

GENERAL NOTES

GENERAL ITEMS

GENERAL NOTES ON THIS DRAWING ARE APPLICABLE TO EACH HVAC DRAWING OF THIS SET. SEE EACH DRAWING FOR SPECIFIC NOTES APPLICABLE TO THAT DRAWING.

COORDINATE THAT OUTSIDE AIR INTAKE OPENINGS FOR VENTILATION AIR ARE LOCATED AT LEAST 10 FEET MEASURED IN ANY DIRECTION FROM ANY HAZARDOUS OR NOXIOUS CONTAMINANT SOURCE SUCH AS FLUES, VENTS, CHIMNEYS, GAS METERS, GAS REGULATORS, PLUMBING VENTS, ETC., UNLESS TOP OF SUCH INTAKE OPENING IS 3 FEET OR GREATER BELOW ANY OF THE LISTED ITEMS.

OVERHEAD PIPING IN SPACES WITHOUT HUNG CEILINGS SHALL BE RUN AS CLOSE TO ROOF DECK OR STRUCTURE ABOVE, AS PRACTICAL, AS CLOSE TO PARALLEL JOISTS AS POSSIBLE AND ABOVE LIGHTING FIXTURES TO CONCEAL PIPING.

OVERHEAD DUCTWORK AND PIPING IN SPACES WITH CEILINGS SHALL BE CONCEALED UNLESS OTHERWISE NOTED.

EXERCISE DUE CAUTION IN INSTALLING RUNOUTS AND BRANCH PIPING FROM MAINS FOR EXPANSION MOVEMENT.

COORDINATE LOCATION OF GRILLES, REGISTERS, DIFFUSERS, THERMOSTATS AND OTHER WALL OR CEILING MOUNTED HVAC ACCESSORIES WITH REFLECTED CEILING PLAN, LIGHTING FIXTURE LAYOUT AND ACCESSORIES INSTALLED BY OTHER TRADES SO AS TO PRESENT A NEAT AND ATTRACTIVE INSTALLATION THROUGHOUT THE ENTIRE BUILDING. IT IS THE INTENT FOR GRILLES, REGISTERS AND DIFFUSERS TO BE INSTALLED IN THE CENTER OF CEILING PANELS.

EQUIPMENT ON THE ROOF SHALL BE INSTALLED SO AT LEAST 10 FEET OF CLEARANCE SHALL BE MAINTAINED BETWEEN EQUIPMENT AND THE ROOF EDGE.

ARRANGE PIPING AND DUCTWORK, PARTICULARLY ABOVE CEILING AS REQUIRED TO CLEAR STRUCTURE, DUCTS, CONDUITS, ETC. ALLOWING SPACE FOR PIPE HANGERS, EXPANSION LOOPS AND ACCESS TO VALVES, FILTERS, AND MAINTENANCE OF EQUIPMENT.

CONTRACTOR SHALL VERIFY REQUIRED REFRIGERANT PIPE SIZES AND QUANTITIES WITH EQUIPMENT MANUFACTURER FOR THE INDICATED INSTALLATION.

COORDINATE LOCATION AND INSTALLATION OF EQUIPMENT WITH OTHER TRADES.

DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF DOORS, WINDOWS, ETC.

THERMOSTATS AND SENSORS SHALL BE LOCATED IN THE ROOMS INDICATED. INSTALL AT APPROX. 46" ABOVE FINISH FLOOR TO MATCH THE HEIGHT OF WALL SWITCHES OR OTHER WALL MOUNTED DEVICES.

PIPING, DUCTWORK, VENTS, ETC., EXTENDING THROUGH EXTERIOR WALLS AND ROOF SHALL BE FLASHED AND COUNTER FLASHED IN A WEATHERPROOF MANNER.

VALVES AND SPECIALTIES SHALL BE LINE SIZE EXCEPT FOR CONTROL VALVES OR UNLESS NOTED OTHERWISE.

EXTEND DRAIN LINES AS INDICATED. ROUTING SHALL NOT INTERFERE WITH PASSAGEWAYS AND MAINTENANCE. DRAINS FROM AIR CONDITIONING CONDENSATE DRAIN PANS SHALL BE TRAPPED. SLOPE CONDENSATE DRAIN PIPING AT 1/4" PER FOOT. VERIFY INVERT IS ESTABLISHED AFTER AIR HANDLING UNIT IS INSTALLED BUT PRIOR TO DUCTWORK INSTALLATION.

PIPING AND DUCTWORK INSULATION SHALL BE RUN CONTINUOUSLY THROUGH NON-RATED FLOORS, WALLS, ROOF AND PARTITIONS, UNLESS OTHERWISE INDICATED.

NO PIPING SHALL BE SMALLER THAN 3/4" UNLESS OTHERWISE NOTED.

RUNOUTS SHALL PITCH DOWN IN DIRECTION OF FLOW A MINIMUM OF 1" IN 3'.

PROVIDE UNION OR FLANGED CONNECTIONS AT EACH PIECE OF EQUIPMENT AND ON BOTH SIDES OF CONTROL VALVES AND PRESSURE REGULATING VALVES. PROVIDE SHUT-OFF VALVES ON BOTH SIDES OF AUTOMATIC VALVES.

FLOOR MOUNTED EQUIPMENT IN THE MECHANICAL ROOMS SHALL BE LOCATED ON 4" THICK CONCRETE HOUSEKEEPING PADS UNLESS OTHERWISE INDICATED.

PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE SPECIFICATIONS. ADDITIONAL SUPPORTS OR HANGERS SHALL BE INSTALLED ADJACENT TO ELBOWS TO PREVENT WEIGHT OF PIPING BEING PLACED ON THE EQUIPMENT.

CORRECT SETTING ON BALANCING FITTINGS SHALL BE PERMANENTLY MARKED.

INSTALL ANCHORS AND EXPANSION LOOPS WHERE INDICATED AND WHERE REQUIRED TO ALLOW FOR EXPANSION.

LOCATE AND SIZE CONCRETE PADS AND CURBS FOR MECHANICAL EQUIPMENT IN ACCORDANCE WITH ACTUAL EQUIPMENT PURCHASED.

THROUGH-PENETRATION FIRESTOP ASSEMBLIES

PROVIDE UL LISTED THROUGH-PENETRATION ASSEMBLIES FOR FIRE RATED PARTITIONS, WALLS, AND FLOORS. REVIEW ARCHITECTURAL DRAWINGS FOR FIRE PARTITION LOCATIONS AND UL LISTINGS.

SHEET METAL

PROVIDE ACCESS DOORS IN DUCTWORK WHERE INDICATED OR REQUIRED FOR ACCESS TO SYSTEM COMPONENTS INCLUDING THE FOLLOWING:

- DAMPER MOTORS AND/OR MOTOR OPERATED DAMPERS
- HUMIDIFIERS
- FILTERS
- BOTH SIDES OF HEATING AND COOLING COILS
- FAN BEARINGS ENCLOSED IN DUCTS OR PLENUMS
- FIRE DAMPERS AND SMOKE DAMPERS

HIGH SIDEWALL REGISTERS OR GRILLES SHALL BE LOCATED 6" FROM CEILING TO TOP OF REGISTER OR GRILLE.

LOW SIDEWALL REGISTERS OR GRILLES SHALL BE LOCATED 12" FROM BOTTOM OF REGISTER OR GRILLE TO FINISHED FLOOR.

INSTALL FLOOR REGISTERS AND CEILING REGISTERS A MINIMUM OF 4" FROM EXTERIOR WALL.

PROVIDE A MINIMUM OF THREE TIMES THE FAN DIAMETER OF STRAIGHT DUCTWORK OFF THE SUPPLY AIR FAN DISCHARGE BEFORE ANY TAKEOFFS OR ELBOWS.

PROVIDE EXTENDED VOLUME DAMPER CONTROL RODS SO THAT HANDLES ARE WELL CLEAR OF DUCT INSULATION.

A2L PIPING REQUIREMENTS

REFRIGERANT PIPING LOCATED IN AREAS OTHER THAN THE ROOM OR SPACE WHERE THE REFRIGERATING EQUIPMENT IS LOCATED SHALL BE LABELED. THE PERMANENT PIPE LABELS SHALL BE LOCATED AT INTERVALS NOT EXCEEDING 20 FEET. MINIMUM TEXT SHALL BE 1/2 INCH AND SHALL INDICATE THE REFRIGERANT DESIGNATION AND SAFETY GROUP CLASSIFICATION OF REFRIGERANT USED IN THE PIPING SYSTEM AND INCLUDE "DANGER-- RISK OF FIRE OR EXPLOSION. FLAMMABLE REFRIGERANT."

REFRIGERANT PIPING USED WITH GROUP A2L REFRIGERANTS AND LOCATED IN CONCEALED LOCATIONS WHERE TUBING IS INSTALLED IN STUDS, JOISTS, RAFTERS OR SIMILAR MEMBER SPACES, AND LOCATED LESS THAN 1-1/2 INCHES FROM THE NEAREST EDGE OF THE STRUCTURAL MEMBER, SHALL BE CONTINUOUSLY PROTECTED BY SHIELD PLATES. PROTECTIVE STEEL SHIELD PLATES SHALL HAVE A MINIMUM THICKNESS OF 0.0375 INCH (NO. 16 GAGE) AND SHALL COVER THE AREA OF THE TUBE PLUS THE AREA EXTENDING NOT LESS THAN 2 INCHES BEYOND BOTH SIDES OF THE TUBE.

MAINTENANCE

EQUIPMENT WITH FILTERS SHALL BE INSTALLED SO THAT FILTERS CAN BE EASILY REMOVED AND REPLACED.

EQUIPMENT INSTALLED ABOVE CEILINGS SHALL BE MOUNTED APPROX. 12" ABOVE CEILING (UON) FOR MAINTENANCE ACCESS.

INSTALL PIPE RUNS AT LEAST 6" ABOVE CEILING TILES, WHERE PRACTICAL INSTALL VALVES, AND OTHER MAINTAINABLE DEVICES LOW ENOUGH TO REACH WITH A 6' LADDER.

PROVIDE ACCESS TO ANY INSPECTION OR MAINTAINABLE DEVICE, EQUIPMENT, ETC. - ACCESS OR ACCESS DOOR SHALL BE OF ADEQUATE SIZE TO WORK ON DEVICE.

EXAMINE MANUFACTURER'S LITERATURE TO DETERMINE RECOMMENDED CLEARANCES. THESE CLEARANCES, IN ADDITION TO MINIMUM CLEARANCES REQUIRED BY THE NATIONAL ELECTRICAL CODE, SHALL BE ESTABLISHED AND MAINTAINED. THIS APPLIES TO NEW AND EXISTING EQUIPMENT IMPACTED BY THIS PROJECT AS WELL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THESE REQUIREMENTS WITH ALL OTHER TRADES.

INTERDISCIPLINARY COORDINATION

IF THIS CONTRACTOR SHOULD ELECT TO PROPOSE ANY EQUIPMENT THAT HAS DIFFERENT PHYSICAL OR ELECTRICAL CHARACTERISTICS, ETC. WHEN COMPARED TO THE BASIS OF DESIGN EQUIPMENT, THIS CONTRACTOR IS RESPONSIBLE FOR COORDINATING THESE CHANGES WITH THE OTHER TRADES PRIOR TO BID AND AGAIN BEFORE ORDERING OF EQUIPMENT. IF THERE SHOULD BE ANY ADDITIONAL WORK INCURRED BY THE OTHER TRADES AS A RESULT OF THIS CONTRACTOR'S EQUIPMENT SELECTION, ALL COSTS ASSOCIATED WITH THE ADDITIONAL WORK SHALL BE BORNE BY THIS CONTRACTOR.

TESTING, ADJUSTING, AND BALANCING (TAB)

AIRSIDE AND WATERSIDE TAB SHALL BE PERFORMED ON ALL DUCTED AND NON-DUCTED HVAC SYSTEMS. NON-DUCT HVAC SYSTEMS, INCLUDE, BUT ARE NOT LIMITED TO, UNIT HEATERS, CABINET UNIT HEATERS, BASEBOARD HEATERS, DUCTLESS MINI-SPLITS, DESTRATIFICATION FANS, LARGE CEILING FANS, INFRARED SPACE HEATERS, AIR CURTAINS, ETC. IT SHALL BE THE RESPONSIBILITY OF THE TAB CONTRACTOR TO DETERMINE APPROPRIATE TESTING, ADJUSTING AND BALANCING PROCEDURES FOR SYSTEMS NOT LISTED BY THE PROCEDURAL STANDARDS CERTIFYING BODY (NEBB, AABC, ETC.).

LEGEND AND ABBREVIATIONS

	NEW WORK NOTE DESIGNATION	AFF	ABOVE FINISHED FLOOR
	POINT OF CONNECTION NEW TO EXISTING	APPROX	APPROXIMATELY
	DETAIL/ RISER/ ENLARGED PLAN	CFM	CUBIC FEET PER MINUTE
	SHEET WHERE SHOWN/CUT	CO	CLEANOUT
AHU-1	AIR HANDLING UNIT DESIGNATION	DB	DRY BULB TEMPERATURE
DSS-1	DUCTLESS SPLIT SYSTEM DESIGNATION	EA	EXHAUST AIR
EF-1	EXHAUST FAN DESIGNATION	EAT	ENTERING AIR TEMPERATURE
EW-1	ELECTRIC WALL HEATER DESIGNATION	FLA	FULL LOAD AMPS
HP-1	HEAT PUMP DESIGNATION	HP	HORSEPOWER
L-1	LOUVER DESIGNATION	IN	INCH
FS	FAN SWITCH	KW	KILOWATT
	WALL THERMOSTAT/TEMPERATURE SENSOR	MAX	MAXIMUM
	BACKDRAFT DAMPER	MBH	1000 BRITISH THERMAL UNITS PER HOUR
	MOTORIZED DAMPER	MCA	MIN CIRCUIT AMPACITY
	VOLUME DAMPER	MIN	MINIMUM
	RADIATION DAMPER (HORIZONTAL)	MOCP	MAX OVERCURRENT PROTECTION
	GRILLE, REGISTER OR DIFFUSER MARK (CFM AS INDICATED)	NC	NOISE CRITERIA
	SUPPLY AIR/OUTSIDE AIR DUCT SECTION	OA	OUTSIDE AIR
	RETURN/EXHAUST DUCT SECTION	PD	PRESSURE DROP
	SUPPLY AIR/OUTSIDE AIR DUCT SECTION THROUGH ROOF	RA	RETURN AIR
	RETURN/EXHAUST DUCT SECTION THROUGH ROOF	SA	SUPPLY AIR
	DUCT TURNING UP	SEER	SEASONAL ENERGY EFFICIENCY RATING
	DUCT TURNING DOWN	SF	SQUARE FEET
	CEILING DIFFUSER WITH FLEXIBLE DUCTWORK	(TYP)	TYPICAL
	RETURN/EXHAUST REGISTER	UON	UNLESS OTHERWISE NOTED
	MITERED ELBOW WITH TURNING VANES	V	VOLT
	PIPE TURNING UP	W	WATT
	PIPE TURNING DOWN	WB	WET BULB TEMPERATURE
	CONDENSATE DRAIN	WG	WATER GAUGE
	REFRIGERANT SUCTION/LIQUID PIPING	Ø	PHASE/DIAMETER
	1 HOUR FIRE RATED PARTITION	°F	DEGREE FAHRENHEIT
	2 HOUR FIRE RATED PARTITION		

ENERGY CODE COMPLIANCE PATH

- ☐ ASHRAE 90.1
- ☐ VECC CHAPTER 4 - PRESCRIPTIVE
- ☐ VECC CHAPTER 4 - PERFORMANCE

FIRE STOPPING NOTE:

CONTRACTOR SHALL PROVIDE AN APPROPRIATE LISTED THROUGH-PENETRATION FIRE STOPPING ASSEMBLY AT EACH PENETRATION OF FIRE RATED CONSTRUCTION (I.E. WALLS AND SLABS, ETC.). FIRE STOPPING OF DUCT PENETRATIONS THROUGH RATED ASSEMBLIES ARE ONLY PERMITTED WHEN FIRE AND/OR SMOKE DAMPERS ARE NOT REQUIRED. SLEEVES SHALL ONLY BE PERMITTED WHERE INDICATED IN THE CONTRACTOR SELECTED THROUGH-PENETRATION FIRE STOPPING ASSEMBLY. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL RATED ASSEMBLIES AND ASSOCIATED UL DESIGNATIONS. DEVICES INSTALLED RECESSED WITHIN FIRE RATED CONSTRUCTION (I.E. LIGHT SWITCHES, RECEPTACLES, ICE MAKER BOXES, ETC.) ARE ONLY PERMITTED WHEN AN APPROVED LISTED FIRE STOPPING SYSTEM EXISTS FOR THE APPLICATION. IF AN APPROVED LISTED FIRE STOPPING SYSTEM IS NOT AVAILABLE, THE CONTRACTOR SHALL BRING THE CONDITION TO THE ATTENTION OF THE A/E FOR RESOLUTION PRIOR TO PROCEEDING WITH WORK.

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1228 PERIMETER PARKWAY
SUITE 101
VIRGINIA BEACH, VIRGINIA
23454
www.tc3architects.com
757.689.2699

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VIRGINIA CORPORATION NO.
405001837

PROJECT TITLE
8091 WILLIAMSON
APARTMENTS, LP
8091 WILLIAMSON ROAD
ROANOKE, VA 24019

PROJECT NUMBER
TS324072.00

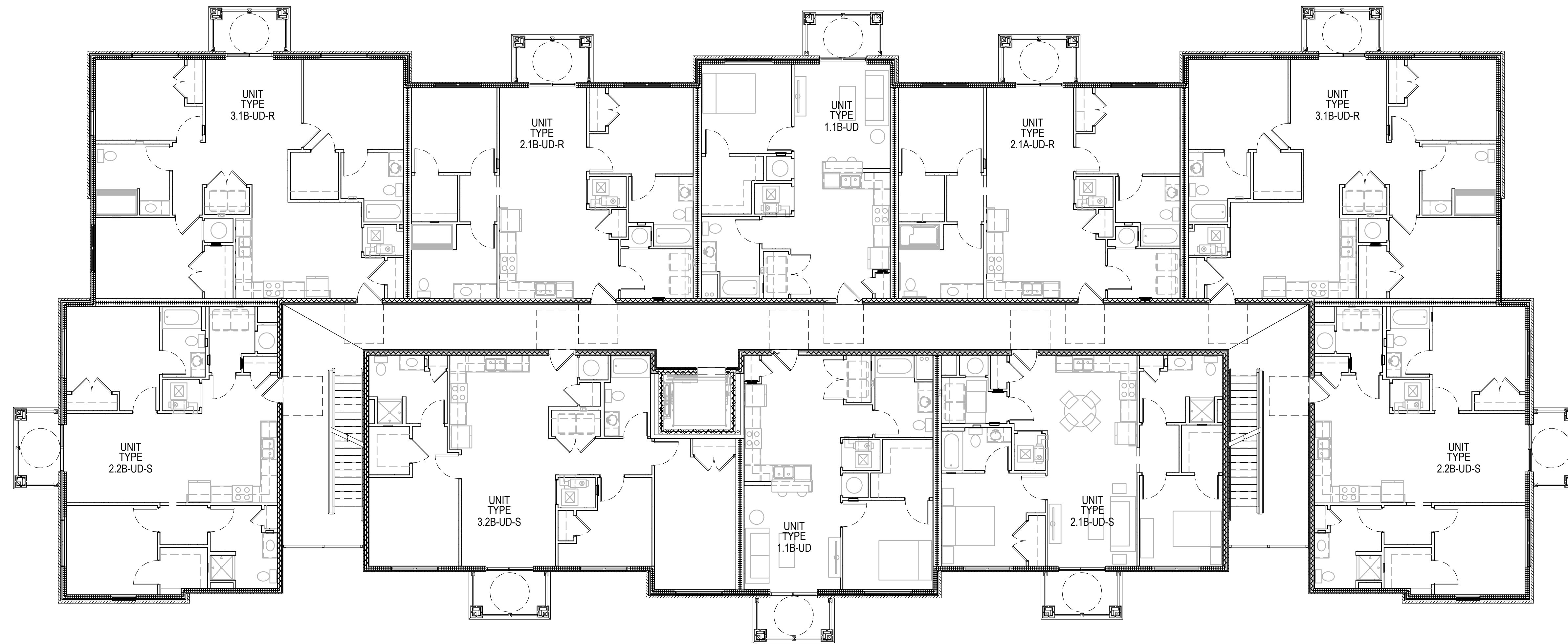
CONTRACT DRAWING DATE

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DRAWING TITLE
GENERAL NOTES,
LEGEND, AND
ABBREVIATIONS

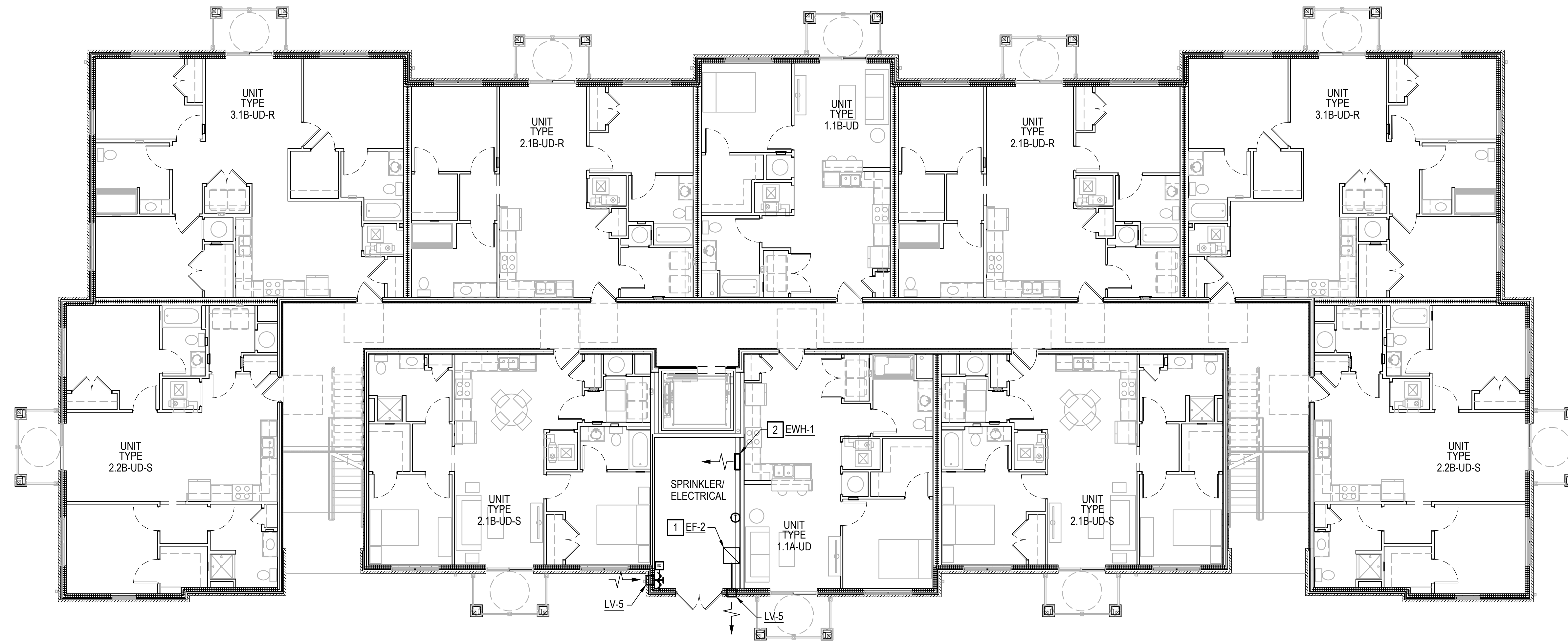
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M001

SHEET 1 OF 00



- NOTES THIS SHEET
- 1 PROVIDE WALL MOUNTED HEATER COMPLETE. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
 - 2 PROVIDE EXHAUST FAN, HANGERS AND SUPPORTS, AND CONTROLS COMPLETE.


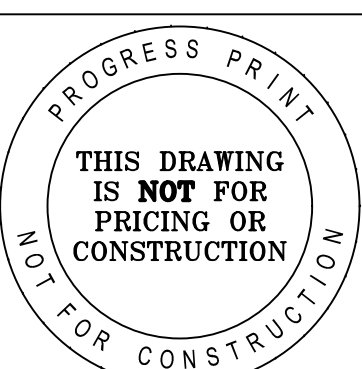

 SECOND FLOOR PLAN - BUILDING 1 (BUILDING 2 SIM.)
SCALE: 1/8" = 1'-0"



 FIRST FLOOR PLAN - BUILDING 1 (BUILDING 2 SIM.)
SCALE: 1/8" = 1'-0"

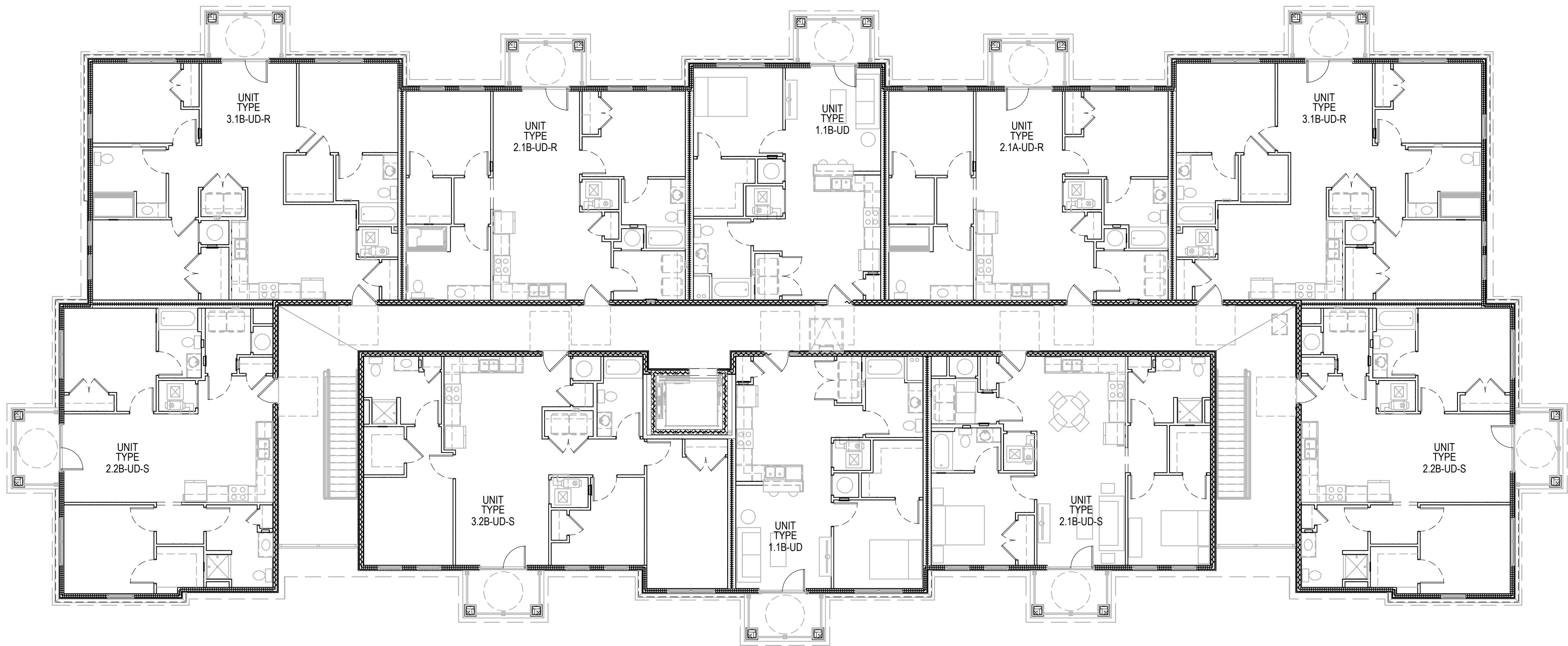
GRAPHIC SCALES



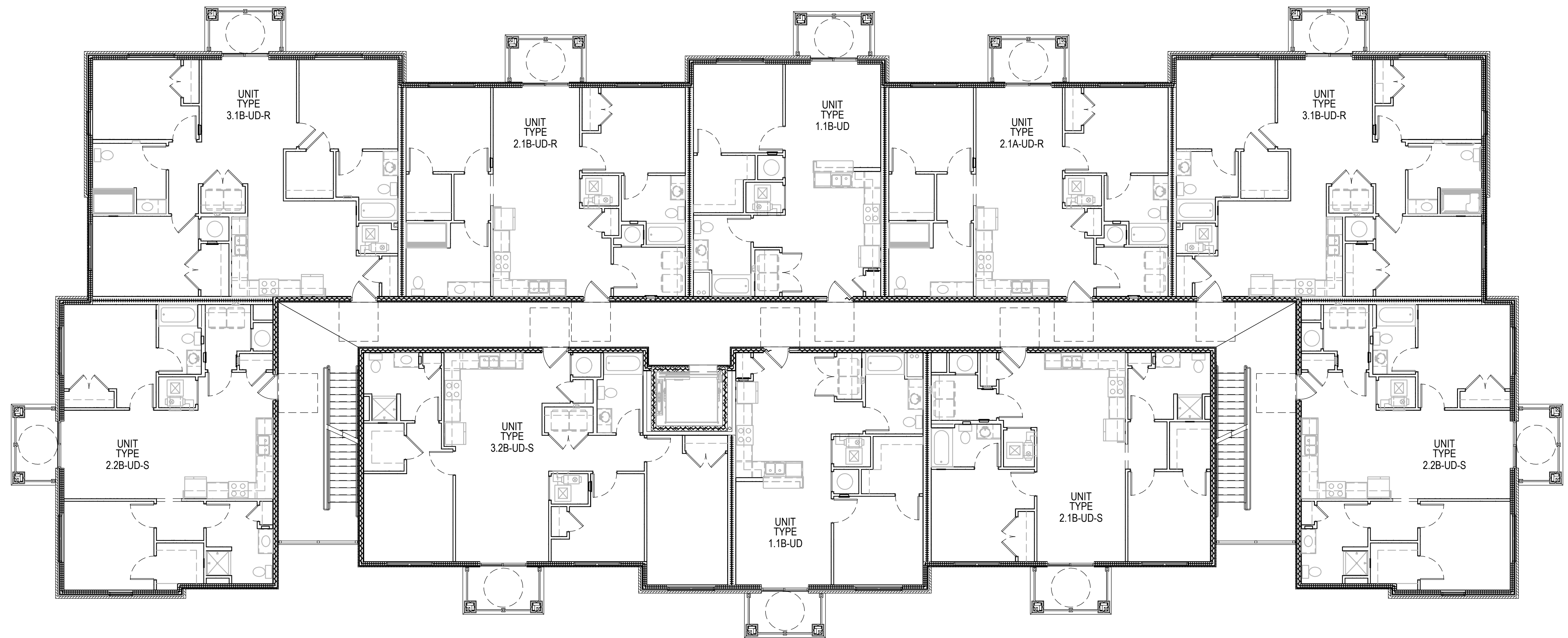
 CONSULTANTS	 #25158	1228 PERIMETER PARKWAY SUITE 101 VIRGINIA BEACH, VIRGINIA 23454 www.ts3architects.com 757.689.2699	PROJECT TITLE 8091 WILLIAMSON APARTMENTS, LP 8091 WILLIAMSON ROAD ROANOKE, VA 24019
		100 ARCHITECTURE, INC. © 2025 VIRGINIA CORPORATION NO. 405001837	PROJECT NUMBER TS324072.00 CONTRACT DRAWING DATE
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DRAWING TITLE BUILDING 1 FIRST AND SECOND FLOOR PLANS		DRAWING NUMBER M101	
SHEET 1 OF 00			

NOTES THIS SHEET

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 FOURTH FLOOR PLAN - BUILDING 1 (BUILDING 2 SIM.)
SCALE: 1/8" = 1'-0"



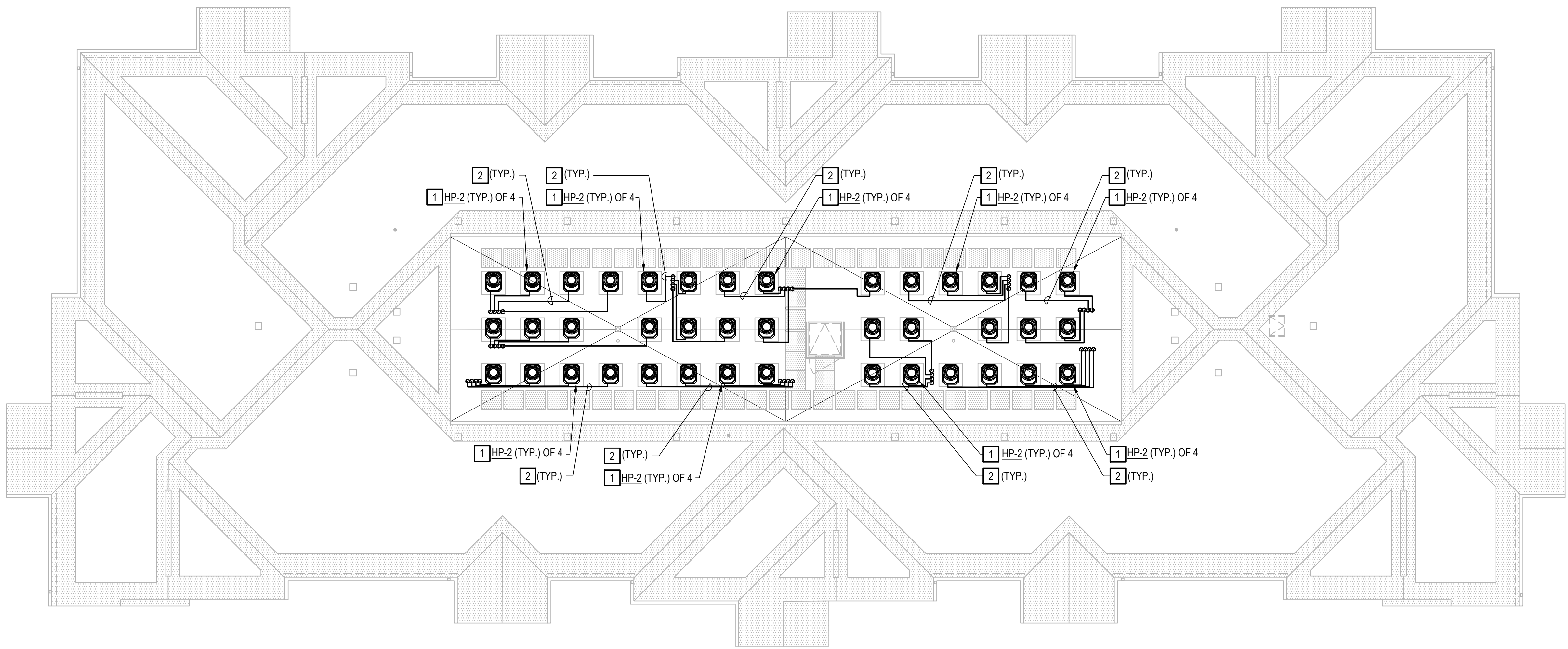
 THIRD FLOOR PLAN - BUILDING 1 (BUILDING 2 SIM.)
SCALE: 1/8" = 1'-0"

GRAPHIC SCALES

1/8" = 1'-0"
0' 5' 10' 20'

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			DRAWING NUMBER M102
			SHEET 1 OF 00

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 **ROOF PLAN - BUILDING 1 (BUILDING 2 SIM.)**
SCALE: 1/8" = 1'-0"

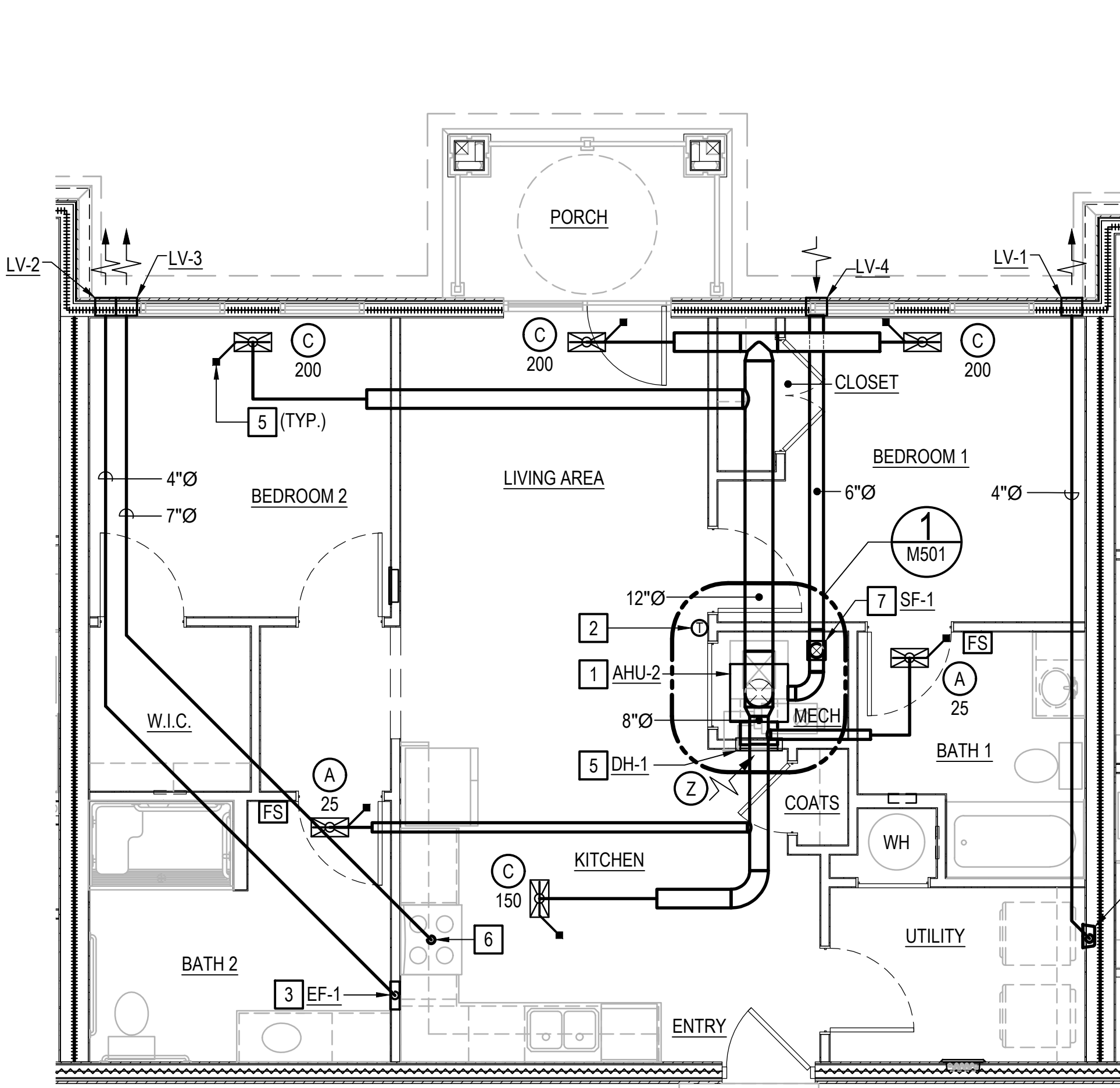
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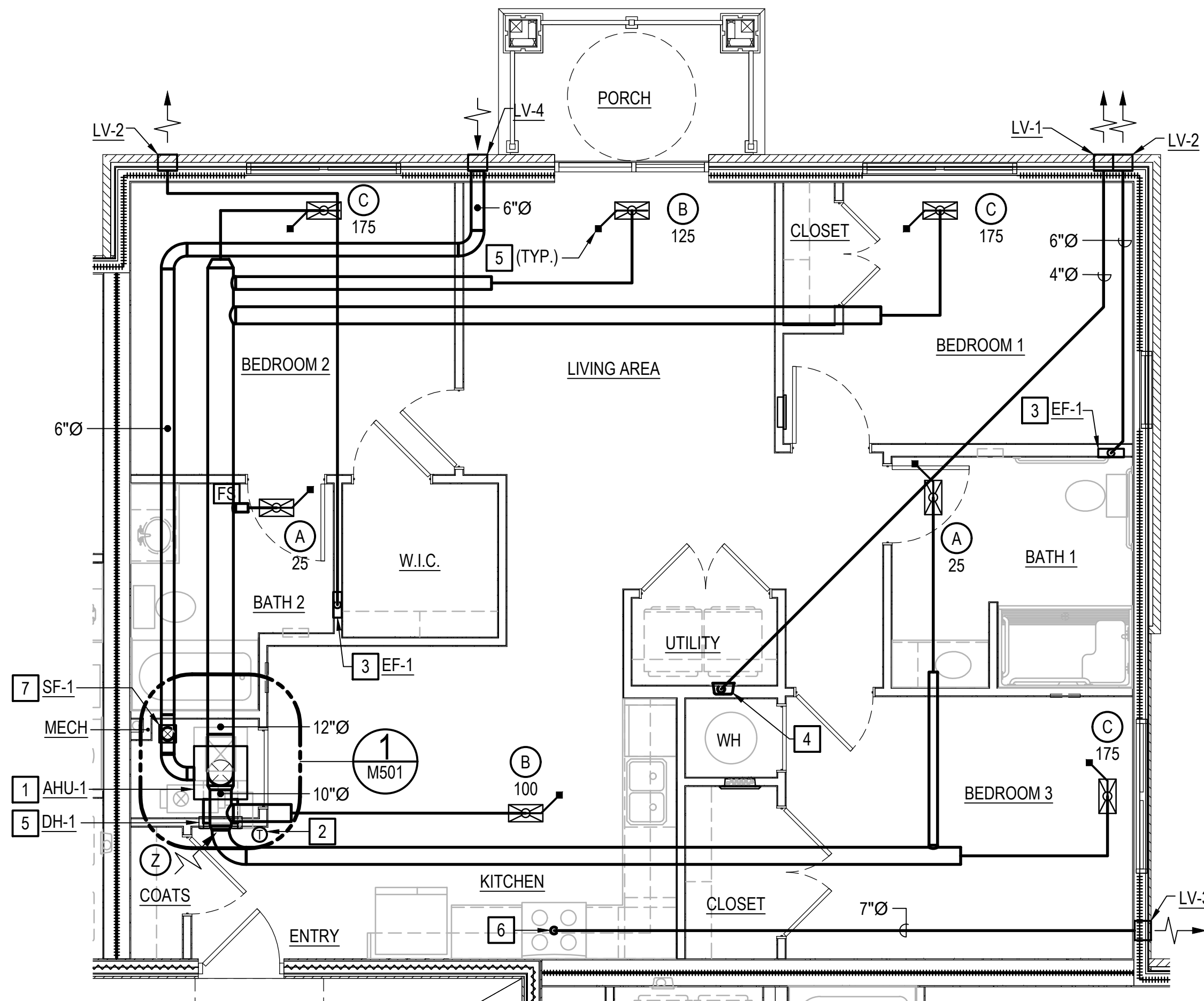
NOTES THIS SHEET

- 1 PROVIDE HEAT PUMP UNIT. MOUNT LEVEL ON CONCRETE PAD EXTENDING TO THE FACE OF THE BUILDING. EACH UNIT SHALL BE LOCATED A MINIMUM OF 2'-0" FROM AN OBSTRUCTION OR ADJACENT UNIT.
- 2 PROVIDE REFRIGERENT SUCTION/LIQUID PIPING, INSULATION, HANGERS AND SUPPORTS. PROVIDE UV RESISTANT PVC JACKETING ON ALL EXTERIOR REFRIGERANT PIPING, JOHNS MANVILLE ZESTON, OR APPROVED EQUAL.

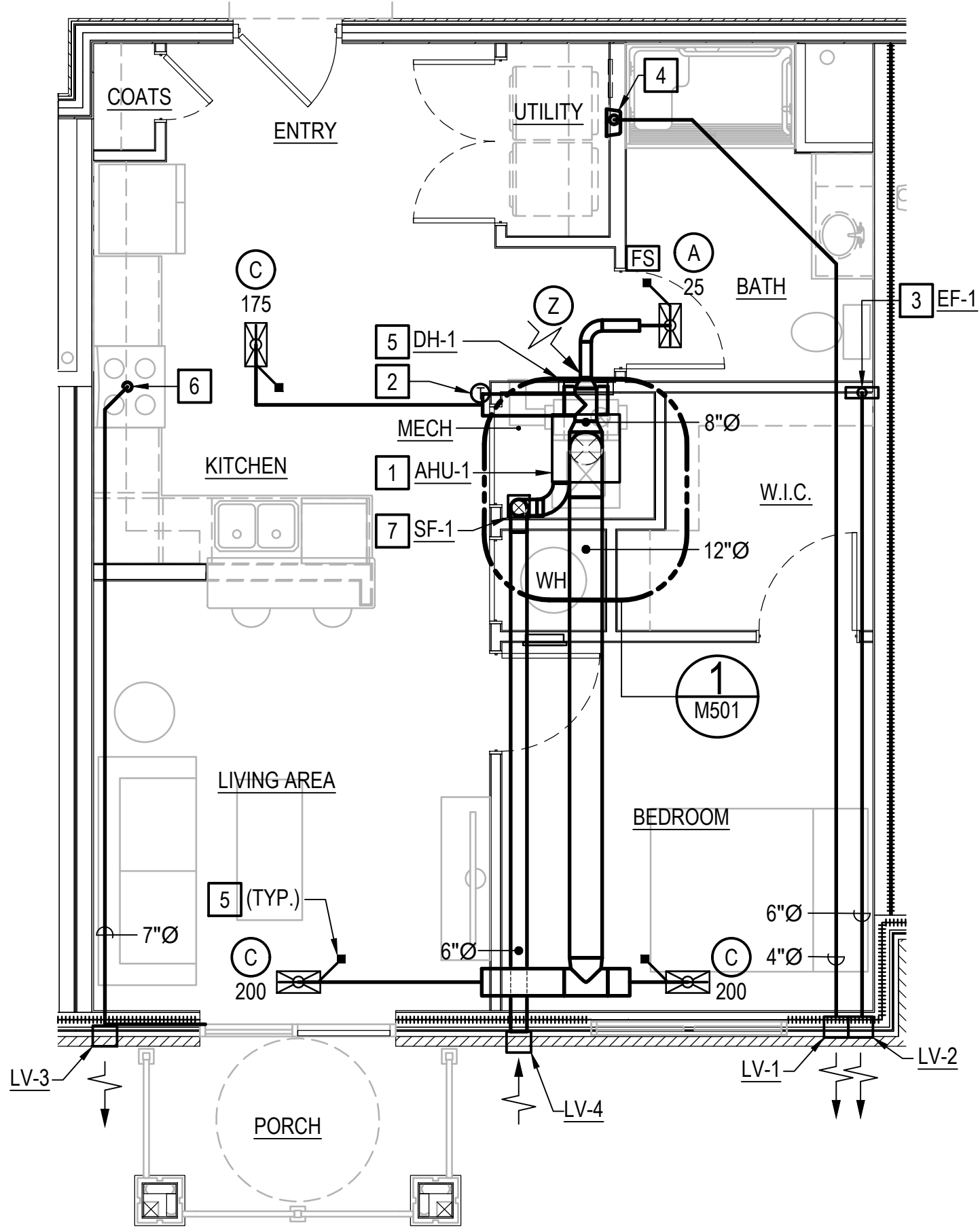
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		VIRGINIA CORPORATION NO. 405001837	PROJECT NUMBER TS324072.00
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		DRAWING NUMBER M103	
SHEET 1 OF 00			



ENLARGED PLAN - UNIT 2.1A-UD
SCALE: 1/4" = 1'-0"



ENLARGED PLAN - UNIT 3.1A-UD
SCALE: 1/4" = 1'-0"



ENLARGED PLAN - UNIT 1.1A-UD
SCALE: 1/4" = 1'-0"

NOTES THIS SHEET

- 1 PROVIDE FLOOR MOUNTED SPLIT SYSTEM AIR HANDLING UNIT WITH MANUFACTURER'S ACCESS PANEL WALL GRILLE COVER. REFER TO TYPICAL DETAIL ON SHEET M601 FOR ADDITIONAL INFORMATION.
- 2 PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT AND ASSOCIATED CONTROL WIRING.
- 3 PROVIDE CABINET WALL EXHAUST FAN. PROVIDE WITH MANUFACTURER'S CEILING RADIATION DAMPER KIT.
- 4 PROVIDE CEILING RADIATION DAMPER. INSTALL PER MANUFACTURER'S INSTRUCTIONS. GRILLE OR DUCT BELOW SHALL BE REMOVABLE TO ALLOW FOR ACCESS FROM BELOW.
- 5 PROVIDE WALL MOUNTED DEHUMIDIFIER COMPLETE. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- 6 PROVIDE 26 GAGE MINIMUM KITCHEN HOOD EXHAUST DUCT. FIRE SEAL AROUND CEILING MEMBRANE PENETRATION.
- 7 PROVIDE INLINE VENTILATION SUPPLY FAN COMPLETE. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

TYPICAL APARTMENT UNIT NOTE:

ACTUAL FLOOR PLAN FOR APARTMENT UNITS MAY BE MIRRORED OR ROTATED.

WASHER / DRYER NOTE:

WHEN INSTALLING WASHER / DRYER HOOK UP CONNECTION, WASHER SHALL BE LOCATED ON THE LEFT SIDE OF THE DRYER. CONFIRM SIDE OF CONNECTION PRIOR TO INSTALLATION.

GRAPHIC SCALES



1228 PERIMETER PARKWAY
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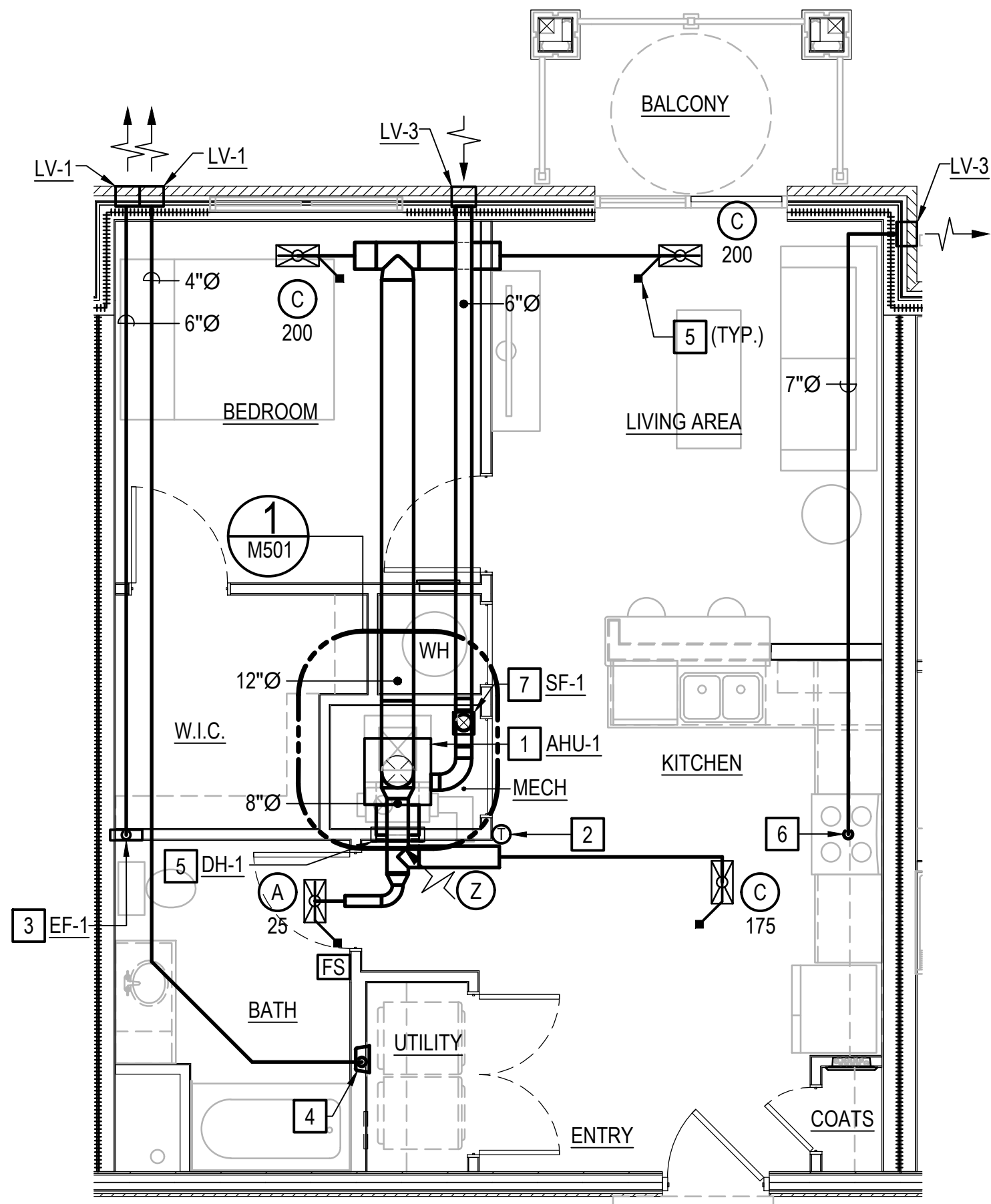
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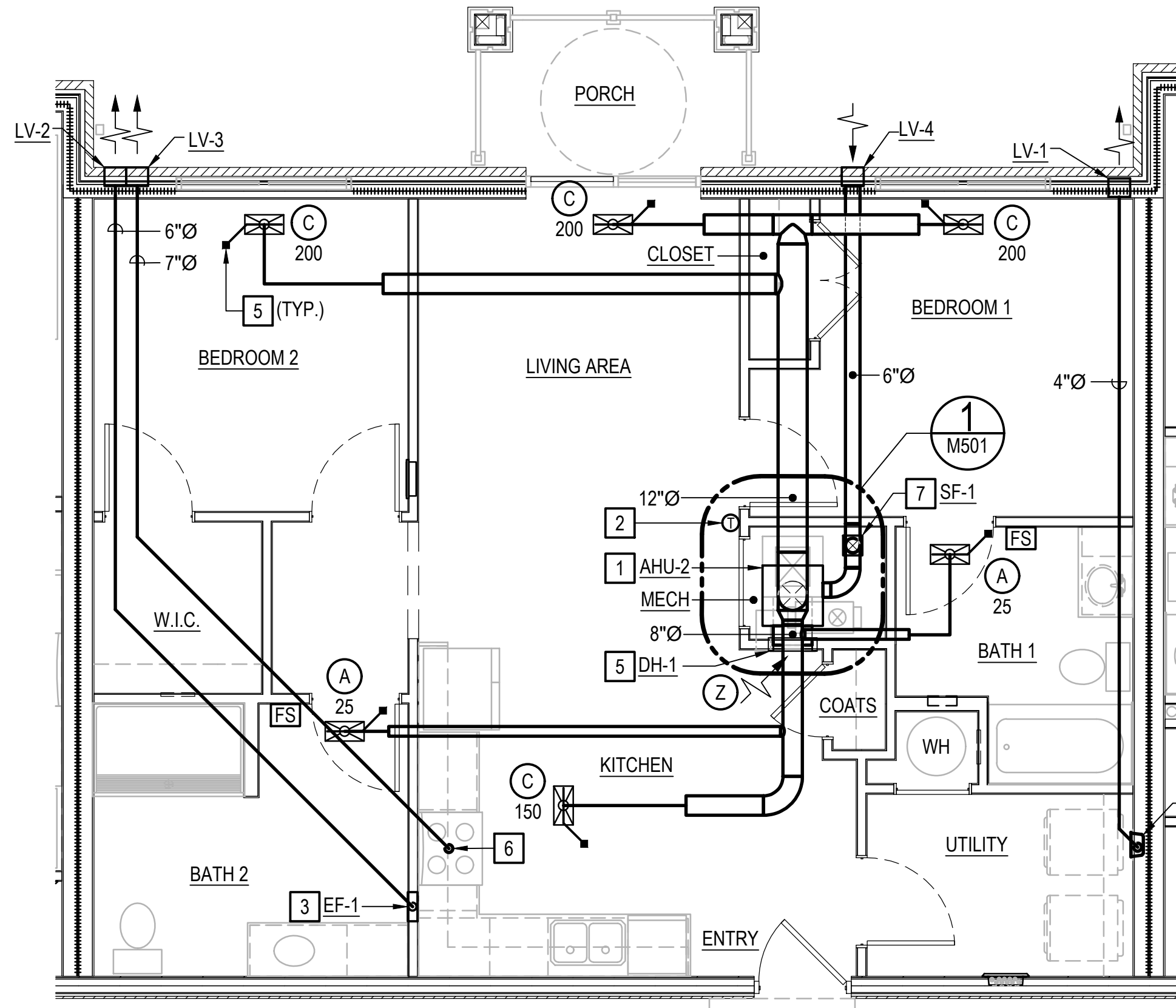
DRAWING TITLE
UNIT PLANS

DRAWING NUMBER
M401

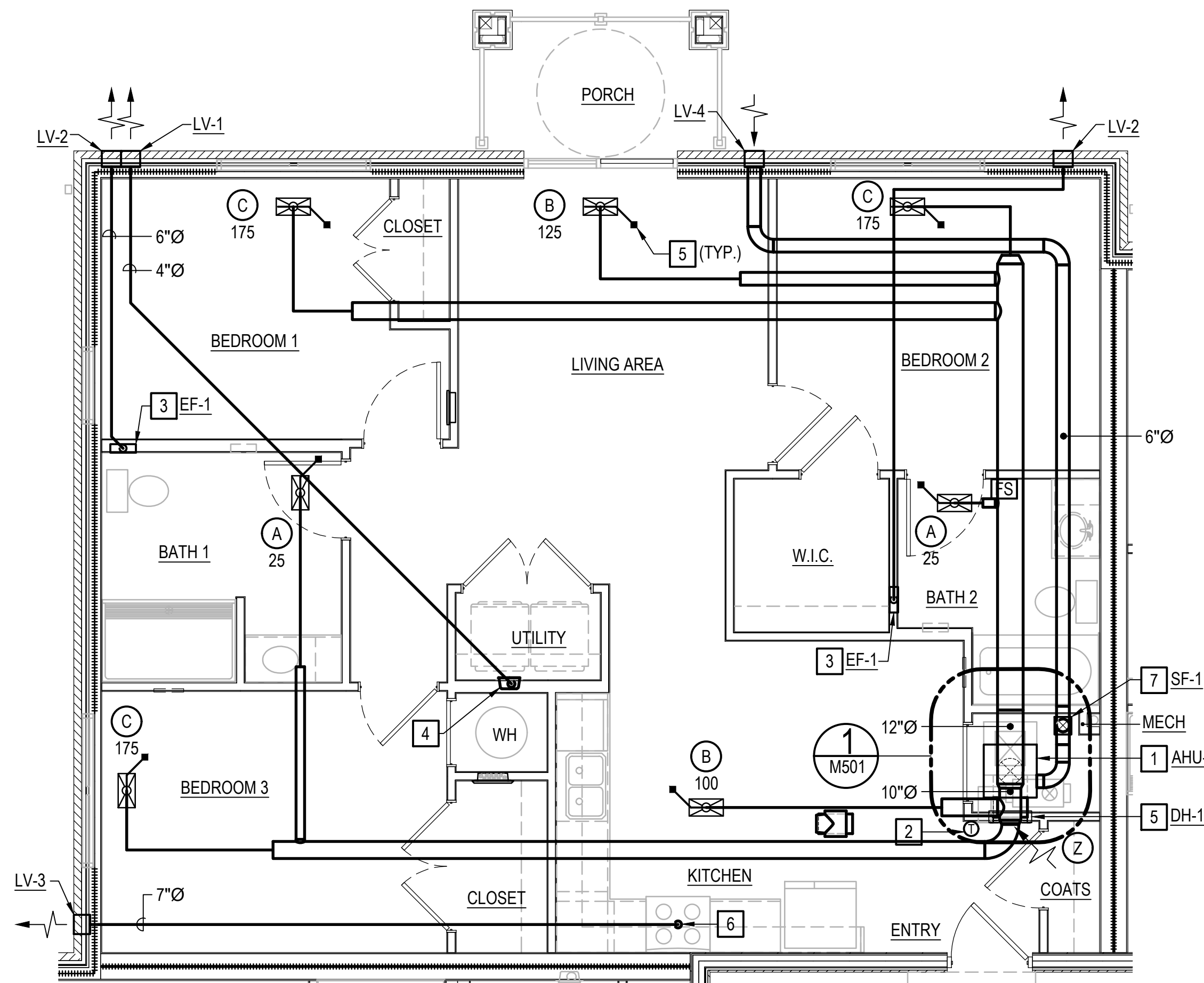
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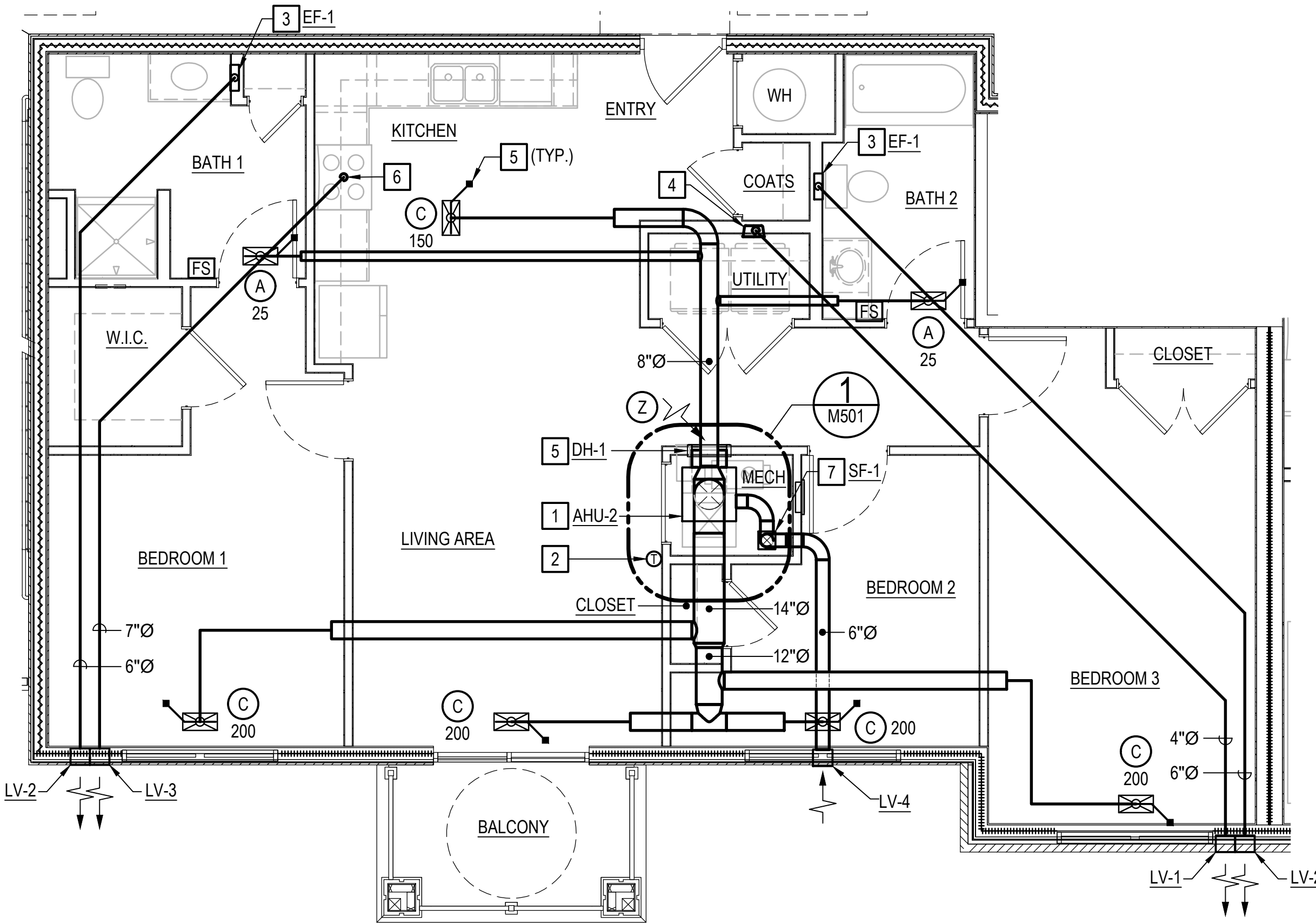
ENLARGED PLAN - UNIT 1.1B-UD
SCALE: 1/4" = 1'-0"



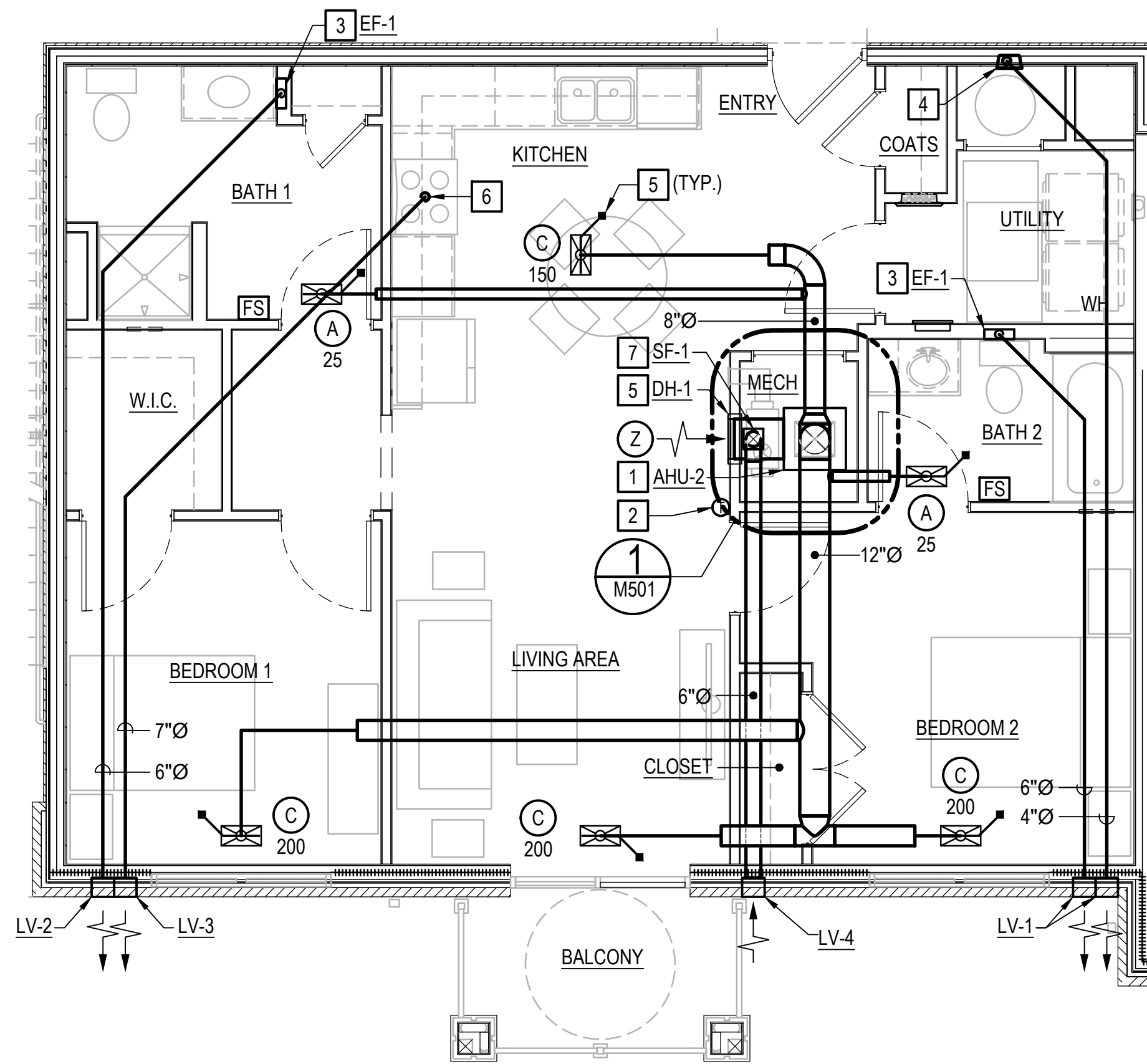
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SCALE: 1/4" = 1'-0"



ENLARGED PLAN - UNIT 3.1B-UD-R
SCALE: 1/4" = 1'-0"



ENLARGED PLAN - UNIT 3.2B-UD-S
SCALE: 1/4" = 1'-0"



ENLARGED PLAN - UNIT 2.1B-UD-S (UNIT 2.2B-UD-S SIM.)
SCALE: 1/4" = 1'-0"

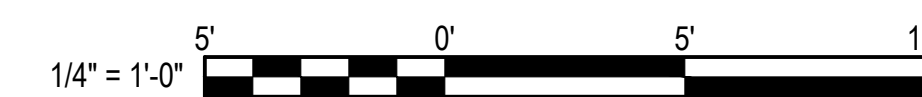
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GRAPHIC SCALES



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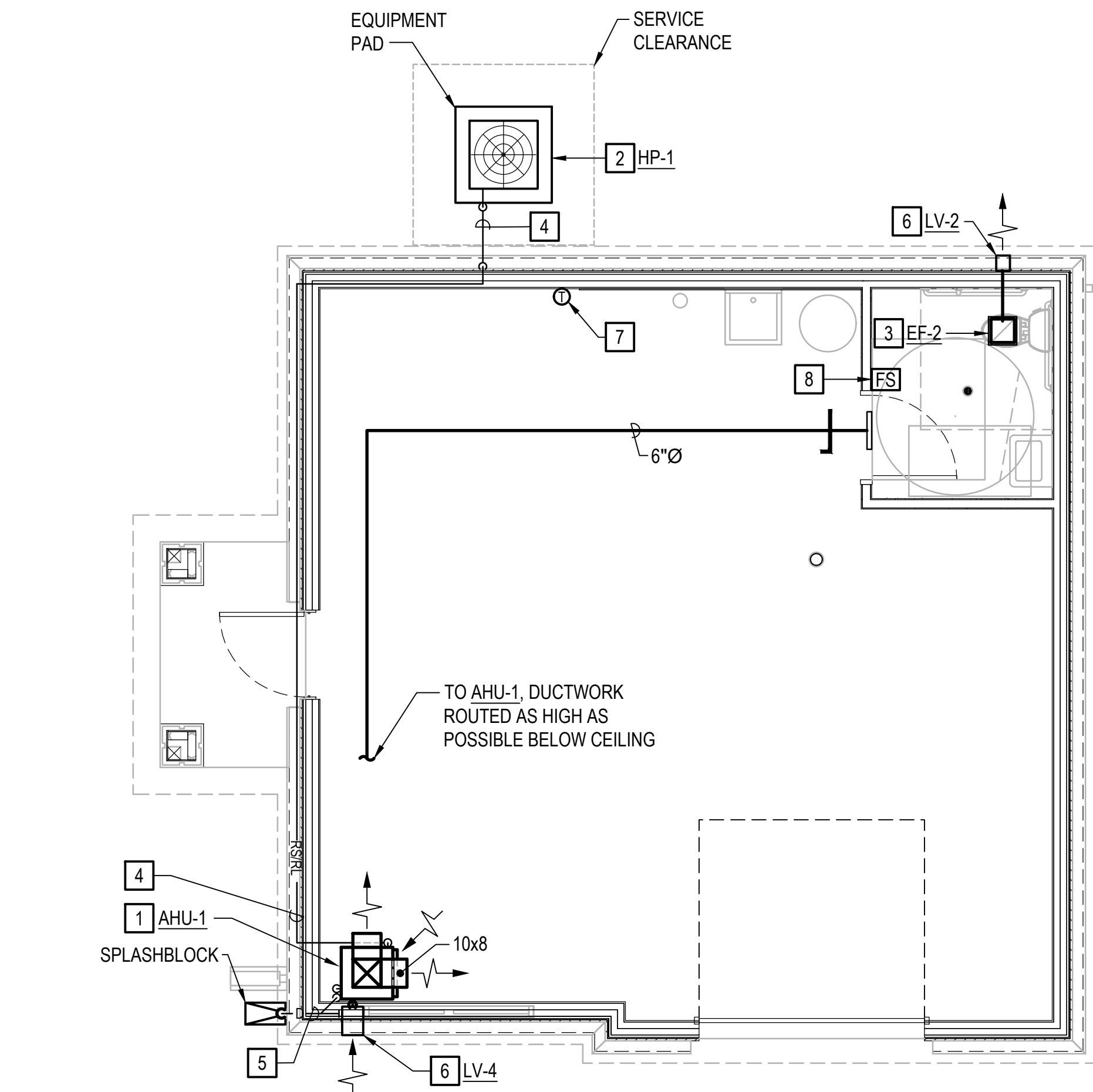
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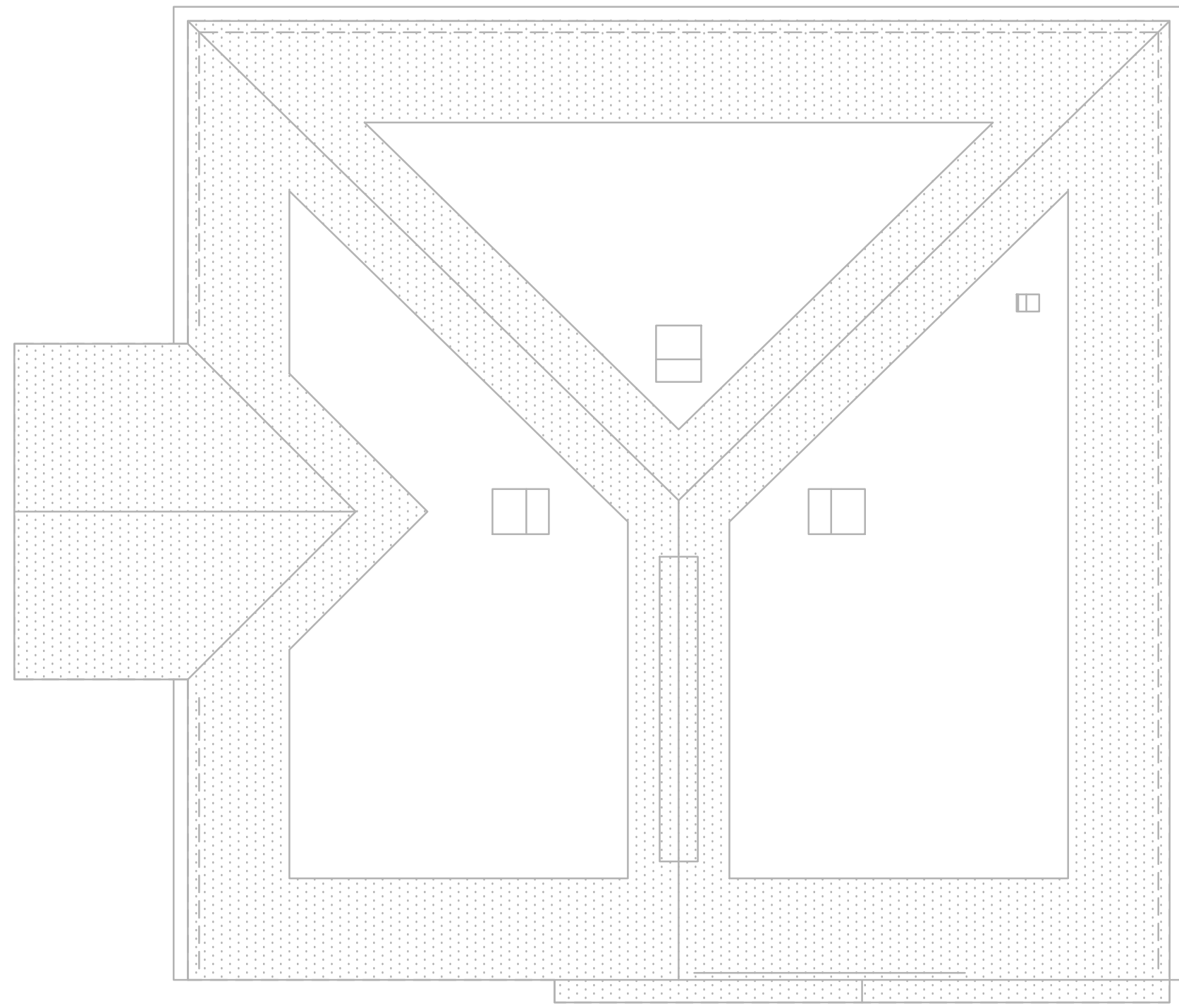
M402

SHEET 1 OF 00

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MAINTENANCE - FLOOR PLAN
SCALE: 1/4" = 1'-0"

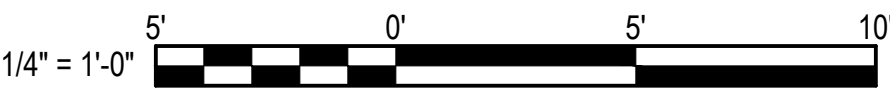


MAINTENANCE - ROOF PLAN
SCALE: 1/4" = 1'-0"

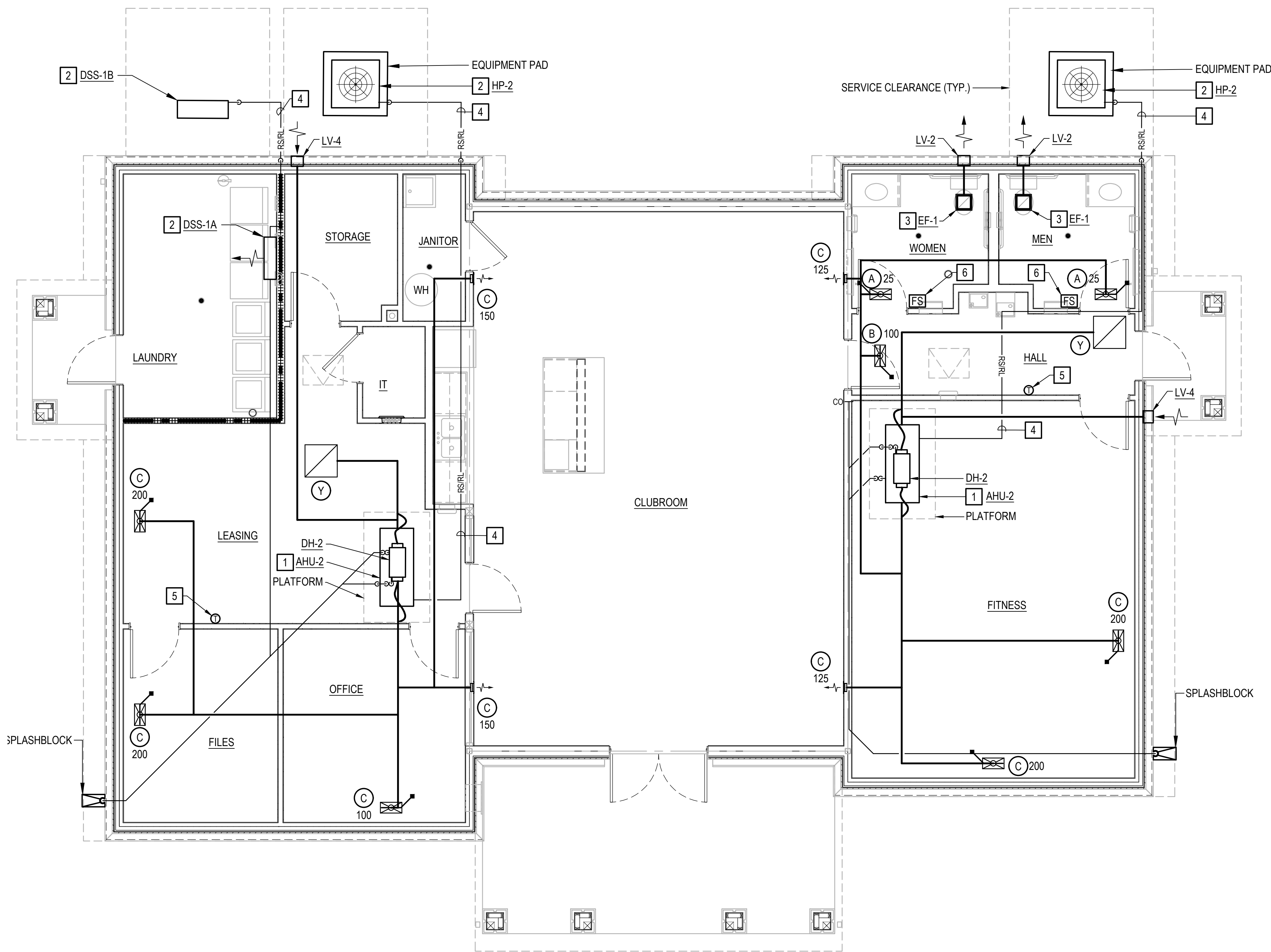
NOTES THIS SHEET

- 1 PROVIDE SPLIT SYSTEM AIR HANDLING UNIT, SUPPORTS, AND EMERGENCY DRAIN PAN COMPLETE. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES. SEE HORIZONTAL AIR HANDLING UNIT DETAIL ON SHEET M501 FOR MORE INFORMATION. VERIFY WITH ACTUAL EQUIPMENT PURCHASED.
- 2 PROVIDE HEAT PUMP OUTDOOR UNIT. INSTALL PER MANUFACTURER'S INSTRUCTIONS AND ENSURE ALL RECOMMENDED CLEARANCES ARE ACHIEVED. MOUNT ON LEVEL EQUIPMENT PAD. ROUTE REFRIGERANT PIPING TO ASSOCIATED AIR HANDLING UNIT.
- 3 PROVIDE EXHAUST FAN, HANGERS AND SUPPORTS COMPLETE. PROVIDE DUCTWORK, HANGERS AND SUPPORTS COMPLETE.
- 4 PROVIDE REFRIGERANT SUCTION/LIQUID PIPING, INSULATION, JACKETING, HANGERS AND SUPPORTS COMPLETE.
- 5 PROVIDE 1" CONDENSATE DRAIN PIPING, INSULATION, HANGERS AND SUPPORTS COMPLETE. ROUTE WITHIN WALL CAVITY AND SPILL ON SPLASH BLOCK.
- 6 PROVIDE WALL LOUVER AS SCHEDULED. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION.
- 7 PROVIDE A 7-DAY PROGRAMMABLE COMBINATION THERMOSTAT/HUMIDISTAT AND ASSOCIATED CONTROL WIRING COMPLETE. MOUNT APPROXIMATELY CENTERLINE WITH ADJACENT WALL SWITCHES. SEE DETAIL ON SHEET M501.
- 8 PROVIDE FAN SWITCH AND ASSOCIATED CONTROL WIRING COMPLETE. REFER TO SEQUENCE OF OPERATIONS FOR MORE INFORMATION, SHEET M601.

GRAPHIC SCALES



		1228 PERIMETER PARKWAY SUITE 101 VIRGINIA BEACH, VIRGINIA 23454 www.ts3architects.com 757.689.2699	PROJECT TITLE 8091 WILLIAMSON APARTMENTS, LP 8091 WILLIAMSON ROAD ROANOKE, VA 24019
		VIRGINIA CORPORATION NO. 405001837	PROJECT NUMBER TS324072.00
CONSULTANTS		REVISIONS / SUBMISSIONS	DRAWING TITLE MAINTENANCE FLOOR PLAN AND ROOF PLAN
 RECEIVED December 12th, 2025			DRAWING NUMBER MM401
			SHEET 1 OF 00



- NOTES THIS SHEET**
- 1 PROVIDE SPLIT SYSTEM AIR HANDLING UNIT, SUPPORTS, AND EMERGENCY DRAIN PAN COMPLETE. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES. SEE HORIZONTAL AIR HANDLING UNIT DETAIL ON SHEET M501 FOR MORE INFORMATION. VERIFY WITH ACTUAL EQUIPMENT PURCHASED.
 - 2 PROVIDE HEAT PUMP OUTDOOR UNIT. INSTALL PER MANUFACTURER'S INSTRUCTIONS AND ENSURE ALL RECOMMENDED CLEARANCES ARE ACHIEVED. MOUNT ON LEVEL EQUIPMENT PAD. ROUTE REFRIGERANT PIPING TO ASSOCIATED AIR HANDLING UNIT.
 - 3 PROVIDE EXHAUST FAN, HANGERS AND SUPPORTS COMPLETE. PROVIDE DUCTWORK, HANGERS AND SUPPORTS COMPLETE.
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 - 6 PROVIDE FAN SWITCH AND ASSOCIATED CONTROL WIRING COMPLETE. REFER TO SEQUENCE OF OPERATIONS FOR MORE INFORMATION, SHEET M601.

CLUBHOUSE - FLOOR PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALES



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SUITE 101
VIRGINIA BEACH, VIRGINIA
23464
www.ts3architects.com
757.689.2699

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#25158

PROJECT TITLE
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APARTMENTS, LP
8091 WILLIAMSON ROAD
ROANOKE, VA 24019

PROJECT NUMBER
TS324072.00

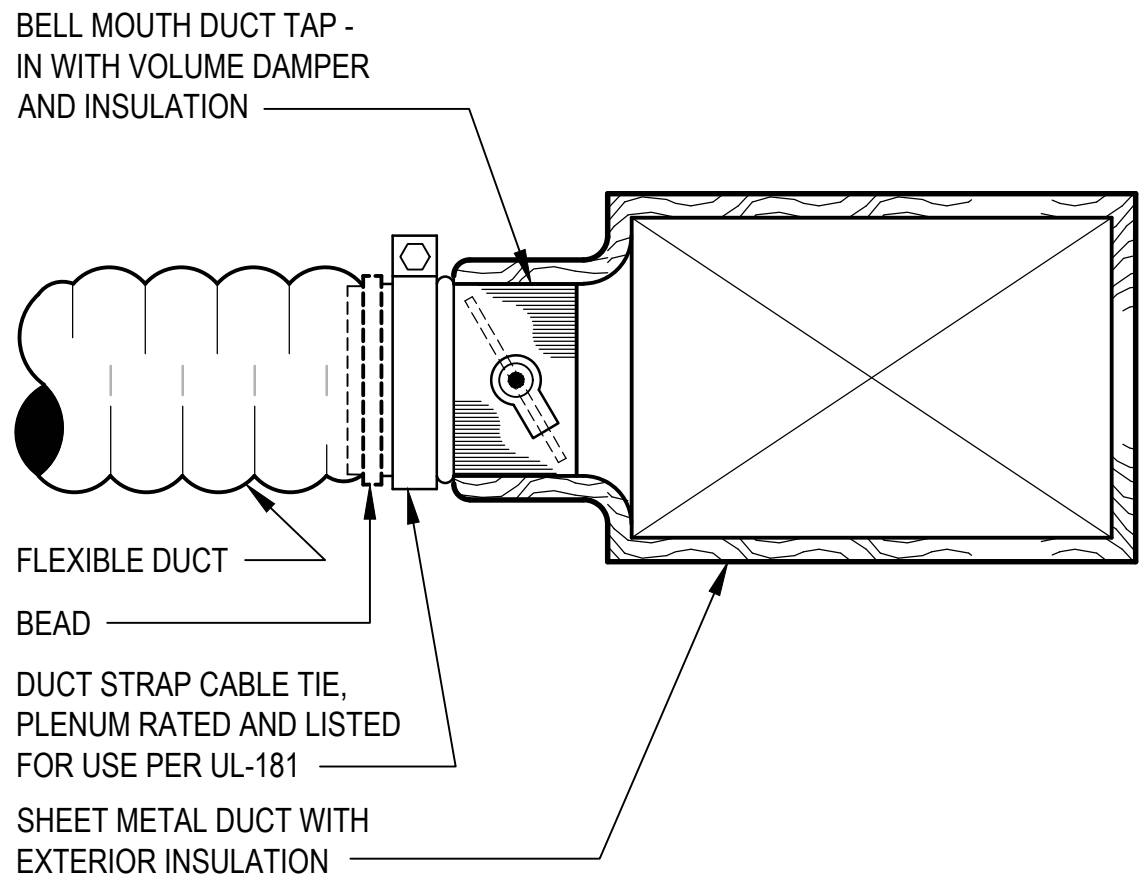
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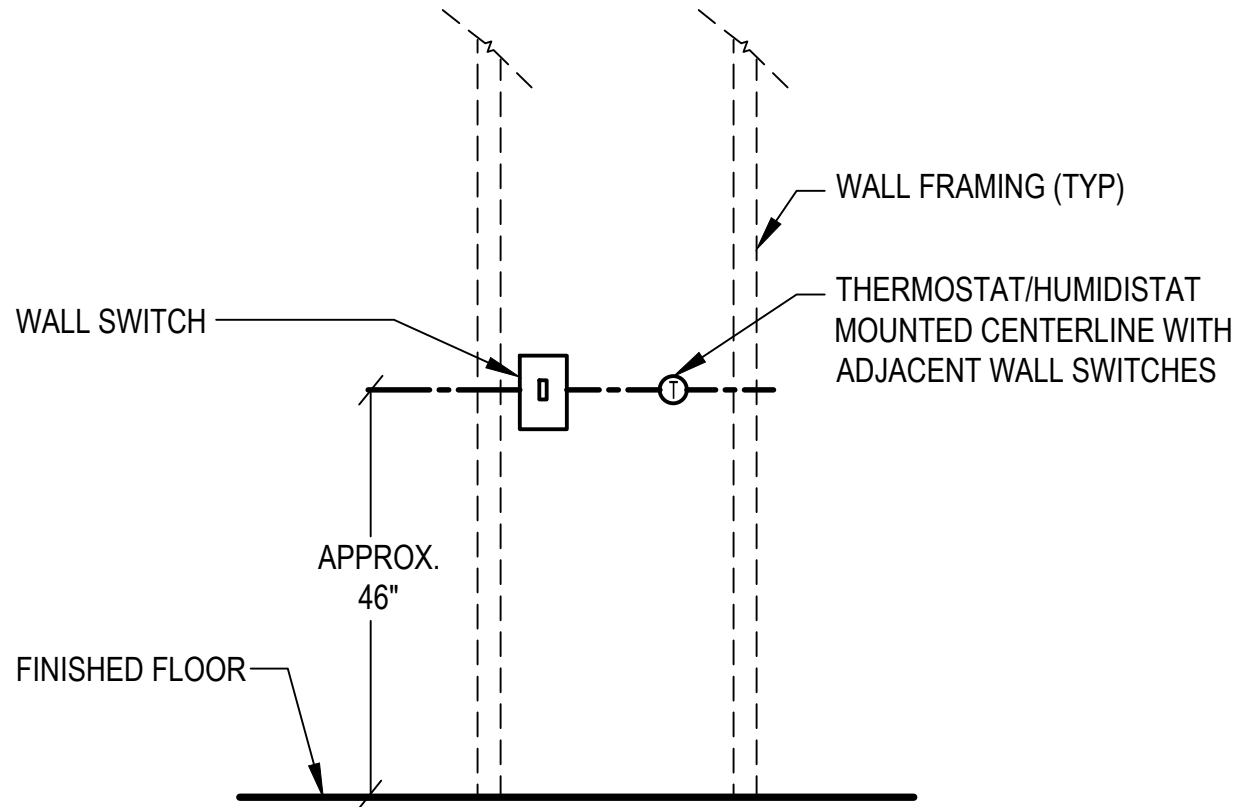
DRAWING TITLE
CLUBHOUSE FLOOR
PLAN AND ROOF
PLAN

DRAWING NUMBER
MX401

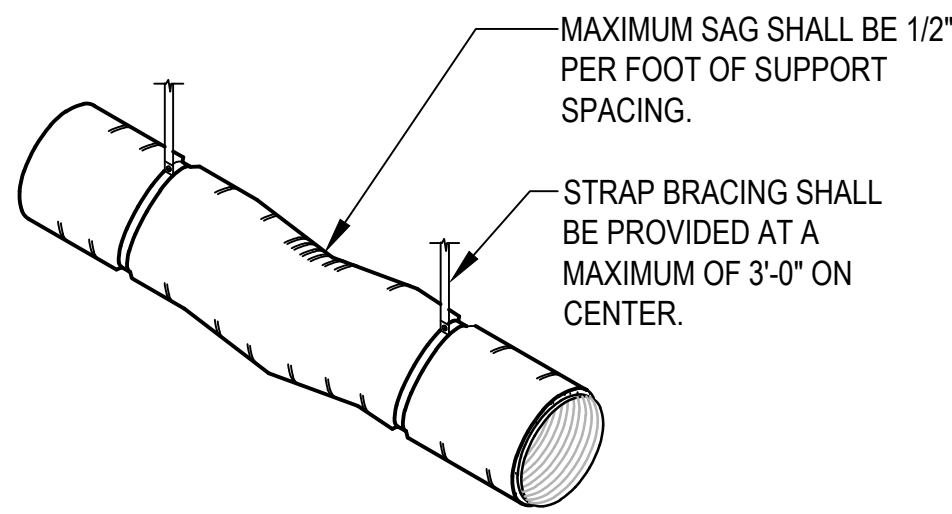
SHEET 1 OF 00



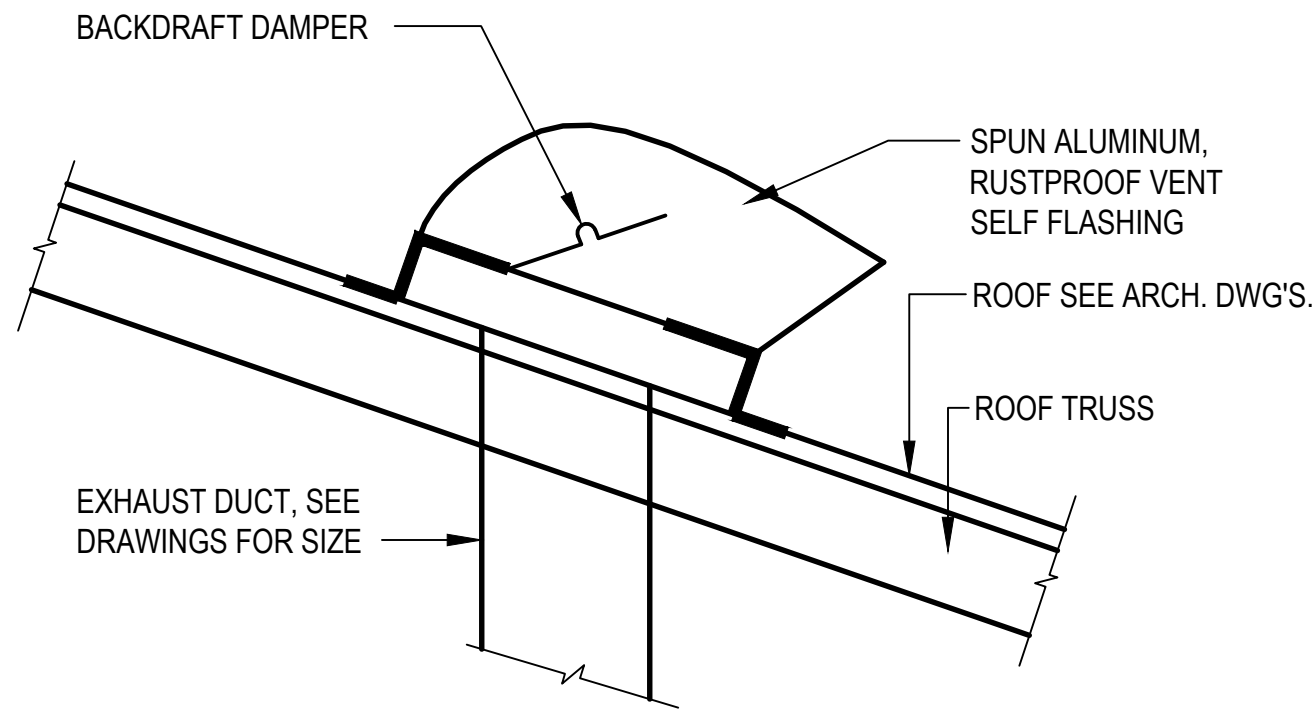
FLEXIBLE DUCT INSTALLATION DETAIL
NO SCALE



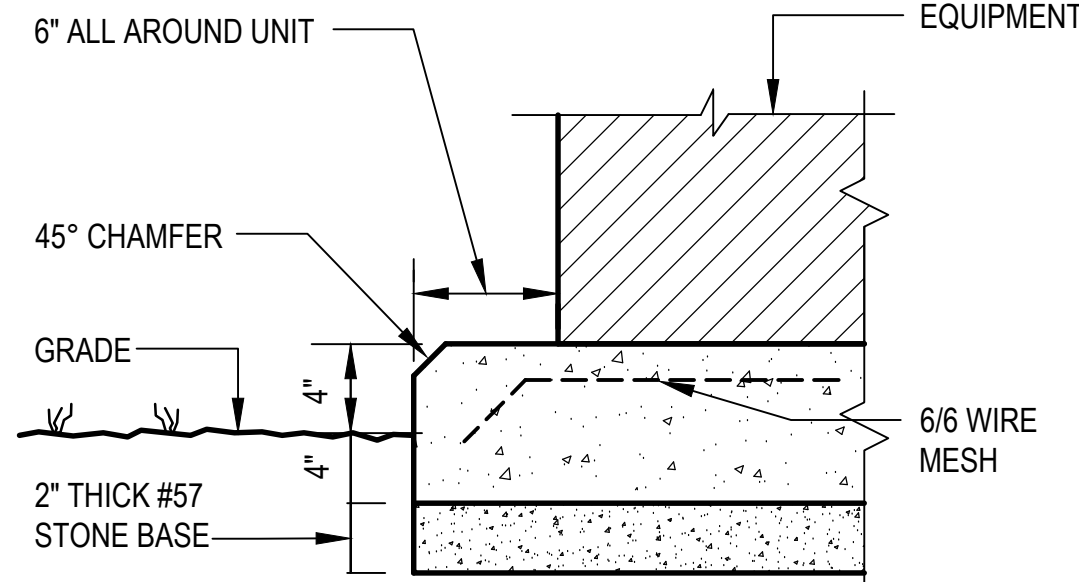
SWITCH/THERMOSTAT MOUNTING HEIGHT DETAIL
NO SCALE



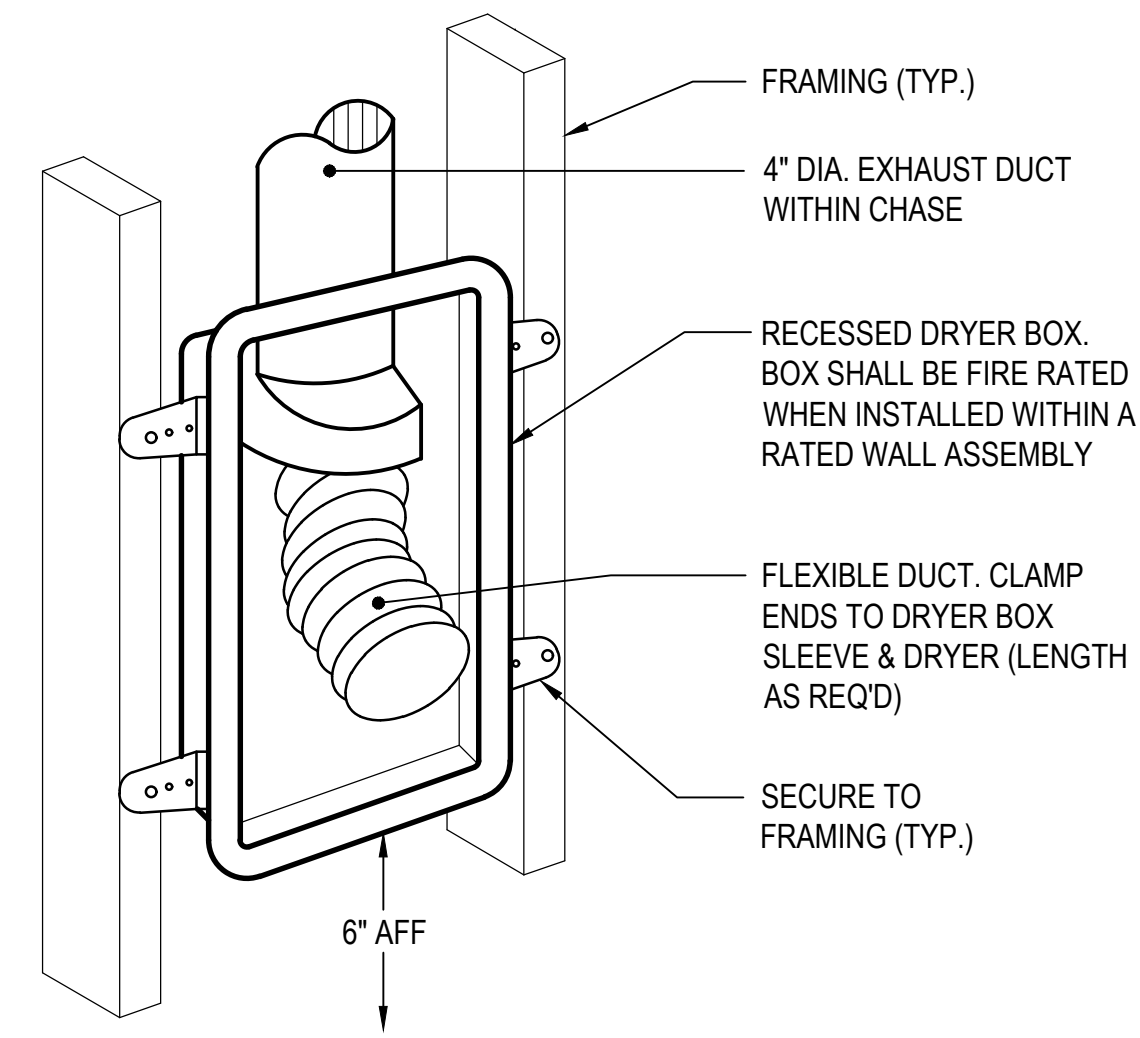
INSULATED FLEXIBLE DUCTWORK DETAIL
NO SCALE



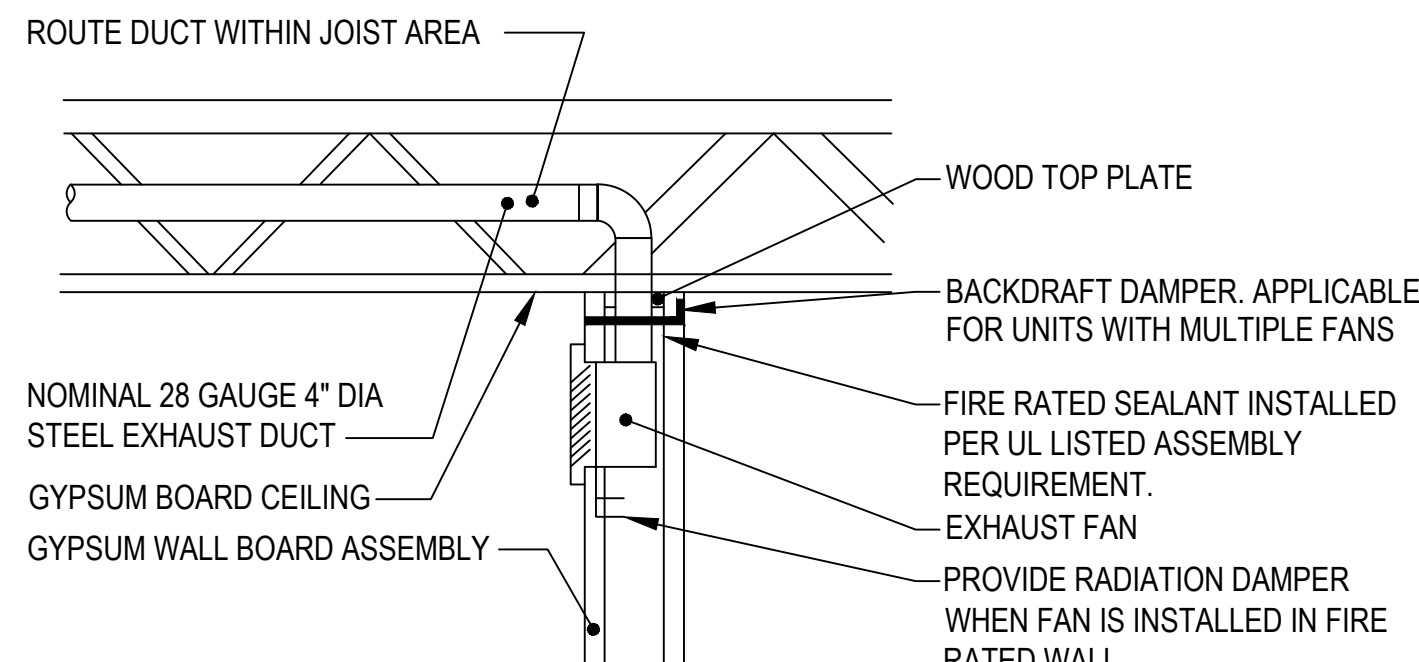
ROOF VENT DETAIL - SLOPED ROOF
NO SCALE



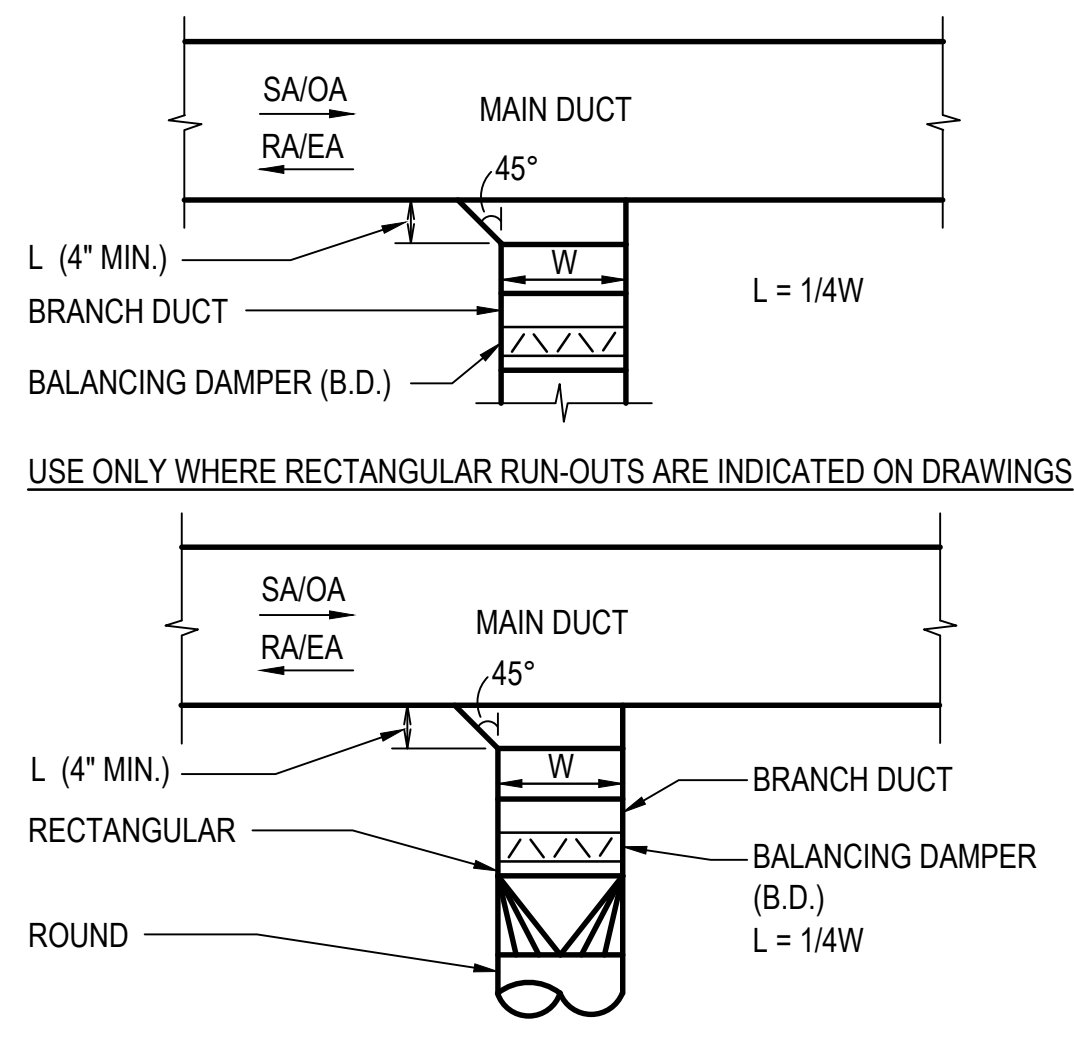
NOTE: CONCRETE SHALL BE 3,500 PSI WITH A MAX W/C RATIO OF 0.58 AND AN AIR CONTENT OF 5-7%
CONCRETE PAD DETAIL - EXTERIOR
NO SCALE



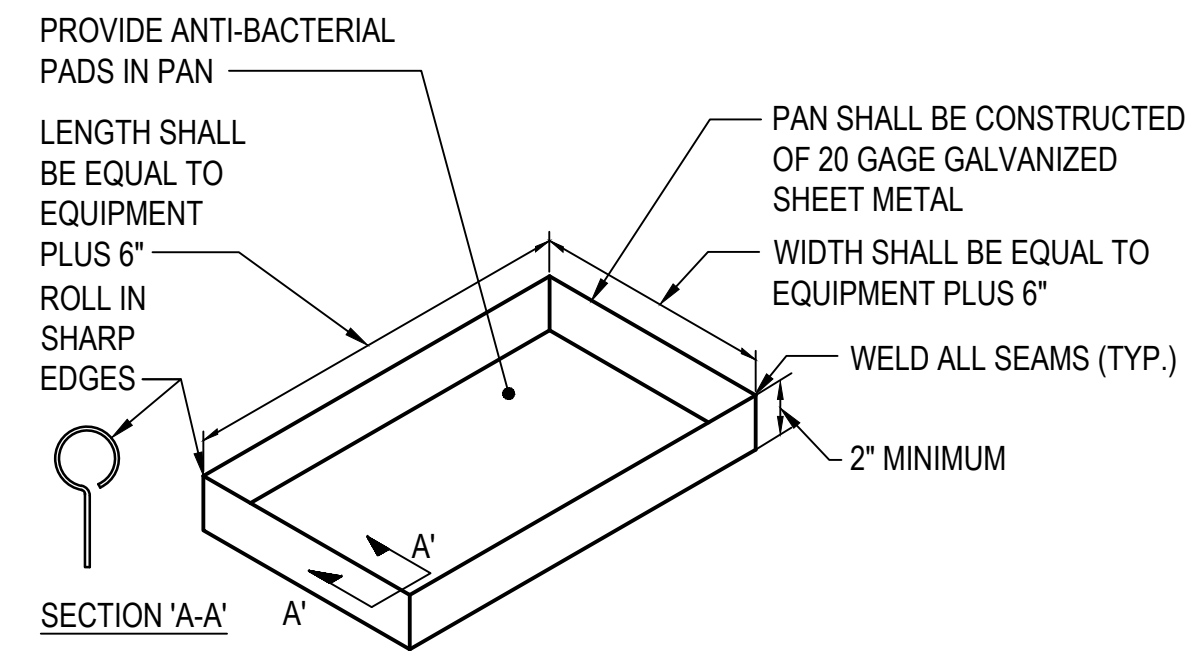
RECESSED DRYER BOX DETAIL
NO SCALE



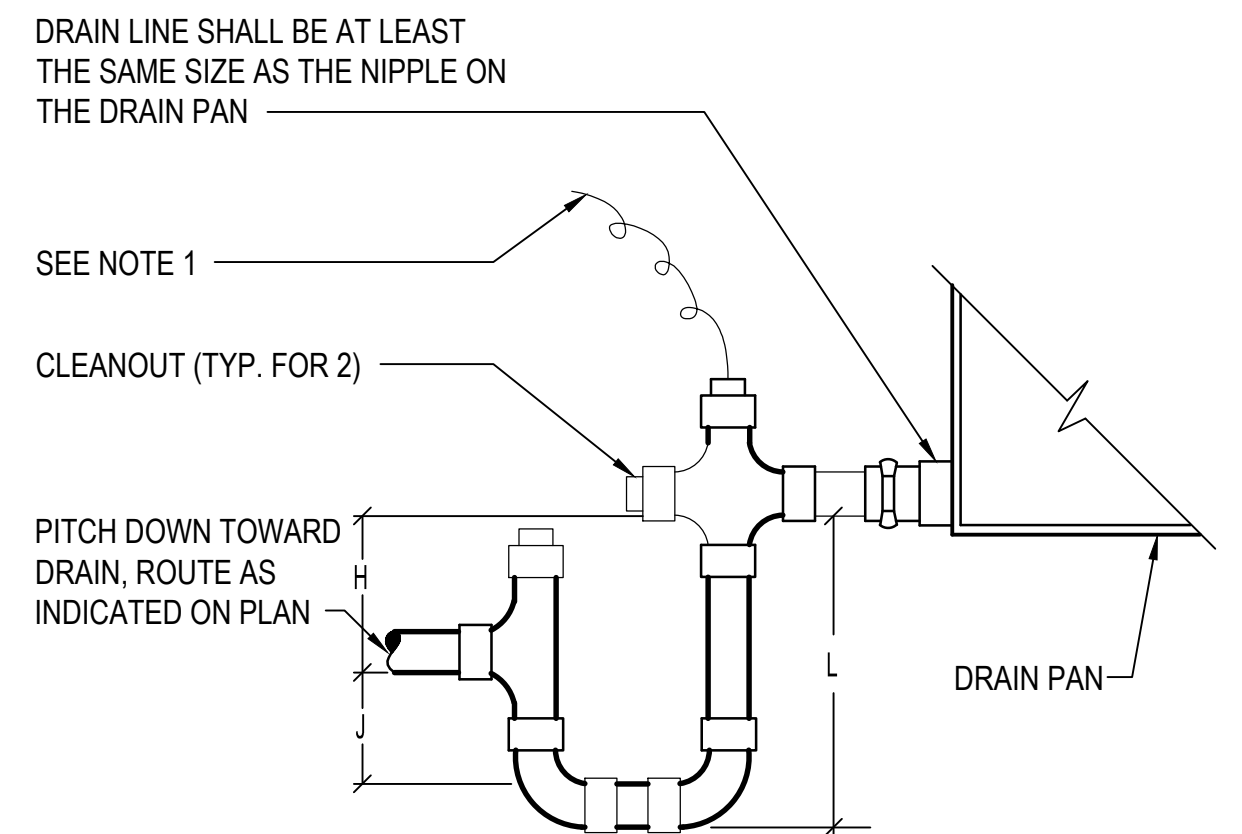
BATH AND DRYER EXHAUST DUCT DETAIL
NO SCALE



USE ONLY WHERE RECTANGULAR RUN-OUTS ARE INDICATED ON DRAWINGS
USE ONLY WHERE ROUND RUN-OUTS ARE INDICATED ON DRAWINGS
TYPICAL BRANCH CONNECTION DETAIL
NO SCALE



AUXILIARY DRAIN PAN DETAIL
NO SCALE

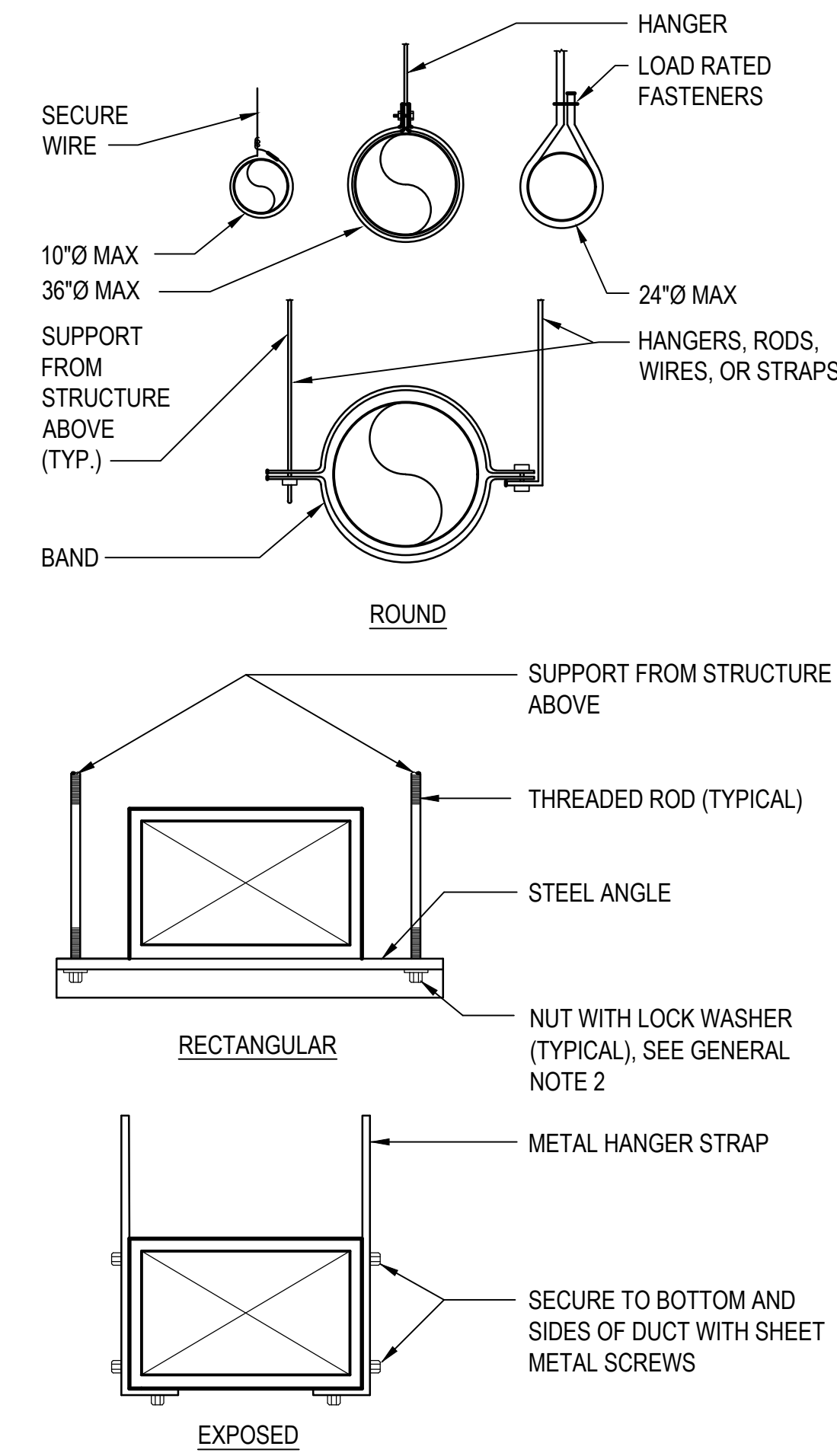


DRAIN PAN TRAPPING FOR SECTION UNDER NEGATIVE PRESSURE: L = H + J + PIPE DIAMETER WHERE:
H = 1 INCH FOR EACH INCH OF NEGATIVE PRESSURE PLUS 1 INCH
J = 1/2 INCH

DRAIN PAN TRAPPING FOR SECTION UNDER POSITIVE PRESSURE: L = H + J + PIPE DIAMETER WHERE:
H = 1/2 INCH (MINIMUM)
J = 1/2 INCH PLUS THE UNIT POSITIVE STATIC PRESSURE AT COIL DISCHARGE (LOADED FILTERS)

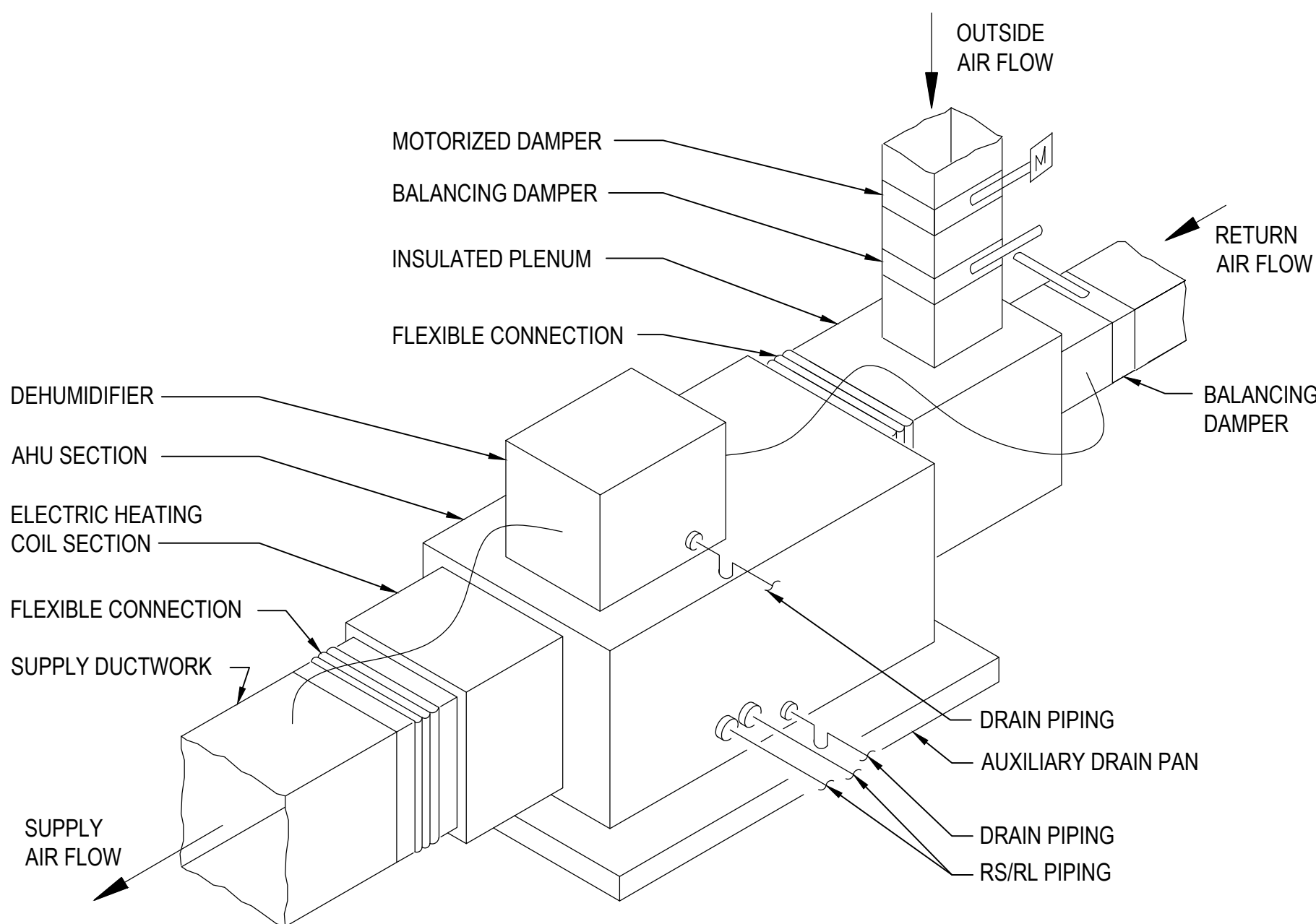
NOTES:
1. FOR INDOOR AIR HANDLING UNITS AND UNITARY AIR CONDITIONERS, PROVIDE RECTORSEAL EZ TRAP 83230 EXT-230 WITH INTEGRAL OVERFLOW SENSOR, OR APPROVED EQUAL.

CONDENSATE DRAIN TRAP DETAIL
NO SCALE

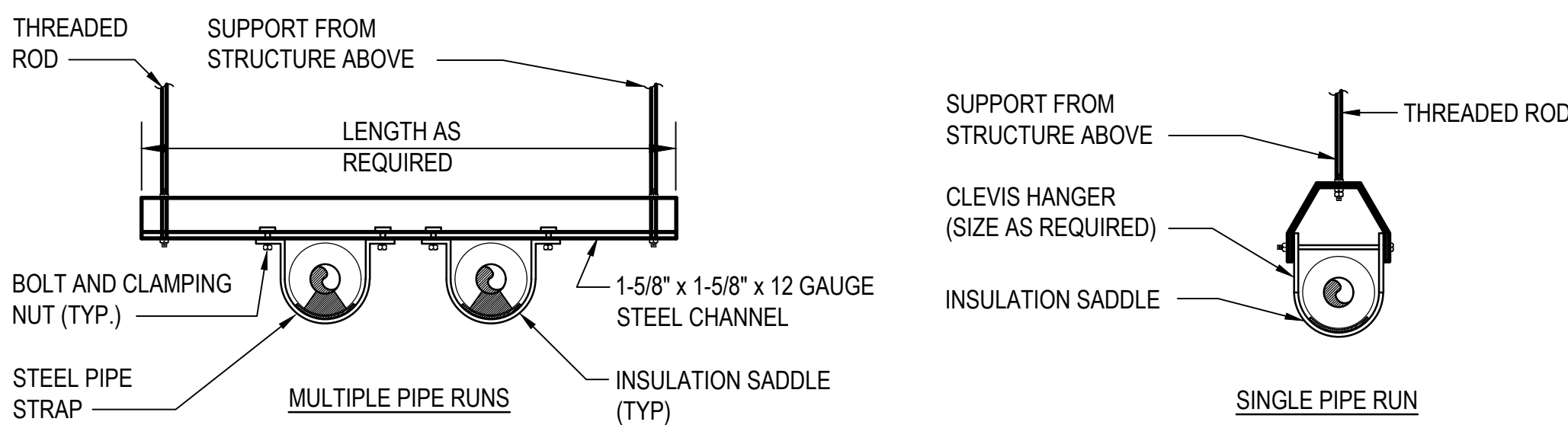


GENERAL NOTES: 1. FOR ANGLE SIZE AND HANGER STRAP GAUGE, SEE SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS.
2. CUT THREADED ROD FLUSH WITH NUTS AT BOTTOM OF HANGERS AND STRUT SUPPORTS.

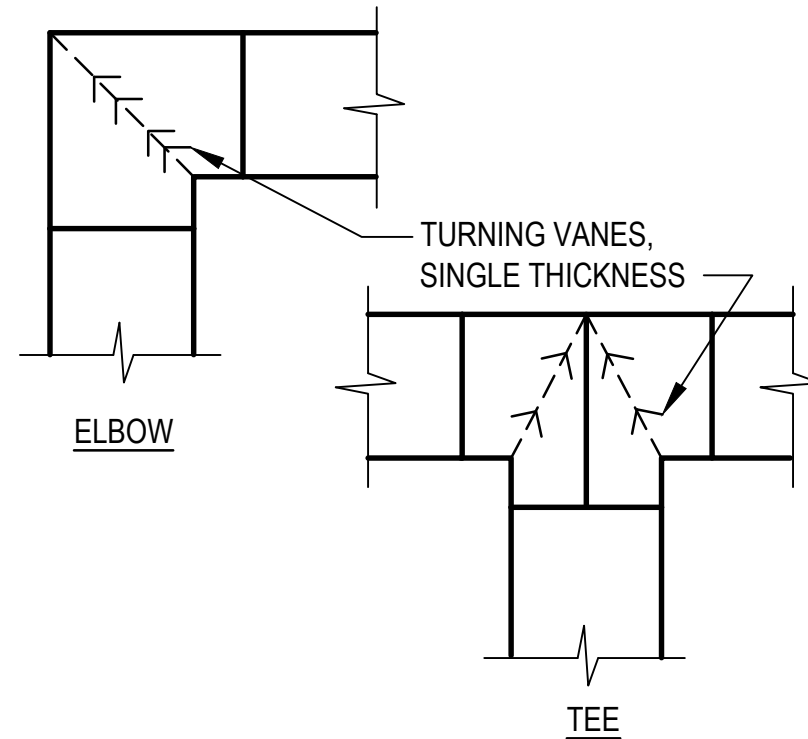
DUCT SUPPORT METHODS DETAIL
NO SCALE



HORIZONTAL AIR HANDLING UNIT DETAIL
NO SCALE



NOTE: ROD SIZE PER MANUFACTURER'S RECOMMENDATIONS.
PIPE SUPPORT METHODS DETAIL
NO SCALE



DUCTWORK FITTING DETAIL
NO SCALE

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SUITE 101
VIRGINIA BEACH, VIRGINIA
23454
www.ts3architects.com
757.689.2699

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405001837

#25158

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APARTMENTS, LP
8091 WILLIAMSON ROAD
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PROJECT NUMBER
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DETAILS

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M501

SHEET 1 OF 00

DUCTLESS SPLIT SYSTEM SCHEDULE

INDOOR UNIT TAG	LOCATION	TOTAL COOLING CAPACITY M.B.H.	COIL E.A.T.		FAN DATA		HEATING DATA			ELECTRIC DATA INDOOR UNIT				OUTDOOR UNIT TAG	ELECTRIC DATA OUTDOOR UNIT				REMARKS
			°F D.B.	°F W.B.	SUPPLY AIR C.F.M.	MOTOR POWER (W)	TOTAL M.B.H	HSPF	E.A.T. (°F)	M.C.A.	M.O.C.P.	VOLTS	PHASE		M.C.A.	M.O.C.P.	VOLTS	PHASE	
DSS-1A	LAUNDRY	13.6	80	70	380	30	18.1	10.7	47	POWERED BY OUTDOOR UNIT				DSS-1B	10	15	240	1	SEE NOTES

NOTES:

1. SELECTION BASED ON MITSUBISHI MSZ-GS12NA.

2. COOLING CAPACITY BASED ON 95° F AMBIENT.

3. PROVIDE INDOOR UNIT WITH COIL FREEZE PROTECTION, REMOTE MOUNTED THERMOSTAT, CONDENSATE PUMP. PROVIDE OUTDOOR UNIT WITH LOW AMBIENT CONTROL.

4. INDOOR UNIT POWERED FROM OUTDOOR UNIT. IF AN ALTERNATE UNIT IS PROVIDED THAT REQUIRES SEPARATE POWER CONNECTIONS, ELECTRICAL CONTRACTOR TO PROVIDE ALL ADDITIONAL DISCONNECTS, BREAKERS, WIRING, AS REQUIRED FOR A FULLY FUNCTIONAL SYSTEM.

5. PROVIDE OUTDOOR UNIT WITH LOW AMBIENT CONTROL.

SPLIT SYSTEM HEAT PUMP SCHEDULE - AIR TO AIR																						
TAG	NOMINAL TONS	FAN DATA				COOLING DATA		HEATING DATA		SUPPLEMENTAL ELECTRIC HEATER		ELECTRICAL DATA INDOOR UNIT				INDOOR MODEL NUMBER	ELECTRICAL DATA OUTDOOR UNIT				MODEL NUMBER	REMARKS
		TOTAL C.F.M.	OA C.F.M.	E.S.P. IN. W.G.	MOTOR H.P.	TOTAL M.B.H.	MIN. SEER2	TOTAL M.B.H.	HSPF2	SIZE KW	STAGES	M.C.A.	M.O.C.P.	VOLTS	PHASE		M.C.A.	M.O.C.P.	VOLTS	PHASE		
AHU-1	1.5	600	40	0.5	3/4	18.0	15.2	17.8	7.8	5	1	5.8	15.0	240	1	AMST	HP-1	11.4	240	1	GLZS5B	SEE NOTES
AHU-2	2	800	55	0.5	3/4	23.2	15.2	23.0	7.8	5	1	5.8	15.0	240	1	AMST	HP-2	13.8	240	1	GLZS5B	SEE NOTES
NOTES: 1. SELECTION BASED ON GOODMAN, OR APPROVED EQUAL. PROVIDE ENERGY STAR RATED EQUIPMENT. 2. SUPPLEMENTAL ELECTRIC HEATER F.L.A. INCLUDED. ONE DISCONNECT SWITCH FOR EACH INDOOR UNIT. 3. EXTERNAL STATIC PRESSURE INCLUDES SUPPLY, RETURN AND OUTSIDE AIR DISTRIBUTION SYSTEMS. 4. PROVIDE WITH R-32 REFRIGERANT, MERV 8 FILTER, AND VARIABLE SPEED ECM BLOWER. 5. PROVIDE LONG LINESET ACCESSORY KIT FOR ALL UNITS WITH REFRIGERANT LINE LENGTHS LONGER THAN 75 FEET 6. PERFORMANCE BASED ON DOE PROCEDURES AND ANSI/AHRI STANDARD 210/240																						

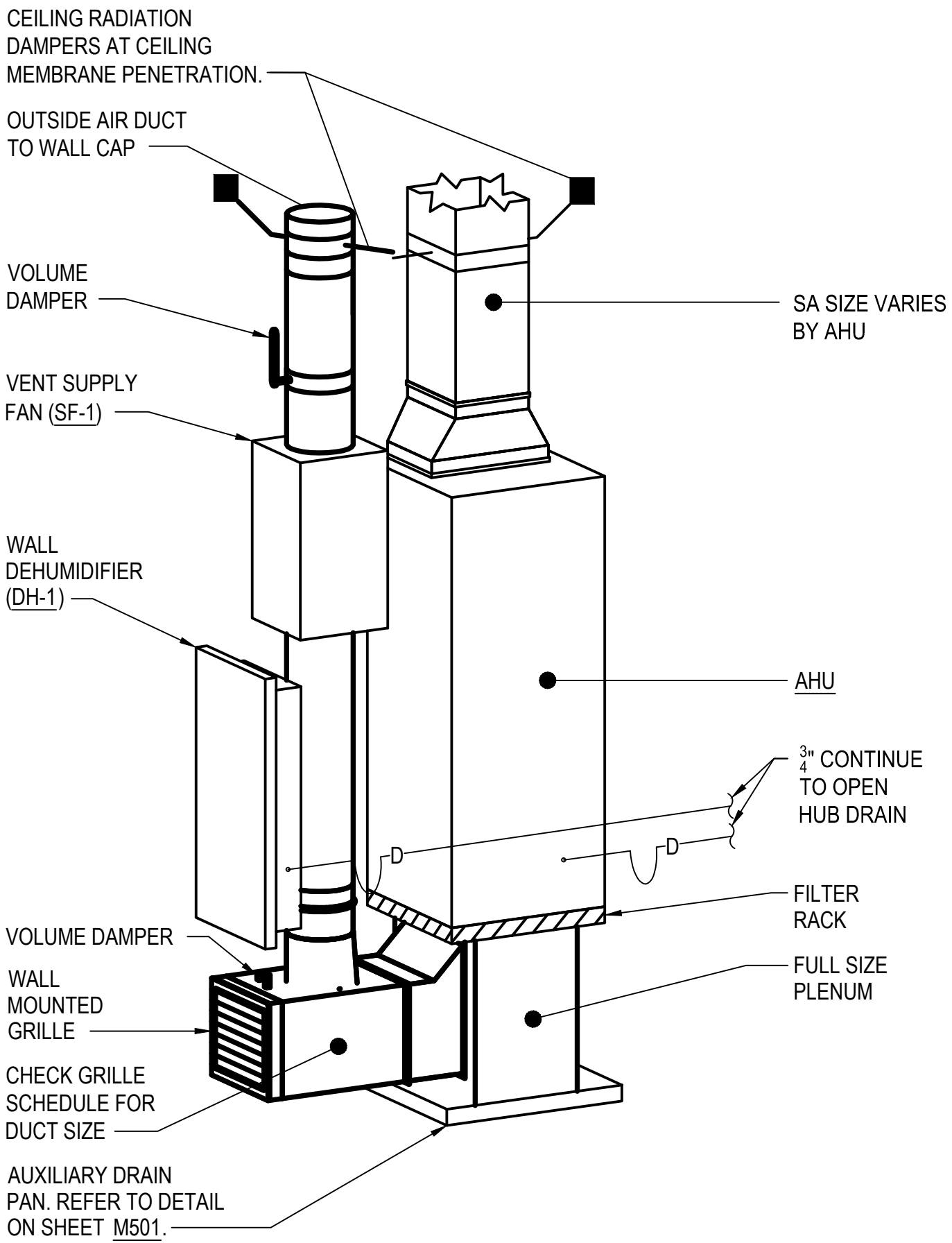
FAN SCHEDULE											
TAG	LOCATION	FAN TYPE	C.F.M.	E.S.P. (IN. WG.)	MAX SONES	DRIVE	ELECTRICAL DATA			MODEL NO.	REMARKS
							WATTS	VOLTS	PHASE		
EF-1	TOILET/ STORAGE	CABINET CEILING	75	0.50	1	DIRECT	26	120	1	LP80	1,2,3
SF-1	AHU-1 / AHU-2	INLINE	140	0.20	3	DIRECT	24	120	1	FAPV-L	4,5
NOTES: 1. SELECTIONS BASED ON BROAN OR APPROVED EQUAL. 2. PROVIDE DIRECT DRIVE FANS WITH ELECTRONIC SPEED CONTROLLER. 3. PROVIDE CABINET CEILING FANS WITH CHATTERPROOF BDD, INTEGRAL ELECTRICAL DISCONNECT, DUCT FLANGE, AND INTEGRAL OFF-WHITE ALUMINUM INTAKE GRILLE. 4. UNIT TAGS USED IN MULTIPLE INSTANCES. MULTIPLE UNITS REQUIRED, SEE DRAWINGS FOR QUANTITIES. 5. PROVIDE FIELD CONTROLS VENTILATION INLINE FAN OR APPROVED EQUAL. FAN SHALL BE ENERGY STAR COMPLIANT AND APPROVED FOR APARTMENT UNITS ONLY.											

GRILLE, REGISTER & DIFFUSER SCHEDULE								
TAG	TYPE	SERVICE	C.F.M. RANGE	DUCT SIZE	NECK SIZE	MAX. P.D.	MODEL NUMBER	REMARKS
A	REGISTER	SUPPLY	0-35	4"ø	6"x4"	0.1	620	SEE NOTES
B	REGISTER	SUPPLY	40-230	8"ø	10"x6"	0.1	620	SEE NOTES
W	GRILLE	TRANSFER	0-590	14"x14"	14"x14"	0.03	630	SEE NOTES
Z	GRILLE	RETURN	0-865	14"x20"	14"x20"	0.1	630	SEE NOTES
THE FOLLOWING NOTES ARE TYPICAL UNLESS OTHERWISE NOTED: 1. SELECTIONS BASED ON PRICE. 2. PROVIDE ALUMINUM DIFFUSERS AND REGISTERS WITH OPPOSED BLADE VOLUME DAMPERS, BAKED STANDARD WHITE ENAMEL FINISH (INCLUDING HEAD OF SCREWS), MAXIMUM NC=25 AT HIGHEST CFM AND PROVIDE SQUARE TO ROUND TRANSITION AS REQUIRED. 3. PROVIDE 4-WAY PATTERN CEILING DIFFUSERS, U.O.N. ON PLANS OR SCHEDULE. 4. MAXIMUM PRESSURE DROP SHALL INCLUDE VOLUME DAMPER WHERE DAMPER IS PROVIDED.								

DEHUMIDIFIER SCHEDULE								
TAG	FAN DATA		ELECTRICAL DATA				SERVICES	REMARKS
	CFM	WATER REMOVAL PINTS/DAY	MCA	MOC	P	PHASE		
DH-1	155 @ 0.0" WG	33.0	5.1	15	120	1	AHU-1/AHU-2	SEE NOTES
NOTES: 1. SELECTION BASED ON SANTA FE ULTRAMD33 IN-WALL DEHUMIDIFIER OR APPROVED EQUAL. 2. UNIT TAGS USED IN MULTIPLE INSTANCES. MULTIPLE UNIT REQUIRED, SEE DRAWINGS FOR QUANTITIES.								

ELECTRIC UNIT HEATER SCHEDULE						
TAG	LOCATION	NOMINAL CFM	WATTS	VOLTS	PHASE	REMARKS
EWH-1.1	SPRINKLER	175	750	120	1	SEE NOTES
EWH-1.2	SPRINKLER	175	750	120	1	SEE NOTES
EWH-1.3	MAINTENANCE	175	750	120	1	SEE NOTES
NOTES: 1. SELECTION BASED ON MARKEL 3320. 2. PROVIDE WITH INTEGRAL TAMPER RESISTANT THERMOSTAT, INTEGRAL ELECTRICAL DISCONNECT AND BLOWER.						

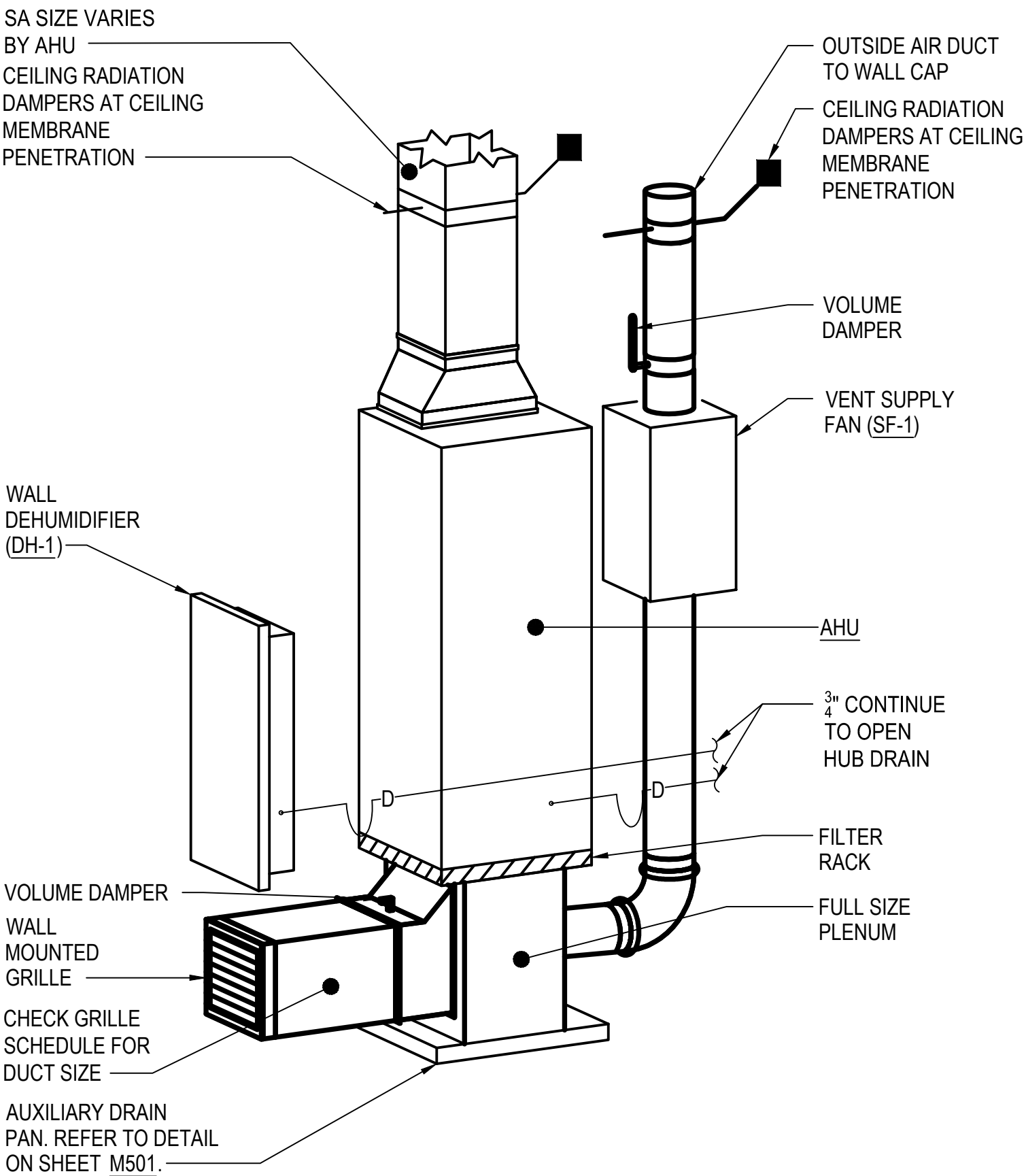
LOUVER SCHEDULE					
TAG	SERVICE	SIZE (IN.) WxH	FREE AREA (SF)	C.F.M.	REMARKS
LV-1	DRYER EXHAUST	4"	0.04	-	SEE NOTES
LV-2	TOILET EXHAUST	6"	0.08	75-100	EF-1 SEE NOTES
LV-3	KITCHEN EXHAUST	8"	0.15	125	SEE NOTES
LV-4	INTAKE	6"	0.08	46-86	AHU-1/AHU-2 SEE NOTES
LV-5	INTAKE	10"	0.19	370	LAUNDRY SEE NOTES
NOTES: 1. LV-1 IS BASED ON SEIHO SFZ. 2. ALL OTHER SELECTIONS BASED ON SEIHO SFX. 3. PROVIDE WITH BIRDSCREEN PROVIDE BIRDSCREEN FOR INTAKE, INSECT SCREEN FOR EXHAUST. 4. PROVIDE ALUMINUM STORMPROOF CONSTRUCTION. 5. PROVIDE COLOR CHART FOR FINISH SELECTION BY ARCHITECT.					



NOTES: COORDINATE LAYOUT WITH UNIT MECHANICAL ROOM, SYSTEM MAY BE MIRRORED OR ROTATED.

COORDINATE CONDENSATE DRAIN LOCATION WITH SYSTEM LAYOUT.

1 TYPICAL AHU DETAIL
M4XX NO SCALE



NOTES: COORDINATE LAYOUT WITH UNIT MECHANICAL ROOM, SYSTEM MAY BE MIRRORED OR ROTATED.

COORDINATE CONDENSATE DRAIN LOCATION WITH SYSTEM LAYOUT.

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