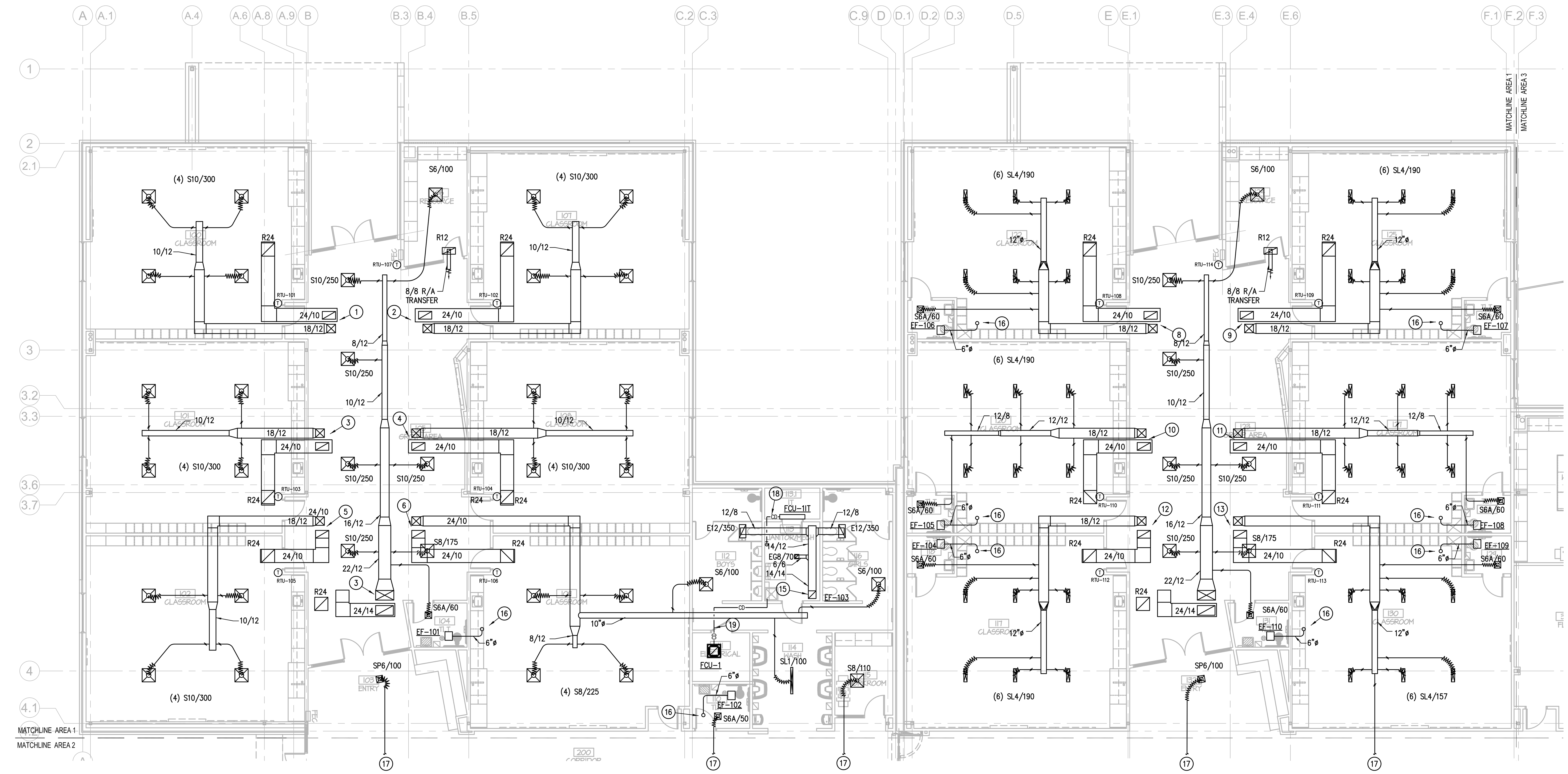

NORTH TRUE

NORTH PLAN

MECHANICAL FLOOR PLAN – AREA 1

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

GENERAL MECHANICAL NOTES:

A. INSTALL ALL DUCTWORK AND ACCESSORIES PER 2015 INTERNATIONAL MECHANICAL CODE AND ALL LOCAL CODES, AND AUTHORITY HAVING JURISDICTION.

B. COORDINATE EXACT LOCATION OF ALL AIR DEVICES WITH THE REFLECTED CEILING PLAN.

C. COORDINATE ALL ROOF PENETRATIONS AND ROOF MOUNTED EQUIPMENT LOCATIONS WITH STRUCTURAL. COORDINATE MASONRY WALL PENETRATION WITH STRUCTURAL.

D. MAXIMUM FLEXIBLE S/A DUCTWORK AT ANY AIR DEVICE SHALL NOT EXCEED 5'-0". PROVIDE ADDITIONAL SUPPORTS AS NECESSARY TO PREVENT CONTACT WITH CEILING MATERIAL/ASSEMBLY.

E. REFER TO AIR DISTRIBUTION DEVICE SCHEDULE FOR SUPPLY RUNOUT SIZES.

F. MOUNT THERMOSTAT AT NOT MORE THAN 48" AFF. COORDINATE W/ LIGHT SWITCHES. MOUNT DEVICE LEVEL WITH COVER AND TRIM SNUG TO WALL.

G. RETURN AND/OR EXHAUST DEVICE AIRFLOW VOLUMES SHALL EQUAL SUPPLY UNLESS INDICATED OTHERWISE.

SPECIFIC MECHANICAL NOTES (○):

1. 16/16 S/A & 24/14 R/A FROM RTU-101 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
2. 16/16 S/A & 24/14 R/A FROM RTU-102 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
3. 16/16 S/A & 24/14 R/A FROM RTU-103 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
4. 16/16 S/A & 24/14 R/A FROM RTU-104 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
5. 16/16 S/A & 24/14 R/A FROM RTU-105 TRANSITION TO 18/12 S/A & TRANSITION TO 24/10 R/A.
6. 16/16 S/A & 24/14 R/A FROM RTU-106 TRANSITION TO 18/12 S/A & TRANSITION TO 24/10 R/A.
7. 33/17 S/A & 32/17 R/A FROM RTU-107 TRANSITION TO 22/12 S/A & DROP 32/17 INTO 24/14 R/A PLENUM.
8. 16/16 S/A & 24/14 R/A FROM RTU-108 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
9. 16/16 S/A & 24/14 R/A FROM RTU-109 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
10. 16/16 S/A & 24/14 R/A FROM RTU-110 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
11. 16/16 S/A & 24/14 R/A FROM RTU-111 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
12. 16/16 S/A & 24/14 R/A FROM RTU-112 TRANSITION TO 18/12 S/A & TRANSITION TO 24/10 R/A.
13. 16/16 S/A & 24/14 R/A FROM RTU-113 TRANSITION TO 18/12 S/A & TRANSITION TO 24/10 R/A.
14. 33/17 S/A & 32/17 R/A FROM RTU-114 TRANSITION TO 22/12 S/A & DROP 32/17 INTO 24/14 R/A PLENUM.
15. 14/14 UP TO EF-103.
16. EXTEND 6"ø EXHAUST UP THRU ROOF JACK.
17. SEE M102 FOR CONTINUATION.
18. ROUTE 3/4" CONDENSATE LINE, DISCHARGE AT FLOOR DRAIN.
19. ROUTE 3/4" CONDENSATE LINE, DISCHARGE AT MOP BASIN.

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JENNIFER JORDAN FAIR 17220 OKLAHOMA

MORROW ELEMENTARY

OWASSO PUBLIC SCHOOLS

OWASSO, OK 2018

PROJECT

KEY PLAN

REVISIONS

03.06.18

ISSUE DATE

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MECHANICAL FLOOR PLAN - AREA 1

M101

SHEET TITLE

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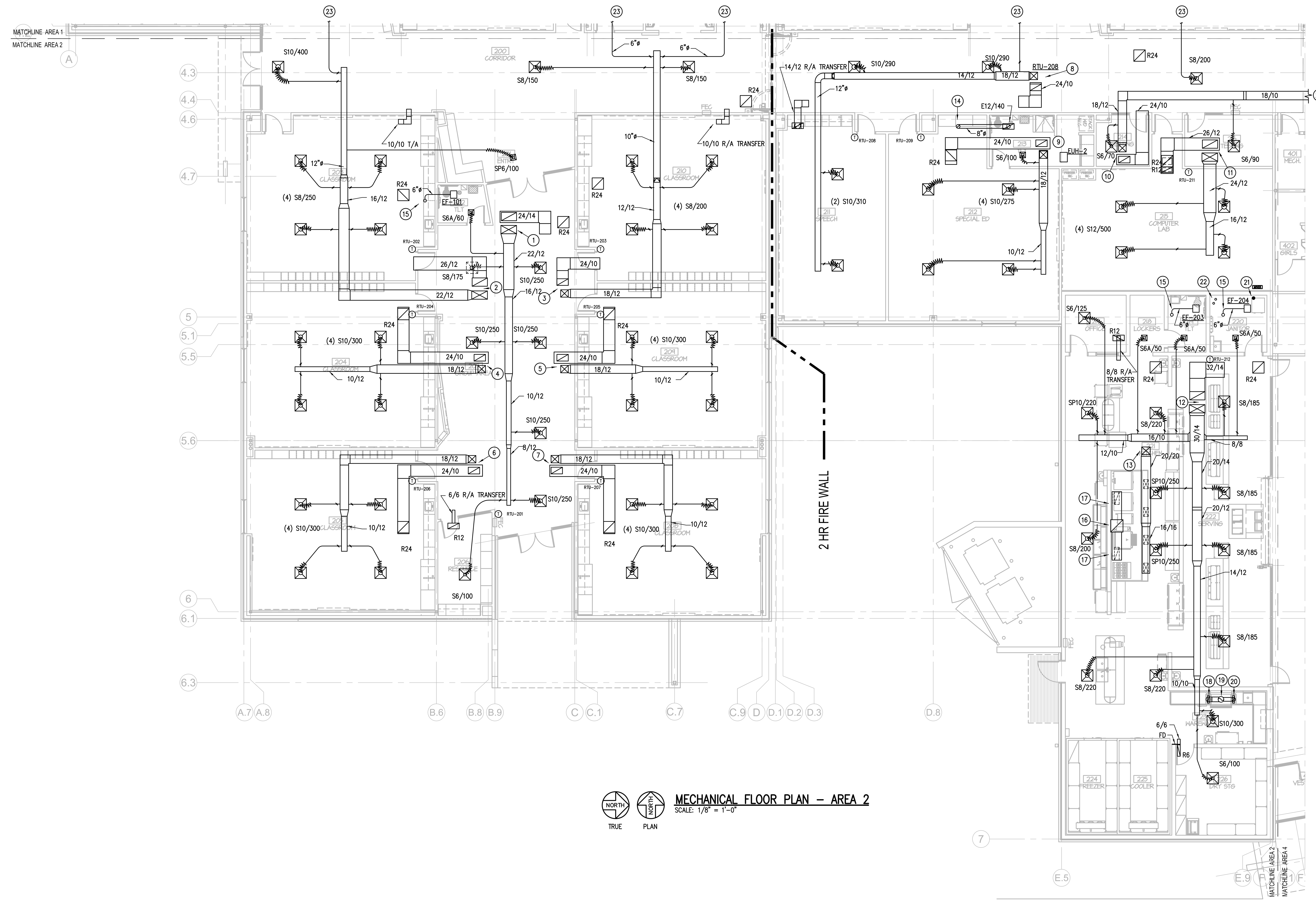

MECHANICAL FLOOR PLAN – AREA 2

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

GENERAL MECHANICAL NOTES:

A. INSTALL ALL DUCTWORK AND ACCESSORIES PER 2015 INTERNATIONAL MECHANICAL CODE AND ALL LOCAL CODES, AND AUTHORITY HAVING JURISDICTION.

B. COORDINATE EXACT LOCATION OF ALL AIR DEVICES WITH THE REFLECTED CEILING PLAN.

C. COORDINATE ALL ROOF PENETRATIONS AND ROOF MOUNTED EQUIPMENT LOCATIONS WITH STRUCTURAL. COORDINATE MASONRY WALL PENETRATION WITH STRUCTURAL.

D. MAXIMUM FLEXIBLE S/A DUCTWORK AT ANY AIR DEVICE SHALL NOT EXCEED 5'–0". PROVIDE ADDITIONAL SUPPORTS AS NECESSARY TO PREVENT CONTACT WITH CEILING MATERIAL/ASSEMBLY.

E. REFER TO AIR DISTRIBUTION DEVICE SCHEDULE FOR SUPPLY RUNOUT SIZES.

F. MOUNT THERMOSTAT AT NOT MORE THAN 48" AFF. COORDINATE W/ LIGHT SWITCHES. MOUNT DEVICE LEVEL WITH COVER AND TRIM SNUG TO WALL.

G. RETURN AND/OR EXHAUST DEVICE AIRFLOW VOLUMES SHALL EQUAL SUPPLY UNLESS INDICATED OTHERWISE.

SPECIFIC MECHANICAL NOTES (○):

1. 33/17 S/A & 32/17 R/A FROM RTU–201 TRANSITION TO 22/12 S/A & DROP 32/17 INTO 24/14 R/A PLENUM.
2. 33/17 S/A & 32/17 R/A FROM RTU–202 TRANSITION TO 22/12 S/A & DROP 32/17 INTO 24/14 R/A PLENUM.
3. 16/16 S/A & 24/14 R/A FROM RTU–203 TRANSITION TO 18/12 S/A & TRANSITION TO 24/10 R/A.
4. 16/16 S/A & 24/14 R/A FROM RTU–204 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
5. 16/16 S/A & 24/14 R/A FROM RTU–205 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
6. 16/16 S/A & 24/14 R/A FROM RTU–206 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
7. 16/16 S/A & 24/14 R/A FROM RTU–207 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
8. 16/16 S/A & 24/14 R/A FROM RTU–208 TRANSITION TO 18/12 S/A & TRANSITION TO 24/10 R/A.
9. 16/16 S/A & 24/14 R/A FROM RTU–209 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
10. 16/16 S/A & 24/14 R/A FROM RTU–210 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
11. 33/17 S/A & 32/17 R/A FROM RTU–211 TRANSITION TO 24/12 S/A & DROP 32/17 INTO 26/12 R/A PLENUM.
12. 33/17 S/A & 32/17 R/A FROM RTU–212 TRANSITION TO 30/14 S/A & TRANSITION TO 36/14 R/A.
13. TRANSITION 18/16 M/A FROM KSF–1 TO 20/20 M/A. DROP 19/10 M/A DOWN TO EACH MAKE–UP AIR PLENUM CONNECTION.
14. 8"Ø UP TO EF–202.
15. EXTEND 6"Ø EXHAUST UP THRU ROOF JACK.
16. 26/26 EXHAUST UP TO KEF–1.
17. 20/20 EXHAUST DOWN TRANSITION TO 10/19 EXHAUST CONNECTION AT HOOD.
18. 10"Ø EXHAUST DOWN TRANSITION TO 4/16 EXHAUST CONNECTION AT DISHWASHER.
19. 12"Ø EXHAUST UP TO KEF–2, TRANSITION AS REQUIRED. SLOPE DUCT TOWARDS DISHWASHER.
20. 8"Ø EXHAUST DOWN TRANSITION TO 4/16 EXHAUST CONNECTION AT DISHWASHER.
21. EXTEND 4"Ø DRYER VENT UP THROUGH ROOF W/ DRYER JACK.
22. EXTEND COMBUSTION AIR/FLUE FROM WATER HEATER UP THROUGH ROOF.
23. SEE M101 FOR CONTINUATION.
24. SEE M104 FOR CONTINUATION.

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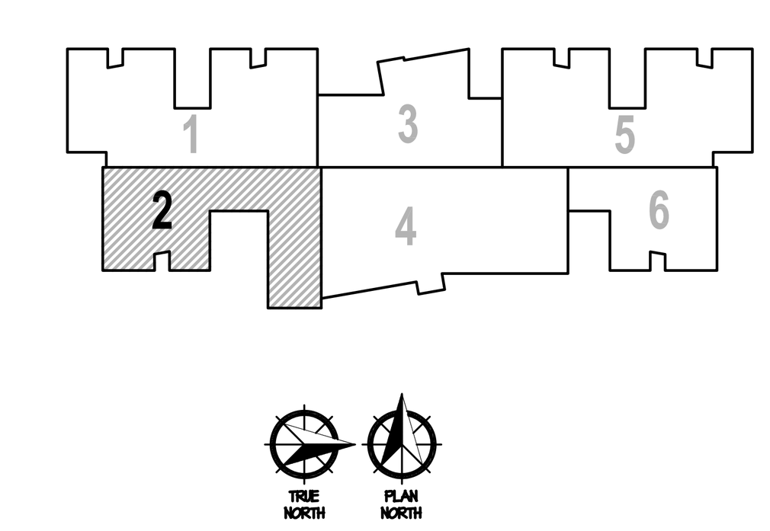
PROJECT



KEY PLAN

REVISIONS

03.06.18

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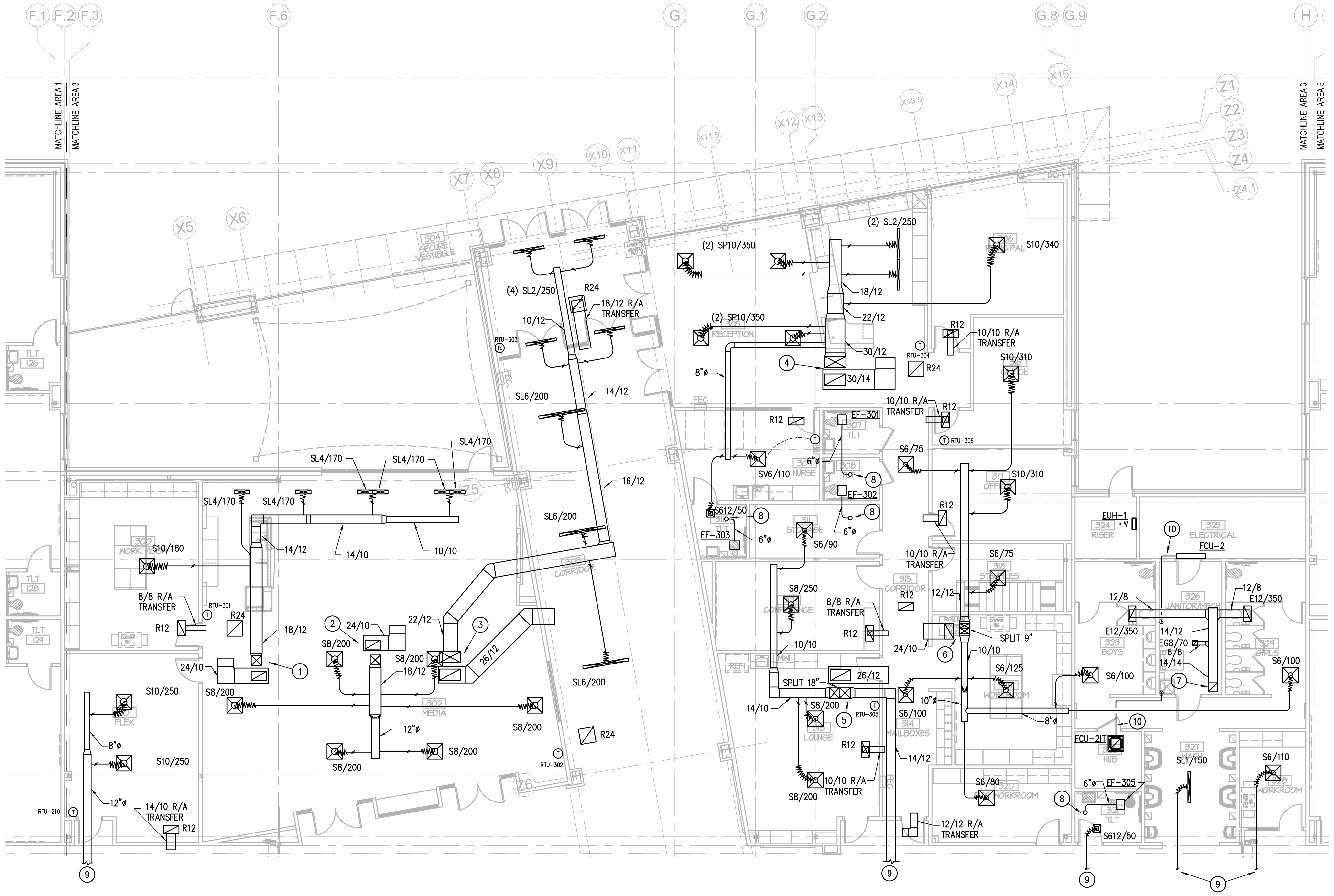
JJF	CHK'D BY

MECHANICAL FLOOR PLAN - AREA 2

M102

SHEET TITLE



MECHANICAL FLOOR PLAN – AREA 3
SCALE: 1/8" = 1'-0"

TRUE NORTH PLAN NORTH

GENERAL MECHANICAL NOTES:

A. INSTALL ALL DUCTWORK AND ACCESSORIES PER 2015 INTERNATIONAL MECHANICAL CODE AND ALL LOCAL CODES, AND AUTHORITY HAVING JURISDICTION.

B. COORDINATE EXACT LOCATION OF ALL AIR DEVICES WITH THE REFLECTED CEILING PLAN.

C. COORDINATE ALL ROOF PENETRATIONS AND ROOF MOUNTED EQUIPMENT LOCATIONS WITH STRUCTURAL. COORDINATE MASONRY WALL PENETRATION WITH STRUCTURAL.

D. MAXIMUM FLEXIBLE S/A DUCTWORK AT ANY AIR DEVICE SHALL NOT EXCEED 5'-0". PROVIDE ADDITIONAL SUPPORTS AS NECESSARY TO PREVENT CONTACT WITH CEILING MATERIAL/ASSEMBLY.

E. REFER TO AIR DISTRIBUTION DEVICE SCHEDULE FOR SUPPLY RUNOUT SIZES.

F. MOUNT THERMOSTAT AT NOT MORE THAN 48" AFF. COORDINATE W/ LIGHT SWITCHES. MOUNT DEVICE LEVEL WITH COVER AND TRIM SNUG TO WALL.

G. RETURN AND/OR EXHAUST DEVICE AIRFLOW VOLUMES SHALL EQUAL SUPPLY UNLESS INDICATED OTHERWISE.

SPECIFIC MECHANICAL NOTES (○):

1. 16/16 S/A & 24/14 R/A FROM RTU-301 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
2. 16/16 S/A & 24/14 R/A FROM RTU-302 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
3. 33/17 S/A & 32/17 R/A FROM RTU-303 TRANSITION TO 22/12 S/A & DROP 32/17 INTO 26/12 R/A PLENUM.
4. 33/17 S/A & 32/17 R/A FROM RTU-304 TRANSITION TO 30/12 S/A & DROP 32/17 INTO 34/14 R/A PLENUM.
5. 33/17 S/A & 32/17 R/A FROM RTU-305 PROVIDE 18" SPLIT IN RISE & TRANSITION TO SIZES INDICATED & DROP 32/17 INTO 26/12 R/A PLENUM.
6. 16/16 S/A & 24/14 R/A FROM RTU-306 PROVIDE 9" SPLIT IN RISE & TRANSITION TO 18/12 S/A & TRANSITION TO 24/10 R/A.
7. 14/14 UP TO EF-304.
8. EXTEND 6"ø EXHAUST UP THRU ROOF JACK.
9. SEE M104 FOR CONTINUATION.
10. ROUTE 3/4" CONDENSATE DRAIN, DISCHARGE AT FLOOR DRAIN.
11. ROUTE 3/4" CONDENSATE DRAIN, DISCHARGE AT MOP BASIN.

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MECHANICAL FLOOR PLAN - AREA 3

M103
SHEET TITLE

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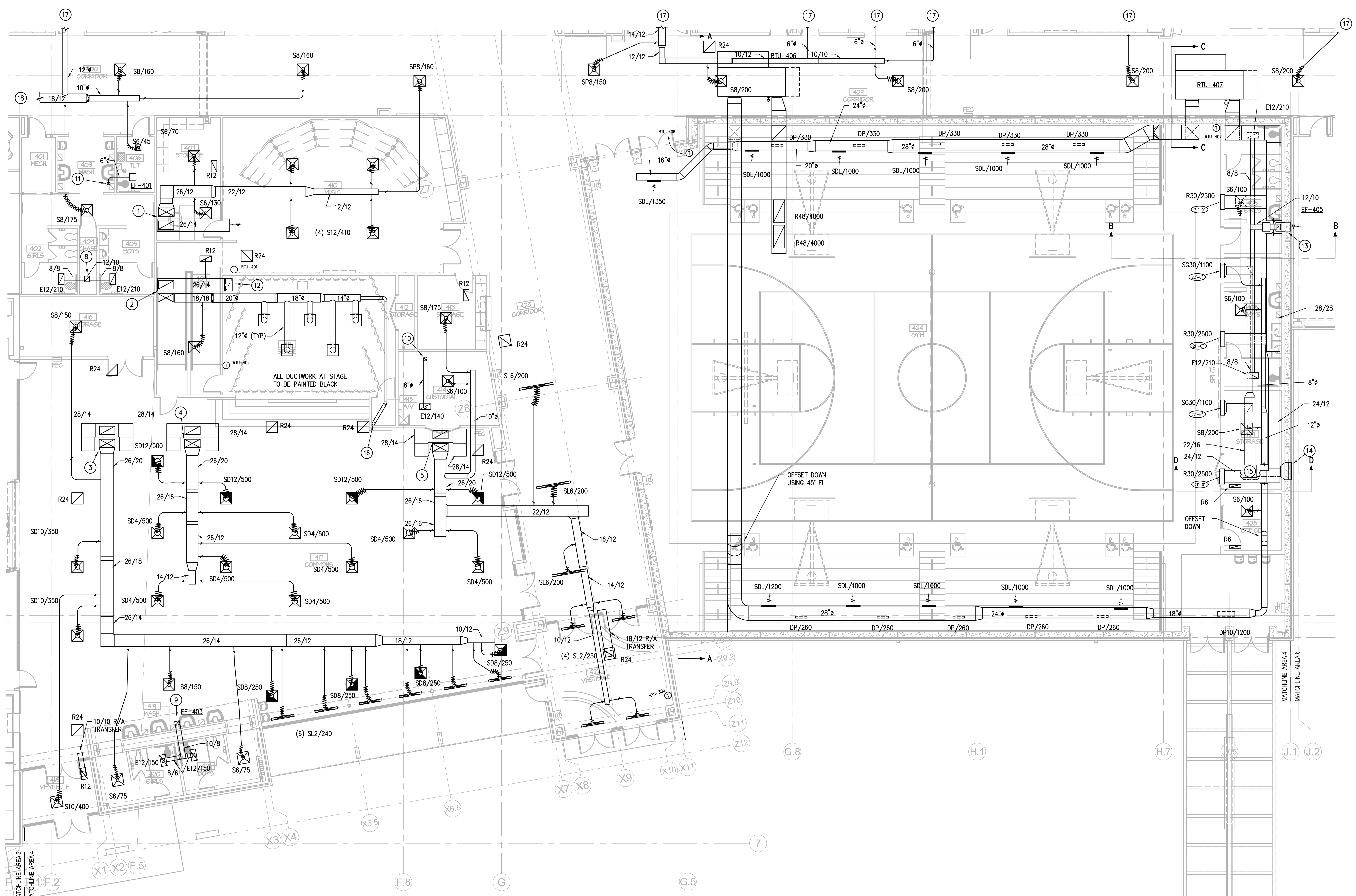

MECHANICAL FLOOR PLAN – AREA 4

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

NORTH TRUE · NORTH PLAN

GENERAL MECHANICAL NOTES:

A. INSTALL ALL DUCTWORK AND ACCESSORIES PER 2015 INTERNATIONAL MECHANICAL CODE AND ALL LOCAL CODES, AND AUTHORITY HAVING JURISDICTION.

B. COORDINATE EXACT LOCATION OF ALL AIR DEVICES WITH THE REFLECTED CEILING PLAN.

C. COORDINATE ALL ROOF PENETRATIONS AND ROOF MOUNTED EQUIPMENT LOCATIONS WITH STRUCTURAL. COORDINATE MASONRY WALL PENETRATION WITH STRUCTURAL.

D. MAXIMUM FLEXIBLE S/A DUCTWORK AT ANY AIR DEVICE SHALL NOT EXCEED 5'-0". PROVIDE ADDITIONAL SUPPORTS AS NECESSARY TO PREVENT CONTACT WITH CEILING MATERIAL/ASSEMBLY.

E. REFER TO AIR DISTRIBUTION DEVICE SCHEDULE FOR SUPPLY RUNOUT SIZES.

F. MOUNT THERMOSTAT AT NOT MORE THAN 48" AFF. COORDINATE W/ LIGHT SWITCHES. MOUNT DEVICE LEVEL WITH COVER AND TRIM SNUG TO WALL.

G. RETURN AND/OR EXHAUST DEVICE AIRFLOW VOLUMES SHALL EQUAL SUPPLY UNLESS INDICATED OTHERWISE.

H. COORDINATE ROUTING OF DUCTWORK FROM RTU WITH STRUCTURAL FOR PROTECTION OF WALL OPENINGS. COORDINATE ALL LOUVERS IN SHELTER AREA WITH STRUCTURAL.

SPECIFIC MECHANICAL NOTES (◯):

1. 33/17 S/A & 32/17 R/A FROM RTU-401 TRANSITION TO 26/12 S/A & DROP 32/17 INTO 26/14 R/A PLENUM.
2. 33/17 S/A & 32/17 R/A FROM RTU-402 TRANSITION TO 18/18 S/A & DROP 32/17 INTO 26/14 R/A PLENUM.
3. 33/17 S/A & 32/17 R/A FROM RTU-403 TRANSITION TO 26/20 S/A & DROP 32/17 INTO 28/14 R/A PLENUM.
4. 33/17 S/A & 32/17 R/A FROM RTU-404 TRANSITION TO 26/20 S/A & DROP 32/17 INTO 28/14 R/A PLENUM.
5. 33/17 S/A & 32/17 R/A FROM RTU-405 TRANSITION TO 26/20 S/A & DROP 32/17 INTO 28/14 R/A PLENUM.
6. 28/28 R/A W/ 1.5" DUCTLINER FROM RTU-GYM, COORDINATE WITH STRUCTURE AND STRUCTURAL REQUIREMENTS.
7. 28/28 S/A W/ 1" DUCTLINER FROM RTU-GYM, DROP DOWN & ROUTE BELOW R/A. COORDINATE WITH STRUCTURAL AND STRUCTURAL SHROUD REQUIREMENTS.
8. 12/10 EXHAUST UP TO EXHAUST FAN EF-402 ON ROOF.
9. 10/8 EXHAUST UP TO EXHAUST FAN EF-403 ON ROOF.
10. 8"ø EXHAUST UP TO EXHAUST FAN EF-404 ON ROOF.
11. EXTEND 6"ø EXHAUST UP THRU ROOF JACK.
12. DROP 26/14 R/A DOWN TO 18" AFF. R/A DUCT TO BE OPEN TO STAGE TO ALLOW LOW RETURN.
13. PROVIDE AND INSTALL 18/18 FEMA EXHAUST LOUVER, REFER DETAIL K/M200.
14. PROVIDE AND INSTALL 36/36 FEMA INTAKE LOUVER, REFER DETAIL K/M200.
15. PROVIDE AND INSTALL SUPPLY FAN SF-1 AND SUSPEND FROM STRUCTURE WITH VIBRATION ISOLATORS. FAN CONTROL SHALL BE MANUAL FROM KEYED SWITCH ADJACENT TO INVERTER.
16. DROP 6"ø S/A DUCT TO DELIVER 150 CFM DOWN THRU CEILING INTO AV CLOSET. PROVIDE ACCESSIBLE BALANCING DAMPER.
17. SEE M103 FOR CONTINUATION.
18. SEE M102 FOR CONTINUATION.

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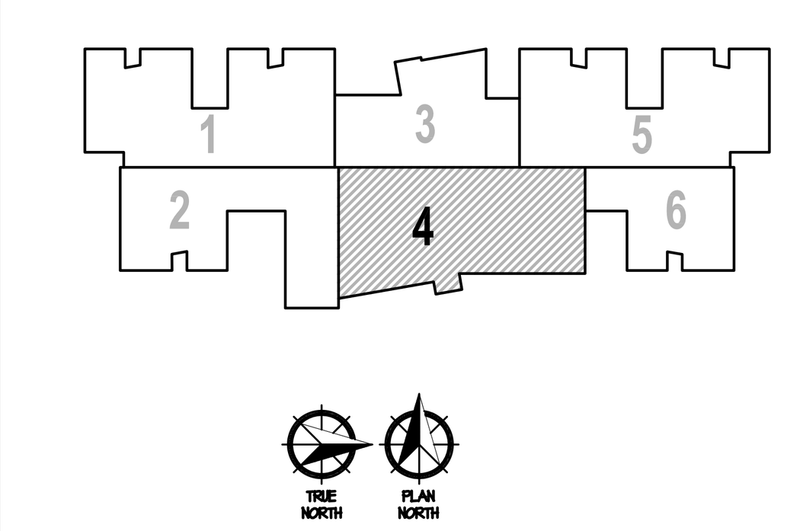


KEY PLAN

REVISIONS

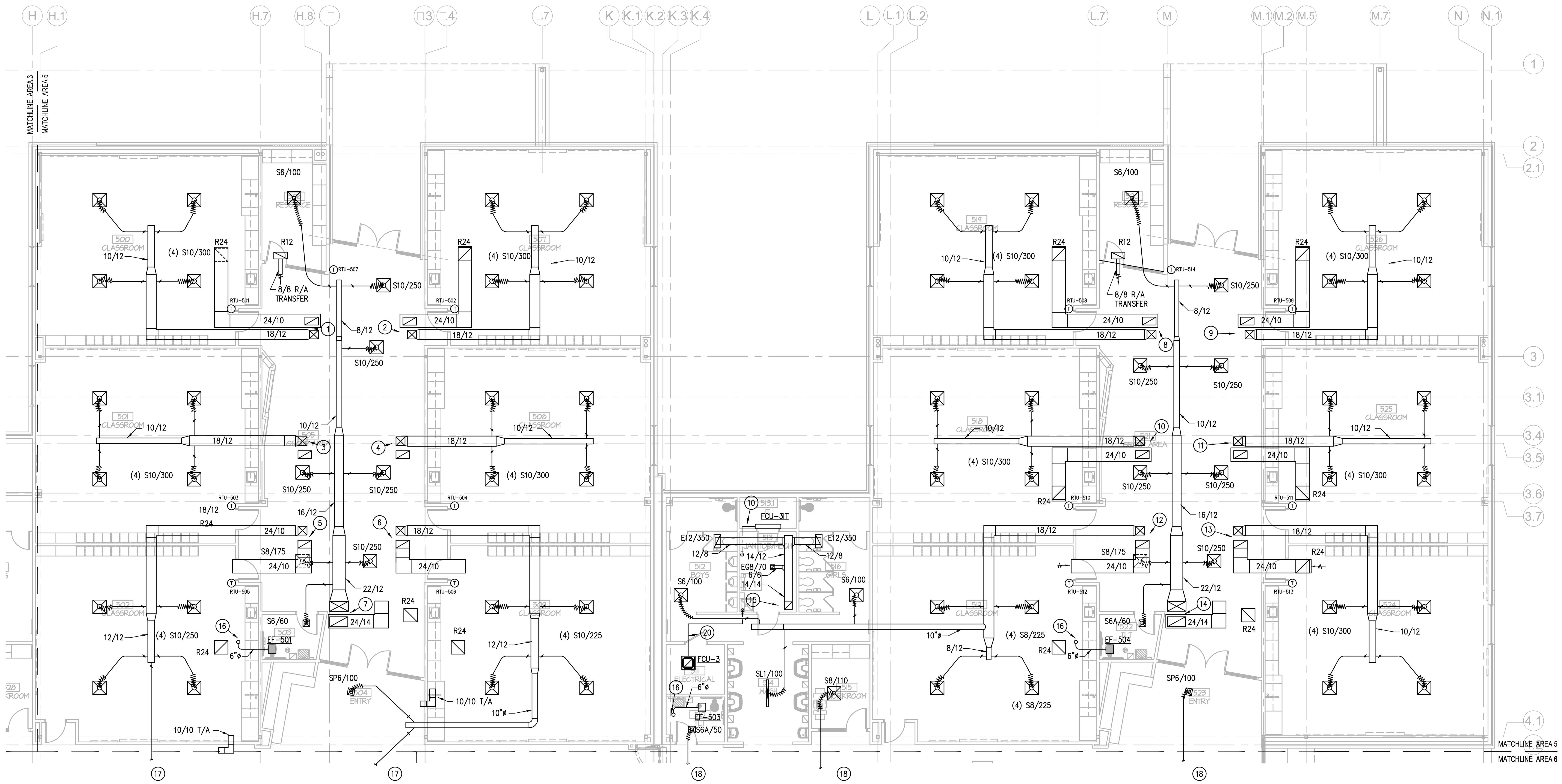
03.06.18

ISSUE DATE

MECHANICAL FLOOR PLAN - AREA 4

SHEET TITLE

M104



NORTH TRUE   NORTH PLAN

MECHANICAL FLOOR PLAN – AREA 5

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

GENERAL MECHANICAL NOTES:

A. INSTALL ALL DUCTWORK AND ACCESSORIES PER 2015 INTERNATIONAL MECHANICAL CODE AND ALL LOCAL CODES, AND AUTHORITY HAVING JURISDICTION.

B. COORDINATE EXACT LOCATION OF ALL AIR DEVICES WITH THE REFLECTED CEILING PLAN.

C. COORDINATE ALL ROOF PENETRATIONS AND ROOF MOUNTED EQUIPMENT LOCATIONS WITH STRUCTURAL. COORDINATE MASONRY WALL PENETRATION WITH STRUCTURAL.

D. MAXIMUM FLEXIBLE S/A DUCTWORK AT ANY AIR DEVICE SHALL NOT EXCEED 5'–0". PROVIDE ADDITIONAL SUPPORTS AS NECESSARY TO PREVENT CONTACT WITH CEILING MATERIAL/ASSEMBLY.

E. REFER TO AIR DISTRIBUTION DEVICE SCHEDULE FOR SUPPLY RUNOUT SIZES.

F. MOUNT THERMOSTAT AT NOT MORE THAN 48" AFF. COORDINATE W/ LIGHT SWITCHES. MOUNT DEVICE LEVEL WITH COVER AND TRIM SNUG TO WALL.

G. RETURN AND/OR EXHAUST DEVICE AIRFLOW VOLUMES SHALL EQUAL SUPPLY UNLESS INDICATED OTHERWISE.

H. COORDINATE ROUTING OF DUCTWORK FROM RTU WITH STRUCTURAL FOR PROTECTION OF WALL OPENINGS. COORDINATE ALL LOUVERS IN SHELTER AREA WITH STRUCTURAL.

SPECIFIC MECHANICAL NOTES (○):

1. 16/16 S/A & 24/14 R/A FROM RTU–501 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
2. 16/16 S/A & 24/14 R/A FROM RTU–502 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
3. 16/16 S/A & 24/14 R/A FROM RTU–503 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
4. 16/16 S/A & 24/14 R/A FROM RTU–504 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
5. 16/16 S/A & 24/14 R/A FROM RTU–505 TRANSITION TO 18/12 S/A & TRANSITION TO 24/10 R/A.
6. 16/16 S/A & 24/14 R/A FROM RTU–506 TRANSITION TO 18/12 S/A & TRANSITION TO 24/10 R/A.
7. 33/17 S/A & 32/17 R/A FROM RTU–507 TRANSITION TO 22/12 S/A & DROP 32/17 INTO 24/14 R/A PLENUM.
8. 16/16 S/A & 24/14 R/A FROM RTU–508 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
9. 16/16 S/A & 24/14 R/A FROM RTU–509 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
10. 16/16 S/A & 24/14 R/A FROM RTU–510 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
11. 16/16 S/A & 24/14 R/A FROM RTU–511 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
12. 16/16 S/A & 24/14 R/A FROM RTU–512 TRANSITION TO 18/12 S/A & TRANSITION TO 24/10 R/A.
13. 16/16 S/A & 24/14 R/A FROM RTU–513 TRANSITION TO 18/12 S/A & TRANSITION TO 24/10 R/A.
14. 33/17 S/A & 32/17 R/A FROM RTU–514 TRANSITION TO 22/12 S/A & DROP 32/17 INTO 24/14 R/A PLENUM.
15. 14/14 UP TO EF–502.
16. EXTEND 6"ø EXHAUST UP THRU ROOF JACK.
17. SEE M104 FOR CONTINUATION.
18. SEE M106 FOR CONTINUATION
19. ROUTE 3/4" CONDENSATE, DISCHARGE AT FLOOR DRAIN.
20. ROUTE 3/4" CONDENSATE, DISCHARGE AT MOP BASIN.

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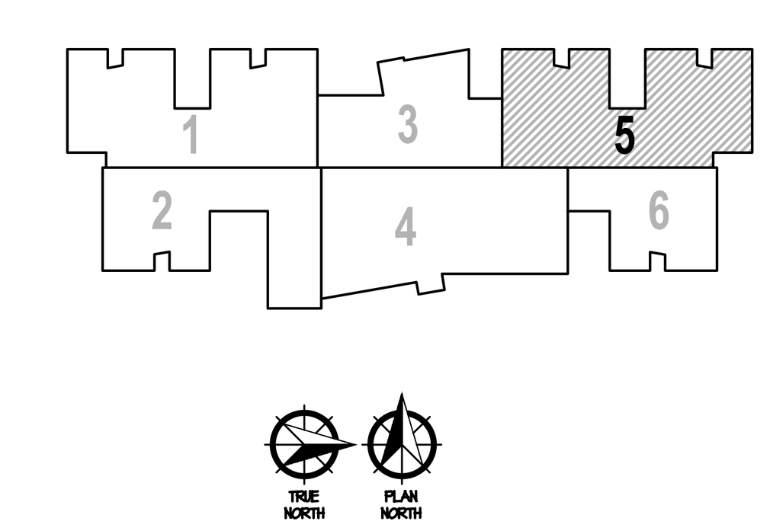

KEY PLAN

REVISIONS

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JU CHK'D BY

MECHANICAL FLOOR PLAN - AREA 5
SHEET TITLE

M105

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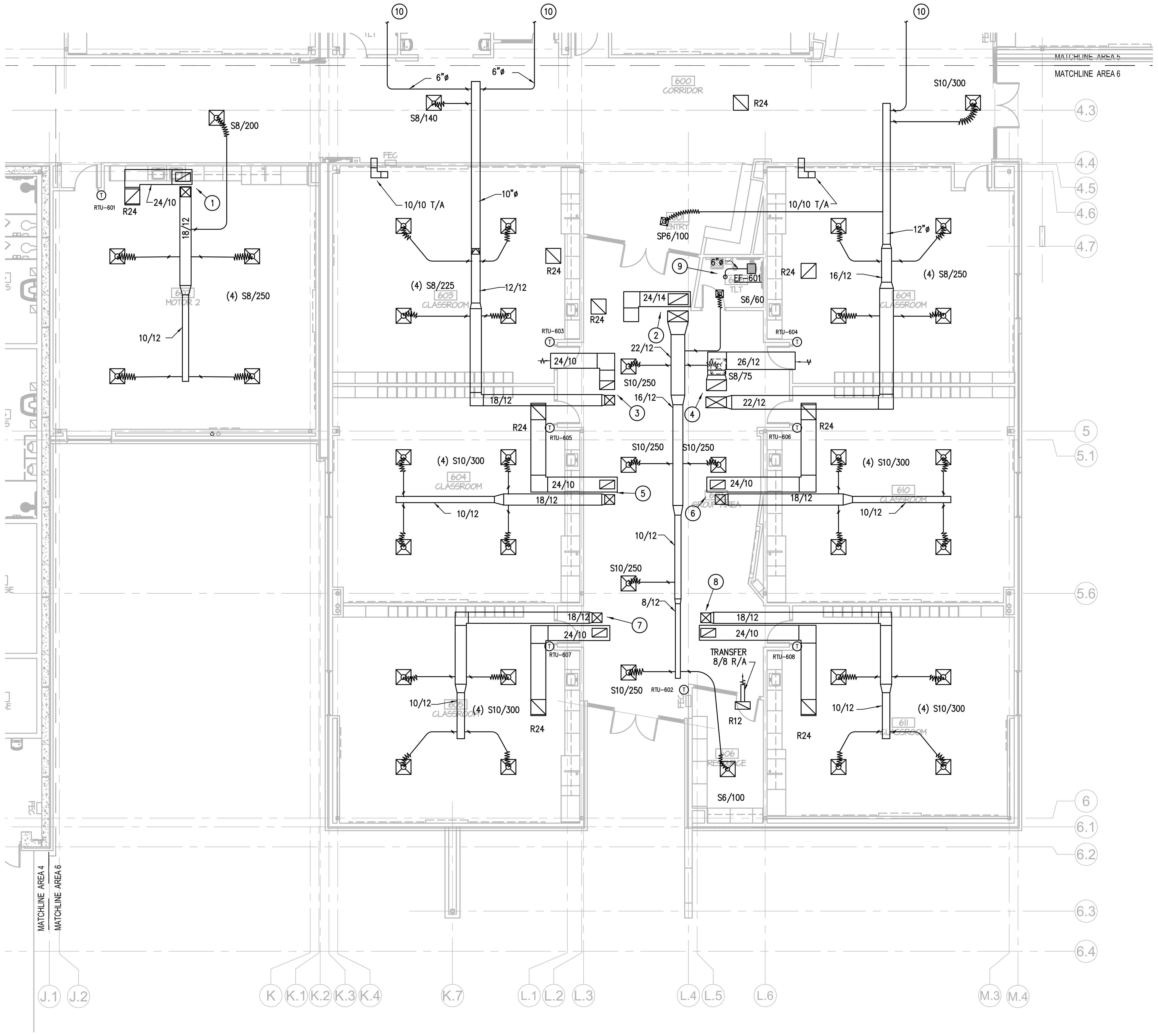

MECHANICAL FLOOR PLAN – AREA 6

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

TRUE NORTH — PLAN NORTH

GENERAL MECHANICAL NOTES:

A. INSTALL ALL DUCTWORK AND ACCESSORIES PER 2015 INTERNATIONAL MECHANICAL CODE AND ALL LOCAL CODES, AND AUTHORITY HAVING JURISDICTION.

B. COORDINATE EXACT LOCATION OF ALL AIR DEVICES WITH THE REFLECTED CEILING PLAN.

C. COORDINATE ALL ROOF PENETRATIONS AND ROOF MOUNTED EQUIPMENT LOCATIONS WITH STRUCTURAL. COORDINATE MASONRY WALL PENETRATION WITH STRUCTURAL.

D. MAXIMUM FLEXIBLE S/A DUCTWORK AT ANY AIR DEVICE SHALL NOT EXCEED 5'–0". PROVIDE ADDITIONAL SUPPORTS AS NECESSARY TO PREVENT CONTACT WITH CEILING MATERIAL/ASSEMBLY.

E. REFER TO AIR DISTRIBUTION DEVICE SCHEDULE FOR SUPPLY RUNOUT SIZES.

F. MOUNT THERMOSTAT AT NOT MORE THAN 48" AFF. COORDINATE W/ LIGHT SWITCHES. MOUNT DEVICE LEVEL WITH COVER AND TRIM SNUG TO WALL.

G. RETURN AND/OR EXHAUST DEVICE AIRFLOW VOLUMES SHALL EQUAL SUPPLY UNLESS INDICATED OTHERWISE.

SPECIFIC MECHANICAL NOTES (◯):

1. 16/16 S/A & 24/14 R/A FROM RTU–601 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
2. 33/17 S/A & 32/17 R/A FROM RTU–602 TRANSITION TO 22/12 S/A & DROP 32/17 INTO 24/14 R/A PLENUM.
3. 16/16 S/A & 24/14 R/A FROM RTU–603 TRANSITION TO 18/12 S/A & TRANSITION TO 24/10 R/A.
4. 33/17 S/A & 32/17 R/A FROM RTU–604 TRANSITION TO 22/12 S/A & TRANSITION 32/17 INTO 24/14 R/A PLENUM.
5. 16/16 S/A & 24/14 R/A FROM RTU–605 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
6. 16/16 S/A & 24/14 R/A FROM RTU–606 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
7. 16/16 S/A & 24/14 R/A FROM RTU–607 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
8. 16/16 S/A & 24/14 R/A FROM RTU–608 TRANSITION TO 18/12 S/A & DROP 24/14 INTO 24/10 R/A PLENUM.
9. EXTEND 6"ø EXHAUST UP THRU ROOF JACK.
10. SEE M105 FOR CONTINUATION.

PSA CONSULTING ENGINEERS, INC.
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COA # 390 - RENEWAL DATE 6/30/2019

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MORROW ELEMENTARY

OWASSO PUBLIC SCHOOLS
OWASSO, OK
2018

PROJECT

KEY PLAN

REVISIONS

03.06.18

ISSUE DATE

PROJECT NO
DRAWN BY
CHK'D BY

MECHANICAL FLOOR PLAN - AREA 6

M106

SHEET TITLE

GENERAL MECHANICAL/PLUMBING NOTES:

A. ALL MECHANICAL WORK SHALL BE INSTALLED PER THE 2015 INTERNATIONAL MECHANICAL, PLUMBING, AND FUEL GAS CODES, AMERICAN WITH DISABILITIES ACT (ADA), AND ALL LOCAL CODES, AND AUTHORITY HAVING JURISDICTION.

B. ALL GAS PIPING SHALL BE PAINTED SILVER FOR CORROSION PROTECTION. ALL GAS PIPING TO UNITS TO BE 3/4" IN SIZE UNLESS NOTED OTHERWISE. SUPPORT ALL GAS PIPING ON ROOF EVERY 8 FEET, REFER TO PIPING DETAILS

C. COORDINATE ROUTING OF ALL DUCT, PIPING, ETC. WITH STRUCTURAL ELEMENTS. MODIFY ACTUAL LOCATIONS AS REQUIRED. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AS REQUIRED BY THE DIVISION 23 SPECS FOR ALL DUCTWORK IN ALL AREAS, COORDINATED WITH THE ACTUAL STRUCTURE TO BE PROVIDED. DRAWINGS SHALL ENSURE THAT ALL CODE REQUIRED CLEARANCES ARE PROVIDED FOR ALL EQUIPMENT.

D. ALL ROOF-TOP EQUIPMENT CURBS SHALL BE A MINIMUM OF 8 INCHES ABOVE THE FINISHED ROOF SURFACE FOR COUNTER-FLASH ENDORSED BY THE ROOF MANUFACTURER. THE TOPS OF ALL EQUIPMENT CURBS AND HOUSEKEEPING PADS SHALL BE LEVEL.

E. ALL EQUIPMENT LABELING/IDENTIFICATION SHALL BE LEGIBLE AND SHALL BE MECHANICALLY SECURED AT THE EQUIPMENT WITH NON-CORRODING FASTENERS.

F. ALL MISCELLANEOUS ROOF-TOP EQUIPMENT SUPPORTS SHALL BE ENDORSED BY BOTH THE RESPECTIVE EQUIPMENT AND THE ROOF SYSTEM MANUFACTURER.

G. ALL VERTICAL LEADERS TO ROOF AND OVERFLOW DRAINS SHALL BE THE SAME SIZE AS DRAIN. NOTE THAT DRAIN PIPING SIZES MAY CHANGE AFTER TURNING HORIZONTAL.

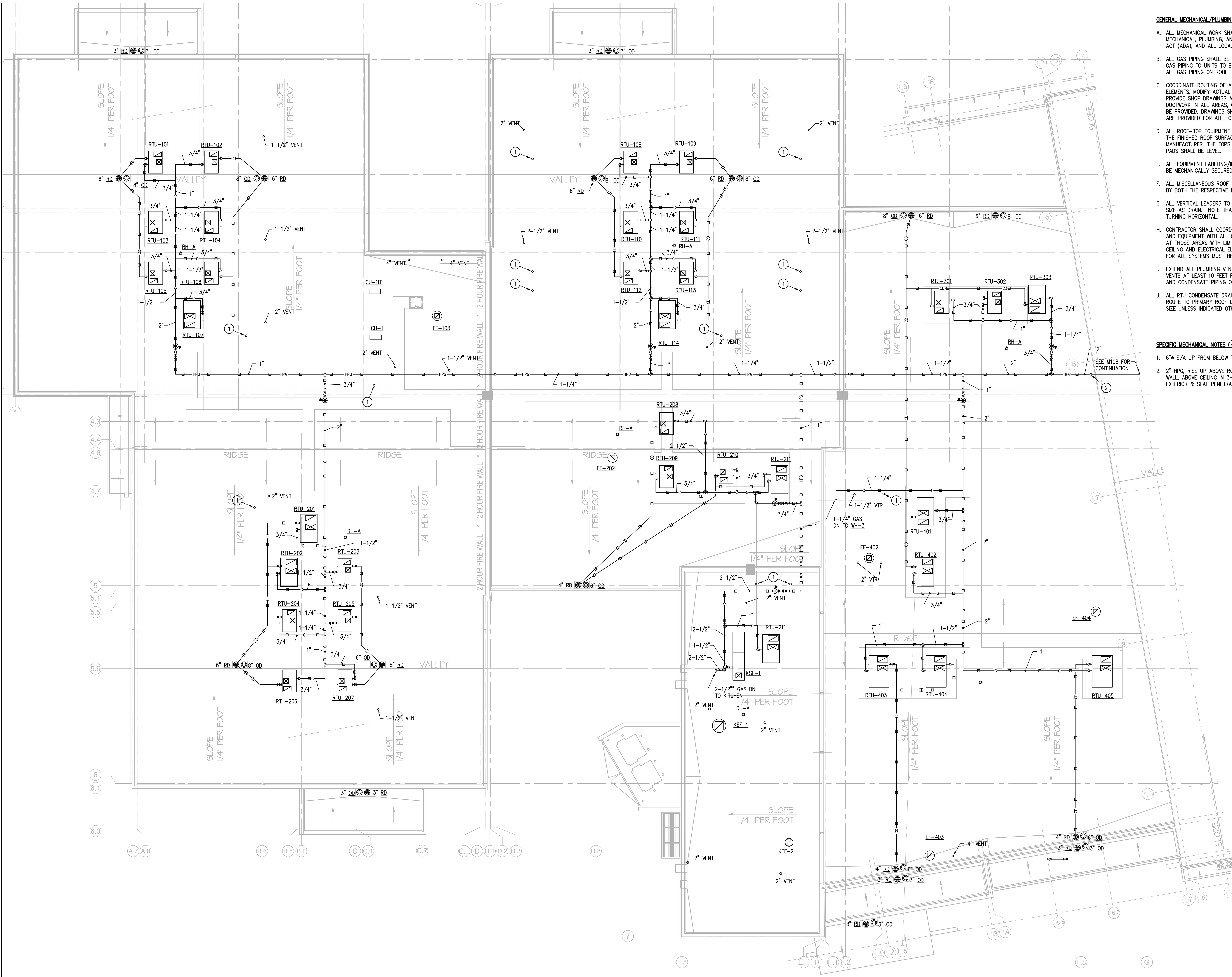
H. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL PLUMBING PIPING AND EQUIPMENT WITH ALL OTHER CONTRACTORS, SUBCONTRACTORS AND TRADES AT THOSE AREAS WITH LIMITED CLEARANCES DUE TO STRUCTURAL, MECHANICAL, CEILING AND ELECTRICAL ELEMENTS. ALL CODE REQUIRED CLEARANCES FOR ALL SYSTEMS MUST BE PROVIDED.

I. EXTEND ALL PLUMBING VENTS UP THRU ROOF THRU PIPE PORTAL. LOCATE VENTS AT LEAST 10 FEET FROM O/A INTAKES. SUPPORT ALL GAS PIPING AND CONDENSATE PIPING ON ROOF EVERY 8 FEET, REFER TO PIPING DETAILS.

J. ALL RTU CONDENSATE DRAIN PIPING SHALL HAVE P-TRAPS WITH AIR VENT, ROUTE TO PRIMARY ROOF DRAIN. ALL CONDENSATE DRAINS ARE 3/4" PIPE SIZE UNLESS INDICATED OTHERWISE.

SPECIFIC MECHANICAL NOTES (○):

1. 6"ø E/A UP FROM BELOW TO MANUFACTURER'S ROOF CAP.
2. 2" HPG, RISE UP ABOVE ROOF FLASHING & ROUTE THRU EXTERIOR WALL, ABOVE CEILING IN 3-INCH CONDUIT. VENT CONDUIT TO EXTERIOR & SEAL PENETRATION WEATHERTIGHT.



MECHANICAL ROOF PLAN – AREA A
SCALE: 1" = 10'-0"

TRUE NORTH   PLAN NORTH

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2018
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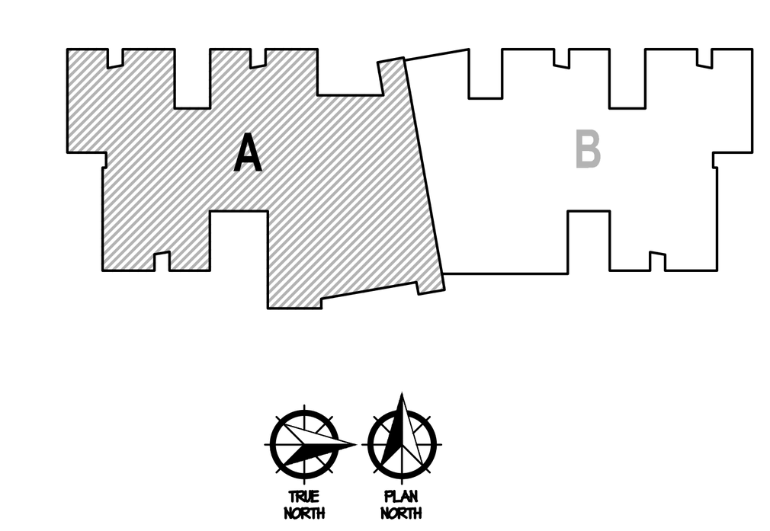

KEY PLAN

REVISIONS

03.06.18
ISSUE DATE

1507	PROJECT NO
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JJ	CHK'D BY

MECHANICAL ROOF PLAN - AREA A

M107
SHEET TITLE

PSA CONSULTING ENGINEERS, INC.
3031 N.W. 64TH STREET SUITE 101
OKLAHOMA CITY, OKLAHOMA 73116
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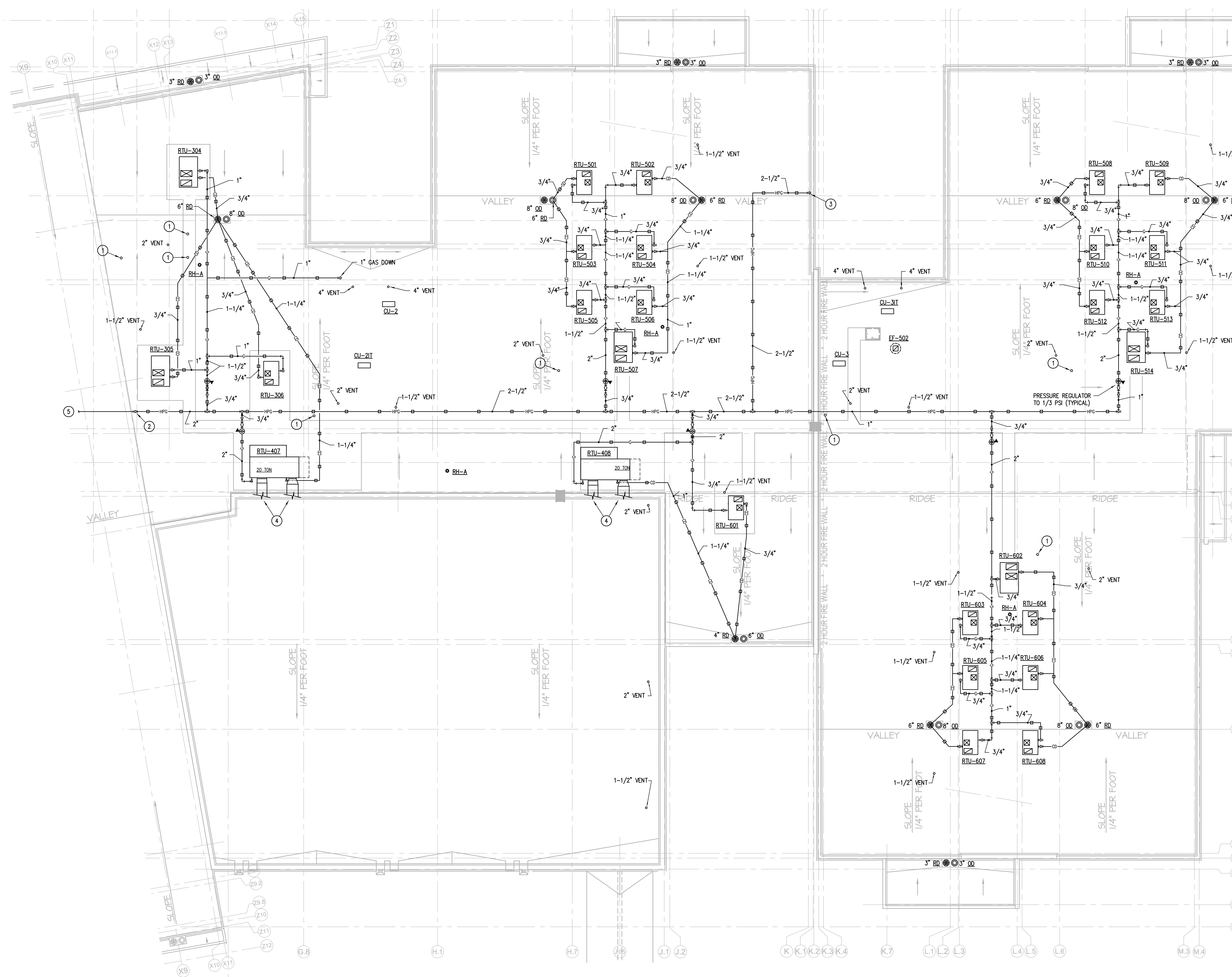
COA # 390 - RENEWAL DATE 6/30/2019



MECHANICAL ROOF PLAN – AREA B

SCALE: 1" = 10'-0"

TRUE NORTH PLAN NORTH

GENERAL MECHANICAL/PLUMBING NOTES:

A. ALL MECHANICAL WORK SHALL BE INSTALLED PER THE 2015 INTERNATIONAL MECHANICAL, PLUMBING, AND FUEL GAS CODES, AMERICAN WITH DISABILITIES ACT (ADA), AND ALL LOCAL CODES, AND AUTHORITY HAVING JURISDICTION.

B. ALL GAS PIPING SHALL BE PAINTED SILVER FOR CORROSION PROTECTION. ALL GAS PIPING TO UNITS TO BE 3/4" IN SIZE UNLESS NOTED OTHERWISE. SUPPORT ALL GAS PIPING ON ROOF EVERY 8 FEET, REFER TO PIPING DETAILS

C. COORDINATE ROUTING OF ALL DUCT, PIPING, ETC. WITH STRUCTURAL ELEMENTS. MODIFY ACTUAL LOCATIONS AS REQUIRED. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS AS REQUIRED BY THE DIVISION 23 SPECS FOR ALL DUCTWORK IN ALL AREAS, COORDINATED WITH THE ACTUAL STRUCTURE TO BE PROVIDED. DRAWINGS SHALL ENSURE THAT ALL CODE REQUIRED CLEARANCES ARE PROVIDED FOR ALL EQUIPMENT.

D. ALL ROOF-TOP EQUIPMENT CURBS SHALL BE A MINIMUM OF 8 INCHES ABOVE THE FINISHED ROOF SURFACE FOR COUNTER-FLASH ENDORSED BY THE ROOF MANUFACTURER. THE TOPS OF ALL EQUIPMENT CURBS AND HOUSEKEEPING PADS SHALL BE LEVEL.

E. ALL EQUIPMENT LABELING/IDENTIFICATION SHALL BE LEGIBLE AND SHALL BE MECHANICALLY SECURED AT THE EQUIPMENT WITH NON-CORRODING FASTENERS.

F. ALL MISCELLANEOUS ROOF-TOP EQUIPMENT SUPPORTS SHALL BE ENDORSED BY BOTH THE RESPECTIVE EQUIPMENT AND THE ROOF SYSTEM MANUFACTURER.

G. ALL VERTICAL LEADERS TO ROOF AND OVERFLOW DRAINS SHALL BE THE SAME SIZE AS DRAIN. NOTE THAT DRAIN PIPING SIZES MAY CHANGE AFTER TURNING HORIZONTAL.

H. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL PLUMBING PIPING AND EQUIPMENT WITH ALL OTHER CONTRACTORS, SUBCONTRACTORS AND TRADES AT THOSE AREAS WITH LIMITED CLEARANCES DUE TO STRUCTURAL, MECHANICAL, CEILING AND ELECTRICAL ELEMENTS. ALL CODE REQUIRED CLEARANCES FOR ALL SYSTEMS MUST BE PROVIDED.

I. EXTEND ALL PLUMBING VENTS UP THRU ROOF THRU PIPE PORTAL. LOCATE VENTS AT LEAST 10 FEET FROM O/A INTAKES. SUPPORT ALL GAS PIPING AND CONDENSATE PIPING ON ROOF EVERY 8 FEET, REFER TO PIPING DETAILS.

J. ALL RTU CONDENSATE DRAIN PIPING SHALL HAVE P-TRAPS WITH AIR VENT, ROUTE TO PRIMARY ROOF DRAIN. ALL CONDENSATE DRAINS ARE 3/4" PIPE SIZE UNLESS INDICATED OTHERWISE.

SPECIFIC MECHANICAL NOTES (○):

1. 6"ø E/A UP FROM BELOW TO MANUFACTURER'S ROOF CAP.
2. 2" HPG, RISE UP ABOVE ROOF FLASHING & ROUTE THRU EXTERIOR WALL, ABOVE CEILING IN 3-INCH CONDUIT. VENT CONDUIT TO EXTERIOR & SEAL PENETRATION WEATHERTIGHT.
3. DROP 3" HPG DOWN. SEE P203 FOR CONTINUATION. MAX GAS DEMAND = 6482 MBH.
4. SEE M104 FOR CONTINUATION.
5. SEE M107 FOR CONTINUATION.

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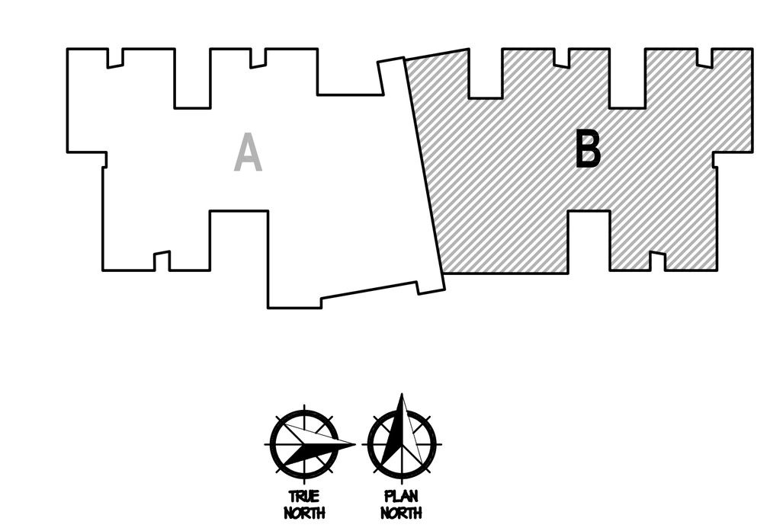
JENNIFER JORDAN FAIR 17220

MORROW ELEMENTARY

OWASSO PUBLIC SCHOOLS
OWASSO, OK
2018
PROJECT



KEY PLAN

REVISIONS

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ISSUE DATE

1507	PROJECT NO
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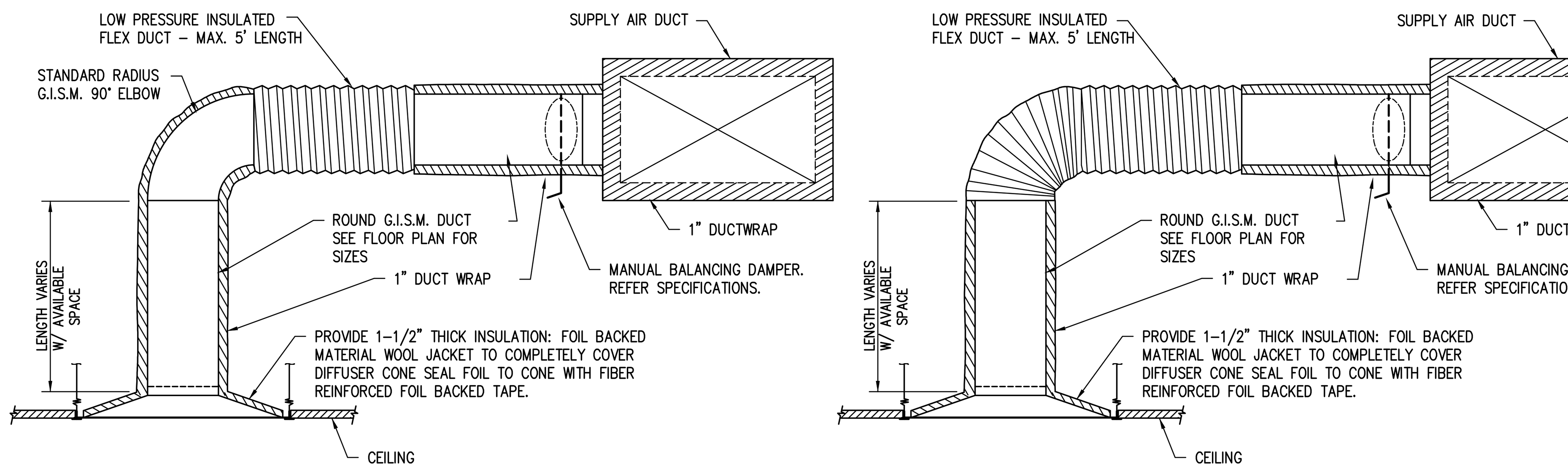
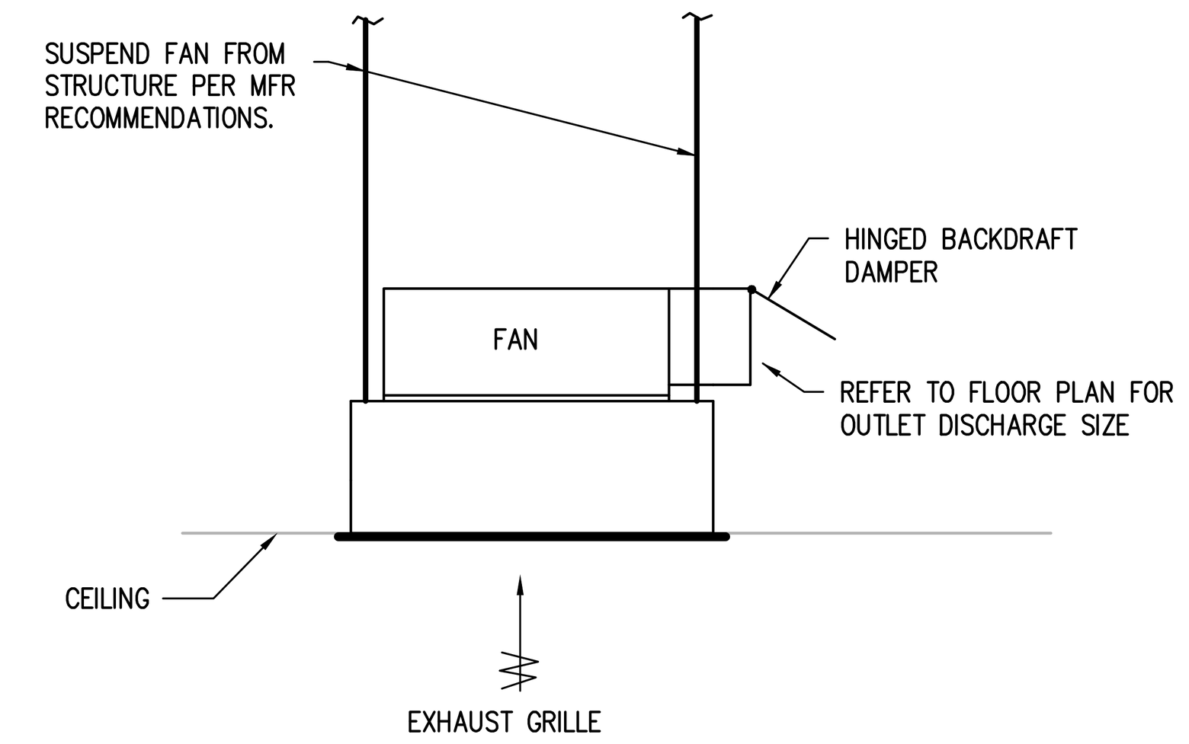
JJF	CHK'D BY

MECHANICAL
ROOF PLAN -
AREA B

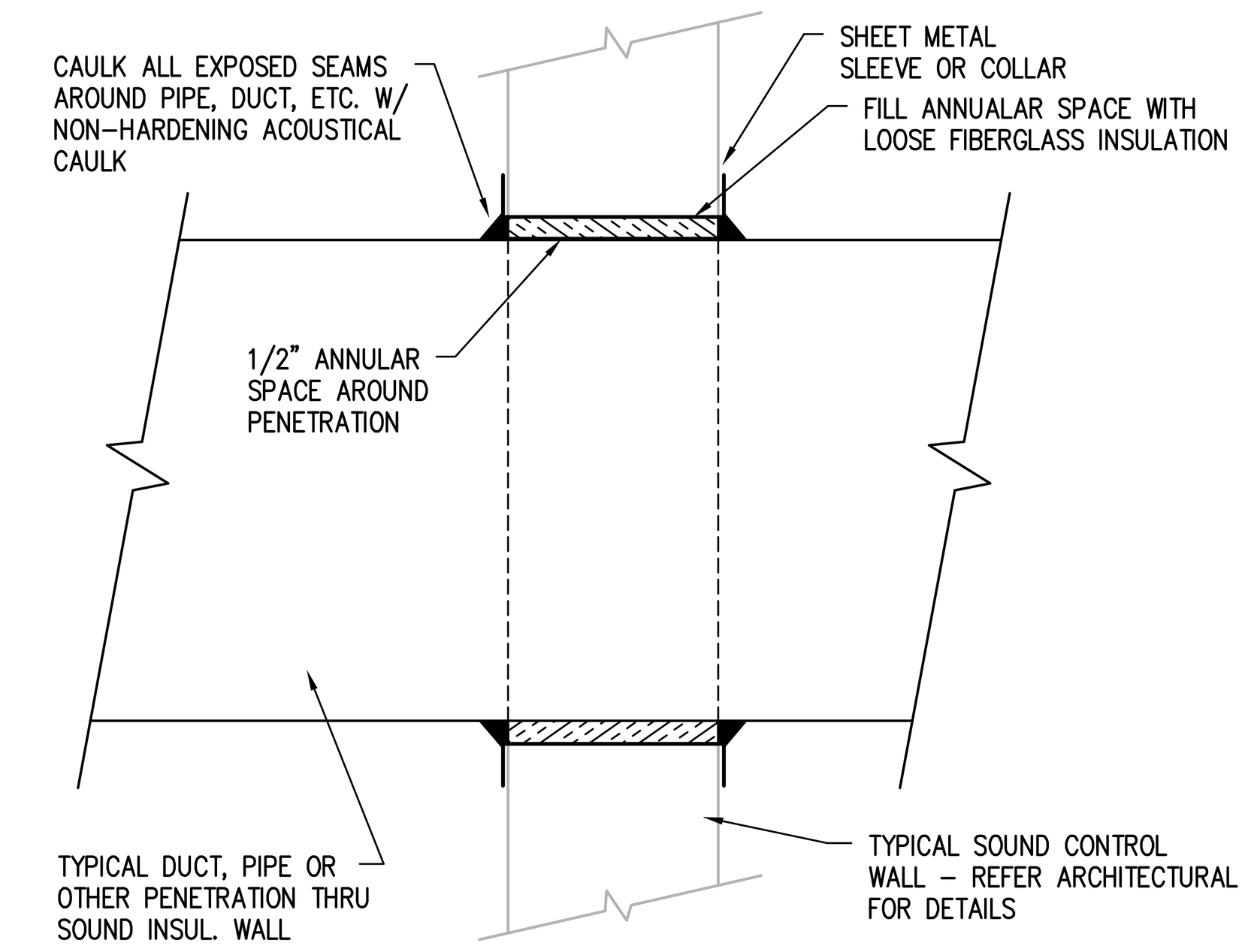
M108
SHEET TITLE



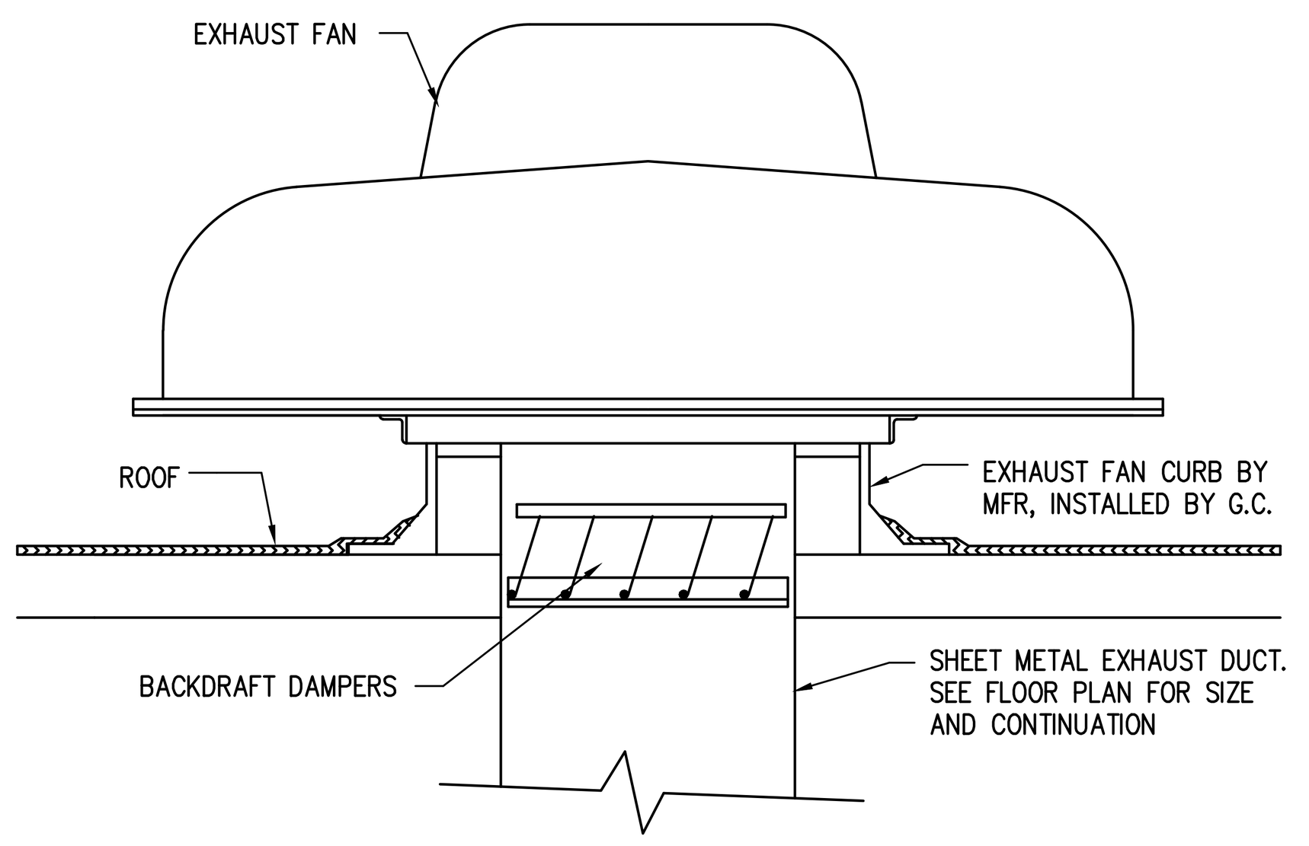
A TYPICAL FLEXIBLE DUCT DIFFUSER DETAIL
NO SCALE



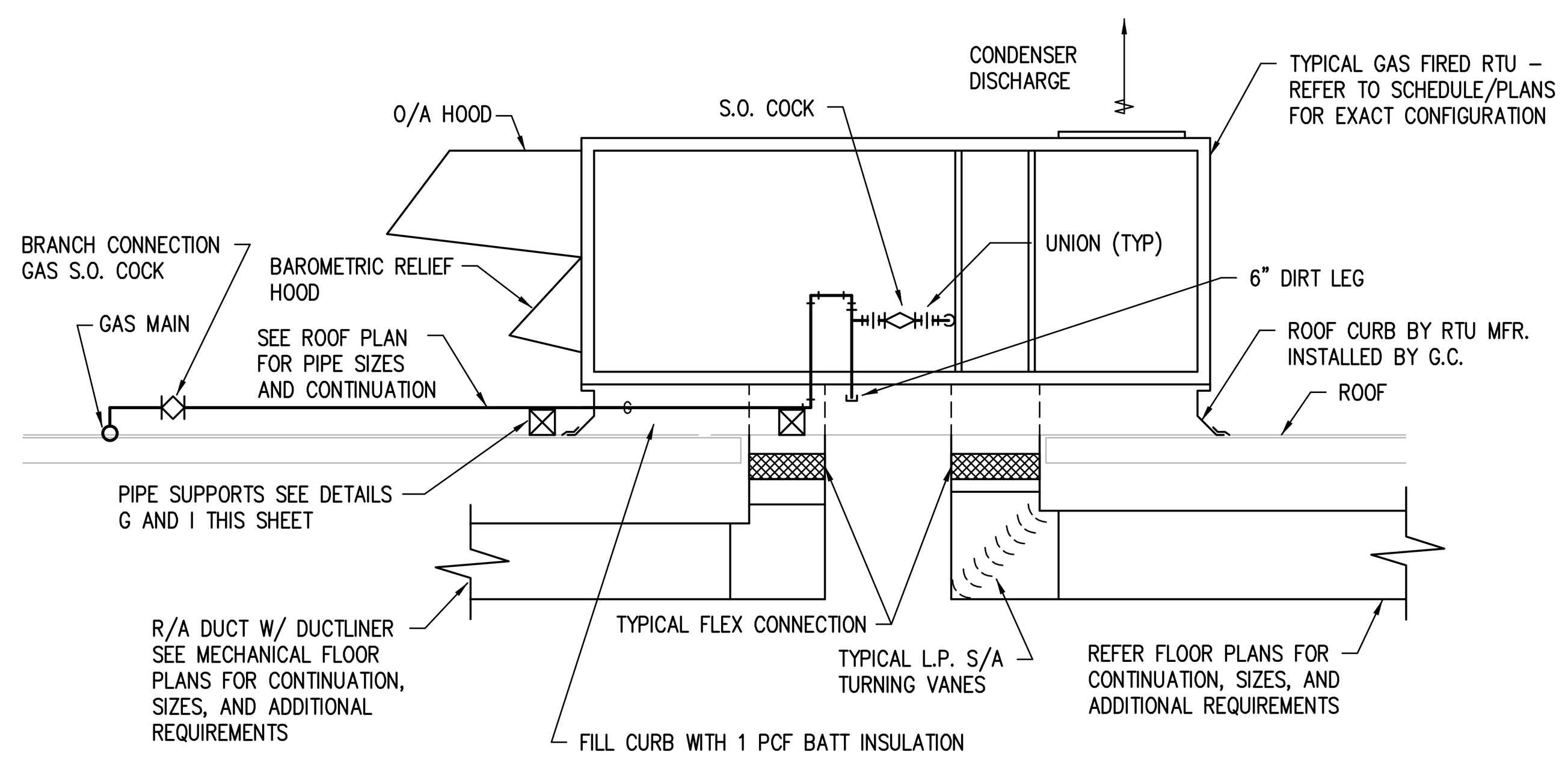
B IN-LINE EXHAUST FAN DETAIL
NO SCALE



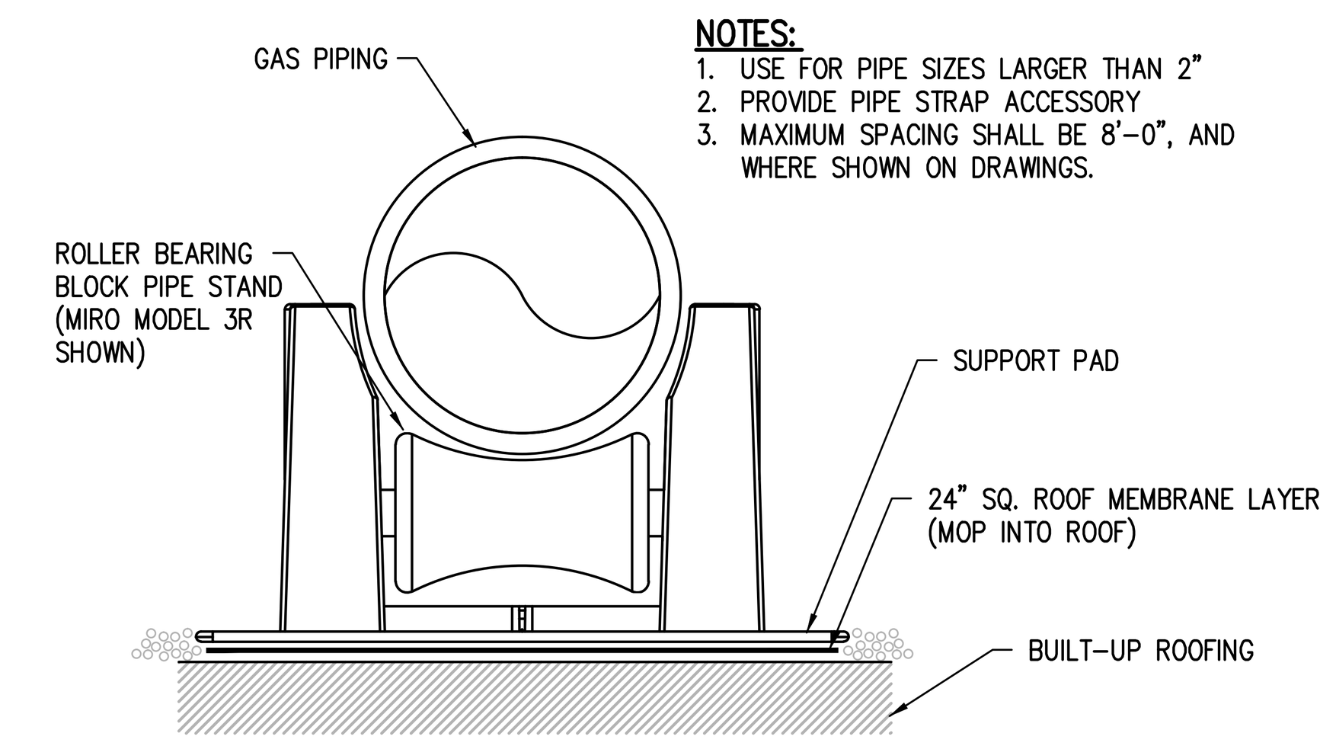
C SEALING DETAIL AT PIPE, DUCT OR OTHER PENETRATION THRU WALLS
NO SCALE



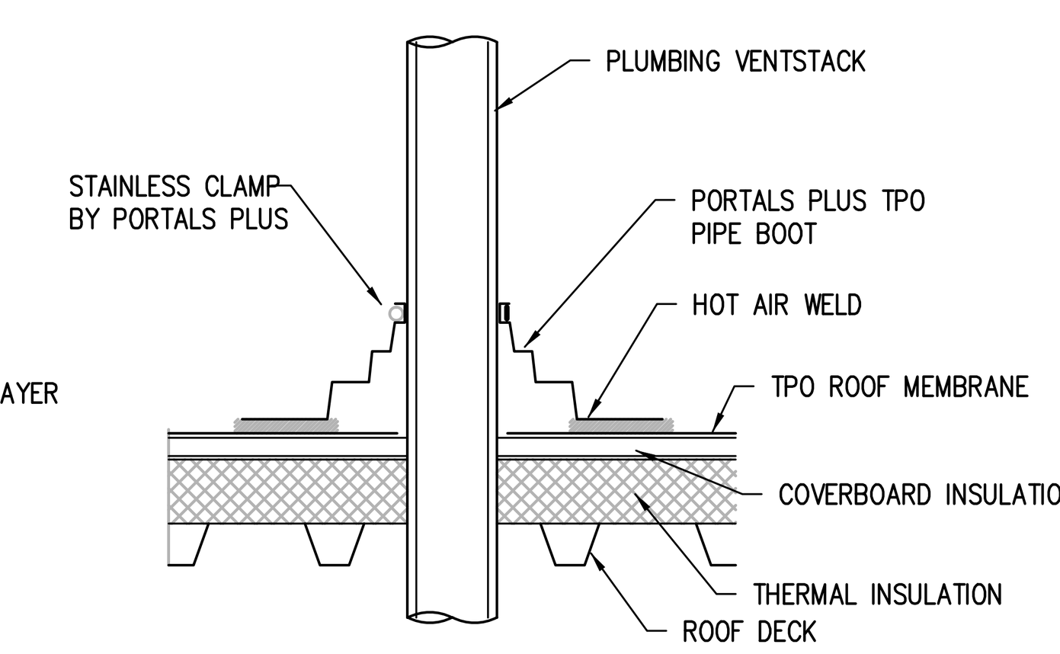
D TYPICAL ROOF MOUNTED EXHAUST
NO SCALE



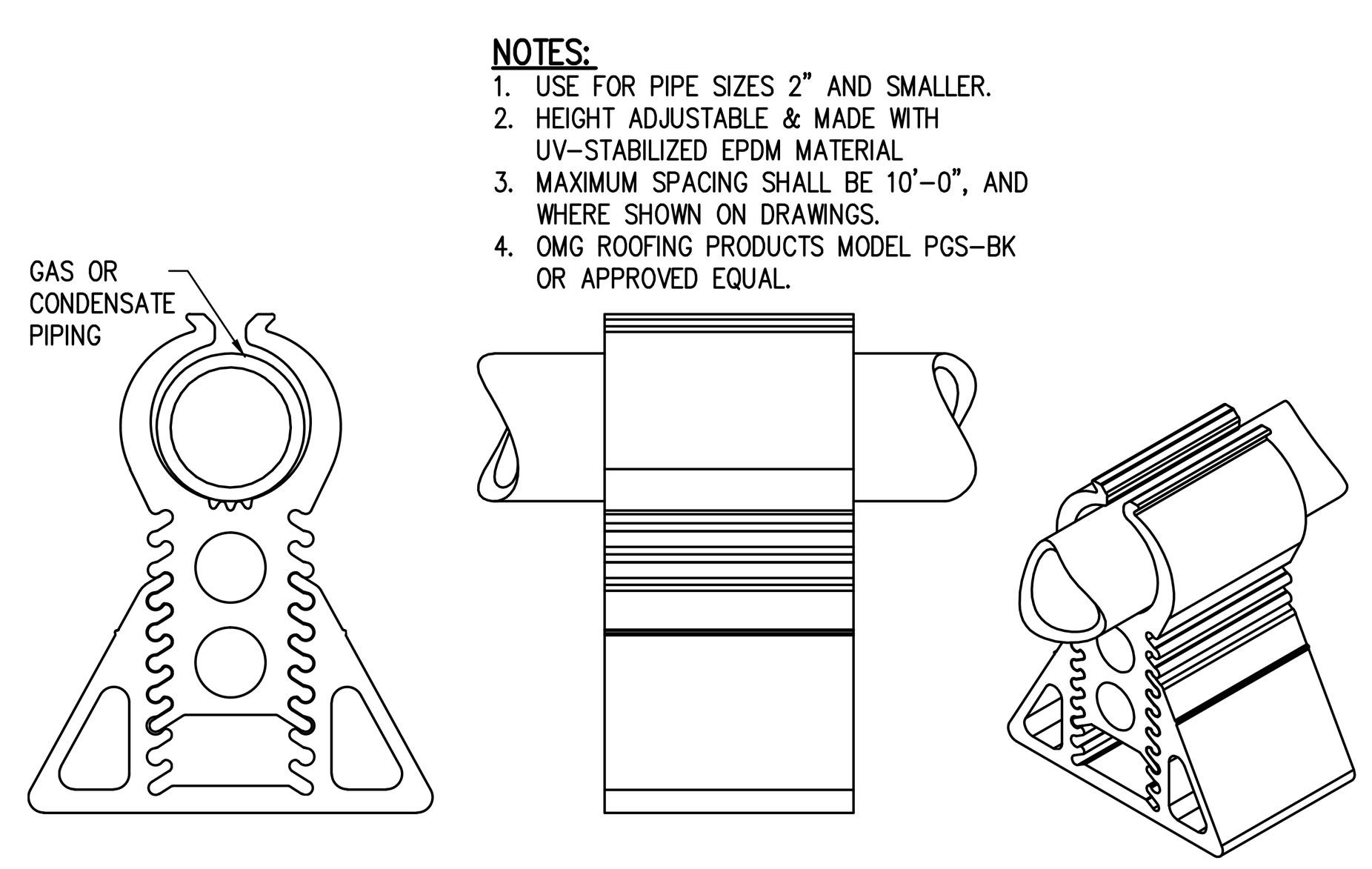
E TYPICAL ROOF TOP UNIT DETAIL
NO SCALE



F SUPPORT FOR ROOF MOUNTED PIPE (LARGER THAN 2")
NO SCALE



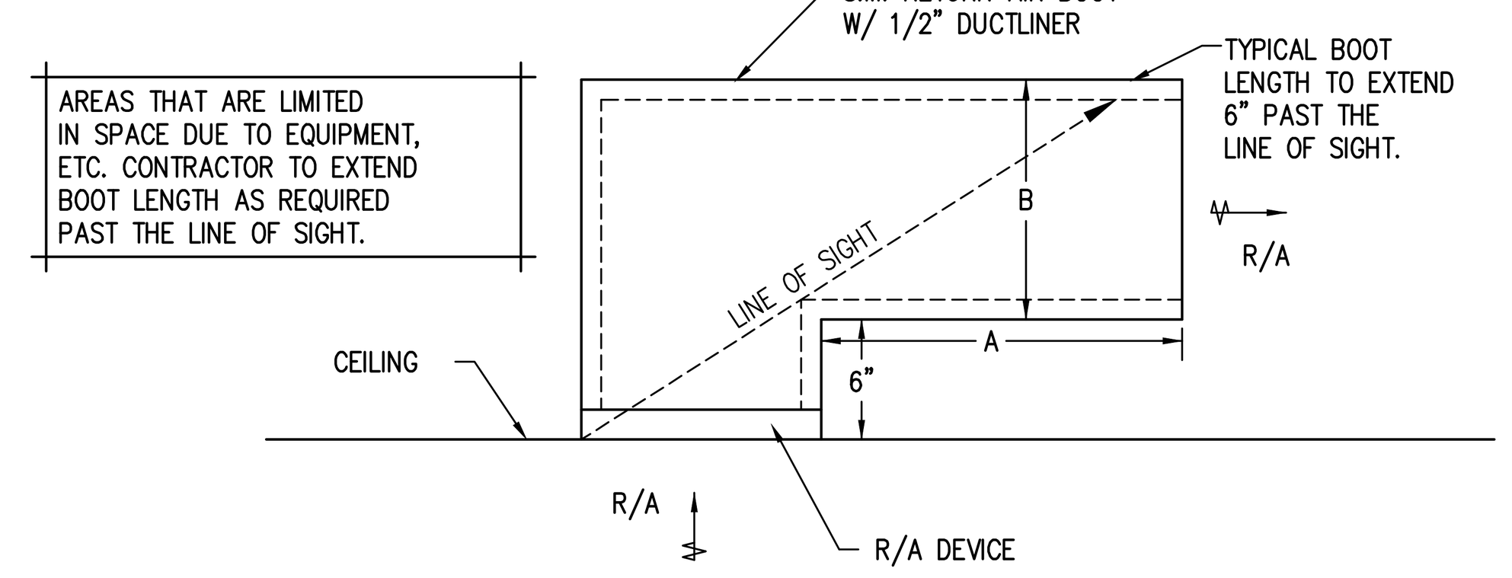
G PIPE FLASHING DETAIL
NO SCALE



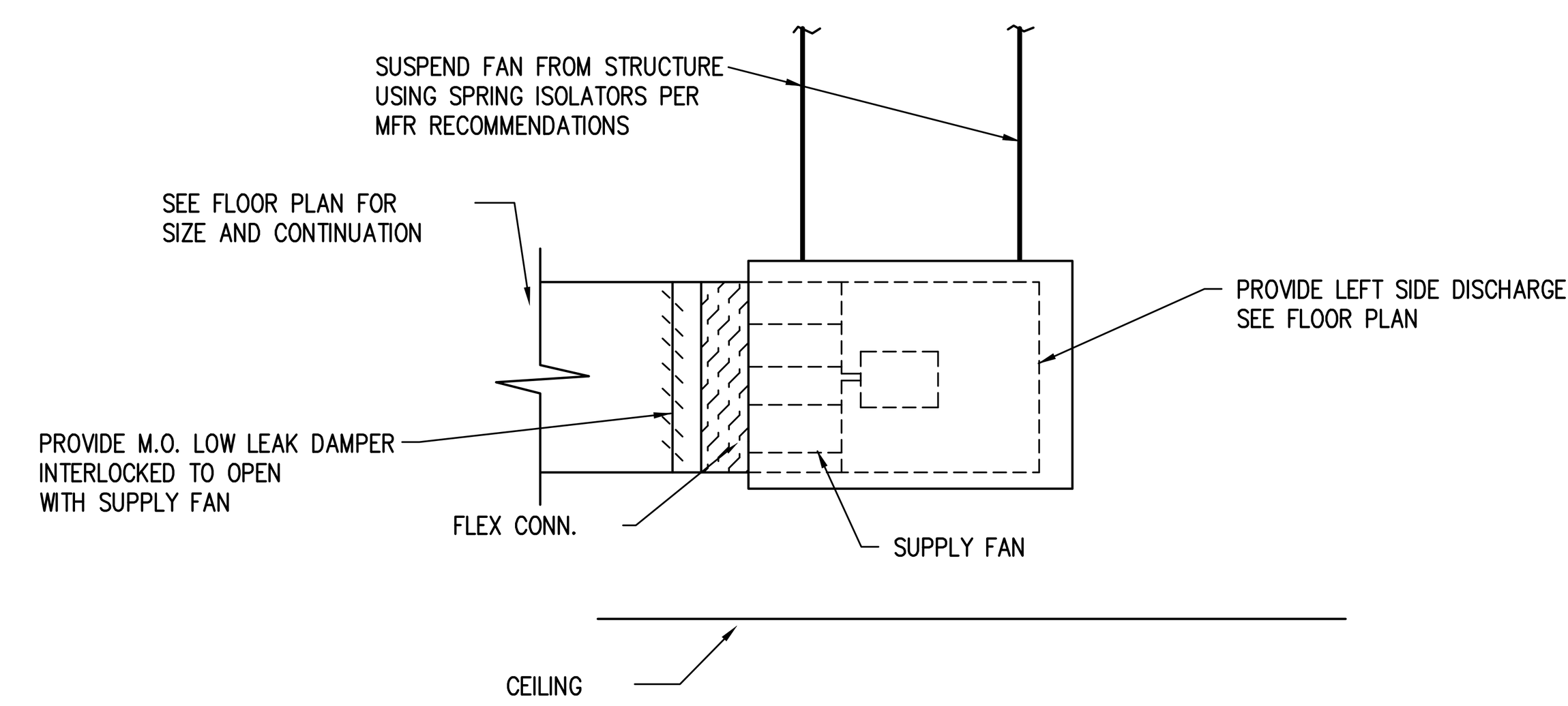
H SUPPORT FOR ROOF MOUNTED PIPE (2" OR SMALLER)
NO SCALE

R/A BOOT DEVICES

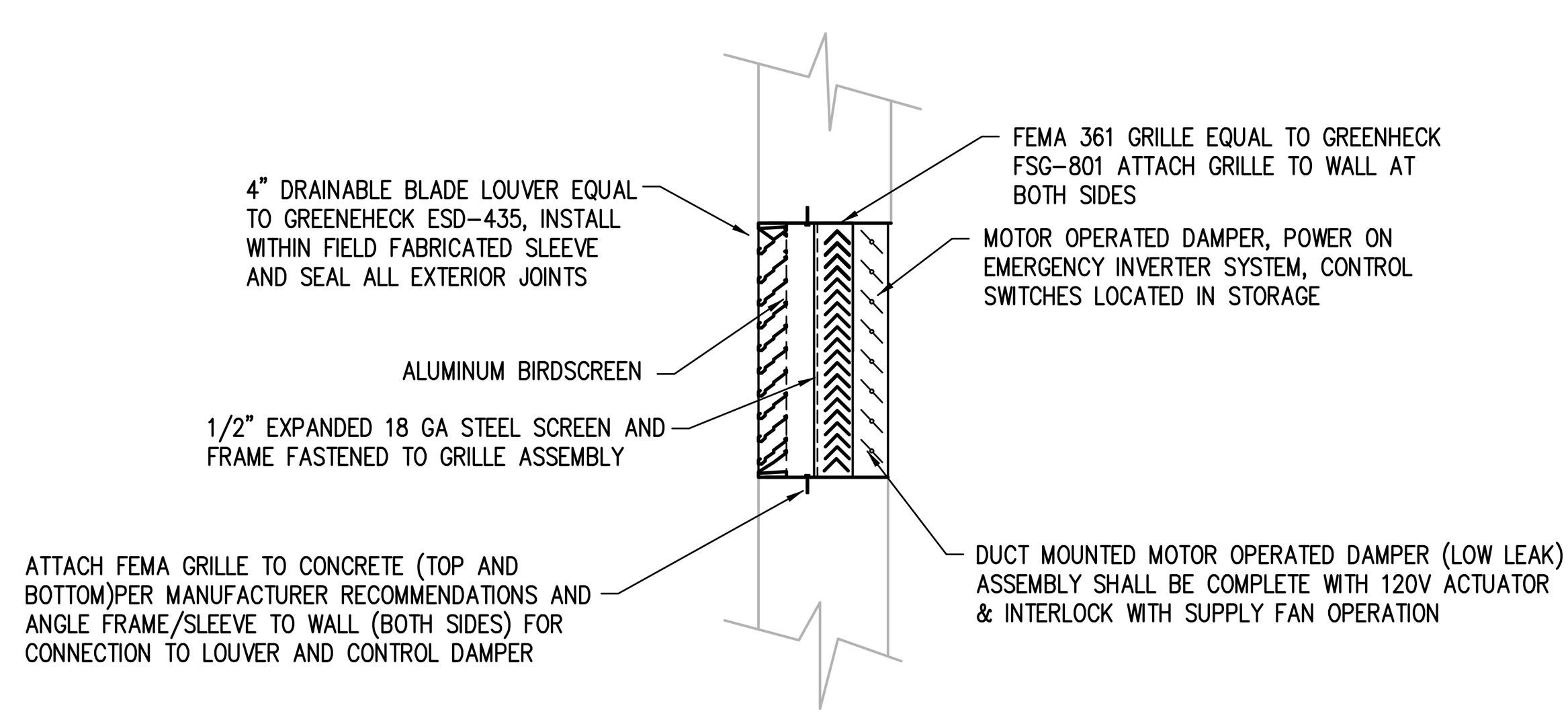
R/A DEVICE	A (LENGTH)	B (HEIGHT)	WIDTH
24"x6"	12"	6"	24"
24"x8"	12"	6"	24"
24"x12"	24"	8"	24"
24"x24"	30"	12"	24"



I TYPICAL R/A BOOT DETAIL AT PLENUM AREAS
NO SCALE

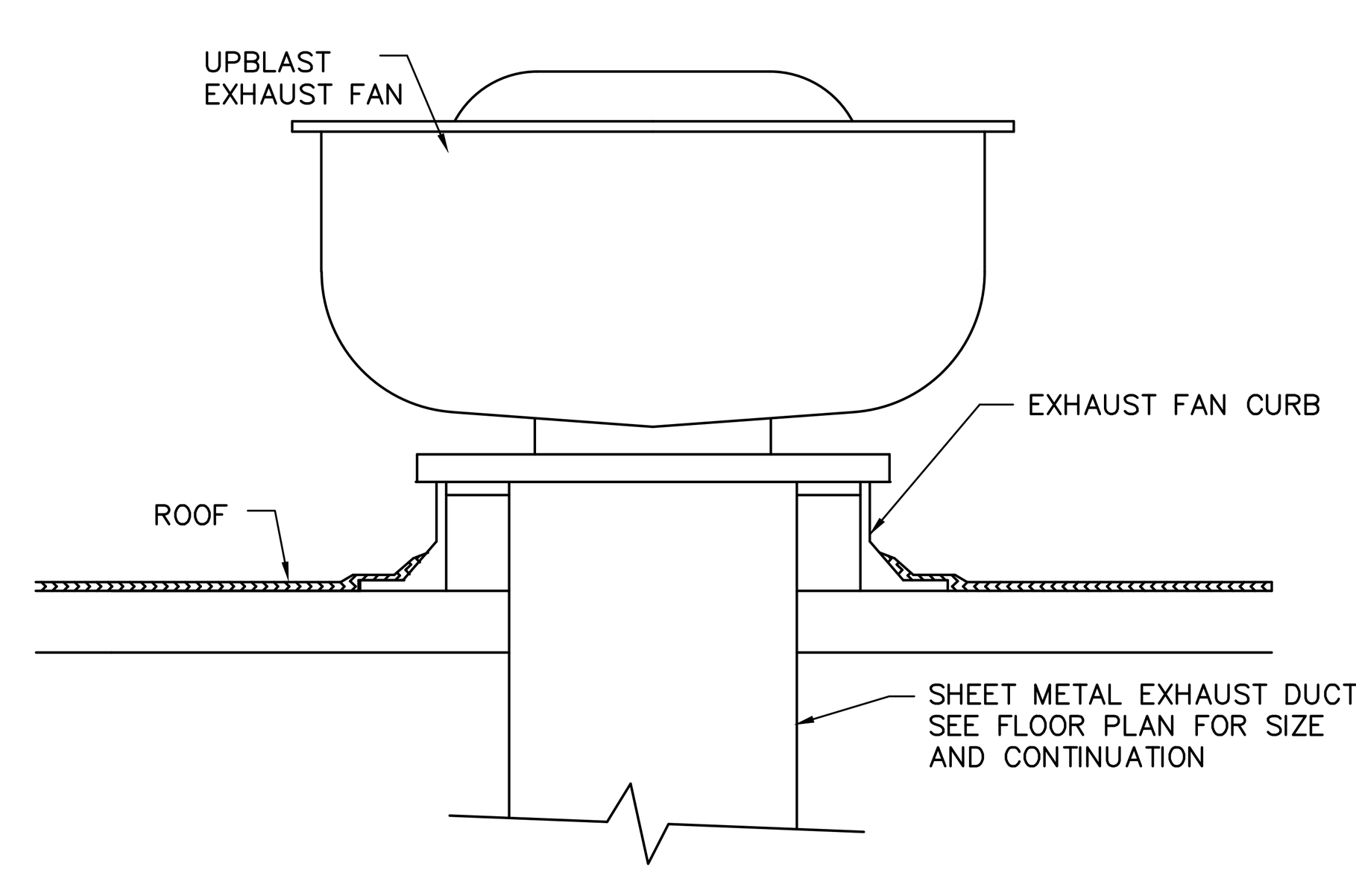


J IN-LINE SUPPLY FAN DETAIL
NO SCALE

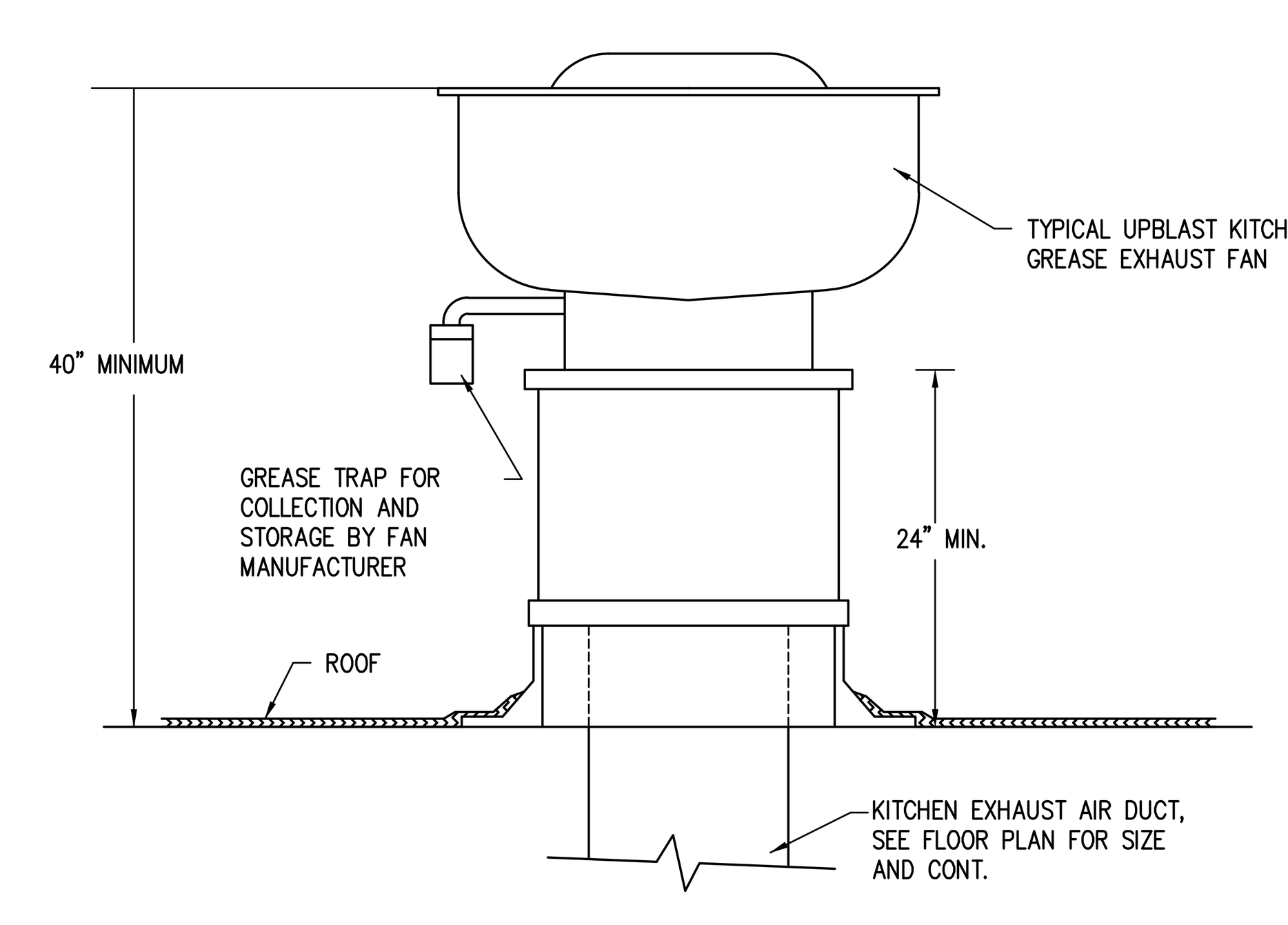


REFER TO PLANS FOR SIZES, LOCATIONS, ELEVATIONS AND OTHER REQUIREMENTS

K FEMA LOUVER INTAKE/EXHAUST ASSEMBLY
NO SCALE



E TYPICAL ROOF MOUNTED DISHWASHER EXHAUST DETAIL
NO SCALE



F TYPICAL ROOF MOUNTED KITCHEN GREASE EXHAUST FAN
NO SCALE

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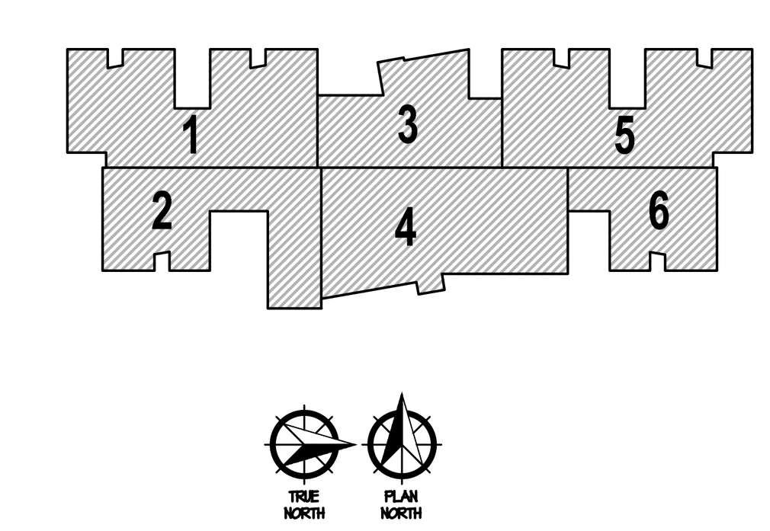
MORROW ELEMENTARY

OWASSO PUBLIC SCHOOLS
OWASSO, OK
2018

PROJECT



KEY PLAN

REVISIONS

03.06.18
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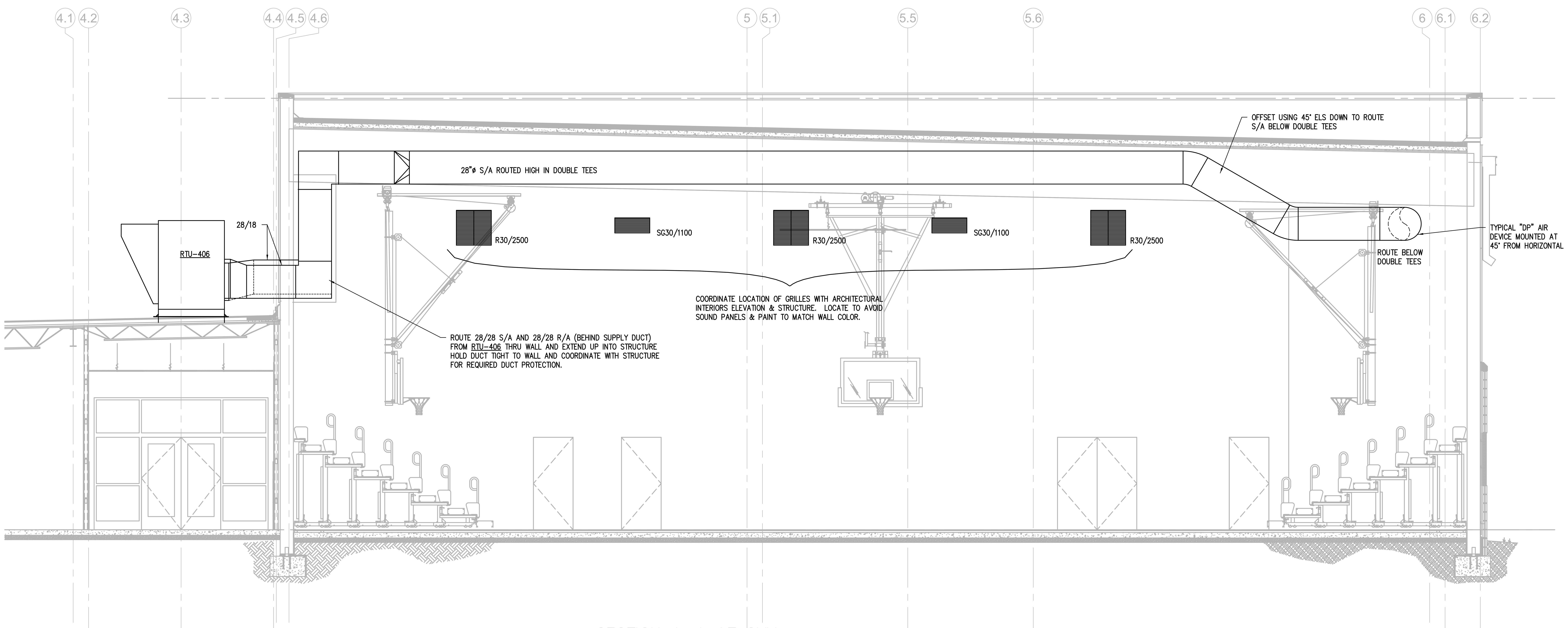
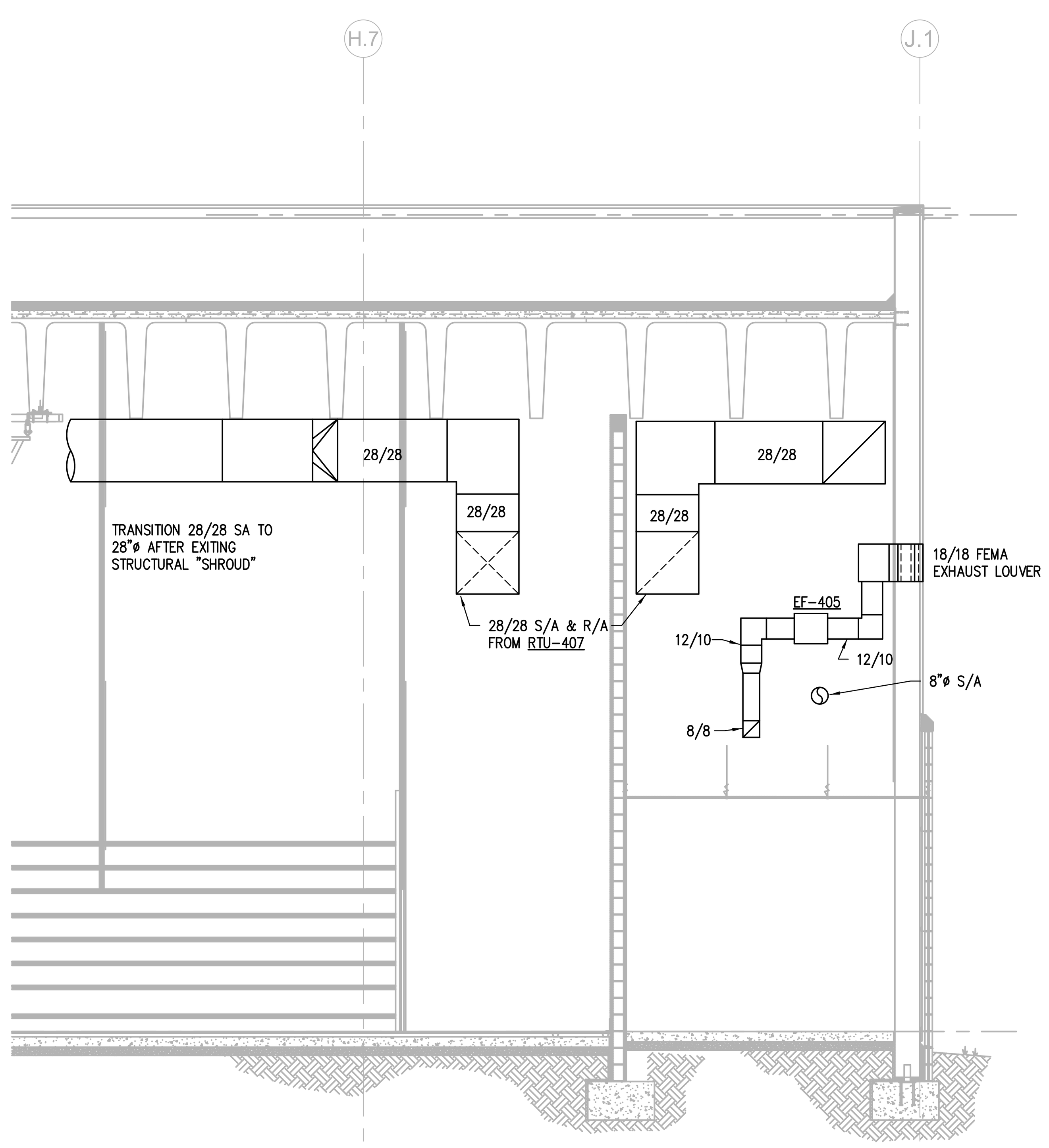
1507 PROJECT NO
NES DRAWN BY
JJ CHK'D BY

MECHANICAL DETAILS

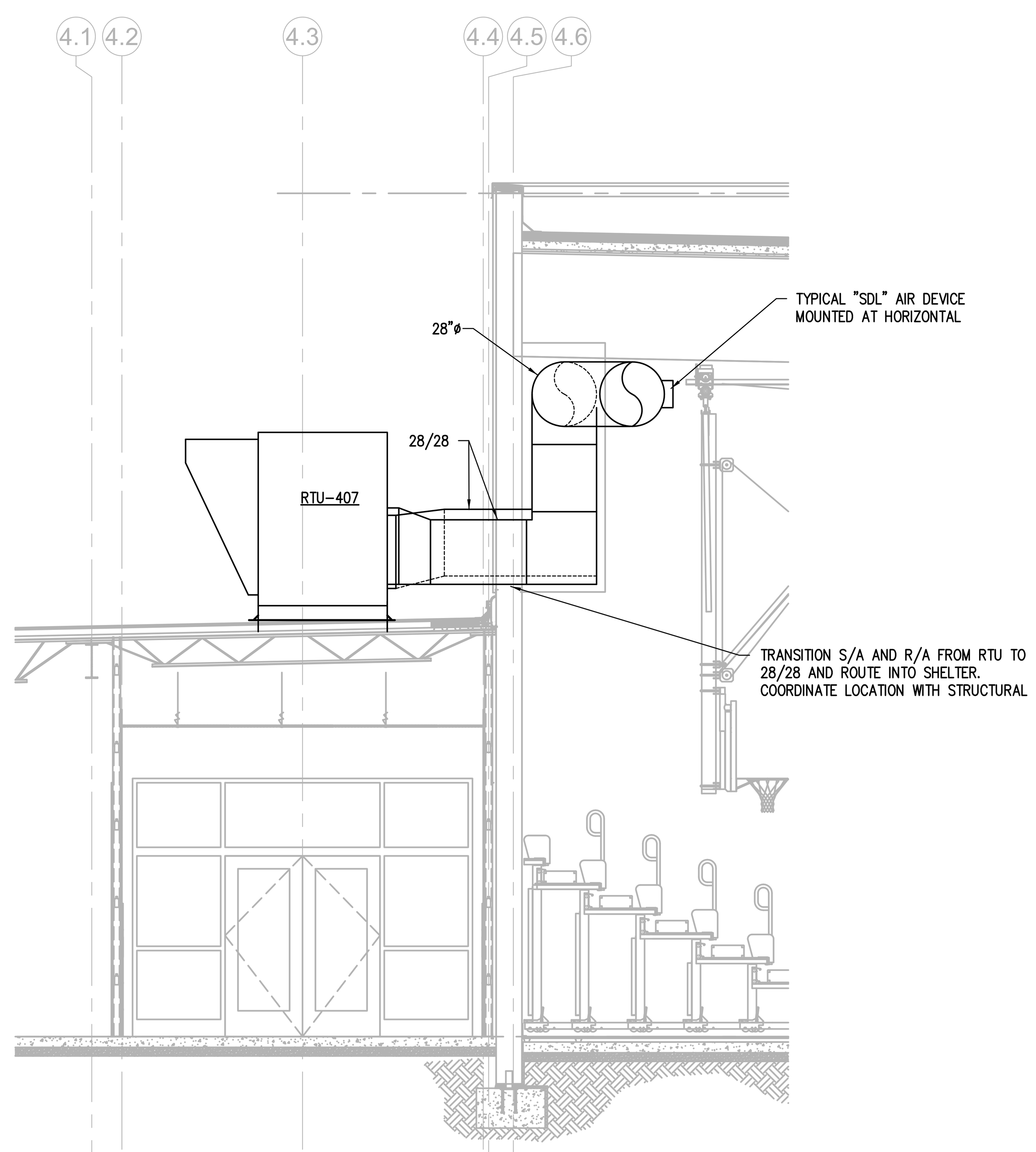
M200
SHEET TITLE



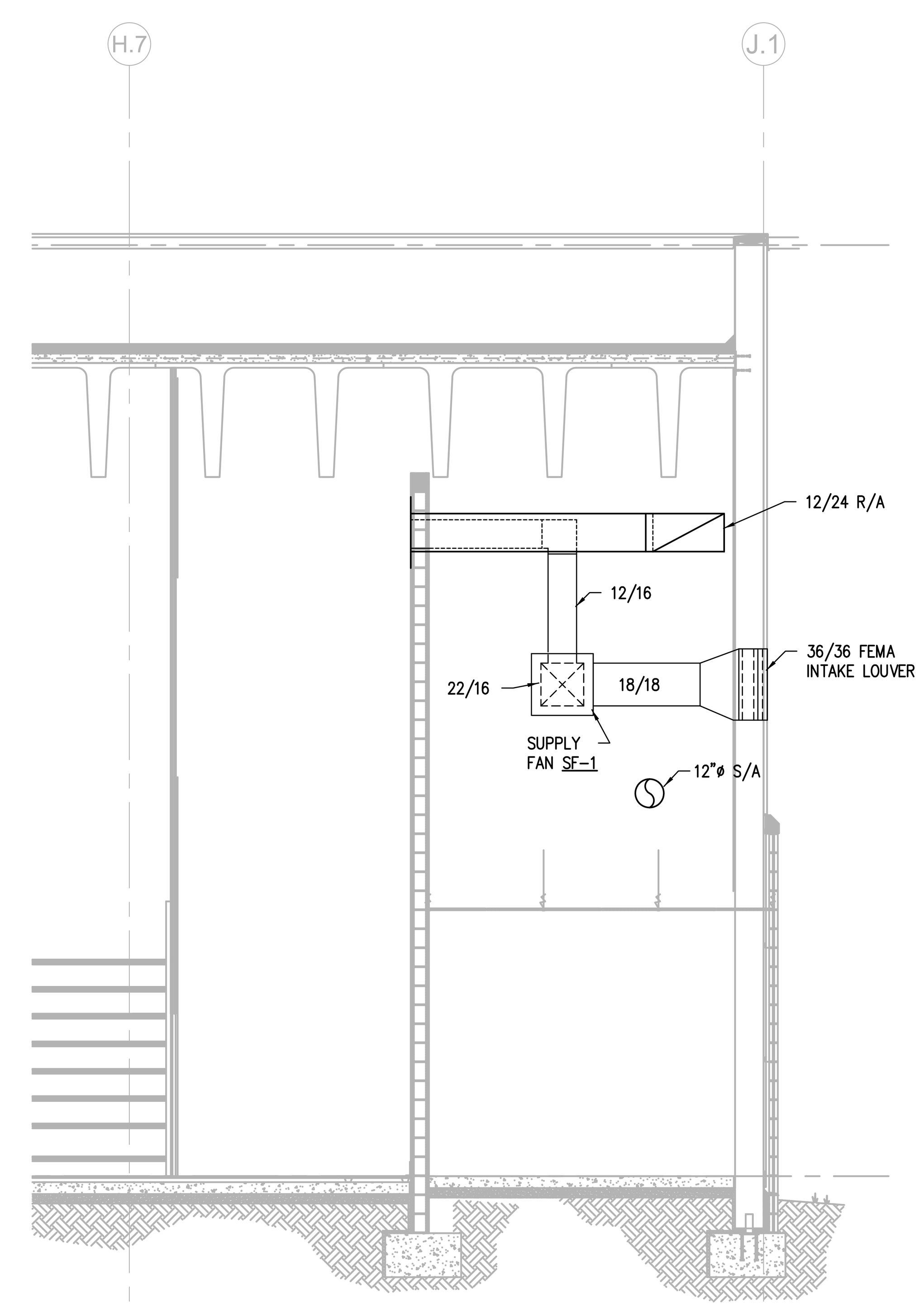
A SECTION A–A AT GYM
SCALE: 1/4" = 1'-0"



B SECTION B–B AT GYM
SCALE: 1/4" = 1'-0"



C SECTION C–C AT GYM
SCALE: 1/4" = 1'-0"



D SECTION D–D AT GYM
SCALE: 1/4" = 1'-0"

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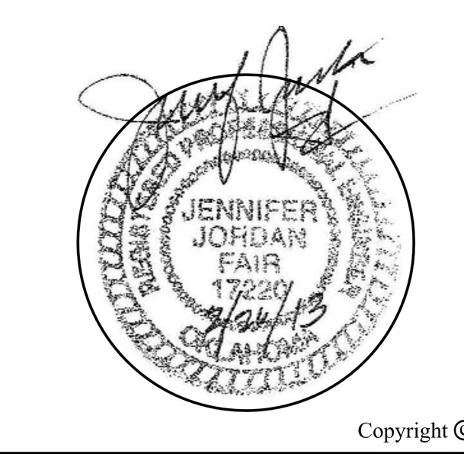
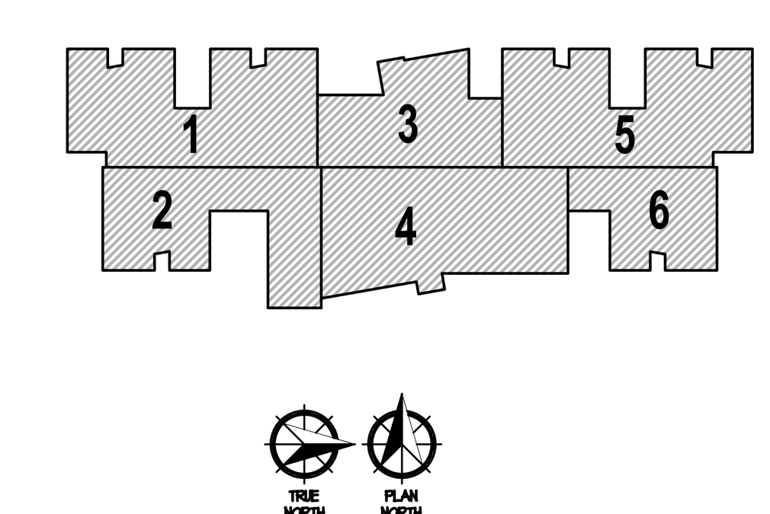


MORROW ELEMENTARY

OWASSO PUBLIC SCHOOLS
OWASSO, OK
2018
PROJECT



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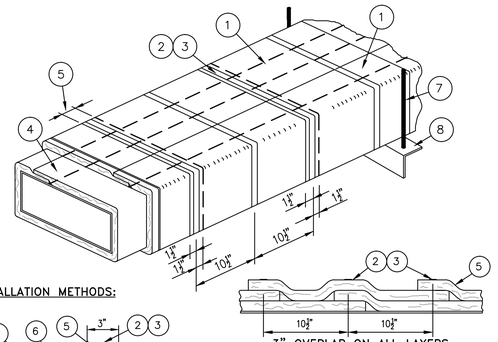
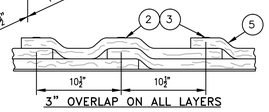
JJF	CHK'D BY

MECHANICAL DETAILS

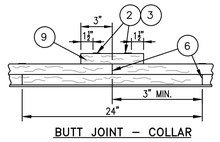
M201
SHEET TITLE



INSTALLATION METHODS:



BUTT–JOINT – 3" OVERLAP



BUTT JOINT – COLLAR

3" OVERLAP ON ALL LAYERS

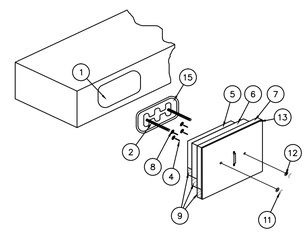
LEGEND:	
1	FYREWRAP®ELITE®1.5 DUCT INSULATION, TWO LAYERS (EACH 1.5", TOTAL THICKNESS = 3")
2	FILAMENT TAPE (TEMPORARY HOLD)
3	CARBON OR SS BANDING STRAPS (PERMANENT HOLD)
4	3" MINIMUM LONGITUDINAL OVERLAP
5	3" MINIMUM TRANSVERSE OVERLAP
6	1" COMPRESSED BUTT JOINT
7	STEEL HANGER ROD
8	STEEL ANGLE
9	6" WIDE FYREWRAP®ELITE®1.5 COLLAR

* APPLIES TO BOTH HORIZONTAL AND VERTICAL DUCT ORIENTATIONS

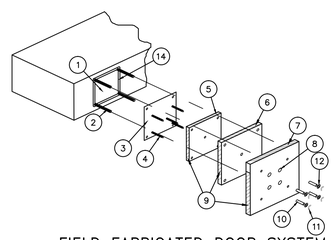
A FYREWRAP® ELITE® 1.5 DUCT INSULATION COMMERCIAL KITCHEN GREASE DUCT SYSTEM

NO SCALE

ASTM E2336 SYSTEM 2 HOUR FIRE RATED ENCLOSURE, SHAFT ALTERNATIVE
ZERO CLEARANCE TO COMBUSTIBLES



DUCTMATE F2–HT DOOR SYSTEM



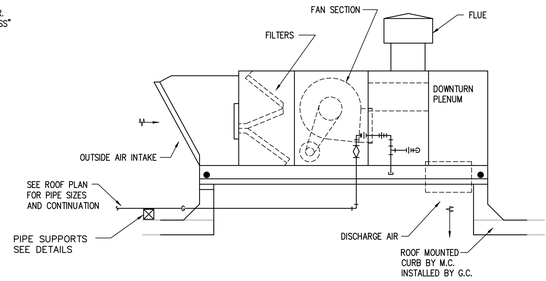
FIELD FABRICATED DOOR SYSTEM

LEGEND:	
1	ACCESS DOOR OPENING
2	ALL THREAD RODS
3	ACCESS DOOR COVER PANEL 16 GAUGE (FIELD FAB. ONLY)
4	INSULATION PINS – WELDED TO COVER
5	FIRST LAYER FYREWRAP®ELITE®1.5
6	SECOND LAYER FYREWRAP®ELITE®1.5, 1" OVERLAP
7	THIRD LAYER FYREWRAP®ELITE®1.5, 1" OVERLAP
8	SPEED CLIPS/WASHERS
9	CUT EDGES SEALED WITH ALUMINUM FOIL TAPE
10	SPOOL PIECES FOR THREAED RODS (OPTIONAL FIELD FAB. ONLY)
11	WING NUTS
12	WASHERS
13	INSULATION PLATE
14	CERAMIC FIBER GASKET, ¼" THICK
15	PRE–FABRICATED ACCESS DOOR

B FYREWRAP® ELITE ®1.5 DUCT INSULATION COMMERCIAL KITCHEN GREASE DUCT SYSTEM ACCESS DOOR SYSTEMS

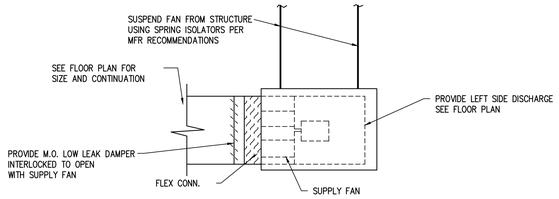
NO SCALE

FIRE DAMPER ACCESS DOOR. LABEL "FIRE DAMPER ACCESS"



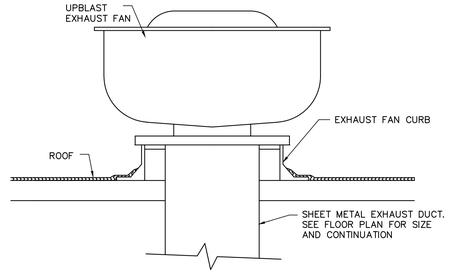
C TYPICAL ROOF MOUNTED MAKEUP AIR UNIT

NO SCALE



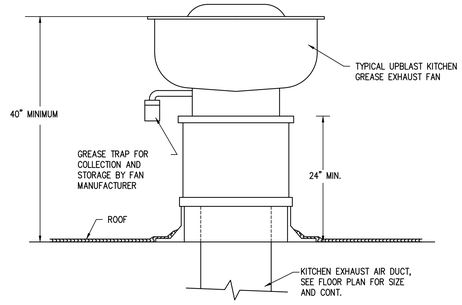
D IN–LINE SUPPLY FAN DETAIL

NO SCALE



E TYPICAL ROOF MOUNTED DISHWASHER EXHAUST DETAIL

NO SCALE



F TYPICAL ROOF MOUNTED KITCHEN GREASE EXHAUST FAN

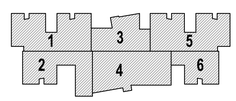
NO SCALE

the.stacy.group
architecture. interiors
8091 N. Owasso Expressway
Owasso, Oklahoma 74055
phone: 918.272.2622
fax: 918.272.2633

JENNIFER JORDAN FAIR 17284 REGISTERED PROFESSIONAL ENGINEER

MORROW ELEMENTARY

OWASSO PUBLIC SCHOOLS
OWASSO, OK
2018
PROJECT



TRUE NORTH PLAN NORTH

KEY PLAN

REVISIONS

03.06.18
ISSUE DATE

1507 | PROJECT NO
NES | DRAWN BY
JJ | CHK'D BY

MECHANICAL DETAILS

M202
SHEET TITLE

PSA CONSULTING ENGINEERS, INC.
3031 N.W. 64TH STREET SUITE 101
OKLAHOMA CITY, OKLAHOMA 73116
(405) 840-1901 FAX (405) 840-1916
COA # 390 - RENEWAL DATE 6/30/2019

ROOF TOP UNIT SCHEDULE AREA 1

MARK	RTU-101-106, 108-113,	RTU-107, 114,	
SERVES	CLASSROOMS	GROUP CLASS	
TRANE MODEL NO.	YHC037	YHC047	
TOTAL AIRFLOW (CFM)	1200	1600	
MINIMUM AIRFLOW (CFM)	--	--	
OUTSIDE AIR SETPOINT 1	300	300	
OUTSIDE AIR SETPOINT 2	100	120	
EXTERNAL SP. (IN WC)	0.50	0.50	
COOLING SECTION			
TOTAL COOLING (MBH)	34.94	48.87	
SENSIBLE COOLING (MBH)	27.85	38.72	
EAT DB/WB (°F)	81.25/66.26	77.6/64.1	
LAT DB/WB (°F)	60.76/57.28	57.69/54.65	
ARI SEER OR IEER	17.5	17.5	
HEATING SECTION			
INPUT (MBH)	80	80	
OUTPUT (MBH)	64	64	
ELECTRICAL			
UNIT MCA	11.4	13.7	
UNIT MOCP	15	20	
UNIT VOLTAGE	460/60/3	460/3/60	
UNIT WEIGHT (LBS.)	532	763	
NOTES	1, 2, 3	1, 2, 3	

ALL CAPACITIES BASED ON 918' ELEVATION AND 100°F AMBIENT
1. PROVIDE UNIT WITH THROWAWAY FILTER MERV 8 MINIMUM, 14" ROOF CURB, 0-100% ENTHALPY BASED ECONOMIZER WITH BAROMETRIC RELIEF AIR DAMPER, FACTORY MOUNTED DISCONNECT, HOT GAS REHEAT, NON-POWERED 20 GFI, 2 STAGE GAS HEAT AND HAIL GUARDS.
2. PROVIDE CO2 SENSOR TO BE USED FOR DEMAND LIMITING OF OUTSIDE AIR. RTU CONTROLLER SHALL SHUT-DOWN OUTSIDE AIR WHEN CO2 SENSOR SATISFIED. SETTINGS SHALL BE PER ASHRAE AND AS RECOMMENED BY RTU MFR.
3. TRANSITION ALL FITTINGS FROM DUCT TO UNIT AS NECESSARY.

ROOF TOP UNIT SCHEDULE AREA 3

MARK	RTU-301, 302	RTU-303	RTU-304	RTU-305	RTU- 306
SERVES	MEDIA	WEST ENTRY	RECEPTION	CONFERENCE	OFFICES
TRANE MODEL NO.	YHC037	YHC047	YHC067	YHC047	YHC037
TOTAL AIRFLOW (CFM)	1200	1600	2400	1600	1275
MINIMUM AIRFLOW (CFM)	--	--	--	--	--
OUTSIDE AIR SETPOINT 1	240	100	200	120	120
OUTSIDE AIR SETPOINT 2	100	120	100	120	100
EXTERNAL SP. (IN WC)	0.50	0.50	0.50	0.50	0.50
COOLING SECTION					
TOTAL COOLING (MBH)	33.42	45.87	55.9	47.45	33.42
SENSIBLE COOLING (MBH)	27.28	35.61	45.24	37.41	27.28
EAT DB/WB (°F)	80/65.53	76.19/63.15	75.83/62.96	78.94/64.66	80/65.53
LAT DB/WB (°F)	59.49/56.56	56.66/53.73	59.48/55.5	58.31/55.17	59.49/56.56
ARI SEER OR IEER	17.5	17.5	17.2 (IEER)	17.5	17.5
HEATING SECTION					
INPUT (MBH)	60	60	80	60	60
OUTPUT (MBH)	48	49	64	49	48
ELECTRICAL					
UNIT MCA	11.4	13.7	15.2	13.7	11.4
UNIT MOCP	15	20	20	20	15
UNIT VOLTAGE	460/60/3	460/60/3	460/60/3	460/3/60	460/60/3
UNIT WEIGHT (LBS.)	532	763	822	763	532
NOTES	1, 2, 3	1, 2, 3	1, 2, 3, 4	1, 2, 3	1, 2, 3

ALL CAPACITIES BASED ON 918' ELEVATION AND 100°F AMBIENT
1. PROVIDE UNIT WITH THROWAWAY FILTER MERV 8 MINIMUM, 14" ROOF CURB, 0-100% ENTHALPY BASED ECONOMIZER WITH BAROMETRIC RELIEF AIR DAMPER, FACTORY MOUNTED DISCONNECT, HOT GAS REHEAT, NON-POWERED 20 GFI, 2 STAGE GAS HEAT AND HAIL GUARDS.
2. PROVIDE CO2 SENSOR TO BE USED FOR DEMAND LIMITING OF OUTSIDE AIR. RTU CONTROLLER SHALL SHUT-DOWN OUTSIDE AIR WHEN CO2 SENSOR SATISFIED. SETTINGS SHALL BE PER ASHRAE AND AS RECOMMENED BY RTU MFR.
3. TRANSITION ALL FITTINGS FROM DUCT TO UNIT AS NECESSARY.
4. PROVIDE DUCT SMOKE DETECTOR IN RETURN SIDE OF UNIT. MECHANICAL CONTRACTOR RESPONSIBLE FOR INSTALLATION OF SMOKE DETECTOR. PROVIDE AND INSTALL DUCT DETECTOR EQUAL TO SYSTEM SENSOR DH10ACDCP WITH SENSOR RTS-451 REMOTE TEST STATION. POWER AND WIRING BY DIVISION 26. FA CONTRACTOR TO CONNECT TO FACP.

ROOF TOP UNIT SCHEDULE AREA 5

MARK	RTU- 501-506, 508-513	RTU-507, 514	
SERVES	CLASSROOMS	GROUP CLASS	
TRANE MODEL NO.	YHC037	YHC047	
TOTAL AIRFLOW (CFM)	1200	1600	
MINIMUM AIRFLOW (CFM)	--	--	
OUTSIDE AIR SETPOINT 1	300	300	
OUTSIDE AIR SETPOINT 2	100	120	
EXTERNAL SP. (IN WC)	0.50	0.50	
COOLING SECTION			
TOTAL COOLING (MBH)	34.94	48.87	
SENSIBLE COOLING (MBH)	27.85	38.72	
EAT DB/WB (°F)	81.25/66.26	77.6/64.1	
LAT DB/WB (°F)	60.76/57.28	57.69/54.65	
ARI SEER OR IEER	17.5	17.5	
HEATING SECTION			
INPUT (MBH)	80	80	
OUTPUT (MBH)	64	64	
ELECTRICAL			
UNIT MCA	11.4	13.7	
UNIT MOCP	15	20	
UNIT VOLTAGE	460/60/3	460/3/60	
UNIT WEIGHT (LBS.)	532	763	
NOTES	1, 2, 3	1, 2, 3	

ALL CAPACITIES BASED ON 918' ELEVATION AND 100°F AMBIENT
1. PROVIDE UNIT WITH THROWAWAY FILTER MERV 8 MINIMUM, 14" ROOF CURB, 0-100% ENTHALPY BASED ECONOMIZER WITH BAROMETRIC RELIEF AIR DAMPER, FACTORY MOUNTED DISCONNECT, HOT GAS REHEAT, NON-POWERED 20 GFI, 2 STAGE GAS HEAT AND HAIL GUARDS.
2. PROVIDE CO2 SENSOR TO BE USED FOR DEMAND LIMITING OF OUTSIDE AIR. RTU CONTROLLER SHALL SHUT-DOWN OUTSIDE AIR WHEN CO2 SENSOR SATISFIED. SETTINGS SHALL BE PER ASHRAE AND AS RECOMMENED BY RTU MFR.
3. TRANSITION ALL FITTINGS FROM DUCT TO UNIT AS NECESSARY.

SUPPLY FAN SCHEDULE

MARK	SERVES	LOCATION	GREENHECK MODEL NO.	AIRFLOW (CFM)	E.S.P. (IN WC)	FAN SPEED (RPM)	MOTOR (HP)	CURRENT (A)	VOLTAGE (V/ø/HZ)	WEIGHT (LB)	NOTES
SF-01	SHELTER VENTILATION	INLINE	SQ-160-VG	2250	0.5	1006	3/4	--	277/1/60	155	1, 2, 3, 4

NOTES: ALL SELECTIONS BASED ON 1280 FT ELEVATION, 70° F AIR. DIRECT DRIVE FANS SHALL BE PROVIDED WITH FAN SPEED CONTROLLER
1. PROVIDE SPRING ISOLATION HANGERS, LEFT DISCHARGE, VARI-GREEN MOTOR AND CONTROL,
2. SEE DETAIL D/M202.
3. FAN SHALL BE OPERATED FROM WALL SWITCH PROVIDED AND INSTALLED BY DIVISION 26.
4. FAN SHALL BE MONITORED BY BAS.

KITCHEN MAKE-UP AIR FAN SCHEDULE

MARK	GREENHECK MODEL NO.	LOCATION	AIRFLOW (CFM)	t.S.P. (IN WC)	FAN SPEED (RPM)	MOTOR (HP)	HEATING IN/OUT (MBH)	VOLTAGE (V/ø/HZ)	MCA (A)	MOP (A)	WEIGHT (LBS)	NOTES
KSF-1	DG-112-H20	ROOF	3508	1.632	1102	3	251.2/231.1	460/3/60	6.3	15	951	1, 2

NOTES:
1. PROVIDE WITH 2" MERV 8 FILTERS, MOTORIZED INLET DAMPER, DOWNBLAST DISCHARGE CONFIGURATION, AND ROOF CURB. SEE DETAIL C/M202.
2. FAN TO BE INTERLOCKED WITH EXHAUST FAN KEF-1.

EXHAUST FAN SCHEDULE

MARK	SERVES	LOCATION	GREENHECK MODEL NO.	AIRFLOW (CFM)	E.S.P. (IN WC)	FAN SPEED (RPM)	MOTOR (HP)	SONES	FLA (A)	VOLTAGE (V/ø/HZ)	WEIGHT (LBS)	NOTES
EF-101	TLT 104	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	46	2, 5
EF-102	TLT 110	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-103	RESTROOM GROUP 112/114/116	ROOF	G-099-A	770	0.50	1539	1/4	10.1	5.8	115/1/60	23	3, 9
EF-104	TLT 118	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-105	TLT 119	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-106	TLT 121	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-107	TLT 126	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-108	TLT 128	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-109	TLT 129	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-110	TLT 131	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-201	TLT 202	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-202	TLT 213	CEILING	G-095-VG	140	0.60	1220	1/4	5.5	--	115/1/60	35	2, 5
EF-203	KITCHEN TOILET 219	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-204	KITCHEN JANITOR 220	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-301	TLT 307	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-302	TLT 308	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-303	TLT 310	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-304	RESTROOM GROUP 323/326/329	ROOF	G-099-A	770	0.50	1539	1/4	10.1	5.8	115/1/60	23	3, 9
EF-305	TLT 321	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-401	TLT 406	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-402	RESTROOM GROUP 402/405	ROOF	G-095-VG	420	0.60	1683	1/4	10.7	--	115/1/60	26	1, 11
EF-403	RESTROOM GROUP 420/421	ROOF	G-095-VG	280	0.60	1585	1/4	12.1	--	115/1/60	26	2, 5
EF-404	TLT 401	ROOF	G-095-VG	140	0.60	1220	1/4	5.5	--	115/1/60	35	2, 5
EF-405	RESTROOM GROUP 425/426	CEILING	CSP-A710	420	0.60	1080	268 W	2.0	4.4	115/1/60	36	2, 5
EF-501	TLT 503	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-502	RESTROOM GROUP 512/513/516	ROOF	G-099-A	770	0.50	1539	1/4	10.1	5.8	115/1/60	23	3, 9
EF-503	TLT 510	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-504	TLT 522	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
EF-601	TLT 608	CEILING	SP-B110	70	0.20	698	100 W	1.5	--	277/1/60	12	2, 5
KEF-1	KITCHEN HOOD	ROOF	CUBE-240-20	5850	1.0	898	2	17.5	7.5	208/3/60	162	8
KEF-2	DISHWASHER EXHAUST	ROOF	CUBE-101	1200	0.55	1708	1/3	11.4	2.4	208/3/60	72	4

NOTES: ALL SELECTIONS BASED ON 981' ELEVATION, 70° F AIR. PROVIDE ALL DIRECT DRIVE FANS WITH FAN SPEED CONTROLLER TO BE INSTALLED BY DIVISION 26.

1. PROVIDE FAN WITH MANUFACTURER'S ROOF CURB, BACKDRAFT DAMPER, AND BIRDSCREEN. INSTALL FAN PER DETAIL L/M201.
2. PROVIDE FAN WITH MANUFACTURER'S ROOF CAP, CURB, INTEGRAL BACKDRAFT DAMPER, AND WHITE GRILLE. SEE DETAIL E/M202.
3. PROVIDE AND INSTALL SPEED CONTROLLER, INSTALL FAN PER DETAIL N/M202.
4. PROVIDE MANUFACTURER'S ROOF CURB, BACKDRAFT DAMPER. INTERLOCK WITH DISHWASHER. SEE DETAIL E/M202.
5. INTERLOCK WITH RESTROOM LIGHTS.
6. INTERLOCK WITH RTU-401
7. INTERLOCK WITH RTU-301
8. PROVIDE MANUFACTURER'S HINGED BASE ROOF CURB, BACKDRAFT DAMPER AND GREASE TRAP. INTERLOCK WITH KITCHEN EXHAUST HOOD AND CONTROLS PROVIDED WITH THE HOOD, REFER TO FOOD SERVICE DRAWINGS AND SPECIFICATIONS FOR SPECIFIC REQUIREMENTS. SEE DETAIL F/M202.
9. INTERLOCK WITH LIGHTS.
10. INTERLOCK WITH RTU-KIT
11. INTERLOCK WITH RTU-302

ROOF TOP UNIT SCHEDULE AREA 2

MARK	RTU-203-207, 209	RTU-201, 202	RTU-208, 210	RTU-211	RTU-212
SERVES	CLASSROOMS	GROUP CLASS	SPEECH	COMP LAB	KITCHEN
TRANE MODEL NO.	YHC037	YHC047	YHC037	YCD067	YHC092
TOTAL AIRFLOW (CFM)	1200	1600	1200	2000	3000
MINIMUM AIRFLOW (CFM)	--	--	--	1550	2200
OUTSIDE AIR SETPOINT 1	300	300	240	400	1200
OUTSIDE AIR SETPOINT 2	100	100	100	100	1200
EXTERNAL SP. (IN WC)	0.50	0.50	0.50	0.50	0.50
COOLING SECTION					
TOTAL COOLING (MBH)	34.94	48.87	33.42	57.47	89.32
SENSIBLE COOLING (MBH)	27.85	38.72	27.28	45.56	71.28
EAT DB/WB (°F)	81.25/66.26	77.6/64.1	80/65.53	79.2/64.8	81.5/66.5
LAT DB/WB (°F)	60.76/57.28	57.69/54.65	59.49/56.56	59.1/55.84	60.74/57.25
ARI SEER OR IEER	17.5	17.5	17.5	17.2 (IEER)	15.0 (IEER)
HEATING SECTION					
INPUT (MBH)	80	80	60	60	150/120
OUTPUT (MBH)	64	64	48	49	55.6
ELECTRICAL					
UNIT MCA	11.4	13.7	11.4	15.2	19.9
UNIT MOCP	15	20	15	20	25
UNIT VOLTAGE	460/60/3	460/3/60	460/60/3	460/3/60	460/3/60
UNIT WEIGHT (LBS.)	532	763	532	822	1212
NOTES	1, 2, 3	1, 2, 3	1, 2, 3	1, 2, 3, 4	1, 2, 3, 4

ALL CAPACITIES BASED ON 918' ELEVATION AND 100°F AMBIENT
1. PROVIDE UNIT WITH THROWAWAY FILTER MERV 8 MINIMUM, 14" ROOF CURB, 0-100% ENTHALPY BASED ECONOMIZER WITH BAROMETRIC RELIEF AIR DAMPER, FACTORY MOUNTED DISCONNECT, HOT GAS REHEAT, NON-POWERED 20 GFI, 2 STAGE GAS HEAT AND HAIL GUARDS.
2. PROVIDE CO2 SENSOR TO BE USED FOR DEMAND LIMITING OF OUTSIDE AIR. RTU CONTROLLER SHALL SHUT-DOWN OUTSIDE AIR WHEN CO2 SENSOR SATISFIED. SETTINGS SHALL BE PER ASHRAE AND AS RECOMMENED BY RTU MFR.
3. TRANSITION ALL FITTINGS FROM DUCT TO UNIT AS NECESSARY.
4. PROVIDE DUCT SMOKE DETECTOR IN RETURN SIDE OF UNIT. MECHANICAL CONTRACTOR RESPONSIBLE FOR INSTALLATION OF SMOKE DETECTOR. PROVIDE AND INSTALL DUCT DETECTOR EQUAL TO SYSTEM SENSOR DH10ACDCP WITH SENSOR RTS-451 REMOTE TEST STATION. POWER AND WIRING BY DIVISION 26. FA CONTRACTOR TO CONNECT TO FACP.

ROOF TOP UNIT SCHEDULE AREA 4

MARK	RTU-401	RTU-402	RTU-403-405	RTU-406, 407
SERVES	MUSIC	COMP LAB/STAGE	CAFETERIA	GYM
TRANE MODEL NO.	YHC067	YCD067	YHC120	HORIZON OAKD300D4
TOTAL AIRFLOW (CFM)	2000	2000	4000	8000
MINIMUM AIRFLOW (CFM)	1550	1550	1800	3687
OUTSIDE AIR SETPOINT 1	240	400	960	1200
OUTSIDE AIR SETPOINT 2	150	150	960	400
EXTERNAL SP. (IN WC)	0.50	0.50	0.50	1.50
COOLING SECTION				
TOTAL COOLING (MBH)	57.12	57.47	109.94	274.7
SENSIBLE COOLING (MBH)	46.56	45.56	97.94	193.8
EAT DB/WB (°F)	80.25/65.35	79.2/64.8	79.38/31.89	80/67
LAT DB/WB (°F)	59.66/56.37	59.1/55.84	58.73/56.46	55.2
ARI SEER OR IEER	17.2 (IEER)	17.2 (IEER)	12.4 (IEER)	17.5
HEATING SECTION				
INPUT (MBH)	80	60	150/105	500
OUTPUT (MBH)	64	49	120/84	400
ELECTRICAL				
UNIT MCA	15.2	15.2	21.9	61.4
UNIT MOCP	20	20	30	70
UNIT VOLTAGE	460/60/3	460/3/60	460/3/60	460/60/3
UNIT WEIGHT (LBS.)	822	822	1259	922
NOTES	1, 2, 3	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4, 5

ALL CAPACITIES BASED ON 918' ELEVATION AND 100°F AMBIENT
1. PROVIDE UNIT WITH THROWAWAY FILTER MERV 8 MINIMUM, 14" ROOF CURB, 0-100% ENTHALPY BASED ECONOMIZER WITH BAROMETRIC RELIEF AIR DAMPER, FACTORY MOUNTED DISCONNECT, HOT GAS REHEAT, NON-POWERED 20 GFI, 2 STAGE GAS HEAT AND HAIL GUARDS.
2. PROVIDE CO2 SENSOR TO BE USED FOR DEMAND LIMITING OF OUTSIDE AIR. RTU CONTROLLER SHALL SHUT-DOWN OUTSIDE AIR WHEN CO2 SENSOR SATISFIED. SETTINGS SHALL BE PER ASHRAE AND AS RECOMMENED BY RTU MFR.
3. TRANSITION ALL FITTINGS FROM DUCT TO UNIT AS NECESSARY.
4. PROVIDE DUCT SMOKE DETECTOR IN RETURN SIDE OF UNIT. MECHANICAL CONTRACTOR RESPONSIBLE FOR INSTALLATION OF SMOKE DETECTOR. PROVIDE AND INSTALL DUCT DETECTOR EQUAL TO SYSTEM SENSOR DH10ACDCP WITH SENSOR RTS-451 REMOTE TEST STATION. POWER AND WIRING BY DIVISION 26. FA CONTRACTOR TO CONNECT TO FACP.
5. UNIT IS HORIZONTAL DISCHARGE.

ROOF TOP UNIT SCHEDULE AREA 6

MARK	RTU-601, 603, 605-608	RTU-602, 604	
SERVES	CLASSROOMS	GROUP CLASS	
TRANE MODEL NO.	YHC037	YHC047	
TOTAL AIRFLOW (CFM)	1200	1600	
MINIMUM AIRFLOW (CFM)	--	--	
OUTSIDE AIR SETPOINT 1	300	300	
OUTSIDE AIR SETPOINT 2	100	100	
EXTERNAL SP. (IN WC)	0.50	0.50	
COOLING SECTION			
TOTAL COOLING (MBH)	34.94	48.87	
SENSIBLE COOLING (MBH)	27.85	38.72	
EAT DB/WB (°F)	81.25/66.26	77.6/64.1	
LAT DB/WB (°F)	60.76/57.28	57.69/54.65	
ARI SEER OR IEER	17.5	17.5	
HEATING SECTION			
INPUT (MBH)	80	80	
OUTPUT (MBH)	64	64	
ELECTRICAL			
UNIT MCA	11.4	13.7	
UNIT MOCP	15	20	
UNIT VOLTAGE	460/60/3	460/3/60	
UNIT WEIGHT (LBS.)	532	763	
NOTES	1, 2, 3	1, 2, 3	

ALL CAPACITIES BASED ON 918' ELEVATION AND 100°F AMBIENT
1. PROVIDE UNIT WITH THROWAWAY FILTER MERV 8 MINIMUM, 14" ROOF CURB, 0-100% ENTHALPY BASED ECONOMIZER WITH BAROMETRIC RELIEF AIR DAMPER, FACTORY MOUNTED DISCONNECT, HOT GAS REHEAT, NON-POWERED 20 GFI, 2 STAGE GAS HEAT AND HAIL GUARDS.
2. PROVIDE CO2 SENSOR TO BE USED FOR DEMAND LIMITING OF OUTSIDE AIR. RTU CONTROLLER SHALL SHUT-DOWN OUTSIDE AIR WHEN CO2 SENSOR SATISFIED. SETTINGS SHALL BE PER ASHRAE AND AS RECOMMENED BY RTU MFR.
3. TRANSITION ALL FITTINGS FROM DUCT TO UNIT AS NECESSARY.

SYSTEMS MATERIALS SCHEDULE

SYSTEM	MATERIAL	INSULATION THICKNESS	INSULATION TYPE	INSULATION JACKET
CONDENSATE DRAIN (INTERIOR)	TYPE "M" COPPER	1/2"	FIBERGLASS	VAPOR BARRIER
CONDENSATE DRAIN (EXTERIOR)	TYPE "M" COPPER	--	--	--
REFRIGERANT RS/RL	TYPE "ACR" COPPER	1/2"	FLEX. UNICELLULAR	--
REFRIGERANT RH	TYPE "ACR" COPPER	--	--	--
NATURAL GAS	SCHEDULE 40 BLACK STEEL	--	--	--
FLUE AT DIRECT VENT WATER HEATER	SCHEDULE 40 PVC (1)	--	--	--
L.P. R/A DUCT - EXPOSED	G.I.S.M. (4)	1"	DUCTLINER	--
L.P. S/A DUCTWORK AT GYM - RECT.	G.I.S.M. (4)	1"	DUCTLINER	--
L.P. S/A DUCTWORK EXPOSED - ROUND	G.I.S.M. DOUBLE WALL (4)	1"	FIBERGLASS	--
L.P. S/A DUCTWORK	G.I.S.M.	1-1/2"	DUCTWRAP	--
L.P. S/A RUNOUTS	G.I.S.M.	1-1/2"	DUCTWRAP	--
L.P. S/A FLEX DUCT	1" INSULATED FLEX	--	--	--
L.P. R/A DUCTWORK AT COMMONS	G.I.S.M.	2"	DUCTLINER	--
L.P. R/A DUCTWORK AT GYM	G.I.S.M. (4)	1"	DUCTLINER	--
L.P. R/A DUCTWORK	G.I.S.M.	1"	DUCTLINER	--
L.P. EXHAUST DUCTWORK	G.I.S.M.	--	--	--
GREASE EXHAUST DUCTWORK (CONCEALED)	16 GA. CARBON STEEL (5)	3" TOTAL	--	--
GREASE EXHAUST DUCTWORK (EXPOSED)	STAINLESS STEEL	--	--	--
DISHWASHER EXHAUST	22 GA. ALUMINUM	--	--	--

NOTES:
SEE PLANS AND SPECIFICATIONS FOR ADDITIONAL OR MORE SPECIFIC REQUIREMENTS.
(1) MATERIAL SHALL ALSO BE USED FOR COMBUSTION AIR.
(2) PROVIDE VENT KIT FOR FLUE AND SEALED COMBUSTION BY WATER HEATER MANUFACTURER.
(3) ALL EXTERIOR DUCTWORK EXPOSED TO ELEMENTS TO BE PROVIDED 2" DUCTLINER.
(4) EXPOSED INTERIOR DUCTWORK SHALL BE SUITABLE FOR PAINTING COLOR AS SPECIFIED BY ARCHITECT.
(5) PROVIDE FYREWRAP EZ 1.5 INSULATION TWO LAYER GREASE DUCT SYSTEM WITH ASSOCIATED ACCESS DOORS.

AIR DISTRIBUTION DEVICE SCHEDULE

MARK	SERVICE	MANUFACTURER	MODEL	FACE TYPE	MOUNTING	DESCRIPTION	SIZE	S/A RUNOUT	NOTES
S6A	SUPPLY	TITUS	TMSA	FULL FACED LOUVER	VARIES	SQUARE, ADJUSTABLE V-H DISCHARGE	12"x12" - 6"ø NECK	6"ø	1, 2
S6	SUPPLY	TITUS	TMSA	FULL FACED LOUVER	LAY-IN	SQUARE, ADJUSTABLE V-H DISCHARGE	24"x24" - 6"ø NECK	6"ø	1, 2
S8	SUPPLY	TITUS	TMSA	FULL FACED LOUVER	VARIES	SQUARE, ADJUSTABLE V-H DISCHARGE	24"x24" - 8"ø NECK	8"ø	1, 2
S10	SUPPLY	TITUS	TMSA	FULL FACED LOUVER	LAY-IN	SQUARE, ADJUSTABLE V-H DISCHARGE	24"x24" - 10"ø NECK	10"ø	1, 2
S12	SUPPLY	TITUS	TMSA	FULL FACED LOUVER	LAY-IN	SQUARE, ADJUSTABLE V-H DISCHARGE	24"x24" - 12"ø NECK	12"ø	1, 2
SL1	SUPPLY	TITUS	ML-39	LINEAR SLOT	LAY-IN	(1) 1" SLOT, 4 FT. WITH PLENUM	48" LONG x ~4" WIDE		1, 3
SL2	SUPPLY	TITUS	ML-39	LINEAR SLOT	LAY-IN	(2) 1" SLOTS, WITH PLENUM	48" LONG x ~4" WIDE	6"ø	1, 3
SL4	SUPPLY	TITUS	ML-39	LINEAR SLOT	LAY-IN	(4) 1" SLOTS, 2 FT. WITH PLENUM	24" LONG x ~8" WIDE	8"ø	1, 3
SL6	SUPPLY	TITUS	ML-39	LINEAR SLOT	LAY-IN	(2) 1" SLOTS, 2 FT. WITH PLENUM	72" LONG x ~8" WIDE	8"ø	1, 3
SD10	SUPPLY	CAPTIVEAIRE	DI-PSP	PERFORATED	LAY-IN	LAMINAR, PERFORATED	24"x24" - 10"ø NECK	10"ø	1, 2
SP6	SUPPLY	TITUS	OMNI	PLAQUE FACED LOUVER	LAY-IN	SQUARE BACKPAN, SQUARE PLAQUE	12"x12" - 8"ø NECK	6"ø	1, 2
SP8	SUPPLY	TITUS	OMNI	PLAQUE FACED LOUVER	LAY-IN	SQUARE BACKPAN, SQUARE PLAQUE	24"x24" - 8"ø NECK	8"ø	1, 2
SP10	SUPPLY	TITUS	OMNI	PLAQUE FACED LOUVER	LAY-IN	SQUARE BACKPAN, SQUARE PLAQUE	24"x24" - 10"ø NECK	10"ø	1, 2
SDL	SUPPLY	AIR CONCEPTS	DL-3008	DRUM LOUVER	DUCT	CURVED DRUM LOUVER WITH AIR SCOOP	30"x10" DUCT SIZE	DUCT MOUNTED	4
DP	SUPPLY	AIR CONCEPTS	DMPG-2406	PERFORATED	DUCT	CURVED PERFORATED GRILLE	24"x6" DUCT SIZE	DUCT MOUNTED	4
DP10	SUPPLY	AIR CONCEPTS	DMPG-2410	PERFORATED	DUCT	CURVED PERFORATED GRILLE	24"x10" DUCT SIZE	DUCT MOUNTED	4
SV6	SUPPLY	TITUS	T3SQ-2	PLAQUE FACED	LAY-IN	DIGITAL VAV DIFFUSER	24"x24" - 6"ø NECK	6"ø	1, 2, 11
SG	SUPPLY	TITUS	301 RSHD	SUPPLY GRILLE	SURFACE	DOUBLE DEFLECTION, 1/2" SPACING	30"x12"	--	1, 5
SD4	SUPPLY	TITUS	TDC	FULL FACED LOUVER	LAY-IN	SQUARE, ADJUSTABLE V-H DISCHARGE, 4-WAY	24"x24" - 8"ø NECK	8"ø	1, 2, 10
SD8	SUPPLY	TITUS	TDC	LOUVER - TYPE G2	LAY-IN	SQUARE, ADJUSTABLE V-H DISCHARGE, 2-WAY	24"x24" - 8"ø NECK	8"ø	1, 2, 10
SD10	SUPPLY	TITUS	TDC	LOUVER - TYPE G2	LAY-IN	SQUARE, ADJUSTABLE V-H DISCHARGE, 2-WAY	24"x24" - 10"ø NECK	10"ø	1, 2, 10
SD12	SUPPLY	TITUS	TDC	LOUVER - TYPE G2	LAY-IN	SQUARE, ADJUSTABLE V-H DISCHARGE, 2-WAY	24"x24" - 12"ø NECK	12"ø	1, 2, 10
R6	RETURN	TITUS	355 RL	LOUVER/GRILLE	LAY-IN	35° SINGLE DEFLECTION - 1/2" SPACING	6"x24" OVERALL - 4"x22" DUCT	--	6
R12	RETURN	TITUS	355 RL	LOUVER/GRILLE	LAY-IN	35° SINGLE DEFLECTION - 1/2" SPACING	12"x24" OVERALL - 10"x22" DUCT	--	6
R24	RETURN	TITUS	355 RL	LOUVER/GRILLE	LAY-IN	35° SINGLE DEFLECTION - 1/2" SPACING	24"x24" OVERALL - 22"x22" DUCT	--	6
R30	RETURN	TITUS	63 FL	LOUVER/GRILLE	SURFACE	35° SINGLE DEFLECTION - 1/2" SPACING	31.5"x31.5" OVERALL - 30"x30" DUCT	--	5
R48	RETURN	TITUS	63 FL	LOUVER/GRILLE	DUCT	35° SINGLE DEFLECTION - 1/2" SPACING	49.5"x25.5" OVERALL - 48"x24" DUCT	--	5
E12	EXHAUST	TITUS	355 RL	LOUVER/GRILLE	SURFACE	35° SINGLE DEFLECTION - 1/2" SPACING	12"x24" OVERALL - 10"x22" DUCT	--	8
E12A	EXHAUST	TITUS	355 RL	LOUVER/GRILLE	SURFACE	35° SINGLE DEFLECTION - 1/2" SPACING	12'x12" OVERALL - 10"x10" DUCT	--	8
EG8	EXHAUST	TITUS	355 RL	LOUVER/GRILLE	SIDEWALL	35° SINGLE DEFLECTION - 1/2" SPACING	8'x8" OVERALL - 6"x6" DUCT		8

NOTES:
GENERAL: VERIFY GRILLE MOUNTING FRAME TYPES AND SIZES WITH CEILING AND/OR WALL REQUIREMENTS. ALL AIR DEVICE FINISHES AND COLOR TO BE COORDINATED WITH ARCHITECT PRIOR TO ORDERING AND INSTALLATION. SEE DETAIL G/M300 FOR TYPICAL S/A DIFFUSER DETAIL.
1. PROVIDE BALANCING DAMPER AT CONNECTION TO MAIN. IF CONNECTION TO MAIN IS ABOVE AN INACCESSIBLE CEILING, PROVIDE DAMPER ACCESSIBLE THROUGH FACE OF DEVICE.
2. 4-WAY PATTERN DISCHARGE UNLESS NOTED OTHERWISE ON DRAWINGS.
3. PROVIDE INSULATED PLENUM.
4. DEVICE SHALL HAVE CURVED FRAME ROLLED TO THE DIAMETER OF THE DUCT. COLOR TO BE AS INDICATED BY ARCHITECT. REFER ARCHITECTURAL FINISH SCHEDULE.
5. PROVIDE DUCT MOUNTED BALANCING DAMPER. PAINT COLOR INDICATED BY ARCHITECT REFER ARCHITECTURAL FINISH SCHEDULE.
6. PROVIDE WITH DUCT MOUNTED BALANCING DAMPER FOR AIR DEVICE, SIZE AS REQUIRED.
7. DEVICE TO BE FURNISHED BLACK OR FIELD PAINTED BLACK.
8. PROVIDE TITUS MODEL AG-15 OPPOSED BLADE DAMPER AT DEVICE UNLESS OTHERWISE NOTED, SIZE AS REQUIRED.
9. DUCT MOUNTED. PAINT COLOR INDICATED BY ARCHITECT, REFER TO ARCHITECTURAL FINISH SCHEDULE.
10. BACKPAN SIZE 18"x18".
11. VAV DIFFUSERS SHALL BE CONNECTED AND CONTROLLED THROUGH THERMOSTAT INDICATED IN ROOM SEPARATE FROM THE RTU THERMOSTAT.

ELECTRIC UNIT HEATER SCHEDULE

MARK	SERVES	TYPE	MARKEL MODEL NO.	HEAT OUTPUT (KW)	AIRFLOW (CFM)	TEMP. RISE (°F)	VOLTAGE (V/ø/HZ)	CURRENT (A)	NOTES
EUH-1	RISER 234	WALL HEATER	J3455T	5.0	245	40	208/3/60	13.9	1, 2
EUH-2	TOILET 213	CEILING HEATER	E3383D-RP	1.5	175	27	120/1/60	12.5	3

NOTES:
1. PROVIDE WITH INTEGRAL THERMOSTAT, SET AT 60°F.
2. SURFACE WALL MOUNT HEATER. INSTALL PER MANUFACTURER'S RECOMMENDATIONS MOUNT AT 24" A.F.F. OPPOSITE FIRE RISER.
3. CEILING MOUNT HEATER. PROVIDE WALL MOUNTED PUSH BUTTON TIMER CONTROL WITH MINIMUM 4 SETTINGS (10, 20, 30, 60 MINUTES), WHITE IN COLOR. LOCATE ADJACENT TO WALL SWITCH. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

DUCT-FREE SPLIT SYSTEMS UNIT SCHEDULE

MARK	SERVES	TYPE	MFR	MODEL NUMBERS INDOOR	MODEL NUMBERS OUTDOOR	CFM	COOLING (MBH)	HEATING (MBH)	ELECTRICAL MCA	ELECTRICAL MOP	ELECTRICAL VOLTAGE
FCU/CU-1IT	IT ROOM	WALL MOUNTED	FUJITSU	ASU24RLF	AOU24RLXFW	659	22.0	27.6	23	30	208/1/60
FCU/CU-2IT	IT ROOM	CEILING CASSETTE	FUJITSU	AUU9RLF	AOU12RLFC	659	22.0	27.6	23	30	208/1/60
FCU/CU-3IT	IT ROOM	WALL MOUNTED	FUJITSU	ASU24RLF	AOU24RLXFW	659	22.0	27.6	23	30	208/1/60
FCU/CU-1	ELECTRICAL	CEILING CASSETTE	FUJITSU	AUU9RLF	AOU12RLFC	659	22.0	27.6	23	30	208/1/60
FCU/CU-2	ELECTRICAL	WALL MOUNTED	FUJITSU	ASU24RLF	AOU24RLXFW	659	22.0	27.6	23	30	208/1/60
FCU/CU-3	ELECTRICAL	CEILING CASSETTE	FUJITSU	AUU9RLF	AOU12RLFC	659	22.0	27.6	23	30	208/1/60

NOTES:
1. CONTRACTOR TO ROUTE REFRIGERANT PIPING (SIZED AND PROVIDED WITH ACCESSORIES AS REQUIRED PER MANUFACTURER) FROM INDOOR TO OUTDOOR CONDENSING UNIT.
2. INDOOR UNIT POWERED THRU OUTDOOR UNIT. PROVIDE DISCONNECT FOR INDOOR UNIT BY DIV. 26.
3. CAPACITIES ARE BASED ON ARI CONDITIONS.
4. PROVIDE ACCESSORY CONDENSATE PUMP TO LIFT CONDENSATE AS REQUIRED.
5. REFER TO MFR. FOR INSTALLATION REQUIREMENTS.
6. PROVIDE WALL MOUNTED THERMOSTAT/UNIT CONTROLLER.
7. SEE A/M202 FOR CONDENSING UNIT MOUNTING DETAIL ON ROOF

MECHANICAL SYMBOL LEGEND

SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
CD	CONDENSATE DRAIN		SHUT-OFF VALVE - BALL VALVE
G	NATURAL GAS		CHECK VALVE
HPG	NATURAL GAS - HIGH PRESSURE LINE		COCK
	FLEX DUCT		BALL VALVE W/ MEMORY STOP
MBD	MANUAL BALANCING DAMPER		PRESSURE REDUCING VALVE
	MANUAL BALANCING DAMPER		RELIEF VALVE
T RTU-X	THERMOSTAT WITH ASSOCIATED EQUIP. MARK		UNION
TS RTU-X	TEMPERATURE SENSOR W/ASSOCIATED EQUIP. MARK		
	S/A DEVICE	elev	BOTTOM OF DUCT MARKER
	R/A OR E/A DEVICE	elev TO C.L.	CENTERLINE OF DUCT MARKER
			MOTOR-OPERATED BAL. DAMPER 120V

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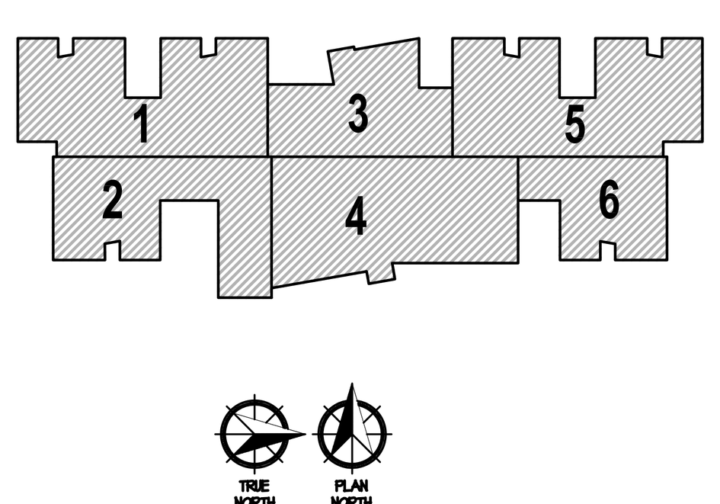
MORROW ELEMENTARY

OWASSO PUBLIC SCHOOLS
OWASSO, OK
2018
PROJECT



KEY PLAN

REVISIONS

03.06.18
ISSUE DATE

1507 PROJECT NO
NES DRAWN BY
JJF CHK'D BY

MECHANICAL SCHEDULES

M301
SHEET TITLE