# Dectron Unit Replacement Century Gardens Recreation Centre

340 Vodden Street East, Brampton, Ontario L6V 2N2

## LIST OF DRAWINGS

#### ARCHITECTURAL

KEY PLAN, LOCATION PLAN & DRAWING LIST PART ROOF DEMOLITION PLAN PART ROOF PLAN & SECTION DETAILS ENLARGED PLAN AND SECTIONS

#### **STRUCTURAL**

GENERAL NOTES & OVERALL ROOF PLAN PART ROOF FRAMING DEMOLITION PLAN PART ROOF FRAMING PLAN & SECTION DETAILS

#### **MECHANICAL**

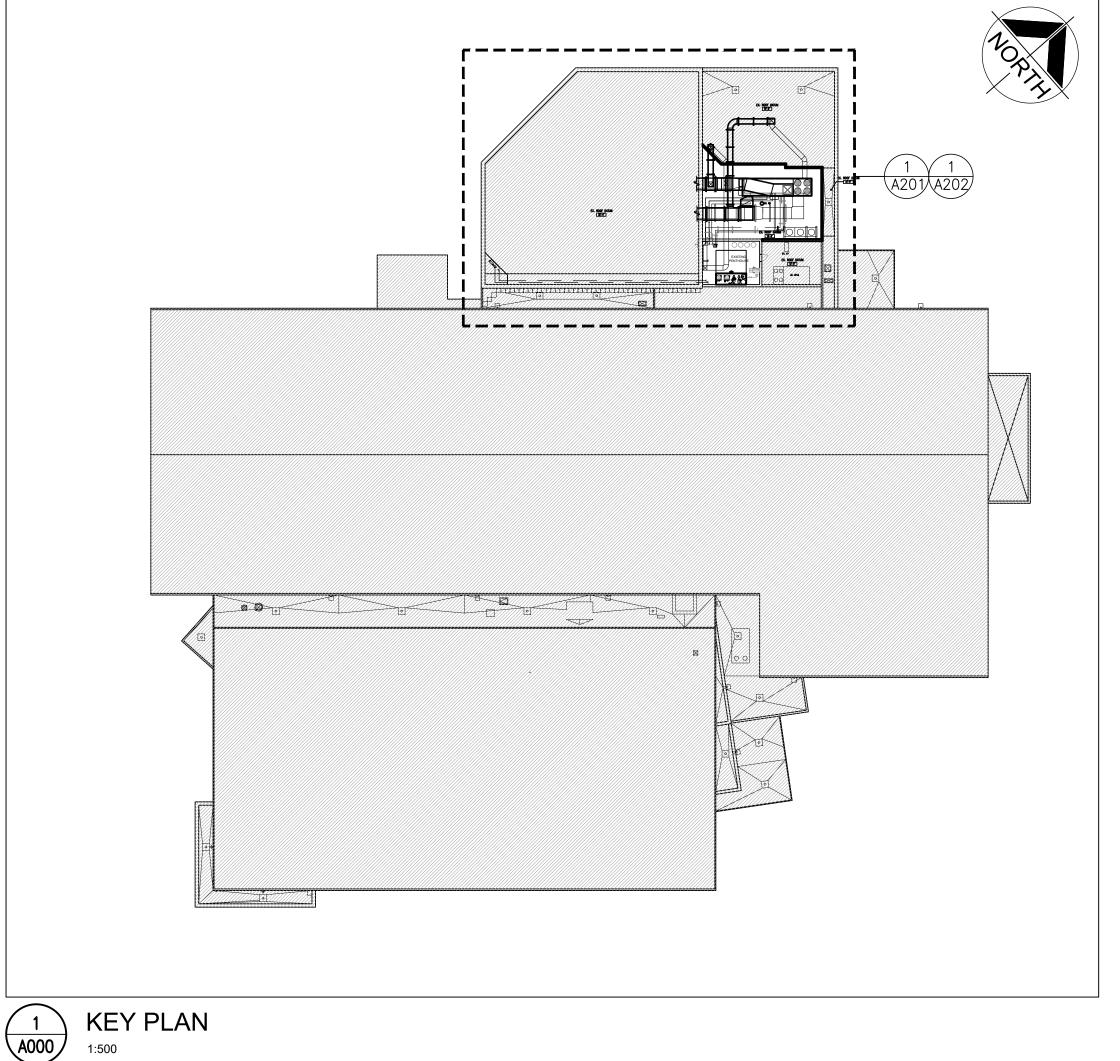
LEGEND & SCHEDULES (1 OF 2) EXISTING ROOF PART PLAN - DEMOLITION **ROOF PART PLAN - RENOVATION ROOF PART PLAN - RENOVATION** 

#### ELECTRICAL

LEGEND, SCHEDULES, PART PLAN AND DETAILS E101 ENLARGED & PART PLANS - POWER & SYSTEMS DEMOLITION E201 E301 **ENLARGED & PART PLANS - POWER & SYSTEMS RENOVATION** POWER DISTRIBUTION & PANEL SCHEDULE - DEMO & RENO E401

**ELECTRICAL SPECIFICATION** 





#### ARCHITECTURAL & STRUCTURAL:



MECHANICAL, ELECTRICAL:



DO NOT SCALE THE DRAWINGS. CHECK AND VERIFY ALL DIMENSIONS AT THE SITE.

ALL DRAWINGS, SPECIFICATIONS AND RELATED DOCUMENTS ARE THE COPYRIGHT PROPERTY OF THE CONSULTANT AND MUST BE RETURNED UPON REQUEST. REPRODUCTION OF DRAWINGS IN PART OR WHOLE WITHOUT THE PERMISSION OF THE CONSULTANT IS FORBIDDEN.



NO.	ISSUES	DATE	ВҮ
1	ISSUED FOR 90% REVIEW	JUNE 12, 2024	BBA
2	ISSUED FOR TENDER	MAR. 12, 2025	BBA

NO.	REVISIONS	DATE	BY

#### PROJECT:

#### **DECTRON UNIT** REPLACEMENT

**CENTURY GARDENS** RECREATION CENTRE 340 VODDEN STREET EAST BRAMPTON, ONTARIO L6V 2N2 CITY OF BRAMPTON

#### DRAWING:

KEY PLAN, LOCATION PLAN & DRAWING LIST





**ASSOCIATES** Architects Engineers Project Managers 250 Water Street Suite 201

Whitby, Ontario L1N 0G5 Tel: (905) 666-5252

MAY 2024 AS NOTED Fax: (905) 666-5256 e-mail: bba@bba-archeng.com

20143.2 A000







9

PHOTO 4



PHOTO 3

9



PHOTO 2

CUT/ CORE EXISTING

MÉCHÁNICAL SERVICING

EX. 240mm CONCRETE —

REMOVE AND MAKE GOOD

EX. ACOUSTIC PANELS AT

THE CORE PENETRATIONS

NOTCHED FOR NEW LARGER

SHALL BE LOCALLY

PENETRATIONS AND

± COVERED WITH AN FRD COVER PLATE.

Z ACOUSTIC PANELS \_\_\_\_

MASONRY BLOCK WALL WITH

ACOUSTIC PANELS ON POOL

SIDING FOR NEW

/ TO PENTHOUSE /

(10)

EXISTING ROOF COMPOSITION (TO BE VERIFIED

(4) PLY ASPHALT BUR MEMBRANE

BY CONTRACTOR)

PEA GRAVEL

4 PLY FELT CONCRETE DECK

/ex. koof/datum/

PROPOSED NEW MECHANICAL

PIPING TO MEZZANINE ROOM

SERVICING ROUTE FOR

2" FIBRE BOARD 4" POLYISO INSULATION



EX. ROOF DATUM

REMOVE AND CUT BACK

EXISTING BALLASTED 2

PLY ROOFING FOR NEW

DUCT SUPPORT CURBS

DECTRON INCLUDING

EXISTING

PENTHOUSE

CORE PENETRATIONS THROUGH

EXTERIOR PENTHOUSE WALL.

PATCH AND SÉAL METAL SIDÍNG

ÁROUND THE CORÉD ÓPENINGS.

CORE NEW OPENINGS FOR MECHANICAL

PENETRATIONS IN THE EXISTING CONCRETE



PHOTO 5

### **GENERAL**

CONFORM TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE LATEST EDITION.

COMPLY WITH THE REQUIREMENTS OF THE

FOR CONSTRUCTION PROJECTS EXISTING BUILDING ROOF CONSTRUCTION IS BASED ON INFORMATION SUPPLIED BY THE OWNER AND IS TO BE VERIFIED BY THE CONTRACTOR.

OCCUPATIONAL HEALTH AND SAFETY ACT/REGULATIONS

THIS WORK MUST BE PERFORMED ADJACENT TO AND AROUND THE GENERAL PUBLIC AND CITY OF BRAMPTON WORKERS. EXERCISE EXTREME CAUTION AND PROVIDE ALL NECESSARY PROTECTION AS REQUIRED AND APPROVED BY THE OWNER.

FENCE OFF WASTE DISPOSAL BINS AND STORAGE AND LAYDOWN AREAS IN LOCATIONS AS APPROVED BY OWNER. THE EXISTING PLAYGROUND AND WALKWAYS MAY NOT BE USED FOR CONTRACTOR'S LAYDOWN OR MATERIAL DISPOSAL AREAS. PROVIDE ALL HOISTING EQUIPMENT NECESSARY TO ACCESS ROOF AREAS FOR DELIVERY AND REMOVAL OF EQUIPMENT.

COMPLY WITH OWNER'S SECURITY REQUIREMENTS FOR ON-SITE MANAGEMENT OF TOOLS AND EQUIPMENT. DO NOT PERMIT ANY TOOLS OR EQUIPMENT TO BE LEFT ON SITE DURING OFF-HOURS EXCEPT AS PERMITTED

- BE RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING BUILDING, GROUNDS AND EQUIPMENT, AND REPAIR SAME TO THE SATISFACTION OF THE OWNER AND
- KEEP THE SITE THROUGHOUT THE WORK AREA IN A CLEAN AND ORDERLY CONDITION AT ALL TIMES TO THE SATISFACTION OF THE OWNER.
- FILE NOTICE OF PROJECT WITH MINISTRY OF LABOUR PRIOR TO COMMENCEMENT.
- . INSTALL PROPER GARBAGE CHUTES AND WASTE BINS AND PROVIDE PROTECTION SO AS TO NOT DAMAGE THE EXISTING STRUCTURE. PLACEMENT OF BIN(S) AND CHUTES TO BE APPROVED BY OWNER.
- DISPOSE OF ALL REMOVED MATERIALS AND ROOFING DEBRIS OFF SITE AT THE END OF EACH WORK DAY.
- . ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE ONTARIO ELECTRICAL CODE.
- 3. SCHEDULE ALL WORK WITH THE OWNER.

#### **ROOFING NOTES**

DISCONNECT, REMOVE AND REINSTALL EXISTING ELECTRICAL EQUIPMENT, INCLUDING ELECTRICAL LINES, ON ROOF AS NECESSARY TO COMPLETE ALL NEW ROOF AND FLASHING INSTALLATIONS. DISCONNECTION AND REINSTALLATION SHALL BE BY A QUALIFIED AND LICENSED ELECTRICIAN. ALL REMOVALS AND SHUTDOWNS SHALL BE COORDINATED WITH CITY OF BRAMPTON. ALL MECHANICAL UNITS, BREATHERS, VENTS, GAS LINES, ROOF CURBS, AND ALL ASSOCIATED ROOF EQUIPMENT IS TO BE REMOVED/REPLACED AS NECESSARY TO COMPLETE THE WORK. COORDINATE WORK WITH CITY OF BRAMPTON MECHANICAL REPRESENTATIVE. ALLOW FOR INCREASED INSULATION DEPTH OF ROOF FOR REINSTALLATION/ REPLACEMENT OF ALL MECHANICAL UNITS.

- REMOVE PERIMETER PARAPET FLASHING AS NOTED, COUNTERFLASHING AND CURB FLASHINGS TO ACCOMMODATE ROOF REPLACEMENT.
- PROTECT ALL EXISTING SERVICES AND EQUIPMENT.
- REPLACE EXISTING PLUMBING VENTS PIPING AND BOOTS.
- REMOVE/REPLACE EXISTING ROOF DRAINS.

#### DEMOLITION/ REMOVALS

PROVIDE PROTECTION TO THE EXISTING STRUCTURE TO PREVENT DAMAGE TO IT. TO ADJACENT PARKING AREAS, OR TO THE SURROUNDING LANDSCAPE.

PROVIDE TEMPORARY WEATHERPROOF AND VANDAL RESISTANT PROTECTION AS REQUIRED OVER ALL ROOF OPENINGS EXPOSED BY REMOVAL OF EQUIPMENT. LEAVE ROOF IN WEATHERTIGHT CONDITION AT THE END OF EACH WORK DAY. REMOVE ONLY ENOUGH ROOFING THAT CAN BE REPLACED IN ONE DAY.

ON GROUND FOR TEMPORARY STORAGE MUST BE ENCLOSED IN A LOCKED FENCED COMPOUND OR STORED OFF SITE.

REPORT ALL DAMAGE OR STRUCTURAL DEFICIENCIES TO THE CONSULTANT. DO NOT PROCEED UNTIL

#### TEMPORARY WORKS

THE CONTRACTOR SHALL DESIGN, PROVIDE, ERECT, MAINTAIN REMOVE AND ASSUME FULL AND SOLE RESPONSIBILITY FOR ALL TEMPORARY WORKS REQUIRED FOR THE SAFE AND COMPLETE EXECUTION OF THE

N THE EXECUTION OF THE TEMPORARY WORKS AND FOR THE DURATION OF THE CONTRACT, THE CONTRACTOR SHALL MAKE ADEQUATE PROVISION FOR ALL LIKELY CONSTRUCTION LOADING AND PROVIDE SUFFICIENT BRACING AND PROPS TO KEEP THE WORKS IN PLUMB AND ALIGNMENT AND FREE FROM EXCESSIVE DEFLECTION.

ACCESS OF HEAVY CONSTRUCTION EQUIPMENT AND ACCUMULATION OF CONSTRUCTION MATERIALS ON THE FLOORS ARE NOT PERMITTED UNLESS SUCH HAVE BEEN CATERED FOR IN THE CONTRACTOR'S TEMPORARY WORK DESIGN TO THE SATISFACTION OF THE STRUCTURAL

#### ROOF NOTATION LEGEND

( RD EX. ROOF DRAIN

HATCH DENOTES AREA OF EXISTING ROOFING TO BE



IDENTIFIES EXISTING AREA TO REMAIN.

DISPOSE OF MATERIALS IN LEGAL LANDFILL OR RECYCLING SITES IN ACCORDANCE WITH LOCAL MUNICIPAL REGULATIONS.

CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.

ALL EQUIPMENT REMOVED FROM ROOF AND PLACED

REMOVE AND REPLACE EXISTING ROOF WITH NEW AS

FLASH AT ALL EXISTING PROTRUSIONS THROUGH ROOF AND WALLS OF BUILDING.

WRITTEN AUTHORITY HAS BEEN RECEIVED FROM THE

SUBMIT SHOP DRAWINGS FOR ALL TEMPORARY WORKS FOR REVIEW BEFORE FABRICATION COMMENCES. SHOP DRAWINGS SHALL BE SEALED BY PROFESSIONAL ENGINEER REGISTERED IN THE PROVINCE OF ONTARIO.

DIRECTION OF SLOPE

REMOVED.

PART ROOF DEMOLITION PLAN A201

CORE EXISTING 190mm MASONRY

PARTITION FOR NEW PIPING. SEAL

PENETRATIONS FROM BOTH SIDES

WITH ELASTOMERIC SEALANT.

PHOTO 1 (13) (12) (13.1)

EX. ROOF CURB:

IN NEW ROOF

REMOVE EXISTING

 $\rightarrow$  PHOTO 6

FX. ROOF CURB:

REMOVE CAP FLASHING

AND MEMBRANE TO

LAP IN NEW ROOF

<u>CONDENSER</u>

/EX. HP/

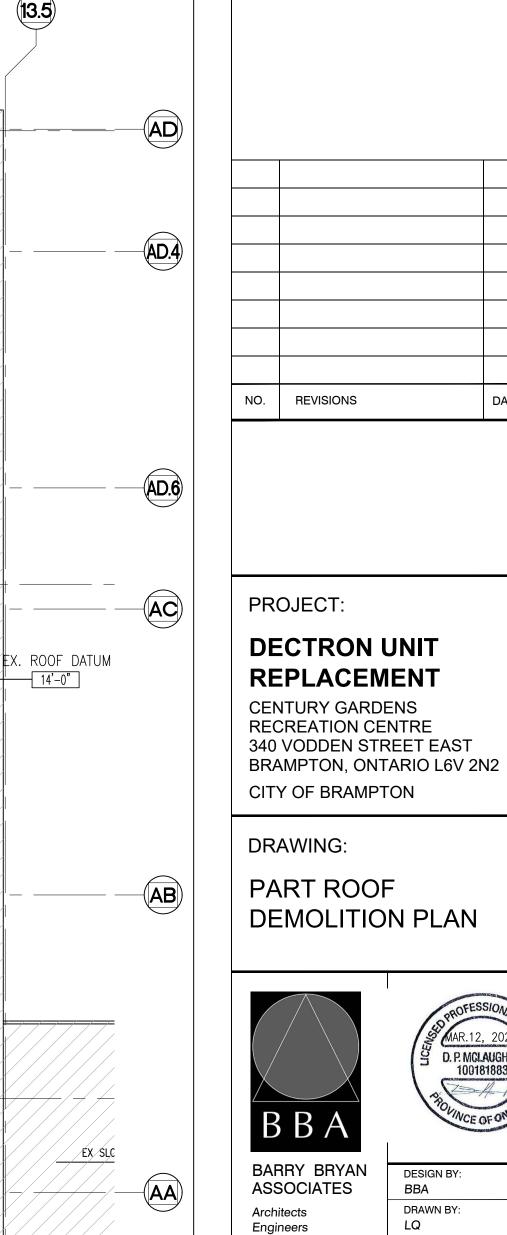
ÉX. RÓOÉ DATUM /

13'-0"

EX ROOF DATUM

REMOVE CAP FLASHING

AND MEMBRANE TO LAP



DO NOT SCALE THE DRAWINGS.

NO. ISSUES

ISSUED FOR 90% REVIEW

ISSUED FOR TENDER

CHECK AND VERIFY ALL DIMENSIONS AT THE SITE.

ALL DRAWINGS, SPECIFICATIONS AND RELATED DOCUMENTS ARE THE COPYRIGHT PROPERTY OF THE CONSULTANT AND MUST BE RETURNED UPON REQUEST. REPRODUCTION OF DRAWINGS IN PART OR WHOLE WITHOUT THE PERMISSION OF THE CONSULTANT IS FORBIDDEN. DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY THE CONSULTANT.

DATE BY

JUNE 12, 2024 BBA

DATE BY

D. P. MCLAUGHLIN

% COMPLETE:

DESIGN BY:

DRAWN BY:

CHECKED BY:

MAY 2024

AS NOTED

DRAWING NO:

**A201** 

DM

FILE:

Project Managers

Tel: (905) 666-5252

Fax: (905) 666-5256

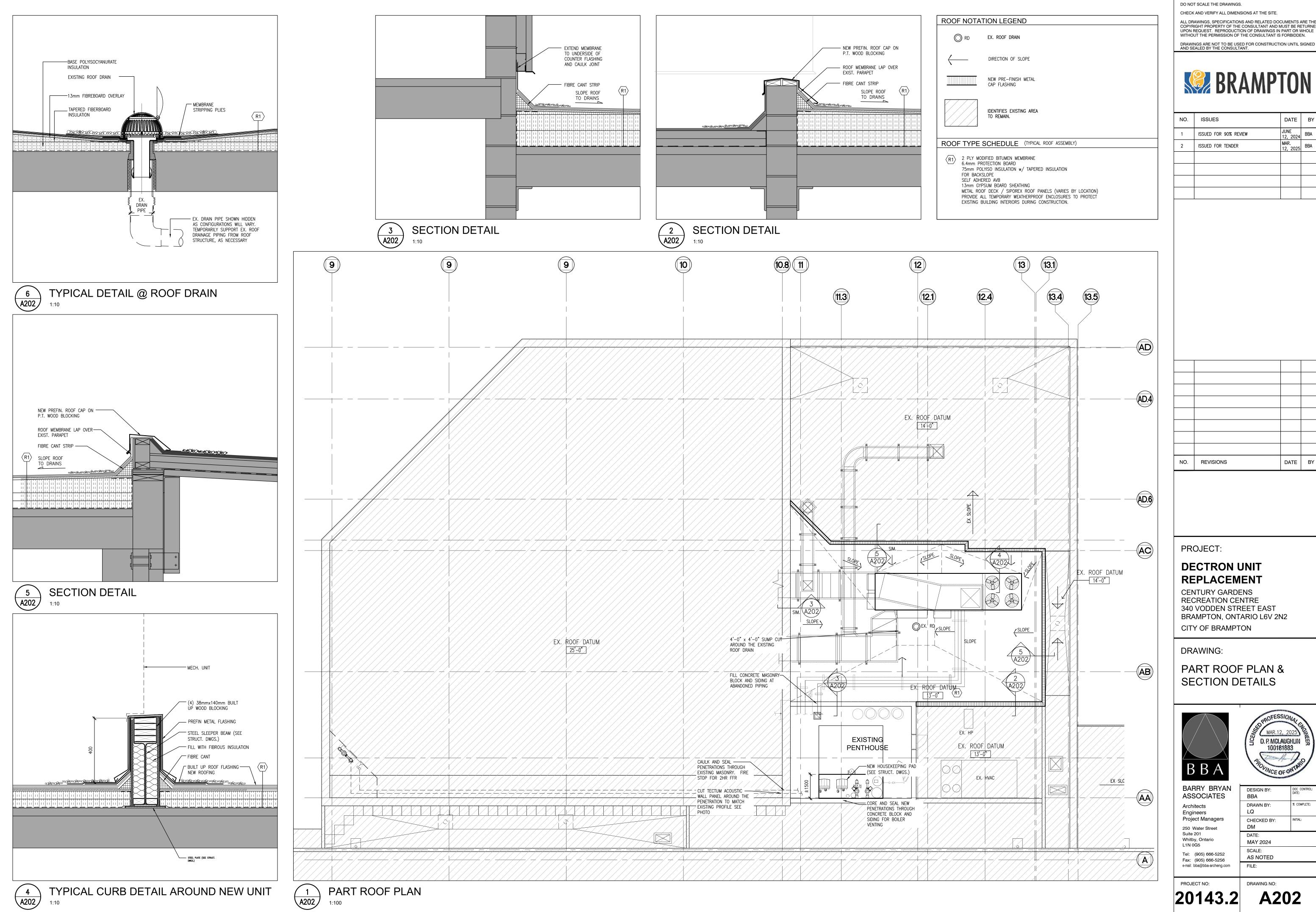
e-mail: bba@bba-archeng.com

250 Water Street

Whitby, Ontario

Suite 201

L1N 0G5



DO NOT SCALE THE DRAWINGS.

CHECK AND VERIFY ALL DIMENSIONS AT THE SITE. ALL DRAWINGS, SPECIFICATIONS AND RELATED DOCUMENTS ARE THE COPYRIGHT PROPERTY OF THE CONSULTANT AND MUST BE RETURNED UPON REQUEST. REPRODUCTION OF DRAWINGS IN PART OR WHOLE WITHOUT THE PERMISSION OF THE CONSULTANT IS FORBIDDEN.



NO.	ISSUES	DATE	BY
1	ISSUED FOR 90% REVIEW	JUNE 12, 2024	BBA
2	ISSUED FOR TENDER	MAR. 12, 2025	BBA

PROJECT:

### **DECTRON UNIT REPLACEMENT**

**CENTURY GARDENS** RECREATION CENTRE 340 VODDEN STREET EAST BRAMPTON, ONTARIO L6V 2N2 CITY OF BRAMPTON

DRAWING:

PART ROOF PLAN & SECTION DETAILS





DATE BY

BARRY BRYAN ASSOCIATES Architects Engineers Project Managers 250 Water Street Suite 201

% COMPLETE: DRAWN BY: CHECKED BY: DM MAY 2024 AS NOTED FILE:

DESIGN BY:

PROJECT NO:

**A202** 

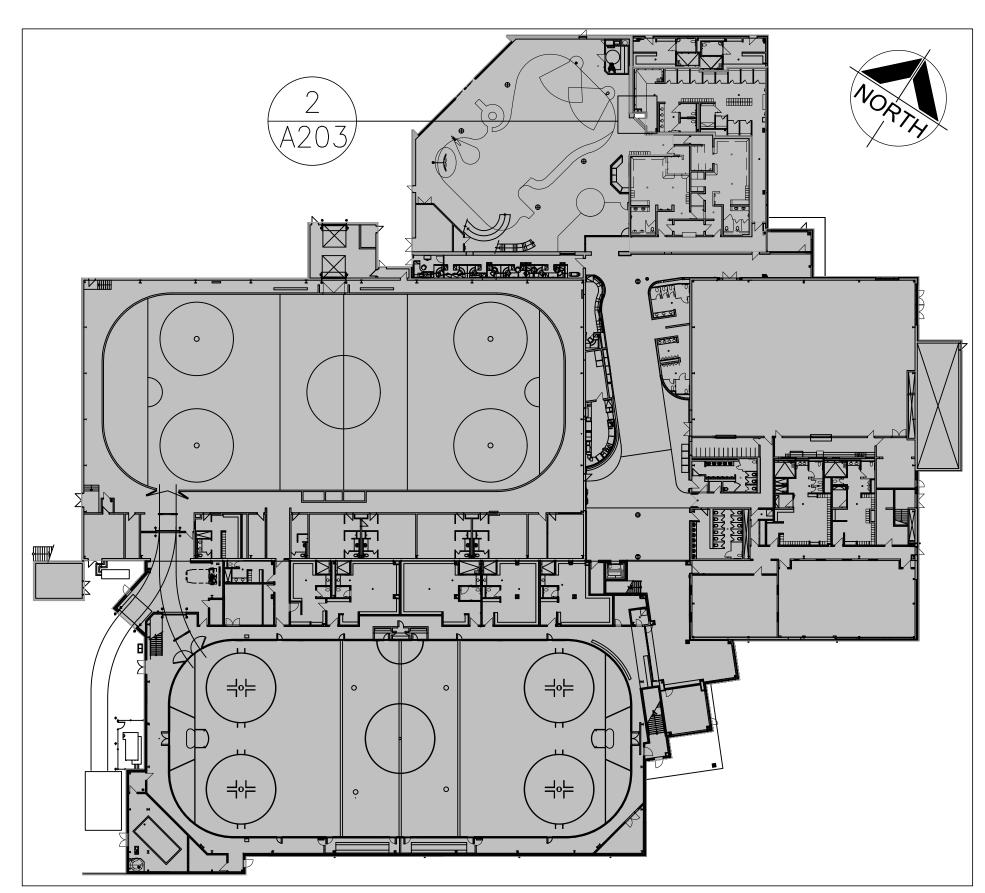
20143.2

Whitby, Ontario

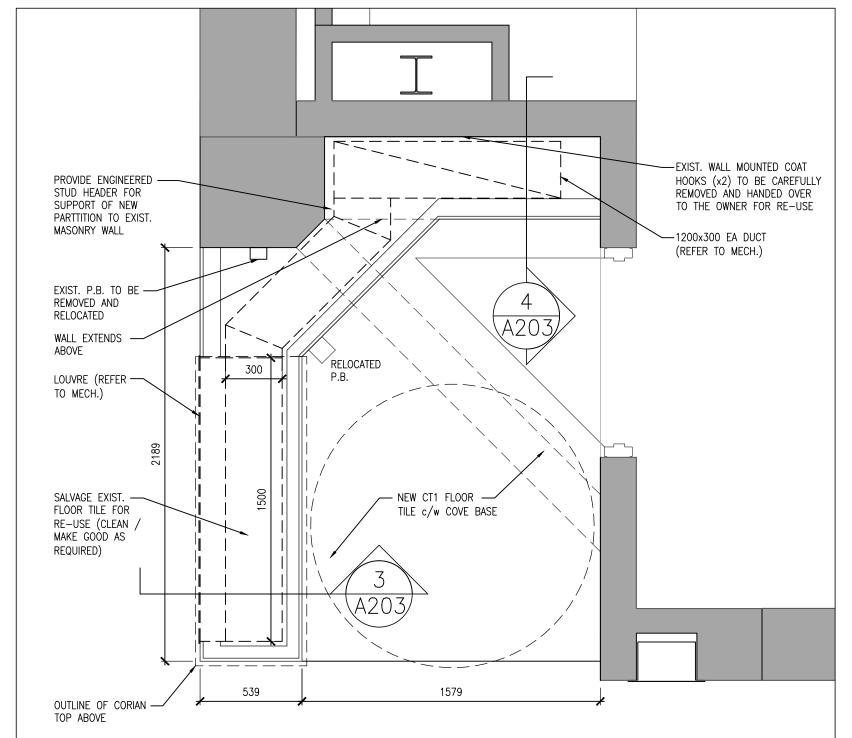
Tel: (905) 666-5252

Fax: (905) 666-5256 e-mail: bba@bba-archeng.com

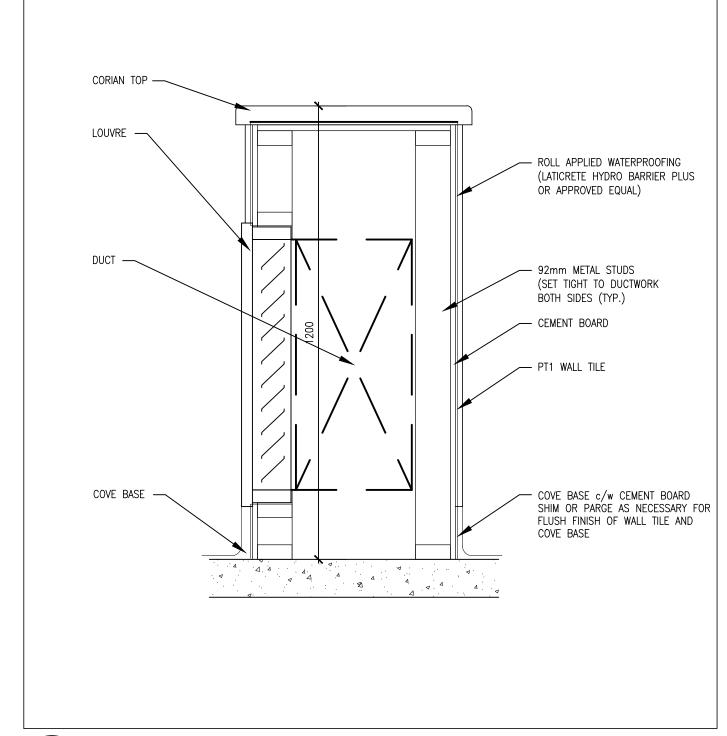
L1N 0G5



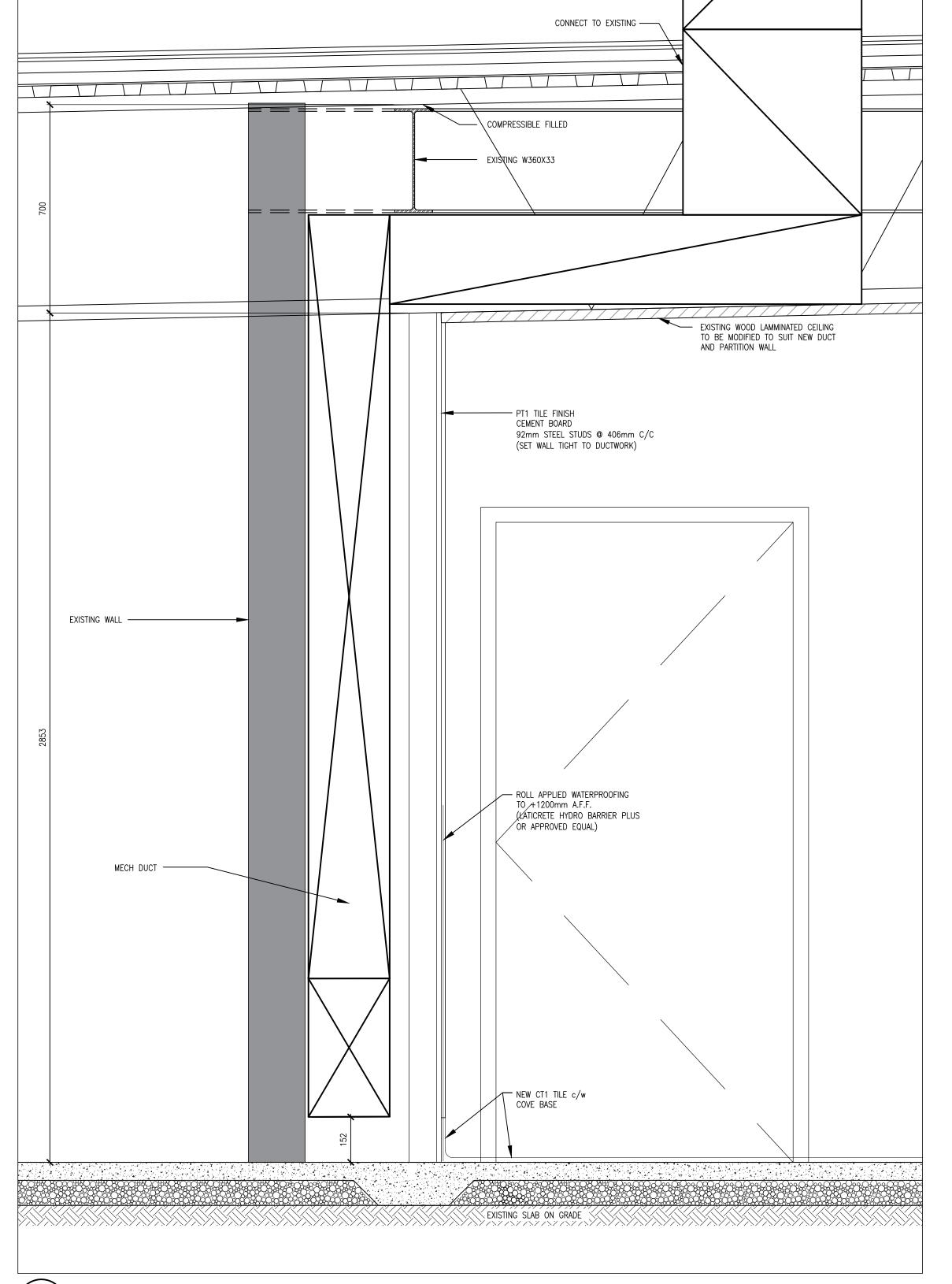
GROUND FLOOR KEY PLAN A204



GROUND FLOOR ENLARGED PLAN (2) A203



2 A203 SECTION



SECTION A203

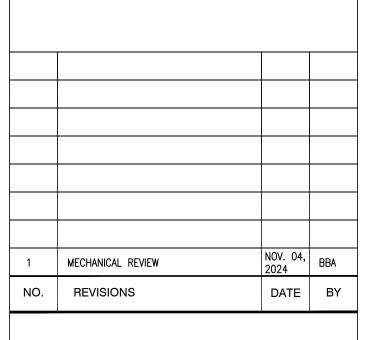
DO NOT SCALE THE DRAWINGS.

CHECK AND VERIFY ALL DIMENSIONS AT THE SITE. ALL DRAWINGS, SPECIFICATIONS AND RELATED DOCUMENTS ARE THE COPYRIGHT PROPERTY OF THE CONSULTANT AND MUST BE RETURNED UPON REQUEST. REPRODUCTION OF DRAWINGS IN PART OR WHOLE WITHOUT THE PERMISSION OF THE CONSULTANT IS FORBIDDEN.

DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY THE CONSULTANT.



NO.	ISSUES	DATE	BY
1	ISSUED FOR 90% REVIEW	JUNE 12, 2024	BBA
2	ISSUED FOR TENDER	MAR. 12, 2025	BBA



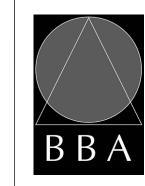
PROJECT:

### **DECTRON UNIT REPLACEMENT**

CENTURY GARDENS RECREATION CENTRE 340 VODDEN STREET EAST BRAMPTON, ONTARIO L6V 2N2 CITY OF BRAMPTON

**DRAWING**:

**ENLARGED PLAN AND** SECTIONS





BARRY BRYAN **ASSOCIATES** Architects Engineers Project Managers 250 Water Street Suite 201

% COMPLETE: DRAWN BY: CHECKED BY: DM Whitby, Ontario NOV. 2024

DESIGN BY:

AS NOTED Fax: (905) 666-5256 e-mail: bba@bba-archeng.com FILE: PROJECT NO:

**A203** 

20143.2

Tel: (905) 666-5252

L1N 0G5

#### GENERAL

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST EDITION OF ALL RELEVANT CODES AND STANDARDS.
- 2. CONFORM TO OWNER'S GENERAL SPECIFICATIONS INCLUDING ALL SAFETY REQUIREMENTS.
- 3. SITE VERIFY ALL DIMENSIONS AND LEVELS.
- 4. KEEP THE SITE THROUGHOUT THE WORK AREA IN A CLEAN AND ORDERLY CONDITION AT ALL TIMES TO THE SATISFACTION OF THE OWNER.
- 5. ALL STRUCTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH OTHER CONSULTANTS DRAWINGS.

#### **DEMOLITION NOTES**

- PROVIDE PROTECTION AS REQUIRED TO PREVENT DAMAGE TO THE EXISTING STRUCTURE AND/OR ADJACENT EQUIPMENT. PROTECT ALL EXISTING FINISHES, FRAMES AND PROPERTY.
- SAW CUT, REMOVE AND DISPOSE OF EXISTING DEMOLISHED MATERIALS OFF—SITE, AS
  REQUIRED TO COMPLETE THE WORK. REMOVAL OF ALL ACM IS BY OTHERS.
- 3. KEEP THE WORK AND STAGING AREAS CLEAN AND ORDERLY AT ALL TIMES AND FREE FROM RUBBLE AND DEBRIS.
- 4. NOTIFY CONSULTANT OF ANY LOAD BEARING MEMBERS OR ASSEMBLIES DISCOVERED OR IDENTIFIED DURING WORK WITH EXCESSIVE DETERIORATION BEYOND WHAT IS NOT INDICATED ON THE DRAWINGS. DO NOT PROCEED WITH REMOVAL WITHOUT PRIOR REVIEW BY THE CONSULTING STRUCTURAL ENGINEER.
- ALL BUILDING MATERIALS TO BE REMOVED FROM THE BUILDING SHALL BECOME THE PROPERTY OF THE CONTRACTOR UNLESS SPECIFIED OTHERWISE AND SHALL BE REMOVED FROM THE SITE.
- 6. COVER ALL LOADED TRUCKS LEAVING THE DEMOLITION SITE.
- 7. CARRY OUT SAFETY MEASURES AS PER THE CONSTRUCTION SAFETY ASSOCIATION OF ONTARIO ACT AND REGULATIONS FOR DEMOLITION.
- 8. THE ONTARIO OCCUPATIONAL HEALTH AND SAFETY MANUAL APPLIES TO THIS PROJECT.
  THE CONTRACTOR IS RESPONSIBLE TO PERFORM ALL WORK IN ACCORDANCE WITH
  O.H.S.A..
- 9. CONTRACTOR SHALL KEEP CLEAR AND NOT INHIBIT THE USE OF BUILDING FIRE ROUTE AND ALL HYDRANTS DURING THE ENTIRE DEMOLITION WORK.
- 10. REPORT ANY DOUBTFUL UNFORESEEN AND/OR UNEXPECTED SITE CONDITIONS TO THE ENGINEER PRIOR TO PROCEEDING.

#### CONCRETE

1. CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF CAN/CSA-A23.1 AND CAN/CSA-A23.3 WITH THE FOLLOWING PROVISION:

LOCATION	DESIGN STRENGTH (28 DAYS)	SLUMP	EXPOSURE CLASS
ALL OTHER INTERIOR CONCRETE	25 MPa	80± 30	N

- 2. NO ADDITIONAL WATER SHALL BE ADDED AT THE JOB SITE. CONCRETE WHICH HAS BEEN WATERED OR DOES NOT MEET SPECIFICATIONS SHALL BE REJECTED.
- 3. DURING WINTER WEATHER BELOW 5 °C PROVIDE TEMPORARY HEATING OF CONCRETE IN ACCORDANCE WITH THE REQUIREMENTS OF CSA A23.1, LATEST EDITION.

### STRUCTURAL STEEL

- 1. ALL STRUCTURAL STEEL HSS AND W SECTIONS TO BE G40.21M-350W CLASS C. ALL OTHERS TO BE G40.21M-300W.
- 2. DESIGN FORCES INDICATED ON DRAWINGS FOR STRUCTURAL STEEL WORK ARE UN-FACTORED FORCES UNLESS NOTED OTHERWISE.
- 3. ALL CONNECTIONS TO BE DESIGNED BY FABRICATOR UNLESS NOTED OTHERWISE. ALL BEAM CONNECTIONS TO BE STANDARD SHEAR CONNECTIONS IN COMPLIANCE WITH CISC, UNLESS NOTED OTHERWISE.
- 4. PROVIDE SHOP DRAWINGS OF COMPONENTS AND CONNECTIONS DESIGNED BY THE FABRICATOR'S ENGINEER. DRAWINGS SHALL BE SIGNED AND SEALED BY THAT ENGINEER.
- 5. FABRICATOR'S ENGINEER MUST BE LICENSED IN THE PROVINCE OF ONTARIO.
- ALL ERECTION BOLTS SHALL BE ASTM GRADE A325 MINIMUM, AND SHALL BE DESIGNED BY STEEL FABRICATOR'S ENGINEER FOR TRANSFER OF ALL LOADS.
- PIECE AND DESIGNED AS BEARING CONNECTIONS U.N.O.
- 8. FABRICATOR'S ENGINEER SHALL DESIGN TOP PLATES AND THEIR CONNECTIONS TO FULLY TRANSFER VERTICAL AND HORIZONTAL LOADS AS WELL AS MOMENTS WHEN REQUIRED PER CISC STANDARDS.

7. BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF TWO BOLTS IN EACH CONNECTION

- 9. FABRICATION, ERECTION AND WORKMANSHIP SHALL CONFORM TO CSA S16.1.
- 10. ALL WELDING SHALL CONFORM TO CSA W59 AND SHALL BE PERFORMED BY A WELDER QUALIFIED UNDER CSA W47.
- 11. ALL STRUCTURAL STEEL SHALL BE PAINTED WITH ONE SHOP APPLIED COAT OF PRIMER. SPOT PRIME ALL WELDED AREAS.
- 12. REMOVE PAINT FILM FROM ALL STEEL SURFACES TO BE WELDED. SPOT PRIME AS
- 13. ALL WELDED CONNECTIONS SHALL BE WITH CSA W48 SERIES ELECTRODES.
- 14. PROVIDE DRAINAGE HOLES TO ARCHITECT'S APPROVAL IN ALL EXPOSED EXTERIOR HSS
- 15. PROVIDE CAP PLATES ON ALL HSS FRAMING MEMBERS UNLESS NOTED OTHERWISE.
- 16. DO NOT CUT OR CORE ANY OPENINGS IN ANY STRUCTURAL STEEL MEMBERS WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER.
- 17. WHERE A STRUCTURAL STEEL SHAPE SHOWN ON THE DRAWINGS IS UNAVAILABLE, A SHAPE OF EQUAL OR GREATER SECTION PROPERTIES AND STRUCTURAL CAPACITY SHALL BE SUBSTITUTED, UPON APPROVAL BY OWNER AND CONSULTANT AT NO EXTRA COST.
- 18. ALL EXPOSED STEEL SHALL BE HOT DIP GALVANIZED INCLUDING CURBS.

DO NOT SCALE THE DRAWINGS.

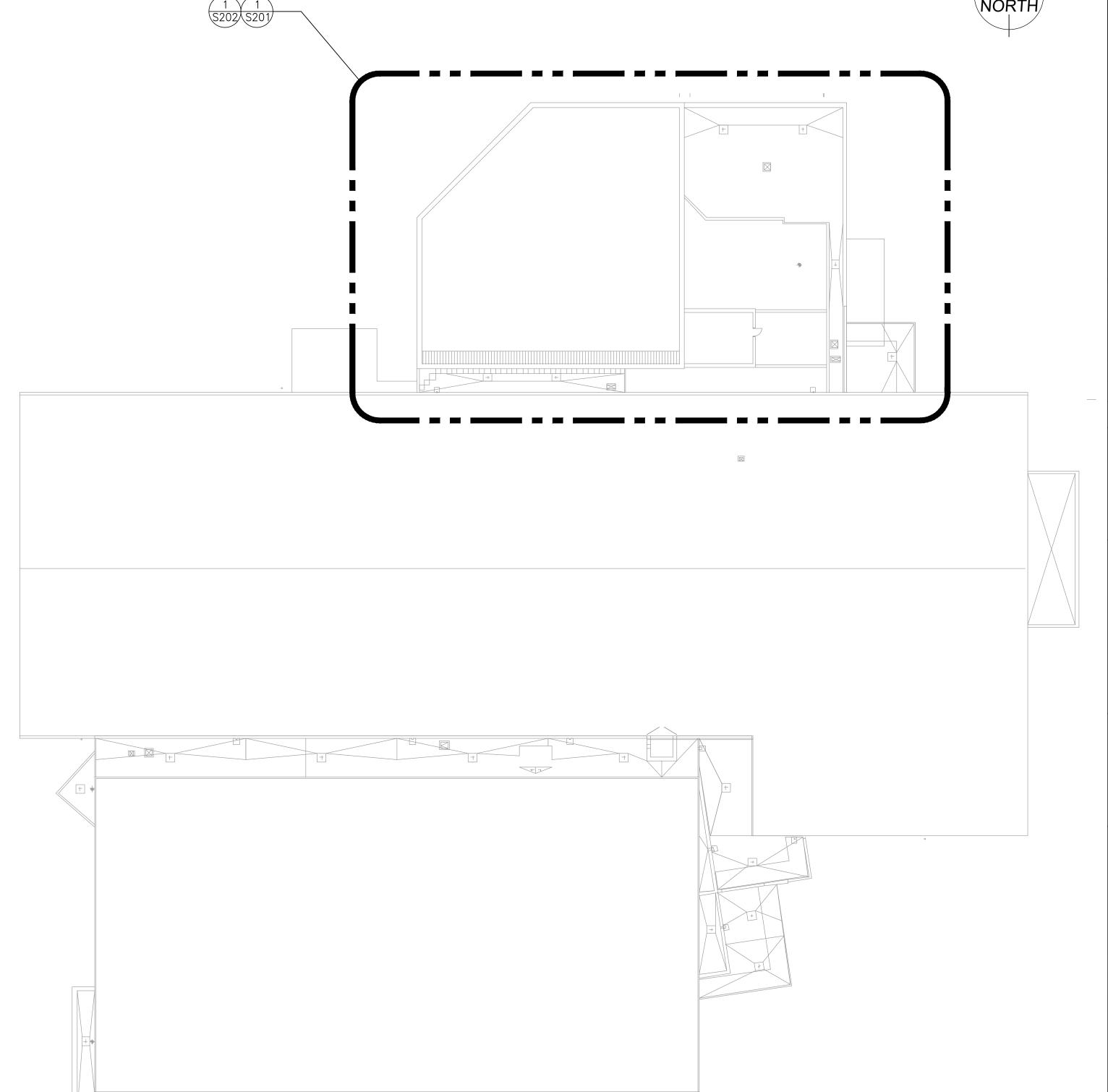
CHECK AND VERIFY ALL DIMENSIONS AT THE SITE.

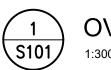
ALL DRAWINGS, SPECIFICATIONS AND RELATED DOCUMENTS ARE THE COPYRIGHT PROPERTY OF THE CONSULTANT AND MUST BE RETURNED UPON REQUEST. REPRODUCTION OF DRAWINGS IN PART OR WHOLE WITHOUT THE PERMISSION OF THE CONSULTANT IS FORBIDDEN.



DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY THE CONSULTANT.

NO.	ISSUES	DATE	BY
1	ISSUED FOR 90% REVIEW	JUNE 12, 2024	BBA
2	ISSUED FOR TENDER	MAR. 12, 2025	BBA





OVERALL ROOF PLAN
1:300

B A

B A

ROPESSIONAL MAR. 12 2025

D. P. MCL AUGHLIN 100181883

DESIGN BY:

DRAWN BY:

MAY 2024

1:300

CHECKED BY:

BBA

DM

BARRY BRYAN
ASSOCIATES
Architects
Engineers
Project Managers

NO. REVISIONS

PROJECT:

**DECTRON UNIT** 

REPLACEMENT

CENTURY GARDENS

CITY OF BRAMPTON

DRAWING:

RECREATION CENTRE

340 VODDEN STREET EAST

BRAMPTON, ONTARIO L6V 2N2

**GENERAL NOTES &** 

OVERALL ROOF PLAN

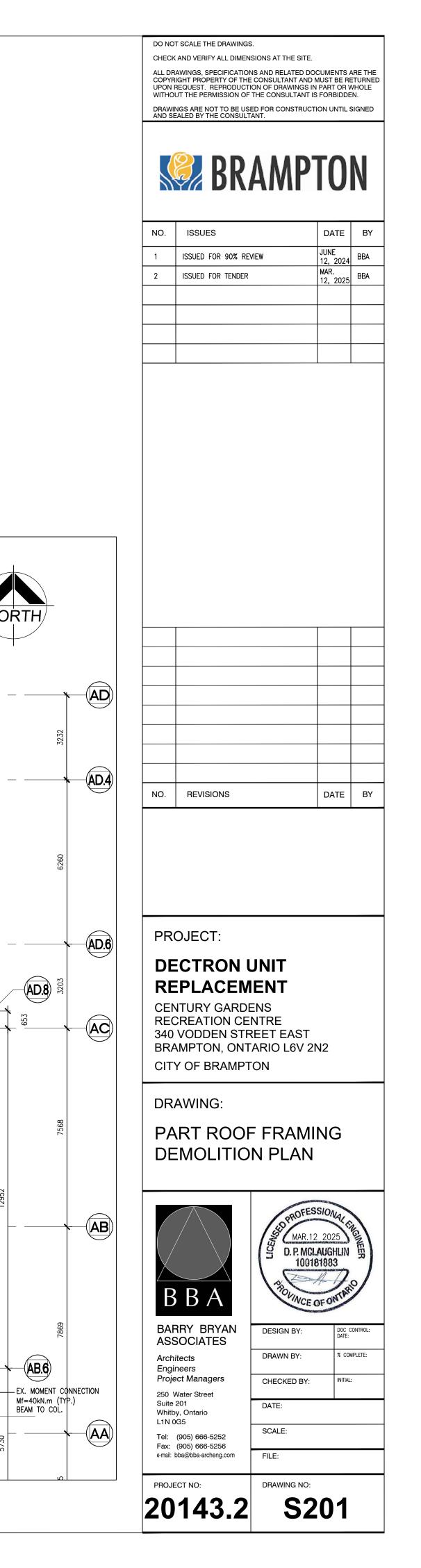
DATE BY

Architects
Engineers
Project Managers
250 Water Street
Suite 201
Whitby, Ontario

Whitby, Ontario L1N 0G5 Tel: (905) 666-5252 Fax: (905) 666-5256 e-mail: bba@bba-archeng.com

DRAWING NO:

% COMPLETE:



7315

6172

EX. HOUSEKEEPING PAD ----

PART ROOF FRAMING DEMOLITION PLAN

S201

7315

EX. W530x66

EX. LINTEL EX. LINTEL EX. LINTEL

MECH. PENTHOUSE FLOOR

P.H. WALL

EX. W310x45

PC SLAB

5385

EX. 76mmx0.91 THICK STEEL DECK

— EX. DUCT WORK SUPPORT CURBS TO

BE REMOVED AND REPLACED WITH
NEW TO SUIT UPDATED MECHANICAL
LAYOUTS\_AFTER\_ALL\_EXISTING
ROOFING HAS BEEN REPLACED

13.4

EX. MECHANICAL UNIT TO BE REMOVED & REPLACED WITH NEW. CUT BACK EXISTING ROOF

FOR NEW DECTON UNIT.

PREPARE THE PRECAST SLABS

FOR PLACEMENT OF THE NEW

SLEEPER STEEL TO SUPPORT

THE DECTRON UNIT

EX HSS 76x76x6.4 (TO BE ON TOP OF BEAM) TYP.

EX W200x27 (T.O.S. EL. 3080)

L76x76x6.4 (TYP.)

EX. W360x45

EX. W360x45

EX. W360x45

EX. W360x45

EX. W360x45

| 🕍 | EX. W360x45 🛣

EX. W200x27 EX. 76mmx1.22 STEEL DECK

POST P1-HSS 152x102x4.8 VERT. (TOTAL OF 4)

5200

EX. W360x33

76x76x6.4

76x76x6.4

76x76x6.4

C200x17

76x76x6.4

C200x17

EX. HSS —

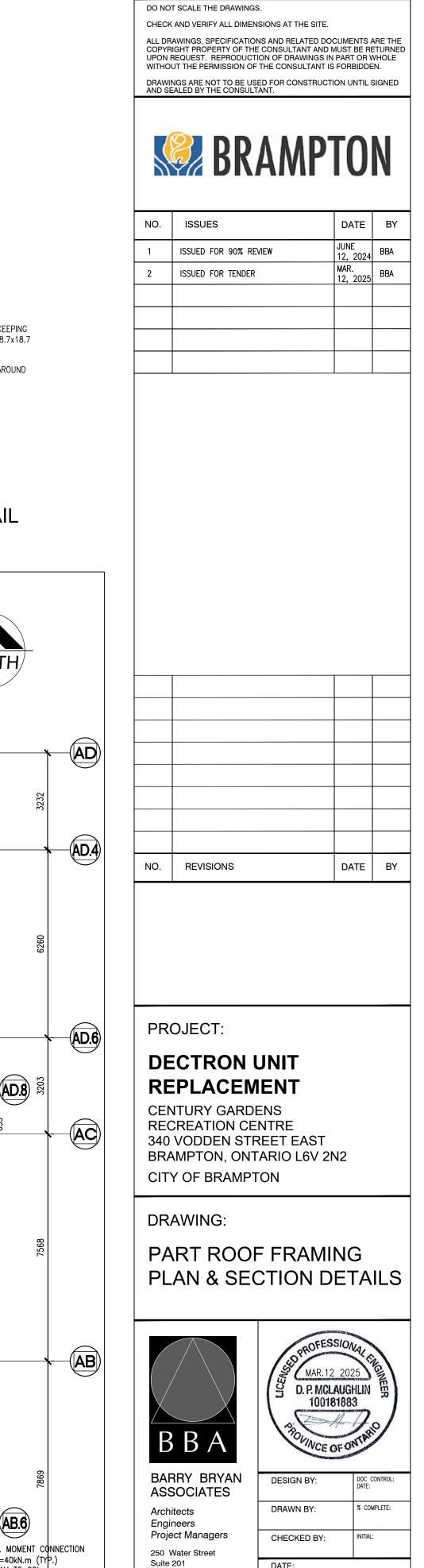
76x76x6.4

EX. LINTEL EX. LINTEL EX. HSS -

EX. 38mm STEEL DECK ON OWSJ

EX. 2L 76x76x6.4 'X' BRACING

EX. W410x46



Whitby, Ontario

PROJECT NO:

Tel: (905) 666-5252

Fax: (905) 666-5256 e-mail: bba@bba-archeng.com

20143.2

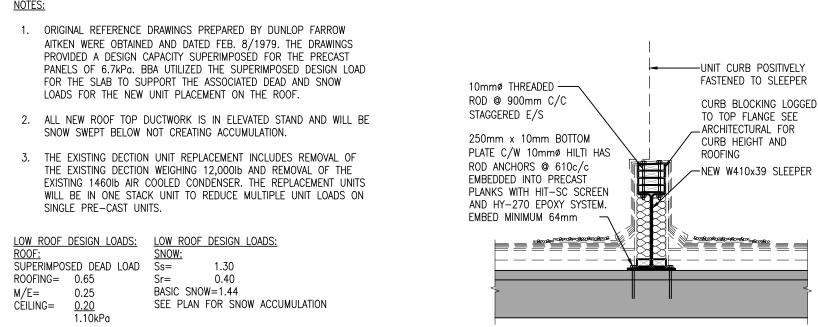
SCALE:

DRAWING NO:

**S202** 

FILE:

L1N 0G5

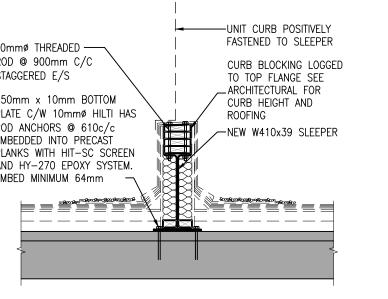


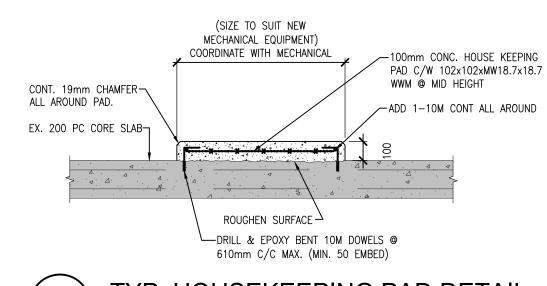
SEE PLAN FOR SNOW ACCUMULATION

NOTES:

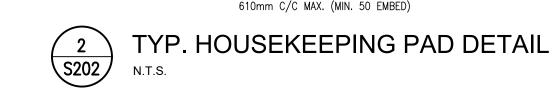
PART ROOF FRAMING PLAN

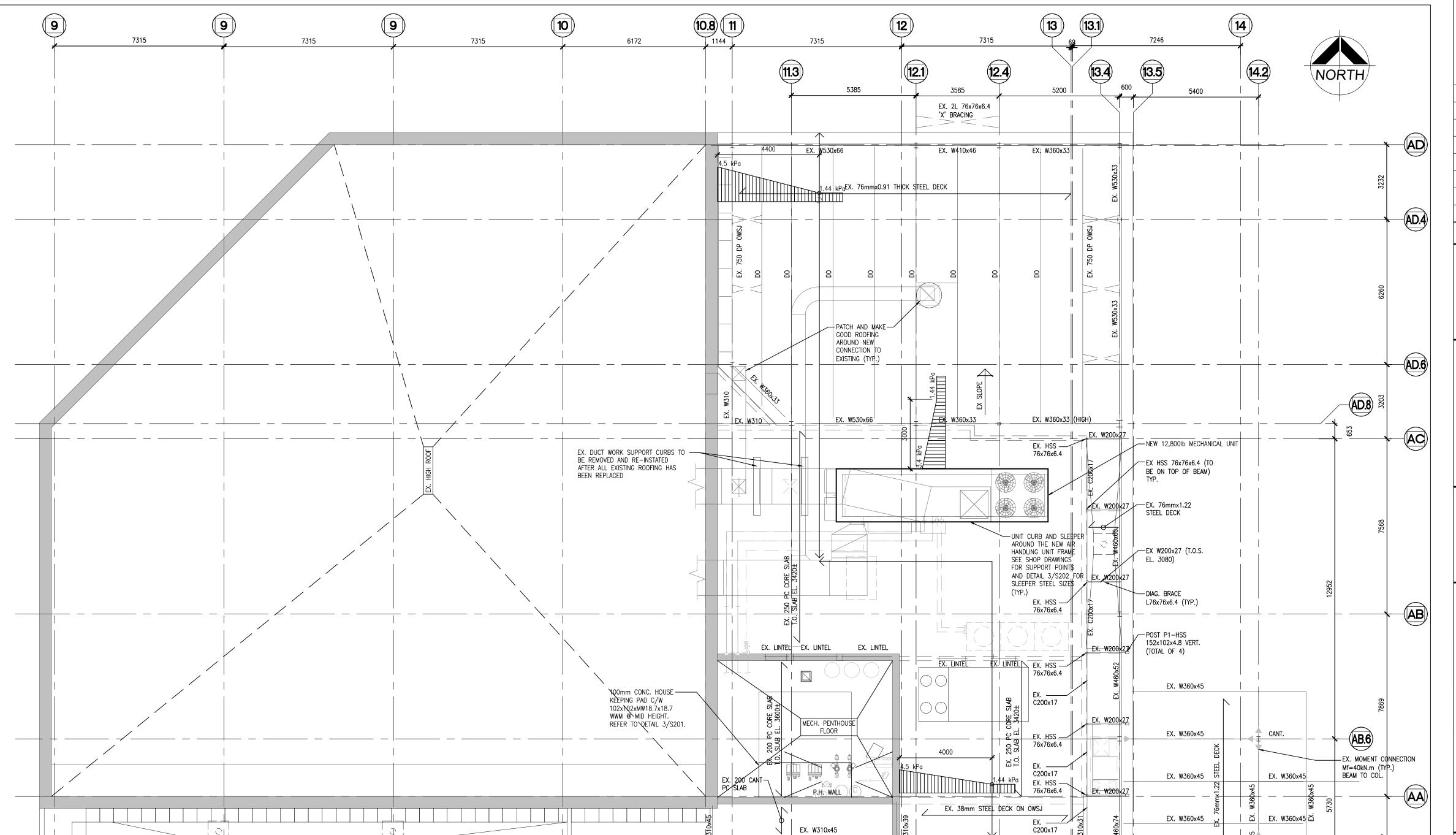
<u>S202</u>

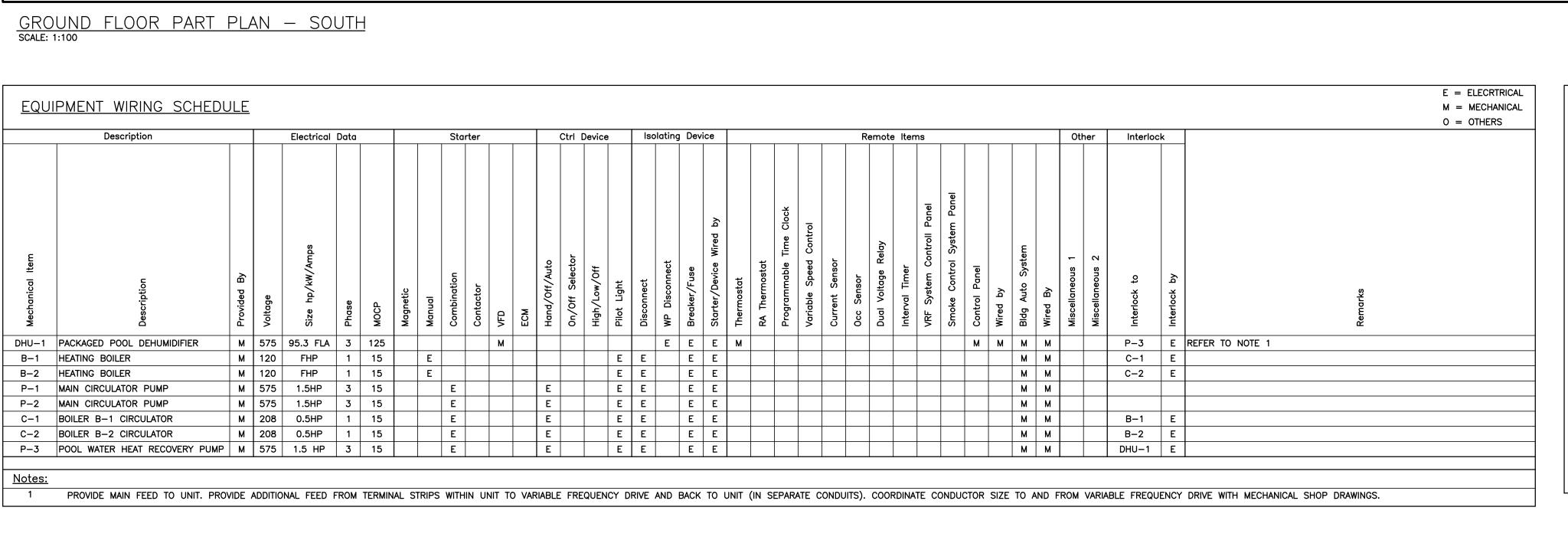












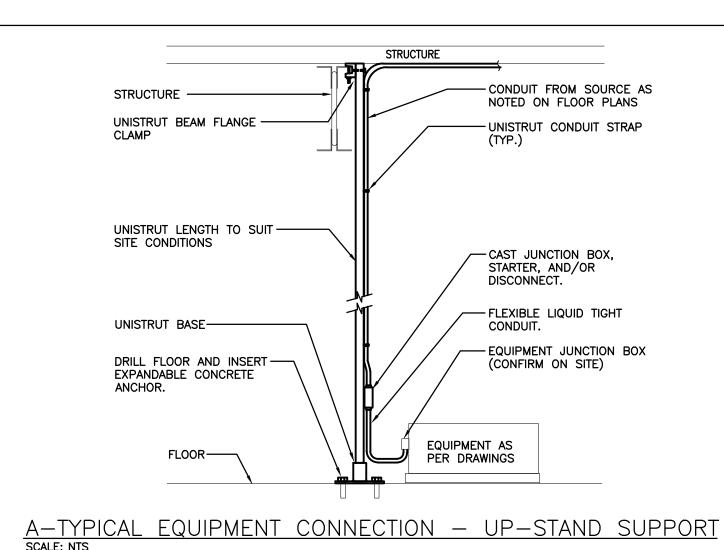
MEN'S DRESS RM

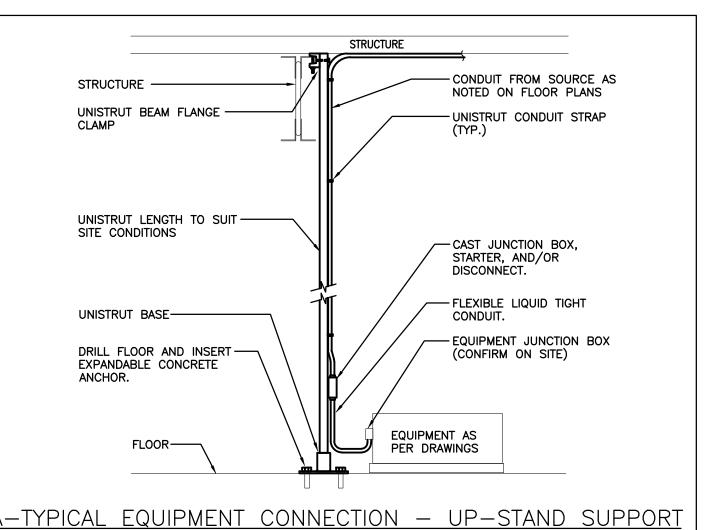
WOMEN'S DRESS RM

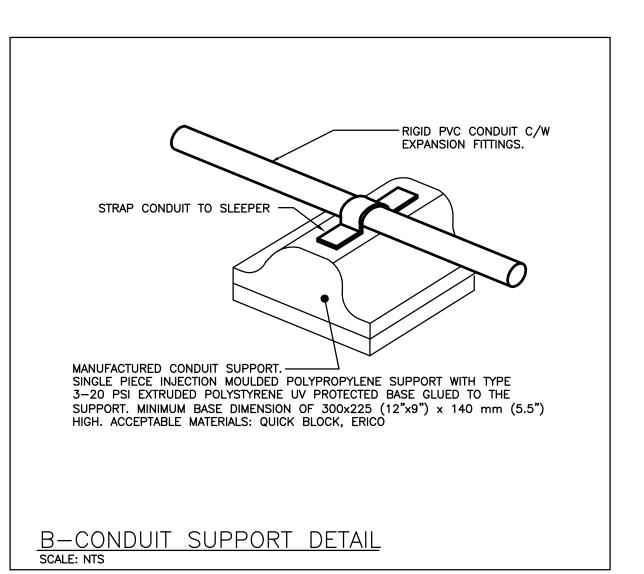
ROOF PART PLAN
SCALE: 1:100

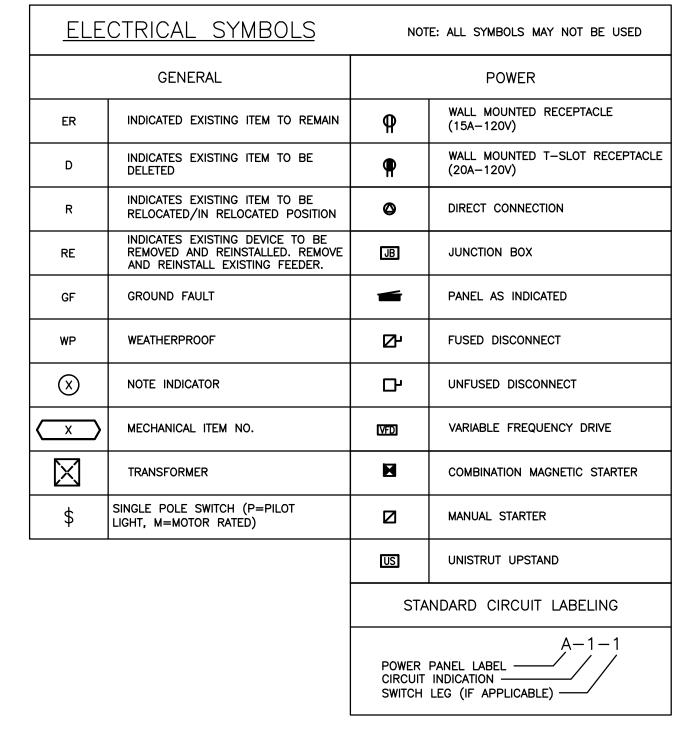
REFER TO DRAWINGS E201 & E301 FOR WORK WITHIN THIS AREA.

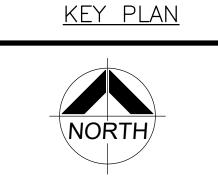
MECH. PENTHOUSE











The contractor shall verify all dimensions and report all errors and discrepancies to the Consultant before commencement of

and discrepancies to the Consultant before commencement of the work.

The drawings show general arrangement of services. Follow as closely as actual building construction will permit. Obtain approval for relocation of service from Consultant before commencement of the work.

The drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required conditions.

Drawings and specifications, etc., prepared and issued by the consultant are the property of the consultant and must be returned at the completion of the project. These documents are not to be duplicated or copied without the consent of the Consultant. Do not scale this drawing.

© 2025 DEI & Associates Inc.

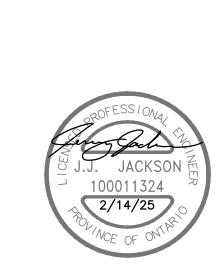
ISSUED FOR PERMIT & TENDER 2025.02.14

2024.10.30 JJ

NO. ISSUES

ISSUED FOR REVIEW







PROJECT: **CENTURY GARDENS RECREATION CENTRE** 340 VODDEN ST. EAST,

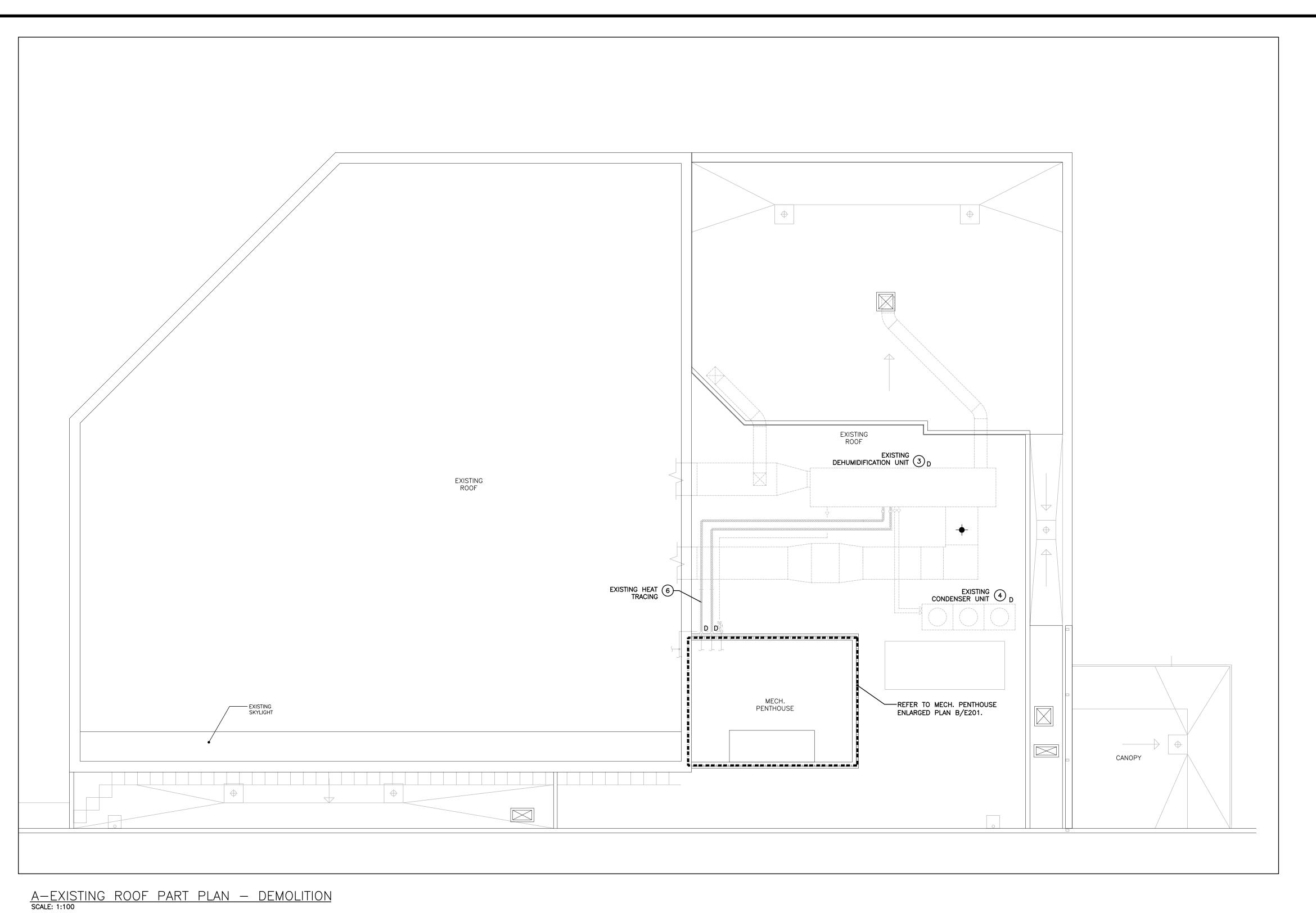
DRAWING:

BRAMPTON, ONTARIO

LEGEND, SCHEDULES, PART PLAN AND DETAILS

DESIGN BY: MEK DRAWN BY: AAA CHECKED BY:MEK DATE: NOV 2023

SCALE: AS NOTED



#### GENERAL DEMOLITION NOTES

- 'ER' DENOTES EXISTING EQUIPMENT TO REMAIN. EXISTING ELECTRICAL EQUIPMENT NOT SHOWN SHALL REMAIN UNLESS NOTED
- 'R' INDICATES EXISTING EQUIPMENT TO BE RELOCATED. REFER TO RENOVATION DRAWINGS AND RELOCATE DEVICE AND WIRING TO SUIT. UNLESS OTHERWISE
- 'D' INDICATES EXISTING EQUIPMENT TO BE REMOVED. UNLESS OTHERWISE NOTED
- DISCONNECT AND REMOVE EXISTING CONDUIT AND WIRING BACK TO SOURCE. REFER TO MECHANICAL DRAWINGS FOR FURTHER DETAILS AND REQUIREMENTS. ELECTRICAL DEVICES NOT SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
- THIS CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ON SITE ALL LOCATIONS AND SIZES OF ALL SERVICES & EQUIPMENT PRIOR TO THE COMMENCEMENT OF WORK AND INCLUDE ASSOCIATED COST IN TENDER.
- EXISTING SYSTEMS TO REMAIN. INFORM OWNER OR CONSULTANT BEFORE ALL EXISTING CIRCUITS SHOWN ARE FOR REFERENCE PURPOSES ONLY. CONTRACTOR MUST TRACE CIRCUITS AND CONFIRM INFORMATION PRIOR TO DISCONNECTION AND REWORKING / REMOVING OF CIRCUITS. - ALL MATERIALS REMOVED UNDER DEMOLITION, NOT TO BE RELOCATED OR DESIGNATED TO BE TURNED OVER TO THE OWNER, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED COMPLETELY FROM THE SITE.

REMOVE ALL REDUNDANT CONDUIT AND WIRING WHILE MAINTAINING INTEGRITY OF

### SPECIFIC DEMOLITION NOTES

- INDICATES EXISTING 200A NON-FUSED DISCONNECT SWITCH FOR DEHUMIDIFICATION UNIT. REFER TO RENOVATION AND POWER DISTRIBUTION DRAWINGS FOR FURTHER DETAILS.
- INDICATES EXISTING PUMP TO BE REMOVED COMPLETE BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL REMOVE EXISTING CONDUIT, POWER AND CONTROL WIRING BACK TO LOCAL JUNCTION BOX. REWORK AND

EXTEND EXISTING CONDUIT AND WIRING FROM JUNCTION BOX FOR RECONNECTION TO NEW PUMP FOR A COMPLETE WORKING SYSTEM. REFER TO RENOVATION AND

- POWER DISTRIBUTION DRAWINGS FOR FURTHER DETAILS. INDICATES EXISTING DEHUMIDIFICATION UNIT TO BE REMOVED COMPLETE BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL ISOLATE, DISCONNECT AND REMOVE EXISTING LOCAL DISCONNECT SWITCH, AND CABLE/WIRING BACK TO SOURCE AND MAKE SAFE. REFER TO RENOVATION AND POWER DISTRIBUTION
- DRAWINGS FOR FURTHER DETAILS. INDICATES EXISTING CONDENSER UNIT TO BE REMOVED COMPLETE BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL REMOVE EXISTING LOCAL DISCONNECT SWITCH, POWER AND CONTROL WIRING/CABLE BACK TO
- SOURCE DISCONNECT SWITCH AT SPLITTER AND MAKE SAFE. RETAIN EXISTING FUSED DISCONNECT SWITCH AT SPLITTER AND MARK AS SPARE. REFER TO RENOVATION AND POWER DISTRIBUTION DRAWINGS FOR FURTHER DETAILS. INDICATES EXISTING RECEPTACLE PANEL BOARD 120/208V, 3PH/4W, 250A BUS, 18-CIRCUITS, SIEMENS, TYPE P1. PANEL BOARD SHALL BE DISCONNECTED AND REMOVED COMPLETE. CONTRACTOR SHALL ISOLATE AT EXISTING ISOLATION SWITCH AND MAKE SAFE PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR SHALL RETAIN ALL EXISTING CIRCUITS FOR RECONNECTION TO NEW PANEL BOARD. CONTRACTOR SHALL REFER TO RENOVATION DRAWING FOR NEW PANEL
- INDICATES EXISTING HEAT TRACE SHALL BE DISCONNECTED AND REMOVED COMPLETE BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL REMOVE CONDUIT/WIRING BACK TO SOURCE POINT AND MAKE SAFE. RETAIN POWER CIRCUIT FOR RECONNECTION TO NEW HEAT TRACE, REFER TO RENOVATION AND POWER DISTRIBUTION DRAWINGS FOR FURTHER DETAILS.

REPLACEMENT DETAILS.

and discrepancies to the Consultant before commencement of the work.

The drawings show general arrangement of services. Follow as closely as actual building construction will permit. Obtain approval for relocation of service from Consultant before commencement of the work.

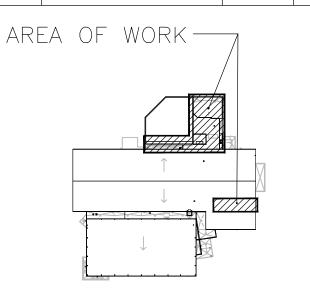
The drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required conditions.

Drawings and specifications, etc., prepared and issued by the consultant are the property of the consultant and must be returned at the completion of the project. These documents are not to be duplicated or copied without the consent of the Consultant. Do not scale this drawing.

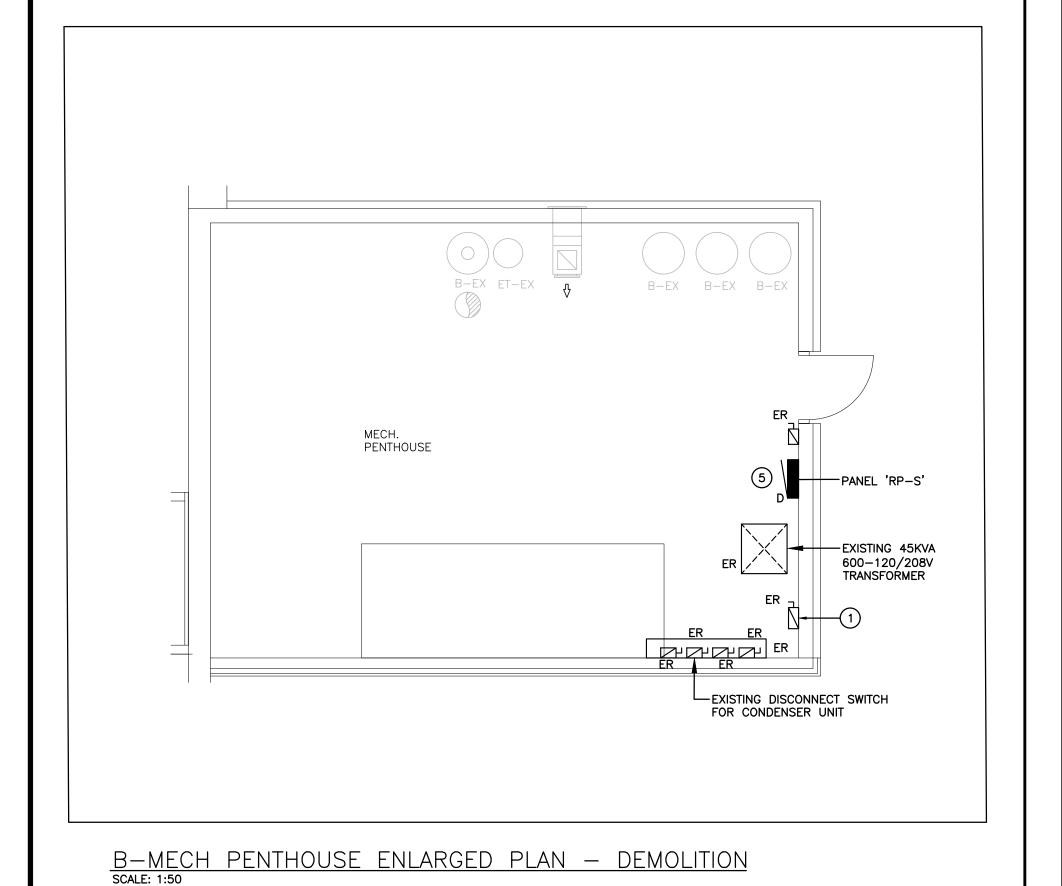
© 2025 DEI & Associates Inc.

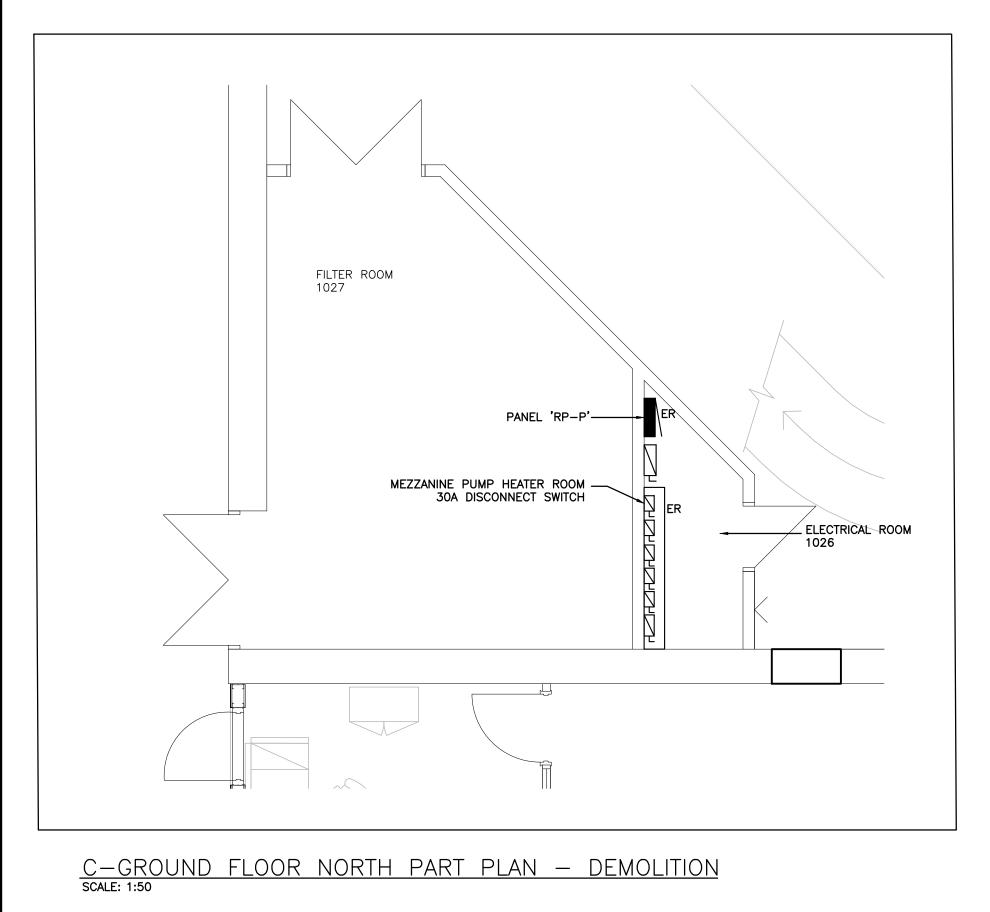
The contractor shall verify all dimensions and report all errors and discrepancies to the Consultant before commencement of

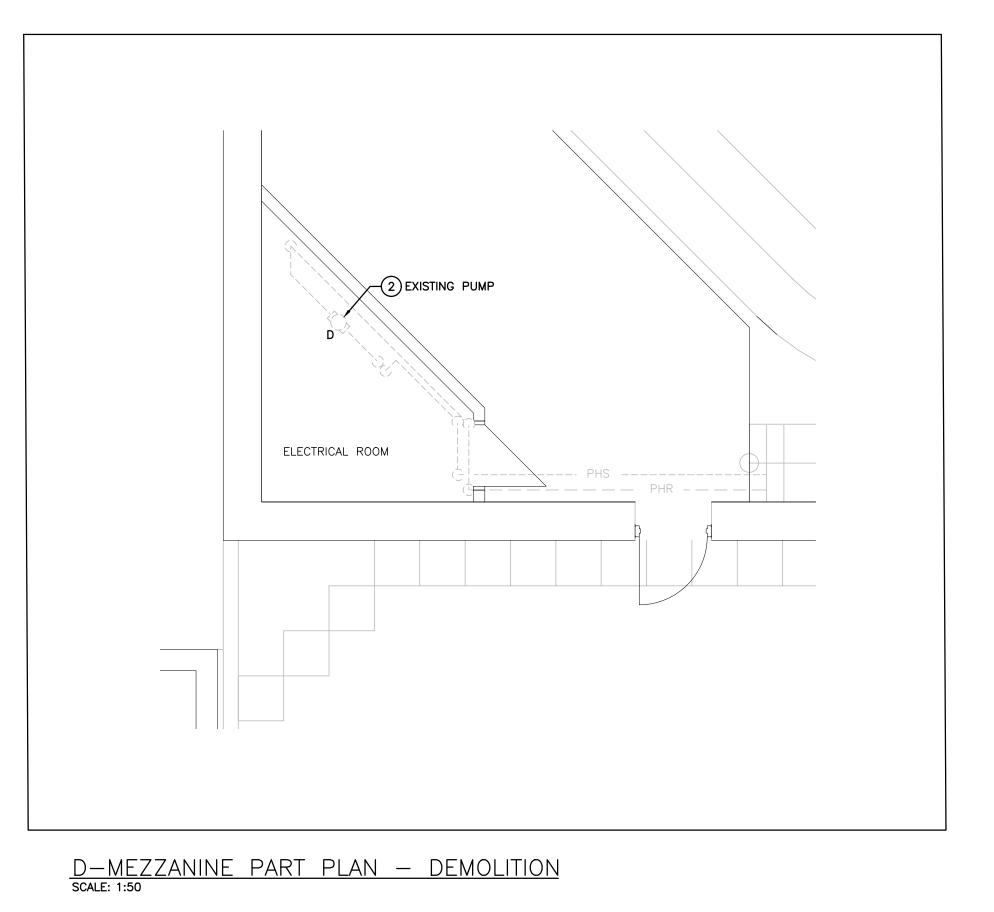
DATE B no. Issues 2024.10.30 JJ ISSUED FOR REVIEW ISSUED FOR PERMIT & TENDER 2025.02.14

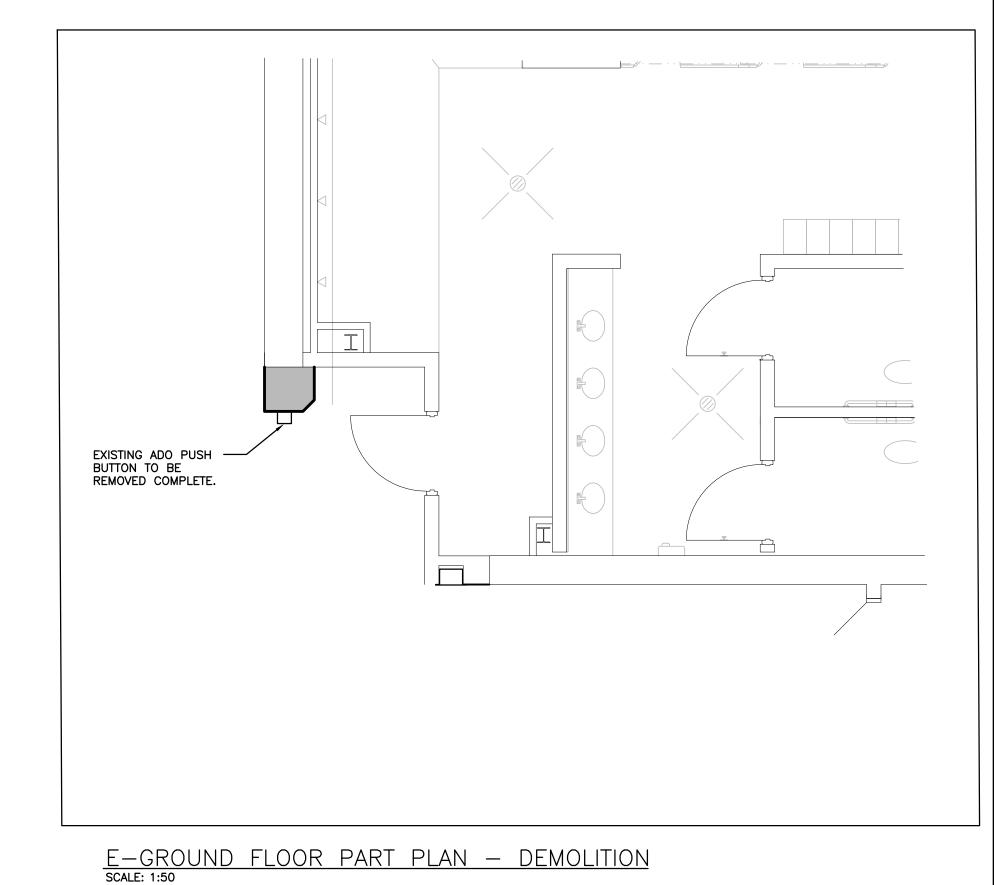
















PROJECT:

**CENTURY GARDENS** RECREATION CENTRE 340 VODDEN ST. EAST, BRAMPTON, ONTARIO

DRAWING:

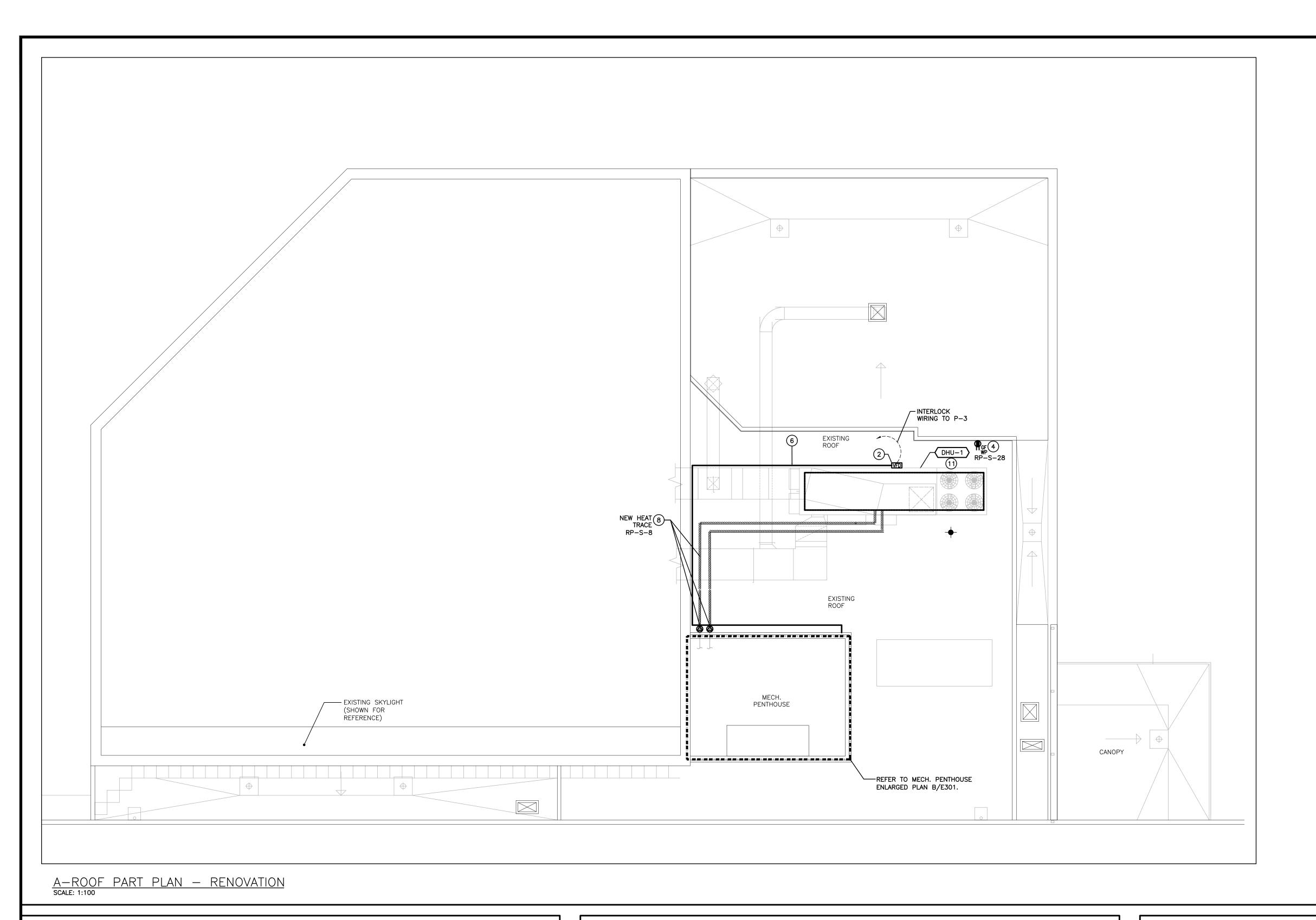
ENLARGED & PART PLANS - POWER & SYSTEMS DEMOLITION

DESIGN BY: MEK

DRAWN BY: AAA CHECKED BY:MEK

DATE: FEB 2024 SCALE: AS NOTED

E201 23295



B-EX B-EX B-EX B-EX

B-MECH PENTHOUSE ENLARGED PLAN - RENOVATION
SCALE: 1:50

#### GENERAL NOTES

- A. 'ER' DENOTES EXISTING EQUIPMENT TO REMAIN.
- B. EXISTING ELECTRICAL EQUIPMENT NOT SHOWN SHALL REMAIN UNLESS NOTED
- C. 'R' INDICATES EXISTING EQUIPMENT TO BE RELOCATED. REFER TO RENOVATION DRAWINGS AND RELOCATE DEVICE AND WIRING TO SUIT. UNLESS OTHERWISE
- D. 'D' INDICATES EXISTING EQUIPMENT TO BE REMOVED. UNLESS OTHERWISE NOTED DISCONNECT AND REMOVE EXISTING CONDUIT AND WIRING BACK TO SOURCE.
- E. REFER TO MECHANICAL DRAWINGS FOR FURTHER DETAILS AND REQUIREMENTS.
- F. ELECTRICAL DEVICES NOT SHOWN SHALL REMAIN UNLESS NOTED OTHERWISE.
- G. REVISE PANEL DIRECTORIES TO SUIT CHANGES (TYPED). H. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ON SITE ALL LOCATIONS AND SIZES OF ALL SERVICES & EQUIPMENT PRIOR TO THE
- COMMENCEMENT OF WORK AND INCLUDE ASSOCIATED COST IN TENDER. ALL EXISTING CIRCUITS SHOWN ARE FOR REFERENCE PURPOSES ONLY.
  CONTRACTOR MUST TRACE CIRCUITS AND CONFIRM INFORMATION PRIOR TO DISCONNECTION AND REWORKING / REMOVING OF CIRCUITS.

### SPECIFIC RENOVATION NOTES

- PROVIDE UNISTRUT UP-STAND SUPPORT SECURED TO FLOOR AND STRUCTURE. FEED SERVICES TO LOCAL EQUIPMENT VIA THIS UP-STAND. REFER TO DETAIL A/E101 AND COORDINATE EQUIPMENT LOCATION ON SITE WITH MECHANICAL
- INDICATES APPROXIMATE LOCATION FOR VFD STARTER/CONTROL CABINET SERVING NEW DEHUMIDIFICATION UNIT 'DHU-1', SHALL BE SUPPLIED AND INSTALLED BY MECHANICAL CONTRACTOR. CONFIRM EXACT LOCATION ON
- SITE PRIOR TO COMMENCEMENT OF WORK. PROVIDE NEW CABLE, AS PER SPECIFICATION, FROM STARTER/CONTROL CABINET TO EQUIPMENT AS REQUIRED. INDICATES PROPOSED LOCATION TO INSTALL MOTOR RATED SHUT OFF SWITCHES C/W PILOT LIGHT FOR NEW BOILERS. MOUNT SWITCHES AT 1800MM A.F.F.
- PROVIDE LAMACOID LABEL NOTING EQUIPMENT CONTROLLED.
- PROVIDE T-SLOT GROUND FAULT RECEPTACLE COMPLETE WITH "IN-USE" WEATHER-PROOF COVER.COORDINATE PLACEMENT WITH MECHANICAL TRADE PRIOR TO ROUGH-IN. INDICATED DEVICE IS TO BE MOUNTED 750mm ABOVE FINISHED ROOF LEVEL. PROVIDE SUITABLE SUPPORT AT MECHANICAL EQUIPMENT.
- INDICATES PROPOSED LOCATION FOR MANUAL STARTERS SERVING NEW PUMPS TO BE SUPPLIED AND INSTALLED BY ELECTRICAL CONTRACTOR. CONFIRM EXACT LOCATION AND MOUNTING HEIGHT ON SITE.
- INDICATES NEW CABLE RUN TO EXISTING DISCONNECT SWITCH IN MECHANICAL PENTHOUSE. CONTRACTOR SHALL FOLLOW EXISTING ROUTING AND PROVIDE
- SUPPORT AS REQUIRED. CONTRACTOR SHALL PROVIDE NEW PANEL BOARD IN-PLACE OF EXISTING PANEL BOARD. RECONNECT ALL BRANCH CIRCUITS MADE AVAILABLE DURING DEMOLITION PHASE.
- REPLACEMENT PANEL SHALL BE AS FOLLOWS: PROVIDE INTERIOR AND TRIM
- 120/208V, 3PH, 4W, 250A BUS 100% NEUTRAL 42 CIRCUITS SIEMENS TYPE P1, TOP FEED
- SPRINKLER HOOD SURFACE MOUNT C/W NEW BREAKERS AS NOTED IN PROPOSED PANEL SCHEDULE
- INDICATES NEW HEAT TRACE BY MECHANICAL TRADE. ELECTRICAL CONTRACTOR SHALL PROVIDE CONNECTION TO HEAT TRACING SYSTEM. PROVIDE GROUND FAULT PROTECTION TO SUIT O.E.S.C. UTILIZE EXISTING CIRCUIT MADE AVAILABLE DURING DEMOLITION. REFER TO PROPOSED PANEL SCHEDULE FOR FURTHER DETAILS, COORDINATE CONNECTION REQUIREMENTS WITH MECHANICAL TRADE PRIOR TO ROUGH-IN.

CONTRACTOR SHALL PROVIDE NEW LAMACOID TAG AND LABEL PANEL AS "RP-S".

- INDICATES APPROXIMATE LOCATION OF COMBINATION MAGNETIC STARTERS SERVING NEW MAIN CIRCULATION PUMPS, SUPPLIED, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. PROVIDE AS PER SPECIFICATIONS. PROVIDE NEW CABLING AS PER POWER DISTRIBUTION.
- REWORK AND EXTEND EXISTING CONDUIT AND WIRING MADE AVAILABLE DURING DEMOLITION FROM NEAREST LOCAL JUNCTION BOX TO STARTER INDICATED AND FROM STARTER TO NEW PUMP. UPDATE EXISTING SOURCE DISCONNECT SWITCH WITH NEW LAMACOID PLATE INDICATING NEW EQUIPMENT TAG 'P-3'. REFER TO POWER DISTRIBUTION DRAWING FOR FURTHER DETAILS.
- 1 REFER TO RENOVATION SINGLE LINE DIAGRAM, DRAWING #E401 FOR CIRCUIT DETAILS.

PROVIDE NEW ADO PUSH-BUTTON, TO BE RECESSED IN

NEW WALL ASSEMBLY.

E-GROUND FLOOR PART PLAN - DEMOLITION SCALE: 1:50



and discrepancies to the Consultant before commencement of the work.

The drawings show general arrangement of services. Follow as closely as actual building construction will permit. Obtain approval for relocation of service from Consultant before commencement of the work.

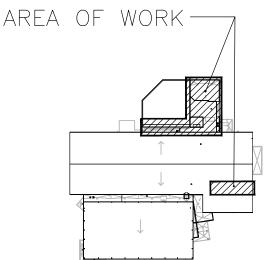
The drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required conditions.

Drawings and specifications, etc., prepared and issued by the consultant are the property of the consultant and must be returned at the completion of the project. These documents are not to be duplicated or copied without the consent of the Consultant. Do not scale this drawing.

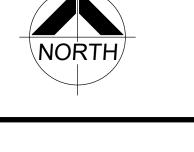
© 2025 DEI & Associates Inc.

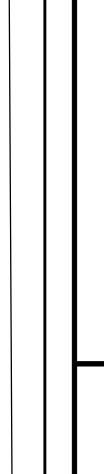
The contractor shall verify all dimensions and report all errors and discrepancies to the Consultant before commencement of

DATE B no. Issues 2024.10.30 JJ ISSUED FOR REVIEW ISSUED FOR PERMIT & TENDER 2025.02.14











100011324 2/14/25

PROJECT: **CENTURY GARDENS** 

340 VODDEN ST. EAST, BRAMPTON, ONTARIO

**RECREATION CENTRE** 

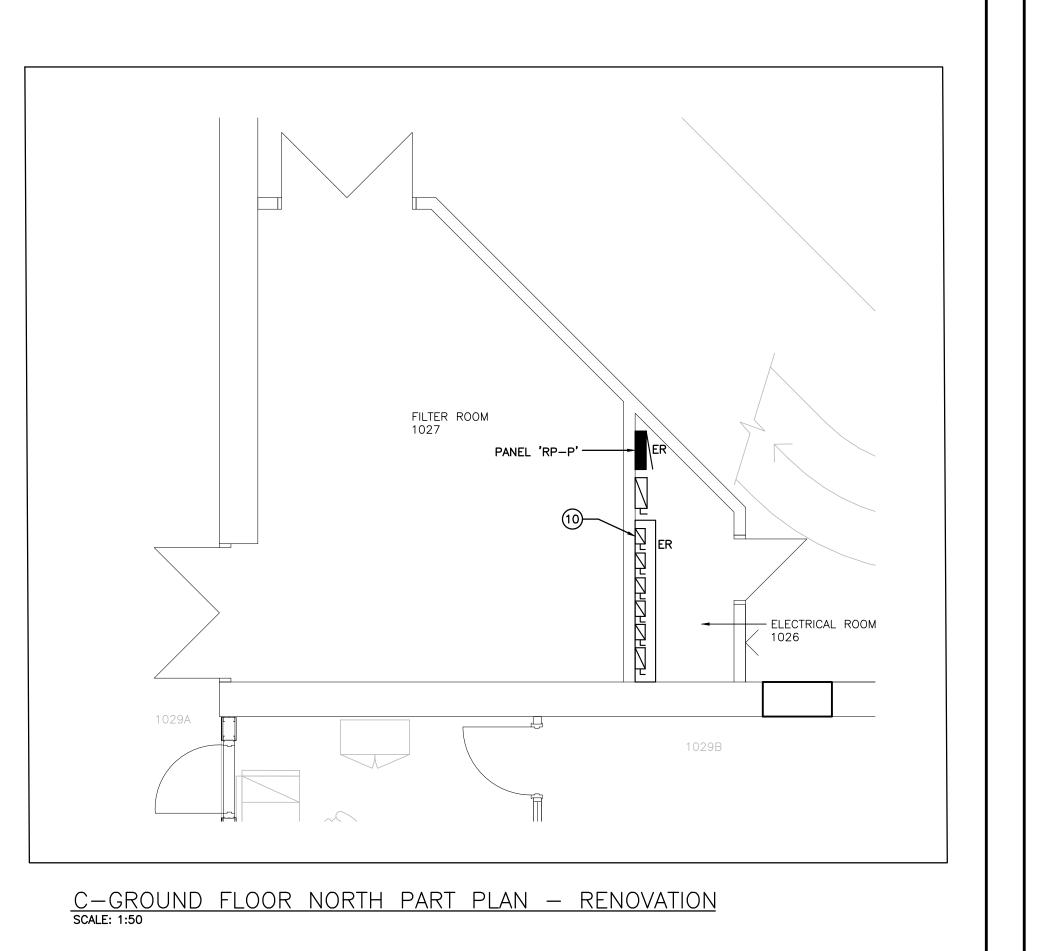
DRAWING: **ENLARGED & PART PLANS** - POWER & SYSTEMS RENOVATION

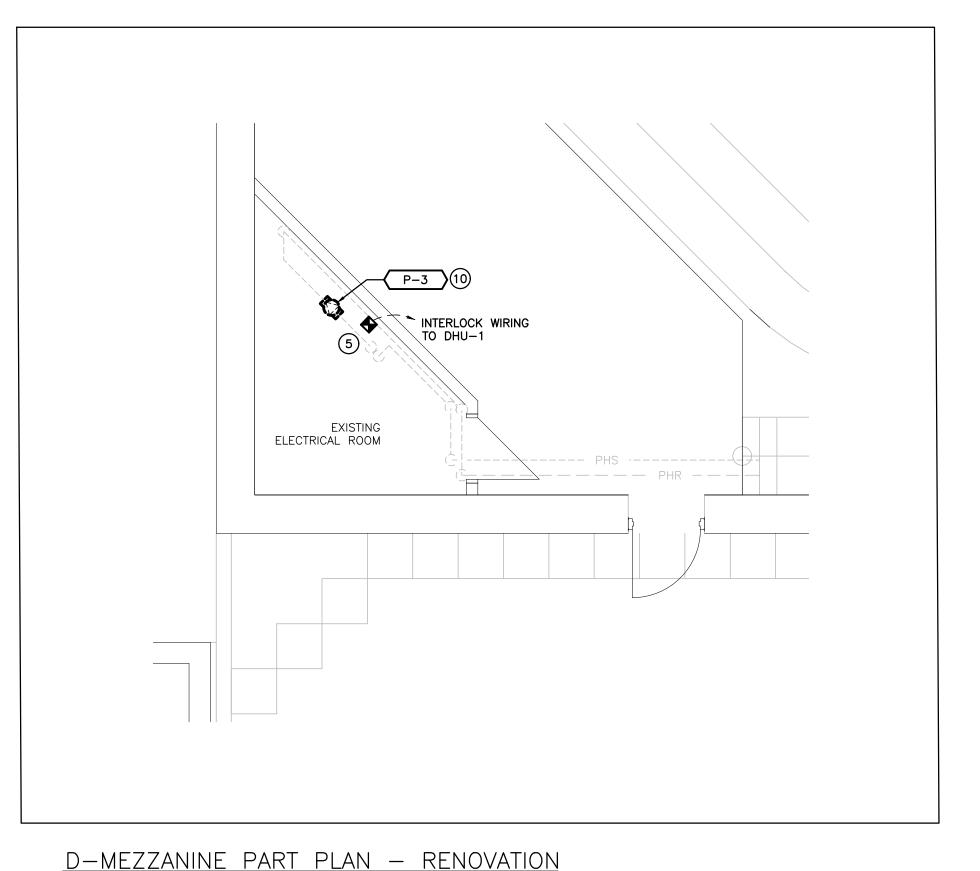
DESIGN BY: MEK

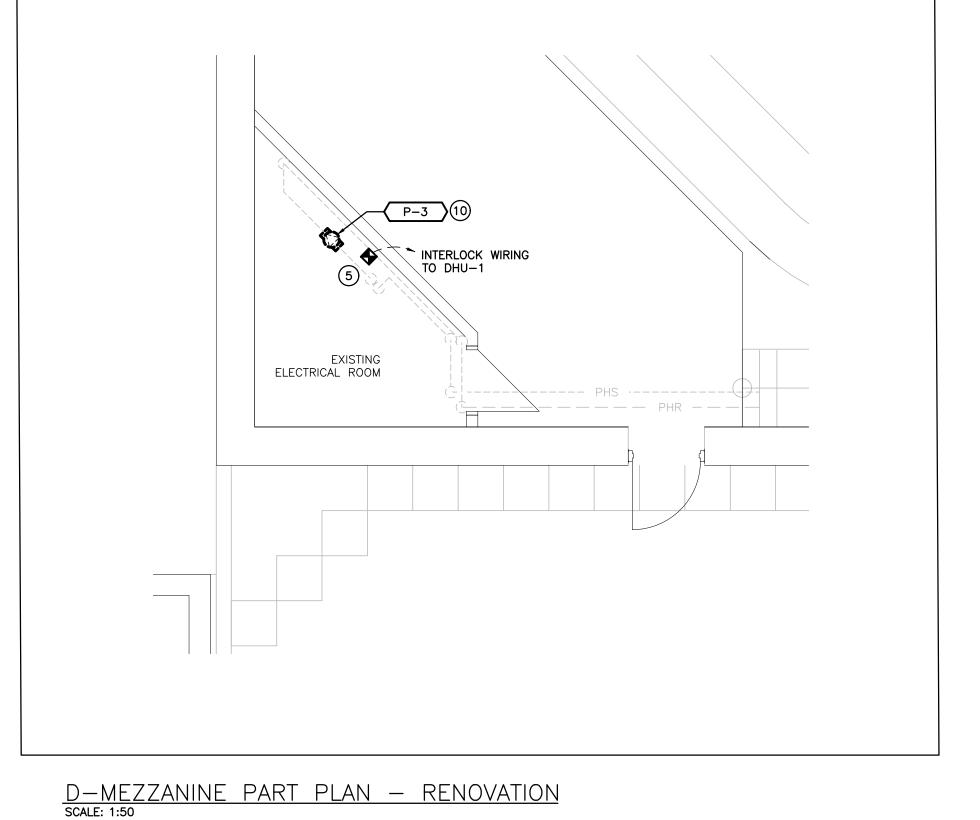
DRAWN BY: AAA CHECKED BY:MEK

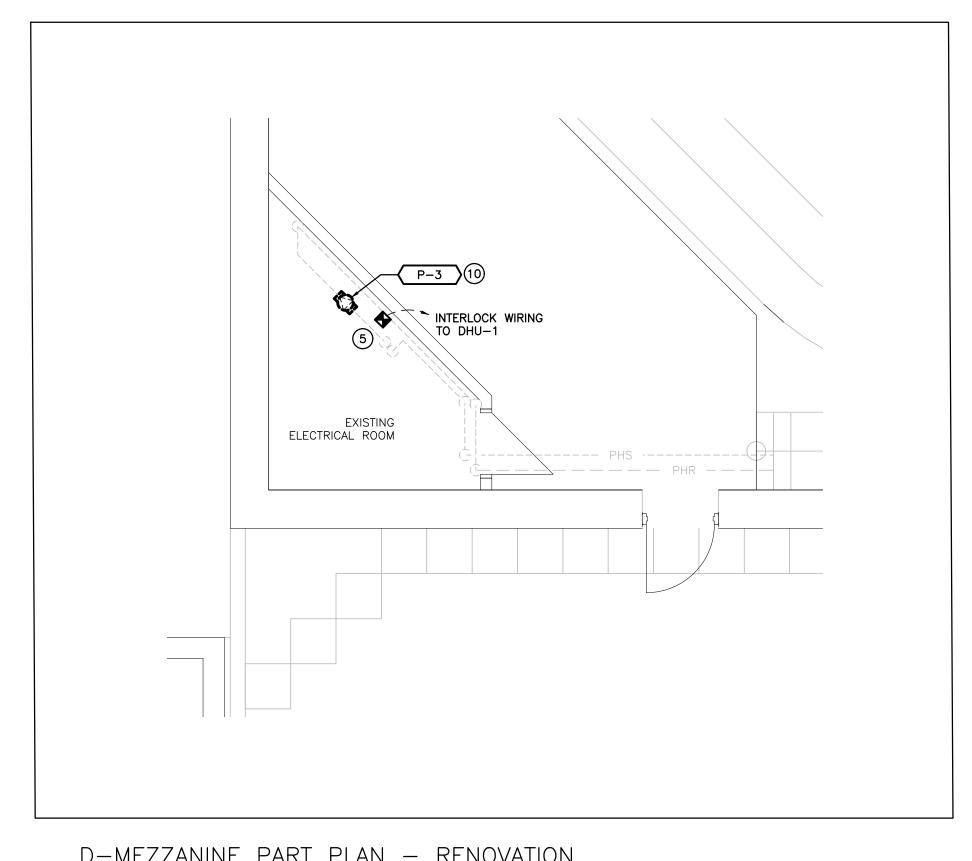
DATE: FEB 2024 SCALE: AS NOTED

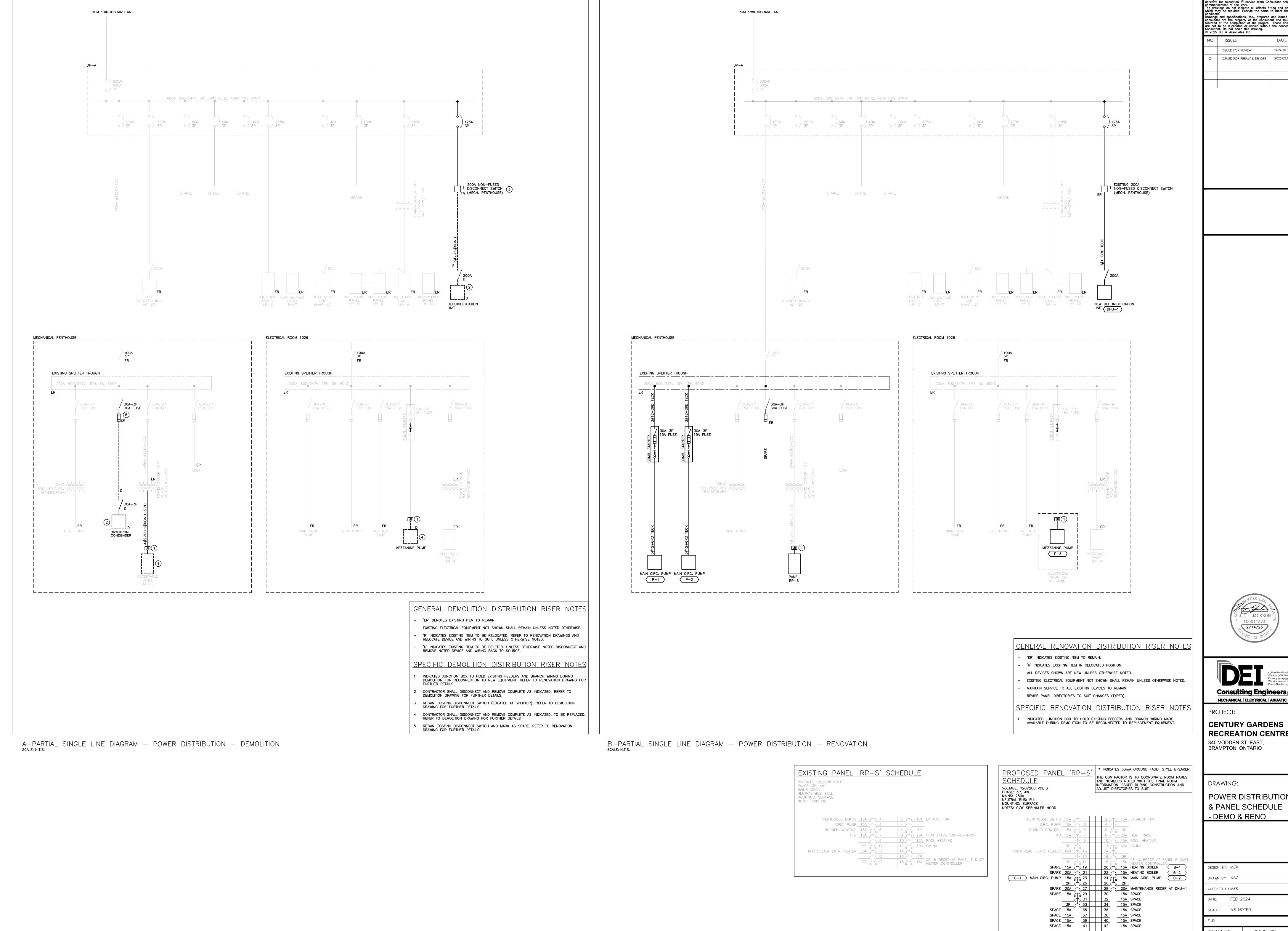
23295











2024.10.30 ISSUED FOR PERMIT & TENDER 2025.02.14



**CENTURY GARDENS RECREATION CENTRE** 

POWER DISTRIBUTION & PANEL SCHEDULE

THE INDICATED PANEL ASSEMBLY MUST HAVE AN INTERRUPTING CAPACITY OF 22000A (MIN.).

PROVIDE BY EITHER FULLY RATED BREAKERS OR INTEGRATED EQUIPMENT RATING WITH THE UPSTREAM

#### **ELECTRICAL SPECIFICATION** GENERAL NOTES WIRING DEVICES PROVIDE LABOUR MATERIAL AND EQUIPMENT REQUIRED TO PROVIDE A COMPLETE INSTALLATION WITH QUALITY WORKMANSHIP .1 GENERAL PURPOSE AC SWITCHES MUST CONFORM TO CSA C22.2 NO. 111 (LATEST EDITION). ACCEPTABLE TO THE OWNER, ARCHITECT AND CONSULTANT. .2 ACCEPTABLE MATERIALS: OBTAIN ALL PERMITS AND PAY ALL TAXES, FEES AND OTHER COSTS INCURRED WITH THIS WORK. FILE ALL PLANS. OBTAIN .1 MOTOR RATED: HUBBELL CAT. #HBL1221PL OR EQUAL (HBL2121 DECORA OR EQUAL) C/W PILOT LIGHT. NECESSARY APPROVALS, CERTIFICATES AND INSPECTIONS. SUBMIT ALL FINAL CERTIFICATES TO THE CONSULTANT. COMPLY WITH RULES AND RECOMMENDATIONS OF THE BOARD OF UNDERWRITERS, ELECTRICAL SAFETY AUTHORITY, THE CANADIAN .3 INSTALL SWITCHES IN GANG TYPE OUTLET BOX WHEN MORE THAN ONE SWITCH IS REQUIRED IN ONE LOCATION. STANDARDS ASSOCIATION AND ALL REQUIREMENTS OF THE LOCAL UTILITY. RECEPTACLES, PLUGS, AND OTHER SIMILAR WIRING DEVICES MUST CONFORM TO CSA C22.2 NO. 42 (LATEST EDITION). .5 WEATHERPROOF "HEAVY DUTY IN USE" COVERPLATE CAT. #WP1010HMXD OR EQUAL COMPLETE WITH GASKETS FOR DUPLEX VISIT THE SITE BEFORE SUBMITTING TENDERS TO EVALUATE ANY SITE CONDITIONS THAT MIGHT ARISE. INCLUDE ALL SITE CONDITIONS IN TENDER, EXTRAS WILL NOT BE ACCEPTED UNLESS BELIEVED TO BE REASONABLE BY THE OWNER AND ACCEPTABLE MATERIALS: .5 CUTTING AND PATCHING SHALL BE BY THE CONTRACTOR REQUIRING TO INSTALL THE SERVICE. .1 GROUND FAULT PROTECTED T-SLOT RECEPTACLES: HUBBELL CAT. #GF20X COMPLETE WITH DECORA STYLE. THE DRAWINGS ARE DIAGRAMMATIC, THE SERVICES SHALL BE INSTALLED TO CONSERVE HEADROOM AND INTERFERE AS LITTLE AS POSSIBLE WITH THE FREE USE OF THE SPACES THROUGH WHICH THEY PASS. PANEL BOARDS SUBMIT COPIES OF SHOP DRAWINGS AS PDF FILES VIA EMAIL FOR ALL MAJOR EQUIPMENT. THESE WILL BE REVIEWED BY THE .1 PANEL BOARDS MUST CONFORM TO CSA C22.2 NO. 29 (LATEST EDITION). CONSULTANT. RESUBMIT AS OFTEN AS MAY BE FOUND NECESSARY. .2 IN ADDITION TO CSA REQUIREMENTS MANUFACTURER'S NAMEPLATE MUST SHOW FAULT CURRENT THAT PANEL INCLUDING BREAKERS PROVIDE ALL NECESSARY PROTECTION FOR FINISHED OR UNFINISHED WORK. ALL OPENINGS IN CONDUITS, DUCTS AND EQUIPMENT HAS BEEN BUILT TO WITHSTAND. SERIES RATING IS ACCEPTABLE-SUBMIT INFORMATION WITH SHOP DRAWINGS. SHALL BE CAPPED TO ENSURE SERVICES ARE KEPT CLEAN WHEN NOT IN USE. .3 BUS AND BREAKERS/SWITCHES MUST BE RATED FOR 10KA (SYMMETRICAL) INTERRUPTING CAPACITY OR AS INDICATED. MAINTAIN INSURANCE TO FULLY PROTECT THE CONTRACTOR, OWNER AND CONSULTANT FROM ANY AND ALL CLAIMS SUCH AS UNDER THE WORKMEN'S COMPENSATION ACT, ETC. POST PROJECT NOTIFICATION AT THE SITE IN ACCORDANCE WITH THE MINISTRY SEQUENCE PHASE BUSSING WITH ODD NUMBERED BREAKERS ON LEFT AND EVEN ON RIGHT, WITH EACH BREAKER IDENTIFIED BY OF LABOUR REQUIREMENTS. PERMANENT NUMBER IDENTIFICATION AS TO CIRCUIT NUMBER AND PHASE. .10 PROVIDE STRUCTURAL SUPPORTS, PLATFORMS, SUPPORTING RODS, HANGERS, INSERTS AND BRACKETS FOR EQUIPMENT AND .5 PANEL BOARD MAINS, NUMBER OF CIRCUITS, AND NUMBER AND SIZE OF BRANCH CIRCUIT AS INDICATED. SERVICES, DO NOT SUPPORT SERVICES FROM STEEL DECK. .6 TWO KEYS FOR EACH PANEL BOARD AND KEY PANEL BOARDS ALIKE. .11 INSTRUCT THE OWNER'S STAFF IN THE CARE, MAINTENANCE AND OPERATION OF THE SYSTEMS. .7 ALUMINUM BUS WITH NEUTRAL OF SAME AMPERE RATING AS MAINS. .12 WARRANTY ALL LABOUR, MATERIAL AND EQUIPMENT FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF SYSTEM. .8 MAINS MUST BE SUITABLE FOR BOLT-ON BREAKERS. PROVIDE MAIN (IF APPLICABLE) AND BRANCH BREAKERS AS BOLT-ON .13 COORDINATE WITH OTHER CONTRACTORS INSTALLING EQUIPMENT OR MATERIAL AND ARRANGE EQUIPMENT IN PROPER RELATION WITH APPARATUS OF ALL OTHER TRADES. .9 TRIM AND DOOR FINISH MUST BE BAKED GRAY ENAMEL. .14 PROVIDE LAMICOID TAGS FOR IDENTIFICATION OF NEW EQUIPMENT ADDED. .10 BREAKERS WITH THERMAL AND MAGNETIC TRIPPING IN PANEL BOARD EXCEPT AS INDICATED OTHERWISE. .15 MOUNTING HEIGHTS SHALL BE AS FOLLOWS FROM FINISHED FLOOR TO CENTERLINE OF DEVICE/EQUIPMENT (UNLESS OTHERWISE .11 PROVIDE NAMEPLATE FOR EACH PANEL BOARD WITH ENGRAVED DESCRIPTION AS INDICATED. SWITCHES: 1100mm (44") WALL RECEPTACLES: .12 FOR EACH NEW AND EXISTING PANEL PROVIDE COMPLETE CIRCUIT DIRECTORY WITH TYPEWRITTEN LEGEND SHOWING LOCATION OF GENERAL: 400mm (16") EACH CIRCUIT. - IN MECHANICAL/ELECTRICAL ROOMS: 1100mm (44") (GANG WITH SWITCH). .13 LOCATE PANEL BOARDS AS INDICATED AND MOUNT SECURELY, PLUMB, TRUE AND SQUARE, TO ADJOINING SURFACES. .16 ALL AREAS NOT AFFECTED BY RENOVATION OR DEMOLITION SHALL REMAIN AS PRESENTLY INSTALLED UNLESS OTHERWISE NOTED. .14 INSTALL SURFACE MOUNTED PANEL BOARDS ON PLYWOOD BACKBOARDS. WHERE PRACTICAL, GROUP PANEL BOARDS ON COMMON .17 ALL EXISTING ELECTRICAL DEVICES, OUTLET BOXES, ETC., NOT SHOWN ON DRAWINGS OR MENTIONED IN THE FOLLOWING NOTES BACKBOARD. AND INSTALLED IN WALLS SLATED FOR DEMOLITION, SHALL BE DISCONNECTED AND REMOVED COMPLETELY IN ALL RESPECTS. .15 CONNECT LOADS TO CIRCUITS. .18 EXCAVATION AND BACKFILLING SHALL BE BY THE TRADE INSTALLING THE SERVICE. .16 CONNECT NEUTRAL CONDUCTORS TO COMMON NEUTRAL BUS. .19 SUBMIT ONE COPY OF OPERATING AND MAINTENANCE INSTRUCTIONS IN A THREE RING BINDER LABELED FOR THE PROJECT COMPLETE WITH ITEMIZED SECTIONS CONTAINING PROJECT DATA, SHOP DRAWINGS, ETC. UPON ACCEPTANCE OF THE OPERATION .17 BRANCH CIRCUIT PANEL BOARDS MUST BE THE FOLLOWING: AND MAINTENANCE MANUAL BY THE CONSULTANT PROVIDE TWO ADDITIONAL COPIES BOUND IN SEPARATE THREE RING BINDERS. A PDF FILE OF THE ENTIRE MANUAL IS TO BE PROVIDED ON A USB STICK. ONLY ONE USB STICK IS TO BE PROVIDED CONTAINING SIEMENS CAT. #SENTRON P1 SERIES BOTH THE APPROVED MANUALS AND RECORD DRAWINGS. .20 ALL REDUNDANT BREAKERS ARE TO REMAIN AND BE RE-LABELED AS "SPARE". .20 CONTRACTOR SHALL PROVIDE 2 SETS OF REPRODUCIBLE ELECTRICAL DRAWINGS. MARK THEREON ALL CHANGES AS WORK PROGRESSES AND AS CHANGES OCCUR. THIS SHALL INCLUDE FIELD AND CONTRACT CHANGES TO ELECTRICAL SYSTEMS. IDENTIFY .21 EXISTING PANELS MUST BE REVIEWED FOR LOOSE AND/OR FAULTY BREAKERS AND WIRING. ALL REQUIRED MODIFICATIONS MUST EACH DRAWING IN LOWER RIGHT HAND CORNER IN LETTERS AT LEAST 3mm (1/8") HIGH AS FOLLOWS: - "RECORD DRAWINGS: BE PERFORMED TO CORRECT ANY UNCOVERED PROBLEMS. THIS DRAWING HAS BEEN REVISED TO SHOW ELECTRICAL SYSTEMS AS INSTALLED. (SIGNATURE OF CONTRACTOR)(DATE)". SUBMIT HARD COPY TO CONSULTANT FOR APPROVAL. WHEN RETURNED, MAKE CORRECTIONS (IF ANY) AS DIRECTED. ONCE APPROVED, SUBMIT COMPLETED REPRODUCIBLE PAPER RECORD DRAWINGS AS WELL AS A SCANNED PDF COPY FILE ON USB STICK WITH OPERATING AND MAINTENANCE MANUALS. MOTOR STARTERS AND DEVICES CONTRACTOR SHALL PROVIDE RED LINE RECORD DRAWINGS OF EACH AND EVERY ELECTRICAL DRAWING FOR DEI CONSULTING .1 MAGNETIC AND COMBINATION MAGNETIC STARTERS OF SIZE, TYPE, RATING AND ENCLOSURE TYPE AS INDICATED WITH ENGINEERS TO CAD THE RECORD DRAWINGS. THE CAD DRAWING FILES WILL BE PROVIDED TO THE OWNER AS PART OF THE COMPONENTS AS FOLLOWS: 1 CONTACTOR SOLENOID OPERATED, RAPID ACTION TYPE. MAINTENANCE MANUALS. 2 MOTOR OVERLOAD PROTECTION DEVICE IN EACH PHASE, MANUALLY RESET FROM OUTSIDE ENCLOSURE. 3 WIRING AND SCHEMATIC DIAGRAM INSIDE STARTER ENCLOSURE IN VISIBLE LOCATION. .22 THE CONTRACTOR IS TO DETERMINE GENERAL INSPECTION FEES WITH THE ELECTRICAL SAFETY AUTHORITY AND INCLUDE AS PART .4 IDENTIFY EACH WIRE AND TERMINAL FOR EXTERNAL CONNECTIONS, WITHIN STARTER, WITH PERMANENT NUMBER MARKING OF TENDER. IDENTICAL TO DIAGRAM. .23 A SUBMISSION HAS BEEN MADE (IF REQUIRED BY THIS SCOPE OF PROJECT) BY THE CONSULTANT TO THE ELECTRICAL SAFETY AUTHORITY FOR REVIEW OF THIS PROJECT. THE PAYMENT OF THE REQUIRED REVIEW COSTS WILL BE COORDINATED BY THE .1 PUSHBUTTONS SELECTOR SWITCHES STANDARD DUTY LABELED AS INDICATED CONSULTANT. A COPY OF THE ELECTRICAL SAFETY AUTHORITY REVIEW REPORT WILL BE FORWARDED TO THE SUCCESSFUL 2 INDICATING LIGHTS: STANDARD DUTY TYPE AND COLOUR AS INDICATED. .3 1-N/O AND 1-N/C SPARE AUXILIARY CONTACTS UNLESS OTHERWISE INDICATED. .4 SINGLE PHASE, DRY TYPE, CONTROL TRANSFORMER WITH PRIMARY VOLTAGE AS INDICATED AND SECONDARY VOLTAGE TO SUIT REMOTE CONTROL DEVICE, COMPLETE WITH SECONDARY FUSE, INSTALLED IN WITH STARTER AS INDICATED. CONTRACTOR FOR INFORMATION AND ACTION. .5 SIZE CONTROL TRANSFORMER FOR CONTROL CIRCUIT LOAD PLUS 20% SPARE CAPACITY. BASIC MATERIALS .3 ALL STARTERS AND DEVICES MUST BE CAPABLE OF INTERRUPTING A FAULT CURRENT OF 35,000KA RMS SYMMETRICAL. JUNCTION, OUTLET AND PULL BOXES MUST BE APPROVED TO SUIT INSTALLATION METHODS AND ENVIRONMENT. .4 PROVIDE NEMA STYLE STARTERS ONLY. IEC STARTERS OR HALF SIZE STARTERS WILL NOT BE ACCEPTED. .2 CONDUIT MUST BE CONCEALED UNLESS INSTALLED IN SERVICE OR STORAGE ROOMS. .5 EACH STARTER SHALL BE EQUIPPED WITH A FUSIBLE SWITCH, A FUSED CONTROL POWER TRANSFORMER, TWO (2) INDICATING LIGHTS, CONTROL DEVICE AS PER THE EQUIPMENT WIRING SCHEDULE, TWO (2)—N/O AND TWO (2)—N/C CONTACTS (INCLUDING SPARES), UNLESS OTHERWISE SCHEDULED ON THE DRAWINGS. DEVICE PANEL TO HAVE SPACE TO ACCOMMODATE .3 CONDUIT MUST BE INSTALLED PARALLEL AND PERPENDICULAR TO BUILDING LINES IN A NEAT AND WORKMANLIKE MANNER. .4 ALL FEEDER AND BRANCH CIRCUIT WIRING MUST BE COPPER, T90 RATING/STYLE RUN IN EMT CONDUIT WITH INTERNAL INSULATED SIX OIL-TITE PILOT-CONTROL DEVICES OR INDICATING AMMETERS, VOLTMETERS, OR ELAPSED TIME METERS. GREEN GROUND WIRE UNLESS NOTED OTHERWISE. MINIMUM WIRE SIZE SHALL BE #12 AND MINIMUM CONDUIT SIZE SHALL BE .6 INDIVIDUAL FEEDER AND STARTER DISCONNECT SWITCHES SHALL BE QUICK—MAKE, QUICK—BREAK GANG OPERATED TYPE UTILIZING CLASS J FUSE CLIPS. THE FUSED SWITCH SHALL HAVE A 200, 000 AIC AT RATED VOLTAGE. AC90 CABLE MAY BE USED FOR BRANCH CIRCUIT WIRING IN STEEL STUD WALLS AND "DROPS" IN T-BAR CEILING AREAS TO LIGHT FIXTURES AND FIRE ALARM DEVICES. LENGTH OF DROP MUST BE LIMITED TO 8'-0" (2400mm). <u>FUSES</u> .6 WHERE DEVICES ARE TO BE INSTALLED ON EXISTING WALLS IN FINISHED AREA, WHICH CANNOT BE FISHED, INSTALL FEEDS IN A SURFACE METAL RACEWAY EQUAL TO WIREMOLD V700 SERIES. REFERENCES COLOUR CODE CONDUITS, BOXES AND METALLIC SHEATHED CABLES. CANADIAN STANDARDS ASSOCIATION (CSA) .1 CSA C22.2 NO.248.12/94, LOW VOLTAGE FUSES PART 12: CLASS R (BI-NATIONAL STANDARD WITH, UL 248-12 (1ST EDITION). .8 CODE WITH PLASTIC TAPE OR PAINT AT POINTS WHERE CONDUIT OR CABLE ENTERS WALL, CEILING, OR FLOOR, AND AT 15m (45') INTERVALS. .2 CSA C22.2 NO. 106-M92 (LATEST EDITION). .9 COLOUR BANDS MUST BE 25mm (1") WIDE AND CODED AS FOLLOWS FOR NOTED SYSTEMS. MAINTENANCE MATERIAL .1 THREE SPARE FUSES OF EACH TYPE AND SIZE INSTALLED. DELIVERY AND STORAGE 209 TO 600V .1 SHIP FUSES IN ORIGINAL CONTAINERS. .10 THIS CONTRACTOR MUST PAINT ALL SYSTEM JUNCTION BOXES AND COVERS IN CONFORMANCE WITH THE ABOVE SCHEDULE. .2 STORE FUSES IN ORIGINAL CONTAINERS IN MOISTURE FREE LOCATION. DRAW BREAKDOWN PRODUCTS THIS CONTRACTOR MUST SUBMIT A BREAKDOWN OF THE TENDER PRICE INTO CLASSIFICATIONS TO THE SATISFACTION OF THE CONSULTANT, WITH THE AGGREGATE OF THE BREAKDOWN TOTALING THE TOTAL CONTRACT AMOUNT. EACH ITEM MUST BE BROKEN FUSES GENERAL OUT INTO MATERIAL AND LABOUR COSTS. PROGRESS CLAIMS, WHEN SUBMITTED ARE TO BE ITEMIZED AGAINST EACH ITEM OF .1 FUSES: PRODUCT OF ONE MANUFACTURER FOR ENTIRE PROJECT. THE DRAW BREAKDOWN. THIS SHALL BE DONE IN TABLE FORM SHOWING CONTRACT AMOUNT, AMOUNT THIS DRAW, TOTAL TO DATE, % COMPLETE AND BALANCE. .2 FUSES SPECIFIED BELOW MUST CONFORM TO CSA C22.2 NO. 106 (LATEST EDITION). FUSES CONFORMING TO STANDARD C22.2 NO. BREAKDOWN SHALL BE AS FOLLOWS: PERMITS AND FEES .3 FUSES MUST PROVIDE A FULLY CO-ORDINATED SYSTEM FOR BOTH OVERLOAD AND FAULT CONDITIONS. MOBILIZATION (MAXIMUM 1%) FUSE TYPES PANELBOARDS AND MISCELLANEOUS DISTRIBUTION EQUIPMENT BRANCH CONDUITS CLASS L FUSES (FORMERLY HRC-L ) FOR RATINGS 601-6000 A. BRANCH WIRING/CABLE .1 TIME DELAY, CAPABLE OF CARRYING 500% OF ITS RATED CURRENT FOR 10 S MINIMUM. STARTERS, CONTACTORS AND CONTROL DEVICES WIRING FOR MECHANICAL EQUIPMENT .2 FAST ACTING AS NOTED. COMMISSIONING (MINIMUM OF 3%) .10 CLOSEOUT REQUIREMENTS (MINIMUM OF 3%) CLASS J FUSES (FORMERLY HRCI- J). .3 THE BREAKDOWN MUST BE APPROVED BY THE CONSULTANT PRIOR TO SUBMISSION OF THE FIRST DRAW. .1 TIME DELAY, CAPABLE OF CARRYING 500% OF ITS RATED CURRENT FOR 10 S MINIMUM. .2 FAST ACTING AS NOTED. .4 BREAKDOWNS NOT COMPLYING TO THE ABOVE WILL NOT BE APPROVED. .3 CLASS R FUSES (FORMERLY HRCI- R). FOR UL CLASS RK1 FUSES, PEAK LET-THROUGH CURRENT AND I2T VALUES NOT TO EXCEED LIMITS .5 BREAKDOWN MUST INDICATE TOTAL CONTRACT AMOUNT. .6 MOBILIZATION AMOUNT MAY ONLY BE DRAWN WHEN ALL REQUIRED SHOP DRAWINGS HAVE BEEN REVIEWED BY THE CONSULTANT. ACCEPTABLE PRODUCTS 1 MOTOR PROTECTION: SHOP DRAWINGS AND PRODUCT DATA .1 1-600 A: MERSEN TYPE AJT .2 601-2000 A: MERSEN TYPE A4BT FURNISH COMPLETE CATALOG DATA FOR MANUFACTURED ITEMS OF EQUIPMENT TO BE USED IN THE WORK TO CONSULTANT FOR REVIEW WITHIN 30 DAYS AFTER AWARD OF CONTRACT. .2 OTHER ACCEPTABLE MANUFACTURERS: .2 IF MATERIAL OR EQUIPMENT IS NOT AS SPECIFIED OR SUBMITTAL IS NOT COMPLETE, IT WILL BE REJECTED BY CONSULTANT. .1 GEC .2 LITTLE FUSE ADDITIONAL SHOP DRAWINGS REQUIRED BY THE CONTRACTOR FOR MAINTENANCE MANUALS, SITE COPIES ETC., SHALL BE PHOTOCOPIES OF THE "REVIEWED" SHOP DRAWINGS. ALL COSTS TO PROVIDE ADDITIONAL COPIES OF SHOP DRAWINGS SHALL BE INSTALLATION BORNE BY THE CONTRACTOR. .1 INSTALL FUSES IN MOUNTING DEVICES IMMEDIATELY BEFORE ENERGIZING CIRCUIT. PARTIAL SUBMITTALS WILL NOT BE ACCEPTED. .2 ENSURE CORRECT FUSES FITTED TO PHYSICALLY MATCHED MOUNTING DEVICES. CATALOG DATA OR SHOP DRAWINGS FOR EQUIPMENT, WHICH ARE NOTED AS BEING REVIEWED BY CONSULTANT OR HIS ENGINEER .3 INSTALL CLASS R REJECTION CLIPS FOR HRCI-R FUSES. SHALL NOT SUPERSEDE CONTRACT DOCUMENTS. .4 ENSURE CORRECT FUSES FITTED TO ASSIGNED ELECTRICAL CIRCUIT. REVIEW COMMENTS OF CONSULTANT SHALL NOT RELIEVE THIS DIVISION FROM RESPONSIBILITY FOR DEVIATIONS FROM CONTRACT DOCUMENTS UNLESS CONSULTANT'S ATTENTION HAS BEEN CALLED TO SUCH DEVIATIONS IN WRITING AT TIME OF SUBMISSION, NOR SHALL THEY RELIEVE THIS DIVISION FROM RESPONSIBILITY FOR ERRORS IN ITEMS SUBMITTED. <u>EQUIPMENT</u> CHECK WORK DESCRIBED BY CATALOG DATA WITH CONTRACT DOCUMENTS FOR DEVIATIONS AND ERRORS. .8 SHOP DRAWINGS AND PRODUCT DATA SHALL SHOW: .2 CONTACTORS MOUNTING ARRANGEMENTS. .1 CONTACTORS SHALL HAVE THE FOLLOWING FEATURES: OPERATING AND MAINTENANCE CLEARANCES. E.G. ACCESS DOOR SWING SPACES. SHOP DRAWINGS AND PRODUCT DATA SHALL BE ACCOMPANIED BY: CONTACTORS SHALL BE ELECTRICALLY HELD AND CONTROLLED BY PILOT DEVICES AS INDICATED AND RATED FOR TYPE OF LOAD CONTROLLED. DETAILED DRAWINGS OF BASES, SUPPORTS, AND ANCHOR BOLTS. MOUNTED IN CSA ENCLOSURE 1. MANUFACTURER TEST DATA WHERE REQUESTED. MANUFACTURER TO CERTIFY AS TO CURRENT MODEL PRODUCTION. INCLUDE THE FOLLOWING OPTIONS: .4 CERTIFICATION OF COMPLIANCE TO APPLICABLE CODES. RED INDICATING LAMP. HAND-OFF-AUTO SELECTOR SWITCH. .4 CONTROL TRANSFORMER MOUNTED IN CONTACTOR ENCLOSURE. .10 STATE SIZES, CAPACITIES, BRAND NAMES, MOTOR HP, ACCESSORIES, MATERIALS, GAUGES, DIMENSIONS, AND OTHER PERTINENT INFORMATION. LIST ON CATALOG COVERS PAGE NUMBERS OF SUBMITTED ITEMS. UNDERLINE APPLICABLE DATA. ACCEPTABLE MANUFACTURERS ARE AS FOLLOWS: .11 ONCE THESE SHOP DRAWINGS ARE RETURNED "REVIEWED" OR "REVIEWED AS NOTED" FABRICATION, PRODUCTION, AND INSTALLATION MAY COMMENCE. NOTE: IF A SHOP DRAWING IS RETURNED "REVIEWED AS NOTED" THIS CONTRACTOR MUST PROVIDE WRITTEN INDICATION THAT THE COMMENTS HAVE BEEN COMPLIED WITH. ALLEN BRADLEY CUTLER HAMMER SIEMENS .12 A PARTIAL LIST OF SHOP DRAWINGS INCLUDES: GROUP SCHNEIDER KLOCKNER MOELLER PANELBOARDS AND MISC. DISTRIBUTION EQUIPMENT STARTERS, CONTACTORS, AND CONTROL DEVICES FIRESTOPPING MATERIALS .4 WIRING DEVICES <u>FIRESTOPPING</u> I FIRESTOPPING MATERIAL AND INSTALLATION WITHIN ANNULAR SPACE BETWEEN CONDUITS, DUCTS, AND ADJACENT FIRE SEPARATION. .2 PROVIDE MATERIALS AND SYSTEMS CAPABLE OF MAINTAINING EFFECTIVE BARRIER AGAINST FLAME, SMOKE, AND GASES. .3 COMPLY WITH THE REQUIREMENTS OF CAN4-S115-M35, AND DO NOT EXCEED OPENING SIZED FOR WHICH THEY HAVE BEEN TESTED. 4 SYSTEMS TO HAVE AN F OR FT RATING (AS APPLICABLE) NOT LESS THAN THE FIRE PROTECTION RATING REQUIRED FOR CLOSURES IN A FIRE SEPARATION. PROVIDE "FIREWRÀP" BLANKET AROUND SERVICES PENETRATING FIREWALLS. 5 EXTENT OF BLANKET MUST CORRESPOND TO ULC RECOMMENDATIONS. IN GENERAL WRAP INDIVIDUAL CONDUITS WITH APPROVED FIREWRAP MATERIALS ON EACH SIDE OF FIREWALL. REFER TO ARCHITECTURAL DRAWINGS FOR FT RATINGS. PROVIDE 1 AND/OR 2 LAYERS OF FIREWRAP WITH TRANSVERSE AND LONGITUDINAL SEAMS OVERLAPPED AND/OR BUTTED (SECOND LAYER OFFSET FROM FIRST LAYER). CUT EDGES ARE TO BE SEALED WITH ALUMINUM FOIL TAPE. PROVIDE 50 MM STAINLESS STEEL BANDING AT 200 MM INTERVALS. INSTALL FIREWRAP TO MANUFACTURERS' RECOMMENDATIONS FOR PROPER FT RATING. ACCEPTABLE MANUFACTURERS ARE 3M FIREMASTER DUCTWRAP OR APPROVED EQUAL. .6 THE FIRESTOPPING MATERIALS ARE NOT TO SHRINK, SLUMP OR SAG AND BE FREE OF ASBESTOS, HALOGENS AND VOLATILE 7 FIRESTOPPING MATERIALS ARE TO CONSIST OF A COMPONENT SEALANT APPLIED WITH A CONVENTIONAL CAULKING GUN AND 3 FIRESTOP MATERIALS ARE TO BE CAPABLE OF RECEIVING FINISH MATERIALS IN THOSE AREAS, WHICH ARE EXPOSED AND SCHEDULED TO RECEIVE FINISHES. .9 FIRESTOPPING SHALL BE INSPECTED AND APPROVED BY LOCAL AUTHORITY PRIOR TO CONCEALMENT OR ENCLOSURE. .10 INSTALL MATERIAL AND COMPONENTS IN ACCORDANCE WITH ULC CERTIFICATION, MANUFACTURERS INSTRUCTIONS AND LOCAL

.11 SUBMIT PRODUCT LITERATURE AND INSTALLATION MATERIAL ON FIRESTOPPING IN SHOP DRAWING AND PRODUCT DATA MANUAL.

NOTE: FIRE STOP MATERIAL MUST CONFORM TO REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION. CONTRACTOR TO CONFIRM PRIOR TO APPLICATION AND ENSURE MATERIAL USED IS COMPATIBLE WITH THAT USED BY OTHER TRADES ON SITE.

13 ENSURE FIRESTOP MANUFACTURER REPRESENTATIVE PERFORMS ON SITE INSPECTIONS AND CERTIFIES INSTALLATION. SUBMIT

12 ACCEPTABLE MANUFACTURERS:

PROSET SYSTEMS

STI FIRESTOP

RECTORSEAL CORPORATION (METACAULK)

INSPECTION REPORTS/CERTIFICATION AT TIME OF SUBSTANTIAL COMPLETION.

closely as actual building construction will permit. Obtain approval for relocation of service from Consultant before commencement of the work.

The drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required conditions Drawings and specifications, etc., prepared and issued by the consultant are the property of the consultant and must be returned at the completion of the project. These documents are not to be duplicated or copied without the consent of the Consultant. Do not scale this drawing.

© 2025 DEI & Associates Inc. DATE NO. ISSUES 2024.10.30 ISSUED FOR REVIEW ISSUED FOR PERMIT & TENDER 2025.02.14 J.J. JACKSON 100011324 2/14/25 PROJECT: 340 VODDEN ST. EAST. BRAMPTON, ONTARIO DRAWING: **ELECTRICAL SPECIFICATION** 

ne contractor shall verify all dimensions and report all error nd discrepancies to the Consultant before commencement of

55 Northland Road, **Consulting Engineers** MECHANICAL | ELECTRICAL | AQUATIC

**CENTURY GARDENS RECREATION CENTRE** 

DESIGN BY: MEK

DRAWN BY: AAA CHECKED BY:MEK

DATE: FEB 2024

SCALE: AS NOTED

# SPLIT AIR CONDITIONING UNIT SCHEDULE

	T	Cooling	ı	ı	I			1.4					
   Item	Туре	Capacity		Capacity		Cooling Capacity	SP	Size	Elect	rical	1	Manufacturer (or Approved	Remarks
Kom	7,7	tons	cfm	MBH	in wc	hp	Voltage	MCA	A Fuse	e Alternate)	Nomanie		
HP-EX	OUTDOOR HEAT PUMP	8	7989	92.0	_		575/3/60	16.8	20	DAIKIN RXTQ96XAYCA	PROVIDE POWER FOR DX-EX FROM HP-EX		
DX-EX	INDOOR HEAT PUMP	8	7989	96.0	_	_	208/1/60	_	_	DAIKIN EKEXV250-US	CONNECT TO HP-EX		

GRIL	LE SCHEDULE			CAPACITY INDICATED ON SCHEDULE REFER TO SPECIFICATION FOR CONSTRUCTION STANDARDS, ACCESSORIES AND ADDITIONAL INFORMATION.		
Item	Туре	Equalizing Grid	Volume Damper	Acceptable Manufacturer	Description	
S1	SUPPLY GRILLE	NO	NONE		DOUBLE DEFLECTION, 3/4" SPACING, ALUMINUM AIRFOIL BLADES PARALLEL TO LONG DIMENSION, C/W 1 1/4" FLAT BORDER & SCREWED FASTENING FOR SURFACE MOUNTING.	
R1	HEAVY DUTY SIDEWALL GRILLE	NO	NONE		HEAVY DUTY, FIXED ALUMINUM BLADES AT 30°, 1/2" SPACING, PARALLEL TO SHORT DIMENSION, C/W 1 1/4" FLAT BORDER & SCREWED FASTENING FOR SURFACE MOUNTING.	

GENERAL DIFFUSER/GRILLE NOTES . ACCEPTABLE MANUFACTURERS: EH PRICE, NAILOR, TITUS, KRUEGER, CARNES, METALAIRE, TUTTLE & BAILEY . GRILLE COLOURS ARE SELECTED BY ARCHITECT FROM STANDARD COLOUR CHART, UNLESS OTHERWISE NOTED. 3. PAINT INTERIOR OF DUCTWORK BEHIND GRILLE MATT BLACK (WHERE VISIBLE THRU GRILLE).

#### DEHUMIDIFICATION UNIT SCHEDULE

14	Supply Air Data Exhaust Air Data Purge Air Data Outdoor Outdoor Air Purge Air Data					Manufacturer	Domonile	
Item	туре	Capacity ESP Size Capacity ESP Size Capacity ESP Size cfm in wc hp cfm in wc hp	Air Purge   Air min   Coil   Nominal Total Cap. Sens Country   Type   Tons   MBH   MBH	Cap. MRC (EDB/WB) (LDB/WB) Medium Output  BH  b/hr (*F) (*F) MBI	t Cap. Ent Air LVG Air Output Cap.   Flow BH °F db °F db MBH GPM	dP PSI FLA MCA MOCP Voltage/Phase	<b>A</b> 14 1 1	Remarks
DHU-	DEHUMIDIFICATION AIR HANDLING UNIT	14000 1.5 20HP 4,000 0.5 fhp 11,400 0.5 fhp	11,400 3,650 R410a DX 40 569.2 313.	3.1 237.2 71.0/66.0 85.3/70.4 P.GLYCOL 640	40 82 139 390 70	10 95.3 102 125 575/3/60	DECTRON LD-182-GL-X-P6FT2143W2G5AF0H	

PUM	MP SCHEDU	<u>JLE</u>						CAPACITY INDICATED ON SCHEDULE REF SPECIFICATION FOR CONSTRUCTION STAND ACCESSORIES AND ADDITIONAL INFORM	ARDS,     🗀	OILER SCI	HEDL	JLE			
Item	Туре	Capacity USgpm	Head ft	Size hp	Electrical Voltage	Speed rpm	Manufacturer & Model	Remarks	Iter	туре	Input MBH	Output MBH	Flue Vent in	Fluid Type	Electrical Voltage
P-1	INLINE MAIN GLYCOL HTG PUMP	70	25	1.5	575/3/60	1750	BELL & GOSSETT SERIES e-80SC 2.5x2.5x7B	SUITABLE FOR 40% P. GLYCOL	B-	HEATING WATER BOILER	400	376	4	40% P. GLYCOL	120/1/60 STAINLES
P-2	INLINE MAIN GLYCOL HTG PUMP	70	25	1.5	575/3/60	1750	BELL & GOSSETT SERIES e-80SC 2.5x2.5x7B	SUITABLE FOR 40% P. GLYCOL	B-	HEATING WATER BOILER	400	376	4	40% P. GLYCOL	120/1/60 STAINLES
P-3	INLINE MAIN GLYCOL HTG PUMP	30	30	1.5	575/3/60	1750		CASTING TO BE EPOXY COATED, SUITABLE FOR CHLORINATED POOL WATER							

<u>BC</u>	DILER SCH	HEDU	<u>JLE</u>						CAPACITY INDICATED ON SCHEDULE REFER TO SPECIFICATION CONSTRUCTION STANDARDS, ACCESSORIES AND ADDITIONAL INFORMAT
Item	Туре	Input MBH	Output MBH	Flue Vent in	Fluid Type	_	Description		Remarks
B-1	HEATING WATER BOILER	400	376	4	00.000			KBN 401	CONDENSING MODULATING BURNER CONTROL C/W INTAKE AIR FILTER KIT
B-2	HEATING WATER BOILER	400	376	4	40% P. GLYCOL	120/1/60	STAINLESS STEEL	LOCHINVAR KBN 401	CONDENSING MODULATING BURNER CONTROL C/W INTAKE AIR FILTER KIT

#### PART A GENERAL NOTES:

- PROVIDE LABOUR, MATERIAL AND EQUIPMENT REQUIRED TO PROVIDE A COMPLETE INSTALLATION WITH QUALITY WORKMANSHIP ACCEPTABLE TO OWNER AND CONSULTANT. OBTAIN ALL PERMITS AND PAY ALL TAXES, FEES, AND OTHER COSTS INCURRED WITH THIS WORK. FILE ALL PLANS. OBTAIN ALL NECESSARY APPROVALS, CERTIFICATES. SUBMIT ALL FINAL CERTIFICATES TO THE CONSULTANT. COMPLY WITH RULES AND RECOMMENDATIONS OF THE BOARD OF FIRE UNDERWRITERS, THE CANADIAN GAS ASSOCIATION, THE LOCAL BUILDING CODE, AND ALL REQUIREMENTS OF THE LOCAL UTILITY COMPANY AND BY-LAWS. POST BUILDING PERMIT AT SITE IN ACCORDANCE WITH O.B.C. REQUIREMENTS.
- VISIT THE SITE BEFORE SUBMITTING TENDERS TO EVALUATE ANY SITE CONDITIONS THAT MIGHT ARISE. INCLUDE ALL SITE CONDITIONS IN TENDER, EXTRAS WILL NOT BE ACCEPTED UNLESS BELIEVED TO BE REASONABLE BY THE OWNER AND CONSULTANT. COORDINATE WITH OTHER CONTRACTORS INSTALLING EQUIPMENT OR MATERIAL AND ARRANGE EQUIPMENT IN PROPER RELATION WITH ALL OTHER TRADES. ENSURE SYSTEMS ARE
- CUTTING AND PATCHING SHALL BE BY THE CONTRACTOR REQUIRED TO INSTALL THE
- . THE DRAWINGS ARE DIAGRAMMATIC. THE SERVICES SHALL BE INSTALLED TO CONSERVE HEADROOM AND INTERFERE AS LITTLE AS POSSIBLE WITH THE FREE USE OF THE SPACES THROUGH WHICH THEY PASS.
- 7. ALL EQUIPMENT AND MATERIAL SHALL BE NEW. REPLACE ALL DAMAGED EQUIPMENT. 3. MATERIAL AND EQUIPMENT ARE NAMED IN THE SPECIFICATION TO ESTABLISH AN ACCEPTABLE STANDARD OF MATERIALS AND THE QUALITY OF WORKMANSHIP BY WHICH TO ADHERE. PROVIDE ALL NECESSARY PROTECTION FOR FINISHED OR UNFINISHED WORK. ALL OPENINGS IN PIPES, DUCTS AND EQUIPMENT SHALL BE CAPPED TO ENSURE SERVICES ARE KEPT
- O. MAINTAIN INSURANCE TO FULLY PROTECT THE CONTRACTOR, OWNER AND CONSULTANT FROM ANY AND ALL CLAIMS SUCH AS UNDER THE WORKMEN'S COMPENSATION ACT, ETC. POST PROJECT NOTIFICATION AT THE SITE IN ACCORDANCE WITH THE MINISTRY OF LABOUR . PROVIDE STRUCTURAL SUPPORTS, SUPPORTING RODS, HANGERS, INSERTS AND BRACKETS 2. REMOVE ALL PROTECTIVE COVERINGS. CLEAN AND POLISH ALL EQUIPMENT, FREE ALL OBSTRUCTIONS, CLEAN AND REPLACE ALL FILTERS WITH NEW, AND LEAVE ALL KEYS AND 13. ALL SURPLUS AND WASTE MATERIALS SHALL BE PROMPTLY REMOVED FROM THE PREMISES. 14. ALL AREAS NOT AFFECTED BY RENOVATION OR DEMOLITION SHALL REMAIN AS PRESENTLY
- 15. THE OWNER WILL DECIDE WHICH ITEMS OR EQUIPMENT SLATED FOR REMOVAL THAT THEY WISH TO RETAIN AS THEIR PROPERTY AND THIS CONTRACTOR SHALL REMOVE ALL OTHER 16. WARRANTY ALL MATERIAL AND EQUIPMENT FOR A PERIOD OF ONE (1) YEAR AFTER FINAL PART B DEMOLITION NOTES: . THIS PROJECT IS ONE OF A RETROFIT NATURE IN PART, AND WHICH WILL REQUIRE SOME DEMOLITION. ALLOW FOR ALL REMEDIAL WORK IN AREAS INDICATED ON THE DRAWINGS AND
- . THE SCOPE OF WORK IS ESSENTIALLY THE SELECTED DISCONNECTION AND/OR REMOVAL OF SERVICES AND/OR EQUIPMENT, PIPING, DUCTWORK ETC. AS INDICATED OR REQUIRED TO THIS DIVISION IS TO LIAISE WITH THE OWNERS OR CONSULTANT FOR EQUIPMENT BEING REMOVED THAT MAY BE SUITABLE FOR REUSE TO THAT SPECIFIED OR HANDED OVER TO THE OWNER.
- THIS DIVISION TO TAKE FULL RESPONSIBILITY FOR ANY SPECIAL TOOLS OR EQUIPMENT REQUIRED TO DISASSEMBLE OR REMOVE MATERIAL FROM BUILDING. . THE GENERAL EXECUTION OF THE DEMOLITION IS TO BE CARRIED OUT IN A CLEAN AND ERVICES OR EQUIPMENT OR INSTALLATION OF NEW TO BE KEPT TO A MINIMUM AND THEN
- ALL OPENINGS OR HOLES CREATED BY REMOVAL OF EXISTING MECHANICAL SYSTEMS WHICH ARE NOT BEING REUSED ARE TO BE PATCHED WITH THE SAME MATERIAL SURROUNDING . PROTECT ALL EXISTING FURNISHINGS MATERIALS AND EQUIPMENT. ANY DAMAGE OCCURRING AS A RESULT OF THE WORK OF THIS DIVISION SHALL BE REPAIRED OR REPLACED AT THE
- E WORK INVOLVES BREAKING INTO OR CONNECTING TO EXISTING SERVICES, CARRY OUT WORK AT TIMES DIRECTED BY THE OWNERS IN AN EXPEDIENT MANNER WITH MINIMUM DISRUPTION TO THE FACILITY AND SYSTEMS DOWNTIME. 10. WHERE UNKNOWN SERVICES ARE ENCOUNTERED, IMMEDIATELY ADVISE CONSULTANT AND CONFIRM FINDINGS IN WRITING. . WHERE THE LOCATION OF ANY SERVICES HAS BEEN SHOWN ON THE PLANS, SUC
- INFORMATION IS NOT GUARANTEED. IT IS THIS DIVISION'S RESPONSIBILITY TO VERIFY LOCATIONS, INVERT ELEVATIONS, ETC., IMMEDIATELY AFTER MOVING ON SITE. SHOULD FOR ANY REASON THE INFORMATION OBTAINED NECESSITATES CHANGES IN PROCEDURE OR ESIGN. ADVISE THE CONSULTANT AT ONCE. IF VERIFICATION OF EXISTING CONDITIONS OT DONE AT THE OUTSET AND ANY PROBLEMS ARISE, THE RESPONSIBILITY FOR SAME IS

12. DISCONNECT AND/OR REMOVE EQUIPMENT PIPING, DUCTWORK, ETC. AS INDICATED.

- 13. CAP AND CONCEAL ALL REDUNDANT AND OBSOLETE CONNECTIONS 14. PROVIDE A LIST OF EQUIPMENT TO BE REMOVED TO THE OWNER, FOR HIS ACCEPTANCE OF SAME. REMOVE ALL EQUIPMENT FROM SITE WHICH THE OWNER DOES NOT RETAIN. 5. MAINTAIN EQUIPMENT TO BE RETAINED BY OWNER ON SITE WHERE DIRECTED BY 6. DEMOLITION OF ALL PARTS OF THE WORK MUST BE COMPLETED WITHIN THE CONFINES OF THE WORK AREA AND IN SUCH A WAY AS THE DUST PRODUCED AND RISK TO INJURY OF 7. DEMOLISHED AREAS OF THE EXISTING BUILDING WILL REMAIN IN THEIR CURRENT USE IN SOME CASES, DEMOLITION IN THESE AREAS MUST BE KEPT TO THE MINIMUM REQUIRED TO
- 18. DEMOLITION SHALL TAKE PLACE WITHIN AREAS ISOLATED FROM ALL OTHER AREAS WITH APPROPRIATE HOARDING, SCAFFOLDING, NETTING, FENCING OR OTHER MEANS OF SECURITY BETWEEN BUILDING USERS AND THE WORK. 19. CO-ORDINATE MAKING SAFE ELECTRICAL DEVICES, CAPPING PLUMBING AND REMOVAL OF FIXTURES PRIOR TO COMMENCEMENT OF DEMOLITION. 20. 1AGE SYSTEMS INCLUDING ALL RELATED EQUIPMENT AS REQUIRED TO FACILITATE SYSTEM

21. DISPOSAL OF EXISTING SYSTEM SHALL BE TO THE REQUIREMENTS OF THE LOCAL AND/OR PROVINCIAL REGULATIONS.

PART C PLUMBING NOTES: CONNECT TO EXISTING SERVICES WHERE SHOWN ON DRAWINGS.

GAS VALVES: SHALL BE GSA APPROVED LUBRICATED PLUG TYPE.

- ALL GAS PIPING SHALL CONFORM TO THE CANADIAN GAS CODE AND THE LOCAL GAS DISTRIBUTORS REQUIREMENTS.
- GAS PIPING: ALL GAS PIPING SHALL BE PRESSURE TESTED TO THE LATEST ONTARIO GAS UTILIZATION CODE AND LOCAL GAS DISTRIBUTORS REQUIREMENTS. ALL GAS PIPING SHALL
- PART D HYDRONIC HEATING SCHEDULE 40 STEEL PIPE TO ASTM 53, GRADE B
  PIPING NPS 2 AND UNDER SHALL BE MALLEABLE IRON 150 LB SCREWED FITTINGS WITH
- PIPING NPS 21/2 AND OVER SHALL BE WELDED FITTINGS AND STEEL FLANGES TO ANSI/ASME CHLORINATED POLYVINYL CHLORIDE (CPVC) PIPE TO MEET SPECIFIED REQUIREMENTS OF ASTM F441: SCHEDULE 40 AND SCHEDULE 80 AS MANUFACTURED BY IPEX OR APPROVED
- BALL VALVES: CLASS 125 SCREWED ENDS, STAINLESS STEEL BALL AND TEFLON SEATS. CHECK VALVES: CLASS 125 WITH COMPOSITION DISC TO MSS SP-80.
- COMPLETE WITH REDUCED PRESSURE BACKFLOW PREVENTER, PRESSURE GAUGE ON INLET AND OUTLET, PRESSURE REDUCING VALVE TO CSA B356, PRESSURE RELIEF VALVE ON LOW ACCEPTABLE MATERIAL: WATTS 5. PIPE INSULATION:
- NSULATE ALL HEATING WATER PIPING WITH 1½" FIBERGLASS INSULATION WITH VAPOUR BARRIER. INSTALL AS PER MANUFACTURERS RECOMMENDATIONS. RECOVER EXPOSED PIPING WITH PVC JACKET.
- PROVIDE TWO (2) DE LOCHINVAR MODEL KBN401 INPUT 376 MBH OUTPUT GAS FIRED STAINLESS STEEL CONDENSING BOILERS WHERE INDICATED ON DRAWINGS COMPLETE WITH MODULATING GAS BURNER. GAS BURNER TO BE SUITABLE FOR 120/1/60. PROVIDE FOR EACH BOILER AND TO MEET ANSI/ASME REQUIREMENTS THE FOLLOWING RELIEF VALVES: ANSI/ASME RATED, SET AT TO RELEASE ENTIRE BOILER CAPACITY. PRESSURE GAUGE: 90 MM DIAMETER COMPLETE WITH SHUT-OFF COCK. THERMOMETER: 115 MM DIAMETER RANGE 10 TO 150C. LOW WATER CUT-OFF: WITH VISUAL AND AUDIBLE ALARMS. ISOLATING BUTTERFLY VALVE: ON SUPPLY AND RETURN CONNECTIONS. DRAIN VALVE: NPS 1½. ONE SET OF CLEANING TOOLS. INSTALL TO MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS AND ANSI/ASME BOILER AND PRESSURE VESSEL
- CO-ORDINATE FILLING OF SYSTEM WITH HVAC WATER TREATMENT CONTRACTOR. REFILL GLYCOL HEATING SYSTEM WITH 40% PROPYLENE GLYCOL SOLUTION AS SPECIFIED.

SLOPE TOP OF

PREFINISHED

METAL JACKET FOR

ROSITIVE DRAINAGE

STANDING

CAULK @

30"MAX

CENTRES

- SCREW

— FIBREGLASS

COVERING

CORNER BEAD

AS SPECIFIED

- DUCT SUPPORT

**EXTERIOR DUCT INSTALLATION** 

- RIGID DUCT INSULATION

MESH C/W TAR

AS NOTED

ON PLAN

DRIP LEG —

EQUIPMENT —

GAS PIPING CONNECTION

CONNECTION

SEAM

VAPOUR BARRIER TAPE

MECHANICAL FASTENERS —

RIGID DUCT INSULATION

TO BE INSTALLED TIGHT

ON JOINTS, BREAKS

AND PENETRATIONS

VAPOUR BARRIER -

TO DUCT SUPPORT

RIGID DUCTWORK. SIZE AS NOTED

PROVIDE ACOUSTIC LINING

WHERE INDICATED

ON DRAWING.

TOP OF DUCTWORK T

PROVIDE HIGH DENSITY ----

DUCT AND ANGLE FRAME.

RIGID INSULATION BEYOND

INSULATION BETWEEN

EXTEND 150mm (6")

FRAME EACH DIRECTION

WELDED ANGLE FRAMÉ

50x50x6 (2"x2"x1/4") —

BASE CHANNEL LAGGED ----

O SLEEPER. SEAL WITH

NON-HARDENING MASTIC

STANDING WATER

DUCTWORK ON ROOF

SIZE AS NOTED ON

AS SPECIFIED

TO SUPPORT

- FASTEN DUCTWORK

PROVIDE CROSS BRACING AS REQUIRED

- ROOF SLEEPER

SQUARE DUCT SUPPORT ON ROOF

BE TENTED TO PREVENT

THERMAL DUCT INSULATION

- PROVIDE MIXING TANK AND POSITIVE DISPLACEMENT PUMP FOR GLYCOL CHARGING. RETEST FOR CONCENTRATION TO ASTM E202 AFTER CLEANING. PROVIDE REPORT TO CONSULTANT. MAINTAIN GLYCOL LEVEL IN STORAGE TANK UNTIL SYSTEM IS FULLY CHARGED AND HAS EQUALIZED THROUGHOUT THE ENTIRE SYSTEM. MONITOR SYSTEM ON BI-WEEKLY BASIS UNTIL SYSTEM IS COMPLETELY FILLED. PROVIDE GLYCOL SOLUTION AS REQUIRED.
- PIPING PRESSURE TESTING. TERMINAL DEVICE (REHEAT COILS, HEAT PUMPS, PERIMETER RADIATION, ETC.), AIR HANDLING UNIT COILS AND THEIR ASSOCIATED CONTROL AND BALANCING VALVES SHOULD BE BYPASSED DURING THE PRELIMINARY FLUSHING AND CLEANING PROCESS. INSTRUMENTS SUCH AS FLOW METERS, FLOW METERING VALVES AND ORIFICE PLATES SHOULD ONLY BE INSTALLED AFTER FLUSHING AND CLEANING.

PART E HEATING, AIR CONDITIONING, AND VENTILATION NOTES:

- 1. DUCTWORK TO BE CONSTRUCTED TO SMACNA STANDARDS, MEDIUM STATIC PRESSURE WITH LEAKAGE RATE OF 5% MAXIMUM. FABRICATED IN ACCORDANCE WITH RECOMMENDATIONS OF SMACNA AND ASHRAE. SEAL ALL TRANSVERSE AND LONGITUDINAL JOINTS WITH DUCT SEALER 2. SQUARE AND RECTANGULAR DUCTWORK:
- DUCTS: TO SMACNA. TRANSVERSE JOINTS, LONGEST SIDE:UP TO AND INCLUDING 750 MM (30"): SMACNA PROPRIETARY DUCT JOINTS. ALL DUCTWORK IN POOL AREA SHALL BE
- BALANCING SINGLE BLADE BALANCING DAMPERS WITH LOCKING QUADRANT. ROUND BALANCING DAMPERS TO BE 1/16" THICK. RECTANGULAR BALANCING DAMPERS TO BE 1/16" THICK. MULTI-LEAF OPPOSED BLADE DAMPERS DESIGNED TO SMACNA DETAILS WITH LOCKING QUADRANT. MANUFACTURED ADJUSTABLE EXTRACTORS TO BE WITH ADJUSTMENT ROD. ACCEPTABLE PRODUCTS: TITUS, NAILOR APPROVED DAMPERS OF THICKNESS' AND TYPES OF CONSTRUCTION IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS.
- 4. FLEXIBLE CONNECTIONS AT ALL DUCT CONNECTIONS TO FANS AND AIR HANDLING UNITS. NEOPRENE COATED GLASS FABRIC, NOT MORE THAN 6" LONG BETWEEN METAL PARTS INSTALLED SUFFICIENT SLACK TO PREVENT VIBRATION TRANSMISSION. ALLOW MOVEMENT (2") TO LOW PRESSURE FANS.
- . EXTERIOR DUCT INSULATION PROVIDE 3" THK RIGID MINERAL FIBRE BOARD TO ASTM C612, WITH FACTORY APPLIED VAPOUR RETARDER JACKET TO CGB 51-GP-52Mg. COVER WITH SELF-ADHESIVE ALUMINUM WEATHERPROOF JACKET, MINIMUM THICKNESS 1.5mm, WHITE FINISH.
- 8. CONTROLS: INTEGRATE NEW DEHUMIDIFIER AND BOILER SYSTEM INTO EXISTING BUILDING BAS SYSTEM THRU BACNET. DEHUMIDIFIER CONTROLS: SHALL OPERATED BASED ON FACTORY INSTALLED CONTROLS AND BOILER CONTROLS: MODULATE BOTH BOILERS B-1 AND B-2 To maintain heating setpoint. Alternate start on Boiler B-1 and B-2. Reset hot water heating temperature based upon outdoor air temperature. Alternate existing pumps on a weekly schedule. START/STOP HEATING SYSTEM BASED ON OUTDOOR AIR TEMPERATURE. MONITOR STATUS AND ALARM ON FAILURE THE FOLLOWING: SUPPLY WATER TEMPERATURE, RETURN WATER TEMPERATURE, PUMP STATUS, BOILER CONTROLLER FAILURE.
- 9. POOL DEHUMIDIFICATION UNIT WITH PACKAGED REFRIGERATION
- FURNISH AND INSTALL, WHERE INDICATED, A FACTORY-ASSEMBLED, FULLY-ENCLOSED, PACKAGED ENVIRONMENTAL CONTROL SYSTEM WITH ENERGY RECOVERY FEATURE(S) DESIGNED FOR NATATORIUM ENVIRONMENT CONTROL
- DEHUMIDIFICATION BY MEANS OF A DIRECT EXPANSION EVAPORATOR COIL B.SPACE HEATING BY MEANS OF A PACKAGED HOT WATER COIL COOLING MODE WITH HEAT REJECTION TO A PACKAGED OUTDOOR AIR COOLED FLUID D. POOL WATER HEATING FROM RECLAIMED COMPRESSOR WASTE HEAT BY MEANS OF A FULL FLOW TITANIUM HEAT EXCHANGER
- E.PACKAGED MINIMUM EXHAUST FAN AND PURGE FAN WITH ECONOMIZER MODE F.INTEGRAL MINIMUM OUTDOOR AIR CONNECTION G. INTEGRAL PURGE OUTDOOR AIR CONNECTION WITH ECONOMIZER MODE H. HEAT RECOVERY BY MEANS OF A GLYCOL RUN—AROUND LOOP BETWEEN THE MINIMUM EXHAUST AND MINIMUM OUTDOOR AIR STREAMS CONVENIENCE OUTLET AND LIGHT INCLUDED FACTORY MOUNTED IN CONTROL CABINET, POWERED AND WIRED SEPARATELY.
- J.INTERNET CONNECTIVITY FOR 2 YEARS VIA CELL BASED TECHNOLOGY 2. QUALITY AND SAFETY ASSURANCE A. THE SYSTEM SHALL BE ETL LISTED B.THE SYSTEM SHALL BE COMPLETELY ASSEMBLED, WIRED, PIPED, AND TEST-RUN AT THE FACTORY PRIOR TO SHIPPING. ALL CONTROLS SHALL BE FACTORY ADJUSTED TO SATISFY THE DESIGN CONDITIONS. MANUFACTURER SHALL HAVE A MINIMUM OF TEN-PLUS YEARS PRIOR EXPERIENCE MAKING SIMILAR EQUIPMENT AS DESCRIBED IN THIS SPECIFICATION. D. THE SYSTEM SHALL HAVE A MECHANICAL VESTIBULE WHERE THE ELECTRICAL PANEL, COMPRESSOR(S), RECEIVER(S) AND MOST OF THE REFRIGERATION CONTROLS ARE OUT OF COMPRESSOR(S), RECEIVER(S) THE PROCESS AIR STREAM E.WARRANTY: THE ENTIRE SYSTEM SHALL HAVE A 24-MONTH LIMITED PARTS WARRANTY FROM THE FACTORY SHIP DATE
- 1.A 1-YEAR LABOR WARRANTY SHALL BE PROVIDED BY THE MANUFACTURER WHEN THE SYSTEM IS CONNECTED TO THE FACTORY VIA AN INTERNET MONITORING SYSTEM FROM THE DATE OF INITIAL COMMISSIONING F.WHEN CONNECTED TO A NETWORK WITH INTERNET ACCESS, THE SYSTEM SHALL HAVE REMOTE SERVICE CAPABILITY WITH THE ABILITY FOR FIELD SERVICE TECHNICIANS TO RECEIVE SERVICE AND TROUBLE ALERTS BY E-MAIL AND MAKE PARAMETER ADJUSTMENTS VIA A BROWSER INTERFACE ON ANY INTERNET-CAPABLE DEVICE

### PART 2 - PRODUCT 1.1. FURNISH AND INSTALL, WHERE INDICATED, A FACTORY—ASSEMBLED, FULLY—ENCLOSED, PACKAGED ENVIRONMENTAL CONTROL SYSTEM WITH ENERGY RECOVERY FEATURE(S)

- FEATURES SHALL INCLUDE: 1.1.1. DEHUMIDIFICATION BY MEANS OF A DIRECT EXPANSION EVAPORATOR COIL 1.1.2. SPACE HEATING BY MEANS OF A PACKAGED HOT WATER COIL
- 1.1.3. COOLING MODE WITH HEAT REJECTION TO A PACKAGED OUTDOOR AIR COOLED FLUID COOLER (DRY-COOLER) 1.1.4. POOL WATER HEATING FROM RECLAIMED COMPRESSOR WASTE HEAT BY MEANS OF A FULL FLOW TITANIUM HEAT EXCHANGER 1.1.5. PACKAGED MINIMUM EXHAUST FAN AND PURGE FAN WITH ECONOMIZER MODE 1.1.6. INTEGRAL MINIMUM OUTDOOR AIR CONNECTION 1.1.7. INTEGRAL PURGE OUTDOOR AIR CONNECTION WITH ECONOMIZER MODE
- 1.1.8. HEAT RECOVERY BY MEANS OF A GLYCOL RUN-AROUND LOOP BETWEEN THE MINIMUM EXHAUST AND MINIMUM OUTDOOR AIR STREAMS 1.1.9. CONVENIENCE OUTLET AND LIGHT INCLUDED FACTORY MOUNTED IN CONTROL CABINET, POWERED AND WIRED SEPARATELY. 1.1.10. INTERNET CONNECTIVITY FOR 2 YEARS VIA CELL BASED TECHNOLOGY
- 2. QUALITY AND SAFETY ASSURANCE 2.1. THE SYSTEM SHALL BE ETL LISTED 2.1.1. THE SYSTEM SHALL BE COMPLETELY ASSEMBLED, WIRED, PIPED, AND TEST-RUN AT THE FACTORY PRIOR TO SHIPPING. ALL CONTROLS SHALL BE FACTORY ADJUSTED TO
- SATISFY THE DESIGN CONDITIONS. MAKING SIMILAR EQUIPMENT AS DESCRIBED IN THIS SPECIFICATION. 2.1.3. THE SYSTEM SHALL HAVE A MECHANICAL VESTIBULE WHERE THE ELECTRICAL PANEL COMPRESSOR(S), RECEIVER(S) AND MOST OF THE REFRIGERATION CONTROLS ARE 2.1.4. WARRANTY: THE ENTIRE SYSTEM SHALL HAVE A 24-MONTH LIMITED PARTS WARRANTY FROM THE FACTORY SHIP DATE
- 2.1.5. A 1-YEAR LABOR WARRANTY SHALL BE PROVIDED BY THE MANUFACTURER WHEN THE SYSTEM IS CONNECTED TO THE FACTORY VIA AN INTERNET MONITORING SYSTEM FROM THE DATE OF INITIAL COMMISSIONING 2.1.6. WHEN CONNECTED TO A NETWORK WITH INTERNET ACCESS, THE SYSTEM SHALL HAVE REMOTE SERVICE CAPABILITY WITH THE ABILITY FOR FIELD SERVICE TECHNICIANS TO RECEIVE SERVICE AND TROUBLE ALERTS BY E-MAIL AND MAKE PARAMETER ADJUSTMENTS VIA A BROWSER INTERFACE ON ANY INTERNET-CAPABLE

#### 3. PRODUCT 3.1. GENERAL

- THE NATATORIUM CONTROL SYSTEM SHALL INCLUDE: MECHANICAL PROCESS DEHUMIDIFICATION B.OUTDOOR CABINET CONFIGURATION PACKAGED OUTDOOR AIR-COOLED FLUID COOLER (DRY COOLER) FOR AC HEAT D. A PACKAGED HOT WATER HEATING COIL, SIZED AS SPECIFIED BY THE DESIGN ENGINEER TO MEET THE SKIN LOSSES AND OUTDOOR AIR HEATING LOADS EPOOL HEATING VIA POOL WATER-TO-FLUID TITANIUM HEAT EXCHANGER PROVIDING PREMIUM UNMATCHED CHEMICAL RESISTANCE FOR SALTWATER AND CHLORINE POOL WATER LESSER POOL WATER HEATER WILL NOT BE ENTERTAINED AND ARE NOT ACCEPTABLE. F.AIR FILTRATION VIA MERV-13 PLEATED PANEL FILTERS FOR RETURN
- G. PURGE AND ECONOMIZER MODES MINIMUM EXHAUST AND PURGE EXHAUST FAN(S) WITH ECONOMIZER MODE HEAT RECOVERY BETWEEN THE MINIMUM EXHAUST AIR AND OUTDOOR AIR STREAMS AND J.A SERVICE VESTIBULE WHERE THE COMPRESSOR, REFRIGERATION SPECIALTIES, CONTROL VALVES AND ALL ELECTRONICS ARE OUTSIDE OF PROCESS AIR STREAM K.CONVENIENCE OUTLET AND LIGHT INCLUDED FACTORY MOUNTED IN CONTROL CABINET,

GAS FIRED

**APPLIANCE** 

OF TYPICAL

NOTE:
SEAL CORNERS
WITH DUCT SEALANT

CORNER

- . SEQUENCE OF OPERATION THE SYSTEM SHALL BE DESIGNED AND SIZED TO MAINTAIN THE SPECIFIED SPACE
- 9. FLUSHING AND CLEANING PROCEDURE: FLUSHING AND CLEANING SHOULD ONLY TAKE PLACE AFTER SUCCESSFUL STARTS AND OPERATES CONTINUOUSLY BASED ON THE SEQUENCE BELOW
  - NATATORIUM
  - C. **DEHUMIDIFICATION MODE** 2.RETURN AIR DEWPOINT IS ABOVE DEWPOINT SETPOINT.
  - SECOND COMPRESSOR CIRCUIT WILL START
- 5. ACOUSTIC DUCT LINER
- RIGID DUCT LINER 1" THICK 36 KG/M WITH NEOPRENE LINER GLUED AND PINNED TO INSIDE SURFACE OF DUCTWORK. MINIMUM 3.OM (10') FROM ALL AIR HANDLERS AND WHERE SHOWN ON DRAWINGS. SEAL ALL EXPOSED EDGES. DUCT SIZING REPRESENTS CLEAR INSIDE BALANCE AIR AND WATER SYSTEMS USING NEBB CERTIFIED FIRM AND AS PER NEBB REQUIREMENTS TO WITHIN 5% OF TOTAL SYSTEM CAPACITY. PROVIDE PDF COPY OF
  - FLUID LOOP WHICH IS PUMPED OUTDOORS TO AN OUTDOOR AIR-COOLED HEAT 4.100% OF COMPRESSOR HEAT IS REJECTED AT THE OUTDOOR AIR-COOLED HEAT EXCHANGER ON A SUMMER DESIGN DAY. ON OFF-PEAK DAYS, THE AIR REHEAT SECOND COMPRESSOR WILL START
  - 1.THE RETURN AIR TEMPERATURE IS BELOW THE ROOM TEMPERATURE SETPOINT THE RETURN AIR TEMPERATURE
  - 1.THE RETURN POOL WATER TEMPERATURE IS BELOW THE POOL WATER SETPOINT CONDITIONING DEMAND, THE FLUID CONTROL VALVE WILL DIVERT FLUID TO THE
  - MICROPROCESSOR SENDS A SIGNAL TO THE AUXILIARY POOL WATER HEATER SO AT THE CONTROLLER. AUX POOL HEAT CONTACT WILL BE CLOSED WITH
  - INSTALLED IN SERIES WITH THESE WIRES. THE SMART POOL FEATURE. THIS FEATURE PROVIDES THE ABILITY TO ACTIVATE
  - G. EXHAUST AIR HEAT RECOVERY MODE THE SYSTEM'S OCCUPANCY SCHEDULE AND WILL OPERATE AS PROGRAMMED 2.ONCE THE OUTDOOR AIR TEMPERATURE FALLS BELOW THE HEAT RECOVERY SETPOINT (65 'F BY DEFAULT; FIELD-ADJUSTABLE) THE GLYCOL PUMP SHALL
  - OPERATOR PANEL(S), THROUGH THE ONLINE VISION 2.0 INTERFACE OR BY THE 2.PURGE MODE HAS AN ADJUSTABLE TIMED DURATION AFTER WHICH THE SYSTEM
  - 3. ONCE TRIGGERED BY THE OPERATOR: a)THE COMPRESSOR(S), IF OPERATING, PUMP DOWN AND CYCLE OFF b)A SIGNAL FROM THE MICROPROCESSOR SETS THE EXHAUST FAN(S) TO THEIR MAXIMUM c)THE UNIT-MOUNTED OUTDOOR AIR DAMPERS OPEN FULLY AND THE RETURN AIR d)THE SYSTEM STAYS IN 100% OUTDOOR AIR VENTILATION MODE
  - I. ECONOMIZER COOLING MODE 1.THE RETURN AIR TEMPERATURE IS ABOVE THE ROOM TEMPERATURE SETPOINT WITH THE COOLING SETPOINT

THE BASE FRAME FOR RIGGING THE SYSTEM. FIBERGLASS INSULATION 3.THE CABINET FLOOR SHALL BE COMPRISED OF A 16-GAUGE GALVANIZED STEEL PANEL WITH A 20-GAUGE PRE-PAINTED STEEL INNER LINER, 2-INCH DOUBLE WALL ENGINEERED WITH STRUCTURAL BENDING FOR MAXIMUM RIGIDITY AND BE MECHANICALLY FASTENED TO THE BASE FRAME OF THE UNIT WALL ENGINEERED WITH STRUCTURAL BENDING FOR MAXIMUM RIGIDITY AND BE MECHANICALLY FASTENED TO THE BASE WALLS OF THE UNIT

## MECHANICAL SPECIFICATION

- 3.BASED ON SENSOR FEEDBACK, THE SYSTEM SHALL BEGIN OR RESUME OPERATION B.AIRSIDE CONFIGURATION
- 2. THE MINIMUM EXHAUST AIR VOLUME IS SET TO MEET THE ENGINEER'S SCHEDULE. 3.THE MINIMUM OUTDOOR AIR VOLUME IS SET TO MEET THE ENGINEER'S SCHEDULE.
- 3.THE COMPRESSOR ENTERS THE COMPRESSOR START SEQUENCE
- 5.COMPRESSOR WASTE HEAT IS REJECTED INTO A GLYCOL FLUID LOOP WHICH FEEDS THE REHEAT COILS AND THE AIR CONDITIONING AIR- COOLED HEAT EXCHANGER IN 6.THE REHEAT COILS ARE FULLY MODULATING (0-100%). THE REHEAT OUTPUT WILL MODULATE TO MAINTAIN THE SPACE TEMPERATURE AT SET POINT YEAR-ROUND. REHEAT COILS THAT ARE ON OFF OR ONLY GIVE HEAT FROM ONE CIRCUIT ARE
- 1.THE RETURN AIR TEMPERATURE IS ABOVE THE ROOM TEMPERATURE SETPOINT 2.THE COMPRESSOR STARTS, IF NOT ALREADY OPERATING IN DEHUMIDIFICATION MODE 3.EXCESS COMPRESSOR HOT GAS IS DIVERTED TO A FLUID-COOLED HEAT EXCHANGER. UP TO 100% OF COMPRESSOR HEAT IS REJECTED INTO THE GLYCOL EXCHANGER FOR 100% HEAT REJECTION AT SUMMER DESIGN AMBIENT CONDITIONS OUTPUT WILL MODULATE TO MAINTAIN THE SPACE TEMPERATURE AT THE SET POINT 5.IF THE SYSTEM CANNOT MAINTAIN THE RETURN AIR TEMPERATURE SETPOINT, THE
- AND THE POOL WATER FLOW SWITCH OR MINIMUM TEMPERATURE DIFFERENTIAL IS  $2. ext{IF}$  THE COMPRESSOR IS ALREADY OPERATING DUE TO A DEHUMIDIFICATION OR AIR TITANIUM POOL WATER HEAT EXCHANGER TO MODULATE THE HEATING OF THE POOL WATER, POOL WATER HEATING THAT DOES NOT USE A TITANIUM POOL WATER
- 3.IF THERE IS NO PRE-EXISTING DEMAND FOR THE COMPRESSOR TO OPERATE, THE (REMOTE BY OTHERS) TO OPERATE. THE COMPRESSOR WILL NOT OPERATE SOLELY
- 4.FIELD-INSTALLED POOL WATER TEMPERATURE SENSOR(S) ARE PROVIDED TO ENABLE BOOSTER POOL WATER PUMP(S) FEEDING THE UNIT WHEN POOL WATER HEATING IS IN DEMAND.
- 1. THE MINIMUM OUTDOOR AIR DAMPER AND MINIMUM EXHAUST FAN(S) ARE TIED TO CIRCULATE A GLYCOL MIXTURE BETWEEN THE EXHAUST AIR AND THE OUTDOOR AIR HEAT RECOVERY COILS, RECOVERING HEAT FROM THE SPACE CONDITION EXHAUST AIR AND USING IT TO PREHEAT THE INCOMING OUTSIDE AIR
- H. PURGE MODE 1.THIS MODE IS MANUALLY TRIGGERED BY AN OPERATOR WHEN SUPER-CHLORINATING THE POOL. IT CAN BE TRIGGERED AT THE UNIT- MOUNTED OR OPTIONAL REMOTE
- e)AFTER THE TIMED PERIOD EXPIRES, ALL DAMPERS AND FANS RETURN TO NORMAL OPERATING SETTINGS AND THE SYSTEM RESUMES NORMAL OPERATION f) DURING PURGE MODE, THE SYSTEM WILL CONTROL HEATING BASED ON SUPPLY AIR
- 3. WHEN OUTSIDE AIR IS DEEMED SUITABLE BY THE MICROPROCESSOR, IT WILL BE USED AS THE FIRST STAGE OF SENSIBLE COOLING 4.THE SYSTEM WILL SWITCH OVER TO USING THE COMPRESSOR(S) IF OUTSIDE AIR
- J. ECONOMIZER DEHUMIDIFICATION MODE 1. THE RETURN AIR RELATIVE HUMIDITY IS ABOVE HUMIDITY SETPOINT 2.THE MICROPROCESSOR WILL COMPARE THE MOISTURE CONTENT OF THE OUTSIDE AIR TO THE DEHUMIDIFICATION SETPOINT  $3. \mbox{WHEN}$  THE OUTSIDE AIR IS DEEMED SUITABLE BY THE MICROPROCESSOR, IT WILL BE USED AS THE FIRST STAGE OF DEHUMIDIFICATION 4.THE SYSTEM WILL SWITCH OVER TO USING THE COMPRESSOR(S) IF OUTSIDE AIR CONDITIONS CANNOT SATISFY THE SPACE HUMIDITY DEMAND.
- L.THE SUPPLY AIR TEMPERATURE FALLS BELOW THE FREEZESTAT SETPOINT M. EXHAUST FAN(S) ARE STOPPED AND OUTDOOR AIR DAMPER(S) ARE FULLY CLOSED N. WHEN THE FREEZESTAT ALARM IS TRIPPED, IT MUST BE MANUALLY CLEARED BY THE
- 4.THE CABINET ROOF SHALL BE 20-GAUGE PRE-PAINTED STEEL, 2-INCH DOUBLE 5.THE CABINETS SHALL BE MECHANICALLY ASSEMBLED WITH STAINLESS STEEL 5/32"

SEALED BLIND RIVETS. WHERE BOLTS ARE REQUIRED BRIGHT ZINC PLATED BOLTS

-CARRIAGE BOLT & NUT

- NEXUS CORNERS

- NEXUS FLANGES

---- NEOPRENE GASKET

**DUCT CONSTRUCTION** 

- NEXUS CLEAT

6.ACCESS DOORS SHALL BE SUPPORTED ON MULTIPLE HINGES, HELD SHUT BY COMPRESSION LATCHES FOR QUICK ACCESS, DOORS SHALL BE PROVIDED FOR ENTRANCE TO ALL SECTIONS HOUSING COMPONENTS REQUIRING ROUTINE MAINTENANCE. FULL HEIGHT ACCESS DOORS SHALL HAVE "HOLD BACK" LATCHES TO PREVENT DOOR CLOSURE DURING THE PERFORMANCE OF SERVICE PROCEDURES

INTAKE OPENINGS

8.THE SYSTEM SHALL HAVE NON-CORRODING PROTECTIVE MESH SCREENS COVERING INTERNAL FAN BLADES, PROTECTIVE GRATES COVERING ALL FLOOR ACCESS PORTS **B.OUTDOOR AIR INTAKE:** 1.PURGE /ECONOMIZER AND MINIMUM OUTDOOR AIR CONNECTIONS WITH MOTORIZED DAMPERS AND CONTROLS. C. INSULATION: THE UNIT SHALL BE INSULATED PER THE FOLLOWING STANDARDS:

7.THE UNIT SHALL HAVE NON-CORRODING PROTECTIVE MESH SCREENS ON ALL AIR

1.ALL EXTERIOR CABINET SECTIONS SHALL BE INSULATED WITH TWO (2) INCH THICK FIBERGLASS INSIDE THE DOUBLE WALLED CABINET 2.FIRE RESISTANT RATING TO CONFORM TO NFPA STANDARD 90A AND 90B 3.SOUND ATTENUATION COEFFICIENT SHALL NOT BE LESS THAN 1.02 AT A FREQUENCY OF 1,000 HZ AS PER ASTM STANDARD C423 4.THERMAL CONDUCTIVITY SHALL NOT EXCEED 0.26 BTU/HR-SQFT-FT AT 75 °F

D. CABINET CONFIGURATION SHALL INCLUDE:

- 1.A FILTER RACK WITH SEPARATE ACCESS DOORS SHALL BE PROVIDED FOR THE RETURN AIR AND MINIMUM OUTDOOR AIR STREAMS 2.UNIT SHALL BE EQUIPPED WITH A SECOND OUTDOOR AIR INTAKE ASSEMBLY WITH MOTORIZED 2 POSITION EXTRUDED ALUMINUM, INSULATED, SILICONE SIDE-SEALED DAMPER FOR PURGE AND ECONOMIZER OPERATION 3.MECHANICAL VESTIBULE: THE UNIT SHALL HAVE THE COMPRESSOR, RECEIVER SOLENOID VALVES AND THE ELECTRICAL PANEL IN A SEPARATE COMPARTMENT OUT OF THE PROCESSED AIR STREAM. ALL COMPONENTS SHALL BE SERVICEABLE WHILE THE UNIT IS IN OPERATION WITHOUT DISTURBING THE AIRFLOW 4.ELECTRICAL PANEL: THE UNIT SHALL HAVE A BUILT-IN ELECTRICAL CONTROL PANEL IN A SEPARATE COMPARTMENT IN ORDER NOT TO DISTURB THE AIRFLOW WITHIN THE DEHUMIDIFIER DURING ELECTRICAL SERVICING. ALL ELECTRICAL COMPONENTS
- 6.1 WHEREVER POSSIBLE, AIR FILTERS SHALL BE STANDARD SIZED, REPLACEABLE, OFF-THE-SHELF FILTERS INCLUDING: A. EXHAUST AIR: 2-INCH MERV 8, 30% PLEATED FILTERS WITH RUST-FREE NON-METALLIC STRUCTURE B.RETURN AIR: 2-INCH MERV 13, 90% PLEATED FILTERS WITH RUST-FREE NON-METALLIC STRUCTURE ON A SLIDE-IN OR FACE-LOADING RACK OUTSIDE AIR: 2-INCH MERV 13, 90% PLEATED FILTERS WITH RUST-FREE D. DIRTY AIR FILTER SWITCHES INCLUDED ON THE RETURN AIR FILTER FOR INDICATING

SHALL BE MOUNTED ON A 16 GAUGE GALVANIZED SUB-PANEL.

- AN ALARM WHEN PRESSURE DROP EXCEEDS A SET POINT. 7. COILS EVAPORATOR/DEHUMIDIFIER COILS SHALL BE DESIGNED FOR MAXIMUM MOISTURE 1. COILS SHALL BE FULLY DIPPED AND COATED WITH A POLYESTER/ENAMEL COATING FOR MAXIMUM CORROSION PROTECTION. COATING SHALL COMPLY WITH ASTM B117/D1654 AND ASTM D2126 FOR CORROSION RESISTANCE AGAINST COMMON
- ACIDS, SALT AND GASES 2.COIL SHALL HAVE GALVANIZED CASING AND END PLATES ALUMINUM FIN AND COPPER TUBES MECHANICALLY BONDED TO ASSURE HIGH HEAT B AIR REHEAT COILS SHALL BE SIZED FOR VARIABLE HEAT TRANSFER INTO THE AIR WITH A CAPACITY OF 100% OF THE COMPRESSORS TOTAL REQUIRED HEAT OF REJECTION. AIR REHEAT COILS THAT ARE ON OFF WILL CAUSE UNSTABLE SPACE CONDITIONS AND ARE
- 1.COILS SHALL BE FULLY DIPPED AND COATED WITH A POLYESTER/ENAMEL COATING FOR MAXIMUM CORROSION PROTECTION. COATING SHALL COMPLY WITH ASTM B117/D1654 AND ASTM D2126 FOR CORROSION RESISTANCE AGAINST COMMON ACIDS, SALT AND GASES 2.COIL SHALL HAVE GALVANIZED CASING AND END PLATES
- 3.ALUMINUM FIN AND COPPER TUBE JOINTS MECHANICALLY BONDED TO ASSURE HIGH C. **HEAT RECOVERY COILS** 1. THE UNIT SHALL HAVE HEAT RECOVERY BETWEEN THE MINIMUM EXHAUST AND OUTDOOR AIR STREAMS PER SPECIFICATIONS
- a)THE HEAT RECOVERY COILS SHALL BE SIZED FOR HEAT TRANSFER BETWEEN THE TWO AIR STREAMS b)THE HEAT RECOVERY FLUID CIRCULATING BETWEEN COILS SHALL BE GLYCOL. THE MODULE SHALL BE A COMPLETE PACKAGE AND INDEPENDENT CIRCUIT THAT INCLUDES A CIRCULATING PUMP, FILL VALVES AND EXPANSION TANK 2.COILS SHALL BE FULLY DIPPED AND COATED WITH A POLYESTER/ENAMEL COATING FOR MAXIMUM CORROSION PROTECTION. COATING SHALL COMPLY WITH ASTM B117/D1654 AND ASTM D2126 FOR CORROSION RESISTANCE AGAINST COMMON 3.ALUMINUM FIN AND COPPER TUBE JOINTS MECHANICALLY BONDED TO ASSURE HIGH
- 4.PLATE HEAT RECOVERY THAT WILL ADD FAN HORSEPOWER AND THEREFORE HAVE A NEGATIVE EFFECT ON ENERGY SAVING ARE NOT ACCEPTABLE. STRATEGIES THAT USE THE MAIN COMPRESSORS TO COOL EXHAUST AIR TO TRY AND ACT AS HEAT RECOVERY CANNOT BE USED IN PLACE OF FULL TIME HEAT RECOVERY BECAUSE THE COMPRESSORS WILL NOT BE RUNNING IN THE COLDEST MONTHS REQUIRING
- EACH EVAPORATOR COIL SHALL BE PROVIDED WITH A POSITIVE DRAINING, COMPOUND-SLOPED, BAKED POWDER PAINT COATED ALUMINUM DRAIN PAN WITH FULLY-WELDED CORNERS TO ENSURE ZERO WATER RETENTION. IN NO WAY WILL STAINLESS STEEL OR GALVANIZED DRAIN PANS BE ACCEPTABLE. 9. BLOWERS AND BLOWER MOTORS
- 1. THE COMPLETE BLOWER ASSEMBLY SHALL BE STATICALLY AND DYNAMICALLY BALANCED ON PRECISION ELECTRONIC BALANCERS 2.THE BLOWER ASSEMBLY SHALL BE MOUNTED ON A 1" DEFLECTION SPRING ISOLATED RACK 3.THE FAN INLETS SHALL BE EQUIPPED WITH ACCIDENTAL CONTACT PROTECTION
- 4.MOTOR(S) SHALL BE PREMIUM EFFICIENCY PAINTED CAST IRON CONSTRUCTION TEFC, NEMA MG1-PART 31 INVERTER DUTY 15:1 CONSTANT TORQUE SEVERE DUTY WITH A SERVICE FACTOR 1.25. MOTORS SHALL BE 6 POLE 1200 RPM SYNCHRONOUS SPEED WITH HOA SWITCH WITH MOTOR SAFETIES AGAINST OVERLOADING AT 60 HZ OPERATION DIRECTLY ON MAINS, MOTORS SHALL HAVE DOUBLE LIP SEALS ON BOTH ENDS WITH RE-GREASABLE BEARINGS 254T FRAME AND LARGER WITH POLYUREA GREASE B.EXHAUST BLOWERS:
- 1. THE PACKAGED EXHAUST BLOWER (EF1) SHALL BE SIZED TO MAINTAIN THE NEGATIVE PRESSURE REQUIREMENT IN THE SPACE DURING NORMAL OPERATION AND ITS OPERATION TIED TO THE SYSTEM'S OCCUPANCY SCHEDULER 2.THE BLOWER SHALL BE IMPELLER PLENUM FAN COMPLETE WITH BACKWARD CURVED, THREE-DIMENSIONAL, PROFILED BLADES MADE OF HIGH PERFORMANCE COMPOSITE MATERIAL. THE BLOWER SHALL BE COMPLETELY CORROSION RESISTANT AND BE MAINTENANCE FREE A DIRECT DRIVE VIA A DIRECT CURRENT (DC) DESIGN AND HAVE CONTINUOUSLY VARIABLE SPEED CONTROL WHEN CONNECTED TO THE UNIT'S CONTROLLER. FANS THAT ARE NOT DIRECT DRIVE OR EC ARE NOT
- 3.THE FAN ASSEMBLY SHALL BE BALANCED IN CLASS G 6.3 ACC DIN ISO 1940, DYNAMIC ON TWO LEVELS 4.THE FAN ASSEMBLY SHALL BE SUITABLE FOR AMBIENT TEMPERATURES OF -40°C 5.THERMAL CONTACTS INSTALLED IN THE WINDINGS COMPLIANT WITH THCL 155 6.DRIVE MOTOR IN EXTERNAL ROTOR PRINCIPLE, SEALED IN PROTECTION CLASS IP54 WITH MOISTURE PROTECTION IMPREGNATION OF THE WINDINGS, TOPICAL PROTECTION 7.HIGH CORROSION RESISTANCE DESIGN WITH HIGH QUALITY AND RELIABILITY

8.THE EXHAUST FAN SHALL BE CONTROLLED FROM AN END SWITCH ON THE POWER

INCLUDES FE20WLET BLADES COMBINED WITH GUIDE VANES AND EC COMMUTATED

DIRECT-CURRENT EXTERNAL ROTOR MOTORS PROVIDES MAXIMUM EFFICIENCY THE

ELECTRONIC CIRCUITRY. A ROTOR WITH PERMANENT MAGNETS. AND AN INTEGRAL

CONTROLLER TO PROVIDE THE WINDINGS WITH ELECTRICAL CURRENT SO THAT, THE

QUIETEST PERFORMANCE. THE EC MOTOR SHALL HAVE MAINTENANCE-FREE

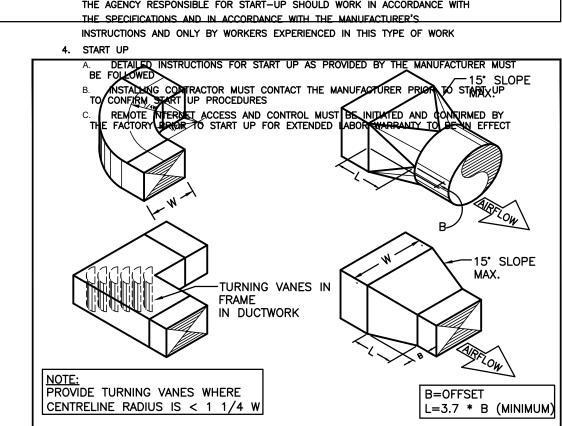
OPEN OF THE EXHAUST AIR DAMPER. THE EXHAUST DAMPERS SHALL BE PROTECTED BY LOUVERS TO DIVERT RAIN FROM THE FACE OF THE DAMPERS 9.SHALL BE PACKAGED WITH THE HEAT RECOVERY MODULE C. PURGE BLOWERS: 1.THE VENTILATION/ECONOMIZER/PURGE EXHAUST BLOWER (PEA) SHALL BE UNIT MOUNTED AND SIZED TO PROVIDE FULL EXHAUST FROM THE SPACE WHEN OPERATING WITH EF1 2.THE FAN SHALL BE DIRECT DRIVEN AXIAL FAN MADE OF HIGH-STRENGTH COMPOSITE MATERIAL IN WHICH THE MOTOR AND CONTROLLER ARE INTEGRATED. IT

- 7.HIGH CORROSION RESISTANCE DESIGN WITH HIGH QUALITY AND RELIABILITY 8.THE EXHAUST FAN SHALL BE CONTROLLED FROM AN END SWITCH ON THE POWER SHALL BE PROTECTED BY LOUVERS TO DIVERT RAIN FROM THE FACE OF THE 10. DAMPERS INTERNAL DAMPERS SHALL BE MADE FROM EXTRUDED ANODIZED ALUMINUM WITH A PARALLEL BLADE CONFIGURATION AND NEOPRENE DOUBLE-SEAL TIPS TO MINIMIZE
  - LEAKAGE. DAMPER BLADES SHALL BE MOUNTED ON STEEL RODS WHICH ROTATE ON NYLON BUSHINGS. ALL DAMPER HARDWARE SHALL BE CORROSION RESISTANT A. THE SYSTEM SHALL BE PROVIDED WITH NORMALLY CLOSED OUTSIDE AIR AND EXHAUST AIR DAMPERS EQUIPPED WITH SPRING-RETURN ACTUATORS THE DAMPERS ADJUST BETWEEN 0% TO 100% OPEN POSITION. B.THE OUTDOOR AIR AND EXHAUST AIR DAMPERS SHALL BE OF OPPOSED BLADE CONFIGURATION. DAMPERS SHALL HAVE 0.750-INCH INSULATED BLADES MADE FROM EXTRUDED ANODIZED ALUMINUM WITH NEOPRENE DOUBLE-SEAL TIPS TO MINIMIZE LEAKAGE. DAMPER LEAKAGE SHALL BE LESS THAN 1% OF MAXIMUM FLOW AT 4-INCH WATER COLUMN DIFFERENTIAL. DAMPER BLADES SHALL BE MOUNTED ON STEEL RODS WHICH ROTATE ON NYLON BUSHINGS. ALL DAMPER HARDWARE SHALL BE CORROSION
- BHEAT EXCHANGER WILL BE MODULATING. ON/OFF POOL WATER HEATERS ARE NOT POOL HEATERS THAT WHEN BREACHED ALLOW WATER INTO THE REFRIGERATION SYSTEM ARE NOT ALLOWED. TERMINATING CONNECTIONS ARE PVC NPT FITTINGS LOCATED AT THE CABINET WALL
- E.THE MAXIMUM CIRCUIT PRESSURE RATING IS 100 PSI. 12. COMPRESSORS A. HERMETIC, SCROLL ACTION COMPRESSOR, SUCTION GAS COOLED, SUITABLE FOR REFRIGERANT R-410A B.THE COMPRESSOR(S) SHALL BE MOUNTED ON RUBBER-IN-SHEAR ISOLATORS TO LIMIT THE TRANSMISSION OF NOISE AND VIBRATION THE COMPRESSOR(S) SHALL BE EQUIPPED WITH REMOVABLE CRANKCASE HEATER(S) FOR LIQUID MIGRATION PROTECTION

E.THE COMPRESSOR MANUFACTURER MUST HAVE A WHOLESALE OUTLET FOR

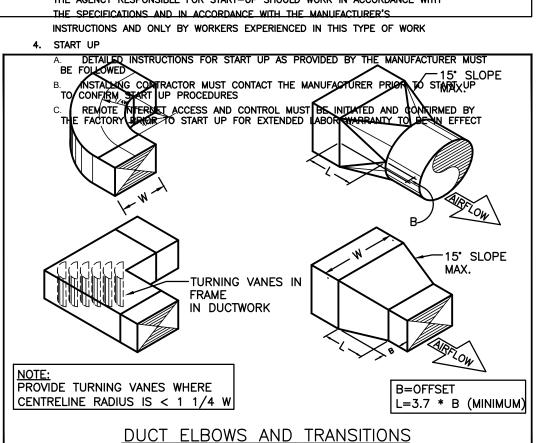
REPLACEMENT PARTS IN THE NEAREST MAJOR CITY

- THE SUCTION LINE SHALL BE FULLY INSULATED WITH 0.500-INCH CLOSED CELL H. THE MAXIMUM OPERATING PRESSURE FOR THE GLYCOL LOOP IS 100 PSI. THE GLYCOL LOOP TEMPERATURE SHOULD NOT EXCEED 134 °F. A. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR EXTERNAL POWER WIRING AND DISCONNECT SWITCH FUSING. POWER BLOCK TERMINALS SHALL BE PROVIDED B.THE SYSTEM SHALL INCLUDE A FACTORY-INSTALLED FUSED DISCONNECT
- D. BLOWER MOTORS SHALL BE PROTECTED WITH THERMAL TRIP OVERLOADS E.THE SYSTEM SHALL HAVE A VOLTAGE MONITOR WITH PHASE PROTECTION F.AVAILABLE DRY CONTACTS SHALL INCLUDE: 2.BLOWER INTERLOCK
- 4.OUTDOOR AIR DAMPER CONTROL 5.REMOTE EXHAUST FAN #1 6.REMOTE EXHAUST FAN #2 7.OUTDOOR-AIR COOLED EQUIPMENT 8.SYSTEM ON
- G. TERMINALS SHALL BE PROVIDED TO SEND 24-VOLT POWER TO THE OUTDOOR AIR COOLED CONDENSER OR FLUID COOLER FAN CONTACTOR H. ALL WIRING SHALL BE INSTALLED IN ACCORDANCE WITH UL OR CSA SAFETY ELECTRICAL CODE REGULATIONS AND SHALL BE IN ACCORDANCE WITH THE NFPA ALL COMPONENTS USED IN THE SYSTEM SHALL BE UL OR CSA LISTED I. WIRING DIAGRAMS SHALL BE LOCATED NEAR THE ELECTRICAL PANEL(S) ON THE SYSTEM. THESE DIAGRAMS SHALL PROVIDE COLOUR—CODING AND WIRE NUMBERING FOR EASY TROUBLESHOOTING. ALL WIRES SHALL BE CONTAINED IN A WIRE DUCT. KAN AIRFLOW SWITCH AND A DRY CONTACT FOR ALARM(S) SHALL BE PROVIDED AND
- E.FINS SHALL BE MADE OF ALUMINUM F.TUBES SHALL BE MADE OF COPPER G. THE MAXIMUM LOOP OPERATING PRESSURE SHALL NOT BE LESS THAN 250 PSIG 16. AIR CONDITIONING AIR-COOLED AIR CONDITIONING VIA A FLUID COOLER
- C. EACH REFRIGERATION CIRCUIT SHALL INCLUDE REFRIGERANT VALVES, A RECEIVER WITH PRESSURE RELIEF VALVE SET AT 650 PSIG, A PRESSURE CONTROL VALVE AND A PRESSURE DIFFERENTIAL VALVE, AND TWO MANUAL SHUTOFF VALVES TO ISOLATE THE OUTDOOR FLUID COOLER COILS SHALL BE TESTED AT 425 PSIG AND MOUNTED VERTICALLY FOR COMPLETE
- PART 3 EXECUTION 1. PRODUCT DELIVERY, ACCEPTANCE, STORAGE AND HANDLING A. PERFORM A THOROUGH PHYSICAL INSPECTION OF THE SYSTEM UPON DELIVERY FROM BIDENTIFY AND IMMEDIATELY REPORT ANY PHYSICAL DAMAGE TO MANUFACTURER
- D. HANDLE THE SYSTEM CAREFULLY DURING INSTALLATION TO PREVENT DAMAGE E.DAMAGED SYSTEMS OR COMPONENTS SHALL NOT BE INSTALLED. CONTACT THE MANUFACTURER FOR RMA INSTRUCTIONS F.COMPLY WITH THE MANUFACTURER'S RIGGING AND INSTALLATION INSTRUCTIONS FOR UNLOADING THE SYSTEM AND MOVING IT INTO POSITION.
- BDUCT CONNECTIONS: DRAWINGS INDICATE THE GENERAL ARRANGEMENTS OF THE DUCTS. CONNECT THE SYSTEM TO DUCTS WITH FLEXIBLE DUCT CONNECTORS. COMPLY WITH CODE REQUIREMENTS FOR FLEXIBLE DUCT CONNECTORS C. ELECTRICAL CONNECTIONS: COMPLY WITH CODE REQUIREMENTS FOR POWER WIRING, SWITCHES AND MOTOR CONTROLS IN ELECTRICAL SECTIONS INSTALLATION



#### MOTOR ROTATES CONTINUOUSLY AND QUIETLY. THE FAN IS AERODYNAMICALLY-OPTIMIZED. SICKLE-BLADE PROFILE. PATTERNED WITH SERRATED TRAILING EDGE AND WINGLETS ON THE BLADE OUTER EDGE FOR ENERGY AND NOISE-OPTIMIZED OPERATION 3.THE FAN ASSEMBLY SHALL BE BALANCED IN CLASS G 6.3 ACC DIN ISO 1940, DYNAMIC ON TWO LEVELS

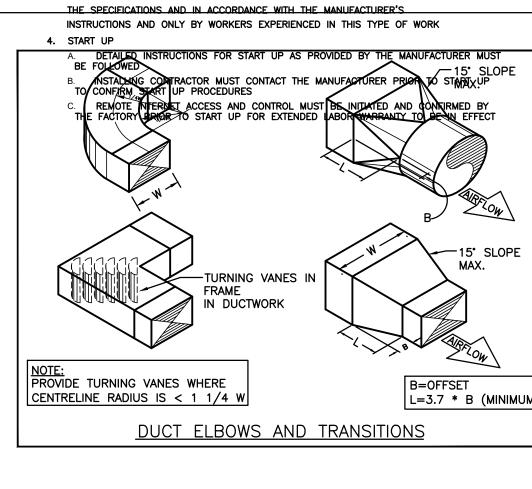
- 4.THE FAN ASSEMBLY SHALL BE SUITABLE FOR AMBIENT TEMPERATURES OF -40°C TO MAX. +70°C 5.THERMAL CONTACTS INSTALLED IN THE WINDINGS COMPLIANT WITH THCL 155 6.DRIVE MOTOR IN EXTERNAL ROTOR PRINCIPLE, SEALED IN PROTECTION CLASS IP54 WITH MOISTURE PROTECTION IMPREGNATION OF THE WINDINGS, TOPICAL PROTECTION OPEN AND SPRING RETURN OUTSIDE AIR DAMPER. THE GRAVITY EXHAUST DAMPERS
- 11. POOL WATER HEATER A. THE POOL WATER HEATER SHALL BE TITANIUM GASKETED FLAT PLATE HEAT EXCHANGER. HEAT EXCHANGER THAT ARE NOT TITANIUM ARE NOT ACCEPTABLE SINCE THEY INCREASE THE OWNERS LIABILITY.
- COMPRESSOR(S) SHALL BE LOCATED OUTSIDE THE CONDITIONED AIR STREAM IN
- 13. REFRIGERATION CIRCUIT A. THE SYSTEM SHALL CONSIST OF TWO FACTORY SEALED REFRIGERATION CIRCUITS FOR DEHUMIDIFICATION AND SENSIBLE COOLING. NO SITE REFRIGERATION WORK SHALL BE BEACH REFRIGERATION CIRCUIT SHALL HAVE PRESSURE TRANSDUCERS MONITORING THE REFRIGERANT DISCHARGE (HIGH) AND SUCTION (LOW) PRESSURES. THE REFRIGERATION CIRCUIT SHALL BE ACCESSIBLE FOR DIAGNOSTICS, ADJUSTMENT AND SERVICING WITHOUT THE NEED FOR SERVICE MANIFOLD GAUGES ALL REFRIGERATION CIRCUITS SHALL HAVE REFRIGERANT CONTROL VALVES, A LIQUID LINE FILTER—DRIER, A LIQUID AND MOISTURE INDICATOR, AN EXPANSION VALVE, HEAD PRESSURE CONTROL FEATURE AND PUMP DOWN FEATURE D. ALL REFRIGERATION CIRCUITS SHALL HAVE AN EXTERNALLY ADJUSTABLE BALANCED PORT DESIGN MECHANICAL THERMOSTATIC EXPANSION VALVE F.TAMPER PROOF, HERMETICALLY SEALED NON-ADJUSTABLE HIGH AND LOW PRESSURE SWITCHES AND REFRIGERATION SERVICE VALVES SHALL BE INSTALLED USING SCHRADEI TYPE VALVES. REFRIGERATION SERVICE VALVES SHALL BE LOCATED OUTSIDE OF THE
- C. MAIN CONTROL PANEL SHALL BE MOUNTED INSIDE THE SERVICE VESTIBULE OUTSIDE OF THE PROCESS AIR STREAM
- 3.STAGE 1 & 2 HEATING
- 9.AUXILIARY POOL HEATER 1
- 10. **HEAT RECOVERY** FACTORY-MOUNTED.
- $\ensuremath{\mathsf{L}}.\ensuremath{\mathsf{CONVENIENCE}}$  OUTLET AND LIGHT INCLUDED FACTORY MOUNTED IN CONTROL CABINET, POWERED AND WIRED SEPARATELY. THE PACKAGED HOT WATER COIL SHALL BE SIZED TO MEET THE SCHEDULED HEATING CAPACITY AND HAVE THE FOLLOWING CHARACTERISTICS: A. MODULATING (0-10V) AUXILIARY AIR HEAT CONTROL BY MEANS OF A FACTORY MOUNTED AND WIRED THREE-WAY CONTROL VALVE BAUXILIARY AIR HEATING COIL TUBES, FINS, HEADERS, CASING AND END-PLATES SHALL BE FULLY PROTECTED BY A POLYESTER/ENAMEL COATING FOR MAXIMUM CORROSION PROTECTION. THE PROTECTIVE COATING SHALL COMPLY WITH ASTM B117/D1654 AND ASTM D2126 FOR CORROSION RESISTANCE AGAINST COMMON ACIDS, SALTS AND GASES C. COIL CASING AND END-PLATES SHALL BE MADE OF GALVANIZED STEEL FIN AND TUBE JOINTS SHALL BE MECHANICALLY BONDED TO ENSURE HIGH HEAT
- A. THE SYSTEM SHALL BE EQUIPPED WITH AN AIR CONDITIONING MODE WHERE EXCESS COMPRESSOR HEAT IS REJECTED TO A FACTORY PACKAGED INTEGRAL OUTDOOR AIR-COOLED HEAT EXCHANGER (AKA DRY COOLER) VIA A SINGLE GLYCOL FLUID LOOP. NO SITE REFRIGERATION WORK SHALL BE REQUIRED. THE PACKAGED FLUID COOLED REJECTING 100% OF THE COMPRESSOR HEAT REJECTION WITH AN AIR ON TEMPERATURE AT SUMMER DESIGN CONDITIONS B.THE SYSTEM SHALL BE PROVIDED WITH A 24 VAC/2A SIGNAL TO OPERATE THE REMOTE OUTDOOR FLUID COOLER CONTROL
- SURFACE UTILIZATION. COILS SHALL BE COUNTER FLOW AND HAVE ADEQUATE CAPACITY TO DISSIPATE THE TOTAL HEAT REJECTION OF THE SYSTEM AT DESIGN CONDITIONS 17. FACTORY PERFORMANCE TESTING A. THE SYSTEM SHALL BE THOROUGHLY TESTED UNDER FACTORY TEST CONDITIONS.
- C. IF THE SYSTEM IS TO BE STORED PRIOR TO INSTALLATION, STORE IN A CLEAN, DRY PLACE PROTECTED FROM WEATHER, DIRT, FUMES, WATER, CONSTRUCTION AND PHYSICAL
- 2. CONNECTIONS A. WHERE INSTALLING PIPING ADJACENT TO THE SYSTEM, ALLOW SPACE FOR SERVICE AND MAINTENANCE
- THE AGENCY RESPONSIBLE FOR START-UP SHOULD WORK IN ACCORDANCE WITH





- A. SYSTEM STARTUP
- 1.POWER IS TURNED ON OR THE SYSTEM IS RESTARTED 2.AFTER A SHORT INITIAL DELAY TO ALLOW THE SENSORS TO STABILIZE, THE BLOWER
- 1.THE SYSTEM CONTINUOUSLY DELIVERS THE SPECIFIED SUPPLY AIR VOLUME TO THE
- 1.THE RETURN AIR RELATIVE HUMIDITY IS ABOVE THE HUMIDITY SETPOINT
- 4.IF THE SYSTEM CANNOT MAINTAIN THE RELATIVE HUMIDITY BELOW SETPOINT, THE
- NOT ACCEPTABLE SINCE THEY DO NOT CLOSELY MATCH THE REQUIREMENT OF THE SPACE AND CAUSE SWINGS IN SPACE CONDITIONS. D. AIR CONDITIONING MODE
- E.SPACE HEATING MODE 2. THE MICROPROCESSOR SPACE HEATING OUTPUT SIGNAL (0-10 VOLTS) IS SENT TO THE HEATING COIL CONTROLLER. THE SIGNAL OUTPUT WILL REGULATE BASED ON
- HEATER OR MODULATION TO MATCH THE DEMANDS OF THE POOL ARE NOT
- FOR A POOL WATER HEATING DEMAND UNLESS SPECIFICALLY CONFIGURED TO DO INSUFFICIENT FLOW. IN ORDER TO PREVENT THE POOL FROM OVERHEATING, IT IS RECOMMENDED THAT A FIELD-INSTALLED AQUASTAT (PROVIDED BY OTHERS) BE
- AUTOMATICALLY RESUMES NORMAL OPERATION
- 2.THE MICROPROCESSOR WILL COMPARE THE TEMPERATURE OF THE OUTSIDE AIR
- CONDITIONS CANNOT SATISFY THE SPACE COOLING DEMAND
- A. CABINET CONSTRUCTION: ALL CABINET 16, 20 AND 24 GAUGE SHEET METAL SHALL BE GALVANIZED G90 STEEL OR GALVALUMETM ALLOY WITH MILL—APPLIED ZINC PHOSPHATE PRIMER FOLLOWED BY AN EXTERIOR GRADE WHITE SILICONE MODIFIED POLYESTER TOP COAT. THE SHEET METAL IS ENGINEERED TO FORM A CABINET WITH MAXIMUM STRENGTH AND RIGIDITY. ALL SEAMS SHALL BE CAULKED WITH SILICONE TO PREVENT AIR AND WATER LEAKAGE OF INFILITRATION. 1.BASE RAILS: THE CABINET SHALL HAVE A BASE FRAME COMPRISED OF 2 LAYERS OF 10 GAUGE MILL GALVANIZED G90 STEEL. LIFTING LUGS SHALL BE PROVIDED ON 2.THE CABINET WALLS SHALL BE OF DOUBLE-WALL CONSTRUCTION USING 20 GAUGE PRE-PAINTED STEEL WITH A FULLY PAINTED INNER METAL LINER AND 2 INCHES OF

#### - SHEET METAL DUCT DUCT LINER -RIGID DÚCT LINER FASTENERS -- DUCT LINER GLUED & TYPICAL) PINNED INTO PLACE TRANSVERSE AND ONGITUDINAL EDGES OF LINER. FROM EDGE OF LINER TO BE COATED WITH ADHESIVE ALL LINER TO BE MEDICAL GRADE NON-FIBROUS. REFER TO SPECIFICATION. ACOUSTIC LINING



contractor shall verify all dimensions and report all errors discrepancies to the Consultant before commencement of drawings show general arrangement of services. Follow as closely as actual building construction will permit. Obtain approval for relocation of service from Consultant before commencement of the work.

The drawings do not indicate all offsets fitting and accessories which may be required. Provide the same to meet the required conditions.

Drawings and specifications, etc., prepared and issued by the consultant are the property of the consultant and must be returned at the completion of the project. These documents are not to be duplicated or copied without the consent of the Consultant. Do not scale this drawing.

© 2025 DEI & Associates Inc. ISSUES DATE ISSUED FOR REVIEW

MECHANICAL LEGEND

FLOW DIRECTION

——CD—— CONDENSATE DRAIN

FD **Q** → | FLOOR DRAIN

- NATURAL GAS

TRAP PRIMER

\_\_ TEE CONNECTION

PIPE DOWN

PIPE UP

- UNION

PLUG VALVE

—**|ō|**——|BALL VALVE

**≮**C── VALVE ON RISER

SUPPLY AIR DUCT

PRESSURE REDUCING VALVE

WHERE INDICATED)

RETURN/EXHAUST AIR DUCT

THERMAL INSULATION

RECTANGULAR DUCTWORK

ABOVE FINISHED FLOOR

ABOVE FINISHED ROOF

ALL DRAWINGS ARE TO BE READ IN

CONJUNCTION WITH THE PREPARED

CONTRACTOR TO INCLUDE COST FOR

CAD AS-BUILT DWGS (ALL PAGES).

RECORD DWGS.

REFER TO SPEC SECTION 20 02 51

SANITARY VENT PIPING IS NOT SHOWN

PROVIDE ALL NECESSARY VENT PIPING

FROM ALL FIXTURES FOR A COMPLETE

& LOCAL AUTHORITY REQUIREMENTS

NEW VENTS AS REQUIRED.

SYSTEM TO ALL LOCAL PLUMBING CODE

INNECTED TO EXISTING VENTS OR

CO-ORDINATE VENT LOCATION(S) WITH

GENERAL CONTRACTOR. MAINTAIN MIN

14'-0" FROM ANY AIR INLET. INSTALL

VENT PIPING HIGH IN JOIST SPACE.

UPON COMPLETION OF THE PROJECT

INDIVIDUAL PHASE OF THE PROJECT

THE CONTRACTORS SHALL PROVIDE THE

CONFORMANCE LETTERS ARE ISSUED B

CSA-B149 GAS PRESSURE TEST TAG

SUBMITTED TOGETHER IN A SINGLE

BALANCING REPORT FOR ALL POOL

VENTILATION SYSTEMS & EQUIPMENT

OR UPON COMPLETION OF EACH

FOLLOWING CERTIFICATES BEFORE

- COPY OF MANDATORY TSSA

ALL CERTIFICATES ARE TO BE

CONSULTANT TO COMPLETE ELECTRONIC

EXISTING DUCT (SIZE AS

ACOUSTIC DUCT LINING

→ BD BALANCING DAMPER

→ MOTORIZED DAMPER

Type Size DIFFUSER/GRILLE SIZE (imp),

TYPE & CAPACITY (cfm)

THERMOSTAT (WITH GUARD

—HPG ——

----

- ITEM TO BE REMOVED

Description

CUT EXISTING & CONNECT

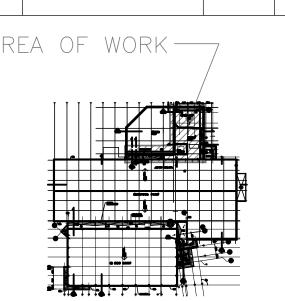
- EXISTING SAN ABOVE FLOOR

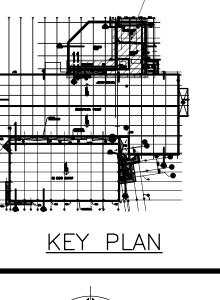
- EXISTING SAN BELOW FLOOR

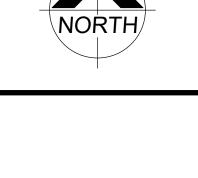
HIGH PRESSURE NATURAL

SCREWED OR WELDED PIPE

2024.10.30 MP ISSUED FOR PERMIT & TENDER 2025.02.14 MP











MECHANICAL | ELECTRICAL | AQUATIC

PROJECT:

DRAWING:

(1 OF 2)

14 Feb 25

M.S. PACE

190171722 Heece

**CENTURY GARDENS RECREATION CENTRE** 340 VODDEN ST. EAST. BRAMPTON, ONTARIO

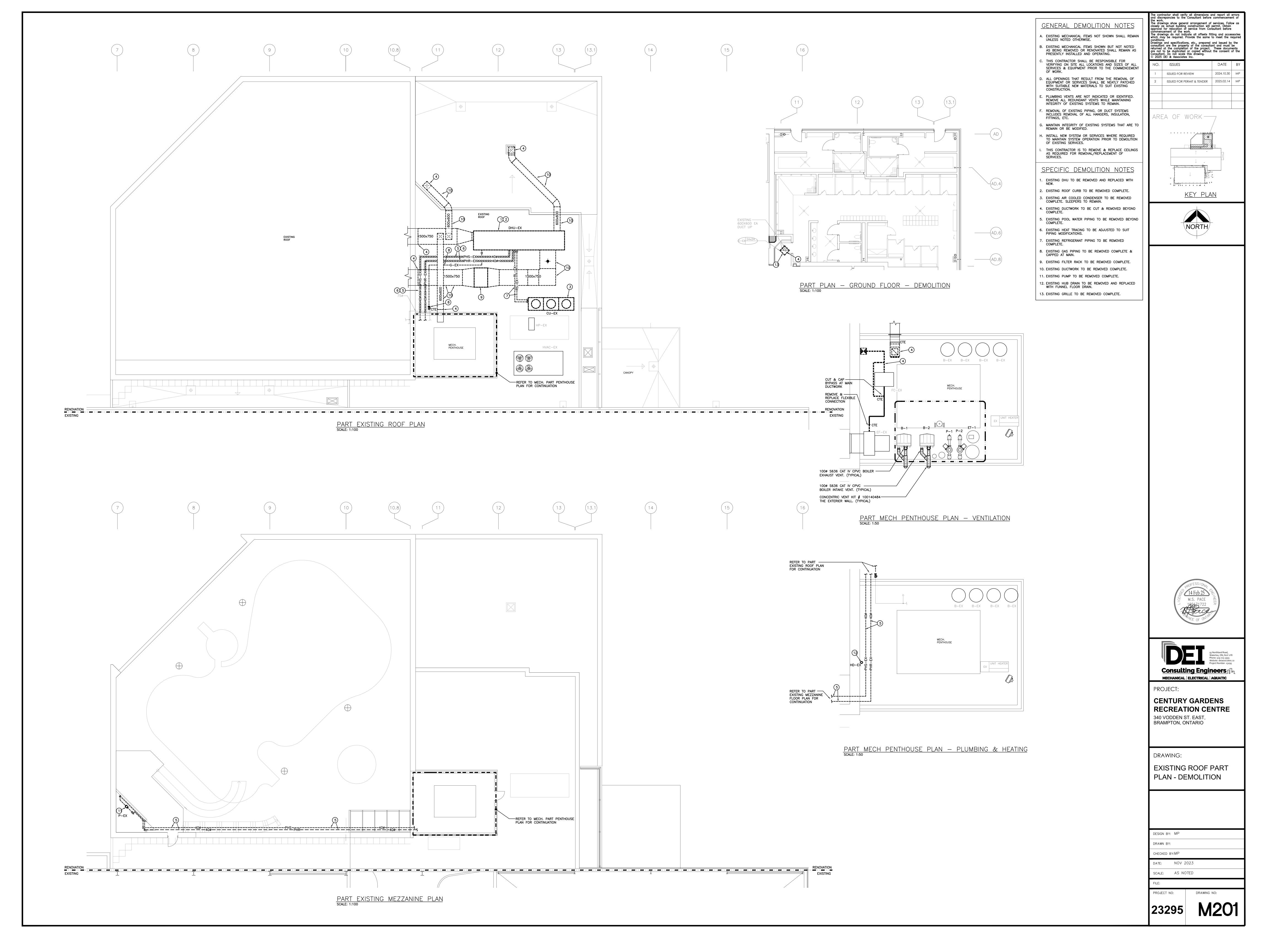
LEGEND & SCHEDULES

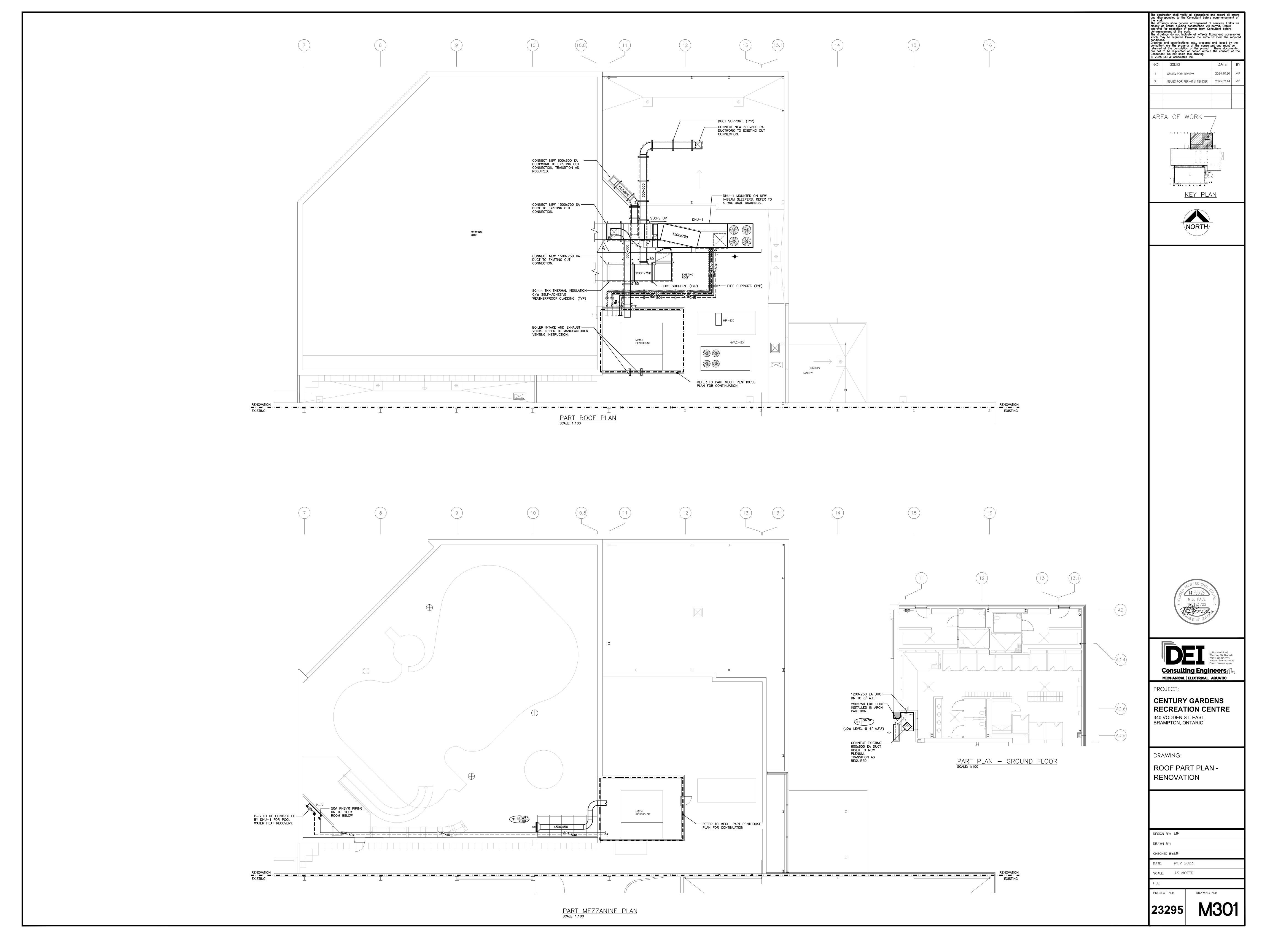
DESIGN BY: MP DRAWN BY: CHECKED BY:MP

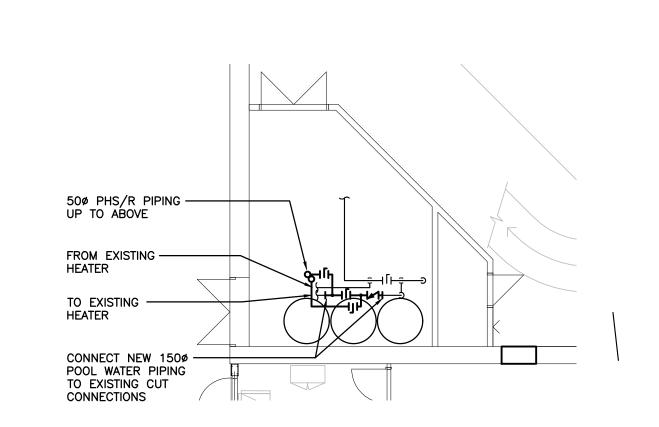
PROJECT NO: DRAWING NO:

DATE: NOV 2023

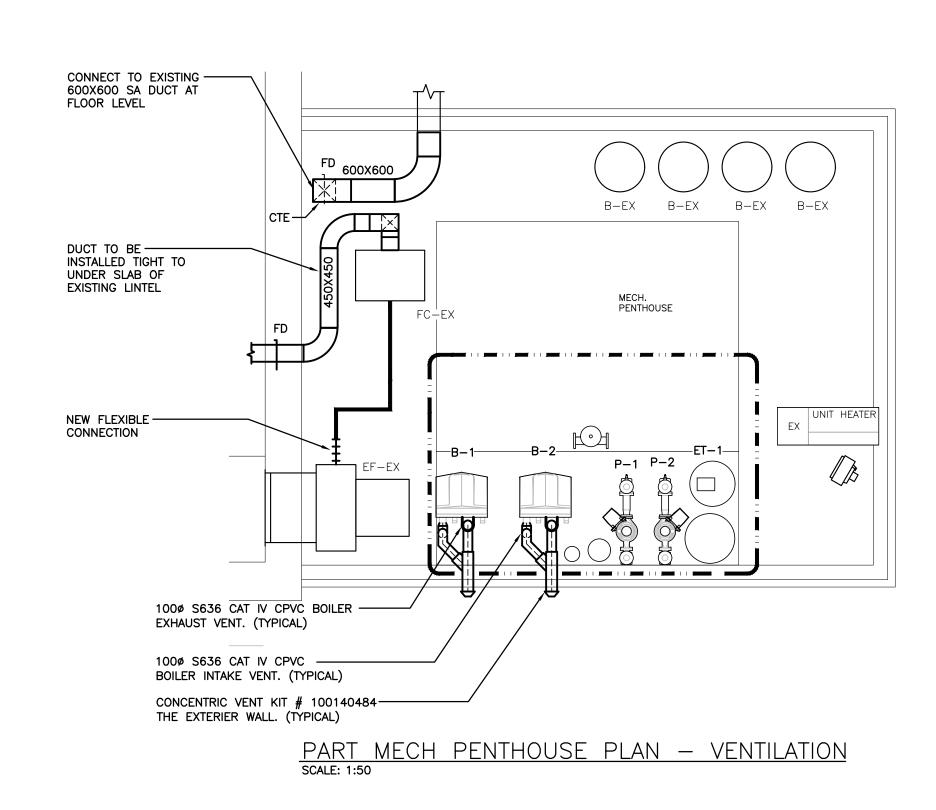
SCALE: AS NOTED

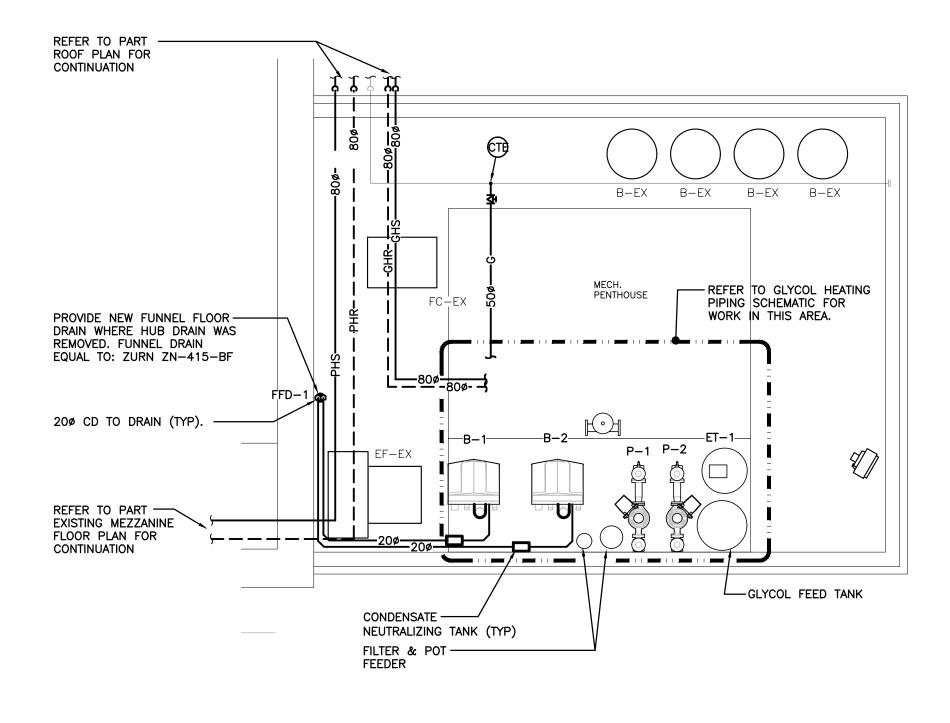




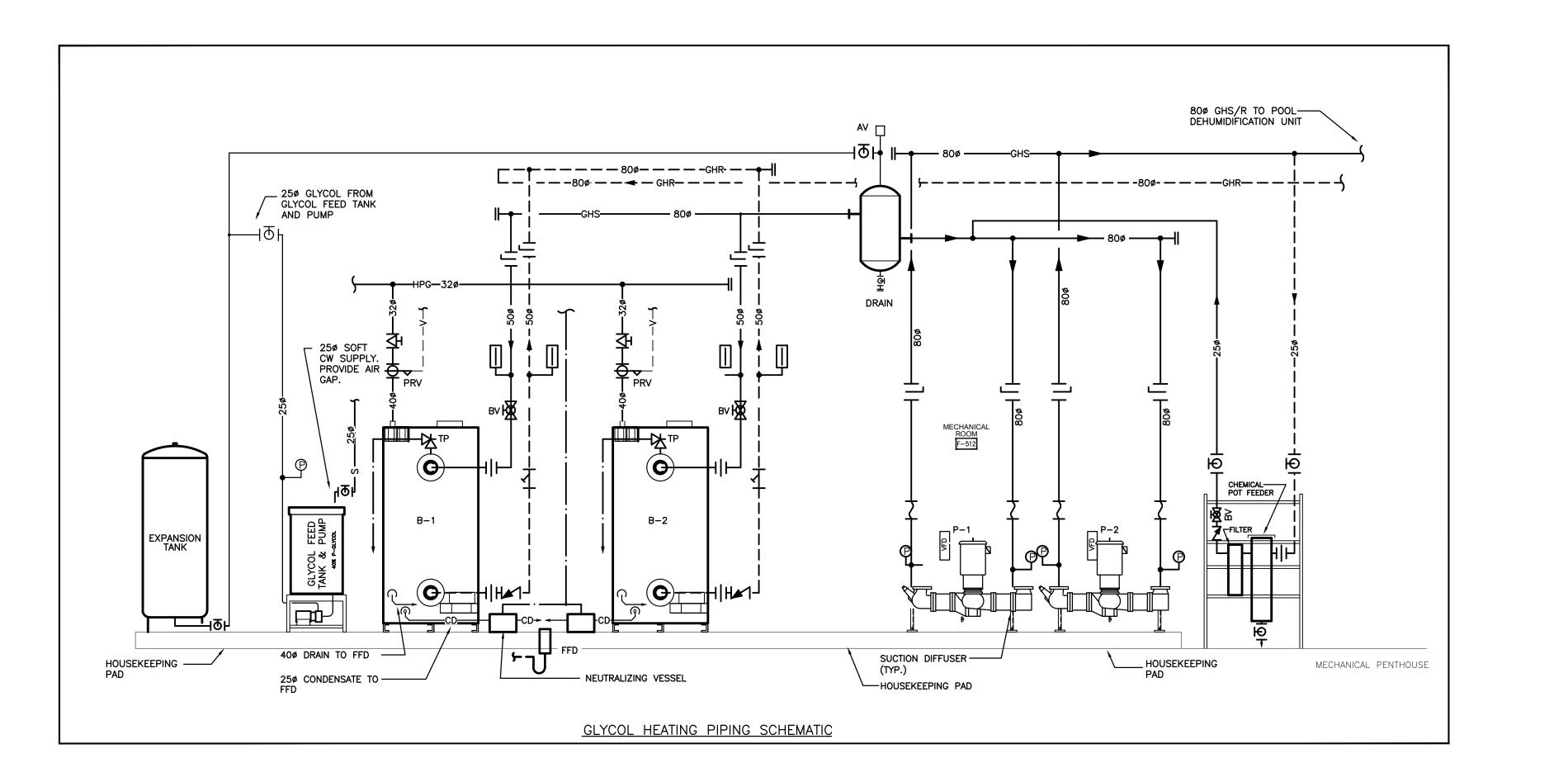


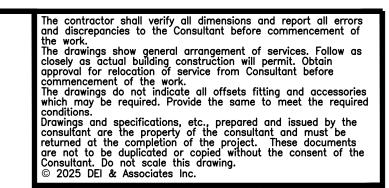
PART GROUND FLOOR FILTER ROOM PLAN
SCALE: 1:50



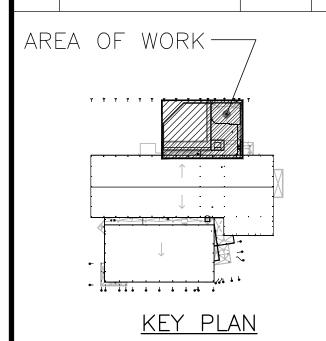


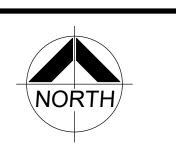
PART MECH PENTHOUSE PLAN — PLUMBING & HEATING SCALE: 1:50





© 2025	DEI & Associates Inc.		
NO.	ISSUES	DATE	BY
1	ISSUED FOR REVIEW	2024.10.30	MP
2	ISSUED FOR PERMIT & TENDER	2025.02.14	MP









PROJECT:

CENTURY GARDENS
RECREATION CENTRE
340 VODDEN ST. EAST,
BRAMPTON, ONTARIO

DRAWING:

ROOF PART PLAN -RENOVATION

ESICNI DV. MP

DESIGN BY: MP

DRAWN BY:

CHECKED BY:MP

DATE: NOV 2023

SCALE: AS NOTED

FILE:

PROJECT NO: DRAWING NO: 23295 M30