

MECHANICAL ABBREVIATIONS

Table of mechanical abbreviations with columns for symbol, description, and symbol. Includes terms like ACQU, AFF, AFMD, ARH, ARCH, ATC, BDD, BLDG, BTH, BVI, CA, CFM, CIRC, CO, CONC, CONCD, CONN, CUH, CH, DB, DB, DEMO, DIA, DIV, DN, DNG, DRNG, (E), EA, EAT, EBR, EF, ELEG, ESP, EXH, EXH, EXIST, F, F/S, FD, FLEX, FLA, FLD, FFM, FTR, GALV, GGO, GPH, GPM, HB, HC, HP, HR, HVAC.

MECHANICAL SYMBOLS

Table of mechanical symbols with columns for symbol, description, and symbol. Includes symbols for domestic cold/hot water, duct sections, rain leaders, storm drains, heating/cooling systems, valves, dampers, and grilles.

\* ALL SYMBOLS AND ABBREVIATIONS DO NOT NECESSARILY APPEAR ON DRAWINGS

GENERAL MECHANICAL NOTES:

- A. NOTIFY THE ENGINEER OF ANY DISCREPANCIES...
B. IF DISCREPANCIES ARE NOT REPORTED...
C. DISCREPANCIES DISCOVERED DURING CONSTRUCTION...
D. ALL MINOR ITEMS NECESSARY FOR THE COMPLETION...
E. OMISSION OF OR EXPRESS REFERENCE TO ANY MATERIAL...
F. ANY WORK NOT CLEAR TO CONTRACTOR...
G. BY VIRTUE OF SUBMITTING A BID...
H. THE DRAWINGS INDICATE THE EXTENT AND GENERAL LAYOUT...
I. ALL PIPING AND DUCTWORK SHALL BE ROUTED...
J. IN GENERAL, THE MECHANICAL EQUIPMENT...
K. ALL DRAWINGS AND SPECIFICATIONS SHALL BE CONSIDERED...
L. ALL APPLIANCES AND EQUIPMENT SHALL BE INSTALLED...
M. ALL EQUIPMENT SHALL BE INSTALLED IN SUCH A MANNER...
N. AS A PART OF THE WORK OF THIS CONTRACT...
O. COOPERATE WITH OTHER TRADES...
P. BEFORE SUBMITTING A PROPOSAL...
Q. NEATLY CUT OPENINGS AND HOLES...
R. THIS CONTRACTOR SHALL OPEN ALL EXISTING WALLS...
S. REFER TO AND COORDINATE WITH ARCHITECTURAL PLANS...
T. ALL SHUT-OFF VALVES, STRAINERS, CONTROL VALVES...
U. FLOOR CUTTING FOR PLUMBING INSTALLATION...
V. PROVIDE 1/2" DRAIN VALVE AT ALL LOW POINTS...
W. ALL OPEN ENDS OF DUCTWORK SHALL BE CAPPED...
X. THIS CONTRACTOR IS RESPONSIBLE FOR REMOVAL...
Y. THE ENTIRE INSTALLATION SHALL BE MADE...
Z. ALL WORK SHALL CONFORM TO APPLICABLE STATE...
AA. ALL FIRE PROTECTION WORK SHALL ADHERE TO CURRENT NFPA...

MECHANICAL SHEET INDEX

Table listing sheet numbers and titles, such as M000 MECHANICAL TITLE SHEET, M100A FOUNDATION PLAN - WEST - PLUMBING, M101A GARAGE FLOOR PLAN - WEST - PLUMBING, etc.



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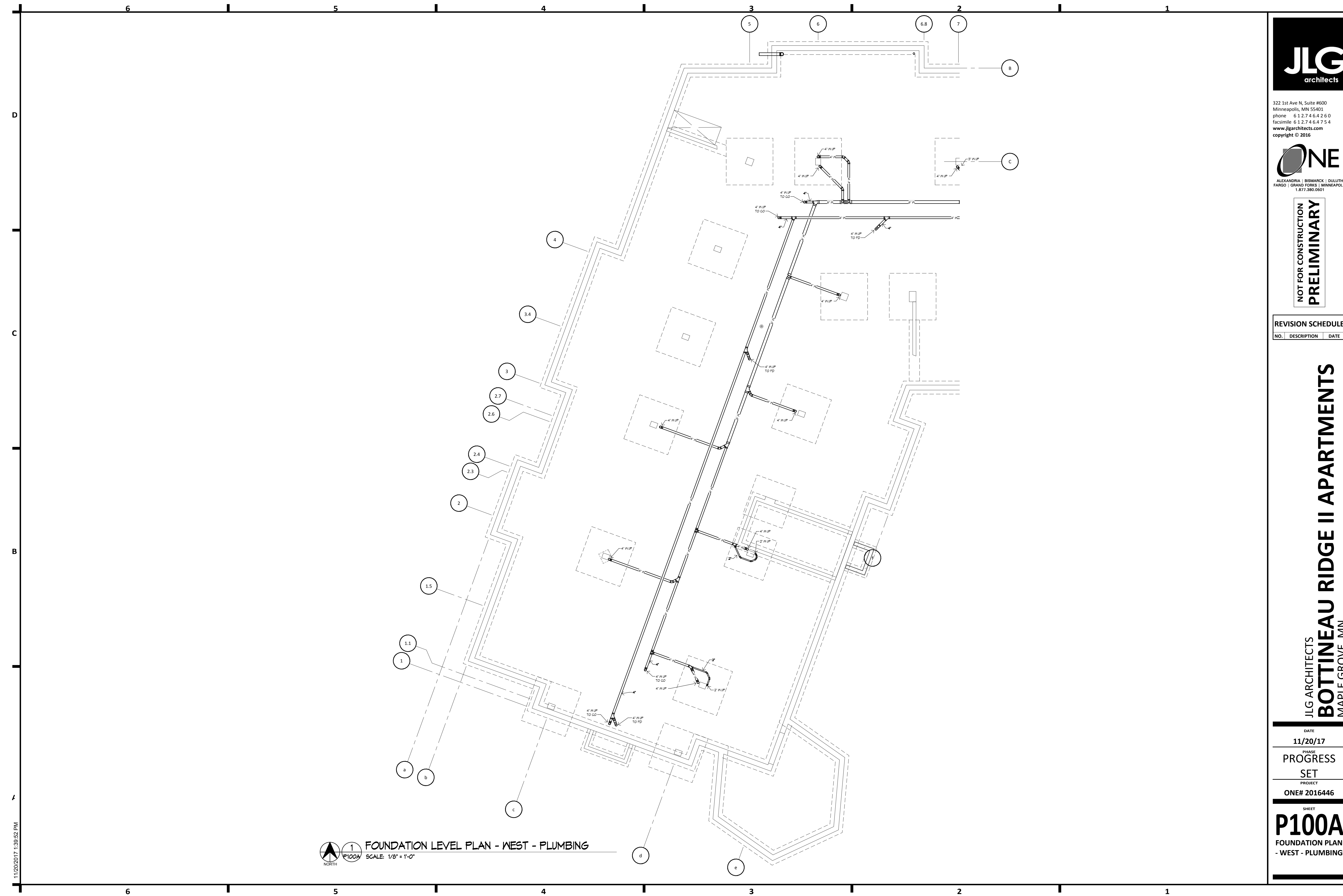
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REVISION SCHEDULE table with columns NO., DESCRIPTION, DATE

JLG ARCHITECTS
BOTTINEAU RIDGE II APARTMENTS
MAPLE GROVE, MN

DATE 11/20/17
PHASE PROGRESS
PROJECT ONE# 2016446
SHEET M000
MECHANICAL TITLE SHEET




**1** FOUNDATION LEVEL PLAN - WEST - PLUMBING  
 SCALE: 1/8" = 1'-0"

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 MAPLE GROVE, MN

DATE: 11/20/17

PHASE: PROGRESS

SET

PROJECT: ONE# 2016446

SHEET  
**P100A**  
 FOUNDATION PLAN  
 - WEST - PLUMBING



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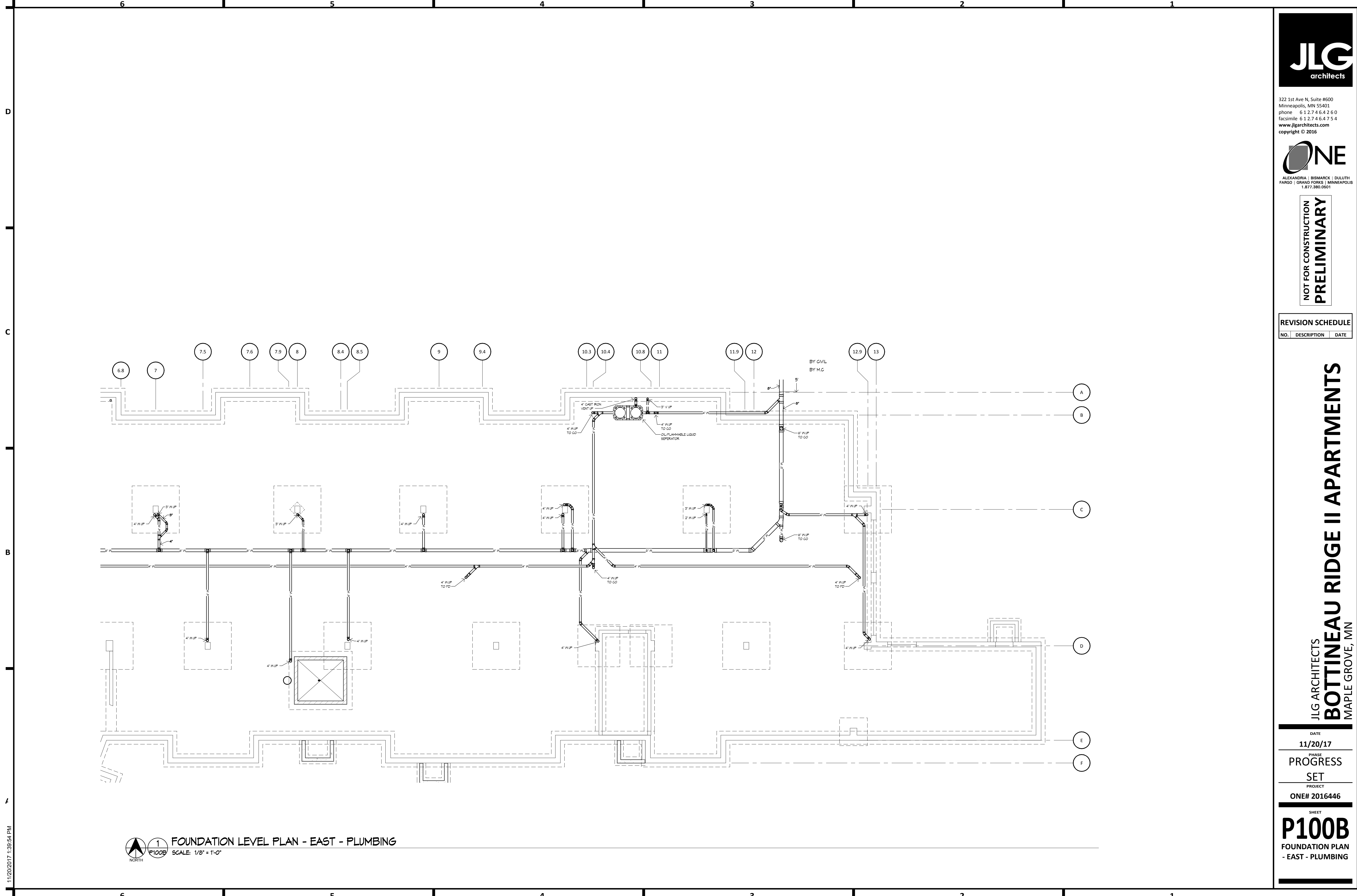
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DATE	11/20/17
PHASE	PROGRESS
PROJECT	SET
PROJECT	ONE# 2016446
SHEET	<b>P100B</b>
FOUNDATION PLAN - EAST - PLUMBING	



**FOUNDATION LEVEL PLAN - EAST - PLUMBING**  
 SCALE: 1/8" = 1'-0"

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**PLUMBING FIXTURE ROUGH-IN CONNECTION SCHEDULE**

FIXTURE	WASTE	VENT	GV	HN
WALL HYDRANT	-	-	3/4"	-
CLEAN OUT	4"	-	-	-
FLOOR DRAIN	2"	1-1/2"	-	-
FLOOR SINK	2"	1-1/2"	-	-
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WATER CLOSET (FV)	4"	2"	1"	-
SHOWER/BATH	2"	1-1/2"	3/4"	3/4"
EMERG. EYE WASH/SHOWER	2"	1-1/2"	1"	1"
SINK	2"	1-1/2"	3/4"	1/2"
BK	2"	1-1/2"	1/2"	-
MIXING VALVE	-	-	3/4"	3/4"
MOP BASIN	3"	1-1/2"	3/4"	3/4"
HOSE BIBB	-	-	3/4"	-
WASH MACHINE TRIM	2"	1-1/2"	3/4"	3/4"
DRAIN PAN W/ FLOOR DRAIN	2"	1-1/2"	-	-

NOTES:  
 1. SIZES SHALL BE AS SCHEDULED UNLESS OTHERWISE NOTED ON DRAWINGS.

**PLUMBING NOTES:**

- A. COORDINATE ALL PLUMBING INSTALLATION WITH GENERAL, FIRE PROTECTION, VENTILATION AND ELECTRICAL CONTRACTORS. INSTALL ALL PLUMBING PIPING AS HIGH AS POSSIBLE. PROVIDE ALL NECESSARY OFFSETS (DROPS AND RISES) TO KEEP PLUMBING PIPING TIGHT TO THE STRUCTURE OR DUCTWORK ABOVE. OFFSET PLUMBING PIPING TO AVOID BEAMS.
- B. REFER TO AND COORDINATE WITH THE ARCHITECTURAL PLANS FOR CEILING TYPES, HEIGHTS, SOFFIT AREAS, AND ELEVATIONS FOR INSTALLATION OF NEW PLUMBING PIPING, EQUIPMENT, ETC.
- C. MAINTAIN 3'-0" CLEAR SPACE IN FRONT OF ALL ELECTRICAL, CONTROL, AND ACCESS PANELS FOR ACCESSIBILITY.
- D. ALL SHUT-OFF VALVES, ETC., SHALL BE INSTALLED IN ACCESSIBLE CEILINGS.

- 1. PROVIDE AND INSTALL WASHING MACHINE TRIM BOX FOR CLOTHES WASHER.
- 2. PROVIDE AND INSTALL DRAIN PAN WITH INTEGRAL FLOOR DRAIN BELOW WASHING MACHINE. CONTRACTOR SHALL COORDINATE DRAIN PLACEMENT WITH STRUCTURE.



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**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**

SHEET  
**P102A**  
 FIRST FLOOR PLAN -  
 WEST - PLUMBING

**1** FIRST FLOOR PLAN - PLUMBING  
 P102A SCALE: 1/8" = 1'-0"

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**PLUMBING FIXTURE ROUGH-IN CONNECTION SCHEDULE**

FIXTURE	WASTE	VENT	GN	HN
WALL HYDRANT	-	-	3/4"	-
CLEAN OUT	4"	-	-	-
FLOOR DRAIN	2"	1-1/2"	-	-
FLOOR SINK	2"	1-1/2"	-	-
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WATER CLOSET (FV)	4"	2"	1"	-
SHOWER/BATH	2"	1-1/2"	3/4"	3/4"
EMERG. EYE WASH/SHOWER	2"	1-1/2"	1"	1"
SINK	2"	1-1/2"	3/4"	1/2"
BKIC	2"	1-1/2"	1/2"	-
MIXING VALVE	-	-	3/4"	3/4"
MOP BASIN	3"	1-1/2"	3/4"	3/4"
HOSE BIBB	-	-	3/4"	-
WASH MACHINE TRIM	2"	1-1/2"	3/4"	3/4"
DRAIN PAN w/ FLOOR DRAIN	2"	1-1/2"	-	-

NOTES:  
 1. SIZES SHALL BE AS SCHEDULED UNLESS OTHERWISE NOTED ON DRAWINGS.

**PLUMBING NOTES:**

- A. COORDINATE ALL PLUMBING INSTALLATION WITH GENERAL, FIRE PROTECTION, VENTILATION AND ELECTRICAL CONTRACTORS. INSTALL ALL PLUMBING PIPING AS HIGH AS POSSIBLE. PROVIDE ALL NECESSARY OFFSETS (DROPS AND RISES) TO KEEP PLUMBING PIPING TIGHT TO THE STRUCTURE OR DUCTWORK ABOVE. OFFSET PLUMBING PIPING TO AVOID BEAMS.
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- C. MAINTAIN 3'-0" CLEAR SPACE IN FRONT OF ALL ELECTRICAL, CONTROL, AND ACCESS PANELS FOR ACCESSIBILITY.
- D. ALL SHUT-OFF VALVES, ETC., SHALL BE INSTALLED IN ACCESSIBLE CEILINGS.

- 1. PROVIDE AND INSTALL WASHING MACHINE TRIM BOX FOR CLOTHES WASHER.
- 2. PROVIDE AND INSTALL DRAIN PAN WITH INTEGRAL FLOOR DRAIN BELOW WASHING MACHINE. CONTRACTOR SHALL COORDINATE DRAIN PLACEMENT WITH STRUCTURE.



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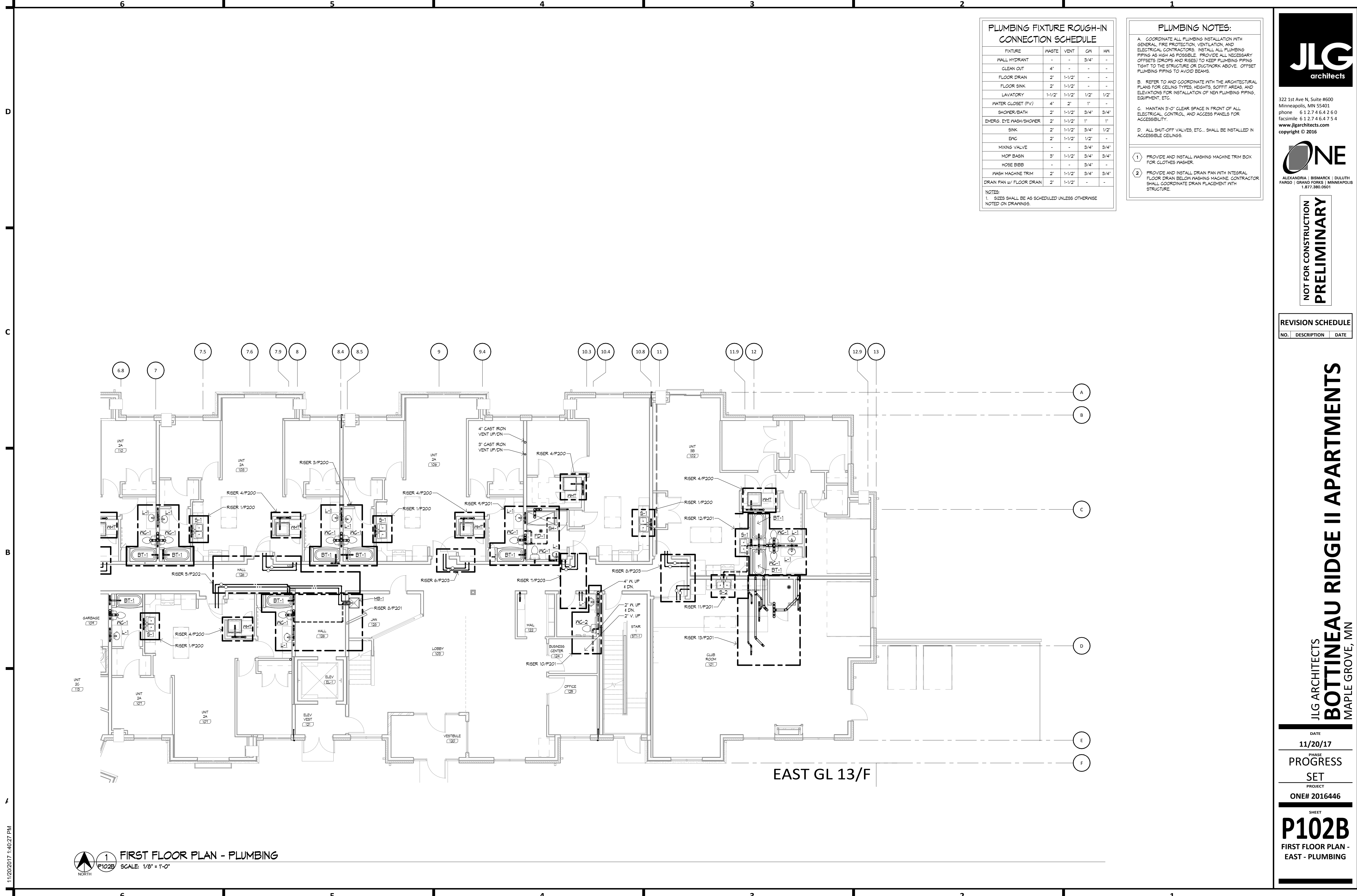
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NO.	DESCRIPTION	DATE

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**11/20/17**  
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**PROGRESS**  
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 PROJECT  
**ONE# 2016446**

SHEET  
**P102B**  
 FIRST FLOOR PLAN -  
 EAST - PLUMBING



**1 FIRST FLOOR PLAN - PLUMBING**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:40:27 PM



**PLUMBING FIXTURE ROUGH-IN CONNECTION SCHEDULE**

FIXTURE	WASTE	VENT	GN	HN
WASH MACHINE TRIM CLEAN OUT	-	-	3/4"	-
FLOOR DRAIN	2"	1-1/2"	-	-
FLOOR SINK	2"	1-1/2"	-	-
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WATER CLOSET (TV)	4"	2"	1"	-
SHOWER/BATH	2"	1-1/2"	3/4"	3/4"
EMERG. EYE WASH/SHOWER	2"	1-1/2"	1"	1"
SINK	2"	1-1/2"	3/4"	1/2"
ENK	2"	1-1/2"	1/2"	-
MIXING VALVE	-	-	3/4"	3/4"
NOY BATH HOSE BIBS	3"	1-1/2"	3/4"	3/4"
WASH MACHINE TRIM	2"	1-1/2"	3/4"	3/4"
DRAIN PAN W/ FLOOR DRAIN	2"	1-1/2"	-	-

NOTES:  
1. SIZES SHALL BE AS SCHEDULED UNLESS OTHERWISE NOTED ON DRAWINGS.

**PLUMBING NOTES:**

- A. COORDINATE ALL PLUMBING INSTALLATION WITH GENERAL, FIRE PROTECTION, VENTILATION AND ELECTRICAL CONTRACTORS. INSTALL ALL PLUMBING PIPING AS HIGH AS POSSIBLE. PROVIDE ALL NECESSARY OFFSETS (DROPS AND RISES) TO KEEP PLUMBING PIPING TIGHT TO THE STRUCTURE OR DUCTWORK ABOVE. OFFSET PLUMBING PIPING TO AVOID BEAMS.
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- 2. PROVIDE AND INSTALL DRAIN PAN WITH INTEGRAL FLOOR DRAIN BELOW WASHING MACHINE. CONTRACTOR SHALL COORDINATE DRAIN PLACEMENT WITH STRUCTURE.

**1 SECOND FLOOR PLAN - PLUMBING**  
SCALE: 1/8" = 1'-0"  
NORTH



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MAPLE GROVE, MN

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SET  
PROJECT  
**ONE# 2016446**

SHEET  
**P103A**  
SECOND FLOOR  
PLAN - WEST -  
PLUMBING

11/20/2017 1:40:36 PM

**PLUMBING FIXTURE ROUGH-IN CONNECTION SCHEDULE**

FIXTURE	WASTE	VENT	GN	HN
WALL HYDRANT	-	-	3/4"	-
CLEAN OUT	4"	-	-	-
FLOOR DRAIN	2"	1-1/2"	-	-
FLOOR SINK	2"	1-1/2"	-	-
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WATER CLOSET (FV)	4"	2"	1"	-
SHOWER/BATH	2"	1-1/2"	3/4"	3/4"
EMERG. EYE WASH/SHOWER	2"	1-1/2"	1"	1"
SINK	2"	1-1/2"	3/4"	1/2"
BKC	2"	1-1/2"	1/2"	-
MIXING VALVE	-	-	3/4"	3/4"
MOP BASIN	3"	1-1/2"	3/4"	3/4"
HOSE BIBB	-	-	3/4"	-
WASH MACHINE TRIM	2"	1-1/2"	3/4"	3/4"
DRAIN PAN w/ FLOOR DRAIN	2"	1-1/2"	-	-

NOTES:  
 1. SIZES SHALL BE AS SCHEDULED UNLESS OTHERWISE NOTED ON DRAWINGS.

**PLUMBING NOTES:**

- A. COORDINATE ALL PLUMBING INSTALLATION WITH GENERAL, FIRE PROTECTION, VENTILATION AND ELECTRICAL CONTRACTORS. INSTALL ALL PLUMBING PIPING AS HIGH AS POSSIBLE. PROVIDE ALL NECESSARY OFFSETS (DROPS AND RISES) TO KEEP PLUMBING PIPING TIGHT TO THE STRUCTURE OR DIAPHRAGM ABOVE. OFFSET PLUMBING PIPING TO AVOID BEAMS.
- B. REFER TO AND COORDINATE WITH THE ARCHITECTURAL PLANS FOR CEILING TYPES, HEIGHTS, SOFFIT AREAS, AND ELEVATIONS FOR INSTALLATION OF NEW PLUMBING PIPING, EQUIPMENT, ETC.
- C. MAINTAIN 3'-0" CLEAR SPACE IN FRONT OF ALL ELECTRICAL, CONTROL, AND ACCESS PANELS FOR ACCESSIBILITY.
- D. ALL SHUT-OFF VALVES, ETC., SHALL BE INSTALLED IN ACCESSIBLE CEILINGS.

- 1. PROVIDE AND INSTALL WASHING MACHINE TRIM BOX FOR CLOTHES WASHER.
- 2. PROVIDE AND INSTALL DRAIN PAN WITH INTEGRAL FLOOR DRAIN BELOW WASHING MACHINE. CONTRACTOR SHALL COORDINATE DRAIN PLACEMENT WITH STRUCTURE.



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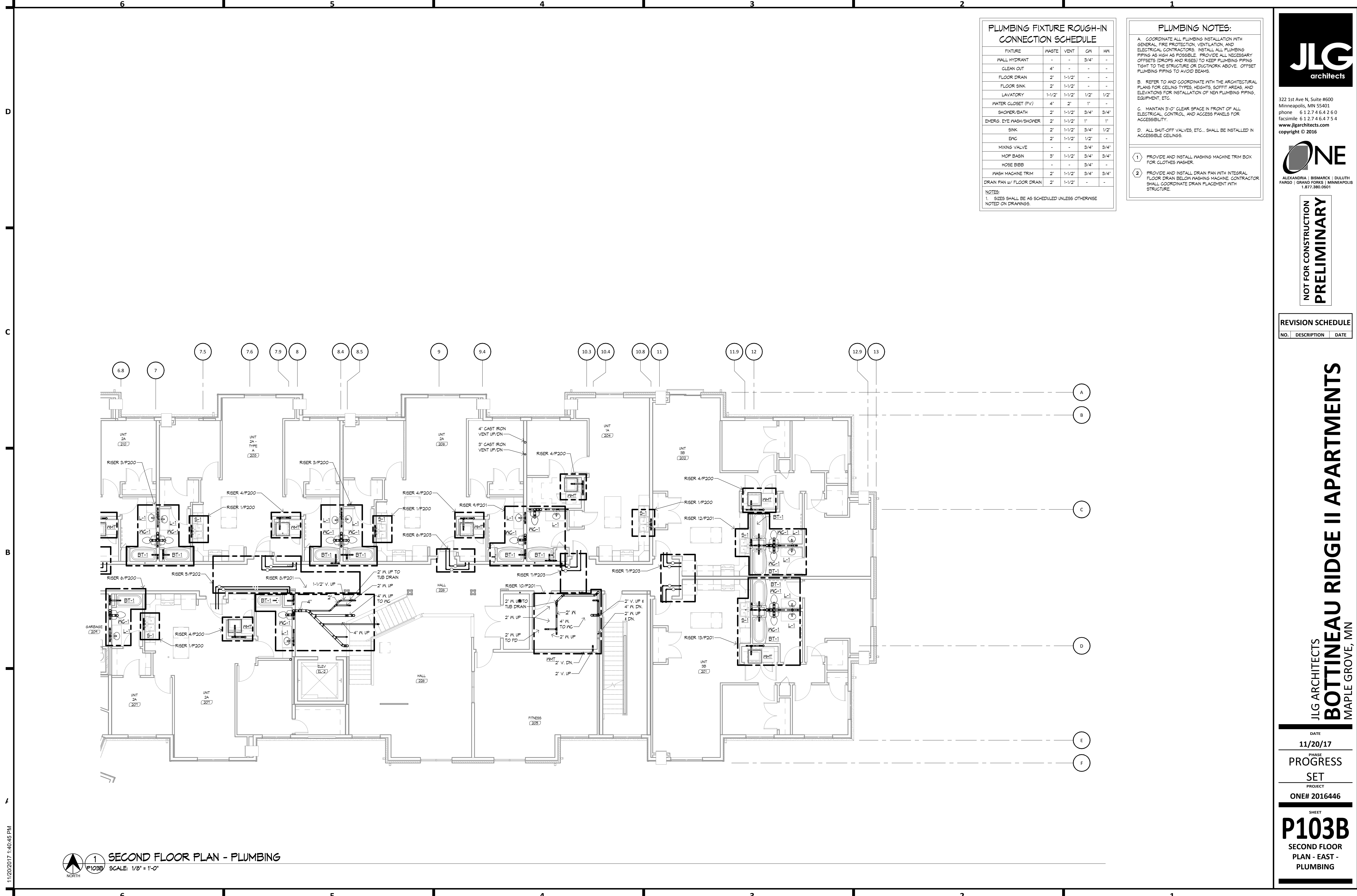
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NO.	DESCRIPTION	DATE

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 MAPLE GROVE, MN

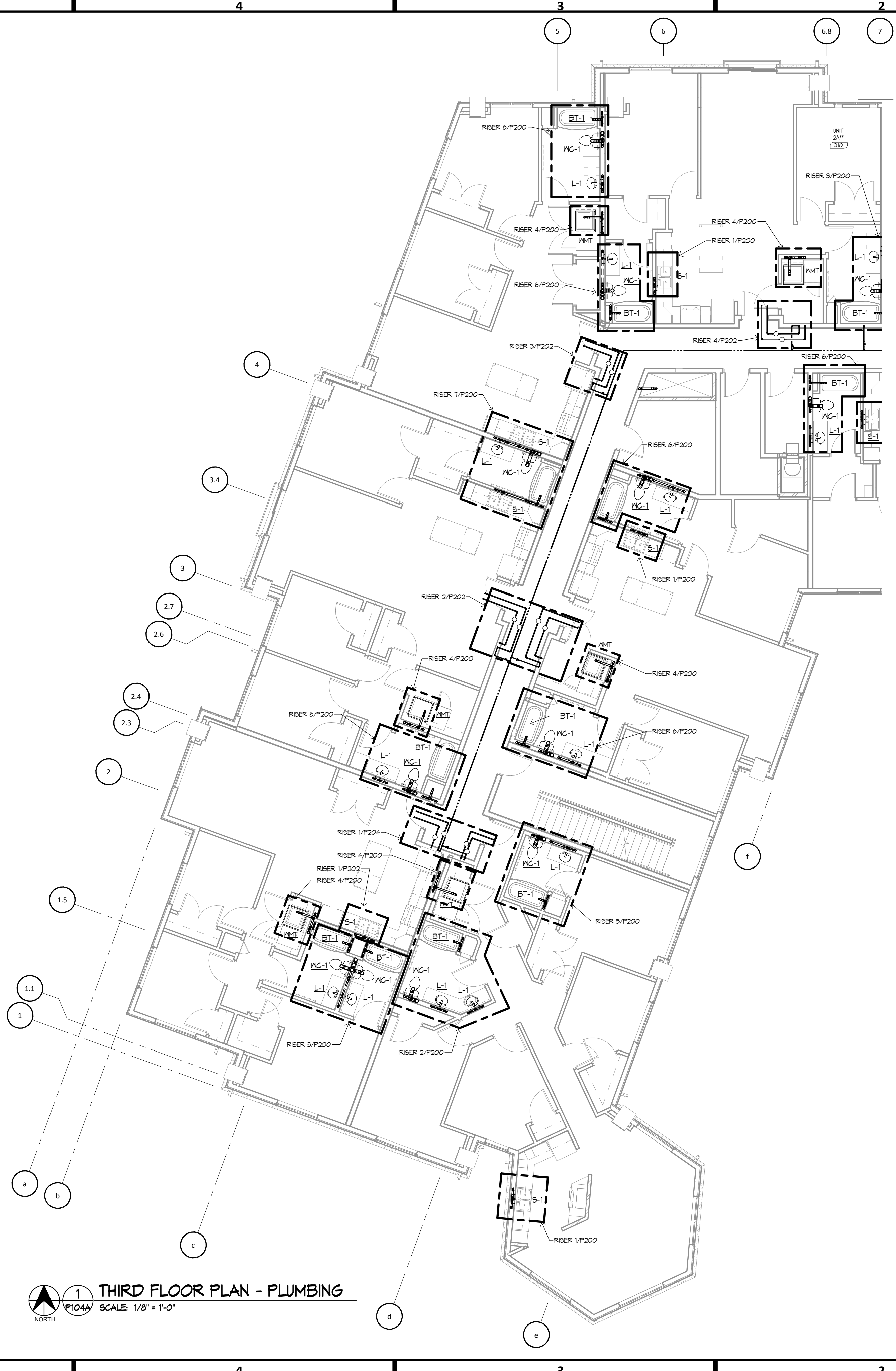
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**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**

SHEET  
**P103B**  
 SECOND FLOOR  
 PLAN - EAST -  
 PLUMBING



**1 SECOND FLOOR PLAN - PLUMBING**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:40:45 PM



**PLUMBING FIXTURE ROUGH-IN CONNECTION SCHEDULE**

FIXTURE	WASTE	VENT	GV	HN
WALL FOUNTAIN CLEAN OUT	-	-	3/4"	-
FLOOR DRAIN	2"	1-1/2"	-	-
FLOOR SINK	2"	1-1/2"	-	-
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WATER CLOSET (TV)	4"	2"	1"	-
SHOWER/BATH	2"	1-1/2"	3/4"	3/4"
EMERG. EYE WASH/SHOWER	2"	1-1/2"	1"	1"
SINK	2"	1-1/2"	3/4"	1/2"
BKIC	2"	1-1/2"	1/2"	-
MIXING VALVE	-	-	3/4"	3/4"
MOP SINK HOSE BIBS	3"	1-1/2"	3/4"	3/4"
WASH MACHINE TRIM	2"	1-1/2"	3/4"	3/4"
DRAIN PAN W/ FLOOR DRAIN	2"	1-1/2"	-	-

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**1 THIRD FLOOR PLAN - PLUMBING**  
SCALE: 1/8" = 1'-0"



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**PROGRESS**  
SET  
PROJECT  
**ONE# 2016446**

SHEET  
**P104A**  
THIRD FLOOR PLAN -  
WEST - PLUMBING

11/20/2017 1:40:55 PM

**PLUMBING FIXTURE ROUGH-IN CONNECTION SCHEDULE**

FIXTURE	WASTE	VENT	GN	HN
WALL HYDRANT	-	-	3/4"	-
CLEAN OUT	4"	-	-	-
FLOOR DRAIN	2"	1-1/2"	-	-
FLOOR SINK	2"	1-1/2"	-	-
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WATER CLOSET (TV)	4"	2"	1"	-
SHOWER/BATH	2"	1-1/2"	3/4"	3/4"
EMERG. EYE WASH/SHOWER	2"	1-1/2"	1"	1"
SINK	2"	1-1/2"	3/4"	1/2"
BKC	2"	1-1/2"	1/2"	-
MIXING VALVE	-	-	3/4"	3/4"
MOP BASIN	3"	1-1/2"	3/4"	3/4"
HOSE BIBB	-	-	3/4"	-
WASH MACHINE TRIM	2"	1-1/2"	3/4"	3/4"
DRAIN PAN w/ FLOOR DRAIN	2"	1-1/2"	-	-

NOTES:  
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**PLUMBING NOTES:**

- A. COORDINATE ALL PLUMBING INSTALLATION WITH GENERAL, FIRE PROTECTION, VENTILATION AND ELECTRICAL CONTRACTORS. INSTALL ALL PLUMBING PIPING AS HIGH AS POSSIBLE. PROVIDE ALL NECESSARY OFFSETS (DROPS AND RISES) TO KEEP PLUMBING PIPING TIGHT TO THE STRUCTURE OR DUCTWORK ABOVE. OFFSET PLUMBING PIPING TO AVOID BEAMS.
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- ① PROVIDE AND INSTALL WASHING MACHINE TRIM BOX FOR CLOTHES WASHER.
- ② PROVIDE AND INSTALL DRAIN PAN WITH INTEGRAL FLOOR DRAIN BELOW WASHING MACHINE. CONTRACTOR SHALL COORDINATE DRAIN PLACEMENT WITH STRUCTURE.



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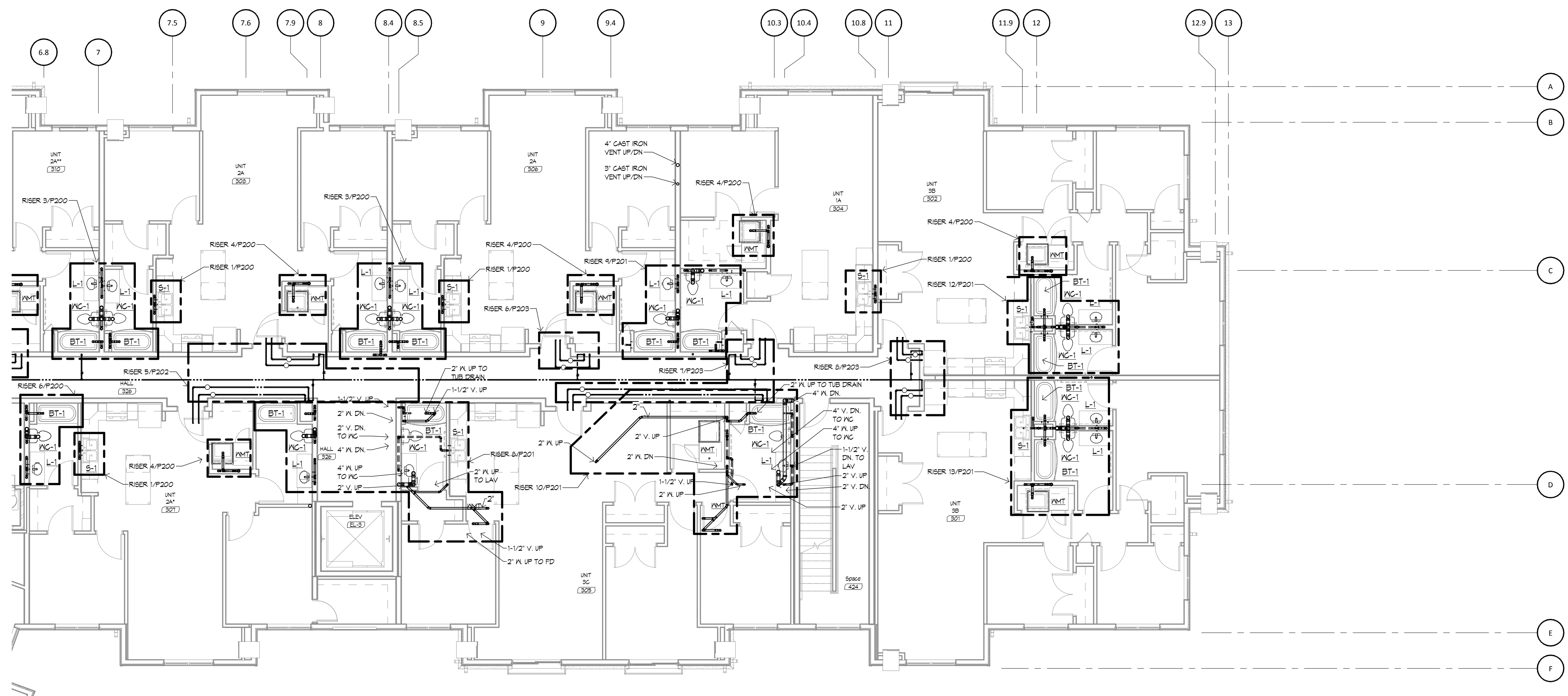
**REVISION SCHEDULE**

NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
MAPLE GROVE, MN

DATE  
**11/20/17**  
PHASE  
**PROGRESS**  
SET  
PROJECT  
**ONE# 2016446**

SHEET  
**P104B**  
THIRD FLOOR PLAN -  
EAST - PLUMBING



**1 THIRD FLOOR PLAN - PLUMBING**  
SCALE: 1/8" = 1'-0"

11/20/2017 1:41:04 PM



**PLUMBING FIXTURE ROUGH-IN CONNECTION SCHEDULE**

FIXTURE	WASTE	VENT	GN	HN
WALL MOUNT CLEAN OUT	-	-	3/4"	-
FLOOR DRAIN	2"	1-1/2"	-	-
FLOOR SINK	2"	1-1/2"	-	-
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WATER CLOSET (TV)	4"	2"	1"	-
SHOWER/BATH	2"	1-1/2"	3/4"	3/4"
EMERG. EYE WASH/SHOWER	2"	1-1/2"	1"	1"
SINK	2"	1-1/2"	3/4"	1/2"
BKIC	2"	1-1/2"	1/2"	-
MIXING VALVE	-	-	3/4"	3/4"
NO. 2 PAN HOSE BIBS	3"	1-1/2"	3/4"	3/4"
WASH MACHINE TRIM	2"	1-1/2"	3/4"	3/4"
DRAIN PAN W/ FLOOR DRAIN	2"	1-1/2"	-	-

NOTES:  
 1. SIZES SHALL BE AS SCHEDULED UNLESS OTHERWISE NOTED ON DRAWINGS.

**PLUMBING NOTES:**

- A. COORDINATE ALL PLUMBING INSTALLATION WITH GENERAL, FIRE PROTECTION, VENTILATION AND ELECTRICAL CONTRACTORS. INSTALL ALL PLUMBING PIPING AS HIGH AS POSSIBLE. PROVIDE ALL NECESSARY OFFSETS (DROPS AND RISES) TO KEEP PLUMBING PIPING TIGHT TO THE STRUCTURE OR DUCTWORK ABOVE. OFFSET PLUMBING PIPING TO AVOID BEAMS.
- B. REFER TO AND COORDINATE WITH THE ARCHITECTURAL PLANS FOR CEILING TYPES, HEIGHTS, SOFFIT AREAS, AND ELEVATIONS FOR INSTALLATION OF NEW PLUMBING PIPING, EQUIPMENT, ETC.
- C. MAINTAIN 3'-0" CLEAR SPACE IN FRONT OF ALL ELECTRICAL, CONTROL, AND ACCESS PANELS FOR ACCESSIBILITY.
- D. ALL SHUT-OFF VALVES, ETC., SHALL BE INSTALLED IN ACCESSIBLE CEILINGS.

- 1. PROVIDE AND INSTALL WASHING MACHINE TRIM BOX FOR CLOTHES WASHER.
- 2. PROVIDE AND INSTALL DRAIN PAN WITH INTEGRAL FLOOR DRAIN BELOW WASHING MACHINE. CONTRACTOR SHALL COORDINATE DRAIN PLACEMENT WITH STRUCTURE.

**1 FOURTH FLOOR PLAN - PLUMBING**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:41:14 PM



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**REVISION SCHEDULE**

NO.	DESCRIPTION	DATE

**JLG ARCHITECTS  
 BOTTINEAU RIDGE II APARTMENTS  
 MAPLE GROVE, MN**

DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**  
 SHEET  
**P105A**  
 FOURTH FLOOR  
 PLAN - WEST -  
 PLUMBING

**PLUMBING FIXTURE ROUGH-IN CONNECTION SCHEDULE**

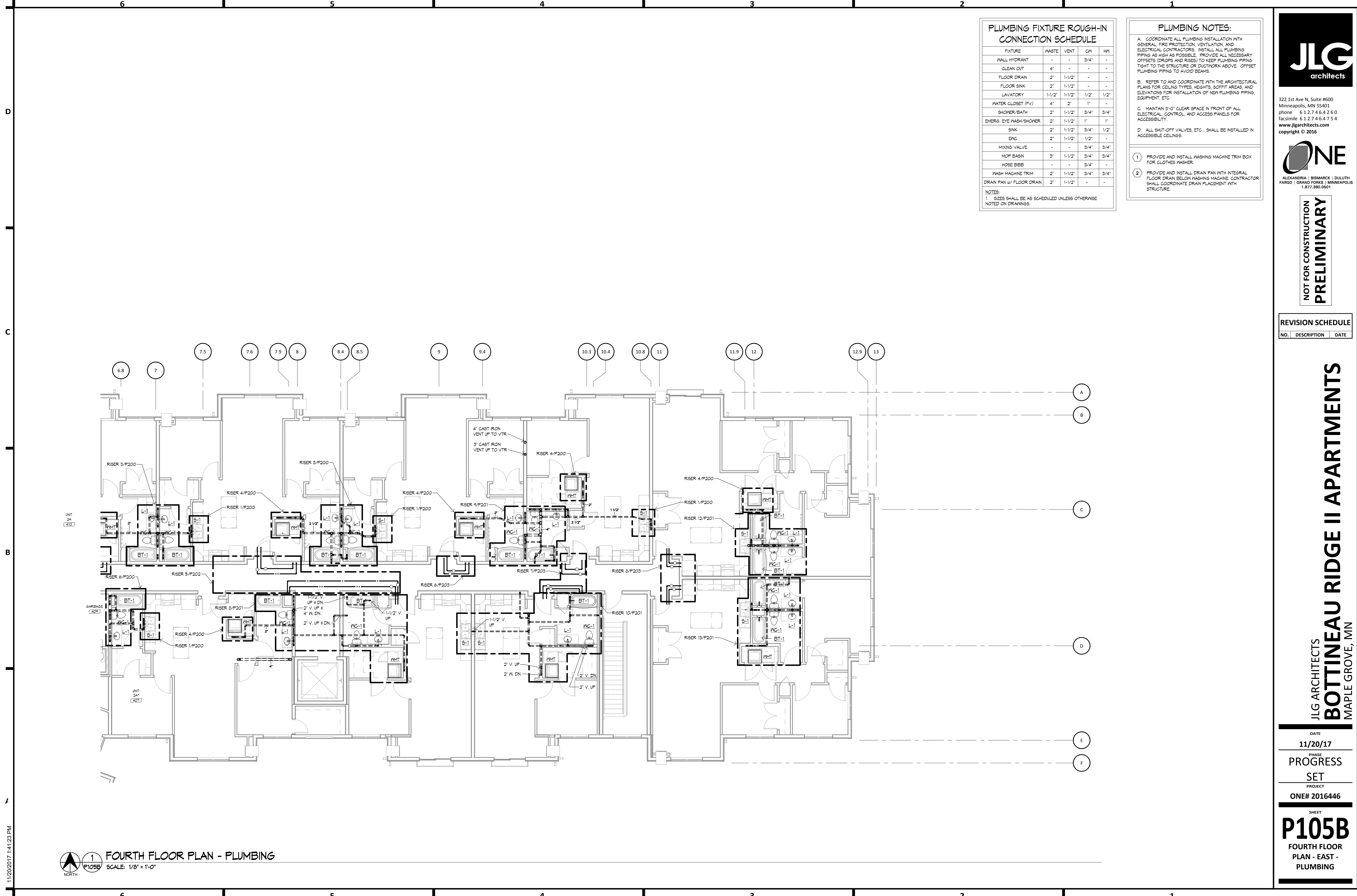
FIXTURE	WASTE	VENT	GN	HN
WALL HYDRANT	-	-	3/4"	-
CLEAN OUT	4"	-	-	-
FLOOR DRAIN	2"	1-1/2"	-	-
FLOOR SINK	2"	1-1/2"	-	-
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WATER CLOSET (TV)	4"	2"	1"	-
SHOWER/BATH	2"	1-1/2"	3/4"	3/4"
EMERG. EYE WASH/SHOWER	2"	1-1/2"	1"	1"
SINK	2"	1-1/2"	3/4"	1/2"
BKC	2"	1-1/2"	1/2"	-
MIXING VALVE	-	-	3/4"	3/4"
MOP BASIN	3"	1-1/2"	3/4"	3/4"
HOSE BIBB	-	-	3/4"	-
WASH MACHINE TRIM	2"	1-1/2"	3/4"	3/4"
DRAIN PAN w/ FLOOR DRAIN	2"	1-1/2"	-	-

NOTES:  
 1. SIZES SHALL BE AS SCHEDULED UNLESS OTHERWISE NOTED ON DRAWINGS.

**PLUMBING NOTES:**

- A. COORDINATE ALL PLUMBING INSTALLATION WITH GENERAL, FIRE PROTECTION, VENTILATION AND ELECTRICAL CONTRACTORS. INSTALL ALL PLUMBING PIPING AS HIGH AS POSSIBLE. PROVIDE ALL NECESSARY OFFSETS (DROPS AND RISES) TO KEEP PLUMBING PIPING TIGHT TO THE STRUCTURE OR DUCTWORK ABOVE. OFFSET PLUMBING PIPING TO AVOID BEAMS.
- B. REFER TO AND COORDINATE WITH THE ARCHITECTURAL PLANS FOR CEILING TYPES, HEIGHTS, SOFFIT AREAS, AND ELEVATIONS FOR INSTALLATION OF NEW PLUMBING PIPING, EQUIPMENT, ETC.
- C. MAINTAIN 3'-0" CLEAR SPACE IN FRONT OF ALL ELECTRICAL, CONTROL, AND ACCESS PANELS FOR ACCESSIBILITY.
- D. ALL SHUT-OFF VALVES, ETC., SHALL BE INSTALLED IN ACCESSIBLE CEILINGS.

- 1. PROVIDE AND INSTALL WASHING MACHINE TRIM BOX FOR CLOTHES WASHER.
- 2. PROVIDE AND INSTALL DRAIN PAN WITH INTEGRAL FLOOR DRAIN BELOW WASHING MACHINE. CONTRACTOR SHALL COORDINATE DRAIN PLACEMENT WITH STRUCTURE.



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**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**

SHEET  
**P105B**  
 FOURTH FLOOR  
 PLAN - EAST -  
 PLUMBING

**1** FOURTH FLOOR PLAN - PLUMBING  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:41:23 PM

PLUMBING FIXTURE ROUGH-IN CONNECTION SCHEDULE

FIXTURE	WASTE	VENT	GA	HW
WALL HYDRANT	-	-	3/4"	-
CLEAN OUT	4"	-	-	-
FLOOR DRAIN	2"	1-1/2"	-	-
FLOOR SINK	2"	1-1/2"	-	-
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WATER CLOSET (FV)	4"	2"	1"	-
SHOWER/BATH	2"	1-1/2"	3/4"	3/4"
EMERG. EYE WASH/SHOWER	2"	1-1/2"	1"	1"
SINK	2"	1-1/2"	3/4"	1/2"
ENK	2"	1-1/2"	1/2"	-
MIXING VALVE	-	-	3/4"	3/4"
MOP BASIN	3"	1-1/2"	3/4"	3/4"
HOSE BIBB	-	-	3/4"	-
WASH MACHINE TRIM	2"	1-1/2"	3/4"	3/4"
DRAN PAN W/ FLOOR DRAIN	2"	1-1/2"	-	-

NOTES:  
1. SIZES SHALL BE AS SCHEDULED UNLESS OTHERWISE NOTED ON DRAWINGS.



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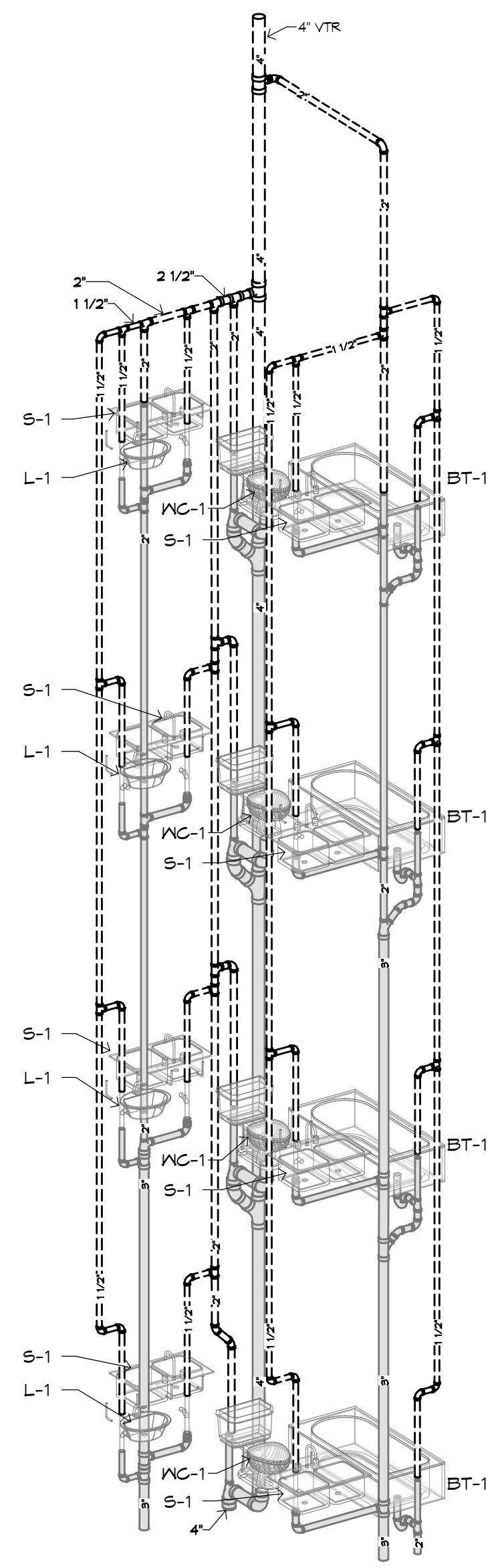
REVISION SCHEDULE

NO.	DESCRIPTION	DATE

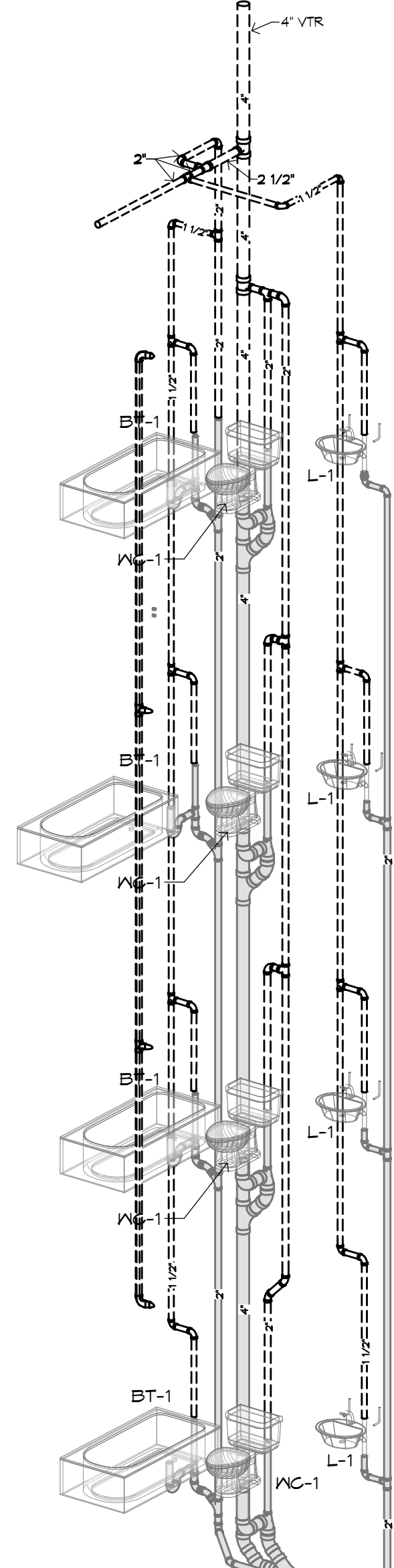
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PROJECT  
ONE# 2016446

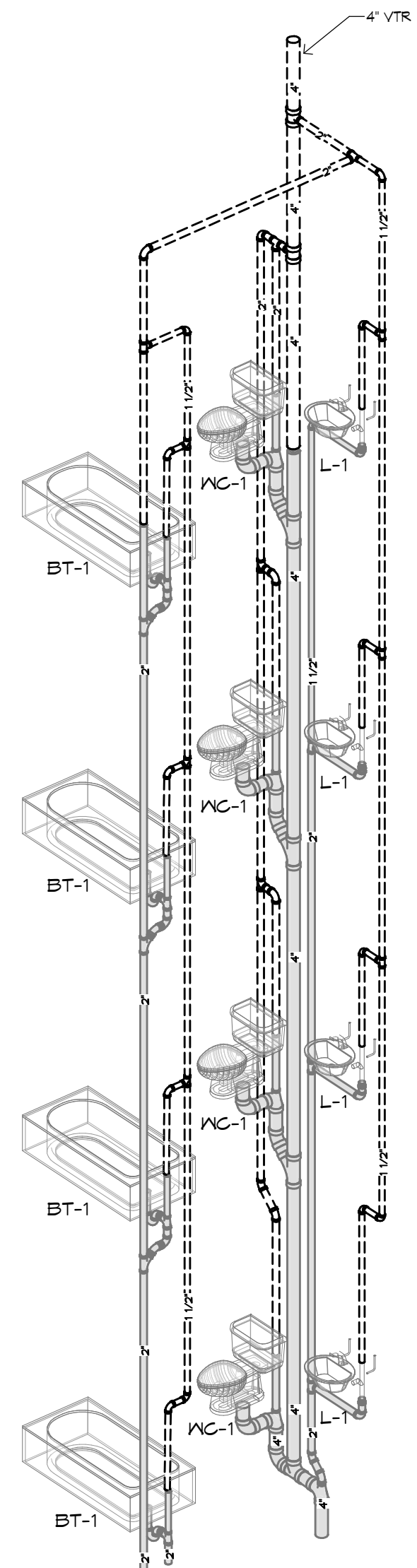
SHEET  
**P200**  
WASTE & VENT  
RISER DIAGRAMS



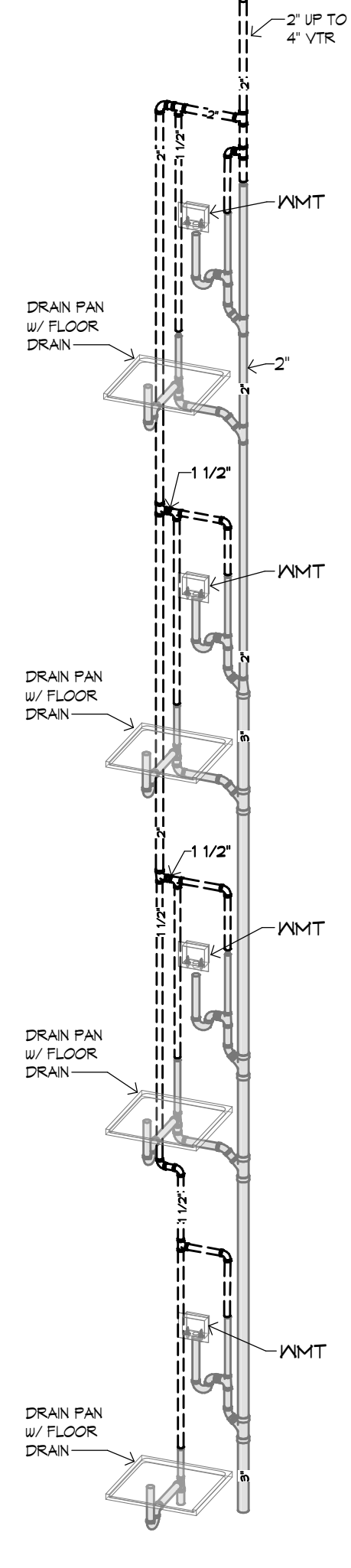
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SCALE: NTS



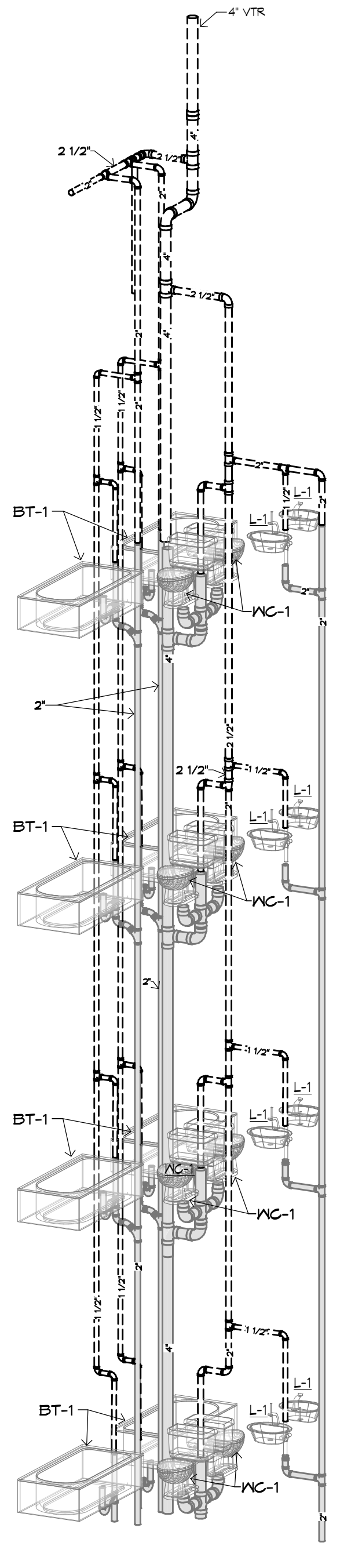
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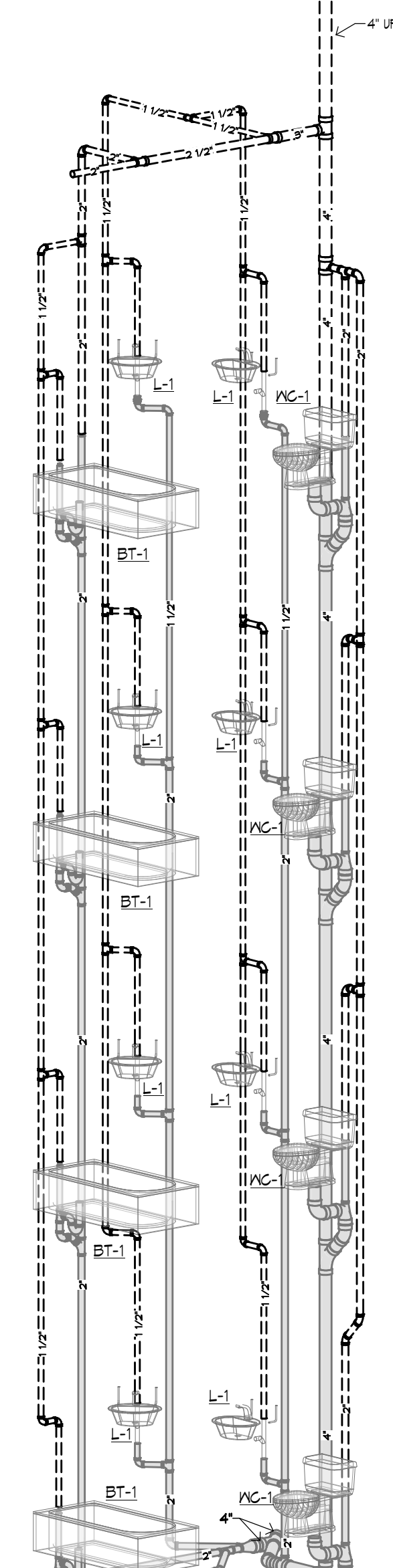
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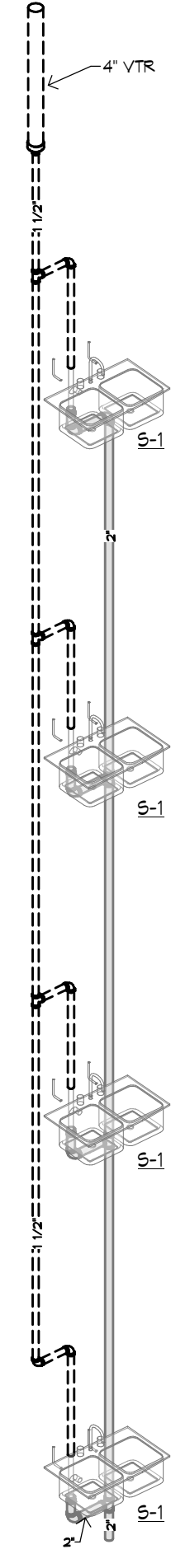
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SCALE: NTS



3 RISER 3/P200  
SCALE: NTS



2 RISER 2/P200  
SCALE: NTS



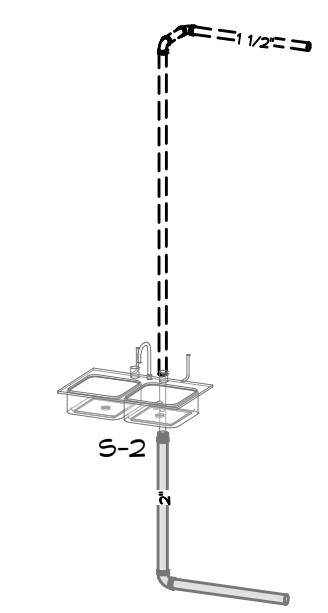
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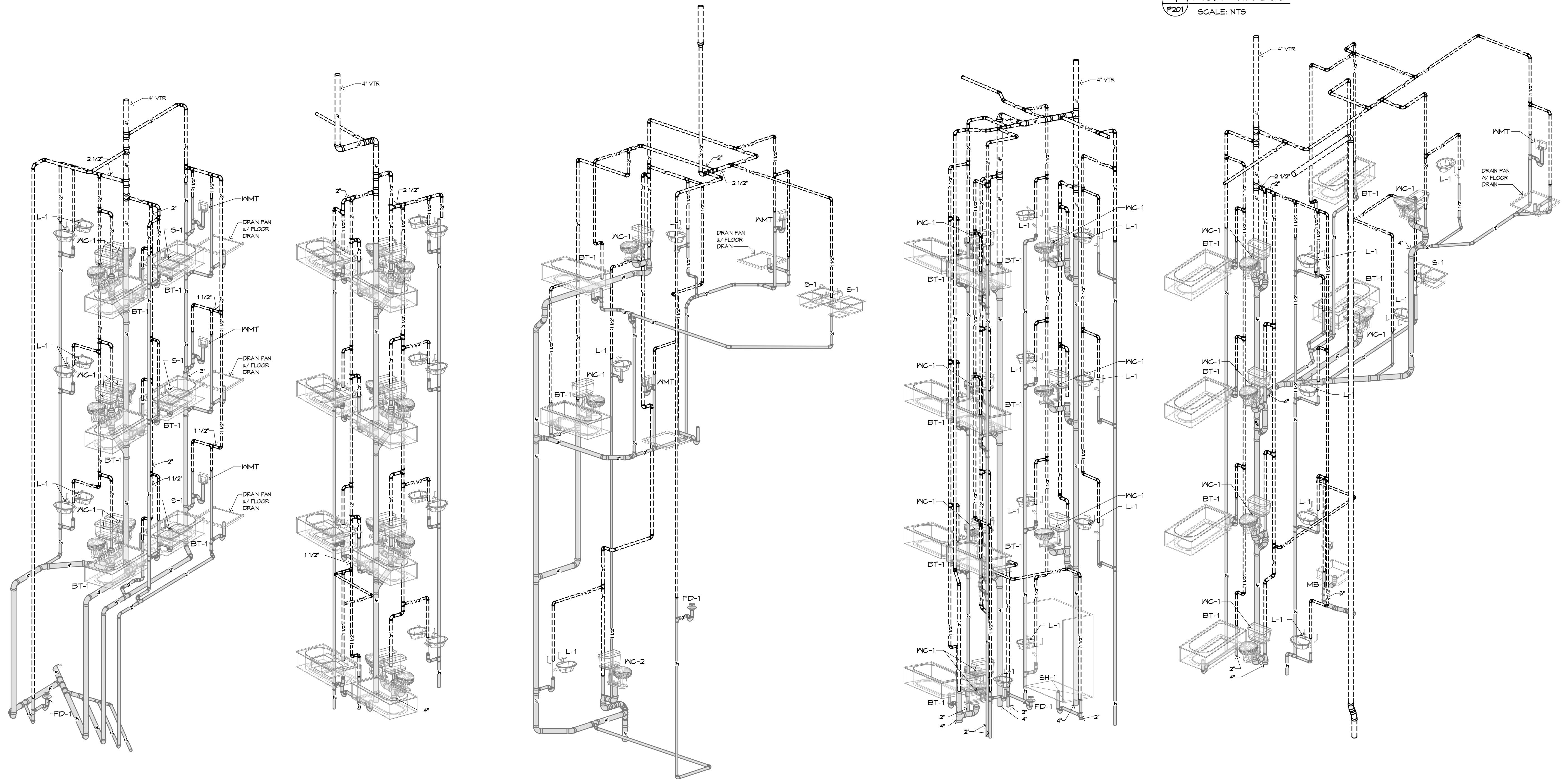
PLUMBING FIXTURE ROUGH-IN CONNECTION SCHEDULE

FIXTURE	WASTE	VENT	GA	HA
WALL HYDRANT	-	-	3/4"	-
CLEAN OUT	4"	-	-	-
FLOOR DRAIN	2"	1-1/2"	-	-
FLOOR SINK	2"	1-1/2"	-	-
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WATER CLOSET (FV)	4"	2"	1"	-
SHOWER/BATH	2"	1-1/2"	3/4"	3/4"
EMERG. EYE WASH/SHOWER	2"	1-1/2"	1"	1"
SINK	2"	1-1/2"	3/4"	1/2"
ENC	2"	1-1/2"	1/2"	-
MIXING VALVE	-	-	3/4"	3/4"
MOP BASIN	3"	1-1/2"	3/4"	3/4"
HOSE BIBB	-	-	3/4"	-
WASH MACHINE TRIM	2"	1-1/2"	3/4"	3/4"
DRAIN PAN w/ FLOOR DRAIN	2"	1-1/2"	-	-

NOTES:  
 1. SIZES SHALL BE AS SCHEDULED UNLESS OTHERWISE NOTED ON DRAWINGS.



4 RISER 11/P203  
 P201 SCALE: NTS



6 RISER 13/P201  
 P201 SCALE: NTS

5 RISER 12/P201  
 P201 SCALE: NTS

3 RISER 10/P201  
 P201 SCALE: NTS

2 RISER 9/P201  
 P201 SCALE: NTS

1 RISER 8/P201  
 P201 SCALE: NTS

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REVISION SCHEDULE

NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

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 PROJECT  
 ONE# 2016446

SHEET  
**P201**  
 WASTE & VENT  
 RISER DIAGRAMS

**PLUMBING FIXTURE ROUGH-IN CONNECTION SCHEDULE**

FIXTURE	WASTE	VENT	GA	HW
WALL HYDRANT	-	-	3/4"	-
CLEAN OUT	4"	-	-	-
FLOOR DRAIN	2"	1-1/2"	-	-
FLOOR SINK	2"	1-1/2"	-	-
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WATER CLOSET (FV)	4"	2"	1"	-
SHOWER/BATH	2"	1-1/2"	3/4"	3/4"
EMERG. EYE WASH/SHOWER	2"	1-1/2"	1"	1"
SINK	2"	1-1/2"	3/4"	1/2"
ENK	2"	1-1/2"	1/2"	-
MIXING VALVE	-	-	3/4"	3/4"
MOP BASIN	3"	1-1/2"	3/4"	3/4"
HOSE BIBB	-	-	3/4"	-
WASH MACHINE TRIM	2"	1-1/2"	3/4"	3/4"
DRAIN PAN w/ FLOOR DRAIN	2"	1-1/2"	-	-

NOTES:  
 1. SIZES SHALL BE AS SCHEDULED UNLESS OTHERWISE NOTED ON DRAWINGS.



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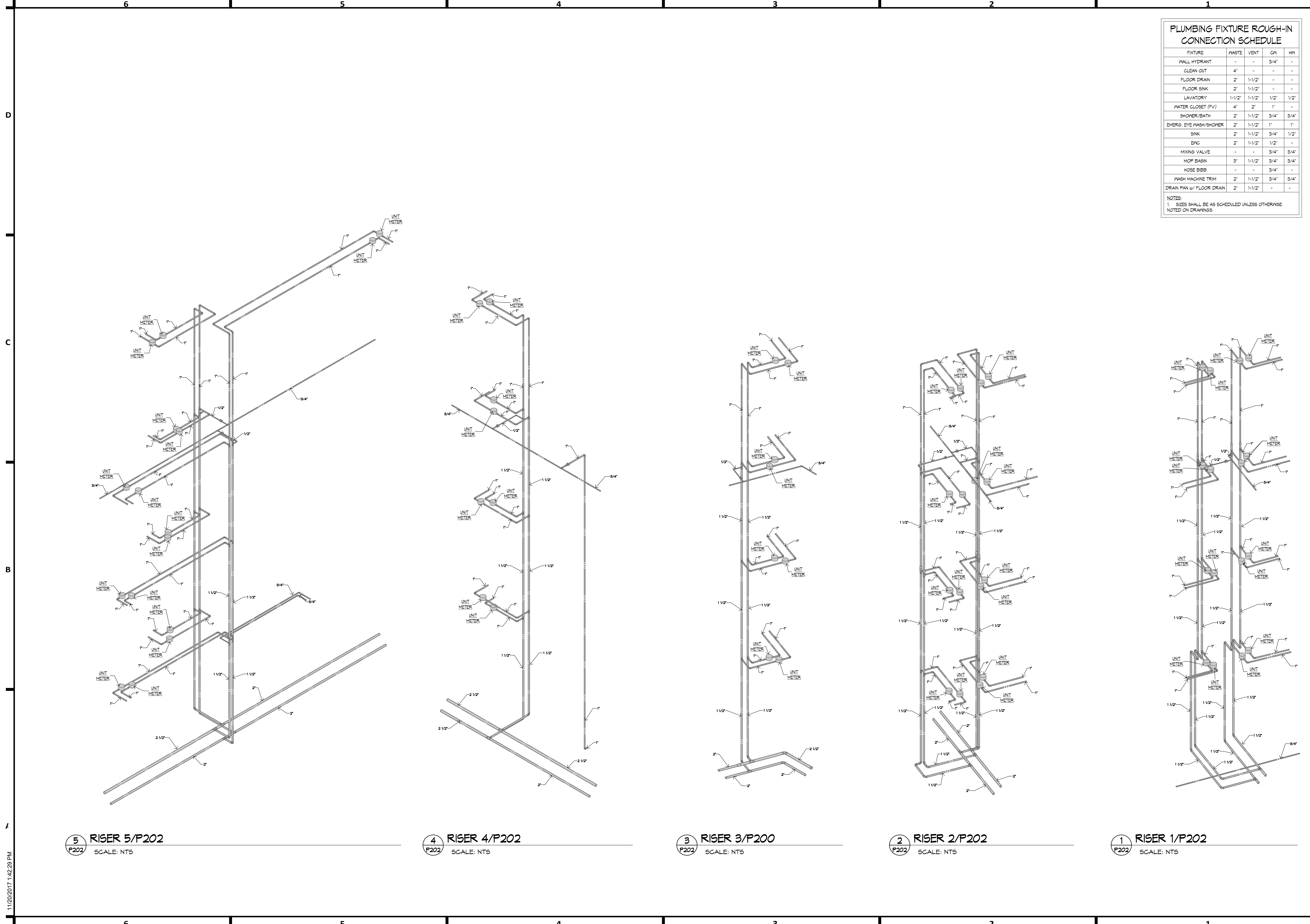
**REVISION SCHEDULE**

NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/10/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**

SHEET  
**P202**  
 DOMESTIC WATER  
 RISER DIAGRAMS



**5 RISER 5/P202**  
 SCALE: NTS

**4 RISER 4/P202**  
 SCALE: NTS

**3 RISER 3/P200**  
 SCALE: NTS

**2 RISER 2/P202**  
 SCALE: NTS

**1 RISER 1/P202**  
 SCALE: NTS

11/20/2017 1:42:29 PM

PLUMBING FIXTURE ROUGH-IN CONNECTION SCHEDULE

FIXTURE	WASTE	VENT	GA	HW
WALL HYDRANT	-	-	3/4"	-
CLEAN OUT	4"	-	-	-
FLOOR DRAIN	2"	1-1/2"	-	-
FLOOR SINK	2"	1-1/2"	-	-
LAVATORY	1-1/2"	1-1/2"	1/2"	1/2"
WATER CLOSET (FV)	4"	2"	1"	-
SHOWER/BATH	2"	1-1/2"	3/4"	3/4"
EMERG. EYE WASH/SHOWER	2"	1-1/2"	1"	1"
SINK	2"	1-1/2"	3/4"	1/2"
ENK	2"	1-1/2"	1/2"	-
MIXING VALVE	-	-	3/4"	3/4"
MOP BASIN	3"	1-1/2"	3/4"	3/4"
HOSE BIBB	-	-	3/4"	-
WASH MACHINE TRIM	2"	1-1/2"	3/4"	3/4"
DRAIN PAN w/ FLOOR DRAIN	2"	1-1/2"	-	-

NOTES:  
1. SIZES SHALL BE AS SCHEDULED UNLESS OTHERWISE NOTED ON DRAWINGS.



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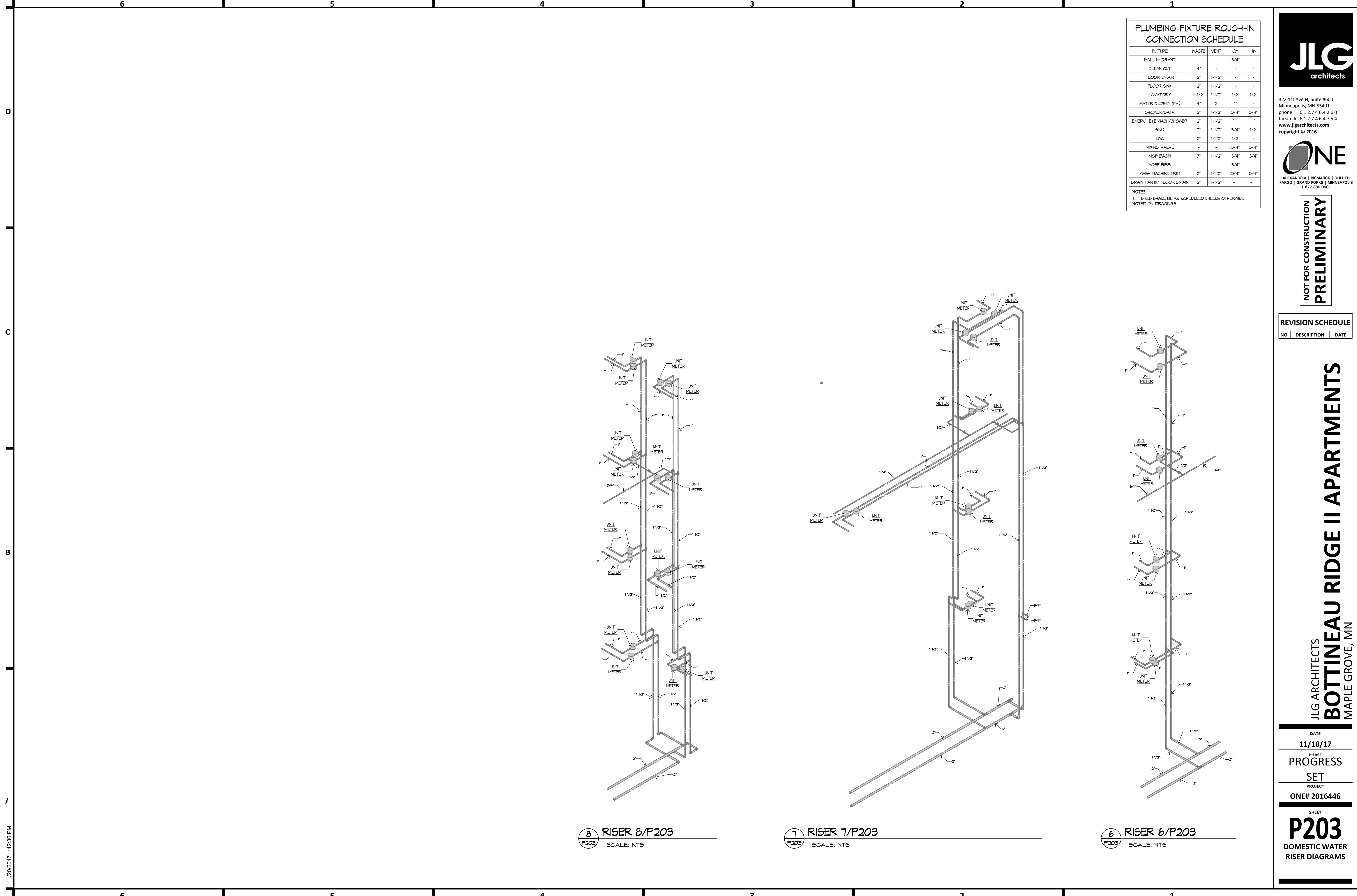
REVISION SCHEDULE

NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
MAPLE GROVE, MN

DATE  
**11/10/17**  
PHASE  
**PROGRESS SET**  
PROJECT  
**ONE# 2016446**

SHEET  
**P203**  
DOMESTIC WATER  
RISER DIAGRAMS

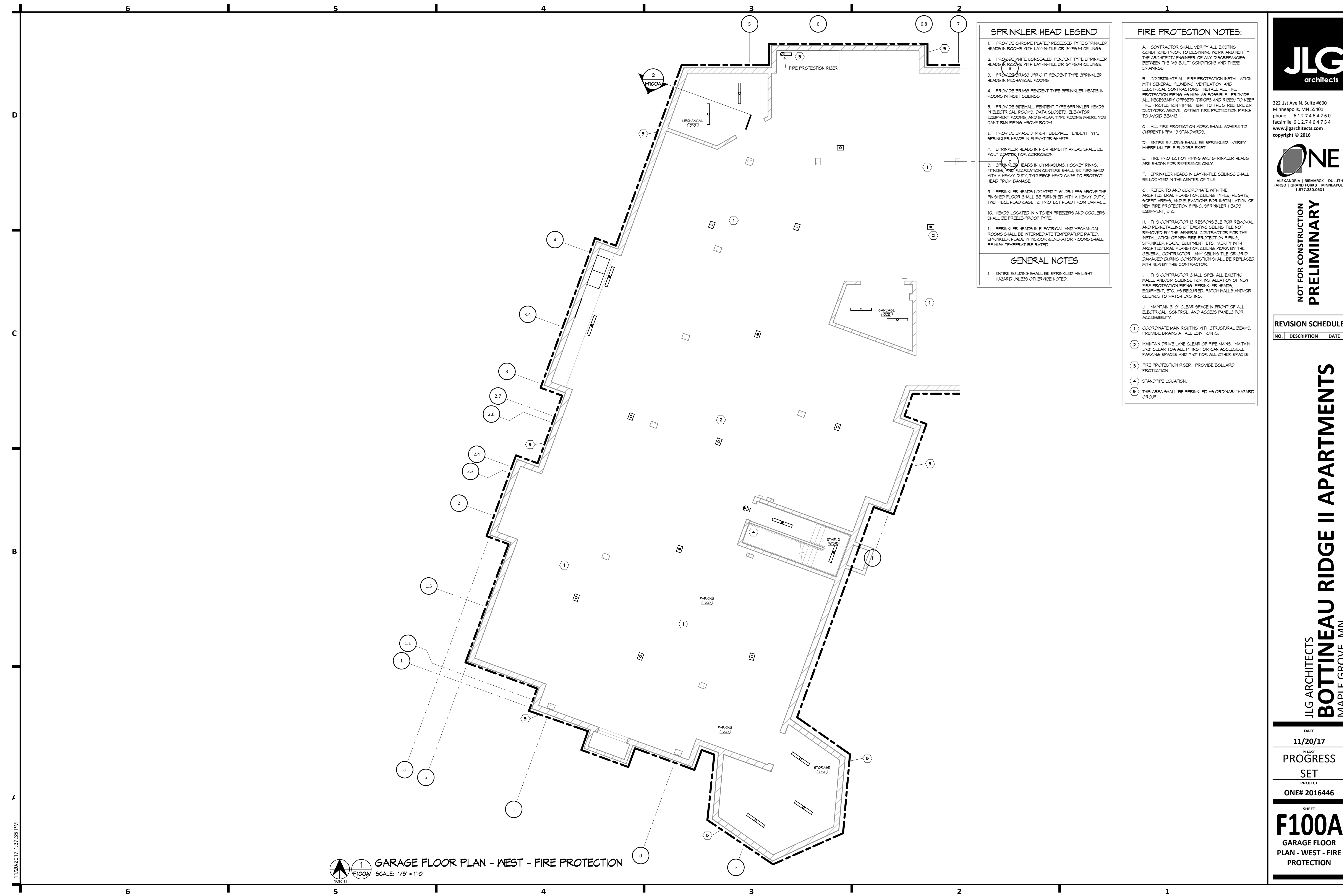


8 RISER 8/P203  
SCALE: NTS

7 RISER 7/P203  
SCALE: NTS

6 RISER 6/P203  
SCALE: NTS

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**SPRINKLER HEAD LEGEND**

1. PROVIDE CHROME PLATED RECESSED TYPE SPRINKLER HEADS IN ROOMS WITH LAY-IN-TILE OR GYPSUM CEILINGS.
2. PROVIDE WHITE CONCEALED PENDENT TYPE SPRINKLER HEADS IN ROOMS WITH LAY-IN-TILE OR GYPSUM CEILINGS.
3. PROVIDE BRASS UPRIGHT PENDENT TYPE SPRINKLER HEADS IN MECHANICAL ROOMS.
4. PROVIDE BRASS PENDENT TYPE SPRINKLER HEADS IN ROOMS WITHOUT CEILINGS.
5. PROVIDE SIDEWALL PENDENT TYPE SPRINKLER HEADS IN ELECTRICAL ROOMS, DATA CLOSETS, ELEVATOR EQUIPMENT ROOMS, AND SIMILAR TYPE ROOMS WHERE YOU CAN'T RUN PIPING ABOVE ROOM.
6. PROVIDE BRASS UPRIGHT SIDEWALL PENDENT TYPE SPRINKLER HEADS IN ELEVATOR SHAFTS.
7. SPRINKLER HEADS IN HIGH HUMIDITY AREAS SHALL BE POLY COATED FOR CORROSION.
8. SPRINKLER HEADS IN GYMNASIUMS, HOCKEY RINKS, FITNESS, AND RECREATION CENTERS SHALL BE FURNISHED WITH A HEAVY DUTY, TWO PIECE HEAD CASE TO PROTECT HEAD FROM DAMAGE.
9. SPRINKLER HEADS LOCATED 7'-6" OR LESS ABOVE THE FINISHED FLOOR SHALL BE FURNISHED WITH A HEAVY DUTY, TWO PIECE HEAD CASE TO PROTECT HEAD FROM DAMAGE. SPRINKLER HEADS IN INDOOR GENERATOR ROOMS SHALL BE HIGH TEMPERATURE RATED.
10. HEADS LOCATED IN KITCHEN FREEZERS AND COOLERS SHALL BE FREEZE-PROOF TYPE.
11. SPRINKLER HEADS IN ELECTRICAL AND MECHANICAL ROOMS SHALL BE INTERMEDIATE TEMPERATURE RATED. SPRINKLER HEADS IN INDOOR GENERATOR ROOMS SHALL BE HIGH TEMPERATURE RATED.

**GENERAL NOTES**

1. ENTIRE BUILDING SHALL BE SPRINKLED AS LIGHT HAZARD UNLESS OTHERWISE NOTED.

**FIRE PROTECTION NOTES:**

- A. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN THE "AS-BUILT" CONDITIONS AND THESE DRAWINGS.
- B. COORDINATE ALL FIRE PROTECTION INSTALLATION WITH GENERAL, PLUMBING, VENTILATION, AND ELECTRICAL CONTRACTORS. INSTALL ALL FIRE PROTECTION PIPING AS HIGH AS POSSIBLE. PROVIDE ALL NECESSARY OFFSETS (DROPS AND RISES) TO KEEP FIRE PROTECTION PIPING TIGHT TO THE STRUCTURE OR DUCTWORK ABOVE. OFFSET FIRE PROTECTION PIPING TO AVOID BEAMS.
- C. ALL FIRE PROTECTION WORK SHALL ADHERE TO CURRENT NFPA 13 STANDARDS.
- D. ENTIRE BUILDING SHALL BE SPRINKLED. VERIFY WHERE MULTIPLE FLOORS EXIST.
- E. FIRE PROTECTION PIPING AND SPRINKLER HEADS ARE SHOWN FOR REFERENCE ONLY.
- F. SPRINKLER HEADS IN LAY-IN-TILE CEILINGS SHALL BE LOCATED IN THE CENTER OF TILE.
- G. REFER TO AND COORDINATE WITH THE ARCHITECTURAL PLANS FOR CEILING TYPES, HEIGHTS, SOFFIT AREAS, AND ELEVATIONS FOR INSTALLATION OF NEW FIRE PROTECTION PIPING, SPRINKLER HEADS, EQUIPMENT, ETC.
- H. THIS CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND RE-INSTALLING OF EXISTING CEILING TILE NOT REMOVED BY THE GENERAL CONTRACTOR FOR THE INSTALLATION OF NEW FIRE PROTECTION PIPING, SPRINKLER HEADS, EQUIPMENT, ETC. VERIFY WITH ARCHITECTURAL PLANS FOR CEILING WORK BY THE GENERAL CONTRACTOR. ANY CEILING TILE OR GRID DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH NEW BY THIS CONTRACTOR.
- I. THIS CONTRACTOR SHALL OPEN ALL EXISTING WALLS AND/OR CEILINGS FOR INSTALLATION OF NEW FIRE PROTECTION PIPING, SPRINKLER HEADS, EQUIPMENT, ETC. AS REQUIRED. PATCH WALLS AND/OR CEILINGS TO MATCH EXISTING.
- J. MAINTAIN 3'-0" CLEAR SPACE IN FRONT OF ALL ELECTRICAL, CONTROL, AND ACCESS PANELS FOR ACCESSIBILITY.

1. COORDINATE MAIN ROUTING WITH STRUCTURAL BEAMS. PROVIDE DRAINS AT ALL LOW POINTS.
2. MAINTAIN DRIVE LANE CLEAR OF PIPE MAINS. MAINTAIN 8'-2" CLEAR TO ALL PIPING FOR CAN ACCESSIBLE PARKING SPACES AND 7'-0" FOR ALL OTHER SPACES.
3. FIRE PROTECTION RISER. PROVIDE BOLLARD PROTECTION.
4. STANDPIPE LOCATION.
5. THIS AREA SHALL BE SPRINKLED AS ORDINARY HAZARD GROUP 1.



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**11/20/17**

PHASE  
**PROGRESS**

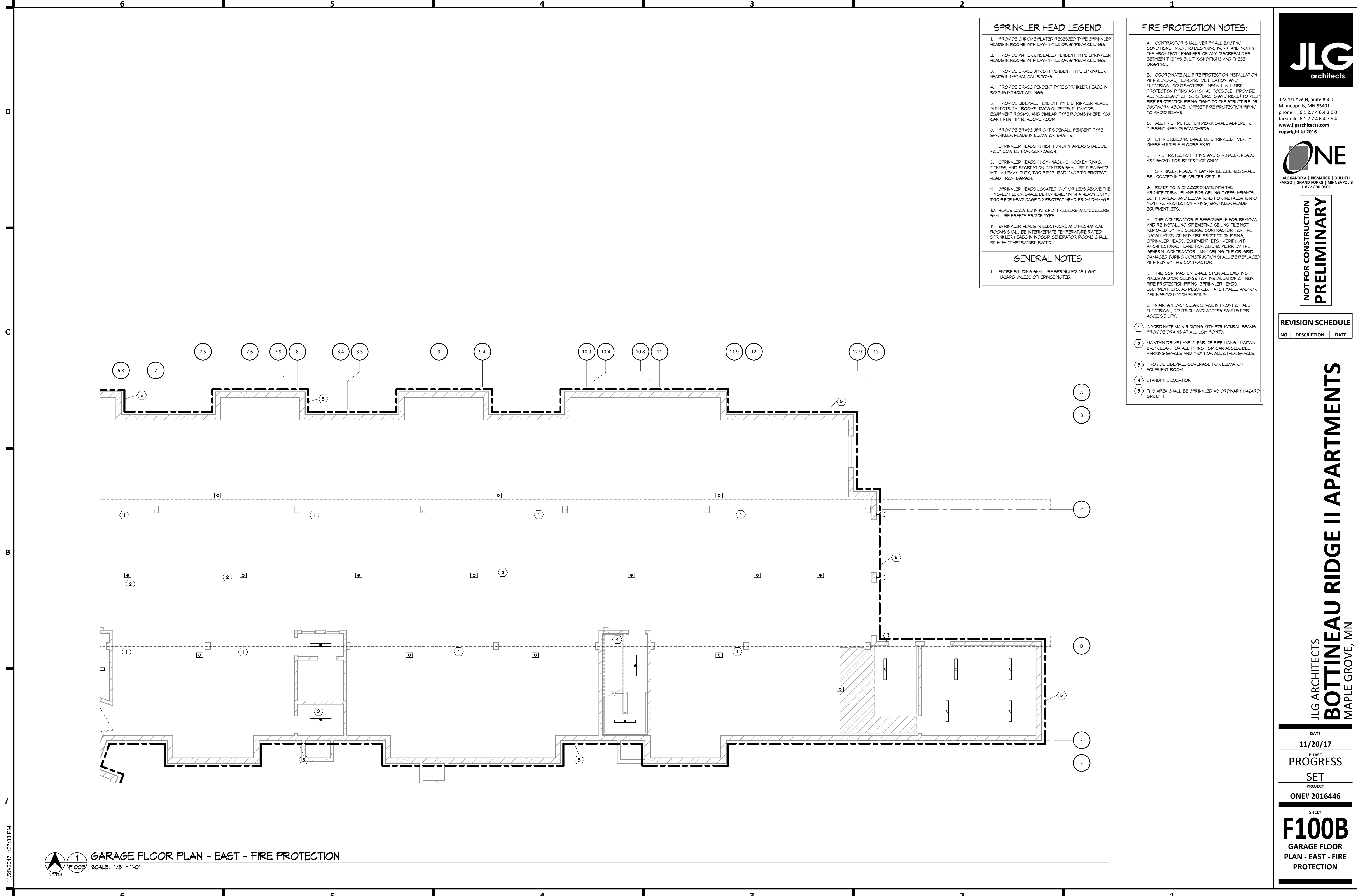
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PROJECT  
**ONE# 2016446**

SHEET  
**F100A**  
 GARAGE FLOOR  
 PLAN - WEST - FIRE  
 PROTECTION

**GARAGE FLOOR PLAN - WEST - FIRE PROTECTION**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:37:35 PM



**SPRINKLER HEAD LEGEND**

1. PROVIDE CHROME PLATED RECESSED TYPE SPRINKLER HEADS IN ROOMS WITH LAY-IN-TILE OR GYPSUM CEILINGS.
2. PROVIDE WHITE CONCEALED PENDENT TYPE SPRINKLER HEADS IN ROOMS WITH LAY-IN-TILE OR GYPSUM CEILINGS.
3. PROVIDE BRASS UPRIGHT PENDENT TYPE SPRINKLER HEADS IN MECHANICAL ROOMS.
4. PROVIDE BRASS PENDENT TYPE SPRINKLER HEADS IN ROOMS WITHOUT CEILINGS.
5. PROVIDE SIDEWALL PENDENT TYPE SPRINKLER HEADS IN ELECTRICAL ROOMS, DATA CLOSETS, ELEVATOR EQUIPMENT ROOMS, AND SIMILAR TYPE ROOMS WHERE YOU CANT RUN PIPING ABOVE ROOM.
6. PROVIDE BRASS UPRIGHT SIDEWALL PENDENT TYPE SPRINKLER HEADS IN ELEVATOR SHAFTS.
7. SPRINKLER HEADS IN HIGH HUMIDITY AREAS SHALL BE POLY COATED FOR CORROSION.
8. SPRINKLER HEADS IN GYMNASIUMS, HOCKEY RINKS, FITNESS, AND RECREATION CENTERS SHALL BE FURNISHED WITH A HEAVY DUTY, TWO PIECE HEAD CASE TO PROTECT HEAD FROM DAMAGE.
9. SPRINKLER HEADS LOCATED 7'-6" OR LESS ABOVE THE FINISHED FLOOR SHALL BE FURNISHED WITH A HEAVY DUTY, TWO PIECE HEAD CASE TO PROTECT HEAD FROM DAMAGE.
10. HEADS LOCATED IN KITCHEN FREEZERS AND COOLERS SHALL BE FREEZE-PROOF TYPE.
11. SPRINKLER HEADS IN ELECTRICAL AND MECHANICAL ROOMS SHALL BE INTERMEDIATE TEMPERATURE RATED. SPRINKLER HEADS IN INDOOR GENERATOR ROOMS SHALL BE HIGH TEMPERATURE RATED.

**GENERAL NOTES**

1. ENTIRE BUILDING SHALL BE SPRINKLED AS LIGHT HAZARD UNLESS OTHERWISE NOTED.

**FIRE PROTECTION NOTES:**

- A. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN THE "AS-BUILT" CONDITIONS AND THESE DRAWINGS.
- B. COORDINATE ALL FIRE PROTECTION INSTALLATION WITH GENERAL, PLUMBING, VENTILATION, AND ELECTRICAL CONTRACTORS. INSTALL ALL FIRE PROTECTION PIPING AS HIGH AS POSSIBLE. PROVIDE ALL NECESSARY OFFSETS (DROPS AND RISES) TO KEEP FIRE PROTECTION PIPING TIGHT TO THE STRUCTURE OR DUCTWORK ABOVE. OFFSET FIRE PROTECTION PIPING TO AVOID BEAMS.
- C. ALL FIRE PROTECTION WORK SHALL ADHERE TO CURRENT NFPA 13 STANDARDS.
- D. ENTIRE BUILDING SHALL BE SPRINKLED. VERIFY WHERE MULTIPLE FLOORS EXIST.
- E. FIRE PROTECTION PIPING AND SPRINKLER HEADS ARE SHOWN FOR REFERENCE ONLY.
- F. SPRINKLER HEADS IN LAY-IN-TILE CEILINGS SHALL BE LOCATED IN THE CENTER OF TILE.
- G. REFER TO AND COORDINATE WITH THE ARCHITECTURAL PLANS FOR CEILING TYPES, HEIGHTS, SOFFIT AREAS, AND ELEVATIONS FOR INSTALLATION OF NEW FIRE PROTECTION PIPING, SPRINKLER HEADS, EQUIPMENT, ETC.
- H. THIS CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND RE-INSTALLING OF EXISTING CEILING TILE NOT REMOVED BY THE GENERAL CONTRACTOR FOR THE INSTALLATION OF NEW FIRE PROTECTION PIPING, SPRINKLER HEADS, EQUIPMENT, ETC. VERIFY WITH ARCHITECTURAL PLANS FOR CEILING WORK BY THE GENERAL CONTRACTOR. ANY CEILING TILE OR GRID DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH NEW BY THIS CONTRACTOR.
- I. THIS CONTRACTOR SHALL OPEN ALL EXISTING WALLS AND/OR CEILINGS FOR INSTALLATION OF NEW FIRE PROTECTION PIPING, SPRINKLER HEADS, EQUIPMENT, ETC. AS REQUIRED. PATCH WALLS AND/OR CEILINGS TO MATCH EXISTING.
- J. MAINTAIN 3'-0" CLEAR SPACE IN FRONT OF ALL ELECTRICAL, CONTROL, AND ACCESS PANELS FOR ACCESSIBILITY.

1. COORDINATE MAIN ROUTING WITH STRUCTURAL BEAMS. PROVIDE DRAINS AT ALL LOW POINTS.
2. MAINTAIN DRIVE LANE CLEAR OF PIPE MANS. MAINTAIN 8'-2" CLEAR TO ALL PIPING FOR CAN ACCESSIBLE PARKING SPACES AND 7'-0" FOR ALL OTHER SPACES.
3. PROVIDE SIDEWALL COVERAGE FOR ELEVATOR EQUIPMENT ROOM.
4. STANDPIPE LOCATION.
5. THIS AREA SHALL BE SPRINKLED AS ORDINARY HAZARD GROUP 1.



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**REVISION SCHEDULE**

NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**  
 SHEET  
**F100B**  
 GARAGE FLOOR  
 PLAN - EAST - FIRE  
 PROTECTION

11/20/2017 1:37:38 PM

**1** GARAGE FLOOR PLAN - EAST - FIRE PROTECTION  
 SCALE: 1/8" = 1'-0"



**SPRINKLER HEAD LEGEND**

- PROVIDE CHROME PLATED RECESSED TYPE SPRINKLER HEADS IN ROOMS WITH LAY-IN-TILE OR GYPSUM CEILINGS.
- PROVIDE WHITE CONCEALED PENDENT TYPE SPRINKLER HEADS IN ROOMS WITH LAY-IN-TILE OR GYPSUM CEILINGS.
- PROVIDE BRASS UPRIGHT PENDENT TYPE SPRINKLER HEADS IN MECHANICAL ROOMS.
- PROVIDE BRASS PENDENT TYPE SPRINKLER HEADS IN ROOMS WITHOUT CEILINGS.
- PROVIDE SIDEWALL PENDENT TYPE SPRINKLER HEADS IN ELECTRICAL ROOMS, DATA CLOSETS, ELEVATOR EQUIPMENT ROOMS, AND SIMILAR TYPE ROOMS WHERE YOU CANT RUN PIPING ABOVE ROOM.
- PROVIDE BRASS UPRIGHT SIDEWALL PENDENT TYPE SPRINKLER HEADS IN ELEVATOR SHAFTS.
- SPRINKLER HEADS IN HIGH HUMIDITY AREAS SHALL BE POLY COATED FOR CORROSION.
- SPRINKLER HEADS IN GYMNASIUMS, HOCKEY RINKS, FITNESS, AND RECREATION CENTERS SHALL BE FURNISHED WITH A HEAVY DUTY, TWO PIECE HEAD CASE TO PROTECT HEAD FROM DAMAGE.
- SPRINKLER HEADS LOCATED 7'-6" OR LESS ABOVE THE FINISHED FLOOR SHALL BE FURNISHED WITH A HEAVY DUTY, TWO PIECE HEAD CASE TO PROTECT HEAD FROM DAMAGE. SPRINKLER HEADS IN INDOOR GENERATOR ROOMS SHALL BE HIGH TEMPERATURE RATED.
- HEADS LOCATED IN KITCHEN FREEZERS AND COOLERS SHALL BE FREEZE-PROOF TYPE.
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**GENERAL NOTES**

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**FIRE PROTECTION NOTES:**

- CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN THE "AS-BUILT" CONDITIONS AND THESE DRAWINGS.
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- MAINTAIN 3'-0" CLEAR SPACE IN FRONT OF ALL ELECTRICAL, CONTROL, AND ACCESS PANELS FOR ACCESSIBILITY.

1 STANDPIPE LOCATION.  
 2 PROVIDE CONNECTION TO TRASH CHUTE.



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JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**

PHASE  
**PROGRESS**

SET  
**SET**

PROJECT  
**ONE# 2016446**

SHEET  
**F101A**  
 FIRST FLOOR PLAN -  
 WEST - FIRE  
 PROTECTION

1  
**F101A**  
**FIRST FLOOR PLAN - WEST - FIRE PROTECTION**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:37:41 PM

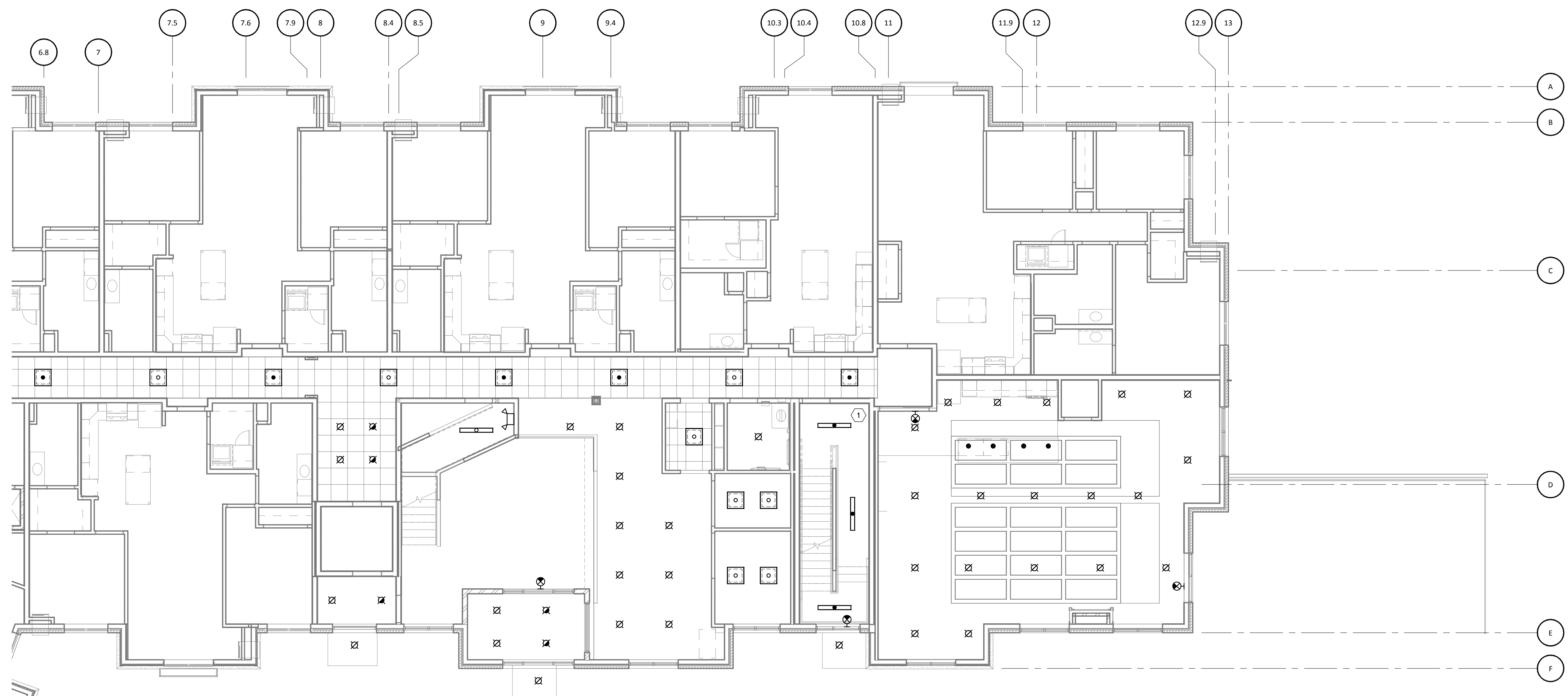
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- ① STANDPIPE LOCATION.



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 MAPLE GROVE, MN

DATE  
**11/20/17**  
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 PROJECT  
**ONE# 2016446**

SHEET  
**F101B**  
 FIRST FLOOR PLAN -  
 EAST - FIRE  
 PROTECTION

**1** FIRST FLOOR PLAN - EAST - FIRE PROTECTION  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:37:45 PM

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- ### SPRINKLER HEAD LEGEND
1. PROVIDE CHROME PLATED RECESSED TYPE SPRINKLER HEADS IN ROOMS WITH LAY-IN-TILE OR GYPSUM CEILINGS.
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- 1 STANDPIPE LOCATION.

**1**  
**F102A**  
**SCALE: 1/8" = 1'-0"**  
**SECOND FLOOR PLAN - WEST - FIRE PROTECTION**

11/20/2017 1:37:49 PM



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NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE	11/20/17
PHASE	PROGRESS
PROJECT	SET
PROJECT	ONE# 2016446
SHEET	<b>F102A</b>
SECOND FLOOR PLAN - WEST - FIRE PROTECTION	

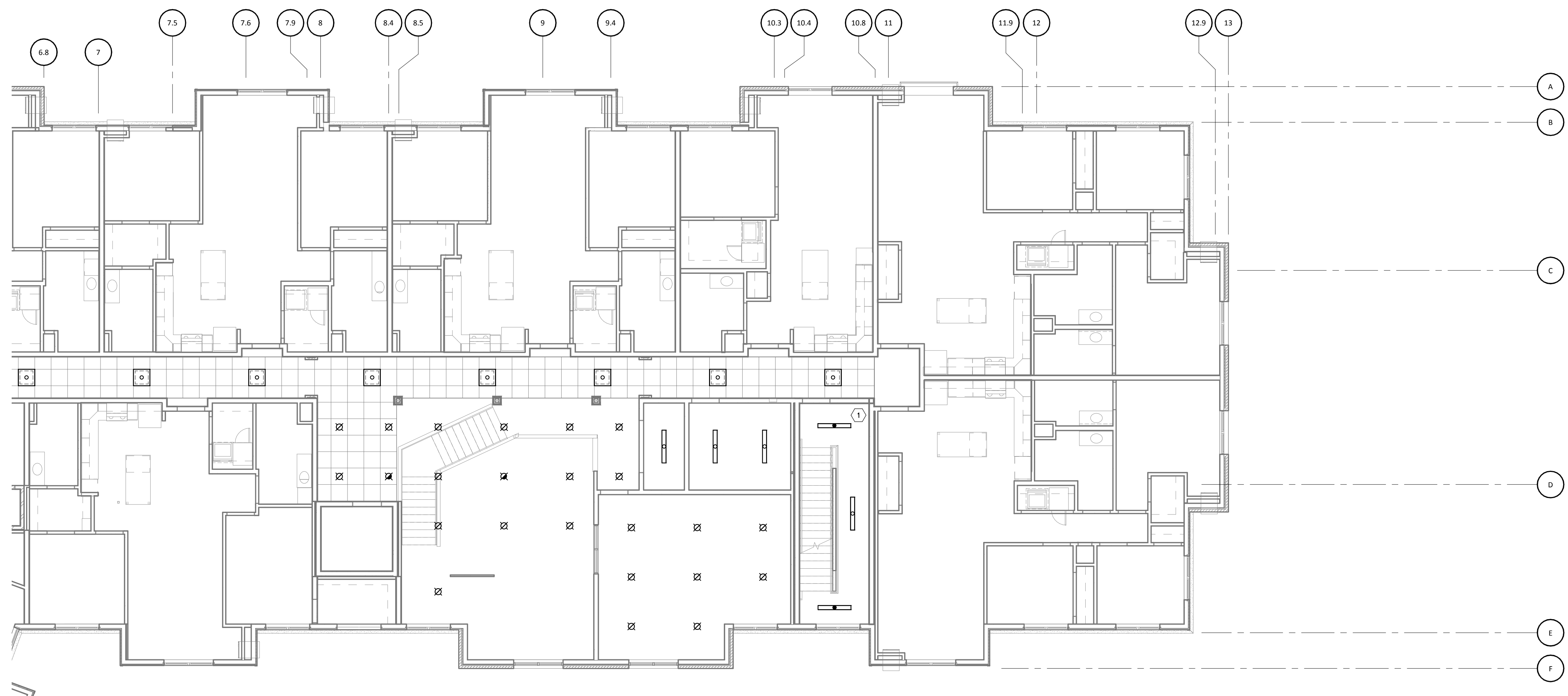
6 5 4 3 2 1

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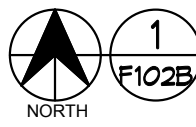
NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**

SHEET  
**F102B**  
 SECOND FLOOR  
 PLAN - EAST - FIRE  
 PROTECTION

11/20/2017 1:37:53 PM



**1 SECOND FLOOR PLAN - EAST - FIRE PROTECTION**

SCALE: 1/8" = 1'-0"

6 5 4 3 2 1



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  8. SPRINKLER HEADS IN GYMNASIUMS, HOCKEY RINKS, FITNESS, AND RECREATION CENTERS SHALL BE FURNISHED WITH A HEAVY DUTY, TWO PIECE HEAD CASE TO PROTECT HEAD FROM DAMAGE.
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  - C. ALL FIRE PROTECTION WORK SHALL ADHERE TO CURRENT NFPA 13 STANDARDS.
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  - J. MAINTAIN 3'-0" CLEAR SPACE IN FRONT OF ALL ELECTRICAL, CONTROL, AND ACCESS PANELS FOR ACCESSIBILITY.
- 1 STANDPIPE LOCATION.

1 THIRD FLOOR PLAN - WEST - FIRE PROTECTION  
 SCALE: 1/8" = 1'-0"



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NO.	DESCRIPTION	DATE

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**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE	11/20/17
PHASE	PROGRESS
PROJECT	SET
PROJECT	ONE# 2016446
SHEET	F103A
THIRD FLOOR PLAN - WEST - FIRE PROTECTION	

11/20/2017 1:37:57 PM

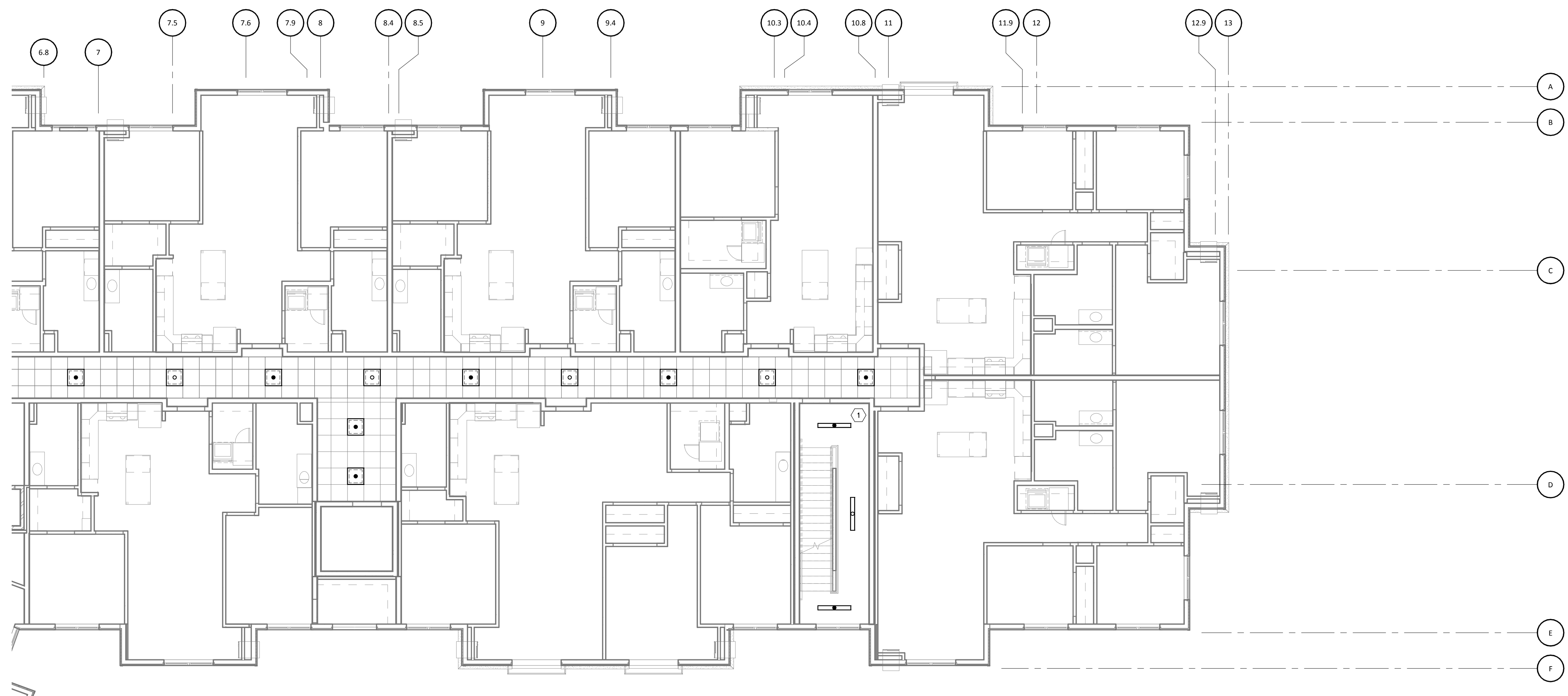
6 5 4 3 2 1

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**SPRINKLER HEAD LEGEND**

1. PROVIDE CHROME PLATED RECESSED TYPE SPRINKLER HEADS IN ROOMS WITH LAY-IN-TILE OR GYPSUM CEILINGS.
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4. PROVIDE BRASS PENDENT TYPE SPRINKLER HEADS IN ROOMS WITHOUT CEILINGS.
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① STANDPIPE LOCATION.



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 MAPLE GROVE, MN

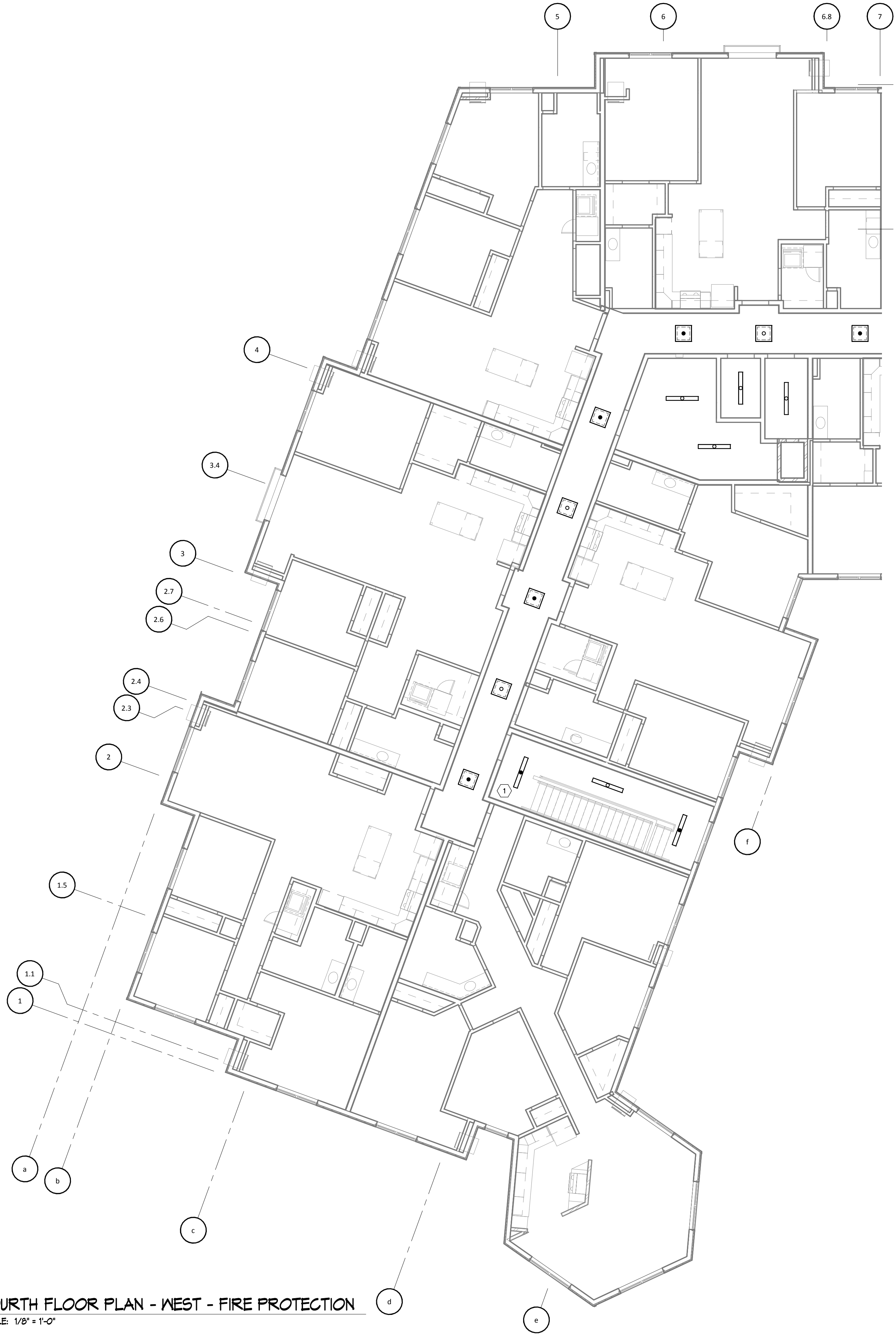
DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**

SHEET  
**F103B**  
 THIRD FLOOR PLAN -  
 EAST - FIRE  
 PROTECTION

**1 THIRD FLOOR PLAN - EAST - FIRE PROTECTION**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:35:00 PM

6 5 4 3 2 1



**SPRINKLER HEAD LEGEND**

1. PROVIDE CHROME PLATED RECESSED TYPE SPRINKLER HEADS IN ROOMS WITH LAY-IN-TILE OR GYPSUM CEILINGS.
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NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**

SHEET  
**F104A**  
 FOURTH FLOOR  
 PLAN - WEST - FIRE  
 PROTECTION

**1** FOURTH FLOOR PLAN - WEST - FIRE PROTECTION  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:35:04 PM

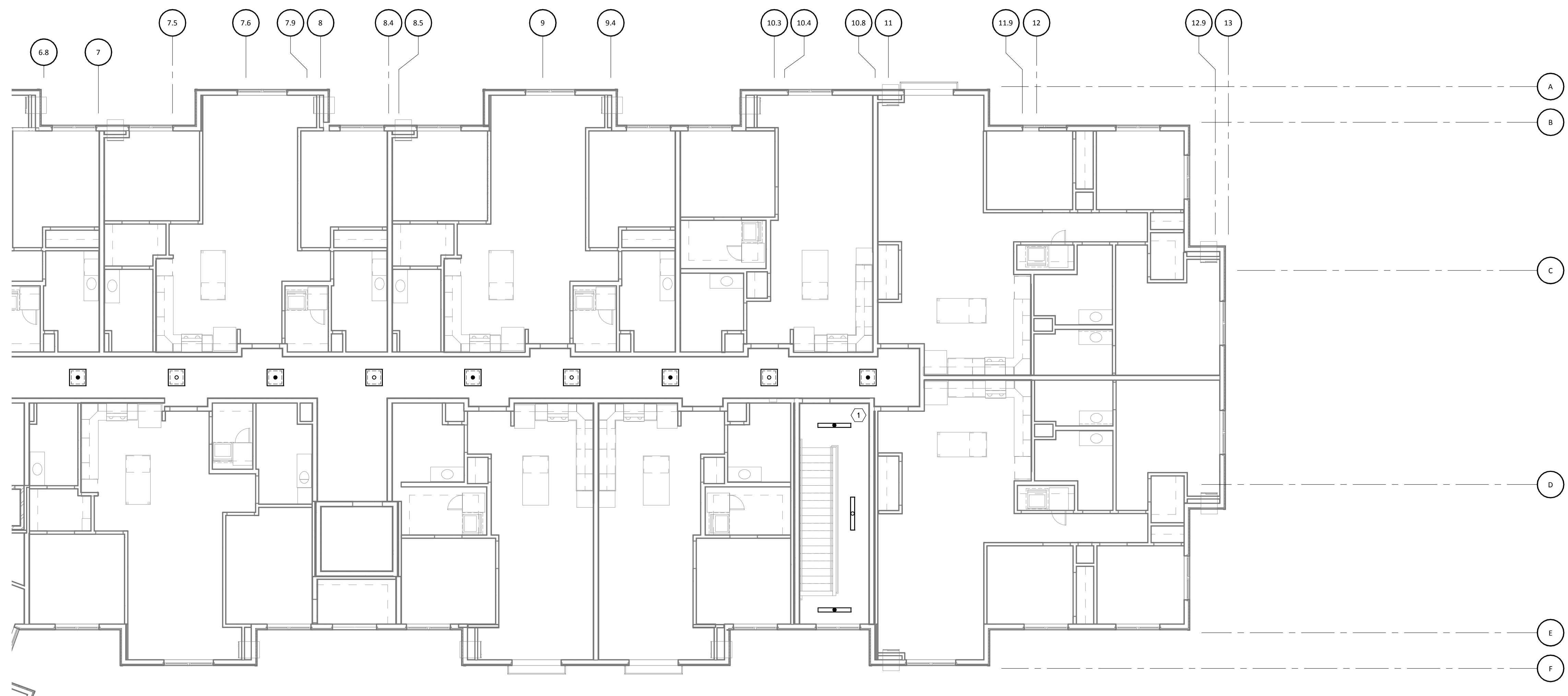
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- ① STANDPIPE LOCATION.



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NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**  
 SHEET  
**F104B**  
 FOURTH FLOOR  
 PLAN - EAST - FIRE  
 PROTECTION

**1** FOURTH FLOOR PLAN - EAST - FIRE PROTECTION  
 SCALE: 1/8" = 1'-0"

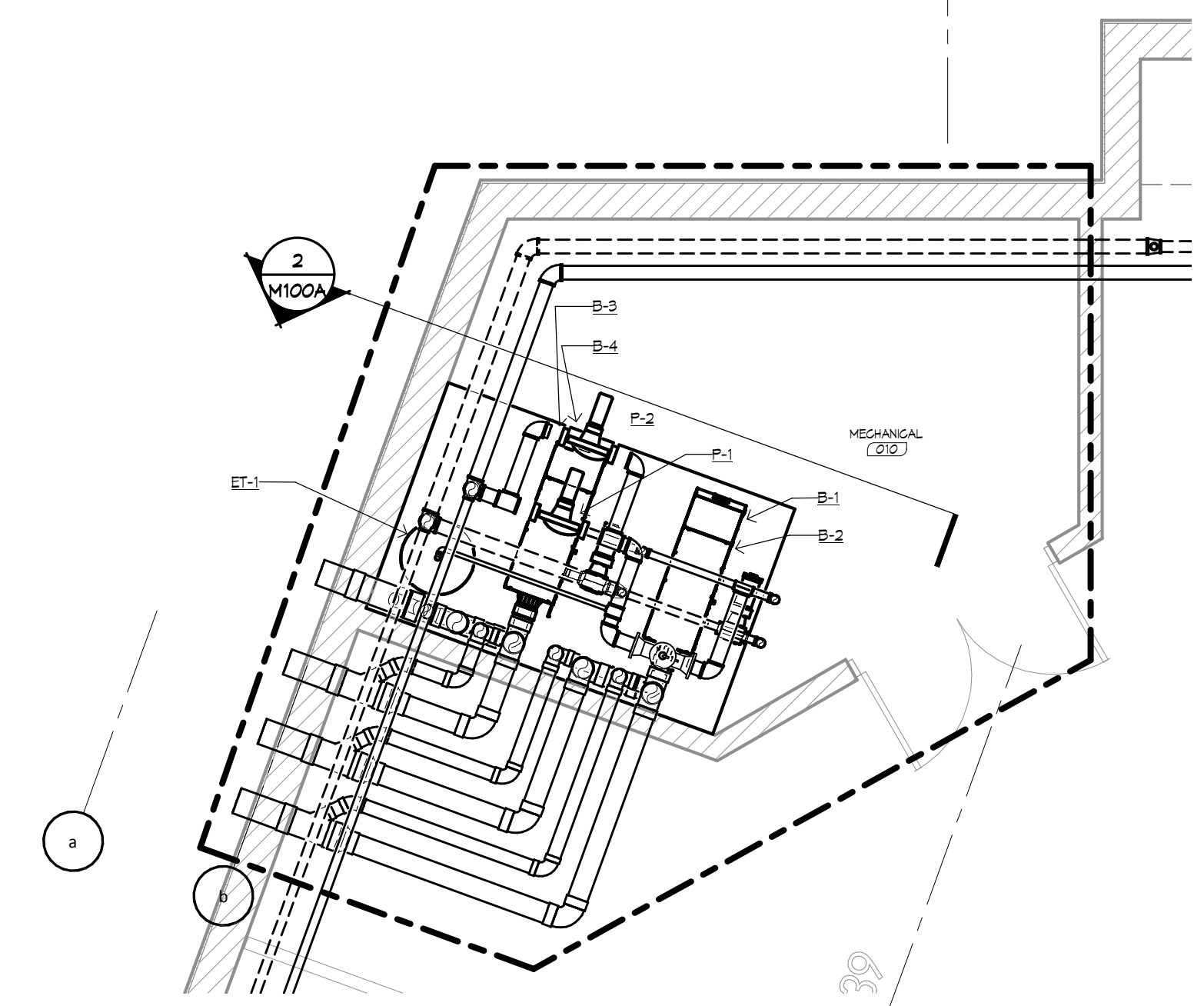
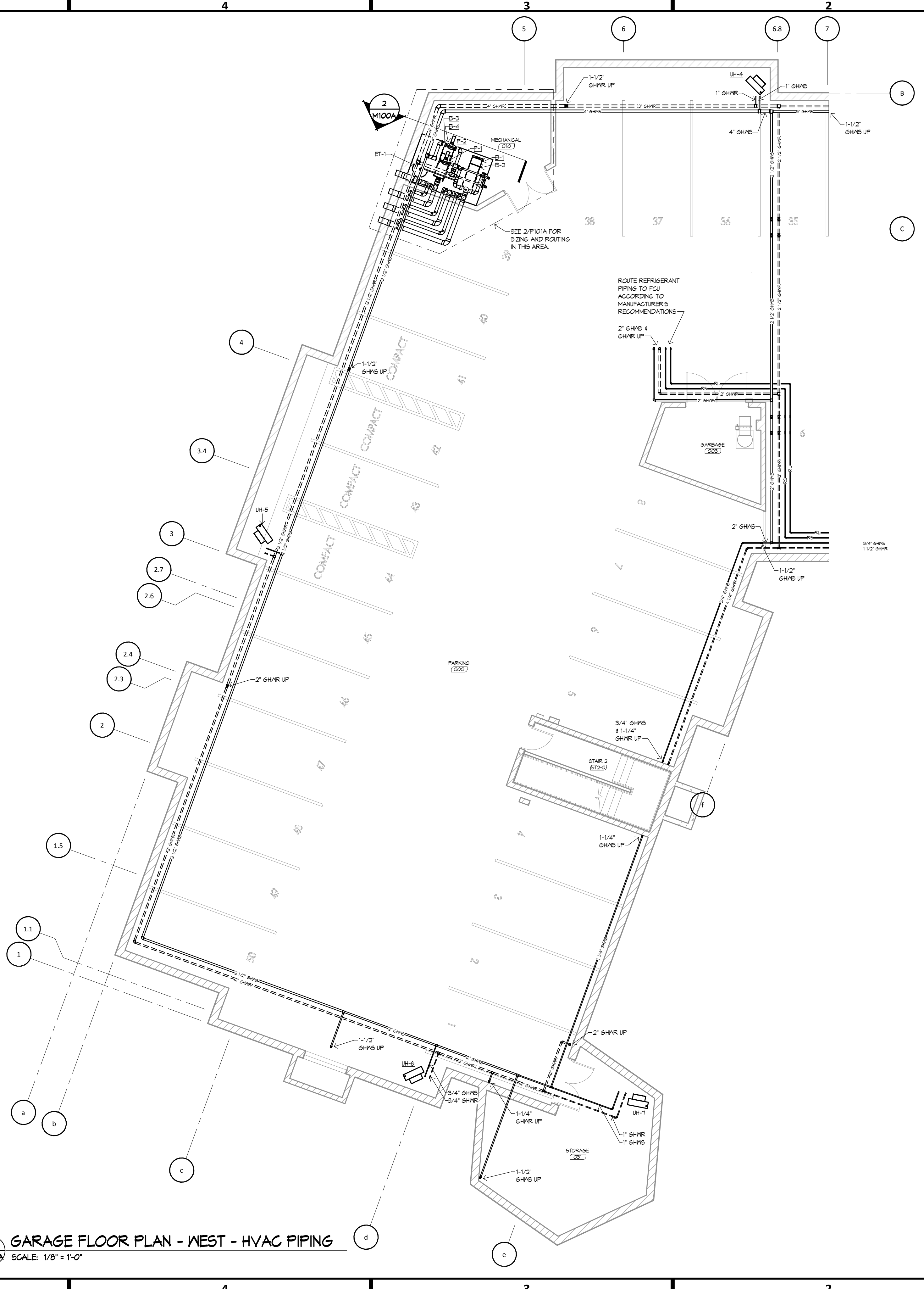
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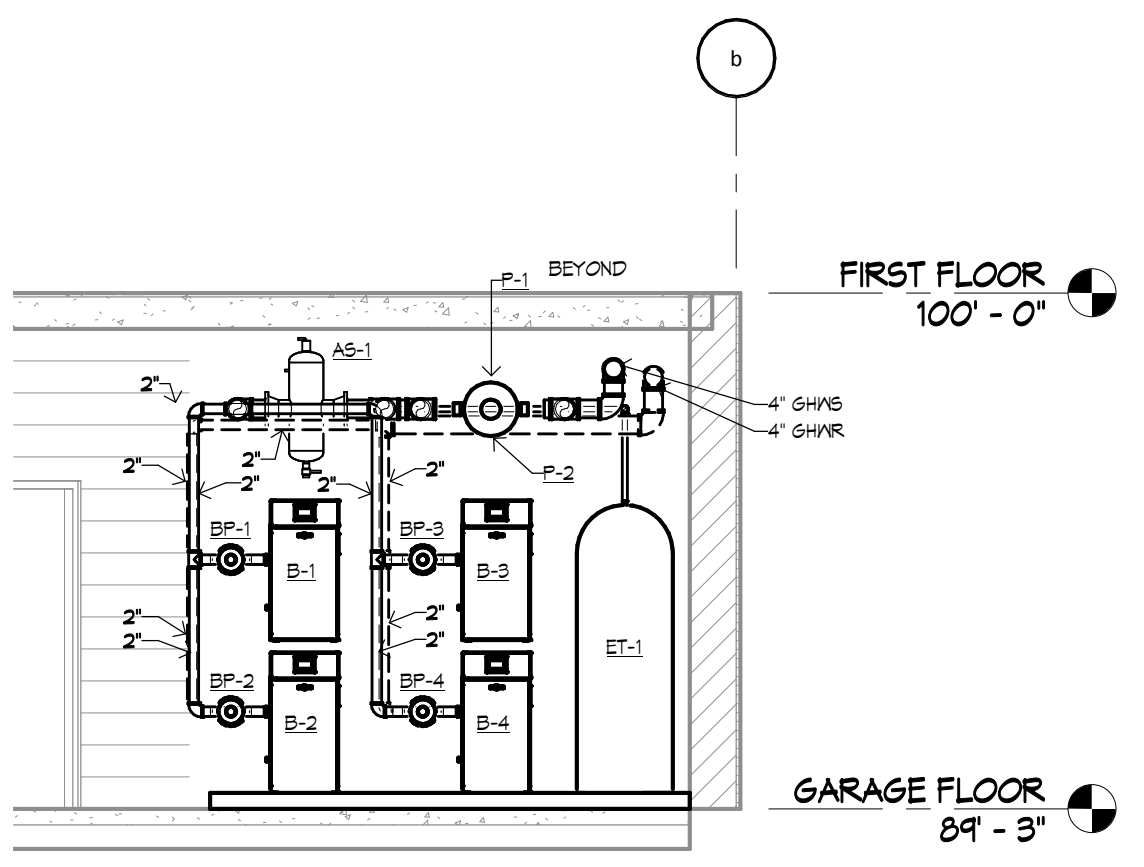
REVISION SCHEDULE

NO.	DESCRIPTION	DATE

DATE	11/20/17
PHASE	PROGRESS
SET	SET
PROJECT	ONE# 2016446
SHEET	<b>M100A</b>
GARGAGE FLOOR PLAN - WEST - HVAC PIPING	



**3** LARGE SCALE PLAN - HVAC PIPING  
SCALE: 1/4" = 1'-0"



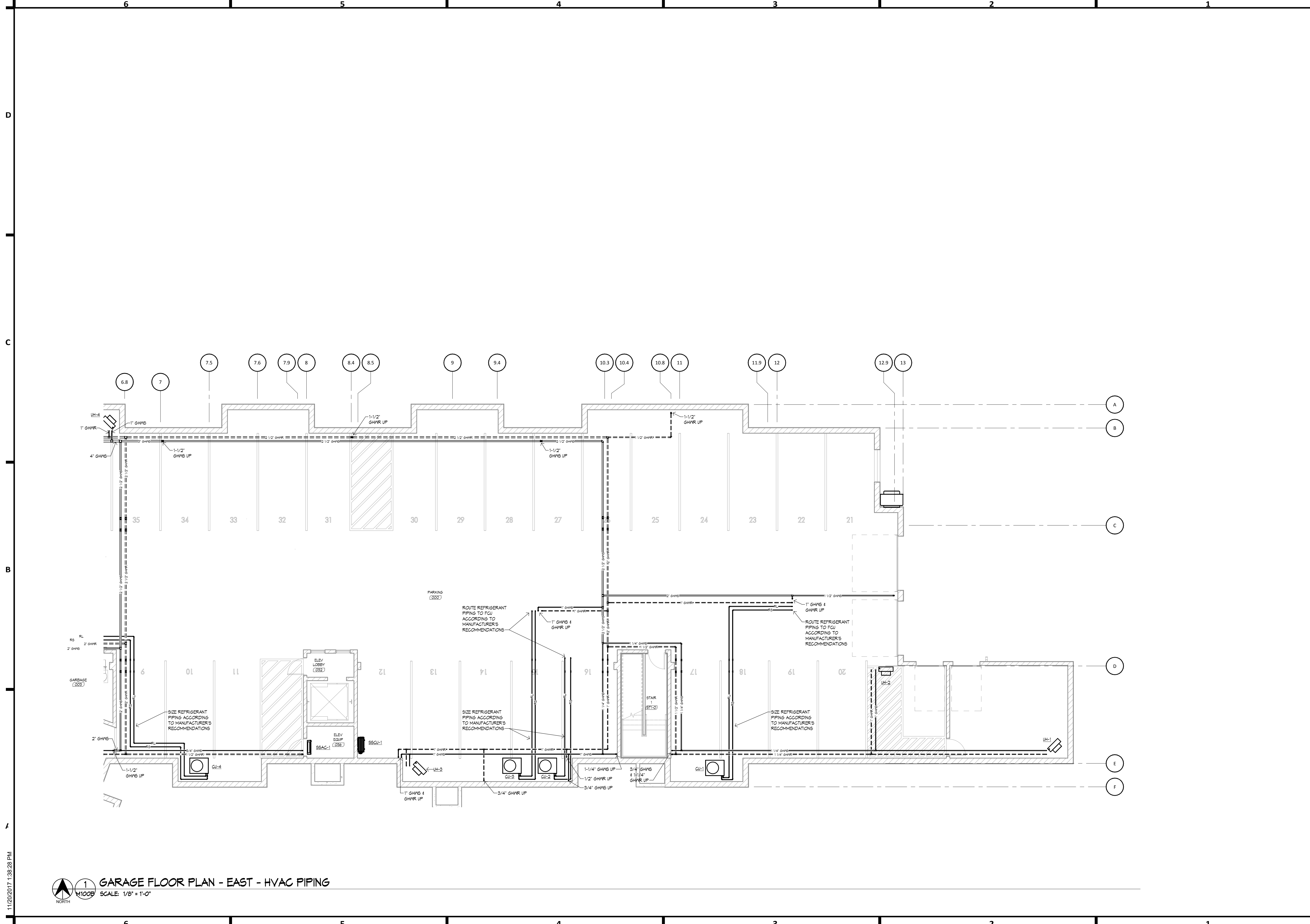
**2** BOILER SECTION  
SCALE: 1/4" = 1'-0"

**1** GARAGE FLOOR PLAN - WEST - HVAC PIPING  
SCALE: 1/8" = 1'-0"

11/20/2017 1:35:24 PM

REVISION SCHEDULE

NO.	DESCRIPTION	DATE



**1** GARAGE FLOOR PLAN - EAST - HVAC PIPING  
SCALE: 1/8" = 1'-0"

11/20/2017 1:35:25 PM



**HVAC PIPING NOTES:**

- HEATING PIPING BETWEEN THESE TWO FIN RADIATION UNITS SHALL BE ROUTED IN CEILING SPACE BELOW. PROTECT CEILING ASSEMBLY PENETRATIONS AS REQUIRED.
- ROUTE REFRIGERANT PIPING UP TO FCU AS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE S-TRAPS AS REQUIRED.



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 MAPLE GROVE, MN

DATE  
**11/20/17**

PHASE  
**PROGRESS SET**

PROJECT  
**ONE# 2016446**

SHEET  
**M101A**  
 FIRST FLOOR PLAN - WEST - HVAC PIPING

**FIRST FLOOR PLAN - WEST - HVAC PIPING**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:35:32 PM



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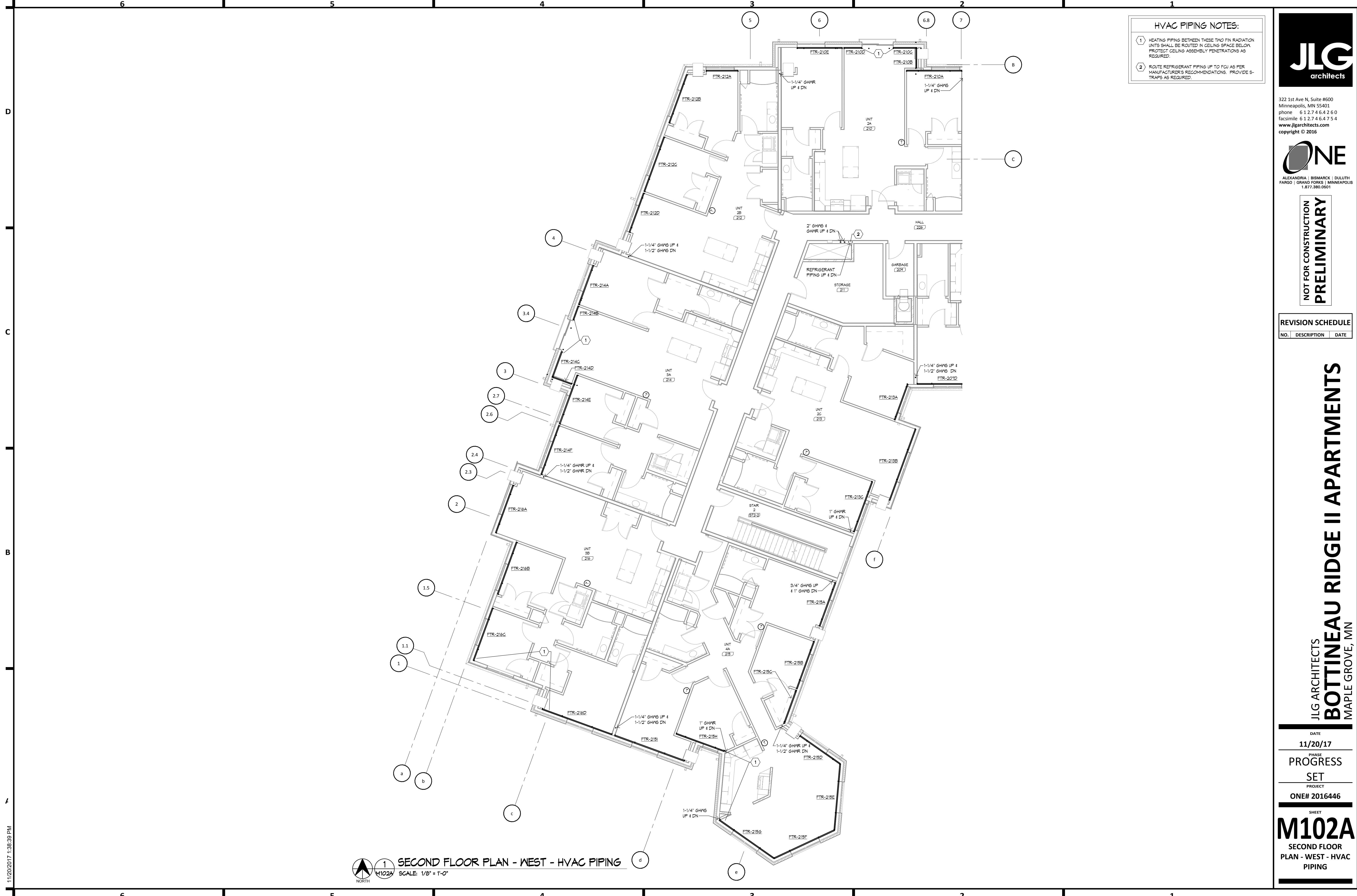
NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**  
 SHEET  
**M101B**  
 FIRST FLOOR PLAN - EAST - HVAC PIPING

**1** FIRST FLOOR PLAN - EAST - HVAC PIPING  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:35:35 PM



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 MAPLE GROVE, MN

DATE  
**11/20/17**

PHASE  
**PROGRESS**

SET

PROJECT  
**ONE# 2016446**

SHEET  
**M102A**  
 SECOND FLOOR  
 PLAN - WEST - HVAC  
 PIPING

**1 SECOND FLOOR PLAN - WEST - HVAC PIPING**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:35:39 PM

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**ONE# 2016446**  
 SHEET  
**M102B**  
 SECOND FLOOR  
 PLAN - EAST - HVAC  
 PIPING



11/20/2017 1:38:43 PM

**1 SECOND FLOOR PLAN - EAST - HVAC PIPING**  
 SCALE: 1/8" = 1'-0"



- HVAC PIPING NOTES:**
- ① HEATING PIPING BETWEEN THESE TWO FIN RADIATION UNITS SHALL BE ROUTED IN CEILING SPACE BELOW. PROTECT CEILING ASSEMBLY PENETRATIONS AS REQUIRED.
  - ② ROUTE REFRIGERANT PIPING UP TO FOU AS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE S-TRAPS AS REQUIRED.



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**REVISION SCHEDULE**

NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE	11/20/17
PHASE	PROGRESS
PROJECT	SET
PROJECT	ONE# 2016446
SHEET	M103A
THIRD FLOOR PLAN - WEST - HVAC PIPING	

**THIRD FLOOR PLAN - WEST - HVAC PIPING**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:35:47 PM

**HVAC PIPING NOTES:**  
 ① HEATING PIPING BETWEEN THESE TWO FIN RADIAN UNITS SHALL BE ROUTED IN GELING SPACE BELOW. PROTECT CEILING ASSEMBLY PENETRATIONS AS REQUIRED.



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**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

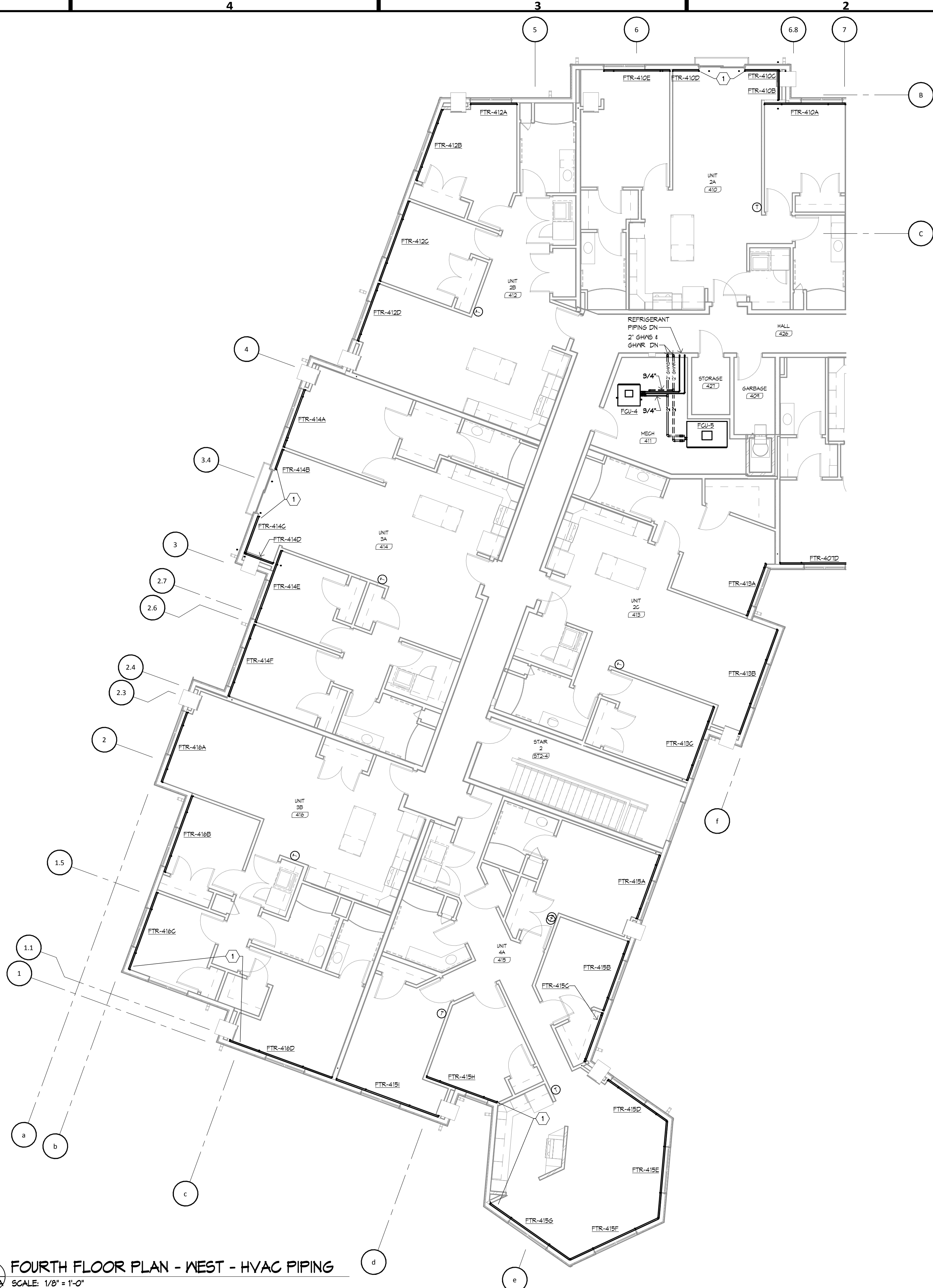
DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**

SHEET  
**M103B**  
 THIRD FLOOR PLAN -  
 EAST - HVAC PIPING



**1 THIRD FLOOR PLAN - EAST - HVAC PIPING**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:35:51 PM



**HVAC PIPING NOTES:**

1 HEATING PIPING BETWEEN THESE TWO FIN RADON UNITS SHALL BE ROUTED IN CEILING SPACE BELOW. PROTECT CEILING ASSEMBLY PENETRATIONS AS REQUIRED.



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**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**

PHASE  
**PROGRESS**

SET

PROJECT  
**ONE# 2016446**

SHEET  
**M104A**  
 FOURTH FLOOR  
 PLAN - WEST - HVAC  
 PIPING

**1** FOURTH FLOOR PLAN - WEST - HVAC PIPING  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:35:54 PM

**HVAC PIPING NOTES:**

1 HEATING PIPING BETWEEN THESE TWO FIN RADON UNITS SHALL BE ROUTED IN CEILING SPACE BELOW. PROTECT CEILING ASSEMBLY PENETRATIONS AS REQUIRED.



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**1** FOURTH FLOOR PLAN - EAST - HVAC PIPING  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:35:58 PM

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**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

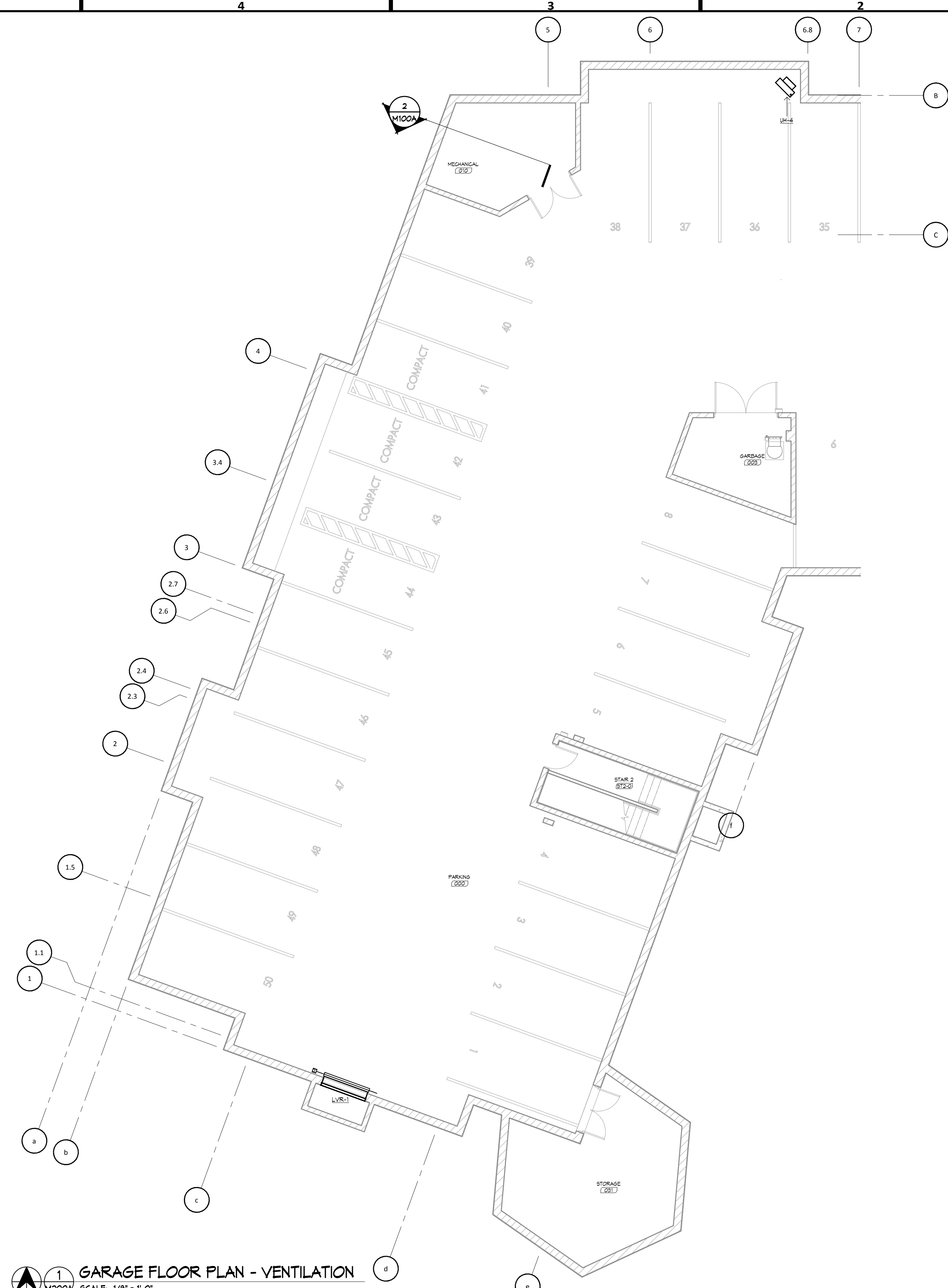
DATE  
**11/20/17**

PHASE  
**PROGRESS**

SET

PROJECT  
**ONE# 2016446**

SHEET  
**M104B**  
 FOURTH FLOOR  
 PLAN - EAST - HVAC  
 PIPING



1 GARAGE FLOOR PLAN - VENTILATION  
 M200A SCALE: 1/8" = 1'-0"

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11/20/2017 1:35:00 PM



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**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
 11/20/17  
 PHASE  
 PROGRESS  
 SET  
 PROJECT  
 ONE# 2016446  
 SHEET  
**M200A**  
 GARAGE FLOOR  
 PLAN - WEST -  
 VENTILATION



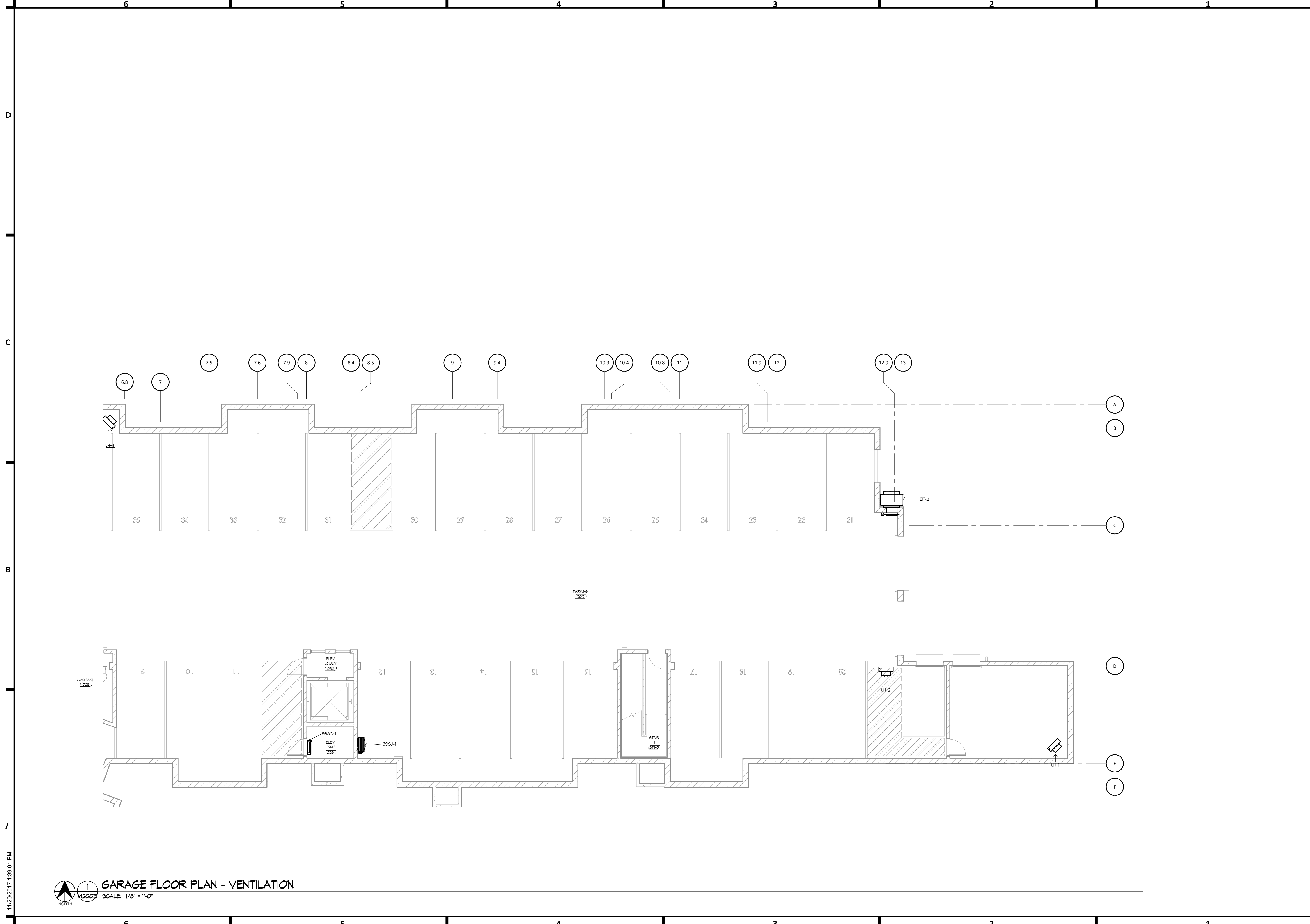
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NO.	DESCRIPTION	DATE



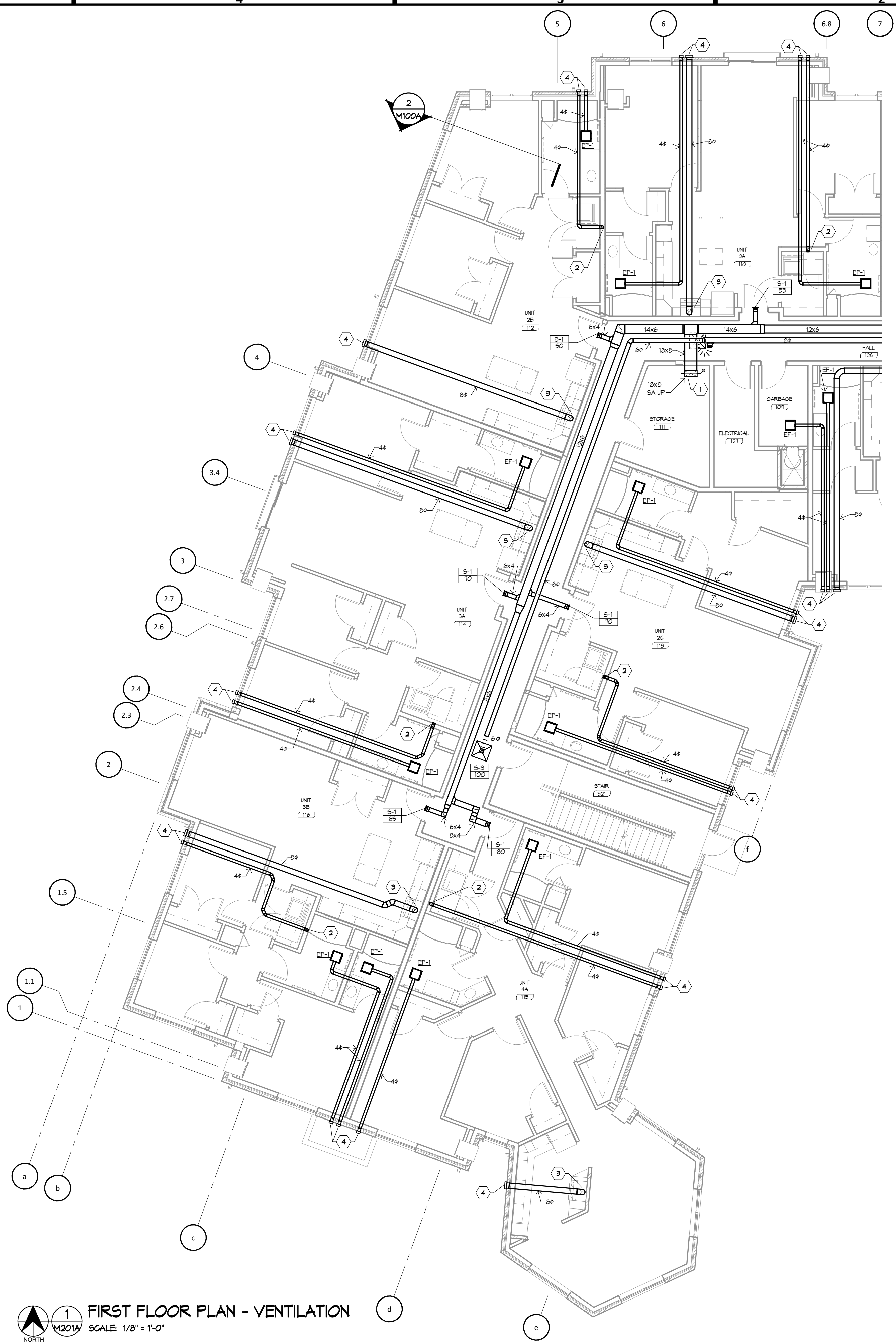
JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
 11/20/17  
 PHASE  
 PROGRESS  
 SET  
 PROJECT  
 ONE# 2016446

SHEET  
**M200B**  
 GARAGE FLOOR  
 PLAN - EAST -  
 VENTILATION

**1** GARAGE FLOOR PLAN - VENTILATION  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:35:01 PM



- VENTILATION NOTES:**
- 1 FIRE SMOKE DAMPER TO BE INSTALLED BETWEEN 1ST AND 2ND FLOOR
  - 2 4" EA DUCT DOWN TO DRYER EXHAUST
  - 3 8" EA DUCT DOWN TO RANGE HOOD
  - 4 PROVIDE AND INSTALL WALL CAP WITH BACKDRAFT DAMPER. PROVIDE BIRD SCREEN ON RANGE HOOD & EXHAUST FAN WALL CAP.



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**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**

PHASE  
**PROGRESS**

SET

PROJECT  
**ONE# 2016446**

SHEET  
**M201A**  
 FIRST FLOOR PLAN -  
 WEST -  
 VENTILATION

**FIRST FLOOR PLAN - VENTILATION**  
 M201A SCALE: 1/8" = 1'-0"

11/20/2017 1:35:06 PM

- VENTILATION NOTES:**
- 1 PROVIDE AND INSTALL WALL CAP WITH BACKDRAFT DAMPER. PROVIDE BIRD SCREEN ON RANGE HOOD EXHAUST FAN WALL CAP
  - 2 4" EA DUCT DOWN TO DRYER EXHAUST
  - 3 8" EA DUCT DOWN TO RANGE HOOD
  - 4 PROVIDE AND INSTALL 10" GA NTAKE HOOD WITH BIRD SCREEN



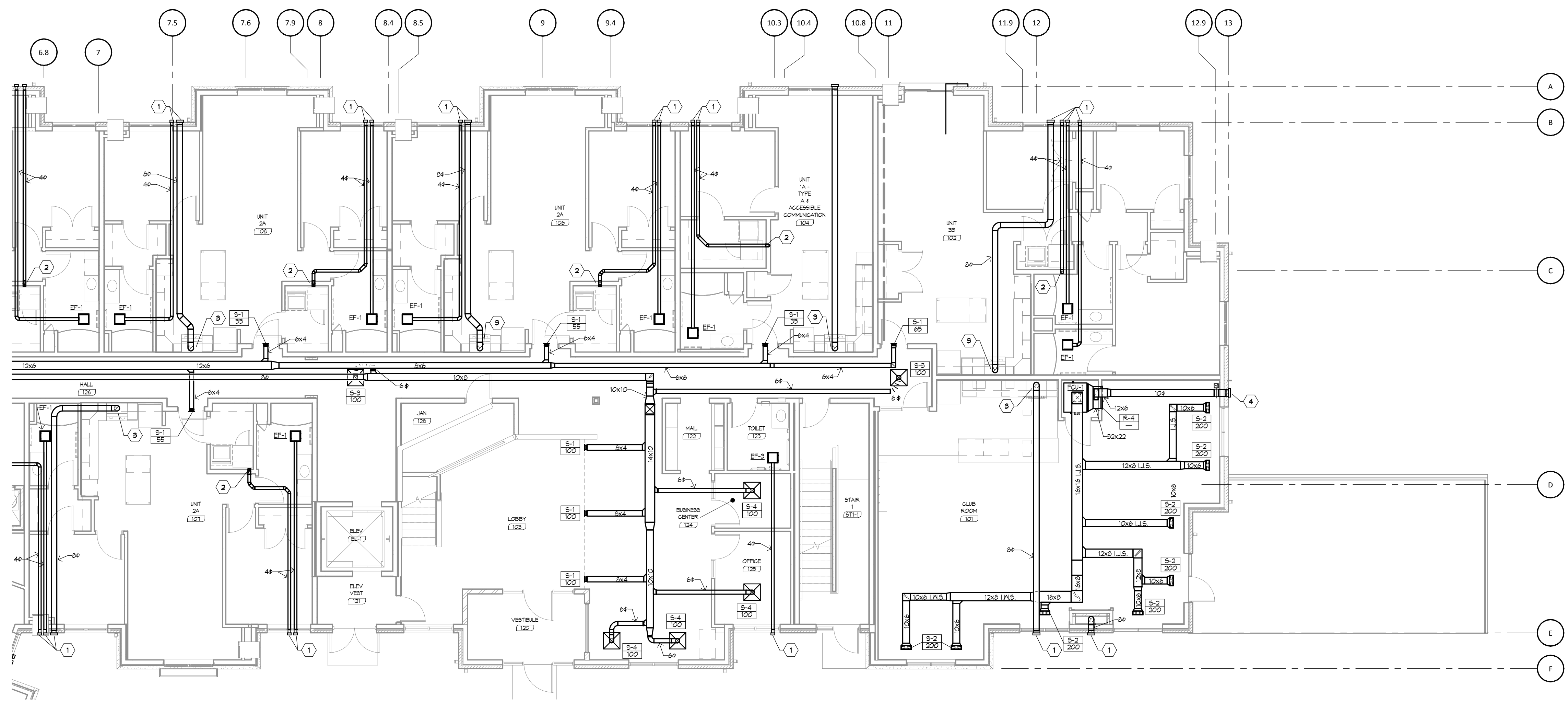
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**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**  
 SHEET  
**M201B**  
 FIRST FLOOR PLAN -  
 EAST -  
 VENTILATION

**1 FIRST FLOOR PLAN - VENTILATION**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:35:10 PM



- VENTILATION NOTES:**
- ① FIRE SMOKE DAMPER TO BE INSTALLED BETWEEN 1ST AND 2ND FLOOR
  - ② 4" EA DUCT DOWN TO DRYER EXHAUST
  - ③ 8" EA DUCT DOWN TO RANGE HOOD
  - ④ PROVIDE AND INSTALL WALL CAP WITH BACKDRAFT DAMPER. PROVIDE BIRD SCREEN ON RANGE HOOD & EXHAUST FAN WALL CAP.



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**BOTTINEAU RIDGE II APARTMENTS**

MAPLE GROVE, MN

DATE  
11/20/17

PHASE  
PROGRESS

SET

PROJECT  
ONE# 2016446

SHEET  
**M202A**

SECOND FLOOR  
PLAN - WEST -  
VENTILATION

**1 SECOND FLOOR PLAN - WEST - VENTILATION**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:35:14 PM

- VENTILATION NOTES:**
- 1 PROVIDE AND INSTALL WALL CAP WITH BACKDRAFT DAMPER. PROVIDE BIRD SCREEN ON RANGE HOOD EXHAUST FAN WALL CAP.
  - 2 4" EA DUCT DOWN TO DRYER EXHAUST
  - 3 6" EA DUCT DOWN TO RANGE HOOD
  - 4 PROVIDE AND INSTALL 6" OA INTAKE HOOD WITH BIRD SCREEN.



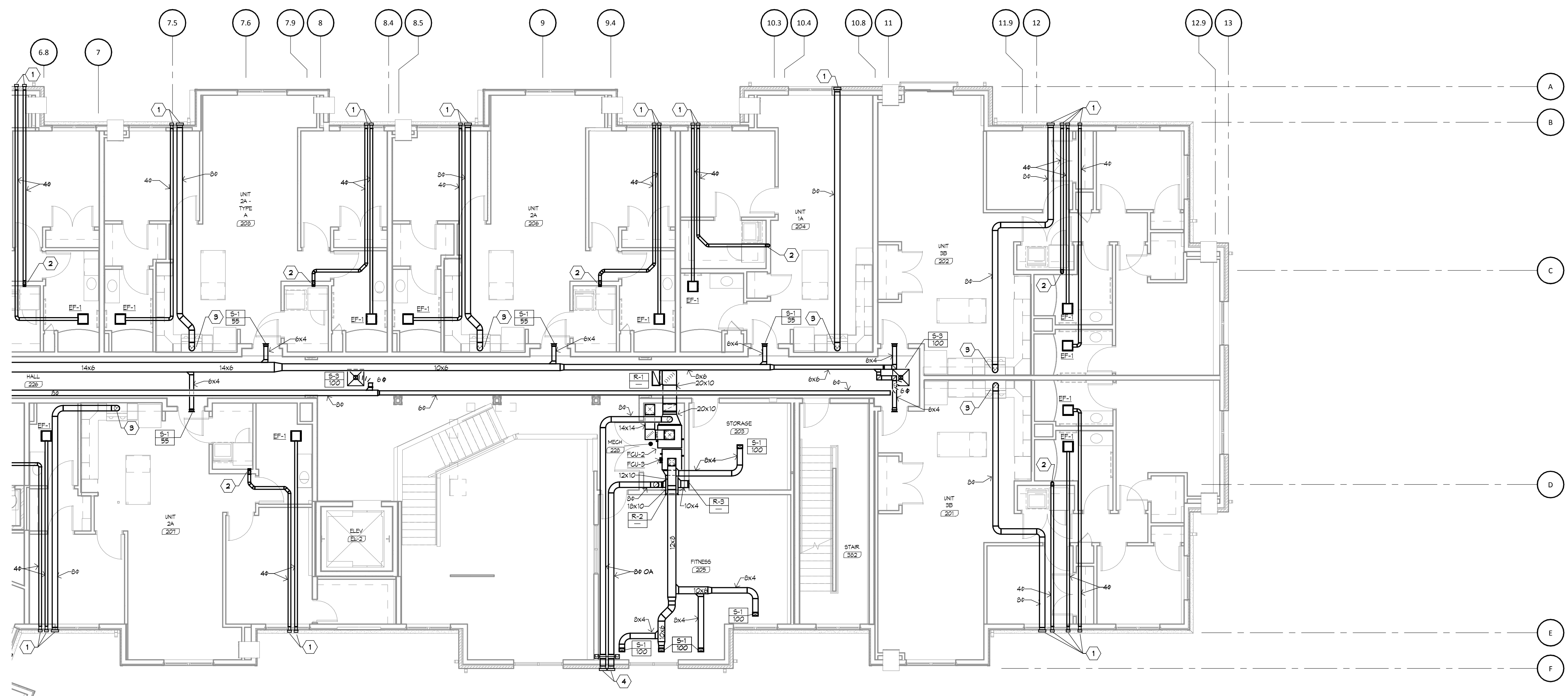
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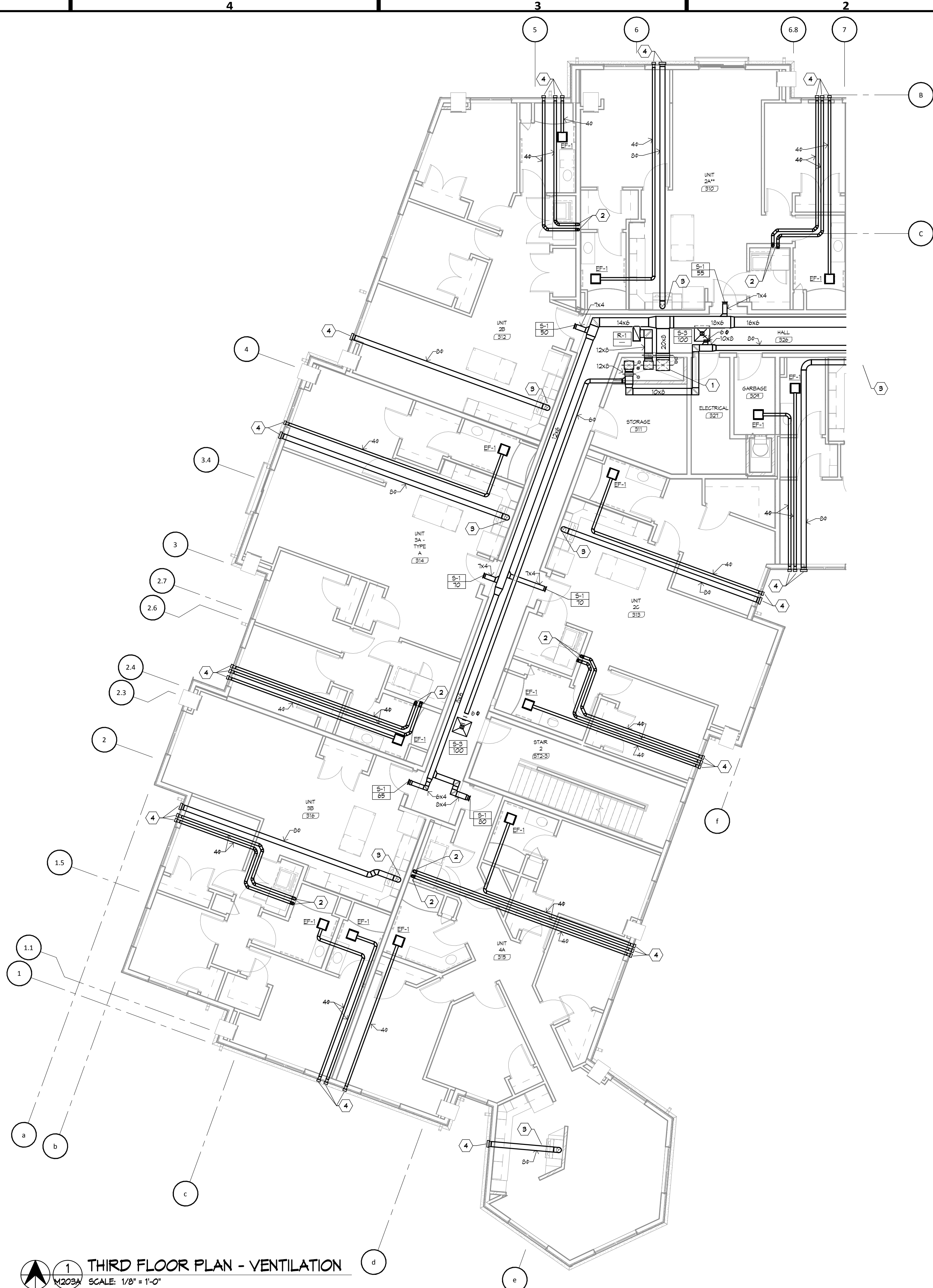


11/20/2017 1:35:18 PM

**1 SECOND FLOOR PLAN - EAST - VENTILATION**  
 SCALE: 1/8" = 1'-0"

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**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**  
 SHEET  
**M202B**  
 SECOND FLOOR  
 PLAN - EAST -  
 VENTILATION



- VENTILATION NOTES:**
- 1 FIRE SMOKE DAMPER TO BE INSTALLED BETWEEN 4TH AND 3RD FLOOR.
  - 2 4" EA DUCT UP/DOWN TO DRYER EXHAUST
  - 3 6" EA DUCT DOWN TO RANGE HOOD
  - 4 PROVIDE AND INSTALL WALL CAP WITH BACKDRAFT DAMPER. PROVIDE BIRD SCREEN ON RANGE HOOD & EXHAUST FAN WALL CAP.



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**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE	11/20/17
PHASE	PROGRESS
PROJECT	SET
PROJECT	ONE# 2016446
SHEET	M203A
THIRD FLOOR PLAN - WEST - VENTILATION	

**1 THIRD FLOOR PLAN - VENTILATION**  
 M203A SCALE: 1/8" = 1'-0"

11/20/2017 1:39:23 PM

- VENTILATION NOTES:**
- 1 PROVIDE AND INSTALL WALL CAP WITH BACKDRAFT DAMPER. PROVIDE BIRD SCREEN ON RANGE HOOD & EXHAUST FAN WALL CAP.
  - 2 4" EA DUCT UP/DOWN TO DRYER EXHAUST
  - 3 8" EA DUCT DOWN TO RANGE HOOD



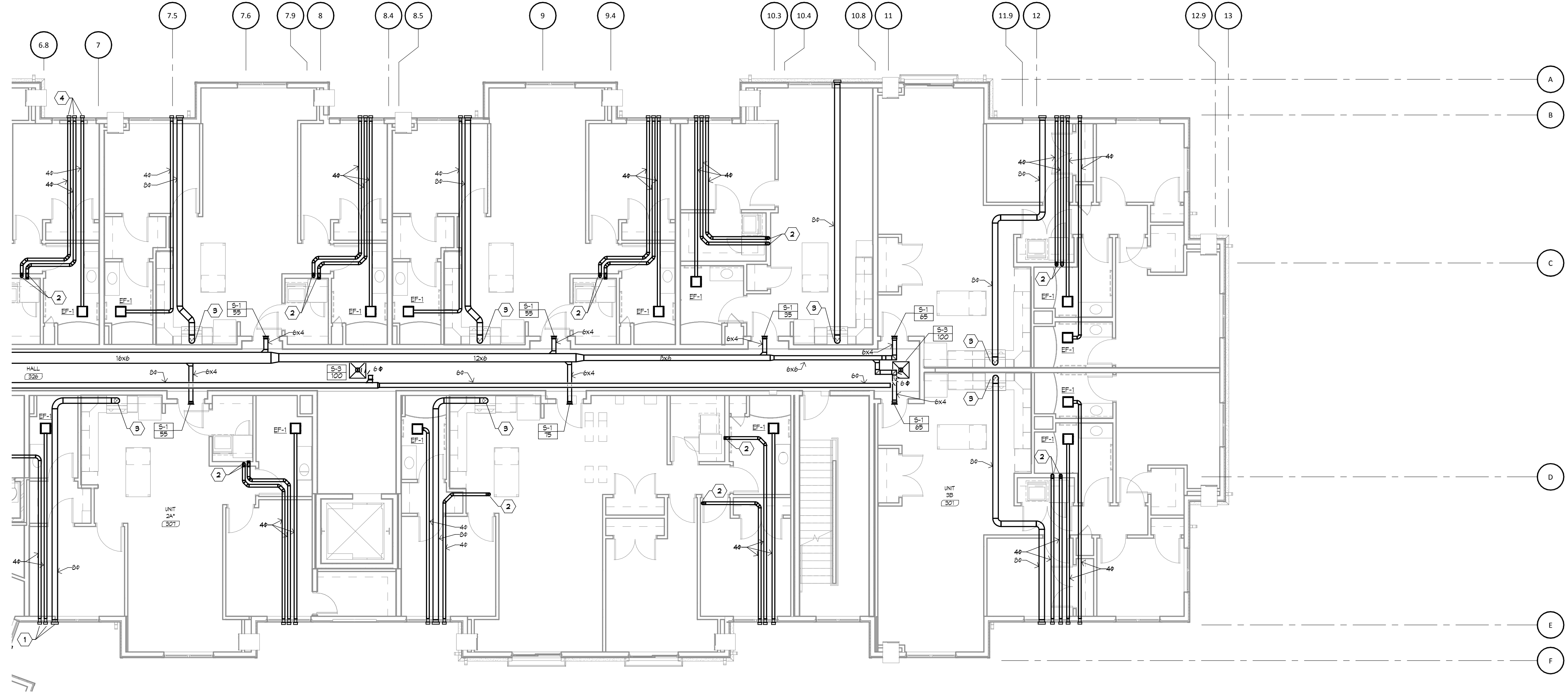
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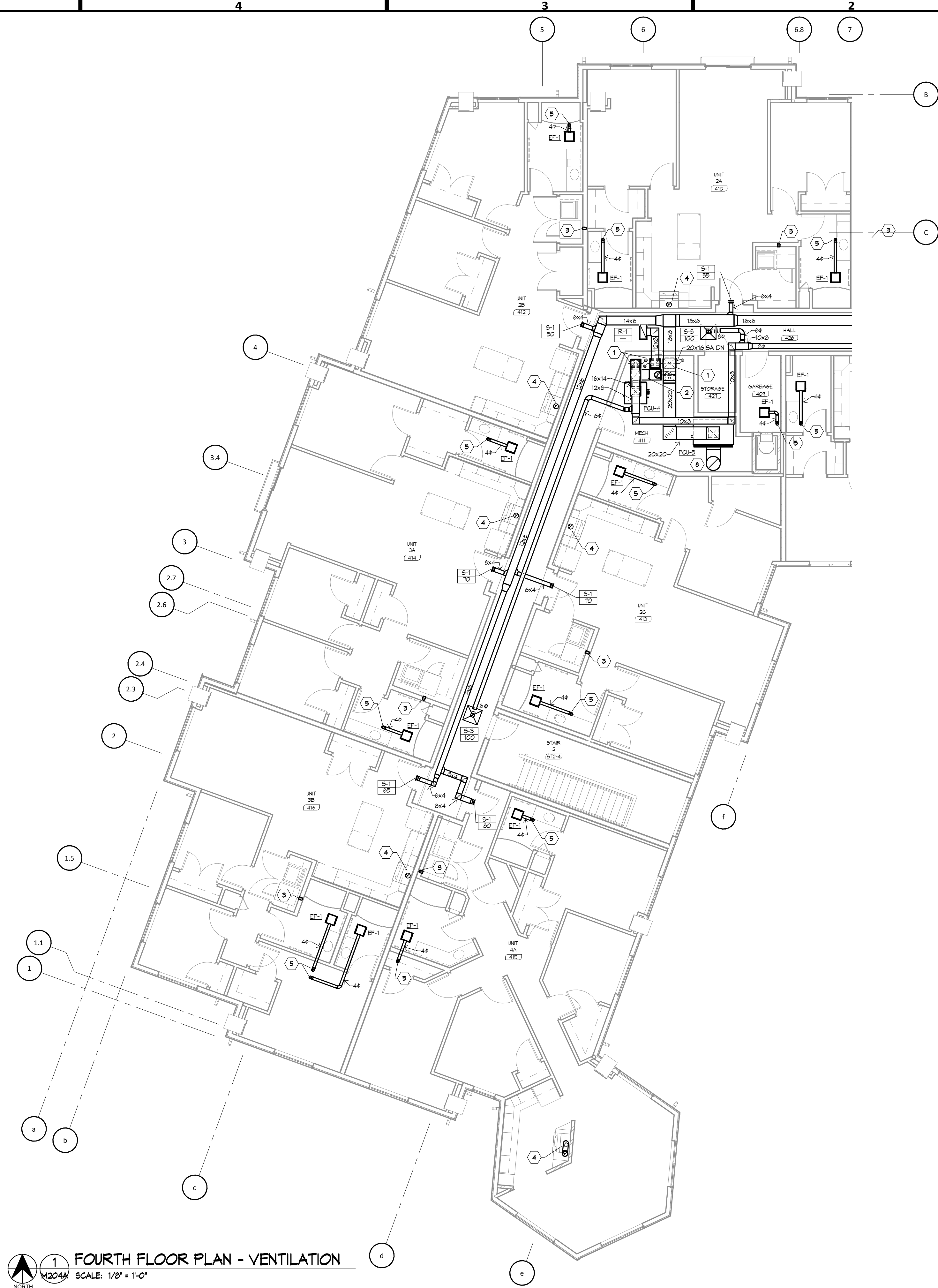
A  
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C  
D  
E  
F

**1 THIRD FLOOR PLAN - VENTILATION**  
 SCALE: 1/8" = 1'-0"

11/20/2017 1:39:27 PM

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**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**  
 SHEET  
**M203B**  
 THIRD FLOOR PLAN -  
 EAST -  
 VENTILATION



- VENTILATION NOTES:**
- 1 FIRE SMOKE DAMPER TO BE INSTALLED BETWEEN 4TH AND 3RD FLOOR.
  - 2 100' OA UP TO OUTSIDE AIR HOOD ON ROOF.
  - 3 40' DRYER DUCT ROUTED TO EXTERIOR IN CEILING SPACE BELOW.
  - 4 8" EA DUCT DOWN TO RANGE HOOD & UP TO HOOD ON ROOF.
  - 5 4" EA UP TO HOOD ON ROOF.
  - 6 22" OA UP TO LOWER LOCATED IN FALSE CHIMNEY. COORDINATE LOCATION WITH ARCHITECTURAL.



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JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**

PHASE  
**PROGRESS**

SET

PROJECT  
**ONE# 2016446**

SHEET  
**M204A**  
 FOURTH FLOOR  
 PLAN - WEST -  
 VENTILATION

**1** FOURTH FLOOR PLAN - VENTILATION  
 M204A SCALE: 1/8" = 1'-0"

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- VENTILATION NOTES:**
- 1 4\"/>



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 MAPLE GROVE, MN

DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**

SHEET  
**M204B**  
 FOURTH FLOOR  
 PLAN - EAST -  
 VENTILATION

**1** FOURTH FLOOR PLAN - VENTILATION  
 M204B SCALE: 1/8" = 1'-0"

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JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**

PHASE  
**PROGRESS**

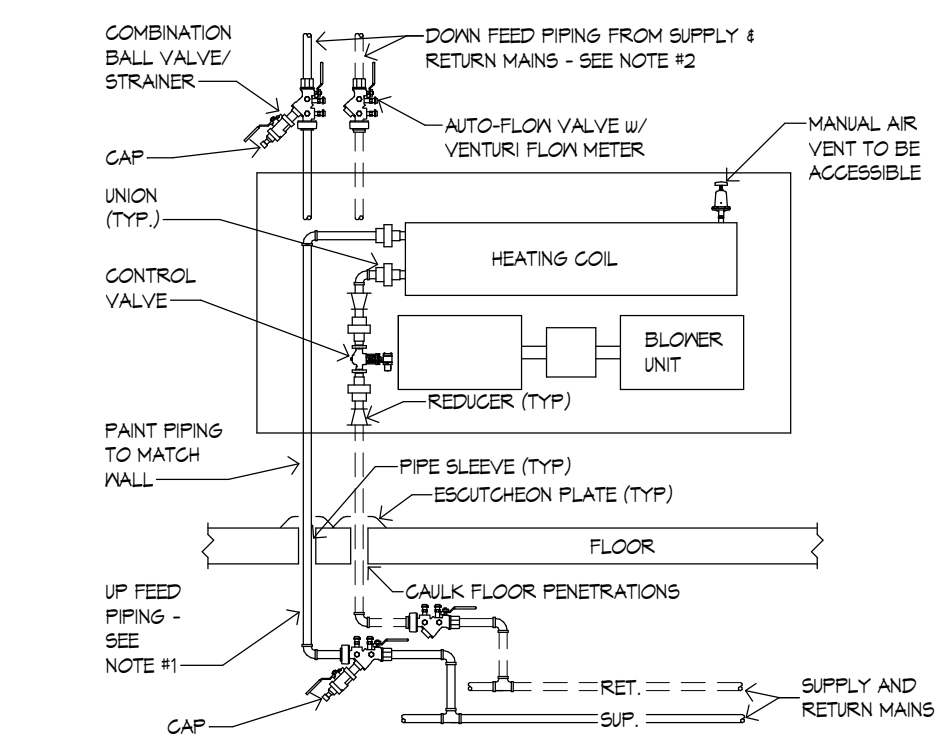
SET

PROJECT  
**ONE# 2016446**

SHEET  
**M205**  
 ROOF PLAN -  
 MECHANICAL

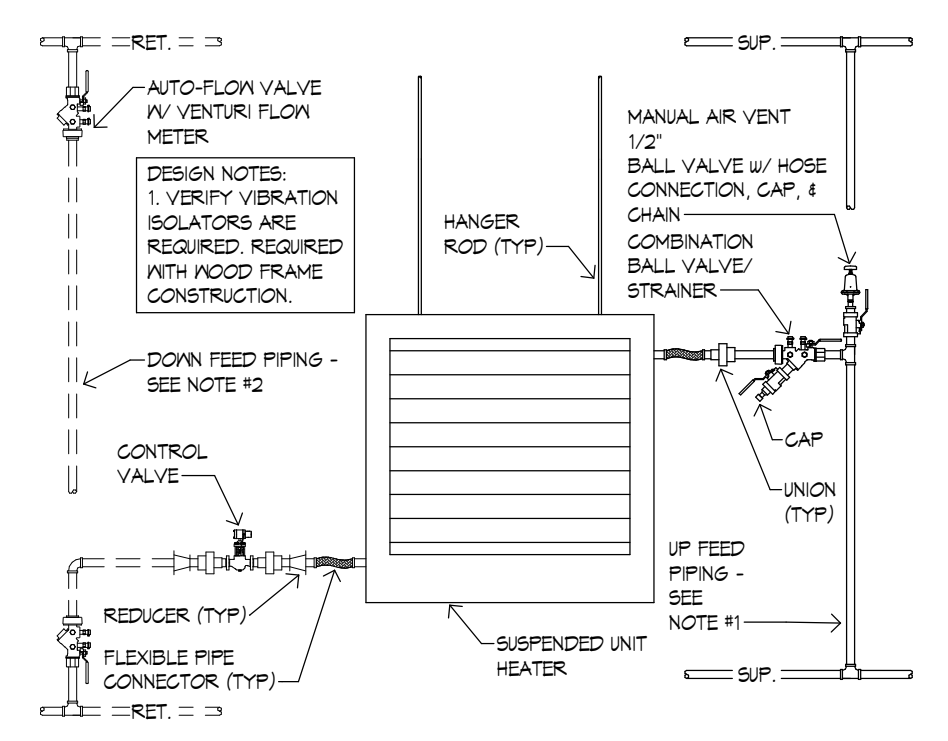
**1 ROOF PLAN - VENTILATION**  
 SCALE: 3/32" = 1'-0"

11/20/2017 1:35:40 PM



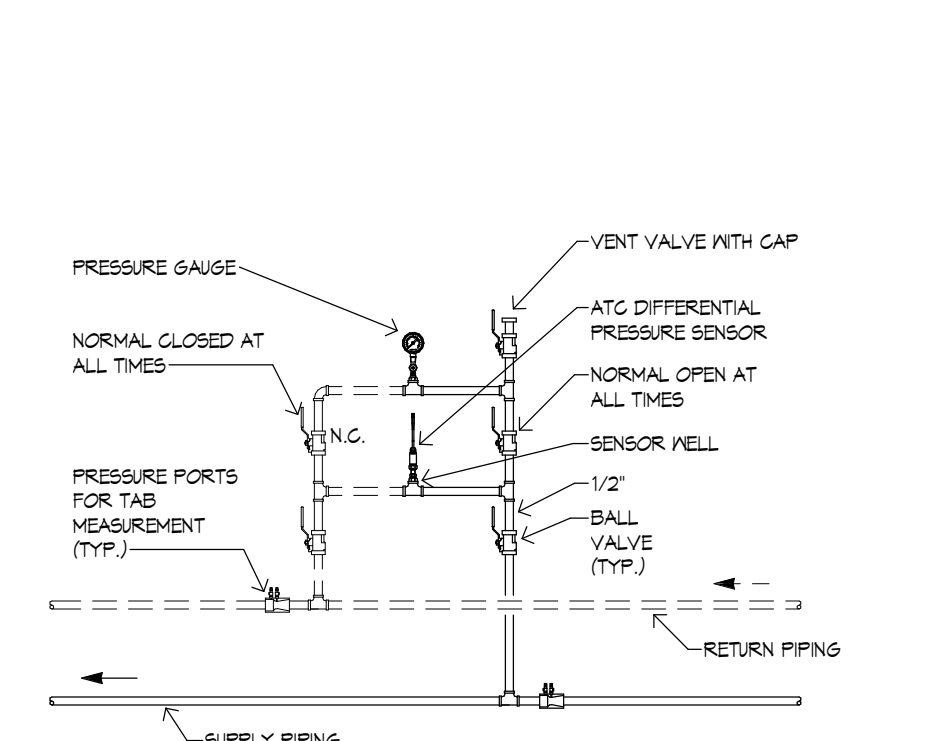
**NOTES:**  
 1. WHEN PLANS INDICATE UP FEED RATHER THAN DOWN FEED PIPING, PROVIDE MANUAL AIR VENT, STRAINER MUST BE INSTALLED IN HORIZONTAL PIPING.  
 2. WHEN PLANS INDICATE DOWN FEED RATHER THAN UP FEED PIPING PROVIDE DRAIN WITH BALL VALVE.  
 3. VALVE, HOSE CONNECTION, AND CAP VERIFY MOUNTING HEIGHTS AND LOCATIONS PRIOR TO INSTALLATION.

**12 CABINET UNIT HEATER 2-WAY VALVE AUTOFLOW DETAIL**  
 SCALE: NTS

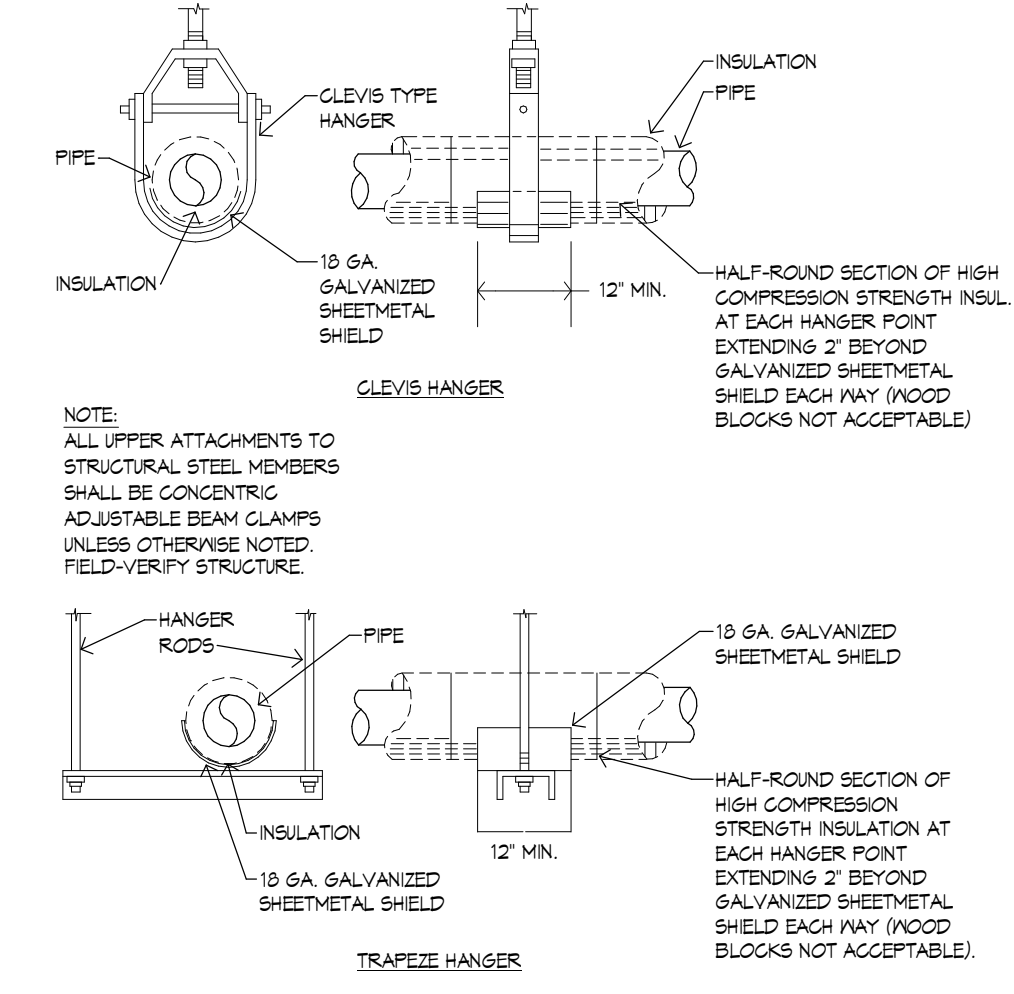


**DESIGN NOTES:**  
 1. VERIFY VIBRATION ISOLATORS ARE REQUIRED. REQUIRED WITH WOOD FRAME CONSTRUCTION.  
 2. WHEN PLANS INDICATE UP FEED RATHER THAN DOWN FEED PIPING, PROVIDE MANUAL AIR VENT, STRAINER MUST BE INSTALLED IN HORIZONTAL PIPING.  
 3. WHEN PLANS INDICATE DOWN FEED RATHER THAN UP FEED PIPING PROVIDE DRAIN WITH BALL VALVE.  
 4. VALVE, HOSE CONNECTION, AND CAP VERIFY MOUNTING HEIGHTS AND LOCATIONS PRIOR TO INSTALLATION.

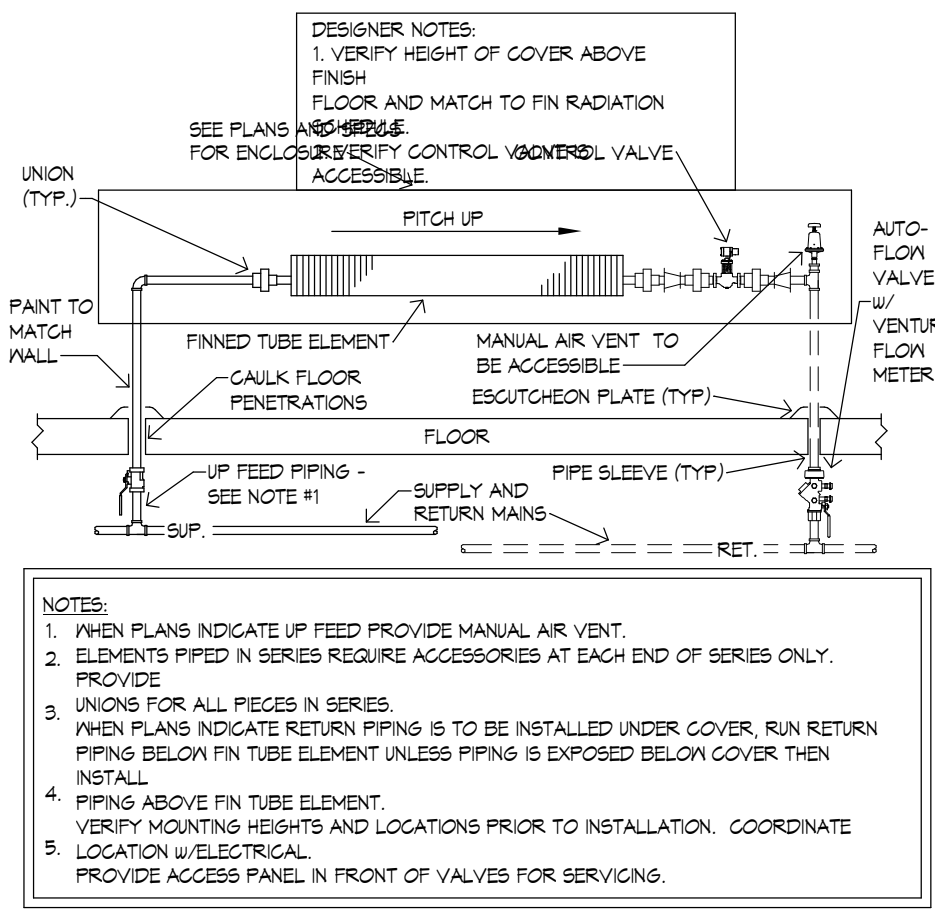
**9 SUSPENDED UNIT HEATER 2-WAY VALVE AUTOFLOW DETAIL**  
 SCALE: NTS



**6 DIFFERENTIAL PRESSURE SENSOR DETAIL**  
 SCALE: NTS

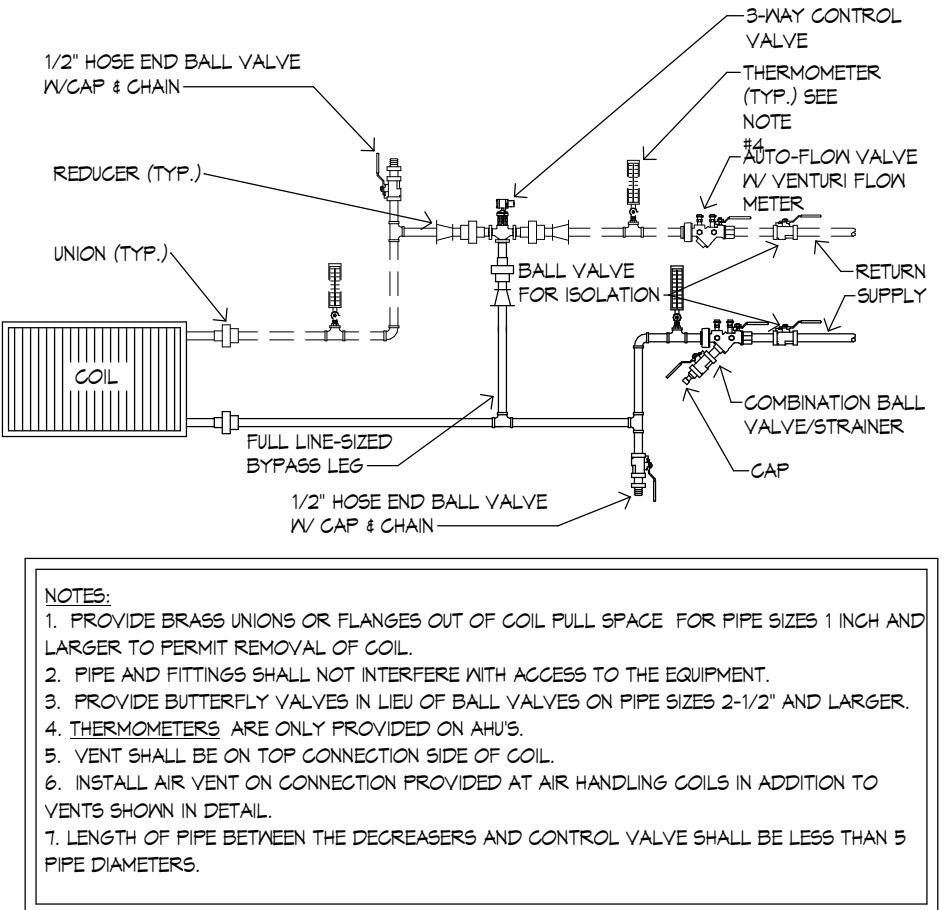


**3 TYPICAL PIPE HANGER DETAIL**  
 SCALE: NTS



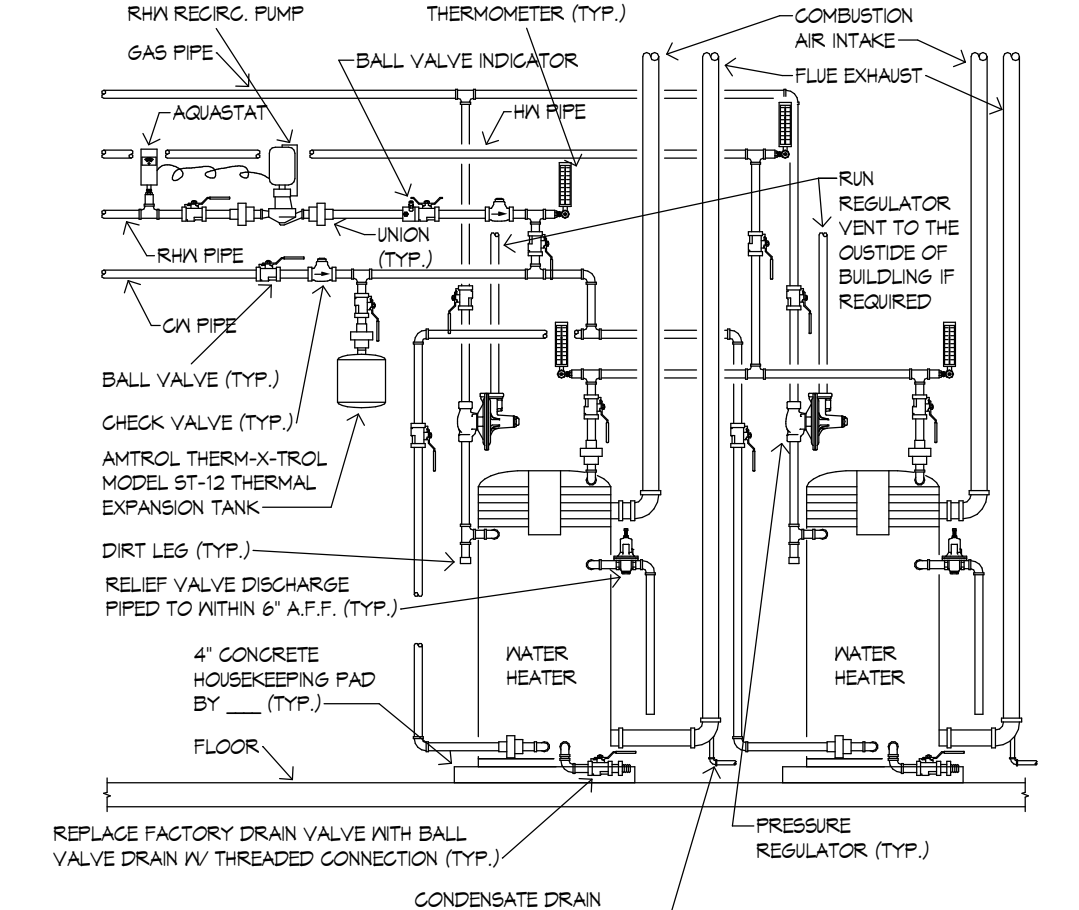
**DESIGNER NOTES:**  
 1. VERIFY HEIGHT OF COVER ABOVE FINISH FLOOR AND MATCH TO FIN RADIATION.  
 2. WHEN PLANS INDICATE RETURN PIPING IS TO BE INSTALLED UNDER COVER, RUN RETURN PIPING BELOW FIN TUBE ELEMENT UNLESS PIPING IS EXPOSED BELOW COVER THEN INSTALL.  
 3. PIPING ABOVE FIN TUBE ELEMENT, VERIFY MOUNTING HEIGHTS AND LOCATIONS PRIOR TO INSTALLATION. COORDINATE LOCATION W/ ELECTRICAL. PROVIDE ACCESS PANEL IN FRONT OF VALVES FOR SERVICING.

**11 FIN TUBE RADIATION 2-WAY VALVE AUTOFLOW DETAIL**  
 SCALE: NTS

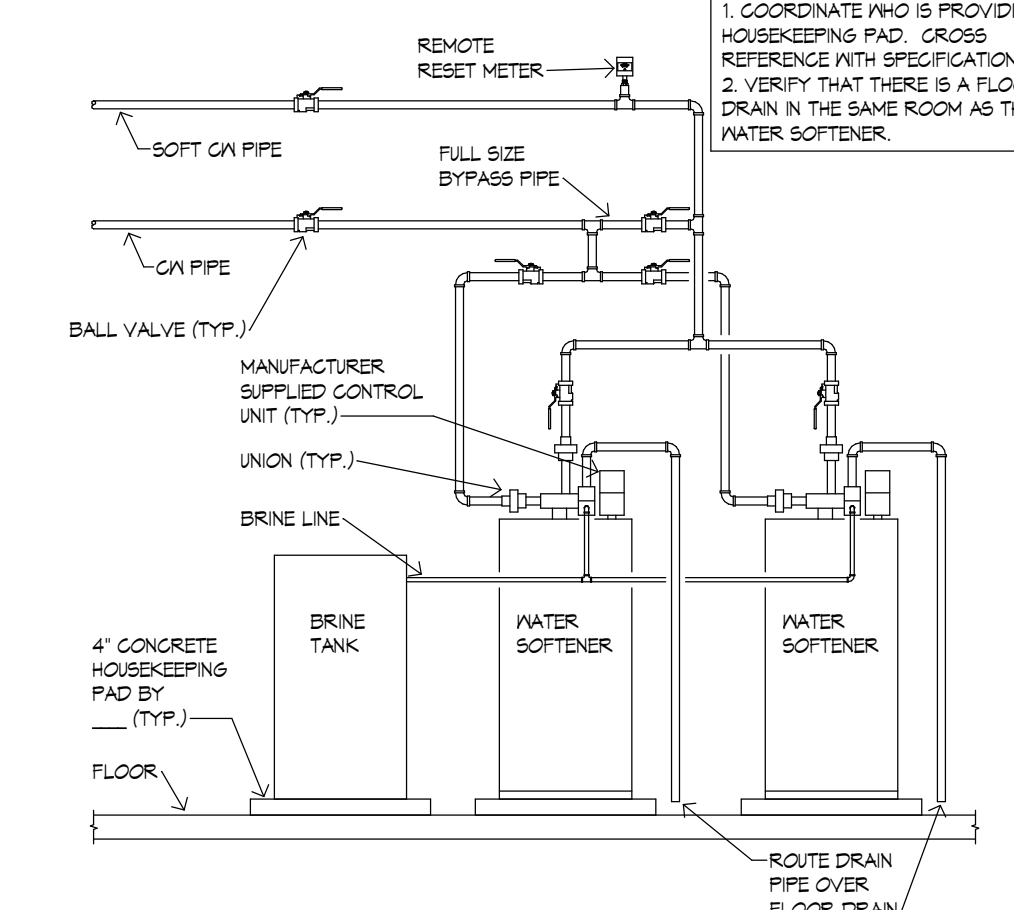


**NOTES:**  
 1. PROVIDE BRASS UNIONS OR FLANGES OUT OF COIL PULL SPACE FOR PIPE SIZES 1 INCH AND LARGER TO PERMIT REMOVAL OF COIL.  
 2. PIPE AND FITTINGS SHALL NOT INTERFERE WITH ACCESS TO THE EQUIPMENT.  
 3. PROVIDE BUTTERFLY VALVES IN LIEU OF BALL VALVES ON PIPE SIZES 2-1/2" AND LARGER.  
 4. THERMOMETERS ARE ONLY PROVIDED ON AHUS.  
 5. VENT SHALL BE ON TOP CONNECTION SIDE OF COIL.  
 6. INSTALL AIR VENT ON CONNECTION PROVIDED AT AIR HANDLING COILS IN ADDITION TO VENTS SHOWN IN DETAIL.  
 7. LENGTH OF PIPE BETWEEN THE DEGREASERS AND CONTROL VALVE SHALL BE LESS THAN 5 PIPE DIAMETERS.

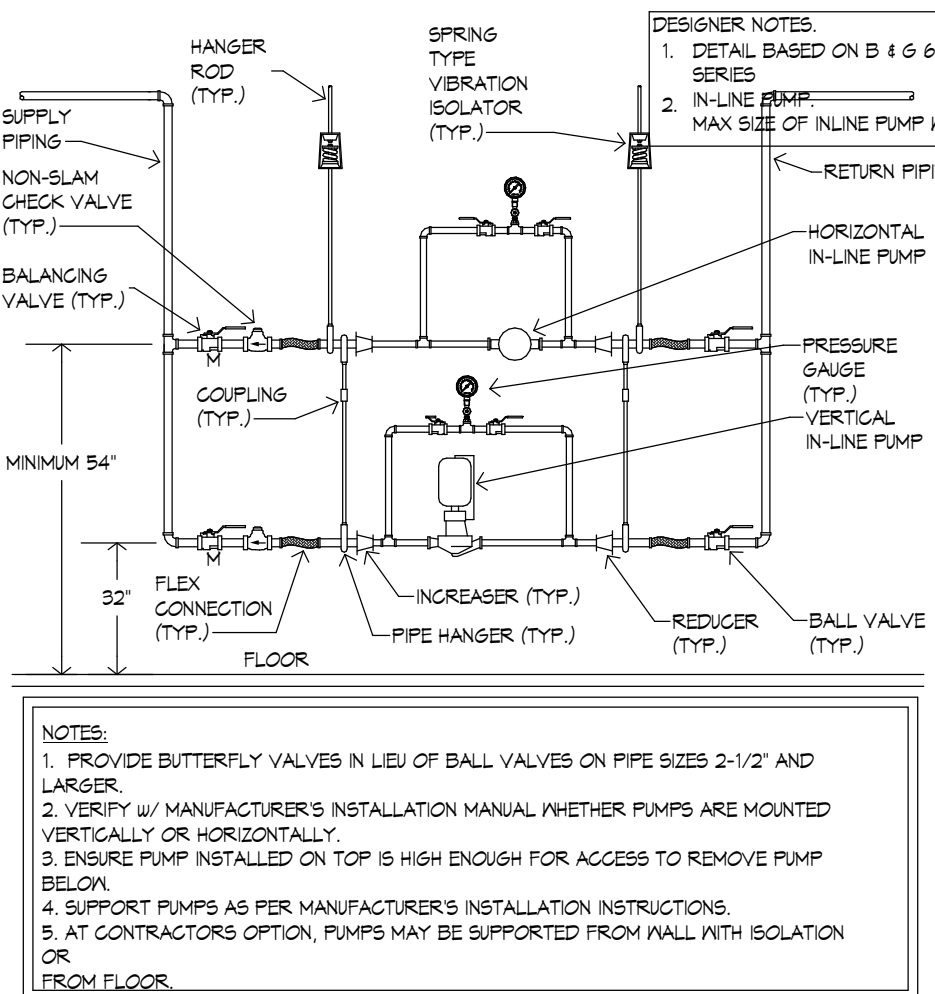
**8 WATER COIL 3-WAY VALVE AUTOFLOW PIPING DETAIL**  
 SCALE: NTS



**5 DUAL SEALED COMBUSTION GAS FIRED WATER HEATER PIPING DETAIL**  
 SCALE: NTS



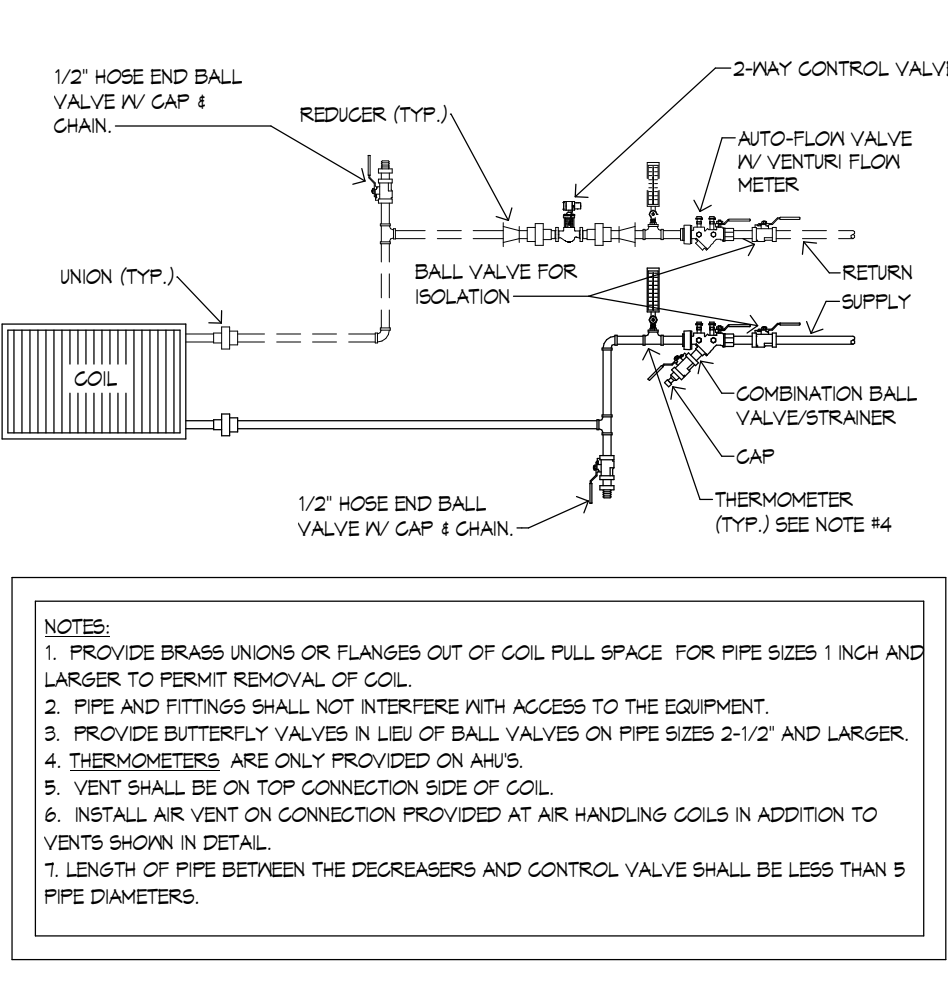
**2 DUAL WATER SOFTENER PIPING DETAIL**  
 SCALE: NTS



**DESIGNER NOTES:**  
 1. DETAIL BASED ON B & B 60 & 80 SERIES  
 2. IN-LINE PUMP MAX SIZE OF IN-LINE PUMP WILL BE 5 HP

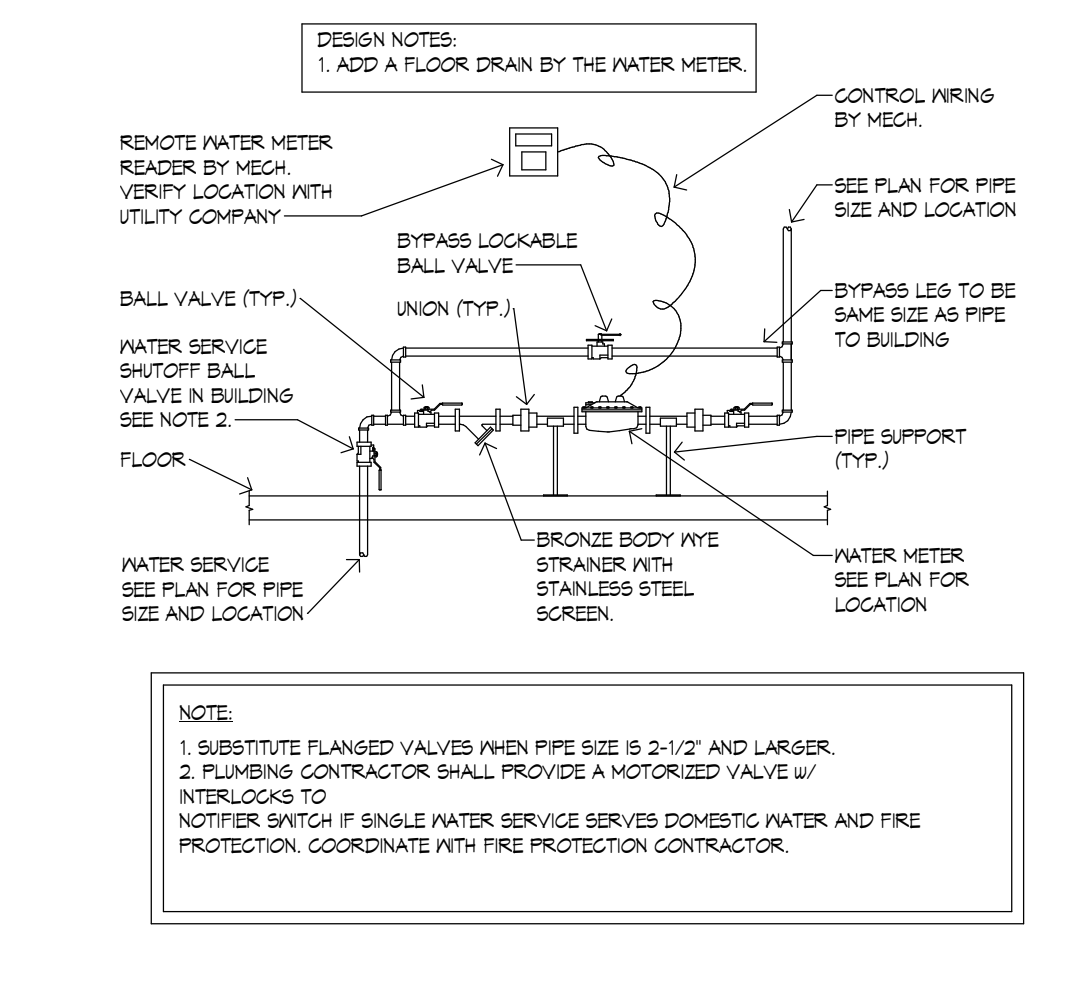
**NOTES:**  
 1. PROVIDE BUTTERFLY VALVES IN LIEU OF BALL VALVES ON PIPE SIZES 2-1/2" AND LARGER.  
 2. VERIFY W/ MANUFACTURER'S INSTALLATION MANUAL WHETHER PUMPS ARE MOUNTED VERTICALLY OR HORIZONTALLY.  
 3. ENSURE PUMP INSTALLED ON TOP IS HIGH ENOUGH FOR ACCESS TO REMOVE PUMP BELOW.  
 4. SUPPORT PUMPS AS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.  
 5. AT CONTRACTOR'S OPTION, PUMPS MAY BE SUPPORTED FROM WALL WITH ISOLATION OR FROM FLOOR.

**10 IN-LINE PUMPS DETAIL**  
 SCALE: NTS

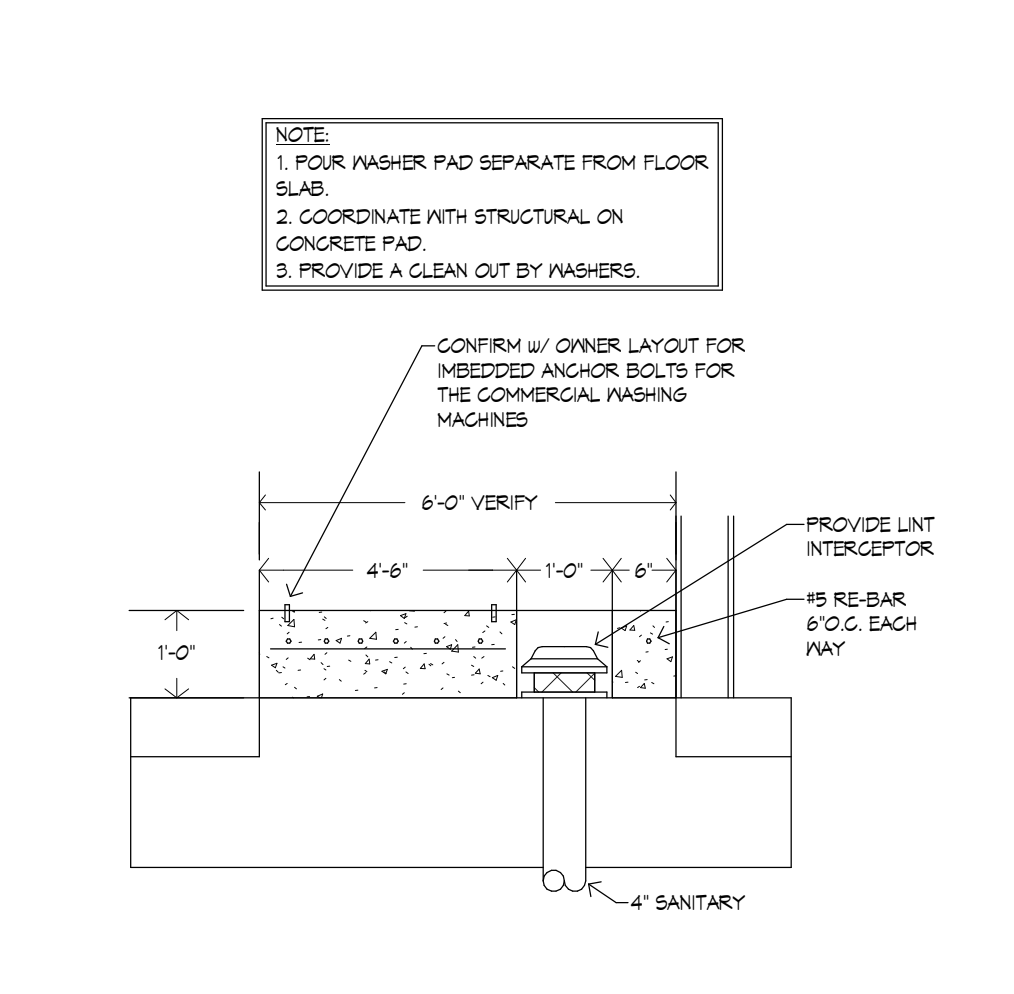


**NOTES:**  
 1. PROVIDE BRASS UNIONS OR FLANGES OUT OF COIL PULL SPACE FOR PIPE SIZES 1 INCH AND LARGER TO PERMIT REMOVAL OF COIL.  
 2. PIPE AND FITTINGS SHALL NOT INTERFERE WITH ACCESS TO THE EQUIPMENT.  
 3. PROVIDE BUTTERFLY VALVES IN LIEU OF BALL VALVES ON PIPE SIZES 2-1/2" AND LARGER.  
 4. THERMOMETERS ARE ONLY PROVIDED ON AHUS.  
 5. VENT SHALL BE ON TOP CONNECTION SIDE OF COIL.  
 6. INSTALL AIR VENT ON CONNECTION PROVIDED AT AIR HANDLING COILS IN ADDITION TO VENTS SHOWN IN DETAIL.  
 7. LENGTH OF PIPE BETWEEN THE DEGREASERS AND CONTROL VALVE SHALL BE LESS THAN 5 PIPE DIAMETERS.

**7 WATER COIL 2-WAY VALVE AUTOFLOW PIPING DETAIL**  
 SCALE: NTS



**4 WATER METER DETAIL**  
 SCALE: NTS



**1 WASHER PAD W/ TRENCH DRAIN**  
 SCALE: NTS



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REVISION SCHEDULE		
NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
**BOTTINEAU RIDGE II APARTMENTS**  
 MAPLE GROVE, MN

DATE  
**11/20/17**  
 PHASE  
**PROGRESS**  
 SET  
 PROJECT  
**ONE# 2016446**  
 SHEET  
**M400**  
 MECHANICAL  
 DETAILS

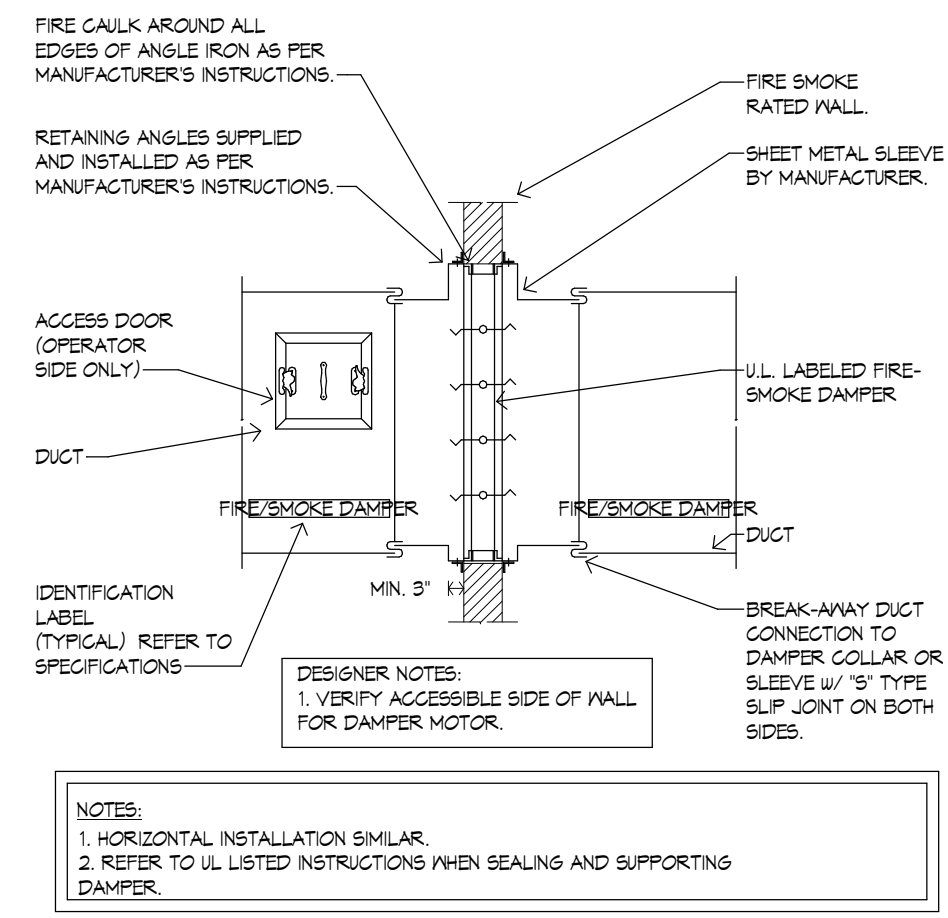
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D

C

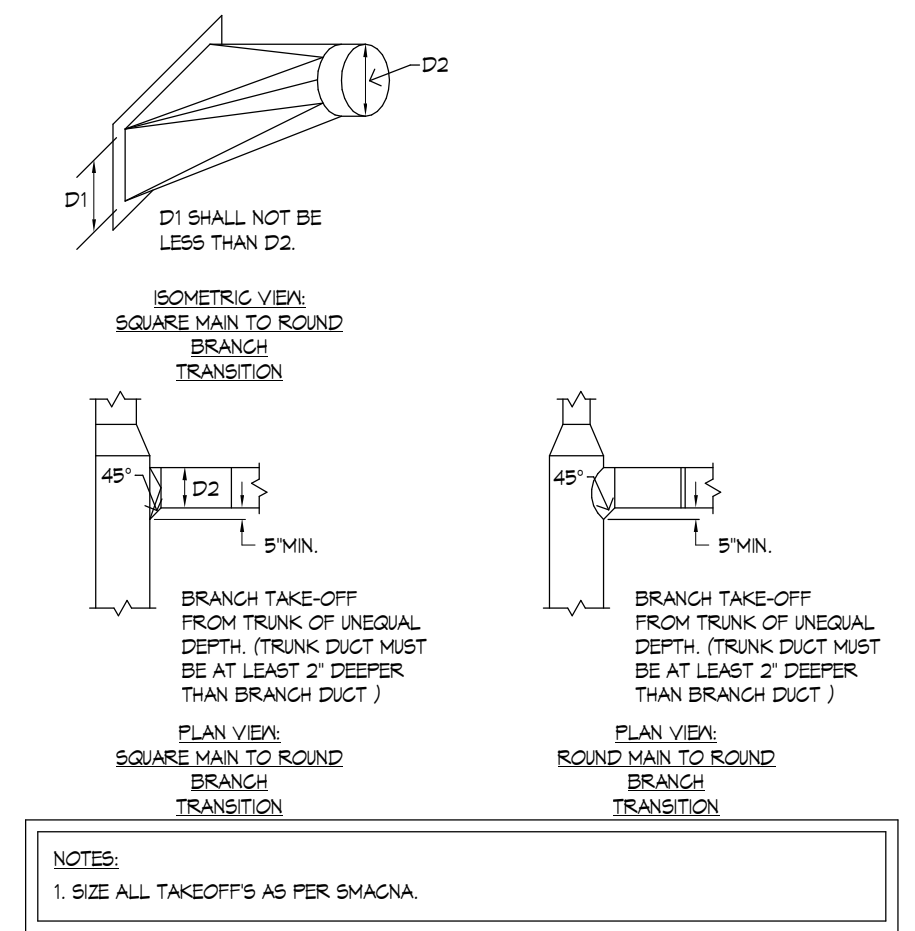
B

A



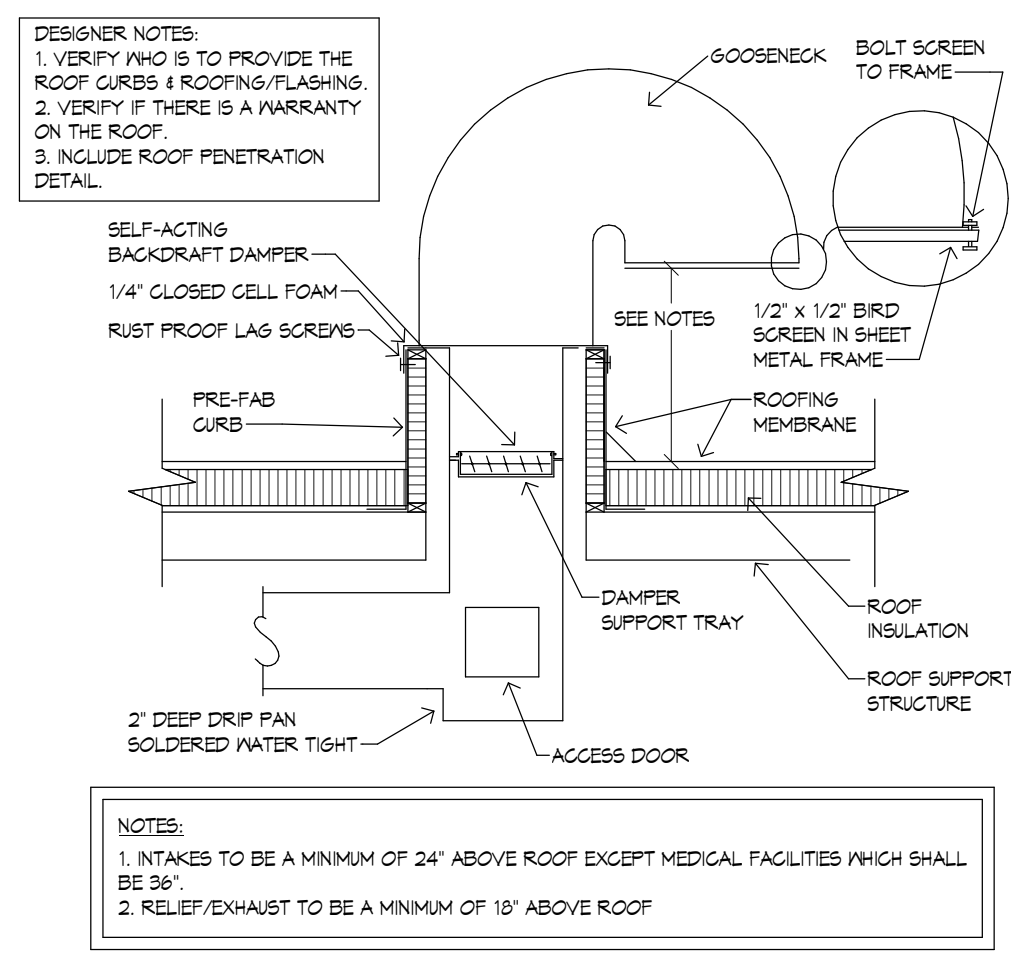
6 COMBINATION FIRE/SMOKE DAMPER DETAIL

SCALE: NTS



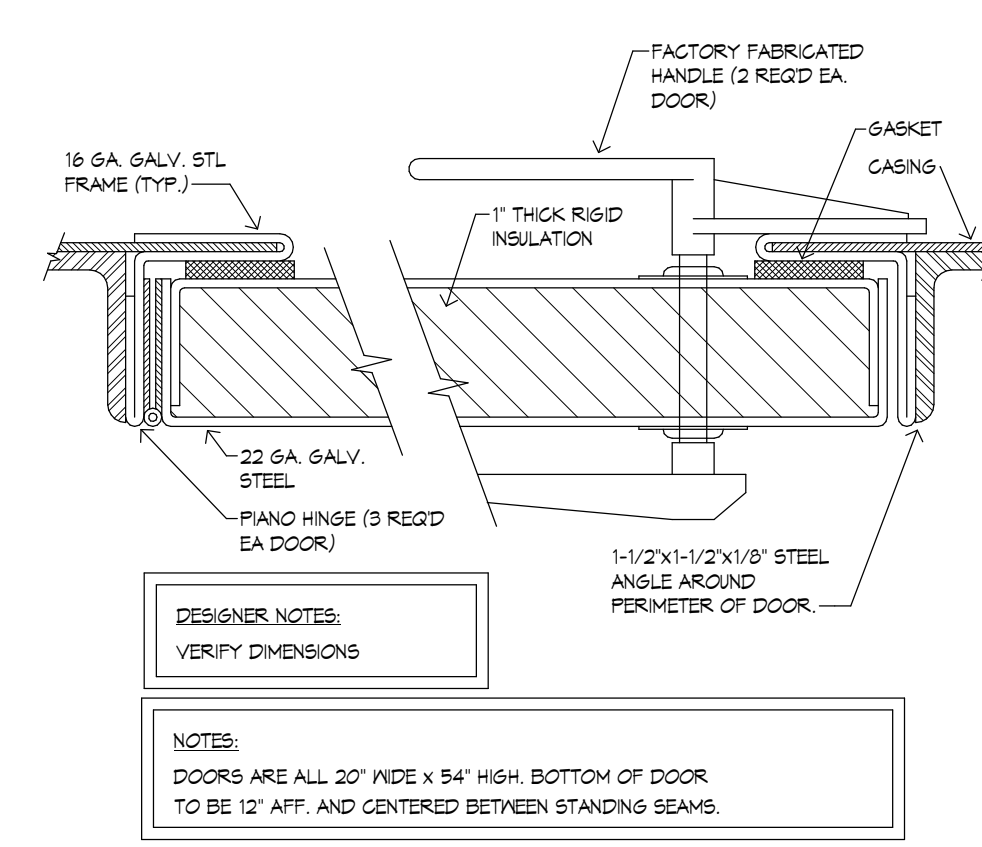
3 ROUND DUCT CONNECTION DETAILS

SCALE: NTS



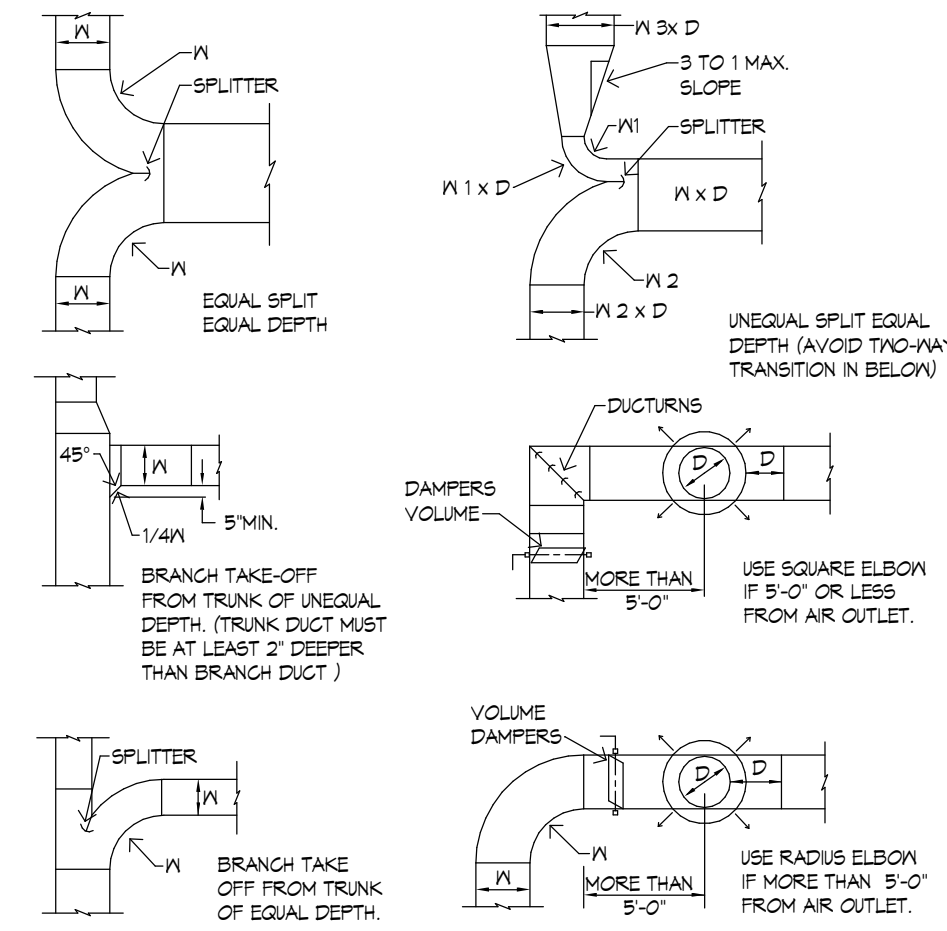
8 GOOSENECK DETAIL

SCALE: NTS



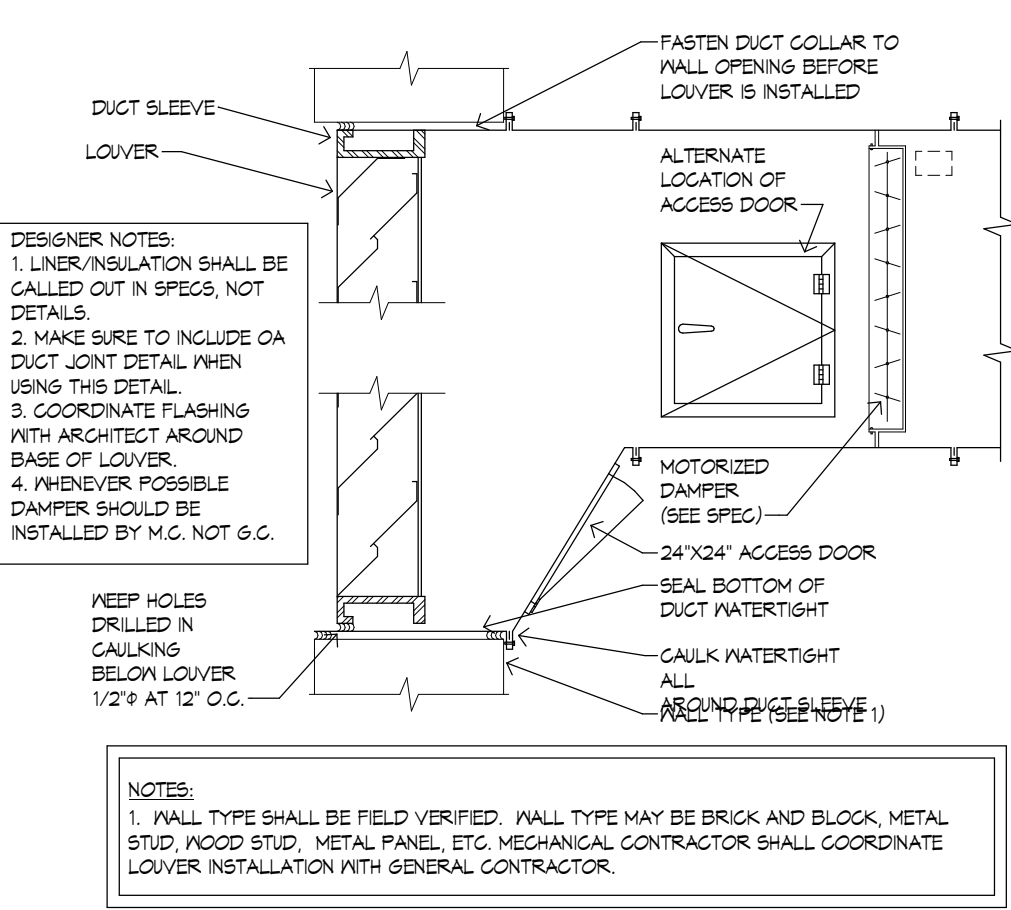
5 ACCESS DOOR DETAIL

SCALE: NTS



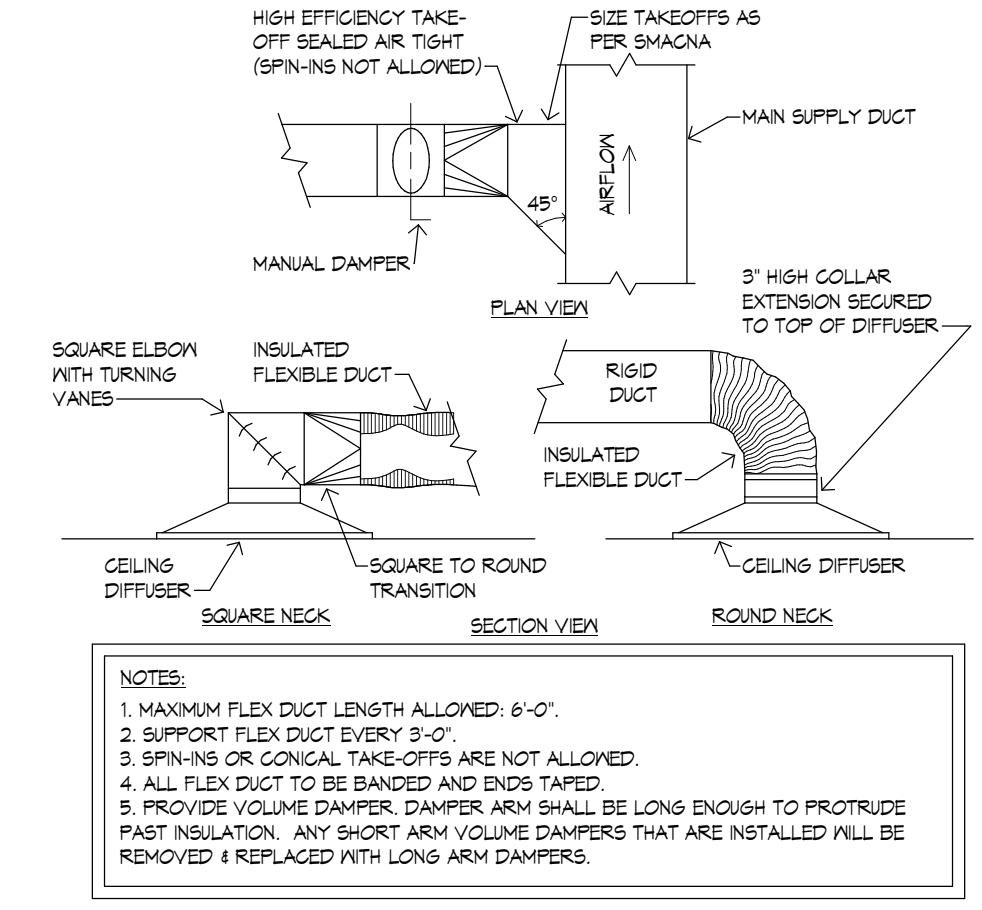
2 DUCT CONNECTION DETAILS

SCALE: NTS



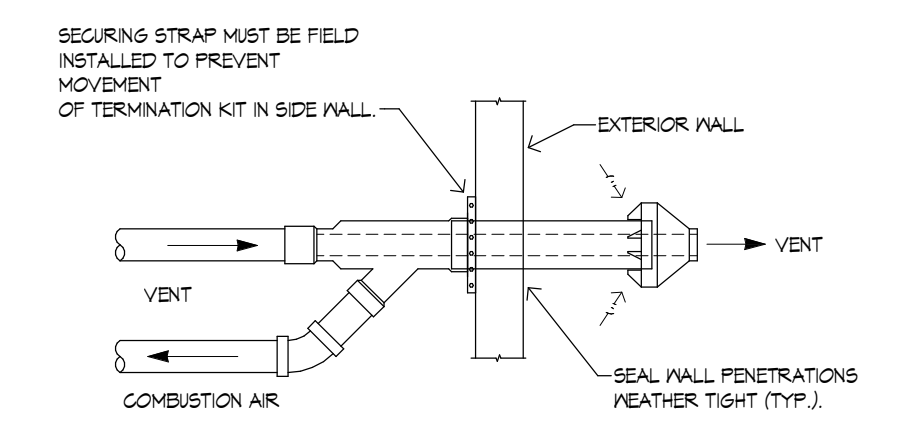
7 LOUVER INSTALLATION DETAIL

SCALE: NTS



4 SUPPLY DUCT TO DIFFUSER DETAIL

SCALE: NTS



1 CONCENTRIC VENT TERMINATION DETAIL

SCALE: NTS



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REVISION SCHEDULE		
NO.	DESCRIPTION	DATE

JLG ARCHITECTS  
BOTTINEAU RIDGE II APARTMENTS  
MAPLE GROVE, MN

DATE  
12/22/10

PHASE  
PROGRESS  
SET

PROJECT  
ONE# 2016446

SHEET  
M401  
MECHANICAL  
DETAILS

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PUMP SCHEDULE														
UNIT NO.	MANUFACTURER & SERIES NO.	MODEL NO.	SERVICE	TYPE	GPM	HEAD (FT)	MIN EFF	MOTOR HP	VOLT	PH	VFD	DISC BY	PUMP RPM	NOTES
FP-1	B46	PL-50	DOM. HW	IL	7	14	---	1/6	120	1	N	EC	3300	1,2
BP-1	B46 e-90	1.25AAB	BOILER	IL	46	20	60%	1/2	120	1	N	EC	1800	3
BP-2	B46 e-90	1.25AAB	BOILER	IL	46	20	60%	1/2	120	1	N	EC	1800	3
BP-3	B46 e-90	1.25AAB	BOILER	IL	46	20	60%	1/2	120	1	N	EC	1800	3
BP-4	B46 e-90	1.25AAB	BOILER	IL	46	20	60%	1/2	120	1	N	EC	1800	3
P-1	B46 e-80	3X3X7C	BUILDING	IL	220	35	75%	3	208	3	Y	EC	1800	3,4
P-2	B46 e-80	3X3X7C	BUILDING	IL	220	35	75%	3	208	3	Y	EC	1800	3,4

IL IN LINE  
DISC DISCONNECT  
EC ELECTRICAL CONTRACTOR

NOTES:  
1. ALL BRONZE CONSTRUCTION.  
2. PROVIDE AQUASTAT FOR PUMP CONTROL.  
3. PUMPS SELECTED FOR 30% PROPYLENE GLYCOL.  
4. COORDINATE VFD MOUNTING WITH ELECTRICAL ENGINEER.

AIR COOLED CONDENSING UNIT SCHEDULE										
UNIT NO.	MANUFACTURER & MODEL NO.	UNIT SERVED	CAPACITY MBH	SEER	VOLTS	PH	DISC BY	MCA	MOCF	NOTES
SSCU-1	MITSUBISHI MUY-GE12NA	SSAC-1	12	20.5	208	3	EC	12	15	1,2,4
CJ-1	DAIKIN DX135A0603	FCU-1	56.5	13	208	3	EC	21.5	35	1,2,3,4,5
CJ-2	DAIKIN DX135A0483	FCU-2	46	13	208	3	EC	17.9	30	1,2,3,4,5
CJ-3	DAIKIN DX135A0241	FCU-3	23	13	208	1	EC	17.6	30	1,2,3,4,5
CJ-4	DAIKIN DX135A0483	FCU-2	46	13	208	3	EC	17.9	30	1,2,3,4,5

MCA MINIMUM CIRCUIT AMPACITY  
MFS MAX FUSE SIZE  
DISC DISCONNECT  
MC MECHANICAL CONTRACTOR  
EC ELECTRICAL CONTRACTOR

NOTES:  
1. PROVIDE REFRIGERANT QUANTITIES PER MANUFACTURER'S RECOMMENDATIONS.  
2. SEE SPECIFICATIONS FOR REFR. LINE SET INSULATION.  
3. PROVIDE MATCHING EVAPORATOR COIL IN FAN COIL UNIT.  
4. SERVICE RECEPTACLE SHALL BE PROVIDED WITHIN 25'.  
5. PROVIDE REFRIGERANT PIPING P-TRAPS AS REQUIRED BY THE MANUFACTURER.

FAN COIL UNIT SCHEDULE													
UNIT NO.	MANUFACTURER & MODEL NO.	TYPE	CFM	ESP	HP	VOLT	PH	DISC BY	HEATING COIL	COOLING COIL	MIN OA CFM	FILTER TYPE	NOTES
FCU-1	DAIKIN LAH004	V	1,600	1.00	1.5	208	3	EC	HC-1	DX-1	260	TA	
FCU-2	DAIKIN LAH003	V	1,200	1.00	1	208	3	EC	HC-2	DX-2	180	TA	
FCU-3	DAIKIN LAH002	V	500	0.75	0.5	208	3	EC	HC-3	DX-3	130	TA	
FCU-4	DAIKIN LAH003	V	1,200	1.00	1	208	3	EC	HC-4	DX-4	250	TA	
FCU-5	DAIKIN LAH010A	V	3,200	1.00	2	208	3	EC	HC-4	---	3200	TA	

TA THROW AWAY  
V VERTICAL  
DISC DISCONNECT  
MC MECHANICAL CONTRACTOR  
EC ELECTRICAL CONTRACTOR

NOTES:  
1.  
2.

LOUVER SCHEDULE									
UNIT NO.	MANUFACTURER & MODEL NO.	WIDTH	HEIGHT	FRAME	DEPTH	CFM	FREE AREA	PD	NOTES
LVR-1	AMERICAN WARMING LE-31	72	46	DRAINABLE	6"	12,500	22.28	0.05	1,2
LVR-2	AMERICAN WARMING LE-31	48	48	DRAINABLE	6"	3,200	9.28	0.05	1,3

PD PRESSURE DROP, IN. W.C.

NOTES:  
1. SEE SPECIFICATION FOR FINISH REQUIREMENTS.  
2. PROVIDE MOTORIZED DAMPER ON LOUVER. INTERLOCK WITH GARAGE EXHAUST FAN.  
3. PROVIDE MOTORIZED DAMPER AT FAN COIL.

UNIT HEATER SCHEDULE																	
UNIT NO.	MANUFACTURER & MODEL NO.	TYPE	CFM	EAT	LAT	OUTPUT/MOTOR				DISC BY	EWT	LWT	GPM	RECESS	NOTES		
						MBH	HP	VOLT	PH								
UH-1	DAIKIN UHH-33	Y	630	40	60	18.0	1/15	120	1	MC	160	140	2.5	YH	1,2,3		
UH-2	DAIKIN UHH-63	Y	1120	40	60	39.2	1/10	120	1	MC	160	140	4.7	YH	1,2,3		
UH-3	DAIKIN UHH-63	Y	1120	40	60	39.2	1/10	120	1	MC	160	140	4.7	YH	1,2,3		
UH-4	DAIKIN UHH-63	Y	1120	40	60	39.2	1/10	120	1	MC	160	140	4.7	YH	1,2,3		
UH-5	DAIKIN UHH-63	Y	1120	40	60	39.2	1/10	120	1	MC	160	140	4.7	YH	1,2,3		
UH-6	DAIKIN UHH-63	Y	1120	40	60	39.2	1/10	120	1	MC	160	140	4.7	YH	1,2,3		
UH-7	DAIKIN UHH-33	Y	630	40	60	18.0	1/15	120	1	MC	160	140	2.5	YH	1,2,3		
CJH-1	DAIKIN F-CHF 506	Y	600	60	90	23.1	1/7	120	1	MC	160	140	1.6	Y	1,2		
CJH-2	DAIKIN F-CHF 506	Y	600	60	90	23.1	1/7	120	1	MC	160	140	1.6	Y	1,2		
CJH-3	DAIKIN F-CHF 506	Y	600	60	90	23.1	1/7	120	1	MC	160	140	1.6	Y	1,2		
CJH-4	DAIKIN F-CHF 506	Y	600	60	90	23.1	1/7	120	1	MC	160	140	1.6	Y	1,2		

W WATER  
S STEAM  
H HORIZONTAL  
I INVERTED  
R RECESSED  
SR SEMI RECESSED  
WH WALL HUNG  
DISC DISCONNECT  
MC MECHANICAL CONTRACTOR  
EC ELECTRICAL CONTRACTOR

NOTES:  
1. UNITS SELECTED BASED ON 30% PROPYLENE GLYCOL.  
2. PROVIDE LOW VOLTAGE THERMOSTAT & CONTROL TRANSFORMER  
3. PROVIDE WALL MOUNTING BRACKET & DISCONNECT.

WATER SOFTENER SCHEDULE											
UNIT NO.	MANUFACTURER & MODEL NO.	EXCHANGE GRAIN		PEAK FLOW	CONTINUOUS FLOW		RESIN CF	BRINE DIA	NOTES		
		MAX	MIN	GPM	PD	GPM	PD				
WS-1	WATER CONTROL CORP LP-360-TWIN-ECG	768,000	504,000	176	15	114.2	7	12	30"	ALL	

PD PRESSURE DROP, PSI

NOTES:  
1. SOFTENER SYSTEM IS DUPLEX PROGRESSIVE WITH A SINGLE FLOW METER. SIZES SCHEDULED ARE PER TANK.

WATER HEATER SCHEDULE																	
UNIT NO.	MANUFACTURER & MODEL NO.	TYPE	INPUT GPM	SOURCE EWT	LOAD EWT	LWT	REC. GPH	STORE GAL	ELECTRICAL AMPS	VOLTS	PH	DISC BY	NOTES				
WH-1	PVI 900L215A-TREPDW	HX	15.0	160	82	40	140	696	215	6	120	1	EC	ALL			

NG NATURAL GAS  
E ELECTRIC  
DISC DISCONNECT  
MC MECHANICAL CONTRACTOR  
EC ELECTRICAL CONTRACTOR  
HX HEAT EXCHANGER

NOTES:  
1. PROVIDE LOW WATER CUTOFF, HIGH TMEP LIMIT & RELAY PACKAGE.  
2. PROVIDE BOILER WATER VALVE PACKAGE.  
3. PROVIDE 25 YEAR TANK WARRANTY.  
4. PROVIDE (1) EXPANSION TANK - AMTROL ST-42V-C, 17.5 GALL TANK VOL., 11.4 GAL. ACCEPTANCE FOR THE ENTIRE SYSTEM.  
5. UNIT SHALL STORE WATER AT 140°F.

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE														
UNIT NO.	MANUFACTURER & MODEL NO.	LOCATION	TYPE	NET CAPACITY CFM	EAT			TOTAL MBH	SENS MBH	FILTER TYPE	ELECTRICAL			NOTES
					DB	WB	WB				VOLTS	PH	MCA	
SSAC-1	MITSUBISHI MSY-GE12NA	ELEV EQUIP	YH	297	90	67	12	-	Y	208	1	7	15	1

MFS MAX FUSE SIZE  
MCA MIN. CIRCUIT AMPACITY  
E ELECTRIC  
DX DIRECT EXPANSION

NOTES:  
1. UNIT SHALL HAVE A SINGLE POINT POWER CONNECTION FOR CONNECTION BY OTHERS. WIRING BETWEEN EVAPORATOR AND CONDENSER SHALL BE BY THIS CONTRACTOR

FAN SCHEDULE															
UNIT NO.	MANUFACTURER & MODEL NO.	TYPE	CFM	TSP (IN WC)	MOTOR				DISC BY	FAN RPM	DRIVE	CONT. SONES	BY	NOTES	
					HP	VOLT	PH	VFD <td colspan="5"></td>							
EF-1	PANASONIC FV-05-11VKS2	VARIOUS	CEP	30/80	0.25	24.3W	120	1	NO	MC	956	D	0.8	MC	2,3,5,6
EF-2	GREENHECK CMB-300	010 - PARKING	SN	11200	0.1	3	208	3	NO	EC	1142	B	39	MC	1,4
EF-3	PANASONIC FV-05-11VKS2	104 - RESTROOM	CEP	30/80	0.25	24.3W	120	1	NO	MC	956	D	0.8	MC	2,3,6

C CENTRIFUGAL  
P PROPELLER  
W WALL MOUNTED  
IL IN LINE  
B BELT DRIVE  
D DIRECT DRIVE  
EF EXHAUST FAN  
CEF CEILING EXHAUST FAN  
BDD BACKDRAFT DAMPER  
DISC DISCONNECT  
MC MECHANICAL CONTRACTOR  
EC ELECTRICAL CONTRACTOR  
TSM TWO SPEED MOTOR  
SS SPEED SWITCH ON UNIT  
SW SIDE WALL  
MD MOTORIZED DAMPER (ELECTRICAL) INSTALLED IN CURB

NOTES:  
1. PROVIDE SELF ACTING BACKDRAFT DAMPER, BIRDSCREEN, AND UNIT MOUNTED DISCONNECT SWITCH.  
2. PROVIDE UNIT MOUNTED VARIABLE SPEED SWITCH.  
3. FAN MUST BE ENERGY STAR RATED.  
4. INTERLOCK FAN WITH OUTSIDE AIR MOTORIZED DAMPER AND GAS DETECTION SYSTEM. ALL CONTROL WIRING BY MC.  
5. PROVIDE EXHAUST FAN FOR PROTECTION OF FIRE RATED ASSEMBLY.  
6. VARIABLE SPEED AND DELAYED TIMER CONTROLS TO BE BUILT IN. FAN HIGH/LOW SPEED AND DELAYED TIMER SHALL BE ACTIVATED BY SWITCH

SUMP PUMP SCHEDULE													
UNIT NO.	MANUFACTURER & MODEL NO.	SERVICE	TYPE	GPM	HEAD (FT.)	MOTOR				PUMP RPM	NOTES		
						HP	VOLT	PH	VFD <td colspan="3"></td>				
SP-1	ZOELLER 145/4145	ELEV	SUB	50	24	3/4	115	1	N	3450	1,2		

SP SUMP PUMP  
SUB SUBMERSIBLE

NOTES:  
1. PROVIDE 10' DEEP SUMP PIT WITH LOCKABLE COVER.  
2. SIMPLEX PUMP CONTROLLER

DIFFUSER, REGISTER AND GRILLE SCHEDULE											
UNIT NO.	MODEL NO.	TYPE	NECK SIZE	PANEL SIZE	FRAME STYLE	NC	MOUNTING	AIR SA	MAX CFM	NOTES	
S-1	520D	REG	7x4	8x5	F	<20	GYP	SA	120	1,2,3,4	
S-2	520D	REG	14x4	15x8	F	<20	GYP	SA	220	1,2,3,4	
S-3	SPD	PCD	6"	24x24	31	<20	LIT	SA	130	1,2,4	
S-4	SPD	PCD	6"	24x24	31	<20	GYP	SA	130	1,2,4	
R-1	80	EGG	24x12	24x12	TB	<20	LIT	RA	1100	1,2,4	
R-2	530	GR	18x10	19x11	F	<20	GYP	RA	460	1,2,4	
R-3	530	GR	10x4	11x5	F	<20	GYP	RA	110	1,2,4	
R-4	530	GR	32x22	33x23	F	<20	GYP	RA	1100	1,2,4	

PCD PERFORATED CEILING DIFFUSER  
REG REGISTER  
EGG EGG CRATE GRILLE  
GR GRILLE  
GYP GYPSUM WALL OR CEILING  
LIT LAY-IN TILE  
SA SUPPLY AIR  
RA RETURN AIR  
EA EXHAUST AIR

NOTES:  
1. ALL DIFFUSERS, GRILLES & REGISTERS TAKEN FROM THE 'PRICE' AIR DISTRIBUTION EQUIPMENT CATALOG. SEE SPECIFICATIONS.  
2. S-1 INDICATES UNIT NO. ON SCHEDULE  
200 INDICATES AIR QUANTITY IN 'CFM'  
TYP(2) INDICATES QUANTITY OF SIMILAR UNITS IN THE SAME ROOM OR GENERAL AREA  
3. PROVIDE WITH OPPOSED BLADE DAMPER.  
4. PROVIDE CEILING RADIATION DAMPER WHEN DIFFUSER PENETRATES A RATED CEILING ASSEMBLY.

PCD PERFORATED CEILING DIFFUSER  
REG REGISTER  
EGG EGG CRATE GRILLE  
GR GRILLE  
GYP GYPSUM WALL OR CEILING  
LIT LAY-IN TILE  
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3. PROVIDE WITH OPPOSED BLADE DAMPER.  
4. PROVIDE CEILING RADIATION DAMPER WHEN DIFFUSER PENETRATES A RATED CEILING ASSEMBLY.

FAN COIL UNIT COIL SCHEDULE																	
UNIT NO.	COIL TYPE	UNIT SERVED	CFM	MAX FV	MAX APD	EAT DB	WB	LAT DB	WB	SENS MBH	TOTAL MBH	EWT	LWT	GPM	MAX WPD	NOTES	
HC-1	HW	FCU-1	1,600	500	0.15	60	---	42	---	---	56.6	160	130	4.4	0.40	1	
DX-1	DX	FCU-1	1,600	500	0.30	78	65	53	52	43.2	60.0	---	---	---	---	2,3	
HC-2	HW	FCU-2	1,200	500	0.14	60	---	100	---	---	52.2	160	130	3.3	1.00	1	
DX-2	DX	FCU-2	1,200	500	0.27	78	65	53	52	32.3	44.6	---	---	---	---	2,3	
HC-3	HW	FCU-3	500	500	0.06	60	---	96	---	---	20.0	160	130	1.4	0.20	1	
DX-3	DX	FCU-3	500	500	0.12	79	66	51	50	15.3	23.0	---	---	---	---	2,3	
HC-4	HW	FCU-4	1,200	500	0.14	60	---	100	---	---	52.2	160	130	3.3	1.00	1	
DX-4	DX	FCU-4	1,200	500	0.27	78	65	53	52	32.3	44.6	---	---	---	---	2,3	
HC-5	HW	FCU-5	3,200	500	0.10	-20	-20	83	83	---	359.4	160	125	22.5	3.40	1	

DX DIRECT EXPANSION  
W WATER  
S STEAM  
WPD WATER PRESSURE DROP, FT.  
APD AIR PRESSURE DROP, IN  
FV FACE VELOCITY

NOTES:  
1. CAPACITY BASED ON 30% PROPYLENE GLYCOL/WATER SOLUTION  
2. ALL DX COOLING COILS SHALL BE INTERLACED STYLE.  
3. SATURATED SUCTION TEMPERATURE OF 45°F.

BOILER SCHEDULE												
UNIT NO.	MANUFACTURER & MODEL NO.	HEATING MEDIUM	TYPE	FIRING RATE		NET ELECTRICAL			DISC BY	NOTES		
				FUEL	MBH	GPH	MBH	HP	VOLTS	PH		
B-1	THERMAL SOLUTIONS APX125C	30% PG	COND	NG	725	---	689	---	120	1	EC	ALL
B-2	THERMAL SOLUTIONS APX125C	30% PG	COND	NG	725	---	689	---	120	1	EC	ALL
B-3	THERMAL SOLUTIONS APX125C	30% PG	COND	NG	725	---	689	---	120	1	EC	ALL
B-4	THERMAL SOLUTIONS APX125C	30% PG	COND	NG	725	---	689	---	120	1	EC	

**FIN RADIATION SCHEDULE**

UNIT NO.	MANUFACTURER & MODEL NO.	FLUID TYPE	COVER TYPE	COVER HEIGHT (IN)	COVER DEPTH (IN)	COVER LENGTH (FT)	ROWS	TUBE SIZE (IN)	FINS PER FT	FIN LENGTH (FT)	BTU PER FT	TOTAL MBH	FLOW GPM	NOTES
FTR-201A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	10	683.52	6.8	3.0	1,2,3,4
FTR-201B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-6"	1	3/4	40	10	683.52	6.8	---	1,2,3,4
FTR-201C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	9	683.52	6.2	---	1,2,3,4
FTR-201D	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	4'-0"	1	3/4	40	3.5	683.52	2.4	---	1,2,3,4
FTR-201E	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	9'-0"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-202A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	10.0	683.52	6.8	---	1,2,3,4
FTR-202B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-6"	1	3/4	40	10.0	683.52	6.8	---	1,2,3,4
FTR-202C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	10.0	683.52	6.8	---	1,2,3,4
FTR-202D	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	4'-6"	1	3/4	40	4.0	683.52	2.7	---	1,2,3,4
FTR-202E	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	3'-6"	1	3/4	40	3.0	683.52	2.1	---	1,2,3,4
FTR-202F	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	3'-0"	1	3/4	40	2.0	683.52	1.4	---	1,2,3,4
FTR-204A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	12.0	683.52	8.2	2.0	1,2,3,4
FTR-204B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	11'-0"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-206A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	8.0	683.52	5.5	2.0	1,2,3,4
FTR-206B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	12.0	683.52	8.2	---	1,2,3,4
FTR-206C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	8'-0"	1	3/4	40	7.0	683.52	4.8	---	1,2,3,4
FTR-207A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	9'-0"	1	3/4	40	8.0	683.52	5.5	3.0	1,2,3,4
FTR-207B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-207C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	12.0	683.52	8.2	---	1,2,3,4
FTR-207D	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	11'-0"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-208A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	8.0	683.52	5.5	2.0	1,2,3,4
FTR-208B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	12.0	683.52	8.2	---	1,2,3,4
FTR-208C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	8'-0"	1	3/4	40	7.0	683.52	4.8	---	1,2,3,4
FTR-210A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	8.0	683.52	5.5	2.0	1,2,3,4
FTR-210B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	3'-6"	1	3/4	40	3.0	683.52	2.1	---	1,2,3,4
FTR-210C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	4'-0"	1	3/4	40	3.5	683.52	2.4	---	1,2,3,4
FTR-210D	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	3'-0"	1	3/4	40	2.5	683.52	1.7	---	1,2,3,4
FTR-210E	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	8'-0"	1	3/4	40	7.0	683.52	4.8	---	1,2,3,4
FTR-212A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	5'-6"	1	3/4	40	4.5	683.52	3.1	2.0	1,2,3,4
FTR-212B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	9'-0"	1	3/4	40	7.0	683.52	4.8	---	1,2,3,4
FTR-212C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-6"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-212D	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	7'-6"	1	3/4	40	7.5	683.52	5.1	---	1,2,3,4
FTR-213A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	7'-0"	1	3/4	40	6.0	683.52	4.1	2.0	1,2,3,4
FTR-213B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	14'-0"	1	3/4	40	12.0	683.52	8.2	---	1,2,3,4
FTR-213C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-214A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	7'-6"	1	3/4	40	7.0	683.52	4.8	3.0	1,2,3,4
FTR-214B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	2'-6"	1	3/4	40	2.0	683.52	1.4	---	1,2,3,4
FTR-214C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	4'-6"	1	3/4	40	4.5	683.52	3.1	---	1,2,3,4
FTR-214D	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	3'-6"	1	3/4	40	4.5	683.52	3.1	---	1,2,3,4
FTR-214E	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	9'-6"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-214F	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	9'-6"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-215A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	8'-6"	1	3/4	40	8.0	683.52	5.5	2.0	1,2,3,4
FTR-215B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	9'-6"	1	3/4	40	9.0	683.52	6.2	---	1,2,3,4
FTR-215C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	6'-6"	1	3/4	40	4.0	683.52	2.7	---	1,2,3,4
FTR-215D	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	9'-0"	1	3/4	40	8.0	683.52	5.5	4.0	1,2,3,4
FTR-215E	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	12'-0"	1	3/4	40	10.0	683.52	6.8	---	1,2,3,4
FTR-215F	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	12'-0"	1	3/4	40	10.0	683.52	6.8	---	1,2,3,4
FTR-215G	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	12'-0"	1	3/4	40	10.0	683.52	6.8	---	1,2,3,4
FTR-215H	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	9'-6"	1	3/4	40	6.0	683.52	4.1	2.0	1,2,3,4
FTR-215I	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	10.0	683.52	6.8	---	1,2,3,4
FTR-216A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	9'-6"	1	3/4	40	9.0	683.52	6.2	3.0	1,2,3,4
FTR-216B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-216C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-216D	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	10.0	683.52	6.8	---	1,2,3,4

- NOTES:**
- CAPACITIES BASED ON 150°F AVG. WATER TEMP AND 65°F EAT
  - BOTTOM OF COVER 4" ABOVE FLOOR
  - PROVIDE TRIM PIECES TO ACCOUNT FOR EXTRA LENGTH FOR A COMPLETE WALL TO WALL INSTALLATION.
  - FLOW RATES LISTED ARE FOR ENTIRE CIRCUIT OF FTR.

W WATER  
ST SLOPE TOP  
TO TOP OUTLET  
FO FRONT OUTLET  
W-W WALL TO WALL

**FIN RADIATION SCHEDULE**

UNIT NO.	MANUFACTURER & MODEL NO.	FLUID TYPE	COVER TYPE	COVER HEIGHT (IN)	COVER DEPTH (IN)	COVER LENGTH (FT)	ROWS	TUBE SIZE (IN)	FINS PER FT	FIN LENGTH (FT)	BTU PER FT	TOTAL MBH	FLOW GPM	NOTES
FTR-102A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	10.0	683.52	6.8	3.0	1,2,3,4
FTR-102B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-6"	1	3/4	40	10.0	683.52	6.8	---	1,2,3,4
FTR-102C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	10.0	683.52	6.8	---	1,2,3,4
FTR-102D	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	4'-6"	1	3/4	40	4.0	683.52	2.7	---	1,2,3,4
FTR-102E	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	3'-6"	1	3/4	40	3.0	683.52	2.1	---	1,2,3,4
FTR-102F	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	3'-0"	1	3/4	40	2.0	683.52	1.4	---	1,2,3,4
FTR-103A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	5'-0"	1	3/4	40	4.0	683.52	2.7	2.0	1,2,3,4
FTR-103B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	4'-6"	1	3/4	40	4.0	683.52	2.7	---	1,2,3,4
FTR-103C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	7'-0"	1	3/4	40	6.0	683.52	4.1	1.0	1,2,3,4
FTR-104A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	12.0	683.52	8.2	2.0	1,2,3,4
FTR-104B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	11'-0"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-106A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	8.0	683.52	5.5	2.0	1,2,3,4
FTR-106B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	12.0	683.52	8.2	---	1,2,3,4
FTR-106C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	8'-0"	1	3/4	40	7.0	683.52	4.8	---	1,2,3,4
FTR-107A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-107B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	12.0	683.52	8.2	---	1,2,3,4
FTR-107C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	11'-0"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-108A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	8.0	683.52	5.5	2.0	1,2,3,4
FTR-108B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	13'-6"	1	3/4	40	12.0	683.52	8.2	---	1,2,3,4
FTR-108C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	8'-0"	1	3/4	40	7.0	683.52	4.8	---	1,2,3,4
FTR-110A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	8.0	683.52	5.5	2.0	1,2,3,4
FTR-110B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	3'-6"	1	3/4	40	3.0	683.52	2.1	---	1,2,3,4
FTR-110C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	4'-0"	1	3/4	40	3.5	683.52	2.4	---	1,2,3,4
FTR-110D	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	3'-0"	1	3/4	40	2.5	683.52	1.7	---	1,2,3,4
FTR-110E	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	8'-0"	1	3/4	40	7.0	683.52	4.8	---	1,2,3,4
FTR-112A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	5'-6"	1	3/4	40	4.5	683.52	3.1	2.0	1,2,3,4
FTR-112B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	9'-0"	1	3/4	40	7.0	683.52	4.8	---	1,2,3,4
FTR-112C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-6"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-112D	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	7'-6"	1	3/4	40	7.5	683.52	5.1	---	1,2,3,4
FTR-113A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	7'-0"	1	3/4	40	6.0	683.52	4.1	2.0	1,2,3,4
FTR-113B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	14'-0"	1	3/4	40	12.0	683.52	8.2	---	1,2,3,4
FTR-113C	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	10'-0"	1	3/4	40	8.0	683.52	5.5	---	1,2,3,4
FTR-114A	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	7'-6"	1	3/4	40	7.0	683.52	4.8	3.0	1,2,3,4
FTR-114B	VULCAN JV3-ARS	30% PG	ST	14"	4-3/8	2'-6"								

D

C

B

A

FIN RADIATION SCHEDULE

Table with columns: UNIT NO., MANUFACTURER NO., FLUID TYPE, COVER TYPE, COVER HEIGHT (IN), COVER DEPTH (IN), COVER LENGTH (FT), ROWS, TUBE SIZE (IN), FINS PER FT, FIN LENGTH (FT), BTU PER FT, TOTAL MBH, FLOW GPM, NOTES. Rows include units FTR-401A through FTR-416D.

NOTES: CAPACITIES BASED ON 150°F AVG. 1. WATER AND 85°F BOTTOM OF COVER 4" ABOVE FRODOBE TRIM PIECES TO ACCOUNT FOR EXTRA LENGTH FOR 3. COMPLETE WALL TO WALL INSTALLATION.

W WATER ST TOP TO FRODOBE FO W-W WALL

FIN RADIATION SCHEDULE

Table with columns: UNIT NO., MANUFACTURER NO., FLUID TYPE, COVER TYPE, COVER HEIGHT (IN), COVER DEPTH (IN), COVER LENGTH (FT), ROWS, TUBE SIZE (IN), FINS PER FT, FIN LENGTH (FT), BTU PER FT, TOTAL MBH, FLOW GPM, NOTES. Rows include units FTR-301A through FTR-316D.

NOTES: CAPACITIES BASED ON 150°F AVG. 1. WATER AND 85°F BOTTOM OF COVER 4" ABOVE FRODOBE TRIM PIECES TO ACCOUNT FOR EXTRA LENGTH FOR 3. COMPLETE WALL TO WALL INSTALLATION.

W WATER ST TOP TO FRODOBE FO W-W WALL

11/20/2017 1:38:50 PM



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REVISION SCHEDULE

Table with columns: NO., DESCRIPTION, DATE

JLG ARCHITECTS BOTTINEAU RIDGE II APARTMENTS MAPLE GROVE, MN

DATE 12/22/10 PHASE PROGRESS SET PROJECT ONE# 2016446

SHEET M502 MECHANICAL SCHEDULES