

Public Works and  
Government Services  
Canada

Travaux publics et  
Services gouvernementaux  
Canada

REAL PROPERTY SERVICES  
Western Region  
SERVICES IMMOBILIERS  
Région de l'ouest

Building 111, Brandon Research Centre

For:  
Agriculture and Agri-Food Canada (AAFC)

2701 Grand Valley Road, Brandon, Manitoba  
R.076331.001

DATE: 8th of June 2016  
ISSUED FOR CONSTRUCTION

PRIME CONSULTANT

MECHANICAL, ELECTRICAL &  
TELECOMMUNICATIONS

HDK CONSULTING INCORPORATED  
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Winnipeg, Manitoba R3C 4J9  
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F 204.818.0388

CONSULTANTS

ARCHITECTURAL

REPUBLIC ARCHITECTURE  
374 Donald Street, First Floor,  
Winnipeg, Manitoba R3B 2J2  
T 204.989.0102  
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CIVIL

SISON BLACKBURN CONSULTING, INC.  
Unit 10 - 5 Scurfield Boulevard  
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STRUCTURAL

LAVERGNE DRAWARD  
402-138 Portage Avenue East  
Winnipeg, Manitoba R3C 0A1  
T 204.947.2222  
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DRAWING LIST

00 COVER SHEET

CIVIL

C1 CIVIL SITE SERVICING  
C2 CIVIL GRADING PLAN  
C3 CIVIL SECTIONS

ARCHITECTURAL

A1 SITE PLAN, SYMBOLS, ABBREVIATIONS, GENERAL NOTES, NATIONAL  
BUILDING CODE SUMMARY AND NOTES  
A2 ROOF PLAN AND NOTES  
A3 NEW CONSTRUCTIONS FLOOR PLAN, WALL TYPES, PLAN DETAILS &  
NOTES  
A4 EXTERIOR ELEVATIONS  
A5 BUILDING SECTIONS  
A6 WALL SECTIONS  
A7 REFLECTED CEILING PLAN  
A8 WASHROOM, LUNCHROOM AND VESTIBULE LARGE SCALE PLAN AND  
INTERIOR ELEVATIONS  
A9 DIRTY ROOM EQUIPMENT LAYOUT AND EQUIPMENT LIST  
A10 ROOM FINISH SCHEDULE, WINDOW AND DOOR TYPES, DOOR  
SCHEDULE AND DETAILS

STRUCTURAL

S01 STRUCTURAL GENERAL NOTES  
S02 STRUCTURAL FOUNDATION PLAN & SCHEDULES  
S03 STRUCTURAL ROOF FRAMING PLAN  
S04 BUILDING ELEVATIONS  
S05 SECTIONS & DETAILS

MECHANICAL

M1 MAIN FLOOR PLUMBING PLAN AND SYMBOL LEGEND  
M2 MAIN FLOOR MECHANICAL PIPING PLAN  
M3 MAIN FLOOR HVAC PLAN  
M4 DIRTY ROOM - LARGE SCALE PLAN  
M5 MECHANICAL ROOF PLAN  
M6 MECHANICAL SCHEDULES  
M7 MECHANICAL DETAILS  
M8 MECHANICAL DETAILS  
M9 MECHANICAL BUILDING ELEVATIONS & DIRTY ROOM SECTION  
M10 MECHANICAL SECTIONS

ELECTRICAL

E1 SITE PLAN, SYMBOL SCHEDULE, DETAILS AND ELECTRICAL LOAD  
E2 MAIN FLOOR POWER PLAN  
E3 MAIN FLOOR LIGHTING PLAN  
E4 MAIN FLOOR SERVICE AREA LIFE SAFETY SYSTEMS PLAN (LOW  
CEILING)  
E5 MAIN FLOOR LIFE SAFETY SYSTEMS PLAN (HIGH CEILING)  
E6 FIRE ALARM RISER DIAGRAM, DETAILS AND OWNER SUPPLIED  
EQUIPMENT LIST  
E7 MECH/ELEC ROOM LAYOUT AND SINGLE LINE DIAGRAM  
E8 ELECTRICAL SCHEDULES  
E9 ELECTRICAL SCHEDULES AND DETAILS

TELECOMMUNICATIONS

T1 TELECOMMUNICATIONS SITE PLAN AND COPPER AND FIBRE  
BACKBONE SINGLE LINE DIAGRAM AND SYMBOL SCHEDULE  
T2 MAIN FLOOR TELECOMMUNICATIONS PLAN, TELECOMMUNICATIONS  
LAYOUT MECH/ELEC ROOM PLAN, SYMBOL SCHEDULE AND GENERAL  
NOTES

150 WM	WATERMAIN	150 WM
250 WWS	WASTEWATER	150 WWS
300 LDS	LAND DRAINAGE SEWER	300 LDS
○	HYDRANT ASSEMBLY	○
⊗	GATE VALVE	⊗
⊙	CURB STOP	⊙
⊘	REDUCER	⊘
⊙	MANHOLE	⊙
⊙	CATCH BASIN	⊙
⊙	CATCH PIT	⊙
⊙	SURVEY BAR	⊙
⊙	UTILITY POLE	⊙
⊙	UTILITY PEDESTAL	⊙
⊙	HYDRO	⊙
⊙	GAS	⊙
⊙	MTS	⊙
⊙	TREE LINE	⊙
⊙	CULVERT	⊙
⊙	SWALE	⊙
⊙	DIRECTION OF FLOW	⊙
⊙	GROUND ELEVATION	⊙
⊙	DITCH ELEVATION	⊙
⊙	ROAD ELEVATION	⊙
EXISTING	LEGEND	PROPOSED

DO NOT SCALE DRAWINGS

3	ISSUED FOR CONSTRUCTION	16/06/08
2	99% CONSTRUCTION DOCUMENTS	16/05/10
1	50% CONSTRUCTION DOCUMENTS	16/03/21
0	ISSUED FOR DESIGN DEVELOPMENT	16/02/08
Revision/	Description/Description	Date/Date
Client/client		

AGRICULTURE AND  
AGRI-FOOD CANADA  
(AAFC)

BRANDON, MANITOBA

Project title/Titre du projet  
**2701 GRAND VALLEY ROAD,  
BRANDON, MANITOBA**

**BUILDING 111 -  
BRANDON RESEARCH CENTRE**

Approved by/Approuvé par  
**REYNOLD CABIGTING**

Designed by/Concept par  
**JUSTIN TAPLIN**

Drawn by/Dessiné par  
**JUSTIN TAPLIN**

PWSC Project Manager/Administrateur de Projets TPSC  
**BRAD SITARZ**

PWSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'ingénierie, TPSC

Client/client

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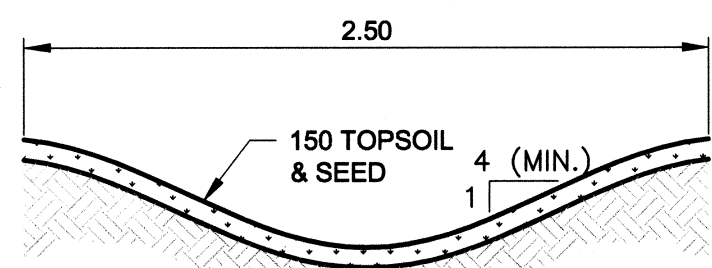
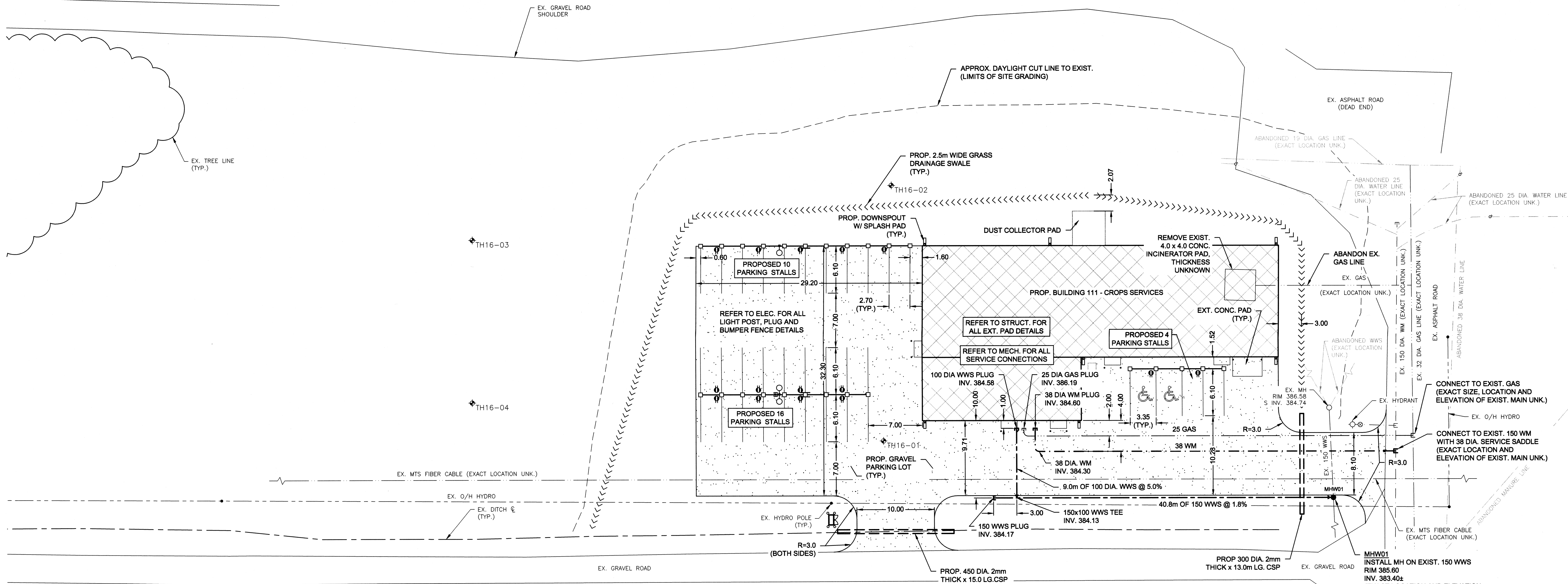
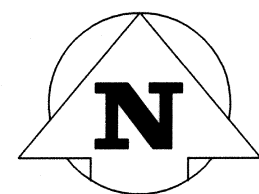
**CIVIL  
SITE SERVICING PLAN**

Project No./No. du projet  
**R.076331**

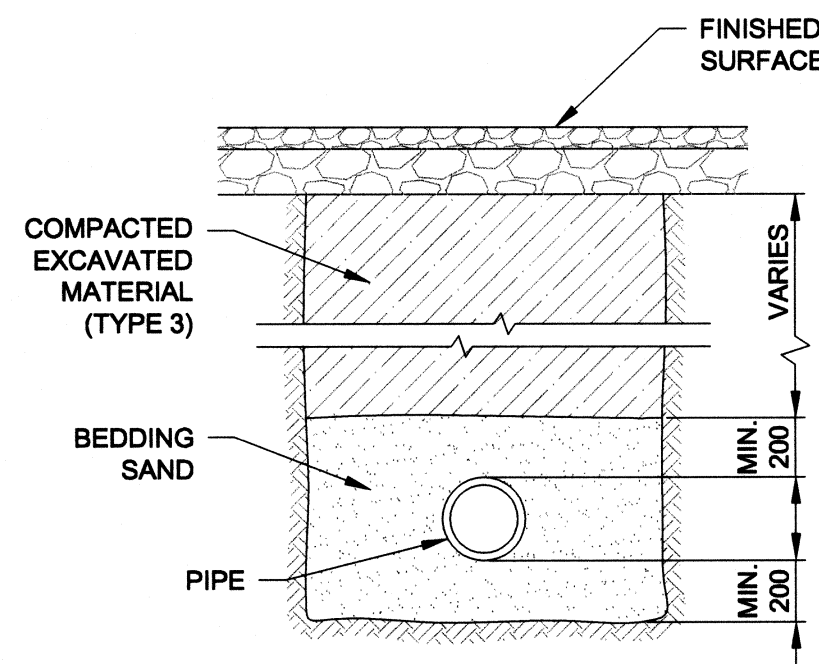
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**C1**

Revision no./  
La Révision  
no.  
**3**

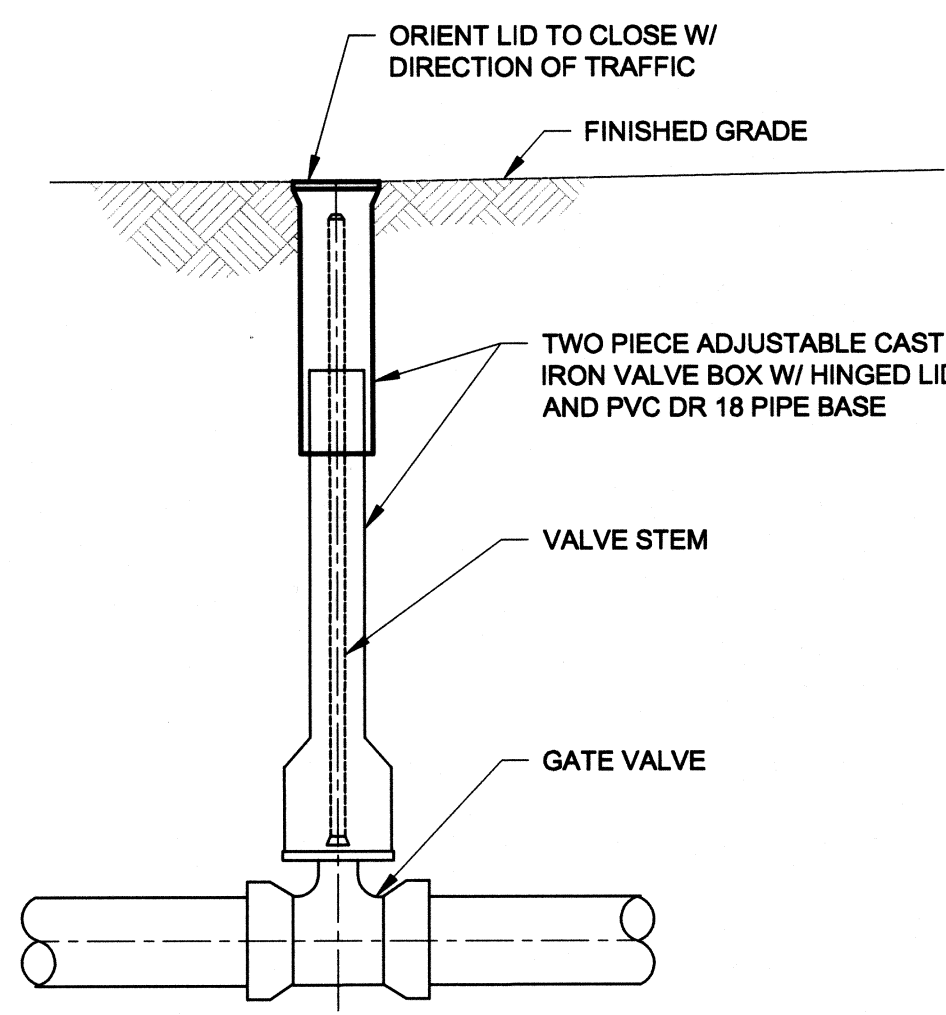
OF 3



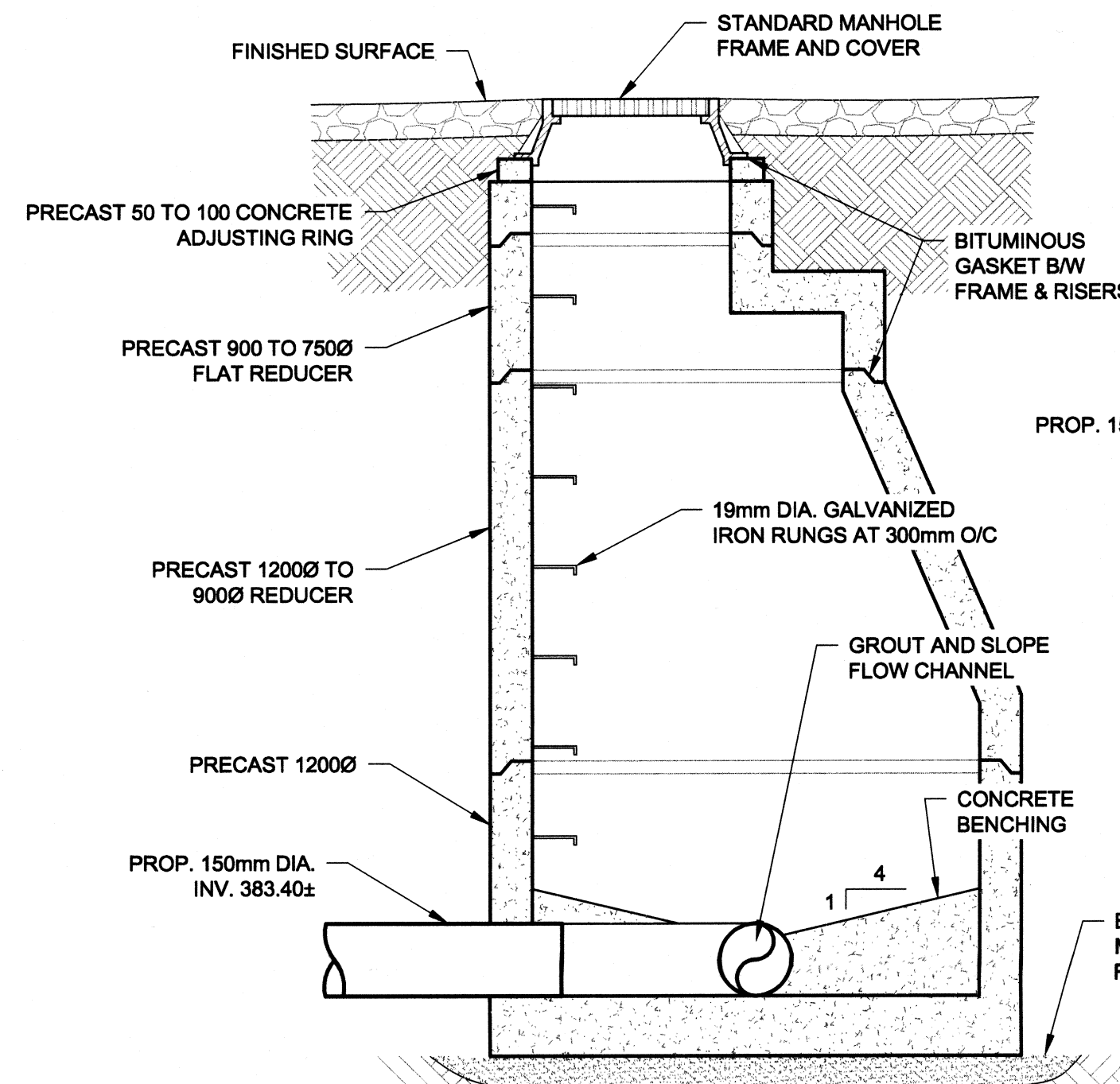
GRASS DRAINAGE SWALE TYPICAL SECTION  
N.T.S.



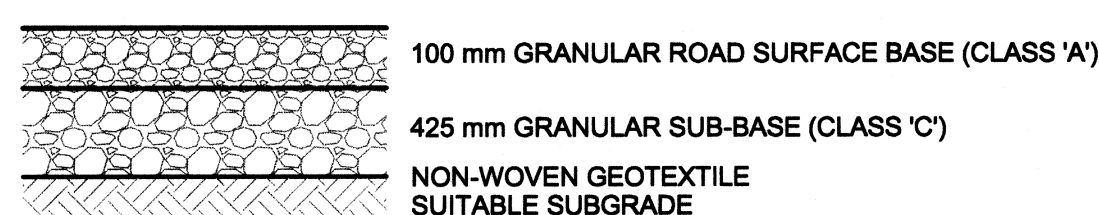
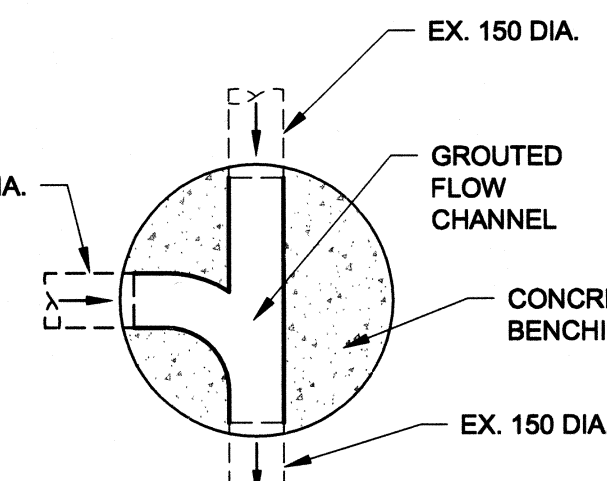
TRENCH BACKFILL DETAIL  
N.T.S.



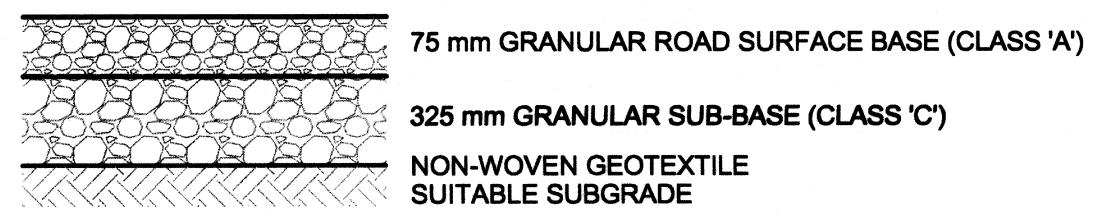
TYPICAL VALVE DETAIL  
N.T.S.



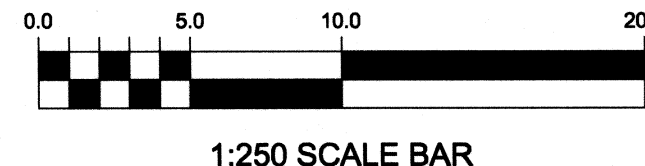
WWS MANHOLE DETAIL  
N.T.S.



GRAVEL DRIVE AISLE STRUCTURE  
N.T.S.



GRAVEL PARKING STALL STRUCTURE  
N.T.S.



1:250 SCALE BAR

EXISTING SERVICES NOTE:

REMOVE ABANDONED SERVICE LINES WITHIN 2m OF STRUCTURES. CAP OR OTHERWISE SEAL LINES AT CUT-OFF POINTS AS DIRECTED BY DEPARTMENTAL REPRESENTATIVE.

MATERIAL NOTES:

1. ALL WASTEWATER SEWER PIPE SHALL BE PVC SDR 35.
2. 150mm DIAMETER WATER PIPE SHALL BE PVC C-900. 38mm DIAMETER WATER SERVICE PIPE SHALL BE COPPER TUBING TYPE K.
3. REFER TO MECHANICAL SPECIFICATIONS FOR GAS LINE MATERIAL.

GENERAL CONSTRUCTION NOTES:

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2. LOCATIONS OF PROPERTY LIMITS AND EXISTING AND/OR PROPOSED FEATURES RELATIVE TO THESE LIMITS AS SHOWN DO NOT REPRESENT A LEGAL SURVEY. SBC INC. MAKES NO REPRESENTATION OR GUARANTEE THAT THE PROPERTY LIMIT INFORMATION SHOWN IS ACCURATE, AND ACCEPTS NO RESPONSIBILITY FOR ANY DAMAGES SUFFERED BY ANY THIRD PARTY AS A RESULT OF DECISIONS OR ACTIONS BASED ON THIS DRAWING.
3. ALL SURFACES AND ANY EXISTING UTILITIES DAMAGED OR DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO ITS ORIGINAL CONDITION OR BETTER, OR REPLACED, AT THE CONTRACTOR'S EXPENSE. DISTURBED GRASS AREAS OUTSIDE THE LIMITS OF WORK SHALL BE RESTORED WITH TOPSOIL AND SOD OR SEED AS DIRECTED BY DEPARTMENTAL REPRESENTATIVE.
4. UNUSED EXCAVATED MATERIAL SHALL BE HAULED AWAY BY THE CONTRACTOR TO A LOCAL SITE LOCATION AS DIRECTED BY THE DEPARTMENTAL REPRESENTATIVE.

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

SURVEY INFORMATION SHOWN PROVIDED BY PWSC AND DATED NOVEMBER 2015.

BENCHMARK INFORMATION			
DESCRIPTION	NORTHING	EASTING	ELEVATION
BOLT ON HYDRANT WEST OF SITE	5524690.782	429580.467	382.366
SEED PROCESSING FACILITY FLOOR LEVEL	5524702.972	429581.728	383.610

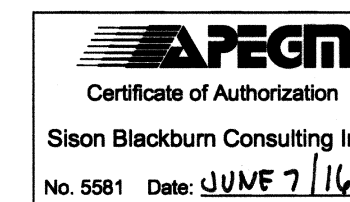
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150 WM	WATERMAIN	150 WM
250 WWS	WASTEWATER	150 WWS
300 LDS	LAND DRAINAGE SEWER	300 LDS
HYDRANT ASSEMBLY		
GATE VALVE		
CURB STOP		
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CIVIL  
GRADING PLAN

Project No./No. du projet

R.076331

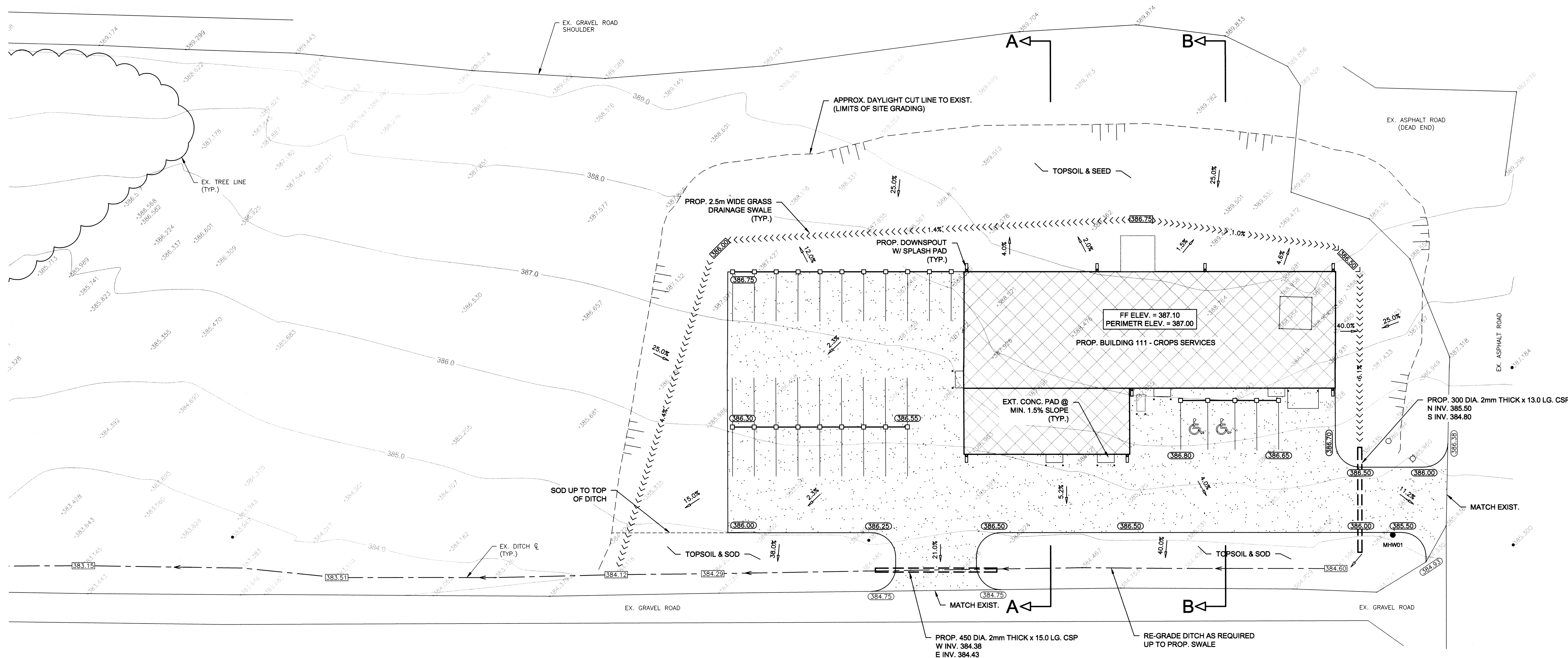
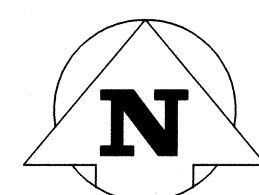
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OF 3

Revision no./  
La Révision no.

3

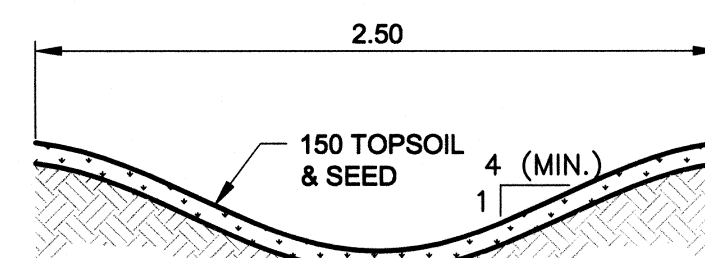


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- UNUSED EXCAVATED MATERIAL SHALL BE HAULED AWAY BY THE CONTRACTOR TO A LOCAL SITE LOCATION AS DIRECTED BY THE DEPARTMENTAL REPRESENTATIVE.

EARTH AND BASE WORK APPROXIMATE QUANTITIES SUMMARY:

- SITE EXCAVATION = 4150 m<sup>3</sup>
- SITE BACKFILL = 450 m<sup>3</sup>
- SUB-GRADE AREA FOR GEOTEXTILE = 1800 m<sup>2</sup>
- TOTAL PARKING LOT AREA = 1800 m<sup>2</sup>  
(1285 m<sup>2</sup> DRIVE AISLE / 515 m<sup>2</sup> PARKING STALL)
- TOPSOIL AND SEED AREA = 2100 m<sup>2</sup>
- TOPSOIL AND SOD AREA = 410 m<sup>2</sup>



GRASS DRAINAGE SWALE TYPICAL SECTION  
N.T.S.

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Client/client

**BRANDON, MANITOBA**

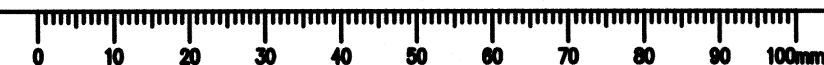
**BUILDING 111 -  
BRANDON RESEARCH CENTRE**

Client/client  
**AGRICULTURE AND AGRI-FOOD CANADA (AAFC)**

<b>R.076331</b>	<b>C3</b>	<b>1</b>
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**METRIC**  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES





ITEM

1

PROJECT INFORMATION:

NAME OF PROJECT  
BRANDON\_CROP\_SERVICES BUILDING 111

LOCATION  
BRANDON, MB

LEGAL DESCRIPTION  
NA

2

PROJECT DESCRIPTION:

NEW

ADDITION

CHANGE OF USE

ALTERATION

3

MAJOR OCCUPANCY(IES):

F2

-

-

-

-

-

MULTIPLE MAJOR OCCUPANCIES

FIRE SEPARATIONS (FS) REQUIRED: (FRR HRS.)

-

-

-

-

-

-

-

-

-

-

-

-

4

BUILDING AREA (M2)

EXISTING

-

NEW

830M2

TOTAL

830M2

FIRE WALL

REQUIRED

NOT REQUIRED

RATING AND GRID LOCATION

-

-

-

-

-

-

5

GROSS AREA (M2)

EXISTING

-

NEW

830M2

TOTAL

830M2

6

NUMBER OF STORES

ABOVE GRADE

-

BELOW GRADE

-

7

NUMBER OF STREETS/FIRE FIGHTER ACCESS

FACING:

1 STREET

2 STREETS

3 STREETS

FIREFIGHTER ACCESS

8

BUILDING CLASSIFICATION

3.2.2.76

9

SPRINKLER SYSTEM PROPOSED

ENTIRE BUILDING

BASEMENT ONLY

NOT REQUIRED

10

FIRE ALARM REQUIRED

YES

NO

EXIT SIGNAGE REQUIRED

YES

NO

11

STANDPIPE REQUIRED

YES

NO

12

PERMITTED CONSTRUCTION

COMBUSTIBLE

NON-COMBUSTIBLE

BOOTH

BOOTH

13

REQUIRED FIRE RESISTANCE RATING (FRR)

HORIZONTAL ASSEMBLIES FRR (HOURS)

FLOORS

.75

HRS

ROOF

-

HRS

MEZZANINE

.75

HRS

SUPPORTING MEMBERS FRR (HOURS)

FLOORS

.75 or NON-COMBUSTIBLE

HRS

ROOF

-

HRS

MEZZANINE

.75 or NON-COMBUSTIBLE

HRS

FIRESTOPS IN CONCEALED SPACES

CRANKSPACE

COMPARTMENT AREA

N/A

M2

MAX DIMENSION

M

ATTIC SPACE

COMPARTMENT AREA

N/A

M2

MAX DIMENSION

M

VERTICAL TRANSPORTATION

ELEVATOR SHAFT FIRE SEPARATION

N/A

HRS

ELEVATOR MACHINE ROOM FIRE SEPARATION

N/A

HRS

ELEVATOR SIZE

mm

X

mm

14

SPATIAL SEPARATION - CONSTRUCTION OF EXTERIOR WALLS

WALL	AREA OF EBF (M2)	L.D. (M)	L/H OR H/L	PERMITTED MAX. % OF OPENINGS	PROPOSED % OF OPENINGS	FRR (HOURS)	TYPE OF CONSTRUCTION REQ'D	TYPE OF CLADDING REQ'D
							COMB./NON-COMB.	NON-COMB.
NORTH	225M²	14M	3to10/L/H	36%	6%	-	■	□
SOUTH	225M²	18M	3to10/L/H	57%	5%	-	■	□
EAST	110M²	16M	3to10/L/H	73%	2%	-	■	□
WEST	110M²	29M	3to10/L/H	100%	13%	-	■	□

15

MEZZANINE(S) AREA M2

N/A

OPEN MEZZANINE (MAX 40%)

ENCLOSED MEZZANINE (MAX 10%)

INTERCONNECTED FLOOR SPACE

YES

NO

YES

NO

YES

NO

16

OCCUPANT LOAD BASED ON

M2/PERSON

DESIGN OF BUILDING

FLOOR	OCCUPANCY	LOAD	PERSONS
BASEMENT	-	0.0 M2 / (0.0 M2 / PERSON)	00
1ST FLOOR	26	0.0 M2 / (0.0 M2 / PERSON)	20 EMP + 6 GUESTS
2ND FLOOR	-	0.0 M2 / (0.0 M2 / PERSON)	00
3RD FLOOR	-	0.0 M2 / (0.0 M2 / PERSON)	00
4TH FLOOR	-	0.0 M2 / (0.0 M2 / PERSON)	00

17

EXIT AND EGRESS

20.1 CORRIDOR(S) & TRAVEL DISTANCE

CORRIDOR WIDTH (CLEAR)

1100

mm

MEZZANINE

N/A

DISTANCE TO SINGLE EGRESS DOOR

-

M

MAX TRAVEL DISTANCE

30

M

DISTANCE TO TOP OF STAIR IF >1 EGRESS

-

M

DEAD END CORRIDOR

MAX. LENGTH PERMITTED

6

M

20.2 EXIT STAIRS

N/A

STAR WIDTH

-

mm

LANDING TO LANDING, MAXIMUM RISE

-

M

LANDING WIDTH

-

mm

DOOR WIDTH

-

mm

20.3 EXIT CAPACITY

DOORS

FLOOR	# OF DOORS	DOOR WIDTH (mm)	WIDTH PER PERSON	CAPACITY OF DOORS
1	10	9000	346	-

STAIRS

N/A

# OF STAIRS

-

TREAD WIDTH

-

WIDTH PER PERSON

-

CAPACITY OF STAIRS

-

EXIT CAPACITY

-

ADEQUATE EXIT CAPACITY PROVIDED: YES/NO

YES

EXIT CAPACITY DISTRIBUTED AS REQUIRED: YES/NO

-

OTHER EXIT & EGRESS CONSIDERATIONS:

18

SAFETY IN FLOOR AREAS

21.1 COMPARTMENTALIZATION

SUITES

YES

NO

FRR REQUIRED

PUBLIC CORRIDORS

YES

NO

FRR REQUIRED

21.2 PERMITTED AREA AND TRAVEL DISTANCE SERVED BY A SINGLE MEANS OF EGRESS

OCCUPANCY (GROUP)

F2

MAX. AREA

150

M2

MAX. DISTANCE

10

M

21.1 ADDITIONAL REQUIREMENTS FOR SPECIFIC ROOMS OR SUITES

DESCRIPTION

FIRE SEPARATION REQ'D

JANITOR ROOMS

1 HR

FRR REQUIRED

MECHANICAL ROOMS

FRR REQUIRED

ELECTRICAL ROOMS

FRR REQUIRED

STORAGE ROOMS

FRR REQUIRED

OTHER:

FRR REQUIRED

22.2 OTHER GENERAL SAFETY CONSIDERATIONS

19

22.1 ADDITIONAL REQUIREMENTS FOR SPECIFIC ROOMS OR SUITES

DESCRIPTION

FIRE SEPARATION REQ'D

JANITOR ROOMS

1 HR

FRR REQUIRED

MECHANICAL ROOMS

FRR REQUIRED

ELECTRICAL ROOMS

FRR REQUIRED

STORAGE ROOMS

FRR REQUIRED

OTHER:

FRR REQUIRED

22.2 OTHER GENERAL SAFETY CONSIDERATIONS

20

HEALTH AND BARRIER-FREE DESIGN

16.1 WASHROOM REQUIREMENTS

OCCUPANCY (TYPE)

F2

# OF PEOPLE

26

WC'S REQ'D

2 + 2

LADIES

2

MENS

2

UNSEX

TOTAL

4

2

2

16.3 ENTRY LEVEL

BARRIER FREE (BF) ENTRANCES

1

# PROVIDED

POWER ASSIST DOOR OPERATORS PROVIDED

YES

NO

ELEVATOR (BARRIER FREE LIFT)

APPLICABLE/NOT APPLICABLE

BF ACCESS REQUIRED THROUGHOUT ENTRY LEVEL (NOTE EXCEPTIONS)

NB. FLOORS CONSIDERED BF ACCESSIBLE REQUIRE BF WC'S WITHIN 45M OF NON-ACCESSIBLE WC'S

21

BUILDING CODE COMPLIANCE

ALTERNATIVE SOLUTIONS PROPOSED

YES (EXPLAIN)

NO

DOCUMENTATION REFERENCE

GENERAL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF SITE MEASUREMENTS AND QUANTITIES OF MATERIALS REQUIRED.

2. PERFORM WORK IN STRICT ACCORDANCE WITH THE NATIONAL BUILDING CODE OF CANADA AND ANY OTHER CODE/ AMENDMENTS OF PROVINCIAL APPLICATION.

3. DRAWINGS MUST NOT BE SCALED.

4. IN CASE OF DOUBT, CONFLICT OR DISCREPANCIES ON THE DRAWINGS, SPECIFICATIONS, MATERIALS OR METHOD OF CONSTRUCTION, CONSULT ARCHITECT FOR CLARIFICATION IN WRITING BEFORE PROCEEDING WITH WORK.

SYMBOLS

NORTH ARROW

NEW DOOR

GRID

####

ROOM NAME, NUMBER, AREA

D####

DOOR NUMBER

#

NEW CONSTRUCTION KEY NOTE

1

AB

SECTION

1

AB

PLAN DETAIL

1a

AB

1b

1c

INTERIOR ELEVATION

CEILING HEIGHT, A.F.F.

CEILING FINISH

XX

XX

FLOOR FINISH / BASE FINISH

XX

XX

WALL FINISH

TR-X

FLOOR FINISH TRANSITION STRIP

ABBREVIATIONS

A.F.F.

ACT.

ALUM.

ARCH.

APB

BATT.

BF

BLDG.

CPT.

CLG.

CL.

COL.

C/W

CONC.

CMU

CONT.

CG.

CORR.

DEMO

DIM.

DIA.

DN.

DWG.

EA.

EL.

ELEC.

EQ.

EXIST.

EXT.

F.O.

FIN.

FR.

F.R.R.

FL.

F.H.C.

FF&E

GWB.

INT.

INSUL.

LAM.

MAX.

MECH.

MTL.

MSC.

MIN.

MW

N.B.C.C.

N.I.C.

N.T.S.

NO.

PTD.

PL.

PTN.

PREFIN.

PLWD.

REQ.

REV.

RM.

R.O.

RCP

RB

SPEC.

S.C.

STD.

S.S.

STL.

STRUCT.

SV

TBD

T.O.

T.I.

TYP.

U/S

U.L.C.

V.B.

VERT.

V.C.T.

WB.

WD.

-

ABOVE FINISHED FLOOR

ACOUSTIC CEILING TILE

ALUMINIUM

ARCHITECTURAL

ACOUSTIC PLENUM BARRIER

BATT INSULATION

BARRIER FREE

BUILDING

CARPET

CEILING

CENTRE LINE

COLUMN

COMPLETE WITH

CONCRETE

CONCRETE MASONRY UNIT

CONTINUOUS

CORNER GUARD

CORRIDOR

DEMOLITION

DIMENSION

DIAMETER

DOWN

DRAWING

EACH

ELEVATION

ELECTRICAL

EQUAL

EXISTING

EXTERIOR

FACE OF

FINISH

FRIDGE

FIRE RESISTANCE RATING

FLOOR

FIRE HOSE CABINET

FURNITURE, FIXTURES & EQUIPMENT

GYPSUM WALL BOARD

INTERIOR

INSULATION

LAMINATED

MAXIMUM

MECHANICAL

METAL

MISCELLANEOUS

MINIMUM

MICROWAVE

NATIONAL BUILDING CODE CANADA

NOT IN CONTRACT

NOT TO SCALE

NUMBER

PAINTED

PLASTIC LAMINATE

PARTITION

PREFINISHED

PLYWOOD

REQUIRED

REVISED

ROOM

ROUGH OPENING

REFLECTED CEILING PLAN

RUBBER BASE

SPECIFICATION

SOLID CORE

STAINED

STAINLESS STEEL

STEEL

STRUCTURAL

SHEET VINYL

TO BE DETERMINED

TOP OF

TENANT IMPROVEMENT

TYPICAL

UNDERSIDE

UNDERWRITER LABORATORIES OF CANADA

VAPOUR BARRIER

VERTICAL

VINYL COMPOSITE TILE

WHITE BOARD

WOOD

1

A1

1:1000

SITE KEY PLAN

SITE PLAN GENERAL NOTES:

1. REFER TO CIVIL DRAWINGS FOR PARKING STALL DIMENSIONS AND FINAL LOCATIONS.

SITE PLAN LEGEND:

EXISTING CATCH BASIN

EXISTING FIRE HYDRANT

EXISTING HYDRO POLE

NEW ACCESSIBLE PARKING STALL

SITE PLAN KEY NOTES:

1 DEMOLISH EXISTING CONCRETE PAD

2 DUST COLLECTOR SYSTEM. REFER TO MECH. DRAWINGS.

3 PARKING STALL BUMPER FENCE. REFER TO CIVIL DRAWINGS.

2

A1

1:500

SITE PLAN

876331

A1

OF A10

3

Public Works and Government Services Canada

Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES Western Region

SERVICES IMMOBILIERS Région de l'ouest

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374 Donald Street, First Floor Winnipeg, MB R3B 2J2

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PROVINCE OF MANITOBA

SHANE JOSHUA SOLOMON

REGISTERED ARCHITECT

DO NOT SCALE DRAWINGS

5

4

3

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16/06/08

2

99% CONSTRUCTION DOCUMENT

16/05/10

1

50% CONSTRUCTION DOCUMENT

16/03/23

0

ISSUED FOR DESIGN DEVELOPMENT

16/01/28

Revision/

Revision

Description/Description

Date/Date

Client/client

AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

BRANDON, MANITOBA

Project title/Titre du projet

2701 GRAND VALLEY ROAD BRANDON, MANITOBA

BUILDING 111 - BRANDON RESEARCH CENTRE

Approved by/Approuve par

EH

Designed by/Concept par

JB

Drawn by/Dessine par

JB

PWGSC Project Manager/Administrateur de Projets TPSGC

BRAD SITARZ

PWGSC Architectural and Engineering Resources Manager/ Ressources Architecturales et de Directeur d'ingénierie, TPSGC

Client/client

AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

Drawing title/Titre du dessin

SITE PLAN, SYMBOLS, ABBREVIATIONS, GENERAL NOTES, NATIONAL BUILDING CODE SUMMARY, AND NOTES

Project No./No. du projet

R.076331

Sheet/Feuille

A1

Revision no./

La Révision

no.

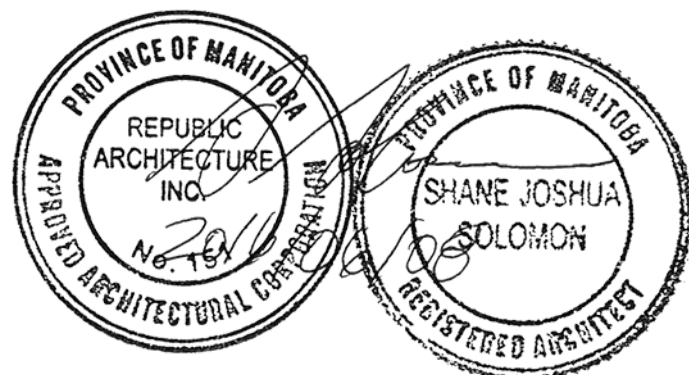
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PWGSC - B1 - 1000X707

0 10 20 30 40 50 60 70 80 90 100mm

A1 Site Plan, Symbols, Abbreviations, & Building Code





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**AGRICULTURE AND  
AGRI-FOOD CANADA  
(AAFC)**

**BRANDON, MANITOBA**

Project title/Titre du projet  
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BRANDON, MANITOBA**

**BUILDING 111 -  
BRANDON RESEARCH CENTRE**

Approved by/Approuvé par \_\_\_\_\_

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PWGSC Project Manager/Administrateur de Projets TPSGC

**BRAD SITARZ**  
PWGSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'ingénierie, TPSG

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## ROOF PLAN & NOTES

Project No./No. du projet

**R.076331**

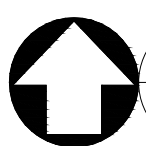
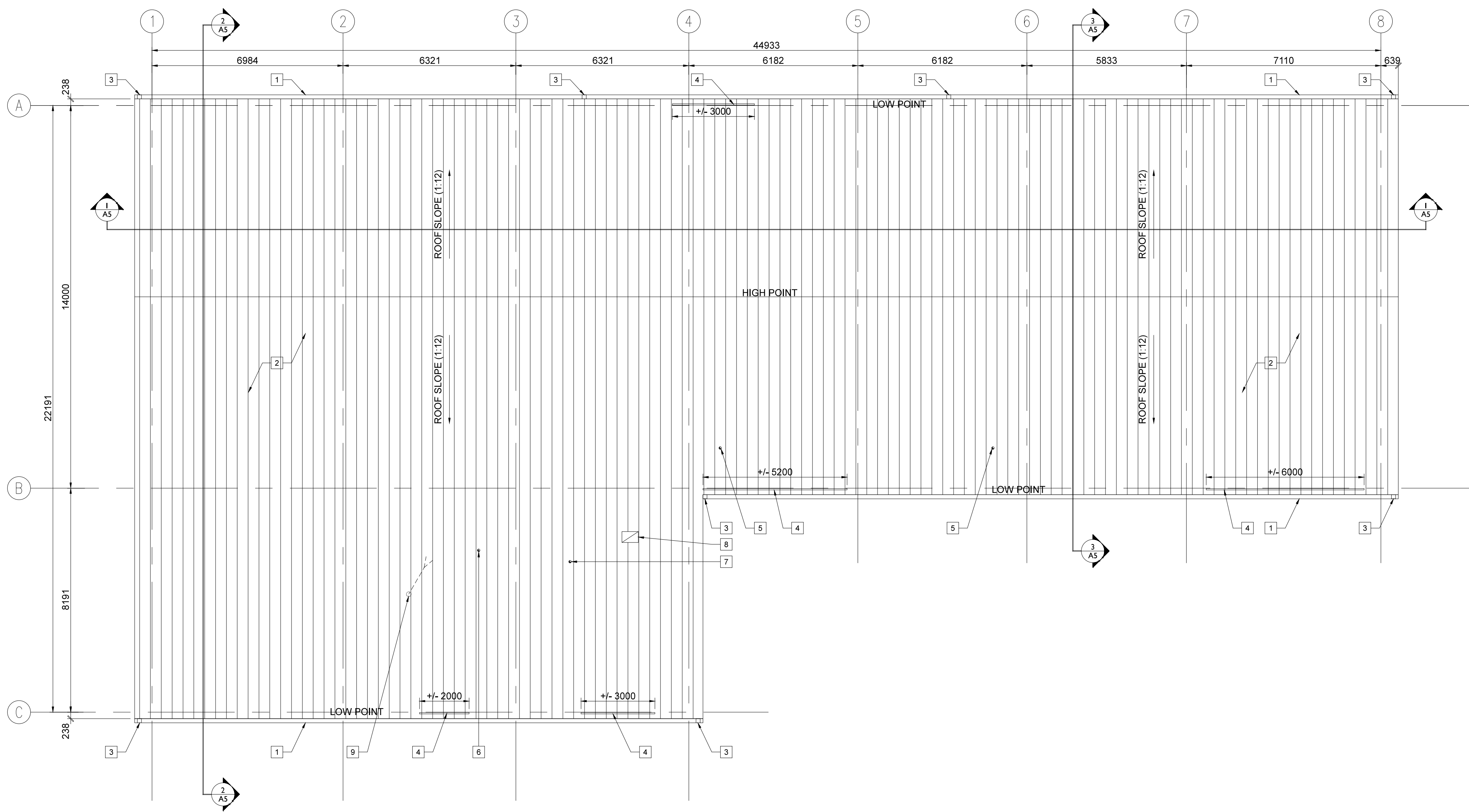
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## A2

OF A1

Revision no. \_\_\_\_\_

2



**1 ROOF PLAN**  
A2 1:100

ROOF TYPE

## ROOF TYPE (TYP.)

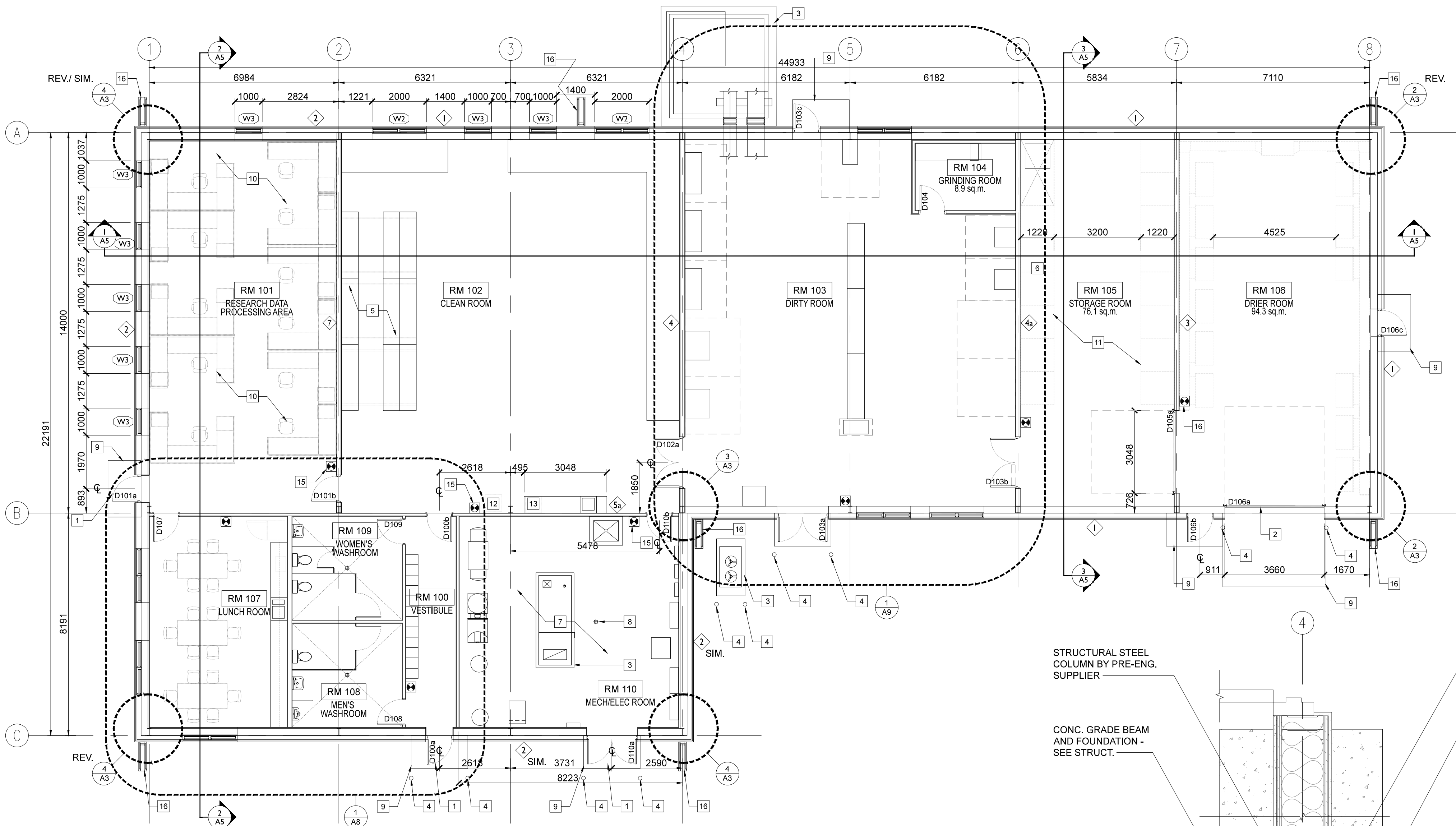
- PRE-FINISHED STANDING SEAM METAL ROOF
- Z GIRTS
- 200mm SEMI RIGID INSULATION (RSI 7.0)
- METAL LINER PANEL/VAPOUR BARRIER (CAULK & SEAL JOINTS)
- STRUCTURAL SUPPORT

## NEW CONSTRUCTION ROOF PLAN KEYNOTES

- 1 EAVES TROUGH - REFER TO SPECIFICATION MANUAL.
- 2 PRE-FINISHED STANDING SEAM METAL ROOF
- 3 GUTTER DOWNSPOUT - REFER TO SPECIFICATION MANUAL.
- 4 SNOW GUARD/PROTECTION - REFER TO SPECIFICATION MANUAL.
- 5 UNIT HEATER FLUE STACK - SEE MECHANICAL.
- 6 CENTRAL VACUUM VENT - SEE MECHANICAL.
- 7 AHU FLUE STACK - SEE MECHANICAL.
- 8 RELIEF AIR DUCT - SEE MECHANICAL.
- 9 PLUMBING VENT - SEE MECHANICAL.

NOTE: FOR ALL MECHANICAL ROOF PENETRATIONS PROVIDE STANDARD PRE-FINISHED STANDING SEAM METAL ROOF CURB/ FLASHING TO SUIT. ROOFING SUPPLIER IS TO PROVIDE ENGINEERED STAMPED DRAWINGS FOR REVIEW.





**1 NEW CONSTRUCTION FLOOR PLAN**  
A3  
1:100

**WALL TYPES**

- 1 EXTERIOR WALL ASSEMBLY (TYP.)**

  - 38mm EXTERIOR PRE-FINISHED METAL CLADDING
  - 50mm VERTICAL Z-BAR SUB-GIRTS @ 600mm O.C.
  - 50mm EXTRUDED RIGID INSULATION (RSI 1.74)
  - 150mm HORIZONTAL Z-BAR METAL GIRTS @ 600mm O.C.
  - 150mm SEMI RIGID BATT INSULATION (RSI 4.47)
  - STRUCTURAL GIRT (REFER TO STRUCTURAL)
  - PRE-FINISHED INTERIOR STEEL LINER PANEL
- 2 EXTERIOR WALL ASSEMBLY**

  - 38mm EXTERIOR PRE-FINISHED METAL CLADDING
  - 50mm VERTICAL Z-BAR SUB-GIRTS @ 600mm O.C.
  - 50mm EXTRUDED RIGID INSULATION (RSI 1.74)
  - 150mm HORIZONTAL Z-BAR METAL GIRTS @ 600 O.C.
  - 150mm SEMI RIGID BATT INSULATION (RSI 4.47)
  - STRUCTURAL GIRT (REFER TO STRUCTURAL)
  - PRE-FINISHED INTERIOR STEEL LINER PANEL
  - 41mm METAL STUDS @ 400mm O.C.
  - 15.9mm TYPE X GYPSUM WALL BOARD - PTD.
- 3 NON-INSULATED INTERIOR WALL ASSEMBLY**

  - PRE-FINISHED METAL LINER
  - 22mm METAL FURRING
  - 152mm METAL STUDS @ 400mm O.C.
  - 22mm METAL FURRING
  - PRE-FINISHED METAL LINER
- 4 INTERIOR WALL ASSEMBLY**

ASSEMBLY UP TO ELEV. 102,400

  - 12.7mm GYPSUM WALL BOARD - PTD.
  - 19mm PLYWOOD
  - 152mm METAL STUDS @ 400mm O.C.
  - 150mm BATT INSULATION
  - 19mm PLYWOOD
  - 12.7mm GYPSUM WALL BOARD - PTD. ASSEMBLY ABOVE ELEV. 102,400
  - PRE-FINISHED METAL LINER
  - 22mm METAL FURRING
  - 152mm METAL STUDS @ 400mm O.C.
  - 150mm BATT INSULATION
  - 22mm METAL FURRING
  - PRE-FINISHED METAL LINER
- 5a 1HR. FRR INTERIOR WALL ASSEMBLY**

  - SIMILAR TO WALL TYPE 5 WITH 1HR. FIRE RESISTANCE RATING INSULATION
  - APPLY FIRE SEALANT AT WALL PERIMETER AND ALL WALL OPENINGS
- 6 INTERIOR WALL ASSEMBLY (PLUMBING WALL)**

  - 15.9mm TYPE X GYPSUM WALL BOARD - PTD.
  - 152mm STEEL STUDS @ 400mm O.C.
  - 150mm BATT INSULATION
  - 15.9mm TYPE X GYPSUM WALL BOARD - PTD.
- 7 INTERIOR WALL ASSEMBLY**

ASSEMBLY UP TO ELEV. 102,400

  - 12.7mm GYPSUM WALL BOARD - PTD.
  - 19mm PLYWOOD
  - 152mm METAL STUDS @ 400mm O.C.
  - 150mm BATT INSULATION
  - 19mm PLYWOOD
  - 12.7mm GYPSUM WALL BOARD - PTD. ASSEMBLY ABOVE ELEV. 102,400
  - PRE-FINISHED METAL LINER
  - 22mm METAL FURRING
  - 152mm METAL STUDS @ 400mm O.C.
  - 150mm AFB INSULATION
  - 15.9mm TYPE X GYPSUM WALL BOARD (100mm ABOVE SUSPENDED CEILING TILES) - PTD.
- 8 INTERIOR WALL ASSEMBLY (STC 56)**

  - 2 LAYERS OF 15.9mm TYPE X GYPSUM WALL BOARD - PTD.
  - 22mm METAL FURRING
  - 92mm STEEL STUDS @ 600mm O.C.
  - 89mm BATT INSULATION
  - 2 LAYERS OF 15.9mm TYPE X GYPSUM WALL BOARD - PTD.
  - 2 STAINLESS STEEL WALL FINISH (1220mm A.F.F. WITHIN GRINDING ROOM)
- 4a INTERIOR WALL ASSEMBLY**

  - SIMILAR TO WALL TYPE 4 WITH VAPOUR BARRIER ON EAST SIDE OF WALL ON PLYWOOD SHEATHING

**GENERAL NOTES:**

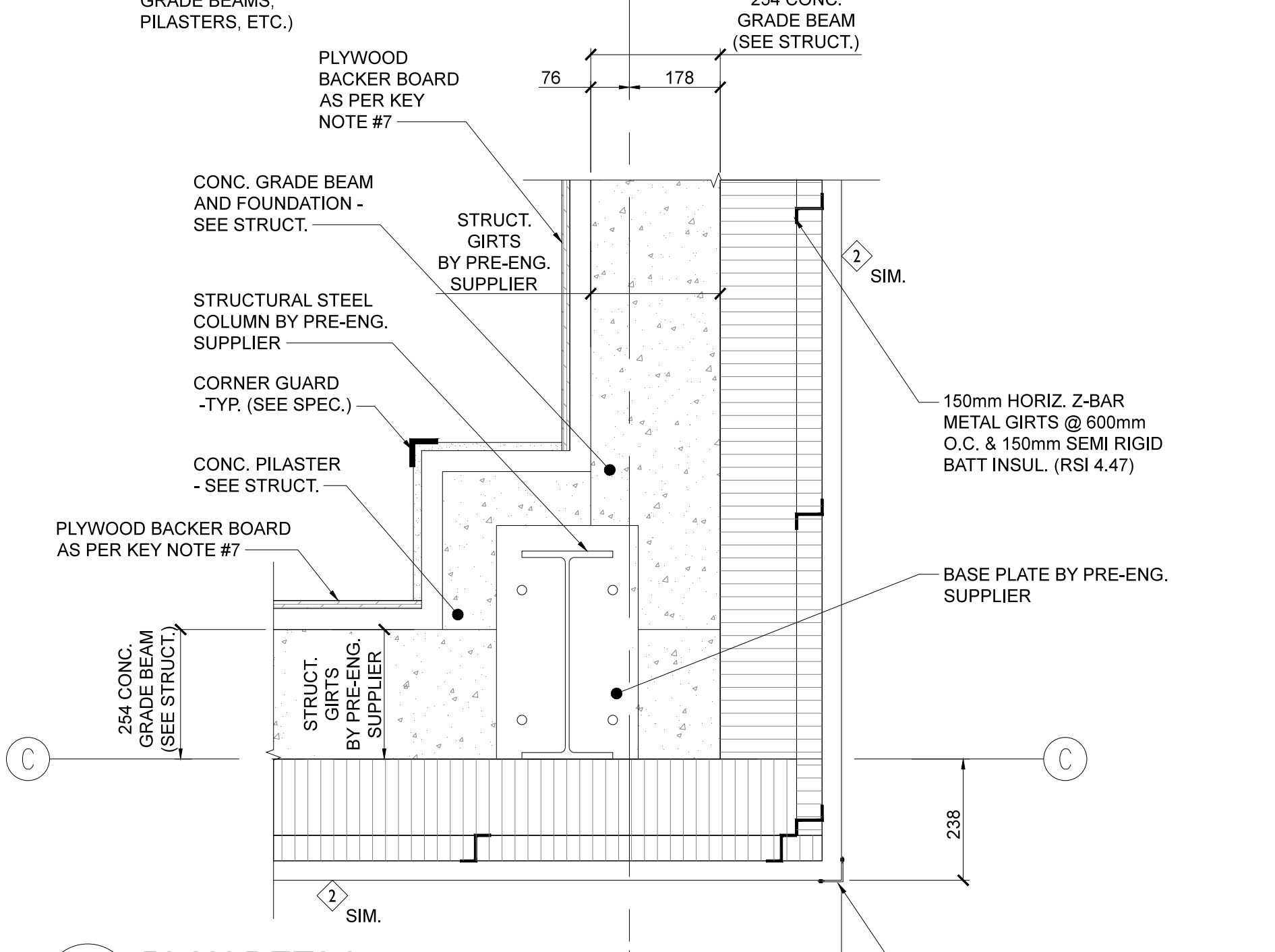
- ALL WALL MOUNTED EQUIPMENT, MILLWORK, ETC. TO HAVE APPROPRIATE BLOCKING WITHIN WALLS PRIOR TO FINISHING WALL CONSTRUCTION.
- DIMENSIONS TAKEN TO FACE OF STEEL STUD UNLESS NOTED OTHERWISE.

**NEW CONSTRUCTION FLOOR PLAN KEY NOTES:**

- EXTERIOR GRADE STEEL THERMALLY INSULATED STANDARD DOOR C/W PRESSED STEEL FRAME PRIMED & PAINTED - REFER TO SPEC. & DOOR SCHEDULE ON SHEET A10.
- EXTERIOR COMMERCIAL GRADE, R14 INSULATED, ELECTRICALLY OPERATED OVERHEAD DOOR (FAST ACTION DOOR) - REFER TO SPEC. & DOOR SCHEDULE ON SHEET A10.
- CONCRETE PAD - REFER TO MECHANICAL AND STRUCTURAL DRAWINGS.
- 152mm DIA. CONCRETE FILLED STEEL BOLLARD - PTD. REFER TO TYPICAL BOLLARD DETAIL ON STRUCT.
- MOBILE SHELVING UNIT - REFER TO SPEC.
- GRINDING ROOM RECOVERY AIR AREA.
- 1HR. FIRE RESISTANCE RATING FROM INSIDE ONLY, FULL HEIGHT. SUPPLY & INSTALL PLYWOOD BACK BOARD ON THE SOUTH & EAST SIDES OF ROOM. ENSURE BOARDS ARE PAINTED ON ALL SIDES OF THE BOARD WITH FIRE RETARDANT PAINT.
- FLOOR DRAIN - REFER TO MECHANICAL DRAWINGS.
- CONC. PAD - REFER TO STRUCT.
- FURNISHINGS N.I.C.
- PALLET RACKING SYSTEM N.I.C.
- ICE MACHINE N.I.C.
- DISH WASHER N.I.C.
- FRIDGE N.I.C.
- DRY CHEMICAL 2.3 KG (5 LB) TYPE ABC EXTINGUISHER, SURFACE MOUNTED - SEE MECH.
- PROPOSED LOCATION OF CONC. SPLASH PAD C/W DOWNSPOUT.

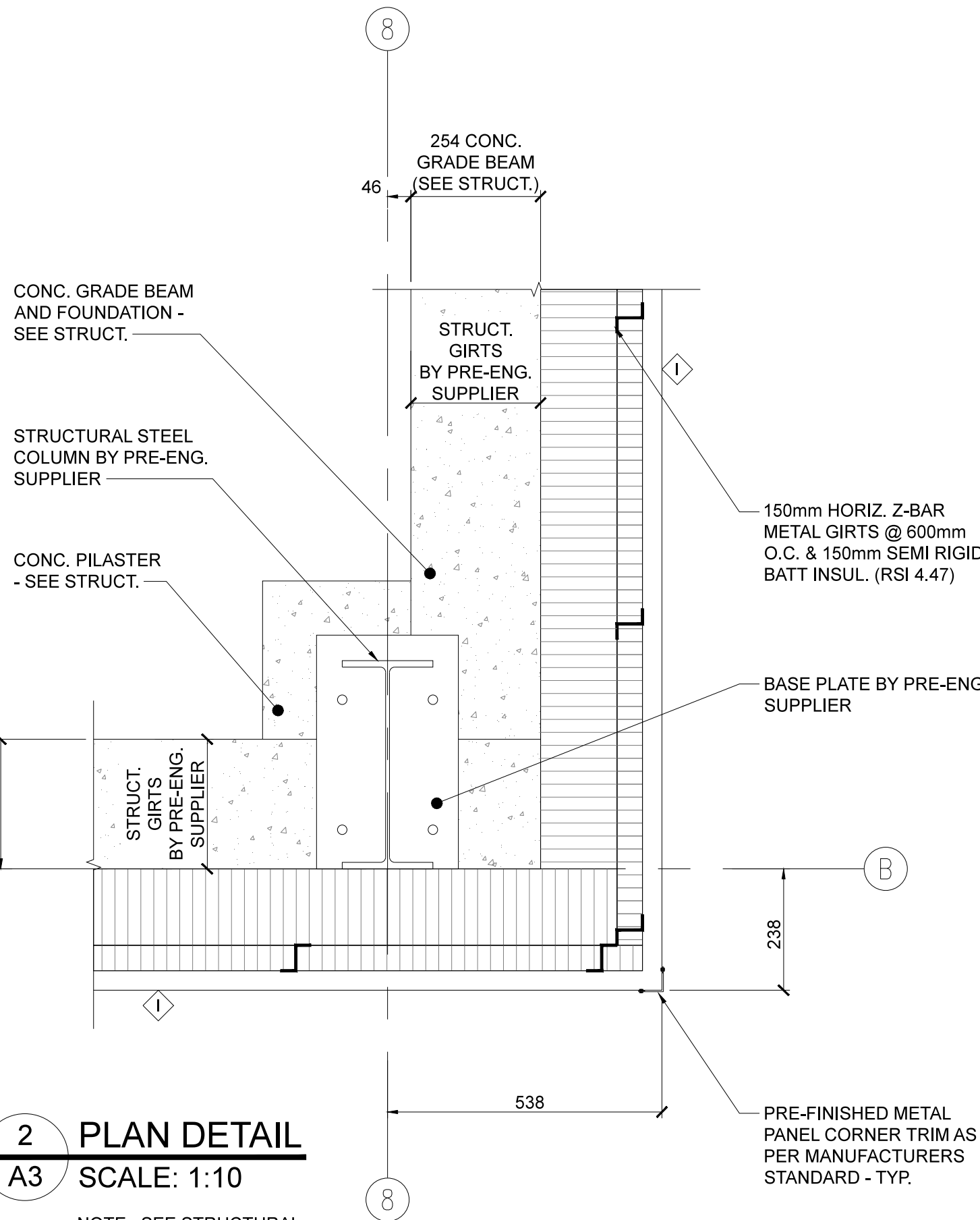
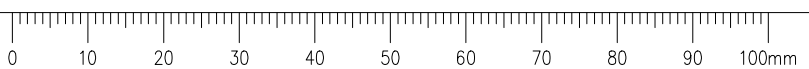
**3 PLAN DETAIL**  
A3  
SCALE: 1:10

NOTE: SEE STRUCTURAL FOR ELEVATIONS OF CONCRETE (FLOOR SLAB, GRADE BEAMS, PILASTERS, ETC.)



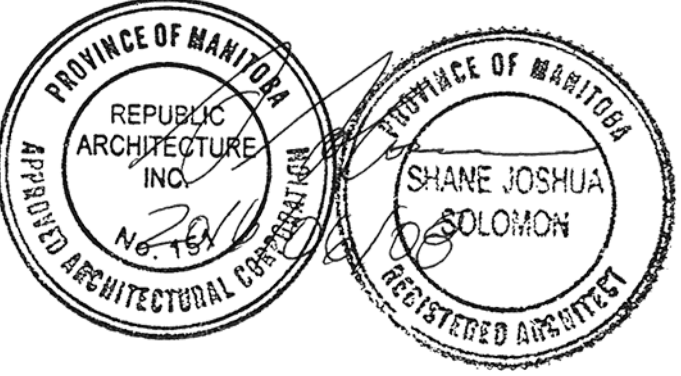
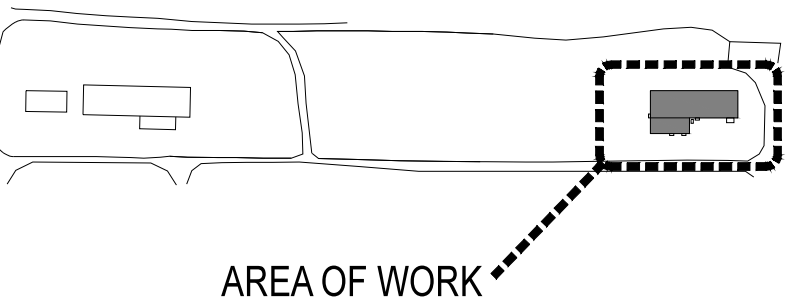
**4 PLAN DETAIL**  
A3  
SCALE: 1:10

NOTE: SEE STRUCTURAL FOR ELEVATIONS OF CONCRETE (FLOOR SLAB, GRADE BEAMS, PILASTERS, ETC.)



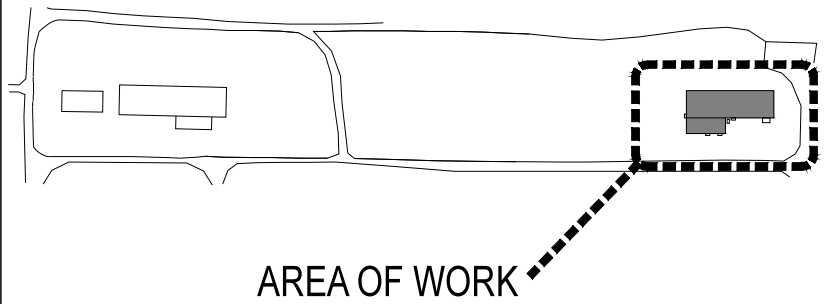
**2 PLAN DETAIL**  
A3  
SCALE: 1:10

NOTE: SEE STRUCTURAL FOR ELEVATIONS OF CONCRETE (FLOOR SLAB, GRADE BEAMS, PILASTERS, ETC.)



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<b>AGRICULTURE AND AGRI-FOOD CANADA (AAFC)</b>		
BRANDON, MANITOBA		
Project title/Titre du projet <b>2701 GRAND VALLEY ROAD BRANDON, MANITOBA</b>		
<b>BUILDING 111 - BRANDON RESEARCH CENTRE</b>		
Approved by/Approuvé par <b>EH</b>		
Designed by/Concept par <b>JB</b>		
Drawn by/Dessiné par <b>JB</b>		
PWGSC Project Manager/Administrateur de Projets TPSGC <b>BRAD SITARZ</b>		
PWGSC Architectural and Engineering Resources Manager/ Ressources Architecturales et de Directeur d'Ingénierie, TPSGC		
Client/client <b>AGRICULTURE AND AGRI-FOOD CANADA (AAFC)</b>		
Drawing title/Titre du dessin <b>NEW CONSTRUCTION FLOOR PLAN, WALL TYPES, PLAN DETAILS &amp; NOTES</b>		
Project No./No. du projet <b>R.076331</b>	Sheet/Feuille <b>A3 OF A10</b>	Revision no./ La Révision no. <b>3</b>



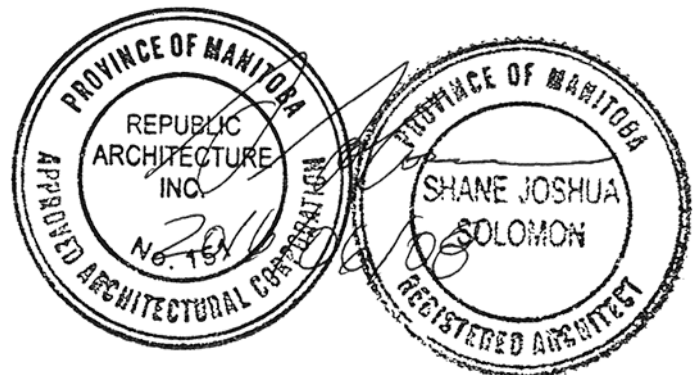


GENERAL NOTES:

- CONTRACTOR TO VERIFY SIZES AND LOCATIONS OF ALL REQUIRED ENVELOPE PENETRATIONS (REFER TO MECHANICAL AND ELECTRICAL DRAWINGS).
- DIMENSIONS TAKEN TO FACE OF STEEL STUD UNLESS NOTED OTHERWISE.

EXTERIOR ELEVATION KEY NOTES:

- EXTERIOR GRADE STEEL THERMALLY INSULATED STANDARD DOOR C/W PRESSED STEEL FRAME PRIMED & PAINTED - REFER TO DOOR SCHEDULE IN SPECIFICATION MANUAL.
- EXTERIOR COMMERCIAL GRADE, R14 INSULATED, ELECTRICALLY OPERATED OVERHEAD DOOR (FAST ACTION DOOR) - REFER TO DOOR SCHEDULE IN SPEC.
- CONCRETE PAD. REFER TO MECHANICAL AND STRUCTURAL DRAWINGS.
- 152mm DIA. CONCRETE FILLED STEEL BOLLARD - PTD. REFER TO TYPICAL BOLLARD DETAIL ON STRUCT.
- EAVES TROUGH - REFER TO SPECIFICATION MANUAL.
- EXTERIOR 26 GA. COMMERCIAL GRADE SCREWED DOWN CORRUGATED METAL ROOF BY PRE-ENG. SUPPLIER.
- GUTTER DOWNSPOUT - REFER TO SPECIFICATION MANUAL.
- SNOW GUARD/PROTECTION - REFER TO SPECIFICATION MANUAL.
- EXTERIOR LIGHTING - REFER TO ELECTRICAL.
- AHU FLU STACK & AIR RELIEF - SEE MECHANICAL.
- WEATHERHOOD - SEE MECHANICAL.
- LOUVER - SEE MECHANICAL.
- WALL CAP (AIR INTAKE & EXHAUST) - SEE MECHANICAL.
- DUST COLLECTOR E/A DUCT - SEE MECHANICAL.
- DUST COLLECTOR R/A DUCT - SEE MECHANICAL.



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AGRICULTURE AND  
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(AAFC)

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Project title/Titre du projet  
**2701 GRAND VALLEY ROAD  
BRANDON, MANITOBA**

**BUILDING 111 -  
BRANDON RESEARCH CENTRE**

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**EH**

Designed by/Concept par  
**JB**

Drawn by/Dessiné par  
**JB**

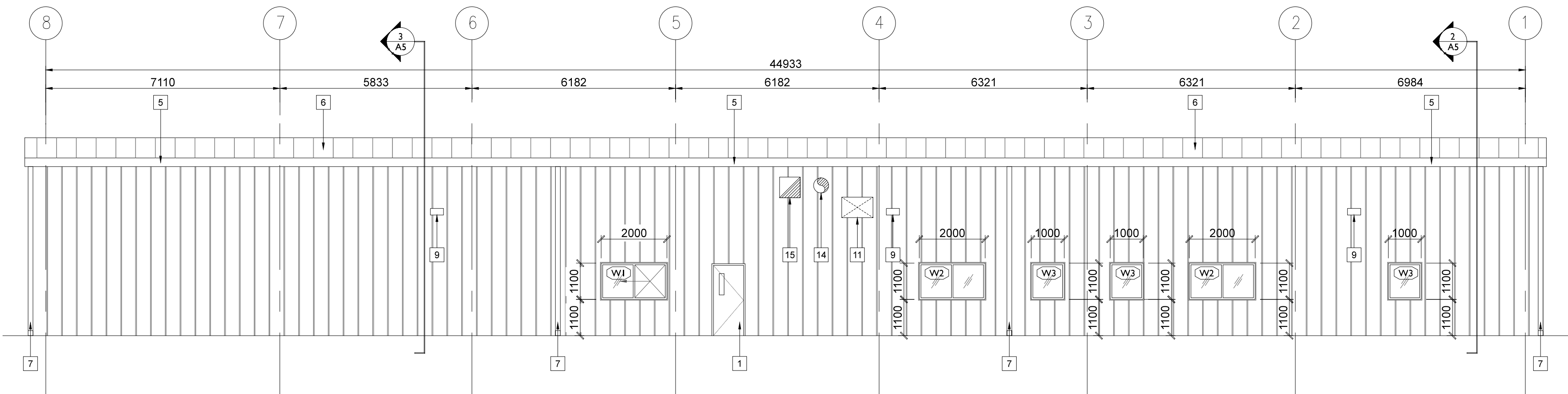
PWSSC Project Manager/Administrateur de Projets TPSSC  
**BRAD SITARZ**

PWSSC Architectural and Engineering Resources Manager/  
Ressources Architecturales et de Directeur d'Ingénierie, TPSSC

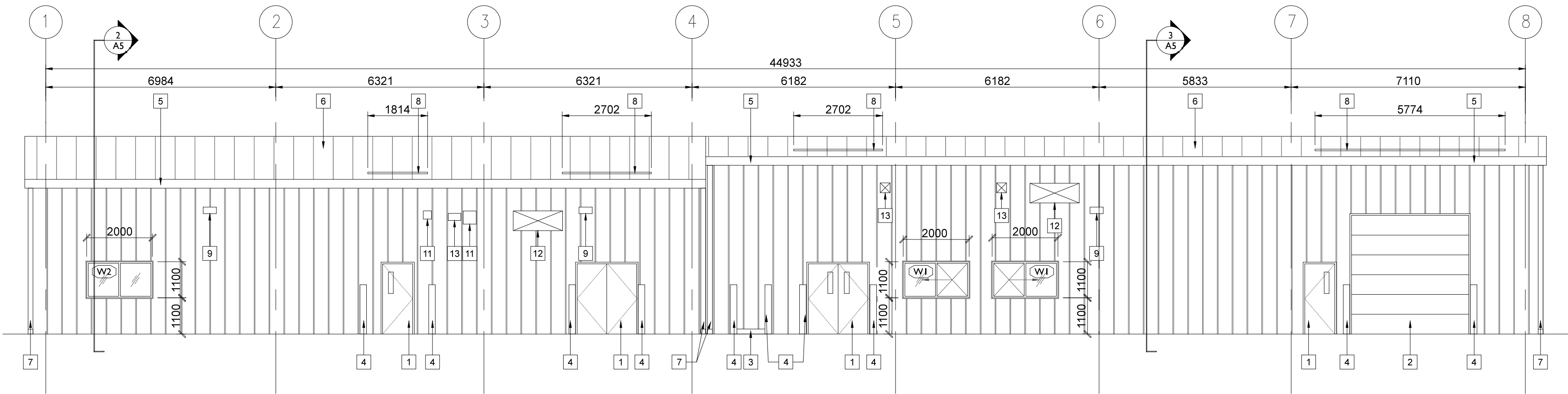
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**AGRICULTURE AND AGRI-FOOD CANADA (AAFC)**

Drawing title/Titre du dessin  
**EXTERIOR ELEVATIONS**

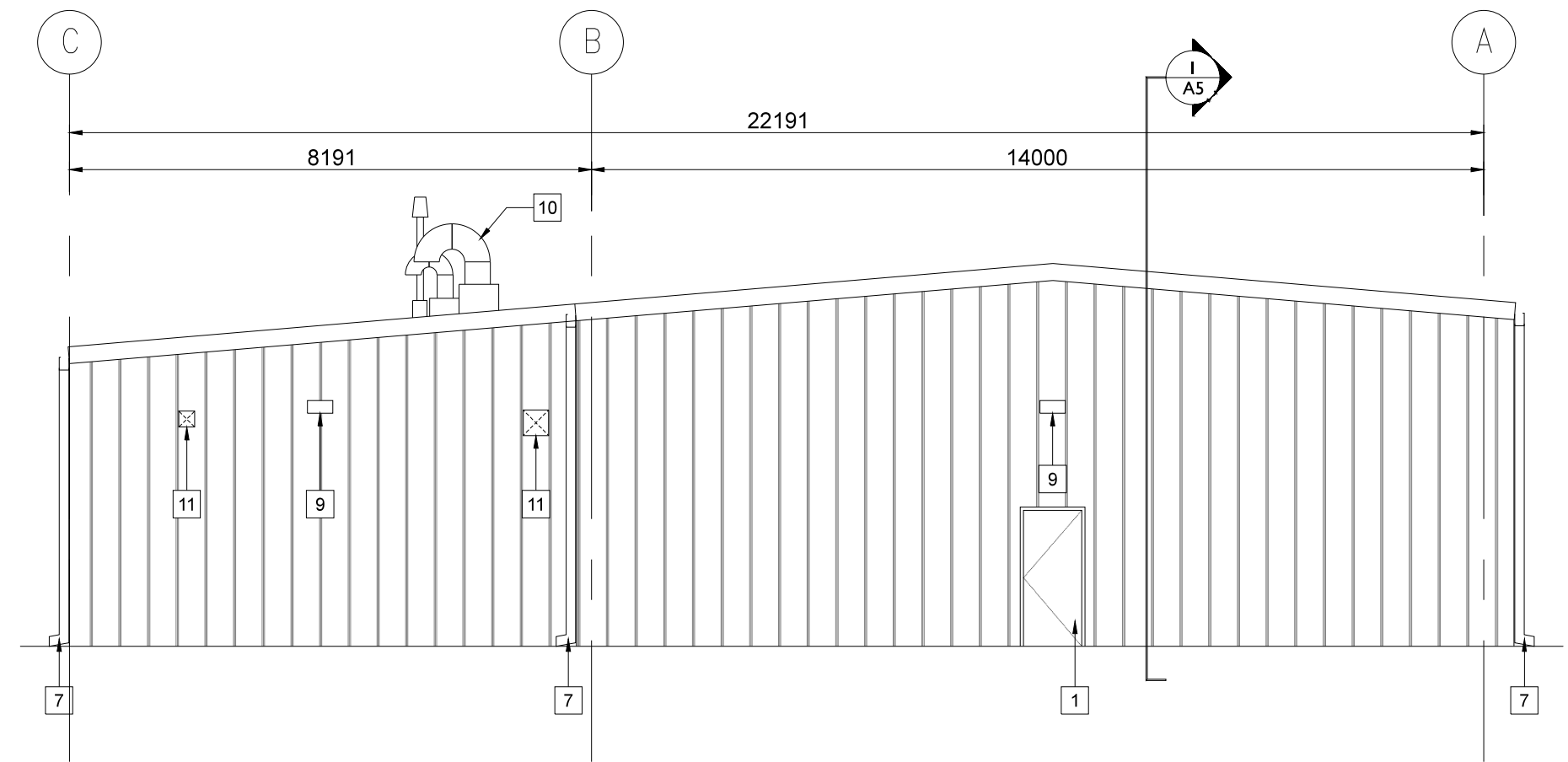
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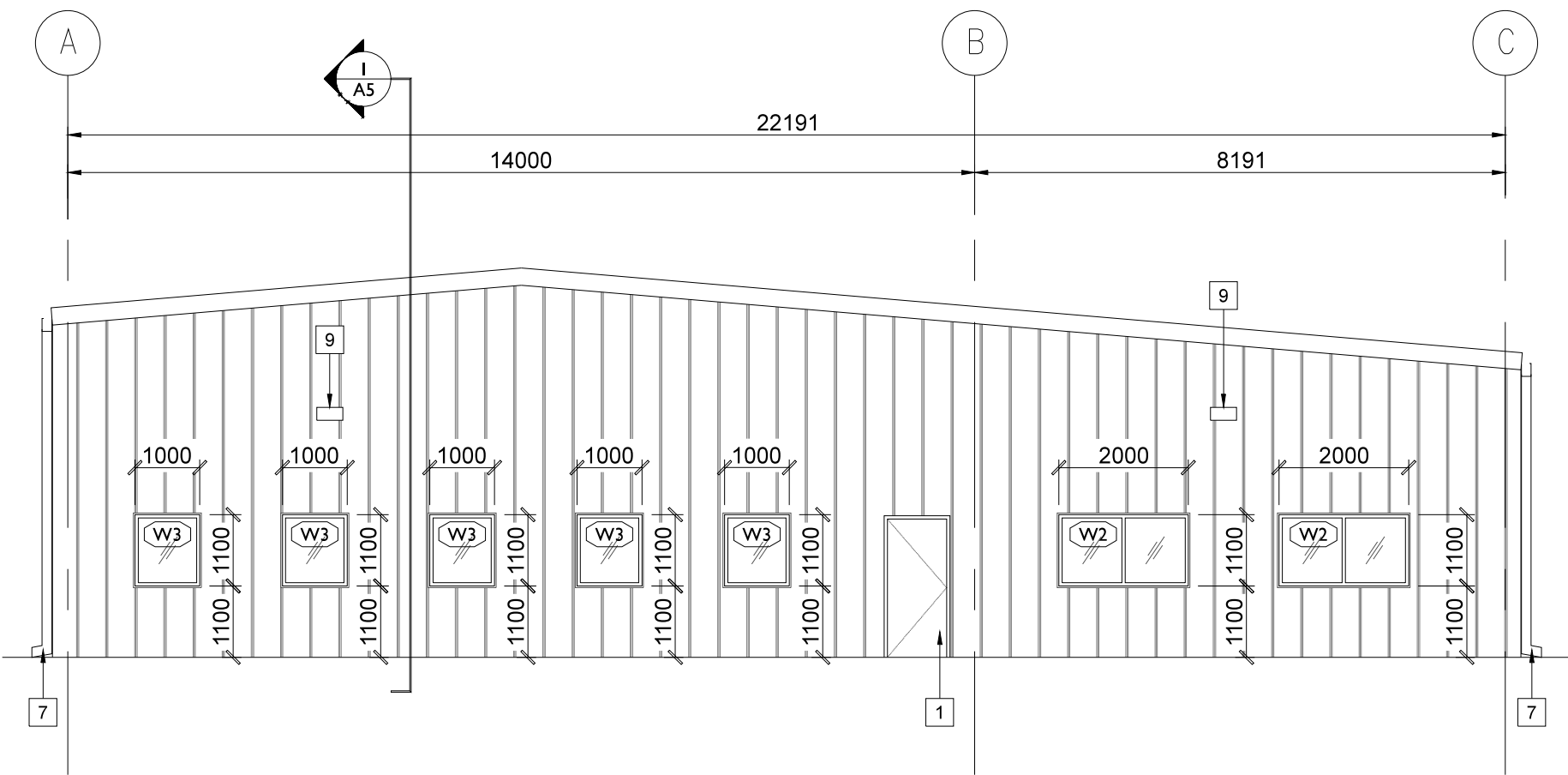
**1 NORTH EXTERIOR ELEVATION**  
A4 1:100



**2 SOUTH EXTERIOR ELEVATION**  
A4 1:100



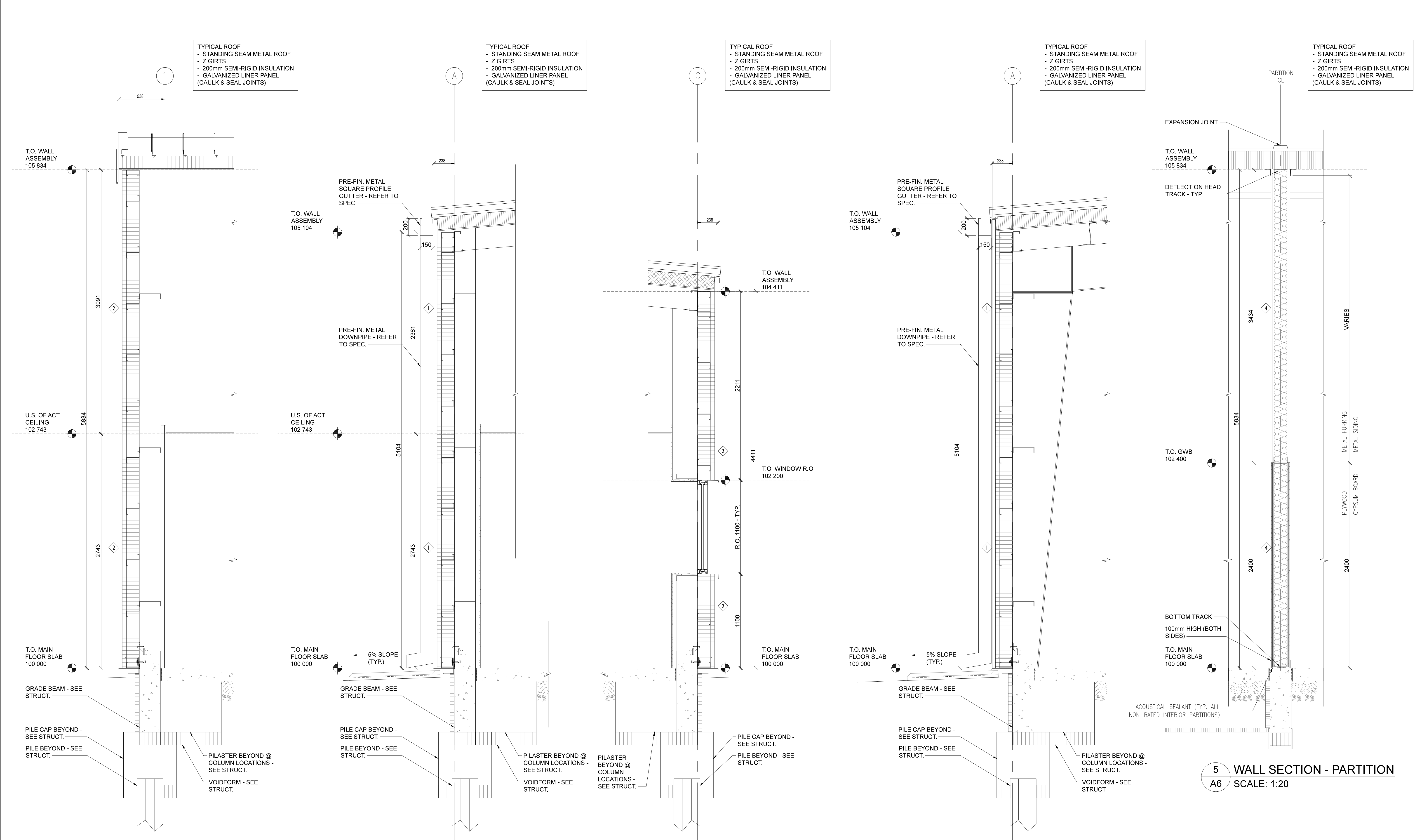
**3 EAST EXTERIOR ELEVATION**  
A4 1:100



**4 WEST EXTERIOR ELEVATION**  
A4 1:100








1 WALL SECTION - PARTITION  
A6 SCALE: 1:20

2 WALL SECTION - PARTITION  
A6 SCALE: 1:20

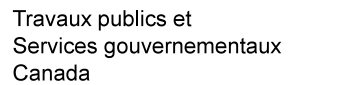
3 WALL SECTION - PARTITION  
A6 SCALE: 1:20

4 WALL SECTION - PARTITION  
A6 SCALE: 1:20

5 WALL SECTION - PARTITION  
A6 SCALE: 1:20



Public Works and  
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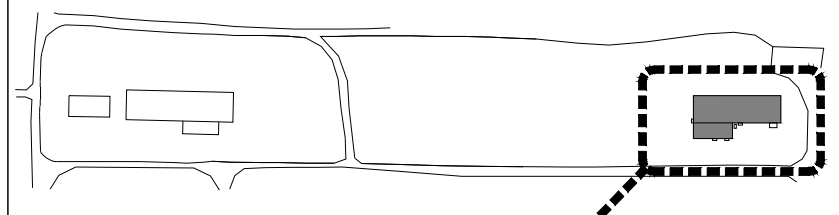


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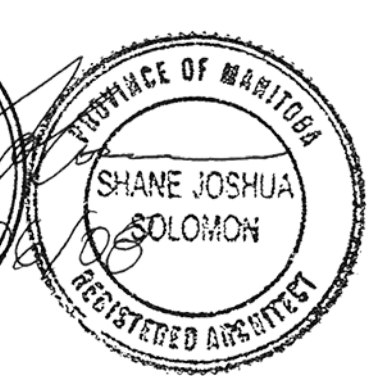

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**BUILDING 111 -  
BRANDON RESEARCH CENTRE**

Approved by/Approuvé par  
EH

Designed by/Concept par  
JB

Drawn by/Dessiné par  
JB

PWSSC Project Manager/Administrateur de Projets TPSGC  
**BRAD SITARZ**

PWSSC Architectural and Engineering Resources Manager/  
Ressources Architecturales et de Directeur d'Ingénierie, TPSGC

Client/client  
**AGRICULTURE AND AGRI-FOOD CANADA (AAFC)**

Drawing title/Titre du dessin  
**WALL SECTIONS**


Project No./No. du projet  
**R.076331**

Sheet/Feuille  
**A6**  
OF A10

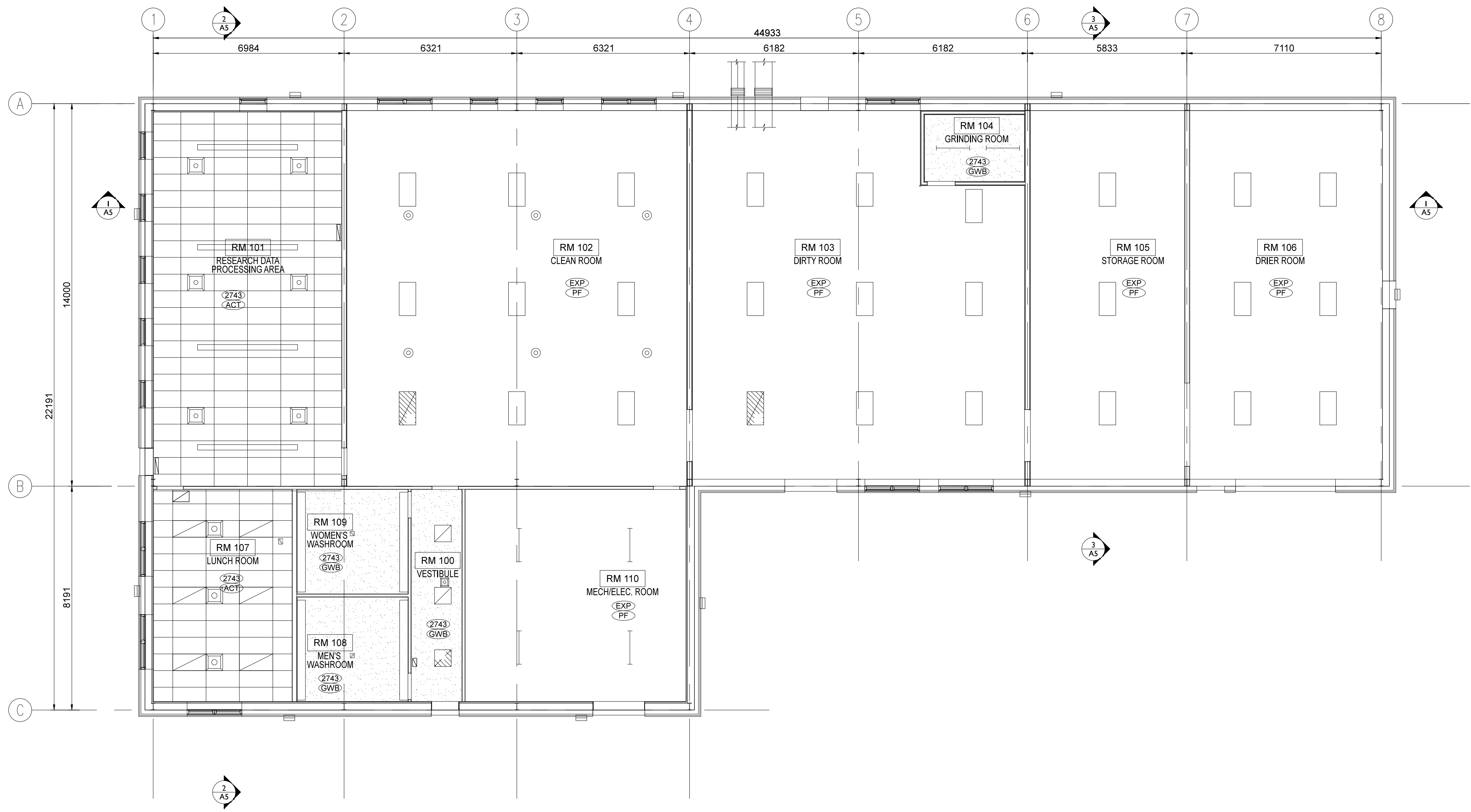
Revision no./  
La Révision  
no.  
**1**

PWGSC - B1 - 1000X707

0 10 20 30 40 50 60 70 80 90 100mm

A6 Wall Sections 

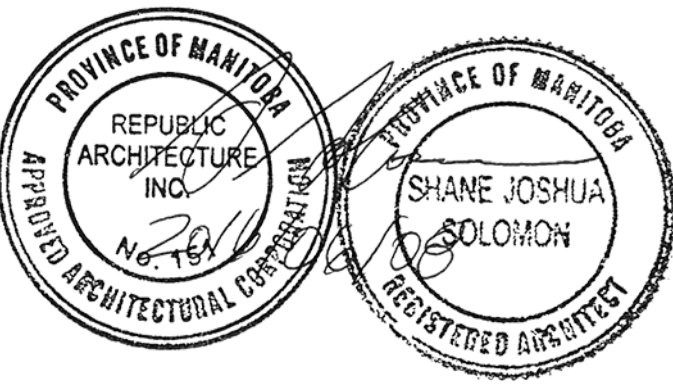
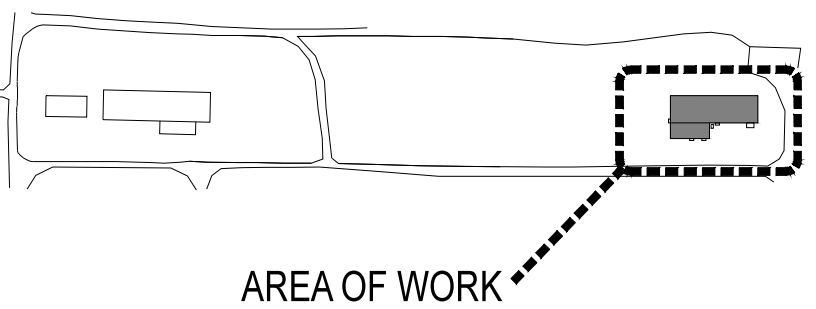




**1 REFLECTED CEILING PLAN**  
A7 1:100

**LEGEND**

- CEILING HEIGHT, A.F.F. CEILING FINISH
- ACT ACOUSTIC CEILING TILE
- EXP EXPOSED STRUCTURE
- GWB GYPSUM WALL BOARD
- PF PRE-FINISHED
- NEW 610 x 1219 LED CHAIN HUNG LIGHT FIXTURE - REFER TO ELEC.
- NEW 610 x 1219 LED RECESSED LIGHT FIXTURE - REFER TO ELEC.
- NEW 610 x 610 LED RECESSED LIGHT FIXTURE - REFER TO ELEC.
- NEW LED CHAIN HUNG STRIP LIGHT FIXTURE - REFER TO ELEC.
- NEW 305 x 3658 LED RECESSED LIGHT FIXTURE - REFER TO ELEC.
- NEW 200 x 3658 LED SUSPENDED DIRECT/INDIRECT LIGHT FIXTURE - REFER TO ELEC.
- NEW EXTERIOR LED WALL PACK LIGHT FIXTURE - REFER TO ELEC.
- SUPPLY AIR DIFFUSERS - REFER TO MECH.
- EXHAUST FAN & RETURN AIR GRILLES - SEE MECH.



**DO NOT SCALE DRAWINGS**

5		
4		
3	ISSUED FOR CONSTRUCTION	16/06/08
2	99% CONSTRUCTION DOCUMENT	16/05/10
1	50% CONSTRUCTION DOCUMENT	16/03/23
0	ISSUED FOR DESIGN DEVELOPMENT	16/01/28
Revision/ Revision	Description/Description	Date/Date

Client/client

**AGRICULTURE AND  
AGRI-FOOD CANADA  
(AAFC)**

**BRANDON, MANITOBA**

Project title/Titre du projet  
**2701 GRAND VALLEY ROAD  
BRANDON, MANITOBA**

**BUILDING 111 -  
BRANDON RESEARCH CENTRE**

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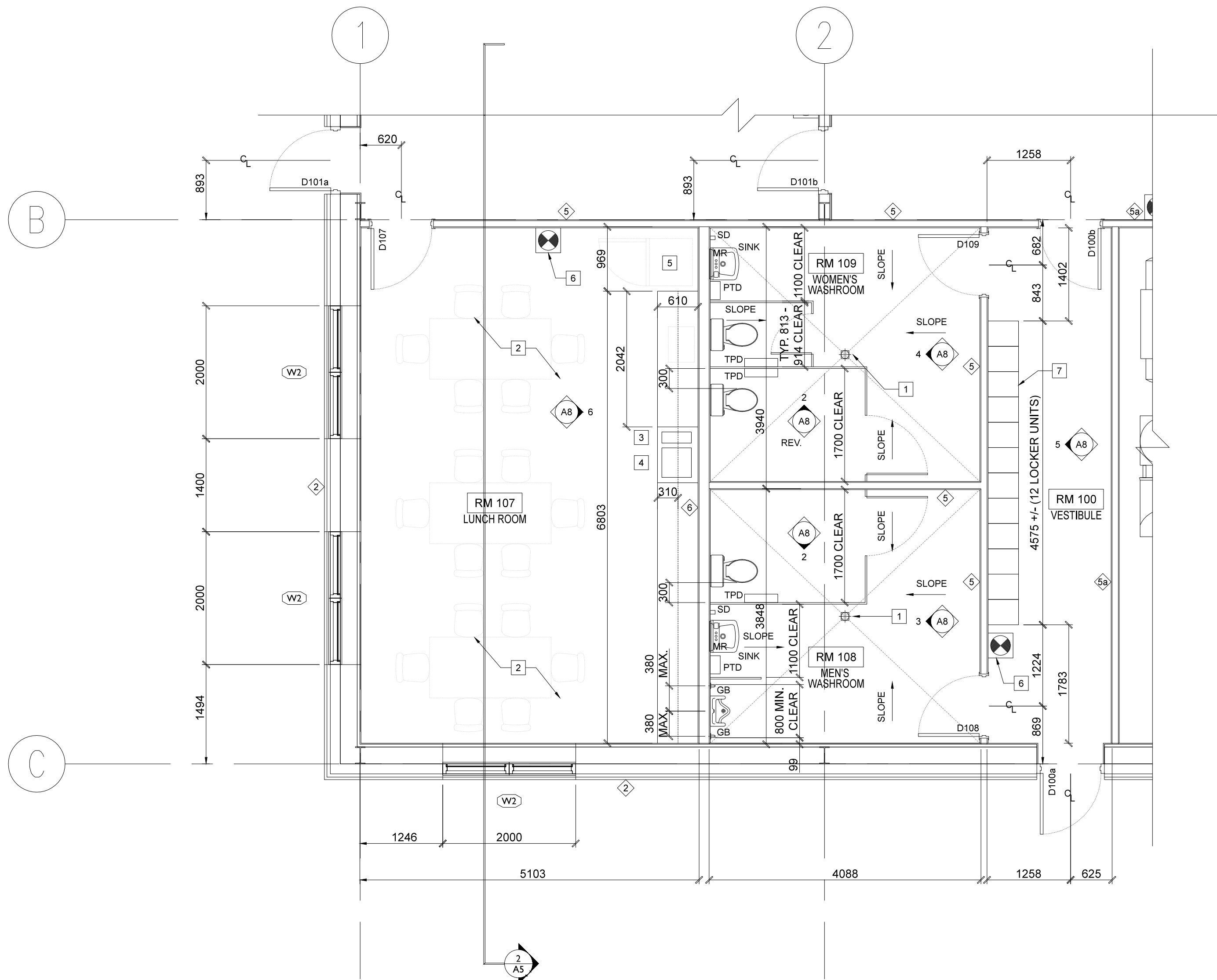
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**REFLECTED CEILING PLAN**





**1 WASHROOM, LUNCHROOM & VESTIBULE LARGE SCALE FLOOR PLAN**  
A8 1:50

**GENERAL NOTES:**

- ALL WALL MOUNTED EQUIPMENT, MILLWORK, ETC. TO HAVE APPROPRIATE BLOCKING WITHIN WALLS PRIOR TO FINISHING WALL CONSTRUCTION.
- DIMENSIONS TAKEN TO FACE OF STEEL STUD UNLESS NOTED OTHERWISE.

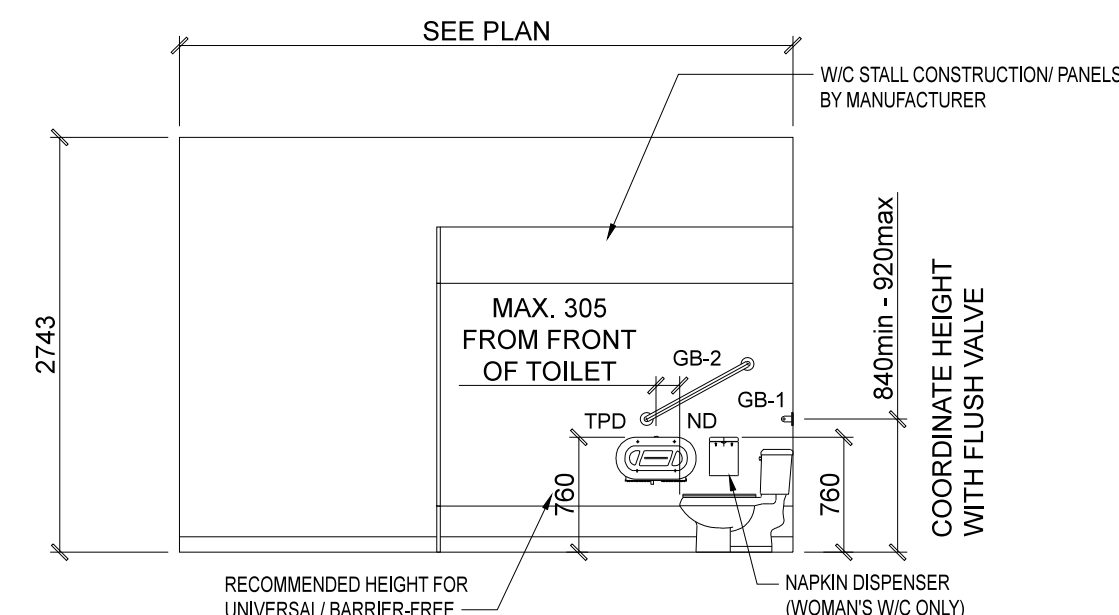
**NEW CONSTRUCTION FLOOR PLAN KEY NOTES:**

- FLOOR DRAIN - REFER TO MECHANICAL DRAWINGS.
- FURNISHINGS N.I.C.
- ICE MACHINE N.I.C.
- DISH WASHER N.I.C.
- FRIDGE N.I.C.
- 5 LBS. ABC DRY CHEM. FIRE EXTINGUISHER C/W SUPPORT BRACKET - SEE MECH.
- METAL LOCKERS - REFER TO SPECIFICATION MANUAL. FOR SIZES REFER TO PLAN AND INTERIOR ELEVATIONS ON THIS SHEET.

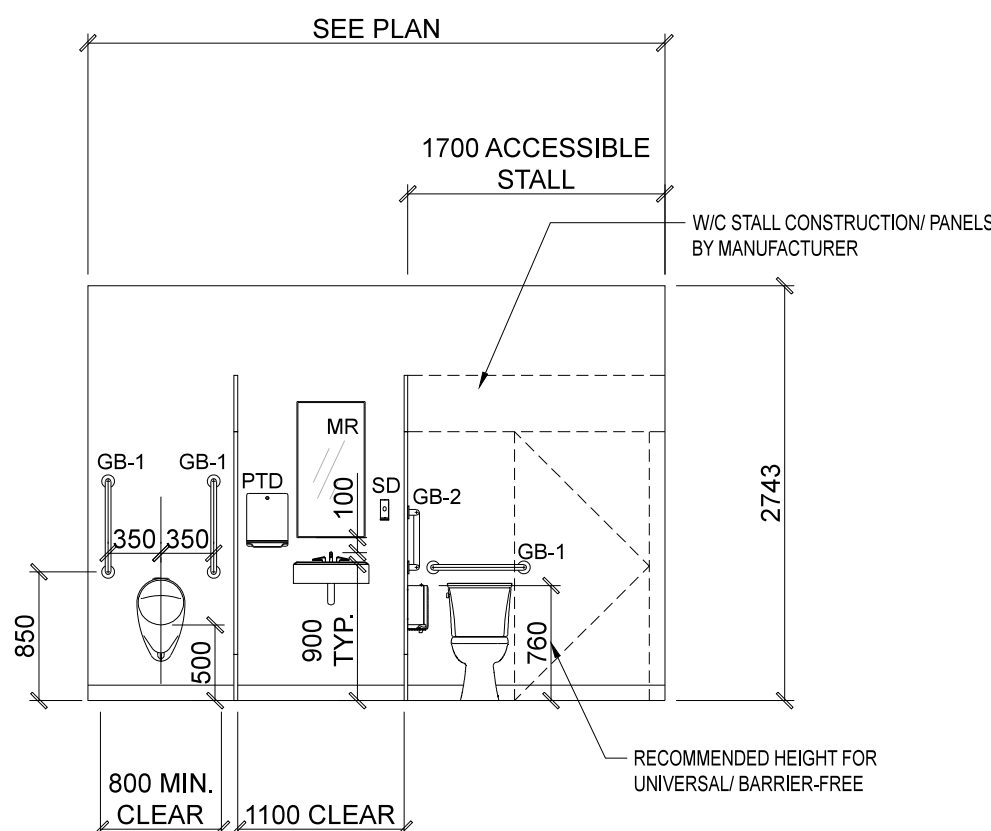
**WASHROOM ACCESSORIES LEGEND:**

- TPD - TOILET PAPER DISPENSER  
PTD - PAPER TOWEL DISPENSER  
SD - SOAP DISPENSER  
MR - 450 x 900 MIRROR - SEE SPEC.  
TB - TOWEL BAR  
GB-1 - 600mm GRAB BAR  
GB-2 - 750mm GRAB BAR (MOUNTED @ 30° ANGLE)  
ND - NAPKIN DISPENSER

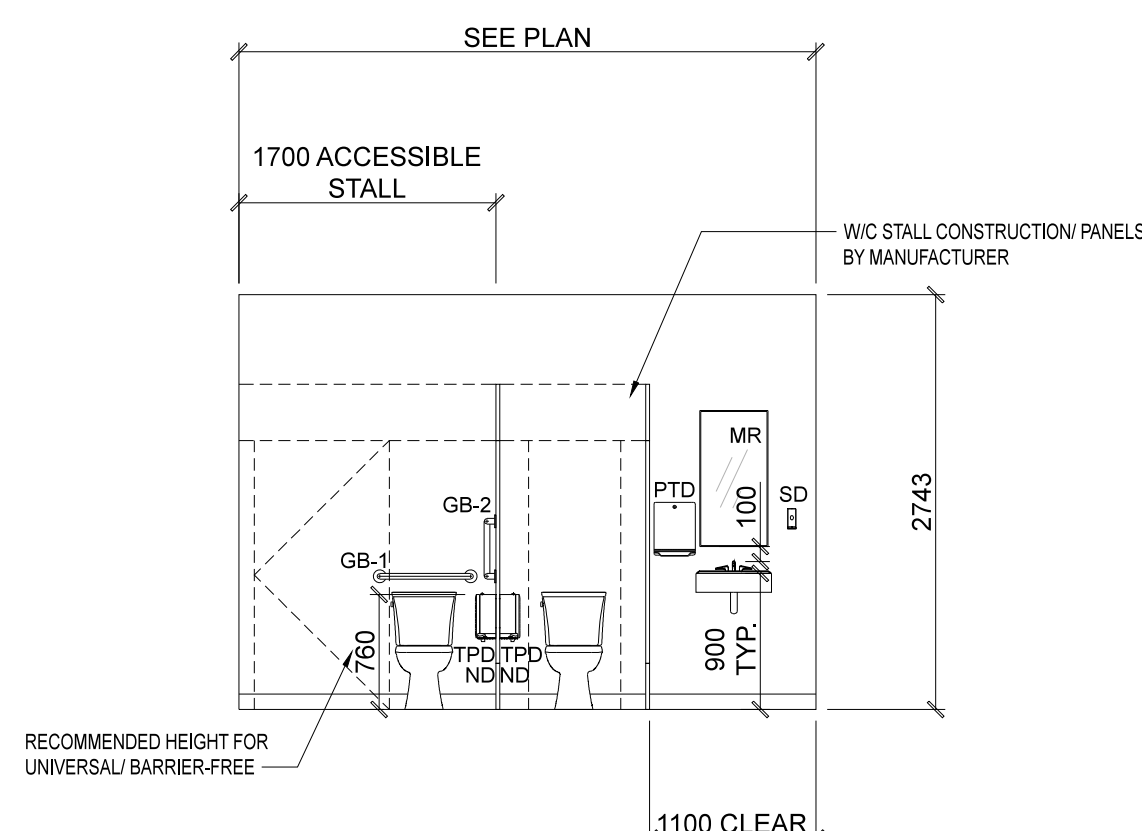
NOTE: WOOD BLOCKING TO BE PROVIDED BEHIND ALL WALL MOUNTED ACCESSORIES.



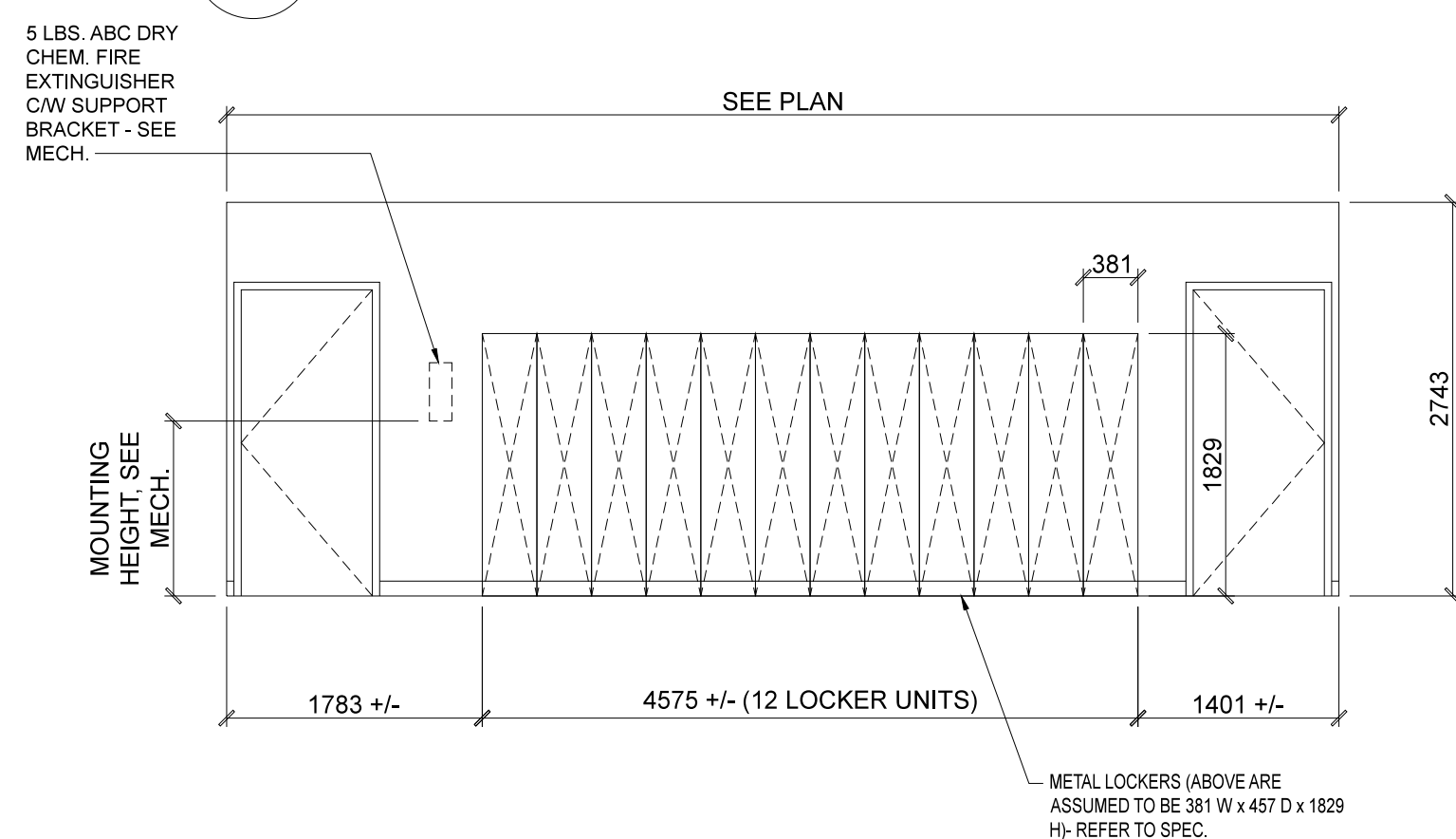
**2 RM 108 & 109 INTERIOR ELEVATION - MEN'S & WOMEN'S W/C TYP.**  
A8 1:50



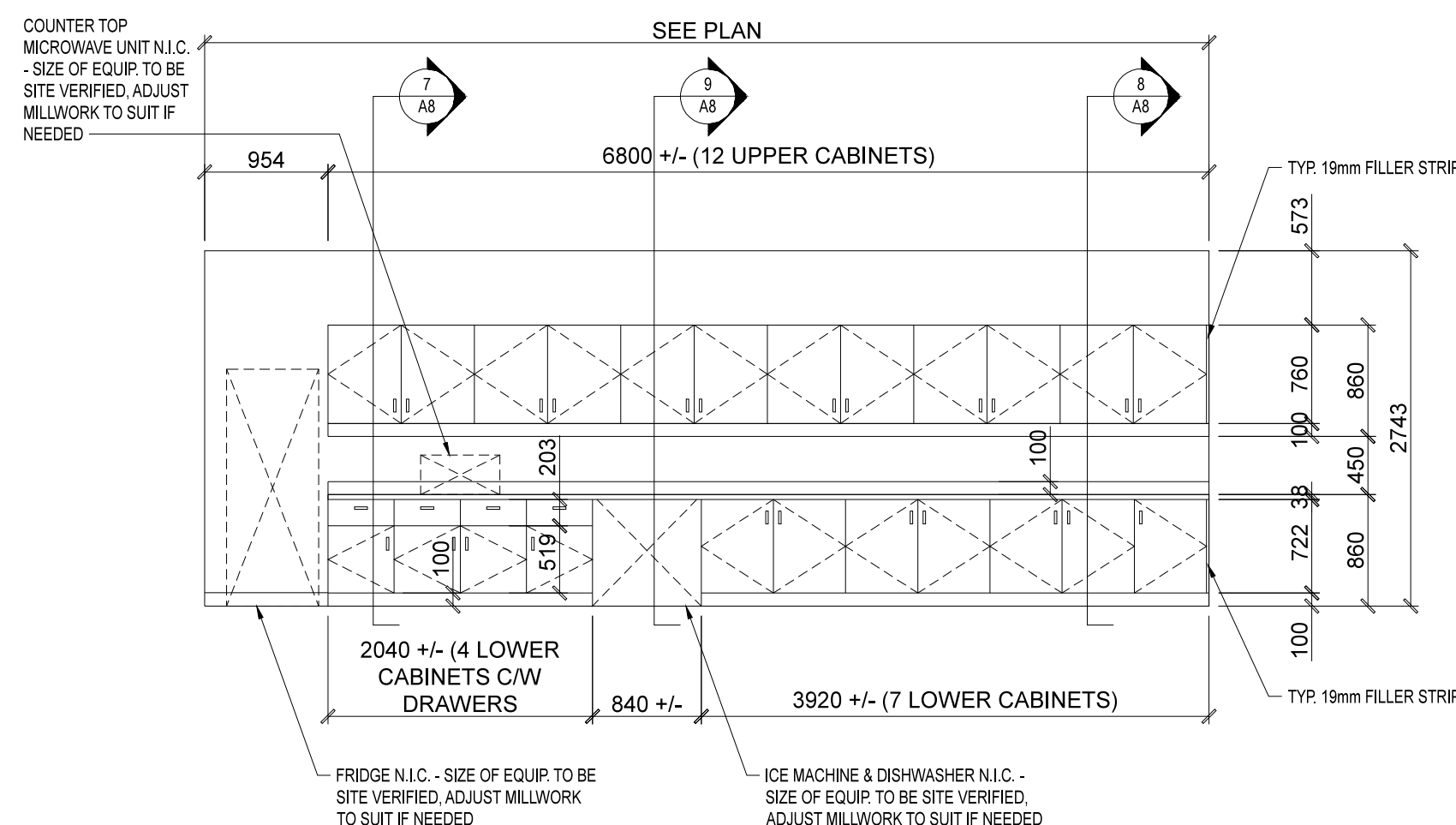
**3 RM 108 INTERIOR ELEVATION - MEN'S W/C**  
A8 1:50



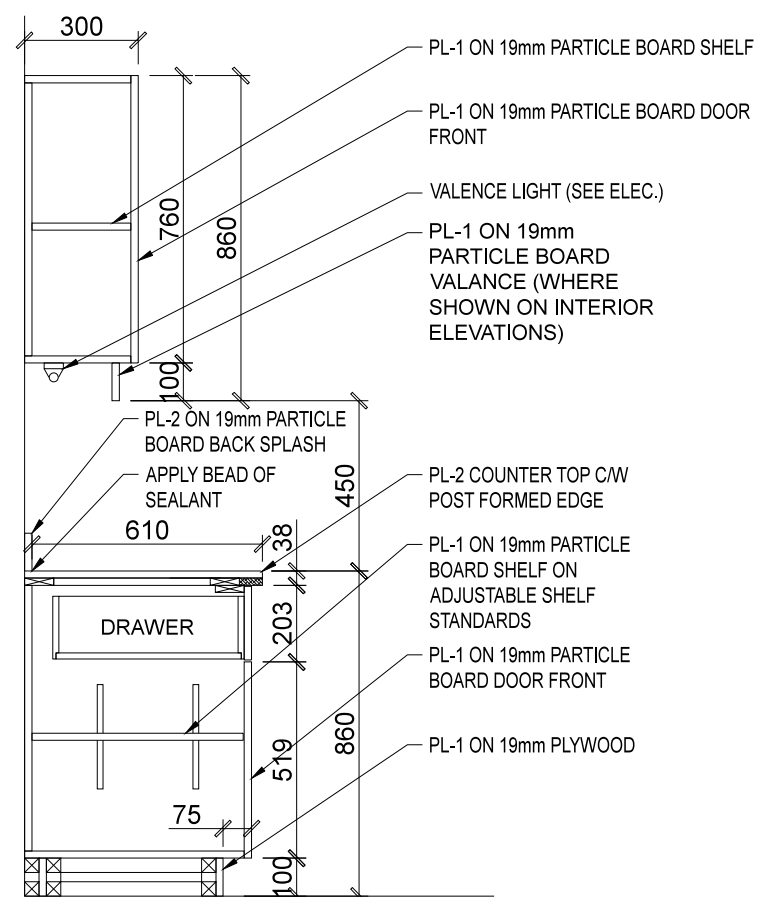
**4 RM 109 INTERIOR ELEVATION - WOMAN'S W/C**  
A8 1:50



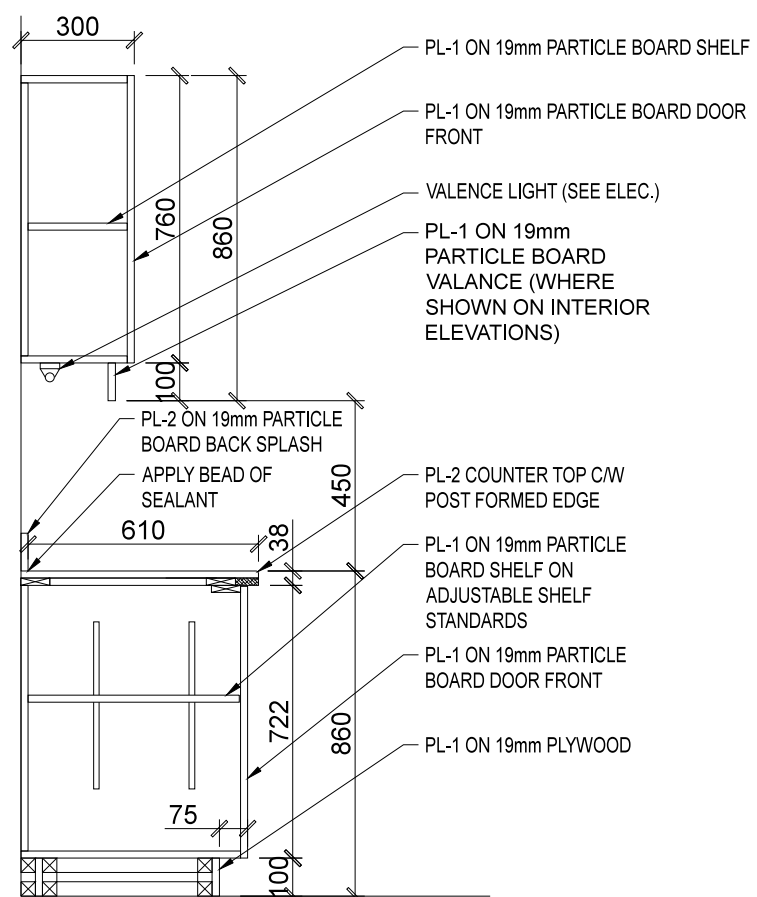
**5 RM 100 INTERIOR ELEVATION - VESTIBULE**  
A8 1:50



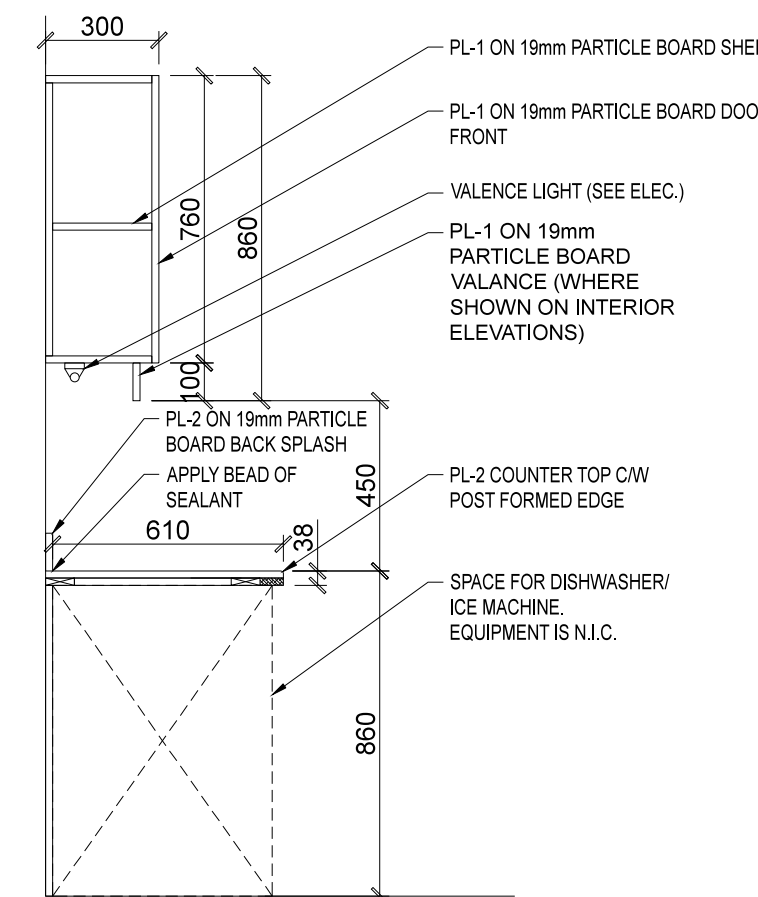
**6 RM 107 INTERIOR ELEVATION - LUNCH ROOM**  
A8 1:50



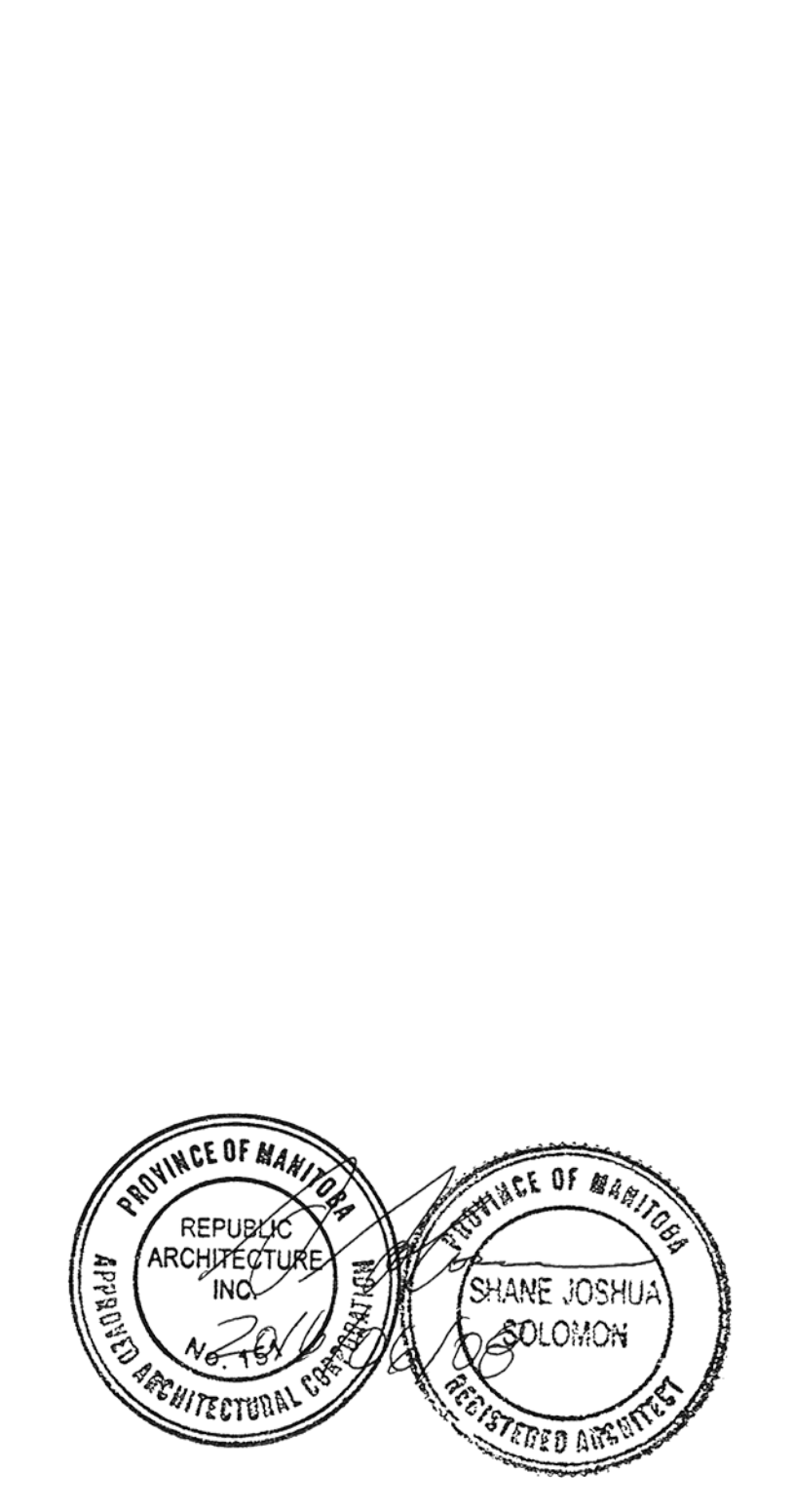
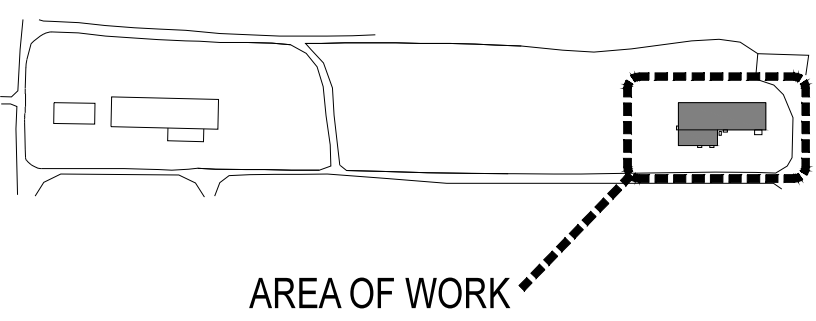
**7 MILLWORK SECTION**  
A8 1:20



**8 MILLWORK SECTION**  
A8 1:20



**9 MILLWORK SECTION**  
A8 1:20



**DO NOT SCALE DRAWINGS**

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BRANDON, MANITOBA**

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**BRAD SITAR**  
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**AGRICULTURE AND AGRI-FOOD CANADA (AAFC)**  
Drawing title/Titre du dessin  
**WASHROOM, LUNCHROOM &  
VESTIBULE LARGE SCALE PLAN  
& INTERIOR ELEVATIONS**





SEED TREATER (INTERCHANGEABLE EQUIPMENT)



ALMACO BLOWER (INTERCHANGEABLE EQUIPMENT)



GRAVITY TABLE (INTERCHANGEABLE EQUIPMENT)



WHITE CAPPER (INTERCHANGEABLE EQUIPMENT)



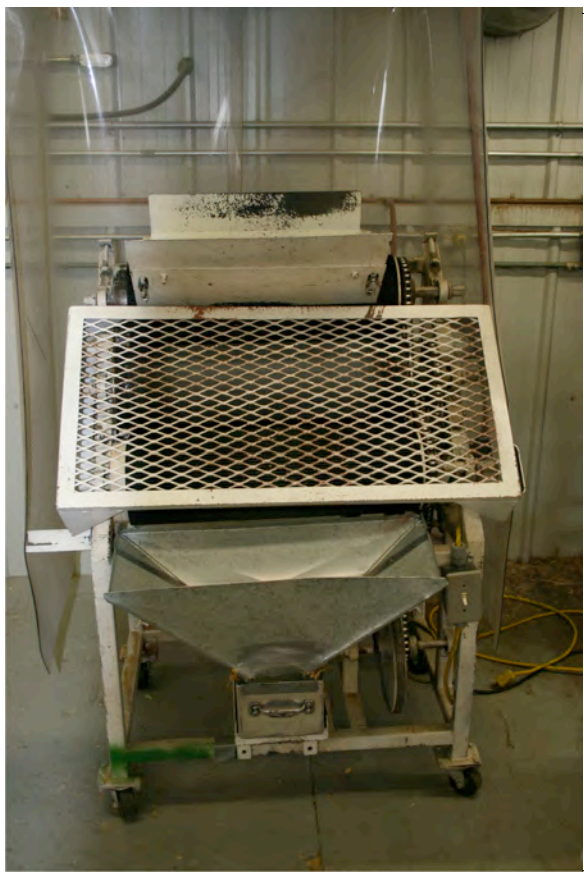
CIPPER (INTERCHANGEABLE EQUIPMENT)



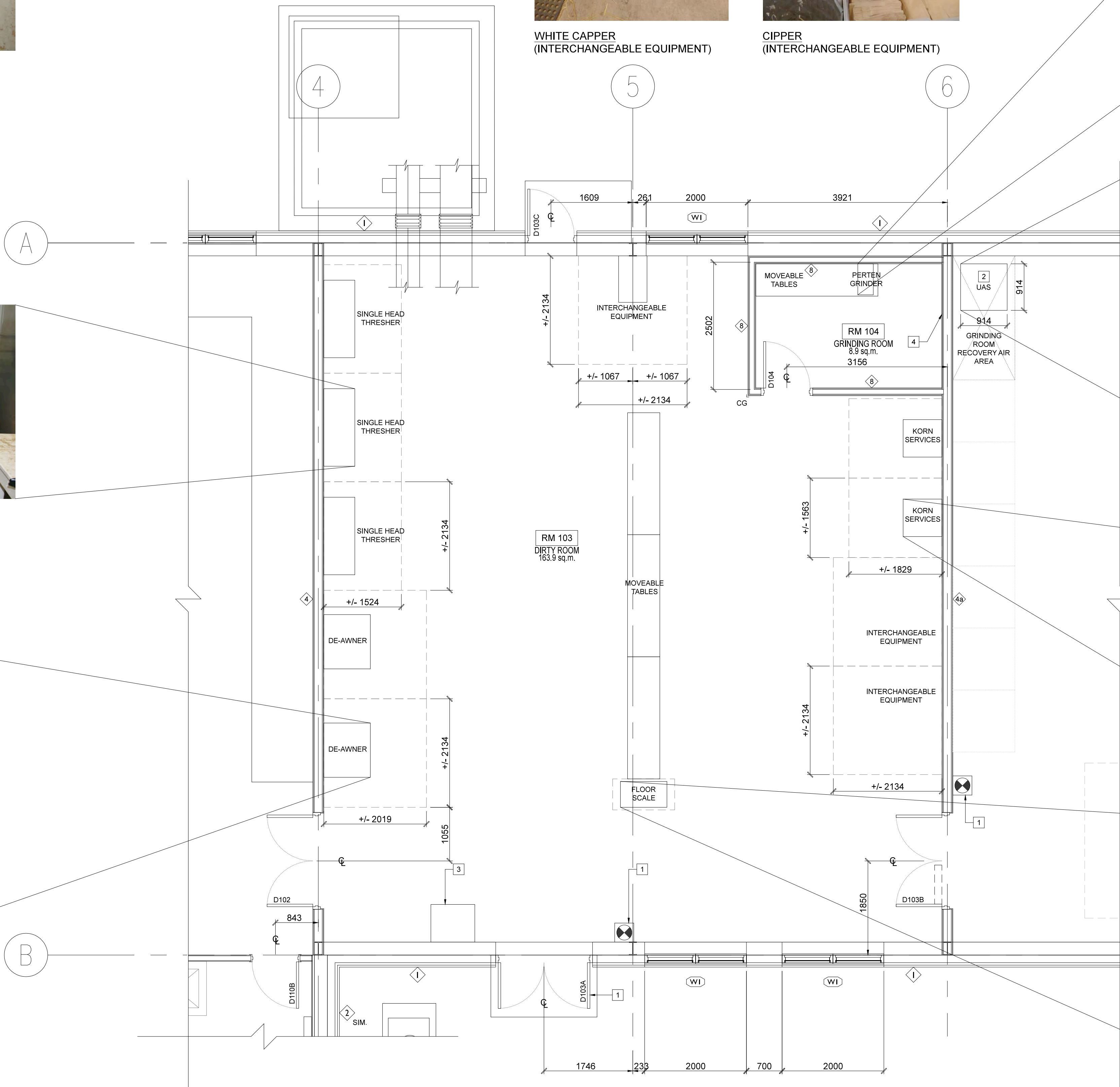
PERTTEN GRINDER



SINGLE HEAD THRESHER



DE-AWNER



UAS



KORN SERVICES



FLOOR SCALE

GENERAL NOTES:  
1. ALL EQUIPMENT, INCLUDING MOVEABLE TABLES, ARE NOT IN CONTRACT (N.I.C.). DRAWING TO BE USED FOR REFERENCE ONLY.

LEGEND:  
 AREA REQUIRED AROUND EQUIPMENT TO OPERATE  
  
 CORNER GUARD - STAINLESS STEEL (1219mm ABOVE BASE)

EQUIPMENT LIST														
EQUIPMENT	L x W x H (mm)	AMOUNT	POWER SUPPLY	DUCT SIZE (mm)	AIRFLOW (CFM)	AIRFLOW (LPS)	MECHANICAL SERVICES			MECHANICAL ACCESSORIES				NOTES
							DUST COLLECTION PICK-UP	CENTRAL VACUUM	COMPRESSED AIR	DUST HOOD	DROP DOWN VENT W/ ARM	VACUUM OUTLET	COMP. AIR OUTLET, REG. & HOSE	
KORN SERVICE	762 x 736.6 x 1524	5	110 V	-	-	-	X	X	X		X	X	X	
SINGLE HEAD THRESHER	1524 x 610 x 1600	3	110 V	100	300	142	X			X				LONG SIDE FACES THE OPERATOR/WALL
ALMACO BLOWER	1168.4 x 660.4 x 1321	2	110 V	-	-	-								
DE-AWNER	914.4 x 1067 x 1321	2	110 V	-	-	-								
WHITE CAPPER	1219 x 610 x 1321	1	110 V	125	475	224	X		X	X			X	
GRAVITY TABLE	1118 x 1067 x 1219	1	230 V	-	-	-	X							
CIPPER	1219 x 635 x 1321	1	110 V	-	-	-								
SEED TREATER	914.4 x 533.4 x 1321	1	110 V	-	-	-								
FLOOR SCALE		1		-	-	-								
PERTTEN GRINDER (GRINDING RM.)	610 x 305 x 483	1	110 V	-	-	-								SITS ON COUTNER TOP
UAS (GRINDING RM.)	914.4 x 914.4 x 1829	1	230 V - 3 PHASE	-	-	-								USED FOR DUST SUCTION FROM PERTTEN GRINDER

DIRTY ROOM KEY NOTES:  
1 DRY CHEMICAL 2.3 KG (5 LB) TYPE ABC EXTINGUISHER, SURFACE MOUNTED - SEE MECH.  
2 PROVIDE 914mm X 914mm CONCRETE PAD (50mm HIGH) FOR UAS EQUIPMENT. CONFIRM DIMENSIONS OF CONCRETE PAD ON SITE WITH END USER.  
3 EMERGENCY EYE WASH STATION - REFER TO MECHANICAL DRAWINGS.  
4 ADD STAINLESS STEEL WALL FINISH (1220 A.F.F.)

Public Works and Government Services Canada  
Travaux publics et Services gouvernementaux Canada

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BRANDON, MANITOBA

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AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

Drawing title/Titre du dessin  
DIRTY ROOM EQUIPMENT LAYOUT  
AND EQUIPMENT LIST

Project No./No. du projet  
R.076331

Sheet/Feuille  
A9  
OF A10

Revision no./  
La Révision no.  
3

PWGSC - B1 - 1000X707

0 10 20 30 40 50 60 70 80 90 100mm

A9 Large Scale Plan



ROOM FINISH SCHEDULE													
RM NO.	RM NAME	FLOOR		WALLS								CEILING	
				NORTH		EAST		SOUTH		WEST			
		MATERIAL	FINISH	BASE	FINISH	BASE	FINISH	BASE	FINISH	BASE	FINISH	MATERIAL	FINISH
D100	VESTIBULE	SV	-	RB	PT	RB	PT	RB	PT	RB	PT	GWB	PT
D101	RESEARCH DATA PROCESSING AREA	SV	-	RB	PT	RB	PT	RB	PT	RB	PT	ACT	PF
D102	CLEAN ROOM	CONC.	S	CONC.	PF	RB	PT / PF	RB	PT	RB	PT	EXP	PF
D103	DIRTY ROOM	CONC.	S	CONC.	PF	RB	PT / PF	RB	PT	CONC.	PF	EXP	PF
D104	GRIDING ROOM	CONC.	S	SS	SS SHEET	SS	SS SHEET	SS	SS SHEET	SS	SS SHEET	GWB	PT
D105	STORAGE ROOM	CONC.	S	CONC.	PF	CONC.	PF	CONC.	PF	RB	PT / PF	EXP	PF
D106	DRIER ROOM	CONC.	S	CONC.	PF	CONC.	PF	CONC.	PF	CONC.	PF	EXP	PF
D107	LUNCH ROOM	SV	-	RB	PT	RB	PT	RB	PT	RB	PT	ACT	PF
D108	MEN'S WASHROOM	SV	-	CB	PT	CB	PT	CB	PT	CB	PT	GWB	PT
D109	WOMEN'S WASHROOM	SV	-	CB	PT	CB	PT	CB	PT	CB	PT	GWB	PT
D110	MECHANICAL / ELECTRICAL ROOM	CONC.	S	CONC.	PF	CONC.	PF/ PL	CONC.	PF/ PL	RB	PT	EXP	PF

LEGEND

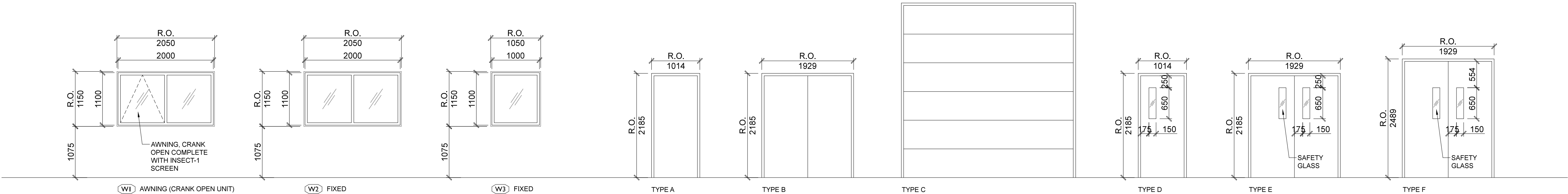
MATERIALS  
ACT - ACOUSTIC CEILING TILE  
CB - COVE BASE  
CONC. - CONCRETE  
EXP - EXPOSED STRUCTURE  
GWB - GYPSUM WALL BOARD  
PL - PLYWOOD  
SS - STAINLESS STEEL  
SV - SHEET VINYL  
RB - RUBBER BASE

FINISHES  
PT - PAINT  
PVC - PVC WALL PANEL  
PLAM - PLASTIC LAMINATE  
PF - PRE-FINISHED  
S - SEALER

NOTE:

FINISHES WITHIN THE BUILDING ARE TO BE SIMILAR TO EXISTING BUILDING 110. CONTRACTOR IS TO REVIEW THESE FINISHES LISTED WITH PWGSC DEPARTMENTAL REPRESENTATIVE DURING CONSTRUCTION PHASE PRIOR TO APPLICATION.

1 ROOM FINISH SCHEDULE  
A10 1:50



WINDOW AND DOOR TYPE GENERAL NOTES

- CLEAR ANODIZED ALUMINUM DUAL GLAZED INSULATED UNITS COMPLETE WITH THERMALLY BROKEN AND INSULATED ALUMINUM FRAMES. REFER TO SPECIFICATION MANUAL.
- FOR DOOR HARDWARE REFER TO SPECIFICATION MANUAL.
- ALL VISION PANELS IN EXTERIOR DOORS TO BE DUAL GLAZED INSULATED UNITS.
- WEATHER CLOSURE, STRIPPING, AND SWEEPS ON ALL EXTERIOR DOORS.
- D100a, D100b, D102a, D106b, D108 AND D109 TO BE EQUIPPED WITH AUTOMATIC DOOR OPERATORS.
- PREPARE D100a, D100b, D101a, D103a, D103c, D106b, D106c AND D107 DOOR FRAMES FOR INSTALLATION OF CARD ACCESS HARDWARE.


LEGEND

AO - AUTOMATIC OPERATOR  
CA - CARD ACCESS  
EXT. - EXTERIOR  
FRR - FIRE RESISTANCE RATING  
HM - HOLLOW METAL, WELDED  
INSUL. - INSULATION  
OH - OVER HEAD  
PP - PUSH PLATE  
PT - PAINT  
RM - ROOM  
R.O. - ROUGH OPENING  
SS - STAINLESS STEEL  
STC - SOUND TRANSMISSION CLASS  
VISION LT - VISION LIGHT  
WD - WOOD WITH SOLID CORE

DOOR SCHEDULE

DOOR NO.	LOCATION		SIZE	DOOR				FRAME			FRR / STC RATING	NOTES
	FROM	TO		TYPE	MATERIAL	CORE	FINISH	GLASS	MATERIAL	FINISH	GLASS	
D100a	RM 100	EXT.	914 x 2134	D	HM	INSUL.	PT	-	HM	PT	-	AO, PP, CA, THERMALLY BROKEN FRAME
D100b	RM 100	RM 102	914 x 2134	D	HM	-	PT	VISION LT	HM	PT	-	AO, PP, CA
D101a	RM 101	EXT.	914 x 2134	A	HM	INSUL.	PT	-	HM	PT	-	PP, CA, THERMALLY BROKEN FRAME
D101b	RM 101	RM 102	914 x 2134	D	HM	-	PT	VISION LT	HM	PT	-	CLOSER, KICKPLATE
D102a	RM 102	RM 103	2 - 914 x 2438	F	HM	-	PT	VISION LT	HM	PT	-	SS KICKPLATE ON BOTH SIDES, CLOSER, DUAL DOOR, AO SENSORS TO PROXIMITY
D103a	RM 103	EXT.	2 - 914 x 2134	E	HM	INSUL.	PT	VISION LT	HM	PT	-	PP, CA, THERMALLY BROKEN FRAME
D103b	RM 103	RM 105	2 - 914 x 2438	F	HM	-	PT	VISION LT	HM	PT	-	SS KICKPLATE ON BOTH SIDES, CLOSER, AND WEATHER STRIPPING
D103c	RM 103	EXT.	914 x 2134	A	HM	INSUL.	PT	-	HM	PT	-	PP, CA, THERMALLY BROKEN FRAME
D104	RM 104	RM 103	914 x 2134	A	HM	-	PT	-	HM	PT	-	STC 56 SS KICKPLATE ON BOTH SIDES, CLOSER, AND WEATHER STRIPPING
D105a	RM 105	RM 106	3048 x 3048	C	METAL	-	PT	-	METAL	PT	-	-
D105a	RM 106	EXT.	3660 x 3660	C	METAL	INSUL.	PT	-	METAL	PT	-	ELECTRICALLY OPERATED
D106b	RM 106	EXT.	914 x 2134	A	HM	INSUL.	PT	-	M, INSUL PT	PT	-	AO, PP, CA, THERMALLY BROKEN FRAME
D106c	RM 106	EXT.	914 x 2134	A	HM	INSUL.	PT	-	HM	PT	-	PP, CA, THERMALLY BROKEN FRAME
D107	RM 107	RM 101	914 x 2134	D	HM	-	PT	VISION LT	HM	PT	-	STC 47 CLOSER, KICKPLATE, CA
D108	RM 108	RM 100	914 x 2134	A	HM	-	PT	-	HM	PT	-	AO, PP
D109	RM 109	RM 100	914 x 2134	A	HM	-	PT	-	HM	PT	-	AO, PP
D110a	RM 110	EXT.	2 - 914 x 2134	B	HM	INSUL.	PT	-	HM	PT	-	DUAL DOOR, CLOSER, WEATHER STRIPPING, THERMALLY BROKEN FRAME
D110b	RM 110	RM 102	914 x 2134	A	HM	-	PT	-	HM	PT	-	1 HR. FRR CLOSER

2 WINDOW AND DOOR TYPES & DOOR SCHEDULE  
A10 1:50



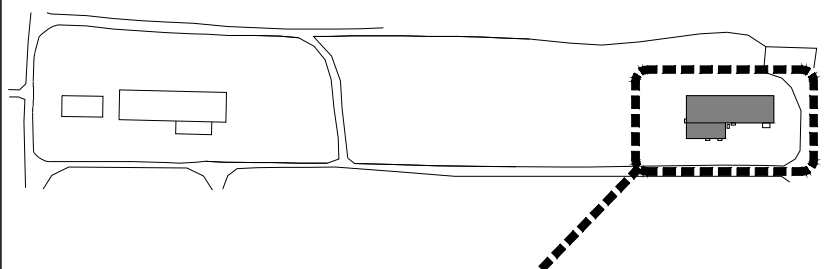
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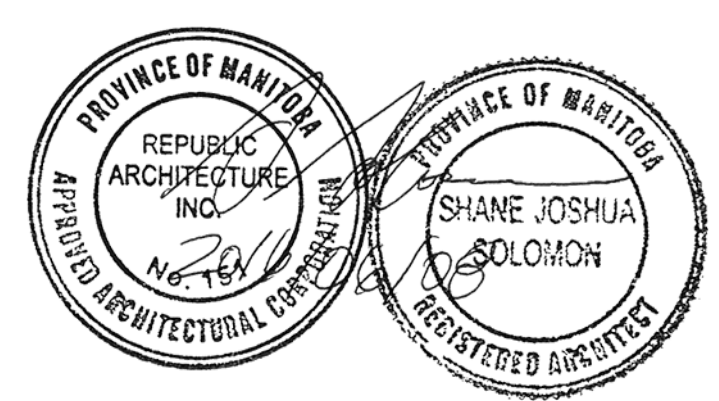
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AREA OF WORK



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AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

Drawing title/Titre du dessin  
ROOM FINISH SCHEDULE,  
WINDOW AND DOOR TYPES,  
DOOR SCHEDULE AND DETAILS

Project No./No. du projet  
R.076331

Sheet/Feuille  
A10  
OF A10

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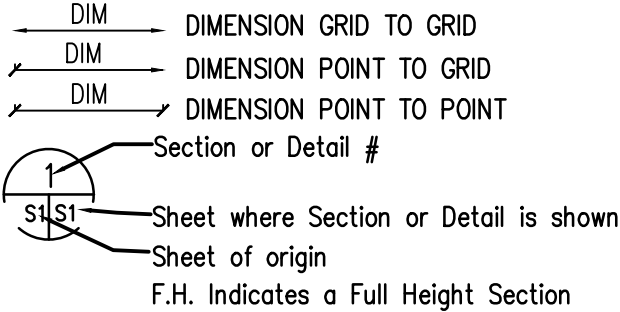
0 10 20 30 40 50 60 70 80 90 100mm

A10 Finish & Door Schedule

GENERAL NOTES

- DO NOT SCALE DRAWINGS.
- Design live loads shall not be exceeded at any time during construction. For concrete structures, design live loads may only be applied after concrete reaches its design strength.
- Construction loads must not be imposed on structure in excess of specified design live load. Design live loads may only be applied after concrete reaches its design strength.
- The contractor is to verify dimensions, elevations, slopes, details, conditions and other data noted on the structural drawings with conditions on the site, co-ordinate all dimensions with the architectural drawings prior to construction or fabrication of any building component, and is held responsible for reporting any discrepancies that effect structural framing to the departmental representative before proceeding with the work. Variations and modifications to work shown on the structural drawings shall not be carried out without written permission from the departmental representative.
- Modifications, alterations or substitutions must be authorized in writing by the Departmental Representative.
- The General Contractor shall locate all existing site services prior to construction.
- For openings in slabs, floor, walls, roof, etc. refer to architectural, mechanical, structural and or other pertinent drawings.
- Location of construction joints not indicated on plans is the responsibility of the general contractor but approval must be obtained from the Departmental Representative before proceeding.
- The contractor shall be responsible for the design and installation of all necessary shoring, bracing and form work. Form work for new construction shall be bridged over existing services.
- The structure and grade beams shall be braced in all directions to safely withstand all lateral forces which may be encountered during erection. The bracing shall remain in place until all permanent bracing, framing, cladding and backfill are in place.
- All codes referenced in these notes shall be of the latest applicable revision.
- All beams, angles and miscellaneous metals indicated on architectural drawings but not shown on structural drawings, shall be included in the tender price. The contractor is responsible for confirming sizes and locations of these members with both Departmental Representatives prior to tender closing.
- Do not cut or drill any openings into structural members without obtaining written permission from the departmental representative.
- The Contractor shall retain a manufacturer's representative to provide onsite anchor installation training for all of their products specified. The departmental representative of record must receive documented confirmation that the contractors personnel are trained prior to the commencement of installing anchors.

DIMENSIONS & SYMBOLS



DESIGN SPECIFICATIONS

- The building is designed in accordance with the 2011 edition of the Manitoba Building Code & the 2010 National Building Code of Canada,  
— Snow (Roof) 0.8(Ss) + (Sr) = 1.88 kPa (39.3 psf)  
— Wind q(1/50) = 0.49 kPa (10.23 psf)

TEMPORARY BRACING

- The structure and grade beams shall be braced in all directions to safely withstand all lateral forces which may be encountered during erection. The bracing shall remain in place until all permanent bracing, framing, cladding and backfill are in place.

CONCRETE

- Concrete shall have the following properties.

CONCRETE STRENGTH AND MIX SPECIFICATIONS							
USE	EXPOSURE CLASS	CEMENT TYPE	MINIMUM COMPRESSIVE STRENGTH	MAXIMUM WATER TO CEMENT RATIO	AIR CONTENT (%)	SLUMP	MAXIMUM AGGREGATE SIZE
PILES, PILECAPS	S-2	MS	32 MPa AT 28 DAYS	0.45	4 – 7	90 mm	20 mm
GRADE BEAMS	F-2	GU	25 MPa AT 28 DAYS	0.55	4 – 7	90 mm	20 mm
SLABS (STRUCTURAL OR ON GRADE)	N	GU	25 MPa AT 28 DAYS	0.55	NONE	90 mm	20 mm
EXTERIOR SIDEWALKS, CURBS	C-2	GU	32 MPa AT 28 DAYS	0.45	5 – 8	90 mm	20 mm

- Construction joints shall be made and located so as not to significantly impair the strength of the structure. The location of construction joints shall be approved by the Departmental Representative. Slab and beam construction joint details shall be approved by the Departmental Representative.
- Provide 150mm plastic wrapped cardboard void form below all beams,walls and pile caps.
- Place concrete as a continuous operation stopping only at construction joints. Construction joints shall be adequately dowelled and keyed. If not provided as part of this drawing set, details and locations of construction joints shall be provided by the contractor and reviewed by the departmental representative.
- Reinforcing steel must be reviewed by the departmental representative prior to placing concrete.
- The general contractor shall notify the Departmental Representative at least 48 hours (72 hours for out-of-town projects) prior to all concrete pours.
- Fins on concrete surfaces shall be removed. Honeycombed or otherwise defected concrete shall be removed sufficiently to expose sound concrete and shall be repaired as directed by the departmental representative.
- Timing for removal of form work to be based on strength of concrete, as determined by the testing of field cured concrete cylinders. Do not remove form work from footings before concrete has reached 50% of its design strength. For walls and columns not supporting load, remove at 60% of design strength. For suspended structural slabs, form work may be removed at 80% of design strength, provided the slab is re-shored until full strength is reached.

CONCRETE FORMWORK

- DO NOT scale this drawing
- It is the responsibility of the contractor to verify site dimensions and conditions with those shown on the drawings and to report any discrepancies to the departmental representative before proceeding with formwork installation.
- This drawing is provided for construction and assembly of concrete formwork for area indicated on drawings only.
- Unless otherwise noted it is the responsibility of the contractor to ensure the location attachment and anchorage of all bracing and shoring for any possible lateral loads including wind, eccentric loading, fall protection etc.
- Lavergne Draward is not responsible for any alterations and deviations from what is specified in the formwork details, drawings or general notes provided. It is the final responsibility of the contractor to ensure the proper design and erection to any formwork.

REINFORCING STEEL

- Lap top bars at centre span and bottom bars over supports.
- All reinforcing to be held in place and tied by the use of proper accessories such as hi-chairs, spacers, etc., to be supplied by the reinforcing steel fabricator.
- Reinforcing in concrete beams to be bent 600mm round corners or use 900mm x 900mm corner bars.
- Submit shop drawings which clearly indicate bar sizes, grade, spacing, hooks, bends, and supporting/spacing devices, etc., for review to the Departmental Representative prior to fabrication of the reinforcing steel.
- Housekeeping pads shall be a minimum of 100mm thick and reinforced with 10M @ 300mm O.C. each way at centre unless otherwise shown.
- Prior to placing concrete, ensure all reinforcing steel is clean, free of loose scale, rust, mud, oil or other foreign material which would reduce bond.
- Heating, quenching and bending of reinforcing steel on the site is not allowed.
- Splices at points of maximum tensile stress shall be avoided wherever possible. Such splices, where used, shall be approved by the departmental representative, the minimum lap shall be 48 bar diameters.
- Continuous and temperature reinforcing bars shall be lapped 24 bar diameters, or 450mm minimum at splice or at corners.
- Terminate continuous bar at non-continuous ends with standard hook.
- Minimum clear distance between parallel bars shall be greater than the largest of the following:  
a) 1.4 times bar diameter.  
b) 1.4 times maximum size of aggregates.  
c) 30mm minimum.
- Minimum concrete cover for reinforcing:

Exposure Condition	Exposure Class		
	N	F-1, F-2, S-1, S-2	C-1,C-2,C-3, A-1,A-2,A-3
PILES, AND CONCRETE CAST AGAINST AND/OR PERMANENTLY EXPOSED TO EARTH.	---	75mm	75mm
BEAMS	30mm	40mm	60mm
SLABS	20mm	40mm	60mm

EXCAVATION AND BACKFILL

- Grade beams or walls shall be backfilled with granular material.
- Excavation, sub-grade preparation and backfill for slabs on grade shall be provided in accordance with the geotechnical report included with the specifications.
- For excavation, backfill and compaction, refer to the Departmental Representative's recommendation and geotechnical report.
- Excavation, backfill and compaction is to be supervised by a Departmental Representative.
- All compaction test results are to be forwarded to the other Departmental Representatives.

PRECAST CONCRETE DRIVEN PILES

- The contractor shall confirm the location of sub-grade services prior to commencing drilling for piles.
- Precast concrete piles should be pre-drilled and driven to depths indicated on drawings.
- Piles driven within five pile diameters on center shall be monitored for heave and where it is observed, the piles shall be re-driven to the aforementioned refusal criteria.
- All foundations shall be installed in accordance with the geotechnical report that has been prepared for this project. A copy of the report is attached to the specifications.
- Pile installation shall be provided under full time inspection of a qualified professional departmental representative selected by the departmental representative.
- Maintain an accurate record of each pile.
- All precast driven piles are designed for the factored ultimate capacities at the ULS skin friction shown from Geodetic Elevation:  
— 387.0m – 383.3m = 0kPa  
— 383.3m – 370.3m = 11.2kPa  
Factored ULS end bearing capacity at geodetic elevation 377.5 is 1200kPa
- Pile spacing shall not be less than three pile diameters on center.
- All piles to meet the pile driving criteria set out in the Geotechnical Report.
- Pre-boring should be no larger than 50mm larger than pile diameter and a depth no deeper than 3m.

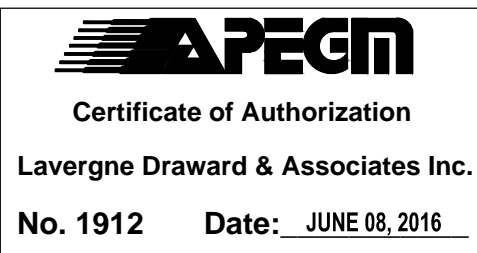
FLOOR SLAB SUPPORTED ON GRADE

- Remove all top soil and soils containing organics. Contractor is to refer to geotechnical report for indication of depths of unsuitable soil and is to remove soft or weak areas to competent material. All of this work is to be carried out under the direct instructions of the Departmental Representative.
- Proof roll sub-grade as directed by the Departmental Representative.
- A Departmental Representative must provide a letter of certification with an engineer's seal, stating that the granular layer and sub-base preparation has been installed in accordance to their recommendations and requirements. Lavergne, Draward, & Associates Inc. will not certify these items. The letter of certification is to be forwarded to the Contractor, along with all Departmental Representatives.
- Prepare granular layer and sub-base as per Departmental Representative's recommendation and geotechnical report.

PRE-ENGINEERED BUILDING

- Pre Engineered building to be designed for design loads as per the latest edition of the Manitoba Building Code & the 2010 National Building Code of Canada.
- Building shall be sealed by an Engineer licenced to practice in the project Province.
- Design Live Loads:  
— Snow Load 2.1(0.8)+0.2 = 1.88 kPa (39.3 psf)  
— Wind q(1/50) = 0.49 kPa (10.23 psf)  
— Wind q(1/10) = 0.38 kPa (7.9 psf)

THE CONTRACTOR IS TO VERIFY DIMENSIONS AND DATA NOTED ON THE STRUCTURAL DRAWINGS WITH CONDITIONS ON THE SITE. CO-ORDINATE ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS, AND IS HELD RESPONSIBLE FOR REPORTING ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION FROM THE ENGINEER. THIS DRAWING IS NOT TO BE SCALED.



DO NOT SCALE DRAWINGS

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0	ISSUED FOR DESIGN DEVELOPMENT	16/02/08
Revision/Revisions	Description/Description	Date/Date

Client/client

**AGRICULTURE AND AGRI-FOOD CANADA (AAFC)**

**BRANDON, MANITOBA**

Project title/Titre du projet  
**2701 GRAND VALLEY ROAD,  
BRANDON, MANITOBA**

**BUILDING 111 -  
BRANDON RESEARCH CENTRE**

Approved by/Approuve par  
**JULIEN LAVERGNE**

Designed by/Concept par  
**CORY PELLETIER**

Drawn by/Dessine par  
**JEMAL WALKER**

PWGSC Project Manager/Administrateur de Projets TPSGC  
**BRAD SITRAZ**

PWGSC Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'Ingénierie, TPSGC  
**-**

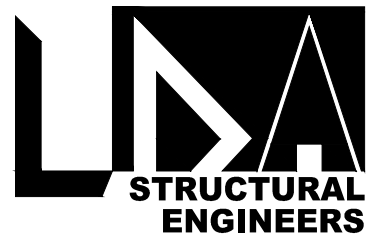
Client/client  
**AGRICULTURE AND AGRI-FOOD CANADA (AAFC)**

Drawing title/Titre du dessin  
**STRUCTURAL  
GENERAL NOTES**



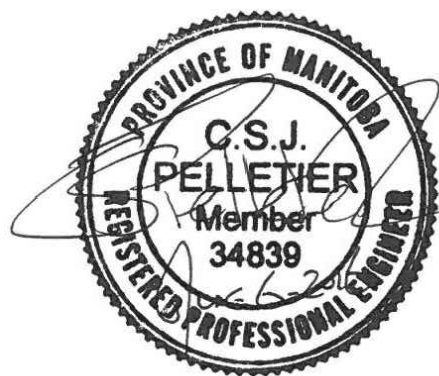


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& Associates Inc.

Project Number: 15299



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Client/client  
AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

Drawing title/Titre du dessin

STRUCTURAL  
FOUNDATION PLAN  
& SCHEDULES

Project No./No. du projet

R.076331

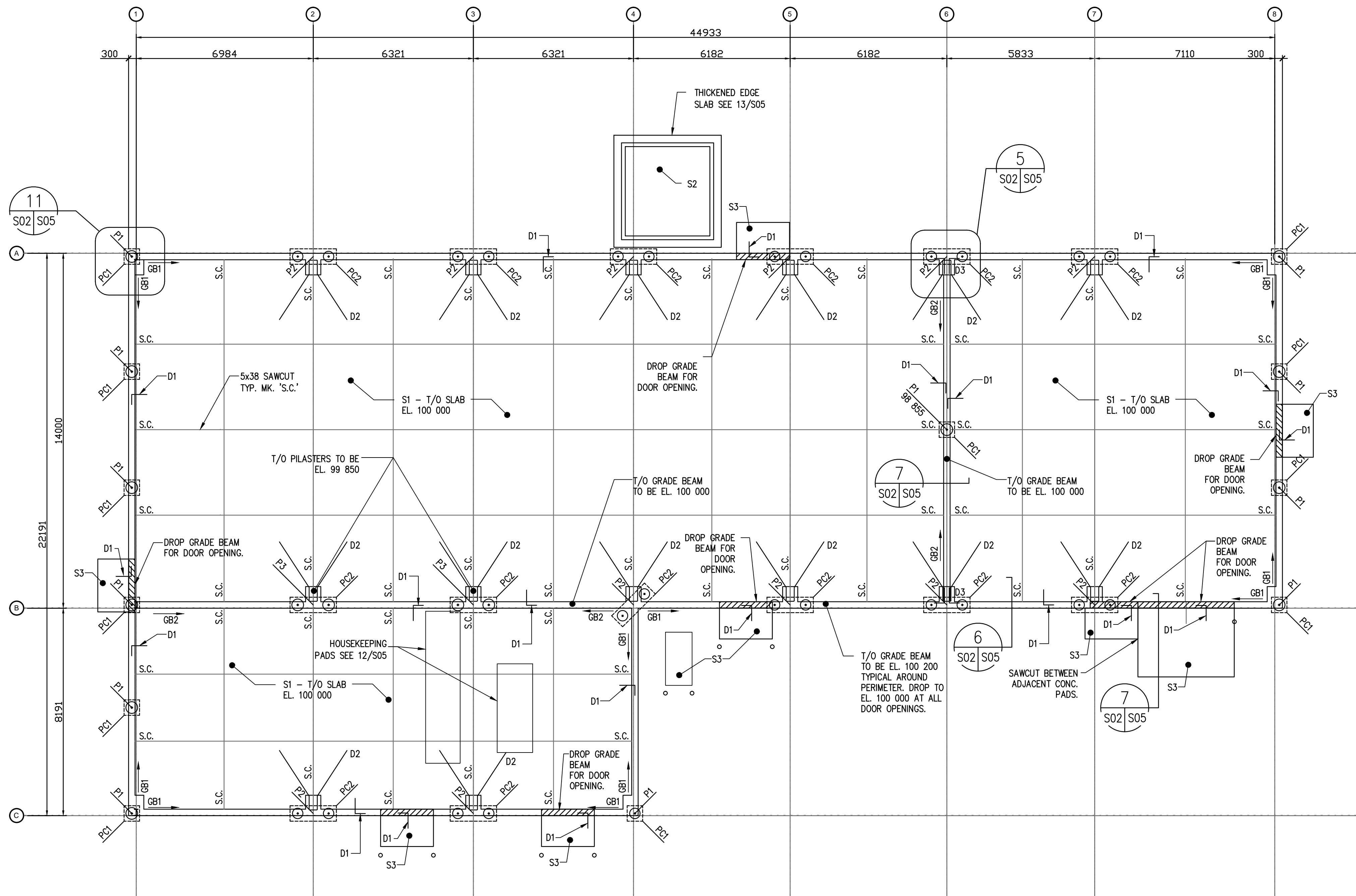
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S02

OF 5

Revision no./  
La Révision  
no.

3



1 FOUNDATION PLAN  
S02 1:100

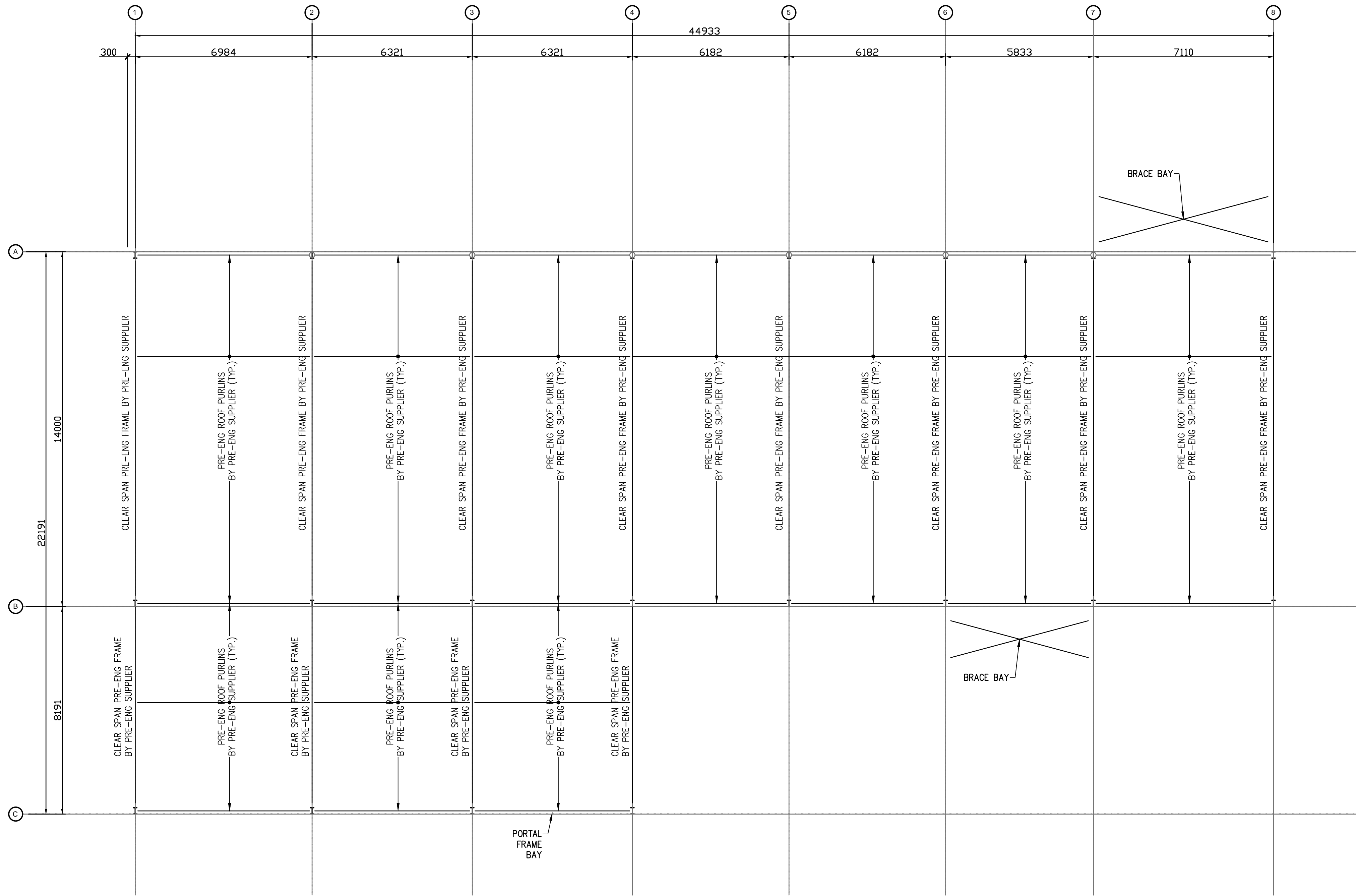
NOTES: TOP OF PILASTERS TO BE 100 200 U.N.O.  
DESIGN FLOOR LOADS: LIVE LOAD = 4.8kPa

MARK	SIZE	REINFORCING	REMARKS
S1	150	10M @ 300 O.C. TOP	IN HEATED AREAS, THE FLOOR SLAB SHOULD BE PLACED ON 150mm OF MIT CLASS A GRANULAR BASE COURSE OVERLYING 200mm MIT CLASS C GRANULAR BASE COURSE. IN UNHEATED AREAS, THE FLOOR SLAB SHOULD BE PLACED ON 150mm OF MIT CLASS A GRANULAR BASE COURSE OVERLYING 250mm MIT CLASS C GRANULAR BASE COURSE. THE GRANULAR BASE SHOULD BE PLACED IN LIFTS NO GREATER THAN 150mm AND COMPACTED TO 100% AND 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD) FOR CLASS A AND CLASS C RESPECTIVELY. (SEE GEOTECHNICAL REPORT FOR RECOMMENDATIONS.)
S2	200	15M E.W. MIDDLE @ 300 O.C.	SLAB ON 75mm THICK BASE LAYER CONSISTING OF MIT CLASS A GRANULAR BASE COURSE UNDERLAIN BY A 250mm THICK SUB-BASE LAYER CONSISTING OF MIT CLASS C GRANULAR BASE COURSE. GRANULAR FILL SHOULD BE PLACED IN LIFTS NO GREATER THAN 150mm AND COMPACTED TO 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD). REFER TO ARCH FOR LOCATIONS & SIZES.
S3	125	10M @ 350 O.C. E.W. 50mm FROM TOP	SLAB ON 75mm THICK BASE LAYER CONSISTING OF MIT CLASS A GRANULAR BASE COURSE UNDERLAIN BY A 250mm THICK SUB-BASE LAYER CONSISTING OF MIT CLASS C GRANULAR BASE COURSE. GRANULAR FILL SHOULD BE PLACED IN LIFTS NO GREATER THAN 150mm AND COMPACTED TO 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD). SAWCUT @ 1220 O.C. REFER TO ARCH FOR LOCATIONS & SIZES.

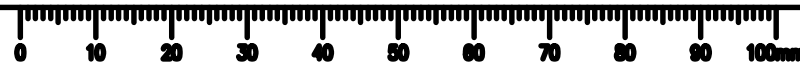
MARK	DESCRIPTION	ELEVATION
P1	406# x 12M	98 665 U.N.O.
P2	2- 406# x 12.5M	98 865 U.N.O.
P3	2- 406# x 14.5M	98 865 U.N.O.


MARK	DESCRIPTION
D1	10M @ 300 O.C. 400
D2	25M TIE BAR @ 450 CENTER OF SLAB 2730
D3	2-15M BARS @ 460 TOP & BOTTOM 460

MARK	SIZE (WxD)	REINFORCING
GB1	250x800	2-25M T&B, 2-15M HORIZONTAL C/W 10M STIRRUPS @ 350 O.C., T/O GRADE BEAM EL. 100 200
GB2	250x610	2-25M T&B, C/W 10M STIRRUPS @ 350 O.C., T/O GRADE BEAM EL. 100 000



1 ROOF PLAN  
S03 1:100



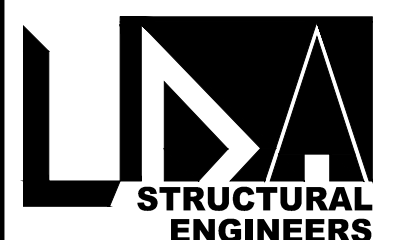


Public Works and  
Government Services  
Canada

Travaux publics et  
Services gouvernementaux  
Canada


REAL PROPERTY SERVICES  
Western Region  
SERVICES IMMOBILIERS  
Région de l'ouest

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Lavergne Draward  
& Associates Inc.

Project Number: 15299



C.S.J. PELLETIER  
Manitoba  
34839  
REGISTERED PROFESSIONAL ENGINEER



Certificate of Authorization  
Lavergne Draward & Associates Inc.  
No. 1912 Date: JUNE 08, 2016

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Client/client

AGRICULTURE AND  
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(AAFC)

BRANDON, MANITOBA

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2701 GRAND VALLEY ROAD,  
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BRANDON RESEARCH CENTRE

Approved by/Approuve par  
JULIEN LAVERGNE

Designed by/Concept par  
CORY PELLETIER

Drawn by/Dessiné par  
JEMAL WALKER

PWGSC Project Manager/Administrateur de Projets TPSGC  
BRAD SITRAZ

PWGSC Architectural and Engineering Resources Manager/  
Ressources Architecturales et de Directeur d'Ingénierie, TPSGC

Client/client

AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

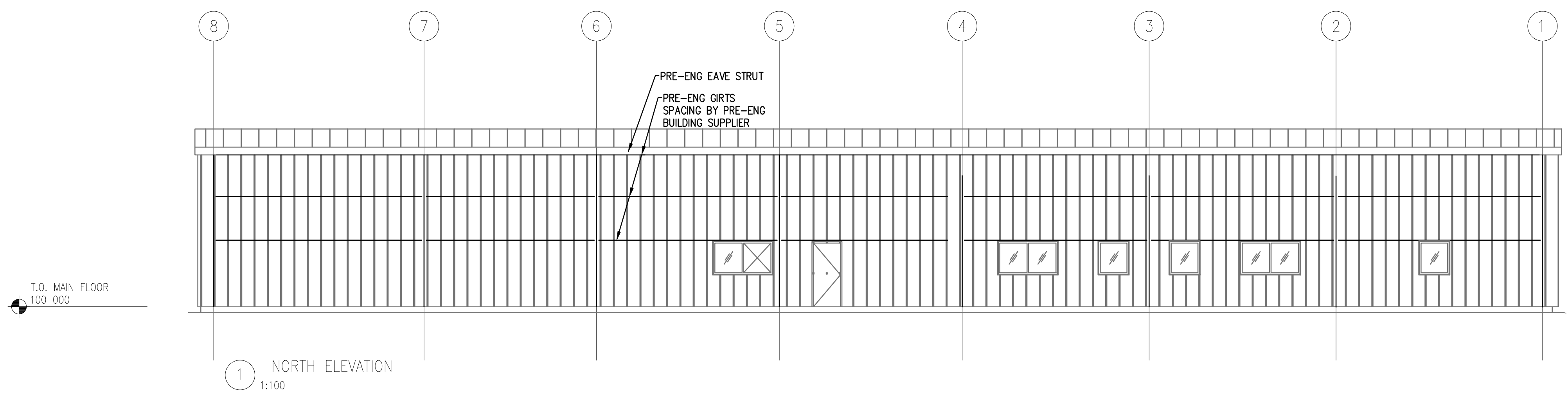
Drawing title/Titre du dessin

STRUCTURAL ROOF  
FRAMING PLAN

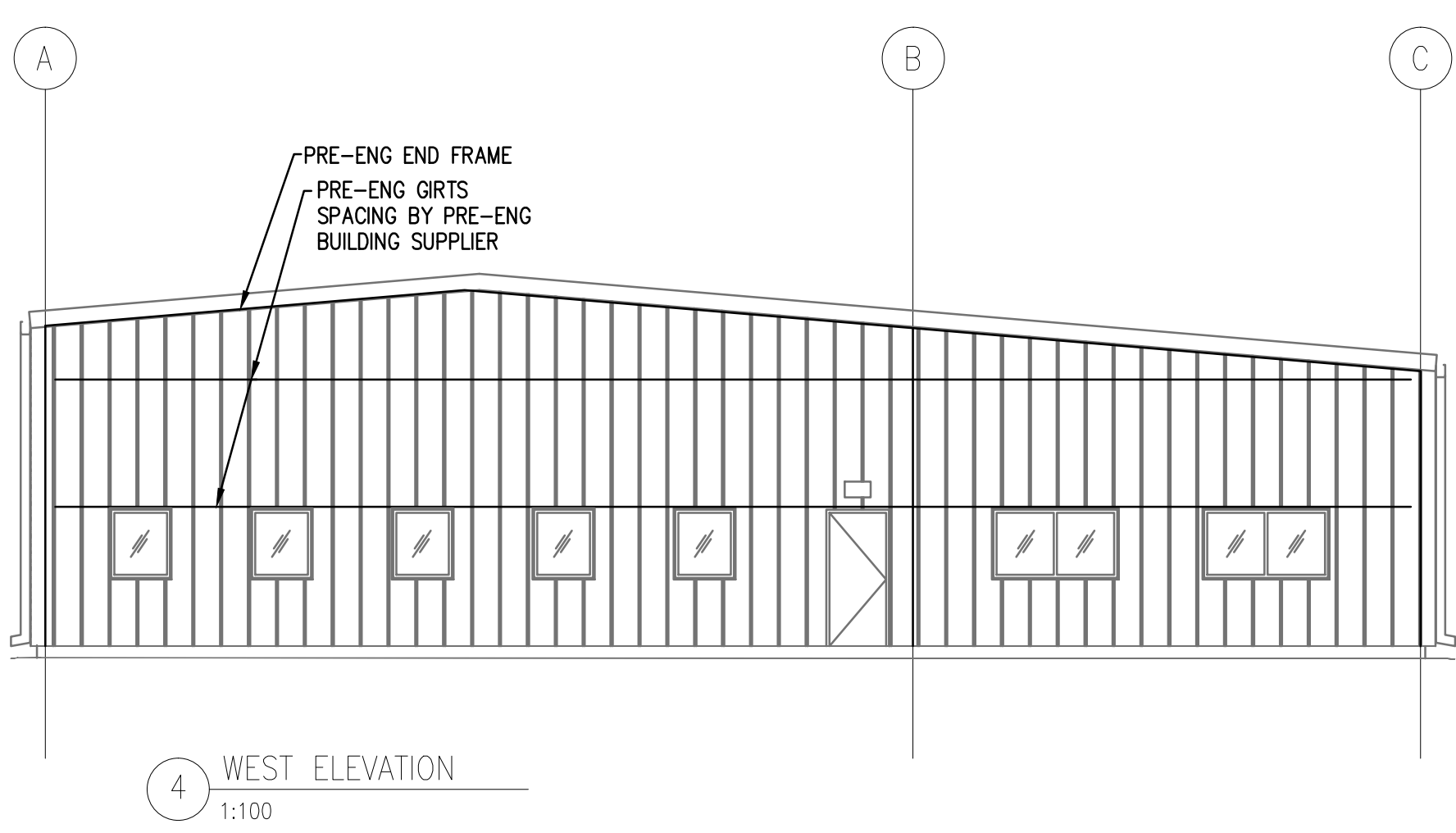
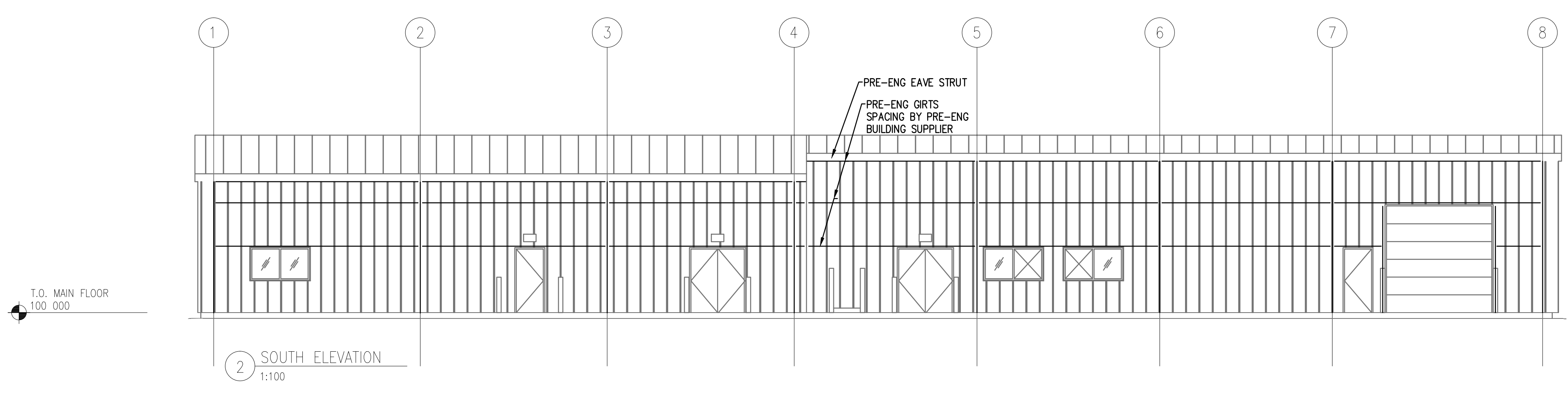
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R.076331	S03 OF 5	3






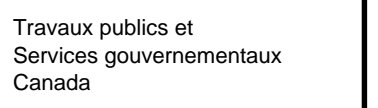


- APPROXIMATE LOCATIONS OF STEEL MEMBERS.
- STEEL BY PRE-ENG SUPPLIER.
- INSIDE FLANGES OF GIRTS TO BE FACE DOWN FOR HOUSEKEEPING PURPOSES.





Public Works and  
Government Services  
Canada



Travaux publics et  
Services gouvernementaux  
Canada

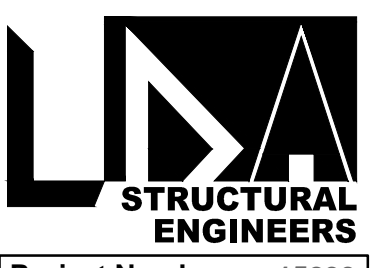
REAL PROPERTY SERVICES

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SERVICES IMMOBILIERS

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STRUCTURAL  
ENGINEERS

Lavergne Draward  
& Associates Inc.

Project Number: 15299



C.S.J.  
PELLETIER  
Member  
34839  
REGISTERED PROFESSIONAL ENGINEER



APECM

Certificate of Authorization

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AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

Drawing title/Titre du dessin  
BUILDING ELEVATIONS


Project No./No. du projet  
R.076331

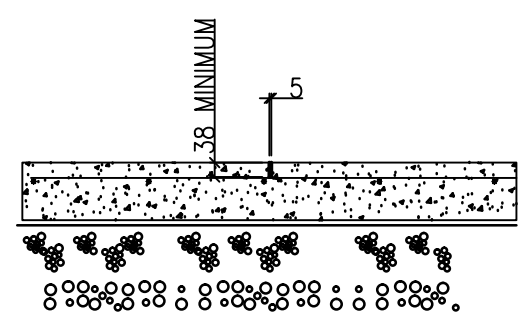
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S04  
OF 5

Revision no./  
La Révision  
no.  
3

PWGSC - B1 - 1000X707

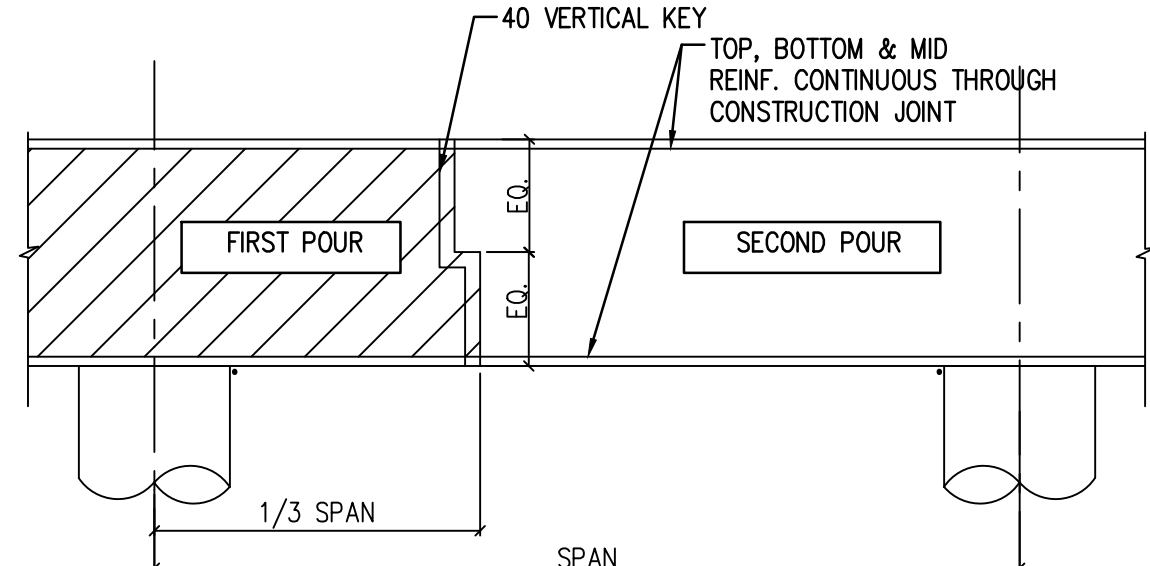
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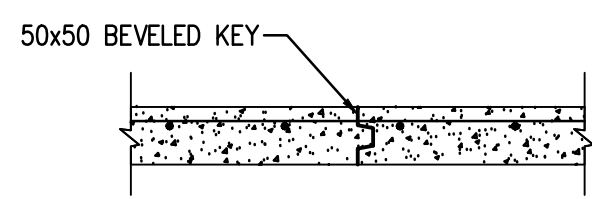


- NOTES:**
1. SAW CUTTING SHALL BE COMPLETED WITHIN 6 TO 18 HOURS OF PLACING CONCRETE.
  2. AFTER THE SLAB IS A MINIMUM 60 DAYS OLD, REMOVE ALL DEBRIS FROM THE SAW CUTS AND FILL WITH MORTAR CONTAINING CEMENT, SAND AND LATEX BONDING AGENT, OR AS NOTED IN SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT CONSTRUCTION ACTIVITIES WILL NOT REDUCE QUALITY OR DURABILITY OF FILLED JOINTS.
  3. MAXIMUM SPACING OF SAWCUTS IN SLAB ON GRADE SHALL NOT EXCEED THE FOLLOWING, U/N OTHERWISE:  
100 SLAB - MAXIMUM SPACING 3.6m  
125 SLAB - MAXIMUM SPACING 4.5m  
150 SLAB - MAXIMUM SPACING 4.5m  
200 SLAB - MAXIMUM SPACING 4.5m
  4. COORDINATE EXACT LOCATION OF SAWCUTS IN SLAB ON GRADE WITH ARCHITECTURAL FLOOR FINISHES.
  5. SAWCUT SLAB ON GRADE AT LOCATIONS NOTED BELOW. ALTERNATE DETAIL SHALL BE SUBMITTED TO ENGINEER FOR REVIEW, WELL IN ADVANCE OF POURING SLAB ON GRADE.
  6. PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT GROUT ALL CRACKS IN THE SLAB ON GRADE, AND FILL WITH MORTAR CONTAINING CEMENT, SAND AND LATEX BONDING AGENT OR AS NOTED IN SPECIFICATIONS.

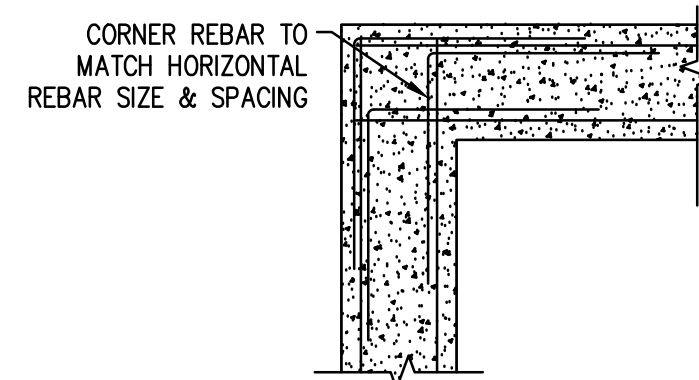
**1** TYPICAL SAWCUT DETAIL  
S05 1:20



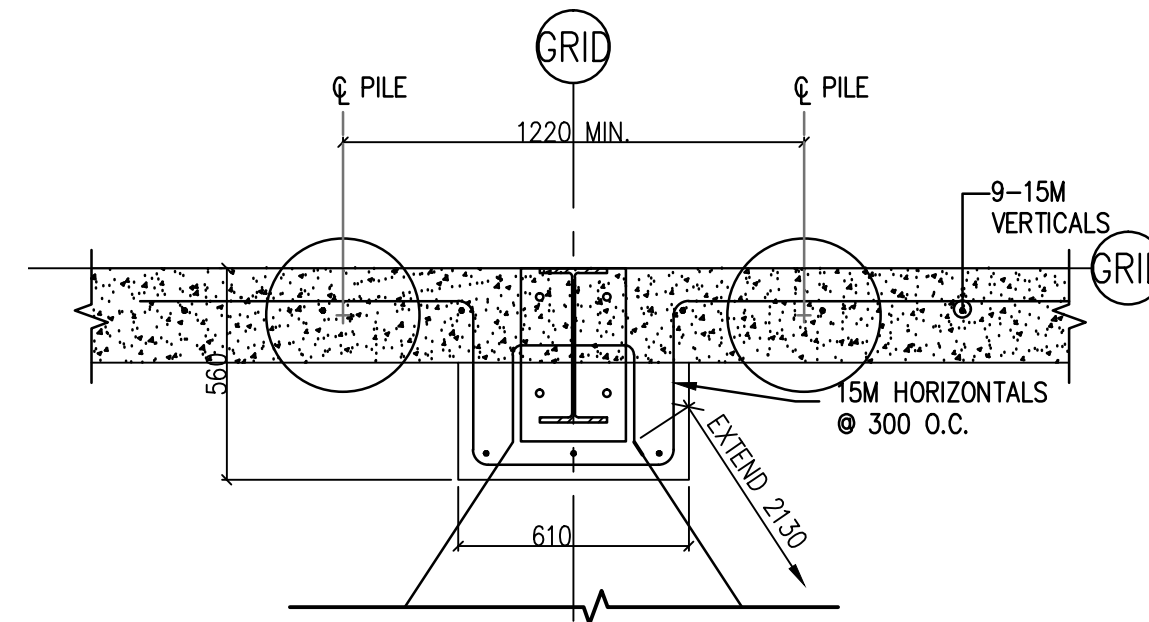
**2** TYPICAL CONSTRUCTION JOINT DETAIL  
S05 1:20



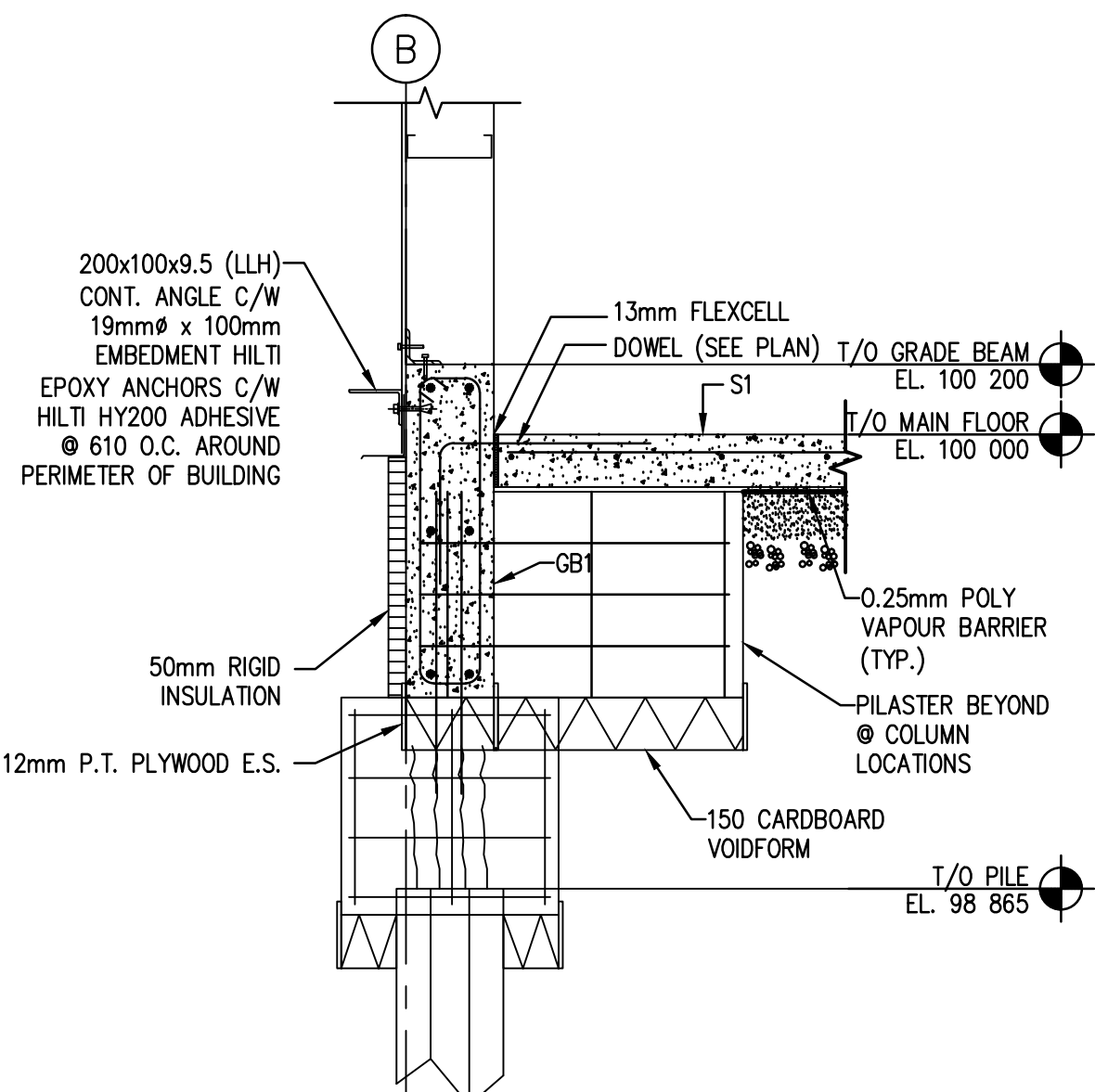
**3** TYPICAL SLAB ON GRADE CONSTRUCTION JOINT DETAIL  
S05 1:20



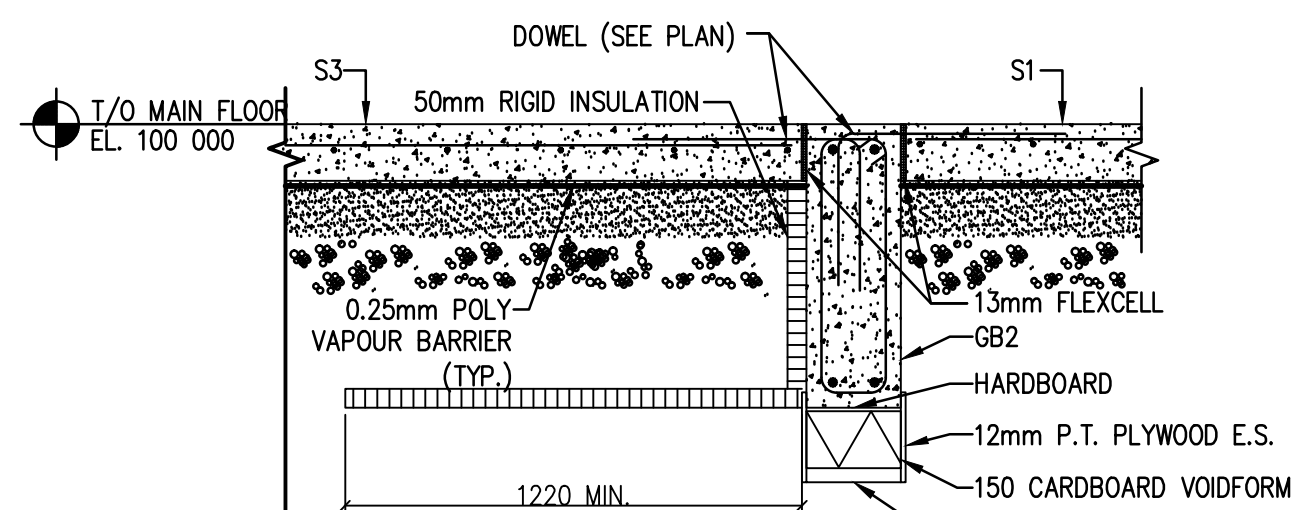
**4** TYPICAL CORNER REBAR DETAIL  
S02 S05 1:20



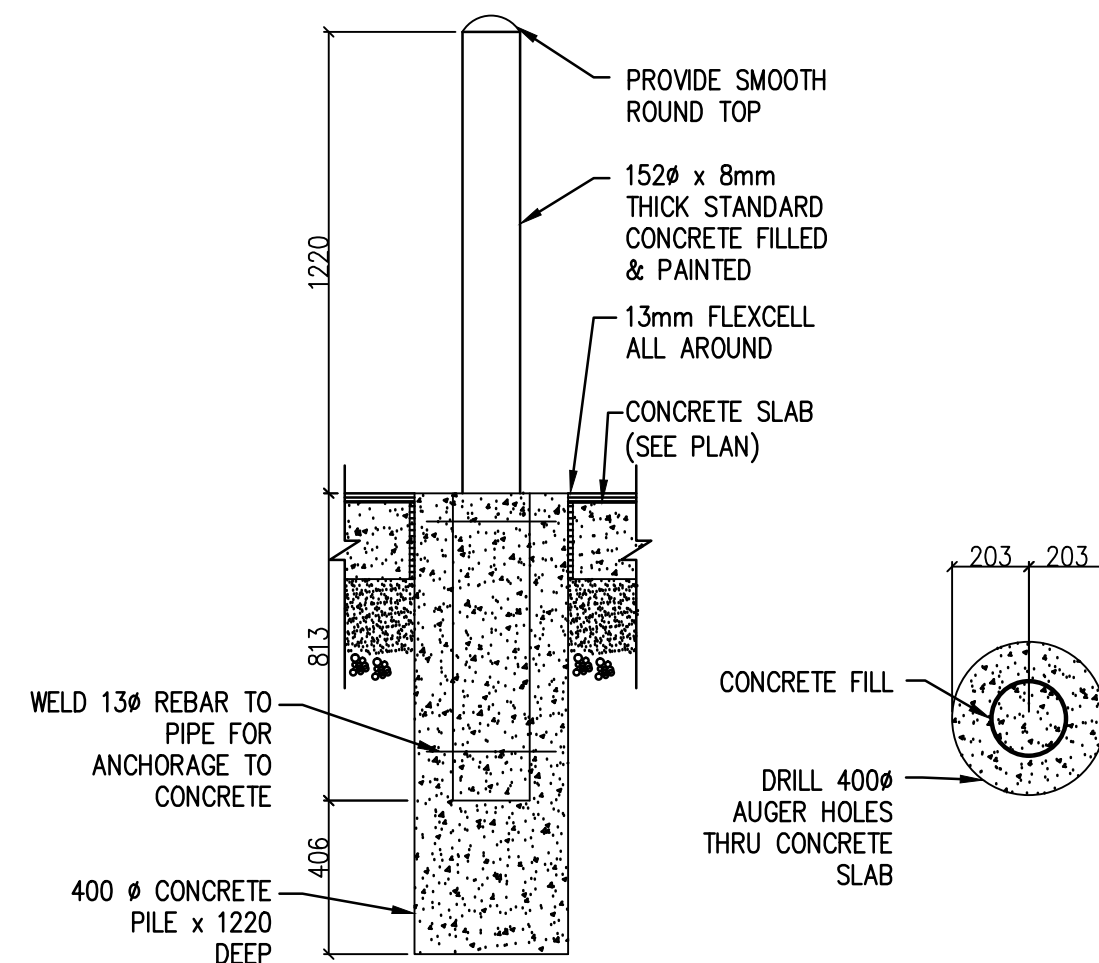
**5** TYPICAL PILASTER 'P2' DETAIL  
S02 S05 1:20



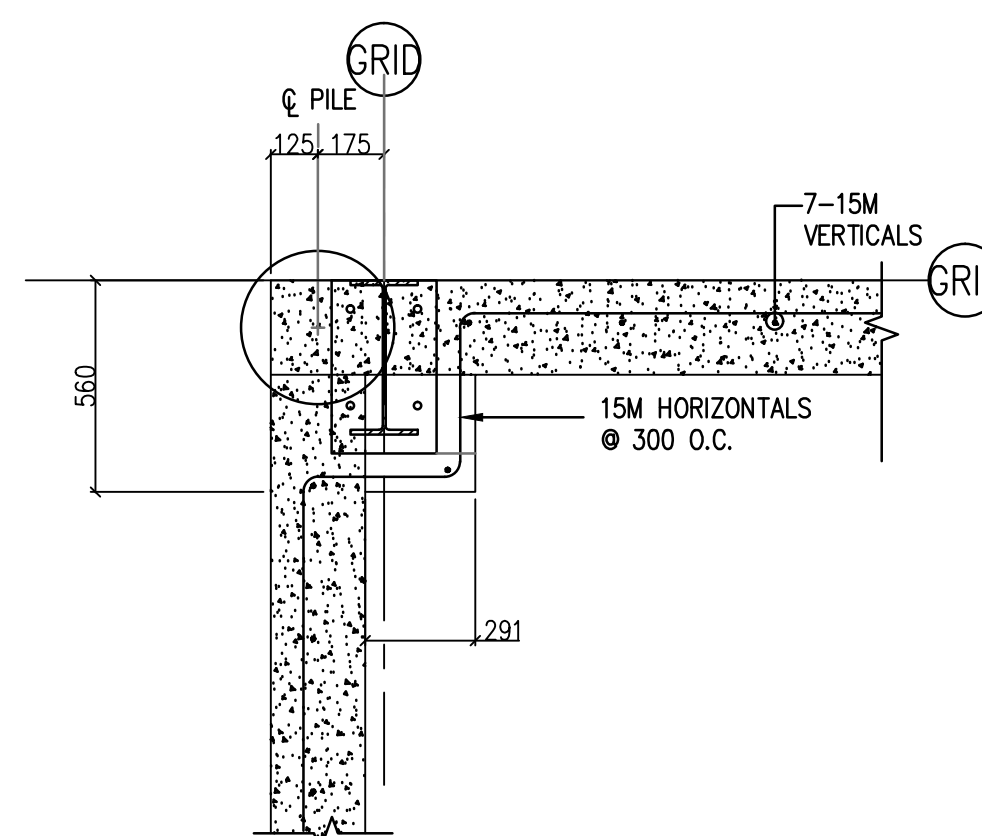
**6** TYPICAL PILASTER 'P2' SECTION  
S02 S05 1:20



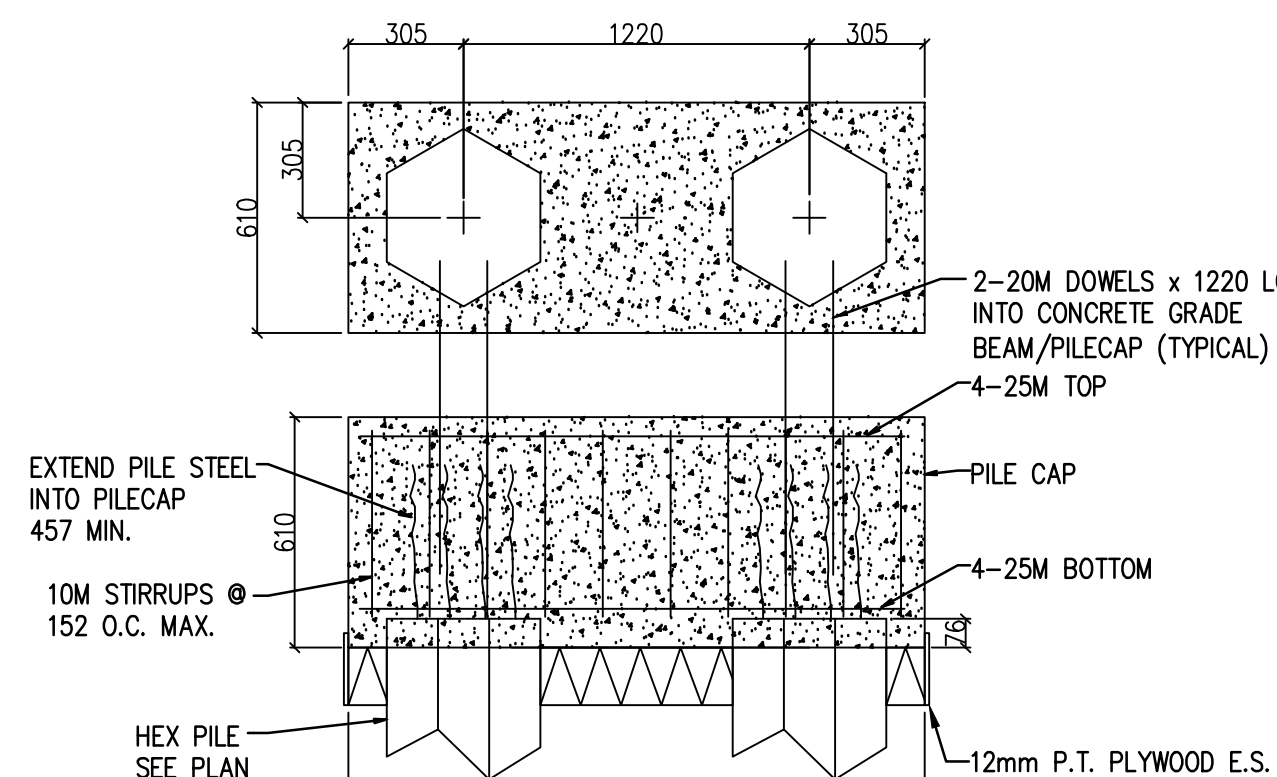
**7** SECTION  
S02 S05 1:20



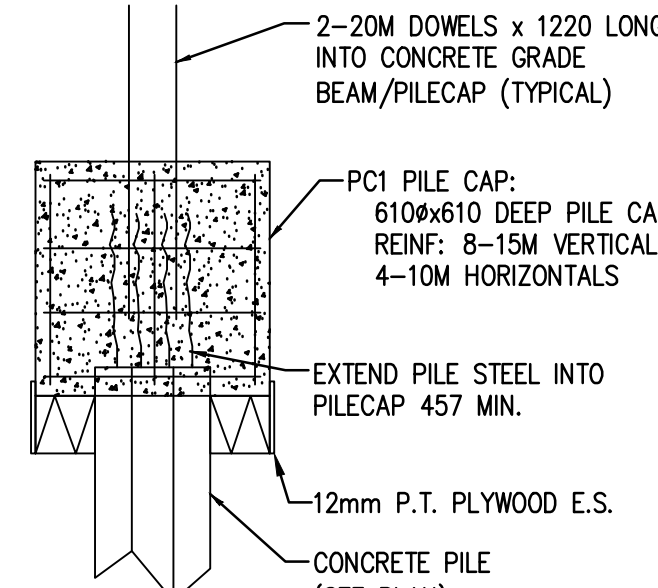
**8** TYPICAL BOLLARD DETAIL  
S02 S05 1:20



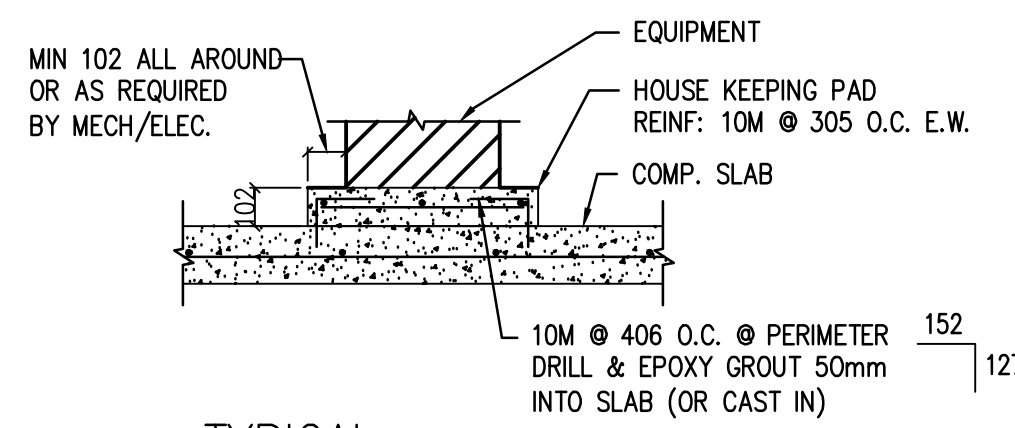
**11** TYPICAL CORNER PILASTER DETAIL  
S02 S05 1:20



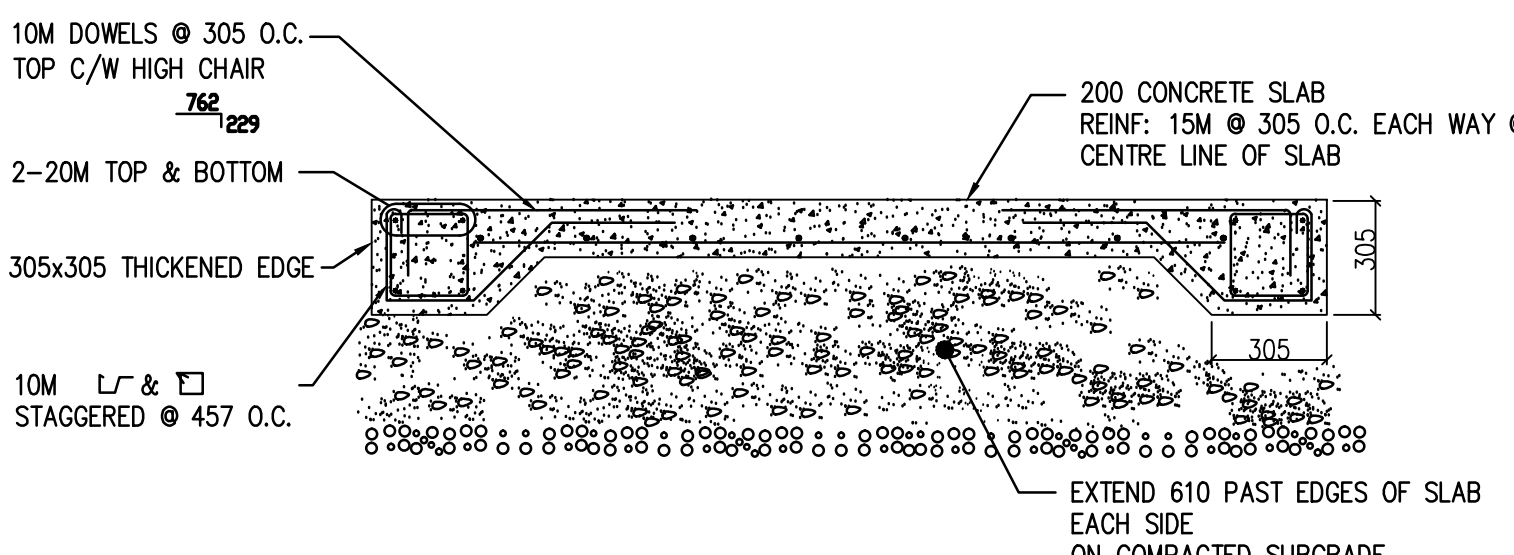
**9** PC-2 DOUBLE PILECAP DETAIL  
S05 1:20



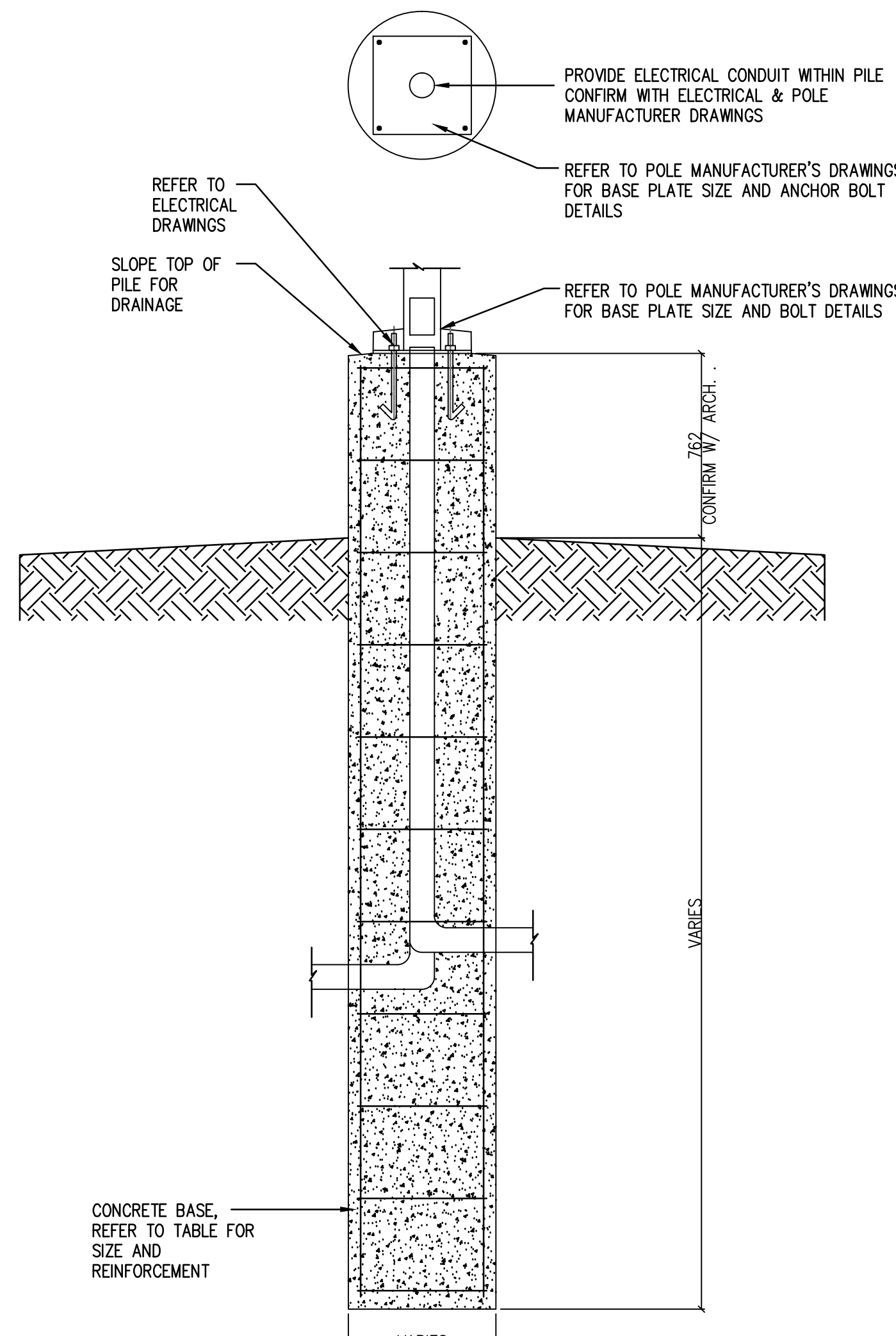
**10** PC-1 SINGLE PILECAP DETAIL  
S05 1:20



**12** TYPICAL HOUSEKEEPING PAD  
S05 S05 1:20



**13** TYPICAL THICKENED EDGE SLAB ON GRADE DETAIL  
S05 1:20



POLE HT.	DIAMETER	DEPTH BELOW FINISH GRADE	REINFORCEMENT
TO 7.62m	610	3.05m	6-20M VERT. 10M TIES @ 305 O.C.
TO 9.14m	762	3.66m	10-20M VERT. 10M TIES @ 305 O.C.
TO 10.7m	762	4.27m	10-20M VERT. 10M TIES @ 305 O.C.

**14** LUMINAIRE BASE DETAIL  
S05 S05 1:20

Public Works and Government Services Canada  
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**REAL PROPERTY SERVICES**  
Western Region  
**SERVICES IMMOBILIERS**  
Région de l'ouest

THE CONTRACTOR IS TO VERIFY DIMENSIONS AND DATA NOTED ON THE STRUCTURAL DRAWINGS WITH CONDITIONS ON THE SITE. CO-ORDINATE ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS, AND IS HELD RESPONSIBLE FOR REPORTING ANY DISCREPANCIES TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THE STRUCTURAL DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION FROM THE ENGINEER. THIS DRAWING IS NOT TO BE SCALED.

**Lavergne Draward & Associates Inc.**  
STRUCTURAL ENGINEERS  
Project Number: 15299

**C.S.J. PELLETER**  
Member  
34839  
REGISTERED PROFESSIONAL ENGINEER

**APECM**  
Certificate of Authorization  
Lavergne Draward & Associates Inc.  
No. 1912 Date: JUNE 08, 2016

**DO NOT SCALE DRAWINGS**

Revision/Revisions	Description/Description	Date/Date
3	ISSUED FOR CONSTRUCTION	16/06/08
2	99% CONSTRUCTION DOCUMENTS	16/05/10
1	50% CONSTRUCTION DOCUMENTS	16/03/21
0	ISSUED FOR DESIGN DEVELOPMENT	16/02/08

Client/client

**AGRICULTURE AND AGRI-FOOD CANADA (AAFC)**

BRANDON, MANITOBA

Project title/Titre du projet  
**2701 GRAND VALLEY ROAD,  
BRANDON, MANITOBA**

**BUILDING 111 -  
BRANDON RESEARCH CENTRE**

Approved by/Approuvé par  
JULIEN LAVERGNE

Designed by/Concept par  
CORY PELLETER

Drawn by/Dessiné par  
JEMAL WALKER

PWGSC Project Manager/Administrateur de Projets TPSGC  
BRAD SITRAZ

PWGSC Architectural and Engineering Resources Manager/  
Ressources Architecturales et de Directeur d'Ingénierie, TPSGC

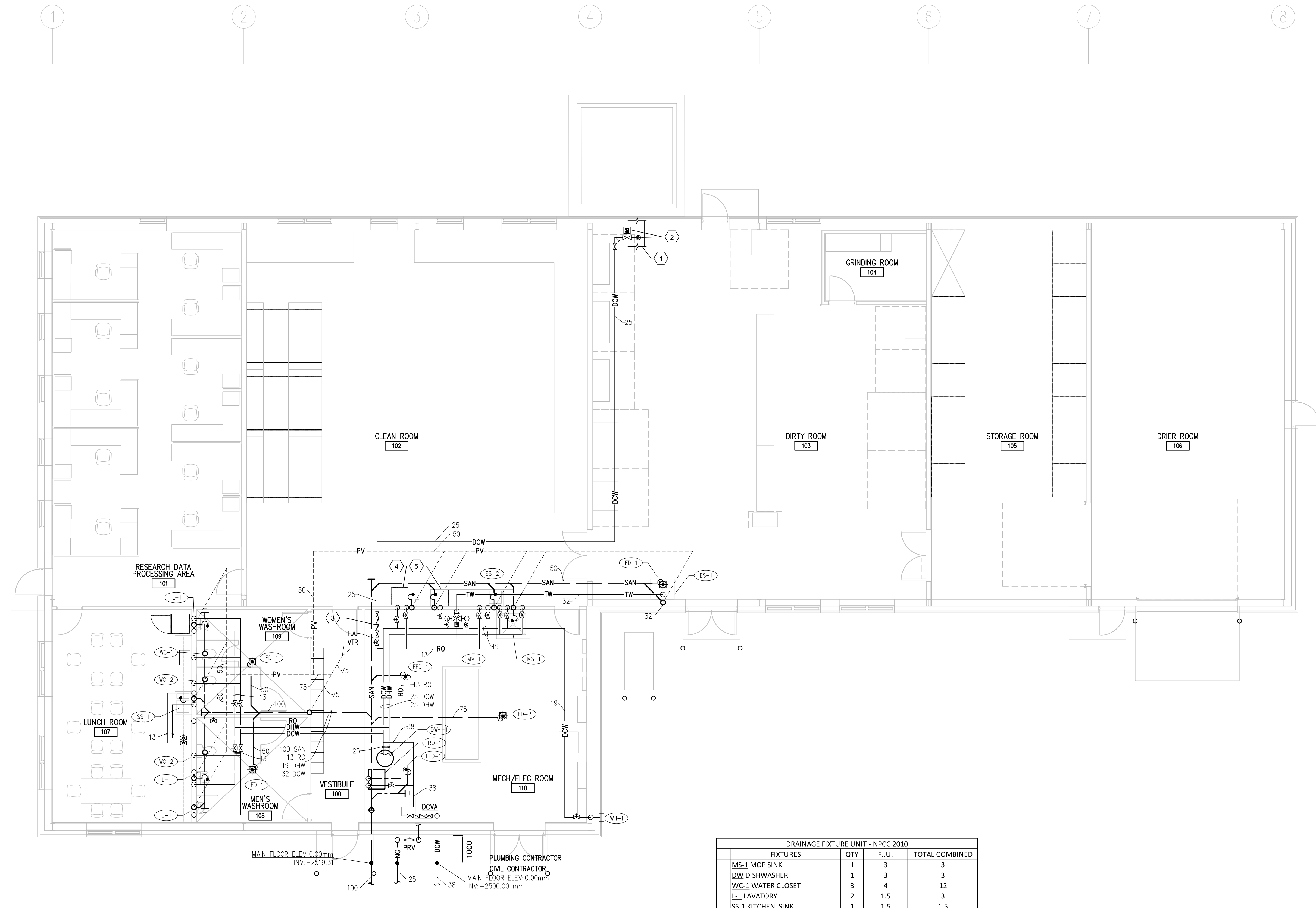
Client/client  
AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

Drawing title/Titre du dessin

**SECTIONS & DETAILS**

Project No./No. du projet	Sheet/Feuille	Revision no./ La Révision no.
R.076331	<b>S05</b> OF 5	<b>3</b>





1 MAIN FLOOR PLUMBING PLAN  
M1 1:75

DRAINAGE FIXTURE UNIT - NPCC 2010				
FIXTURES	QTY	F.U.	TOTAL COMBINED	
MS-1 MOP SINK	1	3	3	
DW DISHWASHER	1	3	3	
WC-1 WATER CLOSET	3	4	12	
L-1 LAVATORY	2	1.5	3	
SS-1 KITCHEN SINK	1	1.5	1.5	
SS-2 STAINLESS STEEL SINK	1	1.5	1.5	
U-1 URINAL	1	2	2	
FD-1 EMERGENCY FLOOR DRAIN	2	0	0	
FD-2 EMERGENCY FLOOR DRAIN	1	0	0	
FFD-1 FUNNEL FLOOR DRAIN	2	3	6	
TOTAL			32	

WATER FIXTURE UNIT - NPCC 2010						
FIXTURES	QTY	HW - F.U.	CW-F.U.	COMBINED	TOTAL HW	TOTAL CW
MS-1 MOP SINK	1	2.25	2.25	3	2.25	2.25
WH-1 NON FREEZE HOSE BIBB	1		6	6	0	6
DW DISHWASHER	1	1.4		1.4	1.4	0
WC-1 WATER CLOSET	3		2.2	2.2		6.6
L-1 LAVATORY	2	1.5	1.5	2	3	4
SS-1 KITCHEN SINK	1	1.5	1.5	2	1.5	1.5
SS-2 STAINLESS STEEL SINK	1	1.5	1.5	2	1.5	1.5
U-1 URINAL	1		20	20	0	20
ES-1 EMERGENCY STATION	1	6	6	8.5	6	8.5
TOTAL					15.65	46.85
					53.5	
					USE: 38mm	

SYMBOL LEGEND	
	SHUT-OFF VALVE
	CHECK VALVE
	DOUBLE CHECK VALVE ASSEMBLY
	COCK VALVE/BALL VALVE
	GAS REGULATOR
	COMPRESSED AIR OUTLET
	CENTRAL VACUUM OUTLET
	CLEAN-OUT
	TRAP (SANITARY)
	PIPE CAP
	PIPE BREAK
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	PLUMBING VENT
	SANITARY
	REVERSE OSMOSIS
	NATURAL GAS PIPE
	TEMPERED WATER
	REFRIGERANT LIQUID
	REFRIGERANT SUPPLY
	CENTRAL VACUUM
	COMPRESSED AIR
	UNIT HEATER
	FIRE DAMPER
	BACKDRAFT DAMPER
	BALANCING DAMPER
	MOTORIZED DAMPER
	AIRFLOW
	TEMPERATURE SENSOR
	THERMOSTAT
	SUPPLY AIR DIFFUSER
	RETURN AIR GRILLE
	EXHAUST FAN GRILLE
	TAG
	EQUIPMENT TAG
	QUANTITY
	TAG
	FACE SIZE
	FLOW RATE
	NECK SIZE
	TAG
	SIZE
	MAX. FLOW RATE
	MIN. FLOW RATE
	TAG
	LENGTH
	kW RATING
	PLUMBING TAG

DRAWING KEYNOTES:

- DUST COLLECTOR DUCTWORK. REFER TO DRAWING M4 FOR CONTINUATION OF DUCTWORK.
- SPRAY NOZZLE AND VALVES (INCLUDED IN SPARK DETECTION SYSTEM PACKAGE). REFER TO DETAIL ON DRAWING M8.
- PROVIDE DCVA AND SHUT-OFF VALVE.
- OWNER/G.C. SUPPLIED ICE MACHINE. PROVIDE 15mm DCW AND RO C/W SHUT-OFF VALVES AND AVB (ATMOSPHERIC VACUUM BREAKER). CONTRACTOR TO MAKE FINAL CONNECTIONS. REFER TO MANUFACTURER'S MANUAL FOR INSTALLATION INSTRUCTIONS.
- OWNER/G.C. SUPPLIED DISHWASHER. PROVIDE 32mm DRAIN STUB-OUT WITH P-TRAP AND 15mm DHW C/W SHUT-OFF VALVE. CONTRACTOR TO MAKE FINAL CONNECTIONS. REFER TO MANUFACTURER'S MANUAL FOR INSTALLATION INSTRUCTIONS.

GENERAL NOTES:

- DO NOT SCALE THIS DRAWING. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION AND REPORT ANY DISCREPANCY TO THE DEPARTMENTAL REPRESENTATIVE.
- THE DRAWING ONLY SHOWS A GENERAL SCHEMATIC OF THE SYSTEMS. ROUTING OF PIPING AND UNITS LOCATIONS SHALL SUIT SITE CONDITIONS AND MAY HAVE TO BE CHANGED TO AVOID CONFLICTS WITH STRUCTURE, PIPING AND DUCTWORK. WHEN CONFLICT CANNOT BE AVOIDED, THE PIPING SHALL BE MODIFIED AS REQUIRED.
- CONFORM TO SPECIFICATIONS AND MANUFACTURER GUIDES FOR MATERIALS AND UNITS' INSTALLATION DETAILS.
- PROVIDE A COMPLETE PLUMBING SYSTEM TO SERVE ALL FIXTURES AND EQUIPMENT AS NOTED ON THE DRAWINGS AND IN ACCORDANCE WITH THE NATIONAL PLUMBING CODE OF CANADA AS WELL AS ANY REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
- ALL SANITARY PIPES 100mm AND ABOVE SHALL BE SLOPED @ 1% AND PIPES 75mm AND BELOW SHALL BE SLOPED @ 2%.
- PIPE MATERIALS, VALVES, INSULATION, SUPPORTS, EXPANSION AND INSTALLATION SHALL CONFORM TO SPECIFICATION.
- PLUMBING CONTRACTOR SHALL SITE VERIFY ALL SANITARY AND SITE WATER CONNECTIONS. PLUMBING CONTRACTOR TO COORDINATE WITH CIVIL ENGINEER.
- ALL DOMESTIC WATER PIPING SHALL BE INSULATED WITH APPROVED INSULATION AS PER MECHANICAL SPECIFICATIONS. REFER TO MECHANICAL SPECIFICATION.
- ALL PIPING RUNNING IN CEILING SPACE SHALL BE PROVIDED WITH APPROVED PIPE HANGERS AS PER MECHANICAL SPECIFICATIONS.
- FIRE STOP ALL PIPE PENETRATIONS WHERE THEY PASS THROUGH FIRE RATED WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF RATED WALLS AND THEIR RATING IN HOURS.

Public Works and Government Services Canada

Travaux publics et Services gouvernementaux Canada

**REAL PROPERTY SERVICES**  
Western Region  
**SERVICES IMMOBILIERS**  
Région de l'ouest

**HDK CONSULTING INCORPORATED**  
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3	ISSUED FOR CONSTRUCTION	16/06/08
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Client/client

**AGRICULTURE AND AGRI-FOOD CANADA (AAFC)**

**BRANDON, MANITOBA**

Project title/Titre du projet  
**2701 GRAND VALLEY ROAD,  
BRANDON, MANITOBA**

**BUILDING 111 -  
BRANDON RESEARCH CENTRE**

Approved by/Approuvé par  
DH

Designed by/Concept par  
JT

Drawn by/Dessiné par  
JT

PWOSC Project Manager/Administrateur de Projets TPSCC  
**BRAD SITARZ**

PWOSC Architectural and Engineering Resources Manager/  
Ressource Architectural et de Génie, TPSCC

Client/client  
**AGRICULTURE AND AGRI-FOOD CANADA (AAFC)**

Drawing title/Titre du dessin  
**MAIN FLOOR PLUMBING PLAN  
AND SYMBOL LEGEND**

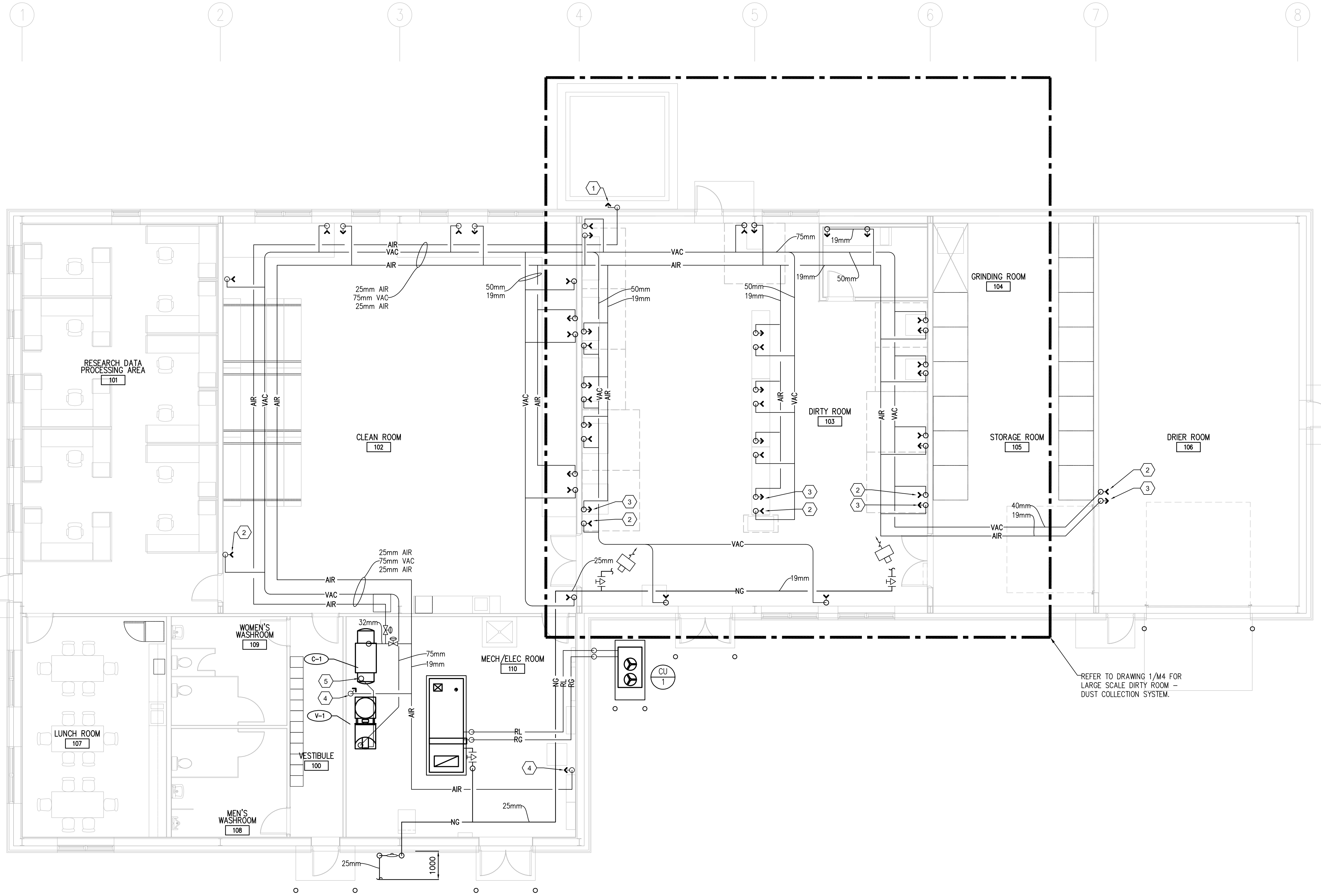
Project No./No. du projet	Sheet/Feuille	Revision no./ La Révision no.
<b>R.076331</b>	<b>M1</b> OF 10	<b>3</b>

PWOSC - B1 - 1000X707

0 10 20 30 40 50 60 70 80 90 100mm

M1 - PLUMBING





1 MAIN FLOOR MECHANICAL PIPING PLAN  
M2 1:75

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- FIRE STOP ALL PIPE PENETRATIONS WHERE THEY PASS THROUGH FIRE RATED WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF RATED WALLS AND THEIR RATING IN HOURS.

DRAWING KEYNOTES:

- DEDICATED 25mm COMPRESSED AIR STUB-OUT TO SERVE DUST COLLECTOR.
- 38mm CENTRAL VACUUM OUTLET C/W OUTLET VALVE. TYPICAL.
- 12mm COMPRESSED AIR OUTLET C/W BALL VALVE, HOSE COIL, AND NOZZLE. TYPICAL.
- 12mm COMPRESSED AIR OUTLET C/W BALL VALVE & VALVE WITH CAP.
- 150mm VACUUM EXHAUST THROUGH ROOF. PROVIDE ROOF CURB AND GOOSENECK ON ROOF WITH SCREEN.

NATURAL GAS LOAD

TAG	INPUT
AHU-1	100 MBH
UH-2	60 MBH
UH-3	60 MBH
TOTAL:	220 MBH

Public Works and  
Government Services  
Canada

Travaux publics et  
Services gouvernementaux  
Canada

REAL PROPERTY SERVICES  
Western Region

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Région de l'ouest

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D.A.  
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Member  
25705  
2019  
REGISTERED PROFESSIONAL ENGINEER

Certificate of Authorization  
HDK Consulting Incorporated  
No. 5539 Date: 04/30/2017

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3	ISSUED FOR CONSTRUCTION	16/06/08
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0	ISSUED FOR DESIGN DEVELOPMENT	16/02/08

Client/client

AGRICULTURE AND  
AGRI-FOOD CANADA  
(AAFC)

BRANDON, MANITOBA

Project title/Titre du projet  
2701 GRAND VALLEY ROAD,  
BRANDON, MANITOBA

BUILDING 111 -  
BRANDON RESEARCH CENTRE

Approved by/Approuvé par  
DH

Designed by/Concept par  
JT

Drawn by/Dessiné par  
JT

PWOSC Project Manager/Administrateur de Projets TPSSC  
BRAD SITARZ

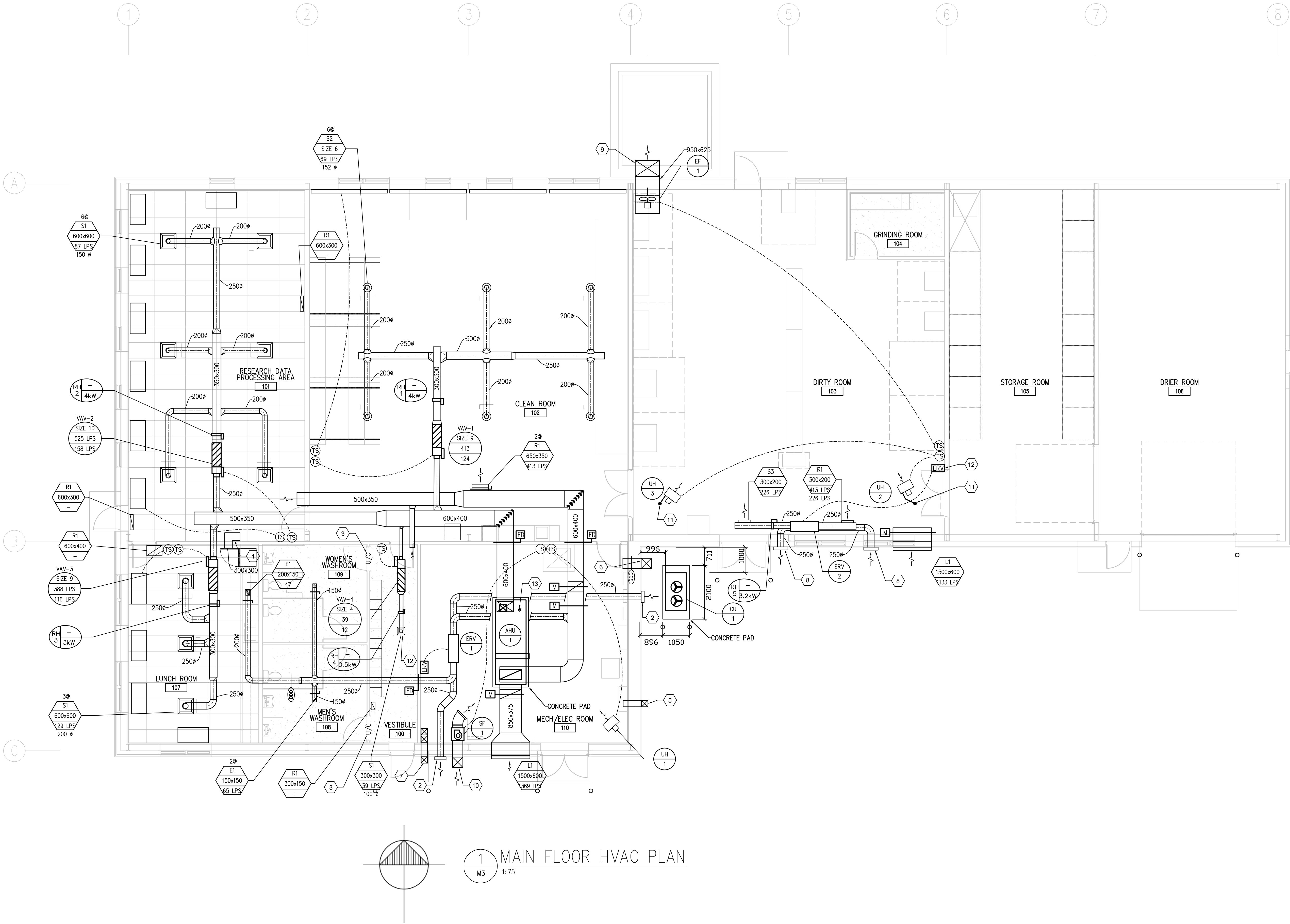
PWOSC Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSSC

Client/client  
AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

Drawing title/Titre du dessin  
MAIN FLOOR MECHANICAL  
PIPING PLAN

Project No./No. du projet R.076331	Sheet/Feuille M2 OF 10	Revision no./ La Révision no. 3
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1 MAIN FLOOR HVAC PLAN  
M3 1:75

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- THE DRAWING ONLY SHOWS A GENERAL SCHEMATIC OF NEW SYSTEMS. ROUTING OF DUCTWORK AND UNITS LOCATIONS SHALL SUIT SITE CONDITIONS AND MAY HAVE TO BE CHANGED TO AVOID CONFLICTS WITH STRUCTURE, DUCTS AND PIPES. WHEN CONFLICT CANNOT BE AVOIDED, THE DUCTWORK SHALL BE MODIFIED AS REQUIRED.
- CONTRACTOR SHALL INCLUDE FOR AND PROVIDE ALL COORDINATION BETWEEN TRADES AND CONSULTANT ON AND OFF SITE AS REQUIRED FOR INSTALLATION OF MECHANICAL AND ELECTRICAL SYSTEMS, WHERE REROUTING OF DUCTWORK OR ADDITIONAL WORK REASONABLY INCIDENTAL TO ORIGINAL DESIGN INTENT IS REQUIRED DUE TO COORDINATION, IT SHALL BE PERFORMED AT NO ADDITIONAL COST TO OWNER.
- COORDINATE ALL GRILLE AND DIFFUSER LOCATIONS WITH LIGHTING LAYOUT.
- INSTALL FIRE DAMPERS IN ALL DUCTWORKS WHERE THEY PASS THROUGH FIRE RATED WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF RATED WALLS AND THEIR RATING IN HOURS.
- FIRE STOP ALL PIPE PENETRATIONS WHERE THEY PASS THROUGH FIRE RATED WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF RATED WALLS AND THEIR RATING IN HOURS.
- CONFORM TO SPECIFICATIONS AND MANUFACTURER GUIDES FOR MATERIALS AND UNITS' INSTALLATION DETAILS.

DRAWING KEYNOTES:

- ACOUSTICALLY LINED TRANSFER DUCT.
- ERV E/A AND O/A DUCT ON WALL. PROVIDE HIGH CAPACITY EXHAUST WALL CAP WITH BUILT-IN BIRD SCREEN AND BACKDRAFT DAMPER.
- DOOR UNDERCUT BY 19mm.
- PROVIDE WEATHERHOOD C/W INSECT SCREEN.
- 400x400 AIR RELIEF VENT C/W WEATHER HOOD WITH INSECT SCREEN.
- 250x250 VENTILATION AIR DUCT C/W WEATHER HOOD WITH INSECT SCREEN.
- 250x250 COMBUSTION AIR DUCT C/W WEATHERHOOD WITH INSECT SCREEN.
- PROVIDE #250mm EXHAUST WALL CAP AND INTAKE WALL CAP.
- 950x625 WEATHERHOOD.
- 400x400 WEATHERHOOD.
- VENT THROUGH ROOF.
- ERV CENTRAL WALL CONTROLLER.
- 100 # AHU FLUE STACK (TYPE B VENT) THROUGH ROOF. REFER TO DETAIL # 9 ON DRAWING M8.

Public Works and Government Services Canada  
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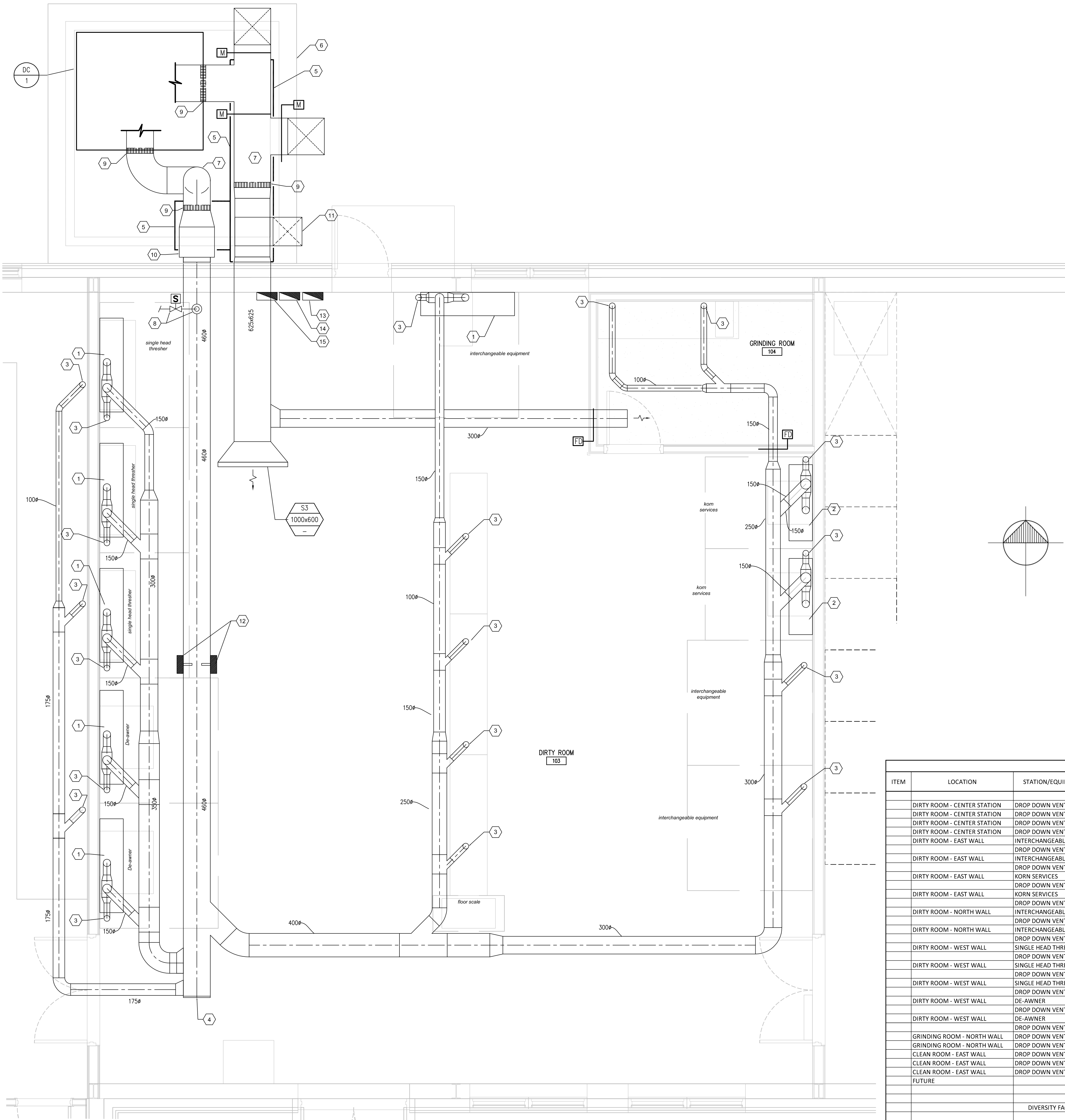
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**APEGM**  
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<b>AGRICULTURE AND AGRI-FOOD CANADA (AAFC)</b>		
<b>BRANDON, MANITOBA</b>		
Project title/Titre du projet <b>2701 GRAND VALLEY ROAD, BRANDON, MANITOBA</b>		
<b>BUILDING 111 - BRANDON RESEARCH CENTRE</b>		
Approved by/Approuvé par DH		
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PWSC Project Manager/Administrateur de Projets TPSCG BRAD SITARZ		
PWSC, Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'Ingénierie, TPSCG		
Client/client AGRICULTURE AND AGRI-FOOD CANADA (AAFC)		
Drawing title/Titre du dessin <b>MAIN FLOOR HVAC PLAN</b>		
Project No./No. du projet <b>R.076331</b>	Sheet/Feuille <b>M3</b> OF 10	Revision no./ La Révision <b>3</b>





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- FIRE STOP ALL PIPE PENETRATIONS WHERE THEY PASS THROUGH FIRE RATED WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF RATED WALLS AND THEIR RATING IN HOURS.

### DRAWING KEYNOTES:

- 1600x400x1200 (LxWxH) SHOP HOOD. PROVIDE Ø125mm DUST PICK-UP DUCT C/W AIR GATE VALVE. REFER TO DETAIL.
- 1300x400x1200 (LxWxH) SHOP HOOD. PROVIDE Ø125mm DUST PICK-UP DUCT C/W AIR GATE VALVE. REFER TO DETAIL.
- ARTICULATING ARM WITH HOOD. PROVIDE Ø100mm DUST PICK-UP DUCT C/W AIR GATE VALVE.
- FUTURE CONNECTION. DUCT TO BE CAPPED-OFF.
- STRUCTURAL MEMBER SUPPORT FOR DUST COLLECTOR DUCTWORK BY MECHANICAL CONTRACTOR. CONTRACTOR TO SUBMIT SIGNED AND SEALED SHOP DRAWING BY THE PROFESSIONAL ENGINEER FOR CONSULTANTS' (MECHANICAL & STRUCTURAL) REVIEW PRIOR TO INSTALLATION.
- HOUSEKEEPING PAD (BY OTHERS). REFER TO STRUCTURAL DRAWINGS.
- INSULATE ALL EXTERIOR DUCTWORK C/W ALUMINUM JACKET.
- SPRAY NOZZLE AND VALVES (INCLUDED IN SPARK DETECTION SYSTEM PACKAGE). INTERLOCK WITH SPARK DETECTION SYSTEM. REFER TO DRAWING M1 - PLUMBING FOR CONTINUATION OF PIPING.
- PROVIDE FLEXIBLE DUCT CONNECTOR.
- PROVIDE NON RETURN EXPLOSION ISOLATION VALVE (SPARK DETECTION SYSTEM PACKAGE) C/W MICRO SWITCH FOR SYSTEM SHUT DOWN. INTERLOCK WITH SPARK DETECTION SYSTEM.
- ABORT GATE (SPARK DETECTION SYSTEM PACKAGE). INTERLOCK WITH SPARK DETECTION SYSTEM.
- PROVIDE 2 UNITS OF SPARK DETECTOR (SPARK DETECTION SYSTEM PACKAGE). INTERLOCK WITH SPARK DETECTION SYSTEM.
- DUST COLLECTOR CONTROL PANEL. INTERLOCK DUST COLLECTOR WITH DE-AWNER STATIONS, SINGLE HEAD THRESHER STATIONS, KORN SERVICE STATIONS, AND INTERCHANGEABLE STATIONS.
- SPARK DETECTION CONTROL PANEL. INTERLOCK WITH DUST COLLECTOR OPERATIONS.
- DUST COLLECTOR DAMPER CONTROL PANEL. INTERLOCK WITH DUST COLLECTOR OPERATIONS.

DUST PICK-UP SCHEDULE						
ITEM	LOCATION	STATION/EQUIPMENT	DUCT SIZE (mm)	AIRFLOW (CFM)	AIRFLOW (LPS)	ACCESSORIES
	DIRTY ROOM - CENTER STATION	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - CENTER STATION	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - CENTER STATION	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - CENTER STATION	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - EAST WALL	INTERCHANGEABLE EQMT				
	DIRTY ROOM - EAST WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - EAST WALL	INTERCHANGEABLE EQMT				
	DIRTY ROOM - EAST WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - EAST WALL	KORN SERVICES	125	475	224	C/W DUST COLLECTION HOOD AND AIR GATE VALVE
	DIRTY ROOM - EAST WALL	KORN SERVICES	125	475	224	C/W DUST COLLECTION HOOD AND AIR GATE VALVE
	DIRTY ROOM - EAST WALL	KORN SERVICES	125	475	224	C/W DUST COLLECTION HOOD AND AIR GATE VALVE
	DIRTY ROOM - NORTH WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - NORTH WALL	INTERCHANGEABLE EQMT	125	475	224	C/W DUST COLLECTION HOOD AND AIR GATE VALVE
	DIRTY ROOM - NORTH WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - NORTH WALL	INTERCHANGEABLE EQMT	125	475	224	C/W DUST COLLECTION HOOD AND AIR GATE VALVE
	DIRTY ROOM - WEST WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - WEST WALL	SINGLE HEAD THRESHER	125	475	224	C/W DUST COLLECTION HOOD AND AIR GATE VALVE
	DIRTY ROOM - WEST WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - WEST WALL	SINGLE HEAD THRESHER	125	475	224	C/W DUST COLLECTION HOOD AND AIR GATE VALVE
	DIRTY ROOM - WEST WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - WEST WALL	SINGLE HEAD THRESHER	125	475	224	C/W DUST COLLECTION HOOD AND AIR GATE VALVE
	DIRTY ROOM - WEST WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - WEST WALL	DE-AWNER	125	475	224	C/W DUST COLLECTION HOOD AND AIR GATE VALVE
	DIRTY ROOM - WEST WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	DIRTY ROOM - WEST WALL	DE-AWNER	125	475	224	C/W DUST COLLECTION HOOD AND AIR GATE VALVE
	DIRTY ROOM - WEST WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	GRINDING ROOM - NORTH WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	GRINDING ROOM - NORTH WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	CLEAN ROOM - EAST WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	CLEAN ROOM - EAST WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	CLEAN ROOM - EAST WALL	DROP DOWN VENT	100	300	142	ARTICULATING ARM WITH AIR GATE VALVE
	FUTURE			1700	802	
				11975	5652	
		DIVERSITY FACTOR	50 %	5987.5	2826	



Public Works and  
Government Services  
Canada




Travaux publics et  
Services gouvernementaux  
Canada

**REAL PROPERTY SERVICES**  
Western Region  
**SERVICES IMMOBILIERS**  
Région de l'ouest



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HDK Consulting Incorporated  
No. 5539 Date: 04/30/2017

### DO NOT SCALE DRAWINGS

Revision/	Description/Description	Date/Date
1	ISSUED FOR CONSTRUCTION	16/06/08
0	99% CONSTRUCTION DOCUMENTS	16/05/10

Client/client

### AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

#### BRANDON, MANITOBA

Project title/Titre du projet  
**2701 GRAND VALLEY ROAD,  
BRANDON, MANITOBA**

### BUILDING 111 - BRANDON RESEARCH CENTRE

Approved by/Approuvé par  
DH

Designed by/Concept par  
JT

Drawn by/Dessiné par  
JT

PWSC Project Manager/Administrateur de Projets TPSCC  
**BRAD SITARZ**

PWSC Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'ingénierie, TPSCC

Client/client  
**AGRICULTURE AND AGRI-FOOD CANADA (AAFC)**

Drawing title/Titre du dessin  
**DIRTY ROOM -  
LARGE SCALE PLAN**

Project No./No. du projet

**R.076331**

Sheet/Feuille

**M4**

OF 10

Revision no./  
La Révision  
no.

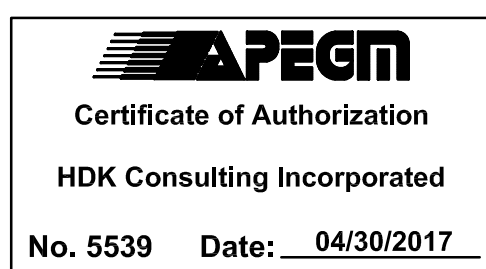
**1**





1. DO NOT SCALE THIS DRAWING. CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION AND REPORT ANY DISCREPANCY TO THE DEPARTMENT REPRESENTATIVE.
2. THE DRAWING ONLY SHOWS A GENERAL SCHEMATIC OF THE SYSTEMS. ROUTING OF PIPING AND UNITS LOCATIONS SHALL SUE SITE CONDITIONS AND MAY HAVE TO BE CHANGED TO AVOID CONFLICTS WITH STRUCTURE, PIPING AND DUCTWORK. WHEN CONFLICT CANNOT BE AVOIDED, THE PIPING SHALL BE MODIFIED AS REQUIRED.
3. CONFORM TO SPECIFICATIONS AND MANUFACTURER GUIDES FOR MATERIALS AND UNITS' INSTALLATION DETAILS.
4. PIPE MATERIALS, VALVES, INSULATION, SUPPORTS, EXPANSION AND INSTALLATION SHALL CONFORM TO SPECIFICATION.
5. ALL PIPING RUNNING IN CEILING SPACE SHALL BE PROVIDED WITH APPROVED PIPE HANGERS AS PER MECHANICAL SPECIFICATIONS.
6. FIRE STOP ALL PIPE PENETRATIONS WHERE THEY PASS THROUGH FIRE RATED WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF RATED WALLS AND THEIR RATING IN HOURS.

1. 750 PLUMBING VENT.
2. 750 CENTRAL VACUUM VENT.
3. 100 Ø AHU FLUE STACK. REFER TO DETAIL # 9 ON DRAWING M8.
4. 75 Ø UNIT HEATER FLUE STACK. PROVIDE VENT CAP.
5. 600x400 AHU RELIEF AIR DUCT. PROVIDE GOOSENECK ON ROOF C/W INSECT SCREEN.



2	ISSUED FOR CONSTRUCTION	16/06/08
1	ISSUED FOR DESIGN DEVELOPMENT	16/01/23
0	DESIGN DEVELOPMENT PROPOSAL	15/08/28
<b>Revision/ Sequence</b>	<b>Description/Description</b>	<b>Date/Date</b>

Revision/ Revision	Description/Description	Date/Date
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Client/client

**BRANDON, MANITOBA**

**BUILDING 111 -  
BRANDON RESEARCH CENTRE**

Approved by/Approuvé par  
DH

Designed by/Concept par  
JIT

Drawn by/Dessine par  
.IT

PWGSC Project Manager/Administrateur de Projets TPSGC  
BRAD SITABZ

PWGSC, Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSGC

Client/client

AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

Drawing title/Titre du dessin

MECHANICAL  
ROOF PLAN

**R.076331**

**M5**  
OF 10

Revisión no./  
La Révision  
no.



DUST COLLECTOR					
TAG	POWER	AVERAGE FLOWRATE	MIN. SYSTEM PRESSURE	kPA	In.W.C.
		(L/s)	(CFM)		
DC-1	20 hp	2,832	6,000	2.49	10.0
ACCESSORIES					
1. CARTRIDGE JET-PULSE					
2. 55 GAL PYRAMID TYPE (55 DEG. SLOPE) HOPPER					
3. SHALL BE 20 HP, 575 VOLTS, 3450 RPM TEFC MOTOR					
4. WEATHER DISCHARGED WITH BIRDSCREEN					
5. FINAL FILTERS TO PERMIT SAFE RECIRCULATION					
6. EXPLOSION RELIEF VENT					
7. PROGRAMMABLE PULSE CONTROLLER FOR MONITORING FILTER PRESSURE DROP					
8. DAMPER CONTROL AND EXHAUST/RETURN AIR MANUAL SELECTOR SWITCH.					
9. DISCONNECT SWITCH					
10. CONTROL PANEL					
11. PACKAGED TYPE SYSTEM					

CENTRAL VACUUM - MULTISTAGE CENTRIFUGAL					
TAG	POWER	AVERAGE FLOWRATE	MIN. SYSTEM PRESSURE	kPA	In.Hg
		(L/s)	(SCFM)		
V-1	10 hp	104	220	26.41	7.8
ACCESSORIES					
1. CARTRIDGE JET-PULSE					
2. SIX UNIT PTFE SPUN BOND CARTRIDGE FILTERS FOR 90 SQ.FT. FILTER AREA					
3. 2-1/4 CU.FT. DIRT CAN					
4. 575/3/60 TEFC LONGSHAFT STANDARD EFF. MOTOR					
5. MOUNTING FLANGE FOR EXPLOSION VENT					
6. 18x35 MVRD EXPLOSION VENT					
7. DIFFERENTIAL PRESSURE GAUGE					
8. BLEED HARDWARE ASSEMBLY					
9. NEMA 12 VISUAL SETPOINT BLEED CONTROL					
10. CURRENT TRANSFORMER					
11. AIR GATE VALVE					
12. DISCHARGE SILENCER					

ROTARY SCREW COMPRESSOR (100% DUTY CYCLE) - PACKAGED TYPE					
TAG	POWER	AVERAGE FLOWRATE	MIN. SYSTEM PRESSURE	kPA	PSIG
		(L/s)	(SCFM)		
C-1	15 HP	26	55	861.84	125
ACCESSORIES					
1. 120 U.S. GAL. TANK MOUNTED					
2. BUILT-IN REFRIGERATED DRYER					
3. PRE FILTER AND AFTER FILTER					
4. HOURMETER					
5. ELECTRONIC DRAIN VALVE					
6. 575/3/60 OPEN DRIP PROOF MOTOR					
7. ULTRA GRADE COOLANT					

UNIT HEATER SCHEDULE (REZNOR)									
TAG	POWER	HEATING INPUT		HEATING OUTPUT		AIR SIDE FLOW RATE			
		(kW)	(MBH)	(kW)	(MBH)	(L/s)	(CFM)	(HP)	
UH1	ELECTRIC	5.0	17.0	N/A	N/A	330	700	FRAC.	
UH2	NATURAL GAS	17.6	60.0	14.6	49.8	363	769	FRAC.	
UH3	NATURAL GAS	17.6	60.0	14.6	49.8	363	769	FRAC.	
NOTES:									
1. ACCEPTABLE MANUFACTURERS: LENNOX, TRANE AND ENGINEERED AIR.									
2. FUEL: NATURAL GAS, CONNECTION SIZE: 1/2 IN.									
3. PROVIDE VERTICAL COMBUSTION AIR/VENT KIT WITH SINGLE CONCENTRIC TERMINATION ON ROOF.									
4. UH-1 SHALL BE 240V/1Ø									

DIFFUSER AND GRILLE SCHEDULE (Based on E. H. PRICE)				
TAG	MODEL	ACCESSORIES	COLOR	REMARKS
S1	24"x24" SCD, SQUARE CONE DIFFUSER	-	WHITE	REFER TO DRAWING FOR NECK SIZE
S2	SIZE 6 - RCD, ROUND CONE DIFFUSER	-	WHITE	REFER TO DRAWING FOR NECK SIZE
S3	LOUVER FACE SUPPLY, DOUBLE DEFLECTION	-	WHITE	REFER TO DRAWING FOR FACE SIZE
R1	80 SERIES EGG CRATE RETURN GRILLE	-	WHITE	REFER TO DRAWING FOR GRILLE SIZE
E1	80 SERIES EGG CRATE EXHAUST GRILLE	-	WHITE	REFER TO DRAWING FOR GRILLE SIZE
ACCESSORIES:				
BD INTEGRAL BALANCING DAMPER				
NOTES:				
1. PROVIDE MOUNTING AND FRAME TO SUIT SURFACE BEING INSTALLED ON.				
2. ACCEPTABLE MANUFACTURERS: TITUS, NAILOR				

MINIMUM VENTILATION RATES IN BREATHING ZONE (ASHRAE 62.1-2007)							
AHU-1							
ITEM	SUITE TYPE	SUITE OCCUPANCY PEOPLE (P)	SUITE AREA SQ.FT.	VENTILATION RATES PEOPLE CFM/P	AREA CFM/SQ.FT.	VENTILATION EFFECTIVENESS FACTOR E <sub>z</sub>	TOTAL EXHAUST CFM
1	CLEAN ROOM	2	1840.6	5	0.06	1	120.44
3	LUNCH ROOM	2	430.6	5	0.06	1	35.83
5	RESEARCH DATA PROC.	12	1044.1	5	0.06	1	122.65
6	VESTIBULE	0	150.7	0	0.06	1	9.04
7	MEN'S TOILET						137.00
8	WOMEN'S TOILET						137.00
TOTAL						287.96	374.00

MINIMUM VENTILATION RATES IN BREATHING ZONE (ASHRAE 62.1-2007)							
ERV-2							
ITEM	SUITE TYPE	SUITE OCCUPANCY PEOPLE (P)	SUITE AREA SQ.FT.	VENTILATION RATES PEOPLE CFM/P	AREA CFM/SQ.FT.	VENTILATION EFFECTIVENESS FACTOR E <sub>z</sub>	TOTAL EXHAUST CFM
1	DIRTY ROOM	12	1765.3	10	0.18	1	437.75
TOTAL						437.75	0.00

FAN SCHEDULE									
TAG	TYPE	RPM	AIR FLOW RATE		E.S.P.		MOTOR		ACCESSORIES
			(L/s)	(CFM)	(Pa)	(in.WC)	(W)	(HP)	
EF-1	SBE	1,012	1,133	2,400	62	0.25	372	0.50	BS, DS, BD, TS
SF-1	C, I	1,140	283	600	62	0.25	124	0.17	DS, BS, TS
NOTES:									
1. INTERLOCK OPERATION WITH DDC.									
2. COORDINATE AND SELECT ELECTRICAL REQUIREMENTS WITH ELECTRICAL CONTRACTOR.									
3. REFER TO SPECIFICATIONS FOR ACCEPTABLE MANUFACTURER.									
4. REFER TO DETAIL FOR ADDITIONAL INFORMATION.									
FAN TYPES:									
C CENTRIFUGAL I IN-LINE MF MIXED FLOW CE CEILING EXHAUST CU CENTRIFUGAL UP BLAST									
TA TUBE AXIAL W WALL P PROPELLER SBE SIDEWALL BELT DRIVE FAN									
R ROOF									
ABBREVIATIONS: BG BELT GUARD MT MANUAL RESET TIMER SD SCROLL DRAIN									
AS ADJUSTABLE SHEAVES NSW NON-SPARKING WHEEL FC FACTORY CURB									
SC SOLID STATE SPEED CONTROL SH SPRING HANGERS BS BIRDSCREEN									
TS TEMPERATURE SENSOR VP VIBRATION PADS MC MOUNTING COLLAR									
BD BACKDRAFT DAMPER SM SPRING MOUNT WH WEATHERPROOF HOUSING									
F FILTER WC WALL CAP RC ROOF CAP									
E EPOXY COATING DS DISCONNECT SWITCH AD ACCESS DOOR									
IH INLET HOOD MDW MOTION DETECTOR, WALL MTD. GN GOOSENECK									
IK ISOLATION KIT									

CONDENSING UNIT SCHEDULE													
TAG	REFRIG. TYPE	NOMINAL COOLING		COMPRESSORS TYPE	FANS	WEIGHT		WIDTH		LENGTH		HEIGHT	
		(kW)	(MBH)		(No.)	(kg)	(lbs.)	(mm)	(in.)	(mm)	(in.)	(mm)	(in.)
CU-1	R-410A	31.65	108	HERMETIC SCROLL	2	225	497	806.70	31.76	1485.9	58.5	1224.03	48.19
NOTES:													
1. MOUNT CONDENSING UNIT ON HOUSEKEEPING PAD. REFER TO STRUTURAL DRAWINGS.													
2. COORDINATE ELECTRICAL REQUIREMENTS WITH ELECTRICAL ENGINEER. POWER SUPPLY SHALL BE 575-3-60													
3. PROVIDE WIND BAFFLES FOR ALL CONDENSING UNITS.													
4. ACCEPTABLE MANUFACTURERS: JOHNSON CONTROLS, TRANE, DAIKIN, CARRIER													

VAV TERMINAL UNIT SCHEDULE (Based on Titus)									
TAG	AREA SERVED	AIRFLOW RATE		ATTENUATOR		S.P.D.			
		MAXIMUM (L/s)	MINIMUM (L/s)	LENGTH (mm)	OUTLET NC	AT MAX. (Pa)	A.F.R. (in.WC)		
VAV-1	ROOM 102	413	875	124	263	914	36	25	0.10
VAV-2	ROOM 101	525	1112	158	335	914	36	25	0.10
VAV-3	ROOM 106	388	822	116	246	914	36	25	0.10
VAV-4	ROOM 100	39	83	12	25	914	36	25	0.10
AHU-1 TOTALS		1,365	2,892	410	869	N/A	N/A	N/A	N/A
NOTES:									
1. ACCEPTABLE MANUFACTURERS: EH,PRICE, NAILOR									

ENERGY RECOVERY VENTILATOR					
TAG	SERVICE	ERV-1		ERV-2	
		WASHROOM/LUCHROOM EXHAUST		DIRTY ROOM VENTILATION	
SUPPLY FAN					
AIR FLOW RATE (L/s / CFM)		177	375	227	480
E.S.P. (Pa / in.WC)		222	0.89	167	0.75
MOTOR SIZE (kW / HP)		0.46	0.62	0.51	0.69
RETURN FAN					
AIR FLOW RATE (L/s / CFM)		177	375	227	480
E.S.P. (Pa / in.WC)		222	0.89	167	0.75
MOTOR SIZE (kW / HP)		0.46	0.62	0.51	0.69
SPEED					
HEAT EXCHANGER (WINTER)					
TEMP EFF%		74.0		73.0	
TOTAL EFF% WINTER/SUMMER		69/58		66/56	
FILTERS SECTION					
FILTER DEPTH / TYPE		Two total, MERV 8, 2" pleated 14"x20"		Two total, MERV 8, 2" pleated 14"x20"	
PHYSICAL DATA					
WEIGHT (kg / lbs)		0		0	
LENGTH (mm / in.)		1,384 54.50		1,384 54.50	
WIDTH (mm / in.)		416 16.38		416 16.38	
HEIGHT (mm / in.)		860 33.88		860 33.88	
ELECTRICAL DATA					
VOLTAGE/PHASE					
NOTES:					
1. Provide wall mounted controller. Initiate high speed based on humidistat (> 60% RH)					
2. Unit shall come packaged with single point power connection.					
3. Provide defrost cycle.					
4. Unit shall be capable of free cooling during cooling season. Provide ambient air temperature sensor and controls to automatically initiate free cooling.					
5. Coordinate support requirements with Structural Engineer.					
6. Indoor unit shall "condensate" free with no mounting restrictions. Unit shall be mounted for low profile, suspended from ceiling.					



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Revision/	Description/Description	Date/Date
2	ISSUED FOR CONSTRUCTION	16/06/08
1	98% CONSTRUCTION DOCUMENTS	16/05/10
0	50% CONSTRUCTION DOCUMENTS	16/03/23

Revision/	Description/Description	Date/Date
Client/client		

AGRICULTURE AND  
AGRI-FOOD CANADA  
(AAFC)

BRANDON, MANITOBA

Project title/Titre du projet  
2701 GRAND VALLEY ROAD,  
BRANDON, MANITOBA

BUILDING 111 -  
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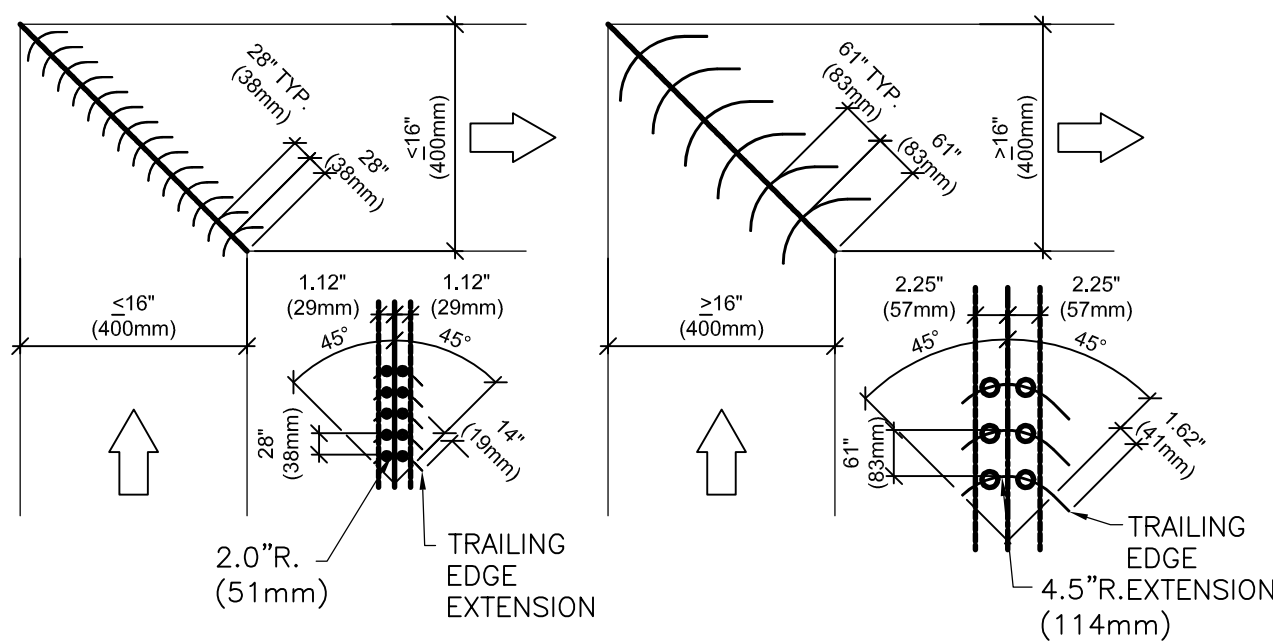
Drawing title/Titre du dessin  
MECHANICAL DETAILS

Project No./No. du projet  
R.076331

Sheet/Feuille  
M7  
OF 10

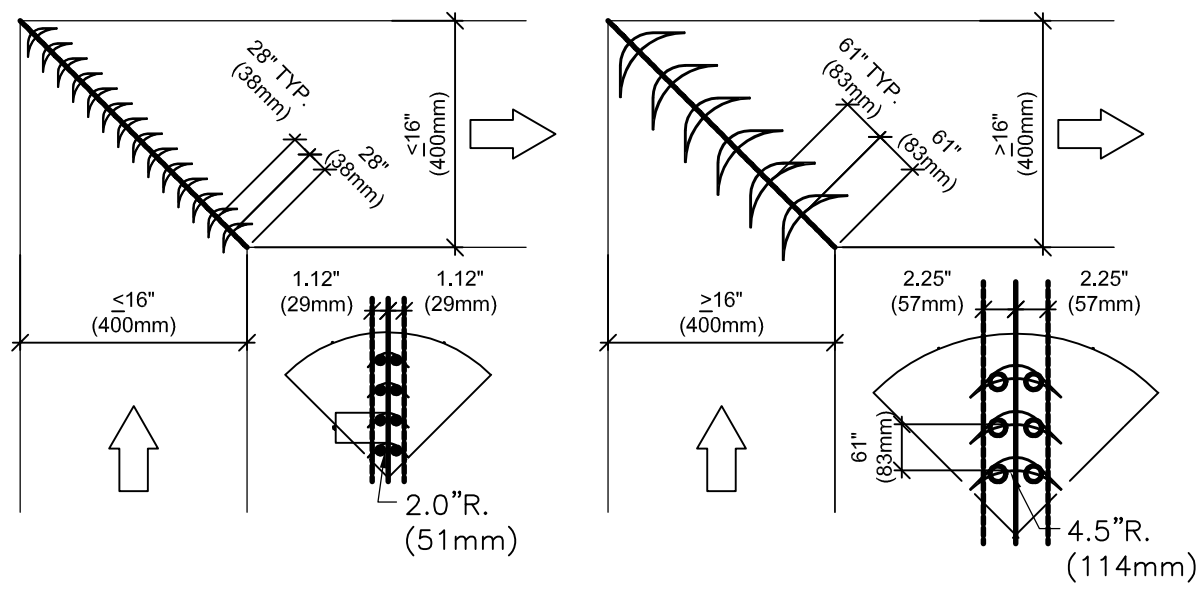
Revision no./  
La Révision  
no.

2



SINGLE THICKNESS VANES  
FOR DUCTS UP TO  
30" (762mm) HIGH

SINGLE THICKNESS VANES  
FOR DUCTS UP TO  
30" (762mm) HIGH



DOUBLE THICKNESS VANES  
FOR DUCTS OVER  
30" (762mm) HIGH

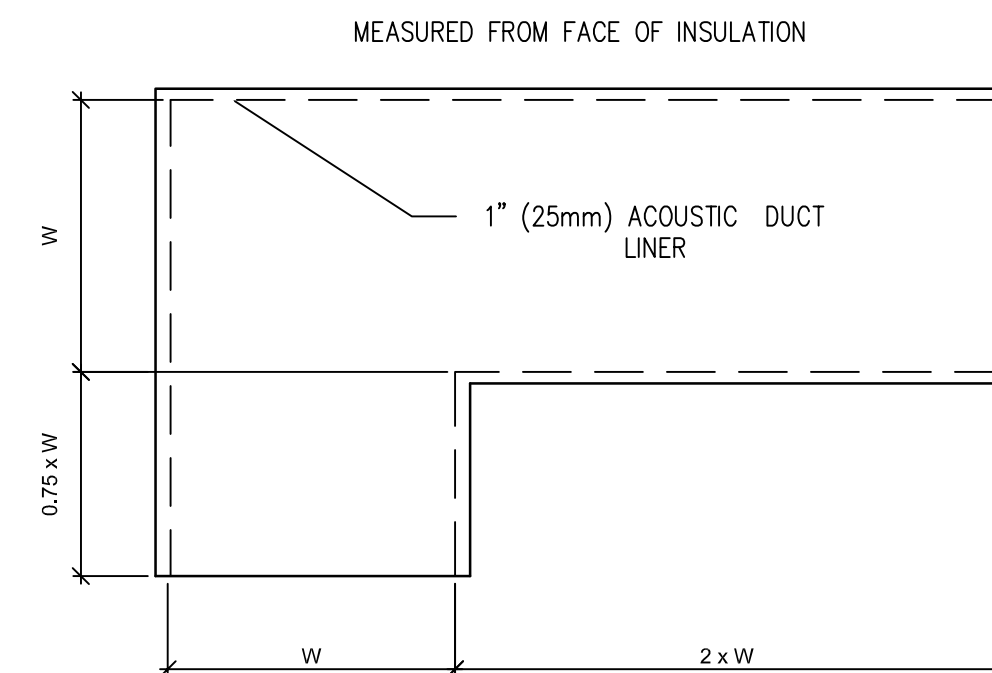
DOUBLE THICKNESS VANES  
FOR DUCTS OVER  
30" (762mm) HIGH

DUCTS UP TO  
16" (406mm) WIDE

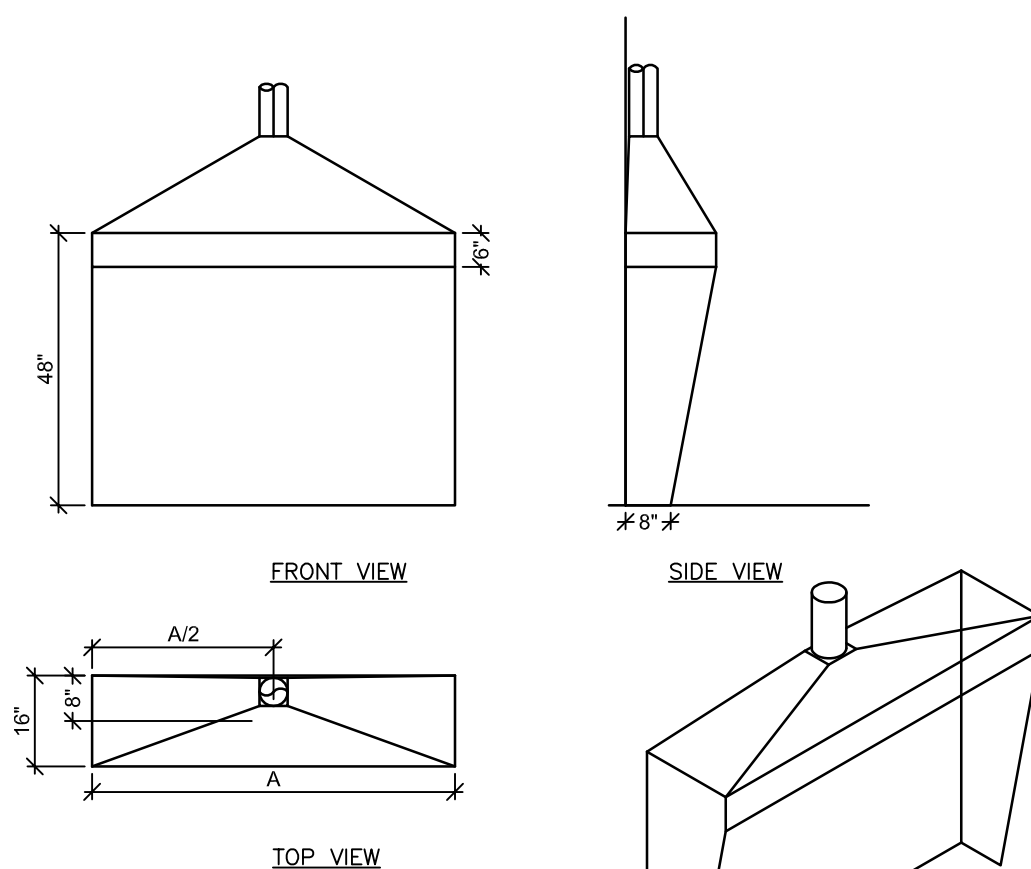
DUCTS OVER  
16" (406mm) WIDE

8 TYPICAL DUCT VANE DETAIL  
M7 NTS

W = DUCT WIDTH  
H = DUCT HEIGHT  
REFER TO H.V.A.C. PLAN  
FOR SIZES.

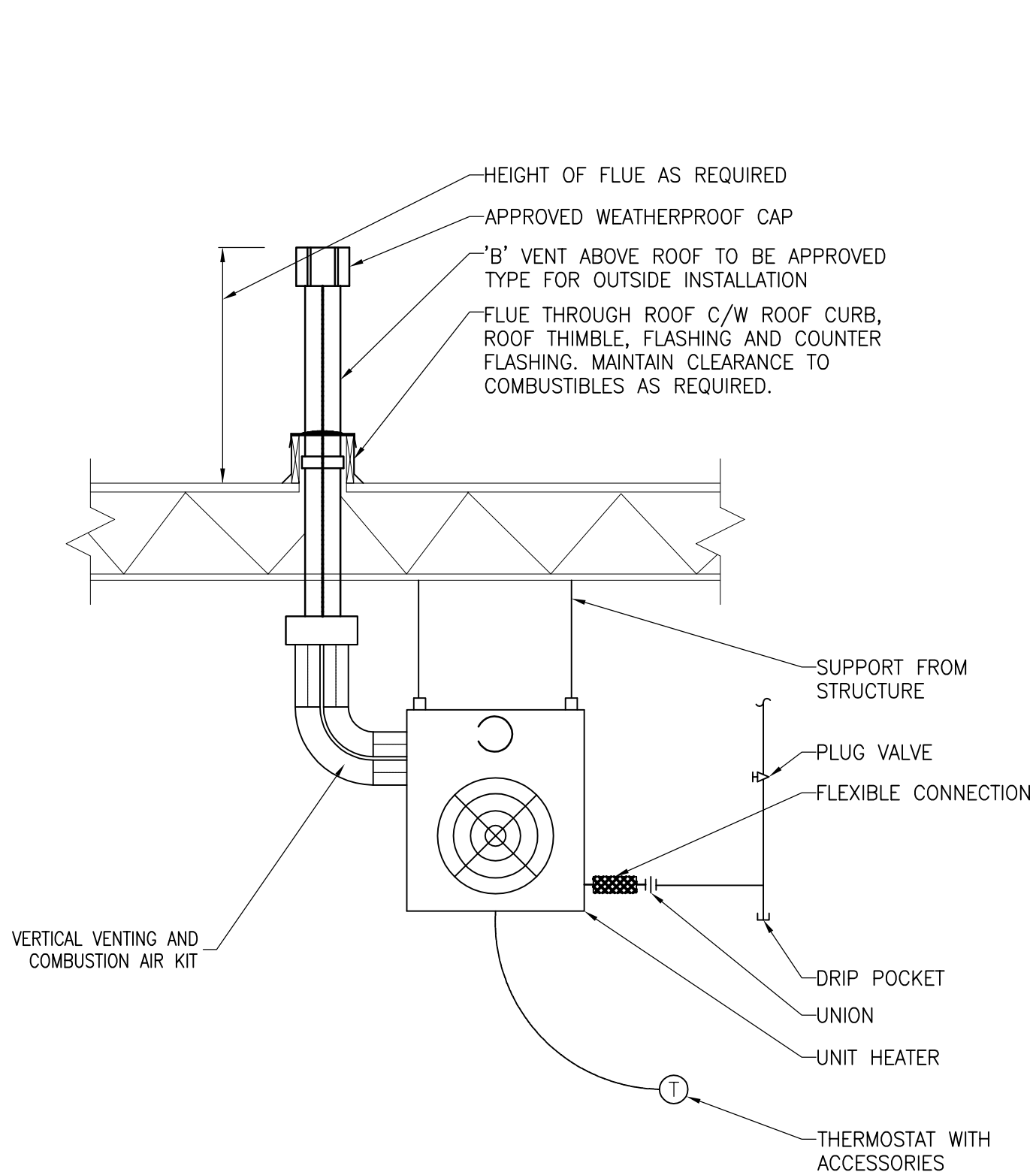


9 TRANSFER DUCT DETAIL  
M7 NTS

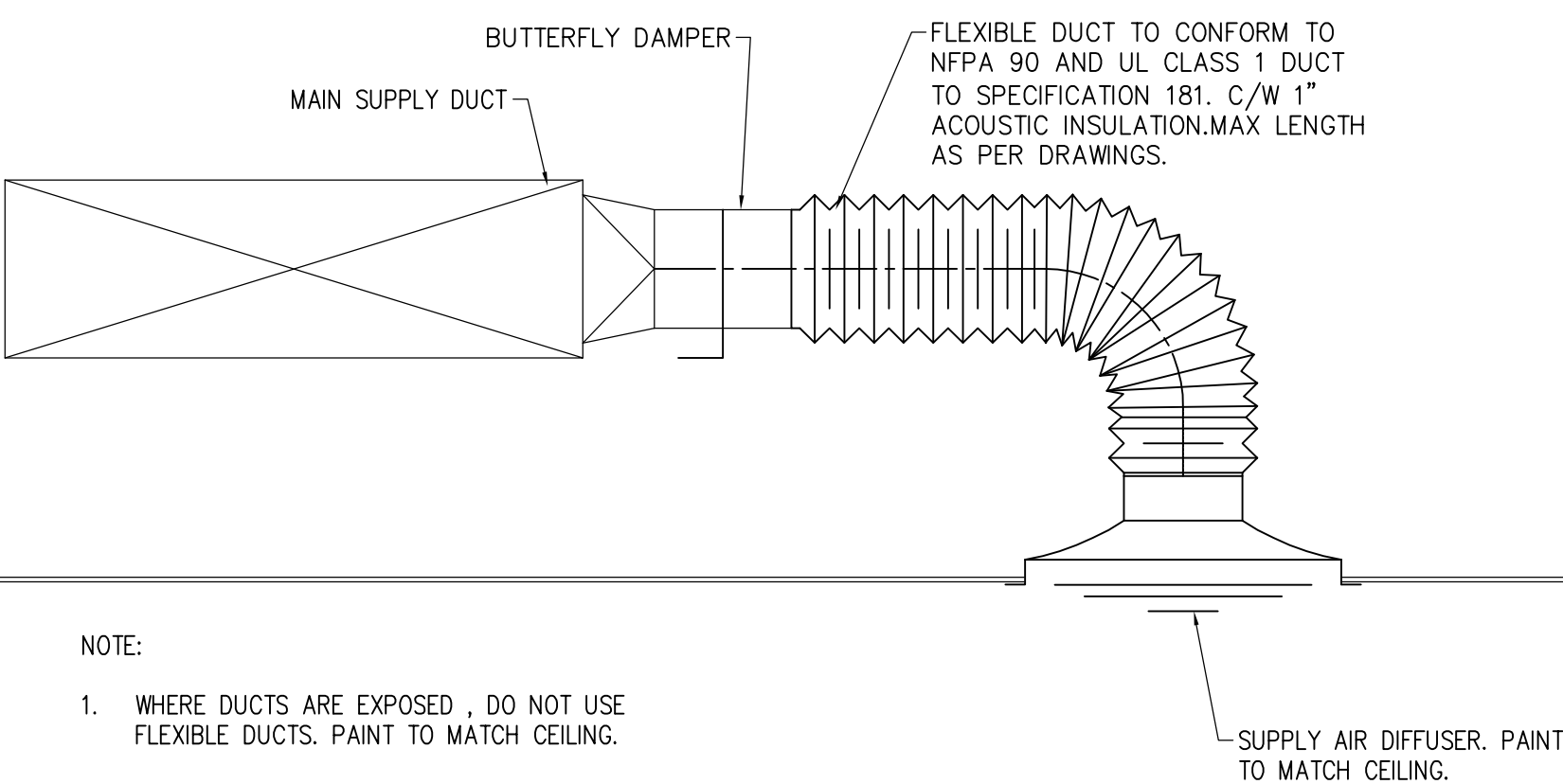


REFER TO PLAN FOR SIZES.

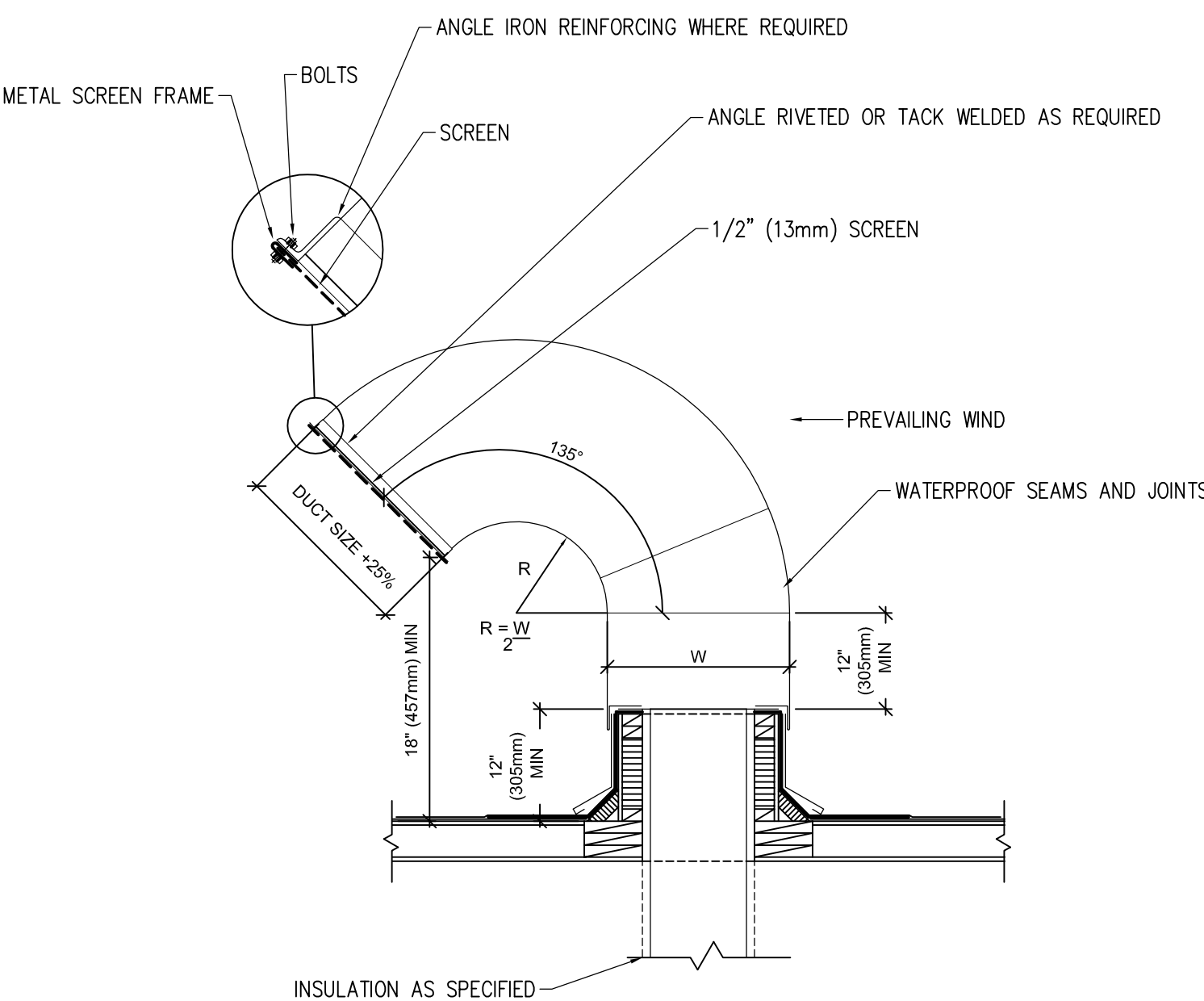
10 SHOP HOOD DETAIL  
M7 NTS



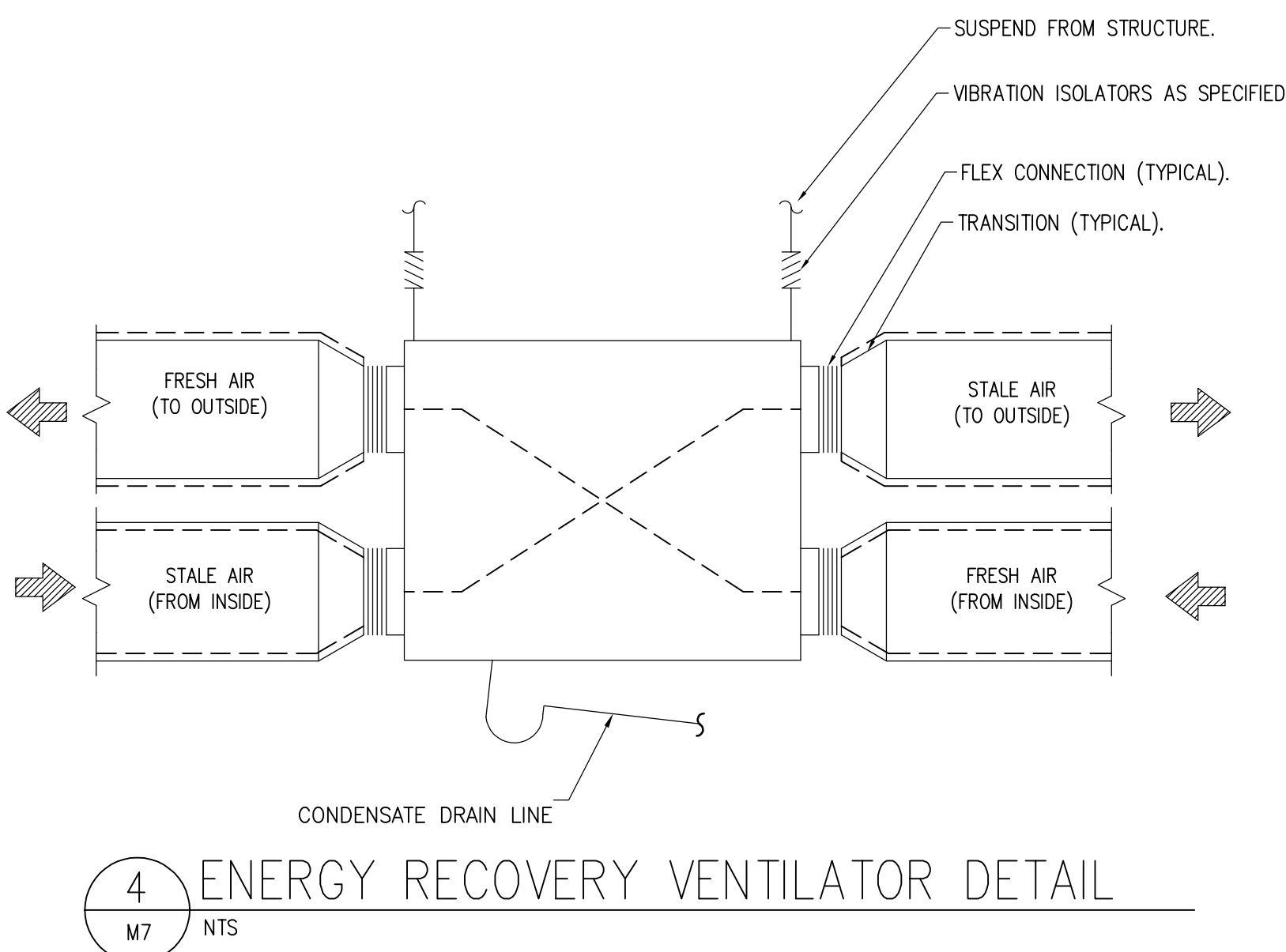
1 GAS-FIRED UNIT HEATER DETAIL  
M7 NTS



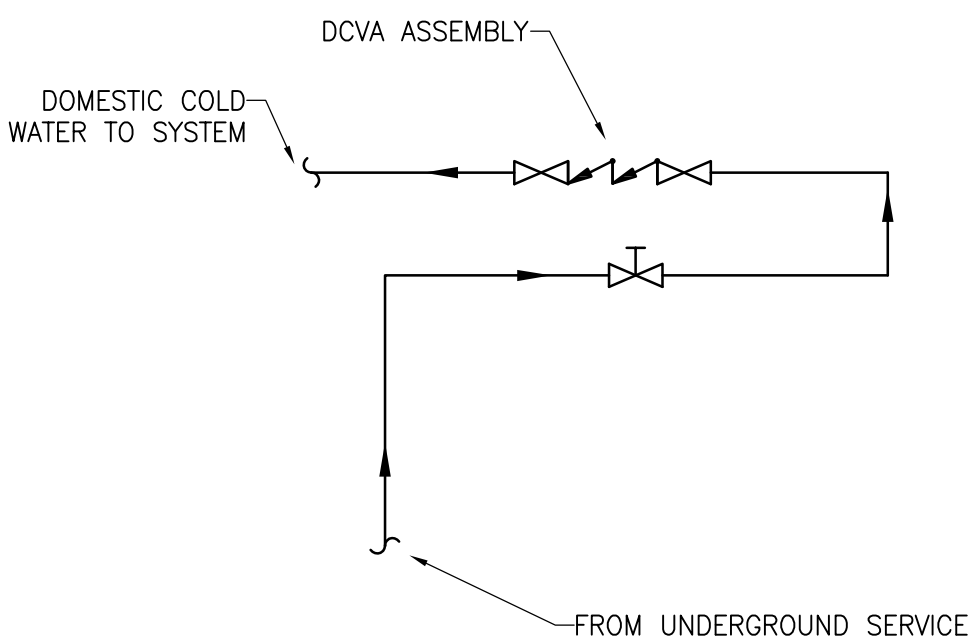
2 CEILING DIFFUSER DETAIL  
M7 NTS



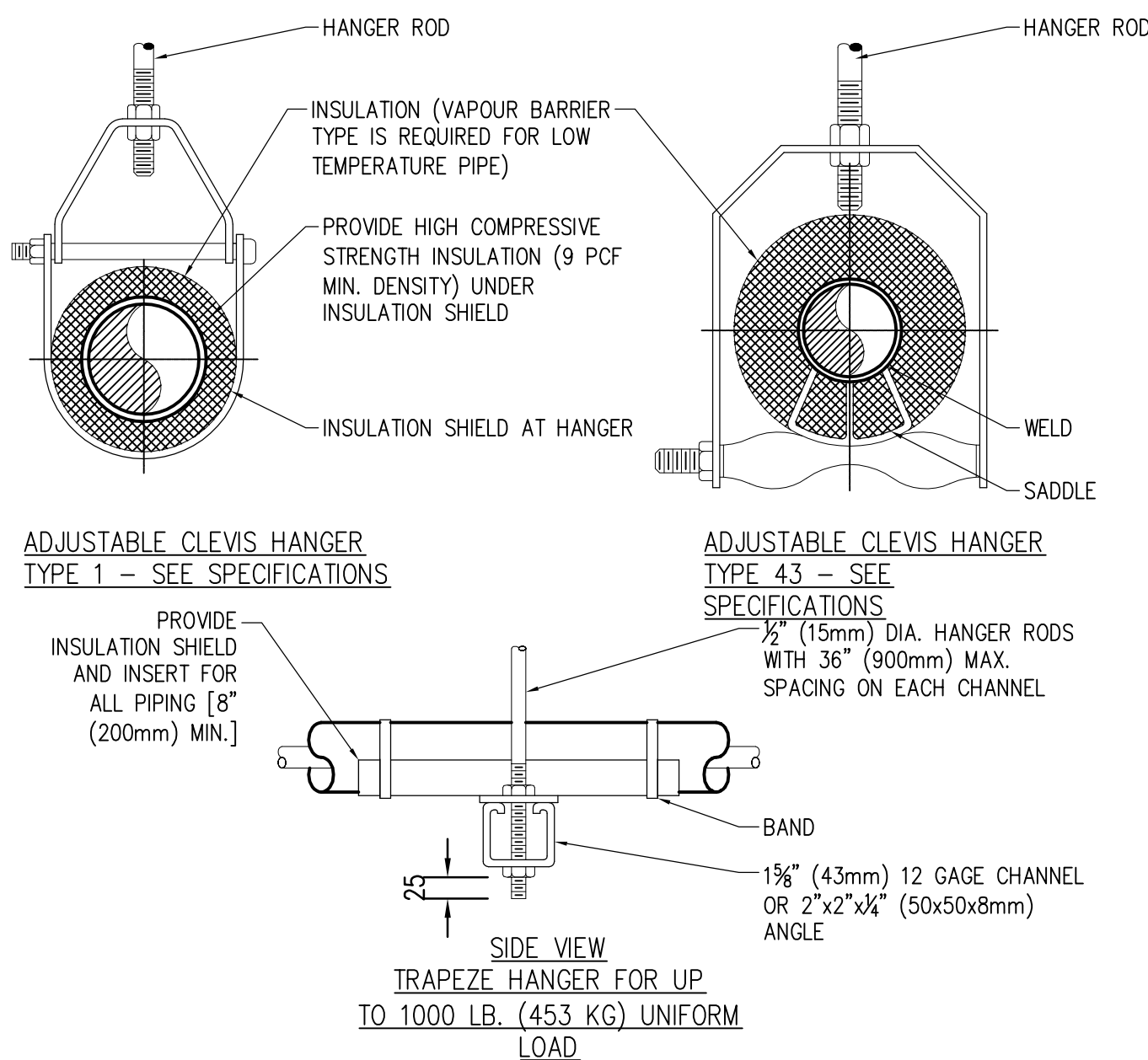
3 GOOSENECK DETAIL  
M7 NTS



4 ENERGY RECOVERY VENTILATOR DETAIL  
M7 NTS



5 WATER SERVICE DETAIL  
M7 NTS

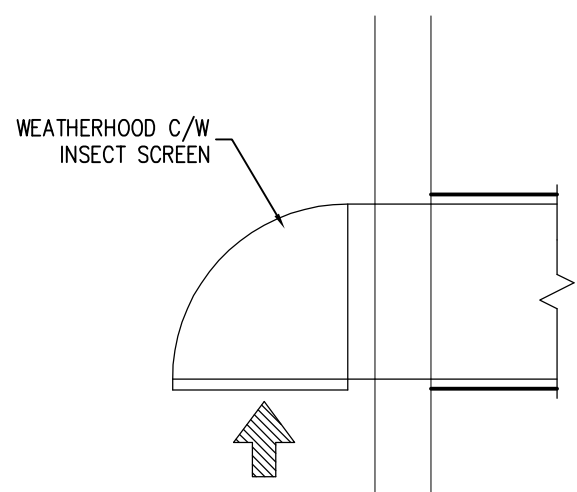


TYPICAL PIPE HANGERS

MAXIMUM PIPE/TUBING SUPPORT SPACING																			
NOM. SIZE	IN. (mm)	THRU 3/4 THRU (20)	1 (25)	1 1/4 (32)	1 1/2 (40)	2 (50)	2 1/2 (65)	3 (75)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)
PIPE	FT. (m)	7 (2.1)	7 (2.1)	7 (2.1)	9 (2.7)	10 (3.0)	11 (3.4)	12 (3.7)	14 (4.1)	16 (4.9)	17 (5.2)	19 (5.8)	22 (6.7)	23 (7.0)	25 (7.6)	27 (8.2)	28 (8.5)	30 (9.1)	32 (9.6)
	TUBING FT. (m)	5 FT (1.5)	6 (1.8)	7 (2.1)	8 (2.4)	8 (2.4)	9 (2.7)	10 (3.0)	12 (3.7)	13 (4.0)	14 (4.1)	16 (4.9)	—	—	—	—	—	—	—
NOTE: FOR TRAPEZE HANGER, TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.																			

NOTE: FOR TRAPEZE HANGER, TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.

6 PIPE HANGER DETAIL  
M7 NTS

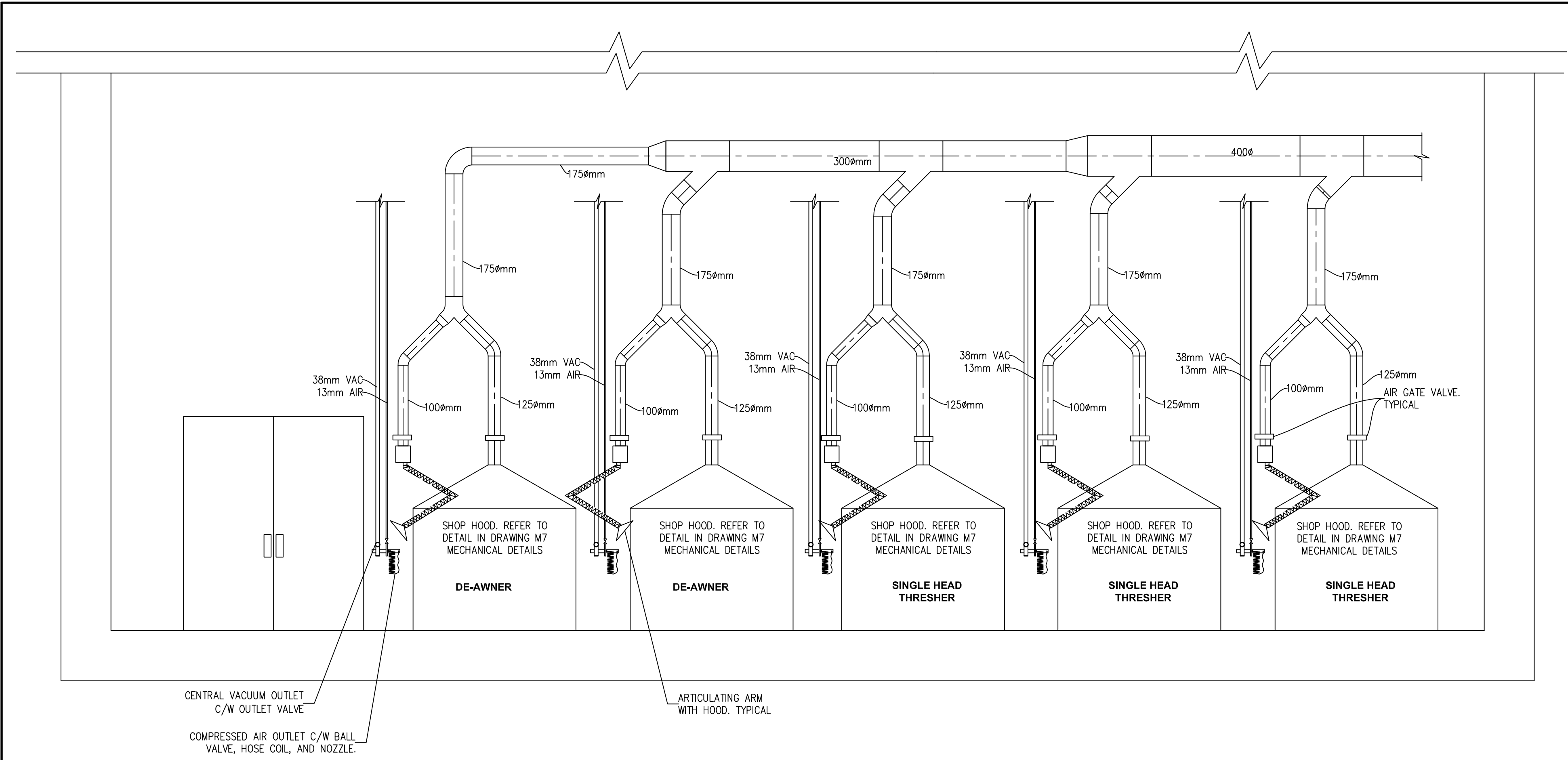


11 WEATHERHOOD DETAIL  
M7 NTS

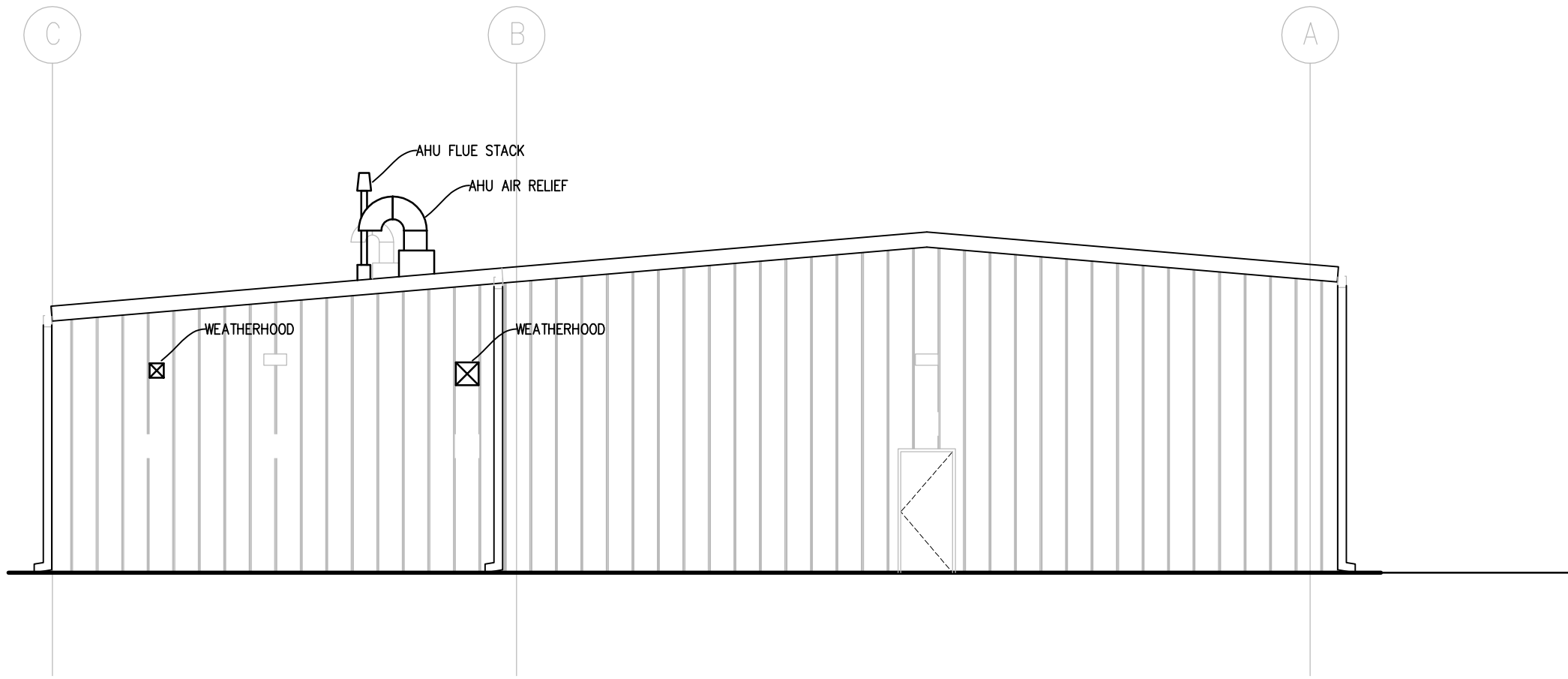




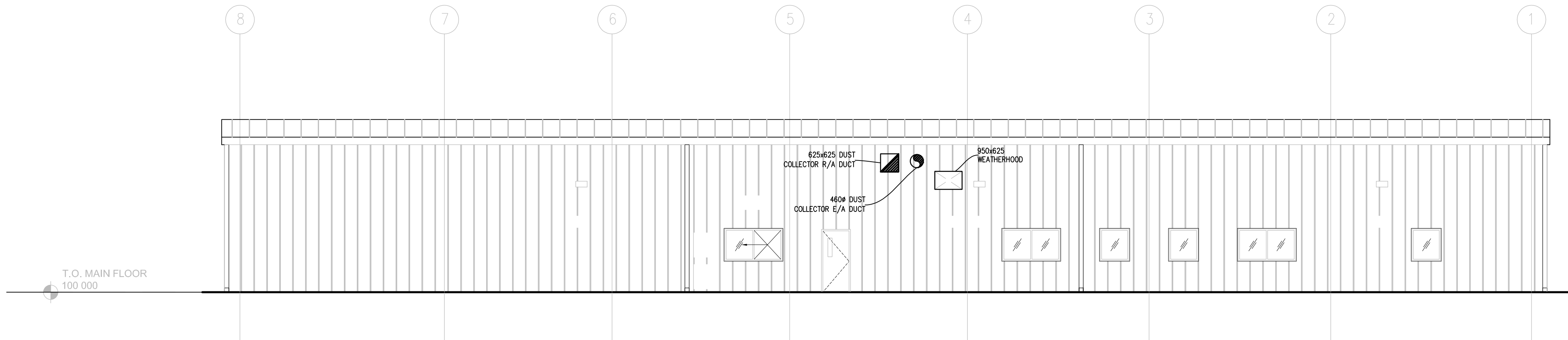




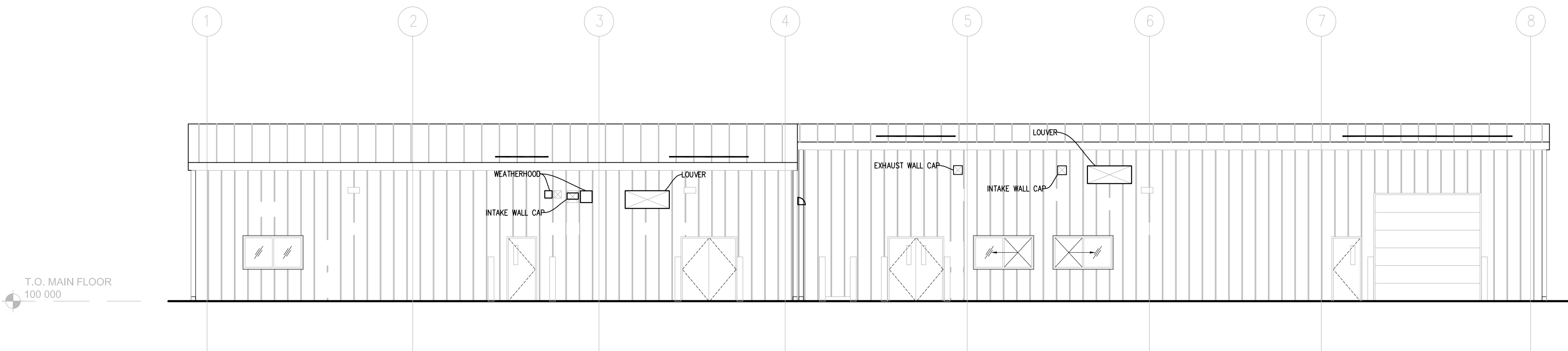
1 DIRTY ROOM SECTION – EAST WALL STATIONS  
M9 1:30



4 BUILDING ELEVATION – EAST  
M9 1:100



2 BUILDING ELEVATION – NORTH  
M9 1:100



3 BUILDING ELEVATION – SOUTH  
M9 1:100



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Project title/Titre du projet 2701 GRAND VALLEY ROAD, BRANDON, MANITOBA		
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Drawing title/Titre du dessin MECHANICAL BUILDING ELEVATIONS		
Project No./No. du projet R.076331	Sheet/Feuille M9 OF 10	Revision no./ La Révision no. 1





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JT

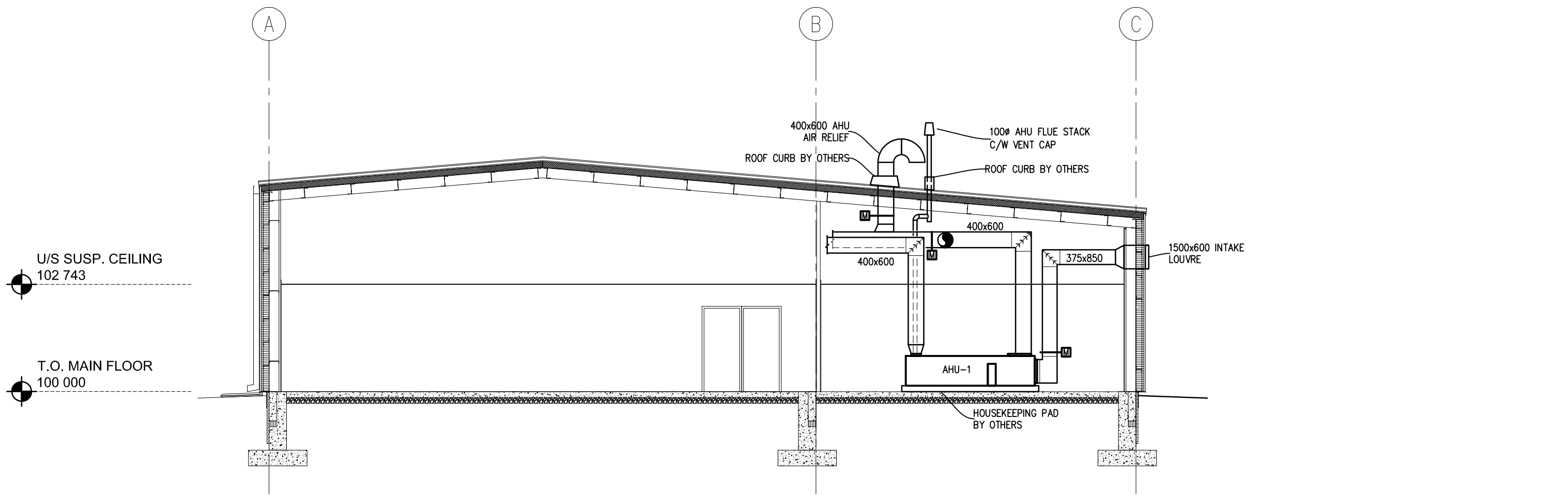
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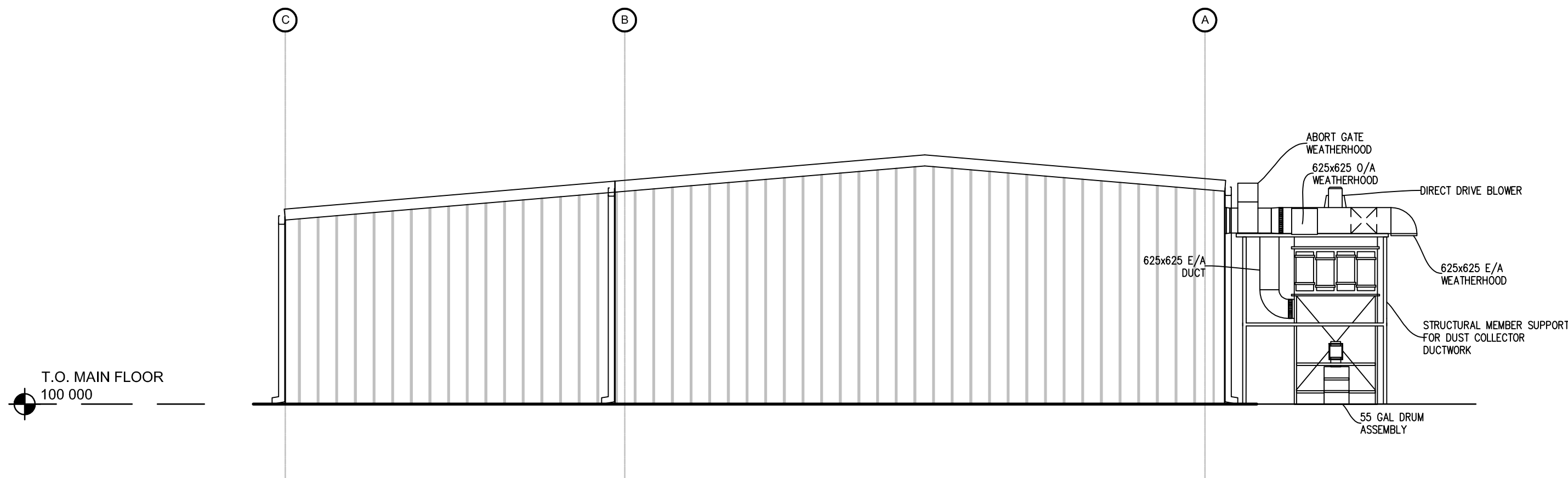
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**MECHANICAL SECTIONS**

Project No./No. du projet <b>R.076331</b>	Sheet/Feuille <b>M10</b> OF 10	Revision no./ La Révision no. <b>0</b>
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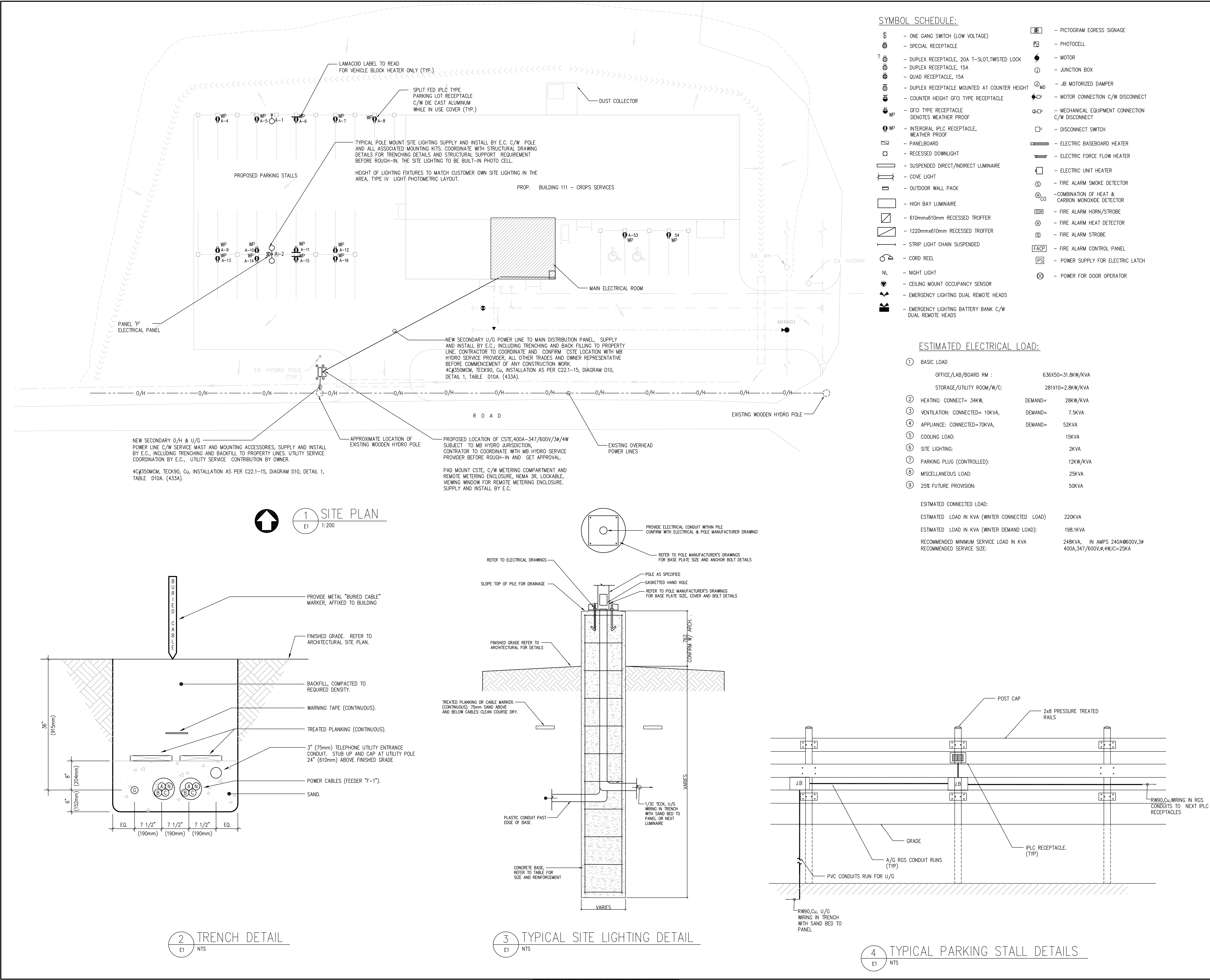


1 MECHANICAL SECTION (AHU-1)  
M10 NTS



2 MECHANICAL SECTION (DUST COLLECTOR)  
M10 NTS





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Drawing title/Titre du dessin SITE PLAN, SYMBOL SCHEDULE, DETAILS AND ELECTRICAL LOAD		
Project No./No. du projet R.076331	Sheet/Feuille E1 OF 9	Revision no./ La Révision no. 2





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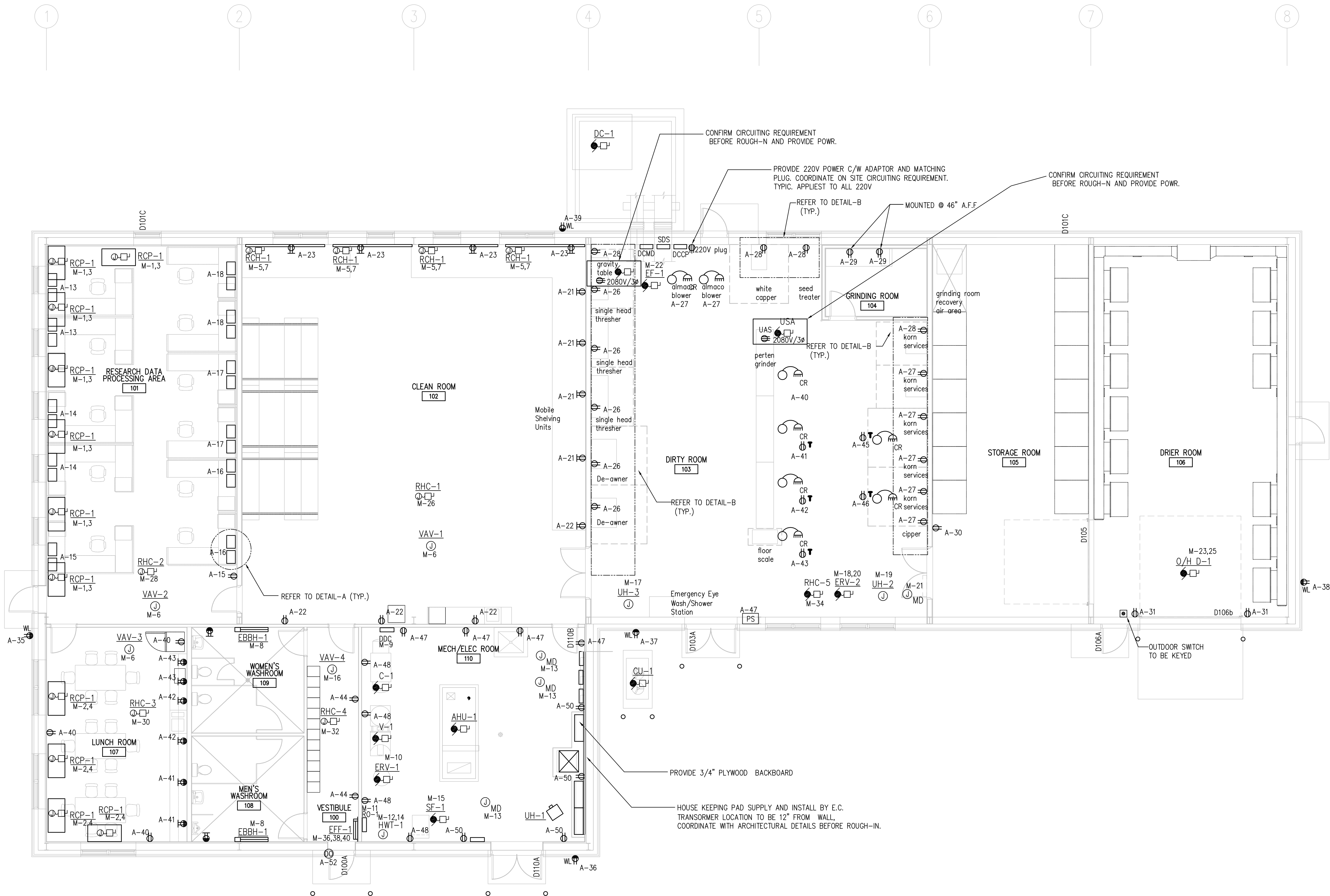
Drawing title/Titre du dessin

MAIN FLOOR POWER PLAN

Project No./No. du projet  
R.076331

Sheet/Feuille  
E2  
OF 9

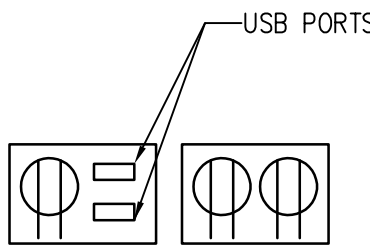
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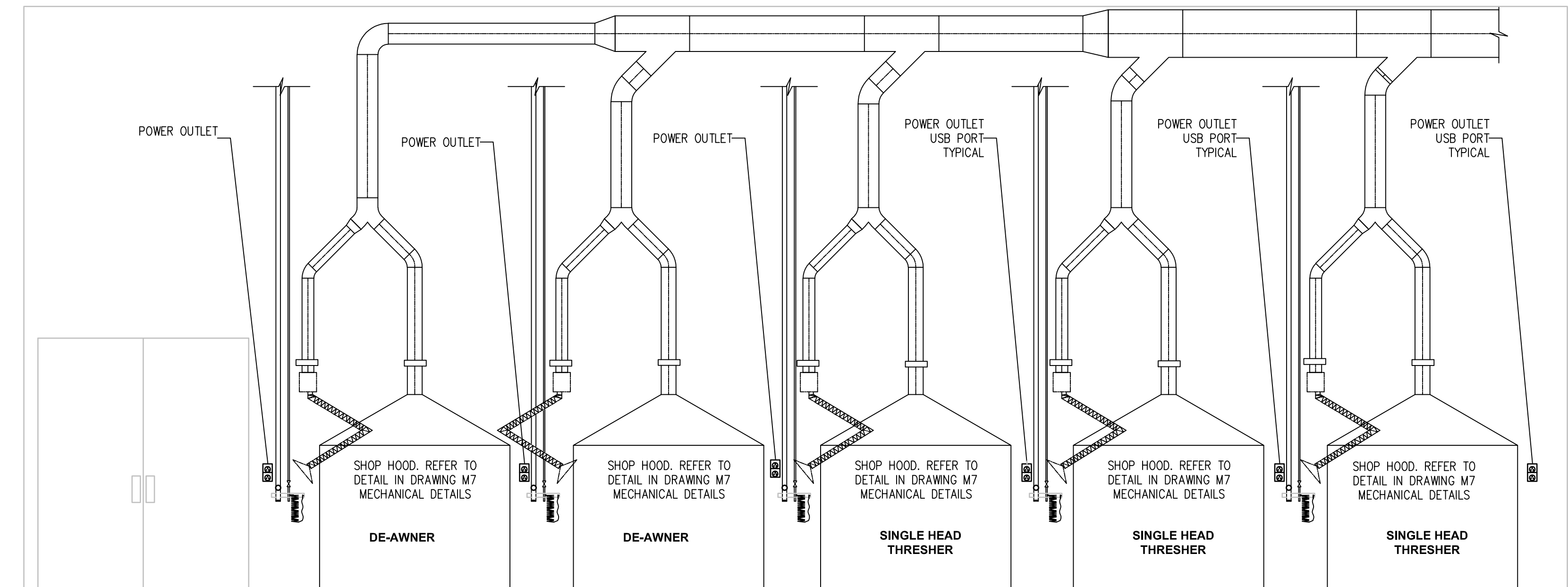
1 MAIN FLOOR POWER PLAN  
E2 1:75

NOTES:

1. ALL EQUIPMENT RECEPTACLES TO BE LOCATED BESIDE EQUIPMENT BEING SERVED. ELECTRICAL CONTRACTOR TO CONFIRM EQUIPMENT LAYOUT ON SITE BEFORE ROUGH-IN. NO RECEPTACLES BEHIND EQUIPMENT WILL BE ACCEPTED.



2 DETAIL-A  
E2 1:30



3 DETAIL-B  
E2 1:30





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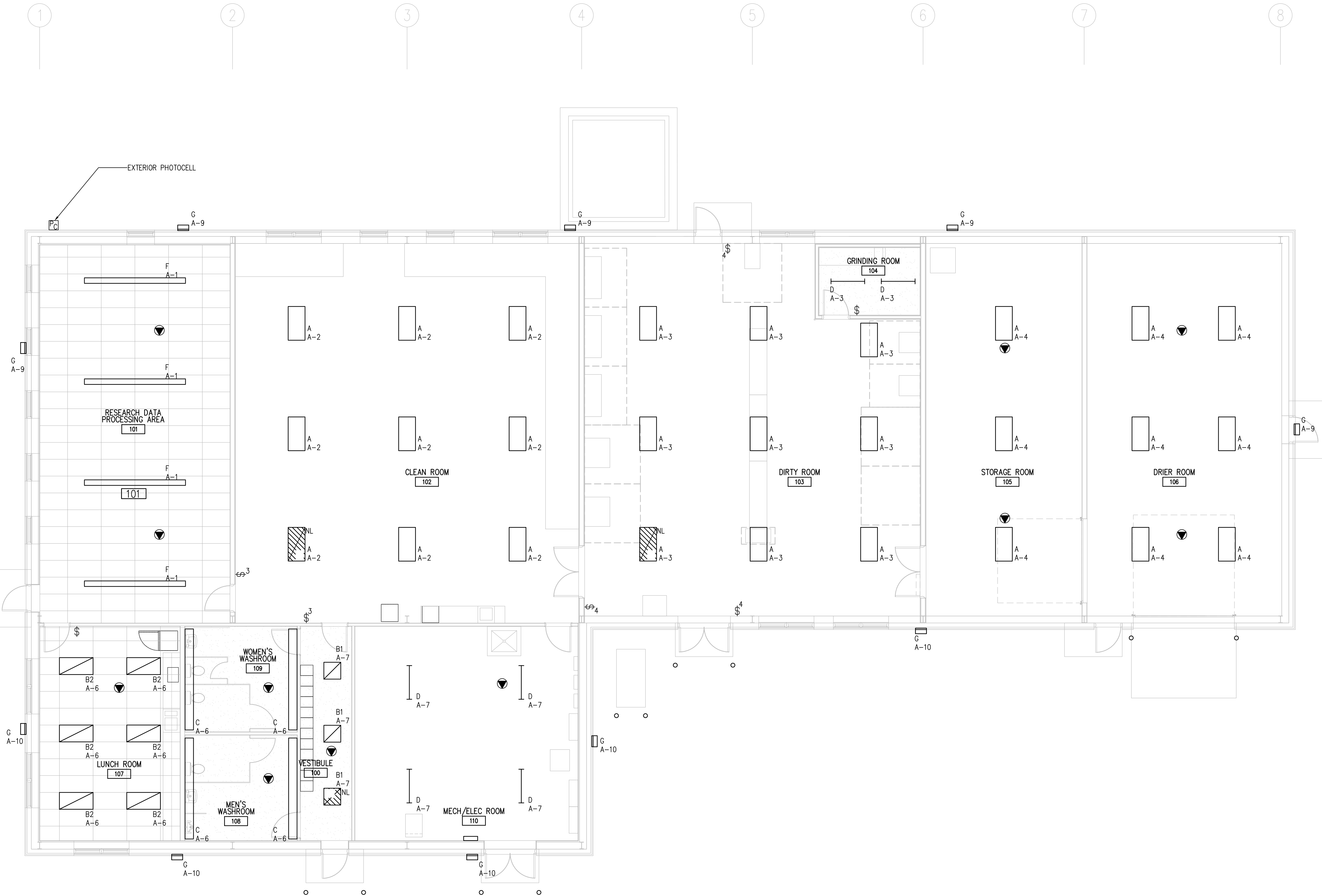
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Drawing title/Titre du dessin  
**MAIN FLOOR LIGHTING PLAN**

Project No./No. du projet <b>R.076331</b>	Sheet/Feuille <b>E3</b> OF 9	Revision no./ La Révision <b>3</b>
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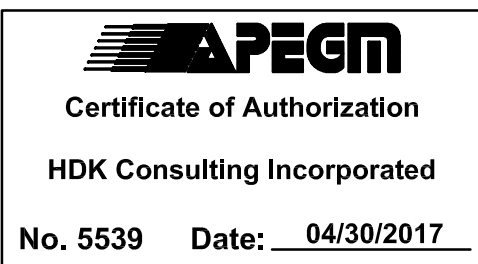


**1 MAIN FLOOR LIGHTING PLAN**  
E3 1:75

**NOTES:**

1. PROVIDE PHOTO CELL ON NORTH SIDE OF EXTERIOR WALL, ALL EXTERIOR WALL PACK LIGHTING FIXTURES TO BE CONTROLLED BY THIS PHOTO CELL.





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**BRANDON, MANITOBA**

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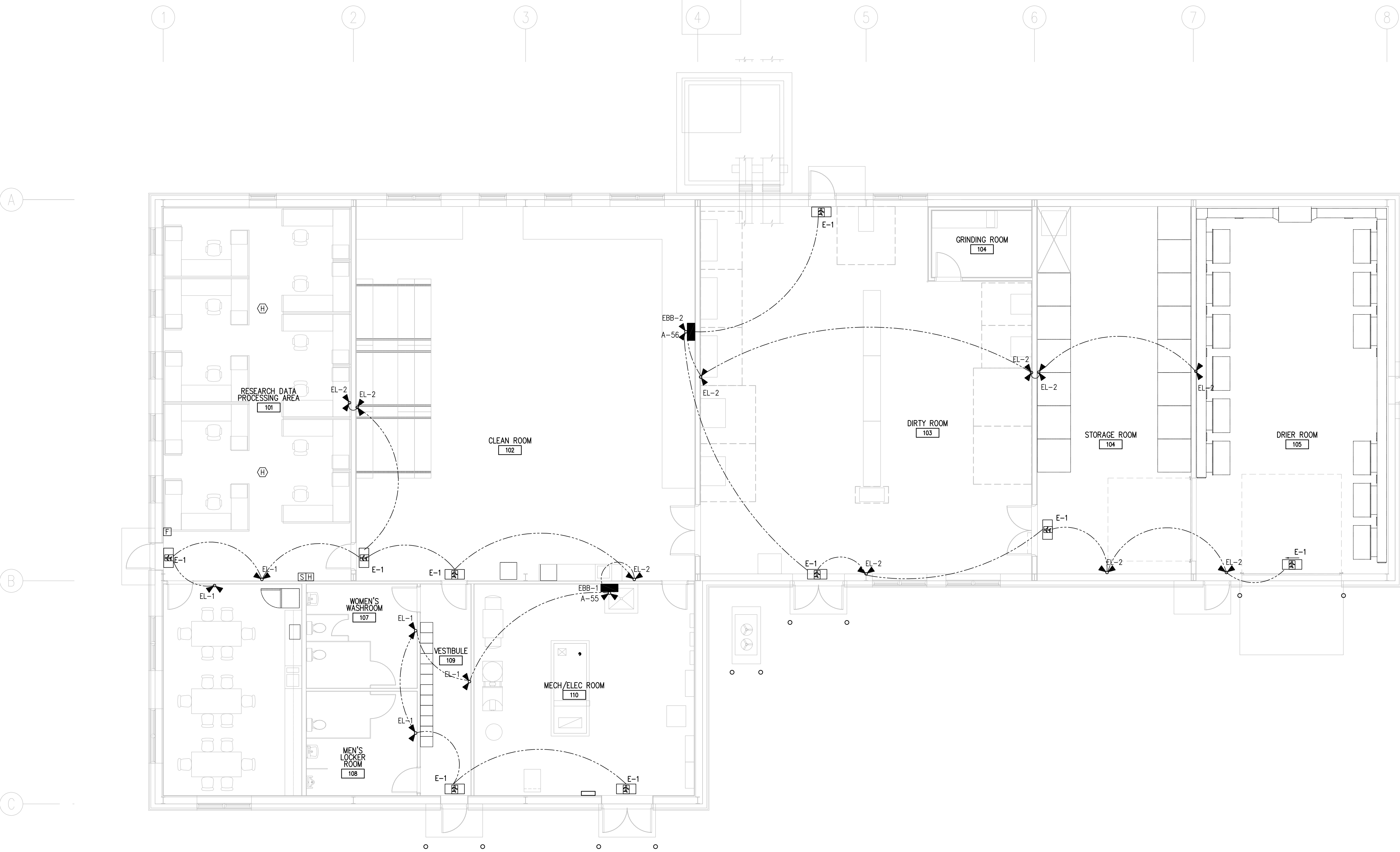
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Drawing title/Titre du dessin

**MAIN FLOOR SERVICE AREA  
LIFE SAFETY SYSTEMS PLAN (LOW  
CEILING)**

Project No./No. du projet	Sheet/Feuille	Revision no./ La Révision no.
R.076331	<b>E4</b> OF 9	<b>2</b>




**1** MAIN FLOOR SERVICE AREA LIFE SAFETY SYSTEMS PLAN (LOW CEILING)  
E4 1:75





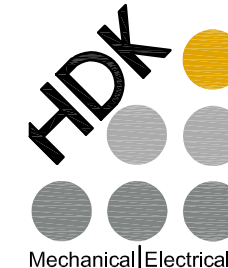
1 MAIN FLOOR LIFE SAFETY SYSTEMS PLAN (HIGH CEILING)  
ES 1:75



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Drawing title/Titre du dessin  
MAIN FLOOR LIFE SAFETY SYSTEMS  
PLAN (HIGH CEILING)

Project No./No. du projet R.076331	Sheet/Feuille E5 OF 9	Revision no./ La Révision no. 2
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Drawing title/Titre du dessin FIRE ALARM RISER DIAGRAM, DETAILS AND OWNER SUPPLIED EQUIPMENT LIST		
Project No./No. du projet R.076331	Sheet/Feuille E6 OF 9	Revision no./ La Révision no. 3

CORD REEL RECEPTACLE DETAIL

NOTES:  
1. CORD REEL TO BE HEAVY DUTY TYPE C/W MINIMUM 9.0m LONG, 10/3 AWG, SOW CABLE AND BALL STOP ASSEMBLY.  
2. CORD REEL SUPPLY END TO BE C/W 20A, TWIST LOCK RECEPTACLE TO ALLOW FOR QUICK DISCONNECTION.  
3. CORD REEL SERVICE END TO BE C/W 20A, PENDANT OUTLET BOX AND TWO DUPLEX 5-20R, T-SLOT RECEPTACLES.  
4. CORD REEL TO BE C/W BRAIDED METAL STRAIN RELIEF FOR CORD.  
5. CORD REEL TO BE C/W ALL MOUNTING HARDWARE AS REQUIRED FOR A COMPLETE INSTALLATION.

FIRE ALARM RISER DIAGRAM

MAIN FLOOR  
FIRE ALARM HORN/STROBE SHALL BE SILENCED AFTER 1 MINUTE OF FIRE ALARM INITIATION, ONLY AUTHORIZED PERSONAL SHALL HAVE ACCESS.

GENERAL NOTES:  
1. SUPPLY, INSTALL, WIRE AND CONNECT AND GROUND IN EMT ONE (1) INDEPENDENT MICROPROCESSOR CONTROLLED, SINGLE STAGE, NON-CODED, ADDRESSABLE FIRE ALARM SYSTEM. SYSTEM EQUIPMENT TO BE CSA APPROVED, ULC LISTED AND INSTALLED IN ACCORDANCE WITH CAN/ULC-5524-14 AND MANUFACTURERS REQUIREMENTS.  
2. ELECTRICAL CONTRACTOR TO PROVIDE 2 LOOPS AS INDICATED:  
1 - MAIN FLOOR  
2 - SPARE  
3. ALL WIRING FOR NOTIFICATION DEVICES TO BE WIRED IN A CLASS 'A' CONFIGURATION (RETURN LOOP CIRCUIT) AND ALL WIRING FOR SIGNALING DEVICES TO BE WIRED IN A CLASS 'B' CONFIGURATION. PROVIDE SEPARATE CONDUIT SYSTEM FOR EACH LOOP.  
4. ALL FIRE ALARM WIRING TO BE RUN IN MINIMUM 21mm EMT. ALL FIRE ALARM CONDUIT TO BE RED.  
5. ELECTRICAL CONTRACTOR TO PROVIDE FAULT ISOLATION MODULES WHEN ENTERING AND LEAVING EACH FIRE ALARM ZONE PER NATIONAL BUILDING CODE OR A LESSER NUMBER WHERE RECOMMENDED BY THE MANUFACTURER. THIS DIAGRAM IS FOR SCHEMATIC PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADDITIONAL MODULES AS REQUIRED WHETHER SHOWN OR NOT IN ORDER TO ACCOMMODATE THE ACTUAL NUMBER OF DEVICES AND ROUTING OF WIRING. EACH MODULES TO BE CLEARLY LABELED WITH A RIVETED LAMACOID AND READILY ACCESSIBLE FOR INSPECTION. MODULES ARE NOT BE INSTALLED ABOVE SUSPENDED CEILINGS. AS BUILT DRAWINGS TO REFLECT THE LOCATION OF EACH ISOLATION MODULE.  
6. THE OPERATION OF ANY MANUAL PULL STATION OR DETECTION TYPE DEVICE TO TRIP THE FIRE ALARM CONTROL PANEL CAUSING IT TO GO INTO ALARM. ALL FIRE ALARM SIGNALING DEVICES TO SOUND CONTINUOUSLY UNTIL THE SYSTEM IS MANUALLY RESET AT THE CONTROL PANEL.  
7. ELECTRICAL CONTRACTOR TO INCLUDE ALL COSTS ASSOCIATED WITH SETTING-UP, TESTING AND THE VERIFICATION OF THE FIRE ALARM SYSTEM. THE MANUFACTURER WITH THE ASSISTANCE OF THE ELECTRICAL CONTRACTOR AND THE OWNER'S REPRESENTATIVE TO PERFORM A COMPLETE FIRE ALARM VERIFICATION AFTER THE INSTALLATION HAS BEEN COMPLETE. A CERTIFICATE OF VERIFICATION AND A COMPLETE REPORT SHALL BE SENT TO THE DEPARTMENTAL REPRESENTATIVE FOR REVIEW. THE ENTIRE FIRE ALARM SYSTEM AND INSTALLATION SHALL CARRY A ONE (1) YEAR WARRANTY FROM THE DATE OF SUBSTANTIAL COMPLETION.  
8. THE ENTIRE INSTALLATION TO BE TO THE FULL SATISFACTION OF THE DEPARTMENTAL REPRESENTATIVE.  
9. PROVIDE 15A/120V CIRCUIT FOR FIRE ALARM CONTROL PANEL. CIRCUIT BREAKER TO BE PAINTED RED AND LOCKED IN THE CLOSED POSITION.

SYMBOL SCHEDULE  
S SMOKE DETECTOR  
H HEAT DETECTOR  
SD SMOKE DUCT DETECTOR  
SH HORN STROBE  
M MONITOR MODULE  
F MANUAL PULL STATION  
I ISOLATION MODULE  
J JUNCTION BOX  
EOL END OF LINE DEVICE

OVERHEAD DOOR DETAIL

NOTES:  
1. ELECTRICAL CONTRACTOR TO WIRE AND CONNECT OVERHEAD DOOR PUSHBUTTON CONTROLS AND PROVIDE JUNCTION BOX FOR SAFETY SENSORS.  
2. PROVIDE ALL REQUIRED WIRING AND CONDUIT FOR ENTIRE INSTALLATION.  
3. CONFIRM FINAL LOCATIONS OF SWITCH, CONTROLLER AND OVERHEAD DOOR MOTOR WITH SUPPLIER. COORDINATE ALL WORK WITH SUPPLIER.

DOOR OPERATOR DETAIL

NOTES:  
1. ELECTRICAL CONTRACTOR TO WIRE ELECTRIC STRIKE, DOOR OPERATOR AND PUSHBUTTONS PER MANUFACTURER'S RECOMMENDATIONS.

DUST COLLECTOR/SPARK DETECTION CONTROL SCHEMATIC

NOTES:  
1. INTERLOCK DUST COLLECTOR WITH CONTACTOR/SHOP EQUIPMENT POWER PANEL SO THAT CONTACTOR IS ENERGIZED ONLY WHEN DUST COLLECTOR IS RUNNING.  
2. WIRE AND CONNECT DUST COLLECTOR BACK TO FIRE ALARM PANEL FOR SHUTDOWN UPON SIGNAL FROM FIRE ALARM PANEL.  
3. WIRE AND CONNECT AS PER MANUFACTURER'S RECOMMENDATIONS.  
4. PROVIDE ALL INTERLOCK WIRING BETWEEN SPARK DETECTION SYSTEM AND HIGH SPEED ABORT GATE SYSTEM.

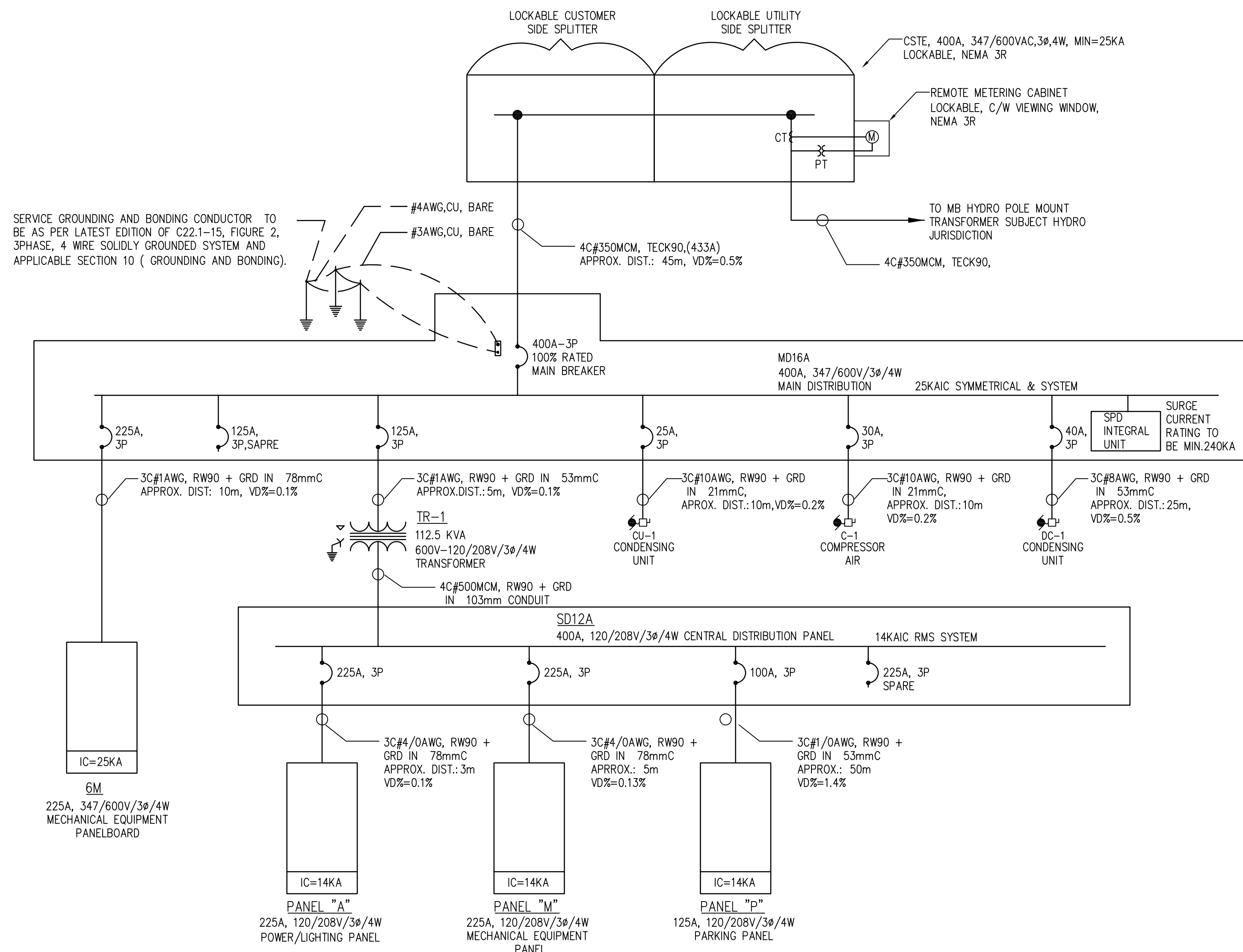
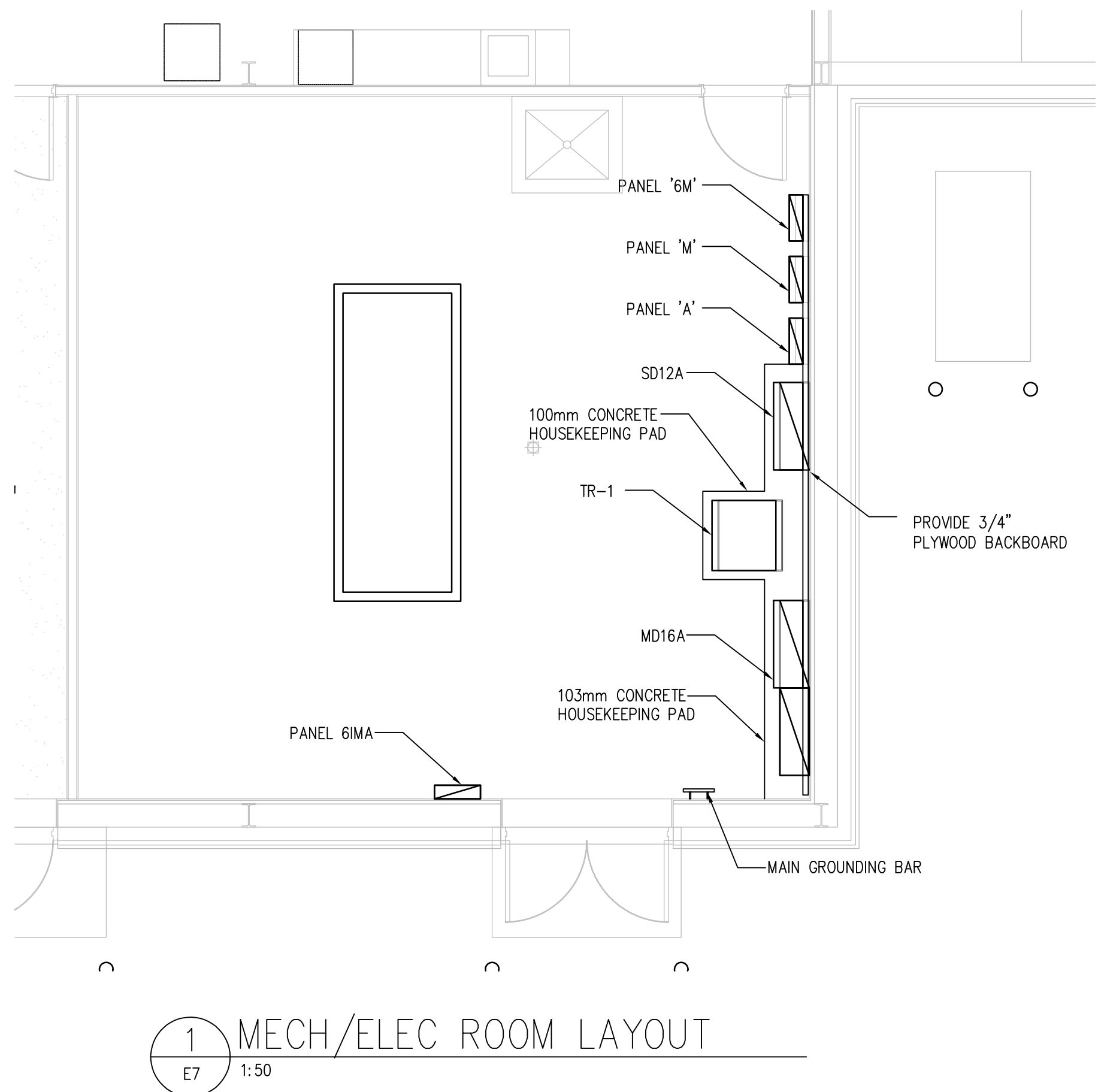
OWNER SUPPLIED EQUIPMENT LIST				
TYPE	DESCRIPTION	QUANTITIES	VOLT/Ø	PANEL CCT#
1.1	DE-AWNER	2	120V/1Ø	CCT # A-26
2.1	SINGLE HEAD THRESHER	3	120V/1Ø	CCT # A-26
3.1	GRAVITY TABLE	1	208V/1Ø	CCT # A-28
4.1	ALMACO BLOWER	2	120V/1Ø	CCT # A-60, 62, 64
5.1	WHITE CAPPER	1	120V/1Ø	CCT # A-28
6.1	SEED TREATER	1	120V/1Ø	CCT # A-28
7.1	KORN SERVICES	5	120V/1Ø	CCT # A-27 AND CCT # A-28
8.1	CIPPER	1	120V/1Ø	CCT # A-27
9.1	UAS	1	208V/1Ø	CCT # M-59, 61, 63
10.1	PERTEN GRINDER	1	120V/1Ø	CCT # M-57


PWSC - B1 - 1000X707

0 10 20 30 40 50 60 70 80 90 100mm

E6



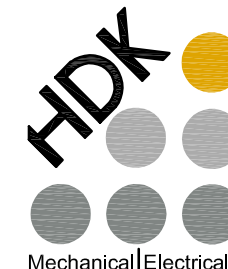





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MECH/ELEC ROOM LAYOUT,  
AND SINGLE LINE DIAGRAM

Project No./No. du projet  
R.076331

Sheet/Feuille  
E7  
OF 9

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0 10 20 30 40 50 60 70 80 90 100mm

E7



MECHANICAL EQUIPMENT SCHEDULE																
EQUIPMENT			ELECTRICAL CHARACTERISTICS			PACKAGED UNIT	CONTROLS				CIRCUITRY INFORMATION				NOTES	
ITEM	DESCRIPTION/QUANTITY	LOCATION	HP/KW	AMPS	VOLTS/ø		TYPE	SUPPLIED BY	INSTALLED BY	WIRED BY	PANEL-CCT #	O.C.P.	WIRE	CONDUIT		
AIR HANDLING UNITS																
AHU-1	AIR HANDLING UNIT	MECH/ELEC ROOM 110		7.0MCA	600V/3ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT 6M,-1, 3, 5	15A-3P	3 #12 AWG RW 90 Cu. + GRD	21mm		
FANS																
EF-1	EXHAUST FAN	DIRTY MECH/ELEC ROOM 103	1/2HP	9.8FLA	120V/1ø			BY MECH	BY MECH	BY DDC	CCT M-22	20A-1P	2 #10 AWG RW 90 Cu. + GRD	21mm	STARER SIZE 0, HOA SUPPLY & INSTALL BY E.C.	
SF-1	SUPPLY FAN	MECH/ELEC ROOM 110	1/6HP	5.1FLA	120V/1ø			BY MECH	BY MECH	BY DDC	CCT M-15	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm	STARER SIZE 0, HOA SUPPLY & INSTALL BY E.C.	
ENERGY RECOVERY VENTILATORS																
ERV-1	ENERGY RECOVERY VENTILATOR	MECH/ELEC ROOM 110		7.2FLA	120V/1ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-10	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
ERV-2	ENERGY RECOVERY VENTILATOR	DIRTY MECH/ELEC ROOM 103		4.91FLA	208V/1ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-18, 20	15A-2P	2 #12 AWG RW 90 Cu. + GRD	21mm		
CONDENSING UNITS																
CJ-1	CONDENSING UNIT	OUTDOOR		15.5MCA	600V/3ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-16A	25A-3P	3 #10 AWG RW 90 Cu. + GRD	21mm		
UNIT HEATERS																
UH-2	GAS FIRE UNIT HEATER	DIRTY MECH/ELEC ROOM 103	FRAC	FRAC	120V/1ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-19	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
UH-3	GAS FIRE UNIT HEATER	DIRTY MECH/ELEC ROOM 103	FRAC	FRAC	120V/1ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-17	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
VARIABLE AIR VOLUME UNITS																
VAV-1	VARIABLE AIR VOLUME	CLEAN ROOM 102	FRAC	FRAC	120V/1ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-6	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
VAV-2	VARIABLE AIR VOLUME	RESEARCH DATA ROOM 101	FRAC	FRAC	120V/1ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-6	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
VAV-3	VARIABLE AIR VOLUME	LUNCG ROOM 107	FRAC	FRAC	120V/1ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-6	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
VAV-4	VARIABLE AIR VOLUME	VESTIBULE 100	FRAC	FRAC	120V/1ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-16	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
REHEAT COILS																
RHC-1	REHEAT COIL/S UNITS	CLEAN ROOM 102	4KW		120V/1ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-26	40A-1P	2 #8 AWG RW 90 Cu. + GRD	27mm		
RHC-2	REHEAT COIL	CLEAN ROOM 102	4KW		120V/1ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-28	40A-1P	2 #8 AWG RW 90 Cu. + GRD	27mm		
RHC-3	REHEAT COIL	CLEAN ROOM 102	3KW		120V/1ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-30	30A-1P	2 #10 AWG RW 90 Cu. + GRD	21mm		
RHC-4	REHEAT COIL	CLEAN ROOM 102	0.5KW		120V/1ø	PACKAGE		BY MECH	BY MECH	BY DDC	CCT M-32	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
RHC-5	REHEAT COIL	CLEAN ROOM 102	3.2KW		120V/1ø	PACKAGE		BY MECH	BY MECH	BY MECH	CCT M-34	30A-1P	2 #8 AWG RW 90 Cu. + GRD	27mm	LOCAL VIA REMOTE THERMOSTAT	
MISCELLANEOUS																
HWT-1	DOMESTIC HOT WATER TANK	MECH/ELEC ROOM 110	2X3.0 KW	28.8 FLA	208V/1ø	PACKAGE		BY MECH	BY MECH	BY MECH	CCT M-12, 14	40A-2P	2 #8 AWG RW 90 Cu. + GRD	27mm	CONFIRM CIRUITNG & CONNECTION REQUIREMENT FOR 2 STAGE SYSTEM	
C-1	AIR COMPRESSOR	MECH/ELEC ROOM 110	15.0 HP	----	600V/3ø	PACKAGE		BY MECH	BY MECH	BY MECH	CCT MD16A	30A-3P	3 #10 AWG RW 90 Cu. + GRD	21mm		
V-1	CENTRAL VACUUM	MECH/ELEC ROOM 110	10.0 HP	-----	208V/3ø	PACKAGE		BY MECH	BY MECH	BY MECH	CCT M-25, 27, 29	40A-3P	3 #8 AWG RW 90 Cu. + GRD	27mm		
DC-1	DUST COLLECTOR	OUTDOOR	20.0 HP		600V/3ø	PACKAGE		BY MECH	BY MECH	BY MECH	CCT MD16A	40A-3P	3 #8 AWG RW 90 Cu. + GRD	27mm		
DDC-#	DIRECT DIGITAL CONTROL POINTS	MECH/ELEC ROOM 110	FRAC	FRAC	120V/1ø	BY MECH		BY OTHERS	BY MECH	BY MECH	CCT M-9	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
MD-#	MOTORIZED DAMPERS/4UNITS	MECH/ELEC RM 110 & DIRTY RM 103	FRAC	FRAC	120V/1ø	BY MECH		BY MECH	BY MECH	BY DDC	CCT M-13	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
O/H-1	OVER HEAD DOOR OPENER	DRIER ROOM 106	2.0HP??	9.6FLA??	208V/1ø	PACKAGE		BY ARCH.	BY MECH	BY MECH	CCT M-23, 25	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
EUH-1	ELECTRIC UNIT HEATER	MECH/ELEC ROOM 110	5.0KW+frac HP	24.2FLA	208/1ø	BY MECH		BY MECH	BY ELECT	BY DDC	CCT M-33, 35	30A-2P	2 #10 AWG RW 90 Cu. + GRD	21mm		
RO-1	REVERSE OSMOSIS	MECH/ELEC ROOM 110	FRAC	FRAC	120/1ø	BY MECH		BY MECH	BY MECH	BY MECH	CCT M-11	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
DDMD	DUST COLLECTOR MOTOR DAMPER	DIRTY ROOM	FRAC	FRAC	120/1ø	PACKAGE		BY MECH	BY MECH	BY MECH	CCT M-37	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
SDS	SPARK DETECTION SYSTEM	DIRTY ROOM	FRAC	FRAC	120/1ø	PACKAGE		BY MECH	BY MECH	BY MECH	CCT M-39	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
DCCP	DUST COLLECTOR CONTROL PANEL	DIRTY ROOM	FRAC	FRAC	120/1ø	PACKAGE		BY MECH	BY MECH	BY MECH	CCT M-41	15A-1P	2 #12 AWG RW 90 Cu. + GRD	21mm		
NOTES:																
1. DIVISION 26 TO CONFIRM FINAL LOCATION OF ALL EQUIPMENT WITH MECHANICAL DRAWINGS PRIOR TO ROUGHING IN OF CONDUIT. CONFIRM FINAL EQUIPMENT RATINGS WITH MECHANICAL PRIOR TO ROUGHING-IN OF CONDUIT, WIRING AND CIRCUIT BREAKERS. SIZE OVERLOADS ACCORDINGLY. CONFIRM FINAL RATINGS WITH EQUIPMENT NAMEPLATES. INFORM DEPARTMENTAL REPRESENTATIVE OF ANY DISCREPANCIES AND OR DEVIATIONS PRIOR TO ROUGHING IN OF EQUIPMENT.																
2. ALL CONTROL WIRING TO BE BY DIVISION 23 UNLESS OTHERWISE NOTED. REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS. ALL CONDUIT REQUIRED FOR CONTROLS TO BE SUPPLIED AND INSTALLED BY DIVISION 26. COORDINATE ALL WORK WITH DIVISION 23.																
3. PROVIDE DISCONNECTS FOR ALL EQUIPMENT AS REQUIRED, SUPPLY AND INSTALL BY E.C.																
4. PROVIDE CONTROL TRANSFORMERS FOR ALL VAV'S. CONFIRM LOCATIONS AND QUANTITIES WITH MECHANICAL. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.																

ELECTRIC HEATER SCHEDULE									
TYPE	UNIT COUNT	STYLE	MANUFACTURER	CATALOGUE NUMBER	FINISH	MOUNTING	HEATING ELEMENT WATTAGE	VOLTAGE	ADDITIONAL INFORMATION
RCP-1	11	RADIANT CEILING PANEL	Q-MARK	CP758	WHITE	RECESSED CEILING MOUNT (LAY-IN)	750W	208V/1ø	SUPPLY AND INSTALL BY E.C.
			THERMA-RAY	AS SERIES 750W-208V					
			INDEECO	AS2448-750-208					
RCH-1	4	RADIANT COVE HEATER	Q-MARK	RCC150C8C	WHITE	WALL MOUNTED	1500W	208V/1ø	SUPPLY AND INSTALL BY E.C.
			OUELLET	ORC1508					
			INDEECO	918U01500C					
EBBH-1	2	ELECTRIC BASEBOARD HEATER	Q-MARK	DBSL01-250W/FT	WHITE	WALL/FLOOR MOUNT	500W	208V/1ø	SUPPLY AND INSTALL BY E.C.
			OUELLET	OCB0758					
			INDEECO	914U00525C					
EFF-1	1	ELECTRIC FORCE FLOW HEATER	OUELLET	OAC04008	WHITE	WALL MOUNTED	4.0KW	208V/3ø	C/W BUILT IN THERMOSTAT, SUPPLY AND INSTALL BY E.C.
			REZNOR	EHC-4-208V/3					
			Q-MARK	CWH34083F					
NOTES:									
1. LOW VOLTAGE CONTROL RELAY SUPPLY AND INSTALL BY E.C., COORDINATE CONTROL RELAYS LOCATION WITH CONTROL AND MECHANICAL CONTRACTOR BEFORE ROUGH-IN									

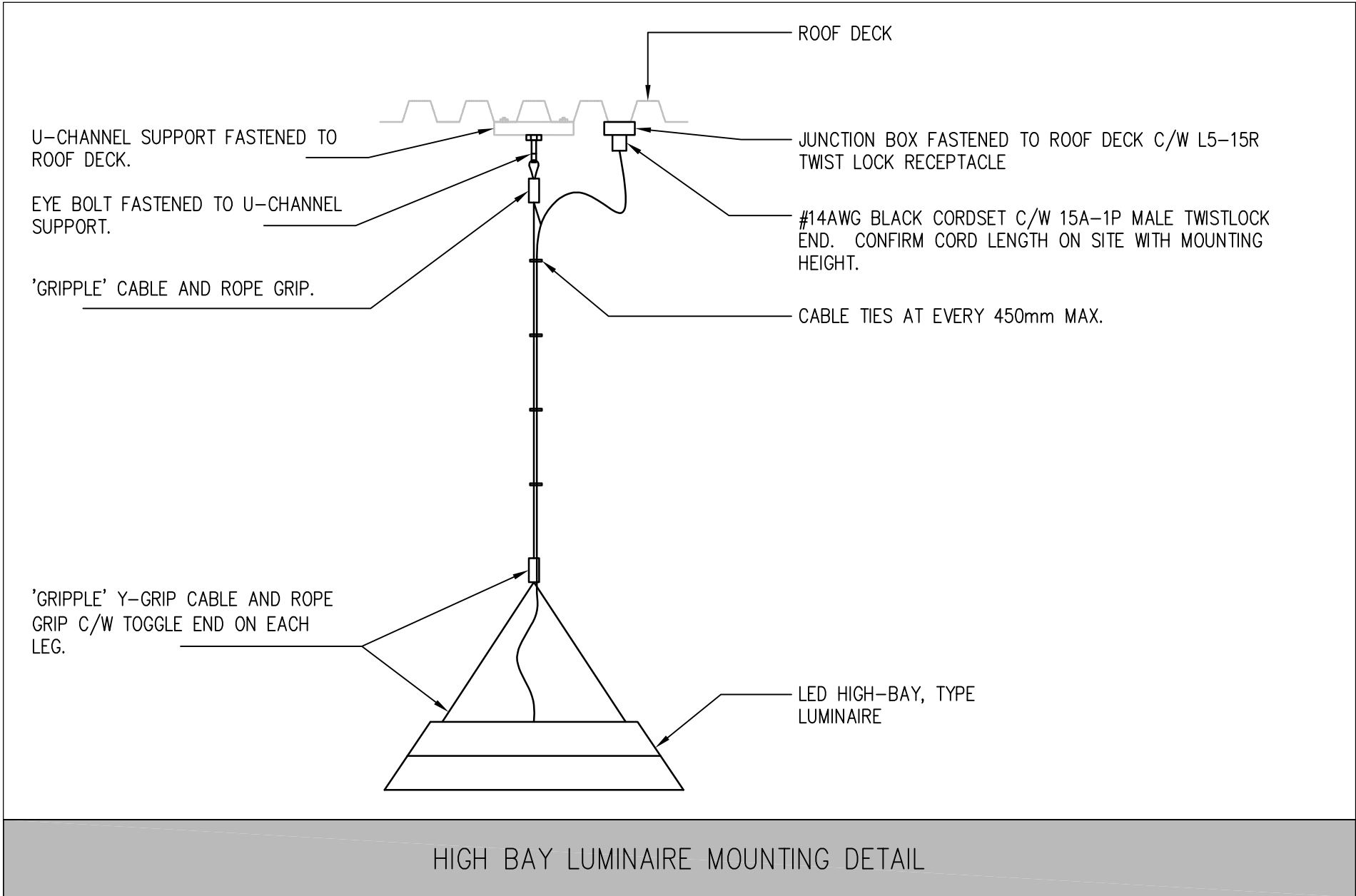
PANELBOARD "6M"								
ITEM	LOAD (KVA)	OCF	C	C	ITEM	LOAD (kW)	OCF	
AHU-1	7.3	15A, 3P	1	2	SPARE			15A, 3P
			3	4				
			5	6				
			7	8				
SPARE		15A, 3P	9	10	SPARE			15A, 3P
			11	12				
			13	14				
			15	16				
SPARE		15A, 3P	17	18	SPARE			15A, 3P
			19	20				
			21	22				
			23	24				
SPARE		15A, 3P	25	26	SPARE			15A, 3P
			27	28				
			29	30				
			31	32				
SPARE		15A, 3P	33	34	SPARE			15A, 3P
			35	36				
			37	38				
			39	40				
SPARE		15A, 3P	41	42	SPARE			15A, 3P
NOTES: —					MOUNTING: SURFACE RATING: 100A,347/600V,3ø,4W			

PANELBOARD "A"									
ITEM	LOAD (KVA)	OCF	C	C	ITEM	LOAD (kW)	OCF		
LIGHTS RESEARCH DATA ROOM 101	1.0	15A	1	2	LIGHTS CLEAN ROOM 102	1.0	15A		
LIGHTS DIRTY ROOM 103	1.0	15A	3	4	LIGHTS DRIER ROOM 106/STO. 105	1.0	15A		
SPARE		15A	5	6	LIGHTS LUNCH ROOM 107 & W/C 109	1.0	15A		
LIGHTS MECH./ELEC RM 110/VEST 100	1.0	15A	7	8	SPARE		15A		
EXTERIOR WALL PACK LIGHT	1.0	15A	9	10	EXTERIOR WALL PACK LIGHT	1.0	15A		
SPARE		1.0	15A	11	12	SPARE	1.0	15A	
RECEPT. RESEARCH DATA RM 101	1.0	15A	13	14	RECEPT. RESEARCH DATA RM 101	1.0	15A		
RECEPT. RESEARCH DATA RM 101	1.0	15A	15	16	RECEPT. RESEARCH DATA RM 101	1.0	15A		
RECEPT. RESEARCH DATA RM 101	1.0	15A	17	18	RECEPT. RESEARCH DATA RM 101	1.0	15A		
SPARE		15A	19	20	SPARE		15A		
RECEPT. CLEAN RM 102	1.0	15A	21	22	RECEPT. CLEAN RM 102	1.0	15A		
RECEPT. CLEAN RM 102	1.0	15A	23	24	SPARE	1.0	15A		
SPARE	1.0	15A	25	26	RECEPT. DIRTY RM 103	1.0	15A		
RECEPT. DIRTY RM 103	1.0	15A	27	28	RECEPT. DIRTY RM 103	1.0	15A		
RECEPT. GRINDING RM 104	1.0	15A	29	30	RECEPT. STORAGE RM 105	1.0	15A		
RECEPT. DRIER RM 106	1.0	15A	31	32	RECEPT. DRIER RM 106	1.0	15A		
SPARE		15A	33	34	SPARE		15A		
EXTERIOR RECEPT WEST WALL	1.3	20A	35	36	EXTERIOR RECEPT SOUTH WALL	1.3	20A		
EXTERIOR RECEPT FOR CU--1*	1.3	20A	37	38	EXTERIOR RECEPT EAST WALL	1.3	20A		
EXTERIOR RECEPT FOR V--1*	1.3	20A	39	40	RECEPT DROP DOWN, DIRTY RM 103	1.0	15A		
RECEPT DROP DOWN, DIRTY RM 103	1.0	15A	41	42	RECEPT DROP DOWN, DIRTY RM 103	1.0	15A		
RECEPT DROP DOWN, DIRTY RM 103	1.0	15A	43	44	RECEPT DROP DOWN, DIRTY RM 103	1.0	15A		
RECEPT DROP DOWN, DIRTY RM 103	1.0	15A	45	46	RECEPT DROP DOWN, DIRTY RM 103	1.0	15A		
PS(POWER SUPPLY FOR ELECTRIC LATCH)	0.1	15A	47	48	RECEPTACLE MECH. ROOM	1.0	15A		
SPARE		15A	49	50	RECEPTACLE MECH. ROOM	1.0	15A		
SPARE		15A	51	52	DO (DOOR OPERATION)		FRAC	15A	
ILCL RECEPT EAST	0.65	15A	53	54	ILCL RECEPT EAST	0.65	15A		
EBB-1 (EMERGENCY BATTERY PACK)	0.2	15A	55	56	EBB-2 ( EMERGENCY BATTER PACK)	0.2	15A		
PERTEN GRINDER*		15A	57	58	SPARE		15A		
			59	60					
UAS*		3P	61	62	GRAVITY TABLE**		3P		
			63	64					
SPARE		15A	65	66	SPARE		15A		
SPARE		15A	67	68	SPARE		15A		
SPARE		15A	69	70	SPARE		15A		
SPARE		15A	71	72	SPARE		15A		
SPARE		15A	73	74	SPARE		15A		
SPACE		15A	75	76	SPACE		15A		
SPACE		15A	77	78	SPACE		15A		
SPACE		15A	79	80	SPACE		15A		
SPACE		15A	81	82	SPACE		15A		
SPACE		15A	83	84	SPACE		15A		
NOTES: ** CONFIRM CIRCUITING REQUIREMENT ON SITE AND PROVIDE CIRCUITING.					MOUNTING: SURFACE RATING: -225A,120/208V,3ø,4W				
** CONFIRM CIRCUITING AND UNIT LOCATION REQUIREMENT ON SITE AND PROVIDE CIRCUITING.									

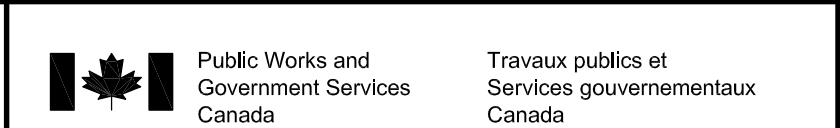


EMERGENCY LIGHTING BATTERY BANK SCHEDULE						
TYPE	MANUFACTURER	CATALOGUE NUMBER	WATTAGE	CIRCUIT NUMBER	LOCATION	LAMPS
EBB-1	LUMACELL	RG12S-200-2-LD10-AT	200W	CCT#55	MECH/ELEC ROOM	2x6W MR16 LED
	BEGHELLI	NV-12-1BTMR-12V-7W-LED-AT	200W			2x7W MR16 LED
	AIMLITE	EBST-12-200-2MB-7LA-WHT-ATD	200W			2x7W MR16 LED
EBB-2	LUMACELL	RG12S-200-2-LD10-AT	200W	CCT#56	MECH/ELEC ROOM	2x6W MR16 LED
	BEGHELLI	NV-12-1BTMR-12V-7W-LED-AT	200W			2x7W MR16 LED
	AIMLITE	EBST-12-200-2MB-7LA-WHT-ATD	200W			2x7W MR16 LED

REMOTE HEADS			
TYPE	MANUFACTURER	CATALOGUE NUMBER	LAMPS
EL-1	LUMACELL	MQM-2-LD9	2x5W MR16 LED
	BEGHELLI	BTMR2-12V-5W-LED-WH	2x5W MR16 LED
	AIMLITE	RMMB-2-06-24-5W-LA-WHT	2x6W MR16 LED
EL-2	LUMACELL	MQM-2-LD10	2x6W MR16 LED
	BEGHELLI	BTMR2-12V-7W-LED-WH	2x6W MR16 LED
	AIMLITE	RMMB-2-06-24-7W-LA-WHT	2x7W MR16 LED



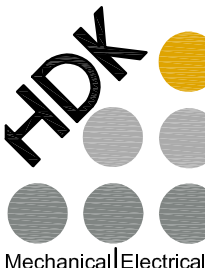
LUMINAIRE SCHEDULE							
TYPE	MANUFACTURER	CATALOGUE NUMBER	LAMPS	WATTS	LUMINAIRE STYLE	VOLTAGE	COMMENTS
A	LITHONIA	IBL-WD-SD125-(BLANK)-LP840-HC36	LED 4000K		HIGH BAY	120V	
	METALUX	HBLED-LD4-W-A-UNV-L840-CD-1-HBAYC-CHAIN/SET/U-U					
	PHILIPS DAY BRITE	FBX-L-40-UNV-W-LPA-FBX CHAIN KIT					
B1	CREE	ZR22-32L-35K-BLANK-10V	LED 3500K		RECESSED TROFFER (LAY-IN)	120V	
	LITHONIA	2VTL2-(BLANK)-33L-ADP-(BLANK)-EZ1-LP835					
	METALUX	BLANK-22CZ-STANDARD-LD4-34-UNV-L835-CD-1-U					
B2	CREE	ZR24-40L-35K-BLANK-10V	LED 3500K		RECESSED TROFFER LINEAR	120V	
	LITHONIA	2VTL4-40L-ADP-(BLANK)-EZ1-LP835					
	METALUX	24CZ-LD4-40-UNV-L835-CD-1-U					
C	AXIS	BBRLED-B3-MF-750-80-35-F-12-W-120-D-1-DF	LED 3500K		RECESSED LINEAR	120V	
	FINELITE	HP-4-R-12-H-8-35-F-120-SC-VF					
	HE WILLIAMS	LX4R-G-12-L8-835-F/J-A-DIM-120					
D	HE WILLIAMS	75L-4-L50-835-DMA-VBY-2-DIM-120	LED 3500K		STRIP LIGHT	120V	
	METALUX	4-SNLED-LD4-46SL-46SL-LN-UNV-L835-CD-1-AYC-CHAIN/SET=36-U					
	LITHONIA	ZL2N-L48-5000LM-MDD-MVOLT-35K-80CRI-WH-HC36					
E-1	LUMACELL	LA-1-W-U	LED		PICTOGRAM STYLE EGRESS SIGN	120V-347VAC 6V-24VDC	
	AIMLITE	RPALW-1-M-WHT-UNVDC					
	BEGHELLI	QR-RM-L-1-QLR-M-UDC					
F	PEERLESS	BRM9L-HI-SSH-R4-120-SCT-EZB-LP835-F2/~36"-ACG-C210-CSA	LED 3500K		SUSPEND DIRECT/INDIRECT	120V	
	CORELITE	VB-WS-3-L35-1-D-120-AC-48"-ST-12-STD-W					
	PHILIPS LEDALITE	7406-L-B-C-Q-12-1-1-E-W					
G	LITHONIA	CSXW LED-30C-700-40K-T3M-120 <sup>2</sup> - DNAXD	LED 4000K		EXTERIOR WALL PACK	120V	
	MC GRAW EDISON	VTS-F03-LED-E1-T3-AP					
	CREE	SEC-EDG-3M-WM-08-E-UL-SV-525-40K					
H	LITHONIA	CSX2LED-120C-700-40K-T4M-120-SPA-PER DNAXD C/W SSS 30 5C-5"-DM19 AND DM28 (ONE WITH ONE LAMP/POLE AND ONE WITH TWO LAMPS/POLE)	LED 4000K		POLE MOUNT	120V	TOTAL OF TWO POLES, ONE WITH 1 LAMP/POLE & ONE 2LAMPS/POLE, (SEE E1 DRAWING)
	COOPER	GAN-AE-06-LED-U-SL4-AP700 C/E SSS5-A-30-S-V ( ONE LAMP/POLE AND TWO/POLE TOTAL OF 2 LIGHTING POLE).					
	CREE	ARE-EDG-4M-DA-14-E-UL-SV-700mA-40K C/W PSS530S-SV (SINGLE AND TWIN MOUNTING CONFIGURATION).					
NOTES: 1. ALL LUMINAIRES, AMPS, ETC. TO BE CSA APPROVED. 2. ALL BALLASTS AND DRIVER CUTSHEETS MUST BE INCLUDED WITH EACH LUMINAIRE SHOP DRAWING. 3. PROVIDE ALL REQUIRED MOUNTING KITS/HARDWARE FOR ALL CEILING/WALL TYPES. 4. ELECTRICAL CONTRACTOR TO SUBMIT ENTIRE INSTALLATION TO MANITOBA HYDRO POWER SMART ON BEHALF OF PWGSC. ENTIRE REBATE TO BE MADE PAYABLE TO PWGSC.							




Public Works and Government Services Canada

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REAL PROPERTY SERVICES  
Western Region  
SERVICES IMMOBILIERS  
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Member  
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REGISTERED PROFESSIONAL ENGINEER



Certificate of Authorization  
HDK Consulting Incorporated  
No. 5539 Date: 04/30/2017

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2	ISSUED FOR CONSTRUCTION	16/06/08
1	90% CONSTRUCTION DOCUMENTS	16/05/10
0	50% CONSTRUCTION DOCUMENTS	16/03/23
Revision/	Description/Description	Date/Date

Client/client

AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

BRANDON, MANITOBA

Project title/Titre du projet  
2701 GRAND VALLEY ROAD,  
BRANDON, MANITOBA

BUILDING 111 -  
BRANDON RESEARCH CENTRE

Approved by/Approuvé par  
HCC

Designed by/Concept par  
SN

Drawn by/Dessiné par  
SN

PWGSC Project Manager/Administrateur de Projets TPSSC  
BRAD SITARZ

PWGSC Architectural and Engineering Resources Manager/  
Ressources Architectural et de Directeur d'Ingénierie, TPSSC

Client/client  
AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

Drawing title/Titre du dessin  
ELECTRICAL  
SCHEDULES AND DETAIL

Project No./No. du projet  
R.076331

Sheet/Feuille  
E9  
OF 9

Revision no./  
La Révision  
no.  
2

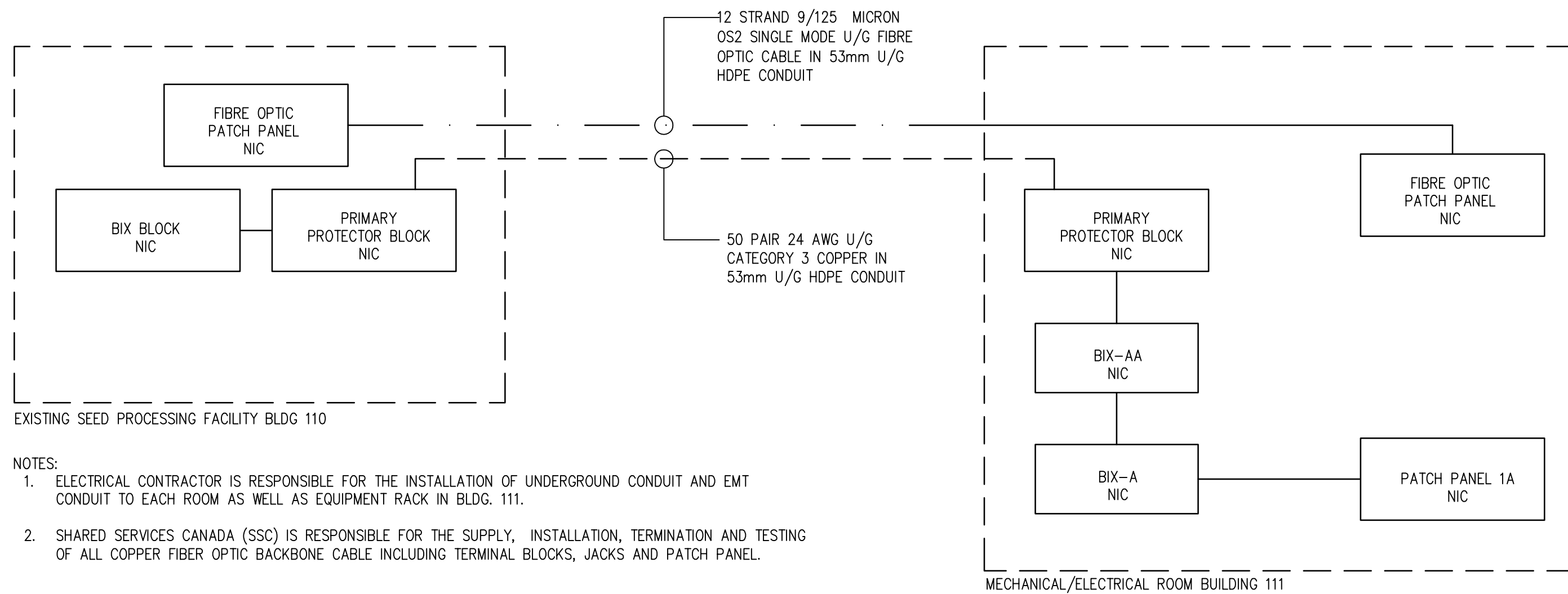
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E9





1 TELECOMMUNICATIONS SITE PLAN  
T1 NTS



- NOTES:
- ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF UNDERGROUND CONDUIT AND EMT CONDUIT TO EACH ROOM AS WELL AS EQUIPMENT RACK IN BLDG. 111.
  - SHARED SERVICES CANADA (SSC) IS RESPONSIBLE FOR THE SUPPLY, INSTALLATION, TERMINATION AND TESTING OF ALL COPPER FIBER OPTIC BACKBONE CABLE INCLUDING TERMINAL BLOCKS, JACKS AND PATCH PANEL.

2 COPPER AND FIBRE BACKBONE SINGLE LINE DIAGRAM  
T1 NTS

GENERAL NOTES:

- PROVIDE LOCATES FOR EXISTING MTS FIBRE OPTIC CABLE TO EXISTING ADMINISTRATION BUILDING.

DRAWING KEYNOTES:

- CARE IS TO BE TAKEN DURING ALL EXCAVATIONS ON SITE. CONTACT MTS FOR LOCATES.
- APPROXIMATE LOCATION OF TELECOMMUNICATION CABINET IN BUILDING 110.

Public Works and Government Services Canada

Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES

Western Region

SERVICES IMMOBILIERS

Région de l'ouest

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No. 5539 Date: 04/30/2017

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0	ISSUED FOR DESIGN DEVELOPMENT	16/02/08

Client/client

AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

BRANDON, MANITOBA

Project title/Titre du projet

2701 GRAND VALLEY ROAD, BRANDON, MANITOBA

BUILDING 111 - BRANDON RESEARCH CENTRE

Approved by/Approuvé par

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Designed by/Concept par

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Drawn by/Dessiné par

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PWOSC Project Manager/Administrateur de Projets TPSCC

BRAD SITRAZ

PWOSC Architectural and Engineering Resources Manager/Ressources Architectural et de Directeur d'ingénierie, TPSCC

Client/client

AGRICULTURE AND AGRI-FOOD CANADA (AAFC)

Drawing title/Titre du dessin

TELECOMMUNICATIONS SITE PLAN, COPPER AND FIBRE BACKBONE SINGLE LINE DIAGRAM AND SYMBOL SCHEDULE

Project No./No. du projet

R.076331

Sheet/Feuille

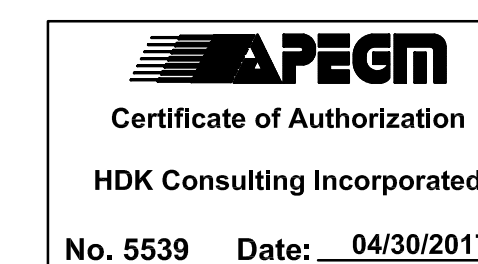
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Revision no./La Révision

3

OF 2





## DO NOT SCALE DRAWINGS

3	ISSUED FOR CONSTRUCTION	16/06/08
2	99% CONSTRUCTION DOCUMENTS	16/05/10
1	50% CONSTRUCTION DOCUMENTS	16/03/23
0	ISSUED FOR DESIGN DEVELOPMENT	16/01/28
<b>Revision/</b>	<b>Description/Description</b>	<b>Date/Date</b>

Revision	
Client/client	

**AGRICULTURE AND  
AGRI-FOOD CANADA  
(AAFC)**

**BRANDON, MANITOBA**

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Ressources Architecturales et de Direction d'ingénierie, PWGSC

Ressources Architecturales et de Directeur d'Ingénierie, IF300

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## MAIN FLOOR TELECOMMUNICATIONS

## PLAN, TELECOMMUNICATIONS

LAYOUT MECH/ELEC ROOM PLAN

## AND GENERAL NOTES

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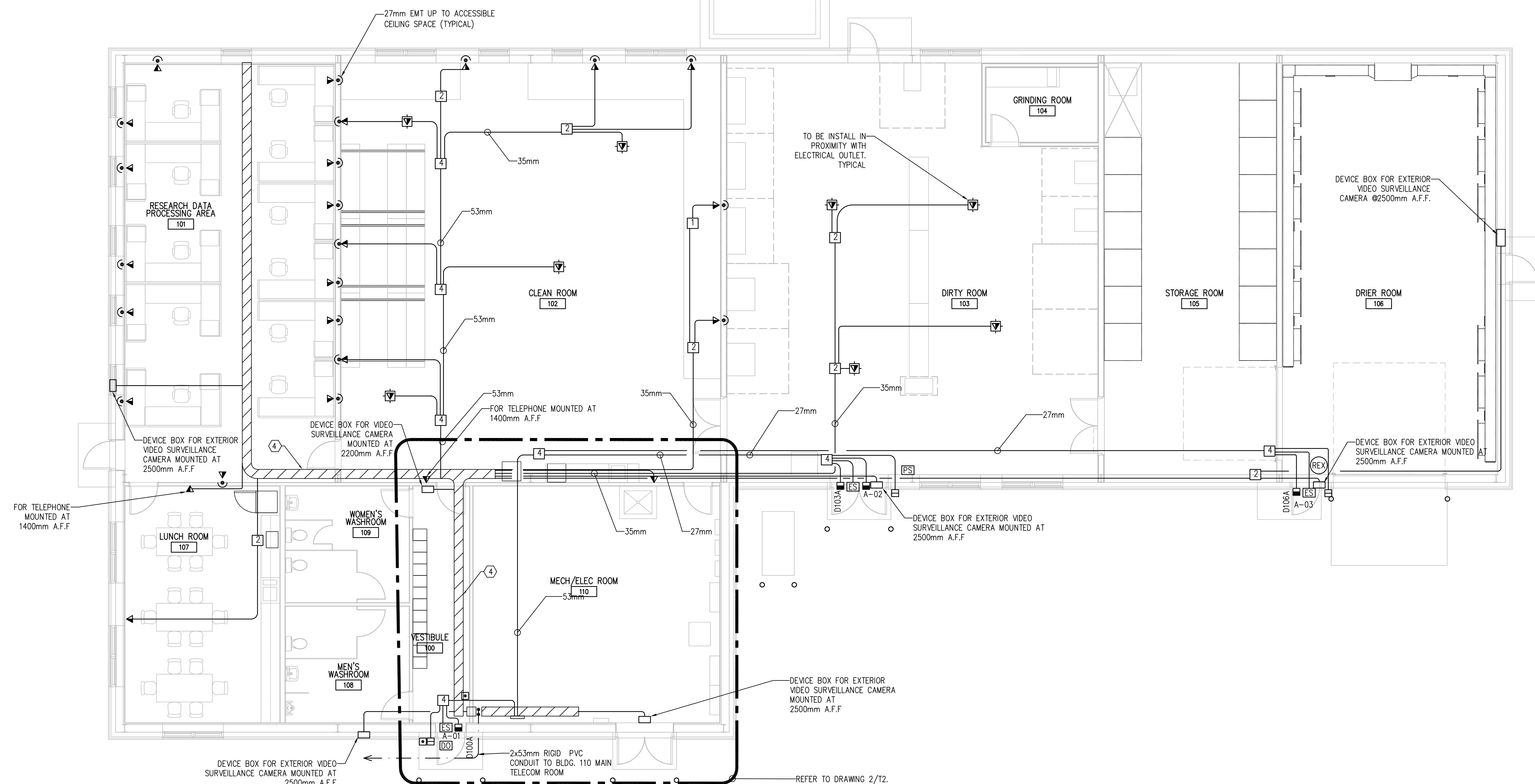
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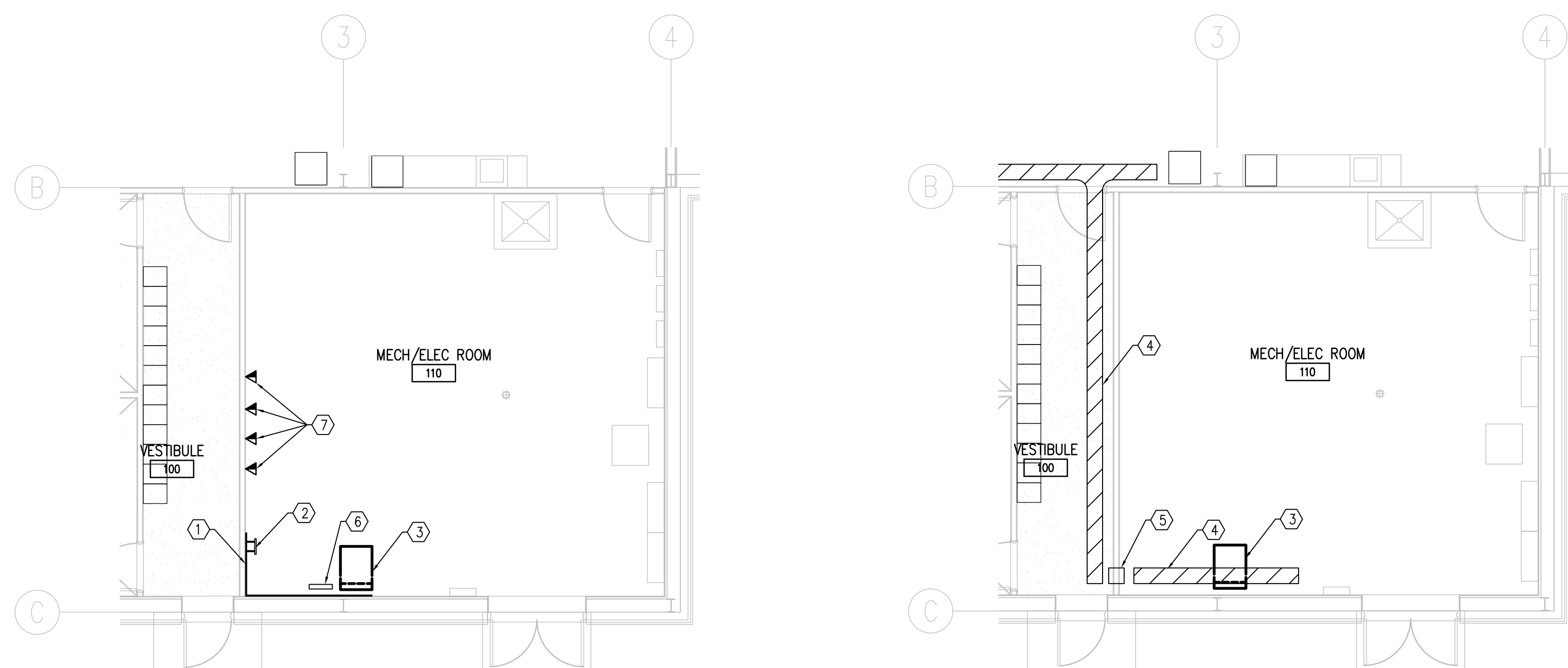
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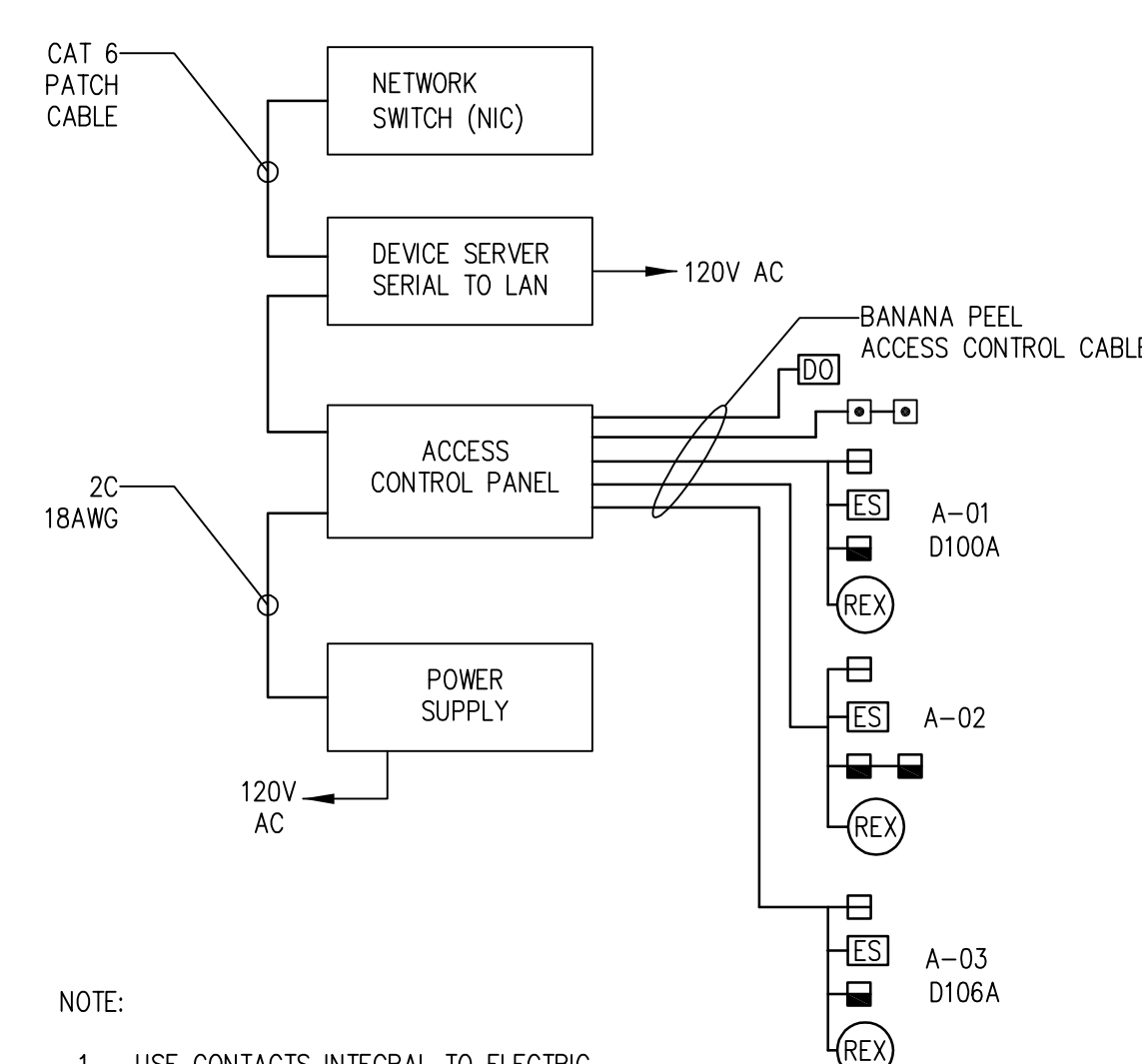
T2



1 MAIN FLOOR TELECOMMUNICATIONS AND SECURITY PLAN  
T2 1:75



TELECOMMUNICATIONS LAYOUT  
MECH/ELEC ROOM PLAN



NOTE:

1. USE CONTACTS INTEGRAL TO ELECTRIC STRIKE FOR REX CONNECTION.

## 3 ACCESS CONTROL SINGLE LINE DIAGRAM

GENERAL NOTES:

1. ALL CONDUITS TO BE 27mm EMT UNLESS OTHERWISE NOTED.
2. CABLE TRAY TO BE MOUNTED 150mm ABOVE T-BAR CEILING WITH 300mm CLEAR ACCESS ABOVE CABLE TRAY AND 600mm ACCESS ON ONE SIDE.
3. USE J-HOOK FROM CABLE TRAY TO STUB CONDUIT DOWN TO DEVICE OUTLET FOR ALL THE CABLES LOCATED IN ROOM 101. CONTRACTOR TO INSTALL J-HOOK @1M APART STARTING AT THE END OF EMT CONDUIT TO CABLE TRAY.
4. SHARED SERVICES CANADA (SSC) IS RESPONSIBLE FOR THE INSTALLATION, TERMINATION AND TESTING OF BACKBONE COPPER AND FIBER OPTIC CABLE AS WELL AS HORIZONTAL COPPER CABLE FOR BOTH DATA AND VOICE.  
  
SSC IS ALSO RESPONSIBLE FOR THE SUPPLY AND INSTALL OF NETWORK SWITCH, CEILING MOUNTED RETRACTABLE WORK AREA CORD, PATCH PANEL, RJ-45 JACK AND FLOEPLATE.
5. CABLE TRAY LOCATED IN MECHANICAL/ELECTRICAL ROOM TO BE INSTALLED @2250mm A.F.F. TOP OF TELECOM CABINET AND ACCESS CONTROL CABINET TO BE INSTALLED @1900mm A.F.F
6. ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL RETRACTABLE DATA CABLE MANUFACTURED BY LINQ EQUIPMENT PART # LE2320CAT FOR ALL CEILING MOUNTED DATA OUTLET.

KEYNOTES:

- ① 19 mm PLYWOOD BACKBOARD PAINTED ON ALL SIX SIDES WITH COLOUR WHITE FIRE RETARDANT PAINT.
- ② TELECOMMUNICATIONS GROUNDING BUS BAR CONNECTED TO MAIN ELECTRICAL BUSBAR USING 3/0 GREEN INSULATED GROUNDING COPPER CONDUCTOR.
- ③ SWING OUT RACK WALL MOUNTED.
- ④ 300mm x 100mm BASKET STYLE CABLE TRAY
- ⑤ CABLE TRAY FIRE RATED CABLE PASS THROUGH
- ⑥ ACCESS CONTROL PANEL
- ⑦ FOR BUILDING CONTROL SYSTEM: CONFIRM FINAL LOCATION PRIOR TO CONTROL SYSTEM INSTALLATION.