

RELATED DOCUMENTS:

Applicable provisions of the General Conditions, Supplemental General Conditions, and Special Conditions are hereby adopted and govern work under this division.

SCOPE:

The work involved in this specification and the accompanying drawings consists of furnishing all labor, material, and incidental items necessary for complete and proper operation of these mechanical systems.

PERMITS AND SERVICES:

This Contractor shall be responsible to obtain and purchase all required permits as applicable to his contract work. This contractor shall also install and/or pay for all utilities, services applicable, such as water taps, meters, gas service, sewer taps, etc.

DRAWINGS AND MEASUREMENTS:

Verify all dimensions and conditions with the Architectural and Structural drawings. The small scale of the drawings prohibits the indication of offsets, fittings and accessories necessary and shall be furnished by this contractor and required for complete and proper operation.

REGULATIONS AND CODES:

All work, materials, and equipment in this contract shall comply with all requirements of the applicable Federal, County, City and State ordinances, regulations and codes. In addition, the latest or adopted issue of the following published standards shall be adhered to:

- Local, State and National Plumbing Codes
  - ASHRAE Guide
  - SMACNA Handbook
  - NFPA Pamphlets
  - ASME Boiler Code
  - ASME Unfired Pressure Vessel Code
  - State Boiler Inspection Dept. Rules
  - Uniform Building Code
  - Occupational Safety and Health Act
  - State Air Pollution Control Regulations
  - ADA
- California Electrical Code 2019
  - California Mechanical Code 2019
  - California Plumbing Code 2019
  - California Energy Efficiency Standards 2019
  - California Green Building Standards Code 2019

Where above code or contract documents conflict with one another, the one with the more stringent requirements shall govern.

INSTALLATION:

Consult the drawings and specifications of all other trades. Layout work and coordinate with other trades, before installing any equipment, to avoid interfering with these trades or conflicting with applicable codes.

Extra work and/or equipment as a result of not coordinating work shall be the responsibility of the installing contractor and of all extra cost to the Owner.

INSTRUCTIONS:

Furnish instructions to Owner on all systems. Instruction shall include operating procedures, adjustments, and periodic maintenance.

OPERATING AND MAINTENANCE MANUALS:

Furnish two complete sets of O & M manuals to the engineer, prior to final inspection, containing all pertinent data to the mechanical system. Information shall be indexed and labeled per system and shall include catalog cuts, installation manuals, maintenance manuals, manufacturer's names, replacement parts lists, exploded views of facets, and system description as to season startup and operation.

INSPECTION OF SITE AND DOCUMENTS:

Before submitting a proposal on the work contemplated, the bidder shall thoroughly familiarize himself with the contract documents, the site, and existing conditions and limitations that may effect the performance of his work. Any conflict noted shall be brought to the attention of the owner before bidding. If there is not sufficient time prior to bidding, the contractor shall bid the larger quantity or better quality of work.

No extra compensation will be allowed, because of misunderstanding the amount of work involved or the bidder's lack of knowledge, for obvious conflicts which could have been discovered or reasonably anticipated prior to bidding.

WORKMANSHIP:

All work under this contract shall be done in accordance with the best modern practice, using first grade equipment and materials. The work shall be performed in a neat workmanlike manner. Only the best quality workmanship will be accepted. The contractor shall furnish only licensed workmen or journeymen to work as superintendents on the project.

DISINFECTION OF POTABLE WATER SYSTEM:

Potable water systems shall be disinfected and approved 2 weeks prior to occupancy. The method to be followed shall be that prescribed by the health authority or in case no method is prescribed, the following:

- the pipe system shall be flushed with clean, potable water until no dirty water appears at the points of outlet.
- the system or part thereof shall be filled with a water chlorine solution containing at least 50 parts per million of chlorine and shall be allowed to stand for 24 hours or filled with a water-chlorine solution containing at least 200 parts per million of chlorine and allowed to stand for three hours.
- following the allowed standing time the system shall be flushed with clean potable water until no chlorine remains in the water coming from the system.

15100 CUTTING AND PATCHING:

This contractor shall coordinate prior to and shall be responsible for all cutting and patching of holes required for passage of piping, equipment, and ducts.

Cutting of new concrete, in place less than 4 months, shall only be done with rotary type drilling equipment. Whenever possible, holes shall be sleeved with schedule 40 steel pipe or formed before concrete is poured in place. Holes for piping and ducts through fire resistive walls and floors shall be fire stopped and/or sealed to the complete satisfaction of the local governing authorities.

PAINTING:

Any equipment which becomes rusted or damaged during construction shall be repaired cleaned and repainted by this contractor. Painting shall always be applied in two coats, one primer and one finish. Paint all unfinished steel.

15145 EQUIPMENT AND PIPE SUPPORTS:

Provide all structural supporting frames, steelstands, concrete bases, and hangers as required for mechanical equipment. All floor equipment shall be set on 4" high concrete bases furnished by this contractor.

Pipe hangers shall be wrought or malleable iron, adjustable ring type, and clevis type, material to match pipe material and plastic coated for copper.

Horizontal steel piping shall be supported as follows:			
Pipe Size	Rod Diameter	Maximum Spacing	
Up to 1"	1/4"	8 ft.	
1-1/2" & 2"	3/8"	10 ft.	
2-1/2" & 3-1/2"	1/2"	12 ft.	
4" and 5"	5/8"	12 ft.	
6"	3/4"	12 ft.	

Horizontal copper tubing shall be supported as follows:			
Nom. Tubing Size	Rod Diameter	Maximum Spacing	
Up to 1"	1/4"	8 ft.	
1-1/4" & 1-1/2"	3/8"	6 ft.	
2"	1/2"	8 ft.	
2-1/2"	5/8"	8 ft.	
3" and 4"	3/4"	10 ft.	

Horizontal ABS or PVC plastic pipe shall be supported as follows:			
Nom. Pipe Size	Rod Diameter	Maximum Spacing	
Up to 1"	1/4"	4 ft.	
1-1/4" to 1-1/2"	3/8"	4 ft.	
2" to 4"	1/2"	4 ft.	

Vertical piping shall be supported at each story or floor level. Support trap arms in excess of three (3) feet in length as close as possible to the trap. Closet flanges shall be securely fastened with corrosive resistant fasteners to the floor with top surface one-quarter (1/4) inch (6.4 mm) above finish floor.

EXCAVATING AND BACKFILLING:

Excavate for buried pipe to depth required for pipe bedding or to remove unstable soil and rocks. Pipe bedding shall be compacted sand-gravel mixtures. Backfill, after all required tests and inspections are completed, with same excavated material free of trash and other debris or borrowed material. Replace material in horizontal layers no more than 12" thick and hand or machine compact to 95% of standard proctor density. All disturbed areas shall be restored to original condition and be the responsibility of this contractor. See soils/earth work section of this project and coordinate with owners testing agency for compaction tests.

15990 TESTING AND ADJUSTING:

At completion of work, all parts of the installation shall be cleaned, lubricated, tested, and adjusted for proper operation. Special tools not available retail, that are required for operation and periodic adjustment shall be furnished to the Owner. Lubrication fittings that are not readily accessible shall be extended to an accessible location using galvanized or copper tubing.

All piping and ductwork shall be tested during the construction period. Tests shall be performed in the presence of the authority having jurisdiction. Written notification of test, date, and results shall be furnished to the owner before concealing or covering the installation.

Piping shall be tested as follows:

- Domestic Water - Air pressure, 125 PSIG, 8 hours.
- Drainage - Hydrostatic, highest level, 30 minutes.
- Nat/LP Gas - Air pressure, 50 PSIG, 8 hours.

Ductwork shall be balanced at outlets and returns to less than 10% variance of quantity indicated on drawings. All controls shall be tested and adjusted for proper operation.

GUARANTEE:

This Contractor shall assume responsibility for any defects which may develop in any part of his work, material, or equipment, and agrees to replace, repair or alter the same, at his expense, to perfect operating condition for a period of one full year. Warranty period shall begin after final acceptance by Owner at project completion. Equipment placed in operation before project completion shall be considered under warranty only by written consent of the Owner. Acceptance of work shall waive this guarantee. This shall not supercede any requirements of the General Conditions. See general conditions of this project.

15100 SHOP DRAWINGS:

Shop drawings shall be submitted on all equipment designated. Submittals shall include information on each item indicating plant designation numbers, catalog numbers, dimensions, power characteristics, rough-in data, and any other pertinent data.

Shop drawings shall be furnished for the following equipment:

- Plumbing Fixtures
- Fixture Brass
- Alltrains - floor and roof
- Stainless steel items
- Bathtubs and Shower Bays
- Shower heads and valves
- Sewage ejector or sump pump
- Circulating pumps
- Blower Coil Units
- Condensing units
- Furnace
- Exhaust fans
- Roof intake and relief structures
- Louvers
- Registers, grilles and diffusers

15100 SUBSTITUTION OF MATERIALS:

The materials or products specified on the plans and in these specifications shall establish the minimum standard of quality. Such reference shall not be construed as limiting competition. Proof of equally rests with the party making the request.

All additional work or materials required as a result of substituted equipment shall be the responsibility of the contractor who made the substitution.

15971 TEMPERATURE CONTROL WIRING:

All temperature control wiring shall be part of the Mechanical Contract. Interlocks between items of mechanical equipment shall be provided by the Mechanical Contractor unless specifically shown otherwise on the Electrical drawings.

ELECTRICAL WORK:

The electrical service and electrical power connections required for all items of equipment furnished under this contract will be made by others under the electrical specifications and drawings.

All disconnects will be furnished and installed by the Electrical Contractor, unless noted otherwise. All motors will be furnished and installed by the Mechanical Contractor.

The Mechanical Contractor shall supply detailed wiring diagrams for connections of all motors, controls, and accessory items.

Any changes in wire or conduit size or addition of electrical equipment made necessary due to the installation of a larger motor than specified, or extra motors, shall be the responsibility of this Contractor.

All electrical work furnished integral with equipment shall be in accordance with NEC, and local governing authority, i.e., integral disconnect switches shall be used for junction boxes, all control and internal wiring shall be properly fused, and conductors shall be color coded.

15250 INSULATION:

All cold & hot water piping, valves, water meter, and fittings shall be insulated. Provide pre-formed 2" thick fiberglass insulation all service jacket, and built-up fittings and/or filling covers or a polyolefin system by IMCOA. Insulation shall meet state building codes. Insulation system shall meet fire safety requirements of NFPA 90A and have a smoke/ flame rating of 25/50. All joints shall be sealed. Insulation shall extend thru and into walls up to back of gyp. bd. Hangers shall encompass the insulation. Insulation jacket shall form a vapor barrier. Individual branch piping in walls to P-Fixtures shall not be insulated.

15250 DUCTWORK INSULATION:

All outside air and exhaust air ducts shall be externally insulated, 1" thick, 1.5 lb. fiberglass, with vapor barrier, and reinforced foil faced. Concealed ducts shall be insulated with blanket or ductwrap. Exposed ducts shall be insulated with rigid board.

15410 PIPING MATERIALS:

Subject to plumbing codes, piping shall be as follows:

Domestic Water:

In Building, Below Grade - Type K soft copper, flared fittings.

In Building Above Grade - Type L copper, sweat fittings, (no-lead), 95-5 solder (tin antimony).

Waste, Vent and Storm:

Building Sewer, Below Grade - No hub cast iron, Class 150, neoprene gasket with double S.S. drawbands on each side.

Building sewer, In Building, Above Grade - No hub cast iron, Class 150, neoprene gasket with double S.S. drawbands on each side.

Natural Gas or LP:

Schedule 40 black steel, wrought iron threaded fittings up to 1/2", steel welded fittings 2" and over. All concealed piping shall be welded.

Condensate Drain:

Type M hard copper for cooling coils, schedule 40 PVC for condensing furnaces.

Refrigerant Piping:

Type L hard drawn copper tube, wrought copper fittings, sweat with "Sifos". Precharged line kits allowed for 5 tons or less.

Special Joints - Pipes of dissimilar metals shall be joined with dielectric unions.

15430 SHOCK ABSORBERS:

Furnish shock absorbers where shown on the water supply system in accordance with PD standards, Wade "shockstop" or equal, to eliminate any water hammer.

15100 VALVES:

All valves shall be ball valves of the same manufacturer: Crane, Nibco/Scott, Stockham, Hammond, Powell, Apollo, or Watts. Valves 2" and under shall be bronze or brass body, bronze trim, 125\* S.W.P., 200\* W.O.G., threaded or wedge. Valves over 2" shall be iron body, bronze trim.

All equipment shall be furnished with two isolation valves for proper sectionalizing from piping system. Provide unions to facilitate equipment removal.

15440 CLEAN OUTS:

Full size cleanouts shall be provided at the foot of oil and waste stacks and at all points shown or necessary to permit entire drainage system to be cleaned out. Cleanouts in non-carpeted finished areas shall be chrome plated Zurn ZN-1400 with scoriated top and recessed knockout plug in floors and Zurn Z-1441 with polished chrome cover plate in walls. Covers shall be flush with finished plaster or floor material. Covers in carpeted areas shall be recessed for carpet plug.

15440 FLOOR DRAINS:

Floor drains shall be as scheduled on plans. Furnish flashing clamp and adjustable grate.

15430 ROOF JACKETS:

Vent stacks through roof shall be encased in frost proof jackets. Furnish and install flashing for all roof jackets.

15440 PLUMBING FIXTURES:

All items shall be furnished complete with all trim and fittings. All exposed trim and fittings shall be chromium plated. Provide all fixtures with supply stops. All "P" traps and tailpieces shall be 17 gauge chromium plated cast brass. Traps shall be provided with cleanout plugs. Concealed P-traps may be ABS or PVC plastic.

Contractor shall be responsible for verifying fixture quantities, locations and sizes. Verify all countertop mounted items with Architectural drawings and details.

Fixture Mounting Heights:

A schedule of fixture mounting heights is shown on the mechanical drawings. The rough-in for all fixtures shall conform to the mounting heights shown on the schedule. The Contractor shall be responsible for verifying these mounting heights with the architectural drawings.

All fixtures shall be caulked at the wall and/or floor with white silicone rubber sealant.

All exposed supply piping shall be chrome plated with escutcheon plates.

Verify countertop dimensions before ordering any countertop fixtures.

15460 WATER HEATERS:

Gas. The water heater shall be as scheduled, PVI type with an automatic thermostat with built-in gas, cut-off in the event of thermostat failure or an overheated condition. Water heater shall be AGA and ASME certified.

Water heater shall be furnished with a relay kit to operate the combustion air damper.

Water heater shall have a 3 year commercial guarantee.

15575 WATER HEATER PACKAGED GAS VENT:

Mechanical Contractor shall provide a positive pressure, double walled, UL labeled gas vent as shown. Provide an approved terminal cap, low support, cable guys, and all flashing and counterflashing as required for a complete installation.

Water heater breaching from the draft hood to the vertical stack shall be same material.

15540 CIRCULATING PUMP:

Provide in-line pumps as scheduled. Pumps shall be Bell & Gossett, Taco, or Thrush. Pump and motor shall have sleeve bearings, non-overloading throughout range of curve, flanged bodies, stainless steel shaft, one piece cast bronze or nonmetallic impeller, and bronze or stainless steel body.

15325 FIRE EXTINGUISHING SYSTEM:

Work under this section of the specifications shall include furnishing all labor, materials and equipment necessary to install a complete automatic sprinkler system in accordance with NFPA Standard No. 13 & 14 where applicable. Material shall include pipe, fittings, sprinkler heads, valves, controls, alarms, hangers fire pump, air compressor, and any other supplemental items necessary to complete the system as required for this project locally and in accordance with the NFPA specifications.

Refer to floor plans, building sections and mechanical detail sheets to determine all areas to be protected. Bidding may require wet and/or dry system as determined by local code requirements. Design and approval of the fire sprinkler system is the responsibility of the fire sprinkler system contractor. Cold spaces shall be provided with a dry pipe system with low pressure alarm.

Fire Protection Contractor shall assume full responsibility for system details to be familiar with and satisfy requirements of NFPA Standards, and state and local authorities having jurisdiction.

The Contractor shall be specifically responsible for the coordination and proper relation of his work to the building structure and to the work of all trades. The Contractor shall visit the premises and thoroughly familiarize himself with all details of the work and working conditions to verify dimensions in the field and to advise the Engineer of any discrepancy before performing any work.

At completion of construction, Contractor shall submit to the owner corrected and complete as-built drawings.

Sprinkler Heads. Sprinkler heads shall be UL approved white semi-recessed pendant, or sidewall type in finished areas, and brass upright or brass pendant, in unfinished areas. Where heads must be located adjacent to surface mounted light fixtures or other obstructions, clearance shall be per NFPA Standard No. 13. Extended escutcheons shall be provided as required. Provide dry pendant heads in areas subject to freezing.

Heads subject to higher ambient temperatures, such as at skylights, in boiler rooms, etc., shall be high temperature type as required.

Water Service. Pipe, fittings, testing and installation methods shall be as specified in applicable portions of NFPA Standards No. 13 and No. 14. Underground pipe shall be corrosion resistant as approved by local authority.

Valve Supervision. All valves located outside of the building shall be equipped with indicator posts, either vertical type or wall type as applicable. Indicator posts shall be furnished with open-stick indicators, operating wrench or handwheel and provisions for locking.

All valves located inside the building shall be electrically supervised by microswitch or other acceptable means. Closing of the valve shall sound an audible malfunction alarm within the building.

Fire Department Connection. Fire Department connection shall be a Potter-Roemer flush wall with polished chrome plate with word "Auto Sprinkler" lettered thereon threads to meet local Fire Department connection requirements. Furnish and install automatic ball drain on riser and 3/4" pipe with valve to drain the piping system. Extend pipe to nearest drain.

Sprinkler Head Installation. Where heads occur in 2 x 2 or 2 x 4 lay-in ceilings, they shall be installed in the center of the tile.

Sprinkler Cabinet. Furnish and install cabinet containing extra sprinklers of each type in the quantity specified by NFPA Standard No. 13 and a standard sprinkler wrench.

Alarm and Flow Switch. Furnish and install alarm tamper and flow switches as required to activate an audible alarm. Provide an outside alarm horn mounted where directed. Provide interconnections to the building fire alarm system. Coordinate switching and wiring requirements with the Electrical Contractor. All interconnecting wiring shall be the responsibility of the Sprinkler Contractor.

System Test. System shall be tested in accordance with Section 1-11.13 of NFPA Standard No. 13 and approved by governing authority.

Instructions for Tests, Inspection, Operation and Preventative Maintenance. Prior to acceptance, the Contractor shall furnish the owner with three bound copies of complete instructions including catalog cuts, diagrams, drawings, and other descriptive data covering the proper testing, operation, and maintenance of system installed, and the necessary information for ordering replacement parts.

15870 EXHAUST FANS:

See schedule for size and capacity. Ceiling fans shall have steel housing finished in baked enamel and insulated with 2" acoustical insulation. Housing shall have adjustable mounting brackets.

Fans shall have aluminum backdraft dampers of air outlets. Dampers shall have cushioned stops to prevent clatter.

Blower shall have centrifugal fan wheel and shall be removable from the housing. Motors shall be permanently lubricated type mounted with neoprene torsion mounts.

Inlet grilles shall be steel or aluminum with off-white enamel finish.

Each unit shall carry the AMCA certified seal for both air and sound performance ratings. Units shall be UL listed.

15891 SHEET METAL DUCTWORK:

Provide a complete system of sheet metal ductwork, fabricated and installed in accordance with the latest recommendations of the ASHRAE Guide, and the SMACNA duct Construction Standards.

Duct Sleeves. This Contractor shall be responsible for the coordinating of the location and size with General Contractor of all openings for ductwork that pass through walls, floors, or partitions.

Duct Sealing. All outside air ductwork shall be soldered and sealed water-tight over its entire length. All inside air duct work shall be taped at joints.

Drp Pans shall be provided under all openings through the roof. Pan shall be at least 1" deep and shall be soldered and coated on the inside with two coats asphaltum.

Silicone rubber sealant shall be used to seal all seams on ductwork which is exposed to the weather.

Materials. Ductwork and fittings shall be fabricated from hot dipped, galvanized sheet steel of U.S. Standard Gauges, lock-forming quality.

15893 FIBERGLASS DUCTWORK:

At the Contractor's option, all or part of the duct system may be a non-metallic duct system, comprised of 1" thick fibrous glass board, with a glass fabric reinforced embossed aluminum surface.

All fabrication details shall be in accordance with the manufacturer's recommendations and the SMACNA Fibrous Glass Manual. Duct Construction Standards for an operating static pressure of 2 in. w.c. A closure system shall be provided using 1/4" outward clinch staples on 2" centers and sealed with Johns-Manville THERMOLOCK pressure sensitive tape.

15932 LOUVERS:

Blades and frames shall be of Extruded Aluminum. Each louver shall be complete with 1/4" square mesh 16 gauge steel galvanized screen attached to interior of louver by mechanical fasteners. Duct connections shall be sloped toward louver to enhance moisture drainage. Provide with prime coat.

15932 REGISTERS, GRILLES AND DIFFUSERS:

Registers, grilles and diffusers shall be of the size, type and finish shown on the equipment schedule. Locations shown are approximate. Contractor shall make adjustments necessary to fit construction. Reference the air distribution schedule for all required accessories such as material, blade spacing, neck size, etc.

15910 SHEET METAL SPECIALTIES:

Dampers. All motorized dampers not part of the specified equipment shall be furnished and installed by this Contractor.

15910 FIRE DAMPERS:

Dampers shall be multiple folding blade Style B complete with angle frame, 160 degree fusible link and locking device. Dampers shall be Air Balance Model 219A radiation dampers for ceiling penetrations, and Air Balance Model 199 for all other applications. Dampers shall be UL labeled in accordance with UL Standard 555 and rated for the proposed installation and fire separation. Verify conditions before ordering dampers.

All fire dampers except ceiling radiation dampers, shall be installed within a 16 gauge sleeve. Sleeve shall be held in place with metal angles to prevent displacement of the damper in case of duct collapse. Duct shall be secured to the sleeve with an "S" slip fitting. All fire dampers shall be installed in accordance with manufacturer's instructions and the UL listing. Access doors in ductwork shall be provided adjacent to all fire dampers. Access doors shall also be provided in ceiling or wall construction where required for damper access.

15910 COMBINATION FIRE/SMOKE DAMPERS:

CABO and UL listed closure device must allow the damper to close upon receipt of an electric signal from a remotely located smoke detection device. Dampers must automatically open and reset in the ready position after the smoke has cleared and power is restored. Motors shall be line voltage (115 volts). Smoke dampers shall be Model 120AJ with the electric motor, automatic reset feature as manufactured by Air Balance, Inc. Dampers shall be installed per UL and NFPA requirements. All wiring and controls shall be furnished and installed by this Contractor. This Contractor shall coordinate with the Electrical Contractor.

15910 DUCT ACCESSORIES:

- Manual damper regulators up to 12" long damper - Ventlok \*620.
- Manual damper regulators over 12" long damper - Ventlok \*635.
- Damper end bearings - Ventlok \*607.
- Access door latch - Ventlok \*100.
- Access door hinges - Ventlok \*150.

Access Doors - (Wall and Ceilings). Provide access doors in walls and ceilings where necessary for access to equipment. Panels shall be furnished by this Contractor. Doors shall be INRYCO/MOLCOR, 18" x 18" minimum size, the style applicable to the type of construction. Doors shall be fire rated when installed in rated construction.

15971 THERMOSTATS:

For Blower Coil Units, furnish a heat/cool, on/off/auto thermostat with independent 7-day programmable features and capable of 4 different temperature settings per day. Thermostat shall be micro-electric, similar to the American Stabils "Digitast". Thermostat time and date read-out shall be digital and shall include an override feature and battery back-up. Thermostat shall have separate heating and cooling program capability so that both may be programmed at one time.

15910 ELECTRIC FURNACES:

Provide forced air furnaces as scheduled. Furnace shall be factory assembled and wired. Furnaces shall be electric complete with fan control, speed controllers, thermal cutouts, automatic reset, condactor, fused control circuit transformer, and power circuit fuses for single power connection.

Blower-motor assembly shall be direct drive, multi-speed, class 1, full DTD, statically and dynamically balanced.

Filters shall be 2" disposable type of the number required for the unit and shall be installed in a factory built filter rack.

Heaters shall be UL listed for zero clearance and meet all the applicable requirements of the NEC. Heaters shall be supplied with over current protection and built-in disconnect per NEC with positive door interlock and marked on/off positions.

Heater construction shall be of galvanized steel frame. Terminal box shall be provided with a solid cover.

All resistance coil terminals and nuts shall be made of stainless steel, and terminal insulators and bracket bushings shall be made of high grade ceramic and securely positioned. Resistance wire shall be iron free, 80% nickel and 20% chromium. Heaters shall be tested electrically for 2000v.

Provide built-in pneumatic-electric switches for each stage. Switches shall be coordinated with temperature control requirements.

Coil shall include silent mercury contactors, recessed terminal ends, automatic circuit breakers (2 pole energizing type), heat limiter, air flow switch and automatic thermal cutouts.

Coils shall be sized as close as possible for duct size. Coils shall be designed for flanged type installation, installed duct. Coils shall be designed for horizontal air flow.

Installation:

Install the furnace level, and on the mounting frame as required.

Provide adequate room in front of the furnace for service and to the sides for pipe and ductwork required.</

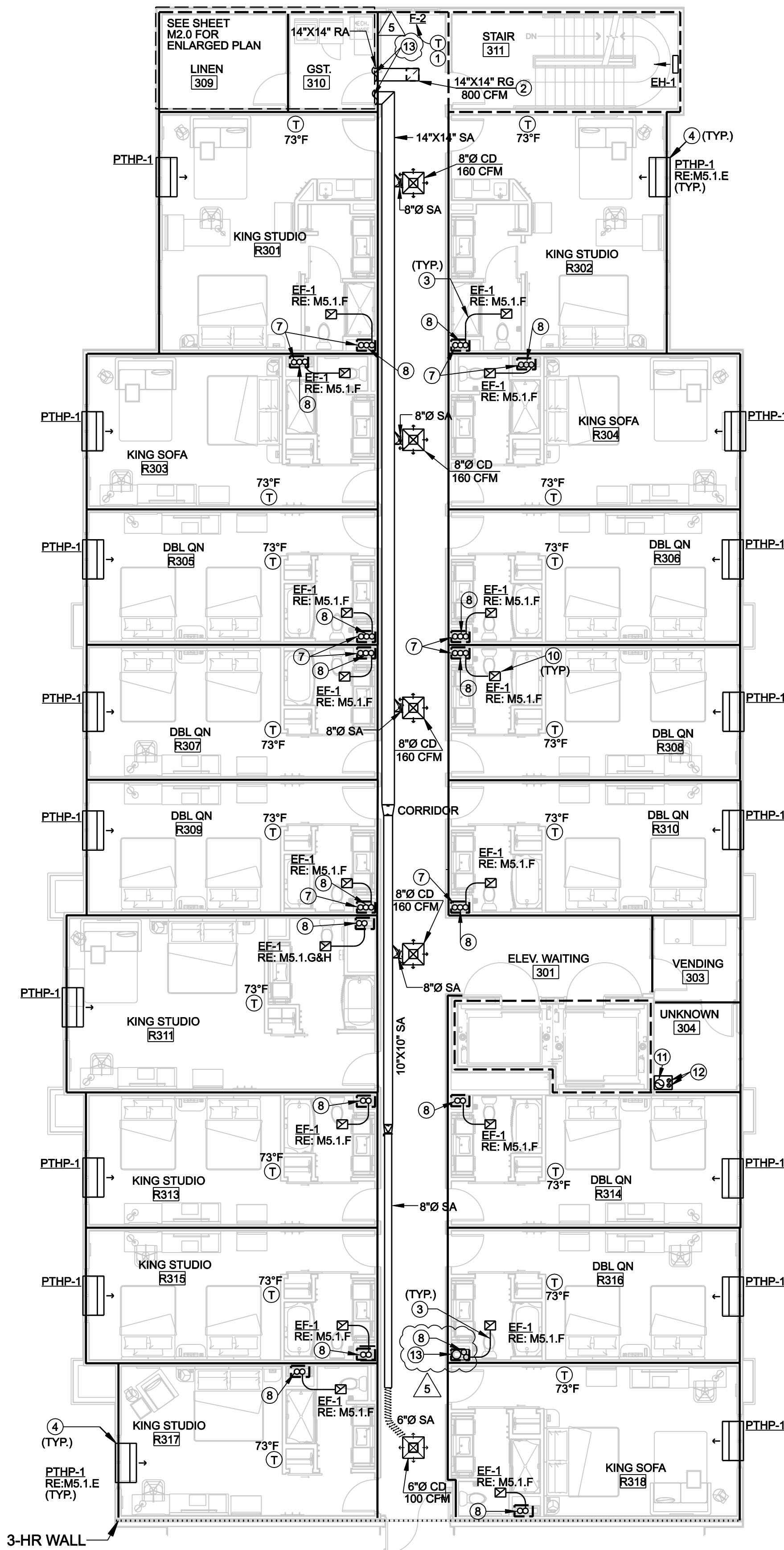












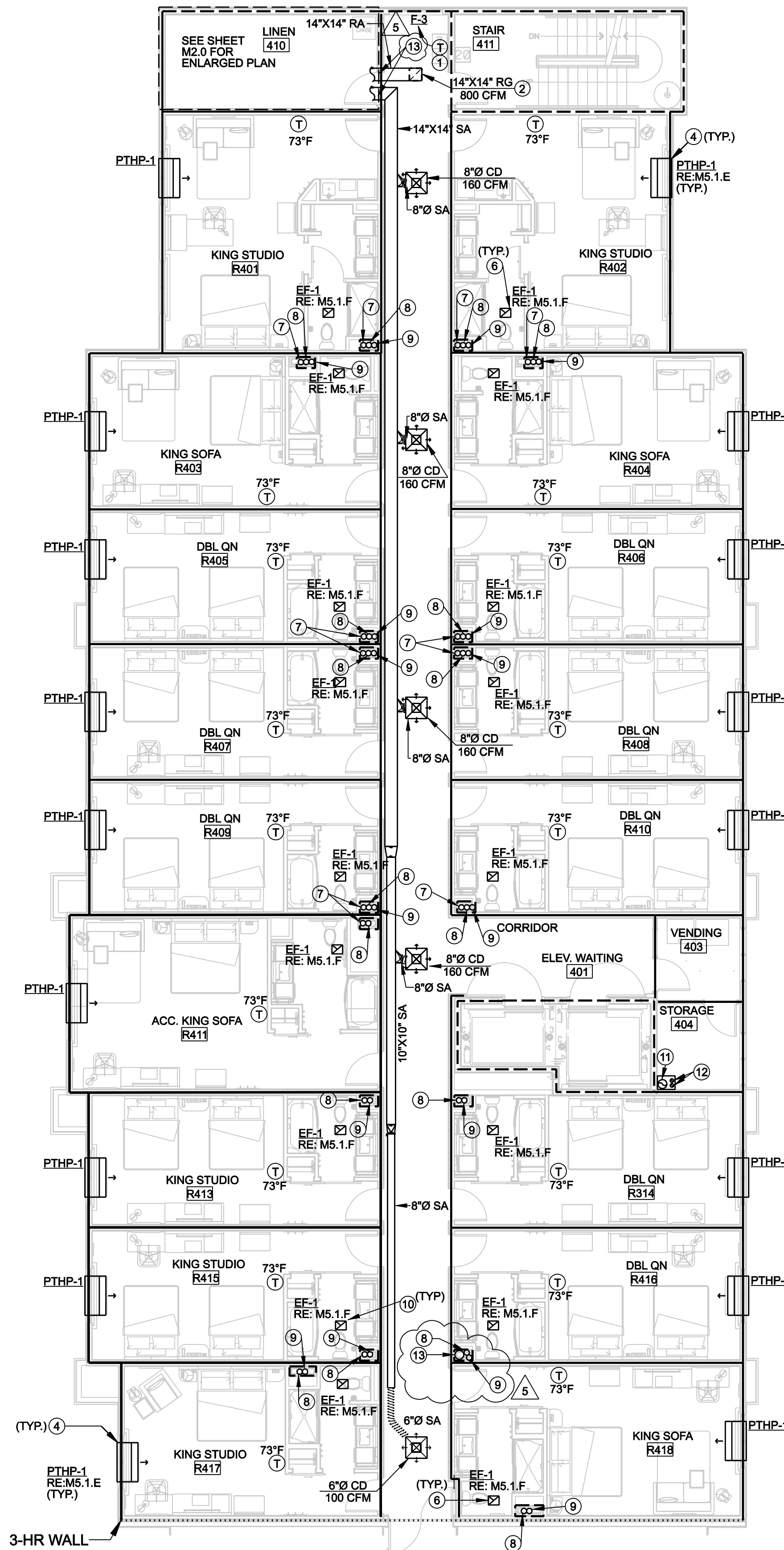
**THIRD FLOOR HVAC PLAN**  
 SCALE: 1/8"=1'-0"  
 FLEX DUCT LENGTH NOT TO EXCEED 5'-0" IN LENGTH.  
 NOTE: ENVIRONMENTAL AIR DUCT EXHAUST SHALL  
 TERMINATE AS FOLLOWS:  
 - 3 FOOT FROM PROPERTY LINE  
 - 10 FEET FROM A FORCED AIR INLET  
 - 3 FEET FROM OPENINGS INTO THE BUILDING  
 - SHALL NOT DISCHARGE ONTO A PUBLIC WALKWAY.

**KEYED NOTES**

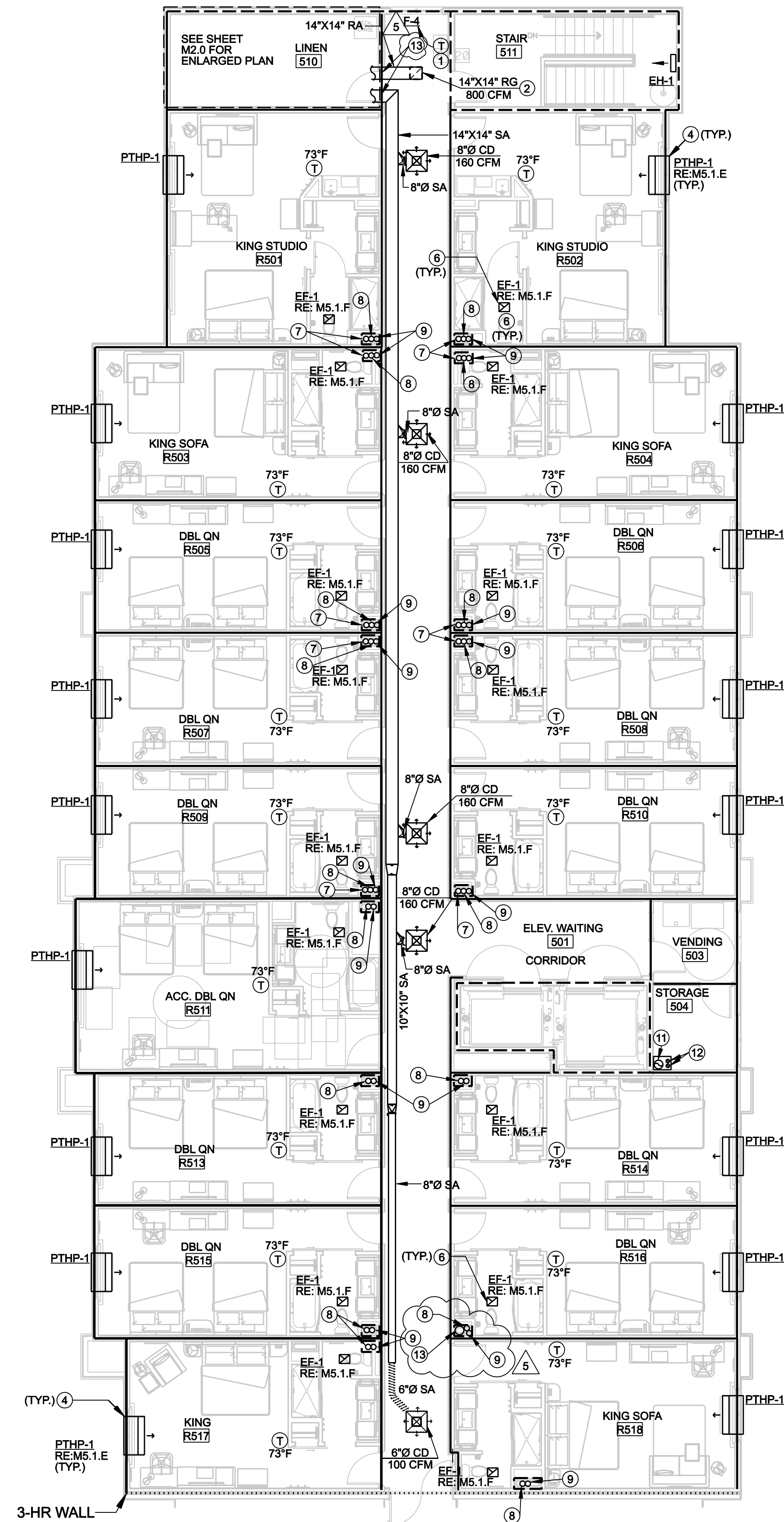
- ① 7 DAY PROGRAMMABLE T-STAT W/ AUTO CHANGEOVER. MOUNT 4'-0" ABOVE FINISHED FLOOR.
- ② DROP AND CONNECT TO RETURN GRILLE WITH SAME SIZE DUCT AS GRILLE.
- ③ ROUTE 8"Ø EXHAUST DUCT FROM CABINET FAN TO RATED EXHAUST SHAFT AND UP TO ROOF TOP PENETRATION. CONTRACTOR TO UTILIZE A MIN. 20 GAGE EXHAUST DUCTWORK.
- ④ SET MIN. OSA ON UNIT TO 60 CFM.
- ⑤ UNUSED
- ⑥ ROUTE 4"Ø EXHAUST DUCT FROM CABINET FAN ON FOURTH AND FIFTH FLOOR UP TO ROOF PENETRATION AS SHOWN. SEE M1.2 FOR CONTINUATION.
- ⑦ 6"Ø EXHAUST DUCT SERVING FIRST FLOOR AT THIS LOCATION. SHOWN FOR REFERENCE ONLY.
- ⑧ 6"Ø EXHAUST DUCT SERVING SECOND FLOOR AT THIS LOCATION. SHOWN FOR REFERENCE ONLY.
- ⑨ 6"Ø EXHAUST DUCT SERVING THIRD FLOOR AT THIS LOCATION. SHOWN FOR REFERENCE ONLY.
- ⑩ UNUSED
- ⑪ 8"Ø PVC EXHAUST FROM WATER HEATERS BELOW TO ROOF PENETRATION.
- ⑫ 2"Ø PVC EXHAUST FROM FURNACE BELOW TO ROOF PENETRATION.
- ⑬ FURNACE WITH LINEN ROOM SHALL ONLY SERVE CORRIDOR.
- ⑭ 10"Ø EXHAUST AIR DUCT SERVING FIRST FLOOR AT THIS LOCATION. SHOWN FOR REFERENCE ONLY.

**WALL LEGEND**

SYMBOL	DESCRIPTION
—	1- HOUR FIRE WALL OR PARTITION REFERENCE ARCHITECTURAL SHEET A8.01 & A8.02
----	2- HOUR FIRE RATED WALL
.....	3- HOUR FIRE RATED WALL



**FOURTH FLOOR HVAC PLAN**  
 SCALE: 1/8"=1'-0"  
 FLEX DUCT LENGTH NOT TO EXCEED 5'-0" IN LENGTH.  
 NOTE: ENVIRONMENTAL AIR DUCT EXHAUST SHALL  
 TERMINATE AS FOLLOWS:  
 - 3 FOOT FROM PROPERTY LINE  
 - 10 FEET FROM A FORCED AIR INLET  
 - 3 FEET FROM OPENINGS INTO THE BUILDING  
 - SHALL NOT DISCHARGE ONTO A PUBLIC WALKWAY.



**FIFTH FLOOR HVAC PLAN**  
 SCALE: 1/8"=1'-0"  
 FLEX DUCT LENGTH NOT TO EXCEED 5'-0" IN LENGTH.  
 NOTE: ENVIRONMENTAL AIR DUCT EXHAUST SHALL  
 TERMINATE AS FOLLOWS:  
 - 3 FOOT FROM PROPERTY LINE  
 - 10 FEET FROM A FORCED AIR INLET  
 - 3 FEET FROM OPENINGS INTO THE BUILDING  
 - SHALL NOT DISCHARGE ONTO A PUBLIC WALKWAY.

CITY OF SANTA CLARITA  
 BUILDING & SAFETY

**APPROVED**  
 Under SCMC Titles  
 18, 19, 20, 21, 24, 25  
 Oct 19, 2020  
 M. Nelson



BLD19-00927 REV 1  
 The approved plans must be available at the construction site at all times. Changes or alterations to approved plans shall not be made without the written approval of the Santa Clarita Building & Safety Division. The approval of these plans shall not be construed to permit or approve any violation of the applicable codes, ordinances, or other laws.

PERMIT# BLD19-00927

REVISIONS	BY
1 CITY COMMENTS 8/15/19	JW
2 CITY COMMENTS 2/17/20	JW
3 CITY COMMENTS 4/23/20	JW
4 CITY COMMENTS 5/11/20	JW
5 CITY COMMENTS 6/1/20	JW

**PRIME GROUP**  
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 MECHANICAL  
 CONSULTANTS  
**Kortner**  
 Associates LLC  
 1301 E. MCAL PINO RD. SUITE 200  
 FLORES, 33068-1115

HAMPTON INN  
 NEWHALL RANCH RD  
 SANTA CLARITA, CA 91355  
 THIRD THRU FIFTH FLOOR HVAC PLAN

DRAWN  
 JW/AB/TB  
 CHECKED  
 JB  
 DATE  
 APR 23, 2019  
 SCALE  
 AS NOTED  
 JOB NO.  
 15-112  
 SHEET

**M1.1**  
 OF SHEETS





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

- 3 FOOT FROM PROPERTY LINE
- 10 FEET FROM A FORCED AIR INLET
- 3 FEET FROM OPENINGS INTO THE BUILDING
- SHALL DISCHARGE ONTO A PUBLIC WALKWAY

NOTE: PROVIDE SEISMIC CURBS FOR ALL ROOF MOUNTED EQUIPMENT PER LOCAL AND STATE CODES

- ① APPROXIMATE LOCATION OF CURB MOUNTED PENTHOUSE ROOF. COORDINATE WORK WITH ARCHITECTURAL AND GENERAL CONTRACTOR. RE: MS.1.G
- ② SUCTION & LIQUID REFRIGERANT LINES SIZED BY EQUIPMENT MANUFACTURER. ROUTE TO INDOOR COOLING COIL SECTION AT ASSOCIATED FLOOR, AS REQUIRED. RE: MS.2.B.
- ③ MOUNT PER MANUFACTURER'S SPECIFICATIONS
- ④ 4"Ø EXHAUST DUCT FROM FIFTH FLOOR. SEE DETAIL. MS.1.D
- ⑤ INTERLOCK RELEASE/OPENING OF 48"X48" VENT HATCH WITH ELEVATOR CALL SYSTEM. COORDINATE WITH LIFE SAFETY CONTRACTOR. COORDINATE LOCATION OF ELEVATOR SHAFTS WITH ARCHITECTURAL.
- ⑥ 4"Ø EXHAUST DUCT FROM FOURTH FLOOR. SEE DETAIL. MS.1.D
- ⑦ 6"Ø EXHAUST DUCT SERVING FIRST FLOOR AT THIS LOCATION. SHOWN FOR REFERENCE ONLY.
- ⑧ 6"Ø EXHAUST DUCT SERVING SECOND FLOOR AT THIS LOCATION. SHOWN FOR REFERENCE ONLY.
- ⑨ 6"Ø EXHAUST DUCT SERVING THIRD FLOOR AT THIS LOCATION. SHOWN FOR REFERENCE ONLY.
- ⑩ 4"Ø EXHAUST DUCT SERVING FOURTH FLOOR AT THIS LOCATION. SHOWN FOR REFERENCE ONLY.
- ⑪ 4"Ø EXHAUST DUCT SERVING FIFTH FLOOR AT THIS LOCATION. SHOWN FOR REFERENCE ONLY.
- ⑫ 10"Ø EXHAUST DUCT SERVING FIRST FLOOR AT THIS LOCATION. SHOWN FOR REFERENCE ONLY.

**APPROVED**  
Under SCMC Titles  
18, 19, 20, 21, 24, 25  
**Oct 19, 2020**  
*M. Nelson*



**BLD19-00927 REV 1**

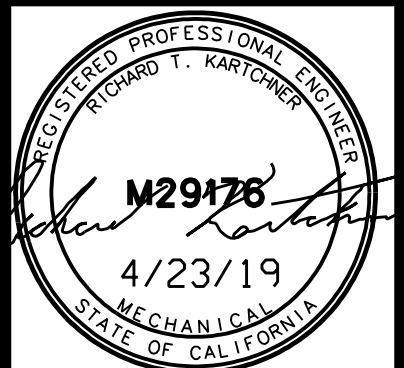
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ADMINISTRATOR@DESRESARCH.COM



**HAMPTON INN**  
**NEWHALL RANCH RD**  
**SANTA CLARITA, CA 91355**

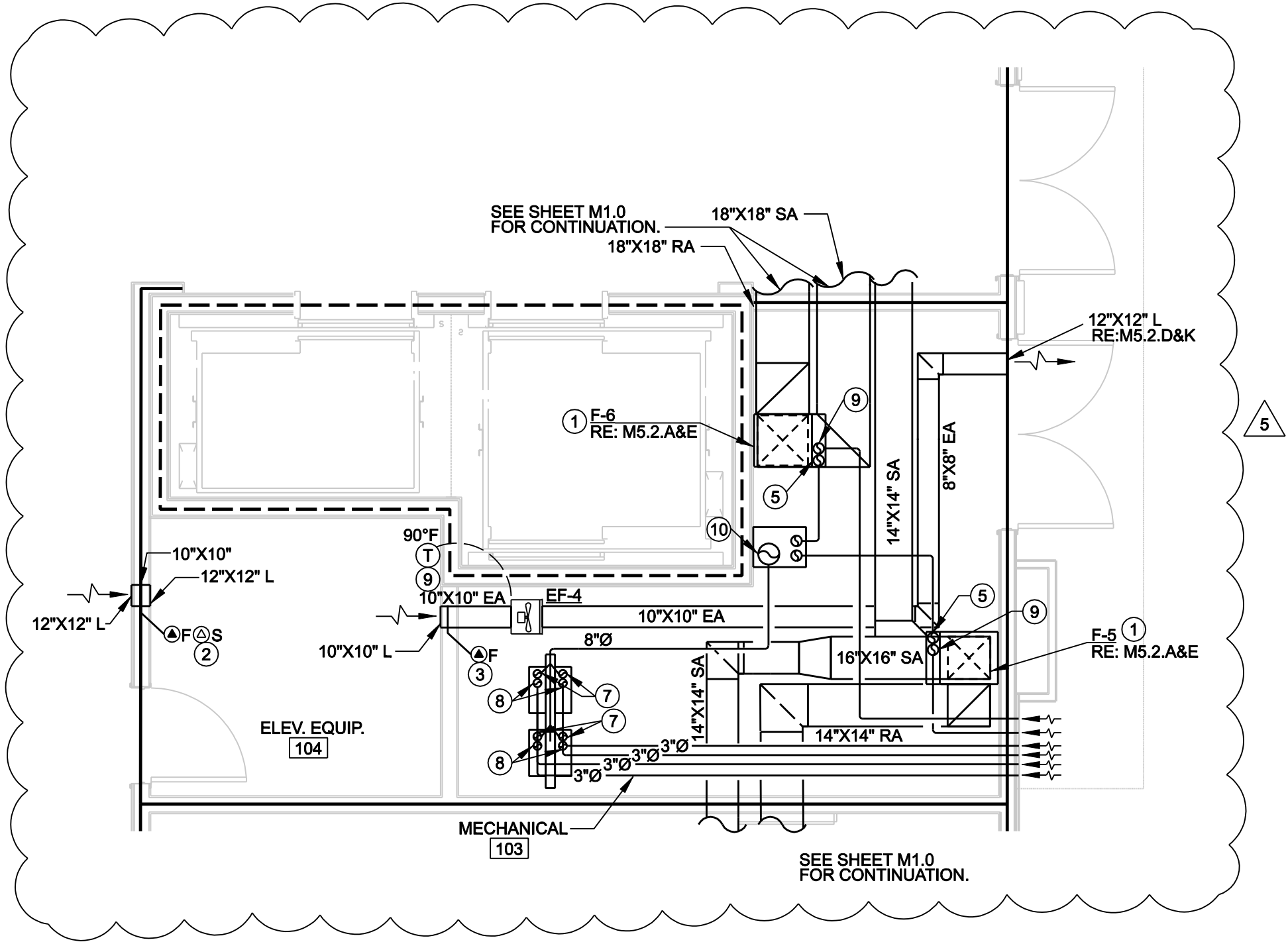
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**ROOF HVAC PLAN**

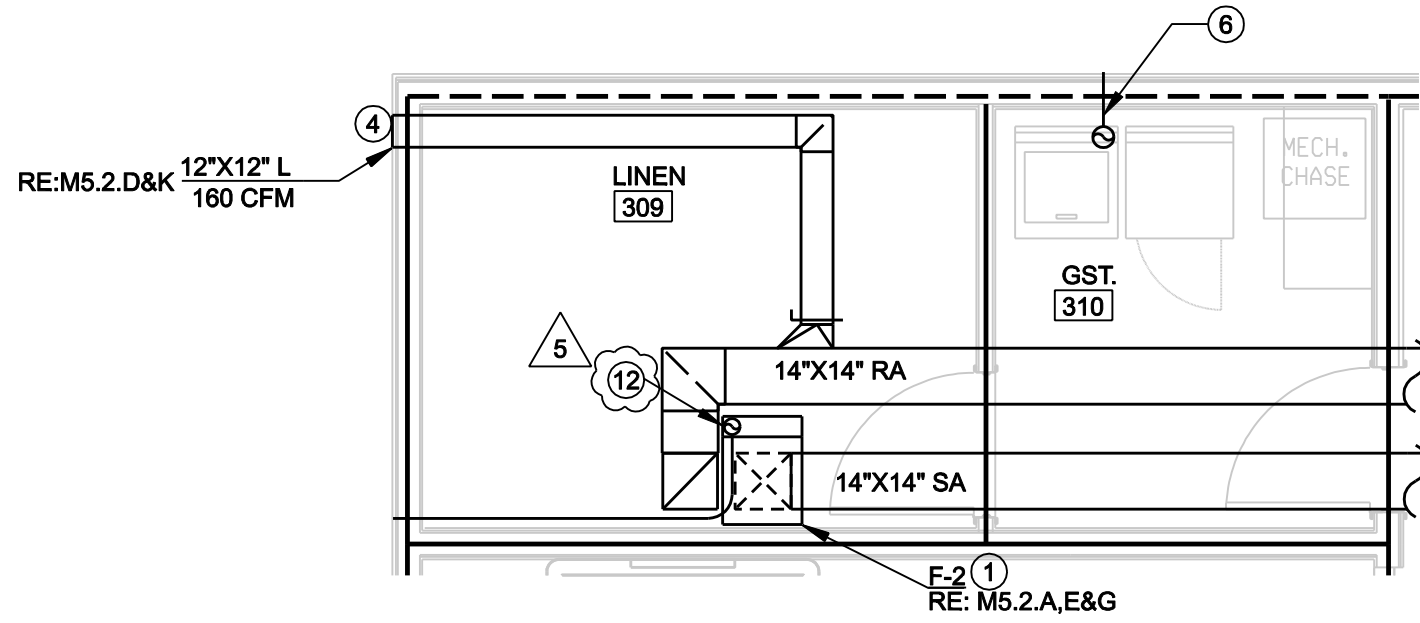
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JW/AJ/AB/TE
CHECKED
JB
DATE
APR 23, 2019
SCALE
AS NOTED
JOB NO.
15-112
SHEET

# M1.2





**FIRST FLOOR ENLARGED MECHANICAL ROOM PLAN**  
SCALE: 1/4" = 1'-0"  
NOTE: ENVIRONMENTAL AIR DUCT EXHAUST SHALL TERMINATE AS FOLLOWS:  
- 3 FOOT FROM PROPERTY LINE  
- 10 FEET FROM A FORCED AIR INLET  
- 3 FEET FROM OPENINGS INTO THE BUILDING  
- SHALL DISCHARGE ONTO A PUBLIC WALKWAY.  
ELEVATOR VENTILATION REQUIREMENTS:  
- RISE FROM CORRIDOR: 74°F  
- PER ELEVATOR SPECIFICATIONS TEMPERATURE WITHIN MACHINE ROOM: 90°F  
- HEAT EMISSION PER ELEVATOR SPECIFICATIONS: 5288 BTU/Hr  
REQUIRED VENTILATION: 475 CFM  
VENTILATION PROVIDED: 500 CFM



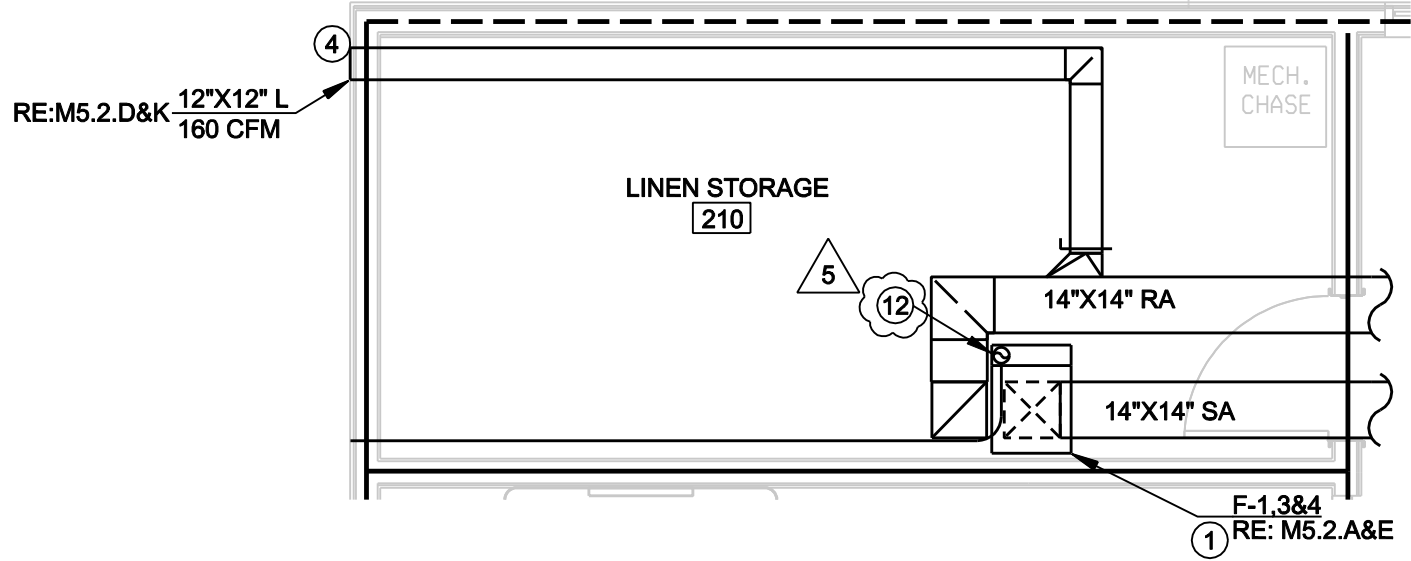
**THIRD FLOOR ENLARGED MECHANICAL ROOM PLAN**  
SCALE: 1/4" = 1'-0"  
NOTE: ENVIRONMENTAL AIR DUCT EXHAUST SHALL TERMINATE AS FOLLOWS:  
- 3 FOOT FROM PROPERTY LINE  
- 10 FEET FROM A FORCED AIR INLET  
- 3 FEET FROM OPENINGS INTO THE BUILDING  
- SHALL DISCHARGE ONTO A PUBLIC WALKWAY.

**KEYED NOTES**

1. TRANSITION TO UNIT INLET/OUTLET AS NECESSARY.
2. INSTALL RUSKIN FSD60 FIRE/SMOKE DAMPER PER MANUFACTURER'S SPECIFICATIONS.
3. INSTALL RUSKIN FD35 FIRE DAMPER PER MAUFACTURER'S SPECIFICATIONS.
4. RUN 6\"/>
5. RISE FROM FURNACE WITH 3\"/>
6. ROUTE 4\"/>
7. RISE FROM WATER HEATER WITH 3\"/>
8. RISE FROM WATER HEATER 3\"/>
9. RISE FROM FURNACE WITH 3\"/>
9. PROVIDE RATE OF RISE T-STAT FOR EQUIPMENT ROOM EXHAUST FAN. EXHAUST FAN TO ENERGIZE WHEN ROOM TEMPERATURE REACHES 80°F.
10. RISE 8\"/>
11. RISE 3\"/>
12. COMBINE INTAKE AND EXHAUST FROM FURNACE TO CONCENTRIC VENT AND TERMINATE AT EXTERIOR WALL. INSTALL PER MANUFACTURER'S SPECIFICATIONS. RE: M-S.2.H&L.

**WALL LEGEND**

SYMBOL	DESCRIPTION
—————	1- HOUR FIRE WALL, BARRIER OR PARTITION REFERENCE ARCHITECTURAL SHEET A8.01 & A8.02
-----	2- HOUR FIRE RATED WALL/SHAFT
.....	3- HOUR FIRE RATED WALL



**SECOND, FOURTH AND FIFTH FLOOR ENLARGED MECHANICAL ROOM PLAN**  
SCALE: 1/4" = 1'-0"  
NOTE: ENVIRONMENTAL AIR DUCT EXHAUST SHALL TERMINATE AS FOLLOWS:  
- 3 FOOT FROM PROPERTY LINE  
- 10 FEET FROM A FORCED AIR INLET  
- 3 FEET FROM OPENINGS INTO THE BUILDING  
- SHALL DISCHARGE ONTO A PUBLIC WALKWAY.

CITY OF SANTA CLARITA  
BUILDING & SAFETY

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REVISIONS	BY
1. CITY REVISIONS 8/15/19	JW
2. CITY COMMENTS 2/17/20	JW
3. CITY COMMENTS 4/29/20	JW
4. CITY COMMENTS 5/11/20	JW
5. CITY COMMENTS 8/1/20	JW

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Irvine, CA 92618-1715

**Beaucannon**  
Tier Consultants

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NEWHALL RANCH RD  
SANTA CLARITA, CA 91355

ENLARGED ROOM PLANS

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JW/AJ/AB/TB

CHECKED  
JB

DATE  
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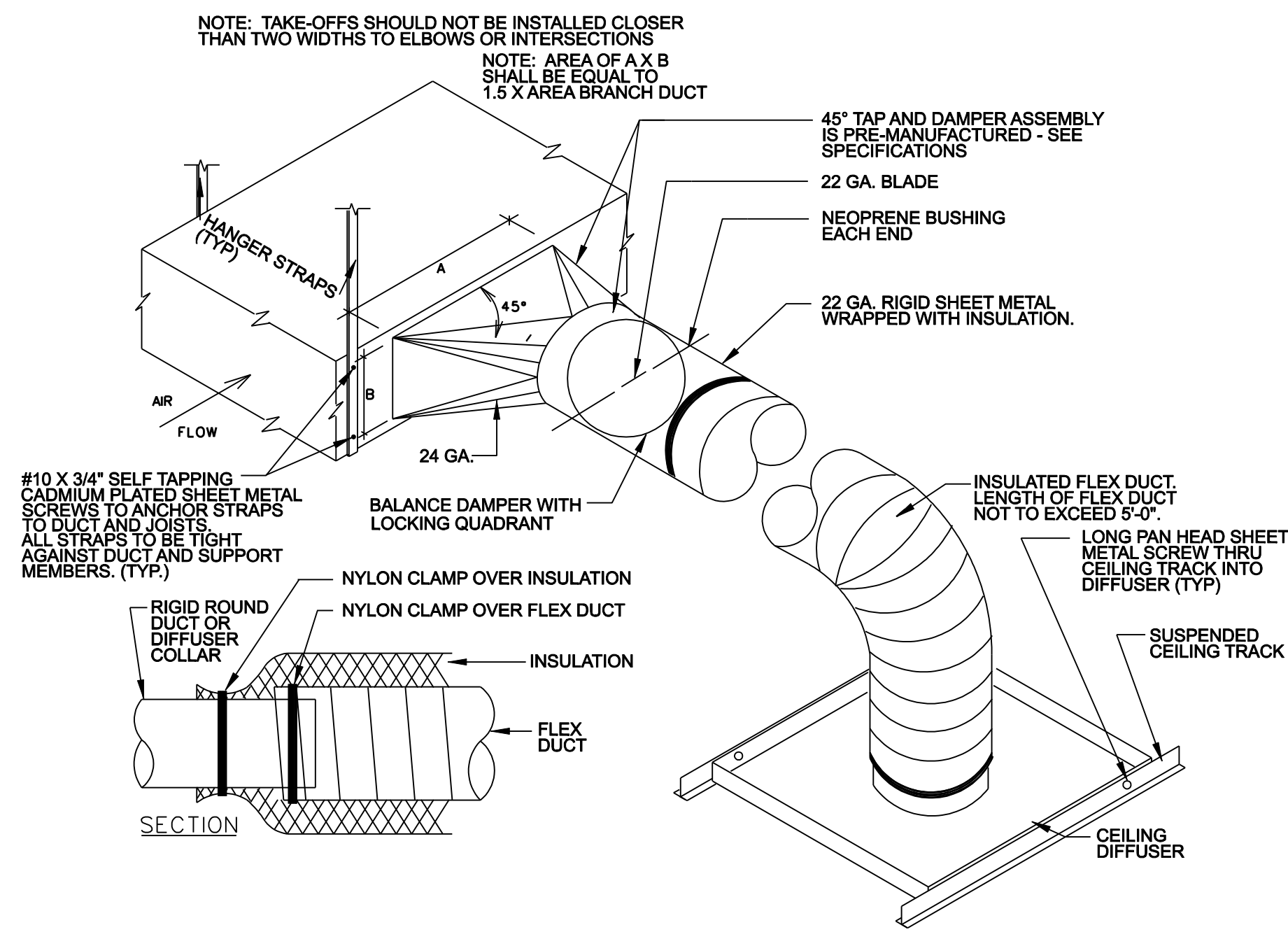
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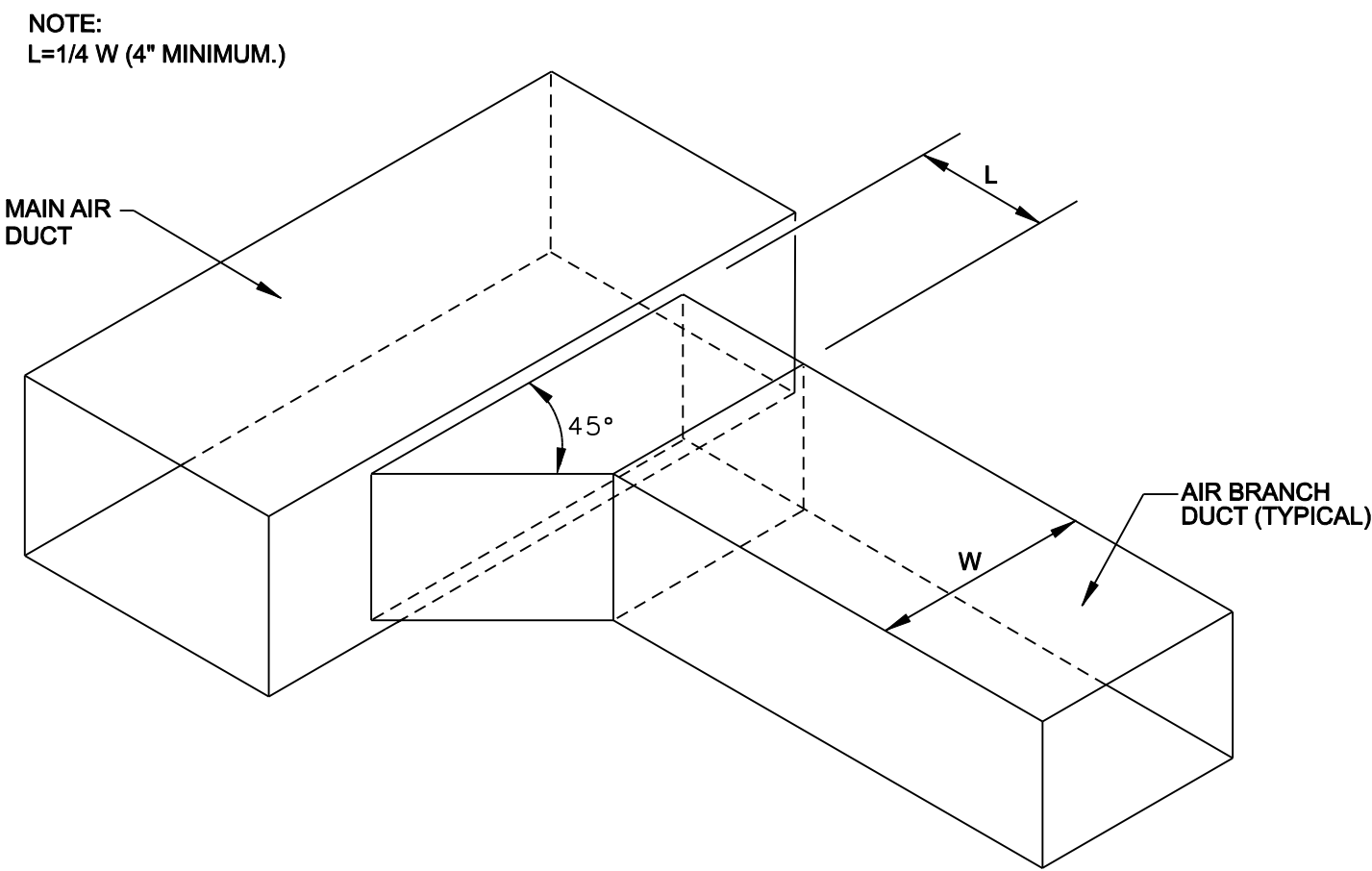
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M2.0

OF SHEETS

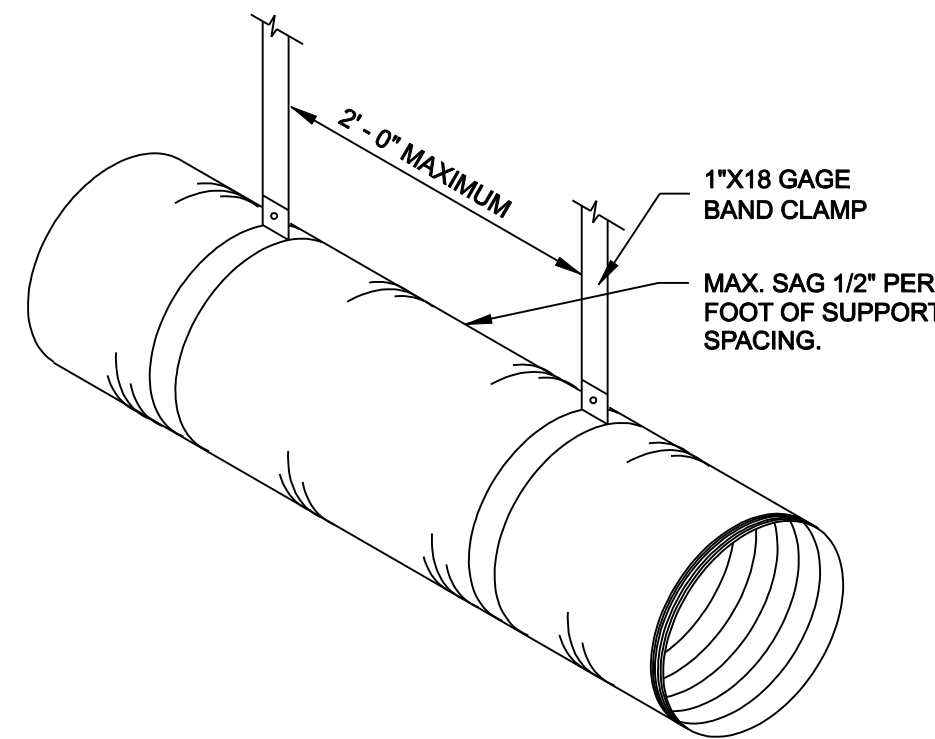




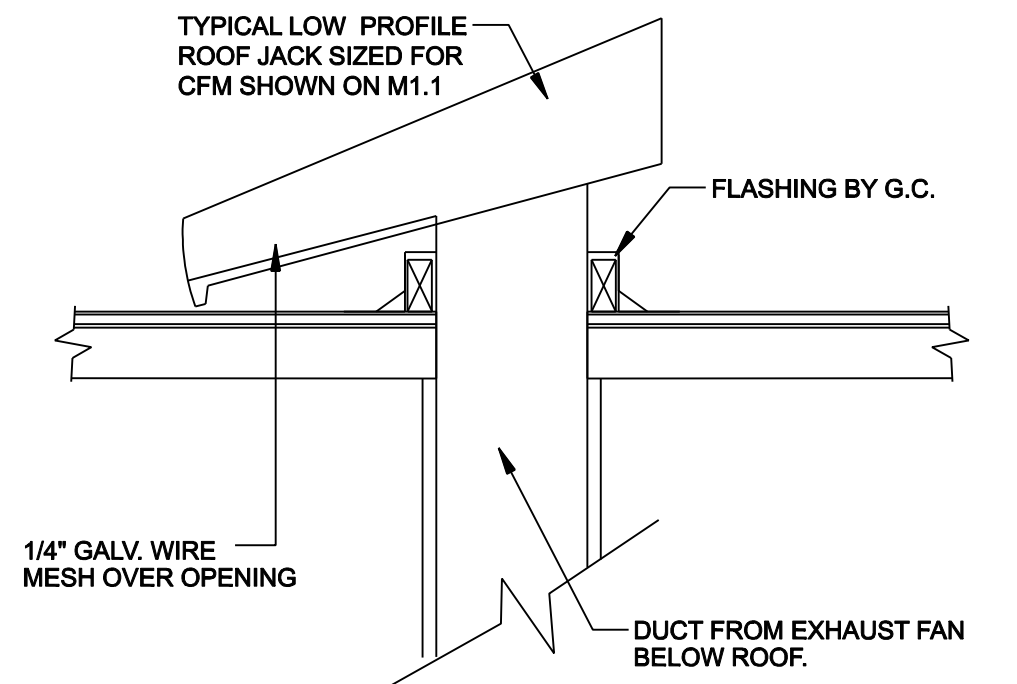
**SQUARE TO ROUND TAKE-OFF DETAIL**  
SCALE: NONE



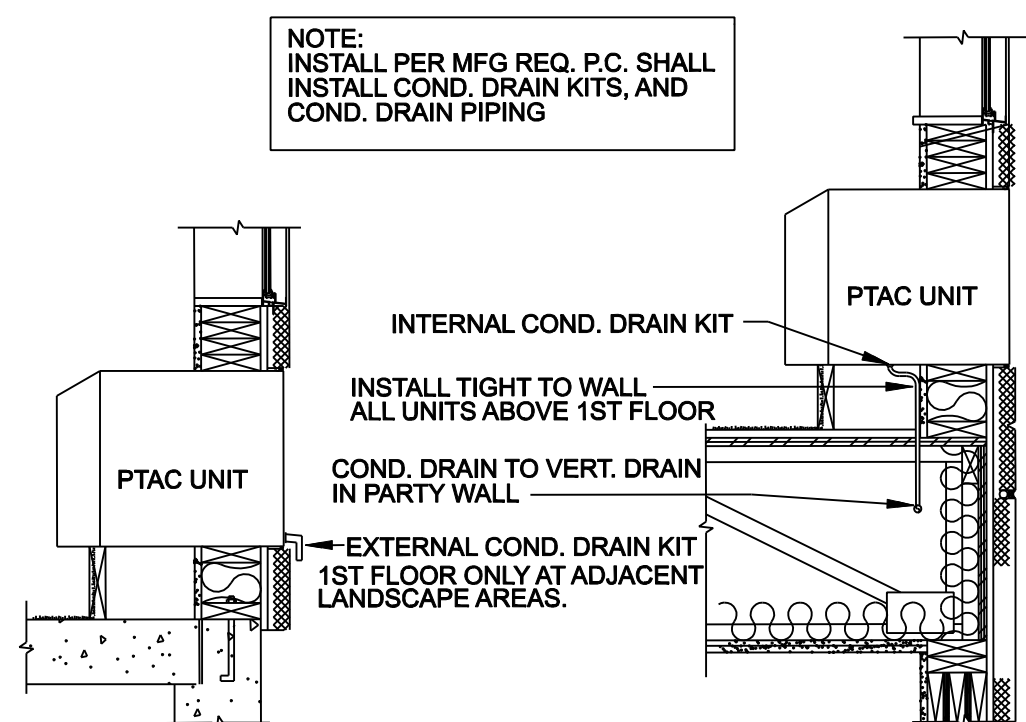
**SUPPLY OR RETURN AIR DUCT BRANCH CONNECTION DETAIL**  
SCALE: NONE



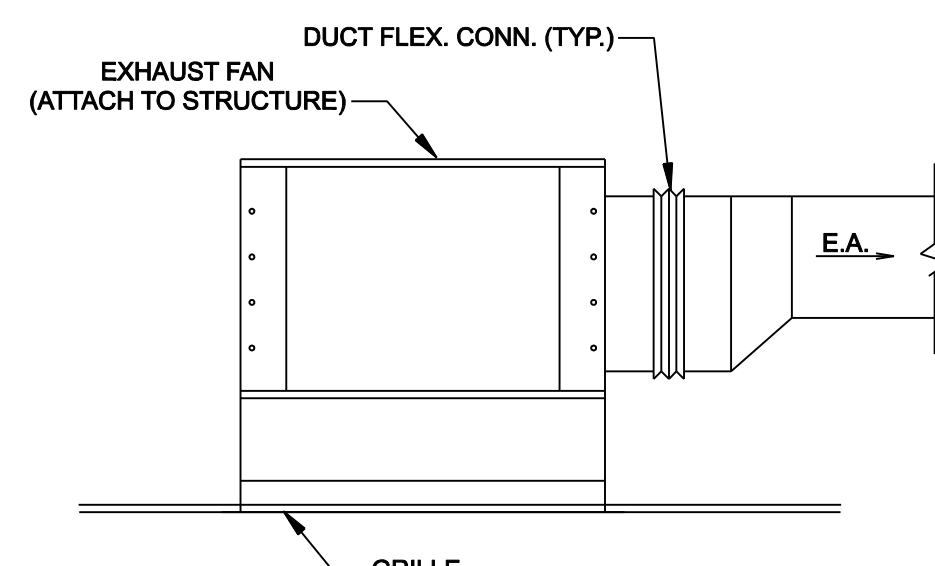
**FLEXIBLE DUCT SUPPORT DETAIL**  
SCALE: NONE



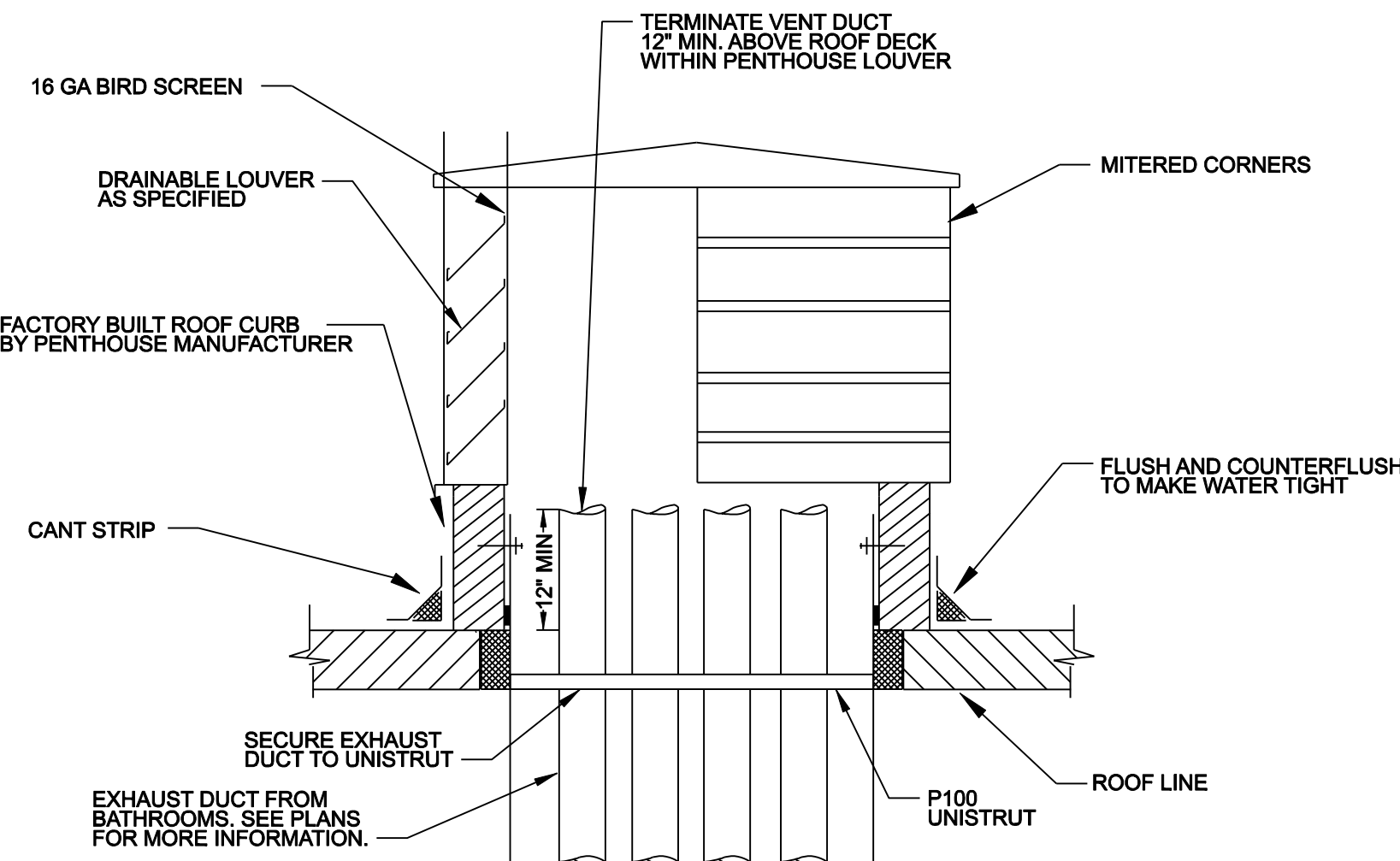
**EXHAUST/OSA AIR OUTLET DETAIL**  
SCALE: NONE



**HEAT PUMP DETAIL**  
SCALE: NONE



**EXHAUST FAN DETAIL**  
SCALE: NONE  
NOTE: GUEST ROOMS EXHAUST FANS TO BE INTERLOCKED WITH FIRE/SMOKE DAMPER OPERATION TO POWER OFF THE EXHAUST FAN WHEN THE DAMPER IS CLOSED.



**PENTHOUSE LOUVER DETAIL**  
SCALE: NONE

CITY OF SANTA CLARITA  
BUILDING & SAFETY

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2 CITY COMMENTS 2/17/20	JW
3 CITY COMMENTS 3/11/20	JW

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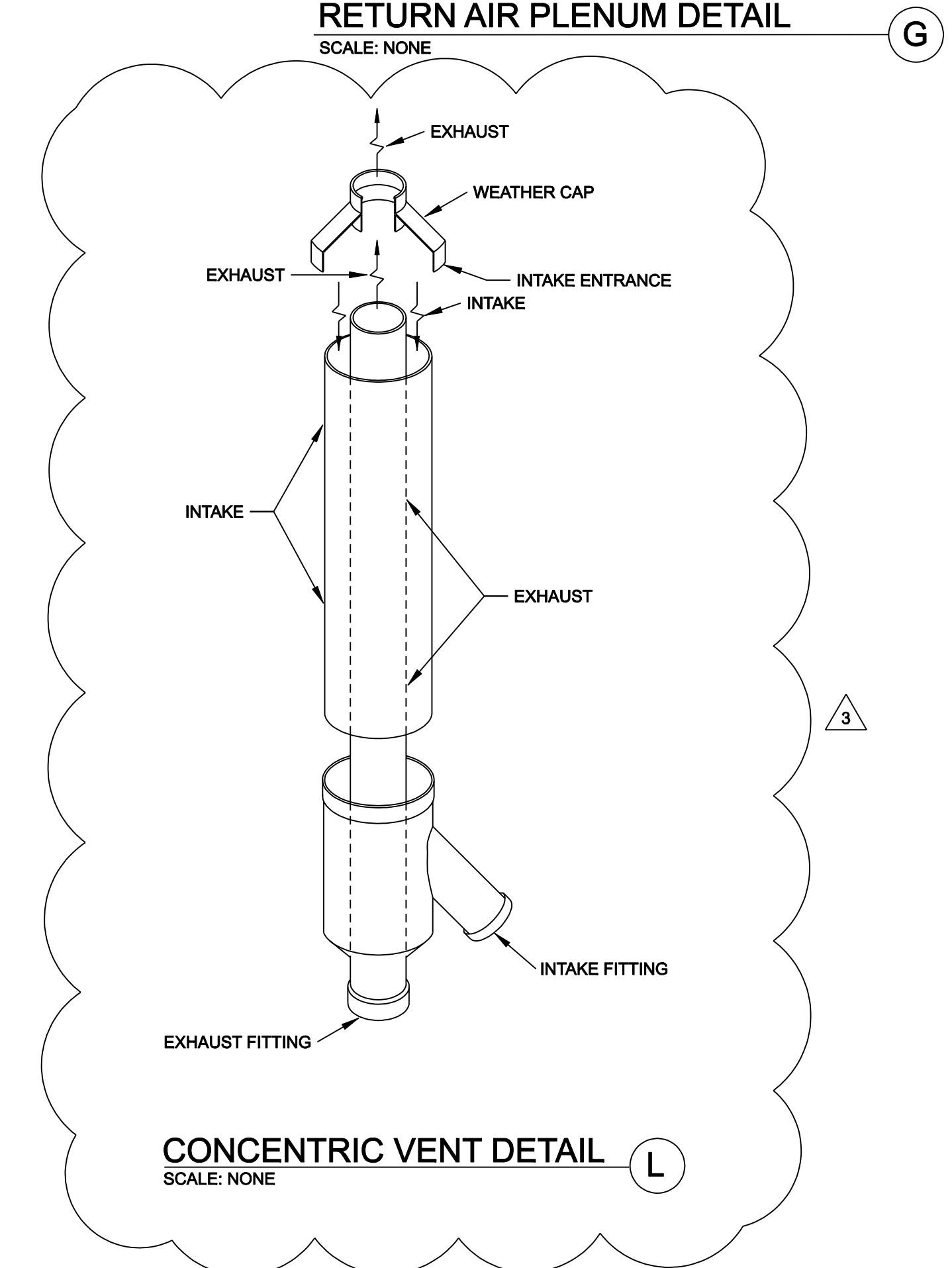
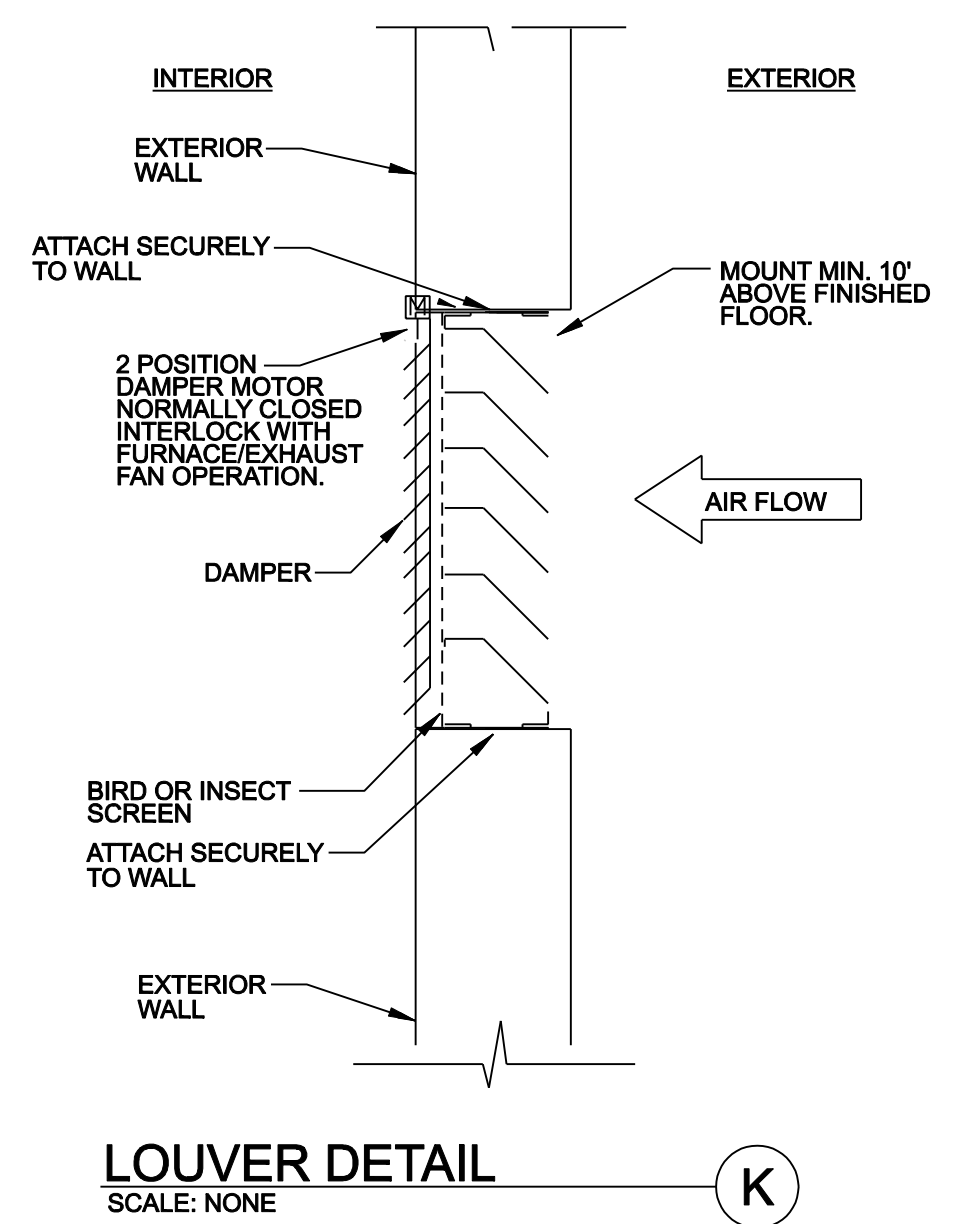
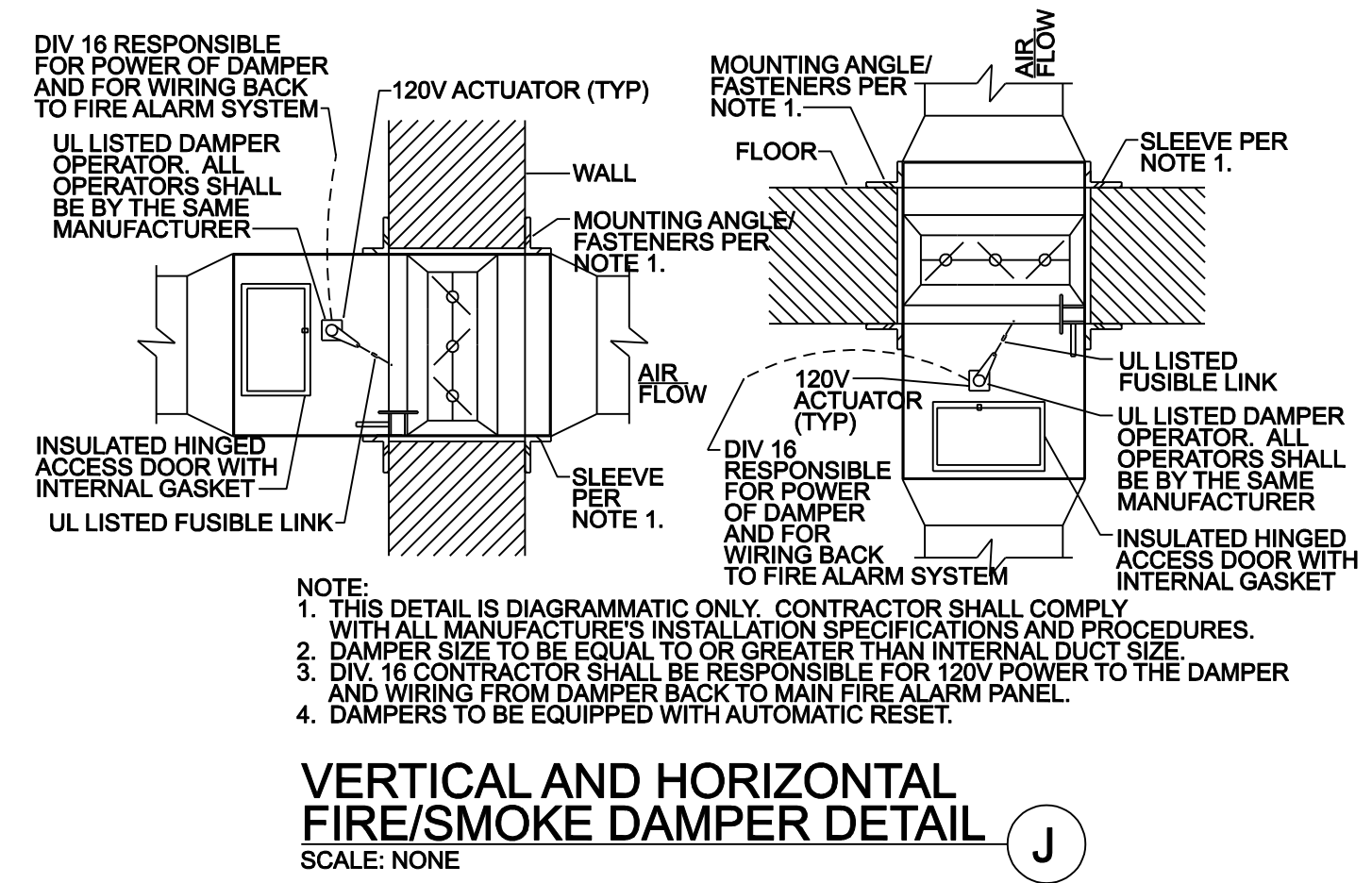
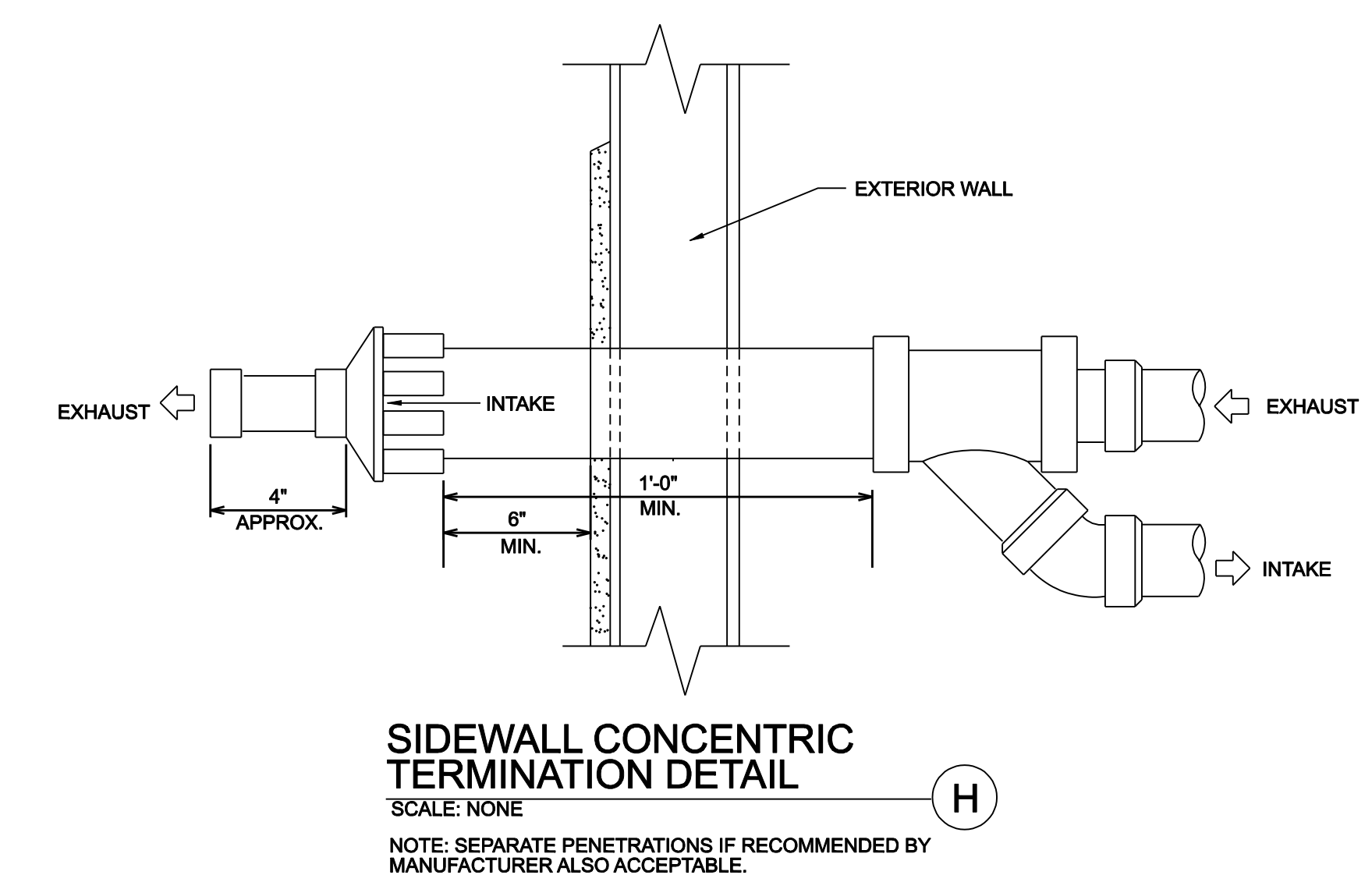
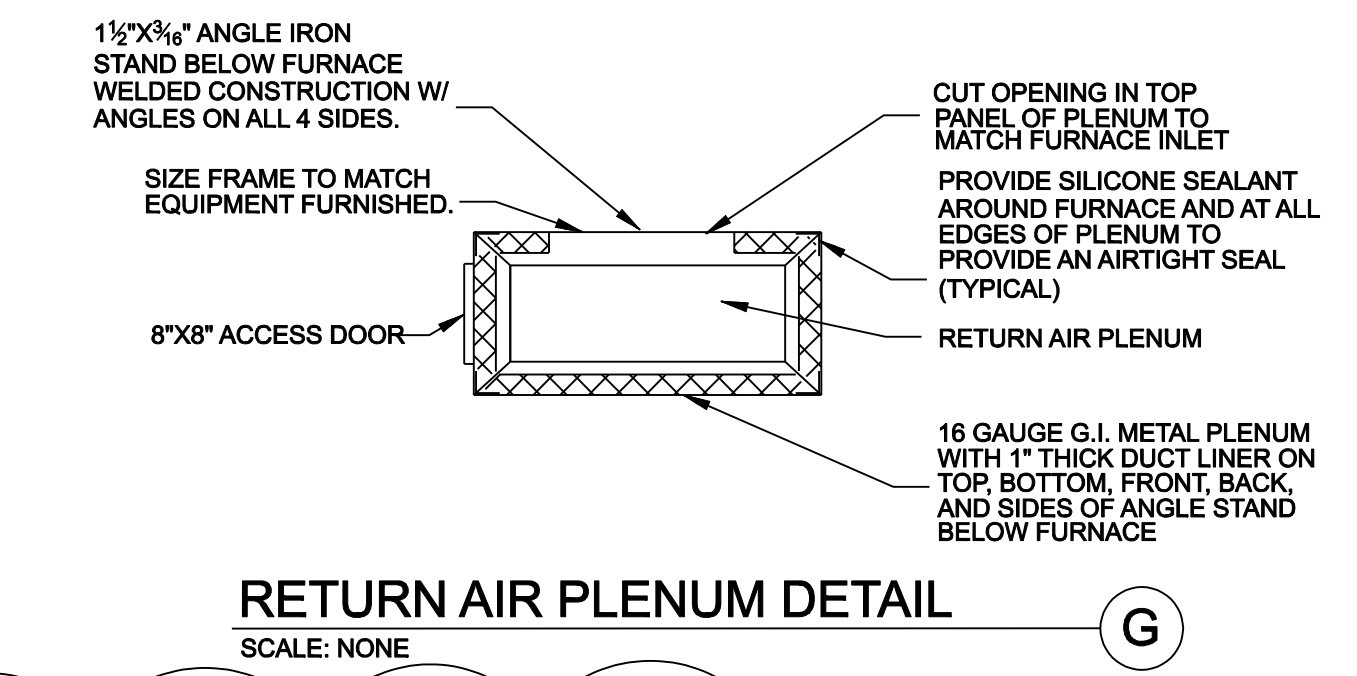
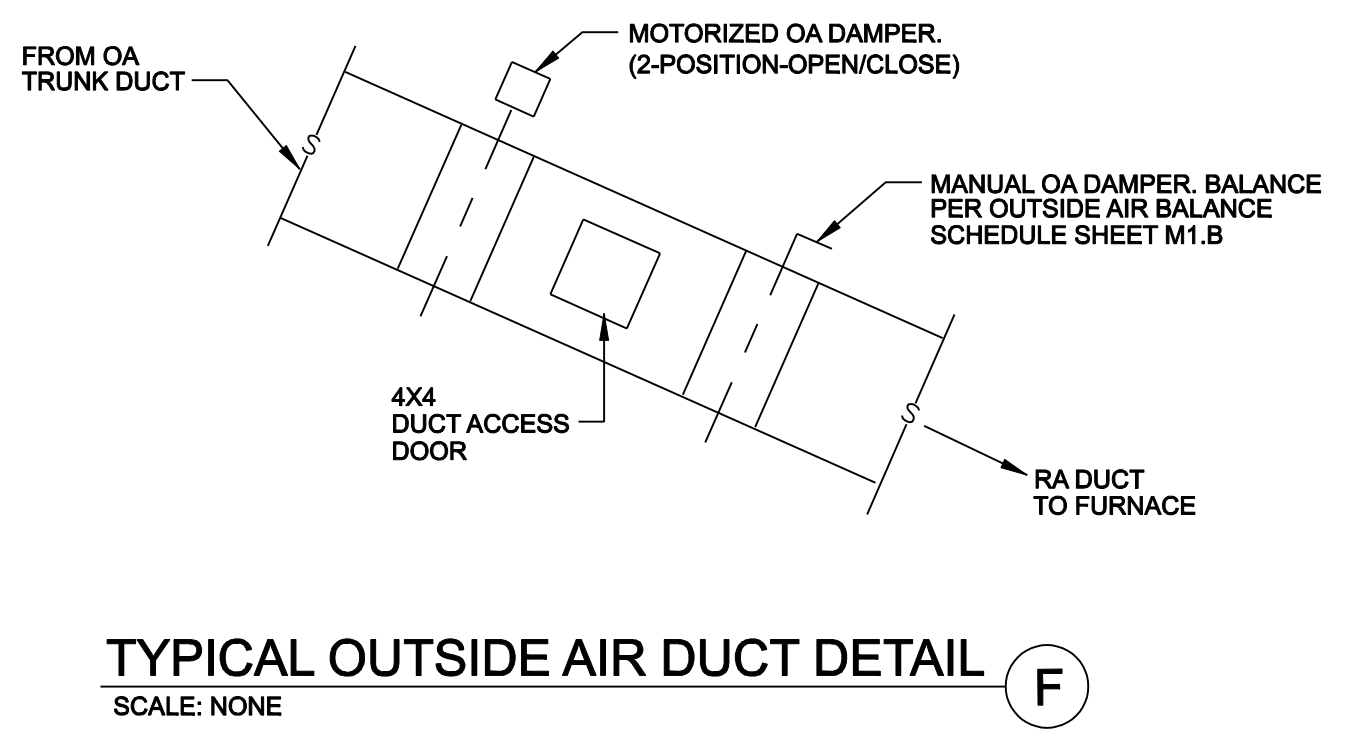
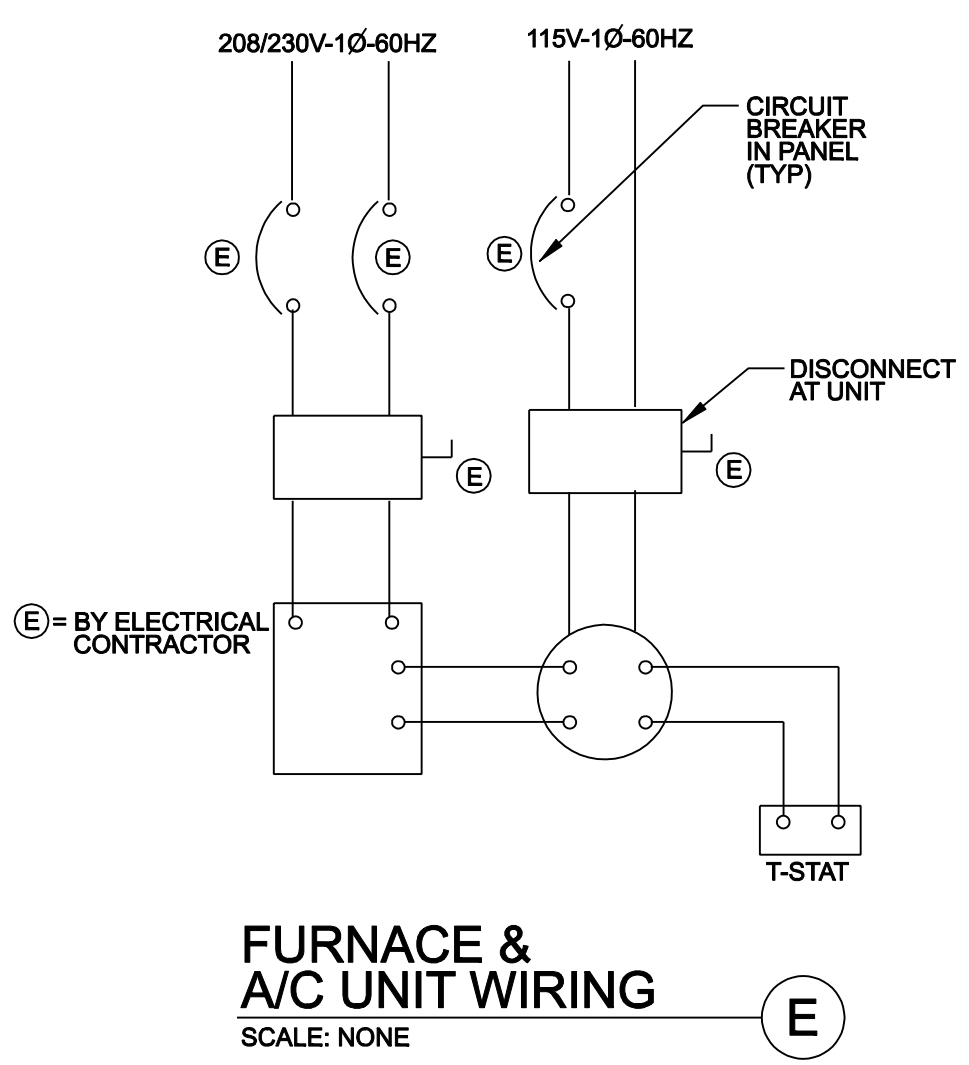
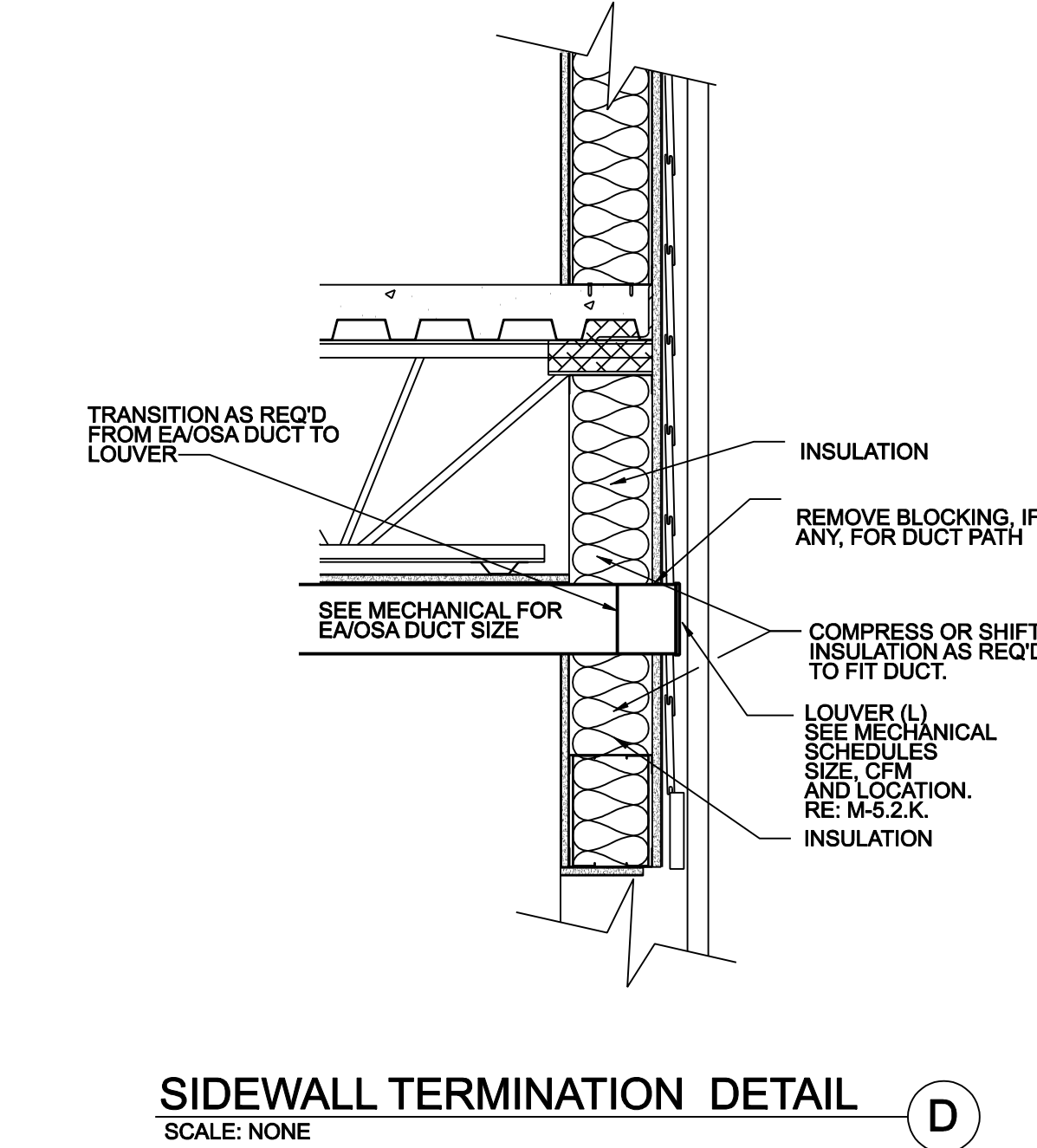
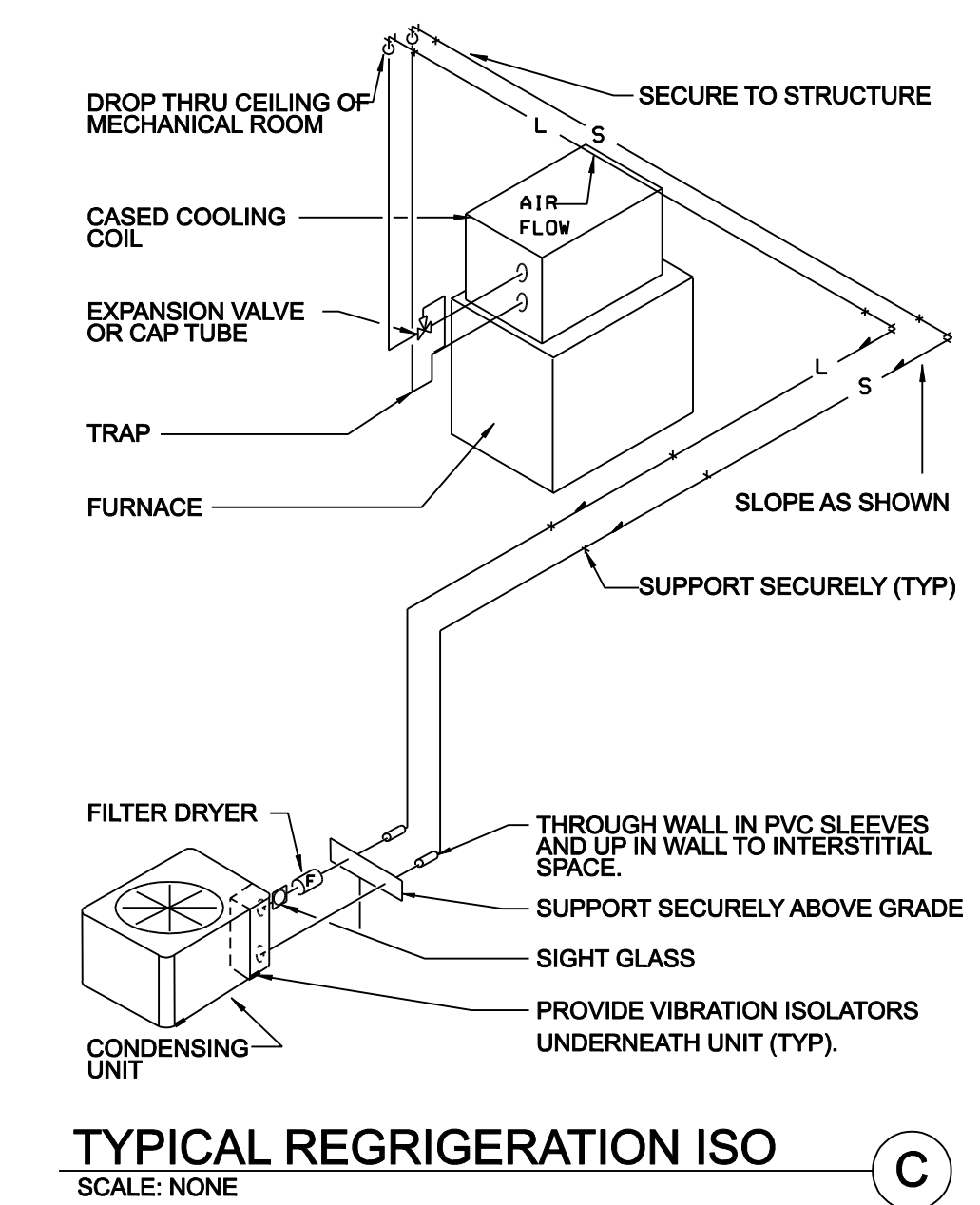
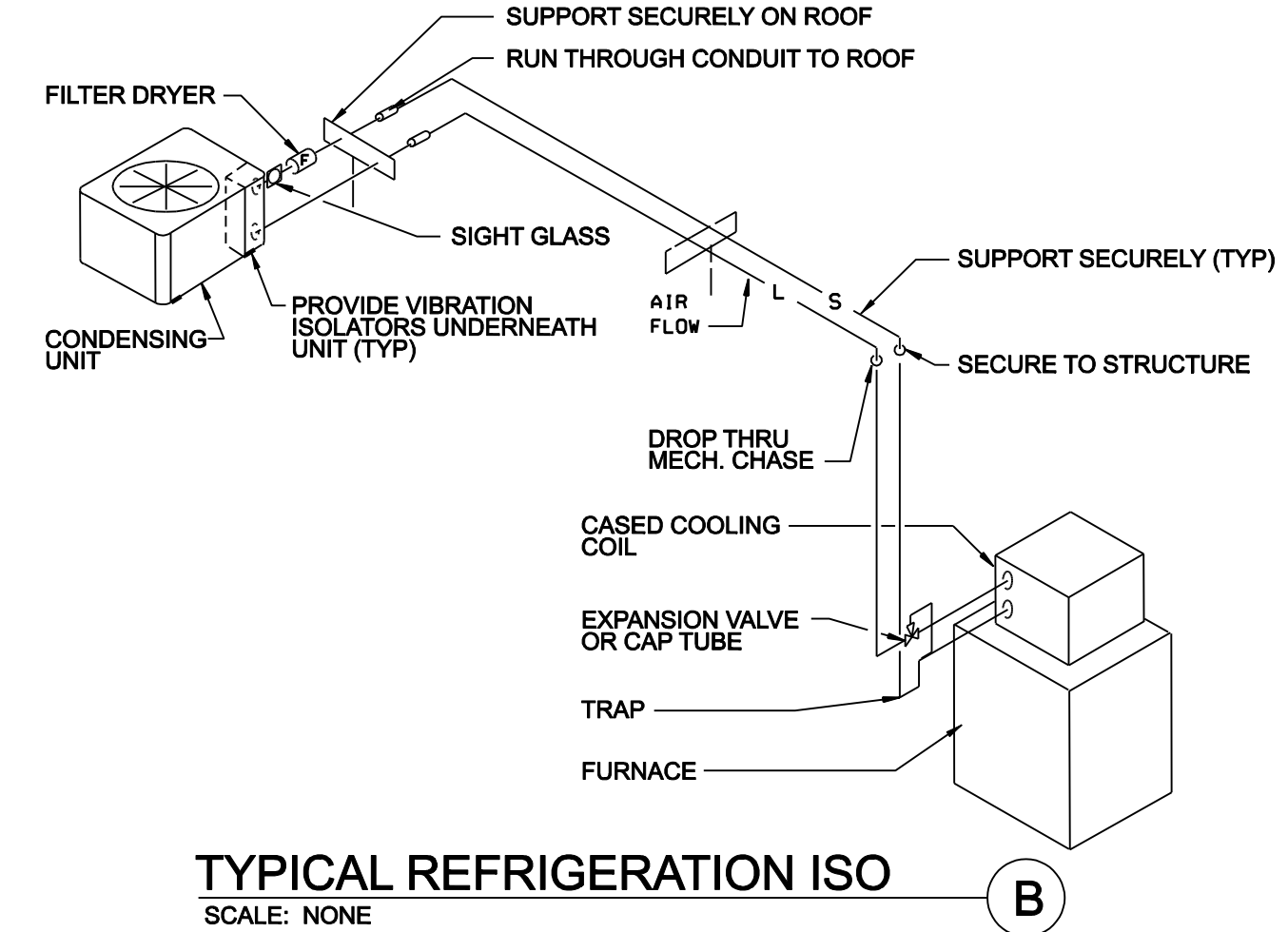
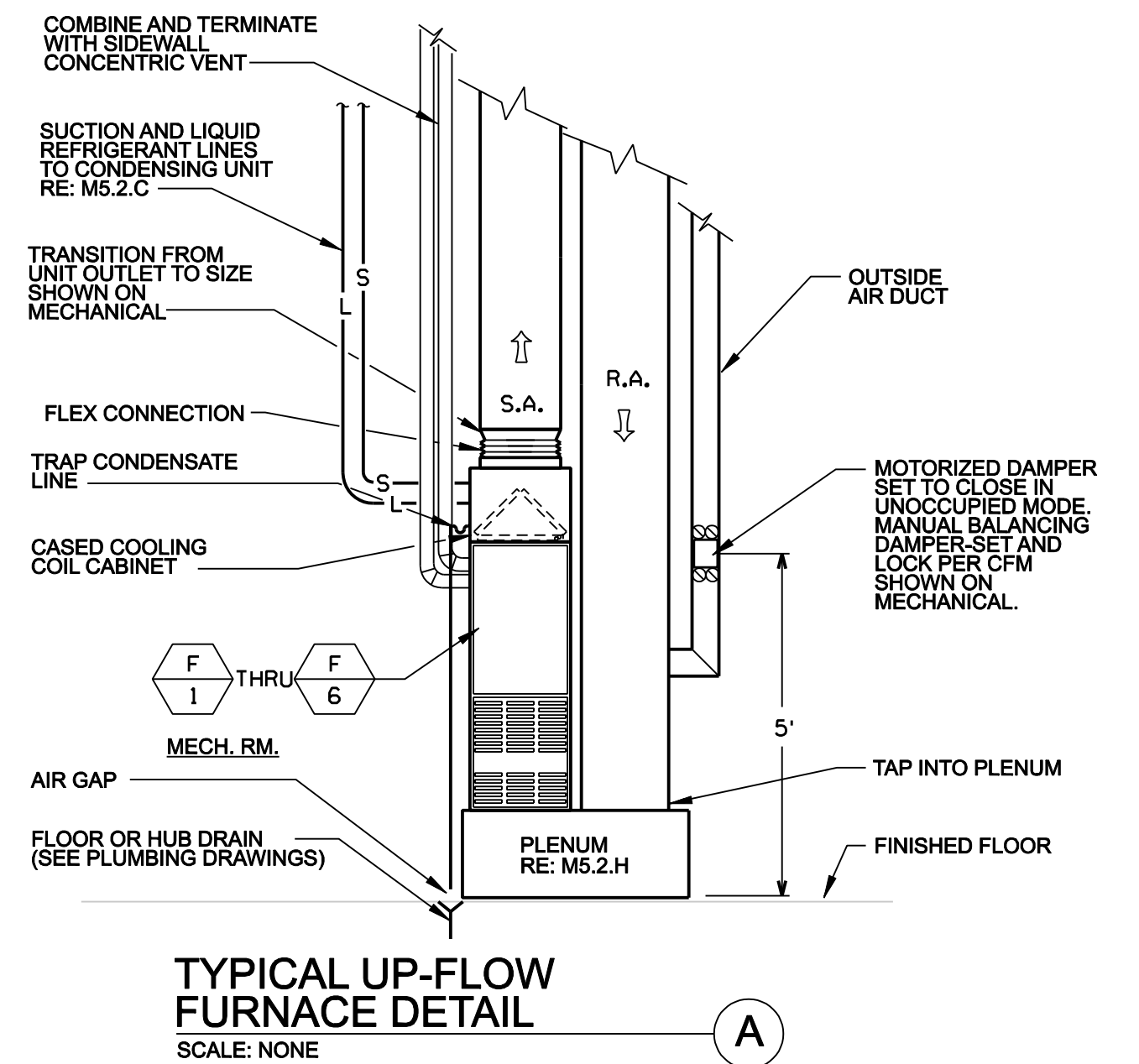


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HAMPTON INN  
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SANTA CLARITA, CA 91355  
HVAC DETAILS

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**CITY OF SANTA CLARITA**  
BUILDING & SAFETY

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**M29176**  
4/23/19  
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