

MECHANICAL ABBREVIATIONS

AMPERE	A(AMP)
ABOVE FINISHED FLOOR	AFF.
ABOVE FINISHED GRADE	AFG.
ADDENDUM	ADD.
ADJUSTABLE	ADJ.
AIR CONDITIONING	A/C
AIR HANDLER UNIT	AHU
APPROXIMATE(LY)	APPROX.
ARCHITECT(URAL)	ARCH(’L)
AUTOMATIC	AUTO
AUXILIARY	AUX.

BUILDING	BLDG.
BOTTOM OF DUCT	BOD
BOTTOM OF PIPE	BOP
BRITISH THERMAL UNIT	BTU.

CAPACITY	CAP
CARBON DIOXIDE	CO2
CENTER	CTR.
CIRCLE	CIR.
CONDENSATE DRAIN	CD.
CONDENSING UNIT	C.U.
CONSTRUCTION	CONST.
CONTINUATION	CONT.
COOLING	CLG.
CUBIC FOOT PER MINUTE	CFM

DAMPER	DMPR.
DEGREE FAHRENHEIT	DegF.
DEMOLISH(ITION)	DEMO.
DIAMETER	DI.
DIRECT EXPANSION	DX.
DIVISION	DIV.
DOWN	DN.
DOUBLE	DBL
DRAWING(S)	DWG(S).
DRY BULB	D.B.
DUCTLESS SPLIT	D.S.

EAST	E.
ENTERING AIR TEMPERATURE	EAT.
EFFICIENCY	EFF.
ELECTRIC(AL)	ELEC.
ELEVATION	EL.
ENERGY EFFICIENCY RATIO	EER.
ENGINEER	ENGR.
ENTERING	ENT
EQUAL	EQ.
EQUIPMENT	EQPT.
ETCETERA	ETC.
EXHAUST FAN	E.F.
EXISTING	EXIST.
EXPOSED	EXP.
EXHAUST	EXH.
EXHAUST AIR	EA.
EXTERNAL	EXT
EXTERNAL STATIC PRESSURE	ESP.

FAHRENHEIT	F.
FINISH(ED)	FIN.(’D)
FINISH FLOOR	F.F.
FLEXIBLE	FLEX.
FLOOR	FL.
FOOT/FEET	FT.

GALLONS PER MINUTE	GPM
GALVANIZED	GALV.
GAS HEATER	G.H.
GAUGE	GA.
GENERAL CONTRACTOR	G.C.
GROUND	GND.
GYPSON BOARD	GYP.

HEATER	HTR.
HORSEPOWER	H.P.
HEATING, VENTILATION & AIR CONDITIONING	HVAC

NOTE: NOT ALL ABBREVIATIONS ON THIS LIST ARE APPLICABLE TO THIS PROJECT.

HOT WATER	H.W.
HOT WATER RETURN	H.W.R.
HERTZ	HZ.

INFORMATION	INFO.
INCHES	IN.
INSULATION	INSUL.
INTERIOR	INT.

KILOWATT	KW
----------	----

LEAVING AIR TEMPERATURE	LAT.
LEAVING	LVG.
LOUVER	L.
LONG RADIUS ELBOW	LRE.

MANUFACTURE(R)	MFR.
MAKEUP AIR	MA.
MAXIMUM	MAX.
1,000 BTU/HR	MBH.
MAXIMUM OVERCURRENT	MOCP
PROTECTION	
MECHANICAL	MECH.
METAL	MTL.
MINIMUM	MIN.
MIXED AIR TEMPERATURE	MAT.
MISCELLANEOUS	MISC.
MOTORIZED VOLUME DAMPER	MVD
MULTIPLE	MULT.
MANUAL VOLUME DAMPER	VD.

NOT APPLICABLE	N/A
NOISE CRITERIA	NC.
NATURAL	NAT.
NOMINAL	NOM.
NORTH	N.
NOT IN CONTRACT	N.I.C.
NOT TO SCALE	N.T.S.
NUMBER	NO./#

OUTSIDE AIR	OA
-------------	----

PARTIAL	PART.
PHASE	PH.
POLYVINYL CHLORIDE	PVC
POUND(S)	LBS
EQUAL	EQ.
POUNDS PER SQUARE INCH	PSI
PRESSURE DROP	PD.

QUANTITY	QTY.
----------	------

RADIUS	R.
REFRIGERATION	REFRIG.
RECESSED	REC.
REINFORCE(ING)(ED)(MENT)	REINF.
RETURN AIR	R.A.
REQUIRE(D)	REQ.(’D)
ROOF TOP UNIT	RTU
ROOM	RM.

SANITARY SEWER	S.S.
SCHEDULE	SCH.
SEASONAL ENERGY EFFICIENCY	SEER

RATIO	
SECTION	SECT.
SENSIBLE	SENS.
SMOKE DETECTOR	S.D.
SOUTH	S.
SPECIFICATION(S)	SPEC.(’S)
SQUARE	SQ.

SQUARE FEET	SF
STAINLESS STEEL	SS.
SQUARE FEET	SF
STATIC PRESSURE	SP.
SUCTION	SUCT.
SUPPLY AIR	SA.

TEMPERATURE	TEMP.
TOP OF STEEL	T.O.S.
TYPICAL	TYP.

UNDERGROUND	U.G.
UNDERWRITER LABORATORIES	U.L.
INC.	
UNIT HEATER	U.H.
UNLESS NOTED OTHERWISE	U.N.O.
UTILITY	UTIL.

MANUAL VOLUME DAMPER	VD
VOLTAGE	V.
VOLUME	VOL.

WATER GAUGE	WG.
WEIGHT	WT.
WEST	WEST
WET BULB	W.B.
WITH	W/
WITHOUT	W/O

MANUAL VOLUME DAMPER	VD
VOLTAGE	V.
VOLUME	VOL.

WATER GAUGE	WG.
WEIGHT	WT.
WEST	WEST
WET BULB	W.B.
WITH	W/
WITHOUT	W/O

MANUAL VOLUME DAMPER	VD
VOLTAGE	V.
VOLUME	VOL.

PARTIAL	PART.
PHASE	PH.
POLYVINYL CHLORIDE	PVC
POUND(S)	LBS
EQUAL	EQ.
POUNDS PER SQUARE INCH	PSI
PRESSURE DROP	PD.

QUANTITY	QTY.
----------	------

RADIUS	R.
REFRIGERATION	REFRIG.
RECESSED	REC.
REINFORCE(ING)(ED)(MENT)	REINF.
RETURN AIR	R.A.
REQUIRE(D)	REQ.(’D)
ROOF TOP UNIT	RTU
ROOM	RM.

SANITARY SEWER	S.S.
SCHEDULE	SCH.
SEASONAL ENERGY EFFICIENCY	SEER

RATIO	
SECTION	SECT.
SENSIBLE	SENS.
SMOKE DETECTOR	S.D.
SOUTH	S.
SPECIFICATION(S)	SPEC.(’S)
SQUARE	SQ.

MECHANICAL CONTROLS SYMBOL LEGEND

CO2	CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
T	THERMOSTAT
H	HUMIDISTAT

DP	DIFFERENTIAL PRESSURE SENSOR
FS	FLOW SWITCH

P	WELL PRESSURE SENSOR
T	WELL TEMPERATURE SENSOR

S	STARTER
CS	CURRENT SWITCH

HOA	HAND-OFF-AUTO SWITCH
T	AVERAGING TEMPERATURE SENSOR

T	SINGLE POINT TEMPERATURE SENSOR
SD	SMOKE DETECTOR

LT	LOW TEMPERATURE LIMIT SWITCH
----	------------------------------

	FILTER
--	--------

M	MOTOR
---	-------

	OPPOSED BLADE DAMPER
--	----------------------

	PARALLEL BLADE DAMPER
--	-----------------------

M	MOTORIZED DAMPER
---	------------------

C	CHILLED WATER COIL
H	HEATING HOT WATER COIL

	ELECTRIC RESISTIVE HEAT COIL
--	------------------------------

	DEMOLITION
--	------------

	DEMOLITION EQUIPMENT
--	----------------------

	DEMOLITION EQUIPMENT
--	----------------------

	DEMOLITION EQUIPMENT
--	----------------------

	DEMOLITION EQUIPMENT
--	----------------------

	DEMOLITION EQUIPMENT
--	----------------------

	DEMOLITION EQUIPMENT
--	----------------------

	DEMOLITION EQUIPMENT
--	----------------------

	DEMOLITION EQUIPMENT
--	----------------------

	DEMOLITION EQUIPMENT
--	----------------------

	DEMOLITION EQUIPMENT
--	----------------------

	DEMOLITION EQUIPMENT
--	----------------------

	DEMOLITION EQUIPMENT
--	----------------------

	DEMOLITION EQUIPMENT
--	----------------------

MECHANICAL SYMBOL LEGEND

TYPE/CFM	SUPPLY AIR GRILLE
TYPE/CFM	RETURN AIR GRILLE

TYPE/CFM	EXHAUST AIR GRILLE
	THERMOSTAT

FSD	COMBINATION FIRE/SMOKE DAMPER
FD	FIRE DAMPER

	FLEXIBLE DUCT WORK
	MANUAL DAMPER

M	MOTORIZED VOLUME DAMPER
	TAKEOFF WITH DAMPER

	TAKEOFF WITHOUT DAMPER
	SIDEWALL GRILLE, SUPPLY AIR

	SIDEWALL GRILLE, RETURN / EXHAUST AIR
	MECHANICAL EQUIPMENT WITH CLEARANCES, SEE SCHEDULES

	TRANSITION RECTANGULAR TO ROUND DUCT
	TURNINGVANE, 90 DEGREE ELBOW

	RADIUS ELBOW
	DOUBLE WALL SPIRAL DUCT

	INCLINED RISE, IN DIRECTION OF AIR FLOW
	INCLINED DROP, IN DIRECTION OF AIR FLOW

	CONNECT TO EXISTING
	DISCONNECT FROM EXISTING

##/##	SIZE OF RECTANGULAR DUCT WIDTH AND SECOND NUMBER INDICATES VERTICAL DIMENSION
##Ø	DIAMETER OF ROUND DUCT

	VAV AIR TERMINAL BOX
	EXISTING DUCTWORK

	NEW DUCTWORK
	SUPPLY AIR DUCT UP

	SUPPLY AIR DUCT DOWN
	RETURN AIR DUCT UP

	RETURN AIR DUCT DOWN
	EXHAUST AIR DUCT UP

	EXHAUST AIR DUCT DOWN
	PIPE DOWN

	PIPE UP
UDC	UNDERCUT DOOR FOR A 1" MIN. CLEARANCE

	UNDERCUT DOOR FOR A 1" MIN. CLEARANCE
--	---------------------------------------

	UNDERCUT DOOR FOR A 1" MIN. CLEARANCE
--	---------------------------------------

	UNDERCUT DOOR FOR A 1" MIN. CLEARANCE
--	---------------------------------------

	UNDERCUT DOOR FOR A 1" MIN. CLEARANCE
--	---------------------------------------

	UNDERCUT DOOR FOR A 1" MIN. CLEARANCE
--	---------------------------------------

	UNDERCUT DOOR FOR A 1" MIN. CLEARANCE
--	---------------------------------------

	UNDERCUT DOOR FOR A 1" MIN. CLEARANCE
--	---------------------------------------

	UNDERCUT DOOR FOR A 1" MIN. CLEARANCE
--	---------------------------------------

	UNDERCUT DOOR FOR A 1" MIN. CLEARANCE
--	---------------------------------------

	UNDERCUT DOOR FOR A 1" MIN. CLEARANCE
--	---------------------------------------

	UNDERCUT DOOR FOR A 1" MIN. CLEARANCE
--	---------------------------------------

MECHANICAL GENERAL NOTES

- A. THE MECHANICAL WORK CONSISTS OF PROVIDING LABOR, MATERIALS, PRODUCTS, AND IN PERFORMING ALL OPERATIONS REQUIRED FOR THE COMPLETE OPERATING INSTALLATION OF ALL MECHANICAL SYSTEMS IN ACCORDANCE WITH SPECIFICATIONS, APPLICABLE DRAWINGS, TERMS, CONDITIONS OF THE CONTRACT AND ALL APPLICABLE CODES AND ORDINANCES GOVERNING THE INSTALLATION OF THE VARIOUS MECHANICAL SYSTEMS. ALL WORK SHALL BE FULLY CORRELATED WITH THE WORK OF OTHER CRAFTS.
- B. EACH CONTRACTOR SHALL STUDY THE CONTRACT DOCUMENTS TO DETERMINE THE EXTENT OF WORK PROVIDED UNDER THIS CONTRACT, AS WELL AS TO ASCERTAIN THE DIFFICULTY TO BE ENCOUNTERED IN PERFORMING THE WORK ON THE DRAWINGS AND OUTLINED HEREINAFTER AND IN MAKING CONNECTIONS TO EXISTING UTILITIES, INSTALLING NEW EQUIPMENT AND SYSTEMS AND COORDINATING THE WORK WITH THE OTHER TRADES.
- C. EXAMINATION OF SITE: THE CONTRACTOR SHALL THOROUGHLY EXAMINE SITE AND SATISFY HIMSELF AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. THE CONTRACTOR SHALL VERIFY, AT THE SITE, ALL MEASUREMENTS AFFECTING HIS WORK AND SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF SAME. NO EXTRA COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR EXPENSES DUE TO HIS NEGLECT TO EXAMINE OR FAILURE TO DISCOVER CONDITIONS WHICH AFFECT HIS WORK. NO EXTRA COMPENSATION WILL BE ALLOWED ON ACCOUNT OF DIFFERENCES BETWEEN ACTUAL DIMENSIONS AND THOSE INDICATED ON THE DRAWINGS.
- D. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
- E. CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL HVAC WORK IS DIAGRAMMATIC AND IS INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY. DO NOT SCALE DRAWINGS FOR EXACT LOCATION OF ITEMS SHOWN.
- F. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, MANUFACTURERS' CERTIFIED DRAWING, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
- G. SHOULD DISCREPANCIES OCCUR WITHIN THE CONTRACT DOCUMENTS, THE MORE STRINGENT AND MORE COSTLY APPROACH SHALL APPLY FOR BIDDING PURPOSES. THE CONTRACTOR IS TO NOTIFY THE OWNER'S REPRESENTATIVE OF DISCREPANCIES FOR CLARIFICATION. CLARIFICATIONS ISSUED AFTER THE CONTRACT IS AWARDED ARE TO BE INCORPORATED BY THE CONTRACTOR AT NO ADDITIONAL COSTS AND ARE TO BE REVIEWED BY THE OWNER'S REPRESENTATIVE TO DETERMINE IF A REDUCTION IN COST IS JUSTIFIED.
- H. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL FEES AND CHARGES TO ALL LOCAL AND OTHER RELATED AGENCIES AS REQUIRED.
- I. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL, PLUMBING WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWING.
- J. MECHANICAL CONTRACTOR SHALL COORDINATE ANY ROOF PENETRATION WITH ROOFING CONTRACTOR, ROOF SYSTEM MANUFACTURER, ARCHITECT, AND ALL OTHER TRADES INVOLVED. ALL ROOF PENETRATIONS SHALL BE REVIEWED AND APPROVED BY ROOF SYSTEM MANUFACTURER TO COMPLIANCE ROOFING WARRANTY.
- K. ALL ROOF-MOUNTED EQUIPMENT CURBS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR.
- L. MECHANICAL CONTRACTOR SHALL COORDINATE LOCATIONS AND SIZES OF ALL FLOOR AND WALL PENETRATIONS SHALL BE COORDINATED WITH STRUCTURAL, PLUMBING, ELECTRICAL, AND ARCHITECTURAL WORK.

HVAC GENERAL NOTES

- A. COORDINATE DIFFUSER, REGISTER, AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING, AND OTHER CEILING ITEMS AND MAKE MINOR DUCT MODIFICATIONS TO SUIT.
- B. ALL DUCTWORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- C. PROVIDE ACCESS DOORS IN DUCTWORK TO PROVIDE ACCESS FOR ALL ITEMS AND EQUIPMENT LOCATED IN THE DUCTWORK THAT REQUIRE SERVICE AND/OR INSPECTION.
- D. SMOKE DETECTORS SHALL BE FURNISHED BY FIRE CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MOUNTING THE SMOKE DETECTOR IN DUCTWORK AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS. SMOKE DETECTORS SHALL BE PROVIDED AS REQUIRED BY CODE AND AS INDICATED ON THE DRAWINGS.

MECHANICAL PIPING GENERAL NOTES

- A. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE PIPING SYSTEMS AS INDICATED ON THE DRAWINGS, AND AS SPECIFIED AND REQUIRED BY CODE.
- B. INSTALL PIPING SO THAT ALL PIPING ACCESSORIES REQUIRING SERVICE, MAINTENANCE, OR REPLACING ARE ACCESSIBLE.
- C. ALL VALVES SHALL BE INSTALLED SO THAT THE VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON THE EQUIPMENT SIDE OF THE VALVE IS REMOVED.
- D. ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

APPLICABLE CODES
2018 IBC
2018 IMC
2018 IPC
2018 IECC
2017 NEC
LOCAL CODES AND ORDINANCES

DESIGN CRITERIA	SUMMER	WINTER
OUTDOOR CONDITIONS BASED ON 1% ASHRAE	97	30
INDOOR CONDITIONS	75	72

SHEET INDEX

M000	MECHANICAL GENERAL NOTES, LEGEND & ABBREVIATIONS
M001	MECHANICAL SPECIFICATIONS
M002	MECHANICAL SPECIFICATIONS
M101	MECHANICAL BUILDING TYPE I - SECTION Ia - ROOF
M102	MECHANICAL BUILDING TYPE I - SECTION Ib - ROOF
M103	MECHANICAL BUILDING TYPE I - SECTION Ic - ROOF
M104	MECHANICAL BUILDING TYPE I - SECTION Id - ROOF
M105	MECHANICAL BUILDING TYPE I - SECTION Ie - ROOF
M106	MECHANICAL BUILDING II (#2 & #5) - ROOF
M107	MECHANICAL BUILDING II (#3) - ROOF
M108	MECHANICAL BUILDING II (#4) - ROOF
M201	MECHANICAL UNIT A1 & A2
M202	MECHANICAL UNIT A2c, A2-ALT-1, A3, & A4
M203	MECHANICAL UNIT A5 & A6
M204	MECHANICAL UNIT A7 & B1
M205	MECHANICAL UNIT B2 & B3
M206	MECHANICAL UNIT B4 & B5
M207	MECHANICAL UNIT B6 & C1
M301	MECHANICAL COMMUNITY CENTER - LEVEL 1
M302	MECHANICAL COMMUNITY CENTER - LEVEL 2
M303	MECHANICAL MAINTENANCE
M401	MECHANICAL DWELLING UNIT SCHEDULES
M402	MECHANICAL COMMON AREA SCHEDULES
M501	MECHANICAL SEQUENCE OF OPERATIONS
M502	MECHANICAL SEQUENCE OF OPERATIONS
M601	MECHANICAL DETAILS
M602	MECHANICAL DETAILS
M603	MECHANICAL DETAILS



Structural Engineer:

VIEWTECH INC.  
4205 Bellway Dr. Addison, TX 75001  
Victor Lisjak III  
972.661.8187

MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

Civil Engineer:

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.443.1122

Landscape Architect:

LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
210.443.8477

Interior Designer:

SJL Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
210.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

GENERAL NOTES

A. REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.

KEYED NOTES

- CONDENSING UNIT ON ROOF CURB. MAINTAIN MINIMUM CLEARANCES OF 10' OFF ANY VERTICAL SURFACE AND 20' BETWEEN CONDENSING UNITS. PROVIDE NEOPRENE VIBRATION ISOLATION PADS. REFER TO DETAILS 3/M602. INSTALL TYPE 'L' COPPER REFRIGERANT LINES. SIZE REFRIGERANT LINES BASED ON MANUFACTURER RECOMMENDATIONS. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER-RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION. COORDINATE ALL CONDENSING UNIT PADS WITH ROOF DRAIN AND VENT LOCATIONS.
- THE CONDENSING UNITS WITHOUT AN ID TAG ARE THE CONDENSING UNITS FOR THE APARTMENT AIR HANDLER UNITS. PROVIDE AN ID TAG FOR THE CONDENSING UNITS TO MATCH THE ID TAG ON THE RESPECTIVE AIR HANDLER UNIT ID TAG. THE AIR HANDLER UNIT ID TAG WILL BE THE APARTMENT NUMBER. REFER TO ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.
- 10" CLASS A GAS FLUE VENT AND 12" TYPE-B GAS FLUE VENT (HEAT ONLY) FROM "ACUCRAFT #CIRCULAR4" GAS FIREPLACE IN COMMUNITY CENTER ENTRY LOBBY. EXTEND PIPE IN TRUSS/JOIST SPACE TO BE A MINIMUM OF 3' FOR ANY EXHAUST VENT WITHIN 10' HORIZONTALLY.

Structural Engineer:

VIEWTECH INC.  
4205 Beltway Dr. Addison, TX 75001  
Victor Lisiek III  
972.661.8187

MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

Civil Engineer:

MBC & Associates, Inc.  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

Landscape Architect:

LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

Interior Designer:

S.J.L. Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

MECHANICAL  
BUILDING 1a  
ROOF

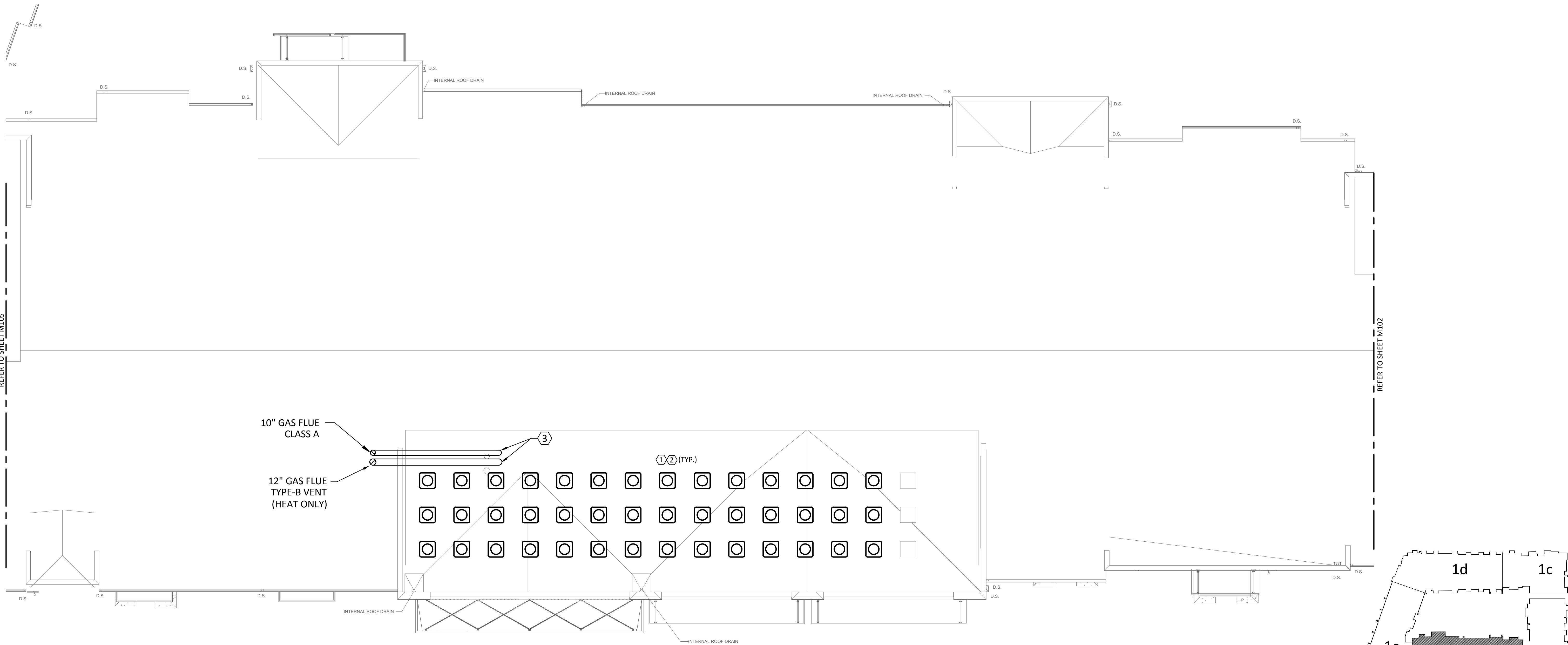
Project Number 18054

Date 01/14/2018

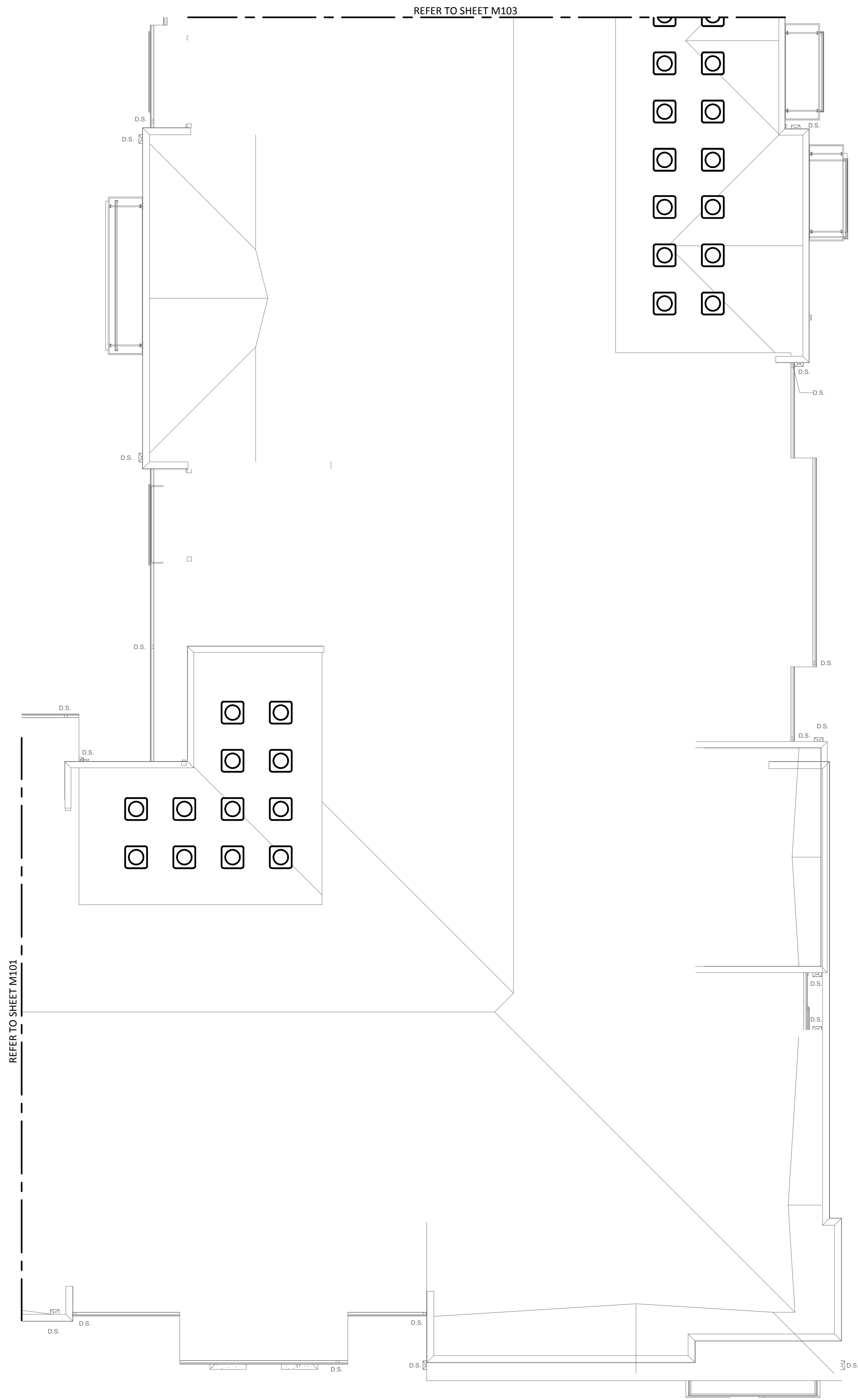
Drawn By TLR

Checked By EEC

M101



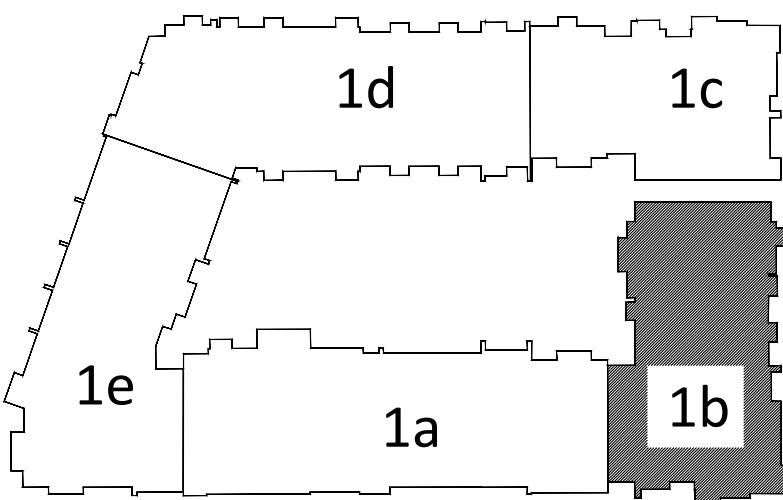
1 MECHANICAL - BUILDING 1a - ROOF  
SCALE: 1/8"=1'-0"



**1** MECHANICAL - BUILDING 1b - ROOF  
SCALE: 1/8"=1'-0"

**GENERAL NOTES**  
A. REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.

- KEYED NOTES**
- CONDENSING UNIT ON ROOF CURB. MAINTAIN MINIMUM CLEARANCES OF 10' OFF ANY VERTICAL SURFACE AND 20' BETWEEN CONDENSING UNITS. PROVIDE NEOPRENE VIBRATION ISOLATION PADS. REFER TO DETAILS 3/M602. INSTALL TYPE 'L' COPPER REFRIGERANT LINES. SIZE REFRIGERANT LINES BASED ON MANUFACTURER RECOMMENDATIONS. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER-RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION. COORDINATE ALL CONDENSING UNIT PADS WITH ROOF DRAIN AND VENT LOCATIONS.
  - THE CONDENSING UNITS WITHOUT AN ID TAG ARE THE CONDENSING UNITS FOR THE APARTMENT AIR HANDLER UNITS. PROVIDE AN ID TAG FOR THE CONDENSING UNITS TO MATCH THE ID TAG ON THE RESPECTIVE AIR HANDLER UNIT ID TAG. THE AIR HANDLER UNIT ID TAG WILL BE THE APARTMENT NUMBER. REFER TO ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.
  - 10" CLASS A GAS FLUE VENT AND 12" TYPE-B GAS FLUE VENT (HEAT ONLY) FROM "ACUCRAFT #CIRCULAR4" GAS FIREPLACE IN COMMUNITY CENTER ENTRY LOBBY. EXTEND PIPE IN TRUSS/JOIST SPACE TO BE A MINIMUM OF 3' FOR ANY EXHAUST VENT WITHIN 10' HORIZONTALLY.



**KEY PLAN**  
N.T.S.

**ENCOTECH**  
ENGINEERING CONSULTANTS  
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103  
Austin, Texas 78759 | 512.338.1101  
Project No.: 18054.M5.AUS

**Structural Engineer:**  
VIEWTECH INC.  
4205 Beltway Dr. Addison, TX 75001  
Victor Lisiek III  
972.661.8187

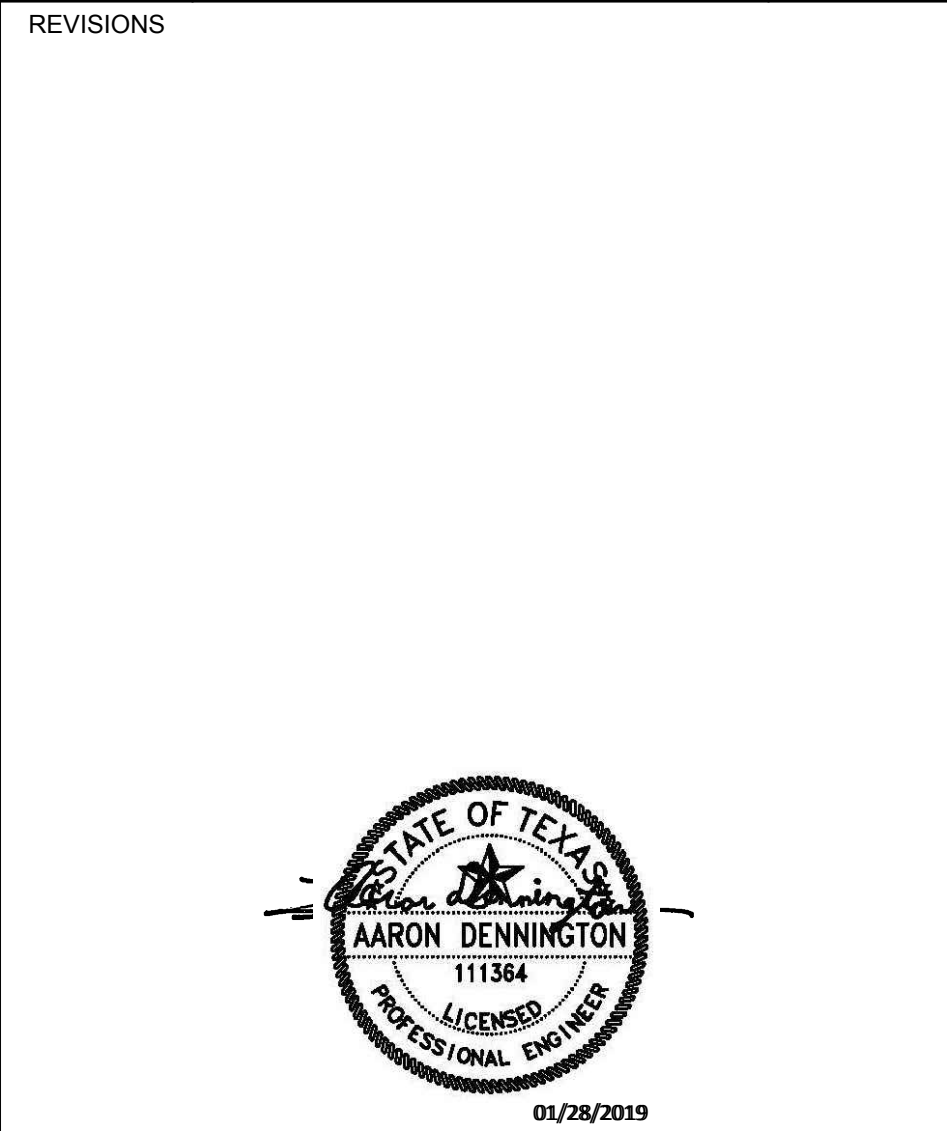
**MEP Engineer:**  
ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

**Civil Engineer:**  
MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

**Landscape Architect:**  
LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

**Interior Designer:**  
S.J.L. Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19



a multifamily project for  
NRP Group

**West Cevallos**  
San Antonio, Texas

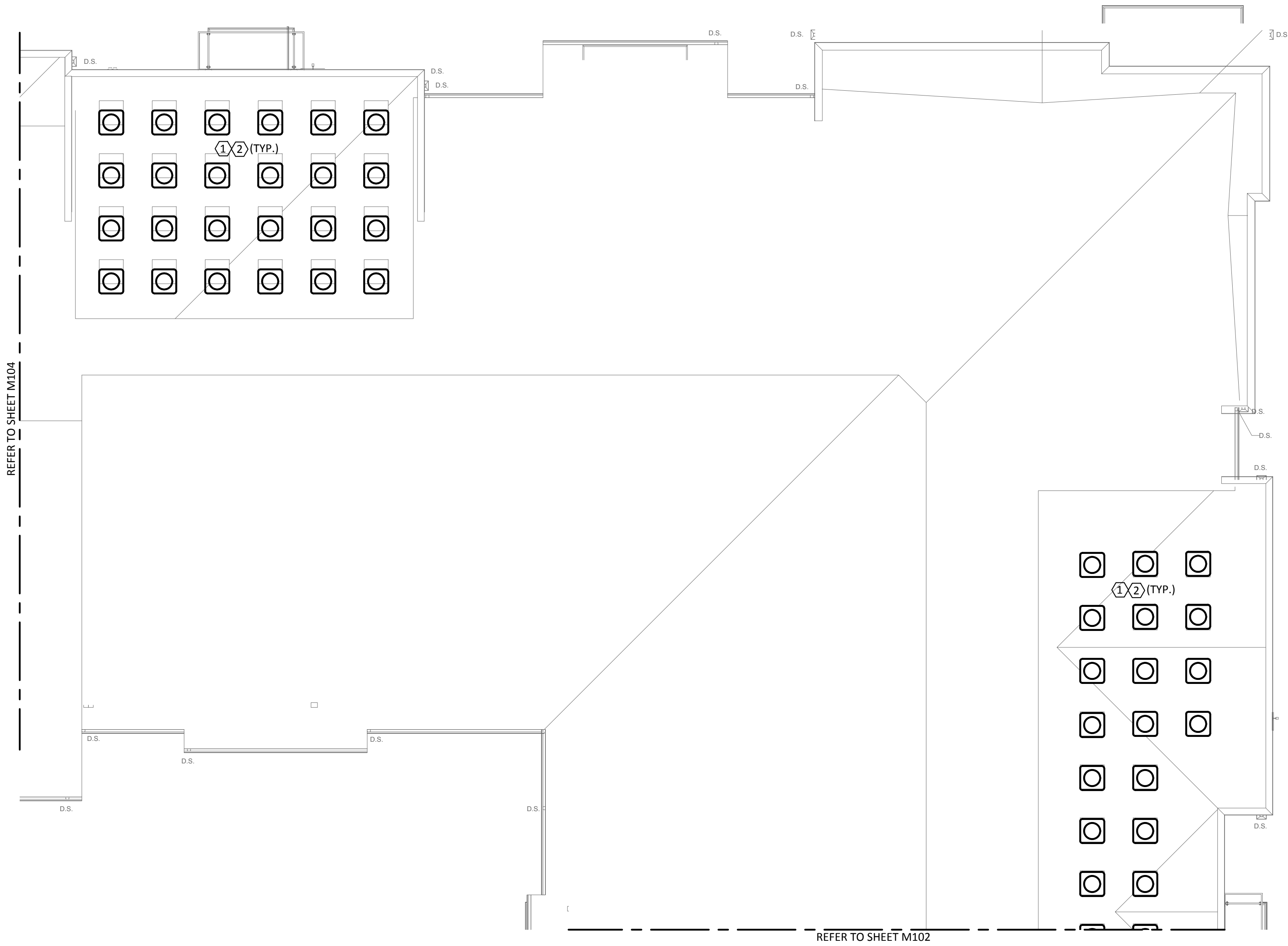
**MECHANICAL  
BUILDING 1b  
ROOF**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

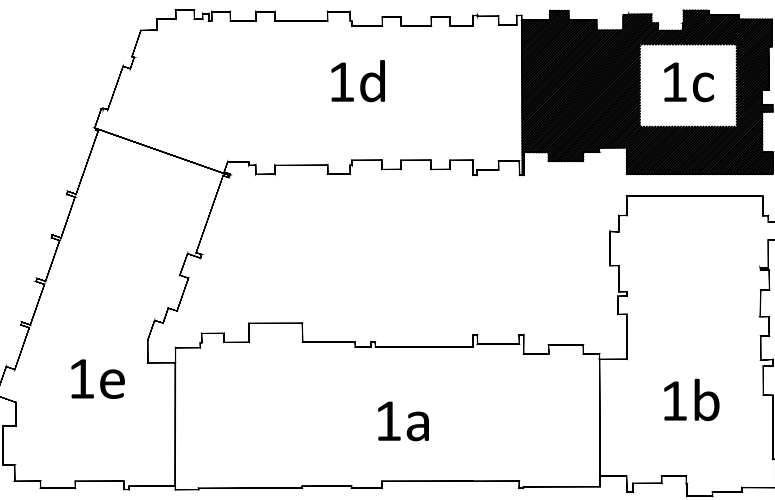
**M102**

GENERAL NOTES
A. REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.

KEYED NOTES
1. CONDENSING UNIT ON ROOF CURB. MAINTAIN MINIMUM CLEARANCES OF 10" OFF ANY VERTICAL SURFACE AND 20" BETWEEN CONDENSING UNITS. PROVIDE NEOPRENE VIBRATION ISOLATION PADS. REFER TO DETAILS 3/M602. INSTALL TYPE 'L' COPPER REFRIGERANT LINES. SIZE REFRIGERANT LINES BASED ON MANUFACTURER RECOMMENDATIONS. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER-RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION. COORDINATE ALL CONDENSING UNIT PADS WITH ROOF DRAIN AND VENT LOCATIONS.
2. THE CONDENSING UNITS WITHOUT AN ID TAG ARE THE CONDENSING UNITS FOR THE APARTMENT AIR HANDLER UNITS. PROVIDE AN ID TAG FOR THE CONDENSING UNITS TO MATCH THE ID TAG ON THE RESPECTIVE AIR HANDLER UNIT ID TAG. THE AIR HANDLER UNIT ID TAG WILL BE THE APARTMENT NUMBER. REFER TO ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.
3. 10" CLASS A GAS FLUE VENT AND 12" TYPE-B GAS FLUE VENT (HEAT ONLY) FROM "ACUCRAFT #CIRCULAR4" GAS FIREPLACE IN COMMUNITY CENTER ENTRY LOBBY. EXTEND PIPE IN TRUSS/JOIST SPACE TO BE A MINIMUM OF 3' FOR ANY EXHAUST VENT WITHIN 10' HORIZONTALLY.



**1** MECHANICAL - BUILDING 1c - ROOF  
SCALE: 1/8"=1'-0"



KEY PLAN  
N.T.S.

**ENCOTECH**  
ENGINEERING CONSULTANTS

TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103  
Austin, Texas 78759 | 512.338.1101  
Project No.: 18054.M5.AUS

**DAVIES**  
COLLABORATIVE

3607 S Lamar Blvd, Suite 103 Austin, Texas 78704 512.852.4310

**Structural Engineer:**

VIEWTECH INC.  
4205 Beltway Dr. Addison, TX 75001  
Victor Lisiek III  
972.661.8187

**MEP Engineer:**

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

**Civil Engineer:**

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

**Landscape Architect:**

LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

**Interior Designer:**

S.J.L. Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS

a multifamily project for  
NRP Group

**West Cevallos**  
San Antonio, Texas

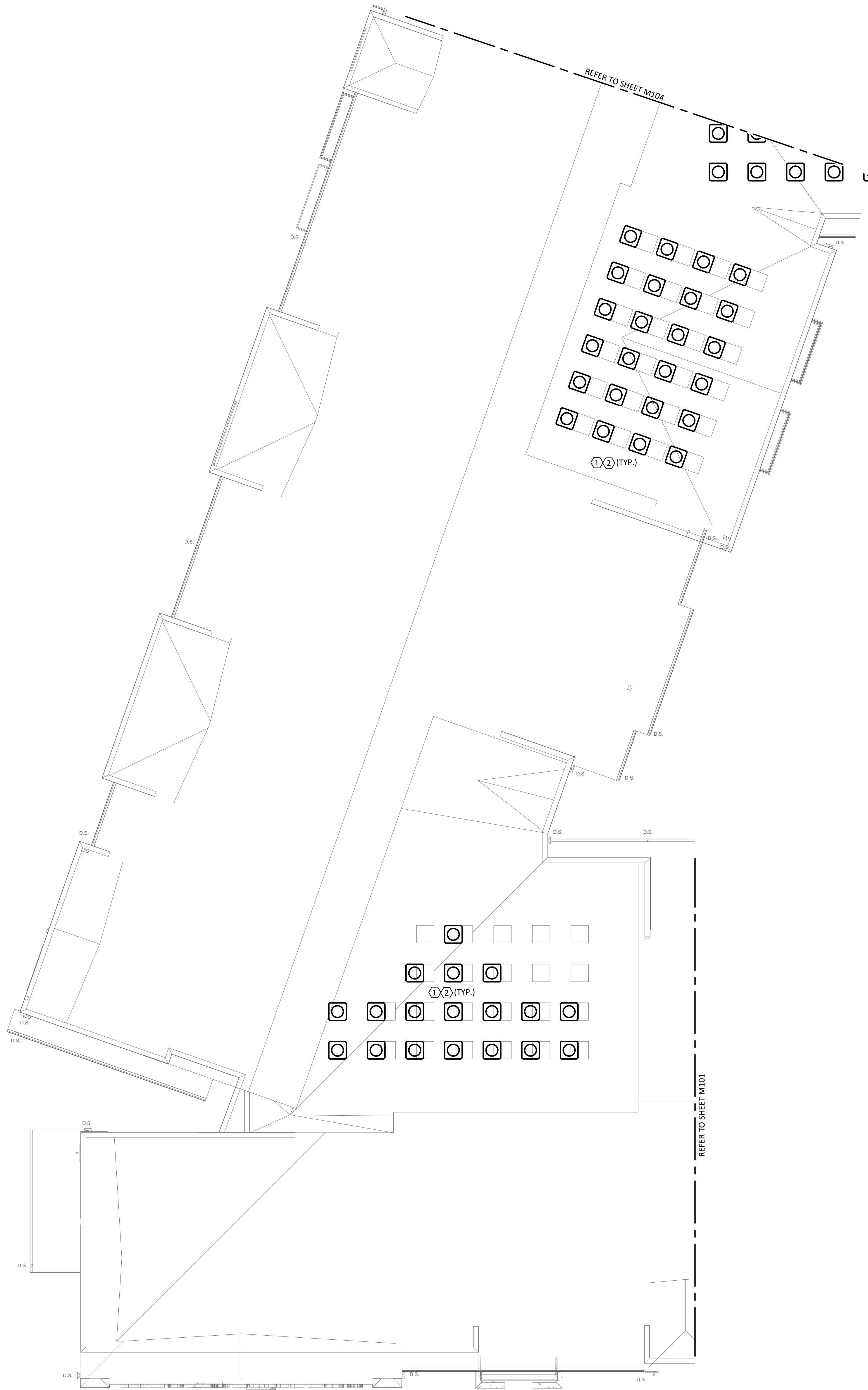
**MECHANICAL  
BUILDING 1c  
ROOF**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

**M103**



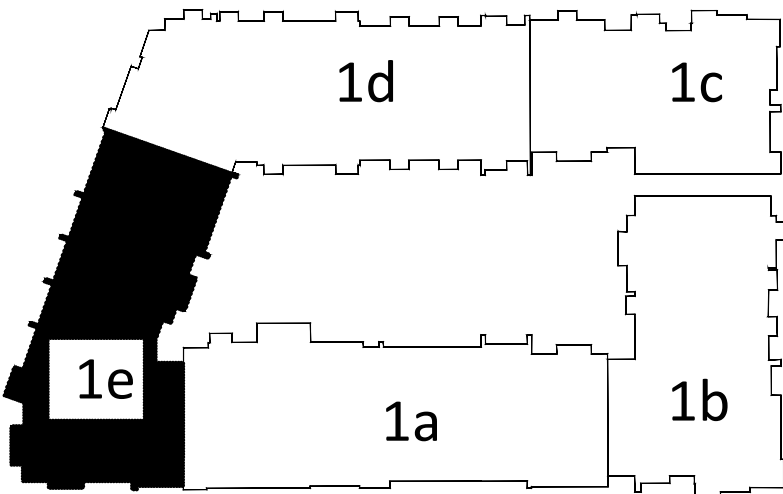




**1** MECHANICAL - BUILDING 1e - ROOF  
SCALE: 1/8"=1'-0"

GENERAL NOTES
A. REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.

KEYED NOTES
1. CONDENSING UNIT ON ROOF CURB. MAINTAIN MINIMUM CLEARANCES OF 10' OFF ANY VERTICAL SURFACE AND 20' BETWEEN CONDENSING UNITS. PROVIDE NEOPRENE VIBRATION ISOLATION PADS. REFER TO DETAILS 3/M602. INSTALL TYPE 'L' COPPER REFRIGERANT LINES. SIZE REFRIGERANT LINES BASED ON MANUFACTURER RECOMMENDATIONS. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER-RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION. COORDINATE ALL CONDENSING UNIT PADS WITH ROOF DRAIN AND VENT LOCATIONS.
2. THE CONDENSING UNITS WITHOUT AN ID TAG ARE THE CONDENSING UNITS FOR THE APARTMENT AIR HANDLER UNITS. PROVIDE AN ID TAG FOR THE CONDENSING UNITS TO MATCH THE ID TAG ON THE RESPECTIVE AIR HANDLER UNIT ID TAG. THE AIR HANDLER UNIT ID TAG WILL BE THE APARTMENT NUMBER. REFER TO ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.
3. 10" CLASS A GAS FLUE VENT AND 12" TYPE-B GAS FLUE VENT (HEAT ONLY) FROM "ACUCRAFT #CIRCULAR4" GAS FIREPLACE IN COMMUNITY CENTER ENTRY LOBBY. EXTEND PIPE IN TRUSS/JOIST SPACE TO BE A MINIMUM OF 3' FOR ANY EXHAUST VENT WITHIN 10' HORIZONTALLY.



KEY PLAN  
N.T.S.

**ENCOTECH**  
ENGINEERING CONSULTANTS  
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite B-103  
Austin, Texas 78759 | 512.338.1101  
Project No.: 18054.M5.AUS

<b>Structural Engineer:</b>  VIEWTECH INC. 4205 Beltway Dr. Addison, TX 75001 Victor Lisiek III 972.661.8187
<b>MEP Engineer:</b>  ENCOTECH 8500 Bluffstone Cove, Austin, TX. 78759 Tessa Roberts 512.338.1101
<b>Civil Engineer:</b>  MBC & Associates, Inc 1035 Central Pkwy N, San Antonio, TX 78732 David Allen 210.545.1122
<b>Landscape Architect:</b>  LEE & Associates, Inc. 9020 N Capital of Texas Hwy, Austin, TX. 78759 Amber Rothwell 512.345.8477
<b>Interior Designer:</b>  S.J.L. Design Group 921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207 Cassie Farley 214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS

a multifamily project for  
NRP Group

**West Cevallos**  
San Antonio, Texas

MECHANICAL BUILDING 1e ROOF	
Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC
<b>M105</b>	

GENERAL NOTES
A. REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.

KEYED NOTES
1. CONDENSING UNIT ON ROOF CURB. MAINTAIN MINIMUM CLEARANCES OF 10" OFF ANY VERTICAL SURFACE AND 20" BETWEEN CONDENSING UNITS. PROVIDE NEOPRENE VIBRATION ISOLATION PADS. REFER TO DETAIL 3/M602. INSTALL TYPE 'L' ACR COPPER REFRIGERANT LINES. SIZE REFRIGERANT LINES BASED ON MANUFACTURER RECOMMENDATIONS. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER-RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION. COORDINATE ALL CONDENSING UNIT PADS WITH ROOF DRAIN AND VENT LOCATIONS.
2. THE CONDENSING UNITS WITHOUT AN ID TAG ARE THE CONDENSING UNITS FOR THE APARTMENT AIR HANDLER UNITS. PROVIDE AN ID TAG FOR THE CONDENSING UNITS TO MATCH THE ID TAG ON THE RESPECTIVE AIR HANDLER UNIT ID TAG. THE AIR HANDLER UNIT ID TAG WILL BE THE APARTMENT NUMBER. REFER TO ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.

<b>Structural Engineer:</b>  VIEWTECH INC. 4205 Beltway Dr. Addison, TX 75001 Victor Lisiek III 972.661.8187
<b>MEP Engineer:</b>  ENCOTECH 8500 Bluffstone Cove, Austin, TX. 78759 Tessa Roberts 512.338.1101
<b>Civil Engineer:</b>  MBC & Associates, Inc 1035 Central Pkwy N, San Antonio, TX 78732 David Allen 210.545.1122
<b>Landscape Architect:</b>  LEE & Associates, Inc. 9020 N Capital of Texas Hwy, Austin, TX. 78759 Amber Rothwell 512.345.8477
<b>Interior Designer:</b>  S.J.L. Design Group 921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207 Cassie Farley 214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



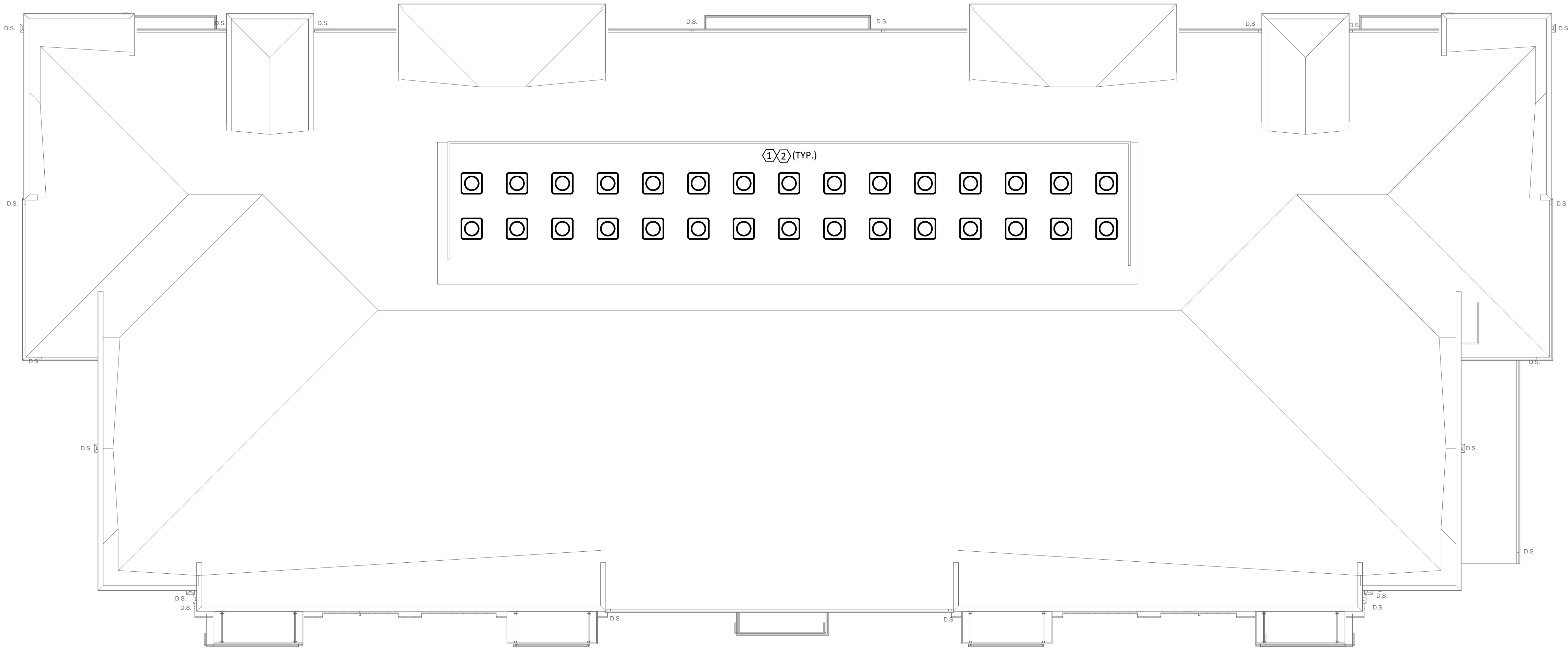
a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

MECHANICAL  
BUILDING II (#2 & #5)  
ROOF

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

M106



1 MECHANICAL - BUILDING II (#2 & #5) - ROOF  
SCALE: 1/8"=1'-0"

GENERAL NOTES
A. REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.

KEYED NOTES
1. CONDENSING UNIT ON ROOF CURB. MAINTAIN MINIMUM CLEARANCES OF 10" OFF ANY VERTICAL SURFACE AND 20" BETWEEN CONDENSING UNITS. PROVIDE NEOPRENE VIBRATION ISOLATION PADS. REFER TO DETAIL 3/M602. INSTALL TYPE 'L' ACR COPPER REFRIGERANT LINES. SIZE REFRIGERANT LINES BASED ON MANUFACTURER RECOMMENDATIONS. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER-RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION. COORDINATE ALL CONDENSING UNIT PADS WITH ROOF DRAIN AND VENT LOCATIONS.
2. THE CONDENSING UNITS WITHOUT AN ID TAG ARE THE CONDENSING UNITS FOR THE APARTMENT AIR HANDLER UNITS. PROVIDE AN ID TAG FOR THE CONDENSING UNITS TO MATCH THE ID TAG ON THE RESPECTIVE AIR HANDLER UNIT ID TAG. THE AIR HANDLER UNIT ID TAG WILL BE THE APARTMENT NUMBER. REFER TO ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.

Structural Engineer:

VIEWTECH INC.  
4205 Beltway Dr. Addison, TX 75001  
Victor Lisiek III  
972.661.8187

MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

Civil Engineer:

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

Landscape Architect:

LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

Interior Designer:

S.J.L. Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



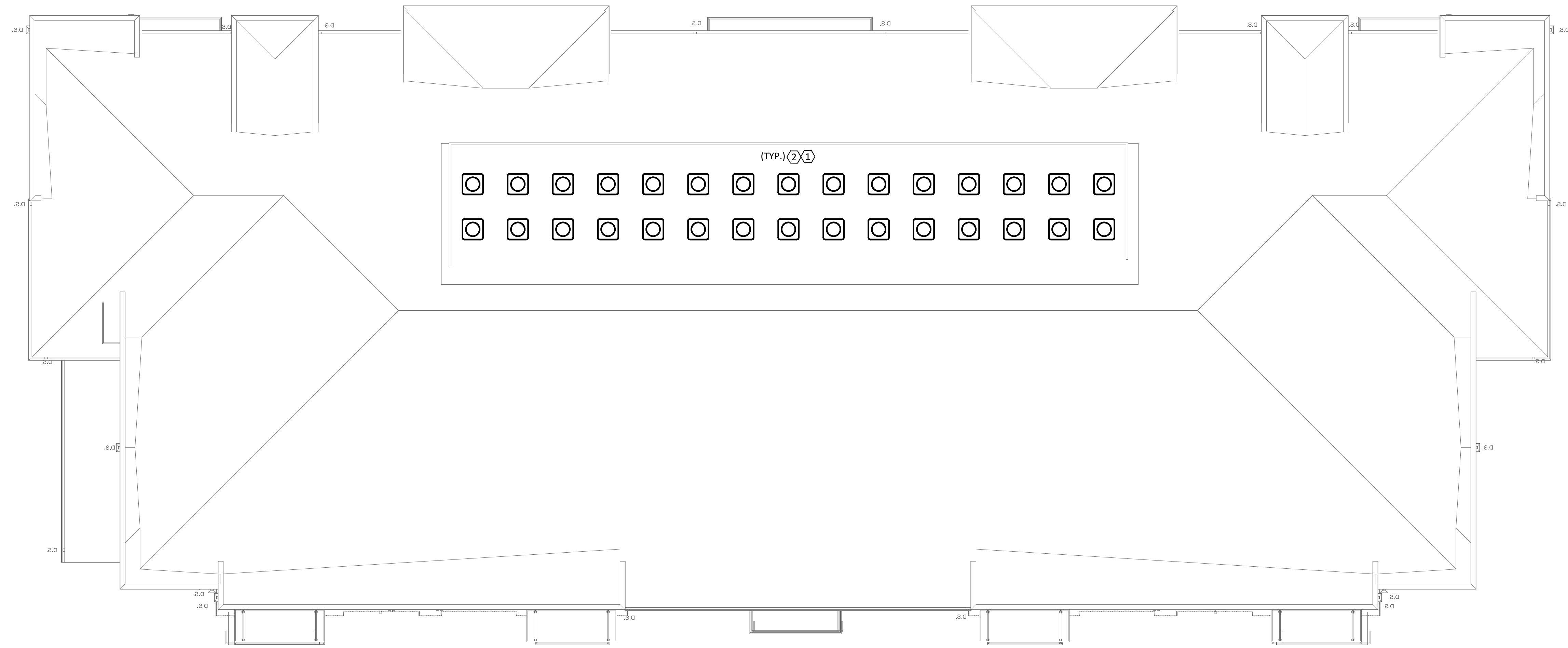
a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

MECHANICAL  
BUILDING II (#3)  
ROOF

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

M107



1 MECHANICAL - BUILDING II (#3) - ROOF  
SCALE: 1/8"=1'-0"



GENERAL NOTES
A. REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.

KEYED NOTES
1. CONDENSING UNIT ON ROOF CURB. MAINTAIN MINIMUM CLEARANCES OF 10" OFF ANY VERTICAL SURFACE AND 20" BETWEEN CONDENSING UNITS. PROVIDE NEOPRENE VIBRATION ISOLATION PADS. REFER TO DETAIL 3/M602. INSTALL TYPE 'L' ACR COPPER REFRIGERANT LINES. SIZE REFRIGERANT LINES BASED ON MANUFACTURER RECOMMENDATIONS. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER-RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION. COORDINATE ALL CONDENSING UNIT PADS WITH ROOF DRAIN AND VENT LOCATIONS.
2. THE CONDENSING UNITS WITHOUT AN ID TAG ARE THE CONDENSING UNITS FOR THE APARTMENT AIR HANDLER UNITS. PROVIDE AN ID TAG FOR THE CONDENSING UNITS TO MATCH THE ID TAG ON THE RESPECTIVE AIR HANDLER UNIT ID TAG. THE AIR HANDLER UNIT ID TAG WILL BE THE APARTMENT NUMBER. REFER TO ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.

Structural Engineer:

VIEWTECH INC.  
4205 Beltway Dr. Addison, TX 75001  
Victor Lisiek III  
972.661.8187

MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

Civil Engineer:

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

Landscape Architect:

LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

Interior Designer:

S.J.L. Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



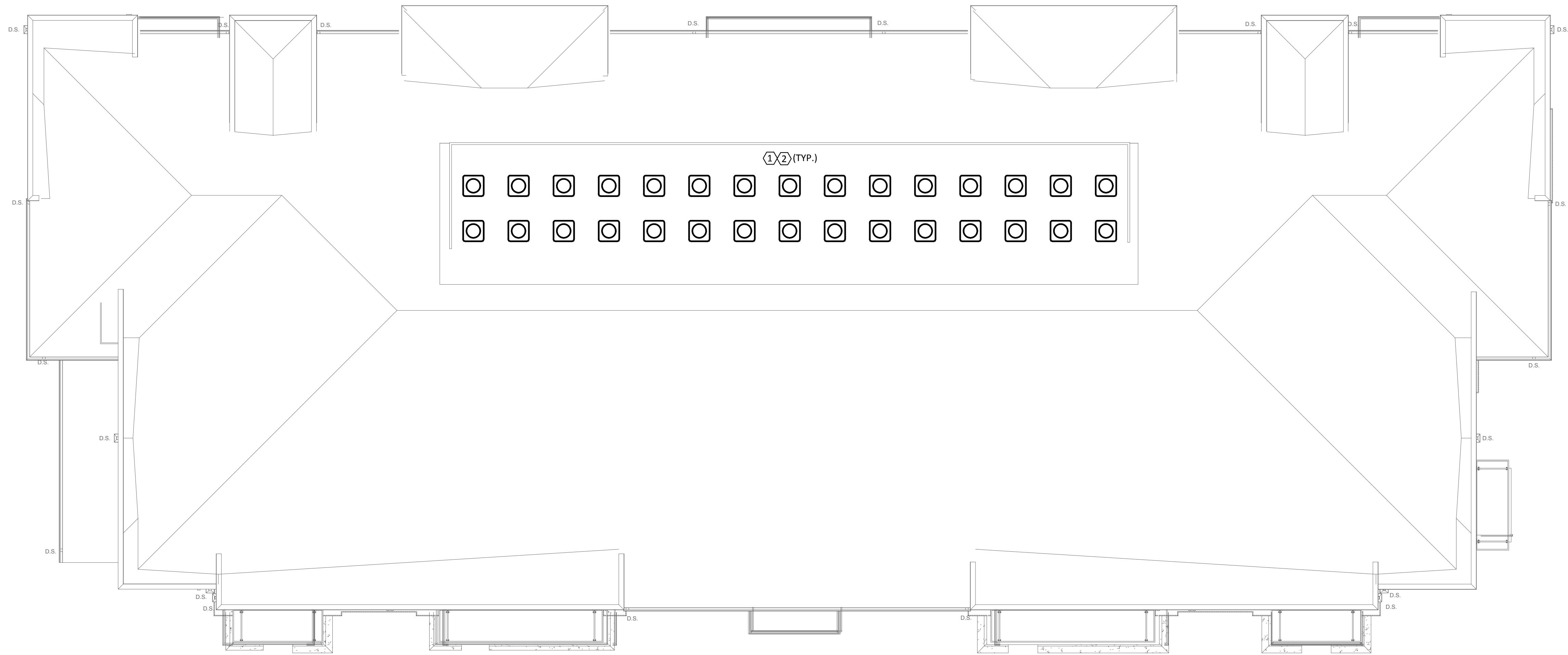
a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

MECHANICAL  
BUILDING II (#4)  
ROOF

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

M108



1 MECHANICAL - BUILDING II (#4) - ROOF  
SCALE: 1/8"=1'-0"

Structural Engineer:

VIEWTECH INC.  
4205 Bellway Dr. Addison, TX 75001  
Victor Lisjak III  
972.661.8187

MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

Civil Engineer:

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.443.1122

Landscape Architect:

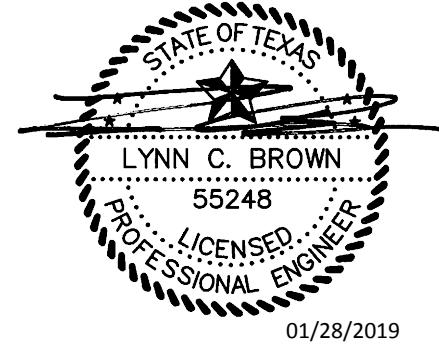
LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

Interior Designer:

SJL Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS		
	PERMIT REVIEW 03	11.08.2016



a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

MECHANICAL  
UNIT A1 & A2

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

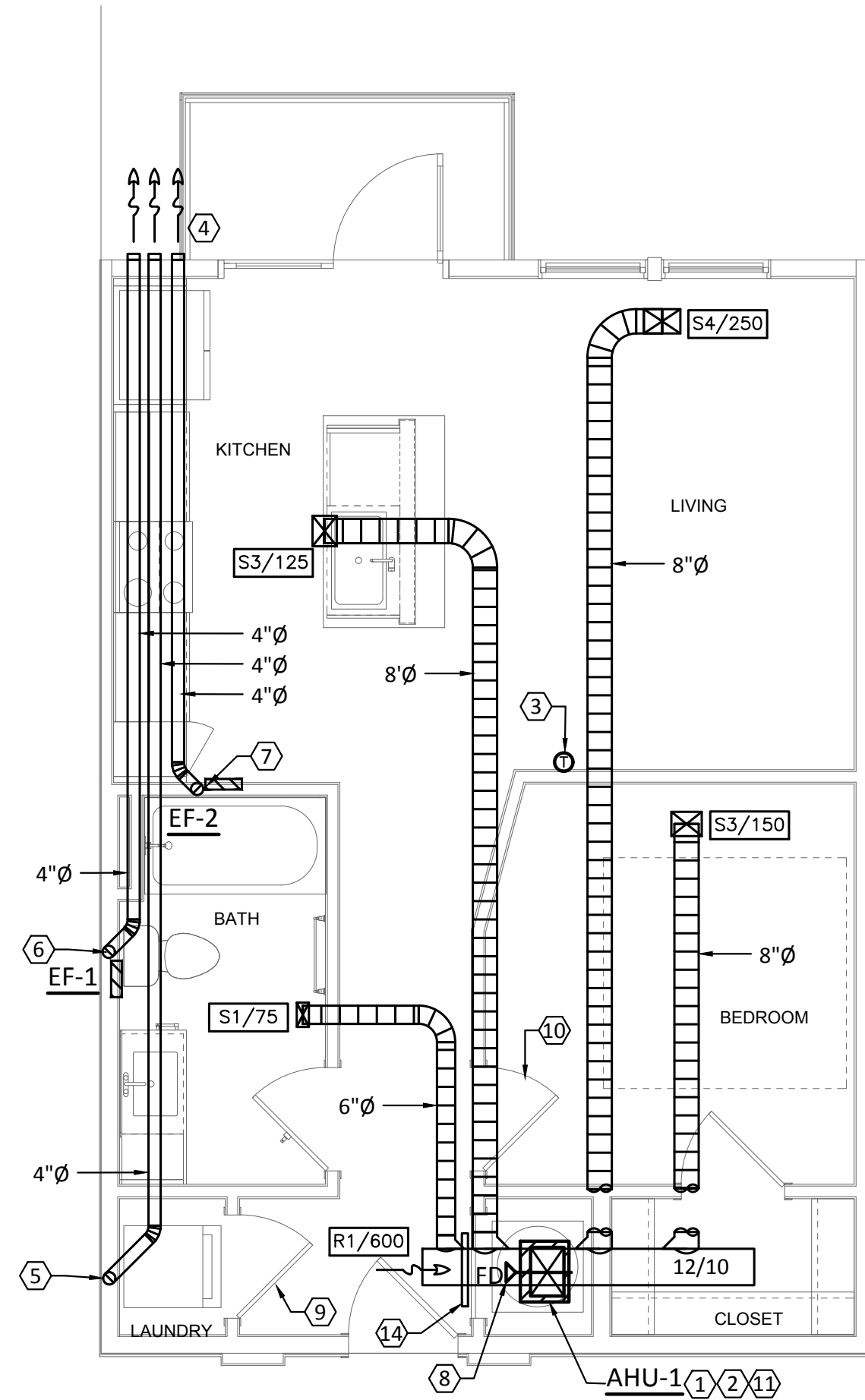
M201

GENERAL NOTES:

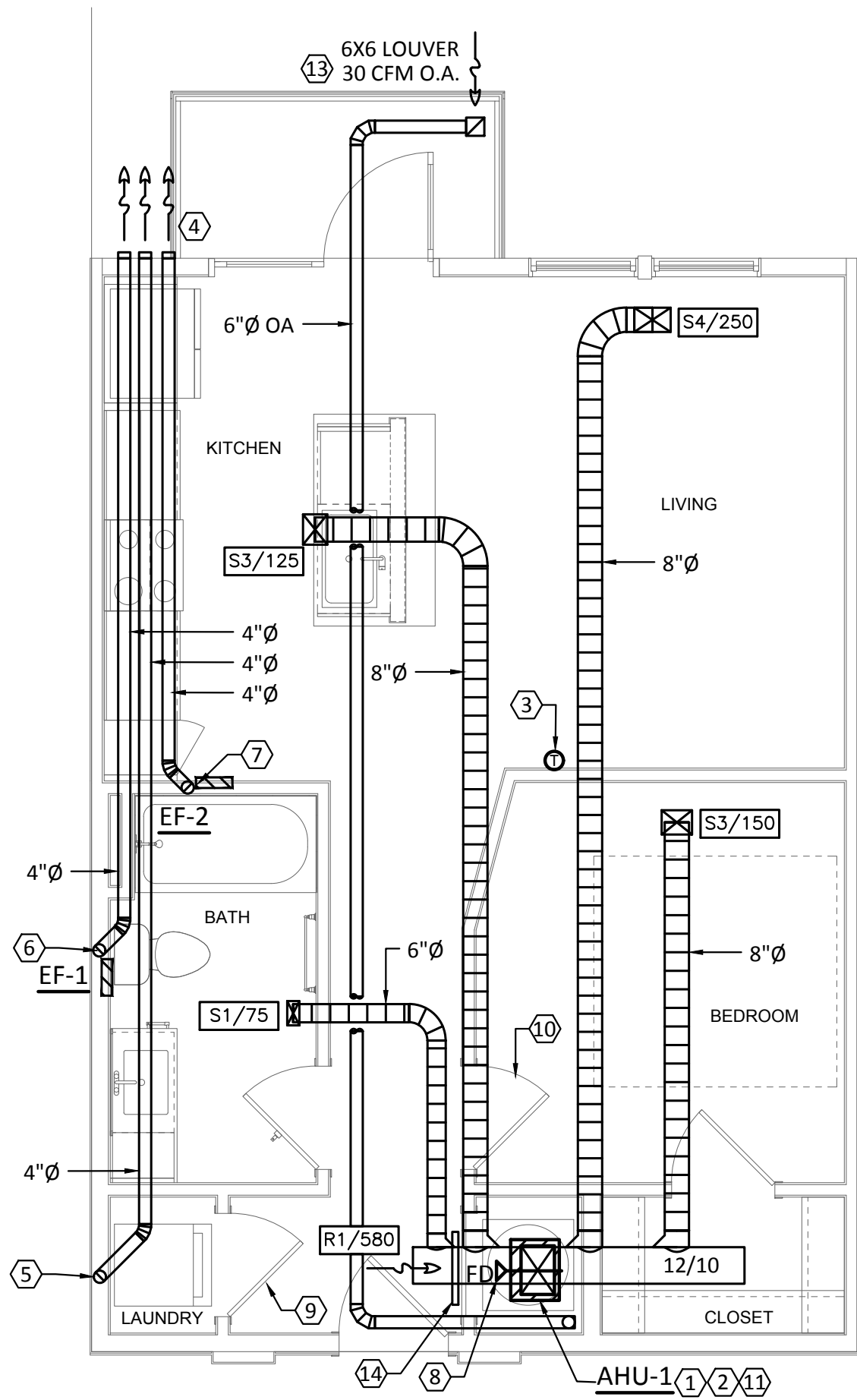
- REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.
- ALL MATERIALS LOCATED WITH PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
- PROVIDE RADIATION DAMPER AT ALL FIRE-RATED CEILING PENETRATIONS. REFER TO DETAIL 10/M601.
- ALL CLOTHES DRYERS SHALL BE PROVIDED BY OWNER. DRYER EXHAUST DUCT LENGTHS SHALL MEET MAXIMUM TOTAL ALLOWED DEVELOPED LENGTH FROM MANUFACTURER REQUIREMENTS. REFER TO SHEET M401 FOR DRYER DUCT LENGTH TABLE.
- APPLICABLE ONLY TO THIRD FLOOR. DROP DOWN OUTSIDE AIR DUCTS AND EXHAUST AIR DUCTS FROM THIRD FLOOR TO SECOND FLOOR TRUSSES. EXTEND TO LOUVER AT EXTERIOR WALL.

KEYED NOTES:

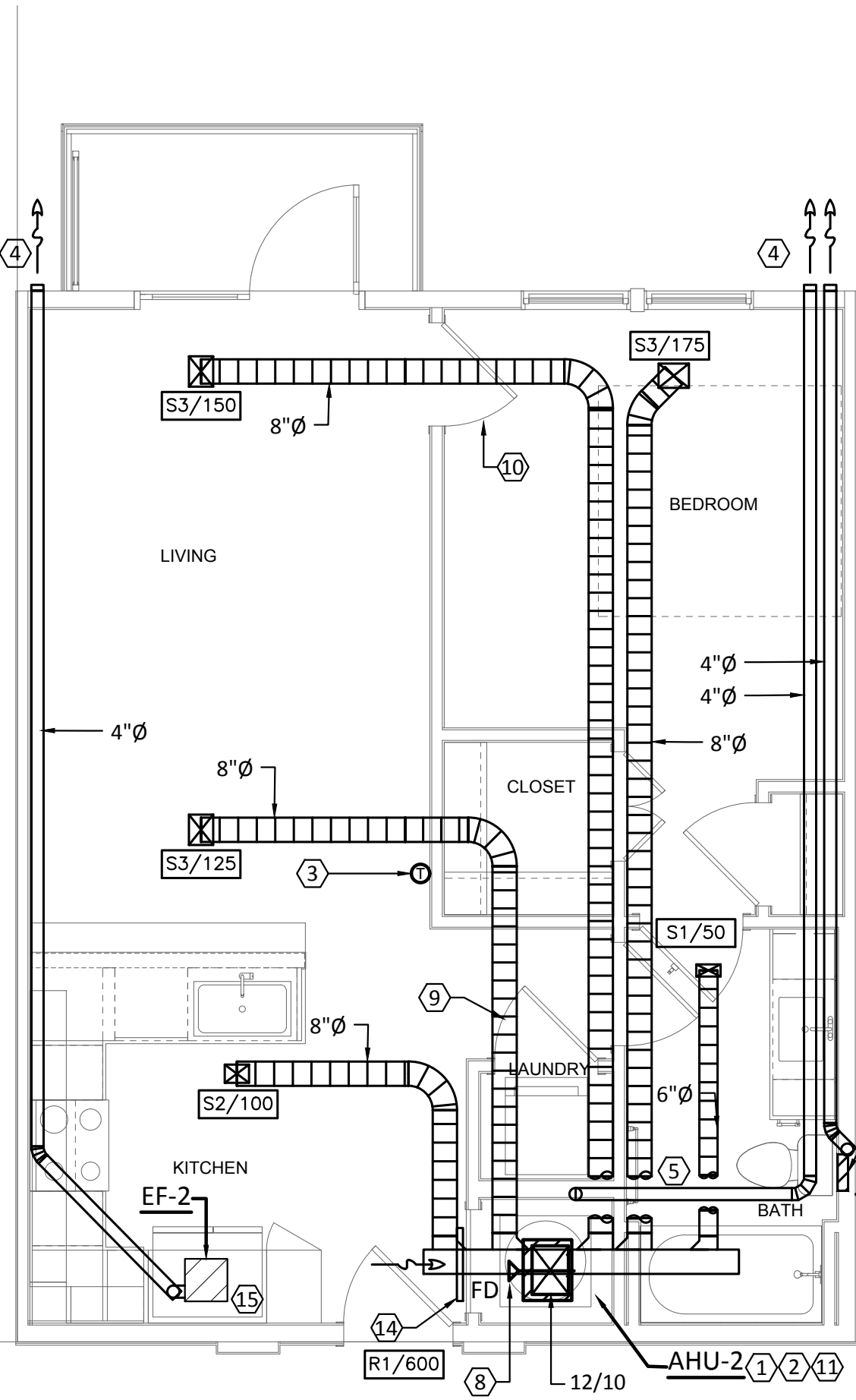
- WALL MOUNTED VERTICAL AIR HANDLER UNIT. FILTER TRAY MUST BE ACCESSIBLE. ROUTE PRIMARY CONDENSATE DRAIN TO HUB DRAIN IN HVAC CLOSET. MAINTAIN 1" AIR GAP ABOVE HUB DRAIN. PROVIDE AND INSTALL ELECTRONIC FLOAT SWITCH ON AUXILIARY CONDENSATE DRAIN. REFER TO DETAIL 5/M602. CONNECT LOW-VOLTAGE WIRING PER MANUFACTURERS RECOMMENDATIONS. COORDINATE WITH PLUMBING CONTRACTOR THE HUB DRAIN LOCATION PRIOR TO COMMENCING WORK. REFER TO DETAIL 4/M603.
- MERV 7 OR GREATER AIR FILTER SHALL BE INSTALLED IN FILTER TRAY LOCATED AT BOTTOM OF AIR HANDLER UNIT. INSTALL PER MANUFACTURERS RECOMMENDATIONS. FILTER MUST BE EASILY ACCESSIBLE.
- PROVIDE AND INSTALL PROGRAMMABLE THERMOSTAT ON WALL AT 48" A.F.F. CONFIRM EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- WALL CAPS WITH GRAVITY DAMPER AND 1/4" GALVANIZED BIRDSCREEN MESH.
- 4"Ø DRYER DUCT UP TO TRUSS/JOIST SPACE FROM DRYER BOX IN 2x6 NON-RATED WALL. EXTEND TO EXTERIOR WALL. PROVIDE INSULATION ON LAST 5' OF EXHAUST DUCT. SLOPE TO EXTERIOR. TERMINATE AT WALL CAP. PROVIDE GRAVITY BACKDRAFT DAMPER. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAILS 2/M601. PROVIDE DRYER BOX, "NEW CONSTRUCTION SOLUTIONS" #DBXMBT4 FOR 2x4 WALLS AND #DBXMBT6 FOR 2x6 WALLS OR EQUAL. REFER TO DETAIL 6/M601.
- 3"Ø BATHROOM EXHAUST DUCT UP THRU WALL CAVITY. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAILS 7/M601.
- 3"Ø KITCHEN EXHAUST DUCT UP THRU WALL CAVITY. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAIL 7/M601.
- PROVIDE AND INSTALL FIRE DAMPER AT PENETRATION OF CEILING FIRE-RATED ASSEMBLY. PROVIDE AND LABEL ACCESS PANEL IN THE SUPPLY DUCT IN MECHANICAL CLOSET. REFER TO DETAIL 1/M601. REFER TO DETAIL 10/M601 FOR CEILING RADIATION DAMPERS LOCATED AT EACH AIR DEVICE.
- PROVIDE 100 SQUARE INCHES FREE AREA VENT AT UTILITY ROOMS FOR CLOTHES DRYER MAKE-UP AIR. REFER TO DETAIL 5/M601.
- UNDERCUT DOORS A MINIMUM OF 1-1/2" FOR RETURN AIR PATH.
- PROVIDE ID TAG FOR EACH APARTMENT AIR HANDLER UNIT. THE ID TAG WILL BE THE APARTMENT NUMBER. REFER TO THE ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.
- INSTALL LOW PROFILE LOUVER FOR OUTSIDE AIR. MAINTAIN 10' MINIMUM CLEARANCE FROM EXHAUST VENTS AND PLUMBING VENTS. PROVIDE MANUAL BALANCING DAMPER.
- INSTALL OUTDOOR AIR LOUVER IN BALCONY SOFFIT. MAINTAIN 10' CLEARANCE FROM ALL EXHAUST VENTS.
- INSTALL RETURN AIR GRILLE ABOVE MECHANICAL CLOSET DOOR.
- 3"Ø CEILING MOUNTED KITCHEN EXHAUST FAN. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAIL 7/M601. PROVIDE FIRE-RATED BOX AT CEILING PENETRATION.



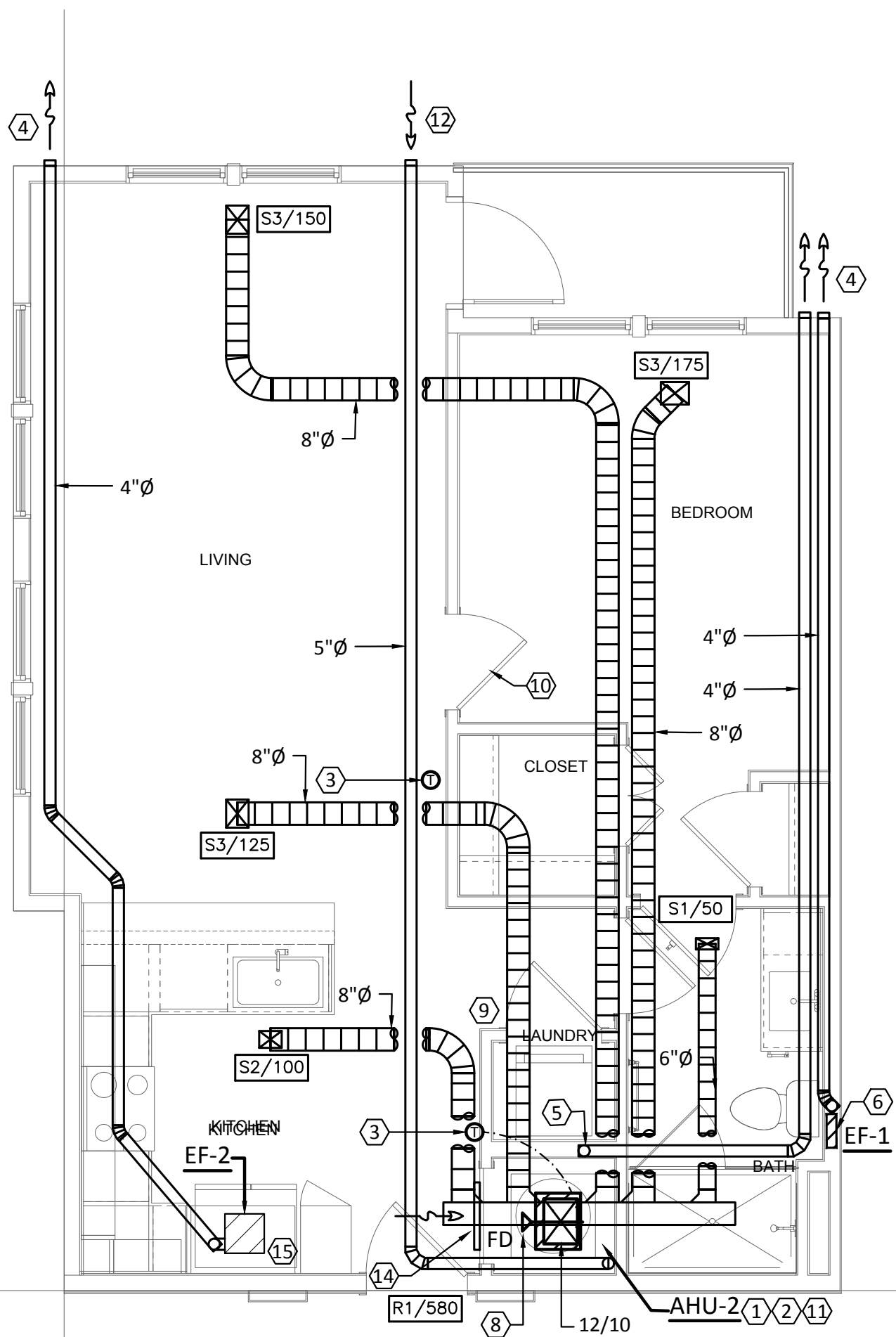
1 MECHANICAL - UNIT TYPE A1  
SCALE: 1/4"=1'-0"



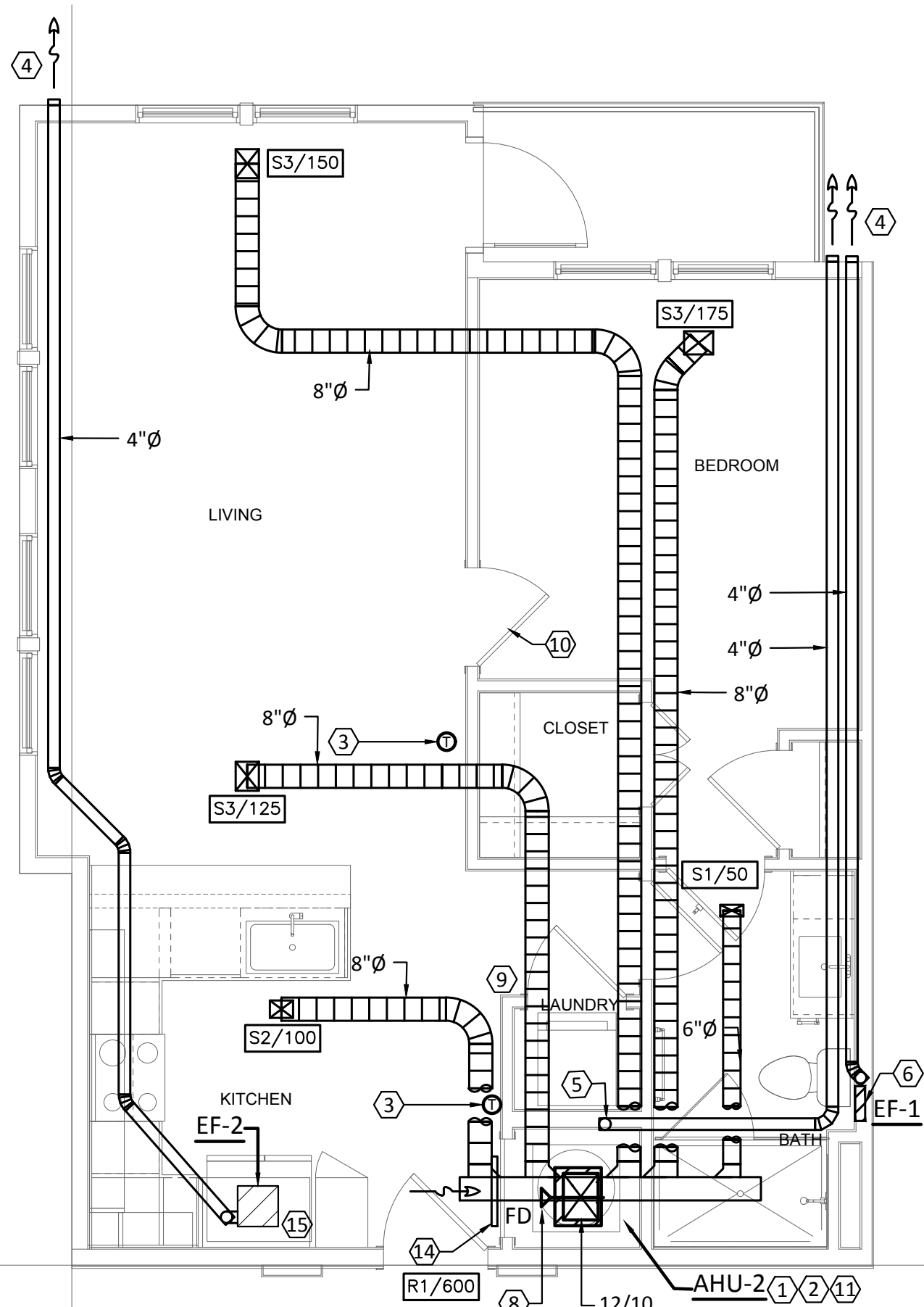
2 MECHANICAL - UNIT TYPE A1  
(BUILDING I POOL COURTYARD)  
SCALE: 1/4"=1'-0"



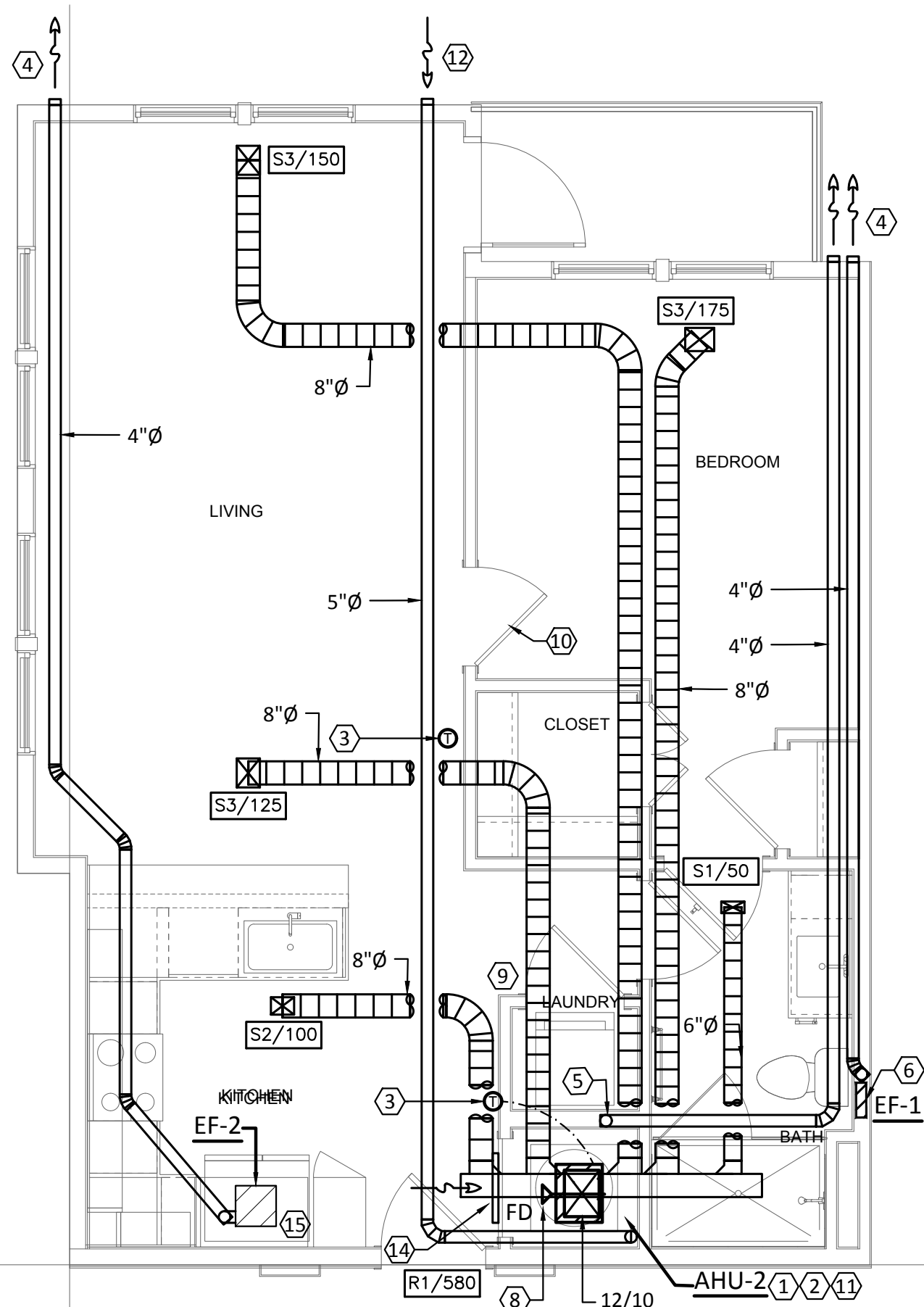
2 MECHANICAL - UNIT TYPE A2  
SCALE: 1/4"=1'-0"



3 MECHANICAL - UNIT TYPE A2  
(BUILDING I POOL COURTYARD & BUILDING II)  
SCALE: 1/4"=1'-0"



4 MECHANICAL - UNIT TYPE A2b  
SCALE: 1/4"=1'-0"



5 MECHANICAL - UNIT TYPE A2b (BUILDING II)  
SCALE: 1/4"=1'-0"

Structural Engineer:

VIEWTECH INC.  
4205 Bellway Dr. Addison, TX 75001  
Victor Lisjak III  
972.661.8187

MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

Civil Engineer:

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

Landscape Architect:

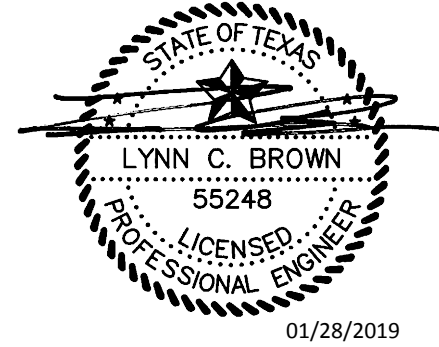
LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

Interior Designer:

SJL Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS		
	PERMIT REVIEW 03	11.08.2016



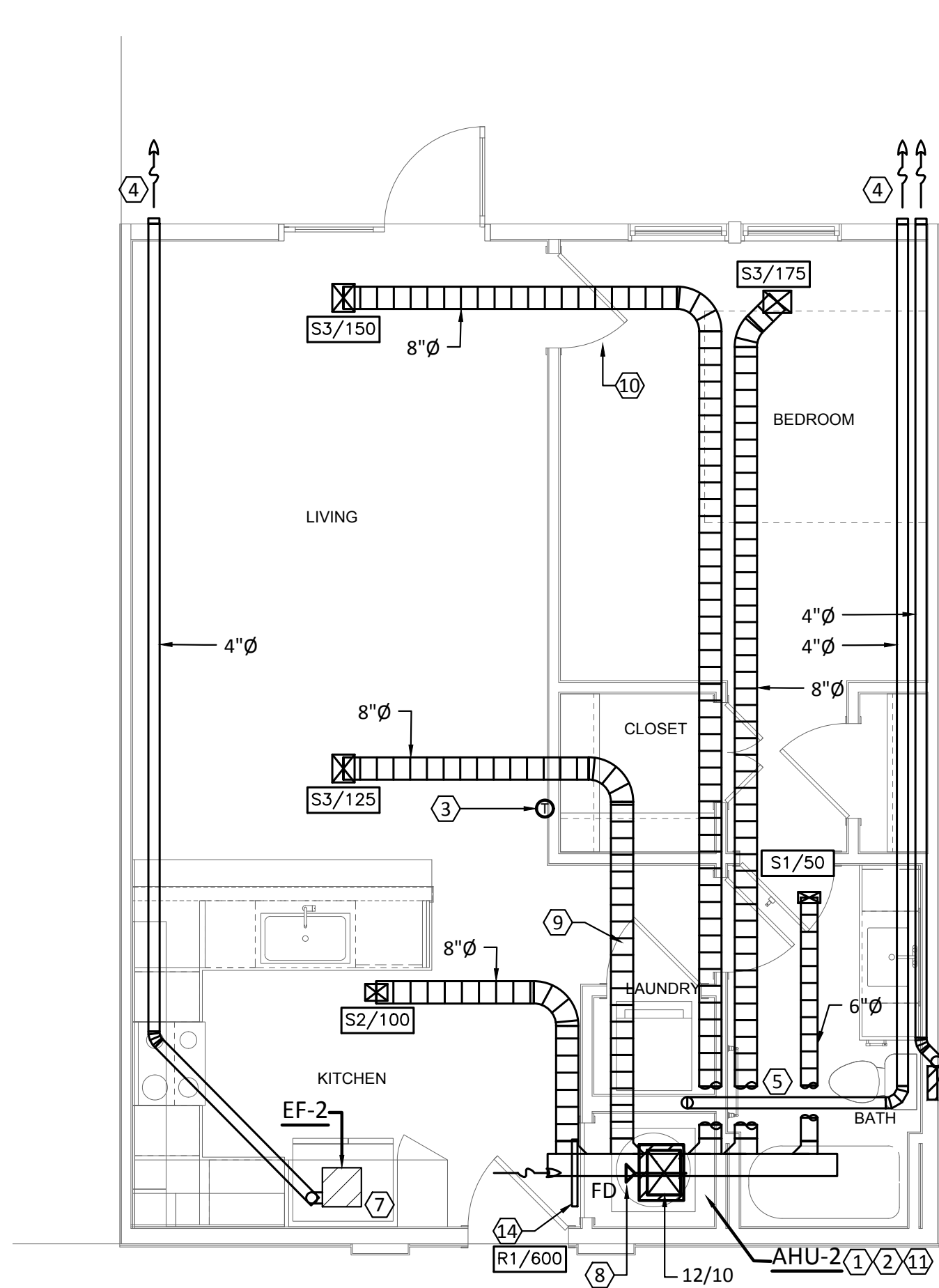
a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

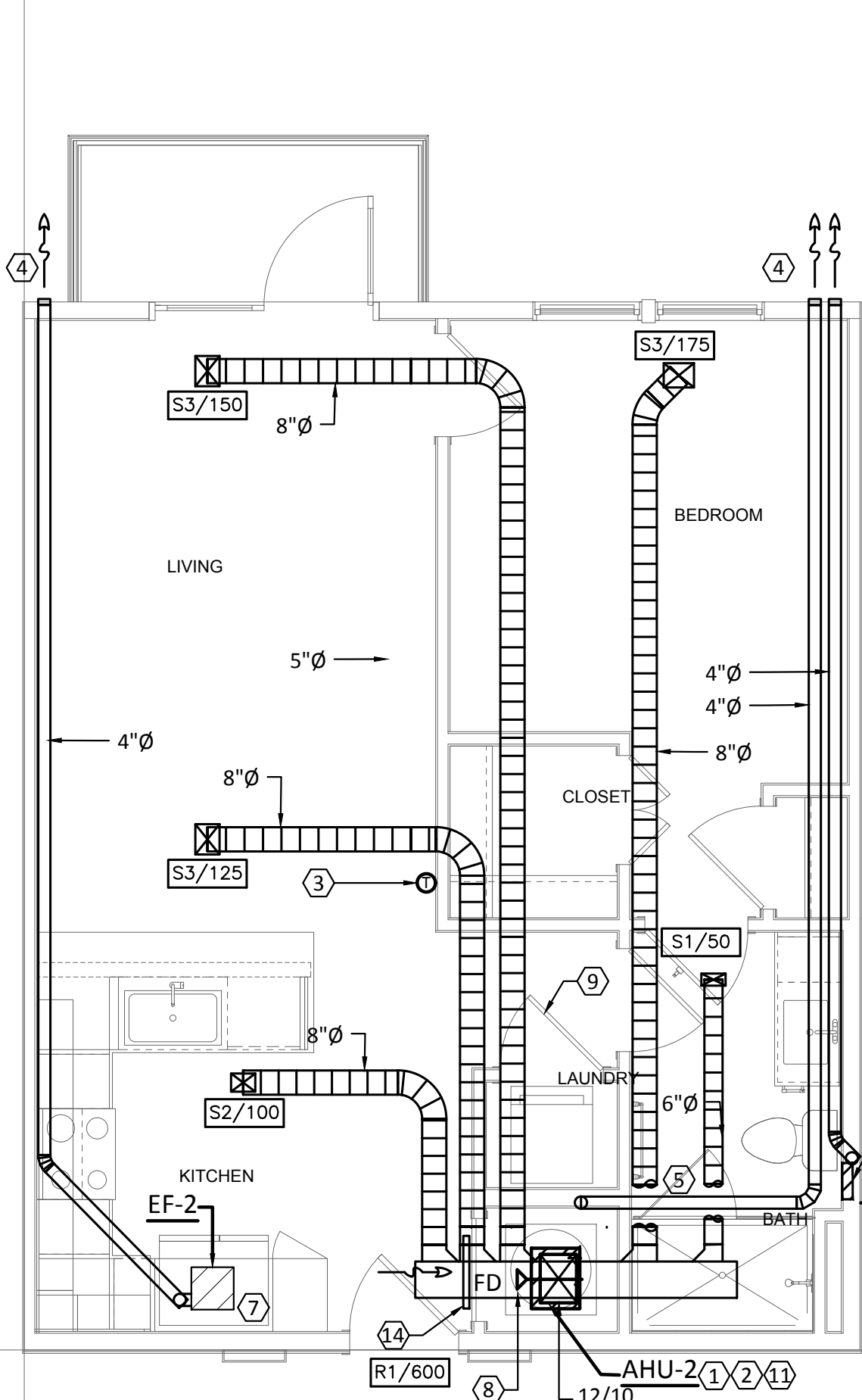
MECHANICAL  
UNIT A2c, A2-ALT-1, A3, & A4

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

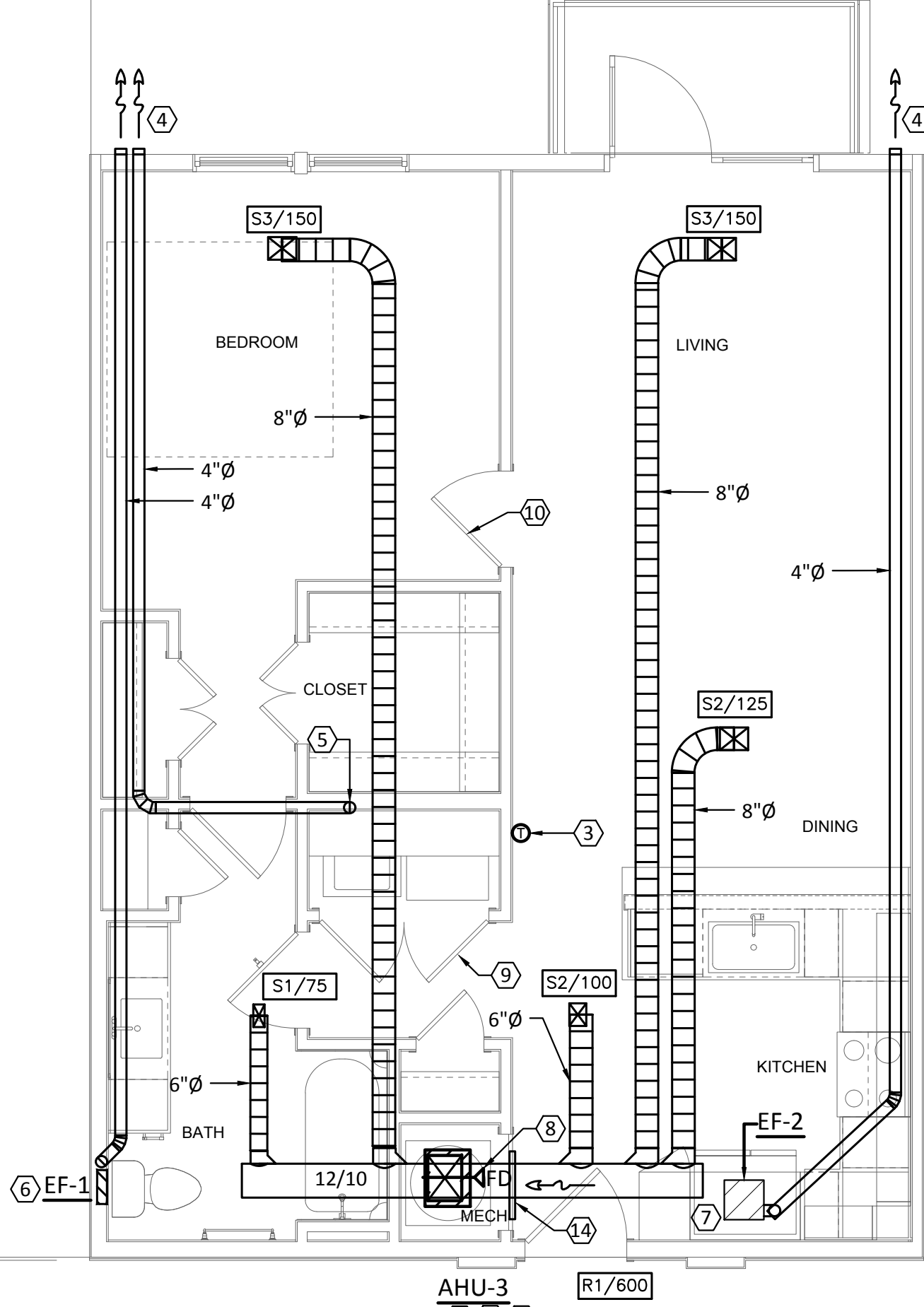
M202



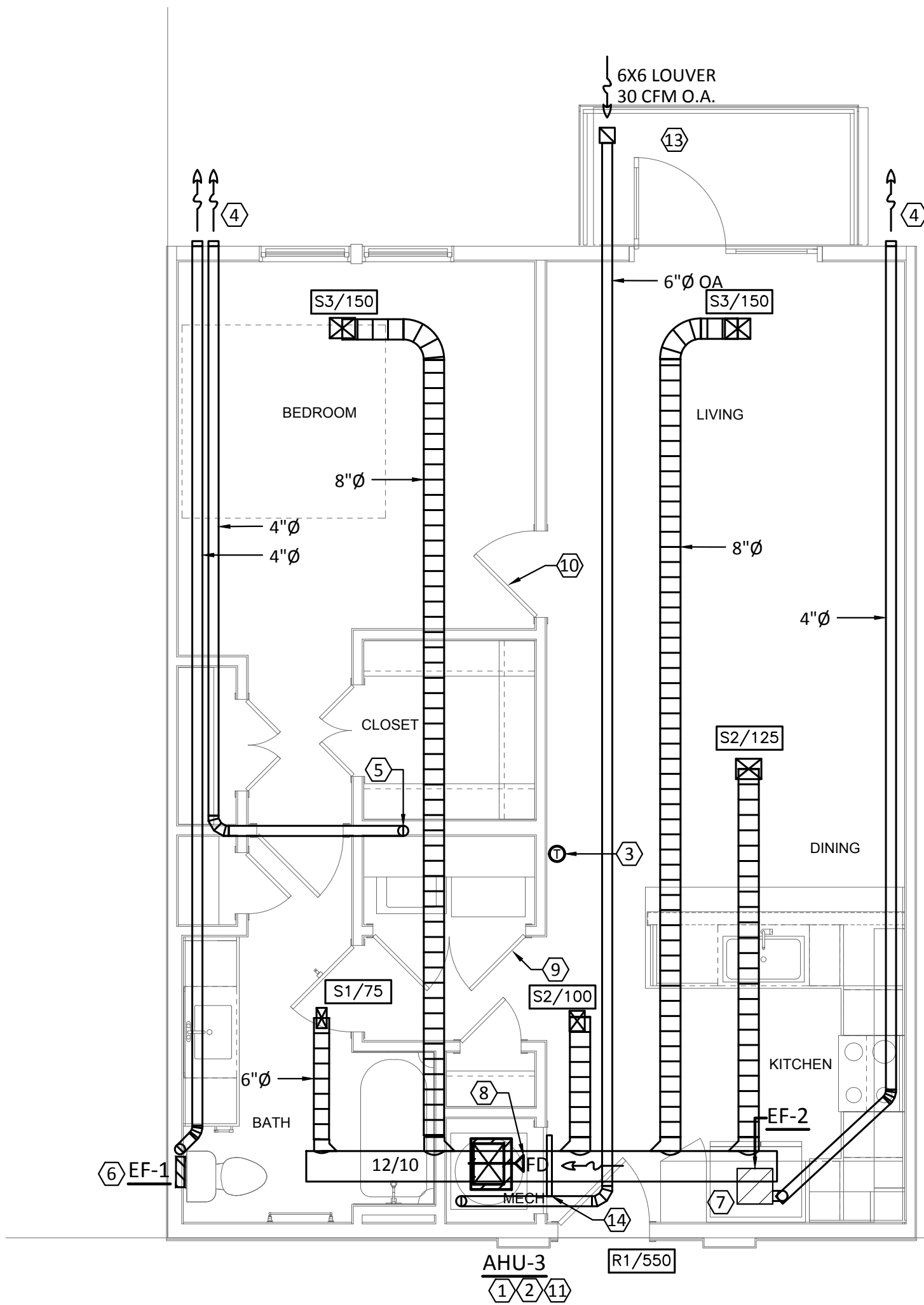
1 MECHANICAL - UNIT TYPE A2c, A2d, A2e & A2f  
SCALE: 1/4"=1'-0"



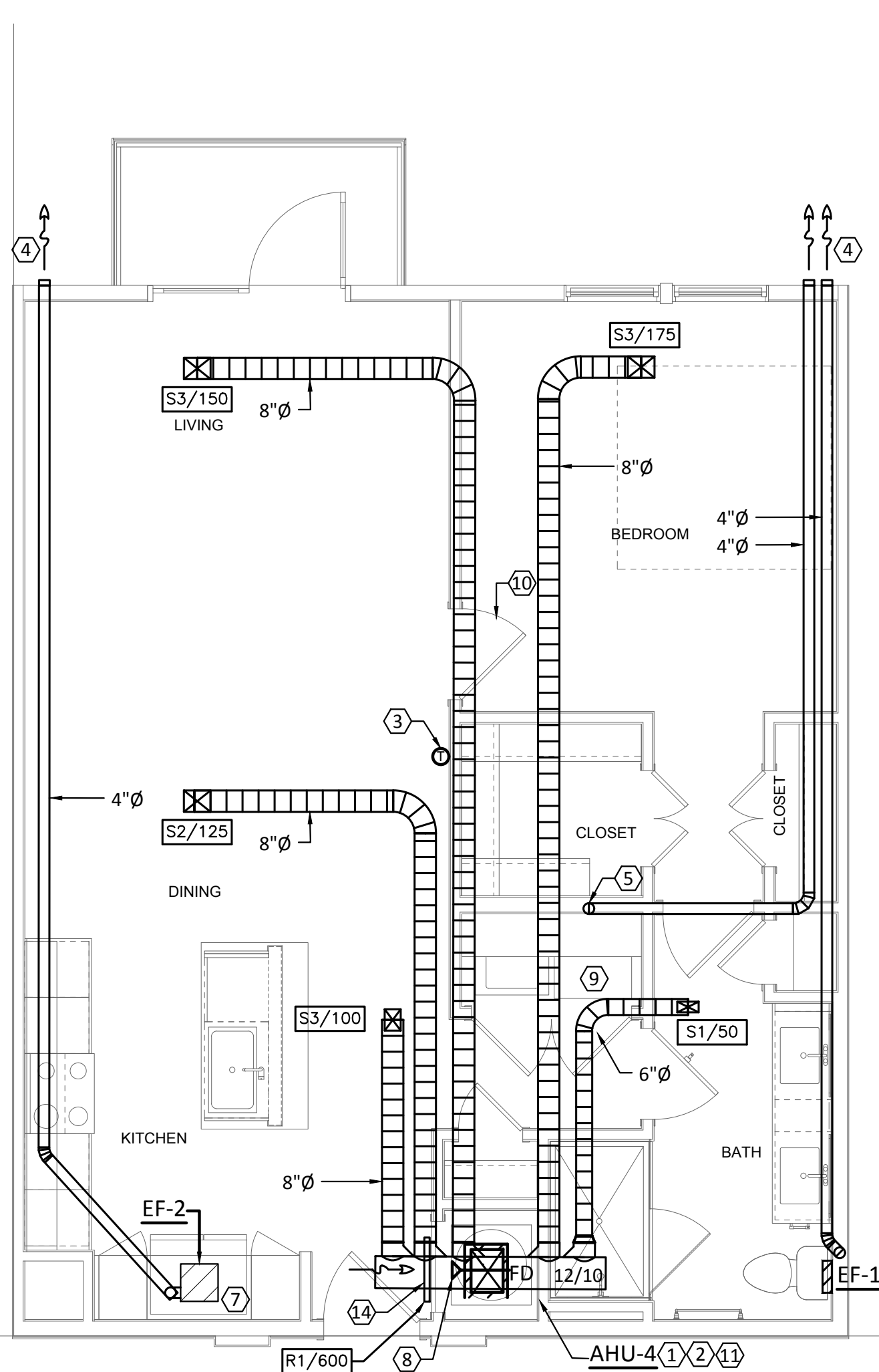
2 MECHANICAL - UNIT TYPE A2-ALT-1  
SCALE: 1/4"=1'-0"



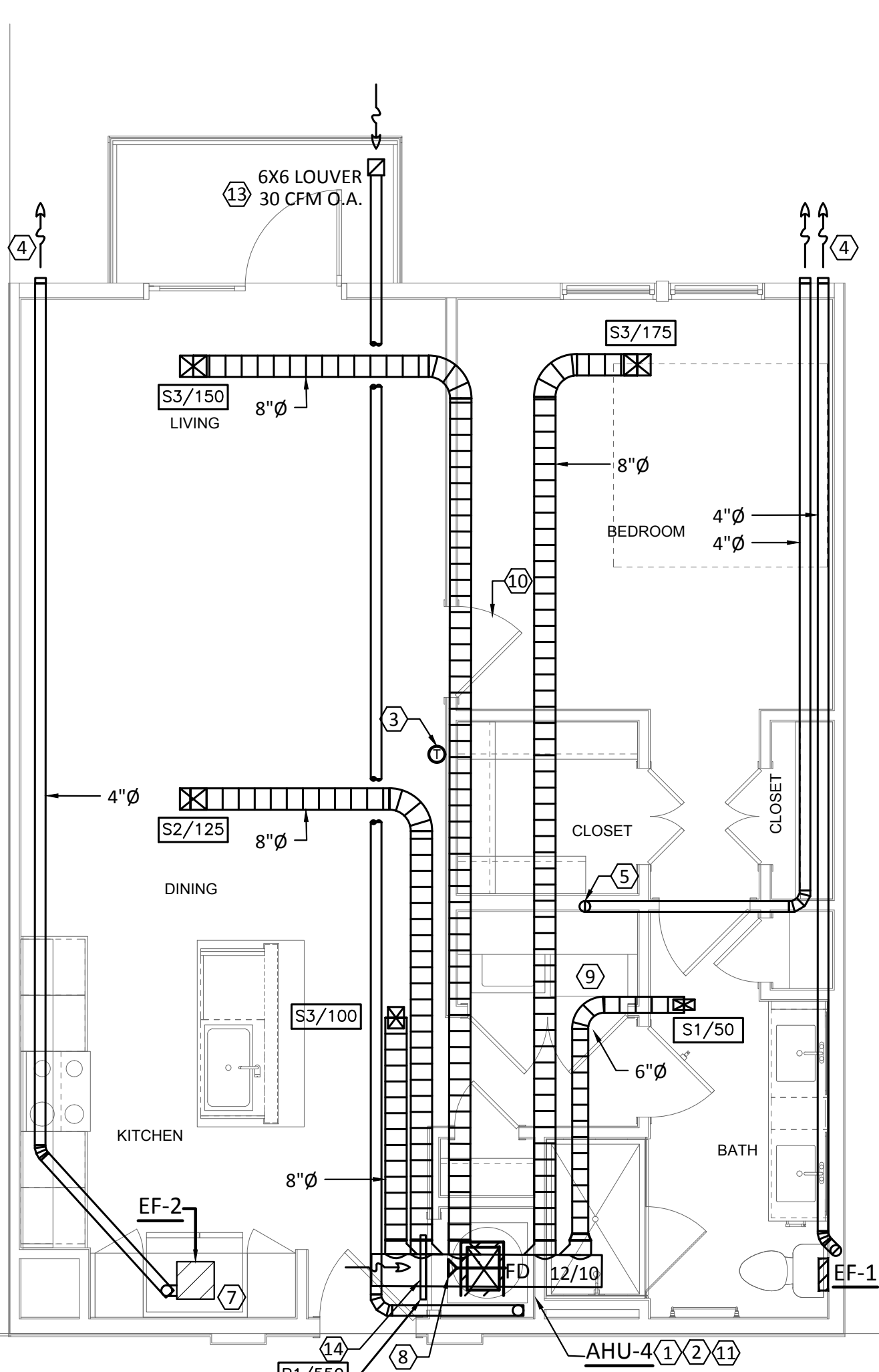
3 MECHANICAL - UNIT TYPE A3  
SCALE: 1/4"=1'-0"



4 MECHANICAL - UNIT TYPE A3 (BUILDING II ONLY)  
SCALE: 1/4"=1'-0"

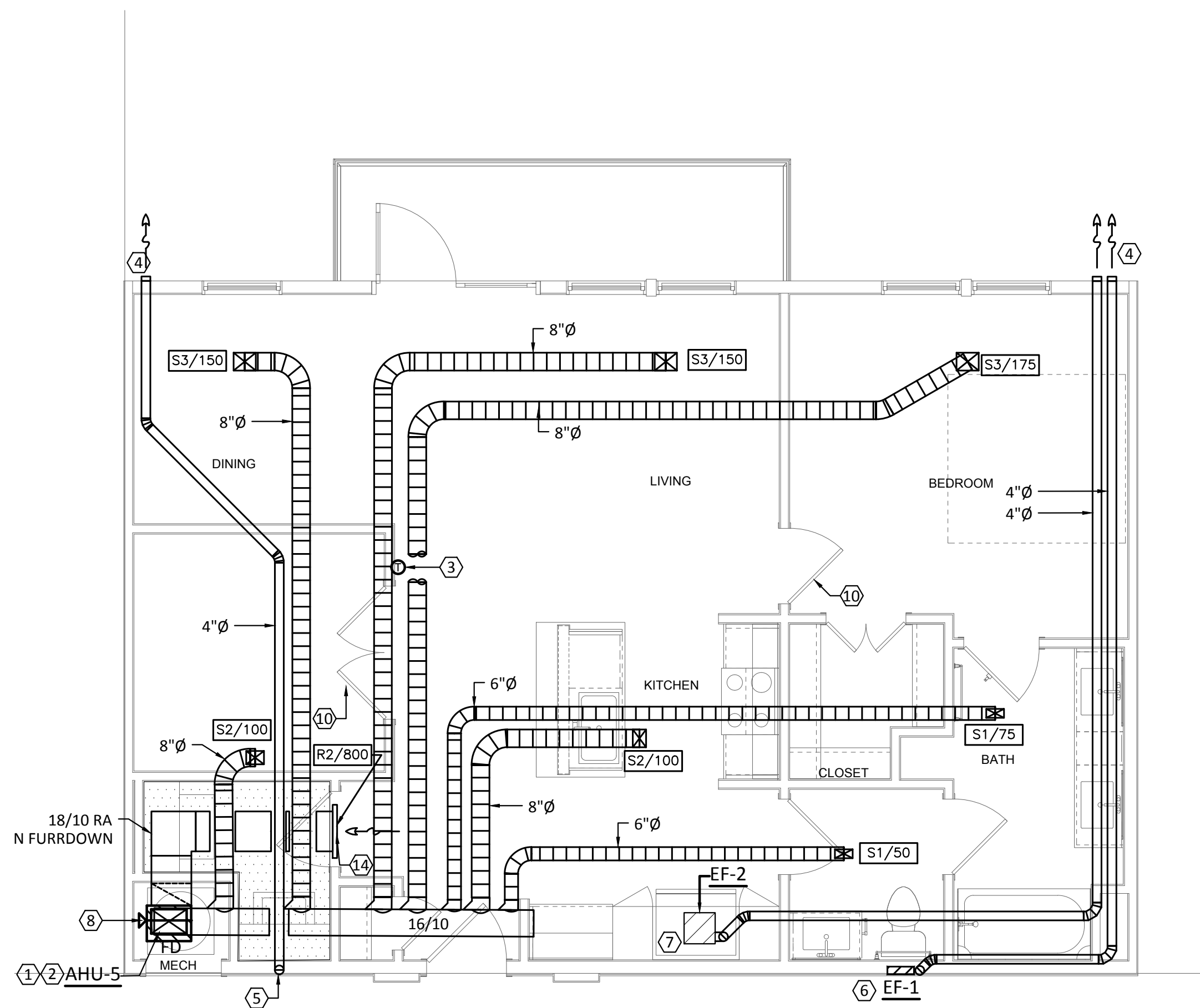


5 MECHANICAL - UNIT TYPE A4  
SCALE: 1/4"=1'-0"

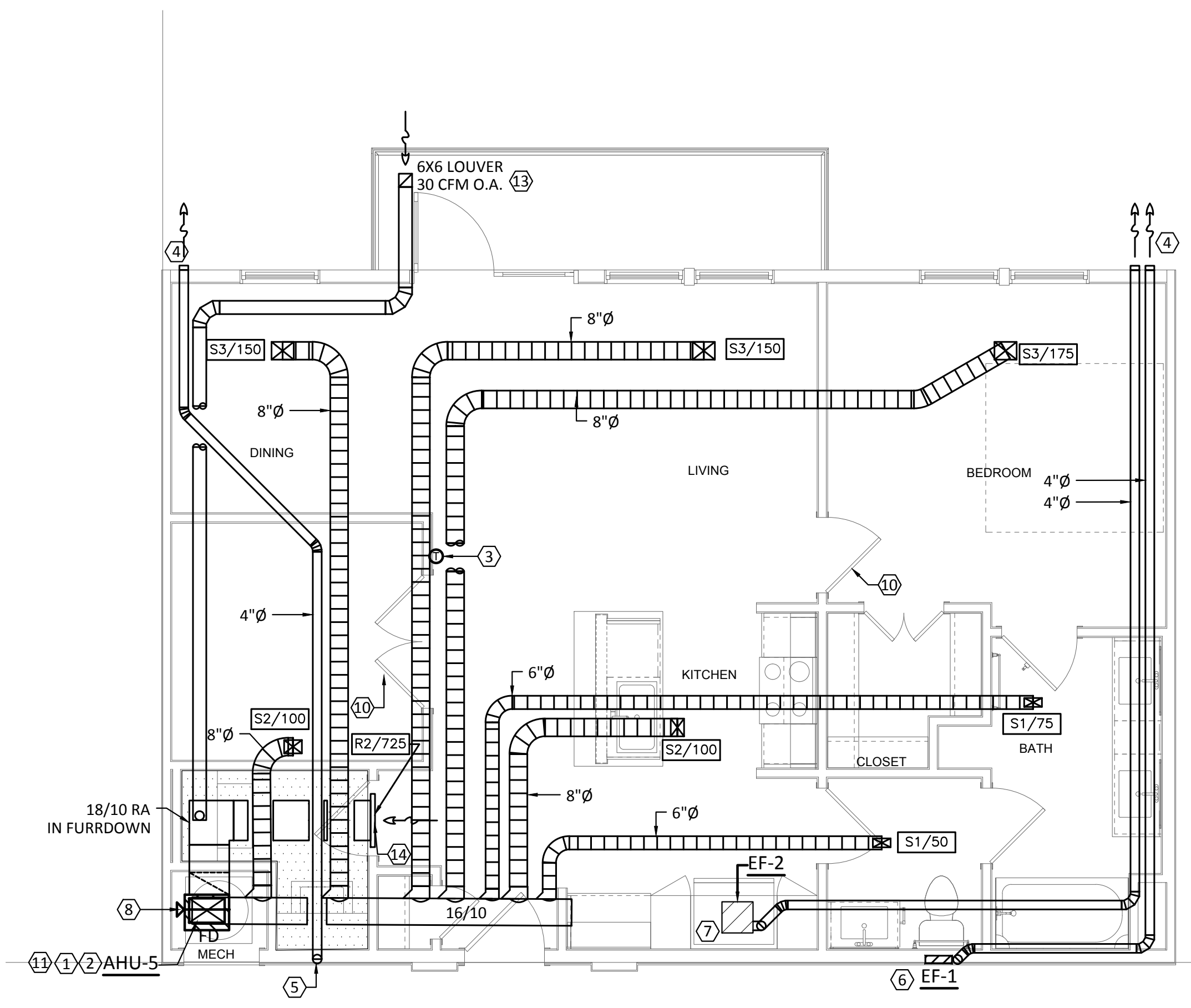


6 MECHANICAL - UNIT TYPE A4  
(BUILDING I POOL COURTYARD)  
SCALE: 1/4"=1'-0"

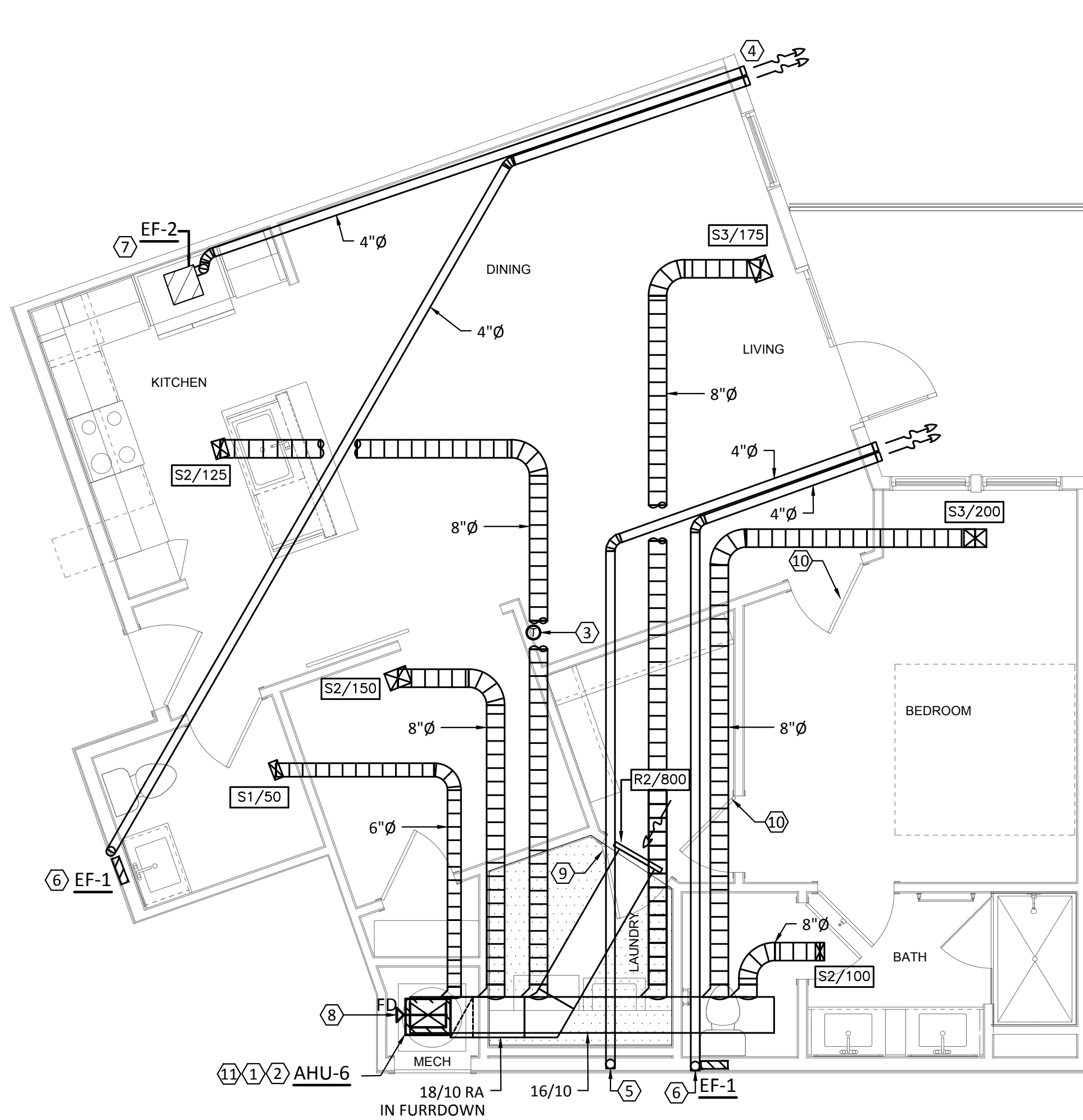




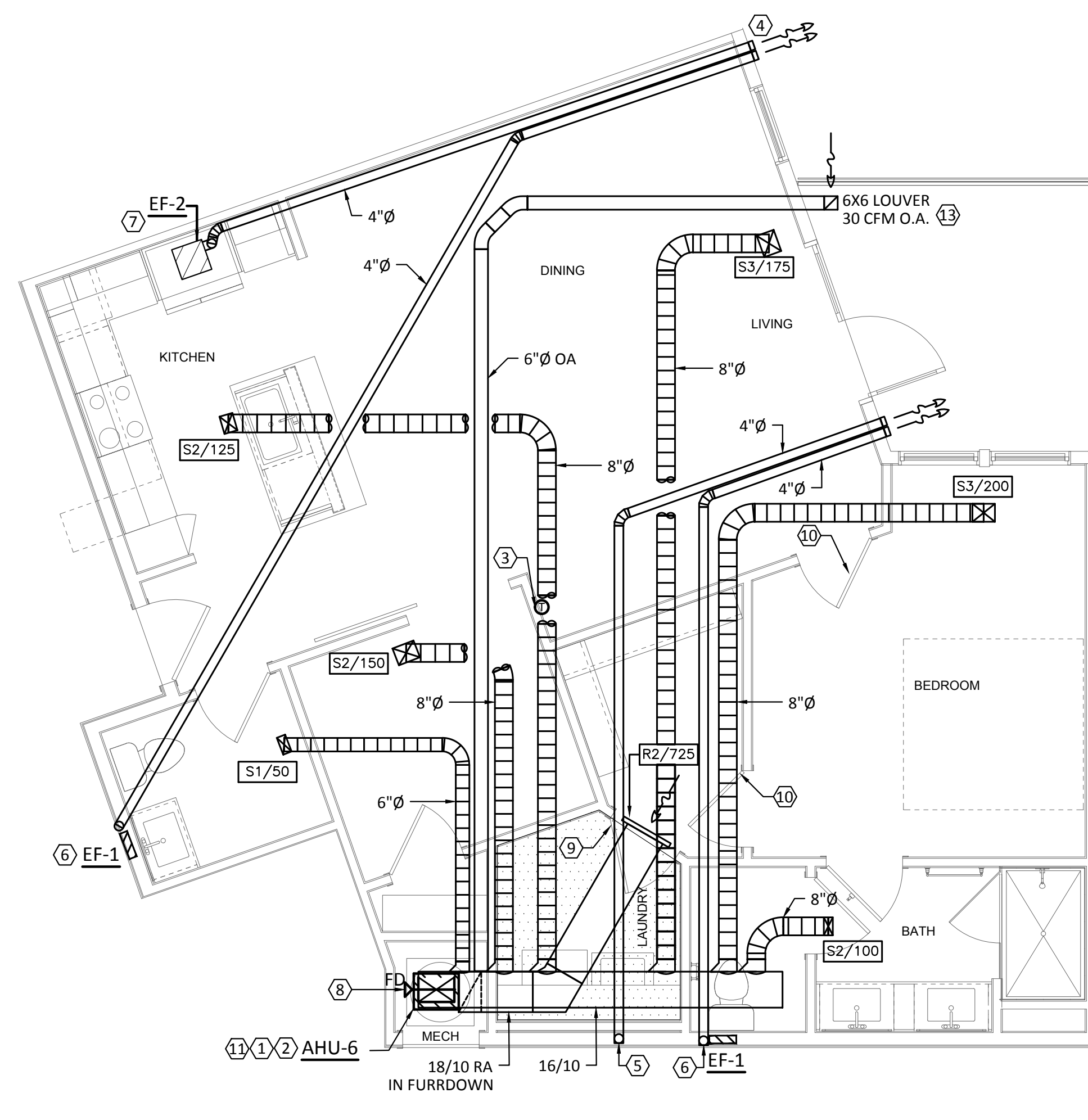
**1** MECHANICAL - UNIT TYPE A5  
SCALE: 1/4"=1'-0"



**2** MECHANICAL - UNIT TYPE A5  
(BUILDING I POOL COURTYARD)  
SCALE: 1/4"=1'-0"



**3** MECHANICAL - UNIT TYPE A6  
SCALE: 1/4"=1'-0"



**4** MECHANICAL - UNIT TYPE A6  
(BUILDING I POOL COURTYARD)  
SCALE: 1/4"=1'-0"

#### GENERAL NOTES:

- REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.
- ALL MATERIALS LOCATED WITH PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
- PROVIDE RADIATION DAMPER AT ALL FIRE-RATED CEILING PENETRATIONS. REFER TO DETAIL 10/M601.
- ALL CLOTHES DRYERS SHALL BE PROVIDED BY OWNER. DRYER EXHAUST DUCT LENGTHS SHALL MEET MAXIMUM TOTAL ALLOWED DEVELOPED LENGTH FROM MANUFACTURER REQUIREMENTS. REFER TO SHEET M401 FOR DRYER DUCT LENGTH TABLE.
- APPLICABLE ONLY TO THIRD FLOOR. DROP DOWN OUTSIDE AIR DUCTS AND EXHAUST AIR DUCTS FROM THIRD FLOOR TO SECOND FLOOR TRUSSES. EXTEND TO LOUVER AT EXTERIOR WALL.

#### KEYED NOTES:

- WALL MOUNTED VERTICAL AIR HANDLER UNIT. FILTER TRAY MUST BE ACCESSIBLE. ROUTE PRIMARY CONDENSATE DRAIN TO HUB DRAIN IN HVAC CLOSET. MAINTAIN 1" AIR GAP ABOVE HUB DRAIN. PROVIDE AND INSTALL ELECTRONIC FLOAT SWITCH ON AUXILIARY CONDENSATE DRAIN. REFER TO DETAIL 5/M602. CONNECT LOW-VOLTAGE WIRING PER MANUFACTURERS RECOMMENDATIONS. COORDINATE WITH PLUMBING CONTRACTOR THE HUB DRAIN LOCATION PRIOR TO COMMENCING WORK. REFER TO DETAIL 4/M603.
- MERV 7 OR GREATER AIR FILTER SHALL BE INSTALLED IN FILTER TRAY LOCATED AT BOTTOM OF AIR HANDLER UNIT. INSTALL PER MANUFACTURERS RECOMMENDATIONS. FILTER MUST BE EASILY ACCESSIBLE.
- PROVIDE AND INSTALL PROGRAMMABLE THERMOSTAT ON WALL AT 48" A.F.F. CONFIRM EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- WALL CAPS WITH GRAVITY DAMPER AND 1/4" GALVANIZED BIRDSCREEN MESH.
- 4"Ø DRYER DUCT UP TO TRUSS/JOIST SPACE FROM DRYER BOX IN 2x6 NON-RATED WALL. EXTEND TO EXTERIOR WALL. PROVIDE INSULATION ON LAST 5' OF EXHAUST DUCT. SLOPE TO EXTERIOR. TERMINATE AT WALL CAP. PROVIDE GRAVITY BACKDRAFT DAMPER. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAILS 2/M601. PROVIDE DRYER BOX. "NEW CONSTRUCTION SOLUTIONS" #DBXMBT4 FOR 2x6 WALLS AND #DBXMBT6 FOR 2x6 WALLS OR EQUAL. REFER TO DETAIL 6/M601.
- 3"Ø BATHROOM EXHAUST DUCT UP THRU WALL CAVITY. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAILS 7/M601.
- 3"Ø CEILING MOUNTED KITCHEN EXHAUST FAN. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAIL 7/M601. PROVIDE FIRE-RATED BOX AT CEILING PENETRATION.
- PROVIDE AND INSTALL FIRE DAMPER AT PENETRATION OF CEILING FIRE-RATED ASSEMBLY. PROVIDE AND LABEL ACCESS PANEL IN THE SUPPLY DUCT IN MECHANICAL CLOSET. REFER TO DETAIL 1/M601. REFER TO DETAIL 10/M601 FOR CEILING RADIATION DAMPERS LOCATED AT EACH AIR DEVICE.
- PROVIDE 100 SQUARE INCHES FREE AREA VENT AT UTILITY ROOMS FOR CLOTHS DRYER MAKE-UP AIR. REFER TO DETAIL 5/M601.
- UNDERCUT DOORS A MINIMUM OF 1-1/2" FOR RETURN AIR PATH.
- PROVIDE ID TAG FOR EACH APARTMENT AIR HANDLER UNIT. THE ID TAG WILL BE THE APARTMENT NUMBER. REFER TO THE ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.
- INSTALL LOW PROFILE LOUVER FOR OUTSIDE AIR. MAINTAIN 10' MINIMUM CLEARANCE FROM EXHAUST VENTS AND PLUMBING VENTS. PROVIDE MANUAL BALANCING DAMPER.
- INSTALL OUTDOOR AIR LOUVER IN BALCONY SOFFIT. MAINTAIN 10' CLEARANCE FROM ALL EXHAUST VENTS.
- INSTALL RETURN AIR GRILLE ABOVE MECHANICAL CLOSET DOOR.

#### Structural Engineer:

VIEWTECH INC.  
4205 Bellway Dr. Addison, TX 75001  
Victor Lisjak III  
972.661.8187

#### MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

#### Civil Engineer:

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.345.1122

#### Landscape Architect:

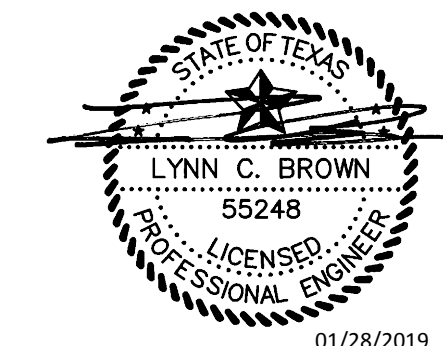
LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

#### Interior Designer:

SJL Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS		
	PERMIT REVIEW 03	11.08.2016



a multifamily project for  
NRP Group

**West Cevallos**  
San Antonio, Texas

#### MECHANICAL UNIT A5 & A6

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

**M203**



Structural Engineer:

VIEWTECH INC.  
4205 Bellway Dr. Addison, TX 75001  
Victor Lisjak III  
972.661.8187

MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

Civil Engineer:

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

Landscape Architect:

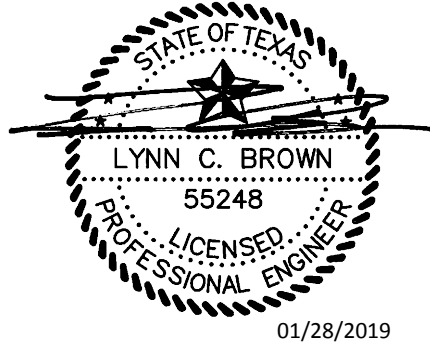
LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

Interior Designer:

S.J.L Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS		
	PERMIT REVIEW 03	11.08.2016



a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

MECHANICAL  
UNIT A7 & B1

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

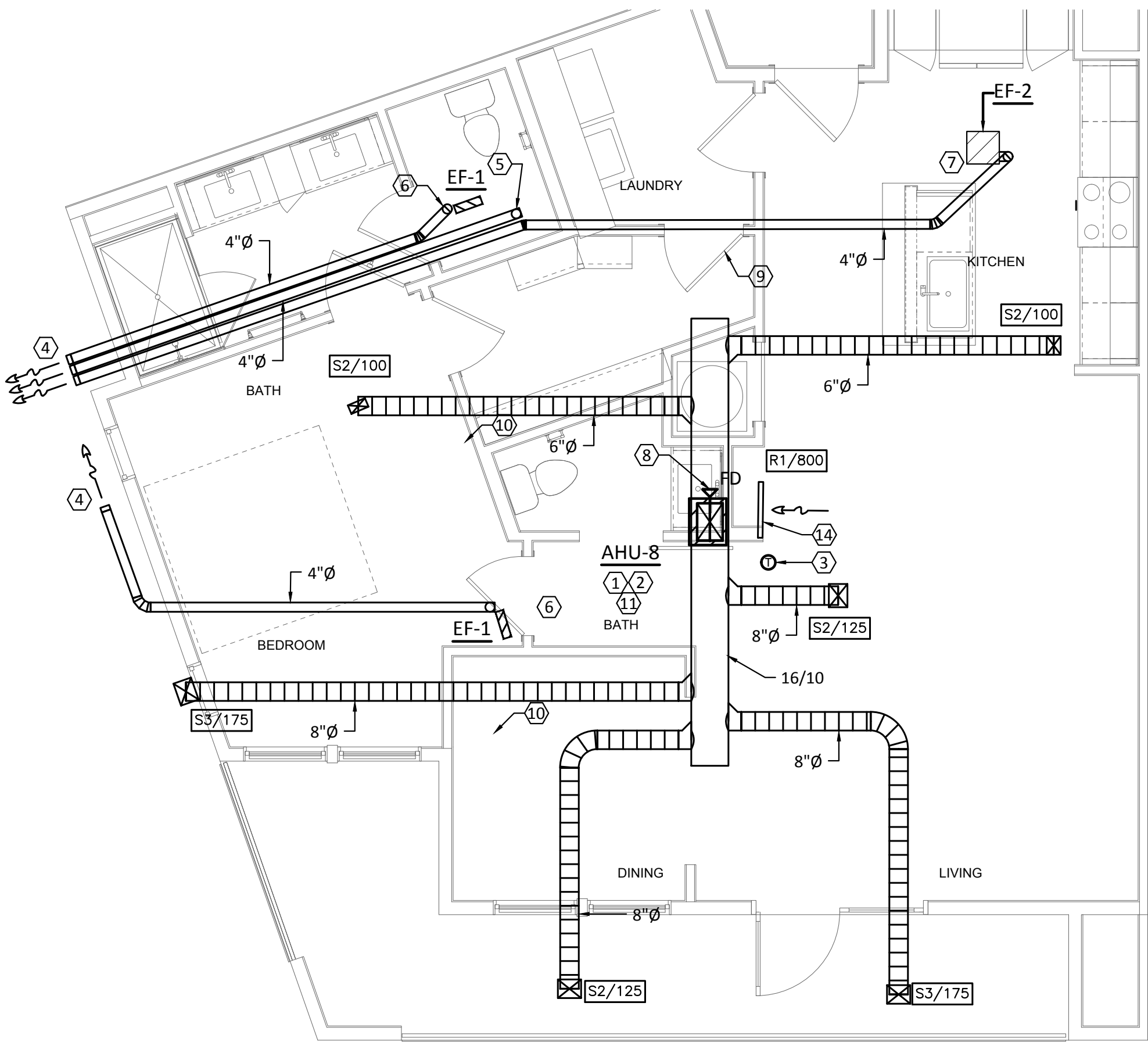
M204

GENERAL NOTES:

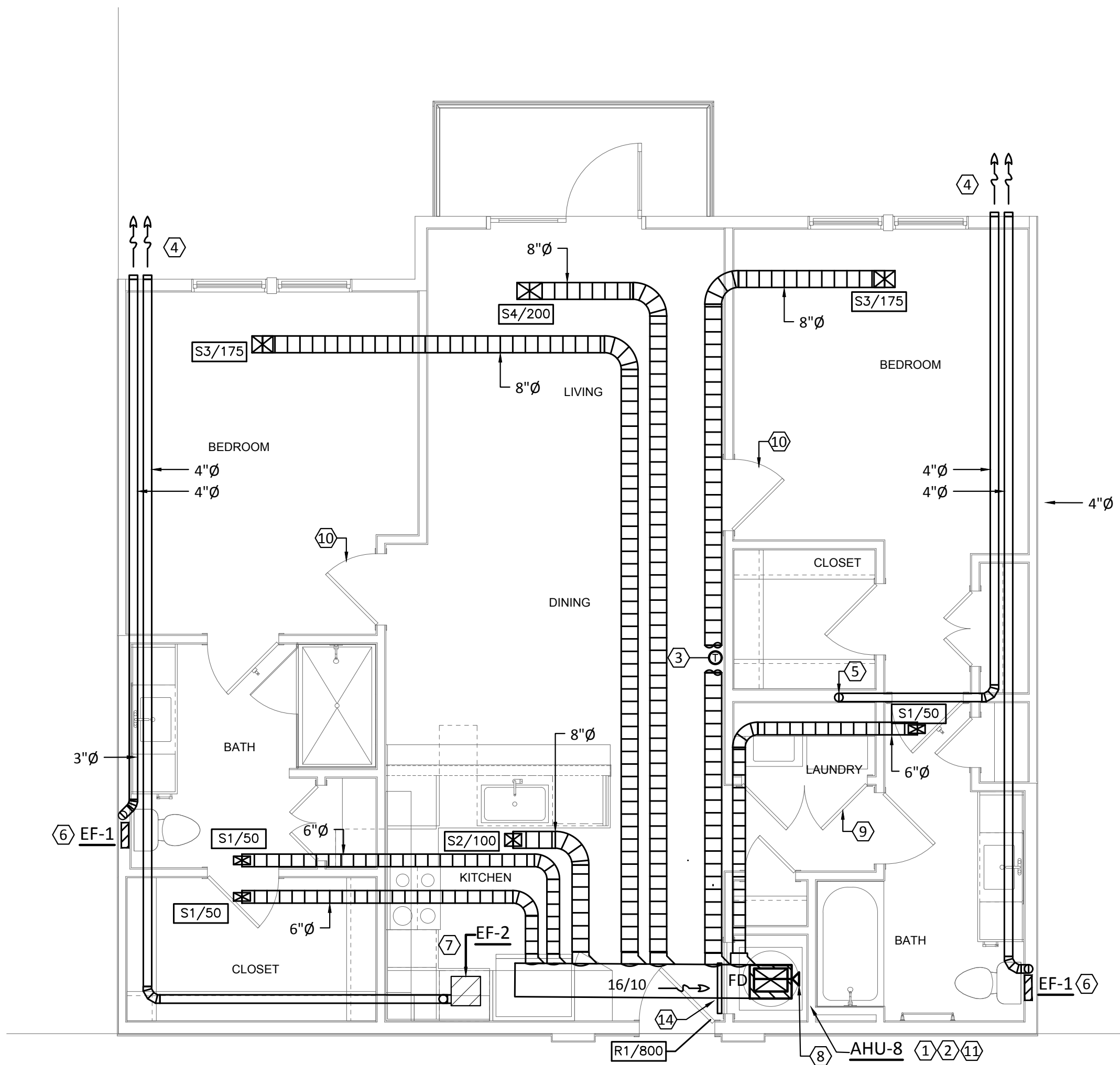
- REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.
- ALL MATERIALS LOCATED WITH PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
- PROVIDE RADIATION DAMPER AT ALL FIRE-RATED CEILING PENETRATIONS. REFER TO DETAIL 10/M601.
- ALL CLOTHES DRYERS SHALL BE PROVIDED BY OWNER. DRYER EXHAUST DUCT LENGTHS SHALL MEET MAXIMUM TOTAL ALLOWED DEVELOPED LENGTH FROM MANUFACTURER REQUIREMENTS. REFER TO SHEET M401 FOR DRYER DUCT LENGTH TABLE.
- APPLICABLE ONLY TO THIRD FLOOR. DROP DOWN OUTSIDE AIR DUCTS AND EXHAUST AIR DUCTS FROM THIRD FLOOR TO SECOND FLOOR TRUSSES. EXTEND TO LOUVER AT EXTERIOR WALL.

KEYED NOTES:

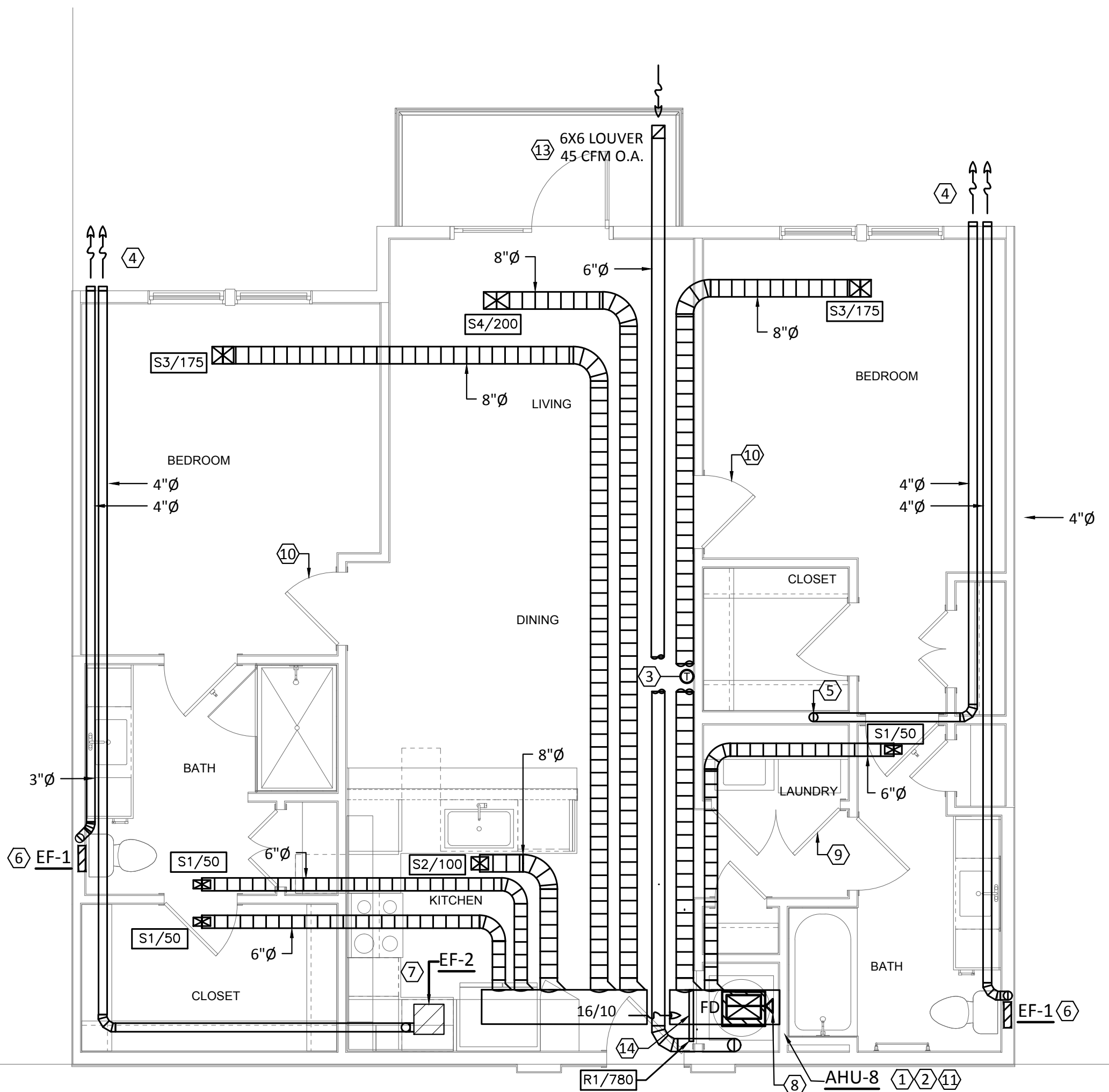
- WALL MOUNTED VERTICAL AIR HANDLER UNIT. FILTER TRAY MUST BE ACCESSIBLE. ROUTE PRIMARY CONDENSATE DRAIN TO HUB DRAIN IN HVAC CLOSET. MAINTAIN 1" AIR GAP ABOVE HUB DRAIN. PROVIDE AND INSTALL ELECTRONIC FLOAT SWITCH ON AUXILIARY CONDENSATE DRAIN. REFER TO DETAIL 5/M602. CONNECT LOW-VOLTAGE WIRING PER MANUFACTURERS RECOMMENDATIONS. COORDINATE WITH PLUMBING CONTRACTOR THE HUB DRAIN LOCATION PRIOR TO COMMENCING WORK. REFER TO DETAIL 4/M603.
- MERV 7 OR GREATER AIR FILTER SHALL BE INSTALLED IN FILTER TRAY LOCATED AT BOTTOM OF AIR HANDLER UNIT. INSTALL PER MANUFACTURERS RECOMMENDATIONS. FILTER MUST BE EASILY ACCESSIBLE.
- PROVIDE AND INSTALL PROGRAMMABLE THERMOSTAT ON WALL AT 48" A.F.F. CONFIRM EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- WALL CAPS WITH GRAVITY DAMPER AND 1/4" GALVANIZED BIRDSCREEN MESH.
- 4"Ø DRYER DUCT UP TO TRUSS/JOIST SPACE FROM DRYER BOX IN 2x6 NON-RATED WALL. EXTEND TO EXTERIOR WALL. PROVIDE INSULATION ON LAST 5' OF EXHAUST DUCT. SLOPE TO EXTERIOR. TERMINATE AT WALL CAP. PROVIDE GRAVITY BACKDRAFT DAMPER. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAILS 2/M601. PROVIDE DRYER BOX, "NEW CONSTRUCTION SOLUTIONS" #DBXMBT4 FOR 2x4 WALLS AND #DBXMBT6 FOR 2x6 WALLS OR EQUAL. REFER TO DETAIL 6/M601.
- 3"Ø BATHROOM EXHAUST DUCT UP THRU WALL CAVITY. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAILS 7/M601.
- 3"Ø CEILING MOUNTED KITCHEN EXHAUST FAN. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAIL 7/M601. PROVIDE FIRE-RATED BOX AT CEILING PENETRATION.
- PROVIDE AND INSTALL FIRE DAMPER AT PENETRATION OF CEILING FIRE-RATED ASSEMBLY. PROVIDE AND LABEL ACCESS PANEL IN THE SUPPLY DUCT IN MECHANICAL CLOSET. REFER TO DETAIL 1/M601. REFER TO DETAIL 10/M601 FOR CEILING RADIATION DAMPERS LOCATED AT EACH AIR DEVICE.
- PROVIDE 100 SQUARE INCHES FREE AREA VENT AT UTILITY ROOMS FOR CLOTHS DRYER MAKE-UP AIR. REFER TO DETAIL 5/M601.
- UNDERCUT DOORS A MINIMUM OF 1-1/2" FOR RETURN AIR PATH.
- PROVIDE ID TAG FOR EACH APARTMENT AIR HANDLER UNIT. THE ID TAG WILL BE THE APARTMENT NUMBER. REFER TO THE ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.
- INSTALL LOW PROFILE LOUVER FOR OUTSIDE AIR. MAINTAIN 10' MINIMUM CLEARANCE FROM EXHAUST VENTS AND PLUMBING VENTS. PROVIDE MANUAL BALANCING DAMPER.
- INSTALL OUTDOOR AIR LOUVER IN BALCONY SOFFIT. MAINTAIN 10' CLEARANCE FROM ALL EXHAUST VENTS.
- INSTALL RETURN AIR GRILLE ABOVE MECHANICAL CLOSET DOOR.



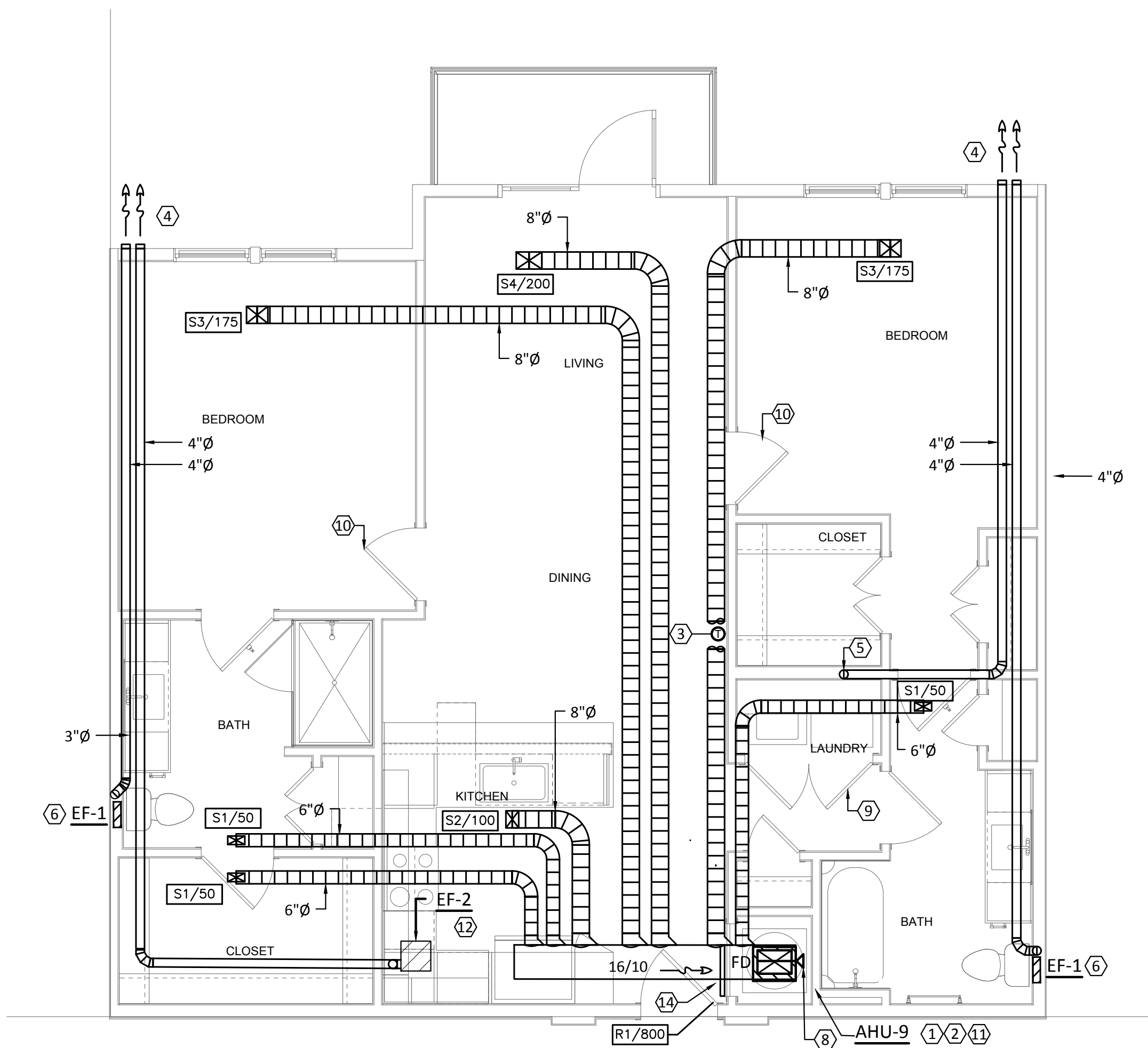
1 MECHANICAL - UNIT TYPE A7  
SCALE: 1/4"=1'-0"



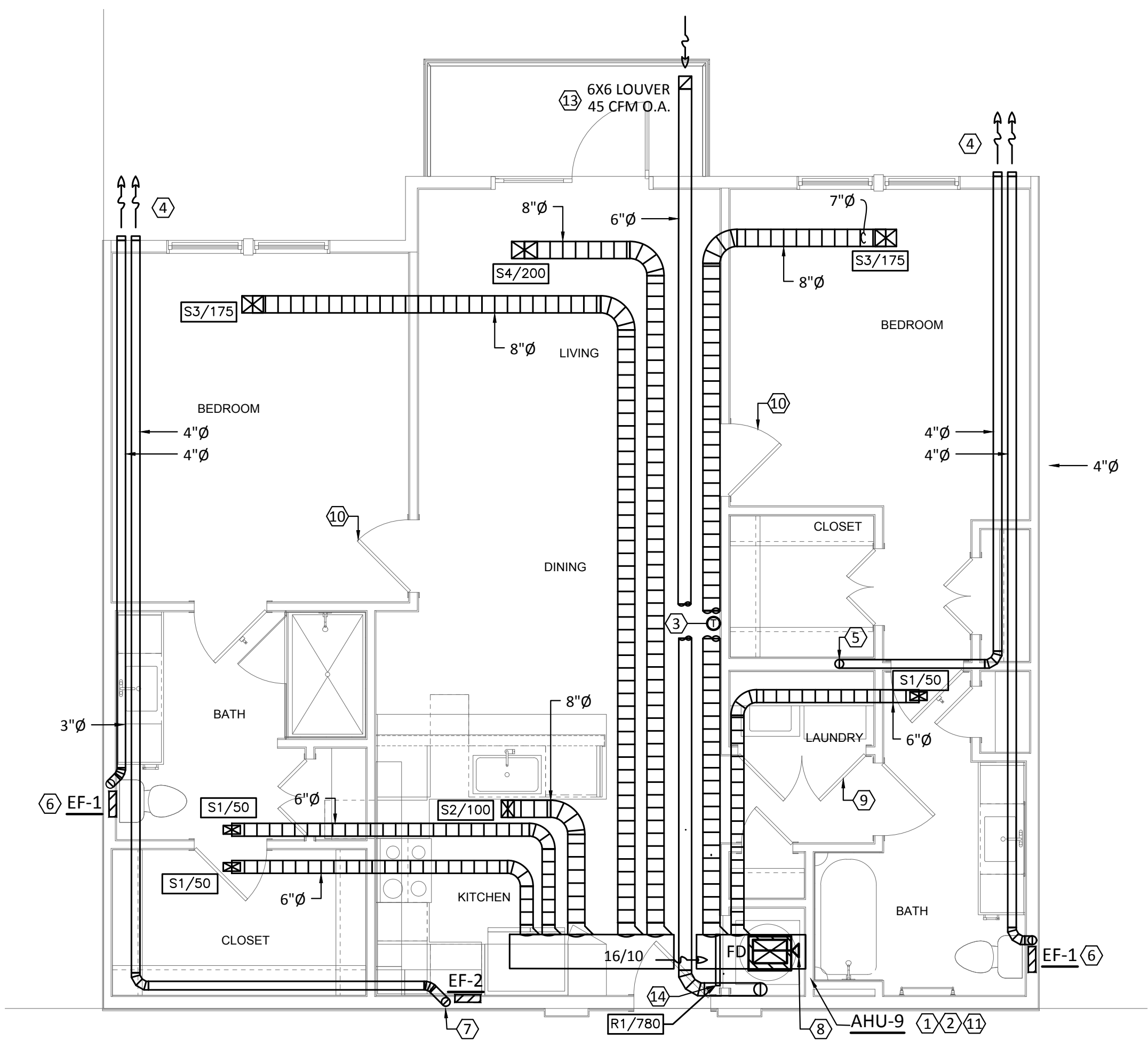
2 MECHANICAL - UNIT TYPE B1  
SCALE: 1/4"=1'-0"



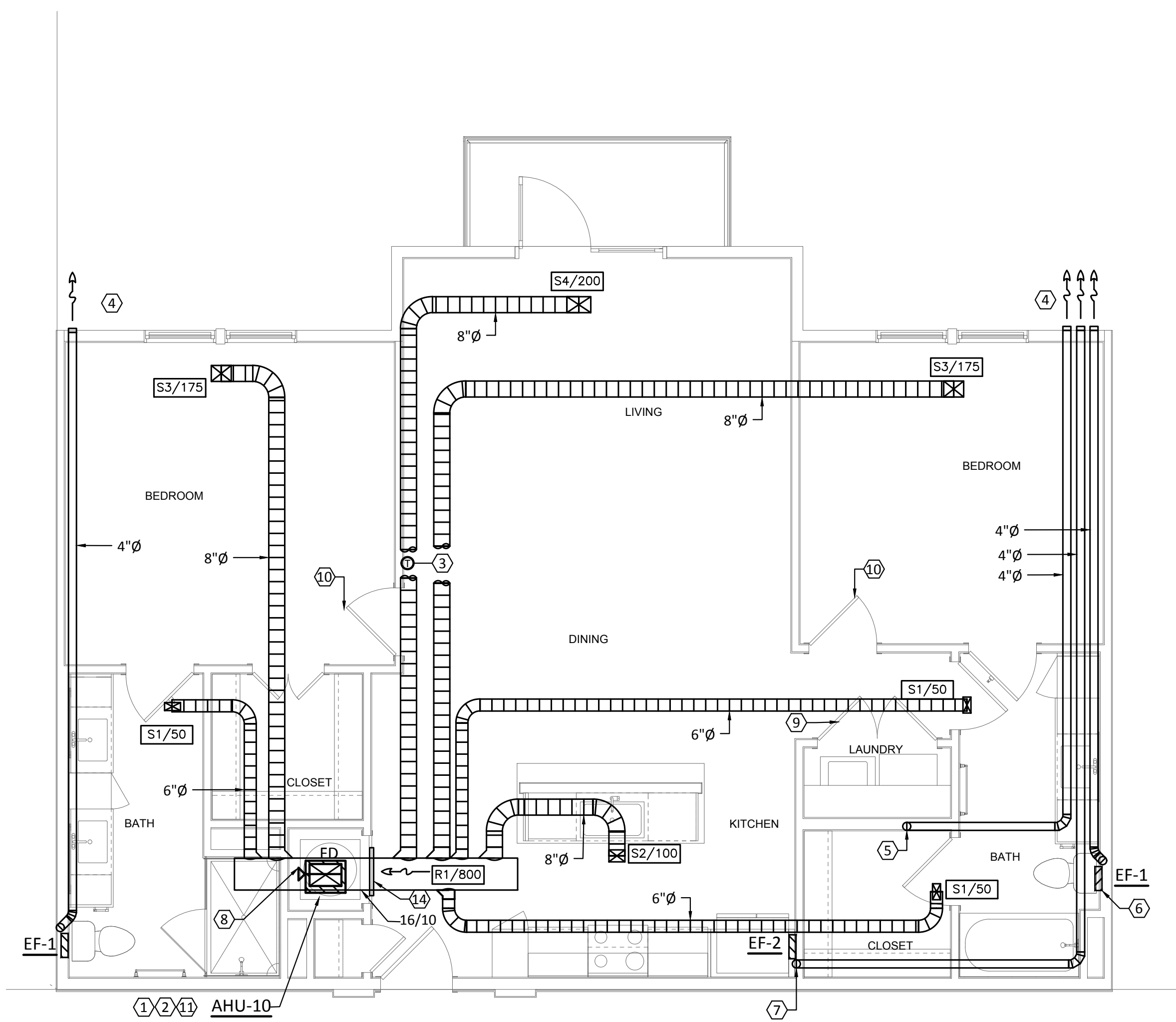
3 MECHANICAL - UNIT TYPE B1  
(BUILDING I POOL COURTYARD & BUILDING II)  
SCALE: 1/4"=1'-0"



**1 MECHANICAL - UNIT TYPE B2**  
SCALE: 1/4"=1'-0"



**2 MECHANICAL - UNIT TYPE B2 (BUILDING II)**  
SCALE: 1/4"=1'-0"



**3 MECHANICAL - UNIT TYPE B3**  
SCALE: 1/4"=1'-0"

**GENERAL NOTES:**

- REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.
- ALL MATERIALS LOCATED WITH PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
- PROVIDE RADIATION DAMPER AT ALL FIRE-RATED CEILING PENETRATIONS. REFER TO DETAIL 10/M601.
- ALL CLOTHES DRYERS SHALL BE PROVIDED BY OWNER. DRYER EXHAUST DUCT LENGTHS SHALL MEET MAXIMUM TOTAL ALLOWED DEVELOPED LENGTH FROM MANUFACTURER REQUIREMENTS. REFER TO SHEET M401 FOR DRYER DUCT LENGTH TABLE.
- APPLICABLE ONLY TO THIRD FLOOR. DROP DOWN OUTSIDE AIR DUCTS AND EXHAUST AIR DUCTS FROM THIRD FLOOR TO SECOND FLOOR TRUSSES. EXTEND TO LOUVER AT EXTERIOR WALL.

**KEYED NOTES:**

- WALL MOUNTED VERTICAL AIR HANDLER UNIT. FILTER TRAY MUST BE ACCESSIBLE. ROUTE PRIMARY CONDENSATE DRAIN TO HUB DRAIN IN HVAC CLOSET. MAINTAIN 1" AIR GAP ABOVE HUB DRAIN. PROVIDE AND INSTALL ELECTRONIC FLOAT SWITCH ON AUXILIARY CONDENSATE DRAIN. REFER TO DETAIL 5/M602. CONNECT LOW-VOLTAGE WIRING PER MANUFACTURERS RECOMMENDATIONS. COORDINATE WITH PLUMBING CONTRACTOR THE HUB DRAIN LOCATION PRIOR TO COMMENCING WORK. REFER TO DETAIL 4/M603.
- MERV 7 OR GREATER AIR FILTER SHALL BE INSTALLED IN FILTER TRAY LOCATED AT BOTTOM OF AIR HANDLER UNIT. INSTALL PER MANUFACTURERS RECOMMENDATIONS. FILTER MUST BE EASILY ACCESSIBLE.
- PROVIDE AND INSTALL PROGRAMMABLE THERMOSTAT ON WALL AT 48" A.F.F. CONFIRM EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- WALL CAPS WITH GRAVITY DAMPER AND 1/4" GALVANIZED BIRDSCREEN MESH.
- 4"Ø DRYER DUCT UP TO TRUSS/JOIST SPACE FROM DRYER BOX IN 2x6 NON-RATED WALL. EXTEND TO EXTERIOR WALL. PROVIDE INSULATION ON LAST 5' OF EXHAUST DUCT. SLOPE TO EXTERIOR. TERMINATE AT WALL CAP. PROVIDE GRAVITY BACKDRAFT DAMPER. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAILS 2/M601. PROVIDE DRYER BOX, "NEW CONSTRUCTION SOLUTIONS" #DBXMBT4 FOR 2x4 WALLS AND #DBXMBT6 FOR 2x6 WALLS OR EQUAL. REFER TO DETAIL 6/M601.
- 3"Ø BATHROOM EXHAUST DUCT UP THRU WALL CAVITY. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAILS 7/M601.
- 3"Ø KITCHEN EXHAUST DUCT UP THRU WALL CAVITY. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAIL 7/M601.
- PROVIDE AND INSTALL FIRE DAMPER AT PENETRATION OF CEILING FIRE-RATED ASSEMBLY. PROVIDE AND LABEL ACCESS PANEL IN THE SUPPLY DUCT IN MECHANICAL CLOSET. REFER TO DETAIL 1/M601. REFER TO DETAIL 10/M601 FOR CEILING RADIATION DAMPERS LOCATED AT EACH AIR DEVICE.
- PROVIDE 100 SQUARE INCHES FREE AREA VENT AT UTILITY ROOMS FOR CLOTHS DRYER MAKE-UP AIR. REFER TO DETAIL 5/M601.
- UNDERCUT DOORS A MINIMUM OF 1-1/2" FOR RETURN AIR PATH.
- PROVIDE ID TAG FOR EACH APARTMENT AIR HANDLER UNIT. THE ID TAG WILL BE THE APARTMENT NUMBER. REFER TO THE ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.
- 3"Ø CEILING MOUNTED KITCHEN EXHAUST FAN. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAIL 7/M601. PROVIDE FIRE-RATED BOX AT CEILING PENETRATION.
- INSTALL OUTDOOR AIR LOUVER IN BALCONY SOFFIT. MAINTAIN 10' CLEARANCE FROM ALL EXHAUST VENTS.
- INSTALL RETURN AIR GRILLE ABOVE MECHANICAL CLOSET DOOR.

**Structural Engineer:**

VIEWTECH INC.  
4205 Bellway Dr. Addison, TX 75001  
Victor Lisjak III  
972.661.8187

**MEP Engineer:**

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

**Civil Engineer:**

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

**Landscape Architect:**

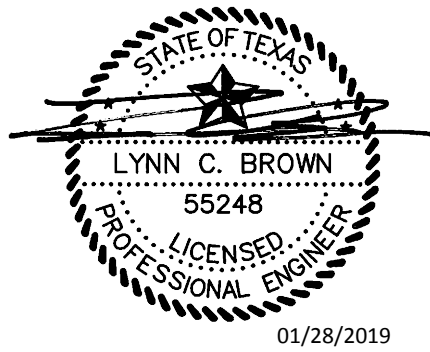
LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

**Interior Designer:**

S.J.L Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS		
	PERMIT REVIEW 03	11.08.2016



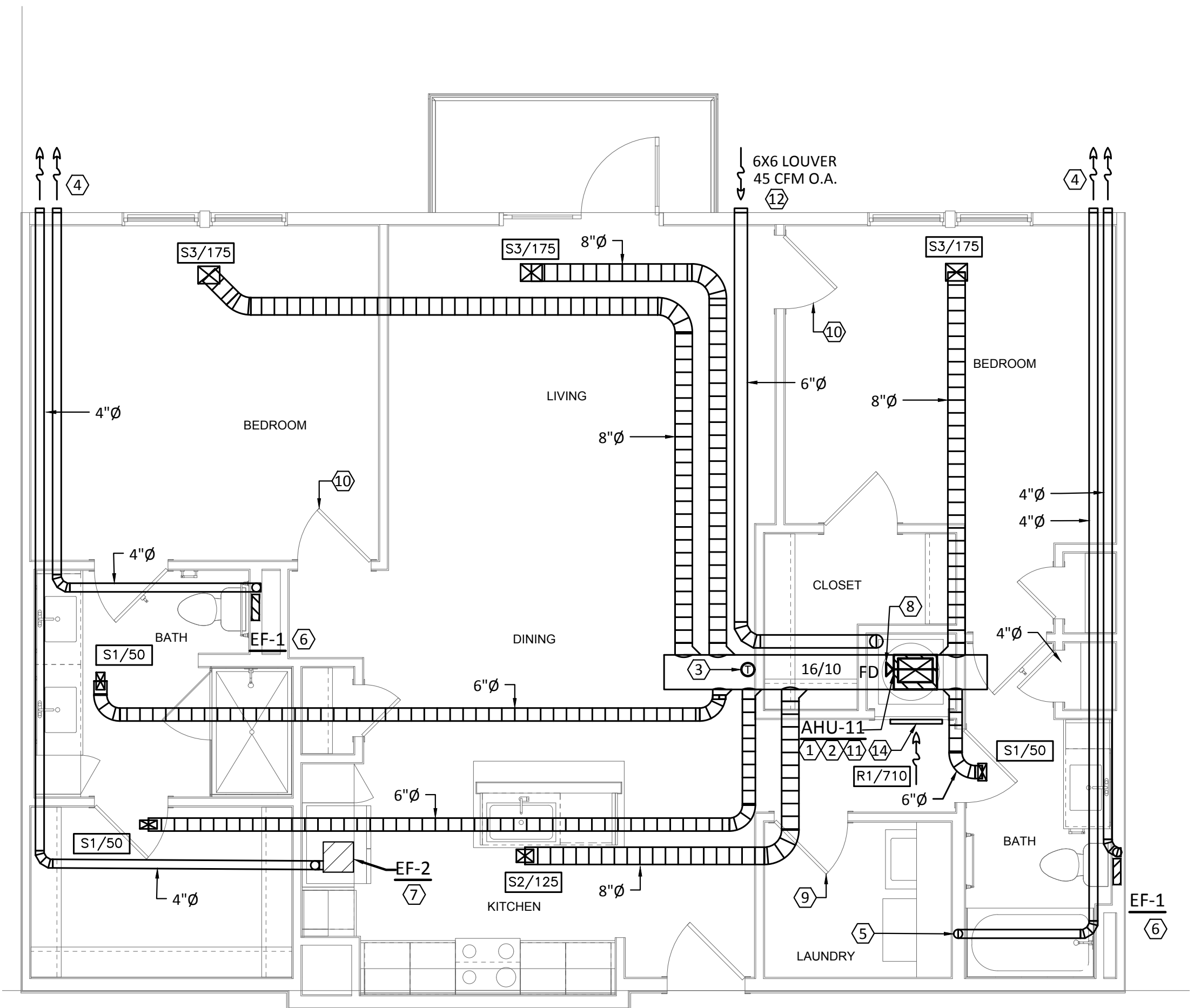
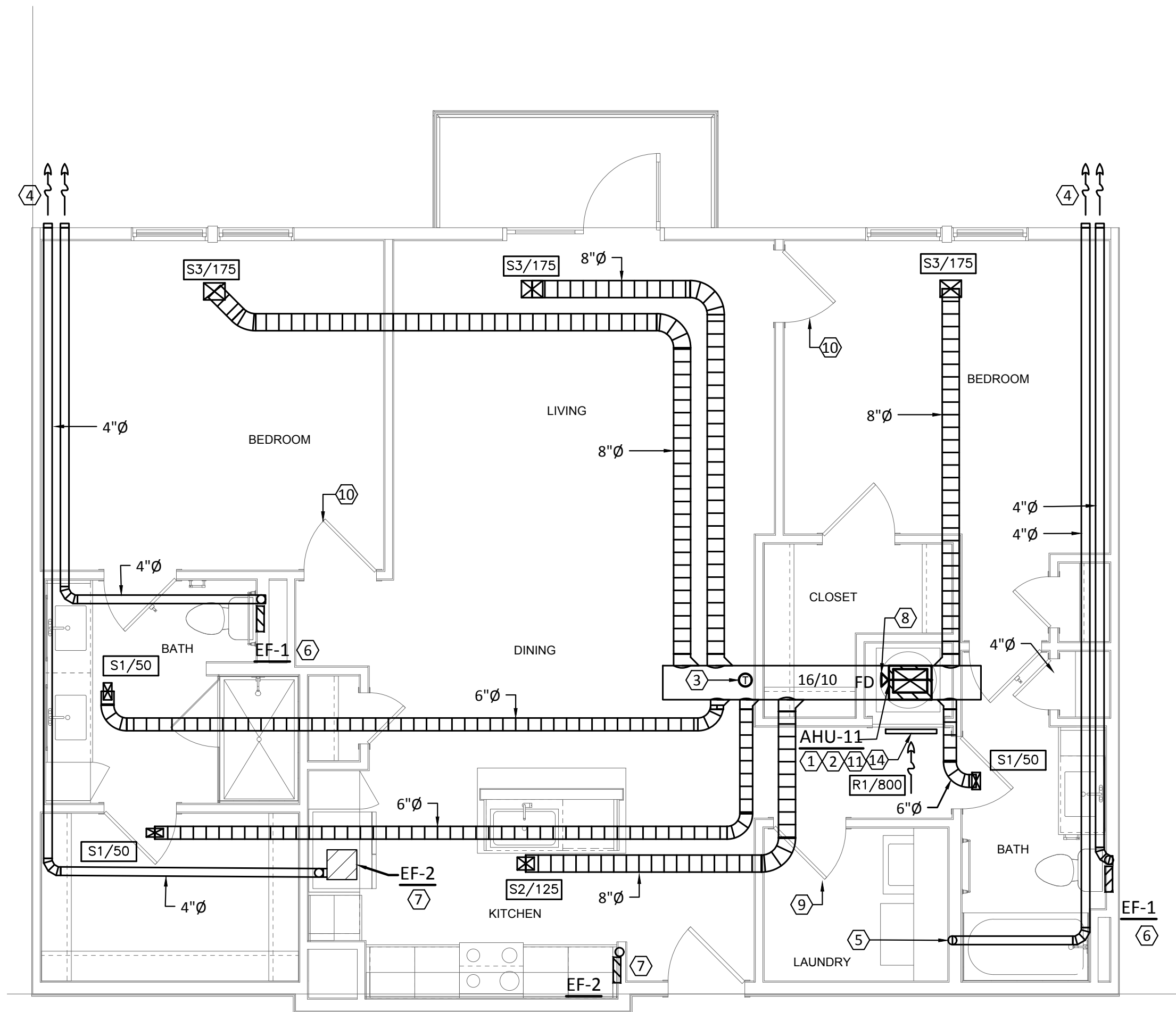
a multifamily project for  
NRP Group

**West Cevallos**  
San Antonio, Texas

**MECHANICAL  
UNIT B2 & B3**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

**M205**

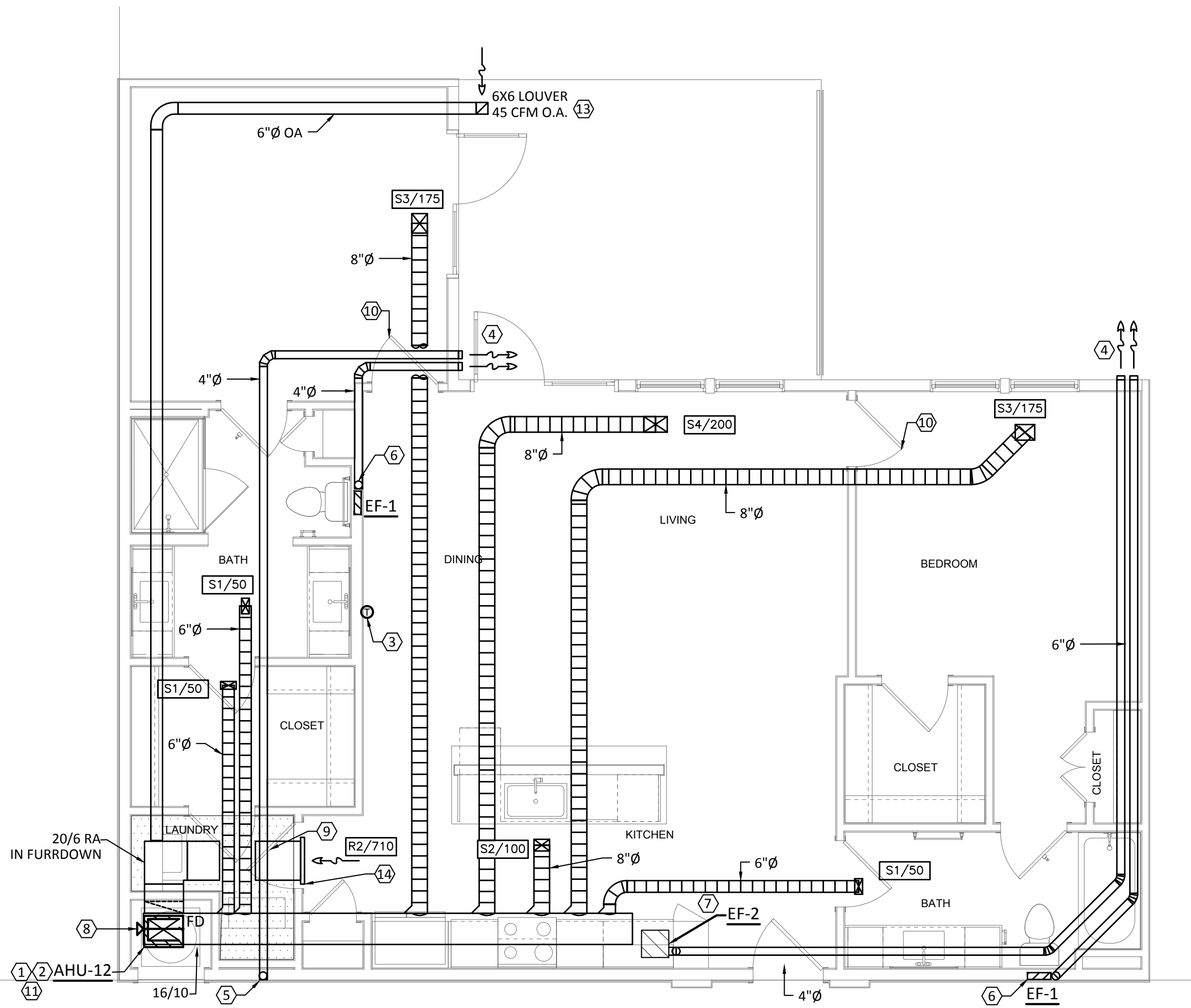
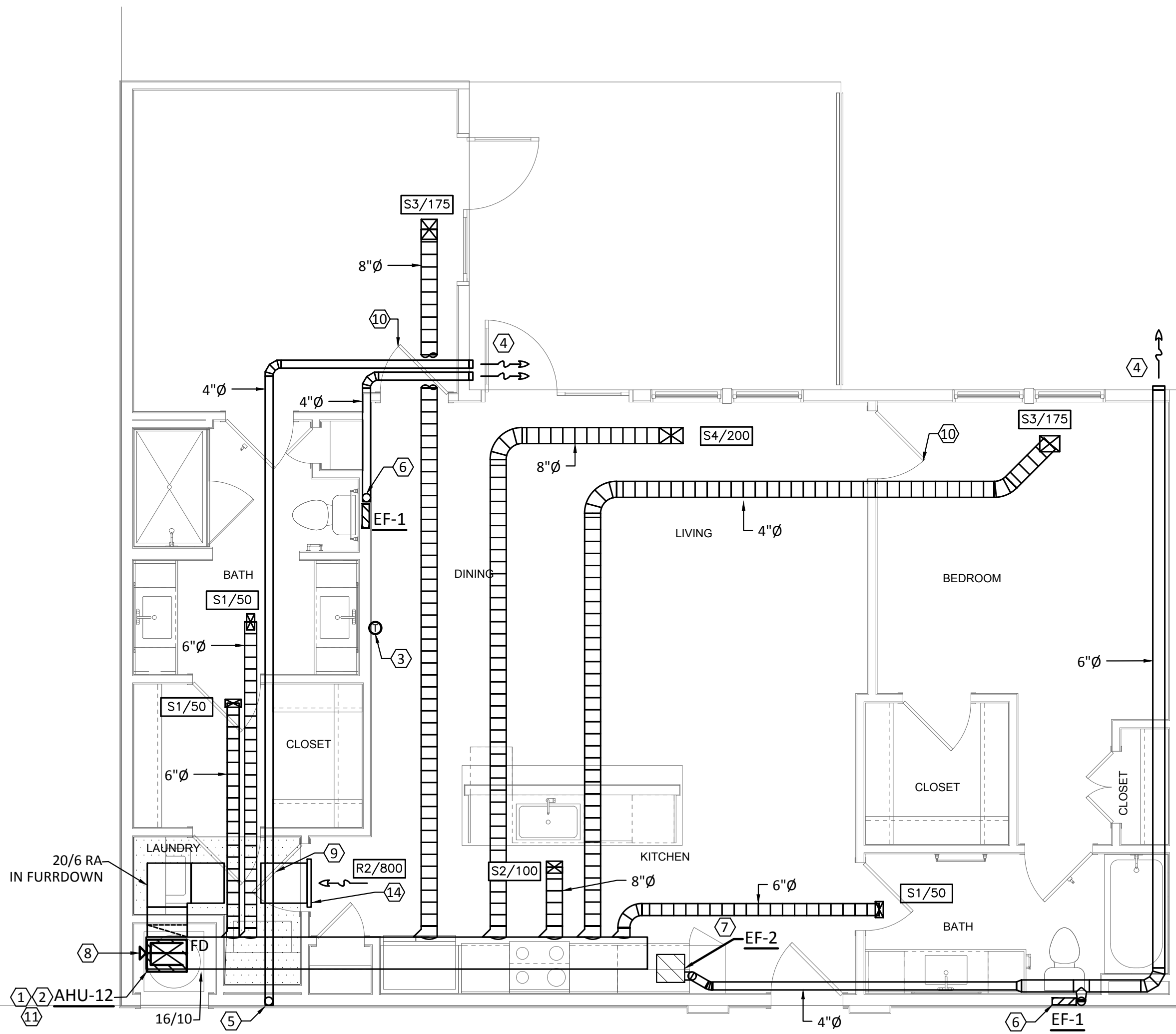


#### GENERAL NOTES:

- REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.
- ALL MATERIALS LOCATED WITH PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
- PROVIDE RADIATION DAMPER AT ALL FIRE-RATED CEILING PENETRATIONS. REFER TO DETAIL 10/M601.
- ALL CLOTHES DRYERS SHALL BE PROVIDED BY OWNER. DRYER EXHAUST DUCT LENGTHS SHALL MEET MAXIMUM TOTAL ALLOWED DEVELOPED LENGTH FROM MANUFACTURER REQUIREMENTS. REFER TO SHEET M401 FOR DRYER DUCT LENGTH TABLE.
- APPLICABLE ONLY TO THIRD FLOOR, DROP DOWN OUTSIDE AIR DUCTS AND EXHAUST AIR DUCTS FROM THIRD FLOOR TO SECOND FLOOR TRUSSES. EXTEND TO LOUVER AT EXTERIOR WALL.

#### KEYED NOTES:

- WALL MOUNTED VERTICAL AIR HANDLER UNIT. FILTER TRAY MUST BE ACCESSIBLE. ROUTE PRIMARY CONDENSATE DRAIN TO HUB DRAIN IN HVAC CLOSET. MAINTAIN 1" AIR GAP ABOVE HUB DRAIN. PROVIDE AND INSTALL ELECTRONIC FLOAT SWITCH ON AUXILIARY CONDENSATE DRAIN. REFER TO DETAIL 5/M602. CONNECT LOW-VOLTAGE WIRING PER MANUFACTURERS RECOMMENDATIONS. COORDINATE WITH PLUMBING CONTRACTOR THE HUB DRAIN LOCATION PRIOR TO COMMENCING WORK. REFER TO DETAIL 4/M603.
- MERV 7 OR GREATER AIR FILTER SHALL BE INSTALLED IN FILTER TRAY LOCATED AT BOTTOM OF AIR HANDLER UNIT. INSTALL PER MANUFACTURERS RECOMMENDATIONS. FILTER MUST BE EASILY ACCESSIBLE.
- PROVIDE AND INSTALL PROGRAMMABLE THERMOSTAT ON WALL AT 48" A.F.F. CONFIRM EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- WALL CAPS WITH GRAVITY DAMPER AND 1/4" GALVANIZED BIRDSCREEN MESH.
- 4"Ø DRYER DUCT UP TO TRUSS/JOIST SPACE FROM DRYER BOX IN 2x6 NON-RATED WALL. EXTEND TO EXTERIOR WALL. PROVIDE INSULATION ON LAST 5' OF EXHAUST DUCT. SLOPE TO EXTERIOR. TERMINATE AT WALL CAP. PROVIDE GRAVITY BACKDRAFT DAMPER. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAILS 2/M601. PROVIDE DRYER BOX "NEW CONSTRUCTION SOLUTIONS" #DBXMBT4 FOR 2x4 WALLS AND #DBXMBT6 FOR 2x6 WALLS OR EQUAL. REFER TO DETAIL 6/M601.
- 3"Ø BATHROOM EXHAUST DUCT UP THRU WALL CAVITY. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAILS 7/M601.
- 3"Ø CEILING MOUNTED KITCHEN EXHAUST FAN. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAIL 7/M601. PROVIDE FIRE-RATED BOX AT CEILING PENETRATION.
- PROVIDE AND INSTALL FIRE DAMPER AT PENETRATION OF CEILING FIRE-RATED ASSEMBLY. PROVIDE AND LABEL ACCESS PANEL IN THE SUPPLY DUCT IN MECHANICAL CLOSET. REFER TO DETAIL 1/M601. REFER TO DETAIL 10/M601 FOR CEILING RADIATION DAMPERS LOCATED AT EACH AIR DEVICE.
- PROVIDE 100 SQUARE INCHES FREE AREA VENT AT UTILITY ROOMS FOR CLOTHES DRYER MAKE-UP AIR. REFER TO DETAIL 5/M601.
- UNDERCUT DOORS A MINIMUM OF 1-1/2" FOR RETURN AIR PATH.
- PROVIDE ID TAG FOR EACH APARTMENT AIR HANDLER UNIT. THE ID TAG WILL BE THE APARTMENT NUMBER. REFER TO THE ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.
- INSTALL LOW PROFILE LOUVER FOR OUTSIDE AIR. MAINTAIN 10' MINIMUM CLEARANCE FROM EXHAUST VENTS AND PLUMBING VENTS. PROVIDE MANUAL BALANCING DAMPER.
- INSTALL OUTDOOR AIR LOUVER IN BALCONY SOFFIT. MAINTAIN 10' CLEARANCE FROM ALL EXHAUST VENTS.
- INSTALL RETURN AIR GRILLE ABOVE MECHANICAL CLOSET DOOR.



#### Structural Engineer:

VIEWTECH INC.  
4205 Bellway Dr. Addison, TX 75001  
Victor Lisjak III  
972.661.8187

#### MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

#### Civil Engineer:

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

#### Landscape Architect:

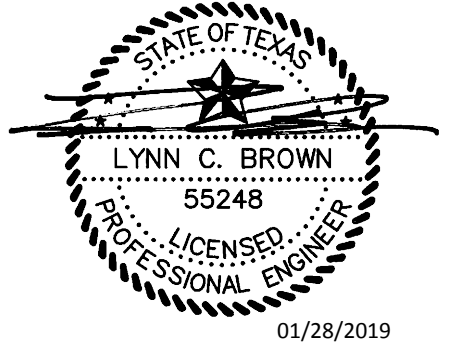
LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

#### Interior Designer:

SJL Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS		
	PERMIT REVIEW 03	11.08.2016



a multifamily project for  
NRP Group

**West Cevallos**  
San Antonio, Texas

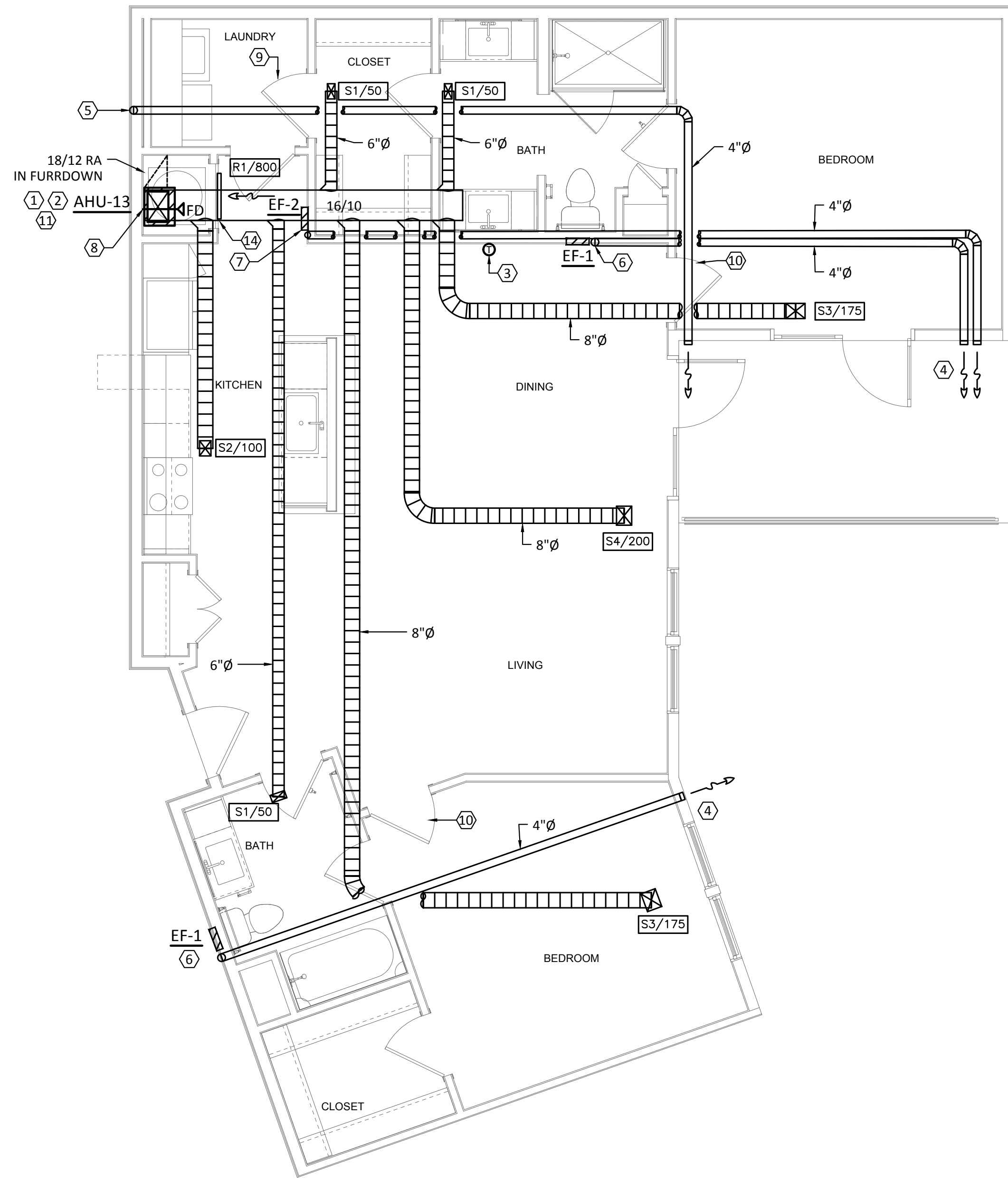
#### MECHANICAL UNIT B4 & B5

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

**M206**

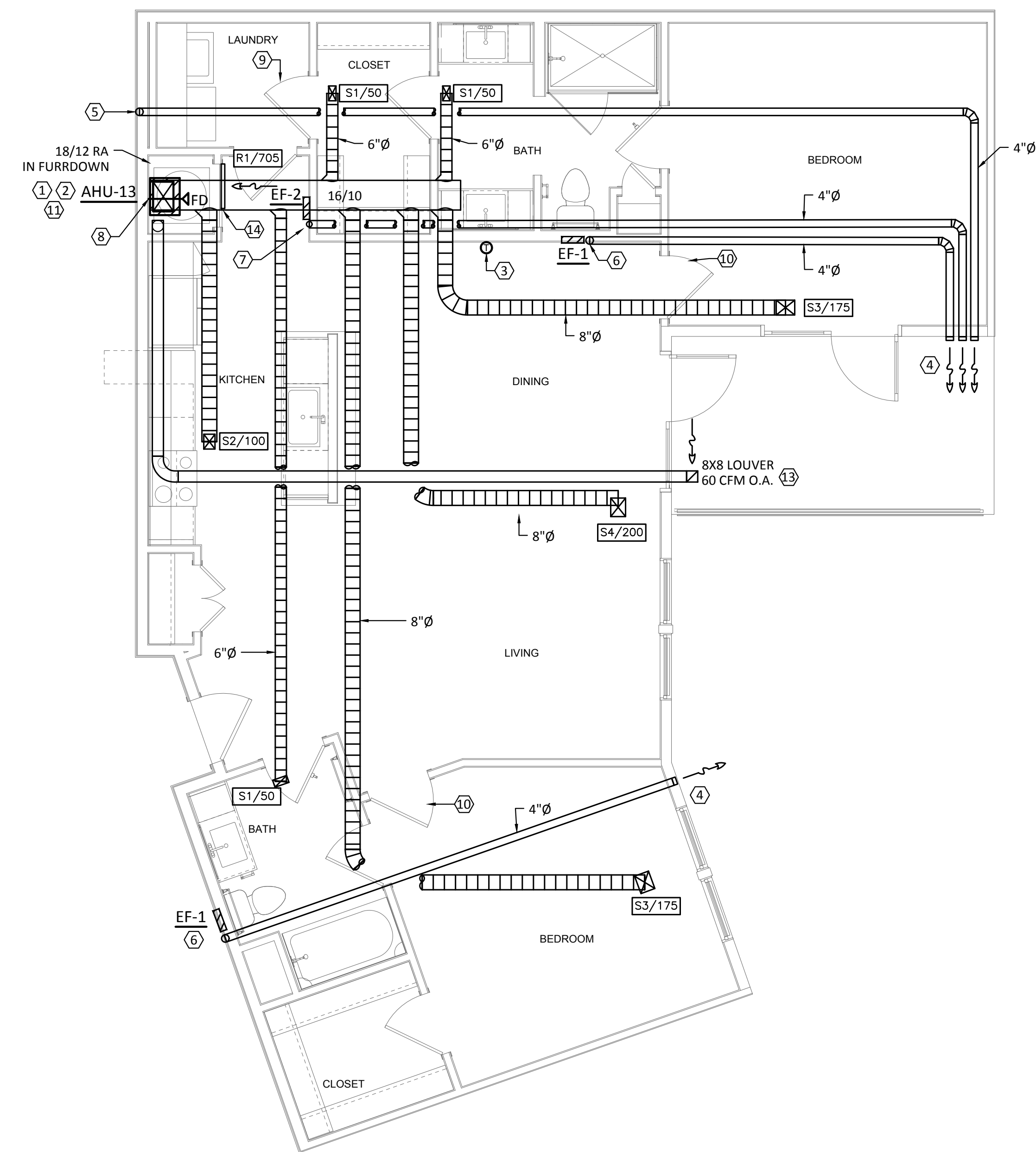


I B6



1 MECHANICAL - UNIT TYPE B6  
SCALE: 1/4"=1'-0"

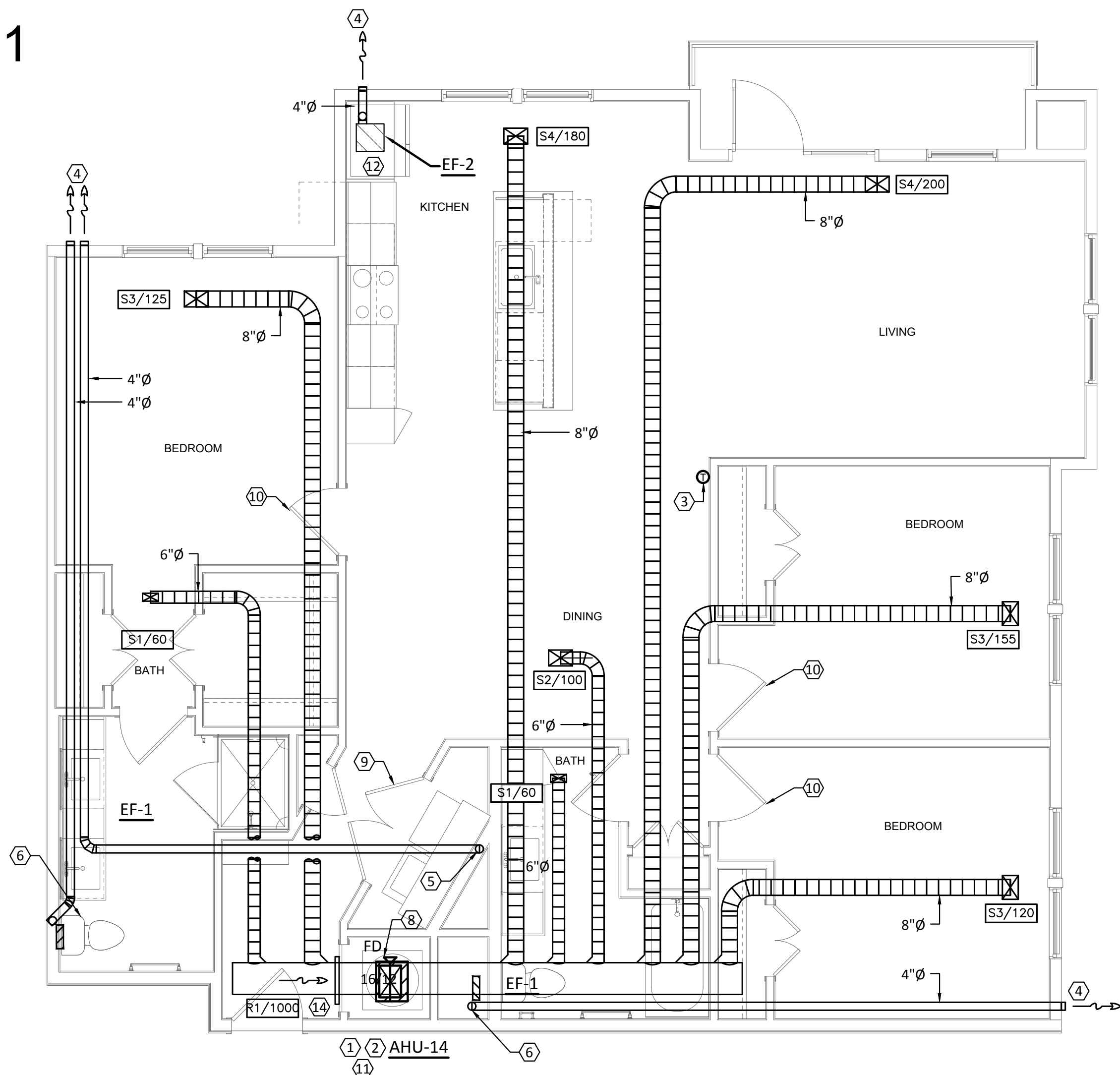
T B6



1 MECHANICAL - UNIT TYPE B6  
(BUILDING I POOL COURTYARD)  
SCALE: 1/4"=1'-0"

- GENERAL NOTES:**
- A. REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.
  - B. ALL MATERIALS LOCATED WITH PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
  - C. PROVIDE RADIATION DAMPER AT ALL FIRE-RATED CEILING PENETRATIONS. REFER TO DETAIL 10/M601.
  - D. ALL CLOTHES DRYERS SHALL BE PROVIDED BY OWNER. DRYER EXHAUST DUCT LENGTHS SHALL MEET MAXIMUM TOTAL ALLOWED DEVELOPED LENGTH FROM MANUFACTURER REQUIREMENTS. REFER TO SHEET M401 FOR DRYER DUCT LENGTH TABLE.
  - E. APPLICABLE ONLY TO THIRD FLOOR, DROP DOWN OUTSIDE AIR DUCTS AND EXHAUST AIR DUCTS FROM THIRD FLOOR TO SECOND FLOOR TRUSSES. EXTEND TO LOUVER AT EXTERIOR WALL.
- KEYED NOTES:**
1. WALL MOUNTED VERTICAL AIR HANDLER UNIT. FILTER TRAY MUST BE ACCESSIBLE. ROUTE PRIMARY CONDENSATE DRAIN TO HUB DRAIN IN HVAC CLOSET. MAINTAIN 1" AIR GAP ABOVE HUB DRAIN. PROVIDE AND INSTALL ELECTRONIC FLOAT SWITCH ON AUXILIARY CONDENSATE DRAIN. REFER TO DETAIL 5/M602. CONNECT LOW-VOLTAGE WIRING PER MANUFACTURERS RECOMMENDATIONS. COORDINATE WITH PLUMBING CONTRACTOR THE HUB DRAIN LOCATION PRIOR TO COMMENCING WORK. REFER TO DETAIL 4/M603.
  2. MERV 7 OR GREATER AIR FILTER SHALL BE INSTALLED IN FILTER TRAY LOCATED AT BOTTOM OF AIR HANDLER UNIT. INSTALL PER MANUFACTURERS RECOMMENDATIONS. FILTER MUST BE EASILY ACCESSIBLE.
  3. PROVIDE AND INSTALL PROGRAMMABLE THERMOSTAT ON WALL AT 48" A.F.F. CONFIRM EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
  4. WALL CAPS WITH GRAVITY DAMPER AND 1/4" GALVANIZED BIRDSCREEN MESH.
  5. 4"Ø DRYER DUCT UP TO TRUSS/JOIST SPACE FROM DRYER BOX IN 2x6 NON-RATED WALL. EXTEND TO EXTERIOR WALL. PROVIDE INSULATION ON LAST 5' OF EXHAUST DUCT. SLOPE TO EXTERIOR. TERMINATE AT WALL CAP. PROVIDE GRAVITY BACKDRAFT DAMPER. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAILS 2/M601. PROVIDE DRYER BOX, "NEW CONSTRUCTION SOLUTIONS" #DBXMBT4 FOR 2x4 WALLS AND #DBXMBT6 FOR 2x6 WALLS OR EQUAL. REFER TO DETAIL 6/M601.
  6. 3"Ø BATHROOM EXHAUST DUCT UP THRU WALL CAVITY. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAILS 7/M601.
  7. 3"Ø KITCHEN EXHAUST DUCT UP THRU WALL CAVITY. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAIL 7/M601.
  8. PROVIDE AND INSTALL FIRE DAMPER AT PENETRATION OF CEILING FIRE-RATED ASSEMBLY. PROVIDE AND LABEL ACCESS PANEL IN THE SUPPLY DUCT IN MECHANICAL CLOSET. REFER TO DETAIL 1/M601. REFER TO DETAIL 10/M601 FOR CEILING RADIATION DAMPERS LOCATED AT EACH AIR DEVICE.
  9. PROVIDE 100 SQUARE INCHES FREE AREA VENT AT UTILITY ROOMS FOR CLOTHS DRYER MAKE-UP AIR. REFER TO DETAIL 5/M601.
  10. UNDERCUT DOORS A MINIMUM OF 1-1/2" FOR RETURN AIR PATH.
  11. PROVIDE ID TAG FOR EACH APARTMENT AIR HANDLER UNIT. THE ID TAG WILL BE THE APARTMENT NUMBER. REFER TO THE ARCHITECTURAL ADDRESSING PLAN FOR APARTMENT NUMBER.
  12. 3"Ø CEILING MOUNTED KITCHEN EXHAUST FAN. TRANSITION TO 4"Ø DUCT AND EXTEND EXHAUST DUCT THRU TRUSS/JOIST SPACE TO EXTERIOR WALL. SLOPE LAST 5' OF DUCT. TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. TERMINATE A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING. REFER TO DETAIL 7/M601. PROVIDE FIRE-RATED BOX AT CEILING PENETRATION.
  13. INSTALL OUTDOOR AIR LOUVER IN BALCONY SOFFIT. MAINTAIN 10' CLEARANCE FROM ALL EXHAUST VENTS.
  14. INSTALL RETURN AIR GRILLE ABOVE MECHANICAL CLOSET DOOR.

C1



2 MECHANICAL - UNIT TYPE C1  
SCALE: 1/4"=1'-0"



**Structural Engineer:**

VIEWTECH INC.  
4205 Bellway Dr. Addison, TX 75001  
Victor Lisjak III  
972.661.8187

**MEP Engineer:**

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

**Civil Engineer:**

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

**Landscape Architect:**

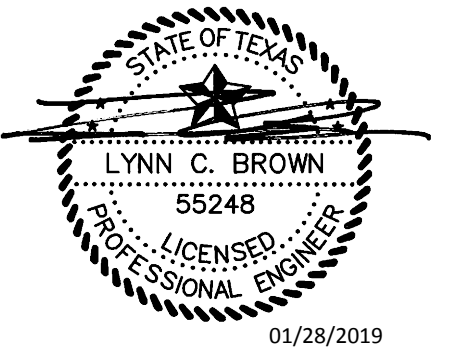
LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.545.8477

**Interior Designer:**

SJL Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS		
	PERMIT REVIEW 03	11.08.2016



a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

MECHANICAL  
UNIT B6 & C1

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

M207





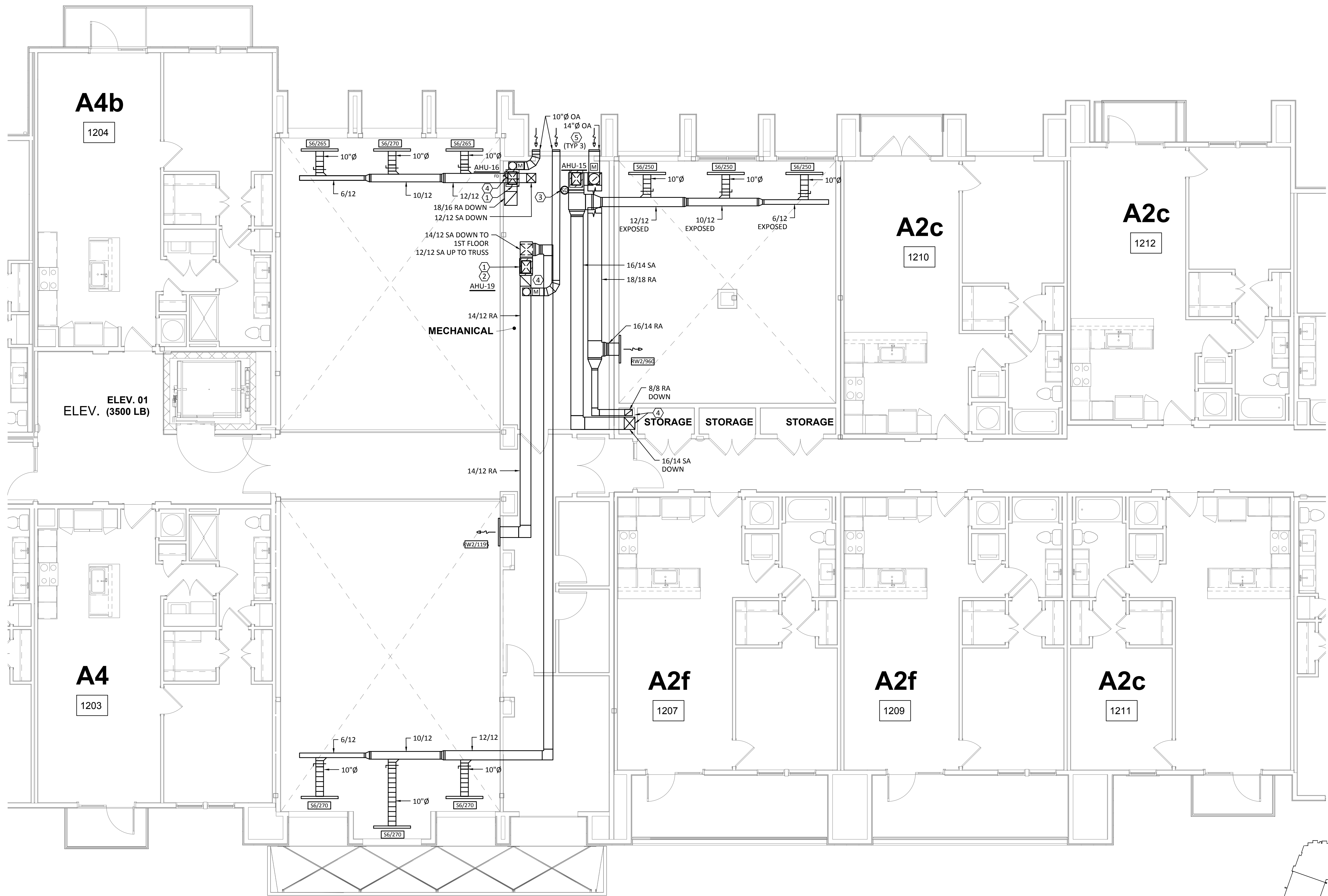


GENERAL NOTES:

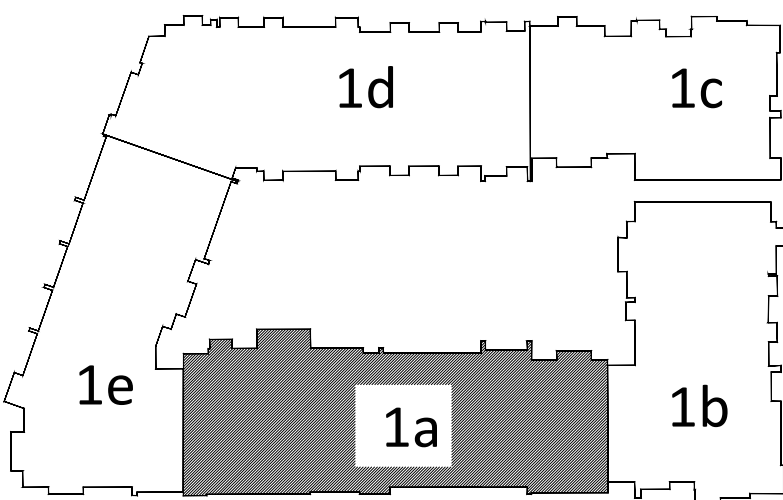
- A. REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.
- B. ALL MATERIALS LOCATED WITH PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
- C. PROVIDE RADIATION DAMPER AT ALL FIRE-RATED CEILING PENETRATIONS. REFER TO DETAIL 10/M601.
- D. PROVIDE THE RECOMMENDED CLEARANCE AROUND AIR HANDLER PER MANUFACTURER FOR MAINTENANCE OR REPLACEMENT.
- E. FLEX DUCT SHALL NOT EXCEED 5' IN LENGTH. PROVIDE RIGID ROUND DUCT TO MAIN SUPPLY TRUNK.

KEYED NOTES:

1. VERTICAL AIR HANDLER UNIT MOUNTED ON FLOOR. PROVIDE NEOPRENE VIBRATION ISOLATORS. FILTER TRAY MUST BE ACCESSIBLE. ROUTE PRIMARY CONDENSATE DRAIN TO HUB DRAIN IN HVAC CLOSET. MAINTAIN 1" AIR GAP ABOVE HUB DRAIN. PROVIDE AND INSTALL ELECTRONIC FLOAT SWITCH ON AUXILIARY CONDENSATE DRAIN. REFER TO DETAIL 5/M602. CONNECT LOW-VOLTAGE WIRING PER MANUFACTURERS RECOMMENDATIONS. COORDINATE WITH PLUMBING CONTRACTOR THE HUB DRAIN LOCATION PRIOR TO COMMENCING WORK. REFER TO DETAIL 4/M603.
2. MERV 7 OR GREATER AIR FILTER SHALL BE INSTALLED IN FILTER TRAY LOCATED AT BOTTOM OF AIR HANDLER UNIT. INSTALL PER MANUFACTURERS RECOMMENDATIONS. FILTER MUST BE EASILY ACCESSIBLE.
3. PROVIDE DUCT SMOKE DETECTOR IN SUPPLY AIR DUCT.
4. PROVIDE AND INSTALL FIRE DAMPER AT PENETRATION OF CEILING FIRE-RATED ASSEMBLY. PROVIDE AND LABEL ACCESS PANEL IN THE SUPPLY DUCT IN MECHANICAL CLOSET. REFER TO DETAIL 1/M601 FOR FIRE DAMPER AND DETAIL 10/M601 FOR CEILING RADIATION DAMPERS LOCATED AT EACH AIR DEVICE.
5. INSTALL LOW PROFILE LOUVER FOR OUTSIDE AIR. MAINTAIN 10" MINIMUM CLEARANCE FROM EXHAUST VENTS AND PLUMBING VENTS. PROVIDE MANUAL BALANCING DAMPER. REFER TO ARCHITECTURAL ELEVATIONS FOR INSTALLATION HEIGHTS.



**1** MECHANICAL - COMMUNITY CENTER - 2ND FLOOR  
SCALE: 3/16"=1'-0"



KEY PLAN  
N.T.S.

Structural Engineer:

VIEWTECH INC.  
4205 Beltway Dr. Addison, TX 75001  
Victor Lisiek III  
972.661.8187

MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

Civil Engineer:

MBC & Associates, Inc.  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

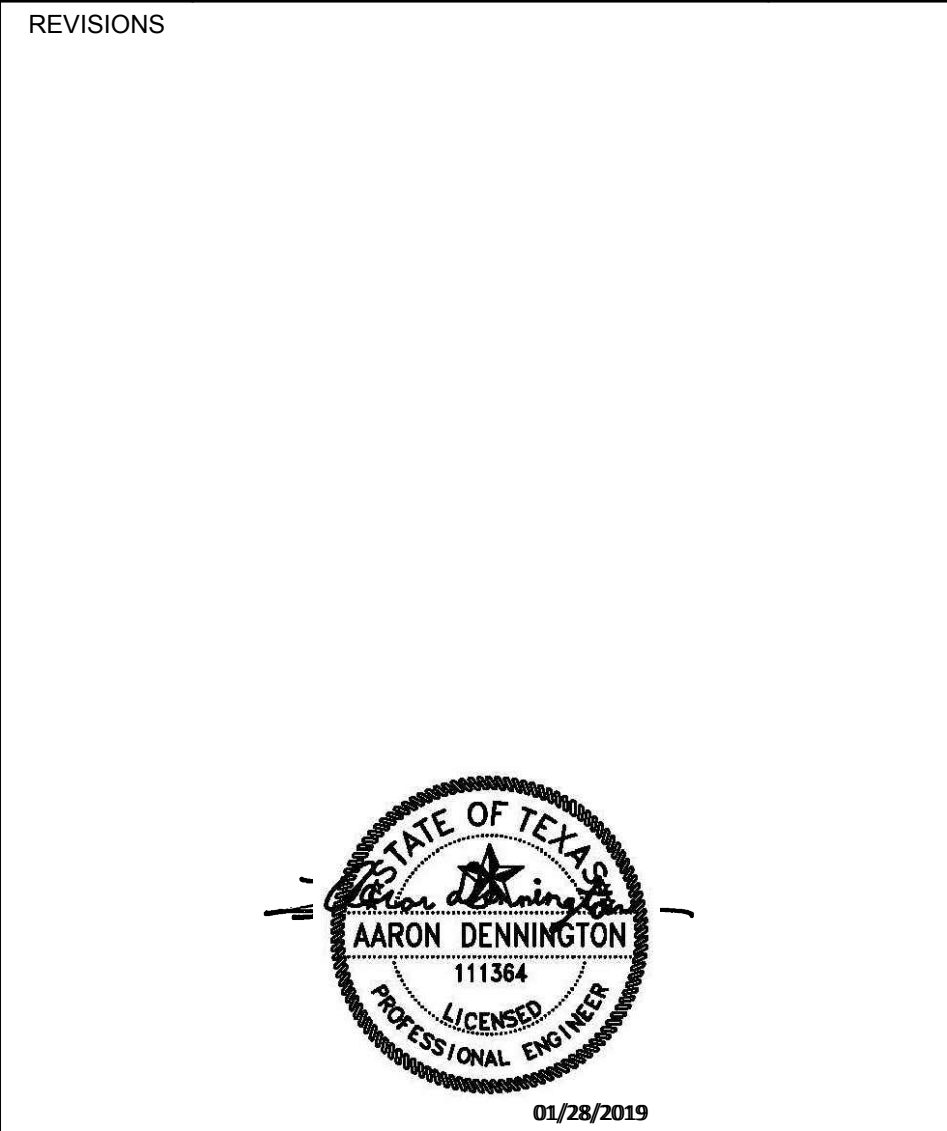
Landscape Architect:

LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

Interior Designer:

S.J.L. Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19



a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

MECHANICAL  
COMMUNITY CENTER  
LEVEL 2

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

M302

Structural Engineer:

VIEWTECH INC.  
4205 Beltway Dr. Addison, TX 75001  
Victor Lisiek III  
972.661.8187

MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

Civil Engineer:

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

Landscape Architect:

LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

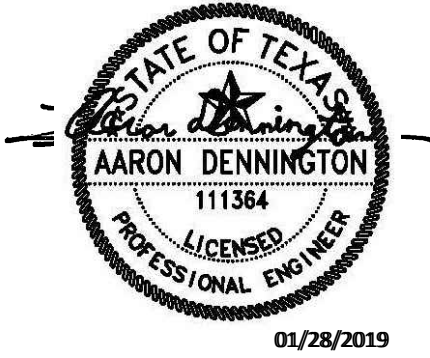
Interior Designer:

S.J.L. Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES

01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

MECHANICAL  
MAINTENANCE

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

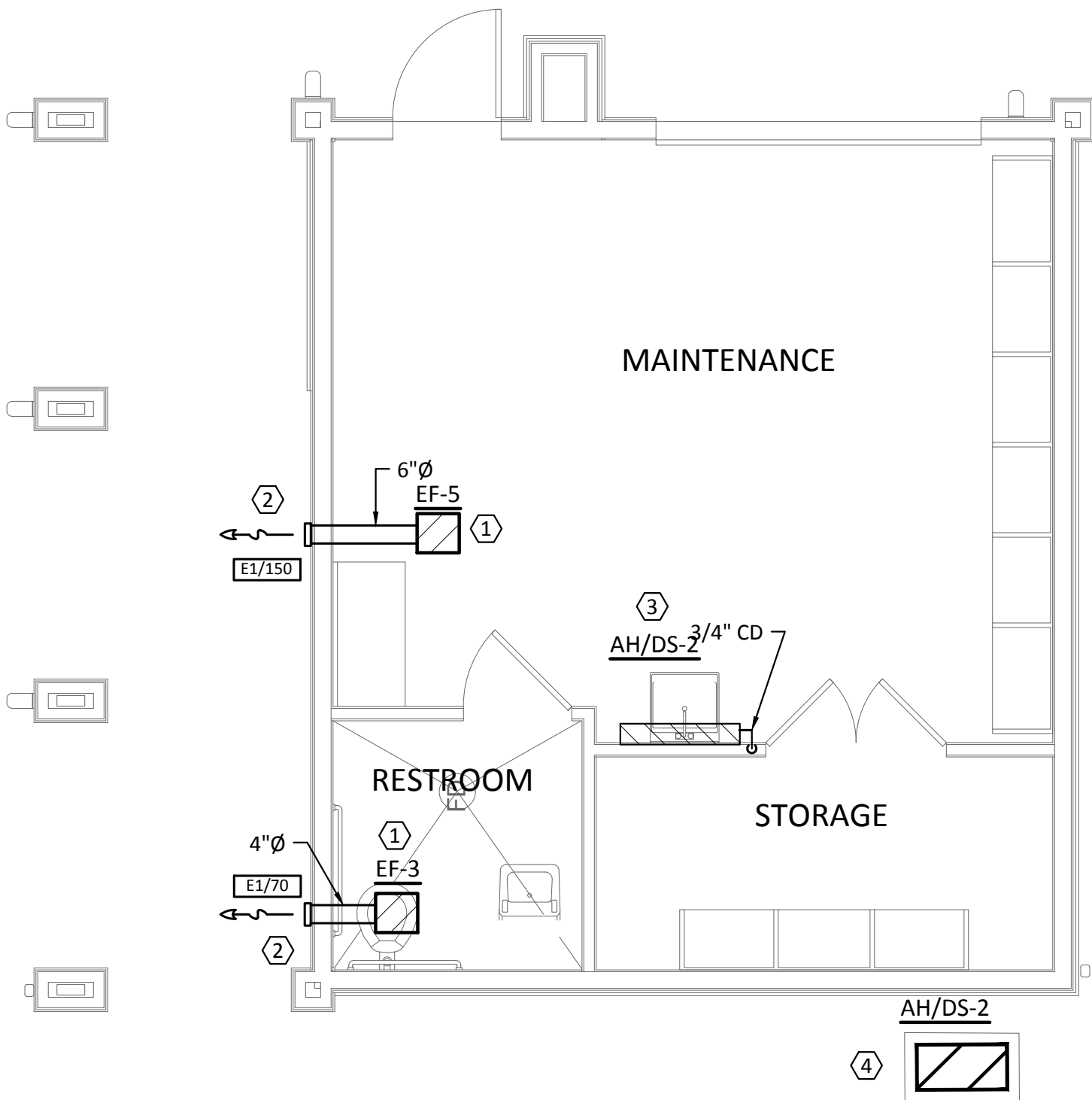
M303

GENERAL SHEET NOTES:

- A. REFER TO SHEET M000 FOR ADDITIONAL INFORMATION.  
B. REFER TO SITE PLAN M001 FOR CONDENSING UNIT LOCATIONS.

KEYED NOTES:

1. CEILING MOUNTED EXHAUST FAN. ROUTE DUCT TO EXTERIOR WALL TO TERMINATE AT WALL CAP WITH 1/4" GALVANIZED MESH BIRD SCREEN. MAINTAIN A MINIMUM OF 3'-0" CLEARANCE FROM ANY BUILDING OPENING.  
2. WALL CAP AT EXTERIOR WALL WITH BACKDRAFT DAMPER AND 1/4" GALVANIZED MESH BIRD SCREEN.  
3. DUCTLESS AIR HANDLER SHALL BE MOUNTED SECURELY AND HIGH ON WALL WITH REFRIGERANT PIPING CONCEALED IN WALL. ROUTE INSULATED CONDENSATE DRAIN FROM INTEGRAL CONDENSATE DRAIN TO MOP SINK.  
4. CONDENSING UNIT ON 4" CONCRETE PAD. MAINTAIN MINIMUM CLEARANCES OF 10" OFF ANY WALL AND 20" BETWEEN CONDENSING UNITS. INSTALL TYPE 'L' ACR COPPER REFRIGERANT LINES. SIZE REFRIGERANT LINES BASED ON MANUFACTURER RECOMMENDATIONS. AIR CONDITIONING REFRIGERANT CIRCUIT ACCESS PORTS LOCATED OUTDOORS SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS WITH LOCKING-TYPE TAMPER-RESISTANT CAPS OR IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION. COORDINATE ALL CONDENSING UNIT PADS WITH ROOF DRAIN AND VENT LOCATIONS.



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





Structural Engineer:

VIEWTECH INC.  
4205 Beltway Dr. Addison, TX 75001  
Victor Lisjak III  
972.661.8187

MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

Civil Engineer:

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

Landscape Architect:

LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.445.8477

Interior Designer:

SJL Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS		
<div><div><div><div><div><div><span></span></div><div>STATE OF TEXAS</div></div><div><div><span></span></div><div>LYNN C. BROWN</div></div><div><div><span></span></div><div>55248</div></div><div><div><span></span></div><div>LICENSED PROFESSIONAL ENGINEER</div></div></div></div><div>01/28/2019</div></div></div>		

a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

MECHANICAL  
DWELLING UNIT  
SCHEDULES

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

M401

AIR DEVICE SCHEDULE							
MARK	NOMINAL SIZE	MOUNTING	CFM	MAX NC	MAKE	MODEL	NOTES
S1	8"x4"	GYP CEIL	0-75	25	SHOEMAKER	950	1, 2, 3, 4
S2	8"x6"	GYP CEIL	76-115	25	SHOEMAKER	950	1, 2, 3, 4
S3	10"x8"	GYP CEIL	116-175	25	SHOEMAKER	950	1, 2, 3, 4
S4	12"x8"	GYP CEIL	176-225	25	SHOEMAKER	950	1, 2, 3, 4
S5	12"x12"	LAY-IN	0-650	25	SHOEMAKER	100	1, 2, 3, 4
S6	2"x4"	SLOT	100-400	25	TUTTLE & BAILEY	LP (6000)	1, 2, 3, 4
R1	10"x10"	GYP CEIL	0-350	25	METALAIR	CCS	1, 3, 4
R2	16"x16"	GYP CEIL	351-710	25	METALAIR	CCS	1, 3, 4
R3	24"x24"	GYP CEIL	711-1100	25	METALAIR	CCS	1, 3, 4
RW1	16"x16"	WALL	350-710	25	METALAIR	CCS	1, 3, 4
RW2	36"x14"	WALL	1300-1800	25	METALAIR	CC6	1, 3, 4
RW3	20"x12"	WALL	350-710	25	METALAIR	CCS	1, 3, 4
NOTES: 1. COORDINATE EXACT LOCATION OF DIFFUSERS WITH ARCHITECTURAL REFLECTED CEILING PLAN. 2. *NECK SIZES SHALL BE SIZED AS PER FLEX DUCT SCHEDULE, EXCEPT RETURN GRILLES, WHICH HAVE NOMINAL SIZE NECK. 3. AIRFLOW QUANTITIES AS NOTED ON MECHANICAL DRAWINGS. 4. PROVIDE CEILING RADIATION DAMPERS ON ALL AIR DEVICES THAT PENETRATE THE FIRE-RATED ASSEMBLY. REFER TO DETAIL 6/M501.							

DRYER EXHAUST DUCT DEVELOPED LENGTH						
UNIT TYPE	VERTICAL (FT) <sup>4</sup>	HORIZONTAL (FT)	45° TURN (9" EACH)	90° TURN (1.5' EACH)	TOTAL (FT)	NOTES
A1	6	28	0.75	1.5	36.25	1, 2, 3, 4
A2	6	32	0.00	1.5	39.5	1, 2, 3, 4
A3	6	25	0.00	1.5	32.5	1, 2, 3, 4
A4	6	26	0.00	1.5	33.5	1, 2, 3, 4
A5	6	28	1.50	1.5	37	1, 2, 3, 4
A6	6	29	0.75	1.5	37.25	1, 2, 3, 4
A7	6	17	0.00	1.5	24.5	1, 2, 3, 4
B1	6	25	0.00	3.0	34	1, 2, 3, 4
B2	6	25	0.00	3.0	34	1, 2, 3, 4
B3	6	27	0.00	3.0	36	1, 2, 3, 4
B4	6	33	0.00	3.0	42	1, 2, 3, 4
B5	6	35	0.00	3.0	44	1, 2, 3, 4
B6	6	34	0.00	3.0	43	1, 2, 3, 4
C1	6	29	0.75	1.5	37.25	1, 2, 3, 4
NOTES: 1. ALLOWED DUCT LENGTH IS BASED ON USING 4" DIAMETER, RIGID DUCT. 2. PROVIDE "DRYER ELL" # LT90 OR EQUAL, 10" RADIUS DRYER ELBOW FOR ALL DRYER LENGTHS THAT EXCEED TOTAL DEVELOPED LENGTH OF 35'. 3. VERTICAL LENGTH OF EXHASUT DUCT IS BASED ON THE USE OF DRYER BOX TO ELIMINATE 1 90° TURN. 4. ALL DWELLING UNIT DRYERS SHALL BE SUPPLIED BY THE OWNER. "GE" #GEFV40ESCWMWW, LONG THROW, ELECTRIC DRYER.						

DWELLING UNIT OUTSIDE AIR VENTILATION CALCULATION						
SPACE	TOTAL NO. OF PEOPLE	O/A REQUIRED (CFM/PERSON)	SQUARE FOOTAGE (S.F.)	CEILING HEIGHT (FT.)	O/A REQUIRED (ACH)	REQUIRED O/A SUB-TOTAL (CFM)
A1	2	15	650	9'1"	0.35	30
A2	2	15	663	9'1"	0.35	30
A3	2	15	796	9'1"	0.35	30
A4	2	15	852	9'1"	0.35	30
A5	2	15	988	9'1"	0.35	30
A6	2	15	1058	9'1"	0.35	30
B1	3	15	1157	9'1"	0.35	45
B2	3	15	1157	9'1"	0.35	45
B4	3	15	1284	9'1"	0.35	45
B5	3	15	1315	9'1"	0.35	45
B6	3	15	1318	9'1"	0.35	45
NOTES: 1. OUTSIDE AIR CALCULATIONS ONLY APPLY TO DWELLING UNITS IN 3-STORY BUILDING AND UNITS AT 1ST FLOOR AT POOL COURTYARD. 2. THE OUTSIDE AIR QUANTITIES LISTED IN THIS TABLE HAVE BEEN CALCULATED IN ACCORDANCE WITH ASHRAE 62.2-2015 AND CITY OF SAN ANTONIO ORDINANCES.						

SUPPLY AIR FLEX DUCT	
AIRFLOW (CFM)	NECK SIZE
0 - 100	6"
101 - 200	8"
201 - 275	10"
276 - 375	12"
376 - 475	14"
476 - 600	16"

OUTSIDE AIR DUCT	
AIRFLOW (CFM)	NECK SIZE
0 - 100	6"
101 - 200	8"
201 - 300	10"
301 - 425	12"

AIR HANDLER SCHEDULE - DWELLING UNIT																						
MARK	AREA SERVED	AIR DATA					COOLING DATA					HTG. KW (OUTPUT)	ELECTRICAL DATA			UNIT DATA			NOTES			
		TOT. CFM	OA	E.S.P.	HP	CONFIGURATION	AMBIENT D.B.	W.B.	ENTERING D.B.	W.B.	DESIGN SENS.		SCHEDULE SENS.	TOT.	MCA	MOC	VOLT/PH	MAKE		MODEL	WEIGHT (LB)	
AHU-1	A1	600	30	0.5	1/5	VERTICAL	97	73	80	67	14.1	17.2	13.6	17.2	5.0	23.8	30	240V/1PH	GOODMAN	AWUF311816A	84	1, 2, 3, 4
AHU-2	A2	600	30	0.5	1/5	VERTICAL	97	73	80	67	14.8	18.0	13.6	17.2	5.0	23.8	30	240V/1PH	GOODMAN	AWUF311816A	84	1, 2, 3, 4
AHU-3	A3	600	30	0.5	1/5	VERTICAL	97	73	80	67	12.3	15.5	13.6	17.2	5.0	23.8	30	240V/1PH	GOODMAN	AWUF311816A	84	1, 2, 3, 4
AHU-4	A4	600	30	0.5	1/5	VERTICAL	97	73	80	67	12.7	15.9	13.6	17.2	5.0	23.8	30	240V/1PH	GOODMAN	AWUF311816A	84	1, 2, 3, 4
AHU-5	A5	800	30	0.5	1/5	VERTICAL	97	73	80	67	19.3	22.7	18.8	22.8	5.0	26.6	30	240V/1PH	GOODMAN	AWUF312416A	84	1, 2, 3, 4
AHU-6	A6	800	30	0.5	1/5	VERTICAL	97	73	80	67	14.2	17.4	13.6	17.2	5.0	26.6	30	240V/1PH	GOODMAN	AWUF311816A	84	1, 2, 3, 4
AHU-7	A7	800	-	0.5	1/5	VERTICAL	97	73	80	67	15.2	18.4	18.8	22.8	5.0	26.6	30	240V/1PH	GOODMAN	AWUF312416A	84	1, 2, 3
AHU-8	B1	800	45	0.5	1/5	VERTICAL	97	73	80	67	16.0	20.1	18.8	22.8	8.0	39.6	50	240V/1PH	GOODMAN	AWUF312416A	84	1, 2, 3, 4
AHU-9	B2	800	45	0.5	1/5	VERTICAL	97	73	80	67	16.0	20.1	18.8	22.8	8.0	39.6	50	240V/1PH	GOODMAN	AWUF312416A	84	1, 2, 3, 4
AHU-10	B3	800	-	0.5	1/5	VERTICAL	97	73	80	67	18.0	22.1	18.8	22.8	8.0	39.6	50	240V/1PH	GOODMAN	AWUF312416A	84	1, 2, 3
AHU-11	B4	800	45	0.5	1/5	VERTICAL	97	73	80	67	16.0	20.1	18.8	22.8	8.0	39.6	50	240V/1PH	GOODMAN	AWUF312416A	84	1, 2, 3, 4
AHU-12	B5	800	45	0.5	1/5	VERTICAL	97	73	80	67	18.0	22.2	18.8	22.8	8.0	39.6	50	240V/1PH	GOODMAN	AWUF312416A	84	1, 2, 3, 4
AHU-13	B6	800	45	0.5	1/5	VERTICAL	97	73	80	67	18.5	22.6	18.8	22.8	8.0	39.6	50	240V/1PH	GOODMAN	AWUF312416A	84	1, 2, 3, 4
AHU-14	C1	1000	-	0.5	1/5	VERTICAL	97	73	80	67	19.8	24.1	20.6	27.8	8.0	39.6	50	240V/1PH	GOODMAN	AWUF313016A	84	1, 2, 3
NOTES: 1. PROVIDE WITH MANUFACTURER RECOMMENDED 7-DAY PROGRAMMABLE THERMOSTAT . 2. PROVIDE DISCONNECT, TO BE FIELD MOUNTED BY ELECTRICAL CONTRACTOR. 3. UNIT TO INCLUDE STANDARD DISPOSABLE 1" FILTER, MERV 7 OR GREATER. 4. REFER TO MECHANICAL UNIT PLANS FOR UNITS THAT REQUIRE OUTSIDE AIR. (UNITS IN 3-STORY BUILDING AND IN BUILDING TYPE I AT POOL COURTYARD ONLY).																						

CONDENSING UNIT SCHEDULE - DWELLING UNIT										
MARK	AREA SERVED	CLG. DATA		ELECTRICAL DATA			UNIT DATA			NOTES
		TONS	EER/SEER	MCA	MOCPP	VOLT/PH	MAKE	MODEL	LBS.	
CU-1	A1	1.5	12.0/14.5	12.4	20	240V/1φ	GOODMAN	GSX140181K	132	1, 2, 3 7995115
CU-2	A2	1.5	12.0/14.5	12.4	20	240V/1φ	GOODMAN	GSX140181K	132	1, 2, 3 7995115
CU-3	A3	1.5	12.0/14.5	12.4	20	240V/1φ	GOODMAN	GSX140181K	132	1, 2, 3 7995115
CU-4	A4	1.5	12.0/14.5	12.4	20	240V/1φ	GOODMAN	GSX140181K	132	1, 2, 3 7995115
CU-5	A5	2	12.0/14.5	14.7	25	240V/1φ	GOODMAN	GSX140241K	142	1, 2, 3 7995000
CU-6	A6	1.5	12.0/14.5	12.4	20	240V/1φ	GOODMAN	GSX140181K	132	1, 2, 3 7995115
CU-7	A7	2	12.0/14.5	14.7	25	240V/1φ	GOODMAN	GSX140241K	142	1, 2, 3 7995000
CU-8	B1	2	12.0/14.5	14.7	25	240V/1φ	GOODMAN	GSX140241K	142	1, 2, 3 7995000
CU-9	B2	2	12.0/14.5	14.7	25	240V/1φ	GOODMAN	GSX140241K	142	1, 2, 3 7995000
CU-10	B3	2	12.0/14.5	14.7	25	240V/1φ	GOODMAN	GSX140241K	142	1, 2, 3 7995000
CU-11	B4	2	12.0/14.5	14.7	25	240V/1φ	GOODMAN	GSX140241K	142	1, 2, 3 7995000
CU-12	B5	2	12.0/14.5	14.7	25	240V/1φ	GOODMAN	GSX140241K	142	1, 2, 3 7995000
CU-13	B6	2	12.0/14.5	14.7	25	240V/1φ	GOODMAN	GSX140241K	142	1, 2, 3 7995000
CU-14	C1	2.5	12.0/14.0	17.9	30	240V/1φ	GOODMAN	GSX140301K	156	1, 2, 3 7994959
NOTES: 1. PROVIDE DISCONNECT, TO BE FIELD MOUNTED BY ELECTRICAL CONTRACTOR. 2. UNIT TO BE PROVIDED LOW AMBIENT KIT FOR OPERATION DOWN TO 40°F. 3. COMPRESSOR SHALL BE PROVIDED WITH 10 YEAR WARRANTY.										

EXHAUST FAN SCHEDULE - DWELLING UNITS									
MARK	LOCATION	INTERLOCK	AIR DATA			ELECTRICAL DATA		UNIT DATA	
			CFM	S.P.	HP	MCA	MOCPP	MAKE	MODEL
EF-1	DWELLING UNIT-BATH	LIGHT SWITCH	50	0.25	1/4	0.8	15	BROAN	670
EF-2	DWELLING UNIT-KITCHEN	LIGHT SWITCH	100	0.25	1/4	0.3	15	DELTA	SLM100
			4" DIA. DUCT WITH BACKDRAFT DAMPER, WALL MOUNTED, PROVIDE SPEED CONTROLLER						
			4" DIA. DUCT WITH BACKDRAFT DAMPER, WALL MOUNTED, PROVIDE SPEED CONTROLLER						

LOUVER SCHEDULE							
MARK	NOMINAL SIZE	O.A (CFM)	TYPE		MAKE	MODEL	NOTES
L1	6"x6"	0-250	OUTSIDE AIR LOUVER		DEFLECTO	SVMA	1, 2, 3, 4,5
E1	12"x12"	0-400	EXHAUST GRILLE		METALAIRE	DG	1, 2, 3, 4,5
T1	12"x12"	-	TRANSFER GRILLE		METALAIRE	DG	1, 2, 3, 4
T2	24"x84"	-	TRANSFER GRILLE		METALAIRE	DG	1, 2, 3,



Structural Engineer:

VIEWTECH INC.  
4205 Bellway Dr. Addison, TX 75001  
Victor Lisiak III  
972.661.8187

MEP Engineer:

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

Civil Engineer:

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

Landscape Architect:

LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

Interior Designer:

SJL Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS		
<div><div><div>STATE OF TEXAS</div><div>LYNN C. BROWN</div><div>55248</div><div>LICENSED PROFESSIONAL ENGINEER</div></div><div>01/28/2019</div></div>		

a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

MECHANICAL  
COMMON AREA  
SCHEDULES

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

M402

AIR HANDLER SCHEDULE - AMENITIES/LEASING																					
MARK	LOCATION	AIR DATA					COOLING DATA					ELECTRICAL DATA			UNIT DATA		NOTES				
	AREA SERVED	TOT. CFM	O/A CFM	E.S.P.	HP	CONFIGURATION	AMBIENT		ENTERING		DESIGN SENS. TOT.	SCHEDULE		TOT. KW	MCA	MOC		VOLT/PH	MAKE	MODEL	
							D.B.	W.B.	D.B.	W.B.		SENS.	TOT.								SENS.
AHU-15	FITNESS CENTER	2000	470	0.9	1	VERTICAL	97	73	80	67	31.2	58.7	41.5	54.0	10.0	59.0	60	240V/1PH	GOODMAN	AVPTC60D14A	1, 2, 3, 4
AHU-16	RESIDENTS LOUNGE	1400	185	0.9	1	VERTICAL	97	73	80	67	25.1	36.9	31.2	41.0	8.0	48.0	50	240V/1PH	GOODMAN	AVPTC42C14A	1, 2, 3, 4
AHU-17	OFFICE/WORK RM	1600	205	0.9	1	VERTICAL	97	73	80	67	27.9	44.4	34.2	45.0	8.0	48.0	50	240V/1PH	GOODMAN	AVPTC48C14A	1, 2, 3, 4
AHU-18	GAMING/WIFI	1400	210	0.9	1	VERTICAL	97	73	80	67	23.2	38.8	31.2	41.0	8.0	48.0	50	240V/1PH	GOODMAN	AVPTC42C14A	1, 2, 3, 4
AHU-19	LOBBY	1400	205	0.9	1	VERTICAL	97	73	80	67	25.1	40.4	31.2	41.0	8.0	48.0	50	240V/1PH	GOODMAN	AVPTC42D14A	1, 2, 3, 4
Notes																					
1. PROVIDED 7-DAY PROGRAMMABLE THERMOSTAT, SINGLE STAGE COOLING AND HEATING, BY HONEYWELL, OR APPROVED EQUIVALENT.																					
2. PROVIDE DISCONNECT, TO BE FIELD MOUNTED BY ELECTRICAL CONTRACTOR.																					
3. UNIT TO BE MOUNTED USING NEOPRENE VIBRATION ISOLATORS.																					
4. UNIT TO INCLUDE STANDARD DISPOSABLE 1" FILTER, MERV 7 OR GREATER.																					

CONDENSING UNIT SCHEDULE - COMMUNITY CENTER											
MARK	AREA SERVED	CLG. DATA		ELECTRICAL DATA			UNIT DATA			NOTES	AHR#1
		TONS	EER/ SEER	MCA	MOCP	VOLT/PH	MAKE	MODEL	LBS.		
CU-15	FITNESS CENTER	5	13.0/16.0	29.6	50	240V/1PH	GOODMAN	GSX1606001B	279	1, 2, 3	5924359
CU-16	RESIDENTS LOUNGE	3.5	13.0/16.0	23.3	40	240V/1PH	GOODMAN	GSX1604201B	206	1, 2, 3	5924357
CU-17	OFFICE/WORK RM	4	13.0/16.0	23.9	40	240V/1PH	GOODMAN	GSX1604801B	219	1, 2, 3	5924358
CU-18	GAMING/WIFI	3.5	13.0/16.0	23.3	40	240V/1PH	GOODMAN	GSX1604201B	206	1, 2, 3	5924357
CU-19	LOBBY	3.5	13.0/16.0	23.3	40	240V/1PH	GOODMAN	GSX1604201B	206	1, 2, 3	5924357
NOTES: 1. PROVIDE DISCONNECT, TO BE FIELD MOUNTED BY ELECTRICAL CONTRACTOR. 2. UNIT TO BE PROVIDED LOW AMBIENT KIT FOR OPERATION DOWN TO 40°F. 3. COMPRESSOR SHALL BE PROVIDED WITH 10 YEARS WARRANTY.											

DUCTLESS SPLIT UNIT SCHEDULE																
DS ID	AREA SERVED	TOT. CFM	AIR DATA		COOLING DATA				ELECTRICAL DATA			UNIT DATA				
			CONFIGURATION	AMBIENT	ENTERING		STAGE	EER/ SEER	MCA	MOCP	VOLT/PH	MAKE	MODEL	LBS.		
				D.B.	W.B.	D.B.									W.B.	
DS-1	MDF ROOM	500	WALL-MOUNTED	97	74	80	67	INV.	12.0/ 18.0	15.5	20	208V/3PH	DAIKIN	FTXN15KVJU/ RKN15KEVJU	26.5	
DS-2	MAINTENANCE	400	WALL-MOUNTED	97	74	80	67	INV.	12.0/ 18.0	7.0	15	208V/3PH	DAIKIN	FTXN12KVJU/ RKN012KEVJU	26.5	
NOTES: C																

BASEBOARD HEATER SCHEDULE						
TAG	LOCATIONS	MFG.	MODEL	WATTS	LENGTH	NOTES
BH1	SPRINKLER CLOSET	MARKEL	G2907-048SW	750	48"	1, 2
BH2	POOL EQUIP. RM.	MARKEL	F2907-040SW	750	40"	1, 2
BH3	POOL RESTROOM	MARKEL	F2906-036SW	600	36"	1, 2
BH4	ELEVATOR	MARKEL	F2906-036SW	600	36"	1, 2
NOTES: 1. COORDINATE EXACT LOCATION WITH ARCHITECTURAL PLANS. 2. SURFACE MOUNT CABINET, BUILT IN QUIET ACTION THERMOSTAT, THERMAL HIGH LIMIT CUT-OFF AND SAFETY CONTROLS, UL APPROVAL, 16 GAUGE.						

COMMUNITY CENTER/MAINTENANCE OUTDOOR AIR CALCULATIONS									
SPACE	AHU	TOTAL NO. OF PEOPLE	O/A REQUIRED (CFM/PEPS ON)	SQUARE FOOTAGE (S.F.)	CEILING HEIGHT (FT.)	O/A REQUIRED (CFM/S.F.)	EXHAUST REQUIRED (CFM/S.F.)	REQUIRED O/A SUB-TOTAL (CFM)	ACTUAL O/A SUB-TOTAL (CFM)
Fitness Center	15	12	20	1030	18	0.06	-	302	300
Yoga		4	20	143	9	0.06	-	89	90
Flex		4	20	137	9	0.06	-	88	90
Women's Restroom		-	-	173	9		80	-	0
Men's Restroom		-	-	162	9		80	-	0
TOTAL O/A FOR AHU-16									480
Resident Lounge	16	12	7.5	783	18	0.06	-	137	135
Lounge		2	7.5	606	9	0.06	-	51	50
TOTAL O/A FOR AHU-17									185
Leasing	17	6	5	530	9	0.06	-	62	65
Assistant Manager		2	5	129	9	0.06	-	18	20
Manager		2	5	154	9	0.06	-	19	20
Work Room		4	5	390	9	0.06	-	43	40
Mail		4	5	645	9	0.06	-	59	60
TOTAL O/A FOR AHU-18									205
Gaming	18	4	5	819	9	0.06	-	69	70
Wifi		10	5	520	9	0.06	-	81	80
Conference		4	5	115	9	0.06	-	27	30
Conference		4	5	115	9	0.06	-	27	30
TOTAL O/A FOR AHU-19									210
Lobby	19	20	5	1188	18	0.06	-	171	175
Corridor		0	0	520	9	0.06	-	31	30
TOTAL O/A FOR AHU-20									205
* OUTSIDE AIR CALCULATIONS BASED ON NUMBER OF PEOPLE SUBMITTED BY OWNER									
** THE OUTSIDE AIR QUANTITIES LISTED IN THIS TABLE HAVE BEEN CALCULATED ACCORDING TO THE VENTILATION RATES PROVIDED IN IMC 2015.									

EXHAUST FAN SCHEDULE - COMMON AREAS										
MARK	LOCATION	INTERLOCK	AIR DATA		ELECTRICAL DATA		UNIT DATA			
			CFM	S.P.	HP	MCA	MOCP	MAKE	MODEL	NOTES
EF-3	MAINTENANCE RESTROOM	LIGHT SWITCH	80	0.125	1/4	0.8	15	PANASONIC	FV-08-11VK1	4" DIA. DUCT WITH BACKDRAFT DAMPER, CEILING MOUNTED, PROVIDE SPEED CONTROLLER
EF-4	CLUBHOUSE RESTROOM	LIGHT SWITCH	80	0.125	1/4	0.8	15	PANASONIC	FV-08-11VK1	4" DIA. DUCT WITH BACKDRAFT DAMPER, CEILING MOUNTED, PROVIDE SPEED CONTROLLER
EF-5	MAINTENANCE	CONTINUOUS	150	0.1	1/4	2.1	15	BROAN	L150	4" DIA. DUCT WITH BACKDRAFT DAMPER, CEILING MOUNTED, PROVIDE SPEED CONTROLLER
EF-6	POOL RESTROOM	CONTINUOUS	80	0.125	1/4	0.8	15	PANASONIC	FV-08-11VK1	4" DIA. DUCT WITH BACKDRAFT DAMPER, CEILING MOUNTED, PROVIDE SPEED CONTROLLER
EF-7	POOL CHEMICAL CLOSET	CONTINUOUS	50	0.125	1/3	0.4	15	PANASONIC	FV-05-11VK1	4" DIA. DUCT WITH BACKDRAFT DAMPER, CEILING MOUNTED, HI-PRO POLYESTER COATING ON FAN AND INTERNAL COMPONENTS FOR CORROSION RESISTANCE

SEQUENCE OF OPERATION: AHU-16, AHU-17, AHU-18 & AHU-19

SYSTEM DESCRIPTION

CONSTANT VOLUME SPLIT SYSTEM WITH BACKUP ELECTRIC HEAT AND MULTI-STAGE DIRECT EXPANSION COMPRESSOR. SYSTEM SHALL PROVIDE OUTSIDE AIR, COOLING, AND HEATING TO THE SPACE. UNIT SHALL BE CONTROLLED VIA MANUFACTURER CONTROLS AND ZONE THERMOSTAT. OPERATION SCHEDULE, TEMPERATURE SET POINT, AND ALARMS SHALL BE AVAILABLE AT THE ZONE THERMOSTAT

SET POINTS

ROOM TEMPERATURE SETPOINT / COOLING: 75°F (ADJ.) / HEATING 72°F (ADJ.)

SUPPLY FAN

1. THE FAN SHALL OPERATE ANYTIME THE UNIT IS IN OCCUPIED MODE.

2. UPON START THE FAN SHALL RAMP UP TO THE SUPPLY AIR FLOW PER SCHEDULE, AND AIR BALANCE REPORT.

3. START/STOP CONTROL FROM HAND OFF AUTO (H.O.A.) SWITCH.

4. WHEN THERMOSTAT SWITCH IS IN HAND FAN SHALL OPERATE CONTINUOUSLY.

5. WHEN THERMOSTAT SWITCH IS IN OFF FAN AND UNIT SHALL BE OFF.

6. WHEN THERMOSTAT SWITCH IS IN AUTO FAN SHALL OPERATE IN ACCORDANCE TO THIS SEQUENCE OF OPERATION.

OCCUPIED MODE

1. OCCUPIED MODE SHALL BE DESIGNATED BY THE SCHEDULES SET AT THE ZONE THERMOSTAT.

2. SUPPLY FAN SHALL OPERATE ANYTIME THE UNIT IS IN OCCUPIED MODE AND FAN IN "HAND" OR "AUTO".

3. UPON ACTIVATION OF THE SUPPLY FAN THE MOTORIZED OUTSIDE AIR DAMPER SHALL BE OPEN TO MINIMUM POSITION.

4. AN OCCUPANCY OVERRIDE SHALL BE AVAILABLE AT THE ROOM TEMPERATURE SENSOR TO TEMPORARILY ACTIVATE OCCUPIED MODE.

5. UPON ACTIVATION, UNIT SHALL TEMPORARILY OPERATE IN OCCUPIED MODE FOR 1 HOUR (ADJ.). AFTER WHICH SHALL RETURN TO UNOCCUPIED MODE.

OCCUPIED COOLING MODE

1. COOLING MODE SHALL BE ACTIVE WHEN THE SPACE TEMPERATURE RISES ABOVE COOLING SET POINT.

2. UPON A CALL FROM COOLING STAGE 1 OF THE COMPRESSOR SHALL OPERATE TO MAINTAIN THE ROOM COOLING TEMPERATURE SET POINT.

3. IF THE ROOM TEMPERATURE CONTINUES TO RISE ABOVE SET POINT BECAUSE STAGE 1 IS NOT ADEQUATE, STAGE 2 OF THE COMPRESSOR SHALL OPERATE TO MAINTAIN A ROOM COOLING TEMPERATURE SET POINT.

4. THE COMPRESSOR SHALL OPERATE FOR A MINIMUM PERIOD OF TIME (AS DEFINED BY MANUFACTURER) TO AVOID SHORT CYCLING.

OCCUPIED HEATING MODE

1. HEATING MODE SHALL BE ACTIVATED ANYTIME THE ROOM TEMPERATURE DROPS BELOW HEATING SET POINT.

2. IF THE ROOM TEMPERATURE CONTINUES TO DROP BELOW HEATING SET POINT, ELECTRIC HEAT COIL SHALL ACTIVATE AND OPERATE TO MAINTAIN THE ROOM HEATING TEMPERATURE SET POINT. INTERLOCK HEATER WITH FAN SUCH TAT ELECTRIC HEAT SHALL NOT OPERATE WHEN FAN IS OFF.

3. HEATING MODE SHALL BE AVAILABLE FOR OVERRIDE AT THE THERMOSTAT.

UNOCCUPIED MODE

1. UNOCCUPIED MODE SHALL BE DESIGNATED BY THE SCHEDULES SET AT THE ZONE THERMOSTAT.

2. THE MOTORIZED OUTSIDE AIR DAMPER SHALL REMAIN CLOSED WHILE UNOCCUPIED MODE.

3. THE SUPPLY FAN SHALL REMAIN DE-ENERGIZED AND THE AHU SHALL BE OFF.

4. THE COMPRESSOR AND ELECTRIC HEAT COILS SHALL REMAIN DE-ENERGIZED.

ALARMS

AN ALARM SHALL BE MADE AT THE THERMOSTAT ANYTIME ANY OF THE FOLLOWING IS TRUE.

1. PRESSURE ACROSS AIR FILTER RISES ABOVE MANUFACTURER RECOMMENDED SET POINT.

2. THE FLOAT SWITCH IN THE PRIMARY DRAIN PAN IS TRIPPED.

SAFTIES AND SHUTDOWN

THE FAN SHALL DE-ENERGIZE, OUTSIDE AIR DAMPER SHALL CLOSE, AND COMPRESSOR SHALL DE-ENERGIZE IF ANY OF THE FOLLOWING OCCURS.

1. GENERAL FIRE ALARM IS TRIGGERED.

2. WATER IS DETECTED IN THE PRIMARY DRAIN PAN BY THE FLOAT SWITCH

1 SPLIT SYSTEM CONTROL DIAGRAM (AHU-16, AHU-17, AHU-18 & AHU-19)  
NOT TO SCALE

SEQUENCE OF OPERATION: DWELLING UNITS

SYSTEM DESCRIPTION

CONSTANT VOLUME SPLIT SYSTEM WITH BACKUP ELECTRIC HEAT AND MULTI-STAGE DIRECT EXPANSION COMPRESSOR. SYSTEM SHALL PROVIDE OUTSIDE AIR, COOLING, AND HEATING TO THE SPACE. UNIT SHALL BE CONTROLLED VIA MANUFACTURER CONTROLS AND ZONE THERMOSTAT. OPERATION SCHEDULE, TEMPERATURE SET POINT, AND ALARMS SHALL BE AVAILABLE AT THE ZONE THERMOSTAT

SET POINTS

ROOM TEMPERATURE SETPOINT / COOLING: 75°F (ADJ.) / HEATING 72°F (ADJ.)

SUPPLY FAN

1. THE FAN SHALL OPERATE ANYTIME THE UNIT IS IN OCCUPIED MODE.

2. UPON START THE FAN SHALL RAMP UP TO THE SUPPLY AIR FLOW PER SCHEDULE, AND AIR BALANCE REPORT.

3. START/STOP CONTROL FROM HAND OFF AUTO SWITCH.

4. WHEN THERMOSTAT SWITCH IS IN HAND FAN SHALL OPERATE CONTINUOUSLY.

5. WHEN THERMOSTAT SWITCH IS IN OFF FAN AND UNIT SHALL BE OFF.

6. WHEN THERMOSTAT SWITCH IS IN AUTO FAN SHALL OPERATE IN ACCORDANCE TO THIS SEQUENCE OF OPERATION.

OCCUPIED MODE

1. OCCUPIED MODE SHALL BE DESIGNATED BY THE SCHEDULES SET AT THE ZONE THERMOSTAT.

2. SUPPLY FAN SHALL OPERATE ANYTIME THE UNIT IS IN OCCUPIED MODE AND FAN IN "HAND" OR "AUTO"

OCCUPIED COOLING MODE

3.1. COOLING MODE SHALL BE ACTIVE WHEN THE SPACE TEMPERATURE RISES ABOVE COOLING SET POINT.

3.2. UPON A CALL FOR COOLING STAGE 1 OF THE COMPRESSOR SHALL OPERATE TO MAINTAIN THE ROOM COOLING TEMPERATURE SET POINT.

3.3. IF THE ROOM TEMPERATURE CONTINUES TO RISE ABOVE SET POINT BECAUSE STAGE 1 IS NOT ADEQUATE, STAGE 2 OF THE COMPRESSOR SHALL OPERATE TO MAINTAIN A ROOM COOLING TEMPERATURE SET POINT.

3.4. THE COMPRESSOR SHALL OPERATE FOR A MINIMUM PERIOD OF TIME (AS DEFINED BY MANUFACTURER) TO AVOID SHORT CYCLING.

OCCUPIED HEATING MODE

4.1. HEATING MODE SHALL BE ACTIVATED ANYTIME THE ROOM TEMPERATURE DROPS BELOW HEATING SET POINT.

4.2. IF THE ROOM TEMPERATURE CONTINUES TO DROP BELOW HEATING SET POINT, ELECTRIC HEAT COIL SHALL ACTIVATE AND OPERATE TO MAINTAIN THE ROOM HEATING TEMPERATURE SET POINT. INTERLOCK HEATER WITH FAN SUCH THAT ELECTRIC HEAT SHALL NOT OPERATE WHEN FAN IS OFF.

UNOCCUPIED MODE

1. UNOCCUPIED MODE SHALL BE DESIGNATED BY THE SCHEDULES SET AT THE ZONE THERMOSTAT.

2. THE SUPPLY FAN SHALL REMAIN DE-ENERGIZED AND THE AHU SHALL BE OFF.

3. THE COMPRESSOR AND ELECTRIC HEAT COILS SHALL REMAIN DE-ENERGIZED.

ALARMS

AN ALARM SHALL BE MADE AT THE THERMOSTAT ANYTIME ANY OF THE FOLLOWING IS TRUE

1. PRESSURE ACROSS AIR FILTER RISES ABOVE MANUFACTURER RECOMMENDED SET POINT.

2. THE FLOAT SWITCH IN THE PRIMARY DRAIN PAN IS TRIPPED.

SAFTIES AND SHUTDOWN

THE FAN SHALL DE-ENERGIZE, AND COMPRESSOR SHALL DE-ENERGIZE IF ANY OF THE FOLLOWING OCCURS.

1. WATER IS DETECTED IN THE PRIMARY DRAIN PAN BY THE FLOAT SWITCH

2 SPLIT SYSTEM CONTROL DIAGRAM (DWELLING UNITS IN BLDG I)  
NOT TO SCALE

3 SPLIT SYSTEM CONTROL DIAGRAM (DWELLING UNITS IN BLDG II & AT POOL COURTYARD)  
NOT TO SCALE

**ENCOTECH**  
ENGINEERING CONSULTANTS  
TBPE Firm 1141 | 8500 Bluffstone Cove, Suite 8-103  
Austin, Texas 78759 | 512.338.1101  
Project No.: 18054.M5.AUS

**DAVIES**  
COLLABORATIVE  
3607 S Lamar Blvd, Suite 103 Austin, Texas 78704 512.852.4310

**Structural Engineer:**  
  
VIEWTECH INC.  
4205 Bellway Dr. Addison, TX 75001  
Victor Lisjak III  
972.661.8187

**MEP Engineer:**  
  
ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

**Civil Engineer:**  
  
MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

**Landscape Architect:**  
  
LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

**Interior Designer:**  
  
S.J.L Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS

a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

## MECHANICAL SEQUENCE OF OPERATIONS

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

M501

2018 Copyright The Davies Collaborative. All Rights Reserved

SEQUENCE OF OPERATION: VERTICAL AIR HANDLER AHU-15

**SYSTEM DESCRIPTION**

CONSTANT VOLUME SPLIT SYSTEM WITH BACKUP ELECTRIC HEAT AND MULTI-STAGE DIRECT EXPANSION COMPRESSOR. SYSTEM SHALL PROVIDE OUTSIDE AIR, COOLING, AND HEATING TO THE SPACE. UNIT SHALL BE CONTROLLED VIA MANUFACTURER CONTROLS AND ZONE THERMOSTAT. OPERATION SCHEDULE, TEMPERATURE SET POINT, AND ALARMS SHALL BE AVAILABLE AT THE ZONE THERMOSTAT

**SET POINTS**

- ROOM TEMPERATURE SETPOINT / COOLING: 75°F (ADJ.) / HEATING 72°F (ADJ.)

**SUPPLY FAN**

- THE FAN SHALL OPERATE ANYTIME THE UNIT IS IN OCCUPIED MODE.
- UPON START THE FAN SHALL RAMP UP TO THE SUPPLY AIR FLOW PER SCHEDULE, AND AIR BALANCE REPORT.
- START/STOP CONTROL FROM HAND OFF AUTO (H.O.A.) SWITCH.
- WHEN THERMOSTAT SWITCH IS IN HAND FAN SHALL OPERATE CONTINUOUSLY.
- WHEN THERMOSTAT SWITCH IS IN OFF FAN AND UNIT SHALL BE OFF.
- WHEN THERMOSTAT SWITCH IS IN AUTO FAN SHALL OPERATE IN ACCORDANCE TO THIS SEQUENCE OF OPERATION.

**OCCUPIED MODE**

- OCCUPIED MODE SHALL BE DESIGNATED BY THE SCHEDULES SET AT THE ZONE THERMOSTAT.
- SUPPLY FAN SHALL OPERATE ANYTIME THE UNIT IS IN OCCUPIED MODE AND FAN IN "HAND" OR "AUTO".
- UPON ACTIVATION OF THE SUPPLY FAN THE MOTORIZED OUTSIDE AIR DAMPER SHALL BE OPEN TO MINIMUM POSITION.
- AN OCCUPANCY OVERRIDE SHALL BE AVAILABLE AT THE ROOM TEMPERATURE SENSOR TO TEMPORARILY ACTIVATE OCCUPIED MODE.
- UPON ACTIVATION, UNIT SHALL TEMPORARILY OPERATE IN OCCUPIED MODE FOR 1 HOUR (ADJ.). AFTER WHICH SHALL RETURN TO UNOCCUPIED MODE.

**OCCUPIED COOLING MODE**

- COOLING MODE SHALL BE ACTIVE WHEN THE SPACE TEMPERATURE RISES ABOVE COOLING SET POINT.
- UPON A CALL FROM COOLING STAGE 1 OF THE COMPRESSOR SHALL OPERATE TO MAINTAIN THE ROOM COOLING TEMPERATURE SET POINT.
- IF THE ROOM TEMPERATURE CONTINUES TO RISE ABOVE SET POINT BECAUSE STAGE 1 IS NOT ADEQUATE, STAGE 2 OF THE COMPRESSOR SHALL OPERATE TO MAINTAIN A ROOM COOLING TEMPERATURE SET POINT.
- THE COMPRESSOR SHALL OPERATE FOR A MINIMUM PERIOD OF TIME (AS DEFINED BY MANUFACTURER) TO AVOID SHORT CYCLING.

**OCCUPIED HEATING MODE**

- HEATING MODE SHALL BE ACTIVATED ANYTIME THE ROOM TEMPERATURE DROPS BELOW HEATING SET POINT.
- IF THE ROOM TEMPERATURE CONTINUES TO DROP BELOW HEATING SET POINT, ELECTRIC HEAT COIL SHALL ACTIVATE AND OPERATE TO MAINTAIN THE ROOM HEATING TEMPERATURE SET POINT. INTERLOCK ELECTRIC HEATER WITH FAN SUCH THAT ELECTRIC HEAT SHALL NOT OPERATE WHEN FAN IS OFF.
- HEATING MODE SHALL BE AVAILABLE FOR OVERRIDE AT THE THERMOSTAT.

**UNOCCUPIED MODE**

- UNOCCUPIED MODE SHALL BE DESIGNATED BY THE SCHEDULES SET AT THE ZONE THERMOSTAT.
- THE MOTORIZED OUTSIDE AIR DAMPER SHALL REMAIN CLOSED WHILE UNOCCUPIED MODE.
- THE SUPPLY FAN SHALL REMAIN DE-ENERGIZED AND THE AHU SHALL BE OFF.
- THE COMPRESSOR AND ELECTRIC HEAT COILS SHALL REMAIN DE-ENERGIZED.

**ALARMS**

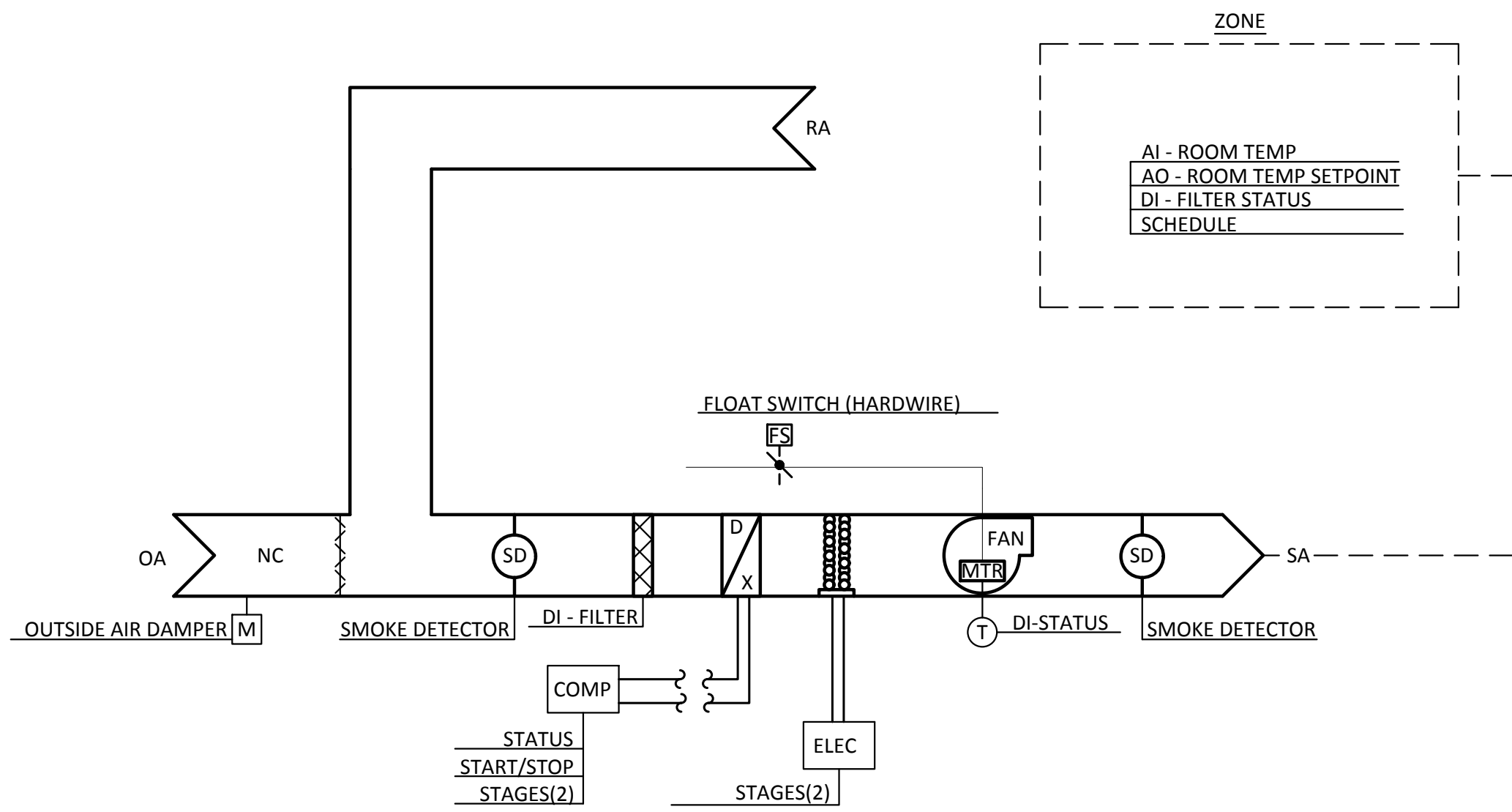
AN ALARM SHALL BE MADE AT THE THERMOSTAT ANYTIME ANY OF THE FOLLOWING IS TRUE.

- PRESSURE ACROSS AIR FILTER RISES ABOVE MANUFACTURER RECOMMENDED SET POINT.
- THE FLOAT SWITCH IN THE PRIMARY DRAIN PAN IS TRIPPED.

**SAFTIES AND SHUTDOWN**

THE FAN SHALL DE-ENERGIZE, OUTSIDE AIR DAMPER SHALL CLOSE, AND COMPRESSOR SHALL DE-ENERGIZE IF ANY OF THE FOLLOWING OCCURS.

- SMOKE IS DETECTED IN THE SUPPLY AIR DUCT.
- SMOKE IS DETECTED IN THE RETURN AIR DUCT.
- GENERAL FIRE ALARM IS TRIGGERED.
- WATER IS DETECTED IN THE PRIMARY DRAIN PAN BY THE FLOAT SWITCH



1 SPLIT SYSTEM CONTROL DIAGRAM  
NOT TO SCALE

SEQUENCE OF OPERATIONS: DUCTLESS SYSTEM DS-1 & DS-2

**SYSTEM - ON/OFF CONTROL:**  
ON/OFF CONTROL FROM INTEGRAL THERMOSTAT.

**ROOM TEMPERATURE SET POINT:**  
72°F (ADJ.)

**FAN - ON/OFF CONTROL:**  
FAN SHALL BE ACTIVATED UNDER THE FOLLOWING CONDITIONS:

- THE THERMOSTAT IS SET IN THE "FAN" MODE
- THERMOSTAT IS SET IN "AUTO/COOLING" MODE AND COOLING MODE IS ACTIVE

**CONDENSATE PUMP CONTROL**  
THE PRIMARY CONDENSATE FLOAT SWITCH WILL ACTIVATE AND DEACTIVATE THE CONDENSATE PUMP.

**SAFETIES**  
A SECONDARY OVERFLOW CONDENSATE FLOAT SWITCH UPON ACTIVATION WILL CONTINUE TO RUN THE CONDENSATE PUMP, DEACTIVATE THE FAN, AND INITIATE A BLINKING LIGHT ON THE CONTROL DISPLAY TO INDICATE THE PROBLEM.

SEQUENCE OF OPERATION: BASEBOARD HEATERS BH-1, BH-2 & BH-3

**SYSTEM DESCRIPTION**  
CEILING HUNG/WALL MOUNTED AXIAL FAN UNIT HEATER WITH ELECTRIC HEAT.

**SET POINTS**

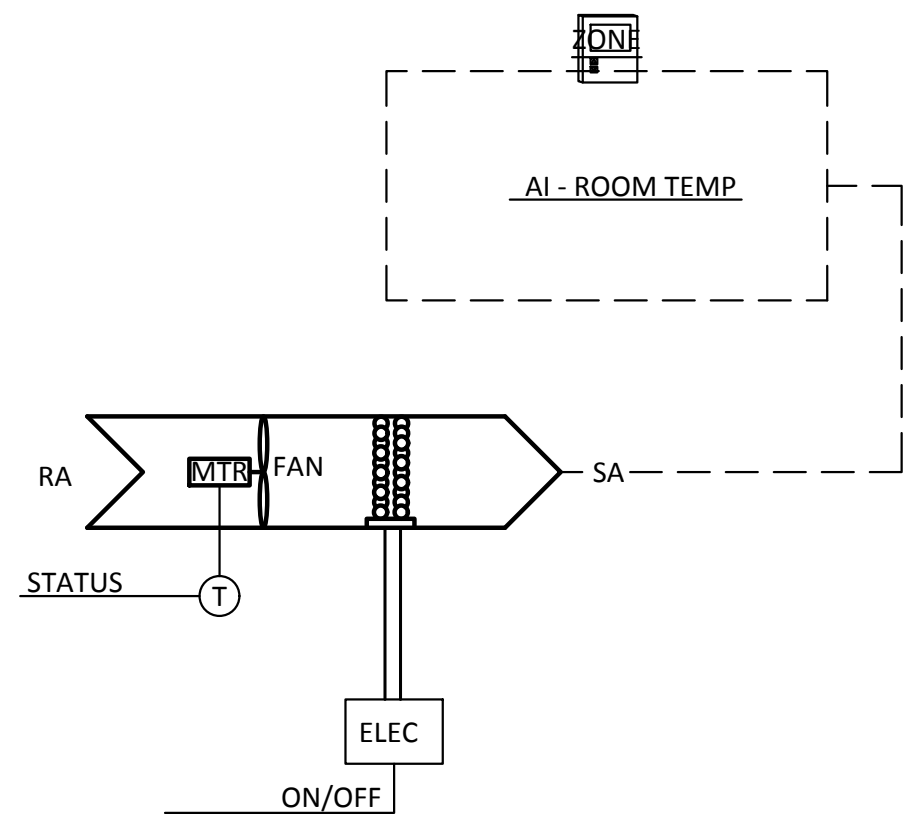
- ROOM TEMPERATURE SETPOINT HEATING 40°F (ADJ.)

**SUPPLY FAN**

- THE FAN SHALL OPERATE ANYTIME THERE IS A DEMAND FOR HEATING.
- THE FAN AND HEATER SHALL BE INTERLOCKED SUCH THAT NEITHER SHALL OPERATE INDEPENDENTLY.

**HEATING MODE**

- WHEN THE ROOM TEMPERATURE DROPS 3°F (ADJ.) BELOW THE ROOM TEMPERATURE SET POINT THE UNIT HEATER SHALL ENTER HEATING MODE.
- WHEN HEATING MODE IS ACTIVATED THE FAN SHALL START THEN THE HEATER SHALL ENERGIZE.
- THE FAN AND HEATER SHALL OPERATE CONTINUOUSLY UNTIL THE SET POINT IS REACHED.
- WHEN THE ROOM TEMPERATURE RISES 3°F ABOVE THE SET POINT HEATER SHALL DE-ENERGIZE AND THE FAN SHALL STOP.



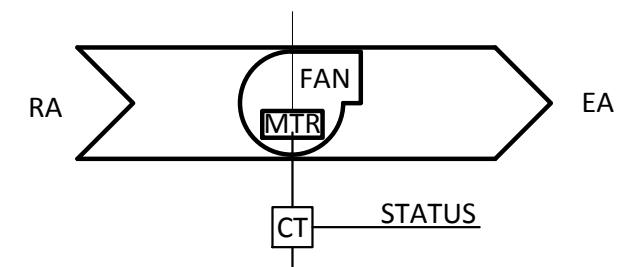
2 BASEBOARD HEATER CONTROL DIAGRAM  
NOT TO SCALE

SEQUENCE OF OPERATION: EXHAUST FAN EF-1, EF-2, EF-3 & EF-4

**SYSTEM DESCRIPTION**  
CEILING MOUNTED CONSTANT VOLUME EXHAUST FAN.

**FAN MOTOR - ON/OFF CONTROL:**

- THE EXHAUST FAN SHALL BE INTERLOCKED WITH THE LIGHT SWITCH AND WILL OPERATE ANYTIME THE LIGHT SWITCH IS ON. EXHAUST FAN SHALL CONTINUE TO OPERATE FOR 15 MINUTES (VIA TIME DELAY RELAY) AFTER LIGHT SWITCH IS SWITCHED TO "OFF".



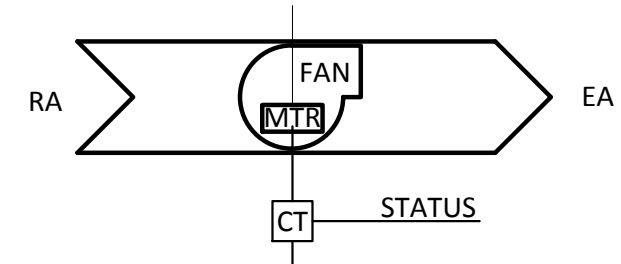
3 EXHAUST FAN CONTROL DIAGRAM  
NOT TO SCALE

SEQUENCE OF OPERATION: EXHAUST FAN EF-5, EF-6, EF-7, EF-8 & EF-9

**SYSTEM DESCRIPTION**  
CEILING MOUNTED CONSTANT VOLUME EXHAUST FAN.

**FAN MOTOR - ON/OFF CONTROL:**

- THE EXHAUST FAN SHALL RUN CONTINUOUSLY AND ONLY DEACTIVATED BY THE DISCONNECT SWITCH FOR MAINTENANCE AND REPAIR.



4 EXHAUST FAN CONTROL DIAGRAM  
NOT TO SCALE



**Structural Engineer:**

VIEWTECH INC.  
4205 Bellway Dr. Addison, TX 75001  
Victor Lisiak III  
972.661.8187

**MEP Engineer:**

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

**Civil Engineer:**

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

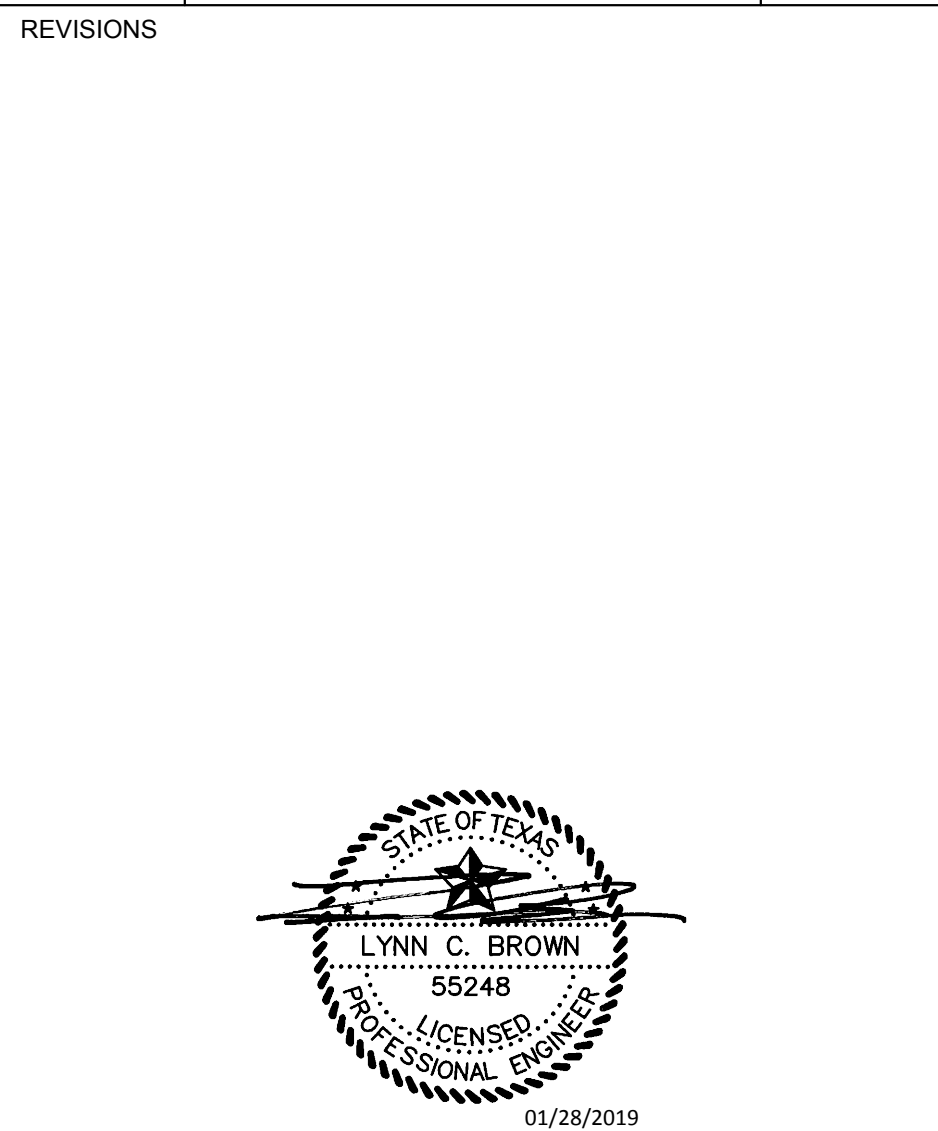
**Landscape Architect:**

LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

**Interior Designer:**

SJL Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19



a multifamily project for  
NRP Group

West Cevallos  
San Antonio, Texas

MECHANICAL  
SEQUENCE OF OPERATIONS

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

M502



**Structural Engineer:**

VIEWTECH INC.  
4205 Beltway Dr. Addison, TX 75001  
Victor Lisiak III  
972.661.8187

**MEP Engineer:**

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

**Civil Engineer:**

MBC & Associates, Inc  
1035 Central Pkwy N. San Antonio, TX 78732  
David Allen  
210.545.1122

**Landscape Architect:**

LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

**Interior Designer:**

SJL Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



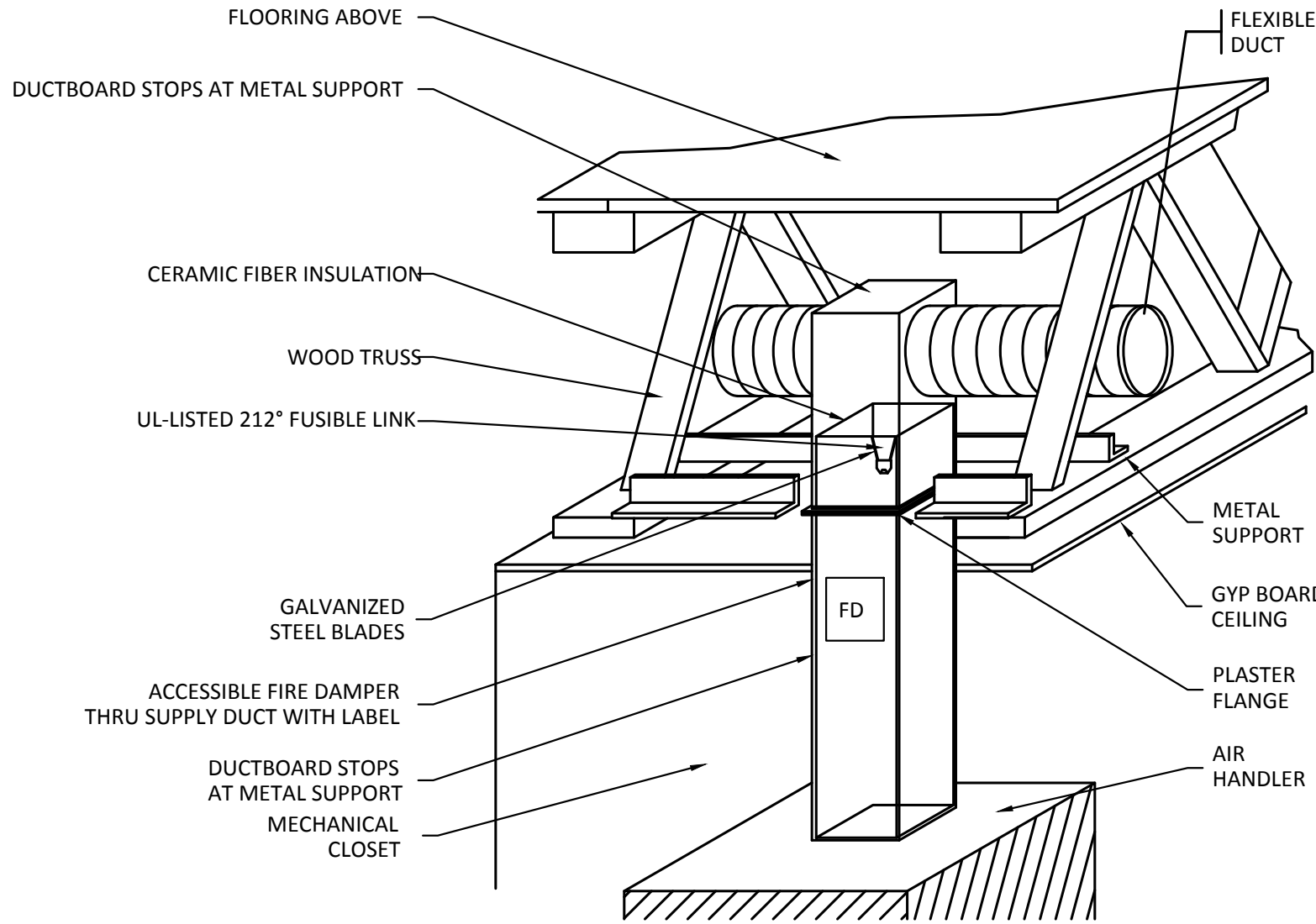
a multifamily project for  
NRP Group

**West Cevallos**  
San Antonio, Texas

**MECHANICAL  
DETAILS**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

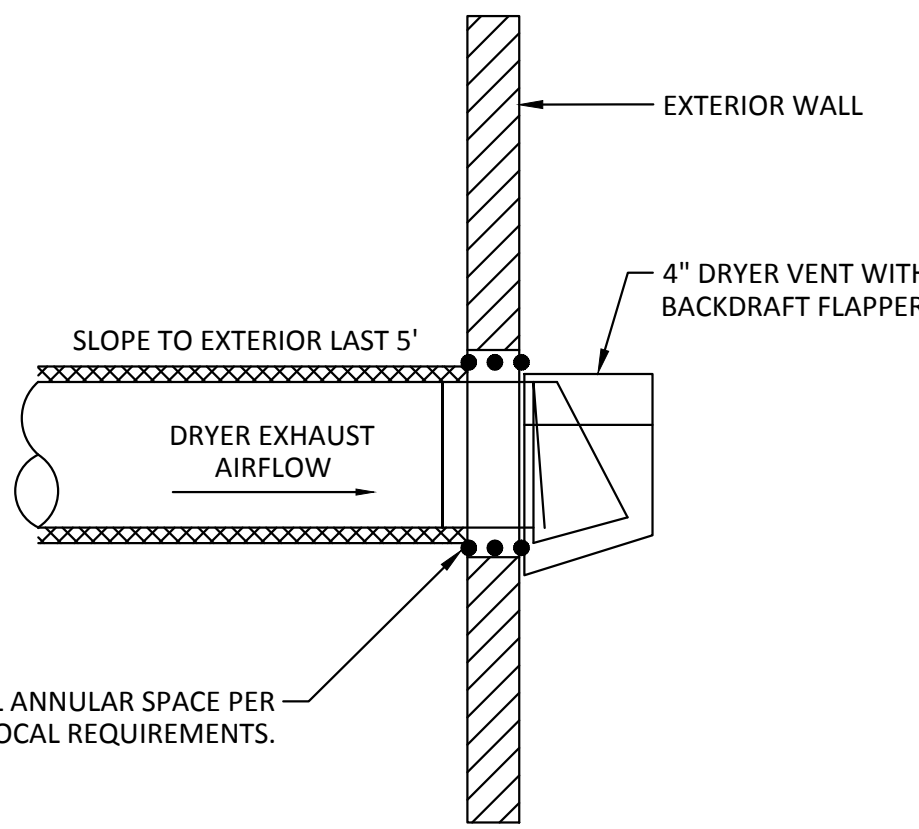
**M601**



**1 FIRE DAMPER DETAIL**

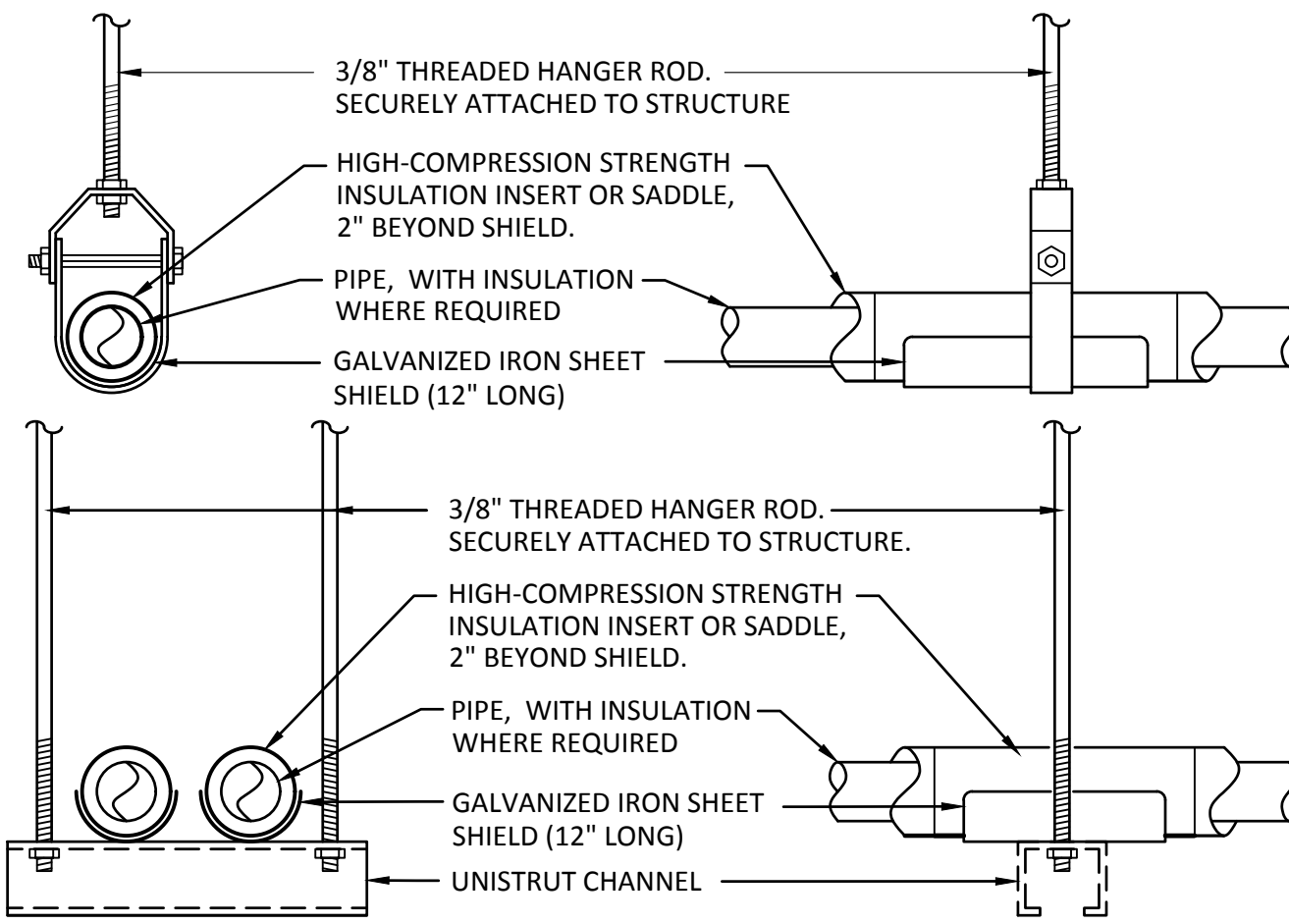
N.T.S.

- NOTES:
1. THE FIRE DAMPER SHALL BE ATTACHED WITHIN A 24 GAUGE MINIMUM STEEL SLEEVE WITH NO. 8 SHEET METAL SCREWS, AT 12" O.C. MAXIMUM. A MINIMUM OF THREE CONNECTIONS.



**2 DRYER EXHAUST @ EXTERIOR WALL DETAIL**

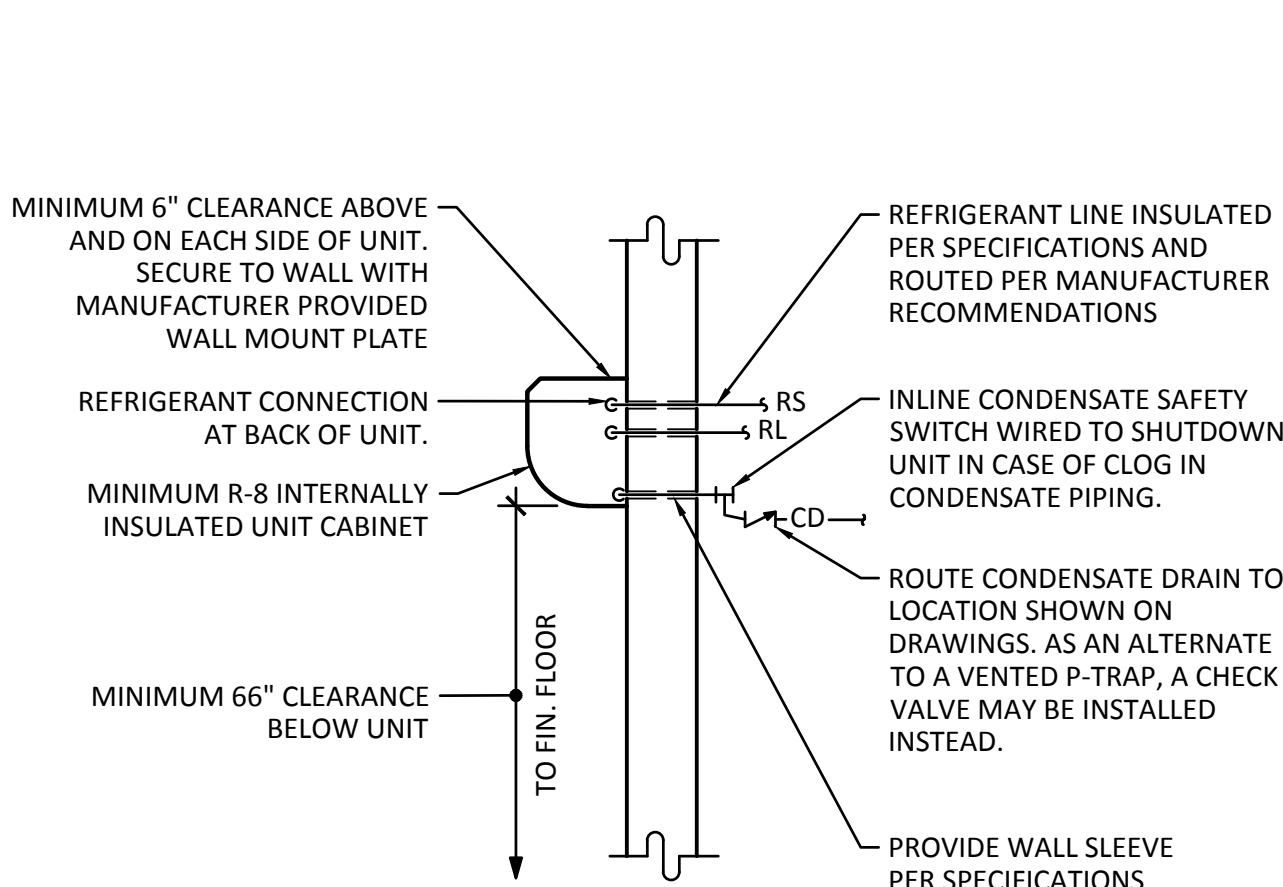
N.T.S.



**3 PIPE HANGER DETAILS**

N.T.S.

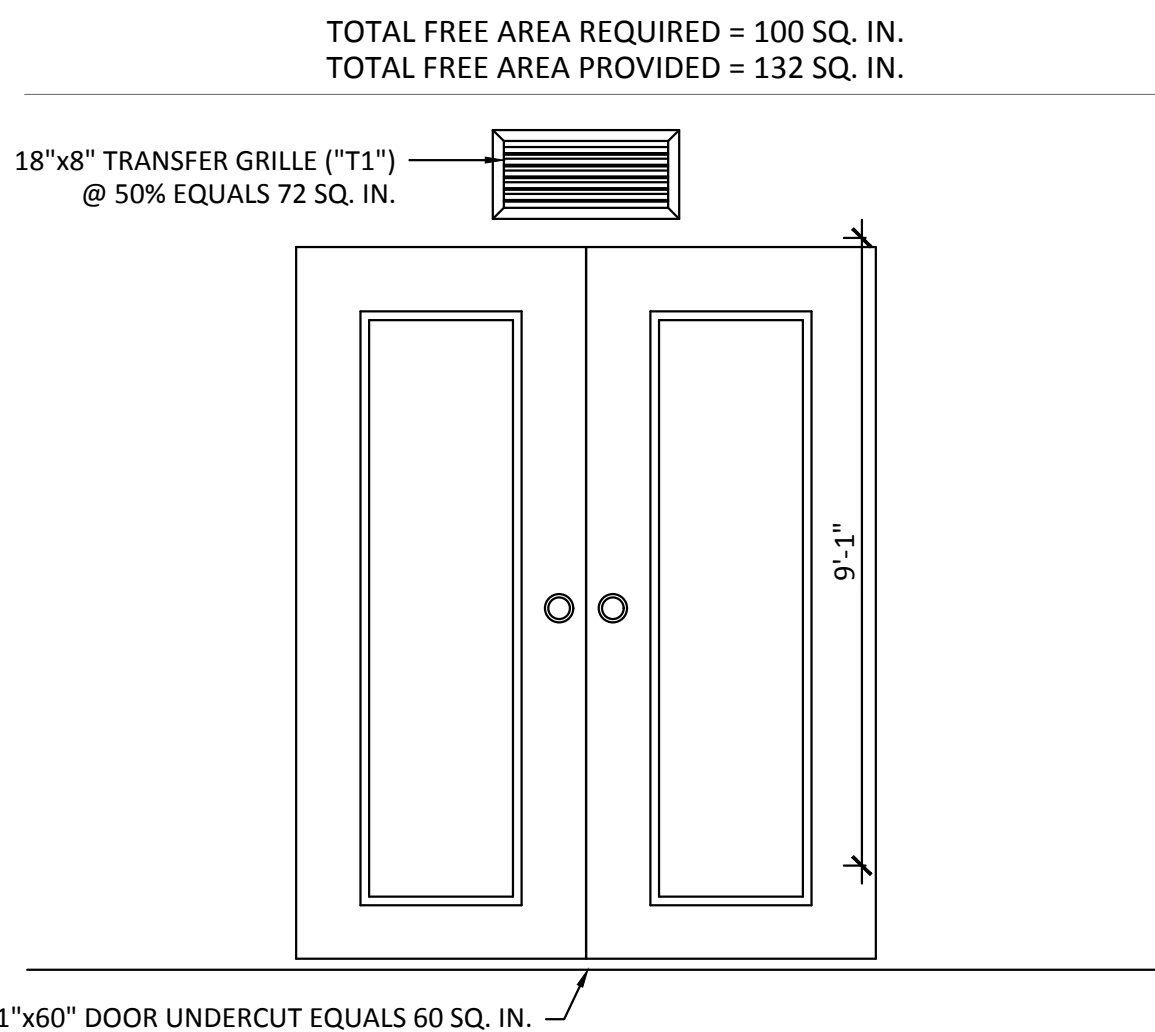
- NOTES:
1. ATTACH SUPPORTS FOR ALL PIPING SUSPENDED FROM THE STEEL STRUCTURE TO THE TOP CORD OF JOISTS OR BEAM.
  2. PROVIDE COPPER OR PLASTIC COATED HANGERS FOR NON-INSULATED COPPER PIPE



**4 WALL MOUNTED DUCTLESS SPLIT-SYSTEM DETAIL**

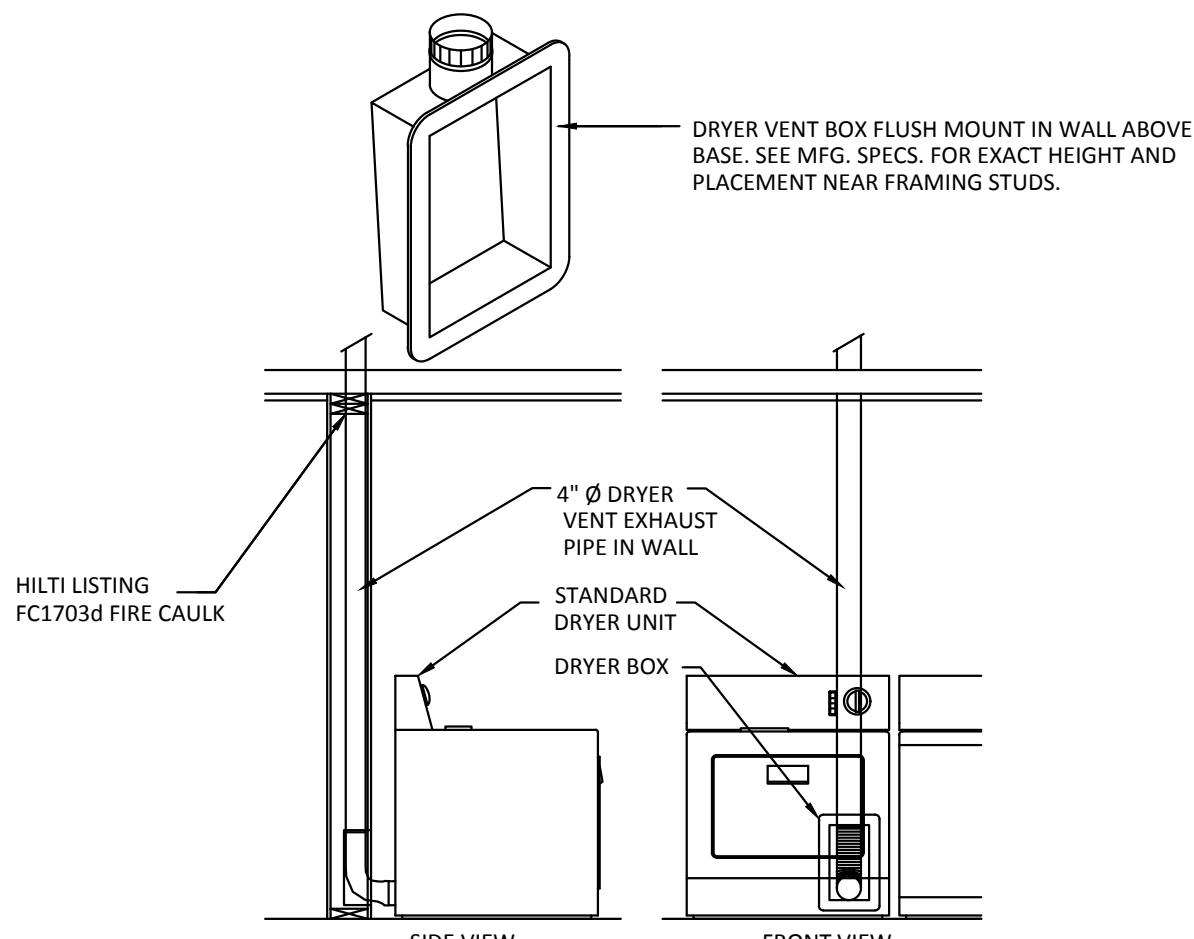
N.T.S.

- NOTE:
1. PROVIDE WITH MOTOR RATED SWITCH. ELECTRICAL POWER CONNECTION BY OUTDOOR UNIT. REFER TO ELECTRICAL DRAWINGS.



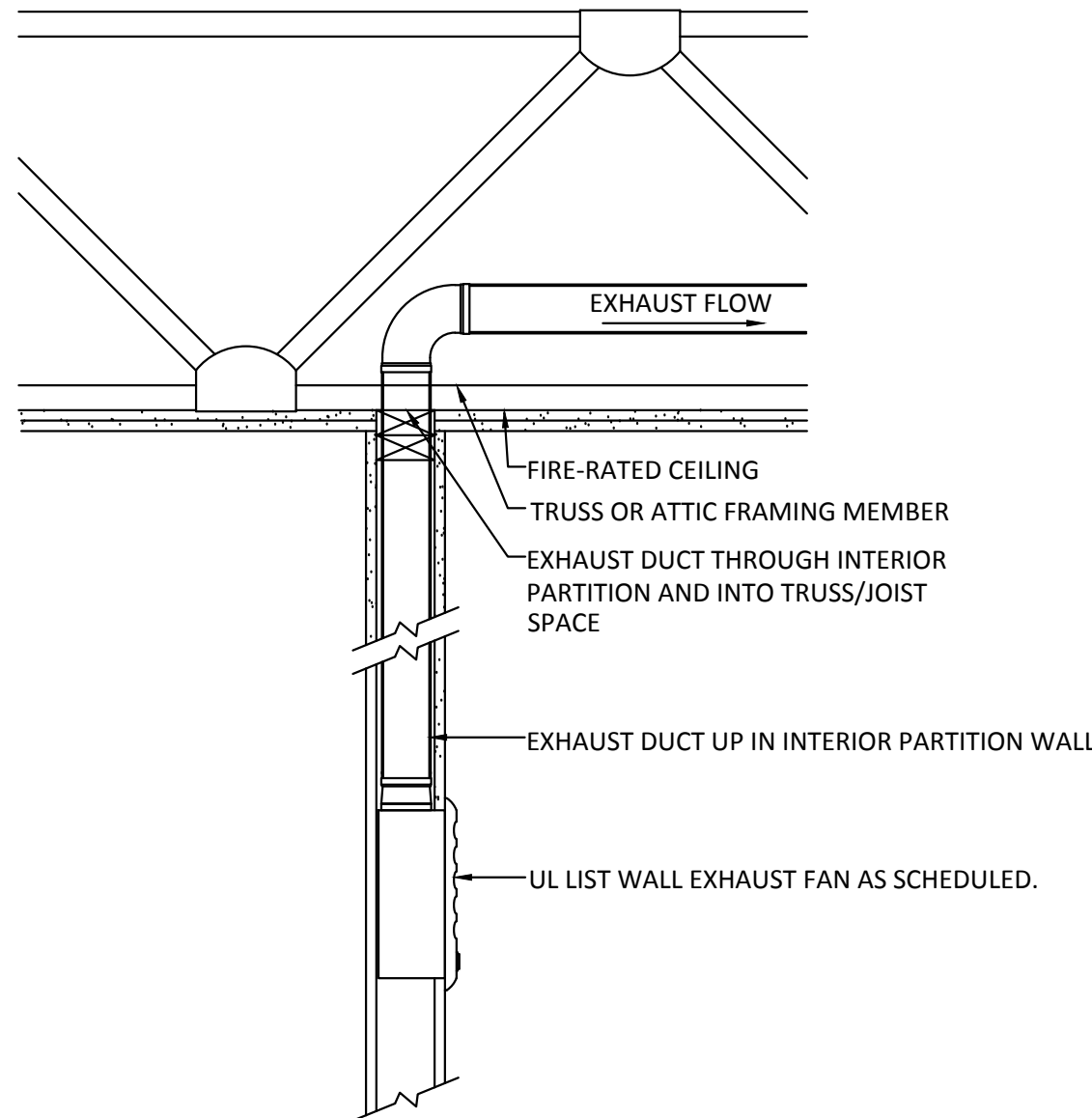
**5 UTILITY ROOM MAKEUP AIR CALCULATIONS DETAIL**

N.T.S.



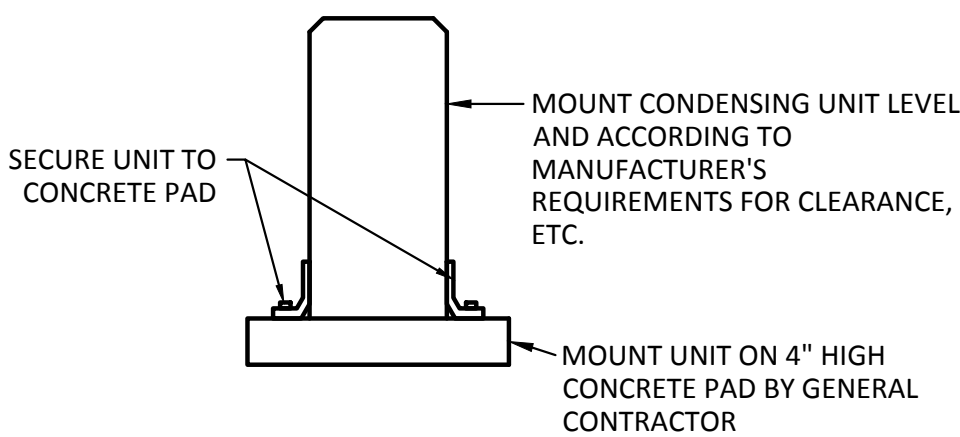
**6 DRYER BOX DETAIL**

NOT TO SCALE



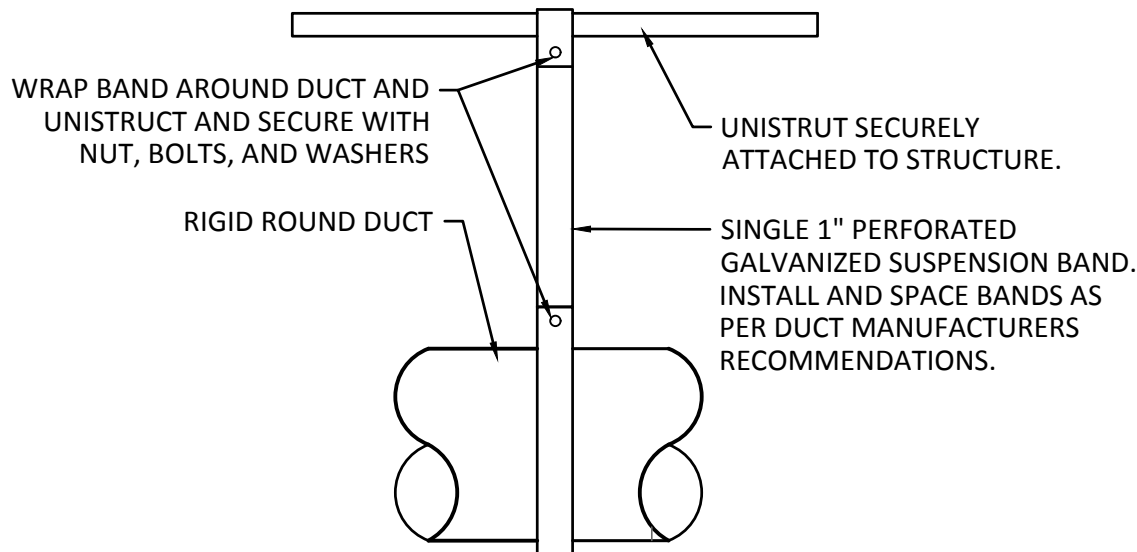
**7 WALL MOUNTED EXHAUST DETAIL**

NOT TO SCALE



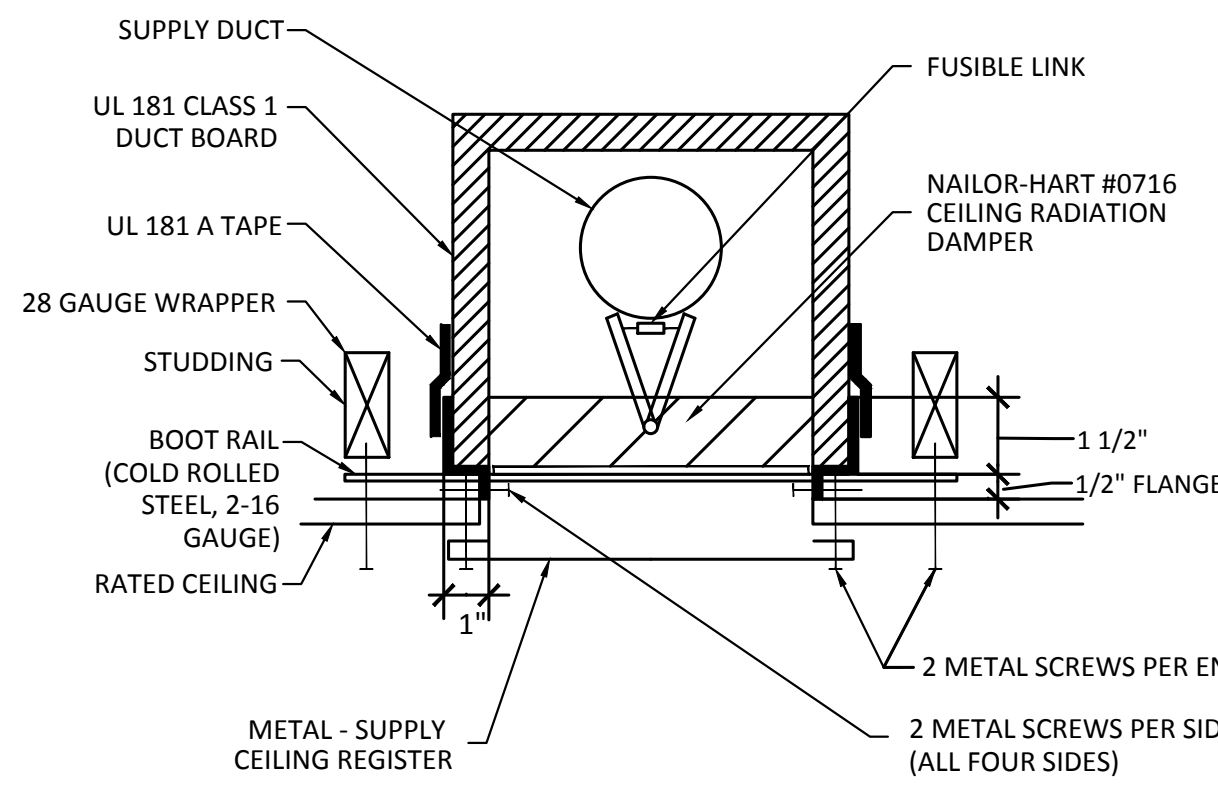
**8 DUCTLESS SPLIT CONDENSING UNIT MOUNTING DETAIL**

N.T.S.



**9 ROUND DUCT HANGER DETAIL**

N.T.S.



NOTES:

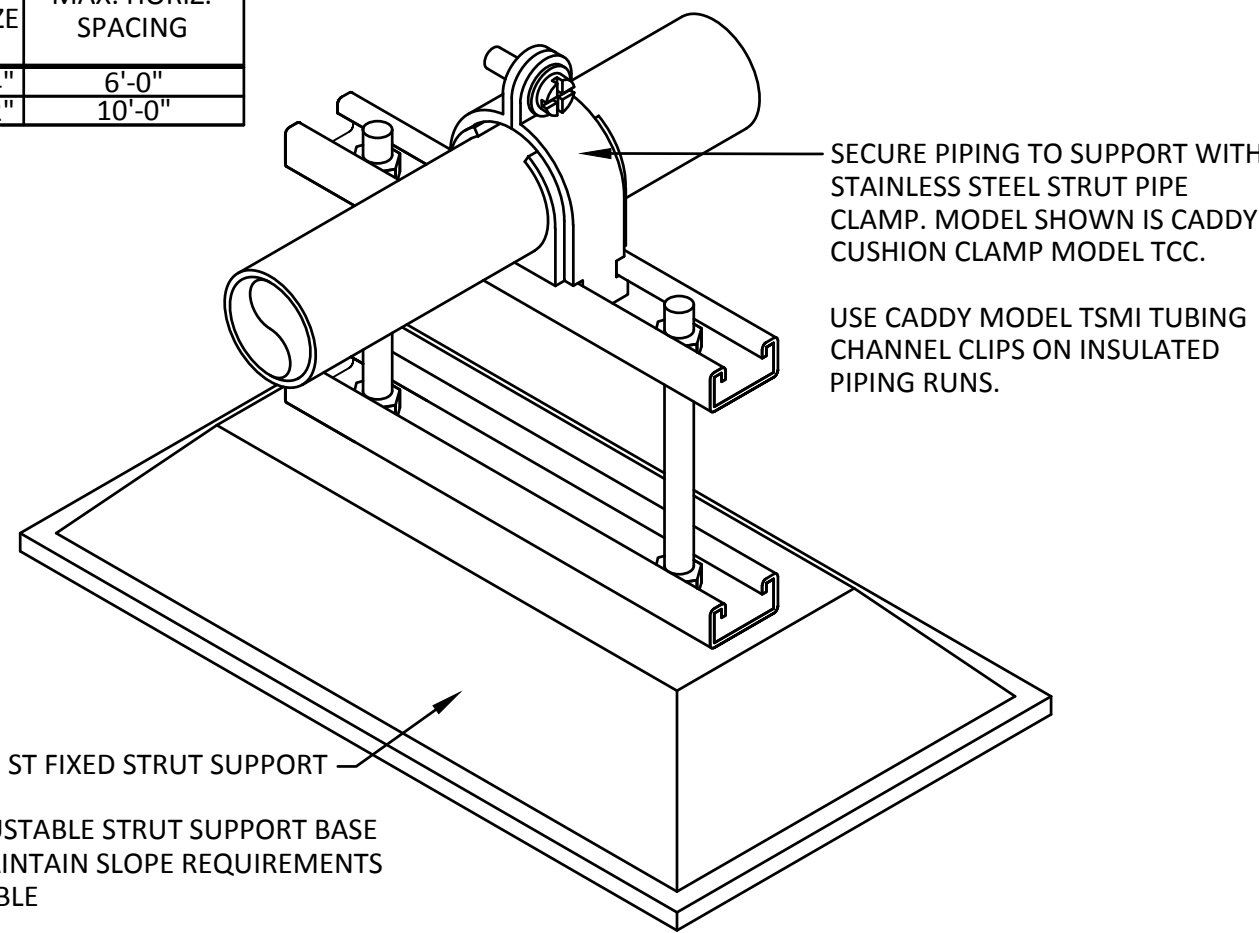
1. TIGHT, FLUSH FIT SHALL BE MADE BETWEEN THE FLANGES OF THE WRAPPER AND FIRE DAMPER.

**10 CEILING RADIATION DAMPER DETAIL**

NOT TO SCALE

THIS SYSTEM FOR USE WITH ELECTRICAL CONDUIT, CPVC CONDENSATE PIPING, AND JACKETED/INSULATED REFRIGERANT PIPING. BASE MAY DIFFER AS NOTED. CLIPS AND CLAMPS MAY DIFFER AS NOTED. CONTACT ERICO/CADDY REP FOR SPECIFIC USAGE AND REQUIREMENTS DEPENDING ON EXTERIOR AND/OR INTERIOR USAGES.

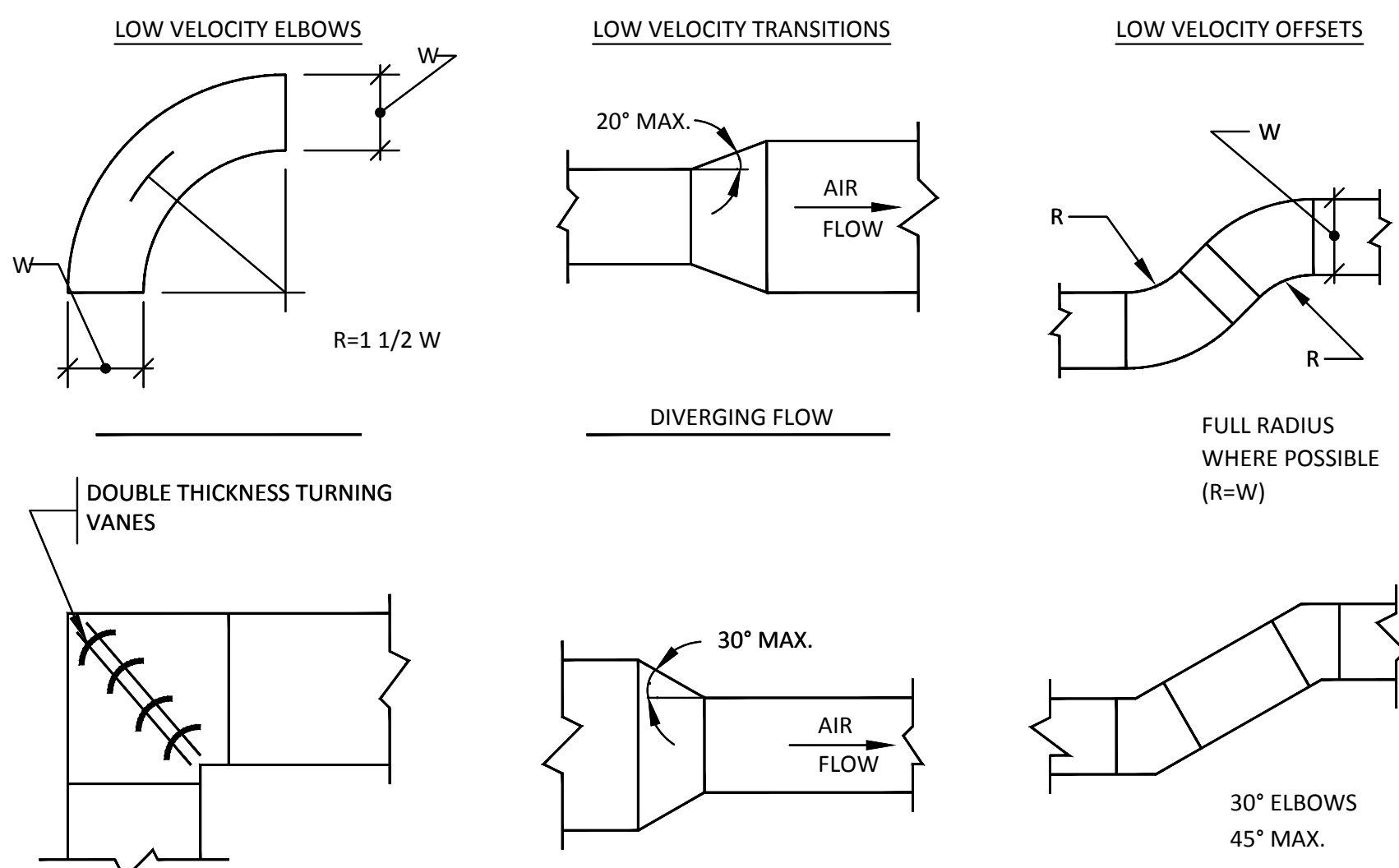
MINIMUM PIPE SUPPORT SPACING		
TYPE	PIPE SIZE	MAX. HORIZ. SPACING
COPPER	≤ 1-1/4"	6'-0"
COPPER	≥ 1-1/2"	10'-0"



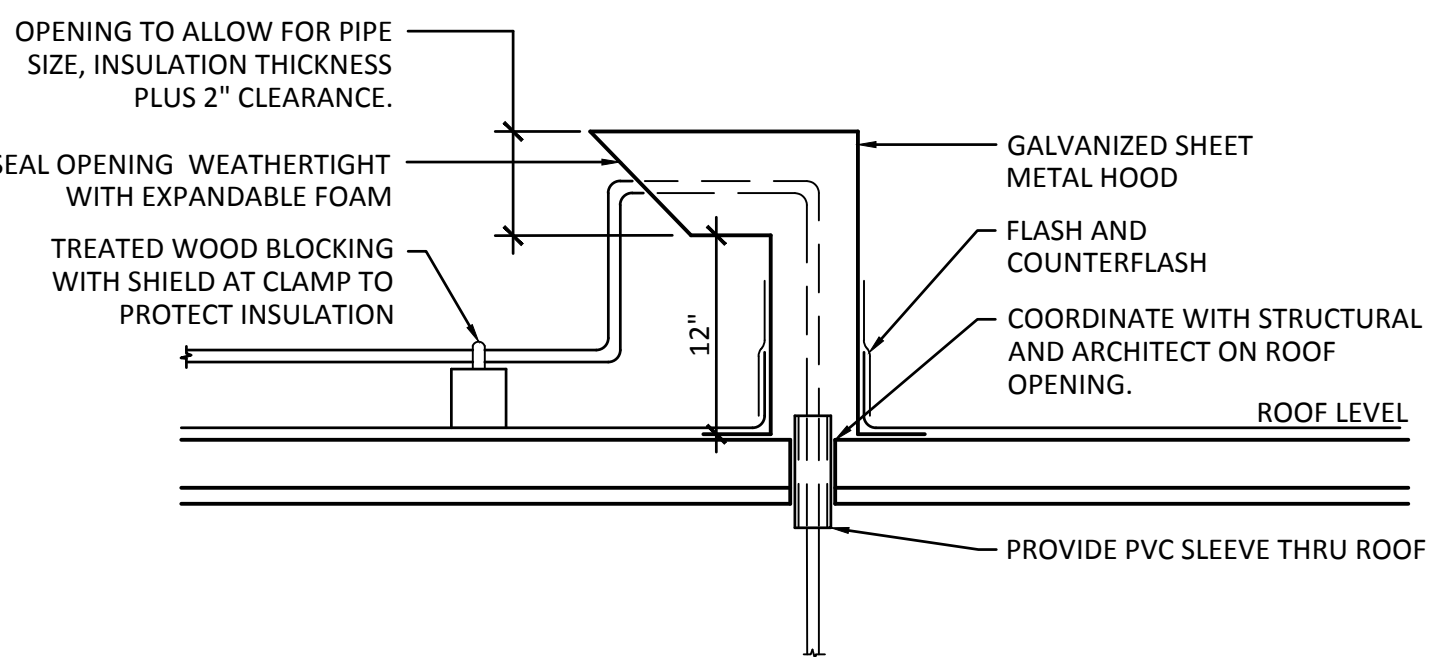
**11 TYPICAL PIPING SUPPORT DETAIL**

N.T.S.

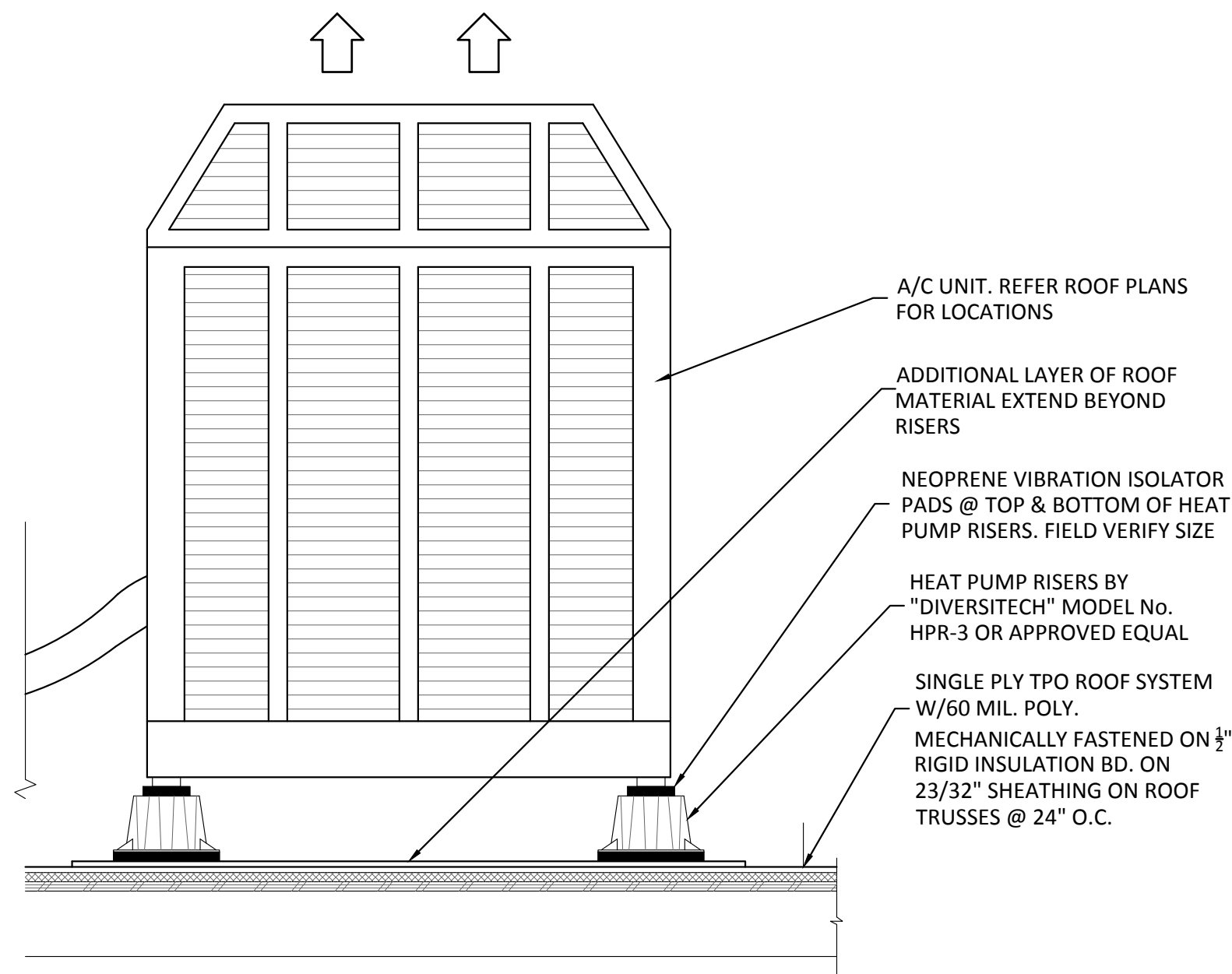




**1** LOW VELOCITY TRANSITIONS, OFFSETS AND ELBOWS  
N.T.S.

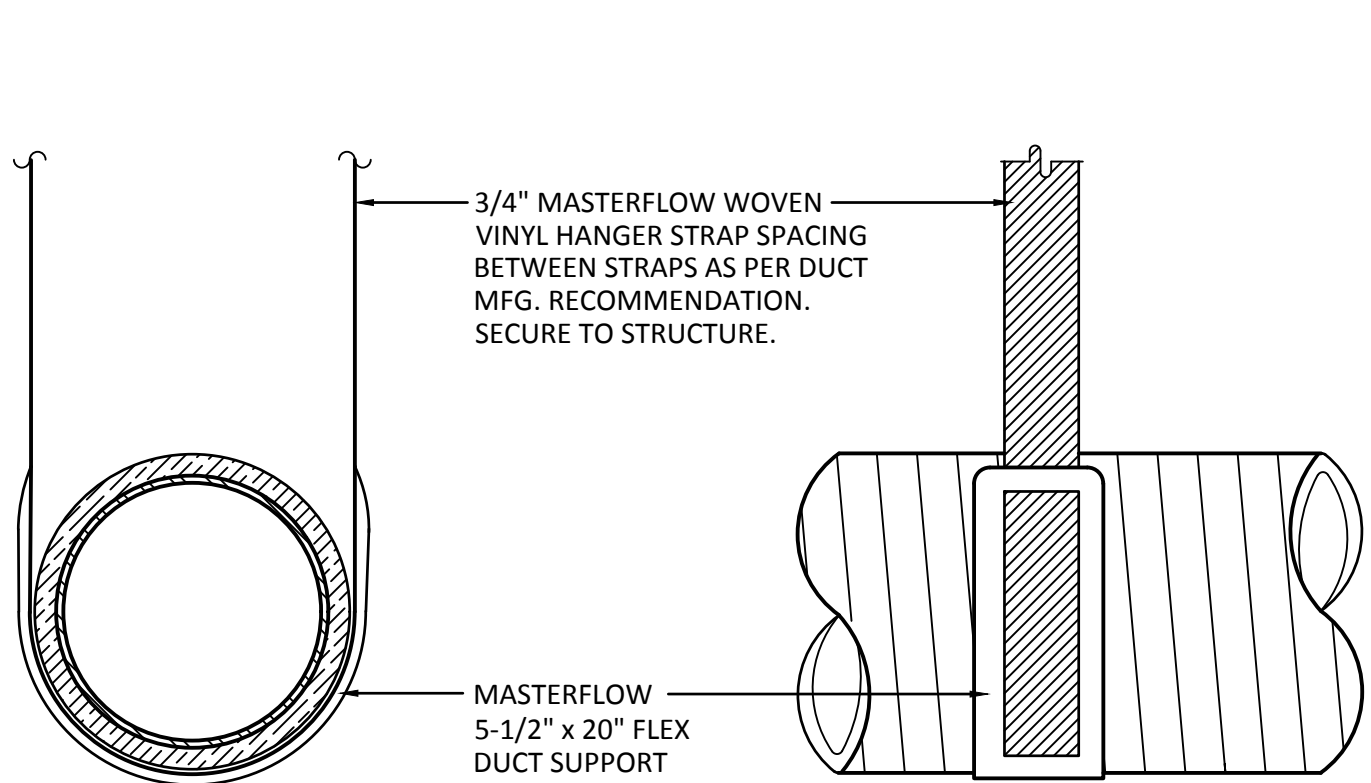


**2** REFRIGERANT PIPING ROOF JACK DETAIL  
N.T.S.

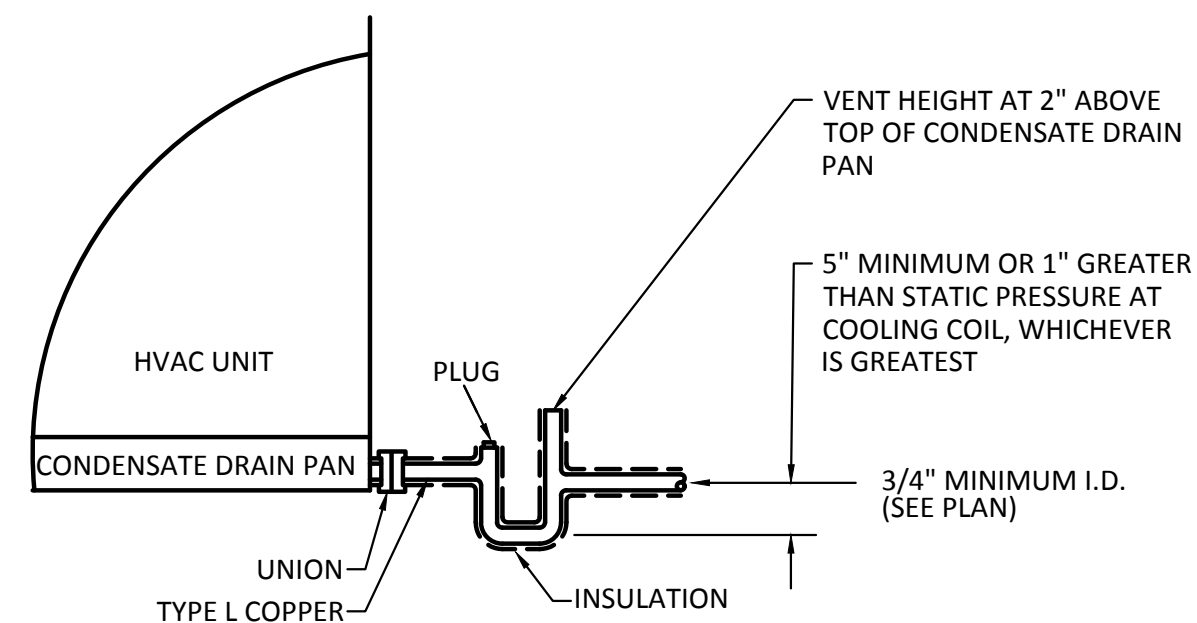


- NOTES:
1. PAINT PIPING INSULATION WITH 2 COATS, PER INSULATION MANUFACTURER'S REQUIREMENT AND INSTRUCTIONS.
  2. PROVIDE AND INSTALL LINE DRYER IN LIQUID REFRIGERENT LINE.
  3. TREATED LUMBER IS NOT A SUITABLE ALTERNATIVE FOR EQUIPMENT SUPPORT.
  4. DISCONNECT SWITCH SHALL NOT BE UNIT MOUNTED. PROVIDE SUBMITTALS FOR ALL EQUIPMENT CURBS TO ARCHITECT.

**3** CONDENSING UNIT ON ROOF DETAIL  
N.T.S.

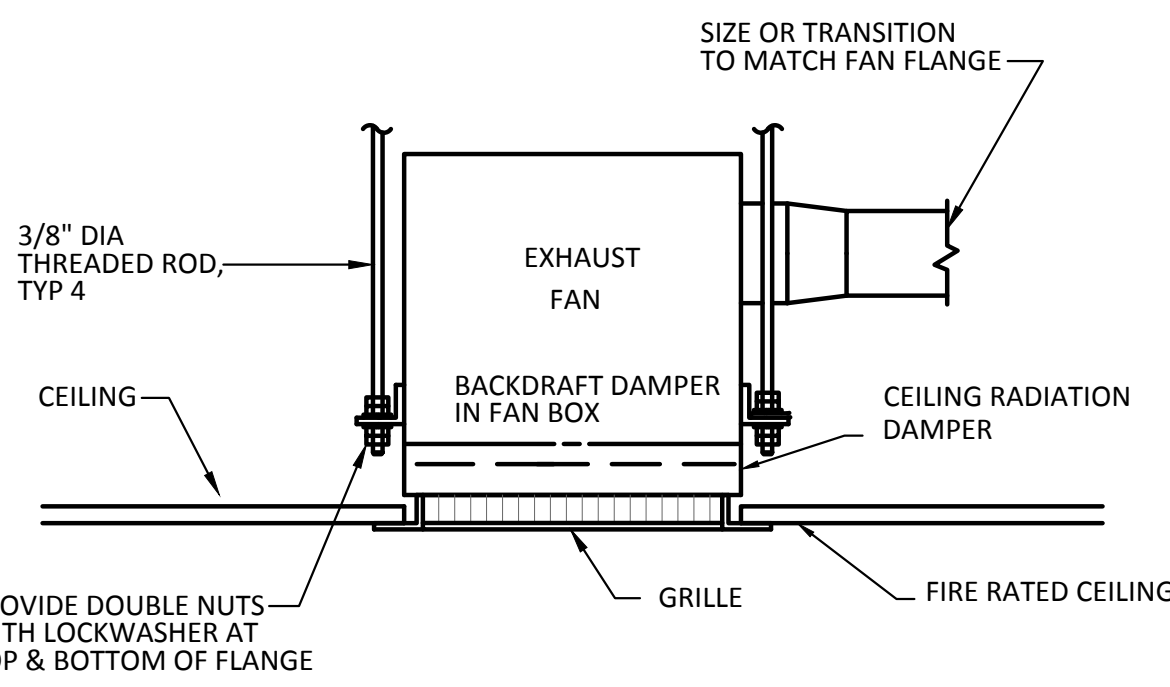


**4** FLEX DUCT SUPPORT DETAIL  
N.T.S.

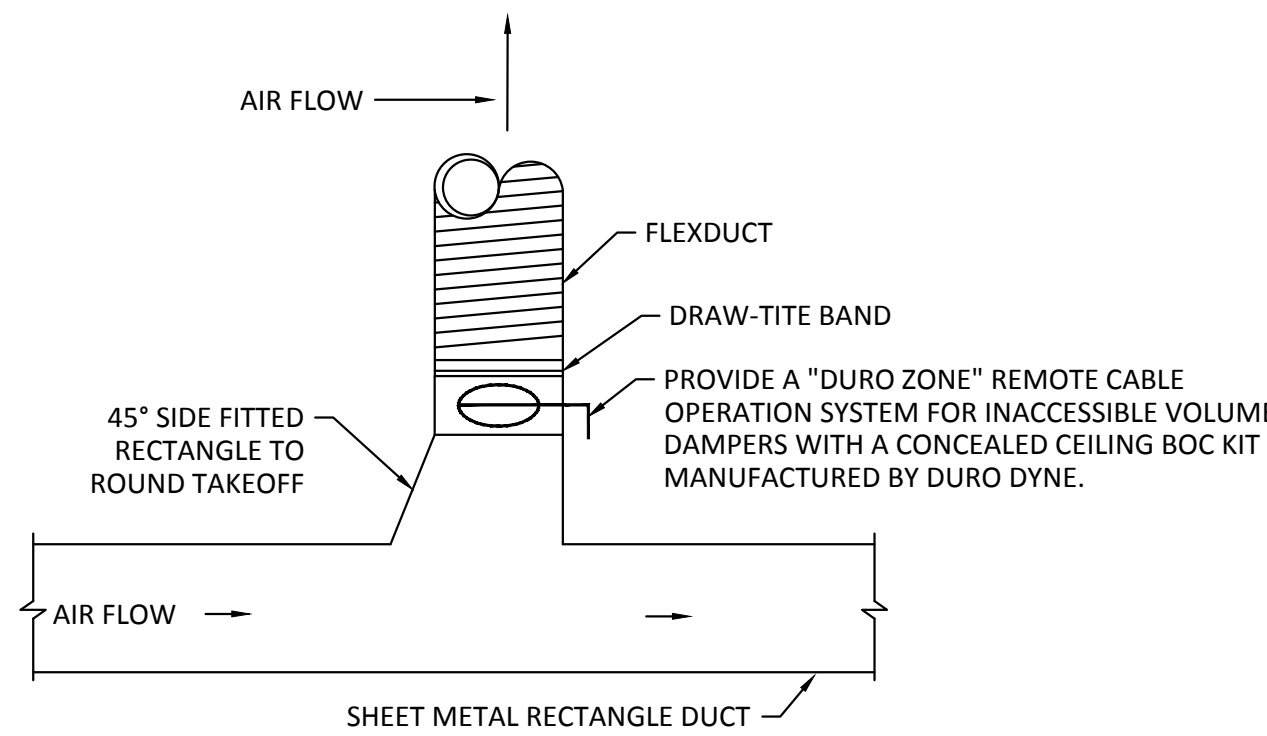


- NOTES:
1. ROUTE DRAIN TO AN APPROVED RECEPTOR, SUCH AS A DRAIN TAILPIECE AT NEAREST LAVATORY, FLOOR DRAIN, FLOOR SINK, HUB DRAIN OR MOP SINK.

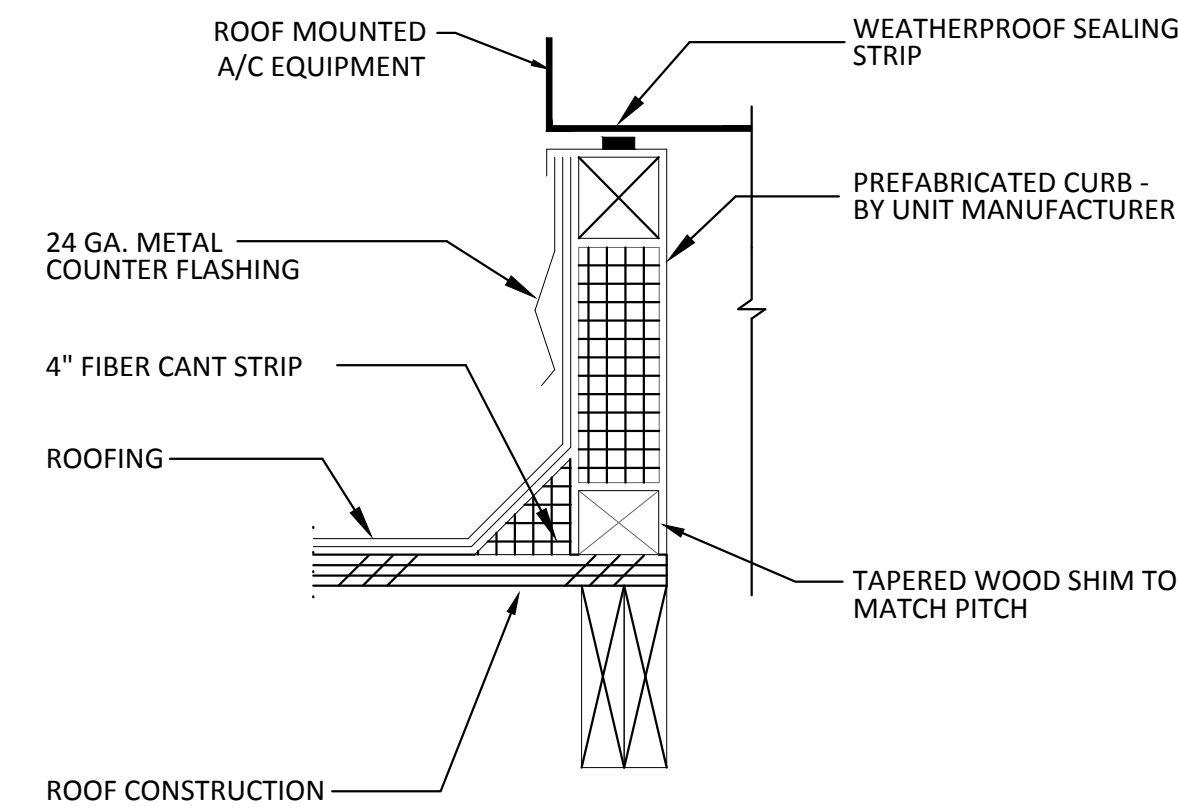
**5** CONDENSATE DRAIN DETAIL  
N.T.S.



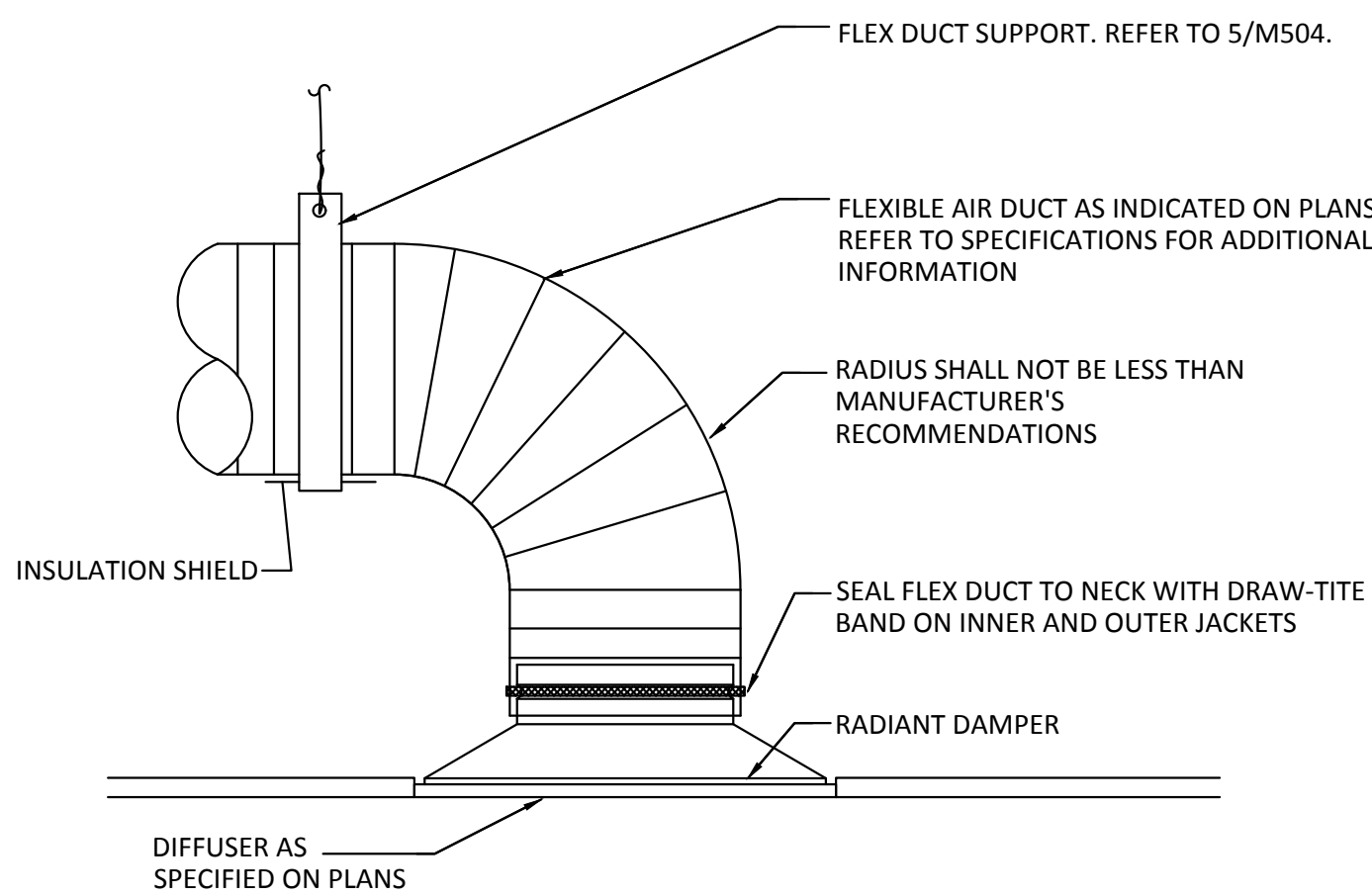
**6** CEILING EXHAUST FAN DETAIL  
N.T.S.



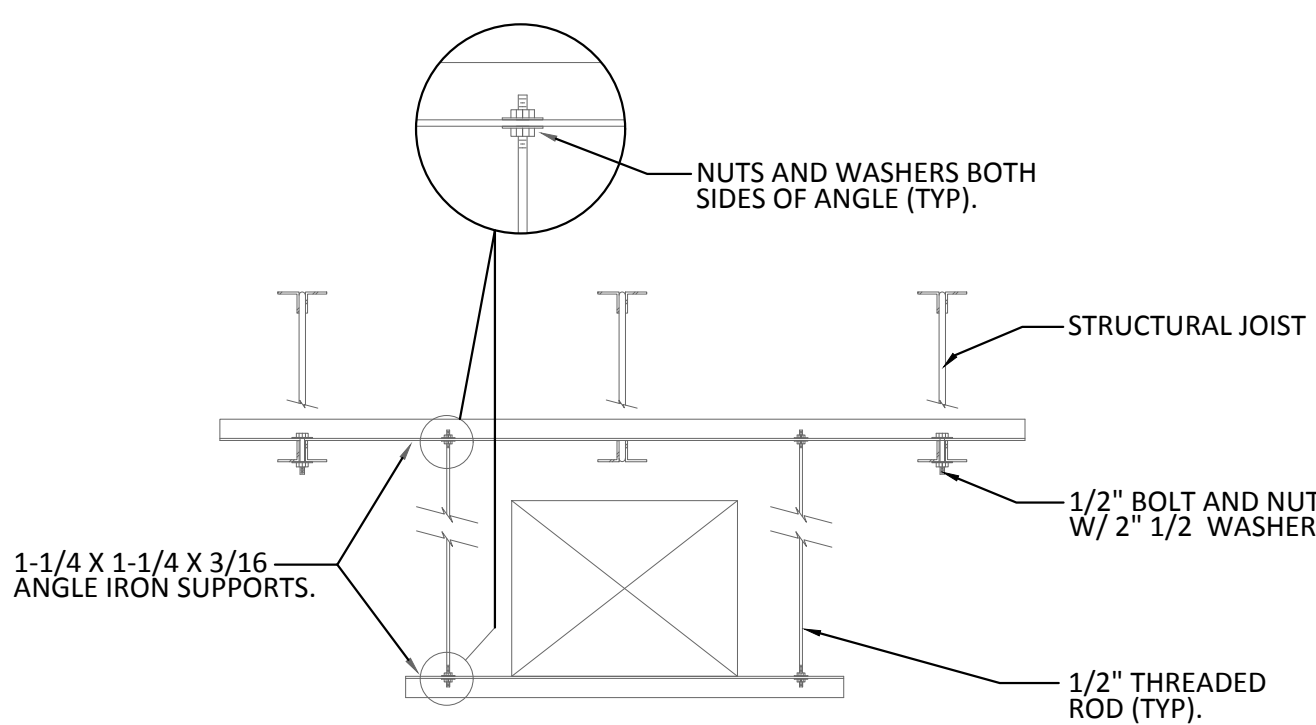
**7** TYPICAL BRANCH DUCT DETAIL - DWELLING UNIT  
N.T.S.



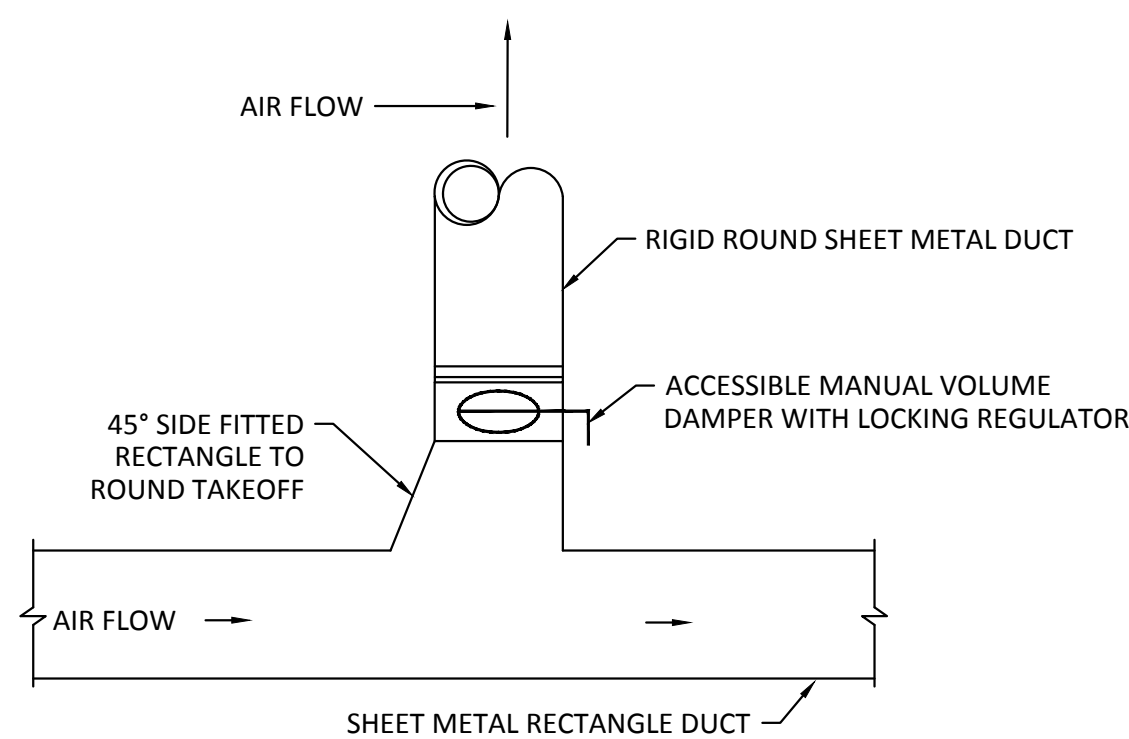
**8** ROOF CURB DETAIL  
N.T.S.



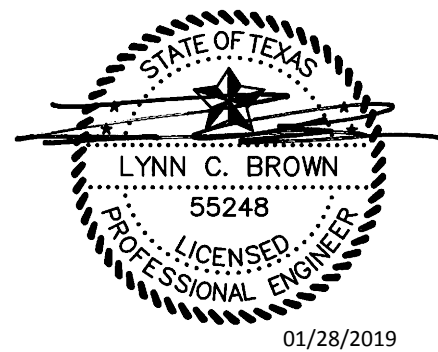
**9** TYPICAL SUPPLY DIFFUSER  
N.T.S.



**10** DUCT HANGER DETAIL  
N.T.S.



**11** TYPICAL BRANCH DUCT DETAIL - COMMUNITY CENTER  
N.T.S.



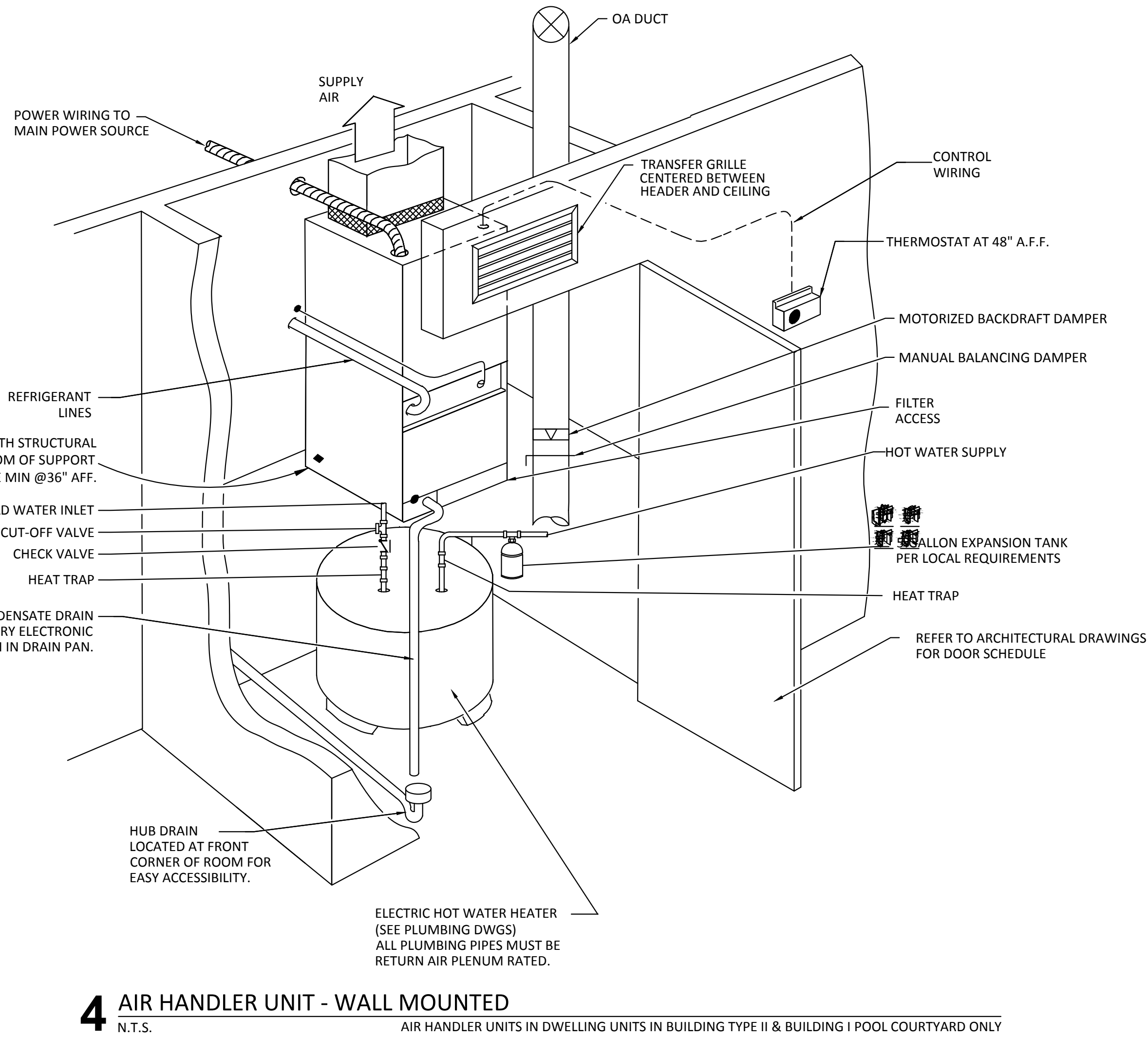
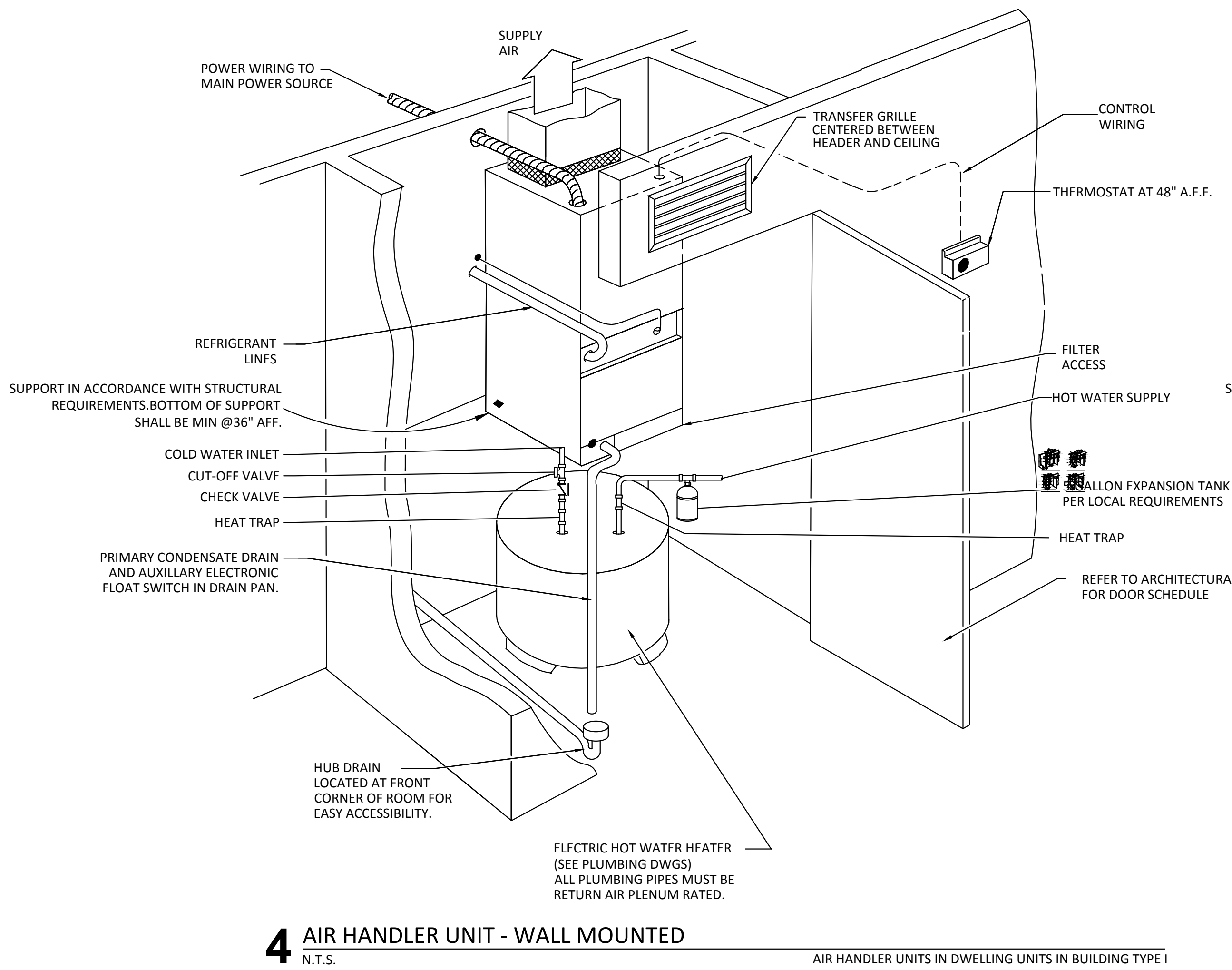
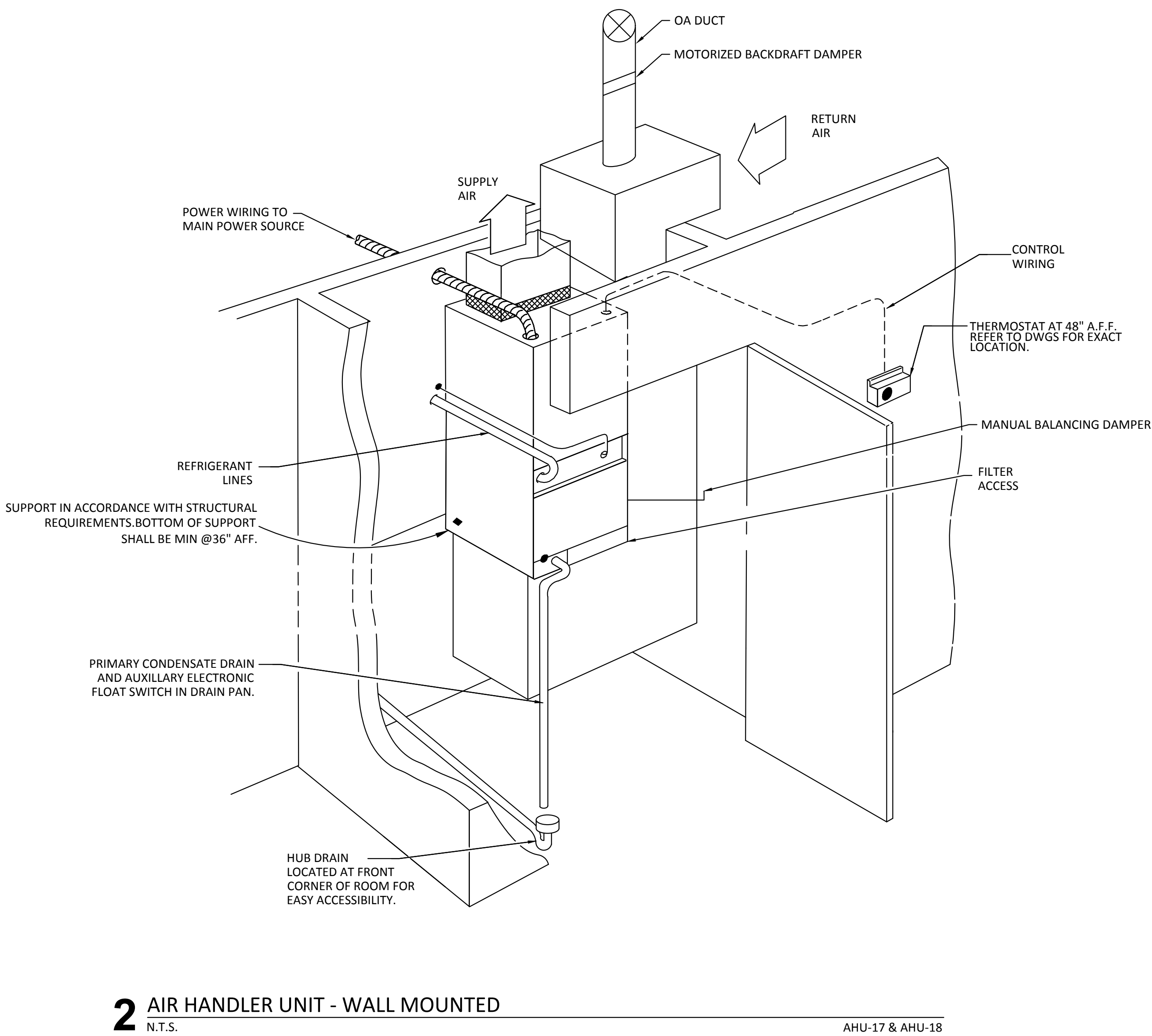
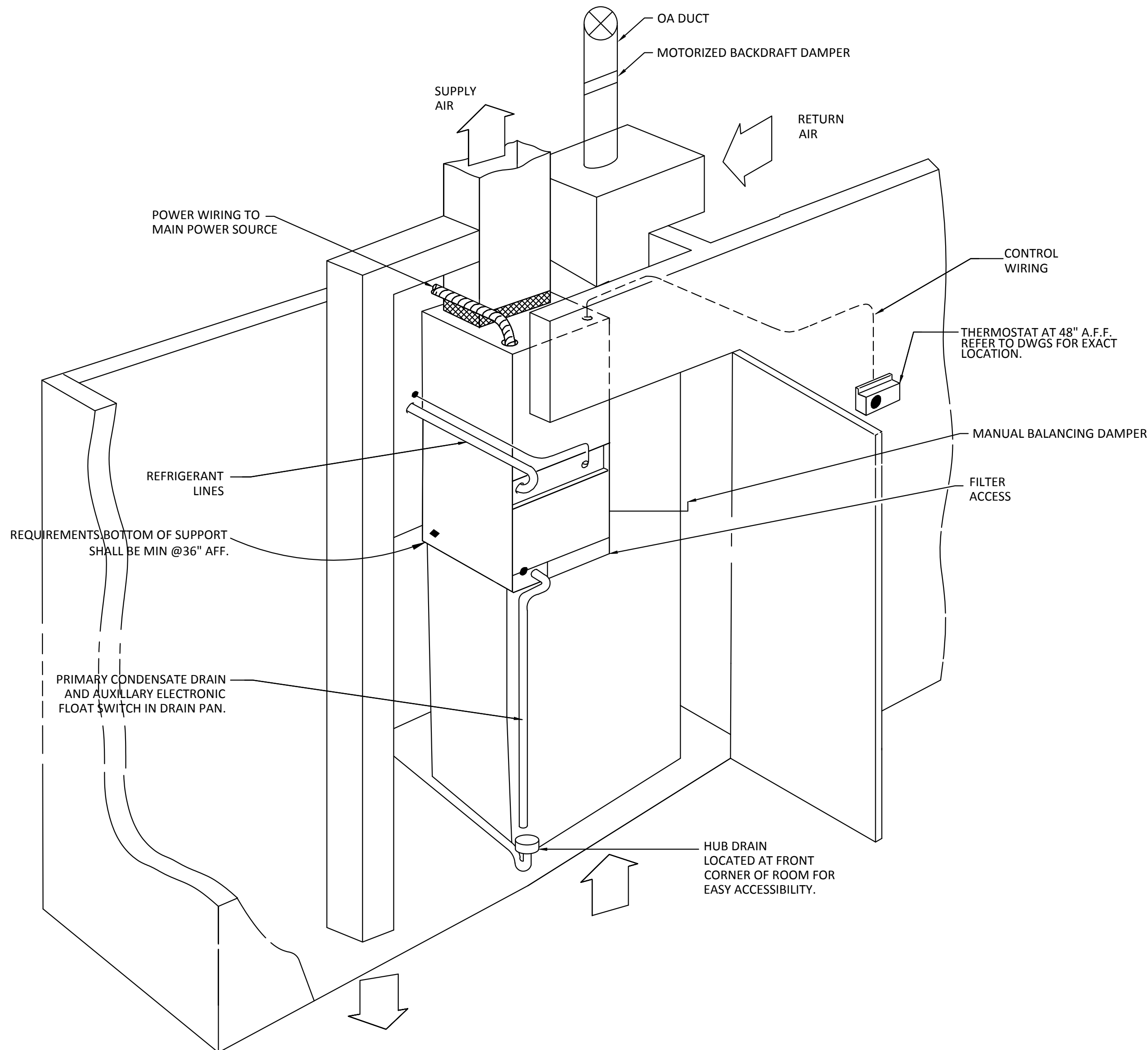
a multifamily project for  
NRP Group

**West Cevallos**  
San Antonio, Texas

## MECHANICAL DETAILS

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

**M602**



**Structural Engineer:**

VIEWTECH INC.  
4205 Beltway Dr. Addison, TX 75001  
Victor Lisiak III  
972.661.8187

**MEP Engineer:**

ENCOTECH  
8500 Bluffstone Cove, Austin, TX. 78759  
Tessa Roberts  
512.338.1101

**Civil Engineer:**

MBC & Associates, Inc  
1035 Central Pkwy N, San Antonio, TX 78732  
David Allen  
210.545.1122

**Landscape Architect:**

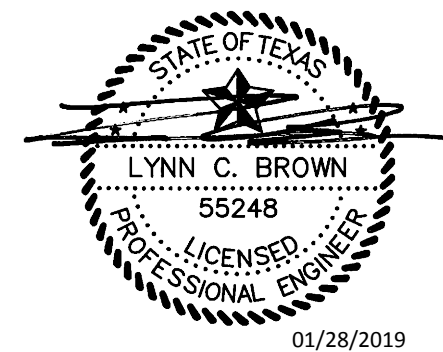
LEE & Associates, Inc.  
9020 N Capital of Texas Hwy, Austin, TX. 78759  
Amber Rothwell  
512.345.8477

**Interior Designer:**

SJL Design Group  
921 N. Riverfront Blvd. Suite 100, Dallas, TX 75207  
Cassie Farley  
214.443.9090

ISSUANCES		
01	SCHEMATIC DESIGN	09.10.18
02	DEVELOPMENT DESIGN	11.09.18
03	PERMIT SET	01.28.19

REVISIONS



a multifamily project for  
NRP Group

**West Cevallos**  
San Antonio, Texas

**MECHANICAL  
DETAILS**

Project Number	18054
Date	01/14/2018
Drawn By	TLR
Checked By	EEC

**M603**