



Web site: www.engrteam.com
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CLIENT:

ADDRESS:

Little Manor, Barnet Lane, Elstree
WD6 3QU

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1. ALL DIMENSIONS HEREIN ARE IN METRIC UNITS
UNLESS STATED OTHERWISE.

2. THESE DRAWINGS ARE TO BE READ IN
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SPECIFICATIONS.

3. THE CONTRACTOR MUST CHECK ALL
DIMENSION AT SITE BEFORE COMMENCING
WORK.

4. THE CONTRACTOR IS RESPONSIBLE FOR
PROVIDING ALL NECESSARY TEMPORARY
SUPPORT TO THE BUILDING AND ANY ADJACENT
STRUCTURES.

Air System Sizing Summary for HVAC 1

Project Name: 246_Fate_Little Manor, Barnet Lane, Elstree WD6 3Q
Prepared by: Engineer's Team

08/15/2026
05:32PM

Air System Information

Air System Name: HVAC 1
Equipment Class: SPLT AHU
Air System Type: SZCAV
Number of zones: 1
Floor Area: 243.9 m²
Location: London - Heathrow, United Kingdom

Sizing Calculation Information

Calculation Months: Jan to Dec
Sizing Data: Calculated
Zone L/s Sizing: Sum of space airflow rates
Space L/s Sizing: Individual peak space loads

Central Cooling Coil Sizing Data

Total coil load: 21.0 kW
Sensible coil load: 18.8 kW
Coil L/s at Jul 1500: 1306 L/s
Max block L/s: 1306 L/s
Sum of peak zone L/s: 1306 L/s
Sensible heat ratio: 0.894
L/s (kW): 62.1
m³/kW: 11.6
W/m²: 86.2
Water flow @ 5.6 K rise: N/A
Load occurs at: Jul 1500
OA DB / WB: 26.9 / 18.8 °C
Entering DB / WB: 24.8 / 17.1 °C
Leaving DB / WB: 12.9 / 12.0 °C
Coil ADP: 11.3 °C
Bypass Factor: 0.120
Resulting RH: 46 %
Design supply temp.: 12.8 °C
Zone T-stat Check: 1 of 1 OK
Max zone temperature deviation: 0.0 K

Central Heating Coil Sizing Data

Max coil load: 14.8 kW
Coil L/s at Des Htg: 1306 L/s
Max coil L/s: 1306 L/s
Water flow @ 11.1 K drop: N/A
Load occurs at: Des Htg
W/m²: 60.6
Ent. DB / Lvg DB: 18.1 / 27.5 °C

Supply Fan Sizing Data

Actual max L/s: 1306 L/s
Standard L/s: 1302 L/s
Actual max L/s (m³): 5.35 L/s (m³)
Fan motor BHP: 0.00 BHP
Fan motor kW: 0.00 kW
Fan static: 0 Pa

Outdoor Ventilation Air Data

Design airflow L/s: 138 L/s
L/s (m³): 0.57 L/s (m³)
L/s/person: 5.31 L/s/person

Hourly Analysis Program 5.10

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Zone Sizing Summary for HVAC 1

Project Name: 246_Fate_Little Manor, Barnet Lane, Elstree WD6 3Q
Prepared by: Engineer's Team

08/15/2026
05:32PM

Air System Information

Air System Name: HVAC 1
Equipment Class: SPLT AHU
Air System Type: SZCAV
Number of zones: 1
Floor Area: 243.9 m²
Location: London - Heathrow, United Kingdom

Sizing Calculation Information

Calculation Months: Jan to Dec
Sizing Data: Calculated
Zone L/s Sizing: Sum of space airflow rates
Space L/s Sizing: Individual peak space loads

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/s (m ³)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11.1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11.1 K	Mixing Box Fan Airflow (L/s)
Zone 1	1306	1306	5.35	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible Peak Load (kW)	Time of Peak Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m ²)
Zone 1	16.4	Jul 1500	11.4	243.9

Space Loads and Airflows

Zone Name / Space Name	Mult	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m ²)	Space L/s (m ³)
Zone 1							
F Bedroom (1)	1	3.0	Jun 1500	223	1.8	41.4	5.38
F Bedroom (2)	1	2.2	Jun 1500	165	1.3	28.3	5.84
F Bedroom (3)	1	1.4	Jun 1500	102	1.2	28.7	3.66
F Bedroom (4)	1	1.8	Sep 1500	131	0.8	21.2	6.18
F Bedroom (5)	1	1.0	Jun 1500	75	0.8	22.3	3.35
F CORRIDOR	1	2.5	Sep 1500	188	1.1	27.3	6.88
F Ensuite (1)	1	1.0	Jun 1500	75	0.8	11.3	6.63
F Ensuite (2)	1	1.1	Sep 1500	81	0.6	12.1	6.87
F Ensuite (3)	1	0.5	Jun 1500	39	0.5	8.4	4.58
F Ensuite (4)	1	0.5	Sep 1500	38	0.3	4.0	9.49
F Ensuite (5)	1	0.4	Jun 1500	32	0.5	5.3	6.12
F HALL WAY	1	0.5	Aug 1500	39	0.5	8.9	4.39
F WALK IN WARDROBE	1	1.2	Jun 1800	92	0.8	19.8	4.63
F WARDROBE	1	0.3	Jul 1800	26	0.3	4.9	5.31

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Air System Design Load Summary for HVAC 1

Project Name: 246_Fate_Little Manor, Barnet Lane, Elstree WD6 3Q
Prepared by: Engineer's Team

08/15/2026
05:32PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 26.9 °C / 18.8 °C			HEATING DATA AT DES HGTG HEATING OA DB / WB -3.9 °C / -6.1 °C		
	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
ZONE LOADS						
Window & Skylight Solar Loads	57 m ²	8960	-	57 m ²	-	-
Wall Transmission	498 m ²	1158	-	498 m ²	4693	-
Roof Transmission	244 m ²	431	-	244 m ²	622	-
Window Transmission	57 m ²	265	-	57 m ²	4785	-
Skylight Transmission	0 m ²	0	-	0 m ²	0	-
Door Loads	31 m ²	74	-	31 m ²	1329	-
Floor Transmission	0 m ²	0	-	0 m ²	0	-
Partitions	303 m ²	0	-	303 m ²	0	-
Ceiling	0 m ²	0	-	0 m ²	0	-
Overhead Lighting	2100 W	1693	-	0	0	-
Task Lighting	2100 W	1874	-	0	0	-
Electric Equipment	2600 W	2369	-	0	0	-
People	26	1558	1647	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	16380	1647	-	11438	0
Zone Conditioning	-	18400	1647	-	10706	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	1306 L/s	0	-	1306 L/s	0	-
Ventilation Load	138 L/s	392	576	138 L/s	4084	0
Supply Fan Load	1306 L/s	0	-	138 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	16380	1647	-	14790	0
Central Cooling Coil	-	1871	222	-	0	0
Central Heating Coil	-	0	-	-	14790	0
>> Total Conditioning	-	1871	222	-	14790	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

Hourly Analysis Program 5.10

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Air System Sizing Summary for HVAC 2

Project Name: 246_Fate_Little Manor, Barnet Lane, Elstree WD6 3Q
Prepared by: Engineer's Team

08/15/2026
05:33PM

Air System Information

Air System Name: HVAC 2
Equipment Class: SPLT AHU
Air System Type: SZCAV
Number of zones: 1
Floor Area: 192.4 m²
Location: London - Heathrow, United Kingdom

Sizing Calculation Information

Calculation Months: Jan to Dec
Sizing Data: Calculated
Zone L/s Sizing: Sum of space airflow rates
Space L/s Sizing: Individual peak space loads

Central Cooling Coil Sizing Data

Total coil load: 12.7 kW
Sensible coil load: 11.4 kW
Coil L/s at Jul 1500: 792 L/s
Max block L/s: 792 L/s
Sum of peak zone L/s: 792 L/s
Sensible heat ratio: 0.893
L/s (kW): 62.3
m³/kW: 15.1
W/m²: 66.2
Water flow @ 5.6 K rise: N/A
Load occurs at: Jul 1500
OA DB / WB: 26.9 / 18.8 °C
Entering DB / WB: 25.0 / 17.2 °C
Leaving DB / WB: 13.1 / 12.2 °C
Coil ADP: 11.5 °C
Bypass Factor: 0.120
Resulting RH: 46 %
Design supply temp.: 12.8 °C
Zone T-stat Check: 1 of 1 OK
Max zone temperature deviation: 0.0 K

Central Heating Coil Sizing Data

Max coil load: 10.6 kW
Coil L/s at Des Htg: 792 L/s
Max coil L/s: 792 L/s
Water flow @ 11.1 K drop: N/A
Load occurs at: Des Htg
W/m²: 56.2
Ent. DB / Lvg DB: 17.5 / 28.6 °C

Supply Fan Sizing Data

Actual max L/s: 792 L/s
Standard L/s: 790 L/s
Actual max L/s (m³): 4.12 L/s (m³)
Fan motor BHP: 0.00 BHP
Fan motor kW: 0.00 kW
Fan static: 0 Pa

Outdoor Ventilation Air Data

Design airflow L/s: 103 L/s
L/s (m³): 0.53 L/s (m³)
L/s/person: 5.71 L/s/person

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Zone Sizing Summary for HVAC 2

Project Name: 246_Fate_Little Manor, Barnet Lane, Elstree WD6 3Q
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05:33PM

Air System Information

Air System Name: HVAC 2
Equipment Class: SPLT AHU
Air System Type: SZCAV
Number of zones: 1
Floor Area: 192.4 m²
Location: London - Heathrow, United Kingdom

Sizing Calculation Information

Calculation Months: Jan to Dec
Sizing Data: Calculated
Zone L/s Sizing: Sum of space airflow rates
Space L/s Sizing: Individual peak space loads

Zone Terminal Sizing Data

Zone Name	Design Supply Airflow (L/s)	Minimum Supply Airflow (L/s)	Zone L/s (m ³)	Reheat Coil Load (kW)	Reheat Coil Water L/s @ 11.1 K	Zone Htg Unit Coil Load (kW)	Zone Htg Unit Water L/s @ 11.1 K	Mixing Box Fan Airflow (L/s)
Zone 2	792	792	4.12	0.0	-	0.0	-	0

Zone Peak Sensible Loads

Zone Name	Zone Cooling Sensible Peak Load (kW)	Time of Peak Sensible Cooling Load	Zone Heating Load (kW)	Zone Floor Area (m ²)
Zone 2	10.0	Jul 1500	8.0	192.4

Space Loads and Airflows

Zone Name / Space Name	Mult	Cooling Sensible (kW)	Time of Peak Sensible Load	Air Flow (L/s)	Heating Load (kW)	Floor Area (m ²)	Space L/s (m ³)
Zone 2							
Bedroom (10)	1	0.6	Jul 1500	48	0.5	12.2	3.91
Bedroom (6)	1	1.2	Jun 1500	93	1.0	22.5	4.15
Bedroom (7)	1	2.4	Sep 1500	176	1.1	18.0	9.80
Bedroom (8)	1	1.4	Jun 1500	103	1.1	32.2	3.19
Bedroom (9)	1	1.6	Jun 1500	123	1.5	19.8	6.20
Ensuite (10)	1	0.2	Aug 1500	18	0.3	3.7	4.86
Ensuite (6)	1	0.5	Jun 1500	37	0.5	11.1	3.32
Ensuite (7)	1	0.6	Sep 1500	46	0.4	5.6	8.21
Ensuite (8)	1	0.4	Jul 1500	28	0.4	10.4	2.70
Ensuite (9)	1	0.4	Jun 1500	27	0.4	5.2	8.15
2F Roof Terrace	1	1.3	Jul 1500	94	0.8	51.7	1.82

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Air System Design Load Summary for HVAC 2

Project Name: 246_Fate_Little Manor, Barnet Lane, Elstree WD6 3Q
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08/15/2026
05:33PM

	DESIGN COOLING			DESIGN HEATING		
	COOLING DATA AT Jul 1500 COOLING OA DB / WB 26.9 °C / 18.8 °C			HEATING DATA AT DES HGTG HEATING OA DB / WB -3.9 °C / -6.1 °C		
	Details	Sensible (W)	Latent (W)	Details	Sensible (W)	Latent (W)
ZONE LOADS						
Window & Skylight Solar Loads	35 m ²	3033	-	35 m ²	-	-
Wall Transmission	383 m ²	895	-	383 m ²	3610	-
Roof Transmission	201 m ²	354	-	201 m ²	512	-
Window Transmission	35 m ²	160	-	35 m ²	2888	-
Skylight Transmission	0 m ²	0	-	0 m ²	0	-
Door Loads	24 m ²	56	-	24 m ²	1014	-
Floor Transmission	0 m ²	0	-	0 m ²	0	-
Partitions	197 m ²	0	-	197 m ²	0	-
Ceiling	0 m ²	0	-	0 m ²	0	-
Overhead Lighting	1657 W	1248	-	0	0	-
Task Lighting	1657 W	1430	-	0	0	-
Electric Equipment	2150 W	1914	-	0	0	-
People	18	879	957	0	0	0
Infiltration	-	0	0	-	0	0
Miscellaneous	-	0	0	-	0	0
Safety Factor	0% / 0%	0	0	0%	0	0
>> Total Zone Loads	-	9969	957	-	8023	0
Zone Conditioning	-	11084	957	-	7579	0
Plenum Wall Load	0%	0	-	0	0	-
Plenum Roof Load	0%	0	-	0	0	-
Plenum Lighting Load	0%	0	-	0	0	-
Return Fan Load	792 L/s	0	-	792 L/s	0	-
Ventilation Load	103 L/s	277	400	103 L/s	3034	0
Supply Fan Load	792 L/s	0	-	792 L/s	0	-
Space Fan Coil Fans	-	0	-	-	0	-
Duct Heat Gain / Loss	0%	0	-	0%	0	-
>> Total System Loads	-	11371	1357	-	10613	0
Central Cooling Coil	-	11371	1357	-	0	0
Central Heating Coil	-	0	-	-	10613	0
>> Total Conditioning	-	11371	1357	-	10613	0
Key:	Positive values are clg loads Negative values are htg loads			Positive values are htg loads Negative values are clg loads		

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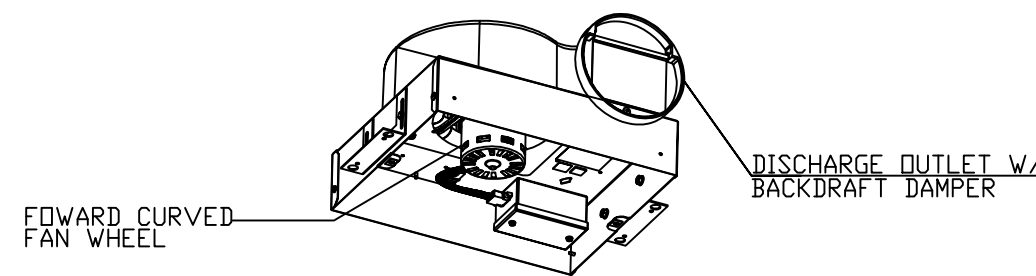
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REV. NO.	DESCRIPTION	DATE	BY

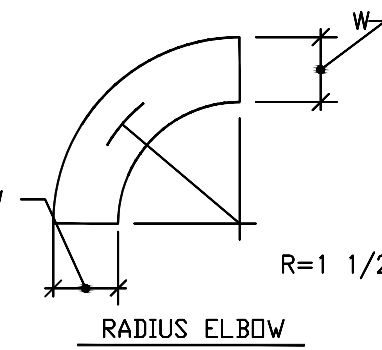
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TITLE: HVAC INSTALLATION INSTRUCTION		
PROJ. NO.	PROJ. ENGR.	SCALE @ 24X36: N/A
DATE : August 28, 2026		
DRAWING NO. H - 7		REV.



CEILING FAN DETAIL

NOT TO SCALE
CEILING RADIATION DAMPERS SHALL BE
INSTALLED IN ACCORDANCE WITH UL 555C

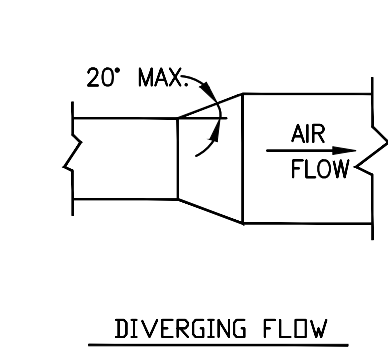
LOW VELOCITY ELBOWS



RECTANGULAR ELBOW



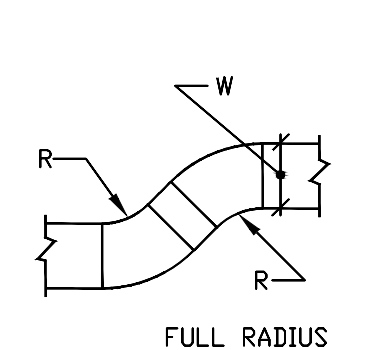
LOW VELOCITY TRANSITIONS



CONTRACTION FLOW



LOW VELOCITY OFFSETS

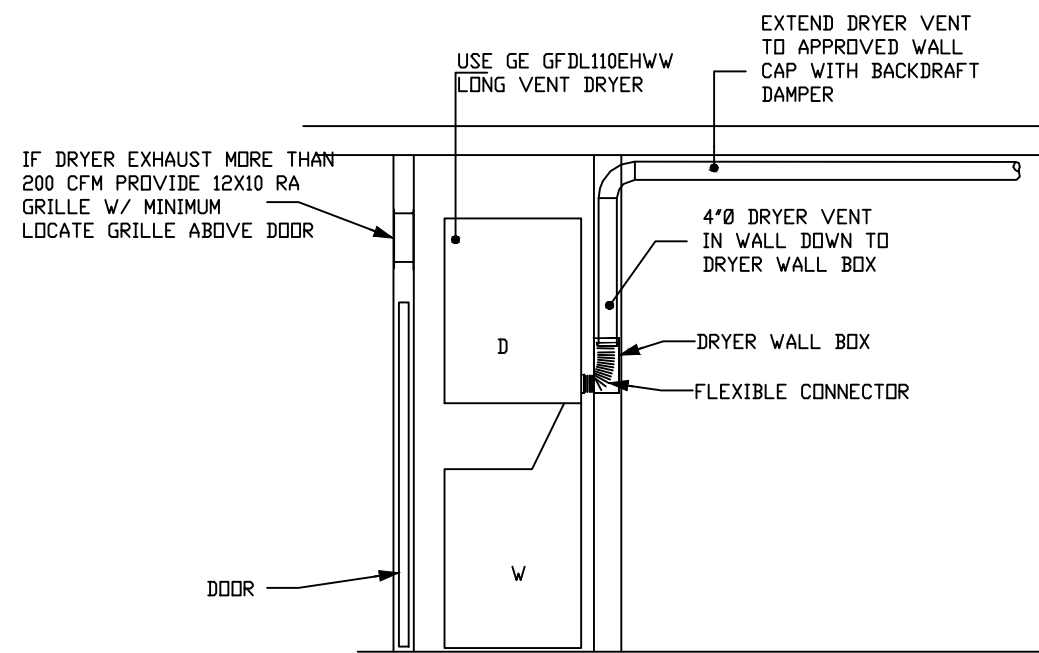


LOW VELOCITY TRANSITIONS, OFFSETS AND ELBOWS

NOT TO SCALE

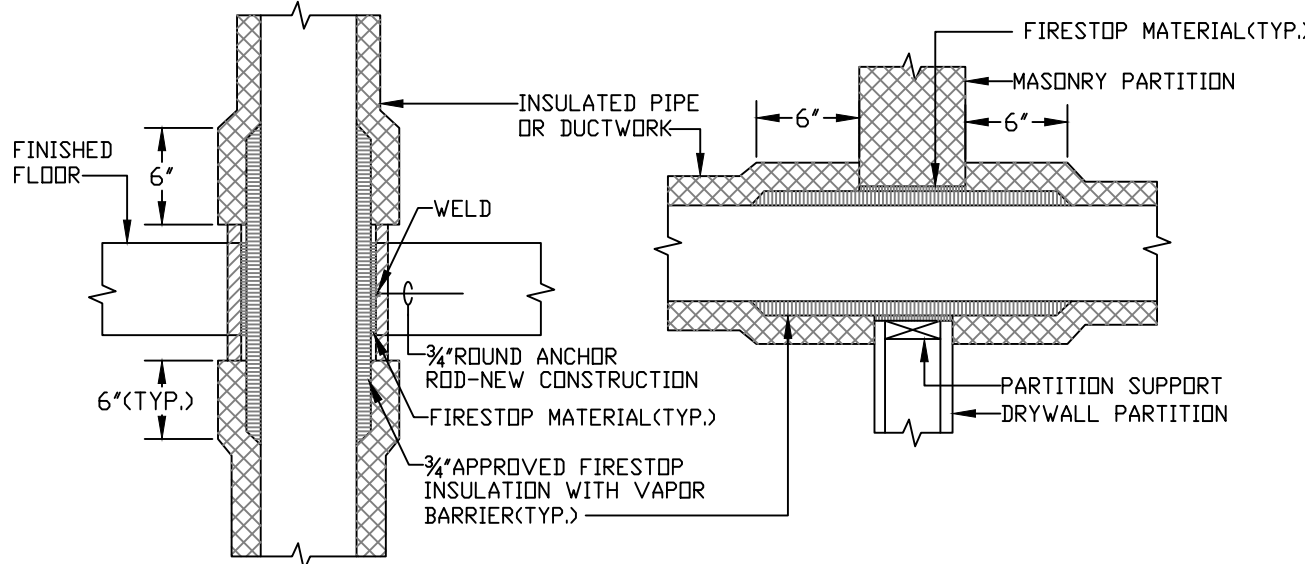
TYPICAL SOUND LINING DETAIL

NOT TO SCALE



DRYER DETAIL

NOT TO SCALE



FLOOR OR DECK PENETRATION

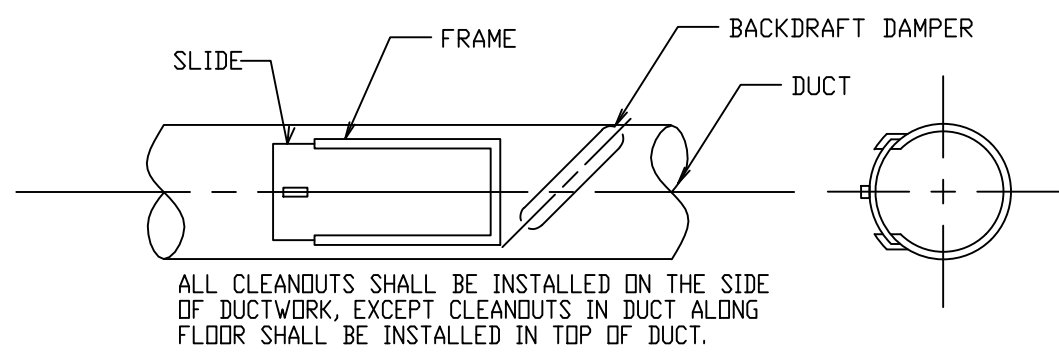
PARTITION OR CHASE PENETRATION

NOTE:

APPLICABLE TO PENETRATIONS OF ALL FIRE RATED MEMBRANES, IN ACCORDANCE WITH
2012 IBC 714. REFER UL LISTED FIRE STOPPING SYSTEMS UL-1479, UL-2043

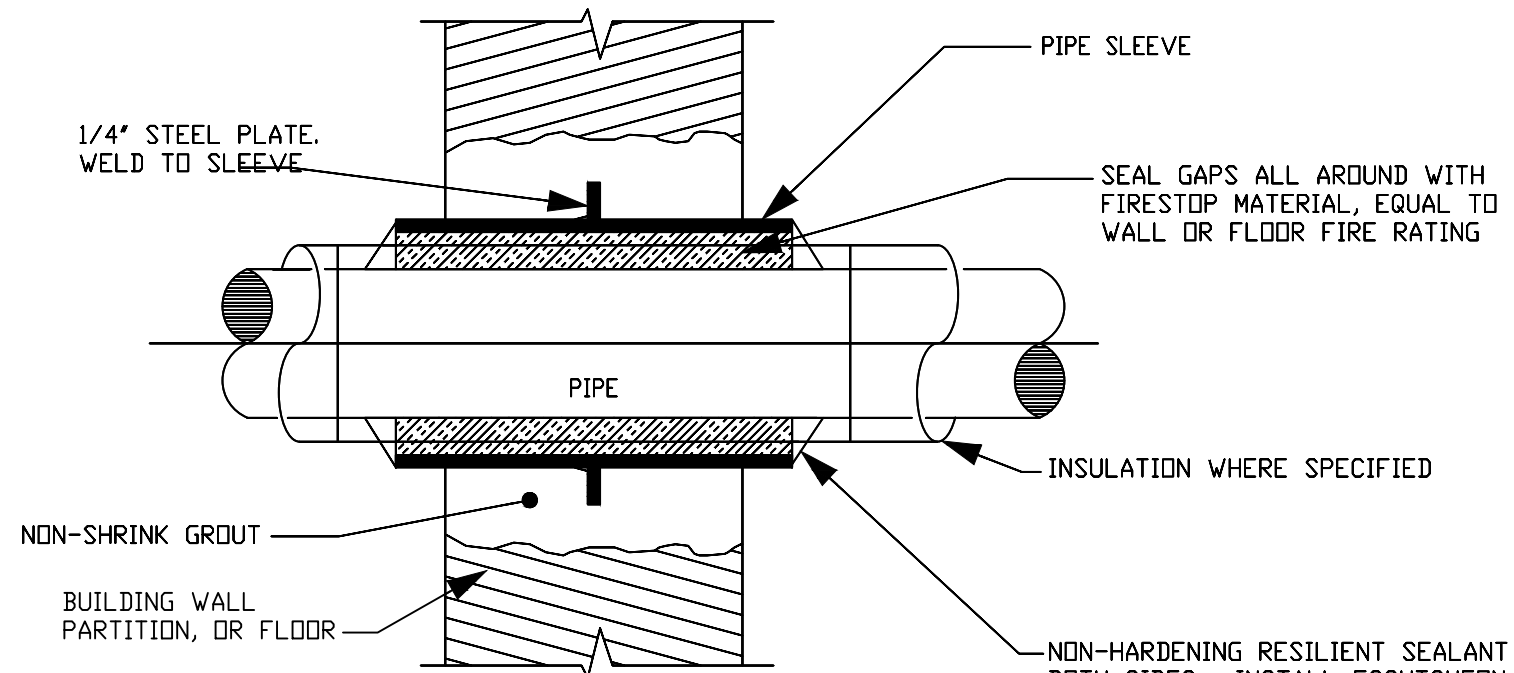
PENETRATION OF FIRE/SMOKE BARRIERS

NOT TO SCALE



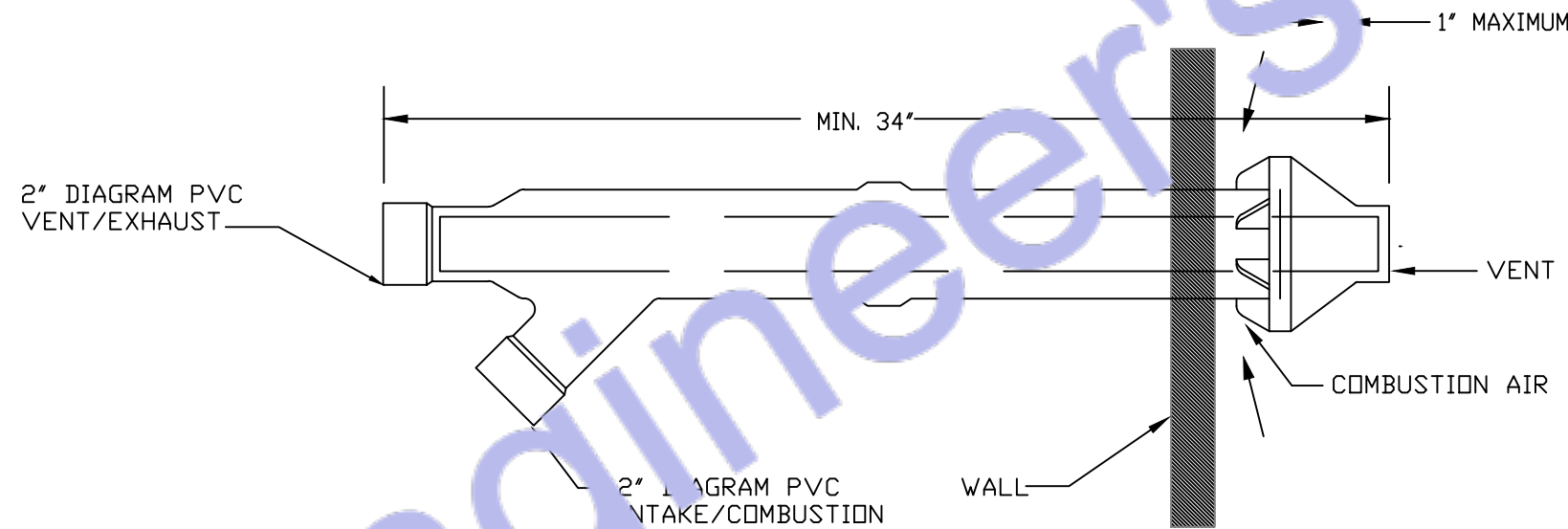
CLEAN OUT / INSPECTION DETAIL

NO SCALE



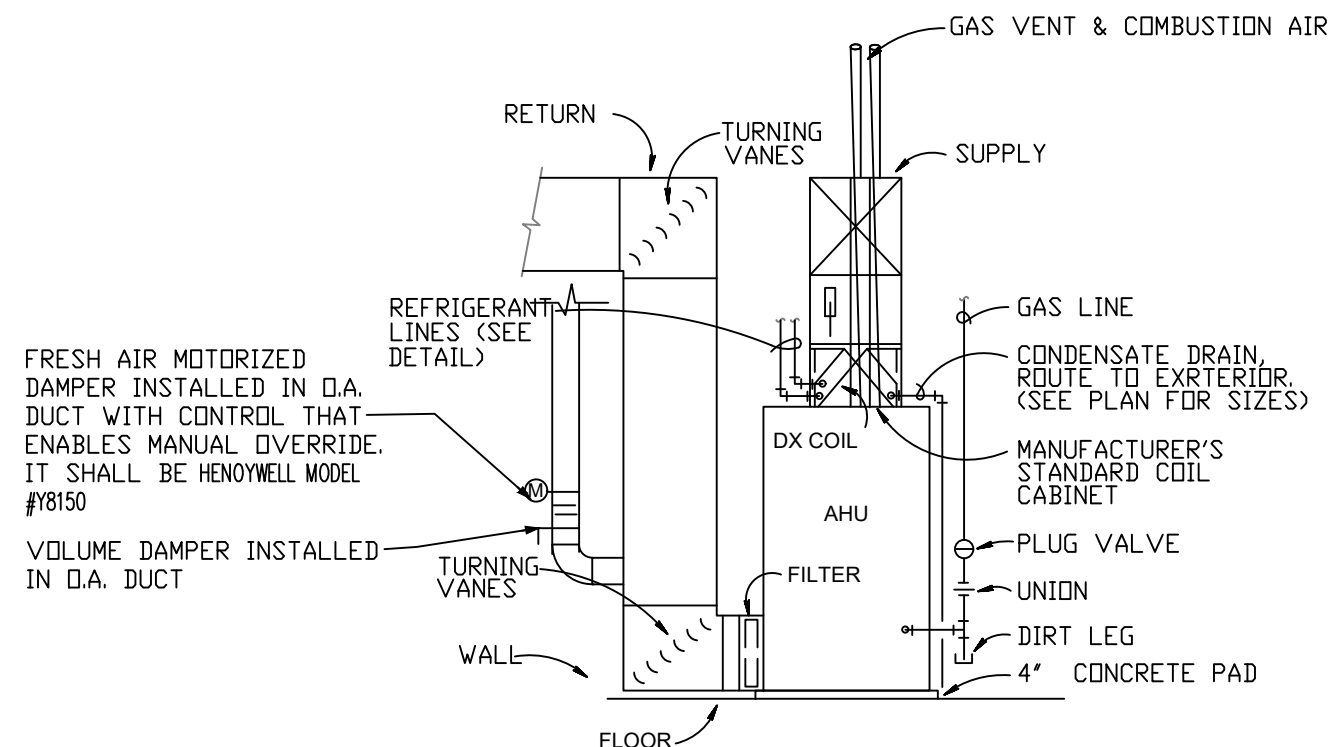
INTERIOR MASONRY WALL AND FLOOR PENETRATION

NOT TO SCALE



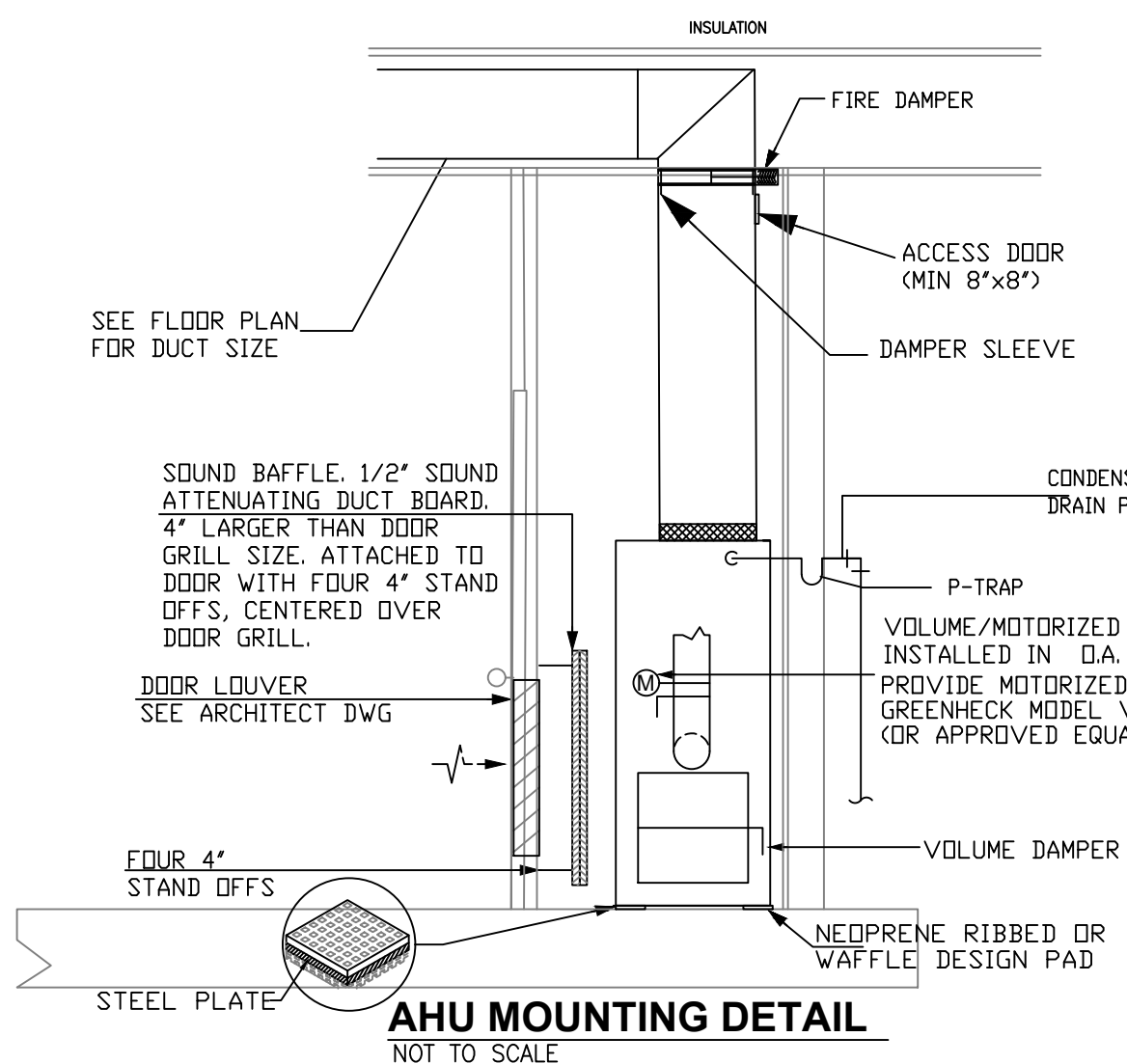
HORIZONTAL VENT TERMINAL/COMBUSTION AIR INLET

NOT TO SCALE
UL-PLASTIC PIPE AND FITTINGS USED TO VENT APPLIANCES SHALL BE INSTALLED IN
ACCORDANCE WITH THE APPLIANCE MANUFACTURER'S INSTRUCTIONS. PLASTIC PIPE VENTING
MATERIALS LISTED AND LABELED IN ACCORDANCE WITH UL 1738 SHALL BE INSTALLED IN
ACCORDANCE WITH THE VENT MANUFACTURER'S INSTALLATION INSTRUCTIONS. FLUID PVC PIPING
SHALL NOT BE USED FOR COMBUSTION GAS VENTING.



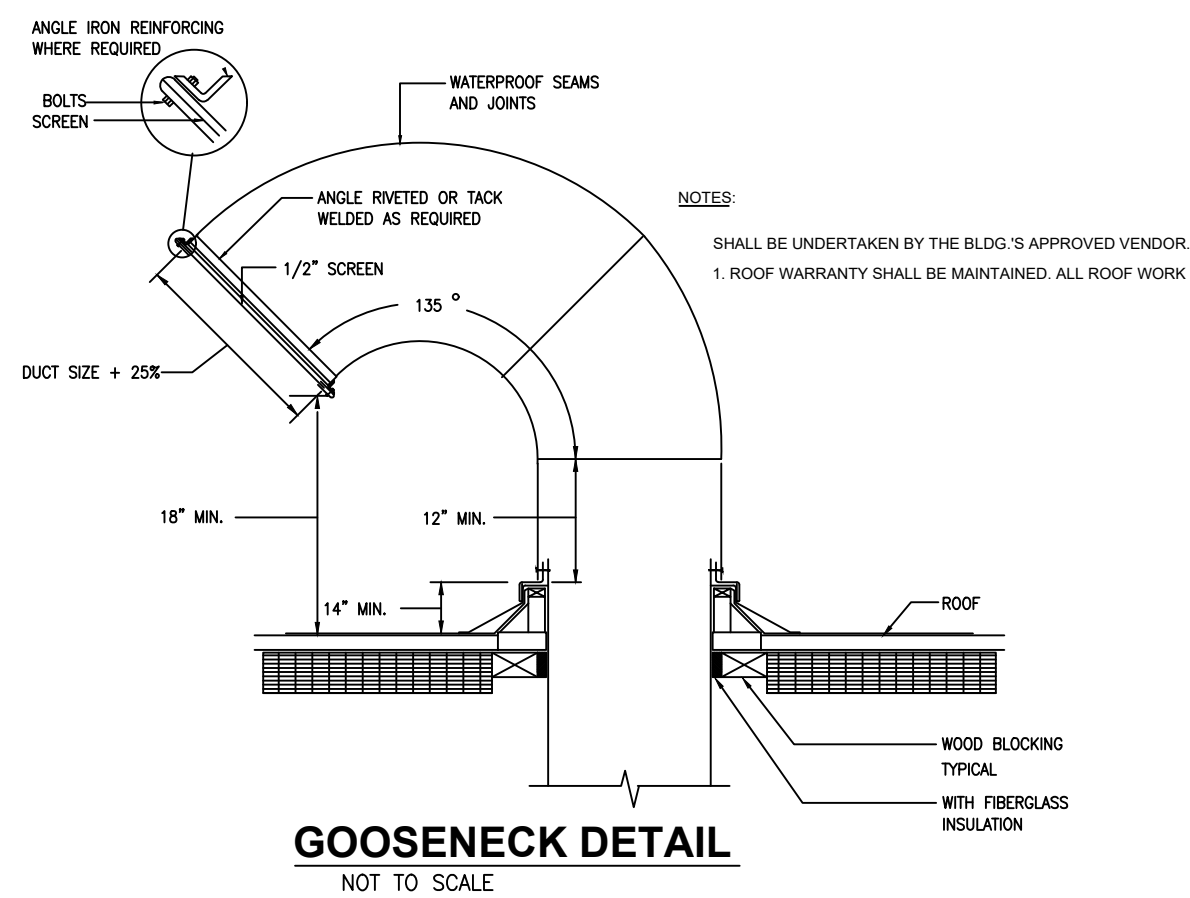
GAS-FIRED AIR HANDLING UNIT DETAIL

N.T.S.



AHU MOUNTING DETAIL

NOT TO SCALE



GOOSENECK DETAIL

NOT TO SCALE



Designed By Engr. Al Amin (MEP Engineer | Director - Engineer's Team LTD)

 support@engrteam.com

 <https://engrteam.com>

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