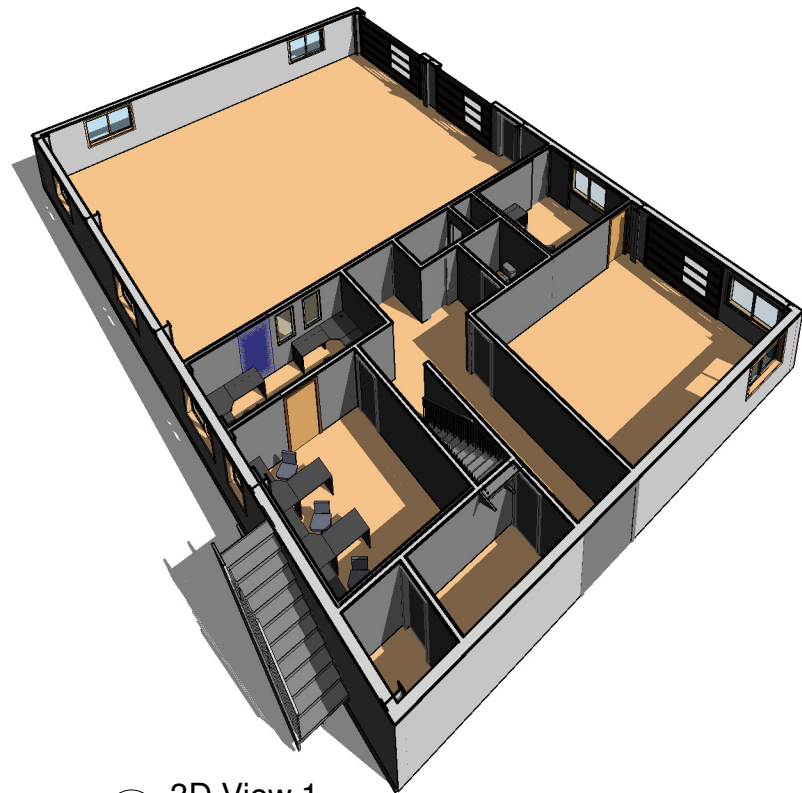


# INDIAN HEAD RESEARCH FARM



2 3D View 1

## BUILDING CODE MATRIX

REFERENCE: Part 3, National Building Code, 2010 Edition

Renovation to existing building.

Description	Requirement	Design
1. Major Occupancy, 3.1.2.1	: Group F2, Shop : Group D, Office	
2. Building Classification, 3.2.2.76	: F2 up to 2 Storeys	
▪ Max. Building Area	: 750 sq.m.	: 371.60 sq.m.
▪ Max. Number of Storeys	: 2 Storeys	: 2 Storeys
▪ Access Route	: 2 Streets	: 2 Streets
▪ Sprinkler System	: Not Required	: N/A
▪ Permitted Construction	: C or NC or Combi	: Combination
3. Fire Alarm System, 3.2.2.73	: Not Required	: N/A
4. Fire Separation (F/S):		
<i>Floor Assemblies</i>	: FRR	: FRR (NBC/ULC)
▪ 2nd Floor, 3.2.2.76	: 3/4 hr.	: 1.0 hr. (??)
<i>Wall Assemblies</i>	: FRR	: FRR (NBC/ULC)
▪ Exit, 3.4.4.1	: 3/4 hr.	: 3/4 hr. (??)
▪ Mech'l Room, 3.6.2.1 (2)	: Not required	: N/A
▪ Shop	: 2.0 hrs.	: 2.0 hrs.
▪ Garage	: 1.5 hrs.	: 1.5 hrs.
<i>Roof Assemblies</i>	: FRR	: FRR (NBC/ULC)
▪ Assembly, 3.2.2.76	: Not required	: N/A
5. Closures, 3.1.8.4		
▪ 2.0 F/S	: 1.5 hrs.	: 1.5 hrs.
▪ 1.5 F/S	: 1.0 hrs.	: 1.0 hrs.
▪ 3/4 F/S	: 3/4 hr.	: 3/4 hr.
6. Barrier Free Design, 3.8	: Required	: See drawings

C : Combustible  
 NC : Non-Combustible  
 MAUO : Maximum Allowable Unprotected Opening

Sheet List	
	Sheet Name

### ARCHITECTURAL

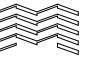
A100	COVER SHEET
A101	DEMOLITION 1ST FLOOR
A102	DEMOLITION 2ND FLOOR
A201	1ST FLOOR PLAN
A201a	ENLARGED PLAN
A202	2ND FLOOR PLAN
A202a	ENLARGED PLAN
A301	DOOR & WINDOW SCHEDULES
A302	ROOM SCHEDULES
A501	INTERIOR ELEVATIONS
A502	INTERIOR ELEVATIONS
A503	INTERIOR ELEVATIONS
A601	REFLECTED CEILING PLAN 1 ST FLOOR
A602	REFLECTED CEILING PLAN 1 ST FLOOR

### MECHANICAL

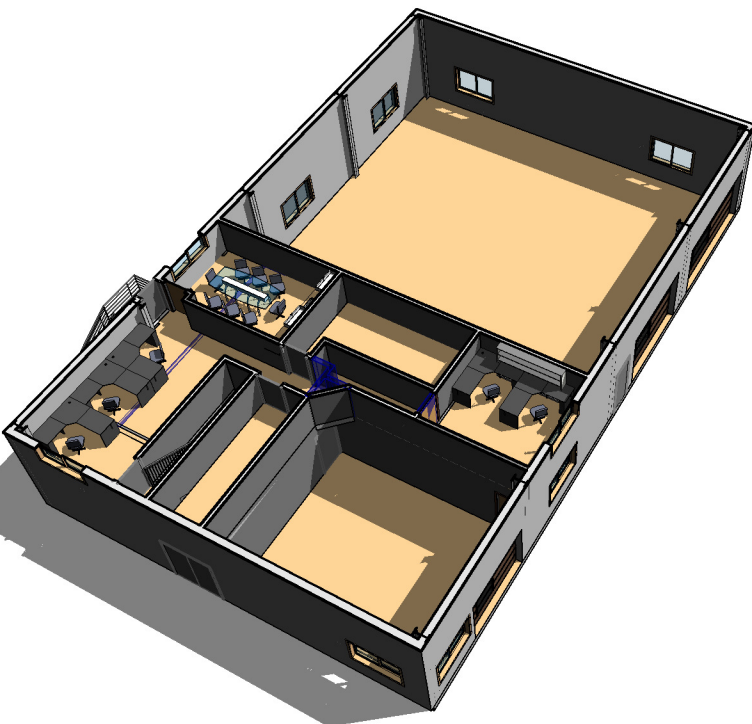
M6.1	MAIN FLOOR MECHANICAL DEMO PLAN
M6.2	MEZZANINE MECHANICAL DEMO PLAN
M6.3	MAIN FLOOR RENOVATED MECHANICAL PLAN
M6.4	MEZZANINE RENOVATED MECHANICAL PLAN
M6.5	MECHANICAL SPECIFICATIONS AND DETAILS

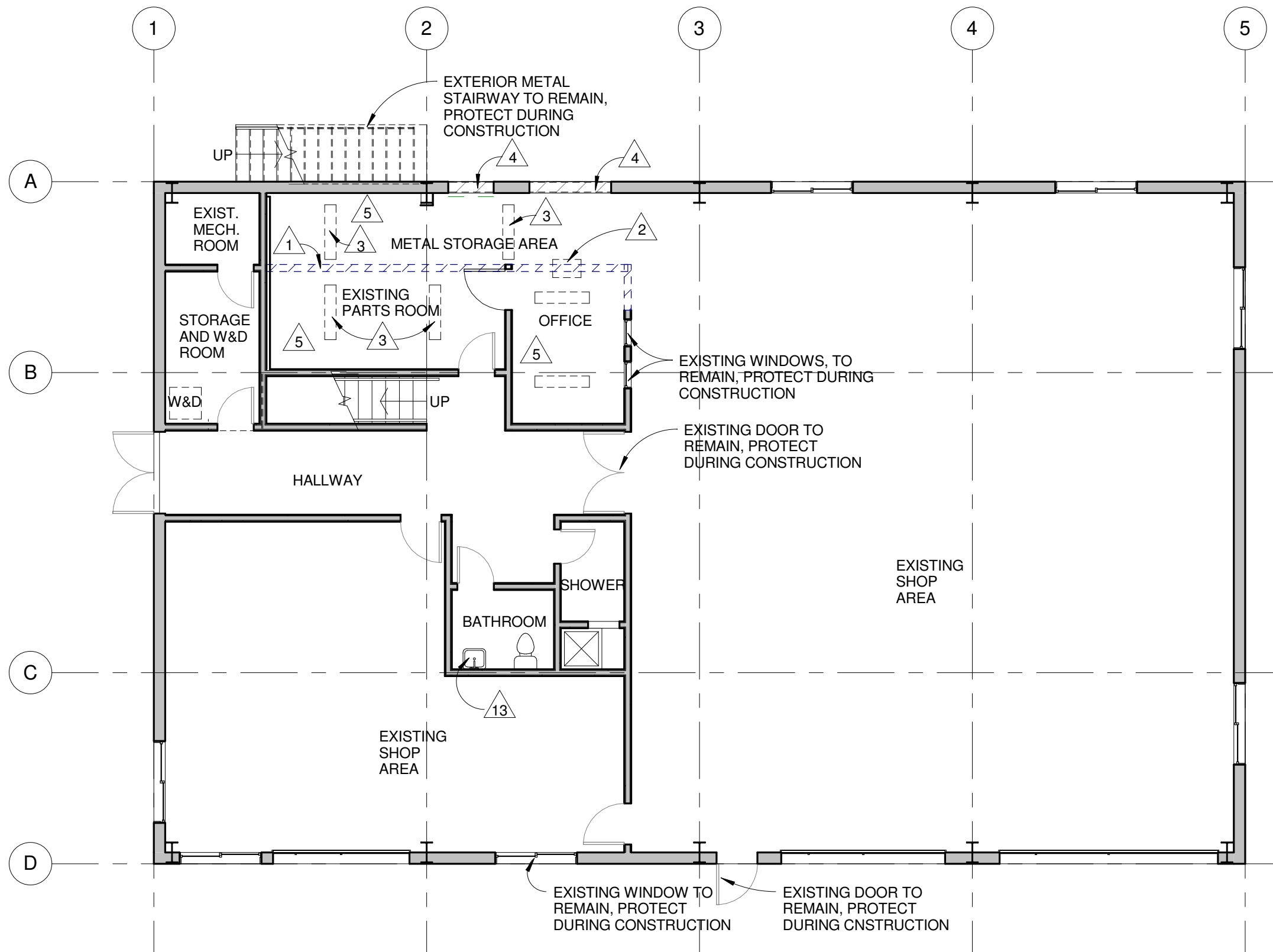
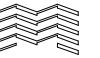
### ELECTRICAL

E1.0	ELECTRICAL - SPECIFICATIONS
E1.1	ELECTRICAL - SYMBOLS
E1.2	ELECTRICAL - NOTES AND DETAILS
E2.0	ELECTRICAL - SINGLE LINE DIAGRAM
E2.1	ELECTRICAL - SCHEDULES
E3.0	ELECTRICAL - MAIN FLOOR PLAN - LIGHTING
E3.1	2ND FLOOR PLAN - LIGHTING
E4.0	ELECTRICAL - MAIN FLOOR PLAN - POWER & SYSTEMS
E4.1	2ND FLOOR PLAN - POWER AND SYSTEMS



1 3D View 2





**GENERAL NOTES:**

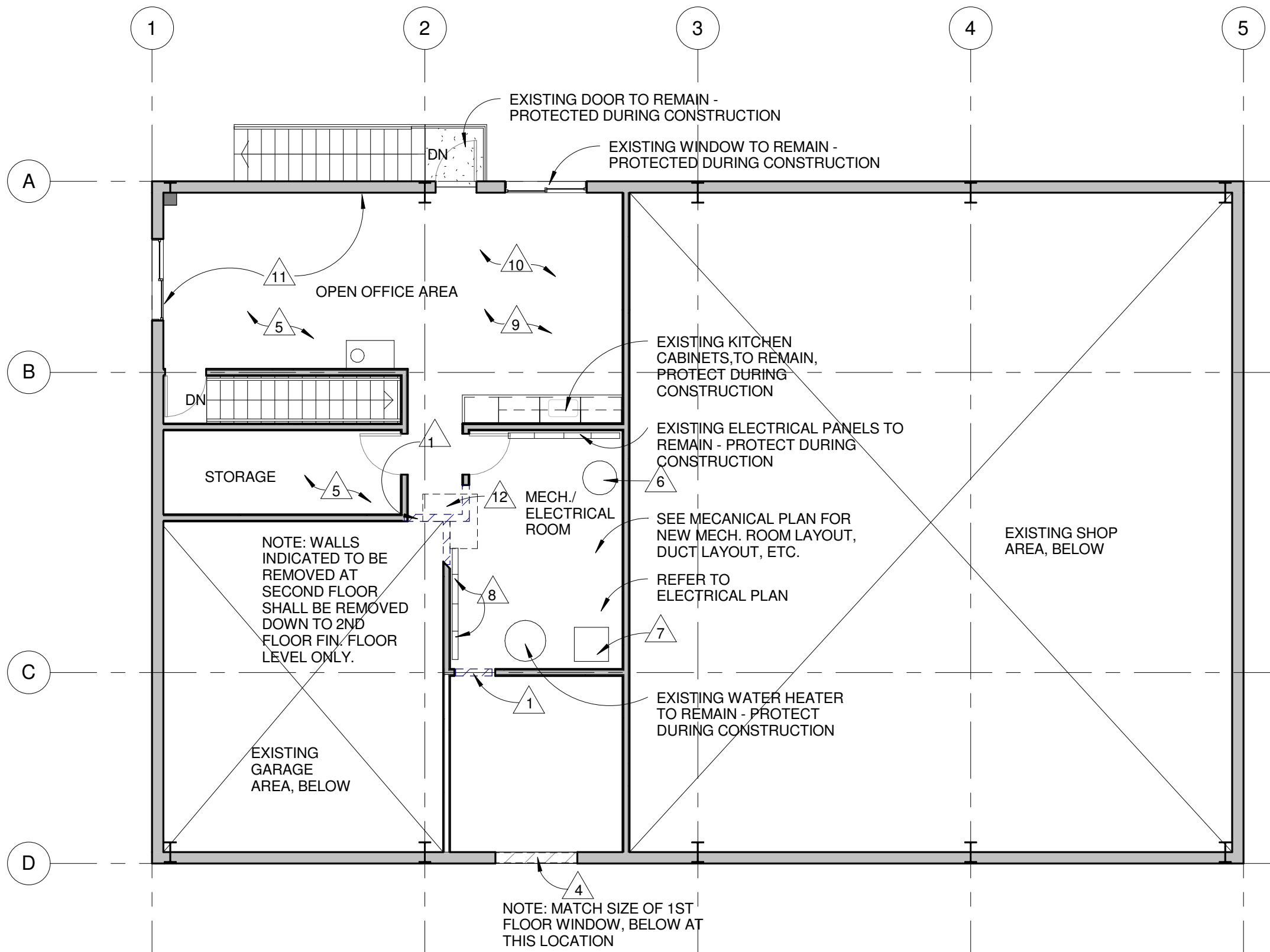
- 1 CONTRACTORS TO VISIT SITE AND FAMILIARIZE THEMSELVES WITH ALL EXISTING CONDITIONS-SEE ALSO GENERAL CONDITIONS SECTION IN THE SPECIFICATIONS
- 2 SHADED WALLS REPRESENT EXISTING, TO REMAIN.
- 3 CONTRACTOR TO PROVIDE BARRIERS AS REQUIRED IN ORDER TO CONTAIN AREAS UNDER CONSTRUCTION AND COORDINATE WITH THE OWNER DAILY CONSTRUCTION ACTIVITES

**DEMOLITION NOTES**

- 1 REMOVE EXISTING PARTITION INCLUDING METAL PANEL, WHRE IT OCCURS, FRAMING AND DRYWALL. COORDINATE WITH THE ELECTRICAL CONTRACTOR THE REMOVAL AND/OR RELOCATION OF ELECTRICAL BOXES, SWITCHES, CONDUIT, ETC.
- 2 REMOVE EXISTING THROUGH-WALL A/C BOX.
- 3 REMOVE EXISTING SURFACE-MOUNTED CEILING LIGHT FIXTURES AND TURN OVER TO OWNER - SEE ELECTRICAL DRAWINGS.
- 4 CUT NEW OPENING FOR WINDOW IN EXISTING EXTERIOR WALL, AS SHOWN. CONTRACTOR TO VERIFY LOCATION OF ANY EXISTING OBSTRUCTION, SUCH AS: "X" BRACING, STEEL GIRT, ETC. SEE WINDOW SCHEDULE FOR ROUGH OPENING.
- 5 EXISTING FURNITURE AND/OR EQUIPMENT TO BE REMOVED/RE-LOCATED BY OWNER.
- 13 RELOCATE EXISTING LAVATORY TO THE SOUTH TO SATISFY A MINIMUM DISTANCE OF 2'-11" BETWEEN THE TWO BATHROOM FIXTURES AS REQUIRED BY CODE

1 **DEMOLITION 1 ST FLOOR PLAN**  
1 : 100





1 DEMOLITION 2ND FLOOR PLAN  
1 : 100



**GENERAL NOTES:**

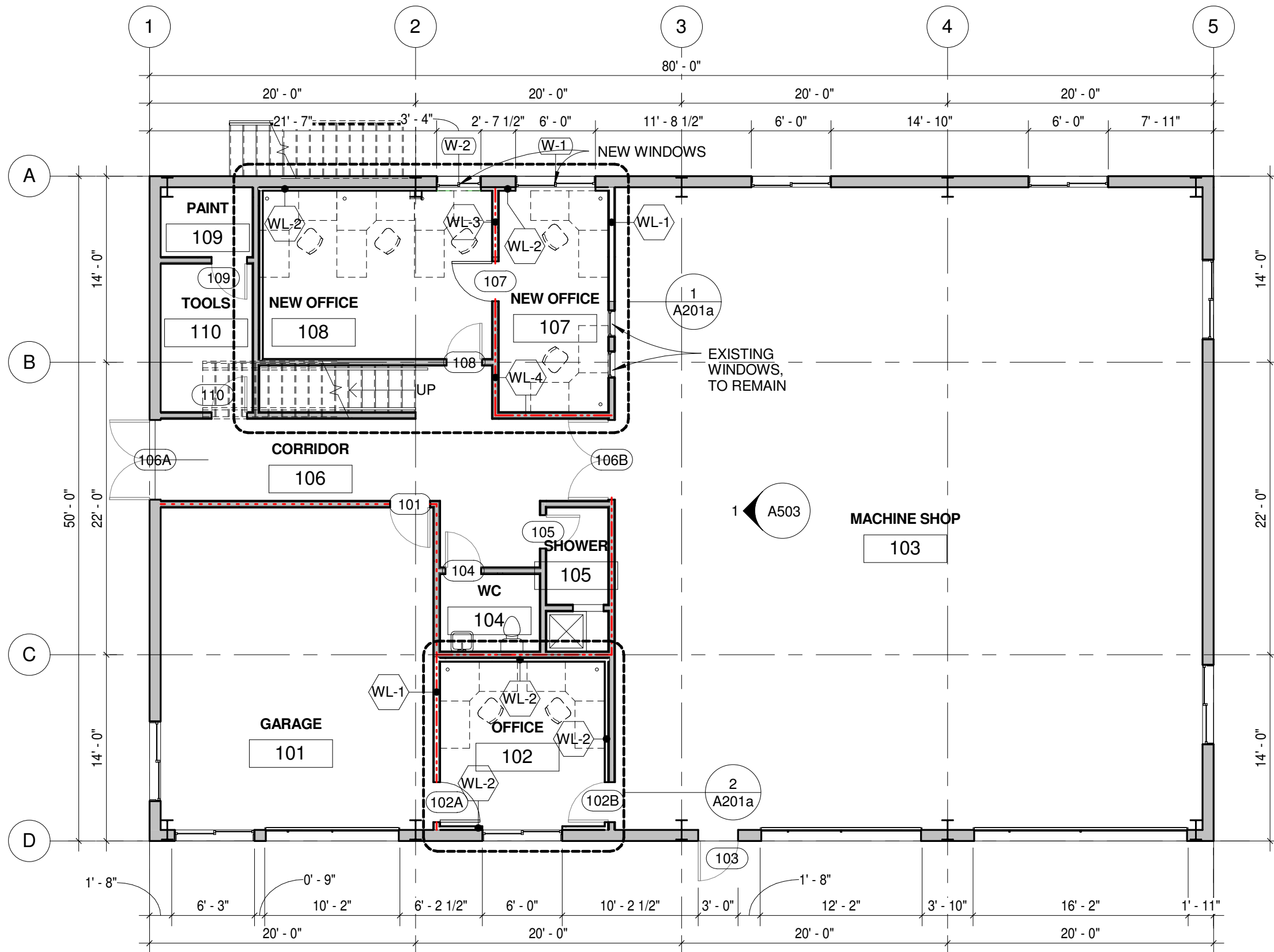
- 1 CONTRACTORS TO VISIT SITE AND FAMILIARIZE THEMSELVES WITH ALL EXISTING CONDITIONS-SEE ALSO GENERAL CONDITIONS SECTION IN THE SPECIFICATIONS
- 2 SHADED WALLS REPRESENT EXISTING, TO REMAIN.
- 3 CONTRACTOR TO PROVIDE BARRIERS AS REQUIRED IN ORDER TO CONTAIN AREAS UNDER CONSTRUCTION AND COORDINATE WITH THE OWNER DAILY CONSTRUCTION ACTIVITIES

**DEMOLITION NOTES**

- 1 REMOVE EXISTING PARTITION INCLUDING METAL PANEL, WHERE IT OCCURS, FRAMING AND DRYWALL. COORDINATE WITH THE ELECTRICAL CONTRACTOR THE REMOVAL AND/OR RELOCATION OF ELECTRICAL BOXES, SWITCHES, CONDUIT, ETC.
- 2 REMOVE EXISTING THROUGH-WALL A/C BOX.
- 3 REMOVE EXISTING SURFACE-MOUNTED CEILING LIGHT FIXTURES AND TURN OVER TO OWNER - SEE ELECTRICAL DRAWINGS.
- 4 CUT NEW OPENING FOR WINDOW IN EXISTING EXTERIOR WALL, AS SHOWN. CONTRACTOR TO VERIFY LOCATION OF ANY EXISTING OBSTRUCTION, SUCH AS "X" BRACING, STEEL GIRTS, ETC. SEE WINDOW SCHEDULE FOR ROUGH OPENING.
- 5 EXISTING FURNITURE AND/OR EQUIPMENT TO BE REMOVED/RE-LOCATED BY OWNER.
- 13 RELOCATE EXISTING LAVATORY TO THE SOUTH TO SATISFY A MINIMUM DISTANCE OF 2'-11" BETWEEN THE TWO BATHROOM FIXTURES AS REQUIRED BY CODE
- 6 RE-LOCATE COMPRESSOR SEE MECHANICAL/ELECTRICAL DRAWINGS.
- 7 EXISTING FURNACE TO BE REPLACED - SEE MECHANICAL AND ELECTRICAL DRAWINGS.
- 8 EXISTING ELECTRICAL EQUIPMENT, CONDUIT, SWITCHES, BOXES, VIDEO SURVEILLANCE EQUIPMENT, ETC TO BE REMOVED AND RELOCATED- SEE ELECTRICAL PLANS.
- 9 VERIFY EXISTING CEILING GRID AND TILES, REPLACE STAINED AND/OR DAMAGED TILES AND INSTALL NEW LIGHT FIXTURES (SEE ELECTRICAL).
- 10 OWNER SHALL VERIFY EXISTING FLOOR TILE FOR ASBESTOS CONTENT AND, IF REMOVED, ENSURE REMOVAL BY SPECIALIZED CONTRACTOR.
- 11 CONTRACTOR TO REMOVE EXISTING VINYL BASE AT PERIMETER OF WALL.
- 12 CONTRACTOR TO REMOVE FLOORING UNDERLAYMENT AS REQUIRED TO EXPOSE THE FLOOR JOISTS FOR THE PURPOSE OF INSTALLING CORNER SUPPORT FOR NEW PARTITION (SEE NEW FLOOR PLAN).







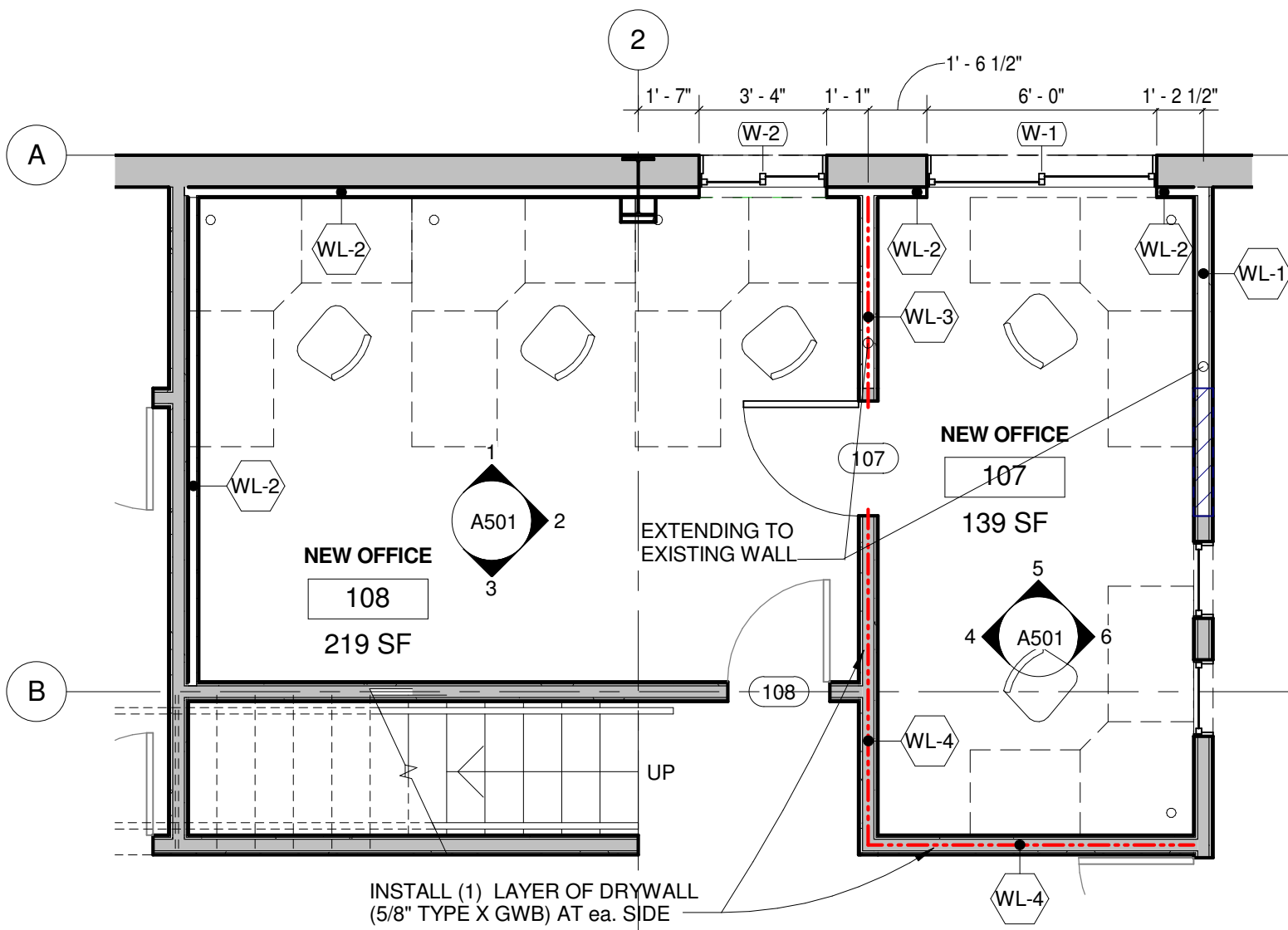
- WALL ASSEMBLIES**
- WL-1 3 5/8" STEEL STUDS WITH 5/8" GYP BD AT EACH SIDE FILL WITH 3 1/2" BATT ACOUSTICAL INSULATION
  - WL-2 (1) ONE LAYER OF 5/8" GYP BOARD, OVER 2 5/8" STEEL STUD AT 16" O.C. OVER EXISTING METAL PANELS.
  - WL-3 (2) LAYERS OF 5/8" GYP BD (TYPE X), ea. SIDE OF 3 5/8" STEEL STUD AT 16" O.C. FILL w/ ACOUSTICAL INSULATION
  - WL-4 (1) LAYER OF 5/8" GYP BD (TYPE X), ea. SIDE OF EXISTING WALL

- EXISTING INTERIOR WALL
- EXISTING EXTERIOR WALL

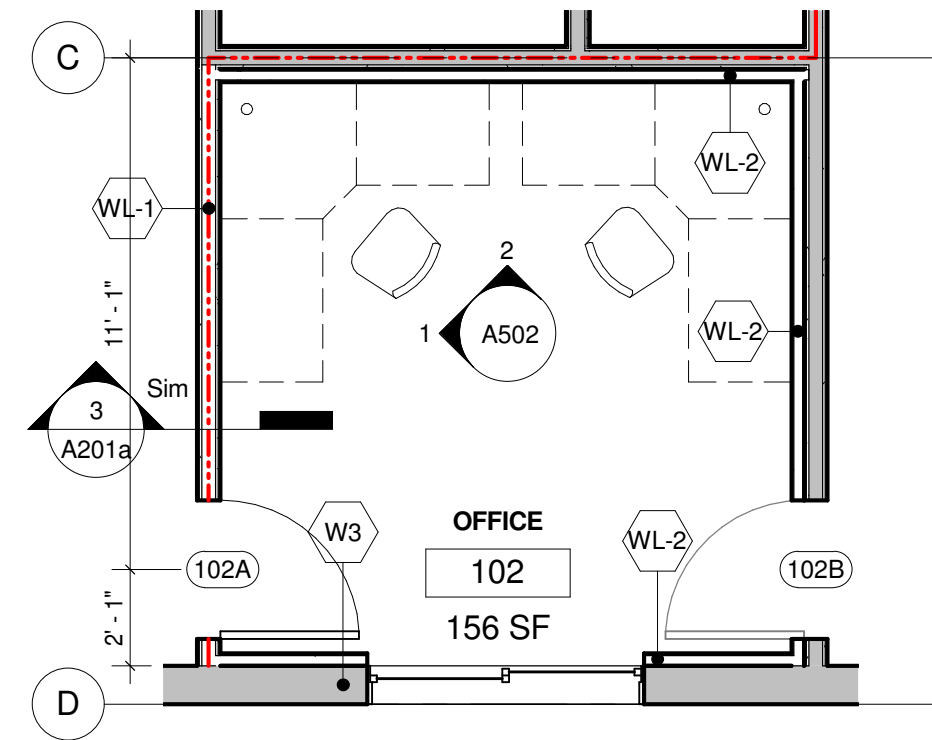
- RATED WALL ASSEMBLIES**
- 2HR w/ 1.5HR RATED DOOR
  - 45MIN w/ 45MIN RATED DOOR
  - 1.5HR w/ 1HR RATED DOOR

1 1ST FLOOR PLAN  
1 : 100

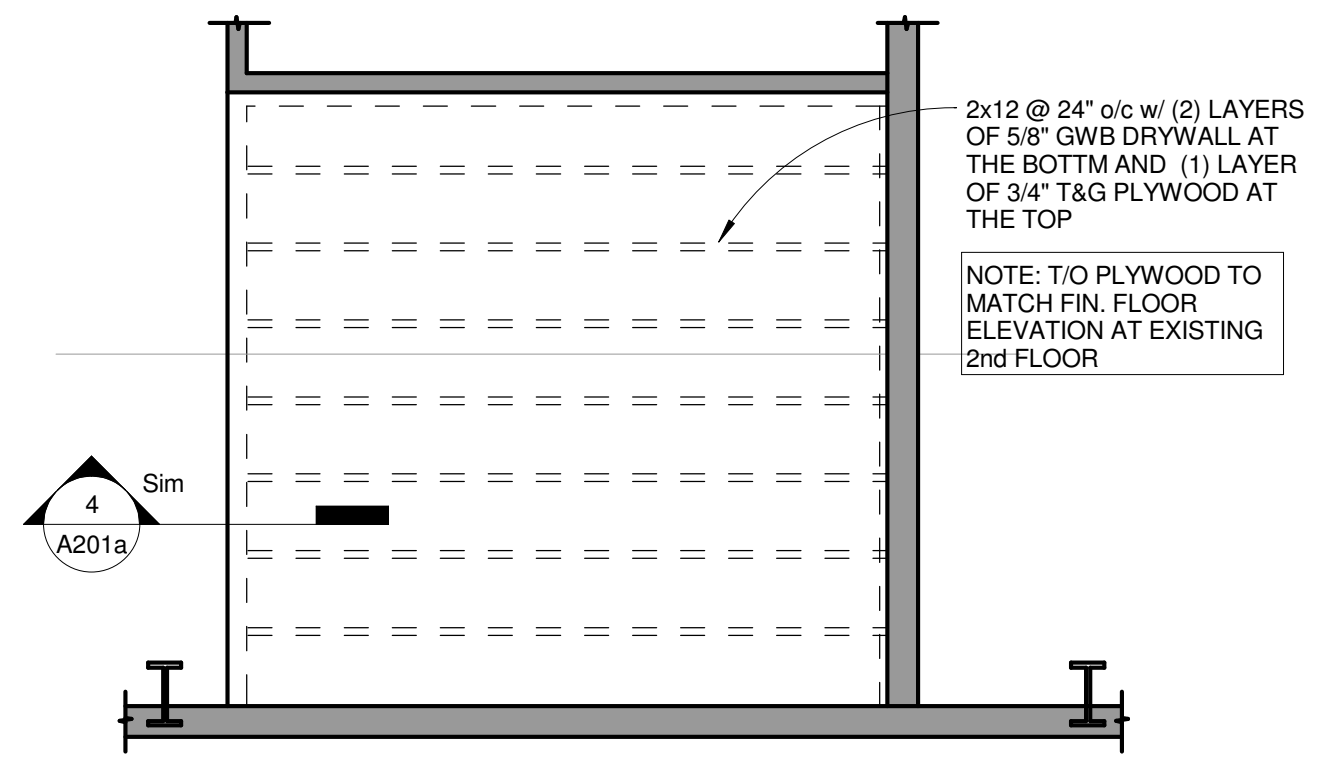




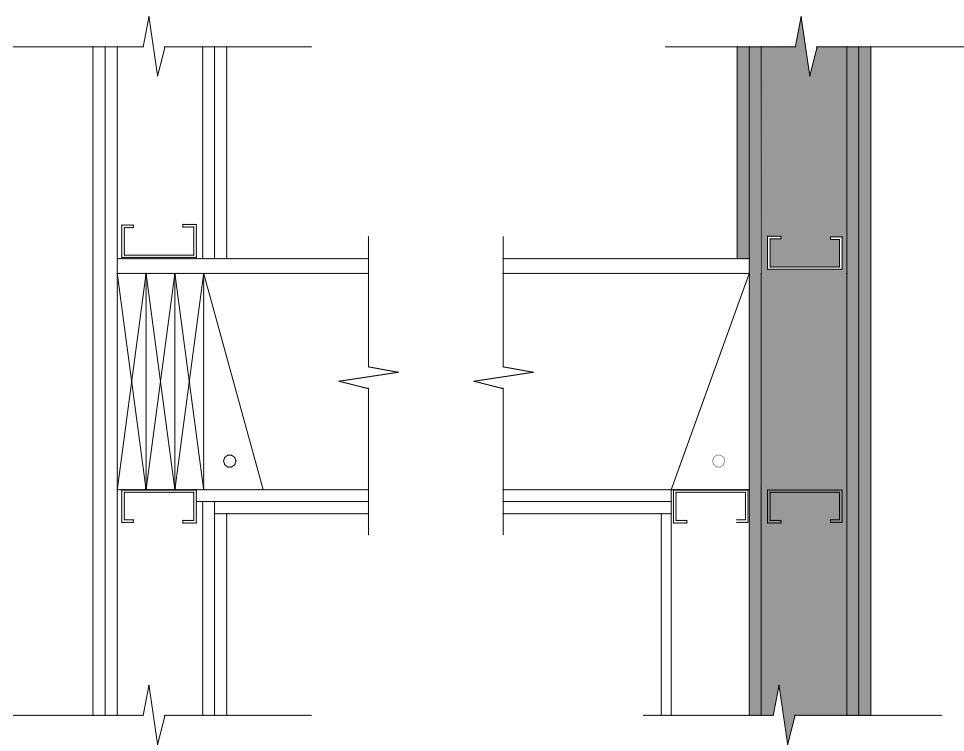
1 PARTIAL2 1ST FLOOR PLAN  
1 : 50



2 PARTIAL1 1ST FLOOR PLAN  
1 : 50



3 PARTIAL 2ND FLOOR FRAMING PLAN  
1 : 50



4 SECTION DETAIL  
1 : 10



NOTES:

Issue Record:  
YY.MM.DD/Issued For/Issued To/Issued By

Revisions:  
R# Brief Description/YY.MM.DD/Revised By

**2ND FLOOR PLAN**

Designed By: \_\_\_\_\_ Scale: 1 : 100  
Drawn By: \_\_\_\_\_ Date: \_\_\_\_\_  
Checked By: \_\_\_\_\_ Date: \_\_\_\_\_  
Project No.: \_\_\_\_\_

**A202**

Revision No.: \_\_\_\_\_ Date: \_\_\_\_\_  
Issued For: \_\_\_\_\_  
**TENDER**  
Date Issued: 2014.12.19  
Date Plotted: 19/12/2014 5:40:37 PM

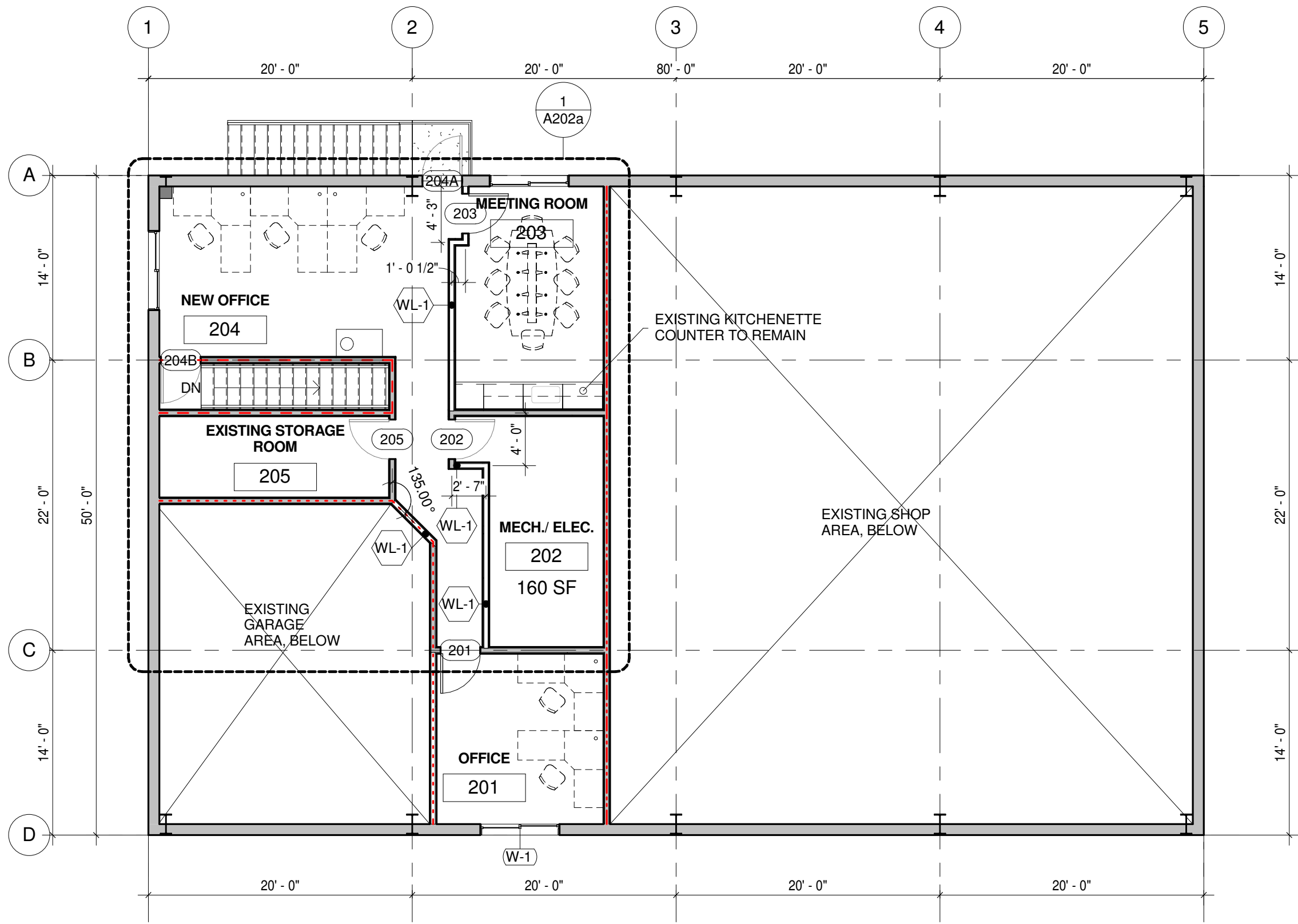
**WALL ASSEMBLIES**

- WL-1 = 3 5/8" STEEL STUDS WITH 5/8" GYP BD AT EACH SIDE FILL WITH 3 1/2" BATT ACOUSTICAL INSULATION
- WL-2 = (1) ONE LAYER OF 5/8" GYP BOARD, OVER 2 5/8" STEEL STUD AT 16" O.C. OVER EXISTING METAL PANELS.
- WL-3 = (2) LAYERS OF 5/8" GYP BD (TYPE X), ea. SIDE OF 3 5/8" STEEL STUD AT 16" O.C. FILL w/ ACOUSTICAL INSULATION
- WL-4 = (1) LAYER OF 5/8" GYP BD (TYPE X), ea. SIDE OF EXISTING WALL

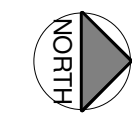
- EXISTING INTERIOR WALL
- EXISTING EXTERIOR WALL

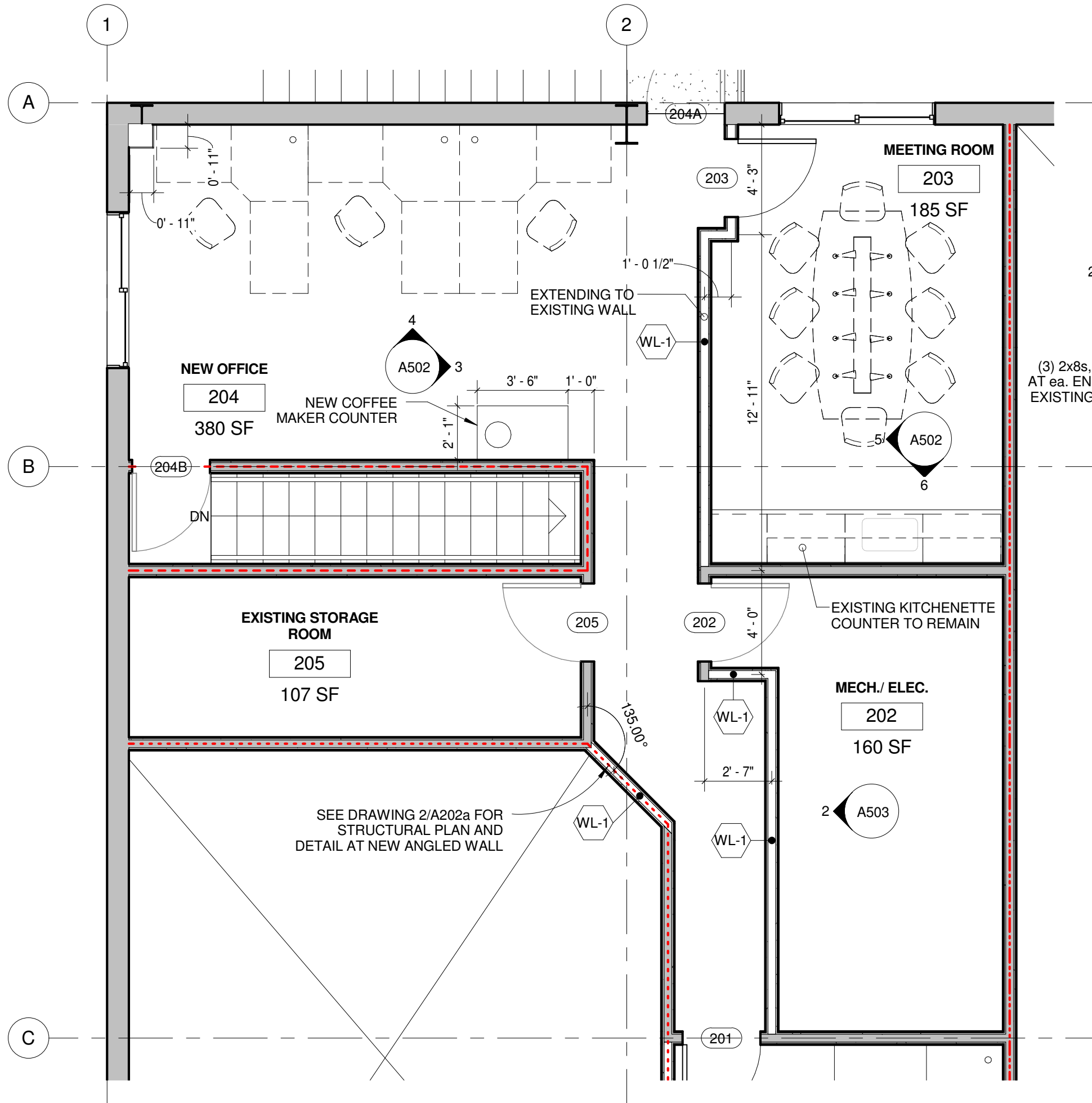
**RATED WALL ASSEMBLIES**

- 2HR w/ 1.5HR RATED DOOR
- 45MIN w/ 45MIN RATED DOOR
- 1.5HR w/ 1HR RATED DOOR

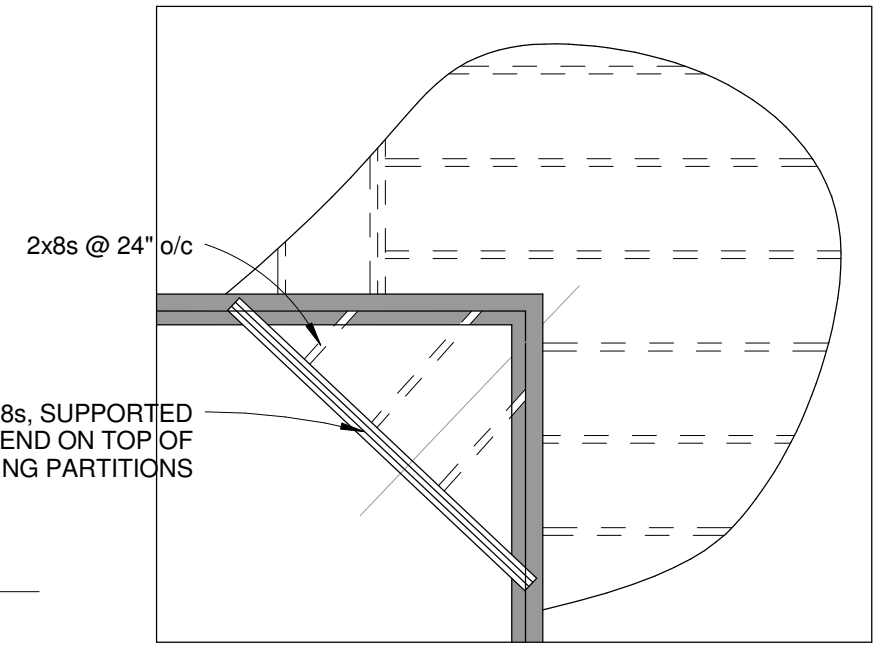


**1 2ND FLOOR PLAN**  
1 : 100

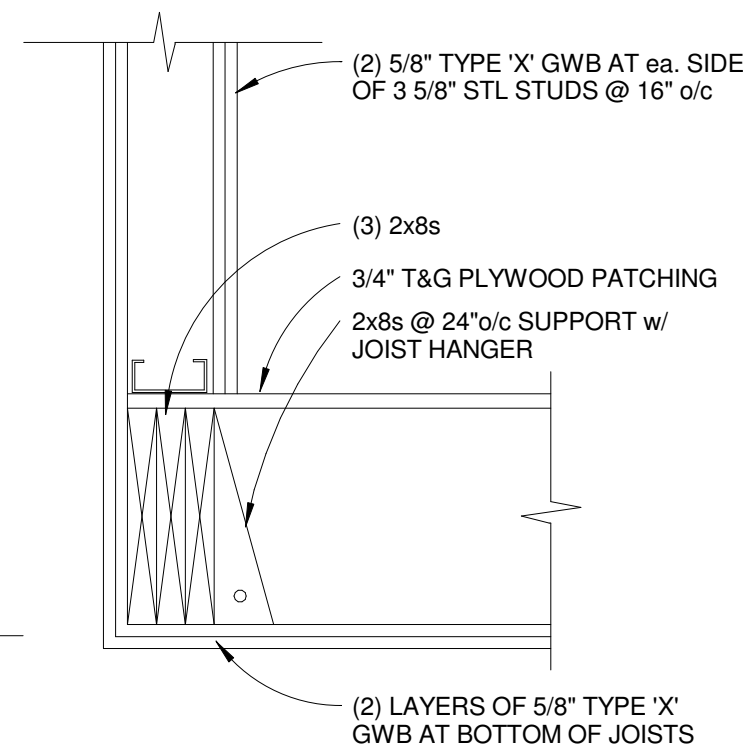




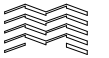
1 PARTIAL 2ND FLOOR PLAN  
1 : 50



3 PARTIAL PLAN NEW FRAMING  
1 : 50



2 SECTION AT NEW FLOOR FRAMING  
1 : 10



Window Schedule								
Mark	Type Mark	Width	Height	Sill Height	Count	Level	Phase Created	Description

1 ST FLOOR

W-1	W-1	6' - 0"	4' - 0"	3' - 0"	1	1 ST FLOOR	New Construction	PVC CONSTRUCTION, SLIDER, WELDED CORNERS, 1" INSULATED, LOW 'E' ARGON FILLED GLAZING
W-2	W-2	3' - 4"	4' - 0"	3' - 0"	1	1 ST FLOOR	New Construction	PVC CONSTRUCTION, SLIDER, WELDED CORNERS, 1" INSULATED, LOW 'E' ARGON FILLED GLAZING

2ND FLOOR

W-1	W-1	6' - 0"	4' - 0"	3' - 0"	1	2ND FLOOR	New Construction	PVC CONSTRUCTION, SLIDER, WELDED CORNERS, 1" INSULATED, LOW 'E' ARGON FILLED GLAZING
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Door Schedule							
Mark	Width	Height	Count	Level	Phase Created	Description	Hardware Function

1 ST FLOOR

101	3' - 0"	7' - 0"	1	1 ST FLOOR	Existing		
102A	3' - 0"	7' - 0"	1	1 ST FLOOR	New Construction	HOLLOW METAL DOOR & FRAME w/ 6"x18" LIGHT-KIT. 90MIN FIRE RATING	OFFICE
102B	3' - 0"	7' - 0"	1	1 ST FLOOR	Existing		
103	3' - 0"	7' - 0"	1	1 ST FLOOR	Existing		
104	2' - 8"	7' - 0"	1	1 ST FLOOR	Existing		
105	2' - 6"	7' - 0"	1	1 ST FLOOR	Existing		
106A	6' - 0"	7' - 0"	1	1 ST FLOOR	Existing		
106B	6' - 0"	7' - 0"	1	1 ST FLOOR	Existing		
107	3' - 0"	7' - 0"	1	1 ST FLOOR	New Construction	HOLLOW METAL DOOR & FRAME w/ 6"x18" LIGHT-KIT. 90MIN FIRE RATING	OFFICE
108	2' - 8"	7' - 0"	1	1 ST FLOOR	Existing		
109	2' - 8"	7' - 0"	1	1 ST FLOOR	Existing		
110	2' - 8"	7' - 0"	1	1 ST FLOOR	Existing		

2ND FLOOR

201	3' - 0"	7' - 0"	1	2ND FLOOR	New Construction	HOLLOW METAL DOOR & FRAME w/ 6"x18" LIGHT-KIT	OFFICE
202	3' - 0"	7' - 0"	1	2ND FLOOR	Existing		
203	3' - 0"	7' - 0"	1	2ND FLOOR	New Construction	HOLLOW METAL DOOR & FRAME w/ 6"x18" LIGHT-KIT	OFFICE
204A	3' - 0"	7' - 0"	1	2ND FLOOR	Existing		
204B	3' - 0"	7' - 0"	1	2ND FLOOR	Existing		
205	3' - 0"	7' - 0"	1	2ND FLOOR	Existing		



**ROOM SCHEDULE (NOTE: ORIENTATION FOLLOW TRUE NORTH DIRECTION INDICATION ON FLOOR PLANS)**

Number	Level	Name	Area	Wall Finish				Base Finish	Floor Finish	Ceiling Finish	Comments
				N	E	S	W				
<b>1 ST FLOOR</b>											
101	1 ST FLOOR	GARAGE	497 SF	EXIST/GWB-P	EXIST	EXIST	EXIST	4" V.B	EXIST (CONC)	EXPOSED	PAINT DRYWALL
102	1 ST FLOOR	OFFICE	156 SF	GWB-P	GWB-P	GWB-P	GWB-P	-	VCT	GWB-P	DRYWALL LID
103	1 ST FLOOR	MACHINE SHOP	2135 SF	EXIST	EXIST	EXIST-P	EXIST	4" V.B	EXIST CONC	EXP	PAINT DRYWALL
104	1 ST FLOOR	WC	43 SF	EXIST-P	EXIST-P	EXIST-P	EXIST-P	EXIST	VCT	EXIST-P	PAINT DRYWALL
105	1 ST FLOOR	SHOWER	50 SF	EXIST	EXIST	EXIST	EXIST	4" V.B	EXIST	EXIST-P	PAINT DRYWALL
106	1 ST FLOOR	CORRIDOR	309 SF	EXIST-P	EXIST-P	EXIST-P	EXIST-P	4" V.B	VCT	EXIST-P	PAINT DRYWALL
107	1 ST FLOOR	NEW OFFICE	139 SF	GWB-P	GWB-P	EXIST-P	GWB-P	4" V.B	VCT	EXIST/GWB-P	PAINT DRYWALL
108	1 ST FLOOR	NEW OFFICE	219 SF	GWB-P	EXIST-P	EXIST-P	GWB-P	4" V.B	VCT	EXIST/GWB-P	PAINT DRYWALL
109	1 ST FLOOR	PAINT	36 SF	NO WORK							
110	1 ST FLOOR	TOOLS	77 SF	NO WORK							
<b>2ND FLOOR</b>											
201	2ND FLOOR	OFFICE	163 SF	EXIST-P	GWB-P	GWB-P	GWB-P	4" V.B	C	ACT	
202	2ND FLOOR	MECH./ ELEC.	160 SF	-	-	EX/GWB-P	GWB-P	-	-	EXP	
203	2ND FLOOR	MEETING ROOM	185 SF	EXIST-P	EXIST-P	GWB-P	EXIST-P	4" V.B	C	ACT	
204	2ND FLOOR	NEW OFFICE	380 SF	GWB-P	EXIST-P	EXIST-P	EXIST-P	4" V.B	C	ACT	
205	2ND FLOOR	EXISTING STORAGE ROOM	107 SF	EXIST-P	EXIST-P	EXIST-P	EXIST-P	4" V.B	VCT	EXP	

**LEGEND**

P	- PAINT
GWB	- DRYWALL
EXIST	- EXISTING
ACT	- ACOUSTICAL CEILING TILE
EXP	- EXPOSED
CONC	- CONCRETE
CONC-S	- SEALED CONCRETE
VB	-VINYL BASE
VCT	-VINYL FLOOR TILE
C	-CARPET

**SPECIFICATIONS**

**DIVISION 6**

- NEW PLASTIC LAMINATE COFFEE COUNTER: PLASTIC LAMINATE OVER 3/4" PARTICLE BOARD AND SIMILAR CONSTRUCTION BASE CABINET. NEVAMAR, WILSONART, PIONITE, OR APPROVED EQUAL.

**DIVISION 7**

- ACOUSTICAL INSULATION: 3 1/2" BATT INSULATION AS MANUFACTURED BY FIBREGLOSS CANADA INC. OR APPROVED EQUAL.  
 - PRE-FINISHED METAL FLASHING AT NEW EXTERIOR WINDOW SILLS (WHITE).  
 - SEALANTS – ACRYLIC: TREMCO 830; OTHER PRODUCTS BY TREMCO, SONNEBORN, OR APPROVED EQUAL. FIRE-RATED SEALANTS: TREMCO, HILTI, OR APPROVED EQUAL.

**DIVISION 8**

- HOLLOW METAL DOORS AND H.M. FRAMES (WELDED), 1.5 MM THICK (16 GA), AS MANUFACTURED BY SHANAHAN'S MANUF. LTD., STELDOR LTD., S.W. FLEMING LTD. OR APPROVED EQUAL.  
 - GLAZING (SEE WINDOWS)  
 - PVC WINDOWS (EXTRUDED, WELDED MITERED CORNERS), OPERABLE (SLIDERS) WITH 1" INSULATED GLASS, LOW E, ARGON FILLED, AS MANUFACTURED BY ACORN, ALLWEATHER WINDOWS, OR APPROVED EQUAL. NOTE: PROFILE TO FIT EXISTING WALL THICKNESS. BLOCKING AS REQUIRED TO INSTALL IN METAL BUILDING ENCLOSURE EXTERIOR WALL. PROVIDE TRIM AT INTERIOR (FOR DRYWALL) AND EXTERIOR (METAL "J" CHANNEL – WHITE).

**DIVISION 9**

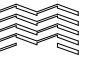
- DRYWALL 5/8" THICK GYPSUM BOARD, TYPE 'X'.  
 - PAINT – LOW VOC, COMMERCIAL GRADE BY SHERWIN WILLIAMS, BENJAMIN MOORE, OR APPROVED EQUAL. ONE COAT OF PRIMER, TWO COATS OF PAINT, SATIN FINISH. NOTE: PAINT DRYWALL SURFACES, NEW AND EXISTING HOLLOW METAL FRAMES AND DOORS IN ALL SPACES SCHEDULED TO BE FINISHED, AND ALL EXPOSED STEEL IN INTERIOR OFFICE SPACES OR OTHER SPACES SCHEDULED TO BE FINISHED (SEE FINISH SCHEDULE).  
 - RESILIENT FLOORING – VCT 12" X 12" BY ARMSTRONG / STANDARD EXCELON COLLECTION OR APPROVED EQUAL. INCLUDE RUBBER TRANSITION STRIPS AT VCT AREAS JOINING OTHER FLOOR FINISHES SUCH AS: SEALED CONCRETE, CARPET, ETC.  
 - VINYL BASE – 100 MM (4") BY JOHNSONITE, VPI, OR APPROVED EQUAL.  
 - CARPET – ZERO VOC, 24" X 24" (600 MM X 600 MM) TILE PRODUCT AS MANUFACTURED BY MOHAWK GROUP (SUPERFRESH), BENTLEY (TROUBADOUR), OR APPROVED EQUAL.  
 - ACOUSTICAL CEILINGS – 24" X 24" (600 MM X 600 MM) ACOUSTICAL TILE AS MANUFACTURED BY ARMSTRONG COMMERCIAL CEILINGS, CGC, OR APPROVED EQUAL. STANDARD TEXTURED TILES (WHITE) WITH STANDARD WHITE POWDER-COATED METALLIC GRID SYSTEM.

**NOTES:** COLOR SELECTIONS TO BE DETERMINED BY OWNER AND ARCHITECT AT A LATER DATE AND CONFIRMED DURING THE SHOP DRAWING REVIEW/APPROVALS. CONTRACTOR TO SUBMIT ACTUAL SAMPLE KITS OF ALL INTERIOR FINISHES AND/OR PRODUCTS.

**Carcoana**  
ARCHITECTURE LTD.

Lawrence N. Carcoana, Principal  
SAA, AAA, MAA, AIA, NCARB

1457 ALBERT STREET, REGINA,  
SASKATCHEWAN S4R 2R8  
TEL 306.565.0411 | FAX  
306.757.9471  
email address



**McGinn Engineering Ltd.**  
A DIVISION OF MCGINN GROUP

1457 ALBERT STREET,  
REGINA,  
SASKATCHEWAN S4R 2R8  
TEL 306.565.0411  
FAX 306.757.9471  
mcginn@mcginnengineering.ca  
www.mcginnengineering.ca

Project Title:  
**Indian Head  
Research Farm**

AAFC

NOTES:

Issue Record:  
YY.MM.DD/Issued For/Issued To/Issued By

Revisions:  
# Description/YY.MM.DD/Revised By

**ROOM SCHEDULES**

Designed By: \_\_\_\_\_ Scale: 1 : 100  
 Drawn By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Checked By: \_\_\_\_\_ Date: \_\_\_\_\_  
 Project No.: \_\_\_\_\_

**A302**

Revision No.: \_\_\_\_\_ Date: \_\_\_\_\_  
 Issued For: TENDER

Date Issued: 2014.12.19  
 Date Plotted: 19/12/2014 5:40:38 PM



**INTERIOR  
ELEVATIONS**

Designed By: Scale: 1 : 50

Drawn By: Date:

Checked By: Date:

Project No.:

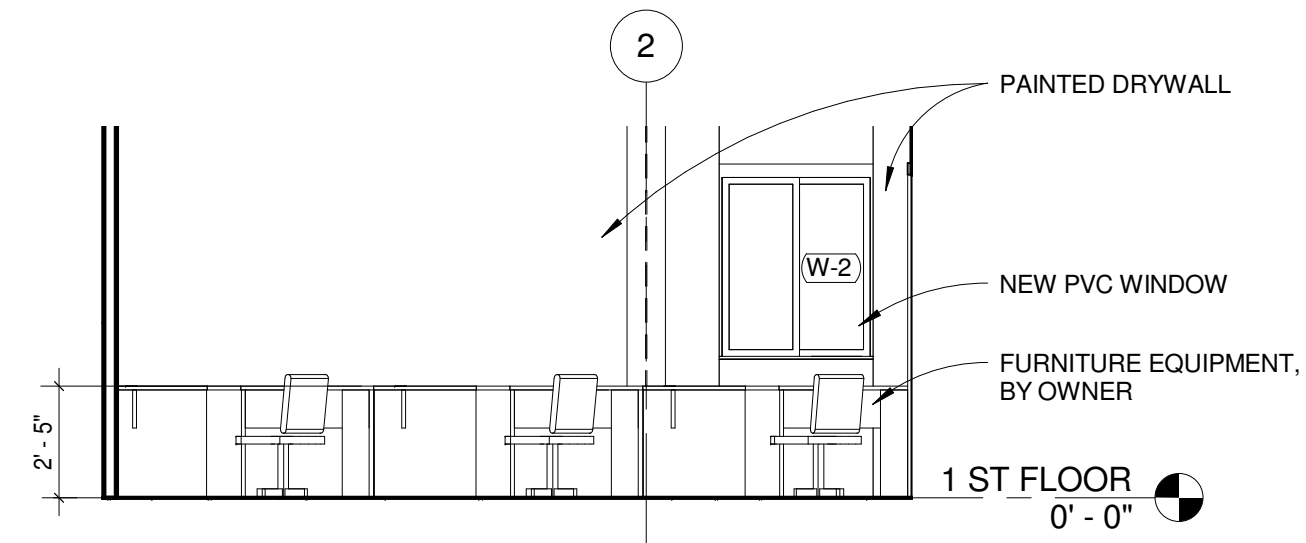
**A501**

Revision No.: Date:

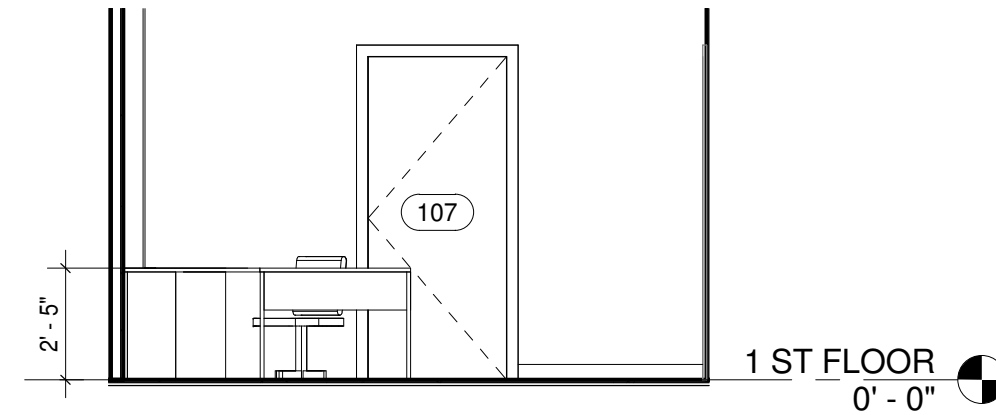
Issued For: TENDER

Date Issued: 2014.12.19

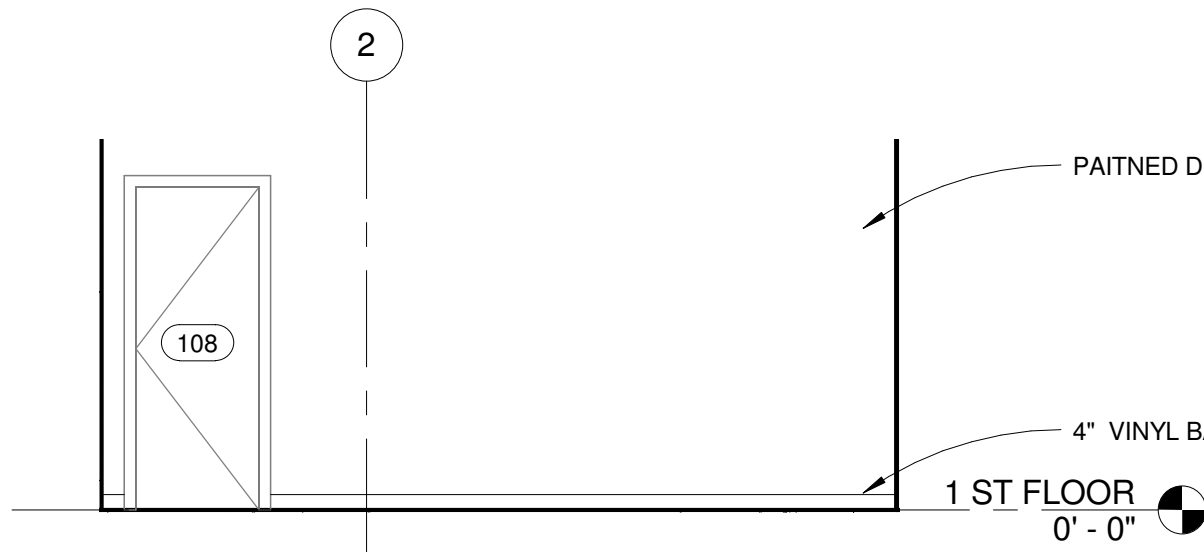
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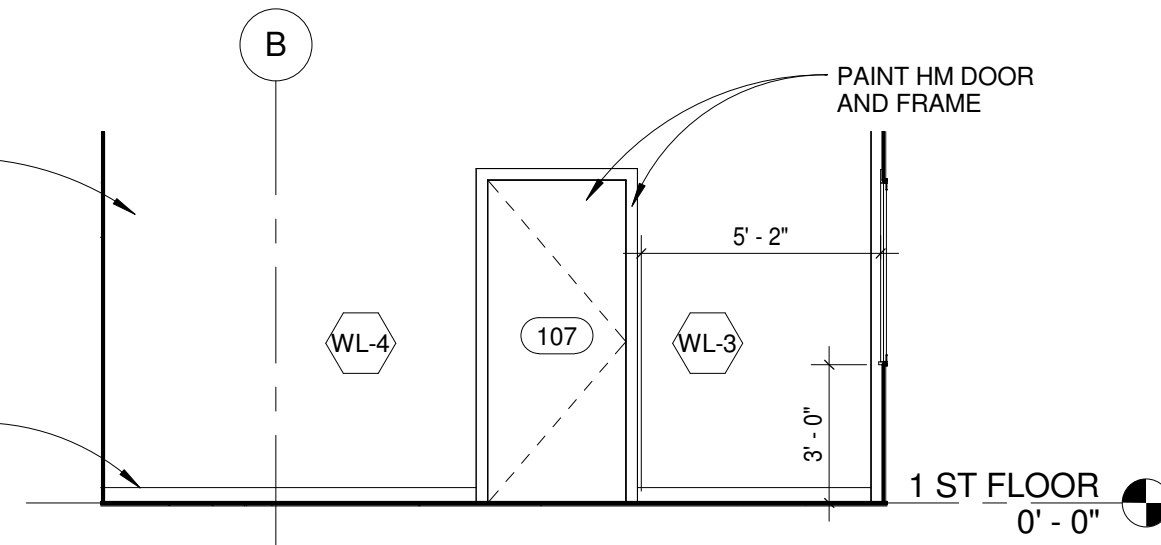
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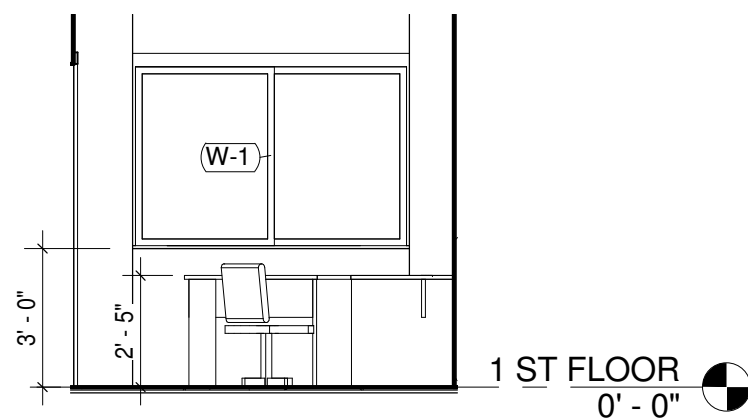
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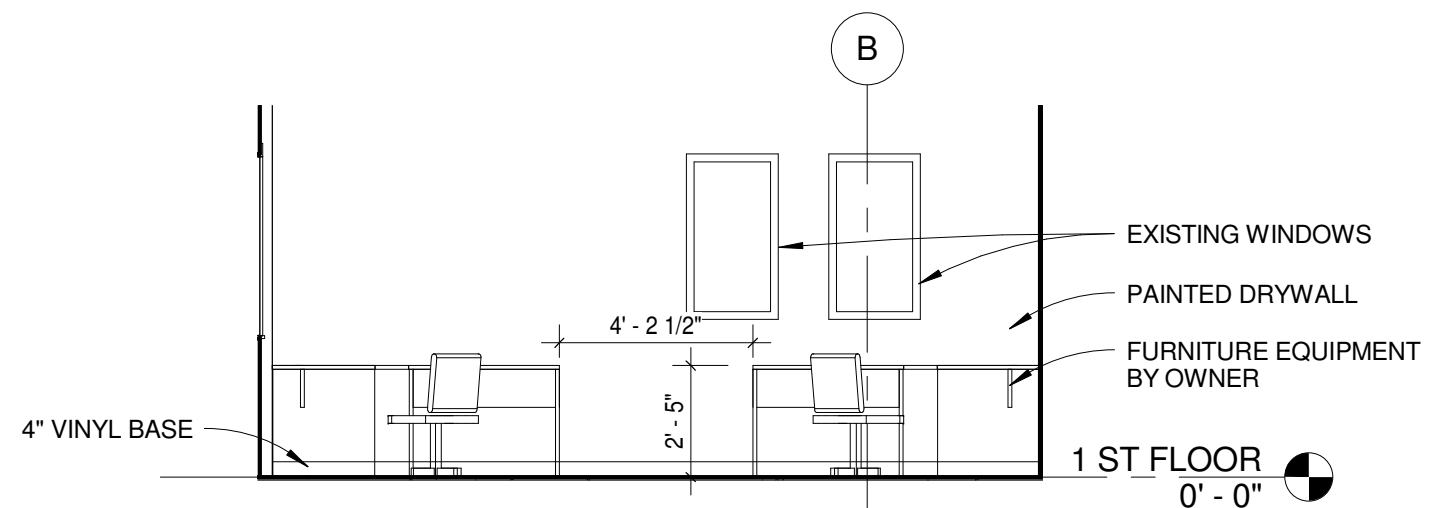
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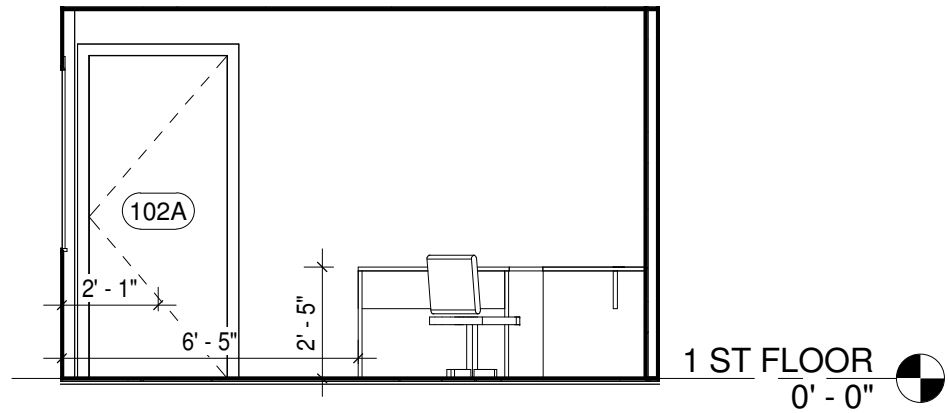
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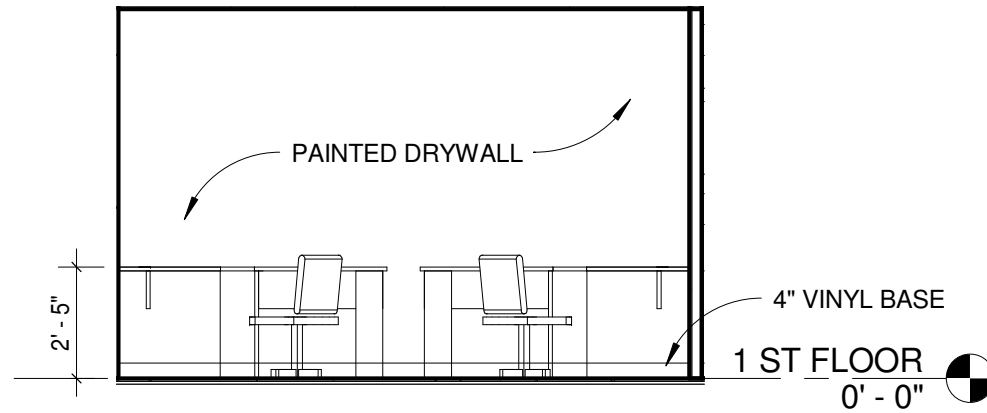
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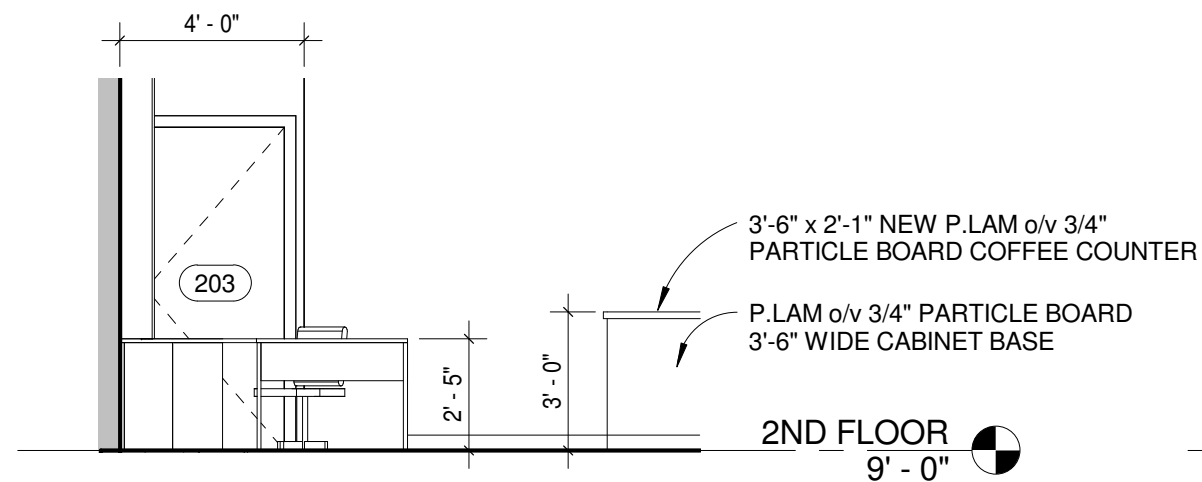
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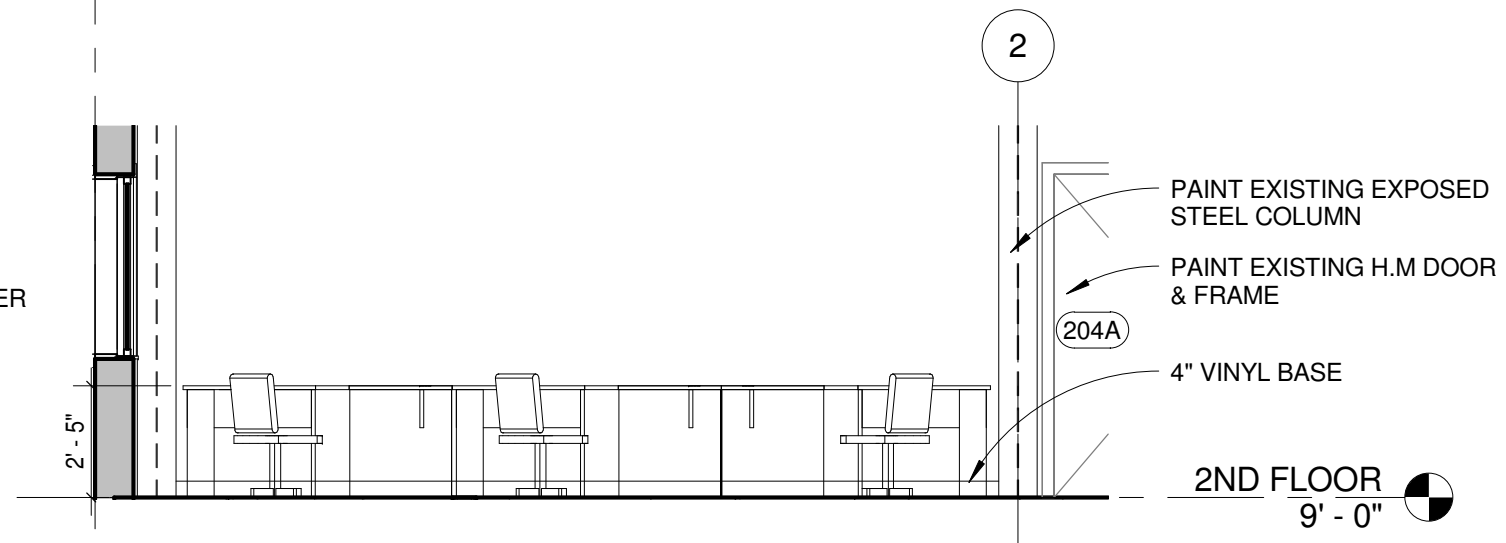
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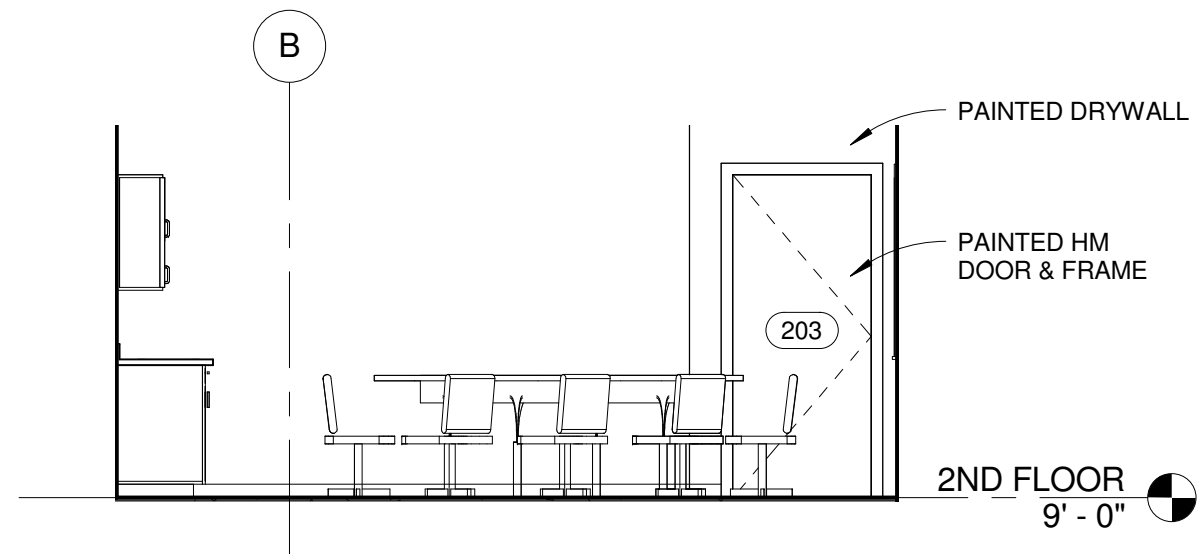
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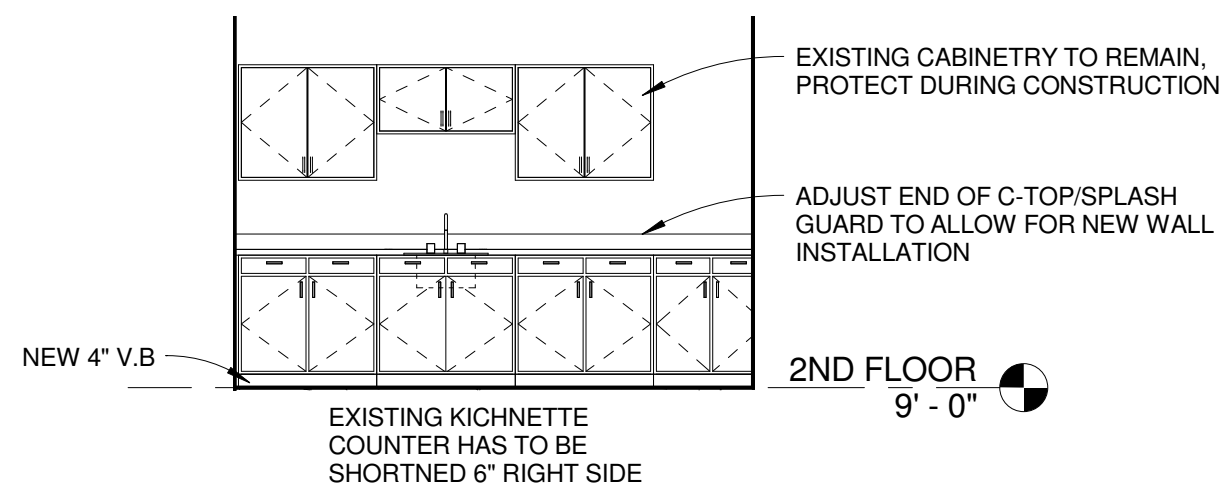
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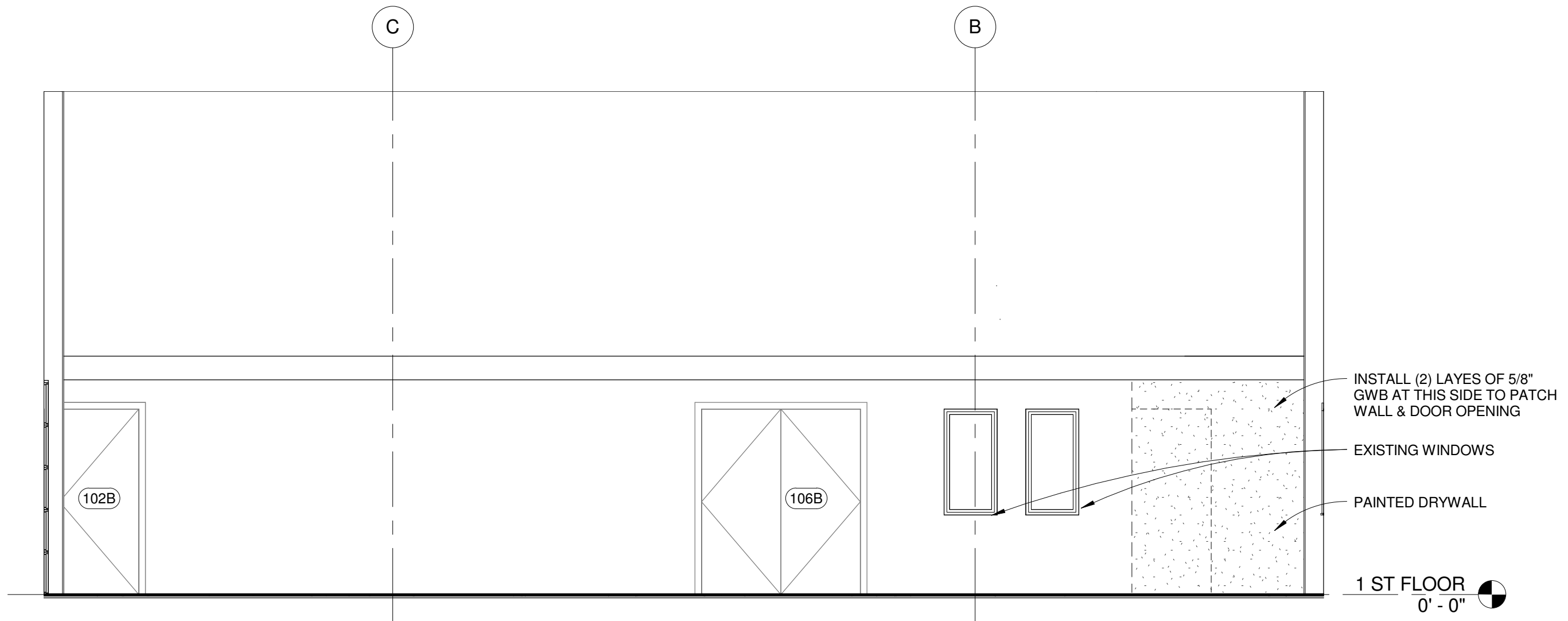
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1 : 50



5 IN. ELEV. 5 MEETING ROOM 203  
1 : 50



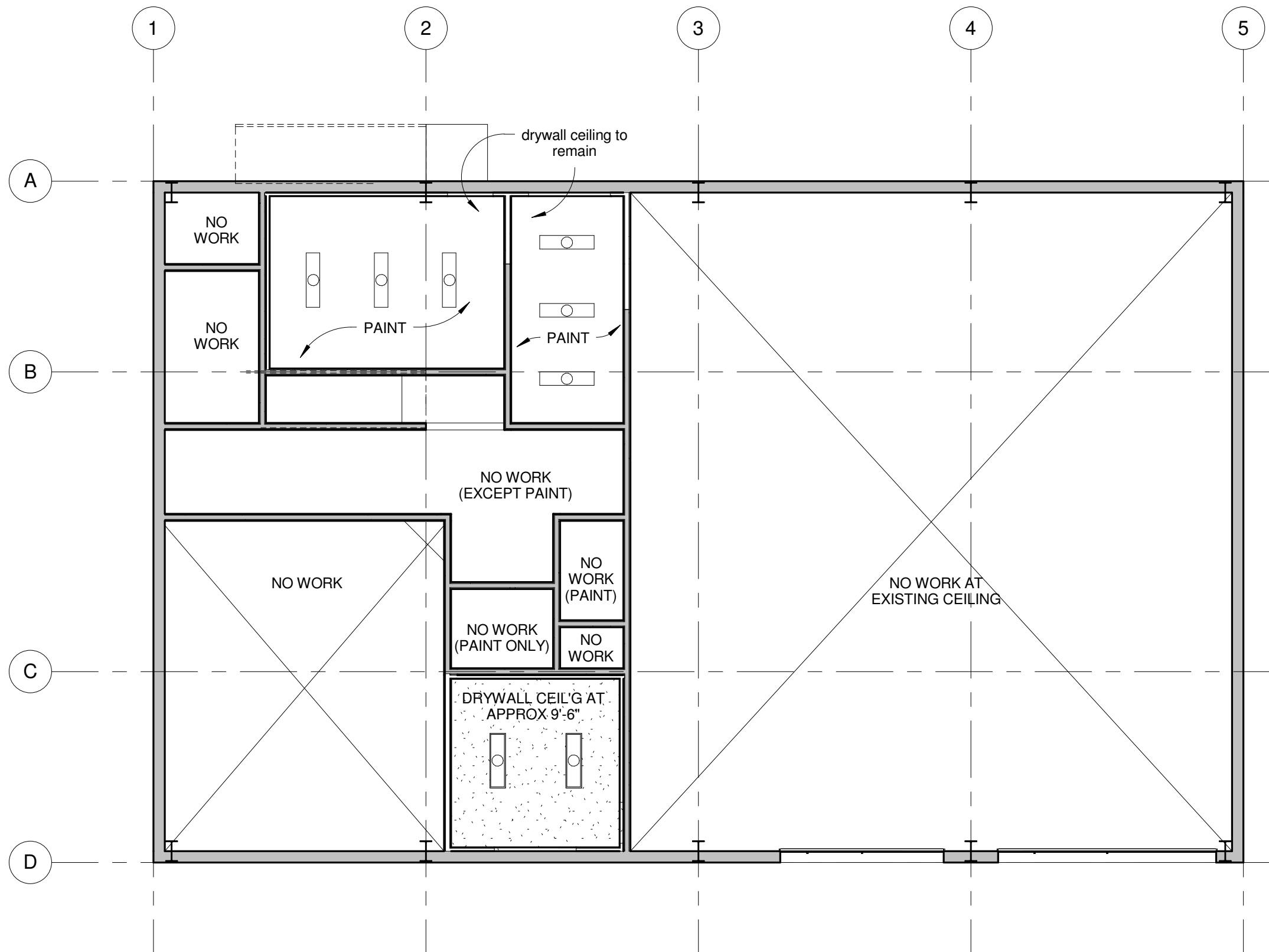
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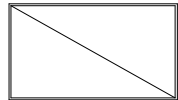
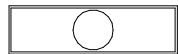
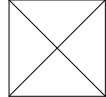
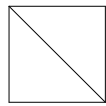
① IN. ELEV. 1 MACHINE SHOP 103  
1 : 50



② IN. ELEV. 1 MECH./ ELECT. ROOM 202  
1 : 50

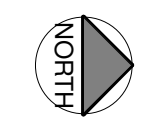


**REFLECTED CEILING PLAN LEGEND**

-  2'x4' RECESSED FLORESCENT LIGHT FIXTURE
-  1'x4' SURFACE MOUNT RECESSED FLORESCENT LIGHT FIXTURE
-  SUPPLY AIR DIFFUSER SEE MECHANICAL
-  RETURN AIR GRILL SEE MECHANICAL

**NOTE:** ALL MECHANICAL NOT SHOWN HERE, SEE MECH DRAWINGS & COORDINATE LOCATION w/ ELECTRICAL

1 1ST FLOOR REFLECTED CEILING  
1 : 100



NOTES:

Issue Record:  
YY.MM.DD/Issued For/Issued To/Issued By

Revisions:  
R# Brief Description/YY.MM.DD/Revised By

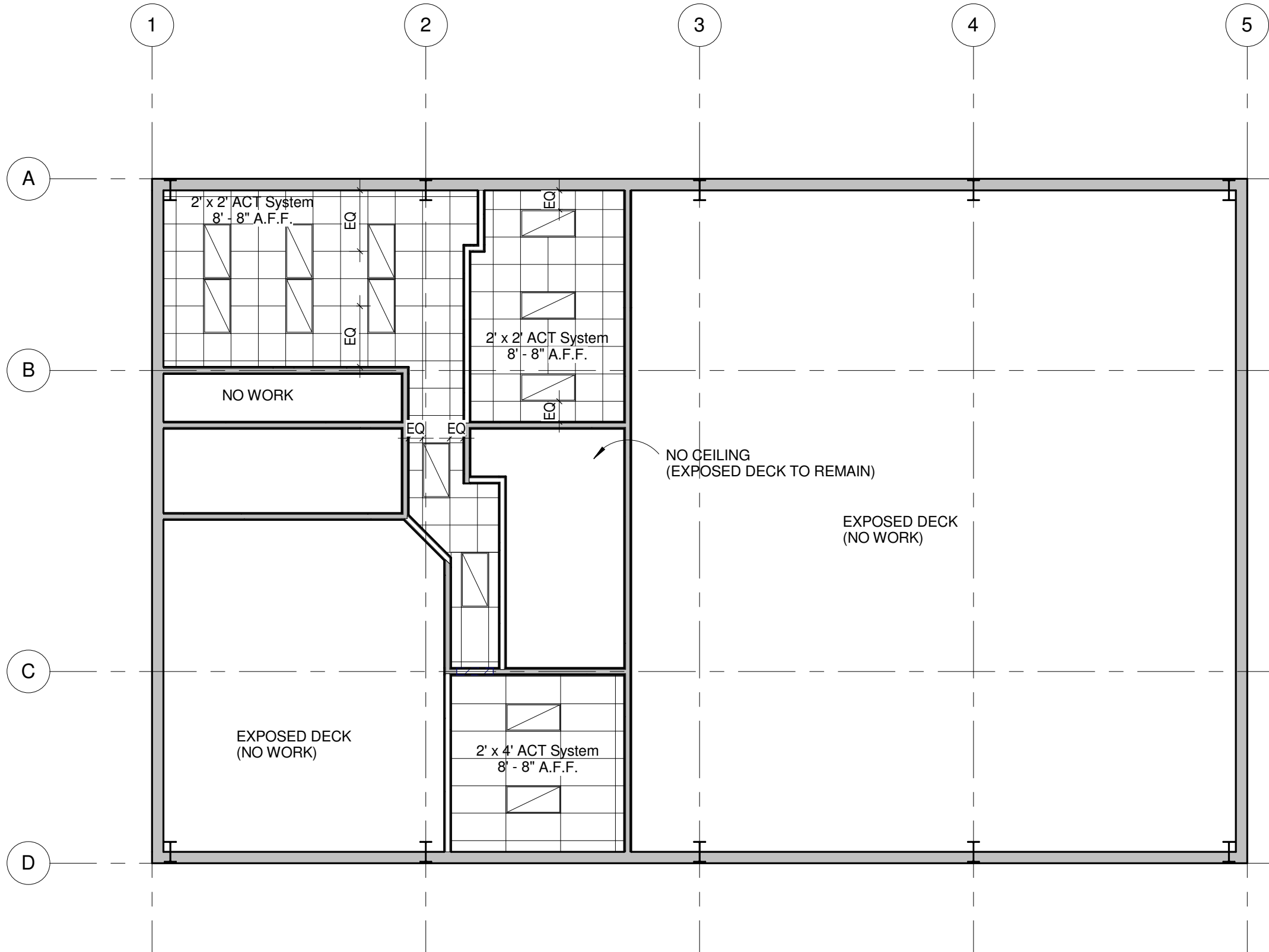
**REFLECTED  
CEILING PLAN 1 ST  
FLOOR**

Designed By: \_\_\_\_\_ Scale: As indicated  
Drawn By: \_\_\_\_\_ Date: \_\_\_\_\_  
Checked By: \_\_\_\_\_ Date: \_\_\_\_\_  
Project No.: \_\_\_\_\_

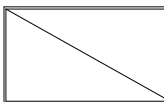
**A601**

Revision No.: \_\_\_\_\_ Date: \_\_\_\_\_  
Issued For: TENDER






**REFLECTED CEILING PLAN LEGEND**

 2'x4' RECESSED FLORESCENT LIGHT FIXTURE

 1'x4' SURFACE MOUNT RECESSED FLORESCENT LIGHT FIXTURE

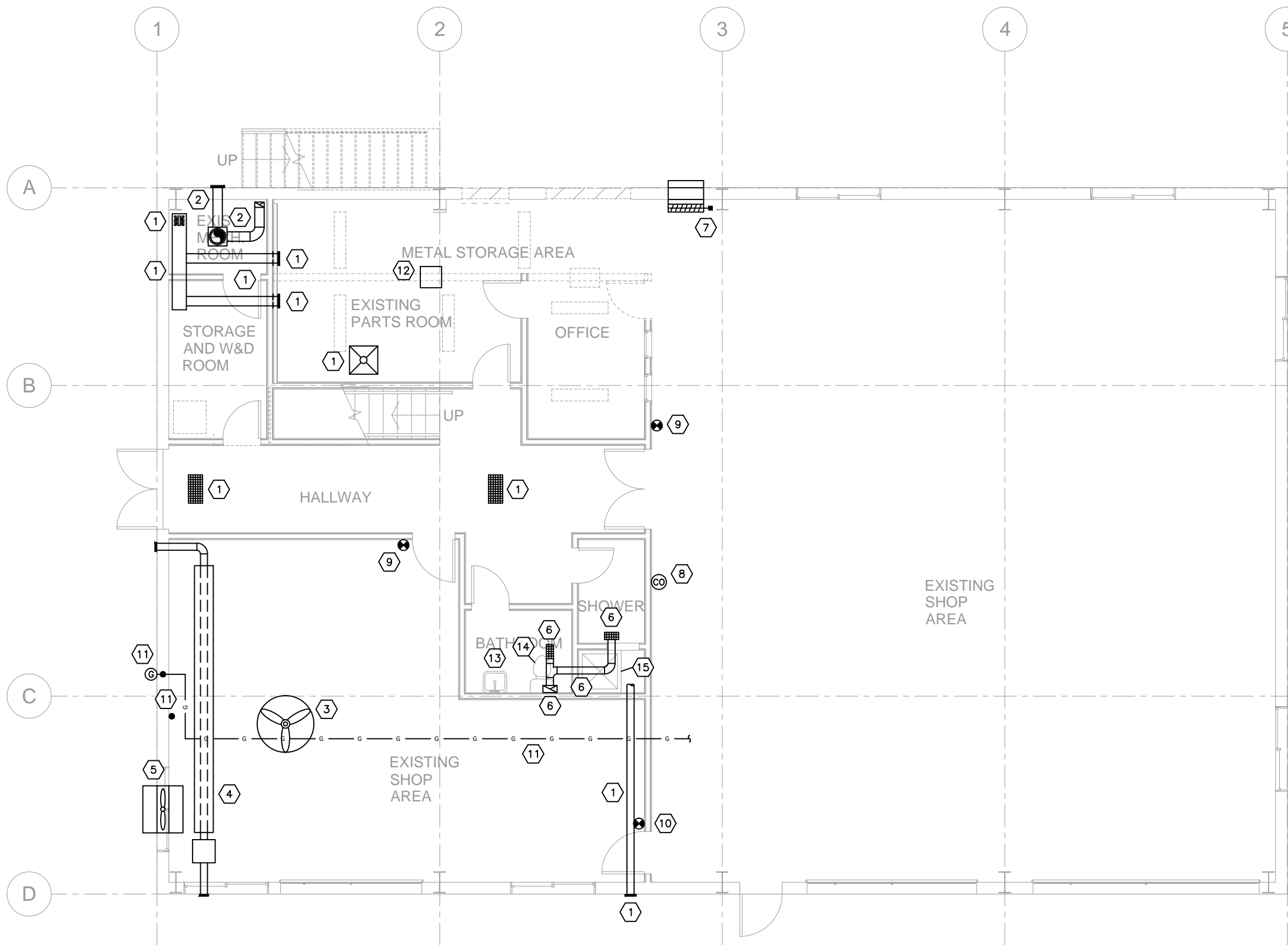
 SUPPLY AIR DIFFUSER  
SEE MECHANICAL

 RETURN AIR GRILL  
SEE MECHANICAL

**NOTE:** ALL MECHANICAL NOT SHOWN HERE, SEE MECH DRAWINGS & COORDINATE LOCATION W/ ELECTRICAL

**1 2ND FLOOR REFLECTED CEILING**  
1 : 100





**MECHANICAL DEMOLITION NOTES**

1. THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF ALL EXISTING MECHANICAL EQUIPMENT INCLUDING DUCTWORK, GRILLES, PIPING, INSULATION, FANS, PLUMBING FIXTURES, PIPING, ETC. AS NOTED.
2. COORDINATE WITH GENERAL CONTRACTOR TO PATCH ALL SURFACES DISTURBED AS A RESULT OF DEMOLITION INCLUDING CEILING, ROOF, FLOOR, WALLS, ETC. AND MAKE GOOD AND LEVEL TO EXISTING SURROUNDINGS.
3. THE CONTRACTOR IS RESPONSIBLE FOR FINAL CLEANING OF THE AFFECTED AREAS.
4. THE CONTRACTOR SHALL MAINTAIN A CLEAN, ORGANIZED WORK AND DISPOSAL STAGING AREA. PROVIDE GARBAGE/REFUSE CONTAINER FOR DEMOLITION MATERIAL AND INCLUDE ALL COSTS FOR REMOVAL AND DISPOSAL. COORDINATE STAGING AREA WITH GENERAL CONTRACTOR.
5. ALL HAZARDOUS WASTE SUCH AS REFRIGERANT, OIL, CHEMICALS, ETC. TO BE DISPOSED OF IN ACCORDANCE WITH SASKATCHEWAN ENVIRONMENT AND THE CITY OF SASKATOON REQUIREMENTS.
6. LOCATION AND CONFIGURATION OF EXISTING EQUIPMENT, DUCTWORK, PIPING, ETC. IS APPROXIMATE AND WAS OBTAINED FROM EXISTING DRAWINGS AND SITE VISITS. CONTRACTOR TO DETERMINE AND VERIFY EXACT CONFIGURATION AND LOCATION OF EXISTING EQUIPMENT ON SITE.

**MECHANICAL KEYNOTES** (xx) ← DENOTES KEYNOTE ON DRAWING

- 1 EXISTING SUPPLY AIR DUCT/DIFFUSER/GRILLE/FIRE DAMPER TO BE REMOVED.
- 2 EXISTING EXHAUST FAN TO BE REMOVED C/W DUCTWORK, ELECTRICAL, ETC. PATCH WALL AND CEILING AND MAKE GOOD AND LEVEL TO EXISTING SURROUNDINGS.
- 3 EXISTING ANTI-STRATIFICATION FAN TO REMAIN.
- 4 EXISTING GAS-FIRED RADIANT HEATER TO REMAIN.
- 5 EXISTING EXHAUST FAN TO REMAIN.
- 6 EXISTING EXHAUST AIR GRILLE/DUCT TO REMAIN. SEE MEZZANINE MECHANICAL DEMO PLAN 1/M6.2 FOR CONTINUATION.
- 7 EXISTING MOTORIZED DAMPER/AIR INTAKE TO REMAIN.
- 8 EXISTING CO SENSOR TO REMAIN.
- 9 EXISTING FIRE EXTINGUISHER TO REMAIN.
- 10 EXISTING FIRE EXTINGUISHER TO BE RELOCATED. SEE MAIN FLOOR MECHANICAL RENOVATION PLAN 1/M6.3.
- 11 EXISTING GAS METER AND GAS LINE TO REMAIN.
- 12 EXISTING WALL AC UNIT TO BE REMOVED C/W ELECTRICAL.
- 13 EXISTING SINK TO REMAIN.
- 14 EXISTING WATER CLOSET TO REMAIN.
- 15 EXISTING SHOWER TO REMAIN.

**MECHANICAL GENERAL NOTES**

1. SEE DRAWING M6.3 FOR MECHANICAL LEGEND AND GRILLE/LOUVRE SCHEDULE.
2. SEE DRAWING M6.4 FOR MECHANICAL EQUIPMENT SCHEDULE AND MECHANICAL GENERAL NOTES.
3. SEE DRAWING M6.5 FOR MECHANICAL SPECIFICATIONS AND DETAILS.

**1 MAIN FLOOR PLAN**  
M6.1 SCALE: 1/8" = 1'-0"

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Project Title:

**RESEARCH FARM**

INDIAN HEAD, SASKATCHEWAN

McGINN  
ENGINEERING LTD.  
ASSOCIATION OF PROFESSIONAL ENGINEERS  
OF SASKATCHEWAN  
CERTIFICATE OF AUTHORIZATION  
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No. 124  
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DISCIPLINE SASK. REG. No. SIGNATURE  
PROFESSIONAL SEAL:

Issue Record:

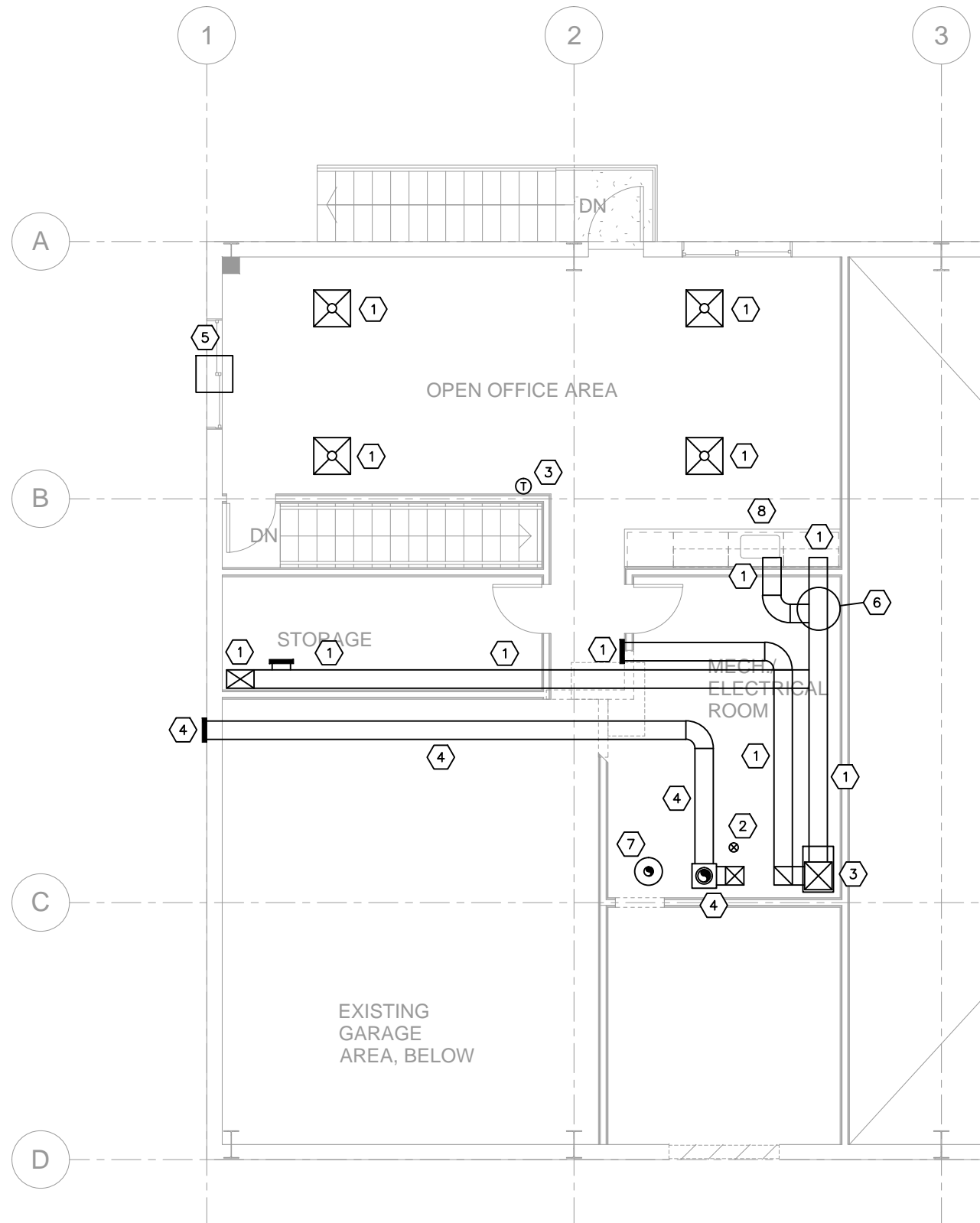
Revisions:

**MAIN FLOOR MECHANICAL DEMO PLAN**

Designed By: DJT Scale: AS NOTED  
Drawn By: SMH Date: DEC 2014  
Checked By: GAS Date: 2014.12.19  
Project No.: 4748

**M6.1**

Revision No.: Date:  
Issued For:  
Date Issued: -  
Date Plotted:



**1 MEZZANINE PLAN**  
 M6.2 SCALE 1/8" = 1' 0"

**MECHANICAL GENERAL NOTES**

1. SEE DRAWING M6.1 FOR MECHANICAL DEMOLITION NOTES.
2. SEE DRAWING M6.3 FOR MECHANICAL LEGEND AND GRILLE/LOUVRE SCHEDULE.
3. SEE DRAWING M6.4 FOR MECHANICAL EQUIPMENT SCHEDULE AND MECHANICAL GENERAL NOTES.
4. SEE DRAWING M6.5 FOR MECHANICAL SPECIFICATIONS AND DETAILS.

**MECHANICAL KEYNOTES**

**(XX)** ← DENOTES KEYNOTE ON DRAWING

- 1** EXISTING SUPPLY/RETURN AIR DUCT/DIFFUSER/GRILLE TO BE REMOVED.
- 2** EXISTING FLOOR DRAIN TO REMAIN.
- 3** EXISTING GAS-FIRED FURNACE TO BE REMOVED C/W VENTING, ELECTRICAL, ETC. PATCH FLOOR, WALLS, AND/OR CEILING AND MAKE GOOD AND LEVEL TO EXISTING SURROUNDINGS.
- 4** EXISTING EXHAUST FAN TO REMAIN C/W DUCTWORK. SEE MAIN FLOOR MECHANICAL DEMO PLAN 1/M6.1.
- 5** EXISTING WALL AC UNIT TO BE REMOVED C/W ELECTRICAL, ETC. PATCH WALL AND MAKE GOOD AND LEVEL TO EXISTING SURROUNDINGS WEATHER TIGHT.
- 6** EXISTING AIR COMPRESSOR TO BE RELOCATED TO SHOP. SEE MAIN FLOOR RENOVATED MECHANICAL PLAN 1/M6.3.
- 7** EXISTING RHEEM 50 GALLON WATER HEATER TO REMAIN.
- 8** EXISTING SINK TO REMAIN.



Project Title:

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PROFESSIONAL SEAL:

Issue Record:

Revisions:

**MEZZANINE MECHANICAL DEMO PLAN**

Designed By: DJT Scale: AS NOTED

Drawn By: SMH Date: DEC 2014

Checked By: GAS Date: 2014.12.19

Project No.: 4748

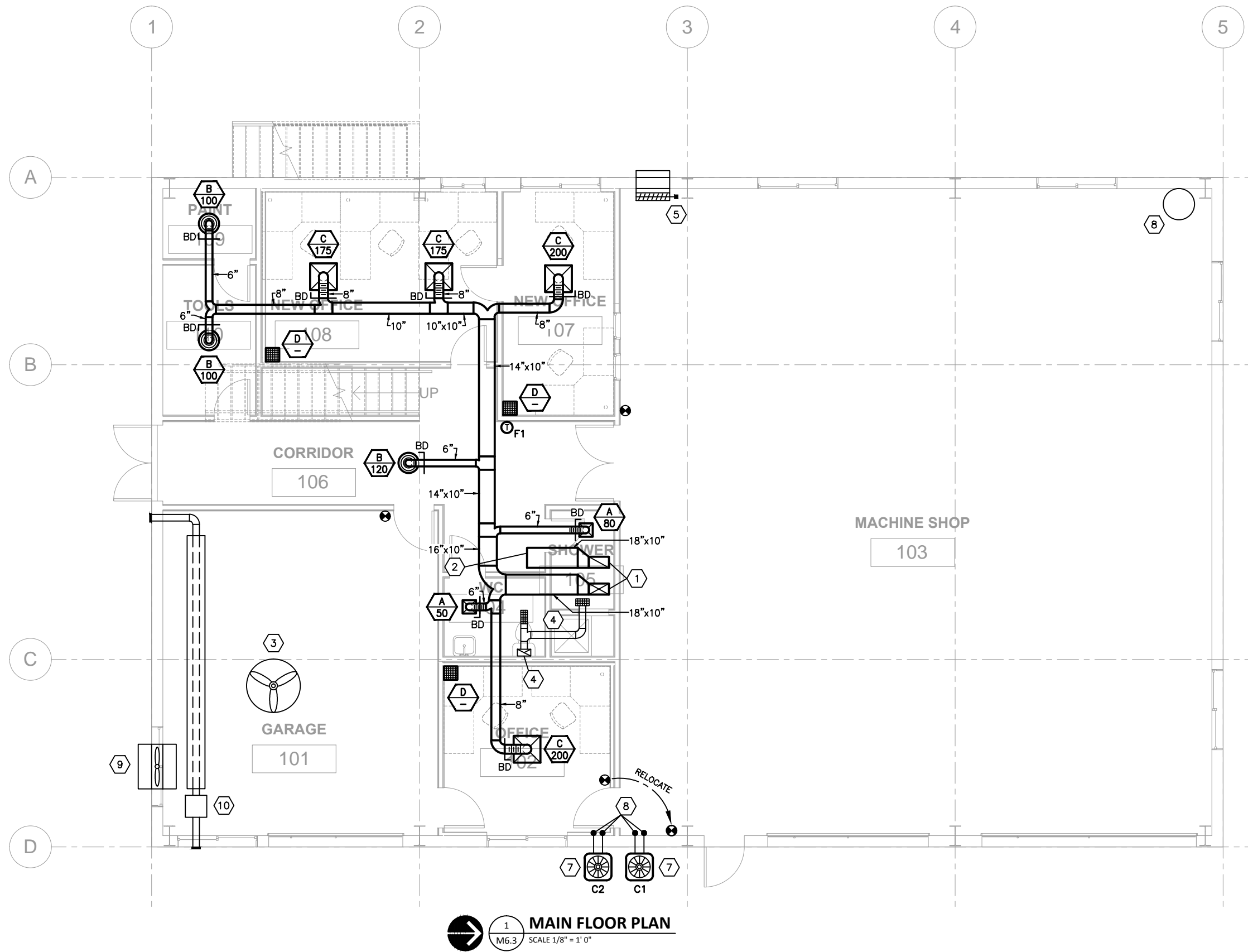
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Date Issued: -

Date Plotted:



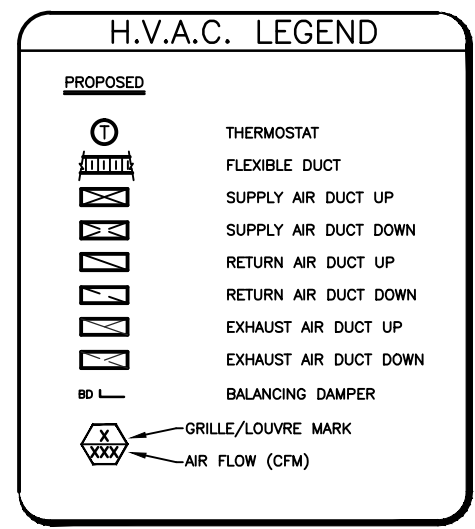
**1 MAIN FLOOR PLAN**  
M6.3 SCALE 1/8" = 1' 0"

**MECHANICAL GENERAL NOTES**

- SEE DRAWING M6.4 FOR HVAC EQUIPMENT SCHEDULE AND HVAC GENERAL NOTES.
- SEE DRAWING M6.7 FOR MECHANICAL SPECIFICATIONS AND DETAILS.

**MECHANICAL KEYNOTES**

- XX ← DENOTES KEYNOTE ON DRAWING
- 18"x10" SUPPLY AND RETURN AIR DUCTS DOWN FROM SECOND FLOOR INTO MAIN FLOOR CEILING SPACE. SEE SECOND FLOOR RENOVATED MECHANICAL PLAN 1/M6.4 FOR CONTINUATION.
  - STUB 18"x10" RETURN AIR DUCT INTO MAIN FLOOR CEILING SPACE.
  - EXISTING ANTI-STRATIFICATION FAN TO REMAIN.
  - EXISTING EXHAUST AIR GRILLE AND DUCTWORK TO REMAIN. SEE SECOND FLOOR RENOVATED MECHANICAL PLAN 1/M6.4 FOR CONTINUATION.
  - EXISTING MOTORIZED DAMPER/INTAKE AIR TO REMAIN.
  - MOUNT CONDENSING UNIT ON GRADE ON CONCRETE PAD.
  - REFRIGERANT LINE KIT THRU WALL AND UP TO U/S OF ROOF. SEAL AT WALL PENETRATION WEATHER TIGHT WITH CAULKING AND ESCUTCHEON. SEE SECOND FLOOR RENOVATED MECHANICAL PLAN 1/M6.4 FOR CONTINUATION.
  - EXISTING AIR COMPRESSOR TO BE RELOCATED FROM SECOND FLOOR MECH ROOM TO THIS LOCATION.
  - EXISTING EXHAUST FAN TO REMAIN.
  - EXISTING GAS-FIRED RADIANT HEATER TO REMAIN.



GRILLE / LOUVRE SCHEDULE						
MARK	MAKE	MODEL	SIZE	FLOW RATE	DESCRIPTION	REMARKS
Ⓐ	E.H. PRICE	12"x12"/SPD/31/B12	12"x12"	AS NOTED	SUPPLY AIR DIFFUSER	OR EQUAL. THROAT SIZE TO MATCH DUCT SIZE.
Ⓑ	E.H. PRICE	6"/RCD/B12	6"φ	AS NOTED	ROUND S/A DIFFUSER	OR EQUAL.
Ⓒ	E.H. PRICE	24"x24"/SPD/31/B12	24"x24"	AS NOTED	SUPPLY AIR DIFFUSER	OR EQUAL. THROAT SIZE TO MATCH DUCT SIZE.
Ⓓ	E.H. PRICE	10"x10"/780/TB/12"x12"/B12	12"x12"	-	RETURN AIR GRILLE	OR EQUAL. ALUMINUM EGGCRATE RETURN AIR GRILLE. LAU-IN T-BAR CEILING.

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Project Title:  
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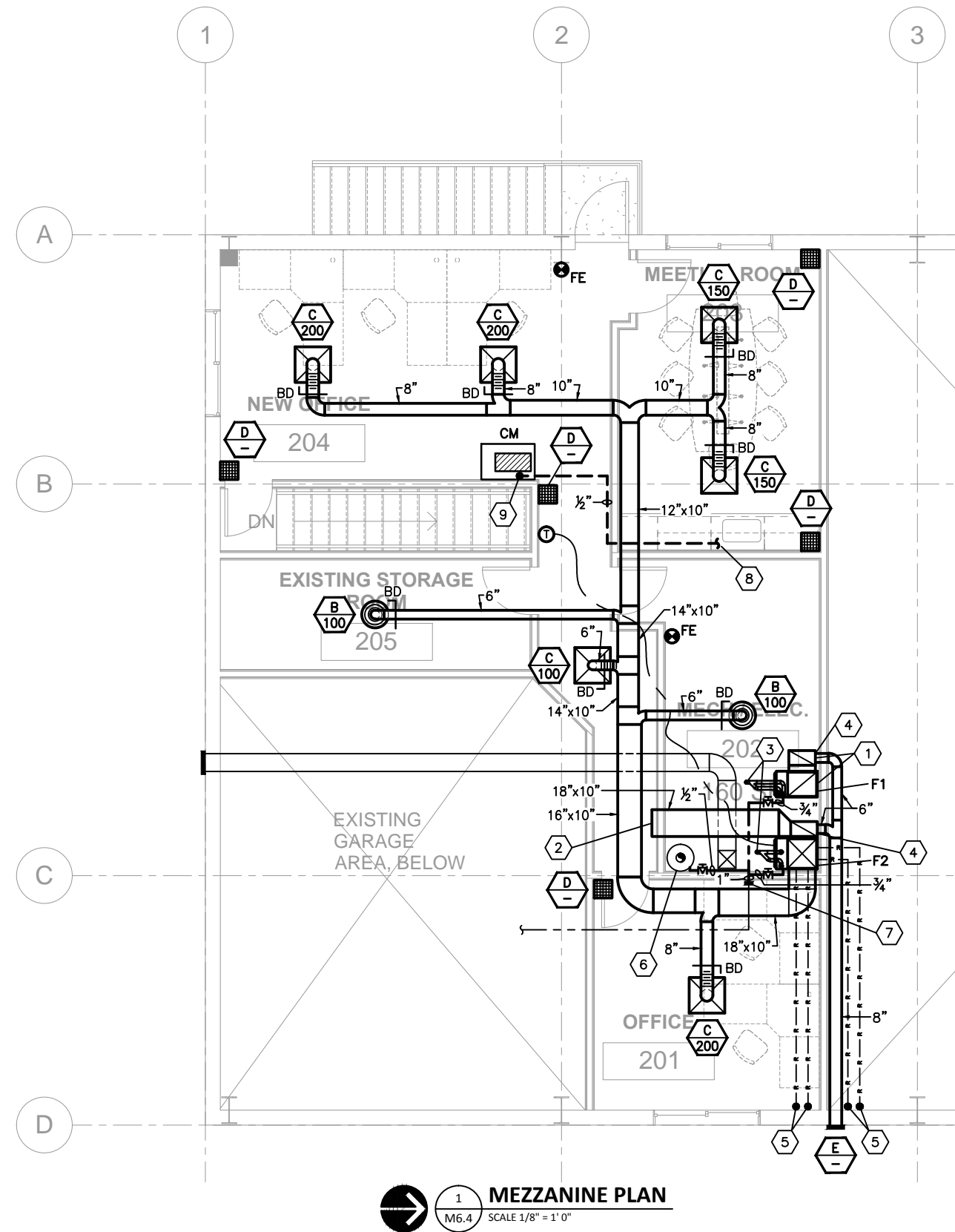
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Issue Record:

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**MAIN FLOOR RENOVATED MECHANICAL PLAN**  
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Checked By: GAS Date: 2014.12.18  
Project No.: 4748

**M6.3**  
Revision No.: Date:  
Issued For:  
Date Issued: -  
Date Plotted:



**MEZZANINE PLAN**  
 1 M6.4 SCALE 1/8" = 1' 0"

**MECHANICAL GENERAL NOTES**

- ALL DUCTING SHOWN SCHEMATICALLY.
- ALL DUCT SIZES ARE NET SIZES.
- ALL DUCT TAKE-OFFS TO BE 45° CONICAL WITH BALANCING DAMPERS.
- DUCTING TO BE CONNECTED TO ALL MAKE-UP AIR UNITS AND FAN UNITS WITH CANVAS CONNECTIONS, EXCEPT KITCHEN CANOPY EXHAUST FANS.
- ALL MAIN SUPPLY PLENUM ELBOWS TO BE MITERED WITH TURNING VANES.
- DUCT ELBOW RADII TO BE MINIMUM 1.5 TIMES THE TURNING DIMENSION.
- ALL DUCTING TO BE INSTALLED CONCEALED WITHIN CEILING SPACE IN A GOOD WORKMANSHIP LIKE MANNER AS PER SMACNA STANDARDS. ALL EXPOSED DUCTWORK TO BE PAINTED TO MATCH ARCHITECTURAL.
- DUCTWORK WITHIN ROOF TOP UNIT AND MAKE-UP AIR UNIT SUPPLY PLENUMS AND/OR RETURN SHALL BE LINED WITH 1" OF ACOUSTIC INSULATION. INCREASE DUCT SIZE TO MAINTAIN INDICATED DIMENSIONS.
- COORDINATE ROUTING OF DUCTWORK IN CEILING WITH ELECTRICAL TO ENSURE ADEQUATE ACCESS TO ELECTRICAL SYSTEMS IS MAINTAINED AT THE HIGHEST POSSIBLE LEVEL.
- INSULATE ALL EXHAUST DUCTWORK FOR A DISTANCE OF 10ft. FROM THE BUILDING OUTLET COMPLETE WITH 1" FOILBACK FIBREGLASS INSULATION TO BE CANVAS WRAPPED IN FINISHED AREAS ONLY.
- ENSURE ALL FLUE GAS AND EXHAUST OUTLETS ARE AT LEAST 10ft. AWAY FROM THE NEAREST FRESH AIR INTAKE.
- ALL EQUIPMENT TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- ALL DUCTING TO BE FIRE DAMPERED AT ALL FIRE SEPARATIONS COMPLETE WITH QUICK CLOSING HINGED ACCESS DOORS FOR MAINTENANCE OF FUSIBLE LINK.
- RUN ALL DUCTWORK UP AS HIGH AS POSSIBLE TO UNDERSIDE OF ROOF STRUCTURE AND WITHIN ROOF JOIST WEB WHERE POSSIBLE IN EXPOSED CEILING AREAS.
- CONTRACTOR TO CHANGE ALL UNIT FILTERS ON BUILDING HAND OVER COMPLETION AND PROVIDE 1 SET OF SPARE FILTERS HANDED OVER TO OWNERS TO BE STORED ON SITE.

**MECHANICAL EQUIPMENT SCHEDULE**

- F1 - GAS-FIRED FURNACE #1**  
 SUPPLY AND INSTALL LENNOX MODEL ML193UH070XP36B GAS-FIRED, MERIT SERIES, DOWNFLOW FURNACE OR EQUAL. UNIT TO PROVIDE 66 MBH HEATING INPUT, 61 MBH HEATING OUTPUT, 93% AFUE AND 1200 cfm @ 0.5" S.P. WITH A 1/2 H.P. DIRECT DRIVE BLOWER MOTOR. UNIT TO BE COMPLETE WITH AIR FILTER AND RACK KIT, CONCENTRIC VENT KIT WITH VERTICAL VENT/AIR INTAKE TERMINATION THROUGH ROOF, CR33-30/36B-F DOWNFLOW EVAPORATOR COIL WITH FACTORY TXV, AND 7DAY/24HR PROGRAMMABLE NIGHT SETBACK THERMOSTAT WITH LOCKABLE PLASTIC COVER. UNIT ELECTRICAL TO BE 120 VOLT, SINGLE PHASE WITH A MAXIMUM OVERCURRENT PROTECTION OF 15 AMPS. SEE DETAIL 1/M6.7.
- F2 - GAS-FIRED FURNACE #2**  
 SUPPLY AND INSTALL LENNOX MODEL ML193UH090XP36C GAS-FIRED, MERIT SERIES, UPFLOW FURNACE OR EQUAL. UNIT TO PROVIDE 88 MBH HEATING INPUT, 83 MBH HEATING OUTPUT, 93% AFUE AND 1200 cfm @ 0.5" S.P. WITH A 1/2 H.P. DIRECT DRIVE BLOWER MOTOR. UNIT TO BE COMPLETE WITH AIR FILTER AND RACK KIT, CONCENTRIC VENT KIT WITH VERTICAL VENT/AIR INTAKE TERMINATION THROUGH ROOF, CX34-36C-6F UPFLOW EVAPORATOR COIL WITH FACTORY TXV, AND 7DAY/24HR PROGRAMMABLE NIGHT SETBACK THERMOSTAT WITH LOCKABLE PLASTIC COVER. UNIT ELECTRICAL TO BE 120 VOLT, SINGLE PHASE WITH A MAXIMUM OVERCURRENT PROTECTION OF 15 AMPS. SEE DETAIL 2/M6.7.
- C1 & C2 - CONDENSING UNIT #1 & #2**  
 SUPPLY AND INSTALL A LENNOX MODEL TSO36H4N41Y CONDENSING UNIT OR EQUAL. UNIT TO PROVIDE 3 TONS TOTAL COOLING WITH A SEER OF 14.50. UNIT TO BE C/W REFRIGERANT LINE KIT, R-410A REFRIGERANT CHARGE, HAIL GUARD, AND LOW AMBIENT KIT DOWN TO 30°F WITH FREEZESTAT CRANKCASE HEATER AND COMPRESSOR LOCKOUT THERMOSTAT. UNIT ELECTRICAL TO BE 208 VOLT, THREE PHASE WITH AN MCA OF 18.7 AMPS AND A MAXIMUM OVERCURRENT PROTECTION OF 30 AMPS. UNIT 'C1' TO BE PIPED TO FURNACE 'F1' DOWNFLOW EVAPORATOR COIL AND UNIT 'C2' TO BE PIPED TO FURNACE 'F2' UPFLOW EVAPORATOR COIL.
- CM - COFFEE MACHINE**  
 COFFEE MACHINE TO BE SUPPLIED BY OWNER. CONTRACTOR TO PROVIDE 1/2" COLD WATER CONNECTION.
- FE - FIRE EXTINGUISHER**  
 SUPPLY AND INSTALL A NATIONAL FIRE EQUIPMENT MODEL ABC-10G LB. DRY CHEMICAL FIRE EXTINGUISHER OR EQUAL. EXTINGUISHER WITH A RATING OF 4-A, 60-B.C. UNIT TO BE MOUNTED ON WALL WITH STEEL MOUNTING BRACKET.

- COORDINATE INSTALLATION OF ALL DIFFUSERS AND GRILLES WITH CEILING GRID AND LIGHTING LAYOUT.
- ALL PLUMBING LINES SHOWN SCHEMATICALLY.
- ALL WATER PIPING TO RUN CONCEALED IN FINISHED AREAS WITHIN CEILING SPACE, AND WALLS. PAINT ALL EXPOSED PIPING AS PER ARCHITECTURAL. ALL SEWER LINES TO RUN CONCEALED BELOW CONCRETE SLAB, IN CRAWLSPACE, AND/OR IN WALLS.
- ALL WATER LINES TO BE COVERED WITH 13mm (1/2") INSULATION AND WITH PVC JACKET IN EXPOSED AREAS.
- ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- ALL PIPING TO FIXTURES AND EQUIPMENT TO RUN CONCEALED WHERE POSSIBLE.
- ALL WATER CONNECTIONS TO FIXTURES TO BE 13mm (1/2") UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR TO SUPPLY AND INSTALL PLUMBING VENTS, TRAP SEAL PRIMERS, CLEANOUTS, AND ISOLATION VALVES AS PER CODE.
- INSTALL ALL GAS FIRED EQUIPMENT AND PIPING IN ACCORDANCE WITH THE CANADIAN GAS CODE AND GAS UTILITY REQUIREMENTS.
- SOLDERS AND FLUXES HAVING A LEAD CONTENT IN EXCESS OF 0.2% SHALL NOT BE USED.
- CONTRACTOR TO FIELD DETERMINE THE EXACT LOCATION OF ALL EXISTING BUILDING SERVICES.
- PVC AND PLASTIC PIPING MAY BE USED WHERE PERMITTED BY CODE. ALL PVC PIPING WITHIN RETURN AIR CEILING PLENUMS TO BE XFR RATED.
- ALL PLUMBING TO BE INSTALLED IN ACCORDANCE WITH THE CANADIAN PLUMBING CODE, PROVINCIAL PLUMBING CODES, AND CITY BYLAWS.
- PROVIDE FIRESTOPS AT ALL PIPING THAT PASSES THROUGH FIRE SEPARATIONS.
- PROVIDE TRUEBRO PREFABRICATED INSULATION PACKAGE OVER ALL EXPOSED WATER SUPPLIES AND WASTES AT BARRIER FREE SINKS DESIGNATED AS "HL".

**MECHANICAL KEYNOTES** (XX) ← DENOTES KEYNOTE ON DRAWING

- SUPPLY AND RETURN AIR DUCTS DOWN INTO MAIN FLOOR. SEE MAIN FLOOR RENOVATED HVAC PLAN 1/M6.3 FOR CONTINUATION.
- STUB 18"x10" RETURN AIR DUCT WITHIN SECOND FLOOR CEILING SPACE.
- FURNACE CONCENTRIC VENT/AIR INTAKE UP THRU ROOF C/W CONCENTRIC VENT AND VERTICAL TERMINATION KIT. FLASH AND SEAL AT ROOF PENETRATION WEATHER TIGHT.
- CONNECT FRESH AIR DUCT TO FURNACE RETURN AIR PLENUM C/W MANUAL DAMPER.
- REFRIGERANT LINE KIT UP FROM MAIN FLOOR TIGHT ALONG WALL TO U/S OF ROOF. SEE MAIN FLOOR RENOVATED MECHANICAL PLAN 1/M6.3 FOR CONTINUATION.
- EXISTING RHEEM GAS-FIRED WATER HEATER TO REMAIN C/W VENTING. UNIT PROVIDES 50 GALLON STORAGE AND 45 MBH HEATING.
- CONNECT NEW 1" GAS LINE TO EXISTING GAS LINE STUB ALONG U/S OF ROOF.
- CONNECT NEW 1/2" COLD WATER LINE TO EXISTING SINK COLD WATER SUPPLY LINE WITHIN CEILING SPACE. CONTRACTOR TO DETERMINE EXACT LOCATION ON SITE.
- 1/2" COLD WATER LINE DOWN WITHIN FURR-IN TO COFFEE MACHINE 'CM'.

**MEZZANINE RENOVATED MECHANICAL PLAN**

**M6.4**





# ELECTRICAL SPECIFICATION

Electrical installation shall be in accordance with the current edition of The Canadian Electrical Code, Provincial, Municipal and other codes, rules and regulations.

The contract shall include the furnishing of labor, new material, equipment and services necessary and reasonably implied and/or incidental to the complete installation of the electrical work as shown on the plans and or specified. Supply and install all devices required for the complete approved system, operating to the complete satisfaction of the responsible professional Engineer.

Scope of electrical engineering work:  
1. Renovations to existing building.

Prepare and submit to the proper authorities all necessary permits and pay all fees. Provide responsible professional engineer a PDF copy of all electrical permits.

Upon completion and before final payment is made, present to Engineer a Certificate of Approval for all electrical work from the inspection department having jurisdiction.

Electrical work shall be completed in conformance with, and subject to, all cautionary notes available to the reader including those available on the websites of the manufacturers and consultants.

Electrical installation including electrical equipment supplied, installed or connected shall be tested in the presence of the Owner on completion of the work.

The Electrical Contractor shall visit the site and ascertain that all work indicated can be carried out without additional cost to the Owner.

The Electrical Contractor shall guarantee the satisfactory operation of all work and apparatus included and installed under this section of the specification for a period of twelve (12) calendar months after the final acceptance of the complete building.

The Electrical Contractor shall be responsible for any damage caused the Owners or their contractors by improperly carrying out this contract.

The Electrical Contractor shall carefully examine all drawings and specifications relating to the work to be certain that the work under this contract can be satisfactorily carried out and prior to the submission of his tender, report at once to the Consultant any defect, discrepancy, omission or interference affecting the work of this section or the guarantee of same.

Submit one set of "as-built" prints or PDF documents to the engineer.

Grounding shall be in accordance with the latest edition of The Canadian Electrical Code.

Panelboards, motor starters, disconnect switches, etc., shall be properly identified by means of engraved lamacoid nameplates.

Supply and install all motor controls unless noted otherwise on the drawings. Refer to Mechanical drawings for exact location of motors and mechanical equipment. Unless otherwise specified and/or shown on the drawings, supply and install the following motor control equipment:  
Manual motor starters.

Magnetic motor starters which are not part of package equipment. Refer to Mechanical drawings and specifications.

Pushbutton stations.  
Hand-off-auto selector switches.  
Motor disconnect switches.  
Interlock contacts as required for starters.  
Enclosures.

Starter heater elements as required for starters.

Contactors.  
Time clocks, time switches and photoelectric relays.

Pilot lights for all starters, switches and pushbutton stations.

Mechanical and electrical contractors are responsible for the mutual coordination of all electrical requirements of mechanical equipment. Coordination is to include the communication of all final electrical nameplate information from the mechanical contractor to the electrical contractor, the communication of the detailed control information as well as any ancillary information required for the final systems to operate as intended by the responsible professional engineer. The coordination is to occur prior to the ordering of equipment by either trade. No extra compensation will be allowed due to failure to carry out this coordination. Report at once to the consultant any defect, discrepancy, omission or interference affecting the satisfactory completion of work.

Conduits shall be electric metallic tubing unless otherwise noted on drawings or unless prohibited by regulations. Conduits in direct contact with earth or in concrete shall be rigid PVC. Conduits shall be concealed unless otherwise noted on the drawings. Conduits shall not be exposed in any area where concealed work is required without prior written approval.

Outlet, junction and switch boxes shall be galvanized pressed steel of size and type to suit the requirements of each outlet. Outlet boxes shall be accessible.

All wiring shall be in conduit, except that building and allow for such items that may occur in his tendered price. armoured cable may be used in stud partitions and for drops to recessed luminaires (max. 4 luminaires per drop). Armoured cable drops (including any daisy chain) shall not exceed 9m in total length.

Wire and cable shall be copper of standard AWG sizes with 600V (90 Degree C) insulation. Insulation shall be X-Link Polyethylene unless otherwise noted on drawings or prohibited by regulations. Aluminum conductors will not be accepted, unless otherwise indicated. Minimum wire size shall be # 12 AWG.

Panelboards shall be factory-assembled custom made of size, type and arrangement as shown on drawing. Circuit breakers shall be bolt-in, moulded-case, thermal and magnetic trip. Trip values as shown on drawing. Two or three pole breakers shall have common trip units. Mount a typewritten directory behind a plastic shield on the inside of panelboard doors. All distribution equipment to be sprinkler-proof and c/w lockable door. Minimum fault rating of circuit breakers shall be 22KA S.C.I.C.

Wall-mounted flush switches shall be specification grade 15A,125VAC. White handle, side or back wiring. Mount switches 1200mm above finished floor unless otherwise noted on the drawings.

Duplex receptacles shall be specification grade 15A, 125VAC, parallel slot, U-ground, white, side and back wiring. Mount receptacles 450mm above finished floor or 150mm above counter tops unless otherwise noted on the drawings.

Cover plates for flush-mounted receptacles and switches on concealed conduit system shall be stainless steel.

Telephone raceway system shall be in separate and independent conduit system. Empty conduits shall be complete with a #12 AWG pull wire. Install as shown on drawings. Complete entire installation to local telephone utility requirements and satisfaction.

Mount surface mounted equipment such as panelboards, telephone cabinets and other electrical equipment on fireguard mounting boards, c/w grey enamel finish.

Any cutting and patching in existing walls or floors required for the addition or relocation of electrical equipment shall be the responsibility of the Electrical Contractor.

Existing Work:

The Electrical Contractor shall take into account items which he is responsible for due to the changes and alterations to the existing

building and allow for such items that may occur in his tendered price.

The Electrical Contractor is to notify the supply utility of all load increases to existing service.

Existing conduits, wire and outlets which are in good repair and sized to meet all code requirements, may be reused. All equipment to be reused must be approved by the local inspection department and the engineer.

Provide code conforming emergency lighting and exit system. Min. wire size for this system as per manufacturers recommendations. Acceptable manufacturers include: Aimplite, Lumacell.

The electrical contractor shall relocate outlets at no additional charge if requested prior to roughing in. The electrical contractor shall relocate outlets at no additional charge if requested by the local authority having jurisdiction.

Electrical installation shall in conformance with the barrier free requirements applicable in the latest edition of the National Building Code of Canada.

Where luminaires are recessed into insulated ceilings, the electrical contractor is responsible for providing luminaires suitable for that use.

Supply and install all indicated electric heaters, standard watt density to be Chromalox or approved equal. Thermostats to be calibrated in degrees Celsius.

Equipment and material shall be installed as specified. Requests for equal status shall be submitted to Engineer 7 days prior to tender submission. No requests will be accepted past the 7 day deadline. Only one request will be considered from each supplier. If rejected for any reason, no substitutes from the same supplier will be reviewed.

Electrical contractor shall submit shop drawings to Engineer for review prior to ordering equipment. At the request of the engineer, the successful electrical contractor shall submit a completed C-1 form (form available from Engineer).

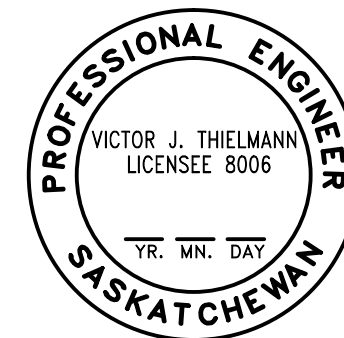
Supply and install, wire and connect all luminaires (to be complete with lamps) as indicated. All luminaires exceeding 150V shall be complete with an integral disconnecting means that will simultaneously open all circuit conductors and conductors supplying the ballast(s). All luminaires exceeding 150V shall be marked in a conspicuous, legible, and permanent manner adjacent to the disconnecting means,

identifying the specific purpose. Refer to Canadian Electrical Code rule 30-308(4).

Final connection to all mechanical equipment to be flexible. Obtain and refer to mechanical shop drawings of mechanical equipment for circuit breaker and wire size. Adjust circuit breaker and wire size without additional cost to owner.

All existing and new owners equipment is to be wired and connected. Supply and install, wire and connect matching receptacle for portable equipment complete with cord and cap. Refer to equipment name plate rating for electrical characteristics prior to rough-in. All owners equipment which is non-portable, shall be directly connected via cab tyre cord matching electrical characteristics as determined by nameplate ratings of equipment. Confirm nameplate characteristics prior to rough-in.

Owner is responsible for the supply & installation of all communication wiring, unless otherwise noted.



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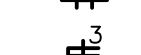





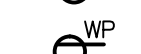





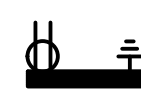




ELECTRICAL –  
SPECIFICATIONS

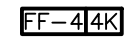
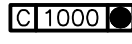



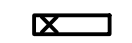
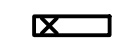

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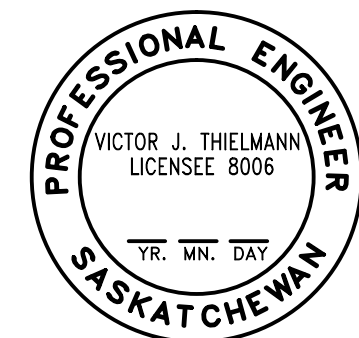
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DATE 2014-12-19	DESIGNED BY AJT	DRAWN BY ITS

**SYMBOL SCHEDULE**

-  Linear luminaire, 'B1-a' denotes panel circuit # and switch.
-  Night light luminaire.
-  Ceiling mounted luminaire.
-  Wall mounted luminaire. 'A' denotes type.
-  Single pole switch.
-  Single pole switches in multiple.
-  Three way switch.
-  Duplex receptacle.
-  Quadplex receptacle.
-  Duplex receptacle mounted above counter level. (See architectural elevations.)
-  Duplex receptacle on separate circuit. Provide lamacoid label indicating "SC".
-  Microwave outlet above counter. Verify location before installation.
-  Duplex receptacle weather proof.
-  Ground fault duplex receptacle.
-  20A T-slot duplex receptacle.
-  Special outlet to match owners equipment. Confirm voltage, amperage, poles and configuration prior to installation.
-  Combination voice/data outlet c/w cover plate. Run one(1) 3/4" conduit to accessible ceiling space or crawlspace. # indicates a different number of data outlets.
-  Fireguard backboard c/w power supply and #6 AWG green ground wire to building ground and c/w one(1) 4" entrance conduit as required by the telephone utility and one(1) 3" entrance conduit as required by the CATV utility.
-  Motor. Refer to mechanical for exact location. For roof mounted equipment, supply and install wire and connect a separate circuit GFI receptacle in accordance with C.E.C. rule 26-704.
-  Disconnect switch to suit application. By electrical contractor.
-  Motorized damper control wiring by mechanical contractor, 120V power supply by electrical contractor.
-  Junction box.

-  Electric force flow heater c/w built in thermostat unless otherwise indicated. 'FF-4' denotes type. '4K' denotes wattage. See heating schedule for details.
  -  Electric heater, "C" denotes type, see electric heating schedule. "1000" denotes watts. ● denotes heater c/w built in thermostat. ○ denotes heater controlled by remote thermostat. Provide low voltage relays if required. Refer to mechanical for details.
  -  Electric unit heater c/w built in thermostat unless otherwise indicated. 'UH-1' denotes type. See heating schedule for details.
  -  Emergency battery bank c/w two(2) 6W (540 lumen) LED heads. 12V, backup battery capacity to suit. Lumacell.
  -  LED Emergency double head fixture c/w two(2) 6W (540 lumen) LED heads. Wire to battery bank. Lumacell.
  -  Universal LED exit sign. Wire to battery bank - to match existing.
  -  LED pictogram egress sign. Wire to battery bank. Lumacell.
  -  Combination LED pictogram egress sign/emergency double head fixture c/w two(2) 6W (540 lumen) LED lamps and integral battery backup (minimum 30 minutes). Lumacell.
- Note: 'E' indicates existing to remain.  
'R' indicates existing electrical device relocated to new location indicated.



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ELECTRICAL —  
SYMBOLS

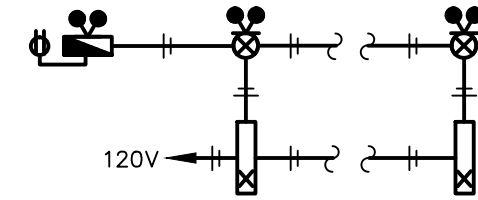
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DATE 2014-12-19	DESIGNED BY AJT DRAWN BY ITS	

## WORK IN EXISTING AREA

- A. Refer to electrical, architectural, and mechanical drawings for work involved in existing building.
- B. Examine the site and local conditions affecting the work to establish all information necessary for the installation. No extra compensation will be allowed due to failure to make this examination.
- C. Install, wire and connect all new mechanical equipment as shown or noted on the drawing as specified.
- D. Rewire, alter, modify, divert and extend existing wiring as herein specified and as may be required to provide a complete, approved, and fully operative installation to the satisfaction of the Engineer.
- E. In all areas where existing walls, ceilings, etc. are required to be cut into or removed, or other similar construction or alterations are required, existing wiring in the areas required to remain in use for any reason, this contractor shall reroute, alter, and/or divert all such wiring in these areas in an approved manner, concealed in the building structure where required in such a manner that the original electrical capacity or characteristics of the existing wiring is maintained to the complete satisfaction of the engineer.
- F. Conduits and boxes shall be installed exposed (surface mounted) only in areas specified.
- G. Cutting and patching necessary for conduit work, etc., shall be as specified in another section of this contract. Routes of conduits, etc. shall be coordinated with the owner and engineer in order to keep such cutting and patching to a minimum. All existing wiring that is required to remain in use and required to be diverted and extended to appropriate existing panelboards, etc., shall be installed in conformance with this specification.
- H. Existing branch circuit wiring within the areas of the renovations which are substandard or do not meet normal requirements, shall be noted and owner advised. All existing circuits which are required to be reconnected shall be free from interconnection (cross connected circuits, i.e. accidentally connected to the conductors of another circuit) and shall conform to the installation tests described elsewhere in this section of the specification. The responsibility for existing wiring which is not required to be altered in any way is beyond the area of this contract and is not included in this scope of work unless such wiring is specifically affected due to work carried out in this contract.
- J. Existing branch circuit wiring and outlets, etc. for any electrical systems no longer required to remain in use shall be removed, or if this is not possible, rendered permanently inaccessible and completely disconnected from the electrical distribution system. Existing branch circuit wiring which unnecessarily extends into the construction area shall be terminated (deadened) in an approved manner.
- K. Disconnect and remove all existing lighting fixtures as specified and noted on drawings. All fixtures shall be neatly stored on the premises at the location as directed by the owners. Once the new ceiling is complete, the electrical subcontractor shall clean and reinstall fixtures to the location specified. Provide all mounting hardware as required.
- L. Scheduling work in existing building shall be as arranged with the owners to minimize disruption to owner's operations during normal working hours. Any shutdowns or interruptions to systems or operation shall be at times acceptable to and approved by the owners and architects.
- M. Owners shall remove items such as special equipment, devices, cables, etc., in areas to be renovated prior to commencement of electrical work. Electrical trade shall remove/terminate any branch circuit wiring, etc., no longer required which supplied the above equipment.
- N. Disconnect and remove existing ceiling mounted electrical devices for the construction of new ceiling. Once new ceiling is complete, reinstall and reconnect to original locations and circuits.



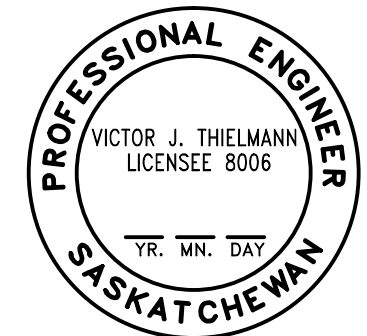
## EMERGENCY LIGHTING AND SIGNAGE

N.T.S.

1. CONDUCTORS SIZED TO MANUFACTURERS RECOMMENDATIONS. MAXIMUM 5% VOLTAGE DROP.
2. WIRE AND CONNECT DC TO ALL COMPONENTS.
3. PROVIDE 30 MINUTE CAPACITY UNDER FULL LOAD.
4. INTERLOCK WITH NORMAL LIGHTING CIRCUIT TO ACTIVATE EMERGENCY LIGHTING UPON LOSS OF NORMAL LIGHTING IN THE AREA, FOR EACH EMERGENCY LIGHTING HEAD. PROVIDE ZONE SENSING RELAYS AS REQUIRED.

## GENERAL ELECTRICAL NOTES

1. ALL ITEMS REQUIRED TO BE DEMOLISHED ARE NOT NECESSARILY SHOWN. THOSE INDICATED ARE FOR REFERENCE ONLY. ALL ITEMS INTERFERING WITH NEW CONSTRUCTION SHALL BE REMOVED AT NO ADDITIONAL COST.



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ELECTRICAL —  
NOTES

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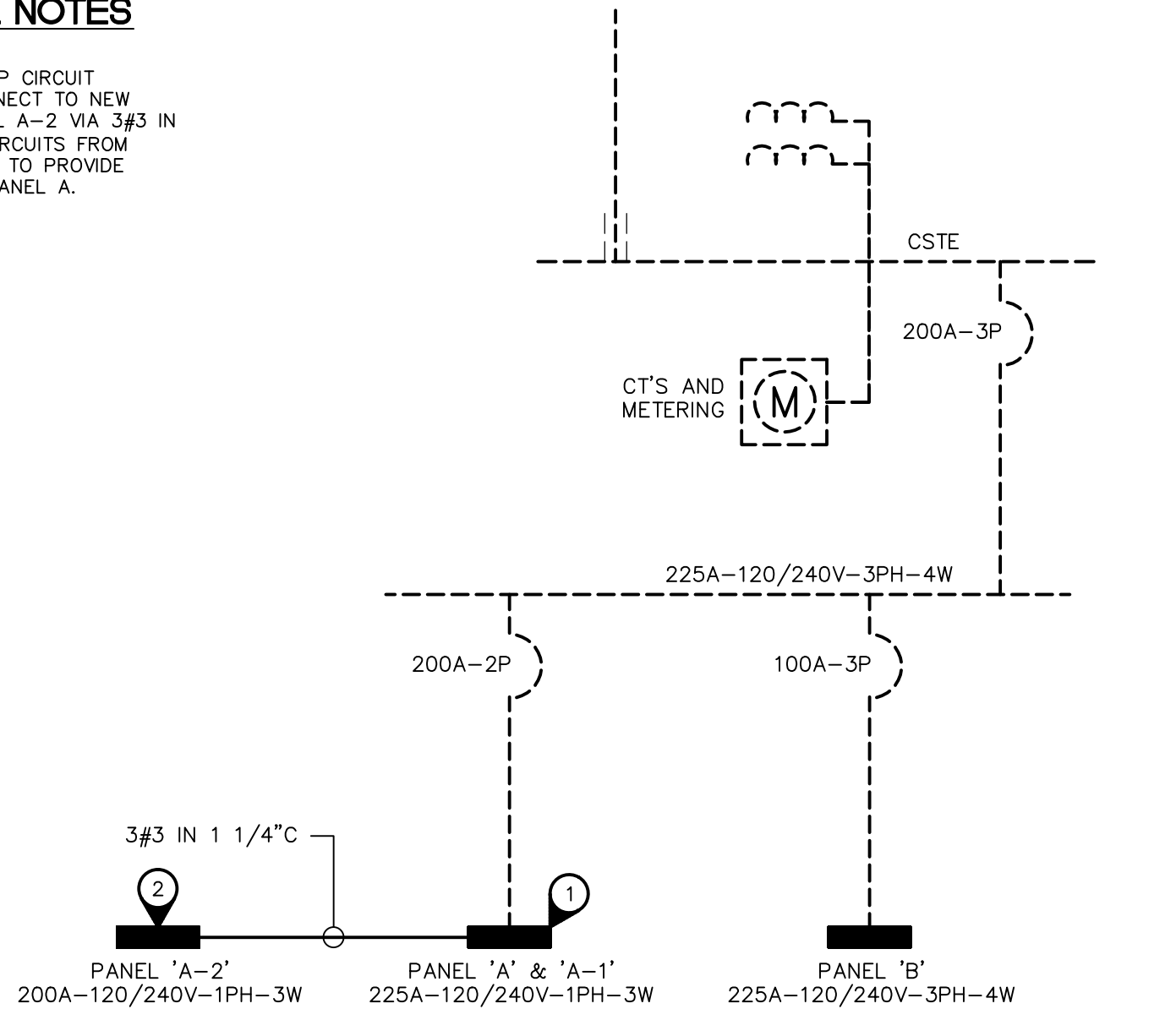
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DATE 2014-12-19	DESIGNED BY AJT	DRAWN BY ITS

**SPECIFIC ELECTRICAL NOTES**

- 1 PROVIDE A MATCHING 100A-2P CIRCUIT BREAKER AND WIRE AND CONNECT TO NEW MATCHING 42CCT-200A PANEL A-2 VIA 3#3 IN 1 1/4" C. SWING 2 EXISTING CIRCUITS FROM PANEL A TO NEW PANEL A-2 TO PROVIDE CIRCUIT BREAKER SPACE IN PANEL A.
- 2 NEW PANEL A-2.

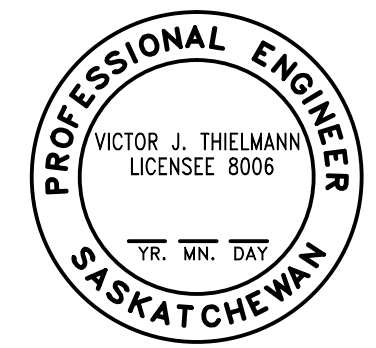


SINGLE LINE DIAGRAM

N.T.S

\* SIZE CIRCUIT BREAKER AND WIRING ACCORDING TO THE FINAL NAMEPLATE RATING ON THE EQUIPMENT.

NOTE: DASHED INDICATES EXISTING.



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ELECTRICAL –  
SINGLE LINE DIAGRAM

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DATE 2014-12-19	DESIGNED BY AJT DRAWN BY ITS	



MOTOR SCHEDULE								
NO.	DESCRIPTION	LOCATION	VOLTAGE	HP/W/MCA	C.B.	COND.	STARTER	NOTES
F1	GAS FURNACE	MECH. ROOM	120V-1PH	1/3HP	15A-1P	#12	-	1
F2	GAS FURNACE	MECH. ROOM	120V-1PH	1/3HP	15A-1P	#12	-	1
C1	CONDENSING UNIT	GRADE	208V-3PH	18.7MCA	30A-3P	#10	PACKAGED	1
C2	CONDENSING UNIT	GRADE	208V-3PH	18.7MCA	30A-3P	#10	PACKAGED	1

**SPECIFIC NOTES**  
1. WIRE AND CONNECT AS REQUIRED. REFER TO MECHANICAL.  
2. MAGNETIC STARTER BY ELECTRICAL CONTRACTOR.  
3. MANUAL STARTER BY ELECTRICAL CONTRACTOR.  
4. COORDINATE INSTALLATION OF PATHWAYS TO PIT FOR SUMP PUMP WIRING.

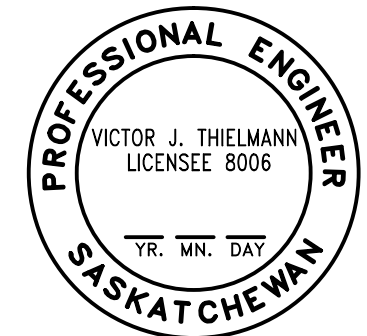
**GENERAL NOTES**  
A. MANUAL STARTERS TO BE C/W OVERCURRENT PROTECTION.  
B. ALL DISCONNECT SWITCHES TO BE SUPPLIED BY ELECTRICAL CONTRACTOR.  
C. ELECTRICAL CONTRACTOR TO PROVIDE CIRCUIT BREAKERS AND WIRING ACCORDING TO THE FINAL NAMEPLATES OF ALL THE MECHANICAL EQUIPMENT.  
D. ALL LOW VOLTAGE CONTROL WIRING BY MECHANICAL CONTRACTOR.  
E. ALL LINE VOLTAGE CONTROL WIRING BY ELECTRICAL CONTRACTOR - REFER TO MECHANICAL SECTION. CO-ORDINATE EXACT REQUIREMENTS WITH MECHANICAL CONTRACTOR.

**SPECIFIC ELECTRICAL NOTES**

① WIRE AND CONNECT TO NEW MATCHING CIRCUIT BREAKERS IN PANEL B.

LUMINAIRE SCHEDULE				
TYPE	DESCRIPTION	MOUNTING	CATALOG NUMBER	LAMPS
A	2'X4' FLUORESCENT	RECESSED	LITHONIA 2GT8 3 32 A12 120 GEB10IS CSA	3-32W T8
B	1'X4' FLUORESCENT	SURFACE	LITHONIA LB 3 32 120 GEB10IS CSA	3-32W T8

**LUMINAIRE SCHEDULE NOTES:**  
1. ALL FLUORESCENT BALLAST TO BE ELECTRONIC.  
2. ALL FLUORESCENT LAMPS TO BE 3500K & 85 CRI, UNLESS OTHERWISE NOTED.  
3. PROVIDE PHOTOCCELL CONTROL FOR ALL OUTDOOR LUMINAIRES.



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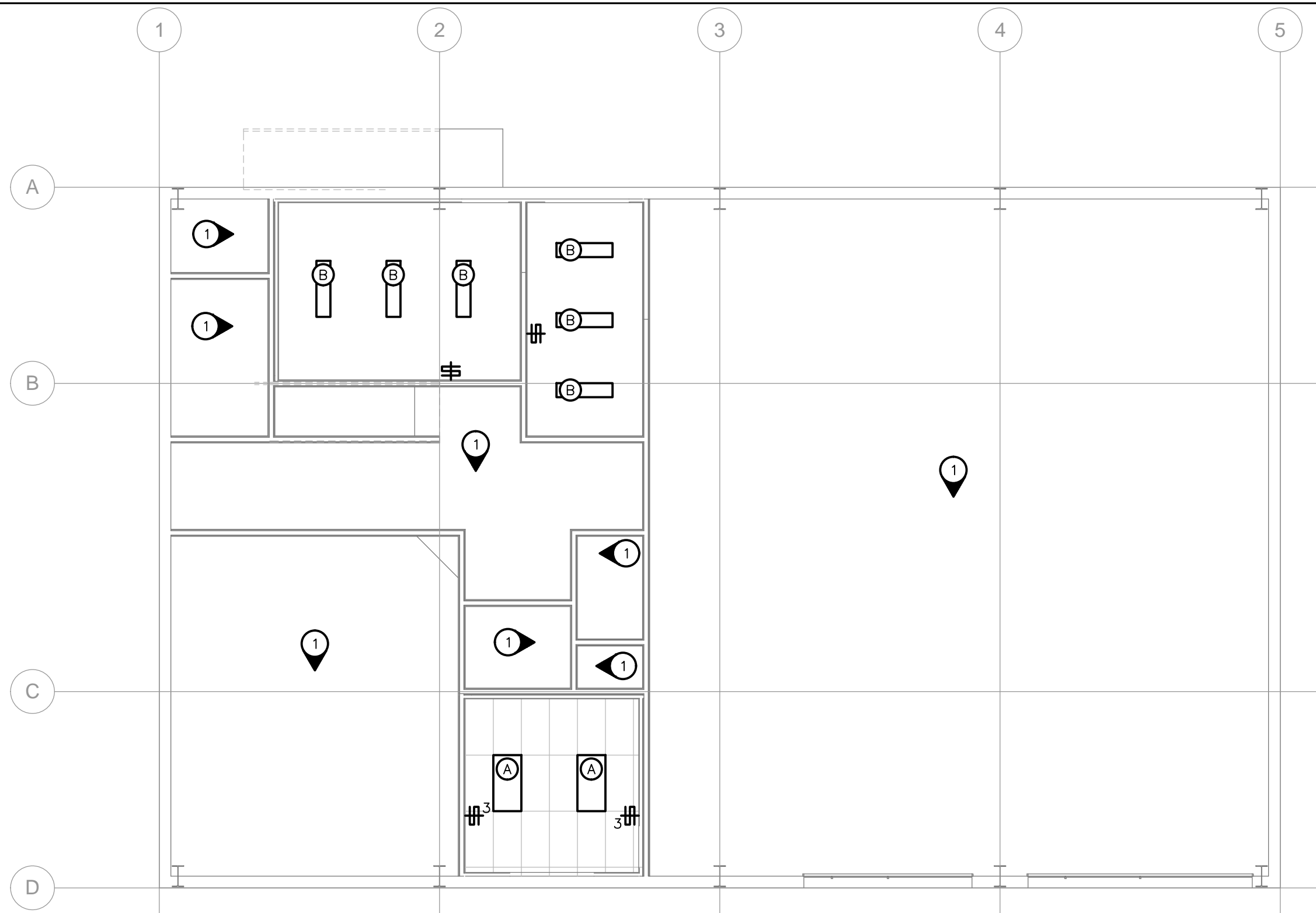
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INDIAN HEAD, SASKATCHEWAN

ELECTRICAL -  
SCHEDULES

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SCALE AS SHOWN	JOB NUMBER 34326e	SHEET <b>E2.1</b>
DATE 2014-12-19	DESIGNED BY AJT      DRAWN BY ITS	

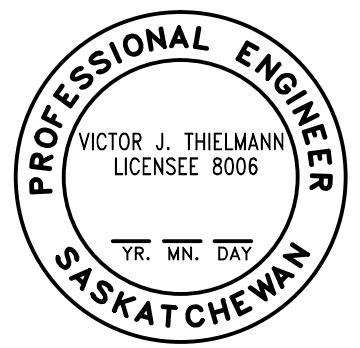


**SPECIFIC ELECTRICAL NOTES**

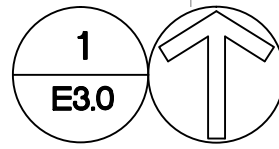
① NO WORK TO BE DONE IN AREA.

**GENERAL ELECTRICAL NOTES**

1. CIRCUIT NEW ELECTRICAL OUTLETS IN ACCORDANCE WITH THE C.E.C. PROVIDE MATCHING CIRCUIT BREAKERS IN NEW PANEL A-2 TO ACCOMMODATE.



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**ELECTRICAL MAIN FLOOR PLAN - LIGHTING**

SCALE: 1/8" = 1'-0"

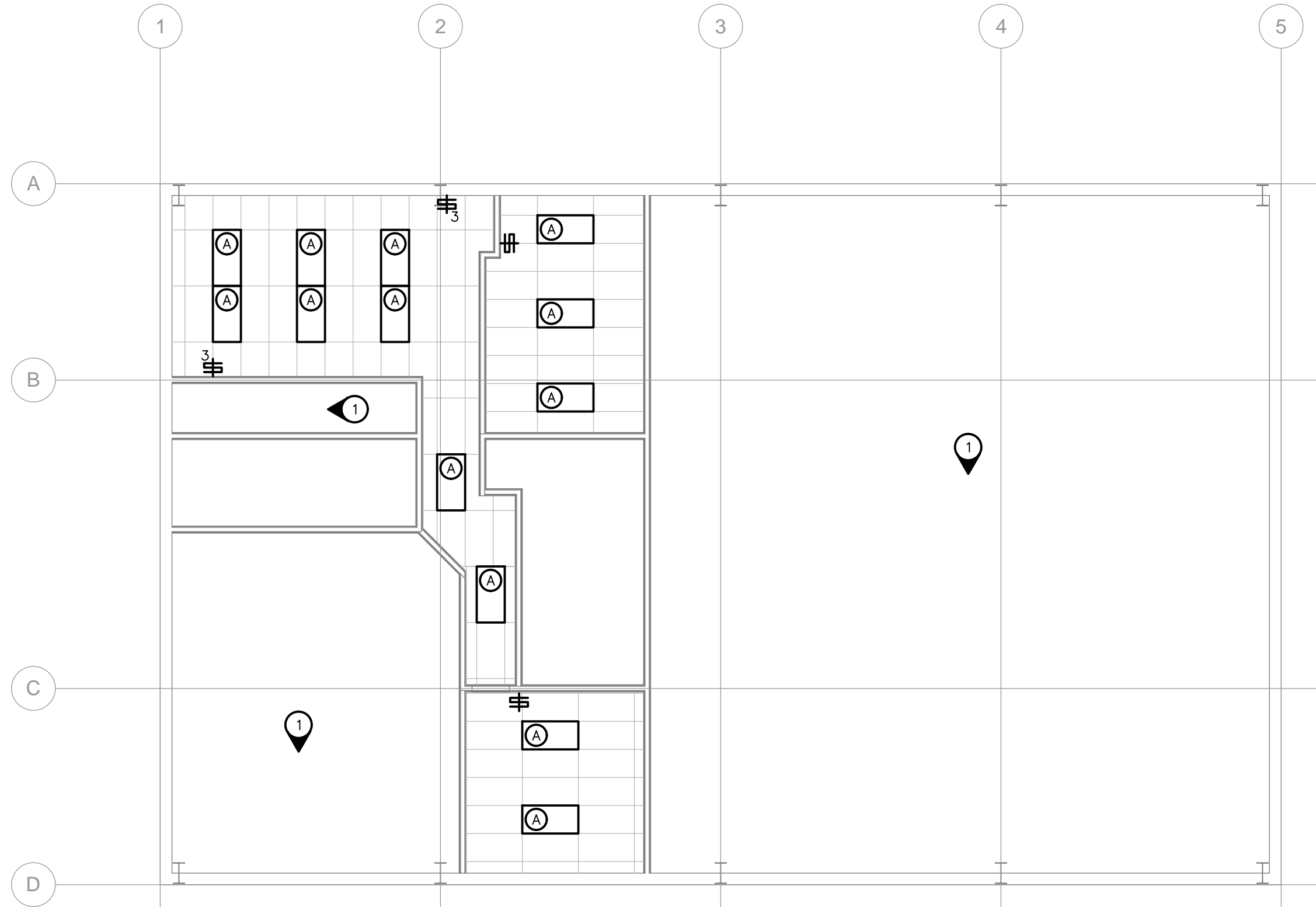
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ELECTRICAL -  
MAIN FLOOR PLAN -  
LIGHTING

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SCALE AS SHOWN	JOB NUMBER 34326e	SHEET <b>E3.0</b>
DATE 2014-12-19	DESIGNED BY AJT DRAWN BY ITS	

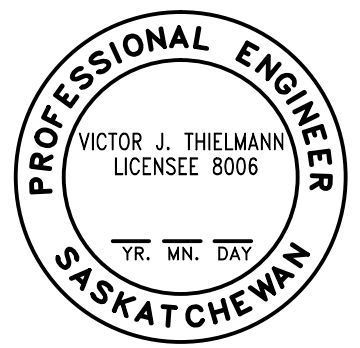


**SPECIFIC ELECTRICAL NOTES**

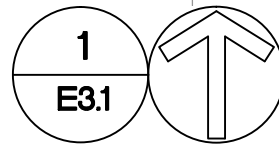
① NO WORK TO BE DONE IN AREA.

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**ELECTRICAL 2ND FLOOR PLAN - LIGHTING**

SCALE: 1/8" = 1'-0"

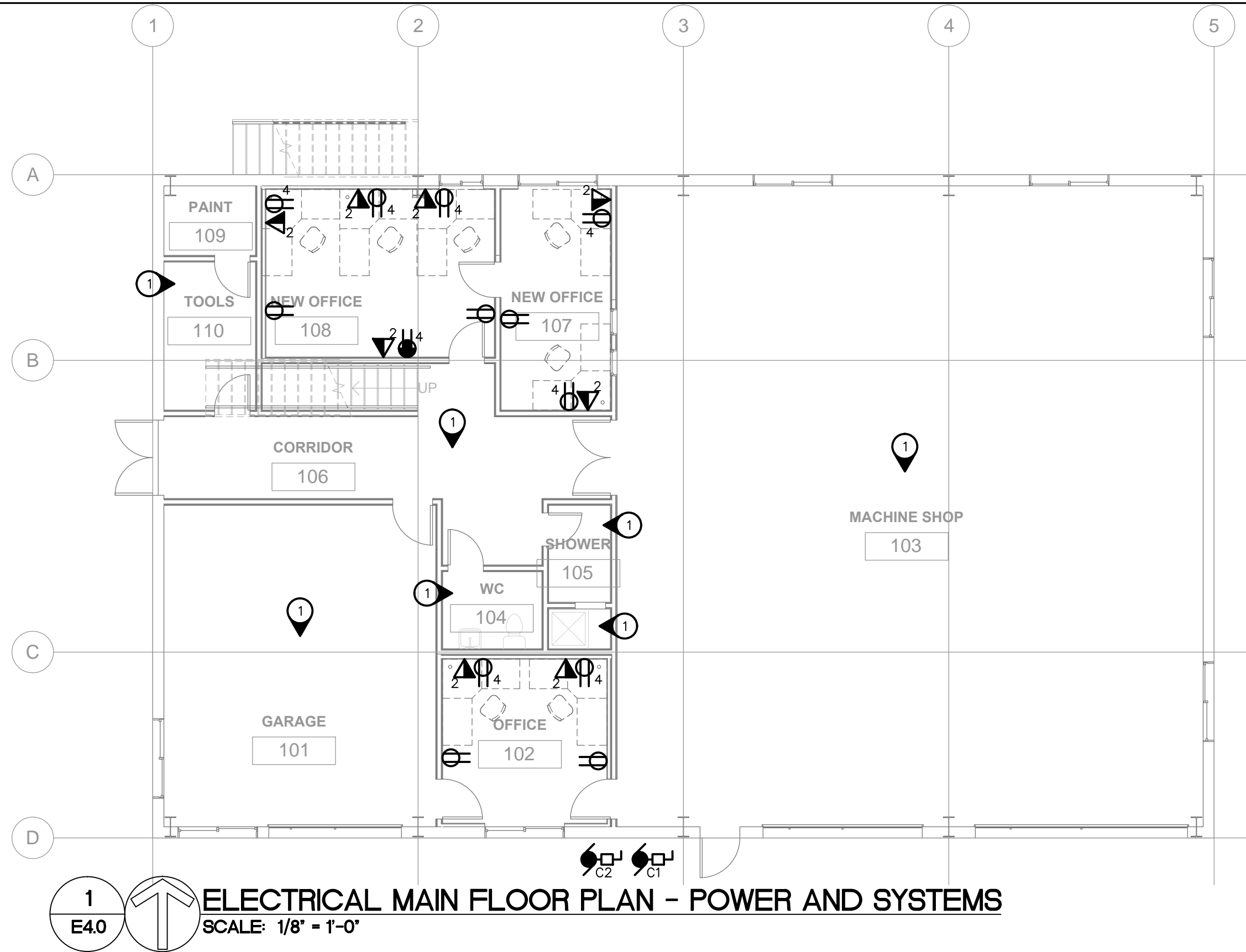
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ELECTRICAL -  
2ND FLOOR PLAN -  
LIGHTING

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SCALE AS SHOWN	JOB NUMBER 34326e	SHEET <b>E3.1</b>
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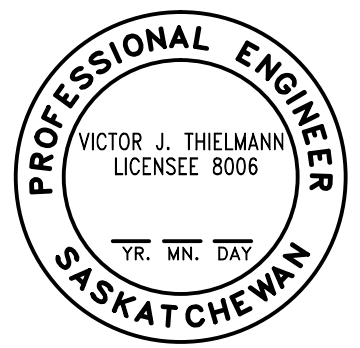


**SPECIFIC ELECTRICAL NOTES**

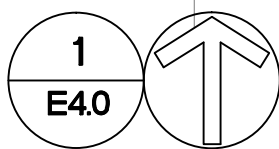
1. NO WORK TO BE DONE IN AREA.

**GENERAL ELECTRICAL NOTES**

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**ELECTRICAL MAIN FLOOR PLAN - POWER AND SYSTEMS**  
SCALE: 1/8" = 1'-0"

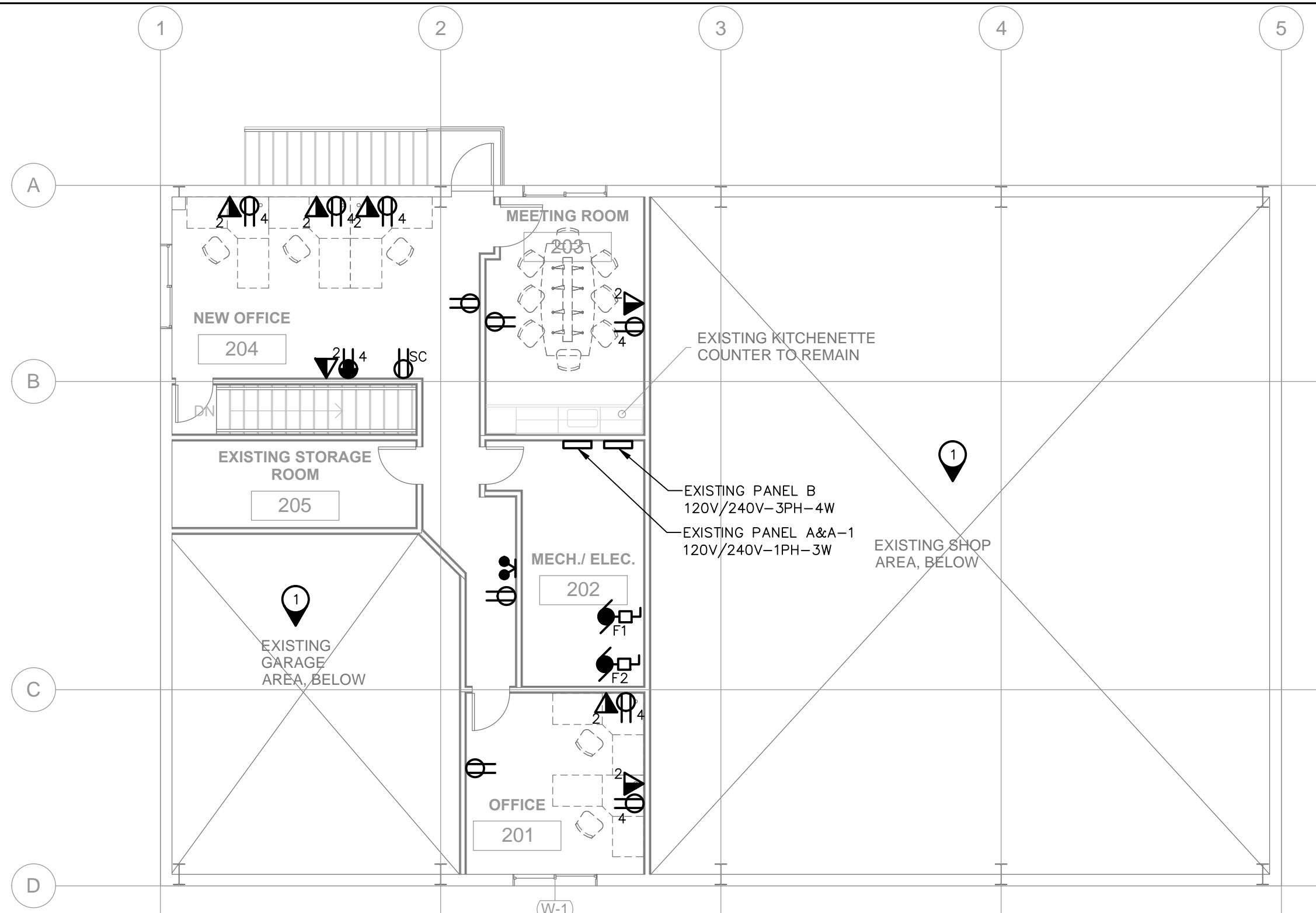
**AAFC RESEARCH BUILDING**  
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ELECTRICAL -  
MAIN FLOOR PLAN -  
POWER AND SYSTEMS

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SCALE AS SHOWN	JOB NUMBER 34326e	SHEET <b>E4.0</b>
DATE 2014-12-19	DESIGNED BY AJT DRAWN BY ITS	

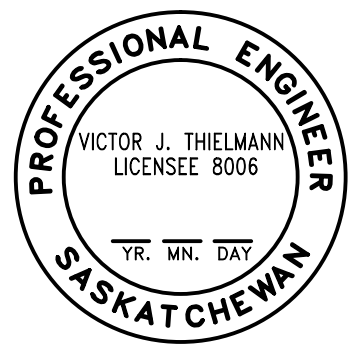


**SPECIFIC ELECTRICAL NOTES**

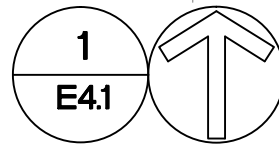
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**ELECTRICAL 2ND FLOOR PLAN - POWER AND SYSTEMS**

SCALE: 1/8" = 1'-0"

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2ND FLOOR PLAN –  
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