMBER INDICATES ZONE NUMBER.

SECURITY SYSTEM

- ELECTRIC DOOR STRIKE.
- SKP — SECURITY SYSTEM KEY PAD
- REQUEST TO EXIT BUTTON
- AUTOMATIC DOOR OPERATOR.
- DOOR ACTUATOR
- MAGNETIC DOOR LOCK.
- LOW VOLTAGE POWER SUPPLY FOR THE DOOR STRIKE.
- PUSH BUTTON.
- KEY PAD.
- SECURITY KEYSWITCH FOR ALARM SHUT OFF
- CARD READER.
- INFRA RED AUTOMATIC DOOR OPERATOR.
- EGRESS MOTION DETECTOR.
- AUDIBLE ALARM (BUZZER)
- INTRUSION ALARM WITH STROBE
- GLASS BREAK DETECTOR
- SECURITY SYSTEM MONITORING STATION
- PANIC ALARM
- MOTION DETECTOR. SUBSCRIPT 'G' DENOTES GLASS BREAK
- DOOR/WINDOW CONTACT.
- CCTV CAMERA
- CEILING MOUNTED DOME CAMERA

EMERGENCY CALL ASSISTANCE

- EMERGENCY CALL BUTTON.
- EMERGENCY CALL ASSISTANCE HORN.
- CEILING MOUNTED DOME LIGHT.
- WALL MOUNTED DOME LIGHT.
- "PUSH TO LOCK" PUSH BUTTON.
- "WAVE TO LOCK" BUTTON.

LIGHTING

- LIGHT SWITCH

  SUBSCRIPTS:

  2 – DOUBLE POLE (DPST).
  3 – THREE WAY.
  4 – FOUR WAY.
  D – DIMMER.
  K – KEY OPERATED.
  P – PILOT.
  S – SPEED SWITCH.
  LV – LOW VOLTAGE
  2LVD – MULTI–ZONE/MULTI–BUTTON LOW VOLTAGE DIMMING SWITCH. NUMBER REPRESENTS NUMBER OF BUTTONS TO BE PROVIDED PLUS DIMMER.
- MULTIPLE SWITCH INSTALLATION UNDER COMMON PLATE.
- LOW VOLTAGE COMBINATION SWITCH AND OCCUPANCY SENSOR.
- A / B / C / NL — LIGHTING FIXTURES. LETTER WITHIN INDICATES TYPE.

  CROSS HATCHING INDICATES WIRED TO EMERGENCY CIRCUIT.

  SUBSCRIPT "NL" INDICATES NIGHT LIGHT.
- EXIT SIGNS

  ARROWS INDICATE DIRECTION

  CEILING MOUNT, SINGLE FACE

  CEILING MOUNT, DOUBLE FACE

  WALL MOUNT, SINGLE FACE

  WALL MOUNT, DOUBLE FACE

  END WALL MOUNT, DOUBLE FACE

  EXIT SIGN & REMOTE HEAD COMBO
- DUAL TECHNOLOGY OCCUPANCY SENSOR
  LV – DENOTES LOW VOLTAGE
  W – DENOTES WALL MOUNT
- PC — PHOTOCELL
- DS — DAYLIGHT SENSOR
- WALL MOUNTED EMERGENCY LIGHTS. ARROW DENOTES AIMING DIRECTION.
- BATTERY UNIT
  (REFER TO LIGHTING FIXTURE SCHEDULE FOR DETAILS)

SMART BOARD/PROJECTOR REQUIREMENTS

- S1 — 15A, 120V, 1P, ISOLATED GROUND RECEPTACLE, 1 DATA OUTLET(COMPUTER) W/ 4 PORT COVER.
- S2 — 15A, 120V, 1P, ISOLATED GROUND RECEPTACLE, 2 DATA OUTLET(COMPUTER) W/ 4 PORT COVER.
- 4"x4" RECESSED BOX W/ BLANK COVER PLATE

MISCELLANEOUS ABBREVIATIONS/SUBSCRIPTS/SYMBOLS

SUBSCRIPTS

A	– MOUNTING HEIGHT FOR DEVICES ABOVE COUNTER/SINK MILLWORK TO BE 1020mm FROM TOP OF DEVICE TO A.F.F. (UNLESS NOTED OTHERWISE).
1–3	– TYPICAL NORMAL POWER CIRCUIT NUMBER EG. PANELBOARD LP–1 CIRCUIT NUMBER 3.
E1–3	– TYPICAL ESSENTIAL POWER CIRCUIT NUMBER EG. PANELBOARD LPE–1 CIRCUIT NUMBER 3.
1A–3	– TYPICAL CONTROL PANEL CIRCUIT NUMBER EG. PANELBOARD LP–1A CIRCUIT NUMBER 3.
3P+N	– 3 POLE & UNSWITCHED NEUTRAL.
AFF	– ABOVE FINISHED FLOOR.
A	– ABOVE COUNTER
B	– BENCH MOUNTED.
C	– CEILING SPACE MOUNTED.
CL	– CONTROLLED LOAD.
D/I	– WITH DISCONNECT AND VISIBLE ISOLATION.
EXP/EP	– EXPLOSION PROOF.
F	– FLOOR MOUNTED.
GF	– GROUND FAULT CIRCUIT INTERUPTER.
IG	– ISOLATED GROUND TYPE.
MH	– MOUNTING HEIGHT.
NL	– NIGHT LIGHT
HL	– MOUNT AT 1188mm A.F.F.(TO THE BOTTOM)
S	– SURGE SUPRESSION TYPE DEVICE.
T	– LOCKING TYPE (TWISTLOCK).
V	– MOUNT IN VERTICAL FACE.
WG	– WIREGUARD.
WP	– WEATHERPROOF TYPE.
Z	– MOUNT 42" (1065mm) A.F.F.
PTZ	– PAN, TILT, ZOOM
E	– EXISTING TO REMAIN.
ER	– EXISTING TO BE RELOCATED.
RE	– RELOCATED DEVICE AT NEW LOCATION
R	– EXISTING TO BE REMOVED
N	– EXISTING TO BE REPLACED WITH NEW
SR	– MOUNTED ON SURFACE RACEWAY

IDENTIFICATIONS

ACB	– AIR CIRCUIT BREAKER.
ATS	– AUTOMATIC TRANSFER SWITCH.
AV	– AUDIO VISUAL.
CM	– COFFEE MAKER.
CR	– CASH REGISTER.
CS	– COMMUNICATION STATION.
DP	– DISTRIBUTION PANEL.
EVR	– ELECTRONIC VOLTAGE REGULATOR.
FR	– FRIDGE.
GEN	– ELECTRICAL GENERATOR.
HWD	– HOT WATER DISPENSER
IM	– ICE MACHINE
MCB	– MINIATURE CIRCUIT BREAKER.
MCCB	– MOULDED CASE CIRCUIT BREAKER.
MSB	– MAIN SWITCH BOARD (SERVICE ENTRANCE RATED).
PC	– PHOTOCOPIER.
PF	– POWER FACTOR CORRECTION CAPACITOR BANKS.
PR	– PRINTER.
SB	– SMARTBOARD.
SP	– SPLITTER.
SPD	– SURGE PROTECTION DEVICE
TR	– LOW VOLTAGE TRANSFORMER.
TV	– TELEVISION.
TVSS	– TRANSIENT VOLTAGE SURGE SUPPRESSOR.
UPS	– UNINTERRUPTIBLE POWER SUPPLY.
VM	– VENDING MACHINE.
XFMR	– TRANSFORMER.

DRAWING LIST

E0–00	ELECTRICAL LEGEND & DRAWINGS LIST
E1–00	ENLARGED PLANS DEMO – ELECTRICAL
E2–00	ENLARGED PLANS NEW – ELECTRICAL
E3–00	ELECTRICAL SPECIFICATION
ME1–00	MECHANICAL & ELECTRICAL SCHEDULES

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	2025–03–24
1	ISSUED FOR PERMIT	2025–02–25
B	PROGRESS SUBMISSION	2025–02–04
A	PROGRESS SUBMISSION	2025–01–10

REVISIONS

24098

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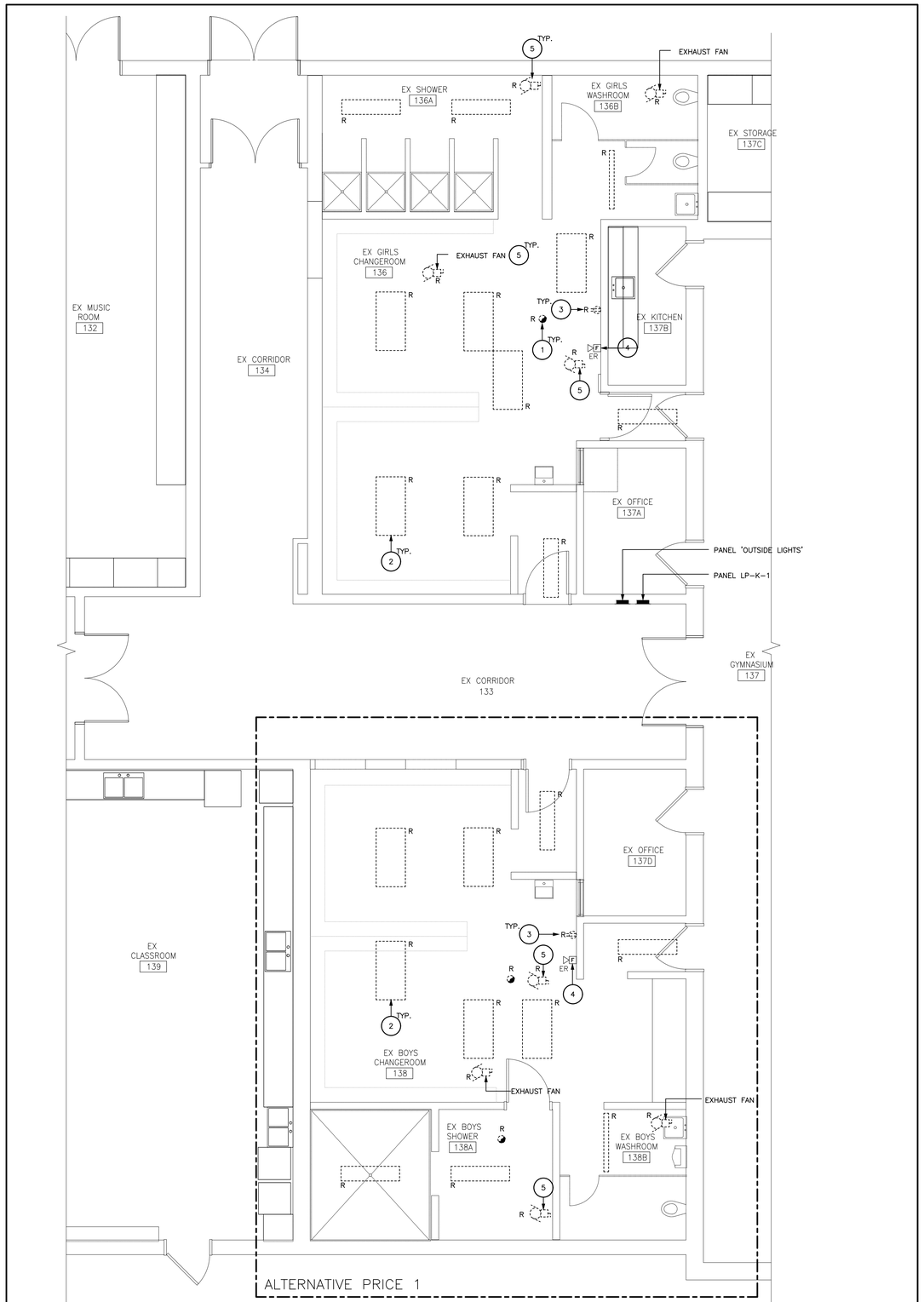
project title:
HAMILTON - WENTWORTH DISTRICT SCHOOL BOARD
P02125 - LAKE AVENUE ELEMENTARY SCHOOL RENOVATIONS
WASHROOMS & CHANGEROOMS RENOVATIONS

Drawing Title:
ELECTRICAL LEGEND & DRAWING LIST

drawn: MD	scale: NTS
date:	project number: 24-21
checked: MD	DRAWING NO: E0-00
date:	Revision: 0



1 E1-00 GROUND FLOOR ENLARGE PLAN – DEMO

SCALE– 1:50

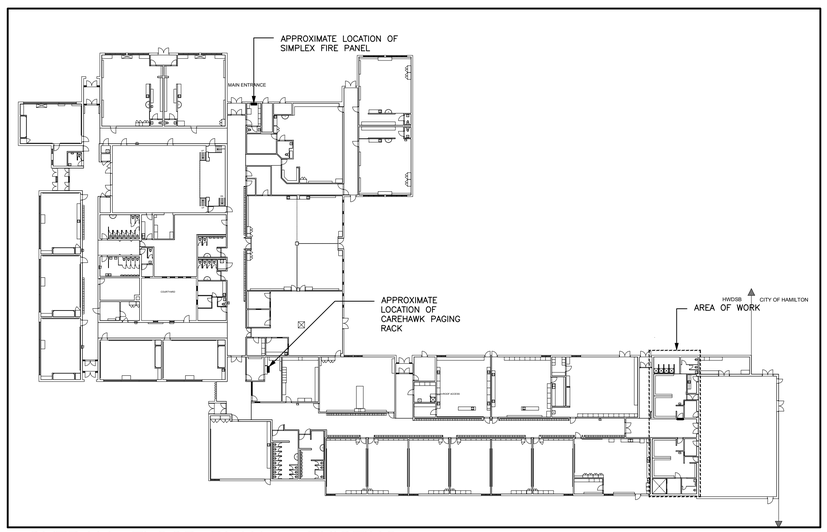
DRAWING NOTES

1. DISCONNECT & REMOVE ALL EXISTING FIRE ALARM DEVICES AS SHOWN. UNLESS OTHERWISE NOTED.
2. DISCONNECT & REMOVE ALL EXISTING LIGHTING & LIGHTING CONTROLS.
3. DISCONNECT & REMOVE EXISTING RECEPTACLES BACK TO SOURCE.
4. DISCONNECT & RELOCATED FIRE ALARM HORN & STROBE AS SHOWN ON NEW DRAWINGS.
5. DISCONNECT & REMOVE POWER TO HEATERS/EXHAUST FANS BACK TO SOURCE.

GENERAL DEMO NOTES

1. THE ELECTRICAL CONTRACTOR SHALL, AS PART OF HIS WORK, PERFORM ALL RELATED DEMOLITION, MODIFICATIONS, RELOCATION OF ELECTRICAL DISTRIBUTION AND OTHER EQUIPMENT AND RELATED WORK, INCLUDING NEW WORK NECESSARY TO COMPLETE THE PROJECT.
2. IT IS SUGGESTED THAT THE ELECTRICAL CONTRACTOR ATTEND THE BID WALK–THROUGH AND VERIFY FIELD CONDITIONS TO DETERMINE THE EXTENT OF THE DEMOLITION AND NEW WORK PRIOR TO SUBMITTING BIDS.
3. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL TECHNICAL DETAILS OF EQUIPMENT TO BE REMOVED. WHERE THERE IS A DISCREPANCY WITH THE TENDER DOCUMENTS, CONTRACTOR SHALL ENGAGE CONSULTANTS FOR DIRECTIONS. ELECTRICAL CONTRACTOR SHALL MAKE A LIST OF ALL EQUIPMENT TO BE REMOVED. THIS LIST SHALL BE WITH ALL FOLLOWING INFORMATION.
   - ** MAKE/MODELS
   - ** MANUFACTURER
   - ** TECHNICAL DETAILS
   - ** LOCATION

   THIS LIST SHALL BE SUBMITTED TO THE OWNER FOR RECORD PURPOSES.
4. THE ELECTRICAL CONTRACTOR SHALL NOT DISCONNECT EQUIPMENT AND ELECTRICAL CIRCUITS IN THE RENOVATION AREA OR ANY PART OF THE BUILDING WITHOUT PRIOR NOTIFICATION AND PERMISSION FROM THE OWNER. EXTREME CARE SHALL BE TAKEN TO MINIMIZE DISTURBANCE TO THE SURROUNDING AREA.
5. ITEMS REMOVED AND NOT SCHEDULED TO BE RELOCATED SHALL BE OFFERED TO THE OWNER FOR THEIR USE AND IF NOT ACCEPTED BY THE OWNER, THE ELECTRICAL CONTRACTOR SHALL DISPOSE OF THE MATERIAL FROM THE SITE IN ACCORDANCE WITH LOCAL REGULATIONS. THE ELECTRICAL CONTRACTOR SHALL DELIVER ITEMS ACCEPTED BY THE OWNER TO THE DESIGNATED LOCATIONS AS DIRECTED BY THE OWNER.
6. IN ALL CASES WHERE WORK IS REMOVED, THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS, EQUIPMENT AND LABOR TO SUSTAIN OPERATION OF ALL PARTS OF THE SYSTEMS CONNECTING TO OR FROM THE PART REMOVED, COMPLETING ALL WORK IN STRICT ACCORDANCE WITH APPLICABLE CODES.
7. ALL WIRING, CABLES AND FEEDERS INCLUDING BOTH CONNECTED TO DEVICES AND EQUIPMENT TO BE DEMOLISHED AND EXISTING THAT WERE ABANDONED IN PLACE SHALL BE REMOVED BACK TO THEIR SOURCES. UNLESS NOTED OTHERWISE, CONDUITS AND/OR WIRING SHALL, WHERE NECESSARY, BE RE-CIRCUIT AROUND THE REMOVED PART, KEEPING OCCUPIED PARTS OF THE BUILDING SYSTEM IN FULL SERVICE.
8. ALL EXISTING CONDUITS WHICH HAVE BEEN ABANDONED OR ARE UNUSED SHALL BE REMOVED.
9. PROVIDE BLANK METAL COVER PLATES FOR ALL JUNCTION/DEVICE BOXES NO LONGER IN USE THAT ARE EMBEDDED IN FLOOR SLAB OR MASONRY WALLS. PROVIDE PLUGS FOR ALL PANELS WHERE CONDUIT HAS BEEN REMOVED. COVER PLATES SHALL BE PAINTED TO MATCH EXISTING CONDITIONS.
10. WHERE REQUIRED COORDINATE WITH THE CONSULTANTS/OWNER FOR EXISTING PARTITIONS TO BE REMOVED TO FACILITATE WORK. DISCONNECT EXISTING BRANCH CIRCUITS SERVICING DEVICES IN PARTITIONS TO BE REMOVED. MAINTAIN CONTINUITY OF CIRCUITS SERVICING EXISTING DEVICES IN OTHER AREAS TO REMAIN.
11. LIGHTING FIXTURES: REMOVE LIGHTING FIXTURES AND SWITCH CONTROL WHEN THE FIXTURE TO BE REMOVED IS SERVED BY A CIRCUIT, THAT SUPPLIES FIXTURES IN OTHER, AREAS THAT ARE TO REMAIN, THE ELECTRICAL CONTRACTOR SHALL MAINTAIN THE CONTINUITY OF THE CIRCUIT TO THE REMAINING FIXTURES.
12. POWER RECEPTACLES: REMOVE RECEPTACLES. WHEN THE RECEPTACLE TO BE REMOVED IS SERVED BY A CIRCUIT THAT SUPPLIES RECEPTACLES IN OTHER AREAS, THAT ARE TO REMAIN, THE ELECTRICAL CONTRACTOR SHALL MAINTAIN THE CONTINUITY OF THE CIRCUIT TO THE REMAINING RECEPTACLES.
13. FIRE ALARM SYSTEM: COORDINATE AND CONSULT WITH CURRENT F/A SYSTEM SERVICE CONTRACTOR OR THEIR QUALIFIED REPRESENTATIVE FOR ALL FIRE ALARM DEMOLITION AND MODIFICATIONS. OPERATION SHALL BE MAINTAINED OF EXISTING FIRE ALARM SYSTEM SPECIFICALLY AS IT RELATES TO ADJACENT AREAS WHICH ARE NOT INCLUDED IN THE SCOPE OF THIS PROJECT.
14. ELECTRICAL CONTRACTOR SHALL PROVIDE UPDATED TYPE WRITTEN PANEL DIRECTORIES FOR ALL PANELS AFFECTED BY THE DEMOLITION AND/OR NEW WORK. CIRCUIT BREAKERS NOT USED FOR NEW WORK SHALL BE LABELED AS SPARE.
15. FOR EXISTING DEVICES/CIRCUITRY THAT ARE INDICATED TO BE REMOVED BACK TO POINT OF ORIGIN---THESE ITEMS ARE TO BE REMOVED BACK TO POINT OF ORIGIN UNLESS THEREWILL BE EXISTING DEVICES ON THE SAME CIRCUIT THAT ARE LOCATED OUTSIDE AREA OF WORK THAT ARE TO REMAIN. IN THAT CASE, REMOVE THE EXISTING DEVICES/CIRCUITRY IN AREA OF WORK BACK TO THESE EXISTING DEVICES TO REMAIN. ALL DEVICES/CIRCUITRY IN SURROUNDING AREAS THAT ARE TO REMAIN ARE TO BE KEPT ENERGIZED. FOR REMOVAL OF CONDUIT AND WIRING OUTSIDE OF AREA OF WORK COORDINATE AND SCHEDULE WITH OWNER PRIOR TO PERFORMING WORK.



2 E1-00 OVERALL FLOOR PLAN – EXISTING

SCALE– 1:500

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	2025-03-24
1	ISSUED FOR PERMIT	2025-02-25
B	PROGRESS SUBMISSION	2025-02-04
A	PROGRESS SUBMISSION	2025-01-10

REVISIONS

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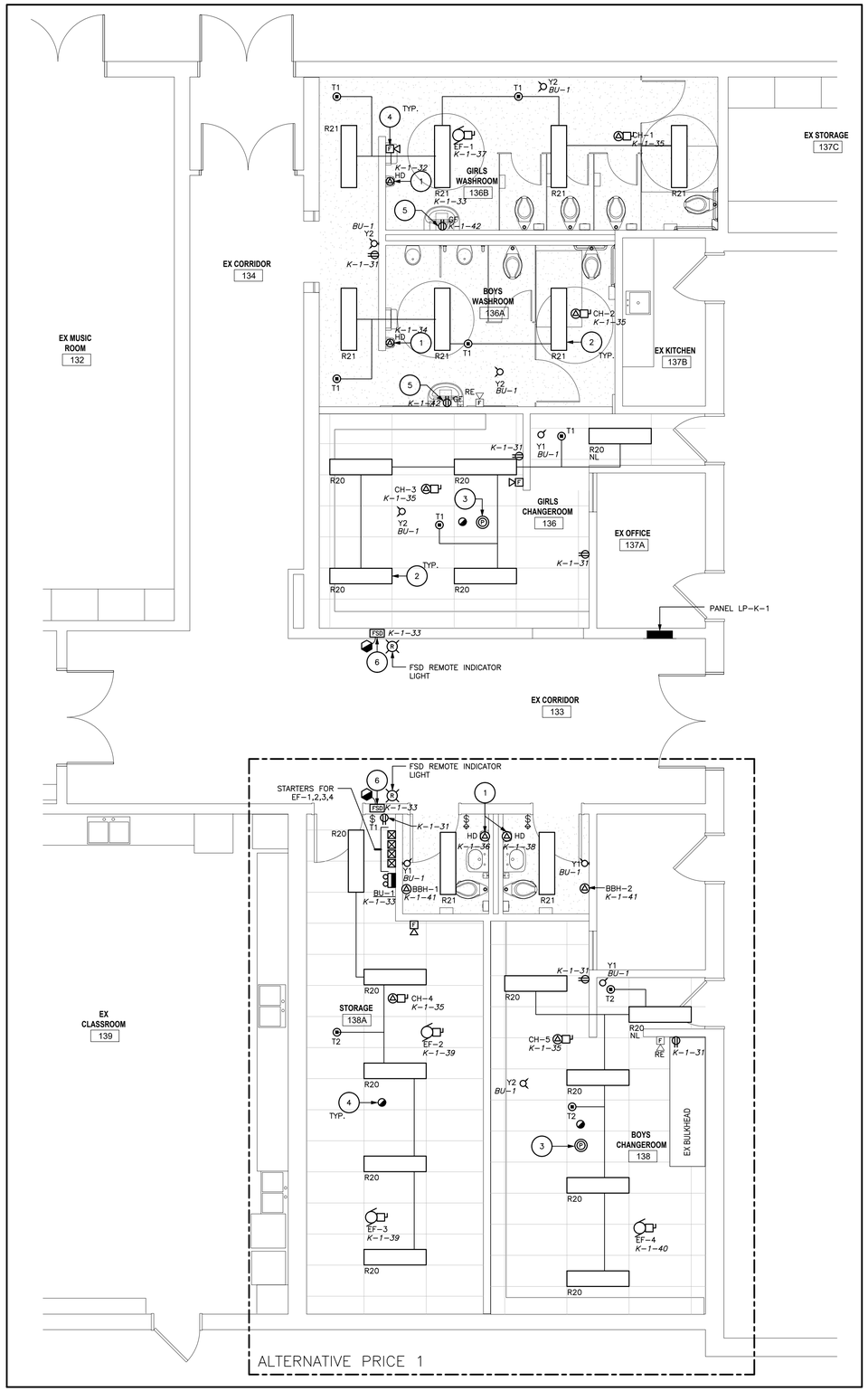
project title:
HAMILTON - WENTWORTH DISTRICT SCHOOL BOARD
P02125 - LAKE AVENUE ELEMENTARY SCHOOL RENOVATIONS.
WASHROOMS & CHANGEROOMS RENOVATIONS

Drawing Title:
ENLARGED PLANS DEMO - ELECTRICAL

drawn: MD
date:
scale: AS SHOWN
project number: 24-21
checked: MD
date: 12/2024
DRAWING NO: E1-00
Revision: 0



1 / E2-00 GROUND FLOOR – NEW ENLARGE PLAN

SCALE– 1:50

OCCUPANCY SENSOR/SWITCH SCHEDULE

SYMBOL	DESCRIPTION	ACCEPTABLE PRODUCTS
T1	LOW VOLTAGE DUAL TECHNOLOGY CEILING MOUNT OCCUPANCY SENSOR.	1. WATTSTOPPER DT–300 OR APPROVED EQUIVALENT
	LINE VOLTAGE DUAL TECHNOLOGY WALL SWITCH TYPE OCCUPANCY SENSOR WITH MANUAL ON/OFF	1. WATTSTOPPER DWS–301 OR APPROVED EQUIVALENT
T1	LOW VOLTAGE 1 BUTTON SWITCH	1. WATTSTOPPER LMSW–210 OR APPROVED EQUIVALENT

LIGHTING CONTROL TYPES

NOT ALL CONTROL TYPES MAY HAVE BEEN USED. REFER TO LIGHTING DRAWINGS FOR ALL REQUIREMENTS. FOR ALL TYPES BELOW; 'UNOCCUPIED DURATION SHALL BE 5 MINUTES.

CTO – NO CONTROL ALWAYS 'ON' 27/7

CT1 – AUTOMATIC 'ON' / AUTOMATIC 'OFF'
AUTO 'OFF' BY OCCUPANCY AFTER 15 MINUTES

LIGHTING CONTROLS	
ROOM	TYPE
CHANGE ROOM	CT1
WASHROOMS	CT1
STORAGE	CT1

GENERAL NOTES

1. THIS DRAWING ILLUSTRATES INTENT AND DOES NOT REPRESENT ALL REQUIRED CONTROL COMPONENTS, FINAL WIRING METHODS OR FIXTURE MOUNTING LOCATIONS. DETERMINE THE FINAL SYSTEM INSTALLATION BASED ON THE PRODUCT MANUFACTURER'S SHOP DRAWINGS.
2. OCCUPANCY SENSORS SHALL BE MOUNTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS SO THEY ARE CAPABLE OF OPERATING PROPERLY WITHOUT FALSE 'ON' OR PREMATURE 'OFF' OPERATIONS. DUAL TECHNOLOGY OCCUPANCY SENSORS SHALL NOT BE MOUNTED WITHIN 610mm OF ANY HVAC DIFFUSERS.
3. REMOTE MOUNTED POWER SUPPLIES AND CONTROL DEVICES SHALL BE MOUNTED IN ACCESSIBLE LOCATIONS OUT OF VIEW OF PUBLIC.
4. CEILING SPACE IS A RETURN AIR PLENUM. ANY DEVICES LOCATED IN CEILING SPACES SHALL BE PLENUM RATED.
5. ALL WIRING IN FINISHED AREAS SHALL BE RUN CONCEALED IN WALLS/CEILINGS WHERE POSSIBLE. OTHERWISE PROVIDE SURFACE RACEWAYS SUCH AS WIREMOLD OR EQUIVALENT. EMT WILL NOT BE ACCEPTED UNLESS OTHERWISE NOTED.
9. ALL ROOM CONTROLLERS SHALL BE DIMMING TYPE. FINAL LIGHTING DIMMING PRE–SETS TO BE DETERMINED ON SITE WITH THE OWNER DURING COMMISSIONING.
10. ALL RECEPTACLES SHALL BE TAMPER RESISTANT TYPE.
11. ALL NEW LIGHTING SHALL BE RE–CONNECTED TO THE EXISTING CIRCUIT. UPDATE EXISTING PANEL SCHEDULE TO MATCH ANY CHANGES TO CIRCUITS.

DRAWING NOTES

1. PROVIDE ADA COMPLIANT HAND DRYER. WORLD DRYER SLIMDRI OR APPROVED EQUAL. HAND DRYER SHALL BE POLISHED STAINLESS STEEL. COORDINATE MOUNTING HEIGHT WITH ARCHITECT. PROVIDE 15A–1P GFCI BREAKER IN PANEL AND WIRE COMPLETELY.
2. RE–CONNECT NEW LIGHTING FIXTURES TO EXISTING LIGHTING CIRCUITS.
3. WIRE ALL NEW PAGING SPEAKERS TO EXISTING PAGING RACK. REFER TO SPECIFICATION FOR MORE DETAILS.
4. WIRE ALL NEW FIRE ALARM DEVICES TO EXISTING FIRE ALARM PANEL. VERIFY ALL DEVICES AT THE COMPLETION OF THE PROJECT AND SUBMIT REPORT TO CONSULTANT.
5. PROVIDE GF RECEPTACLE FOR WASHFOUNTAIN. COORDINATE EXACT LOCATION WITH MECHANICAL DIVISION.
6. COMBINATION FIRE & SMOKE DAMPER PROVIDED BY MECHANICAL DIVISION. ELECTRICAL DIVISION TO PROVIDE SMOKE DETECTOR & WIRE TO DAMPER SUCH THAT DAMPER CLOSES WITH DETECTION OF SMOKE. COORDINATE EXACT LOCATION & REQUIREMENTS WITH MECHANICAL DIVISION. WIRE TO EXISTING FLOOR FIRE ALARM ZONE. PROVIDE REMOTE INDICATOR ON CORRIDOR CEILING NEXT TO EACH DAMPER AS SHOWN.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	ACCEPTABLE PRODUCTS
BU–1	EMERGENCY BATTERY UNIT – 120V INPUT/12VDC OUTPUT – 2 HEAD WITH 5W LED LAMPS EACH – 100W FOR 30 MINUTE OPERATING TIME – AUTOMATIC SELF TEST	1. LUMACELL RGS SERIES OR APPROVED EQUIVALENT
Y1,2	INDOOR REMOTE HEAD (NUMBER RELATES TO # OF HEADS) – 12VDC INPUT – METAL HOUSING – 5W LED LAMP – 1,2,3... HEADS AS SPECIFIED IN DRAWINGS – 7' MOUNTING HEIGHT	1. LUMACELL MQM SERIES OR APPROVED EQUIVALENT
R20	LED FLAT PANEL WITH THE FOLLOWING ATTRIBUTES: – 1'X4' – 29W, 3800 LUMENS, 4000K, 120V – 80+ CRI, ROUND SMOOTH DIFFUSER – DLC LISTED – 0–10V DIMMING (1%) – T–GRID CEILING MOUNT	1. SIGNIFY CFI FLUXPANEL LED GEN 2 OR APPROVED EQUIVALENT
R21	SAME AS R20 EXCEPT THE FOLLOWING ATTRIBUTES: – DRYWALL CEILING MOUNT	1. SIGNIFY CFI FLUXPANEL LED GEN 2 OR APPROVED EQUIVALENT

PANEL NAME: **EXISTING LP–K–1**
MOUNTING: RECESSED
PANEL LOCATION: HALL WAY
MAINS: 225A 120/208V 3ø 4W
BUSSING:
OTHER:

42 CIRCUIT PANELBOARD
ENCLOSURE: TYPE–1
SCCR=10KA

LOAD DESCRIPTION	VA		BRKR	BRKR		VA	LOAD DESCRIPTION
EXISTING	–	1	20A	20A	2	–	EXISTING
EXISTING	–	3	20A	20A	4	–	EXISTING
EXISTING	–	5	20A	20A	6	–	EXISTING
EXISTING	–	7	20A	15A	8	–	EXISTING
EXISTING	–	9	15A	15A	10	–	EXISTING
EXISTING	–	11	15A	15A	12	–	EXISTING
EXISTING	–	13	15A	15A	14	–	EXISTING
EXISTING	–	15	15A	15A	16	–	EXISTING
EXISTING	–	17	15A	15A	18		
EXISTING	–	19	15A	20A	20	–	EXISTING
EXISTING	–	21	20A	15A	22		
		23		15A	24	–	EXISTING
EXISTING	–	25	15A	15A	26	–	EXISTING
EXISTING	–	27	15A	15A	28	–	EXISTING
EXISTING	–	29	15A	15A	30	–	EXISTING
RECEP– 136,136A,136B,138,138A	1000	31	15A	*15A	32	1000	HAND DRYER – 136A
BU–1, FIRE SMOKE DAMPERS	150	33	15A	*15A	34	1000	HAND DRYER – 136B
CH 1–5(136A,136B,138A,138,136)	345	35	15A	*15A	36	1000	HAND DRYER – 138B
EF–1	828	37	15A	15A	38	1000	HAND DRYER – 138C
EF – 2,3	644	39	15A	15A	40	322	EF–4
BASEBOARD HEATER (BBH –1,2)	1000	41	15A	15A	42	100	WASH FOUNTAINS
CONNECTED LOAD (L.H.)	–					–	CONNECTED LOAD (R.H.)

NOTES: BREAKERS SHOWN IN GREY ARE EXISTING. PROVIDE ALL OTHER BREAKERS.
* DENOTES 6mA GFCI BREAKER

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	2025–03–24
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A	PROGRESS SUBMISSION	2025–01–10

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project title:
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WASHROOMS & CHANGEROOMS RENOVATIONS

Drawing Title:
ENLARGED PLANS NEW - ELECTRICAL

drawn: MD
date:
scale: AS SHOWN
project number: 24-21
checked: MD
date: 08/2024
DRAWING NO: E2-00
0 Revision

ELECTRICAL SPECIFICATIONS

1. RELATED INSTRUCTIONS

1.1. THIS SPECIFICATION SHALL APPLY TO AND GOVERN ALL WORK BY DIVISION 16.

1.2. FURNISH ALL LABOUR, MATERIAL, TOOLS, EQUIPMENT, ETC., REQUIRED TO COMPLETE ALL WORK SHOWN ON THE DRAWINGS AND HEREIN SPECIFIED. THE WORK SHALL BE IN ACCORDANCE WITH RULES AND REGULATIONS OF ALL AUTHORITIES HAVING LEGAL JURISDICTION OVER THE WORK. PROVIDE ANY SMALL ITEMS OF WORK NOT SPECIFICALLY CALLED FOR BUT REQUIRED TO COMPLETE THE INTENDED INSTALLATION.

1.3. DEVICE/EQUIPMENT LOCATIONS ARE APPROXIMATE. CHANGE LOCATION OF ANY DEVICE/EQUIPMENT WITHIN 3M OF INDICATED LOCATION AT NO ADDITIONAL COST TO OWNER PROVIDED INSTRUCTIONS ARE RECEIVED PRIOR TO COMMENCING ROUGH-IN WORK. PRIOR TO COMMENCING ANY ROUGH-IN OR INSTALLATION WORK VISIT SITE, MEET WITH THE OWNERS REPRESENTATIVE AND CONFIRM EXACT LOCATION OF ALL DEVICES.

2. CODES, PERMITS AND INSPECTION

2.1. BUILDING PERMIT SHALL BE OBTAINED BY OWNER.

ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR, AND OBTAIN ALL OTHER PERMITS, INSPECTIONS, VERIFICATIONS, ETC., AS REQUIRED BY ALL AUTHORITIES HAVING JURISDICTION OVER THIS WORK AND PAY FOR ALL FEES RELATED TO SAME.

2.2. DELIVER ALL PERMITS TO THE OWNER AS SOON AS THEY BECOME AVAILABLE.

2.3. AT THE CONCLUSION OF THE PROJECT, SUBMIT TO THE OWNER, THE ELECTRICAL SAFETY AUTHORITY FINAL ACCEPTANCE CERTIFICATE.

3. RECORD DRAWINGS AND EQUIPMENT MANUALS

3.1. AS THE PROJECT PROGRESSES, RECORD, ON A SET OF WHITE PRINTS, ALL ADDENDA, CHANGES TO AND DEVIATIONS FROM THE PLANS MADE DURING THE CONSTRUCTION PERIOD. ALSO, RECORD THE LOCATION OF ALL LIGHT FIXTURES AND OTHER ELECTRICAL EQUIPMENT AND WIRING FOR SAME.

3.2. MAKE THESE PROGRESS RECORD DRAWING WHITE PRINTS AVAILABLE TO THE CONSULTANTS FOR THEIR REVIEW AT ALL TIMES DURING THE CONSTRUCTION PERIOD.

3.3. AT THE CONCLUSION OF THE PROJECT, TRANSFER ALL RECORD DRAWING INFORMATION TO A USB FLASH DRIVE.

3.4. THE CONSULTANT SHALL PROVIDE TO THE CONTRACTOR A COPY OF THE DRAWINGS IN AUTOCAD FORMAT. COMPLETE AND RETURN THE RELEASE FORM "TRANSFER OF FILES ON ELECTRONIC MEDIA" IN ORDER TO RECEIVE AND USE THE ELECTRONIC FILES. (SAMPLE OF THE FORM CAN BE PROVIDED ON REQUEST).

3.5. BEFORE SUBSTANTIAL PERFORMANCE OF THE CONTRACT, COMPLY WITH THE FOLLOWING:

3.6. PROVIDE USB FLASH DRIVE CONTAINING THE FOLLOWING:
- 3.6.1. ALL UPDATED RECORD DRAWING INFORMATION IN AUTOCAD FORMAT AS SPECIFIED HEREIN.
- 3.6.2. EQUIPMENT DATA SHEETS AND/OR MANUFACTURER'S MAINTENANCE MANUALS COVERING EACH SYSTEM AND ITS COMPONENTS IN ACCORDANCE WITH REQUIREMENTS OF EACH APPROPRIATE SECTION.

4. EQUIPMENT AND MATERIAL

4.1. ALL EQUIPMENT AND MATERIAL, UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE NEW AND WITHOUT BLEMISH OR DEFECT. ALL MATERIAL AND EQUIPMENT SHALL BEAR ULC. OR CSA LABELS.

5. ACCESSIBILITY

5.1. INSTALL ALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION MAINTENANCE AND REPAIRS.

6. RESPONSIBILITY

6.1. BE RESPONSIBLE FOR WORK UNTIL COMPLETION AND FINAL ACCEPTANCE, FOR REPLACING ANY ITEM THAT MAY BE DEFECTIVE, DAMAGED, LOST OR STOLEN WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY TO THE COMPLETION OF THE PROJECT.

7. CONDUIT, AND WIRING

7.1. USE EMT CONDUIT FOR ALL WIRING UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL BE INSTALLED PARALLEL TO BUILDING LINES AND SECURELY FASTENED.

7.2. UNLESS NOTED OTHERWISE, CONDUITS SHALL BE CONCEALED EMT COMPLETE WITH STEEL SET SCREW TYPE CONNECTORS AND COUPLINGS.

7.3. DO NOT RUN CONDUITS IN FIRE RATED CEILING ASSEMBLIES.

7.4. SURFACE RACEWAY SYSTEM WITH WIRING LAID IN SHALL BE ACCEPTABLE BUT KEPT TO A MINIMUM IN AREAS WHERE EMT CONDUIT CAN NOT BE CONCEALED. TWO PIECE STEEL ASSEMBLY MANUFACTURED AS LAY-IN TYPE RACEWAY C/W TEES, ELBOWS AND HANGER FITTING AND SUPPORTS REQUIRED FOR A COMPLETE SYSTEM – WIREMOLD OR APPROVED EQUAL.

7.6. ALL SURFACE MOUNTED RACEWAYS IN AREAS OTHER THAN SERVICE ROOMS SHALL BE WIREMOLD OR EQUIVALENT. COLOUR TO MATCH WALL.

7.7. ALL CONDUCTORS SHALL BE COPPER, RW90 XLPE #12 AWG MINIMUM UNLESS NOTED OTHERWISE. WHERE THE DISTANCE FROM THE PANELBOARD TO THE LAST OUTLET EXCEEDS 50', #10 AWG CONDUCTOR MUST BE USED FOR THE FULL LENGTH OF THE CIRCUIT.

8. WIRING DEVICES

8.1. SWITCHES: RATED 125VAC, 20 AMPERES AND LOW VOLTAGE WHITE TOGGLE TYPE COMPATIBLE WITH EXISTING.

8.2. INSTALL SINGLE THROW SWITCHES WITH HANDLE IN "UP" POSITION WHEN SWITCH CLOSED (ON).

8.3. INSTALL SWITCHES IN GANG-TYPE OUTLET BOX WHEN MORE THAN ONE SWITCH IS REQUIRED IN ONE LOCATION AND AT 1200mm(48") ABOVE FINISHED FLOOR UNLESS INDICATED OTHERWISE.

8.4. 125V SWITCHES AS SHOWN SHALL BE LOW VOLTAGE COMPLETE WITH TRANSFORMERS AND CONTROL RELAYS LOCATED CONCEALED IN CEILING SPACES

8.5. RECEPTACLES: 3-WIRE, U-GROUND TYPE GENERAL PURPOSE, HEAVY DUTY, NEMA 5-15R.

8.6. INSTALL RECEPTACLES IN GANG-TYPE OUTLET BOX WHEN MORE THAN ONE SWITCH IS REQUIRED IN ONE LOCATION AND AT 450mm(18") ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.

8.7. FLOOR BOX : RFB4 SERIES BY LEGRAND WITH ALL REQUIRED ACCESSORIES FOR A COMPLETE SYSTEM. PROVIDE FLOOR SCANNING PRIOR TO CUTTING INTO EXISTING FLOORS.

8.8. COVERPLATES:

- 8.8.1. PROVIDE No.301 STAINLESS STEEL, BRUSHED COVERPLATES C/W PROTECTIVE PLASTIC FILM UNTIL PAINTING AND OTHER WORK IS FINISHED FOR ALL WIRING DEVICES MOUNTED IN A FLUSH MOUNTED OUTLET BOX. PROVIDE COMMON COVERPLATE WHEN WIRING DEVICES ARE GROUPED TOGETHER.
- 8.8.2. PROVIDE FITTING SHEET METAL (CAST) COVERPALTES FOR WIRING DEVICES MOUNTED IN SURFACE FS OR FD TYPE CONDUIT BOXES.
- 8.8.3. DO NOT USE COVERPLATES MEANT FOR FLUSH OUTLET BOXES ON SURFACE MOUNTED BOXES.

8.9. ACCEPTABLE MANUFACTURERS ARE:

- 8.9.1. BRYANT
- 8.9.2. CROUSE-HINDS
- 8.9.3. HUBBELL
- 8.9.4. LEVITON
- 8.9.5. PASS & SEYMOUR
- 8.9.6. LEGRAND
- 8.9.7. OR OTHER APPROVED EQUALS

9. WIRING FOR MECHANICAL EQUIPMENT

9.1. SUPPLY AND INSTALL ALL STARTERS, DISCONNECTS, RELAYS, WIRING, ETC., TO ACCOMMODATE THE COMPLETE MECHANICAL SYSTEM, UNLESS NOTED OTHERWISE.

9.2. OTHER DIVISIONS SUPPLYING MOTOR-DRIVEN EQUIPMENT SHALL SUPPLY AND INSTALL ALL NECESSARY MOTORS WITH SUCH EQUIPMENT. ALL INTERNAL CONTROL WIRING IN SUCH EQUIPMENT SHALL BE FACTORY INSTALLED, OR SHALL BE SUPPLIED AND INSTALLED BY THOSE SUPPLYING THE EQUIPMENT.

9.3. REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS DURING TENDERING AND CONSTRUCTION TO ENSURE ENTIRE MECHANICAL EQUIPMENT WIRING SCOPE OF WORK IS UNDERSTOOD.

9.4. THIS DIVISION IS RESPONSIBLE FOR THE FOLLOWING:

- 9.4.1. SUPPLY AND INSTALLATION OF ALL STARTERS, DISCONNECT SWITCHES, PUSHBUTTON STATIONS, SPLITTER TROUGHS, JUNCTION BOXES AND TIME SWITCHES, ETC., AS NOTED ON DRAWING.
- 9.4.2. INSTALLATION AND WIRING OF ALL SEPARATELY MOUNTED THERMOSTATS, MOTOR CONTROLLERS AND CONTROL UNITS WHICH ARE SUPPLIED BY MECHANICAL.
- 9.4.3. SUPPLY AND INSTALLATION OF ALL POWER WIRING AND CONDUITS FROM THE DISTRIBUTION PANEL THROUGH THE STARTER AND DISCONNECT SWITCH ONTO THE MOTOR (OR EQUIPMENT).
- 9.4.4. SUPPLY AND INSTALLATION OF ALL CONTROL WIRING FROM REMOTE SWITCHES OR PUSHBUTTON STATIONS TO CONTROL STARTERS.
- 9.4.5. SUPPLY AND INSTALLATION OF ALL WIRING TO PROVIDE INTERLOCKING BETWEEN STARTERS COMPLETE WITH NECESSARY DOUBLE VOLTAGE RELAYS.
- 9.4.6. SUPPLY AND INSTALLATION OF TRANSIENT (SURGE) SUPPRESSERS ON HOLDING COILS OF MAGNETIC STARTERS, RELAYS, ETC., WHERE INDICATED FOR PROTECTION TO SOLID STATE EQUIPMENT THAT IS SENSITIVE TO SURGES, SPIKES, ETC.

10. MOTOR STARTERS

10.1. MANUAL STARTER SHALL HAVE QUICK-MAKE, QUICK-BREAK, SWITCHING MECHANICAL COMPLETE WITH OVERLOAD HEATERS, MANUAL RESET, TRIP INDICATING HANDLE, AND LOCKING TAB TO PERMIT PADLOCKING IN "ON" OR "OFF" POSITION.

10.2. MAGNETIC AND COMBINATION MOTOR STARTERS TO BE MINIMUM SIZE 1 TYPE, AND RATING TO SUIT MOTOR LOAD. C/W CONTROL TRANSFORMER, CONTACTOR SOLENOID OPERATED, MOTOR OVERLOAD PROTECTIVE DEVICE IN EACH PHASE, MANUALLY RESET, POWER AND CONTROL TERMINALS, PUSHBUTTONS AND SELECTOR SWITCHES, TWO N/O AND TWO N/C AUXILIARY CONTACTS, PROVISION FOR PREVENTING SWITCHING TO "ON" POSITION WHILE ENCLOSURE DOOR IS OPEN.

11. LIGHTING

11.1. REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWINGS FOR DETAILS.
11.2. MINIMUM CRI OF 80
11.3. 50,000+ HOURS L70 LUMEN PERFORMANCE
11.4. EFFICACY OF >110 LUMENS PER WATT
11.5. MINIMUM 5 YEARS WARRANTY
11.6. PROVIDE DLC LISTING NUMBER AND ENERGY STAR CERTIFICATION FOR REBATES.

12. FIRE ALARM SYSTEM

12.1. ALL NEW FIRE ALARM DEVICES SHALL BE COMPATIBLE WITH THE EXISTING SIMPLEX 4100ES FIRE ALARM PANEL, CONTRACTOR SHALL OBTAIN ADDITIONAL INFORMATION FROM THE SYSTEM MAINTENANCE COMPANY(SEE BELOW). TEST AND VERIFY SYSTEM UPON COMPLETION AND SUBMIT REPORT TO CONSULTANTS.

HAMILTON FIRE CONTROL TO PERFORM ALL MODIFICATIONS & ADDITIONS TO THE EXISTING SYSTEM AND INCLUDE ALL ASSOCIATED COSTS. CONFIRM SPACE FOR NEW DEVICES IN THE PANEL.

12.2. UPGRADE, RE-PROGRAM EXISTING CONTROL PANEL AND ALL REMOTE ANNUNCIATOR PANELS AS REQUIRED TO ACCOMMODATE NEW DEVICES AND INITIATING ZONES AS INDICATED ON PLANS FOR THE ADDITION OF NEW DEVICES AND NEW INITIATING ZONES TO THE EXISTING.

12.3. UNLESS INDICATED OTHERWISE ON PLANS, WIRE NEW DEVICES TO EXISTING LOCAL FIRE ALARM INITIATING ZONE AND NEW SPEAKERS TO EXISTING LOCAL SIGNAL CIRCUITS.

12.4. CODES AND STANDARDS

.1 AUDIBLE SIGNAL APPLIANCES STANDARD ULC-S525
.2 SMOKE DETECTORS STANDARD ULC-S529
.3 SYSTEM INSTALLATION STANDARD CAN/ULC-S524
.4 SYSTEM VERIFICATION STANDARD CAN/ULC-S537

12.5. PRODUCTS

.1 FIRE ALARM PULL STATION
.1 PANEL #
.2 SMOKE DETECTOR IONIZATION TYPE
.1 PANEL #
.3 HEAT DETECTOR FIXED TEMPERATURE
.1 PANEL #
.4 HEAT DETECTOR FIXED TEMPERATURE AND RATE OF RISE
.1 PANEL #
.5 HORN & STROBE
.1 PANEL #
.6 CONTROL RELAY MODULES
.1 PANEL # (RELAY IAM) WITH ONE FORM "C" DRY RELAY PER MODULE WITH CONTACTS RATED: 2A @24VDC AND 1.0A @120VAC.

12.6. TESTING AND VERIFICATION
.1 PERFORM SYSTEM TESTING AND VERIFICATION AND SUBMIT REPORT TO CONSULTANTS.

13. REVISIONS TO EXISTING PANEL BOARDS

13.1. ALL EXISTING PANEL BOARDS ON DRAWINGS TO REMAIN AND BE REUSED TO FEED NEW DEVICES. FOR IDENTIFIED PANELBOARDS WHERE APPLICABLE ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL NEW BRANCH AND FEEDER BREAKERS, TYPE, QUANTITY AND CAPACITY AS IDENTIFIED ON DRAWING AND INSTALL IN EXISTING PANEL. ON EACH PANEL BOARD MODIFIED PROVIDE REVISED AND UPDATED PANEL BOARD SCHEDULE TO REFLECT NEW LOADS. RE-USE ALL SPARE BREAKERS MADE REDUNDANT IN DEMOLITION PHASE AND UPDATE PANEL BOARD SCHEDULES TO REFLECT ALL NEW AND REVISED CIRCUITS.

14. MILLWORK, FURNITURE, AND EQUIPMENT WIRING

14.1. ALL EQUIPMENT MUST BE CAREFULLY COORDINATED FOR EXACT FLOOR OR WALL LOCATIONS PRIOR TO DRILLING CONDUIT SLEEVES THROUGH FLOOR SLABS OR WALLS.

15. LIGHTING CONTROL

15.1. BASIS OF DESIGN IS A WATTSTOPPER DLM LOW VOLTAGE CONTROLS FOR A COMPLETE SYSTEM.

15.2. EXTENT OF LIGHTING CONTROL SYSTEM WORK IS INDICATED ON DRAWINGS ALONG WITH SEQUENCE OF OPERATIONS. THE SYSTEM IS DEFINED TO INCLUDE, BUT NOT BY WAY OF LIMITATION.

- 15.2.1. OCCUPANCY SENSORS
- 15.2.2. DAYLIGHT SENSORS
- 15.2.3. DIGITAL ROOM CONTROLLERS
- 15.2.4. NETWORK DEVICES
- 15.2.5. WALL STATIONS
- 15.2.6. SOFTWARE

15.3. CORRIDOR LIGHTING SHALL BE TIED INTO BAS. REFER TO DRAWINGS FOR MORE DETAILS.

15.4. ACCEPTABLE MANUFACTURERS

- 15.4.1. LEGRAND WATTSTOPPER
- 15.4.2. ACUITY N-LIGHT
- 15.4.3. COOPER

16. PAGING SYSTEM

16.1. ALL NEW PAGING DEVICES SHALL BE COMPATIBLE WITH THE EXISTING CAREHAWK CH1000 PAGING SYSTEM, CONTRACTOR SHALL OBTAIN ADDITIONAL INFORMATION FROM THE SYSTEM MAINTENANCE COMPANY(SEE BELOW). TEST AND VERIFY SYSTEM UPON COMPLETION.

CONTACT DOUG LAPPIN AT 905-522-1200(EXT 115) TO PERFORM ALL MODIFICATIONS & ADDITIONS TO THE EXISTING SYSTEM AND INCLUDE ALL ASSOCIATED COSTS.

16.2. UPGRADE, RE-PROGRAM EXISTING PAGING CONTROL PANEL AS REQUIRED TO ACCOMMODATE NEW DEVICES.

16.3. UNLESS INDICATED OTHERWISE ON PLANS, WIRE NEW DEVICES TO EXISTING PAGING RACK.

16.4. ALL WIRING SHALL BE PLENUM RATED.

16.5. PRODUCTS

16.5.1. PAGING SPEAKER IN DRYWALL CEILING
- 16.5.1.1. MCBRIDGE 8229-25-7025
- 16.5.1.2. MCBRIDGE MC20E

16.5.2. PAGING SPEAKER IN ACT
- 16.5.2.1. MCBRIDGE 8229-11-7025
- 16.5.2.2. MCBRIDGE MC10E/MC10EA

No.	DESCRIPTION	DATE
2	ISSUED FOR TENDER	2025-03-24
1	ISSUED FOR PERMIT	2025-02-25
B	PROGRESS SUBMISSION	2025-02-04
A	PROGRESS SUBMISSION	2025-01-10

REVISIONS

24098

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HWDSB

AMRA J ARCHITECTS INC.
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project title:
HAMILTON - WENTWORTH DISTRICT SCHOOL BOARD
P02125 - LAKE AVENUE ELEMENTARY SCHOOL RENOVATIONS, WASHROOMS & CHANGEROOMS RENOVATIONS

Drawing Title:
ELECTRICAL SPECIFICATION

drawn: MD	scale: NTS
date:	project number: 24-21
checked: MD	DRAWING NO: E3-00
date:	0 Revision

UNIT HEATER SCHEDULE (HYDRONICS)

TAG	AREA SERVED	MANUFACTURE	MODEL NUMBER	ARRANGEMENT NUMBER	DIMENSION (L X D X H)	HEATING MBH	GPM	COIL PRESSURE DROP FT. WG	AIR FLOW CFM	MOTOR HP	RPM	MOTOR AMPS	# OF FANS	POWER	ELECTRICAL WIRING INSTRUCTION
CH-1/CH-2/CH-4	R-136A/R-136B/ R-138A	ENGINEERED AIR	CUH-1	24	660X711X241	16.10	1.62	1.52	185	1/25	1050	0.6	1	115/1/60	DIV. 26 TO WIRE UNIT COMPLETELY. ALL CONTROL WIRING BY MECHANICAL DIVISION. CONTROL VALVE TO BE PROVIDED BY THE BAS SUPPLIER AND WIRE TO THE FOR ON/OFF.
CH-3/CH-5	R-138/R-136	ENGINEERED AIR	CUH-3	24	660X711X241	21.45	2.17	3.57	300	1/25	1050	0.6	1	115/1/60	

NOTES

1. EWT=180^{0}F, ΔT= 20^{0}F
2. THE UNIT TO BE SELECTED WITH BUILT-IN THERMOSTAT.
3. UNIT HEATER COLOR SHALL BE SELECTED BY ARCHITECT. ALLOW FOR FACTORY FINISH FINAL COAT.

EXHAUST FAN SCHEDULE

TAG	AREA SERVED	MANUFACTURER AND MODEL NUMBER	VOLUME L/S (CFM)	EXTERNAL SP (PASCAL)	FAN RPM	WALL OPENING SIZE (MM)	WEIGHT WITH ACC'S (LBS)	REMARKS	WIRING FOR MECHANICAL EQUIPMENT SCHEDULE						ROOM STARTER TYPE	REMOTE CONTROL DEVICE	ELECTRICAL WIRING SCOPE
									MOTOR								
									SIZE (HP)	V/PH/HZ	MOTOR RPM	FLA (AMPS)	MCA	MOCP			
EF-1	R-136/R-136A/R-136B/R-137A /R-137B	GREENHECK SQ-130	472 (1000)	125	1140	-	91		1/3	115/1/60	1140	7.2	-	15	MAG. STARTER HOA	BAS	DIV. 26 TO PROVIDE MAGNETIC STARTER C/W HAND/OFF/AUTO SWITCH & PILOT LIGHTS AND WIRE UNIT COMPLETELY THROUGH DISCONNECT SWITCH SUPPLIED BY MECHANICAL DIVISION. ALL CONTROL WIRING TO BAS BY MECHANICAL DIVISION. BAS SHALL ENABLE DISABLE AND MONITOR STATUS OF THE FAN. ALL STARTERS SHALL BE LOCATED IN STORAGE ROOM 138A BY THE ELECTRICAL CONTRCTOR.
EF-2	R-138A	GREENHECK SQ-90-VG	94 (200)	100	1300	-	35		1/6	115/1/60	-	2.8	-	15	MAG. STARTER HOA	BAS	
EF-3	STAFF WASHROOMS	GREENHECK SQ-90-VG	94 (200)	100	1300	-	35		1/6	115/1/60	-	2.8	-	15	MAG. STARTER HOA	BAS	
EF-4	R-138B	GREENHECK SQ-90-VG	189 (400)	100	1300	-	34		1/6	115/1/60	-	2.8	-	15	MAG. STARTER HOA	BAS	

NOTES:
1. MOTOR WITH CSA APPROVAL
2. SWITCH, NEMA-1, JUNCTION BOX MOUNTED & WIRED
3. GRAVITY OPERATED BACK DRAFT DAMPER
4. COATED WITH PERMATECTOR, CONCRETE GRAY-RAL 7023, FAN AND ATTACHED ACCESSORIES. ALUMINUM WHEEL MATERIAL
5. ISOLATORS & BRACKETS, SPRING HANGING KIT(S) FOR INDOOR FANS

MECHANICAL SCHEDULE - BASEBOARD ELECTRIC HEATER

TAG	MANUFACTURER	MODEL	LOCATION	TYPE	QTY.	FINISH/ COLOUR	CAPACITY (KW)	POWER (V/ø/HZ)	ELECTRICAL WIRING SCOPE
BBH 1	OUELLET	OFM0502	STAFF WASHROOM (138B)	OFM	1	STANDARED	0.5	120V/1PH	DIV. 26 TO WIRE UNIT COMPLETELY THROUGH DISCONNECT SWITCH SUPPLIED BY MECHANICAL DIVISION.
BBH 2	OUELLET	OFM0502	STAFF WASHROOM (138B)	OFM	1	STANDARED	0.5	120V/1PH	

NOTES,

1. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
2. OR APPROVED EQUIVALENT AS OUTLINED IN THE SPECIFICATIONS
3. BUILT IN THERMOSTAT
4. DISCONNECT SWITCH

BUILDING AUTOMATION SYSTEM

INCLUDE IN PRICE TO RETAIN SCHOOL BOARDS BAS SYSTEM PROVIDER (SIEMENS CANADA- JAKE RENDULIC ACCOUNT EXECUTIVE 1577 NORTH SERVICE ROAD EAST, L6H 0H6, OAKVILLE, ON MOBILE: 905-541-7433 EMAIL: JAKE.RENDULIC@SIEMENS.COM) TO CONTROL NEW CABINET HEATERS AND EXHAUST FANS. ALL CONTROL WIRING AND CONDUITS SHALL BE INCLUDED.

BAS PROVIDER SHALL DETERMINE ADDITIONAL SUB PANELS OR ANY OTHER UPGRADES REQUIRED AND PRICE ACCORDINGLY.

BAS POINT LIST

1. CH-1,2,3,4,5 CABINET HEATERS - ON/OFF CONTROL OF THE VALVE. VALVE SHALL BE SUPPLIED BY THE BAS SUPPLIER FOR MECHANICAL CONTRACTOR TO INSTALL.
2. EF-1,2,3,4- ON/OFF/STATUS SIGNALS. SUPPLY AND INSTALL A FLOW SENSOR IN EXHAUST DUCT BY THE BAS SUPPLIER.
3. BAS SHALL ENABLE DISABLE & MONITOR STATUS OF THE FAN. ALL STARTERS SHALL BE LOCATED IN STORAGE ROOM 138A BY THE ELECTRICAL CONTRACTOR.

NOMENCLATURE (APPLICABLE ONLY FOR THIS DRAWING)

MCA	-	MINIMUM CIRCUIT AMPACITY
MFA	-	MAXIMUM FUSE AMPACITY
BIS	-	BUILT-IN START
TS	-	THERMOSTAT
HP	-	HORSEPOWER
DISC	-	DISCONNECT
BAS	-	BUILDING AUTOMATION SYSTEM
FRAC	-	FRACTIONAL HORSEPOWER

LEGEND FOR MECHANICAL EQUIPMENT WIRING SCHEDULE

AM	-	ACTUATOR MOTOR
APS	-	AIR PROVING SWITCH
AST	-	AQUASTAT
BAS	-	BUILDING AUTOMATION SYSTEM
BIS	-	BUILT IN START
C1	-	EEMAC-1 TYPE DISC. SWITCH
C2	-	EEMAC-2 TYPE DISC. SWITCH
C3R	-	EEMAC-3R TYPE DISC. SWITCH
C4	-	EEMAC-4 TYPE DISC. SWITCH
C12	-	EEMAC-12 TYPE DISC. SWITCH
COMB	-	COMBINATION MAGNETIC STARTER
CP	-	CONTROL PANEL
CSR	-	CURRENT SENSING RELAY
CT	-	CONTROL TRANSFORMER
CWSV	-	COLD WATER SOLENOID VALVE
DISC	-	DISCONNECT
DM	-	DAMPER MOTOR
DMSW	-	DAMPER MOTOR SWITCH
DVR	-	DOUBLE VOLTAGE RELAY
FA	-	FIRE ALARM SYSTEM CONNECTION
FL	-	FLOAT SWITCH
FLA	-	FULL LOAD RUNNING AMPERES
FPU	-	FIELD PROCESSOR UNIT BY DIV. 15900*
FPU/SS	-	START/STOP CONTROL OUTPUT FROM FPU*
FPU/ST	-	MOTOR RUNNING STATUS INPUT TO FPU*
FRAC	-	FRACTIONAL HORSEPOWER
FS	-	FLOW SWITCH
GSV	-	GAS SOLENOID VALVE
HP	-	HORSEPOWER
HOA	-	HAND/OFF/AUTO SWITCH IN STARTER COVER
HUM	-	HUMIDISTAT
HWSV	-	HOT WATER SOLENOID VALVE
IRS	-	INFRARED SENSOR
KMSW	-	KEY OPERATED MOMENTARY CONTACT SWITCH
KSW/PL	-	KEY SWITCH(15A, 120V,SPST, LOCK TYPE C/W PILOT LIGHT)
LS	-	LEVEL SWITCH
LWCO	-	LOW WATER CUT OFF
MAG	-	MAGNETIC STARTER
MAN	-	MANUAL STARTER
MCA	-	MINIMUM CIRCUIT AMPS
MCC	-	MOTOR CONTROL CENTRE
MFA	-	MAXIMUM FUSE AMPACITY
MOCP	-	MAXIMUM OVER CURRENT PROTECTION
MVS	-	MONITORED VALVE SWITCH
ODT	-	OFF DELAY TIMER
PB	-	PUSHBUTTON ON/OFF SWITCH IN STARTER COVER
PL	-	PILOT LIGHT IN STARTER COVER
PLG	-	PLUG
PS	-	PRESSURE SWITCH
RPB	-	REMOTE STOP/START PUSHBUTTON
RPL	-	REMOTE PILOT LIGHT
SD	-	SMOKE DETECTOR (DUCT TYPE)
SS	-	SPEED SWITCH
SLS & PL	-	SELECTOR SWITCH AND PILOT LIGHT
SV	-	SOLENOID VALVE
SW	-	HP RATED TOGGLE SWITCH
T	-	THERMOSTAT OR TEMPERATURE SENSING UNIT
TC	-	TEMPERATURE CONTROLLER
TI	-	TIMER (INTERVAL)
T7	-	TIMER (7-DAY)
TRS	-	THERMOSTAT REVERSING SWITCH
TS	-	THERMOSTAT
TOA	-	TEST/OFF/AUTO SWITCH IN COVER (SPRING RETURN TEST TO OFF)
VM	-	VALVE MOTOR
VFD (VSD)	-	VARIABLE FREQUENCY (OR SPEED) DRIVE

No.	DESCRIPTION	DATE
	REVISIONS	
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B	PROGRESS SUBMISSION	2025-02-04
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HWDSB

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project title:
HAMILTON - WENTWORTH DISTRICT SCHOOL BOARD
P02125 - LAKE AVENUE ELEMENTARY SCHOOL RENOVATIONS.
WASHROOMS & CHANGEROOMS RENOVATIONS

Drawing Title:
MECHANICAL & ELECTRICAL SCHEDULES

drawn: MH	scale: AS SHOWN
date: 01/2025	project number: 24-21
checked: KS	DRAWING NO: ME1-00
date:	Revision

S1.0
GENERAL NOTES
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MTE Computer Dwg No.

N01 GENERAL NOTES

1. CONFORM TO THE REQUIREMENTS OF THE LATEST ONTARIO BUILDING CODE (OBC) INCLUDING ALL THE LATEST STANDARDS REFERENCED THEREIN, AND ANY APPLICABLE ACTS OF AUTHORITY HAVING JURISDICTION. THE LATEST VERSION OF ALL STANDARDS AND CODES LISTED BELOW SHALL BE USED.
2. READ STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL OTHER SPECIFICATIONS AND CONTRACT DOCUMENTS.
3. WHERE DISCREPANCIES EXIST BETWEEN CONTRACT DOCUMENTS, INCLUDING DRAWINGS AND APPLICABLE CODES AND ACTS, THE MOST STRINGENT SHALL GOVERN. CONTRACTOR SHALL CHECK ALL DIMENSIONS ON WORKING DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
4. THESE DESIGN DOCUMENTS ARE PREPARED SOLELY FOR THE USE BY THE PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS ENTERED INTO A CONTRACT AND THERE ARE NO REPRESENTATIONS OF ANY KIND MADE BY THE DESIGN PROFESSIONAL TO ANY PARTY WITH WHOM THE DESIGN PROFESSIONAL HAS NOT ENTERED INTO A CONTRACT.
5. THE USE OF THESE DRAWINGS IS LIMITED TO THAT IDENTIFIED IN THE REVISION COLUMN. DO NOT CONSTRUCT FROM THESE DRAWINGS UNLESS MARKED "ISSUED FOR CONSTRUCTION" BY MTE CONSULTANTS.
6. UNDER NO CIRCUMSTANCES ARE THESE DRAWINGS TO BE SCALED, INCLUDING FOR PREPARATION OF SHOP DRAWINGS, CONSTRUCTION LAYOUT, OR BIDDING PURPOSES. ERRORS MADE BY PERSONS SCALING THESE DRAWINGS SHALL NOT BE THE RESPONSIBILITY OF MTE CONSULTANTS.
7. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS AND SIZES OF PITS, BASES, HOUSE KEEPING PADS, SUMPS, TRENCHES, DEPRESSIONS, GROOVES, CURBS, CHAMFERS AND SLOPES NOT SHOWN ON STRUCTURAL DRAWINGS.
8. BEFORE PROCEEDING WITH WORK, THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIARIZED WITH ALL CHARACTERISTICS AFFECTING NEW AND EXISTING CONSTRUCTION. ANY CHANGES, ALTERATIONS OR REVISIONS MUST BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
9. SUBSTITUTIONS FROM SPECIFIED PRODUCTS AND MATERIALS MUST BE APPROVED IN WRITING BY THE ENGINEER PRIOR TO ORDERING OF MATERIALS. THE CONTRACTOR SHALL REIMBURSE ALL CONSULTANTS FOR ADDITIONAL COSTS INCURRED AS A RESULT OF REVIEWING ANY CHANGES MADE TO THE CONTRACT DOCUMENTS.
10. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS - O.REG. 213/91.
11. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN ALL SHORING AND TEMPORARY BRACING AS PER O.REG 213/91 AND THE CONTRACTOR SHALL RETAIN AN ENGINEER AS REQUIRED.
12. THE CONTRACTOR SHALL RETAIN AN INDEPENDENT INSPECTION AND TESTING COMPANY TO ENSURE THAT ALL WORK IS DONE IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. REQUIRED TESTING SHALL BE AS PER THE TESTING AND INSPECTION TABLE BELOW.
13. MTE CONSULTANTS WILL PROVIDE GENERAL REVIEW OF CONSTRUCTION IN ACCORDANCE WITH THE PERFORMANCE STANDARDS OF THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF ONTARIO BY MEANS OF A RATIONAL SAMPLING PROCEDURE TO DETERMINE WHETHER THE CONSTRUCTION OF THAT WORK SHOWN ON THE MTE DRAWINGS IS IN GENERAL CONFORMITY WITH THE PLANS, SKETCHES, DRAWINGS, AND SPECIFICATIONS FORMING PART OF THE CONTRACT DOCUMENTS PREPARED BY "MTE". THE CONTRACTOR IS SOLELY RESPONSIBLE FOR QUALITY CONTROL AND THE PERFORMANCE OF THE WORK IN ACCORDANCE WITH THE CONTRACT. "MTE" SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CONTRACTOR, OR ANY OTHER PERSON PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
14. IT IS THE RESPONSIBILITY OF BOTH THE OWNER AND THE CONTRACTOR TO NOTIFY THE ENGINEER OF CONSTRUCTION PROGRESS SO THE ENGINEER CAN COMPLETE GENERAL REVIEWS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A CONSTRUCTION SCHEDULE PRIOR TO STARTING THE WORK. GENERALLY, REVIEWS BY THE ENGINEER WILL BE REQUIRED FOR REBAR PRIOR TO CONCRETE PLACEMENT, FOOTING AND FOUNDATIONS PRIOR TO BACKFILLING, AND ABOVE GRADE FRAMING PRIOR TO INSTALLATION OF INTERIOR FINISHES.

N02 TESTING AND INSPECTION

THE FOLLOWING ITEMS REQUIRE TESTING OR INSPECTION BY A CERTIFIED INDEPENDENT TESTING OR INSPECTION AGENCY UNLESS NOTED OTHERWISE. THE AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS TO THE ENGINEER FOR REVIEW.

ITEM	REQ'D	COMMENTS
SOIL BEARING CAPACITY	NO	
SOIL COMPACTION	NO	
REINFORCING STEEL PLACMENT	NO	
CONC. COMPRESSIVE TESTS	NO	
CONCRETE SLUMP	NO	
STRUCTURAL STEEL BOLTING	NO	
STRUCTURAL STEEL WELDING	NO	
MORTAR CUBES	YES	

N03 REQUIRED SUBMITTALS

THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.

ITEM	REQ'D SUBMITTAL?	ENGINEER'S STAMP REQ'D?	NOTES
REBAR SHOP DRAWINGS	NO	NO	
CONCRETE MIX DESIGNS	NO	NO	
MASONRY GROUT MIX DESIGN	YES	NO	
BLOCK MILL REPORT	YES	NO	
STRUCTURAL STEEL SHOP DRAWINGS	YES	YES	FOR CONNECTIONS ONLY
MISCELLANEOUS STEEL SHOP DRAWINGS	NO	NO	STAMP FOR STAIRS, LADDERS AND GUARDS
STEEL DECK SHOP DRAWINGS	NO	NO	
COLD FORMED STEEL FRAMING SHOP DWGS.	NO	NO	
FALL ARREST ANCHORS	NO	NO	

N08 STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL AND CONNECTIONS SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST CSA STANDARD S16
2. STRUCTURAL STEEL SHALL CONFORM TO CAN/CSA-G40.20 FOR GENERAL REQUIREMENTS, AND CAN/CSA-G40.21 FOR QUALITY
   a. GRADE 350W CLASS C FOR H.S.S.
   b. GRADE 350W FOR W SHAPES, S SHAPES, AND TEES.
   c. ALL OTHER MISCELLANEOUS METAL SHALL BE MINIMUM GRADE 300W (U.N.O.)
3. BOLTED CONNECTIONS SHALL USE ASTM A325 BOLTS. ALL BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 EXCEPT THAT ANCHOR BOLTS SHALL BE FABRICATED FROM STEEL ROD CONFORMING TO CSA STANDARD G40.21 OR ASTM F1554 WITH A MINIMUM YIELD STRENGTH OF 250 MPa.
4. STEEL COATINGS - UNLESS NOTED OTHERWISE ALL STRUCTURAL STEEL SHALL BE CLEANED AND PREPARED TO A MINIMUM LEVEL OF SSPC SP-3 AND IN ACCORDANCE WITH CSA STANDARD S16:
   a. ALL INTERIOR STEEL THAT IS TO BE PROTECTED BY A SPRAY APPLIED CEMENTIOUS FIRE PROOFING SHALL BE CLEANED AND REMAIN UNCOATED STEEL.
   b. ALL OTHER INTERIOR STRUCTURAL STEEL SHALL BE SHOP PRIME PAINTED AS PER CSA/CAN-S-16. SHOP PRIMER SHALL CONFORM TO CISC/CPMA 1-73A.
   c. ALL STEEL EXPOSED TO WEATHER IS TO BE HOT DIP GALVANIZED IN ACCORDANCE TO CAN/CSA-G164. TOUCH UP OF WELDS, CUTS OR SCRATCHES TO GALVANIZING SHALL BE DONE WITH A MINIMUM OF 3 COATS OF ZINC RICH PAINT.
5. WELDING OF STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF CSA STANDARD W59 AND SHALL BE UNDERTAKEN BY A FABRICATOR AND ERECTOR FULLY APPROVED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA STANDARD W47, DIVISION 1 AND DIVISION 2. FABRICATOR TO SUPPLY CERTIFICATION OF FUSION WELDING, AND WELDING MAY ONLY BE CARRIED OUT IN ACCORDANCE WITH OWNER'S SAFETY REGULATIONS REGARDING WELDING.
6. FABRICATOR SHALL DESIGN CONNECTIONS AND THE LIKE IN ACCORDANCE WITH THE 2012 OBC FOR THE FORCES SHOWN ON THE DRAWINGS. WHERE FORCES ARE NOT NOTED ON THE DRAWINGS, BEAM REACTIONS SHALL BE TAKEN AS ONE-HALF OF THE TOTAL UNIFORMLY DISTRIBUTED FACTORED LOADS NOTED ON THE BEAM LOAD TABLES OF PART FIVE OF CISC'S HANDBOOK OF STEEL CONSTRUCTION, LATEST EDITION, PROVIDED NO POINT LOADS ACT ON THE BEAM. ALL WELDS SHALL BE 5 mm (3/16") MIN. FILLET. ALL BOLTS SHALL BE MIN. M20 (3/4") DIAMETER AND PROVIDE MIN. (2) BOLTS PER CONNECTION.
7. WHERE MOMENT CONNECTIONS ARE CALLED FOR BUT VALUES ARE NOT INDICATED, DESIGN CONNECTIONS FOR FULL MOMENT CAPACITY OF THE SMALLER MEMBER JOINED.
8. SPLICES SHALL BE DESIGNED TO DEVELOP THE FULL CAPACITY OF THE MEMBER AT THE POINT OF THE SPLICE. MEMBERS SHALL NOT BE SPLICED AT POINTS OF MAXIMUM STRESS. NO SPLICES SHALL BE MADE UNLESS SHOWN ON THE DRAWINGS OR REVIEWED AND APPROVED BY THE ENGINEER.
9. MOMENT FRAME AND X-BRACE CONNECTIONS SHALL HAVE ASTM A325 FRICTION TYPE M20 (3/4") MINIMUM DIAMETER BOLTS (U.N.O.).
10. SHAPE AND SIZE GUSSET PLATES TO CLEAR ARCHITECTURAL FINISHES AND MECHANICAL DUCTS AND PIPES AND ELEVATOR SHAFTS.
11. SHOP DRAWINGS OF STRUCTURAL STEEL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE FABRICATION.
12. ALL BEAMS CANTILEVERED OR CONTINUOUS OVER A COLUMN OR OTHER SUPPORT, AND BEAMS SUPPORTING POINTS OF CONCENTRATED LOAD, SHALL HAVE A MIN. OF 2-10 mm (3/8") STIFFENERS EACH SIDE OF WEB UNLESS OTHERWISE NOTED.
13. TOP OF COLUMNS WHICH ARE NOT BRACED BY JOISTS OR BEAMS SHALL BE BRACED DIAGONALLY TO THE ROOF OR FLOOR BY A MINIMUM OF 4-L76 x 76 x 6.4 mm (L3 x 3 x 1/4") ANGLES FOR INTERIOR COLUMNS; A MINIMUM 2-L76 x 76 x 6.4 mm (L3 x 3 x 1/4") ANGLES FOR EXTERIOR COLUMNS. BRACING SHALL BE BETWEEN TOP OF COLUMN AND TOP CHORD OF JOISTS.
14. COLUMN BASE PLATES AND BEAM BEARING PLATES SHALL BE GROUTED WITH 40 mm (1.5") NON-SHRINK 40 MPa GROUT.
15. ALL COLUMNS BUILT INTO MASONRY WALLS SHALL HAVE ADJUSTABLE ANCHORS AT MINIMUM 400 mm (16") O.C.
16. STEEL BEAMS AND LINTELS SHALL HAVE 200 mm (8") MINIMUM END BEARING ON MASONRY AND 65 mm (2 1/2") MINIMUM BEARING ON STEEL UNLESS INDICATED OTHERWISE.
17. FOR ALL BEAMS AND LINTELS ON STEEL BEARING PLATES.
   a. BEARING PLATES ARE TO BE CENTRED BELOW ALL BEAMS OR LINTELS U.N.O ON THE DRAWINGS.
   b. WELD TO BEARING PLATE WITH A MINIMUM 50 mm x 5 mm (2" x 3/16") FILLET ON BOTH SIDES OF BEAM.
18. WHERE BACK-TO-BACK ANGLES ARE USED AS LINTELS OR SUPPORTS. STITCH WELD TOGETHER AT A MAXIMUM SPACING OF 300mm (12") O.C.
19. ALL ROOF OPENINGS TO BE REINFORCED BY FRAMES COMPRISED OF C130X10 (C5X6.7) CHANNEL MEMBERS UNLESS NOTED OTHERWISE. MAXIMUM SPAN 2250 mm (7'-6").
20. SUPPORT AT COLUMNS AND IRREGULARITIES:
   a. INSTALL L76 x 76 x 6.4 mm (L3 x 3 x 1/4") ANGLE SEATS FOR STEEL DECK AT CONNECTIONS, AT COLUMNS OR OTHER IRREGULARITIES, TO PROVIDE SUPPORT TO THE RIBS OF THE DECK.
   b. INSTALL L102 x 102 x 7.9 mm (L4 x 4 x 5/16") ANGLE SEATS FOR PRECAST SUPPORT AT CONNECTIONS, AT COLUMNS OR OTHER IRREGULARITIES, TO PROVIDE BEARING FOR PRECAST PLANKS.
21. NO STRUCTURAL STEEL SHALL BE CUT IN THE FIELD UNLESS REVIEWED AND APPROVED BY THE ENGINEER.
22. MAINTAIN ERECTION BRACING UNTIL COMPLETION OF ENTIRE STRUCTURE, INCLUDING ROOF DECKS AND OTHER ELEMENTS WHICH ARE PART OF THE LATERAL LOAD RESISTING SYSTEM.

N09 MASONRY

1. ALL MASONRY CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF CSA STANDARDS CAN/CSA-A370, CAN/CSA-A371 AND CSA S304.1.
2. ALL MASONRY UNITS OF CONCRETE SHALL CONFORM TO THE CSA STANDARD CAN/CSA-A165 AND SHALL HAVE A MINIMUM LOAD BEARING STRENGTH OF 15MPA BASED ON NET CROSS-SECTIONAL AREA.
3. REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF CAN/CSA G30.18 GRADE 400W FOR REINFORCING STEEL AND BE DEFORMED HI-BOND HARD GRADE WITH MINIMUM YIELD STRENGTH OF Fy = 400 MPa.
4. TYPE S MORTAR SHALL BE USED THROUGHOUT FOR LOAD BEARING BLOCK. TYPE N MORTAR SHALL BE USED FOR BRICK VENEER OR DECORATIVE NON-LOAD BEARING BLOCK.
   LAB CURED MORTAR COMPRESSIVE STRENGTHS:
   (JOB PREPARED MIX)
   TYPE S: MIN. 28 DAY STRENGTH 12.0 MPa
   TYPE N: MIN. 28 DAY STRENGTH 7.5 MPa
   MORTAR MIX PROPORTIONS:
   MIX ACCORDING TO TABLE 3 OR 4 OF CSA A179. MORTAR MIX SHALL BE TESTED FOR STRENGTH AND APPROVED BY THE ENGINEER PRIOR TO USE ON THE JOB.
   GROUT: (WHERE CALLED FOR ON DRAWINGS)
   SHALL CONFORM TO CAN/CSA A179
   MIN. 28 DAY STRENGTH 20 MPa
5. ALL MASONRY WALLS SHALL BE HORIZONTALLY REINFORCED WITH NO.9 (3.7mm) STANDARD DUR-O-WAL TRUSS JOINT REINFORCEMENT (OR APPROVED EQUAL) AND CONTINUOUS REINFORCEMENT AT EVERY SECOND COURSE (400 mm/16").
   a. ALL JOINT REINFORCEMENT SHALL BE HOT-DIPPED GALVANIZED.
   b. REINFORCEMENT SHALL BE LAPPED A MINIMUM OF 300mm (12") AT ALL JOINTS.
   c. PREFABRICATED CORNER AND TEE REINFORCEMENT SHALL BE USED AT ALL WALL INTERSECTIONS.
   d. REINFORCEMENT SHALL BE INSTALLED IN THE FIRST AND SECOND BED JOINTS 200 mm (8") APART, BELOW THE TOP OF WALLS.
   e. REINFORCEMENT SHALL BE INSTALLED IN THE FIRST AND SECOND BED JOINTS 200 mm (8") APART, IMMEDIATELY ABOVE LINTELS AND BELOW SILLS AND SHALL EXTEND 600 mm (2'-0") BEYOND THE JAMB.
   f. REINFORCEMENT SHALL BE PLACED AS TO PROVIDE 16 mm (5/8") MORTAR COVER ON THE EXTERIOR FACE OF WALL AND 12 mm (1/2") COVER ON THE INTERIOR FACE OF WALL.
6. ALL TIES FOR MASONRY VENEER SHALL BE DESIGNED AND SUPPLIED BY THE MASONRY CONTRACTOR IN ACCORDANCE WITH CSA STANDARDS S304.1 AND CAN/CSA-A370.
7. PROVIDE COLD WEATHER PROTECTION AS REQUIRED BY CAN/CSA-A371 "MASONRY CONSTRUCTION FOR BUILDINGS".
8. ALL BLOCK MASONRY UNITS SHALL BE CONSTRUCTED WITH FULL HEAD JOINTS, AND ULL BED JOINTS UNDER THE FULL BEARING AREAS OF THE FACE SHELLS, AND UNDER WEBS SURROUNDING THOSE CELLS TO BE FILLED WITH GROUT.
9. THE INTERSECTION OF ALL MASONRY WALLS SHALL BE TOOTHED OR CONTINUOUSLY REINFORCED WITH JOINT REINFORCEMENT.
10. PROVIDE A MINIMUM DEPTH OF 200 mm (8") OF 100% SOLID MASONRY UNITS, OR FULLY GROUTED UNITS, FOR SLABS OR STEEL DECK BEARING ON MASONRY, UNLESS MORE IS SHOWN ON THE DRAWINGS.
11. ALL MASONRY BENEATH CONCENTRATED LOADS (SUCH AS BEAMS, LINTELS, AND JOISTS) SHALL HAVE VOIDS FILLED WITH 20 MPA GROUT FOR A MINIMUM DEPTH OF 400 mm (16") OR 3 TIMES THE LENGTH OF BEARING (WHICHEVER IS GREATER) AND PROJECTING A MINIMUM OF 200 mm (8") OR THE LENGTH OF BEARING BEYOND EACH EDGE OF BEARING (WHICHEVER IS GREATER), UNLESS OTHERWISE NOTED OR SHOWN.
12. WHERE STEEL BEARING PLATES ARE SHOWN ON THE DRAWINGS, THEY SHALL BE ANCHORED WITH A MINIMUM OF TWO 12 mm DIA X 450 mm LONG + 50 mm (1/2" DIA X 18" LONG + 2") HOOKED ANCHOR RODS WELDED TO THE PLATES AND EMBEDDED INTO GROUT FILL AS NOTED ABOVE.
13. SEE PLANS AND SCHEDULES REGARDING LINTEL SIZES FOR MASONRY WALLS AND VENEER.
14. FOR ALL OPENINGS OR RECESSES IN MASONRY NOT SHOWN ON DRAWINGS GREATER THAN 300 mm (12") AND UP TO 1200 mm (4 FT.), INCLUDING THOSE FOR MECHANICAL OR ELECTRICAL SERVICES OR EQUIPMENT, PROVIDE ONE L89X89X6.4 (L3 1/2 X 3 1/2 X 1/4") ANGLE FOR EACH 100 mm (4") THICKNESS OF WALL.
15. MAINTAIN SUPPORT OF MASONRY LINTELS FOR A MINIMUM OF SEVEN DAYS OR UNTIL SUFFICIENT STRENGTH IS GAINED TO SAFELY SUPPORT LOADS IMPOSED.
16. FULLY GROUT BLOCK CELLS AT PARAPETS.
17. ALL MASONRY WALLS SHALL BE ADEQUATELY BRACED DURING CONSTRUCTION UNTIL ADEQUATE DIAPHRAGM ACTION CAN BE DEVELOPED BY INSTALLED FLOOR AND ROOF STRUCTURAL COMPONENTS.
18. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF MASONRY CONTROL JOINTS. SPACING OF CONTROL JOINTS IN ALL WALLS SHALL BE CONSTRUCTED AS PER PLAN, BUT SHALL NOT EXCEED 6000 mm (20'-0") O.C. ALL REINFORCING TO BE DISCONTINUOUS AT CONTROL JOINTS. CONTROL JOINTS SHALL BE CAULKED WITH FOAM BACKER ROD AND SHALL NOT BE FILLED WITH MORTAR.
19. REINFORCED MASONRY:
   a. CELLS TO BE REINFORCED SHALL BE KEPT CLEAN OF MORTAR.
   b. GROUT FOR REINFORCED CELLS, BOND BEAMS, LINTELS AND CELLS CONTAINING DOWELS, ANCHOR BOLTS AND INSERTS PER NOTE #3C.
   c. PROVIDE MINIMUM 2-15M VERTICALS FULL HEIGHT AT ALL WALL ENDS, CORNERS, INTERSECTIONS AND OPENINGS UNLESS OTHERWISE NOTED ON DRAWINGS.
   d. PROVIDE 1-15M VERTICAL FULL HEIGHT EACH SIDE OF CONTROL JOINTS.
   e. DOWELS FROM FOUNDATIONS TO MATCH VERTICAL REINFORCEMENT IN WALL.
   f. PROVIDE THE FOLLOWING LAPS FOR THE REINFORCEMENT INDICATED:
      - 10M BARS = 450 mm (18")
      - 15M BARS = 600 mm (24")
      - 20M BARS = 900 mm (36")
20. EMBEDDED ITEMS ARE NOT TO INTERFERE WITH THE INTEGRITY OF THE MASONRY WALL OR LOCATION OF REINFORCEMENT. PROVIDE FULLY GROUTED LINTEL BEAM FOR CONDUITS AND PIPES RUNNING HORIZONTALLY WITHIN WALL.

N10 SHOP DRAWING REVIEW

1. ERECTION AND FABRICATION SHOP DRAWINGS FOR ALL BUILDING COMPONENTS AS LISTED IN THE REQUIRED SUBMITTALS TABLE AND ANY RELATED WORKS ARE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE COMMENCING WITH FABRICATION.
2. AS PART OF THEIR FIELD SERVICES, MTE CONSULTANTS ("MTE") WILL REVIEW SHOP DRAWINGS PERTAINING TO WORK SHOWN ON MTE CONSULTANT'S DRAWINGS BY MEANS OF APPROPRIATE RATIONAL SAMPLING PROCEDURES AND COMMENT ON THE ACCURACY WITH WHICH THE CONTRACTOR PREPARED THE DRAWINGS.
3. REVIEW OF THE SHOP DRAWINGS IS FOR THE SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH THE GENERAL DESIGN CONCEPT AND IS NOT AN APPROVAL OF THE DETAIL DESIGN INHERENT IN THE SHOP DRAWINGS, RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR SUBMITTING THEM. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS OR FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INFORMATION PERTAINING TO THE FABRICATION PROCESS TECHNIQUES OF CONSTRUCTION AND INSTALLATION AND FOR COORDINATION OF THE WORK OF ALL SUB-TRADES.
4. THE APPROVAL OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF THE FITTING OF BUILDING COMPONENTS. ANY DISCREPANCIES IN THE SHOP DRAWINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL SHOP DRAWINGS MUST BEAR THE SEAL OF A PROFESSIONAL ENGINEER LICENSED IN ONTARIO UNLESS NOTED OTHERWISE IN THE SUBMITTALS TABLE BELOW. UNSEALED SHOP DRAWINGS WILL NOT BE REVIEWED UNLESS ALTERNATIVE ARRANGEMENTS HAVE BEEN AGREED UPON.

N15 STRUCTURAL ABBREVIATIONS

A.B	ANCHOR BOLT	I.D.	INSIDE DIAMTER
ALT.	ALTERNATE	kN.	KILONEWTON
ALUM.	ALUMINUM	kPa	KILOPASCAL
ANCH'S	ANCHORS	L	ANGLE
APPROX.	APPROXIMATELY	L.L.H.	LONG LEG HORIZONTAL
ARCH.	ARCHITECTURAL	L.L.V.	LONG LEG VERTICAL
B/F	BOTTOM FACE	L.P.	LOW POINT
B.PL	BASE PLATE	LG.	LONG
BLK.	BLOCK	MAX.	MAXIMUM
BM.	BEAM	MECH	MECHANICAL
BOT.	BOTTOM	MET'L	METAL
BRG.	BEARING	MIN.	MINIMUM
BT.PL.	BENT PLATE	MISC.	MISCELLANEOUS
C/W	COMPLETE WITH	m	METRE
C/C	CENTRE TO CENTRE	mm	MILLIMETRE
C.J.	CONTROL JOINT	MPa	MEGAPASCAL
CLG.	CEILING	N.I.C.	NOT IN CONTRACT
COL.	COLUMN	N.T.S.	NOT TO SCALE
CONC.	CONCRETE	No.	NUMBER
CONN.	CONNECTION	O.C.	ON CENTRE
CONSTR'N	CONSTRUCTION	O.D.	OUTSIDE DIAMETER
CONT.	CONTINUOUS	O.H.	OVERHEAD
DEMO.	DEMOLITION	OWSJ	OWEN WEB STEEL JOIST
DET.	DETAIL	OPNG.	OPENING
DIA.	DIAMETER	PARTN	PARTITION
DIM.	DIMENSION	PL.	PLATE
DO	DIDO	R.C.	REINFORCED CONCRETE
DP.	DEEP	R.D.	ROOF DRAIN
DWG.	DRAWING	R.O.	ROUGH OPENING
DWL.	DOWEL	REF.	REFERENCE
E.F.	EACH FACE	REINF.	REINFORCED
E.J.	EXPANSION JOINT	REQ'D	REQUIRED
ELEC.	ELECTRICAL	S.C.	SAWCUT
E.S.	EACH SIDE	SECT.	SECTION
E.W.	EACH WAY	S.L.H	SHORT LEG HORIZONTAL
EA.	EACH	S.L.V.	SHORT LEG VERTICAL
EL.	ELEVATION	S.O.G.	SLAB ON GRADE
EQ.	EQUAL	S.S.	STAINLESS STEEL
EXIST.	EXISTING	STL.	STEEL
F.F	FACE TO FACE	STIFF.	STIFFENER
FIN.	FINISHED	STRUCT.	STRUCTURAL
FL.	FLOOR	T/O	TOP OF
FNDN.	FOUNDATION	T.L.L	TOP LOWER LAYER
FTG.	FOOTING	T.U.L.	TOP UPPER LAYER
Ga.	GAUGE	TYP.	TYPICAL
GALV.	GALVANIZED	U.N.O.	UNLESS NOTED OTHERWISE
GRD.	GRADE	U/S	UNDERSIDE
HORIZ.	HORIZONTAL	VERT.	VERTICAL
H.D.	HEAVY DUTY	V.E.F.	VERTICAL EACH FACE
H.D.G.	HOT DIPPED GALVANIZED	V.I.F.	VERTICAL INSIDE FACE
H.E.F.	HORIZONTAL EACH FACE	V.O.F.	VERTICAL OUTSIDE FACE
H.P.	HIGH POINT	W.P.	WORKING POINT
HSS	HOLLOW STRUCTURAL STEEL	W.W.M.	WELDED WIRE MECH @ SPACED AT

NOTE TO CONTRACTOR:

DO NOT SCALE DRAWINGS.

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT THE ENGINEER'S WRITTEN PERMISSION.

THE OWNER/ARCHITECT/CONTRACTOR IS ADVISED THAT M.T.E. CONSULTANTS INC. CANNOT CERTIFY ANY COMPONENT OF THE SITE WORKS NOT INSPECTED DURING CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO NOTIFY M.T.E. CONSULTANTS INC. PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR INSPECTION.

ISSUANCE	ID	DATE
ISSUED FOR TENDER	2	APR. 01, 2025
ISSUED FOR TENDER	1	MAR. 12 , 2025

MTE
Engineers, Scientists, Surveyors
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CLIENT
AMRA J ARCHITECTS INC.

PROJECT
LAKE AVENUE ELEMENTARY SCHOOL
157 LAKE AVENUE NORTH, HAMILTON, ON

DRAWING
GENERAL NOTES

Project Manager:	DXF	Date:	MARCH 2025
Design By:	PVD	Project No.:	60671_001
Drawn By:	NXP	Drawing No.:	S1.0
Scale:	AS NOTED		

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S2.0

FRAMING PLAN WASHROOMS AND CHANGEROOMS

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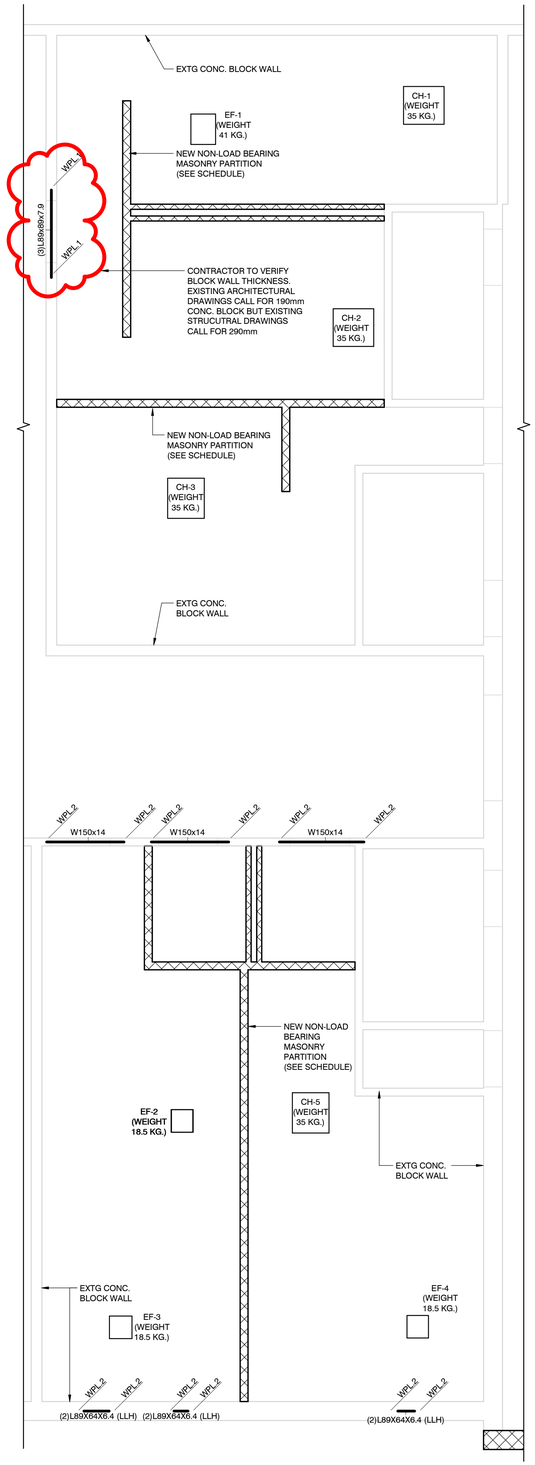
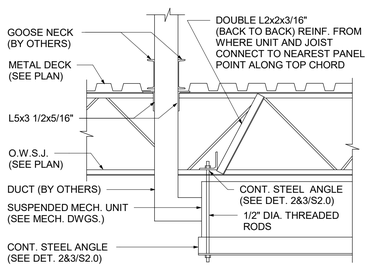


NOTES:
1. T/O SLAB EL. = (SEE ARCH. DWGS.)
2. REFER TO ARCH. DRAWINGS FOR ALL DIMENSIONS, OPENINGS AND SLOPES NOT SHOWN ON THIS DRAWING.
3. SEE TYPICAL SCHEDULE FOR LINTELS IN NON-LOAD BEARING CONCRETE BLOCK WALLS.
4. MASONRY SUPPLIER TO PROVIDE BLOCK TIES FROM NEW BULLNOSE MASONRY TO EXISTING CONCRETE MASONRY WALL.
5. IT IS THE SOLE RESPONSBILITY OF THE CONTRACTOR TO DESIGN ALL SHORING AND TEMPORARY BRACING AS PER O REG 213/91 AND THE CONTRACTOR SHALL RETAIN AN ENGINEER AS REQUIRED. ANY NEW OPENINGS WITHIN THE EXISTING BLOCK WALLS WILL REQUIRE TEMPORARY SHORING.
6. REFER TO ARCH. AND/OR MECH. DRAWINGS FOR DIMENSIONS AND LOCATIONS OF MECHANICAL UNITS.

FRAMING PLAN

1 : 50



TYPICAL SECTION DETAIL

FOR UNITS SUSPENDED BELOW JOISTS (N.T.S.)

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157 LAKE AVENUE NORTH, HAMILTON, ON

DRAWING

FRAMING PLAN WASHROOMS AND CHANGEROOMS

Project Manager: DXF	Date: MARCH 2025
Design By: PVD	Project No.: 60671_001
Drawn By: NXP	Drawing No.: S2.0
Scale: AS NOTED	

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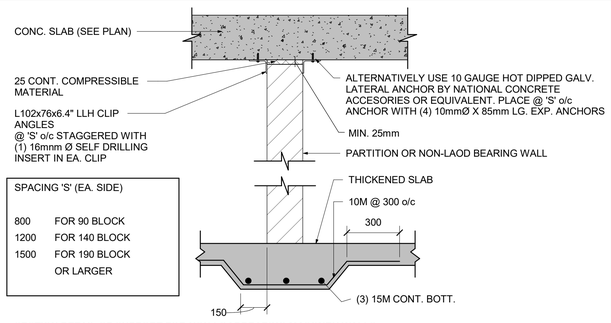
INTERIOR NON-LOAD BEARING MASONRY PARTITION WALL MINIMUM REINFORCEMENT

SEISMIC HAZARD INDEX	WALL THICKNESS	VERTICAL REINFORCEMENT	HORIZONTAL REINFORCEMENT
IeFaSa(0.2) < 0.35	140	NO MANDATED MINIMUM	STANDARD 3.6mm LADDER TYPE EVERY 3RD BED JOINT
	190	NO MANDATED MINIMUM	STANDARD 3.6mm LADDER TYPE EVERY 3RD BED JOINT
	240	NO MANDATED MINIMUM	STANDARD 3.6mm LADDER TYPE EVERY 3RD BED JOINT
	290	NO MANDATED MINIMUM	STANDARD 3.6mm LADDER TYPE EVERY 3RD BED JOINT
0.35 < IeFaSa(0.2) < 0.75	140	15M@800	STANDARD 3.6mm LADDER TYPE EVERY 2ND BED JOINT
	190	15M@1200	STANDARD 3.6mm LADDER TYPE EVERY 2ND BED JOINT
	240	15M@1200	STANDARD 3.6mm LADDER TYPE EVERY 2ND BED JOINT
	290	15M@1200	STANDARD 3.6mm LADDER TYPE EVERY 2ND BED JOINT
IeFaSa(0.2) < 0.75	140	15M@800	STANDARD 3.6mm LADDER TYPE EVERY 2ND BED JOINT
	190	15M@1200	STANDARD 3.6mm LADDER TYPE EVERY BED JOINT
	240	15M@1200	STANDARD 3.6mm LADDER TYPE EVERY BED JOINT
	290	15M@1200	STANDARD 3.6mm LADDER TYPE EVERY BED JOINT

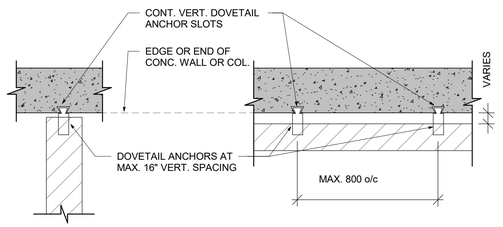
NOTES:
CONDITIONS WHERE THIS DETAIL IS APPLICABLE:
1. "PIN-PIN" WALLS. LATERAL SUPPORT IS REQUIRED AT THE TOP OF ALL MASONRY PARTITION WALLS, REFER TO MASONRY LATERAL SUPPORT TYPICAL DETAILS.
2. MASONRY WALL PIERS ONLY WHEN THEIR LENGTH EXCEEDS 800mm, PIERS MUST BE CONTINUOUS TO TOP OF WALL.
3. INTERIOR PARTITIONS ONLY WITH A MAXIMUM HEIGHT OF 4000mm.
4. DOES NOT APPLY TO MASONRY PARAPETS.

C14 DETAILS OF MASONARY WALL AT CONCRETE SLAB AND WALL (N.T.S.)



SPACING 'S' (EA. SIDE)	
800	FOR 90 BLOCK
1200	FOR 140 BLOCK
1500	FOR 190 BLOCK OR LARGER

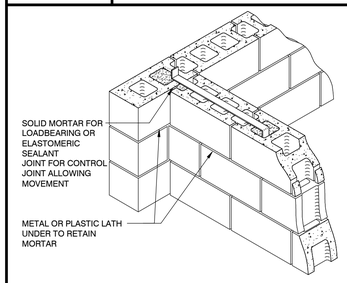
SECTION DETAIL OF SUPPORT FOR NON LOADBEARING MASONRY WALLS

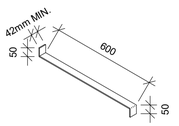


PLAN DETAIL OF MASONRY WALL BUTTING CONCRETE

PLAN DETAIL OFMASONRY WALL FACING CONCRETE

C25 TYPICAL SECTION DETAIL AT INTERSECTING BLOCK WALLS (N.T.S.)





STEEL STRAP ANCHOR SHAPED BOTH ENDS FOR MECHANICAL KEY EMBEDDED IN MORTAR 815 o/c OR GROUTED 1200 o/c FOR SHEAR WALL.

NON-LOAD BEARING BLOCK LINTEL SCHED.

STEEL LINTELS

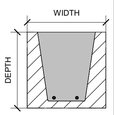
WIDTH	<4'-0"	5'-0"	7'-0"	8'-0"	12'-0"	SECTION DETAIL
4"	(2) L 2x1 1/2x3/16 (LLV)	(2) L 2 1/2x2x3/16 (LLV)				
6"	(2) L 2 1/2x2 1/2x1/4	(2) L2 1/2x2 1/2x1/4	(2) L 3 1/2x2 1/2x1/4 (LLV)	(2) L 3 1/2x2 1/2x3/8 (LLV)		
8"	(2) L 3 1/2x3x1/4 (LLH)	(2) L 3 1/2x3x1/4 (LLH)	(2) L 3 1/2x3 1/2x1/4	(2) L 5x3 1/2x1/4 (LLV)	(2) L 5x3 1/2x5/16 (LLV)	
10"	L4x3x1/4 (LLH) L5x3x1/4 (LLH)	L4x3x1/4 (LLH) L5x3x1/4 (LLH)	L4x3 1/2x5/16 (LLH) L5x3 1/2x5/16 (LLH)	L6x4x5/16 (LLV) L5x5x5/16	L6x4x5/16 (LLV) L5x5x5/16	
12"	(3) L 5 1/2x3x1/4 (LLH)	(3) L 3 1/2x3x1/4 (LLH)	(3) L3 1/2x3 1/2x1/4	(3) L 5x3 1/2x1/4 (LLV)	(3) L 5x3 1/2x5/16 (LLV)	

NOTES:
1. STRUCTURAL STEEL SHALL BE G40.12.
2. BEARING LENGTH = 6" AT EACH END.
3. CONNECT ANGLES @ 24" o/c BY WELDING or BOLTING FOR ANGLES WITH A TOTAL LENGTH OF 6'-0" OR MORE.

NON-LOAD BEARING BLOCK LINTEL SCHED.

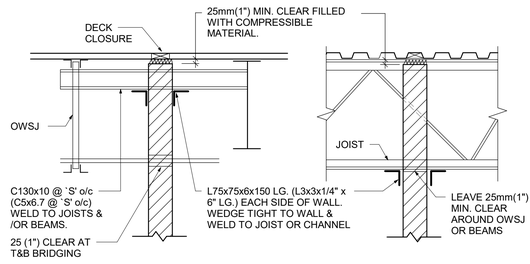
BLOCK LINTELS

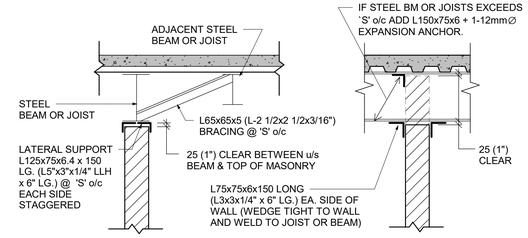
WIDTH	DEPTH	MAX CLEAR SPAN <4'-0"	5'-0"	7'-0"	8'-0"	10'-0"	SECTION DETAIL
4"	d	190	390	390			
	BOT. REINF.	1-10M	1-10M	1-10M			
6"	d	190	190	390	390		
	BOT. REINF.	2-10M	2-10M	2-10M	2-10M		
8"	d	190	190	390	390	390	
	BOT. REINF.	2-10M	2-10M	2-10M	2-10M	2-10M	
10"	d	190	190	390	390	390	
	BOT. REINF.	2-10M	2-10M	2-10M	2-10M	2-10M	
12"	d	190	190	390	390	390	
	BOT. REINF.	2-10M	2-10M	2-10M	2-10M	2-10M	



NOTES:
1. BLOCK STRENGTH = 15 MPa @ 28 DAYS
2. REINCORING STEEL TO BE GRADE 400W
3. 8" NOMINAL BEARING LENGTH (UNLESS NOTED OTHERWISE)

LATERAL SUPPORT AT TOPS OF NON-LOAD BEARING MASONRY WALLS

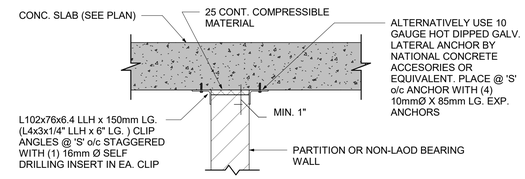




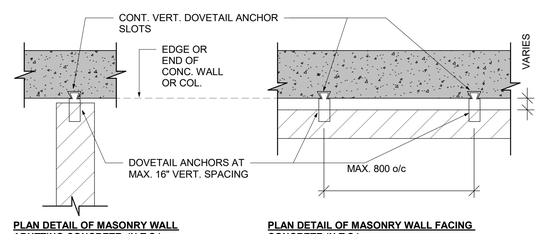
WALL PARALLEL TO OWSJ AND OR BEAM

MASONRY WALL TYPES	EACH SIDE SPACING 'S'
140 BLOCK (4'-0")	1200
190 & LARGER BLOCK	1500 (5'-0")

WALL PERPENDICULAR OWSJ AND OR BEAM



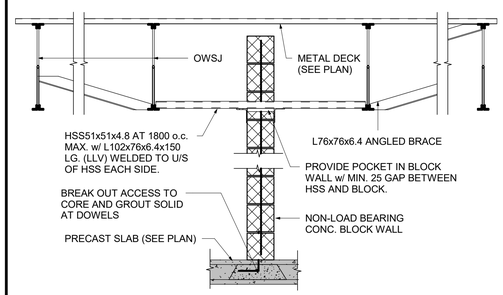
SECTION DETAIL OF SUPPORT FOR NON LOADBEARING MASONRY WALLS



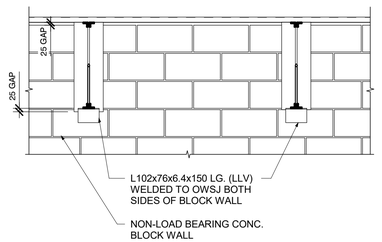
PLAN DETAIL OF MASONRY WALL ABUTTING CONCRETE. (N.T.S.)

PLAN DETAIL OF MASONRY WALL FACING CONCRETE (N.T.S.)

C16a DETAILS OF MASONARY WALL AT METAL DECK (N.T.S.)



TYPICAL BLOCK WALL BRACED BY PARALLEL OWSJ

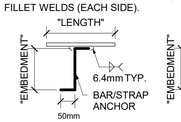


TYPICAL BLOCK WALL BRACED BY PERPENDICULAR OWSJ

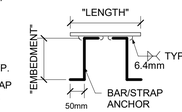
WALL PLATE SCHED.

TYPE	PLATE SIZE THK.xLG.xWD.	ANCHORAGE
WPL.1	10x290x290	(2) 12mm Ø ROD w/ 300 EMBEDMENT
WPL.2	10x178x178	(2) 12mm Ø ROD w/ 300 EMBEDMENT

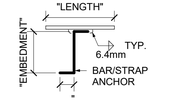
NOTES:
1. CONCRETE FILL SOLID (3) MASONRY COURSES MIN. BENEATH ALL BEARING PLATES.
2. PLATE DIMENSION NOTED AS "LENGTH" TO BE PARALLEL WITH BEAM WEB.
3. FIELD WELD BEAM TO BEARING PLATE w/ 2- 6.4mmx38mm LG. FILLET WELDS (EACH SIDE).



TYP. ELEVATION DETAIL
@ WALL PLATE (N.T.S.)



TYP. ELEVATION DETAIL
@ WALL PLATE (N.T.S.)



TYP. SECTION DETAIL
@ CONT. WELD PLATE (N.T.S.)

MASONRY VENEER LINTEL SCHED.

MAX. CLEAR SPAN	SIZE	REMARKS
2100	L89x76x6.4 (LLH)	
2700	L102x102x6.4	
3050	L127x89x7.9 (LLV)	
3350	L127x89x9.5 (LLV)	
3650	L152x102x9.5 (LLV)	
3950	L152x102x11.0 (LLV)	
4250	L178x102x11.0 (LLV)	
4550	L203x102x11.0 (LLV)	

NOTES:
1. LINTEL BEARING LENGTH TO BE MIN. 150mm
2. ALL STRUCTURAL STEEL MEMBERS TO BE HOT DIPPED GALVANIZED.
3. SEE ARCHITECTURAL DRAWINGS FOR SPANS.

NOTE TO CONTRACTOR:

DO NOT SCALE DRAWINGS.

CONTRACTORS MUST CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

ISSUANCE	ID	DATE
ISSUED FOR TENDER	2	APR. 01, 2025
ISSUED FOR TENDER	1	MAR. 12 , 2025

MTE
Engineers, Scientists, Surveyors
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CLIENT
AMRA J ARCHITECTS INC.

PROJECT
LAKE AVENUE ELEMENTARY SCHOOL
157 LAKE AVENUE NORTH, HAMILTON, ON

DRAWING
MASONRY SCHEDULES AND TYPICAL DETAILS

Project Manager:	DXF	Date:	MARCH 2025
Design By:	PVD	Project No.:	60671_001
Drawn By:	NXP	Drawing No.:	S3.0
Scale:	AS NOTED		