RENOVATIONS TO

Sir Allan MacNab Secondary School

145 Magnolia Drive, Hamilton, ON.

ISSUED FOR TENDER

ABBREVIATIONS

A	
A/C	AIR CONDITIONING
A/PNL	ACOUSTIC PANEL
AB	ANCHOR BOLT
ABV	ABOVE
AC	ACOUSTIC
AC/PNL	ACRYLIC PANEL
ACC	ACCESS
ACCD	ACCESS DOOR (HINGED)
ACI	AMERICAN CONCRETE INSTITUTE
ACM	ACOUSTIC MEMBRANE
ACPL	ACOUSTICAL PLASTER
ACT	ACOUSTIC CEILING TILE
ADJ	ADJUSTABLE
ADM	ADMINIUM
ADH	ADHESIVE
ADJ	ADJACENT
ADJUST	ADJUSTABLE
ADOM	AUTOMATIC DOOR OPERATOR - MOTION DETECTOR OPERATION
ADO/P	AUTOMATIC DOOR OPERATOR - PUSH PLATE OPERATION
AFF	ABOVE FINISHED FLOOR
AGG	AGGREGATE
ALT	ALTERNATE
ALUM	ALUMINUM
AMP	ACOUSTIC METAL PANEL
ANCH	ANCHOR, ANCHORAGE
ANN/PNL	ANNUNCIATOR PANEL
ANOD	ANODIZED
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ACCESS PANEL (NON-HINGED)
APPROX	APPROXIMATE
ASBEST	ASBESTOS
ASPH	ASPHALT
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AUTO	AUTOMATIC
AVB	AIR/VAPOUR BARRIER
AWI	ARCHITECTURAL WOODWORK INSTITUTE
AWMAC	ARCHITECTURAL WOODWORK MANUFACTURERS ASS. OF CANADA
AWP	ACOUSTIC WALL PANEL
B	
B/BD	BACKER BOARD
B/O	BOTTOM OF
B/PL	BASE PLATE
B/S	BOTH SIDES
BAS	BUILDING AUTOMATION SYSTEM
BITUM	BITUMINOUS
BLK	BLACK BOARD
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BLW	BELOW
BM	BENCH MARK
BN	BULLNOSE
BO	BOARD
BRG	BEARING
BRK	BRICK
BRZ	BRONZE
BSMT	BASEMENT
BTM	BOTTOM
BTWN	BETWEEN
BUR/HD	BUILT UP ROOF
BUSH CONC	BUSH-HAMMERED CONCRETE
BW	BOTH WAYS
C	
C/W	COMPLETE WITH
CAB	CABINET
CAULK	CAULKING
CB	CATCH BASIN
CEM	CEMENT
CEM/BD	CEMENTITIOUS BOARD
CEM/FIN	CEMENT FINISH
CEM/PLAS	CEMENT PLASTER
CL/CENTL	CENTRE LINE
CLG	CEILING
CG	CORNER GUARD
CGSB	CANADIAN GENERAL STANDARDS BOARD
CH	COAT HOOK
CHALKBD	CHALKBOARD
CI	CAST IRON
CIRC	CIRCULAR/CIRCULATION
CJ	CONSTRUCTION JOINT
CL	CLOSET
CLG	CEILING
CLR	CLEAR (ANCE)
CLR CONC	CLEAR CONCRETE
CLR/GL	CLEAR GLASS
CLWG	CLEAR WIRED GLASS
CM	CENTIMETER (S)
CMU	CONCRETE MASONARY UNIT
CNTR	COUNTER
COL	COLUMN
COMBIN	COMBINATION
COMM	COMMUNICATION
COMP	COMPACTED
COMPT	COMPARTMENT
COMPOS	COMPOSITION (COMPOSITE)
CONC	CONCRETE
CONNECT	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS OR CONTINUE
CONTR	CONTRACT (OR)
CORR	CORRUGATED
CPBD	CUPBOARD
CPT	CARPET
CPT-T	CARPET TILE
CR	CHROMIUM (PLATED)
CRCI	CONTRACTOR REMOVED, CONTRACTOR INSTALLED
CRS	COURSE (S)
CSA	CANADIAN STANDARDS ASSOCIATION
CSCI	CONTRACTOR SUPPLIED, CONTRACTOR INSTALLED
CSMT	CASEMENT
CT	CERAMIC TILE
CTJ	CONTROL JOINT
CTR	COUNTER
CTSK	COUNTERSUNK
cc or cm³	CUBIC CENTIMETER
D	
D/F	DRINKING FOUNTAIN
DAMP	DAMPER
DCS	DIAPER CHANGE STATION
DEC FIN	DECORATIVE FINISH
DEM	DEMOLISH/DEMOLITION
DEPRESS	DEPRESSED
DEPT	DEPARTMENT
DET	DETAIL
DH	DOUBLE HUNG
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIV	DIVISION
DL	DEAD LOAD
DMP	DEMOUNTEDABLE PARTITION
DN	DOWN
DPC	DAMPERROOF COURSE
DR	DOOR
DWG	DRAWING
DWR	DRAWER
DW	DRYWALL
E	
E	EAST
E/PT	EPOXY PAINT
EF	EACH FACE
EHO	ELECTRIC HOLD OPEN
EIFS	EXTERIOR INSULATED AND FINISH SYSTEM
EL	ELEVATION (ABOVE DATUM)
ELEC	ELECTRICAL
ELEV	ELEVATOR
EL PNL	ELECTRICAL PANELBOARD
EMERG	EMERGENCY
ENCL	ENCLOSURE (URE)
ENT	ENTRANCE
EQ	EQUAL
EQUIP	EQUIPMENT
EXPOSED SLAB PAINTED	EXPOSED SLAB PAINTED
EST	ESTIMATE
EXCAV	EXCAVATE
EXH	EXHAUST
EXIST	EXISTING
EXP JT	EXPANSION JOINT
EXPOS STRUC	EXPOSED STRUCTURE
EXT	EXTERIOR
F	
F	FIXED
F/GL	FROSTED GLASS
FA	FIRE ALARM
FD	FLOOR DRAIN
FDTN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
F (CONT.)	
FFE	FINISH FLOOR ELEVATION
FFL	FINISH FLOOR LINE
FHC	FIRE EXTINGUISHER CABINET
FIBER	FIBERGLASS
FIN	FINISH (ED)
FIRE SEP	FIRE SEPARATION
FL	FLOOR
FLASH	FLASHING
FLEX	FLEXIBLE
FLR	FLOORING
FLUOR	FLOURESCENT
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUD/STEEL
FRR	FIRE RESISTANCE RATED
FR	FRAME (D) (ING)
FIRE RET	FIRE RETARDANT
FP	FIREPLACE
ft.	FOOT
FTG	FOOTING
FURR	FURRED (ING)
FUT	FUTURE
G	
GA	GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GD	GRADE (ING)
GFT	GLASS FIBRE TILE
GL	GLASS (FLOAT)
GL BLK	GLASS BLOCK
GND	GROUND
GR	GRADE
GRAN	GRANULAR
GWB	GYPSUM WALL BOARD
GWB/AR	GYPSUM WALL BOARD, ABUSE RESISTANT
GWG	GEORGIAN WIRED GLASS
GXT	GYPSUM TEXTURE SPRAY
GYP	GYPSUM
H	
HARD	HARDENED
HDBD	HARDBOARD
HB	HOSE BIBB
HC	HOLLOW CORE
HD	HEAVY DUTY
HDR	HEADER
HDRY	HAND DRYER
HDWRE	HARDWARE
HEX	HEXAGONAL
HH	HANDHOLE
HM	HOLLOW METAL
HNDRL	HANDRAIL
HOR	HORIZONTAL
HP	HYDRO POLE
HR	HOUR
HSKP	HOUSEKEEPING
HSS	HOLLOW STEEL SECTION
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HVAC	HEATING/VENTILATION/ AIR CONDITIONING
HWH	HOT WATER HEATER
HWT	HOT WATER TANK
HYD	HYDRAULIC
I	
ID	INSIDE DIAMETER
INCH	INCH
INCL	INCLUDE (D) (ION)
INSUL	INSULATE (D) (ION)
INT	INTERIOR
INTERMED	INTERMEDIATE
INV	INVERT
INVERTED	INVERTED ROOF MEMBRANE ASSEMBLY
J	
JAN	JANITOR
JB	JUCTION BOX
JT	JOINT
K	
kg	KILOGRAM
KIT	KITCHEN
KO	KNOCKOUT
kPa	KILOPASCALS
L	
l or L	LITRE/LENGTH
LAB	LABORATORY
LAM/GL	LAMINATED GLASS
LAV	LAVATORY
lb	POUND (S)
LBL	LABEL
LC	LIGHT CONTROL
LDGL	LEADED GLASS
LH	LEFT HAND
LIN	LINEAR
LINO	LINOLEUM
LKR	LOCKER
LL	LIVE LOAD
LP	LOW PRESSURE
LT	LIGHT
LT STD	LIGHT STANDARD
LVB	LOUVRE BLIND
LVR	LOUVRE
LW	LIGHTWEIGHT
LWC	LIGHT CONCRETE
M	
m	METRE (S)
MANUF	MANUFATURER (ER)
MARB	MARBLE
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MBR	MEMBRANE
MBRB	MEMBRANE
MC	MEDICINE CABINET
ME	MATCH EAST
MECH	MECHANIC (AL)
MED	MEDIUM
MED CAB	MEDICINE CABINET
MET GR CLG	METAL GRID CEILING
MET/LIN	METAL LINEAR
MET/PNL	METAL PANEL
MEZZ	MEZZANNE
MH	MANHOLE
MHO	MAGNETIC HOLD OPEN
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
mm	MILLIMETRE (S)
MO	MASONRY OPENING
MOD	MODULAR
MOD-BIT	MODULAR BITUMEN
MOULD	MOULDING
MPa	MEGAPASCAL
MTL	METAL
MTO	MINISTRY OF TRANSPORTATION ONTARIO
N	
N	NORTH
NAT	NATURAL
NBC	NATIONAL BUILDING CODE
ND	NAPKIN DISPOSAL
NIC	NOT IN CONTRACT
No.	NUMBER
NOM	NOMINAL
NPS	NOMINAL PIPE SIZE
NR	NOISE REDUCTION
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
O	
OA	OVERALL
OBC	ONTARIO BUILDING CODE
OC	ON CENTRE (S)
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OPG	OPENING
OPP	OPPOSITE
OPSS	ONTARIO PROVINCIAL STANDARD SPECIFICATION
ORCI	OWNER REMOVED, CONTRACTOR INSTALLED
OSCI	OWNER SUPPLIED, CONTRACTOR INSTALLED
OSOI	OWNER SUPPLIED, OWNER INSTALLED
OV	OVEN
OWSJ	OPEN WEB STEEL JOISTS
oz.	OUNCE
P	
PAR	PARALLEL
PARK	PARKING
PTD	PAINT (ED)
psf	POUNDS PER CUBIC FOOT
PED	PEDESTAL
PEGBD	PEGBOARD
PERF	PERFORATED
P (CONT.)	
PERIM	PERIMETER
PL	PROPERTY LINE/PLATE
P/LAM	PLASTIC LAMINATE
PLAST	PLASTER
PLF	POUNDS PER LINEAL FOOT
PLYWD	PLYWOOD
PNL	PANEL
POS	POSITION
PR	PAIR
PREC/CONC	PRECAST CONCRETE
PREFAB	PREFABRICATE (D)
PREFIN	PREFINISHED
PREFORM.	PREFORMATION
PRESS. TREAT.	PRESSURE TREATED
PRINT	PRINTER
PROF	PROFILE
PROJ	PROJECT/PROJECTING
psf	POUNDS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
PT	POINT/PAINT
PTD	PAINTED
PTN	PARTITION
PTWD	PRESSURE TREATED WOOD
PVC	POLYVINYL CHLORIDE OR COATING
Q	
QT	QUARRY TILE
R	
R/S	ROD AND SHELF
RA	RETURN AIR
RAD	RADIUS/RADIATOR
RAG	RETURN AIR GRILLE
RB	RUBBER BASE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REC	RECESSED
RECP	RECEPTACLE
REF	REFERENCE
REFL	REFLECTIVE/REFLECTED
REFRIG	REFRIGERATOR
REG	REGISTER
REM	REMOVE
REQD	REQUIRED
RES	RESILIENT
RET	RETURN
REV	REVISION (S), REVISED
RFG	ROOFING
RH	RIGHT HAND
RP	RADIANT HEAT PANEL
RR	RAIN
RAIL	RAILING
REINF	REINFORCE
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RT	RUBBER TILE
RUB	RUBBER
RVS	REVERSE (SIDE)
RWL	RAINWATER LEADER
S	
S	SOUTH
SAN	SANITARY
SC	SOLID CORE
SCHED	SCHEDUAL
SD	SOAP DISPENSER
SDH	SMOKE DAMPER/SOAP DISH
SEAL	SEALANT
SEAT	SEATING
SECT	SECTION
SERV	SERVICES
SG	SINGLE GLASS
SH	SHOWER
SH/C	SHOWER CURTAIN
SH/HD	SHOWER HEAD
SH/RD	SHOWER ROD
SHEATHING	SHEATHING
SHT	SHEET
SHV	SHEET VYNL
SIM	SIMILAR
SKYLT	SKYLIGHT
sm or m²	SQUARE METRES
SND	SANITARY NAPKIN DISPENSER
SP	SPANDREL PANEL
SPEC	SPECIFICATION OR SPECIAL
SPGL	SPANDREL GLASS
SPKR	SPEAKER
sq.	SQUARE
ST	STAIR
ST STL	STAINLESS STEEL
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STL	STEEL
STM	STORM
STN	STATION
STOR	STORAGE
STR OR STRUCT	STRUCTURAL
SUSP	SUSPENDED
SVT	SOLID VINYL TILE
SYM	SYMMETRY (ICAL)
SYN	SYNTHETIC
SYST	SYSTEM
T	
T & G	TONGUE AND GROOVE
T/O	TOP OF
TB	TOWEL BAR
TBD	TO BE DETERMINED
TD	TOWEL DISPENSER
TEL	TELEPHONE
TEMPERED	TEMPERED
TERR	TERRAZZO
TEXT FIN	TEXTURED FINISH
THK	THICK (NESS)
THRESH	THRESHOLD
TI/GL	TINTED GLASS
TKB	TACKBOARD
TOL	TOLERANCE
TPD	TOILET PAPER DISPENCER
TPH	TOILET PAPER HOLDER
TRANS	TRANSPARENT
TRANS/MIR	TRANSPARENT MIRROR (ONE WAY MIRROR)
TRD	TREAD
TSD	TOILET SEAT DISPENSER
TSL	TOP OF SLAB
TV	TELEVISION
TYP	TYPICAL
U	
U/C	UNDERCUT
U/G	UNDERGROUND
U/N	UNDERNEATH
U/S	UNDERSIDE
UC/REF	UNDERCOUNTER REFRIGERATOR
ULC	UNDERWRITERS' LABORATORIES OF CANADA
ULI	UNDERWRITERS' LABORATORIES INCORPORATED
UNEX	UNEXCAVATED
UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
UT	UTILITY
V	
V-JT	V-JOINT (ED)
VAP.BAR	VAPOUR BARRIER
VB	VINYL BASE
VCT	VINYL COMPOSITION TILE
VENT	VENTILATED
VERT	VERTICAL
VEST	VESTIBULE
VF	VINYL FABRIC
VNL	VINYL
VRT	VINYL REINFORCED TILE
VT	VINYL TILE
W	
W	WEST
W	WITH
W/O	WITHOUT
WA	WASHROOM ACCESSORY
WB	WHITEBOARD
WC	WATER CLOSET
WC/WR	WHEELCHAIR WASHROOM
WD	WOOD (SOLID)/WIDE
WDW	WINDOW
WH	WALL HUNG
W/H/C	WINDOW COVERING
WKSP	WORKSHOP
WM	WIRE MESH
WP	WALL PROTECTION
WPF	WATERPROOF
WR	WASHROOM
WWM	WELDED WIRE MESH

END OF ABBREVIATIONS LISTING

CONTACT LIST

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GS | GACESA | SLOTE ARCHITECTS	Architect	GS | GACESA SLOTE ARCHITECTS 118 James Street North, Suite 300 Hamilton, Ontario, L8R 2K7 T: 905-297-0863 E: stevan.gacesa@cgsarch.ca	Stevan Gacesa OAA
CoPA ENGINEERING LTD.	Mechanical	CoPa Engineering Ltd. 29 Rolling Acres Drive Kitchener, ON N2A 3W5 T: 519-894-0022 E: copa.eng@sympatico.ca	Costas Pashartis, P. Eng.
ROOT3 Engineering	Electrical	ROOT3 Engineering 1595 16th Avenue, Suite 301 Richmond Hill, Ontario, L4B 3N9 T: 289-271-5151 E: sholditch@root3.ca	Steve Holditch, P.Eng.
AILMAR ENGINEERING STRUCTURAL ENGINEERS	Structural	Ailmar Engineering Inc. 94 Curran Road, Ancaster, Ontario, L9K 0H4 T: 905-966-4797 E: ssomo@ailmar.com	Samuel Somo, P.Eng.

GRAPHIC SYMBOLS

- 1 / A8.1 — INDICATES DETAIL NUMBER; INDICATES DRAWING SHEET ON WHICH DETAIL IS SHOWN (CROSS REFERENCING)
- A3000 — INDICATES SKETCH SHEET ON WHICH DETAIL IS SHOWN
- PROJECT NORTH
- W01 — WINDOW TYPE
- # — KEYNOTE
- RM# — EXTERIOR WALL ASSEMBLY
- RM# — ROOM NUMBER
- 1 / 5.1 — INDICATES ELEVATION NUMBER; INDICATES SHEET ON WHICH ELEVATION IS SHOWN (CROSS REFERENCING)
- 254.400 — EXISTING ELEVATION
- + 254.400 — NEW ELEVATION
- 3 — REVISION TO DRAWING
- #A — INTERIOR PARTITION ASSEMBLY
- #A / #A — FLOOR/ROOF ASSEMBLY
- D001 — DOOR NUMBERS
- A — GRID REFERENCE
- 1 / A7.1 — INDICATES WALL SECTION NUMBER; INDICATES DRAWING SHEET ON WHICH SECTION IS SHOWN (CROSS REFERENCING)
- 1 / A5.1 — INDICATES BUILDING SECTION NUMBER; INDICATES DRAWING SHEET ON WHICH SECTION IS SHOWN (CROSS REFERENCING)
- SC# — INTERIOR GLAZED SCREEN TYPE

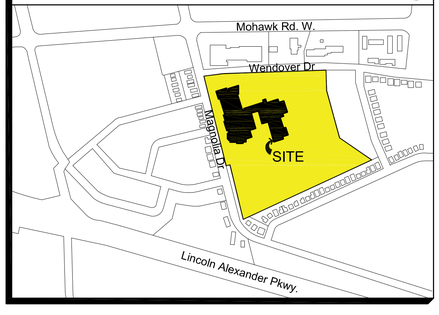
SHEET INDEX

	SHEET NUMBER/TITLE	
ARCHITECTURAL	A0.1	COVER
	A0.2	OBC Matrix, SCHEDULES, ASSEMBLIES & KEY PLAN
	A0.3	CONCRETE PAD AND FENCE DETAILS AND SPECIFICATIONS
	A2.1	DEMOLITION PLANS
	A2.2	PROPOSED FLOOR PLANS AND EXTERIOR ELEVATION
	A3.1	IT ROOM & COSMETOLOGY ROOM RCP AND FLOOR FINISH PLAN
	A10.1	INTERIOR ELEVATIONS
	A10.2	MILLWORK DETAILS
	A10.3	MILLWORK DETAILS
SURVEY		
CIVIL		
STRUCTURAL		

SHEET INDEX

	SHEET NUMBER/TITLE	
MECHANICAL	M1-1	DEMOLITION PLUMBING LAYOUTS
	M1-2	DEMOLITION HVAC LAYOUTS
	M2-1	PROPOSED PLUMBING LAYOUTS
	M3-1	PROPOSED HVAC LAYOUTS
	M3-2	PROPOSED DUST COLLECTOR SYSTEM LAYOUT, NOTES & SCHEDULES
	M4-1	MECHANICAL INSTALLATION NOTES & EQUIPMENT SCHEDULES
ELECTRICAL	E1	ELECTRICAL LEGEND & SPECIFICATION
	E2	ELECTRICAL DEMO PLAN IT RM & COSMETOLOGY RM
	E3.1	ELECTRICAL PROPOSED PLAN 1ST FLOOR
	E3.2	ELECTRICAL PROPOSED PLAN 2ND FLOOR
	E4	ELECTRICAL WIRING DIAGRAM & SCHEDULES

KEY PLAN



GENERAL NOTES

1. ALL CONSTRUCTION TO MEET ALL CURRENT ONTARIO BUILDING CODE REQUIREMENTS.
2. ENSURE THAT ALL CONSTRUCTION, MATERIALS, METHODS OF INSTALLATION AND TEMPORARY FACILITIES COMPLY WITH REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION.
3. INSPECT SITE CONDITIONS PRIOR TO COMMENCING ON NEW WORK AND REPORT ANY DISCREPANCIES.
4. REPORT ALL CONTEMPLATED DEVIATIONS FROM THE DRAWINGS PRIOR TO MAKING CHANGES.
5. SITE VERIFY ALL DIMENSIONS AND MAKE MODIFICATIONS TO SUIT EXISTING SITE CONDITIONS.
6. MAKE GOOD ALL AREAS DISTURBED OR DAMAGED DURING CONSTRUCTION WHETHER SHOWN ON DRAWINGS OR NOT.
7. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ANY AND ALL STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL AND LANDSCAPE DRAWINGS. COORDINATE STRUCTURAL, MECHANICAL, ELECTRICAL, CIVIL & LANDSCAPE WORK TO ENSURE THE PARTS OF THE WORK COME TOGETHER PROPERLY.
8. PROVIDE CUTTING, PATCHING, AND REMEDIAL WORK IN ORDER TO ENSURE PARTS OF THE WORK COME TOGETHER PROPERLY.
9. ARRANGE FOR INSPECTIONS REQUIRED BY LOCAL BUILDING, PLUMBING, HYDRO, GAS, ETC., AUTHORITIES DURING CONSTRUCTION AND FOR OCCUPANCY.
10. THE PLANS SHOWN HERE DO NOT REPRESENT THE FULL LIMIT OF THE SCOPE OF WORK. PROVIDE ALL WORK IN ORDER TO ENSURE PARTS OF THE WORK COME TOGETHER PROPERLY.

GACESA | SLOTE ARCHITECTS
GS
TEL 905-297-0863
118 JAMES ST. NORTH, SUITE 300, HAMILTON, ONTARIO L8R 2K7

No.	Date	Remarks
03	2026-04-10	Issued for Tender
02	2025-12-23	Issued for Building Permit
01	2025-12-05	Issued for Coordination

Renovations to Sir Allan MacNab Secondary School

145 Magnolia Drive, Hamilton, ON

Dwg. Title:

COVER

Drwn:		Chkd:	SG
Proj. No.:	25018		
Scale:	As noted		
Date:	2025 07 30		

Drawing No.:

A0.1

		DOOR					FRAME			FIRE RATING	REMARKS
ROOM NAME	NUMBER	SIZE	TYPE	MAT'L	FINISH	GLASS	TYPE	MAT'L	FINISH		
IT CLASSROOM DOOR	D1064	965 X 2135	NL	HM	PT	G1	EX	EX	EX	45 min	REUSE EX. DOOR CLOSER, HINGES AND LATCHING HARDWARE

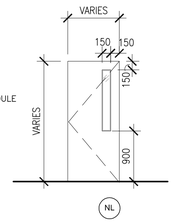
LEGEND: EX. – EXISTING
HM – HOLLOW METAL
PT – PAINTED

G1 – 6mm TEMPERED GLASS
G2 – 25mm INSULATED GLAZING
G3 – 13mm TEMPERED GLASS

8 / A0.2 DOOR SCHEDULE
NTS

NOTES ON H.M. DOOR:

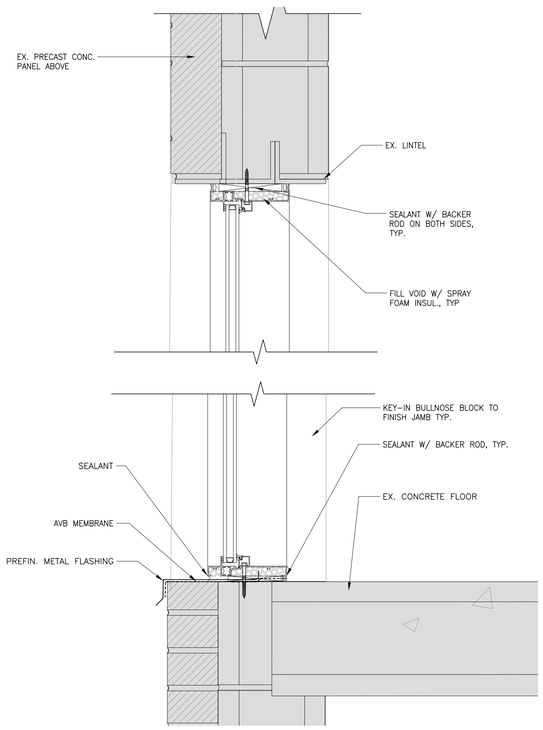
1. REFER TO DOOR SCHEDULE FOR GLAZING TYPE



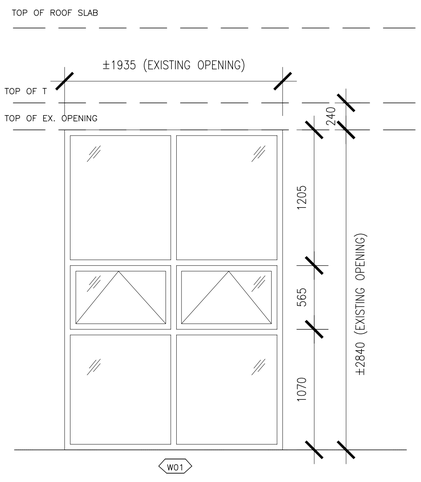
7 / A0.2 DOOR TYPE
1:50

BEAMS (BM)	
GRAPHIC DESCRIPTION	
DESIGNATION	BM
TYPE	FIRE RATED BEAM
FIRE RESISTANCE RATING (F.R.R.) REQUIRED/PROVIDED	2 HR (ULC DES 0504)
REQUIRED/PROVIDED R-VALUE	N/A
CONSTRUCTION (TOP) (SIDE) (UNDERSIDE)	– EX. STRUCTURAL STEEL BEAM – 43MMX25MM CHANNEL BRACKETS FASTENED TO RUNNER ANGLE 610MM O/C – 2 LAYERS OF 15.9MM TYPE X GYPSUM BOARD, FINISH ALL JOINTS

6 / A0.2 ASSEMBLY SCHEDULE
NTS



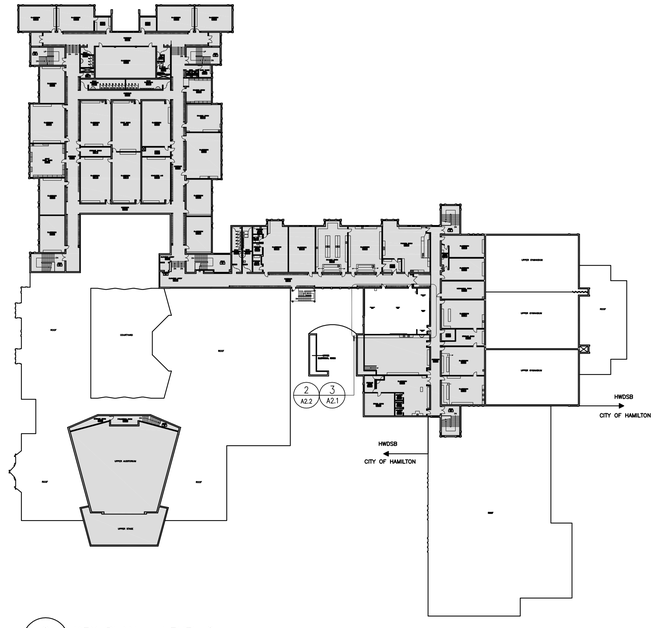
5 / A0.2 W01 WINDOW SECTION
1:5



NOTES:

1. WINDOW TO BE THERMALLY BROKEN ALUMINIUM FRAMING.
2. PROVIDE ROLLER BLIND FOR WINDOW
3. EXTERIOR WINDOW PANE TO BE TEMPERED AND LAMINATED. INSIDE PANE TO BE TEMPERED.

3 / A0.2 W01 WINDOW TYPE
1:25



2 / A0.2 KEY PLAN – LEVEL 2
1:300

Name of Practice:
CGS | CURRAN GACESA SLOTE ARCHITECTS INC.
118 James Street North, Suite 301
Hamilton, ON, L8R 2K7
Tel: 905-297-0863

Name of Project: Sir Allan MacNab Secondary School Renovations
Location: 145 Magnolia Drive, Hamilton, ON
Date: Novmber 2025

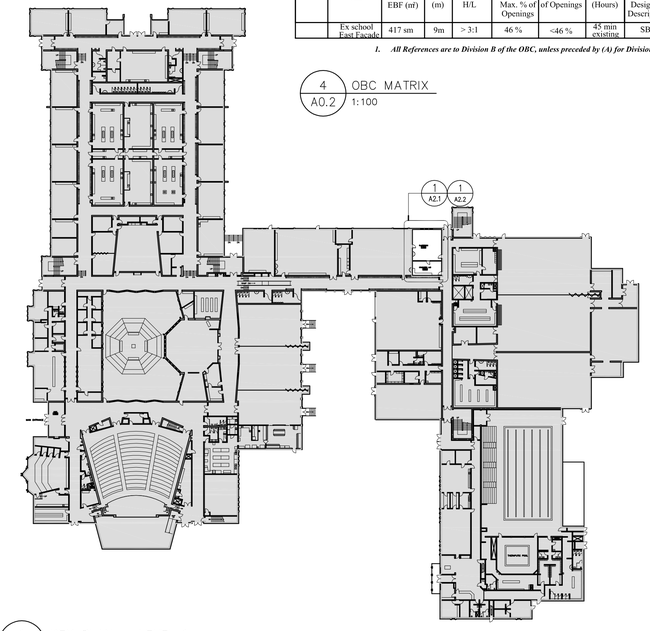
2024 Ontario Building Code Data Matrix
Part-11 Renovation

			Building Code Reference (1)
11.00	Building Code Version:	O. Reg. 163/24 — Last Amendment O. Reg. 447/24	
11.01	Project Type :	☐ Addition ☒ Renovation ☐ Addition and Renovation ☐ Change of use Description : Existing Use Assembly Occupancy (Group A2)	[A] 1. 3. 3. 3B.
11.02	Major Occupancy Classification :	Occupancy: Ex. Group A2 — Use: Existing Secondary School	11. 2. 1.
11.03	Superimposed Major Occupancies :	☒ No ☐ Yes Description : No superimposed major occupancy	11. 2., 3. 2. 2. 5. to 3. 2. 2. 8., & 2. 2. 1.
11.04	Gross Floor Area (m^2)	Description: Ground Floor — Existing: 13, 136 sq.m. — New: 0 — Total: 13, 136 sq.m. Second Floor — 7, 255 sq.m. — 0 — 7, 255 sq.m. Total — 20, 391 sq.m. — 0 — 20, 391 sq.m.	[A] 1. 4. 1. 2., 11. 2., & 11. 3.
	Project Area (m^2)	Proposed Renovation floor area 209.6 sq.m. (Cosmetology room) + 94.1 sq.m.(IT room) Total 303.7 sq.m.	
11.05	Building Height	2 Storeys above grade — Ex. — (m) Above grade 0 Storeys below grade	[A] 1. 4. 1. 2., 3. 2. 1. 1., 2. 2. 2. 2., & 11. 3.
11.06	Number of Streets/ Firefighter access :	1 Street(S)	3. 2. 2. 10., 3. 2. 5., 2. 2. 4. 1., & 11. 3.
11.07	Building Size	☐ Small ☐ Medium ☐ Large ☐ > Large N/A	11. 2. 1. 1., 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 : N/A Hazard Index : N/A Importance Category: ☐ Low ☐ Normal ☐ High ☐ Post disaster N/A	10. 1. 1. 2., 11. 2. 1. 1. T 11. 2. 1. 1. A T 11. 2. 1. 1. B to N 4. 1. 2. 1. (3), 2. 3. 1., & 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	Unchanged - Existing to remain	3. 1. 17., 2. 1. 2., & 11. 4. 2. 2.
11.11a	Plumbing Fixture Requirements	Unchanged - Existing to remain	3. 7. 4., 11. 3. 4., 11. 3. 5., 11. 4. 2. 4., & 11. 4. 2. 5.
11.12	Barrier free Design	☒ No ☐ Yes Unchanged - Existing to remain	11. 3. 1. 2., 11. 3. 2., 11. 3. 3. 2.
11.13	Reduction in Performance Level:	None	11. 4. 2. 1. to 11. 4. 2. 6.
11.14	Compensating Construction:	None	11. 4. 3. 1. to 11. 4. 3. 7.
11.15	Required Fire Resistance Rating (FRR)	Horizontal Assemblies FRR (Hours): Existing Corridors 1 Hour; Existing Classrooms 1 Hour; Existing Floor Assembly 1 Hour Listed Design No: or Description (SB-3): ULC U905; ULC U905	3. 2.2.20. to .83 & 3. 2. 1. 4.

19	Spatial Separation							3.2.3.		9.10.14. & 9.10.15.	
	Wall	Area of EBF (m²)	L.D. (m)	L/H or H/L	Permitted Max. % of Openings	Proposed % of Openings	FRR (Hours)	Listed Design or Description	Comb Const	Comb. Constr. Nonc. Cladding	Non-comb. Constr.
	Ex school East Facade	417 sm	9m	> 3:1	46 %	<46 %	45 min existing	SB-2	☐	☐	☒

1. All References are to Division B of the OBC, unless preceded by (A) for Division A and (C) for Division C.

4 / A0.2 OBC MATRIX
1:100



1 / A0.2 KEY PLAN – LEVEL 1
1:300

GACESA | SLOTE ARCHITECTS
118 JAMES ST. NORTH, SUITE 300, HAMILTON, ONTARIO L8R 2K7
TEL 905-297-0863

No.	Date	Remarks
03	2026-04-10	Issued for Tender
02	2025-12-23	Issued for Building Permit
01	2025-12-05	Issued for Coordination

Renovations to
Sir Allan MacNab Secondary School
145 Magnolia Drive, Hamilton, ON

Dwg. Title:
OBC Matrix, Schedules, Assemblies & Key Plan

Drwn:		Chkd:	SG
Proj. No.:	25018		
Scale:	As noted		
Date:	2025 07 30		

Drawing No.:
A0.2

25018 HWDSB Sir Allan MacNab Secondary School
Project Address: 145 Magnolia Drive, Hamilton, ON

OUTLINE SPECIFICATIONS

Air Barrier: Henry Blueskin VP160 self-adhered water resistive air barrier membrane on manufacturer recommended self-adhered membrane primer.

Fence: All steel components to be hot-dip galzanized.

Prefinished Metal Flashing: 0.61 mm (24 gauge minimum thickness) prefinished metal flashing. Colour to match adjacent material.

Sealants: General Purpose & Acoustical Sealant: To CAN/CGSB-19. 17-M; one-part, siliconized acrylic latex, mildew-resistant, accommodating joint movement of plus or minus 12-1/2 percent; colours as selected by Consultant; Tremflex 834 by Tremco or similar by Dow, General Electric or Master Builders Solutions Canada, Inc.

Install joint sealants to ASTM C1193.

Exterior Sealants: To ASTM C920, Type S, Grade NS, Class 35, Use NT, M, A and O; one-part moisture curing, low modulus polyurethane sealant; accommodating joint movement of plus or minus 35 percent, with a 30 to 90 minute skin time; eg. Dymonic FC by Tremco, colours as selected by Consultant.

Glazing Sealant: To CAN/CGSB-19. 13-M, Type MG2-25-A-L; one-part, moisture curing, acetoxy silicone sealant; eg. Proglaze by Tremco, Clear colour.

Inspect completed sealant joints for adhesion and cohesion to ASTM C1521.

Steel Lintels: For brick veneer: L90x90x6
For 140mm block wall: 2-L64x64x6 back-to-back angles
For 190mm block wall: 2-L90x90x6
For 240mm block wall: 2-L100x100x6

Paint: Conform to MPI Architectural Painting Specification Manual, using only Products from the following manufacturers as listed in MPI Approved Products List for each scheduled paint system. Provide primers and undercoats produced by same manufacturer as finish coats.
1. Manufacturers: Benjamin Moore & Co. Ltd., ICI (Dulux) Paints, MF Paints Inc. (Innovation Plus), Para Paints Canada Inc., PPG Canada Inc. (Pittsburgh Paints), Pratt & Lambert Co., Sherwin-Williams Canada, and Sico Coatings, Inc.
   Conform to MPI Maintenance Repainting Manual for refinishing existing previously finished surfaces.

Paint System Schedule
1. Concrete - Opaque Painted Finish: INT. 3.1M - Institutional low odor/voc , Premium Grade; Gloss Level G5 - Semi-Gloss.
2. Concrete Masonry Units - Opaque Painted Finish: INT. 4.2E - Institutional low odor/voc (over latex block filler), Premium Grade; Gloss Level G4 - Satin.
3. Gypsum Board Walls - Opaque Painted Finish: INT. 9.2M - Institutional low odor/voc (over latex primer/sealer), Premium Grade; Gloss Level G4 - Satin.
4. Gypsum Board Ceilings - Opaque Painted Finish: INT. 9.2M - Institutional low odor/voc (over latex primer/sealer), Premium Grade; Gloss Level G1 - Flat.
5. Galvanized and Galvannealed Metal - INT.5.3N - Institutional low odor/voc (over w.b. galvanized primer), Premium Grade; Gloss Level G5.

Colours: Up to 8 colours as selected by Consultant.
NOTE: All exterior metal to be hot-dipped galvanized.

Millwork: Fabricate and install casework to AWMAC NAAWS 4.0, Custom Grade.
Materials:
Hardwood Lumber: White Birch, NHLA Select and Better Grade, with vertical grain capable of receiving a high quality transparent finish.

Plywood:
To ANSI/HPVA HP-1, Architectural G2S; hardwood veneer core comprised of minimum 9 plies; White Birch veneers, Face Grade A; Plain-Sliced (flat cut); of clear Book match grain capable of receiving a high quality transparent finish; thicknesses as indicated on Drawings.

Medium Density Fiberboard (MDF):
To ANSI A208.2, Grade MD; minimum 740 kg/m³ density and moisture content between 4.5 - 8.0 percent; with clear Natural finish; thicknesses as indicated on Drawings.

Melamine Panels:
melamine resin impregnated decorative paper, thermally fused to both sides of a premium grade medium density fiberboard (MDF). Performance to meet or exceed NEMA LD3-2005-VGS minimum requirements. Colours to be selected from full manufacturer's standard colour range.

Decorative Laminate: High pressure decorative laminate to ANSI/NEMA LD3; as follows:
1. General Purpose Type: Grade HGS, 1.2 mm thick.
2. Postforming Type: Grade HGP, 1.0 mm thick.
3. Backer Type: Grade BKM, 1.0 mm thick.
4. Manufacturers: Arborite, Formica, Nevamar or Wilsonart.

Casework Hardware:
To ANSI/BHMA A156.9, Grade 1.
a. Hinges: Concealed 'European' hinges, equal to Hafele Salice 200 Series.
b. Door pulls: A: Hafele 115.00.962. matt stainless steel, 192mm.
c. Double Roller Catch: Equal to Hafele, Stainless Steel, 245.50.010

Shop finish hardwood and hardwood veneer-clad surfaces to AWMAC NAAWS 4.0, System 12 - POLYURETHANE, WATER-BASED, Custom Grade for Transparent finish, colour and sheen as selected by Consultant.

Solid Surface Counter top: 19mm thick. Non-porous, homogeneous material maintaining the same composition throughout the part with a composition of thermoset polyester, aluminum trihydrate filler and pigment; eg. Aristech Surfaces LLC - manufacturer of the Avonite® brand of solid surface, Solid Surfaces Studio Collection® Class I Solid Surfacing. Colour and Finish as selected by Consultant from full manufacturer's range. Allow for 3 colours.

Flammable Storage Cabinet: Global Industrial™ Justrite Flammable Storage Cabinet 35"Wx22"Dx35"H and with Manual Close Doors - Model WBB3149356 / 892320. 18-gauge steel cabinet with 14-gauge steel doors, one shelf and 22 gallon / 83 litre capacity.

Whiteboards, Tackboards & Pegboard:
Whiteboard: Sandwich panel construction, as follows:
1. Face Panel: 22 ga. porcelain enameled sheet steel; writable and washable surface, acid-resistant and magnetic; White colour.
2. Core: 7/16" thick fibreboard.
3. Back-up Balancing Sheet: 26 ga. sheet steel.

Tackboard: 1/2" thick; factory laminated; as follows:
1. Tackable Surface: 1/4" thick natural cork.
2. Back-up Panel: 1/4" thick particleboard.

Pegboard: Commercial grade 6mm tempered hardboard, 7mm diameter holes are 25mm apart. Cut to custom size and provide 19x38 wood strapping around perimeter to attach to wall. Paint on site to match walls.

Aluminum Trim: 1/16" thick extruded aluminum profiles; eg. Series 9300 by ASI Visual Display Products, Inc., comprised of:
1. Perimeter and divider trim,
2. Concealed mechanical joining system, including 1" wide integrally slotted PVC inserts laminated into ends of panels, and 3/32" thick galvanized steel splines.
3. Marker tray, with contour fitting end castings; flat type.

Epoxy flooring: Sikafloor Morritex Self-Levelling 3 mm (1/8") thick seamless, smooth, glossy floor system. Consisting of a prime coat of Sikafloor 261 at 8 mils - broadcast to saturation, a self-levelling body coat of Sikafloor 261 at 80 - 160 mils - broadcast to saturation with fine silica sand aggregate (provided by Sika). Prepare existing concrete surface to be clean and sound and remove any dust, laitance, grease, oil, dirt, curing agents, impregnations, wax, foreign matters, coatings and detritus by appropriate mechanical means in order to achieve a profile equivalent to ICRI-CSP 3-5. Apply the prime coat using a squeegee and backroll. Avoid puddling. Apply the self-levelling body coat using a notched squeegee or trowel.
Color to be selected by the consultant from the manufacturers full standard colour range.

Rubber Floor Base: To ASTM F1861, Type TP, Group 1, Style B- Cove; 1/8" thick thermoplastic rubber, 4" high; top set; complete with pre-moulded end stops and external corners; charcoal colour; as manufactured by Armstrong World Industries, Roppe Corporation or Tarkett Johnsonite.

Rubber Flooring: Equal Noraplan Environcare by Interface, 2mm tile, size 24"x24". ASTM F1344 Standard Specification for Rubber Floor Tile. ISO 9001, 14001, and 50001 Certified Facility in Weinheim, Germany
Maximum of 5 colours to be selected by consultant at a later date.

Suspended Ceiling Slats: 'Dauntless Baffle Suspended Ceiling' System by Longboard Architectural Products Inc. 6" deep prefinished aluminum baffles spaced 6" on centre c/w rails, t-nuts, hanger clips and end caps. 6063-T5 extruded aluminum baffles - 'Rock Elm REM' finish. Warranty: 15 years on finish and 50 years on aluminum. Meets CAN/ULC S102 and CAN/ULC S114.

Ceramic Tiles: (CT-A) Acceptable Materials: Size 300mm x 600mm; "NuStone" by Centura or "Regal" by Olympia Tile, all in matte finish. Allow for one (1) field colour from manufacturer's full Install with coloured epoxy grout to match.

Epoxy grout to conform to ANSI 118.3. Grout to be two-component, 100% solids epoxy grout, water cleanable and non-sagging: Mapei Kerapoxy CQ or equivalent.
Install tile to TTMAC Tile Installation Manual 2019-2021.

Clothes Washer: Complies With UL2157; front-loading washing machine; 5.2 Cu.Ft. Front Load Washer With Self Clean+. Samsung Model WF45T6000A* with 120V power consumption. Overal height 38.7"x 27" width, depth 31.3". Clearance required for installation: 1" on sides and 7.19" at rear when stacked. Manufactured from recyclable materials;stainless steel drum;Operational control panels and smart care facility; minimum capacity as required for project use; vibration control system; complete with water supply hoses, drain connections, stacking kit and accessories; as manufactured by Samsung. Installation needs to be done on solid floor to minimize vibration.

Clothes Dryer: To CSA standards; electric heat pump ventless dryer as specified
Samsung Model DV45DG6000HWAC with 2500W power consumption. 7.5 cu. ft. Front load dryer with Hybrid Heat Pump and SmartThings. Overall height 38.7"x 27" width, depth 32.2". Clearance required for installation: 1" on sides , 5.9" at rear and 6" above when stacked. If both the washer and a dryer are installed in the same location, the front of the alcove or closet must have two unobstructed air openings for a combined minimum total area of 72 in.2 (465 cm2). Stainless steel drum; automatic moisture sensing controls; lint filter and exhaust duct connections; complete with accessories and fittings; as manufactured by Samsung.
Installation needs to be done on solid floor to minimize vibration.

Mirrors: Provide silvered, 4.76mm mirrors with ground and polished edges, glued to frame and plywood backing and mounted on aluminum channel frame, bright nickel plated. Sizes as per drawings. Mirror glass to conform to ASTM C1503. Mirror glass to be clear float type. Custom cut sizes as per drawings.

Aluminum Windows (W) : Equal to Alumicor, RainBlade 1970, Fixed T.B. Window System, 5 ¼" mullion. All frames to be thermally broken, dark bronze anodized.
Design aluminum windows to AAMA/WDMA/CSA 101/I.S. 2/A440 and CSA A440S1; meeting the following performance criteria:
1. Air Tightness:
   a. Fixed Units: Class Fixed.
   b. Operable Vents: Class A3.
2. Water Tightness
   a. Fixed Units: Class B4.
   b. Operable Vents: Class B4.
3. Wind Load Resistance: Class C5.
4. Screen Strength: Class S1.
5. Forced Entry: Class F2.
6. Condensation Resistance Temperature Index: Class IG > 58.
7. Assembly Thermal Transmittance (ANSI/NFRC 100):
   a. Fixed Units: U < 2.15 W/m2 degrees C
   b. Operable Vents: U < 2.56 W/m2 degrees C.

Fabricate aluminum windows to AAMA/WDMA/CSA 101/I.S. 2/A440 and CSA A440S1. Install aluminum windows to CAN/CSA-A440.4.
Extended Warranties: Submit extended warranties, covering full replacement of curtain wall experiencing air leakage, water leakage, defects or malfunctions under normal usage for the following durations:
1. Manufacturer's Warranty: Ten years.
2. Installer's Warranty: Two years.

Operable Window vents : Equal to Alumicor, UniVent 1350, Thermally Broken System. Projected out vent with concealed 4 bar hinges. All frames to be thermally broken, natural anodized.
All operable vents to be regular crank handles c/w insect screens. Provide 1 crank handle for each operable vent.
Supply 1 surplus crank handle in addition to above noted requirements. Supply 6 surplus screen clips.

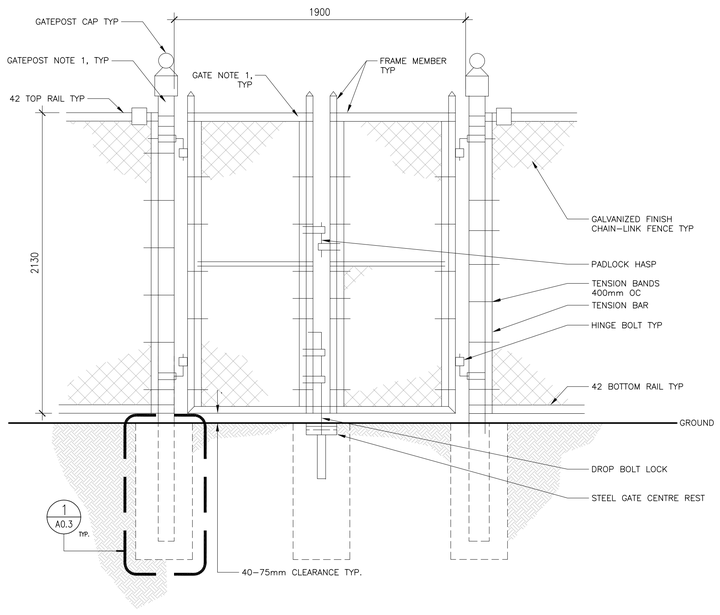
General Window notes : Other acceptable window manufacturers: Commdoor, Alwind Industries Ltd., CRL US Aluminum, Kawneer, Oldcastle BuildingEnvelope, Windspec Inc.
Install glazing to IGMAC Glazing Recommendations for Sealed Insulated Glass Units and GANA Glazing Manual.
Contractor to prepare one complete installation of one curtain wall and one complete installation of one fixed window as a mock-up to be inspected and approved by Consultant before continuing with remaining installations.

Glazing : Sealed Insulating Glass Unit specifications: To CAN/CGSB-12.8; double pane with warm edge seal; comprised as follows:
Outer Pane: ¼" (6mm) thick tinted tempered glass.
Interpane Space: filled with minimum 90% Argon gas.
Inner Pane: ¼" (6mm) thick clear tempered glass, sputtered low-E coating on #3 surface
Overall thickness: 1" (25mm)
Manufacturer's name and product: eg. Solargray + Solarban 60 (3) Clear by Vitro Architectural glass
Sealed Insulating Glass Units to have the following tested physical properties:
1. Visible Light Transmittance (VLT): 35%
2. Visible Light Reflectance: 7% exterior, 9% interior
3. Coefficient of Heat Transmission, Winter Argon-filled (U-value): 1.36 W/m² degree celsius
4. Solar Heat Gain Coefficient (SHGC): 0.29
5. Light to Solar Gain Ratio (LSG): 1.21

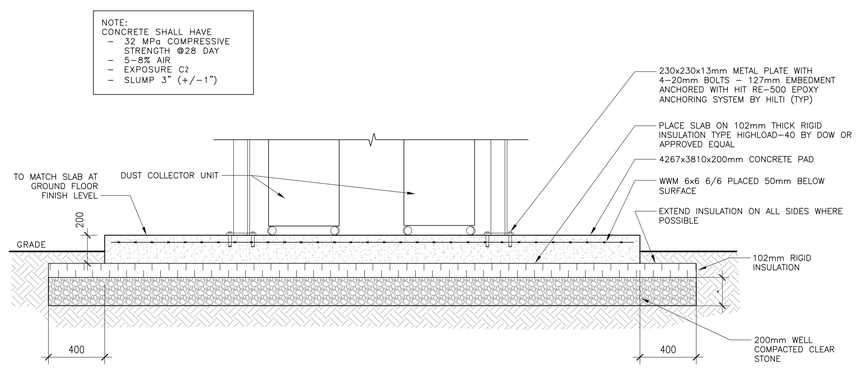
Interior Manual Roller Window Shades : Manual pull-down and retracting operation, single sprocket roller shade, rectangular-shaped, with infinite positioning; each unit consisting of two end brackets, shade roller tube, cassette fascia, exposed hembar, and sun control fabric; sizes as indicated.
Design manual roller window shades to operate without any exposed cords or chains, in accordance with ANSI/WCMA A100.1.
Sun control fabric: woven of 0.18 opaque, vinyl coated polyester yarn consisting of approximately 79% vinyl and 21% 500 dernier polyester core yarn; tensioned prior to heat setting; to NFPA 701 and CAN-ULC-S109; Grey colour; 1 percent open. Acceptable manufacturers: Solarfective, Concord Shading Systems Inc., Sun Project of Canada Inc.
Window (W01) in room 2066 to receive the window shades.

Cabinet Hardware : Teachers closet lock shall be cabinet deadbolt lock CL777R selected from the Schlage Portable Security and Cabinet Lock catalog. This lock shall use the full-size interchangeable core (FSIC) and can accommodate a closet door thickness of 7/8" to 1¾". Keyed alike to the classroom door with a D-pull. This application can work for a double or single door teachers closet.

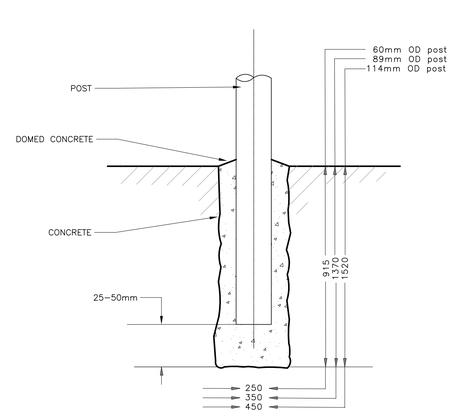
Pull-Down Projector Screen : 1525 x 2035 (60"x80") manual wall-mounted retractable projector screen Da-Lite Model C w/ matte white screen. Standard white powder-coated enclosure finish. Include floating mount wall brackets.



3 A0.3 TYPICAL FENCE DETAILS
1:20



2 A0.3 SECTION THROUGH CONCRETE PAD
1:20



1 A0.3 DETAIL
1:20

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TEL 905-297-0863
118 JAMES ST. NORTH, SUITE 300, HAMILTON, ONTARIO L8R 2K7

No.	Date	Remarks
03	2026-04-10	Issued for Tender
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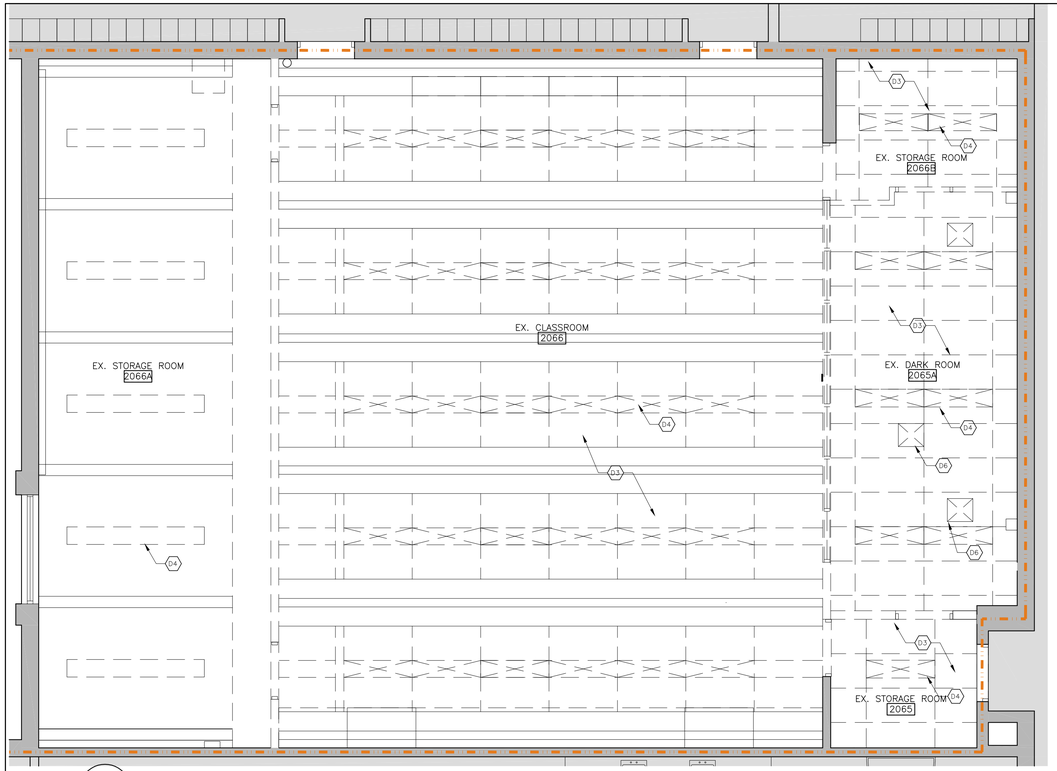
01	2025-12-05	Issued for Coordination

Renovations to
Sir Allan MacNab
Secondary School
145 Magnolia Drive, Hamilton, ON

Dwg. Title:
Concrete Pad and Fence Details and Specifications

Drwn:		Chkd:	SG
Proj. No.:	25018		
Scale:	As noted		
Date:	2025 07 30		

Drawing No.:
A0.3



5 A2.1 RM 2066 RCP DEMOLITION PLAN
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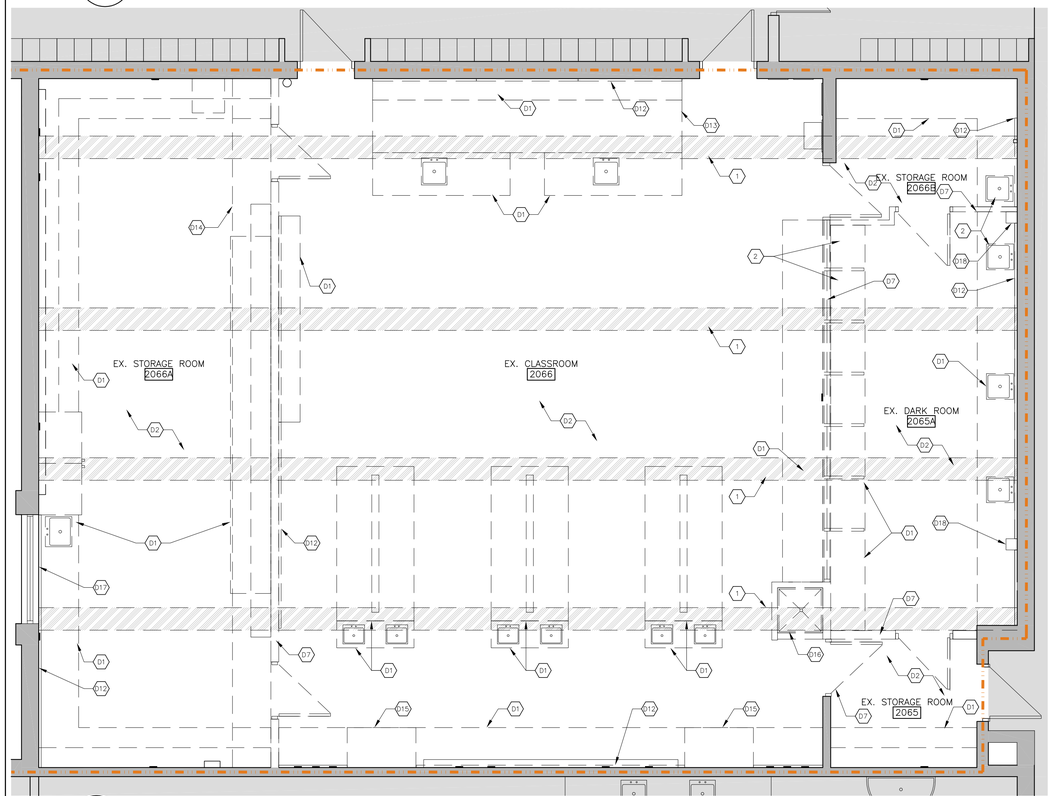


3 A2.1 RM 2066 DEMOLITION PLAN
1:25

PLAN LEGEND

- EXISTING TO REMAIN
- DEMOLITION
- EX. SECOND FLOOR BEAM LOCATIONS
- EX. SECOND FLOOR BEAM LOCATIONS
- EXISTING DOOR TO REMAIN
- PROPOSED DOOR
- PROPOSED FENCE AREA
- 1 – HOUR FIRE SEPARATION

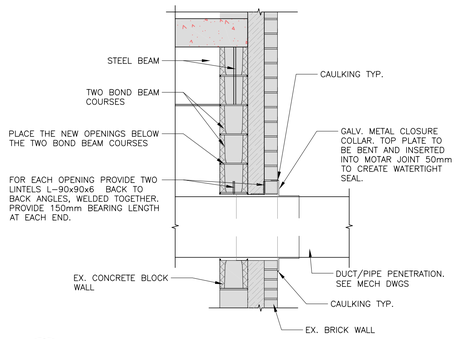
NOTE: CONTRACTOR TO REMOVE ALL EXISTING SHOP EQUIPMENT FROM CLASSROOM 1064 TO A DESIGNATED SPACE INSIDE SCHOOL AND REINSTALL AFTER FLOORING IN CLASSROOM 1064 HAS BEEN COMPLETED.

STRUCTURAL NOTES

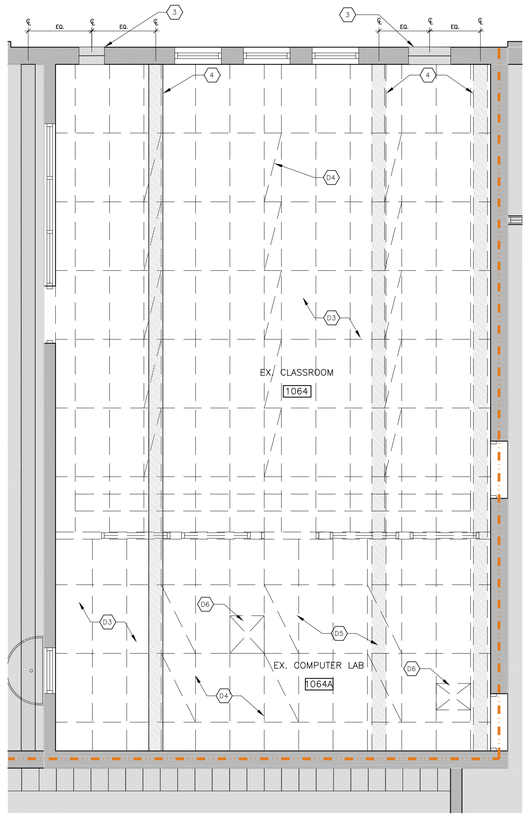
1. EX. SECOND FLOOR BEAMS BELOW WIDTH OF STEEL SUPPORT BEAMS BELOW ROOM IS APPROX. 400mm (INCLUDING CONCRETE FIRE PROTECTION). ALL NEW FLOOR PENETRATIONS MUST AVOID SUPPORT BEAMS.
2. EXISTING REINFORCING STEEL IN EX. FLOOR SLAB OF CLASSROOM IS SPACED AT APPROX 7" (178mm) ON CENTRE. GC TO SCAN FLOOR SLAB TO LOCATE REINFORCING STEEL BEFORE CUTTING NEW FLOOR PENETRATIONS. NO REINFORCING STEEL IS TO BE CUT.
3. CENTRE NEW DUCT PENETRATIONS IN EXTERIOR WALL IN ROOM 1064 BETWEEN BEAMS AND BETWEEN BEAM AND WALL.
4. EX. SECOND FLOOR BEAMS ABOVE

DEMOLITION PLAN NOTES

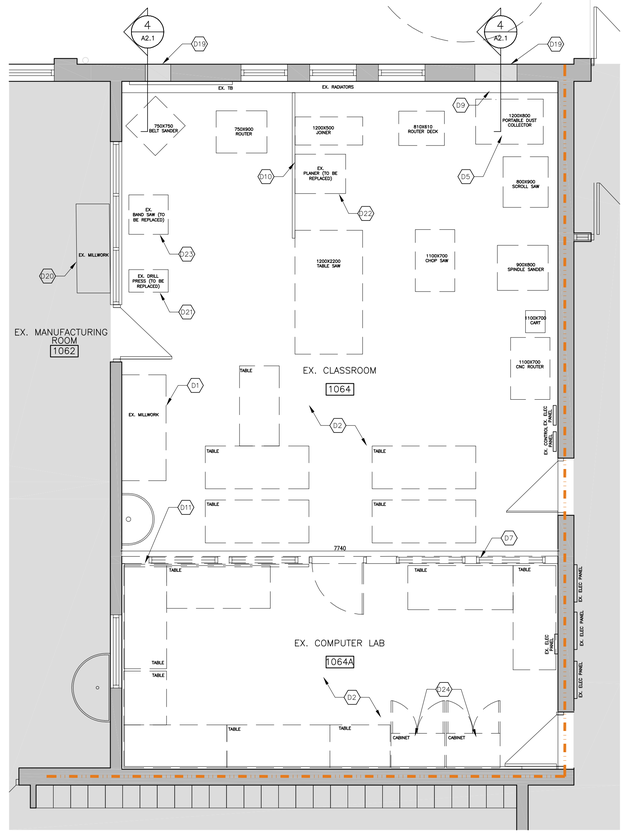
- D1 REMOVE EXISTING MILLWORK ALONG WITH ANY PLUMBING FIXTURES, CAP ALL PLUMBING FIXTURES, AND MAKE GOOD ALL DISTURBED ADJACENT SURFACES
- D2 REMOVE ALL EXISTING FLOOR FINISHES & MAKE GOOD FOR NEW FINISHES
- D3 REMOVE EXISTING ACT AND CEILING GRID.
- D4 REMOVE EXISTING LIGHTING FIXTURES AND DISPOSE. COORDINATE WITH ELECTRICAL.
- D5 REMOVE EXISTING PORTABLE DUST COLLECTOR. COORDINATE WITH MECHANICAL.
- D6 REMOVE AND DISPOSE EX. DIFFUSERS, COORDINATE WITH MECHANICAL.
- D7 REMOVE EX. PARTITION WALL, DOORS AND GLAZED OPENINGS, PATCH AND MAKE GOOD ALL DISTURBED SURFACES.
- D8 EX. TREE TO BE REMOVED, REPAIR GRADING AND RESTORE W/ SOD.
- D9 EX. RADIATORS ALONG THE WALL TO BE REMOVED, COORDINATE WITH MECHANICAL.
- D10 REMOVE FLOOR MOUNTED ELECTRICAL FEED TO SHOP EQUIPMENT. NEW CEILING ELECTRICAL FEED TO BE INSTALLED.
- D11 EX. WIREMOLD TO BE REMOVED ONLY ON WALL AREA TO BE DEMOLISHED.
- D12 REMOVE EXISTING WALL MOUNTED TACK BOARDS, WHITEBOARDS, BLACKBOARDS, FRAMES AND DISPLAY ITEMS. PATCH AND MAKE GOOD ALL DISTURBED SURFACES.
- D13 EX. RAISED PLATFORM TO BE DEMOLISHED, SURFACE IS TO BE PREPARED FOR NEW FINISHES.
- D14 EX. BULKHEAD IS TO BE DEMOLISHED, MAKE GOOD ALL ADJACENT SURFACES AFFECTED BY DEMOLITION.
- D15 EX. FUMEHOODS ARE TO BE REMOVED, COORDINATE WITH MECHANICAL.
- D16 EX. SHOWER WITH CURB IS TO BE DEMOLISHED ALONG WITH ADJACENT WALL. CAP ANY PLUMBING LINES AND MAKE GOOD ALL ADJACENT SURFACES.
- D17 EX. WINDOW AND MASONRY BELOW WINDOW IS TO BE REMOVED FOR INSTALLATION OF NEW FLOOR HEIGHT WINDOW. EX. LINTEL TO REMAIN.
- D18 EX. EXHAUST TO BE REMOVED, COORDINATE WITH MECHANICAL.
- D19 REMOVE EX. MASONRY AS REQUIRED FOR DUCT PENETRATIONS.
- D20 RELOCATING THE EX. CABINETS
- D21 REMOVE EX. DRILL PRESS AND HANDOVER TO OWNER. NEW DRILL PRESS TO BE INSTALLED.
- D22 REMOVE EX. PLANER AND HANDOVER TO OWNER. NEW PLANER TO BE INSTALLED.
- D23 REMOVE EX. BAND SAW AND HANDOVER TO OWNER. NEW BAND SAW TO BE INSTALLED
- D24 EX. METAL CABINETS TO BE REMOVED AND RELOCATED.



4 A2.1 LINTEL DETAIL @ RM 1064 DUCT PENETRATIONS
1:25



2 A2.1 RM 1064 & 1064A RCP DEMOLITION PLAN
1:25



1 A2.1 RM 1064 & 1064A DEMOLITION PLAN
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GS
118 JAMES ST. NORTH, SUITE 300, HAMILTON, ONTARIO L8R 2K7
TEL 905-297-0863

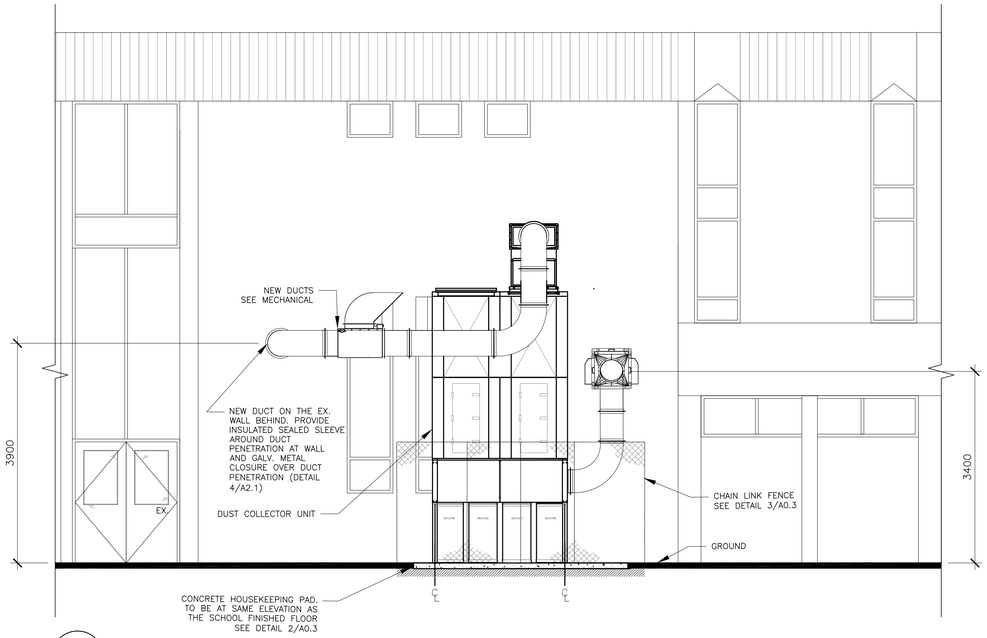
No.	Date	Remarks
03	2026-04-10	Issued for Tender
02	2025-12-23	Issued for Building Permit
01	2025-12-05	Issued for Coordination

Renovations to
Sir Allan MacNab
Secondary School
145 Magnolia Drive, Hamilton, ON

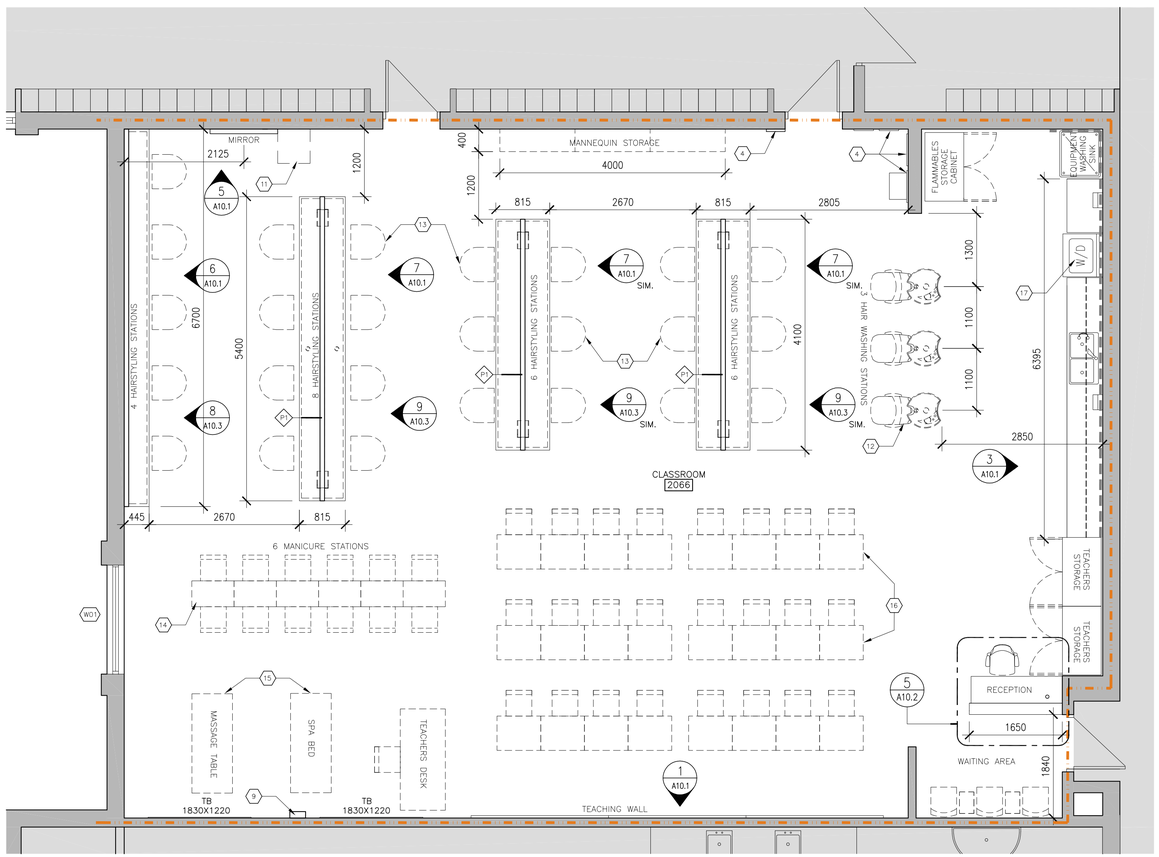
Dwg. Title:
DEMOLITION PLANS

Drwn:		Chkd:	SG
Proj. No.:	25018		
Scale:	As noted		
Date:	2025 07 30		

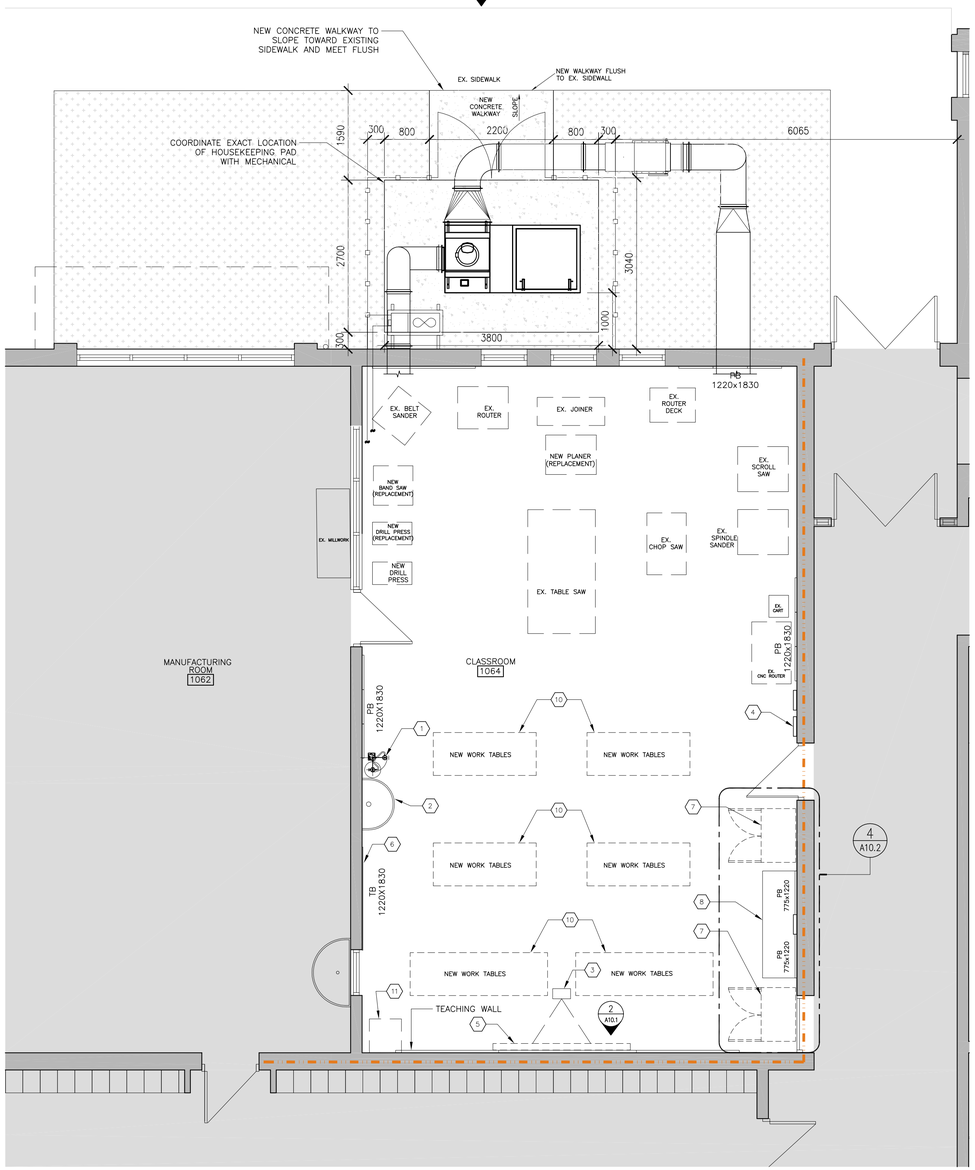
Drawing No.:
A2.1



3 / A2.2 EXTERIOR ELEVATION
1:50



2 / A2.2 RM2066 – PROPOSED FLOOR PLAN
1:50



1 / A2.2 RM1064 – PROPOSED FLOOR PLAN
1:50

PLAN LEGEND

- EXISTING TO REMAIN
- DEMOLITION
- EX. SECOND FLOOR BEAM LOCATIONS
- EX. SECOND FLOOR BEAM LOCATIONS
- EXISTING DOOR TO REMAIN
- PROPOSED DOOR
- PROPOSED FENCE AREA
- 1 – HOUR FIRE SEPARATION
- NEW CONCRETE
- EX. SOD TO BE RESTORED WHERE DISTURBED BY CONSTRUCTION.
- EXTENT OF WALL TILE

CONSTRUCTION KEY NOTES

11. EX. I.T. RACK TO REMAIN
12. HAIRWASHING STATIONS BY MECHANICAL
13. HAIRSTYLING CHAIRS BY CASH ALLOWANCE.
14. MANICURE STATIONS BY CASH ALLOWANCE.
15. SPA AND MASSAGE BED BY CASH ALLOWANCE.
16. TABLE/DESKS FOR CLASSROOM BY CASH ALLOWANCE.
17. STACKED CLOTHES WASHER AND VENTLESS HEAT PUMP DRYER

CONSTRUCTION KEY NOTES

1. NEW EYE WASH STATION
2. EX. BRADLEY SINK TO BE REFURBISHED AND CLEANED. TERRAZZO SURFACES TO BE POLISHED.
3. NEW SHORT THROW PROJECTOR. SUPPLIED BY OWNER AND INSTALLED BY CONTRACTOR.
4. EX. CONTROL AND ELECTRICAL PANELS TO REMAIN
5. MANUAL PULL DOWN PROJECTOR SCREEN
6. ELECTRICAL – REUSE EX. WIRE MOLD
7. RELOCATED EX. METAL CABINETS
8. SOLID SURFACE COUNTER
9. EX. RISER TO REMAIN
10. WORK TABLE BY CASH ALLOWANCE.

GENERAL NOTES

1. PATCH AND MAKE GOOD AT ALL JUNCTION OF NEW AND EXISTING WORK.
2. FENCE ENCLOSURE AND CONCRETE HOUSEKEEPING PAD TO BE COORDINATED WITH DUST COLLECTOR CONFIGURATION.
3. ALL EXPOSED DUCT WORK AND CEILING TO BE PAINTED IN CLASSROOMS 1064 AND 2066.
4. PAINT ALL WALL SURFACES IN CLASSROOM 1064 & 2066.
5. CONTRACTOR TO REMOVE ALL EXISTING SHOP EQUIPMENT FROM CLASSROOM 1064 TO A DESIGNATED SPACE INSIDE SCHOOL AND REINSTALL AFTER FLOORING IN CLASSROOM 1064 HAS BEEN COMPLETED.

ABBREVIATIONS

PB – PEGBOARD
TB – TACK BOARD
WB – WHITEBOARD

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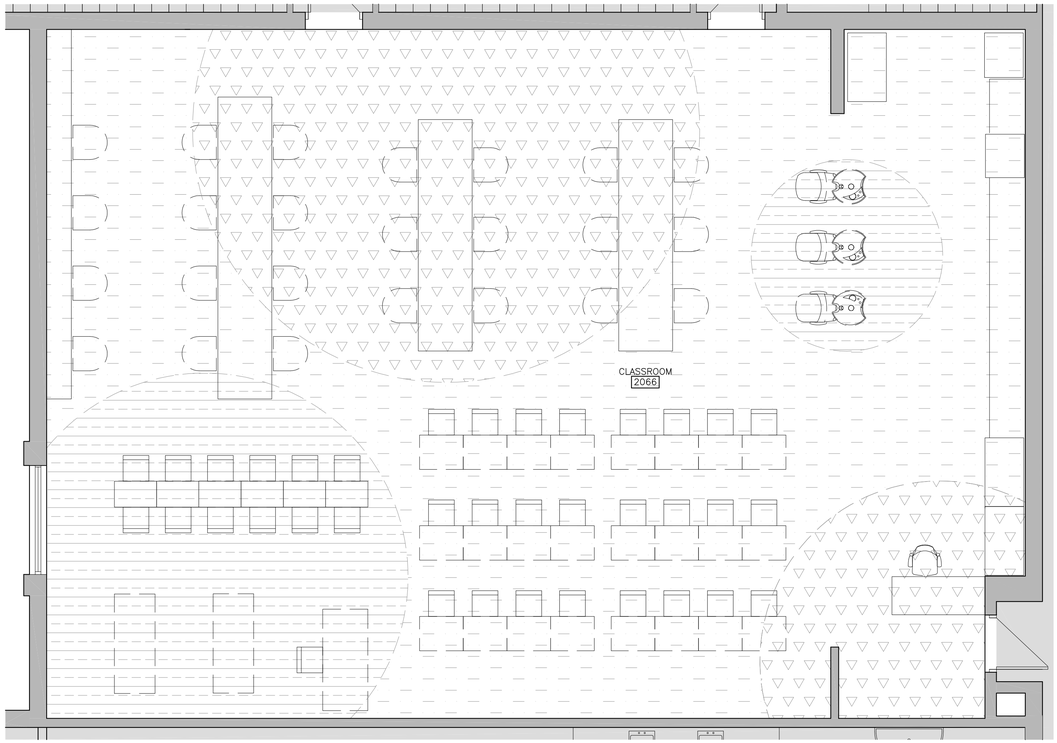
Renovations to
Sir Allan MacNab Secondary School
145 Magnolia Drive, Hamilton, ON

Dwg. Title:
PROPOSED FLOOR PLANS & EXTERIOR ELEVATION

Drwn:		Chkd:	SG
Proj. No.:	25018		
Scale:	As noted		
Date:	2025 07 30		

Drawing No.:
A2.2



3 / A3.1 RM 2066 FLOOR FINISH PLAN
1:50

REFLECTED CEILING PLAN NOTES

1. PAINT FINISH THE EXPOSED CEILING.
2. MAKE FIRE RATED BULKHEAD FOR BEAMS NOTED.
3. SUSPENDED CEILING SLATS FOR WAITING AREA (SEE DETAILS IN SPEC)

REFLECTED CEILING PLAN LEGEND

- LINEAR PENDANT LIGHT FIXTURE
- LINEAR PENDANT LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- ELECTRICAL CORD REELS
- COMPRESSED AIR HOSE REELS

KEYNOTES

1. 75 DIA. PAINTED STEEL PIPE (ELECTRICAL CHASE)

FLOOR FINISH PLAN NOTES

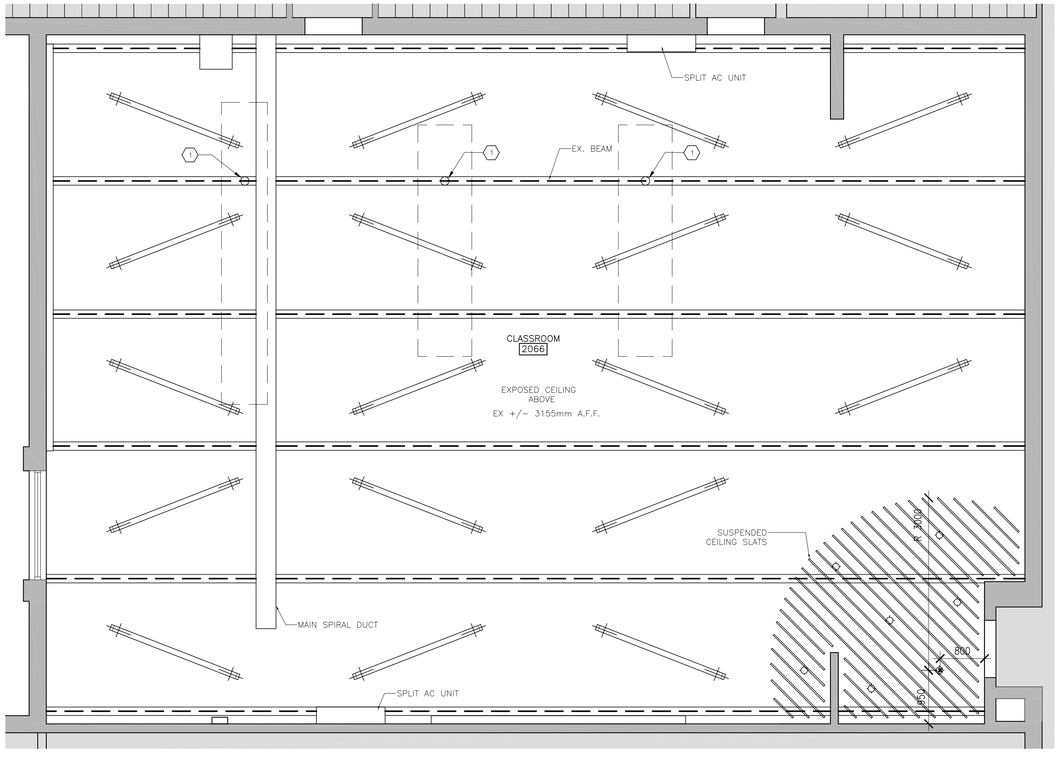
1. ALIGN CHANGE IN FLOORING WITH ADJACENT WALL, UNO.
2. ALL FLOORING WILL BE RUBBER SHEET FLOORING.

KEYNOTES

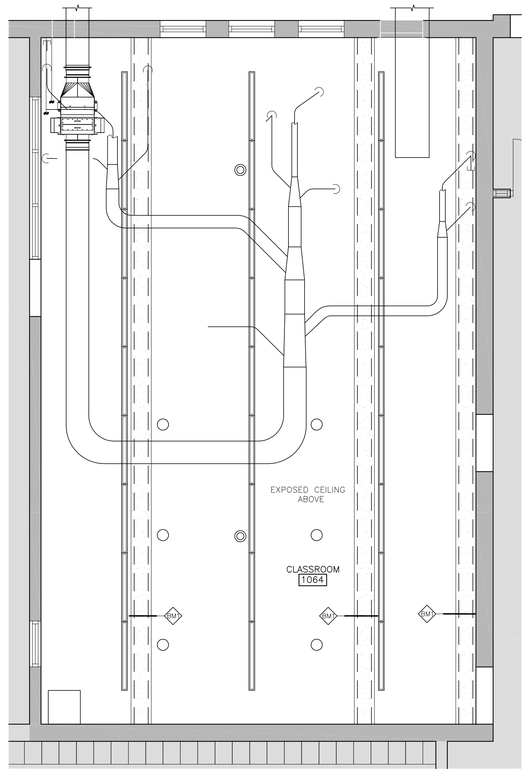
1. ALIGN CHANGE IN FLOORING WITH MILLWORK KICK.

FLOOR FINISNH PLAN LEGEND

- FLOOR COLOR BOUNDARYLINE
- RUB-1 – RUBBER SHEET FLOORING COLOR 1
- RUB-2 – RUBBER SHEET FLOORING COLOR 2
- RUB-3 – RUBBER SHEET FLOORING COLOR 3



2 / A3.1 RM 2066 RCP
1:50



1 / A3.1 RM 1064 RCP
1:50

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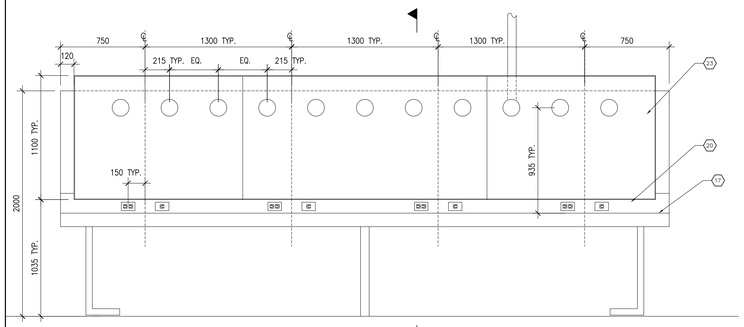
Renovations to
Sir Allan MacNab
Secondary School
145 Magnolia Drive, Hamilton, ON

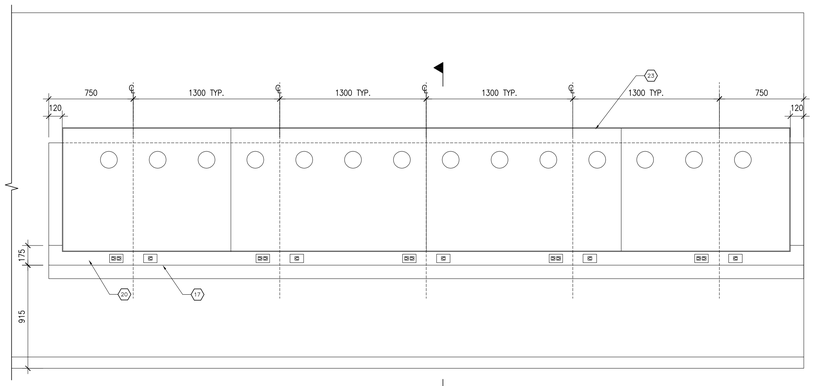
Dwg. Title:
IT ROOM & COSMETOLOGY ROOM RCP AND FLOOR FINISH PLAN

Drwn:		Chkd:	SG
Proj. No.:	25018		
Scale:	As noted		
Date:	2025 07 30		

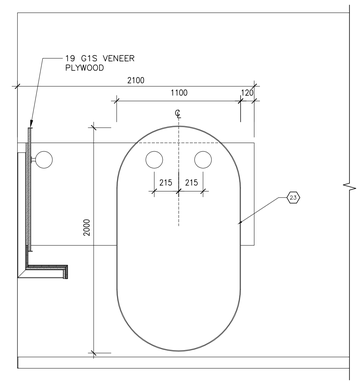
Drawing No.:
A3.1



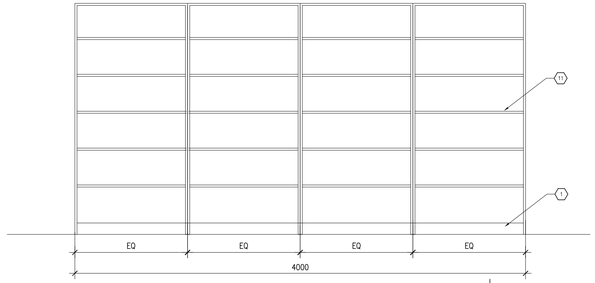
7 A10.1 HAIRDRESSING STATION ELEVATION
1:25



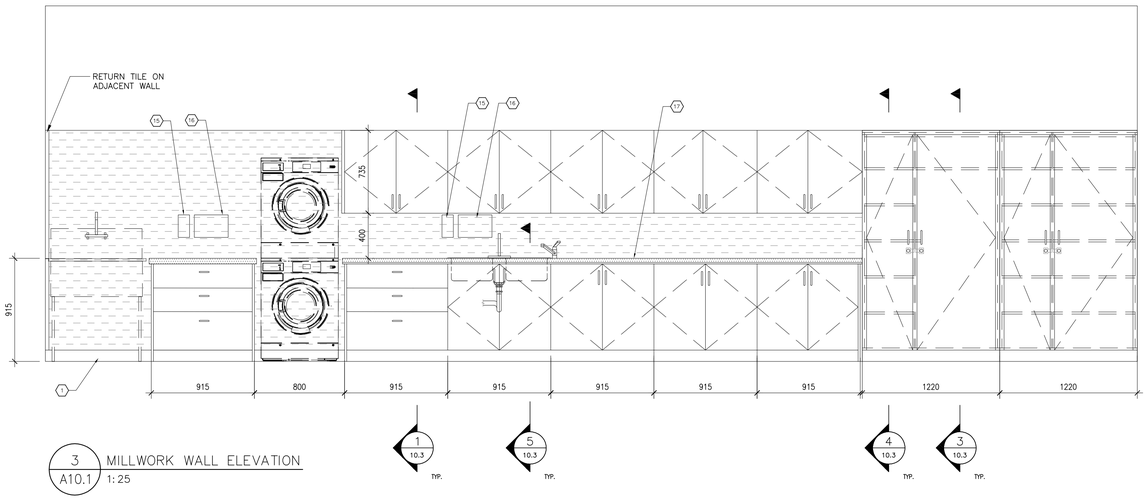
6 A10.1 HAIRDRESSING STATION ON WALL ELEVATION
1:25



5 A10.1 PARTIAL WALL ELEVATION
1:25



4 A10.1 MANNEQUIN STORAGE ELEVATION
1:25



3 A10.1 MILLWORK WALL ELEVATION
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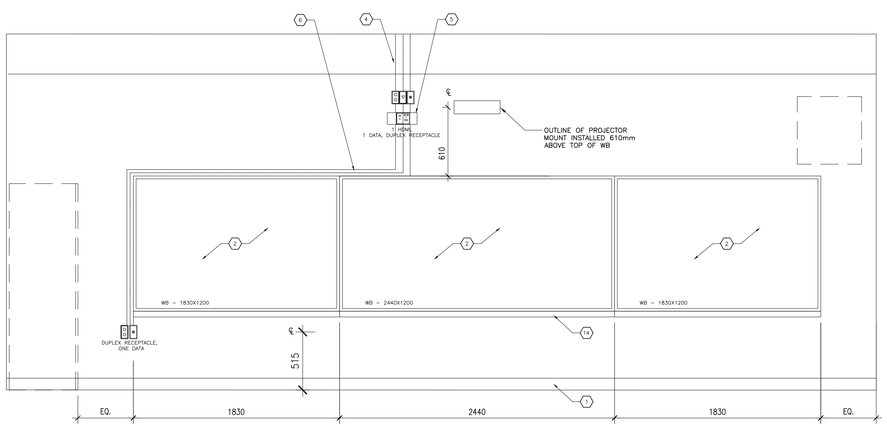

2 A10.1 TEACHING WALL ELEVATION– RM 1064
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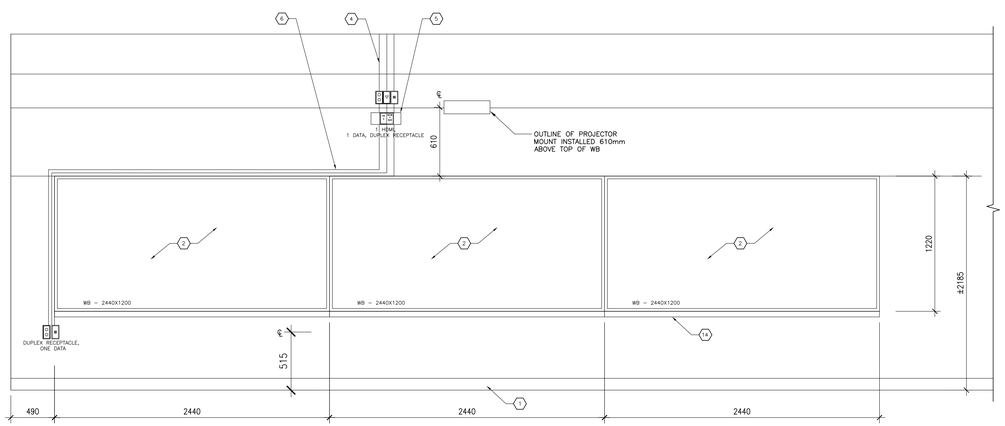

1 A10.1 TEACHING WALL ELEVATION– RM 2066
1:25

KEYNOTES

NOTE: ALL KEYNOTES MAY NOT BE USED

1. RUBBER BASE
2. WHITEBOARD
3. CONTINUOUS TACK STRIP (MAP RAIL)
4. CONDUIT FOR POWER & DATA
5. OVERHEAD PROJECTOR (SUPPLIED BY CLIENT, INSTALLED BY CONTRACTOR)
6. WIREMOLD (SEE ELECTRICAL)
7. 22 PLAM DOOR
8. METAL PULL, TYP.
9. CABINET LOCK, KEYED PER CLASSROOM DOOR
10. HEAVY–DUTY ROLLER CATCH, TOP & BOTTOM
11. ADJUSTABLE SHELF
12. SOLID HARDWOOD DOOR JAMB C/W EDGE RABBET @ PANELS, TYP.
13. TACK BOARD
14. MARKER TRAY
15. SOAP DISPENSER (SUPPLIED BY OWNER / INSTALLED BY CONTRACTOR)
16. PAPER TOWEL DISPENSER (SUPPLIED BY OWNER / INSTALLED BY CONTRACTOR)
17. SOLID SURFACE COUNTER TOP & BACKSPLASH
18. SOLID SURFACE GABLE
19. SOLID SURFACE EDGE/ TOP
20. DOUBLE RECEPTABLES
21. PEG BOARD
22. EX. ELECTRICAL PANEL
23. MIRROR

GENERAL NOTES

1. PATCH AND MAKE GOOD ALL SURFACES.
2. PAINT ALL WALL SURFACES U.N.O. COLOUR SELECTION BY CONSULTANT.
3. ALL MELAMINE TO BE GREY COLOUR.
4. ALL GABLE ENDS NOT ABUTTING A WALL ARE TO BE FINISHED.
5. ALL SHELVING FIXED UNLESS OTHERWISE NOTED.
6. ALL BLOCKING TO BE 140X19 PLYWOOD, CONTINUOUS ON ALL SURFACES OF CABINETS/SHELVING ABUTTING WALLS.
7. PROVIDE BLOCKING FOR ALL ITEMS/ACCESSORIES MOUNTED ON STUD AND GYPSUM BOARD WALL ASSEMBLIES.
8. ALL VISIBLE FASTENERS AT CONNECTION OF MISC. METALS PIECES TO FLOOR TO BE STAINLESS STEEL.
9. All EX. CONTROL AND ELECTRIC PANEL TO REMAIN.

℄ – DENOTES CENTRELINE

MILLWORK MATERIAL (UNO)

DOORS:	P–LAM
BOX FRAMES (INT.):	19 MELAMINE
BOX FRAMES (EXT.):	P–LAM WHERE VISIBLE, 19 MELAMINE ELSEWHERE
DRAWERS:	13 MELAMINE INTERIOR, P–LAM FRONTS
SHELVES:	P–LAM WHERE VISIBLE, 19 MELAMINE ELSEWHERE
BACKS:	6 MELAMINE ON 13 PLYWOOD STRAPPING
COUNTERTOPS:	19 SOLID SURFACE C/W 38 BULLNOSE EDGE WHERE INDICATED
TRIM:	SOLID PLASTIC EDGEBANDING

LEGEND

WOOD VENEER TYPE 1
CT–A
SOLID SURFACE
P–LAM PANEL

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Renovations to Sir Allan MacNab Secondary School
145 Magnolia Drive, Hamilton, ON

Dwg. Title:
INTERIOR ELEVATIONS

Drwn:		Chkd:	SG
Proj. No.:	25018		
Scale:	As noted		
Date:	2025 07 30		

Drawing No.:
A10.1

LEGEND

WOOD VENEER TYPE 1	CT-A
SOLID SURFACE	P-LAM PANEL

KEYNOTES

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2. WHITEBOARD
3. CONTINUOUS TACK STRIP (MAP RAIL)
4. CONDUIT FOR POWER & DATA
5. OVERHEAD PROJECTOR (SUPPLIED BY CLIENT, INSTALLED BY CONTRACTOR)
6. WIREMOLD (SEE ELECTRICAL)
7. 22 PLAM DOOR
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20. DOUBLE RECEPTABLES
21. PEG BOARD
22. EX. ELECTRICAL PANEL
23. MIRROR

GENERAL NOTES

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2. PAINT ALL WALL SURFACES U.N.O. COLOUR SELECTION BY CONSULTANT.
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8. ALL VISIBLE FASTENERS AT CONNECTION OF MISC. METALS PIECES TO FLOOR TO BE STAINLESS STEEL.
9. All EX. CONTROL AND ELECTRIC PANEL TO REMAIN.

℄ – DENOTES CENTRELINE

MILLWORK MATERIAL (UNO)

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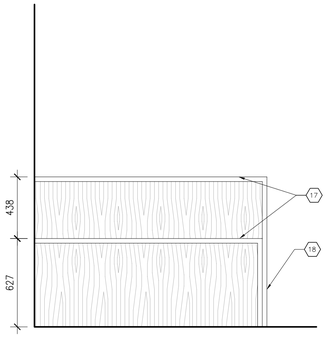
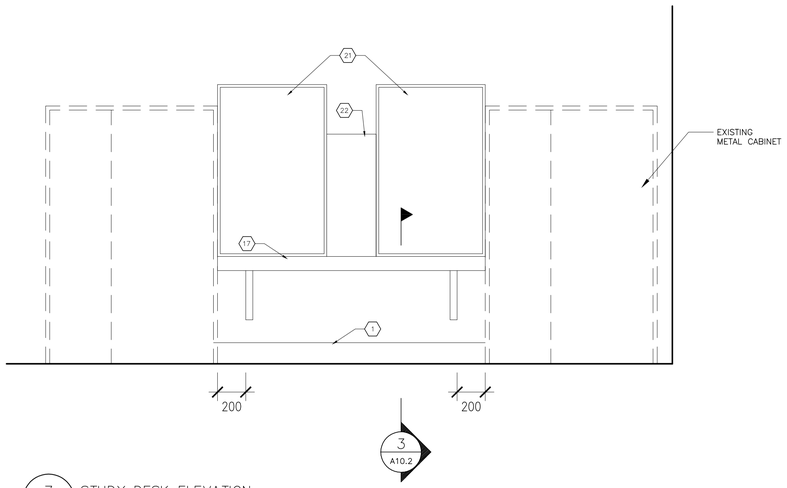
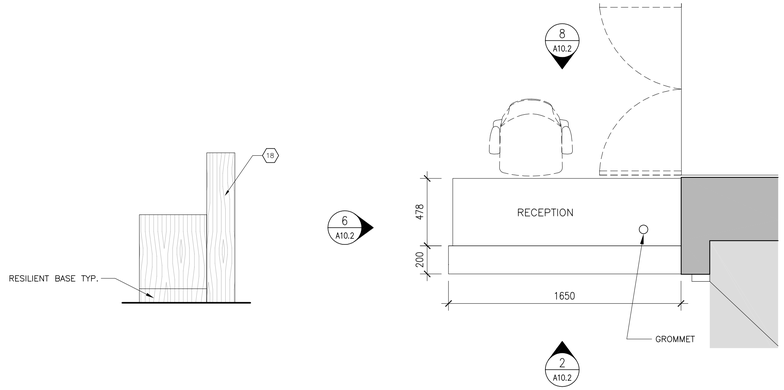
BOX FRAMES (EXT.):	P-LAM WHERE VISIBLE, 19 MELAMINE ELSEWHERE
DRAWERS:	13 MELAMINE INTERIOR, P-LAM FRONTS
SHELVES:	P-LAM WHERE VISIBLE, 19 MELAMINE ELSEWHERE
BACKS:	6 MELAMINE ON 13 PLYWOOD STRAPPING
COUNTERTOPS:	19 SOLID SURFACE C/W 38 BULLNOSE EDGE WHERE INDICATED
TRIM:	SOLID PLASTIC EDGEBANDING



8 / A10.2 RECEPTION DESK ELEVATION
1:20

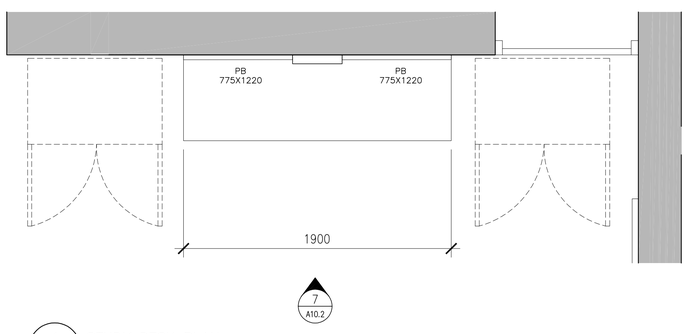


7 / A10.2 STUDY DESK ELEVATION
1:20

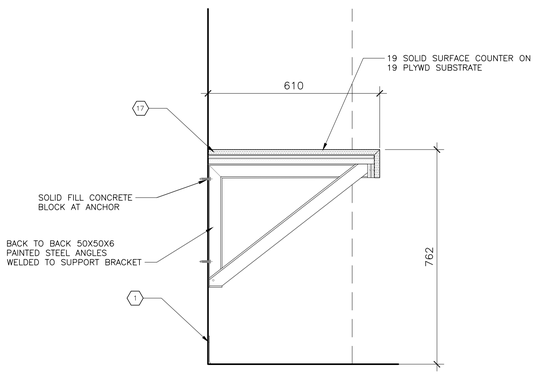


6 / A10.2 RECEPTION DESK ELEVATION
1:20

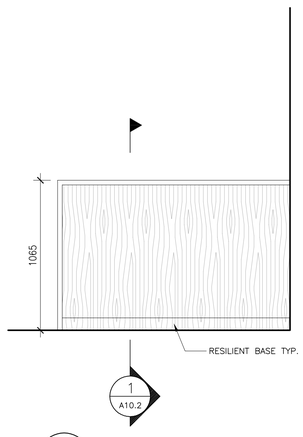
5 / A10.2 RECEPTION DESK PLAN
1:20



4 / A10.2 STUDY DESK PLAN
1:20



3 / A10.2 STUDY DESK SECTION
1:10



2 / A10.2 RECEPTION DESK ELEVATION
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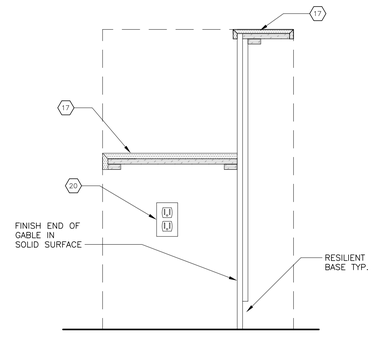

1 / A10.2 RECEPTION DESK SECTION
1:10

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Renovations to
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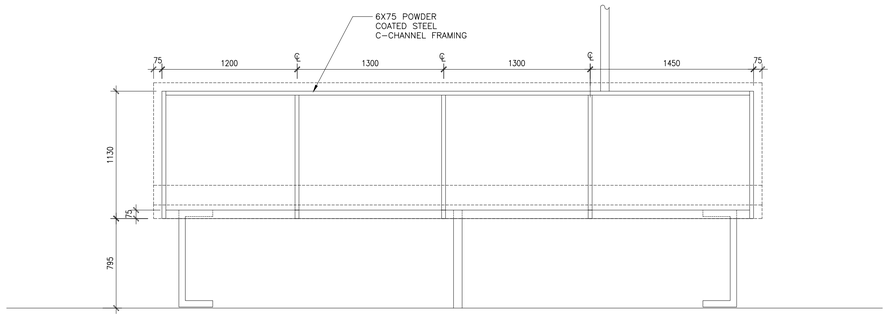
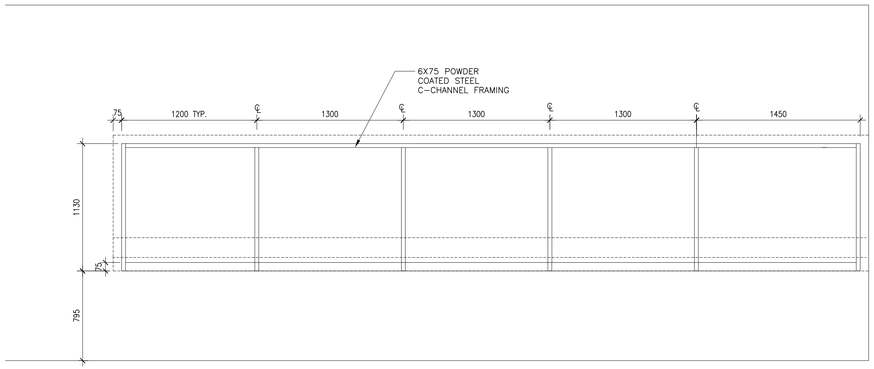
Dwg. Title:
MILLWORK DETAILS

Drwn:	Chkd:	SG
Proj. No.:	25018	
Scale:	As noted	
Date:	2025 07 30	

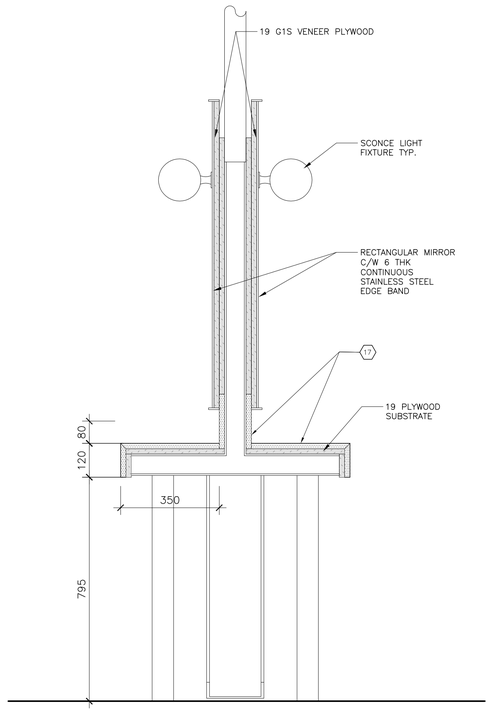
Drawing No.:
A10.2



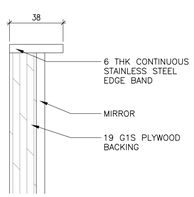
9 A10.3 HAIR DRESSING STATION— STEEL FRAMING LAYOUT
1:25



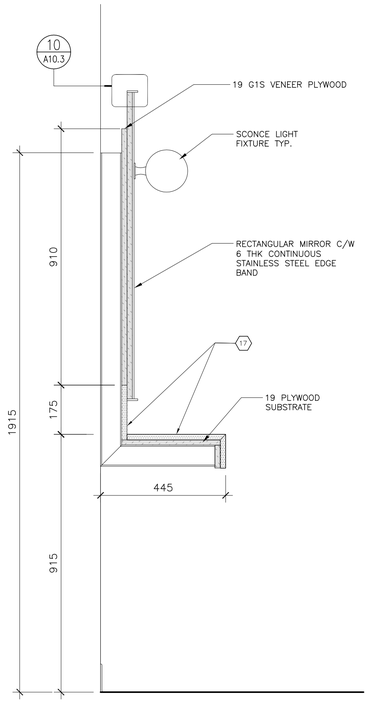
8 A10.3 HAIR DRESSING STATION ON WALL — STEEL FRAMING LAYOUT
1:25



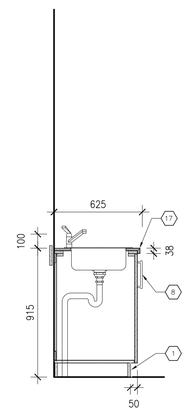
7 A10.3 HAIR DRESSING STATION— SECTION
1:10



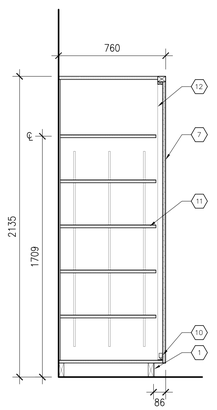
10 A10.3 MIRROR FRAMING DETAIL
1:2



6 A10.3 HAIR DRESSING STATION ON WALL — SECTION
1:10



5 A10.3 MILLWORK SECTION
1:20



4 A10.3 MILLWORK SECTION
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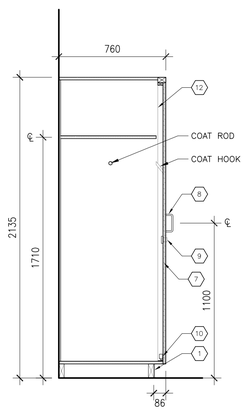
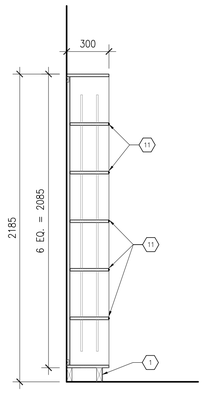
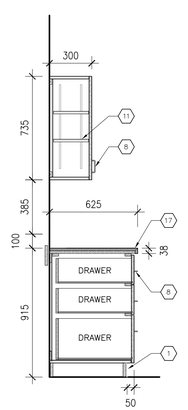


3 A10.3 MILLWORK SECTION
1:20



2 A10.3 MILLWORK SECTION
1:20



1 A10.3 MILLWORK SECTION
1:20

KEYNOTES

NOTE: ALL KEYNOTES MAY NOT BE USED

1. RUBBER BASE
2. WHITEBOARD
3. CONTINUOUS TACK STRIP (MAP RAIL)
4. CONDUIT FOR POWER & DATA
5. OVERHEAD PROJECTOR (SUPPLIED BY CLIENT, INSTALLED BY CONTRACTOR)
6. WIREMOLD (SEE ELECTRICAL)
7. 22 PLAM DOOR
8. METAL PULL, TYP.
9. CABINET LOCK, KEYED PER CLASSROOM DOOR
10. HEAVY-DUTY ROLLER CATCH, TOP & BOTTOM
11. ADJUSTABLE SHELF
12. SOLID HARDWOOD DOOR JAMB C/W EDGE RABBET @ PANELS, TYP.
13. TACK BOARD
14. MARKER TRAY
15. SOAP DISPENSER (SUPPLIED BY OWNER / INSTALLED BY CONTRACTOR)
16. PAPER TOWEL DISPENSER (SUPPLIED BY OWNER / INSTALLED BY CONTRACTOR)
17. SOLID SURFACE COUNTER TOP & BACKSPLASH
18. SOLID SURFACE GABLE
19. SOLID SURFACE EDGE/ TOP
20. DOUBLE RECEPTABLES
21. PEG BOARD
22. EX. ELECTRICAL PANEL
23. MIRROR

GENERAL NOTES

1. PATCH AND MAKE GOOD ALL SURFACES.
2. PAINT ALL WALL SURFACES U.N.O. COLOUR SELECTION BY CONSULTANT.
3. ALL MELAMINE TO BE GREY COLOUR.
4. ALL CABLE ENDS NOT ABUTTING A WALL ARE TO BE FINISHED.
5. ALL SHELVING FIXED UNLESS OTHERWISE NOTED.
6. ALL BLOCKING TO BE 140X19 PLYWOOD, CONTINUOUS ON ALL SURFACES OF CABINETS/SHELVING ABUTTING WALLS.
7. PROVIDE BLOCKING FOR ALL ITEMS/ACCESSORIES MOUNTED ON STUD AND GYPSUM BOARD WALL ASSEMBLIES.
8. ALL VISIBLE FASTENERS AT CONNECTION OF MISC. METALS PIECES TO FLOOR TO BE STAINLESS STEEL.
9. All EX. CONTROL AND ELECTRIC PANEL TO REMAIN.

℄ – DENOTES CENTRELINE

MILLWORK MATERIAL (UNO)

DOORS:	P-LAM
BOX FRAMES (INT.):	19 MELAMINE
BOX FRAMES (EXT.):	P-LAM WHERE VISIBLE, 19 MELAMINE ELSEWHERE
DRAWERS:	13 MELAMINE INTERIOR, P-LAM FRONTS
SHELVES:	P-LAM WHERE VISIBLE, 19 MELAMINE ELSEWHERE
BACKS:	6 MELAMINE ON 13 PLYWOOD STRAPPING
COUNTERTOPS:	19 SOLID SURFACE C/W 38 BULLNOSE EDGE WHERE INDICATED
TRIM:	SOLID PLASTIC EDGEBANDING

LEGEND

WOOD VENEER TYPE 1	CT-A
SOLID SURFACE	P-LAM PANEL

GACESA | SLOTE ARCHITECTS
GS
118 JAMES ST. NORTH, SUITE 300, HAMILTON, ONTARIO L8R 2K7
TEL 905-297-0863

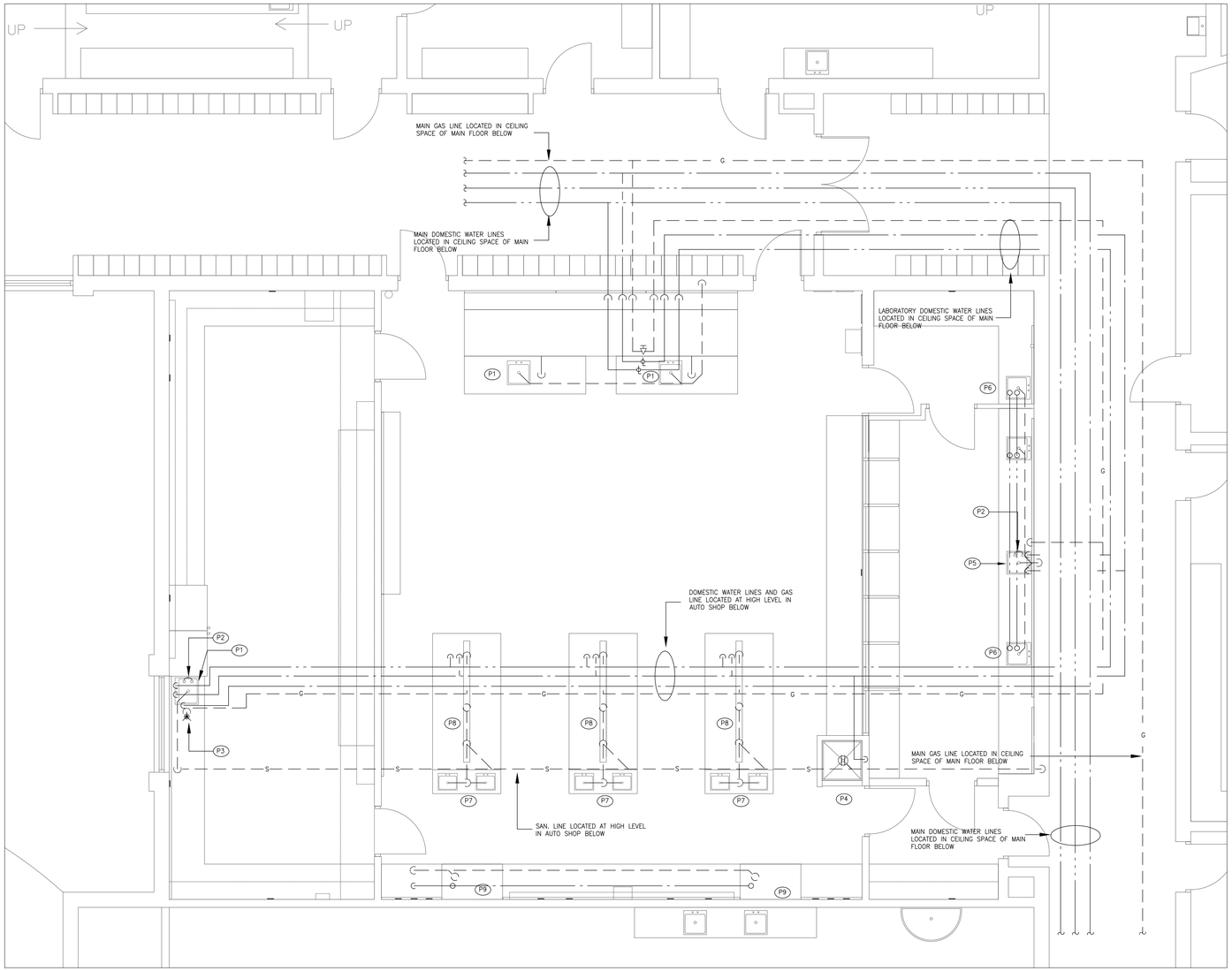
No.	Date	Remarks
03	2026-04-10	Issued for Tender
02	2025-12-23	Issued for Building Permit
01	2025-12-05	Issued for Coordination

Renovations to
Sir Allan MacNab Secondary School
145 Magnolia Drive, Hamilton, ON

Dwg. Title:
MILLWORK DETAILS

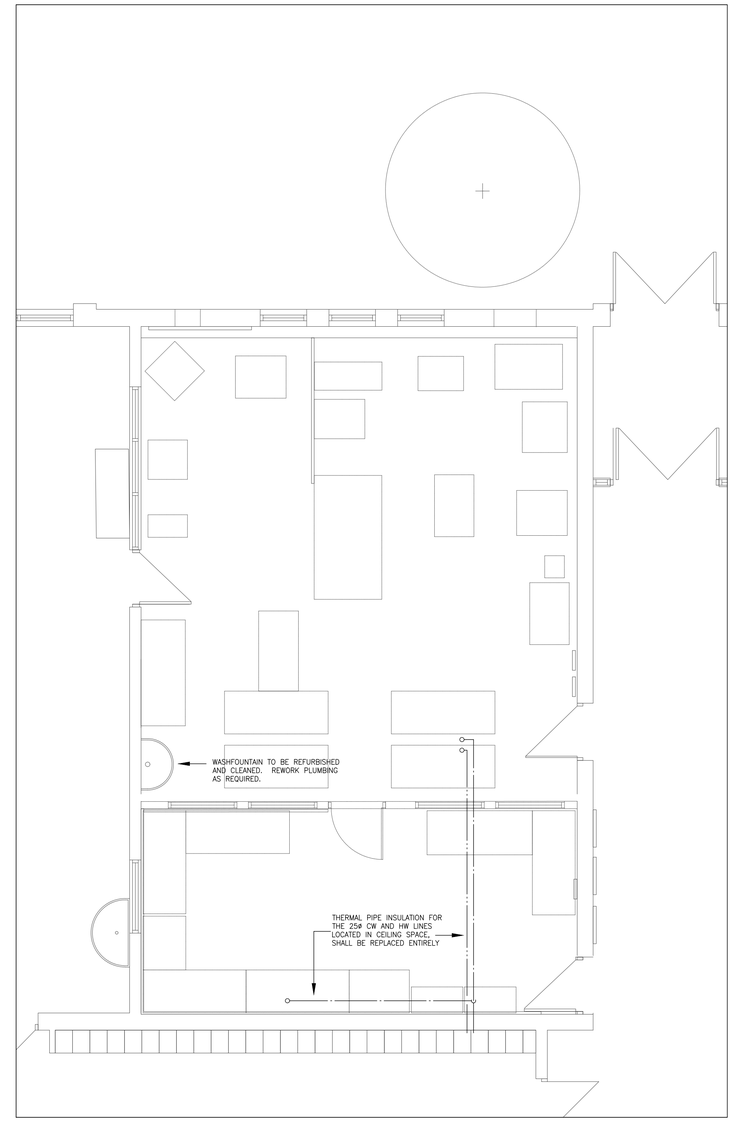
Drwn:		Chkd:	SG
Proj. No.:	25018		
Scale:	As noted		
Date:	2025 07 30		

Drawing No.:
A10.3



2 M1-1 RM2066 - DEMOLITION PLUMBING LAYOUT

1:50



1 M1-1 RM1064 - DEMOLITION PLUMBING LAYOUT

1:50

PLUMBING DEMOLITION NOTES (PD)

1 REMOVE COUNTER MOUNTED SINK. CUTBACK ALL OBSOLETE SAN., DOMESTIC WATER AND GAS LINES LOCATED UNDER SINK. CAP ALL OBSOLETE PLUMBING AND GAS LINES BELOW 2ND LEVEL FLOOR SLAB AND LOCATED AT HIGH LEVEL.

2 REMOVE EYEWASH AND PLUMBING LINES.

3 REMOVE NATURAL GAS HOSE COCK AND ENTIRE GAS LINE. CAP OBSOLETE GAS LINE BELOW 2ND LEVEL FLOOR SLAB AND LOCATED AT HIGH LEVEL.

4 REMOVE EMERGENCY SHOWER AND EYEWASH. CUTBACK ALL OBSOLETE SAN. AND DOMESTIC WATER LINES LOCATED UNDER FIXTURE. CAP ALL OBSOLETE PLUMBING LINES BELOW 2ND LEVEL FLOOR SLAB AND LOCATED AT HIGH LEVEL.

5 REMOVE COUNTER MOUNTED SINK. CUTBACK ALL OBSOLETE SAN., DOMESTIC WATER AND GAS LINES LOCATED UNDER SINK. REWORK SAN. AND DOMESTIC WATER LINES TO FACILITATE INSTALLATION OF NEW SINK. CAP OBSOLETE GAS LINE BELOW 2ND LEVEL FLOOR SLAB AND LOCATED AT HIGH LEVEL.

6 REMOVE COUNTER MOUNTED SINK. REMOVE ALL OBSOLETE SAN. AND DOMESTIC WATER LINES LOCATED UNDER SINK AND COUNTER.

7 REMOVE COUNTER MOUNTED SINK. REMOVE ENTIRE OBSOLETE SAN. LINE LOCATED UNDER SINK AND COUNTER SPACE.

8 REMOVE COUNTER MOUNTED TROUGH SINK. REMOVE ENTIRE OBSOLETE SAN., DOMESTIC WATER AND GAS LINE LOCATED UNDER TROUGH SINK. CAP ALL OBSOLETE LINES BELOW 2ND LEVEL FLOOR SLAB AND LOCATED AT HIGH LEVEL.

9 CUTBACK OBSOLETE SAN. LINE AND DOMESTIC WATER LINE RUNNING UNDER FUME HOOD COUNTERS. CAP OBSOLETE SAN. LINE BELOW 2ND LEVEL FLOOR SLAB AND LOCATED AT HIGH LEVEL.

NO.	DATE	REVISION
3	APR.10/26	ISSUED FOR TENDER
2	DEC.12/25	ISSUED FOR PERMIT
1	NOV.24/25	ISSUED FOR COORDINATION

DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED BY CONTRACTOR DURING THE COURSE OF WORK.

CoPA ENGINEERING LTD.

LICENSED PROFESSIONAL ENGINEER
C.T. PASHARTIS
90327800
APR.10/26
PROVINCE OF ONTARIO

29 ROLLING ACRES DR.
KITCHENER, ONTARIO
N2A 3W5
TEL. (519) 894-0022

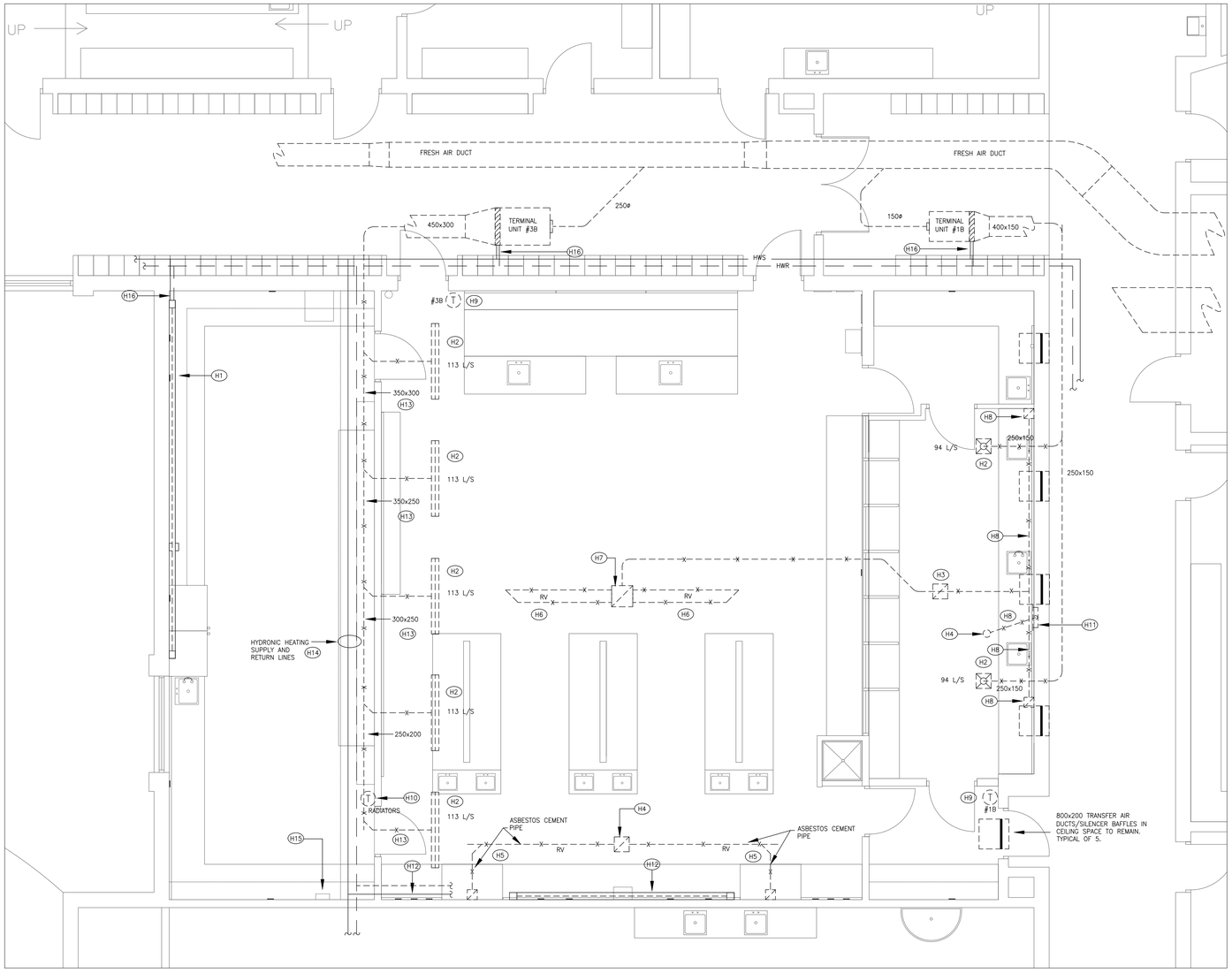
PROJECT

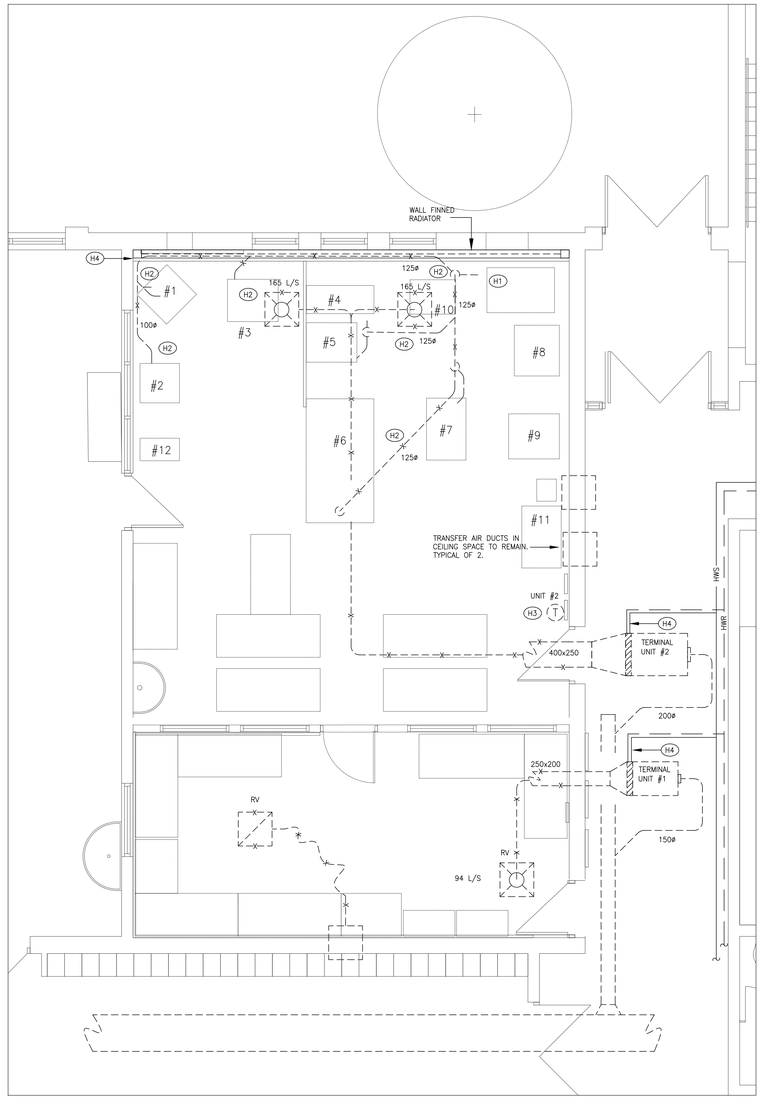
Renovations to
Sir Allan MacNab
Secondary School
145 MAGNOLIA DRIVE
HAMILTON ONTARIO

DRAWING

DEMOLITION
PLUMBING LAYOUTS

DRAWN BY: C. P.	SCALE: 1:50
CHECKED BY: C. PASHARTIS	DATE: NOVEMBER 24, 2025
PROJECT NO. 25CP044	DRAWING NO. M1-1





2 M2-1 RM2066 - DEMOLITION HVAC LAYOUT

1:50

HVAC DEMOLITION NOTES (HF)

1 HYDRONIC FINNED RADIATOR AT HIGH LEVEL. ENCLOSURE SHALL BE REMOVED AND ENTIRE FINNED ELEMENT SHALL BE CLEANED OF ANY DEBRIS AND DUST. ENCLOSURE SHALL BE SANDED DOWN TO REMOVE RUST, REFINISHED AND PAINTED. REINSTALL ENCLOSURE UPON COMPLETION OF PAINTING.

2 REMOVE SUPPLY AIR DIFFUSER AND ASSOCIATED DUCTWORK. CUTBACK DUCTS AND CAP AT MAIN SUPPLY DUCT.

3 REMOVE EXHAUST AIR GRILLE AND ASSOCIATED DUCTWORK.

4 CUTBACK EXHAUST DUCT RISER AND REMOVE ROOF MOUNTED EXHAUST FAN. EXHAUST DUCT RISER SHALL BE CAPPED ON ROOF.

5 REMOVE ENTIRE EXHAUST PIPE SERVING FUME HOODS. PIPE IS OF ASBESTOS CEMENT.

6 REMOVE ENTIRE EXHAUST DUCT SERVING LABORATORY.

7 CUTBACK 450x450 EXHAUST DUCT RISER AND REMOVE ROOF MOUNTED EXHAUST FAN. ROOF OPENING SHALL BE REUSED FOR NEW EXHAUST DUCT RISER AND NEW EXHAUST FAN.

8 REMOVE EXHAUST DUCT.

9 REMOVE PNEUMATIC THERMOSTAT AND INSTALL NEW DDC THERMOSTAT.

10 REMOVE PNEUMATIC THERMOSTAT SERVING RADIATOR AND INSTALL NEW DDC THERMOSTAT AT NEW LOCATION.

11 REMOVE EXHAUST AIR GRILLE LOCATED UNDER BENCH AND AT FLOOR LEVEL. CAP OBSOLETE DUCT OPENING. REMOVE ASSOCIATED DUCTWORK.

12 REMOVE WALL FINNED RADIATOR MOUNTED AT HIGH LEVEL. CUTBACK AND REMOVE OBSOLETE HYDRONIC HEATING LINES.

13 SUPPLY SHALL BE REMOVED AND REPLACED WITH SPIRAL DUCT.

14 CUTBACK AND REMOVE HYDRONIC HEATING LINES. INSTALL NEW HYDRONIC LINES TO RUN ABOVE EXISTING RADIATOR LOCATED ON EXTERIOR WALL.

15 CHASE WALL CONCEALING PIPES TO REMAIN.

16 REMOVE PNEUMATIC 2 WAY CONTROL VALVE AND REPLACE WITH 2-WAY MODULATING DDC CONTROL VALVE.

1 M2-1 RM1064 - DEMOLITION HVAC LAYOUT

1:50

DEMOLITION NOTES (HF)

1 REMOVE PORTABLE DUST COLLECTOR AND HANDOVER TO THE SCHOOL BOARD.

2 REMOVE AND DISPOSE OF THE ENTIRE DUST COLLECTION SYSTEM EXHAUST DUCT.

3 REMOVE PNEUMATIC THERMOSTAT AND INSTALL NEW DDC ROOM THERMOSTAT.

4 REMOVE PNEUMATIC 2 WAY CONTROL VALVE AND REPLACE WITH 2-WAY MODULATING DDC CONTROL VALVE.

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TEL. (519) 894-0022

PROJECT

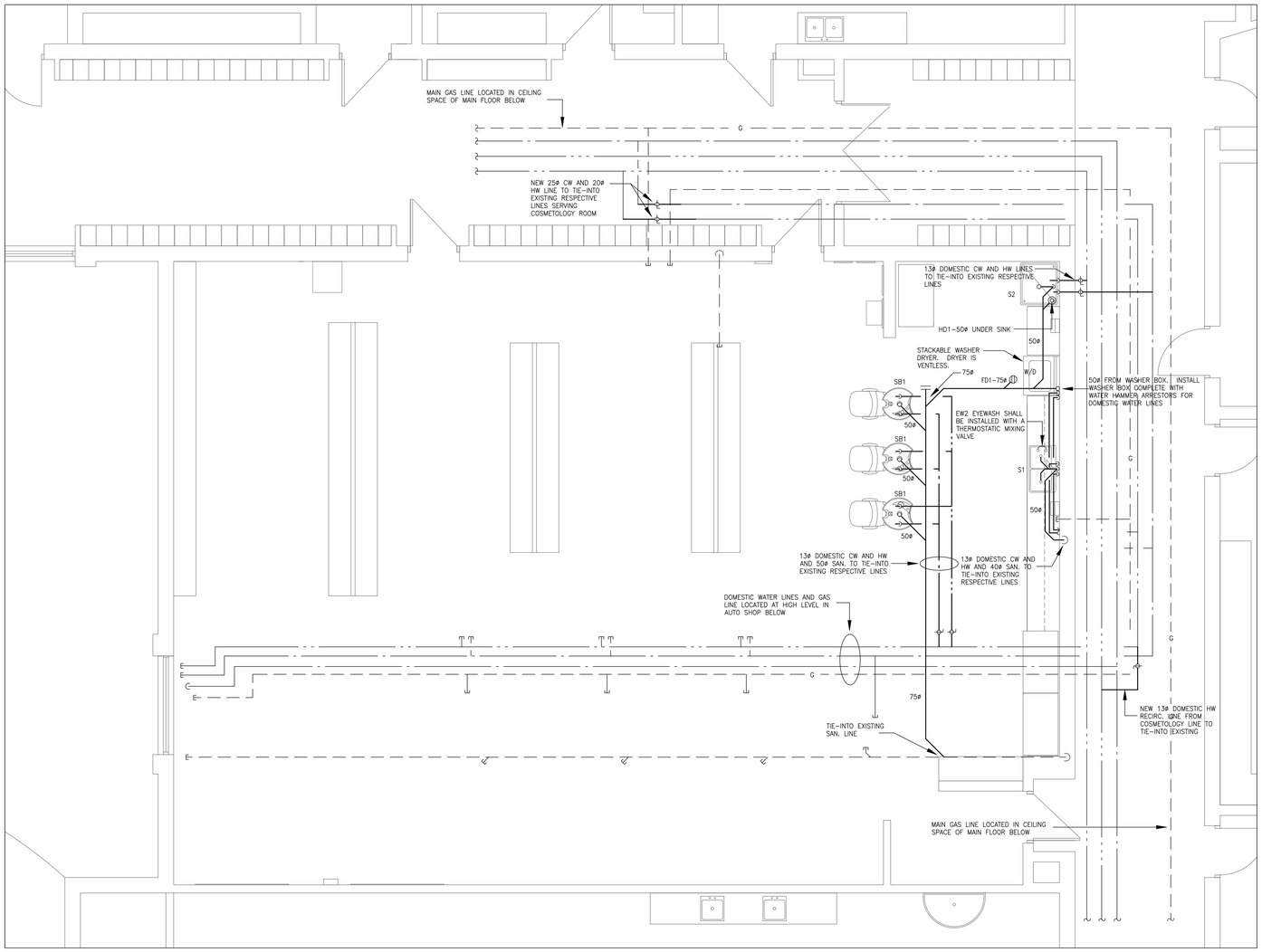
Renovations to
Sir Allan MacNab
Secondary School

145 MAGNOLIA DRIVE
HAMILTON ONTARIO

DRAWING

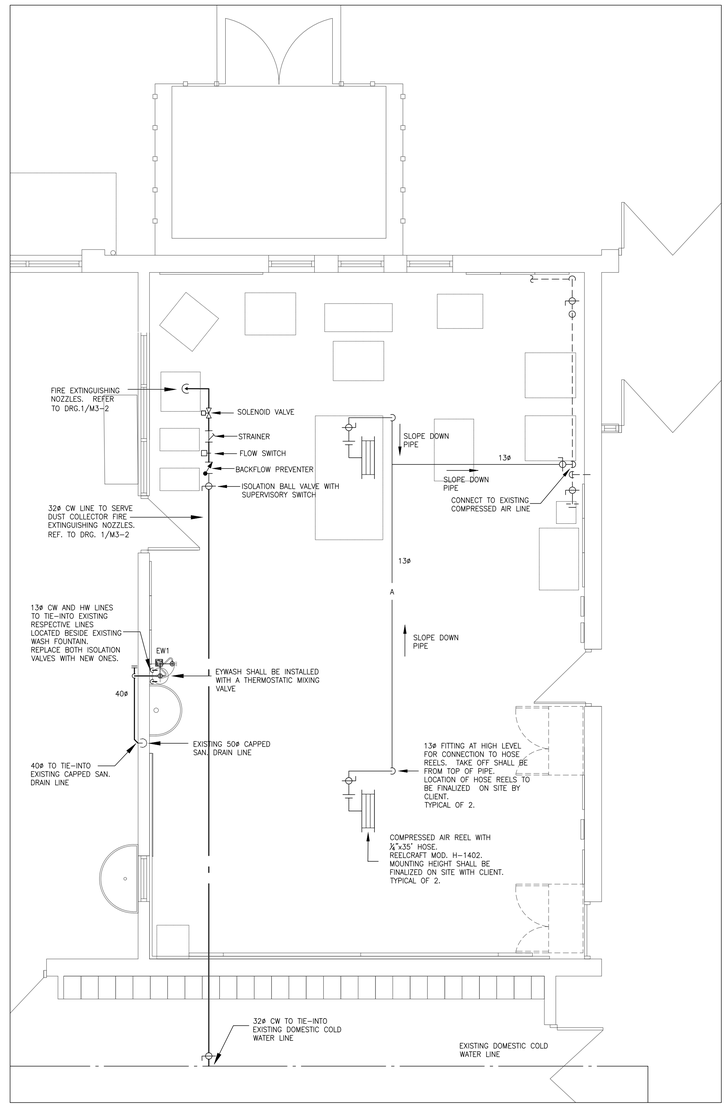
DEMOLITION
HVAC LAYOUTS

DRAWN BY: C. P.	SCALE: 1:50
CHECKED BY: C. PASHARTIS	DATE: NOVEMBER 24, 2025
PROJECT NO. 25CP044	DRAWING NO. M1-2



2 M2-1 RM2066 - PROPOSED PLUMBING LAYOUT

1:50



1 M2-1 RM1064 - PROPOSED PLUMBING LAYOUT

1:50

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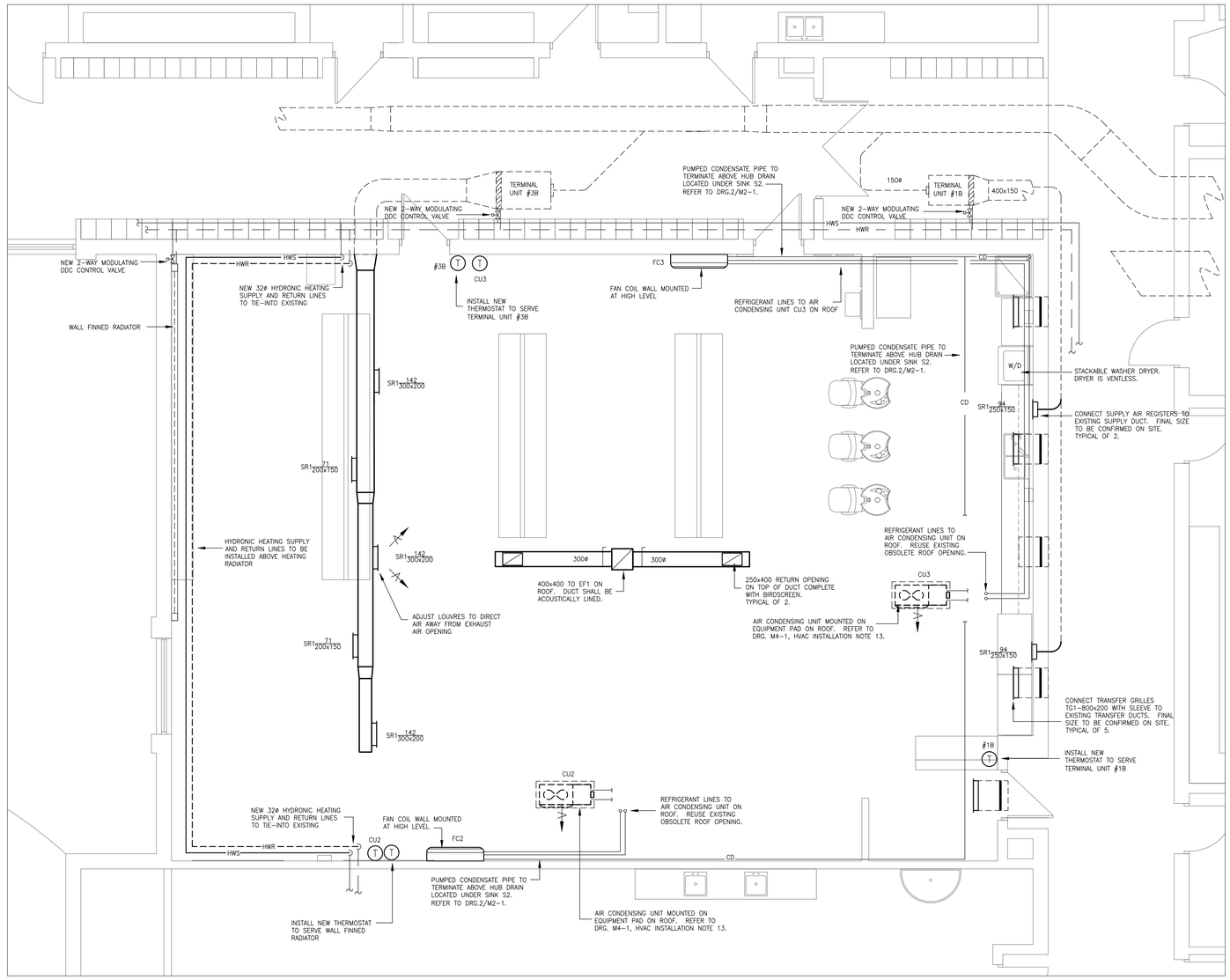
Sir Allan MacNab
Secondary School

145 MAGNOLIA DRIVE
HAMILTON ONTARIO

DRAWING

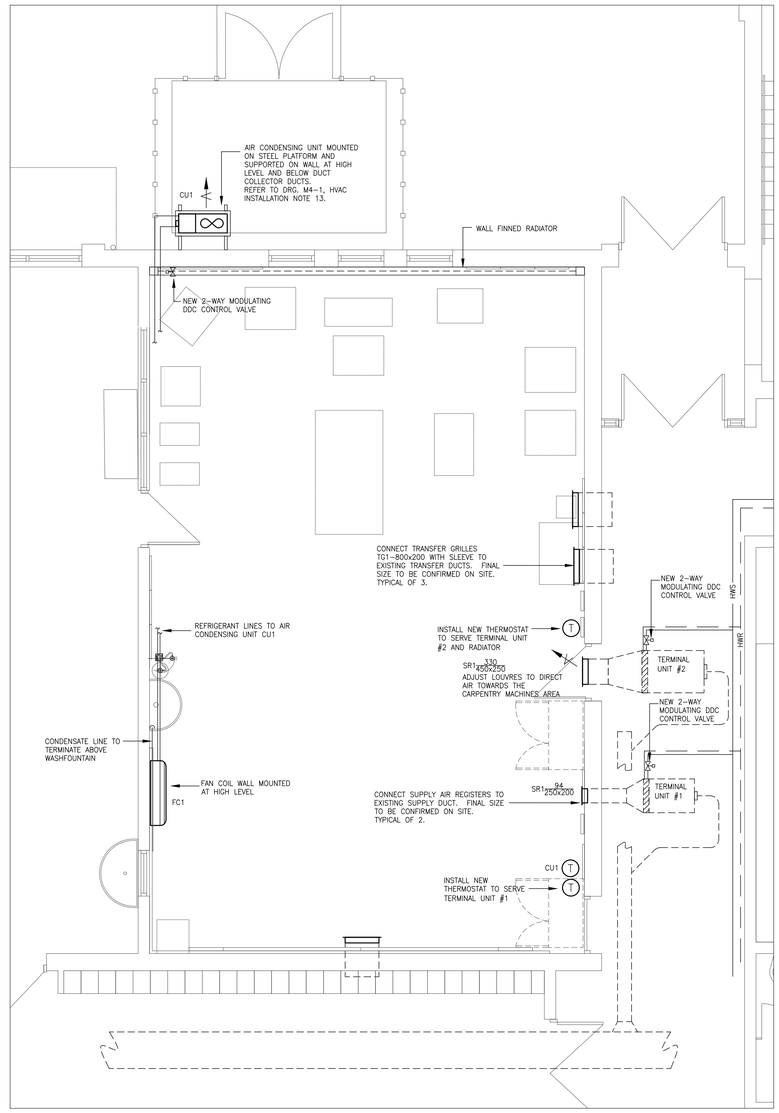
PROPOSED
PLUMBING LAYOUTS

DRAWN BY: C. P.	SCALE: 1:50
CHECKED BY: C. PASHARTIS	DATE: NOVEMBER 24, 2025
PROJECT NO. 25CP044	DRAWING NO. M2-1



2 M3-1 RM2066 - PROPOSED HVAC LAYOUT

1:50



1 M3-1 RM1064 - PROPOSED HVAC LAYOUT

1:50

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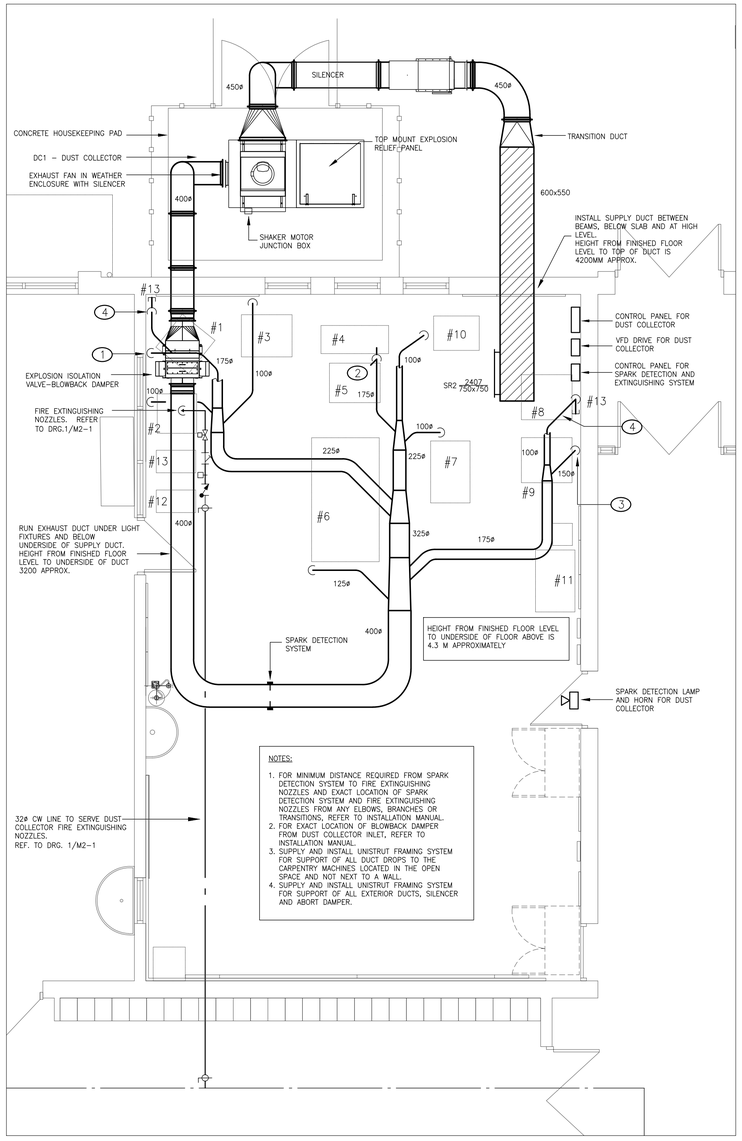
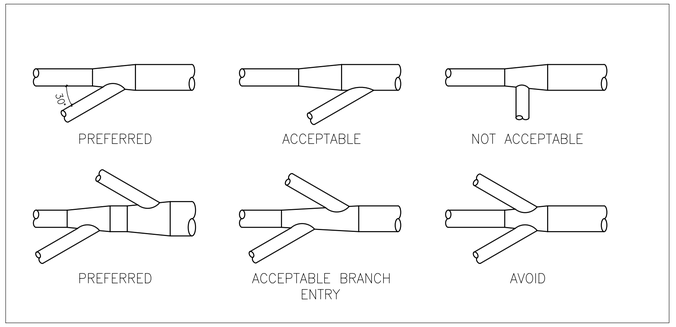
PROPOSED
HVAC LAYOUTS

DRAWN BY: C. P.	SCALE: 1:50
CHECKED BY: C. PASHARTIS	DATE: NOVEMBER 24, 2025
PROJECT NO. 25CP044	DRAWING NO. M3-1



1 M3-2 RM1064 - PROPOSED DUST COLLECTOR SYSTEM LAYOUT
1:50



2 M3-2 DUCT CONTRUCTION DETAILS
N.T.S.

WOODWORKING MACHINES AIRFLOW CAPACITIES & CONNECTIONS

REF. #	MACHINE	EXHAUST CFM	CONNECTION PORT	REMARKS
1	BELT/DISC SANDER	600	2x3"ø	
2	BAND SAW	400	4"ø	
3	ROUTER	350	3"ø	
4	JOINTER	550	5"ø	
5	PLANER	550	4"ø	
6	TABLE SAW	550	4"ø	
7	MITER SAW	350	3"ø	
8	SCROLL SAW	350	3"ø	
9	SPINDLE SANDER	350	3"ø	
10	ROUTER TABLE	350	3"ø	
11	CNC MACHINE	–	–	DOES NOT REQUIRE EXHAUST
12	DRILL PRESS	–	–	DOES NOT REQUIRE EXHAUST
13	DRILL PRESS	–	–	DOES NOT REQUIRE EXHAUST
14	SPARE x 2	350	4"ø	CAPPED DUCT FOR FUTURE CONNECTION
	TOTAL AIRFLOW	5100		

GENERAL INSTALLATION NOTES

1 DUCTWORK IN THE CLASSROOM SHALL BE INSTALLED AS HIGH AS POSSIBLE. DUCTWORK DISTRIBUTION SHALL BE COORDINATED WITH LIGHT FIXTURES.

2 DUCT BRANCHES SHOULD ENTER AT GRADUAL EXPANSIONS AND AT AN ANGLE OF 30° OR LESS (PREFERRED) TO 45° IF NECESSARY. EXPANSION SHOULD BE 15° MAXIMUM.

3 FOR SPARE DUCTS INTENDED FOR CONNECTION OF FUTURE CARPENTRY MACHINES, INSTALL BRANCH DUCT WITH MANUAL BLAST GATE AND DUCT CAP.

4 PROVIDE MANUAL BLAST GATES, DUCT TRANSITIONS AND FLEXIBLE HOSE TO BE CONNECTED TO THE CARPENTRY MACHINES. FLEXIBLE HOSE SHALL BE LIMITED TO 5 FT. MAXIMUM. COORDINATE WITH MECHANICAL ENGINEER WHERE LONGER LENGTHS WILL HAVE TO BE INSTALLED DUE TO SITE CONDITIONS.

5 INSTALL ACCESS DOORS ALONG THE ENTIRE MAIN DUCTWORK, SPACING SHALL BE EVERY 10 FT. INSTALL ACCESS DOORS AT SPARK DETECTION ASSEMBLY AND FIRE EXTINGUISHING NOZZLE ASSEMBLY.

6 USE LONG RADIUS ELBOW R/D=1.5 OR GREATER.

EXHAUST SYSTEM INSTALLATION NOTES (E)

1 DROP 125ø BRANCH DUCT AND TERMINATE WITH WYE (Y) DUCT FITTING WITH 2x75ø BRANCHES TO FACILITATE CONNECTION TO MACHINE #1 WITH 2 PORTS.

2 DROP 175ø BRANCH DUCT AND TERMINATE ABOVE FLOOR LEVEL WITH WYE (Y) DUCT FITTING WITH 125ø AND 100ø BRANCHES. 125ø BRANCH SHALL BE CONNECTED TO MACHINE #4 AND THE 100ø BRANCH TO MACHINE #5 PORT.

3 DROP 150ø BRANCH DUCT AND TERMINATE ABOVE FLOOR LEVEL WITH WYE (Y) DUCT FITTING WITH 2x75ø BRANCHES. ONE BRANCH SHALL CONNECT TO THE MACHINE #8 PORT AND THE OTHER BRANCH TO MACHINE #9.

4 SPARE DUCT FITTING 100MM DIAMETER AND CAPPED.

PLUMBING GENERAL NOTES FOR INSTALLATION

1. DOMESTIC WATER PIPING WITHIN THE BUILDING:
   .1 ABOVE GROUND SHALL BE SEAMLESS COPPER WATER TUBE, TYPE L WITH SOLDERED JOINTS.
   .2 BURIED PIPING SHALL BE SOFT ANNEALED COPPER TYPE K WITH NO JOINTS.
2. FOR ALL PIPE PENETRATIONS, VOIDS AROUND PIPES SHALL BE SEALED AND CAULKED TO KEEP REQUIRED INTEGRITY.
3. ALL DOMESTIC WATER LINES SHALL BE INSULATED WITH PREFORMED SECTIONAL FIBREGLASS PIPE INSULATION WITH VAPOUR BARRIER JACKET, OR EXPANDED CLOSED–CELL STRUCTURE INSULATION. SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50. INSULATION THERMAL CONDUCTIVITY RANGE SHALL BE 0.24–0.28 BTU.IN./(H.FT2.°F) AT 100°F MEAN TEMPERATURE. INSULATION THICKNESS FOR HOT WATER SUPPLY AND HOT WATER RECIRCULATION LINES SHALL BE 1" THICKNESS. FOR COLD WATER LINE, INSULATION THICKNESS SHALL BE 1/2".
4. WHERE SUPPORTING COPPER PIPE, IT SHALL BE ISOLATED FROM ANY NON–COPPER HANGER WITH ELECTROLYTIC ACTION TAPE OR EQUIVALENT.
5. INSTALL VALVED SUPPLIES AT ALL PLUMBING FIXTURES AND EQUIPMENT.
6. INSTALL BACK FLOW PREVENTERS WHERE THERE IS A HEALTH HAZARD POTENTIAL FOR POTABLE WATER SYSTEM AND AS REQUIRED BY THE LOCAL BUILDING DEPARTMENT.

DUST COLLECTION SYSTEM GENERAL NOTES FOR INSTALLATION

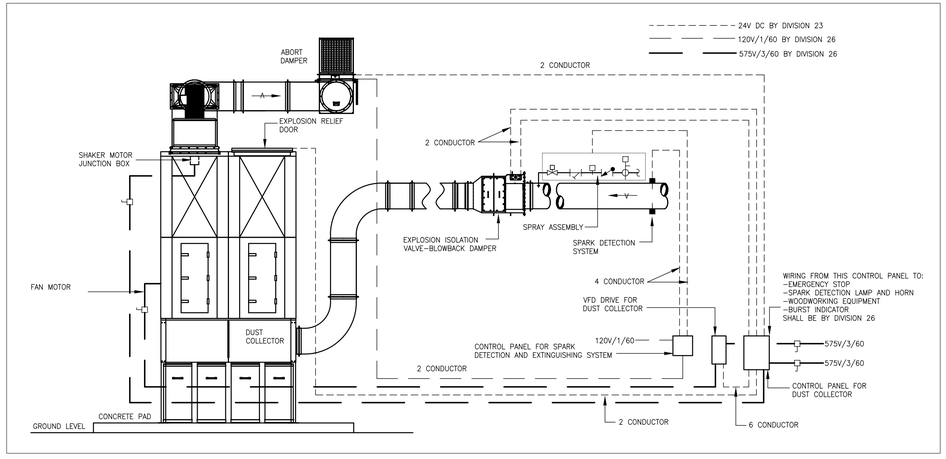
1. DUCT CONSTRUCTION:
   .1 UNLESS OTHERWISE NOTED ALL DUCTWORK AND DUCTWORK ACCESSORIES SHALL BE GALVANIZED STEEL.
   .2 DUCTWORK CONSTRUCTION AND INSTALLATION SHALL BE AS PER THE REQUIREMENTS OF SMACNA FOR HIGH VELOCITY APPLICATION.
   .3 SUPPLY DUCTS AND FITTINGS AS PER "NORDFAB" QUICK–FIT CLAMP–TOGETHER DUCTING SUITABLE FOR DUST EXTRACTION PROCESS. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
   .4 DUCTWORK BETWEEN BLOWBACK DAMPER AND THE DUST COLLECTOR SHALL BE 12 GAUGE AND WELDED.
2. SUPPLY AND INSTALL SUITABLE FLEXIBLE HOSE TO CONNECT DUCT DROPS TO THE CARPENTRY MACHINES. SHALL BE SIMILAR TO NORDFAB, THERMOPLASTIC FLEXIBLE BLACK RUBBER HOSE, REINFORCED WITH SPRING STEEL WIRE HELIX. INSTALL WITH HOSE ADAPTER AND HOSE CLAMPS.
3. ALL DUCTWORK TRANSVERSE JOINTS AND CONNECTIONS SHALL BE SEALED WITH A SUITABLE SEALANT FOR THE APPLICATION AND HIGH VELOCITY DUCTWORK.
   .1 DUCTWORK EXPOSED TO THE EXTERIOR SHALL BE WATERTIGHT.
4. DUCTWORK SHALL BE INSULATED AS FOLLOWS. ALL INSULATION SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50.
   .1 EXHAUST DUCT 4 FT. FROM INSIDE OF EXTERIOR WALL AND UP TO THE DUST COLLECTOR SHALL BE INSULATED WITH 2 IN. THICKNESS OF FIBREGLASS FLEXIBLE DUCT INSULATION WITH REINFORCED FOIL/KRAFT VAPOUR RETARDER FACING, DENSITY 0.75 PCF AND NOMINAL R–VALUE OF 6.7 H.FT2.°F/BTU.
   .2 SUPPLY DUCT FROM DUST COLLECTOR AND UP TO 4 FT. INSIDE THE BUILDING FROM EXTERIOR WALL, SHALL BE INSULATED WITH 2 IN. THICKNESS OF FIBREGLASS FLEXIBLE DUCT INSULATION WITH REINFORCED FOIL/KRAFT VAPOUR RETARDER FACING, DENSITY 0.75 PCF AND NOMINAL R–VALUE OF 6.7 H.FT2.°F/BTU.
   .3 THERMALLY INSULATED SUPPLY AND EXHAUST DUCTS LOCATED EXPOSED TO OUTDOOR CONDITIONS, SHALL BE INSTALLED WITH A STUCCO–EMBOSSED ALUMINUM JACKET (CLADDING) SYSTEM OF 0.02" THICKNESS. SHALL BE FLEXIBLE SELF–ADHERING WEATHERPROOFING SYSTEM WITH PEEL OFF RELEASE PAPER AND PRESS MEMBRANE INTO PLACE. SHALL BE SUITABLE FOR EXTERIOR USE, WEATHER RESISTANT, UV STABLE FOR EXTERIOR. SHALL EXCEED 25/50 FLAME/SMOKE RATING AND RESIST VAPOUR TRANSMISSION.
   .4 FASTENINGS:
      .1 SELF ADHESIVE ALUMINUM TAPE ULC LABELLED.
      .2 LAP SEAL ADHESIVE, QUICK SETTING FOR JOINTS AND LAP SEALING OF VAPOUR BARRIERS.
      .3 CONTACT ADHESIVE QUICK SETTING.
5. WHERE INDICATED ON THE DRAWINGS AND AS SPECIFIED BELOW, ACOUSTIC LINER FOR DUCTWORK SHALL BE 1" THICKNESS RIGID FIBREGLASS OF DENSITY 2.0 PCF. INSULATION SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50. DUCT SIZE DIMENSION INDICATED ON DRAWING IS THE INTERNAL DIMENSION OF THE ASSEMBLED DUCT WITH ACOUSTIC LINER.
   .1 ENTIRE EXTERIOR AND INTERIOR LOCATION OF RECTANGULAR SUPPLY DUCT FROM ABORT DAMPER.
6. WHERE DUCTS CROSS A FIRE SEPARATION, INSTALL FIRE DAMPERS TO SUIT APPLICATION. FIRE DAMPERS SHALL BE OF THE DYNAMIC CLOSURE TYPE WITH BLADE OUT OF AIRSTREAM, ULC LISTED AND FUSIBLE LINK WITH TEMPERATURE RATING TO SUIT APPLICATION. SHALL BE INSTALLED AS PER NFPA 90A WITH BREAKAWAY JOINTS, RETAINING ANGLES AND ACCESS DOOR ADJACENT TO FIRE DAMPER.
7. FOR DUCT PENETRATIONS AT WALL, VOIDS AROUND DUCT SHALL BE SEALED AND CAULKED TO MAINTAIN REQUIRED INTEGRITY.

DUST COLLECTION SYSTEM EQUIPMENT SCHEDULE

DUST COLLECTOR HAS BEEN PURCHASED BY HWDSB. DUST COLLECTOR SUPPLIER WILL DELIVER THE DUST COLLECTOR TO THE SITE. MECHANICAL CONTRACTOR SHALL UNLOAD AND INSTALL THE DUST COLLECTOR ON EQUIPMENT CONCRETE PAD WITHIN THE FENCED ENCLOSURE.
FOR DUST COLLECTOR AND SPARK DETECTION SYSTEM, THE START–UP, TESTING, ADJUSTMENT, COMMISSIONING AND CERTIFICATION, SHALL BE BY MANUFACTURER'S PERSONNEL OR MANUFACTURER'S APPROVED CONTRACTOR.

DUST COLLECTOR SHAKER TYPE, NEDERMAN NFP23000–2HE, 5100 CFM AT EXTERNAL STATIC PRESSURE (E.S.P.) OF 11.0" W.G. AND TOTAL STATIC PRESSURE (T.S.P.) OF 16.0" W.G. TOP MOUNTED INTEGRATED EXHAUST FAN, AMCA B SPARK PROOF, MOTOR 20 HP DIRECT DRIVE, TEFC HIGH EFFICIENCY, VFD COMPATIBLE. SHAKER MOTOR OF 0.14 HP.
SHALL BE COMPLETE WITH:
- HOPPER DESIGN WITH 4 STEEL CANISTERS (DRUM) OF 42 GAL. EACH, DOLLIES AND SOLID DRUM CONNECTORS.
- FILTERS OF INVERTED "V" SHAPED POCKETS. FILTER AREA 910 FT². AIR TO CLOTH RATIO 5.67:1. FILTER EFFICIENCY AT 3 MICRON IS 99%
- ENCLOSURE FOR EXHAUST FAN BLOWER AND MOTOR. FOR WEATHER PROTECTION AND NOISE REDUCTION.
- DUST COLLECTOR CONTROL PANEL NEMA 12 ENCLOSURE, PROGRAMMABLE LOGIC CONTROLLER (PLC). SHALL INCLUDE A FUSED DISCONNECT, STEP–DOWN CONTROL TRANSFORMER, CIRCUIT BREAKERS, FUSES, OVERLOAD PROTECTION, EMERGENCY STOP, PILOT LIGHTS. PANEL SHALL BE ETL APPROVED AND SHALL MONITOR ALL COMPONENTS IN THE SYSTEM, SUCH AS THE VFD, EXPLOSION VENT BURST INDICATOR, NON–RETURN VALVE, SYSTEM PRESSURE, FILTER DIFFERENTIAL, BUILDING FIRE ALARM, SPARK DETECTION SYSTEM, ETC.
- VFD CONTROL PANEL TO MAINTAIN CONSTANT DUCT AIRFLOW AND AIR VELOCITY. SHALL BE COMPLETE WITH HARMONIC FILTERS.
- DIFFERENTIAL PRESSURE TRANSMITTER AND MAGNETIC GAUGE INSTALLED ON THE DUST COLLECTOR TO CONTROL THE VFD AND SYSTEM CAPACITY.
- DISCHARGE FAN SILENCER STRAIGHT CONFIGURATION. TO REDUCE NOISE DOWN TO 80 DBA AT 3 FEET IN FRONT OF SILENCER.
- ABORT DAMPER, BLOWBACK DAMPER, EXPLOSION RELIEF PANEL ON TOP OF UNIT. EXHAUST (DIRTY AIR FLOW) DUCT SIZE 16" DIAMETER.
- SPARK DETECTION AND FIRE EXTINGUISHING SYSTEM TO COMPRISE OF:
  – CONTROL PANEL SINGLE ZONE HANSENTEK MOD. AN104, WITH VISUAL DISPLAY
  – ALARM HORN WITH LAMP AND BATTERY BACK UP
  – INFRARED DIRECT OPTIC SPARK DETECTORS COMPLETE WITH QUICK RELEASE BRACKETS, ADDRESSABLE ELECTRONICS AND BUILT–IN SENSITIVITY TESTING WITH TEST LIGHTS FOR EACH DETECTOR. NEMA 4 RATED.
  – WATER SPRAY ASSEMBLY COMPRISED OF A 1" SHUT–OFF BALL VALVE WITH SUPERVISORY SWITCH, FLOW SWITCH, STRAINER, SOLENOID VALVE AND NOZZLE
  – SUPPLY VOLTAGE TO CONTROL PANEL 120V/1/60
- SPRINKLER PORTS (CAPPED) ON CLEAN AND DIRTY SIDE OF DUST COLLECTOR HOUSING
- SUPPLY VOLTAGE FOR FAN MOTOR: 575V/3/60, 20 HP, FLC 22A, FUSE SIZE 25A, DISCONNECT 60A.
- SUPPLY VOLTAGE FOR MAIN CONTROL PANEL: 575V/3/60, FLC 2A, FUSE SIZE 3A, DISCONNECT 30A.
- SUPPLY VOLTAGE FOR SHAKER MOTOR: 575V/3/60, 0.14 HP, FLC 0.9A, DISCONNECT 30A.
- SUPPLY VOLTAGE FOR VFD DRIVE: LINE VOLTAGE 575V/3/60, CONTROL VOLTAGE 24V, DRIVE CURRENT 22A, FUSE SPECIFICATION 35A.

SUPPLY REGISTERS BY E.H. PRICE. COLOUR TO BE FINALIZED ON SITE WITH ARCHITECT
REF. SR1: LOUVERED FACE SUPPLY, 302/F/L/A, DOUBLE DEFLECTION



3 M3-2 DUST COLLECTOR SYTEM - WIRING SCHEMATIC
N.T.S.

NO.	DATE	REVISION
3	APR.10/26	ISSUED FOR TENDER
2	DEC.12/25	ISSUED FOR PERMIT
1	NOV.24/25	ISSUED FOR COORDINATION

DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED BY CONTRACTOR DURING THE COURSE OF WORK.

CoPa ENGINEERING LTD.
LICENSED PROFESSIONAL ENGINEER
C.T. PASHARTIS
90327800
APR.10/26
PROVINCE OF ONTARIO
29 ROLLING ACRES DR.
KITCHENER, ONTARIO
N2A 3W5
TEL. (519) 894–0022

PROJECT
Renovations to
Sir Allan MacNab
Secondary School
145 MAGNOLIA DRIVE
HAMILTON ONTARIO

DRAWING
PROPOSED DUST COLLECTOR SYSTEM LAYOUT
NOTES AND SCHEDULES

DRAWN BY: C. P.	SCALE: 1:50
CHECKED BY: C. PASHARTIS	DATE: NOVEMBER 24, 2025
PROJECT NO. 25CP044	DRAWING NO. M3-2

GENERAL NOTES:

1. ANY COMBUSTIBLE MATERIALS INSTALLED IN THE CEILING SPACE USED AS A RETURN AIR PLENUM, SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50. PLUMBING AND HVAC CONTRACTORS SHALL COORDINATE WITH ALL OTHER TRADES.
2. WHERE CEILING SPACE IS TO BE USED AS A RETURN AIR PLENUM, ALL WIRING FOR CONTROL, TELEPHONE, DATA, SECURITY, SPEAKER WIRE ETC., SHALL BE FT6, CMP, MPP OR PLENUM VERIFIED.
3. THE SPECIFIED MANUFACTURERS MEANS THAT THE ITEM NAMED AND SPECIFIED, FORMS PART OF SPECIFICATION AND SETS STANDARD REGARDING PERFORMANCE, QUALITY OF MATERIAL AND WORKMANSHIP. ALTERNATE MANUFACTURERS WILL BE CONSIDERED IF PROPOSED AND ACCEPTED DURING THE TENDER PERIOD.

MECHANICAL GENERAL REQUIREMENTS

1. DESCRIPTION OF WORK
   .1 THE MECHANICAL CONTRACTOR SHALL FURNISH ALL LABOUR, MATERIAL, TOOLS, EQUIPMENT, SUPERVISION AND OTHER SERVICES AS MAY BE REQUIRED TO EXECUTE THE WORK DESCRIBED IN THE CONTRACT DOCUMENTS.
2. SITE EXAMINATION
   .1 BEFORE SUBMITTING TENDERS, CAREFULLY EXAMINE THE ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND MECHANICAL DRAWINGS HAVING A BEARING ON THE WORK. VISIT THE EXISTING BUILDING ONLY DURING THE SITE WALKTROUGH AND THOROUGHLY ASCERTAIN THE EXTENT AND NATURE OF ALL CONDITIONS AFFECTING THE PERFORMANCE OF WORK.
3. CODES AND STANDARDS
   .1 THE INSTALLATION SHALL COMPLY WITH THE LATEST EDITIONS AND ALL AMENDMENTS OF THE FOLLOWING CODES AND STANDARDS. WHERE CONFLICTS IN REQUIREMENTS OCCUR, THE HIGHER STANDARDS WILL APPLY: ONTARIO BUILDING CODE, ONTARIO FIRE CODE, N.F.P.A., ASHRAE, AND LOCAL CODES, STANDARDS AND BY-LAWS.
4. REGULATIONS, PERMITS, FEES, CONNECTION CHARGES AND CERTIFICATES
   .1 ALL MATERIALS AND WORKMANSHIP SHALL MEET ALL PROVINCIAL BUILDING, MUNICIPAL, N.F.P.A., AND FIRE MARSHALL REGULATIONS, CODES AND BYLAWS IN FORCE IN THE AREA OF THE PROJECT.
   .2 EACH CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND PAY FOR ALL FEES AND CONNECTION CHARGES FOR ALL SERVICES PROVIDED BY THIS DIVISION.
5. COOPERATION OF TRADES
   .1 READ SPECIFICATIONS AND DRAWINGS OF OTHER TRADES AND CONFORM WITH THEIR REQUIREMENTS BEFORE PROCEEDING WITH ANY WORK SPECIFIED IN THIS DIVISION RELATED TO OTHER TRADES.
6. DRAWINGS
   .1 CONTRACT DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF THE MECHANICAL SYSTEMS AND WORK INCLUDED IN THE CONTRACT.
   .2 WHERE THE EXACT LOCATIONS OF FIXTURES AND EQUIPMENT ARE NOT DEFINITELY ESTABLISHED, THE CONTRACTOR SHALL OBTAIN THIS INFORMATION FROM THE OWNER AND ENGINEER.
7. REMOVAL OF EXISTING EQUIPMENT
   .1 EXAMINE THE EXISTING BUILDING AND INCLUDE IN TENDER PRICE ALL NECESSARY ALLOWANCES TO REMOVE EXISTING EQUIPMENT AS DETAILED ON DRAWINGS AND AS DIRECTED BY THE GENERAL CONTRACTOR.
   .2 MATERIALS REMOVED BY THIS DIVISION SHALL BECOME CONTRACTOR'S PROPERTY AND BE REMOVED FROM WORK SITE, PROVIDED:
      .1 THE ITEMS HAVE BEEN INSPECTED BY THE OWNER AND GENERAL CONTRACTOR AND RELEASED FOR REMOVAL.
      .2 ITEMS HAVE NOT BEEN DESIGNATED FOR REUSE IN OTHER SECTIONS OF SPECIFICATIONS OR DRAWINGS.
8. ALTERATION TO EXISTING
   .1 PRIOR TO REMOVAL AND ALTERATION OF THE EXISTING SYSTEMS, THE CONTRACTOR SHALL IDENTIFY TO THE ENGINEER AT WHICH SECTIONS OF THE EXISTING MECHANICAL EQUIPMENT, PIPING AND DUCTWORK SHALL BE CUT BACK AND REMOVED.
   .2 RELOCATE EXISTING MECHANICAL EQUIPMENT AND APPURTENANCES AS SPECIFICALLY INDICATED ON DRAWINGS OR SPECIFIED AND AS REQUIRED TO SUIT ALTERATION WORK. CLEAN RELOCATED EQUIPMENT AND INSTALL IN NEW LOCATION, IN A NEAT ORDERLY MANNER WITH SAME ATTENTION AS GIVEN TO NEW EQUIPMENT. WHERE EXISTING MATERIAL OR EQUIPMENT IS NO LONGER REQUIRED, SHALL BE CUT BACK AND MAKE GOOD TO SATISFACTION OF THE ENGINEER. WHEN EXISTING MATERIAL OR EQUIPMENT IS DISCONNECTED OR DISASSEMBLED TO FACILITATE RELOCATION, REINSTALL AS ORIGINAL, INCLUDING AUXILIARY WORK, INSULATION, ELECTRICAL WORK ETC.
   .3 WHERE EXISTING MATERIAL OR EQUIPMENT IS DAMAGED, MAKE GOOD TO THE SATISFACTION OF ENGINEER. IF IT IS FOUND IN AN UNSUITABLE CONDITION, NOTIFY ENGINEER FOR INSTRUCTIONS.
   .4 OBTAIN WRITTEN AUTHORIZATION FROM ENGINEER FOR ALTERATION WORK THAT IS NOT SPECIFICALLY CALLED FOR OR CLEARLY INDICATED ON DRAWINGS.
9. PROTECTION OF OPENINGS
   .1 PROTECT EQUIPMENT AND SYSTEMS OPENINGS FROM DIRT, DUST, AND OTHER FOREIGN MATERIALS.
   .2 THIS CONTRACTOR SHALL PROTECT FINISHED AND UNFINISHED WORK BY HIS OWN AND OTHER SUBCONTRACTORS FROM DAMAGE DUE TO CARRYING OUT HIS WORK. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONDITION OF ALL MATERIALS AND EQUIPMENT SUPPLIED UNDER THIS CONTRACT OR REMOVED FROM EXISTING BUILDING FOR REUSE AND SHALL PROVIDE ALL NECESSARY PROTECTION FOR SAME. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND MAINTENANCE OF THE WORK OF THIS SECTION, UNTIL THE BUILDING HAS BEEN COMPLETED AND ACCEPTED.
10. CUTTING AND PATCHING
   .1 RESPONSIBILITY FOR CUTTING OF OPENINGS TO WALLS, FLOORS, ROOF AND ANY OTHER SURFACES IN THE STRUCTURE SHALL BE COORDINATED WITH GENERAL CONTRACTOR. IN ADDITION, RESPONSIBILITY FOR THE PATCHING AND FINISHING OF THESE SURFACES AND ASSEMBLIES SHALL ALSO BE COORDINATED WITH GENERAL CONTRACTOR. WORK SHALL BE PERFORMED BY THE EXPERT TRADE WHO SPECIALIZE IN THEIR WORK. IN THE EVENT THE GENERAL CONTRACTOR WILL NOT BE RESPONSIBLE FOR THIS WORK, THIS SCOPE OF WORK SHALL BE INCLUDED UNDER THE MECHANICAL CONTRACTOR.
   .2 BEFORE CUTTING OF OPENINGS IN THE STRUCTURE, THE CONTRACTOR SHALL IDENTIFY TO THE STRUCTURAL ENGINEER AND THE OWNER'S REPRESENTATIVE AT WHICH SECTIONS OF THE BUILDING STRUCTURE ARE TO BE CUT BACK. THE CUTTING, PATCHING AND FINISHING OF THE ASSEMBLIES RESTRICTED BY THE WORK OF THIS DIVISION SHALL BE PERFORMED BY THE AFFECTED/EXPERT TRADE.
   .3 UNDER NO CIRCUMSTANCES SHALL ANY CUTTING OR BURNING OF THE STRUCTURAL PARTS OF THE BUILDING BE UNDERTAKEN WITHOUT THE WRITTEN AUTHORITY OF THE ENGINEER.
11. EXCAVATING, BACKFILLING, COMPACTING AND FLOOR CEMENTING
   .1 RESPONSIBILITY FOR EXCAVATING, BACKFILLING AND COMPACTING FOR PLUMBING PIPES AND DRAINS PROVIDED BY THIS DIVISION SHALL BE COORDINATED WITH GENERAL CONTRACTOR. ALL BACKFILLING SHALL BE NEW CLEAN GRANULAR FILL BROUGHT IN SPECIFICALLY FOR THE PURPOSE OF BACKFILLING. ALL BACKFILLING SHALL BE COMPACTED AT INTERVALS OF NOT MORE THAN 6" LAYERS TO THE SATISFACTION OF THE ENGINEER. RESPONSIBILITY FOR FLOOR CEMENTING SHALL BE COORDINATED WITH GENERAL CONTRACTOR. IN THE EVENT THE GENERAL CONTRACTOR WILL NOT BE RESPONSIBLE FOR THIS WORK, THIS SCOPE OF WORK SHALL BE INCLUDED UNDER THE MECHANICAL CONTRACTOR.
12. EQUIPMENT INSTALLATION
   .1 ALL EQUIPMENT, FIXTURES, PIPES, INSULATION AND ASSOCIATED APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
   .2 SPACE FOR SERVICING, DISASSEMBLY AND REMOVAL OF EQUIPMENT AND COMPONENTS: PROVIDE AS RECOMMENDED BY MANUFACTURER OR AS INDICATED.
   .3 CONTROL PANELS, ELECTRICAL PANELS AND WIRING TERMINATION POINTS PROVIDE MINIMUM 40" CLEARANCE.
   .4 EQUIPMENT DRAINS: PIPE TO FLOOR DRAINS.
13. ROOF CONES AND FLASHING
   .1 ROOF CONES FOR PIPES AND ROUND DUCTS PENETRATING ROOF SHALL BE SUPPLIED AND INSTALLED BY MECHANICAL CONTRACTOR.
   .2 IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO SEE THAT ACCEPTABLE FLASHING ARE INSTALLED WHERE NECESSARY FOR THE WORK OF HIS TRADE. COUNTER FLASHING IS BY ROOFING CONTRACTOR AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.
14. SLEEVES
   .1 THIS CONTRACTOR SHALL SUPPLY AND INSTALL SUITABLE SLEEVES FOR PIPING AND DUCTWORK PENETRATIONS TO THE BUILDING STRUCTURE.
   .2 PIPE SLEEVES: INSTALL AT POINTS WHERE PIPES PASS THROUGH MASONRY, CONCRETE OR U.L.C. FIRE RATED ASSEMBLIES AND AS INDICATED.
   .3 SCHEDULE 40 STEEL PIPE.
   .4 SLEEVES WITH ANNULAR FIN CONTINUOUSLY WELDED AT MIDPOINT:
   .5 SIZES: 1/4" CLEARANCE ALL AROUND, BETWEEN SLEEVE AND NON-INSULATED PIPE OR BETWEEN SLEEVE AND INSULATION.
   .6 TERMINATE SLEEVES FLUSH WITH SURFACE OF CONCRETE AND MASONRY WALLS AND CONCRETE FLOORS ON GRADE IN FINISHED AREAS.
   .7 FILL VOIDS AROUND PIPES:
      .1 WHERE SLEEVES PASS THROUGH WALLS, PROVIDE SPACE FOR FIRE STOPPING. WHERE PIPES PASS THROUGH FIRE RATED WALLS AND PARTITIONS, MAINTAIN FIRE RATING INTEGRITY.
      .2 ENSURE NO CONTACT BETWEEN COPPER TUBE OR PIPE AND FERROUS SLEEVE.
      .3 FILL FUTURE-USE SLEEVES WITH LIME PLASTER OR OTHER EASILY REMOVABLE FILLER.
      .4 COAT EXPOSED EXTERIOR SURFACES OF FERROUS SLEEVES WITH HEAVY APPLICATION OF ZINC RICH PAINT
15. PREPARATION FOR FIRE STOPPING
   .1 FIRE STOPPING MATERIALS AND INSTALLATION WITHIN ANNULAR SPACE BETWEEN PIPES, DUCTS, INSULATION AND ADJACENT FIRE SEPARATION: TO THE APPROVAL OF THE ENGINEER.
   .2 UNINSULATED UNHEATED PIPES NOT SUBJECT TO MOVEMENT: NO SPECIAL PREPARATION.
   .3 UNINSULATED HEATED PIPES SUBJECT TO MOVEMENT: WRAP WITH NON-COMBUSTIBLE SMOOTH MATERIAL TO PERMIT PIPE TO MOVE WITHOUT DAMAGING FIRE STOPPING.
   .4 INSULATED PIPES AND DUCTS: ENSURE INTEGRITY OF INSULATION AND VAPOUR BARRIER AT FIRE SEPARATION.
16. ESCUTCHEONS
   .1 PROVIDE ON EXPOSED PIPES PASSING THROUGH WALLS, PARTITIONS, FLOORS AND CEILINGS ON FINISHED AREAS.
   .2 CHROME OR NICKEL PLATED BRASS OR TYPE 302 STAINLESS STEEL, SPLIT PIECE TYPE WITH SET SCREWS.
   .3 OUTSIDE DIAMETER TO COVER OPENING OR SLEEVE.
   .4 INSIDE DIAMETER TO FIT AROUND FINISHED PIPE.
   .5 SECURE TO PIPE OR FINISHED SURFACE BUT NOT INSULATION.
17. TESTS
   .1 INSULATE OR CONCEAL WORK ONLY AFTER TESTING AND APPROVAL BY ENGINEER.
   .2 BEAR ALL COSTS IN CONNECTION WITH ALL TESTS, INCLUDING REPAIRING LEAKS RETESTING AND MAKING GOOD.
   .3 PRIOR TO TESTS, ISOLATE ALL EQUIPMENT AND OTHER PARTS WHICH ARE NOT DESIGNED TO WITHSTAND TEST PRESSURES OR TEST MEDIUM.
   .4 PROVIDE CERTIFICATES INDICATING RESULTS OF ALL TESTS INCLUDING TEST LOGS.
   .5 PIPING:
      .1 PLUMBING LINES SHALL BE TESTED IN ACCORDANCE WITH THE ONTARIO BUILDING CODE.
18. PIPE FLUSHING AND CLEANING
   .1 AFTER PRESSURE TESTS ARE COMPLETED AND APPROVED, PRIOR TO START-UP AND PLACING INTO OPERATION, FLUSH AND CLEAN OUT ALL PIPING SYSTEMS.
   .2 FOR DOMESTIC WATER SYSTEM, CLEAN AS PER ONTARIO BUILDING CODE AND LOCAL REQUIREMENTS.
19. ACCESS DOORS
   .1 SUPPLY ACCESS DOORS TO CONCEALED MECHANICAL EQUIPMENT FOR OPERATING, INSPECTING, ADJUSTING AND SERVICING.
   .2 ACCESS DOORS REQUIRED IN LISTED FIRE SEPARATION SHALL BEAR A ULC LABEL TO MATCH WALL CLASSIFICATION.
20. DIELECTRIC COUPLINGS
   .1 PROVIDE WHERE PIPES OF DISSIMILAR METALS ARE JOINED. SHALL BE COMPATIBLE WITH AND TO SUIT PRESSURE RATING OF PIPING SYSTEM.
   .2 PIPES NPS 2 AND UNDER SHALL BE WITH ISOLATING UNIONS. PIPES NPS 2 1/2 AND OVER SHALL BE ISOLATING FLANGES.
   .3 PROVIDE FELT OR RUBBER GASKET TO PREVENT DISSIMILAR METALS CONTACT.
21. DRAIN VALVES
   .1 LOCATE AT LOW POINTS AND AT SECTION ISOLATING VALVES UNLESS OTHERWISE SPECIFIED.
   .2 MINIMUM NPS 3/4 UNLESS OTHERWISE SPECIFIED: BRONZE, WITH HOSE END MALE THREAD.
22. EQUIPMENT SUPPORTS
   .1 EQUIPMENT SUPPORTS NOT SUPPLIED BY EQUIPMENT MANUFACTURER SHALL BE FABRICATED FROM STRUCTURAL GRADE STEEL.
   .2 RESPONSIBILITY FOR ROOFING AND REINFORCING OF ROOF FOR MECHANICAL EQUIPMENT SUPPORT SHALL BE COORDINATED WITH GENERAL CONTRACTOR. IN THE EVENT THE GENERAL CONTRACTOR WILL NOT BE RESPONSIBLE FOR THIS WORK, THIS SCOPE OF WORK SHALL BE INCLUDED UNDER THE MECHANICAL CONTRACTOR.
23. PIPE HANGERS AND SUPPORTS
   .1 PROVIDE UPPER ATTACHMENTS, MIDDLE ATTACHMENT ROD, PIPE ATTACHMENT, RISER CLAMPS, SADDLES, SHIELDS AND OTHER DEVICES. RIGID, SWING OR ANY OTHER HANGER SYSTEM SHALL BE SUITABLE FOR THE APPLICATION AND TAKE INTO ACCOUNT ATTACHMENT IN AREAS MADE OF CONCRETE SLAB, STEEL BEAM, WOOD JOISTS AND STEEL JOISTS AND FOR EXPANSION OF PIPING.
   .2 HANGER SPACING AND MIDDLE ATTACHMENT (ROD) DIAMETER AS PER REGULATORY AUTHORITIES AND MANUFACTURER'S RECOMMENDATIONS.
   .3 INSTALL HANGER SO THAT ROD IS VERTICAL UNDER OPERATING CONDITIONS. ADJUST HANGERS TO EQUALIZE LOAD. SUPPORT FROM STRUCTURAL MEMBERS. WHERE STRUCTURAL BEARING DOES NOT EXIST OR INSERTS ARE NOT IN SUITABLE LOCATIONS, PROVIDE SUPPLEMENTARY STRUCTURAL STEEL MEMBERS.
   .4 WHERE SUPPORTING COPPER PIPE, IT SHALL BE ISOLATED FROM ANY NON-COPPER HANGER WITH ELECTROLYTIC ACTION TAPE OR EQUIVALENT.
24. SHOP DRAWINGS AND PRODUCT DATA
   .1 EQUIPMENT SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
   .2 SHOP DRAWINGS AND PRODUCT DATA SHALL SHOW:
      .1 MOUNTING ARRANGEMENTS.
      .2 OPERATING AND MAINTENANCE CLEARANCES. EG. ACCESS DOOR, SWING SPACES.
   .3 TYPE, NAME, CATALOGUE NUMBERS, TECHNICAL PERFORMANCE DATA, WIRING DIAGRAMS ETC
25. PAINTING
   .1 APPLY AT LEAST ONE COAT OF CORROSION RESISTANT PRIMER PAINT TO FERROUS SUPPORTS AND SITE FABRICATED WORK.
   .2 PRIME AND TOUCH UP MARRED FINISHED PAINT WORK TO MATCH ORIGINAL.
   .3 RESTORE TO NEW CONDITION, FINISHES WHICH HAVE BEEN DAMAGED TO EXTENSIVELY TO BE MERELY PRIMED AND TOUCHED UP.
   .4 AT AREAS WHERE CUTTING AND PATCHING HAS TAKEN PLACE, PAINTING OF THESE AREAS SHALL BE UNDERTAKEN BY THE AFFECTED (EXPERT) TRADE AT THE EXPENSE OF THE MECHANICAL CONTRACTOR.
26. IDENTIFICATION
   .1 IDENTIFY AND LABEL EQUIPMENT AND PIPEWORK SERVICES ON COMPLETION OF THE PROJECT.
   .2 DOMESTIC WATER LINES SHALL SHOW SERVICE AND DIRECTION OF FLOW.
   .3 EQUIPMENT, PANELS AND CABINETS, SYSTEM NAMEPLATES SHALL BE 1/8"THICK LAMINATED PLASTIC WITH LETTERS AND NUMBERS MACHINE ENGRAVED INTO CORE.
27. ELECTRICAL WORK
   .1 ALL WIRING AND CONDUIT FOR POWER AND CONTROL SHALL BE BY ELECTRICAL DIVISION, EXCEPT FOR WIRING, CONDUIT AND CONNECTIONS BELOW 50V WHICH ARE RELATED TO AUTOMATIC CONTROL SYSTEMS SHALL BE BY MECHANICAL CONTRACTOR.
   .2 COORDINATE WITH ELECTRICAL CONTRACTOR FOR WIRING AND TESTING OF ALL MECHANICAL EQUIPMENT.
28. CLEANING
   .1 UPON COMPLETION AND IN PREPARATION FOR FINAL ACCEPTANCE, CONTRACTOR SHALL REMOVE PROTECTIVE COVERINGS, CLEAN AND REFURBISH ALL EQUIPMENT, FREE ALL OBSTRUCTIONS, REPLACE FILTERS, CLEAN STRAINERS AND LEAVE IN OPERATING CONDITION. ALL SURPLUS AND WASTE MATERIAL SHALL BE PROMPTLY REMOVED FROM THE PREMISES.
29. TRIAL USAGE
   .1 OBTAIN WRITTEN PERMISSION FROM ENGINEER TO START AND TEST PERMANENT EQUIPMENT AND SYSTEMS TO ACCEPTANCE BY OWNER.
   .2 ENGINEER AND OWNER MAY USE EQUIPMENT AND SYSTEMS FOR TEST PURPOSES PRIOR TO ACCEPTANCE. SUPPLY LABOUR, MATERIAL AND INSTRUMENTS REQUIRED FOR TESTING.
30. TESTING, ADJUSTING AND BALANCING (TAB)
   .1 THIS OPERATION SHALL BE UNDERTAKEN BY A CONTRACTOR WHOSE PRINCIPAL BUSINESS IS THAT OF TESTING, ADJUSTING AND BALANCING. THIS CONTRACTOR IS TO CONDUCT ACCEPTANCE TESTS TO DEMONSTRATE THAT THE EQUIPMENT AND SYSTEMS ACTUALLY MEET THE SPECIFIED REQUIREMENTS. TESTS MAY BE CONDUCTED AS SOON AS CONDITIONS PERMIT. SUBMIT TAB REPORT TO ENGINEER FOR REVIEW.
   .2 THE BALANCING CONTRACTOR SHALL BE AFFILIATED WITH AABC OR NEBB.
   .3 THIS CONTRACTOR SHALL COORDINATE LOCATION AND INSTALLATION OF ALL "TAB" DEVICES, EQUIPMENT, ACCESSORIES, MEASUREMENT PORT AND FITTINGS. ALL NECESSARY TEST PORTS FOR HYDRONIC SYSTEM SHALL BE PROVIDED TO THE MECHANICAL CONTRACTOR FOR INSTALLATION. OPERATE SYSTEMS FOR LENGTH OF TIME REQUIRED FOR TAB. SUBMIT "TAB" REPORT TO ENGINEER FOR VERIFICATION. "TAB" SHALL BE CARRIED OUT FOR THE FOLLOWING SYSTEMS:
      .1 ALL AIRFLOWS WHERER INDICATED.
31. DEMONSTRATION, OPERATION AND MAINTENANCE INSTRUCTIONS
   .1 SUPPLY TOOLS, EQUIPMENT AND PERSONNEL TO DEMONSTRATE AND INSTRUCT CLIENT'S REPRESENTATIVE DURING REGULAR WORK HOURS AND PRIOR TO ACCEPTANCE IN OPERATING, CONTROLLING, AND ADJUSTING OF ALL SYSTEMS AND EQUIPMENT.
   .2 ALLOW 4 HOURS FOR TRAINING.
32. OPERATION AND MAINTENANCE MANUAL
   .1 PROVIDE OPERATION AND MAINTENANCE DATA FOR INCORPORATION INTO MANUAL.
   .2 OPERATION AND MAINTENANCE MANUAL TO BE APPROVED BY AND FINAL COPIES DEPOSITED WITH ENGINEER BEFORE FINAL INSPECTION.
33. RECORD DRAWINGS
   .1 SITE RECORDS:
      .1 ON ONE SET OF AUTOCAD MECHANICAL DRAWINGS, MARK ALL CHANGES AS WORK PROGRESSES AND AS CHANGES OCCUR.
      .2 MAKE AVAILABLE FOR REFERENCE PURPOSES AND INSPECTION AT ALL TIMES.
   .2 AS-BUILT DRAWINGS:
      .1 IDENTIFY EACH DRAWING IN LOWER RIGHT HAND CORNER IN LETTERS AT LEAST 1/2" HIGH AS FOLLOWS: "AS BUILT DRAWINGS: THIS DRAWING HAS BEEN REVISED TO SHOW MECHANICAL SYSTEMS AS INSTALLED" (SIGNATURE OF CONTRACTOR) (DATE).
      .2 SUBMIT TO ENGINEER FOR APPROVAL AND MAKE CORRECTIONS AS DIRECTED.
      .3 SUBMIT COMPLETED REPRODUCIBLE AS-BUILT DRAWINGS WITH OPERATING AND MAINTENANCE MANUALS.
34. GUARANTEE
   .1 PROVIDE A WRITTEN GUARANTEE TO COVER ALL MATERIALS AND INSTALLATION OF THE COMPLETE MECHANICAL SYSTEMS. THIS GUARANTEE SHALL EXTEND FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE CERTIFICATE OF SUBSTANTIAL COMPLETION.
   .2 SPECIFIC GUARANTEE OF MANUFACTURERS WHOSE WARRANTY NORMALLY EXTENDS OVER LONGER OR SHORTER PERIODS THAN ONE YEAR, SHALL IN NO WAY LIMIT THE GUARANTEE OF THE MECHANICAL WORK.
   .3 ANY DEFECTS OCCURRING WITHIN THE GUARANTEE PERIOD SHALL BE REPAIRED/REPLACED AT NO COST TO THE OWNER.
   .4 WHERE PERMANENT EQUIPMENT IS USED TO PROVIDE TEMPORARY SERVICES, THE WARRANTY SHALL BE EXTENDED SO THAT THE WARRANTY PERIOD DOES NOT COMMENCE UNTIL THE CERTIFICATE OF SUBSTANTIAL COMPLETION IS ISSUED.

PLUMBING GENERAL NOTES FOR INSTALLATION

1. DOMESTIC WATER PIPING WITHIN THE BUILDING
   .1 ABOVE GROUND SHALL BE SEAMLESS COPPER WATER TUBE, TYPE L WITH SOLDERED JOINTS.
2. GRAVITY SANITARY, STORM AND VENT PIPE AND FITTINGS:
   .1 BELOW GRADE SHALL BE PVC-SDR35 (8 IN. AND LARGER), PVC-SDR28 (6 IN. AND SMALLER), ABS-DWV OR PVC-DWV WITH SOLVENT WELD FITTINGS.
   .2 ABOVE GROUND UP TO 2-1/2" DIA. SHALL BE PVC-DWV ULC APPROVED WITH SOLVENT WELD FITTINGS OR COPPER DWV WITH WROUGHT COPPER FITTINGS.
   .3 ABOVE GROUND FOR 3" AND OVER SHALL BE PVC-DWV, ULC APPROVED WITH SOLVENT WELD FITTINGS OR CAST IRON WITH MECHANICAL JOINTS, NEOPRENE OR BUTYL RUBBER COMPRESSION GASKETS AND STAINLESS STEEL CLAMPS.
   .4 IN A RETURN AIR PLENUM USE FULLY CERTIFIED FIRE-RESISTANT PVC-DWV PIPE SUCH AS IPEX SYSTEM XFR 15-50. COORDINATE WITH ARCHITECTURAL AND HVAC DRAWINGS TO CLARIFY AREAS WITH RETURN AIR PLENUM.
   .5 COMBUSTIBLE PIPE SHALL NOT BE INSTALLED IN A VERTICAL SERVICE SHAFT.
3. WHERE PLASTIC PIPE CROSSES A FIRE SEPARATION IT SHALL BE FITTED WITH APPROVED FIRE STOP DEVICES.
4. INSTALL PLUMBING VENT LINES AS PER OBC PART 7. DISTRIBUTION AND SIZING SHALL BE BY PLUMBING CONTRACTOR.
5. FOR ALL PIPE PENETRATIONS, VOIDS AROUND PIPES SHALL BE SEALED AND CAULKED TO KEEP REQUIRED INTEGRITY.
6. INSTALL PIPE CLEANOUTS FOR SANITARY DRAINAGE LINES.
7. HOT WATER HEATING STEEL PIPING, VALVES AND FITTINGS.
   .1 SHALL BE BLACK STEEL PIPE TO ASTM A53, GRADE B, SCHEDULE 40.
   .2 PIPE JOINTS
      .1 NPS 2 AND UNDER: SCREWED FITTINGS WITH TEFLON TAPE.
      .2 NPS 2-1/2 AND OVER: WELDING FITTINGS AND FLANGES TO ANSI/ASME B16.5.
      .3 ROLL GROOVED MECHANICAL COUPLING TO CSA B242.
   .3 FITTINGS
      .1 SCREWED FITTINGS: MALLEABLE IRON., TO ANSI/ASME B16.3, CLASS 150.
      .2 PIPE FLANGES AND FLANGED FITTINGS: STEEL TO ANSI/ASME B16.5.
      .3 BUTT_WELDING FITTINGS: STEEL, TO ANSI/ASME B16.9.
      .4 UNIONS: MALLEABLE IRON, TO ASTM A47M AND ANSI/ASME B16.3.
      .5 FITTINGS FOR ROLLED GROOVED PIPING: MALLEABLE IRON TO ASTM A47M OR DUCTILE IRON TO ASTM A536.
8. COMPRESSED AIR PIPING VALVES AND FITTINGS.
   .1 SHALL BE BLACK STEEL PIPE TO ASTM A53, GRADE B, SCHEDULE 40.
   .2 PIPE JOINTS
      .1 NPS 2 AND UNDER: SCREWED FITTINGS WITH TEFLON TAPE.
   .3 FITTINGS
      .1 SCREWED FITTINGS: MALLEABLE IRON., TO ANSI/ASME B16.3, CLASS 150.
9. PIPING INSULATION
   .1 PREFORMED SECTIONAL RIGID FIBREGLASS PIPE INSULATION WITH VAPOUR BARRIER JACKET AND FACING MATERIAL 0-850 DEG.F. SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50.
      .1 APPLICATION:
         .1 DOMESTIC COLD AND HOT WATER, HOT WATER RECIRCULATION LINE SHALL BE INSULATED THROUGHOUT IN ALL LOCATIONS.
         .2 HYDRONIC HEATING SYSTEM PIPING SHALL BE INSULATED THROUGHOUT IN ALL LOCATIONS.
      .2 THICKNESS AND THERMAL CONDUCTIVITY AS PER FOLLOWING: RUNOUTS REFERS TO INDIVIDUAL PLUMBING FIXTURES OR TERMINAL UNITS NOT EXCEEDING 12FT.
         .1 DOMESTIC COLD AND HOT WATER AND HOT WATER RECIRCULATION LINES:
            INSULATION THERMAL CONDUCTIVITY 0.24-0.28 BTU.IN/(H.FT2°F) AT 100 DEG. F MEAN TEMP. RATING. NOMINAL PIPE DIAMETER UP TO 2 IN., INSULATION THICKNESS SHALL BE 1 IN. RUNOUTS UP TO 2 IN. NOMINAL PIPE SIZE, THICKNESS SHALL BE 1/2 IN.
         .2 HYDRONIC SYSTEM LINES:
            INSULATION THERMAL CONDUCTIVITY 0.25-0.29 BTU.IN/(H.FT2°F) AT 125 DEG. F MEAN TEMP. RATING. NOMINAL PIPE DIAMETER UP TO 4 IN., INSULATION THICKNESS FOR HEATING SYSTEM SHALL BE 1-1/2 IN.
   .2 FASTENINGS:
      .1 SELF ADHESIVE ALUMINUM TAPE ULC LABELLED.
      .2 LAP SEAL ADHESIVE, QUICK SETTING FOR JOINTS AND LAP SEALING OF VAPOUR BARRIERS.
      .3 LAGGING ADHESIVE FIRE RETARDANT COATING.
10. ALL INSULATED EXPOSED PLUMBING PIPES AND HYDRONIC HEATING LINES RUNNING INSIDE THE BUILDING SHALL SHALL BE ENTIRELY INSTALLED WITH WHITE PVC JACKETING, UV-RESISTANT WITH MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED RATING OF 50.
11. WHERE SUPPORTING COPPER PIPE, IT SHALL BE ISOLATED FROM ANY NON-COPPER HANGER WITH ELECTROLYTIC ACTION TAPE OR EQUIVALENT.
12. INSTALL VALVED SUPPLIES AT ALL PLUMBING FIXTURES.
13. INSTALL TRAP SEAL PRIMER FOR FLOOR DRAINS AND HUB DRAINS ON COLD WATER SUPPLY TO NEAREST FREQUENTLY USED PLUMBING FIXTURE OR TO A TRAP SEAL PRIMER. INSTALL SOFT COPPER TUBING OR PEX PIPE TO FLOOR DRAIN AND HUB DRAIN.
14. INSTALL WATER HAMMER ARRESTORS ON BRANCH LINES TO EACH FIXTURE OR GROUP OF FIXTURES HAVING A QUICK CLOSING DEVICE OR SOLENOID OR HOSE BIB.
15. INSTALL BACK FLOW PREVENTER WHERE THERE IS A HEALTH HAZARD POTENTIAL FOR POTABLE WATER SYSTEM AND AS REQUIRED BY THE LOCAL BUILDING DEPARTMENT.
16. FOR THE REWORKING OF EXISTING PLUMBING LINES, CUTTING BACK AND CAPPING OF THE LINES, THIS SHALL BE CARRIED OUT BY FREEZING EXISTING PLUMBING LINES.
17. FOR THE REWORKING OF EXISTING HYDRONIC HEATING LINES, CUTTING BACK AND CAPPING THIS SHALL BE CARRIED OUT BY FREEZING EXISTING SUPPLY AND RETURN LINES.
18. WATER TREATMENT SYSTEMS -- CLOSED HOT WATER HEATING SYSTEM
   .1 THIS OPERATION SHALL BE UNDERTAKEN BY A CONTRACTOR WHOSE PRINCIPAL BUSINESS IS THAT OF CHEMICAL WATER TREATMENT SERVICES. THIS CONTRACTOR IS TO CONDUCT WATER TREATMENT, WATER ANALYSIS, SYSTEM STABILIZATION AND TREATMENT FOR CORROSION, SCALE AND CORROSION AND TO BE COMPATIBLE WITH HYDRONIC SYSTEM MATERIALS. CONTRACTOR SHALL PROVIDE CERTIFICATE THAT THE SYSTEM HAS BEEN PROPERLY INSTALLED, CONNECTED, TESTED AND CHECKED. TESTS MAY BE CONDUCTED AS SOON AS CONDITIONS PERMIT.
   .2 CHEMICAL TREATMENT COMPANY SHALL EXAMINE EXISTING SYSTEM AND PROVIDE TREATMENT CHEMICALS TO MATCH EXISTING.
   .3 MECHANICAL CONTRACTOR SHALL OBTAIN PRICE RELATED TO THIS FROM THE CHEMICAL WATER TREATMENT CONTRACTOR AND INCLUDE IT IN THE BASE TENDER PRICE.

HVAC GENERAL NOTES FOR INSTALLATION

1. THESE GENERAL NOTES FOR INSTALLATION DO NOT APPLY TO THE DUST COLLECTION SYSTEM. REFER TO APPLICABLE NOTES FOR DUST COLLECTION SYSTEM.
2. UNLESS OTHERWISE NOTED ALL DUCTWORK AND DUCTWORK ACCESSORIES SHALL BE GALVANIZED STEEL LOW PRESSURE. DUCTWORK CONSTRUCTION AND INSTALLATION SHALL BE AS PER THE REQUIREMENTS OF SMACNA.
3. ALL DUCTWORK TRANSVERSE JOINTS AND CONNECTIONS SHALL BE SEALED.
   .1 EXHAUST DUCTWORK SERVING EXHAUST FANS SHALL BE SEALED AT TRANSVERSE JOINTS AND CONNECTIONS.
   .2 DUCTWORK EXPOSED TO THE EXTERIOR SHALL BE WATERTIGHT.
4. INTAKE AND EXHAUST DUCTWORK OPENINGS ON ROOF, SHALL BE INSTALLED WITH BIRDSCREEN.
5. FLEXIBLE DUCT LENGTH SHALL BE LIMITED TO 8FT. MAXIMUM AND SHALL BE FACTORY FABRICATED TO CAN/ULC S110 SHALL BE ALUMINUM FOIL REINFORCED FILM LAMINATE, PERMANENTLY BONDED TO A CORROSION RESISTANT COATED SPRING STEEL WIRE HELIX. WHERE IT IS

ELECTRICAL SPECIFICATION

GENERAL CONDITIONS

1. THE CANADIAN STANDARD FORM OF CONSTRUCTION CONTRACT AND GENERAL CONDITIONS GOVERNING THE SAME CCDC PARTS 1 TO 12 INCLUSIVE ARE HEREBY MADE PART OF THIS SPECIFICATION.
2. ALL WORK SHALL BE IN FULL ACCORDANCE WITH THE REQUIREMENTS OF THE 2021 ONTARIO ELECTRICAL SAFETY CODE, ELECTRICAL SAFETY AUTHORITY (ESA), AND THE LOCAL BUILDING INSPECTION DEPARTMENT REQUIREMENTS.
3. ELECTRICAL CONTRACTOR SHALL INCLUDE FOR ESA INSPECTION FEES.
4. THIS CONTRACTOR SHALL MAINTAIN LIABILITY INSURANCE AS REQUIRED.
5. ALL WORKMANSHIP SHALL BE EXECUTED TO A STANDARD DETERMINED BY GOOD PRACTICE. THE ELECTRICAL CONTRACTOR SHALL GUARANTEE THE EQUIPMENT & INSTALLATION FOR ONE YEAR FROM SUBSTANTIAL COMPLETION.
6. THE ELECTRICAL CONTRACTOR SHALL SUBMIT ONE SET OF ELECTRONIC PDF SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW. SHOP DRAWINGS TO INCLUDE ALL ELECTRICAL EQUIPMENT, DEVICES & ULC LISTED FIRE STOPPING DETAILS. MATERIALS **SHALL NOT BE ORDERED** UNTIL REVIEW HAS BEEN COMPLETED. APPROVAL IS FOR GENERAL DESIGN COMPLIANCE ONLY.
7. THE OWNERS RESERVE THE RIGHT TO ALTER THE LOCATION OF ANY ITEM UP TO TEN FEET (3m) WITHOUT INCURRING EXTRA COSTS, PROVIDED THE REQUEST IS MADE PRIOR TO INSTALLATION.
8. ALL MATERIAL AND EQUIPMENT USED ON THIS PROJECT SHALL BE C.S.A. APPROVED, ESA FIELD EVALUATED, OR MUST BEAR AN ESA RECOGNIZED CERTIFICATION MARK.
9. CUTTING AND PATCHING FOR ELECTRICAL WORK SHALL BE DONE BY THE GENERAL CONTRACTOR AT THE ELECTRICAL CONTRACTOR'S EXPENSE.
10. THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE THE EXISTING CONDITIONS AND THEN MAKE NECESSARY ALLOWANCES IN THEIR TENDER PRICE FOR REMOVAL, RELOCATION, REROUTING AND/OR RECONNECTION OF EXISTING ELECTRICAL EQUIPMENT AND WIRING, AS MAY BE NECESSARY FOR THE EXECUTION AND COMPLETION OF THIS PROJECT. EXTRA CHARGES FOR PREMIUM TIME LABOUR SHALL BE INCLUDED IN THE TENDER PRICE, ALLOWING FOR AFTER HOURS, WEEKEND AND HOLIDAY LABOUR REQUIREMENTS.
11. THE DRAWINGS AND SPECIFICATIONS SHALL BE READ IN CONJUNCTION WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS AND SPECIFICATIONS. ANY DISCREPANCIES OR CONTRADICTIONS SHALL BE BROUGHT TO THE CONSULTANT'S ATTENTION.
12. THE ELECTRICAL REQUIREMENTS OF ALL MECHANICAL EQUIPMENT **IS TO BE CONFIRMED** WITH MECHANICAL DRAWINGS & SCHEDULES PRIOR TO RELATED WORK.
13. ALL TEMPORARY LIGHTING AND POWER DURING CONSTRUCTION SHALL BE BY THE GENERAL CONTRACTOR AFTER AGREEMENT WITH THE ELECTRICAL CONTRACTOR. POWER SHALL BE PROVIDED FROM PANELS WITH REQUIRED SUPPLY AND CAPACITY.
14. TENDER SHALL BE BASED UPON THE SPECIFIED EQUIPMENT AND MATERIAL. REQUESTS FOR CONSIDERATION OF ALTERNATES SHALL BE SUBMITTED VIA THE BIDDING SYSTEM ONE WEEK PRIOR TO TENDER CLOSING AND SHALL INCLUDE MANUFACTURER, MODEL, AND COST MODIFICATION. COSTS OF ANY CHANGE REQUIRED TO OTHER TRADES AS A RESULT OF USING ALTERNATE EQUIPMENT ARE TO BE INCURRED BY THE ELECTRICAL CONTRACTOR.
15. ALL CLAIMS FOR EXTRA WORK NOT COVERED IN THE CONTRACT TO BE SUBMITTED WITH A COMPLETE BREAKDOWN OF MATERIALS AND LABOUR.
16. DRAWINGS ARE NOT TO BE SCALED. ALL DIMENSIONS ARE TO BE TAKEN FROM THE ARCHITECTURAL DRAWINGS AND CONFIRMED ON SITE.
17. PROVIDE FIRE STOPPING PROTECTION FOR OPENINGS THROUGH ALL FIRE RATED ASSEMBLIES. ULC LISTED ASSEMBLY NUMBERS ARE TO BE USED.
18. LOW VOLTAGE CABLES (IE: NETWORK, SECURITY, CONTROL, ETC...) ROUTED WITHIN PLENUM SPACES SHALL BE FT6, CMP OR PLENUM RATED WHEN ROUTING THROUGH MECHANICAL CEILING PLENUMS.

MOUNTING HEIGHTS

1. DEVICE MOUNTING HEIGHT TO CENTRE OF DEVICE IS AS FOLLOWS:
   - LIGHT SWITCHES 1090mm (or 1200mm IN SERVICE ROOMS)
   - RECEPTACLE 400mm
   - DATA OUTLETS 400mm
   - THERMOSTATS 1400mm (or 1200mm BARRIER FREE PATH OF TRAVEL)
   - FIRE ALARM BELL/HORN 2300mm
   - FIRE ALARM HORN/STROBE 2300mm
   - FIRE ALARM MANUAL PULL STATION 1150mm
   - FIRE ALARM END OF LINE RESISTORS 1700mm
   - OTHER BUILDING CONTROLS 1000mm

NOTE: AUDIBLE FIRE ALARM DEVICES TO BE AT LEAST 150mm BELOW CEILING.

ELECTRICAL EQUIPMENT, DEVICES & MATERIAL

1. ALL EQUIPMENT, DEVICES & MATERIAL TO BE INSTALLED AS PER MANUFACTURERS INSTRUCTIONS.
2. ALL BRANCH CIRCUIT WIRING SHALL BE RUN IN ELECTRICAL METALLIC TUBING (E.M.T.) OR FLEXIBLE ARMOURED CABLE (AC90) RECESSED IN WALLS OR CEILINGS EXCEPT WHERE SPECIFICALLY NOTED ON THE PLANS. ALL WIRING TO BE COPPER AND MINIMUM #12 AWG UNLESS STATED OTHERWISE.
3. ALL SURFACE WIRING SHALL BE T90/RW90 COPPER IN EMT CONDUIT SURFACE WIREMOLD PAINTED TO MATCH WALL WHERE WIRING AND CONDUIT CANNOT BE RECESSED.
4. ALL DEVICES MOUNTED ON CORE SLAB SHALL BE FED WITH WIRING CONCEALED WITHIN THE CORES. UNFINISHED AREAS SUCH AS UTILITY OR STORAGE ROOMS MAY BE SURFACE EMT.
5. ALL BELOW GRADE WIRING SHALL BE RW90 COPPER IN RIGID PVC CONDUIT UNLESS OTHERWISE NOTED.
6. ALL ELECTRICAL DEVICES AND LIGHTING CONTROLS, TO HAVE **TYPED CIRCUIT LABEL** ON DEVICE COVER PLATE. LABEL TO BE BLACK LETTERING ON CLEAR BACKING.
7. THE ELECTRICAL CONTRACTOR SHALL SUPPLY ALL LABOUR AND MATERIALS TO PROVIDE ELECTRIC SERVICE COMPLETE WITH FEEDERS AND BRANCH CIRCUITS ALL AS SHOWN ON THE PLANS. CONTRACTOR TO COORDINATE WITH UTILITY FOR NEW INCOMING ELECTRICAL SERVICE.
8. ELECTRICAL PANELS TO HAVE BOLT ON CIRCUIT BREAKERS. . ALL PANELS TO HAVE HINGED LOCKABLE PANEL COVERS. PANELS SHALL HAVE TYPED DIRECTORIES.
9. ALL NON-RESIDENTIAL EQUIPMENT (PANELS, SWITCHBOARDS, SPLITTERS, TRANSFORMERS, ETC...) TO HAVE LAMACOID LABEL INDICATING: EQUIPMENT ID, VOLTAGE, PHASE/WIRE, AND "SUPPLIED FROM: EQUIPMENT ID".
10. ALL JUNCTION AND PULL BOXES ARE TO BE ACCESSIBLE AND BE PROVIDED WITH SCREWED PLATES COLOUR MATCHED TO ADJACENT WALL OR CEILING FINISHES.
11. PULL BOXES SHALL BE PROVIDED EVERY 30m AND EVERY THREE 90° BENDS.
12. ALL WIRING SHALL BE PARALLEL WITH ARCHITECTURAL LINES AND DESIGN.
13. PROVIDE A NYLON PULL STRING IN ALL EMPTY CONDUIT.
14. ALL NEW SWITCH AND RECEPTACLE DEVICES & PLATES SHALL BE WHITE NYLON. ALL DEVICES TO BE COMMERCIAL GRADE DECORA SERIES OR EQUAL UNLESS OTHERWISE STATED.
15. DO NOT MOUNT WALL OUTLETS BACK TO BACK IN WALLS, STAGGER TO PREVENT SOUND TRANSFER.
16. WIRING TO FIXTURES IN SUSPENDED CEILINGS IS TO CONSIST OF AC90 'DROPS' WITH A MAXIMUM LENGTH OF 4.5m (15 FT) AND T90 WIRING IN EMT CONDUIT BACK TO SOURCE PANEL.
17. ALL CONDUITS TO BE SECURELY FASTENED WITH APPROVED CLIPS AND SCREWS. NAILS OR TIE WIRES ARE NOT ACCEPTABLE.
18. ALL ELECTRICAL EQUIPMENT, DEVICES, AND WIRING ARE TO BE INDEPENDENTLY SUPPORTED. KEEP CLEAR OF MECHANICAL PIPING WHERE POSSIBLE.
19. WIRING FOR MECHANICAL EQUIPMENT SHALL BE AS DETAILED ON THE PLANS.
20. PROVIDE 21mm (3/4") CONDUIT RACEWAY BETWEEN MECHANICAL EQUIPMENT AND CONTROLS AS PER MECHANICAL AND ELECTRICAL PLANS.
21. PROVIDE EQUIPOTENTIAL BONDING OF NON-ELECTRICAL EQUIPMENT AS PER OESC 10-700, AND WIRE MESH/REBAR SUPPORTING ELECTRICAL RADIANT HEATING CABLES. REFER TO MECHANICAL AND ARCHITECTURAL PLANS.

COMMUNICATION SYSTEM

1. PROVIDE PLYWOOD COMMUNICATION BACKBOARD WHERE SHOWN, GOOD ONE SIDE, PAINTED GRAY WITH FIRE RETARDANT INTUMESCENT PAINT. PROVIDE #6 AWG CU GROUND WIRE FROM MAIN BUILDING GROUND TO BACKBOARD.
2. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL A COMPLETE EMPTY CONDUIT SYSTEM FOR COMMUNICATION OUTLETS AS SHOWN ON THE PLANS.
3. PROVIDE CONDUIT AS PER LOW-VOLTAGE DEVICE SCHEDULE. CONDUIT TO BE METALLIC CONDUIT & FIRE STOPPPED WHEN PENETRATING FIRE SEPARATIONS.
4. PROVIDE NYLON PULL STRING IN ALL EMPTY CONDUITS.

LIGHTING

1. SUPPLY AND INSTALL LIGHTING FIXTURES AND DEVICES AS NOTED ON THE PLANS AS PER THE MANUFACTURERS INSTALLATION INSTRUCTIONS.
2. INSTALL ALL FIXTURES PARALLEL WITH BUILDING LINES UNLESS INDICATED OTHERWISE.
3. FOR RECESSED FIXTURES (LED PUCK LIGHTS EXEMPTED) WITHIN SUSPENDED CEILINGS, PROVIDE EITHER:
   A. SAFETY 'JACK CHAIN' TO BUILDING STRUCTURE, OR
   B. MANUFACTURER APPROVED FASTENING DEVICES OR 'EARTHQUAKE CLIPS' FASTENED TO T-BAR.
4. INSTALL A SEPARATE NEUTRAL CONDUCTOR FOR EACH LIGHTING BRANCH CIRCUIT.
5. LIGHTING CONTROL WIRING NOT RUN WITHIN CONDUIT SHALL BE PLENUM RATED (FT6).

FIRE ALARM

GENERAL:

1. FIRE ALARM WIRING SHALL BE MINIMUM #18 AWG 300V FAS CABLE (WIRING TO BE SIZED BY FIRE ALARM VENDOR FOR VOLTAGE DROP) RUN AS FOLLOWS:
   A. EXPOSED WALL: SURFACE WALL WIRING SHALL BE FAS WIRING IN SURFACE METAL WIREMOLD PAINTED TO MATCH WALL WHERE WIRING AND CONDUIT CANNOT BE RECESSED.
   B. ACCESSIBLE CEILING SPACES, CONCEALED SPACES, FINAL DEVICE CONNECTIONS: ARMOURED FAS CABLE
   C. EXPOSED CEILING, RISER CLOSETS, SERVICE ROOMS: FAS WIRING IN EMT CONDUIT.
   D. BELOW GRADE: FAS WIRING IN CONCRETE ENCASED PVC CONDUIT.
   E. OUTDOOR & BELOW GRADE: ARMOURED UNSHIELDED MULTICONDUCTOR CABLE, AS PER CSA C22.2 NO. 208, TYPE FAS105, 300V, 16AWG COPPER, FLAME & UV RESISTANT PVC OUTER JACKET, LOW-TEMPERATURE (-40C) DECA CABLES OR EQUAL. WHEN RUN OVERHEAD, LASHED TO MESSENGER SUPPORT CABLE.
2. COMMISSIONING OF LIFE SAFETY SYSTEMS **SHALL BE INCLUDED** IN ELECTRICAL CONTRACTORS PRICE.
3. FIRE ALARM SYSTEM SHALL BE INSTALLED IN CONFORMANCE WITH CAN/ULC-S524:2019, "INSTALLATION OF FIRE ALARM SYSTEMS".
4. FIRE ALARM SYSTEM SHALL BE VERIFIED IN CONFORMANCE WITH CAN/ULC-S537:2019, "VERIFICATION OF FIRE ALARM SYSTEMS" BY A THIRD PARTY (ARMS LENGTH).
5. ANNUNCIATOR PANEL TO BE UPDATED WITH NEW ZONES LABELS. PASSIVE GRAPHIC BESIDE ANNUNCIATOR PANEL TO BE REPLACED WITH NEW PASSIVE GRAPHIC SHOWING NEW/UPDATED ZONES.
6. IF A FIRE ALARM OR VOICE COMMUNICATION SYSTEM OR ANY PART THEREOF IS SHUT DOWN:
   A. THE **FIRE DEPARTMENT AND BUILDING OCCUPANTS** SHALL BE NOTIFIED, AND
   B. IF APPLICABLE THE SUPERVISORY STAFF SHALL BE NOTIFIED, AND
   C. POST NOTICES ON ALL FLOORS BY ELEVATORS AND AT ENTRANCES, STATING THE SCOPE OF WORK AND WHEN IT IS EXPECTED TO BE COMPLETED.
   D. HAVE STAFF OR OTHER RELIABLE PERSON(S) PATROL THE AFFECTED AREA(S) AT LEAST ONCE EVERY HOUR. REFER TO CAN/ULC-S537:2019(18) APPENDIX B - ALTERNATE MEASURES FOR OCCUPANT FIRE SAFETY.
7. WHERE EXISTING, UNLESS NOTED OTHERWISE, FIRE ALARM TO BE KEPT. THE ELECTRICAL CONTRACTOR TO INCLUDE ALL COSTS ASSOCIATED WITH RELOCATION OF ANY DEVICES OR EQUIPMENT.
8. NEW LIFE SAFETY DEVICES SHALL BE COMPATIBLE WITH THE EXISTING SYSTEM. WHERE EXISTING ZONE CIRCUITS ARE USED TO FEED NEW DEVICES, CONTRACTOR TO CONFIRM EXISTING INITIATING AND ANNUNCIATING ZONE WIRING IS COMPLETE WITH A BOND WIRE PRIOR TO RELATED WORK.
9. FIRE ALARM PANEL SHALL PROVIDE EMERGENCY BATTERY BACKUP TO SUPPLY SUPERVISORY POWER FOR NOT LESS THAN 24H AND IMMEDIATELY FOLLOWING FULL LOAD FOR NOT LESS THAN: 30MIN, 5MIN (NO ANNUNCIATOR)
10. CIRCUIT BREAKER SUPPLYING THE FIRE ALARM SYSTEM SHALL BE CLEARLY LABELLED, COLOURED RED, AND BE LOCKABLE IN THE ON POSITION.
11. DWELLING UNIT PANEL SIGNAL SILENCE:
    A. CANNOT OCCUR WITHIN THE FIRST 60s OF OPERATION OR WITHIN THE ZONE OF INITIATION
    B. A SUBSEQUENT ALARM ELSEWHERE IN THE BUILDING WILL REACTUATE THE SILENCED AUDIBLE SIGNAL DEVICES WITHIN DWELLING UNITS,
    C. AFTER A PERIOD OF NOT MORE THAN 10MIN, THE SILENCED AUDIBLE SIGNAL DEVICES WILL BE RESTORED TO CONTINUOUS AUDIBLE SIGNAL IF THE ALARM IS NOT ACKNOWLEDGED.
12. PROVIDE MONITORING NOTIFICATION SIGNALS TO A CENTRAL STATION CONFORMING TO CAN/ULC-S561-13, "INSTALLATION AND SERVICES FOR FIRE SIGNAL RECEIVING CENTRES AND SYSTEMS" OR TO THE MUNICIPAL FIRE ALARM SYSTEM.
    OR
    PROVIDE 'LEGIBLE NOTICE' THAT IS NOT EASILY REMOVED, AFFIXED TO THE WALL NEAR EACH MANUAL PULL STATION, "IN EVENT OF FIRE DIAL 911".

EXISTING CONDITIONS

1. ELECTRICAL WORK AFFECTING OTHER TENANTS SHALL BE PERFORMED AFTER BUSINESS HOURS (EVENINGS AND WEEKENDS). COORDINATE WITH LANDLORD.
2. SERVICE AND DISTRIBUTION SYSTEM POWER INTERRUPTIONS SHALL BE KEPT TO A MINIMUM. POWER INTERRUPTIONS MUST BE COORDINATED WITH THE OWNER AND ALL OTHER TRADES BY THIS CONTRACTOR. WRITTEN APPROVAL FOR ELECTRICAL INTERRUPTIONS MUST BE RECEIVED FROM THE OWNER INDICATING THE DATE, TIME AND ESTIMATED DURATION OF THE INTERRUPTION. APPLICATION FOR APPROVAL OF THE POWER INTERRUPTIONS MUST BE SUBMITTED TO THE OWNERS AND/OR ARCHITECTS AT LEAST TWO WEEKS PRIOR TO THE REQUESTED SHUTDOWN DATE.
3. EXISTING ELECTRICAL EQUIPMENT, REMOVED AND INDICATED FOR REUSE, SHALL BE CLEANED BEFORE RE-INSTALLATION.
4. WIRING LOCATED IN AREAS BEING ALTERED OR DEMOLISHED, BUT FEEDING OUTLETS OR EQUIPMENT REQUIRED TO REMAIN IN SERVICE, MUST BE REWORKED IN ORDER TO MAINTAIN THE CONTINUITY OF THE EXISTING WIRING.
5. REPAIRS TO EXISTING WALLS, FLOORS, AND CEILINGS ARE TO BE PERFORMED BY THE GENERAL CONTRACTOR TO MEET THE EXISTING CONDITIONS.
6. SEQUENCE OF REMOVAL AND RELOCATION OF EXISTING EQUIPMENT AND WIRING SHALL BE COORDINATED WITH THE OTHER TRADES AND SHALL CONFORM TO THE REQUIREMENTS AND CONDITIONS OUTLINED.
7. THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION TO EXISTING WIRING AND EQUIPMENT THROUGHOUT THE PROJECT, PARTICULARLY WHERE WIRING AND ELECTRICAL EQUIPMENT HAVE BECOME EXPOSED TO MECHANICAL DAMAGE OR MOISTURE IN THE COURSE OF ALTERATIONS OR NEW CONSTRUCTION.
8. NEW OUTLETS AND EQUIPMENT SHOWN IN THE SAME LOCATION AS EXISTING OUTLETS MAY BE FED THROUGH THE EXISTING CONDUITS/WIRING, PROVIDED THAT THEY ARE IN GOOD CONDITION AND ARE ACCEPTABLE TO THE ESA INSPECTION DEPARTMENT.

DEMOLITION

1. ALL EXISTING ELECTRICAL EQUIPMENT, WIRING, AND ROUGH-IN DEVICES ARE TO BE REMOVED COMPLETE TO SUIT THE DEMOLITION AND RENOVATION OF THE SPACES. ALL EXISTING ELECTRICAL EQUIPMENT, NOT BEING REUSED, SHALL BECOME THE PROPERTY OF THE OWNER. ELECTRICAL CONTRACTOR SHALL PROPERLY DISPOSE OF EQUIPMENT NOT DESIRED BY OWNER .
2. ALL DEVICES & EQUIPMENT MADE OBSOLETE SHALL BE REMOVED FROM THE CONSTRUCTION SITE.

GENERAL CLOSE OUT PROCEDURES

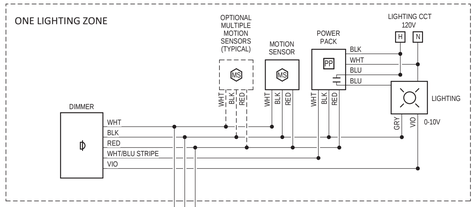
1. **DOCUMENTS:** ELECTRICAL CONTRACTOR TO SUBMIT:
   - FIRE ALARM SYSTEM ULC-S537:2019 VERIFICATION REPORT (INCLUDING DEVICE & AUDIBILITY REPORT).
   - FIRE ALARM MONITORING ULC-S561-13 CERTIFICATE OR MUNICIPAL LETTER OF CONNECTION.
   - ESA CERTIFICATE OF INSPECTIONS;
   - SIGNED COPY OF EMERGENCY LIGHTING TEST REPORT. EMERGENCY LIGHTING TEST REPORT TO INDICATE TOTAL RUNTIME OF EMERGENCY LIGHTING ONCE NORMAL POWER IS LOST FOR EACH BATTERY SYSTEM. (MINIMUM 30MIN 60MIN 120MIN AS PER OBC:3.2.7.4(1b))
2. **TRAINING:** ELECTRICAL CONTRACTOR SHALL PROVIDE TRAINING SESSIONS TO THE OWNER ON ALL MAJOR ELECTRICAL SYSTEMS.
3. **COMMISSIONING:** ALL MAJOR SYSTEMS ARE TO BE COMMISSIONED BY THE MANUFACTURERS REPRESENTATIVE INCLUDING FIRE ALARM, LIGHTING CONTROL SYSTEMS.
4. **FUNCTIONAL TESTING** (AT CONTRACTORS EXPENSE): (NORMALLY $_{5B\text{-}10}$, $_{C\text{-}10}$ if applicable)
   A. LIGHTING CONTROL SYSTEM TESTING SHALL INCLUDE OCCUPANCY SENSOR PLACEMENT, SENSITIVITY, AND CONTROL SETTING CALIBRATION. PROPERLY OPERATING OCCUPANCY SENSORS ARE TO TURN OFF LIGHTS WITHIN A REASONABLE PERIOD OF TIME IN UNOCCUPIED SPACES AND SHALL NOT ALLOW LIGHTS TO TURN ON UNLESS SPACE IS OCCUPIED. CONFIRM ALL TIME SWITCHES AND PROGRAMMABLE SCHEDULE CONTROLS ARE PROGRAMMED TO TURN THE LIGHTS OFF. COORDINATE WITH MECHANICAL, HVAC SYSTEM TO BE ON DURING TESTING.
   B. LIGHTING CONTROL SYSTEM FUNCTIONAL TESTING IS TO BE PERFORMED BY THIRD PARTY REPRESENTATIVE AS PER ASHRAE-90.1-2013 9.4.3. TESTING CERTIFICATION IS TO BE INCLUDED IN CLOSE-OUT DOCUMENTS.
   C. THE INTERCONNECTION OF LIGHTING CONTACTORS AND/OR CONTROL PANEL TO SECURITY SYSTEM OR TIMECLOCK TO BE TESTED TO ENSURE LIGHTING IS SHUT OFF WHEN SECURITY SYSTEM IS IN ARMED MODE OR TIMECLOCK INDICATES.
5. **RECORD DRAWINGS:** ELECTRICAL CONTRACTOR SHALL PROVIDE RECORD DRAWINGS OF ACTUAL INSTALLATION TO OWNERS WITHIN 30 DAYS OF SYSTEM ACCEPTANCE. DRAWINGS ARE TO INCLUDE SINGLE LINE DIAGRAM OF DISTRIBUTION SYSTEM; FLOOR PLANS SHOWING THE LOCATION OF DISTRIBUTION EQUIPMENT AND THE AREAS SERVED BY THAT EQUIPMENT; CHANGES TO LIGHTING, LIGHTING CONTROLS & CIRCUITING.

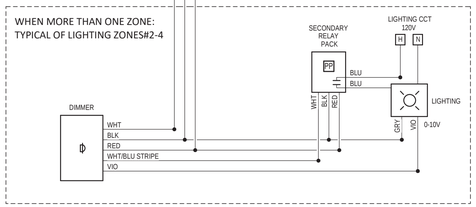
INSPECTIONS BY CONSULTANT

1. CONTRACTOR SHALL NOTIFY CONSULTANTS WHEN INSPECTIONS ARE REQUIRED. ALLOW FOR MINIMUM OF THREE BUSINESS DAYS OF NOTICE PRIOR TO INSPECTION.
2. INSPECTIONS ARE REQUIRED AT THE FOLLOWING MILESTONES:
   A. DEVICE ROUGH-IN (PRIOR TO DRYWALL)
   B. FINAL INSPECTION

All Sheet Notes

#	NOTE
M1	PROVIDE 2P-25A CIRCUIT BREAKER IN EXISTING EATON PANEL LP-K1.UPDATE THE PANEL SCHEDULE ACCORDINGLY. Mechanical
P2	PROVIDE 1P-15A DEDICATED CIRCUIT FOR SCP.1 TYPE ELECTRICAL EQUIPMENT FOR SPARK DETECTION & WIRING IN THE EXISTING EATON PANEL LP-K1. UPDATE THE PANEL SCHEDULE ACCORDINGLY.
P5	PROVIDE 1P-15A CIRCUIT BREAKER & WIRING IN THE EXISTING EATON PLR-1A LP-UU, (X-1) REFERS TO THE GROUPING OF THE CIRCUIT. UPDATE THE PANEL SCHEDULE ACCORDINGLY.
P7	EXISTING SURFACE WIREMOLD TO BE EXTEND & REWORK TO EXISTING CIRCUIT.





WIRING DIAGRAM FOR UP TO 4 DIMMABLE MOTION CONTROLLED LIGHTING ZONES

EACH LIGHTING ZONE IS CONTROLLED BY IT'S OWN DIMMER SWITCH. MOTION SENSORS FROM ALL ZONES DETERMINE OCCUPANCY. MULTIPLE MOTION SENSORS PER ZONE MAY BE USED TO INCREASE COVERAGE. DIMMER TYPE DETERMINES AUTO-ON OR MANUAL-ON, AS PER SCHEDULE.

6 One Or More Dimming Zones

DEVICE/EQUIPMENT OPTIONS & TAGS

(?)	SHEET NOTE LABEL - REFER TO SHEET NOTES
CL	CEILING MOUNT
FL	FLOOR MOUNT
GFI	DEVICE WIRED TO LOAD SIDE OF GFCI RECEPTACLE/BREAKER
RP	REPLACE EXISTING DEVICE WITH NEW DEVICE IN SAME LOCATION.
REL	RELOCATED DEVICE/EQUIPMENT. REWORK WIRING AS NEEDED. IF APPLICABLE PROVIDE NEW DEVICE BOX & CONNECTORS.

NEW DEVICE/EQUIPMENT

TO BE REMOVED

EXISTING TO REMAIN

TYPICAL SYMBOL LINETYPE FOR DEVICES or EQUIPMENT

1 New, Removed, Existing

RS-2 — EQUIPMENT TYPE ID (AS PER MECHANICAL EQUIPMENT SCHEDULE)
A-4/6/8 — EQUIPMENT CIRCUIT
@1800mm AFF — EQUIPMENT SPECIFIC DETAILS.
M — EQUIPMENT SYMBOL (VARIES)

2 Tags - Mechanical Equipment

27S — DEVICE TYPE ID (AS PER LOW VOLTAGE DEVICE SCHEDULE)
TV@1800mm — DEVICE SPECIFIC MOUNTING INSTRUCTIONS
DEVICE SYMBOL (VARIES)

DEVICES WITH UNIQUE SYMBOL & TYPE MAY NOT HAVE A TYPE ID. DEVICES MOUNTED BESIDE COUNTER HEIGHT ELECTRICAL DEVICES ARE TO ALSO BE MOUNTED AT COUNTER HEIGHT.

3 Tags - Low Voltage Devices

RS-2 — DEVICE TYPE ID (AS PER ELECTRICAL DEVICE SCHEDULE)
A-4 — DEVICE CIRCUIT
TV@1800mm — DEVICE SPECIFIC DETAILS
DEVICE SYMBOL (VARIES)

4 Tags - Electrical Devices

V1 — DEVICE TYPE ID (AS PER LIGHTING CONTROL DEVICE SCHEDULE)
(Z1.1) — LIGHTING CONTROL ZONE ID
0-10V — 0-10V WIRING REQUIRED BETWEEN CONTROL DEVICE AND ALL LIGHTING FIXTURES WITHIN THE SAME CONTROL ZONE.
A-4 — CIRCUIT # USED FOR ZONE
DEVICE SYMBOL (VARIES)

5 Tags - Lighting Devices

Electrical Sheet List

Sheet #	Sheet Name
E1	Electrical Legend & Specification
E2	Electrical Demo Plan IT RM & Cosmetology RM
E3.1	Electrical Proposed Plan 1st Floor
E3.2	Electrical Proposed Plan 2nd Floor
E4	Electrical Wiring Diagram & Schedules

Total: 5

ELECTRICAL LEGEND

SCHEDULE (x = TYPE)	EXISTING	DEMO	NEW	DESCRIPTION
LIGHTING DEVICE SCHEDULES	$	$	$x	LIGHT SWITCH
			x	DIMMER SWITCH
	MS	MS	MSx	LIGHTING MOTION SENSOR
	PP	PP	PPx	LIGHTING POWER PACK
	TC	TC	TCx	LIGHTING TIME CLOCK
	CNT	CNT	CNTx	LIGHTING CONTACTOR
	PC	PC	PCx	LIGHTING PHOTOCELL
LIGHTING FIXTURE SCHEDULES			x	EXIT SIGN, CEILING MOUNT, HATCH = SIGN, ARROW = DIRECTION
			x	EXIT SIGN, WALL MOUNT, HATCH = SIGN, ARROW=DIRECTION
			x	EXIT / EMERG COMBO, WALL MOUNT, HATCH=SIGN, ARROW=DIRECTION
			x	EMERGENCY LIGHT, BATTERY UNIT
	,	,	x	EMERGENCY LIGHT, REMOTE HEAD
			x	LIGHTING FIXTURE
			x	WALL MOUNTED LIGHTING FIXTURE
			x	LIGHTING FIXTURE
ELECTRICAL EQUIPMENT SCHEDULES				ELECTRICAL POWER PANEL
				ELECTRICAL DISCONNECT (FUSED OR UNFUSED)
				ELECTRICAL EQUIPMENT - MISCELLANEOUS
MECHANICAL EQUIPMENT SCHEDULES	M	M	Mx	MECHANICAL EQUIPMENT CONTROL
	M	M	Mx	MECHANICAL EQUIPMENT - HARDWIRE CONNECTION
	M	M	Mx	MECHANICAL EQUIPMENT c/w LOCAL DISCONNECT
ELECTRICAL DEVICE SCHEDULES				#6 AWG CU TO BUILDING GROUND
			x	HARDWIRE CONNECTION
			x	DUPLEX RECEPTACLE 15A
			x	DUPLEX RECEPTACLE 15A - COUNTER (100mm ABOVE BACKSPLASH)
			x	DUPLEX RECEPTACLE 20A
			x	DUPLEX RECEPTACLE 20A - COUNTER (100mm ABOVE BACKSPLASH)
			x	SPECIAL RECEPTACLE
LOW VOLTAGE DEVICE SCHEDULES			x	DATA OUTLET
			x	PUSHBUTTON (BOX & 16mm EMT TO ACCESSIBLE CEILING SPACE)
				UNIVERSAL WASHROOM: ASSISTANCE REQUESTED AUDIBLE VISUAL SIGNAL
				COMMUNICATION BACKBOARD - PLYWOOD GOOD ONE SIDE
FIRE ALARM DEVICE SCHEDULES	SA x	SA x	SA x	SMOKE ALARM
	CO	CO	CO	CO2 ALARM - 120V C/W BATTERY BACKUP
	SM	SM	SM	SMOKE/CO2 ALARM - 120V C/W BATTERY BACKUP, STROBE VISUAL
				FIRE ALARM MANUAL PULL STATION
				FIRE ALARM HORN
			zz	FIRE ALARM HORN STROBE (zz = CANDELA, 15cd DEFAULT)
			zz	FIRE ALARM STROBE (zz = CANDELA, 15cd DEFAULT)
	SD	SD	SD x	FIRE ALARM SMOKE DETECTOR
	HD	HD	HD	FIRE ALARM HEAT DETECTOR
	SD R	SD R	SD R	FIRE ALARM SMOKE DETECTOR c/w FORM 'C' RELAY SUB-BASE
	HD R	HD R	HD R	FIRE ALARM HEAT DETECTOR c/w FORM 'C' RELAY SUB-BASE
				FIRE ALARM BELL
			or	POLYCARBONATE COVER WITH ALARM OVER MANUAL PULL STATION
				FIRE ALARM END OF LINE RESISTOR

PANEL: LP-K2

Location: **Volts:** 208/120 WYE **A.I.C. Rating:**
Supply From: **Phases:** 3 **Mains Type:** MLO
Mounting: Surface **Wires:** 4 **Mains Rating:** 100 A
Enclosure: Type 1 **MCB Rating:**

Notes:
Hatch shows existing to remain. Existing Square D panel NQOB.

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
K2-1	Split Recept	15 A	2				3	15 A	Disc Sander	K2-2
K2-3										K2-4
K2-5										K2-6
K2-7	Split Recept	15 A	2				3	15 A	Planer	K2-8
K2-9										K2-10
K2-11										K2-12
K2-13	Split Recept	15 A	2				3	15 A	Table Saw	K2-14
K2-15										K2-16
K2-17										K2-18
K2-19	Split Recept	15 A	2				2	15 A	Split Recept	K2-20
K2-21	Joiner	15 A	1							K2-22
K2-23	R1.CR1 - Cord Reel	15 A	1				2	15 A	Split Recept	K2-24
K2-25	R1.CR1 - Cord Reel	15 A	1							K2-26
K2-27	R1.CR1 - Cord Reel	15 A	1				1	15 A	R1.CR1 - Cord Reel	K2-28
K2-29	R1.CR1 - Cord Reel	15 A	1				1	15 A	R1.CR1 - Cord Reel	K2-30

Notes:

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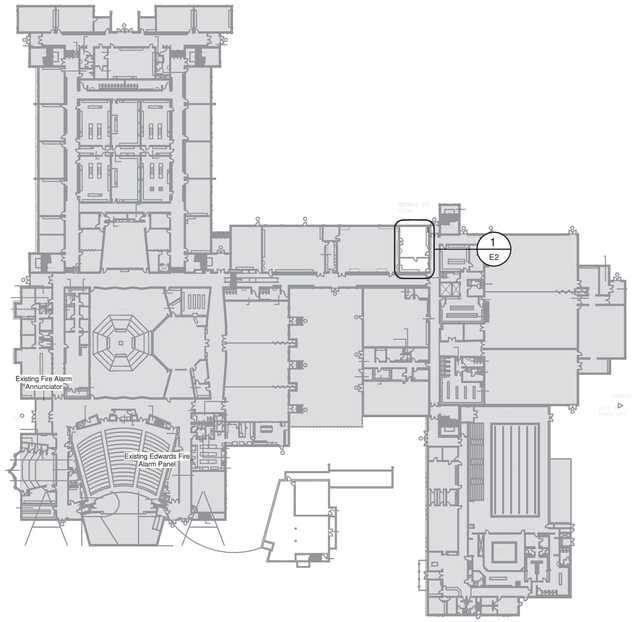
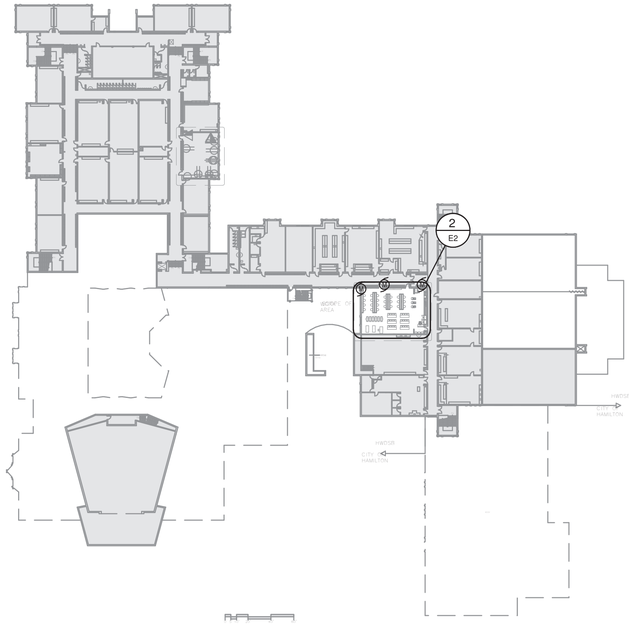
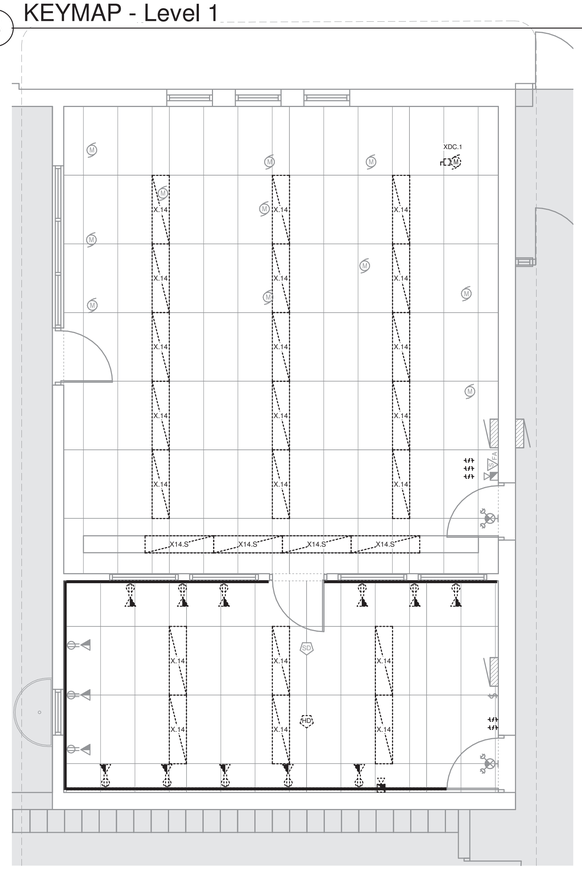
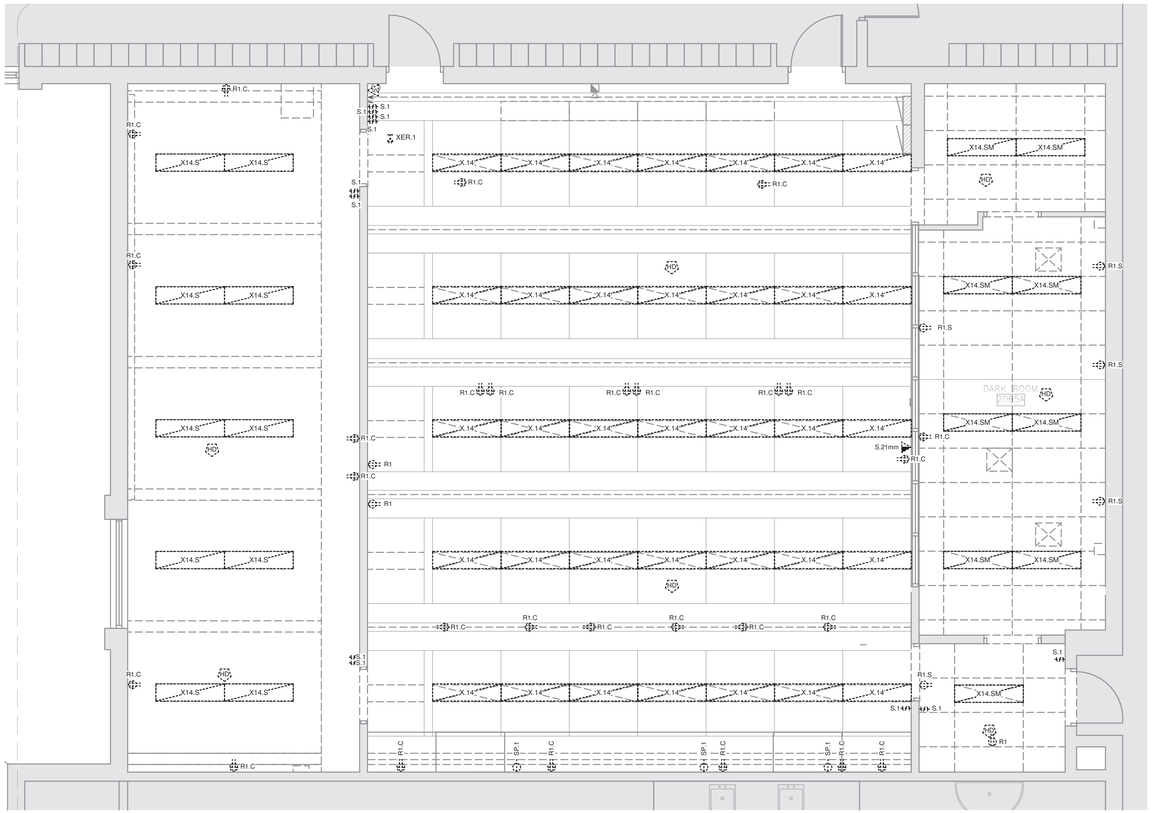




5 KEYMAP - Level 1



3 KEYMAP - Level 2



1 - Total Removed - Low Voltage Device Schedule

CURRENT SCHEDULE PHASE: Tender — SHOWING PHASE ITEMS: None

QTY	Type	Conduit	Description	Phase Added	Phase Removed
11	FS.21	21mm EMT	Std. recessed device Box & conduit to accessible ceiling; Conduit Bushing	EXISTING	Tender
1	S.21mm	21mm EMT	Surface Mount Device Box & Conduit to accessible ceiling; Conduit Bushing	EXISTING	Tender

Total: 12

3 - Total Removed - Electrical Device Schedule

CURRENT SCHEDULE PHASE: Tender — SHOWING PHASE ITEMS: None

Qty	Type ID	Description	Type Comments	Phase Added	Phase Removed
14	R1	15A Duplex Receptacle	120V 5-15R; 1-Gang Box	EXISTING	Tender
28	R1.C	15A Duplex Receptacle	120V 5-15R; Mounted at Counter Height, 4" Above Backsplash.	EXISTING	Tender
5	R1.S	15A Duplex Receptacle	120V 5-15R; Surface mount device box.	EXISTING	Tender
3	SP.1	20A Single Outlet Receptacle	Outlet for Hairdryers;Recessed; Mounted at Counter Height. Provide lamcoid label stating "FOR HAIRDRYER USE ONLY"	EXISTING	Tender

Total: 50

4 - Total Removed - Fire Alarm Device Schedule

CURRENT SCHEDULE PHASE: Tender — SHOWING PHASE ITEMS: None

QTY	Model	Description	Type Comments	Phase Added	Phase Removed
1		ANNUNCIATING	Horn	EXISTING	Tender
1		ANNUNCIATING	Speaker	EXISTING	Tender
8	RoR	Fire Alarm Initiating	Heat Detector, 57C, Rate of Rise	EXISTING	Tender

Total: 10

6 - Total Removed - Lighting Fixture Schedule

CURRENT SCHEDULE PHASE: Tender — SHOWING PHASE ITEMS: None

Qty	Image	Type	Mfg.	Model#	Mounting	Height	Description	Remarks	Phase Added	Phase Removed
14		X14.S	TBD	TBD			TBD	Existing Suspended lighting fixture	EXISTING	Tender
9		X14.SM	TBD	TBD			TBD	Existing Lighting Fixture surface mount	EXISTING	Tender
56		X.14	TBD	TBD			TBD	TBD	EXISTING	Tender
1		XER.1		Existing	Wall	2300mm	Emergency Remote - 1 Head;	Assumed 9W Incandescent	EXISTING	Tender

Total: 80

5 - Total Removed - Lighting Control Device Schedule

CURRENT SCHEDULE PHASE: Tender — SHOWING PHASE ITEMS: None

Qty	Type	Mfg.	Model	Description	Type Comments	Phase Added	Phase Removed
16	S.1	TBD	TBD	Switch, 1-Pole Architectural Decora Style	120V	EXISTING	Tender

Total: 16

7 - Total Removed - Mechanical Equipment Schedule

E=Electrical, M=Mechanical

CURRENT SCHEDULE PHASE: Tender — SHOWING PHASE ITEMS: None

QTY	EQUIPMENT		ELECTRICAL						REMOTE ITEMS					
	Type ID	Description	VOLTAGE	PHASE	hp - A - kW	MCA	MOCP	Interlock With	Isolation Switch By	Weather Proof	Wiring By:	Item Comments	Phase Added	Phase Removed
1	XDC.1	Existing Dust Collector	120 V	1		12 A	0 A			No			EXISTING	Tender

1

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LICENSED PROFESSIONAL ENGINEER
S. HOLDITCH
100108001
Apr 10, 2026
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
3	Issued For Tender	Apr 10, 2026
2	Issued For Review	Mar 30, 2026
1	Issued For Permit	Dec 12, 2025

REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

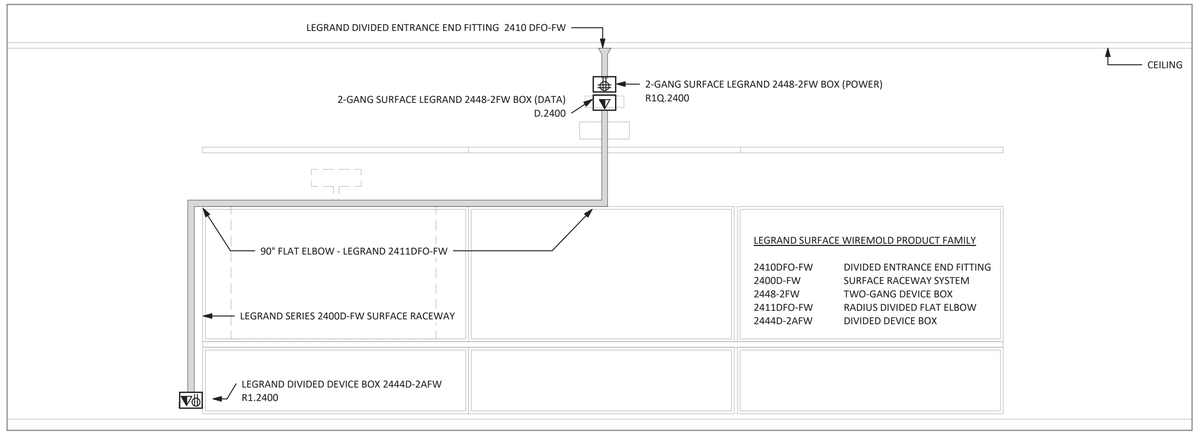
PROJECT NAME
25077 - HWDSB Macnab
145 Magnolia Drive,
Hamilton City, ON

DRAWING TITLE
Electrical Demo Plan IT RM & Cosmetology RM

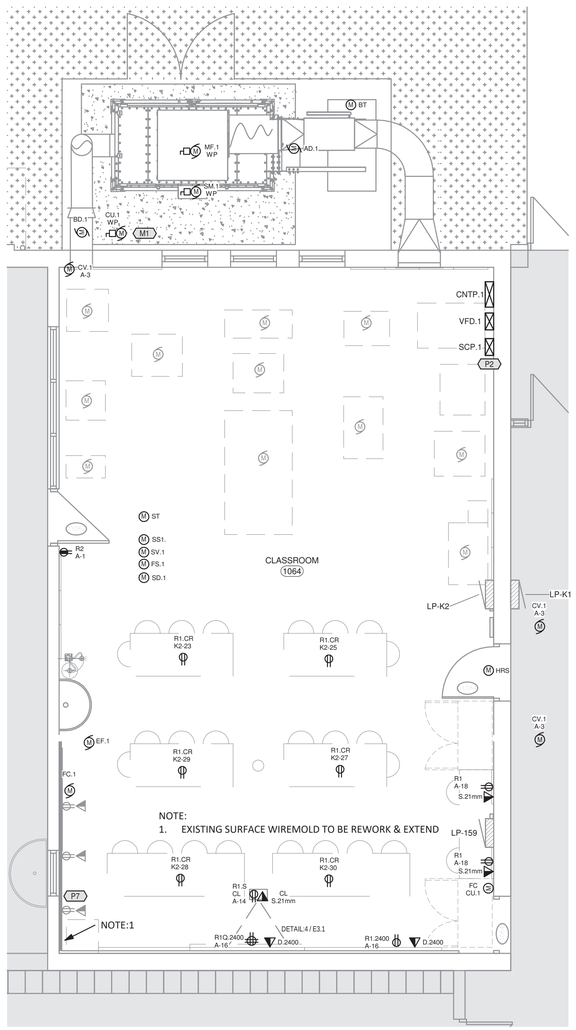
SCALE: As indicated
SHEET SIZE: 24"x36"
PROJECT NUMBER: 25077
DRAWING NUMBER: **E2**

1 Demo - Level 1 - Electrical Plan
1 : 50

2 Demo - Level 2 - Electrical Plan
1 : 50

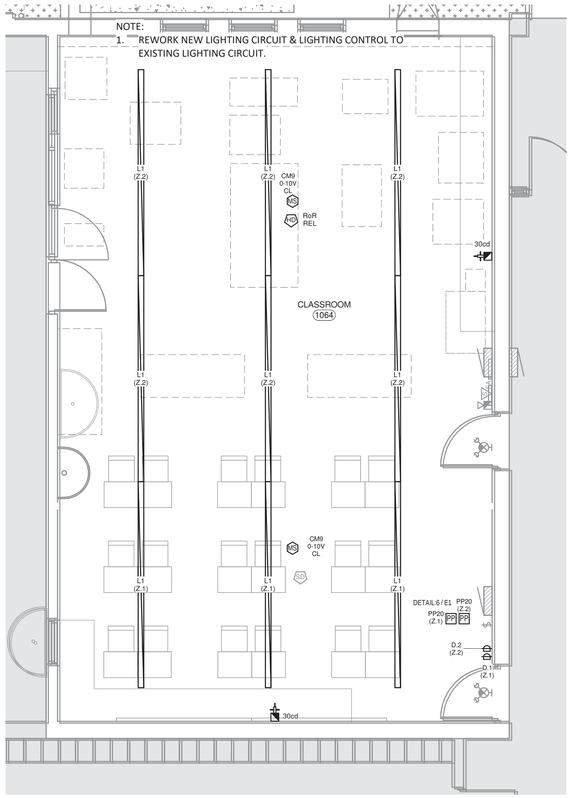


4 Typical Teaching Wall



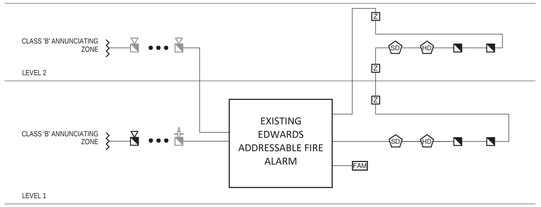
1 Proposed - Level 1 - Power & Data Plan

1 : 50



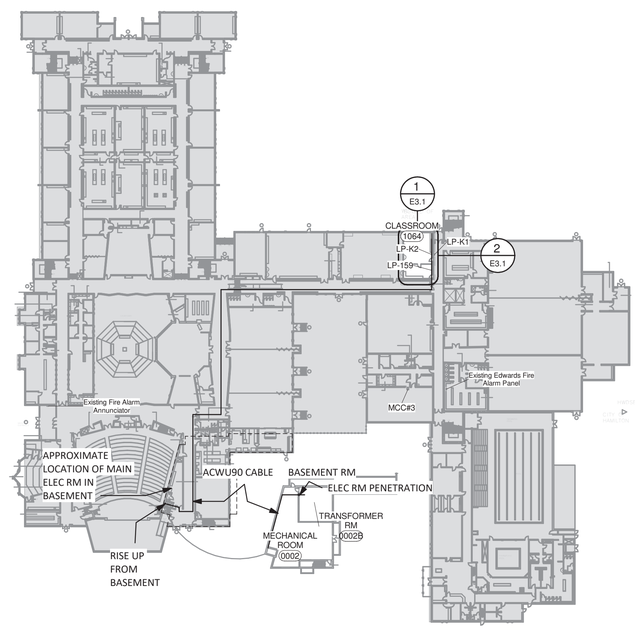
2 Proposed - Level 1 - Lighting & Life-Safety

1 : 50



FIRE ALARM NOTES:
1. RISER SHOWS TOPOLOGY ONLY. REFER TO FLOOR PLANS AND FIRE ALARM DEVICE SCHEDULE FOR ACTUAL DEVICE COUNTS.
2. PROVIDE SEPARATE ANNUNCIATING ZONE WIRING FOR STROBES OR ALTERNATIVELY PROVIDE SYNCHRONIZATION MODULE TO USE STROBES ON HORN ANNUNCIATING CIRCUIT.
3. UPDATE FIRE ALARM ANNUNCIATOR PANEL WITH NEW INITIATING ZONE.

5 Fire Alarm Riser



3 KEYMAP - Level 1

Sheet Notes

#	NOTE
M1	PROVIDE 2P-25A CIRCUIT BREAKER IN EXISTING EATON PANEL LP-K1.UPDATE THE PANEL SCHEDULE ACCORDINGLY. Mechanical
P2	PROVIDE 1P-15A DEDICATED CIRCUIT FOR SCP.1 TYPE ELECTRICAL EQUIPMENT FOR SPARK DETECTION & WIRING IN THE EXISTING EATON PANEL LP-K1. UPDATE THE PANEL SCHEDULE ACCORDINGLY.
P7	EXISTING SURFACE WIREMOLD TO BE EXTEND & REWORK TO EXISTING CIRCUIT.

NO.	DESCRIPTION	DATE
3	Issued For Tender	Apr 10, 2026
2	Issued For Review	Mar 30, 2026
1	Issued For Permit	Dec 12, 2025

REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME
25077 - HWDSB Macnab
145 Magnolia Drive, Hamilton City, ON

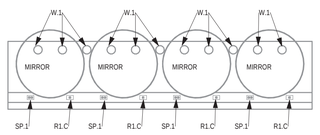
DRAWING TITLE
Electrical Proposed Plan 1st Floor

SCALE: As indicated
SHEET SIZE: 24"x36"
PROJECT NUMBER: 25077
DRAWING NUMBER: **E3.1**

Sheet Notes

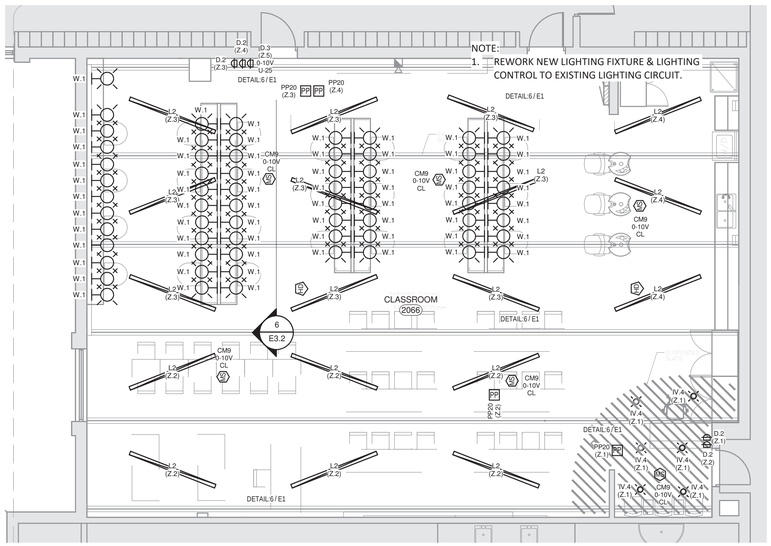
#	NOTE
P5	PROVIDE 1P-15A CIRCUIT BREAKER & WIRING IN THE EXISTING EATON PLR-1A LP-UU, (X-1) REFERS TO THE GROUPING OF THE CIRCUIT. UPDATE THE PANEL SCHEDULE ACCORDINGLY.

LIGHTING FIXTURES



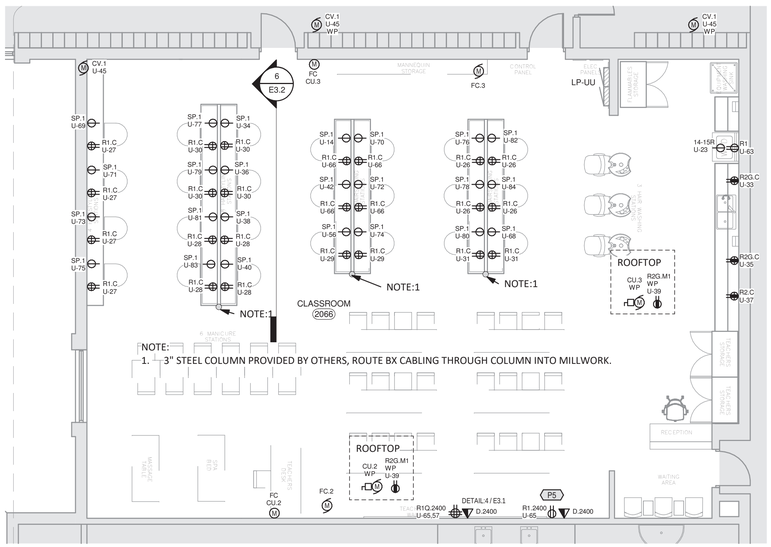
6 Typical Elevation for Hair Styling Station

1 : 50



2 Proposed - Level 2 - Lighting & Life-Safety Plan

1 : 75



1 Proposed - Level 2 - Power & Data Plan

1 : 75

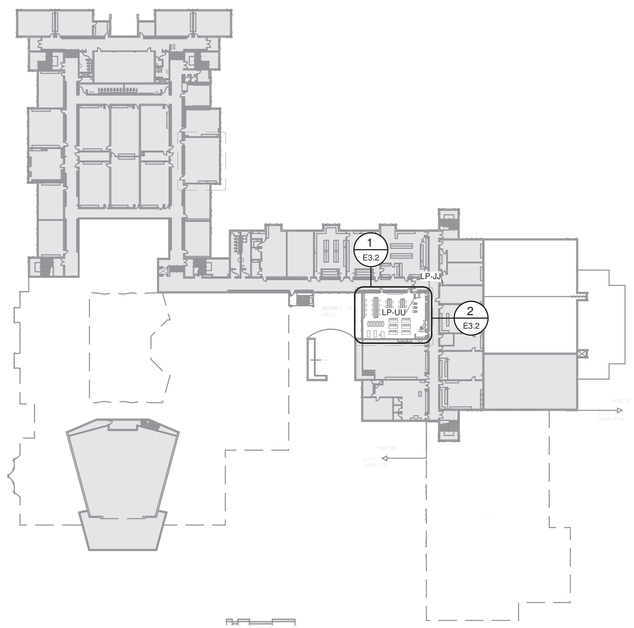
PANEL: LP-UU

Location: | **Volts:** 208/120 WYE | **A.I.C. Rating:**
Supply From: | **Phases:** 3 | **Mains Type:** MLO
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 200 A
Enclosure: Type 1 | **MCB Rating:**

Notes:
Hatch Shows Existing to remain

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
U-1	Teacher's Desk	15 A	1				1	15 A	West Storage RM	U-2
U-3	West Storage RM	15 A	1				1	15 A	West Storage RM	U-4
U-5	West Bench	15 A	1				1	15 A	West Bench	U-6
U-7	East Bench	15 A	1				1	15 A	East Bench	U-8
U-9	Centre Bench	15 A	1				1	15 A	Centre Bench	U-10
U-11	South Counter	15 A	1				1	15 A	South Counter	U-12
U-13	South Counter	15 A	1				1	20 A	SP.1 - Hair Styling Station 6 - 1	U-14
U-15	South Counter	15 A	1				1	15 A	Inst. RM	U-16
U-17	Inst. RM	15 A	1				1	15 A	Inst. RM	U-18
U-19	Inst. RM	15 A	1				1	15 A	Inst. RM	U-20
U-21	Pilot Light	15 A	1				1	15 A	R1.C - Curling Iron 4 -1	U-22
U-23	Classroom Dryer	15 A	1				1	15 A	Spare	U-24
U-25	LTG - Wall Globe	15 A	1				1	15 A	R1.C - Curling Iron 6 -3	U-26
U-27	R1.C - Curling Iron 4 -2	15 A	1				1	15 A	R1.C - Curling Iron 8 -1	U-28
U-29	R1.C - Curling Iron 6 -2	15 A	1				1	15 A	R1.C - Curling Iron 8 -2	U-30
U-31	R1.C - Curling Iron 6 -4	15 A	1							U-32
U-33	Counter Rec 1	20 A	1				1	20 A	SP.1 - Hair Styling Station 8 -5	U-34
U-35	Counter Rec 2	20 A	1				1	20 A	SP.1 - Hair Styling Station 8 -6	U-36
U-37	Counter Rec 3	20 A	1				1	20 A	SP.1 - Hair Styling Station 8 -7	U-38
U-39	Rooftop Cleaning Rec	20 A	1				1	20 A	SP.1 - Hair Styling Station 8 -8	U-40
U-41	Space	--	--				1	20 A	SP.1 - Hair Styling Station 6 - 2	U-42
U-43	Spare	15 A	1				1	15 A	Dark RM. Recept	U-44
U-45	CV.1 - Control Valve	15 A	1				1	15 A	Spare	U-46
U-47	Spare	15 A	1				2	15 A	Spare	U-48
U-49	Spare	15 A	2							U-50
U-51							2	15 A	Spare	U-52
U-53	Spare	15 A	2							U-54
U-55							1	20 A	SP.1 - Hair Styling Station 6 - 3	U-56
U-57	Spare	15 A	1				2	30 A	Spare	U-58
U-59	Spare	15 A	1							U-60
U-61	Spare	15 A	1				2	30 A	Spare	U-62
U-63	Washer	15 A	1							U-64
U-65	Teaching Wall 1	15 A	1				1	15 A	R1.C - Curling Iron 6 -1	U-66
U-67	Teaching Wall 2	15 A	1				1	20 A	SP.1 - Hair Styling Station 6 - 12	U-68
U-69	SP.1 - Hair Styling Station 4 -1	20 A	1				1	20 A	SP.1 - Hair Styling Station 6 - 4	U-70
U-71	SP.1 - Hair Styling Station 4 -2	20 A	1				1	20 A	SP.1 - Hair Styling Station 6 - 5	U-72
U-73	SP.1 - Hair Styling Station 4 -3	20 A	1				1	20 A	SP.1 - Hair Styling Station 6 - 6	U-74
U-75	SP.1 - Hair Styling Station 4 -4	20 A	1				1	20 A	SP.1 - Hair Styling Station 6 - 7	U-76
U-77	SP.1 - Hair Styling Station 8 -1	20 A	1				1	20 A	SP.1 - Hair Styling Station 6 - 8	U-78
U-79	SP.1 - Hair Styling Station 8 -2	20 A	1				1	20 A	SP.1 - Hair Styling Station 6 - 9	U-80
U-81	SP.1 - Hair Styling Station 8 -3	20 A	1				1	20 A	SP.1 - Hair Styling Station 6 - 10	U-82
U-83	SP.1 - Hair Styling Station 8 -4	20 A	1				1	20 A	SP.1 - Hair Styling Station 6 - 11	U-84

Notes:



3 KEYMAP - Level 2

PANEL: LP-159

Location: | **Volts:** 208/120 WYE | **A.I.C. Rating:**
Supply From: | **Phases:** 3 | **Mains Type:** MLO
Mounting: Surface | **Wires:** 4 | **Mains Rating:** 60 A
Enclosure: Type 1 | **MCB Rating:**

Notes:
Hatch shows existing to remain. Existing Square D panel NQOB.

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
A-1	General Cleaning Rec	20 A	1							A-2
A-3	Power	15 A	1							A-4
A-5										A-6
A-7										A-8
A-9										A-10
A-11										A-12
A-13	Server Rack RCP	15 A	1				1	15 A	Projector	A-14
A-15	East Signs	15 A	1				1	15 A	Teaching Wall	A-16
A-17	Split Plug South	15 A	1				1	15 A	Table Rec	A-18
A-19	Split Plug North	15 A	1				1	15 A	Split Plug West	A-20
A-21							1	15 A	Split Plug West	A-22
A-23							1	15 A	Split Plug South	A-24

Notes:

INTERIOR LIGHTING CONTROL - OBC SB-10 REQUIREMENTS

ROOM / AREA	LOCAL CONTROL	50% AUTO-ON **OR** MANUAL-ON	BI-LEVEL LIGHTING CONTROL	AUTOMATIC PARTIAL-OFF	AUTOMATIC FULL-OFF **OR** SCHEDULED-OFF
LOUNGE/BREAK RM	REQUIRED	REQUIRED	REQUIRED		REQUIRED
CLASSROOM / TRAINING / MEETING RM	REQUIRED	REQUIRED	REQUIRED		AUTOMATIC ONLY
CONFERENCE RM	REQUIRED	REQUIRED	REQUIRED		AUTOMATIC ONLY
COPY / PRINT ROOM	REQUIRED	REQUIRED	REQUIRED		AUTOMATIC ONLY
CORRIDOR	REQUIRED	REQUIRED		REQUIRED	REQUIRED
LOBBY	REQUIRED			REQUIRED	REQUIRED
OFFICE - ENCLOSED & <=250 FT²	REQUIRED	REQUIRED	REQUIRED		AUTOMATIC ONLY
OFFICE - ENCLOSED & >=250 FT²	REQUIRED	REQUIRED	REQUIRED		REQUIRED
OFFICE - OPEN PLAN	REQUIRED	REQUIRED	REQUIRED		REQUIRED
RESTROOM	REQUIRED				AUTOMATIC ONLY
STAIRWELL	REQUIRED			REQUIRED	REQUIRED
STORAGE RM < 50FT²	REQUIRED				REQUIRED
STORAGE RM >=50 FT² & <= 1000 FT²	REQUIRED	REQUIRED			REQUIRED
STORAGE RM - ALL OTHER	REQUIRED	REQUIRED		REQUIRED	REQUIRED
WAREHOUSE - STORAGE AREA	REQUIRED	REQUIRED	REQUIRED	REQUIRED	REQUIRED

TABLE HEADER DEFINITIONS

LOCAL CONTROL	THERE SHALL BE ONE OR MORE MANUAL LIGHTING CONTROLS IN THE SPACE THAT CONTROLS ALL OF THE LIGHTING IN THE SPACE. EACH CONTROL DEVICE SHALL CONTROL AN AREA: 1. NO LARGER THAN 2500 FT² IF THE SPACE IS <= 10,000 FT² AND 2. NO LARGER THAN 10,000 FT² OTHERWISE. THE DEVICE INSTALLED TO COMPLY WITH THIS PROVISION SHALL BE READILY ACCESSIBLE AND LOCATED SO THAT THE OCCUPANTS CAN SEE THE CONTROLLED LIGHTING WHEN USING THE CONTROL DEVICE. EXCEPTION: • REMOTE LOCATION OF THIS LOCAL CONTROL DEVICE OR DEVICES SHALL BE PERMITTED FOR REASONS OF SAFETY OR SECURITY WHEN EACH REMOTE CONTROL DEVICE HAS AN INDICATOR PILOT LIGHT AS PART OF OR NEXT TO THE CONTROL DEVICE AND THE LIGHT IS CLEARLY LABELLED TO IDENTIFY THE CONTROLLED LIGHTING.
50% AUTO-ON	NO MORE THAN 50% OF THE LIGHTING POWER FOR THE GENERAL LIGHTING SHALL BE ALLOWED TO BE AUTOMATICALLY TURNED ON, AND NONE OF THE REMAINING LIGHTING SHALL BE AUTOMATICALLY TURNED ON.
MANUAL-ON	NONE OF THE LIGHTING SHALL BE AUTOMATICALLY TURNED ON.
30 TO 70% BI-LEVEL LIGHTING CONTROL	THE GENERAL LIGHTING IN THE SPACE SHALL BE CONTROLLED SO AS TO PROVIDE AT LEAST ONE INTERMEDIATE STEP IN LIGHTING POWER OR CONTINUOUS DIMMING IN ADDITION TO FULL ON AND FULL OFF. AT LEAST ONE INTERMEDIATE STEP SHALL BE BETWEEN 30% AND 70% (INCLUSIVE) OF FULL LIGHTING POWER.
AUTOMATIC PARTIAL-OFF	THE GENERAL LIGHTING POWER IN THE SPACE SHALL BE AUTOMATICALLY REDUCED BY AT LEAST 50% WITHIN 20 MINUTES OF ALL OCCUPANTS LEAVING THE SPACE.
AUTOMATIC FULL-OFF	ALL LIGHTING SHALL BE AUTOMATICALLY SHUT OFF WITHIN 20 MINUTES OF ALL OCCUPANTS LEAVING THE SPACE. A CONTROL DEVICE MEETING THIS REQUIREMENT SHALL CONTROL NO MORE THAN 5000 ft². EXCEPTIONS: • GENERAL LIGHTING AND TASK LIGHTING IN SHOP AND LABORATORY CLASSROOMS. • LIGHTING REQUIRED FOR 24/7 OPERATION.
SCHEDULED SHUT-OFF	ALL LIGHTING SHALL BE AUTOMATICALLY SHUT OFF DURING PERIODS WHEN THE SPACE IS SCHEDULED TO BE UNOCCUPIED USING EITHER: 1. A TIME-OF-DAY OPERATED CONTROL DEVICE THAT AUTOMATICALLY TURNS THE LIGHTING OFF AT SPECIFIC PROGRAMMED TIMES, OR 2. A SIGNAL FROM ANOTHER AUTOMATIC CONTROL DEVICE OR SECURITY SYSTEM. THE CONTROL DEVICE OR SYSTEM SHALL PROVIDE INDEPENDENT CONTROL SEQUENCES THAT: 1. CONTROL THE LIGHTING FOR AN AREA OF NO MORE THAN 25,000 FT². 2. INCLUDE NO MORE THAN ONE FLOOR, AND 3. SHALL BE PROGRAMMED TO ACCOUNT FOR WEEKENDS AND HOLIDAYS. ANY MANUAL CONTROL INSTALLED TO PROVIDE OVERRIDE OF THE SCHEDULED SHUTOFF CONTROL SHALL NOT TURN THE LIGHTING ON FOR MORE THAN TWO HOURS PER ACTIVATION DURING SCHEDULED OFF PERIODS AND SHALL NOT CONTROL MORE THAN 5000 FT². EXCEPTIONS: • LIGHTING IN SPACES WHERE LIGHTING IS REQUIRED FOR 24/7 CONTINUOUS OPERATION.

4 dbASHRAE - Lighting Requirements

LICENSED PROFESSIONAL ENGINEER
S. HOLDITCH
100108001
Apr 10, 2026
PROVINCE OF ONTARIO

NO.	DESCRIPTION	DATE
3	Issued For Tender	Apr 10, 2026
2	Issued For Review	Mar 30, 2026
1	Issued For Permit	Dec 12, 2025

REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME
25077 - HWDSB Macnab
145 Magnolia Drive, Hamilton City, ON

DRAWING TITLE
Electrical Proposed Plan 2nd Floor

SCALE	DRAWING NUMBER
As indicated	**E3.2**
SHEET SIZE: 24"x36"	
PROJECT NUMBER: 25077	

DUST COLLECTOR DUCTWORK EQUIPOTENTIAL BONDING REQUIREMENTS

1. **BONDING CONDUCTOR:** The equipotential bonding conductor shall be a minimum #6 AWG copper conductor with green or green/yellow striped insulation.
   - Indoor Sections: Standard #6 AWG green or green/yellow striped insulated copper conductor.
   - Exterior Sections: The insulated bonding conductor shall be marked as sunlight-resistant (UV-rated) and be suitable for wet locations.
   - Code Requirement Note: Equipotential bonding and grounding of dust collector ductwork is required by Ontario Fire Code Section 5.3.1.5(1), which mandates that electrically conducting parts of conveying systems, dust collectors, and dust-producing machines located in an atmosphere containing combustible dusts shall be electrically bonded and grounded. Conductor sizing and installation methods are applied in accordance with OESC Rules 10-708 and 10-612.
2. **ROUTING & MECHANICAL PROTECTION:** The bonding conductor shall be routed and adequately secured along the ductwork as permitted by OESC Rule 10-702 1). Where the bonding conductor is exposed to mechanical damage, it shall be suitably protected in accordance with OESC Rule 10-612 6).
3. **LUG PLACEMENT & ATTACHMENT (NO DUCT PENETRATIONS):** To comply with OESC Rule 12-010 1) and maintain a smooth interior airstream, screws, bolts, or rivets shall NOT penetrate the interior wall of the ductwork.
   - A bonding jumper is mandatory at every flange joint where a non-conductive gasket is present, or where bare metal-to-metal contact cannot be confirmed.
   - Bonding jumpers shall be installed across any flexible, non-metallic, or vibration-isolating connection in the duct system.
   - At all remaining joints, the contractor may rely on bolt continuity, provided it is verified through the resistance testing detailed in the Testing and Verification section below. If any joint fails the resistance test, a bonding jumper shall be retrofitted at that joint. All bonding lugs shall be Approved (e.g., CSA certified).
   - Pricing Note: Assume eight (8) minimum bonding jumper locations for the base bid; additional jumpers shall be provided as required for flexible/isolation connections and to satisfy continuity testing.
4. **GALVANIC CORROSION PREVENTION:** The bonding connection shall utilize tin-plated copper compression lugs or a listed bonding clamp suitable for galvanized steel to minimize deterioration from dissimilar metals. Stainless steel hardware and a suitable corrosion-inhibiting compound shall be used at the interface. Compound shall be applied around/over the completed connection (after torquing) to seal against moisture; it shall not be applied in a way that reduces bare metal-to-metal contact.
5. **SURFACE PREPARATION:** Any non-conductive coatings (e.g., paint, enamel, or dirt) must be completely removed at the exact point of electrical contact between the lug/clamp and the ductwork to ensure a clean, bare metal-to-metal connection.
6. **MAIN SYSTEM BONDING CONNECTION:** The entire equipotential ductwork system shall be tied back to the building's electrical bonding system to establish equipotentiality. A main bonding conductor, sized no smaller than #6 AWG copper, shall be routed from the dust collector frame or the main ductwork branch to the bonding bus/terminal of the panelboard, MCC bucket, starter, or disconnect supplying the dust collector. Note: A local junction box is acceptable only where the bonding path is verified back to the source bonding point and the enclosure provides an Approved termination method for #6 AWG copper.
7. **TESTING AND VERIFICATION:** Upon completion of the installation, the electrical contractor shall perform resistance testing to ensure adequate dissipation of static electricity. Continuity shall be verified using a calibrated ohmmeter or equivalent test instrument. A confirmed low-resistance connection at each location, with no open circuits detected, shall be acceptable for sign-off.
   - System Bonding Test: Verify continuity between the bonded ductwork and the building's electrical bonding system at the following locations: (1) The furthest duct equipment branch; (2) The middle of the main ductwork branch; (3) At the dust collector frame.
   - Joint Continuity Test: Verify continuity across each individual flange joint where bolt continuity is being relied upon (where a bonding jumper was not installed). If an open circuit or high resistance is detected, a bonding jumper must be retrofitted.
8. **SIGN-OFF AND DOCUMENTATION:** At the end of the project, the contractor shall provide a formal sign-off letter and test report to the engineer and owner confirming that the equipotential bonding is complete. The documentation must include: instrument make and model; exact measurement locations; and confirmation of continuity (pass/fail) at each location and tested joint.

3 Dust Collector Ductwork Equipotential Requirements

8 - Total New/Relocated - Mechanical Equipment Controls Schedule

CURRENT SCHEDULE PHASE: Tender SHOWING PHASE ITEMS: Show Previous + New

Qty	Type ID	Relocated	Mfg. (or Equal)	Model	Contractor Supplied Control	Description	Type Comments	Phase Added
1	BT	No			**No**	Burst Indicator	Burst Indicator on explosion relief vent. Provide 2#16 AWG (24VDC).	Tender
3	FC	No			**No**	Fan Coil Unit Controller	Device Box, 16mm EMT to accessible ceiling; Provide pull string	Tender
1	FS.1	No			**No**	Flow Switch	Provide low voltage wiring 2#16 AWG (24VDC).	Tender
1	HRS	No			**No**	Remote Alarm Horn, Horn Reset & Panel Reset.	Provide low voltage wiring 5#16 AWG (24VDC). Confirm location on site.	Tender
1	SD.1	No			**No**	Spark Detector	Provide wiring from SCP.AC, 2#18 3 Cond shielded cable, Term DET 1 & 2" R/+, BK/-, W/S	Tender
1	SS1.	No			**No**	Supervisory Switch	Provide low voltage wiring AWG 24VDC. Confirm location on site.	Tender
1	ST	No			**No**	E-Stop	E Stop, Provide low voltage wiring. 7#16 AWG (24VDC) in 1/2" C. Confirm location on site.	Tender
1	SV.1	No			**No**	Solenoid Valve	Provide low voltage wiring 2#16 AWG (24VDC).	Tender

Total: 10

3 - Total New/Relocated - Electrical Device Schedule

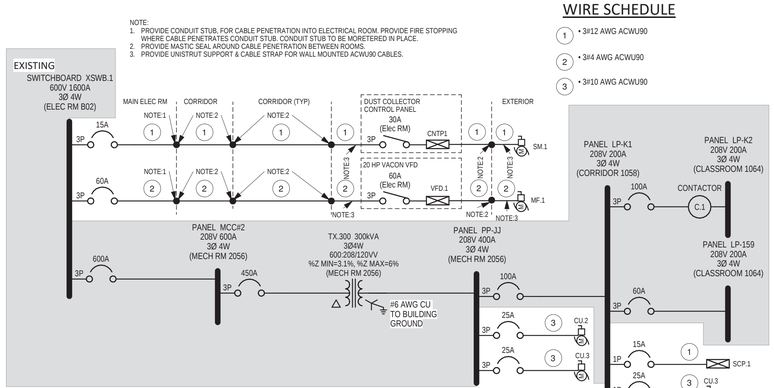
CURRENT SCHEDULE PHASE: Tender SHOWING PHASE ITEMS: Show Previous + New

Qty	Type ID	Relocated	Description	Type Comments	Phase Added
1	14-15R	**No**	Dryer Receptacle Gas	120V 1P 3 Wire; 14-15R Receptacle; Mounted @ ~900mm to Center	Tender
3	R1	**No**	15A Duplex Receptacle	120V 5-15R; 1-Gang Box	Tender
2	R1.2400	**No**	15A Quad Receptacle	One - 15A Duplex receptacle in divided 2 gang surface wiremold box; refer to referenced detail for overall requirements.	Tender
24	R1.C	**No**	15A Duplex Receptacle	120V 5-15R; Mounted at Counter Height, 4" Above Backsplash.	Tender
6	R1.CR	**No**	15A Duplex Receptacle;	120V 5-15R; 1-Gang Box; Dedicated circuit, complete with Gleason Reel GR12340-TR Medium Duty Cord Reel. Ceiling mounted. Complete final location on site.	Tender
1	R1.S	**No**	15A Duplex Receptacle	120V 5-15R; Surface mount device box.	Tender
2	R1Q.2400	**No**	Quad Receptacle	120V - Two - 15A Duplex Receptacle in Divided 2 Gang surface wiremold box; Refer to referenced detail for overall requirements.	Tender
1	R2	**No**	20A Duplex Receptacle	120V 5-20R; 1-Gang Box	Tender
1	R2.C	**No**	20A Duplex Receptacle	120V 5-20R; Mounted at Counter Height, 4" Above Backsplash.	Tender
2	R2G.C	**No**	20A Duplex Receptacle	120V 5-20R; Class A - GFI Receptacle; Mounted at Counter Height, 4" Above Backsplash.	Tender
2	R2G.M1	**No**	20A Duplex GFI Receptacle	120V 5-20R; Class A - GFI Receptacle; Rooftop Receptacle in weatherproof box; Provide Extra-Duty, while in use cover. Provide ballasted galvanized unistrut frame to support receptacle; Mounted not less than 750mm above finished roof as per OESC: 26-710; Located within 7.5m of equipment served.	Tender
24	SP.1	**No**	20A Single Outlet Receptacle	Outlet for Hairdryers;Recessed; Mounted at Counter Height. Provide lamcoid label stating "FOR HAIRDRYER USE ONLY"	Tender

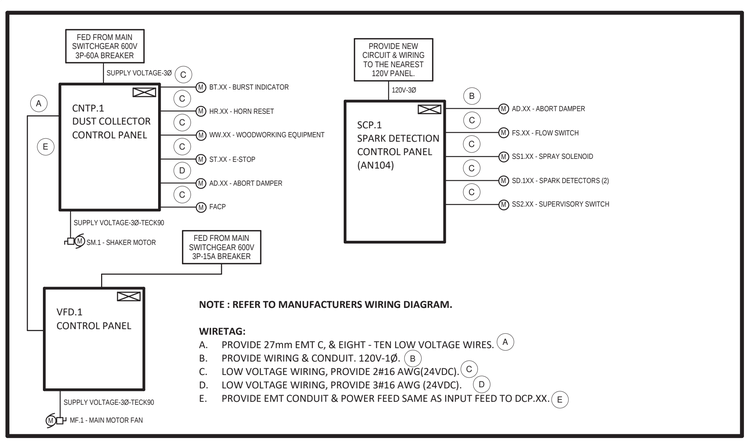
Total: 69

WIRE SCHEDULE

1. • 3#12 AWG ACWU90
2. • 3#4 AWG ACWU90
3. • 3#10 AWG ACWU90



4 Single Line Diagram



1 Dust Collector - Wiring Diagram

1 - Total New/Relocated - Low Voltage Device Schedule

CURRENT SCHEDULE PHASE: Tender SHOWING PHASE ITEMS: Show Previous + New

QTY	Relocated	Type	Conduit	Description	Phase Added
4	No	D.2400	2400 Divided Series Raceway	Refer to referenced detail for overall requirements.	Tender
3	No	5.21mm	21mm EMT	Surface Mount Device Box & Conduit to accessible ceiling; Conduit Bushing	Tender

Total: 7

2 - Total New/Relocated - Electrical Equipment Schedule

CURRENT SCHEDULE PHASE: Tender SHOWING PHASE ITEMS: Show Previous + New

Qty	Equip ID	Relocated	Description	Type Comments	Enclosure	Mounting	Phase Added
1	CNTP.1	No	CNTP1	600V, 3Ø, VFD Controlling 1HP Shaker Motor. Provide local disconnect.	Type 1	Surface	Tender
1	SCP.1	No	SCP	120V, 1Ø, Control panel for spark detection and extiguishing system.	Type 1	Surface	Tender
1	VFD.1	No	VFD.1	600V, 3Ø, VFD Control Panel for Dust Collector. Provide local disconnect.	Type 1	Surface	Tender

Total: 3

4 - Total New/Relocated - Fire Alarm Device Schedule

CURRENT SCHEDULE PHASE: Tender SHOWING PHASE ITEMS: Show Previous + New

QTY	Relocated	Model	Description	Type Comments	Phase Added
2	No	30cd	ANNUNCIATING	Strobe, 30cd	Tender
1	No		FIRE ALARM AUXILLARY	Addressable Module; Confirm final location on site.	Tender
3		RoR	Fire Alarm Initiating	Heat Detector, 57C, Rate of Rise	Tender

Total: 6

5 - Total New/Relocated - Lighting Control Device Schedule

CURRENT SCHEDULE PHASE: Tender SHOWING PHASE ITEMS: Show Previous + New

Qty	Relocated	Type	Mfg.	Model	Description	Type Comments	Phase Added
8	No	CM9	Sensor Switch	CM 9 D	PIR Ceiling Occ. Controlled Dimming, 24V	24V; White; 360deg small motion; 0-10V Dimming; Master on/off control by local switch; Provide surface mount device box.	Tender
1	No	D.1	Sensor Switch	SPODM WH	SwitchPod, Auto On, 24V, Push Button		Tender
5	No	D.2	Sensor Switch	SPODM SA WH	SwitchPod, Manual On, 24V, Push Button		Tender
1	No	D.3	Sensor Switch	SPODMRA D WH	Line Voltage Dimming Wall Switch	120V, 0-10V Dimming, Push Button; Max/Min dimming range adjustable;	Tender
6	No	PP20	Sensor Switch	PP20	Class 1 120V, to Class 2 15V Power / Relay Pack	Plenum Rated; Power up to 14 sensors; Mounted above ceiling tile; Confirm final location on site.	Tender

Total: 21

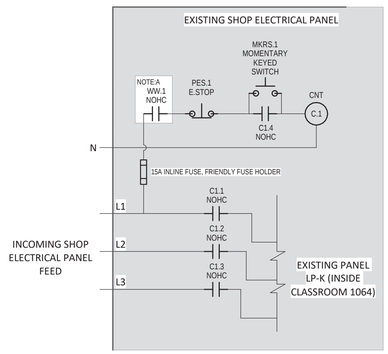
6 - Total New/Relocated - Lighting Fixture Schedule

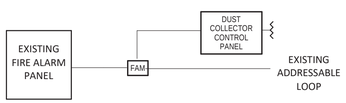
CURRENT SCHEDULE PHASE: Tender SHOWING PHASE ITEMS: Show Previous + New

Qty	Image	Type	Relocated	Mfg.	Model#	Mounting	Height	Description	Remarks	Phase Added
6		IV.4	No	Gotham Lighting	IVO4CYL-PC-D-50D-40K-80CRI-MD-MIN10-MVOLT-ZT-L9-S 2-P-AR-LD-DWHG	Pendant	T-bar	4" Round Cylinders pendant mount	IVO 4" Round Cylinder, pendant mount cylinder, downlight, 500 lumens, 4000K Colour temperature, 80+CRI, Medium batwing, Min 1% Dim level, Multivolt input 120V-277V, Generic 0-10V, Standard 9" Cylinder, Integral driver, surface j-box with conduit covers, 2ft x 1/2" stem, damp location, parabolic trim, clear anodized, non-bevel, no lens, matte diffuse, Textured white.	Tender
9		L1	No	Mark Lighting	S4PID-LLP-12FT-MSL6-80CRI-40K-800LMF-DBW-I80CRI-I40K-I300LMF-SCT-MIN1-FLL-MVOLT-ZT-F2-F2-72A-RDCY-WHTCY-WCRD-PIF	Suspended	Ceiling	Slot 4 Suspended Direct/Indirect lighting	Slot 4 Pendant Indirect/Direct, Linear longest possible, 12FT total run length, 6' max section length, 80CRI+, 4000K Colour temperature, 800 lumens per ft, Direct batwing distribution, 80CRI+,4000K Indirect Colour temperature, Batwing indirect distribution, single circuit/single switching, Constant current dimming to 1T, fluish lens, no indirect shielding, Multi-volt 120-277V, White satin finish, 0-10V control input, Hard ceiling mounting (horizontal J-box), 72" adjustable overall suspension, round canopy, white canopy, white cord, feed cord installed.	Tender
18		L2	No	Mark Lighting	S4PID-LLP-4FT-MSL4-80CRI-40K-800LMF-DBW-I80CRI-I40K-I300LMF-SCT-MIN1-FLL-MVOLT-ZT-F2-F2-72A-RDCY-WHTCY-WCRD-PIF	Suspended	Ceiling	Slot 4 Suspended Direct/Indirect lighting	Slot 4 Pendant Indirect/Direct, Linear longest possible, 4FT total run length, 4' max section length, 80CRI+, 4000K Colour temperature, 800 lumens per ft, Direct batwing distribution, 80CRI+,4000K Indirect Colour temperature, Batwing indirect distribution, single circuit/single switching, Constant current dimming to 1T, fluish lens, no indirect shielding, Multi-volt 120-277V, White satin finish, 0-10V control input, Hard ceiling mounting (horizontal J-box), 72" adjustable overall suspension, round canopy, white canopy, white cord, feed cord installed.	Tender
67		W.1	No	Dainolite	BUR-S1W-PC-WH w/ G9-LED-Dimmable-2700K-6W,120V	Wall	Mirror	Globe Flush Mount	Burlat 6-inch 1 light wall sconce with white glass shade, complete with LED, dimmable, G9 pin, 120V, 5W, & 2700K Colour temeprature. To be controlled by D.3 (Z.5)	Tender

Total: 100

2 Dust Collector Fire Alarm & Estop Control





SEQUENCE OF OPERATIONS

1. PROVIDE NEW ADDRESSABLE MODULE FOR NEW CONVENTIONAL ZONE TO DUST COLLECTOR CONTROL PANEL. ON ACTIVATION OF CONTACT WITHIN DUST COLLECTOR PANEL, FIRE ALARM ACTIVATES. PROVIDE NEW ZONE LABEL ON MAIN FIRE ALARM ANNUNCIATOR PANEL "DUST COLLECTOR RM# ….". CONFIRM ROOM DESIGNATION ON SITE.

NOTE:

A. ASSUME TYPICAL **E-STOP** CONTROL SCHEMATIC AS SHOWN

NO.	DESCRIPTION	DATE
3	Issued For Tender	Apr 10, 2026
2	Issued For Review	Mar 30, 2026
1	Issued For Permit	Dec 12, 2025

REVISION SCHEDULE

ROOT3 Engineering
1920 YONGE ST, SUITE 200
TORONTO, ON, M4S 3E2

PROJECT NAME

25077 - HWDSB Macnab

145 Magnolia Drive,
Hamilton City, ON

DRAWING TITLE

Electrical Wiring Diagram & Schedules

SCALE	DRAWING NUMBER
1 : 1	**E4**
SHEET SIZE: 24"x36"	
PROJECT NUMBER: 25077	