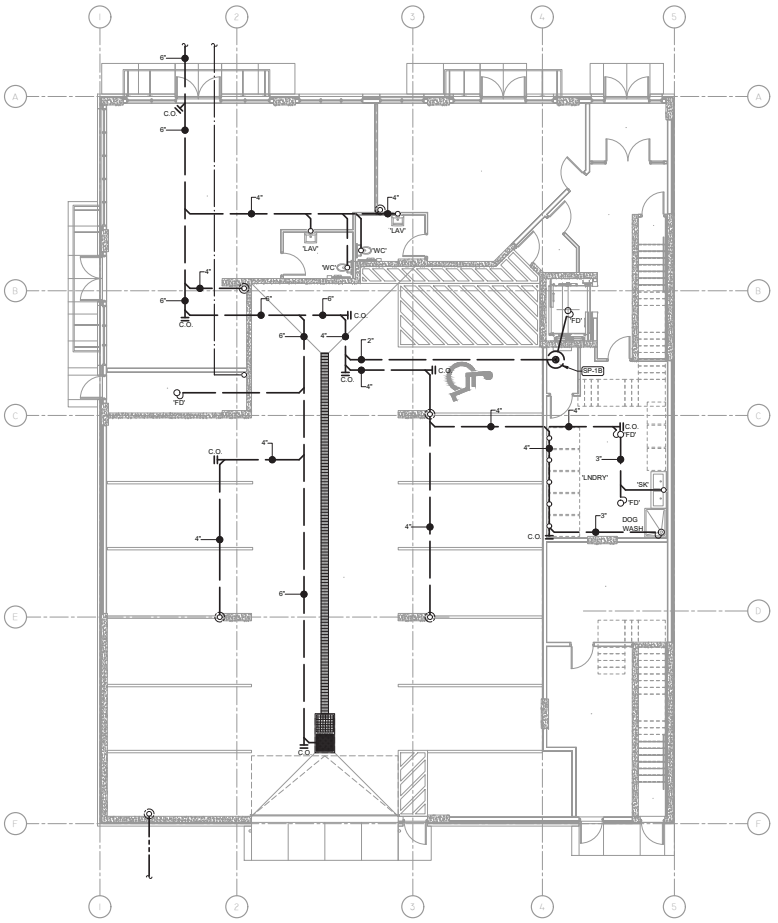


1 M1.1 FOUNDATION PLAN PLUMBING
SCALE: 1/8" = 1'-0"

LEGAL ADDRESS

1202 COLLEGE DRIVE , SASKATOON SK

BUILDING WATER LOAD SUMMARY

DOMESTIC WATER	200 GPM
SITE TOTAL WATER LOAD	200 GPM

SANITARY LOAD SUMMARY

6 STORY RESIDENTIAL BUILDING LOAD = 750 FU

SITE TOTAL LOAD = 750 FU - 8"Ø @ 1% CONNECTION

BUILDING GAS LOAD SCHEDULE

ITEM	DESCRIPTION	LOAD (MBH)
B-1A	BOILER	2000
B-1B	BOILER	2000
WH-1A	WATER HEATER	300
WH-1B	WATER HEATER	300
MUA-1	MAKE UP AIR UNIT	400
DRYER	DRYER STACKED X2	380
	FUTURE	620
	TOTAL METER (5 PSI)	6000

MECHANICAL CONTRACTOR INFORMATION

MINIMUM DISTANCE BETWEEN NATURAL GAS LINE & UNDERGROUND SERVICES = 6FT. MECHANICAL CONTRACTOR SHALL, BEFORE BEGINNING INSTALLATION INSIDE THE BUILDING, CHECK THE LOCATION AND INVERT ELEVATIONS OF ALL SERVICE LINES INCLUDING SANITARY, STORM, WATER, AND NATURAL GAS MAINS WITH LOCAL AUTHORITIES TO ENSURE THAT THESE SERVICES CAN BE INSTALLED AS SHOWN.

DRAWING LIST

PLUMBING GENERAL NOTES

1. ALL LINES SHOWN SCHEMATICALLY AND ARE A GENERAL GUIDELINE. ANY MAJOR DEVIATION FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL SEWER LINES TO RUN BELOW FLOOR OR WITHIN WALLS/CEILING SPACE UNLESS OTHERWISE NOTED.
3. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
4. ALL PIPING TO FIXTURES AND EQUIPMENT TO RUN CONCEALED WHERE POSSIBLE.
5. MECHANICAL CONTRACTOR TO RUN A BEAD OF SILICONE AROUND THE BASE OF NEW WATER CLOSETS AND TUBS.
6. CONTRACTOR TO SUPPLY AND INSTALL PLUMBING VENTS, TRAP SEAL PRIMERS, CLEANOUTS, AND ISOLATION VALVES AS PER CODE.
7. SOLDERS AND FLUXES HAVING A LEAD CONTENT IN EXCESS OF 0.2% SHALL NOT BE USED.
8. PROVIDE FIRE STOPS AT ALL PIPING THAT PASSES THRU FIRE SEPARATIONS.
9. PVC AND PLASTIC PIPING MAY BE USED WHERE PERMITTED BY CODE. ALL PVC PIPING IN RETURN AIR PLENUMS TO BE XFR.
10. ALL PLUMBING TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL PLUMBING CODE, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND REGULATIONS.
11. PROVIDE A COPY OF PLUMBING AND GAS PERMITS TO OWNER.
12. PROVIDE ISOLATION VALVES ON ALL FIXTURES AS REQUIRED. ALL ISOLATION VALVES ARE TO BE ACCESSIBLE.
13. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OTHER TRADES.
14. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
15. CONFIRM ALL SLOPES OF SANITARY AND/OR STORM SEWER PIPING BEFORE COMMENCING WORK.
16. ENSURE ALL MECHANICAL IS INSTALLED WITH A HEAD HEIGHT CLEARANCE FROM FLOOR EQUAL TO OR GREATER THAN THE CLEARANCE OF THE PARKADE OVERHEAD DOORS.

PLUMBING KEYNOTES

1

PLUMBING FIXTURE CONNECTION TABLE

PLUMBING FIXTURE / DEVICES	DCW	DHW	SAN	VACUUM BREAKER
	(in.)	(in.)	(in.)	
LAV-1 - LAVATORY - COUNTER MOUNT	1/2"	1/2"	1-1/2"	-
WC-1 - WATER CLOSET - FLUSH TANK	1/2"	-	3"	-
SK-1 - TWO-COMPARTMENT SINK	1/2"	1/2"	2"	-
BATH-1 - BATHTUB	1/2"	1/2"	2"	-
SHWR-1 - SHOWER	1/2"	1/2"	2"	-
FD-1 - FLOOR DRAIN	-	-	3"	-
AD-1 - AREA DRAIN	-	-	3"	-
LNDRY-1 - SUITE LAUNDRY MACHINE	1/2"	1/2"	2"	-

ALL FIXTURE PIPE SIZES AND REQUIREMENTS FOR FOR VACUUM BREAKERS ARE GENERAL ONLY, AND ARE TO BE USED IF NOT SPECIFICALLY NOTED OTHERWISE. IN ADDITION, PROVIDE VACUUM BREAKERS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

MECHANICAL CONSULTANT:
P.S. Engineering Inc
Mechanical Consulting Engineers
306 Sauer Rise, Saskatoon, SK. S7W 0J9
Contact: Odhner
Phone : (306) 715-6788
Email : odhner@pseng.ca

PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 90% REVIEW

CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

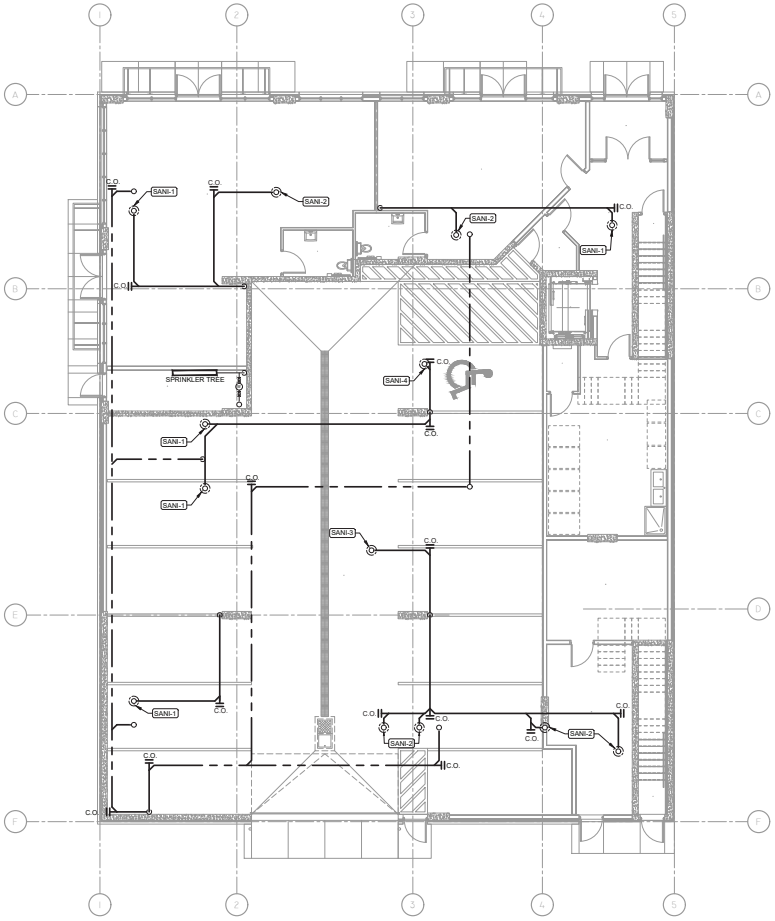
DRAWING TITLE:
FOUNDATION PLAN PLUMBING

PROJECT: 24S-039
DATE : 01/20/2025
SCALE : AS NOTED
DRAWN : I.R.
CHECKED : O.O.

DRAWING NUMBER:
M1.1
REV:0

THIS DRAWING IS NOT TO BE SCALED. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND OTHER DATA FROM THE PROJECT AND REPORT ANY DISCREPANCIES TO P.S. ENGINEERING BEFORE PROCEEDING WITH ANY WORK. ALL WORK TO COMPLY WITH ALL APPLICABLE CODES, STANDARDS AND REGULATIONS.

DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:



1 M1.2 PARKADE PLAN PLUMBING (SANITARY/STORM)
SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

1. ALL LINES SHOWN SCHEMATICALLY AND ARE A GENERAL GUIDELINE. ANY MAJOR DEVIATION FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL SEWER LINES TO RUN BELOW FLOOR OR WITHIN WALLS/CEILING SPACE UNLESS OTHERWISE NOTED.
3. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
4. ALL PIPING TO FIXTURES AND EQUIPMENT TO RUN CONCEALED WHERE POSSIBLE.
5. MECHANICAL CONTRACTOR TO RUN A BEAD OF SILICONE AROUND THE BASE OF NEW WATER CLOSETS AND TUBS.
6. CONTRACTOR TO SUPPLY AND INSTALL PLUMBING VENTS, TRAP SEAL PRIMERS, CLEANOUTS, AND ISOLATION VALVES AS PER CODE.
7. SOLDERS AND FLUXES HAVING A LEAD CONTENT IN EXCESS OF 0.2% SHALL NOT BE USED.
8. PROVIDE FIRE STOPS AT ALL PIPING THAT PASSES THRU FIRE SEPARATIONS.
9. PVC AND PLASTIC PIPING MAY BE USED WHERE PERMITTED BY CODE. ALL PVC PIPING IN RETURN AIR PLENUMS TO BE XFR.
10. ALL PLUMBING TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL PLUMBING CODE, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND REGULATIONS.
11. PROVIDE A COPY OF PLUMBING AND GAS PERMITS TO OWNER.
12. PROVIDE ISOLATION VALVES ON ALL FIXTURES AS REQUIRED. ALL ISOLATION VALVES ARE TO BE ACCESSIBLE.
13. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OTHER TRADES.
14. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
15. CONFIRM ALL SLOPES OF SANITARY AND/OR STORM SEWER PIPING BEFORE COMMENCING WORK.
16. ENSURE ALL MECHANICAL IS INSTALLED WITH A HEAD HEIGHT CLEARANCE FROM FLOOR EQUAL TO OR GREATER THAN THE CLEARANCE OF THE PARKADE OVERHEAD DOORS.

PLUMBING KEYNOTES

(#)

1

PLUMBING FIXTURE CONNECTION TABLE

PLUMBING FIXTURE / DEVICES	DCW	DHW	SAN	VACUUM BREAKER
	(in.)	(in.)	(in.)	
LAV-1 - LAVATORY - COUNTER MOUNT	1/2"	1/2"	1-1/2"	-
WC-1 - WATER CLOSET - FLUSH TANK	1/2"	-	3"	-
SK-1 - TWO-COMPARTMENT SINK	1/2"	1/2"	2"	-
BATH-1 - BATHTUB	1/2"	1/2"	2"	-
SHWR-1 - SHOWER	1/2"	1/2"	2"	-
FD-1 - FLOOR DRAIN	-	-	3"	-
AD-1 - AREA DRAIN	-	-	3"	-
LNDRY-1 - SUITE LAUNDRY MACHINE	1/2"	1/2"	2"	-

ALL FIXTURE PIPE SIZES AND REQUIREMENTS FOR FOR VACUUM BREAKERS ARE GENERAL ONLY, AND ARE TO BE USED IF NOT SPECIFICALLY NOTED OTHERWISE. IN ADDITION, PROVIDE VACUUM BREAKERS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

MECHANICAL CONSULTANT:
P.S. Engineering Inc
Mechanical Consulting Engineers
306 Sauer Rise. Saskatoon, SK. S7W 0J9
Contact: Odhner
Phone : (306) 715-6788
Email : odhner@pseng.ca

PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 90% REVIEW

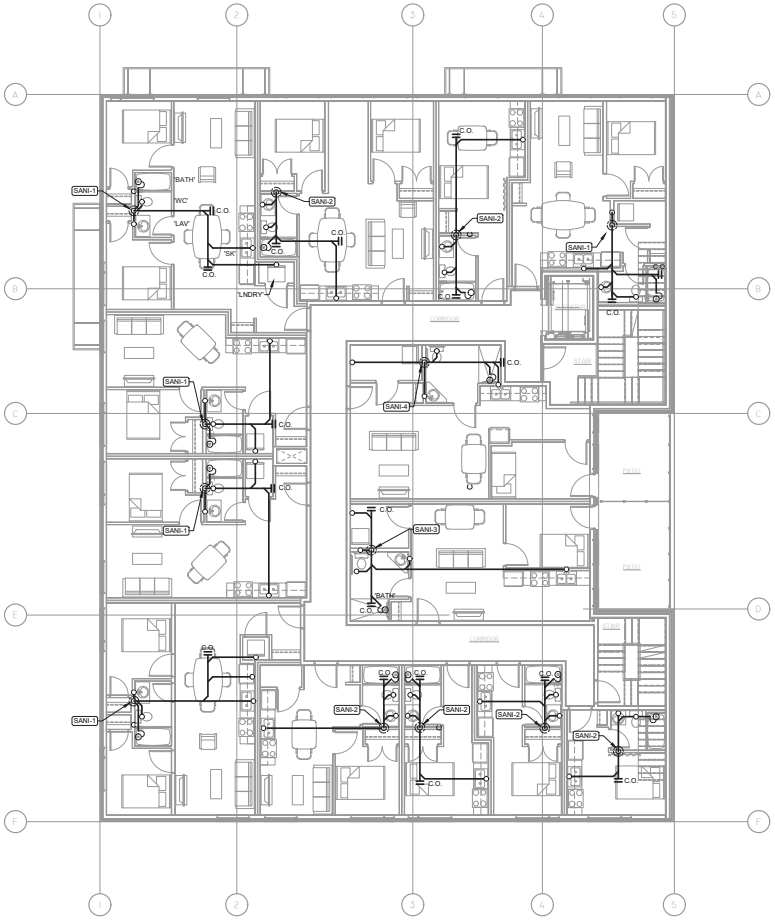
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
PARKADE PLAN PLUMBING (SANITARY/STORM)

PROJECT: 24S-039	DRAWING NUMBER: M1.2
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M1.3 SECOND & THIRD FLOOR PLAN PLUMBING (SANITARY)
SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

1. ALL LINES SHOWN SCHEMATICALLY AND ARE A GENERAL GUIDELINE. ANY MAJOR DEVIATION FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL SEWER LINES TO RUN BELOW FLOOR OR WITHIN WALLS/CEILING SPACE UNLESS OTHERWISE NOTED.
3. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
4. ALL PIPING TO FIXTURES AND EQUIPMENT TO RUN CONCEALED WHERE POSSIBLE.
5. MECHANICAL CONTRACTOR TO RUN A BEAD OF SILICONE AROUND THE BASE OF NEW WATER CLOSETS AND TUBS.
6. CONTRACTOR TO SUPPLY AND INSTALL PLUMBING VENTS, TRAP SEAL PRIMERS, CLEANOUTS, AND ISOLATION VALVES AS PER CODE.
7. SOLDERS AND FLUXES HAVING A LEAD CONTENT IN EXCESS OF 0.2% SHALL NOT BE USED.
8. PROVIDE FIRE STOPS AT ALL PIPING THAT PASSES THRU FIRE SEPARATIONS.
9. PVC AND PLASTIC PIPING MAY BE USED WHERE PERMITTED BY CODE. ALL PVC PIPING IN RETURN AIR PLENUMS TO BE XFR.
10. ALL PLUMBING TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL PLUMBING CODE, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND REGULATIONS.
11. PROVIDE A COPY OF PLUMBING AND GAS PERMITS TO OWNER.
12. PROVIDE ISOLATION VALVES ON ALL FIXTURES AS REQUIRED. ALL ISOLATION VALVES ARE TO BE ACCESSIBLE.
13. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OTHER TRADES.
14. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
15. CONFIRM ALL SLOPES OF SANITARY AND/OR STORM SEWER PIPING BEFORE COMMENCING WORK.
16. ENSURE ALL MECHANICAL IS INSTALLED WITH A HEAD HEIGHT CLEARANCE FROM FLOOR EQUAL TO OR GREATER THAN THE CLEARANCE OF THE PARKADE OVERHEAD DOORS.
17. CONFIRM ALL ROUTING AND SIZING OF EXISTING PIPING ON SITE PRIOR TO CONSTRUCTION (CCTV FOR UNDERSLAB PIPING).

PLUMBING KEYNOTES

#
1

PLUMBING FIXTURE CONNECTION TABLE

PLUMBING FIXTURE / DEVICES	DCW	DHW	SAN	VACUUM BREAKER
	(in.)	(in.)	(in.)	
LAV-1 - LAVATORY - COUNTER MOUNT	1/2"	1/2"	1-1/2"	-
WC-1 - WATER CLOSET - FLUSH TANK	1/2"	-	3"	-
SK-1 - TWO-COMPARTMENT SINK	1/2"	1/2"	2"	-
BATH-1 - BATHTUB	1/2"	1/2"	2"	-
SHWR-1 - SHOWER	1/2"	1/2"	2"	-
FD-1 - FLOOR DRAIN	-	-	3"	-
AD-1 - AREA DRAIN	-	-	3"	-
LNDRY-1 - SUITE LAUNDRY MACHINE	1/2"	1/2"	2"	-

ALL FIXTURE PIPE SIZES AND REQUIREMENTS FOR FOR VACUUM BREAKERS ARE GENERAL ONLY, AND ARE TO BE USED IF NOT SPECIFICALLY NOTED OTHERWISE. IN ADDITION, PROVIDE VACUUM BREAKERS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

MECHANICAL CONSULTANT:
P.S. Engineering Inc
Mechanical Consulting Engineers
306 Sauer Rise. Saskatoon, SK. S7W 0J9
Contact: Odhner
Phone : (306) 715-6788
Email : odhner@pseng.ca

PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

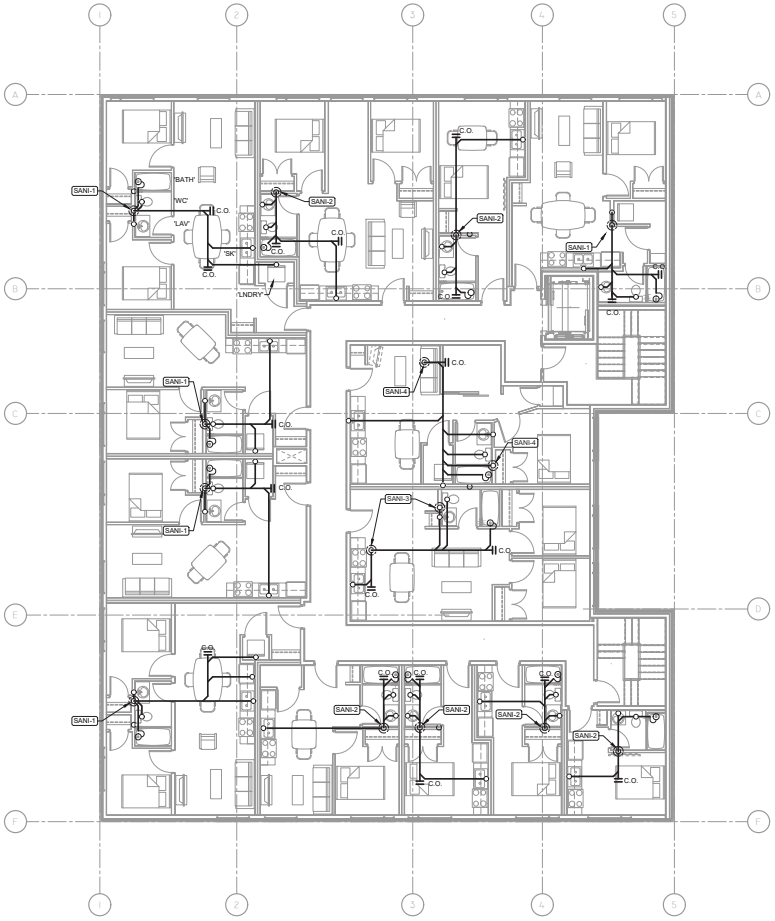
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
SECOND & THIRD FLOOR PLAN PLUMBING (SANITARY)

PROJECT: 24S-039	DRAWING NUMBER: M1.3
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M1.4 FOURTH FLOOR PLAN PLUMBING (SANITARY)
SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

1. ALL LINES SHOWN SCHEMATICALLY AND ARE A GENERAL GUIDELINE. ANY MAJOR DEVIATION FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL SEWER LINES TO RUN BELOW FLOOR OR WITHIN WALLS/CEILING SPACE UNLESS OTHERWISE NOTED.
3. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
4. ALL PIPING TO FIXTURES AND EQUIPMENT TO RUN CONCEALED WHERE POSSIBLE.
5. MECHANICAL CONTRACTOR TO RUN A BEAD OF SILICONE AROUND THE BASE OF NEW WATER CLOSETS AND TUBS.
6. CONTRACTOR TO SUPPLY AND INSTALL PLUMBING VENTS, TRAP SEAL PRIMERS, CLEANOUTS, AND ISOLATION VALVES AS PER CODE.
7. SOLDERS AND FLUXES HAVING A LEAD CONTENT IN EXCESS OF 0.2% SHALL NOT BE USED.
8. PROVIDE FIRE STOPS AT ALL PIPING THAT PASSES THRU FIRE SEPARATIONS.
9. PVC AND PLASTIC PIPING MAY BE USED WHERE PERMITTED BY CODE. ALL PVC PIPING IN RETURN AIR PLENUMS TO BE XFR.
10. ALL PLUMBING TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL PLUMBING CODE, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND REGULATIONS.
11. PROVIDE A COPY OF PLUMBING AND GAS PERMITS TO OWNER.
12. PROVIDE ISOLATION VALVES ON ALL FIXTURES AS REQUIRED. ALL ISOLATION VALVES ARE TO BE ACCESSIBLE.
13. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OTHER TRADES.
14. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
15. CONFIRM ALL SLOPES OF SANITARY AND/OR STORM SEWER PIPING BEFORE COMMENCING WORK.
16. ENSURE ALL MECHANICAL IS INSTALLED WITH A HEAD HEIGHT CLEARANCE FROM FLOOR EQUAL TO OR GREATER THAN THE CLEARANCE OF THE PARKADE OVERHEAD DOORS.

PLUMBING KEYNOTES

(#)
1

PLUMBING FIXTURE CONNECTION TABLE

PLUMBING FIXTURE / DEVICES	DCW	DHW	SAN	VACUUM BREAKER
	(in.)	(in.)	(in.)	
LAV-1 - LAVATORY - COUNTER MOUNT	1/2"	1/2"	1-1/2"	-
WC-1 - WATER CLOSET - FLUSH TANK	1/2"	-	3"	-
SK-1 - TWO-COMPARTMENT SINK	1/2"	1/2"	2"	-
BATH-1 - BATHTUB	1/2"	1/2"	2"	-
SHWR-1 - SHOWER	1/2"	1/2"	2"	-
FD-1 - FLOOR DRAIN	-	-	3"	-
AD-1 - AREA DRAIN	-	-	3"	-
LNDRY-1 - SUITE LAUNDRY MACHINE	1/2"	1/2"	2"	-

ALL FIXTURE PIPE SIZES AND REQUIREMENTS FOR FOR VACUUM BREAKERS ARE GENERAL ONLY, AND ARE TO BE USED IF NOT SPECIFICALLY NOTED OTHERWISE. IN ADDITION, PROVIDE VACUUM BREAKERS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

MECHANICAL CONSULTANT:
P.S. Engineering Inc
Mechanical Consulting Engineers
306 Sauer Rise, Saskatoon, SK. S7W 0J9
Contact: Odhner
Phone : (306) 715-6788
Email : odhner@pseng.ca

PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

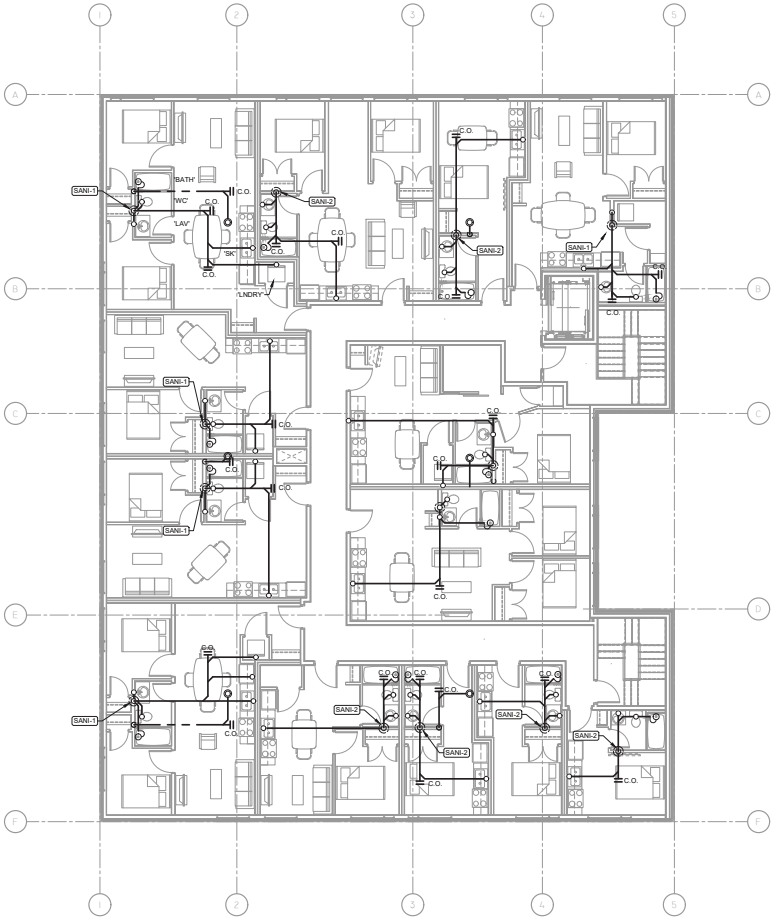
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
FOURTH FLOOR PLAN
PLUMBING (SANITARY)

PROJECT: 24S-039	DRAWING NUMBER: M1.4
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 / M1.5 FIFTH & SIXTH FLOOR PLAN PLUMBING (SANITARY)
SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

1. ALL LINES SHOWN SCHEMATICALLY AND ARE A GENERAL GUIDELINE. ANY MAJOR DEVIATION FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL SEWER LINES TO RUN BELOW FLOOR OR WITHIN WALLS/CEILING SPACE UNLESS OTHERWISE NOTED.
3. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
4. ALL PIPING TO FIXTURES AND EQUIPMENT TO RUN CONCEALED WHERE POSSIBLE.
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6. CONTRACTOR TO SUPPLY AND INSTALL PLUMBING VENTS, TRAP SEAL PRIMERS, CLEANOUTS, AND ISOLATION VALVES AS PER CODE.
7. SOLDERS AND FLUXES HAVING A LEAD CONTENT IN EXCESS OF 0.2% SHALL NOT BE USED.
8. PROVIDE FIRE STOPS AT ALL PIPING THAT PASSES THRU FIRE SEPARATIONS.
9. PVC AND PLASTIC PIPING MAY BE USED WHERE PERMITTED BY CODE. ALL PVC PIPING IN RETURN AIR PLENUMS TO BE XFR.
10. ALL PLUMBING TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL PLUMBING CODE, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND REGULATIONS.
11. PROVIDE A COPY OF PLUMBING AND GAS PERMITS TO OWNER.
12. PROVIDE ISOLATION VALVES ON ALL FIXTURES AS REQUIRED. ALL ISOLATION VALVES ARE TO BE ACCESSIBLE.
13. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OTHER TRADES.
14. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
15. CONFIRM ALL SLOPES OF SANITARY AND/OR STORM SEWER PIPING BEFORE COMMENCING WORK.
16. ENSURE ALL MECHANICAL IS INSTALLED WITH A HEAD HEIGHT CLEARANCE FROM FLOOR EQUAL TO OR GREATER THAN THE CLEARANCE OF THE PARKADE OVERHEAD DOORS.

PLUMBING KEYNOTES

(#) 1

PLUMBING FIXTURE CONNECTION TABLE

PLUMBING FIXTURE / DEVICES	DCW	DHW	SAN	VACUUM BREAKER
	(in.)	(in.)	(in.)	
LAV-1 - LAVATORY - COUNTER MOUNT	1/2"	1/2"	1-1/2"	-
WC-1 - WATER CLOSET - FLUSH TANK	1/2"	-	3"	-
SK-1 - TWO-COMPARTMENT SINK	1/2"	1/2"	2"	-
BATH-1 - BATHTUB	1/2"	1/2"	2"	-
SHWR-1 - SHOWER	1/2"	1/2"	2"	-
FD-1 - FLOOR DRAIN	-	-	3"	-
AD-1 - AREA DRAIN	-	-	3"	-
LNDRY-1 - SUITE LAUNDRY MACHINE	1/2"	1/2"	2"	-

ALL FIXTURE PIPE SIZES AND REQUIREMENTS FOR FOR VACUUM BREAKERS ARE GENERAL ONLY, AND ARE TO BE USED IF NOT SPECIFICALLY NOTED OTHERWISE. IN ADDITION, PROVIDE VACUUM BREAKERS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

MECHANICAL CONSULTANT:
P.S. Engineering Inc
Mechanical Consulting Engineers
306 Sauer Rise, Saskatoon, SK. S7W 0J9
Contact: Odhner
Phone : (306) 715-6788
Email : odhner@pseng.ca

PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

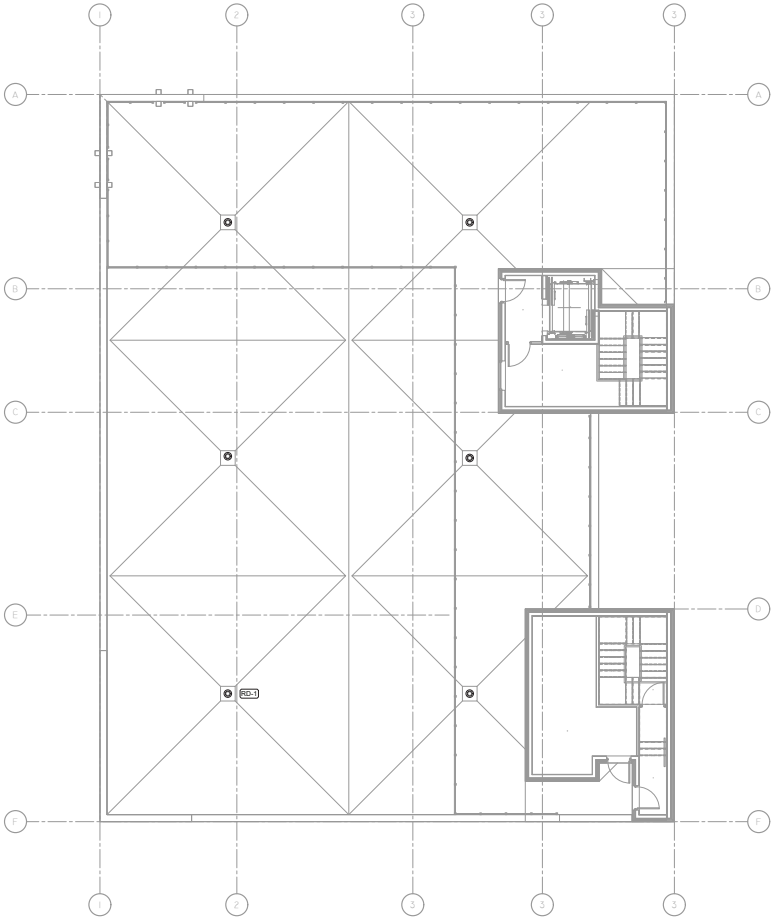
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
FIFTH & SIXTH FLOOR PLAN PLUMBING (SANITARY)

PROJECT: 24S-039	DRAWING NUMBER: M1.5
DATE: 01/20/2025	
SCALE: AS NOTED	
DRAWN: I.R.	
CHECKED: O.O.	REV:0



1 M1.6 ROOF PLAN PLUMBING
SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

1. ALL LINES SHOWN SCHEMATICALLY AND ARE A GENERAL GUIDELINE. ANY MAJOR DEVIATION FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL SEWER LINES TO RUN BELOW FLOOR OR WITHIN WALLS/CEILING SPACE UNLESS OTHERWISE NOTED.
3. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
4. ALL PIPING TO FIXTURES AND EQUIPMENT TO RUN CONCEALED WHERE POSSIBLE.
5. MECHANICAL CONTRACTOR TO RUN A BEAD OF SILICONE AROUND THE BASE OF NEW WATER CLOSETS AND TUBS.
6. CONTRACTOR TO SUPPLY AND INSTALL PLUMBING VENTS, TRAP SEAL PRIMERS, CLEANOUTS, AND ISOLATION VALVES AS PER CODE.
7. SOLDERS AND FLUXES HAVING A LEAD CONTENT IN EXCESS OF 0.2% SHALL NOT BE USED.
8. PROVIDE FIRE STOPS AT ALL PIPING THAT PASSES THRU FIRE SEPARATIONS.
9. PVC AND PLASTIC PIPING MAY BE USED WHERE PERMITTED BY CODE. ALL PVC PIPING IN RETURN AIR PLENUMS TO BE XFR.
10. ALL PLUMBING TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL PLUMBING CODE, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND REGULATIONS.
11. PROVIDE A COPY OF PLUMBING AND GAS PERMITS TO OWNER.
12. PROVIDE ISOLATION VALVES ON ALL FIXTURES AS REQUIRED. ALL ISOLATION VALVES ARE TO BE ACCESSIBLE.
13. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OTHER TRADES.
14. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
15. CONFIRM ALL SLOPES OF SANITARY AND/OR STORM SEWER PIPING BEFORE COMMENCING WORK.
16. ENSURE ALL MECHANICAL IS INSTALLED WITH A HEAD HEIGHT CLEARANCE FROM FLOOR EQUAL TO OR GREATER THAN THE CLEARANCE OF THE PARKADE OVERHEAD DOORS.

PLUMBING KEYNOTES

(#) 1

PLUMBING FIXTURE CONNECTION TABLE

PLUMBING FIXTURE / DEVICES	DCW	DHW	SAN	VACUUM BREAKER
	(in.)	(in.)	(in.)	
LAV-1 - LAVATORY - COUNTER MOUNT	1/2"	1/2"	1-1/2"	-
WC-1 - WATER CLOSET - FLUSH TANK	1/2"	-	3"	-
SK-1 - TWO-COMPARTMENT SINK	1/2"	1/2"	2"	-
BATH-1 - BATHTUB	1/2"	1/2"	2"	-
SHWR-1 - SHOWER	1/2"	1/2"	2"	-
FD-1 - FLOOR DRAIN	-	-	3"	-
AD-1 - AREA DRAIN	-	-	3"	-
LNDRY-1 - SUITE LAUNDRY MACHINE	1/2"	1/2"	2"	-

ALL FIXTURE PIPE SIZES AND REQUIREMENTS FOR FOR VACUUM BREAKERS ARE GENERAL ONLY, AND ARE TO BE USED IF NOT SPECIFICALLY NOTED OTHERWISE. IN ADDITION, PROVIDE VACUUM BREAKERS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

MECHANICAL CONSULTANT:
P.S. Engineering Inc
Mechanical Consulting Engineers
306 Sauer Rise. Saskatoon, SK. S7W 0J9
Contact: Odhner
Phone : (306) 715-6788
Email : odhner@pseng.ca

PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

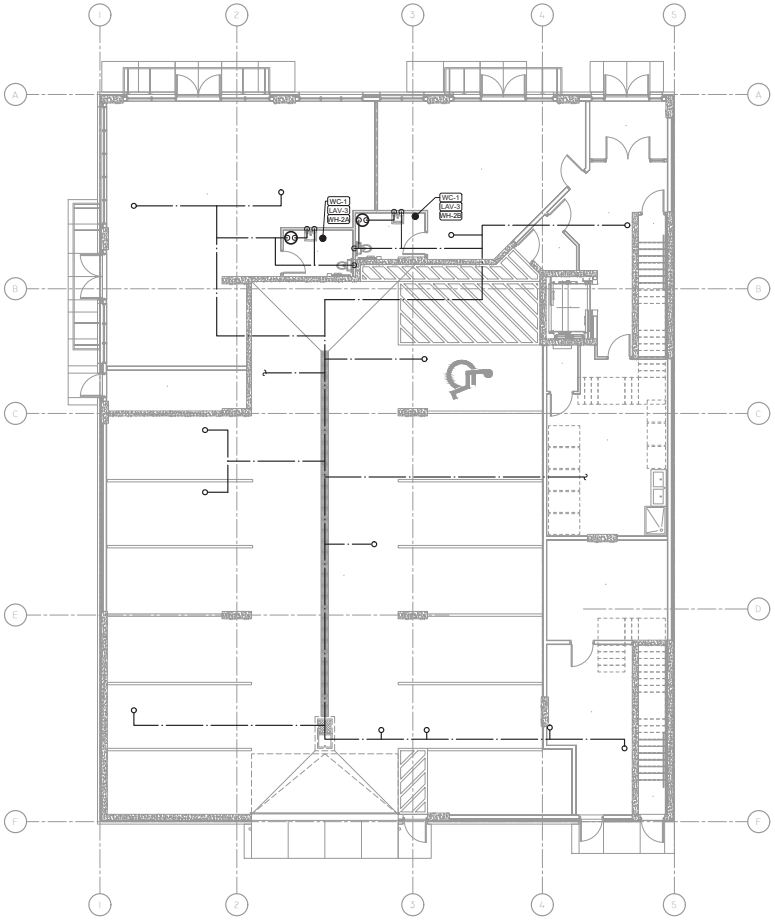
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
ROOF PLAN PLUMBING

PROJECT: 24S-039	DRAWING NUMBER: M1.6
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 / M2.1 PARKADE PLAN PLUMBING (DOMESTIC)
SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

1. ALL LINES SHOWN SCHEMATICALLY AND ARE A GENERAL GUIDELINE. ANY MAJOR DEVIATION FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL SEWER LINES TO RUN BELOW FLOOR OR WITHIN WALLS/CEILING SPACE UNLESS OTHERWISE NOTED.
3. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
4. ALL PIPING TO FIXTURES AND EQUIPMENT TO RUN CONCEALED WHERE POSSIBLE.
5. MECHANICAL CONTRACTOR TO RUN A BEAD OF SILICONE AROUND THE BASE OF NEW WATER CLOSETS AND TUBS.
6. CONTRACTOR TO SUPPLY AND INSTALL PLUMBING VENTS, TRAP SEAL PRIMERS, CLEANOUTS, AND ISOLATION VALVES AS PER CODE.
7. SOLDERS AND FLUXES HAVING A LEAD CONTENT IN EXCESS OF 0.2% SHALL NOT BE USED.
8. PROVIDE FIRE STOPS AT ALL PIPING THAT PASSES THRU FIRE SEPARATIONS.
9. PVC AND PLASTIC PIPING MAY BE USED WHERE PERMITTED BY CODE. ALL PVC PIPING IN RETURN AIR PLENUMS TO BE XFR.
10. ALL PLUMBING TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL PLUMBING CODE, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND REGULATIONS.
11. PROVIDE A COPY OF PLUMBING AND GAS PERMITS TO OWNER.
12. PROVIDE ISOLATION VALVES ON ALL FIXTURES AS REQUIRED. ALL ISOLATION VALVES ARE TO BE ACCESSIBLE.
13. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OTHER TRADES.
14. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
15. CONFIRM ALL SLOPES OF SANITARY AND/OR STORM SEWER PIPING BEFORE COMMENCING WORK.
16. ENSURE ALL MECHANICAL IS INSTALLED WITH A HEAD HEIGHT CLEARANCE FROM FLOOR EQUAL TO OR GREATER THAN THE CLEARANCE OF THE PARKADE OVERHEAD DOORS.

PLUMBING KEYNOTES

(#)
1

PLUMBING FIXTURE CONNECTION TABLE

PLUMBING FIXTURE / DEVICES	DCW	DHW	SAN	VACUUM BREAKER
	(in.)	(in.)	(in.)	
LAV-1 - LAVATORY - COUNTER MOUNT	1/2"	1/2"	1-1/2"	-
WC-1 - WATER CLOSET - FLUSH TANK	1/2"	-	3"	-
SK-1 - TWO-COMPARTMENT SINK	1/2"	1/2"	2"	-
BATH-1 - BATHTUB	1/2"	1/2"	2"	-
SHWR-1 - SHOWER	1/2"	1/2"	2"	-
FD-1 - FLOOR DRAIN	-	-	3"	-
AD-1 - AREA DRAIN	-	-	3"	-
LNDRY-1 - SUITE LAUNDRY MACHINE	1/2"	1/2"	2"	-

ALL FIXTURE PIPE SIZES AND REQUIREMENTS FOR FOR VACUUM BREAKERS ARE GENERAL ONLY, AND ARE TO BE USED IF NOT SPECIFICALLY NOTED OTHERWISE. IN ADDITION, PROVIDE VACUUM BREAKERS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

THIS DRAWING IS NOT TO BE SCALED. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND OTHER DATA FROM THE PROJECT AND REPORT ANY DISCREPANCIES TO P.S. ENGINEERING BEFORE PROCEEDING WITH ANY WORK. ALL WORK TO COMPLY WITH ALL APPLICABLE CODES, STANDARDS AND REGULATIONS.

DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

MECHANICAL CONSULTANT:
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306 Sauer Rise, Saskatoon, SK. S7W 0J9
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Phone : (306) 715-6788
Email : odhner@pseng.ca

PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 95% REVIEW

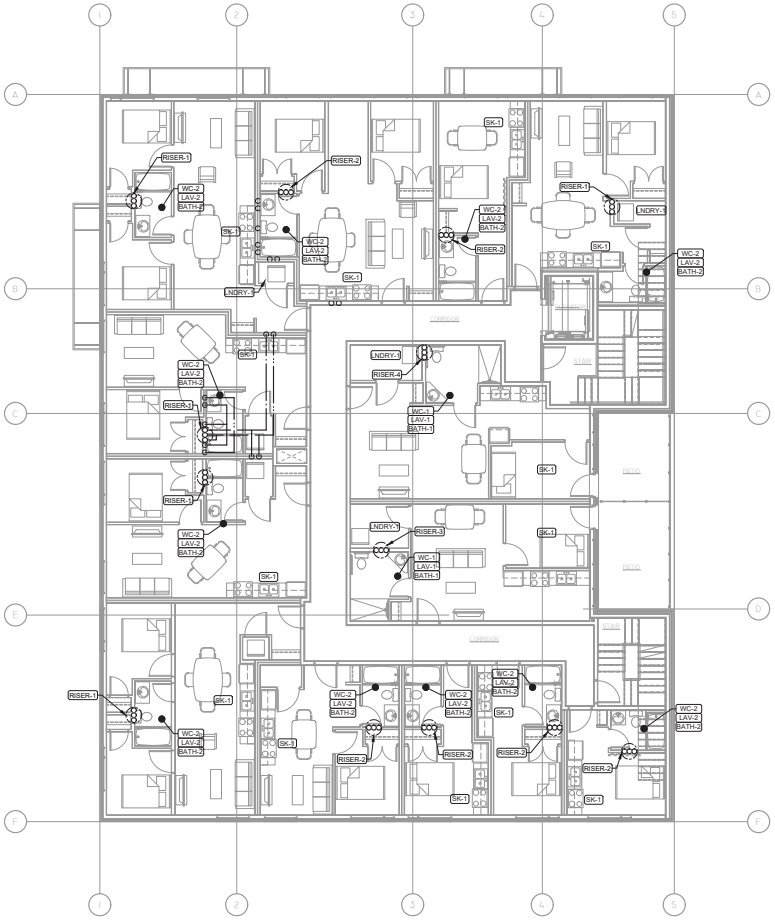
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
PARKADE PLAN PLUMBING (DOMESTIC)

PROJECT: 24S-039	DRAWING NUMBER: M2.1
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M2.2 SECOND FLOOR PLAN PLUMBING (DOMESTIC)
SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

1. ALL LINES SHOWN SCHEMATICALLY AND ARE A GENERAL GUIDELINE. ANY MAJOR DEVIATION FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL SEWER LINES TO RUN BELOW FLOOR OR WITHIN WALLS/CEILING SPACE UNLESS OTHERWISE NOTED.
3. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
4. ALL PIPING TO FIXTURES AND EQUIPMENT TO RUN CONCEALED WHERE POSSIBLE.
5. MECHANICAL CONTRACTOR TO RUN A BEAD OF SILICONE AROUND THE BASE OF NEW WATER CLOSETS AND TUBS.
6. CONTRACTOR TO SUPPLY AND INSTALL PLUMBING VENTS, TRAP SEAL PRIMERS, CLEANOUTS, AND ISOLATION VALVES AS PER CODE.
7. SOLDERS AND FLUXES HAVING A LEAD CONTENT IN EXCESS OF 0.2% SHALL NOT BE USED.
8. PROVIDE FIRE STOPS AT ALL PIPING THAT PASSES THRU FIRE SEPARATIONS.
9. PVC AND PLASTIC PIPING MAY BE USED WHERE PERMITTED BY CODE. ALL PVC PIPING IN RETURN AIR PLENUMS TO BE XFR.
10. ALL PLUMBING TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL PLUMBING CODE, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND REGULATIONS.
11. PROVIDE A COPY OF PLUMBING AND GAS PERMITS TO OWNER.
12. PROVIDE ISOLATION VALVES ON ALL FIXTURES AS REQUIRED. ALL ISOLATION VALVES ARE TO BE ACCESSIBLE.
13. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OTHER TRADES.
14. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
15. CONFIRM ALL SLOPES OF SANITARY AND/OR STORM SEWER PIPING BEFORE COMMENCING WORK.
16. ENSURE ALL MECHANICAL IS INSTALLED WITH A HEAD HEIGHT CLEARANCE FROM FLOOR EQUAL TO OR GREATER THAN THE CLEARANCE OF THE PARKADE OVERHEAD DOORS.

PLUMBING KEYNOTES

(#)
1

PLUMBING FIXTURE CONNECTION TABLE

PLUMBING FIXTURE / DEVICES	DCW	DHW	SAN	VACUUM BREAKER
	(in.)	(in.)	(in.)	
LAV-1 - LAVATORY - COUNTER MOUNT	1/2"	1/2"	1-1/2"	-
WC-1 - WATER CLOSET - FLUSH TANK	1/2"	-	3"	-
SK-1 - TWO-COMPARTMENT SINK	1/2"	1/2"	2"	-
BATH-1 - BATHTUB	1/2"	1/2"	2"	-
SHWR-1 - SHOWER	1/2"	1/2"	2"	-
FD-1 - FLOOR DRAIN	-	-	3"	-
AD-1 - AREA DRAIN	-	-	3"	-
LNDRY-1 - SUITE LAUNDRY MACHINE	1/2"	1/2"	2"	-

ALL FIXTURE PIPE SIZES AND REQUIREMENTS FOR FOR VACUUM BREAKERS ARE GENERAL ONLY, AND ARE TO BE USED IF NOT SPECIFICALLY NOTED OTHERWISE. IN ADDITION, PROVIDE VACUUM BREAKERS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

MECHANICAL CONSULTANT:
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Mechanical Consulting Engineers
306 Sauer Rise, Saskatoon, SK, S7W 0J9
Contact: Odhner
Phone : (306) 715-6788
Email : odhner@pseng.ca

PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

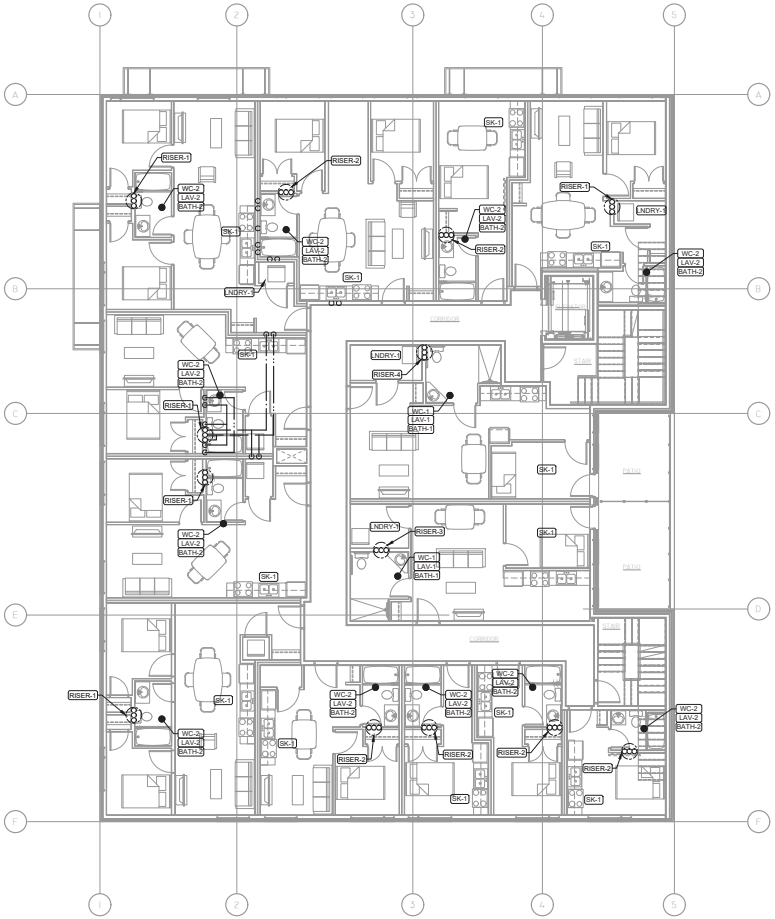
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
SECOND FLOOR PLAN PLUMBING (DOMESTIC)

PROJECT: 24S-039	DRAWING NUMBER: M2.2
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



PLUMBING GENERAL NOTES

1. ALL LINES SHOWN SCHEMATICALLY AND ARE A GENERAL GUIDELINE. ANY MAJOR DEVIATION FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL SEWER LINES TO RUN BELOW FLOOR OR WITHIN WALLS/CEILING SPACE UNLESS OTHERWISE NOTED.
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4. ALL PIPING TO FIXTURES AND EQUIPMENT TO RUN CONCEALED WHERE POSSIBLE.
5. MECHANICAL CONTRACTOR TO RUN A BEAD OF SILICONE AROUND THE BASE OF NEW WATER CLOSETS AND TUBS.
6. CONTRACTOR TO SUPPLY AND INSTALL PLUMBING VENTS, TRAP SEAL PRIMERS, CLEANOUTS, AND ISOLATION VALVES AS PER CODE.
7. SOLDERS AND FLUXES HAVING A LEAD CONTENT IN EXCESS OF 0.2% SHALL NOT BE USED.
8. PROVIDE FIRE STOPS AT ALL PIPING THAT PASSES THRU FIRE SEPARATIONS.
9. PVC AND PLASTIC PIPING MAY BE USED WHERE PERMITTED BY CODE. ALL PVC PIPING IN RETURN AIR PLENUMS TO BE XFR.
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15. CONFIRM ALL SLOPES OF SANITARY AND/OR STORM SEWER PIPING BEFORE COMMENCING WORK.
16. ENSURE ALL MECHANICAL IS INSTALLED WITH A HEAD HEIGHT CLEARANCE FROM FLOOR EQUAL TO OR GREATER THAN THE CLEARANCE OF THE PARKADE OVERHEAD DOORS.

PLUMBING KEYNOTES

(#)

1

PLUMBING FIXTURE CONNECTION TABLE

PLUMBING FIXTURE / DEVICES	DCW	DHW	SAN	VACUUM BREAKER
	(in.)	(in.)	(in.)	
LAV-1 - LAVATORY - COUNTER MOUNT	1/2"	1/2"	1-1/2"	-
WC-1 - WATER CLOSET - FLUSH TANK	1/2"	-	3"	-
SK-1 - TWO-COMPARTMENT SINK	1/2"	1/2"	2"	-
BATH-1 - BATHTUB	1/2"	1/2"	2"	-
SHWR-1 - SHOWER	1/2"	1/2"	2"	-
FD-1 - FLOOR DRAIN	-	-	3"	-
AD-1 - AREA DRAIN	-	-	3"	-
LNDRY-1 - SUITE LAUNDRY MACHINE	1/2"	1/2"	2"	-

ALL FIXTURE PIPE SIZES AND REQUIREMENTS FOR FOR VACUUM BREAKERS ARE GENERAL ONLY, AND ARE TO BE USED IF NOT SPECIFICALLY NOTED OTHERWISE. IN ADDITION, PROVIDE VACUUM BREAKERS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

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DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

MECHANICAL CONSULTANT:
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Mechanical Consulting Engineers
306 Sauer Rise. Saskatoon, SK. S7W 0J9
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Phone : (306) 715-6788
Email : odhner@pseng.ca

PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

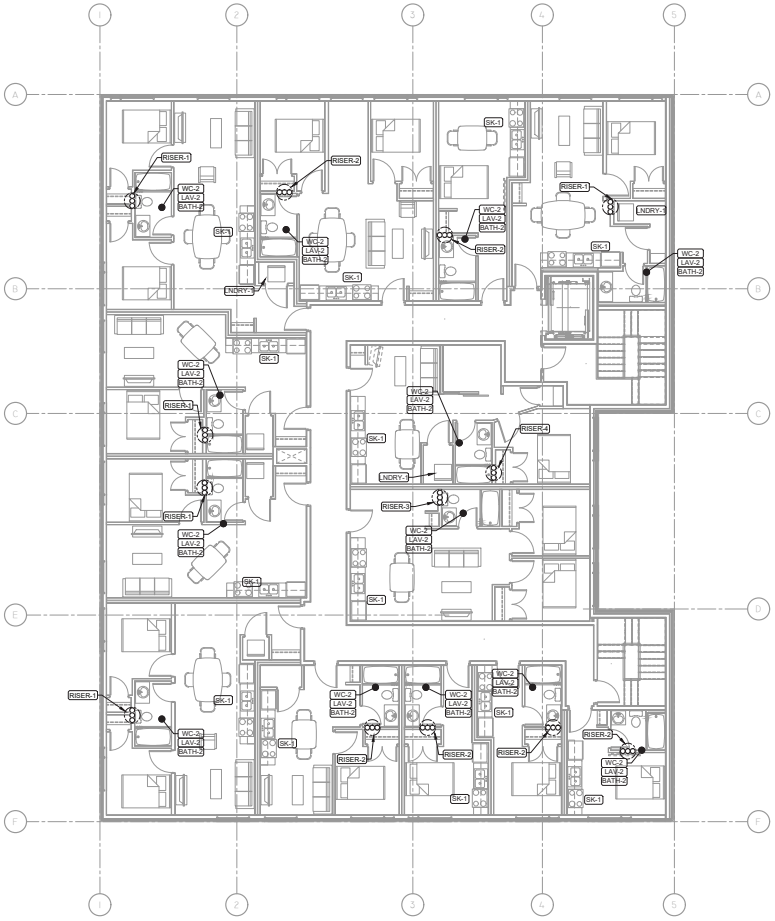
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
THIRD FLOOR PLAN PLUMBING (DOMESTIC)

PROJECT: 24S-039	DRAWING NUMBER: M2.3
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 FOURTH, FIFTH, AND SIXTH FLOOR PLAN PLUMBING (DOMESTIC)
M2.4 SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

1. ALL LINES SHOWN SCHEMATICALLY AND ARE A GENERAL GUIDELINE. ANY MAJOR DEVIATION FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL SEWER LINES TO RUN BELOW FLOOR OR WITHIN WALLS/CEILING SPACE UNLESS OTHERWISE NOTED.
3. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
4. ALL PIPING TO FIXTURES AND EQUIPMENT TO RUN CONCEALED WHERE POSSIBLE.
5. MECHANICAL CONTRACTOR TO RUN A BEAD OF SILICONE AROUND THE BASE OF NEW WATER CLOSETS AND TUBS.
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11. PROVIDE A COPY OF PLUMBING AND GAS PERMITS TO OWNER.
12. PROVIDE ISOLATION VALVES ON ALL FIXTURES AS REQUIRED. ALL ISOLATION VALVES ARE TO BE ACCESSIBLE.
13. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OTHER TRADES.
14. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
15. CONFIRM ALL SLOPES OF SANITARY AND/OR STORM SEWER PIPING BEFORE COMMENCING WORK.
16. ENSURE ALL MECHANICAL IS INSTALLED WITH A HEAD HEIGHT CLEARANCE FROM FLOOR EQUAL TO OR GREATER THAN THE CLEARANCE OF THE PARKADE OVERHEAD DOORS.

PLUMBING KEYNOTES

(#)
1

PLUMBING FIXTURE CONNECTION TABLE

PLUMBING FIXTURE / DEVICES	DCW	DHW	SAN	VACUUM BREAKER
	(in.)	(in.)	(in.)	
LAV-1 - LAVATORY - COUNTER MOUNT	1/2"	1/2"	1-1/2"	-
WC-1 - WATER CLOSET - FLUSH TANK	1/2"	-	3"	-
SK-1 - TWO-COMPARTMENT SINK	1/2"	1/2"	2"	-
BATH-1 - BATHTUB	1/2"	1/2"	2"	-
SHWR-1 - SHOWER	1/2"	1/2"	2"	-
FD-1 - FLOOR DRAIN	-	-	3"	-
AD-1 - AREA DRAIN	-	-	3"	-
LNDRY-1 - SUITE LAUNDRY MACHINE	1/2"	1/2"	2"	-

ALL FIXTURE PIPE SIZES AND REQUIREMENTS FOR FOR VACUUM BREAKERS ARE GENERAL ONLY, AND ARE TO BE USED IF NOT SPECIFICALLY NOTED OTHERWISE. IN ADDITION, PROVIDE VACUUM BREAKERS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

MECHANICAL CONSULTANT:
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Mechanical Consulting Engineers
306 Sauer Rise, Saskatoon, SK. S7W 0J9
Contact: Odhner
Phone : (306) 715-6788
Email : odhner@pseng.ca

PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 95% REVIEW

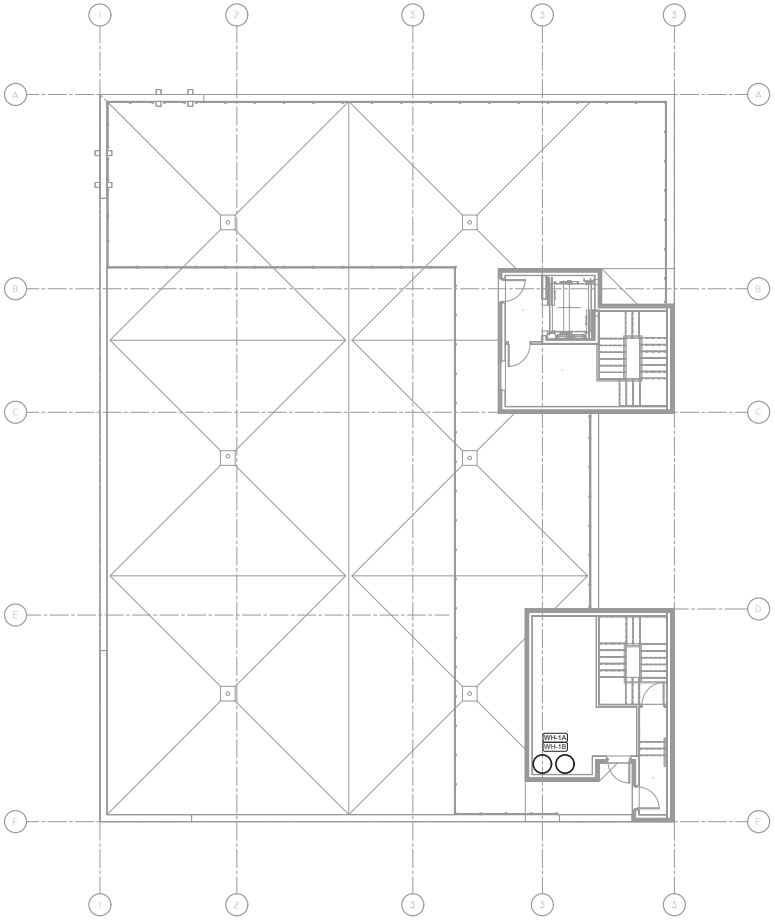
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
FOURTH, FIFTH, AND SIXTH FLOOR PLAN PLUMBING (DOMESTIC)

PROJECT: 24S-039	DRAWING NUMBER: M2.4
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M2.5 ROOF PLAN PLUMBING (DOMESTIC)
SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

1. ALL LINES SHOWN SCHEMATICALLY AND ARE A GENERAL GUIDELINE. ANY MAJOR DEVIATION FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL SEWER LINES TO RUN BELOW FLOOR OR WITHIN WALLS/CEILING SPACE UNLESS OTHERWISE NOTED.
3. ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
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15. CONFIRM ALL SLOPES OF SANITARY AND/OR STORM SEWER PIPING BEFORE COMMENCING WORK.
16. ENSURE ALL MECHANICAL IS INSTALLED WITH A HEAD HEIGHT CLEARANCE FROM FLOOR EQUAL TO OR GREATER THAN THE CLEARANCE OF THE PARKADE OVERHEAD DOORS.

PLUMBING KEYNOTES

(#)

1

PLUMBING FIXTURE CONNECTION TABLE

PLUMBING FIXTURE / DEVICES	DCW	DHW	SAN	VACUUM BREAKER
	(in.)	(in.)	(in.)	
LAV-1 - LAVATORY - COUNTER MOUNT	1/2"	1/2"	1-1/2"	-
WC-1 - WATER CLOSET - FLUSH TANK	1/2"	-	3"	-
SK-1 - TWO-COMPARTMENT SINK	1/2"	1/2"	2"	-
BATH-1 - BATHTUB	1/2"	1/2"	2"	-
SHWR-1 - SHOWER	1/2"	1/2"	2"	-
FD-1 - FLOOR DRAIN	-	-	3"	-
AD-1 - AREA DRAIN	-	-	3"	-
LNDRY-1 - SUITE LAUNDRY MACHINE	1/2"	1/2"	2"	-

ALL FIXTURE PIPE SIZES AND REQUIREMENTS FOR FOR VACUUM BREAKERS ARE GENERAL ONLY, AND ARE TO BE USED IF NOT SPECIFICALLY NOTED OTHERWISE. IN ADDITION, PROVIDE VACUUM BREAKERS AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

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Mechanical Consulting Engineers
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Contact: Odhner
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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 90% REVIEW

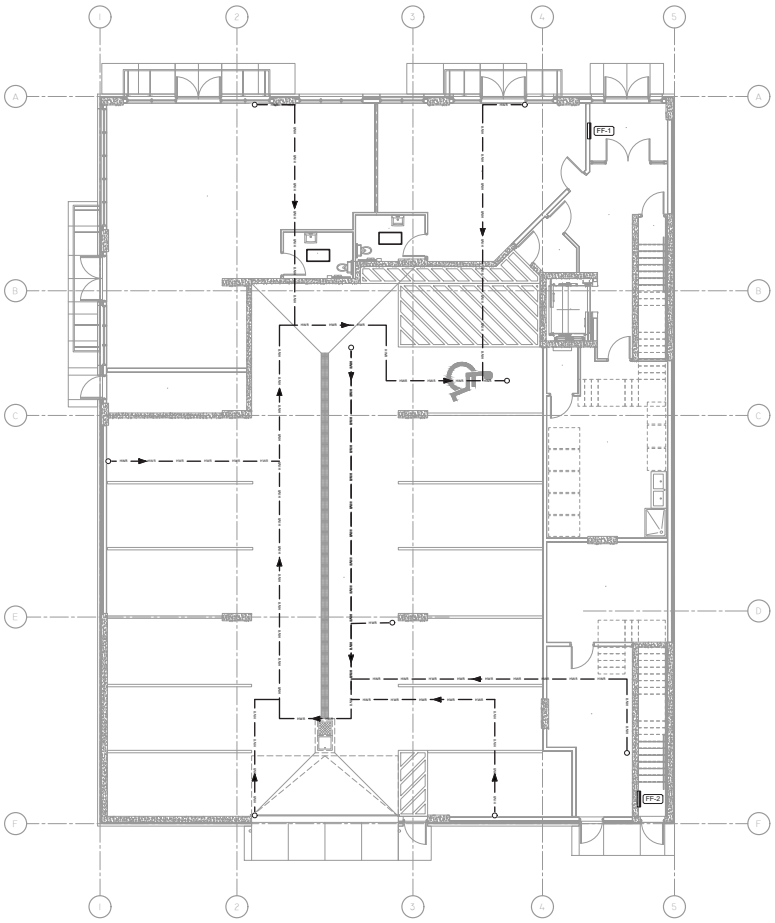
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
ROOF PLAN PLUMBING (DOMESTIC)

PROJECT: 24S-039	DRAWING NUMBER: M2.5
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M3.1 PARKADE PLAN HEATING
SCALE: 1/8" = 1'-0"

HEATING GENERAL NOTES

1. ALL EQUIPMENT TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
2. ALL MECHANICAL ITEMS ARE TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL ENERGY CODE, SMACNA STANDARDS, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND STANDARDS.
3. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OTHER TRADES (IN PARTICULAR ELECTRICAL).
4. ANY MODIFICATIONS REQUIRED AS A RESULT OF THE INSTALLATION OF AN HVAC UNIT THAT DIFFERS FROM THE EQUIPMENT SCHEDULES IN THE CONTRACT DOCUMENTS IS TO BE COORDINATED ON SITE BETWEEN THE MECHANICAL CONTRACTOR AND OTHER TRADES. FAILURE TO DO SO WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE AT NO COST TO THE OWNER.
5. ALL TIMER SWITCHES, SPEED SWITCHES, STARTERS, ETC. TO BE BY ELECTRICAL. INTERLOCKS TO BE BY MECHANICAL CONTROLS SUBCONTRACTOR. COORDINATE ALL CONTROLS WORK BETWEEN MECHANICAL AND ELECTRICAL.
6. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
7. ALL HOT WATER SUPPLY AND RETURN PIPING TO MANIFOLDS TO BE RUN UP HIGH WITHIN CRAWLSPACE ALONG U/S OF MAIN FLOOR STRUCTURE. PIPING TO BE A REVERSE RETURN SYSTEM AS SHOWN.
8. ALL HEATING SYSTEM LOW POINT TO BE COMPLETE WITH VALVED 1/2" DRAINS.
9. ALL HEATING SYSTEM HIGH POINTS TO BE VENTED.
10. COMPLETE SYSTEM TO BE CLEANED, DEGREASED, AND TREATED AS PER SPEC.
11. SEAL AROUND ALL PIPING PASSING THROUGH FIRE RATED ASSEMBLIES WITH FIRE RATED CAULKING.
12. CONTRACTOR MUST CONTACT THE LOCAL INSPECTOR WITH THE BOILER AND PRESSURE VESSEL SAFETY DEPARTMENT AND SUBMIT A BOILER INSTALLATION PERMIT AS REQUIRED. CONTRACTOR TO BE RESPONSIBLE FOR ALL REGISTRATION AND INSPECTION FEES AS REQUIRED BY THE BOILER AND PRESSURE VESSEL SAFETY DEPARTMENT.
13. PROVIDE ISOLATION VALVES ON HOT WATER HEATING SUPPLY AND RETURN LINES TO ALL RADIATION CABINETS, HEATING COILS, EQUIPMENT, AND OTHER LOCATIONS NOTED ON DRAWINGS AND SCHEMATICS.

HEATING KEYNOTES

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1

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PROFESSIONAL SEAL:

PRELIMINARY
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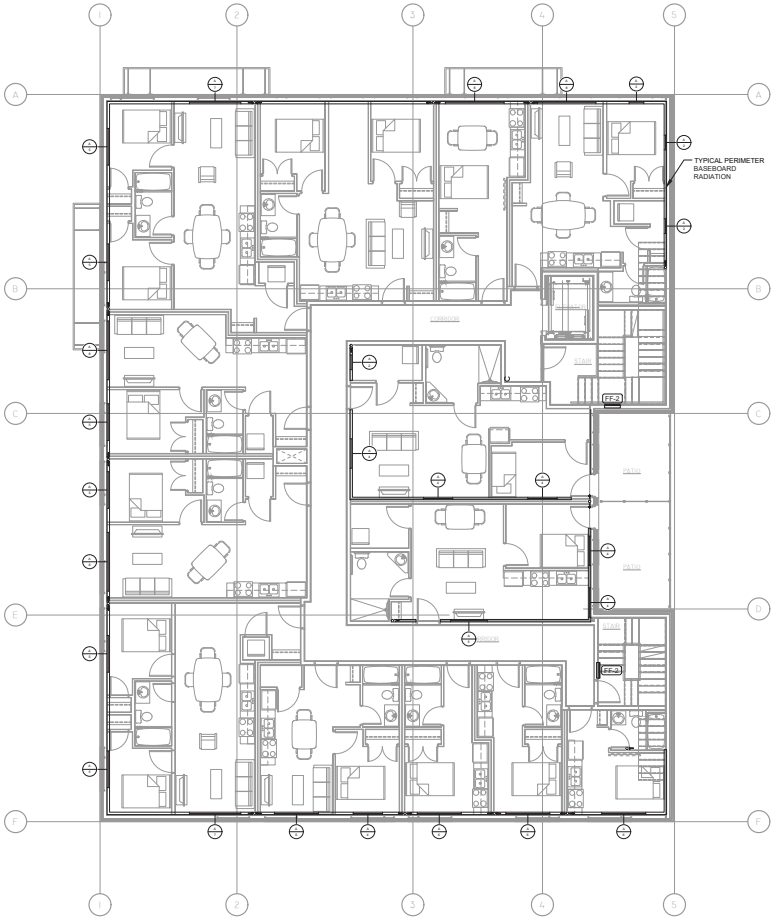
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
PARKADE PLAN HEATING

PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M3.1
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M3.2 SECOND FLOOR PLAN HEATING
SCALE: 1/8" = 1'-0"

HEATING GENERAL NOTES

1. ALL EQUIPMENT TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
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6. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
7. ALL HOT WATER SUPPLY AND RETURN PIPING TO MANIFOLDS TO BE RUN UP HIGH WITHIN CRAWLSPACE ALONG U/S OF MAIN FLOOR STRUCTURE. PIPING TO BE A REVERSE RETURN SYSTEM AS SHOWN.
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HEATING KEYNOTES

(#)
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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 95% REVIEW

CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
SECOND FLOOR PLAN HEATING

PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M3.2
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0

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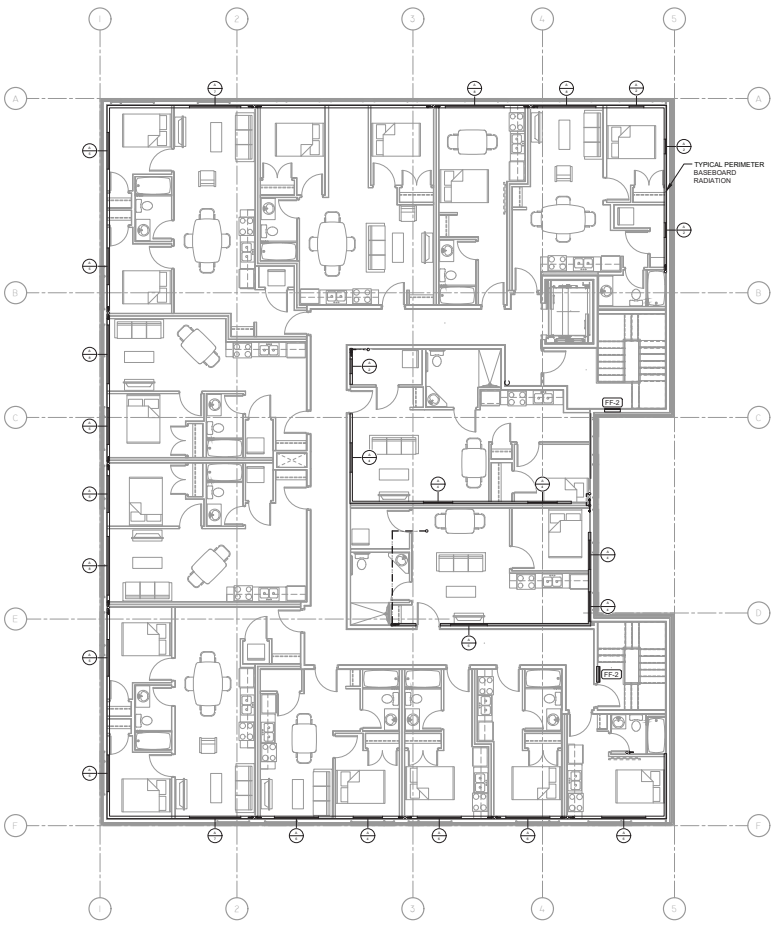
DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:



1 / M3.3 THIRD FLOOR PLAN HEATING
SCALE: 1/8" = 1'-0"

HEATING GENERAL NOTES

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13. PROVIDE ISOLATION VALVES ON HOT WATER HEATING SUPPLY AND RETURN LINES TO ALL RADIATION CABINETS, HEATING COILS, EQUIPMENT, AND OTHER LOCATIONS NOTED ON DRAWINGS AND SCHEMATICS.

HEATING KEYNOTES

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DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 90% REVIEW

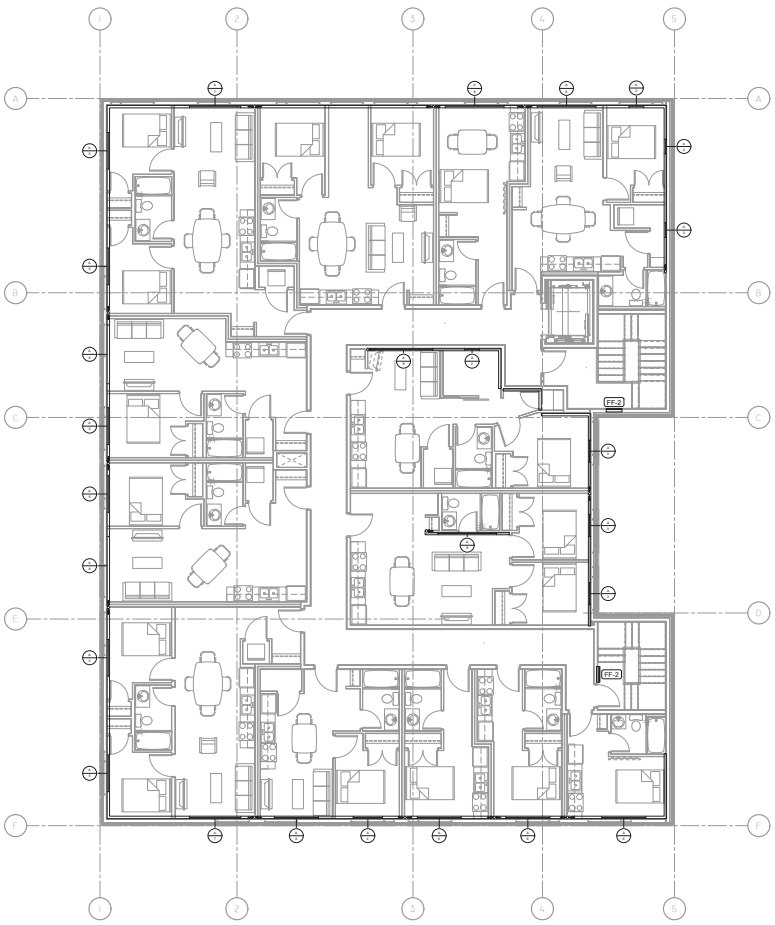
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
THIRD FLOOR PLAN HEATING

PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M3.3
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 / M3.4 FOURTH AND FIFTH FLOOR PLAN HEATING
SCALE: 1/8" = 1'-0"

HEATING GENERAL NOTES

1. ALL EQUIPMENT TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
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13. PROVIDE ISOLATION VALVES ON HOT WATER HEATING SUPPLY AND RETURN LINES TO ALL RADIATION CABINETS, HEATING COILS, EQUIPMENT, AND OTHER LOCATIONS NOTED ON DRAWINGS AND SCHEMATICS.

HEATING KEYNOTES

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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 90% REVIEW

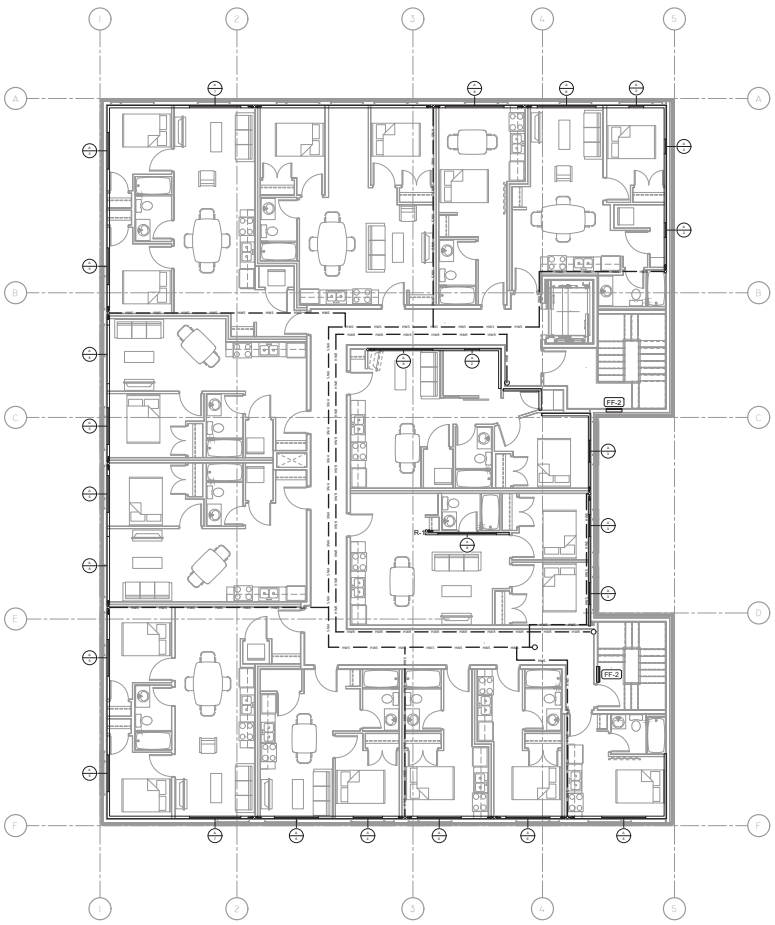
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
FOURTH & FIFTH FLOOR PLAN HEATING

PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M3.4
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M3.5 SIXTH FLOOR PLAN HEATING
SCALE: 1/8" = 1'-0"

HEATING GENERAL NOTES

1. ALL EQUIPMENT TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
2. ALL MECHANICAL ITEMS ARE TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL ENERGY CODE, SMACNA STANDARDS, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND STANDARDS.
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HEATING KEYNOTES

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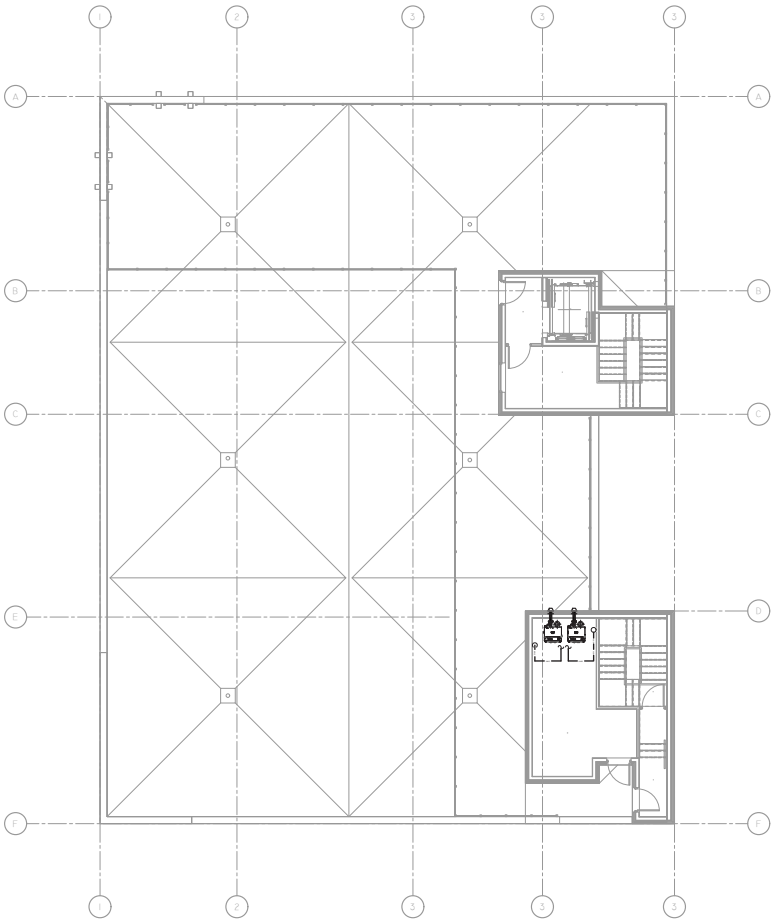
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY
APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
SIXTH FLOOR PLAN HEATING

PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M3.5
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M3.6 ROOF PLAN HEATING
SCALE: 1/8" = 1'-0"

HEATING GENERAL NOTES

1. ALL EQUIPMENT TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
2. ALL MECHANICAL ITEMS ARE TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL ENERGY CODE, SMACNA STANDARDS, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND STANDARDS.
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13. PROVIDE ISOLATION VALVES ON HOT WATER HEATING SUPPLY AND RETURN LINES TO ALL RADIATION CABINETS, HEATING COILS, EQUIPMENT, AND OTHER LOCATIONS NOTED ON DRAWINGS AND SCHEMATICS.

HEATING KEYNOTES

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1

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CLIENT:
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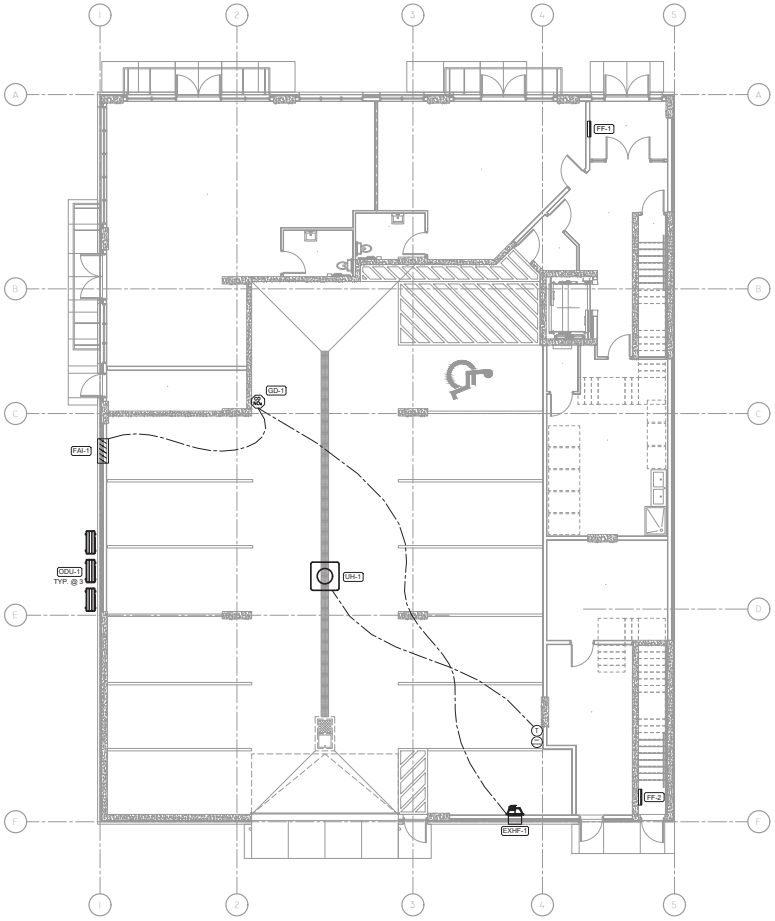
PROJECT:
PROPOSED SIX STORY
APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
ROOF PLAN HEATING

PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M3.6
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M4.1 PARKADE PLAN HVAC
SCALE: 1/8" = 1'-0"

HVAC GENERAL NOTES

1. ALL DUCTING SHOWN SCHEMATICALLY AND IS A GENERAL GUIDELINE. ANY MAJOR DEVIATIONS FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL DUCT SIZES ARE NET SIZES. INCREASE DUCT SIZE WITH INTERNAL INSULATION AS REQUIRED TO MAINTAIN INDICATED DIMENSIONS.
3. ALL DUCT TAKE-OFFS TO BE 45° CONICAL WITH BALANCING DAMPERS.
4. DUCTING TO BE CONNECTED TO ALL HVAC AND FAN UNITS WITH CANVAS CONNECTIONS.
5. ALL MAIN SUPPLY PLENUM ELBOWS TO BE MITERED WITH TURNING VANES. DUCT ELBOW RADII TO BE MINIMUM 1.5 TIMES THE TURNING DIMENSION UNLESS OTHERWISE NOTED.
6. COORDINATE ROUTING OF DUCTWORK IN CEILING WITH ELECTRICAL TO ENSURE ADEQUATE ACCESS TO ELECTRICAL SYSTEMS IS MAINTAINED AT THE HIGHEST POSSIBLE LEVEL.
7. INSULATE ALL DUCTWORK AS PER SPEC. INSULATION TO BE CANVAS WRAPPED IN FINISHED AREAS ONLY.
8. ENSURE ALL FLUE GAS AND EXHAUST OUTLETS ARE AT LEAST 3m (10ft) AWAY FROM THE NEAREST FRESH AIR INTAKE AND AT LEAST 1m (3ft) FROM BUILDING OPENINGS.
9. ALL EQUIPMENT TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
10. ALL MECHANICAL ITEMS ARE TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL ENERGY CODE, SMACNA STANDARDS, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND STANDARDS.
11. DUCTWORK WITHIN NEW HVAC UNIT SUPPLY AND RETURN PLENUMS SHALL BE LINED WITH 25mm (1") OF ACOUSTIC INSULATION. INCREASE DUCT SIZE TO MAINTAIN INDICATED DIMENSIONS.
12. ALL DUCTING TO BE FIRE DAMPERED AT ALL FIRE SEPARATIONS COMPLETE WITH QUICK CLOSE HINGED ACCESS DOORS FOR MAINTENANCE OF FUSIBLE LINK.
13. CONTRACTOR TO CHANGE ALL UNIT FILTERS ON BUILDING HANDOVER/COMPLETION AND PROVIDE 1 SET OF SPARE FILTERS FOR EACH PIECE OF EQUIPMENT TO OWNERS TO BE STORED ON SITE.
14. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OTHER TRADES (IN PARTICULAR ELECTRICAL).
15. MECHANICAL CONTRACTOR SHALL COORDINATE EXACT DUCT ROUTING ON SITE WITH FINAL JOIST LAYOUT AND ADVISE PS ENGINEERING OF ANY ISSUES PRIOR TO HANGING DUCTWORK. ANY DUCTWORK REMOVAL/MODIFICATION REQUIRED WITHOUT PRIOR NOTIFICATION WILL BE COMPLETED AT NO COST TO THE OWNER.
16. ANY MODIFICATIONS REQUIRED AS A RESULT OF THE INSTALLATION OF AN HVAC UNIT THAT DIFFERS FROM THE EQUIPMENT SCHEDULES IN THE CONTRACT DOCUMENTS IS TO BE COORDINATED ON SITE BETWEEN THE MECHANICAL CONTRACTOR AND OTHER TRADES. FAILURE TO DO SO WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE AT NO COST TO THE OWNER.
17. PIPE ALL CONDENSATE DRAINS INDIRECTLY TO NEAREST FLOOR/PIPE DRAIN UNLESS OTHERWISE NOTED.
18. ALL DUCTING IN AREAS WITH FINISHED CEILINGS TO BE INSTALLED CONCEALED WITHIN CEILING SPACE IN A GOOD WORKMANSHIP LIKE MANNER AS PER SMACNA STANDARDS. ALL DUCTWORK IN AREAS WITH NO CEILINGS TO BE SPIRAL ROUND EXPOSED UNLESS OTHERWISE NOTED.
19. ALL INTERLOCKS, TIMER SWITCHES, SPEED SWITCHES, ETC. TO BE BY ELECTRICAL.
20. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
21. ALL EXTERIOR WALL / ROOF PENETRATIONS TO BE SEALED WEATHER / AIR TIGHT.

HVAC KEYNOTES

1

BRANCH DUCT SIZING

AIR FLOW (CFM)	BRANCH SIZE (INCH)
0-60	5 (125)
60-120	6 (150)
121-230	8 (200)
231-400	10 (250)

DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

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Mechanical Consulting Engineers
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Phone : (306) 715-6788
Email : odhner@pseng.ca

PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

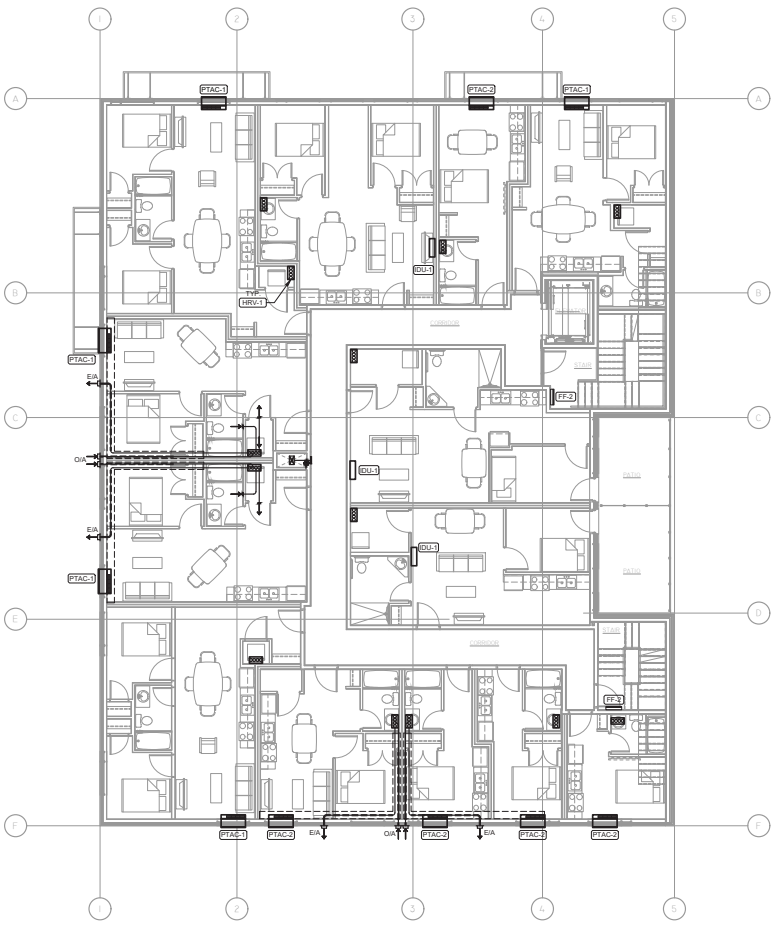
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
PARKADE PLAN HVAC

PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M4.1
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M4.2 SECOND FLOOR PLAN HVAC
SCALE: 1/8" = 1'-0"

HVAC GENERAL NOTES

1. ALL DUCTING SHOWN SCHEMATICALLY AND IS A GENERAL GUIDELINE. ANY MAJOR DEVIATIONS FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL DUCT SIZES ARE NET SIZES. INCREASE DUCT SIZE WITH INTERNAL INSULATION AS REQUIRED TO MAINTAIN INDICATED DIMENSIONS.
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5. ALL MAIN SUPPLY PLENUM ELBOWS TO BE MITERED WITH TURNING VANES. DUCT ELBOW RADII TO BE MINIMUM 1.5 TIMES THE TURNING DIMENSION UNLESS OTHERWISE NOTED.
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11. DUCTWORK WITHIN NEW HVAC UNIT SUPPLY AND RETURN PLENUMS SHALL BE LINED WITH 25mm (1") OF ACOUSTIC INSULATION. INCREASE DUCT SIZE TO MAINTAIN INDICATED DIMENSIONS.
12. ALL DUCTING TO BE FIRE DAMPERED AT ALL FIRE SEPARATIONS COMPLETE WITH QUICK CLOSE HINGED ACCESS DOORS FOR MAINTENANCE OF FUSIBLE LINK.
13. CONTRACTOR TO CHANGE ALL UNIT FILTERS ON BUILDING HANDOVER/COMPLETION AND PROVIDE 1 SET OF SPARE FILTERS FOR EACH PIECE OF EQUIPMENT TO OWNERS TO BE STORED ON SITE.
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19. ALL INTERLOCKS, TIMER SWITCHES, SPEED SWITCHES, ETC. TO BE BY ELECTRICAL.
20. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
21. ALL EXTERIOR WALL / ROOF PENETRATIONS TO BE SEALED WEATHER / AIR TIGHT.

BRANCH DUCT SIZING

AIR FLOW (CFM)	BRANCH SIZE (INCH)
0-60	5 (125)
60-120	6 (150)
121-230	8 (200)
231-400	10 (250)

HVAC KEYNOTES

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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

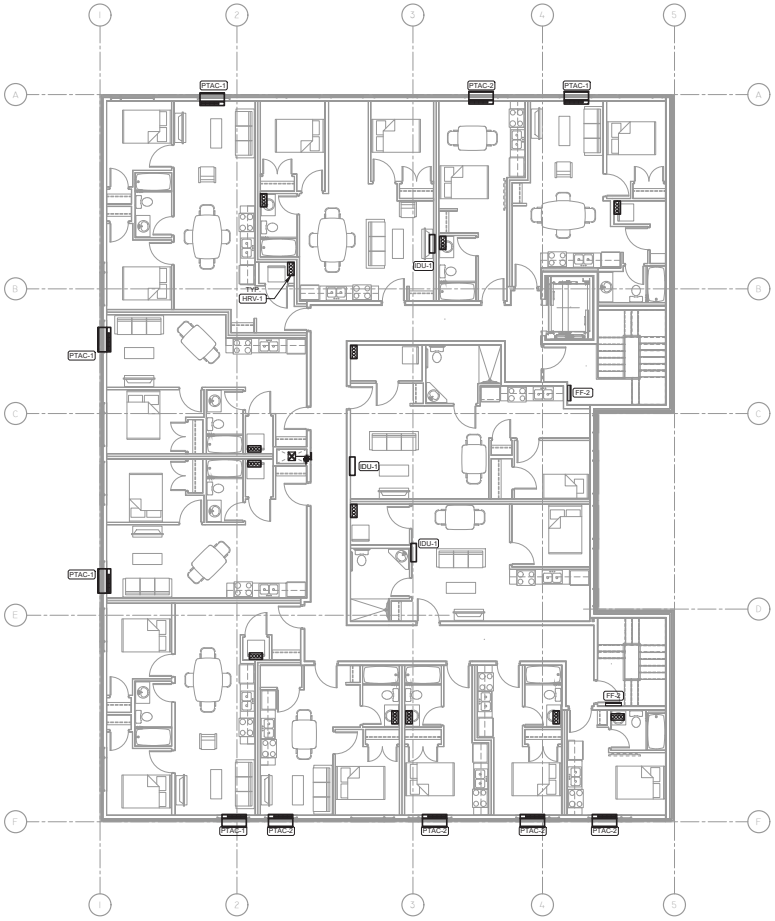
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
SECOND FLOOR PLAN HVAC

PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M4.2
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 THIRD FLOOR PLAN HVAC
M4.3 SCALE: 1/8" = 1'-0"

HVAC GENERAL NOTES

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HVAC KEYNOTES

(#)
1

BRANCH DUCT SIZING

AIR FLOW (CFM)	BRANCH SIZE (INCH)
0-60	5 (125)
60-120	6 (150)
121-230	8 (200)
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Mechanical Consulting Engineers
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Email : odhner@pseng.ca

PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

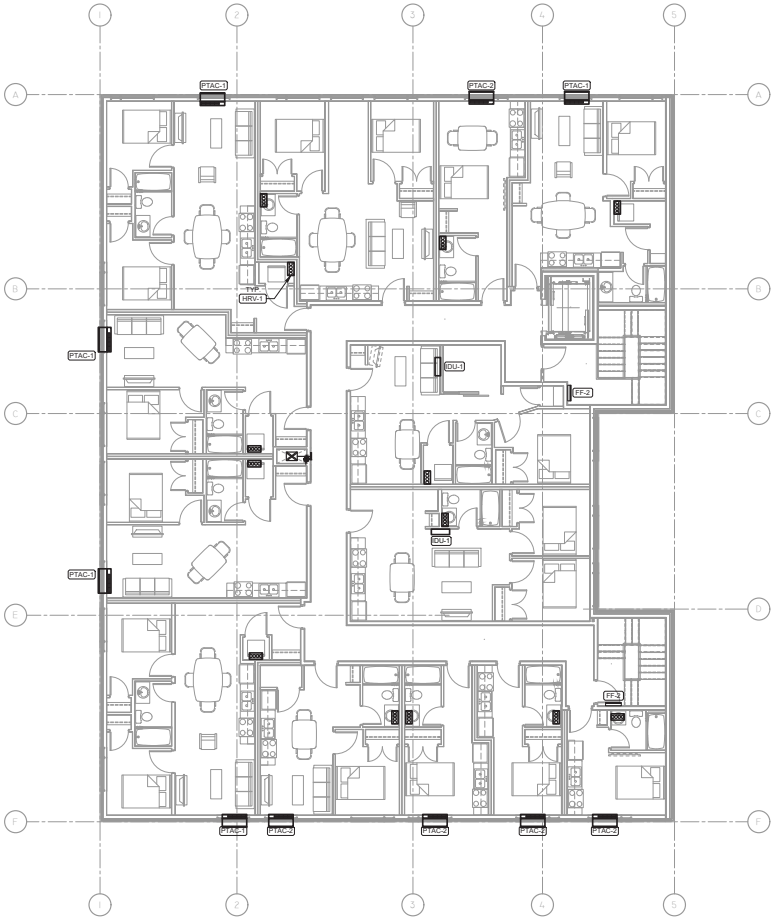
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
THIRD FLOOR PLAN HVAC

PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M4.3
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 FOURTH FLOOR PLAN HVAC
M4.4 SCALE: 1/8" = 1'-0"

HVAC GENERAL NOTES

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BRANCH DUCT SIZING

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HVAC KEYNOTES

1

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PROJECT NO. 24S-039

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PRELIMINARY
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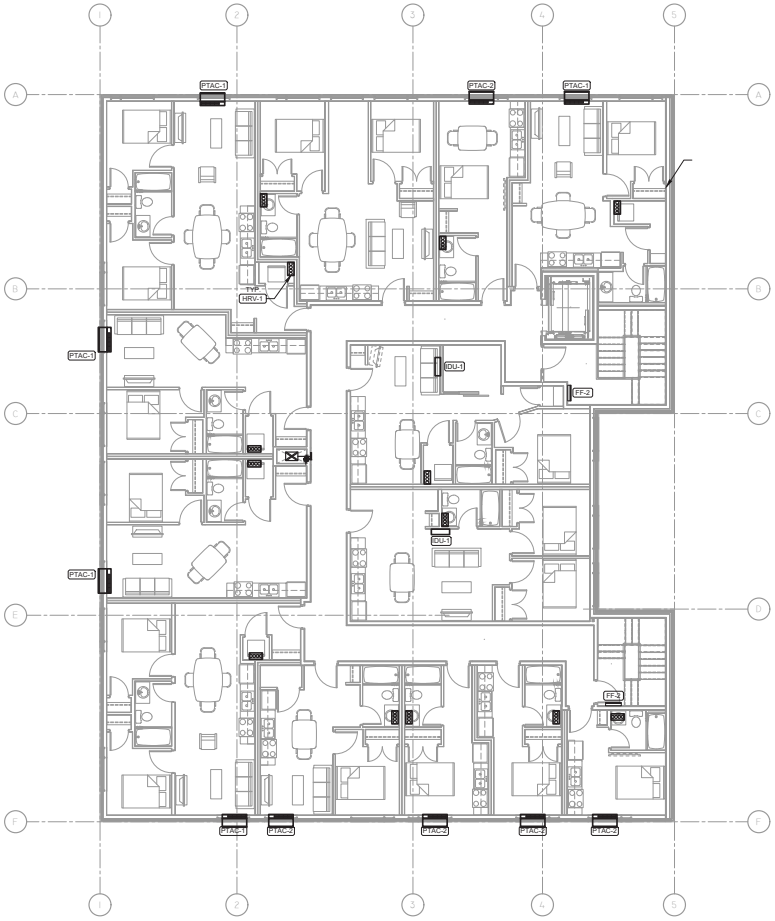
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
FOURTH FLOOR PLAN HVAC

PROJECT :24S-039	DRAWING NUMBER: M4.4
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M4.5 FIFTH FLOOR PLAN HVAC
SCALE: 1/8" = 1'-0"

HVAC GENERAL NOTES

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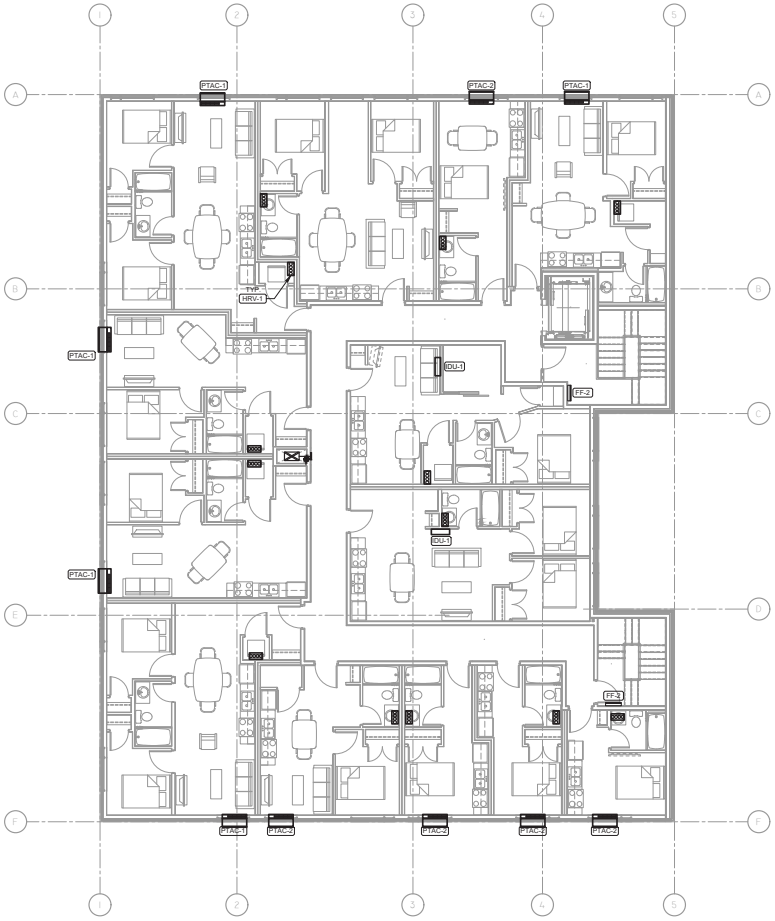
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
FIFTH FLOOR PLAN HVAC

PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M4.5
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 SIXTH FLOOR PLAN HVAC
M4.6 SCALE: 1/8" = 1'-0"

HVAC GENERAL NOTES

1. ALL DUCTING SHOWN SCHEMATICALLY AND IS A GENERAL GUIDELINE. ANY MAJOR DEVIATIONS FROM WHAT IS SHOWN IS TO BE APPROVED BY PS ENGINEERING.
2. ALL DUCT SIZES ARE NET SIZES. INCREASE DUCT SIZE WITH INTERNAL INSULATION AS REQUIRED TO MAINTAIN INDICATED DIMENSIONS.
3. ALL DUCT TAKE-OFFS TO BE 45° CONICAL WITH BALANCING DAMPERS.
4. DUCTING TO BE CONNECTED TO ALL HVAC AND FAN UNITS WITH CANVAS CONNECTIONS.
5. ALL MAIN SUPPLY PLENUM ELBOWS TO BE MITERED WITH TURNING VANES. DUCT ELBOW RADII TO BE MINIMUM 1.5 TIMES THE TURNING DIMENSION UNLESS OTHERWISE NOTED.
6. COORDINATE ROUTING OF DUCTWORK IN CEILING WITH ELECTRICAL TO ENSURE ADEQUATE ACCESS TO ELECTRICAL SYSTEMS IS MAINTAINED AT THE HIGHEST POSSIBLE LEVEL.
7. INSULATE ALL DUCTWORK AS PER SPEC. INSULATION TO BE CANVAS WRAPPED IN FINISHED AREAS ONLY.
8. ENSURE ALL FLUE GAS AND EXHAUST OUTLETS ARE AT LEAST 3m (10ft) AWAY FROM THE NEAREST FRESH AIR INTAKE AND AT LEAST 1m (3ft) FROM BUILDING OPENINGS.
9. ALL EQUIPMENT TO BE INSTALLED AS PER THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
10. ALL MECHANICAL ITEMS ARE TO BE INSTALLED IN ACCORDANCE WITH THE LATEST VERSIONS OF THE NATIONAL BUILDING CODE, NATIONAL ENERGY CODE, SMACNA STANDARDS, LOCAL AUTHORITY CONSTRUCTION DESIGN STANDARDS, MUNICIPALITY BYLAWS, AND ALL OTHER APPLICABLE CODES AND STANDARDS.
11. DUCTWORK WITHIN NEW HVAC UNIT SUPPLY AND RETURN PLENUMS SHALL BE LINED WITH 25mm (1") OF ACOUSTIC INSULATION. INCREASE DUCT SIZE TO MAINTAIN INDICATED DIMENSIONS.
12. ALL DUCTING TO BE FIRE DAMPERED AT ALL FIRE SEPARATIONS COMPLETE WITH QUICK CLOSE HINGED ACCESS DOORS FOR MAINTENANCE OF FUSIBLE LINK.
13. CONTRACTOR TO CHANGE ALL UNIT FILTERS ON BUILDING HANDOVER/COMPLETION AND PROVIDE 1 SET OF SPARE FILTERS FOR EACH PIECE OF EQUIPMENT TO OWNERS TO BE STORED ON SITE.
14. COORDINATE ALL WORK WITH GENERAL CONTRACTOR AND OTHER TRADES (IN PARTICULAR ELECTRICAL).
15. MECHANICAL CONTRACTOR SHALL COORDINATE EXACT DUCT ROUTING ON SITE WITH FINAL JOIST LAYOUT AND ADVISE PS ENGINEERING OF ANY ISSUES PRIOR TO HANGING DUCTWORK. ANY DUCTWORK REMOVAL/MODIFICATION REQUIRED WITHOUT PRIOR NOTIFICATION WILL BE COMPLETED AT NO COST TO THE OWNER.
16. ANY MODIFICATIONS REQUIRED AS A RESULT OF THE INSTALLATION OF AN HVAC UNIT THAT DIFFERS FROM THE EQUIPMENT SCHEDULES IN THE CONTRACT DOCUMENTS IS TO BE COORDINATED ON SITE BETWEEN THE MECHANICAL CONTRACTOR AND OTHER TRADES. FAILURE TO DO SO WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE AT NO COST TO THE OWNER.
17. PIPE ALL CONDENSATE DRAINS INDIRECTLY TO NEAREST FLOOR/PIPE DRAIN UNLESS OTHERWISE NOTED.
18. ALL DUCTING IN AREAS WITH FINISHED CEILINGS TO BE INSTALLED CONCEALED WITHIN CEILING SPACE IN A GOOD WORKMANSHIP LIKE MANNER AS PER SMACNA STANDARDS. ALL DUCTWORK IN AREAS WITH NO CEILINGS TO BE SPIRAL ROUND EXPOSED UNLESS OTHERWISE NOTED.
19. ALL INTERLOCKS, TIMER SWITCHES, SPEED SWITCHES, ETC. TO BE BY ELECTRICAL.
20. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
21. ALL EXTERIOR WALL / ROOF PENETRATIONS TO BE SEALED WEATHER / AIR TIGHT.

BRANCH DUCT SIZING

AIR FLOW (CFM)	BRANCH SIZE (INCH)
0-60	5 (125)
60-120	6 (150)
121-230	8 (200)
231-400	10 (250)

HVAC KEYNOTES

1

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DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

MECHANICAL CONSULTANT:
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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
SIXTH FLOOR PLAN HVAC

PROJECT :24S-039	DRAWING NUMBER:
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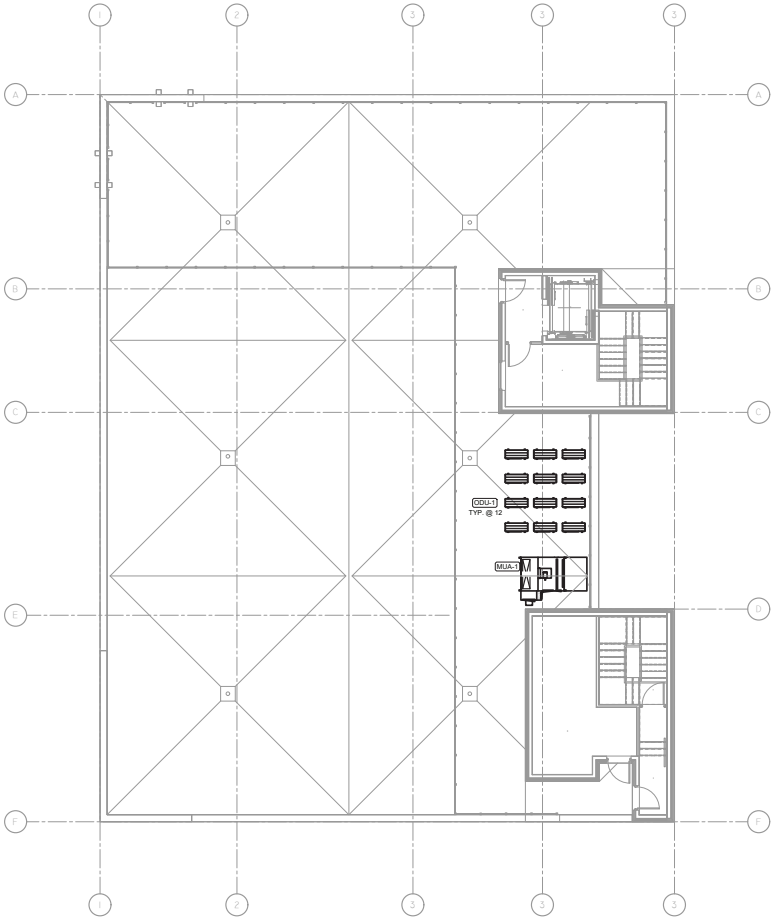

1 M4.7 SIXTH FLOOR PLAN HVAC
SCALE: 1/8" = 1'-0"

HVAC GENERAL NOTES

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20. CONFIRM DETAILS OF ALL SUPPORTS WITH STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION.
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HVAC KEYNOTES

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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
ROOF PLAN HVAC

PROJECT :24S-039	DRAWING NUMBER:
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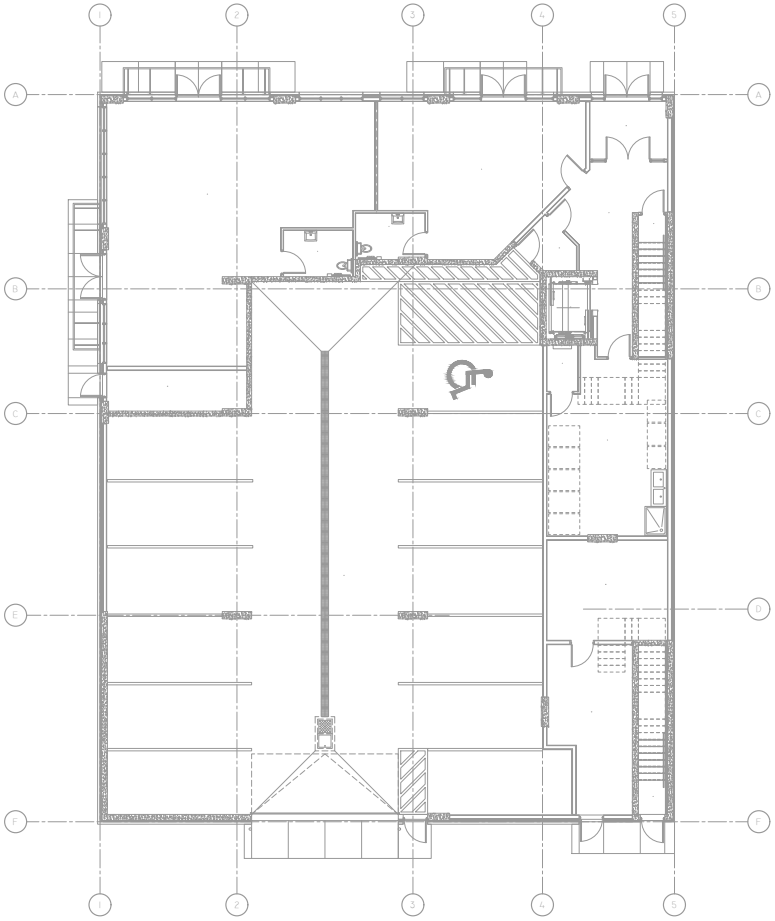

1 M5.1 PARKADE PLAN FIRE PROTECTION
SCALE: 1/8" = 1'-0"

FIRE PROTECTION GENERAL NOTES

1. SPRINKLER SYSTEM TO BE BASED ON NFPA#13R OCCUPANCY.
2. SPRINKLER CONTRACTOR IS RESPONSIBLE FOR A COMPLETE SYSTEM WITHIN THE BUILDING AND SHALL ADD ADDITIONAL HEADS WHERE PATTERN INTERFERES WITH LIGHTING, STRUCTURAL, AND MECHANICAL SYSTEM ARRANGEMENTS.
3. ALL EQUIPMENT TO BE UL LISTED AND SUPPLIED AND INSTALLED AS PER NFPA#13 & NFPA#13R.
4. CONTRACTOR SHALL QUOTE THE SUPPLY AND INSTALLATION OF A COMPLETE SYSTEM WHETHER OR NOT ALL OF THE HARDWARE IS DETAILED HEREON AND IN THE SPECIFICATIONS.
5. ALL PIPING AND SPRINKLER HEADS ARE SHOWN SCHEMATICALLY.
6. SPRINKLER CONTRACTOR TO PROVIDE AND SUBMIT HYDRAULIC CALCULATIONS AND SHOP DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER TO THE LOCAL AUTHORITY HAVING JURISDICTION AND OWNER'S INSURANCE UNDERWRITERS FOR REVIEW AND APPROVAL.
7. PIPING TO BE CPVC PLASTIC SDR 13 CONFORMING TO ASTM F443, UL, AND ULC LISTED. 3/4" TO 1-1/4" SCHEDULE 40 FITTINGS, 1-1/2" TO 3" SCHEDULE 80 FITTINGS. INSTALL AS PER NFPA#13, NFPA#13R, MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. PROVIDE FIRE STOPS AROUND ALL PIPING WHICH PASS THROUGH FIRE SEPARATIONS.
9. ALL HEADS SUBJECT TO DAMAGE TO HAVE WIRE GUARDS.
10. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL WIRING AND CONNECTIONS. SPRINKLER CONTRACTOR TO CO-ORDINATE. THE CORRECT ELECTRICAL OPERATION OF ALL SPRINKLER FLOW SWITCHES, TAMPER SWITCHES, AND PRESSURE SWITCHES SHALL BE CONFIRMED PRIOR TO THE FORMAL FIRE ALARM VERIFICATION.
11. CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL WIRING AND CONNECTIONS.
12. ALL PIPING TO BE EXPOSED AND PAINTED WITH LATEX BASED PAINT AS PER NFPA#13R AND AUTHORITY HAVING JURISDICTION.
13. EXISTING SPRINKLER HEAD LOCATIONS WERE OBTAINED FROM EXISTING SPRINKLER SHOP DRAWING. CONTRACTOR TO DETERMINE EXACT NUMBER AND LOCATION ON SITE.
14. PROVIDE SPRINKLER TEST CERTIFICATE ON COMPLETION.
15. THE SPRINKLER CONTRACTOR SHALL BE PRESENT AT THE FIRE ALARM VERIFICATION TO DEMONSTRATE THE OPERATION OF THESE DEVICES.
16. SPRINKLER CONTRACTOR TO SUPPLY FIRE EXTINGUISHER CABINETS AND FIRE EXTINGUISHERS AS INDICATED. UNITS TO BE LABELED AND INSTALLED AS PER NFPA#10. ALL INSTRUCTION FOR THE OPERATION AND MAINTENANCE OF FIRE EXTINGUISHERS TO BE PERMANENTLY AFFIXED TO EACH UNIT.
17. SPRINKLER HEADS NEAR HEAT PRODUCING EQUIPMENT SUCH AS UNIT HEATERS, ETC. TO BE HIGH TEMPERATURE RATED.

FIRE PROTECTION KEYNOTES

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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 90% REVIEW

CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
PARKADE PLAN FIRE PROTECTION

PROJECT :24S-039	DRAWING NUMBER:
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CHECKED :O.O.	REV:0

MECHANICAL SPECIFICATIONS

1. GENERAL

1.1. GENERAL PROVISIONS
1.1.1. THE INTENT OF THIS SPECIFICATION AND THE DRAWINGS IS TO PROVIDE A COMPLETE AND FULLY OPERATIONAL MECHANICAL SYSTEM.

1.1.2. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO EACH OTHER AND WHAT IS CALLED FOR IN ONE IS BINDING AS IF CALLED FOR BY BOTH. SHOULD ANY DISCREPANCIES AND/OR OMISSIONS BETWEEN DRAWINGS AND THE SPECIFICATIONS BE DISCOVERED, THEY SHALL BE REPORTED TO PS. ENGINEERING IMMEDIATELY AND PRIOR TO TENDER CLOSING FOR RECERTIFICATION BY ADDENDUM.

1.1.3. CONTRACT DOCUMENTS ARE DIAGRAMMATIC ONLY. THEY ARE TO ESTABLISH SCOPE, MATERIAL AND QUALITY. THEY ARE NOT DETAILED INSTALLATION DRAWINGS. MINOR DETAILS USUALLY NOT SHOWN OR SPECIFIED AND ANY INCIDENTAL ACCESSORIES REQUIRED FOR PROPER INSTALLATION OF THE SYSTEM ARE TO BE INCLUDED IN THE WORK.

1.1.4. EACH CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR LAYING OUT THEIR WORK AND FOR ANY DAMAGE CAUSED BY IMPROPER EXECUTION OF THEIR WORK. CONTRACTOR TO CARRY ALL NECESSARY INSURANCE COVERAGE.

1.1.5. REFER TO MECHANICAL SPECIFICATIONS WITHIN THE SPECIFICATION BOOKLET WHICH ALSO FORMS PART OF THE TENDER DOCUMENTS FOR MORE DETAIL.

1.1.6. THE MECHANICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO TENDER AND VERIFY EXISTING CONDITIONS. NEW PIPING, DUCTWORK AND INSULATION STANDARDS SHALL AT LEAST MATCH THE EXISTING INSTALLATION OR BE HIGHER IF SPECIFIED HEREIN.

1.1.7. THE MECHANICAL CONTRACTOR IS TO ENSURE THAT ALL INTENDED EQUIPMENT WILL FIT WITHIN GIVEN SPACES. MAKE REFERENCE TO THE ELECTRICAL, MECHANICAL, ARCHITECTURAL AND STRUCTURAL DRAWINGS, WHEN SETTING OUT WORK AND BEFORE ORDERING EQUIPMENT, CONTRACTOR MUST BE SATISFIED THAT THE WORK CAN BE CARRIED OUT AS SHOWN ON THESE PLANS WITHOUT CHANGES TO THE BUILDING. ANY ISSUES TO BE RELAYED TO P.S. ENGINEERING FOR ENGINEER'S REVIEW.

1.1.8. ALL WORK SHALL CONFORM TO CURRENTLY ACCEPTED EDITION OF NATIONAL, PROVINCIAL AND MUNICIPAL CODES, STANDARDS BYLAWS AND ACTS; AND WILL MEET THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. THE CODES IN EFFECT AT THE TIME OF BUILDING PERMIT APPLICATION ARE ANTICIPATED TO GOVERN THIS PROJECT. THE BELOW LIST OF REGULATORY AUTHORITIES IS INCLUDED FOR REFERENCE PURPOSES:
- 1.1.8.1. FIRE MARSHALL
- 1.1.8.2. CANADIAN ELECTRICAL CODE
- 1.1.8.3. LOCAL BUILDING BY-LAWS
- 1.1.8.4. WORKER'S COMPENSATION BOARD
- 1.1.8.5. CANADIAN STANDARDS ASSOCIATION
- 1.1.8.6. CANADIAN GAS CODE B-149.1
- 1.1.8.7. NATIONAL BUILDING CODE OF CANADA (N.B.C)
- 1.1.8.8. NATIONAL FIRE PROTECTION ASSOCIATION (N.F.P.A)
- 1.1.8.9. UNDERWRITERS' LABORATORIES (ULC) OF CANADA
- 1.1.8.10. NATIONAL ENERGY CODE FOR BUILDINGS (NECB)

1.1.9. DRAWINGS, AND SPECIFICATIONS ARE BASED ON BEST AVAILABLE AS-BUILT INFORMATION PROVIDED, THIS MAY OR MAY NOT BE 100% ACCURATE. ANY DISCREPANCIES BETWEEN WHAT IS SHOWN ON THESE DRAWINGS AND WHAT IS FOUND ON SITE MUST BE REPORTED TO PS. ENGINEERING IMMEDIATELY.

1.1.10.BEFORE COMMENCING THE WORK: EXAMINE THE WORK OF THE OTHER TRADES AND REPORT AT ONCE ANY DEFECT OR INTERFERENCE AFFECTING THE WORK, OR THE GUARANTEE OF THIS WORK. IN ADDITION, PRIOR TO STARTING ANY WORK, THE MECHANICAL CONTRACTOR IS TO REVIEW TYPE, SIZE, AND LOCATION OF ALL EXISTING MECHANICAL EQUIPMENT AND SERVICE CONNECTIONS ON SITE IN COMPARISON TO THAT SHOWN ON THE DRAWINGS AS EXISTING. REVIEW ANY DISCREPANCIES WITH THE P.S. ENGINEERING PRIOR TO STARTING ANY WORK.

1.2. WARRANTY
1.2.1. THE MECHANICAL CONTRACTOR AS A CONDITION PRECEDENT TO FINAL PAYMENT AFTER COMPLETION OF THIS WORK SHALL PROVIDE THE OWNER WITH A WRITTEN GUARANTEE WARRANTING ALL MATERIALS, LABOUR, AND EQUIPMENT FOR ONE (1) FULL YEAR FROM DATE OF ACCEPTANCE.

1.3. WORK, PRODUCTS, AND QUALITY
1.3.1. EQUIPMENT AND MATERIALS TO BE NEW AND FREE FROM DEFECTS AND HAVE DESIGN CHARACTERISTICS AS SPECIFIED.

1.3.2. ALL WORK AND MATERIALS SHALL BE INSTALLED AS SHOWN AND IN ACCORDANCE WITH THE NATIONAL BUILDING CODE AND ALL LOCAL CODES AND BUILDING REGULATIONS.

1.3.3. ALL EQUIPMENT SHALL BE C.S.A. APPROVED.

1.3.4. ALL MECHANICAL EQUIPMENT INSTALLATIONS SHALL BE IN ACCORDANCE WITH MANUFACTURERS' PRINTED INSTRUCTIONS.

1.3.5. ALL INSTALLATIONS ARE SUBJECT TO REVIEW AND APPROVAL BY PS. ENGINEERING PRIOR TO ACCEPTANCE.

1.3.6. COORDINATE WORK WITH THAT OF THE OTHER TRADES, IN PARTICULAR THAT OF THE ELECTRICAL TO ENSURE THE INTEGRITY OF THE WORK AND SITE. LEAVE THE CONSTRUCTION SITE IN A SAFE AND CLEAN MANNER AT ALL TIMES.

1.4. FEES AND PERMITS
1.4.1. THE MECHANICAL CONTRACTOR WILL OBTAIN AND PAY FEES FOR ALL PERMITS NECESSARY FOR COMPLETION OF THIS CONTRACT.

1.4.2. CONTRACTOR TO FURNISH ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK CONFORMS WITH STANDARDS AND REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.

1.4.3. THE MECHNICAL CONTRACTOR IS TO OBTAIN ALL NECESSARY PERMITS AND PAY ALL COSTS SO THAT THE WORK HERINAFTER SPECIFIED MAY BE CARRIED OUT.

1.5. TESTING
1.5.1. TEST ALL EQUIPMENT AND MATERIALS WHERE REQUIRED BY THE SPECIFICATIONS OR AUTHORITIES HAVING JURISDICTION TO DEMONSTRATE ITS PROPER OPERATION TO THE OWNER.
- 1.5.1.1. CARRY OUT ALL HYDRAULIC TESTS PRIOR TO COVERING PIPE IN ANY WAY.
- 1.5.1.1. TEST DOMESTIC WATER PIPING AT 700 kPA (100 PSI) PRESSURE FOR A PERIOD OF TWO (2) HOURS WITH NO APPRECIABLE PRESSURE DROP.
- 1.5.1.2. TEST DRAINAGE SYSTEMS BY FILLING SYSTEMS WITH WATER TO PRODUCE PRESSURE OF 3.0m (10FT) OF WATER COLUMN. KEEP SYSTEM FILLED WITH WATER FOR 15 MINUTES.
- 1.5.1.3. TEST GAS PIPING AS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.
- 1.5.1.4. TEST FIRE WATER PIPING AT 1400 kPA (200 PSI) PRESSURE FOR A PERIOD OF (2) HOURS WITH NO APPRECIABLE PRESSURE DROP.
- 1.5.1.5. TEST HOT WATER HEATING LINES AT 700 kPA (100 PSI) OR 1.5 TIMES OPERATING PRESSURE FOR A PERIOD OF TWO (2) HOURS WITH NO APPRECIABLE PRESSURE DROP.

1.5.2. TEST LOW VELOCITY DUCTWORK FOR TIGHTNESS AND LEAKAGE. ALL LEAKS SHALL BE REPAIRED BEFORE THE SYSTEM IS BALANCED.

1.6. EXCAVATION AND BACKFILLING
1.6.1. THE MECHANICAL CONTRACTOR SHALL DO ALL NECESSARY EXCAVATION. BACKFILL WITH SAND OR OTHER APPROVED MATERIAL TO A MINIMUM OF 300mm (12") OVER ALL PIPING OR AS NECESSARY TO PROTECT THEIR WORK AND THEN COMPACT WITH A MECHANICAL TAMPER. THE REMAINDER OF THE BACKFILL TO BE DONE BY THE MECHANICAL CONTRACTOR AS PER THE REQUIREMENTS OF THE GENERAL CONTRACTOR. COORDINATE ELEVATIONS AND LOCATION OF GAS, WATER, AND SEWER SERVICES AND PROVIDE 2.0m (79") OF SEPARATION FROM GAS, ELECTRICAL, AND TELEPHONE SERVICE BEFORE INSTALLING.

1.7. CUTTING AND PATCHING
1.7.1. THE MECHANICAL CONTRACTOR SHALL CONFER WITH THE GENERAL CONTRACTOR IN REGARDS TO THIS WORK AND SHALL GIVE LOCATIONS FOR ALL HOLES FOR PIPE AND DUCTS ETC. AND PROVIDE SLEEVES 200mm (8") DIAMETER AND SMALLER AS REQUIRED TO EXECUTE THE MECHANICAL INSTALLATION. PATCH IMPROPERLY LOCATED HOLES AND SLEEVES AT NO FURTHER COST. DRILL EXPANSION BOLTS, HANGER ROD, BRACKETS AND SUPPORT

1.7.2. THE MECHANICAL CONTRACTOR SHALL ACCURATELY LOCATE OPENINGS REQUIRED FOR HIS/HER WORK TO BE CARRIED OUT. ONCE THE LOCATIONS ARE LAID OUT THE MECHANICAL CONTRACTOR SHOULD OBTAIN APPROVAL IN WRITING FROM THE GENERAL CONTRACTOR PRIOR TO CUTTING OR DRILLING. ALL CUTTING, DRILLING AND PATCHING REQUIRED TO INSTALL THE MECHANICAL SYSTEMS, SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. ALL PATCHING SHALL MATCH EXISTING FINISHES. ALL OPENINGS THROUGH FIRE WALLS SHALL BE FILLED WITH APPROVED FIRE RESISTANT MATERIALS. SUBMIT APPROVAL LETTER ON MATERIAL FROM AUTHORITY HAVING JURISDICTION TO PS. ENGINEERING PRIOR TO COMMENCING WORK.

1.8. FLASHING AND COUNTERFLASHING
1.8.1. ALL MECHANICAL WORK PASSING THROUGH THE ROOF SHALL BE FLASHED BY THE MECHANICAL CONTRACTOR. COUNTERFLASHING TO BE DONE BY THE ROOFING CONTRACTOR.

1.9. APPROVALS
1.9.1. REQUEST FOR APPROVAL OF EQUIVALENT EQUIPMENT FROM MANUFACTURER'S NOT SPECIFIED ON DRAWINGS SHALL BE MADE IN WRITING SEVEN DAYS PRIOR TO TENDER CLOSING.

1.10. SHOP DRAWINGS
1.10.1. PRIOR TO THE FABRICATION OF ANY MATERIALS AND EQUIPMENT, SUBMIT A MINIMUM OF SEVEN (7) COMPLETE SETS OF SHOP DRAWINGS AND DATA SHEETS COVERING ALL ITEMS OF MECHANICAL EQUIPMENT UNDER THIS CONTRACT FOR REVIEW BY PS. ENGINEERING. ELECTRONIC SUBMISSIONS (PDF) ARE ACCEPTABLE.

1.10.2. SUBMIT COLOUR PDF's OF SHOP DRAWINGS TO PS. ENGINEERING FOR ALL EQUIPMENT SPECIFIED IN THE SPECIFICATION OR DRAWINGS FOR PS. ENGINEERING'S REVIEW. DO NOT ORDER EQUIPMENT OR MATERIALS UNTIL PS. ENGINEERING HAS REVIEWED SHOP DRAWINGS.

1.11. ELECTRIC MOTORS AND WIRING
1.11.1. SUPPLY ALL MECHANICAL EQUIPMENT WITH ELECTRIC MOTORS AS REQUIRED.

1.11.2. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO SUPPLY ALL MOTOR STARTERS AND DISCONNECT SWITCHES FOR ALL MOTORS FOR THIS PROJECT AND INSTALL LINE VOLTAGE WIRING TO STARTERS AND FROM STARTERS TO MOTORS, EXCEPT WHERE PRE-WIRED IN PACKAGED EQUIPMENT.

1.11.3. ELECTRICAL CONTROLS CONNECTED TO MECHANICAL EQUIPMENT SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR AND SHALL BE INSTALLED, WIRED, AND CONNECTED BY THE MECHANICAL CONTROLS SUBCONTRACTOR.

1.11.4. MECHANICAL SHALL CONFIRM ALL EQUIPMENT ELECTRICAL RATINGS WITH ELECTRICAL DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ORDERING EQUIPMENT.

1.12. MAINTENANCE MANUALS
1.12.1. FURNISH THREE (3) SETS OF OPERATION & MAINTENANCE MANUALS WITH INFORMATION OUTLINED BELOW TO PS. ENGINEERING PRIOR TO FINAL INSPECTION FOR APPROVAL.

1.12.2. MAINTENANCE MANUALS TO BE ASSEMBLED IN HARD COVER BINDERS. IDENTIFY FRONT COVER WITH PROJECT NAME & PROJECT LOCATION. PROVIDE INDEX AND INDEX LABELS. MANUALS SHALL CONTAIN THE FOLLOWING:
- 1.12.2.1. WARRANTY CERTIFICATE, BALANCING REPORTS
- 1.12.2.2. DESCRIPTION OF ALL SYSTEMS
- 1.12.2.3. DESCRIPTION OF COMPONENTS OF EACH PIECE OF EQUIPMENT
- 1.12.2.4. DESCRIPTION OF CONTROL SYSTEM
- 1.12.2.5. COMPLETE SET OF DRAWINGS
- 1.12.2.6. DETAILED MAINTENANCE AND LUBRICATION SCHEDULE
- 1.12.2.7. OPERATING AND MAINTENANCE INSTRUCTIONS FOR MAJOR EQUIPMENT
- 1.12.2.8. LIST OF EQUIPMENT SUPPLIERS AND MANUFACTURERS
- 1.12.2.9. LIST OF CONTRACTORS AND CONSULTANTS.

1.13. OPERATING INSTRUCTIONS
1.13.1.ARRANGE AND PAY FOR THE SERVICE OF FULLY QUALIFIED PERSONNEL INCLUDING MANUFACTURER'S REPRESENTATIVES TO INSTRUCT THE OWNER IN OPERATION AND PREVENTIVE MAINTENANCE OF EACH PIECE OF EQUIPMENT AND SYSTEM SUPPLIED AND INSTALLED.

1.14. SUPPORTS, ANCHORS, AND SLEEVES
1.14.1.INSTALL SUPPORTS OF STRENGTH AND RIGIDITY TO SUIT LOADING WITHOUT UNDULY STRESSING OF BUILDING. LOCATE ADJACENT TO EQUIPMENT TO PREVENT UNDUE STRESS IN PIPING AND EQUIPMENT.

1.14.2. PROVIDE CHROME PLATED FLOOR, CEILING, AND WALL ESCUTCHEONS AS REQUIRED FOR PIPING IN FINISHED AREAS.

1.14.3. SEISMIC RESTRAINTS SHALL BE PROVIDED AS REQUIRED BY LOCAL CODE. WHEN LOCAL CODE HAS NO STANDARDS, SEISMIC RESTRAINTS SHALL BE PROVIDED AND INSTALLED PER SMACNA STANDARDS.

1.15. IDENTIFICATION
1.15.1. THE MECHANICAL CONTRACTOR SHALL SUPPLY AND PERMANENTLY INSTALL LAMACOIDS TO PROVIDE IDENTIFICATION OF ALL INSTALLED EQUIPMENT LIKE FANS, WATER HEATERS, AND THEIR SWITCHES.

1.15.2. IDENTIFY ALL PIPING BY MEANS OF COLORED, SELF-ADHESIVE LABELS AND DIRECTIONAL ARROWS USING 19mm (3/4") HIGH LETTERING.

1.15.3. LABEL ALL VALVES LARGER THAN 25mm (1").

1.16. RECORD DRAWINGS
1.16.1. THE MECHANICAL CONTRACTOR SHALL KEEP ON SITE EXTRA SETS OF PRINTS AND SPECIFICATIONS ON WHICH ALL CHANGES AND DEVIATIONS FROM THE ORIGINAL DESIGN SHALL BE RECORDED DAILY. THESE CHANGES MUST BE NEATLY ADDED TO A CLEAN SET OF DRAWINGS AND GIVEN TO THE OWNERS MARKED "AS-BUILT".

1.17. EQUIPMENT AND MATERIALS CLEANUP
1.17.1. PIPING, FIXTURES, DUCTS, AND EQUIPMENT SHALL BE THOROUGHLY CLEANED OF DIRT, GREASE, ADHESIVE LABELS, AND FOREIGN MATERIALS.

1.17.2. ALL DUCTWORK TO BE CLEANED AS PER NADCA STANDARDS.

2. PLUMBING

2.1. GENERAL
2.1.1. SUPPLY AND INSTALL THE PLUMBING SYSTEM AS SHOWN ON THE DRAWINGS WITH THE HIGHEST QUALITY OF WORKMANSHIP AND USING CSA APPROVED MATERIALS IN ACCORDANCE TO THE LATEST EDITIONS OF THE NATIONAL/PROVINCIAL PLUMBING CODE.

2.1.2. SUPPLY AND INSTALL COMPLETE DOMESTIC WATER, DRAINAGE, AND VENT PIPING SERVING ALL NEW PLUMBING FIXTURES. ALL WATER AND SEWER PIPING SHALL EXTEND TO THE NEW BUILDING SERVICES. ENSURE THAT SEWER SERVICES ARE RUN WITH SUFFICIENT SLOPE FOR DRAINAGE WITH ADEQUATE COVER TO PREVENT FREEZING.

2.1.3. ENSURE ALL ROOF PENETRATIONS FOR PLUMBING VENTS ARE A MINIMUM 3M (10FT) AWAY MEASURED HORIZONTALLY AND 1M (3,3FT) AWAY MEASURED VERTICALLY FROM ANY VENTILATION AIR INTAKE OR OPERABLE WINDOW.

2.1.4. COORDINATE ALL PLUMBING ROUGH IN LOCATIONS WITH ARCHITECTURAL PLANS PRIOR TO COMMENCING WORK. ADJUST LOCATIONS WHERE REQUIRED.

2.1.5. CONFIRM ALL LOCATIONS AND SIZING OF EXISTING SITE SERVICES PRIOR TO COMMENCING WORK.

2.1.6. ALL PLUMBING FIXTURES IN THE EQUIPMENT SCHEDULE SHALL BE CONSIDERED AS A BASE MODEL ONLY, ANY OTHER EQUIPMENT CAN BE USED IF APPROVED BY PS. ENGINEERING.

2.1.7. SUPPLY AND INSTALL ALL REQUIRED FITTINGS, HANGERS, RODS AND/OR FASTENERS NEEDED TO COMPLETE THE INSTALLATION. ALL TO LOCAL INDUSTRY STANDARDS, AND TO BE APPROVED BY THE AUTHORITIES HAVING JURISDICTION.

2.1.8. CLEANOUTS:SUPPLY AND INSTALL CLEAN OUTS AT THE BASE OF EACH VERTICAL WASTE STACK AND AT THE BUILDING FOUNDATION AT THE POINT OF EXIT. CLEANOUTS SAME SIZE AS THE PIPE UP TO 4"Ø (100mm) BUT NOT LESS THAN 4"Ø (100mm) FOR LARGER PIPE. CLEANOUTS SHOULD BE EASILY ACCESSIBLE AND SHOULD BE GAS TIGHT AND WATER TIGHT. PROVIDE A MIN CLEARANCE OF 24" (600mm) FOR RODDING. PROVIDE AND SET CLEANOUTS FOR DRAINS A MAXIMUM OF 15m (50') APART FOR PIPE SIZES BELOW 150mm (6") DIAMETER, AND A MAXIMUM OF 30m (100') APART FOR PIPE SIZES IN EXCESS OF 100mm (4") DIAMETER. INSTALL IN ALL STRAIGHT RUNS OF STORM AND SANITARY SEWERS, AT LOCATIONS AS DIRECTED BY PS. ENGINEERING.

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

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

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

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

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

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

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

2.1.16. PLUMBING FIXTURES SHALL BE AS SPECIFIED, OR APPROVED EQUAL.

2.1.17. STERILIZE WATER SERVICE WITH CHLORINE AS PER CITY AND PROVINCIAL PLUMBING CODE STANDARDS AND PROVIDE A WRITTEN REPORT FLUSH SYSTEM AND HAVE BACTERIOLOGICAL TESTS COMPLETED AT A RECOGNIZED CERTIFIED LABORATORY.

2.2. PIPE AND FITTINGS
2.2.1. ALL PIPING SHALL MEET THE REQUIREMENTS OF THE PROVINCIAL PLUMBING CODE AND NATIONAL BUILDING CODE. PVC OR ABS PIPING IS NOT PERMITTED THROUGH A FIRE SEPARATION.

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

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

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

2.2.5. WASTE AND VENT PIPING BELOW GRADE: 150mm (6") AND SMALLER, CAST IRON PIPE, CAST IRON FITTINGS, MECHANICAL JOINTS. PVC PIPING IS ALSO ACCEPTABLE.

2.2.6. WASTE, STORM, AND VENT PIPING: PVC PIPING TO BE XFR RATED IN RETURN AIR PLENUM.

2.3. VALVES
2.3.1. VALVES ON COLD, HOT, AND/OR RECIRCULATING WATER PIPING SHALL BE AS FOLLOWS:
- 2.3.1.1. GATE VALVES 50mm (2") AND SMALLER: CRANE No. 1320C
- 2.3.1.2. GATE VALVES 65mm (2 1/2") AND LARGER: CRANE No. 465 1/2C
- 2.3.1.3. GLOBE VALVES 50mm (2") AND SMALLER: CRANE No. 1310
- 2.3.1.4. GLOBE VALVES 65mm (2 1/2") AND LARGER: CRANE No. 351
- 2.3.1.5. CHECK VALVES 50mm (2") AND SMALLER: CRANE No. 1342
- 2.3.1.6. CHECK VALVES 65mm (2 1/2") AND LARGER: CRANE No. 373
- 2.3.1.7. BALL VALVES 6mm (1/4") THRU 50mm (2"): GRINNELL FIG. 1550

2.4. GAS
2.4.1. MECHANICAL CONTRACTOR SHALL INSTALL GAS SERVICE FROM NEW / RELOCATED BUILDING GAS SERVICE TO ALL GAS-FIRED EQUIPMENT COMPLETE WITH ALUMINIZED PAINT COATING ON PIPE WHERE EXPOSED TO OUTDOORS. LINES CONCEALED SHALL BE BRAZED SEAMLESS COPPER K OR L UP TO 32mm (1¼") OR SCHEDULE 40 BLACK STEEL THREADED UP TO 50mm (2½").

2.4.2. ALL GAS PIPING FITTINGS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH CSA STANDARD B-149 INSTALLATION CODE.

2.4.3. CONTRACTOR TO COORDINATE APPLICATION AND INSTALLATION OF NEW / REVISED GAS SERVICE WITH GAS UTILITY AND OWNER.

3. HYDRONIC HEATING

3.3. GENERAL
3.3.2. FURNISH AND INSTALL THE COMPLETE RADIANT FLOOR HEATING SYSTEM INCLUDING: BOILER, BOILER SYSTEM, EXPANSION TANK, PUMPS, AIR SEPARATOR, PIPING, PIPE INSULATION, VALVES, FITTINGS, CHEMICAL TREATMENT, IN FLOOR TUBING, DISTRIBUTION MANIFOLDS, VENTING/PURGE AIR VALVES, MANIFOLD TO TUBING FITTINGS, CIRCUIT ISOLATION, BALANCING VALVES, CIRCUIT CONTROLS, INSTALLATION SPECIALTIES, ETC.

3.3.3. REFER TO HEATING DRAWINGS FOR RADIANT FLOOR SLAB LAYOUT AND EQUIPMENT SPECIFICATIONS.

3.3.4. OPERATE SYSTEM WITH A FLOOR HOT WATER HEATING SUPPLY TEMPERATURE OF NO GREATER THAN 110 DEGREES F.

3.4. REGULATORY REQUIREMENTS
3.4.1. TUBING SHALL CONFORM TO CAN/CSA B-137.5 AND MANUFACTURED USING THEIR T. ENGLE PROCESS. TUBING OXYGEN PERMEATION BARRIER SHALL CONFORM TO DIN4726.

3.4.2. INSTALLERS QUALIFICATIONS: INSTALLER SHALL BE QUALIFIED IN WRITING AS EITHER BEING CERTIFIED OR CERTIFIABLE PRIOR TO THE COMMENCEMENT OF THE INSTALLATION.

3.5. REFERENCES
3.5.1. ASTM F876 STANDARD SPECIFICATION FOR CROSS-LINKED POLYETHYLENE (PEX) TUBING.

3.5.2. ASTM F877 CROSS-LINKED POLYETHYLENE (PEX) PLASTIC HOT AND COLD WATER DISTRIBUTION SYSTEMS.

3.5.3. CAN/CSA-B137.5 CROSS-LINKED POLYETHYLENE (PEX) TUBING SYSTEMS FOR PRESSURE APPLICATIONS.

3.5.4. DIN4726 GERMAN STANDARD FOR PLASTIC PIPING USED IN WARM WATER FLOOR HEATING SYSTEMS.

3.6. SUBMITTALS
3.6.1. PROVIDE SUBMITTALS AND SHOP DRAWINGS IN ACCORDANCE WITH THE GENERAL REQUIREMENTS AND AS SPECIFIED HEREIN. SUBMIT SHOP DRAWINGS INDICATING SCHEMATIC LAYOUT OF SYSTEM, INCLUDING EQUIPMENT, CRITICAL DIMENSIONS AND TUBING/SLAB PENETRATION DETAILS FOR PROTECTED EXPOSED PEX TUBING.

3.6.2. SUBMIT MANUFACTURER'S TECHNICAL INSTRUCTIONS.

3.6.3. SUBMIT INSTALLERS CERTIFICATIONS OF TRAINING FOR INSTALLATION OF PEX FLOOR HEATING SYSTEMS.

3.6.4. SUBMIT DATA INDICATING TUBE SIZING AND PANEL PERFORMANCE AT TUBE SPACING AND WATER TEMPERATURES SELECTED.

3.6.5. SUBMIT INDEPENDENT CERTIFICATION RESULTS FOR THE RUBING SYSTEMS FROM A RECOGNIZED TESTING LABORATORY.

3.6.6. SUBMIT CATALOG DATA ON ALL SUPPORTS, TUBE GUIDES, SPACERS, AND ASSOCIATED ITEMS NECESSARY FOR THE INSTALLATION OF THE TUBING AND MANIFOLDS.

3.7. DELIVERY, STORAGE, AND HANDLING
3.7.1. DELIVER AND STORE TUBING AND SPECIALTIES IN SHIPPING CONTAINERS WITH LABELING IN PLACE. DO NOT EXPOSE TO ULTRA VIOLET LIGHT FOR MORE THAN 90 DAYS.

3.7.2. PROTECT TUBING AND SPECIALTIES FROM ENTRY OF CONTAMINATING MATERIAL BY INSTALLING TAPE OR PLUGS IN ALL OPEN TUBE ENDS UNTIL INSTALLATION AND/OR MAINTAIN TUBING IN THE ORIGINAL SHIPPING BOXES OR PACKAGING UNTIL USAGE.

3.7.3. UNPROTECTED TUBES SHALL NOT BE DRAGGED ACROSS THE GROUND OR CONCRETE SURFACES, AND SHALL BE STORED ON A FLAT SURFACE WITH NO SHARP EDGES.

3.7.4. TUBE SHALL BE PROTECTED FROM OIL, GREASE, DIRECT SUNLIGHT, AND OTHER ELEMENTS AS RECOMMENDED BY MANUFACTURER.

3.8. WARRANTY
3.8.1. THE RADIANT FLOOR SYSTEM COMPONENT MANUFACTURER SHALL WARRANT THE CROSS-LINKED POLYETHYLENE TUBING TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF TWENTY-FIVE (25) YEARS.

3.8.2. ALL CONTROLS SHALL BE WARRANTED FOR A PERIOD OF 18 MONTHS AND/OR 2 HEATING SEASONS.

3.9. TUBING
3.9.1. MATERIAL: ALL RADIANT FLOOR HEATING TUBING SHALL BE HIGH DENSITY CROSS-LINKED POLYETHYLENE MANUFACTURED IN ACCORDANCE WITH ASTM F877 AS CERTIFIED BY NSF OR THE CSA OF EQUIVALENT TESTING ORGANIZATION AND WITH AN APPROVED CELL IN ACCORDANCE WITH ASTM D3350.

3.9.2. ALL TUBING SHALL BE FULLY CROSS-LINKED TO THE SPECIFIED STANDARD PRIOR TO SHIPMENT FROM THE MANUFACTURING AGENT.

3.9.3. TEMPERATURE AND PRESSURE RATING: TUBING SHALL BE RATED FOR NOT LESS THAN 180 DEGREES F WORKING TEMPERATURE AND 100 PSIG WORKING PRESSURE.

3.9.4. OXYGEN DIFFUSION BARRIER: TUBING SHALL HAVE A CO-EXTRUDED OXYGEN DIFFUSION BARRIER CAPABLE OF LIMITING OXYGEN DIFFUSION THROUGH THE TUBE TO NO GREATER THAN 0.10 G/CUBIC METER PER DAY AT 104 DEGREES F WATER TEMPERATURE IN ACCORDANCE WITH DIN 4726.

3.9.5. BEND RADIUS: THE MINIMUM BEND RADIUS FOR COLD BENDING OF THE TUBE SHALL NOT BE LESS THAN FIVE (5) TIMES THE OUTSIDE DIAMETER. BENDS WITH A RADIUS LESS THAN STATED SHALL REQUIRE THE USE OF A BENDING TEMPLATE SUPPLIED BY THE TUBE MANUFACTURER.

3.10. FITTINGS
3.10.1. FITTINGS SHALL BE MANUFACTURED OF BRASS AND SHALL BE SUPPLIED BY THE TUBING MANUFACTURER AS PART OF A PROVEN CATALOGED SYSTEM.

3.11. MANIFOLDS
3.11.1. MATERIAL: DISTRIBUTION MANIFOLDS SHALL BE A PROVEN CATALOGED PART OF THE MANUFACTURER'S SYSTEM.

3.11.2. BALANCING MANIFOLDS: ALL MANIFOLDS SHALL BE EQUIPPED WITH BALANCING AND ISOLATION VALVES FOR EACH CIRCUIT.

3.12. CONTROLS
3.12.1. PROVIDE A THERMOSTAT TO CONTROL A SOLENOID ACTUATED VALVE ON THE SUPPLY TO EACH IN-FLOOR LOOP AS SPECIFIED.

3.13. PREPARATION
3.13.1. CONCRETE SUBFLOOR: SUBFLOOR MUST BE CLEAN AND FREE FROM ALL CONSTRUCTION DEBRIS WHICH COULD POTENTIALLY DAMAGE THE TUBE.

3.13.2. PREPARING TEH WALL CAVITY FOR MANIFOLD INSTALLATION: SEE DRAWINGS TO DETERMINE THE WIDTH OF THE WALL CABINET AND REQUIRED WALL OPENING DIMENSIONS. MOUNT MANIFOLD CABINET ALLOWING SPACE FOR THE SCREED TO FILL UP THE FRONT OF THE TUBE OPENING.

3.14. INSTALLATION
3.14.1. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED TECHNICAL MANUAL.

3.14.2. ROUTE TUBING IN AN ORDERLY MANNER, ACCORDING TO LAYOUT AND SPACING SHOWN ON THE APPROVED SUBMITTAL DRAWINGS. ALL NOTES ON DRAWINGS SHALL BE FOLLOWED.

3.14.3. ALL JOINTS AND FITTINGS: SQUARE AND CLEAN END OF TUBE, USING A PLASTIC TUBE CUTTER, AND JOIN IMMEDIATELY OR CAP WITH TAPE TO SEAL FROM CONTAMINANTS. WHERE FITTINGS ARE INSTALLED WITHIN THE THERMAL MASS THEY SHALL BE WRAPPED IN CHLORIDE-FREE TAPE.

3.14.4. REMOVE ALL TWISTS PRIOR TO SECURING TUBE. FASTEN TUBE AT NO MORE THAN 3 FOOT INTERVALS, BEING CAREFUL NOT TO TWIST THE TUBE. IN THIN CONCRETE SLABS IT MAY BE NECESSARY TO SECURE TUBING EVERY 2 FEET.

3.14.5. TUBING THAT MUST PASS THROUGH EXPANSION JOINTS SHALL BE SLEEVED 10" ON EACH SIDE OF JOINT.

3.14.6. WHERE TUBING EXITS THE FLOOR, A SLEEVE SHALL BE PLACED AROUND THE TUBE, WITH THE SLEEVE EXTENDING A MINIMUM OF 10" INTO THE FLOOR AND EXISTING BY A MINIMUM OF 10".

3.14.7. AFTER LAYING EACH CIRCUIT, CAP THE END OF THE TUBE WITH TAPE AND LABEL THE TUBE'S CIRCUIT NUMBERS (SUPPLY AND RETURN), OR CONNECT TO ASSOCIATED MANIFOLD AND LABEL TUBE LENGTH FOR BALANCING.

3.14.8. THE FOLLOWING PRECAUTIONS SHALL BE TAKEN IN AREAS INTENDED FOR CARPET: NOTIFY THE CARPET LAYER THAT HYDRONIC FLOOR HEATING HAS BEEN INSTALLED AND INSTALL METAL GUARDS WHERE CARPET TACK STRIPS WILL BE INSTALLED.

3.14.9. THE HEATING SYSTEM SHALL BE PUT INTO OPERATION AFTER THE POURED CONCRETE THERMAL MASS HAS CURED A MINIMUM OF 28 DAYS. IF IT IS NECESSARY TO OPERATE THE HEATING SYSTEM TO PREVENT FREEZING, A MAXIMUM FLOW TEMPERATURE OF 59 DEGREES F MUST NOT BE EXCEEDED WHILE THE THERMAL MASS IS CURING. GRADUALLY INCREASE THE FLOOR TEMPERATURE BY 10 DEGREES F EACH DAY UNTIL IT REACHES THE MAXIMUM OPERATING TEMPERATURE.

3.15. FIELD QUALITY CONTROL
3.15.1. FILLING, TESTING, AND BALANCING: TESTS OF HYDRONIC HEATING SYSTEMS SHALL COMPLY WITH THE LOCAL CODES, AND WHERE REQUIRED, SHOULD BE WITNESSED BY THE BUILDING OFFICIAL (REFERENCE BOCA, IAPMC, OR THE ACCEPTABLE CODE BODY FOR THE GEOGRAPHIC AREA).

3.15.2. PRESSURE GAUGES USED FOR TESTING SHALL HAVE INCREMENTS OF 1 PSIG AND SHOULD BE LOCATED AT OR NEAR THE LOWEST POINTS IN THE DISTRIBUTION SYSTEM.

3.15.3. AIR TEST: CHARGE THE COMPLETED, YET UNCONCEALED TUBES WITH AIR. DO NOT EXCEED 100 PSIG.

3.15.4. USE A LIQUID GAS DETECTOR OR SOAP TO CHECK FOR LEAKAGE AT MANIFOLD CONNECTIONS. RELIEVE AIR PRESSURE.

3.15.5. WATER TEST: CHARGE THE COMPLETED, YET UNCONCEALED TUBES WITH WATER. PURGE ALL AIR FROM TUBES. CHECK THE SYSTEM FOR LEAKAGE, ESPECIALLY AT ALL TUBE JOINTS. TAKE NECESSARY PRECAUTIONS TO PREVENT WATER FROM FREEZING.

3.15.6. PERFORM A PRELIMINARY PRESSURE TEST PRESSURIZING THE SYSTEM TO 1.5 TIMES THE MAXIMUM OPERATING PRESSURE, OR 100 PSIG, WHICHEVER IS GREATER FOR 30 MINUTES. AS THE TUBING EXPANDS, RESTORE PRESSURE, FIRST AT 10 MINUTES INTO THE TEST AND AGAIN AT 20 MINUTES. AT THE END OF THE 30 MINUTE PRELIMINARY TEST, PRESSURE MUST NOT FALL BY MORE THAN 8 PSIG FROM THE MAXIMUM, AND THERE SHALL BE NO LEAKAGE.

3.15.7. AFTER PERFORMING THE PRELIMINARY TEST, PERFORM THE MAIN PRESSURE TEST IMMEDIATELY. THE MAIN PRESSURE TEST SHALL LAST FOR 2 HOURS. THE TEST PRESSURE SHOULD BE RESTORED AND MUST NOT FALL MORE THAN 3 PSIG AFTER 2 HOURS. NO LEAKAGE SHALL BE DETECTED.

3.15.8. PRESSURE SHALL BE MAINTAINED DURING INSTALLATION OF THERMAL MASS.

3.15.9. COMPLETE ALL INSPECTION AND TEST REPORTS AS SUPPLIED BY THE MANUFACTURER OF THE SYSTEM.

3.16. LABELING
3.16.1. LABEL EACH LOOP ON PIPING AS PER LAYOUT DRAWING. USE SELF-ADHESIVE TYPE LABELS TO ASSIST IN BALANCING THE SYSTEM.

3.17. SUPPLY AND RETURN PIPE MAINS TO MANIFOLDS
3.17.1. HOT WATER PIPING: BLACK STEEL SCHEDULE 40, THREADED SCHEDULE 40 FITTINGS, SCREWED JOINTS. WELDED JOINTS FOR SIZES 63mm (2½") AND LARGER. COPPER PIPING: 95/5 SOLDERED JOINTS ALSO ACCEPTABLE.

3.17.2. INSULATE PIPING AS PER INSULATION SECTION.

3.17.3. PROVIDE PIPING EXPANSION COMPENSATION BY MEANS OF EXPANSION LOOPS AND OFFSETTING OF PIPES.

3.17.4. BRANCH TAKE-OFFS OFF HEATING PIPES SHALL BE OFF THE TOP HALF OF MAINS.

3.18. VALVES
3.18.1. RED AND WHITE, RISING STEM, 125 PSIG RATING.

3.19. VENTS
3.19.1. INSTALL MAID-O-MIST NO. 71 AUTOMATIC VENTS AT ALL HIGH POINTS.

3.20. THERMOMETERS
3.20.1. LIQUID IN GLASS GAUGE THERMOMETERS TO BE ASHCRAFT INC, MARSH BELLOFRAM, WEISS INSTRUMENT INC. OR EQUAL.

3.20.2. THERMOMETER TO BE DIECAST AND ALUMINUM FINISHED IN BAKED EPOXING ENAMEL, GLASS FRONT, SPRING SECURED, 9" LONG.

3.20.3. ADJUSTABLE JOINT WITH FINISH TO MATCH CASE, 180 DEGREE ADJUSTABLE IN VERTICAL PLANE, 360 DEGREE ADJUSTMENT IN HORIZONTAL PLANE WITH LOCKING DEVICE.

3.20.4. TUBE RED OR BLUE READING, MERCURY FILLED WITH MAGNIFYING LENS.

3.20.5. SCALE: SATIN FACED NON REFLECTING ALUMINUM WITH PERMANENTLY ETCHED MARKINGS.

3.20.6. STEM: BRASS FOR SEPARATE SOCKET OF LENGTH TO SUIT INSTALLATION.

3.20.7. SCALE RANGE 30 TO 240 DEGREE F WITH 2 DEGREE SCALE DIVISION AND ACCURACY OF PLUS OR MINUS 1 PERCENT OF RANGE SPAN.

3.21. PRESSURE GAUGES
3.21.1. ASME B40.100, PHOSPHOR BRONZE BOURDON-TUBE TYPE WITH BOTTOM CONNECTION, LIQUID FILLED CASE TYPE.

3.21.2. DRAWN STEEL, BRASS, OR ALUMINUM CASE WITH 4½" DIAMETER GLASS LENS.

3.21.3. CONNECTOR: BRASS NPS ¼ (DN8).

3.21.4. SCALE: WHITE COATED ALUMINUM WITH PERMANENTLY ETCHED MARKINGS.

3.21.5. RANGE: TWO TIMES OPERATING PRESSURE OR 0 TO 100 PSI WITH GRADE A ACCURACY PLUS OR MINUS 1 PERCENT OF MIDDLE 50 PERCENT OF SCALE.

3.21.6. PRESSURE GAUGE FITTINGS TO INCLUDE VALVES NPS ¼ (DN8) BRASS NEEDLE TYPE WITH ROUND KNURLED HANDLE AND SNUBBERS TO ASME B40.5 NPS ¼ (DN8) EXTENDED STEM BRASS BUSHING WITH CORROSION RESISTANT POROUS METAL DISK OF MATERIAL SUITABLE FOR SYSTEM FLUID AND WORKING PRESSURE.

3.22. SYSTEM CLEANING AND CHEMICAL TREATMENT
3.22.1. SYSTEM CLEANING AND CHEMICAL TREATMENT TO BE PERFORMED BY A QUALIFIED CHEMICAL TREATMENT CONTRACTOR.

3.22.2. CLEAN AND DEGREASE THE SYSTEM BY FLUSHING SYSTEM FOR EIGHT (8) HOURS WITH 3% NON FOAMING, PHOSPHATE FREE DETERGENT.

3.22.3. CHARGE BOILER SYSTEM WITH A SOLUTION OF 10% ALUMINUM COMPATIBLE PROPYLENE GLYCOL (COMPATIBLE WITH HEATING EQUIPMENT) AND WATER. CHARGE SOLAR SYSTEM WITH A SOLUTION OF 50% SOLAR PROPYLENE GLYCOL AND WATER. CHARGE SNOW MELT SYSTEM WITH A SOLUTION OF 30% PROPYLENE GLYCOL AND WATER.

3.22.4. TREAT WATER WITH PH ADJUSTMENT AND CORROSION INHIBITOR CHEMICALS.

3.23. EXPANSION JOINTS
3.23.1. INNER HOSE STAINLESS STEEL CORRUGATE, BRAIDED WIRE MESH OUTER JACKET, LENGTH AS PER MANUFACTURER'S RECOMMENDATIONS.

3.23.2. THREE FLEXIBLE GROOVE COUPLING PLACED IN CLOSE PROXIMATE TO VIBRATION SOURCE FOR VIBRATION ATTENTION RELIEF.

3.23.3. PIPE ALL DRAIN LINES TO DRAINS.

3.23.4. PROVIDE GUARDS FOR ALL EXPOSED DRIVES.

3.24. SUPPORTS
3.24.1. MECHANICAL ROOM PIPING SHALL BE SUPPORTED WITH CLEVIS HANGERS TO PREVENT EXCESSIVE STRESS ON BOILERS AND CIRCULATING PUMPS.

4. HEATING/VENTILATION

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

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

4.1.3. BALANCING DAMPERS SHALL BE INSTALLED IN ALL BRANCHES AS REQUIRED.

4.1.4. ALL EQUIPMENT SHALL BE AS SPECIFIED OR APPROVED EQUAL.

4.1.5. ALL EXPOSED DUCTWORK TO BE SPIRAL ROUND UNLESS OTHERWISE NOTED.

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

4.1.7. ALL DUCTWORK & ALL FITTINGS TO MEET SMACNA DESIGN STANDARDS.

4.1.8. PROVIDE FLEX CONNECTIONS, 6mm (1/4") DURODYNE CONFLEX PCV COATED POLYESTER AT INLET AND OUTLETS OF ALL HVAC AND FAN UNITS.

4.1.9. CLEAN ALL EQUIPMENT AND CHANGE ALL FILTERS PRIOR TO OCCUPANCY. PROVIDE 1 SET OF SPARE FILTERS ON SITE FOR OWNER.\

4.2. BALANCING
4.2.1. BALANCING OF ALL VENTILATION AND HYDRONIC SYSTEMS AS INDICATED SHALL BE DONE BY THE MECHANICAL CONTRACTOR WHEN ALL EQUIPMENT IS OPERATING UNDER FULL LOAD. THE CONTRACTOR SHALL ALLOW SUFFICIENT FUNDS TO CHANGE THE PULLEYS ON MOTORS OR FANS TO PROPERLY BALANCE THE SYSTEM AT THE LOWEST FAN RPM.

4.2.2. BALANCING CONTRACTOR SHALL BALANCE ALL AIR OUTLETS AND EQUIPMENT VOLUMES TO WITHIN 5% OF DESIGNED VALUES.

4.2.3. BALANCING CONTRACTOR SHALL SUBMIT FOR REVIEW THREE (3) COPIES OF THE REPORT CONTAINING THE FOLLOWING:
- 4.2.3.1. SUPPLY AND RETURN AIR VOLUMES, SUCTION, DISCHARGE, AIR PRESSURE, RPM, AND AMPS OF ALL SUPPLY, RETURN, AND/OR EXHAUST FANS.
- 4.2.3.2. SUPPLY, RETURN, AND/OR EXHAUST AIR VOLUMES OF ALL GRILLES AND DIFFUSERS.
- 4.2.3.3. SKETCH LAYOUT OF DUCT SYSTEMS SHOWING DETAIL OF BALANCE.
- 4.2.3.4. FLOWS OF ALL MANIFOLDS, LOOPS, PUMPS, AND AMPS OF ALL PUMP MOTORS.

5. INSULATION

5.1. GENERAL
5.1.1. ALL INSULATION AND MATERIALS ASSOCIATED WITH INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED CLASSIFICATION OF NOT MORE THAN 50.

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

5.1.3. RECOVERING JACKET ON DUCTWORK SHALL BE ULC LISTED "THERMO CANVAS" TREATED COTTON FABRIC, SUITABLE FOR PAINTING. PROVIDE RECOVERING JACKET ON ALL EXPOSED INSULATION THROUGHOUT, INCLUDING EQUIPMENT ROOM. INSULATION LOCATED IN PIPE SHAFTS AND SUSPENDED CEILING SPACES IS NOT CONSIDERED EXPOSED.

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

5.1.5. INSULATE DUCTWORK WITH MANSON ALLEY WRAP INSULATION OR EQUIVALENT FACED WITH FSK FOR AN EFFECTIVE VAPOUR BARRIER.

5.1.6. LINE DUCTWORK WITH MANSON ACOUSTI-LINER, 0.68 kg (1.5 lbs.) DENSITY COATED SURFACE SHALL FACE AIR STREAM. ALL DUCTWORK IN SUPPLY AND RETURN AIR PLENUMS SHALL BE INSULATED. DUCT SIZES SHOWN ARE CLEAR INSIDE.
- 5.1.6.1. INSULATION SCHEDULE:
- 5.1.6.2. HOT, COLD, AND HOT WATER RECIRC WATER LINES - 25mm (1")
- 5.1.6.3. PLUMBING VENTS WITHIN 3.0m (10'-0") OF ATTIC OR COLD ROOF OR COLD WALL COMPLETE WITH FOIL FACED VAPOUR BARRIER - 38mm (1½")
- 5.1.6.4. ROOF DRAINS, HOPPERS AND PIPING WITHIN 5m (16'-0") OF ROOF DRAIN OR COLD WALL - 38mm (1½")
- 5.1.6.5. EXHAUST DUCTS FROM CEILING MOUNTED FANS TO ROOF OR WALL DISCHARGE - EXTERNAL 38mm (1½")
- 5.1.6.6. EXHAUST DUCTS WITHIN 3.0m (10'-0") OF ATTIC OR COLD ROOF OR COLD WALL COMPLETE WITH FOIL FACED VAPOUR BARRIER - 38mm (1½")
- 5.1.6.7. SUPPLY AND RETURN AIR PLENUMS OF HVAC UNITS - INTERNAL - 25mm (1")
- 5.1.6.8. SUPPLY AIR DUCTS CONCEALED WITHIN CEILING SPACES - 38mm (1½")
- 5.1.6.9. OUTDOOR AIR INTAKES - 50mm (2")
- 5.1.6.10. EXTERIOR SUPPLY AIR DUCTS - EXTERNAL - 75mm (3") RIGID FIBREGLASS DUCT INSULATION WITH STUCCO EMBOSSED ALUMINUM JACKET
- 5.1.6.11. REFRIGERANT PIPING - ARMAFLEX AS PER MANUFACTURER'S SPECIFICATIONS AND REQUIREMENTS
- 5.1.6.12. HYDRONIC HEATING AND/OR COOLING SUPPLY AND RETURN PIPING - 25mm (1")

6. FIRE PROTECTION

6.1. FIRE EXTINGUISHERS
6.1.1. FIRE EXTINGUISHERS: FIRE PROTECTION CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS AS PER PLAN, IN ACCORDANCE WITH NFPA #10 ON WALL HANGERS AND/OR WITHIN CABINETS AS PER PLANS.

6.2. AUTOMATIC SPRINKLER SYSTEM
6.2.1. SPRINKLER SYSTEM IS A WET PIPE TYPE, DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA STANDARD #13.

6.2.2. SPRINKLERS SHALL BE PROTECTED AGAINST MECHANICAL INJURY BY STANDARD GUARDS, WHERE NECESSARY.

6.2.3. SPRINKLERS HEADS, IN AREAS WITH NO CEILINGS, SHALL BE OF UPRIGHT TYPE, OF CAST BRASS CONSTRUCTION.

6.2.4. SPRINKLERS HEADS, IN AREAS WITH CEILINGS, SHALL BE OF PENDANT TYPE, OF CHROME PLATED BRASS CONSTRUCTION WITH FLUSH ESCUTCHEON PLATES.

6.2.5. PROVIDE DOUBLE CHECK VALVE BACKFLOW PREVENTER ASSEMBLY, WATTS OR EQUAL, ON WATER SERVICE CONNECTION ON INLET SIDE OF SPRINKLER TREE AS PER LOCAL REQUIREMENTS. SEE PLANS.

6.2.6. PROVIDE FIRE DEPARTMENT CONNECTION AND ALARM BELL (IF REQUIRED) AS SHOWN ON FIRE PROTECTION DRAWINGS AS PER NFPA #13.

6.2.7. PROVIDE HIGH TEMPERATURE RATED HEADS ADJACENT TO ALL HEAT PRODUCING EQUIPMENT SUCH AS UNIT HEATERS, ETC.

7. CONTROLS

7.1. GENERAL
7.1.1. ALL THERMOSTATS, THERMOMETERS, AND CONTROLLERS UNLESS OTHERWISE STATED SHALL BE PROGRAMMABLE, RATED IN CELSIUS DEGREES, SHALL BE ACCURATE TO WITHIN ±1°C, AND MOUNTED BETWEEN 1400mm AND 1500mm ABOVE THE FINISHED FLOOR LEVEL.

7.1.2. ALL THERMOSTATS, THERMOMETERS, AND CONTROLLERS SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTROLS SUB CONTRACTOR.

7.1.3. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR POWER TO MECHANICAL EQUIPMENT BY THE ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL LINE VOLTAGE WIRING. MECHANICAL/CONTROLS CONTRACTOR IS RESPONSIBLE FOR ALL LOW VOLTAGE WIRING.

7.1.4. PROVIDE BOILER CONTROLS AS SPECIFIED ON HEATING DRAWINGS AND BOILER SCHEMATIC.

7.1.5. PROVIDE THERMOSTATS AND ELECTRIC ACTUATORS FOR IN-FLOOR RADIANT HEATING SYSTEM.

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DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

CLIENT:
JAMES ZIMMER ARCHITECT

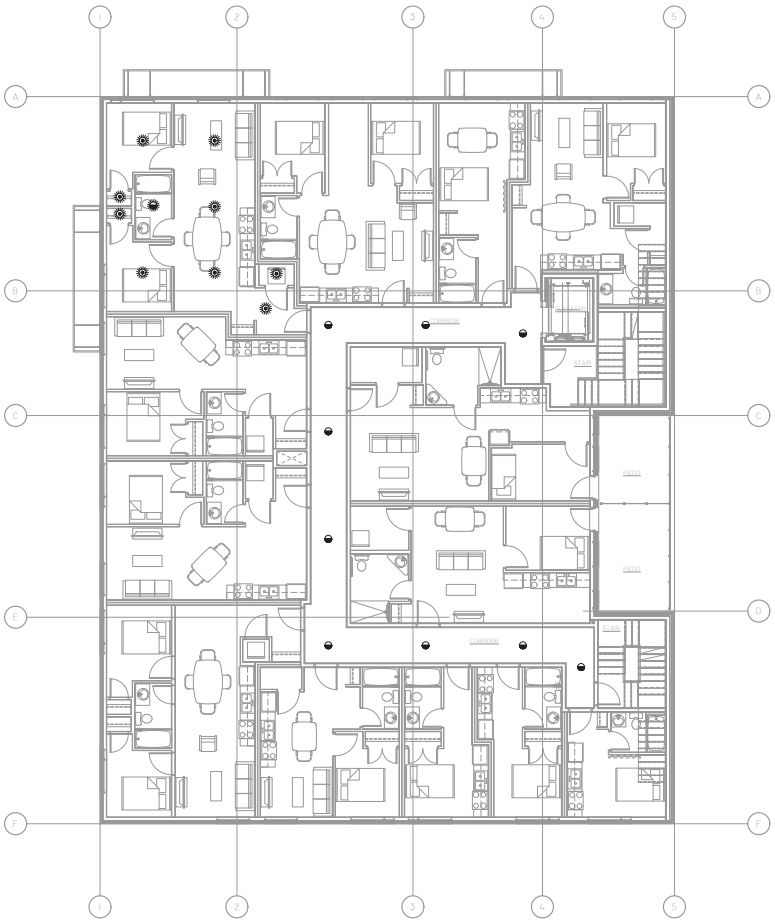
PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
MECHANICAL SPECIFICATIONS

PROJECT :24S-039
DATE : 01/20/2025
SCALE : AS NOTED
DRAWN : I.R.
CHECKED :O.O.

DRAWING NUMBER:
M6.6
REV:0



1 M5.2 SECOND & THIRD FLOOR PLAN FIRE PROTECTION
SCALE: 1/8" = 1'-0"

FIRE PROTECTION GENERAL NOTES

1. SPRINKLER SYSTEM TO BE BASED ON NFPA#13R OCCUPANCY.
2. SPRINKLER CONTRACTOR IS RESPONSIBLE FOR A COMPLETE SYSTEM WITHIN THE BUILDING AND SHALL ADD ADDITIONAL HEADS WHERE PATTERN INTERFERES WITH LIGHTING, STRUCTURAL, AND MECHANICAL SYSTEM ARRANGEMENTS.
3. ALL EQUIPMENT TO BE UL LISTED AND SUPPLIED AND INSTALLED AS PER NFPA#13 & NFPA#13R.
4. CONTRACTOR SHALL QUOTE THE SUPPLY AND INSTALLATION OF A COMPLETE SYSTEM WHETHER OR NOT ALL OF THE HARDWARE IS DETAILED HEREON AND IN THE SPECIFICATIONS.
5. ALL PIPING AND SPRINKLER HEADS ARE SHOWN SCHEMATICALLY.
6. SPRINKLER CONTRACTOR TO PROVIDE AND SUBMIT HYDRAULIC CALCULATIONS AND SHOP DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER TO THE LOCAL AUTHORITY HAVING JURISDICTION AND OWNER'S INSURANCE UNDERWRITERS FOR REVIEW AND APPROVAL.
7. PIPING TO BE CPVC PLASTIC SDR 13 CONFORMING TO ASTM F443, UL, AND ULC LISTED. 3/4" TO 1-1/4" SCHEDULE 40 FITTINGS, 1-1/2" TO 3" SCHEDULE 80 FITTINGS. INSTALL AS PER NFPA#13, NFPA#13R, MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. PROVIDE FIRE STOPS AROUND ALL PIPING WHICH PASS THROUGH FIRE SEPARATIONS.
9. ALL HEADS SUBJECT TO DAMAGE TO HAVE WIRE GUARDS.
10. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL WIRING AND CONNECTIONS. SPRINKLER CONTRACTOR TO CO-ORDINATE. THE CORRECT ELECTRICAL OPERATION OF ALL SPRINKLER FLOW SWITCHES, TAMPER SWITCHES, AND PRESSURE SWITCHES SHALL BE CONFIRMED PRIOR TO THE FORMAL FIRE ALARM VERIFICATION.
11. CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL WIRING AND CONNECTIONS.
12. ALL PIPING TO BE EXPOSED AND PAINTED WITH LATEX BASED PAINT AS PER NFPA#13R AND AUTHORITY HAVING JURISDICTION.
13. EXISTING SPRINKLER HEAD LOCATIONS WERE OBTAINED FROM EXISTING SPRINKLER SHOP DRAWING. CONTRACTOR TO DETERMINE EXACT NUMBER AND LOCATION ON SITE.
14. PROVIDE SPRINKLER TEST CERTIFICATE ON COMPLETION.
15. THE SPRINKLER CONTRACTOR SHALL BE PRESENT AT THE FIRE ALARM VERIFICATION TO DEMONSTRATE THE OPERATION OF THESE DEVICES.
16. SPRINKLER CONTRACTOR TO SUPPLY FIRE EXTINGUISHER CABINETS AND FIRE EXTINGUISHERS AS INDICATED. UNITS TO BE LABELED AND INSTALLED AS PER NFPA#10. ALL INSTRUCTION FOR THE OPERATION AND MAINTENANCE OF FIRE EXTINGUISHERS TO BE PERMANENTLY AFFIXED TO EACH UNIT.
17. SPRINKLER HEADS NEAR HEAT PRODUCING EQUIPMENT SUCH AS UNIT HEATERS, ETC. TO BE HIGH TEMPERATURE RATED.

FIRE PROTECTION KEYNOTES

(#)

1

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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

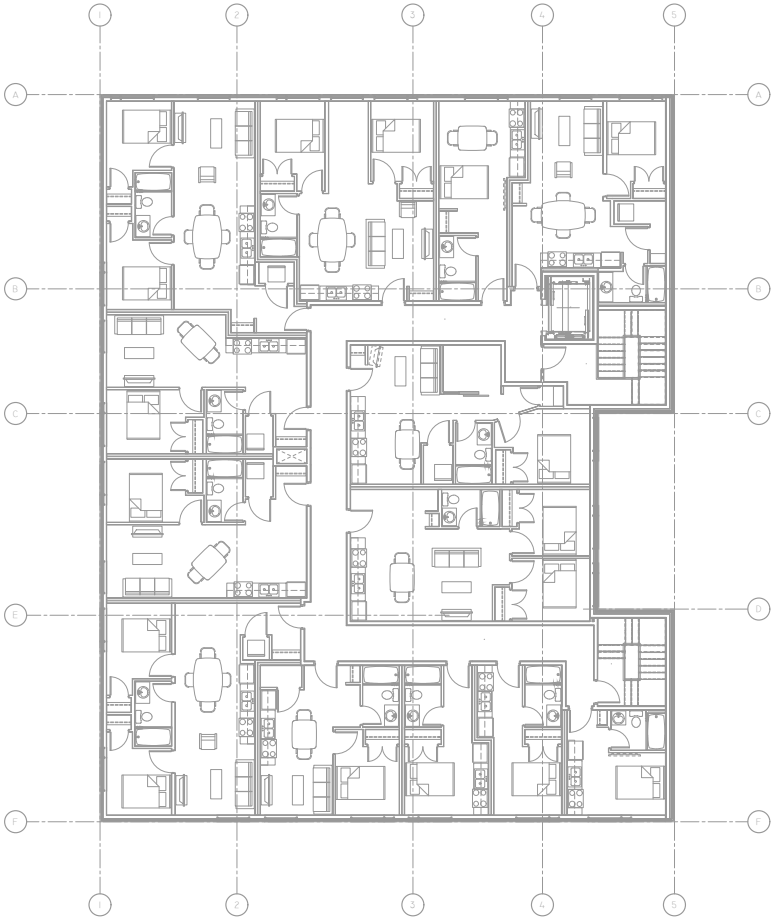
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
SECOND & THIRD FLOOR PLAN FIRE PROTECTION

PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M5.2
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M5.3 FOURTH, FIFTH, AND SIXTH FLOOR PLAN FIRE PROTECTION
SCALE: 1/8" = 1'-0"

FIRE PROTECTION GENERAL NOTES

1. SPRINKLER SYSTEM TO BE BASED ON NFPA#13R OCCUPANCY.
2. SPRINKLER CONTRACTOR IS RESPONSIBLE FOR A COMPLETE SYSTEM WITHIN THE BUILDING AND SHALL ADD ADDITIONAL HEADS WHERE PATTERN INTERFERES WITH LIGHTING, STRUCTURAL, AND MECHANICAL SYSTEM ARRANGEMENTS.
3. ALL EQUIPMENT TO BE UL LISTED AND SUPPLIED AND INSTALLED AS PER NFPA#13 & NFPA#13R.
4. CONTRACTOR SHALL QUOTE THE SUPPLY AND INSTALLATION OF A COMPLETE SYSTEM WHETHER OR NOT ALL OF THE HARDWARE IS DETAILED HEREON AND IN THE SPECIFICATIONS.
5. ALL PIPING AND SPRINKLER HEADS ARE SHOWN SCHEMATICALLY.
6. SPRINKLER CONTRACTOR TO PROVIDE AND SUBMIT HYDRAULIC CALCULATIONS AND SHOP DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER TO THE LOCAL AUTHORITY HAVING JURISDICTION AND OWNER'S INSURANCE UNDERWRITERS FOR REVIEW AND APPROVAL.
7. PIPING TO BE CPVC PLASTIC SDR 13 CONFORMING TO ASTM F443, UL, AND ULC LISTED. 3/4" TO 1-1/4" SCHEDULE 40 FITTINGS, 1-1/2" TO 3" SCHEDULE 80 FITTINGS. INSTALL AS PER NFPA#13, NFPA#13R, MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. PROVIDE FIRE STOPS AROUND ALL PIPING WHICH PASS THROUGH FIRE SEPARATIONS.
9. ALL HEADS SUBJECT TO DAMAGE TO HAVE WIRE GUARDS.
10. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL WIRING AND CONNECTIONS. SPRINKLER CONTRACTOR TO CO-ORDINATE. THE CORRECT ELECTRICAL OPERATION OF ALL SPRINKLER FLOW SWITCHES, TAMPER SWITCHES, AND PRESSURE SWITCHES SHALL BE CONFIRMED PRIOR TO THE FORMAL FIRE ALARM VERIFICATION.
11. CONTRACTOR IS RESPONSIBLE FOR ELECTRICAL WIRING AND CONNECTIONS.
12. ALL PIPING TO BE EXPOSED AND PAINTED WITH LATEX BASED PAINT AS PER NFPA#13R AND AUTHORITY HAVING JURISDICTION.
13. EXISTING SPRINKLER HEAD LOCATIONS WERE OBTAINED FROM EXISTING SPRINKLER SHOP DRAWING. CONTRACTOR TO DETERMINE EXACT NUMBER AND LOCATION ON SITE.
14. PROVIDE SPRINKLER TEST CERTIFICATE ON COMPLETION.
15. THE SPRINKLER CONTRACTOR SHALL BE PRESENT AT THE FIRE ALARM VERIFICATION TO DEMONSTRATE THE OPERATION OF THESE DEVICES.
16. SPRINKLER CONTRACTOR TO SUPPLY FIRE EXTINGUISHER CABINETS AND FIRE EXTINGUISHERS AS INDICATED. UNITS TO BE LABELED AND INSTALLED AS PER NFPA#10. ALL INSTRUCTION FOR THE OPERATION AND MAINTENANCE OF FIRE EXTINGUISHERS TO BE PERMANENTLY AFFIXED TO EACH UNIT.
17. SPRINKLER HEADS NEAR HEAT PRODUCING EQUIPMENT SUCH AS UNIT HEATERS, ETC. TO BE HIGH TEMPERATURE RATED.

FIRE PROTECTION KEYNOTES

(#)

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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 90% REVIEW

CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
FOURTH, FIFTH, & SIXTH FLOOR PLAN FIRE PROTECTION

PROJECT :24S-039	DRAWING NUMBER: M5.3
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0

PIPING SYMBOL LEGEND

ITEM	DESCRIPTION
	GATE VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	REDUCED PRESSURE PRINCIPLE BACK-FLOW PREVENTOR
	DOUBLE CHECK VALVE
	GLOBE VALVE
	LOCKSHIELD BALANCING VALVE
	CONTROL VALVES
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	CIRCUIT BALANCING VALVE
	AUTOMATIC FLOW CONTROL DEVICE
	AUTOMATIC FLOW CONTROL DEVICE WITH INTEGRAL VALVE AND STRAINER
	PRESSURE INDEPENDENT AUTOMATIC FLOW CONTROL VALVE WITH DDC CONTROL MOTOR
	O S & Y VALVE
	GAS COCK
	FLEXIBLE PIPE CONNECTION
	STRAINER
	UNION
	PIPE ANCHOR AND GUIDES
	EXPANSION JOINT
	DIRECTION OF FLOW
	PIPE CAP
	TRIPLE DUTY VALVE - SUCTION DIFFUSER
	AIR VENTS - MANUAL AND AUTOMATIC
	STEAM TRAP - FLOAT AND THERMOSTATIC
	STEAM TRAP - BUCKET
	STEAM TRAP - THERMOSTATIC
	HOSE BIBB
	NON FREEZE HOSE BIBB
	TRAP
	FLOOR DRAIN & FUNNEL FLOOR DRAIN
	CONNECT NEW PIPE TO EXISTING
	CLEAN-OUT
	PIPE DROP
	PIPE RISE
	PIPE TEE
	PIPE ELBOW
	PIPE CONTINUATION
TO DRAIN	CONNECT TO DRAIN - INDIRECT
1% SLOPE	PIPE SLOPE
	TEMPERATURE GAUGE
	PRESSURE GAUGE
	P & T PLUG

NOTE: ALL MAY NOT BE USED IN THESE DRAWINGS.

DUCT LEGEND

ITEM	DESCRIPTION
	DIRECTION OF FLOW
	FIRE DAMPER
	FIRE/SMOKE DAMPER
	FIRE STOP FLAP
	METAL WALL CAP
	DUCT CONTINUATION - RECTANGULAR
	DUCT CONTINUATION - ROUND
	EXISTING DUCT-WORK TO REMAIN
	EXISTING DUCT-WORK TO BE REMOVED
	NEW DUCT-WORK
	DUCTWORK WITH INTERNAL INSULATION
	BALANCING DAMPER / VOLUME EXTRACTOR
	SUPPLY DUCTWORK - UP & DOWN
	OUTDOOR DUCTWORK - UP & DOWN
	RETURN AIR DUCTWORK - UP & DOWN
	EXHAUST DUCTWORK - UP & DOWN
	ROUND DUCTWORK - UP & DOWN
	FLEXIBLE DUCTWORK (1200mm MAXIMUM LENGTH)
	DUCTWORK CONICAL T's
	DUCTWORK ELBOW WITH TURNING VANES
	MOTORIZED DAMPER

NOTE: ALL MAY NOT BE USED IN THESE DRAWINGS.

FIRE PROTECTION

ITEM	DESCRIPTION
	SPRINKLER HEAD - PENDANT
	SPRINKLER HEAD - UPRIGHT
	SPRINKLER HEAD - PENDANT SEMI-RECESSED
	SPRINKLER HEAD - PENDANT - CONCEALED
	SPRINKLER HEAD - SIDEWALL
	SPRINKLER HEAD - INSTITUTIONAL (QUICK RESPONSE)
	REMOVE EXISTING SPRINKLER HEAD
	SPRINKLER HEADS - EXTENDED COVERAGE
	SPRINKLER HEADS - QUICK RESPONSE
	SPRINKLER HEADS - DRY TYPE
	SPRINKLER HEADS - HIGH TEMPERATURE
	FIRE PROTECTION VALVE - WITH SWITCH FOR FIRE ALARM SYSTEM
	CHECK VALVE WITH BALL DRIP
	FIRE HOSE CABINET
	FIRE EXTINGUISHER
	FIRE EXTINGUISHER C/W SEMI-RECESSED CABINET
	FIRE EXTINGUISHER C/W FULL RECESSED CABINET
	FIRE DEPARTMENT CONNECTION
	FIRE HYDRANT
	FIRE PROTECTION SYSTEM GONG

NOTE: ALL MAY NOT BE USED IN THESE DRAWINGS.

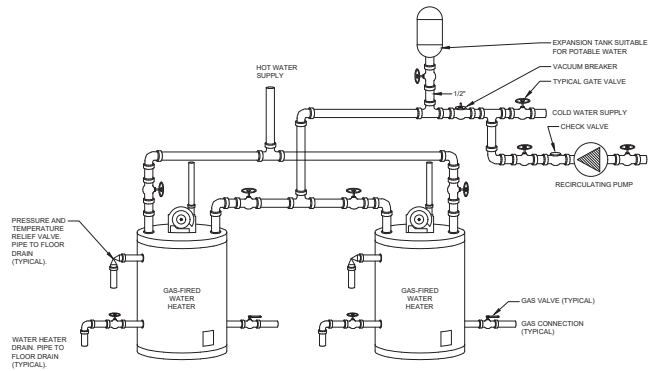
CONTROLS LEGEND

ITEM	DESCRIPTION
T H	THERMOSTAT / HUMIDISTAT
T	THERMOSTAT c/w GUARD
S	FAN SPEED CONTROL
CO2	CO2 SENSOR
	CONTROL CONNECTIONS
TS	TEMPERATURE SENSOR
T	TEMPERATURE SENSOR
F	FLOW SENSOR
	TEMPERATURE GAUGE
	PRESSURE GAUGE

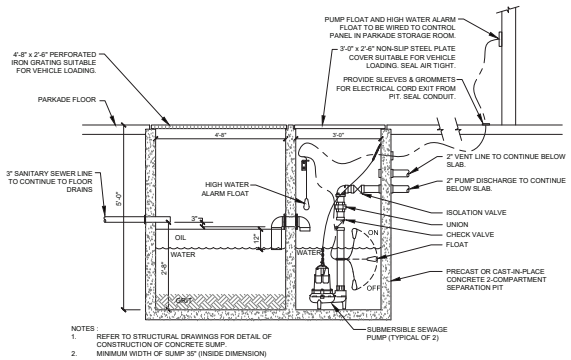
BASEBOARD RADIATION SCHEDULE

A — LENGTH (mm)

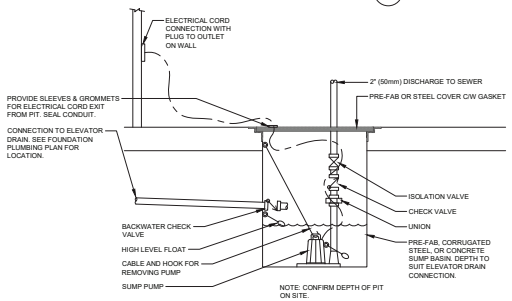
NOTE: ALL MAY NOT BE USED IN THESE DRAWINGS.



4 M6.1 WATER HEATER PIPING SCHEMATIC
SCALE: N.T.S.

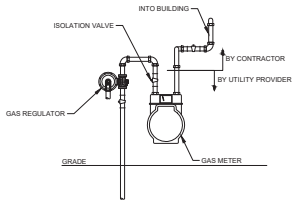


1 M6.1 SEPARATION PIT PIPING DETAIL
SCALE: N.T.S.



2 M6.1 ELEVATOR SUMP PUMP/PIT DETAIL
SCALE: N.T.S.

GAS PIPING SIZED OFF 250FT OF PIPING @ 5 LBS GAS PRESSURE FROM METER. MECH CONTRACTOR TO CONFIRM ALL DISTANCES ON SITE AND SUBMIT GAS PIPING SCHEMATIC & SIZING TO P.S.ENGINEERING FOR REVIEW PRIOR TO INSTALL.



3 M6.1 GAS METER DETAIL
SCALE: N.T.S.

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DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION:

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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

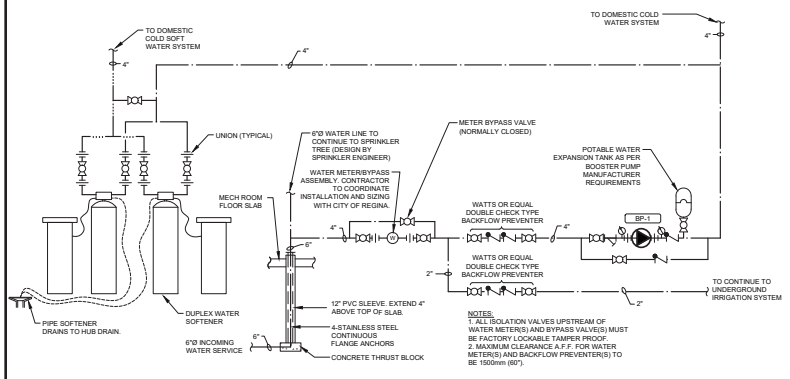
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

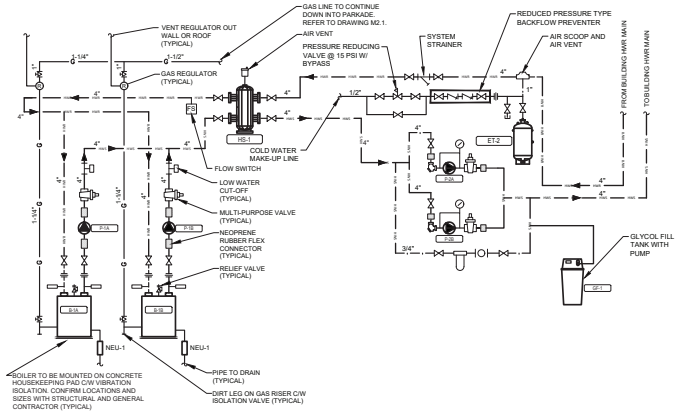
1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
MECHANICAL LEGENDS & DETAILS

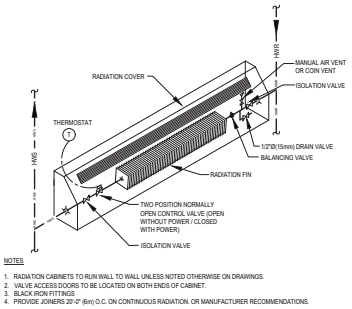
PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M6.1
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



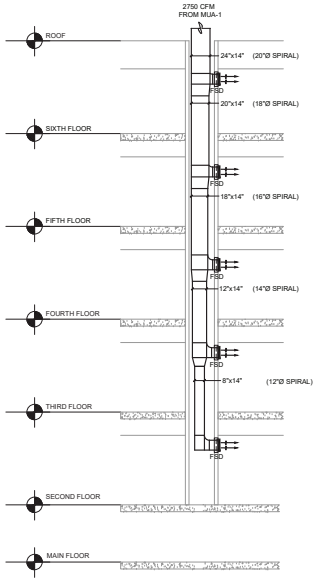
1 M6.2 WATER SERVICE PIPING SCHEMATIC
SCALE: N.T.S.



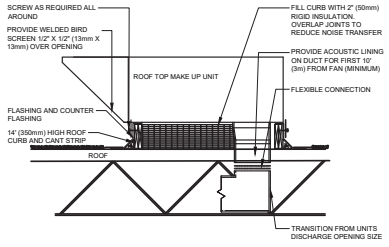
2 M6.2 HEATING SYSTEM SCHEMATIC
SCALE: N.T.S



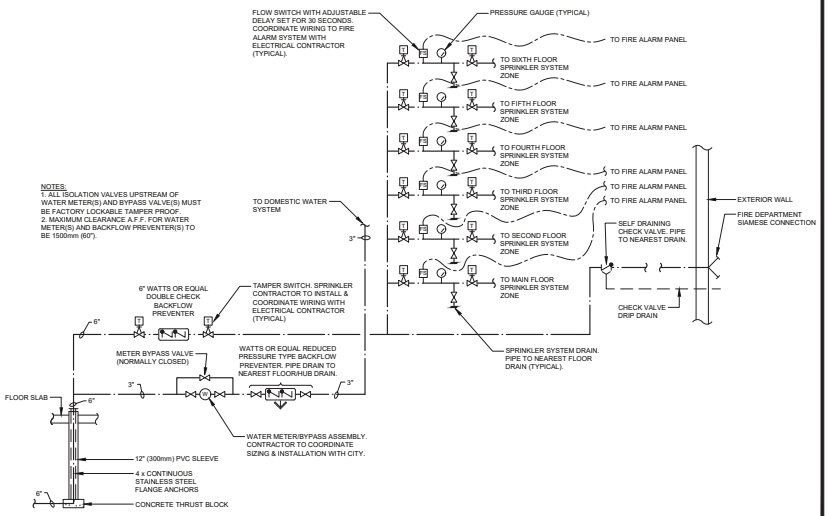
3 M6.2 BASEBOARD HEATER DETAIL
SCALE: N.T.S



4 M6.2 CORRIDOR PRESSURIZATION RISER SCHEMATIC
SCALE: N.T.S



5 M6.2 ROOFTOP MAKE UP AIR UNIT INSTALL DETAIL
SCALE: N.T.S



6 M6.2 INCOMING DOMESTIC WATER SCHEMATIC
SCALE: N.T.S

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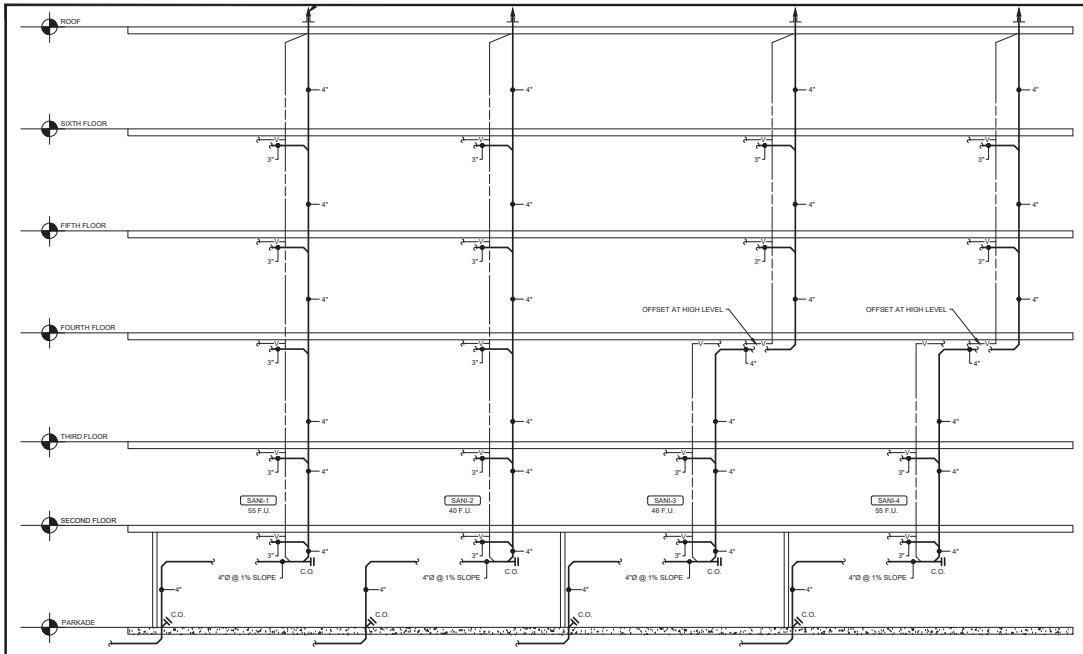
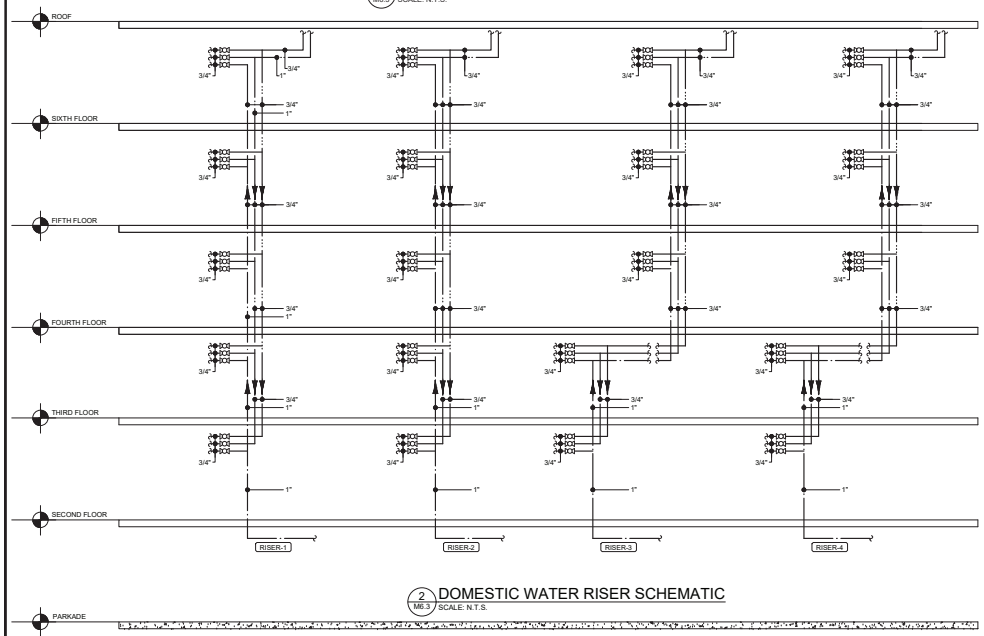
1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
MECHANICAL DETAILS CONT'D

PROJECT: 24S-039	DRAWING NUMBER: M6.2
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M6.3 SANITARY DRAINAGE AND VENT RISER SCHEMATIC
SCALE: N.T.S.



2 M6.3 DOMESTIC WATER RISER SCHEMATIC
SCALE: N.T.S.

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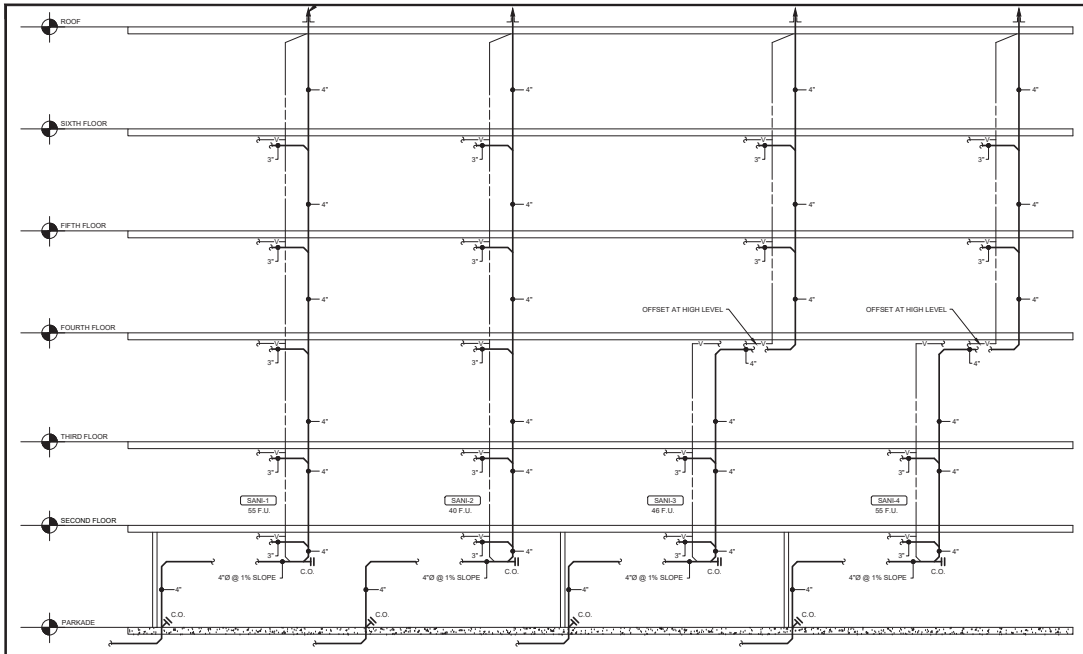
CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

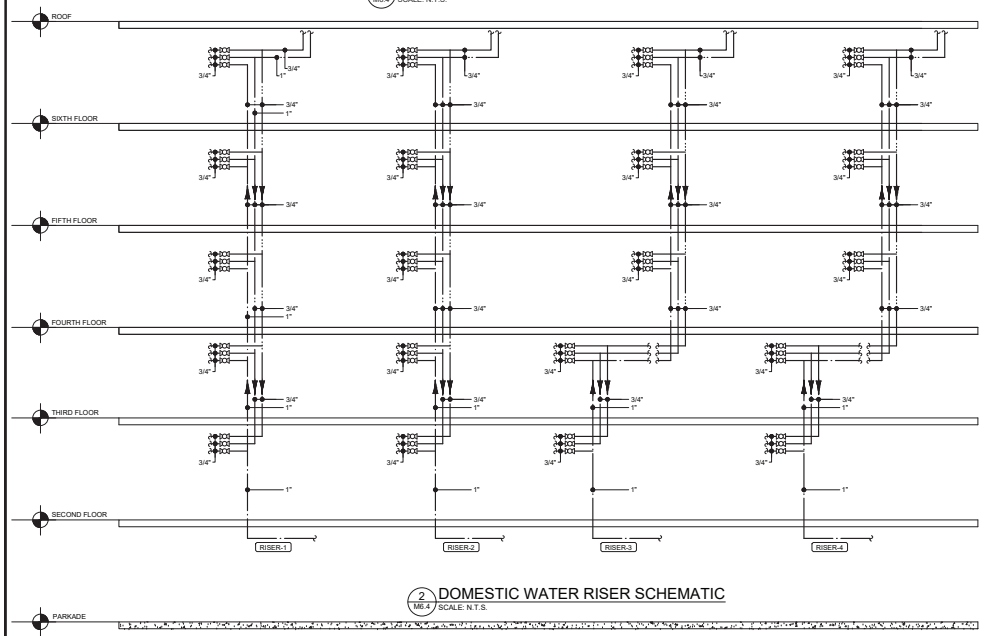
1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
SANITARY & DOMESTIC WATER RISER SCHEMATICS

PROJECT: 24S-039	DRAWING NUMBER: M6.3
DATE : 01/20/2025	
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0



1 M6.4 SANITARY DRAINAGE AND VENT RISER SCHEMATIC
SCALE: N.T.S.



2 M6.4 DOMESTIC WATER RISER SCHEMATIC
SCALE: N.T.S.

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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 90% REVIEW

CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY
APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
HEATING RISER SCHEMATICS

PROJECT :24S-039	DRAWING NUMBER:
DATE : 01/20/2025	M6.4
SCALE : AS NOTED	
DRAWN : I.R.	
CHECKED :O.O.	REV:0

PLUMBING FIXTURE SCHEDULE

TAG	MAKE / MODEL	FUNCTION	DESCRIPTION
WC-1	GERBER / GWS31818	WATER CLOSET - TANK TYPE - BARRIER FREE	ELONGATED 419mm (16-1/2") HIGH TOILET, WHITE VITREOUS CHINA, FLOOR MOUNTED, 4.8 L (1.28 US GAL) PER FLUSH, FULLY GLAZED TRAPWAY, BOLT CAPS, 12" ROUGH-IN, AND INSULATED TANK. PROVIDE CENTOCO #8205TSS HEAVY DUTY TOILET SEAT, WHITE SOLID PLASTIC, STAINLESS STEEL POSTS AND SELF-SUSTAINING CHECK HINGES, OPEN FRONT COVER.
WC-2	GERBER / GWS31818	WATER CLOSET - TANK TYPE	ELONGATED 419mm (16-1/2") HIGH TOILET, WHITE VITREOUS CHINA, FLOOR MOUNTED, 4.8 L (1.28 US GAL) PER FLUSH, FULLY GLAZED TRAPWAY, BOLT CAPS, 12" ROUGH-IN, AND INSULATED TANK. PROVIDE CENTOCO #8205TSS HEAVY DUTY TOILET SEAT, WHITE SOLID PLASTIC, STAINLESS STEEL POSTS AND SELF-SUSTAINING CHECK HINGES, OPEN FRONT COVER.
LAV-1	GERBER / G0012834CH	LAVATORY - COUNTER MOUNTED - BARRIER FREE	VITREOUS CHINA COUNTER MOUNTED LAVATORY. PROVIDE KOHLER #K-15182 SINGLE LEVER HANDLE 4" CENTERSET FAUCET C/W TECK #337311 CAST BRASS 32mm (1-1/4") P-TRAP. TECK #337290 BRASS 32mm (1-1/4") OFFSET OPEN GRID WASTE, AND RIGID/FLEX SUPPLIES WITH LOCKSHIELD STOPS AND FLEXIBLE RISERS. PROVIDE TRUEBRO #103 WHITE VINYL PIPE COVER OVER DRAIN AND SUPPLIES.
LAV-2	GERBER / G0012834CH	LAVATORY - COUNTER MOUNTED	VITREOUS CHINA COUNTER MOUNTED LAVATORY. PROVIDE KOHLER #K-15182 SINGLE LEVER HANDLE 4" CENTERSET FAUCET C/W TECK #337301 CAST BRASS 32mm (1-1/4") P-TRAP. TECK #337260 BRASS 32mm (1-1/4") OPEN GRID WASTE, AND RIGID/FLEX SUPPLIES WITH LOCKSHIELD STOPS AND FLEXIBLE RISERS.
SK-1	MAINLINE / ML3322-R20-D-1H	DOUBLE COMPARTMENT COUNTER MOUNTED SINK	DOUBLE BOWL, STAINLESS STEEL, DROP-IN SINK C/W SINGLE HOLE DRILLING AND EASY SEAL CRUMB CUP BASKET STRAINER PROVIDE KOHLER #K-596 SINGLE HANDLE PULL-DOWN CHROME PLATED DECK DAUCET, RIGID/FLEX SUPPLIES WITH LOCKSHIELD STOPS AND FLEXIBLE RISERS, AND CAST BRASS P-TRAP WITH BOTTOM CLEANOUT.
BATH-1	MIROLIN / PT516L/R	BATHTUB / SHOWER - BARRIER FREE	FIBREGLASS REINFORCED ACRYLIC TUB/SHOWER C/W CURTAIN ROD, CURTAIN HOOKS, WHITE CURTAIN, PATTERNED TUB BOTTOM, 4 LARGE TOILETRY SHELVES, 16" THRESHOLD HEIGHT, AND POWDER COATED WHITE STAINLESS STEEL GRAB BAR. GENERAL CONTRACTOR TO PROVIDE GRAB BARS AS PER ACCESSIBILITY REQUIREMENTS. REFER TO ARCH DRAWINGS. PROVIDE TECK #R1070-DUNS ROUGH-IN VALVE AND TECK #T13H993 TRAM C/W TUB SPOUT, DIVERTER, SHOWER, HAND SHOWER, COMBINATION STAINLESS STEEL SLIDE AND GRAB BAR, PRESSURE BALANCING CARTRIDGE, ADJUSTABLE SHOWER HEAD, ARM, FLANGE, AND LEVER BLADE HANDLE. PROVIDE P-TRAP AND PUSH & LOCK DRAIN WITH OVERFLOW.
BATH-2	MIROLIN / PT516L/R	BATHTUB / SHOWER	FIBREGLASS REINFORCED ACRYLIC TUB/SHOWER C/W CURTAIN ROD, CURTAIN HOOKS, WHITE CURTAIN, PATTERNED TUB BOTTOM, 4 LARGE TOILETRY SHELVES, 16" THRESHOLD HEIGHT, AND POWDER COATED WHITE STAINLESS STEEL GRAB BAR. PROVIDE TECK #R1070-DUNS ROUGH-IN VALVE AND TECK #T13H993 TRAM C/W TUB SPOUT, DIVERTER, SHOWER, HAND SHOWER, COMBINATION STAINLESS STEEL SLIDE AND GRAB BAR, PRESSURE BALANCING CARTRIDGE, ADJUSTABLE SHOWER HEAD, ARM, FLANGE, AND LEVER BLADE HANDLE. PROVIDE P-TRAP AND PUSH & LOCK DRAIN WITH OVERFLOW.
FD-1	WATTS / FD-100-A	FLOOR DRAIN	DURA COATED CAST IRON BODY, BOTTOM OUTLET, HEAVY DUTY POLISHED NICKEL BRONZE ROUND STRAINER.
CO	--	PIPE CLEANOUT	CLEANOUT C/W PLUG SUITABLE FOR EXPOSED DWV PIPING. CLEANOUT TO MATCH DWV PIPE MATERIAL.
LNDRY-1	OATEY / CENTRO II	LAUNDRY BOX	CLOTHES WASHING MACHINE BOX C/W HOSE BIBS WITH VACUUM BREAKERS AND 2" STANDPIPE CONNECTION. UNIT TO BE WALL RECESSED.
RD-1	ZURN / Z105	CONTROLLED FLOW ROOF DRAIN	15"Ø CONTROL-FLO ROOF DRAIN C/W DURA-COATED CAST IRON BODY.

BOILER SCHEDULE

TAG	MAKE	MODEL	LOCATION	MAX FLOW (GPM)	EFFICIENCY	WEIGHT (LBS)	HEAT INPUT (MBH)	HEAT OUTPUT (MBH)	EWT (°F)	LWT (°F)	ELECTRICAL (V/Ph/Hz)	MOP (AMPS)	NOTES
B-1A/B	AERCO	BMK-2000	ROOF MECH ROOM	128	96%	817	2000	1920	180	160	120/1/60	15	1,2

NOTES:
1. SEE HEATING SYSTEM SCHEMATIC 2/M6.2.

PUMP SCHEDULE

TAG	MAKE	MODEL	FUNCTION	LOCATION	FLUID	FLOW RATE (GPM)	HEAD (FT)	MOTOR (HP)	ELECTRICAL (V/Ph/Hz)	NOTES
P-1/A/B	TACO	KC2009D	BOILER CIRC	ROOF MECH ROOM	30% P. GLYCOL	128	50	5	208/3/60	1
P-2A/B	TACO	KS3009D	HEATING CIRC	ROOF MECH ROOM	30% P. GLYCOL	150	65	5	208/3/60	1

NOTES:
1. SEE HEATING SYSTEM SCHEMATIC 2/M6.2.

GLYCOL FEED SYSTEM SCHEDULE

TAG	MAKE	MODEL	LOCATION	FLUID				ELECTRICAL	PHYSICAL		NOTES
				WORKING FLUID	TOTAL VOLUME (GAL)	STATIC FILL PRESSURE (PSIG)	PRESSURE RATING (PSIG)	VOLTAGE/Ph/Hz	LENGTH / WIDTH / HEIGHT (IN)	NPT FITTING (IN)	
GF-1	AXIOM	SF100	ROOF MECH ROOM	30% P. GLY	55	12.7	125.0	120/1/60	24/24/49	0.5	1

NOTES:
1. SEE HEATING SYSTEM SCHEMATIC 2/M6.2.

HYDRAULIC SEPARATOR SCHEDULE

TAG	MAKE	MODEL	LOCATION	TYPE	FLUID				PHYSICAL	NOTES
					WORKING FLUID	MAX FLOW (GPM)	CAPACITY (GALLONS)	MAX PRESSURE (PSIG)	DIAMETER / HEIGHT (IN)	
HS-1	CALEFFI	-	ROOF MECH ROOF	TANK - HIGH EFF (AIR/DIRT)	30% P. GLY	-	-	-	-	1

NOTES:
1. SIZE TO MATCH SYSTEM FLOW/REQUIREMENTS.
2. SEE HEATING SYSTEM SCHEMATIC 2/M6.2.

DOMESTIC WATER HEATER SCHEDULE

TAG	MAKE	MODEL	LOCATION	HEATING CAPACITY (MBH)	STORAGE CAPACITY (GAL)	ELECTRICAL (V/Ph/Hz)	NOTES
WH-1A/B	BRADFORD WHITE	EF-120T-500-3N(A)	ROOF MECH ROOM	499	120	115/1/60	1

NOTES:
1. PROVIDE T&P RELIEF VALVE, DRAIN LINE, 568 GALLON/HR RECOVERY @ 100°F TEMP RISE, POWER VENT, DIRECT COMBUSTION AIR INTAKE, AND PROTECTIVE ANODE ROD. (WEIGHT: 1135 LBS)

FIRE EXTINGUISHER SCHEDULE

TAG	LOCATION	TYPE	RATING	CABINET	NOTES
FEX-1	GENERAL AREAS	ABC	5 LB, 3-A : 40-B:C	-	1

NOTES:
1. MECHANICAL CONTRACTOR TO PROVIDE FIRE EXTINGUISHERS AS PER PLANS AND NFPA #10.

MISCELLANEOUS MECHANICAL EQUIPMENT SCHEDULE

TAG	MAKE / MODEL	FUNCTION	DESCRIPTION
SSF	AXIOM	SIDE STREAM FILTER	10" SIDE STREAM SINGLE CARTRIDGE FILTER HOUSING C/W ¾" NPT INLET AND OUTLET FITTINGS. PROVIDE CASE OF 30-20 MICRON FILTERS.
AV	TACO / HY-VENT	AUTOMATIC AIR VENTS	INSTALL AT HIGH POINTS AND WHERE IDENTIFIED ON PLANS.
FS	TACO / 1F501BF-1	FLOW SWITCH	WIRED TO SHUT DOWN BOILER OPERATION IF FLOW STOPS.

EXPANSION TANK SCHEDULE

TAG	MAKE	MODEL	FUNCTION	LOCATION	TANK VOLUME (GALLON)	ACCEPTANCE VOLUME (GALLON)	SIZE		NOTES
							DIAMETER (in)	HEIGHT (in)	
ET-1	TACO	CA215-125	BOILER SYSTEM	ROOF MECH ROOM	57	57	16	58.9	1
ET-2	WATTS	PLT-35	WH-1 EXPANSION	ROOF MECH ROOM	14	9.17	16	21.7	2

NOTES:
1. SEE HEATING SYSTEM SCHEMATIC 7/MS.1.
2. FOR USE WITH POTABLE WATER.

FRESH AIR INTAKE SCHEDULE

TAG	MAKE	MODEL	LOCATION	WIDTH (in)	HEIGHT (in)	ELECTRICAL (V/Ph/Hz)	NOTES
FAI-1	WESTVENT	635V	PARKADE	40"	36"	115/1/60	1,2

NOTES:
1. FRESH AIR INTAKE LOUVRE C/W, MOTORIZED DAMPER, WELDED CONTINUOUS BLADES, FLANGE FRAME AND SCREEN. MOTORIZED DAMPERS - ALL MOTORIZED DAMPERS TO BE WESTVENT OPPOSED BLADE DAMPER CBX-4H6, C/W BELIMO LF120 US- DAMPER ACTUATOR 120VAC.
2. UNIT TO BE INTERLOCKED WITH EXHAUST FAN EXHF-1 TO OPERATE VIA SIGNAL FROM PARKADE GAS DETECTION SYSTEM GD-1.

PTAC UNIT SCHEDULE

TAG	MAKE	MODEL	LOCATION	HEATING CAPACITY (kW)	COOLING CAPACITY (TONS)	AIR FLOW (CFM)	WEIGHT (LBS)	ELECTRICAL (V/Ph/Hz)	MCA	MOP	NOTES
PTAC-1	ISLANDAIRE	COOLING ONLY	SEE PLANS	-	1	340	116	208/1/60	12	20	1
PTAC-2	ISLANDAIRE	COOLING ONLY	SEE PLANS	-	0.75	340	116	208/1/60	12	20	1

NOTES:
1. C/W WALL SLEEVE WITH ARCHITECTURAL LOUVRE, DUAL FAN MOTORS, WASHABLE FILTER, COMPRESSOR FREEZE PROTECTION, MOTORIZED OUTDOOR AIR DAMPER, CONDENSATE REMOVAL KIT, WIRED REMOTE PROGRAMMABLE THERMOSTAT, AND R-410A REFRIGERANT CHARGE.

FAN SCHEDULE

TAG	MAKE	MODEL	LOCATION	TYPE	FUNCTION	AIR CAPACITY (CFM)	E.S.P. (in w.c.)	MOTOR (HP)	DRIVE	WEIGHT (LBS)	ELECTRICAL (V/Ph/Hz)	NOTES
EXHF-1	PENNBARRY	BLL24	PARKADE	SIDEWALL PROP	EXHAUST	4100	0.1	1/2	BELT	95	120/1/60	1,2

NOTES:
1. C/W VIBRATION ISOLATION, FULLY ENCLOSED MOTOR, AND MOTORIZED BACKDRAFT DAMPER.
2. INTERLOCKED WITH FAI-1 TO OPERATE VIA GAS MONITORING SYSTEM GD-1.

MINI-SPLIT SCHEDULE

TAG	MAKE	MODEL	LOCATION	COOLING CAPACITY (MBH)	AIR FLOW (CFM)	EER	ELECTRICAL (V/Ph/Hz)	MCA	MOP	NOTES
IDU-1	MITSUBISHI ELECTRIC	MSZ-GS12NA	INTERIOR SUITES	12	400	16.0	208/1/60	1.0	-	2
ODU-1	MITSUBISHI ELECTRIC	MXZ-2C20NAHZ2	ROOF/GRADE	20	-	16	208/1/60	29.5	40.0	1,2

NOTES:
1. PROVIDE WIND GUARDS AND LOW AMBIENT KIT.
2. INSULATE REFRIGERANT LINES.

GAS DETECTION SYSTEM SCHEDULE

TAG	MAKE	MODEL	LOCATION	ELECTRICAL	CONTROL	NOTES
GD-1	QEL	Q4C-X-RT4	PARKADE	CONTROLLER: 120/1/60 SENSORS: 24V AC/DC	GAS DETECTION SYSTEM	1,2,3

NOTES:
1. C/W Q6-CO-250P-O-X REMOTE GAS SENSORS LOCATED AS PER MANUFACTURER RECOMMENDATIONS PLAN, LCD DISPLAY WITH LED INDICATORS, RS-485 COMMUNICATION, AUDIBLE ALARM BUZZER, AND MANUAL SHUT-OFF SWITCH.
2. EXHAUST FAN AND MOTORIZED DAMPER TO OPERATE WHEN CO CONCENTRATION EXCEEDS 25 PPM AND/OR WHEN NO2 CONCENTRATION EXCEEDS 3 PPM. UNIT TO INDICATE VISUAL AND AUDIBLE ALARM ON HIGH ALARM CONDITION WHEN CO CONCENTRATION EXCEEDS 190 PPM AND/OR NO2 CONCENTRATION EXCEEDS 5 PPM.
3. REMOTE SENSORS TO MONITOR CO/NO2 LEVELS. SENSORS TO BE MOUNTED AS PER MANUFACTURER RECOMMENDATIONS. EACH SENSOR TO BE C/W WATERDUST TIGHT ENCLOSURE, LCD DISPLAY, INTERNAL AUDIBLE ALARM, AND RS-485 ANALOG INPUT.

MAKE-UP AIR UNIT SCHEDULE

TAG	MAKE	MODEL	HEATING INPUT (MBH)	HEATING OUTPUT (MBH)	FAN E.S.P. (in w.c.)	SUPPLY FAN MOTOR (HP)	SUPPLY AIR (CFM)	SYSTEM MOCP	SYSTEM MCA	ELECTRICAL (V/Ph/Hz)	WEIGHT (LBS)	NOTES
MUA-1	ENGINEERED AIR	DJS40/D	400	324	1.65	1.5	2750	15	8.0	208/3/60	1800	1

NOTES:
1. UNIT TO BE MOUNTED ON ROOF. SEE DETAIL 5/6.2.

HYDRONIC HEATING SCHEDULE

TAG	MAKE	MODEL	HEATING CAPACITY	FLOW RATE (GPM)	WORKING FLUID	AIR FLOW (CFM)	EWT (°F)	LWT (°F)	ELECTRICAL (V/Ph/Hz)	LOCATION	NOTES
A	ENGINEERED AIR	P-10	850 BTU/HR/FT	VARIES	30% P.G.	-	180	160	-	SUITES	1
UH-1	SIGMA	300V	207.3 MBH	19.3	30% P.G.	6360	180	160	120/1/60	PARKADE	2
FF-1	ENGINEERED AIR	CUH-1	30 MBH	3.0	30% P.G.	485	180	160	120/1/60	MAIN ENTRY	3
FF-2	ENGINEERED AIR	CUH-1	16 MBH	1.6	30% P.G.	185	180	160	120/1/60	SIDE STAIRWELLS	3

NOTES:
1. BASEBOARD RADIATION C/W 10" HIGH CABINET, FINNED COPPER TUBE WITH 2.5"x3.25" ALUMINUM FINS, SINGLE ROW, HANGERS AND MOUNTING ACCESSORIES, END CAPS, AND/OR ELBOWS AS REQUIRED.
2. HORIZONTAL UNIT HEATER C/W PAINTED STEEL CABINET, SEAMLESS COPPER TUBING HEATING ELEMENT WITH ALUMINUM FINS, TEFC MOTOR, FAN GUARD, AIR DEFLECTION LOUVRE, AND PROGRAMMABLE THERMOSTAT SET TO MAXIMUM 60°F SETPOINT.
3. WALL MOUNTED CABINET FORCE FLOW HEATER C/W PAINTED STEEL CABINET, TOP ACCESS DOORS FOR PLUMBING AND ELECTRICAL, REUSABLE ALUMINUM FILTERS, CENTRIFUGAL FORWARD CURVED FAN, COPPER HEATING ELEMENT WITH ALUMINUM FINS, ECM MOTOR, AND MOUNTING HARDWARE. UNIT FAN TO BE CONTROLLED BY PROGRAMMABLE WALL THERMOSTAT SET TO MAXIMUM 60°F SETPOINT.

HRV SCHEDULE

TAG	MAKE	MODEL	LOCATION	SUPPLY AIR FLOW (CFM)	EXHAUST AIR FLOW (CFM)	ESP (in w.c.)	WINTER SENSIBLE EFFICIENCY	ELECTRICAL (V/Ph/Hz)	WEIGHT (LBS)	CONTROL	NOTES
HRV-1	FANTECH	VHR70R	SUITES	70	70	0.1	65%	120/1/60	33	WALL CONTROLLER	1

NOTES:
1. INDIVIDUAL HRV TO BE INSTALLED IN SUITE LAUNDRY ROOMS/ABOVE WASHROOMS.

ABBREVIATION	DESCRIPTION
ACH	AIR CHANGES PER HOUR
AD	AREA DRAIN
AAV	AUTOMATIC AIR VENT
ACU	AIR CONDITIONING UNIT
AHU	AIR-HANDLING UNIT
ASHP	AIR-SOURCE HEAT PUMP
B	BOILER
B.B.	BASE BOARD
BATH	BATHTUB
BF	BOOSTER FAN
BFP	BACKFLOW PREVENTOR
BHP	BRAKE HORSEPOWER
BP	BOILER PUMP
Btu	BRITISH THERMAL UNIT
C/A	COMBUSTION AIR
CBV	CIRCUIT BALANCING VALVE
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHW	CHILLED WATER
COP	COEFFICIENT OF PERFORMANCE
CT	COOLING TOWER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
C/W	COMPLETE WITH
CW	CLOTHES WASHER
DCW	DOMESTIC COLD WATER
DD	DECK DRAIN
DH	DUCT HEATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RETURN
DR	DRYER
DW	DISHWASHER
DWH	DOMESTIC WATER HEATER
DWR	DOMESTIC WATER RISER
DWST	DOMESTIC WATER STORAGE TANK
E/A	EXHAUST AIR
EAT	ENTERING AIR TEMP.
EER	ENERGY EFFICIENCY RATIO
EFT	ELECTRIC FAN TIMER
ET	EXPANSION TANK
EUI	ENERGY USE INTENSITY
EWT	ENTERING WATER TEMP.
EXHF	EXHAUST FAN
F/A	FROM ABOVE
F/B	FROM BELOW
FCU	FAN COIL UNIT
FEX	FIRE EXTINGUISHER
FEX-C	FIRE EXTINGUISHER CABINET
FD	FLOOR DRAIN
FF	FORCE FLOW
FFD	FUNNEL FLOOR DRAIN
FSD/IFD	FIRE SMOKE DAMPERS/FIRE DAMPERS
FU	FIXTURE UNITS
FUR	FURNACE
G.C.	GENERAL CONTRACTOR
GI	GREASE INTERCEPTOR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HC	HEATING COIL
HD	HUB DRAIN
HHW	HEATING HOT WATER
HP	HORSEPOWER
IDWH	INSTANTANEOUS DOMESTIC WATER HEATER
JS	JANITOR SINK
KEF	KITCHEN EXHAUST FAN
LAV	LAVATORY
LAT	LEAVING AIR TEMP.
LWCO	LOW WATER CUT OFF
LWT	LEAVING WATER TEMP.
MA	MIXED AIR
MAT	MIXED AIR TEMP.
MAV	MANUAL AIR VENT
MBH	THOUSAND Btu PER HOUR
MUA	MAKE UP AIR UNIT
N.C.	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE
NFHB	NON FREEZE HOSE BIBB
O/A	OUTSIDE AIR
O&M	OPERATION AND MAINTENANCE
P	PUMP
PIBV	PRESSURE INDEPENDENT BALANCING VALVE
PR	PLUMBING RISER
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
R/A	RETURN AIR
RAT	REVERSE ACTING THERMOSTAT
RD	ROOF DRAIN
RH	RADIANT HEATER
RPBP	REDUCING PRESSURE BACKFLOW PREVENTOR
RPM	REVOLUTIONS PER MINUTE
RTU	ROOF TOP UNIT
RWL	RAINWATER LEADER
S/A	SUPPLY AIR
SAR	SUPPLY AIR RISER
SC	SHADING COEFFICIENT
SF	SUPPLY FAN
SH	SHOWER
SHGC	SOLAR HEAT GAIN COEFFICIENT
SK	SINK
SP	SUMP PUMP
SS	SLAB SENSOR
T/A	TO ABOVE
T/B	TO BELOW
TD	TRENCH DRAIN
TDH	TOTAL DESIGN HEAD
TF	TRANSFER FAN
TK	TANK
TP	TRAP PRIMER
TS	TAMPER SWITCH
TSP	TOTAL STATIC PRESSURE
TYP.	TYPICAL
U/C	UNDERCUT DOOR
UH	UNIT HEATER
U/S	UNDERSIDE
URI	URINAL
UTR	UP THROUGH ROOF
VAV	VARIABLE AIR VOLUME
VR	VENT RISER
VRF	VARIABLE REFRIGERANT FLOW
VTR	VENT THROUGH ROOF
VFD	VARIABLE FREQUENCY DRIVE
WC	WATER CLOSET
WSHP	WATER-SOURCE HEAT PUMP
WV	WET VENT

NOTE: NOT ALL USED ON THESE DRAWINGS

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PROJECT NO. 24S-039

PROFESSIONAL SEAL:

PRELIMINARY
ISSUED FOR 80% REVIEW

CLIENT:
JAMES ZIMMER ARCHITECT

PROJECT:
PROPOSED SIX STORY APARTMENT WITH RETAIL

1202 COLLEGE DRIVE,
SASKATOON, SASKATCHEWAN

DRAWING TITLE:
MECHANICAL SCHEDULE

PROJECT: 24S-039
DATE : 01/20/2025
SCALE : AS NOTED
DRAWN : I.R.
CHECKED :O.O.

DRAWING NUMBER:
M6.5
REV:0

DWG REVISIONS:	NO: 0	DATE: 01/20/2025	ENGINEER: O.O.	DESCRIPTION: