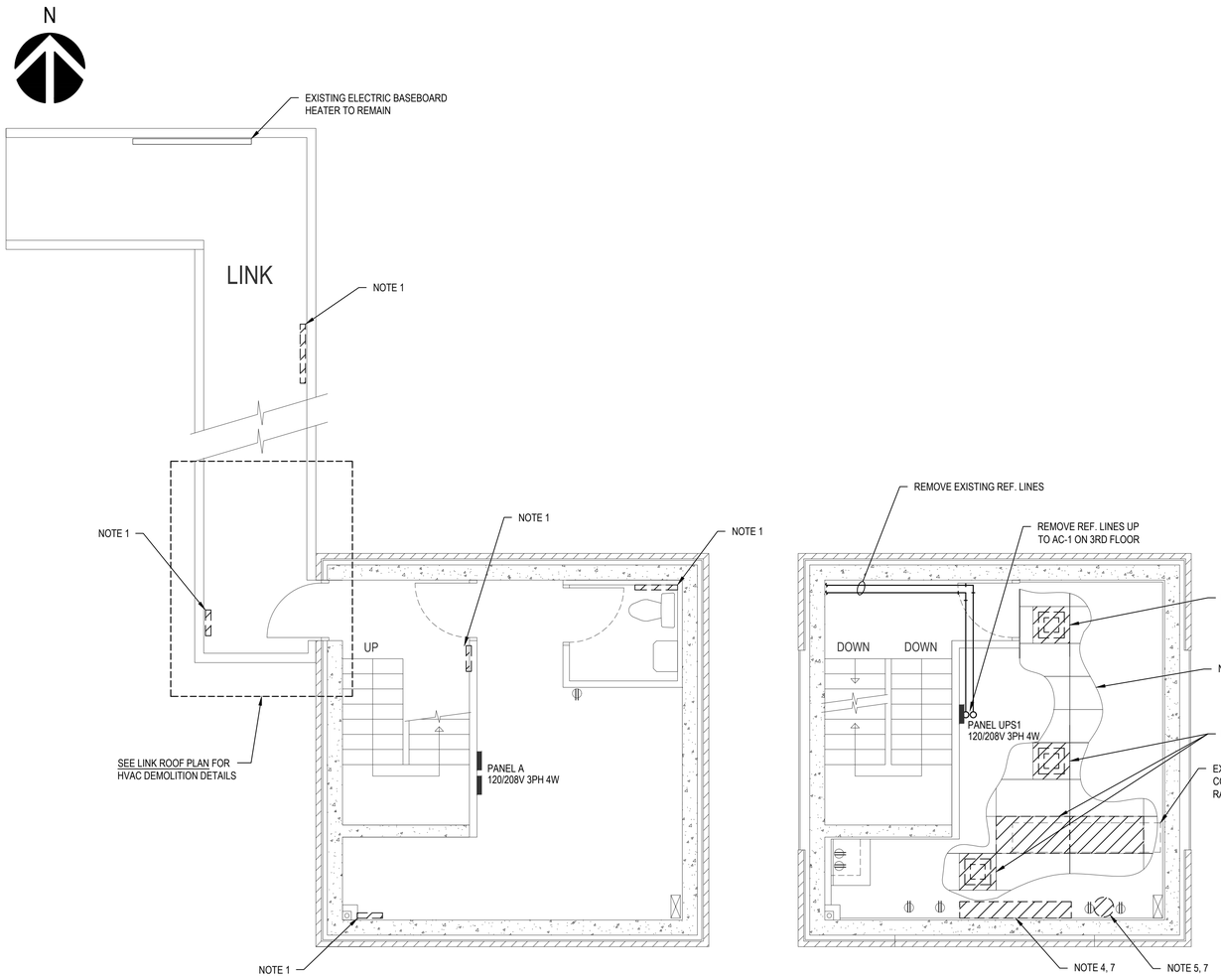
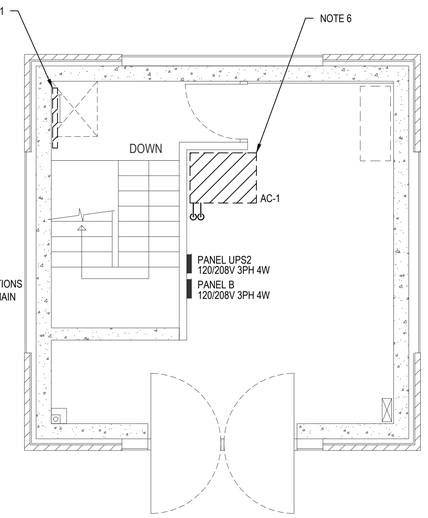
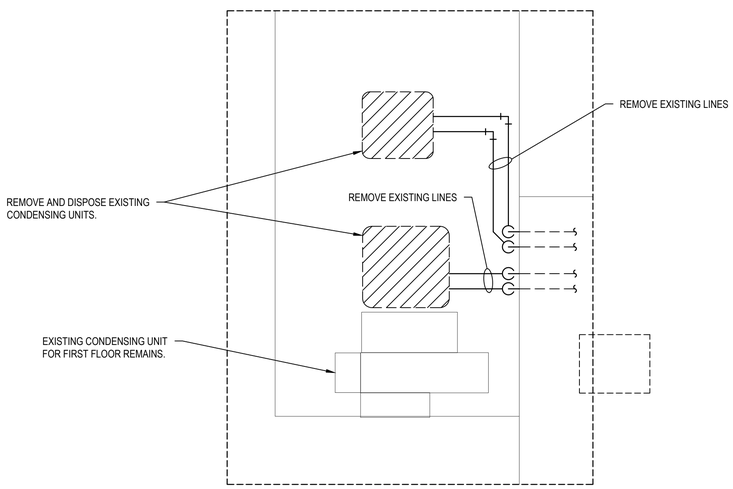


MAIN FLOOR PLAN - HVAC DEMOLITION
N.T.S.

SECOND FLOOR PLAN - HVAC DEMOLITION
N.T.S.



THIRD FLOOR PLAN - HVAC DEMOLITION
N.T.S.



LINK ROOF PLAN - HVAC DEMOLITION
N.T.S.

NOTES:

1. REMOVE AND DISPOSE EXISTING ELECTRIC HEATER.
2. REMOVE AND DISPOSE ALL RETURN AIR 'EGG CRATE' CEILING GRILLES AND SUPPLY AIR DIFFUSERS. REPLACE, ANY DAMAGED & STAINED CEILING TILES TO MATCH EXISTING.
3. REMOVE AND DISPOSE OUTDOOR AIR DUCTWORK TO CEILING SPACE PROVIDE INSULATION AND SEALED CAP. PATCH WALL AS REQUIRED.
4. REMOVE AND DISPOSE EXISTING CONDENSATE PUMP AND PIPING.
5. REMOVE AND DISPOSE EXISTING AIR HANDLING UNIT AND DUCTWORK.
6. REMOVE AND DISPOSE EXISTING AC-1 UNIT INCLUDING PIPING AND DUCTWORK.
7. CONTRACTOR SHALL COORDINATE THEIR DEMOLITION SCHEDULE WITH OPERATORS ON SECOND LEVEL TO ENSURE THERE IS NO INTERRUPTIONS WITH THEIR OPERATIONS.
8. CONTRACTOR SHALL SUPPLY TEMPORARY HEAT AND/OR COOLING UNTIL NEW HVAC SYSTEM IS COMMISSIONED.

REVISION:

REV	DATE	DESCRIPTION	BY
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PROJECT NUMBER: 211-11106-00

CLIENT:

CANADIAN SPACE AGENCY

CLIENT REF. #: --

PROJECT:

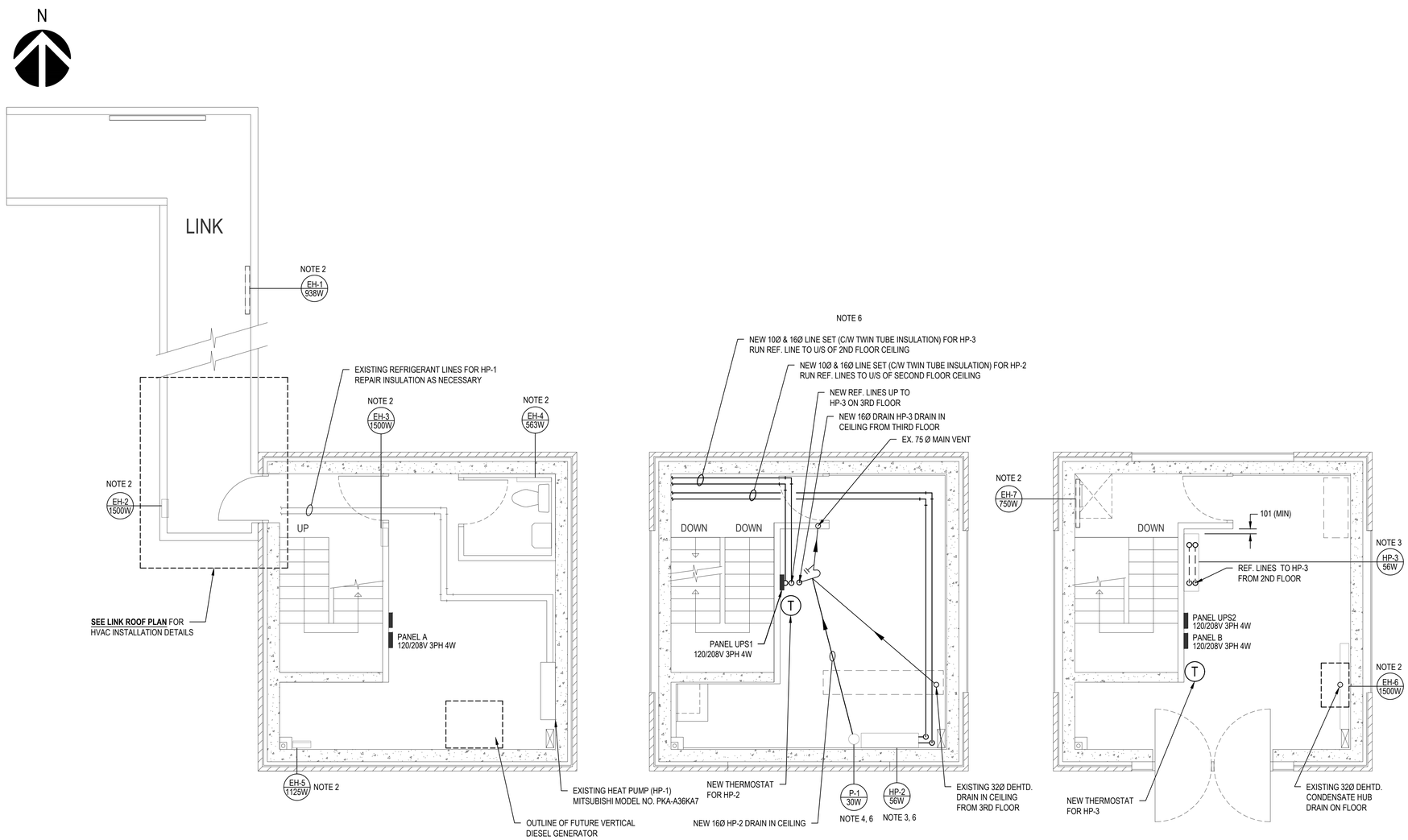
CSA ANTENNA SUPPORT BLDG.

TITLE:

ANTENNA SUPPORT BUILDING

FLOOR PLANS
MECHANICAL
DEMOLITION

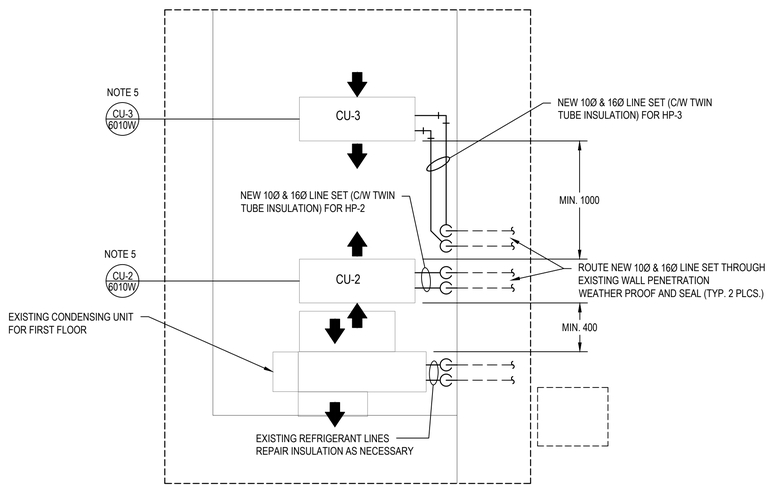
DRAWING NUMBER: M-100
REV. B



MAIN FLOOR PLAN - HVAC INSTALLATION
1:50

SECOND FLOOR PLAN - HVAC INSTALLATON
1:50

THIRD FLOOR PLAN - HVAC INSTALLATION
1:50



LINK ROOF PLAN - HVAC INSTALLATION
N.T.S.

NOTES:

1. ALL EQUIPMENT AND ACCESSORIES SHALL BE SUPPLIED BY MECHANICAL CONTRACTOR. SEE DRAWING M-300 FOR EQUIPMENT SCHEDULES AND DETAILS.
2. ELECTRICAL CONTRACTOR SHALL INSTALL NEW ELECTRIC HEATERS (EH-1 TO EH-7).
3. SUPPLY AND INSTALL INDOOR WALL MOUNTED HEAT PUMP (HP-2 & HP-3). PIPE CONDENSATE TO PUMP (P-1).
4. INSTALL CONDENSATE PUMP (P-1) C/W WALL BRACKET FOR HP-2 & HP-3 CONDENSATE. DISCHARGE TO DRAIN AS EXISTING.
5. SUPPLY AND INSTALL INSTALL COMPRESSOR UNITS (CU-2 & CU-3). PROVIDE LIQUID AND INSULATED SUCTION PIPING TO INDOOR UNITS.
6. CONTRACTOR SHALL COORDINATE THEIR INSTALLATION SCHEDULE WITH OPERATORS ON SECOND LEVEL TO ENSURE THERE IS NO INTERRUPTIONS WITH THEIR OPERATIONS.
7. CONTRACTOR SHALL SUPPLY TEMPORARY HEAT AND/OR COOLING UNTIL NEW HVAC SYSTEM IS COMMISSIONED.

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PROJECT NUMBER: 211-11106-00

CLIENT:

CANADIAN SPACE AGENCY

CLIENT REF. #: --

PROJECT:

CSA ANTENNA SUPPORT BLDG.

TITLE:

ANTENNA SUPPORT BUILDING

FLOOR PLANS
MECHANICAL
INSTALLATION

DRAWING NUMBER: M-200
REV. B

CTB: wsp industrial.ctb
PLOTTED: 2021-12-17 4:27 PM
FILE: k:\projects\2021\211-11106-csa antenna support bldg\03 drawings\04 mechanical\02-cad\m-200_rb.dwg

ELECTRIC HEAT SCHEDULE

TAG	SERVICE/LOCATION	TYPE	MAKE	MODEL	ELECTRICAL (W)	ELECTRICAL (V/ø)	PANEL	CCT (BKR)	POWER CABLE	CONTROLS	REMARKS	NOTE
EH-1	LINK/EAST	BASEBOARD HEATER	OUELLET	OFM1258	938	208/1	A	23/25 (30A)	EXISTING	INTEGRAL	LINK HEATER; NO CABLE NOR BREAKER CHANGES	2
EH-2	LINK/SOUTH	FORCE FLOW HEATER	OUELLET	OAC02000-T	1500	208/1	A	23/25 (30A)	EXISTING	INTEGRAL	LINK HEATER; NO CABLE NOR BREAKER CHANGES	2
EH-3	MAIN FLOOR/STAIRWELL	FORCE FLOW HEATER	OUELLET	OAC02000-T	1500	208/1	A	24/26 (30A)	EXISTING	INTEGRAL	ROOM 101 HEATER; NO CABLE NOR BREAKER CHANGES	2
EH-4	MAIN FLOOR/WASHROOM	BASEBOARD HEATER	OUELLET	ORM0752	563	120/1	A	28 (15A)	EXISTING	INTEGRAL	WASHROOM HEATER; NO CABLE NOR BREAKER CHANGES	2
EH-5	MAIN FLOOR/SOUTH	FORCE FLOW HEATER	OUELLET	OAC01500-T	1125	208/1	A	27/29 (30A)	EXISTING	INTEGRAL	ROOM 103 HEATER; NO CABLE NOR BREAKER CHANGES	2
EH-6	THIRD FLOOR/EAST	BASEBOARD HEATER	OUELLET	OFM2008	1500	208/1	B	10/12 (15A)	2#12	INTEGRAL	NEW THIRD FLOOR HEATER/CIRCUIT	1, 2
EH-7	THIRD FLOOR/WEST	BASEBOARD HEATER	OUELLET	OFM1002	750	120/1	A	11 (15A)	EXISTING	INTEGRAL	ROOF HATCH AREA HEATER	2

AC SCHEDULE

TAG	SERVICE/LOCATION	TYPE	MAKE	MODEL	ELECTRICAL (W)	ELECTRICAL (V/ø)	PANEL	CCT (BKR)	POWER CABLE	CONTROLS	REMARKS	NOTE
HP-2	SECOND FLOOR/SOUTH	HEAT PUMP/AC	MITSUBISHI	PKA-A36KA7	56	208/1, 24VDC	N/A	(BY MANUF)	3#12	CARRIED ON 3C CABLE; S1/S2/S3 TERMINALS TIED TO CU-2	REPLACES EXISTING AC-2 UNIT; SUBFED FROM OUTDOOR CU-2	2
HP-3	THIRD FLOOR	HEAT PUMP/AC	MITSUBISHI	PKA-A36KA7	56	208/1, 24VDC	N/A	(BY MANUF)	3#12	CARRIED ON 3C CABLE; S1/S2/S3 TERMINALS TIED TO CU-3	REPLACES EXISTING AC-3 UNIT; SUBFED FROM OUTDOOR CU-3	2
CU-2 (New)	SECOND FLOOR/SOUTH ROOF	CONDENSING UNIT	MITSUBISHI	PUZ-HA36NHA5	6010	208/1	B	2/4 (40A)	2#8	WALL-MOUNTED PAC-YT53CRAU; 2#16 CABLED TO HP-2	LOAD IS MAXIMUM POWER INPUT AS PUBLISHED	1, 2
CU-3 (New)	THIRD FLOOR/SOUTH ROOF	CONDENSING UNIT	MITSUBISHI	PUZ-HA36NHA5	6010	208/1	B	6/8 (40A)	2#8	WALL-MOUNTED PAC-YT53CRAU; 2#16 CABLED TO HP-3	LOAD IS MAXIMUM POWER INPUT AS PUBLISHED	1, 2

PUMP SCHEDULE

TAG	SERVICE/LOCATION	TYPE	MAKE	MODEL	ELECTRICAL (W)	ELECTRICAL (V/ø)	PANEL	CCT (BKR)	POWER CABLE	CONTROLS	REMARKS	NOTE
P-1	HP-2&3/SECOND FLOOR	CONDENSATE PUMP	FRANKLIN	VCMA-15	30	120/1	TBD	TBD	EXISTING	INTEGRAL	REPLACES EXISTING; PLUG IN TO EXISTING RECEPTACLE	2

NOTES:

1. ELECTRICAL CONTRACTOR SHALL REMOVE 3P BREAKERS IN POSITIONS 2/4/6 AND 8/10/12 AND MAKE SPACE FOR CU-2, CU-3, AND EH-6 (THIRD FLOOR) FEEDER BREAKERS.
2. ELECTRIC HEATERS (EH-1 TO EH-7), HEAT PUMPS (HP-2 & HP-3), CONDENSERS (CU-2 CU-3) AND CONDENSATE PUMP (P-1) SHALL BE SUPPLIED BY MECHANICAL CONTRACTOR.
3. CONTRACTOR SHALL COORDINATE THEIR DEMOLITION SCHEDULE WITH OPERATORS ON SECOND LEVEL TO ENSURE THERE IS NO INTERRUPTIONS WITH THEIR OPERATIONS.

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PROJECT NUMBER: 211-11106-00

CLIENT: CANADIAN SPACE AGENCY

CLIENT REF. #: --

PROJECT: CSA ANTENNA SUPPORT BLDG.

TITLE: ANTENNA SUPPORT BUILDING
FLOOR PLANS
ELECTRICAL
SCHEDULES

DRAWING NUMBER: M-300
REV. B

A. BASIC MATERIALS AND METHODS

1. WORK SHALL CONFORM TO THE NATIONAL BUILDING CODE CURRENT EDITION, AND REGULATIONS OF PROVINCIAL AND MUNICIPAL AUTHORITIES HAVING JURISDICTION. THE MOST SEVERE OF THESE REGULATIONS SHALL APPLY IN CASE OF CONFLICTING OF CODES OR SPECIFICATIONS, WHERE DOCUMENTS CALL FOR INSTALLATIONS MORE STRINGENT THAN MINIMUM REQUIREMENTS OF CODES, THE DRAWINGS SHALL BE FOLLOWED.
   .1 NATIONAL PLUMBING CODE WITH SASKATCHEWAN AND LOCAL REVISIONS
   .2 NATIONAL FIRE CODE
   .3 NFPA 14 STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEM
   .4 ASHRAE STD. 62

2. MATERIALS SUPPLIED SHALL BE NEW AND CSA APPROVED AND SHALL CARRY A LABEL SHOWING THIS APPROVAL. EQUIPMENT SPECIFIED IN THIS DOCUMENT IS INTENDED TO INDICATE STANDARD OF EQUIPMENT THAT SHALL BE REQUIRED.

3. INSTALLATION OF MATERIALS, FIXTURES AND EQUIPMENT SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

4. MAKE NECESSARY CHANGES REQUIRED BY AN AUTHORIZED INSPECTOR.

5. MAKE NECESSARY CHANGES TO ACCOMMODATE EXISTING CONSTRUCTION CONDITIONS AT SITE.

6. OBTAIN PERMITS, GIVE NOTICES AND PAY ALL FEES FOR THE WORK UNLESS SPECIFICALLY NOTED OTHERWISE.

7. PROVIDE SLEEVES AND INFORMATION ON OPENINGS REQUIRED IN THE STRUCTURE TO ACCOMMODATE INSTALLATION OF MECHANICAL SYSTEMS.

8. EQUIPMENT AND MECHANICAL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE, AND REPAIRS BY ACCESS DOORS OR OTHER APPROVED MEANS. TAKE SPECIAL PRECAUTIONS TO PREVENT ENTRY OF FOREIGN MATERIAL INTO ANY WORKING PARTS OR INTO PIPING AND DUCT SYSTEMS.

9. ENSURE THAT EQUIPMENT IS LUBRICATED, CLEANED AND ALIGNED AND THAT CONTROLS ARE OPERATIONAL AND CALIBRATED PRIOR TO COMPLETION.

10. BE RESPONSIBLE FOR THE START-UP OF ALL EQUIPMENT AND SYSTEMS AND PLACE THEM IN OPERATING CONDITION AND IN OPERATION.

11. ALL POWER WIRING FOR THE MECHANICAL EQUIPMENT AND SYSTEMS SHALL BE UNDER ELECTRICAL DIVISION.

12. FURNISH ONE (1) YEAR GUARANTEE ON DEFECTIVE MATERIALS AND WORKMANSHIP FOR THE WORK AND MATERIALS UNDER THIS CONTRACT.

13. TEMPORARY HEATING SHALL BE SUPPLIED BY THE GENERAL CONTRACTOR. ALL EXPENSES FOR SUCH HEATING SHALL BE BORNE BY THE GENERAL CONTRACTOR.

14. COORDINATE FIRE STOPPING OF ALL PENETRATIONS THROUGH FLOORS AND WALLS WITH GENERAL CONTRACTOR. ENSURE COMPATIBILITY OF SYSTEMS. AS A BASE LINE OF ACCEPTANCE, FIRE STOP ALL PIPE PENETRATIONS OF RATED FLOOR ASSEMBLIES AND WALLS AS FOLLOWS: CONTRACTOR IS RESPONSIBLE FOR ENSURING FIRE STOPPING IS ACCEPTABLE TO AUTHORITY.

15. COORDINATE DEMOLITION AND INTALLATION SCHEDULES WITH THE OPERATORS ON SECOND LEVEL TO ENSURE THERE IS NO INTERRUPTIONS WITH THEIR OPERATIONS.

B. HEATING, VENTILATION, AND AIR CONDITIONING

1. HEAT PUMP SYSTEMS
   .1 REFER TO SCHEDULE
   .2 MAINTAIN ADEQUATE CLEARANCES FOR ACCESS AND MAINTENANCE
   .3 SET CONDENSING UNITS ON CONCRETE PAD ON ROOF AS SHOWN. BOLT UNITS ON CONCRETE PAD WITH RESILIENT CONNECTION. PROVIDE WATERPROOF/FLASHED/SEALED OPENING FOR REFRIGERANT PIPING.
   .4 PIPE EVAPORATOR COIL DRAIN TO NEAREST FLOOR DRAIN

2. HEATING UNITS
   .1 UNIT HEATERS
      .1 REFER TO SCHEDULE
      .2 PROVIDE GUARD ON FAN INLET
      .3 VENT HIGH POINT ON PIPING CONNECTIONS
   .2 FORCE FLOWS
      .1 REFER TO SCHEDULE
      .2 ENSURE COVER IS INSTALLED SECURELY AND IS REMOVABLE
      .3 VENT HIGH POINT ON PIPING CONNECTIONS
   .3 WALL FIN RADIATION
      .1 REFER TO SCHEDULE
      .2 ENSURE COVER IS INSTALLED SECURELY AND IS REMOVABLE

C. PIPING

1. BUILDING DRAIN, WASTE, AND VENT SYSTEM
   .1 PVC DWV PIPE AND FITTINGS TO CSA B181.1 AND B181.2 (SOLVENT WELDED JOINTS)
   .2 CAST IRON OR COPPER PIPE AND FITTINGS. (MJ CLAMPS OR COPPER DWV FITTINGS W/ 50/50 SOLDER.) CAST IRON OR COPPER SHALL BE USED WITHIN FIRE RATED WALLS/FLOORS. DO NOT USE PVC.
   .3 PVC DWV XFR 25/50 RATED PIPE SYSTEM WHERE LOCATED IN SPACE USED AS RETURN AIR PLENUM. ALL PIPING AND FITTINGS TO BE FACTORY TREATED. ONLY FIELD JOINTS TO BE RE-COATED. FOR THIS PROJECT ALL PIPE AND FITTINGS LOCATED ABOVE 2M AFF SHALL BE CONSIDERED AS RETURN AIR PLENUM.

2. REFRIGERANT PIPING:
   .1 TYPE 'ACR' COPPER TUBING TO ASTM B280. SILVER SOLDERED JOINTS PERFORMED UNDER PURGE (COPPER PRESSURE FITTINGS).
      .1 SIZE PIPING TO SUIT CONNECTED LOAD. PROVIDE TRAPS AND OTHER PIPELINE DEVICES AS REQUIRED FOR INSTALLATION ACCEPTABLE TO EQUIPMENT MANUFACTURER. CHARGE SYSTEM AS REQUIRED WITH REFRIGERANT AS SPECIFIED BY UNIT MANUFACTURER. CHECK FOR LEAKS WHEN COMPLETE.

D. INSULATION

1. PIPING
   .1 EQUAL TO KNAUF 1000 PIPE INSULATION WITH ASJ CONFORMING TO CGSB51-GP-9M: SEAL ALL JOINTS VAPOUR-TIGHT.

   .2 REFRIGERANT PIPING (SUCTION AND LIQUID) WITH 12MM THICK EQUIVALENT TO ARMAFLEX CLOSED CELL INSULATION. APPLY AS RECOMMENDED BY MANUFACTURER. NOTE: INSULATION EXPOSED TO EXTERIOR DOES NOT REQUIRE FURTHER JACKETING.

E. OPERATION & MAINTENANCE MANUALS

1. COLLECT ALL OPERATION AND MAINTENANCE INFORMATION PROVIDED WITH EQUIPMENT. COMBINE WITH COPIES OF SHOP DRAWING SUBMITTALS. BIND ALL OF ABOVE IN A SINGLE THREE RING BINDER AND TURN OVER TWO COPIES TO ENGINEER PRIOR TO PROJECT COMPLETION.

F. CONTROLS

1. FURNISH ALL MATERIALS INCLUDING LOW VOLTAGE THERMOSTAT, TRANSFORMER AND ALL WIRING AND CONDUIT REQUIRED.

2. ALL WIRING (INCLUDING LOW VOLTAGE) SHALL BE IN CONDUIT. EXISTING CONDUIT MAY BE REUSED WHERE POSSIBLE.

3. ALL CONDUIT SHALL FOLLOW BUILDING LINES AND BE MOUNTED CLOSE TO STRUCTURE.

4. ALL LINE VOLTAGE CONTROL AND DEVICE WIRING & CONDUIT SHALL BE AS SPECIFIED UNDER ELECTRICAL DIVISION.

5. THERMOSTAT EQUAL TO ROBERTSHAW MODEL 300-229 7-DAY PROGRAMMABLE C/W AUX. OCCUPIED/UNOCCUPIED RELAY.

G. RECORD DRAWINGS

1. OBTAIN A CLEAN SET OF WHITE PRINTS AND PROVIDE MARKUPS OF ANY INSTALLATION THAT MIGHT BE DIFFERENT THAN INDICATED ON THE ORIGINAL DESIGN DRAWINGS. SUBMIT MARKED UP DRAWINGS TO THE OWNER PRIOR TO COMPLETION OF THE PROJECT.

H. PIPING IDENTIFICATION

1. ALL PIPING TO HAVE PVC STICK-ON LABELS INDICATING THE SYSTEM, ALONG WITH BANDED DIRECTION OF FLOW LABELS.
   .1 ACCEPTABLE MANUFACTURER: "BRADY"

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CSA ANTENNA SUPPORT BLDG.

TITLE:

ANTENNA SUPPORT BUILDING

FLOOR PLANS
MECHANICAL
GENERAL SPECIFICATIONS

DRAWING NUMBER: M-400
REV. B