

10 8/29/2024 FULL MECH SET UPDATE

9 8/23/2024 ARCH/HVAC/RAD/SNOWMELT UPDATE

8 3/7/2024 CORE SLAB SLEEVE REVISION #2

7 2/29/2024 CORE SLAB SLEEVE REVISIONS

6 2/8/2024 ISSUED FOR CORE SLAB SLEEVE COORD

5 10/25/2023 ISSUED FOR PERMIT COMMENTS

4 10/12/2023 UPDATES / ISSUED FOR PRICING

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2 7/28/2023 ISSUED FOR REVIEW

1 6/20/2023 ISSUED FOR REVIEW

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NO. DATE DESCRIPTION

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THESE DRAWINGS ARE NOT TO BE SCALED.

CONSTRUCTION UNLESS COUNTERSIGNED BY THE DESIGNER.

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CONSTRUCTION NORTH

GEORGINA, ONTARIO

MECHANICAL

PLOT DATE PROJECT No. 23-317

MECHANICAL EQUIPMENT ROOM LAYOUT

CONSULTING INC

23 - 1111 Davis Drive

Newmarket, Ontario L3Y 9E5

T (905) 773-0200

staff@bkconsulting.ca

140 LAKE DRIVE

EAST

2024

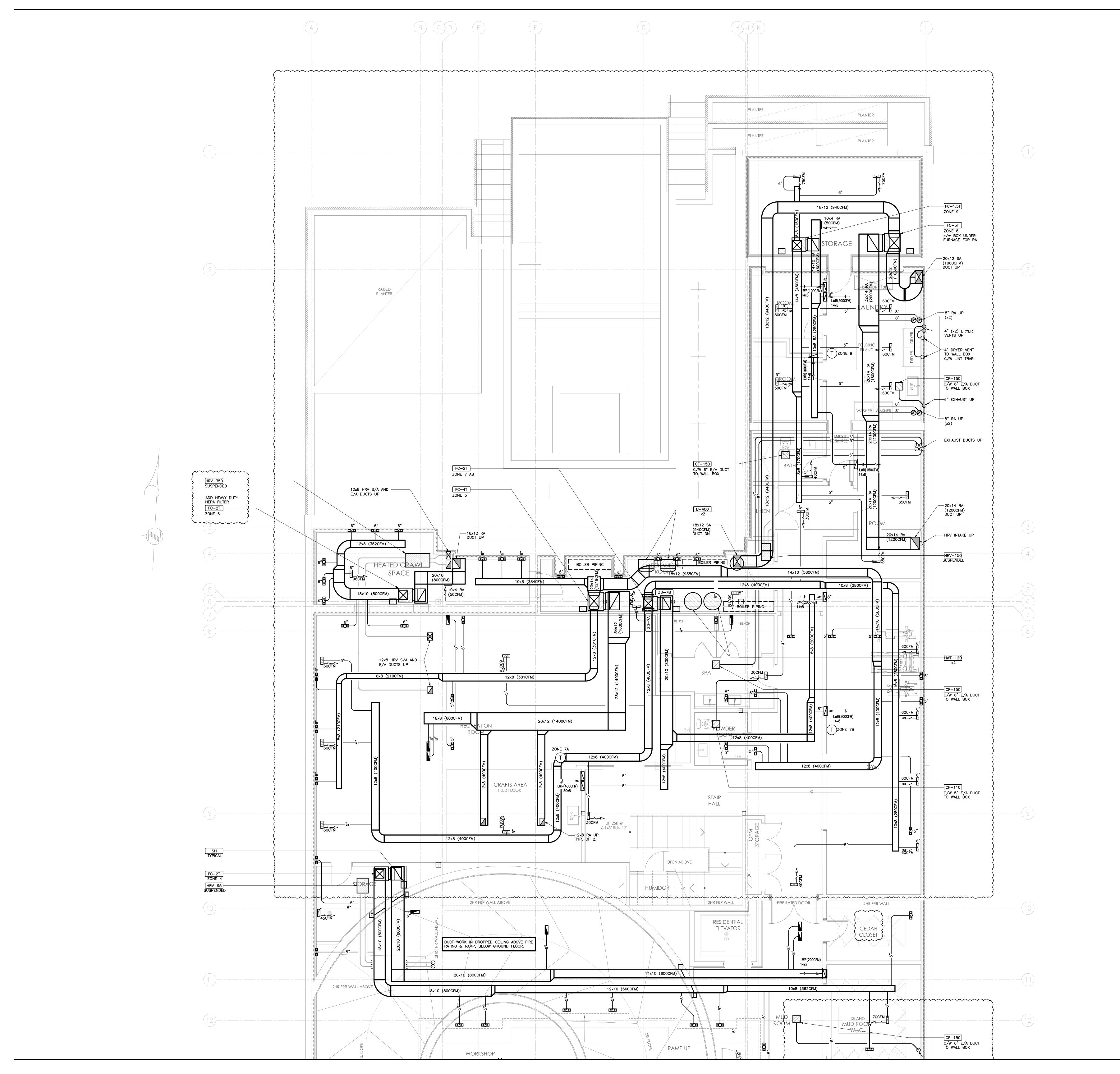
DRAWN BY

J.W/K.W

SCALE

1/4"=1'-0"

M—1
of 25



- REFER TO <u>DUCTED STUD SPACE RETURN AIR DETAIL</u> ON SCHEMATICS DRAWING FOR DETAIL. UNLESS NOTED ALL BRANCH DUCTS SERVING SINGLE STUD SPACE SHALL BE 8".
- . PROVIDE 4" DRYER VENTING AND WALL BOX AS REQUIRED. VENTING SIZE TO BE CONFIRMED WITH DRYER MANUFACTURERS REQUIREMENTS. EXACT LOCATION T.B.D AT SITE. PROVIDE DRYER BOOSTER FAN WHERE VENTING EXCEEDS DRYER MANUFACTURERS RECOMMENDATIONS.
 - PROVIDE 4" S.A AND R.A INTO EVERY SKYLIGHT WHERE APPLICABLE. FINISH OFF WITH 4X4 GRILLE C/W BALANCING DAMPER AS APPROVED BY ARCHITECT/OWNER. BALANCE GRILLE TO 30 CFM.
- . KITCHEN MAKE UP AND FIREPLACE MAKE UP AIR REQUIREMENTS ARE TO BE CONFIRMED AT A LATER DETAIL UPON SELECTION OF HOOD AND ASSOCIATED EXHAUST FAN. NO DRY-WALLING SHALL BE DONE UNTIL THIS HAS BEEN CONFIRMED. KITCHEN EXHAUST FAN SHALL BE SUPPLIED BY OTHERS AND INSTALLED BY THIS CONTRACTOR ALONG WITH THE ASSOCIATED DUCTWORK. UNLESS NOTED ON PLANS ALLOW 50FT OF DUCTWORK FOR BUDGETING PURPOSES. ALL OPEN GAS LOG SET AND WOOD FIREPLACES ARE TO BE ROUGHED-IN ELECTRICALLY FOR POSSIBLE FUTURE ADDITION OF CHIMNEY VENTILATOR EQUAL TO EXHAUSTO RS-012.
- ALL EXTERIOR LOUVRES AND VENT OPENINGS MUST BE MIN. 24" ABOVE FINISHED GRADE. ADJUST OPENING LOCATIONS OR MODIFY GRADE AS REQUIRED.
- 5. ALL DUCTWORK SHALL CONFORM TO ASHRAE. ALL DUCTWORK SHALL AND PLENUMS SHALL BE CONSTRUCTED, INSTALLED AND SEALED AS DETAILED IN THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS — METAL AND FLEXIBLE. CONTRACTOR TO SEAL DUCT WITH ZERO VOC DUCT SEALANT. WHERE DUCTWORK IS EXPOSED SEAL WITH CLEAR SILICONE.
- . RADIUS OF ELBOW SHALL BE AT LEAST 1.5 TIMES THE WIDTH OF THE DUCT. WHERE A RADIUS IS NOT POSSIBLE TURNING VANES MUST BE INTRODUCED.
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WHERE A/C DUCTWORK RUNS THROUGH A DROP CEILING AND MAY BE EXPOSED TO HIGHER PLENUM TEMPERATURE DUE TO POT LIGHTS THE DUCTWORK SHALL BE INSULATED WITH 1.5" TYPE A INSULATION.

<u>SUPPLY AIR GRILLE</u> — TYPE G, 12X4 (UNLESS NOTED ON PLAN), OBVD DAMPER MUST BE EASILY ACCESSIBLE BY HOME OWNER TO MAKE SEASONAL ADJUSTMENTS AS REQUIRED.

RETURN AIR GRILLE — BY ARCHITECTURAL DIVISION UNLESS NOTED, SIZE AS SHOWN, THIS CONTRACTOR TO CARRY (AS A SEPARATE PRICE) RETURN AIR GRILLES AS NOTED ON PLANS, MODEL LBP27B, CONCEALED FASTENING.

WASHROOM EXHAUST GRILLES (APPLICABLE WITH REMOTE FANS OR HRV UNITS) - TYPE G, 10X4 (UNLESS NOTED ON PLAN),

SANITARY EXHAUST FANS SIZING/NOTES PROVIDE FANS AS LOCATED ON FLOOR PLANS AND SIZED AS BELOW

- PROVIDE <u>CF-150</u> CEILING EXHAUST FANS FOR ALL 3 PIECE WASHROOMS AND/OR ROOMS WHERE SHOWERS OR BATHTUBS
- ARE LOCATED. DISCHARGE DUCT SHALL BE 6". . PROVIDE <u>CF-250</u> CEILING EXHAUST FAN FOR EXERCISE ROOMS AND FOR MASTER ENSUITE WHERE THERE IS A
- SHOWER AND BATHTUB. DISCHARGE DUCT SHALL BE 8".
- 3. PROVIDE <u>CF-100</u> CEILING FANS FOR ALL 2 PIECE WASHROOMS WHERE SHOWERS OR BATHTUBS ARE NOT LOCATED. DISCHARGE DUCT SHALL BE 5".
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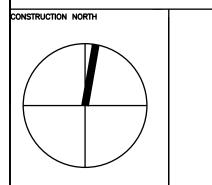
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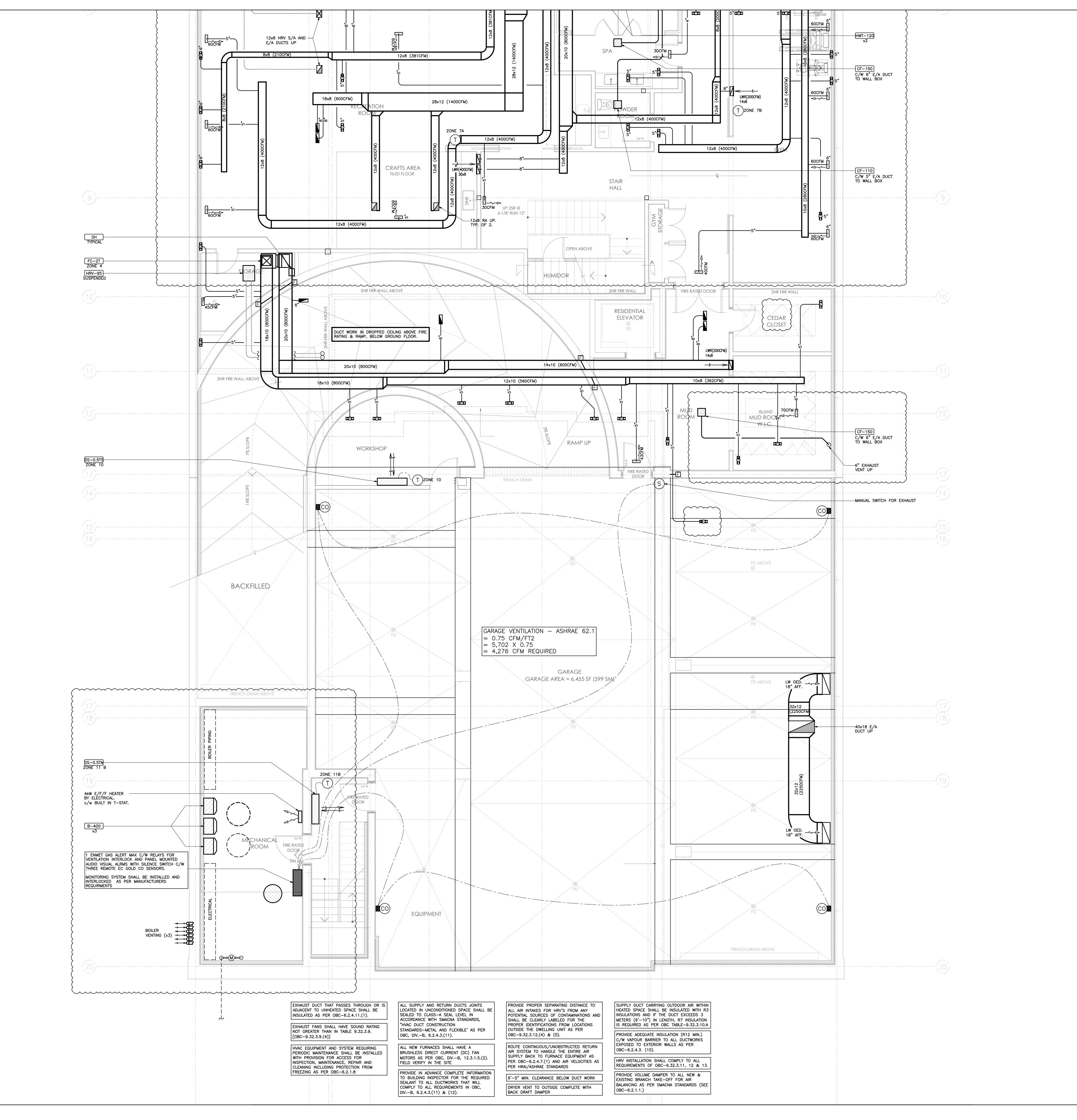
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GEORGINA, ONTARIO MECHANICAL PROJECT No. 23-317

> BASEMENT HVAC LAYOUT

2024 J.W/K.W 1/4"=1'-0"

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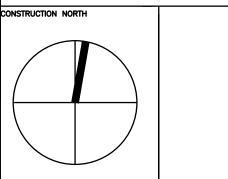
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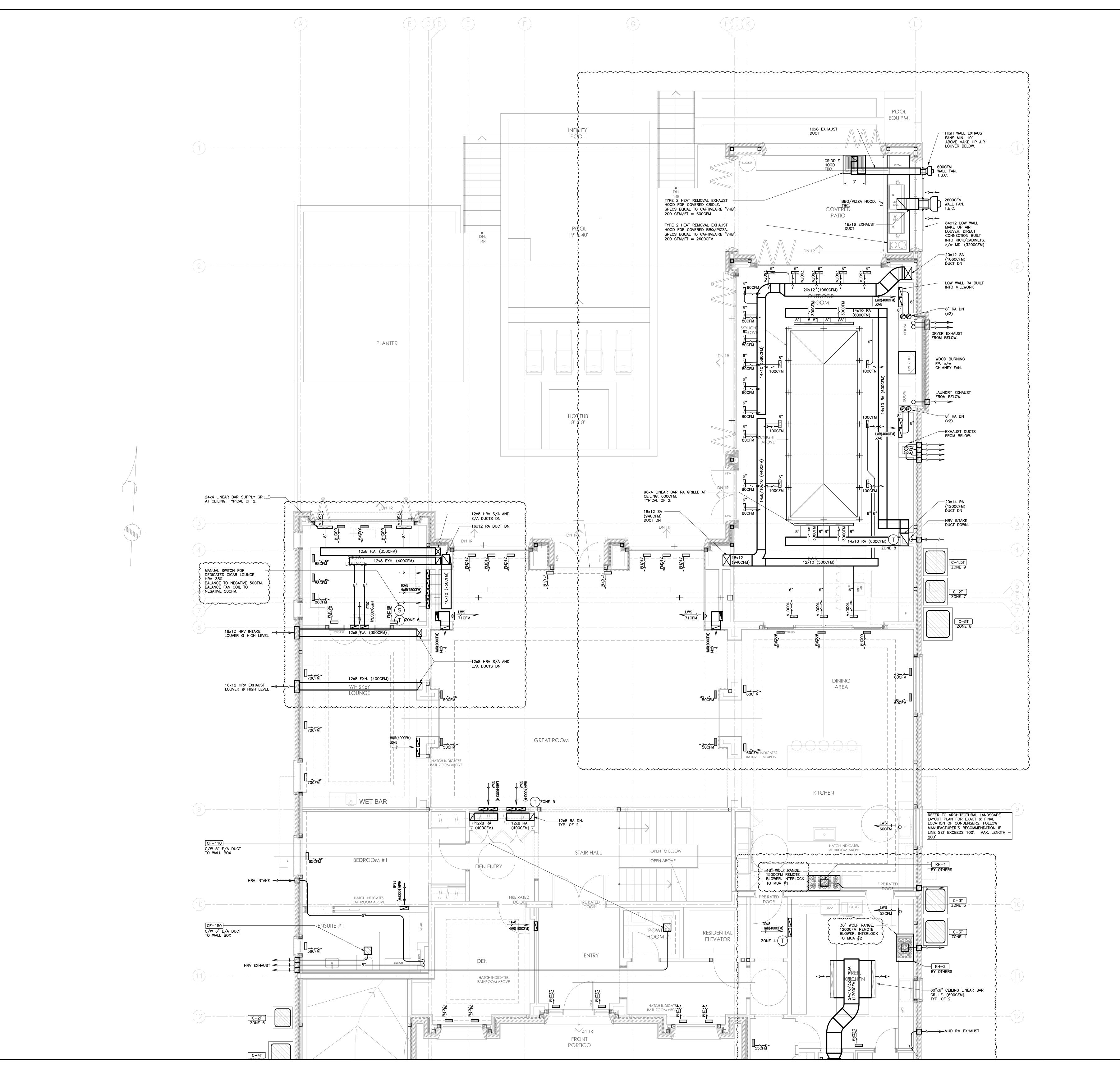
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GEORGINA, ONTARIO **MECHANICAL** PROJECT No. 23-317

BASEMENT

HVAC LAYOUT

J.W/K.W



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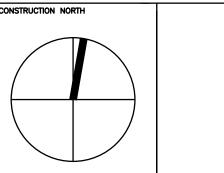
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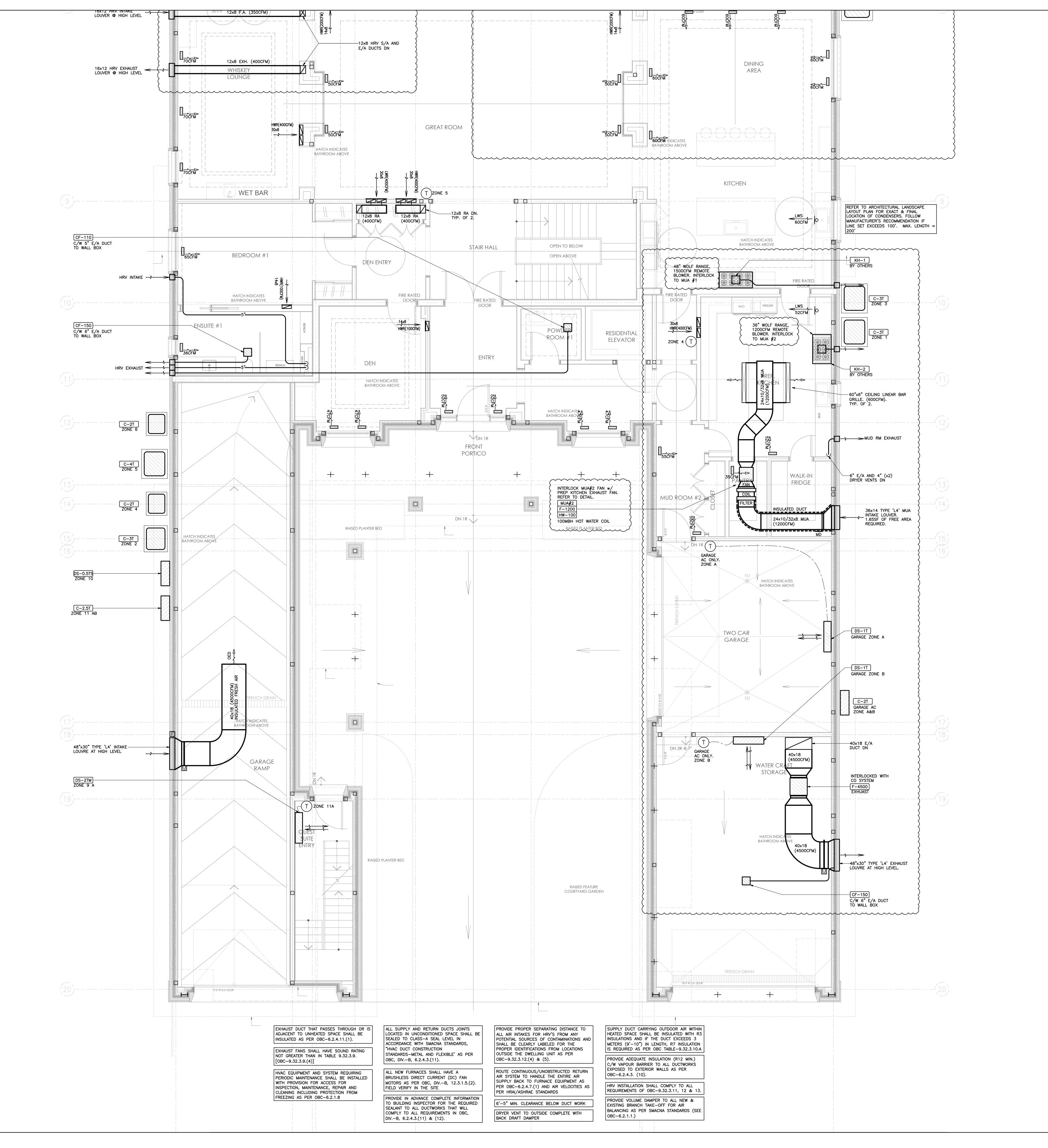
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ONTARIO GEORGINA, **MECHANICAL** PROJECT No. 23-317

GROUND FLOOR HVAC LAYOUT

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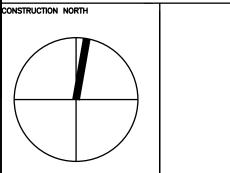
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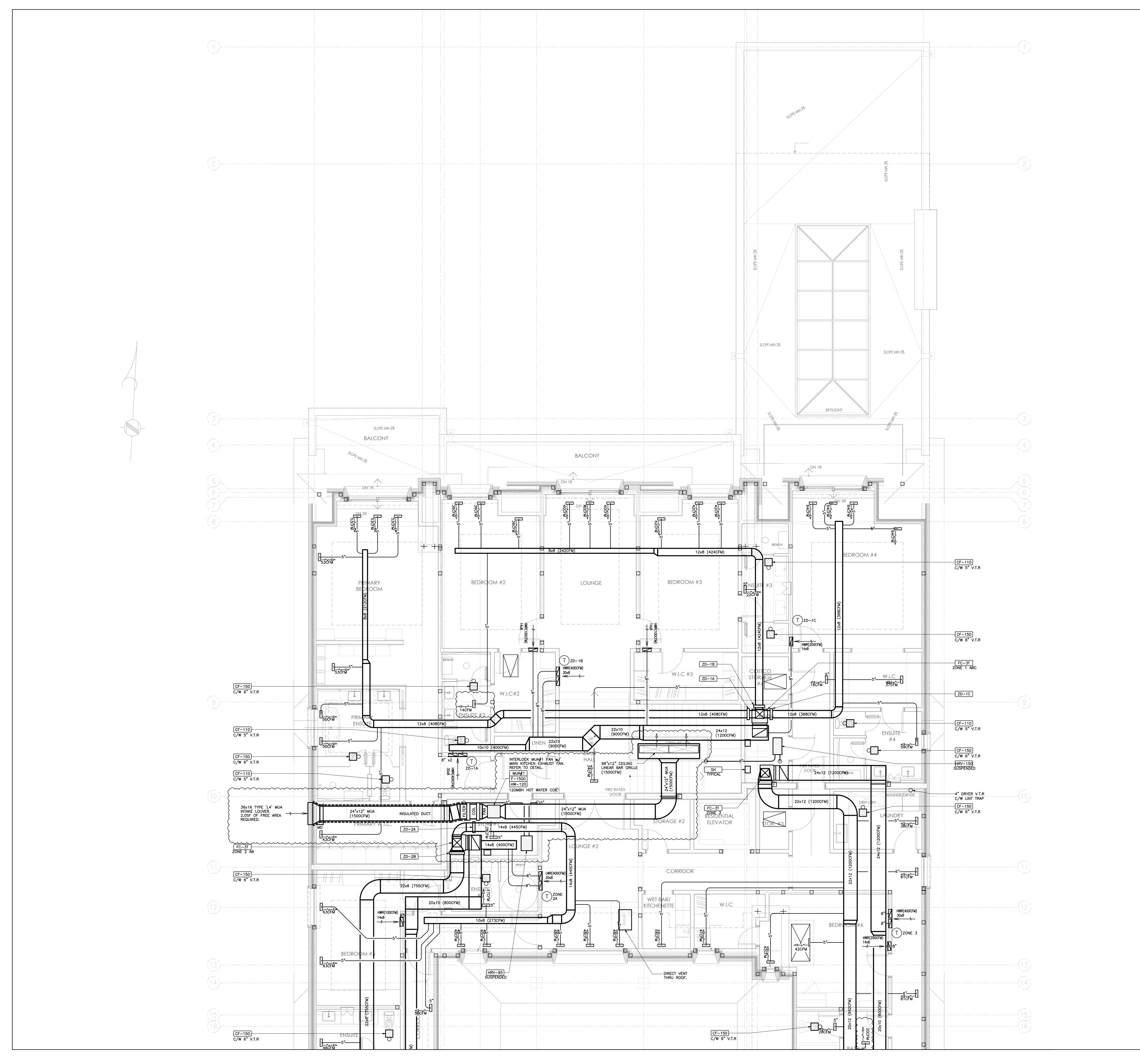
140 LAKE DRIVE EAST

GEORGINA, ONTARIO **MECHANICAL** 23-317

GROUND FLOOR

HVAC LAYOUT 2024

J.W/K.W OF 25



. REFER TO <u>DUCTED STUD SPACE RETURN AIR DETAIL</u> ON SCHEMATICS DRAWING FOR DETAIL. UNLESS NOTED ALL BRANCH DUCTS SERVING SINGLE STUD SPACE SHALL BE 8".

- 2. PROVIDE 4" DRYER VENTING AND WALL BOX AS REQUIRED. VENTING SIZE TO BE CONFIRMED WITH DRYER MANUFACTURERS REQUIREMENTS. EXACT LOCATION T.B.D AT SITE. PROVIDE DRYER BOOSTER FAN WHERE VENTING EXCEEDS DRYER MANUFACTURERS RECOMMENDATIONS.
- . PROVIDE 4" S.A AND R.A INTO EVERY SKYLIGHT WHERE APPLICABLE. FINISH OFF WITH 4X4 GRILLE C/W BALANCING DAMPER AS APPROVED BY ARCHITECT/OWNER. BALANCE GRILLE TO 30 CFM.
- 4. KITCHEN MAKE UP AND FIREPLACE MAKE UP AIR REQUIREMENTS ARE TO BE CONFIRMED AT A LATER DETAIL UPON SELECTION OF HOOD AND ASSOCIATED EXHAUST FAN. NO DRY-WALLING SHALL BE DONE UNTIL THIS HAS BEEN CONFIRMED. KITCHEN EXHAUST FAN SHALL BE SUPPLIED BY OTHERS AND INSTALLED BY THIS CONTRACTOR ALONG WITH THE ASSOCIATED DUCTWORK. UNLESS NOTED ON PLANS ALLOW 50FT OF DUCTWORK FOR BUDGETING PURPOSES. ALL OPEN GAS LOG SET AND WOOD FIREPLACES ARE TO BE ROUGHED-IN ELECTRICALLY FOR POSSIBLE FUTURE ADDITION OF CHIMNEY VENTILATOR EQUAL TO EXHAUSTO RS-012.
- . ALL EXTERIOR LOUVRES AND VENT OPENINGS MUST BE MIN. 24" ABOVE FINISHED GRADE. ADJUST OPENING LOCATIONS OR MODIFY GRADE AS REQUIRED.
- . ALL DUCTWORK SHALL CONFORM TO ASHRAE. ALL DUCTWORK SHALL AND PLENUMS SHALL BE CONSTRUCTED, INSTALLED AND SEALED AS DETAILED IN THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE. CONTRACTOR TO SEAL DUCT WITH ZERO VOC DUCT SEALANT. WHERE DUCTWORK IS EXPOSED
- . RADIUS OF ELBOW SHALL BE AT LEAST 1.5 TIMES THE WIDTH OF THE DUCT. WHERE A RADIUS IS NOT POSSIBLE TURNING VANES MUST BE INTRODUCED.

SEAL WITH CLEAR SILICONE.

- 8. FLEXIBLE DUCTWORK SHALL NOT BE USED.
- WHERE A/C DUCTWORK RUNS THROUGH A DROP CEILING AND MAY BE EXPOSED TO HIGHER PLENUM TEMPERATURE DUE TO POT LIGHTS THE DUCTWORK SHALL BE INSULATED WITH 1.5" TYPE A

INSULATION. <u>SUPPLY AIR GRILLE</u> — TYPE G, 12X4 (UNLESS NOTED ON PLAN), OBVD DAMPER MUST BE EASILY ACCESSIBLE BY HOME OWNER TO MAKE SEASONAL ADJUSTMENTS AS REQUIRED.

RETURN AIR GRILLE — BY ARCHITECTURAL DIVISION UNLESS NOTED, SIZE AS SHOWN, THIS CONTRACTOR TO CARRY (AS A SEPARATE PRICE) RETURN AIR GRILLES AS NOTED ON PLANS, MODEL LBP27B, CONCEALED FASTENING. WASHROOM EXHAUST GRILLES (APPLICABLE WITH REMOTE FANS OR HRV

UNITS) - TYPE G, 10X4 (UNLESS NOTED ON PLAN), SANITARY EXHAUST FANS SIZING/NOTES

PROVIDE FANS AS LOCATED ON FLOOR PLANS AND SIZED AS BELOW

- PROVIDE <u>CF-150</u> CEILING EXHAUST FANS FOR ALL 3 PIECE WASHROOMS AND/OR ROOMS WHERE SHOWERS OR BATHTUBS ARE LOCATED. DISCHARGE DUCT SHALL BE 6".
- . PROVIDE <u>CF-250</u> CEILING EXHAUST FAN FOR EXERCISE ROOMS AND FOR MASTER ENSUITE WHERE THERE IS A
- SHOWER AND BATHTUB. DISCHARGE DUCT SHALL BE 8".
- 3. PROVIDE <u>CF-100</u> CEILING FANS FOR ALL 2 PIECE WASHROOMS WHERE SHOWERS OR BATHTUBS ARE NOT LOCATED. DISCHARGE DUCT SHALL BE 5".
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2/29/2024 CORE SLAB SLEEVE REVISIONS 6 2/8/2024 ISSUED FOR CORE SLAB SLEEVE COORD 5 | 10/25/2023 | ISSUED FOR PERMIT COMMENTS

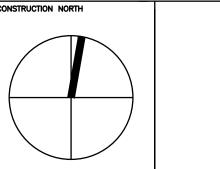
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THIS DRAWING SHALL BE USED ONLY FOR THE PURPOSE INDICATED IN THE LATEST ISSUED COLUMN ABOVE

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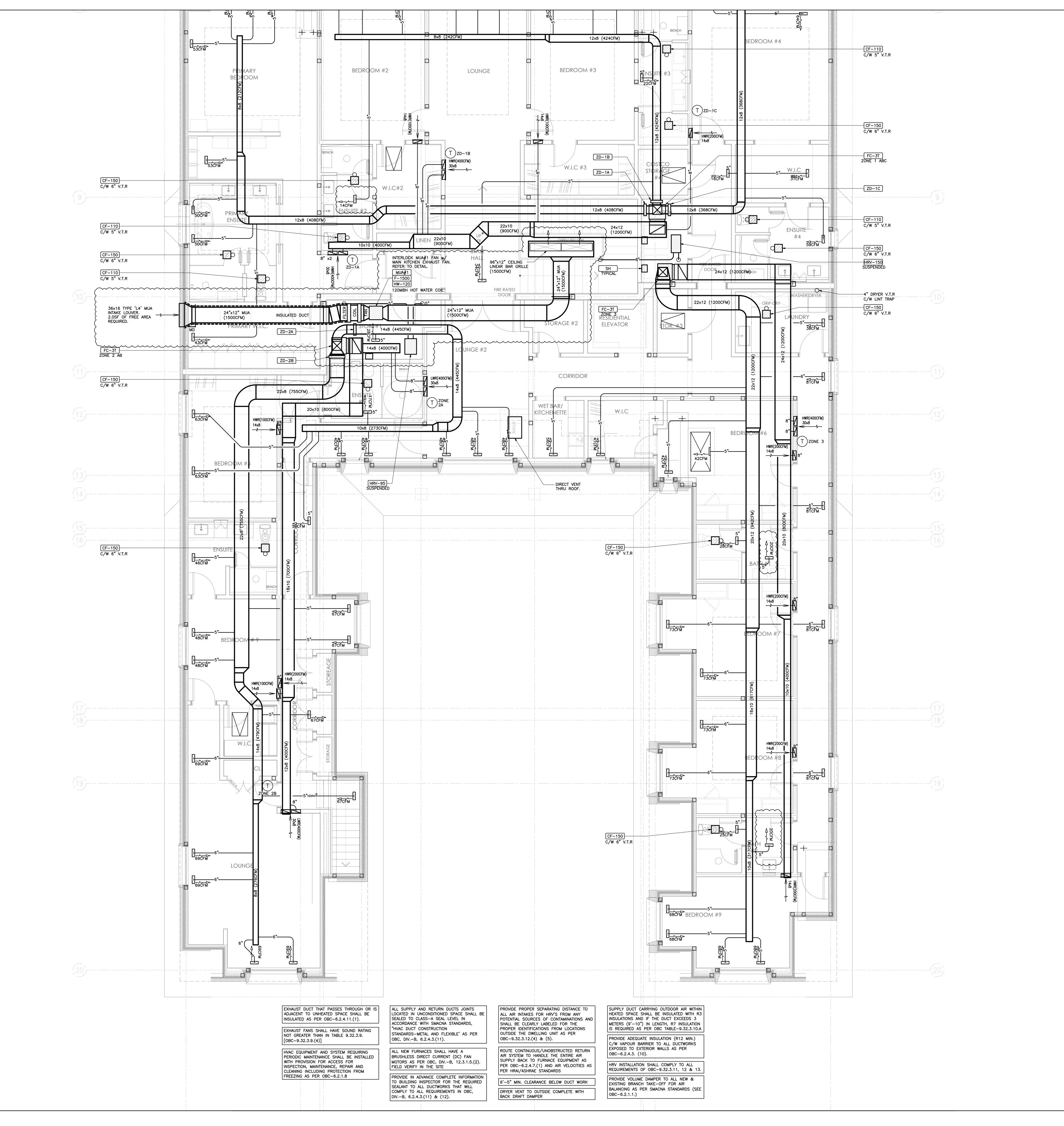
ONTARIO GEORGINA, MECHANICAL PROJECT No. 23-317

SECOND FLOOR HVAC LAYOUT

2024 J.W/K.W

1/4"=1'-0"

OF 25



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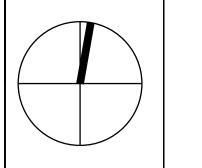
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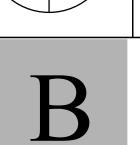
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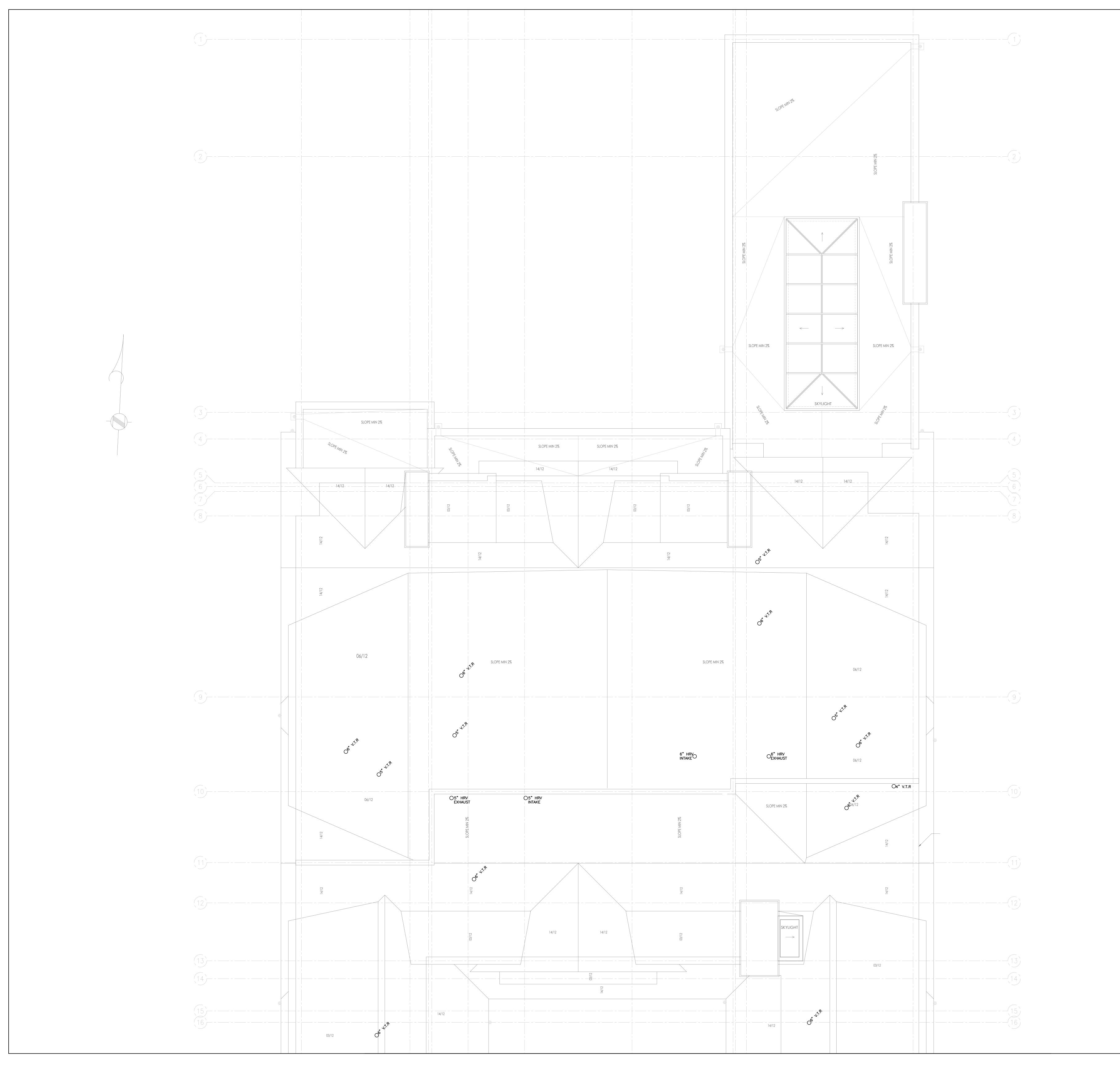
staff@bkconsulting.ca **140 LAKE DRIVE EAST**

GEORGINA, ONTARIO **MECHANICAL** 23-317

> SECOND FLOOR HVAC LAYOUT

J.W/K.W

OF 25



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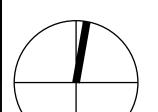
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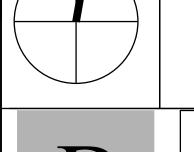
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140 LAKE DRIVE EAST

ONTARIO GEORGINA, **MECHANICAL**

ROOF LAYOUT

2024 J.W/K.W

1/4"=1'-0"



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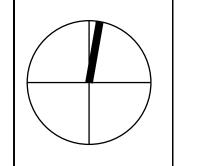
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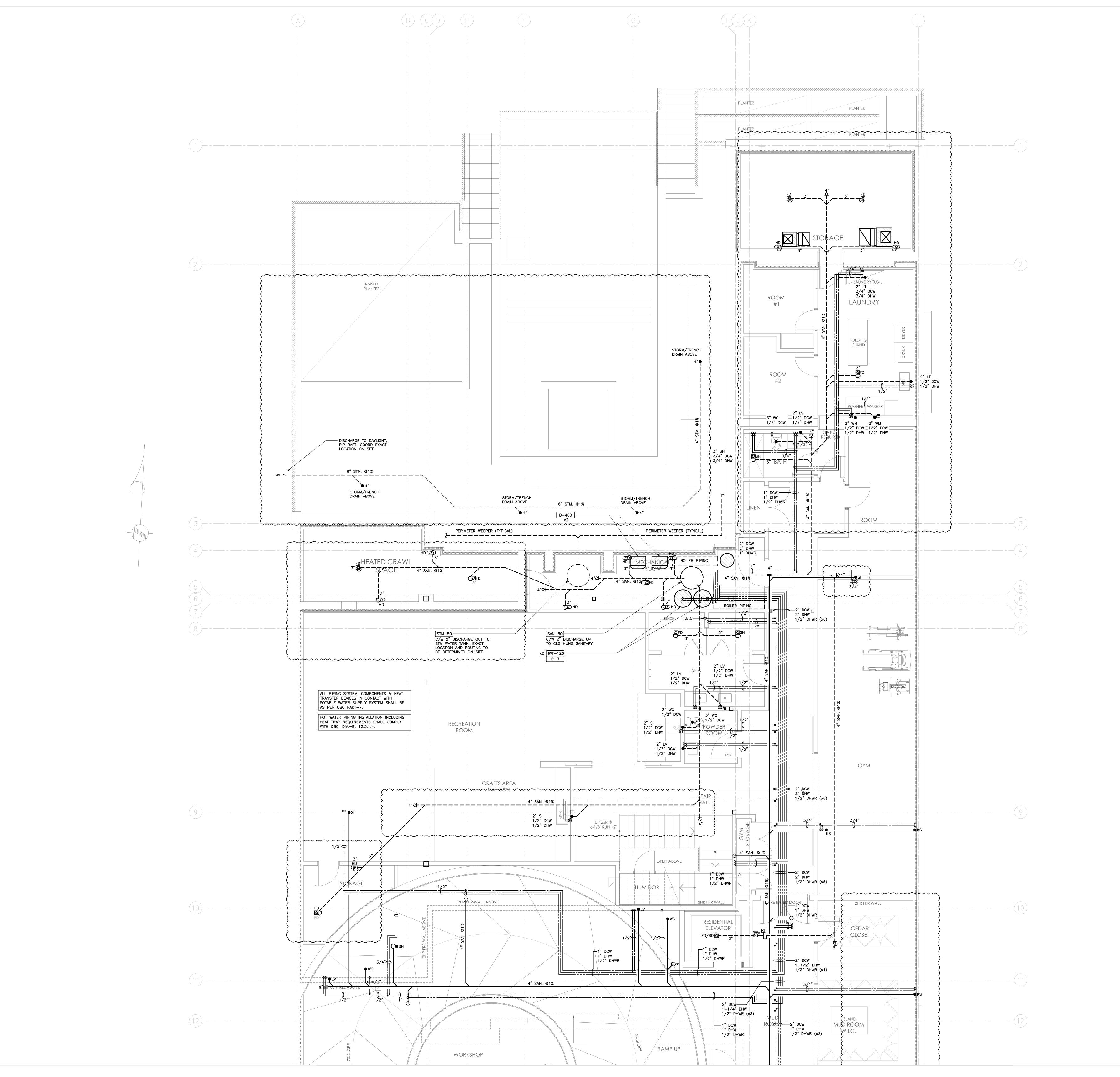
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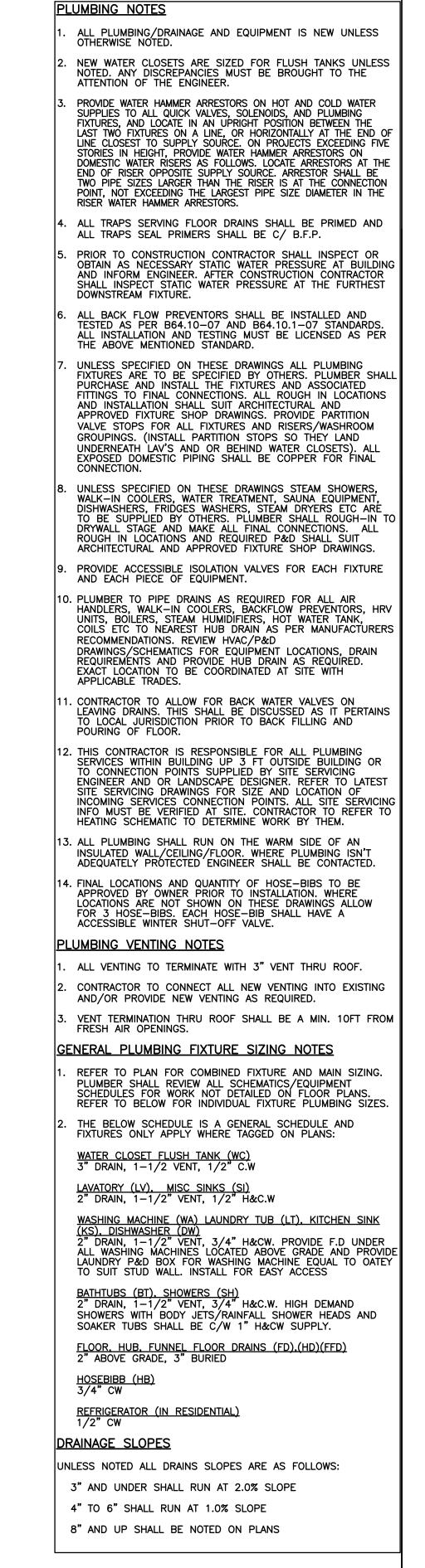
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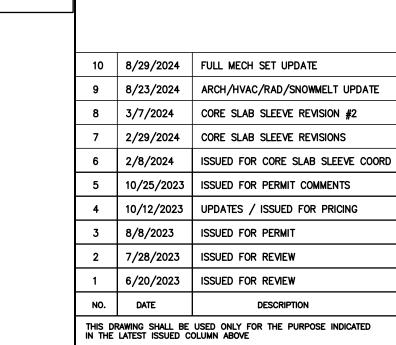
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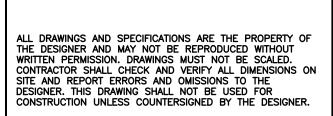
2024 J.W/K.W

OF 25 1/4"=1'-0"

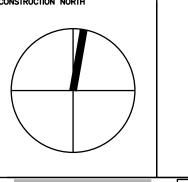








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Newmarket, Ontario L3Y 9E5 T (905) 773-0200 staff@bkconsulting.ca

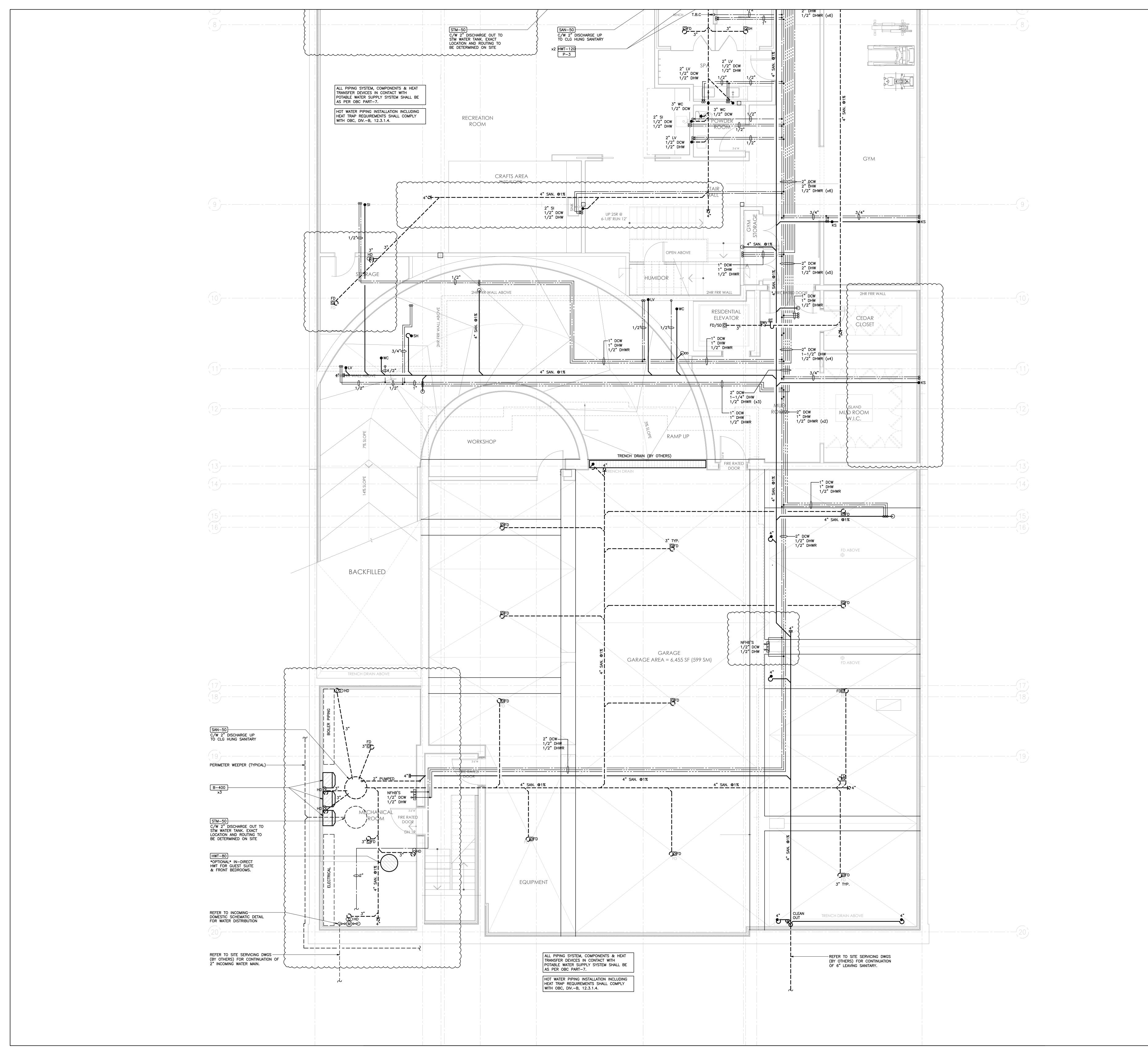
140 LAKE DRIVE EAST

ONTARIO GEORGINA, MECHANICAL PROJECT No. 23-317 **BASEMENT** P&D LAYOUT

OF 25

2024 M - 10J.W/K.W

1/4"=1'-0"



PLUMBING NOTES ALL PLUMBING/DRAINAGE AND EQUIPMENT IS NEW UNLESS OTHERWISE NOTED. NEW WATER CLOSETS ARE SIZED FOR FLUSH TANKS UNLESS NOTED. ANY DISCREPANCIES MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER. PROVIDE WATER HAMMER ARRESTORS ON HOT AND COLD WATER SUPPLIES TO ALL QUICK VALVES, SOLENOIDS, AND PLUMBING FIXTURES, AND LOCATE IN AN UPRIGHT POSITION BETWEEN THE LAST TWO FIXTURES ON A LINE, OR HORIZONTALLY AT THE END OF LINE CLOSEST TO SUPPLY SOURCE. ON PROJECTS EXCEEDING FIVE STORIES IN HEIGHT, PROVIDE WATER HAMMER ARRESTORS ON DOMESTIC WATER RISERS AS FOLLOWS. LOCATE ARRESTORS AT THE END OF RISER OPPOSITE SUPPLY SOURCE. ARRESTOR SHALL BE TWO PIPE SIZES LARGER THAN THE RISER IS AT THE CONNECTION POINT, NOT EXCEEDING THE LARGEST PIPE SIZE DIAMETER IN THE RISER WATER HAMMER ARRESTORS. 4. ALL TRAPS SERVING FLOOR DRAINS SHALL BE PRIMED AND ALL TRAPS SEAL PRIMERS SHALL BE C/ B.F.P. PRIOR TO CONSTRUCTION CONTRACTOR SHALL INSPECT OR OBTAIN AS NECESSARY STATIC WATER PRESSURE AT BUILDING AND INFORM ENGINEER. AFTER CONSTRUCTION CONTRACTOR SHALL INSPECT STATIC WATER PRESSURE AT THE FURTHEST DOWNSTREAM FIXTURE. ALL BACK FLOW PREVENTORS SHALL BE INSTALLED AND TESTED AS PER B64.10-07 AND B64.10.1-07 STANDARDS. ALL INSTALLATION AND TESTING MUST BE LICENSED AS PER THE ABOVE MENTIONED STANDARD. C. UNLESS SPECIFIED ON THESE DRAWINGS ALL PLUMBING FIXTURES ARE TO BE SPECIFIED BY OTHERS. PLUMBER SHALL PURCHASE AND INSTALL THE FIXTURES AND ASSOCIATED FITTINGS TO FINAL CONNECTIONS. ALL ROUGH IN LOCATIONS AND INSTALLATION SHALL SUIT ARCHITECTURAL AND APPROVED FIXTURE SHOP DRAWINGS. PROVIDE PARTITION VALVE STOPS FOR ALL FIXTURES AND RISERS/WASHROOM CROUPINGS. (INSTALL BARTITION STOPS SO THEY LAND GROUPINGS. (INSTALL PARTITION STOPS SO THEY LAND UNDERNEATH LAV'S AND OR BEHIND WATER CLOSETS). ALL EXPOSED DOMESTIC PIPING SHALL BE COPPER FOR FINAL CONNECTION. UNLESS SPECIFIED ON THESE DRAWINGS STEAM SHOWERS, WALK-IN COOLERS, WATER TREATMENT, SAUNA EQUIPMENT, DISHWASHERS, FRIDGES WASHERS, STEAM DRYERS ETC ARE TO BE SUPPLIED BY OTHERS. PLUMBER SHALL ROUGH-IN TO DRYWALL STAGE AND MAKE ALL FINAL CONNECTIONS. ALL ROUGH IN LOCATIONS AND REQUIRED P&D SHALL SUIT ARCHITECTURAL AND APPROVED FIXTURE SHOP DRAWINGS. PROVIDE ACCESSIBLE ISOLATION VALVES FOR EACH FIXTURE AND EACH PIECE OF EQUIPMENT. 10. PLUMBER TO PIPE DRAINS AS REQUIRED FOR ALL AIR HANDLERS, WALK-IN COOLERS, BACKFLOW PREVENTORS, HRV UNITS, BOILERS, STEAM HUMIDIFIERS, HOT WATER TANK, COILS ETC TO NEAREST HUB DRAIN AS PER MANUFACTURERS RECOMMENDATIONS. REVIEW HVAC/P&D DRAWINGS/SCHEMATICS FOR EQUIPMENT LOCATIONS, DRAIN REQUIREMENTS AND PROVIDE HUB DRAIN AS REQUIRED. EXACT LOCATION TO BE COORDINATED AT SITE WITH APPLICABLE TRADES. 1. CONTRACTOR TO ALLOW FOR BACK WATER VALVES ON LEAVING DRAINS. THIS SHALL BE DISCUSSED AS IT PERTAINS TO LOCAL JURISDICTION PRIOR TO BACK FILLING AND POURING OF FLOOR. 2. THIS CONTRACTOR IS RESPONSIBLE FOR ALL PLUMBING SERVICES WITHIN BUILDING UP 3 FT OUTSIDE BUILDING OR TO CONNECTION POINTS SUPPLIED BY SITE SERVICING ENGINEER AND OR LANDSCAPE DESIGNER. REFER TO LATEST SITE SERVICING DRAWINGS FOR SIZE AND LOCATION OF INCOMING SERVICES CONNECTION POINTS. ALL SITE SERVICING INFO MUST BE VERIFIED AT SITE. CONTRACTOR TO REFER TO HEATING SCHEMATIC TO DETERMINE WORK BY THEM. 3. ALL PLUMBING SHALL RUN ON THE WARM SIDE OF AN INSULATED WALL/CEILING/FLOOR. WHERE PLUMBING ISN'T ADEQUATELY PROTECTED ENGINEER SHALL BE CONTACTED. 4. FINAL LOCATIONS AND QUANTITY OF HOSE-BIBS TO BE APPROVED BY OWNER PRIOR TO INSTALLATION. WHERE LOCATIONS ARE NOT SHOWN ON THESE DRAWINGS ALLOW FOR 3 HOSE-BIBS. EACH HOSE-BIB SHALL HAVE A ACCESSIBLE WINTER SHUT-OFF VALVE. PLUMBING VENTING NOTES 1. ALL VENTING TO TERMINATE WITH 3" VENT THRU ROOF. CONTRACTOR TO CONNECT ALL NEW VENTING INTO EXISTING AND/OR PROVIDE NEW VENTING AS REQUIRED. VENT TERMINATION THRU ROOF SHALL BE A MIN. 10FT FROM FRESH AIR OPENINGS. GENERAL PLUMBING FIXTURE SIZING NOTES REFER TO PLAN FOR COMBINED FIXTURE AND MAIN SIZING. PLUMBER SHALL REVIEW ALL SCHEMATICS/EQUIPMENT SCHEDULES FOR WORK NOT DETAILED ON FLOOR PLANS. REFER TO BELOW FOR INDIVIDUAL FIXTURE PLUMBING SIZES. THE BELOW SCHEDULE IS A GENERAL SCHEDULE AND FIXTURES ONLY APPLY WHERE TAGGED ON PLANS: WASHING MACHINE (WA) LAUNDRY TUB (LT), KITCHEN SINK (KS), DISHWASHER (DW)

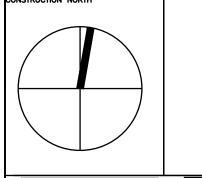
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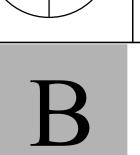
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4 10/12/2023 UPDATES / ISSUED FOR PRICING 3 8/8/2023 ISSUED FOR PERMIT 2 7/28/2023 ISSUED FOR REVIEW 1 6/20/2023 ISSUED FOR REVIEW NO. DATE THIS DRAWING SHALL BE USED ONLY FOR THE PURPOSE INDICATED IN THE LATEST ISSUED COLUMN ABOVE

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T (905) 773-0200 staff@bkconsulting.ca **140 LAKE DRIVE**

ONTARIO

M - 11

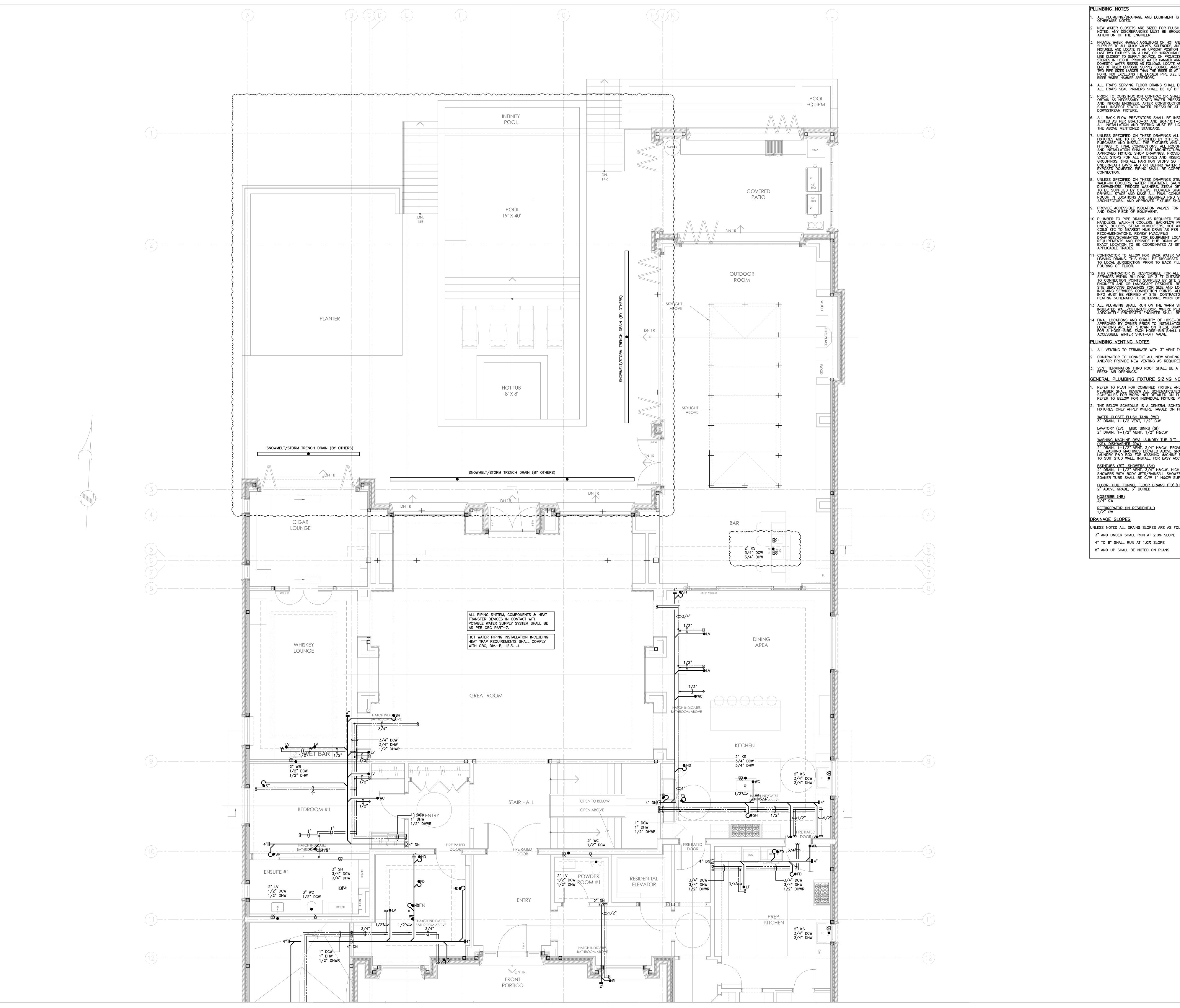
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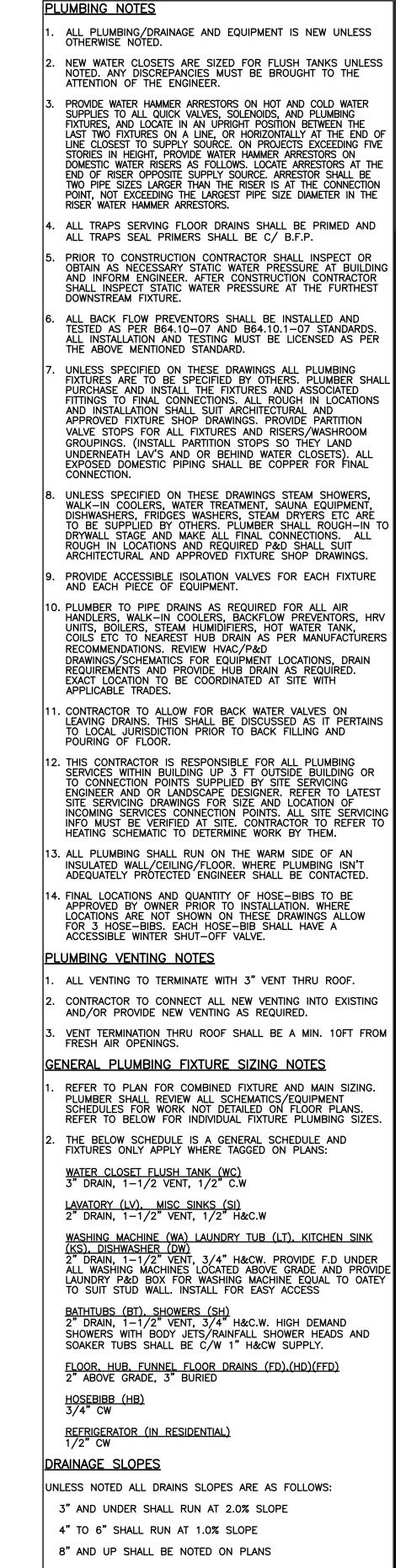
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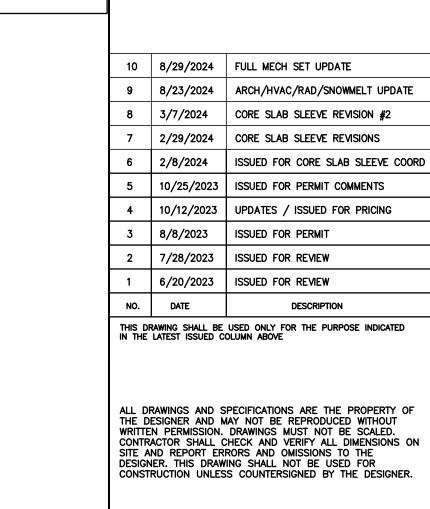
MECHANICAL PROJECT No. 23-317 **BASEMENT** P&D LAYOUT

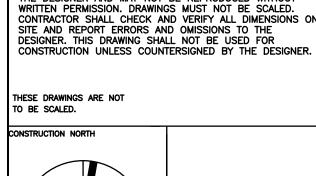
2024 J.W/K.W

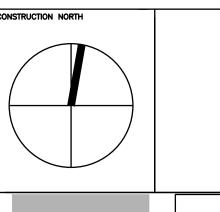
GEORGINA,

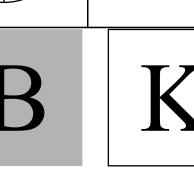












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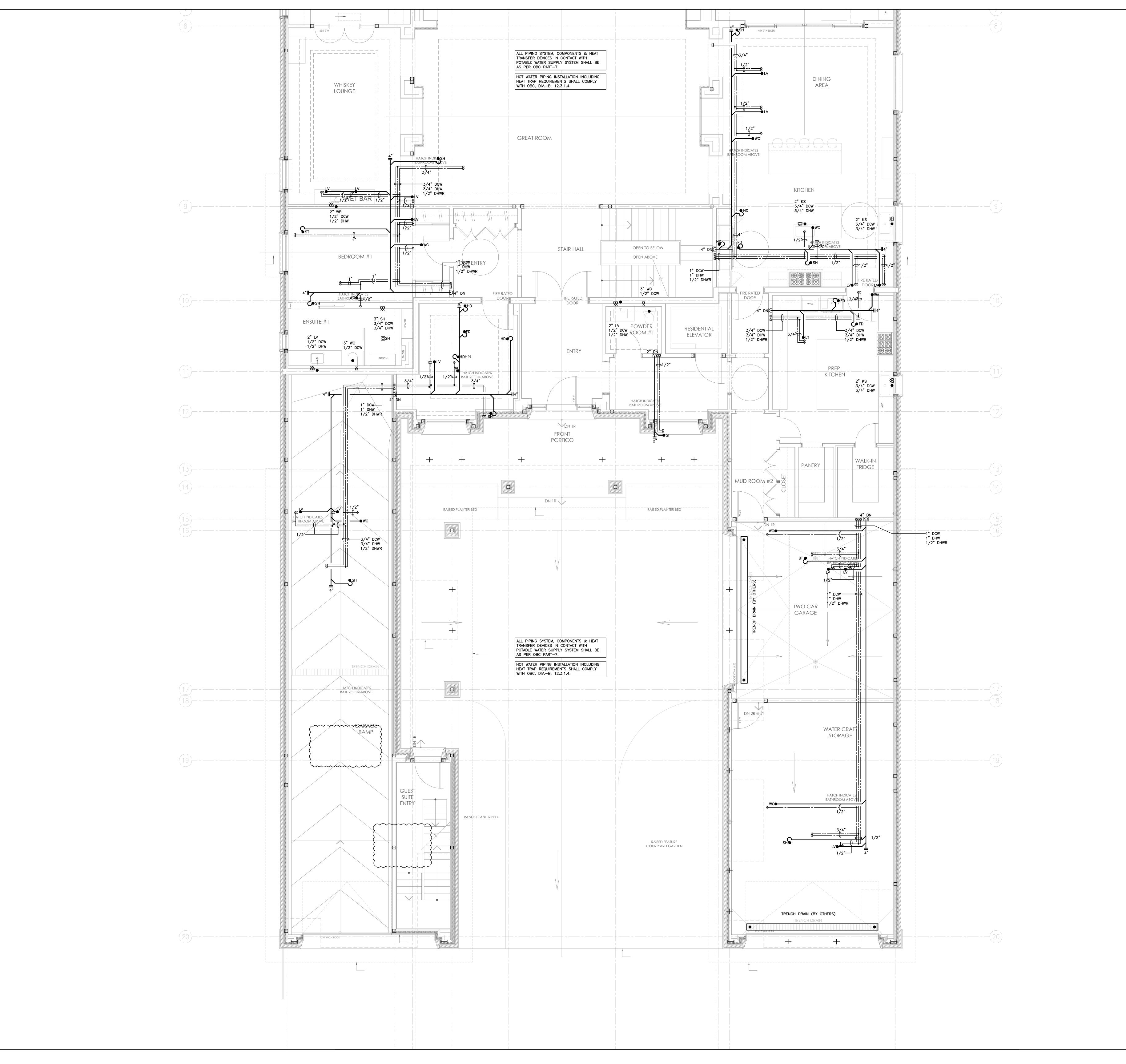
ONTARIO MECHANICAL PROJECT No. 23-317 GROUND FLOOR P&D LAYOUT

2024

DRAWN BY J.W/K.W 1/4"=1'-0"

GEORGINA,

M - 12OF 25



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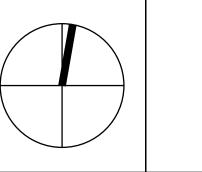
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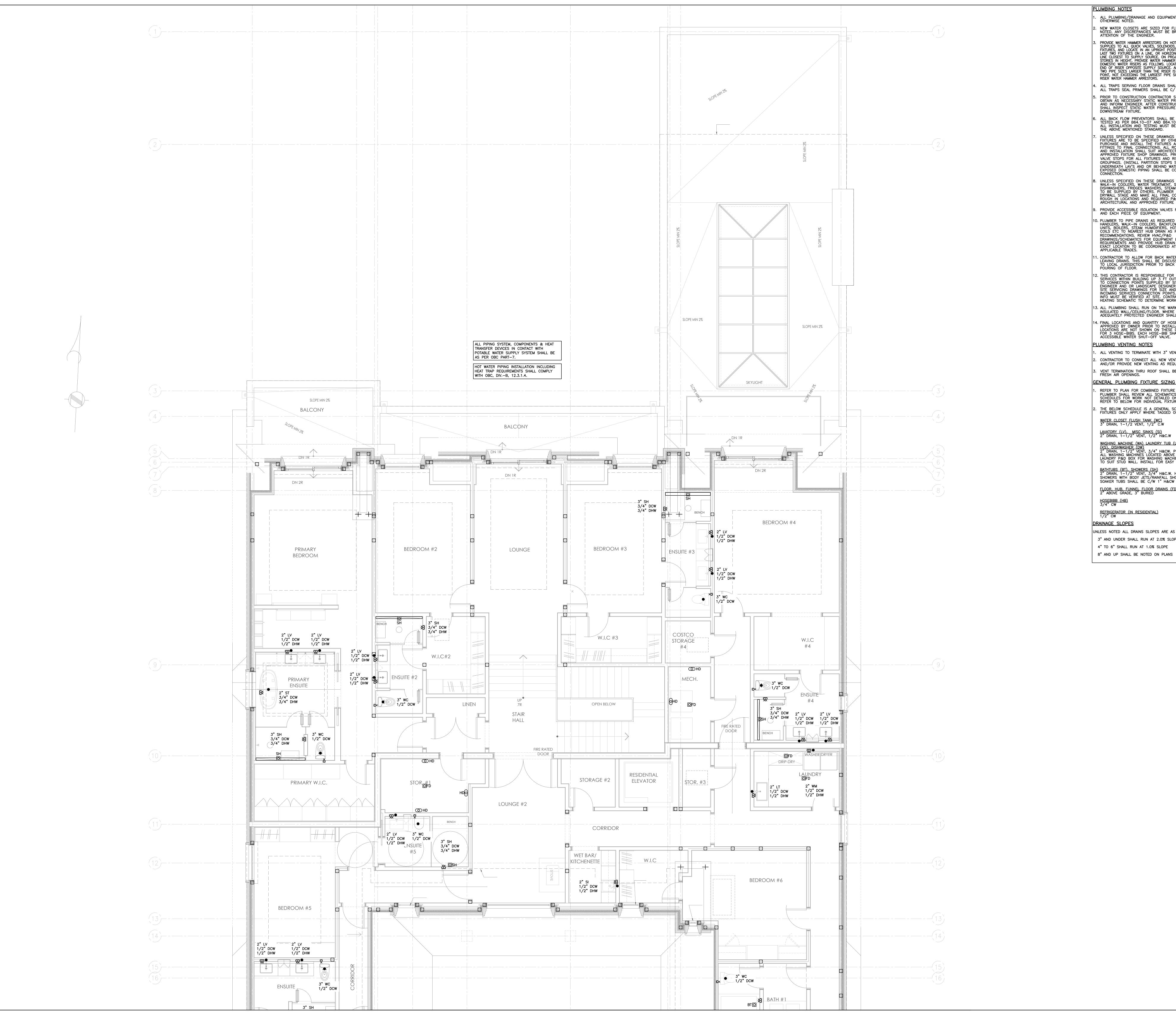
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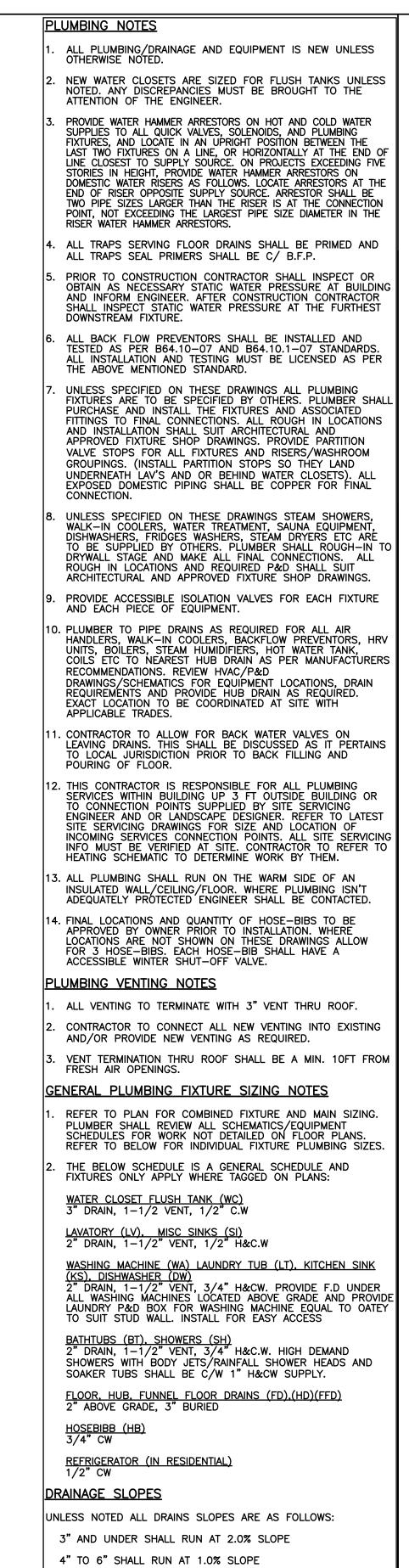
ONTARIO GEORGINA, MECHANICAL PROJECT No. 23-317

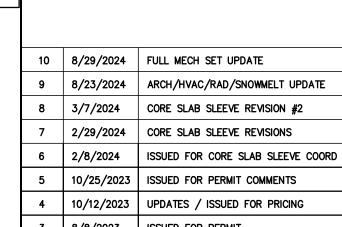
> GROUND FLOOR P&D LAYOUT

2024 J.W/K.W

M - 13OF 25 1/4"=1'-0"



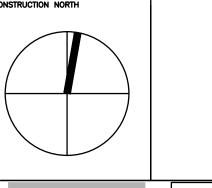




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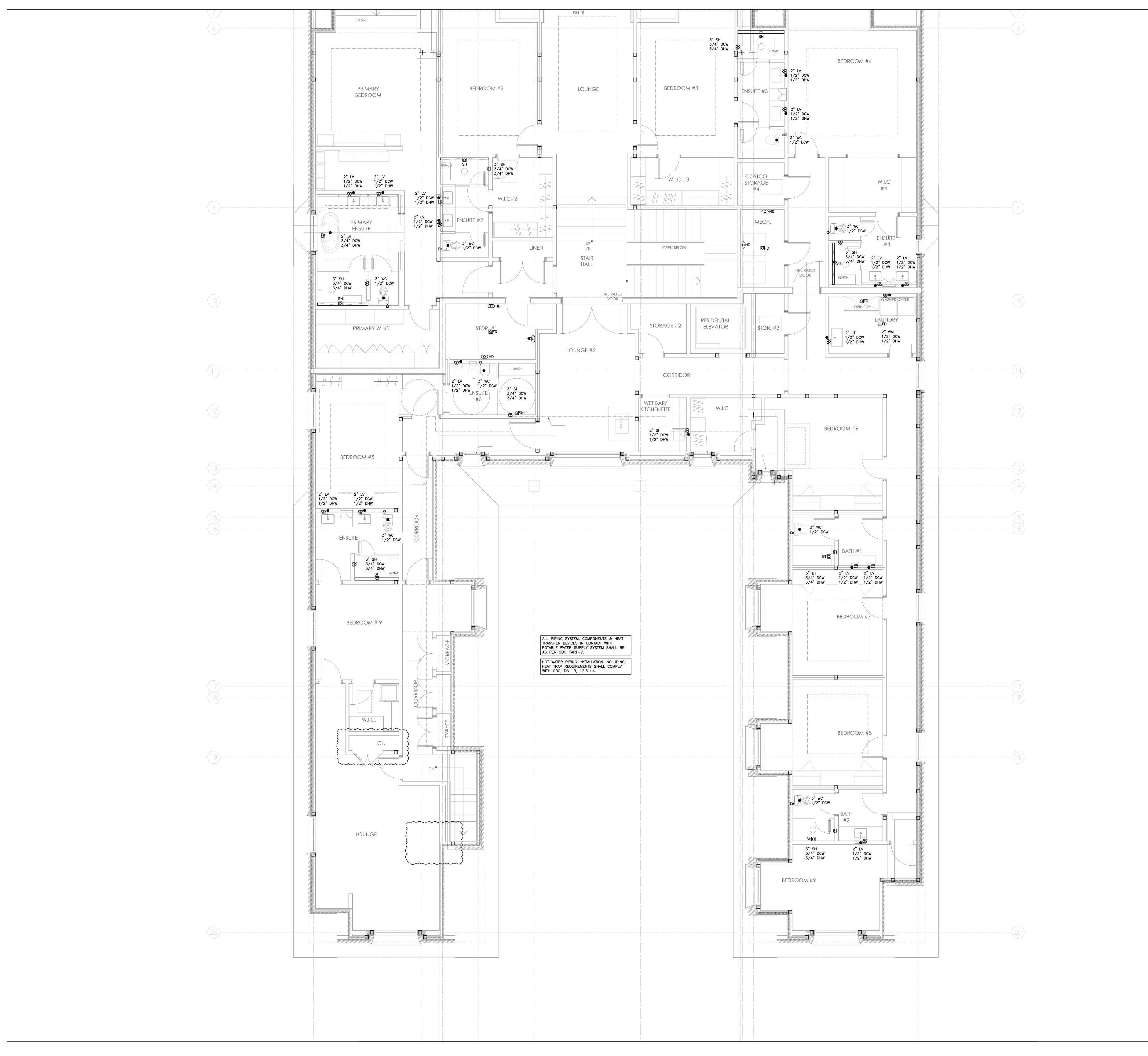
staff@bkconsulting.ca

GEORGINA, ONTARIO MECHANICAL PROJECT No. 23-317 SECOND FLOOR P&D LAYOUT

2024 DRAWN BY J.W/K.W

1/4"=1'-0"

M - 14OF 25



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SOAKER TUBS SHALL BE C/W 1" H&CW SUPPLY. FLOOR, HUB, FUNNEL FLOOR DRAINS (FD),(HD)(FFD)
2" ABOVE GRADE, 3" BURIED REFRIGERATOR (IN RESIDENTIAL)
1/2" CW DRAINAGE SLOPES UNLESS NOTED ALL DRAINS SLOPES ARE AS FOLLOWS: 3" AND UNDER SHALL RUN AT 2.0% SLOPE 4" TO 6" SHALL RUN AT 1.0% SLOPE 8" AND UP SHALL BE NOTED ON PLANS

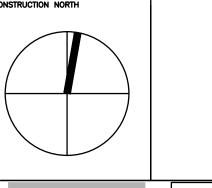
10 8/29/2024 FULL MECH SET UPDATE 9 8/23/2024 ARCH/HVAC/RAD/SNOWMELT UPDATE 8 3/7/2024 CORE SLAB SLEEVE REVISION #2 2/29/2024 | CORE SLAB SLEEVE REVISIONS 6 2/8/2024 ISSUED FOR CORE SLAB SLEEVE COORD 5 10/25/2023 ISSUED FOR PERMIT COMMENTS 4 10/12/2023 UPDATES / ISSUED FOR PRICING 3 8/8/2023 ISSUED FOR PERMIT 2 7/28/2023 ISSUED FOR REVIEW 1 6/20/2023 ISSUED FOR REVIEW

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NO. DATE



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staff@bkconsulting.ca

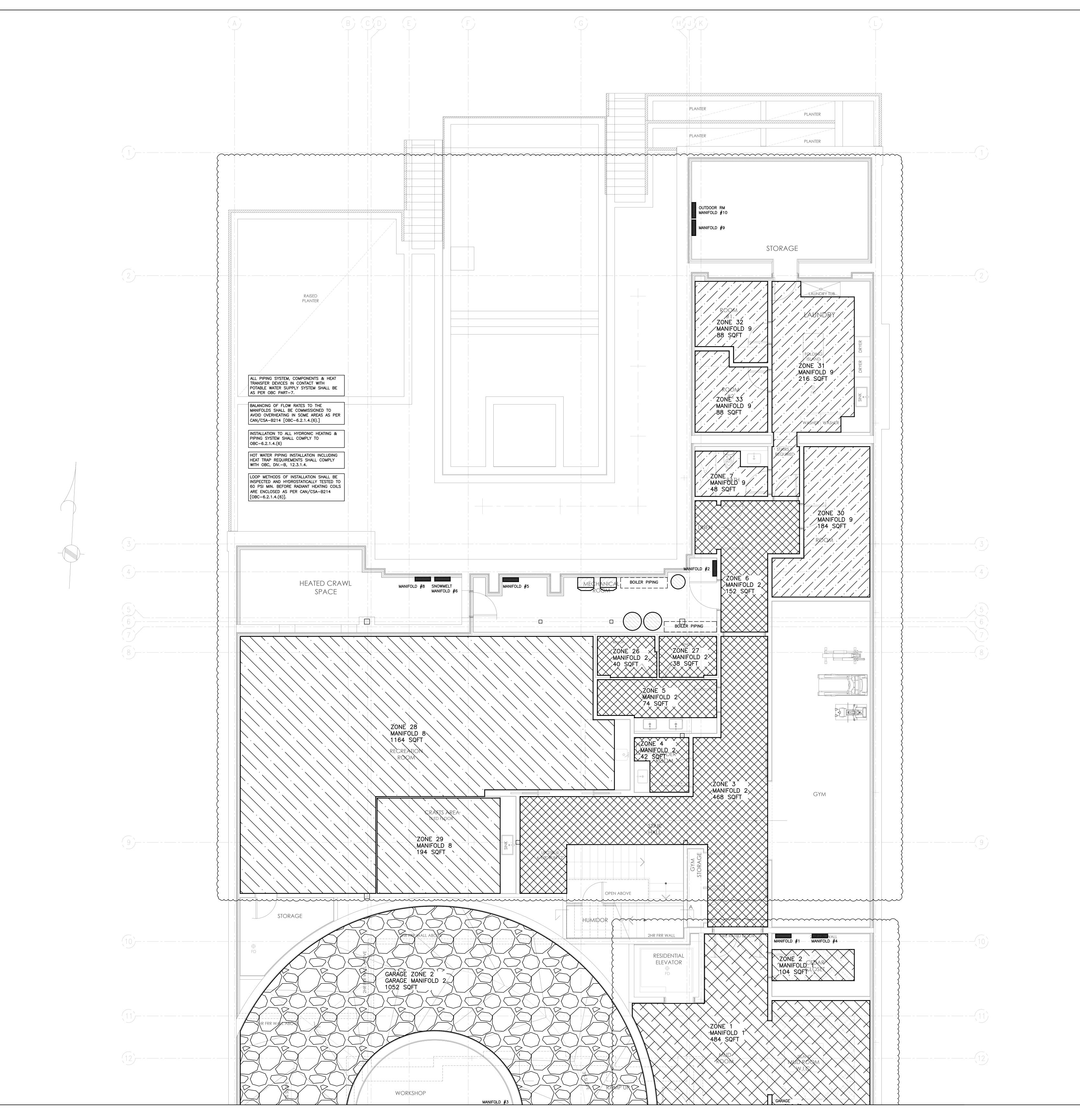
140 LAKE DRIVE EAST

GEORGINA, ONTARIO MECHANICAL PROJECT No. 23-317

SECOND FLOOR P&D LAYOUT

2024 J.W/K.W

M - 151/4"=1'-0" OF 25



INFLOOR HEATING/WARMING/SNOW MELT NOTES

1. PROVIDE IN-FLOOR WARMING AND SNOW MELT SYSTEM FOR AREAS AS NOTED. WHERE IN-FLOOR DRAWINGS ARE NOT INCLUDED PROVIDE FOR INFLOOR AND GARAGE WARMING 1/2" TUBING AT 9" CENTRES FOR 4 ROWS AT PERIMETER WALLS AND AT 12" CENTRES FOR THE REMAINDER OF THE INTERIOR ZONES. SNOW MELT TUBING SHALL BE 5/8" AT 9" CENTRES. EACH ROOM SHALL BE PIPED SEPARATELY FOR

2. EACH ZONE SHALL BE C/W A SLAB AND AIR SENSOR WHICH SHALL BE LOCATED AT SITE. WHERE APPLICABLE TO THIS PROJECT EACH SNOW MELT ZONE SHALL BE C/W A SNOW/ICE SENSOR WHICH IS TO BE LOCATED AT SITE. ZONING REQUIREMENTS SHALL BE APPROVED BY ENGINEER AND OWNER PRIOR TO CONSTRUCTION AND ONCE AGAIN PRIOR TO POURING FLOOR, COVERING AND/OR DRY-WALLING.

BETTER ZONING OPTIONS.

ALLOW 8 ZONES FOR EACH MAINFOLD

MANIFOLDS ARE TO BE LOCATED IN A LOCKABLE CABINET AND SECURELY FASTENED IN AN ACCESSIBLE LOCATION.

3. CONTRACTOR IS TO PROVIDE SHOP DRAWINGS RELATED TO IN—FLOOR WARMING/SNOW MELTING PRIOR TO INSTALLATION AND IS TO NOTICE ENCINEER OF ANY INSTALLATION.

IN-FLOOR WARMING/SNOW MELTING PRIOR TO INSTALLATION
AND IS TO NOTIFY ENGINEER OF ANY INSTALLATION
DEVIATIONS TO OUR DRAWINGS.

4. ALL MANIFOLDS SHALL BE UPONOR TRUFLOW MANIFOLDS
C/W MANIFOLD S/R BALL VALVES (BALL VALVES ARE NOT TO

ACTUATORS WHERE THERÉ ARE MULTIPLE ZONES ON A MANIFOLD.

5. ALL IN-FLOOR AND SNOW MELT PIPING IS TO BE INSTALLED IN A UNIFORMLY MANNER WHERE SPACING IS CONSISTENT AND MAXIMUM SPACING DOESN'T EXCEED WHAT IS SPECIFIED. ALL IN-FLOOR AND SNOW MELT PIPING IS TO PRESSURE TESTED PRIOR TO OVER POURING. CONTRACTOR TO INSTALL AS PER MANUFACTURERS LATEST INSTALLATION DETAILS. IF CONTRACTOR IS UNSURE WITH ALL APPLICABLE DETAILS,

BE USED FOR BALANCING). PROVIDE THERMAL VALVE

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IN-FLOOR HEATING SHALL RUN UNDER SHOWERS AND

BATHTUBS ETC BUT NOT UNDER COUNTERS SERVING LAV'S, KITCHEN SINKS, AND KITCHEN ISLAND ETC.

7. AS AN INITIAL SET UP SLAB TEMPERATURES SHALL BE SET AS FOLLOWS:

-80°F FOR HARDWOOD. HARDWOOD MANUFACTURES SHALL CONFIRM

-85°F FOR TILE

-87°F FOR CARPET

8. ALL SNOW MELTING ON PUBLIC OR CITY PROPERTY SHALL BE PIPED SEPARATELY FOR ISOLATION.

10 8/29/2024 FULL MECH SET UPDATE
9 8/23/2024 ARCH/HVAC/RAD/SNOWMELT UPDATE

8 3/7/2024 CORE SLAB SLEEVE REVISION #2

7 2/29/2024 CORE SLAB SLEEVE REVISIONS
6 2/8/2024 ISSUED FOR CORE SLAB SLEEVE COORD
5 10/25/2023 ISSUED FOR PERMIT COMMENTS
4 10/12/2023 UPDATES / ISSUED FOR PRICING

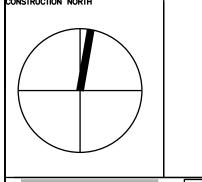
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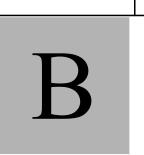
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NO. DATE





C O N S U L T I N G I N C

23 - 1111 Davis Drive
Newmarket, Ontario L3Y 9E5

T (905) 773-0200 staff@bkconsulting.ca

140 LAKE DRIVE EAST

GEORGINA, ONTARIO

MECHANICAL

PLOT DATE

PROJECT No. 23-317

BASEMENT
INFLOOR WARMING LAYOUT

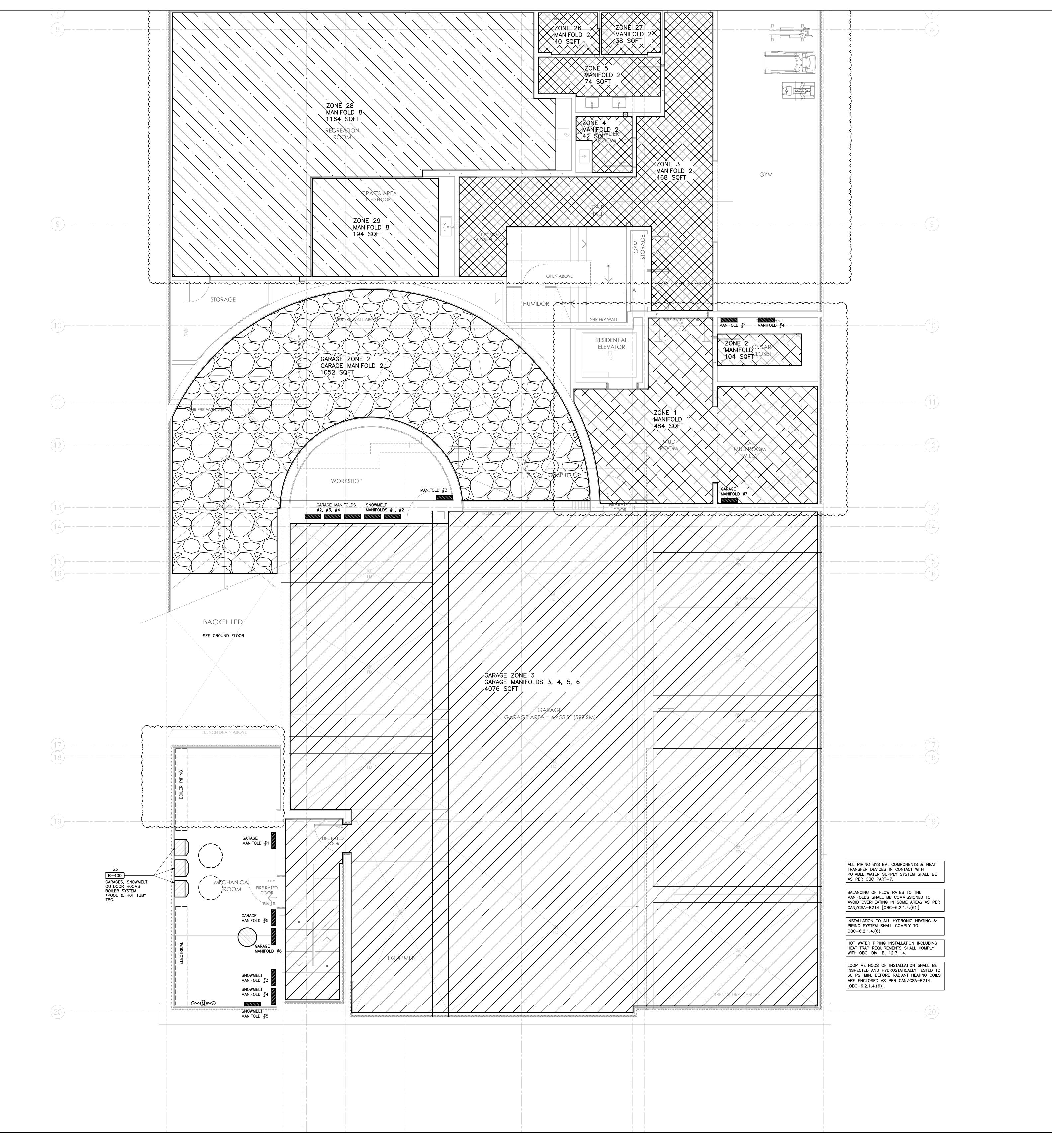
DATE 2024

DRAWN BY J.W/K.W

DRAWN BY
J.W/K.W

SCALE
1/4"=1'-0"

M-16
OF 25



. PROVIDE IN-FLOOR WARMING AND SNOW MELT SYSTEM FOR AREAS AS NOTED. WHERE IN-FLOOR DRAWINGS ARE NOT INCLUDED PROVIDE FOR INFLOOR AND GARAGE WARMING 1/2" TUBING AT 9" CENTRES FOR 4 ROWS AT PERIMETER WALLS AND AT 12" CENTRES FOR THE REMAINDER OF THE INTERIOR ZONES. SNOW MELT TUBING SHALL BE 5/8" AT 9" CENTRES. EACH ROOM SHALL BE PIPED SEPARATELY FOR BETTER ZONING OPTIONS.

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ALLOW 8 ZONES FOR EACH MAINFOLD MANIFOLDS ARE TO BE LOCATED IN A LOCKABLE CABINET AND SECURELY FASTENED IN AN ACCESSIBLE LOCATION.

3. CONTRACTOR IS TO PROVIDE SHOP DRAWINGS RELATED TO IN-FLOOR WARMING/SNOW MELTING PRIOR TO INSTALLATION AND IS TO NOTIFY ENGINEER OF ANY INSTALLATION DEVIATIONS TO OUR DRAWINGS.

BE USED FOR BALANCING). PROVIDE THERMAL VALVE ACTUATORS WHERE THERE ARE MULTIPLE ZONES ON A . ALL IN-FLOOR AND SNOW MELT PIPING IS TO BE INSTALLED IN A UNIFORMLY MANNER WHERE SPACING IS CONSISTENT AND MAXIMUM SPACING DOESN'T EXCEED WHAT IS SPECIFIED.

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TESTED PRIOR TO OVER POURING. CONTRACTOR TO INSTALL

AS PER MANUFACTURERS LATEST INSTALLATION DETAILS. IF

CONTRACTOR IS UNSURE WITH ALL APPLICABLE DETAILS,

THESE DETAILS CAN BE PROVIDED UPON REQUEST. ALL

IN-FLOOR MARMING APPLICATIONS SHALL HAVE MINIMUM R-5

INSULATION ALL SLAB ON CRAPE INSTALLATIONS SHALL BE INSULATION. ALL SLAB ON GRADE INSTALLATIONS SHALL BE C/W MINIMUM R-10 INSULATION.

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-85°F FOR TILE

-87°F FOR CARPET

BE PIPED SEPARATELY FOR ISOLATION.

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8 3/7/2024 CORE SLAB SLEEVE REVISION #2 2/29/2024 | CORE SLAB SLEEVE REVISIONS 6 2/8/2024 ISSUED FOR CORE SLAB SLEEVE COORD 5 | 10/25/2023 | ISSUED FOR PERMIT COMMENTS

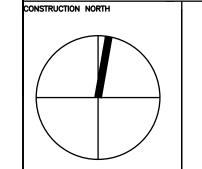
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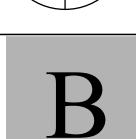
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140 LAKE DRIVE EAST

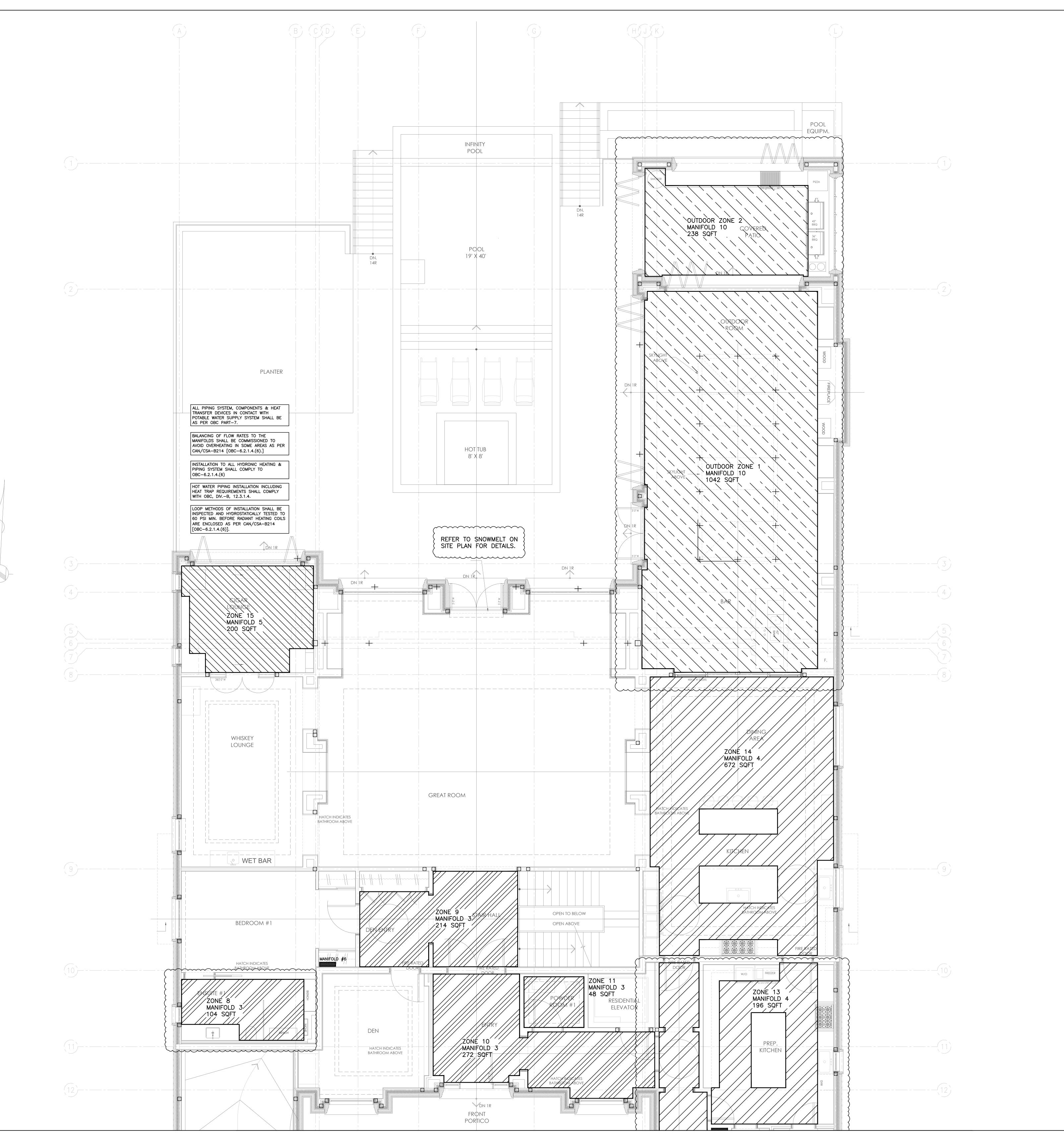
GEORGINA, ONTARIO **MECHANICAL** PROJECT No. 23-317

BASEMENT

INFLOOR WARMING LAYOUT

2024

M - 17J.W/K.W OF 25 1/4"=1'-0"



I. PROVIDE IN-FLOOR WARMING AND SNOW MELT SYSTEM FOR AREAS AS NOTED. WHERE IN-FLOOR DRAWINGS ARE NOT INCLUDED PROVIDE FOR INFLOOR AND GARAGE WARMING 1/2" TUBING AT 9" CENTRES FOR 4 ROWS AT PERIMETER WALLS AND AT 12" CENTRES FOR THE REMAINDER OF THE INTERIOR ZONES. SNOW MELT TUBING SHALL BE 5/8" AT 9" CENTRES. EACH ROOM SHALL BE PIPED SEPARATELY FOR BETTER ZONING OPTIONS.

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ALLOW 8 ZONES FOR EACH MAINFOLD MANIFOLDS ARE TO BE LOCATED IN A LOCKABLE CABINET AND SECURELY FASTENED IN AN ACCESSIBLE LOCATION.

3. CONTRACTOR IS TO PROVIDE SHOP DRAWINGS RELATED TO IN-FLOOR WARMING/SNOW MELTING PRIOR TO INSTALLATION AND IS TO NOTIFY ENGINEER OF ANY INSTALLATION DEVIATIONS TO OUR DRAWINGS.

. ALL MANIFOLDS SHALL BE UPONOR TRUFLOW MANIFOLDS C/W MANIFOLD S/R BALL VALVES (BALL VALVES ARE NOT TO BE USED FOR BALANCING). PROVIDE THERMAL VALVE ACTUATORS WHERE THERE ARE MULTIPLE ZONES ON A

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-85°F FOR TILE

-87°F FOR CARPET

C/W MINIMUM R-10 INSULATION.

. ALL SNOW MELTING ON PUBLIC OR CITY PROPERTY SHALL BE PIPED SEPARATELY FOR ISOLATION.

> 10 8/29/2024 FULL MECH SET UPDATE 9 8/23/2024 ARCH/HVAC/RAD/SNOWMELT UPDATE

8 3/7/2024 CORE SLAB SLEEVE REVISION #2

2/29/2024 | CORE SLAB SLEEVE REVISIONS 6 2/8/2024 ISSUED FOR CORE SLAB SLEEVE COORD 5 10/25/2023 ISSUED FOR PERMIT COMMENTS 4 10/12/2023 UPDATES / ISSUED FOR PRICING

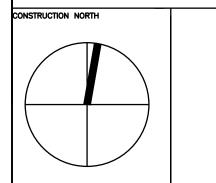
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NO. DATE





 $C\ O\ N\ S\ U\ L\ T\ I\ N\ G\quad I\ N\ C$ 23 - 1111 Davis Drive Newmarket, Ontario L3Y 9E5

T (905) 773-0200 staff@bkconsulting.ca **140 LAKE DRIVE EAST**

ONTARIO GEORGINA, MECHANICAL

PROJECT No. 23-317 PARTIAL GROUND FLOOR

2024 M - 18J.W/K.W

OF 25

INFLOOR WARMING LAYOUT

1/4"=1'-0"



I. PROVIDE IN-FLOOR WARMING AND SNOW MELT SYSTEM FOR AREAS AS NOTED. WHERE IN-FLOOR DRAWINGS ARE NOT INCLUDED PROVIDE FOR INFLOOR AND GARAGE WARMING 1/2" TUBING AT 9" CENTRES FOR 4 ROWS AT PERIMETER WALLS AND AT 12" CENTRES FOR THE REMAINDER OF THE INTERIOR ZONES. SNOW MELT TUBING SHALL BE 5/8" AT 9" CENTRES. EACH ROOM SHALL BE PIPED SEPARATELY FOR BETTER ZONING OPTIONS.

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-85°F FOR TILE

-87°F FOR CARPET

C/W MINIMUM R-10 INSULATION.

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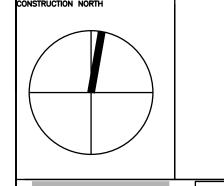
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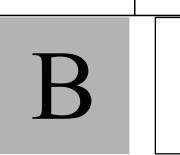
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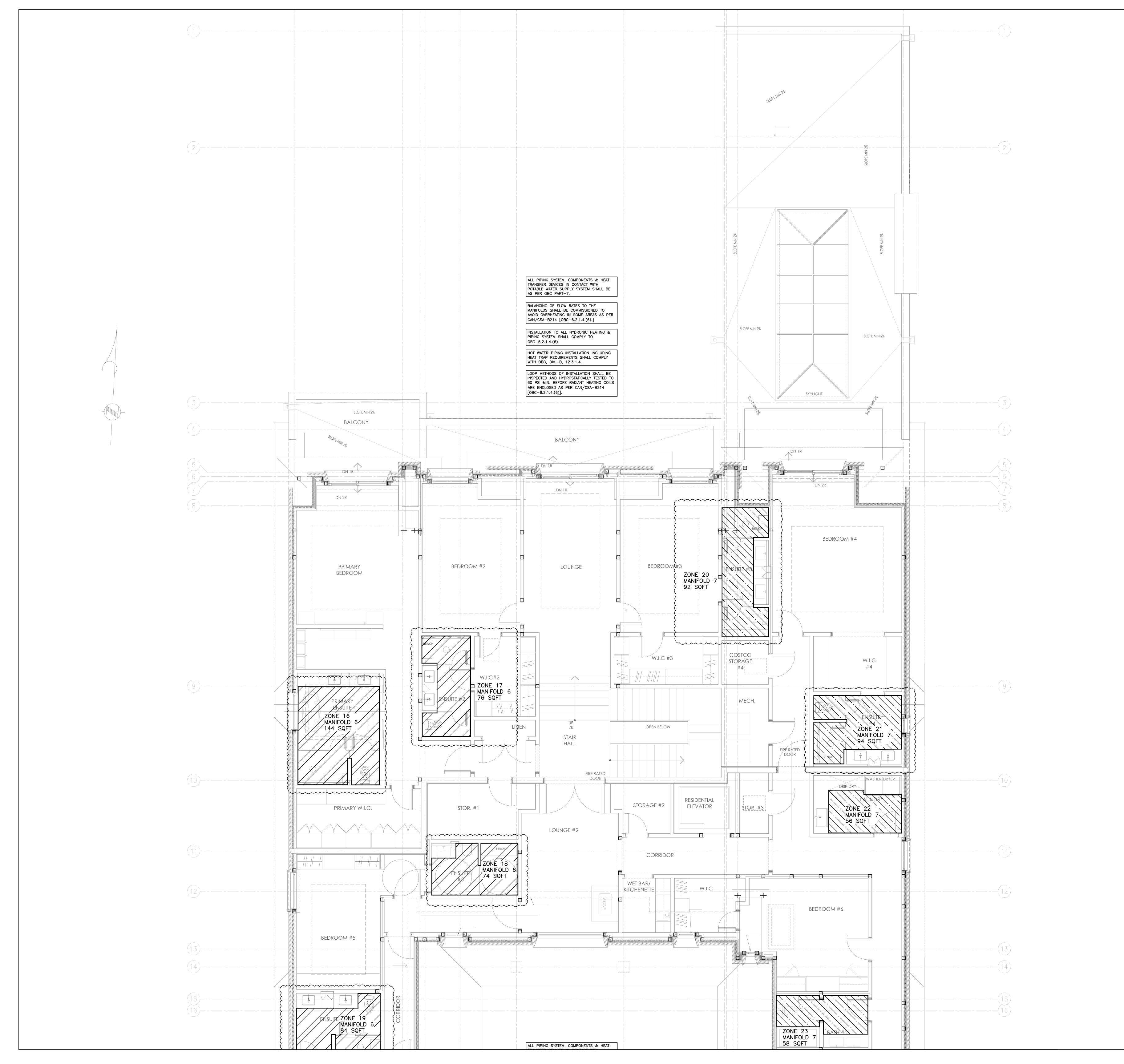
ONTARIO GEORGINA, MECHANICAL PROJECT No. 23-317

PARTIAL GROUND FLOOR

2024 J.W/K.W

M - 19OF 25 1/4"=1'-0"

INFLOOR WARMING LAYOUT



INFLOOR HEATING/WARMING/SNOW MELT NOTES PROVIDE IN-FLOOR WARMING AND SNOW MELT SYSTEM FOR AREAS AS NOTED. WHERE IN-FLOOR DRAWINGS ARE NOT INCLUDED PROVIDE FOR INFLOOR AND GARAGE WARMING 1/2" TUBING AT 9" CENTRES FOR 4 ROWS AT PERIMETER

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C/W MINIMUM R-10 INSULATION.

-87°F FOR CARPET

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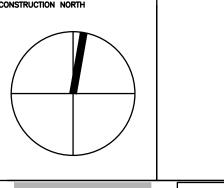
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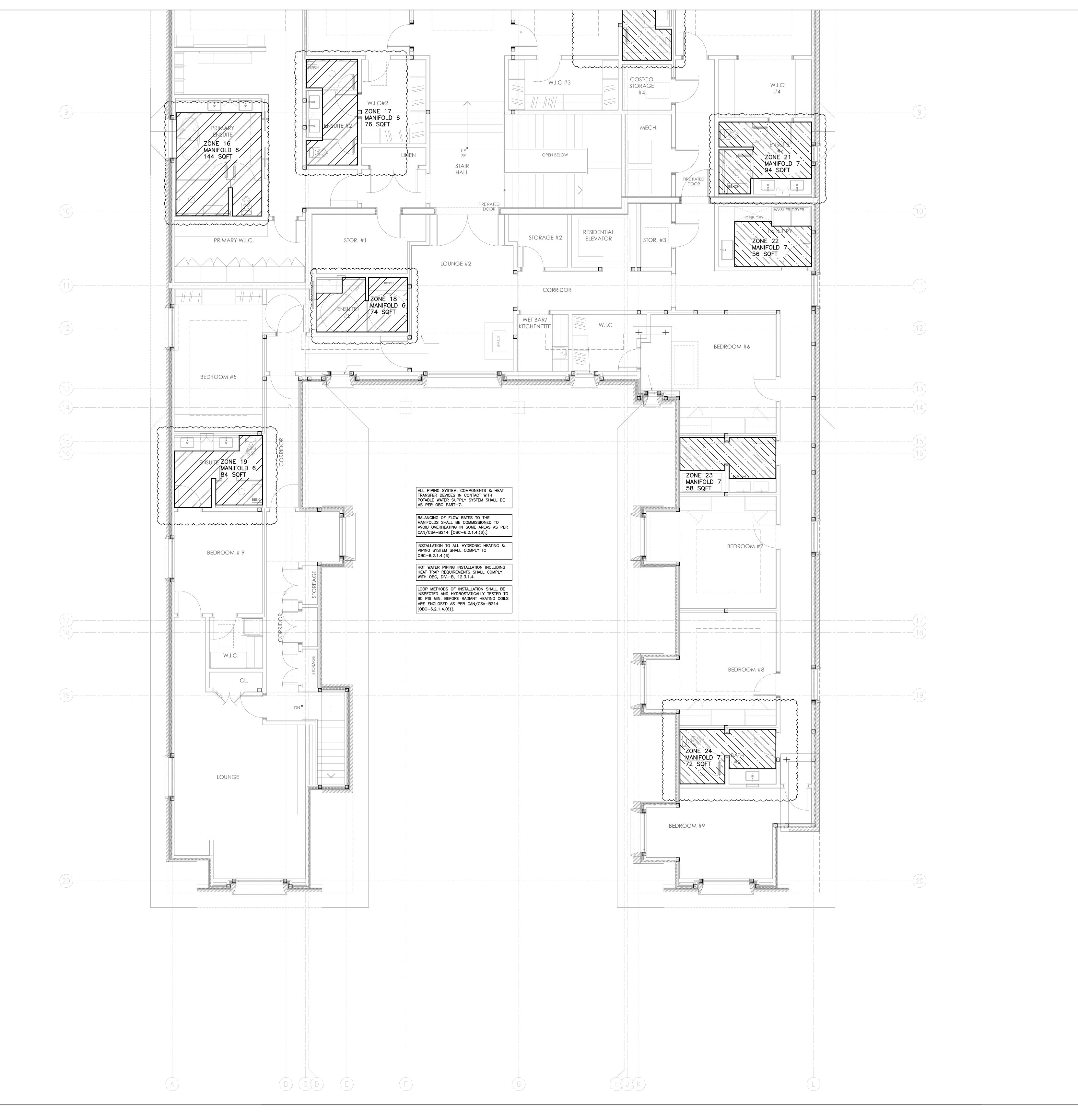
ONTARIO GEORGINA, MECHANICAL

PROJECT No. 23-317

PARTIAL SECOND FLOOR INFLOOR WARMING LAYOUT

OF 25

2024 M - 20J.W/K.W 1/4"=1'-0"



INFLOOR HEATING/WARMING/SNOW MELT NOTES

1. PROVIDE IN-FLOOR WARMING AND SNOW MELT SYSTEM FOR

1. PROVIDE IN—FLOOR WARMING AND SNOW MELT SYSTEM FOR AREAS AS NOTED. WHERE IN—FLOOR DRAWINGS ARE NOT INCLUDED PROVIDE FOR INFLOOR AND GARAGE WARMING 1/2" TUBING AT 9" CENTRES FOR 4 ROWS AT PERIMETER WALLS AND AT 12" CENTRES FOR THE REMAINDER OF THE INTERIOR ZONES. SNOW MELT TUBING SHALL BE 5/8" AT 9" CENTRES. EACH ROOM SHALL BE PIPED SEPARATELY FOR BETTER ZONING OPTIONS.

2. EACH ZONE SHALL BE C/W A SLAB AND AIR SENSOR WHICH SHALL BE LOCATED AT SITE. WHERE APPLICABLE TO THIS PROJECT EACH SNOW MELT ZONE SHALL BE C/W A SNOW/ICE SENSOR WHICH IS TO BE LOCATED AT SITE. ZONING REQUIREMENTS SHALL BE APPROVED BY ENGINEER AND OWNER PRIOR TO CONSTRUCTION AND ONCE AGAIN PRIOR TO POURING FLOOR, COVERING AND/OR DRY-WALLING.

AND OWNER PRIOR TO CONSTRUCTION AND ONCE AGAIN PRIOR TO POURING FLOOR, COVERING AND/OR DRY—WALLING ALLOW 8 ZONES FOR EACH MAINFOLD

MANIFOLDS ARE TO BE LOCATED IN A LOCKABLE CABINET AND SECURELY FASTENED IN AN ACCESSIBLE LOCATION.

3. CONTRACTOR IS TO PROVIDE SHOP DRAWINGS RELATED TO IN-FLOOR WARMING/SNOW MELTING PRIOR TO INSTALLATION AND IS TO NOTIFY ENGINEER OF ANY INSTALLATION DEVIATIONS TO OUR DRAWINGS.

. ALL MANIFOLDS SHALL BE UPONOR TRUFLOW MANIFOLDS

C/W MANIFOLD S/R BALL VALVES (BALL VALVES ARE NOT TO BE USED FOR BALANCING). PROVIDE THERMAL VALVE ACTUATORS WHERE THERE ARE MULTIPLE ZONES ON A MANIFOLD.

5. ALL IN-FLOOR AND SNOW MELT PIPING IS TO BE INSTALLED IN A UNIFORMLY MANNER WHERE SPACING IS CONSISTENT

IN A UNIFORMLY MANNER WHERE SPACING IS TO BE INSTALLED IN A UNIFORMLY MANNER WHERE SPACING IS CONSISTENT AND MAXIMUM SPACING DOESN'T EXCEED WHAT IS SPECIFIED. ALL IN—FLOOR AND SNOW MELT PIPING IS TO PRESSURE TESTED PRIOR TO OVER POURING. CONTRACTOR TO INSTALL AS PER MANUFACTURERS LATEST INSTALLATION DETAILS. IF CONTRACTOR IS UNSURE WITH ALL APPLICABLE DETAILS, THESE DETAILS CAN BE PROVIDED UPON REQUEST. ALL IN—FLOOR WARMING APPLICATIONS SHALL HAVE MINIMUM R—5 INSULATION. ALL SLAB ON GRADE INSTALLATIONS SHALL BE C/W MINIMUM R—10 INSULATION.

BATHTUBS ETC BUT NOT UNDER COUNTERS SERVING LAV'S, KITCHEN SINKS, AND KITCHEN ISLAND ETC.

7. AS AN INITIAL SET UP SLAB TEMPERATURES SHALL BE SET AS FOLLOWS:

-80°F FOR HARDWOOD. HARDWOOD MANUFACTURES SHALL CONFIRM

-85°F FOR TILE

-87°F FOR CARPET

8. ALL SNOW MELTING ON PUBLIC OR CITY PROPERTY SHALL BE PIPED SEPARATELY FOR ISOLATION.

10 8/29/2024 FULL MECH SET UPDATE
9 8/23/2024 ARCH/HVAC/RAD/SNOWMELT UPDATE
8 3/7/2024 CORE SLAB SLEEVE REVISION #2

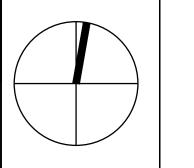
7 2/29/2024 CORE SLAB SLEEVE REVISIONS
6 2/8/2024 ISSUED FOR CORE SLAB SLEEVE COORD
5 10/25/2023 ISSUED FOR PERMIT COMMENTS
4 10/12/2023 UPDATES / ISSUED FOR PRICING
3 8/8/2023 ISSUED FOR PERMIT

3 8/8/2023 ISSUED FOR PERMIT
2 7/28/2023 ISSUED FOR REVIEW
1 6/20/2023 ISSUED FOR REVIEW
NO. DATE DESCRIPTION

THIS DRAWING SHALL BE USED ONLY FOR THE PURPOSE INDICATED IN THE LATEST ISSUED COLUMN ABOVE

ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE DESIGNER AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. DRAWINGS MUST NOT BE SCALED. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ERRORS AND OMISSIONS TO THE DESIGNER. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS COUNTERSIGNED BY THE DESIGNER.

THESE DRAWINGS ARE NOT TO BE SCALED.





C O N S U L T I N G I N C

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Newmarket, Ontario L3Y 9E5
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staff@bkconsulting.ca

140 LAKE DRIVE
EAST

GEORGINA, ONTARIO

MECHANICAL

PLOT DATE PROJECT No. 23-317

PARTIAL SECOND FLOOR INFLOOR WARMING LAYOUT

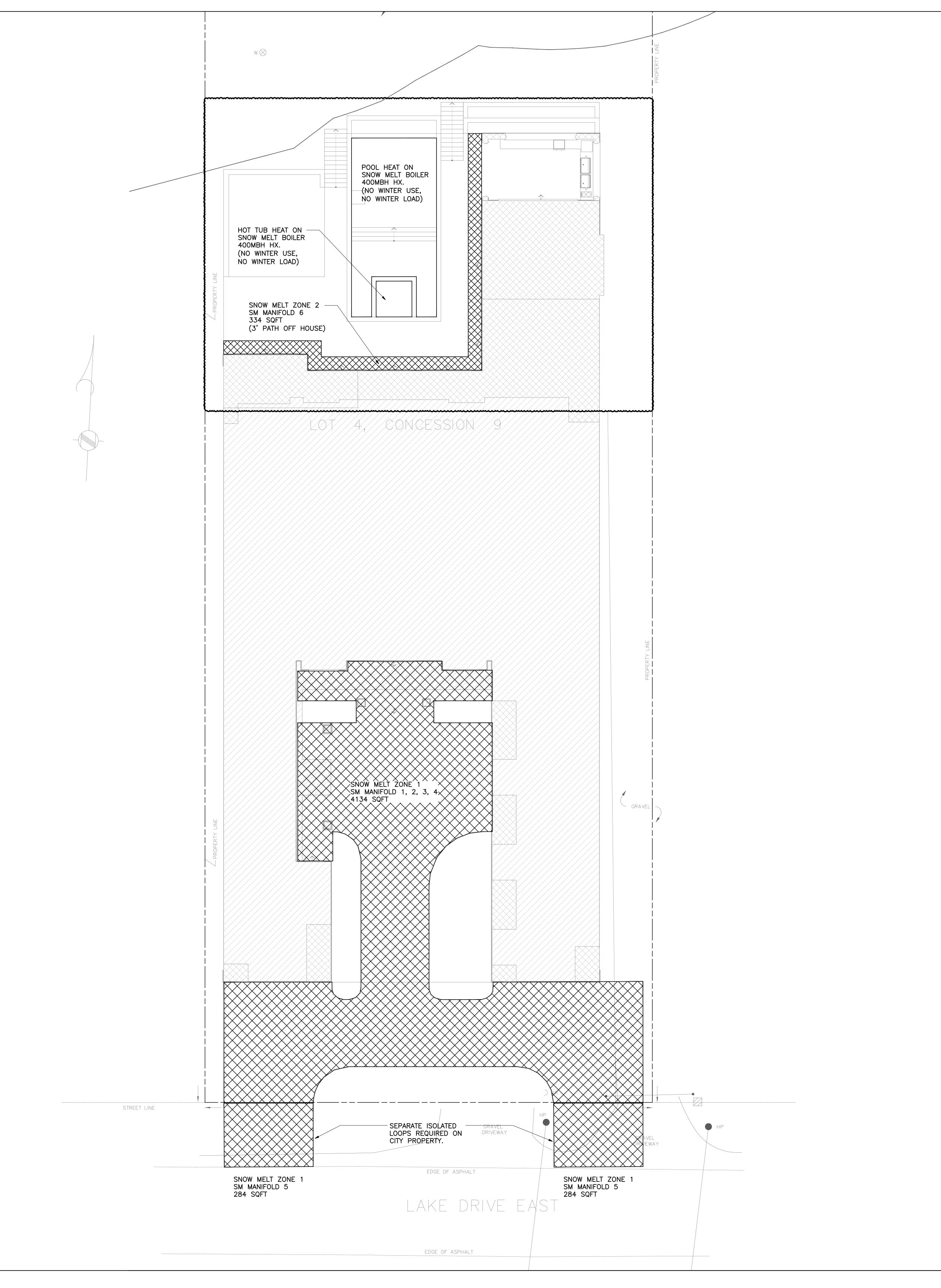
2024 M—2

J.W/K.W

CALE

1/4"=1'-0"

OF 25



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 -85°F FOR TILE

 -87°F FOR CARPET

C/W MINIMUM R-10 INSULATION.

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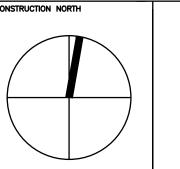
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140 LAKE DRIVE EAST

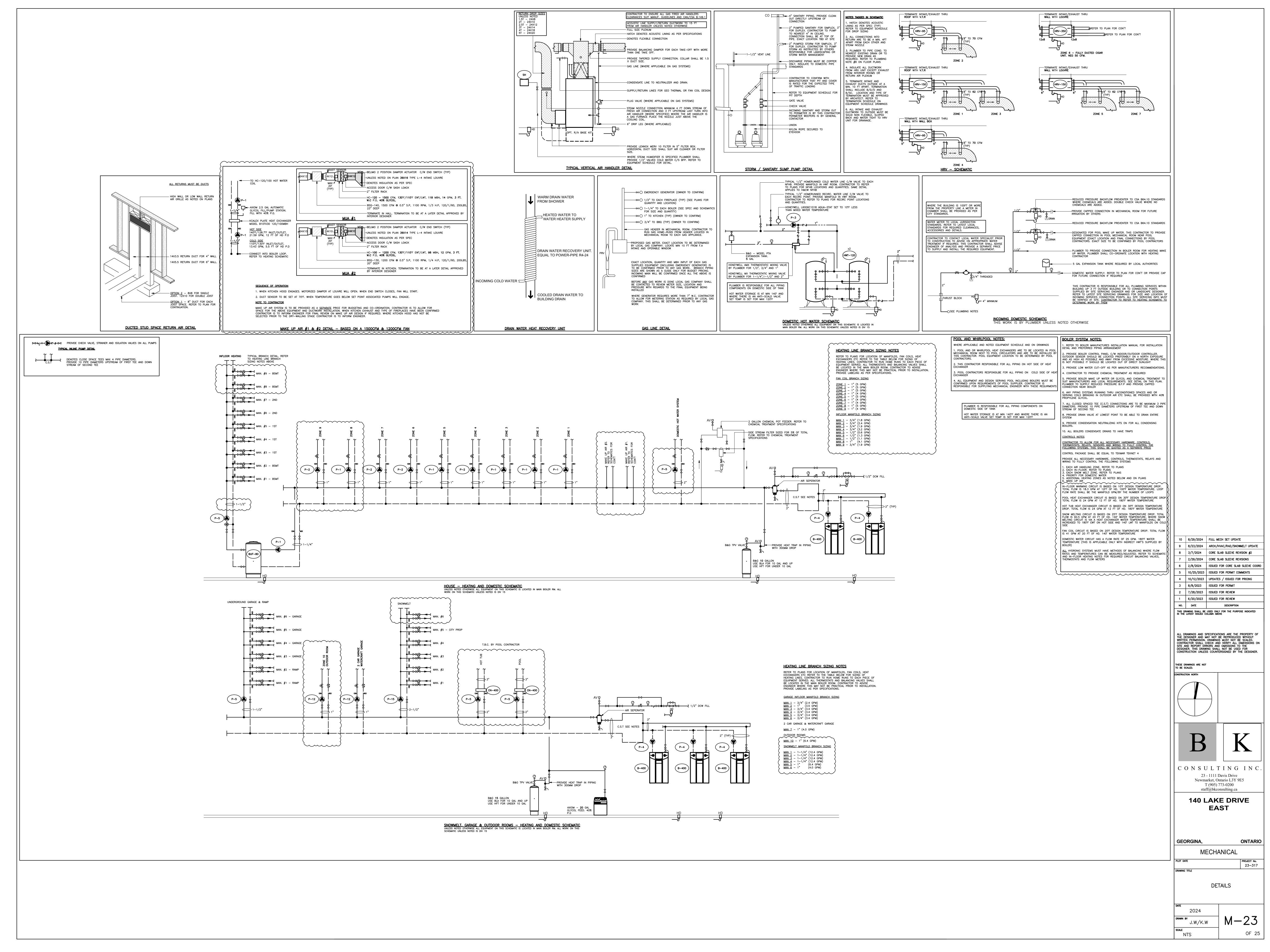
GEORGINA, ONTARIO MECHANICAL PROJECT No. 23-317

SITE PLAN SNOW MELT LAYOUT

2024 M - 22

OF 25

J.W/K.W 1/8"=1'-0"



					RESI	DENT	ΓIAL	FAN COI	L UN	IT SC	HEDUL	.E				
			SUPPL	Y AIR FAN	DATA	WA	TER HEA	TING DATA		COOLING DA	ATA	ELECTRICAL DATA		0175(N)		
MARK	MANUFACTURER	MODEL	CFM	E.S.P.	H.P.	ROWS	GPM	HEATING COIL @160°F	TYPE	TOTAL	SENSIBLE	VOLTAGE	MCA	SIZE(IN) LXWXH	RA DROP	WEIGH
FC-1.5T	LENNOX	CBX32MV-018-230-6	600	0.5"	0.5HP	3	3	35.8 MBH	DX	-	18MBH	208/1/60	5	20x16x45	20x19	126LB
FC-2T	LENNOX	CBX32MV-024-230-6	800	0.5"	0.5HP	3	4	41.4 MBH	DX	-	24MBH	208/1/60	5	20x21x49	24x19	152LB
FC-3T	LENNOX	CBX32MV-036-230-6	1200	0.5"	1HP	3	4	55.9 MBH	DX	-	36MBH	208/1/60	11	22x21x51	24x21	183LB
FC-4T	LENNOX	CBX32MV-048-230-6	1600	0.5"	1HP	4	5	88.4 MBH	DX	-	48MBH	208/1/60	11	24x21x58	30x23	212LB
FC-5T	LENNOX	CBX32MV-060-230-6	2000	0.5"	1HP	4	5	105.7 MBH	DX	-	60MBH	208/1/60	11	24x21x58	30x23	212LB
NOTES																
	- R410A REFRIGER	RANT														
	- MANUFACTURER	TO CONFIRM THE ACTUA	AL REFRIGE	ERANT PIPI	NG LENGT	H ON SITE	AND CON	IFIRM SIZES								

- ALL DIMENSIONS SHOWN ARE FOR UPFLOW MODEL
- CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR DUCT MOUNTED WATER HEATING COIL

- ALL SUPPLY DROPS ARE FULL SIZE UNLESS NOTED ON PLAN.

SPRING ISOLATORS

SPEED CONTROLLERS

ALUMINUM CONSTRUCTION FOR HIGH HUMIDITY AREAS

- PIPE CONDENSATE TO NEAREST HUB C/W AIR GAP. UNLESS NOTED ON PLAN.

				HUMIDIF	IER SCHE	DULE	-			
TAG NO.	LOCATION	SERVING	MANUFACTURER	MODEL NO.	CAPACITY	AIRFLOW	E	LECTRICAL		EMERGENCY POWE
							V/PH/HZ	MCA	FLA	
SH	MECH RM	FAN COIL	CONDAIR	RH	5-10LB/HR	600-1200CFM	208/1/60	20	16	NO

- PROVIDE LENNOX MERV 10 FILTER IN 5" FILTER BOX. WHERE STEAM HUMIDIFIERS ARE NOT SPECIFIED ON THIS PROJECT PROVIDE APRILAIRE MODEL 400 BY-PASS HUMIDIFIER 24V/60, .5 AMP C/W BUILT IN TRANSFORMER

NOTE: 1. PROVIDE VAPOUR LOGIC CONTROLLER, C/W 4 FT STEAM HOSE, S.S. STEAM DISTRIBUTOR MODULATING DUCT MOUNT CONTROL HUMIDISTAT, MODULATING HI LIMIT HUMIDITY SENSOR, OUTDOOR TEMPERATURE HUMIDITY RESET SENSOR, AIR PROVING SWITCH.
2. PROVIDE 1/2" VALVED COPPER ONLY WATER UP TO 4FT OF HUMIDIFIER C/W BACK FLOW APPROVED PREEMPTOR.
3. PROVIDE 1" INSULATED COPPER DRAIN LINE TO HUB DRAIN. HUB DRAIN TO BE LOCATED WITHIN 5FT OF HUMIDIFIER. FOR STEAM LINES LONGER THAN 4FT USE 1" TYPE M COPPER AND INSULATE WITH 1" SNAP ON INSULATION

_											
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(ONDENICEDS V	(ADIADIE CAE	$\Lambda \cap ITV$			I ENINION	~ \	
7			AIR COOLED C	CONDENSERS - V	ARIADLE CAP	ACIT	- 301	JEDULE (\)	
>		T	T	1	1	1	T	1	\ 		1
(OUTDOOR FAN	EMERGENCY	SIZE(IN)
>	TAG	MODEL	TYPE	NOMINAL TONAGE	VOLTAGE	MCA	MOCP	WEIGHT(LBS)	MOTOR	POWER	LXWXH
(C-1.5	XC25-024	OUTDOOR COOLING ONLY	1.5T	230/1/60	14.9	25	303	1/3 HP	NO	40x36x47
7	<u> </u>	71020 021	33.233.4332331		2007.1700				.,,,,,,		10/10/2/11
>	C-2.0	XC25-024	OUTDOOR COOLING ONLY	2T	230/1/60	14.9	25	303	1/3 HP	NO	40x36x47
>	C-3.0	XC25-036	OUTDOOR COOLING ONLY	ЗТ	230/1/60	19.5	30	303	1/3 HP	NO	40x36x47
(0 0.0	7020 000	OUTDOOK COOLING CIVET	01	200/1/00	10.0	- 00	000	170 111		40,000,47
(C-4.0	XC25-048	OUTDOOR COOLING ONLY	4T	230/1/60	32.9	50	330	1/3 HP	NO	40x36x47
(C-5.0	XC25-060	OUTDOOR COOLING ONLY	5T	230/1/60	34.1	50	330	1/3 HP	NO	40x36x47
7											

NOTES: 1. OUTDOOR CONDENSERS ARE 36" WIDE X 39" DEEP X 37" HIGH UP TO 3 TONS (250lbs) AND 47" HIGH FOR 4 AND 5 TONS (350lbs)
2. OUTDOOR CONDENSERS ARE TO BE LENNOX MODEL XC-16S, TONNAGE TO MATCH FAN COIL, MIN. 16 SEER,

3. EXACT LOCATION OF CONDENSERS TO BE DETERMINED AT SITE AND APPROVED BY ARCH/OWNER. REFER TO MANUFACTURERS GUIDE FOR RECOMMENDED MOUNTING DETAILS.
4. LOW AMBIENT KIT DN TO 30°F.. CLEARANCE FROM WALL IS 12", 48" ON TOP OF UNIT, 36" ON ALL OTHER SIDES. C/W CRANK CASE HEATER, FREEZE STAT, REFRIGERANT LINE SET SIZED TO SUIT SITE CONDITIONS.
5. FOR REFRIGERANT LENGTHS OVER 50FT PROVIDE NON BLEED PORT TXV, LIQUID SOLENOID VALVE.

\		LENGTHS OVER SUFT FRO		,						 	
						ENTILATOF					
TAG NO.	CORE	MANUFACTURER	MODEL NO	AIRFLOW	E.S.P	SIZE(IN) LXWXH	VOLTAGE	BLOW HP	FAN WATTS	BLOW NO.	WEIGHT
HRV-95	1	LENNOX	HRV3-095	70CFM	0.3IN W.C.	24.5x18.5x16	120/1/60	1/ 20	150	2	52 LBS
HRV-150	1	LENNOX	HRV3-150	125CFM	0.3IN W.C.	33x19x15	120/1/60	1/ 20	117	2	71 LBS
HRV-350	2	LIFEBREATH	350DCS	400CFM	0.3 IN W.C.	49x28x19	120/1/60	1 /10	610	2	160 LBS
-	UNLESS NOTED C	ON PLANS ALL HRV UNITS AF O AREAS),	RE TO BE , FLEXIBLE	CONNECTIONS, C	;/W 20/40/60 TIMERS	IN EACH ROOM BEING	EXHAUSTED FROM T	HE ASSOCIATED HR	V UNIT, INSULATED CAS	E (TO PREVEN CON	NDENSATION IN
-	VIBRATION ISOLA	TORS. EXACT LOCATION OF	F TERMINATION TO I	BE CO-ORDINATED	WITH ARCHITECT.						
-	PROVIDE B/D/D AND IN SPEC BEL	ND B/SCREEN. UNLESS NOT .OW.	TED ON PLANS TERM	INATIONS THRU W	ALL SHALL BE A L2 I	LOUVRE TYPE . TERMIN	IATIONS THRU ROOF	SHALL BE A ROOF C	AP OR RV-EXH ROOF V	ENTILATOR TYPE A	S NOTED ON PLANS
-	BOXES AND ATTE	NUATORS TO BE C/W 1" AC	OUSTIC LINING.BOX	ES TO BE C/W 35.5'	LONG INTEGRAL S	OUND ATTENUATOR.					
-	PIPE COND. TO NE	EAREST HUBDRAIN C/W AIR	GAP								

				RE	SIDEN	ITIAL CE	ILING F	AN SCHEDULE	=		
				FAN DAT	·A						
MARK	MANUFACTURER	MODEL#	CFM	E.S.P.	H.P.	VOLTAGE	RPM	OPERATION	WEIGHT(LBS)	LOCATION	MOUNTING
CF-110	PANASONIC	FV-1115VQ1	110	.25	1/4	120/1/60		SWITCH / SENSOR	10	AS SHOWN	CEILING MOUNT
CF-150	PANASONIC	FV-1115VQ1	150	.25	1/4	120/1/60		SWITCH / SENSOR	10	AS SHOWN	CEILING MOUNT

4. PROVIDE B/D/D AND B/SCREEN. UNLESS NOTED ON PLANS TERMINATIONS THRU WALLS SHALL BE A WALL BOX. TERMINATIONS THRU ROOF SHALL BE A ROOF CAP. REFER TO TERMINATION SCHEDULE FOR DETAIL

NOTES: 1. DISCHARGE FROM FAN TO BE MIN. 10FT. FROM INTAKE OPENINGS.

2. C/W TIMER (AS DECIDED BY OWNER/ARCHITECT) EXCEPT LAUNDRY ROOM BY HUMIDISTAT, INSULATED DUCT 10FT FROM INSIDE FACE OF EXTERIOR WALL, ROOF, SOFFIT OR SIDEWALL AS SHOWN.

3. EXACT LOCATION OF TERMINATION TO BE CO-ORDINATED WITH ARCHITECT.

					I	NLINE FA	AN SCH	EDULE			
				FAN DAT	·A						
MARK	MANUFACTURER	MODEL#	CFM	E.S.P.	H.P.	VOLTAGE	RPM	OPERATION	WEIGHT(LBS)	SIZE	LOCATION
F-1200	GREENHECK	SQ-130	1200	.5	1/4	120/1/60	1400	HOOD INTERLOCK	200	21" DEEP	PANTRY
F-1500	GREENHECK	SQ-140	1500	.5	1/3	120/1/60	1100	HOOD INTERLOCK	250	23" DEEP	2ND FL MECH
F-4500	GREENHECK	BDF-150	4500	.5	1	120/1/60	685	CO INTERLOCK	221	34"x32"x23"H	GARAGE
	- DISCONNECT		L		L						
	- FLEXIBLE CONNECTION	ONS									
	- 50FT. OF CONTROL V	VIRING OR AS NOTE	D ON PLANS								
	- INSULATED CABINET										
	- MOTOR COVERS										

				SL	JMP P	PUMP	SCHE	DULE						
TAG NO.	TYPE	ARRANGEMENT	MANUFACTURER	MODEL NO	FLOW	HEAD	RPM	DISCHARGE		PIT		ELEC ⁻	TRICAL	EMERCENCY DOWER
TAG NO.	ITE	ARRANGEMENT	MANUFACTURER	MODEL NO	(GPM)	(FT)	KEIVI	SIZE	WIDTH	DEPTH	COVER	V/PH/HZ		LIVIERGENCY FOWER
SAN-50	SANITARY	DUPLEX	BARNES	2SE-51	50	20		3"	36"Ø	60"	REG	230/1/60		YES
STM-50	STORM	DUPLEX	BARNES	2SE-51	50	20		3"	36"Ø	60"	REG	230/1/60		YES
NOTE: 1 PPO	/IDE 1 EL OAT EOL	P SIMDLEY EOD DIIN	ADS WITH MAGNETIC S	TARTERS PROVINE 2 EL (CNTPOL DA	NEL EOR D	I IDI EY DI IMDS D	DDU/IDE 3 EL (ATS AND		DANEI	•	

NOTE: 1. PROVIDE 1 FLOAT FOR SIMPLEX. FOR PUMPS WITH MAGNETIC STARTERS PROVIDE 2 FLOATS AND CONTROL PANEL. FOR DUPLEX PUMPS PROVIDE 3 FLOATS AND CONTROL PANEL. 2. CONTRACTOR TO CONFIRM WITH MANUFACTURER THAT PIT AND COVER IS RATED FOR THE EXPECTED TYPE OF TRAFFIC LOADING

3. CITY INVERTS MUST VERIFIED (BY OTHERS) BEFORE ORDERING AND INSTALLATION OF SANITARY SUMP AND UNDERGROUND DRAINAGE.
4. C/W 20FT POWER CORD, LHW115 HIGH WATER ALARM PANEL C/W EXTRA RELAY IN CEMA 1 ENCLOSURE.

5. FOR DUPLEX COMBINED DISCHARGE PIPE SHALL BE ONE SIZE LARGER THAN INDIVIDUAL PUMP DISCHARGE
6. ENSURE PIT IS A MIN 3FT BELOW INCOMING INVERT. MODIFY PIT DEPTH AS REQUIRED. CONTRACTOR TO VERIFY INCOMING INVERT AT SITE PRIOR TO ORDERING PIT.

HYDRONIC BOILER SCHEDULE

-AG	LOCATION	MANUFACTURER	MODEL		(MBH)	OUTPUT (MBH)	FLUE	COMBUSTION AIR	MAX. VENT LENGTH (FT.)	BOILER EFFECIENCY A.F.U.E.	ELECTRICAL V/PH/HZ	WEIGHT (LBS)	SIZE W x L x H	GAS CONNECTION (IN)	WATER CONNECTION (IN)
				MINIMUM	MAXIMUM										
-400	BSMT	IBC	SL40399	40	399	383	4"	4"	100	96%	120/1/60	250	27" x 20" x 40"	³ / ₄ "	1½"
-	BOILER POWE	ER VENTING POST PUR	RGE TO BE SE	TTO 90 SEC	ONDS, BOILEF	R PUMP POST	PURGE TO	BE SET TO 3 MINU	JTES.						

- VENTING AS PER MANUFACTURERS RECOMMENDATIONS

- PIPE COND. TO NEAREST HUB DRAIN C/W AIR GAP. CONDENSATE SHALL HAVE A NEUTRALIZING FILTER

- OUTDOOR RESET CONTROL WITH OUTDOOR AIR SENSOR

BUILT-IN CASCADING SEQUENCERTHREE PUMP CONTROLLER

DOMESTIC HOT WATER PRIORITIZATIONWIRELESS OUTDOOR TEMPERATURE SENSOR

CONDENSATE NEUTRALIZATION KIT

			INDI	RECT HOT	WATER TA	NK SCHE	DULE			
TAG NO.	LOCATION	MANUFACTURER	MODEL NO.	BOILER OUTPUT	COIL FLOW RATE	STORAGE CAPACITY	RECOVERY @ 115°F RISE	EMERGENCY POWER	SIZE(IN) DIA XH	WEIGHT
HWT-120	AS SHOWN	NTI	INDIRECT NTI S120	290MBH	13.4GPM	119 GAL	636GPH	NO	29x70-1/4	190

NOTES: C/W HEAT TRAP, TEMPERATURE SENSOR C/W 10°F DEADBAND AND DRAIN AS PER MANUFACTURER TO BE ABLE TO DRAIN TANK

			В	UFFER TANK	SCHEDULE				
TAG NO.	MANUFACTURER	MODEL NO.	TANK VOLUME (US GAL.)	HEIGHT (IN.)	DIAMETER (IN.)	MAX. PRESSURE (PSI)	CONNECTION (IN.)	NUMBER OF SENSOR WELLS	WEIGHT (LBS)
BUF-80	HOT WATER PRODUCTS INC.	BB-80 (3W)	80	71-1/4	23-1/8	75	2-1/2	1	128
NOTES:	- NOT FOR USE WITH POTABLE W	ATER							

- ALL MODELS C/W 3/4" NH(M) DRAIN CONNECTION, 1/2" AIR VENT (NPT)

				PUI	MP SCHEDUL	_E			
TAG NO.	MAKE	MODEL#	FLOW RATE (GPM)	HEAD (FT.)	VOLTAGE	POWER	AMPS	LOCATION	NOTES
P-1	GRUNDFOS	UPS-26-99FC	0-33	0-29	120/1/60	1/6 HP	1.8	HEATING LOOP	3 SPEED
P-2	GRUNDFOS	UPS-15-58FC	0-17.5	0-19	120/1/60	1/25 HP	0.75	HEATING LOOP	3 SPEED
P-3	GRUNDFOS	UP-15-42B7	0-17	0-15	120/1/60	1/25 HP	0.74	HOT WATER LOOP	C/W AQUASTAT AND TIMER
P-4	GRUNDFOS	UPS-43-44FC	35-45	6-8	120/1/60	1/6 HP	1.8	HWT	3 SPEED
P-5	GRUNDFOS	MAGNA3 40-80F	0-45	0-16	230/1/60	1/4 HP	1.36	HEATING LOOP	VARIABLE SPEED
P-12	GRUNDFOS	ALPHA-15-55F	0-22	0-18	120/1/60	0.06HP	0.65	HEATING LOOP	VARIABLE SPEED
P-15	GRUNDFOS	MAGNA3 65-120F	0-105	0-39	230/1/60	0.6HP	3.32	HEATING LOOP	VARIABLE SPEED

- ALL PUMPS ARE TO BE C/W ISOLATION VALVE AND CHECK VALVES.

DUCTLESS SPLIT AIR CONDITIONER SCHEDULE

	1	1									
						HEATING DATA	COOLI	NG DATA	E	ELECTRICAL DATA	A
MARK	MANUFACTURER	INDOOR MODEL#	OUTDOOR MODEL#	TYPE	NOMINAL TONS	BTU/HR @17°F	BTU/HR	LOW AMBIENT	VOLTAGE	MCA	MOCF
DS-0.5TS	MITSUBISHI	MSZ-FS06NA	MUZ-FS06NA	WALL MOUNTED	1/2	12,840	6,000	-14°F	208/1/60	10	15
DS-0.5TM	MITSUBISHI	MSZ-GL06NA		WALL MOUNTED	1/2	7,200	6,000	-14°F	208/1/60	1.0	
DS-1T	MITSUBISHI	MSZ-GL12NA		WALL MOUNTED	1	NA	12,000	-14°F	208/1/60	1.5	
DS-2TM	MITSUBISHI	MSZ-GL24NA		WALL MOUNTED	2	27,600	22,400	-14°F	208/1/60	1.0	
C-2T	MITSUBISHI		MXZ-4C24NAHZ	CONDENSER	2	NA	24,000	-14°F	208/1/60	30	35
C-2.5T	MITSUBISHI		MXZ-4C36NAHZ	CONDENSER	2.5	36,000	36,000	-14°F	208/1/60	42	52

- ²⁴// PROGRAMMABLE T-STAT

- CONDENSATE PUMP
- PIPE CONDENSATE TO NEAREST HUB DRAIN C/W AIR GAP.

- PROVIDE AND INSTALL MOUNTING HARDWARE AS REQUIRED.

- CONDENSER IN PARKING GARAGE TO BE MOUNTED AT HIGH LEVEL. CONDENSER ON ROOF ARE TO BE MOUNTED ON SLEEPERS.

LAYOUT AND DETAIL OF PIPING TO BE COORDINATED WITH MANUFACTURERS INSTALLATIONS GUIDELINES.
 CONDENSING UNIT TO BE C/W BRANCH BOX. MODEL: PAC-MKA31BC. MAX 3 DUCLTESS SPLITS PER BOX

ZONE CONTROL SCHEDULE

MARK	MANUFACTURER	MODEL NO	SIZE	NOTES
ZD-1A	LENNOX	X4218	12x8	
ZD-1B	LENNOX	X4218	12x8	
ZD-1C	LENNOX	X4218	12x8	
ZD-2A	LENNOX	X4219	14x8	
ZD-2B	LENNOX	X4223	22x8	
ZD-7A	LENNOX	X4218	12x8	
ZD-7B	LENNOX	X4218	12x8	

NOTES
HONEYWELL: ZONE SYSTEM TO BE C/W HZ432 TRUEZONE PANEL, WIRELESS ADAPTER, DISCHARGE AIR TEMPERATURE SENSOR, TRANSFORMER, PRESTIGE HD THERMOSTAT FOR EACH ZONE, WIRELESS OUTDOOR SENSOR AND ALL NECESSARY WIRING ETC. FOR A COMPLETE SYSTEM.

LENNOX: C/W IHARMONY DAMPER CONTROL MODULE, ICOMFORT THERMOSTAT, IN-ZONE THERMOSTATS, MOTORIZED ZONE DAMPERS, DISCHARGE AIR TEMP. SENSOR.

10 8/29/2024 FULL MECH SET UPDATE
9 8/23/2024 ARCH/HVAC/RAD/SNOWMELT UPDATE
8 3/7/2024 CORE SLAB SLEEVE REVISION #2

7 2/29/2024 CORE SLAB SLEEVE REVISIONS
6 2/8/2024 ISSUED FOR CORE SLAB SLEEVE COORD

5 10/25/2023 ISSUED FOR PERMIT COMMENTS
4 10/12/2023 UPDATES / ISSUED FOR PRICING
3 8/8/2023 ISSUED FOR PERMIT

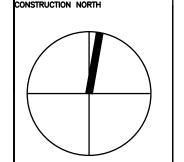
2 7/28/2023 ISSUED FOR REVIEW

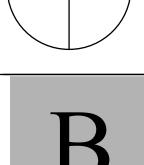
1 6/20/2023 ISSUED FOR REVIEW

THIS DRAWING SHALL BE USED ONLY FOR THE PURPOSE INDICATED IN THE LATEST ISSUED COLUMN ABOVE

ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE DESIGNER AND MAY NOT BE REPRODUCED WITHOUT WRITTEN PERMISSION. DRAWINGS MUST NOT BE SCALED. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ERRORS AND OMISSIONS TO THE DESIGNER. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS COUNTERSIGNED BY THE DESIGNER.

THESE DRAWINGS ARE NOT TO BE SCALED.





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GEORGINA, ONTARIO

MECHANICAL

PLOT DATE PROJECT No. 23-317

DRAWING TITLE

EQUIPMENT SCHEDULES

2024
WN BY
J.W/K.W

NTS

M-24
OF 25

SPECIFICATIONS

REFER TO THE ARCHITECTURAL SPECIFICATIONS. THE GENERAL CONDITIONS, TENDER FORMS, SCHEDULE OF CO-ORDINATE YOUR WORK WITH ALL OTHER TRADES ON THE SITE TO THE EXTENT OF PROPERLY LOCATING ALL EQUIPMENT, PIPING, DUCTWORK, ETC. THIS CONTRACTO SHALL BE RESPONSIBLE FOR OBTAINING ACCURATE DIMENSIONS FROM THE ARCHITECTURAL DRAWINGS, OR EACH CONTRACTOR SHALL SUPERVISE THE LAYING OUT OF HIS WORK AND SHALL ARRANGE IT IN CO-ORDINATION WITH OTHERS WORKING ON THE SITE WHILE THE WORK OF THIS CONTRACT IS IN PROGRESS. HE SHALL PROTECT FINISHED AND UNFINISHED WORK O THE CONTRACT AND/OR WORK OF OTHERS ON THE SITE UNTIL THE COMPLETE WORK HAS BEEN ACCEPTED. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH ALL BY-LAWS AND CODES OF THE AUTHORITIE HAVING JURISDICTION. MAKE ALL NECESSARY TESTS AND ALTERATION AS REQUIRED BY AUTHORITIES HAVING INCLUDE ALL NECESSARY MATERIALS, LABOUR AND EQUIPMENT TO INSTALL MECHANICAL WORK AS SHOWN ON THE DRAWINGS, AS THE MINIMUM REQUIREMENT, AND INCLUDE AS PART OF CONTRACT ANY WORK REQUIRED

O MAKE THE INSTALLATION CONFORM WITH ALL APPLICABLE REGULATIONS. ALL MATERIALS REQUIRED FOR THE PERFORMANCE O THE WORK SHALL BE THE BEST OF THEIR RESPECTIVE KINDS, CSA APPROVED, OF UNIFORM PATTERN THROUGHOUT. WHERE THIS WORK IS WITHIN A BASE BUILDING. THE HIGHER SPECIFICATION STANDARD BETWEEN THE BASE BUILDING AND THIS SPECIFICATION

MUST BE ADHERED TO. THE DRAWINGS ARE TO BE CONSIDERED AS DIAGRAMMATIC ONLY, AND DO NOT SHOW ALL STRUCTURAL AND CONSTRUCTION DETAILS. AN INFORMATION INVOLVING ACCURATE MEASUREMENTS OF THE BUILDING SHALL BE TAKEN AT THE SITE. ANY NECESSARY CHANGES OR ADDITIONS TO ACCOMMODATE STRUCTURE CONDITIONS SHALL BE MADE WITHOUT ALL ENQUIRIES PERTAINING TO ADJACENT WORK. PARTICULARLY PLASTER, WOOD FINISHES AND OTHER BY SUCH DEFECTS OF THIS CONTRACTOR'S WORK OR

MATERIALS OR DAMAGE TO OTHER EQUIPMENT CAUSED BY SUBSEQUENT REPLACEMENT AND REPAIRS, SHALL BE MADE GOOD AT THE EXPENSE OF THIS CONTRACTOR CONCEAL PIPING AND DUCTWORK IN PARTITIONS AND WALLS, AT BETWEEN FLOOR AND CEILING, EXCEPT AS ALL EXCAVATION, REMOVAL OF EXCESS MATERIAL BEDDING, BACKFILLING, COVERING, ETC., SHALL BI CARRIED OUT BY THE TRADES CONCERNED. PIPING BEDDING. BACKFILLING AND TESTING SHALL CONFORM 1 MANUFACTURER'S RECOMMENDATIONS AND LOCAL AUTHORITIES REQUIREMENTS. ALL TRADES MUST KEEP AN UP TO DATE SET OF AS BUILT DRAWINGS ON SITE AS IT RELATES TO THERE

SCOPE. A FINAL SET MUST BE PROVIDED TO ENGINEER

DUCTWORK AND GEO-THERMAL PIPING MUST BE MARKED

PRIOR TO FINAL INSPECTION. ALL BURIED PIPING.

ON AS BUILT DRAWINGS SHOWING LOCATION AND DEPTH PRIOR TO COVERING. IN ADDITION PICTURES MUST BE TAKEN OF ALL BURIED PIPING, DUCTWORK AND/OR GEO-THERMAL PIPING PRIOR TO COVERING. AS BUILT MARK UPS MUST BE SUBMITTED PRIOR TO A FINAL . ALL EQUIPMENT AND INSTALLATION TO BE IN ACCORDANCE WITH ASHRAE STANDARDS, INCLUDING WORKMANSHIP, ENERGY, NOISE, ETC. . FURNISH ALL LABOUR. MATERIAL. TOOLS AND EQUIPMEN REQUIRED TO COMPLETE THE INSTALLATION AND TESTING

OF MECHANICAL SYSTEMS AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN, INCLUDING: HEATING VENTILATION & AIR CONDITIONING, PLUMBING & DRAINAGE AND FIRE PROTECTION. . ALL INSTALLATIONS ARE TO COMPLY WITH LOCAL BUILDING CODE REQUIREMENTS AND ALL APPLICABLE 5. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE ENGINEER AND TO INFORM THE GENERAL CONTRACTOR THAT WE MUST BE CONTACTED FOR AN INSPECTION PRIOR TO POURING THE FLOOR, DRY-WALLING AND

AFTER FINAL COMPLETION OF THERE WORK SO WE CAN DO OUR INSPECTIONS A MINIMUM OF THREE DAYS NOTICE SHALL BE GIVEN. A REQUEST FOR AN INSPECTION SHALL BE DONE IN AN EMAIL TO THE ENGINEER JOB CAPTAIN. BEFORE A FINAL REPORT I ISSUED CONTRACTOR TO PROVIDE (WHERE APPLICABLE) AIR BALANCING REPORTS, COMMISSIONING REPORTS, NFPA LETTERS. BACK FLOW PREVENTOR TESTING REPORTS, AS BUILT MARK UPS ETC. 5. ALL EQUIPMENT, PIPING, INSULATION, CONTROLS DUCTWORK, FITTINGS, ETC AND ASSOCIATED PRODUCTS MUST BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS. WHERE THERE IS A DISCREPANCY

ENGINEER MUST BE CONTACTED FOR FURTHER

. CONTRACTOR IS TO REMOVE FROM SITE AND DISPOSE OF ANY UN-USED EQUIPMENT AND ASSOCIATED DUC WORK/PIPING/GRILLES ETC AND CAP OFF EXISTING AS REQUIRED. MAKE GOOD ON ALL REDUNDANT OPENINGS AS A RESULT OF CONSTRUCTION. B. ALL ROOF PENETRATION, EQUIPMENT HUNG FROM STRUCTRE AND DUCT SLEEVING THROUGH STRUCTURAL MEMBERS SHALL BE APPROVED BY ARCHITECT AND TRUCTURAL ENGINEER PRIOR TO CONSTRUCTION CONTRACTOR TO PROVIDE APPROVED SHOP DRAWINGS O GENERAL CONTRACTOR FOR REVIEW. ALL DUCT DROPS FROM FQUIPMENT IS TO TERMINATE AT 24' BELOW LOWEST STRUCTURE. . WHERE IT IS DISCOVERED THAT EXISTING PIPING MATERIALS BEING RE-USED IN THIS BUILDING IS

ASBESTOS OR NON METALLIC CONTRACTOR SHALL NOTIFY ENGINEER TO DETERMINE PIPING MEETS CODE.). WHERE THE SCOPE OF WORK TAKES PLACE WITHIN AN EXISTING BUILDING THIS CONTRACTOR SHALL CONFIRM ALL WORK MEETS THE BASE BUILDING STANDARDS RICING SHALL BE AS PER THESE DRAWINGS. CHANGES TO THESE SPECIFICATIONS TO SUIT BASE BUILDING SHALL BE DETERMINED AND APPROVED.

THIS SUBCONTRACTOR SHALL GUARANTEE ALL MATERIAL ANI IWORKMANSHIP USED IN THE WORK TO BE IN STRICT ACCORDANCE WITH THE SPECIFICATIONS, OF BEST QUALITY AND YPE OBTAINABLE TO GIVE FIRST-CLASS CONSTRUCTION AND PROPER AND EFFICIENT OPERATION, AND FREE FROM ANY EFECTS. ANY SUCH DEFECTS WHICH MAY APPEAR IN ANY O THE WORK WITHIN 1 YEAR AFTER WRITTEN ACCEPTANCE OF WORK TO SUIT CLOSE OUT REQUIREMENTS, SHALL BE REPAIRED AND REPLACED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER. WHERE SUCH DEFECTS OCCUR, THIS SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL COSTS INCURRED IN MAKING THE DEFECTIVE WORK GOOD. THIS SHALL NOT OBSOLETE ANY LONGER WARRANTIES ON SPECIFIC ITEM OF

CUTTING AND PATCHING

CUTTING, CORING, DRILLING, PATCHING AND REPAIRS T EXISTING SURFACES REQUIRED AS A RESULT OF THE REMOVAL AND/OR RELOCATION OF EXISTING EQUIPMENT AND PIPING, AND/OR INSTALLATION OF NEW EQUIPMENT AND PIPING TO BE INCLUDED BY DIVISION 15 -MECHANICAL IN TENDER PRICE. DIVISION 15 TO EMPLO AND PAY APPROPRIATE SUB-TRADE WHOSE WORK IS INVOLVED, FOR CARRYING OUT WORK DESCRIBED ABOVE. THE CUTTING OF OPENINGS NOT REQUIRING LINTELS OR OTHER STRUCTURAL SUPPORT WILL BE THE RESPONSIBILIT OF THE TRADE REQUIRING THE OPENING. THE OPENING SIZ ILL BE THE MINIMUM REQUIRED, AND THAT PATCHING WILL THE RESPONSIBILITY OF THE TRADES NORMALLY ENGAGED IN WORKING WITH THE FINISHING MATERIALS REQUIRED TO RESTORE THE OPENING TO THE ORIGINAL C SPECIFIED CONDITIONS WHERE OPENINGS REQUIRE LINTELS OR OTHER STRUCTURAL SUPPORT, OR ROOFING WORK, SUCH OPENINGS WILL BE

PRODUCT CHANGES AND SUBMITTALS

SPECIFIED UNDER OTHER DIVISIONS.

WHERE THE CONTRACT DOCUMENTS STIPULATE PARTICULAR PRODUCTS/MATERIALS, EQUAL ALTERNATES MAY BE CONSIDERED BY THE CONSULTANT FOLLOWING THI CONTRACT AWARD. WHEN A REQUEST TO SUBSTITUTE PRODUCTS/MATERIALS IS MADE, THE CONSULTANT MAY APPROVE OR REJECT THE SUBSTITUTION, IF A SUBSTITUTION IS REJECTED. A RESPONSE TO THE PARTY SUBMITTING WIL BE RENDERED. IT IS RECOMMEDNED TO GET APPROVAL PRIOR TO DURING TENDER PROCESS. THESE SUBMISSIONS MUST BE DETAILED AND COMPLETE E IDENTIFYING THE PRODUCTS, MATERIALS OR SYSTEMS SPECIFIED AND COMPARED TO AN ALTERNATIVE PRODUCT MATERIALS OR SYSTEMS, CONTRACTOR MUST STATE THE DIFFERENCE IN THE CONTRACT COST AND TIME. EACH TRADE SHALL EMAIL ONE <u>COMPLETE</u> BOUND PDF FI OF SHOP DRAWINGS FOR REVIEW TO THE PROJECT ENGINEER FOR REVIEW AND COMMENTS PRIOR TO ORDERING, EQUIPMENT SHALL BE TAGGED TO CORRESPON WITH EQUIPMENT SCHEDULE AND PLANS NOTING ALL

ACCESSORIES ETC. THE ASSOCIATED CONTRACTOR SHALL

DOCUMENT, ENGINEER WILL REQUIRE MINIMUM ONE WEEK

TO REVIEW. WHERE PDF FILE IS TOO LARGE TO EMAIL

CONTRACTOR TO CONTACT ENGINEER FOR ALTERNATE

INCLUDE THEIR CONTACT INFORMATION WITHIN THE

<u>FIRE/SMOKE DAMPERS AND FIRESTOPPING</u>

UNLESS NOTED THE BELOW WORK SHALL BE DONE BY THE TRADE WHO IS RESPONSIBLE FOR THE MATERIAL BEING RATED OR FIRE STOPPED. ALL PRODUCTS SHALL BE INSTALLED AS PER MANUFACTURERS LISTING AND INSTRUCTION GUIDELINES FIRE AND OR SMOKE DAMPERS SHALL BE INSTALLED IN THI PLANE OF PENETRATION OF FIRE SEPARATIONS AND IN ACCORDANCE WITH NFPA-90A AND ULC-S505, AND SHALL BEAR THE ULC SEAL. A TIGHTLY FITTED ACCESS DOOR SHALI BE INSTALLED FOR EACH FIRE DAMPER TO PROVIDE ACCESS FOR INSPECTION, AND RESETTING OF DAMPER, AND REPLACING OF FUSIBLE LINK, DAMPERS SHALL BE SUPPORTED INDEPENDENTLY FROM DUCTWORK, DAMPERS SHALL BE OF TH SAME MATERIAL AS THE ASSOCIATED DUCTWORK. FIRE STOP ALL PIPE AND DUCT PENETRATIONS THROUGH ALL RATED SEPARATIONS. FIRE STOPPING MATERIALS TO SATISFY CURRENT CAN4/ULC-S115 STANDARD. PROVIDE FIRE-STOPPING FOR ALL OPENINGS IN FIRE SEPARATIONS FOR PASSAGE OF PIPES, DUCTS, ETC. TO MAINTAIN INTEGRITY OF FIRE SEPARATIONS AND O SATISFY THE APPLICABLE FIRE-STOP AND SMOKE SEAL RATING. INSTALLATIONS TO CONFORM TO APPROVED MANUFACTURERS DETAILS AND CURRENT CAN/ULC STANDARDS. FIRE-STOPPING TO BE EQUAL TO 3M, HILTI OR TREMCO FIRE STOP SYSTEMS, CONTRACTOR TO SUBMIT INSTALLATION DETAILS AND SHOP DRAWINGS OF APPROVED SYSTEM FOR EACH VARIATION OF PENETRATION. CONTRACTOR SHALL BE PREPARED O REMOVE FIRE—STOPPING ASSEMBLY FOR THREE (3) RANDOM INSPECTIONS BY CONSULTANT AND REPLACE AT NO EXTRA

MATERIAL IDENTIFICATION

ALLOW FOR IDENTIFICATION.

IDENTIFY PIPING WITH FACTORY FABRICATED SNAP ON PIPE MARKERS AND DUCTWORK WITH FACTORY FABRICATED NAMEPLATES. PIPE MARKERS SHALL BE FLEXIBLE SEMI-RIGID PREFORMED TO FIT AROUND PIPE WITH OR WITHOUT COVERING, MARKERS SHALL INDICATE FLOW DIRECTION, FLUID, OR AIR SYSTEM BEING CONVEYED INDICATING ASSOCIATED ZONES WHERE APPLICABLE, APPLY LABELS AT 50 FT INTERVALS, BEFORE AND AFTER PIPES/DUCTS PASS THROUGH WALLS, AT ACCESS DOOR OPENINGS OR CLOSER. COLOR TO CONFORM TO ASME PROVIDE 3/4" DIAMETER BRASS NUMBER TAGS WITH NUMBER STAMPED IN BLACK, SECURED TO VALVE WHEEL WITH KEY CHAIN FOR VALVES NOT IN PLAIN SIGHT OF APPARATUS CONTROLLED. PROVIDE NEAT, TYPEWRITTEN DIRECTORIES GIVING VALVE NUMBER, VALVE SERVICE AND LOCATION OF VALVES. FRAME ONE COPY UNDER GLASS FOR IDENTIFY EQUIPMENT, ELECTRIC STARTING SWITCHES AND REMOTE PUSH-BUTTON STATIONS WITH 1/4" LAMINATED PLASTIC PLATES. WHERE HVAC/PLUMBING SERVICES ARE CAPPED IN FUTURE SPACE FOR FUTURE CONNECTION. CONTRACTOR TO EXTEND

DISINFECTION OF WATER PIPING AND CHEMICAL CONTRACTOR TO CONTACT LOCAL WATER SPECIALIST PRIOR TO CONSTRUCTION TO ADVISE ON APPROPRIATE WATER TREATMENT THIS CONTRACTOR SHALL ADVISE ENGINEER OF ANALYSIS AND PROVIDE A SEPARATE PRICE TO SUPPLY AND INSTALL THE PERFORM ALL TESTS AS REQUIRED BY CODE AND/OR LOCAL

HVAC/PLUMBING SERVICES MINIMUM 12" INTO SPACE TO

AUTHORITIES. APPLY 1035 KPA (150 PSI) WATER PRESSURE FOR EIGHT (8) HOURS WITHOUT A DROP IN PRESSURE, REPAIR LEAKS AND RE-TEST UNTIL SYSTEM DOES NOT DROP IN PRESSURE OVER 8 HOURS. FLUSH ALL SYSTEMS WITH SUFFICIENT VELOCITY UNTIL WATER IS CLEAR. ALL DISINFECTION AND CHEMICAL TREATMENT SHALL BE DONE BY A SPECIALISTS WITH MINIMUM 3 YEARS OF RELATED EXPERIENCE AND APPROVED BY ENGINEER. CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT TO OBTAIN DESIRED DISINFECTION OF DOMESTIC WATER (AWWA C651) INTRODUCE

ORINE (AWWA B301) INTO SYSTÈM FOR 24 HOURS. AFTER 24 HOURS FLUSH SYSTEM AGAIN AND CHECK FOR RESIDUAL HLORINE. WHERE REQUIRED FLUSH AGAIN TO ACCEPTABLE EVELS OF LESS THAN 10 PPM. CHEMICAL TREATMENT PROVIDE SHOP DRAWING OF EQUIPMENT ATION, MATERIALS AND PROPOSED CHEMICALS FOR PPROVAL. ALL PIPING SYSTEMS SHALL BE CHEMICALLY FREATED AND VENTED AS PER MANUFACTURES COMMISSIONING GUIDELINES. ENSURE PH LEVELS AND WATER HARDNESS IS WITHIN MANUFACTURERS GUIDELINES. CONTRACTOR TO CONTACT ILOCAL WATER COMPANY FOR A CHEMICAL ANALYSIS AND ADVISE IN WRITING TO THE ENGINEER THE RESULT OF THE CHEMICAL ANALYSIS TO DETERMINE IF FILTERS AND OR WATER SOFTENERS. MAY BE REQUIRED. PROVIDE AN OUTLINE OF ANY ADDITIONAL TREATMENT AND/OR PERMANENT EQUIPMENT THAT MAY BE REQUIRED FOR THE SYSTEM. THIS SHALL BE DONE BY THE IVAC CONTRACTOR AT AWARD OF TENDER AND PRIOR TO CHEMICAL TREATMENT PROCEDURE, CONTRACTOR TO ADVISE THE DATE OF CLEANING FOR ENGINEER PRESENCE, WHERE ANY ADDITIONAL PERMANENT EQUIPMENT IE. WATER SOFTENER/FILTER SYSTEM, IS REQUIRED CONTRACTOR TO PROVIDE A SEPARATE PRICE TO SUPPLY AND INSTALL. CHEMICAL TREATMENT PROCEDURE. ESTABLISH CIRCULATION AND 5. AIR EXTRACTORS SHALL BE ADDED WHERE SUPPLY AIR CIRCULATE FOR 12 HOURS AND ENSURE FLOW IN AL

TEMPERATURE, DRAIN. REFILL WITH CLEAN WATER AND ADD APPROVED CHEMICALS IN APPROPRIATE CONCENTRATIONS AS PROVIDE EQUIPMENT TO ADD CHEMICALS AS REQUIRED. PREVENT DEBRIS AND DIRT FROM ENTERING SYSTEM DURING PROVIDE ADEQUATE DRAIN CONNECTIONS TO COMPLETELY DRAIN EACH SYSTEM IN ONE HOUR. CLEAN STRAINERS FREQUENTLY. CONTRACTOR TO ENSURE ALL SYSTEMS ARE OPERATIONAL O ENSURE FLOW THROUGH ALL SYSTEMS. SYSTEM PUMPS MAY BE USED FOR CLEANING PROVIDED INSPECTED BY PUMP MANUFACTURER.

CIRCUITS. REMOVE HEAT AND CONTINUE TO CIRCULATE 100°F

OR LESS, DRAIN SYSTEM AS QUICKLY AS POSSIBLE, REFILI

WITH CLEAN WATER, CIRCULATE FOR 6 HOURS AT DESIGN

DUCTWORK MATERIAL AND GAUGE - 6" TO 12" WIDE OR ROUND — 26 GAUGE GALVANIZED, 24 GAUGE ALUMINUM 14" TO 30" WIDE OR ROUND - 24 GAUGE GALVANIZED, 22 GAUGE ALUMINUM · 32" TO 54" WIDE OR ROUND - 22 GAUGE GALVANIZED 20 GAUGE ALUMINUM NFPA GREASE DUCTWORK SHALL BE 16 GAUGE WELDED SIZES ABOVE ARE BASED ON 2" W.G, 2000FPM. ALL GOOSENECKS TO BE 22 GAUGE, TERMINATE 24" AFR. UNLESS NOTED ON PLANS ALL OUTDOOR HORIZONTAL DUCTWORK OR BURIED DUCTWORK WITH EXCEPTION TO NFPA DUCTWORK SHALL BE 20 GAUGE. ALL DUCTWORK SERVING DISHWASHERS, POOLS OF APPLICATIONS WITH HIGHER THAN NORMAL HUMIDITY APPLICATIONS SHALL BE ALUMINUM. DISHWASHER DUCTWORK SHALL BE SLOPED BACK FOR DRAINAGE AND PIPED TO AN APPROVED DRAIN. ALL JOINTS MUST BE SOLDERED TO PREVENT LEAKING. AN ACCESSIBLE BALANCING DAMPER SHALL BE PROVIDED AT TH DISHWASHER CONNECTION TO THE EXHAUST SYSTEM.

REFER TO BURIED DUCTWORK DETAIL FOR BURIED DUCTWORK. IF NOT SHOWN ON PLANS PLEASE CONTACT ENGINEER FOR DETAIL. ALL BURIED DUCT TO BE BELOW ALL DUCTWORK SHALL BE PRESSURE TESTED AND SEALED AS PER ASHRAE 90.1

<u>SQUARE DUCTWORK SUPORTS</u> <u>P TO 18"</u> – PAIR OF 1"X16 GAUGE HANGER STRAPS OR PAIR OF 1/4" RODS AND 1"X1"X1/8" ANGLES. SUPPORT EVERY 8FT | <u>8" TO 30"</u> – PAIR OF 1"X16 GAUGE HANGER STRAPS OR PAIR OF 1/4" RODS AND 1"X1"X1/8" ANGLES. SUPPORT EVERY 32" TO 42" - PAIR OF 1"X16 GAUGE HANGER STRAPS OR PAIR OF 1/4" RODS AND 11/2"X11/2"X1/8" ANGLES. <u>14" TO 60"</u> - PAIR OF 3/8" RODS AND 11/2"X11/2"X1/8"

ANGLES. SUPPORT EVERY 4FT IN ADDITION TO ABOVE SUPPORT AT 2FT FROM EACH ELBOW AND WITHIN 4 FT OF EACH BRANCH INTERSECTION. 2FT FROM EACH PIECE OF ASSOCIATED EQUIPMENT TO WHICH IT IS ATTACHED. HANGER STRAPS SHALL NOT BE USED WHERE DUCTWORK IS HANGER STRAPS SHALL TURN 2" AT UNDERSIDE OF DUCT AND BE FASTENED AT SIDES AND BOTTOM. ALL HANGERS ARE FROM BUILDING STRUCTURE IN ADDITION TO THE ABOVE SPACING SUPPORT VERTICAL DUCTS THROUGH FLOOR WITH CONTINUOUS LENGTHS OF

STRUCTURAL ANGLE. SIZED AT LEAST TO THAT OF ROOFTOP EXPOSED DUCTWORK SHALL BE SUPPORTED WITH MIFAB C-PORT DSA SYSTEM ROUND DUCTWORK SUPORTS

UP TO 24"-1/4" ROD WITH 20 GAUGE BAND AND GRINNELL

FIGURE 114 TURNBUCKLE. SUPPORT EVERY 10FT FIGURE 114 TURNBUCKLE. SUPPORT EVERY 8 FT 38"-50" - TWO 3/8" RODS WITH TWO 18 GAUGE BANDS AND GRINNELL FIGURE 114 TURNBUCKLE. SUPPORT EVERY 8 FT IN ADDITION TO ABOVE SUPPORT AT 2FT FROM EACH ELBOW AND WITHIN 4 FT OF EACH BRANCH INTERSECTION. 2FT FROM EACH PIECE OF ASSOCIATED EQUIPMENT TO WHICH IT IS ATTACHED. ROUND FLEXIBLE DUCTWORK SHALL BE SUPPORTED EVERY 5 FT AND SHALL NOT BE USED IN RESIDENTIAL ALL HANGERS ARE FROM BUILDING STRUCTURE.

ALL DUCTWORK SHALL BE SUPPORTED BEFORE AND AFTER WALL OPENINGS/SLEEVES. DO NOT REST DUCTS ON WALL

OPENINGS/SLEEVES. <u>DUCTWORK INSULATION</u> ALL REQUIRED INSULATION TO BE OF 100% COVERAGE AND INSTALLED WITHOUT SAGGING. PROVIDE ACCESSORIES AS ALL DUCTWORK SURFACES MUST BE CLEANED PRIOR TO INSTALLATION. ALL EQUIPMENT SHALL BE INSULATED TO THE SAME STANDARD AS THE CONNECTED DUCT OR PIPE. CONTINUE INSULATION THROUGH PENETRATIONS WITH VAPOUR BARRIER. FLEXIBLE GLASS FIBRE; K VALUE OF 0.29 AT 7 TYPE A - FLEXIBLE GLASS FIBILE, DEGREES F FOIL SCRIM FACING TYPE B — RIGID GLASS FIBRE; K VALUE OF 0.24 AT 75 DEGREES F DAMPER. CONTRACTOR TO VERIFY WALL. FIRE DAMPER- GREENHECK - MODEL FD SHALL BE TYPE B, - 11/2" TYPE A TO 10 FT. FROM EXTERIOR

OUTDOOR AIR INTAKE - 3" TYPE A (R-8.4) UP TO HEAT OURCE. 11/2" (R-4.2) AFTER HEAT SOURCE EXPOSED DUCTWORK (OUTDOORS) - 4" TYPE B (MIN R-PROVIDE AS PER MANUFACTURERS RECOMMENDATIONS VENTURECLAD CW1577 INSULATION CLADDING SUPPLY DUCTWORK - 11/2" TYPE A (R-4.2) - UNLESS ALL DUCTWORK IN UNHEATED AREAS - 3" TYPE B (MIN R-12 <u>DISHWASHER. KITCHEN EXHAUST DUCTWORK</u> - 2" TYPE A

ACOUSTIC INSULATION — ALL SUPPLY AIR AND RETURN AIR DUCTWORK FOR AIR HANDLING UNITS INCLUDING ITAKE/EXHAUST FANS SHALL BE INTERNAL ACOUSTICALLY LINE TO 15 FEET FROM UNIT OR AS SHOWN ON DRAWINGS WITH 1 TYPE B NEOPRENE COATED RIGID FIBERGLASS, WITH MECHANICAL FASTENER AT 16" CENTERS. UPSIZE DUCTWORK AS REQUIRED TO SUIT INSULATION THICKNESS

SYSTEM BALANCING AND COMMISSIONING PRIOR TO COMMISSIONING AND ONCE AGAIN PRIOR TO

OCCUPANCY CONTRACTOR SHALL ENSURE ALL FILTERS ARE CLEANED/REPLACED, PARTS LUBRICATED, WATER SYSTEMS CLEANED AND FLUSHED, BELTS TIGHTENED, CONTROLS COMPLETED, DUCTWORK CLEANED ETC. CONTRACTOR TO ALLOW FOR THIS IN HIS SCOPE OF WORK. CONTRACTOR TO ADJUST AND SET ALL CONTROLS FOR AL FOLIPMENT THAT FALLS WITHIN THERE SCOPE PRIOR TO COMMISSIONING SO THAT THE SYSTEM WORKS AS INTENDED AND AS PER OWNERS REQUIREMENTS ALL SYSTEMS AND EQUIPMENT SHALL BE COMMISSIONED AND BALANCED AS PER DRAWINGS, SPECIFICATIONS AND MANUFACTURES RECOMMENDATIONS FOR A COMPLETE WORKING SYSTEM. ALL COMMISSIONING SHALL BE CO-ORDINATED AND EXECUTED WITH THE APPLICABLE CONTRACTOR AND FOR LARGER CENTRAL SYSTEMS THE MANUFACTURERS REPRESENTATIVE. ALL SYSTEMS AND COMPONENTS MUST BE CONNECTED AND COMPLETE AS PER DRAWINGS. A CLEAR, DATED AND LEGIBLE TYPED START U COMMISSIONING AND BALANCING REPORT COMPLETE WITH SYSTEM SCHEMATICS NOTING ACTUAL SITE CONDITIONS SHALL BE PROVIDED TO ENGINEER FOR APPROVAL. ALL SYSTEMS SHALL BE BALANCED BY AN INDEPENDENT LICENSED CONTRACTOR TO WITHIN 10%. CONTRACTOR TO MAKE ADJUSTMENTS AS REQUIRED TO ACHIEVE DESIGN. THE ABOVE MENTIONED REPORT SHALL NOTE ALL ADDITIONAL WORK DONE IE REPLACING/CLEANING FILTERS, DUCTWORK CLEANING, WATER TREATMENT, CHANGING PULLEYS ETC. CONTRACTOR TO ALLOW FOR TWO ADDITIONAL SITE VISITS O MAKE FURTHER ADJUSTMENTS AS REQUIRED. APPLICABLE CONTRACTOR SHALL PROVIDE MAINTENANCE AN OPERATION MANUALS CLEARLY HIGHLIGHTING MAINTENANCE SCHEDULE AND OPERATING OF EQUIPMENT/CONTROLS TO

ALL BALANCING SHALL BE IN ACCORDANCE WITH NATIONAL ENVIRONMENTAL BALANCING BUREAU STANDARDS. GRILLES, DAMPERS, LOUVRES, TERMINATION PLANS OR IN THE EQUIPMENT SCHEDULE

BUILDING OWNER AND/OR BUILDING ENGINEER. CONTRACTOR

O REVIEW IN PERSON MAINTENANCE PROCEDURE,

FOLLOW THE ABOVE PROCEDURES CONTRACTOR TO

SCHEDULE AS REQUIRED FOR SUCH EQUIPMENT AND

CONTROLS TO BUILDING OWNER OR ENGINEER.

SCHEDULE AND OPERATION OF ALL EQUIPMENT AND

WHERE SEASONAL CONSTRAINTS PREVENT EQUIPMENT 1

BALANCING CONTRACTOR SHALL BE A MEMBER OF A.A.B.C

. ALL GRILLES AND DIFFUSERS TO BE C/W APPROPRIATE BORDER/FRAME TO SUIT CEILING/WALL/DOOR. CONTRACTOR TO CONFIRM CEILING/WALL/DOOR TYPES PRIOR TO ALL NEW S.A AND R.A GRILLES ARE TO BE OF HIGH QUALITY AND SAMPLES ARE TO BE SUBMITTED TO ARCHITECT AND OR INTERIOR DESIGNER OR OWNER FOR APPROVAL PRIOR TO ORDERING. FINISH IS TO BE SELECTED BY ARCHITECT AND OR INTERIOR DESIGNER. . EXACT LOCATION AND MOUNTING HEIGHTS OF ALL SUPPLY, RETURN AND EXHAUST GRILLES TO BE APPROVED BY ARCHITECT AND/OR INTERIOR DESIGNER PRIOR TO INSTALLATION. 4. ALL EXTERIOR TERMINATIONS SHALL BE APPROVED BY

ARCHITECT PRIOR TO ROUGH-IN. PROVIDE INSULATED PLENUM WHERE MULTIPLE DUCTS CONNECT INTO ONE MULTIPLE OUTLETS. CONTRACTOR TO ENSURE ALL NEW WALL LOUVRES AND ROOF PENETRATIONS AND CAPS MATCH BASE BUILDING 7. FINISH TO BE OFF-WHITE OR TO MATCH INTERIOR. GRILLES AND DIFFUSERS

HALL BE EQUAL TO EH PRICE UNLESS NOTED OTHERWISE TYPE A - SUPPLY AIR REGISTER, SIZE AS SHOWN, MODEL 320L C/W ALUMINUM OBVD AND TYPE F BORDER, B-12 <u>MPE B</u> – RETURN/EXHAUST AIR GRILLE, SIZE AS SHOWN, MODEL 630. C/W ALUMINUM OBVD AND TYPE F BORDER WHEN USED FOR DUCTED EXHAUST, B-12 FINISH. TYPE C - RETURN/EXHAUST AIR GRILLE (EGG CRATE), SIZE AS SHOWN, MODEL CORE 80. PROVIDE TYPE F BORDER/FRAME FOR DUCTED AND SURFACE MOUNTED. PROVIDE ALUMINUM OBVD WHEN DUCTED, B-12 FINISH. TYPE D - SQUARE CEILING SUPPLY AIR DIFFUSER, SIZE AS SHOWN, MODEL SCD C/W OBVD, B-12 FINISH.

TYPE E - LINEAR SUPPLY SLOT DIFFUSER, 1" SLOT, SURFACE MOUNT CONCEALED FRAME. SIZE OF LINEAR AND PLENUMS AS SHOWN ON PLANS. MODEL SDS-100 C/W VOLUME CONTROL IUSE EH PRICE SDBI-100 INSULATED PLENUM. PLENUMS ARE OFFERED IN 2,3,4 AND 5 FT SECTIONS. COLLAR SIZES ARE 6,8,10,12. CUSTOM MADE PLENUMS SHALL MATCH TYPE F - LINEAR RETURN SLOT DIFFUSER, 1" SLOT, SURFACE MOUNT CONCEALED FRAME, SIZE AS SHOWN ON PLANS, MODEL

TYPE G - LINEAR SUPPLY BAR GRILLE, SIZE AS SHOWN. MODEL LBP15B FOR ALL APPLICATIONS EXCEPT FLOOR MOUNTED WHICH SHALL BE LBMH15B. C/W OBVD, CONCEALED FASTENING AND 3/4" BORDER. WHERE BEING SERVED BY A BRANCH DUCT CONTRACTOR IS TO PROVIDE INSULATED PLENUM BOOT EQUAL TO EH PRICE UP OR UPL, B-12 FINISH WHERE PAINTED OR #66 WHERE NOT PAINTED. EXACT FINISH TBD. TYPE H - LINEAR RETURN BAR GRILLE, SIZE AS SHOWN. MODEL LBP15B, C/W CONCEALED FASTENING AND 3/4" BORDER, B-12 FINISH WHERE PAINTED OR #66 WHERE NOT PAINTED. EXACT FINISH TBD.

TYPE I - ROUND CEILING SUPPLY AIR DIFFUSER, SIZE AS SHOWN IS NOMINAL DUCT SIZE), MODEL RCD C/W OBVD, B-1 TYPE J - DOOR TRANSFER GRILLE SIZE AS SHOWN, MODEL TG1. B-12 FINISH. TYPE K - FIRE RATED DOOR TRANSFER GRILLE, SIZE AS SHOWN. NAILOR MODEL 61DGD-FR, B-12 FINISH. TYPE L1 AND L-2 - LINEAR VANE GRILLE, SIZE AS SHOWN. MODEL (L1 FOR LV-1) (L2 FOR LV-2) C/W OBVD, CONCEALED FASTENING AND 3/4" BORDER. WHERE BEING SERVED BY A BRANCH DUCT CONTRACTOR IS TO PROVIDE CUSTOM 1/2" INSULATED PLENUM BOOT. BOOT SHALL BE SIZED AS FOLLOWS

LENGTH AND WIDTH 2" LARGER THAN LINEAR COLLAR SIZE AND |HEIGHT SHALL BE 2" LARGER THAN ASSOCIATED DUCT BRANCH | - SQUARE PERFORATED CEILING DIFFUSER, SIZE AS <u>TYPE M</u> — SQUARE PERFORATED CEII SHOWN, MODE APDDR B—12 FINISH. TYPE N - LINEAR ADJUSTA SLOT DIFFUSER MUD IN TYPE. SINGLE SLOT MODEL (REFER TO PLANS FOR LENGTH AND SLOT WIDTH) AS210 WITH 22 BORDER, CONCEALED MOUNTING, DUAL PATTERN CONTROLLERS, XX ENDS. REFER TO PLANS FOR PROVIDE INSULATED UNIVERSAL PLENUM MODEL UP22SM WITH 6" CONNECTION TO MATCH ASSOCIATED LINEAR. PLENUMS ARE OFFERED IN 2,3,4 AND 5FT SECTIONS.

LOUVRES AND TERMINATIONS WALL BOX— GREENHECK — FOR MASONRY USE BRICK VENT BVF808 FOR UP TO 250CFM FOR C/W B/SC AND B/D/D WALL LOUVRE L-2 - MODEL ESD-202 WITH ALUMINUM LEEVE AS REQUIRED. MIN 8" DEEP. | WALL LOUVRE L-4 - MODEL ESD-403 WITH ALUMINUM SLEEVE | AS REQUIRED MIN 12" DEEP L2 AND L-4 LOUVRE SIZES AS NOTED ON PLANS C/W PRIME COAT FINISH FOR FIELD PAINTING, B/SC, B/D/D (UNLESS

INOTED AS A MOTORIZED DAMPER ON PLANS). WALL OPENING SIZE SHALL BE LISTED LOUVRE SIZE. EXAMPLE 6X6 LOUVRE /ILL NEED AN 6X6 OPENING. OPENING SIZE SHALL BE CONFIRMED AND SUPPLIED TO MANUFACTURER PRIOR TO RV-EXH. RV-INT (ROOF VENTILATOR FOR EXH./INTAKE)

REENHECK FABRA MODEL FGI FOR INTAKE AND FGR FOR EXHAUST. SPUN ALUMINUM, COLOUR AS PER OWNER/ARCHITECT, C/W 12" TALL BASE ROOF CURB OR PITCHED ROOF CURB AS REQUIRED, B/SC, PRIME COAT FINISH FOR FIELD PAINTING AND FULL SIZE INSULATED DUCT DROP (EXACT LENGTH OF DROP T.B.D AT SITE). PROVIDE B/D/D TO EACH CONNECTION AT PLENUM DROP OR MOTORIZED DAMPER WHERE NOTED ON PLANS. ROOF CAP (ALUMINUM) - GREENHECK - MODEL RCC-7

(UNLESS LISTED ON PLAN) C/W B/SC AND HORIZONTAL B/D/I BACK DRAFT- GREENHECK - COMMERCIAL WD SERIES C/W ACTUATOR PACK WHERE NOTED ON PLANS, CONTRACTOR TO VERIFY ORIENTATION AND DIRECTION OF AIRFLOW WITH MANUFACTURER WHEN ORDERING. HORIZONTAL MOUNTED DAMPERS SHALL BE C/W COUNTERBALANCE WHERE MOTORIZED DAMPER IS NOT SPECIFIED ON PLANS, PROVIDE ALUMINUM SLEEVE AND OR FLANGE AS REQUIRED. WHERE DAMPER IS ATTACHED TO LOUVRE, LOUVRE SHALL BE ORDERED WITH SLEEVE TO ACCOMMODATE THIS DAMPER. CONTRACTOR TO VERIFY WALL OPENING PRIOR TO ORDERING. MANUAL BALANCING DAMPER— GREENHECK — MDB—15 SERIES. ORIENTATION AND DIRECTION OF AIRFLOW WITH MANUFACTURER WHEN ORDERING. . PROVIDE ALUMINUM SLEEVE AND OR FLANGE AS REQUIRED. MOTORIZED DAMPER- GREENHECK - COMMERCIAL VCD-20 ERIES C/W --- MOTORIZED DAMPER PACK WHERE NOTED (PLANS. PROVIDE ALUMINUM SLEEVE AND OR FLANGE AS REQUIRED WHERE DAMPER IS ATTACHED TO LOUVE LOUVE SHALL BE ORDERED WITH SLEEVE TO ACCOMMODATE THIS

REPLACEABLE LINK. DISHWASHER. KITCHEN OR ANY DUCTWORK DISCHARGING HIGH TEMPERATURE SHALL BE COMPLETE WITH A 350°F REPLACEABLE LINK. SMOKE DAMPER- GREENHECK - MODEL SMD, 3-V BLADE CLASS 2 C/W ACTUATOR, SLEEVE AND SMOKE DETECTOR OR FIED INTO BUILDING MONITORING SYSTEM. POWER FOR ACTUATOR SHALL BE ---.

HOUR FIRE RATED AND COMPLETE WITH 160 DEG.

FIRE/SMOKE DAMPER- GREENHECK - TBD

ALL PIPING MUST BE APPROVED FOR THE WATER TEMPERATURES SHALL BE HEAT TRACED C/W 2" OF INSULATION. ONLY TRACE STORM PIPING FROM ROOF DRAIN UP TO 5 FT WITHIN HEATED SPACE. PIPE TRACING CABLES SHALL BE SUPPLIED AND INSTALLED BY WHERE APPROVED ALL NON METALLIC PIPING MUST BE APPROVED CONTRACTOR INSTALLING ASSOCIATED PIPING. POWER SUPPLY SHALL BY ENGINEER IN WRITING AND BE INSTALLED AS PER BE SUPPLIED AND INSTALLED BY ELECTRICAL DIVISION. PIPE TRACING MANUFACTURERS GUIDLINES. IN ADDITION, TO ENSURE CABLES SHALL BE SELF REGULATING TYPE. MIN 5 WATTS/SQ.FT. C COMPATIBILITY, PERFORMANCE AND MATERIAL QUALITY, IT IS O LENGTH, HARD WIRED. C/W ALL REQUIRED SENSORS, TERMINATION RECOMMENDED THAT THE PIPE AND FITTING DRAINAGE SYSTEM KITS, HARDWARE AND ACCESSORIES. 3M TTS SERIES OR APPROVED EQUAL. MECHANICAL AND ELECTRICAL DIVISIONS SHALL COORDINATE WORK FOR EXACT QUANTITIES & LOCATIONS OF REQUIRED PIPE TRACING, POWER SUPPLY LOCATIONS AND POWER/VOLTAGE

REQUIREMENTS.

BRONZE STRAINER.

SPECIFICATIONS INCLUDING FIRE STANDPIPE, WET SPRINKLER SYSTEMS,

SUMP PUMP DISCHARGE LINES AND DRY PIPE DRUM DRIPS PIPING

OUTLET SIZE TO BE AS PER PLUMBING SIZING NOTES UNLESS

. IN QUARRY OR MOSAIC TILED AREAS, PROVIDE SQUARE NICKEL

ROAT, NO HUB, OVAL CAST IRON FUNNEL--- ADAPTER PRIMER

HUB DRAIN (UNFINISHED FLOORS) — SERIES 2005—2645—P050, CSAT

RAFFIC AREA DRAINS (LARGE CAPACITY) — SERIES SQ-2-1717B LOOR DRAIN. PROVIDE SMITH SQ-2-1717-ADJ-B DRAIN WHEN AN

HUB DRAIN (FINISHED FLOORS) - SERIES 2005-2645RB-P050,

JGH BRONZE HUB FUNNEL, NO HUB, 4" ADAPTER, PRIMER

RON HUB FÜNNEL, NO HUB, 4" ADAPTER, PRIMER CONNECTION.

ADJUSTABLE EXTENSION SLEEVE IS REQUIRED — HEIGHT TO SUIT

GARAGE DRAIN (LARGE CAPACITY) - SERIES SQ-2-1717B FLOOR DRAIN. PROVIDE SMITH SQ-2-1717-ADJ-B DRAIN WHEN AN

ADJUSTABLE EXTENSION SLEEVE IS REQUIRED - HEIGHT TO SUIT

AREA DRAIN (LIGHT TRAFFIC AREAS) — SERIES 2320NB NICKEL BRONZE TRACTOR GRATE, NO HUB, 8" DIA STRAINER.

DEEP BODY, BOTTÓM OUTLET.

PROVIDE SUMP RECEIVER.

CONFORM AS PER MSS-SP-25.

COUPLING FOR BUSHINGS.

DRAIN VALVE - KITZ 3/4" 68AC

FLANGED. FLANGED: KITZ 78.

TERRACE DRAIN (BALCONY AREA) — SERIES 1670T NICKEL BRONZE SRRAINER, THREADED CONNECTION, 6" DIA STRAINER WITH SIDE

TERRACE DRAIN (BALCONY AREA) — SERIES 1610T—B4 NICKEL BRONZE SRRAINER, THREADED CONNECTION, 6" DIA STRAINER WITH 4"

TRENCH DRAINS — SMITH SERIES 9930 TRENCH DRAIN SYSTEMS. FOR APPLICATIONS WITH TRAFFIC UNDER 3500 LBS—70PSI USE GRATE 9870—451—SSPA GRATE AND TYPE 304 STAINLESS STEEL OVERLAY RAIL EDGE OR 9870—491—HPP POLYPROPYLENE. FOR TRAFFIC OVER

3500 LBS-70PSI AND VEHICLE TRAFFIC USE GRATE 9870-455-SSHD

INSTALLATION USE SERIES 1017RCCID DRAINS. PROVIDE SUMP

ROOF DRAIN (FLOW CONTROL) — SMITH SERIES 1083—CAN ROOF DRAIN. INVERTED ROOF INSTALLATION USE SERIES 1017—83 DRAINS.

WHERE POSSIBLE PROVIDE VALVES OF SAME MANUFACTURER

MSS-SP-25). PRODUCT SHALL CARRY VALID CRN (CANADIAN

REGISTRATION NUMBER) ISSUED BY RESPECTIVE PROVINCES. AL

PRESSURE RATINGS, MANUFACTURERS TRADEMARK AND SIZE TO

DISSIMILAR METALLIC CONNECTION USE DIELECTRIC ISOLATING

INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT

BALL VALVES (ISOLATION & BALANCING) - UP TO 4", 1034 KPA

(150PSIG)/600WOG RATING. BRASS AND OR BRONZE BODY. FULL

PORT, TFE SEATS, DOUBLE O-RING DESIGN, OR TEFLON PACKING,

CHROME PLATED SOLID BRONZE BALL, LEVER HANDLE. PROVIDE STEM

KTENSION WITH PIPING THAT IS INSULATED. SOLDERED: KITZ 59,

CHECK VALVES (BACKFLOW PREVENTION) HORIZONTAL & VERTICAL

JP TO 2", 860KPA (125PSIG)/200 WOG RATING, BRONZE BODY T

CAST IRON BODY, TO ASTM A126 BRONZE TRIM, BOLTED BONNET,

CIRCUIT BALANCING VALVES - B&G PIC-V UP TO 4.5 GPM, B&G CIRCUIT SENTRY FOR ABOVE 4.5 GPM.

BRONZE BODY, SCREWED CAP, Y-PATTERN, S.S SCREEN WITH 1/32

860KPA (125 PSIG) / 200 WOG RATING, CAST IRON BODY, BOLTED

COVER, Y-PATTERN, S.S. SCREEN WITH 1/32 PERFORATION, FLANGED:

PERFORATION, SOLDERED: KITZ 16, THREADED: KITZ 15, OVER 2".

| WALL HYDRANT BOX - SMITH SERIES 5509QTSAP BOX TYPE WALL

CLEANOUTS - SERIES 4100 FLOOR CLEANOUT, DUCO COATED CAST

SCREWS, C.O. CAST IN COVER. (FOR WATER-PROOFED AREAS PROVIDE)

IRON BODY AND REMOVABLE POSITIVE GASKET SEAL CLOSURE.

BRONZE COVER AND FRAME, SECURED WITH STAINLESS STEEL

BRONZE FACE AND STAINLESS STEEL WITH FULL 180 DE

'FC' FLANGE WITH FLASHING CLAMP).

PLUG AND HEAVY DUTY 6" (150MM) WITH EXTRA HEAVY NICKEL

NON FREEZE WALL HYDRANT - BOX - EXTERIOR - JAY R. SMITH SERIES 5509QT BOX TYPE WALL HYDRANT, 1/4 TURN NON-DRIP,

FRAMIC CARTRIDGE, 3/4" (19MM) NON FREEZE WALL TYPE WITH

LF-DRAINING INTEGRAL VACUUM BREAKER. LENGTH TO SUIT WALL

OPENING BOX, ADJUSTABLE WALL-FLANGE OPERATING KEY AND

WATER HAMMER ARRESTORS - SMS INC. #SC SERIES SC SERIES

TYPE 'K' COPPER CASING SIZE ACCORDING TO MANUFACTURER'S

SHOCK FROM PIPING SYSTEM. PROVIDE AT ALL FIXTURES

DROP IN THE SYSTEM) WITH 1/2" (12.7MM) NPT (MTOF)

TRAP SEAL PRIMER - SERVING 1 TO 4 DRAINS - SMS INC.

SERIES 'SC' WATER HAMMER ARRESTORS WITH BRASS PISTON IN A

RECOMMENDATIONS CHART BELOW TO ELIMINATE WATER HAMMER AND

#PR-500 SMS INC. #PR-500 AUTOMATIC TRAP SEAL PRIMER VALVE

CAST BRASS BODY, SERVING INDIVIDUAL OR REMOTE AREA DRAINS

PRIMER AUTOMATICALLY ACTIVATED WHEN THERE IS A PRESSURE

ONNECTIONS WITH STRAINER AND INTEGRAL BACK FLOW PREVENTER

& VACUUM BREAKER. PROVIDE APPROPRIATE DISTRIBUTION FITTING UI

O 4 DRAINS MAXIMUM. WHERE CONTRACTOR SUBSITUTES PRIMER

TEMPERATURE OF THE MATERIAL BEING MEASURED WILL FAL

EXCEEDS 2" THICK, A LONGER STEM THERMOMETER WILL BE

USED WITH AN EXTENSION NECK BRASS SEPARABLE THERMOWELL.

THERMOMETERS FOR MEASURING FLUID WILL HAVE STEMS WITH

INSERTION LENGTH WILL BE 2". THERMOMETERS INSTALLED ON

THERMOMETERS FOR MEASURING AIR TEMPERATURES WILL BE

GUARD STEM AND A MOUNTING FLANGE INSTEAD OF A BRASS

. THERMOSTATS SHALL BE EASILY ACCESSIBLE AND READABLE.

PRESSURE GAUGES - TRERICE 450 SERIES WITH 316 STAINLESS

EEL BOURDON TUBE/SOCKET AND STAINLESS STEEL NEEDLE

PROPER RANGE SHALL BE SELECTED SO THAT THE AVERAGE

FALL APPROXIMATELY IN THE MIDDLE OF THE SCALE.

GAUGES SHALL BE EASILY ACCESSIBLE AND READABLE.

INSTALL BALL VALVE IN THE PIPING TO EACH AIR VENT.

(3/8") COPPER DRAINS TO NEAREST FLOOR DRAIN.

LOCATION AND TERMINATE SO DISCHARGE IS VISIBLE.

GAUGES ON ANY SERVICE WHERE PRESSURE SURGES OR

OPERATING PRESSURE OF THE MATERIAL BEING MEASURED WILL

PULSATIONS ARE POSSIBLE WILL BE PROVIDED WITH TRERICE

INSTALL AIR VENTS AT HIGH POINTS IN PIPING SYSTEMS, WHERE

SPECIFIED, WHERE SHOWN ON THE DRAWINGS, AND WHERE

FOR ALL VENTS, EXCEPT FOR CREWDRIVER-OPERATED TYPE AT

CONVECTORS AND UNITARY HEATING EQUIPMENT, PROVIDE 9MM

AIR SEPARATOR - B&G USE BLA FOR 10 GAL AND UP USE HFT FO

FOR 3" AND UP SERIES USE B&G ROLAIRTROL. SIZED AS PER

ZONE VALVES - CALEFFI MODEL 6442 UP TO 1" AND MODEL Z-4

THERMOSTATIC MIXING VALVE - CALEFFI 521 MIXCAL WITH BUILT IN

REDUCED PRESSURE BACKFLOW PREVENTOR - WATTS 009 UP TO 3'

CHEMICAL POT FEEDER - AXIOM SFP SERIES WITH SIZE AS NOTED

<u>SIDE SREAM FILTER</u> — AXIOM CBF SERIES WITH FLOW RATE AS NOTED

FOR 2" AND UNDER SERIES USE B&G EAS. SIZED AS PER

INSTALL DRAIN PIPING TO NEAREST SUITABLE APPROVED DRAIN OR

SAME AS LIQUID WITH THE EXCEPTION OF HAVING A PERFORATED

INSERTION LENGTHS ROUGHLY HALF THE PIPE DIAMETER MINIMUM

APPROXIMATELY IN THE MIDDLE OF THE SCALE, WHERE INSULATION

WITH ALRERNATIVE REQUIREING POWER CONTRACTOR MUST INFORM

PROPER RANGE SHALL BE SELECTED SO THAT OPERATING

THE EXTENSION NECK WILL BE AT LEAST 2" LONG.

TANKS WILL HAVE MIMIMUM INSERTION LEGTHS OF 5".

SEPARABLE THERMOWELL.

#872 PRESSURE SNUBBERS.

<u>AUTOMATIC AIR VENTS</u> - B&G SERIES #792.

INCOMING/DISCHARGE PIPE SIZE.

INCOMING/DISCHARGE PIPE SIZE.

SAFETY RELIEF VALVES - B&G SERIES.

PRESSURE REDUCING VALVE - WATTS UB5-Z3

REQUIRED TO FULLY VENT PIPING SYSTEMS.

STRAINERS - UP TO 2", 860KPA (125PSIG)/200 WOG RATING,

PLUMBING AND HYDRONIC SPECIALTIES

ASTM B62. BRONZE TRIM. AND Y SWING PATTERN. SOLDERED: KITZ 2

THREADED: KITZ 22. OVER 2", 860KPA (125PSIG) /200WOG RATING,

PRESSURE RATING CLEARLY MARKED ON BODY (PER

THROUGHOUT. PROVIDE VALVES WITH MANUFACTURER'S NAME AND

SMITH SERIES 1010ERCCID ROOF DRAIN. ON SMAL

PROVIDE SERIES 1330FRCCID DRAIN INVERTED ROOF

₋ DRAINS WITH FLASHING CLAMP, 7" STRAINER ANI

. CONTRACTOR TO CONFIRM WITH SUPPLIER EXACT USE AND

INSTALLATION DETAILS FOR FURTHER RECOMMENDATIONS.

FOR FLOATING FLOORS PROVIDE 9340-WSH.

SHALL BE PRODUCED BY THE SAME MANUFACTURER. THE MANUFACTURER OF THE PIPE AND FITTING SYSTEM SHALL BE CONTACTED BY THE TRADE CONTRACTOR PRIOR TO THE INSTALLATION TO OBTAIN PRECISE INSTALLATION INSTRUCTIONS. AS WELL, SITE MEETINGS SHALL BE ARRANGED AND INCLUDE, 7 CONTRACTOR, MANUFACTURER AND BUILDING INSPECTOR. ALL BLACK STEEL PIPING AND ACCESSORIES LOCATED IN AREAS THAT ARE CORROSIVE OR AREAS WHICH ARE SUBJECT TO HIGH HUMIDITY CONDITIONS SUCH AS AN INDOOR POOL OR AN ARENA SHALL BE GALVANIZED. ALL PIPING SHALL MEET THE FLAME AND OR SMOKE RATING AS SPECIFIED IN THE APPLICABLE CODES. ADD AN ADDITIONAL 1" INSULATION TO THE VALUES BELOW WHERE PIPING IS LOCATED IN UNHEATED AREAS WITHOUT OR WITHOUT PROVIDE EXPANSION LOOPS, COMPENSATORS, GUIDES, ANCHORS OR JOINTS AS REQUIRED BY APPLICABLE CODES. WHERE CONTRACTOR IN UNSURE OF THESE CODES ENGINEER SHALL BY CONTACTED INSTRUCTION.

PIPE MATERIAL

FLOOR DRAIN (FINISHED FLOORS) — SERIES 2005—A05NB—P050 NICKLE BRONZE, NO HUB, 5" DIA STRAINER, PRIMER CONNECTION. FLOOR DRAIN (UNFINISHED FLOORS) — SERIES 2320—P050 CAST IRON TRACTOR GRATE, NO HUB, 8" DIA STRAINER, PRIMER WHERE NON METALLIC PIPING IS NOT APPROVED DURING TENDER FLOOR DRAIN (COMMERCIAL KITCHEN) - PROVIDE 9700-C-U ALL PROCESS IT IS ASSUMED THAT IT IS NOT BEING USED. USE UNIONS, FLANGES, AND COUPLINGS DOWNSTREAM OF VALVES TAMPER PROOF GRATE. AND AT EQUIPMENT OR APPARATUS CONNECTIONS. DO NOT USE (ALTERNATE) FLOOR DRAIN (COMMERCIAL KITCHEN) - PROVIDE 2005-A06NBSS-B-U CAST IRON DRAINS WITH FLASHING CLAMP, (DIRECT WELDED OR THREADED CONNECTIONS TO VALVES, EQUIPMENT OR OTHER APPARATUS. AINLESS STEEL STRAINER, SEDIMENT BUCKET AND TAMPER PROOF USE NON-CONDUCTING DIELECTRIC CONNECTIONS WHENEVER <mark>UNNEL FLOOR DRAIN (FINISHED FLOORS)</mark> — SERIES 1005—A05NB—2695—3591NB, 5'DIA NICKLE BRONZE OPEN THRROAT JOINTING DISSIMILAR METALS IN OPEN SYSTEMS. . ALL DRAINAGE PIPING SHALL BE CHECKED FOR SLOPES TO THE TRAINER. NO HUB. NICKEL BRONZE OVAL FUNNEL--- ADAPTER SATISFACTION OF THE ENGINEER. ALL UNBURIED DOMESTIC WATER PIPING — 4" AND UNDER SHALL ETYPE 'L' COPPER COMPLETE WITH WROUGHT COPPER FUNNEL FLOOR DRAIN (UNFINISHED FLOORS) — SERIES 2320-2695-3591, CAST IRON TRACTOR GRATE WITH FUL SOLDERED/BRAZED JOINT PRESSURE FITTINGS. PIPING OVER 4

LTERNATIVELY WHERE APPROVED DURING TENDER PROCESS BY ANDLORD/ENGINEER PIPING MAY BE AS FOLLOWS. PEX—A FOR SIZES " AND UNDER. IT MUST BE ENGEL METHOD PEX—A. PEX SHALL BE USED WHERE EXPOSED TO UV LIGHT AND FOR INDIVIDUAL FIXTURE SUPPLIES. PEX SHALL BE INSTALLED TO SUIT BURIED DOMESTIC WATER PIPING - FOR SIZE 2" DIAMETER AND SMALLER TO BE TYPE 'K' COPPER COMPLETE WITH WROUGHT COPPER OLDERED/BRAZED JOINT PRESSURE FITTINGS. FOR SIZES 3" AND LARGER TO BE PVC C-900 C.S.A. LABELED AND COMPLETE WITH WIRE TRACER. PIPE TO BE BEDDED AS REQUIRED BY LOCAL AUTHORITIES AND PROVIDE MINIMUM 6FT COVER WHERE EXPOSED T FROST. WHERE 6FT COVERAGE IS NOT POSSIBLE CONTRACTOR TO INOTIFY FNGINFER PRIOR TO ANY WORK BEING DONE, CROSS LINKER POLYETHYLENE MAY BE USED IN AREAS WITHIN BUILDING AS LONG AS THE PIPING IS NOT EXPOSED TO FROST, IS 11/2" AND SMALLER, RUN IN CONDUIT C/W WIRE TRACER AND IS APPROVED BY BUILDING

LANDLORD AND/OR OWNER. PEX PIPING MUST BE APPROVED FOR IPOTABLE WATER UNBURIED STORM, SANITARY, VENT, CONDENSATE, PIPING SHALL BE TYPE L DWV COPPER WITH WROUGHT COPPER SOLDERED/BRAZED JOINTS OR CAST IRON PIPE AND APPROVED ALTERNATIVELY WHERE APPROVED DURING TENDER PROCESS AND

NON HIGH RISE BUILDINGS OF NON COMBUSTIBLE CONSTRUCTION IPEX SYSTEM 15. SYSTEM XFR SHALL BE USED IN PLENUMS AND UNLESS APPROVED OTHERWISE ALL AREAS LOCATED AT 7FT ABOVE FLOOR. NO COMBUSTIBLE PIPING SHALL BE USED IN VERTICAL NON HIGHRISE BUILDING OF COMBUSTIBLE CONSTRUCTION IPEX SYSTEM 15 AND ABS. NO COMBUSTIBLE PIPING SHALL BE USED IN VERTICAL SHAFTS. HIGH RISE BUILDINGS OF ALL CONSTRUCTION

IPEX SYSTEM XFR. NO COMBUSTIBLE PIPING SHALL BE USED IN

PRIOR TO CONSTRUCTION BY LANDLORD/ENGINEER PIPING, MAY BE

ALL IPEX SYSTEMS SHALL BE INSTALLED AS PER MANUFACTURERS GUIDELINES USING THE APPROVED FITTINGS AND SOLVENT CEMENT BURIED STORM AND SANITARY PIPING - SHALL BE PVC AND SHAL APPROVED SOLVENT CEMENT. WHERE THIS IS NOT POSSIBLE HEAT TRACING AND INSULATION SHALL BE ADDED. ENGINEER TO BE CONTACTED FOR FURTHER DETAIL. HOT WATER TANK RELIEF PIPING - SHALL BE DWV COPPER. GAS PIPING - SHALL BE SCHEDULE 40 STEEL SCREWED FOR 2" AN MALLER AND WELDED FOR LARGER SIZES. ALL SIZED GAS PIPING HALL BE WELDED WITHIN CONCEALED SPACES. INSTALLATION AND DENTIFICATION SHALL BE AS PER LOCAL GAS CODE AND INSTALLED Y LICENSED CONTRACTOR FAMILIAR WITH APPLICABLE CODES. PIPIN SHALL NOT BE RUN IN A HEATING OR VENTILATING PLENUM UNLESS ITS A FAKE REMOVABLE CEILING OR IN A STAIRWELL WITHIN A VENTILATED SHAFT. PIPING WITH FITTINGS CANNOT RUN WHERE THI

OINTS CANNOT BE INSPECTED IN THERE FINAL POSITION PRIOR TO BURIED GAS PIPING - SHALL BE BURIED MINIMUM 3FT BELOW GRADE AND C/W TRACER WIRE AND MARKING TAPE. INSTALLATION AND IDENTIFICATION SHALL BE AS PER LOCAL GAS CODE AND INSTALLED Y LICENSED CONTRACTOR FAMILIAR WITH APPLICABLE CODES. | HEATING/HEATPUMP/CHILLED WATER PIPING - SHALL BE TYPE L COPPER OR BLACK STEEL SCHEDULE 40 THREADED TO 2" AND

ANVIL OR EQUIVALENT. ALL COMPONENTS ARE TO BE GALVANIZED. WHERE SADDLE IS SPECIFIED HANGER SHALL NOT TOUGH PIPING. REFER TO ANVIL MANUAL FOR SIZING AND DETAILS FOR ALL COMPONENETS. USE TRAPEZE HANGERS WHERE PIPES CAN BE HUNG IS FOR ROOFTOP PIPE SUPPORTS USE MIFAB C RUBBER SUPPORT SERIES. PROVIDE PIPE EXTENSIONS AS REQUIRED TO SUIT LOCAL

PIPING LOWER ATTACHMENT UP TO 2" USE FIGURE 65 WITH FIGURE 167 SADDLE . SADDLE ONLY USED WHERE PIPING IS INSULATED. USE CT-65 FOR UN-INSULATED COPPER APPLICATIONS. 21/2"-4" USE FIGURE 260 WITH FIGURE 167 SADDLE. SADDLE ONLY USED WHERE PIPING IS INSULATED. USE CT-65 FOR UN-INSULATED COPPER APPLICATIONS. 6" AND OVER USE FIGURE 260 WHERE NOT INSULATED AND USE FIGURE 260ISS WHERE PIPING IS INSULATED. | PIPING UPPER ATTACHMENT - CONCRETE INSERTS USE FIGURE 152 STEEL BEAMS USE FIGURE(S) 92 OR 93 BEAM CLAMPS. PIPING INTERMEDIATE ATTACHMENT - USE FIGURE 146 THREADED WALL SUPPORTS - USE FIGURE 67 FOR STEEL, USE FIGURE 67F FOR COPPER.

PIPE SUPPORT SPACING ALL PIPING SHALL BE SUPPORTED BEFORE AND AFTER WALL OPENINGS/SLEEVES. DO NOT REST PIPE ON OPENINGS. STEEL - 6FT INTERVAL FOR 4" AND LESS, 10FT INTERVAL FOR OVER 4" AND AT ALL PIPE CONNECTIONS. CAST IRON - AT EACH HUB OR JOINT, INTERVALS NOT EXCEEDING 10FT AND AT INTERVALS NOT EXCEEDING 3FT IF PIPE HAS MECHANICAL JOINTS AND THE LENGTH OF PIPE BETWEEN ADJACENT FITTINGS IS LESS THAN 12' IPEX DRAINAGE SYSTEMS - 4FT INTERVAL OR AS PER MANUFACTURES IDELINES. SUPPORT AT END OF BRANCHES, CHANGE OF DIRECTION/ELEVATION. IF FIXTURE DRAIN IS MORE THAN 3FT PROVIDE

| VERTICAL SUPPORTS - FOR UNDER 2" USE FIGURE 261 FOR STEEL

AND CAST IRON, USE FIGURE CT-121 FOR COPPER.

COPPER - 6FT FOR 1" AND LESS AND 8FT FOR 11/4" AND ABOVE. HEATING AND DOMESTIC PEX SYSTEMS - 3FT INTERVAL OR AS PER | GAS PIPE - 8FT. FOR 3/4", 10FT FOR 11/4"-21/2", 14FT FOR 3"-4", 18 FT FOR 6"-8" AND AT ALL PIPE CONNECTIONS. PIPE AND EQUIPMENT INSULATION

TYPE A INSULATION SHALL BE GLASS FIBRE INSULATION; <<K

VALUE OF 0.24 AT 75 DEGREES F>>. ALL EQUIPMENT SHALL BE INSULATED TO THE SAME STANDARD AS THE CONNECTED DUCT OR PIPE. ALL REQUIRED INSULATION TO BE OF 100% COVERAGE INCLUDING WHERE THIS WORK IS PART OF AN EXISTING BASE BUILDING THE BASE BUILDING STANDARDS MUST BE ADHERED TO UNLESS THE THE BELOW SPECIFICATION IS MORE STRINGENT. BASE BUILDING CONSULTANTS TO CONFIRM. ALL PIPING AND EQUIPMENT MUST BE TESTED AND SURFACES CLEANED PRIOR TO INSTALLATION. CONTINUE INSULATION THROUGH PENETRATIONS WITH VAPOUR

FOR INTERIOR CONCEALED AREAS USE VAPOUR BARRIER JACKETS: KRAFT REINFORCED FOIL VAPOUR BARRIER WITH SELF-ADHESIVE FOR INTERIOR EXPOSED AREAS USE PVC JACKETS: ONE PIECE, FOR OUTSIDE EXTERIOR PIPING USE ALUMINUM JACKETS: <0.5 MM> <<0.020 INCH>> THICK; SMOOTH FINISH. ABOVE GRADE DOMESTIC PIPING, CONDENSATE PIPING, TRAP PRIMER LINES AND SUMP PUMP DISCHARGE MAINS -1" INSULATION ABOVE GRADE DOMESTIC HOT, RECIRCULATION PIPING " INSULATION UP TO 2", 11/2" INSULATION OVER 2"

ABOVE GRADE SANITARY - 1" INSULATION ON HORIZONTAL PIPING

AND 1" WHERE THERE IS A CONTINUOUS FLOW OF BELOW AMBIENT

ABOVE GRADE STORM - 1" INSULATION

SANITARY VENTING - 1" INSULATION UP TO 10 FEET FROM INSIDE FACE OF EXTERIOR WALL. HEATING WATER PIPING AND TWO PIPE FAN COIL - 1" INSULATION U 11/2" INSULATION UP TO 11/2", 2" INSULATION FOR OVER 2" PIPE. CHILLED WATER PIPING - 1" INSULATION UP TO 4", 11/2" FIRE STANDPIPE AND WET SPRINKLER PIPING - 2" TYPE A NSULATION WHERE RUNNING THROUGH UNHEATED AREAS. HEAT TRACING — UNLESS NOTED OTHERWISE THE FOLLOWING SHALL

Y. WHERE EXPOSED TO OUTDOOR TEMPERATURES OR LOCATED

BELOW 6 FT FROST LINE ALL PIPING MENTIONED IN THESE

EQUIPMENT SCHEDULE REFER TO SPECIFICATIONS FOR PRODUCT CHANGES AND SUBMITTAL PROCESS. REFER TO PLANS FOR EXACT QUNATITY AND LOCATION OF EACH PIECE OF EQUIPMENT

MANUAL AND MAGNETIC STARTERS

ALL EQUIPMENT WITH MOTORS GREATER THAN OR EQUAL TO 1/3 HP SHALL HAVE MANUAL STARTERS UNLESS NOTED OTHERWISE OR AS BELOW. ALL EQUIPMENT WITH MOTORS THAT ARE INTERLOCKED OR NOT MANUALLY OPERATED. WHERE THE MOTOR WILL START OR SHUT-DOWN BY ITSELF SHALL HAVE MAGNETIC

DIVISION 15 WILL SUPPLY/MOUNT ALL ELECTRIC MOTORS, STARTERS, TRANSFORMERS SWITCHES FOR EQUIPMENT SUPPLIED BY THEM. WHERE EQUIPMENT IS NOT SUPPLIED BY THEM BUT REQUIRES INTERLOCKING BY THEM DIVISION 15 SHALL OBTAIN SHOP DRAWING AND SUPPLY/MOUNT ALL PREVIOUSLY MENTIONED STARTERS, TRANSFORMER ETC. DIVISION 15 SHALL DO ALL INTERLOCKING OF EQUIPMENT AS NOTED ON THESE DRAWINGS. DIVISION 15 SHALL CO-ORDINATE AND OBTAIN SERVICES OF DIVISION 16 FOR ALL LINE VOLTAGE CONTROL WIRING AND ALL CONDUIT. ALL WIRING SHALL BE IN CONDUIT. ALL WIRING SHALL BE PLENUM RATED WHERE REQUIRED. **EQUIPMENT GENERAL NOTES**

2. ALL CEILING HUNG EQUIPMENT THAT RECEIVES WATER OR PRODUCES CONDENSATE THAT IS NOT LOCATED IN A MECHANICAL ROOM WITH A DRAIN SHALL BE C/W A WATERPROOFED DRAIN PAN SIZED TO PROTECT SURROUNDING WALLS AND CEILINGS ET DRAIN PANS SHALL BE BY ASSOCIATED EQUIPMENT INSTALLER. PLUMBER SHALL O-ORDINATE DRAIN PAN LOCATIONS WITH HVAC CONTRACTOR AND PIPE TO NEARETS

1. ALL APPROVED EQUIPMENT SHALL BE INSTALLED AND COMMISSIONED AS PER MANUFACTURERS RECOMMENDATIONS AND INSTALLATION GUIDLINES. CONTRACTOR TO

REVIEW GUIDLINES AND PROVIDE ALL NECESSARY ACCESSORIES AS REQUIRED

3. ALL EQUIPMENT SHALL BE MOUNTED LEVEL AS PER MANUFACTURERS INSTRUCTIONS

CONTRACTOR TO MODIFY CURBS, ISOLATORS, HANGERS ETC AS REQUIRED . ALL EQUIPMENT SHALL BE ADEQUATELY SUPPORTED TO BUILDING STRUCTURE AND SOLATED TO AVOID VIBRATION TRANSMISSION TO BUILDING STRUCTURE. CONTRACTOR PROVIDE UNISTRUT AND ANCHORS AS REQUIRED TO SUIT EQUIPMENT WEIGHT AND BUILDING STRUCTURE. NOISE LEVEL FROM MECHANICAL EQUIPMENT SHALL NOT EXCEED DRAWINGS TO THIS ENGINEER AND STRUCTURAL ENGINEER OF RECORD FOR APPROVAL 5. ALL EQUIPMENT CONNECTED TO PIPING AND DUCTWORK SHALL BE C/W FLEXIBLE ONNECTIONS TO AVOID NOISE TRANSMISSION. FLEXIBLE CONNECTIONS SHALL BE PLENUM RATED WHERE LOCATED IN A PLENUM 6. ALL EQUIPMENT, DAMPERS VALVES, ETC IS TO BE ACCESSIBLE FOR SERVICING. REFER MANUFACTURERS GUIDELINES AND PROVIDE ULC LISTED ACCESS PANELS AS REQUIRED. ACCESS PANELS SHALL NOT BE SURFACE MOUNTED 7. REFER TO GRILLES, DIFFUSERS LOUVERS, TERMINATIONS SCHEDULE FOR SPECIFICATION WHERE REFERENCED IN EQUIPMENT SCHEDULE 8. ALL EQUIPMENT TO BE ACCESSIBLE FOR SERVICING. CONTRACTOR TO VERIFY WITH ENGINEER AND ARCHITECT WHERE ACCESSIBILITY CANNOT BE OBTAINED BY A PERMANENT OR CSA LOCATED MORE THAN 10 FEET ABOVE FINISHED FLOOR FOR FURTHER INSTRUCTION 9. PROVIDE 4" HOUSE KEEPING PADS FOR ALL EQUIPMENT EXTENDING 6" BEYOND

10. PROVIDE CONDENSATE NEUTRALIZING KITS FOR ALL GAS AND OR PROPANE FIRED EQUIPMENT DISCHARGING CONDENSATE 11. ENGINEER SHALL BE INFORMED WHERE APPLIANCE VENTING TERMINATE ON OR OVER A PROPERTY LINE. CONTRACTOR TO ALLOW FOR FLUSH MOUNT ALTERNATIVE VENTING KIT PLANS OR SCHEDULE BELOW DURING CONSTRUCTION UNLESS WRITTEN APPROVAL BY 13. WHERE PUMPS ARE AFFECTED BY CITY WATER PRESSURE CONTRACTOR TO ALLOW

FOR TRIMMING AS REQUIRED

2. DO NOT USE EXISITNG TO REMAIN OR NEW PERMANENT SYSTEMS AS NOTED IN THE

APPLIANCE VENTING

ALL VENTING FOR APPLIANCES MUST BE AS PER MANUFACTURER RECOMMENDATIONS AND AS PER LATEST B149-1 GAS CODE. WHERE MANUFACTURER ALLOWS PVC OR CPVC IT SHALL BE AS FOLLOWS. ALL IPEX SYSTEMS SHALL BE INSTALLED AS PER MANUFACTURERS GUIDELINES USING THE APPROVED FITTINGS AND SOLVENT CEMENT WHERE REQUIRED ALL METAL VENTING SHALL BE DOUBLE WALL INSULATED AL-294C AND SLOPED BACK TO APPLIANCE. ALL PIPING SHALL MEET THE APPLICABLE FLAME/SMOKE ALL DIRECT VENT PVC OR CPVC TERMINATION KITS MUST HAVE A SIMILAR LOOK TO IPEX LOW PROFILE KITS. KITS SHALL BE HANDED OVER TO ARCHITECT AND OWNER FOR APPROVAL PRIOR TO PURCHASING. KITS SHALL BE APPROVED BY MANUFACTURER AND WHERE MANUFACTURER OF APPLIANCE OFFERS LOW PROFILE KITS THEY SHOULD BE USED. ALL DIRECT VENT APPLIANCES SHALL TERMINATE INTAKE AND DISCHARGE DIRECTLY TO THE OUTDOORS UNLESS NOTED OTHERWISE

IPEX SYSTEM S636 PVC. SYSTEM 636 CPVC SHALL BE USED IN PLENUMS AND UNLESS APPROVED OTHERWISE ALL AREAS LOCATED AT 7FT ABOVE FLOOR. NO COMBUSTIBLE VENTING SHALL BE USED IN SHAFTS NON HIGHRISE BUILDING OF COMBUSTIBLE CONSTRUCTION IPEX SYSTEM S636 PVC. NO COMBUSTIBLE VENTING SHALL BE USED IN SHAFTS HIGH RISE BUILDINGS OF ALL CONSTRUCTION IPEX SYSTEM S636 CPVC. NO COMBUSTIBLE VENTING SHALL BE USED IN SHAFTS <u>APPLIANCE VENTING INSULATION</u>

TYPE A - FLEXIBLE GLASS FIBRE; K VALUE OF 0.29 AT 75 DEGREES F FOIL SCRIM

CING. USE APPROVED INSULATION AND THICKNESS FOR HIGH TEMPERATURE

NON HIGH RISE BUILDINGS OF NON COMBUSTIBLE CONSTRUCTION

AIR INTAKE - 2" TYPE A UP TO BOILER WHERE VENTING RUNS THROUGH UNCONDITIONED AREAS FULLY INSULATE INTAKE AND EXHAUST WITH 2" TYPE A

APPLICATIONS LIKE EMERGENCY GENERATOR EXHAUST

EXHAUST - 11/2" TYPE A TO 10 FT. FROM EXTERIOR WALL

DRAWING LEGEND SANITARY DRAIN — UNBURIED STORM DRAIN - UNBURIED STORM DRAIN — BURIED — DOMESTIC COLD WATER G GAS LINE FCS FAN COIL SUPPLY FCS FAN COIL SUPPLY — — FCR — FAN COIL RETURN HS HEATING SUPPLY — — HR — HEATING RETURN HPS — HEAT PUMP SUPPLY — — HPR — HEAT PUMP RETURN CONDENSATE DRAIN R REFRIGERANT PIPING FIRE STAND PIPE ——— SPK ———— SPRINKLER LINE — V — SANITARY VENT BALL VALVE UNLESS SPECIFIED OTHERWISE SOLENOID VALVE GLOBE VALAVE GATE VALVE

CIRCUIT BALANCING VALVE WITH P/T PORT CHECK VALVE THERMOSTATIC MIXING VALVE PRESSURE REDUCING VALVE REDUCED PRESSURE BACK FLOW PREVENTOR AUTO AIR VENT FLOW SWITCH PRESSURE SWITCH THERMOMETER PRESSURE GUAGE STRAINER THERMOSTAT REVERSE ACTING T-STAT SPEED CONTROL (XX) FLOOR, HUB, FUNNEL FLOOR DRAIN

PLUMBING FIXTURE FROM FLOOR ABOV PLUMBING FIXTURE DRAIN DN PENDANT SPRINKLER HEAD UPRIGHT SPRINKLER HEAD SIDEWALL SPRINKLER HEAD FULLY CONCEALED SPRINKLER HEAD BALANCING DAMPER SPLITTER DAMPER FIRE DAMPER MOTORIZED DAMPER BACK DRAFT DAMPER SPIN COLLAR WITH BALANCING DAMPER

HUNG/LEAVING/BURIED CLEANOUTS CUT AND EXTEND EXISTING CAP OFF EXISTING CONNECT TO EXISTING

- DRAIN STACK <u>DRAINS</u> AREA DRAIN FD - FLOOR DRAIN EA - EXHAUST AIF ETR — EXISTING TO REMAIN FR — FIRF RATFI GM — GAS METER ROOF DRAIN HWR — HIGH WALL RETURN LWR - LOW WALL RETURN LWS - LOW WALL SUPPLY IC - NORMALLY RA – RETURN AIR TAD - TRANSFER AIR DUCT TRANSFER AIR GRILLE - BIRD SCREEN

DSD - DUCT SMOKE DETECTOR

- RAIN WATER LEADER FFD — FUNNEL FLOOR DRAIN PAVED AREA DRAIN SAD - SODDED AREA DRAIN - BALANCING DAMPER F/D - FIRE DAMPER M/D - MOTORIZED DAMPER S/D - SPLITTER DAMPER B/D/D - BACK DRAFT DAMPER

GEORGINA,

SPECIFICATIONS

2024 J.W/K.W NTS

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FLOOR SUPPLY AIR GRILLE CEILING AND WALL SUPPLY AIR GRILLE CEILING AND WALL RETURN AIR GRILL SUPPLY DUCT UP \ SUPPLY DUCT DN / UNLESS NOTED. IDUCT RISER SHALL MATCH ASSOCIATED RETURN DUCT UP \ | HORIZONTAL DUCT RETURN DUCT DN / ► NFHB. NON-FREEZE WALL HYDRANT , ⊨∞ HB HOSE BIBB DOMESTIC WATER UP DOMESTIC WATER DOWN TO ABOVE FLOOR DOMESTIC WATER DOWN TO BELOW FLOOR DOM. VALVED PLUMBING FIXTURE CONNECTION AIR SEPARATOR SAFETY RELIEF VALVE <u>ABBREVIATIONS</u> <u>GENERAL</u> GENERAL PLUMBING AFG — ABOVE FINISHED GRADE AFR — ABOVE FINISHED ROOF BWV - BACK WATER VALVE BFP- BACK FLOW PREVENTOR CFRD — CONTROL FLOW ROOF BRD — BELOW ROOF DECK NA - NOT APPLICABLE R - RELOCATED WM — WATER METER TBD — TO BE DETERMINED <u>GENERAL HVAC</u>

3/7/2024 | CORE SLAB SLEEVE REVISION #2 2/29/2024 | CORE SLAB SLEEVE REVISIONS 2/8/2024 ISSUED FOR CORE SLAB SLEEVE COORD 10/25/2023 I ISSUED FOR PERMIT COMMENTS 10/12/2023 UPDATES / ISSUED FOR PRICING 8/8/2023 ISSUED FOR PERMIT 7/28/2023 ISSUED FOR REVIEW 6/20/2023 I ISSUED FOR REVIEW WRITTEN PERMISSION. DRAWINGS MUST NOT BE SCALED

0 8/29/2024 FULL MECH SET UPDATE

8/23/2024 | ARCH/HVAC/RAD/SNOWMELT UPDATE

ALL DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF THE DESIGNER AND MAY NOT BE REPRODUCED WITHOUT CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS OF SITE AND REPORT ERRORS AND OMISSIONS TO THE DESIGNER. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION UNLESS COUNTERSIGNED BY THE DESIGNER.

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