HVAC Installation Information Sheet

The Terry & The BillE | NiceDigz Rentals

Location: Macon, Georgia
Project: Two approximately 575 sq. ft. apartments
Proposed equipment: 2 × Senville SENA-12HF-ID concealed duct heat pumps
Purpose: Preliminary layout and sizing for HVAC contractor review

1. Senville Equipment Specifications

Specification	Per Apartment
Model	SENA-12HF-ID
Cooling capacity	12,000 BTU/h
Heating capacity	12,500 BTU/h
Cooling operating range	3,400–13,500 BTU/h
Efficiency	20 SEER2
Indoor airflow (Turbo/High/Medium/Low)	400 / 324 / 265 / 177 CFM
Indoor dimensions	27.56" W × 19.92" D × 7.87" H
Refrigerant	R-454B
Electrical	208/230V, single-phase
Installation orientation	Horizontal only
Proposed refrigerant line set	25 ft
Factory refrigerant precharge	Up to 25 ft

2. Proposed Duct Layout — Side-by-Side

Component	BillE (Blue)	Terry (Maroon)
H1 – Air handler	Central location	Central location
R1 – Living room return grille	16" × 20"	16" × 20"
R1 – Main return duct	14" R-8 flex	14" R-8 flex
R2 – Bedroom jumper duct	10" R-8 flex	10" R-8 flex
R2 – Jumper transfer grilles	2 × 12" × 12"	2 × 12" × 12"
Living room supply	8" R-8 flex	8" R-8 flex
Bedroom supply	7" R-8 flex	7" R-8 flex
Supply plenum	Custom, 2 active outlets	Custom, 2 active outlets
Return plenum	Custom, 1 return connection	Custom, 1 return connection
Outdoor condenser	Behind bathroom	Behind bathroom

All duct sizes and grille dimensions are preliminary. The contractor should verify final sizing using actual airflow, equivalent duct lengths, grille free area and the Senville fan-performance tables.

3. Return-Air Configuration

R1 – Central Living Room Return

- One central return per apartment connected directly to the air handler
- Proposed 16" × 20" return grille
- Proposed 14" insulated return duct
- Accessible filtration at the return grille or air handler
- Return plenum sized to match the air handler's inlet

R2 – Bedroom Jumper Return

- One passive transfer duct per apartment
- Proposed 10" insulated flex duct
- One 12" × 12" transfer grille at the bedroom end
- One 12" × 12" transfer grille at the living room end
- The jumper does **not** connect to the air handler
- Designed to transfer bedroom air back to the living room when the bedroom door is closed

The jumper should be routed with minimal bends and arranged to reduce sound transmission between rooms. The installer should verify bedroom pressure with the door closed.

4. Preliminary Airflow Targets

Location	BillE	Terry
Living room supply	225 CFM	225 CFM
Bedroom supply	175 CFM	175 CFM
Total supply	400 CFM	400 CFM
Central return R1	400 CFM	400 CFM
Bedroom jumper transfer	175 CFM	175 CFM

Important: These represent initial design targets at the manufacturer's listed maximum airflow. Actual airflow may be lower once duct resistance is included. The 7" bedroom supply may require resizing. Final targets should follow the room-by-room load calculation and blower-performance data.

5. Installation Considerations

- Existing concrete block construction with stucco exterior
- New insulated interior stud walls in selected areas
- Approximately 8" of new blown-in attic insulation planned
- Double-pane vinyl windows
- Slab foundation
- 8-foot ceilings
- High summer humidity
- Typical occupancy of 1–2 guests per apartment
- Desired cooling and heating comfort around 70–72°F
- R-8 insulated supply and return ductwork
- Outdoor condensers located behind the bathrooms, either on the existing pad or on approved wall brackets
- Proper condensate drainage, overflow protection and service access required
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6. Questions for HVAC Installer

1. Does the Senville 12,000 BTU system meet the calculated heating and cooling loads for each apartment?
2. What airflow can the air handler actually deliver at the proposed duct system's external static pressure?
3. Are the proposed 14" central return duct and 16" × 20" return grille appropriately sized?
4. Is the 10" bedroom jumper large enough to transfer the bedroom supply airflow without excessive room pressure or noise?
5. Are the 8" living room and 7" bedroom supply ducts sufficient, or should the bedroom supply be increased?
6. Would a two-outlet supply plenum be preferable to a four-outlet plenum with unused connections capped?
7. Can the supply and return plenums be fabricated locally to fit the Senville air handler?
8. Does the central air-handler location provide adequate horizontal clearance for maintenance, filter replacement and condensate drainage?
9. Will the proposed 25-foot refrigerant line sets reach both outdoor condensers with proper routing and allowable elevation differences?
10. What filter arrangement will provide good airflow without excessive pressure drop?
11. What condensate overflow protection is appropriate for the air-handler installation locations?
12. Can the completed system be commissioned with measured supply airflow, total external static pressure and bedroom pressure with the door closed?