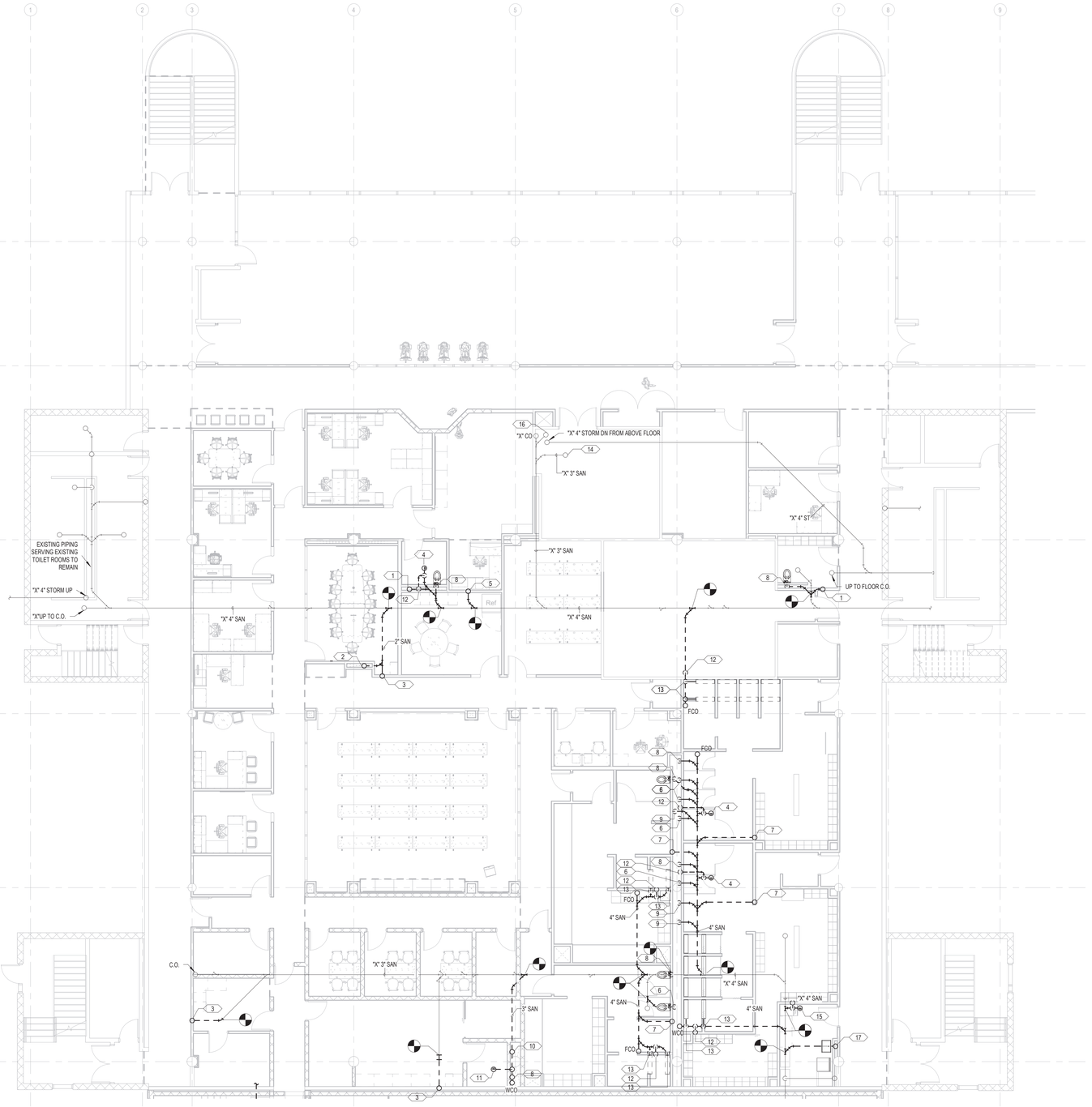

GENERAL PLUMBING NOTES

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3. COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE. PROVIDE PIPE RISES, DROPS, AND OFFSETS, AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK.

4. DRAWINGS FOR PLUMBING WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE PIPING, CONNECTIONS, FITTINGS, VALVES, OFFSETS, ETCETERA AND ALL MATERIALS NECESSARY FOR A COMPLETE SYSTEM.

5. ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING CITY AND THE AUTHORITY HAVING JURISDICTION. OWNER TO PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.

6. PROVIDE BACKFLOW PREVENTION DEVICES IN WATER LINES FEEDING PLUMBING FIXTURES AND/OR EQUIPMENT, AS SHOWN ON PLANS AND ELSEWHERE AS REQUIRED BY AUTHORITY HAVING JURISDICTION. USE DEVICES OF APPROVED MANUFACTURER AND TYPE IN ACCORDANCE WITH REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

7. CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. IF PRESSURE AT BUILDING ENTRY PRIOR TO ALL LOCALLY REQUIRED DEVICES IS LESS THAN 60 PSIG STATIC, CONTACT OWNER'S REPRESENTATIVE. IF PRESSURE EXCEEDS 80 PSIG, PROVIDE PRESSURE REDUCING VALVE.

8. SUSPEND HORIZONTAL SERVICE PIPING FROM UNDERSIDE OF ROOF OR FLOOR STRUCTURE UNLESS OTHERWISE INDICATED. INSTALL PIPING AS HIGH AS POSSIBLE. EXTEND PIPING DOWN IN WALLS, PARTITIONS, AND CHASES TO SERVE FIXTURES AND EQUIPMENT.

9. VERIFY SERVICE CONNECTION POINTS, SIZES, ELEVATIONS, AND METERING LOCATIONS FOR PROJECT WITH LOCAL UTILITY COMPANIES AND/OR CIVIL ENGINEER AS APPLICABLE.

10. USE OF COMBUSTIBLE MATERIALS IS NOT ALLOWED IN RETURN AIR PLENUMS. MATERIALS USED IN THE PLENUM SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25, AND SMOKE DEVELOPED RATING NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84.

11. STACK TEST REQUIRED ON ALL ROUGH AND UNDERGROUND PLUMBING.

12. 25LB AIR TEST REQUIRED ON GAS PIPING AT TIME OF ROUGH INSPECTION.

13. 75LB AIR TEST OR WATER PRESSURE REQUIRED ON WATER PIPING AT TIME OF ROUGH INSPECTION.

14. DOMESTIC WATER TO TEE OFF FIRE MAIN INSIDE BUILDING WITHIN 2' OF THE FIRE RPZ

15. ALL PIPING SHALL BE CONCEALED WITHIN WALLS TO THE GREATEST EXTENT POSSIBLE.

PLUMBING_KEYNOTES

Key Value	Keynote Text
1	2" SAN UP TO LAV-2
2	2" SAN UP TO EWC-1
3	2" SAN UP TO SK-1
4	4" SAN UP TO FD-1
5	2" SAN UP TO SK-2
6	4" SAN UP TO WC-1
7	2" SAN UP TO LAV-1
8	4" SAN UP TO WC-2
9	2" SAN UP TO UR-1
10	2" SAN UP TO LAV-3
11	4" SAN UP TO FD-2
12	2" V UP TO CEILING LEVEL
13	3" SAN UP TO TD-1
14	3" SAN UP TO EXISTING FLOOR SINK
15	4" SAN UP TO FD-3
16	3" SAN DN FROM SECOND FLOOR
17	2" SAN UP TO LT-1

1 P-100 UNDERGROUND PLUMBING SANITARY PLAN

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

PLUMBING

N

LEGAT ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

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Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
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T: 847.756.4180 F: 847.756.4186 | www.rtmec.com

PROFESSIONAL ENGINEER
JESSICA L. IVERSEN
062-068559
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UNDERGROUND PLUMBING SANITARY PLAN

P-100

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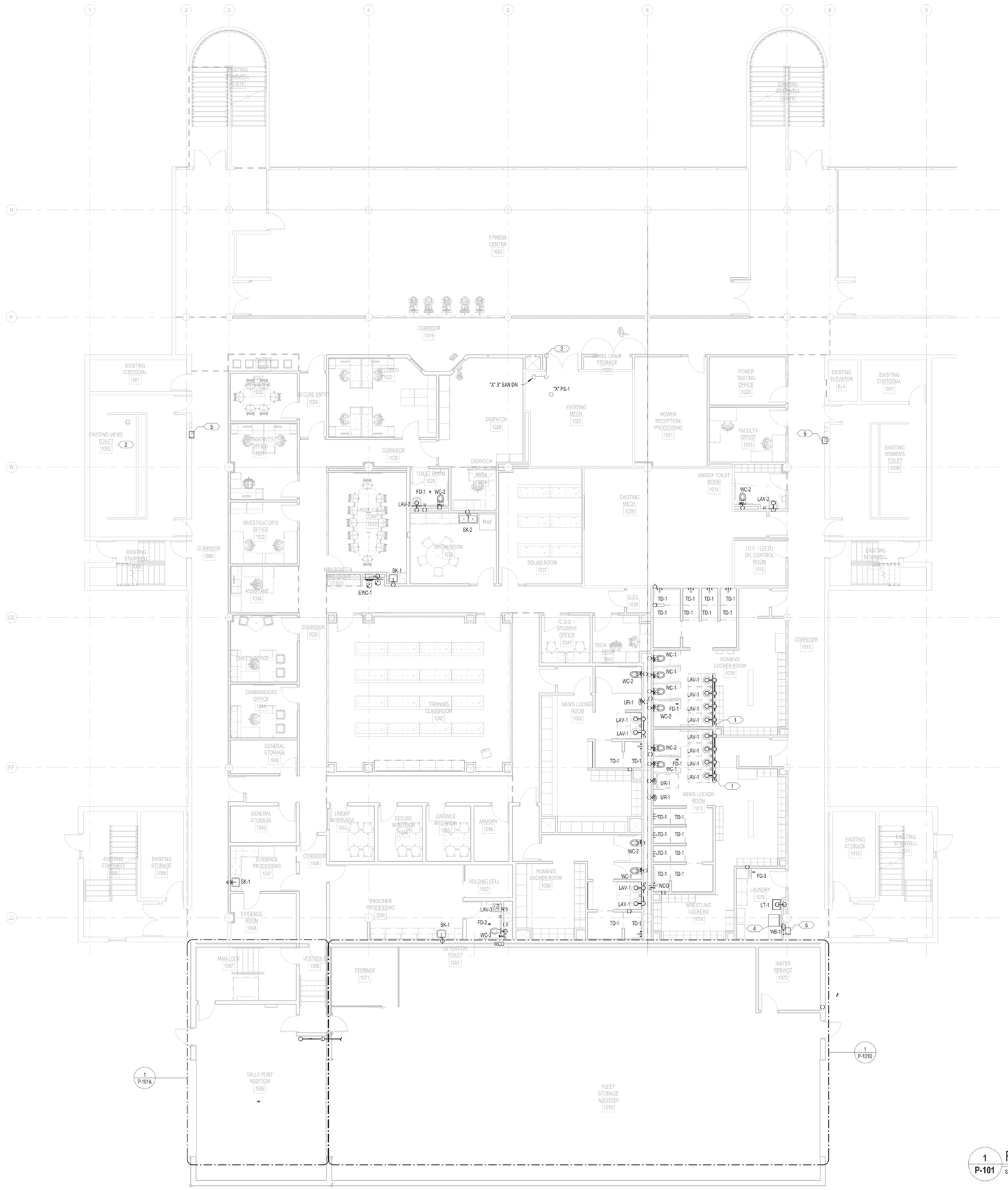

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13. 75LB AIR TEST OR WATER PRESSURE REQUIRED ON WATER PIPING AT TIME OF ROUGH INSPECTION.

14. WATER SERVICE TO BUILDING SHALL BE INSTALLED BY WATER WELL CONTRACTOR

15. DOMESTIC WATER TO TEE OFF FIRE MAIN INSIDE BUILDING WITHIN 2' OF THE FIRE RPZ

16. ALL PIPING SHALL BE CONCEALED WITHIN WALLS TO THE GREATEST EXTENT POSSIBLE.

PLUMBING_KEYNOTES

Key Value	Keynote Text
1	CONNECT 2" SAN FROM (4) LAV-1 IN WALL AND DROP DOWN COMMON 2" SAN TO BELOW FLOOR.
2	EXISTING PLUMBING FIXTURE AND ASSOCIATED PIPING TO BE REMAIN AND NO NEW PLUMBING WORK NEEDED.
3	3" SAN UP TO EXISTING FLOOR SINK ON SECOND FLOOR
4	CONNECT WB-1 INTO EXISTING SAN AND VENT. CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING PIPES
5	EXISTING DRINKING FOUNTAIN AND ALL ASSOCIATED PIPING TO REMAIN

1 P-101 FIRST FLOOR PLUMBING SANITARY PLAN

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

PLUMBING

LEGAT ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

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FIRST FLOOR PLUMBING SANITARY PLAN

P-101

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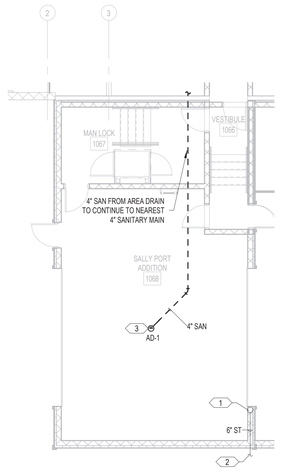

1 P-101A PLUMBING - ALTERNATE 1 - SALLY PORT - SANITARY PLAN

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

N

PLUMBING

PLUMBING_KEYNOTES	
Key Value	Keynote Text
1	4" ST DN FROM ABOVE FLOOR
2	CONNECT NEW 6" ST TO THE EXISTING ST MAIN. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND INVERT OF EXISTING ST MAIN.
3	COORDINATE EXACT LOCATION OF DRAIN WITH FLOOR SLOPE

LEGAT ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

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ALTERNATE #1 - PLUMBING SANITARY PLAN

P-101A

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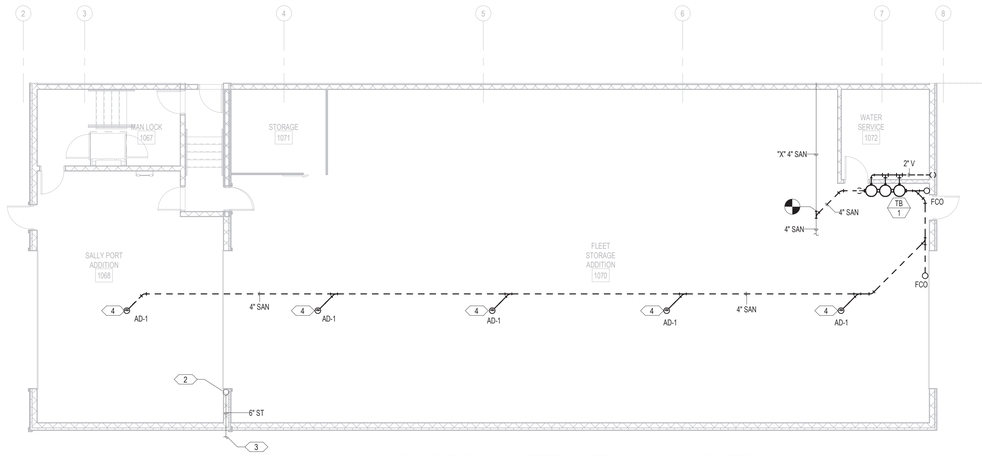
PLUMBING_KEYNOTES	
Key Value	Keynote Text
1	4" ST DN TO BELOW FLOOR
2	4" ST DN FROM ABOVE FLOOR
3	CONNECT NEW 6" ST TO THE EXISTING ST MAIN. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND INVERT OF EXISTING ST MAIN.
4	COORDINATE EXACT LOCATION OF DRAIN WITH FLOOR SLOPE

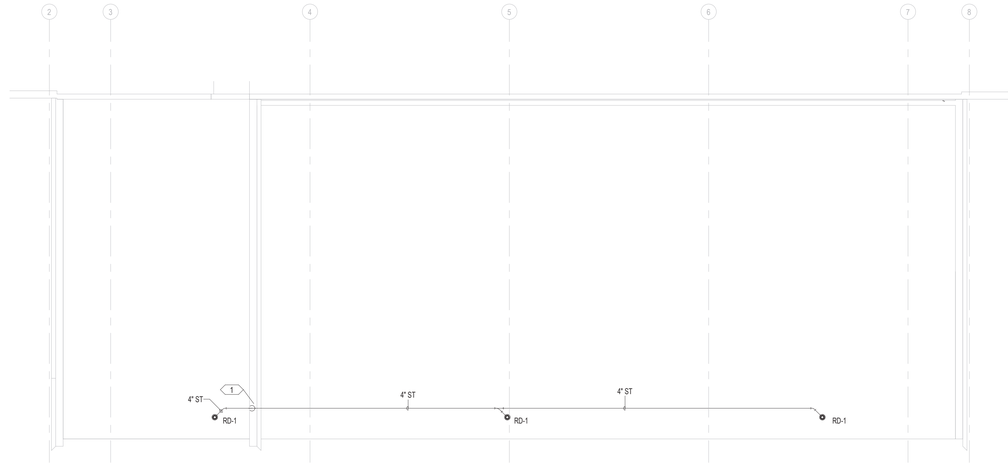


1 P-101B PLUMBING - ALTERNATE 2 - SALLY PORT & FLEET STORAGE - SANITARY PLAN

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

N

PLUMBING

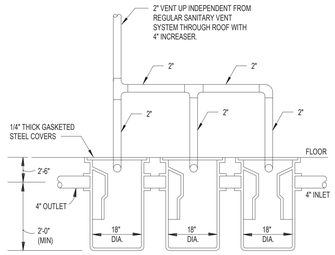


2 P-101B PLUMBING - ALTERNATE 2 - SALLY PORT & FLEET STORAGE - ROOF PLAN

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

N

PLUMBING



FURNISH (1) AK INDUSTRIES MODEL #TGB-18X054-200 (VERIFY INVERT HEAVY DUTY FIBERGLASS TRIPLE GARAGE BASIN WITH 18" DIAMETER BY 4'-6" DEEP BASINS (VERIFY) EACH WITH APPROX. 27 GALLONS OF STORAGE. EACH BASIN SHALL HAVE 1/4" THICK, GASKETED, BOLT DOWN STEEL COVERS. BASIN SHALL BE GLASSED TOGETHER AT THE FACTORY.

TRIPLE BASIN CALCULATIONS FOR PARKING/VEHICLE STORAGE

SIZED PER ILLINOIS PLUMBING CODE SECTION 890.520 "GASOLINE, OIL AND FLAMMABLE LIQUIDS"

1.) TOTAL SQUARE FEET OF GARAGE AREA = 2,440

2.) FIRST 3,000 SQUARE FEET = 6 CUBIC FEET

3.) STORAGE REQUIRED = 6 CUBIC FEET

4.) CUBIC FEET MULTIPLIED BY 7.48 = 44.88 GALLONS

5.) TOTAL GALLONS DIVIDED BY 3 = 15 GALLONS STORAGE PER BASIN.

VOLUME IN GALLONS PER FOOT OF WATER

18" DIA = 13.5/FT	30" DIA = 36 /FT
24" DIA = 23.5/FT	48" DIA = 94/FT
36" DIA = 52.9/FT	72" DIA = 211.5/FT
60" DIA = 147/FT	

18" DIA BASIN x 24 DEEP= 27 GALLONS EACH
TOTAL STORAGE - 81 GALLONS (2X CAPACITY FOR FUTURE NEED)

3 P-101B TRIPLE GARAGE BASIN

SCALE: 1/4" = 1'-0"

N

PLUMBING

LEGAT ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

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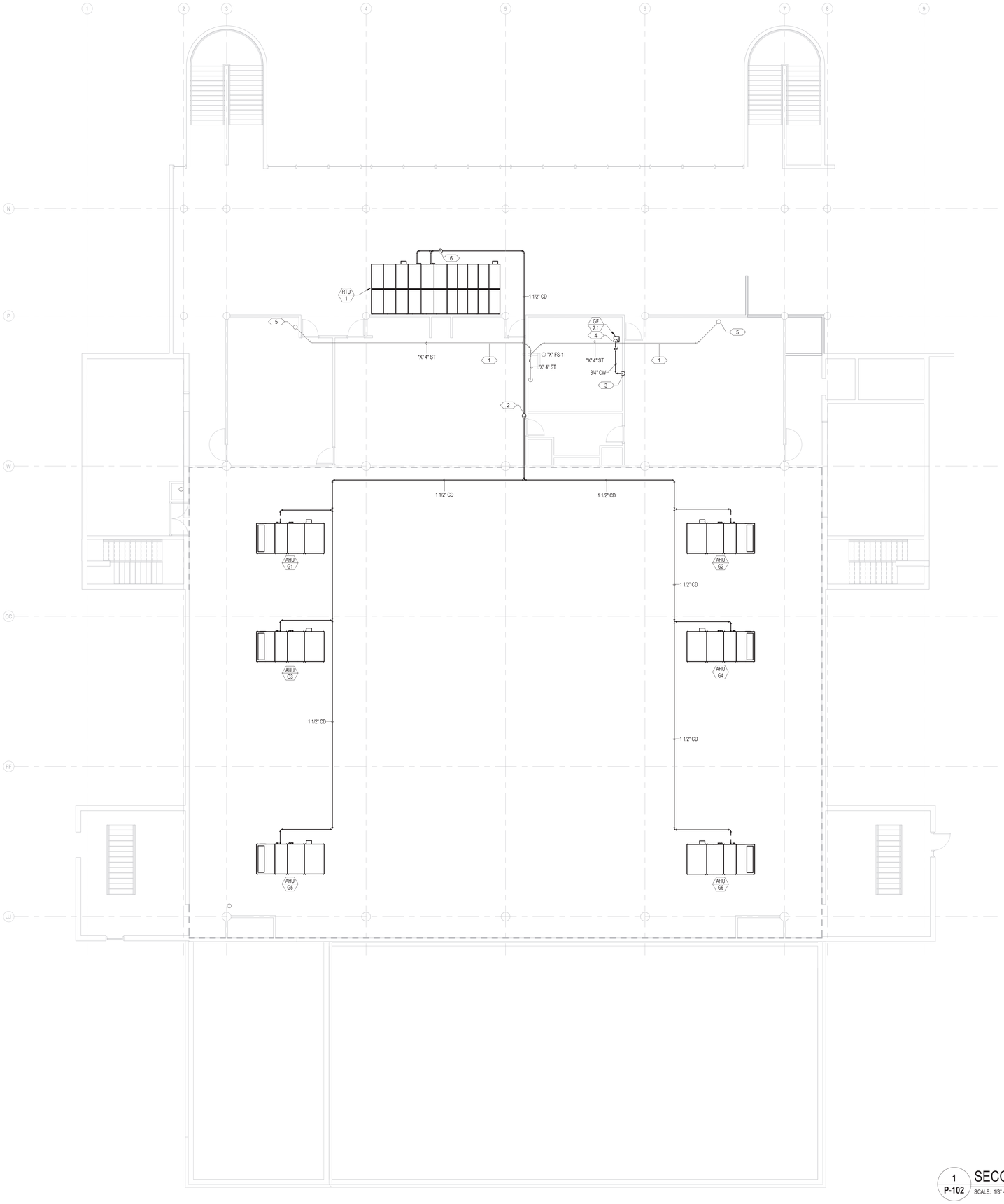
ALTERNATE #2 - PLUMBING SANITAY PLAN

P-101B

ISSUED FOR BID



PLUMBING_KEYNOTES

Key Value	Keynote Text
1	EXISTING 4" STORM PIPING TO REMAIN
2	1-1/2" CD DN TO BELOW FLOOR
3	3/4" CW FROM BELOW FLOOR
4	3/4" CW TO GLYCOL FILL STATION
5	4" ST DN FROM EXISTING ROOF DRAIN
6	1-1/2" CD DN THROUGH ROOF TO CONNECT INTO EXISTING CONDENSATE DRAIN PIPING

1 P-102 SECOND FLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"

N
PLUMBING

LEGAT ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

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SECOND FLOOR PLUMBING PLAN

P-102
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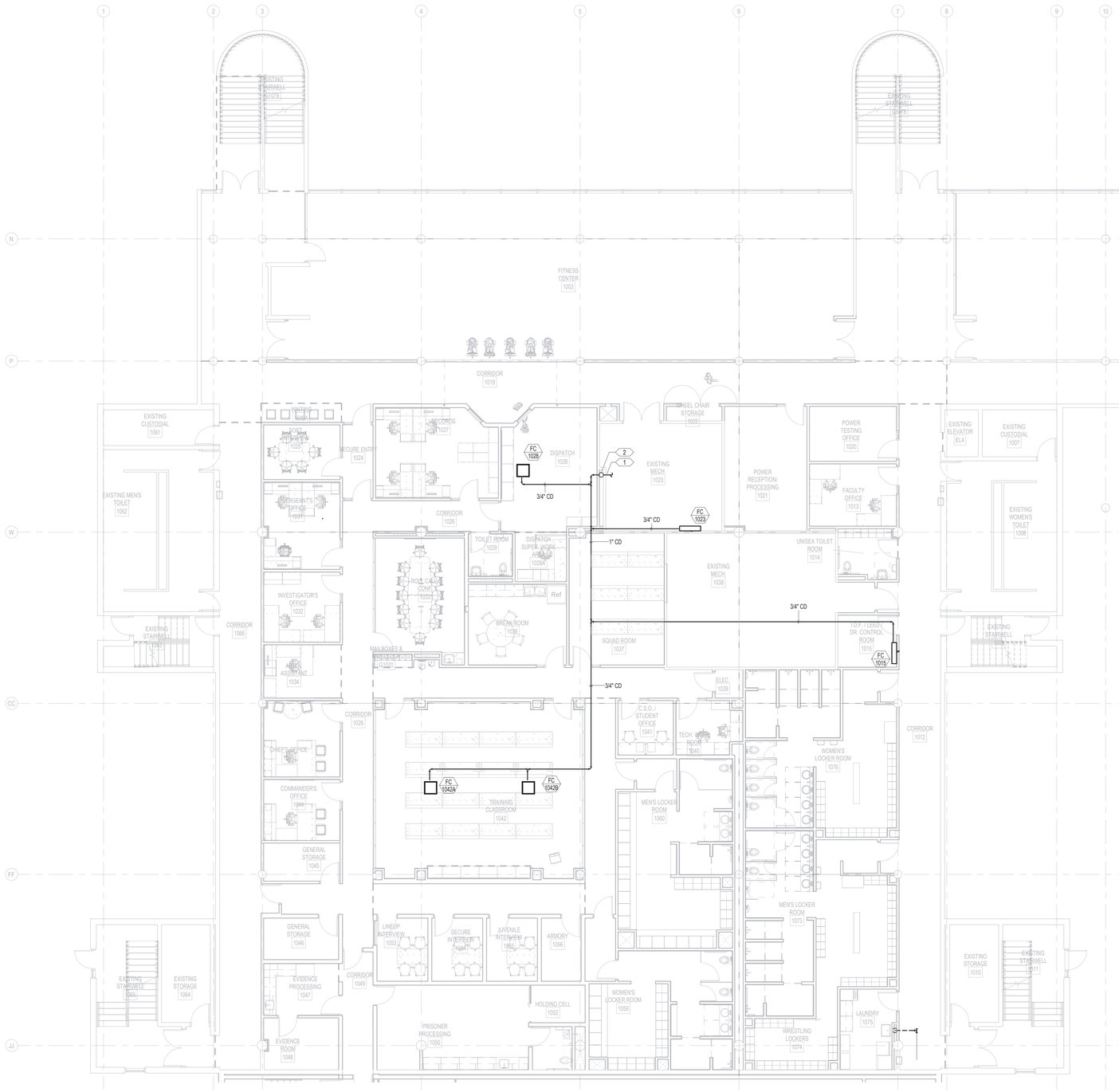

PLUMBING_KEYNOTES	
Key Value	Keynote Text
1	PROVIDE 2" CD TO NEAREST EXISTING FLOOR SINK IN THE EXISTING MECHANICAL ROOM. CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF FLOOR SINK.
2	1-1/2" CD DN FROM ABOVE FLOOR

FIRST FLOOR PLUMBING CONDENSATE DRAIN PLAN

1 / P-103 SCALE: 1/8" = 1'-0"

PLUMBING

N

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FIRST FLOOR PLUMBING CONDENSATE DRAIN PLAN

P-103

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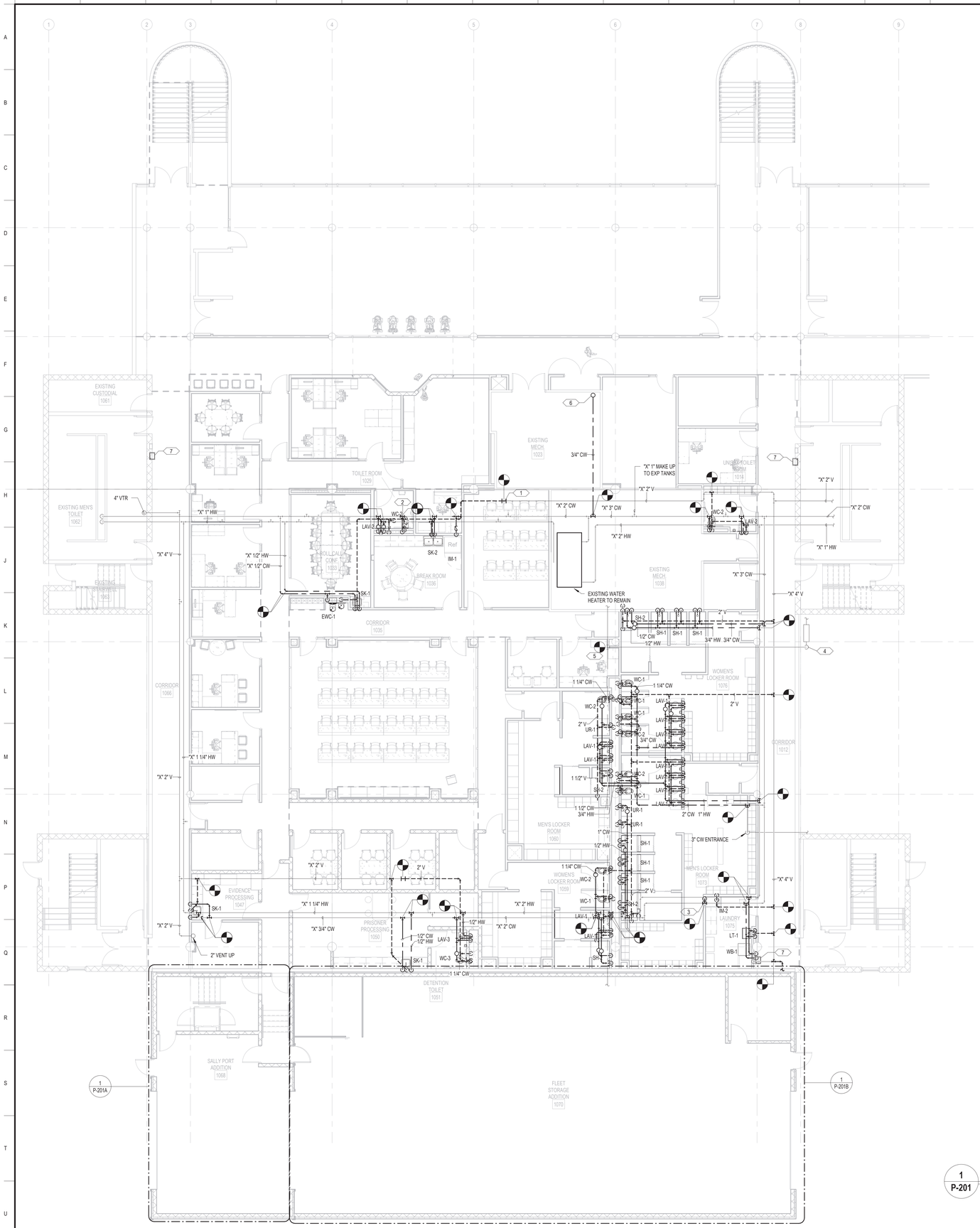

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3. COORDINATE WITH THE WORK OF OTHER SECTIONS, EQUIPMENT FURNISHED BY OTHERS, REQUIREMENTS OF THE OWNER, AND WITH THE CONSTRAINTS OF THE EXISTING CONDITIONS OF THE PROJECT SITE. PROVIDE PIPE RISES, DROPS, AND OFFSETS, AS REQUIRED FOR FIELD INSTALLATION AND TRADE COORDINATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES BEFORE STARTING WORK.

4. DRAWINGS FOR PLUMBING WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT, AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENT. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS. REFER TO MANUFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS. PROVIDE PIPING, CONNECTIONS, FITTINGS, VALVES, OFFSETS, ETCETERA AND ALL MATERIALS NECESSARY FOR A COMPLETE SYSTEM.

5. ALL WORK SHALL COMPLY WITH STATE AND LOCAL CODE REQUIREMENTS AS APPROVED AND AMENDED BY THE GOVERNING CITY AND THE AUTHORITY HAVING JURISDICTION. OWNER TO PURCHASE ALL PERMITS ASSOCIATED WITH THE WORK. OBTAIN ALL INSPECTIONS REQUIRED BY CODE.

6. PROVIDE BACKFLOW PREVENTION DEVICES IN WATER LINES FEEDING PLUMBING FIXTURES AND/OR EQUIPMENT, AS SHOWN ON PLANS AND ELSEWHERE AS REQUIRED BY AUTHORITY HAVING JURISDICTION. USE DEVICES OF APPROVED MANUFACTURER AND TYPE IN ACCORDANCE WITH REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

7. CONTRACTOR SHALL VERIFY WATER PRESSURE PRIOR TO CONSTRUCTION. IF PRESSURE AT BUILDING ENTRY PRIOR TO ALL LOCALLY REQUIRED DEVICES IS LESS THAN 60 PSIG STATIC, CONTACT OWNER'S REPRESENTATIVE. IF PRESSURE EXCEEDS 80 PSIG, PROVIDE PRESSURE REDUCING VALVE.

8. SUSPEND HORIZONTAL SERVICE PIPING FROM UNDERSIDE OF ROOF OR FLOOR STRUCTURE UNLESS OTHERWISE INDICATED. INSTALL PIPING AS HIGH AS POSSIBLE. EXTEND PIPING DOWN IN WALLS, PARTITIONS, AND CHASES TO SERVE FIXTURES AND EQUIPMENT.

9. VERIFY SERVICE CONNECTION POINTS, SIZES, ELEVATIONS, AND METERING LOCATIONS FOR PROJECT WITH LOCAL UTILITY COMPANIES AND/OR CIVIL ENGINEER AS APPLICABLE.

10. USE OF COMBUSTIBLE MATERIALS IS NOT ALLOWED IN RETURN AIR PLENUMS. MATERIALS USED IN THE PLENUM SHALL HAVE FLAME SPREAD RATING NOT TO EXCEED 25, AND SMOKE DEVELOPED RATING NOT TO EXCEED 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84.

11. STACK TEST REQUIRED ON ALL ROUGH AND UNDERGROUND PLUMBING.

12. 25LB AIR TEST REQUIRED ON GAS PIPING AT TIME OF ROUGH INSPECTION.

13. 75LB AIR TEST OR WATER PRESSURE REQUIRED ON WATER PIPING AT TIME OF ROUGH INSPECTION.

14. DOMESTIC WATER TO TEE OFF FIRE MAIN INSIDE BUILDING WITHIN 2' OF THE FIRE RPZ

15. ALL PIPING SHALL BE CONCEALED WITHIN WALLS TO THE GREATEST EXTENT POSSIBLE.

PLUMBING_KEYNOTES

Key Value	Keynote Text
1	CONNECT NEW VENT TO EXISTING VENT MAIN. CONTRACTOR HAS TO FIELD VERIFY THE EXACT LOCATION.
2	CONNECT NEW CW TO EXISTING CW MAIN. CONTRACTOR HAS TO FIELD VERIFY THE EXACT LOCATION.
3	PROVIDE BACKFLOW PREVENTER TO IM-1
4	EXISTING MEDIUM PRESSURE GAS PIPING TO REMAIN.
5	NEW 3/4" GAS LINE TO SERVE IRH FOR ALTERNATE SALLY PORT & FLEET STORAGE ONLY. IF ALTERNATE IS NOT APPROVED NO NEW GAS CONNECTION IS NEEDED
6	3/4" CW UP TO ABOVE FLOOR TO SERVE GLYCOL FILL STATION
7	EXISTING DRINKING FOUNTAIN AND ALL ASSOCIATED PIPING TO REMAIN

1 P-201 FIRST FLOOR PLUMBING DOMESTIC WATER PLAN

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

PLUMBING

N

LEGAT ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

JOLIET JUNIOR COLLEGE

CAMPUS POLICE RENOVATIONS

1215 Houbolt Road
Joliet, IL 60431

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
RT&A Inc.
129 Capista Drive
Shorewood, IL 60404
P: 815.744.6600
www.ruettigertonelli.com

STRUCTURAL ENGINEER
Pease Borst & Associates
18 Exectutive Court
South Barrington, IL 60010
P: 847.842.6930
F: 847.842.6935
www.peaseborst.com

MEP/FP ENGINEER
RTM Engineering Consultants
650 E. Algonquin, Suite 250
Schaumburg, IL 60173
P: 847.756.4180
www.rtmec.com

rtm engineering consultants
650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4186 | www.rtmec.com

PROFESSIONAL ENGINEER
JESSICA L IVERSEN
062-068559
STATE OF ILLINOIS

SIGNATURE

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FIRST FLOOR PLUMBING DOMESTIC WATER PLAN

P-201

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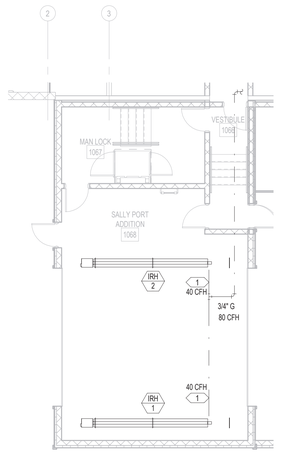

PLUMBING_KEYNOTES	
Key Value	Keynote Text
1	3/4" GAS CONNECTION TO UNIT. PROVIDE WITH SHUTOFF VALVE, PRESSURE REGULATOR, AND DIRT LEG

1 P-201A

PLUMBING - ALTERNATE 1 - SALLY PORT - DOMESTIC WATER PLAN

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

PLUMBING

N

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Joliet, IL 60431

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Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
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Shorewood, IL 60404
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South Barrington, IL 60010
P: 847.842.6930
F: 847.842.6935
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Schaumburg, IL 60173
P: 847.756.4180
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rtm engineering consultants
650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4186 www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L. IVERSEN
062-068559
STATE OF ILLINOIS

SIGNATURE
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ALTERNATE #1 - PLUMBING DOMESTIC WATER PLAN

P-201A

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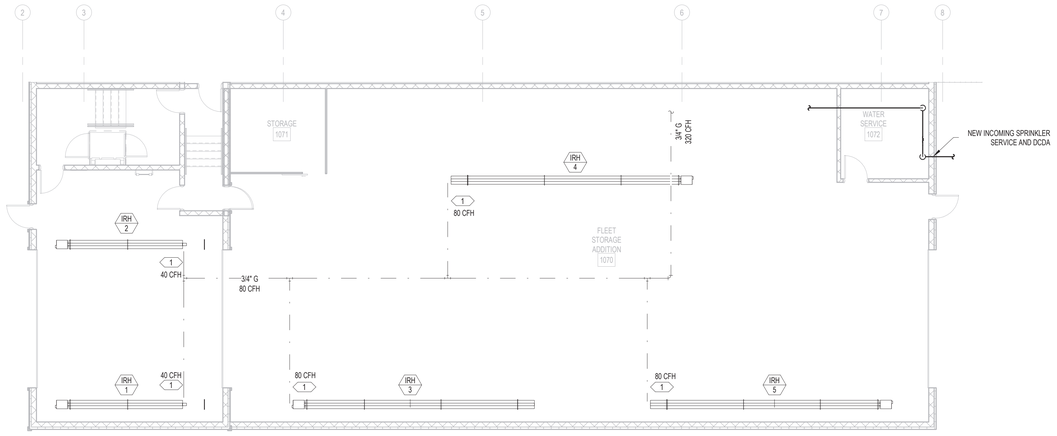

1 P-201B PLUMBING - ALTERNATE 2 - SALLY PORT & FLEET STORAGE - DOMESTIC WATER PLAN

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

N

PLUMBING

PLUMBING_KEYNOTES	
Key Value	**Keynote Text**
1	3/4" GAS CONNECTION TO UNIT. PROVIDE WITH SHUTOFF VALVE, PRESSURE REGULATOR, AND DIRT LEG

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JOLIET JUNIOR COLLEGE

CAMPUS POLICE RENOVATIONS

1215 Houbolt Road
Joliet, IL 60431

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
RT&A Inc.
129 Capista Drive
Shorewood, IL 60404
P: 815.744.6600
www.ruettigertonelli.com

STRUCTURAL ENGINEER
Pease Borst & Associates
18 Exectutive Court
South Barrington, IL 60010
P: 847.842.6930
F: 847.842.6935
www.peaseborst.com

MEP/FP ENGINEER
RTM Engineering Consultants
650 E. Algonquin, Suite 250
Schaumburg, IL 60173
P: 847.756.4180
www.rtmec.com

rtm engineering consultants
650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4189 www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L. IVERSEN
062-068559
STATE OF ILLINOIS

SIGNATURE
DATE 6/25/2021

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CHECKED BY	Checker

ALTERNATE #2 - PLUMBING DOMESTIC WATER PLAN

P-201B
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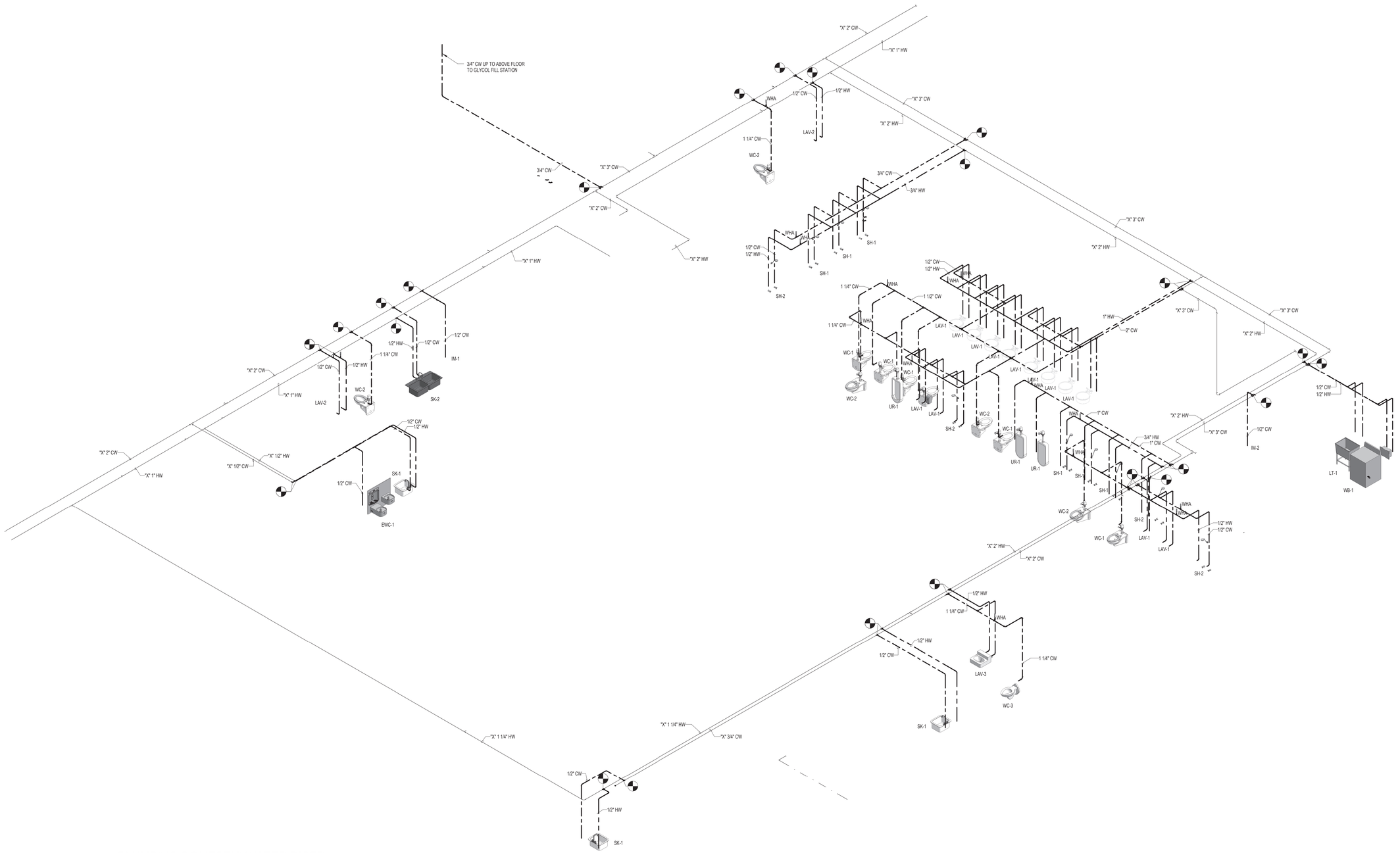

1 P-300 PLUMBING-DOMESTIC WATER RISER DIAGRAM

NO SCALE

PLUMBING

LEGAT ARCHITECTS
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CAMPUS POLICE RENOVATIONS

1215 Houbolt Road
Joliet, IL 60431

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
RT&A Inc.
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South Barrington, IL 60010
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650 E. Algonquin, Suite 250
Schaumburg, IL 60173
P: 847.756.4180
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650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4186 | www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L IVERSEN
062-068559
STATE OF ILLINOIS

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DOMESTIC WATER RISER DIAGRAM

P-300
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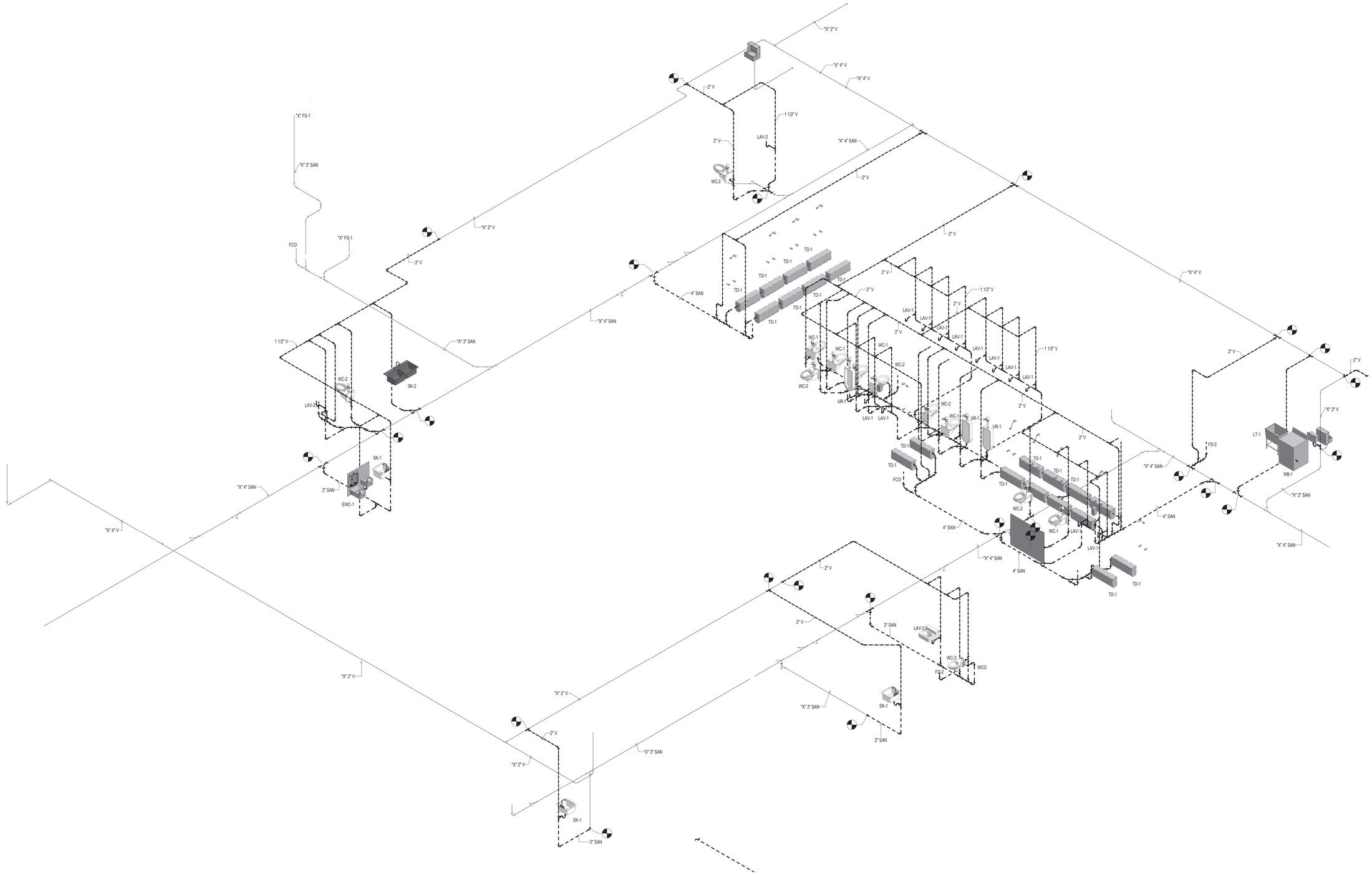

1 P-301 PLUMBING-SANITARY & VENT RISER DIAGRAM

NO SCALE

PLUMBING

LEGAT ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

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CAMPUS POLICE RENOVATIONS

1215 Houbolt Road
Joliet, IL 60431

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
RT&A Inc.
129 Capista Drive
Shorewood, IL 60404
P: 815.744.6600
www.ruettigertonelli.com

STRUCTURAL ENGINEER
Pease Borst & Associates
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South Barrington, IL 60010
P: 847.842.6930
F: 847.842.6935
www.peaseborst.com

MEP/FP ENGINEER
RTM Engineering Consultants
650 E. Algonquin, Suite 250
Schaumburg, IL 60173
P: 847.756.4180
www.rtmec.com

rtm engineering consultants
650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4186 | www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L IVERSEN
062-068559
STATE OF ILLINOIS

SIGNATURE

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SANITARY & VENT RISER DIAGRAM

P-301

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DUCTWORK NOTES

1. ALL DUCTWORK SIZES SHOWN ON THE DRAWINGS ARE INSIDE DIMENSIONS. WHERE DUCT LINING IS CALLED FOR CONTRACTOR SHALL INCREASE THE SIZE OF THE DUCT TO MAINTAIN THE CLEAR INSIDE DIMENSIONS CALLED FOR ON THE DRAWINGS.
2. ALL DUCTWORK CONNECTIONS TO AIR MOVING EQUIPMENT SHALL BE MADE WITH FLEXIBLE DUCT CONNECTIONS ON THE INLET AND DISCHARGE OF ALL SUPPLY, RETURN AND EXHAUST FANS (EXCEPT ROOF MOUNTED EXHAUST FANS).
3. INSTALL TURNING VANES IN ALL SQUARE DUCT ELBOWS. INSTALL MANUAL VOLUME DAMPERS IN EACH BRANCH DUCT AT CONNECTION TO MAIN DUCT AND IN EACH DUCT AFTER A BRANCH DUCT SPLIT.
4. THE LOCATIONS SHOWN FOR ALL DIFFUSERS, REGISTERS AND GRILLES, ETC. ARE DIAGRAMMATIC. EXACT LOCATION SHALL BE DETERMINED FROM THE REFLECTED CEILING PLANS AND/OR ON THE JOB SITE BY THE CONSTRUCTION MANAGER REPRESENTATIVES.
5. INSTALL A MINIMUM 12"x12" ACCESS DOOR (INLET SIDE) AT EACH MOTORIZED DAMPER, FIRE DAMPER, SMOKE DAMPER, INTAKE AND EXHAUST PLENUMS AND AN ACCESS DOOR AT AIR SUPPLY UNIT FILTER SECTION.
6. INSTALL AMCA APPROVED FUSIBLE LINK FIRE DAMPERS IN ALL DUCTS WHICH PASS THROUGH FIRE RATED WALLS AND FLOORS AND AS INDICATED ON DRAWINGS. WHERE FIRE DAMPERS CANNOT BE CHECKED FROM A REGISTER OR GRILLE, INSTALL AN ACCESS DOOR IN THE DUCT NEXT TO THE DAMPER AND ACCESS PANEL IN ALL NEW ACCESSIBLE CEILINGS.
7. ALL DUCTS JOINTS SEALED WITH DUCT MASTIC OR APPROVED TAPE

GENERAL NOTES

1. DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING AND DUCTWORK AS SHOWN DOES NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. EACH CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
2. IT IS INTENDED THAT EQUIPMENT SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS OF THE BUILDING, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLEARNESS OF PRESENTATION.
3. CONTRACTOR SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH THEIR WORK WILL BE INSTALLED ARE CLEAR OF OBSTRUCTIONS. WORK SHALL BE INSTALLED TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITION AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL NOTIFY ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK. DUCT TO BE INSTALLED AS TIGHT TO THE UNDERSIDE OF THE DECK AS CLEARANCES ALLOW TO MAXIMIZE CEILING HEIGHT.
4. CONTRACTOR SHALL FURNISH OTHER TRADES ADVANCE INFORMATION AND/OR SHOP DRAWINGS ON LOCATIONS AND SIZES OF PIPING, DUCTWORK, CONDUIT, RACEWAYS, EQUIPMENT, FRAMES, BOXES, SLEEVES AND OPENINGS, ETC. NEEDED FOR THEIR WORK TO PERMIT OTHER TRADES AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.
5. WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTORS SHALL VERIFY EXACT LOCATIONS OF ALL DEVICES AND EQUIPMENT WITH FIELD CONDITIONS, SHOP DRAWINGS, AND WORK OF OTHER TRADES PRIOR TO ROUGH-IN. CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.
6. CONTRACTOR SHALL PROVIDE SLEEVES IN BEAMS, FLOORS, COLUMNS AND WALLS AS SHOWN ON THE DRAWINGS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR AS SPECIFIED, WHEN INSTALLING THEIR WORK. ALL BEAMS AND COLUMNS WHICH ARE REQUIRED TO BE SLEEVED SHALL BE CUT AND REINFORCED AS REQUIRED BY FIELD CONDITIONS AND LOCATIONS AND SIZES SHALL BE CHECKED AND APPROVED BY STRUCTURAL ENGINEERS BEFORE CONTRACTOR CUTS ANY STRUCTURAL BUILDING MEMBER.
7. THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH CONSTRUCTION MANAGER AND OWNERS STIPULATION AS CALLED FOR IN THE SPECIFICATION AND/OR AS DIRECTED.
8. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL CONTRACT DRAWINGS (BEFORE SUBMITTING THEIR BIDS) TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE OTHER TRADES CONTRACTORS WORK, CEILING HEIGHTS AND CLEARANCE FOR INSTALLING THEIR WORK.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CLEAN-UP DURING CONSTRUCTION. IF CONTRACTOR FAILS TO PROVIDE SUCH CLEAN-UP, THE ARCHITECT/ENGINEER WILL DIRECT ANOTHER CONTRACTOR TO PERFORM THE CLEAN-UP AND THE NEGLIGENT CONTRACTOR SHALL PAY THE ASSOCIATED BACK-CHARGES AS DEEMED APPROPRIATE BY THE CONSTRUCTION MANAGER.
10. CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR PIPING, DUCTWORK, CONDUIT, EQUIPMENT, ETC. ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS ONLY.
11. CONTRACTOR SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. IF MATERIAL IS STORED OUTSIDE OF THE BUILDING, IT MUST BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") SET ON 6 X 6 PLANKS AND/OR WOOD PALLETS. ALL MATERIAL AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WATERPROOF TARPS OR VISQUIN. ALL PIPING AND DUCTWORK WILL HAVE THE ENDS CLOSED TO KEEP OUT DIRT AND OTHER DEBRIS. NO EQUIPMENT WILL BE ALLOWED TO BE STORED ON THE SITE UNLESS IT IS SITTING ON WOOD PLANKS AND COMPLETELY PROTECTED WITH WEATHERPROOF COVERS.
12. THE DRAWINGS, SCHEDULES AND SPECIFICATIONS HAVE BEEN PREPARED USING ONE MANUFACTURER FOR EACH PIECE OF EQUIPMENT AS THE BASIS FOR DIMENSIONAL DESIGN. IF THE CONTRACTOR PURCHASES EQUIPMENT LISTED AS A SPECIFIED ACCEPTABLE MANUFACTURER BUT IS NOT THE SCHEDULED MANUFACTURER USED FOR THE BASE DESIGN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. MINOR DEVIATIONS IN DIMENSIONS WILL BE PERMITTED, PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH SUITABLE ACCESS AROUND EQUIPMENT FOR OPERATION AND MAINTENANCE ON THE EQUIPMENT.
13. CONTRACTOR AND/OR MANUFACTURER SHALL VERIFY THAT THE CHARACTERISTICS OF THE EQUIPMENT THEY SUBMIT FOR REVIEW MEETS THE CAPACITY AND DUTY SPECIFIED. WHEN EQUIPMENT IS SUBMITTED FOR REVIEW AND DOES NOT MEET THE PHYSICAL SIZE OR ARRANGEMENT OF THAT SCHEDULED AND SPECIFIED, CONTRACTOR SHALL PAY FOR ALL ALTERATIONS REQUIRED TO ACCOMMODATE SUCH EQUIPMENT AT NO ADDITIONAL COST TO OWNER. CONTRACTOR WILL ALSO PAY ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, OWNER, ARCHITECT OR ENGINEER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT TO FIT IN THE SPACE AND FUNCTION AS INTENDED.
14. MECHANICAL CONTRACTOR SHALL PROVIDE ON SITE TRAINING OF OWNERS OPERATING PERSONNEL FOR ALL SYSTEMS AND EQUIPMENT INSTALLED UNDER THEIR CONTRACT.
15. BEFORE STARTING ANY SYSTEM INSTALLING CONTRACTOR SHALL CONTACT EQUIPMENT MANUFACTURER TO VERIFY THAT EACH PIECE OF EQUIPMENT OR SYSTEM HAS BEEN CHECKED FOR PROPER LUBRICATION, DRIVE ROTATION, BELT TENSION, CONTROL SEQUENCE OR OTHER CONDITIONS WHICH MAY CAUSE DAMAGE TO THE EQUIPMENT.
16. CONTRACTOR AND/OR MANUFACTURER SHALL VERIFY THAT THE CHARACTERISTICS OF THE EQUIPMENT THEY SUBMIT FOR REVIEW MEETS THE CAPACITY AND DUTY SPECIFIED.
17. THE MECHANICAL CONTRACTOR TO PROVIDE 1/4 INCH SCALE PIPING AND DUCTWORK DRAWINGS FOR COORDINATION WITH OTHER TRADES. DRAWINGS TO INDICATE DIMENSIONS AND ELEVATIONS OF ALL PIPING AND DUCTWORK. DRAWINGS TO ALSO INCLUDE ALL WALL/FLOOR/ROOF OPENINGS.

PIPING NOTES

1. ALL PIPING SHALL BE SUSPENDED WITH CLEVIS AND/OR TRAPEZE PIPE HANGERS. INSULATED PIPING SHALL REST ON STEEL OR WOOD PIPE COVERING PROTECTION SADDLES OR SHEET METAL INSULATION SHIELDS AS CALLED FOR IN THE SPECIFICATIONS AND/OR DETAILED ON THE DRAWINGS.
2. ALL PIPING PASSING THRU FLOOR CONSTRUCTION SHALL HAVE A SCHEDULE 40 STEEL PIPE SLEEVE INSTALLED AROUND PIPE ONLY. ALL PIPE PASSING THRU WALLS SHALL HAVE A GALVANIZED SHEET METAL OR SCHEDULE 40 STEEL PIPE SLEEVE INSTALLED AROUND THE PIPE AND PIPE INSULATION. SEE SLEEVE DETAILS THESE DRAWINGS.
3. SEE LARGE SCALE DRAWINGS (DETAILS) FOR ALL REQUIRED VALVES, FITTINGS, GAUGES, VENTS, THERMOMETERS WHICH ARE CONNECTED TO MECHANICAL EQUIPMENT. ALL WORK SHOWN ON DETAILS SHALL BE BY INSTALLING CONTRACTOR UNLESS OTHERWISE NOTED.
4. INSTALL A MANUAL SHUT OFF COCK AND DIRT LEG ON EACH BRANCH GAS LINE CONNECTED TO GAS FIRED EQUIPMENT. ALL VENT LINES FROM EACH GAS REGULATOR SHALL BE GROUPED INTO A COMMON HEADER AND RUN UP THRU ROOF TO A TURNED DOWN ELBOW WITH GALVANIZED INSECT SCREEN OVER OPENING.
5. MECHANICAL CONTRACTOR TO FURNISH AND INSTALL ALL GAS REGULATORS ON THE LEAVING SIDE OF THE GAS METER. ALL GAS REGULATORS WILL HAVE A VENT PIPE RUNNING TO A COMMON VENT HEADER WHICH TERMINATES 18" ABOVE THE ROOF WITH A GOOSENECK.
6. GAS PIPES MUST BE SLOPED AT 1/4 INCH IN EVERY 15 FEET. FUEL GAS PIPING CONTROLS MUST CONFORM TO THE IFGC, CHAPTER 4 (WITH MODIFICATIONS AS NOTED IN CHAPTER 14). GAS PIPING MATERIALS MUST CONFORM TO THE GAS PIPING & TUBING MATERIAL MATRIX (IFGC 403 REQUIREMENTS). PIPING IN CONCEALED LOCATIONS MUST CONFORM TO THIS IFGC 404.3. [IFGC 404.3].
7. MECHANICAL CONTRACTOR SHALL RUN INSULATED DRAIN PIPES FROM ALL HEATING/COOLING FAN COIL UNITS. SEE DRAWINGS AND DETAILS FOR LOCATION OF TERMINATION OF DRAIN PIPING. ALL CONDENSATE DRAIN PIPES MUST BE PITCHED AWAY FROM THE DRAIN PAN. ALL CONDENSATE DRAIN PIPES WILL BE INSULATED FROM UNIT TO TERMINATION POINT.
8. MECHANICAL CONTRACTOR SHALL INSTALL PVC DRAIN PIPING FROM ALL BUILT-UP AIR SUPPLY UNITS. DRAIN PIPE WILL BE RUN FROM UNIT DRAIN PAN TO NEAREST FLOOR DRAIN. DRAINS WILL NOT BE INSULATED FROM BUILT-UP AIR SUPPLY UNITS.

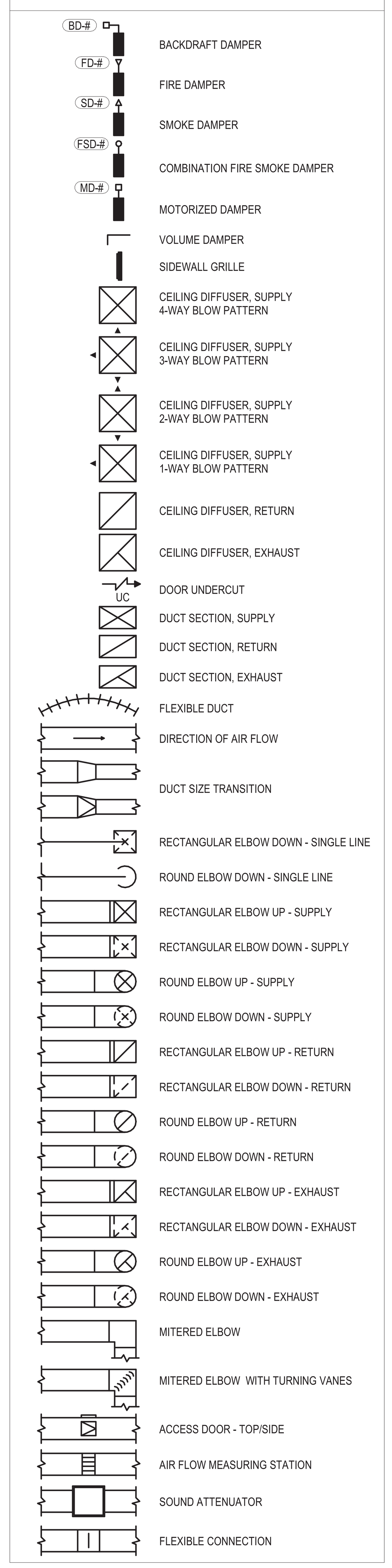
MECHANICAL GENERAL NOTES

1. CONTRACTOR SHALL ABIDE BY CONDITIONS OF CONTRACT AGREEMENT AND DIVISION 01 SPECIFICATIONS
2. ALL WORK SHALL BE IN ACCORDANCE WITH DIVISION 23 SPECIFICATIONS.
3. ALL AIR MOVING EQUIPMENT SHALL BE INSTALLED WITH VIBRATION ISOLATORS AND PROVIDED WITH FLEXIBLE DUCT CONNECTIONS.
4. ALL EQUIPMENT SHALL HAVE TOTALLY ENCLOSED MOTORS AND BE RATED TO OPERATE IN PLENUM CEILINGS, INCLUDING ALL SUPPLY AIR AND RETURN AIR FAN MOTORS EXPOSED TO THE AIR STREAM.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL NEW WORK WITH ALL TRADES PRIOR TO ANY WORK BEING DONE TO INSURE CONFLICTS DO NOT OCCUR.
6. ALL DUCT SIZES INDICATED ON PLANS AND RISERS ARE CLEAR INTERNAL DIMENSIONS. DUCT SIZES NOT SHOWN SHALL BE SIZED TO VELOCITIES NO GREATER THAN UPSTREAM SECTIONS USING SIMILAR ASPECT RATIOS.
7. ALL SUPPLY AIR TAKEOFFS FROM MAIN TRUNK DUCTS ARE TO BE INSTALLED WITH BELLMOUTH FITTINGS OR 45 DEGREE ENTRY TO PROVIDE THE SMOOTHEST AIR FLOW POSSIBLE.
8. PROVIDE GUIDES, HANGERS, EXPANSION LOOPS AND SUPPLEMENTARY STEEL SUPPORT WHERE REQUIRED FOR ALL PIPING.
9. ANY DISCREPANCY BETWEEN DRAWINGS, SPECIFICATIONS AND NOTES SHALL BE CLEARED WITH ENGINEER BEFORE THE BIDDING. NO EXTRAS SHALL BE ALLOWED FOR CLARIFICATIONS DURING CONSTRUCTION.
10. MECHANICAL CONTRACTOR SHALL SEAL ALL MECHANICAL PENETRATIONS THRU FIRE RATED FLOORS AND PARTITIONS WITH FIRE RATED MATERIAL INSTALLED PER MANUFACTURERS GUIDELINES AND U.L. REQUIREMENTS. MATERIAL SELECTION SHALL BE BASED ON RATING OF PARTITION PENETRATED. SEE ARCHITECTURAL DRAWINGS FOR FIRE RATINGS OF WALLS AND FLOORS
11. MECHANICAL CONTRACTOR TO COMPLETE FULL TESTING AND BALANCING OF ALL SUPPLY, RETURN AND EXHAUST AIR SYSTEMS IN RENOVATED SPACE
12. ALL OF THE EXISTING MECHANICAL EQUIPMENT, UTILITIES AND ALL ASSOCIATED APPURTENANCES SHALL BE DEMOLISHED AS SHOWN ON PLAN.
13. ALL GAS FIRED APPLIANCES SHALL BE VENTED IN ACCORDANCE WITH THE 2012 INTERNATIONAL FUEL GAS CODE AND NFPA 31.
14. NOISE LEVEL AT LOT LINE SHALL NOT EXCEED 55 DBA.
15. ALL NATURAL GAS PIPEWORK SHALL BE SCHEDULE 40 STEEL PIPE WITH THREADED FITTINGS BELOW 2" AND WELDED FITTINGS ABOVE 2".

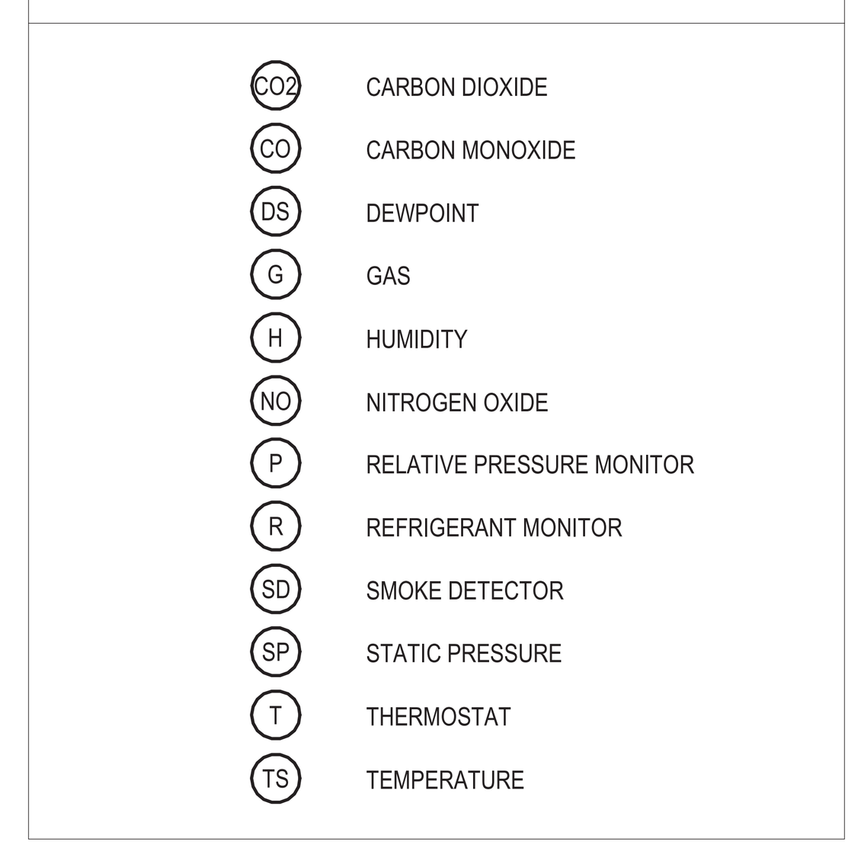
DEMOLITION NOTES

1. ALL DEMOLITION WORK SHALL BE PERFORMED WITH DUE CARE AND DILIGENCE SO AS TO PREVENT THE UNNECESSARY DESTRUCTION AND/OR DAMAGE TO SYSTEMS THAT SHALL REMAIN IN OPERATION AT THE CONCLUSION OF THIS WORK. DETERMINE THE EXACT LOCATION OF ALL EXISTING EQUIPMENT, DEVICES AND WIRING BEFORE COMMENCING WORK.
2. LOCATE AND PRESERVE ALL PORTIONS OF THE EXISTING HVAC SYSTEMS WHICH SHALL REMAIN.
3. CONTROLS DEVICES AND WIRING ARE NOT SHOWN ON THE DEMOLITION PLAN AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
4. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING HVAC DEVICES, EQUIPMENT, AND WIRING BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGED THAT MIGHT OCCUR BECAUSE OF THE CONTRACTORS FAILURE TO ACCURATELY DISCOVER, LOCATE, AND PROTECT ANY AND ALL PORTION OF THE EXISTING HVAC SYSTEM.
5. REMOVE AND REINSTALL (OR PROTECTION IN PLACE) ALL EXISTING EQUIPMENT AND DEVICES TO REMAIN ON OR IN WALLS, CEILINGS AND FLOORS WHICH SHALL BE EXPOSED TO DEMOLITION AND CONSTRUCTION ACTIVITIES AND WHICH MAY BE DAMAGED BY DUST, DEBRIS, ETC.,
6. WHERE EXISTING EQUIPMENT AND DEVICES SHALL BE REMOVED, THE CONTRACTOR SHALL REMOVE ALL THE ASSOCIATED DUCTWORK, PIPING, AND CONTROLS THAT SHALL NOT REMAIN IN OPERATION BACK TO THEIR RESPECTIVE SOURCE OR TO THE POINT ON A SHARED SYSTEM FROM WHERE THE EQUIPMENT OR DEVICE IS SERVED.
7. RELOCATE AS NECESSARY ALL EXISTING DUCTWORK, PIPING AND CONTROLS FOUND PASSING THROUGH THE AREA OF CONSTRUCTION, AND WHICH ARE PRESENTLY IN USE TO THE OTHER PORTIONS OF THE BUILDING UNAFFECTED BY THIS PROJECT PHASE. MAINTAIN THE CONTINUITY OF SERVICES AND GROUNDING, AND CONCEAL THEM ABOVE NEW CEILINGS.
8. ALL EXISTING DAMAGED DUCTWORK, GRILLES AND DEVICES WITHIN THE AREA OF CONSTRUCTION AND SHOWN TO REMAIN IN OPERATION SHALL BE REPLACED WITH NEW MATERIALS CONFORMING TO THESE CONTRACT DOCUMENTS.
9. ALL EQUIPMENT, DEVICES AND MATERIALS REMOVED DURING DEMOLITION WORK AND NOT INDICATED TO BE REUSED OR TURNED OVER TO THE USING AGENCY SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR FOR DISPOSAL.
10. THE CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING NECESSARY TO REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES PERFORMED BY THE CONTRACTOR. THIS WORK INCLUDES AREAS OUTSIDE ANY LIMITS OF CONSTRUCTION LINES SHOWN ON THE DRAWINGS.

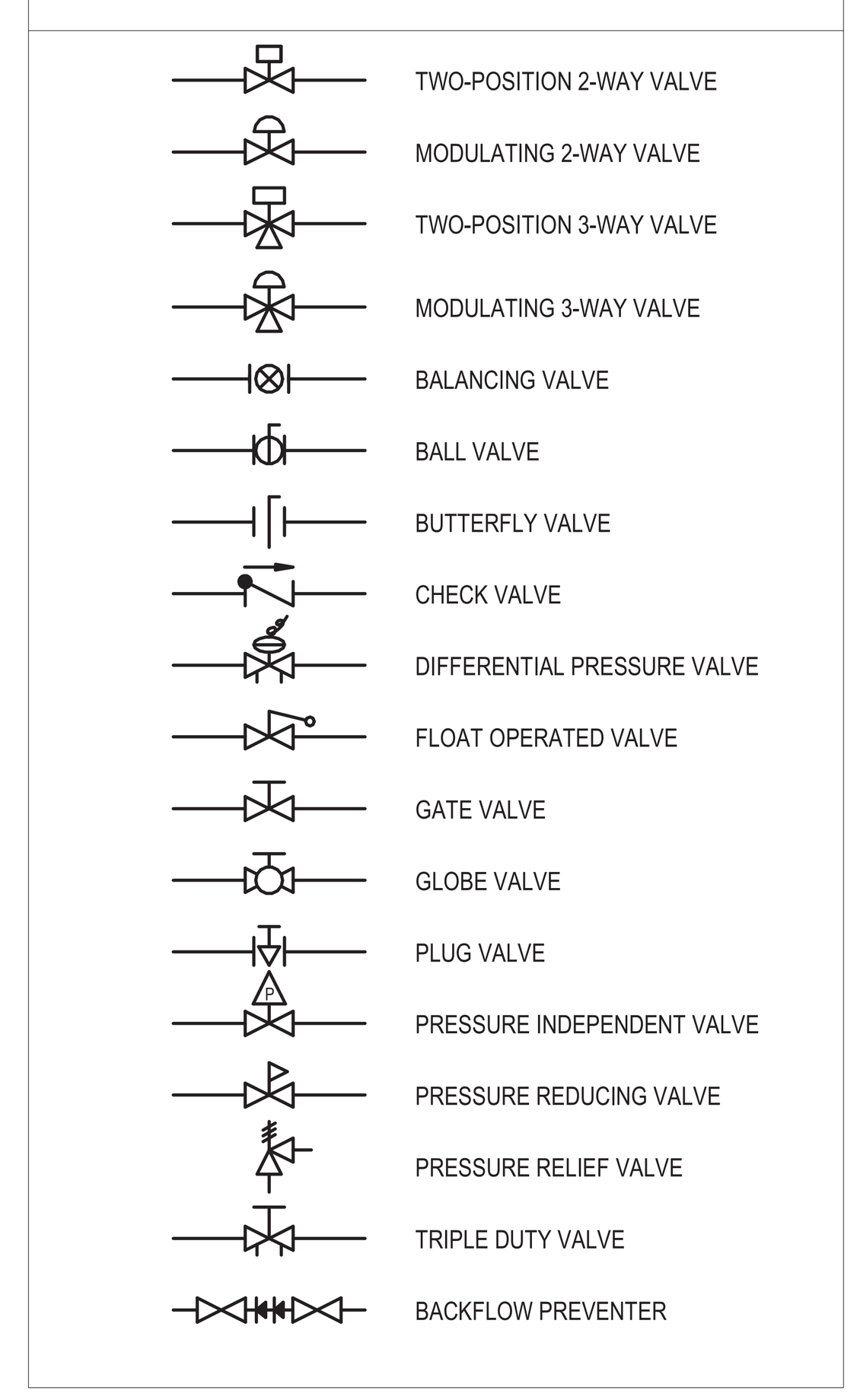
DUCT SYSTEMS



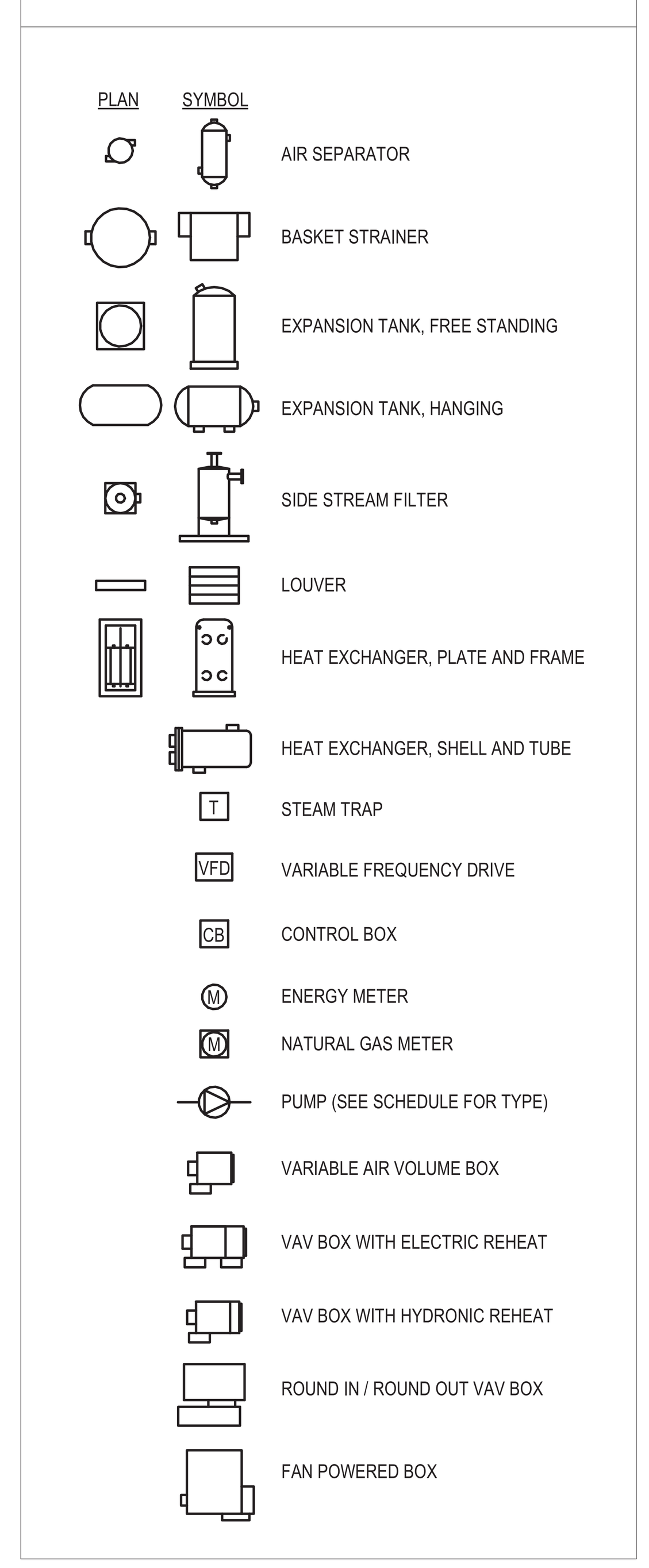
HVAC SENSORS



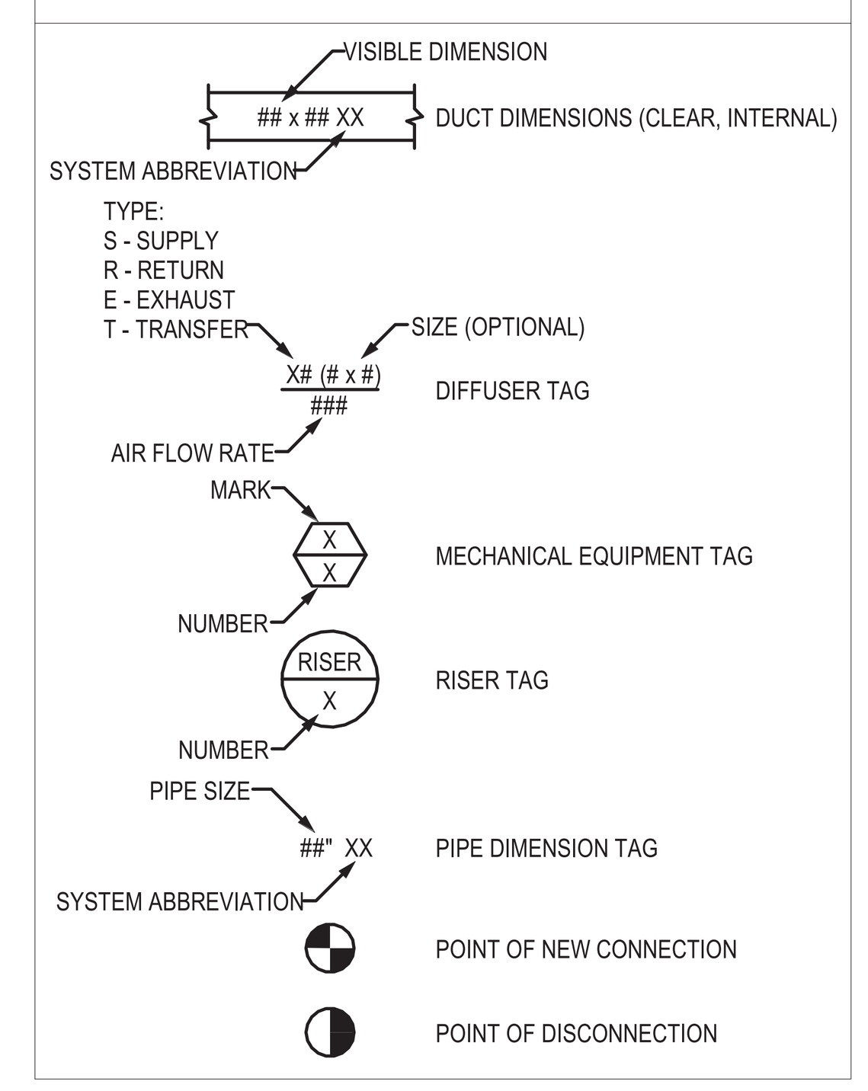
HYDRONIC VALVES



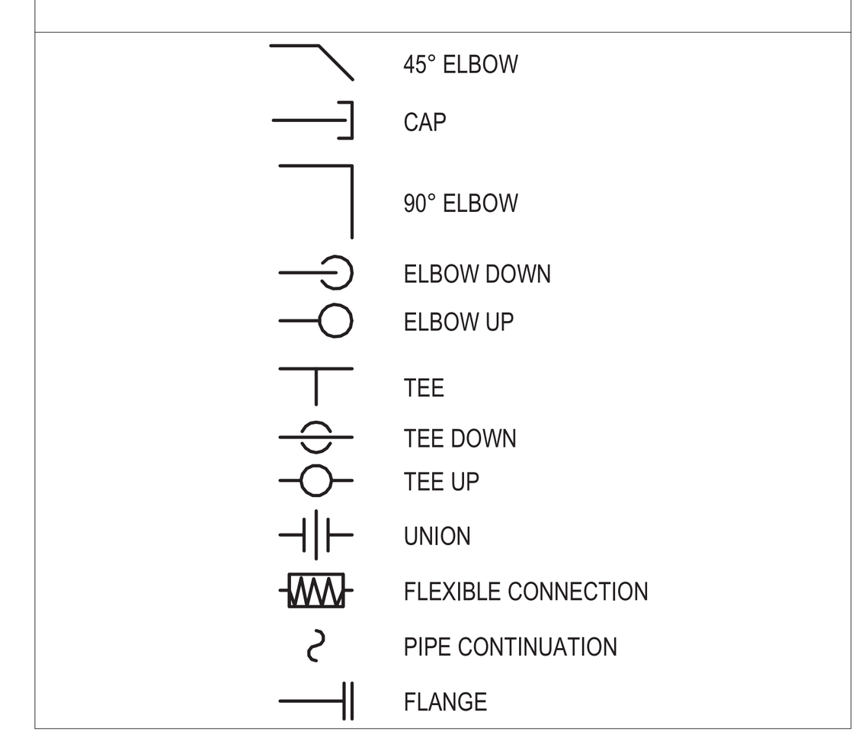
MECHANICAL EQUIPMENT



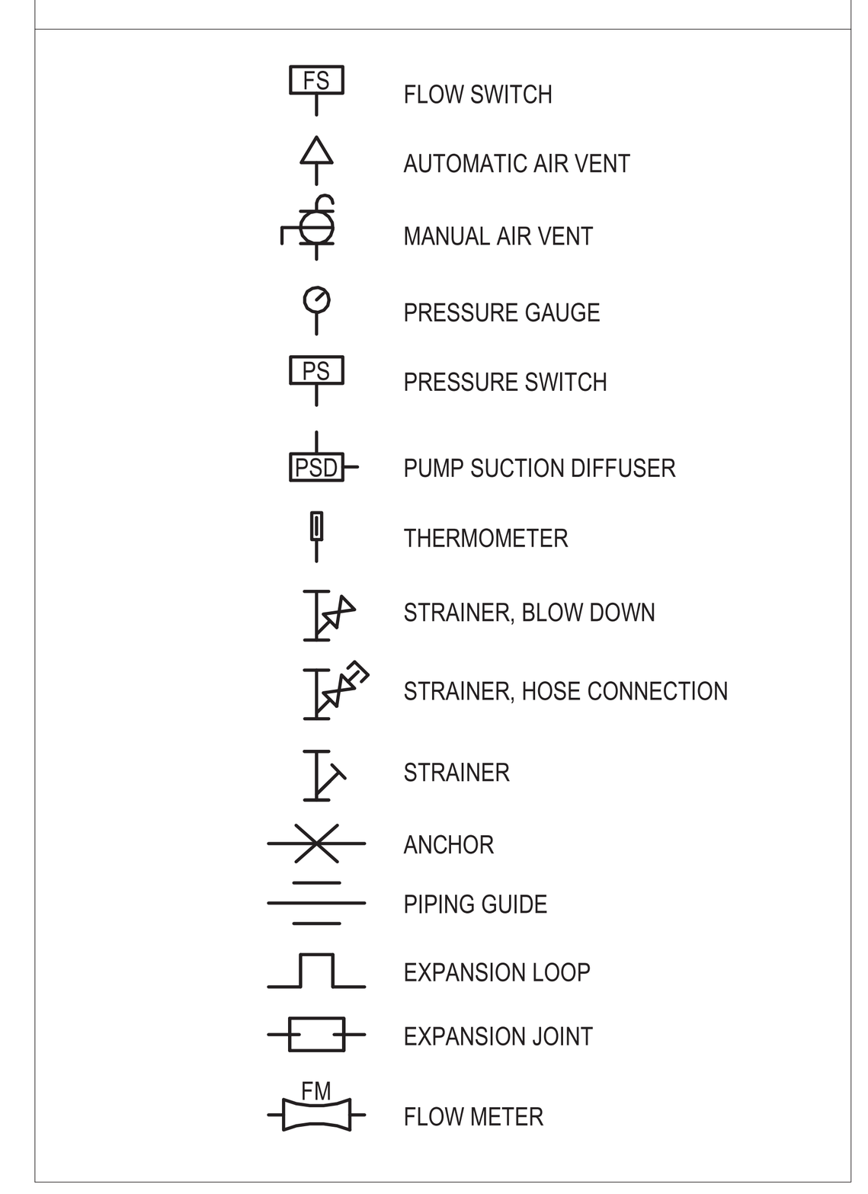
MECHANICAL TAGS



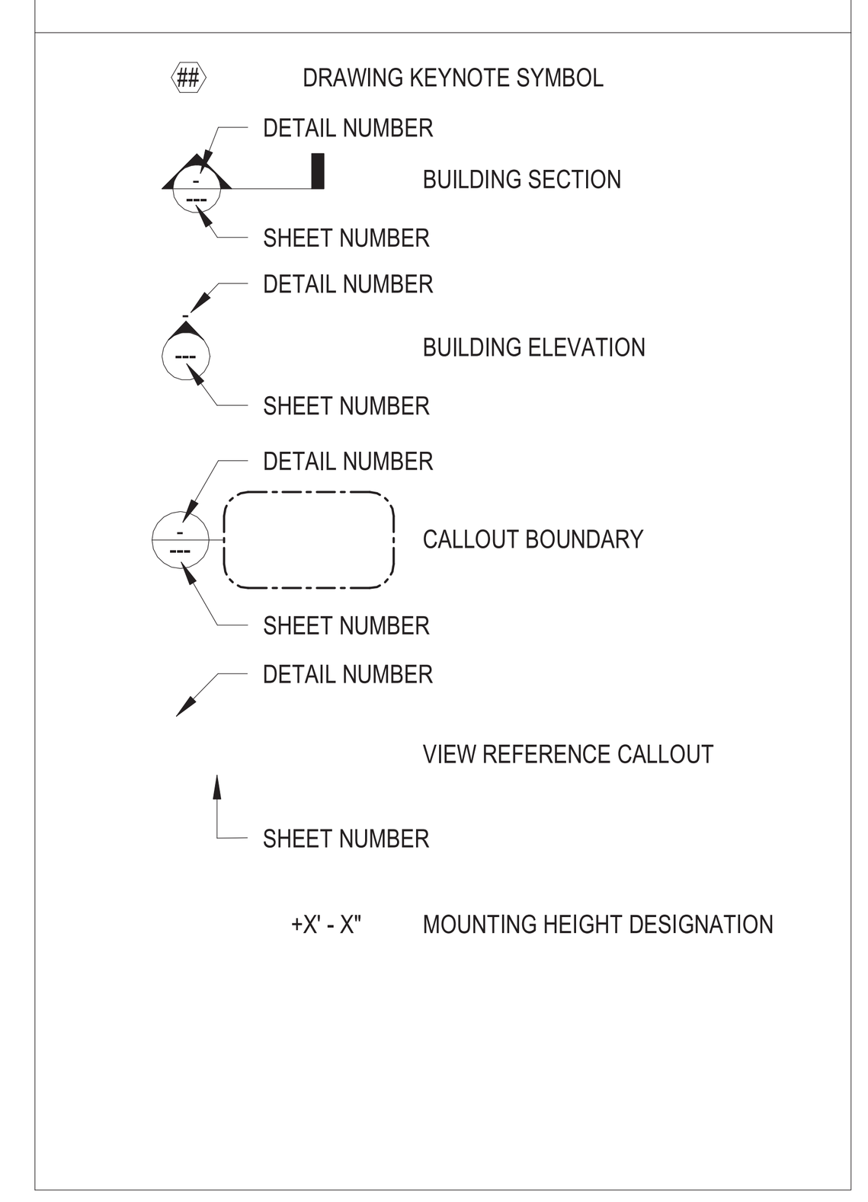
HYDRONIC FITTINGS



HYDRONIC SPECIALTIES



GENERAL



GENERAL ABBREVIATIONS

A/E	ARCHITECT/ENGINEER
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
ARCH	ARCHITECT
BFG	BELOW FINAL GRADE
BLDG	BUILDING
CLG	CEILING
DIR	DIRECT
DISC	DISCONNECT
DN	DOWN
EC	ELECTRICAL CONTRACTOR
ELEV	ELEVATION REFERENCE
EM	EMERGENCY
EP	EXPLOSION PROOF
EWC	ELECTRIC WATER COOLER
F	FLUSH
FBO	FURNISHED BY OTHERS
FIXT	FIXTURE
FLA	FULL LOAD AMPS
FLR	FLOOR
FS	FLOW SWITCH
GC	GENERAL CONTRACTOR
GRD	GROUND
GYP	GYPSUM BOARD
HC	HEATING CONTRACTOR
HVAC	HEATING & VENTILATING - AIR CONDITIONING
HW	HEAVYWALL
ID	INDIRECT
IL	INTERLOCK
IU	IN UNIT
J-BOX	JUNCTION BOX
LG	LAY-IN GRID
LTG	LIGHTING
LV	LOW VOLTAGE
LVT	LINE VOLTAGE THERMOSTAT
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPS
MOCP	MAXIMUM OVERCURRENT PROTECTION
MTD	MOUNTED
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
PLBG	PLUMBING CONTRACTOR
RM	ROOM
SURF	SURFACE
TS	TAMPER SWITCH
TYP	TYPICAL
UG	UNDERGROUND
VC	VENTILATION CONTRACTOR

HYDRONIC SYSTEM ABBREVIATIONS

—— D ——	DRAIN
——NG——	NATURAL GAS
— — — V — — —	VENT
—— CHWS ——	CHILLED WATER SUPPLY
— — CHWR — —	CHILLED WATER RETURN
— — — CD — — —	CONDENSATE DRAIN
—— HHWS ——	HEATING HOT WATER SUPPLY
— — HHWR — —	HEATING HOT WATER RETURN
——GS——	GLYCOL SUPPLY
— — — GR — — —	GLYCOL RETURN
—— MU ——	MAKEUP WATER
— — RHG — —	REFRIGERANT HOT GAS
—— RL ——	REFRIGERANT LIQUID
—— RS ——	REFRIGERANT SUCTION
— — — CR — — —	CONDENSATE RETURN
—— A ——	COMPRESSED AIR

RENOVATION LEGEND

<E>	EXISTING TO REMAIN
<ED>	EXISTING LOCATION, NEW DEVICE OR EQUIPMENT TO BE INSTALLED IN PLACE
<ER>	EXISTING TO BE RELOCATED
<EO>	EXISTING TO BE REMOVED
<EN>	EXISTING IN NEW LOCATION
<N>	NEW
<RAI>	REMAIN AS IS

MECHANICAL ABBREVIATIONS

AC	AIR CONDITIONER
ACH	AIR CHANGES PER HOUR
AF	AIR FILTER
AFMS	AIRFLOW MEASURING STATION
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
BAS	BUILDING AUTOMATION SYSTEM
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CC	COOLING COIL
CF	CUBIC FEET
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CO	CLEANOUT
CT	COOLING TOWER
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CV	CONSTANT AIR VOLUME
DAT	DISCHARGE AIR TEMPERATURE
DB	DECIBEL OR DRY BULB TEMPERATURE
DDC	DIRECT DIGITAL CONTROL
DH	DUCT HEATER
DX	DIRECT EXPANSION
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWT	ENTERING WATER TEMPERATURE
FA	FREE AREA
FC	FAN COIL
FD	FIRE DAMPER
FH	FUME HOOD
FPB	FAN POWERED BOX
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FREEZE STAT
FSD	COMBINATION FIRE/SMOKE DAMPER
GA	GAUGE
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
H	HUMIDISTAT
HC	HEATING COIL
HD	HOOD OR HEAT DETECTOR
HEPA	HIGH EFFICIENCY PARTICULATE AIR FILTER
HP	HORSEPOWER OR HEAT PUMP
HR	HOUR
HUM	HUMIDIFIER
HX	HEAT EXCHANGER
HZ	HERTZ
IN W.C.	INCHES WATER COLUMN
IN W.G.	INCHES WATER GAUGE
KW	KILOWATT
KWH	KILOWATT HOUR
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSAND BTUH
NC	NORMALLY CLOSED
NK	NECK
NO	NORMALLY OPEN
P	PUMP
PA	PASCAL
PH	PHASE
PRV	PRESSURE REDUCING VALVE
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RO	RELIEF OPENING
RPM	REVOLUTIONS PER MINUTE
SAT	SUPPLY AIR TEMPERATURE
SD	SMOKE DAMPER OR SMOKE DETECTOR
SF	SQUARE FEET OR SUPPLY FAN
SPS	STATIC PRESSURE SENSOR
T	THERMOSTAT
TD	TEMPERATURE DIFFERENCE
TO	TRANSFER OPENING
TYP	TYPICAL
UC	UNDERCUT (DOOR)
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VSD	VARIABLE SPEED DRIVE
VTR	VENT THROUGH ROOF
W	WATT
WB	WET BULB TEMPERATURE
WC	WATER COLUMN
WPD	WATER PRESSURE DROP

DUCT SYSTEM ABBREVIATIONS

CA	COMBUSTION AIR
CV	COMBUSTION VENT
EA-D	EXHAUST AIR - DRYER
EA	EXHAUST AIR - ENVIRONMENTAL
OA	OUTDOOR AIR
RA	RETURN AIR
SA	SUPPLY AIR

APPLICABLE CODES/ STANDARDS

- INTERNATIONAL MECHANICAL CODE 2015
- INTERNATIONAL ENERGY CONSERVATION CODE 2018
- SMACNA DUCT CONSTRUCTION STANDARDS

MECHANICAL SHEET INDEX

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M-002	MECHANICAL SCHEDULES				
M-101	FIRST FLOOR MECHANICAL PLAN				
M-101A	ALTERNATE #1 - MECHANICAL PLAN				
M-101B	ALTERNATE#2 - MECHANICAL PLAN				
M-102	SECOND FLOOR MECHANICAL PLAN				
M-201	FIRST FLOOR HYRONIC & CONTROLS PLAN				
M-202	SECOND FLOOR HYDRONIC & CONTROLS PLAN				
M-301	MECHANICAL ROOF PLAN				
M-302	MECHANICAL ENLARGED PLAN AND LOW ROOF PLAN				
M-401	MECHANICAL DETAILS				
M-402	MECHANICAL DETAILS				
M-403	MECHANICAL DETAILS				
MC-101	MECHANICAL CONTROL DIAGRAMS				
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MC-104	MECHANICAL CONTROL DIAGRAMS				
MC-105	MECHANICAL CONTROL DIAGRAMS				
MD101	FIRST FLOOR MECHANICAL DEMOLITION PLAN				
MD102	SECOND FLOOR MECHANICAL DEMOLTION PLAN				
MD201	FIRST FLOOR HYDRONIC & CONTROLS DEMOLITION PLAN				
MD202	SECOND FLOOR HYDRONIC & CONTROLS DEMOLITION PLAN				

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P: 630.990.3541
www.legat.com

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F: 847.842.6935
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RTM Engineering Consultants
650 E. Algonquin, Suite 250
Schaumburg, IL 60173
P: 847.756.4180
www.rtmec.com

rtm engineering consultants
650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4186 : www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L. IVERSEN
062-068559
STATE OF ILLINOIS

SIGNATURE
DATE 6/25/2021

REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR BID	06/28/21

PROJECT NUMBER	220122.00
DATE OF ISSUE	06.28.21
DRAWN BY	MB/BD
CHECKED BY	DP

MECHANICAL NOTES & SCHEDULES

M-000

ISSUED FOR BID

GYM AIR HANDLING UNIT SCHEDULE

TAG	QUANTITY	LOCATION	DESIGN AIR TEMPERATURES			HEATING FLUID TYPE	COOLING FLUID TYPE	COOLING COIL									HEATING COIL							FAN MOTOR DATA				ELECTRICAL				MANUFACTURER	MODEL NO.	WEIGHT (LB)	REMARKS
			SUMMER		WINTER			EDB (°F)	EWB (°F)	LDB (°F)	LWB (°F)	TOTAL COOLING CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	ENT FLUID TEMP (F)	LVG FLUID TEMP (F)	FLOW RATE (GPM)	WPD (FT)	EDB (°F)	LDB (°F)	CAPACITY (MBH)	ENT FLUID TEMP (°F)	LVG FLUID TEMP (°F)	FLOW RATE (GPM)	HEATING FLUID PD (FT H20)	DESIGN AIRFLOW (CFM)	SUPPLY FAN ESP (IN. H2O)	NUMBER OF FANS	SUPPLY FAN MOTOR BHP	FLA	MCA	MOCP	V/PH/HZ				
			DB°F	WB°F	DB°F																													
AHU-G1, AHU-G2, AHU-G3, AHU-G4, AHU-G5, AHU-G6	6	EXISTING GYM	89.7	74.4	3.4	WATER	30% EG	78.4	64.7	55.1	54.2	158	129	42	54	27.8	12.8	56	98	249.15	180	140	12.7	1.8	5,200	0.75	2.0	2.3	15.4	17.3	25	460/3/60	CARRIER	39MN	2158	ALL

REMARKS:
1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE FACTORY STARTUP AND COMPLETE WRITTEN REPORT.
2. DIRECT DRIVE PLENUM FANS.
3. FILTER SECTION: 2" MERV 8 PLEATED MEDIA FILTERS – PROVIDE (2) SETS.
4. FACTORY INSTALLED VFDS – 3 YEAR PARTS AND LABOR WARRANTY ON VFDS. START-UP BY MANUFACTURER.
5. MOTOR SHAFT GROUNDING RINGS.
6. ASHRAE 111 CLASS 6 LEAKAGE CASING (<1.0 PERCENT LEAKAGE) AND PANEL DEFLECTION LESS THAN 0.0042 INCHES AT +/- 8 INCHES W.G.
7. 2-INCH R13 FOAM-INJECTED CASING. NO THROUGH-METAL CASING. THERMAL BREAKS DOORS. TR-VALUE OF 0.6.
8. STAINLESS STEEL COOLING COIL CASING.
9. UL LISTING.
10. RUSKIN CD60 DAMPERS TESTED IN COMPLIANCE WITH AMCA STANDARD 500.
11. PROVIDE EXTENDED DRAIN AND VENT CONNECTIONS THROUGH CASING ON WATER COILS.
12. FULLY PROGRAMMABLE BACNET CONTROLS COMPLETE WITH ALL END-DEVICES, SENSORS, SWITCHES, CONTROL VALVES AND ACTUATORS BY TEMP. CONTROLS CONTRACTOR.
13. OEM FIRST YEAR PARTS AND LABOR WARRANTY – ENTIRE UNIT.
14. EACH MOTOR TO BE PROVIDED WITH INDIVIDUAL MOTOR OVERLOAD PROTECTION.
15. ACTUATORS BY TEMP CONTROLS CONTRACTOR.

EXHAUST FAN SCHEDULE

TAG	SERVICE	CFM	ESP IN	MOTOR DATA							MANUFACTURER AND MODEL	REMARKS
				RPM	DRIVE	HP	VOLT	PH	HZ	WEIGHT		
EF-1059	LOCKER ROOM	475	0.53	1550	DIRECT	1/8	120	1	60	49	GREENHECK SQ-95-D	1, 2, 6
EF-1060	LOCKER ROOM	475	0.53	1550	DIRECT	1/8	120	1	60	49	GREENHECK SQ-95-D	1, 2, 6
EF-1073	LOCKER ROOM	475	0.53	1550	DIRECT	1/8	120	1	60	49	GREENHECK SQ-95-D	1, 2, 6
EF-1076	LOCKER ROOM	475	0.53	1550	DIRECT	1/8	120	1	60	49	GREENHECK SQ-95-D	1, 2, 6
EF-1023	GENERAL EXHAUST	18515	0.50	509	DIRECT	5	460	3	60	319	GREENHECK GB-420	1, 4, 5, 6
CEF-1014	TOILET ROOM	70	0.48	935	DIRECT	6 W	120	1	60	47	GREENHECK SP-80-VG	1, 3, 6
CEF-1029	TOILET ROOM	70	0.48	935	DIRECT	6 W	120	1	60	47	GREENHECK SP-80-VG	1, 3, 6
CEF-1051	TOILET ROOM	70	0.48	935	DIRECT	6 W	120	1	60	47	GREENHECK SP-80-VG	1, 3, 6

REMARKS:
1. PROVIDE FAN WITH DISCONNECT SWITCH, BACKDRAFT DAMPER, AND BIRDSCREEN.
2. EXHAUST FAN TO RUN CONTINUOUSLY.
3. EXHAUST FAN TO BE CONTROLLED BY LIGHT SWITCH.
4. EXHAUST FAN TO BE CONTROLLED WITH AHU BY BAS.
5. EXHAUST FAN TO BE CONTROLLED BY VFD. VFD TO BE PROVIDED MY MECHANICAL CONTRACTOR.
6. EXHAUST FAN TO BE PROVIDED WITH EC MOTOR.

WEATHER CAP SCHEDULE

ITEM TAG	SERVES	DESIGN CFM	TYPE	MANUFACTURER	MODEL	REMARKS
CAP 1	EXHAUST	800	EXHAUST	GREENHECK	GRSF	ALL

REMARKS:
1. PROVIDE BACKDRAFT DAMPER AND BIRDSCREEN AT CONNECTION TO CAP.
2. FLASH CAP CURB INTO ROOF. CURB TO BE A MINIMUM OF 24".

DUCTLESS SPLIT SYSTEM SCHEDULE

MANUFACTURER	AREA SERVED	TONS	REFRIGERANT	CONTROL	COOLING CAPACITY		HEATING CAPACITY	INDOOR UNIT				OUTDOOR UNIT			ELECTRICAL DATA			REMARKS
					TOTAL (MBH)	SEER/EER	TOTAL (MBH)	TAG	MODEL	CFM	WEIGHT	TAG	MODEL	WEIGHT	V/PH/HZ	MCA	MOCP	
CARRIER	IDF 1015	1.8	R-410A	THERMOSTAT SET TO 75	22.0	18.5/11.1	-	FC 1015	40MHHQ24	1500	40.12	CU 1015	38MHRBC24AA3	114.2	208/1/60	18	25	1-9
CARRIER	DISPATCH 1028	1	R-410A	THERMOSTAT SET TO 75	12.0	19.5/12.5	12	FC 1028	40MBCQ12	1200	51.8	CU 1028	38MAQB12R	91.5	208/1/60	9	15	1-8, 10
CARRIER	TRAINING CLASSROOM 1042	1	R-410A	THERMOSTAT SET TO 75	12.0	19.5/12.5	12	FC 1042A	40MBCQ12	1200	51.8	CU 1042A	38MAQB12R	91.5	208/1/60	9	15	1-8, 10
CARRIER	TRAINING CLASSROOM 1042	1	R-410A	THERMOSTAT SET TO 75	12.0	19.5/12.5	12	FC 1042B	40MBCQ12	1200	51.8	CU 1042B	38MAQB12R	91.5	208/1/60	9	15	1-8, 10
CARRIER	MECHANICAL 1023	1.8	R-410A	THERMOSTAT SET TO 75	22.0	18.5/11.1	-	FC 1023	40MHHQ24	1500	40.12	CU 1023	38MHRBC24AA3	114.2	208/1/60	18	25	1-9

REMARKS:
1. ELECTRICAL CONTRACTOR TO PROVIDE SERVICE DISCONNECT SWITCH.
2. PROVIDE FACTORY START UP AND COMPLETE WRITTEN REPORT.
3. MOUNT OUTDOOR UNIT ON ROOF PER MANUFACTURER'S INSTRUCTIONS. PROVIDE SOLID CONCRETE PAD OR PLATFORM.
4. MAINTAIN MANUFACTURERS MINIMUM INSTALLATION CLEARANCES.
5. CONTROL WIRING PER MANUFACTURE'S INSTRUCTION.
6. PROVIDED DX LIQUID AND SUCTION REFRIGERANT PIPING SIZED FOR ACTUAL FIELD CONDITIONS AND MANUFACTURER'S RECOMMENDATIONS.
7. PROVIDE WITH MANUFACTURE'S CONDENSATE PUMP KIT.
8. PROVIDE WITH WIND BAFFLE.
9. MOUNT INDOOR UNIT ON WALL PER MANUFACTURER'S INSTRUCTIONS. PROVIDE MOUNTING SUPPORTS AS NEEDED.
10. MOUNT INDOOR UNIT IN CEILING GRID PER MANUFACTURER'S INSTRUCTIONS. PROVIDE MOUNTING SUPPORTS AS NEEDED.

GRILLE, REGISTERS, AND DIFFUSER SCHEDULE

ITEM TAG	AIR STREAM	MOUNTING TYPE	FRAME SIZE		MANUFACTURER	MODEL	REMARKS
			HEIGHT (IN)	WIDTH (IN)			
A	SUPPLY	SQUARE	24	24	TITUS	OMNI	1-5
B	RETURN	SQUARE	24	24	TITUS	PAR	2, 4, 6
C	EXHAUST	SQUARE	12	12	TITUS	PAR-AA	2, 4, 5
D	RETURN	RECTANGULAR	24	12	TITUS	PAR	2, 4, 6
E	EXHAUST	SQUARE	24	24	TITUS	PAR-AA	2, 4, 5
F	SUPPLY	SQUARE	24	24	TITUS	SG-SD	1-5, 7
G	RETURN	RECTANGULAR	24	12	TITUS	SG-SD	2, 4, 6, 7
H	RETURN	SQUARE	24	24	TITUS	SG-SD	2, 4, 6, 7
J	SUPPLY	SQUARE	24	24	PRICE	AMDC	1-5
K	TRANSFER	SQUARE	24	24	TITUS	PAR	1-5

REMARKS:
1. 4 WAY THROW UNLESS OTHERWISE NOTED.
2. PROVIDE ADAPTOR BOOTS AS REQUIRED.
3. PROVIDE WITH MANUAL VOLUM BALANCE DAMPER.
4. COORDINATE FRAME STYLES WITH ARCHITECTURAL PLANS.
5. REFER TO PLAN FOR FACE AND DUCT SIZING.
6. RETURN GRILLE TO HAVE LINED ELBOW BOOT FOR PLENUM RETURN AND SOUND ATTENTUATION.
7. GRILLE TO BE ANIT-LIGATURE DEVICE.

MOTORIZED CONTROL VALVE SCHEDULE

TAG	DESIGN FLOW (GPM)	MAX DIFFERENTIAL PRESSURE (PSI)	PIPE SIZE (IN)	FAIL POSITION	ELECTRICAL DATA			MANUFACTURER	MODEL NO.	REMARKS
					VOLTS	PH	HZ			
CV 1A	137.1	60	3	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	P6300S	ALL
CV 1B	70	60	2.5	FAIL OPEN	120	1	60	BELIMO	P6250S	ALL
CV 1003A	2	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1003B	2	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1003C	0.6	60	0.5	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1008	1	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1012	1.4	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1021	0.7	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1027	0.3	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1028	0.6	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1031	0.6	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1034	0.5	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1036	1	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1037	0.7	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1041	0.3	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1042	2.1	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1046	0.3	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1055	1.2	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1058	1.1	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1060	0.7	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1062	1.1	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1066	1.4	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1067	0.3	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1075	0.3	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL
CV 1076	0.7	60	0.75	FAIL IN LAST POSITION (F.L.P)	120	1	60	BELIMO	B220HT	ALL

REMARKS:
1. CONTROL VALVE TO BE WIRED AND CONNECTED PER CONTROL DRAWINGS.
2. CONTROL VALVE TO BE ON SUPPLY SIDE OF COIL.
3. CONTROL VALVE TO RECEIVE POWER FROM A 24V DC TRANSFORMER WITH POWER CONDITIONER. PROVIDED BY E.C

VARIABLE AIR VOLUME TERMINAL UNIT SCHEDULE WITH HOT WATER REHEAT

TAG	NECK SIZE (IN.)	DESIGN AIRFLOW		HEATING AIRFLOW (CFM)	HEATING CAP.						CONTROL TYPE	MANUFACTURER	MODEL NO.	WEIGHT (LB)	REMARKS
		MAX (CFM)	MIN (CFM)		MBH	GPM	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	WPD (FT H20)				
VAV-1003A	14	2000	2000	2000	65.1	2.0	65	95	180	113	0.57	DDC	CARRIER	35E	68	1-8
VAV-1003B	14	2000	2000	2000	65.1	2.0	65	95	180	113	0.57	DDC	CARRIER	35E	68	1-8
VAV-1003C	6	415	415	415	14.9	0.6	65	95	180	130	0.10	DDC	CARRIER	35E	34	1-8
VAV-1008	8	810	245	245	26.4	3.7	65	80	108	128	0.37	DDC	CARRIER	35E	37	1-8
VAV-1012	9	1100	330	1100	35.8	1.4	65	95	180	126	0.33	DDC	CARRIER	35E	46	1-8
VAV-1021	7	650	195	195	21.1	3.0	65	80	180	120	0.19	DDC	CARRIER	35E	37	1-8
VAV-1027	5	200	60	60	10.2	1.4	65	80	180	112	0.03	DDC	CARRIER	35E	34	1-8
VAV-1028	6	400	120	120	14.9	2.1	65	80	180	130	0.10	DDC	CARRIER	35E	34	1-8
VAV-1031	7	550	165	165	17.9	2.5	65	80	180	114	0.12	DDC	CARRIER	35E	37	1-8
VAV-1034	7	525	160	160	17.2	2.4	65	80	180	113	0.11	DDC	CARRIER	35E	37	1-8
VAV-1036	8	725	220	220	26.4	3.7	65	80	180	128	0.37	DDC	CARRIER	35E	37	1-8
VAV-1037	8	600	180	180	21.7	3.1	65	80	180	120	0.19	DDC	CARRIER	35E	37	1-8
VAV-1041	5	200	60	60	10.2	1.4	65	80	180	112	0.03	DDC	CARRIER	35E	34	1-8
VAV-1042	12	1750	525	525	57.0	2.1	65	80	180	125	0.94	DDC	CARRIER	35E	56	1-8
VAV-1046	5	250	75	75	10.2	1.4	65	80	180	112	0.03	DDC	CARRIER	35E	34	1-8
VAV-1055	8	875	265	265	28.5	4.0	65	80	180	131	0.47	DDC	CARRIER	35E	37	1-8
VAV-1058	9	975	295	295	31.8	4.5	65	80	180	121	0.24	DDC	CARRIER	35E	46	1-8
VAV-1060	8	650	195	195	21.7	3.1	65	80	180	120	0.19	DDC	CARRIER	35E	37	1-8
VAV-1062	8	830	250	250	27.1	3.8	65	80	180	129	0.40	DDC	CARRIER	35E	37	1-8
VAV-1066	9	1100	330	1100	35.8	1.4	65	95	180	126	0.33	DDC	CARRIER	35E	46	1-8
VAV-1067	4	150	45	45	5.2	0.7	65	80	180	137	0.04	DDC	CARRIER	35E	28	ALL
VAV-1075	5	200	60	60	10.2	1.4	65	80	180	112	0.03	DDC	CARRIER	35E	34	1-8
VAV-1076	7	650	195	195	21.1	3.0	65	80	180	120	0.19	DDC	CARRIER	35E	37	1-8

REMARKS:
1. MAX.HEATING AIR VELOCITY THROUGH COILS SHALL NOT EXCEED 800 FPM.
2. COIL HEIGHT SHALL NOT EXCEED THE BOX HEIGHT. (SPLIT AND DRIVE CONNECTION)
3. MINIMUM 1 ROW FOR RE-HEAT.
4. VAV BOXES TO BE TIED INTO BUILDING BAS.
5. COORDINATE IN FIELD WHICH SIDE CONTROL BOX IS ON.
6. PROVIDE 1 YEAR WARRANTY OF PARTS AND LABOR POST SUBSTANTIAL COMPLETION.
7. INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS.
8. VAV BOX AND ALL ASSOCIATED DUCTWORK, PIPING, AND ELECTRICAL TO BE PART OF ALTERNATE 1 AND ALTERNATE 2 SCOPES.

LOUVER SCHEDULE

ITEM TAG	SERVES	DESIGN CFM	TYPE	MAX AIR VELOCITY (FPM)	FREE AREA (FT2)	SIZES (IN.)	MANUFACTURER	MODEL	REMARKS
L 1	CEF 1059	70	EXHAUST	510	0.1	12X8	GREENHECK	ESD-202-12X8	ALL
L 2	EXHAUST	870	EXHAUST	551	1.6	30X18	GREENHECK	ESD-435-30X18	ALL

REMARKS:
1. LOUVER TO TERMINATE A MINIMUM OF 10'-0" AWAY FROM OUTDOOR AIR INTAKES.
2. LOUVER TO BE UL LISTED

LEGAT ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

JOLIET JUNIOR COLLEGE

CAMPUS POLICE RENOVATIONS

1215 Houbolt Road
Joliet, IL 60431

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
RT&A Inc.
129 Capista Drive
Shorewood, IL 60404
P: 815.744.6600
www.ruettigertonelli.com

STRUCTURAL ENGINEER
Pease Borst & Associates
18 Exectutive Court
South Barrington, IL 60010
P: 847.842.6930
F: 847.842.6935
www.peaseborst.com

MEP/FP ENGINEER
RTM Engineering Consultants
650 E. Algonquin, Suite 250
Schaumburg, IL 60173
P: 847.756.4180
www.rtmec.com

rtm engineering consultants
650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4186 | www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L IVERSEN
062-068559
STATE OF ILLINOIS

SIGNATURE
DATE 6/25/2021

REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR BID	06/28/21

PROJECT NUMBER	220122.00
DATE OF ISSUE	06.28.21
DRAWN BY	MB/BD
CHECKED BY	DP

MECHANICAL SCHEDULES

M-001
ISSUED FOR BID

IMC 2012 VENTILATION SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR AREA (SF)	ROOM OCCUPANCY	DEFAULT OCCUPANCY (#/1000 SF)	# OF PEOPLE	IMC 2015 REQUIREMENTS				ACTUAL			EQUIPMENT	
						OA (CFM/PERSON)	OA (CFM/SF)	OA (CFM)	EA (CFM)	SUPPLY (CFM)	OA (CFM)	EXHAUST (CFM)	SUPPLY FAN	EXHAUST FAN
1003	FITNESS CENTER	2513 SF	HEALTH CLUB / WEIGHT ROOM	10	26	20	0.06	671	0	4415	883	0	VAV 1003A, VAV 1003B, VAV 1003C	-
1012	CORRIDOR	813 SF	CORRIDORS	0	0	0	0.06	49	0	750	150	0	VAV 1012	-
1013	FACULTY OFFICE	146 SF	OFFICE SPACES	5	1	5	0.06	14	0	150	30	0	VAV 1021	-
1014	UNISEX TOILET ROOM	75 SF	TOILET ROOMS - PUBLIC	0	0	0	0.00	0	50	0	0	70	-	CEF 1014
1015	I.D.F. / LEED / DR. CONTROL ROOM	82 SF	STORAGE (INACTIVE)	0	0	0	0.00	0	0	0	0	0	FC 1015	-
1019	CORRIDOR	915 SF	CORRIDORS	0	0	0	0.06	55	0	700	140	0	VAV 1012, VAV 1066	-
1020	POWER TESTING OFFICE	128 SF	OFFICE SPACES	5	1	5	0.06	13	0	150	30	0	VAV 1021	-
1021	POWER RECEPTION/ PROCESSING	274 SF	RECEPTION AREAS	30	9	5	0.06	61	0	350	70	0	VAV 1021	-
1024	SECURE ENTRY	60 SF	MAIN ENTRY LOBBIES	10	1	5	0.06	9	0	50	10	0	VAV 1031	-
1025	SOFT INTERVIEW	112 SF	OFFICE SPACES	5	1	5	0.06	12	0	125	25	0	VAV 1031	-
1026	CORRIDOR	529 SF	CORRIDORS	0	0	0	0.06	32	0	400	80	0	VAV 1058	-
1027	RECORDS	286 SF	STORAGE ROOMS	0	0	0	0.12	34	0	200	40	0	VAV 1027	-
1028	DISPATCH	307 SF	OFFICE SPACES	5	2	5	0.06	28	0	325	65	0	VAV 1028	-
1028A	DISPATCH SUPER. WORK AREA	68 SF	OFFICE SPACES	5	1	5	0.06	9	0	75	15	0	VAV 1028	-
1029	TOILET ROOM	50 SF	TOILET ROOMS - PUBLIC	0	0	0	0.00	0	50	0	0	70	-	CEF 1029
1031	SERGEANT'S OFFICE	178 SF	OFFICE SPACES	5	1	5	0.06	16	0	200	40	0	VAV 1031	-
1032	INVESTIGATOR'S OFFICE	144 SF	OFFICE SPACES	5	1	5	0.06	14	0	175	35	0	VAV 1031	-
1033	ROLL CALL / CONF.	293 SF	CONFERENCE ROOM	50	15	5	0.06	93	0	500	100	0	VAV 1036	-
1034	ADMIN. ASSISTANT	111 SF	OFFICE SPACES	5	1	5	0.06	12	0	125	25	0	VAV 1034	-
1035	CORRIDOR	280 SF	CORRIDORS	0	0	0	0.06	17	0	225	45	0	VAV 1058	-
1036	BREAK ROOM	213 SF	OFFICE SPACES	5	2	5	0.06	23	0	225	45	0	VAV 1036	-
1037	SQUAD ROOM	334 SF	CONFERENCE ROOM	50	17	5	0.06	105	0	600	120	0	VAV 1036	-
1038	EXISTING MECH.	635 SF	STORAGE (INACTIVE)	0	0	0	0.00	0	0	0	0	0	-	-
1040	TECH. WORK ROOM	90 SF	OFFICE SPACES	5	1	5	0.06	10	0	100	20	0	VAV 1041	-
1041	C.S.O. / STUDENT OFFICE	81 SF	OFFICE SPACES	5	1	5	0.06	10	0	100	20	0	VAV 1041	-
1042	TRAINING CLASSROOM	937 SF	CONFERENCE ROOM	50	47	5	0.06	291	0	1750	350	0	VAV 1042	-
1043	CHIEF'S OFFICE	156 SF	OFFICE SPACES	5	1	5	0.06	14	0	175	35	0	VAV 1034	-
1044	COMMANDER'S OFFICE	125 SF	OFFICE SPACES	5	1	5	0.06	13	0	150	30	0	VAV 1034	-
1045	GENERAL STORAGE	78 SF	STORAGE ROOMS	0	0	0	0.12	9	0	75	15	0	VAV 1034	-
1046	GENERAL STORAGE	83 SF	STORAGE ROOMS	0	0	0	0.12	10	0	75	15	0	VAV 1046	-
1047	EVIDENCE PROCESSING	104 SF	STORAGE ROOMS	0	0	0	0.12	13	0	100	20	0	VAV 1046	-
1048	EVIDENCE ROOM	103 SF	STORAGE ROOMS	0	0	0	0.12	12	0	75	15	0	VAV 1046	-
1049	CORRIDOR	103 SF	CORRIDORS	0	0	0	0.06	6	0	75	15	0	VAV 1058	-
1050	PRISONER PROCESSING	342 SF	BOOKING/WAITING	30	11	5	0.06	76	0	400	80	0	VAV 1055	-
1051	DETENTION TOILET	59 SF	TOILET ROOMS - PUBLIC	0	0	0	0.00	0	50	0	0	70	-	CEF 1051
1052	HOLDING CELL	55 SF	CELLS W/O PLUMBING FIXTURES	25	2	5	0.12	17	0	100	20	0	VAV 1055	-
1053	LINEUP INTERVIEW	86 SF	OFFICE SPACES	5	1	5	0.06	10	0	100	20	0	VAV 1055	-
1054	SECURE INTERVIEW	86 SF	OFFICE SPACES	5	1	5	0.06	10	0	100	20	0	VAV 1055	-
1055	JUVENILE INTERVIEW	86 SF	OFFICE SPACES	5	1	5	0.06	10	0	100	20	0	VAV 1055	-
1056	ARMORY	67 SF	STORAGE ROOMS	0	0	0	0.12	8	0	75	15	0	VAV 1055	-
1057	CORRIDOR	173 SF	CORRIDORS	0	0	0	0.06	10	0	125	25	0	VAV 1058	-
1058	CORRIDOR	198 SF	CORRIDORS	0	0	0	0.06	12	0	150	30	0	VAV 1058	-
1059	WOMEN'S LOCKER ROOM	422 SF	LOCKERS/DRESSING ROOMS	0	0	0	0.00	0	106.25	350	70	475	VAV 1060	EF 1059
1060	MEN'S LOCKER ROOM	518 SF	LOCKERS/DRESSING ROOMS	0	0	0	0.00	0	130.25	300	60	475	VAV 1060	EF 1060
1060A	VEST.	33 SF	VESTIBULES	0	0	0	0.00	0	0	0	0	0	-	-
1066	CORRIDOR	755 SF	CORRIDORS	0	0	0	0.06	45	0	750	150	0	VAV 1066	-
1066	VESTIBULE	82 SF	VESTIBULES	0	0	0	0.00	0	0	0	0	0	EWH 2	-
1067	MAN LOCK.	187 SF	VESTIBULES	0	0	0	0.00	0	0	150	30	0	VAV 1067, EWH 1	-
1068	SALLY PORT ADDITION	766 SF	GARAGES, COMMON FOR MULTIPLE UNITS	0	0	0	0.00	0	574.5	0	0	600	-	EF 1A
1070	FLEET STORAGE ADDITION	3677 SF	GARAGES, COMMON FOR MULTIPLE UNITS	0	0	0	0.00	0	2757.75	0	0	3075	-	EF 2B, EF 3B
1072	WATER SERVICE	135 SF	STORAGE (INACTIVE)	0	0	0	0.00	0	0	0	0	0	-	EUH 1
1073	MEN'S LOCKERS	631 SF	LOCKERS/DRESSING ROOMS	0	0	0	0.00	0	157.25	275	60	400	VAV 1076	EF 1073
1074	WRESTLING LOCKERS	120 SF	LOCKERS/DRESSING ROOMS	0	0	0	0.00	0	31.75	25	80	75	VAV 1076	EF 1073
1075	LAUNDRY	117 SF	COIN-OPERATED LAUNDRIES	20	3	7.5	0.06	29	0	200	40	0	VAV 1075	-
1076	WOMEN'S LOCKERS	610 SF	LOCKERS/DRESSING ROOMS	0	0	0	0.00	0	153.75	350	70	475	VAV 1076	EF 1076
2000	GYMNASIUM	10262 SF	GYM, STADIUM, ARENA (PLAY AREA)	0	0	0	0.30	3079	0	31200	6240	0	AHU G1, AHU G2, AHU G3, AHU G4, AHU G5, AHU G6	-

PLATE AND FRAME HEAT EXCHANGER SCHEDULE

TAG	MANUFACTURER	MODEL	FRAME SIZE (INCH)	PLATES REQUIRED	MAX PLATE CAPACITY	EFFECTIVE SURFACE AREA (SQ FT)	TOTAL HEAT EXCHANGED (MBH)	LMTD (DEG F)	HOT SIDE						COLD SIDE						WEIGHT (LB)	REMARKS
									FLUID	EWT	LWT	GPM	HEAD (PSIG)	DESIGN PRESSURE (PSIG)	FLUID	EWT	LWT	GPM	HEAD (PSIG)	DESIGN PRESSURE (PSIG)		
HX-2.1	BELL AND GOSSETT	AP31	15.75	61	63	209.57	450	3	WATER	130	110	45	1.72	150	30% EG	107	127	48	2.17	150	941	ALL

REMARKS:

1. MOUNT ON 4" HOUSEKEEPING PAD.
2. PROVIDE ALL VALVING AND ACCESSORIES AS SHOWN BY DRAWINGS AND DETAILS.

PACKAGED ROOFTOP UNIT SCHEDULE

TAG	DESIGN AMBIENT AIR TEMPERATURES			SUPPLY FAN							RETURN FAN								CHILLED WATER COIL										HEATING WATER COIL							FILTER RATING (PRE/POST)	WEIGHT (LB)	MANUFACTURER	MODEL NO.	REMARKS
	SUMMER		WINTER					ELECTRICAL							ELECTRICAL					EAT		LAT							EAT		LAT								
	DB (DEG F)	WB (DEG F)	DB (DEG F)	TOTAL AIRFLOW (CFM)	ESP (IN WG)	NUMBER OF FANS	BHP (EACH FAN)	V/PH/HZ	TOTAL FLA	TOTAL MCA	TOTAL MOCP	AIRFLOW (CFM)	ESP (IN WG)	NUMBER OF FANS	BHP	V/PH/HZ	TOTAL FLA	TOTAL MCA	TOTAL MOCP	FLUID	DB (DEG F)	WB (DEG F)	DB (DEG F)	WB (DEG F)	EWT (DEG F)	LWT (DEG F)	GPM	WPD (FT)	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	FLUID	DB (DEG F)	DB (DEG F)	EWT (DEG F)	LWT (DEG F)	GPM	WPD (FT)	CAPACITY (MBH)					
RTU-1	89.7	74.4	3.4	18,515	2	6	3.3	460/3/60	46.2	48.1	50	18,515	1.5	6	1.3	460/3/60	46.2	48.1	50	30% EG	80.0	67.0	51.7	51.5	42.0	54.0	137.1	23.2	826.0	555.1	30% EG	50.0	66.0	127.0	107.0	35.0	3.2	324.3	MERV8/MERV13	8,152	CARRIER	39 MW SIZE 36	ALL

REMARKS:

1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE FACTORY STARTUP AND COMPLETE WRITTEN REPORT.
2. DIRECT DRIVE EC PLENUM FANS.
3. PROVIDE TWO SETS OF EACH FILTER.
4. FACTORY INSTALLED VFDS – 3 YEAR PARTS AND LABOR WARRANTY ON VFDS. START-UP BY MANUFACTURER.
5. UNIT SHALL BE PAD MOUNTED.
6. ASHRAE 111 CLASS 6 LEAKAGE CASING (<1.0 PERCENT LEAKAGE) AND PANEL DEFLECTION LESS THAN 0.0042 INCHES AT +/- 8 INCHES W.G.
7. R-13 DOUBLE WALL SEALED PANEL. PAINTED EXTERIOR PANELS. GALVANIZED INTERIOR PANELS. LEVEL II THERMAL BREAK.
8. STAINLESS STEEL COOLING COIL CASING.
9. UL LISTING.
10. PROVIDE PREMIUM DAMPERS CONSTRUCTED OF GALVANIZED STEEL WITH DOUBLE-SKIN AIRFOIL DESIGN, BLADE SEALS AND STAINLESS STEEL JAMB SEELS. MAXIMUM LEAKAGE RATE SHALL BE 2 CFM/SQ FT AT 1" WG DIFFERENTIAL...
11. PROVIDE EXTENDED DRAIN AND VENT CONNECTIONS THROUGH CASING ON WATER COILS.
12. FULLY PROGRAMMABLE BACNET CONTROLS COMPLETE WITH ALL END-DEVICES, SENSORS, SWITCHES, CONTROL VALVES AND ACTUATORS BY TEMP. CONTROLS CONTRACTOR.
13. OEM FIRST YEAR PARTS AND LABOR WARRANTY – ENTIRE UNIT.
14. EACH MOTOR TO BE PROVIDED WITH INDIVIDUAL MOTOR OVERLOAD PROTECTION.
15. ACTUATORS BY TEMP CONTROLS CONTRACTOR.
16. PROVIDE 6" TALL BASE RAIL. UNIT SHALL BE MOUNTED ON SUPPORT STEEL PROVIDED BY OTHERS.
17. PROVIDE SINGLE POINT POWER CONNECTION WITH INTEGRAL DISCONNECT FOR EACH FAN ARRAY.
18. PROVIDE FACTORY WIRED CONVENIENCE OUTLET.

AIR SEPARATOR SCHEDULE

TAG	MANUFACTURER	MODEL	TYPE	GPM	HEAD (FT WG)	FLOODED WEIGHT (LB)	REMARKS
AS-2.1	BELL AND GOSSETT	RL-2-1/2N	CENTRIFUGAL, WITHOUT STRAINTER	75	0.83	108	ALL

REMARKS:

1. PROVIDE ALL VALVING AND ACCESSORIES AS SHOWN BY DRAWINGS AND DETAILS.
2. PROVIDE HANGERS AS REQUIRED BY SPECIFICATIONS.

PUMP SCHEDULE

TAG	MANUFACTURER	MODEL	SERVING	TOTAL GPM	HEAD (FT HD)	ELECTRICAL			REMARKS
						HP	RPM	V/PH/HZ	
HCP-1	BELL AND GOSSETT	Ecocirc XL 110-180	RTU-1 HOT WATER	45	45	1	3011	460/3/60	ALL
HCP-2	BELL AND GOSSETT	Ecocirc XL 110-180	RTU-1 HOT WATER	45	45	1	3011	460/3/60	ALL

REMARKS:

1. PROVIDE ALL VALVING AND ACCESSORIES AS SHOWN BY DRAWINGS AND DETAILS.
2. PROVIDE SPRING VIBRATION ISOLATION HANGERS AS REQUIRED BY SPECIFICATIONS.
3. PUMP CONTROL SHALL BE COMPATIBILE WITH BUILDING MANAGEMENT SYSTEM.
4. PUMP SHALL OPERATE TO MAINTAIN HEATING MODE DISCHARGE AIR TEMPERATURE OF ASSOCIATED RTU.
5. PROVIDE CAST IRON BODY.
6. PROVIDE EC, PERMANENT MAGNET MOTOR.
7. PUMPS SHALL OPERATE LEAD LAG WITH THE LEAD PUMP DETERMINED BY RUN TIME.

EXPANSION TANK SCHEDULE

TAG	MANUFACTURER	MODEL	TYPE	ORIENTATION	SYSTEM VOLUME (GAL)	SYSTEM MEDIUM	ACCEPTANCE VOLUME (GAL)	100% FULL WEIGHT (LB)	REMARKS
FPB-1	BELL AND GOSSETT	B-85LA	BLADDER	VERTICAL	75	30% ETHYLENE GLYCOL	11	270	ALL

REMARKS:

1. MOUNT ON 4" HOUSEKEEPING PAD.
2. PROVIDE ALL VALVING AND ACCESSORIES AS SHOWN BY DRAWINGS AND DETAILS.

GYCOL FILL SYSTEM SCHEDULE

TAG	MANUFACTURER	MODEL	TANK VOLUME (GAL)	ELECTRICAL	REMARKS
				V/PH/HZ	
GF-2.1	WESSELS	GMP-18	18	110/1/60	ALL

REMARKS:

1. PROVIDE ALARM KIT WITH PANEL AND FLOAT.
2. INSTALL PER MANUFACTURER'S INTSTRUCTIONS.

LEGAT ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

JOLIET JUNIOR COLLEGE

CAMPUS POLICE RENOVATIONS

1215 Houbolt Road
Joliet, IL 60431

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
RT&A Inc.
129 Capista Drive
Shorewood, IL 60404
P: 815.744.6600
www.ruettigertonelli.com

STRUCTURAL ENGINEER
Pease Borst & Associates
18 Exectutive Court
South Barrington, IL 60010
P: 847.842.6930
F: 847.842.6935
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650 E. Algonquin, Suite 250
Schaumburg, IL 60173
P: 847.756.4180
www.rtmec.com

rtm engineering consultants
650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4186 : www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L. IVERSEN
062-068559
STATE OF ILLINOIS

SIGNATURE
DATE 6/25/2021

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MECHANICAL SCHEDULES

M-002
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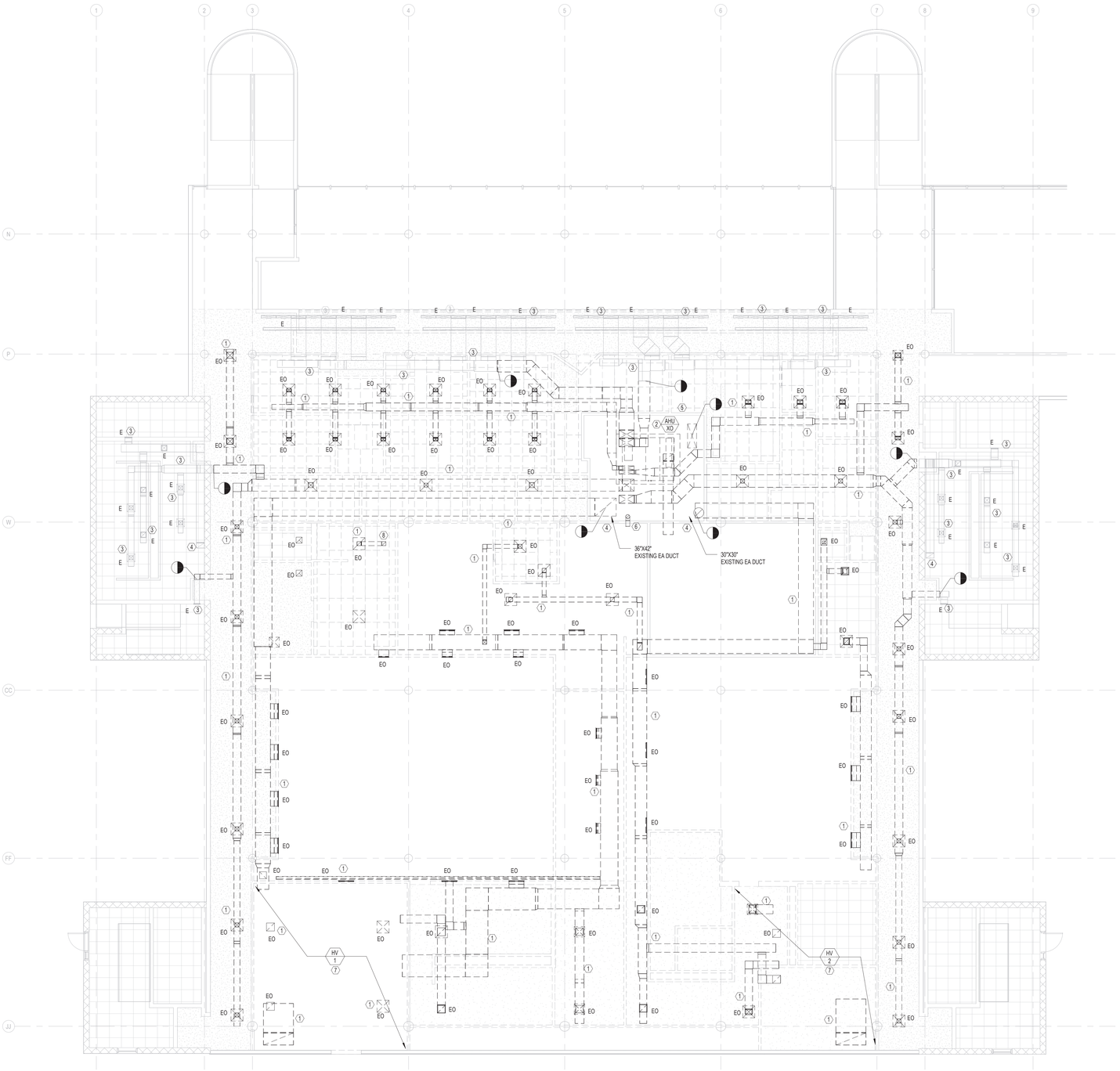

FIRST FLOOR MECHANICAL DEMOLITION PLAN

1 / MD101 — SCALE: 1/8" = 1'-0"

MECHANICAL

N

GENERAL NOTES:

1. ALL UNUSED DUCTWORK SHALL BE CAPPED BACK TO MAIN.
2. ALL UNUSED EQUIPMENT, HANGERS, DUCTS, SUPPORTS, PIPES, AND WIRING SHALL BE DISCONNECTED, PROPERLY DISPOSED OF, AND REMOVED BACK TO SOURCE.
3. ALL RESULTING UNUSED OPENINGS IN WALLS, FLOORS, AND CEILINGS DUE TO DEMOLITION SHALL BE PATCHED TO MATCH EXISTING CORRESPONDING MATERIAL.
4. ALL UNUSED PIPING TO BE CAPPED BACK TO MAIN.
5. COORDINATE ALL DEMOLITION WITH NEW WORK PLANS.

KEYNOTES:

1. EXISTING DUCTWORK AND DIFFUSERS TO BE DEMOLISHED.
2. EXISTING AHU TO BE DEMOLISHED ALONG WITH ALL HYDRONIC CONNECTIONS, DUCTWORK, AND ELECTRICAL CONNECTIONS. CAP HYDRONIC PIPING IN SUCH A WAY TO ALLOW FOR NEW AHU TO CONNECT INTO EXISTING HYDRONIC SYSTEM.
3. EXISTING DUCTWORK AND DIFFUSERS TO REMAIN.
4. EXISTING EXHAUST RISER TO REMAIN.
5. EXISTING OUTSIDE AIR RISER TO REMAIN.
6. EXISTING 8' DRYER EXHAUST DUCT TO BE DEMOLISHED AND CAPPED BACK AT ROOF.
7. EXISTING LOCKER ROOM UNIT TO BE DEMOLISHED ALONG WITH HYDRONIC CONNECTIONS, DUCTWORK, AND ELECTRICAL CONNECTIONS. CAP HYDRONIC PIPING BACK AT MAIN.
8. EXISTING EXHAUST FAN LOCATED ON ROOF SERVING BATHROOM TO BE DEMOLISHED ALONG WITH ALL SUPPORTS, ELECTRICAL, AND DUCTWORK. PATCH ROOF TO MATCH EXISTING.

CONSTRUCTION AND DEMOLITION TO BE DONE IN PHASES SO THAT EXISTING DISPATCH CENTER REMAINS OPERATIONAL UNTIL SWITCHOVER TO FULLY FUNCTIONAL NEW DISPATCH CENTER CAN BE COMPLETED.

LEGAT ARCHITECTS
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FIRST FLOOR MECHANICAL DEMOLITION PLAN

MD101

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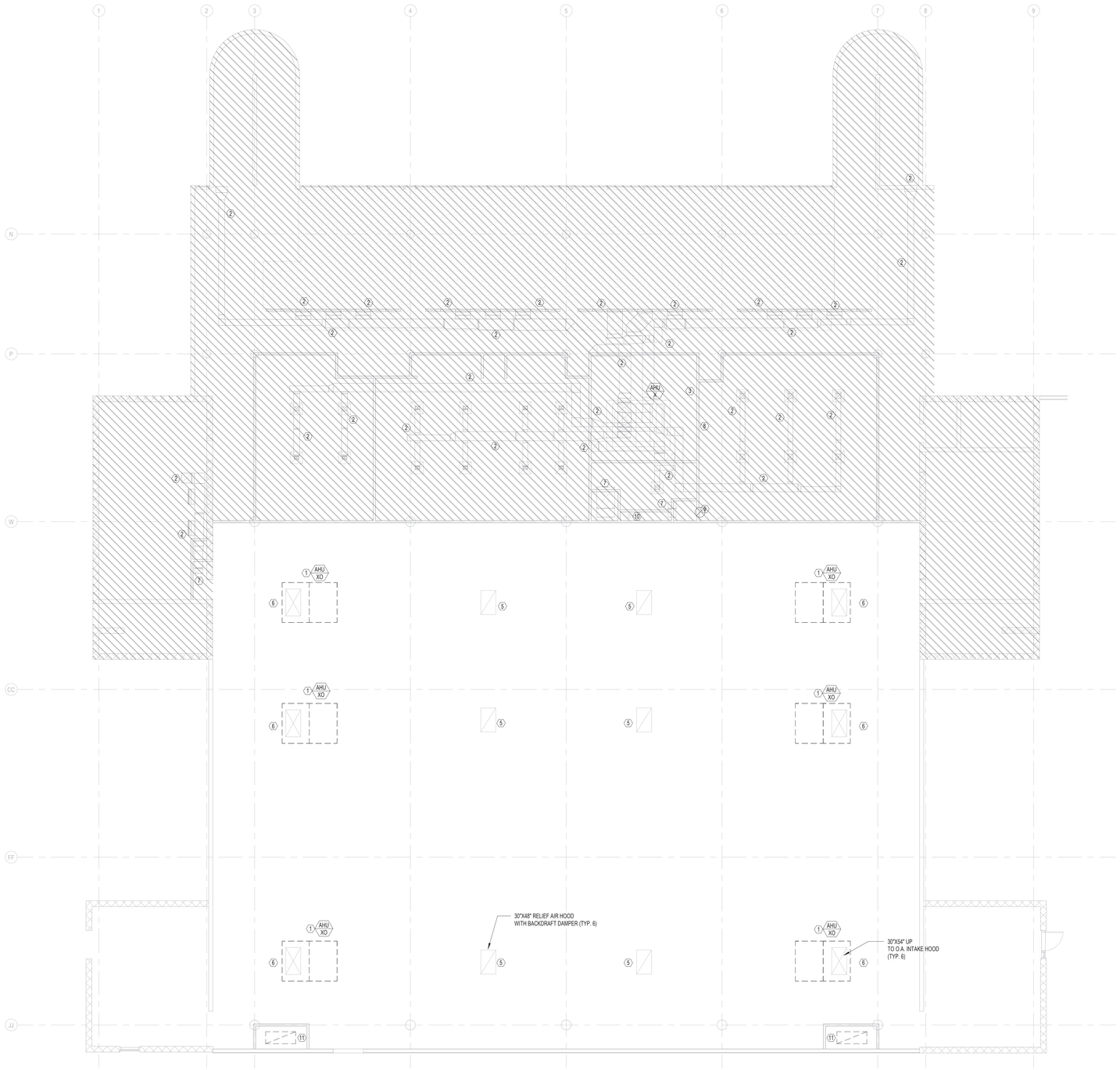

SECOND FLOOR MECHANICAL DEMOLITION PLAN

1 / MD102 — SCALE: 1/8" = 1'-0"

N

MECHANICAL

GENERAL NOTES:

1. ALL UNUSED DUCTWORK SHALL BE CAPPED BACK TO MAIN.
2. ALL UNUSED EQUIPMENT, HANGERS, DUCTS, SUPPORTS, PIPES, AND WIRING SHALL BE DISCONNECTED, PROPERLY DISPOSED OF, AND REMOVED BACK TO SOURCE.
3. ALL RESULTING UNUSED OPENINGS IN WALLS, FLOORS, AND CEILINGS DUE TO DEMOLITION SHALL BE PATCHED TO MATCH EXISTING CORRESPONDING MATERIAL.
4. ALL UNUSED PIPING TO BE CAPPED BACK TO MAIN.
5. COORDINATE DEMOLITION WITH NEW WORK PLANS.

KEYNOTES:

1. EXISTING AHU TO BE DEMOLISHED ALONG WITH ALL HYDRONIC CONNECTIONS, DUCTWORK, AND ELECTRICAL CONNECTIONS. CAP HYDRONIC PIPING IN SUCH A WAY TO ALLOW FOR NEW AHU TO CONNECT INTO EXISTING HYDRONIC SYSTEM. CAP OA INTAKE IN SUCH A WAY TO ALLOW FOR NEW AHU TO CONNECT INTO EXISTING AHU DUCTWORK
2. EXISTING DUCTWORK TO REMAIN.
3. EXISTING AHU TO REMAIN.
4. EXISTING DUCTWORK TO BE DEMOLISHED.
5. EXISTING RELIEF HOOD TO REMAIN AND BE RE-USED
6. EXISTING INTAKE HOOD TO REMAIN AND BE RE-USED.
7. EXISTING EXHAUST RISER TO REMAIN TO BE RE-USED.
8. EXISTING OUTDOOR AIR RISER TO REMAIN AND BE RE-USED
9. EXISTING EXHAUST RISER TO BE TRANSITIONED TO OUTDOOR AIR RISER TO BE RE-USED.
10. EXISTING DRYER EXHAUST DUCT TO BE DEMOLISHED AND CAPPED BACK AT ROOF.
11. EXISTING OPENING IN ROOF TO OUTDOOR AIR INTAKE TO BE CAPPED BACK AT ROOF.

CONSTRUCTION AND DEMOLITION TO BE DONE IN PHASES SO THAT EXISTING DISPATCH CENTER REMAINS OPERATIONAL UNTIL SWITCHOVER TO FULLY FUNCTIONAL NEW DISPATCH CENTER CAN BE COMPLETED.

LEGAT ARCHITECTS
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CAMPUS POLICE RENOVATIONS

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Joliet, IL 60431

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T: 847.756.4180 F: 847.756.4186 www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
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062-066559
STATE OF ILLINOIS

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SECOND FLOOR MECHANICAL DEMOLTION PLAN

MD102

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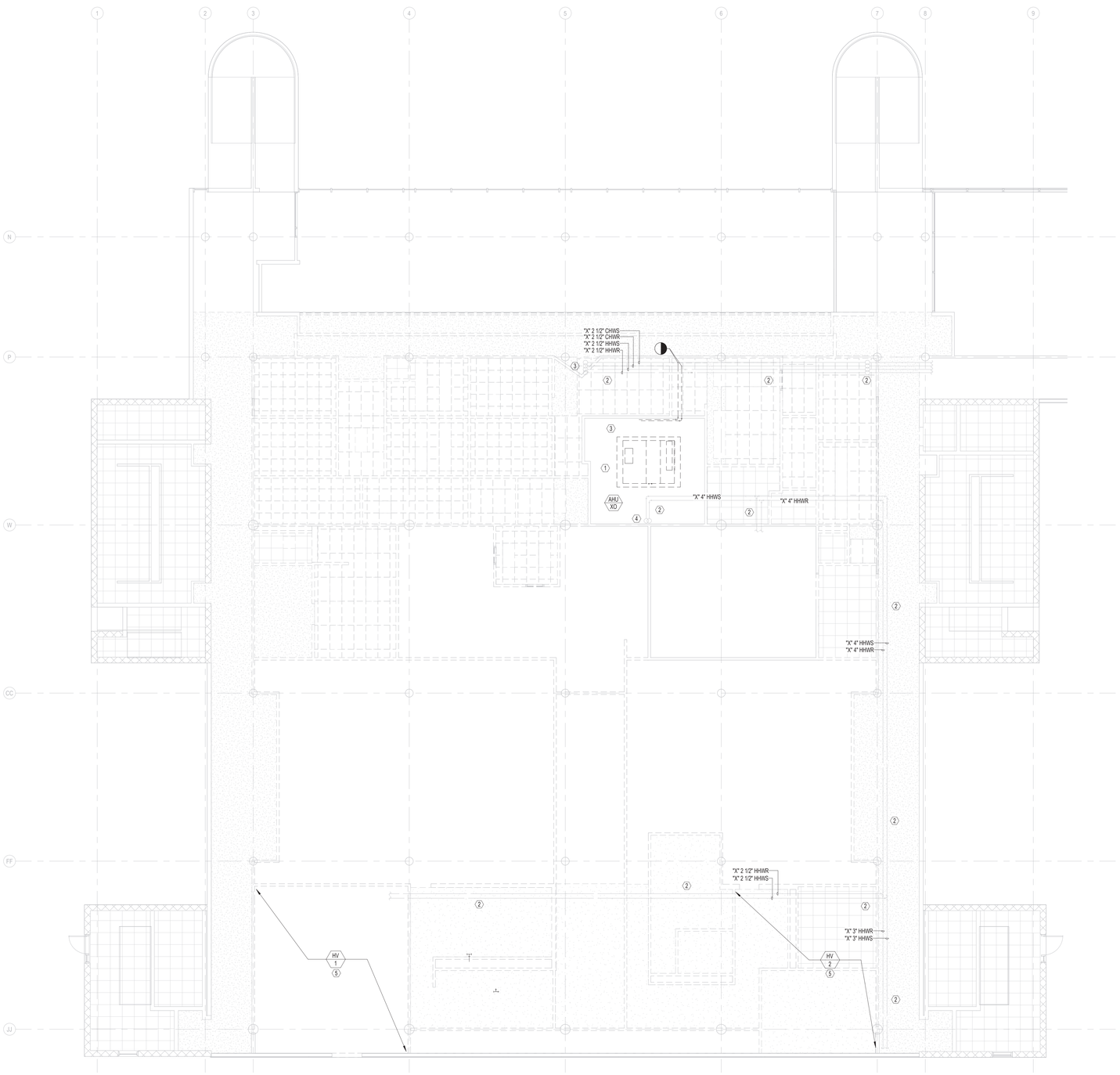

FIRST FLOOR HYDRONIC & CONTROLS DEMOLITION PLAN

1 / MD201 — SCALE: 1/8" = 1'-0"

MECHANICAL

N

GENERAL NOTES:

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KEYNOTES:

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(2) EXISTING HYDRONIC PIPING TO REMAIN.

(3) EXISTING HHWR, HHWS, CHWS, AND CHWR RISER TO REMAIN

(4) EXISTING HHWR, AND HHWS RISER TO REMAIN.

(5) EXISTING LOCKER ROOM UNIT TO BE DEMOLISHED ALONG WITH ALL HYDRONIC CONNECTIONS, DUCTWORK, AND ELECTRICAL CONNECTIONS. CAP HYDRONIC PIPING BACK TO MAIN.

CONSTRUCTION AND DEMOLITION TO BE DONE IN PHASES SO THAT EXISTING DISPATCH CENTER REMAINS OPERATIONAL UNTIL SWITCHOVER TO FULLY FUNCTIONAL NEW DISPATCH CENTER CAN BE COMPLETED.

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Joliet, IL 60431

ARCHITECT
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Oak Brook IL, 60523
P: 630.990.3541
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T: 847.756.4180 F: 847.756.4186 www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L. IVERSEN
062-068559
STATE OF ILLINOIS

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FIRST FLOOR HYDRONIC & CONTROLS DEMOLITION PLAN

MD201

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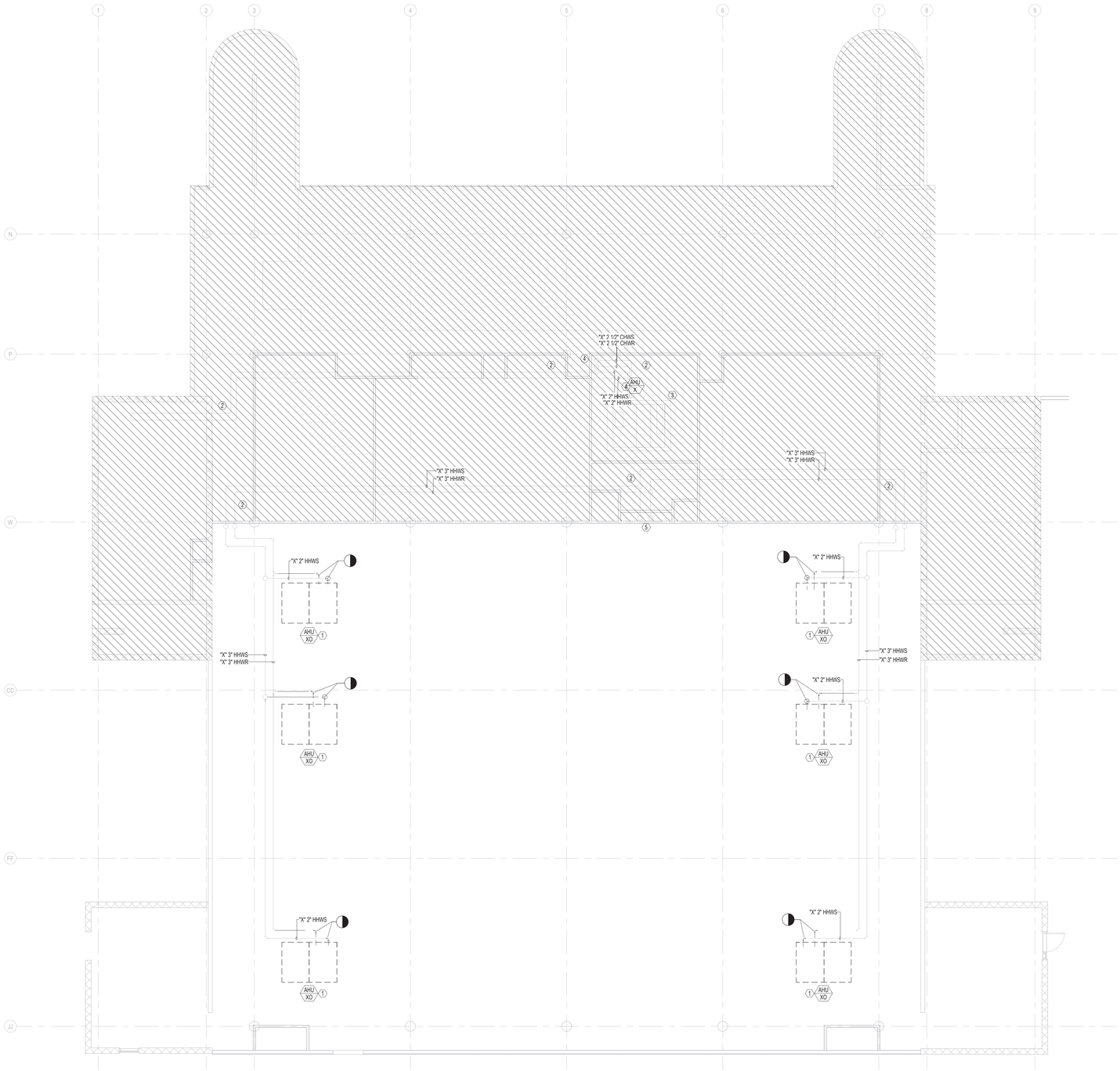

SECOND FLOOR HYDRONIC & CONTROLS DEMOLITION PLAN

1 / MD202 SCALE: 1/8" = 1'-0"

MECHANICAL

N

GENERAL NOTES:

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4. ALL UNUSED PIPING TO BE CAPPED BACK TO MAIN.
5. COORDINATE DEMOLITION WITH NEW WORK PLANS.

KEYNOTES:

(1) EXISTING AHU TO BE DEMOLISHED ALONG WITH ALL HYDRONIC CONNECTIONS, DUCTWORK, AND ELECTRICAL CONNECTIONS. CAP HYDRONIC PIPING IN SUCH A WAY TO ALLOW FOR NEW AHU TO CONNECT INTO EXISTING HYDRONIC SYSTEM. CAP OA INTAKE IN SUCH A WAY TO ALLOW FOR NEW AHU TO CONNECT INTO EXISTING AHU DUCTWORK

(2) EXISTING HYDRONIC PIPING TO REMAIN.

(3) EXISTING AHU TO REMAIN.

(4) EXISTING HHWS, HHWR, CHWS, AND CHWR RISER TO REMAIN.

(5) EXISTING HHWS, AND HHWR RISER TO REMIAN.

CONSTRUCTION AND DEMOLITION TO BE DONE IN PHASES SO THAT EXISTING DISPATCH CENTER REMAINS OPERATIONAL UNTIL SWITCHOVER TO FULLY FUNCTIONAL NEW DISPATCH CENTER CAN BE COMPLETED.

LEGAT ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

JOLIET JUNIOR COLLEGE

CAMPUS POLICE RENOVATIONS

1215 Houbolt Road
Joliet, IL 60431

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
RT&A Inc.
129 Capista Drive
Shorewood, IL 60404
P: 815.744.6600
www.ruettigertonelli.com

STRUCTURAL ENGINEER
Pease Borst & Associates
18 Exectutive Court
South Barrington, IL 60010
P: 847.842.6930
F: 847.842.6935
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LICENSED PROFESSIONAL ENGINEER
JESSICA L. IVERSEN
062-068559
STATE OF ILLINOIS

SIGNATURE

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SECOND FLOOR HYDRONIC & CONTROLS DEMOLITION PLAN

MD202

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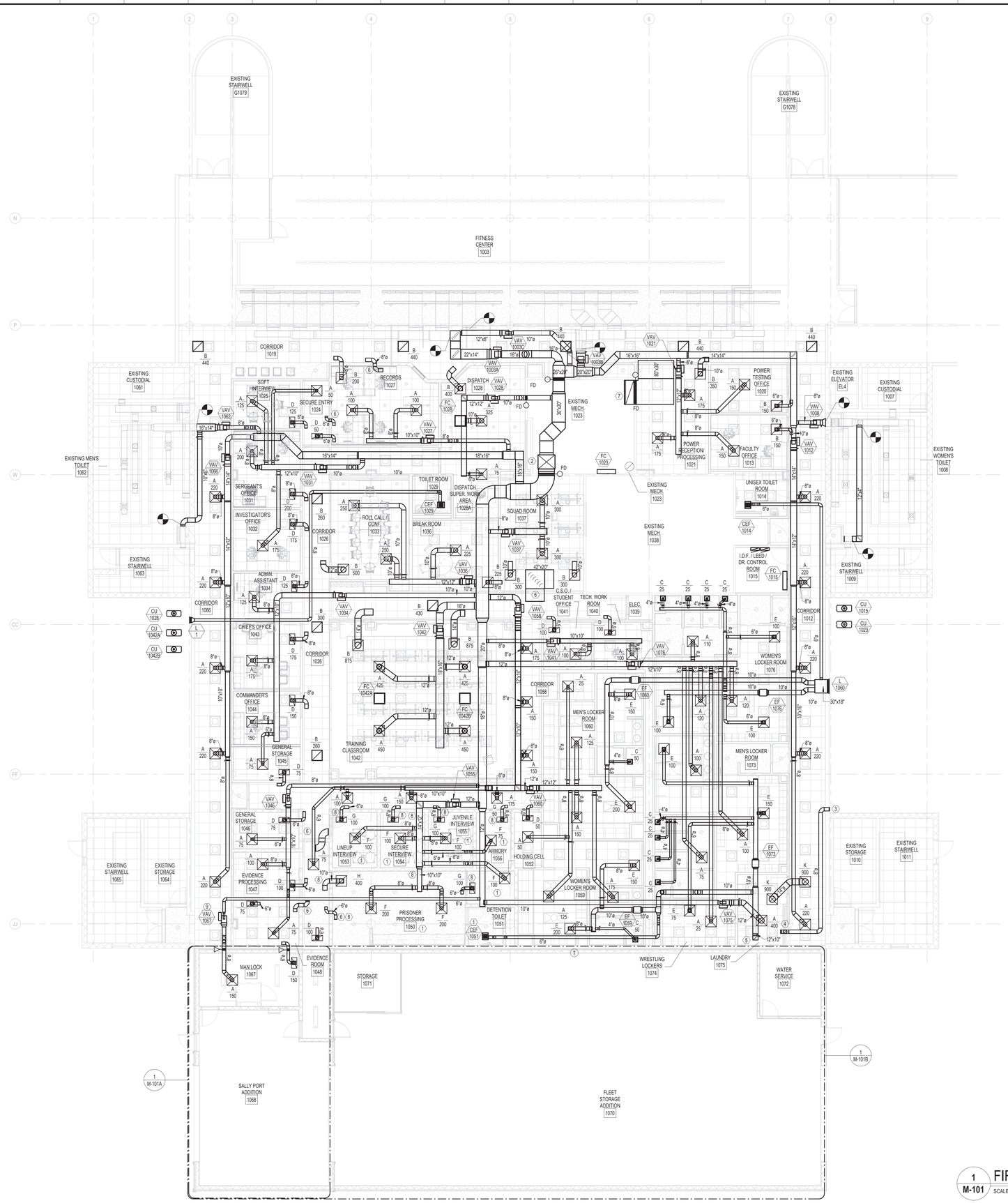

MECHANICAL GENERAL NOTES

1. REFER TO M-000 FOR MECHANICAL NOTES & M-001 FOR MECHANICAL SCHEDULES.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOUVER LOCATIONS.
3. COORDINATE LOUVER MOUNTING REQUIREMENTS WITH SPECIFIC WALL TYPES.
4. PROVIDE DRIP PAN BELOW ALL HORIZONTAL RUNS FOR VENTS/COMBUSTION. TO BE DRAINED TO FLOOR DRAIN.
5. PROVIDE LINED ELBOW OFF ALL RETURNS FOR PLENUMN RETURN SYSTEM.
6. CEILINGS ARE USED FOR PLENUM RETURN. PVC SHOULD NOT BE USED ABOVE CEILNGS AND ALL CABLING SHOULD BE PLENUM RATED.

MECHANICAL KEY NOTES

1. PROVIDE SPACE WITH SUICIDE DETERRENT SUPPLY/RETURN GRILLES.
2. NEW 24"X20" EXHAUST DUCT TO CONNECT TO EXISTING EXHAUST RISER.
3. PROVIDE NEW VENT CAP FOR DRYER EXHAUST.
4. PROVIDE NEW DRYER VENT CONNECTION TO DRYER. COORDINTE EXACT LOCATION IN FIELD
5. 12"X10" EXHAUST UP THROUGH EXISITNG CHASE TO NEW ROOF CAP. SEE ROOF PLAN FOR MORE INFORMATION.
6. TRANSFER DUCT ABOVE CEILING TO ALLOW FOR CLEAR AIR PATH BACK TO AIR HANDLING UNIT.
7. 18X54 RETURN DUCT UP TO LEVEL 2 THROUGH EXISTING FLOOR PENETRATION. VERTICAL DUCT SHALL TAP INTO 54X30 HORIZONTAL DUCT WITHIN THE MECHANICAL ROOM. PROVIDE MITERED TRANSITION ELBOW WITH TURNING VANES. ELBOW SHALL TRANSITION TO 60X30. ALL HORIZONTAL RETURN DUCT SHALL BE INTERNALLY LINED. PROVIDE FIRE DAMPER AT DUCT PENETRATION OF MECHANICAL ROOM WALL.
8. PROVIDE SECURITY BARS IN DUCTWORK AT WALL.
9. VAV BOX AND ALL ASSOCIATED DUCTWORK, PIPING, AND ELECTRICAL TO BE PART OF ALTERNATE 1 AND ALTERNATE 2 SCOPES.

PLENUM NOTES

THE SPACE ABOVE THE CEILING IS BEING UTILIZED AS A RETURN AIR PLENUM. ALL PIPING, WIRING AND DEVICES INSTALLED WITHIN THE PLENUM SHALL BE U.L. LISTED PLENUM RATED AND COMPLY WITH CURRENT AND LOCAL CODES. EXPOSED MATERIAL WITHIN THE PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPEAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPMENT INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.

1 M-101 FIRST FLOOR MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

N
MECHANICAL

LEGAT ARCHITECTS
DESIGN | PERFORMANCE | SUSTAINABILITY

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FIRST FLOOR MECHANICAL PLAN

M-101
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ALTERNATE 1: EXHAUST FAN SCHEDULE

TAG	SERVICE	CFM	ESP IN	MOTOR DATA						MANUFACTURER AND MODEL	UNIT MODEL WT.	REMARKS
				RPM	DRIVE	HP	VOLT	PH	HZ			
EF-1A	SALLY PORT	600	0.25	1501	DIRECT	1/10	115	1	60	GREENHECK G-90-VG	45	1, 2, 3, 4, 5

REMARKS:
1. VERIFY EXACT VOLTAGE PRIOR TO ORDERING EQUIPMENT.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUITS AND LINE WIRING.
3. PROVIDE FAN WITH MOTOR STARTER, NEMA 3R DISCONNECT SWITCH, AND BACKDRAFT DAMPER.
4. PROVIDE INSULATED 14" ROOF CURB. SLOPED TO MATCH ROOF CURB.
5. FANS ARE ENERGIZED BY TOXALERT ALARM OR MANUAL SUMMER VENTILATION OVERRIDE SWITCH.

ALTERNATE 1: GAS FIRED INFRARED HEATER SCHEDULE

TAG	QTY	DESCRIPTION	LOCATION / AREA SERVED	NG INLET PRESSURE (W.C.)	INPUT MODULATION (MBH)	OUTPUT MODULATION (MBH)	FAN MOTOR MOTOR (V/Ph/Hz)	MOUNTING HEIGHT (FT)	COMBUSTION TUBE LENGTH (FT)	VENT CONNECTION (INCH)	WEIGHT INCL. MOTOR (LB)	BASE OF DESIGN	REMARKS
IRH-1,2	2	GAS FIRED INFRARED HEATER	SALLY PORT-1068	5-12"	40	40	120/1/60	12'	15'	4"	107#	ROBERTS GORDON MODEL CTH2V-40	ALL

REMARKS:
1. ALL TUBING SHALL BE HEAT TREATED ALUMINIZED - NO PAINTED OR SWAGGED TUBES ALLOWED.
2. REFLECTORS SHALL COVER ALL TUBING WITHOUT ANY GAPS FOR SUSPENSION POINTS, ALL JOINTS SHALL BE TERMINATED WITH END CAPS.
3. HI EFFICIENCY REFLECTORS WITH AN IF FACTOR OF 1F 14 OR IF 15 IN ACCORDANCE OF AHRI STD. 1330.
4. EQUIPMENT SUPPLIER SHALL PROVIDE S.STEEL GAS LINE FLEX -36" W/ SHUT OFF VALVE.
5. EQUIPMENT PROVIDER SHALL PROVIDE EQUIPMENT TRAINING AND START-UP.
6. E.C TO RECEPTACLE FOR EACH IR HEATER TO PLUG INTO.
7. E.C TO PROVIDE A SERVICE SWITCH LOCATED NEAR EVERY BURNER.
8. EQUIPMENT SUPPLIER TO PROVIDE 7 DAY PROGRAMMABLE THERMOSTATS OR ZONE SENSOR.
9. 4" COMBUSTION AIR INTAKES ON ALL IR HEATERS - COMBUSTION INTAKES MUST HAVE A MIN. OF 8 IN. - FLEXIBLE HOSE

ALTERNATE 1: ELECTRIC UNIT HEATER SCHEDULE

TAG	MAKE / MODEL	SERVES	MOUNTING	CFM	ELECTRICAL			WEIGHT (LBS)	REMARKS
					WATTS	TOTAL AMPS	V/PH/HZ		
EWH-1	INDEECO / WAI	MANLOCK	SURFACE	160	1500	12.9	120/1/60	25	1, 2, 3
EWH-2	INDEECO / WAI	MANLOCK	SURFACE	160	1500	12.9	120/1/60	25	1, 2, 3

REMARKS:
1. PROVIDE WITH MANUFACTURER'S MOUNTING KIT AND DISCONNECT SWITCH.
2. COLOR TO BE SELECTED BY ARCHITECT.
3. PROVIDE WITH INTEGRAL THERMOSTAT.

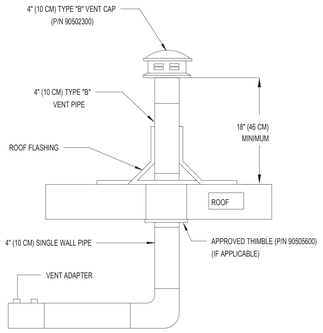
VEHICLE EXHAUST DETECTION SYSTEM

PROVIDE VEHICLE EXHAUST TOXIC GAS DETECTION SYSTEM TO KEEP PPM LEVELS BELOW THE THRESHOLD LEVELS. SYSTEM TO HAVE SINGLE PANEL TO CONTROL VENTILATION IN SALLY PORT AND FLEET STORAGE AREAS. USERS WILL BE ABLE TO SEE WHICH SENSOR IS CALLING THE VENTILATION AND IF LEVELS RISE TO ALARM SETPOINT THE INTEGRAL HORN/LIGHT WILL SOUND. USERS WILL HAVE AN INDIVIDUAL AUTO/PURGE SWITCH FOR EACH VENT ZONE TO FORCE THE VENTILATION ON WHILE STILL KEEPING THE SENSING SYSTEM IN TACT, PROTECTING THE BREATHING ZONE. SYSTEM TO BE FUNCTIONALLY TESTED AT EACH SENSOR, WITH PROPER TRACE GAS AT THE TIME OF ACCEPTANCE, TO ENSURE INTAKE DAMPERSIFANS OPERATE PROPERLY AND ALARMS ANNUNCIATE AT CORRECT PPM LEVEL. SYSTEM TO BE TOXALERT TOX-CE MAIN CONTROL PANEL WITH TOX-EC COMBINATION CO/NO2 SENSORS. SENSORS TO BE MOUNTED AT 5'-6" AFF. VENTILATION TO RUN AT 25 PPM CO (CARBON MONOXIDE) AND 3 PPM (NITROGEN DIOXIDE) AND ALARM AT 100/10 RESPECTIVELY. BAS TO BE TIED INTO ALARM CONTACT.

MECHANICAL KEY NOTES

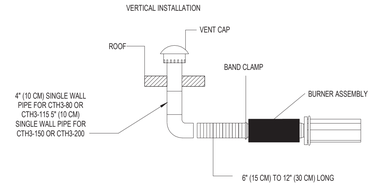
1. INFRARED RADIANT HEATER TO BE INSTALLED PER MANUFACTURER INSTALLATION INSTRUCTION. COORDINATE MOUNTING HEIGHT WITH ARCHITECT, CONTRACTOR, AND OTHER DISCIPLINES.
2. VENTING AND TERMINATION THRU ROOF FOR INFRARED HEATERS TO BE INSTALLED PER MANUFACTURER INSTALLATION INSTRUCTIONS. VENT LENGTH NOT TO EXCEED MAXIMUM LISTED.
3. INSTALL CORBON MONOXIDE SENSOR AND NITROGEN DIOXIDE SENSOR APPROXIMATELY 5'-6" A.F.F. WIRE SENSOR TO MONITOR / CONTROLLER AND GARAGE EXHAUST FAN. REFER TO VEHICLE EXHAUST DETECTION NOTES FOR MORE INFORMATION AND FOLLOW MANUFACTURER RECOMMENDATIONS FOR INSTALLATION AND WIRING INFORMATION.
4. LOCATE MAIN TOXALERT PANEL IN SALLY PORT.
5. EXTEND DUCT FROM VAV TO CONDITION MAN LOCK. DUCT TO BE PROVIDED WITH FIRE DAMPER AT PENETRATION THRU RATED WALL.
6. EXTEND DUCT DUCT BELOW CEILING AND TERMINATE WITH WIRE MESH.

VERTICAL VENTING



A) REFER TO INSTALLATION, OPERATION AND SERVICE MANUAL FOR PROPER DESIGN.
B) TYPE "B" VENT MATERIALS MUST BE USED OUTDOORS.
C) AN INSULATING THIMBLE (P/N 90505600) IS REQUIRED TO PASS THROUGH COMBUSTIBLE STRUCTURES.
D) 4" (10 CM) O.D. VENT PIPE, MAXIMUM 45 FT (13.7M) IN LENGTH MAY BE USED AS SHOWN ABOVE WITH AN APPROVED VENT CAP (P/N 90502300).
NOTE: CONDENSATE MAY DEVELOP WHEN LONG VENT PIPES ARE USED. IT IS RECOMMENDED THAT THE PIPE LENGTH SHOULD BE LESS THAN 20' (6M).
E) WHEN HEATER EXTENSION PACKAGES ARE USED, THEY DIRECTLY EFFECT MAXIMUM VENT LENGTH. REFER TO INSTALLATION, OPERATION AND SERVICE MANUAL FOR REQUIREMENTS.

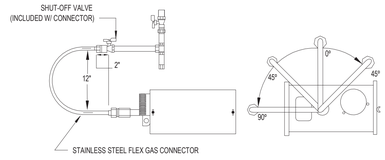
3 M-101A — INFRARED VERTICAL VENTING — NO SCALE — MECHANICAL



A) REFER TO INSTALLATION, OPERATION AND SERVICE MANUAL FOR PROPER DESIGN.
B) FOR AN OUTSIDE AIR SUPPLY, SINGLE WALL DUCT MUST BE ATTACHED TO THE HEATER (SEE DETAILS ABOVE AND INSTALLATION, OPERATION AND SERVICE MANUAL FOR REQUIRED SIZES). THE DUCT MAY BE UP TO 45 FT. (13.7 M) MAXIMUM LENGTH OR 2 FT. (60 CM) MINIMUM LENGTH WITH NO MORE THAN 2 ELBOWS.
C) WHEN HEATER LENGTHS BEYOND MINIMUM HEATER LENGTHS ARE USED, THEY DIRECTLY EFFECT MAXIMUM COMBUSTION AIR DUCT AND HEATER VENT LENGTHS. REFER TO INSTALLATION, OPERATION AND SERVICE MANUAL FOR REQUIREMENTS.
D) THE OUTSIDE AIR TERMINAL MUST BE SECURELY FASTENED TO THE OUTSIDE WALL.
E) FOR THE OUTSIDE AIR TERMINAL, USE 4" METALBESTOS (RG P/N 90502300) FOR CTH3-80 AND CTH3-115, OR 5" METALBESTOS (RG P/N 90502301) FOR CTH3-150 AND CTH3-200, OR EQUIVALENT.

4 M-101A — OUTSIDE COMBUSTION AIR SUPPLY — NO SCALE — MECHANICAL

GAS CONNECTION



(P/N 91412200)

GAS PIPE WORK MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH UNITED STATES ANSI Z 223.1/NFPA 54 LATEST ADDITION AND CANADA-CSA-B149.1

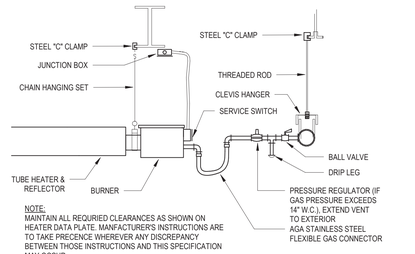
A) INSTALL THE FLEX GAS CONNECTOR AS SHOWN. THE FLEX GAS CONNECTOR ACCOMMODATES EXPANSION OF THE HEATING SYSTEM AND ALLOWS FOR EASY INSTALLATION AND SERVICE OF THE BURNER.
B) SHUT-OFF VALVE MUST BE PARALLEL TO BURNER INLET. THE 2" (5CM) DISPLACEMENT SHOWN IS FOR THE COLD CONDITION. THIS DISPLACEMENT MAY REDUCE WHEN THE SYSTEM IS FIRED.

⚠ CAUTION

HOLD GAS LINE SECURELY WITH PIPE WRENCH WHEN ATTACHING THE FLEX GAS CONNECTOR.

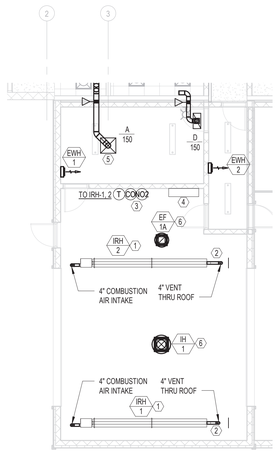
FAILURE TO FOLLOW THESE INSTRUCTIONS WILL RESULT IN PROPERTY DAMAGE.

5 M-101A — INFRARED GAS CONNECTION — NO SCALE — MECHANICAL



NOTE:
MAINTAIN ALL REQUIRED CLEARANCES AS SHOWN ON HEATER DATA PLATE. MANFACTURER'S INSTRUCTIONS ARE TO TAKE PRECENCE WHEREVER ANY DISCREPANCY BETWEEN THOSE INSTRUCTIONS AND THIS SPECIFICATION MAY OCCUR.

6 M-101A — UNIT HEATER - INFARED TUBE — SCALE: 12" = 1'-0" — MECHANICAL



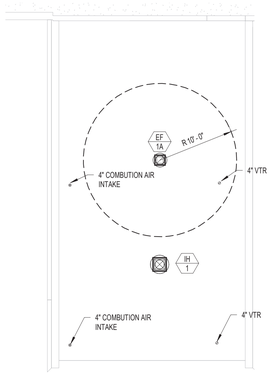
SALLY PORT VENTILATION

EXH. RATE PER CODE = .75 CFM/SQ.FT

FLEET STORAGE AREA: 780 SQ.FT

VENTILATION REQUIREMENT: 780 X .75 = 585 CFM
ACTUAL EXHAUST: 600 CFM VIA EXHAUST FAN

1 M-101A — ALTERNATE 1 SALLY PORT - MECHANICAL PLAN — SCALE: 1/8" = 1'-0" — MECHANICAL



2 M-101A — ALTERNATE 1 SALLY PORT - MECHANICAL ROOF PLAN — SCALE: 1/8" = 1'-0" — MECHANICAL

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DESIGN | PERFORMANCE | SUSTAINABILITY

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CAMPUS POLICE RENOVATIONS

1215 Houbolt Road
Joliet, IL 60431

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
RT&A Inc.
129 Capista Drive
Shorewood, IL 60404
P: 815.744.6600
www.ruettigertonelli.com

STRUCTURAL ENGINEER
Pease Borst & Associates
18 Exectutive Court
South Barrington, IL 60010
P: 847.842.6930
F: 847.842.6935
www.peaseborst.com

MEP/FP ENGINEER
RTM Engineering Consultants
650 E. Algonquin, Suite 250
Schaumburg, IL 60173
P: 847.756.4180
www.rtmec.com

rtm engineering consultants
650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4186 www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L. IVERSEN
062-068559
STATE OF ILLINOIS

SIGNATURE
DATE 6/25/2021

REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR BID	06/28/21

PROJECT NUMBER	220122.00
DATE OF ISSUE	06.28.21
DRAWN BY	MB/BD
CHECKED BY	DP

ALTERNATE #1 - MECHANICAL PLAN

M-101A
ISSUED FOR BID

ALTERNATE 2: GAS FIRED INFRARED HEATER SCHEDULE

TAG	QTY	DESCRIPTION	LOCATION / AREA SERVED	NG INLET PRESSURE (W.C.)	INPUT MODULATION (MBH)	OUTPUT MODULATION (MBH)	FAN MOTOR/ MOTOR (V/Ph/Hz)	MOUNTING HEIGHT (FT)	COMBUSTION TUBE LENGTH (FT)	VENT CONNECTION (INCH)	WEIGHT INCL. MOTOR (LB)	BASE OF DESIGN	REMARKS
IRH-1,2	2	GAS FIRED INFRARED HEATER	SALLY PORT-1068	5-12"	40	40	120/1/60	12'	15'	4"	107#	ROBERTS GORDON MODEL CTHQV-40	ALL
IRH-3,4,5	3	GAS FIRED INFRARED HEATER	FLEET STORAGE -1070	5-12"	80-52	80-52	120/1/60	12'	30'	4"	164#	ROBERTS GORDON MODEL CTH3-80	ALL

REMARKS:
1. ALL TUBING SHALL BE HEAT TREATED ALUMINIZED - NO PAINTED OR SWAGGED TUBES ALLOWED.
2. REFLECTORS SHALL COVER ALL TUBING WITHOUT ANY GAPS FOR SUSPENSION POINTS, ALL JOINTS SHALL BE TERMINATED WITH END CAPS.
3. HI EFFICIENCY REFLECTORS WITH AN I/F FACTOR OF 1F 14 OR IF 15 IN ACCORDANCE OF AHRI STD. 1330.
4. EQUIPMENT SUPPLIER SHALL PROVIDE S.STEEL GAS LINE FLEX -36" W/ SHUT OFF VALVE.
5. EQUIPMENT PROVIDER SHALL PROVIDE EQUIPMENT TRAINING AND START-UP.
6. E.C TO RECEPTACLE FOR EACH IR HEATER TO PLUG INTO.
7. E.C TO PROVIDE A SERVICE SWITCH LOCATED NEAR EVERY BURNER.
8. EQUIPMENT SUPPLIER TO PROVIDE 7 DAY PROGRAMMABLE THERMOSTATS OR ZONE SENSOR.
9. 4" COMBUSTION AIR INTAKES ON ALL IR HEATERS - COMBUSTION INTAKES MUST HAVE A MIN. OF 8 IN. - FLEXIBLE HOSE

ALTERNATE 2: EXHAUST FAN SCHEDULE

TAG	SERVICE	CFM	ESP IN	MOTOR DATA						MANUFACTURER AND MODEL	UNIT MODEL WT.	REMARKS
				RPM	DRIVE	HP	VOLT	PH	HZ			
EF-1A	SALLY PORT	600	0.25	1501	DIRECT	1/10	115	1	60	GREENHECK G-90-VG	45	1, 2, 3, 4, 5
EF-2B	FLEET STORAGE	2875	0.25	1081	DIRECT	1	115	1	60	GREENHECK G-160-VG	85	1, 2, 3, 4, 5
EF-3B	FLEET STORAGE	200	0.25	1163	DIRECT	1	115	1	60	GREENHECK G-080-VG	35	1, 2, 3, 4, 6

REMARKS:
1. VERIFY EXACT VOLTAGE PRIOR TO ORDERING EQUIPMENT.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUITS AND LINE WIRING.
3. PROVIDE FAN WITH MOTOR STARTER, NEMA 3R DISCONNECT SWITCH, AND BACKDRAFT DAMPER.
4. PROVIDE INSULATED 14" ROOF CURB, SLOPED TO MATCH ROOF CURB.
5. FANS ARE ENERGIZED BY TOXALERT ALARM OR MANUAL SUMMER VENTILATION OVERRIDE SWITCH.
6. FAN TO RUN CONTINUOUSLY TO PROVIDE CODE REQUIRED VENTILATION IN FLEET STORAGE.

ALTERNATE 2: INTAKE HOOD

TAG	MANUFACTURER / MODEL	AREA SERVED	CFM	MAX THROAT VELOCITY (FPM)	WEIGHT [LBS]	REMARKS
IH-1	GREENHECK / GRSI 15	SALLY PORT	600	600	20	ALL
IH-2	GREENHECK / GRSI 30	FLEET STORAGE	2,875	600	40	ALL

REMARKS:
1. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
2. PROVIDE PREFABRICATED ROOF CURB A MINIMUM OF 14" HIGH.
3. PROVIDE WITH BIRDSCREEN.
4. PROVIDE WITH MOTORIZED BACKDRAFT DAMPER INTERLOCKED WITH EXHAUST FAN.
5. INTAKE SHOULD BE A MINIMUM OF 10'-0' FROM ANY EXHAUST/RELIEF OPENINGS.

ALTERNATE 2: ELECTRIC UNIT HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	DESCRIPTION	ELECTRIC HEAT		ELECTRICAL			NOTES
				INPUT (KW)	OUTPUT (BTU/HR)	VOLTS/Ø/HZ	MCA (AMPS)	MOCP (AMPS)	
EUH-1	MARKEL	HF3325TD-RP	3320 SERIES COMMERCIAL FAN FORCED WALL HEATER	3	10,350	208/1/60	12.5	-	1-3
EUH-2	MARKEL	F1F5103N	5100 SERIES COMMERCIAL HORIZONTAL WALL HUNG HEATER	3.3	11,200	208/1/60	15.9	-	1,2,4

NOTES:
1. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
2. PROVIDE WITH INTEGRAL TAMPER PROOF THERMOSTAT AND DISCONNECT SWITCH.
3. HEATER TO BE INSTALLED FULLY-RECESSED INTO WALL.
4. HEATER TO BE PROVIDED AND INSTALLED WITH WALL MOUNTING BRACKET.

VEHICLE EXHAUST DETECTION SYSTEM

PROVIDE VEHICLE EXHAUST TOXIC GAS DETECTION SYSTEM TO KEEP PPM LEVELS BELOW THE THRESHOLD LEVELS. SYSTEM TO HAVE SINGLE PANEL TO CONTROL VENTILATION IN SALLY PORT AND FLEET STORAGE AREAS. USERS WILL BE ABLE TO SEE WHICH SENSOR IS CALLING THE VENTILATION AND IF LEVELS RISE TO ALARM SETPOINT THE INTEGRAL HORN/LIGHT WILL SOUND. USERS WILL HAVE AN INDIVIDUAL AUTO/PURGE SWITCH FOR EACH VENT ZONE TO FORCE THE VENTILATION ON WHILE STILL KEEPING THE SENSING SYSTEM IN TACT, PROTECTING THE BREATHING ZONE. SYSTEM TO BE FUNCTIONALLY TESTED AT EACH SENSOR, WITH PROPER TRACE GAS AT THE TIME OF ACCEPTANCE, TO ENSURE INTAKE DAMPERS/FANS OPERATE PROPERLY AND ALARMS ANNUNCIATE AT CORRECT PPM LEVEL. SYSTEM TO BE TOXALERT TOX-C6 MAIN CONTROL PANEL WITH TOX-EC COMBINATION CO/NO2 SENSORS. SENSORS TO BE MOUNTED AT 5'-6" AFF. VENTILATION TO RUN AT 25 PPM CO (CARBON MONOXIDE) AND 3 PPM (NITROGEN DIOXIDE) AND ALARM AT 100/10 RESPECTIVELY. BAS TO BE TIED INTO ALARM CONTACT.

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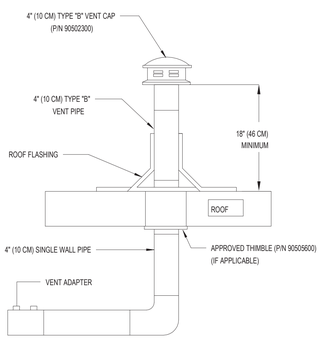
VERTICAL VENTING



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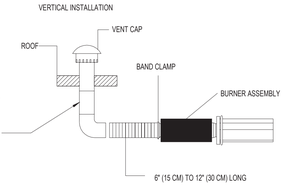
3 M-101B — INFRARED VERTICAL VENTING
SCALE: 1/4" = 1'-0" — MECHANICAL



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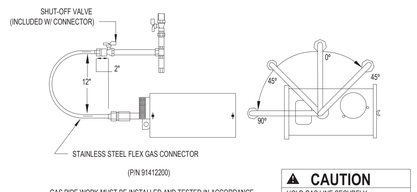
4 M-101B — OUTSIDE COMBUSTION AIR SUPPLY
SCALE: 1/4" = 1'-0" — MECHANICAL

GAS CONNECTION



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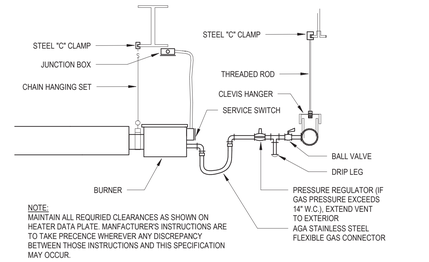
A) INSTALL THE FLEX GAS CONNECTOR AS SHOWN. THE FLEX GAS CONNECTOR ACCOMMODATES EXPANSION OF THE HEATING SYSTEM AND ALLOWS FOR EASY INSTALLATION AND SERVICE OF THE BURNER.
B) SHUT-OFF VALVE MUST BE PARALLEL TO BURNER INLET. THE 2" (5CM) DISPLACEMENT SHOWN IS FOR THE COLD CONDITION. THIS DISPLACEMENT MAY REDUCE WHEN THE SYSTEM IS FIRED.

⚠ CAUTION

HOLD GAS LINE SECURELY WITH PIPE WRENCH WHEN ATTACHING THE FLEX GAS CONNECTOR.

FAILURE TO FOLLOW THESE INSTRUCTIONS WILL RESULT IN PROPERTY DAMAGE.

5 M-101B — INFRARED GAS CONNECTION B
SCALE: 1/4" = 1'-0" — MECHANICAL



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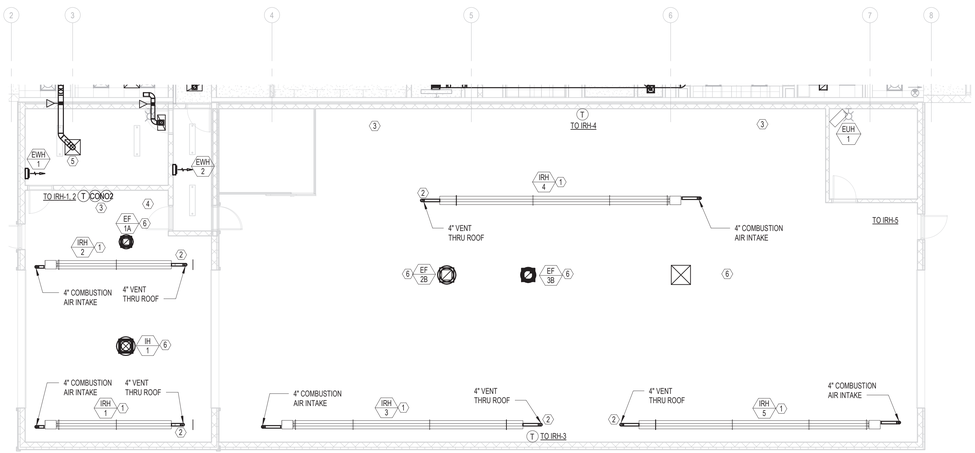
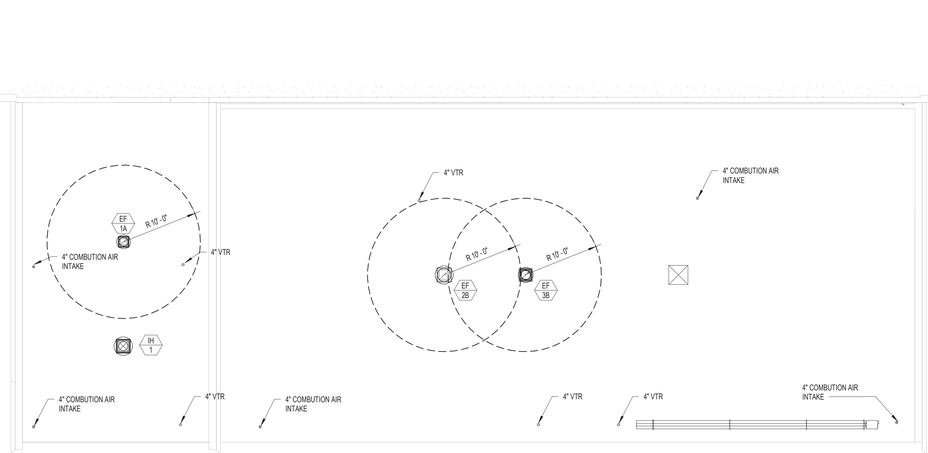
6 M-101B — UNIT HEATER - INFARED TUBE
SCALE: 12" = 1'-0" — MECHANICAL



1 M-101B — ALTERNATE 2 SALLY PORT & FLEET STORAGE - MECHANICAL PLAN
SCALE: 1/8" = 1'-0" — MECHANICAL

FLEET STORAGE VENTILATION

FLEET STORAGE AREA:	3830 SQ.FT
EXH. RATE PER CODE:	.05 CFM/SQ.FT CONTINUOUS .75 CFM/SQ.FT INTERMITTENT
VENTILATION REQUIREMENT:	3830 X .05 = 191.5 CFM 3830 X .75 = 2,872.5 CFM
ACTUAL EXHAUST:	200 CFM VIA EF EF-3 CONTINUOUS 2,875 CFM VIA EF-2 INTERMITTENT



2 M-101B — ALTERNATE 2 SALLY PORT & FLEET STORAGE - MECHANICAL ROOF PLAN
SCALE: 1/8" = 1'-0" — MECHANICAL

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JOLIET JUNIOR COLLEGE

CAMPUS POLICE RENOVATIONS

1215 Houbolt Road
Joliet, IL 60431

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
RT&A Inc.
129 Capista Drive
Shorewood, IL 60404
P: 815.744.6600
www.ruettigertonelli.com

STRUCTURAL ENGINEER
Pease Borst & Associates
18 Exectutive Court
South Barrington, IL 60010
P: 847.842.6930
F: 847.842.6935
www.peaseborst.com

MEP/FP ENGINEER
RTM Engineering Consultants
650 E. Algonquin, Suite 250
Schaumburg, IL 60173
P: 847.756.4180
www.rtmec.com

rtm engineering consultants
650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4186 : www.rtmec.com

JESSICA L. IVERSEN
062-068559
LICENSED PROFESSIONAL ENGINEER
STATE OF ILLINOIS

SIGNATURE
DATE 6/25/2021

REVISIONS

NO.	DESCRIPTION	DATE
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PROJECT NUMBER	220122.00
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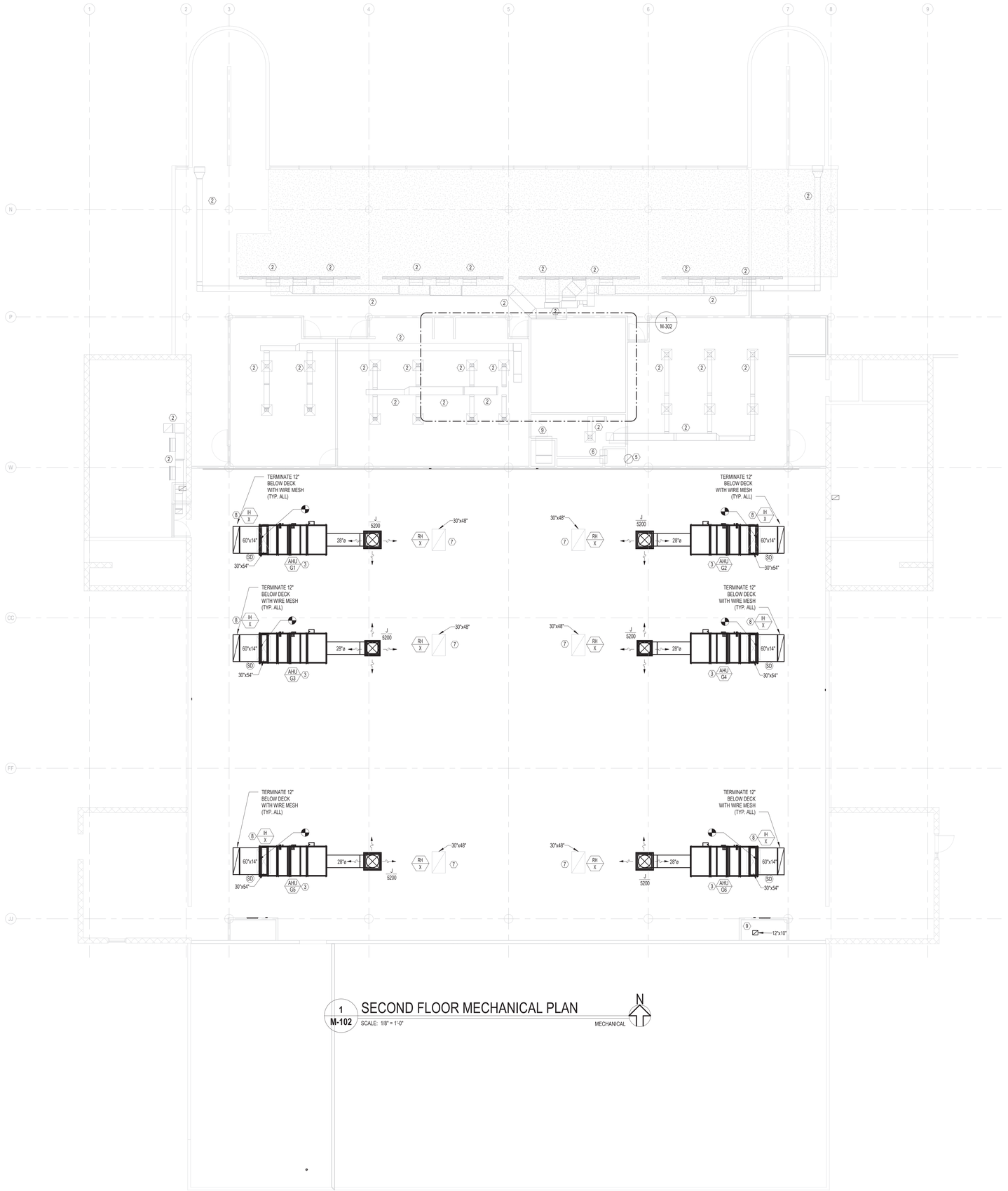
DRAWN BY	Author
CHECKED BY	Checker

ALTERNATE#2 - MECHANICAL PLAN

M-101B
ISSUED FOR BID



1 M-102 SECOND FLOOR MECHANICAL PLAN
SCALE: 1/8" = 1'-0"

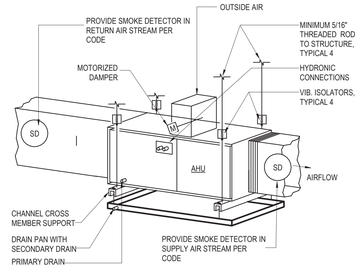
N
MECHANICAL

MECHANICAL GENERAL NOTES

1. REFER TO M-000 FOR MECHANICAL NOTES & M-001 FOR MECHANICAL SCHEDULES.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOUVER LOCATIONS.
3. COORDINATE LOUVER MOUNTING REQUIREMENTS WITH SPECIFIC WALL TYPES.
4. PROVIDE DRIP PAN BELOW ALL HORIZONTAL RUNS FOR VENTS/COMBUSTION. TO BE DRAINED TO FLOOR DRAIN.
5. PROVIDE LINED ELBOW OFF ALL RETURNS FOR PLENUM RETURN SYSTEM.
6. CEILINGS ARE USED FOR PLENUM RETURN. PVC SHOULD NOT BE USED ABOVE CEILNGS AND ALL CABLING SHOULD BE PLENUM RATED.

MECHANICAL KEY NOTES

1. EXISTING AHU TO REMAIN.
2. EXISTING DUCTWORK AND DIFFUSERS TO REMAIN.
3. NEW AHU TO BE INSTALLED IN SAME LOCATION AS PREVIOUS. CONNECT NEW AHU TO EXISTING OA
4. NOT USED.
5. EXISTING BOILER EXHAUST TO REMAIN.
6. EXISTING EXHAUST RISER TO REMAIN.
7. EXISTING RELIEF HOOD TO REMAIN.
8. EXISTING INTAKE HOOD TO REMAIN AND BE RE-USED. CONNECT AHU OUTDOOR AIR INTO EXISTING INTAKE. PROVIDE WITH MOTORIZED DAMPER INTERLOCKED WITH UNIT.
9. NEW EXHAUST RISER UP TO ROOF THROUGH EXISTING CHASE.



1 HORIZONTAL AHU WITH MOTORIZED DAMPER MOUNTING DETAIL
SCALE: N.T.S.

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Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
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T: 847.756.4180 F: 847.756.4186 | www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L. IVERSEN
062-068559
STATE OF ILLINOIS

SIGNATURE
DATE 6/25/2021

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SECOND FLOOR MECHANICAL PLAN

M-102
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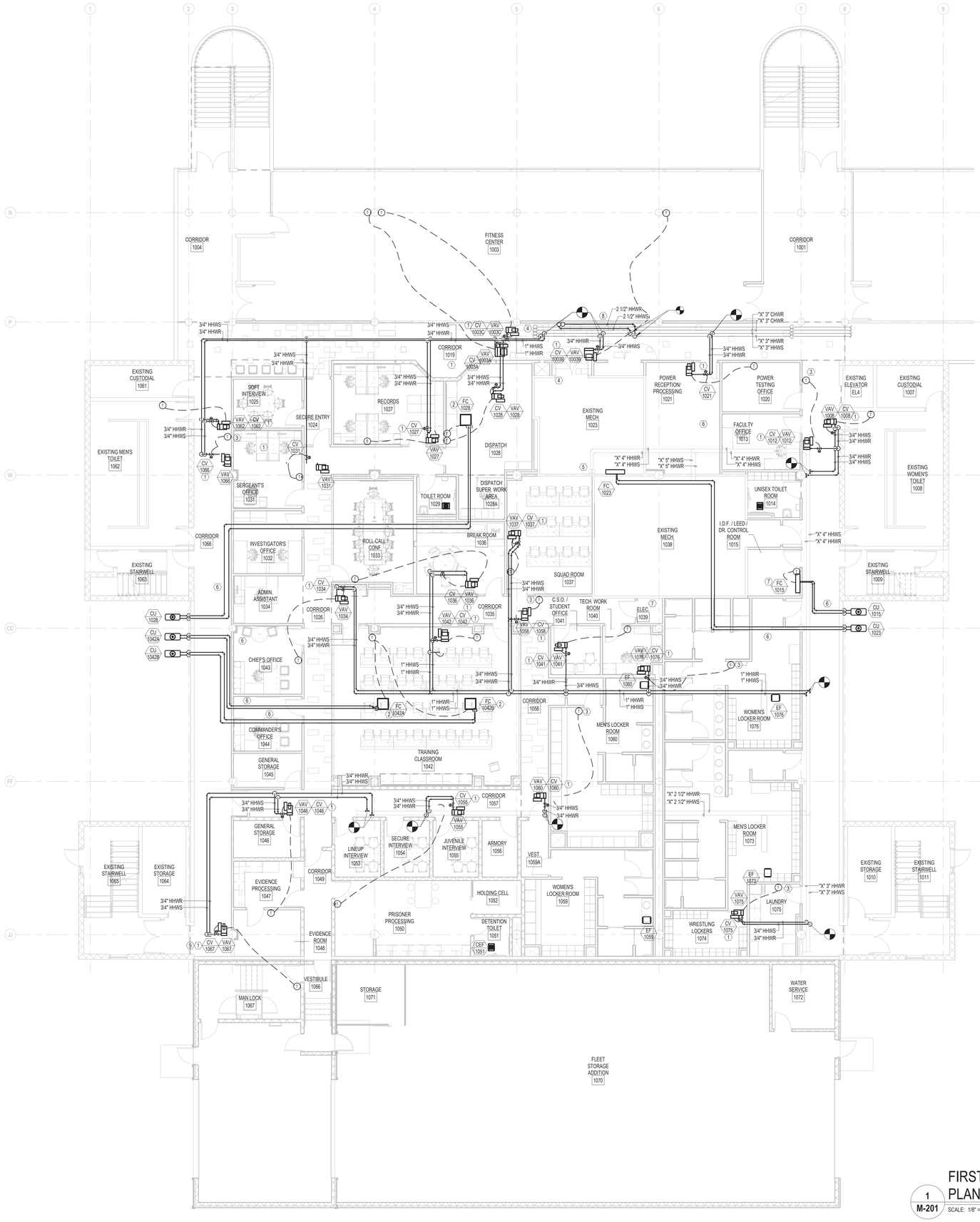

MECHANICAL GENERAL NOTES

1. REFER TO M-000 FOR MECHANICAL NOTES & M-001 FOR MECHANICAL SCHEDULES.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOUVER LOCATIONS.
3. COORDINATE LOUVER MOUNTING REQUIREMENTS WITH SPECIFIC WALL TYPES.
4. PROVIDE DRIP PAN BELOW ALL HORIZONTAL RUNS FOR VENTS/COMBUSTION. TO BE DRAINED TO FLOOR DRAIN.
5. PROVIDE DRIP PANS WITH LEAK DETECTION/ALARM FOR ALL HYDRONIC AND REFRIGERANT PIPING THAT RUNS OVER IDF OR ELECTRICAL ROOMS.

MECHANICAL KEY NOTES

1. CONTROL VALVE TO BE CONNECTED TO CORRESPONDING VAV BOX FOR CONTROL AND COMMUNICATION.
2. FAN COILS TO ONLY OPERATE DURING EMERGENCY SITUATION.
3. THERMOSTAT LOCATED IN PUBLIC SPACE TO BE PROVIDED WITH LOCKABLE COVER.
4. EXISTING HHWS, HHWR, CHWS, AND CHWR RISER TO REMAIN.
5. EXISTING HHWS, AND HHWR RISER TO REMAIN.
6. NEW REFRIGERANT LIQUID AND SUCTION LINES FROM CU TO FC UNITS. COORDINATE EXACT SIZE WITH MANUFACTURER.
7. ROUTE EXISTING/NEW HYDRONIC PIPING AROUND IT/ELECTRICAL CLOSETS AS NECESSARY.
8. CONNECT NEW 2-1/2" HWS/R PIPING TO EXISTING 3" MAIN. ROUTE UP THROUGH SECOND FLOOR TO 2ND FLOOR MECHANICAL ROOM. CONTRACTOR TO COORDINATE WITH EXISTING CONCRETE REINFORCEMENT TO AVOID CUTTING STEEL.
9. VAV BOX AND ALL ASSOCIATED DUCTWORK, PIPING, AND ELECTRICAL TO BE PART OF ALTERNATE 1 AND ALTERNATE 2 SCOPES.

1 M-201 FIRST FLOOR HYDRONIC & CONTROLS PLAN
SCALE: 1/8" = 1'-0"

N

MECHANICAL

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FIRST FLOOR HYRONIC & CONTROLS PLAN

M-201
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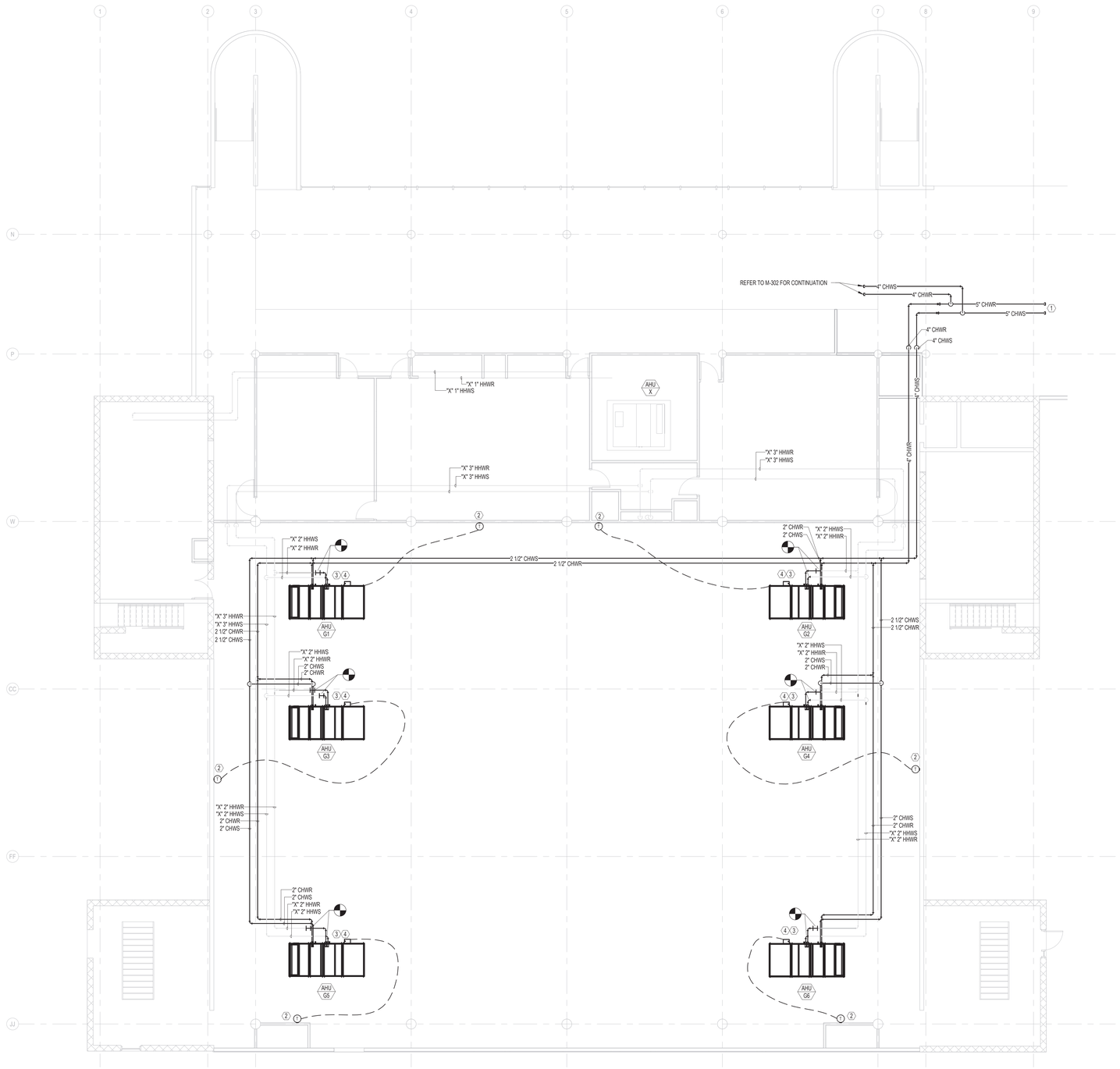

1 M-202 SCALE: 1/8" = 1'-0"

SECOND FLOOR HYDRONIC & CONROLS PLAN

MECHANICAL

MECHANICAL GENERAL NOTES

1. REFER TO M-000 FOR MECHANICAL NOTES & M-001 FOR MECHANICAL SCHEDULES.
2. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT LOUVER LOCATIONS.
3. COORDINATE LOUVER MOUNTING REQUIREMENTS WITH SPECIFIC WALL TYPES.
4. PROVIDE DRIP PAN BELOW ALL HORIZONTAL RUNS FOR VENTS/COMBUSTION. TO BE DRAINED TO FLOOR DRAIN.
5. PROVIDE DRIP PANS WITH LEAK DETECTION/ALARM FOR ALL HYDRONIC AND REFRIGERANT PIPING THAT RUNS OVER IDF OR ELECTRICAL ROOMS.

KEYNOTES:

1. NEW 5" CHILLED WATER SUPPLY AND RETURN LINE TO CONNECT TO EXISTING SYSTEM MAIN THAT IS LOCATED APPROXIMATELY 350' AWAY, CONTRACTOR TO VERIFY EXACT LENGTH IN FIELD PRIOR TO BID. CONTRACTOR TO COORDINATE EXACT ROUTING AND LENGTH IN FIELD. PROVIDE HOT-TAP INTO EXISTING SYSTEM TO AVOID SYSTEM SHUTDOWN.
2. PUBLIC SPACE THERMOSTAT TO BE PROVIDED WITH LOCKABLE COVER.
3. CONNECT EXISTING HEATING HOT WATER SUPPLY AND HEATING HOT WATER RETURN PIPE TO NEW AHU. MODIFY PIPING AS NECESSARY TO ALLOW FOR CONNECTIONS TO NEW AHU.
4. NEW AHUS TO BE PROVIDED WITH DRAIN PANS UNDER UNITS.

CONSTRUCTION AND DEMOLITION TO BE DONE IN PHASES SO THAT EXISTING DISPATCH CENTER REMAINS OPERATIONAL UNTIL SWITCHOVER TO FULLY FUNCTIONAL NEW DISPATCH CENTER CAN BE COMPLETED.

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Oak Brook IL, 60523
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SECOND FLOOR HYDRONIC & CONTROLS PLAN

M-202

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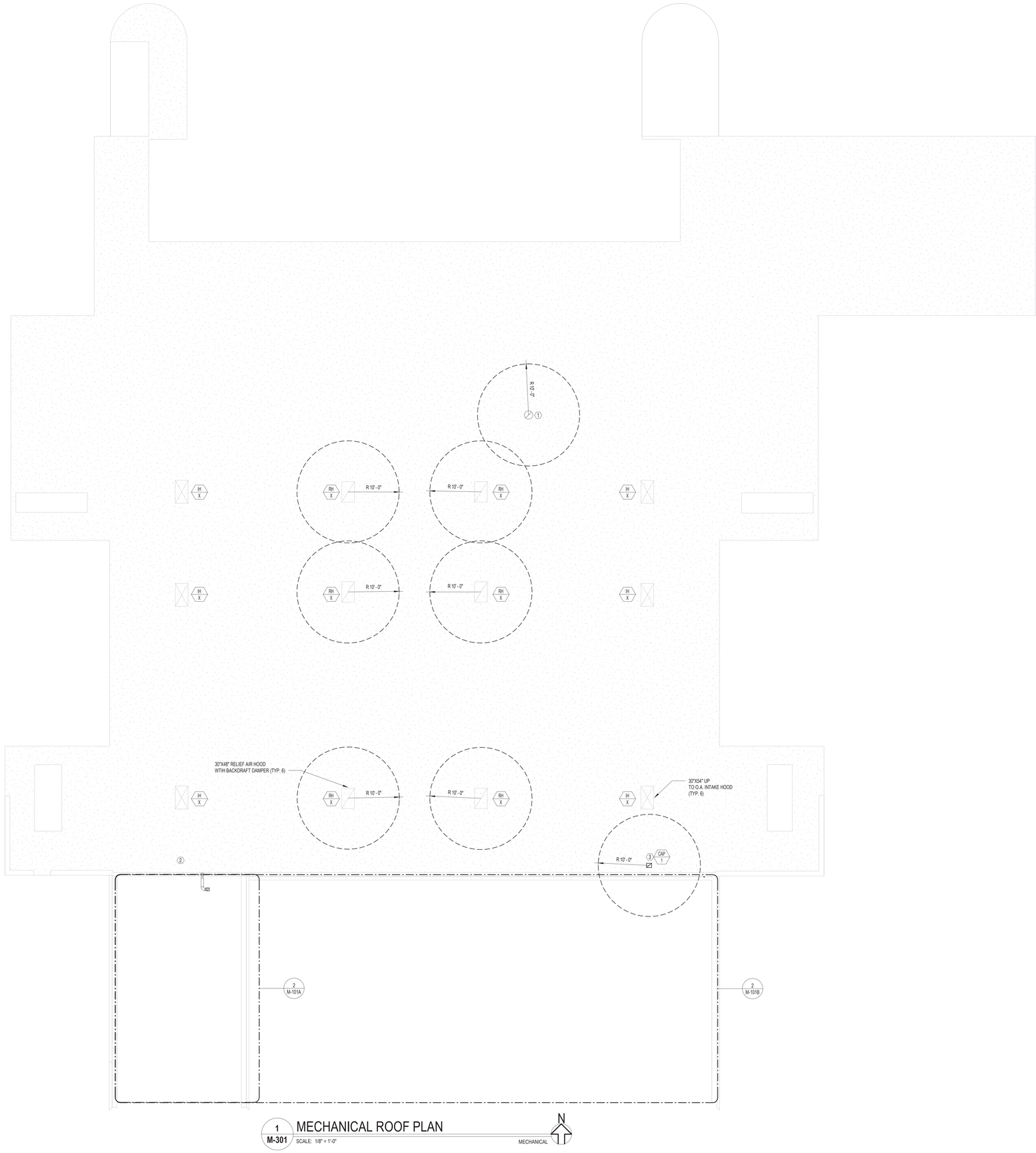

1 M-301 MECHANICAL ROOF PLAN

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

MECHANICAL

MECHANICAL GENERAL NOTES

1. REFER TO M000 FOR MECHANICAL NOTES & M001 FOR MECHANICAL SCHEDULES.
2. EXHAUST OUTLETS SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ANY OUTSIDE AIR INTAKES.
3. TERMINATE EXHAUST VENTS WITH GOOSENECK 12" ABOVE SNOWLINE. PROVIDE WITH BACKDRAFT DAMPER AND BIROSCREEN.

KEYNOTES:

1. EXISTING BOILER EXHAUST TO REMAIN.
2. EXISTING ROOF OPENING IN THIS AREA TO BE CAPPED.
3. EXISTING ROOF OPENING IN THIS ARE TO BE CAPPED IN SUCH A WAY TO ALLOW FOR NEW WEATHER CAP TO BE INSTALLED.
4.
5.
6.
7.
8.

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Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
RT&A Inc.
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Shorewood, IL 60404
P: 815.744.6600
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Pease Borst & Associates
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T: 847.756.4180 F: 847.756.4186 : www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
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062-068559
STATE OF ILLINOIS

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MECHANICAL ROOF PLAN

M-301

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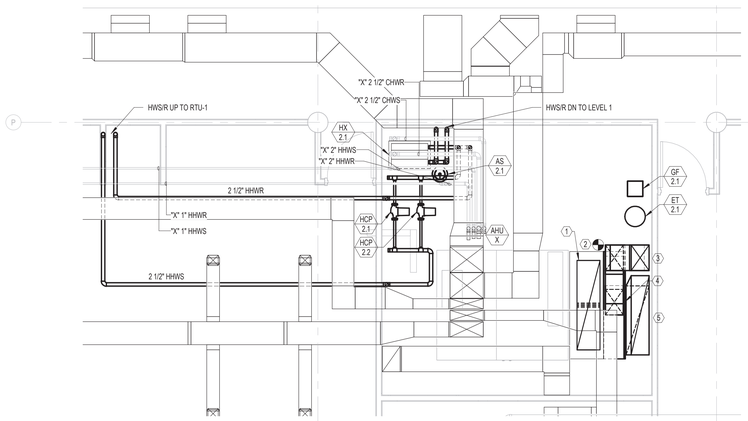


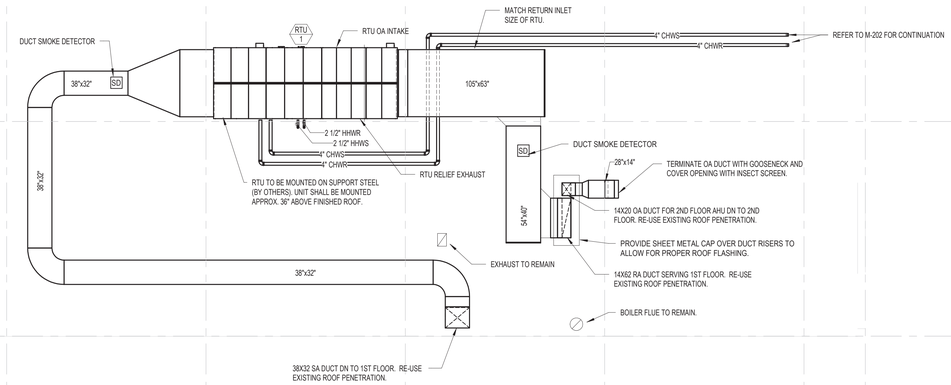
GENERAL NOTES:

1. REFER TO THE PIPING DIAGRAM FOR ALL REQUIRED PIPING SIZES, VALVES, AND ACCESSORIES.
2. RTU-1 HEATING WATER COIL VALVES SHALL BE LOCATED INSIDE THE 2ND FLOOR MECHANICAL ROOM.

1 SECOND FLOOR MECHANICAL ROOM ENLARGED PLAN
1/4" = 1'-0"

MECHANICAL KEY NOTES

1. PROVIDE NEW PNEUMATIC CONTROL DAMPER ON THE EXISTING RETURN OPENING. DAMPER SIZE APPRXOMATELY 18X70. CONTRACTOR TO VERIFY SIZE IN FIELD. CONNECT NEW PNEUMATIC TUBING TO EXISTING PANEL IN MECHANICAL ROOM.
2. EXTEND EXISTING OUTSIDE AIR DUCT TO ALLOW FOR NEW CONNECTION. OA DUCT SIZE IS APPROXIMATELY 84X24. CONTRACTOR TO VERIFY SIZE IN FIELD.
3. NEW 14X20 OUTSIDE AIR DUCT UP THROUGH ROOF.
4. CONNECT NEW OUTSIDE AIR DUCT TO INTAKE PLENUM. PROVIDE NEW PNEUMATIC CONTROL DAMPER AND OUTSIDE AIR SENSOR IN DUCT. CONNECT NEW PNEUMATIC TUBING TO EXISTING PANEL IN MECHANICAL ROOM.
5. NEW 14X62 RETURN DUCT THROUGH ROOF. TRANSITION IN VERTICAL TO 18X54 IN ORDER TO ROUTE THROUGH EXISTING 2ND FLOOR PENETRATION.



2 MECHANICAL LOW ROOF PLAN
1/8" = 1'-0"

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650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4186 www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L. IVERSEN
062-068559
STATE OF ILLINOIS

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MECHANICAL ENLARGED PLAN AND LOW ROOF PLAN

M-302
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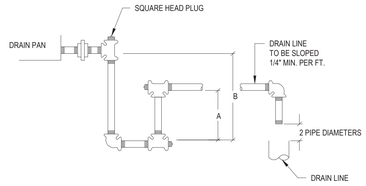
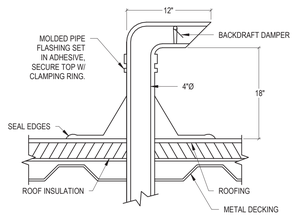
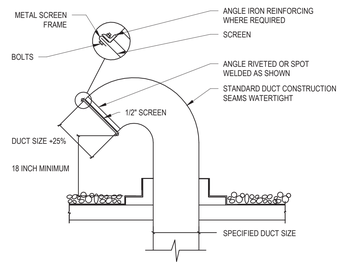


NOTES:
1. FILL TRAP MANUALLY ON INITIAL START-UP.
2. TRAP EACH COMPONENT DRAIN CONNECTION.
3. PIPE SIZE SHALL NOT BE LESS THAN DRAIN PAN CONNECTION SIZE.
4. A = NEGATIVE OR POSITIVE S.P. ON THE DRAIN PAN + 2" B = (2 NEGATIVE S.P.) + 4" FOR DRAW THRU UNITS B = A + 2" FOR BLOW THRU UNITS

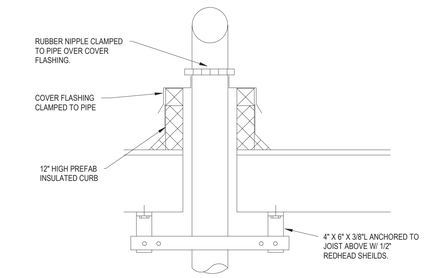
1 M-401 CONDENSATE DRAIN TRAP PIPING DETAIL
NO SCALE — ELECTRICAL



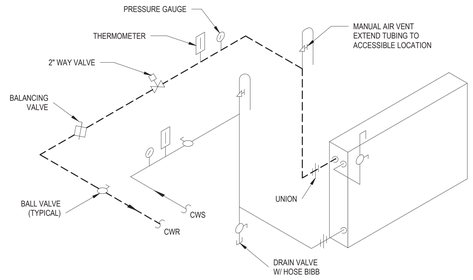
2 M-401 DRYER VENT THRU ROOF DETAIL
NO SCALE — ELECTRICAL



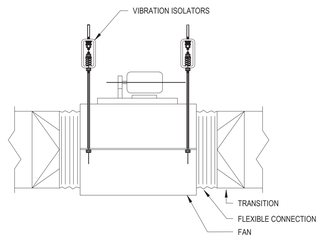
3 M-401 GOOSENECK DETAIL
NO SCALE — MECHANICAL



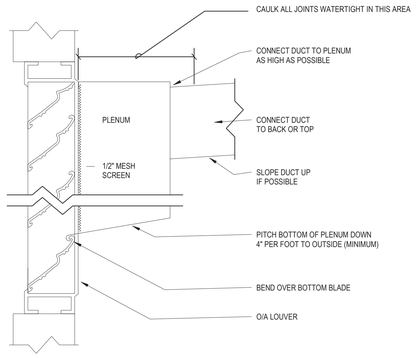
4 M-401 M - PIPE CURB DETAIL
NO SCALE — MECHANICAL



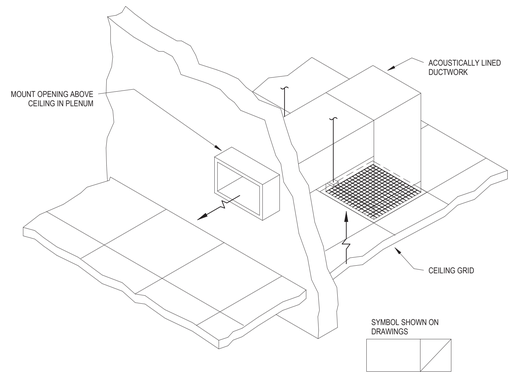
5 M-401 CHILLED WATER COOLING SINGLE COIL DETAIL
NO SCALE — MECHANICAL



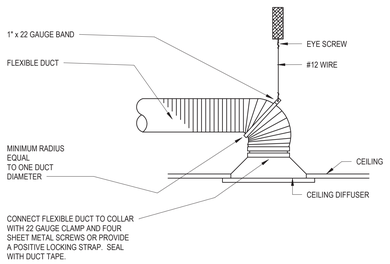
6 M-401 INLINE FAN SUPPORT DETAIL
NO SCALE — MECHANICAL



7 M-401 DUCT CONNECTION TO WATERPROOF LOUVER
NO SCALE — MECHANICAL

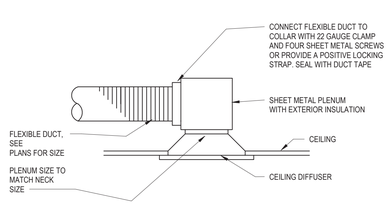


8 M-401 TRANSFER DUCT DETAIL
NO SCALE — MECHANICAL



NOTE:
NORMALLY USED WHEN FULL RADIUS ELBOW IN FLEX DUCT CAN BE ACHIEVED.

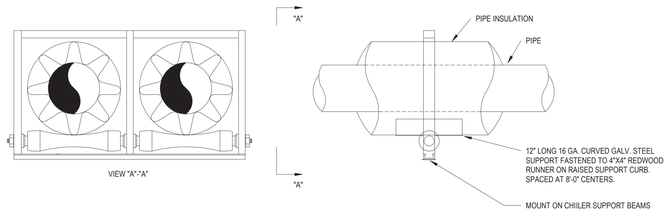
DIFFUSER DETAIL - OPTION #1



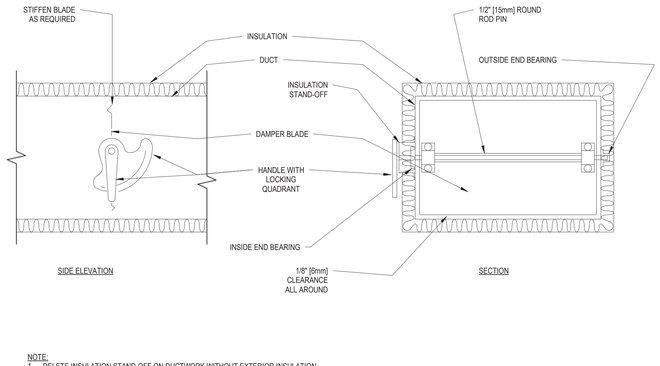
NOTE:
USED WHEN NORMAL RADIUS ELBOW CAN'T BE ATTACHED AS SHOWN IN OPTION #1.

DIFFUSER DETAIL - OPTION #2

9 M-401 TYPICAL DIFFUSER AND GRILLE CONNECTIONS
NO SCALE — MECHANICAL

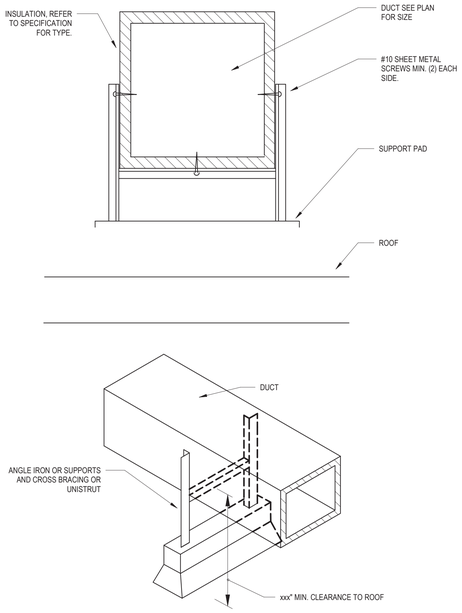


10 M-401 TYPICAL HVAC PIPING SUPPORT DETAIL
NO SCALE — MECHANICAL



NOTE:
1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLAD DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

11 M-401 VOLUME DAMPER DETAIL
NO SCALE — MECHANICAL



12 M-401 RAIL STYLE DUCT SUPPORT DETAIL ON ROOF
SCALE: 1 1/2" = 1'-0" — MECHANICAL

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M-401
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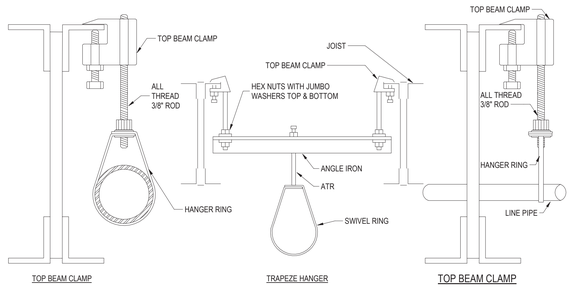


NOTE 1

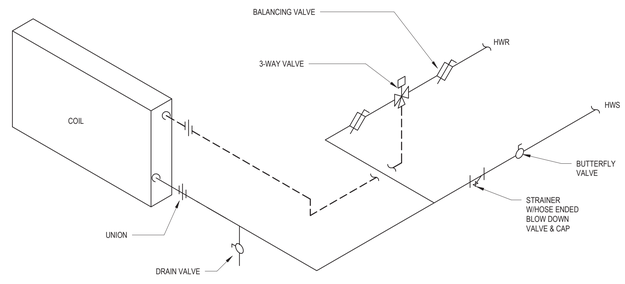
MINIMUM ROD SIZE SHALL BE 3/8" FOR PIPE 1" AND UP TO 4" IN SIZE & MINIMUM 1/2" FOR PIPE 6" AND LARGER (REFER TO PIPE HANGER DETAILS AND MANUFACTURERS INSTALLATION INSTRUCTION.)

NOTE 2

CUTTING STRUCTURAL MEMBERS TO RUN PIPING OR FACILITATE HANGER FASTENING IS NOT PERMITTED

1 TYPICAL HANGER DETAILS

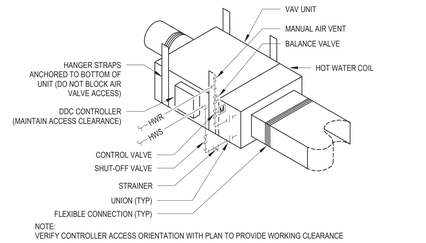
M-402 NO SCALE MECHANICAL



NOTE:
1. LOCATE 3-WAY VALVE WITHIN 2'-0" OF COIL CONNECTION.

2 AHU HOT WATER REHEAT COIL - THREE WAY VALVE

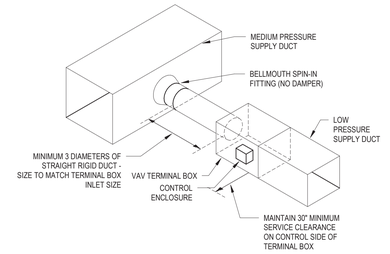
M-402 NO SCALE MECHANICAL



NOTE:
VERIFY CONTROLLER ACCESS ORIENTATION WITH PLAN TO PROVIDE WORKING CLEARANCE

3 VAV UNIT WITH HOT WATER COIL

M-402 NO SCALE MECHANICAL



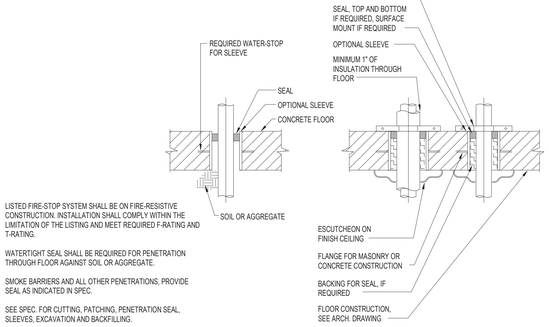
4 VAV TERMINAL BOX INTALLATION

M-402 NO SCALE MECHANICAL

BRANCH TAKE-OFF RECTANGULAR TO RECTANGULAR	L= .25D (4"MIN.) 45° D L	BRANCH TAKE-OFF RECTANGULAR TO ROUND	L= .25D (4" MIN.) D L
BRANCH TAKE-OFF ROUND TO ROUND	L= 5.25 IN. L	TRANSITION FITTING	20° 30°
STANDARD ELBOW	D R R = 1 x D (MIN.)	TEE	R D R = 1 x D (MIN.)
SHORT ELBOW	VANE S R W IF R IS LESS THAN W THEN S = 1/3 W	SHORT TEE	W 1/3W
SINGLE DIRECTION TRANSITION USE SIMILAR TRANSITION WHEN FEEDING UP TO CEILING CAVITY	FLOOR DROP CEILING	SPLIT DIRECTION TRANSITION USE SIMILAR TRANSITION WHEN FEEDING UP TO CEILING CAVITY	FLOOR DROP CEILING

7 TYPICAL DUCT TAKE-OFFS DETAIL

M-402 SCALE: 3" = 1'-0" MECHANICAL



LISTED FIRE-STOP SYSTEM SHALL BE ON FIRE-RESISTIVE CONSTRUCTION. INSTALLATION SHALL COMPLY WITHIN THE LIMITATION OF THE LISTING AND MEET REQUIRED F-RATING AND T-RATING.

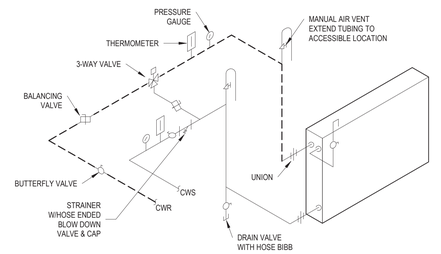
WATERTIGHT SEAL SHALL BE REQUIRED FOR PENETRATION THROUGH FLOOR AGAINST SOIL OR AGGREGATE.

SMOKE BARRIERS AND ALL OTHER PENETRATIONS, PROVIDE SEAL AS INDICATED IN SPEC.

SEE SPEC. FOR CUTTING, PATCHING, PENETRATION SEAL, SLEEVES, EXCAVATION AND BACKFILLING.

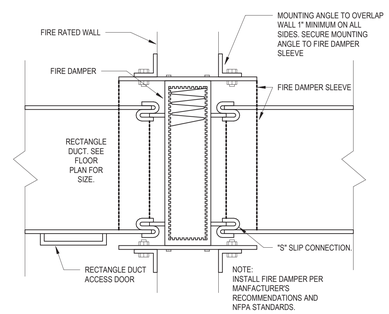
8 FLOOR PENETRATION DETAIL

M-402 NO SCALE MECHANICAL



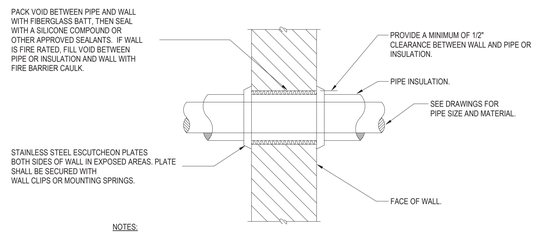
5 CHILLED WATER COOLING COIL DETAIL

M-402 NO SCALE MECHANICAL



6 FIRE DAMPER

M-402 NO SCALE MECHANICAL

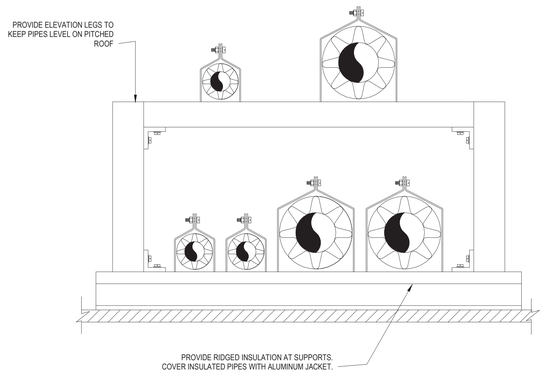


NOTES:

1. I.D. OF WALL OPENING TO BE A MIN. OF 1/2" LARGER THAN O.D. OF PIPE OR INSULATION PASSING THROUGH WALL.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THEIR WALL OPENINGS WITH OTHER TRADES AND/OR CONTRACTORS.
3. PIPE PENETRATIONS OF SMOKE OR FIRE WALLS SHALL BE IN COMPLIANCE WITH NFPA-90A.

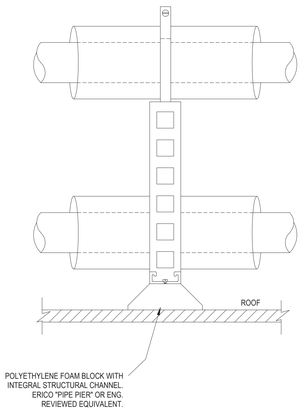
9 PIPE PENETRATION OF INTERIOR WALL DETAIL

M-402 NO SCALE MECHANICAL



10 FOAM BLOCK PIPING SUPPORT ON ROOF

M-402 SCALE: 3" = 1'-0" MECHANICAL



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JOLIET JUNIOR COLLEGE

CAMPUS POLICE RENOVATIONS

1215 Houbolt Road
Joliet, IL 60431

ARCHITECT
Legat Architects
2015 Spring Road, Suite 175
Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
RT&A Inc.
129 Capista Drive
Shorewood, IL 60404
P: 815.744.6600
www.ruettigertonelli.com

STRUCTURAL ENGINEER
Pease Borst & Associates
18 Exectutive Court
South Barrington, IL 60010
P: 847.842.6930
F: 847.842.6935
www.peaseborst.com

MEP/FP ENGINEER
RTM Engineering Consultants
650 E. Algonquin, Suite 250
Schaumburg, IL 60173
P: 847.756.4180
www.rtmec.com

rtm engineering consultants
650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4188 www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L. IVERSEN
062-066559
STATE OF ILLINOIS

SIGNATURE
DATE 6/25/2021

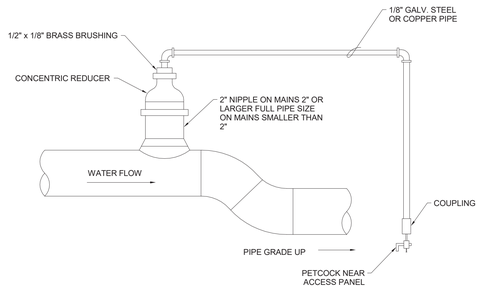
REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR BID	06/28/21

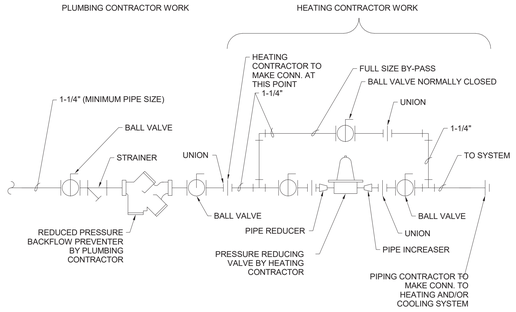
PROJECT NUMBER	220122.00
DATE OF ISSUE	06.28.21
DRAWN BY	MB/BD
CHECKED BY	DP

MECHANICAL DETAILS

M-402
ISSUED FOR BID

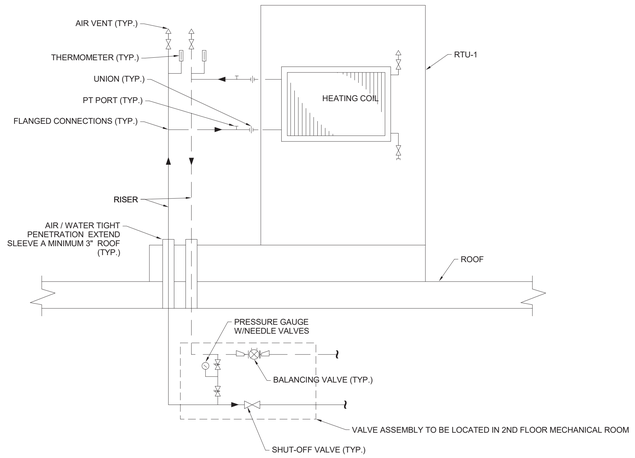


1 M-403 — AIR VENT AT HIGH POINT OF MAIN DETAIL
NO SCALE — MECHANICAL



NOTES:
1. PLUMBING & MECHANICAL CONTRACTOR SHALL INSULATE ALL PIPES PER SPECIFICATIONS.
2. PLUMBING CONTRACTOR TO PROVIDE MAKE-UP WATER LINE, BACK FLOW PREVENTER AND VALVING UP TO FIRST UNION, MECHANICAL CONTRACTOR TO DO ALL WORK FROM UNION TO MECHANICAL AND/OR COOLING SYSTEM.

2 M-403 — HOT WATER SYSTEM MAKE-UP WATER DETAIL
NO SCALE — MECHANICAL



NOTES
1. PROVIDE FLANGED CONNECTIONS BETWEEN RISERS AND TAKE-OFFS TO COILS.

3 M-403 — RTU-1 HEATING COIL PIPING DETAIL
NO SCALE — MECHANICAL

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ARCHITECT
Legat Architects
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Oak Brook IL, 60523
P: 630.990.3541
www.legat.com

CIVIL ENGINEER
RT&A Inc.
129 Capista Drive
Shorewood, IL 60404
P: 815.744.6600
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Pease Borst & Associates
18 Exectutive Court
South Barrington, IL 60010
P: 847.842.6930
F: 847.842.6935
www.peaseborst.com

MEP/FP ENGINEER
RTM Engineering Consultants
650 E. Algonquin, Suite 250
Schaumburg, IL 60173
P: 847.756.4180
www.rtmec.com

rtm engineering consultants
650 E. Algonquin Road | Suite 250 | Schaumburg, IL 60173
T: 847.756.4180 F: 847.756.4186 www.rtmec.com

LICENSED PROFESSIONAL ENGINEER
JESSICA L. IVERSEN
062-066559
STATE OF ILLINOIS

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