SPRINGHILL SERVICE CENTRE RENOVATIONS

CUMBERLAND COUNTY
43 Main St., Upper Level
Springhill, NS

dp18022

DESIGN PLUS ARCHITECTURE
ARCHITECTURAL

MCW Maricor
MECHANICAL

MCW Maricor
ELECTRICAL

ISSUED FOR TENDER / LANCEMENT DE L'APPEL D'OFFRES

2020-03-03

LIST OF DRAWINGS

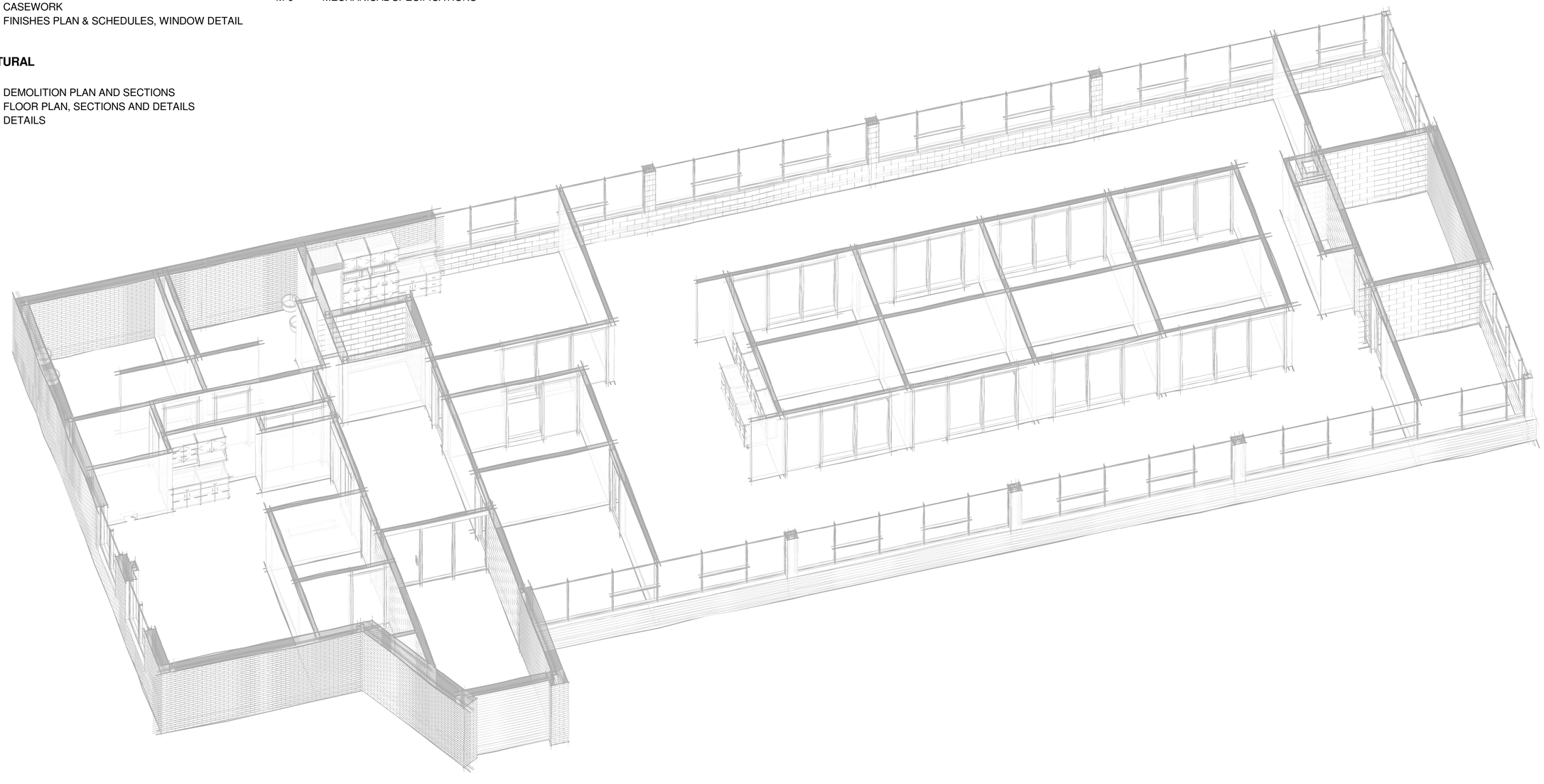
A-1 UPPER LEVEL - DEMOLITION PLAN, ROOF PLAN & DETAILS
A-2 UPPER LEVEL - CONSTRUCTION PLAN, SCHEDULES & DETAILS
A-3 UPPER LEVEL REFLECTED CEILING PLAN & DETAILS
A-4 WINDOW ELEVATIONS & DETAIL
A-5 CASEWORK
A-6 FINISHES PLAN & SCHEDULES, WINDOW DETAIL

M-1 UPPER FLOOR PLAN - NEW SPRINKLER HEAD LAYOUT
M-2 MAIN FLOOR PLAN - HVAC
M-3 UPPER FLOOR PLAN - HVAC
M-4 BASEMENT FLOOR PLAN - HVAC
M-5 DETAILS AND SCHEDULES - HVAC
M-6 MECHANICAL SPECIFICATIONS

E-1 ELECTRICAL UPPER FLOOR LIGHTING PLAN AND LUMINAIRE SCHEDULE
E-2 ELECTRICAL UPPER FLOOR POWER & COMMUNICATIONS PLAN
E-3 ELECTRICAL SPECIFICATIONS

STRUCTURAL

L1 DEMOLITION PLAN AND SECTIONS
L2 FLOOR PLAN, SECTIONS AND DETAILS
L3 DETAILS



2015 NATIONAL BUILDING CODE DATA MATRIX

FORM 35E

ITEM	REVIEW INFORMATION	CODE REFERENCE	
1	PROJECT ADDRESS: **SPRINGHILL** PROJECT DESCRIPTION: **OFFICE FIT-UP** PROJECT TYPE: ☐ NEW CONSTRUCTION ☐ ADDITION ■ RENOVATION ☐ CHANGE OF USE	■ PART 3	☐ PART 9
2	ALTERNATE SOLUTION PROPOSED: ☐ YES ■ NO	DIV. A 1.2.1 & DIV. C 2.3.1	
3	TOTAL BUILDING AREA: 7350 S.F. EXISTING: 7350 S.F. NEW:	DIVISION A 1.4.1.2	DIVISION A 1.4.1.2
4	MAJOR OCCUPANCIES: GROUP: D DESCRIPTION: BUSINESS AND PERSONAL SERVICES OCCUPANCIES	3.1.2.1.(1)	9.10.2
5	BUILDING CLASSIFICATION (MOST RESTRICTIVE GROUP UNDER ITEM 4): GROUP D, UP TO 3 STOREYS, SPRINKLERED	3.2.2.20.-61.	-
6	OCCUPANT LOAD: ■ BY sq.m. / PERSON ☐ BY DESIGN OF BUILDING LOWER FLOOR: EXISTING MAIN FLOOR: EXISTING UPPER FLOOR: 45 PERSONS	3.1.17.	9.9.1.3.
7	NUMBER OF STORIES ABOVE GRADE: 3 BELOW GRADE:	DIVISION A 1.4.1.2.	DIVISION A 1.4.1.2.
8	BUILDING HEIGHT: 55 ft.		
9	NUMBER OF FACADES FACING STREETS: 2	3.2.2.10.	-
10	FIRE WALLS: ☐ YES ■ NO	3.1.10.	9.10.11.
11	SPRINKLER SYSTEM: ■ YES, EXISTING ☐ NO	3.2.1.5.	9.10.1.3.
12	FIRE ALARM SYSTEM: ■ YES ☐ NO	3.2.4.	9.10.18.2.
13	HIGH BUILDING: ☐ YES ■ NO	3.2.6.	-
14	VERTICAL SERVICE SPACES: ☐ YES ■ NO	3.6.3.	-
15	PERMITTED CONSTRUCTION TYPE: ☐ COMBUSTIBLE ☐ NON-COMBUSTIBLE ■ BOTH PROPOSED CONSTRUCTION TYPE: ☐ COMBUSTIBLE ☐ NON-COMBUSTIBLE ■ BOTH	3.2.2.20.-61.	-
16	REQUIRED FIRE RESISTANCE RATING (HOURS)	3.2.2.20.-61.	9.10.8.1.

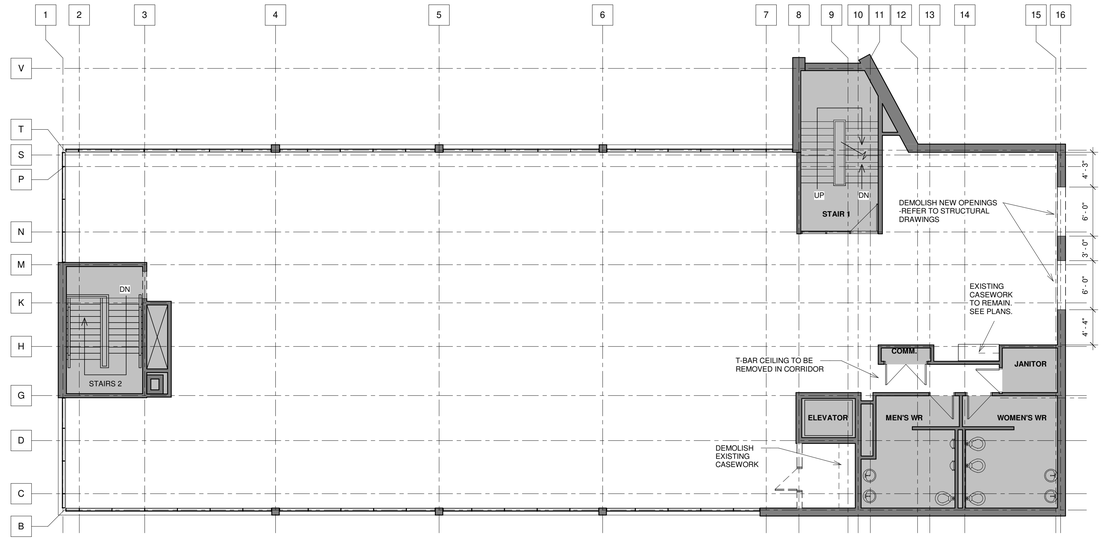
ASSEMBLY LOCATION	HORIZONTAL ASSEMBLY	LISTED DESIGN ULC No.	SUPPORTED ASSEMBLY (WALLS, COLUMNS)	LISTED DESIGN ULC No.
FLOORS	45 min.	EXISTING	45 min.	EXISTING
ROOF	N/A		N/A	

17 SPATIAL SEPARATION — 3.2.3. — 9.10.14.

WALL LOCATION	AREA OF EXP. BUILDING FACE	LIMITING DISTANCE	L/H OR H/L	MAX. % OF OPENINGS	MIN. FIRE RESIST. RATING	TYPE OF CONST.	TYPE OF CLADDING
NORTH		> 9m	N/A	100%	N/A		
EAST		> 9m	N/A	100%	N/A		
SOUTH		> 9m	N/A	100%	N/A		
WEST		> 9m	N/A	100%	N/A		

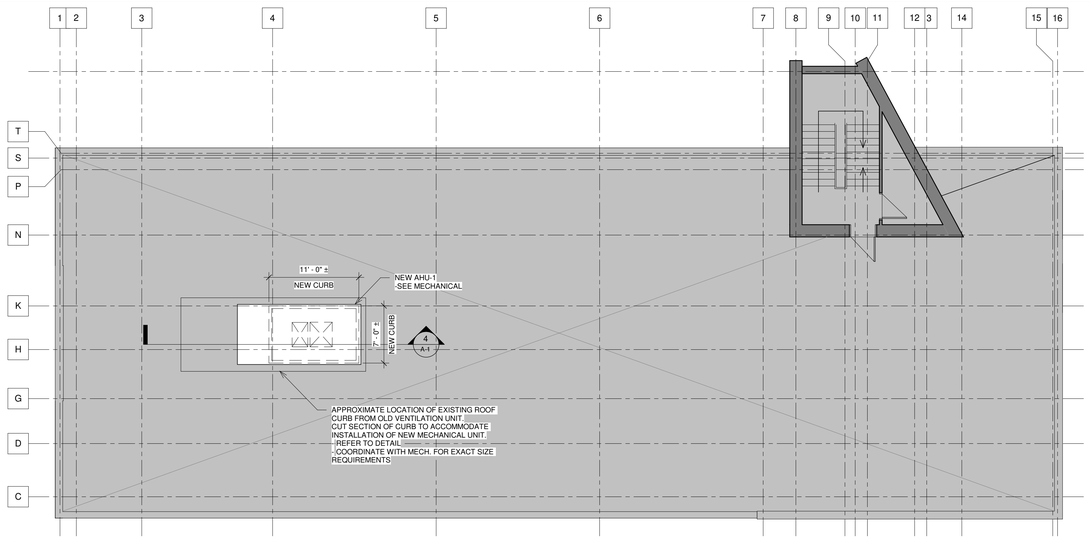
18	MAXIMUM TRAVEL DISTANCE: ACTUAL = 25m REQUIRED = 45m	3.4.2.	9.9.7.-8.
19	BARRIER-FREE DESIGN: ■ YES ☐ NO, EXPLAIN:	NB REGULATION 2011-61	

NOTES:



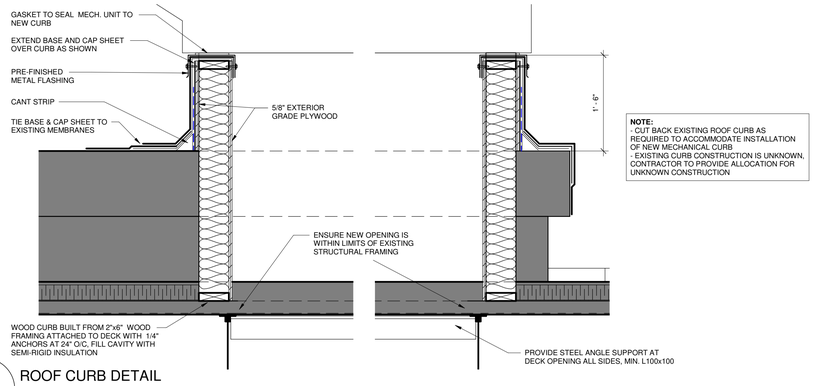
1 / A-1 — UPPER LEVEL DEMOLITION PLAN

1/8" = 1'-0"



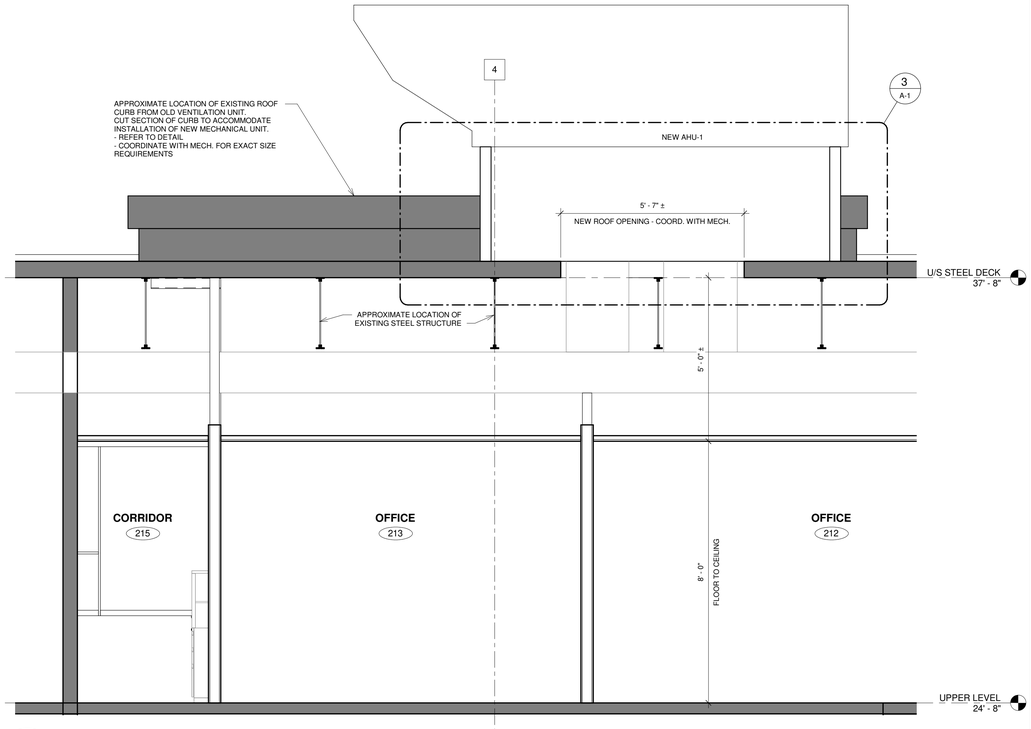
2 / A-1 — ROOF PLAN

1/8" = 1'-0"



3 / A-1 — ROOF CURB DETAIL

1" = 1'-0"



4 / A-1 — SECTION DETAIL @ ROOF CURB

1/2" = 1'-0"

LEGEND

- EQUIPMENT / FURNITURE (NIC)
- XXXX — ROOM NUMBER - NEW
- XXXX — ROOM NUMBER - EXISTING
- X — WALL TYPE
- XXXA — NEW DOOR AND DOOR NUMBER
- EXISTING DOOR & FRAME TO REMAIN
- DOOR, FRAME AND WALL TO BE DEMOLISHED
- AREAS NOT IN CONTRACT
- NEW CASEWORK

NIC — NOT IN CONTRACT
AFF — ABOVE FLOOR FINISH

GENERAL NOTES:

1. IT IS THE GENERAL CONTRACTORS RESPONSIBILITY TO COORDINATE ALL WORK WITH RELATED SUBTRADES FOR DOOR, WINDOW, AND EQUIPMENT OPENINGS, INSERTS AND ITEMS TO BE BUILT INTO FOUNDATION, FOOTINGS, SLABS, AND WALLS AND WHEN INTEGRATING NEW EQUIPMENT/SYSTEMS INSTALLATIONS INTO EXISTING BUILDING SYSTEMS.

2. EXISTING SITE CONDITIONS MAY REQUIRE RE-CONFIGURATION OF EXISTING SYSTEMS, BOTH HIDDEN AND VISIBLE, TO ACCOMMODATE INSTALLATION OF NEW CONSTRUCTION. THESE EXISTING SYSTEMS INCLUDE, BUT ARE NOT LIMITED TO, EXISTING ELECTRICAL FEEDS, EXISTING ELECTRICAL PANELS AND DATA RACKS, EXISTING MECHANICAL DUCTWORK, EXISTING STATIONARY EQUIPMENT PLACEMENT, EXISTING PLUMBING, ETC.

3. THE CONTRACTOR SHALL BE AWARE THAT EXISTING SITE CONDITIONS MAY REQUIRE SOME DEVIATION FROM THE DETAILS OF CONSTRUCTION AS SHOWN IN THESE DOCUMENTS.

4. ALL DIMENSIONS ARE TO BE CONFIRMED ON SITE BEFORE STARTING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.

5. THE GENERAL CONTRACTOR IS RESPONSIBLE TO PATCH AND REPAIR ALL AREAS DAMAGED DURING WORK, TO MATCH ADJACENT CONSTRUCTION. SUCH AREAS INCLUDE, BUT ARE NOT LIMITED TO FLOORS, WALLS AND CEILINGS. THE SAME APPLIES TO AREAS WHERE NEW ELECTRICAL AND MECHANICAL DEVICES ARE INSTALLED, OR EXISTING ELECTRICAL AND MECHANICAL DEVICES ARE REMOVED. THE CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH ELECTRICAL/MECHANICAL DRAWINGS TO DETERMINE THE EXTENT OF SUCH WORK.

6. ALL SURFACES ARE TO BE MADE GOOD TO RECEIVE NEW FINISHES.

7. ALL CUTTING, DRILLING OF HOLES, PATCHING, ETC. REQUIRED BY MECHANICAL AND ELECTRICAL TRADES BY GENERAL CONTRACTOR.

8. REPAIR EXTERIOR WALLS AND ROOFS WHERE NEW MECHANICAL/ ELECTRICAL EQUIPMENT ARE INSTALLED/REMOVED - SEE MECHANICAL/ ELECTRICAL DRAWINGS FOR EXTENT OF SUCH WORK.

9. ALL PENETRATIONS AND JUNCTIONS AT FIRE RATED WALLS, FLOORS, CEILINGS OR ROOFS ARE TO BE SEALED WITH FIRESTOP MATERIAL.

CONSTRUCTION NOTES:

1. PROVIDE SOLID BACKING FOR ALL MILLWORK AND WALL/CEILING MOUNTED EQUIPMENT AND FIXTURES.

DEMOLITION NOTES:

1. ALL GLAZING (THROUGHOUT BUILDING) TO BE REMOVED AND REPLACED WITH NEW. REFER TO WINDOW ELEVATIONS AND DETAIL, SHEET A4.

2. ALL WINDOW SILLS TO BE DEMOLISHED AND REPLACED WITH NEW. REFER TO TYPICAL DETAIL.

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STAMP SCEAU

LICENSED ARCHITECT — LEIGH GOGUEN — NOVA SCOTIA ASSOCIATION OF ARCHITECTS

1 ISSUED FOR TENDER 2019-08-15

REVISIONS DATE

A / B — DETAIL LOCATION OF DETAIL

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DRAWING DESSIN

UPPER LEVEL - DEMOLITION PLAN, ROOF PLAN & DETAILS

DRAWN BY DESSINÉ PAR
RA, BG, JL

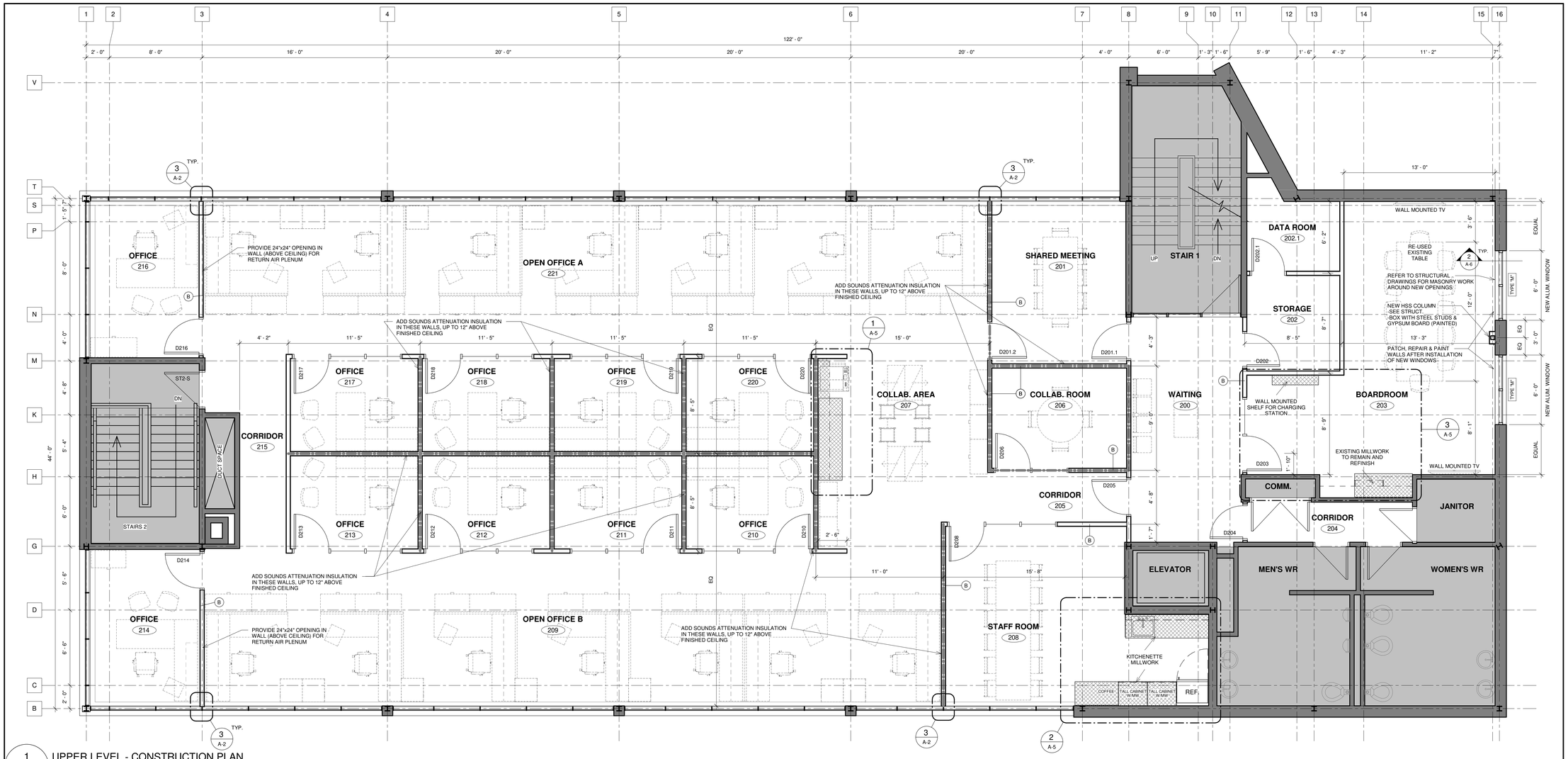
APPROVED BY APPROUVÉ PAR
LG

DATE
2020-03-03

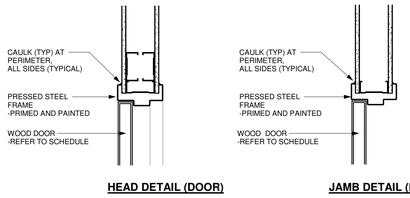
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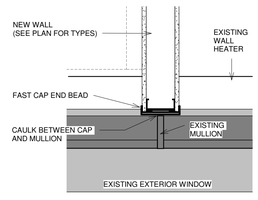
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1 UPPER LEVEL - CONSTRUCTION PLAN
A-2 1/4" = 1'-0"



2 THROATS
A-2 1 1/2" = 1'-0"

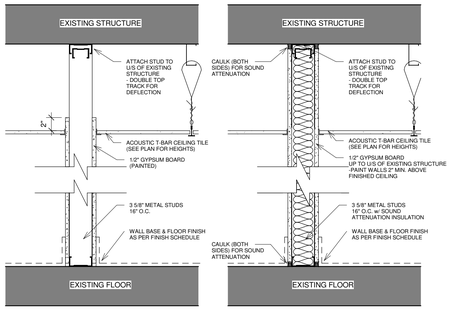


3 TYPICAL WALL TO WINDOW MULLION JOINT DETAIL
A-2 1 1/2" = 1'-0"

WALL TYPES - INTERIOR

NOTES:

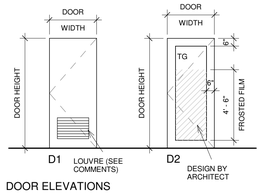
- ALL INTERIOR WALLS TO BE TYPE "A" UNLESS NOTED OTHERWISE
- ALL WALLS TO BE PAINTED TO 2" ABOVE FINISH CEILING OR TO u/s OF DECK IF NO CEILING IS SPECIFIED

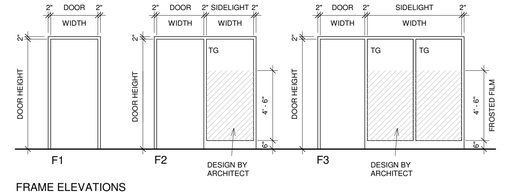


DOOR SCHEDULE

DOOR No.	FROM ROOM	TO ROOM	DOOR PANEL WIDTH	HEIGHT	THICK.	ELEV.	MAT.	FINISH	GLAZING	DOOR FRAME ELEV.	SIDELITE WIDTH	MAT.	FINISH	FIRE RATING	HWST	COMMENTS
L01		L01	3' - 0"	7' - 0"	2"	AL-1	AL	A	IG	AL-1		AL	A		1.0	
L21	ST2-L		3' - 0"	7' - 0"	2"	AL-1	AL	A	IG	AL-1		AL	A		1.0	
M01	M01		6' - 0"	7' - 0"	2"	AL-3	AL	A	IG	AL-3		AL	A		2.0	
M02	M01	M02	6' - 0"	7' - 0"	2"	AL-3	AL	A	TG	AL-3		AL	A		3.0	
D201.1	201	200	3' - 0"	7' - 0"	2"	D2	W	V	Y	F1		M	PT	NO	5.0	
D201.2	221	201	3' - 0"	7' - 0"	2"	D2	W	V	Y	F1		M	PT	NO	5.0	
D202	200	202	2' - 10"	7' - 0"	2"	D1	W	V	N	F1		M	PT	NO	6.0	
D202.1	202	202.1	2' - 10"	7' - 0"	2"	D1	W	V	N	F1		M	PT	NO	7.0	24"x16" LOUVRE
D203	203	200	3' - 0"	7' - 0"	2"	D2	W	V	N	F2	3' - 0"	M	PT	NO	5.0	
D204	204	200	2' - 10"	7' - 0"	2"	D1	W	V	N	F1		M	PT	NO	9.0	
D205	205	200	3' - 0"	7' - 0"	2"	D2	W	V	Y	F1		M	PT	NO	10.0	
D206	206	205	3' - 0"	7' - 0"	2"	D1	W	V	N	F2	3' - 0"	M	PT	NO	8.0	
D208	208	207	3' - 0"	7' - 0"	2"	D1	W	V	N	F3	6' - 0"	M	PT	NO	8.0	
D210	210	209	3' - 0"	7' - 0"	2"	D1	W	V	N	F3	6' - 0"	M	PT	NO	4.0	
D211	211	209	3' - 0"	7' - 0"	2"	D1	W	V	N	F3	6' - 0"	M	PT	NO	4.0	
D212	209	212	3' - 0"	7' - 0"	2"	D1	W	V	N	F3	6' - 0"	M	PT	NO	4.0	
D213	209	213	3' - 0"	7' - 0"	2"	D1	W	V	N	F3	6' - 0"	M	PT	NO	4.0	
D214	209	214	3' - 0"	7' - 0"	2"	D2	W	V	Y	F1		M	PT	NO	4.0	
D216	221	216	3' - 0"	7' - 0"	2"	D2	W	V	Y	F1		M	PT	NO	4.0	
D217	217	M11A	3' - 0"	7' - 0"	2"	D1	W	V	N	F3	6' - 0"	M	PT	NO	4.0	
D218	218	221	3' - 0"	7' - 0"	2"	D1	W	V	N	F3	6' - 0"	M	PT	NO	4.0	
D219	221	219	3' - 0"	7' - 0"	2"	D1	W	V	N	F3	6' - 0"	M	PT	NO	4.0	
D220	221	220	3' - 0"	7' - 0"	2"	D1	W	V	N	F3	6' - 0"	M	PT	NO	4.0	
ST2-S	215	ST2-S	3' - 0"	6' - 8"	2"	D1	W	V		F1			PT	NO	11.0	NEW CARD READER - REFER TO HARDWARE

AL ALUMINUM
A ANODIZED
V VENEER
W WOOD
M METAL
PT PAINT
TG TEMPERED GLASS
IG INSULATED GLASS





LEGEND

- EQUIPMENT / FURNITURE (NIC)
- XXXX — ROOM NUMBER - NEW
- XXXX — ROOM NUMBER - EXISTING
- X — WALL TYPE
- XXXA — NEW DOOR AND DOOR NUMBER
- EXISTING DOOR & FRAME TO REMAIN
- DOOR, FRAME AND WALL TO BE DEMOLISHED
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NIC NOT IN CONTRACT
AFF ABOVE FLOOR FINISH

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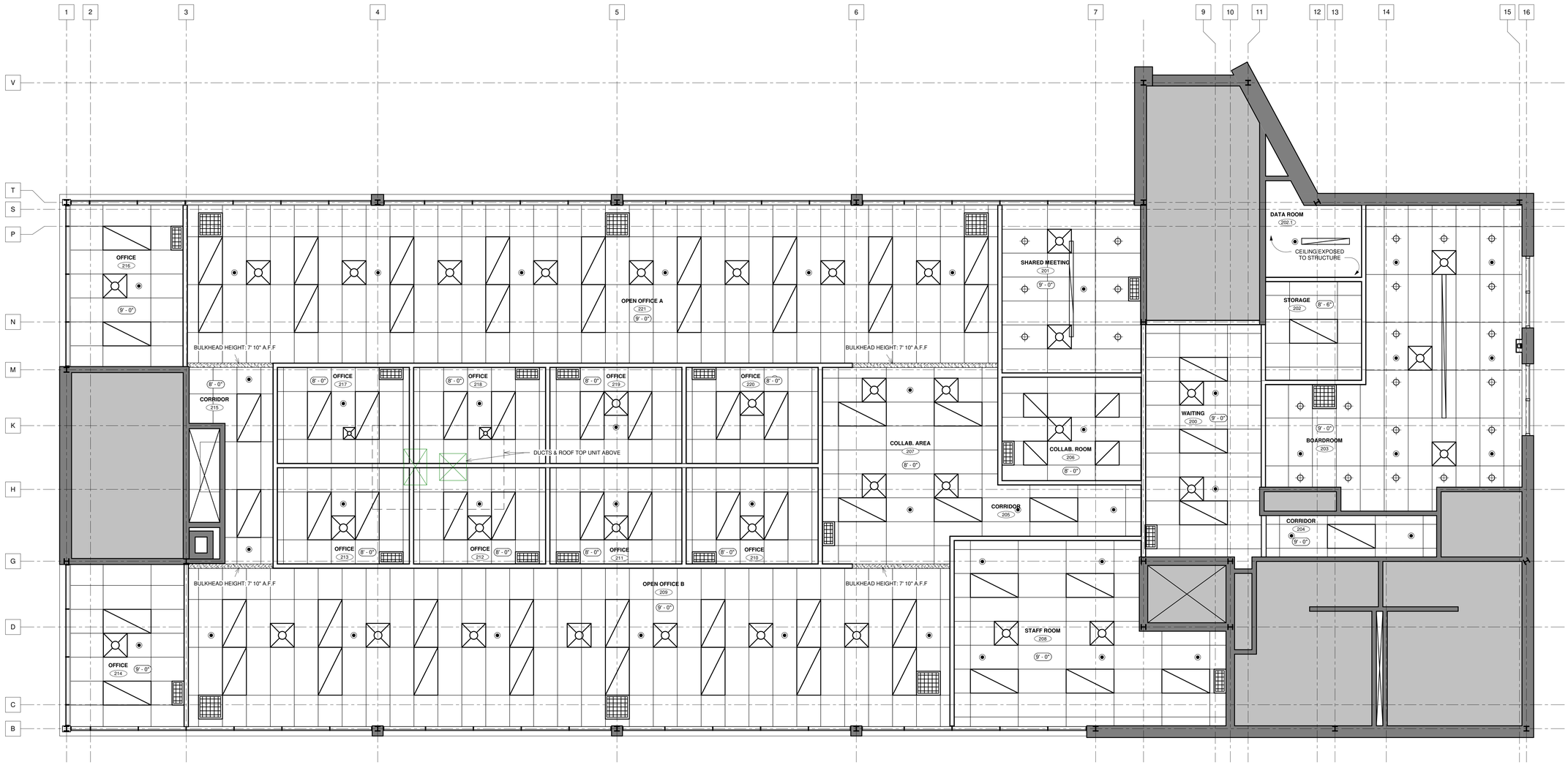
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UPPER LEVEL - CONSTRUCTION PLAN, SCHEDULES & DETAILS

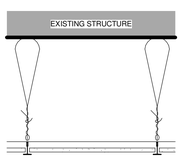
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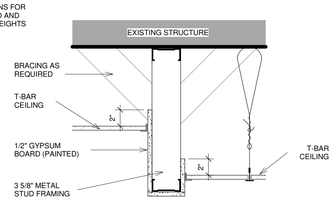
1 UPPER LEVEL - REFLECTED CEILING PLAN
A-3 1/4" = 1'-0"



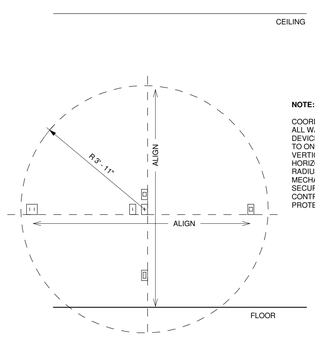
-2X4 SUSPENDED T-BAR CEILING
-ACOUSTIC TILES

2 TYP. T-BAR CEILING ASSEMBLY
A-3 1 1/2" = 1'-0"

* SEE PLANS FOR BULKHEAD AND CEILING HEIGHTS



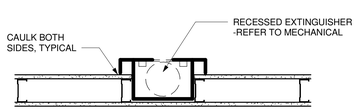
3 TYP. GYPSUM BOARD BULKHEAD
A-3 1 1/2" = 1'-0"



NOTE:

COORDINATE ALIGNMENT OF ALL WALL MOUNTED DEVICES. DEVICES TO ALIGN TO ONE ANOTHER VERTICALLY OR HORIZONTALLY WITHIN A 48" RADIUS. THIS INCLUDES MECHANICAL, ELECTRICAL, SECURITY, COMMUNICATION, CONTROLS AND FIRE PROTECTION DEVICES.

4 WALL DEVICES COORDINATION
A-3 1 : 25



5 FIRE EXTINGUISHER DETAIL
A-3 1 : 10

LEGEND

XXXX	ROOM NUMBER - NEW
XXXX	ROOM NUMBER - EXISTING
XXXX	CEILING HEIGHT ABOVE FLOOR FINISH
X	CONSTRUCTION NOTES
	T-BAR CEILING
	LIGHT FIXTURE - SEE ELECTRICAL
	LIGHT FIXTURE - SEE ELECTRICAL
	LIGHT FIXTURE - SEE ELECTRICAL
	RETURN GRILLE - SEE MECHANICAL
	SUPPLY GRILLE - SEE MECHANICAL
	SPRINKLER HEAD - SEE MECHANICAL

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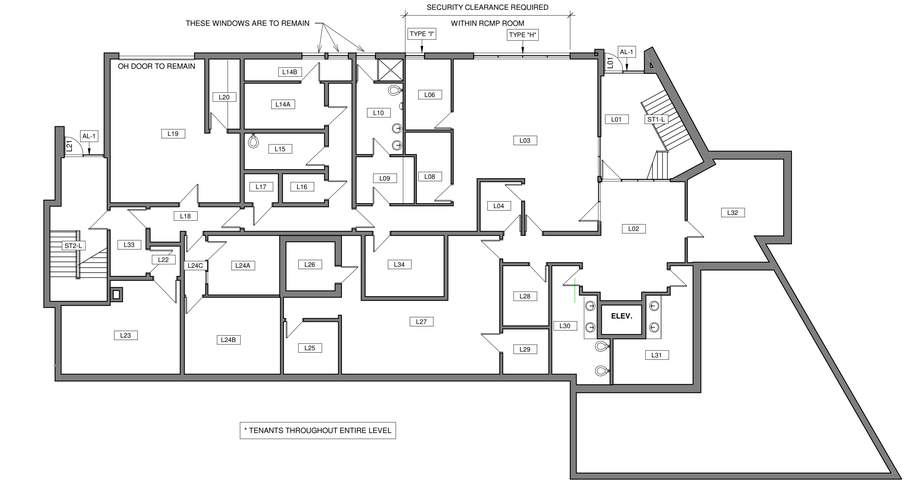
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DRAWING DESSIN

UPPER LEVEL REFLECTED CEILING PLAN & DETAILS

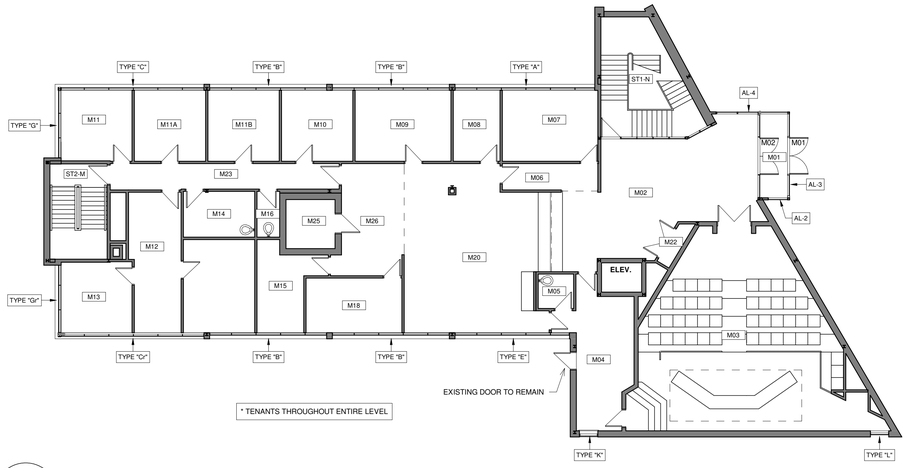
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A-3



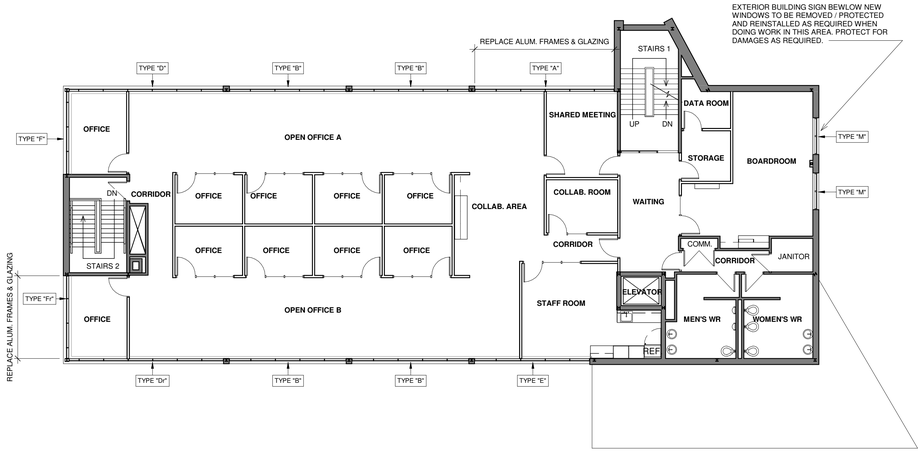
1 LOWER FLOOR - WINDOW LOCATION

A-4 3/32" = 1'-0"



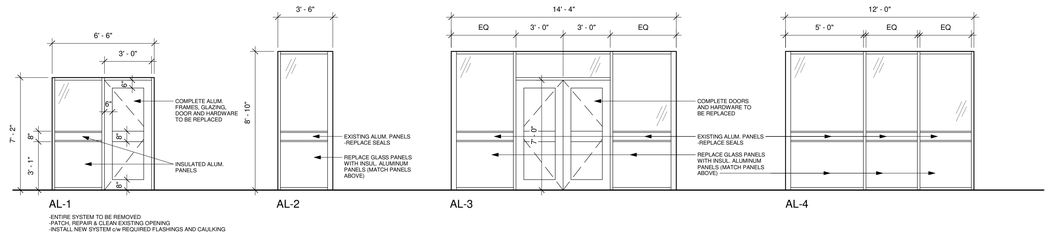
2 MAIN FLOOR - WINDOW LOCATION

A-4 3/32" = 1'-0"



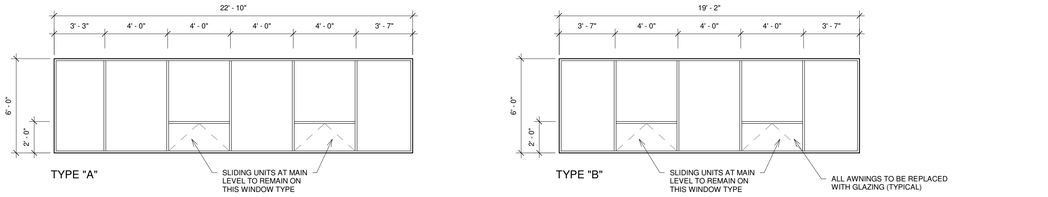
3 UPPER LEVEL - WINDOW LOCATION

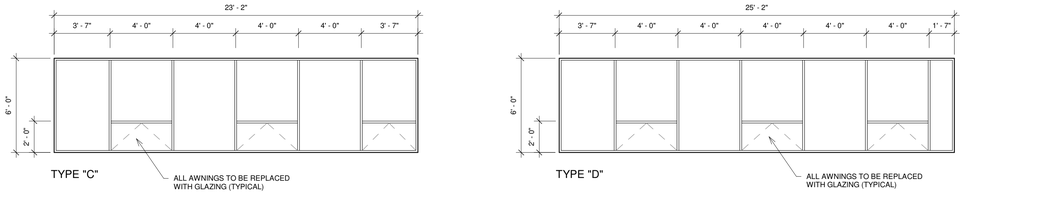
A-4 3/32" = 1'-0"

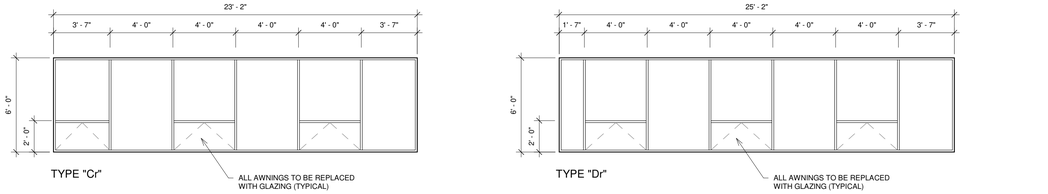


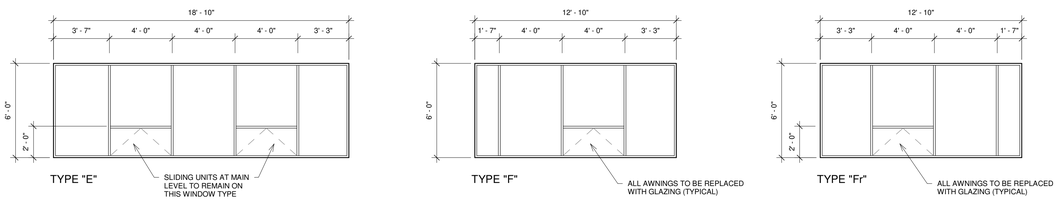
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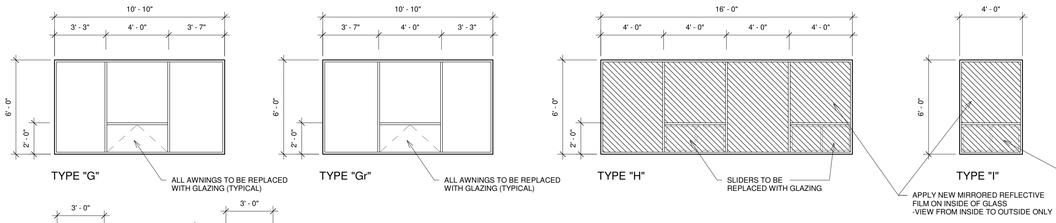
-ENTIRE SYSTEM TO BE REMOVED
-PATCH, REPAIR & CLEAN EXISTING OPENING
-INSTALL NEW SYSTEM c/w REQUIRED FLASHINGS AND CAULKING

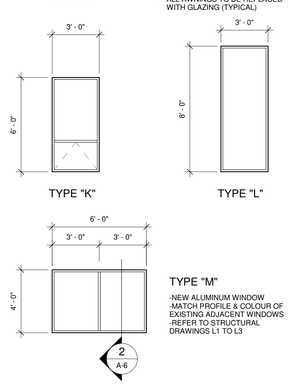






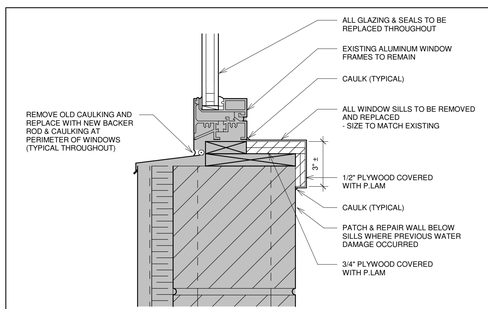






WINDOW ELEVATIONS

1 : 50



4 TYPICAL WINDOW SILL DETAIL

A-4 3" = 1'-0"

NOTES:

1. - UNLESS NOTED OTHERWISE:
   A. ALL EXISTING ALUMINUM FRAMING IS TO REMAIN UNLESS NOTED OTHERWISE
   B. - ALL EXTERIOR GLAZING & SEALS IN WINDOWS & DOORS TO BE REPLACED THROUGHOUT., UNLESS NOTED OTHERWISE
   C. - ALL AWNINGS ARE TO BE REMOVED AND REPLACED WITH FIXED GLAZING UNITS
   D. - ALL WINDOW SILLS (INTERIOR SIDE) ARE TO BE REPLACED - REFER TO DETAIL
2. - ALL DIMENSIONS ARE APPROXIMATE AND SHALL BE CONFIRMED ON SITE
3. - PROVIDE TEMPORARY HOARDING AS REQUIRED IN AREAS THAT ARE OCCUPIED.
4. - SECURITY CLEARANCE REQUIRED FOR RCMP ROOMS. PROVIDE SECURE / LOCKABLE HOARDING AT EXTERIOR OF BUILDING WHEN WORK IS ONGOING.
   WINDOWS WITH AC UNITS TO BE REPLACED WITH GLAZING AFTER CENTRAL AIR CONDITIONING SYSTEM IS INSTALLED AND OPERATIONAL

DESIGN PLUS ARCHITECTURE

dp18022

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CONSULTANTS EXPERT-CONSEIL

MCW Maricor

MECHANICAL / ELECTRICAL

STAMP SCEAU

LICENSED ARCHITECT NOVA SCOTIA ASSOCIATION OF ARCHITECTS LEO F. GOGUEN

1 ISSUED FOR TENDER 2019-08-15

REVISIONS DATE

A / B DETAIL LOCATION OF DETAIL

CLIENT CLIENT

PROJECT PROJET

SPRINGHILL SERVICE CENTRE RENOVATIONS

43 Main St., Upper Level
Springhill, NS

DRAWING DESSIN

WINDOW ELEVATIONS & DETAIL

DRAWN BY DESSINÉ PAR
RA, BG, JL

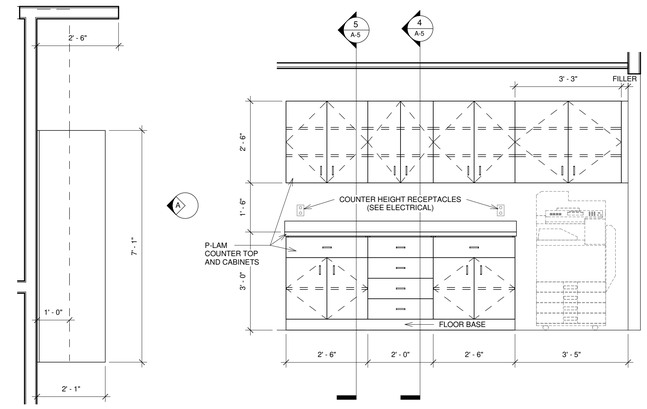
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LG

DATE
2020-03-03

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A-4

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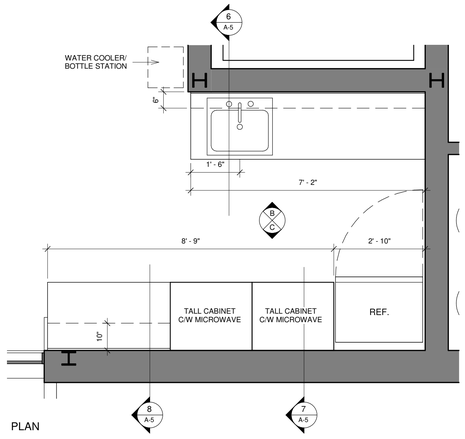


PLAN

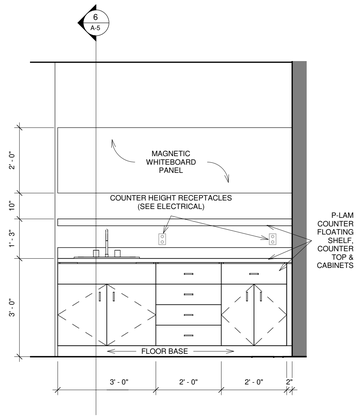
ELEVATION A

1 PRINTING STATION - CASEWORK

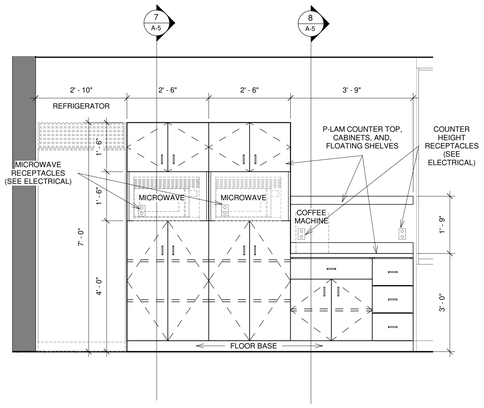
A-5 1/2" = 1'-0"



PLAN



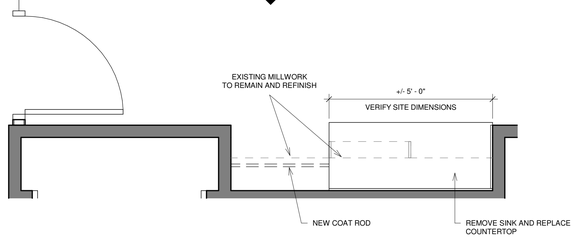
ELEVATION B

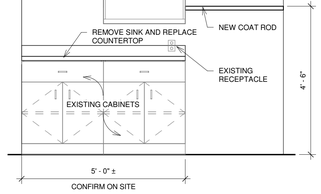


ELEVATION C

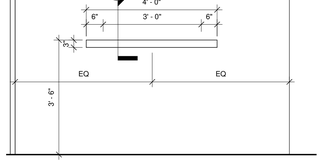
2 STAFF ROOM - CASEWORK

A-5 1/2" = 1'-0"





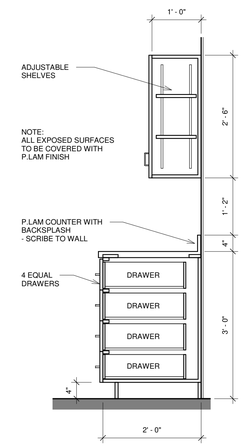
ELEVATION D



ELEVATION E

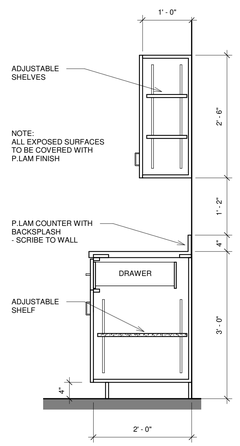
3 BOARDROOM - CASEWORK

A-5 1/2" = 1'-0"



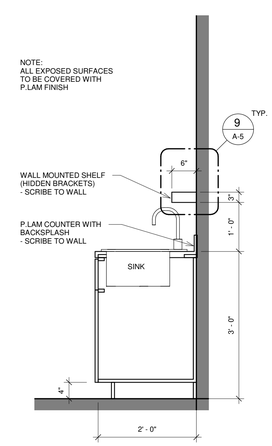
4 PRINTING STATION SECTION

A-5 3/4" = 1'-0"



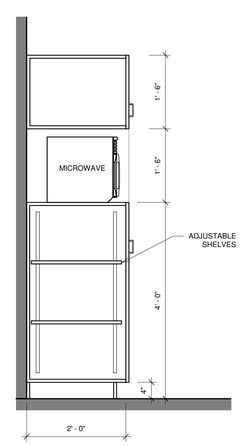
5 PRINTING STATION SECTION

A-5 3/4" = 1'-0"



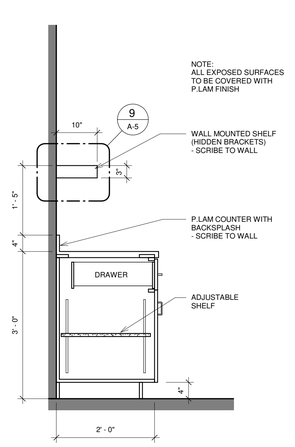
6 SINK SECTION

A-5 3/4" = 1'-0"



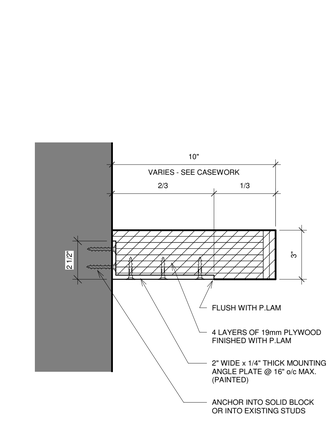
7 UPRIGHT CABINET SECTION

A-5 3/4" = 1'-0"



8 KITCHENETTE SECTION

A-5 3/4" = 1'-0"



9 TYPICAL WALL MOUNTED SHELF DETAIL

A-5 3" = 1'-0"

2020-03-03 2:05:19 PM

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MECHANICAL / ELECTRICAL

STAMP SCEAU

LICENSED ARCHITECT LEO F. GOGUEN NOVA SCOTIA ASSOCIATION OF ARCHITECTS

1 ISSUED FOR TENDER 2019-08-15

REVISIONS DATE

A / B DETAIL LOCATION OF DETAIL

CLIENT CLIENT

PROJECT PROJET

SPRINGHILL SERVICE CENTRE RENOVATIONS

43 Main St., Upper Level
Springhill, NS

DRAWING DESSIN

CASEWORK

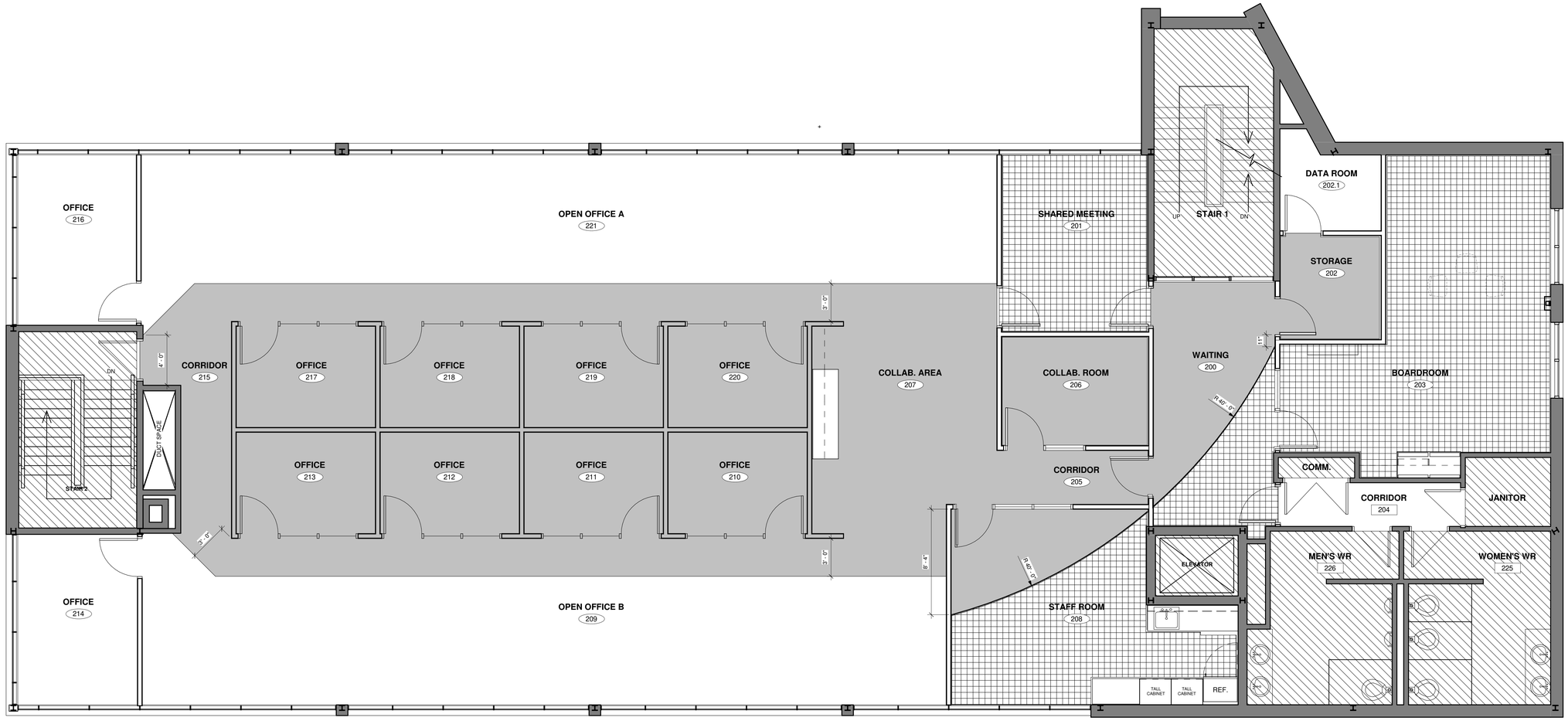
DRAWN BY DESSINÉ PAR
RA, BG, JL

APPROVED BY APPROUVÉ PAR
LG

DATE
2020-03-03

SCALE ÉCHELLE
As indicated

A-5

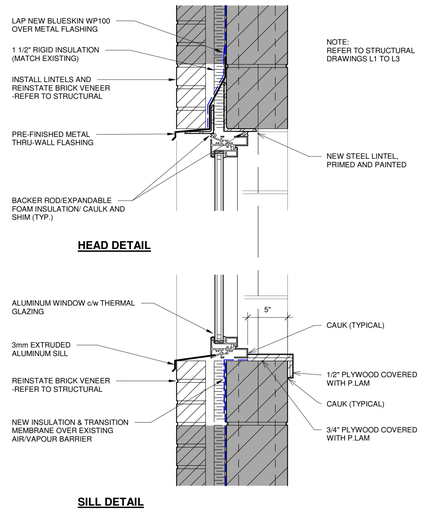


1 UPPER LEVEL - FINISHES PLAN

A-6 1/4" = 1'-0"

FINISH SCHEDULE

ROOM #	ROOM NAME	FLOOR: SHEET FLOORING	FLOOR: PAINT (SEALANT)	BASE: RUBBER	WALL: PAINT - GYPSUM BOARD	CEILING: PAINT - GYPSUM BOARD	CEILING: T-BAR	COMMENTS
200	WAITING	•		•	•		•	
201	SHARED MEETING	•		•	•		•	
202	STORAGE		•	•	•			
202.1	DATA ROOM		•	•	•			
203	BOARDROOM	•		•	•		•	
204	CORRIDOR						•	PATCH & REPAIR EXISTING AS REQUIRED
205	CORRIDOR	•		•	•		•	
206	COLLAB. ROOM	•		•	•		•	
207	COLLAB. AREA	•		•	•	•	•	
208	STAFF ROOM	•		•	•		•	
209	OPEN OFFICE B	•		•	•		•	
210	OFFICE	•		•	•		•	
211	OFFICE	•		•	•		•	
212	OFFICE	•		•	•		•	
213	OFFICE	•		•	•		•	
214	OFFICE	•		•	•		•	
215	CORRIDOR	•		•	•	•	•	
216	OFFICE	•		•	•		•	
217	OFFICE	•		•	•		•	
218	OFFICE	•		•	•		•	
219	OFFICE	•		•	•		•	
220	OFFICE	•		•	•		•	
221	OPEN OFFICE A	•		•	•		•	
225	WOMENS WR				•	•		EXISTING FLOOR AND BASE TO REMAIN
226	MEN'S WR				•	•		EXISTING FLOOR AND BASE TO REMAIN



2 WINDOW DETAILS

A-6 1 1/2" = 1'-0"

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PROJECT PROJET

SPRINGHILL SERVICE CENTRE RENOVATIONS

43 Main St., Upper Level
Springhill, NS

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FINISHES PLAN & SCHEDULES, WINDOW DETAIL

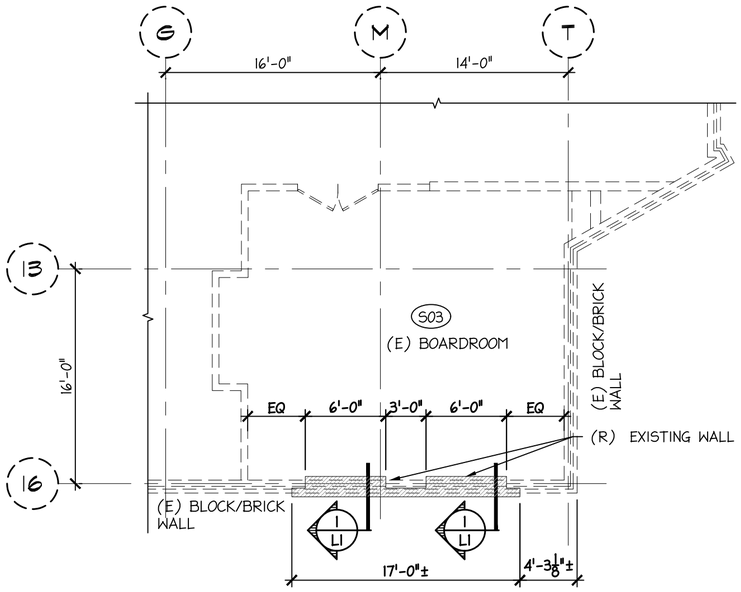
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RA, BG, JL

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LG

DATE
2020-03-03

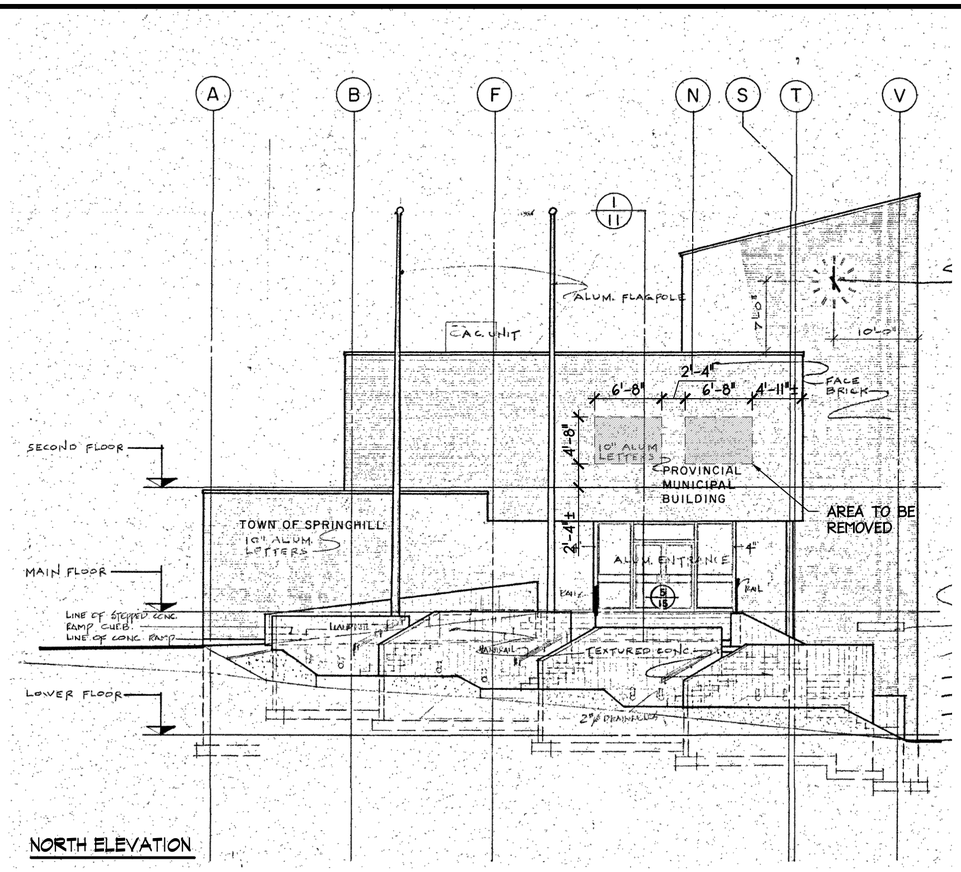
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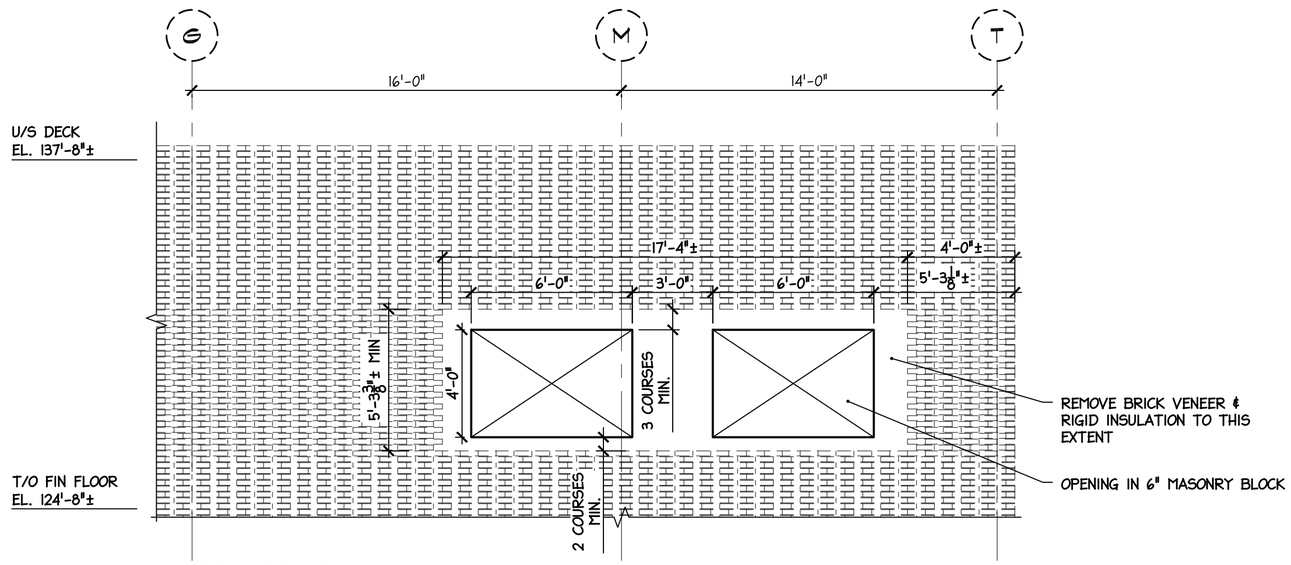


PARTIAL SECOND FLOOR DEMOLITION PLAN

1. ELEVATION TOP OF FINISH FLOOR = 124'-8"±
2. (E) DENOTES EXISTING
3. (R) DENOTES EXISTING TO BE REMOVED



NORTH ELEVATION



PARTIAL ELEVATION

1. CLEAN & REINSTATE EXISTING CLAY BRICK
2. 6" MASONRY BLOCK NOT SHOWN FOR CLARITY
3. REMOVE BRICK IN SAW TOOTH PATTERN SUFFICIENT TO INSTALL LINTELS AND FLASHING

SECTION I / LI

FIELD REVIEW GENERAL NOTES BY J.M. GIFFIN ENGINEERING INC. (GIFFIN ENGINEERING)

1. J.M.GIFFIN ENGINEERING INC. PROVIDES FIELD REVIEW ONLY FOR THE WORK SHOWN ON THESE STRUCTURAL DRAWINGS. THIS REVIEW IS NOT A 'FULL TIME' REVIEW, BUT IS A PERIODIC REVIEW AT THE SOLE DISCRETION OF GIFFIN ENGINEERING'S ENGINEERS IN ORDER TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE PLANS AND SUPPORT DOCUMENTS PREPARED BY GIFFIN ENGINEERING. FIELD REVIEWS BY GIFFIN ENINEERING ARE NOT CARRIED OUT FOR THE CONTRACTOR'S BENEFIT NOR DOES IT MAKE GIFFIN ENGINEERING GUARANTORS OF THE CONTRACTOR'S WORK. IT REMAINS THE CONTRACTOR'S RESPONSIBILITY TO BUILD THE WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. GIFFIN ENGINEERING SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. GIFFIN ENGINEERING WILL REVIEW SHOP DRAWINGS PERTAINING TO WORK SHOWN ON GIFFIN ENGINEERING DRAWINGS. THE EXTENT OF THIS REVIEW IS AT THE SOLE DISCRETION OF GIFFIN ENGINEERING AND IS FOR THE SOLE PURPOSE OF ASCERTAINING GENERAL CONFORMANCE WITH THE STURCTURAL DESIGN, DETAILS AND DIMENSIONS INHERENT IN THE SHOP DRAWINGS, RESPONSIBILITY FOR WHICH SHALL REMAIN WITH THE CONTRACTOR SUBMITTING THEM AND THEIR APPOINTED DESIGN ENGINEER. SUCH REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF HIS OR HER SOLE RESPONSIBILITY FOR ERRORS AND OMISSIONS IN THE SHOP DRAWINGS OR FOR MEETING ALL REQUIREMENTS OF THE CONTRACT DOCUMENTS.
2. PROVIDE 2 DAYS ADVANCE NOTICE OF EACH REQUIRED FIELD REVIEW. FIELD REVIEWS SHALL BE SCHEDULED TO BE CARRIED OUT DURING NORMAL BUSINESS HOURS UNLESS SPECIAL ARRANGEMENTS ARE MADE WITH GIFFIN ENGINEERING.
3. THE WORK TO BE REVIEWED SHALL BE GENERALLY COMPLETE.

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www.giffinengineering.com

NO.	REVISIONS	NAME	DATE
1	ISSUED FOR TENDER	EA	19/08/15
0	ISSUED FOR REVIEW	MKJ	18-08-16

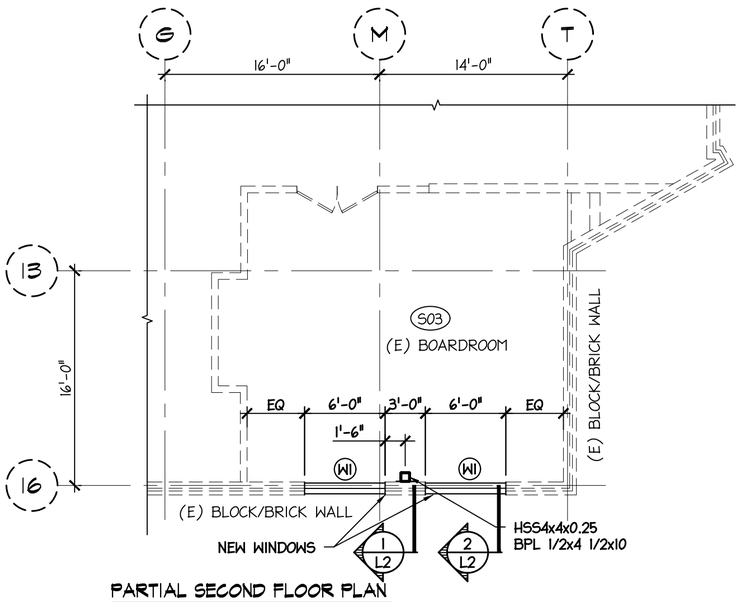
Stamp: REGISTERED PROFESSIONAL ENGINEER * PROVINCE OF NOVA SCOTIA * DATE: AUG. 15 2019 B.J. GREEN 6414

Drawn by: MKJ
Checked by: BJG
Date: 19-08-15
Scale: AS NOTED

Project: SPRINGHILL TOWN HALL, NS RENOVATIONS

Sheet Title: DEMOLITION PLAN AND SECTIONS

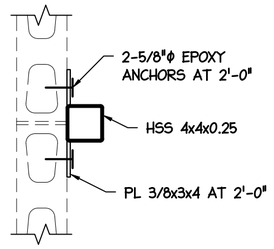
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Revision 0
Drawing no.: L1



PARTIAL SECOND FLOOR PLAN

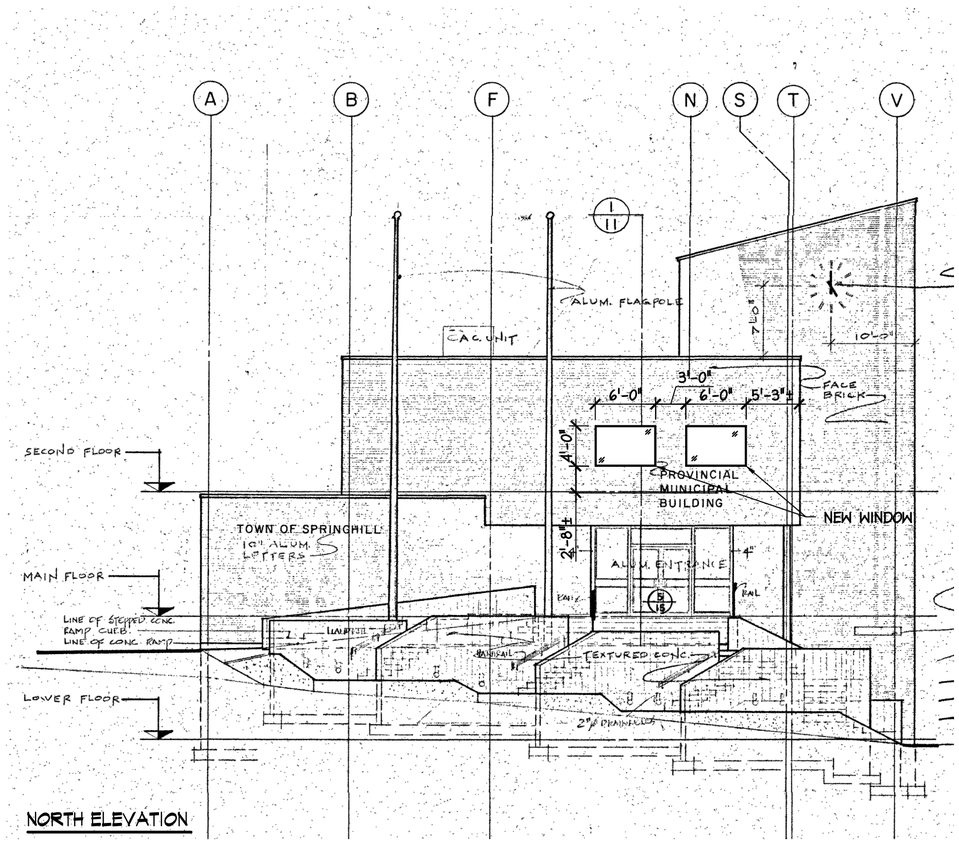
1. ELEVATION TOP OF FINISH FLOOR = 124'-8"±
2. NEW WINDOWS TO BE ALUMINUM FRAME DOUBLE GLAZED LOW-E ARGON
3. CLEAN & REINSTATE EXISTING CLAY BRICK
4. INTERIOR FINISH TO MATCH EXISTING

WINDOW SCHEDULE				
TYPE	SIZE	ROUGH OPEN	NOTES	QUANITY
W1	6'-0" x 4'-0"	SEE MANUFACTURER	DOUBLE GLAZED, LOW-E ARGON	2



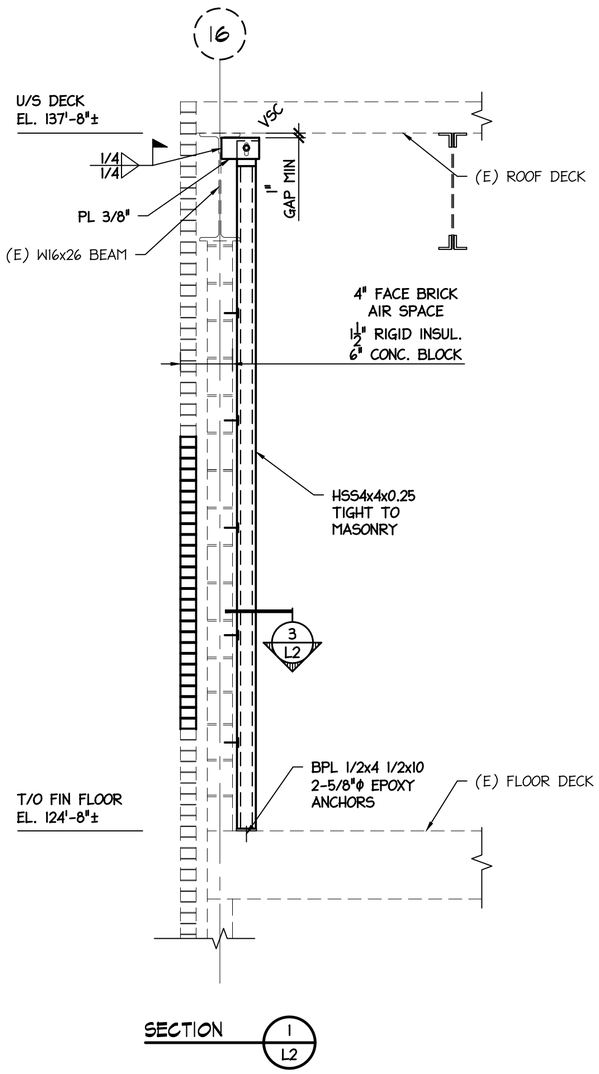
CONCRETE MASONRY GENERAL NOTES

1. COMPLETE MASONRY WORK ACCORDING TO SPECIFICATIONS CSA A371-04(R2009)
2. ALL MASONRY CONNECTIONS SHALL CONFORM TO CSA A370-04(R2009)
3. STANDARD CONCRETE MASONRY UNITS SHALL BE AS SHOWN ON ARCHITECTURAL DRAWINGS
4. TYPES OF MORTAR AND GROUTING SHALL BE ACCORDING TO CSA-A179-04(R2009)
5. REINFORCING OF MASONRY WALLS SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND AS SHOWN ON DRAWINGS
6. TRUSS TYPE HORIZONTAL REINFORCING SHALL BE 9 GUAGE RODS CONTINUOUS EVERY SECOND COURSE
7. VERTICAL REINFORCING SHALL BE AS SPECIFIED ON DRAWINGS. ALL VERTICAL REINFORCING SHALL BE CONTINUOUS FLOOR TO ROOF LEVEL AND DOWELED TO FOUNDATION WALL. GROUT BLOCK CELLS SOLID WITH 3,000 PSI CONCRETE.
8. INSTALL CONTINUOUS REINFORCED MASONRY BOND BEAMS AT ROOF AND FLOOR LEVELS AND OVER ALL OPENINGS (MINIMUM REINFORCING WILL BE 2-15M BARS)
9. VERTICAL REINFORCING REQUIRED, SHALL BE ONE 15M BAR AT ALL JAMBS OF DOOR AND WINDOW OPENINGS
10. LAP ALL REINFORCING AT CORNERS AND INTERSECTIONS OF CONCRETE BOND BEAMS
11. MINIMUM LAP FOR VERTICAL REINFORCING SHALL BE 25 BARS DIAMETERS

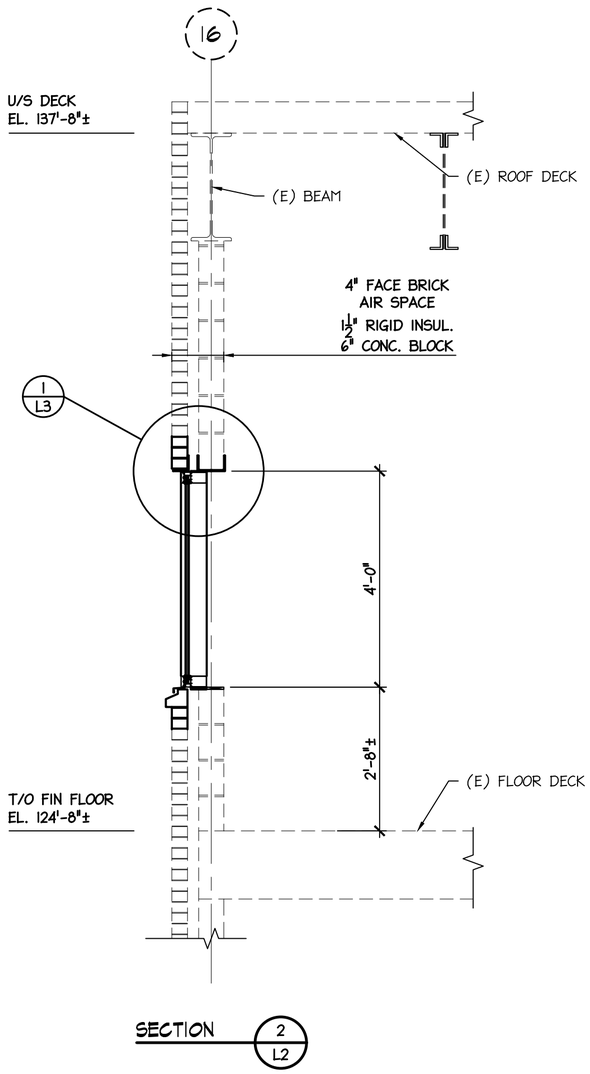


NORTH ELEVATION

DETAIL 3/L2



SECTION 1/L2



SECTION 2/L2

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0	ISSUED FOR REVIEW	MKJ	18-08-16

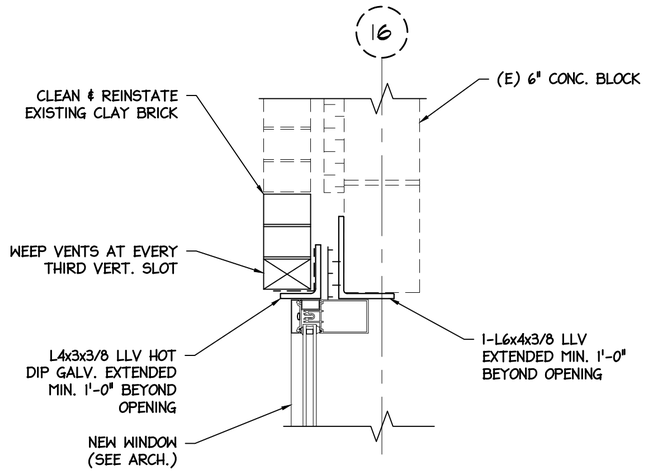
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Drawn by:	MKJ
Checked by:	BJG
Date:	19-08-15
Scale:	AS NOTED

Project: SPRINGHILL TOWN HALL, NS RENOVATIONS

Sheet Title: FLOOR PLAN, SECTIONS AND DETAILS

Job No.	Revision	Drawing no.:
J48-16618	0	L2



HEADER DETAIL 1/L3

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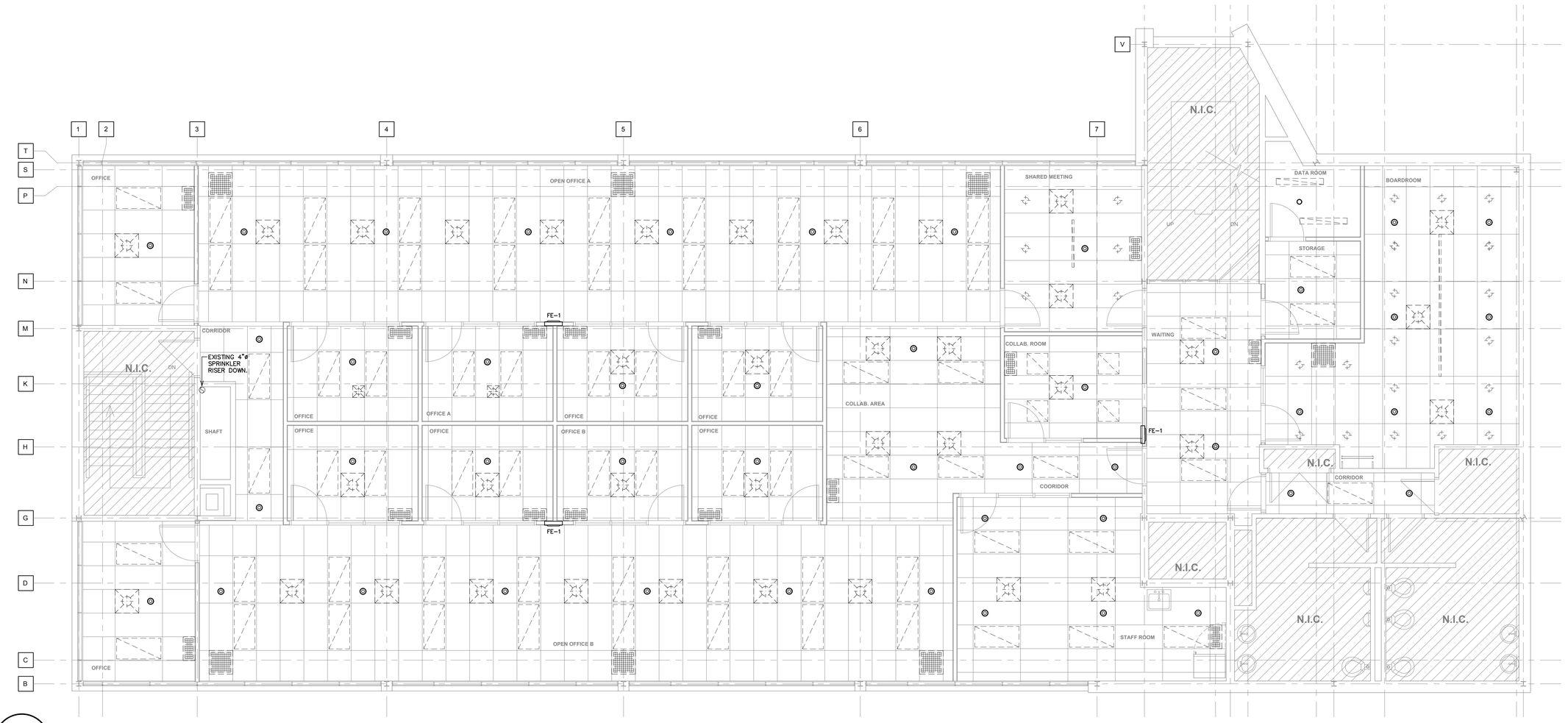
REGISTERED PROFESSIONAL ENGINEER
DATE: AUG. 15 2019
B.J. GREEN
6414
PROVINCE OF NOVA SCOTIA

Drawn by: MKJ
Checked by: BJG
Date: 19-08-15
Scale: AS NOTED

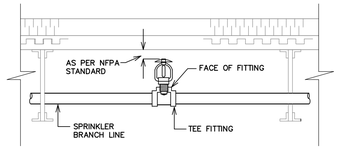
Project:
SPRINGHILL TOWN HALL, NS
RENOVATIONS

Sheet Title:
DETAILS

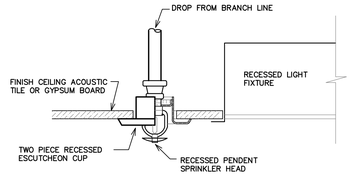
Job No. J48-16618
Revision 0
Drawing no.: L3



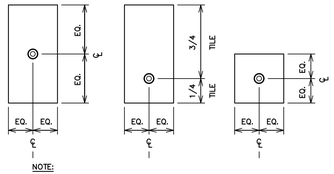
1 M-1 UPPER FLOOR PLAN - SPRINKLER HEAD LAYOUT 1/4"=1'-0"



2 M-1 TYPICAL UPRIGHT SPRINKLER DETAIL N.T.S.

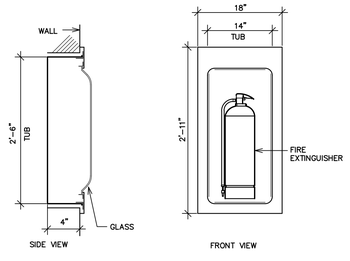


3 M-1 TYPICAL SEMI-RECESSED SPRINKLER DETAIL N.T.S.



NOTE:
TILES SHOWN ARE 610x1220mm (2'-0"x4'-0") AND 610x610mm (2'-0"x2'-0") SPRINKLER HEADS TO BE IN CENTRE OF OTHER IRREGULAR SIZE TILES

4 M-1 TYPICAL HEAD LOCATION DETAIL N.T.S.



NOTE:
SUPPLY AND INSTALL OF THE CABINET BY SPRINKLER CONTRACTOR.

5 M-1 RECESSED EXTINGUISHER CABINET DETAIL N.T.S.

DESIGN NOTES:

1. FIRE PROTECTION DESIGN SHALL BE AS PER NFPA 10-13 EDITION, NFPA 13-13 EDITION, NFPA 25-10 EDITION, NBC 2015 EDITION.
2. PLANS AND HYDRAULIC CALCULATIONS SHALL BE PREPARED AS PER NFPA 13-10 REQUIREMENTS AND SHALL BEAR THE SEAL AND SIGNATURE OF A PROFESSIONAL ENGINEER LICENSED OR REGISTERED TO PRACTICE IN THE PROVINCE OF NOVA SCOTIA.
3. FINAL LOCATION OF SPRINKLER HEADS AND PIPING SHALL BE COORDINATED ON SITE WITH ALL OTHER TRADES PRIOR TO INSTALLATION.
4. PROVIDE HANGERS AS PER NFPA 13 AND INCLUDE DETAILS AS PER THE REQUIREMENTS OF AUTHORITY HAVING JURISDICTION.
5. INSPECTION TO BE CARRIED BY THE CONSULTANT.
6. A NEW HYDROSTATIC TEST MUST BE DONE AFTER INSTALLATION IS COMPLETE AS PER NFPA 13.
7. PROVIDE A TEST CERTIFICATE FOR ABOVEGROUND PIPING AFTER INSTALLATION IS COMPLETE.
8. SPRINKLER TEST TO BE WITNESSED BY THE CONSULTANT.
9. SPRINKLER CONTRACTOR TO PROVIDE O&M INCLUDING AS-BUILT DRAWINGS HARD COPY FOLDED AND ELECTRONIC VERSION ON USB/THUMB DRIVE CONTAINING AS-BUILT DRAWINGS IN AUTOCAD FORMAT.

6 M-1 DESIGN NOTES

SYMBOL LEGEND

- TYPE "A" NEW UPRIGHT SPRINKLER HEAD.
- TYPE "B" NEW SEMI-RECESSED SPRINKLER HEAD.
- FE-1 SEMI-RECESSED FIRE EXTINGUISHER CABINET. C/W 10lbs ABC FIRE EXTINGUISHER.
- MECHANICAL SUPPLY DIFFUSERS
- MECHANICAL RETURN GRILLES
- LIGHTING FIXTURES REFER TO ELECTRICAL

7 M-1 SYMBOL LEGEND N.T.S.

DESIGN PLUS ARCHITECTURE
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A / B DETAIL LOCATION OF DETAIL

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PROJECT / PROJET

SPRINGHILL OFFICE FIT-UP
43 Main St., Upper Level
Springhill, NS

DRAWING / DESSIN

UPPER FLOOR PLAN NEW SPRINKLER HEAD LAYOUT

DRAWN BY / DESSINÉ PAR: K.C.S.
APPROVED BY / APPROUVÉ PAR: M.A.M.
DATE: 2019-06-28
SCALE / ÉCHELLE: AS NOTED

M-1

ROUND DUCTWORK
RECTANGULAR DUCTWORK
RECTANGULAR TO ROUND DUCTWORK
FLEXIBLE DUCT CONNECTION
VARIABLE AIR VOLUME BOX c/w ATTENUATOR (HATCHED AREA)
TEMPERATURE SENSOR c/w CONTROL WIRING
EXISTING HYDRONIC HEATER C/W CONTROL VALVE
EXISTING FIRE DAMPER
SUPPLY AIR DUCT RISER
RETURN AIR DUCT RISER
EXHAUST AIR DUCT RISER
RELAY c/w CONTROL WIRING
ANALOG INPUT CONTROL SIGNAL
ANALOG OUTPUT CONTROL SIGNAL
SPEED CONTROL
TRANSFER FAN
SUPPLY DIFFUSERS
RETURN GRILLES
LIGHTING FIXTURES REFER TO ELECTRICAL

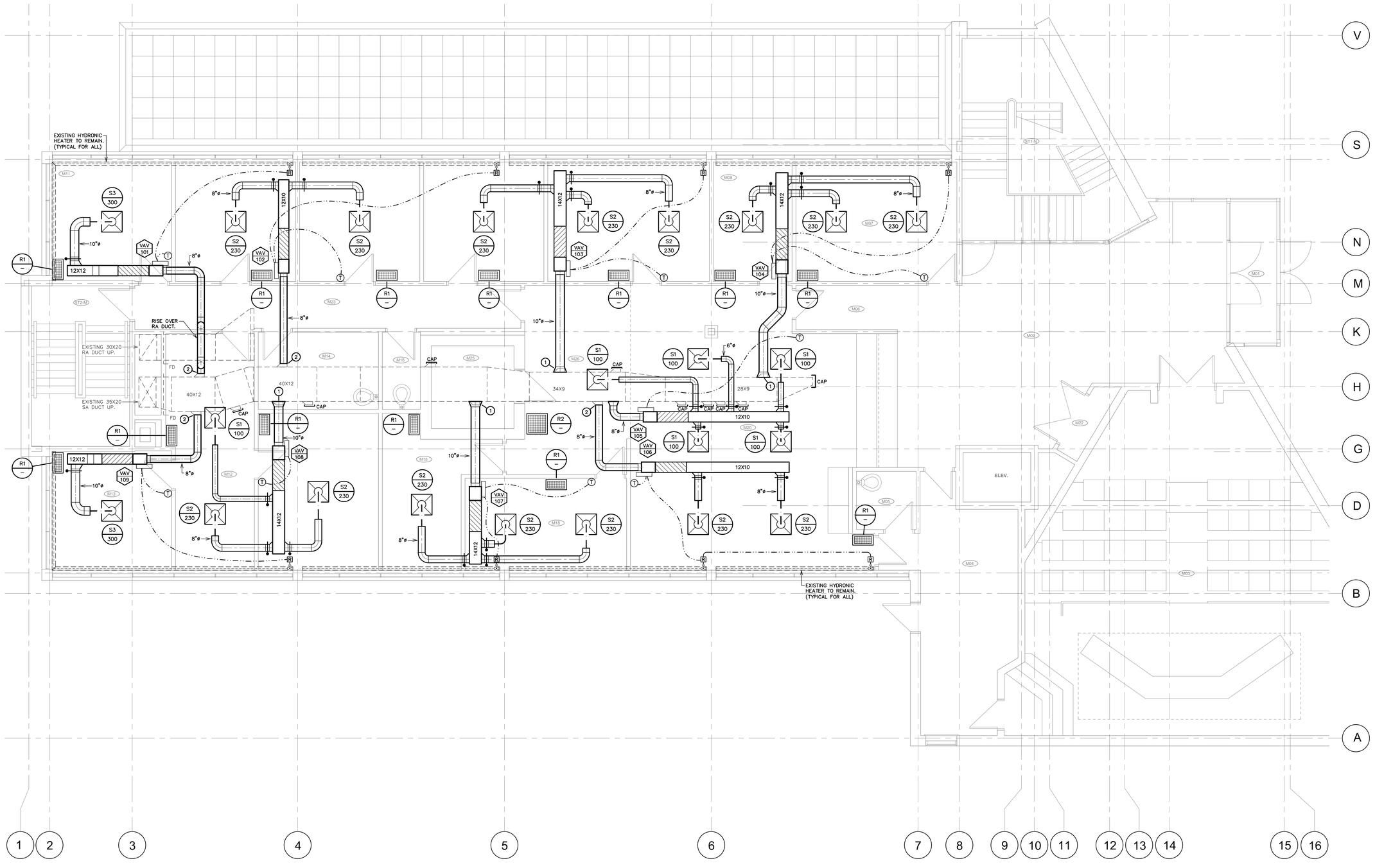
2
M-2
SYMBOL LEGEND

N.T.S.

DRAWING REFERENCE NOTES

1. EXISTING 8"ø/9"ø SUPPLY AIR TAKEOFF TO BE REMOVED AND REPLACED WITH A NEW 10"ø TAKEOFF.
2. CONNECT TO EXISTING SUPPLY AIR DUCT TAKEOFF.

3
M-2
DRAWING REFERENCE NOTES



1
M-2
MAIN FLOOR PLAN - HVAC

1/4"=1'-0"

DESIGN PLUS ARCHITECTURE
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NEW BRUNSWICK ASSOCIATION OF PROFESSIONAL ENGINEERS
M. A. MACKAY
8413
PROVINCE OF NOVA SCOTIA

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Springhill, NS

DRAWING / DESSIN

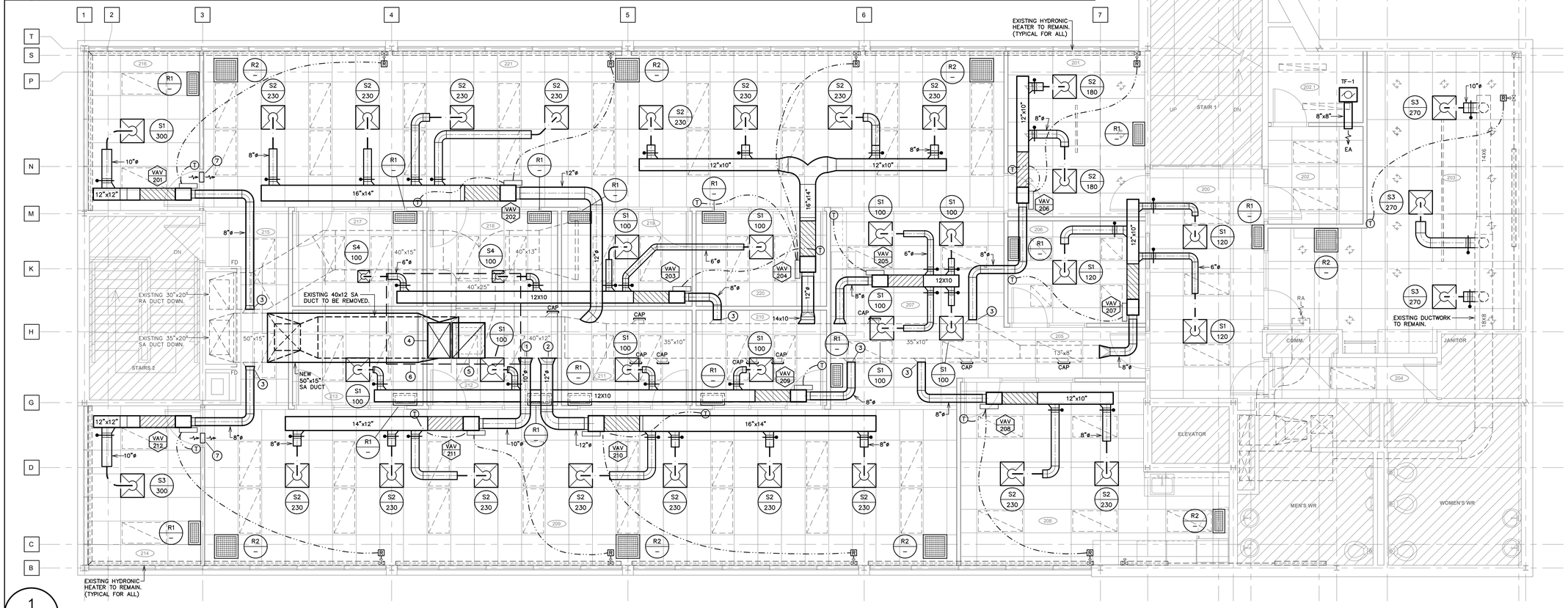
MAIN FLOOR PLAN HVAC

DRAWN BY / DESSINÉ PAR: K.C.S.
APPROVED BY / APPROUVÉ PAR: M.A.M.
DATE: 2019-06-28
SCALE / ÉCHELLE: AS NOTED

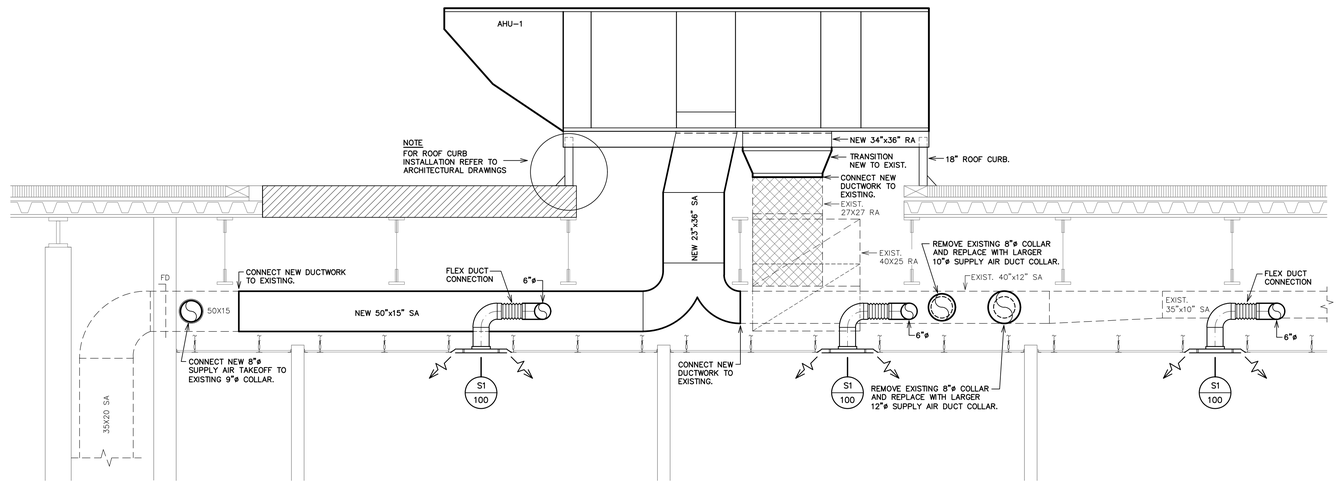
M-2

ROUND DUCTWORK
RECTANGULAR DUCTWORK
RECTANGULAR TO ROUND DUCTWORK
FLEXIBLE DUCT CONNECTION
VARIABLE AIR VOLUME BOX c/w ATTENUATOR (HATCHED AREA)
TEMPERATURE SENSOR c/w CONTROL WIRING
EXISTING HYDRONIC HEATER c/W CONTROL VALVE
EXISTING FIRE DAMPER
SUPPLY AIR DUCT RISER
RETURN AIR DUCT RISER
EXHAUST AIR DUCT RISER
RELAY c/w CONTROL WIRING
ANALOG INPUT CONTROL SIGNAL
ANALOG OUTPUT CONTROL SIGNAL
SPEED CONTROL
TRANSFER FAN
SUPPLY DIFFUSERS
RETURN GRILLES
LIGHTING FIXTURES REFER TO ELECTRICAL

5
M-3
SYMBOL LEGEND
N.T.S.



1
M-3
UPPER FLOOR PLAN - HVAC
1/4"=1'-0"



2
M-3
NEW AHU-1 DUCTWORK CONNECTION SECTION
1/2"=1'-0"

ROOM #	ROOM DESCRIPTION
200	WAITING ROOM
201	SHARED MEETING ROOM
202	STORAGE
202.1	DATA ROOM
203	BOARDROOM
204	CORRIDOR
205	CORRIDOR
206	COLLAB. ROOM
207	COLLAB. AREA
208	STAFF ROOM
209	OPEN OFFICE B
210	OFFICE
211	OFFICE
212	OFFICE
213	OFFICE
214	OFFICE
215	CORRIDOR
216	OFFICE
217	OFFICE
218	OFFICE
219	OFFICE
220	OFFICE
221	OPEN OFFICE A

3
M-3
ROOM LIST

DRAWING REFERENCE NOTES

1. EXISTING 8"ø/9"ø SUPPLY AIR TAKEOFF TO BE REMOVED AND REPLACED WITH A NEW 10"ø TAKEOFF.
2. EXISTING 8"ø/9"ø SUPPLY AIR TAKEOFF TO BE REMOVED AND REPLACED WITH A NEW 12"ø TAKEOFF.
3. CONNECT TO EXISTING SUPPLY AIR DUCT TAKEOFF.
4. NEW 36"X23" SUPPLY AIR DUCT UP TO NEW AIR HANDLING UNIT (AHU-1) ON ROOF ABOVE.
5. NEW 36"X34" RETURN AIR DUCT UP TO NEW AIR HANDLING UNIT (AHU-1) ON ROOF ABOVE. CONNECT EXISTING 27"x27" R.A. DUCT WITH NEW TRANSITION PIECE.
6. OUTLINE OF NEW AIR HANDLING UNIT LOCATED ON ROOF ABOVE. (AHU-1)
7. 10"x10" OPENING IN WALL ABOVE CEILING TO ALLOW FOR TRANSFER OF RETURN AIR BACK TO AHU-1.

4
M-3
DRAWING NOTES

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Springhill, NS

DRAWING / DESSIN

UPPER FLOOR PLAN HVAC

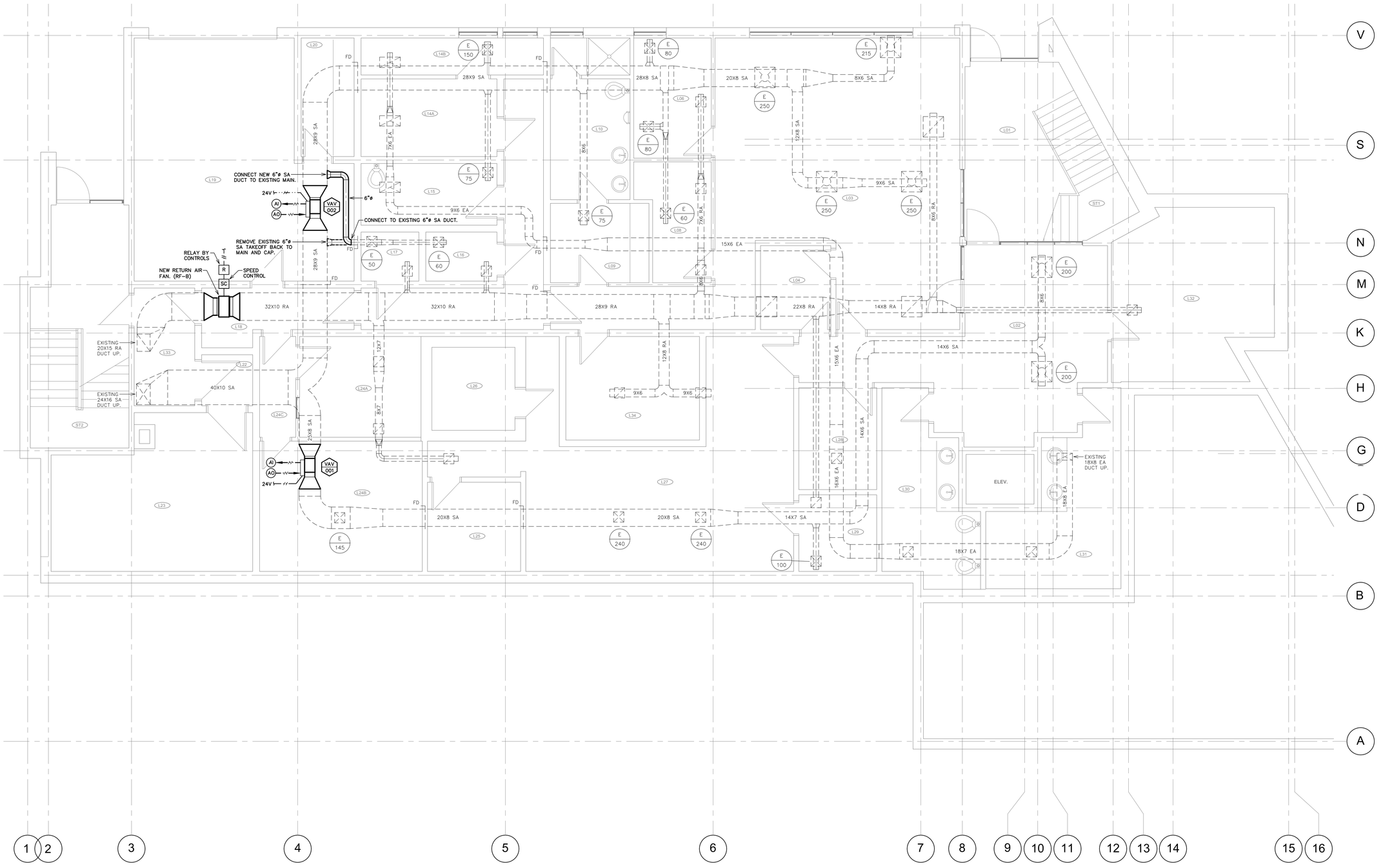
DRAWN BY / DESSINÉ PAR: K.C.S.
APPROVED BY / APPROUVÉ PAR: M.A.M.
DATE: 2019-06-28
SCALE / ÉCHELLE: AS NOTED

M-3

ROUND DUCTWORK
RECTANGULAR DUCTWORK
RECTANGULAR TO ROUND DUCTWORK
FLEXIBLE DUCT CONNECTION
VARIABLE AIR VOLUME BOX (NO ATTENUATOR)
TEMPERATURE SENSOR c/w CONTROL WIRING
EXISTING HYDRONIC HEATER C/W CONTROL VALVE
EXISTING FIRE DAMPER
SUPPLY AIR DUCT RISER
RETURN AIR DUCT RISER
EXHAUST AIR DUCT RISER
RELAY c/w CONTROL WIRING
ANALOG INPUT CONTROL SIGNAL
ANALOG OUTPUT CONTROL SIGNAL
SPEED CONTROL
TRANSFER FAN
SUPPLY DIFFUSERS
RETURN GRILLES
LIGHTING FIXTURES REFER TO ELECTRICAL

2
M-4
SYMBOL LEGEND

N.T.S.



1
M-4
BASEMENT FLOOR PLAN - HVAC

1/4"=1'-0"

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PROJECT / PROJET

SPRINGHILL OFFICE FIT-UP
43 Main St., Upper Level
Springhill, NS

DRAWING / DESSIN

BASEMENT FLOOR PLAN - HVAC

DRAWN BY / DESSINÉ PAR: K.C.S

APPROVED BY / APPROUVÉ PAR: M.A.M.

DATE: 2019-06-28

SCALE / ÉCHELLE: AS NOTED

M-4

AIR HANDLER SCHEDULE

TAG	MANUFACTURER & MODEL	UNIT SIZE (TON)	SUPPLY FAN SECTION				ELECTRICS			HEATING		COOLING PERFORMANCE						REFRIG. (TYPE)	WEIGHT	ACCESSORIES	REMARKS
			AIR FLOW (CFM)	EXT STATIC PRESSURE	HP	FLA	V	PH	MCA	INPUT (KW)	TEMP RISE (°F)	TOTAL CAP (MBH)	SENSIBLE CAP (MBH)	ENTERING TEMP (°F)		LEAVING TEMP (°F)					
														DRY BULB	WET BULB	DRY BULB	WET BULB				
AHU-1	YORK MODEL: ZJ240C00U2B5BCA1G1	20	8000 CFM	1.5 IWG	7.5	–	208	3	132.5	36	14.2	258.5	188.5	80.0	67.0	58.2	56.8	R-410A	2897 lbs	18" CURB	1, 2, 3, 4, 5, 6, 7, 8

1. TWO STAGE COOLING
2. VFD WITH BYPASS AND INTELLISPEED
3. SCROLL COMPRESSORS
4. ECONOMIZER
5. DISCONNECT SWITCH INCLUDED
6. GFCI OUTLET – NON POWERED
7. PROVIDE SINGLE ZONE VAV FAN OPERATION
8. SMART EQUIPMENT CONTROLLER INCLUDING DISCHARGE AIR, RETURN AIR, AND OUTDOOR AIR TEMPERATURE SENSOR.

7 / M-5 AHU SCHEDULE

VARIABLE AIR VOLUME BOX SCHEDULE

TAG	MODEL	BOX SIZE	INLET SIZE	DISCHARGE DUCT SIZE	AIR QUANTITY (cfm) min.	AIR QUANTITY (cfm) max.	CONTROLS	REMARKS
VAV 001	E.H.PRICE MODEL SDV-5000	8	8"ø	12"X10"	–	360	DDC (BY CONTROLS)	
VAV 002	E.H.PRICE MODEL SDV-5000	8	8"ø	12"X10"	–	540	DDC (BY CONTROLS)	
VAV 101	E.H.PRICE MODEL SDV-5000	8	8"ø	12"X10"	120	300	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 102	E.H.PRICE MODEL SDV-5000	8	8"ø	12"X10"	184	460	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 103	E.H.PRICE MODEL SDV-5000	10	10"ø	14"x12"	276	690	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 104	E.H.PRICE MODEL SDV-5000	10	10"ø	14"x12"	276	690	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 105	E.H.PRICE MODEL SDV-5000	8	8"ø	12"X10"	200	500	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 106	E.H.PRICE MODEL SDV-5000	8	8"ø	12"x10"	184	460	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 107	E.H.PRICE MODEL SDV-5000	10	10"ø	14"x12"	276	690	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 108	E.H.PRICE MODEL SDV-5000	10	10"ø	14"X12"	224	560	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 109	E.H.PRICE MODEL SDV-5000	8	8"ø	12"X10"	120	300	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 201	E.H.PRICE MODEL SDV-5000	8	8"ø	12"X10"	120	300	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 202	E.H.PRICE MODEL SDV-5000	12	12"ø	16"X15"	368	920	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 203	E.H.PRICE MODEL SDV-5000	8	8"ø	12"x10"	160	400	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 204	E.H.PRICE MODEL SDV-5000	12	12"ø	16"X15"	368	920	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 205	E.H.PRICE MODEL SDV-5000	8	8"ø	12"x10"	160	400	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 206	E.H.PRICE MODEL SDV-5000	8	8"ø	12"x10"	144	360	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 207	E.H.PRICE MODEL SDV-5000	8	8"ø	12"x10"	144	360	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 208	E.H.PRICE MODEL SDV-5000	8	8"ø	12"X10"	184	460	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 209	E.H.PRICE MODEL SDV-5000	8	8"ø	12"X10"	160	400	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 210	E.H.PRICE MODEL SDV-5000	12	12"ø	16"X15"	368	920	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 211	E.H.PRICE MODEL SDV-5000	10	10"ø	14"x12"	276	690	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR
VAV 212	E.H.PRICE MODEL SDV-5000	8	8"ø	12"X10"	120	300	DDC (BY CONTROLS)	c/w 3'-0" ATTENUATOR

TAG DESCRIPTION
VAV 00 – DENOTES ITEM
– DENOTES ITEM NO.

4 / M-5 VAV BOX SCHEDULE

GRILLE & DIFFUSER SCHEDULE

TAG	MODEL AND TYPE	FACE SIZE	NECK SIZE	AIR FLOW (CFM)	FINISH	NOTES
S1 –	CEILING SUPPLY DIFFUSER E.H. PRICE SPD/31/B12	24"x24"	6"ø	0 – 120	B12 (OFF WHITE)	PROVIDE FRAME FOR CEILING TYPES
S2 –	CEILING SUPPLY DIFFUSER E.H. PRICE SPD/31/B12	24"x24"	8"ø	121 – 220	B12 (OFF WHITE)	PROVIDE FRAME FOR CEILING TYPES
S3 –	CEILING SUPPLY DIFFUSER E.H. PRICE SPD/31/B12	24"x24"	10"ø	221 – 300	B12 (OFF WHITE)	PROVIDE FRAME FOR CEILING TYPES
S4 –	CEILING SUPPLY DIFFUSER E.H. PRICE SPD/31/B12	12"x12"	6"ø	0 – 120	B12 (OFF WHITE)	PROVIDE FRAME FOR CEILING TYPES
R1 –	CEILING RETURN DIFFUSER E.H. PRICE PDDR/3/B12	24"x12"	22"x10"	–	B12 (OFF WHITE)	PROVIDE FRAME FOR CEILING TYPES
R2 –	CEILING RETURN DIFFUSER E.H. PRICE PDDR/3/B12	24"x24"	22"x22"	–	B12 (OFF WHITE)	PROVIDE FRAME FOR CEILING TYPES
E –	EXISTING GRILLE/DIFFUSER	VARIES	VARIES	VARIES		

– INDICATES GRILLE NUMBER
– INDICATES AIR FLOW QUANTITY (CFM)

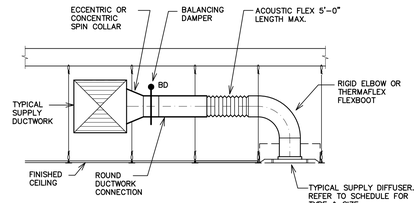
NOTE: ACCEPTABLE ALTERNATIVE EQUIPMENT: NAILOR, TITUS, OR TUTTLE & BAILEY

2 / M-5 GRILLE SCHEDULE

FAN SCHEDULE

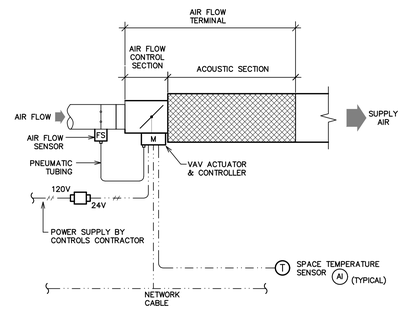
TAG	MANUFACT.	MODEL	MOTOR		ELECTRICAL				AIRFLOW	NOTES
			SIZE	RPM	VOLTS	PHASE	HERTZ	AMPS		
RF-B	GREENHECK	CSP-A700	350w	1100	115V	1ø	60	3.2	752 cfm @ 1/8" t.s.p.	
TF-1	GREENHECK	CSP-A510	217w	1070	115V	1ø	60	3.11	506 cfm @ 1/8" t.s.p.	

1 / M-5 EXHAUST FAN SCHEDULE

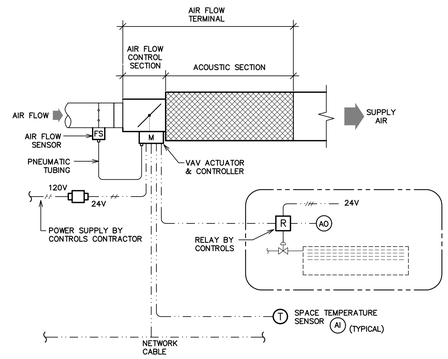


NOTE:
HVAC CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL DUCTWORK WITH OTHER SERVICES INSTALLED IN THE ABOVE CEILING SPACE AND PROVIDE DUCT OFFSETS WHERE NECESSARY TO AVOID CONFLICTS WITH OTHER SYSTEMS.

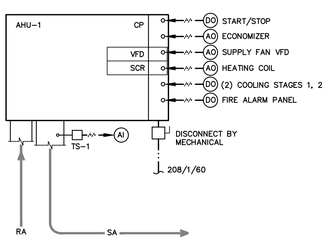
8 / M-5 TYPICAL DIFFUSER INSTALLATION DETAIL N.T.S.



5 / M-5 INTERIOR ZONE VAV CONTROL SCHEMATIC N.T.S.



6 / M-5 PERIMETER ZONE VAV CONTROL SCHEMATIC N.T.S.



3 / M-5 AHU-1 CONTROL SCHEMATIC N.T.S.

AHU-1 CONTROLS

OAT °F	OCCUPIED LAT °F TS-1	UNOCCUPIED LAT °F
-20	70	OFF
-10	67.5	OFF
0	65	OFF
10	62.5	OFF
20	62.5	OFF
30	60	OFF
40	60	OFF
50	58	OFF
60	58	OFF
70	55	OFF
80	55	OFF
90	55	OFF

* MODIFIED BY ZONE SENSOR

DESIGN PLUS ARCHITECTURE

dp18022

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EXCEPT FOR REFERENCE PURPOSES, THE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED FOR ADDITIONS OR ALTERATIONS TO THE PROJECT OR ON ANY OTHER PROJECT.

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STAMP / SCEAU

REGISTERED PROFESSIONAL ENGINEER PROVINCE OF NOVA SCOTIA 8413

ISSUED FOR TENDER MAR. 03, 2020

REVISIONS / DATE

A / B DETAIL LOCATION OF DETAIL

CLIENT / CLIENT

PROJECT / PROJET

SPRINGHILL OFFICE FIT-UP
43 Main St., Upper Level
Springhill, NS

DRAWING / DESSIN

DETAILS AND SCHEDULES HVAC

DRAWN BY / DESSINÉ PAR: K.C.S.

APPROVED BY / APPROUVÉ PAR: M.A.M.

DATE: 2019-06-28

SCALE / ÉCHELLE: AS NOTED

M-5

1. GENERAL CONDITIONS

1.1 GENERAL
THE FOLLOWING GENERAL CONDITIONS SHALL BE READ IN CONJUNCTION WITH THE GENERAL CONDITIONS AND SPECIAL CONDITIONS ISSUED BY THE PROJECT MANAGER.

1.2 SCOPE OF WORK
THE CONTRACTORS SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT AND ASSOCIATED SERVICES NECESSARY FOR, AND REQUIRED BY THE INSTALLATION OF COMPLETELY FINISHED, TESTED, BALANCED AND PROPERLY OPERATING MECHANICAL SYSTEMS AS SPECIFIED HEREAFTER AND SHOWN ON THE DRAWINGS. THE INTENTION IS TO PROVIDE FOR FINISHED WORK COMPLETE IN ALL ESSENTIALS AS CALLED FOR BY THE DOCUMENTS AND ACCEPTED GOOD PRACTICE.
THE WORK SHALL INCLUDE THE FOLLOWING:

FIRE PROTECTION:
- SUPPLY AND INSTALL NEW SPRINKLER HEADS ON UPPER FLOOR WHERE INDICATED.

VENTILATION:
- SUPPLY AND INSTALL COMPLETE SYSTEMS OF VENTILATION; INCLUDING ROOFTOP AHU–1 UNIT; EXHAUST FANS; SUPPLY, RETURN AND EXHAUST DUCTS; GRILLES, DIFFUSERS AND ACCESSORIES; ACOUSTIC INSULATION; AIR BALANCING.

CONTROLS:
- SUPPLY AND INSTALL NEW BUILDING MANAGEMENT CONTROL SYSTEM, INCLUDE ALL CONTROL POINTS AS INDICATED, SYSTEM TO BE AS PER SPECIFICATIONS.

1.3 PERMITS AND BY–LAWS
THE CONTRACTOR SHALL ABIDE BY ALL CODES AND BY–LAWS RELATING TO THIS INSTALLATION. PROVIDE NECESSARY NOTICES, OBTAIN PERMITS AND PAY ALL FEES, IN ORDER THAT WORK SPECIFIED MAY BE CARRIED OUT. CHANGES AND ALTERATIONS REQUIRED BY AUTHORIZED INSPECTOR OF ANY AUTHORITY HAVING JURISDICTION, TO BE CARRIED OUT WITHOUT CHARGE OR EXPENSE TO OWNER.

1.4 SITE VISIT
BEFORE TENDERING THE CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AT THE SITE WHERE THE WORK HAS TO BE DONE. NO EXTRA WILL BE ALLOWED DUE TO FAILURE TO TAKE SITE CONDITIONS INTO CONSIDERATION.

1.5 COORDINATION OF WORK
THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE GENERAL CONTRACTOR AND WITH ALL OTHER SUB–CONTRACTORS. COOPERATE WITH THE OWNER AND OTHER CONTRACTORS. WORK SHALL BE EXECUTED IN A MANNER SO AS TO CAUSE MINIMUM DISRUPTION. ALL SERVICES INTERRUPTIONS SHALL BE SCHEDULED OUTSIDE NORMAL WORKING HOURS. THE CONTRACTOR SHALL INCLUDE IN HIS TENDER, COSTS FOR ALL OVERTIME WORK INVOLVED WITH THE CONSTRUCTION.

1.6 GUARANTEE
THE CONTRACTOR SHALL GUARANTEE ALL WORK AND NEW EQUIPMENT PROVIDED AND INSTALLED UNDER THIS SPECIFICATION AGAINST ANY DEFECTS OF WORKMANSHIP AND MATERIAL FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF SAME BY OWNER. REPAIR AND MAKE GOOD ALL DAMAGE TO BUILDING INCURRED AS A RESULT OF FAILURE OF MECHANICAL WORK.

1.7 DRAWINGS
THE DRAWINGS FOR THE WORK ACCOMPANYING THESE SPECIFICATIONS ARE MADE AS ACCURATELY AS POSSIBLE, BUT ABSOLUTE ACCURACY OF DIMENSIONS CANNOT BE GUARANTEED. THEY ARE INTENDED TO SUPPLEMENT AND SIMPLIFY THE GENERAL CONTRACT DRAWINGS. NO CLAIM FOR EXTRA PAYMENT ON ACCOUNT OF DIFFERENCE OF ACTUAL AND ESTIMATED DIMENSIONS SHALL BE ALLOWED. IN THE CASE OF DISCREPANCY OF FIGURE DIMENSIONS ON THE DRAWINGS, THE MATTER SHALL BE IMMEDIATELY SUBMITTED TO THE ENGINEER FOR HIS DECISION. WITHOUT THE DECISION, THE DISCREPANCY SHALL NOT BE ADJUSTED BY THE CONTRACTOR SAVE AT HIS OWN RISK, AND IN THE SETTLEMENT OF ANY COMPLICATIONS ARISING FROM SUCH ADJUSTING, THE CONTRACTOR SHALL BEAR ALL EXTRA EXPENSE INVOLVED. INTERPRETATION OF ALL DOCUMENTS SHALL BE BY THE ENGINEER.

1.8 EXTRA WORK
NO ADDITIONAL MONEY OVER CONTRACT PRICE SHALL BE PAID UNLESS CONTRACTOR RECEIVES A SIGNED APPROVAL IN ACCORDANCE WITH THE GENERAL CONDITIONS. NO ADDITIONAL MONEY SHALL BE PAID FOR USE OF EQUAL PRODUCTS.

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

1.10 SLEEVES
THE CONTRACTOR IS TO SUPPLY AND SET IN PLACE PIPE AND/OR DUCT SLEEVES IN FLOOR, ROOF, OR FIRE WALLS BEFORE CONCRETE IS POURED.

1.11 SHOP DRAWINGS
THE CONTRACTOR SHALL SUBMIT, WITHIN TWO WEEKS AFTER BEING AWARDED THE CONTRACT, ONE COPY BY EMAIL OF CERTIFIED SHOP DRAWINGS FOR REVIEW BY THE ENGINEER OF ALL EQUIPMENT AND MATERIAL SPECIFIED AND SHALL NOT PROCEED WITH ANY OF THIS WORK UNTIL THE DRAWINGS HAVE BEEN RETURNED STAMPED AND SIGNED. THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE OBLIGATION OF CHECKING THE DRAWINGS HIMSELF OR FURNISHING THE MATERIALS SPECIFIED.

1.12 CLEANING UP
THE CONTRACTOR SHALL, AT ALL TIMES, KEEP THE SITE NEAT, CLEAN AND FREE FROM ACCUMULATION OF WASTE, MATERIALS AND RUBBISH WHICH ARISE OUT OF THEIR WORK.

1.13 EQUIVALENTS
EQUIPMENT OF THE FOLLOWING MANUFACTURERS, PROVIDING THE EQUIPMENT HAS EQUAL CHARACTERISTICS TO THAT SPECIFICALLY MENTIONED IN THIS SPECIFICATION, IS CONSIDERED AS EQUAL AND WILL BE ACCEPTED. THE ENGINEER HAS THE SOLE RIGHT TO DETERMINE AND INTERPRET THE 'EQUAL' QUALITIES. ANY MODIFICATIONS REQUIRED FOR INSTALLATION OF EQUAL PRODUCTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY
EQUIPMENT OF MANUFACTURERS NOT MENTIONED IN THE 'REVIEWED EQUALS LIST', WHO WISH TO HAVE THEIR EQUIPMENT LISTED AS EQUAL, MAY QUALIFY FOR THE 'REVIEWED EQUALS LIST'. SUBMIT ALL REQUIRED TECHNICAL DATA THROUGH THE OFFICE OF THE ENGINEER A MINIMUM OF TEN (10) DAYS PRIOR TO TENDER CLOSING.

1.14 OPERATION AND MAINTENANCE INSTRUCTIONS
CONTRACTOR SHALL INSTRUCT THE OWNER IN OPERATION OF MAINTENANCE OF ALL EQUIPMENT AND SYSTEMS INSTALLED. ALL SAFETY AND CONTROL FEATURES SHALL BE THOROUGHLY EXPLAINED. THREE COPIES OF OPERATION AND MAINTENANCE INSTRUCTIONS, TOGETHER WITH ALL APPROVED SHOP DRAWINGS AND SPARE PARTS LIST FASTENED IN A BINDER, SHALL BE SUBMITTED TO THE OWNER.

1.15 AS BUILT DRAWINGS
CONTRACTOR SHALL MAINTAIN, AT THE JOB SITE, ONE SET OF PLANS ON WHICH HE SHALL CLEARLY NOTE ALL CHANGES OR DEVIATIONS FROM THE CONTRACT DOCUMENTS, AS THE JOB PROGRESSES. CONTRACTOR SHALL AT THE TIME OF FINAL INSPECTION SUBMIT TO THE OWNERS REPRESENTATIVE, ONE SET OF FINAL 'AS–BUILT' WHITE PRINT DRAWINGS.

1.16 FIRE STOPPING
ALL CONTRACTORS SHALL PROVIDE AND INSTALL A ULC LISTED FIRE STOPPING MATERIAL AT PENETRATION OF MECHANICAL SYSTEMS WHERE SUCH SYSTEMS PENETRATE FIRE AND SMOKE SEPARATIONS AND RATED ASSEMBLIES IN THE STRUCTURE AS INDICATED ON ARCHITECTURAL DRAWINGS OR REQUIRED BY AUTHORITIES HAVING JURISDICTION. FIRE STOPPING SHALL BE INSTALLED AS PER MANUFACTURER'S APPROVED INSTALLATION REQUIREMENTS AND SHALL BE INSPECTED PRIOR TO ENCLOSING WALLS OR CEILING WHERE FIRE STOPPING HAS BEEN INSTALLED.

2. FIRE PROTECTION SYSTEMS

2.1 SCOPE
2.1.1 THIS PERFORMANCE SPECIFICATION OUTLINES THE DESIGN INSTALLATION, TESTING AND CERTIFICATION OF THE FOLLOWING:
.A WET SYSTEM UPPER FLOOR (2ND FLOOR).
– AS SHOWN ON THE DRAWINGS
2.1.2 SUBMIT TO THE PROJECT MANAGER ALL SHOP DRAWINGS AND HYDRAULIC CALCULATIONS FOR REVIEW. SHOP DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BEAR THE SEAL AND SIGNATURE OF A PROFESSIONAL ENGINEER LICENSED OR REGISTERED IN PRACTICE IN THE PROVINCE OF NOVA SCOTIA.
2.1.3 COORDINATE LOCATIONS OF ALL PIPING, VALVES, FITTINGS, HANGERS, AND SPRINKLER HEADS WITH OTHER DISCIPLINES AND SERVICES TO AVOID CONFLICT. ALL LOCATIONS SHALL BE APPROVED BY THE PROJECT MANAGER.
2.1.4 SUBMIT SHOP DRAWINGS TO AUTHORITIES HAVING JURISDICTION FOR APPROVALS PRIOR TO INSTALLATION.
2.1.5 OPERATING AND MAINTENANCE INSTRUCTIONS CONTRACTOR SHALL INSTRUCT THE OWNER IN OPERATION OF MAINTENANCE OF ALL EQUIPMENT AND SYSTEMS INSTALLED. ALL SAFETY AND CONTROL FEATURES SHALL BE THOROUGHLY EXPLAINED. THREE COPIES OF OPERATING AND MAINTENANCE INSTRUCTIONS, TOGETHER WITH ALL APPROVED SHOP DRAWINGS AND SPARE PARTS LIST FASTENED IN A BINDER, SHALL BE SUBMITTED TO THE OWNER. COPY OF AS–BUILT DRAWINGS (FOLDED PRINTS) AND ELECTRONIC CAD FILE ON CD.
2.1.6 AS–BUILT DRAWINGS
CONTRACTOR SHALL MAINTAIN, AT THE JOB SITE, ONE SET OF PLANS ON WHICH HE SHALL CLEARLY NOTE ALL CHANGES OR DEVIATIONS FROM THE CONTRACT DOCUMENTS, AS THE JOB PROGRESSES. CONTRACTOR SHALL AT THE TIME OF FINAL INSPECTION SUBMIT TO THE OWNERS REPRESENTATIVE, ONE SET OF FINAL 'AS–BUILT' WHITE PRINT DRAWINGS.
2.1.7 FIRE STOPPING
SPRINKLER CONTRACTORS SHALL PROVIDE AND INSTALL A ULC LISTED FIRE STOPPING MATERIAL AT PENETRATION OF MECHANICAL SYSTEMS WHERE SUCH SYSTEMS PENETRATE E AND SMOKE SEPARATIONS AND RATED ASSEMBLIES IN THE STRUCTURE AS INDICATED ON ARCHITECTURAL DRAWINGS OR REQUIRED BY AUTHORITIES HAVING JURISDICTION. FIRE STOPPING SHALL BE INSTALLED AS PER MANUFACTURERS APPROVED INSTALLATION REQUIREMENTS AND SHALL BE INSPECTED PRIOR TO ENCLOSING WALLS OR CEILING WHERE FIRE STOPPING HAS BEEN INSTALLED.

2.2 RELATED WORK
2.2.1 DIVISION 16.

2.3 REGULATIONS
2.3.1 THE INSTALLATION OF THE FIRE SUPPRESSION SYSTEM SHALL BE IN ACCORDANCE WITH THE DRAWINGS ISSUED UNDER THIS CONTRACT, THESE SPECIFICATIONS AND:
- THE NATIONAL BUILDING CODE OF CANADA 2015
- THE NATIONAL FIRE CODE OF CANADA 2015.
- THE NATIONAL PLUMBING CODE OF CANADA, 2015.
- NFPA 10–2013 STANDARD FOR POTABLE FIRE EXTINGUISHER.
- NFPA 13–2013, "STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS".
- NFPA 25–2013 "STANDARD FOR THE INSPECTION TESTING, AND MAINTENANCE OF WATER BASED FIRE PROTECTION SYSTEM".

2.4 COMPONENTS
ALL SYSTEM COMPONENTS REQUIRED TO BE "LISTED" AS PER NFPA SHALL HAVE THEIR LISTING THROUGH UNDERWRITERS LABORATORIES OF CANADA (ULC)/FACTORY MUTUAL ENGINEERING (FM).

2.5 AUTHORITY HAVING JURISDICTION
THE SYSTEM IS TO BE REVIEWED BY THE OFFICE OF THE FIRE MARSHAL.

2.6 REVIEW AUTHORITY
THE WORKING (SHOP) DRAWINGS ARE TO BE REVIEWED BY THE CONSULTANT. ANY COMMENTS SHALL BE DIRECTED TO THE CONSULTANT FOR REVIEW AND ACTION.

2.7 DESIGN APPROACH
2.7.1 THE SPRINKLER CONTRACTOR IS RESPONSIBLE TO CONDUCT A NEW WATER SUPPLY TEST IN ORDER TO DETERMINE AVAILABLE WATER SUPPLY.

2.8 SYSTEM REQUIREMENTS
2.8.1 WORK BEGINS AT EXISTING 4" RISER LOCATED IN VERTICAL SHAFT.
2.8.2 HEAVY DUTY WIRE HEAD GUARDS FOR SPRINKLER HEADS INDOOR STORAGE AREA, MECHANICAL ROOMS, ANY AREAS WHERE SUBJECT TO PHYSICAL DAMAGE.
2.8.3 SYSTEM TO BE COORDINATED WITH OTHER TRADES PRIOR TO INSTALLATION.
2.8.4 PROVIDE COPIES OF CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR ABOVEGROUND PIPING.
2.8.5 ALL SYSTEM SHALL BE CONNECTED TO THE BUILDING FIRE ALARM PANEL THAT INITIATE A FIRE ALARM. COORDINATE ALL ZONES WITH FIRE ALARM CONTRACTOR.
2.8.6 ALL MATERIAL TO BE AS SPECIFIED IN NFPA 13–10 EDITION ULC LISTED, AND MUST MEET THE REQUIREMENTS OF ALL LOCAL AUTHORITIES HAVING JURISDICTION.
2.8.7 ELECTRICAL BY DIVISION 16.

2.9 OPERATION AND MAINTENANCE DATA
2.9.1 THE CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF OPERATION AND MAINTENANCE INFORMATION AND DRAWING IN A 3 RING BINDER. INFORMATION IN EACH BINDER IS TO INCLUDE:
- COPY OF REVIEWED (STAMPED) PRODUCT DATA.
- DETAILED PERIODIC INSPECTION AND TESTS SCHEDULE PER THE REQUIREMENTS IN THE NATIONAL FIRE CODE AND NFPA 25.
- PRESSURE SETTINGS FOR ALL SWITCHES, ETC.
- COPY OF AS–BUILT DRAWINGS (FOLDED PRINTS) AND CAD FILES ON USB.
- COPY OF HYDRAULIC CALCULATIONS AND CORRESPONDING NODE DRAWINGS.
- COPY OF HYDRAULIC NAMEPLATES INDICATING SYSTEM DEMAND.
- COPY OF THIS SPECIFICATION SECTION.
- COPY OF MATERIAL AND TEST CERTIFICATES FOR SPRINKLER SYSTEMS.

2.9.2 BINDERS SHALL INCLUDE AN INDEX, DIVIDING TABS AND POUCHES FOR DRAWINGS.

2.10 EQUIPMENT
2.10.1 SPRINKLER HEADS
2.10.1.1 TYPE A UPRIGHT HEAD
QUICK RESPONSE, GLASS BULB, 1/2" ORIFICE SIZE 5.6K FACTOR, 155°F TEMPERATURE RATING, BRASS FINISH. TYCO, VICTAULIC OR APPROVED EQUAL
2.10.1.2 TYPE B SEMI–RECESSED PENDENT
QUICK RESPONSE, GLASS BULB 1/2" ORIFICE SIZE 5.6K FACTOR, 155°F TEMPERATURE RATING, CHROME FINISH. TYCO, VICTAULIC OR APPROVED EQUAL
2.10.2 IDENTIFICATION TAGS
2.10.2.1 REFER TO NFPA 13–10 EDITION
2.10.2.2 REQUIRED FOR ALL CONTROL VALVES, DRAIN VALVES, INSPECTOR'S TEST CONNECTIONS, TRIM VALVES AND SWITCHES.
2.10.2.3 RED LAMACOID WITH WHITE LETTERS
2.10.3 PIPE HANGERS
2.10.3.1 PIPING SHALL BE SUPPORTED BY HANGERS OR FLOOR SUPPORT AS PER NFPA 13–10 EDITIO
2.10.3.2 GALVANIZED HANGER FOR ALL AREAS
2.10.3.3 ACCEPTABLE PRODUCTS: TAYLOR, CADDY
2.10.4 PIPING AND FITTINGS
ALL SYSTEM PIPING TO BE SCHEDULE 10 & 40 ONLY ASTM A53 GRADE ONLY. ALL THREADED AND GROOVED PRODUCTS SHALL BE OF ONE MANUFACTURER.
FERROUS PIPE:
2.10.4.1 ROLL–GROOVED STEEL PIPE UP TO AND INCLUDING NPS 6 TO BE SCHEDULE 10 MINIMUM.
2.10.4.2 THREADED STEEL PIPING NPS 6 AND SMALLER TO BE MINIMUM OF SCHEDULE 40.
2.10.4.3 PLAIN AND STEEL PIPE NPS 1 UP TO AND INCLUDING NPS 2 JOINED BY MEANS OF A MECHANICAL LOCKING DEVICE TO BE MINIMUM SCHEDULE 10.
2.10.4.4 ALL MATERIALS USED IN FIRE PROTECTION SYSTEM SHALL BE ULC LISTED. ALL PIPING SHALL BE INSPECTED BY DSS, ENGINEER OR HIS APPOINTED REPRESENTATIVE PRIOR TO INSTALLATION FOR CONFIRMATION OF SIZE AND TYPE.
2.10.4.5 ALL BASEMENT PIPING TO BE SCHEDULE 10 GALVANIZED ONLY. ASTM A53 GRADE ONLY FOR MAINS AND SCHEDULE 40 GALVANIZED FOR BRANCH LINES.
2.10.4.6 ALL BLACK STEEL AND GALVANIZED PIPE SHALL BE MANUFACTURED IN UNITED STATES OR CANADA. ALL PIPE SHALL BE MARKED AS TO BRAND, SCHEDULE, DATE, AND ASTM NUMBER FROM THE FACTORY.
2.10.4.7 STANDARD OF ACCEPTANCE: NOVA TUBE, BULL MOOSE.
2.10.5 FIRE EXTINGUISHERS
2.10.5.1 FE–1 SEMI–RECESSED CABINET C/W 10LBS ABC MULTI–PURPOSE DRY CHEMICAL FIRE EXTINGUISHER.

3. VENTILATION SYSTEMS

3.1 DUCTWORK
ALL DUCTWORK SHALL BE CONSTRUCTED FROM LOCK FORMING QUALITY STEEL WITH G90 DESIGNATION ZINC COATING TO ASTM A525 M–80 IN ACCORDANCE WITH THE LATEST EDITION OF ASHRAE GUIDE AND SMSCNA STANDARDS. DUCT LEAKAGE SHALL NOT EXCEED 2% MAXIMUM. SEAL ALL DUCTS WITH APPROVED, INDOOR/OUTDOOR, ZERO VOC, 25/50 FHC, WATER BASED, POLYMER TYPE WATERPROOF SEALANT AND FIBERGLASS MESH TAPE DUCT SEALANT: DURODYNE EDS, ITW GLENKOTE, OR EQUAL.

DUCT GAUGE AND JOINT CONSTRUCTION SHALL BE AS THE FOLLOWING SCHEDULE, UNLESS NOTED OTHERWISE:

LONGEST SIDE	GAUGE US
< 12" (< 300mm)	26
12" TO 29" OR < 9"ø (300mm TO 735mm OR < 230mmø)	24
30" TO 39" OR 9" TO 14"ø (625mm TO 990mm OR 230mm to 355mmø)	22
40" TO 49" OR 15"–20"ø (1015mm TO 1250mm OR 380mm to 510mmø)	20
> 49" OR 21"–30"ø (> 1250mm OR 535mm TO 765mmø)	18
> 30"ø (> 765mmø)	16

REINFORCING MUST BE APPLIED ON ALL FOUR SIDES AND FASTENED TOGETHER AT EACH CORNER BY WELDING, BOLTING OR RIVETING. SIDES OF DUCTS OVER 18" (450 MM) WIDE SHALL BE STIFFENED BY CROSS BRACING. DUCT SIZES SHOWN ON DRAWINGS ARE INTERIOR DIMENSIONS; WHEN ACOUSTIC INSULATION IS ADDED INSIDE OF DUCT, SIZES SHALL BE INCREASED ACCORDINGLY. ROUND DUCT SHALL BE UNITED SPIRAL "UNISEAL" OR APPROVED EQUAL.

3.2 HANGERS
SUPPORT EACH SECTION OF THE DUCTWORK WITH STEEL RODS, ANGLE IRON, "C" CLAMPS AND OR CONCRETE INSERTS ALL AS PER SCHEDULE BELOW:

DUCT SIZE	ANGLE DIM.	RODS DIA.	SPACING
UP TO 30" (750mm)	1"x1"x1/8" (25x25x3mm)	1/4" (6mm)	108" (2700mm)
31" (775mm) TO 42" (1050mm)	1–1/2"x1–1/2"x1/8" (40x40x3mm)	1/4" (6mm)	108" (2700mm)
43" (1075mm) TO 60" (1500mm)	1–1/2"x1–1/2"x1/8" (40x40x3mm)	3/8" (10mm)	108" (2700mm)
61" (1525mm) TO 84" (2100mm)	2"x2"x1/8" (50x50x3mm)	3/8" (10mm)	108" (2700mm)
85" (2125mm) TO 96" (2400mm)	2"x2"x3/16" (50x50x5mm)	3/8" (10mm)	108" (2700mm)
97" (2425mm) AND OVER	2"x2"x1/4" (50x50x6mm)	3/8" (10mm)	108" (2700mm)

DUCTS UP TO 18" (450 MM) MAY BE SUPPORTED WITH GALVANIZED STEEL STRAP HANGERS MANUFACTURED TO SMACNA STANDARDS, SCREWED AT THE TOP AND ON THE BOTTOM OF DUCT. DO NOT BREAK CONTINUITY OF INSULATION VAPOR BARRIER BY HANGERS OR RODS

3.3 FLEXIBLE CONNECTIONS
PROVIDE AT FANS AND AT ALL FAN POWERED UNITS, NEOPRENE COATED GLASS FABRIC, DURO–DYNE OR EQUAL, WITH 25/50 FHC, NOT MORE THAN 4" (100 MM) WIDE BETWEEN METAL PARTS AND INSTALLED WITH SEALED SEAM AND WITH SUFFICIENT SLACK TO PREVENT VIBRATION TRANSMISSION.

3.4 DUCT INSULATION – THERMAL
ALL DUCT INSULATION MATERIALS, SECUREMENT, AND JACKETING SHALL BE PROVIDED AND APPLIED IN ACCORDANCE WITH MANUFACTURER GUIDELINES AND SHALL MEET OR EXCEED CONFORMANCE WITH TIAC, SMACNA, CAN/ULC S102. FLAME/SMOKE RATINGS OF INSULATION AND COMPONENTS SHALL NOT EXCEED 25/50 FHC. STANDARD OF ACCEPTANCE: 3M, KNAUF, JOHNS MANVILLE, OWENS–CORNING.
INSTALL ALL DUCT INSULATION WITH 3/4" BANDING AT 16"O.C. STRAPPING. APPLY WELD PINS AND CLIPS AT BOTTOM OF DUCT AND WHEREVER DUCT DIMENSION EXCEEDS 12". ALL JOINTS AND SEAMS SHALL BE LAPPED PER MANUFACTURER RECOMMENDATIONS AND PENETRATIONS WITH FIBER REINFORCED FOIL TAPE. INSULATE AFTER ALL DUCTWORK HAS BEEN SEALED AND INSPECTED. ALL DUCT HANGERS AND ANGLE IRON SUPPORTS SHALL BE LOCATED OUTSIDE OF DUCT INSULATION.
ALL DUCTWORK WITHIN 15FT(4.6m) OF EXTERIOR WALL AND ROOF PENETRATIONS SHALL BE INSULATED.INSULATE ALL CONDITIONED SUPPLY AIR DUCT UP TO THE VAV BOX INLET DISCHARGE GRILLE/DIFFUSER.
EXPOSED SPIRAL DUCTWORK (NON–CONCEALED) DOES NOT REQUIRE INSULATION AND JACKET, EXCEPT WHERE OTHERWISE INDICATED.

INDOOR DUCT INSULATION IN ACCORDANCE WITH TIAC C–1 DUCT INSULATION SHALL BE 2"(50mm) THICK FIBERGLASS BLANKET INSULATION TO ASTM C553 C/W FACTORY APPLIED FIBERGLASS REINFORCED FOIL JACKET TO CGSB 51–GP–52MA. UL GREENGUARD GOLD CERTIFIED. 0.75 PCF MIN. DENSITY, MIN. R–VVALUE 2.8 PER INCH THICKNESS AT 25% MAX. COMPRESSION.

3.5 DUCT LINER INSULATION – ACOUSTIC/THERMAL
LINE INSIDE OF DUCTS AND TRANSFER DUCTS, WHERE INDICATED, TO BE 1"(25mm) THICK RIGID FIBROUS GLASS DUCT LINER, DENSITY 21.95 KG/SQUARE METERS, WITH NEOPRENE OR ACRYLIC REINFORCED MAT COATING, OR 1"(25mm) THICK CLOSED CELL HOMOGENOUS ELASTOMERIC LINER, WITH MIN. NRC 0.55. FLAME/SMOKE MAX. 25/50 FHC. LINER TO BE FASTENED TO INTERIOR SHEET METAL SURFACES WITH 100% COVERAGE OF AN APPROVED FIRE RESISTANT BONDING ADHESIVE. SEAL EDGES, PIN PENETRATIONS AND JOINTS WITH AN APPROVED FIRE RESISTANT MASTIC. PRODUCT SHALL NOT PERMIT MICROBIAL GROWTH IN CONFORMANCE WITH ASTM C1338, G21, G22. PRODUCT SHALL BE UL GREENGUARD GOLD CERTIFIED.
MATERIALS: CGSB 51–GP–11M FIBROUS GLASS RIGID BOARD COATED ON ONE SIDE. STANDARD OF ACCEPTANCE: K–FLEX, ARMACELL, JOHNS MANVILLE LINACOUSTIC RC, KNAUF, FIBERGLASS INC.

3.6 FLEXIBLE DUCTS
FLEXIBLE DUCT STANDARD: THERMAFLEX MKE, OR APPROVED EQUAL. FLEXIBLE DUCT LENGTH SHALL NOT EXCEED 5' (1500MM) LENGTH AND SHALL BE SECURELY SUPPORTED FROM STRUCTURE TO MAINTAIN FULL CROSS–SECTIONAL AREA WITH PERMISSIBLE SAG NOT EXCEEDING ½" PER FOOT. FLEXIBLE DUCT SHALL NOT BE PERMITTED AT GRILLE/DIFFUSER COLLAR; DIFFUSERS SHALL HAVE FULL RADIUS HARD DUCTED ELBOWS.

3.7 FIRE DAMPERS
PROVIDE "DYNAMIC" TYPE FIRE DAMPERS WHERE SHOWN AND WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION TO MAINTAIN FIRE WALL OR CEILING INTEGRITY.
ACCEPTABLE MANUFACTURER: CONTROLLED AIR MFG LTD MODEL 'B', OR EQUAL.
FIRE DAMPERS SHALL BE LISTED AND BEAR THE LABEL OF ULC AND SHALL MEET REQUIREMENTS AND BE INSTALLED TO NFPA 90A AND SMACNA STANDARD 'FIRE DAMPER GUIDE FOR AIR HANDLING SYSTEMS'.
SEAL WALL OPENINGS ALL AROUND THE DUCTS PASSING THROUGH THE FIRE WALLS AS RECOMMENDED BY THE NFPA–13. PROVIDE ACCESS DOORS AT FIRE DAMPER (ACCESS TO BE INSULATED TYPE WHERE DUCT IS INSULATED.)

3.8 ACCESS DOORS
PROVIDE AS INDICATED AND WHERE REQUIRED FOR ACCESS TO FIRE OR OTHER DAMPERS AND FOR SERVICE OR INSPECTION OF EQUIPMENT CAM–LEVER TYPE ACCESS PANEL 12" X 18" (300 X 450 MM) UNLESS OTHERWISE STATED, COMPLETE WITH TWO SASH LOCKS.
PANELS ON INSULATED DUCT WORK SHALL BE OF DOUBLE PANEL CONSTRUCTION WITH INSULATION FILLER AND SHALL HAVE AN EXTENDED METAL COLLAR TO BE FLUSH WITH FACE OF FINISHED INSULATION.

3. VENTILATION SYSTEMS (CONTINUED)

3.9 BALANCING DAMPERS
PROVIDE BALANCING DAMPERS IN DUCTWORK WHERE SHOWN AND WHERE REQUIRED FOR PROPER ADJUSTMENT OF AIR QUANTITIES. ALL DAMPERS SHALL BE EQUIPPED WITH A LOCKING QUADRANT SOLIDLY MOUNTED ON THE EXTERIOR OF THE DUCT. CLOSED POSITIONS MUST BE CLEARLY MARKED. PROVIDE SHAFT AND BEARING ON EACH SIDE OF DAMPER.
.1 SPLITTER DAMPERS SHALL BE AIRFOIL SHAPE DOUBLE THICKNESS, ONE GAUGE HEAVIER THAN DUCT (MINIMUM 22 GAUGE) MOUNTED ON A ROUNDED EDGE PIANO HINGE. THE LENGTH OF THE DAMPER SHALL BE 1.5 TIMES THE WIDTH OF THE SMALLEST DUCT.
.2 BUTTERFLY DAMPER WITH A SINGLE 22 GAUGE BLADE MAY BE USED IN ROUND DUCTS OF 12" (300 MM) AND LESS.
.3 MULTI–LEAF OPPOSED BLADE DAMPERS DESIGNED TO SMACNA STANDARDS SHALL BE USED IN SQUARE DUCTS.

3.10 AIR BALANCING
AIR BALANCING SHALL BE DONE BY A PROFESSIONAL TEST AND BALANCING FIRM. AIR QUANTITIES AT EACH OUTLET SHALL BE AS INDICATED ON THE DRAWINGS. A REPORT SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THIS REPORT SHALL SHOW THE CFM (L/S), VELOCITIES AND AREA OF EACH OUTLET, TYPE AND MODEL NUMBER OF FANS AND MOTORS INSTALLED, ACTUAL AIR DELIVERED BY THE FAN WITH TOTAL STATIC PRESSURE, VOLTAGE AND AMPERAGE DRAWN BY THE MOTORS. AFTER FINAL APPROVED BALANCE, PROVIDE INDEPENDENT REPORT TO THE OWNER FOR HIS USE.
EXTENT OF AIR BALANCE SHALL INCLUDE SUPPLY, RETURN, EXHAUST, ALL. TEST PRESSURE (2.0 IN WG, 500PA). DUCT SEAL CLASS C. ALLOWABLE LEAKAGE 2.0%. ESTING TO AABC AND SMACNA STANDARDS, LATEST EDITION.

3.11 CLEANING AND STARTING
SYSTEMS SHALL BE CLEANED OF ALL DIRT, ETC., AND SHALL THEN BE STARTED UP. ALL EQUIPMENT SHALL BE FULLY SERVICED BEFORE STARTUP, AS PER MANUFACTURER'S RECOMMENDATIONS. FILTERS SHALL BE REPLACED AFTER TEST RUN.

3.12 SPARE BELTS AND KEYS
PROVIDE A SPARE SET OF BELTS FOR ALL EQUIPMENT BEING SUPPLIED UNDER THIS CONTRACT. EACH SPARE BELT SHALL BE MARKED WITH SIZE, MODEL, ETC··· AND WHICH PIECE OF EQUIPMENT IT SERVES. PROVIDE A SET IN DUPLICATE, OF KEYS FOR THERMOSTATS, KEY OPERATED SWITCHES, ETC··· EACH KEY SHALL BE MARKED CONCERNING ITS USE.

3.13 GRILLE SCHEDULE
REFER TO DIFFUSER/GRILLE SCHEDULE ON DRAWINGS.

3.14 EQUIPMENT
REFER TO DRAWING SCHEDULES.

3.15 START–UP, COMMISSIONING AND TRAINING
3.15.1 AIR HANDLER START–UP SHALL INCLUDE MANUFACTURERS REPRESENTATIVE START–UP AND COMMISSIONING REPORT.
3.15.2 THIS CONTRACTOR SHALL PROVIDE TRAINING (UP TO 6 HOURS) TO USER REPRESENTATIVE OR DESIGNATED MAINTENANCE PERSONNEL FOR EQUIPMENT OPERATION AND MAINTENANCE. OWNER'S REPRESENTATIVE SHALL SIGN–OFF UPON COMPLETION OF TRAINING.

3.16 OPERATION AND MAINTENANCE DATA
3.16.1 THE CONTRACTOR SHALL PROVIDE THREE (3) COPIES OF OPERATION AND MAINTENANCE INFORMATION AND DRAWINGS IN A THREE (3) RING BINDER ALONG WITH AN ELECTRONIC COPY ON A USB STICK. INFORMATION IN EACH BINDER SHALL INCLUDE:
- COPY OF APPROVED (STAMPED) SHOP DRAWINGS OF PRODUCTS USED.
- COPY OF REVIEWED AS–BUILT DRAWINGS (FOLDED PRINTS) AND CAD FILE ON USB STICK.
- COPY OF CONTRACTOR AND SUBCONTRACTOR CONTACT INFORMATION.
- COPY OF SPECIFICATION SECTIONS.
- COPY OF CONTRACTOR'S WARRANTY LETTER SIGNED BY AN OFFICER OF THE COMPANY.
- COPY OF ALL EQUIPMENT MAINTENANCE INFORMATION.

3.16.2 THE BINDERS SHALL INCLUDE AN INDEX, DIVIDING TABS AND SLEEVES FOR DRAWINGS.

4. CONTROLS

4.1 PROVIDE A SYSTEM OF DDC BACNET CONTROLS TO SCHEDULE AND TEMPERATURE CONTROL ALL HVAC DEVICES, INCLUDING AHU–1, VAV BOXES, HYDRONIC HEATERS, AND EXHAUST FANS.

PROVIDE CAPABILITY TO NETWORK CONTROLS SYSTEMS WITH OWNER'S EQUIPMENT IN A REMOTE LOCATION.

4.1.1 AHU–1 CONTROL
REFER TO POINTS SCHEMATIC FOR CONTROL POINTS.

SCHEDULE: OCCUPIED: 0730–1700 MON–SAT (USER ADJUSTABLE VIA BAS). NOTE THIS SCHEDULE INCLUDES 1 HOUR MORNING WARM–UP AND 1/2 HOUR END OF DAY EXTENSION BASED ON NORMAL OCCUPIED HOURS. CONFIRM WITH USER THAT NORMAL OPERATING HOURS ARE 08:30 – 16:30.

UNOCCUPIED: ALL OTHER

SEQUENCE: REFER TO TEMPERATURE CONTROL PROFILE; AC UNIT PROVIDES NOMINAL HEAT.

UNOCCUPIED: AHU–1 IS OFF.

PROVIDE USER INTERFACE VIA BAS TO PERMIT OCCUPANCY OVERRIDE FOR 2HOUR INTERVALS.

4.1.2 VAV CONTROL
SCHEDULE: OCCUPIED: 0730–1700 MON–SAT (USER ADJUSTABLE VIA BAS)

UNOCCUPIED: ALL OTHER

SEQUENCE:
– DURING OCCUPIED MODE, ACTIVATE ALL VAV BOXES AND MODULATE TO ACHIEVE SET POINT TEMPERATURE, NOMINAL 22.5°C.
– ON CALL FOR COOLING, MODULATE VAV BOX OPEN AND STOP AT SET POINT.
– ON CALL FOR LESS COOLING, MODULATE VAV BOX CLOSING AND STOP AT MINIMUM POSITION.
– ON CALL FOR LESS COOLING BEYOND MINIMUM POSITION, ACTIVATE HEATING RELAY AND OPEN HEATING RADIATION CONTROL VALVE.

UNOCCUPIED: VAV'S ARE CLOSED.

4.2 CONTRACTOR SHALL PROVIDE TRAINING TO USERS (UP TO 4 HOURS) FOR CONTROLS INTERFACE. OWNER'S REPRESENTATIVE SHALL SIGN–OFF UPON COMPLETION OF TRAINING.

4.3 THE CONTRACTOR SHALL PROVIDE THREE(3) COPIES OF OPERATION AND MAINTENANCE (PRODUCT DATA, CONTROL SCHEMATICS, SHOP DRAWINGS AND WARRANTY INFORMATION) IN 3–RING BINDER ALONG WITH AN ELECTRONIC COPY ON USB/THUMB DRIVE.

1
M-6 MECHANICAL SPECIFICATIONS

N.T.S.

DESIGN PLUS ARCHITECTURE

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STAMP SCEAU



ISSUED FOR TENDER MAR. 03, 2020
REVISIONS DATE

A / B DETAIL / LOCATION OF DETAIL

CLIENT CLIENT

PROJECT PROJET

SPRINGHILL OFFICE FIT-UP
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DRAWING DESSIN

MECHANICAL SPECIFICATIONS

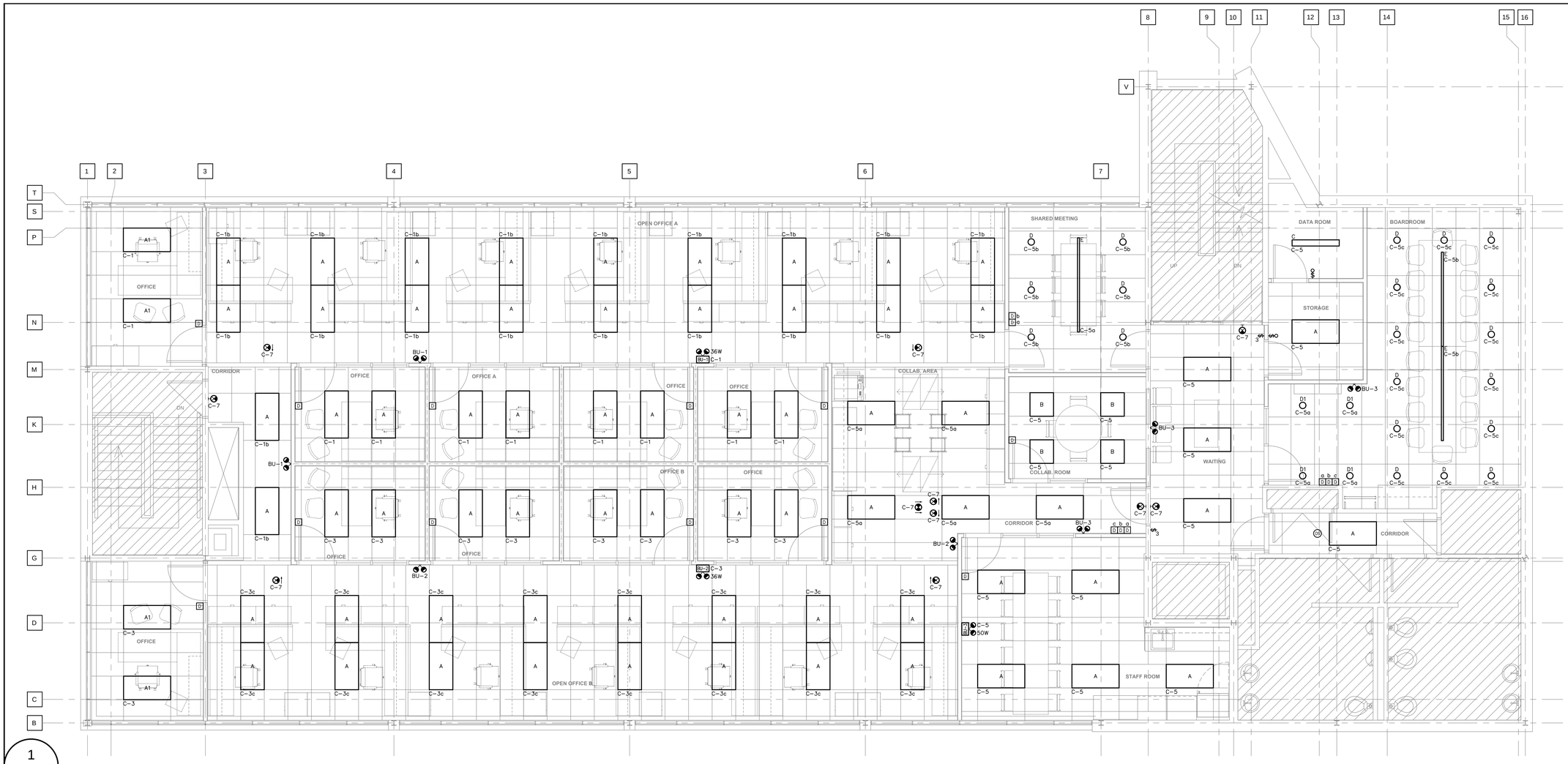
DRAWN BY DESSINÉ PAR K.C.S.

APPROVED BY APPROUVÉ PAR M.A.M.

DATE 2019-06-28

SCALE ÉCHELLE AS NOTED

M-6



1 E-1 UPPER FLOOR PLAN - LIGHTING

SCALE: 1/4" = 1'-0"

LIGHTING

- LINEAR LUMINAIRE, REFER TO LUMINAIRE SCHEDULE
- CEILING MOUNTED LUMINAIRE, REFER TO LUMINAIRE SCHEDULE
- BU-1 — EMERGENCY LIGHTING SYSTEM DUAL REMOTE HEADS, 'BU-1' INDICATES WHICH BATTERY UNIT SERVES REMOTE. REFER TO LUMINAIRE SCHEDULE
- BU-1 — EMERGENCY LIGHTING BATTERY UNIT C/W DUAL HEADS, 'BU-1' INDICATES BATTERY UNIT IDENTIFIER. REFER TO LUMINAIRE SCHEDULE
- GREEN LED "RUNNING MAN" EXIT SIGN, RECESSED CEILING MOUNT OR WALL MOUNTED AS INDICATED, NUMBER OF FACES AND DIRECTIONAL ARROWS AS SHOWN. REFER TO LUMINAIRE SCHEDULE

LIGHTING CONTROL

- 3$ — 3-WAY TOGGLE SWITCH
- $ — WALL MOUNTED OCCUPANCY SENSOR/SWITCH
- D — DIMMER SWITCH, LED COMPATIBLE, 0-10V CONTROL
- OS — CEILING MOUNTED OCCUPANCY SENSOR

EQUIPMENT CONNECTIONS AND CONTROLS

- 120/208V DIRECT CONNECTION
- C — COMMUNICATIONS CONNECTION TO MODULAR FURNITURE
- P — POWER CONNECTION TO MODULAR FURNITURE
- UNFUSED DISCONNECT SWITCH
- RAT — REVERSE ACTING THERMOSTAT
- RECESSED ELECTRICAL PANELBOARD

GENERAL POWER

- 5-15R, 15A, 120V U-GROUND DUPLEX RECEPTACLE – STANDARD MOUNTING HEIGHT AND MOUNTED ABOVE COUNTER
- 5-20R, 20A, 120V T-SLOT U-GROUND DUPLEX RECEPTACLE – STANDARD MOUNTING HEIGHT AND MOUNTED ABOVE COUNTER
- 5-15R, 15A, 120V U-GROUND QUAD RECEPTACLE – STANDARD MOUNTING HEIGHT AND MOUNTED ABOVE COUNTER
- 5-20R, 20A, 120V (T-SLOT) U-GROUND DUPLEX RECEPTACLE C/W GROUND FAULT CIRCUIT INTERRUPTER – STANDARD MOUNTING HEIGHT AND MOUNTED ABOVE COUNTER
- FB — FLOOR BOX
- JB — JUNCTION BOX

FIRE ALARM SYSTEM

- MANUAL PULL STATION
- FLUSH MOUNTED BELL

COMMUNICATIONS

- TELEPHONE OUTLET – WALL MOUNTED OR MOUNTED ABOVE COUNTER
- WAP — WIRELESS ACCESS POINT MOUNTED IN CEILING
- COMBINATION VOICE/DATA OUTLET – WALL MOUNTED OR MOUNTED ABOVE COUNTER, #D=INDICATES NUMBER OF DATA DROPS, #V=INDICATES NUMBER OF VOICE DROPS

SECURITY

- CR — CARD READER
- ES — ELECTRIC STRIKE

MISCELLANEOUS

- ELECTRICAL DRAWING SPECIFIC NOTES
- 1 — MECHANICAL EQUIPMENT DESIGNATION

ABBREVIATIONS

- DEL – INDICATES EXISTING DEVICE TO BE DELETED
- EX – INDICATES EXISTING DEVICE TO REMAIN
- MV – INDICATES EXISTING DEVICE TO BE MOVED
- REL – INDICATES EXISTING DEVICE IN RELOCATED LOCATION
- WAP – WIRELESS ACCESS POINT
- WP – WEATHERPROOF WHILE-IN-USE COVERPLATE

2 E-1 LEGEND N.T.S.

LUMINAIRE SCHEDULE

TYPE	MANUFACTURER		DESCRIPTION	VOLTAGE	MOUNTING	LAMP	NOTES
A	LITHONIA #2AVL4-40L-MDR-GZ10-LP835	METALUX #24CZ2-40-RDP-UNV-L835-CDI-U	2'x4' RECESSED DIRECT/INDIRECT LUMINAIRE, BAKED WHITE ENAMEL FINISH, METAL DIFFUSER ROUND HOLES, 0-10V DIMMABLE LED DRIVER.	120	RECESSED IN T-BAR	41W LED ~4000 LUMENS 3500'K CRI=80	–
A1	LITHONIA #2AVL4-50L-MDR-GZ10-LP835	METALUX #24CZ2-50-RDP-UNV-L835-CDI-U	2'x4' RECESSED DIRECT/INDIRECT LUMINAIRE, BAKED WHITE ENAMEL FINISH, METAL DIFFUSER ROUND HOLES, 0-10V DIMMABLE LED DRIVER.	120	RECESSED IN T-BAR	50W LED ~5200 LUMENS 3500'K CRI=80	–
B	LITHONIA #2AVL2-30L-MDR-GZ10-LP835	METALUX #22CZ2-32-RDP-UNV-L835-CDI-U	2'x2' RECESSED DIRECT/INDIRECT LUMINAIRE, BAKED WHITE ENAMEL FINISH, METAL DIFFUSER ROUND HOLES, 0-10V DIMMABLE LED DRIVER.	120	RECESSED IN T-BAR	31W LED ~3000 LUMENS 3500'K CRI=80	–
C	LITHONIA #ZL1N-L48-5000LM-FST-MVOLT-35K-80CRI-WH	METALUX #4SNLED-LD5-50SL-SLN-UNV-L835-CDI-U	4' LONG LED STRIPLIGHT, BAKED WHITE ENAMEL FINISH, SNAP ON FROSTED LENS, 0-10V DIMMABLE LED DRIVER.	120	SUSPENDED AT 9'-0" A.F.F.	34W LED ~5000 LUMENS 3500'K CRI=80	1
D	LITHONIA #LDN4-35/10-L04-AR-LS-MVOLT-GZ10-TRW	PORTFOLIO #LD4B10D010/ EU4B102080035/ 4LBOM1/ HB26	4" DIAMETER LED DOWNLIGHT, SPECULAR REFLECTOR, DIFFUSING OPTICAL LENS, WHITE TRIM RING, 0-10V DIMMABLE LED DRIVER.	120	RECESSED IN T-BAR	13W LED ~1000 LUMENS 3500'K CRI=80	–

LUMINAIRE SCHEDULE

TYPE	MANUFACTURER		DESCRIPTION	VOLTAGE	MOUNTING	LAMP	NOTES
D1	LITHONIA #LDN4-35/15-L04-AR-LS-MVOLT-GZ10-TRW	PORTFOLIO #LD4B15D010/ EU4B10208035/ 4LBOM1/HB26	4" DIAMETER LED DOWNLIGHT, SPECULAR REFLECTOR, DIFFUSING OPTICAL LENS, WHITE TRIM RING, 0-10V DIMMABLE LED DRIVER.	120	RECESSED IN T-BAR	20W LED ~1500 LUMENS 3500'K CRI=80	–
E	LUMENWERX #VIA3PD-HLO-LED-80-500-35-8FT-UNV-D1-1-53WAC36-W	NEORAY #S123-DP-LC500-35-SC48-ETG-0096-1-D-U-DD-1-W	8' LONG LED PENDANT, EXTRUDED ALUMINUM HOUSING, MATTE WHITE IN COLOR, ACRYLIC LENS, 0-10V DIMMABLE LED DRIVER.	120	SUSPENDED FROM T-BAR AT 8'-0" A.F.F.	4W/FT LED ~500 LUMENS/FT 3500'K CRI=80	1
⚉	READY-LITE #RS-3-W-SP	AIMLITE #RPST-U-M-WHT-BAT	SINGLE OR DUAL FACE UNIVERSAL MOUNTING EXIT SIGN, WHITE STEEL HOUSING, 'RUNNING MAN' PICTOGRAM, DIRECTIONAL ARROWS AS INDICATED, INTERNAL BATTERY	120	SURFACE MOUNTED TO WALL OR CEILING	2W LED	–
BU-1	READY-LITE #LDX12-XXVQ-ADN-LD10	AIMLITE #EBCV-12-XXX-2-6WLA-WHT-ATD	DUAL HEAD EMERGENCY LIGHTING BATTERY UNIT, 10 YEAR BATTERY, BATTERY CHARGER, TEST SWITCH, 'CHARGE' & 'ON' LEDS, AUTO TEST OPTION	120VAC/ 12VDC	SURFACE MOUNTED	2-6W LED	3
BU-1	READY-LITE #RL150-D-LD10	AIMLITE #RMMD-2-12-6WLA-WHT	DUAL HEAD REMOTE EMERGENCY LIGHT, WHITE METAL BULLET STYLE HEADS	120VAC/ 12VDC	SURFACE MOUNTED	2-6W LED	2

NOTES:
1. CONFIRM EXACT MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.
2. PROVIDE ALL REQUIRED LOW VOLTAGE CONDUIT AND WIRING TO CONNECT TO BATTERY UNIT INDICATED.
3. SEE FLOOR PLANS FOR REQUIRED BATTERY CAPACITY.

3 E-1 LUMINAIRE SCHEDULE N.T.S.

2019-05-31 07:46:24

DESIGN PLUS ARCHITECTURE

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STAMP / SCEAU

NEW BRUNSWICK PROFESSIONAL ENGINEERS 26/02 2020 9697 T.S. Dubeau PROFESSIONAL ENGINEER PROVINCE OF NEW BRUNSWICK

ISSUED FOR TENDER	MAR. 03, 2020
REVISIONS	DATE

A / B — DETAIL LOCATION OF DETAIL

CLIENT / CLIENT

PROJECT / PROJET

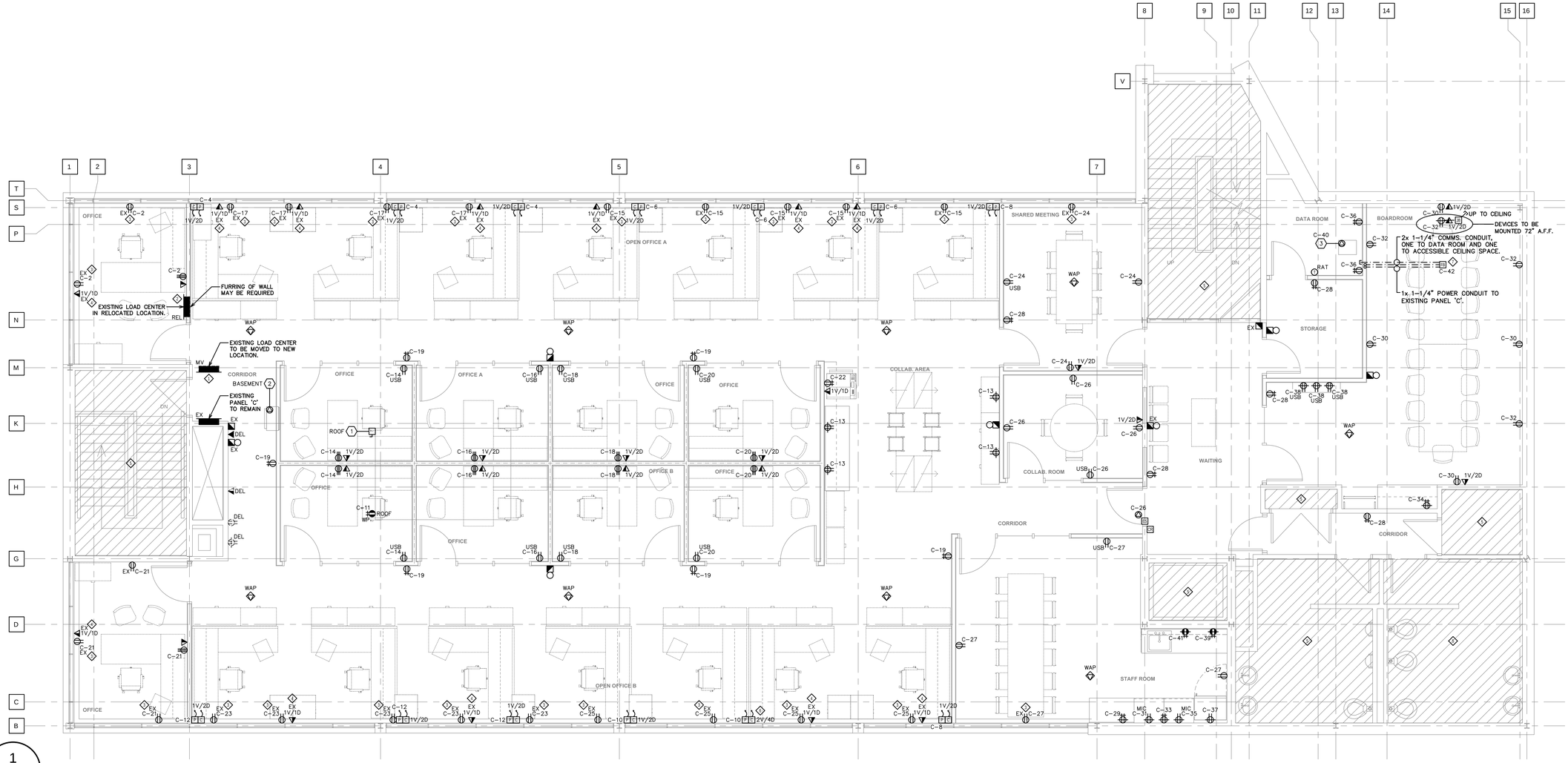
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Springhill, NS

DRAWING / DESSIN

ELECTRICAL UPPER FLOOR LIGHTING PLAN AND LUMINAIRE SCHEDULE

DRAWN BY / DESSINÉ PAR: J.A.
APPROVED BY / APPROUVÉ PAR: T.D.
DATE: 2019-08-15
SCALE / ÉCHELLE: AS INDICATED

E-1



1 E-2 UPPER FLOOR PLAN - POWER & COMMUNICATIONS

SCALE: 1/4" = 1'-0"

SPECIFIC NOTES:

1. TRACE OUT ALL EXISTING CIRCUITS TO DETERMINE WHICH CIRCUITS ARE STILL IN SERVICE (TO BE RETAINED) AND REQUIRED TO BE EXTENDED TO THE NEW LOCATION OF THE EXISTING LOAD CENTER.
2. EXTEND ALL EXISTING CIRCUITS TO BE RETAINED TO THE NEW LOCATION OF THE EXISTING LOAD CENTER. IN ADDITION, EXTEND EXISTING PANEL FEEDER TO THE NEW LOCATION OF THE EXISTING LOAD CENTER.
3. DISCONNECT AND REMOVE EXISTING WIRING DEVICE AND COVERPLATE. PROVIDE NEW RECEPTACLE AND COVERPLATE ON CIRCUIT INDICATED.
4. DISCONNECT AND REMOVE EXISTING COMMUNICATIONS OUTLET AND CABLING BACK TO SOURCE. PROVIDE NEW COMMUNICATIONS OUTLETS AND CABLING TO SUIT QUANTITY INDICATED.
5. ALL EXISTING CIRCUITS WITHIN THIS AREA SHALL BE RETAINED. PROVIDE ALL BREAKERS, CONDUIT AND WIRE REQUIRED TO KEEP THESE CIRCUITS IN SERVICE.
6. COMMUNICATIONS CONDUIT SHALL BE 1" MINIMUM TO SUIT CABLING TO BE INSTALLED.
7. NEW FLOOR BOX SHALL BE 8" FIRE-RATED POKE-THROUGH TYPE COMPLETE WITH TWO (2) DUPLEX RECEPTACLES AND PROVISIONS FOR FUTURE DATA IN EACH BOX. BOX SHALL BE LEGRAND WIREMOLD EVOLUTION SERIES CAT.3: BATC2PBK COMPLETE WITH ALL REQUIRED DEVICES AND COVER PLATES. PROVIDE BOX FOR BOTTOM FEED CONNECTIONS. CONTRACTOR TO CONFIRM EXACT FLOOR BOX AND SYSTEM FURNITURE REQUIREMENTS WITH ARCHITECT PRIOR TO ORDERING. OWNER WANTS TO RUN CONDUITS, CABLING AND WIRING UP THE LEG OF THE BOARDROOM TABLE. CONFIRM WITH OWNER PRIOR TO ORDERING OF FLOOR BOX.

2 E-2 NOTES

N.T.S.

MECHANICAL EQUIPMENT SCHEDULE

NO.	ITEM	DESCRIPTION	LOCATION	LOAD	VOLTS	ø	BREAKER	FEEDER	DISCONNECT	STARTER	PANEL	NOTES
1	AHU-1	AIR HANDLING UNIT	ROOF	132.5A MCA	208	3	EXISTING 150A-3P	EXISTING	BY MECHANICAL	–	EXISTING CDP PANEL	1
2	RF-B	EXHAUST FAN	BASEMENT	3.2A	120	1	15A-1P	2C#12 AC90+BOND	–	–	EXISTING BASEMENT PANEL	2,3
3	TF-1	EXHAUST FAN	SECOND FLOOR DATA ROOM	3.11A	120	1	15A-1P	2C#12 AC90+BOND	–	–	EXISTING PANEL 'C'	4

NOTES:

1. RE-USE EXISTING FEEDER FROM REMOVED AIR HANDLING UNIT AND CONNECT. EXTEND FEEDER AS REQUIRED.
2. WIRE EXHAUST FAN THRU CONTROLS CONTRACTOR SUPPLIED CONTROL RELAY AND CONNECT TO EQUIPMENT SUPPLIED DISCONNECT.
3. PROVIDE A DEDICATED 15A-1P CIRCUIT FROM NEAREST AVAILABLE 120/208V PANELBOARD.
4. WIRE EXHAUST FAN THRU REVERSE ACTING THERMOSTAT AND CONNECT.

STARTER LEGEND

MS= MANUAL TYPE MOTOR STARTER c/w O/L PROTECTION
HOA= MAGNETIC STARTER C/W HAND/OFF/AUTO SELECTOR SWITCH
VSD= VARIABLE SPEED DRIVE, SUPPLIED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR

3 E-2 MECHANICAL EQUIPMENT SCHEDULE

N.T.S.

EXISTING PANEL TO REMAIN. ELECTRICAL CONTRACTOR MAY RE-USE EXISTING BREAKERS AND SHALL PROVIDE NEW BREAKERS AS REQUIRED TO MEET BREAKER LAYOUT INDICATED.

PANEL VOLTAGE: 208		PANEL TYPE:								PANEL 'C'		
CCT	DESCRIPTION	WATTAGE A	WATTAGE B	WATTAGE C	P	BRKR AMP	ø	BRKR AMP	P	WATTAGE A	WATTAGE B	WATTAGE C	DESCRIPTION	CCT
1	LIGHTING	1248			1	15*	A	15	1	1200			RECEPTACLES (5)	2
3	LIGHTING		1084		1	15*	B	15	1		1200		MODULAR FURNITURE (3)	4
5	LIGHTING			1213	1	15*	C	15	1			1200	MODULAR FURNITURE (3)	6
7	EXIT SIGNS	100			1	15*	A	15	1	1200			MODULAR FURNITURE (2)	8
9	SPARE		100		1	15	B	15	1		1200		MODULAR FURNITURE (3)	10
11	ROOFTOP RECEPTACLE (1)			200	1	20	C	15	1			1200	MODULAR FURNITURE (3)	12
13	RECEPTACLES (4)	800			1	15	A	15	1	1200			RECEPTACLES (6)	14
15	RECEPTACLES (5)		1000		1	15	B	15	1		1200		RECEPTACLES (6)	16
17	RECEPTACLES (4)			800	1	15	C	15	1			1200	RECEPTACLES (6)	18
19	RECEPTACLES (6)	1200			1	20	A	15	1	1200			RECEPTACLES (6)	20
21	RECEPTACLES (5)		1000		1	15	B	20	1		1200		PRINTER	22
23	RECEPTACLES (5)			1000	1	15	C	15	1			800	RECEPTACLES (4)	24
25	RECEPTACLES (4)	800			1	15	A	15	1	800			RECEPTACLES (4)	26
27	RECEPTACLES (4)		800		1	15	B	20	1		1000		RECEPTACLES (5)	28
29	RECEPTACLE (1)			1000	1	20	C	15	1			800	RECEPTACLES (4)	30
31	MICROWAVE	1200			1	15	A	15	1	800			RECEPTACLES (4)	32
33	RECEPTACLE (1)		1000		1	20	B	20	1		1000		RECEPTACLE (1)	34
35	MICROWAVE			1200	1	15	C	20	1			400	RECEPTACLES (2)	36
37	REFRIGERATOR	1200			1	15	A	15	1	600			RECEPTACLES (3)	38
39	RECEPTACLE(1)		1000		1	20	B	15	1		373		EXHAUST FAN TF-1	40
41	RECEPTACLE(1)			1000	1	20	C						BOARDROOM FLOOR BOX	42
	PHASE LOADS	6548	5984	6413						7000	7173	5600		
	TOTAL PHASE LOADS	13548			13157					12013				
	TOTAL CONNECTED LOAD	38718												
	TOTAL AMPERAGE	108 AMPS												

* INDICATES LOCK-ON BREAKER DEVICE

4 E-2 PANEL SCHEDULE

N.T.S.

DESIGN PLUS ARCHITECTURE
dp18022

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EXCEPT FOR REFERENCE PURPOSES, THE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED FOR ADDITIONS OR ALTERATIONS TO THE PROJECT OR ON ANY OTHER PROJECT.

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STAMP / SCEAU

REGISTERED PROFESSIONAL ENGINEER PROVINCE OF NOVA SCOTIA
26/02
DATE/2020
T.D. DAVIS
9697

ISSUED FOR TENDER	MAR. 03, 2020
REVISIONS	DATE

A/B DETAIL LOCATION OF DETAIL

CLIENT / CLIENT

PROJECT / PROJET

SPRINGHILL OFFICE FIT-UP
43 Main St., Upper Level
Springhill, NS

DRAWING / DESSIN

ELECTRICAL UPPER FLOOR POWER □ COMMUNICATIONS PLAN

DRAWN BY / DESSINÉ PAR	J.A.
APPROVED BY / APPROUVÉ PAR	T.D.
DATE	2019-08-15
SCALE / ÉCHELLE	AS INDICATED

E-2

2019-05-31 07:46:24

1. GENERAL REQUIREMENTS

1.1. THIS ELECTRICAL SPECIFICATION SHALL BE READ IN CONJUNCTION WITH: GENERAL REQUIREMENTS, ARCHITECTURAL SPECIFICATIONS, ELECTRICAL DRAWINGS AND OTHER CONTRACT DOCUMENTS.

1.2. SCOPE OF WORK
1.2.1. THIS CONTRACTOR SHALL PROVIDE ALL LABOUR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR THE INSTALLATION OF COMPLETELY FINISHED, TESTED, BALANCED AND PROPERLY OPERATING ELECTRICAL SYSTEMS AS SPECIFIED HEREIN AND AS INDICATED ON DRAWINGS. THE INTENT IS TO PROVIDE FOR FINISHED WORK COMPLETE IN ALL ESSENTIALS AS CALLED FOR BY THE CONTRACT DOCUMENTS, IN A MANNER CONSISTENT WITH GOOD WORKMANSHIP.
1.2.2. THE WORK INCLUDES, BUT, IS NOT LIMITED TO, THE FOLLOWING:
1.2.2.1. WIRING OF EQUIPMENT SUPPLIED BY MECHANICAL CONTRACTOR
1.2.2.2. POWER DISTRIBUTION
1.2.2.3. BRANCH CIRCUIT WIRING
1.2.2.4. WIRING DEVICES
1.2.2.5. LUMINAIRES AND CONTROL
1.2.2.6. EMERGENCY LIGHTING AND EXIT SIGNS
1.2.2.7. VOICE CABLING AND OUTLETS
1.2.2.8. DATA CABLING AND OUTLETS
1.2.2.9. FIRE ALARM SYSTEM REVISIONS AND VERIFICATION

1.3. CODES AND STANDARDS
1.3.1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CSA C22-1, CANADIAN ELECTRICAL CODE, PART 1 2018.

1.4. PERMIT AND BY-LAWS
1.4.1. OBTAIN PERMITS AND CERTIFICATIONS PRIOR TO START OF WORK. SUBMIT DRAWINGS TO INSPECTION AUTHORITY. COORDINATE SERVICES WITH UTILITIES AND OTHER SUPPLIERS. PAY ALL FEES ASSOCIATED SUCH THAT ALL WORK INDICATED ON DRAWINGS MAY BE CARRIED OUT.
1.4.2. ALL WORK PERFORMED BY THIS CONTRACTOR SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND THEIR AMENDMENTS, AS WELL AS LOCAL BY-LAWS, AS PERTAINS TO THIS INSTALLATION.

1.5. SITE VISIT
1.5.1. PRIOR TO TENDER CLOSE, THIS CONTRACTOR MUST VISIT SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING BUILDING AND SITE CONDITIONS WHERE THE WORK HAS TO BE DONE. NO ALLOWANCE SHALL BE MADE FOR PROBLEMS DUE TO LACK OF KNOWLEDGE OF EXISTING CONDITIONS THAT COULD REASONABLY HAVE BEEN ASCERTAINED BY A CAREFUL INSPECTION.

1.6. COORDINATION OF WORK
1.6.1. THIS CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE GENERAL CONTRACTOR AND WITH ALL OTHER SUB-CONTRACTORS.
1.6.2. SCHEDULE AND PERFORM ALL WORK IN EXISTING PREMISES WITH PROJECT MANAGER SO AS NOT TO INTERFERE WITH NORMAL OPERATIONS OF BUILDING OCCUPANTS. ANY DISRUPTIVE WORK SHALL BE SCHEDULED OUTSIDE OPERATING HOURS OF PLACE OF WORK AND AS APPROVED BY OWNER.
1.6.3. COOPERATE WITH OTHER TRADES, OWNER AND OWNER'S FORCES IN CARRYING OUT WORK. REPORT ANY DEFICIENCIES OR DEFECTS IN WORK PERFORMED BY OTHERS THAT AFFECT THIS CONTRACT'S WORK TO ENGINEER IMMEDIATELY.
1.6.4. WHERE WORK IS CARRIED OUT IN EXISTING PREMISES, NOTIFY PROJECT MANAGER AT LEAST 72 HOURS IN ADVANCE OF ANY NECESSARY INTERRUPTIONS IN SERVICES OR ACCESS.

1.7. GUARANTEE
1.7.1. THIS CONTRACTOR SHALL PROVIDE, IN WRITING, A GUARANTEE COVERING ALL LABOR AND MATERIAL FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE OF WORK BY OWNER. REPAIR AND MAKE GOOD ALL DEFECTS DURING THAT TIME, INCLUDING ANY DAMAGE TO BUILDING INCURRED AS A RESULT OF FAILURE OF ELECTRICAL WORK AND/OR EQUIPMENT INSTALLED.

1.8. DRAWINGS
1.8.1. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC ONLY. SEE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS, LOCATIONS OF ALL WALLS AND OPENINGS. MAINTAIN ONE SET OF PLANS ON WHICH SHALL BE CLEARLY NOTE ALL CHANGES OR DEVIATIONS, IN RED, FROM THE CONTRACT, AND SUBMIT THEM AT THE END OF THE PROJECT MARKED 'AS-BUILT', SIGNED BY THIS CONTRACTOR. THESE DRAWINGS SHALL BE KEPT ON SITE DURING CONSTRUCTION, UPDATED, AND MADE AVAILABLE FOR REVIEW BY ENGINEER, IF REQUESTED.
1.8.2. REVIEW MECHANICAL DRAWINGS AND PROVIDE POWER TO ALL MECHANICAL EQUIPMENT. SEE MECHANICAL EQUIPMENT SCHEDULE, CONFIRM EXACT REQUIREMENTS WITH MECHANICAL CONTRACTOR, REPORT ANY DISCREPANCY TO ENGINEER FOR DIRECTIVE PRIOR TO START OF WORK. COORDINATE AND ASSIST MECHANICAL CONTRACTOR WITH TESTING OF MECHANICAL EQUIPMENT.

1.9. EXTRA WORK
1.9.1. NO ALLOWANCE SHALL BE MADE BEYOND CONTRACT PRICE UNLESS CONTRACTOR RECEIVES SIGNED APPROVAL IN ACCORDANCE WITH GENERAL CONDITIONS.

1.10. CUTTING AND PATCHING
1.10.1. ALL CUTTING, PATCHING AND FIRE-RATING SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND/OR PROJECT MANAGER. THIS CONTRACTOR SHALL LOCATE THE EXACT DIMENSIONS AND POSITIONS OF OPENINGS AND HOLES WHERE CUTTING IS REQUIRED. WHERE CUTTING AND PATCHING IS NECESSARY, IT SHALL BE DONE BY THE GENERAL CONTRACTOR AND/OR PROJECT MANAGER INCLUDING PENETRATION OF FIRE RATED WALLS, CEILINGS OR FLOORS.

1.11. SHOP DRAWINGS
1.11.1. THIS CONTRACTOR SHALL SUBMIT, WITHIN TWO WEEKS AFTER BEING AWARDED THE CONTRACT, A MINIMUM OF 6 COPIES, OR 1 ELECTRONIC COPY OF SHOP DRAWINGS FOR REVIEW BY THE ENGINEER OF ALL EQUIPMENT AND MATERIAL SPECIFIED. WORK SHALL NOT PROCEED AND EQUIPMENT/MATERIAL SHALL NOT BE ORDERED UNTIL THE DRAWINGS HAVE BEEN RETURNED STAMPED AND SIGNED. THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE OBLIGATION OF CHECKING THE DRAWINGS THEMSELVES OR FURNISHING THE MATERIALS SPECIFIED.
1.11.2. WHEN SUBMITTED, SHOP DRAWINGS/PRODUCT DATA MUST BEAR CONTRACTOR'S STAMP REPRESENTING THAT THEY HAVE DETERMINED AND VERIFIED ALL FIELD MEASUREMENTS, FIELD CONSTRUCTION CRITERIA, MATERIALS, CATALOGUE NUMBERS AND SIMILAR DATA AND THAT HE HAS CHECKED AND COORDINATED EACH SHOP DRAWING WITH REQUIREMENTS OF WORK AS INDICATED ON DRAWINGS AND SPECIFICATIONS.
1.11.3. SHOP DRAWINGS REQUIRED FOR: LUMINAIRES, LAMPS, CONTROLS, EXIT SIGNS, EMERGENCY LIGHTING BATTERIES AND REMOTE HEADS, TRANSFORMERS, PANELBOARDS, MOTOR STARTERS, DISCONNECT SWITCHES, WIRING DEVICES AND ANY AND ALL OTHER ELECTRONIC DEVICES OR ITEMS. INFORMATION REQUIRED: MANUFACTURER, MODEL, DIMENSIONS, CONSTRUCTION DETAILS, ACCESSORIES, INSTALLATION DETAILS, CAPACITIES, PERFORMANCE DATA, FINISHES. INCLUDE WIRING SINGLE LINE AND SCHEMATIC DIAGRAMS WHERE APPLICABLE.
1.11.4. ALL MATERIAL SUPPLIED SHALL BE NEW AND CARRY C.S.A. AND/OR U.L.C. CERTIFICATION.

1.12. CLEANING UP
1.12.1. THIS CONTRACTOR SHALL, AT ALL TIMES, KEEP THE SITE NEAT, CLEAN AND FREE FROM ACCUMULATION OF WASTE MATERIALS AND RUBBISH WHICH ARISE OUT OF HIS WORK.

1.13. NAMEPLATES
1.13.1. SUPPLY AND INSTALL ENGRAVED 1/8" THICK PLASTIC LAMICOID STICK-ON NAMEPLATES, BLACK FACE-WHITE CORE, FOR ALL ELECTRICAL EQUIPMENT. THIS SHALL INCLUDE, BUT NOT LIMITED TO, STARTERS, DISCONNECT SWITCHES, PANELBOARDS, PULLBOXES, ETC. ATTACH WITH TWO-WAY TAPE. WORDING SHALL INDICATE DEVICE NAME AS INDICATED OR SYSTEM NAME, VOLTAGE, PHASE, AND POWER SOURCE. CONFIRM WORDING.

1.14. OPERATION AND MAINTENANCE INSTRUCTIONS
1.14.1. THIS CONTRACTOR SHALL INSTRUCT THE OWNER IN OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND SYSTEMS INSTALLED. ALL SAFETY AND CONTROL FEATURES SHALL BE THOROUGHLY EXPLAINED. THREE COPIES OF OPERATION AND MAINTENANCE INSTRUCTIONS, TOGETHER WITH ALL APPROVED SHOP DRAWINGS AND SPARE PARTS LIST INSERTED IN A BINDER, SHALL BE SUBMITTED TO THE OWNER. MANUALS COMPLETE WITH:
a: DETAILS OF DESIGN ELEMENTS, CONSTRUCTION FEATURES, COMPONENT FUNCTION AND MAINTENANCE REQUIREMENTS, TO PERMIT EFFECTIVE START-UP, OPERATION, MAINTENANCE, REPAIR, MODIFICATION, EXTENSION AND EXPANSION OF ANY PORTION OR FEATURE OF INSTALLATION.
b: TECHNICAL DATA, PRODUCT DATA, SUPPLEMENTED BY BULLETINS, DESCRIPTIONS OF ITEMS, AND PARTS LISTS. ADVERTISING OR SALES LITERATURE IS NOT ACCEPTABLE.
c: WIRING AND SCHEMATIC DIAGRAMS AND PERFORMANCE CURVES.
d: NAME AND ADDRESS OF LOCAL SUPPLIERS.
e: COPY OF REVIEWED SHOP DRAWINGS.
f: COPY OF ALL TEST CERTIFICATES.
g: COPY OF ALL FINAL NEW AND REVISED PANELBOARD SCHEDULES.

1.15. DISPOSALS
1.15.1. ADVISE OWNER OF AVAILABILITY OF SURPLUS MATERIAL. TURN OVER ITEMS REQUESTED BY OWNER AND DISPOSE OF REMAINDER IN ACCORDANCE WITH ALL BY LAWS AND LOCAL AUTHORITIES HAVING JURISDICTION. OWNER HAS RIGHT OF FIRST REFUSAL.

1.16. DEMOLITION
1.16.1. DISCONNECT AND REMOVE ALL DEVICES, COMPONENTS, FIXTURES EQUIPMENT AND EXPOSED RACEWAYS, WIRES AND CABLES, BACK TO SOURCE OF SUPPLY, MADE REDUNDANT BY THIS WORK. MAKE SAFE AND OPERATIONAL ANY REMAINING LIVE CONNECTIONS.
1.16.2. ELECTRICAL CONTRACTOR SHALL ENSURE ELECTRICAL CONTINUITY TO EXISTING DEVICES REMAINING.
1.16.3. RELOCATE EXISTING WIRING, RACEWAYS, FIXTURES AND DEVICES AS REQUIRED TO MAINTAIN REASONABLE ACCESSIBILITY AND TO FACILITATE INSTALLATION OF TOTAL PROJECT WORK.
1.16.4. REVIEW LOADING ON EACH AFFECTED CIRCUIT PRIOR TO START OF CONSTRUCTION AND ADJUST AS REQUIRED.
1.16.5. REMOVE CONTAMINATED OR DANGEROUS MATERIALS AS DEFINED BY AUTHORITIES HAVING JURISDICTION RELATING TO ENVIRONMENTAL PROTECTION FROM SITE AND DISPOSE OF IN A SAFE MANNER TO MINIMIZE DANGER AT SITE OR DURING DISPOSAL.

2. BASIC MATERIAL AND METHODS

2.1. EQUIPMENT AND PROPERTY
2.1.1. ANY ALTERNATE PRODUCT PROPOSED SHALL MEET SAME STANDARDS AS PRODUCT SPECIFIED AND COULD BE CONSIDERED ACCEPTABLE ONLY IF APPROVED PRIOR TO INSTALLATION BY ENGINEER. SUCH APPROVAL WILL NOT BE UNREASONABLY WITHHELD.
2.1.2. SPECIFIED PRODUCTS PROVIDED BY THIS CONTRACTOR SHALL BE NEW AND CAPABLE OF PROPER OPERATION. PRODUCTS PROVIDED SHALL BE OF QUALITY BEST SUITED TO THEIR PURPOSE, CSA OR LOCAL INSPECTION AUTHORITY APPROVED AND CAPABLE OF PROPER OPERATION.
2.1.3. CLEAN VISIBLE PORTIONS OF ALL DEVICES AND COVER PLATES AS RECOMMENDED BY MANUFACTURER TO RESTORE FACTORY FINISH.
2.1.4. PROTECT WORK AND OWNER'S PROPERTY FROM DAMAGE THAT MAY ARISE AS A RESULT OF THIS CONTRACTOR'S PERFORMANCE OF WORK. PROMPTLY MAKE GOOD ANY DAMAGES TO WORK AND OWNER'S PROPERTY ARISING FROM THIS CONTRACTOR'S PERFORMANCE OF WORK.
2.1.5. ARRANGE DELIVERIES AND STORAGE WITH OWNER AND AUTHORITIES HAVING JURISDICTION AS APPROPRIATE. PROTECT NEW AND REUSED MATERIALS FROM ABUSE, DAMAGE AND ENVIRONMENTAL CONDITIONS WHICH THEY ARE NOT INTENDED TO WITHSTAND. NOTWITHSTANDING FOREGOING, FOLLOW MANUFACTURER'S RECOMMENDATIONS.

2.2. WIRING METHODS
2.2.1. WHERE CABLES AND CONDUITS PASS THROUGH FLOORS AND FIRE RATED WALLS, PARTITIONS AND CEILINGS, SEAL ALL VOIDS WITH ULC APPROVED FIRE STOP COMPOUND CONFORMING TO CGSB 19-GP-9MA, CAULK OR FOAM AS REQUIRED TO MAINTAIN BARRIER RATING. ACCEPTABLE MANUFACTURERS: DOW CORNING, NELSON, 3M. COORDINATE WITH PROJECT MANAGER.
2.2.2. LOCATE, DIMENSION AND MAKE ELECTRICAL SERVICES OPENINGS. PROVIDE NECESSARY SLEEVES, ESCUTCHEONS AND COVERS.
2.2.3. DRILL AND PROVIDE ANCHORS AS REQUIRED FOR EXPANSION BOLTS, HANGER RODS, BRACKETS AND SUPPORTS.

2.3. TESTING
2.3.1. TEST ALL LUMINAIRES, CONTROLS, WIRING DEVICES, CIRCUIT BREAKERS, DISCONNECT SWITCHES, AND EMERGENCY LIGHTING UNIT EQUIPMENT FOR CORRECT OPERATION AND ABSENCE OF SHORTS OR GROUNDS.
2.3.2. PUT EQUIPMENT AND SYSTEMS IN SERVICE AS MAY BE REQUESTED BY ENGINEER FOR TRIAL USE PROVIDED NO HAZARD OR DAMAGE WILL RESULT NOR GUARANTEES VOIDED.
2.3.3. FOR POWER WIRING, MAINTAIN PHASE SEQUENCE AND COLOR CODING THROUGHOUT. COLOR CODING TO CSA C22.1.

3. CONDUIT AND FITTINGS

3.1. ALL EMPTY CONDUITS SHALL BE COMPLETE WITH PULL CORD, WHERE APPLICABLE. INSTALL NYLON INSULATED BUSHINGS ON ALL VOICE, DATA AND ALL OTHER CABLE "CONDUIT ENDS".

3.2. SUPPORT ALL BOXES INDEPENDENTLY OF CONNECTING CONDUITS.

3.3. DO NOT USE SUPPORTS OR EQUIPMENT INSTALLED FOR OTHER TRADES FOR CONDUIT SUPPORT, EXCEPT WITH PERMISSION OF OTHER TRADES AND APPROVAL OF ENGINEER.

3.4. DO NOT USE WIRE LASHING OR PERFORATED STRAPPING TO SUPPORT OR SECURE RACEWAYS.

3.5. PROVIDE ADEQUATE SUPPORT FOR RACEWAYS DROPPED VERTICALLY TO EQUIPMENT, WHERE THERE IS NO WALL SUPPORT.

3.6. FASTEN EXPOSED CONDUIT TO BUILDING CONSTRUCTION OR SUPPORT SYSTEM USING ONE OR TWO HOLE STEEL STRAPS.

3.7. INSTALL CONNECTORS ON SURFACE CONDUITS, SO THAT SCREW HEADS DO NOT POSE A DANGER TO OCCUPANTS.

3.8. ALL ELECTRICAL AND COMMUNICATION CONDUITS SHALL BE COLOR CODED. OBTAIN COLOR CODING LIST FROM USER.

4. WIRE AND CABLE

4.1. ALL WIRING SHALL BE RUN IN CONDUIT CONCEALED IN ALL AREAS AND SHALL BE RUN PARALLEL TO BUILDING LINES. NO HORIZONTAL CONDUITS SHALL BE RUN IN WALLS. ALL WIRING AND CONDUITS TO BE CONCEALED.

4.2. WIRING:
4.2.1. AC90 (UP TO 10' LENGTHS WHERE PERMITTED).
4.2.2. AC90 FOR LUMINAIRE DROPS IN T-BAR CEILINGS.
4.2.3. TECK 90 CABLE.
4.2.4. RW90 IN EMT CONDUIT, C/W STEEL SET-SCREW CONNECTORS AND COUPLINGS
4.2.5. RW90 IN LIQUID TIGHT FLEXIBLE CONDUIT FOR CONNECTION TO MECHANICAL EQUIPMENT.
4.2.6. CONDUCTORS; #12 RW90 MINIMUM, 600V, CU, IN EMT CONDUIT.

4.3. IDENTIFY WIRING WITH PERMANENT INDELIBLE IDENTIFYING MARKINGS, EITHER NUMBERED OR COLORED TAPES, ON BOTH ENDS OF PHASE CONDUCTORS OF FEEDERS AND BRANCH CIRCUIT WIRING, AND MAINTAIN PHASE SEQUENCE AND COLOR CODING THROUGHOUT.

4.4. ASSURE THAT ALL CONDUCTORS ARE SIZED FOR MAXIMUM VOLTAGE DROP:
4.4.1. MAX. 3%

4.5. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH BELL-ALIANT, EASTLINK AND/OR ROGERS CABLE.

4.6. ALL SOLID COPPER CONDUCTORS WITH THERMOPLASTIC INSULATION (TYPE RW90, 600V) BRANCH WIRING SHALL BE MINIMUM #12 AWG (MAXIMUM 70'); #10 AWG (MAXIMUM 120'); FOR RUNS EXCEEDING 120' VOLTAGE DROP SHALL BE CALCULATED AT THE MAXIMUM OF 3%. #8 AWG AND LARGER CONDUCTORS SHALL BE STRANDED COPPER. USE CONNECTORS, CLAMPS AND SUPPORTS TO SUIT.

5. OUTLET, PULL & JUNCTION BOXES

5.1. PROVIDE ELECTRO-GALVANIZED STEEL SINGLE OR MULTIPLE GANG BOXES FOR FLUSH INSTALLATION FOR ALL DEVICES AND COMMUNICATIONS OUTLETS AS INDICATED. BOXES SHALL BE CODE GAUGE AND SIZED TO MEET THE CANADIAN ELECTRICAL CODE REQUIREMENTS. EQUIP ALL BOXES WITH EXTENSION AND PLASTER RINGS AS REQUIRED.

5.2. PROVIDE 4" SQUARE OR OCTAGONAL OUTLET BOXES FOR FLUSH LIGHTING FIXTURES.

5.3. PROVIDE WELDED STEEL JUNCTION/PULL BOXES WITH HINGED COVERS FOR SURFACE MOUNTING AS REQUIRED TO FACILITATE CONDUCTOR INSTALLATION. GENERALLY SUCH BOXES WILL BE LOCATED SO AS NOT TO EXCEED 100' OF CONDUIT RUN AND 2-90 DEGREE BENDS BETWEEN PULL BOXES. PROVIDE ADDITIONAL JUNCTION/PULL BOXES AS REQUIRED. ENSURE ALL JUNCTION/PULL BOXES ARE ACCESSIBLE WHEN ALL WORK IS COMPLETE.

5.4. SUPPORT ALL BOXES INDEPENDENTLY OF CONNECTING CONDUITS.

5.5. FOR FLUSH INSTALLATIONS, MOUNT OUTLETS FLUSH WITH FINISHED WALL USING TILE RINGS TO PERMIT WALL FINISH TO COME WITHIN 1/4" OF OPENING.

5.6. DO NOT INSTALL OUTLET BOXES BACK-TO-BACK IN HOLLOW WALLS; ALLOW MINIMUM 6" HORIZONTAL DISTANCE BETWEEN BOXES LOCATED ON OPPOSITE SIDES OF SAME WALL.

5.7. ALL BOXES TO BE FLUSHED MOUNTED IN ALL WALLS.

6. WIRING DEVICES

6.1. CHANGE LOCATION OF OUTLETS, AT NO EXTRA COST OR CREDIT, PROVIDING DISTANCE DOES NOT EXCEED 10'-0" FROM THAT INDICATED, AND DIRECTIVE IS GIVEN PRIOR TO INSTALLATION.

6.2. ADJUST OUTLET AS REQUIRED TO SUIT FINAL FINISHES.

6.3. EQUIPMENT MOUNTING HEIGHT IS FROM FINISHED FLOOR TO EQUIPMENT CENTERLINE UNLESS SPECIFIED OR INDICATED OTHERWISE.

6.4. IF EQUIPMENT MOUNTING HEIGHT IS NOT INDICATED, VERIFY WITH ENGINEER BEFORE PROCEEDING WITH INSTALLATION.

6.5. INSTALL ELECTRICAL EQUIPMENT AT FOLLOWING HEIGHTS UNLESS INDICATED OTHERWISE (REFER ALSO TO ARCHITECTURAL DRAWINGS);
6.5.1. LOCAL SWITCHES: 48"
6.5.2. POWER RECEPTACLES - WALL: 16"
6.5.3. POWER RECEPTACLES - ABOVE COUNTERTOP SPLASHBACK: 6" OR AS INDICATED.
6.5.4. COMMUNICATIONS OUTLETS: 16"
6.5.5. EMERGENCY BATTERY & REMOTE UNITS: 8'-6"
6.5.6. WALL MOUNTED EXIT LIGHTS: 8'-6" OR AS REQUIRED.
6.5.7. FIRE ALARM BELLS: 8'-0"
6.5.8. FIRE ALARM PULL STATIONS: 44"
6.5.9. PANELBOARDS: 5'-0" TO CENTER

6.6. SWITCHES: TOGGLE TYPE 15A & 20A, 120V AS INDICATED, SINGLE POLE, 3-WAY MANUALLY OPERATED SPECIFICATION GRADE AS INDICATED. COLOR: WHITE.

6.7. ACCEPTABLE SWITCH MANUFACTURERS: EATON, HUBBELL, LEVITON, PASS AND SEYMOUR.

6.8. ACCEPTABLE SENSOR MANUFACTURERS: SENSORSWITCH, WATTSTOPPER, LEVITON, HUBBELL.

6.9. GROUND FAULT AND DUPLEX RECEPTACLES: CSA TYPE 5-15R, 5-20R, 125V, U GROUND SPECIFICATION GRADE AS INDICATED. UREA MOULDED HOUSING. COLOR: WHITE.

6.10. ACCEPTABLE RECEPTACLE MANUFACTURERS: COOPER, HUBBELL, LEVITON, PASS AND SEYMOUR.

6.11. PROVIDE COVER PLATES FROM ONE MANUFACTURER FOR EACH TYPE OR ASSEMBLY OF OUTLETS THROUGHOUT PROJECT. OPENINGS TO SUIT TYPE AND GANGING OF DEVICES. MATCH EXISTING.

6.12. SHEET STEEL UTILITY BOX COVERS FOR WIRING DEVICES INSTALLED IN SURFACE-MOUNTED UTILITY BOXES.

6.13. MOUNTING HEIGHTS TO MATCHING EXISTING.

6.14. GROUND FAULT RECEPTACLES TO MEET CSA 22.2-144

7. GROUNDING

7.1. THE ENTIRE ELECTRICAL SYSTEM, AS PERTAINS TO THIS INSTALLATION. SHALL, BE GROUNDED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE SECTION 10 AND LOCAL AUTHORITY HAVING JURISDICTION OVER INSTALLATION.

7.2. MAKE GROUNDING CONNECTIONS IN RADIAL CONFIGURATION ONLY, WITH CONNECTIONS TERMINATING AT SINGLE GROUNDING POINT. AVOID LOOP CONNECTIONS.

8. PANELBOARDS

8.1. PROVIDE CIRCUIT BREAKERS FOR EXISTING PANELBOARDS. MOLDED CASE, BOLT-ON, QUICK MAKE-QUICK BREAK, THERMAL-MAGNETIC TRIPPING BREAKERS WITH (SYMMETRICAL) INTERRUPTING CAPACITY TO MATCH EXISTING. CIRCUIT BREAKERS SHALL BE NEW WITH FULL MANUFACTURER'S WARRANTY AND PURCHASED THROUGH AUTHORIZED DISTRIBUTOR. MATCH EXISTING.

8.2. PROVIDE TYPE WRITTEN DIRECTORIES IN ALL PANELS SHOWING TYPE AND LOCATION OF EACH CIRCUIT. UPDATE EXISTING DIRECTORIES AS REQUIRED.

8.3. EQUIP BREAKERS SERVING EXIT LIGHTS AND ALL EMERGENCY LIGHTING CIRCUITS WITH LOCK-ON DEVICES (NEW AND EXISTING).

8.4. ACCEPTABLE MANUFACTURERS: TO MATCH EXISTING.

8.5. NEW BREAKER FRAMES SHALL MATCH EXISTING PANELBOARDS.

9. MECHANICAL EQUIPMENT

9.1. SEE MECHANICAL EQUIPMENT CONNECTION SCHEDULE AND LEGEND FOR ALL REQUIRED MECHANICAL EQUIPMENT ELECTRICAL CONNECTIONS. THE ELECTRICAL TRADE SHALL PROVIDE THE FOLLOWING, AS APPLICABLE:
9.1.1. THE NECESSARY POWER DISTRIBUTION EQUIPMENT AT THE ELECTRICAL ROOM.
9.1.2. THE NECESSARY CONDUIT AND WIRE TO THE MECHANICAL EQUIPMENT LOCATION.
9.1.3. A TERMINATING DISCONNECT SWITCH, UNLESS PROVIDED FOR BY THE EQUIPMENT MANUFACTURER.
9.1.4. ANY MISCELLANEOUS ITEMS NECESSARY TO COMPLETE THE WORK AS SHOWN ON THE DRAWINGS.
9.1.5. ALL CONDUIT AND WIRING FROM THE TERMINATING DISCONNECT SWITCH TO THE MECHANICAL EQUIPMENT UNLESS NOTED OTHERWISE. LOW VOLTAGE CONTROLS, SHALL BE PROVIDED BY THE MECHANICAL TRADE.
9.1.6. THE ELECTRICAL TRADE SHALL VERIFY ALL MOTOR CONNECTIONS FOR PROPER PHASE ROTATION, WHERE APPLICABLE.

10. LIGHTING (SEE LUMINAIRE SCHEDULE AND LEGEND)

10.1. PROVIDE LUMINAIRES AS INDICATED ON THE LUMINAIRE SCHEDULE AND/OR AS SPECIFIED UNDER THIS SECTION. THESE SHALL BE, COMPLETE WITH ALL NECESSARY PLASTER FRAMES, HANGERS, LAMPS, LOUVERS, DIFFUSERS, CANOPIES, SUPPORTS, BRACKETS, AND REQUIRED HARDWARE FOR A COMPLETE AND FINISHED INSTALLATION. LUMINAIRES IN SCHEDULE AND LEGEND ARE INTENDED TO SET A STANDARD BELOW WHICH EQUIPMENT WILL NOT BE ACCEPTED.

10.2. CONTRACTOR SHALL INCLUDE IN HIS TENDER, THE LUMINAIRE(S) THAT ARE BEING SPECIFIED. IF AN ALTERNATE MANUFACTURER IS NAMED, IT IS MANDATORY THAT THE LUMINAIRE BE EQUIVALENT IN ALL RESPECTS, I.E. SAME LENS, EQUIVALENT FRAME, PERFORMANCE, PAINT FINISH, BALLAST, CONSTRUCTION QUALITY, ETC. ALTERNATE MANUFACTURERS OR ALTERNATE LUMINAIRE TYPES MUST BE OFFERED AS AN ALTERNATIVE ONLY, TO THE BASE BID, WITH A SEPARATE PRICE STATED IN THE TENDER. LOW BIDDER WILL BE DETERMINED ON THE BASIS OF THE SPECIFIED ITEMS, NOT ON "ALTERNATE SAVINGS".

10.3. POSITION LIGHTS AS INDICATED. ADJUST LOCATIONS OF LUMINAIRES TO SUIT CEILING GRID AS INDICATED. ADVISE ENGINEER IF LOCATIONS SHOWN TO CHANGE MORE THAN 6".

10.4. ALL LUMINAIRES WHICH ARE LOCATED IN SUSPENDED CEILINGS SHALL BE SUPPORTED BY APPROVED CHAINS, WHICH SHALL ALLOW THE LUMINAIRES TO BE SUPPORTED INDEPENDENT OF THE CEILING SYSTEM. A 2'x4' FLUORESCENT LUMINAIRE SHALL BE SUPPORTED WITH TWO (2) CHAINS AND A 2'x4' LUMINAIRE SHALL BE SUPPORTED WITH FOUR (4) CHAINS TO THE ROOF STRUCTURE OR SLAB ABOVE. ANCHOR CHAINS TO JOIST AND BRIDGING WHERE POSSIBLE. WHEN CONNECTING TO STEEL DECK, ANCHOR TO SIDE FLUTES. (CONFIRM CONNECTIONS TO DECK WITH STRUCTURAL ENGINEER PRIOR TO INSTALLATION).

10.5. THIS CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL LIGHTING NOT BEING RE-USED UNDER NEW SCHEME WHETHER SHOWN ON DRAWING OR NOT.

10.6. ALIGN LUMINAIRES MOUNTED IN CONTINUOUS ROWS TO FORM STRAIGHT UNINTERRUPTED LINE.

10.7. ACCEPTABLE MANUFACTURERS: REFER TO SCHEDULE

11. EGRESS SIGNS

11.1. EGRESS SIGNS SHALL BE PICTORIAL "RUNNING MAN" TYPE TO CSA 22.2 NO. 141-10 STANDARD.

11.2. TWO (2) SIGNS ARE REQUIRED FOR MULTI-DIRECTIONAL TYPES.

11.3. WIRE ALL EGRESS SIGNS REQUIRING DC POWER TO BATTERY PACK SERVING THE SAME AREA, AS APPLICABLE.

11.4. WIRE ALL EGRESS SIGNS TO AC POWER CIRCUIT, AS PER CODE.

11.5. ALL EXISTING EXIT LIGHTS IN THE BUILDING TO BE REPLACED WITH A NEW RUNNING MAN EXIT SIGN. CONFIRM QUANTITIES ON SITE.

12. EMERGENCY LIGHTING SYSTEM

12.1. EMERGENCY LIGHT BATTERY UNITS: AS SPECIFIED IN LUMINAIRE SCHEDULE.

12.2. EMERGENCY LIGHT HEADS: AS SPECIFIED IN LUMINAIRE SCHEDULE.

12.3. WIRE EMERGENCY BATTERY PACKS TO LINE SIDE OF LIGHTING CIRCUIT SERVING THE SAME AREA FOR AC POWER. WIRE REMOTE HEADS TO BATTERY PACK SERVING THE SAME AREA FOR DC POWER.

12.4. CONNECT HEADS TO EMERGENCY LIGHTING UNIT BATTERIES WITH MINIMUM #12 AWG CONDUCTORS AS INDICATED. SIZE CONDUCTORS FOR MINIMUM 3% VOLTAGE DROP AS PER CEC 2018.

13. ADDRESSABLE FIRE ALARM SYSTEM

13.1. FIRE ALARM SYSTEM: THE FIRE ALARM PANEL IS EXISTING. PROVIDE THE REQUIREMENTS FOR THE INSTALLATION, RE-PROGRAMMING, CONFIGURATION AND CERTIFICATION OF A COMPLETE SINGLE STAGE, ZONED, SUPERVISED FIRE ALARM SYSTEM. COMPLY WITH THE CURRENT APPLICABLE PROVISIONS OF THE FOLLOWING:
- NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.
- NATIONAL BUILDING CODE.
- LOCAL AUTHORITIES HAVING JURISDICTION.
- UNDERWRITERS LABORATORIES OF CANADA.
- CANADIAN ELECTRICAL CODE PART 1 - 2018 SECTION 32.

13.2. BELLS: TO MATCH EXISTING.

13.3. MANUAL PULL STATION: TO MATCH EXISTING.

13.4. SMOKE DETECTORS: TO MATCH EXISTING.

13.5. THE FIRE ALARM CONTROL PANEL SHALL TURN OFF ALL VENTILATION THROUGHOUT, UPON FIRE ALARM ACTIVATION. CONFIRM WITH EXISTING.

13.6. FIRE ALARM VERIFICATION AND RE-CERTIFICATION SHALL BE BY ULC APPROVED, FACTORY TRAINED PERSONNEL. THE FIRE ALARM CERTIFICATION SHALL BE FROM A ULC CERTIFIED FIRE ALARM SUPPLY AND SERVICE COMPANY, CONFIRMING THAT THE DEVICES INSTALLED, OR MODIFIED UNDER THIS PROJECT, OPERATE IN COMPLIANCE WITH CURRENT REGULATIONS AND AS PER THE MANUFACTURER'S RECOMMENDATIONS.

13.7. FIRE ALARM SYSTEM IS AN EXISTING MIRCOM FX-350 SYSTEM.

13.8. INSTALL FIRE ALARM DEVICES WHERE SHOWN ON PLANS AND MAKE INTERCONNECTIONS IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS

13.17. PROVIDE FIRE ALARM VERIFICATION AND CERTIFICATE AFTER COMPLETION OF WORK ON FIRE ALARM SYSTEM.

14. VOICE SYSTEM

14.1. PROVIDE CATEGORY 6 UTP CABLE TO BIX MOUNT FROM VOICE OUTLET.

14.2. PROVIDE ONE RJ45 JACK FOR EACH VOICE OUTLET C/W COVERPLATE.

14.3. COORDINATE FINAL LOCATION OF ALL VOICE OUTLETS WITH OWNER, PRIOR TO START OF WORK.

14.4. INSTALLATION SHALL BE DONE IN ACCORDANCE WITH LOCAL TELEPHONE PROVIDER STANDARDS.

14.5. VOICE CABLING TERMINATIONS AND TESTING SHALL BE PERFORMED BY AN END TO END "CERTIFIED INSTALLER", SHALL BE CERTIFIED AND SHALL HAVE A 20 YEAR PASSIVE COMPONENT GUARANTY. PROVIDE TEST RESULTS AND CERTIFICATION. CABLES FAILING TEST SHALL BE REPLACED BY ELECTRICAL CONTRACTOR AT CONTRACTORS EXPENSE. THE INSTALLER SHALL BE TRAINED IN INSTALLATION OF THE CABLING SYSTEM USED.

14.6. ALL CABLING TO BE IN EMT CONDUIT.

14.7. CONFIRM ALL VOICE AND DATA REQUIREMENTS WITH OWNER PRIOR TO TENDER CLOSE. OWNER MAY OPT OUT TO HAVE AN OUTSIDE CONTRACTOR DE COMPLETE INSTALLATION EXCEPT FOR CONDUIT RUNS.

15. DATA COMMUNICATION SYSTEM

15.1. MINIMUM SYSTEM PERFORMANCE: CATEGORY 6.

15.2. RUN 4 PAIR, 24AWG, FT6 RATED, UTP CABLES FROM DATA OUTLETS TO DATA ROOM PATCH PANELS, AS PER CSAT529-95.

15.3. PROVIDE ONE RJ45 JACK FOR EACH DATA OUTLET c/w COVER PLATE. TERMINATE AT PATCH PANEL.

15.4. PROVIDE AND INSTALL ONE 24 PORT MODULAR PATCH PANEL ON A 19" MOUNTED RELAY RACK C/W CABLE MANAGERS AND COVERS. COORDINATE ON SITE. DATA RACK, EXISTING OR NEW, IS TO BE SUPPLIED AND INSTALLED BY THE OWNERS OR ITS IT CONTRACTOR.

15.5. PROVIDE ONE 4'-0" AND 15'-0" PATCH CORD FOR EACH OUTLET.

15.6. IDENTIFY ALL CABLES, OUTLETS AND PATCH PANEL JACKS AS DESIGNATED BY OWNER.

15.7. BUSH BOTH ENDS OF ALL COMMUNICATIONS CONDUITS AND BOND AT ONE END.

15.8. THE COMPLETE SYSTEM MUST MEET THE MINIMUM STANDARD NOTED. SYSTEM TO BE TESTED, CERTIFIED AND GUARANTEED FOR TWENTY (20) YEARS FROM DATE OF ACCEPTANCE.

15.9. ALL CABLING TO BE IN EMT CONDUIT.

15.10. DATA CABLING TERMINATIONS AND TESTING SHALL BE PERFORMED BY AN END TO END "CERTIFIED INSTALLER", SHALL BE CERTIFIED AND SHALL HAVE A 20 YEAR PASSIVE COMPONENT GUARANTEE. PROVIDE TEST RESULTS AND CERTIFICATION. CABLES FAILING TEST SHALL BE REPLACED BY ELECTRICAL CONTRACTOR AT CONTRACTORS EXPENSE. THE INSTALLER SHALL BE TRAINED IN INSTALLATION OF CABLING SYSTEM USED.

15.11. CONFIRM ALL VOICE AND DATA REQUIREMENTS WITH OWNER PRIOR TO TENDER CLOSE. OWNER MAY OPT OUT TO HAVE AN OUTSIDE CONTRACTOR DE COMPLETE INSTALLATION EXCEPT FOR CONDUIT RUNS.

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ELECTRICAL SPECIFICATIONS
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DESIGN PLUS ARCHITECTURE

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ISSUED FOR TENDER | MAR. 03, 2020
REVISIONS | DATE

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CLIENT | CLIENT

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ELECTRICAL SPECIFICATIONS

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SCALE | ÉCHELLE: AS INDICATED

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