

NOTE: MAINTAIN 10'-0" HORIZONTAL OR 3'-0" VERTICAL CLEARANCE BETWEEN O.A. INTAKES AND CONTAMINATES IN ACCORDANCE WITH SECTION 401.4 2017 OBC-MC.

ENLARGED OFFICE FLOOR PLAN - HVAC

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

HVAC GENERAL NOTES

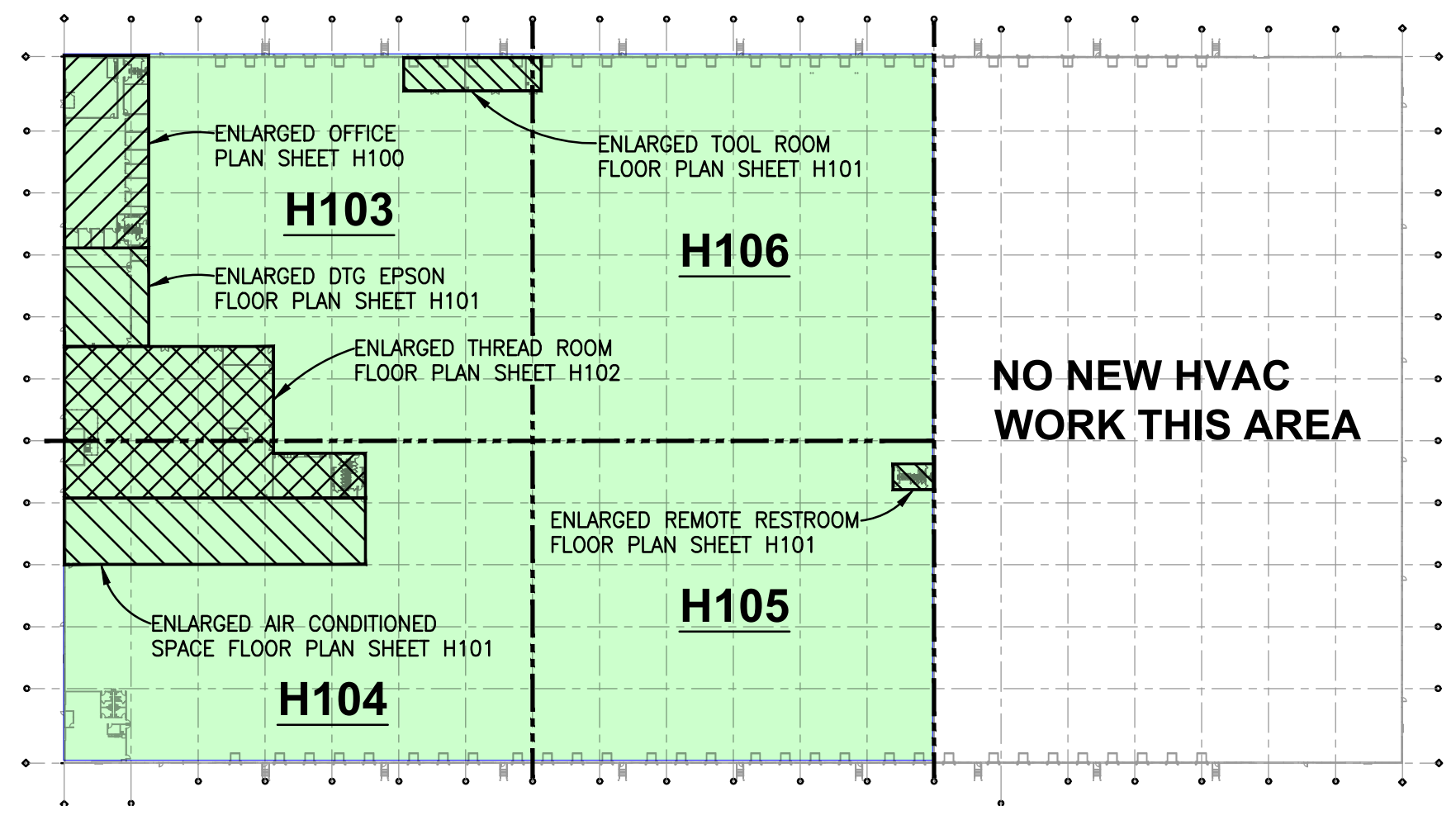
- FURNISH ALL LABOR AND MATERIAL NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM AS SHOWN.
- ALL WORK SHALL CONFORM TO APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. HVAC CONTRACTOR SHALL SECURE AND PAY FOR ALL TESTS AND INSPECTIONS AS REQUIRED FOR HIS OWN WORK.
- WORKMANSHIP SHALL REPRESENT THE HIGHEST STANDARD FOR THE INDUSTRY. ALL MATERIAL AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF OWNER ACCEPTANCE.
- PERFORM ALL TESTS, ADJUSTMENTS, ETC. AS REQUIRED BY THE EQUIPMENT MANUFACTURER.
- BALANCE SUPPLY, RETURN AND OUTDOOR AIR QUANTITIES AS SHOWN.
- DUCTWORK SHALL BE GALVANIZED SHEET METAL, FABRICATED AND INSTALLED TO SMACNA STANDARDS.
- CONTRACTOR SHALL COORDINATE HIS OWN WORK WITH THAT OF THE OTHER TRADES AND EXISTING CONDITIONS INCLUDING ARCHITECTURAL, PLUMBING, LIGHTING, STRUCTURAL, SPRINKLER, ETC.
- LOW VOLTAGE CONTROL WIRING (24V OR LESS) SHALL BE PROVIDED BY THIS CONTRACTOR.
- HIGH VOLTAGE POWER WIRING (120V OR MORE), CONDUITS AND DISCONNECTS ARE TO BE PROVIDED BY ELECTRICAL CONTRACTOR
- DUCTWORK IS TO BE EXTERNALLY INSULATED WITH 2" THICK R-6 FOIL BACKED FIBERGLASS INSULATION.
- FLEXIBLE DUCT AND CONNECTORS SHALL CONFORM TO REQUIREMENTS OF UL181 FOR 0 OR CLASS 1 AND SHALL BE SO IDENTIFIED
- A CONVENIENCE OUTLET OF 120 VOLT AC GROUNDING TYPE RECEPTACLE SHALL BE AVAILABLE FOR EACH APPLIANCE ON THE SAME LEVEL WITHIN 25 FEET (BY ELECTRICAL CONTRACTOR).
- ALL CUTTING AND PATCHING OF ROOFS, WALLS, ETC. INCLUDING REQUIRED SUPPORT OR STRUCTURAL STEEL SHALL BE PROVIDED BY OTHERS. NO CUTTING SHALL BE PERFORMED WITHOUT PRIOR APPROVAL.
- GAS PIPING: SCHEDULE 40 BLACK STEEL WITH MECHANICALLY PRESSED FITTINGS. ALL NEW PIPING AND ASSOCIATED VALVES AND REGULATORS SHALL BE SIZED, INSTALLED, INSPECTED AND TESTED IN ACCORDANCE WITH INTERNATIONAL FUEL GAS CODE. ALL EXTERIOR PIPE TO BE PAINTED WITH RUST INHIBITIVE PAINT.

HVAC LEGEND

	RECTANGULAR DUCTWORK AND SIZE
	ROUND DUCTWORK AND SIZE
	FLEXIBLE DUCTWORK AND SIZE
	SPIN-IN W/SCOOP AND DAMPER
	MANUAL BALANCING DAMPER
	GAS PIPING AND SIZE
	EXISTING GAS PIPING AND SIZE
	SHUT-OFF VALVE
	5psi TO 7" w.c. PRV
	THERMOSTAT
	HARD WIRED AVERAGING SENSOR
	AUDIBLE / VISUAL SIGNALING DEVICE
	DRAWING NOTE SYMBOL AND NUMBER
	AIR DUCT SMOKE DETECTOR
	CONNECT NEW TO EXISTING
	2' x 2' CEILING DIFFUSER
	2' x 2' EGGRATE RETURN OR TRANSFER GRILLE
	2' x 1' EGGRATE RETURN OR TRANSFER GRILLE
	EXHAUST GRILLE
	CEILING DIFFUSER, NECK SIZE, AND CFM
	RETURN GRILLE AND DUCT SIZE
	TRANSFER GRILLE AND DUCT SIZE
	DOOR GRILLE AND SIZE
	1" UNDERCUT DOOR (BY G.C.)
	MOTOR OPERATED DAMPER
	SURFACE MOUNTED SUPPLY REGISTER
	SURFACE MOUNTED RETURN REGISTER
	SUPPLY REGISTER, FACE SIZE, AND CFM
	RETURN REGISTER AND FACE SIZE

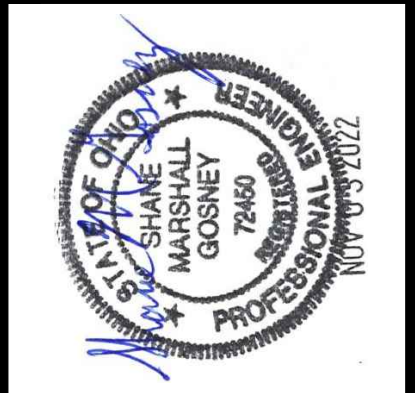
DRAWING NOTES

- FIELD VERIFY THERMOSTAT LOCATION WITH OWNER BEFORE ROUGH-IN.
- FIELD VERIFY AVERAGING SENSOR LOCATION WITH OWNER BEFORE ROUGH-IN.
- AUDIBLE / VISUAL SIGNALING DEVICE LOCATED IN A CONSTANTLY ATTENDED LOCATION (FIELD VERIFY LOCATION WITH OWNER BEFORE ROUGH-IN).
- NEW ROOFTOP UNIT LOCATED ON ROOF ABOVE (FIELD VERIFY LOCATION WITH OWNER/STRUCTURAL ENGINEER BEFORE ROUGH-IN).
- DUCTWORK LOCATED ABOVE LAY-IN CEILING (TYPICAL).
- 10" EXHAUST DUCT THROUGH ROOF TO BIRDPROOF RAIN CAP.
- 14" EXHAUST DUCT THROUGH ROOF TO BIRDPROOF RAIN CAP.
- 12" EXHAUST DUCT THROUGH ROOF TO BIRDPROOF RAIN CAP.
- 4" OUTSIDE AIR DUCT THROUGH WALL TO WALL CAP
- INTAKE LOUVER MOUNTED 18" ABOVE GRADE
- ROOF MOUNTED UPBLAST EXHAUST FAN LOCATED ON ROOF ABOVE, PROVIDE 42.5"x42.5" ROOF OPENING WITH EXPANDED METAL COVERING. FIELD VERIFY UNIT LOCATION WITH OWNER/STRUCTURAL ENGINEER BEFORE ROUGH-IN
- UNIT HEATER SUPPORTED FROM ROOF STRUCTURE ABOVE WITH THREADED RODS UNISTRUT, AND VIBRATION ISOLATORS
- HEAT PUMP LOCATED ON PRECAST PAD, FIELD VERIFY UNIT LOCATION WITH OWNER BEFORE ROUGH-IN
- 3/4" CONDENSATE LINE DOWN TO MOP SINK AS REQUIRED
- 6" OUTSIDE AIR DUCT THROUGH ROOF TO BIRD PROOF RAINCAP
- FAN COIL UNIT LOCATED ABOVE LAY-IN CEILING SUPPORTED FROM STRUCTURE ABOVE WITH THREADED RODS, UNISTRUT, AND VIBRATION ISOLATORS AS REQUIRED

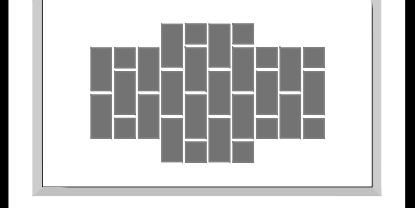


KEY PLAN

SCALE: NONE



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7010 Ripple Road
Cleveland, Ohio 45002

REVISIONS:

PROJECT: **FAIRFIELD COMMERCE PARK #3**
TENANT IMPROVEMENT
110 MERCANTILE DRIVE
FAIRFIELD, OHIO 45014

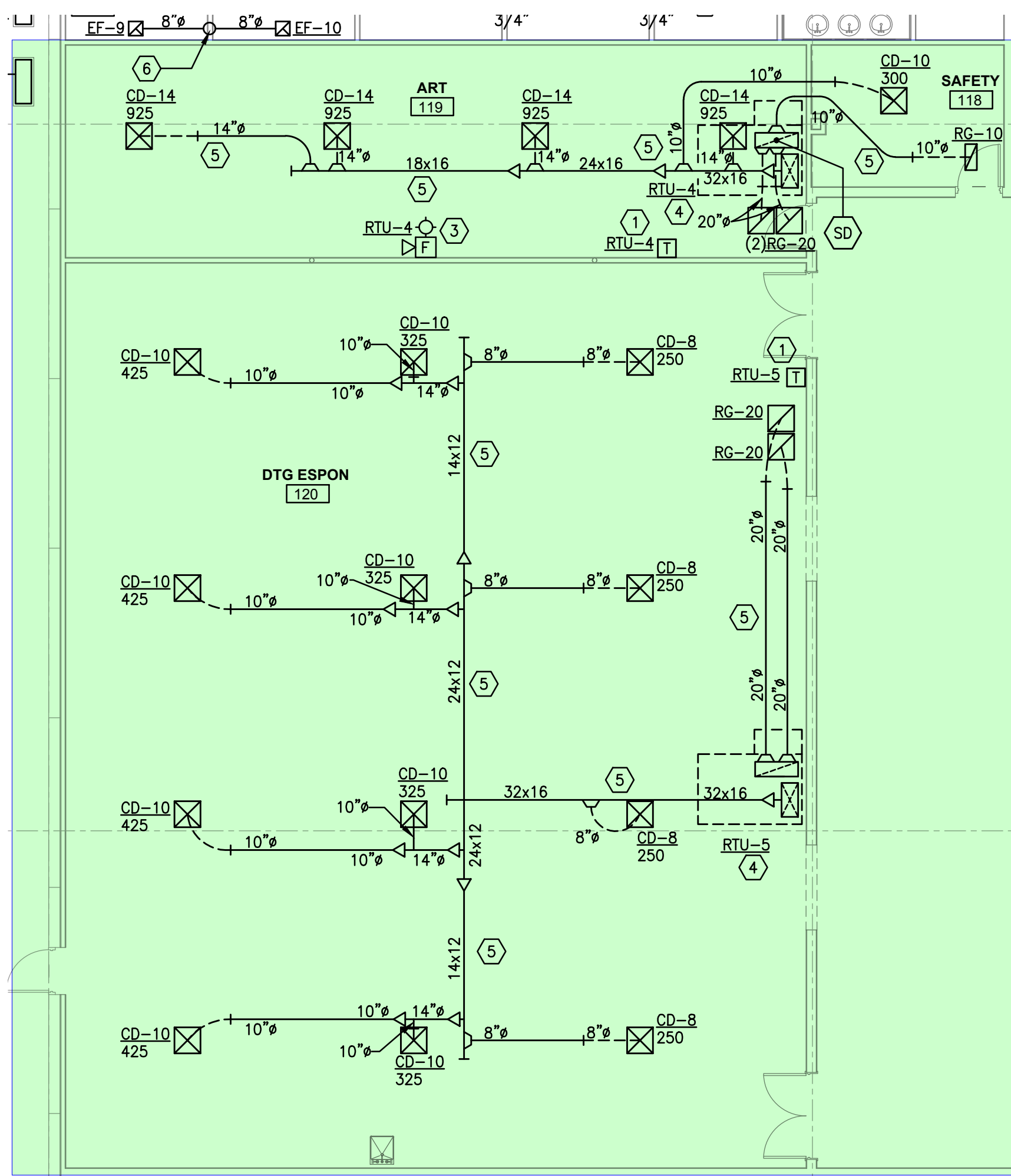
SHEET TITLE: **HVAC - ENLARGED FLOOR PLAN AND NOTES**

DRN: CHK: CAD REF:
CGD BJM 15971H-1

DATE: 11-03-22

SHEET No.: **H100**

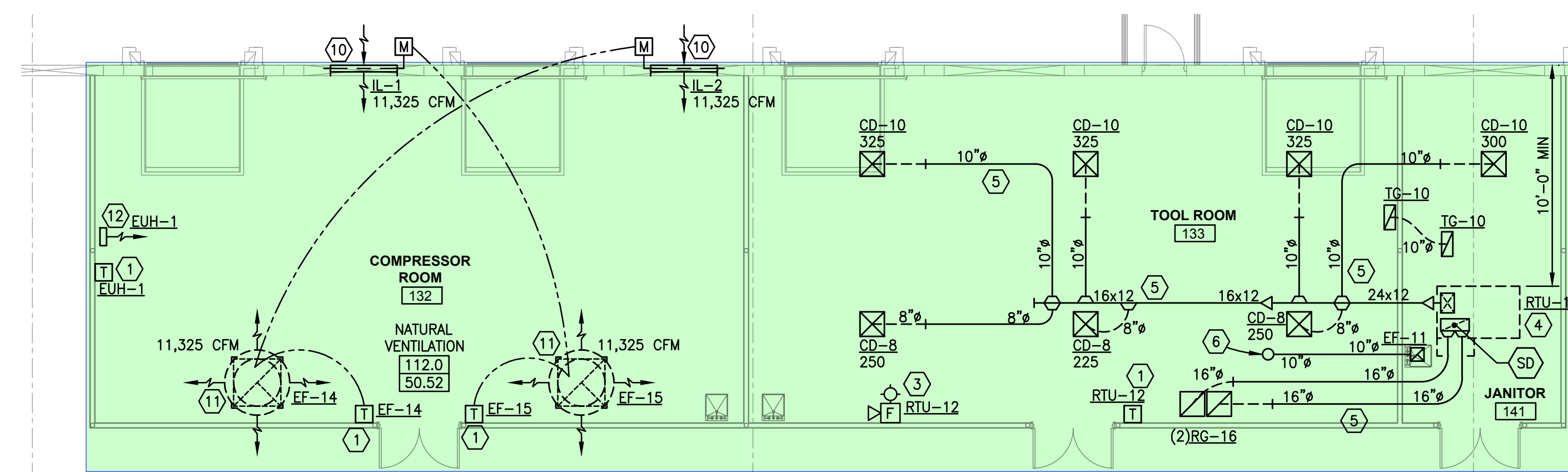
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NOTE: MAINTAIN 10'-0" HORIZONTAL OR 3'-0" VERTICAL CLEARANCE BETWEEN O.A. INTAKES AND CONTAMINATES IN ACCORDANCE WITH SECTION 401.4 2017 OBC-MC.

ENLARGED DTG EPSON FLOOR PLAN - HVAC

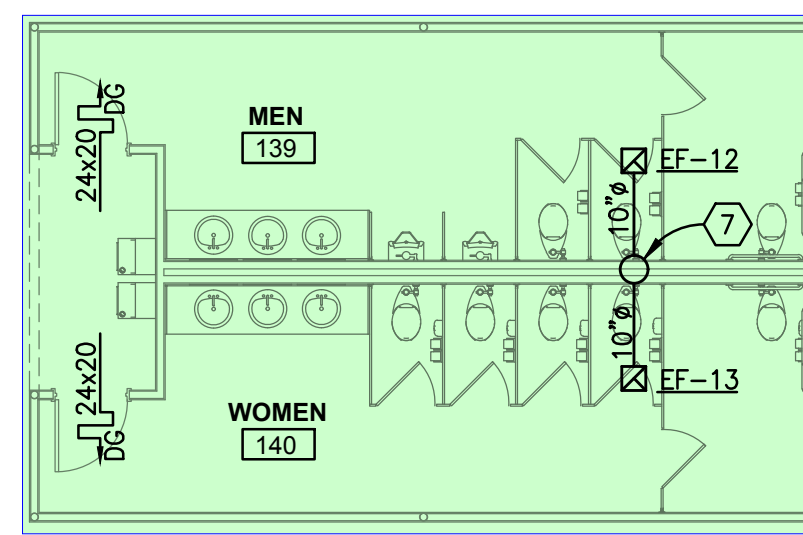
SCALE: 1/8" = 1'-0"



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ENLARGED TOOL ROOM FLOOR PLAN - HVAC

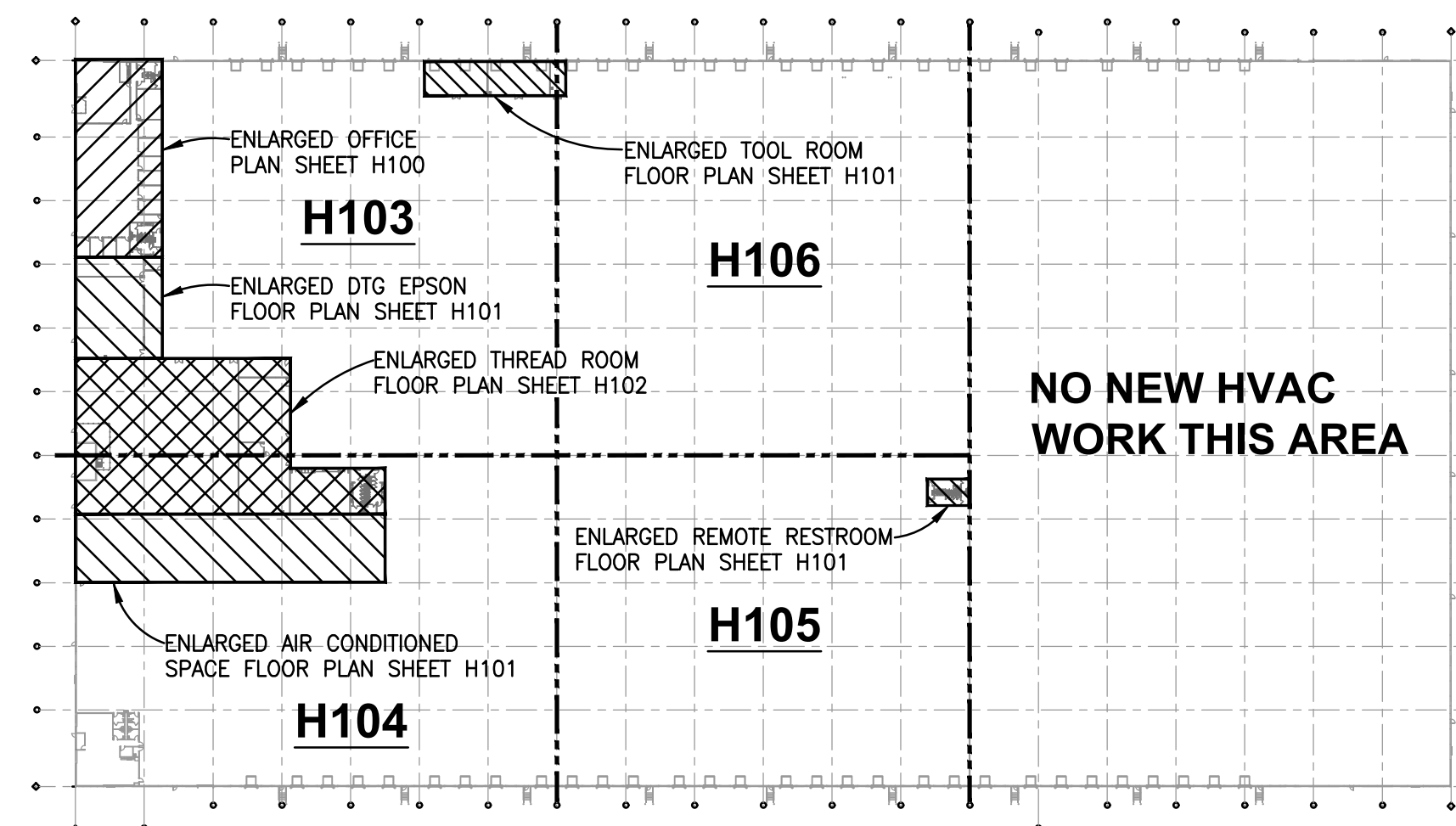
SCALE: 1/8" = 1'-0"



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ENLARGED REMOTE RESTROOM FLOOR PLAN - HVAC

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



KEY PLAN

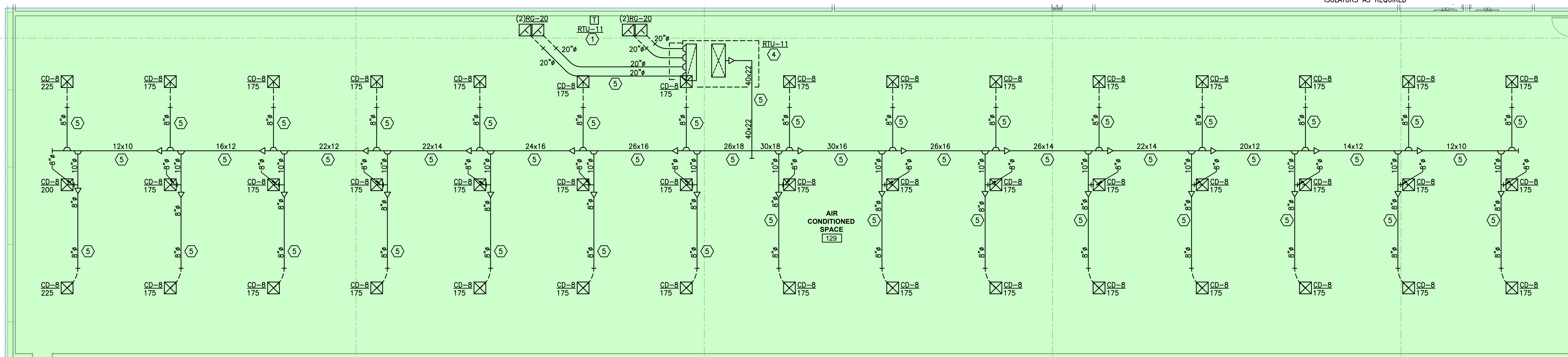
SCALE: NONE

HVAC LEGEND

- 24x12 RECTANGULAR DUCTWORK AND SIZE
- 8" ROUND DUCTWORK AND SIZE
- 8" FLEXIBLE DUCTWORK AND SIZE
- SPIN-IN W/SCOOP AND DAMPER
- MANUAL BALANCING DAMPER
- GAS PIPING AND SIZE
- EXISTING GAS PIPING AND SIZE
- SHUT-OFF VALVE
- 5psi TO 7" w.c. PRV
- THERMOSTAT
- HARD WIRED AVERAGING SENSOR
- AUDIBLE / VISUAL SIGNALING DEVICE
- DRAWING NOTE SYMBOL AND NUMBER
- AIR DUCT SMOKE DETECTOR
- CONNECT NEW TO EXISTING
- 2' x 2' CEILING DIFFUSER
- 2' x 2' EGGRATE RETURN OR TRANSFER GRILLE
- 2' x 1' EGGRATE RETURN OR TRANSFER GRILLE
- EXHAUST GRILLE
- CD-8 CEILING DIFFUSER, NECK SIZE, AND CFM
- RG-10 RETURN GRILLE AND DUCT SIZE
- TG-12 TRANSFER GRILLE AND DUCT SIZE
- 24x20 DOOR GRILLE AND SIZE
- 1" UNDERCUT DOOR (BY G.C.)
- MOTOR OPERATED DAMPER
- SURFACE MOUNTED SUPPLY REGISTER
- SURFACE MOUNTED RETURN REGISTER
- SUPPLY REGISTER, FACE SIZE, AND CFM
- RR-36x24 RETURN REGISTER AND FACE SIZE

DRAWING NOTES

- 1 FIELD VERIFY THERMOSTAT LOCATION WITH OWNER BEFORE ROUGH-IN.
- 2 FIELD VERIFY AVERAGING SENSOR LOCATION WITH OWNER BEFORE ROUGH-IN.
- 3 AUDIBLE / VISUAL SIGNALING DEVICE LOCATED IN A CONSTANTLY ATTENDED LOCATION (FIELD VERIFY LOCATION WITH OWNER BEFORE ROUGH-IN).
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- 12 UNIT HEATER SUPPORTED FROM ROOF STRUCTURE ABOVE WITH THREADED RODS, UNISTRUT, AND VIBRATION ISOLATORS
- 13 HEAT PUMP LOCATED ON PRECAST PAD, FIELD VERIFY UNIT LOCATION WITH OWNER BEFORE ROUGH-IN
- 14 3/4" CONDENSATE LINE DOWN TO MOP SINK AS REQUIRED
- 15 6" OUTSIDE AIR DUCT THROUGH ROOF TO BIRD PROOF RAINCAP
- 16 FAN COIL UNIT LOCATED ABOVE LAY-IN CEILING SUPPORTED FROM STRUCTURE ABOVE WITH THREADED RODS, UNISTRUT, AND VIBRATION ISOLATORS AS REQUIRED



NOTE: MAINTAIN 10'-0" HORIZONTAL OR 3'-0" VERTICAL CLEARANCE BETWEEN O.A. INTAKES AND CONTAMINATES IN ACCORDANCE WITH SECTION 401.4 2017 OBC-MC.

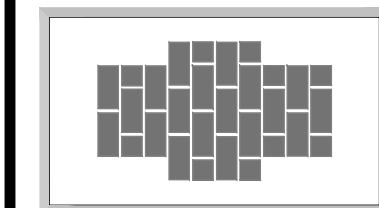
ENLARGED AIR CONDITIONED SPACE FLOOR PLAN - HVAC

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

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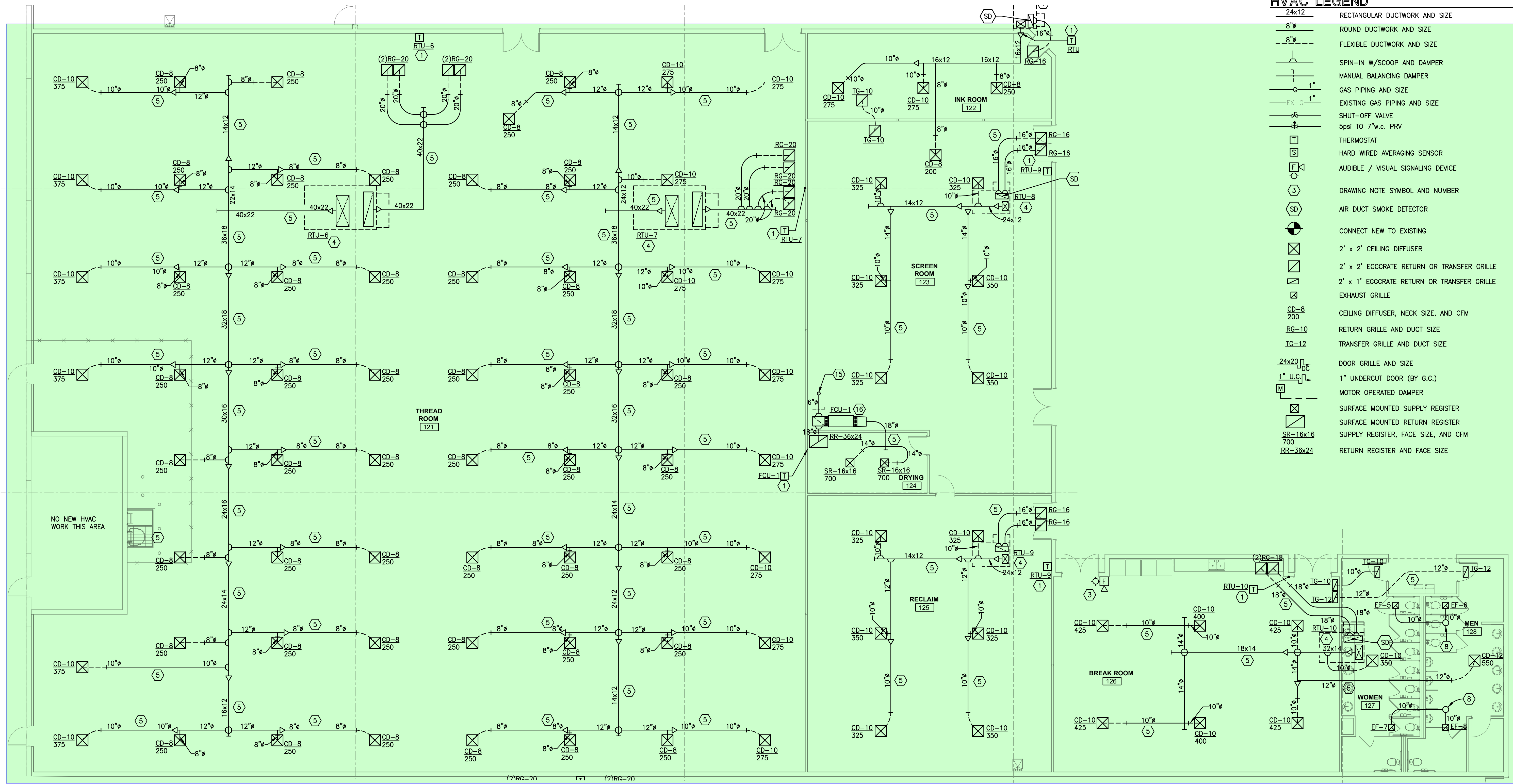
PROJECT: **FAIRFIELD COMMERCE PARK #3**
TENANT IMPROVEMENT
110 MERCANTILE DRIVE
FAIRFIELD, OHIO 45014

SHEET TITLE: **HVAC - ENLARGED FLOOR PLAN AND NOTES**

DRN: CHK: CAD REF:
CGD BJM 15971H-1

DATE: 11-03-22

SHEET No.: **H101**



HVAC LEGEND

- 24x12 RECTANGULAR DUCTWORK AND SIZE
- 8" ROUND DUCTWORK AND SIZE
- 8" FLEXIBLE DUCTWORK AND SIZE
- SPIN-IN W/SCOOP AND DAMPER
- MANUAL BALANCING DAMPER
- GAS PIPING AND SIZE
- EX-G 1" EXISTING GAS PIPING AND SIZE
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- RG-10 RETURN GRILLE AND DUCT SIZE
- TG-12 TRANSFER GRILLE AND DUCT SIZE
- 24x20/10 DOOR GRILLE AND SIZE
- 1" U.C. DOOR (BY G.C.)
- M MOTOR OPERATED DAMPER
- SURFACE MOUNTED SUPPLY REGISTER
- SURFACE MOUNTED RETURN REGISTER
- SR-16x16/700 SUPPLY REGISTER, FACE SIZE, AND CFM
- RR-36x24 RETURN REGISTER AND FACE SIZE

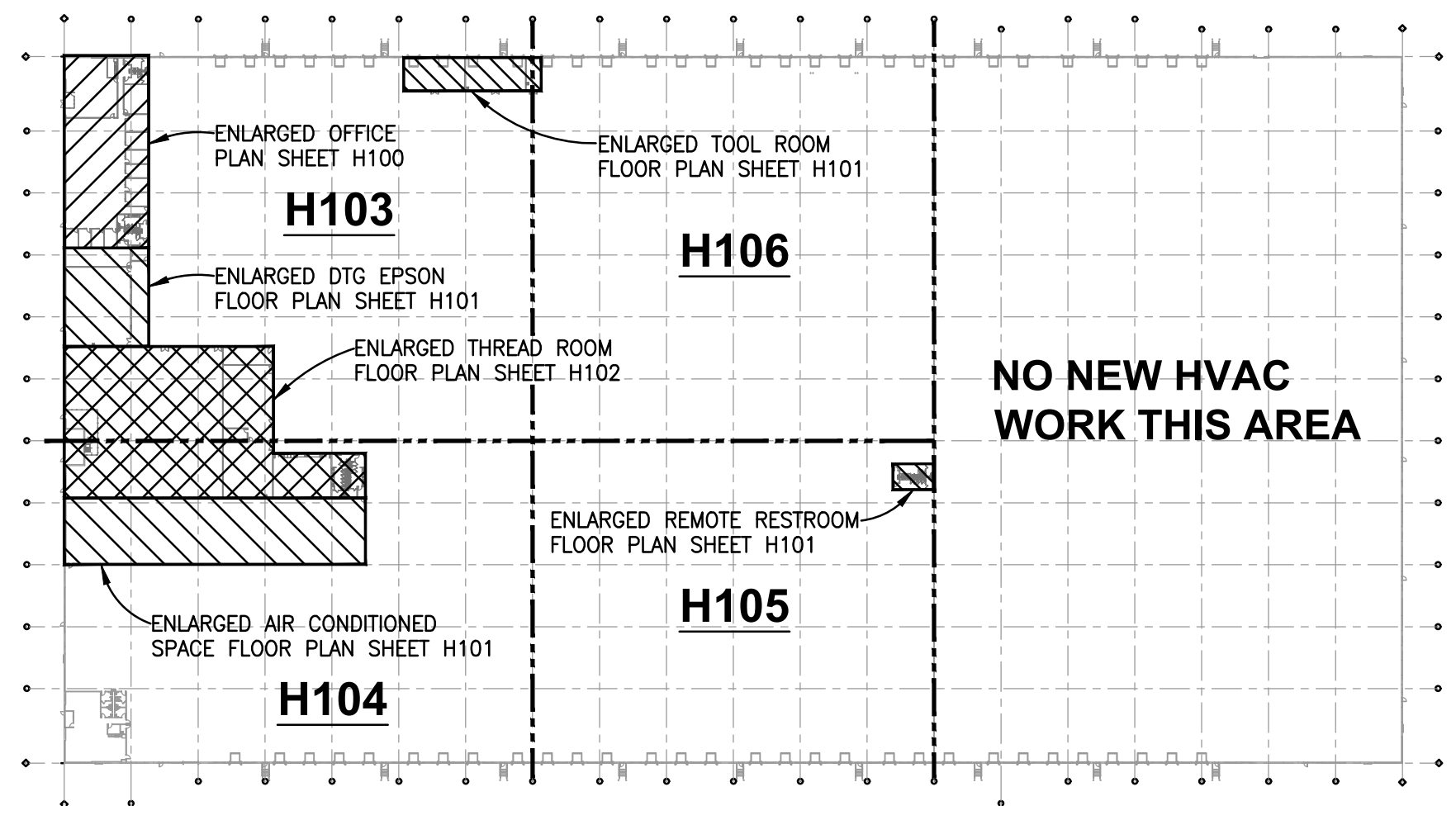
NOTE: MAINTAIN 10'-0" HORIZONTAL OR 3'-0" VERTICAL CLEARANCE BETWEEN O.A. INTAKES AND CONTAMINATES IN ACCORDANCE WITH SECTION 401.4 2017 OBC-MC.

ENLARGED THREAD ROOM FLOOR PLAN - HVAC

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

DRAWING NOTES

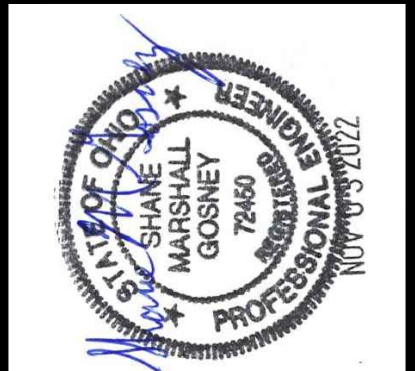
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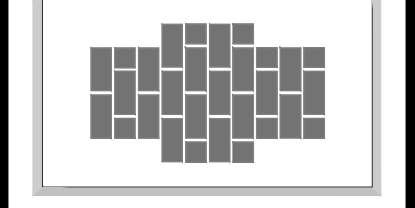
KEY PLAN

SCALE: NONE

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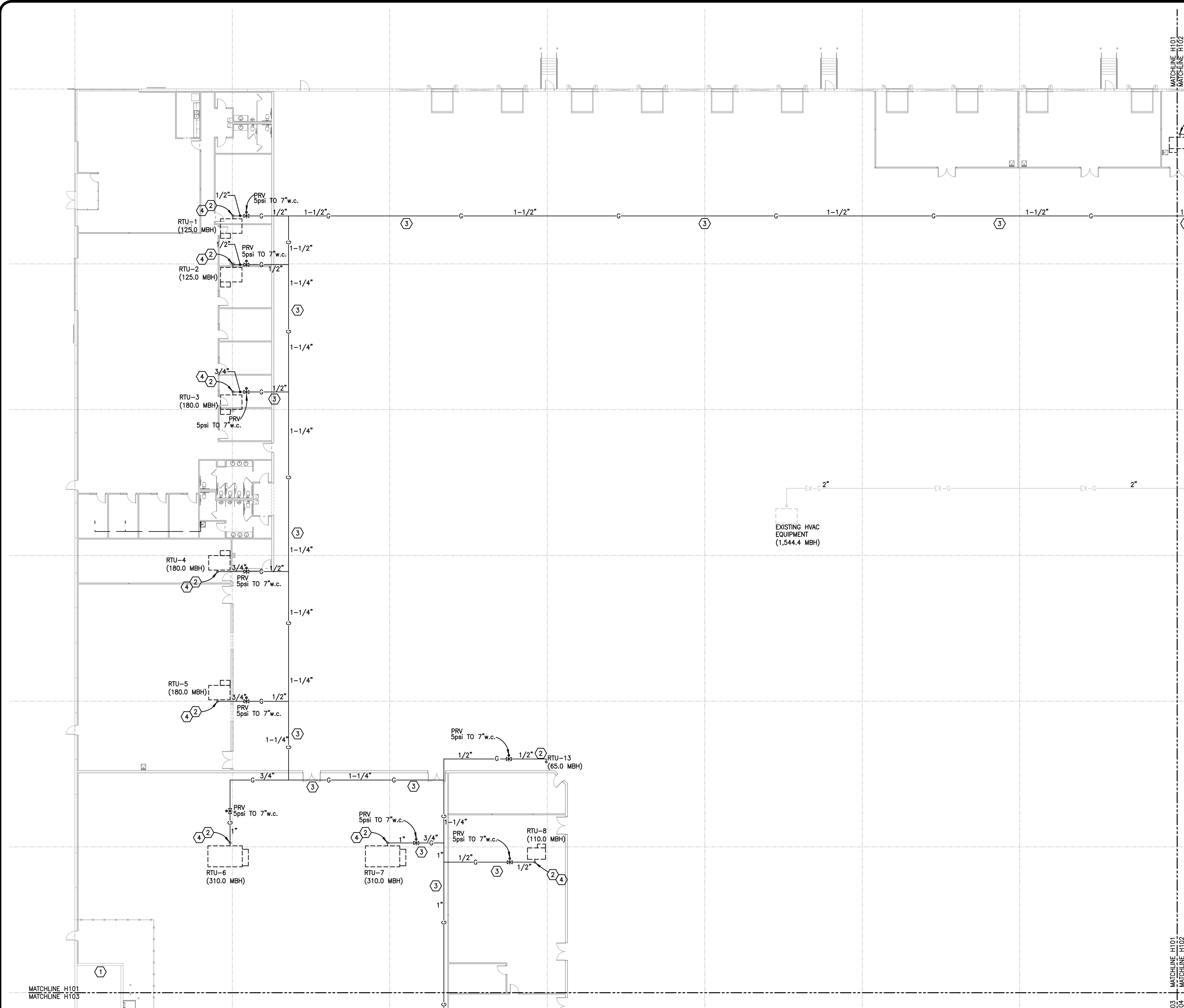
PROJECT: **FAIRFIELD COMMERCE PARK #3**
TENANT IMPROVEMENT
 110 MERCANTILE DRIVE
 FAIRFIELD, OHIO 45014

SHEET TITLE: **HVAC - ENLARGED FLOOR PLAN AND NOTES**

DRN: CHK: CAD REF:
 CGD BJM 15971H-1

DATE: 11-03-22

SHEET No.: **H102**



HVAC LEGEND

	RECTANGULAR DUCTWORK AND SIZE
	ROUND DUCTWORK AND SIZE
	FLEXIBLE DUCTWORK AND SIZE
	SPIN-IN W/SCOOP AND DAMPER
	MANUAL BALANCING DAMPER
	GAS PIPING AND SIZE
	EXISTING GAS PIPING AND SIZE
	SHUT-OFF VALVE
	5psi TO 7" w.c. PRV
	THERMOSTAT
	HARD WIRED AVERAGING SENSOR
	AUDIBLE / VISUAL SIGNALING DEVICE
	DRAWING NOTE SYMBOL AND NUMBER
	AIR DUCT SMOKE DETECTOR
	CONNECT NEW TO EXISTING
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	1" UNDERCUT DOOR (BY G.C.)
	MOTOR OPERATED DAMPER
	SURFACE MOUNTED SUPPLY REGISTER
	SURFACE MOUNTED RETURN REGISTER
	SUPPLY REGISTER, FACE SIZE, AND CFM
	RETURN REGISTER AND FACE SIZE

DRAWING NOTES

- 1 NO NEW HVAC WORK THIS AREA.
- 2 CONNECT TO UNIT WITH UNION, DRIP-LEG, AND SHUT-OFF.
- 3 NEW GAS PIPING SHALL BE SUPPORTED WITH CLEVIS HANGERS & THREADED ROD AT 10'-0" o/c PER INTERNATIONAL FUEL GAS CODE.
- 4 GAS LINE UP THROUGH ROOF INSIDE ROOF CURB. PENETRATE ROOF CURB SIDEWALL BEFORE MAKING FINAL CONNECTION TO EQUIPMENT. SEAL CURB PENETRATION WEATHER TIGHT AS REQUIRED.

GAS PIPING - SIZING

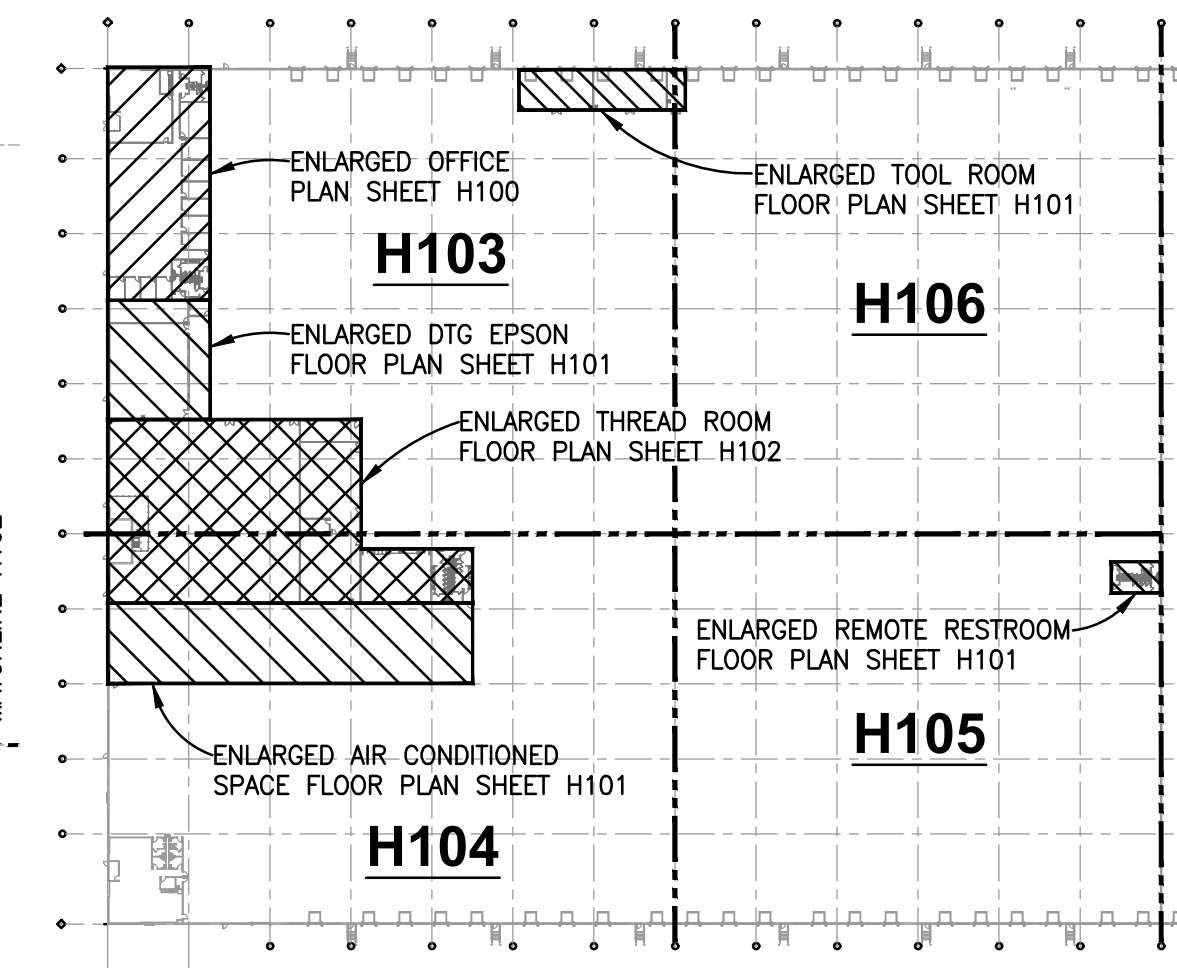
GAS PIPING SIZED IN ACCORDANCE WITH TABLE 402.4(1) 2015 I.F.G.C. FOR SCHEDULE 40 BLACK STEEL PIPING FOR GAS PRESSURE OF 2.0 psig OR LESS AND TABLE 402.4(7) 2015 I.F.G.C. FOR SCHEDULE 40 BLACK STEEL PIPING FOR GAS PRESSURE OF 5.0 psig

GAS PIPING - SUPPORTS

SUPPORT HORIZONTAL PIPING WITH SPLIT RING MALLEABLE IRON OR STEEL CLEVIS HANGERS SUPPORTED FROM BUILDING STRUCTURE AS REQUIRED. HANGERS SHALL BE SPACED 10'-0" INTERVALS IN ACCORDANCE WITH SECTION 415 2015 I.F.G.C.

GAS PIPING - TESTING

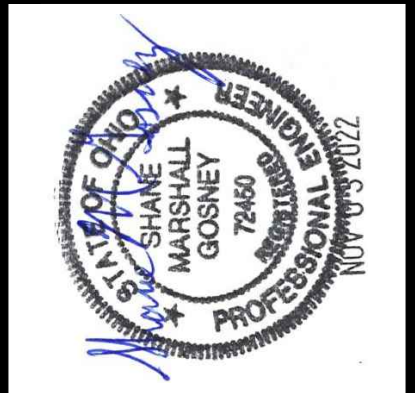
ALL NEW GAS PIPING AND ITS ASSOCIATED VALVES AND REGULATORS SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH NFPA 54 PER OMC SECTION 301.3 AND I.F.G.C. 406.1.



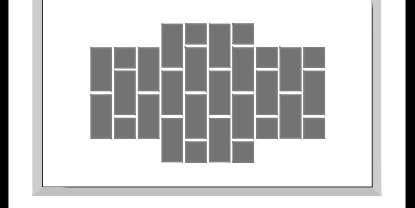
KEY PLAN
SCALE: NONE

NOTE: MAINTAIN 10'-0" HORIZONTAL OR 3'-0" VERTICAL CLEARANCE BETWEEN O.A. INTAKES AND CONTAMINATES IN ACCORDANCE WITH SECTION 401.4 2017 OBC-MC.
PARTIAL FLOOR PLAN - HVAC
SCALE: 1/16" = 1'-0"

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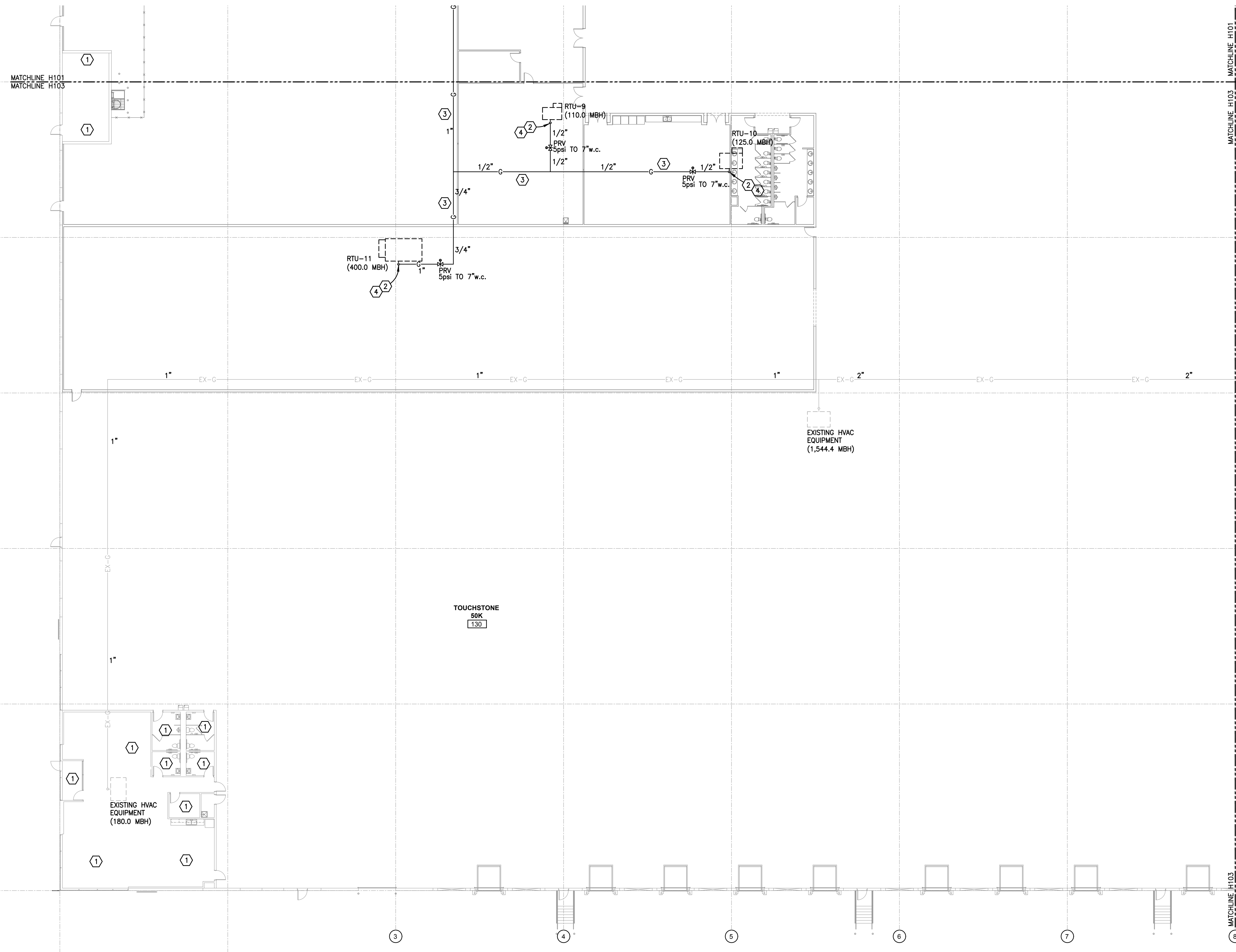
PROJECT: **FAIRFIELD COMMERCE PARK #3**
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FAIRFIELD, OHIO 45014

SHEET TITLE: **HVAC - PARTIAL FLOOR PLAN AND NOTES**

DRN: CHK: CAD REF:
CGD BJM 15971H-1

DATE: 11-03-22

SHEET No.: **H103**



HVAC LEGEND

- 24x12 RECTANGULAR DUCTWORK AND SIZE
- 8" ROUND DUCTWORK AND SIZE
- 8" FLEXIBLE DUCTWORK AND SIZE
- SPIN-IN W/SCOOP AND DAMPER
- MANUAL BALANCING DAMPER
- 1" GAS PIPING AND SIZE
- EX-G 1" EXISTING GAS PIPING AND SIZE
- SHUT-OFF VALVE
- 5psi TO 7" w.c. PRV
- THERMOSTAT
- HARD WIRED AVERAGING SENSOR
- AUDIBLE / VISUAL SIGNALING DEVICE
- DRAWING NOTE SYMBOL AND NUMBER
- AIR DUCT SMOKE DETECTOR
- CONNECT NEW TO EXISTING
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- 2' x 1' EGGRATE RETURN OR TRANSFER GRILLE
- EXHAUST GRILLE
- CD-8 200 CEILING DIFFUSER, NECK SIZE, AND CFM
- RG-10 RETURN GRILLE AND DUCT SIZE
- TG-12 TRANSFER GRILLE AND DUCT SIZE
- 24x20 DOOR GRILLE AND SIZE
- 1" U.C. DOOR (BY G.C.)
- MOTOR OPERATED DAMPER
- SURFACE MOUNTED SUPPLY REGISTER
- SURFACE MOUNTED RETURN REGISTER
- SR-16x16 700 SUPPLY REGISTER, FACE SIZE, AND CFM
- RR-36x24 RETURN REGISTER AND FACE SIZE

DRAWING NOTES

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- 2 CONNECT TO UNIT WITH UNION, DRIP-LEG, AND SHUT-OFF.
- 3 NEW GAS PIPING SHALL BE SUPPORTED WITH CLEVIS HANGERS & THREADED ROD AT 10'-0" o/c PER INTERNATIONAL FUEL GAS CODE.
- 4 GAS LINE UP THROUGH ROOF INSIDE ROOF CURB. PENETRATE ROOF CURB SIDEWALL BEFORE MAKING FINAL CONNECTION TO EQUIPMENT. SEAL CURB PENETRATION WEATHER TIGHT AS REQUIRED.

GAS PIPING - SIZING

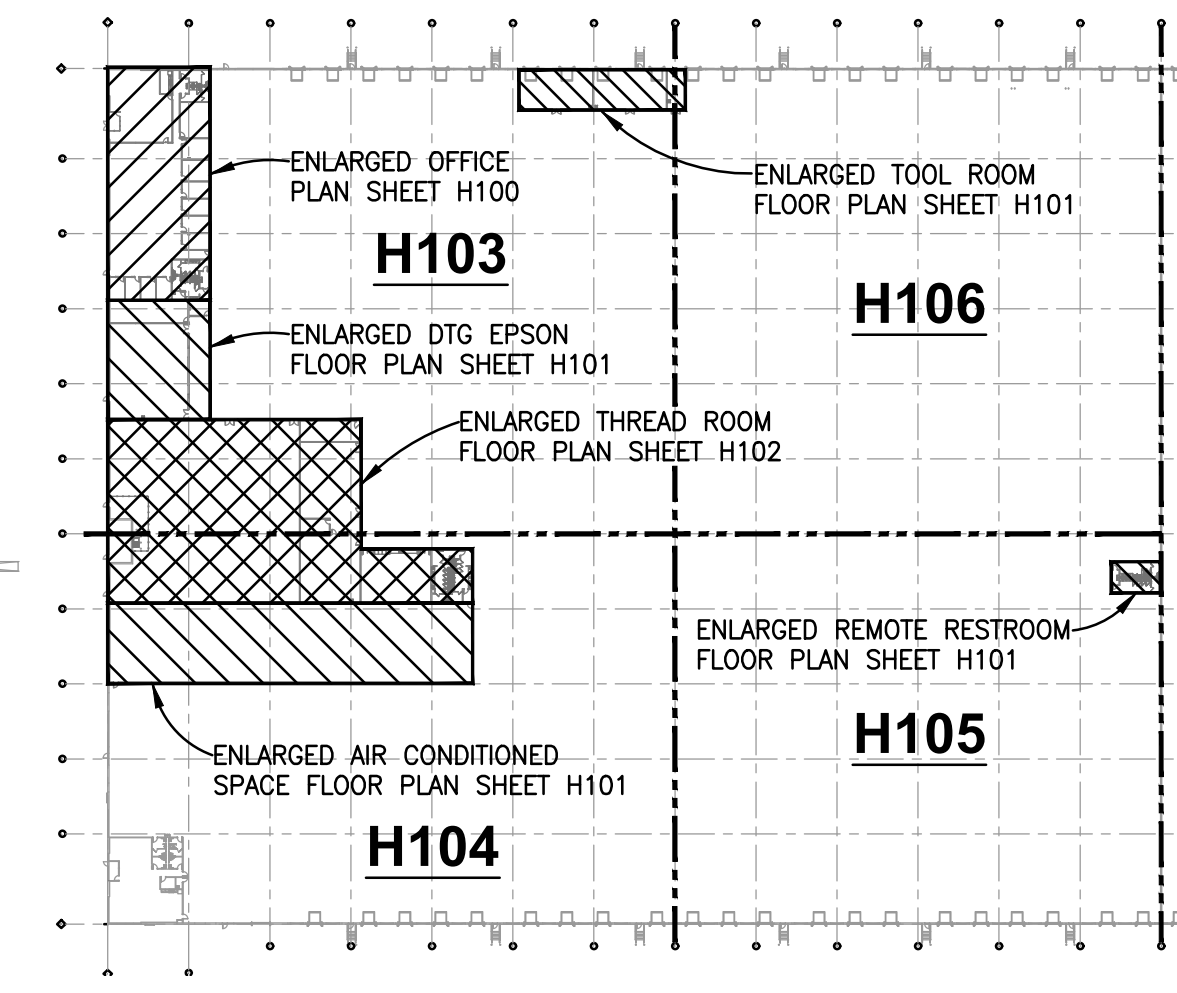
GAS PIPING SIZED IN ACCORDANCE WITH TABLE 402.4(1) 2015 I.F.G.C. FOR SCHEDULE 40 BLACK STEEL PIPING FOR GAS PRESSURE OF 2.0 psig OR LESS AND TABLE 402.4(7) 2015 I.F.G.C. FOR SCHEDULE 40 BLACK STEEL PIPING FOR GAS PRESSURE OF 5.0 psig

GAS PIPING - SUPPORTS

SUPPORT HORIZONTAL PIPING WITH SPLIT RING MALLEABLE IRON OR STEEL CLEVIS HANGERS SUPPORTED FROM BUILDING STRUCTURE AS REQUIRED. HANGERS SHALL BE SPACED 10'-0" INTERVALS IN ACCORDANCE WITH SECTION 415 2015 I.F.G.C.

GAS PIPING - TESTING

ALL NEW GAS PIPING AND ITS ASSOCIATED VALVES AND REGULATORS SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH NFPA 54 PER OMC SECTION 301.3 AND I.F.G.C. 406.1.

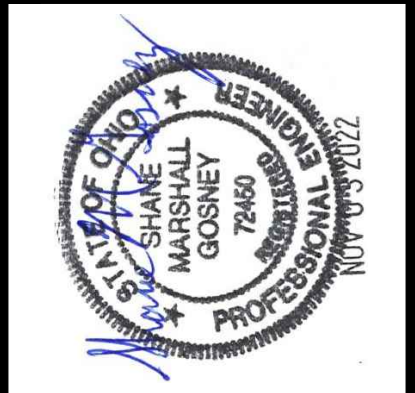


KEY PLAN
SCALE: NONE

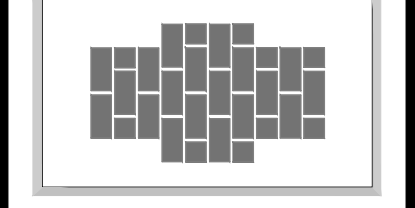
NOTE: MAINTAIN 10'-0" HORIZONTAL OR 3'-0" VERTICAL CLEARANCE BETWEEN O.A. INTAKES AND CONTAMINATES IN ACCORDANCE WITH SECTION 401.4 2017 OBC-MC.

PARTIAL FLOOR PLAN - HVAC
SCALE: 1/16" = 1'-0"

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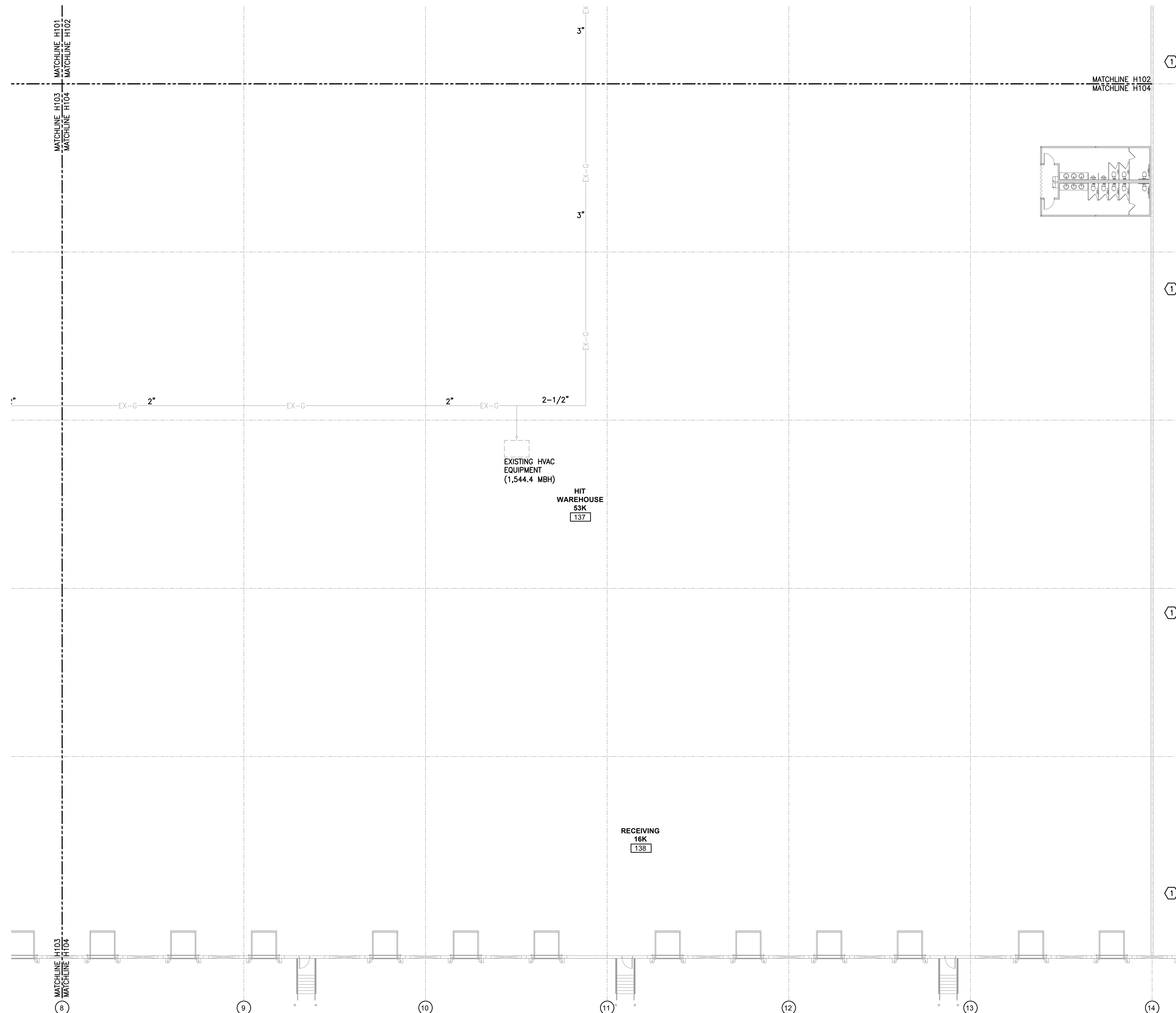
PROJECT: **FAIRFIELD COMMERCE PARK #3**
TENANT IMPROVEMENT
110 MERCANTILE DRIVE
FAIRFIELD, OHIO 45014

SHEET TITLE: **HVAC - PARTIAL FLOOR PLAN AND NOTES**

DRN: CHK: CAD REF:
CGD BJM 15971H-1

DATE: 11-03-22

SHEET No.: **H104**



NOTE: MAINTAIN 10'-0" HORIZONTAL OR 3'-0" VERTICAL CLEARANCE BETWEEN O.A. INTAKES AND CONTAMINATES IN ACCORDANCE WITH SECTION 401.4 2017 OBC-MC.

PARTIAL FLOOR PLAN - HVAC
SCALE: 1/16" = 1'-0"

HVAC LEGEND

	RECTANGULAR DUCTWORK AND SIZE
	ROUND DUCTWORK AND SIZE
	FLEXIBLE DUCTWORK AND SIZE
	SPIN-IN W/SCOOP AND DAMPER
	MANUAL BALANCING DAMPER
	GAS PIPING AND SIZE
	EXISTING GAS PIPING AND SIZE
	SHUT-OFF VALVE
	5psi TO 7" w.c. PRV
	THERMOSTAT
	HARD WIRED AVERAGING SENSOR
	AUDIBLE / VISUAL SIGNALING DEVICE
	DRAWING NOTE SYMBOL AND NUMBER
	AIR DUCT SMOKE DETECTOR
	CONNECT NEW TO EXISTING
	2' x 2' CEILING DIFFUSER
	2' x 2' EGGRATE RETURN OR TRANSFER GRILLE
	2' x 1' EGGRATE RETURN OR TRANSFER GRILLE
	EXHAUST GRILLE
	CEILING DIFFUSER, NECK SIZE, AND CFM
	RETURN GRILLE AND DUCT SIZE
	TRANSFER GRILLE AND DUCT SIZE
	DOOR GRILLE AND SIZE
	1" UNDERCUT DOOR (BY G.C.)
	MOTOR OPERATED DAMPER
	SURFACE MOUNTED SUPPLY REGISTER
	SURFACE MOUNTED RETURN REGISTER
	SUPPLY REGISTER, FACE SIZE, AND CFM
	RETURN REGISTER AND FACE SIZE

DRAWING NOTES

- ① NO NEW HVAC WORK THIS AREA.
- ② CONNECT TO UNIT WITH UNION, DRIP-LEG, AND SHUT-OFF.
- ③ NEW GAS PIPING SHALL BE SUPPORTED WITH CLEVIS HANGERS & THREADED ROD AT 10'-0" o/c PER INTERNATIONAL FUEL GAS CODE.
- ④ GAS LINE UP THROUGH ROOF INSIDE ROOF CURB. PENETRATE ROOF CURB SIDEWALL BEFORE MAKING FINAL CONNECTION TO EQUIPMENT. SEAL CURB PENETRATION WEATHER TIGHT AS REQUIRED.

GAS PIPING - SIZING

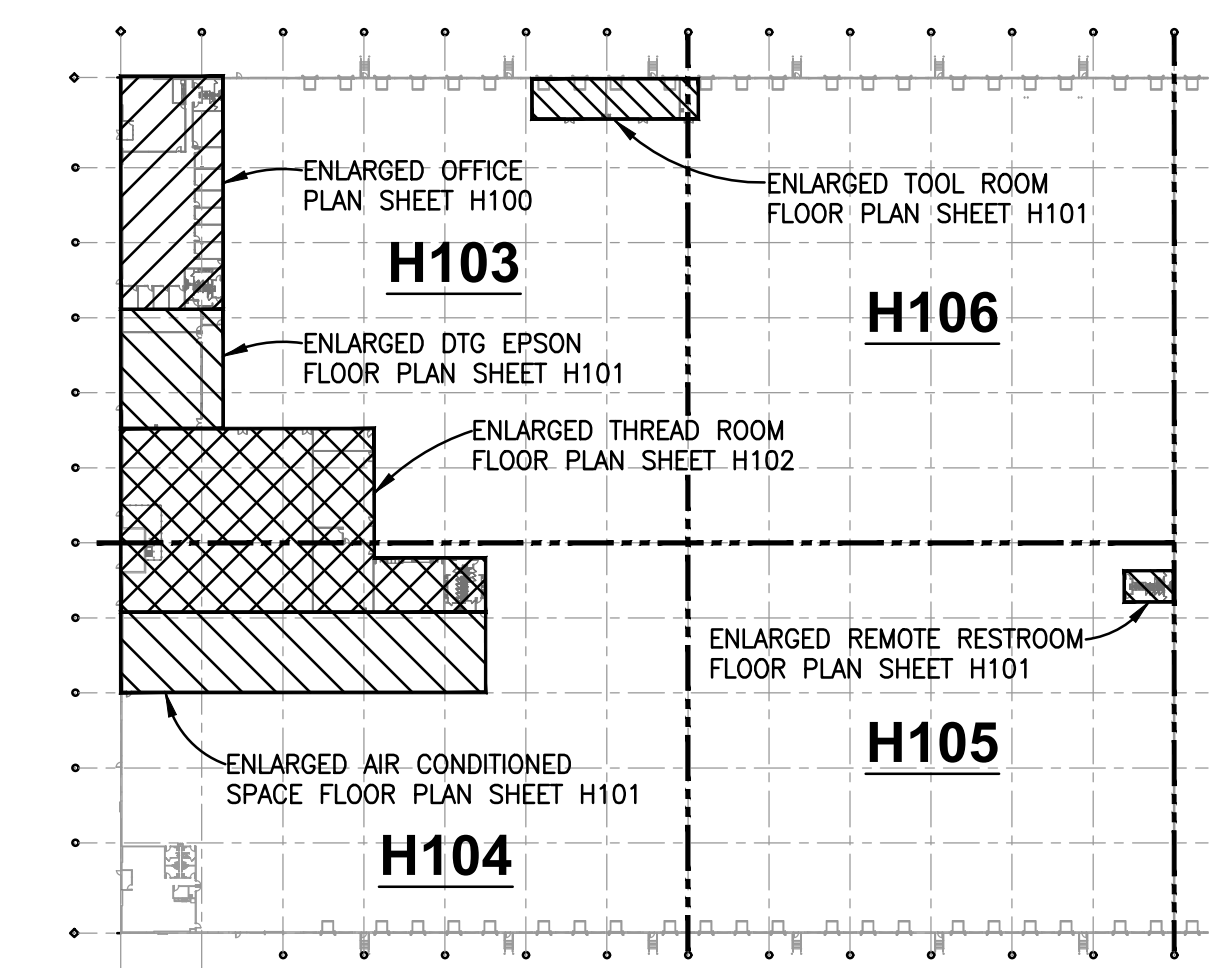
GAS PIPING SIZED IN ACCORDANCE WITH TABLE 402.4(1) 2015 I.F.G.C. FOR SCHEDULE 40 BLACK STEEL PIPING FOR GAS PRESSURE OF 2.0 psig OR LESS AND TABLE 402.4(7) 2015 I.F.G.C. FOR SCHEDULE 40 BLACK STEEL PIPING FOR GAS PRESSURE OF 5.0 psig

GAS PIPING - SUPPORTS

SUPPORT HORIZONTAL PIPING WITH SPLIT RING MALLEABLE IRON OR STEEL CLEVIS HANGERS SUPPORTED FROM BUILDING STRUCTURE AS REQUIRED. HANGERS SHALL BE SPACED 10'-0" INTERVALS IN ACCORDANCE WITH SECTION 415 2015 I.F.G.C.

GAS PIPING - TESTING

ALL NEW GAS PIPING AND ITS ASSOCIATED VALVES AND REGULATORS SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH NFPA 54 PER OMC SECTION 301.3 AND I.F.G.C. 406.1.

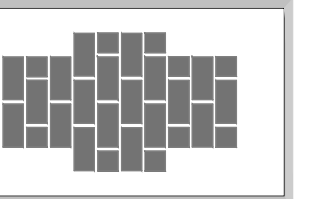


KEY PLAN
SCALE: NONE

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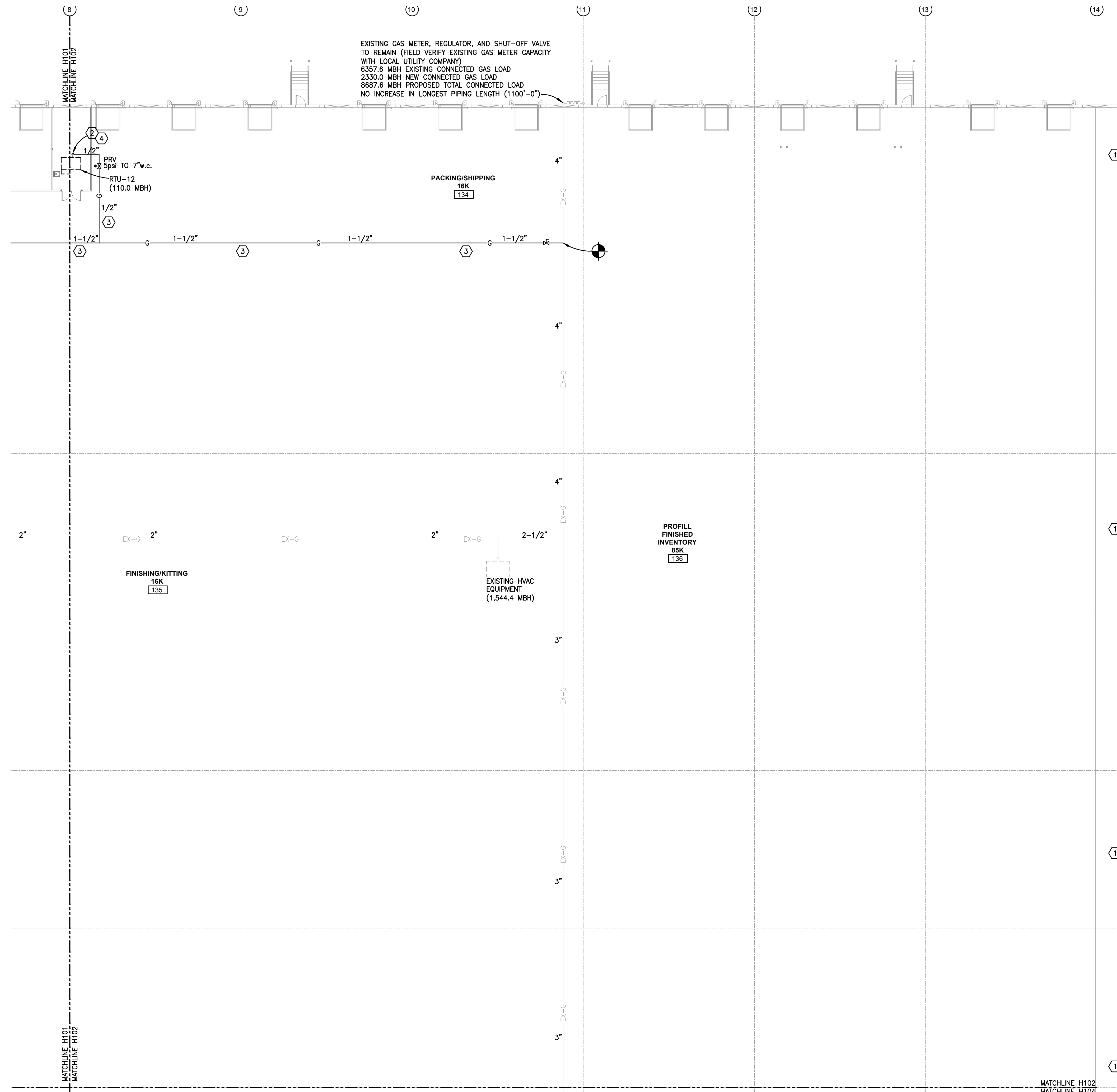
PROJECT: **FAIRFIELD COMMERCE PARK #3**
TENANT IMPROVEMENT
110 MERCANTILE DRIVE
FAIRFIELD, OHIO 45014

SHEET TITLE: **HVAC - PARTIAL FLOOR PLAN AND NOTES**

DRN: CHK: CAD REF:
CGD BJM 15971H-1

DATE: 11-03-22

SHEET No.: **H105**



EXISTING GAS METER, REGULATOR, AND SHUT-OFF VALVE TO REMAIN (FIELD VERIFY EXISTING GAS METER CAPACITY WITH LOCAL UTILITY COMPANY)
 6357.6 MBH EXISTING CONNECTED GAS LOAD
 2330.0 MBH NEW CONNECTED GAS LOAD
 8687.6 MBH PROPOSED TOTAL CONNECTED LOAD
 NO INCREASE IN LONGEST PIPING LENGTH (1100'-0")

HVAC LEGEND

24x12	RECTANGULAR DUCTWORK AND SIZE
8"φ	ROUND DUCTWORK AND SIZE
8"φ	FLEXIBLE DUCTWORK AND SIZE
7	SPIN-IN W/SCOOP AND DAMPER
1	MANUAL BALANCING DAMPER
1"	GAS PIPING AND SIZE
EX-G 1"	EXISTING GAS PIPING AND SIZE
5	SHUT-OFF VALVE
5psi TO 7"w.c. PRV	5psi TO 7"w.c. PRV
T	THERMOSTAT
S	HARD WIRED AVERAGING SENSOR
F	AUDIBLE / VISUAL SIGNALING DEVICE
3	DRAWING NOTE SYMBOL AND NUMBER
SD	AIR DUCT SMOKE DETECTOR
⊕	CONNECT NEW TO EXISTING
⊗	2' x 2' CEILING DIFFUSER
⊘	2' x 2' EGGRATE RETURN OR TRANSFER GRILLE
⊚	2' x 1' EGGRATE RETURN OR TRANSFER GRILLE
⊛	EXHAUST GRILLE
CD-8 200	CEILING DIFFUSER, NECK SIZE, AND CFM
RG-10	RETURN GRILLE AND DUCT SIZE
TG-12	TRANSFER GRILLE AND DUCT SIZE
24x20 DG	DOOR GRILLE AND SIZE
1" U.G.	1" UNDERCUT DOOR (BY G.C.)
M	MOTOR OPERATED DAMPER
⊠	SURFACE MOUNTED SUPPLY REGISTER
⊡	SURFACE MOUNTED RETURN REGISTER
SR-16x16 700	SUPPLY REGISTER, FACE SIZE, AND CFM
RR-36x24	RETURN REGISTER AND FACE SIZE

DRAWING NOTES

- ① NO NEW HVAC WORK THIS AREA.
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- ③ NEW GAS PIPING SHALL BE SUPPORTED WITH CLEVIS HANGERS & THREADED ROD AT 10'-0" o/c PER INTERNATIONAL FUEL GAS CODE.
- ④ GAS LINE UP THROUGH ROOF INSIDE ROOF CURB. PENETRATE ROOF CURB SIDEWALL BEFORE MAKING FINAL CONNECTION TO EQUIPMENT. SEAL CURB PENETRATION WEATHER TIGHT AS REQUIRED.

GAS PIPING - SIZING

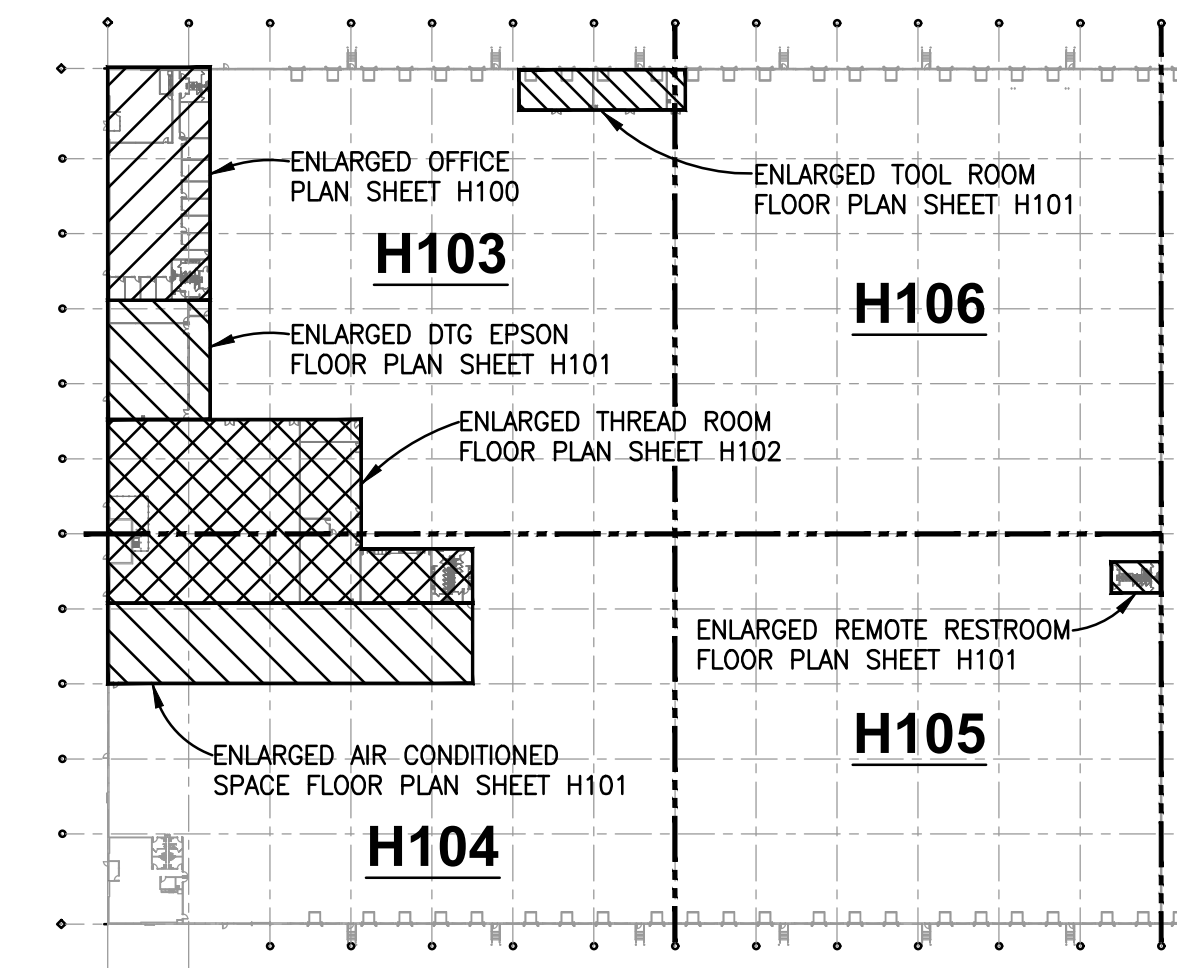
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GAS PIPING - TESTING

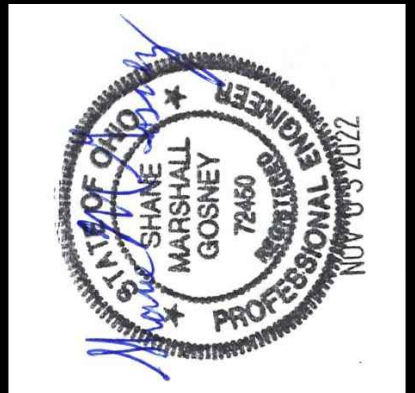
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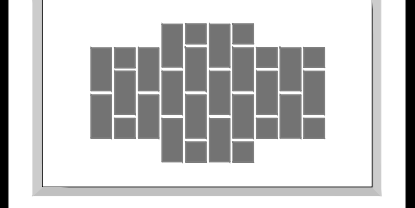
KEY PLAN
SCALE: NONE

NOTE: MAINTAIN 10'-0" HORIZONTAL OR 3'-0" VERTICAL CLEARANCE BETWEEN O.A. INTAKES AND CONTAMINATES IN ACCORDANCE WITH SECTION 401.4 2017 OBC-MC.
PARTIAL FLOOR PLAN - HVAC
 SCALE: 1/16" = 1'-0"

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REVISIONS:

PROJECT: **FAIRFIELD COMMERCE PARK #3**
TENANT IMPROVEMENT
 110 MERCANTILE DRIVE
 FAIRFIELD, OHIO 45014

SHEET TITLE: **HVAC - PARTIAL FLOOR PLAN AND NOTES**
 DRN: CHK: CAD REF:
 CGD: BJM: 15971H-1
 DATE: 11-03-22
 SHEET No.: **H106**

ROOFTOP UNIT SCHEDULE															
MARK	CARRIER MODEL (OR EQUAL)	COOLING (MBH)		SUPPLY (CFM)	OUTSIDE AIR (CFM)	EXT. S.P. (IN WC)	HEATING (NAT. GAS)		ELECTRIC				WEIGHT (LBS.)	NOTES	
		TOTAL	SENSIBLE				INPUT (MBH)	OUTPUT (MBH)	FLA	MCA	MOC	VOLTS			PHASE
RTU-1	48FCDM09A2M6	100.5	77.1	3400	476	1.1"	125.0	103.0	20.0	19.0	25	460	3	1032.0	1, 3, 4, 5, 6, 7, 8
RTU-2	48FCDM09A2M6	100.5	77.1	3400	340	1.1"	125.0	103.0	20.0	19.0	25	460	3	1032.0	1, 3, 4, 5, 6, 7, 8
RTU-3	48FCDM12A3M6	123.8	93.6	3600	468	1.2"	180.0	148.0	26.0	25.0	30	460	3	1062.0	1, 2, 4, 5, 6, 7, 8
RTU-4	48FCDM12A3M6	124.3	94.3	4000	200	1.2"	180.0	148.0	26.0	25.0	30	460	3	1062.0	1, 2, 4, 5, 6, 7, 8
RTU-5	48FCDM12A3M6	124.3	94.3	4000	800	1.2"	180.0	148.0	26.0	25.0	30	460	3	1062.0	1, 2, 4, 5, 6, 7, 8
RTU-6	48FCM24A3M6	252.3	182.3	8000	1680	1.3"	310.0	251.0	54.0	50.8	60	460	3	2514.0	1, 2, 4, 5, 6, 7, 8
RTU-7	48FCM24A3M6	252.3	182.3	8000	1680	1.3"	310.0	251.0	54.0	50.8	60	460	3	2514.0	1, 2, 4, 5, 6, 7, 8
RTU-8	48FCEA06A3M6	58.2	43.9	2000	300	1.1"	110.0	88.0	13.0	14.0	20	460	3	744.0	1, 2, 4, 5, 6, 8
RTU-9	48FCEA06A3M6	58.2	43.9	2000	400	1.1"	110.0	88.0	13.0	14.0	20	460	3	744.0	1, 2, 4, 5, 6, 8
RTU-10	48FCM09A2M6	100.5	77.1	3400	510	1.1"	125.0	103.0	20.0	19.0	25	460	3	1032.0	1, 3, 4, 5, 6, 7, 8
RTU-11	48FCM24A3M6	252.3	182.3	8000	1760	1.3"	400.0	324.0	54.0	50.8	60	460	3	2535.0	1, 2, 4, 5, 6, 7, 8
RTU-12	48FCEA06A3M6	58.2	43.9	2000	340	1.1"	110.0	88.0	13.0	14.0	20	460	3	744.0	1, 2, 4, 5, 6, 8
RTU-13	48FDA04B1M6	34.2	23.8	1000	150	0.5"	65.0	53.0	9.0	10.0	15	460	3	622.0	1, 4, 5, 6, 8

- NOTES:
- DIFFERENTIAL ENTHALPY ECONOMIZER WITH BAROMETRIC RELIEF.
 - HIGH STATIC PRESSURE DRIVE AND MOTOR.
 - MEDIUM STATIC PRESSURE DRIVE AND MOTOR.
 - PRE-FAB ROOF CURB WITH SOUND INSULATION.
 - 7-DAY DIGITAL PROGRAMMABLE HEATING/COOLING THERMOSTAT.
 - CONVENIENCE OUTLET (BY ELECTRICAL CONTRACTOR).
 - TWO STAGE COOLING.
 - SMOKE DETECTOR (RATED FOR USE IN HVAC DUCTWORK) SHALL BE INSTALLED IN RETURN AIR DUCT OR PLENUM UPSTREAM OF ANY FILTERS AND OUTDOOR AIR CONNECTIONS IN ACCORDANCE WITH SECTION 606.2.1, 2017 OBC - MECHANICAL CODE. UPON ACTIVATION, THE SMOKE DETECTOR SHALL SHUT DOWN THE ENTIRE AIR DISTRIBUTION SYSTEM. SYSTEM SUPERVISION CONTROL SHALL BE IN ACCORDANCE WITH SECTION 606.4.1, 2017 OBC - MECHANICAL CODE.
 - MANUAL OUTSIDE AIR HOOD.

EXHAUST FAN SCHEDULE									
MARK	GREENHECK MODEL (OR EQUAL)	CFM	EXT. S.P.	ELECTRIC			NOTES		
				AMPS	VOLTS	PHASE			
EF-1	SP-A190-QD	150	1/4"	1.3	120	1	1, 2		
EF-2	SP-A190-QD	150	1/4"	1.3	120	1	1, 2		
EF-3	SP-A510-QD	375	1/4"	3.3	120	1	1, 2		
EF-4	SP-A510-QD	375	1/4"	3.3	120	1	1, 2		
EF-5	SP-A390-QD	300	1/4"	1.34	120	1	1, 2		
EF-6	SP-A390-QD	300	1/4"	1.34	120	1	1, 2		
EF-7	SP-A390-QD	300	1/4"	1.34	120	1	1, 2		
EF-8	SP-A390-QD	300	1/4"	1.34	120	1	1, 2		
EF-9	SP-A190-QD	150	1/4"	1.3	120	1	1, 4		
EF-10	SP-A190-QD	150	1/4"	1.3	120	1	1, 4		
EF-11	SP-A510-QD	375	1/4"	3.3	120	1	1, 3		
EF-12	SP-A510-QD	375	1/4"	3.3	120	1	1, 2		
EF-13	SP-A510-QD	375	1/4"	3.3	120	1	1, 2		
EF-14	CUBE-360-VG	11,325	1/4"	2 HP	460	3	5, 6		
EF-15	CUBE-360-VG	11,325	1/4"	2 HP	460	3	5, 7		

- NOTES:
- CEILING FAN COMPLETE WITH GRILLE AND BACKDRAFT DAMPER.
 - WIRED ON ROOM LIGHTING CIRCUIT THROUGH LIGHT SWITCH (BY ELECTRICAL CONTRACTOR).
 - WIRED ON ROOM LIGHTING CIRCUIT AHEAD OF LIGHT SWITCH (BY ELECTRICAL CONTRACTOR).
 - CONTROLLED BY WALL MOUNTED COOLING ONLY THERMOSTAT SET TO MAINTAIN 75° F.
 - ROOF MOUNTED UPBLAST EXHAUST FAN COMPLETE WITH CURB AND GRAVITY BACKDRAFT DAMPER.
 - CONTROLLED BY WALL MOUNTED COOLING ONLY THERMOSTAT SET TO MAINTAIN 75° F.
 - CONTROLLED BY WALL MOUNTED COOLING ONLY THERMOSTAT SET TO MAINTAIN 85° F.

ELECTRIC UNIT HEATER SCHEDULE							
MARK	BERKO MODEL (OR EQUAL)	HEATING		BOTTOM MOUNTING HEIGHT	ELECTRIC		NOTES
		KW	BTUH		AMPS	VOLTS	
EUH-1	HUHA720	7.5	25,591	AS REQ'D	36.0	208	1, 2

- NOTES:
- WALL MOUNTED THERMOSTAT.
 - MAINTAIN ALL MANUFACTURER'S REQUIRED SERVICE CLEARANCES AND MINIMUM DISTANCE TO COMBUSTIBLES AS REQUIRED.

LOUVER SCHEDULE

MARK	RUSKIN MODEL (OR EQUAL)	MATERIAL	FINISH	NOTES
IL-1	ELM90	ALUMINUM	MILL	1, 2
IL-2	ELM90	ALUMINUM	MILL	1, 2

- NOTES:
- 5'-0"x5'-0" MOTOR OPERATED INTAKE LOUVER COMPLETE WITH INSECT SCREEN AND BURGLAR BARS.
 - INTERLOCKED WITH EXHAUST FAN OPERATION.

VENTILATION AIR SCHEDULE																	
ZONE	ROOM NAME	ROOM NUMBER	OCCUPANCY CLASSIFICATION	ZONE POPULATION	PEOPLE OUTSIDE AIR RATE (CFM/PERSON)	VENTILATION FOR OCCUPANTS (CFM)	AREA (SQ FT)	AREA OUTDOOR AIR RATE (CFM/SQFT)	VENTILATION FOR AREA (CFM)	BREATHING ZONE OUTSIDE AIR (CFM)	DISTRIBUTION EFFECTIVENESS	ZONE OUTDOOR AIRFLOW (CFM)	PRIMARY OUTDOOR AIR FRACTION	REQUIRED OUTSIDE AIR (CFM)	ACTUAL OUTSIDE AIR (CFM)	ACTUAL SUPPLY AIR (CFM)	NOTES
RTU-1	VESTIBULE	---	CORRIDORS	---	---	---	84	.06	5	5	0.8	6.3	.02	45.5	45.5	325	1, 3
RTU-1	SHOWROOM	100	SALES	27	7.5	202.5	1802	.12	216	419	0.8	523.425	.19 *	395.5	395.5	2825	1, 3
RTU-1	BREAKROOM	101	BREAK ROOMS	3	5	15	124	.06	7	22	0.8	28.05	.11	35	35	250	1, 3
RTU-1	CORRIDOR	---	CORRIDORS	---	---	---	265	.06	16	16	0.8	19.875	.17	10.8	120	120	1, 4
EF-1	MEN	102	PUBLIC RESTROOMS	---	---	---	162	---	---	---	---	---	---	---	15	150	1, 2, 4
EF-2	WOMEN	103	PUBLIC RESTROOMS	---	---	---	162	---	---	---	---	---	---	---	15	150	1, 2, 4
RTU-2	CONFERENCE ROOM	104	CONFERENCE ROOM	22	5	110	459	.06	28	138	0.8	171.925	.21 *	72	80	800	1, 4
RTU-2	OFFICE	105	OFFICE SPACE	1	5	5	252	.06	15	20	0.8	25.15	.09	24.75	27.5	275	1, 4
RTU-2	OFFICE	106	OFFICE SPACE	1	5	5	252	.06	15	20	0.8	25.15	.09	24.75	27.5	275	1, 4
RTU-2	OFFICE	107	OFFICE SPACE	1	5	5	198	.06	12	17	0.8	21.1	.09	20.25	22.5	225	1, 4
RTU-2	OFFICE	108	OFFICE SPACE	1	5	5	198	.06	12	17	0.8	21.1	.09	20.25	22.5	225	1, 4
RTU-2	OFFICE	109	OFFICE SPACE	1	5	5	198	.06	12	17	0.8	21.1	.09	20.25	22.5	225	1, 4
RTU-2	OFFICE	110	OFFICE SPACE	1	5	5	198	.06	12	17	0.8	21.1	.09	20.25	22.5	225	1, 4
EF-3	WOMEN	112	PUBLIC RESTROOMS	---	---	---	254	---	---	---	---	---	---	---	25	250	1, 2, 4
EF-4	MEN	113	PUBLIC RESTROOMS	---	---	---	239	---	---	---	---	---	---	---	25	250	1, 2, 4
RTU-2	OFFICE	114	OFFICE SPACE	1	5	5	150	.06	9	14	0.8	17.5	.15	10.35	11.5	115	1, 4
RTU-2	OFFICE	115	OFFICE SPACE	1	5	5	150	.06	9	14	0.8	17.5	.15	10.35	11.5	115	1, 4
RTU-3	OPEN OFFICE	111	OFFICE SPACE	22	5	110	4322	.06	259	369	0.8	461.65	.13 *	462	468	3600	1
RTU-4	ART	119	SORTING, PACKING, LIGHT ASSEMBLY	5	7.5	37.5	785	.12	94	132	0.8	164.625	.04	148	185	3700	1, 6
RTU-4	SAFETY	118	OFFICE SPACE	1	5	5	136	.06	8	13	0.8	16.45	.05 *	12	15	300	1, 6
RTU-5	DTG EPSON	120	SORTING, PACKING, LIGHT ASSEMBLY	23	7.5	172.5	3349	.12	401.88	574	0.8	717.975	.18 *	718	800	4000	1
RTU-6, 7	THREAD ROOM	121	SORTING, PACKING, LIGHT ASSEMBLY	104	7.5	780	14878	.12	1785.36	2565	0.8	3206.7	.20 *	3207	3360	16,000	1
RTU-13	INK ROOM	122	SORTING, PACKING, LIGHT ASSEMBLY	4	7.5	30	552	.12	66	96	0.8	120.3	.16	120	120	800	1, 5
RTU-13,8	SCREEN ROOM	123	SORTING, PACKING, LIGHT ASSEMBLY	16	7.5	120	2235	.12	268	388	0.8	485.25	.23 *	330	330	2200	1, 5
FCU-1	DRYING	124	SORTING, PACKING, LIGHT ASSEMBLY	1	7.5	7.5	196	.12	24	31	0.8	38.775	.03	38.775	70	1400	1
RTU-9	RECLAIM	125	SORTING, PACKING, LIGHT ASSEMBLY	13	7.5	97.5	1812	.12	217	315	0.8	393.675	.20 *	394	400	2000	1
RTU-10	BREAK ROOM	126	BREAK ROOMS	40	5	200	1585	.06	95	295	0.8	368.875	.15 *	369	375	2500	1
EF-5,7	WOMEN	127	PUBLIC RESTROOMS	---	---	---	387	---	---	---	---	---	---	---	52.5	350	1, 2
EF-6,8	MEN	128	PUBLIC RESTROOMS	---	---	---	372	---	---	---	---	---	---	---	82.5	550	1, 2
RTU-11	AIR CONDITIONED SPACE	129	WAREHOUSES	63	10	630	12630	.06	758	1388	0.8	1734.75	.22 *	1735	1760	8000	1
EF-11	JANITOR	141	JANITORS CLOSET	---	---	---	308	---	---	---	---	---	---	---	51	300	1, 2
AHU-2	I.T.	116	OFFICE SPACE	1	5	5	150	.06	9	14	0.8	17.5	.05	17.5	20	400	1
AHU-1	I.T.	117	OFFICE SPACE	1	5	5	150	.06	9	14	0.8	17.5	.05	17.5	20	400	1

- NOTES:
- OUTDOOR VENTILATION AIR BASED ON ASHRAE STANDARD 62.1-2016 "VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY" IN ACCORDANCE WITH SECTION 403.2 (EXCEPTION), 2017 OBC-MC.
 - REQUIRED EXHAUST AIR PROVIDED BY LOCAL CEILING MOUNTED EXHAUST FAN IN ACCORDANCE WITH TABLE 6.5 "MINIMUM EXHAUST RATES" ASHRAE STANDARD 62.1-2016.
 - RTU-1: WHERE $V_{out} = D \times (OA \text{ FOR PEOPLE}) + (OA \text{ FOR SPACE})$ AND D IS THE OCCUPANT DIVERSITY, $V_{out} = (1 \times 217.5) + 228 = 445.5$ CFM. $Z_p = 0.19$; $E_v = 0.96$; OUTDOOR AIR INTAKE $V_{in} = V_{out} / E_v = 445.5/0.96 = 464$ CFM.
 - RTU-2: WHERE $V_{out} = D \times (OA \text{ FOR PEOPLE}) + (OA \text{ FOR SPACE})$ AND D IS THE OCCUPANT DIVERSITY, $V_{out} = (1 \times 150) + 140 = 290$ CFM. $Z_p = 0.21$; $E_v = 0.94$; OUTDOOR AIR INTAKE $V_{in} = V_{out} / E_v = 290/0.94 = 309$ CFM.
 - RTU-8,13: WHERE $V_{out} = D \times (OA \text{ FOR PEOPLE}) + (OA \text{ FOR SPACE})$ AND D IS THE OCCUPANT DIVERSITY, $V_{out} = (0.50 \times 150) + 334 = 409$ CFM. $Z_p = 0.92$; $E_v = .23$; OUTDOOR AIR INTAKE $V_{in} = V_{out} / E_v = 409/0.92 = 445$ CFM.
 - RTU-4: WHERE $V_{out} = D \times (OA \text{ FOR PEOPLE}) + (OA \text{ FOR SPACE})$ AND D IS THE OCCUPANT DIVERSITY, $V_{out} = (1 \times 42.5) + 102 = 144.5$ CFM. $Z_p = 0.05$; $E_v = 1.0$; OUTDOOR AIR INTAKE $V_{in} = V_{out} / E_v = 144.5/1.0 = 144.5$ CFM.

DUCTLESS AIR HANDLING SYSTEM SCHEDULE											
MARK	CARRIER MODEL (OR EQUAL)	HEAT PUMP	AIRFLOW (CFM)	TOTAL		ELECTRIC			NOTES		
				COOLING (MBH)	HEATING (MBH)	MCA	VOLTS	PHASE		MAX FUSE SIZE	
AHU-1	40MBCQ12--3	HP-1	400	---	12.0	12.0	0.20	208/230	1	NOTE 2	1, 2, 3
AHU-2	40MBCQ12--3	HP-2	400	---	12.0	12.0	0.20	208/230	1	NOTE 2	1, 2, 3

- NOTES:
- WALL MOUNTED HARD WIRED 7-DAY DIGITAL PROGRAMMABLE HEATING / COOLING THERMOSTAT.
 - POWER FEED FROM OUTDOOR UNIT.
 - CONDENSATE PUMP.

HEAT PUMP SCHEDULE									
MARK	CARRIER MODEL (OR EQUAL)	COOLING	HEATING	ELECTRIC			WEIGHT (LBS.)	NOTES	
		TOTAL(MBH)	TOTAL(MBH)	MCA	VOLTS	PHASE			MAX FUSE SIZE
HP-1	38MARBQ12AA3	12.0	12.0	15.0	208/230	1	15	73.6	1,2,3,4,5
HP-2	38MARBQ12AA3	12.0	12.0	15.0	208/230	1	15	73.6	1,2,3,4,5

- NOTES:
- LOCATED ON PRECAST PAD.
 - REFRIGERANT PIPING AND ACCESSORIES AS RECOMMENDED BY MANUFACTURER.
 - MAINTAIN MANUFACTURER'S MINIMUM REQUIRED SERVICE AND AIRFLOW CLEARANCES.
 - POWER WIRING TO INDOOR UNIT.
 - LOW AMBIENT CONTROLS.
- * THE SCHEDULED HEATING CAPACITY SHALL BE THE MINIMUM CAPACITY AT FIVE DEGREES F OUTSIDE.

FAN COIL UNIT SCHEDULE											
MARK	CARRIER MODEL (OR EQUAL)	HEATER MODEL	SUPPLY CFM	OUTSIDE AIR CFM	EXT. S.P.	HEATING (ELECTRIC)		ELECTRIC			NOTES
						KW	OUTPUT(MBH)	MCA	VOLTS	PHASE	
FCU-1	FB4CNF04BL30	KFCEH3501F30	1400	70	0.4"						