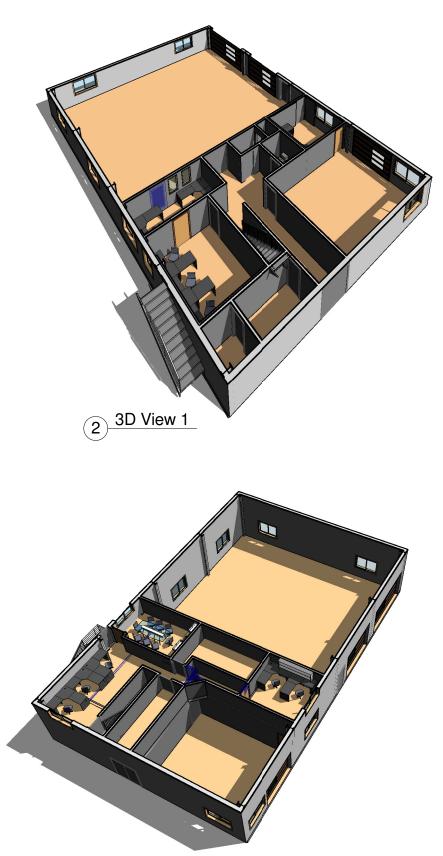
INDIAN HEAD RESEARCH FARM



3D View 2

 $(\mathbf{1})$

BUILDING CODE MATRIX

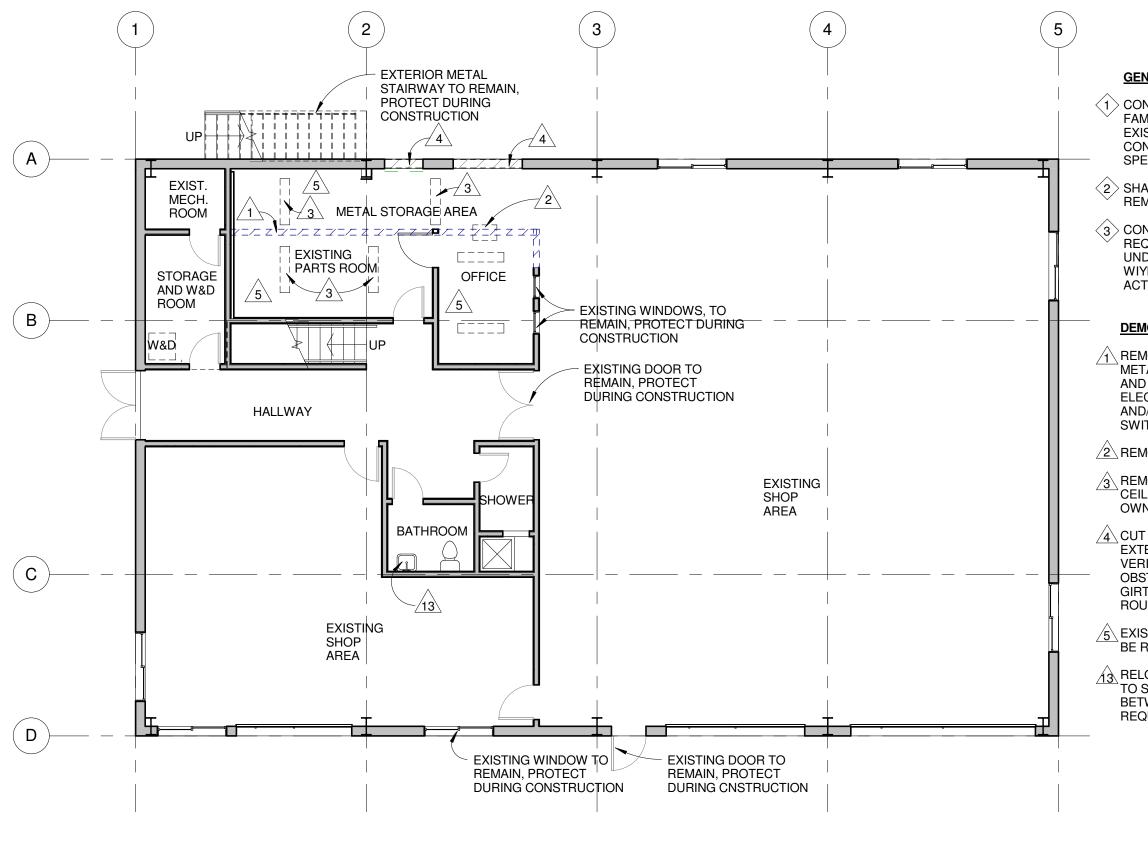
REFERENCE: Part 3, National Building Code, 2010 Edition

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 Store	
	 Max. Building Area 	: 750 sq.m.	
	 Max. Number of Storeys 	: 2 Storeys	: 2 Storeys
	 Access Route 	: 2 Streets	: 2 Streets
	Sprinkler System	: Not Required	
	 Permitted Construction 	: C or NC or Com	bi : Combination
3.	Fire Alarm System, 3.2.2.73	: Not Required	: N/A
1 .	Fire Separation (F/S):		
	Floor Assemblies	: FRR	: FRR (NBC/ULC)
	Ind Floor, 3.2.2.76	: 3/4 hr.	: 1.0 hr. (??)
	Wall Assemblies	: 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.
	Roof Assemblies	: 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.
5.	Barrier Free Design, 3.8	: Required	: See drawings
C NC MA	: Combustible : Non-Combustible NUO : Maximum Allowable Unpro	otected Opening	

Sheet List					
	Sh				
ARCHITECTURAL					
A100	COVER SHEET				
A101	DEMOLITION 1ST FL				
A102	DEMOLITION 2ND FL				
A201	1ST FLOOR PLAN				
A201a	ENLARGED PLAN				
A202	2ND FLOOR PLAN				
A202a	ENLARGED PLAN				
A301	DOOR & WINDOW S				
A302	ROOM SCHEDULES				
A501	INTERIOR ELEVATIO				
A502	INTERIOR ELEVATIO				
A503	INTERIOR ELEVATIO				
A601	REFLECTED CEILING				
A602	REFLECTED CEILING				
MECI	HANICAL				
M6.1	MAIN FLOOR MECH/				
M6.2	MEZZANINE MECHA				
M6.3	MAIN FLOOR RENO				
M6.4	MEZZANINE RENOV				
M6.5	MECHANICAL SPEC				
ELEC	TRICAL				
E1.0	ELECTRICAL - SPECIF				
E1.1	ELECTRICAL - SYMBO				
E1.2	ELECTRICAL - NOTES				
E2.0	ELECTRICAL - SINGLE				
E2.1	ELECTRICAL - SCHED				
E3.0	ELECTRICAL - MAIN F				
E3.1	2ND FLOOR PLAN - LI				
E4.0	ELECTRICAL - MAIN F				
E4.1	2ND FLOOR PLAN - PO				

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t	Indian Head Research Farm
neet Name	
	AAFC
	NOTES:
LOOR	
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SCHEDULES	
3	Issue Record: YY.MM.DD/Issued For/Issued To/Issued By
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IG PLAN 1 ST FLOOR	
IG PLAN 1 ST FLOOR	
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S AND DETAILS	Designed By: Scale:
E LINE DIAGRAM	Drawn By: Date: Checked By: Date:
DULES	Project No.:
FLOOR PLAN - LIGHTING	A100
IGHTING	Revision No.: Date:
FLOOR PLAN - POWER & SYSTEMS	Issued For: TENDER
OWER AND SYSTEMS	Date Issued: 2014.12.19 Date Plotted: 19/12/2014 5:40:36 PM



1 <u>DEMOLITION 1 ST FLOOR PLAN</u> 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 WIYH THE OWNER DAILY CONSTRUCTION ACTIVITES

DEMOLITION NOTES

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 VERIFYLOCATION 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.

A RELOCATE EXISTING LAVATORY TO THE SOUTH TO SATISFY A MINIMUM DISTANCE OF 2'-11" BETWEEN THE TWO BATHROOM FIXTURES AS REQUIRED BY CODE Carcoana ARCHITECTURE LTD.

Lawrence N. Carcoana, Principal

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Indian Head
Research Farm

AAFC

Project Titl

NOTES:

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

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

DEMOLITION 1ST FLOOR

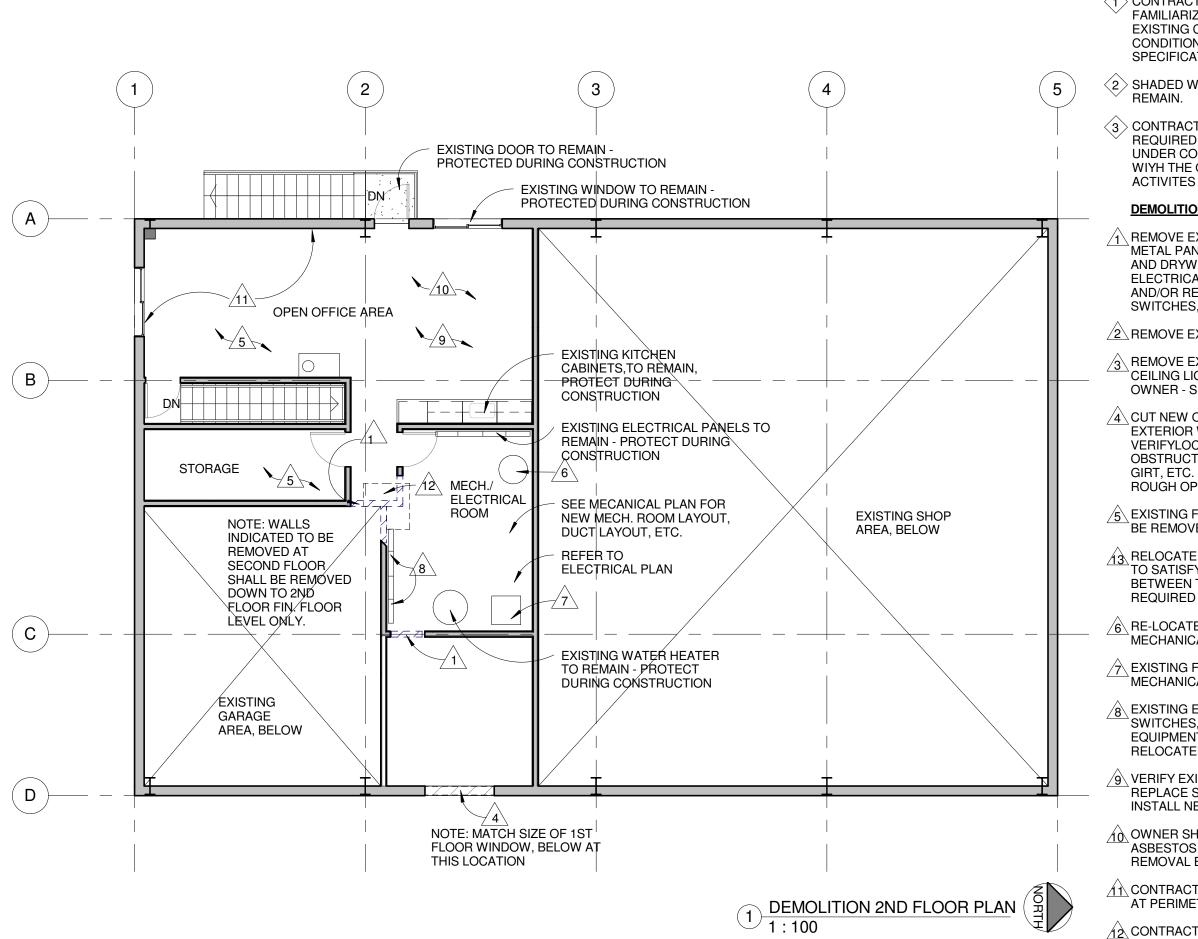
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Drawn By:	Date:	
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Project No.:		

A101 Revision No.: Date:

Issued For: TENDER

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Date Issued: 2014.12.19 Date Plotted: 19/12/2014 5:40:36 PM



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).

GENERAL NOTES:

 $\langle 1 \rangle$ 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

 $\langle 3 \rangle$ CONTRACTOR TO PROVIDE BARRIERS AS REQUIRED IN ORDER TO CONTAIN AREAS UNDER CONSTRUCTION AND COORDINATE WIYH THE OWNER DAILY CONSTRUCTION

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 VERIFYLOCATION 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.

A 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, VIDSO SURVEILLANCE EQUIPMENT, ETC TO BE REMPVED AND RELOCATED- SEE ELECTRICAL PLANS.

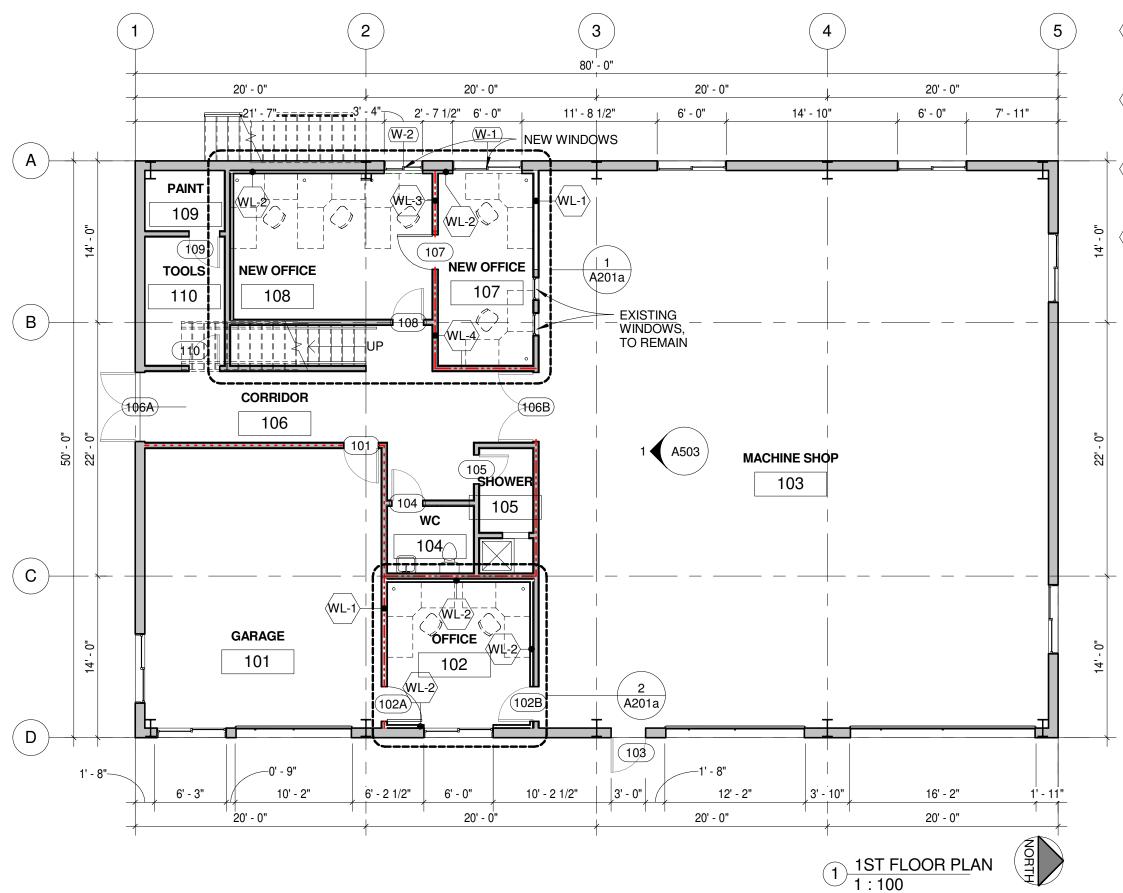
9 VERIFY EXISTING CEILING GRID AND TILES, REPLACE STAINED AND/OR DAMAGED TILES AND INSTALL NEW LIGHT FIXTURES (SEE ELECTRICAL).

10 OWNER SHALL VERIFY EXISTING FLOOR TILE FOR ASBESTOS CONTENT AND, IF REMOVED, ENSURE REMOVAL BY SPECIALIZED CONTRACTOR.

A CONTRACTOR TO REMOVE EXISTING VINYL BASE AT PERIMETER OF WALL.

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	Indian Head Research Farm
,	AAFC
r	NOTES:
	ssue Record: YY.MM.DD/Issued For/Issued To/Issued By
	,
F	Revisions: R# Brief Description/YY.MM.DD/Revised By
	DEMOLITION 2ND
	FLOOR
1	Designed By: Scale: As indicated
-	Drawn By: Date: Checked By: Date:
-	Project No.:
	A 1 0 0
	A102
F	Revision No.: Date:
I	ssued For: TENDER
	Date Issued: 2014.12.19
	Date Plotted: 19/12/2014 5:40:37 PM

Carcoana



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
- (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



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Indian Hea	ad
Research	Farm

AAFC

Incident Title

NOTES:

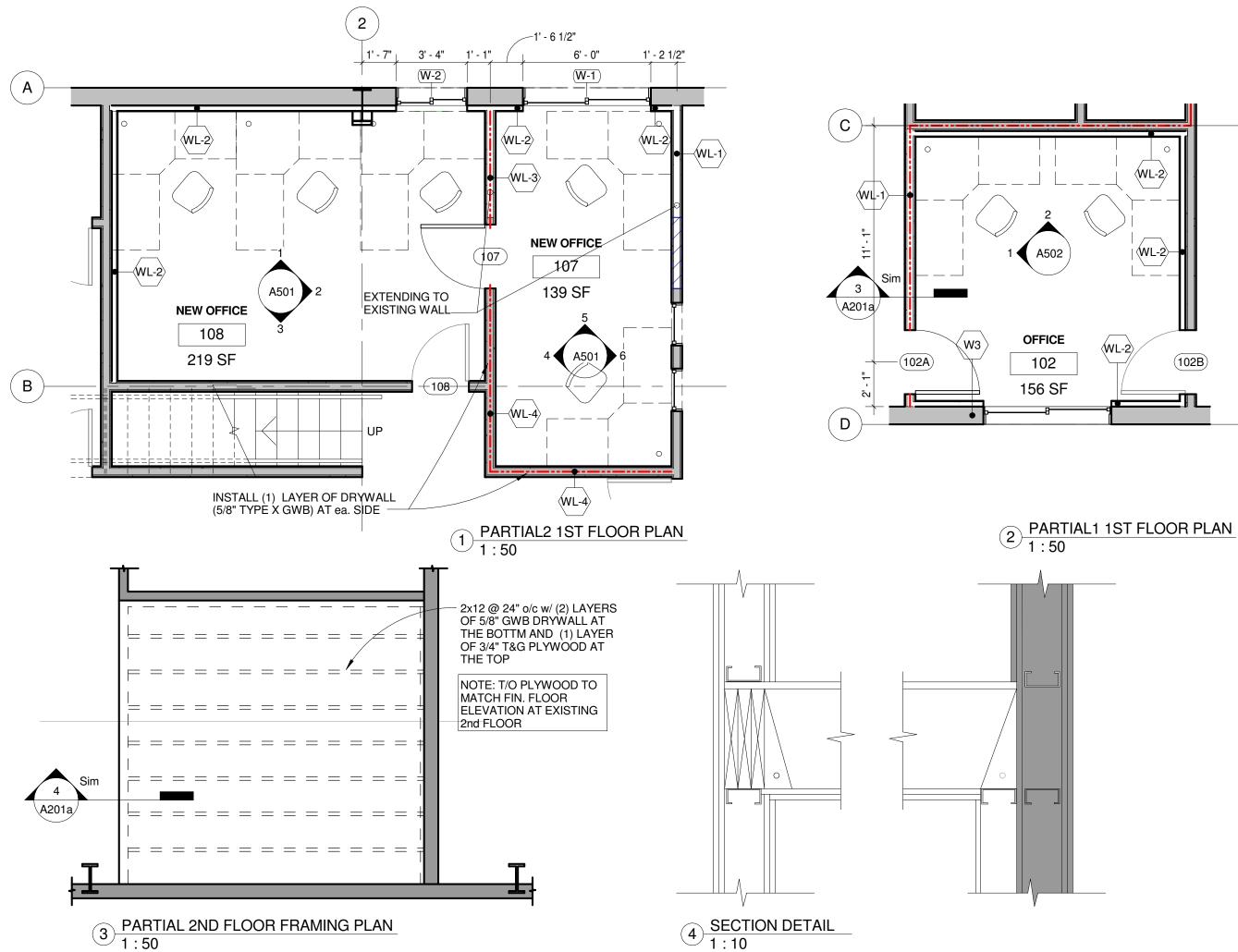
Issue Record: YY.MM.DD/Issued For/Issued To/Issued By

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

1ST FLOOR PLAN

Designed By:	Scale:	1:100
Drawn By:	Date:	
Checked By:	Date:	
Project No.:		
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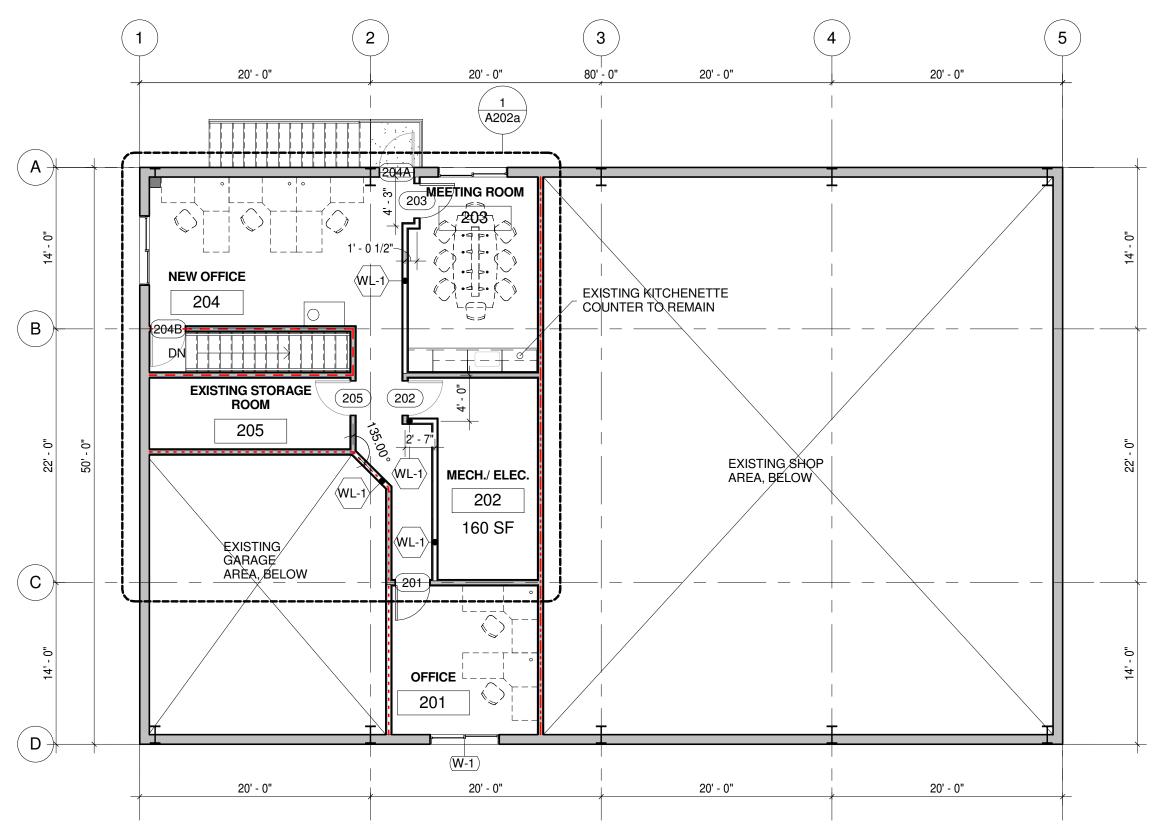
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Project Title: Indian Head
Research Farm
AAFC
NOTES:
Issue Record: YY.MM.DD/Issued For/Issued To/Issued By
Revisions: R# Brief Description/YY.MM.DD/Revised By
ENLARGED PLAN
Designed By: Scale: As indicated
Drawn By: Date: Checked By: Date:
Project No.:
A201a
Revision No.: Date: Issued For:
TENDER

Carcoana

Date Issued: 2014.12.19 Date Plotted: 19/12/2014 5:40:37 PM



1 2ND FLOOR PLAN 1 : 100



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

(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
- ----- 1.5HR w/ 1HR RATED DOOR



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Indian Head Research Farm

AAFC

NOTES:

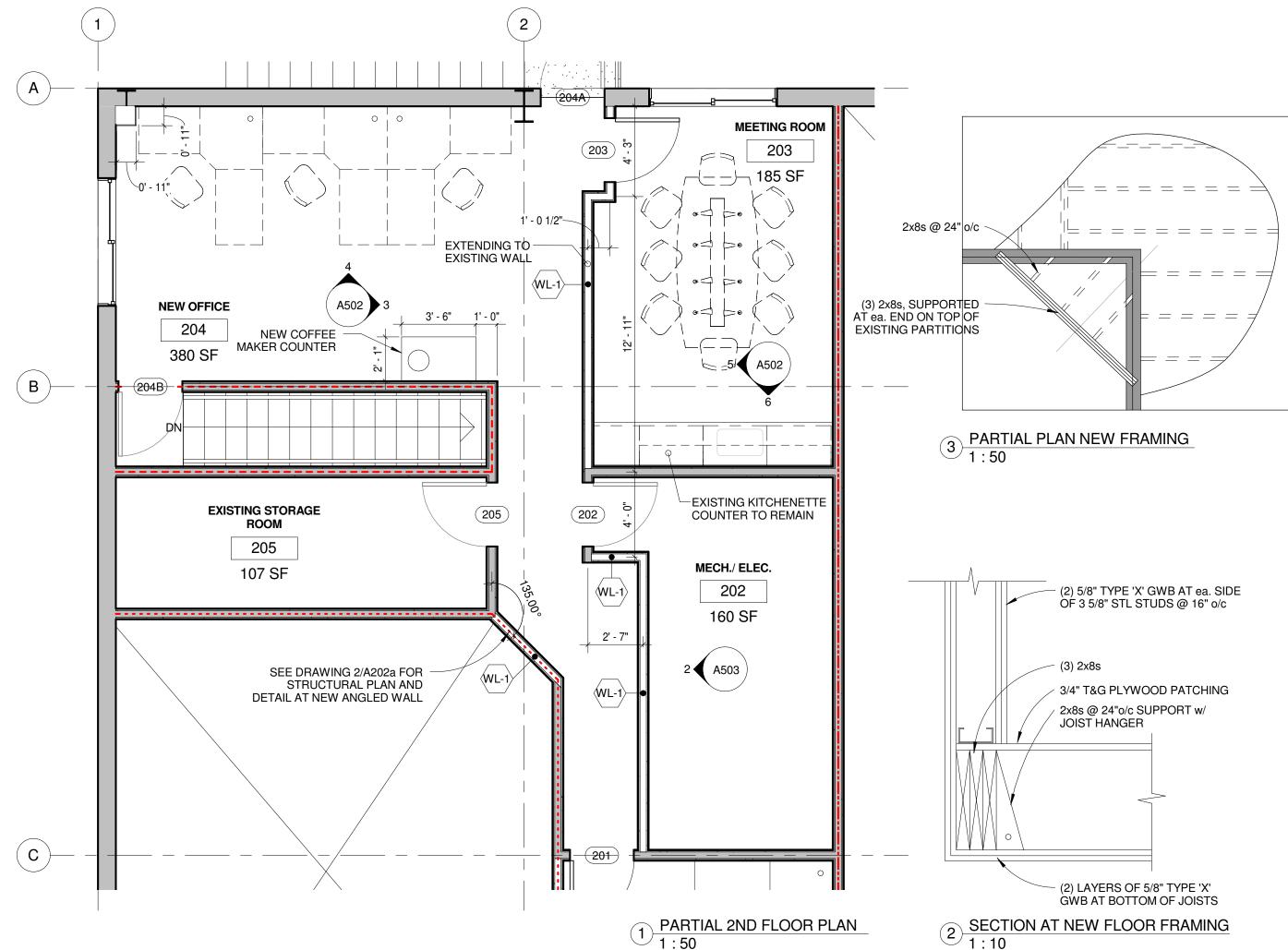
Issue Record: YY.MM.DD/Issued For/Issued To/Issued By

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.:		
Revision No.:	Date:	
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	Head arch Farm
AAFC	
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Revisions: R# Brief Descript	ion/YY.MM.DD/Revised By
ENLAR	GED PLAN
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Revision No.: Issued For:	Date:
TEN	DER
Date Issued: 2014. Date Plotted: 19/12/	12.19 /2014 5:40:38 PM

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					Window Schedu	le	
Type Mark	width	Height	Sill Height	Count	Level	Phase Created	Description
OOB							
W-1	6' - 0"	4' - 0"	3' - 0"	1	1 ST FLOOR	New Construction	PVC CONSTRUCTION, SLIDER,
	OOR	OOR	OOR	OOR	OOR	K Type Mark Width Height Sill Height Count Level OOR	OOR

						Door Schedule	9	
W-1	W-1	6' - 0"	4' - 0"	3' - 0"	1	2ND FLOOR	New Construction	PVC CONSTRUCTION, SLIDER 1" INSULATED, LOW 'E' ARGON
2ND FLC	DOR							
W-2	W-2	3' - 4"	4' - 0"	3' - 0"	1	1 ST FLOOR	New Construction	PVC CONSTRUCTION, SLIDER 1" INSULATED, LOW 'E' ARGON
W-1	W-1	6' - 0"	4' - 0"	3' - 0"	1	1 ST FLOOR	New Construction	PVC CONSTRUCTION, SLIDER 1" INSULATED, LOW 'E' ARGON

Mark	Width	Height	Count	Level	Phase Created	Description
				•		

1 ST FLOOR

TOTTEC						
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
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
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 FLC	OR					
201	3' - 0"	7' - 0"	1	2ND FLOOR	New Construction	HOLLOW METAL DOOR & FRAME w/ 6"x18" LIGHT-KIT
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
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	

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ER, WELDED CORNERS, ON FILLED GLAZING ER, WELDED CORNERS, ON FILLED GLAZING
ER, WELDED CORNERS, ON FILLED GLAZING
Hardware Function
OFFICE
OFFICE
OFFICE
OFFICE

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Indian Head Research Farm
AAFC
NOTES:
Issue Record: YY.MM.DD/Issued For/Issued To/Issued By
Revisions: R# Brief Description/YY.MM.DD/Revised By
DOOR & WINDOW SCHEDULES
Designed By: Scale: Drawn By: Date:
Checked By: Date: Project No.:
A301
Revision No.: Date:
Date Issued: 2014.12.19
Date Plotted: 19/12/2014 5:40:38 PM

		ROOM SCHEDULE (NOTE: OF	RIENTATION FO	DLLOW TRU	JE NORTH D	IRECTION I	NDICATION	ON FLOOR PLA	NS)
Number	Level	Name	Area		Wall Fin	ish	1	Base Finish	Floor Finish	Ceiling F
1 ST FLC	DOR			N	E	S	W			
101	1 ST FLOOR	GARAGE	497 SF	EXIST/GWB-P	EXIST	EXIST	EXIST	4" V.B	EXIST (CONC)	EXPOSE
102	1 ST FLOOR	OFFICE	156 SF	GWB-P	GWB-P	GWB-P	GWB-P	-	VCT	GWB-P
103	1 ST FLOOR	MACHINE SHOP	2135 SF	EXIST	EXIST	EXIST-P	EXIST	4" V.B	EXIST CONC	EXP
104	1 ST FLOOR	WC	43 SF	EXIST-P	EXIST-P	EXIST-P	EXIST-P	EXIST	VCT	EXIST-P
105	1 ST FLOOR	SHOWER	50 SF	EXIST	EXIST	EXIST	EXIST	4" V.B	EXIST	EXIST-P
106	1 ST FLOOR	CORRIDOR	309 SF	EXIST-P	EXIST-P	EXIST-P	EXIST-P	4" V.B	VCT	EXIST-P
107	1 ST FLOOR	NEW OFFICE	139 SF	GWB-P	GWB-P	EXIST-P	GWB-P	4" V.B	VCT	EXIST/GV
108	1 ST FLOOR	NEW OFFICE	219 SF	GWB-P	EXIST-P	EXIST-P	GWB-P	4" V.B	VCT	EXIST/GV
109	1 ST FLOOR	PAINT	36 SF				NO	WORK		
110	1 ST FLOOR	TOOLS	77 SF	NO WORK						
2ND FLC	OOR									
201	2ND FLOOR	OFFICE	163 SF	EXIST-P	GWB-P	GWB-P	GWB-P	4" V.B	С	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	С	ACT
204	2ND FLOOR	NEW OFFICE	380 SF	GWB-P	EXIST-P	EXIST-P	EXIST-P	4" V.B	С	ACT
205	2ND FLOOR	EXISTING STORAGE ROOM	107 SF	EXIST-P	EXIST-P	EXIST-P	EXIST-P	4" V.B	VCT	EXP

LEGEND

EXIST

С

SPECIFICATIONS DIVISION 6

- PAINT GWB

- DRYWALL - EXISTING

ACT - ACOUSTICAL CEILING TILE EXP - EXPOSED

- CONCRETE CONC

CONC-S - SEALED CONCRETE VB -VINYL BASE VCT -VINYL FLOOR TILE

-CARPET

- ACOUSTICAL INSULATION: 3 1/2" BATT INSULATION AS MANUFACTURED BY FIBREGLASS CANADA INC. OR APPROVED EQUAL.

DIVISION 8

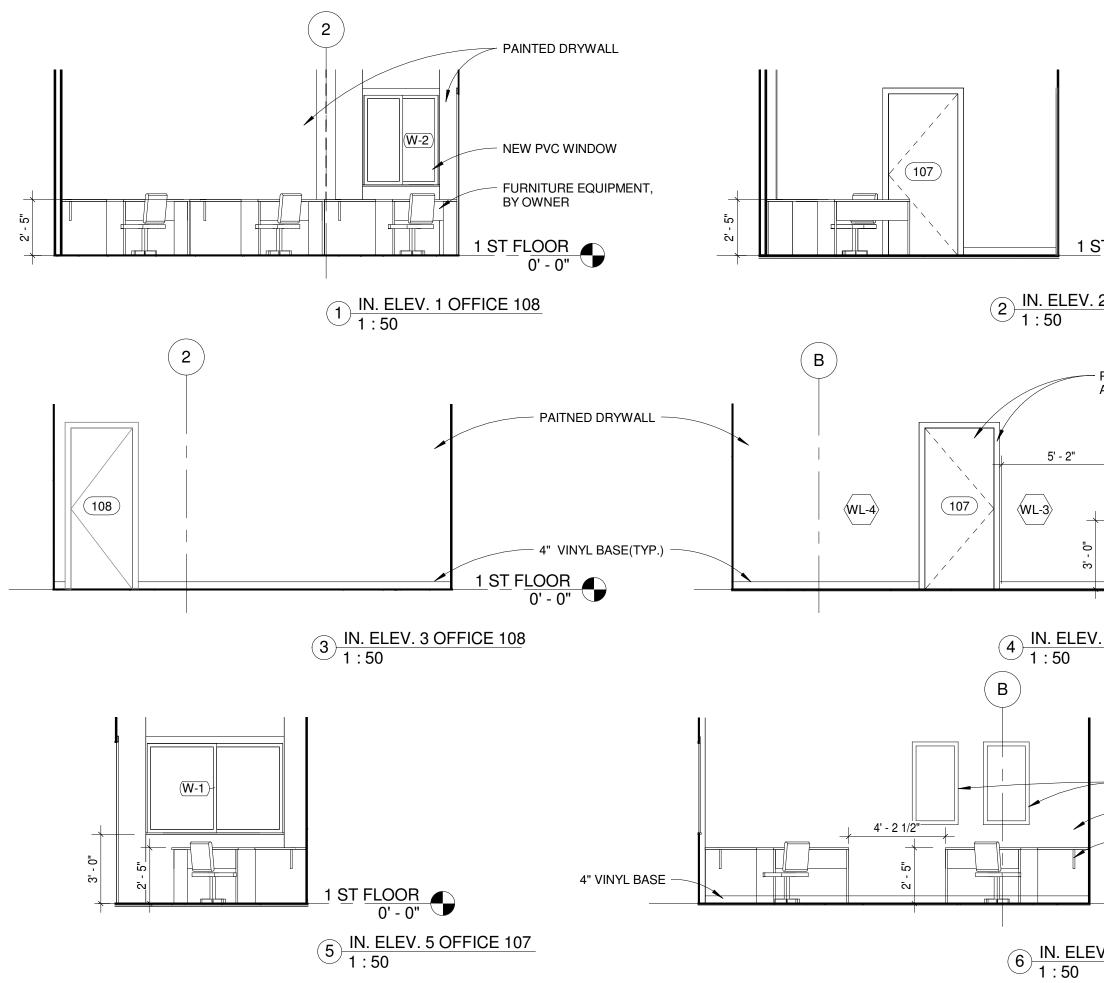
DIVISION 9

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

I SCHEDULE (I	NOTE: OR	IENTATION FC	LLOW TRU	JE NORTH D	IRECTION IN	DICATION	ON FLOOR PLA	NS)	
ne	Area		Wall Fini	sh		Base Finish	Floor Finish	Ceiling Finish	Comments
		N	E	S	W				
	497 SF	EXIST/GWB-P		EXIST	EXIST	4" V.B	EXIST (CONC)	EXPOSED	PAINT DRYWALL
	156 SF	GWB-P	GWB-P	GWB-P	GWB-P	-	VCT	GWB-P	DRYWALL LID
P	2135 SF	EXIST	EXIST	EXIST-P	EXIST	4" V.B	EXIST CONC	EXP	PAINT DRYWALL
	43 SF	EXIST-P	EXIST-P	EXIST-P	EXIST-P	EXIST	VCT	EXIST-P	PAINT DRYWALL
	50 SF	EXIST	EXIST	EXIST	EXIST	4" V.B	EXIST	EXIST-P	PAINT DRYWALL
	309 SF	EXIST-P	EXIST-P	EXIST-P	EXIST-P	4" V.B	VCT	EXIST-P	PAINT DRYWALL
	139 SF	GWB-P	GWB-P	EXIST-P	GWB-P	4" V.B	VCT	EXIST/GWB-P	PAINT DRYWALL
	219 SF	GWB-P	EXIST-P	EXIST-P	GWB-P	4" V.B	VCT	EXIST/GWB-P	PAINT DRYWALL
	36 SF			1	NO	WORK			
	77 SF				NO	WORK			
	163 SF	EXIST-P	GWB-P	GWB-P	GWB-P	4" V.B	С	ACT	
	160 SF	-	-	EX/GWB-P	GWB-P	-	-	EXP	
M	185 SF	EXIST-P	EXIST-P	GWB-P	EXIST-P	4" V.B	С	ACT	
	380 SF	GWB-P	EXIST-P	EXIST-P	EXIST-P	4" V.B	С	ACT	
RAGE ROOM	107 SF	EXIST-P	EXIST-P	EXIST-P	EXIST-P	4" V.B	VCT	EXP	
IFICATIONS DIVISION 6 - NEW PLASTIC LAMINATE COFFEE COUNTER: PLASTIC LAMINATE OVER ¾" 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 FIBREGLASS 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 HOLL OW METAL POORS AND HIM ERAMES (WELDER), 1.5 MATHICK (16 CA), 45 MANUFACTURED BY SHANAHAN'S MANUEL TO, STEL DOD LTD, S.W. ELEMINOL TD, OR									
- 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 FINSIHED, 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 F - VINYL BASE – 10 - CARPET – ZERO EQUAL. - ACOUSTICAL CE	LOOR FINISH 0 MM (4") BY VOC, 24" X 2 ILINGS – 24"	HES SUCH AS: SEAL JOHNSONITE, VPI, 4" (600 MM X 600 MI	LED CONCRET OR APPROVEI M) TILE PRODU	E, CARPET, ETC D EQUAL. JCT AS MANUF/ ICAL TILE AS M	C. ACTURED BY MC IANUFACTURED	DHAWK GROUP BY ARMSTRON	(SUPERFRESH), BEN	NTLEY (TROUBADOL	IR), OR APPROVED

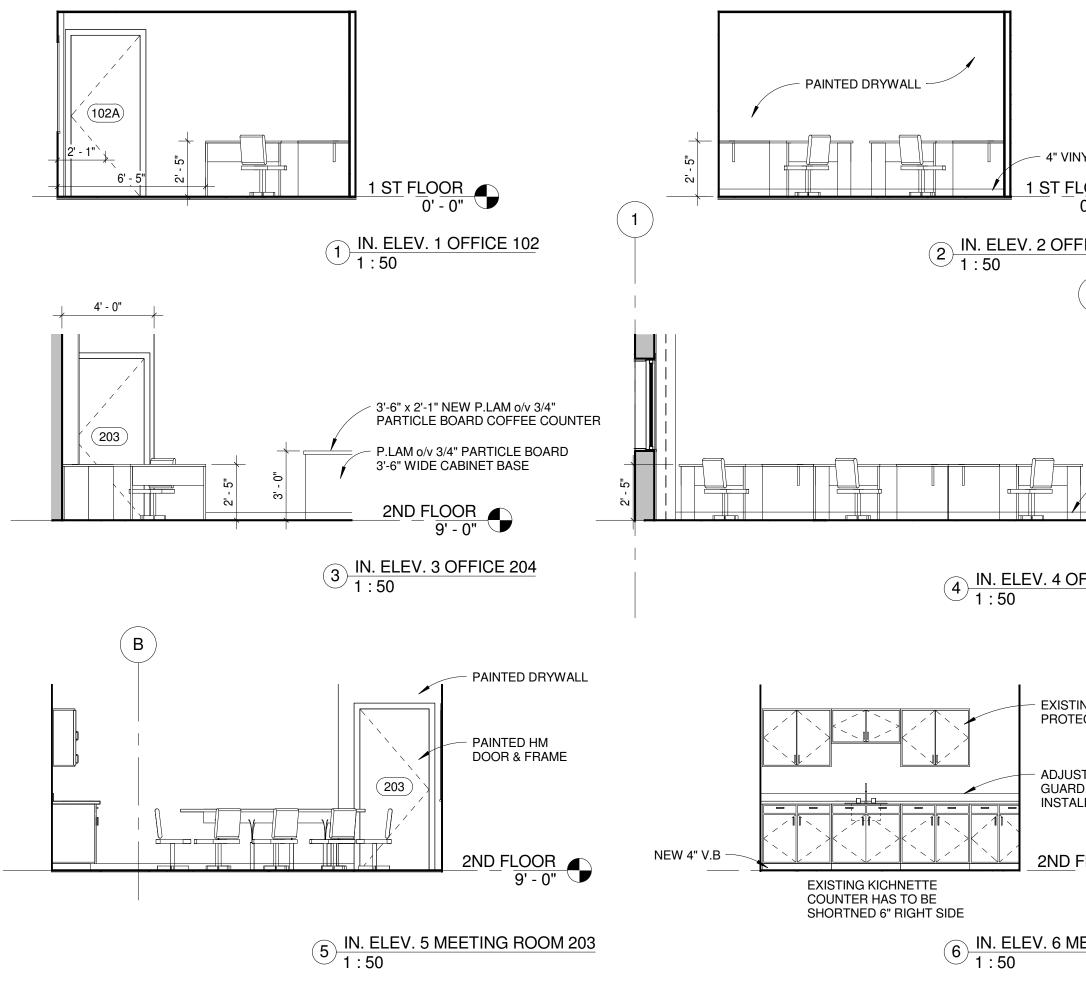
ING REVIEW/APPROVALS.

Carcoana ARCHITECTURE LTD.
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1457 ALBERT STREET, REGINA, SASKATCHEWAN SAR 2R8 TEL 306.565.0411 FAX 306.757.9471 mcginn@mcginngroup.ca www.mcginngroup.ca
Indian Head Research Farm
AAFC
NOTES:
Issue Record: YY.MM.DD/Issued For/Issued To/Issued By
Revisions: R# Brief 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

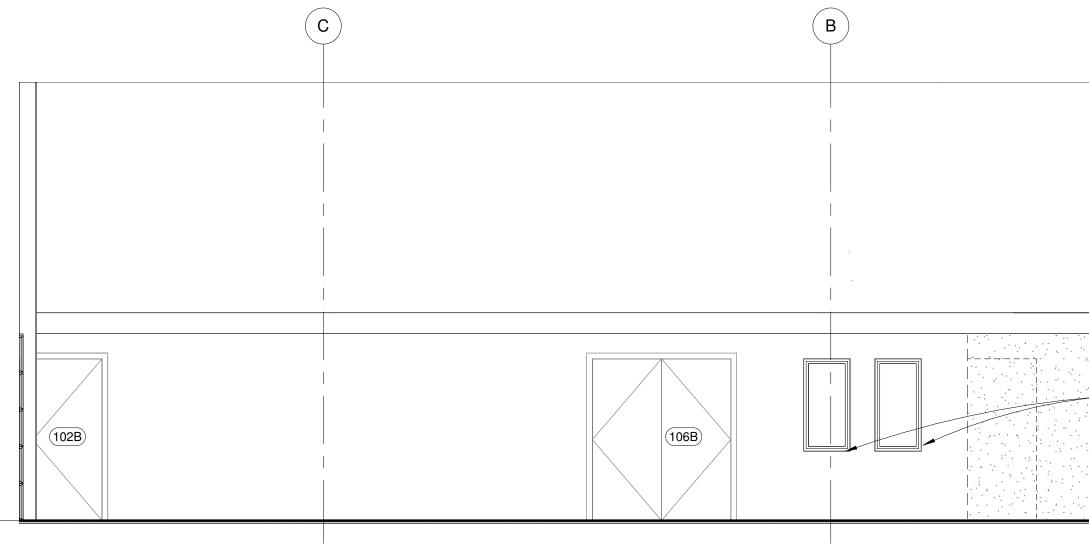


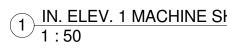
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	Lawrence N. Carcoana, Principal SAA, AAA, MAA, AIA, NCARB
	1457 ALBERT STREET, REGINA, SASKATCHEWAN 548 288 TEI 3065550411 FAX 3067579471 emäiladress
	McGinn Engineering Ltd.
	A DIVISION OF McGINN GROUP 1457 ALBERT STREET, REGINA, SASKATCHEVAN SAR 2R8 TEL 306.565.0411 FAX 306.757.9471 mcginn@mcginngroup.ca
ST FLOOR 0' - 0"	Protect Title: Indian Head Research Farm
1. 2 OFFICE 108	AAFC
	NOTES:
- PAINT HM DOOR AND FRAME	
1 ST FLOOR 0' - 0"	Issue Record: YY.MM.DD/Issued For/Issued To/Issued By
V. 4 OFFICE 107	
	Revisions: R# Brief Description/YY.MM.DD/Revised By
EXISTING WINDOWS	
PAINTED DRYWALL	INTERIOR ELEVATIONS
FURNITURE EQUIPMENT BY OWNER	Designed By: Scale: 1:50 Drawn By: Date:
	Checked By: Date: Project No.:
<u>1 ST FLOOR</u> 0' - 0"	A501
EV. 6 OFFICE 107	Revision No.: Date: Issued For: TENDER
	Date Issued: 2014.12.19

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



	Carcoana ARCHITECTURE LTD.
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	1457 ALBERT STREET, REGINA, SASKATCHEWAN SAR 2R8 TEL 306.555.041 FAX 306.757.9471 email address
	McGinn Engineering Ltd.
NYL BASE	1457 ALBERT STREET, REGINA,
LOOR 0' - 0"	SASKATCHEWAN SAR 2R8 TEL 306.565.0411 FAX 306.757.9471 mcginn@mcginngroup.ca www.mcginngroup.ca
FICE 102	Indian Head Research Farm
2	AAFC
PAINT EXISTING EXPOSED STEEL COLUMN	
PAINT EXISTING H.M DOOR & FRAME	
4" VINYL BASE	
	Issue Record: YY.MM.DD/Issued For/Issued To/Issued By
2ND FLOOR 9' - 0"	
DFFICE 204	
	Revisions:
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TING CABINETRY TO REMAIN, ECT DURING CONSTRUCTION	
ST END OF C-TOP/SPLASH	
ALLATION	INTERIOR ELEVATIONS
	Designed By: Scale: 1 : 50 Drawn By: Date:
FLOOR	Checked By: Date: Project No.:
9' - 0"	A502
	Revision No.: Date:
IEETING ROOM 203	TENDER Date Issued: 2014.12.19
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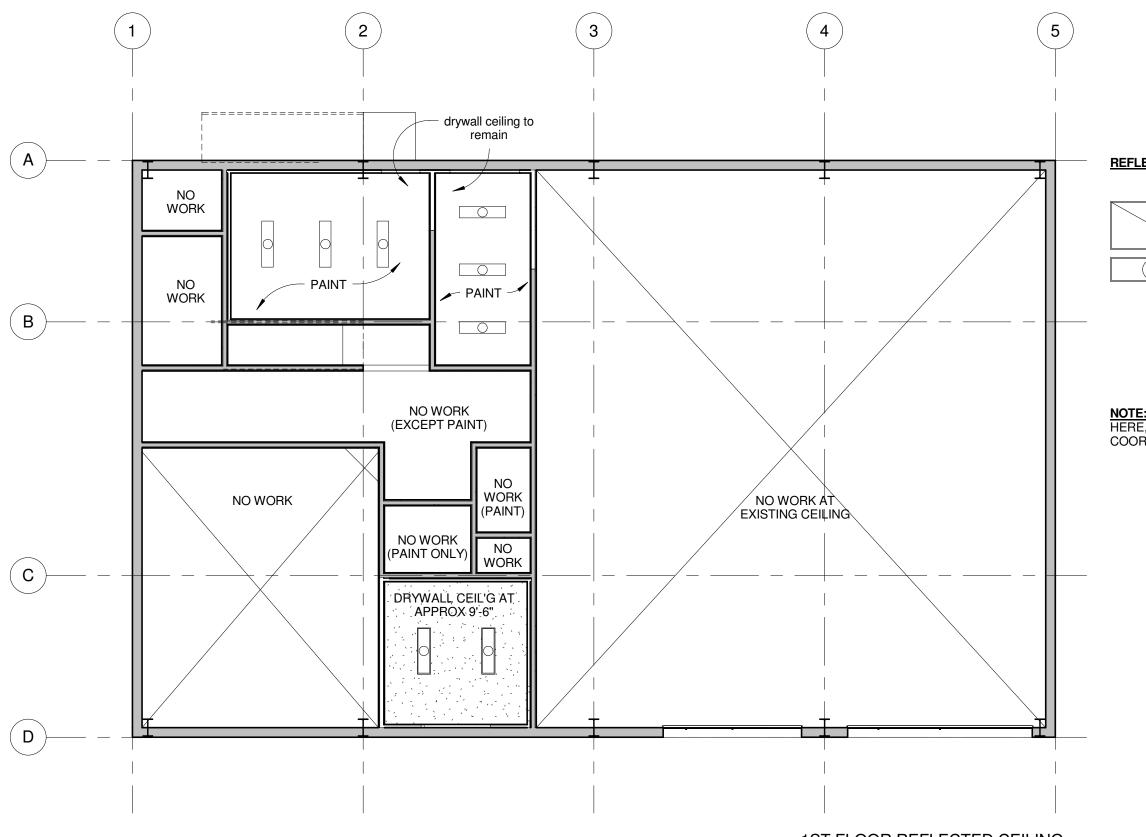






2 IN. ELEV. 1 MECH./ ELEC 1:50

		Carcoana ARCHITECTURE LTD.
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		Indian Head Research Farm
		AAFC
7,	INSTALL (2) LAYES OF 5/8" GWB AT THIS SIDE TO PATCH WALL & DOOR OPENING	NOTES:
	EXISTING WINDOWS	
	PAINTED DRYWALL	
	<u>1 ST FLOOR</u> 0' - 0"	Issue Record: YY.MM.DD/Issued For/Issued To/Issued By
HOP 10	3	
	_	
		Revisions: R# Brief Description/YY.MM.DD/Revised By
XITING DC AINT DOO	OR R & FRAME	
		INTERIOR ELEVATIONS
) <u>FLOOF</u> 9' - 0	<u>R</u>	Designed By: Scale: 1 : 50 Drawn By: Date:
CT. RO	OM 202	
		A503
		Issued For: TENDER
		Date Houted: 2014.12.19 Date Plotted: 19/12/2014 5:40:39 PM



 $1 \underbrace{1 \text{ ST FLOOR REFLECTED CEILING}}_{1:100}$

REFLECTED CEILING PLAN LEGEND

2'x4' RECESSED

FLORESCENT LIGHT FIXTURE

FLORESCENT LIGHT FIXTURE

1'x4' SURFACE MOUNT RECESSED

RETURN AIR GRILL SEE MECHANICAL

SEE MECHANICAL

SUPPLY AIR DIFFUSER

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



Ca	rco	a	n	a
AR	CHITEC	TUR	E L	ΤD

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



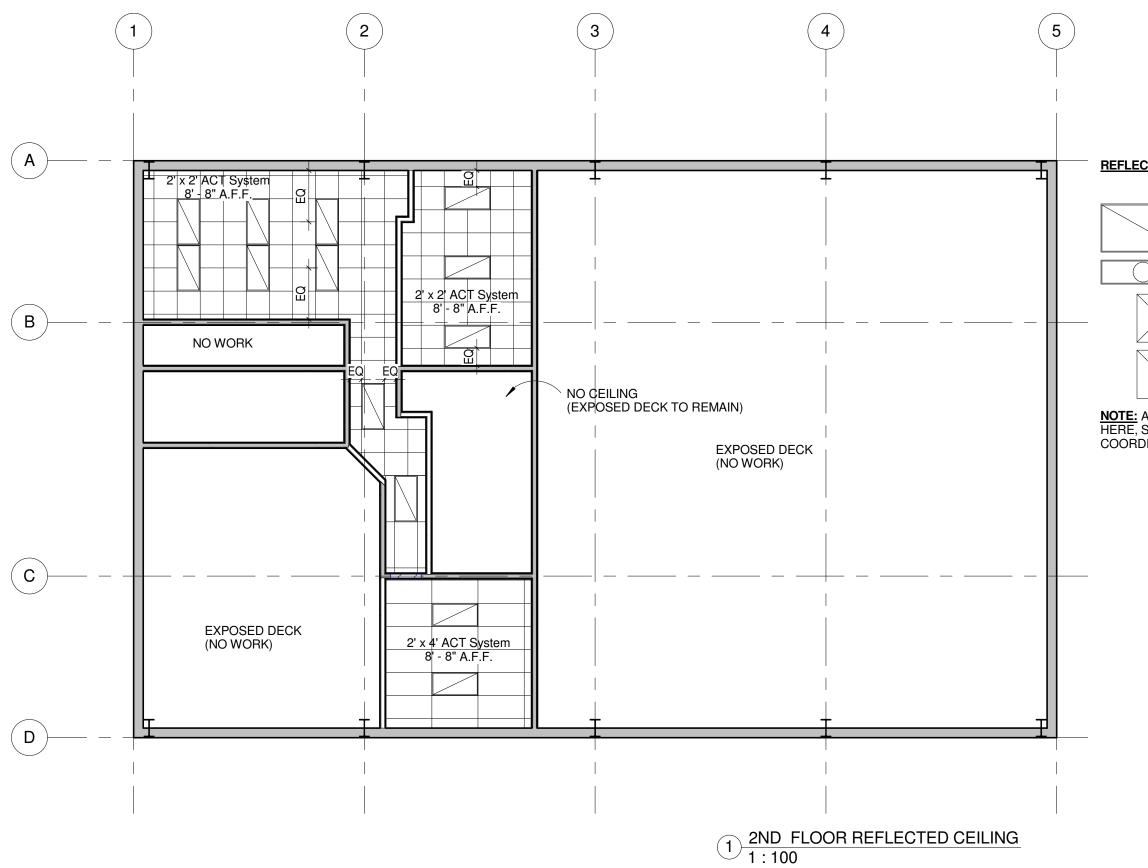
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Project No.:		

A601 Revision No.: Date:

Issued For: TENDER

Date Issued: 2014.12.19

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REFLECTED CEILING PLAN LEGEND

2'x4' RECESSED

FLORESCENT LIGHT FIXTURE

1'x4' SURFACE MOUNT RECESSED FLORESCENT LIGHT FIXTURE

RETURN AIR GRILL SEE MECHANICAL

SEE MECHANICAL

SUPPLY AIR DIFFUSER

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

Proiect Title:	
Indian Hea	ad
Research	Farm

AAFC

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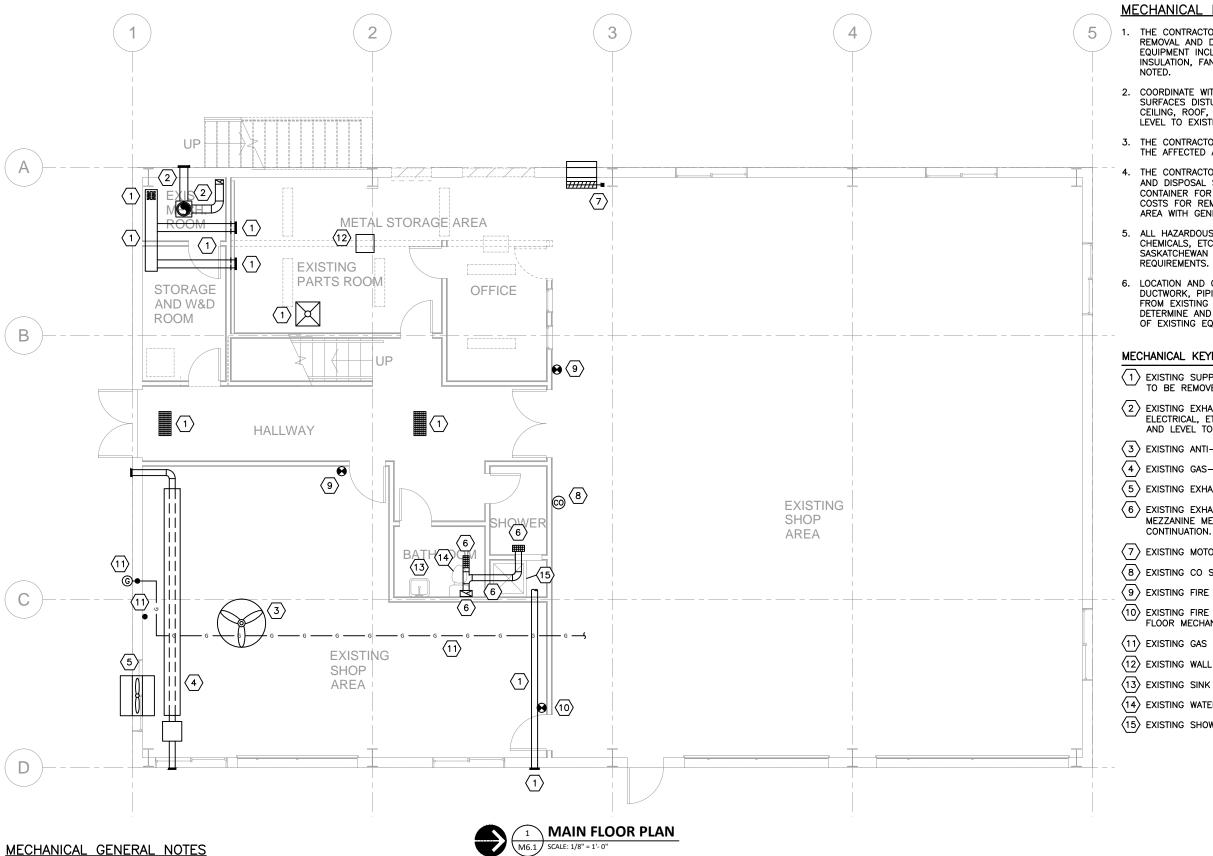
Carcoana ARCHITECTURE LTD.

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- 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.

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

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

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.

- $\langle 3 \rangle$ EXISTING ANTI-STRATIFICATION FAN TO REMAIN.
- $\langle 4 \rangle$ EXISTING GAS-FIRED RADIANT HEATER TO REMAIN.
- $\langle 5 \rangle$ EXISTING EXHAUST FAN TO REMAIN.

 $\langle 6 \rangle$ EXISTING EXHAUST AIR GRILLE/DUCT TO REMAIN. SEE MEZZANINE MECHANICAL DEMO PLAN 1/M6.2 FOR

- $\langle 7 \rangle$ EXISTING MOTORIZED DAMPER/AIR INTAKE TO REMAIN.
- $\langle 8 \rangle$ EXISTING CO SENSOR TO REMAIN.
- $\langle 9 \rangle$ existing fire extinguisher to remain.

(10) EXISTING FIRE EXTINGUISHER TO BE RELOCATED. SEE MAIN FLOOR MECHANICAL RENOVATION PLAN 1/M6.3.

- $\langle 11 \rangle$ EXISTING GAS METER AND GAS LINE TO REMAIN.
- $\langle 12 \rangle$ existing wall ac unit to be removed C/W electrical.
- $\langle 13 \rangle$ EXISTING SINK TO REMAIN.
- $\langle 14 \rangle$ EXISTING WATER CLOSET TO REMAIN.
- (15) EXISTING SHOWER TO REMAIN.



Date Plotter

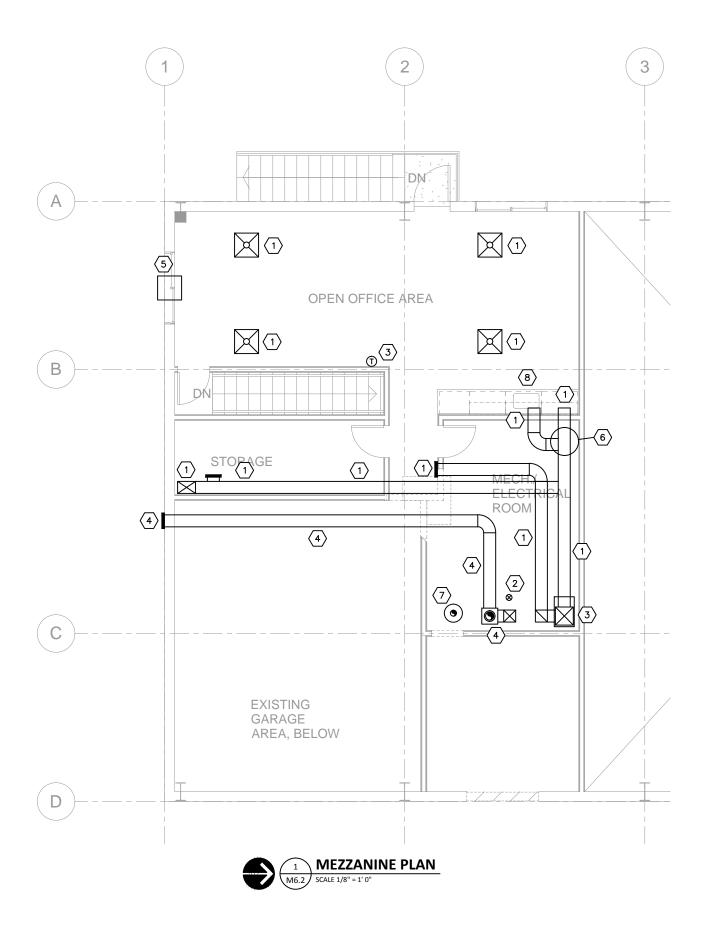
MECHANICAL GENERAL NOTES

- 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

- $\langle 2 \rangle$ EXISTING FLOOR DRAIN TO REMAIN.
- SURROUNDINGS.
- MECHANICAL DEMO PLAN 1/M6.1.

- $\langle 7 \rangle$ EXISTING RHEEM 50 GALLON WATER HEATER TO REMAIN.
- (8) EXISTING SINK TO REMAIN.



1. SEE DRAWING M6.1 FOR MECHANICAL DEMOLITION NOTES.

2. SEE DRAWING M6.3 FOR MECHANICAL LEGEND AND GRILLE/LOUVRE SCHEDULE.

XXX - DENOTES KEYNOTE ON DRAWING

 $\langle 1 \rangle$ EXISTING SUPPLY/RETURN AIR DUCT/DIFFUSER/GRILLE TO BE REMOVED.

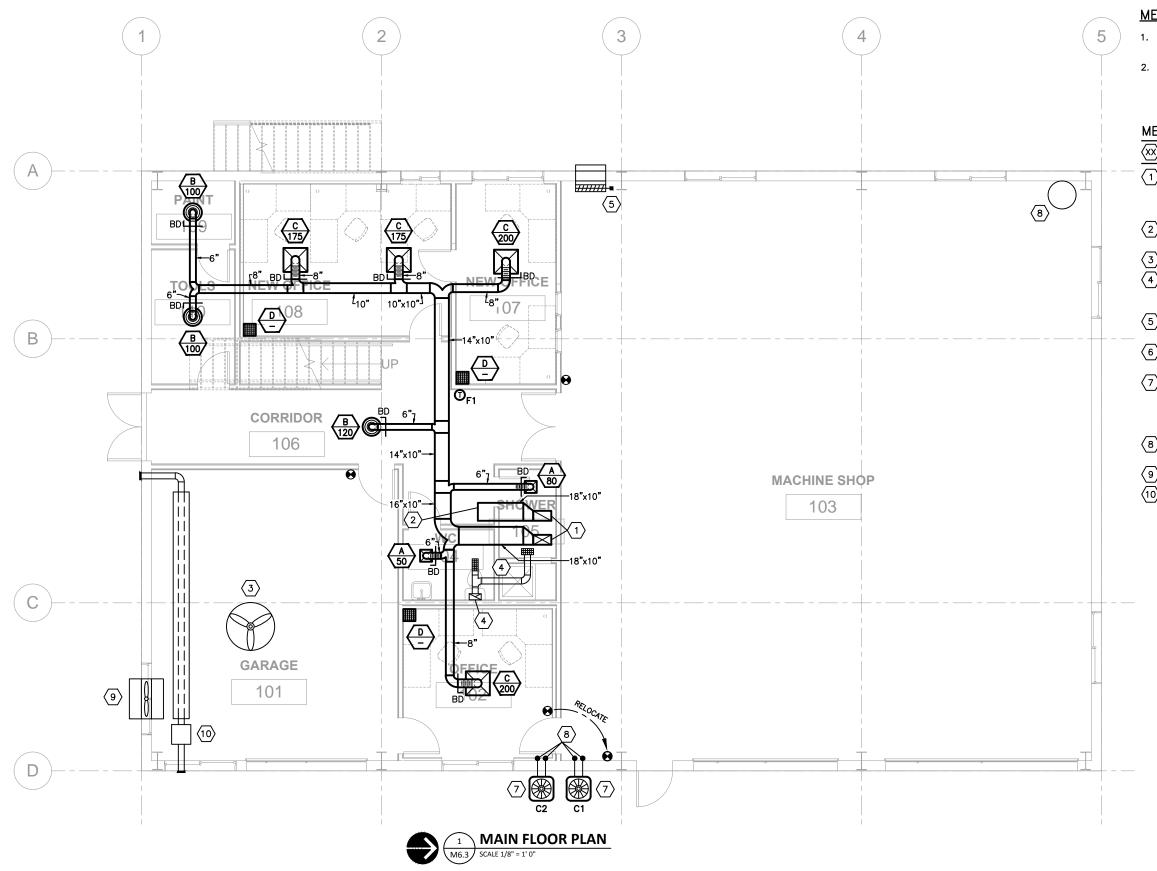
 $\langle 3 \rangle$ existing Gas-fired furnace to be removed C/W venting, electrical, etc. Patch floor, walls, and/or ceiling and make good and level to existing

4 EXISTING EXHAUST FAN TO REMAIN C/W DUCTWORK. SEE MAIN FLOOR

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.

C	2100202
L	Architecture Ltd.
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	MEZZANINE
	MEZZANINE MECHANICAL DEMO PLAN
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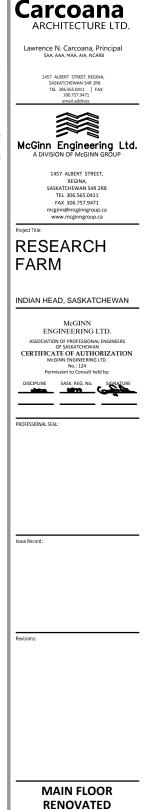
	GRILLE / LOUVRE SCHEDULE					
MA	RK MAKE	MODEL	SIZE	FLOW RATE	DESCRIPTION	REMARKS
Ø			12"x12"	AS NOTED		OR EQUAL. THROAT SIZE TO MATCH DUCT SIZE.
Œ	E.H. PRIC		6"ø	AS NOTED		OR EQUAL.
C	E.H. PRIC		24"x24"	AS NOTED		OR EQUAL. THROAT SIZE TO MATCH DUCT SIZE.
C	E.H. PRIC	E 10"x10"/80/TB/12"x12"/B12	12"x12"	-	RETURN AIR GRILLE	OR EQUAL. ALUMINUM EGGCRATE RETURN AIR GRILLE. LAU-IN T-BAR CEILING.

MECHANICAL GENERAL NOTES

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

MECHANICAL KEYNOTES

- The denotes keynote on drawing
- (1) 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.
- 2 STUB 18"x10" RETURN AIR DUCT INTO MAIN FLOOR CEILING SPACE.
- $\langle 3 \rangle$ 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.
- 5 EXISTING MOTORIZED DAMPER/INTAKE AIR TO REMAIN.
- 6 MOUNT CONDENSING UNIT ON GRADE ON CONCRETE PAD.
- (7) 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.
- (8) EXISTING AIR COMPRESSOR TO BE RELOCATED FROM SECOND FLOOR MECH ROOM TO THIS LOCATION.
- $\langle 9 \rangle$ EXISTING EXHAUST FAN TO REMAIN.
- $\langle 10 \rangle$ EXISTING GAS-FIRED RADIANT HEATER TO REMAIN.



 H.V./	A.C. LEGEND
PROPOSED	
Ū	THERMOSTAT
ر بر المحمد ا	FLEXIBLE DUCT
\square	SUPPLY AIR DUCT UP
$\sum \leq$	SUPPLY AIR DUCT DOWN
	RETURN AIR DUCT UP
\Box	RETURN AIR DUCT DOWN
\leq	EXHAUST AIR DUCT UP
$\geq <$	EXHAUST AIR DUCT DOWN
BD 🖵	BALANCING DAMPER
	-GRILLE/LOUVRE MARK -AIR FLOW (CFM)

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MECHANICAL PLAN

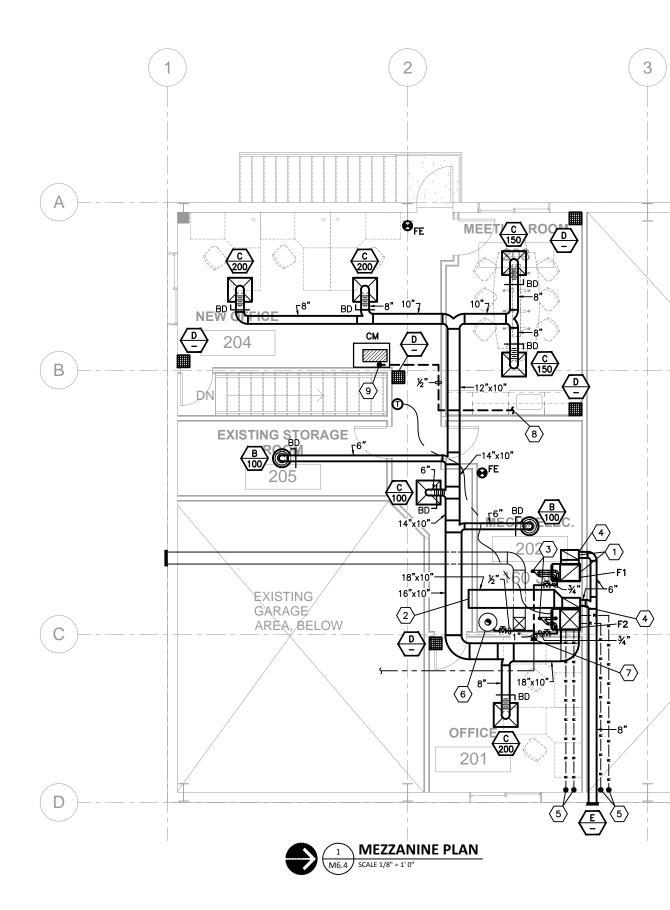
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Scale: AS NOTED

2014.12.18

Designed By: DJT

Date Issued: Date Plotted:



MECHANICAL GENERAL NOTES

- 1. ALL DUCTING SHOWN SCHEMATICALLY.
- 2. ALL DUCT SIZES ARE NET SIZES.
- 3. ALL DUCT TAKE-OFFS TO BE 45° CONICAL WITH BALANCING DAMPERS.
- 4. DUCTING TO BE CONNECTED TO ALL MAKE-UP AIR UNITS AND FAN UNITS WITH CANVAS CONNECTIONS, EXCEPT KITCHEN CANOPY EXHAUST FANS
- 5. ALL MAIN SUPPLY PLENUM ELBOWS TO BE MITERED WITH TURNING VANES.
- DUCT ELBOW RADII TO BE MINIMUM 1.5 TIMES THE TURNING DIMENSION.
- 7. 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 8. 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.
- 10. 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.
- 11. ENSURE ALL FLUE GAS AND EXHAUST OUTLETS ARE AT LEAST 10ft. AWAY FROM THE NEAREST FRESH AIR INTAKE.
- 12. ALL EQUIPMENT TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- 13. ALL DUCTING TO BE FIRE DAMPERED AT ALL FIRE SEPARATIONS COMPLETE WITH QUICK CLOSING HINGED ACCESS DOORS FOR MAINTENANCE OF FUSIBLE LINK.
- 14. RUN ALL DUCTWORK UP AS HIGH AS POSSIBLE TO UNDERSIDE OF ROOF STRUCTURE AND WITHIN ROOF JOIST WEB WHERE POSSIBLE IN EXPOSED CEILING AREAS.
- 15. 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 % 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 3 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 TSA036HAN41Y 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.

<u>CM – COFFEE MACHINE</u>

COFFEE MACHINE TO BE SUPPLIED BY OWNER. CONTRACTOR TO PROVIDE 为" 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.

- POSSIBLE.
- OTHERWISE SPECIFIED.

 - SHALL NOT BE USED.

 - SEPARATIONS.
 - DESIGNATED AS "HL".

- SPACE.
- MANUAL DAMPER.
- 1/M6.3 FOR CONTINUATION.
- OF ROOF
- EXACT LOCATION ON SITE.

16. COORDINATE INSTALLATION OF ALL DIFFUSERS AND GRILLES WITH CEILING GRID AND LIGHTING LAYOUT.

17. ALL PLUMBING LINES SHOWN SCHEMATICALLY.

18. 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.

19. ALL WATER LINES TO BE COVERED WITH 13mm (1/2") INSULATION AND WITH PVC JACKET IN EXPOSED AREAS.

20. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

21. ALL PIPING TO FIXTURES AND EQUIPMENT TO RUN CONCEALED WHERE

22. ALL WATER CONNECTIONS TO FIXTURES TO BE 13mm (1/2") UNLESS

23. CONTRACTOR TO SUPPLY AND INSTALL PLUMBING VENTS, TRAP SEAL PRIMERS, CLEANOUTS, AND ISOLATION VALVES AS PER CODE.

24. INSTALL ALL GAS FIRED EQUIPMENT AND PIPING IN ACCORDANCE WITH THE CANADIAN GAS CODE AND GAS UTILITY REQUIREMENTS.

25. SOLDERS AND FLUXES HAVING A LEAD CONTENT IN EXCESS OF 0.2%

26. CONTRACTOR TO FIELD DETERMINE THE EXACT LOCATION OF ALL EXISTING BUILDING SERVICES.

27. PVC AND PLASTIC PIPING MAY BE USED WHERE PERMITTED BY CODE. ALL PVC PIPING WITHIN RETURN AIR CEILING PLENUMS TO BE XFR

28. ALL PLUMBING TO BE INSTALLED IN ACCORDANCE WITH THE CANADIAN PLUMBING CODE, PROVINCIAL PLUMBING CODES, AND CITY BYLAWS.

29. PROVIDE FIRESTOPS AT ALL PIPING THAT PASSES THROUGH FIRE

30. PROVIDE TRUEBRO PREFABRICATED INSULATION PACKAGE OVER ALL EXPOSED WATER SUPPLIES AND WASTES AT BARRIER FREE SINKS

MECHANICAL KEYNOTES (XX) - DENOTES KEYNOTE ON DRAWING

 $\langle 1 \rangle$ supply and return air ducts down into main floor. See main FLOOR RENOVATED HVAC PLAN 1/M6.3 FOR CONTINUATION.

 $\langle 2 \rangle$ STUB 18"x10" RETURN AIR DUCT WITHIN SECOND FLOOR CEILING

(3) FURNACE CONCENTRIC VENT/AIR INTAKE UP THRU ROOF C/W CONCENTRIC VENT AND VERTICAL TERMINATION KIT. FLASH AND SEAL AT ROOF PENETRATION WEATHER TIGHT.

 $\langle 4 \rangle$ connect fresh air duct to furnace return air plenum C/W

 $\langle 5 \rangle$ REFRIGERANT LINE KIT UP FROM MAIN FLOOR TIGHT ALONG WALL TO U/S OF ROOF. SEE MAIN FLOOR RENOVATED MECHANICAL PLAN

 $\langle 6 \rangle$ existing rheem gas-fired water heater to remain c/w VENTING. UNIT PROVIDES 50 GALLON STORAGE AND 45 MBH HEATING.

 $\langle 7 \rangle$ connect new 1" gas line to existing gas line stub along U/s

8 connect new ½" cold water line to existing sink cold water supply line within ceiling space. Contractor to determine

(9) ½" COLD WATER LINE DOWN WITHIN FURR-IN TO COFFEE MACHINE

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M6.4
Revision No.: Date: Issued For:
Date Issued: -

Date Plotted

ELECTRICAL CONTROLS CONNECTED TO MECHANICAL EQUIPMENT 1.0 GENERAL SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR AND SHALL BE INSTALLED, WIRED, AND CONNECTED BY THE MECHANICAL 1.1 GENERAL PROVISIONS CONTROLS SUB-CONTRACTOR. 1.11.4 THE CONTRACTOR SHALL PROVIDE A COMPLETE AND FULLY MECHANICAL SHALL CONFIRM ALL EQUIPMENT ELECTRICAL RATINGS OPERATIONAL MECHANICAL SYSTEM WITH ELECTRICAL DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ORDERING EQUIPMENT. THE CONTRACTOR SHALL EXAMINE THE SITE PRIOR TO SUBMITTING 1.12.0 MAINTENANCE MANUALS THEIR QUOTE TO FAMILIARIZE THEMSELVES WITH THE WORK 1.12.1 FURNISH THREE (3) SETS OF MAINTENANCE MANUALS WITH INFORMATION OUTLINED BELOW TO THE OWNER ON COMPLETION. ANY DISCREPANCIES AND OMISSIONS DISCOVERED SHALL BE 1.12.2 REPORTED TO THE ENGINEER IMMEDIATELY AND PRIOR TO TENDER MAINTENANCE MANUALS SHALL CONTAIN THE FOLLOWING: CLOSING FOR RECERTIFICATION BY ADDENDUM. WARRANTY CERTIFICATE, BALANCING REPORT EACH CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR DESCRIPTION OF ALL SYSTEMS LAYING OUT THEIR WORK AND FOR ANY DAMAGE CAUSED BY IMPROPER EXECUTION OF THEIR WORK. CONTRACTOR TO CARRY - DESCRIPTION OF COMPONENTS OF EACH PIECE OF EQUIPMENT DESCRIPTION OF CONTROL SYSTEM ALL NECESSARY INSURANCE COVERAGE COMPLETE SET OF DRAWINGS 1.2.0 WARRANTY DETAILED MAINTENANCE AND LUBRICATION SCHEDULE OPERATING AND MAINTENANCE INSTRUCTIONS FOR MAJOR THE MECHANICAL CONTRACTOR AS A CONDITION PRECEDENT TO EQUIPMENT FINAL PAYMENT AFTER COMPLETION OF THIS WORK SHALL PROVIDE - LIST OF FOUIPMENT SUPPLIERS AND MANUFACTURERS. THE OWNER WITH A WRITTEN GUARANTEE WARRANTING ALL DATA TO BE ASSEMBLED IN HARD COVER BINDERS MATERIALS, LABOUR, AND EQUIPMENT FOR ONE (1) FULL YEAR - IDENTIFY FRONT COVER WITH PROJECT NAME & PROJECT FROM DATE OF ACCEPTANCE. LOCATION 1.3.0 WORK, PRODUCTS, AND QUALITY - LIST OF CONTRACTORS AND CONSULTANTS PROVIDE INDEX AND INDEX LABELS 1.13.0 OPERATING INSTRUCTIONS EQUIPMENT AND MATERIALS TO BE NEW AND FREE FROM DEFECTS AND HAVE DESIGN CHARACTERISTICS AS SPECIFIED. 1.13.1 NGE AND PAY FOR THE SERVICE OF FULLY QUALIFIED ALL WORK AND MATERIALS SHALL BE INSTALLED AS SHOWN AND IN PERSONNEL INCLUDING MANUFACTURER'S REPRESENTATIVES TO INSTRUCT THE OWNER IN OPERATION AND PREVENTIVE ACCORDANCE WITH THE NATIONAL BUILDING CODE AND ALL LOCAL CODES AND BUILDING REGULATIONS. MAINTENANCE OF EACH PIECE OF EQUIPMENT AND SYSTEM SUPPLIED AND INSTALLED. 1.14.0 SUPPORTS, ANCHORS, AND SLEEVES ALL EQUIPMENT SHALL BE C.S.A. APPROVED. 1.4.0 FEES AND PERMITS 1.14.1 INSTALL SUPPORTS OF STRENGTH AND RIGIDITY TO SUIT LOADING THE MECHANICAL CONTRACTOR WILL OBTAIN AND PAY FEES FOR WITHOUT UNDULY STRESSING OF BUILDING, LOCATE ADJACENT TO EQUIPMENT TO PREVENT UNDUE STRESS IN PIPING AND ALL PERMITS NECESSARY FOR COMPLETION OF THIS CONTRACT. FOUIPMENT 1.14.2 CONTRACTOR TO FURNISH ALL CERTIFICATES NECESSARY AS PROVIDE CHROME PLATED FLOOR, CEILING, AND WALL EVIDENCE THAT THE WORK CONFORMS WITH STANDARDS AND REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION. ESCUTCHEONS AS REQUIRED FOR PIPING IN FINISHED AREAS. 1.14.3 1.5.0 TESTING SEISMIC RESTRAINTS SHALL BE PROVIDED AS REQUIRED BY LOCAL CODE, WHEN LOCAL CODE HAS NO STANDARDS, SEISMIC TEST ALL EQUIPMENT AND MATERIALS WHERE REQUIRED BY THE RESTRAINTS SHALL BE PROVIDED AND INSTALLED PER SMACNA SPECIFICATIONS OR AUTHORITIES HAVING JURISDICTION TO STANDADDS DEMONSTRATE ITS PROPER OPERATION TO THE OWNER. 1.15.0 IDENTIFICATION 1.15.1 CARRY OUT ALL HYDRAULIC TESTS PRIOR TO COVERING PIPE IN THE MECHANICAL CONTRACTOR SHALL SUPPLY AND PERMANENTLY INSTALL LAMACOIDS TO PROVIDE IDENTIFICATION OF ALL INSTALLED - TEST DOMESTIC WATER PIPING AT 700 kPA (100 psi) PRESSURE EQUIPMENT, FURNACES, CONDENSING UNITS, AND THEIR SWITCHES. FOR A PERIOD OF TWO (2) HOURS WITH NO APPRECIABLE 1.15.2 PRESSURE DROF - TEST GAS PIPING AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. LETTERING. TEST LOW VELOCITY DUCTWORK FOR TIGHTNESS AND LEAKAGE. ALL 1.15.3 LEAKS SHALL BE REPAIRED BEFORE THE SYSTEM IS BALANCED. LABEL ALL VALVES LARGER THAN 25mm (1"). 1.6.0 EXCAVATION AND BACKFILLING 1.16.0 RECORD DRAWINGS 1.16.1 THE MECHANICAL CONTRACTOR SHALL DO ALL NECESSARY EXCAVATION. BACKFILL WITH SAND OR OTHER APPROVED MATERIAL TO A MINIMUM OF 300mm (12") OVER ALL PIPING OR AS NECESSARY TO PROTECT THEIR WORK AND THEN COMPACT WITH A MECHANICAL TAMPER. THE REMAINDER OF THE BACKFILL TO BE DONE BY THE MECHANICAL CONTRACTOR AS PER THE GENERAL CONTRACTOR'S REQUIREMENTS. COORDINATE ELEVATIONS AND CLEAN-UP LOCATION OF GAS, WATER, AND SEWER SERVICES AND PROVIDE 1.17.1 2.0m (79") OF SEPARATION FROM GAS, ELECTRICAL, AND TELEPHONE SERVICE BEFORE INSTALLING 1.7.0 CUTTING AND PATCHING MATERIAI S 1.18.0 BALANCING THE MECHANICAL CONTRACTOR SHALL CONFER WITH THE GENERAL 1.18.1 CONTRACTOR IN REGARDS TO THIS WORK AND SHALL GIVE LOCATIONS FOR ALL HOLES FOR PIPE AND DUCTS ETC., AND PROVIDE SLEEVES 200mm (8") DIAMETER AND SMALLER AS REQUIRED TO EXECUTE THE MECHANICAL INSTALLATION. 1.8.0 FLASHING AND COUNTERFLASHING ALL MECHANICAL WORK PASSING THROUGH THE ROOF SHALL BE 1.18.2 FLASHED BY THE MECHANICAL CONTRACTOR. COUNTERFLASHING TO BE DONE BY THE ROOFING CONTRACTOR. EQUIPMENT VOLUMES TO WITHIN 5% OF DESIGNED VALUES. 1.9.0 APPROVALS 1.18.3 REQUEST FOR APPROVAL OF EQUIVALENT EQUIPMENT FROM COPIES OF THE REPORT CONTAINING THE FOLLOWING: MANUFACTURERS NOT SPECIFIED ON DRAWINGS SHALL BE MADE IN WRITING SEVEN DAYS PRIOR TO TENDER CLOSING. 1.10.0 SHOP DRAWINGS DIFFUSERS. PRIOR TO THE FABRICATION OF ANY MATERIALS AND EQUIPMENT. - SKETCH LAYOUT OF DUCT SYSTEMS SHOWING DETAIL OF SUBMIT A MINIMUM OF SEVEN(7) COMPLETE SETS OF SHOP BALANCE. DRAWINGS AND DATA SHEET COVERING ALL ITEMS OF MECHANICAL 1.19.0 GAS EQUIPMENT UNDER THIS CONTRACT FOR REVIEW BY THE ENGINEER. 1.19.1 1.11.0 ELECTRIC MOTORS AND WIRING SUPPLY ALL MECHANICAL EQUIPMENT WITH ELECTRIC MOTORS AS THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO SUPPLY

1.11.3

MECHANICAL SPECIFICATIONS

1.1.1

1.1.2

INVOLVED.

1.1.3

1.1.4

1.2.1

1.3.1

1.3.2

1.3.3

1.4.1

1.4.2

1.5.1

1.5.2

1.5.3

1.6.1

1.7.1

1.8.1

1.9.1

1.10.1

1.11.1

REQUIRED.

ALL MOTOR STARTERS AND DISCONNECT SWITCHES FOR ALL

STARTERS AND FROM STARTERS TO MOTORS, EXCEPT WHERE

PRE-WIRED IN PACKAGED EQUIPMENT.

1.11.2

IDENTIFY ALL PIPING BY MEANS OF COLORED, SELF-ADHESIVE LABELS AND DIRECTIONAL ARROWS USING 19mm (3/4") HIGH THE MECHANICAL CONTRACTOR SHALL KEEP ON SITE EXTRA SETS OF PRINTS AND SPECIFICATIONS ON WHICH ALL CHANGES AND DEVIATIONS FROM THE ORIGINAL DESIGN SHALL BE RECORDED DAILY. THESE CHANGES MUST BE NEATLY ADDED TO A CLEAN SET OF DRAWINGS AND GIVEN TO THE OWNERS MARKED "AS-BUILT". PIPING, FIXTURES, DUCTS, AND EQUIPMENT SHALL BE THOROUGHLY CLEANED OF DIRT, GREASE, ADHESIVE LABELS, AND FOREIGN BALANCING OF ALL VENTILATION SYSTEMS AS INDICATED SHALL BE DONE BY THE MECHANICAL CONTRACTOR WHEN ALL EQUIPMENT IS OPERATING UNDER FULL LOAD. THE CONTRACTOR SHALL ALLOW SUFFICIENT FUNDS TO CHANGE THE PULLEYS ON MOTORS OR FANS TO PROPERLY BALANCE THE SYSTEM AT THE LOWEST FAN BALANCING CONTRACTOR SHALL BALANCE ALL AIR OUTLETS AND BALANCING CONTRACTOR SHALL SUBMIT FOR REVIEW THREE (3) 3.1.1 SUPPLY AND RETURN AIR VOLUMES, SUCTION, DISCHARGE AIR PRESSURE, RPM, AND AMPS OF ALL SUPPLY AND EXHAUST FANS. SUPPLY AND RETURN AIR VOLUMES OF ALL GRILLES AND

MECHANICAL CONTRACTOR SHALL INSTALL GAS SERVICE FROM EXISTING UPGRADED BUILDING GAS SERVICE TO ALL GAS FIRED EQUIPMENT COMPLETE WITH ALUMINIZED PAINT COATING ON PIPE WHERE EXPOSED TO OUTDOORS. LINES CONCEALED SHALL BE BRAZED SEAMLESS COPPER K OR L (UP TO 32mm OR 11) OF WELDED STEEL. 1.19.2

MOTORS FOR THIS PROJECT AND INSTALL LINE VOLTAGE WIRING TO ALL GAS PIPING FITTINGS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH CSA STANDARD B-149 INSTALLATION CODE. 1.19.3

CONTRACTOR TO COORDINATE UPGRADE OF EXISTING GAS SERVICE NECESSARY WITH OWNERS AND GAS UTILITY IF REQUIRED.

2.0 PLUMBING

2.1.0 GENERAL

2.1.1 PROVIDE COMPLETE DOMESTIC WATER, DRAINAGE, AND VENT PIPING SERVING ALL NEW PLUMBING FIXTURES. ALL WATER AND SEWER PIPING SHALL EXTEND TO THE EXISTING BUILDING SERVICES. ENSURE THAT SEWER SERVICES ARE RUN WITH SUFFICIENT SLOPE FOR DRAINAGE

2.1.2 PROVIDE MANUFACTURED SHOCK ABSORBERS ANCON MODEL SG OR AIR CHAMBERS TO PREVENT WATER HAMMER INSTALL ON ALL HOT AND COLD WATER SUPPLIES TO EACH FIXTURE OR EACH GROUP OF FIXTURES. AIR CHAMBERS SHALL BE A MINIMUM OF 19mm (3/4") DIAMETER AND 450mm (18") LONG. 2.1.3

INSTALL OVERSIZED CLAMPS AND 13mm (1/2") "ARMAFLEX" FOAM RUBBER INSULATION, 75mm (3") LONG AROUND EACH PLUMBING DRAINAGE STACK AND EACH DOMESTIC WATER PIPE AT EACH POINT THROUGH WOODEN STRUCTURE. SUPPORT

2.1.4 PROVIDE VACUUM BREAKERS ON LINES SERVING EQUIPMENT OR FIXTURES WHERE CONTAMINATION OF DOMESTIC WATER MAY OCCUR. 2.1.5

INSTALL WATTS SERIES 900 BACKFLOW PREVENTER OR APPROVED EQUAL ON ALL POTABLE WATER WHERE BACKFLOW AND CROSS CONNECTION MAY OCCUR.

2.1.6 INSTALL AUTOMATIC TRAP SEAL PRIMERS ANCON MS-810 COMPLETE WITH INTEGRAL VACUUM BREAKER FOR FLOOR DRAINS AS REQUIRED BY PLUMBING CODE OR PLUMBING INSPECTOR 2.1.7

PROVIDE ALL VALVES AS SHOWN ON THE DRAWINGS OR AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. INSTALL ISOLATION VALVES AT ALL CONNECTIONS TO EQUIPMENT. AND IN ALL BRANCHES, FIXTURES, OR GROUPS OF FIXTURES 2.1.8

ISOLATE EACH PLUMBING FIXTURE WITH SHUT-OFF VALVES, USE QUICK OPENING "HENDERSON NEWMAN SUPERBALL" VALVES FOR WATER AND GAS. 2.1.9

PLUMBING FIXTURES SHALL BE AS SPECIFIED, OR APPROVED EQUAL. ON DRAWING M6.2.

2.1.10 STERILIZE WATER SERVICE WITH CHLORIDE AS PER CITY AND PROVINCIAL PLUMBING CODE STANDARDS, PROVIDE A WRITTEN REPORT. FLUSH SYSTEM AND HAVE BACTERIOLOGICAL TESTS COMPLETED AT A RECOGNIZED CERTIFIED LABORATORY. 2.2.0 PIPE AND FITTINGS 2.2.1

ALL PIPING SHALL MEET THE REQUIREMENTS OF THE PROVINCIAL PLUMBING CODE AND NATIONAL BUILDING CODE. 2.2.2

DOMESTIC WATER ABOVE GROUND: TYPE K OR TYPE L. HARD COPPER, 95/5 SOLDER JOINTS, WROUGHT COPPER OR BRONZE FITTINGS. OVER 75mm (3"): GALVANIZED STEEL, SCREWED JOINTS. PVC PIPING AND AQUA PEX IS ALSO ACCEPTABLE. 2.2.3

DOMESTIC WATER BELOW GRADE: TYPE K SOFT COPPER, FLARED JOINTS. OVER 50mm (2"): CAST IRON PIPE, CAST IRON FITTINGS MECHANICAL JOINTS. HDPE AND PVC PIPING IS ALSO ACCEPTABLE. 2.2.4

WASTE AND VENT PIPING ABOVE GROUND: TYPE DWV OR HARD DRAWN DRAINAGE TUBE, CAST BRASS FITTINGS, 50/50 SOLDER JOINTS. CAST IRON SOIL PIPE AND FITTINGS, MECHANICAL JOINTS. PVC AND ABS PIPING IS ACCEPTABLE. 2.2.5

WASTE AND VENT PIPING BELOW GRADE: 150mm (6") AND SMALLER, CAST IRON PIPE, CAST IRON FITTINGS, MECHANICAL IOINTS. PVC AND ABS PIPING ACCEPTABLE. 2.3.0 VALVES

2.3.1

VALVES ON HOT AND COLD WATER PIPING SHALL BE AS FOLLOWS:

- GATE VALVES 50mm (2") AND SMALLER: CRANE No. 1320C

GATE VALVES 65mm (22") AND LARGER: CRANE No. 465 1/2C

- GLOBE VALVES 50mm (2") AND SMALLER: CRANE No. 1310 - GLOBE VALVES 65mm (247) AND LARGER: CRANE No. 351
- CHECK VALVES 50mm (2") AND SMALLER: CRANE No. 1342
- CHECK VALVES 65mm (22") AND LARGER: CRANE No. 373
- BALL VALVES 6mm (1/4") THRU 50mm (2"): GRINNELL FIG.

3.0 HEATING/VENTILATION

3.1.0 GENERAL

DUCTWORK SHALL BE GALVANIZED STEEL AND LOCK FORMING QUALITY. ALL DUCTWORK SHALL BE CONSTRUCTED BRACED. CONNECTED, JOINTED, AND INSTALLED IN ACCORDANCE WITH THE LATEST ISSUE OF ASHRAE GUIDE AND DUCT CONSTRUCTION STANDARDS ISSUED BY SMACNA, NFPA 90 AND 90A, PROVINCIAL CODE, AND LOCAL REGULATIONS. INSTALL ALL SUPPLY, RETURN, AND EXHAUST DUCTS COMPLETE WITH GRILLES AND DIFFUSERS AS SHOWN ON THE DRAWINGS. 3.1.2

FIRE DAMPERS AND FIRE STOPS SHALL BE ULC LABELED. INSTALL WHERE SHOWN AND/OR REQUIRED BY AUTHORITIES HAVING JURISDICTION. PROVIDE ACCESS FOR SERVICING AND INSPECTION. FIRE DAMPERS SHALL BE TYPE 'B' WITH DAMPER BLADES FULLY CLEAR OF THE AIR STREAM. SEAL WITH DOW CORNING RTV SILICONE FOAM 3.1.3

BALANCING DAMPERS SHALL BE INSTALLED IN ALL BRANCHES AS REQUIRED

ALL EQUIPMENT SHALL BE AS SPECIFIED ON DRAWING M6.1 OR APPROVED EQUAL.

3.1.5 ALL EXPOSED DUCTWORK TO BE SPIRAL ROUND.

3.1.6

PROVIDE SHEET METAL FIRE STOPS TIGHT AROUND DUCTS PASSING 4.1.3 THROUGH FIRE SEPARATIONS AND CEILINGS. 3.1.7

ALL DUCTWORK SHALL BE GALVANIZED STEEL: 28 GAUGE FOR UP TO 305mm (12") WIDE OR 205mm (8") DIAMETER, 24 GAUGE FOR 330mm (13") TO 760mm (30") WIDE OR 230mm (9") TO 760mm (30") DIAMETER. ALL FITTINGS TO MEET SMACNA DESIGN STANDARDS. 3.1.8

PROVIDE FLEX CONNECTIONS, 6mm (1/4") DURODYNE CONFLEX PCV COATED POLYESTER AT INLET AND OUTLETS OF MAKE-UP AIR UNITS AND FAN UNITS EXCEPT KITCHEN CANOPY EXHAUST FANS. 4.0 INSULATION

4.1.0 GENERAL

4.1.1

ALL INSULATION AND MATERIALS ASSOCIATED WITH INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED CLASSIFICATION OF NOT MORE THAN

CONNECT F/A OUTLET TO-

4.1.2 ALL PIPING INSULATION SHALL BE FIBROUS GLASS WITH K VA MAXIMUM 0.3 W/m DEGREES CELSIUS AT 24 DEGREES CELSI WITH FACTORY APPLIED JACKET - MANSON AK PIPE INSULAT OR APPROVED EQUAL. APPLY PAINTABLE PVC JACKET ON ALL EXPOSED PIPING IN FINISHED AREAS.

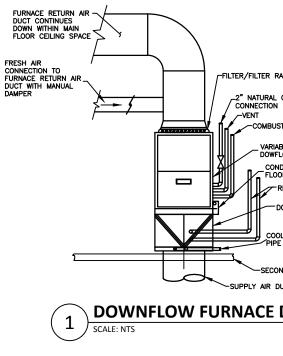
RECOVERING JACKET ON DUCTWORK SHALL BE ULC LISTED "THERMO CANVAS" TREATED COTTON FABRIC, SUITABLE FOR PAINTING. PROVIDE RECOVERING JACKET ON ALL EXPOSED INSULATION THROUGHOUT, INCLUDING EQUIPMENT ROOM. INSULATION LOCATED IN PIPE SHAFTS, AND SUSPENDED CEIL SPACES IS NOT CONSIDERED EXPOSED. ALL EXTERIOR DUCT INSULATIONS TO BE COVERED WITH STUCCO EMBOSSED ALUM

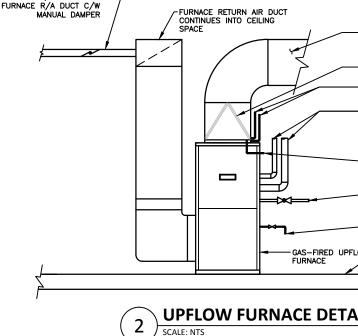
4.1.4

ENSURE INSULATION IS CONTINUOUS THROUGH INSIDE WALLS PACK AROUND PIPES WITH FIRE-PROOF, SELF SUPPORTING INSULATION MATERIALS. 4.1.5

INSULATE DUCTWORK WITH MANSON ALLEY WRAP INSULATION EQUIVALENT FACED WITH FSK FOR AN EFFECTIVE VAPOR BAR 4.1.6

LINE DUCTWORK WITH MANSON ACOUSTIC-LINER, 0.68 kg (1 Ibs.) DENSITY COATED SURFACE SHALL FACE AIR STREAM. A DUCTWORK IN SUPPLY AND RETURN AIR PLENUMS SHALL BE





1.17.0 EQUIPMENT AND MATERIALS

INSULATED. DUCT SIZES SHOWN ARE CLEAR INSIDE. ALUE 4.1.7 INSULATION SCHEDULE: IUS COLD WATER LINES – 13mm (1/2"); SUPPLY AND RETURN AIR PLENUMS OF FURNACE UNITS – INTERNAL – 25mm (1"). 5.0 FIRE PROTECTION 5.1.0 GENERAL 5.1.1 FIRE EXTINGUISHERS FIRE EXTINGUISHERS: CONTRACTOR TO PROVIDE PORTABLE FIRE EXTINGUISHERS AS PER PLAN, IN ACCORDANCE WITH NFPA #10. 5.1.2 FIRE SUPPRESSION SYSTEM PROVIDE ANSUL DRY CHEMICAL FIRE SUPPRESSION SYSTEM AS SPECIFIED SUPPLIED AND INSTALLED AS PER NFPA #96. 6.0 CONTROLS 6.1.0 GENERAL	Carcoana, Principal ARCHITECTURE LTD. Lawrence N. Carcoana, Principal SAA AAA, MAA, ALA NCARB 1457 ALBERT STREEF, REIONS SASSATCHEWANN SR 2008 TE 305 S50 S11 AX 302 S73 PAR
 6.1.1 ALL THERMOSTATS, THERMOMETERS, AND CONTROLLERS SHALL BE RATED IN CELSIUS DEGREES. ALL THERMOSTATS AND CONTROLS SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR AND OR INSTALLED BY THE MECHANICAL CONTROLS SUB-CONTRACTOR. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR POWER 5 TO MECHANICAL EQUIPMENT BY THE ELECTRICAL CONTRACTOR. 	McGinn Engineering Ltd. A DIVISION OF McGINN GROUP 1457 ALBERT STREET, REGINA, SASKATCHEWAW SAR 2R8 TEL 306 565 0411 FAX 306 757 9471 mcginn@mcgingroup.ca www.mcgingroup.ca
ACK	FARM INDIAN HEAD, SASKATCHEWAN MCGINN ENGINEERING LTD. ASSOCIATION OF PROFESSIONAL ENGINEERS OF SASKATCHEWAN CERTIFICATE OF AUTHORIZATION MCGIN ENGINEERING ITD. NB: 124 Permission to consult heid by:
STION AIR INTAKE BLE SPEED, HIGH EFFICIENCY, LOW, GAS-FIRED FURNACE DENSATE DRAIN TRAP PIPE TO OR DRAIN REFRIGERANT LINES DOWNFLOW CASED COOLING COIL	DISCIPLINE SASK. REG. No. SIGNATURE
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	Revisions:
FURNACE SUPPLY AIR DUCT CONTINUES IN CEILING SPACE UPFLOW EVAPORATOR COIL REFRIGERANT PIPING OUT TO CONDENSING UNIT ON GRADE FURNACE VENT/COMBUSTION AIR INTAKE UP TO 2-PIPE VENT OUT THRU ROOF COMPLETE WITH CLOSE COUPLE KIT AND VERTICAL TERMINATION KIT EVAPORATOR COIL DRAIN, PIPE TO EVAPORATOR COIL DRAIN PIPE TO	MECHANICAL SPECIFICATIONS AND DETAILS
MECHANICAL ROOM FLOOR DRAIN 	Designed By: DJT Scale: AS NOTED Drawn By: SMH Date: DEC 2014 Checked By: GAS Date: 2014.12.19 Project No: 4748 Revision No: Date: Issued For: Date:
. <u>IL</u>	Date Issued: - Date Plotted:

ELECTRICAL SPECIFICATION

The contract shall include the furnishing of

labor, new material, equipment and services

Scope of electrical engineering work:

1. Renovations to existing building.

Provide responsible professional engineer a PDF

is made, present to Engineer a Certificate of

Approval for all electrical work from the

inspection department having jurisdiction.

Upon completion and before final payment

professional Engineer.

copy of all electrical permits.

Electrical installation shall be in accordance Submit one set of "as-built" prints or PDF with the current edition of The Canadian documents to the engineer. Electrical Code, Provincial, Municipal and other codes, rules and regulations.

latest edition of The Canadian Electrical Code.

Panelboards, motor starters, disconnect necessary and reasonably implied and/or switches, etc., shall be properly identified by

incidental to the complete installation of the means of engraved lamacoid nameplates. electrical work as shown on the plans and or

and mechanical equipment. Unless otherwise wire size shall be # 12 AWG. specified and/or shown on the drawings, supply and install the following motor control equipment:

Manual motor starters.

authorities all necessary permits and pay all fees. 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 circuit breakers shall be 22KA S.C.I.C. starters.

Contactors.

Electrical work shall be completed in conformance with, and subject to, all cautionary relays. Pilot lights for all starters, switches and above finished floor unless otherwise noted on notes available to the reader including those available on the websites of the manufacturers pushbutton stations. and consultants.

Mechanical and electrical contractors are Electrical installation including electrical responsible for the mutual coordination of all grade 15A, 125VAC, parallel slot, U-ground, equipment supplied, installed or connected shall electrical requirements of mechanical equipment white, side and back wiring. Mount receptacles be tested in the presence of the Owner on Coordination is to include the communication of 450mm above finished floor or 150mm above or approved equal. Thermostats to be calibrated

and ascertain that all work indicated can be control information as well as any ancillary

satisfactory operation of all work and apparatus occur prior to the ordering of equipment by included and installed under this section of the either trade. No extra compensation will be separate and independent conduit system. Empty reason, no substitutes from the same supplier specification for a period of twelve (12) calendar allowed due to failure to carry out this conduits shall be complete with a #12 AWG pull will be reviewed. months after the final acceptance of the coordination. Report at once to the consultant wire. Install as shown on drawings. Complete complete building.

The Electrical Contractor shall be responsible

examine all drawings and specifications relating otherwise noted on the drawings. Conduits shall to the work to be certain that the work under not be exposed in any area where concealed or floors required for the addition or relocation luminaires (to be complete with lamps) as this contract can be satisfactorily carried out work is required without prior written approval. and prior to the submission of his tender, report at once to the Consultant any defect, discrepancy, omission or interference affecting galvanized pressed steel of size and type to suit Existing Work: the work of this section or the guarantee of the requirements of each outlet. Outlet boxes same

mechanical contractor to the electrical drawings. The Electrical Contractor shall visit the site contractor, the communication of the detailed carried out without additional cost to the Owner. information required for the final systems to and switches on concealed conduit system shall operate as intended by the responsible be stainless steel. The Electrical Contractor shall guarantee the professional engineer. The coordination is to

> any defect, discrepancy, omission or interference entire installation to local telephone utility affecting the satisfactory completion of work.

for any damage caused the Owners or their Conduits shall be electric metallic contractors by improperly carrying out this unless otherwise noted on drawings or unless panelboards, telephone cabinets and other completed C-1 form (form available from contract. Contract chall be rigid contact with earth or in concrete shall be rigid boards, c/w grey enamel finish. The Electrical Contractor shall carefully PVC. Conduits shall be concealed unless

> Outlet, junction and switch boxes shall be shall be accessible.

All wiring shall be in conduit, except that building and allow for such items that may occur identifying the specific purpose. armoured cable may be used in stud partitions in his tendered price. and for drops to recessed luminaires (max. 4

Grounding shall be in accordance with the luminaires per drop). Armoured cable drops (including any daisy chain) shall not exceed 9m supply utility of all load increases to existing equipment to be flexible. Obtain and refer to service. in total length.

Wire and cable shall be copper of standard AWG sizes with 600V (90 Degree C) insulation. Awg sizes with boov (so boy to by the unless requirements, may be reased. An equiver insulation shall be X-Link Polyethylene unless be reused must be approved by the local specified. Supply and install all devices required Supply and install all motor controls unless otherwise noted on drawings or prohibited by inspection department and the engineer. the complete satisfaction of the responsible Mechanical drawings for exact location of motors accepted, unless otherwise indicated. Minimum

custom made of size, type and arrangement as Magnetic motor starters which are not part shown on drawing. Circuit breakers shall be Lumacell. Prepare and submit to the proper of package equipment. Refer to Mechanical bolt-in, moulded-case, thermal and magnetic

trip. Trip values as shown on drawing. Two or outlets at no additional charge if requested prior nameplate characteristics prior to rough—in. three pole breakers shall have common trip to rough—in. The electrical contractor shall relocate nameplate characteristics prior to rough—in. three pole breakers shall have common trip to roughing in. The electrical contractor shall units. Mount a typewritten directory behind a plastic shield on the inside of panelboard doors. All distribution equipment to be sprinkler-proof requested by the local authority having installation of all communication wiring, unless and c/w lockable door. Minimum fault rating of

Wall-mounted flush switches shall be the latest edition of the National Building Code Time clocks, time switches and photoelectric specification grade 15A,125VAC. White handle, of Canada. side or back wiring. Mount switches 1200mm

the drawings.

Duplex receptacles shall be specification all final electrical nameplate information from the counter tops unless otherwise noted on the in degrees Celsius.

Cover plates for flush-mounted receptacles specified. Requests for equal status shall be

Telephone raceway system shall be in considered from each supplier. If rejected for any requirements and satisfaction.

Any cutting and patching in existing walls of electrical equipment shall be the responsibility indicated. All luminaires exceeding 150V shall be of the Electrical Contractor.

The Electrical Contractor shall take into ballast(s). All luminaires exceeding 150V shall be account items which he is responsible for due to marked in a conspicuous, legible, and permanent the changes and alterations to the existing manner adjacent to the disconnecting means

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ELECTRICAL -SPECIFICATIONS

Refer to Canadian Electrical Code rule 30-308(4).

The Electrical Contractor is to notify the

Electrical installation shall in conformance

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

Equipment and material shall be installed as submitted to Engineer 7 days prior to tender submission. No requests will be accepted past the 7 day deadline. Only one request will be

Electrical contractor shall submit shop drawings to Engineer for review prior to ordering equipment. At the request of the engineer, the

Supply and install, wire and connect all complete with an integral disconnecting means that will simultaneously open all circuit conductors and conductors supplying the

Final connection to all mechanical mechanical shop drawings of mechanical equipment for circuit breaker and wire size. Existing conduits, wire and outlets which are Adjust circuit breaker and wire size without in good repair and sized to meet all code 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 Provide code conforming emergency lighting equipment complete with cord and cap. Refer and exit system. Min. wire size for this system to equipment name plate rating for electrical Panelboards shall be factory-assembled as per manufacturers recommendations. characteristics prior to rough-in. All owners Acceptable manufacturers include: Aimlite, equipment which is non-portable, shall be directly connected via cab tyre cord matching electrical characteristics as determined by The electrical contractor shall relocate nameplate ratings of equipment. Confirm

otherwise noted.



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NUMBER 752 PERMISSION TO CONSULT HELD BY: DISCIPLINE SASK. REG. No. SIGNATURE

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EERING LTD. MISSION OF ARE BASED	SCALE AS SHOWN	JOB NUMBER 34326e		SHEET
R RELATED BILITY FOR Y ORIGINAL FACSIMILE. FOR FINAL IFICATE OF	date 2014-12-19	designed by AJT	drawn by ITS	E1.0

SYMBOL SCHEDULE

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Linear luminaire, 'B1-a' denotes panel circuit # BI and switch.

- Night light luminaire.
- Ceiling mounted luminaire.
- Wall mounted luminaire. 'A' denotes type.
- 事 Single pole switch.
- Single pole switches in multiple. 事
 - Three way switch.
- Œ Duplex receptacle.
- \bigoplus^{4} Quadplex receptacle.
- Œ Duplex receptacle mounted above counter level. (See architectural elevations.)
- **O**SC SC 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.

- ᄓ Disconnect switch to suit application. By electrical contractor.
- Motorized damper control wiring by mechanical М contractor, 120V power supply by electrical contractor.
- \otimes 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.
- C 1000 Electric heater, "C" denotes type, see electric heating schedule. "1000" denotes watts. • denotes heater c/w built in thermostat. \circ denotes heater controlled by remote thermostat. Provide low voltage relays if required. Refer to mechanical for details.
- UH-1 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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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.
- 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.

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	

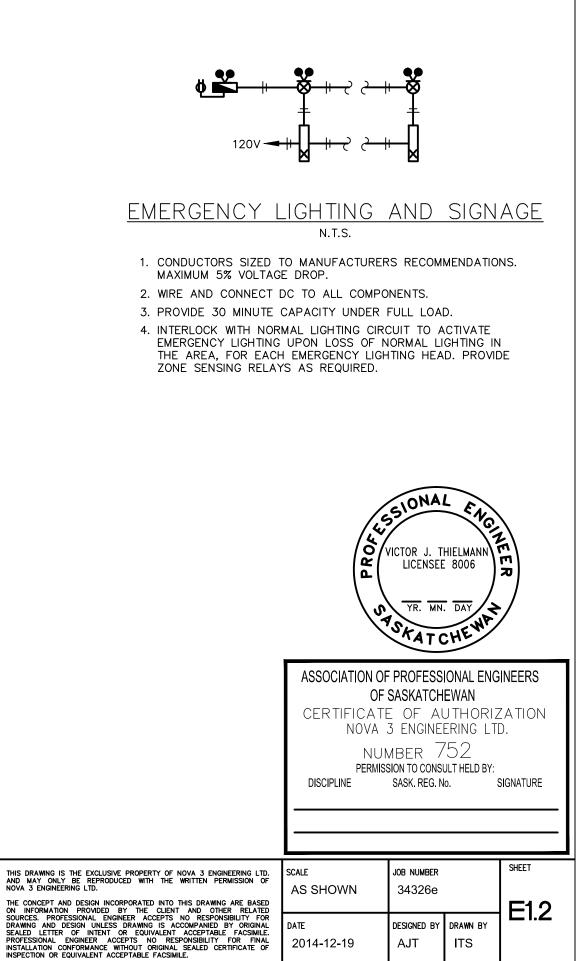
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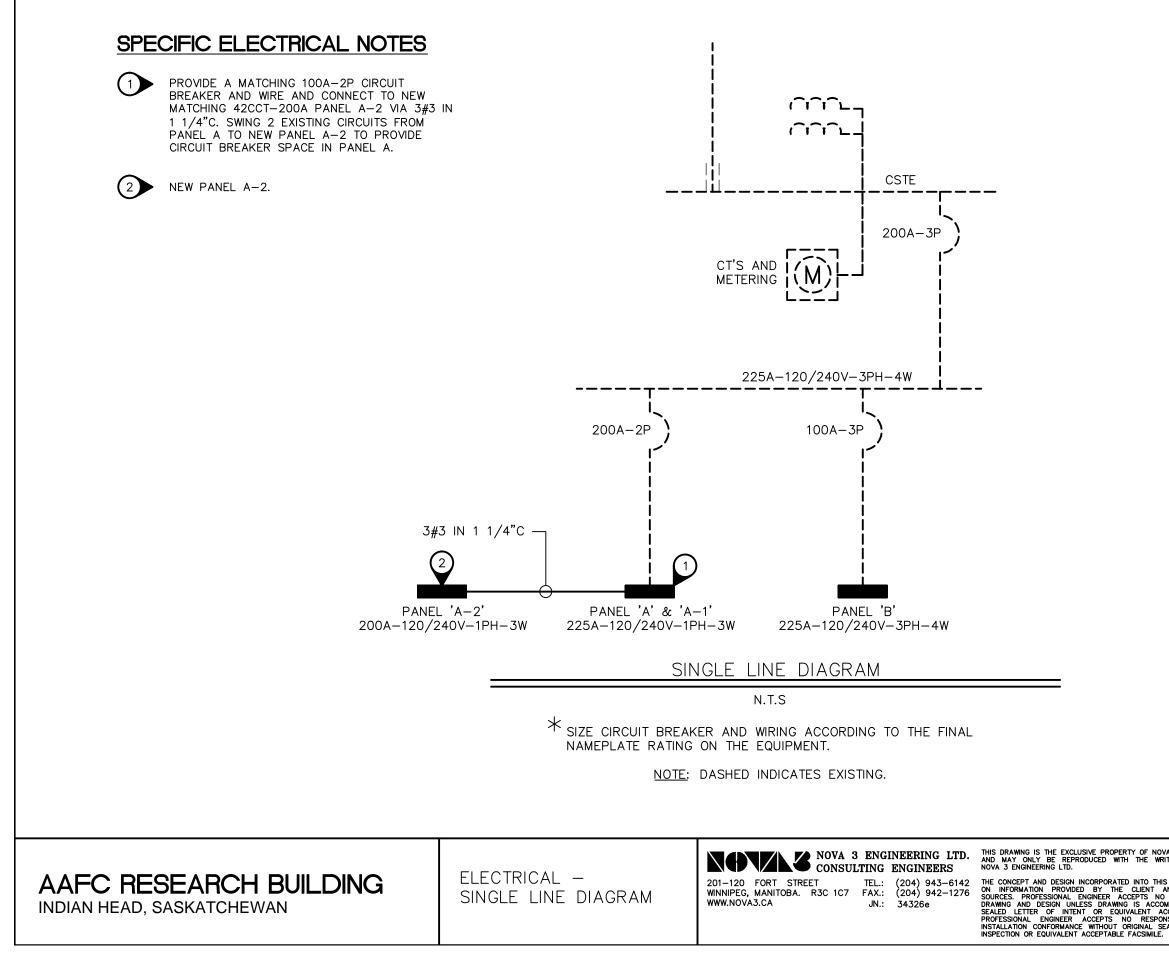
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MOTOR SCHEDULE								
NO.	DESCRIPTION	LOCATION	VOLTAGE	HP/W/MCA	C.B.	COND.	STARTER	NOTES
F1	GAS FURNACE	MECH. ROOM	120V-1PH	1/3HP	15A–1P	<i>#</i> 12	-	1
F2	GAS FURNACE	MECH. ROOM	120V-1PH	1/3HP	15A–1P	# 12	-	1
C1	CONDENSING UNIT	GRADE	208V-3PH	18.7MCA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

TYPE	DESCRIPTION	MOUNTING	CATALOG NUMBER	LAMPS
А	2'X4' FLUORESCENT	RECESSED	LITHONIA 2GT8 3 32 A12 120 GEB10IS CSA	3-32W T8
В	1'X4' FLUORESCENT	SURFACE	LITHONIA LB 3 32 120 GEB10IS CSA	3–32W T8

1. ALL FLUORESCENT BALLAST TO BE ELECTRONIC.

2. ALL FLUORESCENT LAMPS TO BE 3500K & 85 CRI, UNLESS OTHERWISE NOTED.

3. PROVIDE PHOTOCELL CONTROL FOR ALL OUTDOOR LUMINAIRES.

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ELECTRICAL	—
SCHEDULES	

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SPECIFIC ELECTRICAL NOTES

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

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