

TABLE R301.2(2) COMPONENT AND CLADDING LOADS FOR A BUILDING WITH A MEAN ROOF HEIGHT OF 30 FEET LOCATED IN EXPOSURE B (psf)a, b, c, d, e

ZONE	EFFECTIVE WIND AREA (feet ²)	Ultimate Design Wind Speed Vult (mph)									
		110	115	120	130	140	150	160	180	200	
ROOF > 0 TO 7 DEGREES	1	10	8.9 -21.8	9.7 -23.8	10.5 -25.9	12.4 -30.4	14.3 -35.3	16.5 -40.5	18.7 -46.1	23.7 -58.3	29.3 -72.0
	2	20	8.3 -21.2	9.1 -23.2	9.9 -25.2	11.6 -29.6	13.4 -34.4	15.4 -39.4	17.6 -44.9	22.2 -56.8	27.4 -70.1
	3	50	7.6 -20.5	8.3 -22.4	9.0 -24.4	10.6 -28.6	12.3 -33.2	14.1 -38.1	16.0 -43.3	20.3 -54.8	25.0 -67.7
	100	7.0 -19.9	7.7 -21.8	8.3 -23.7	9.8 -27.8	11.4 -32.3	13.0 -37.0	14.8 -42.1	18.8 -53.3	23.2 -65.9	29.3 -72.0
	2	10	8.9 -36.5	9.7 -38.9	10.5 -43.5	12.4 -51.0	14.3 -59.2	16.5 -67.9	18.7 -77.3	23.7 -97.8	29.3 -120.7
ROOF > 7 TO 27 DEGREES	1	10	12.5 -19.9	13.7 -37.9	14.9 -23.7	17.5 -27.8	20.3 -32.3	23.3 -37.0	28.5 -42.1	33.6 -53.3	41.5 -65.9
	2	20	11.4 -19.4	12.5 -34.9	13.6 -23.0	16.0 -27.0	18.5 -31.4	21.3 -36.0	24.2 -41.0	30.6 -51.9	37.8 -64.0
	3	50	10.0 -18.6	10.9 -30.9	11.9 -22.2	13.9 -26.0	16.1 -30.2	18.5 -34.6	21.1 -39.4	26.7 -49.9	32.9 -61.6
	100	8.9 -18.1	9.7 -27.8	10.5 -21.5	12.4 -25.2	14.3 -29.3	16.5 -33.6	18.7 -38.2	23.7 -48.4	29.3 -59.8	37.8 -67.3
	2	10	12.5 -34.7	13.7 -56.0	14.9 -41.3	17.5 -48.4	20.3 -56.2	23.3 -64.5	26.5 -73.4	33.6 -92.9	41.5 -114.6
ROOF > 27 TO 45 DEGREES	1	10	19.9 -21.8	21.8 -27.6	23.7 -25.9	27.8 -30.4	32.3 -35.3	37.0 -40.5	42.1 -46.1	53.3 -58.3	65.9 -72.0
	2	20	19.4 -20.7	21.2 -26.6	23.0 -24.6	27.0 -28.9	31.4 -33.5	36.0 -38.4	41.0 -43.7	51.9 -55.3	64.0 -68.3
	3	50	18.6 -19.2	20.4 -25.0	22.2 -22.8	26.0 -26.8	30.2 -31.1	34.6 -35.7	39.4 -40.6	49.9 -51.4	61.6 -63.4
	100	18.1 -18.1	19.8 -23.8	21.5 -21.5	25.2 -25.2	29.3 -29.3	33.6 -33.6	38.2 -38.2	48.4 -48.4	59.8 -59.8	72.0 -72.0
	2	10	19.9 -25.5	21.8 -27.8	23.7 -30.3	27.8 -35.6	32.3 -41.2	37.0 -47.3	42.1 -53.9	53.3 -68.2	65.9 -84.2
WALL	1	10	19.9 -21.8	21.8 -27.6	23.7 -25.9	27.8 -30.4	32.3 -35.3	37.0 -40.5	42.1 -46.1	53.3 -58.3	65.9 -72.0
	2	20	19.4 -20.7	21.2 -26.6	23.0 -24.6	27.0 -28.9	31.4 -33.5	36.0 -38.4	41.0 -43.7	51.9 -55.3	64.0 -68.3
	3	50	18.6 -19.2	20.4 -25.0	22.2 -22.8	26.0 -26.8	30.2 -31.1	34.6 -35.7	39.4 -40.6	49.9 -51.4	61.6 -63.4
	100	18.1 -18.1	19.8 -23.8	21.5 -21.5	25.2 -25.2	29.3 -29.3	33.6 -33.6	38.2 -38.2	48.4 -48.4	59.8 -59.8	72.0 -72.0
	2	10	19.9 -25.5	21.8 -27.8	23.7 -30.3	27.8 -35.6	32.3 -41.2	37.0 -47.3	42.1 -53.9	53.3 -68.2	65.9 -84.2

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m², 1 mile per hour = 0.447 m/s, 1 pound per square foot = 0.0479 kPa.
 Notes:
 a. The effective wind area shall be equal to the span length multiplied by an effective width. This width shall be permitted to be not less than one-third the span length. For cladding fasteners, the effective wind area shall not be greater than the area that is tributary to an individual fastener.
 b. For effective areas between those given above, the load may be interpolated; otherwise, use the load associated with the lower effective area.
 c. Table values shall be adjusted for height and exposure by multiplying by the adjustment coefficient in Table R301.2(3).
 d. See Figure R301.2(7) for location of zones.
 e. Plus and minus signs signify pressures acting toward and away from the building surfaces.
 f. Positive design wind pressures shall not be less than +16 psf and negative design wind pressures shall not be less than -16 psf.

- THIS BUILDING IS A CLOSE STRUCTURE.
INTERNAL PRESSURE COEFFICIENT ± 0.18 - 3 SECOND GUST
- THIS BUILDING IS A PARTIALLY CLOSED STRUCTURE.
INTERNAL PRESSURE COEFFICIENT ± 0.25 - 3 SECOND GUST
- THIS BUILDING IS AN OPEN STRUCTURE.
INTERNAL PRESSURE COEFFICIENT ± 0.25 - 3 SECOND GUST

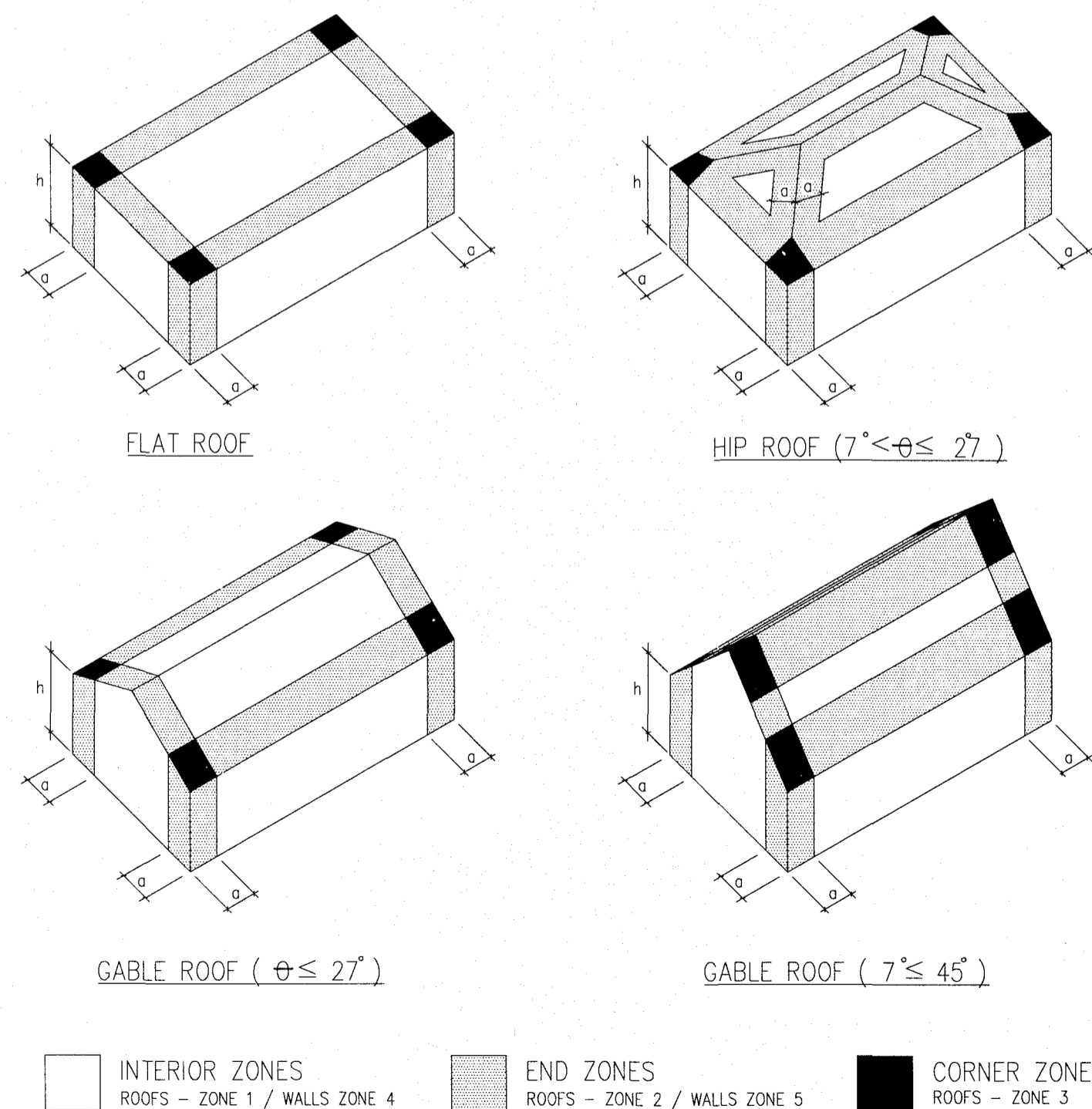


FIGURE R301.2(7) COMPONENTS AND CLADDING PRESSURE.

FLORIDA PRODUCT APPROVAL

PRODUCT CATEGORY	SUB CATEGORY	MANUFACTURER	FL APPROV. #
EXTERIOR DOORS	SWINGING	PLASTIPRO	FL 15180-R2
WINDOWS	SINGLE HUNG	MI WINDOWS	FL 15217-R5
ROOFING	ROOFING ACCESSORIES (ROOF VENT)	LL BUILDING PRODUCTS, INC. sub of GAFMC	FL 5027-R9
ROOFING	SHINGLES	GAF	FL 10124-R20
ROOFING	UNDERLAYMENT	TAMKO Building Products	FL 12328-R8
STRUCTURAL COMPONENTS	WOOD CONNECTORS	SIMPSON STRONG-TIE CO. (HUC HANGER)	FL 10531-R4
STRUCTURAL COMPONENTS	WOOD CONNECTORS	SIMPSON STRONG-TIE CO. (H3)	FL 10456-R4
STRUCTURAL COMPONENTS	WOOD CONNECTORS	SIMPSON STRONG-TIE CO. (H10)	FL 10456-R4

APPLICABLE CODES
 FLORIDA BUILDING CODE, 2017 6TH EDITION
 FLORIDA PLUMBING CODE, 2017
 FLORIDA MECHANICAL CODE, 2017
 NATIONAL ELECTRIC CODE, 2014
 FLORIDA ACCESSIBILITY CODE, 2017
 FLORIDA ENERGY EFFICIENCY CODE, 2017
 FLORIDA FIRE PREVENTION CODE, 5TH EDITION

TYPE II B CONSTRUCTION
 OCCUPANCY R-2

TERMITE PROTECTION

SOIL CHEMICAL SIGN WHICH IDENTIFIES THE TERMITE TREATMENT PROVIDER AND NEED FOR RE-INSPECTION AND TREATMENT CONTRACT RENEWAL SHALL BE PROVIDED. THE SIGN SHALL BE POSTED NEAR THE WATER HEATER OR ELECT. PANEL.

CONDENSATE AND ROOF DOWNSPOUTS SHALL DISCHARGE AT LEAST 1'-4" AWAY FROM BUILDING SIDE WALLS.

IRRIGATION / SPRINKLER SYSTEMS INCLUDING ALL RISERS AND SPRAY HEADS SHALL NOT BE INSTALLED WITHIN 1'-0" OF BUILDING SIDE WALLS.

TO PROVIDE FOR INSPECTION FOR TERMITE INFESTATION, BETWEEN WALL COVERING AND FINAL EARTH GRADE SHALL NOT BE LESS THAN 6 INCHES EXCEPTION: PAINT OR DECORATIVE CEMENTITIOUS FINISH 5/8" THICK ADHERED DIRECTLY TO THE FOUNDATION WALL.

INITIAL TREATMENT SHALL BE DONE AFTER ALL EXCAVATION AND BACKFILL IS COMPLETE.

SOIL DISTURBED AFTER THE INITIAL TREATMENT SHALL BE RETREATED INCLUDING SPACES BOXED OR FORMED.

BOXED AREAS IN CONCRETE FLOORS FOR SUBSEQUENT INSTALLATION OF TRAPS, ETC. SHALL BE MADE WITH PERMANENT METAL OR PLASTIC FORMS. PERMANENT FORMS MUST BE OF A SIZE AND DEPTH THAT WILL ELIMINATE THE DISTURBANCE OF SOIL AFTER THE INITIAL TREATMENT.

MINIMUM 6 MIL. VAPOR RETARDER MUST BE INSTALLED TO PROTECT AGAINST RAINFALL DILUTION. IF RAINFALL OCCURS BEFORE VAPOR RETARDER PLACEMENT, RETREATMENT IS REQUIRED.

CONCRETE OVERPOUR AND MORTAR ALONG THE FOUNDATION PERIMETER MUST BE REMOVED BEFORE EXTERIOR SOIL TREATMENT.

SOIL TREATMENT MUST BE APPLIED UNDER ALL EXTERIOR CONCRETE OR GRADE WITHIN 1'-0" OF THE STRUCTURE SIDE WALLS.

AN EXTERIOR VERTICAL CHEMICAL BARRIER MUST BE INSTALLED AFTER CONSTRUCTION IS COMPLETE INCLUDING LANDSCAPING AND IRRIGATION. ANY SOIL DISTURBED AFTER THE VERTICAL BARRIER IS APPLIED SHALL BE RETREATED.

ALL BUILDINGS ARE REQUIRED TO HAVE PRE-CONSTRUCTION TREATMENT. A CERTIFICATE OF COMPLIANCE MUST BE ISSUED TO THE BUILDING DEPT. BY A LICENSED PEST CONTROL COMPANY BEFORE CERTIFICATE OF OCCUPANCY WILL BE ISSUED.

THE CERTIFICATE SHALL STATE: THE BUILDING HAS RECEIVED A COMPLETE TREATMENT FOR THE PREVENTION OF SUBTERRANEAN TERMITES. THE TREATMENT IS IN ACCORDANCE WITH THE RULES AND LAWS OF THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES.

PENETRATION. PROTECTIVE SLEEVES AROUND METALLIC PIPING PENETRATING CONCRETE SLAB ON GRADE FLOORS SHALL NOT BE OF CELLULOSE - CONTAINING MATERIALS AND SHALL RECEIVE APPLICATION OF A TERMITICIDE IN ANNULAR SPACE BETWEEN SPACE AND PIPE.

AFTER ALL WORK IS COMPLETE, LOOSE WOOD AND FILL MUST BE REMOVED FROM BELOW AND WITHIN 1'-0" OF THE BUILDING. THIS INCLUDES ALL GRADE STAKES, TUB TRAP BOXES, FORMS, SHORING, OR OTHER CELLULOSE CONTAINING MATERIAL.

NO WOOD VEGETATION, STUMPS, CARDBOARD, TRASH, ETC. SHALL BE BURIED WITHIN 15'-0" OF ANY BUILDING OR PROPOSED BUILDING.

DESIGN LOADS

- WIND LOADS BASED ON ASCE 07-10
1. MEAN ROOF HEIGHT OF LESS THAN 30'-0"
 2. WIND SPEED OF 150 MPH
 3. EXPOSURE CATEGORY 'B'
 4. IMPORTANCE FACTOR OF 1.0 (BUILDING CATEGORY II)
 5. INTERNAL PRESSURE COEFFICIENT OF +/- 0.18 (ENCLOSED BUILDING)
 6. CONCRETE TO BE NORMAL WEIGHT WITH THE FOLLOWING MINIMUM COMPRESSIVE STRENGTHS AT 28 DAYS: FOOTING AND SLABS ---- 2500 PSI
FREE STANDING COLUMNS ---- 4000 PSI
FREE SPANNING BEAMS ---- 4000 PSI
 7. REINFORCING STEEL: ASTM A631S GRADE 40
 8. ALL LUMBER IN CONTACT WITH MASONRY OR CONCRETE TO BE PRESSURE TREATED
 9. ALL STRUCTURAL LUMBER TO BE MINIMUM SPRUCE OR FIR NUMBER 2
- ROOF LIVE LOAD TO BE 30 PSF
 BEDROOMS 30 PSF
 LIVING AND BATHROOMS 40 PSF
 BALCONIES 40 PSF
 STAIRS 100 PSF
 SOIL CAPACITY: 2,000 PSI
 DO NOT SCALE THESE DRAWINGS FOR DIMENSIONS NOT GIVEN.
 ADVISE DESIGNER OF ANY CONFLICTS BETWEEN DRAWINGS AND ACTUAL CONDITIONS.
 WIND BORNE DEBRIS AREA, CONTRACTOR TO INSTALL SHUTTERS OVER OPENINGS.

I HEREBY CERTIFY THAT I HAVE REVIEWED THE ATTACHED DESIGN AND FIND IT TO BE COMPLIANT WITH THE 2017 (6th Edition) FLORIDA BUILDING CODE.

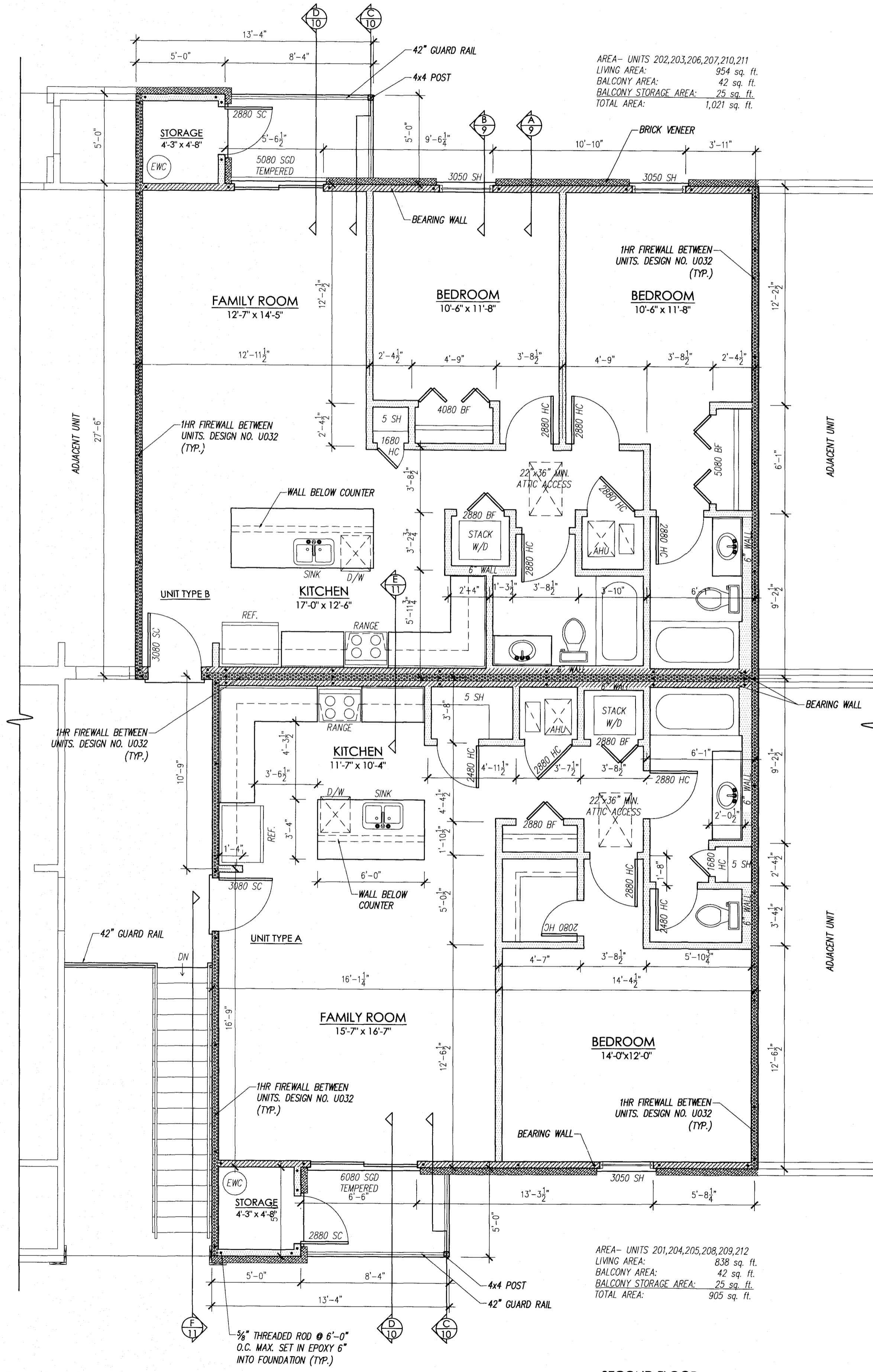
PETE ALFONSO JR.
 ARCHITECT
 LIC # 8735
 1315 W. BUSCH BLVD.
 TAMPA, FL 33612
 PH (813) 231-5600

STEVE HENRY DESIGN, INC.
 1315 W. BUSCH BLVD.
 TAMPA, FL 33612
 (813) 933-5000

REBUILDING PLAN FOR:
NORMANDY APARTMENTS
 11110 N. 56TH STREET
 TEMPLE TERRACE, FLORIDA

DATE	JUNE 7, 2018
REVISION	
SHEET NO.	1

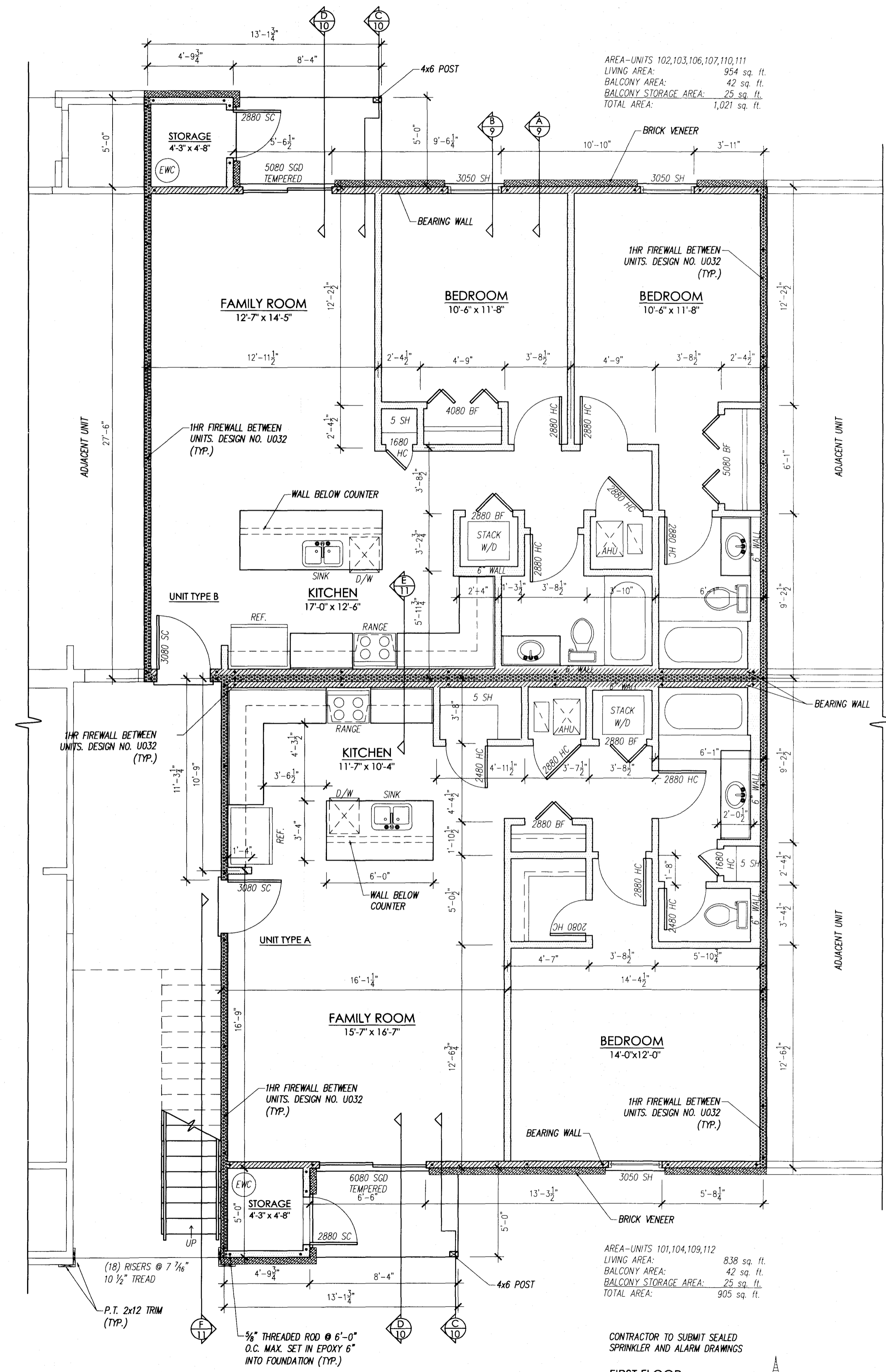
GUARD RAIL SHALL NOT HAVE OPENINGS WHICH ALLOW PASSAGE OF A SPHERE 4" IN DIAMETER FROM WALKING SURFACE TO REQUIRED GUARD.



AREA- UNITS 202,203,206,207,210,211
LIVING AREA: 954 sq. ft.
BALCONY AREA: 42 sq. ft.
BALCONY STORAGE AREA: 25 sq. ft.
TOTAL AREA: 1,021 sq. ft.

AREA- UNITS 201,204,205,208,209,212
LIVING AREA: 838 sq. ft.
BALCONY AREA: 42 sq. ft.
BALCONY STORAGE AREA: 25 sq. ft.
TOTAL AREA: 905 sq. ft.

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



AREA- UNITS 102,103,106,107,110,111
LIVING AREA: 954 sq. ft.
BALCONY AREA: 42 sq. ft.
BALCONY STORAGE AREA: 25 sq. ft.
TOTAL AREA: 1,021 sq. ft.

AREA- UNITS 101,104,109,112
LIVING AREA: 838 sq. ft.
BALCONY AREA: 42 sq. ft.
BALCONY STORAGE AREA: 25 sq. ft.
TOTAL AREA: 905 sq. ft.

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



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ARCHITECT
LIC # 8735
1315 W. BUSCH BLVD.
TAMPA, FL 33612
PH (813) 231-5800

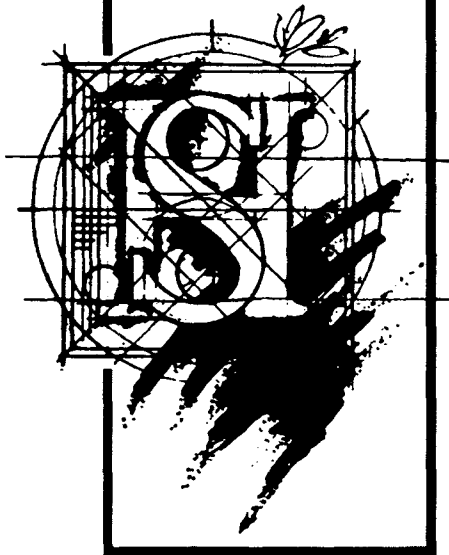
CONTRACTOR TO SUBMIT SEALED SPRINKLER AND ALARM DRAWINGS



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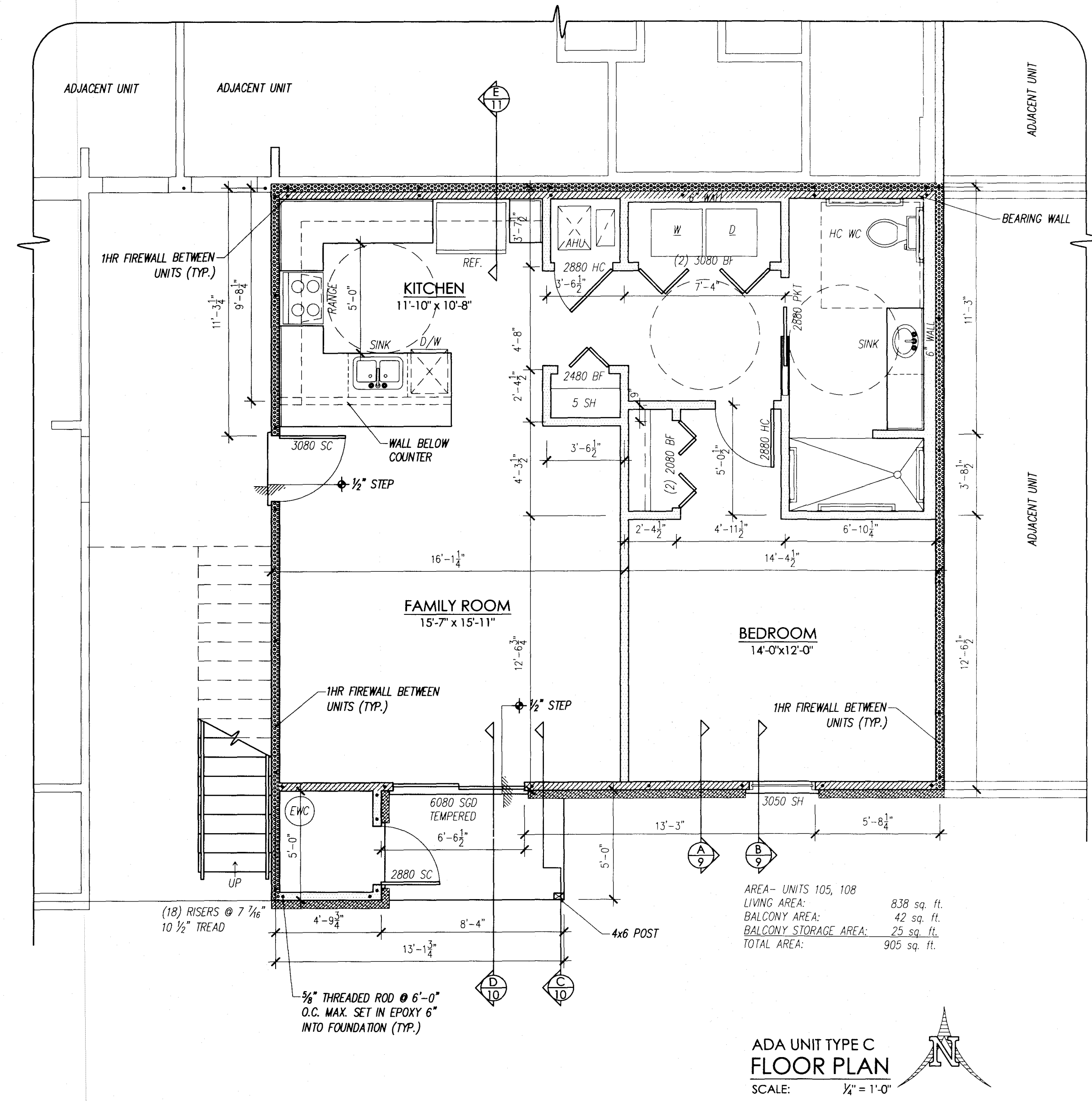
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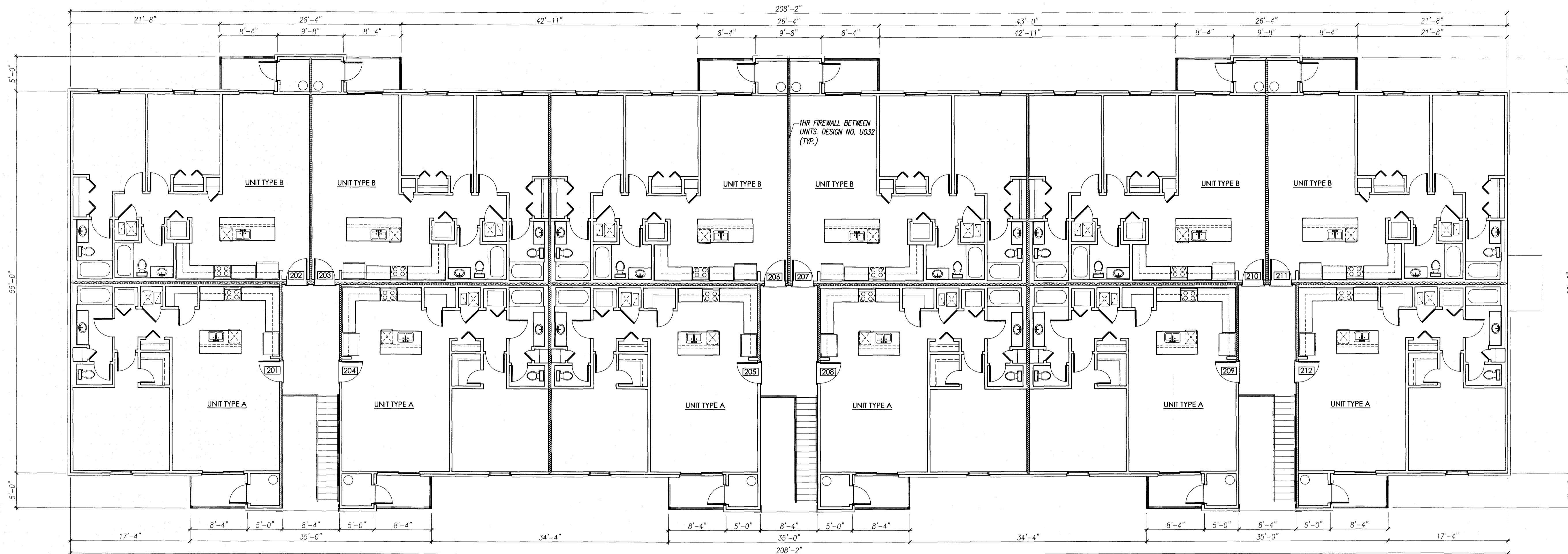
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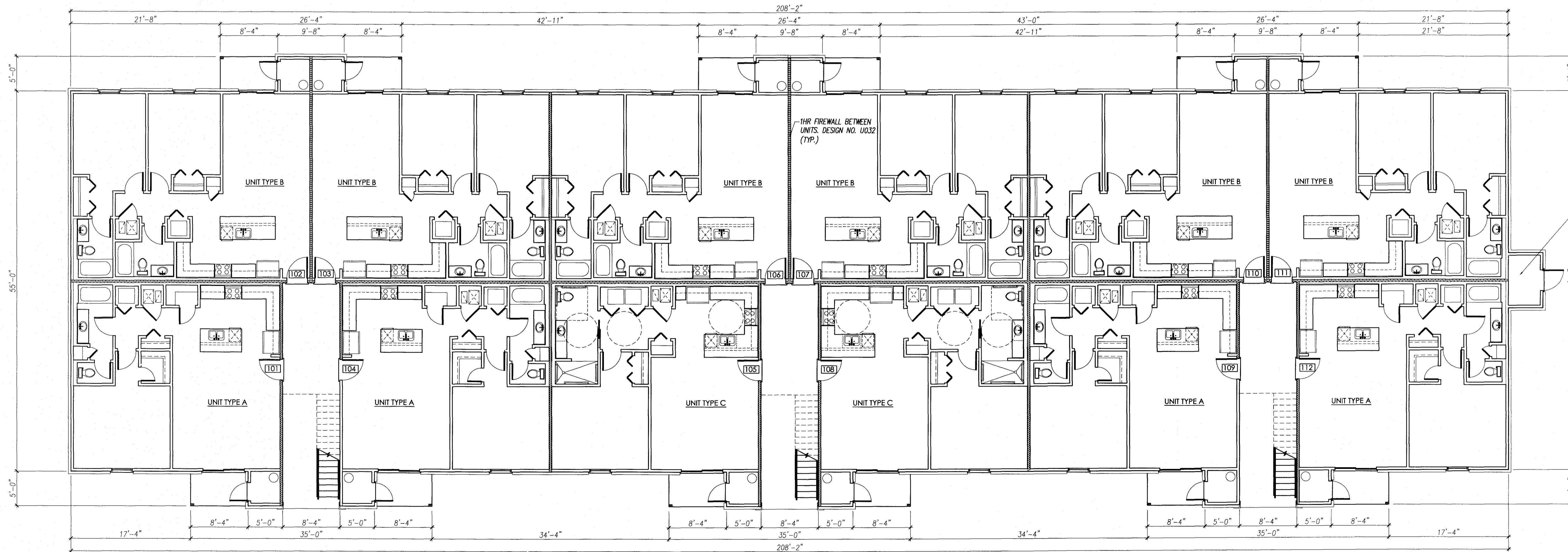
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ADA UNIT TYPE C
FLOOR PLAN
 SCALE: 1/4" = 1'-0"

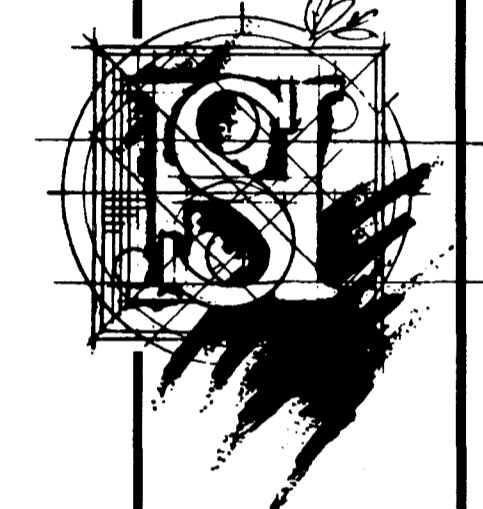


SECOND FLOOR PLAN
SCALE: 1/8" = 1'-0"



FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"

CONTRACTOR TO SUBMIT SEALED SHOP DRAWINGS FOR FIRE SPRINKLER AND FIRE ALARM.



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4

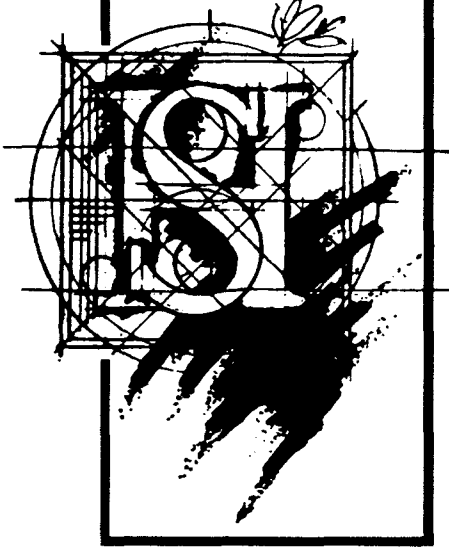
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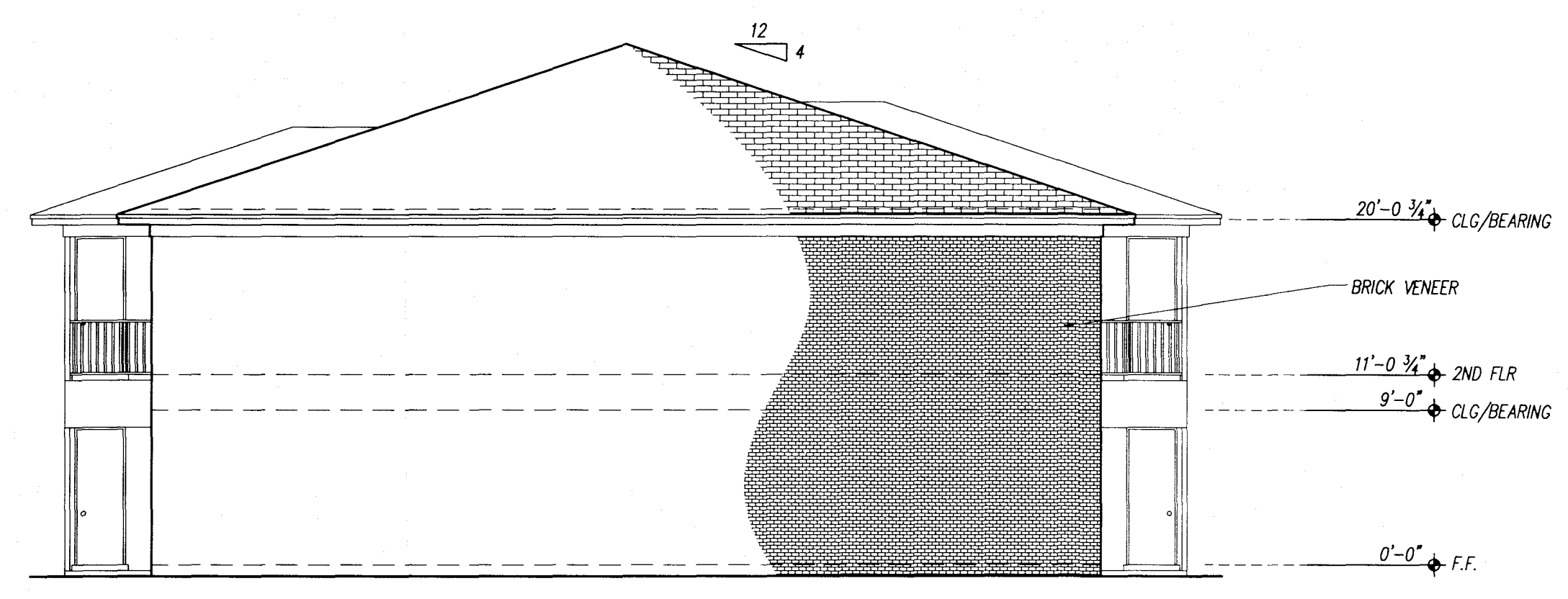
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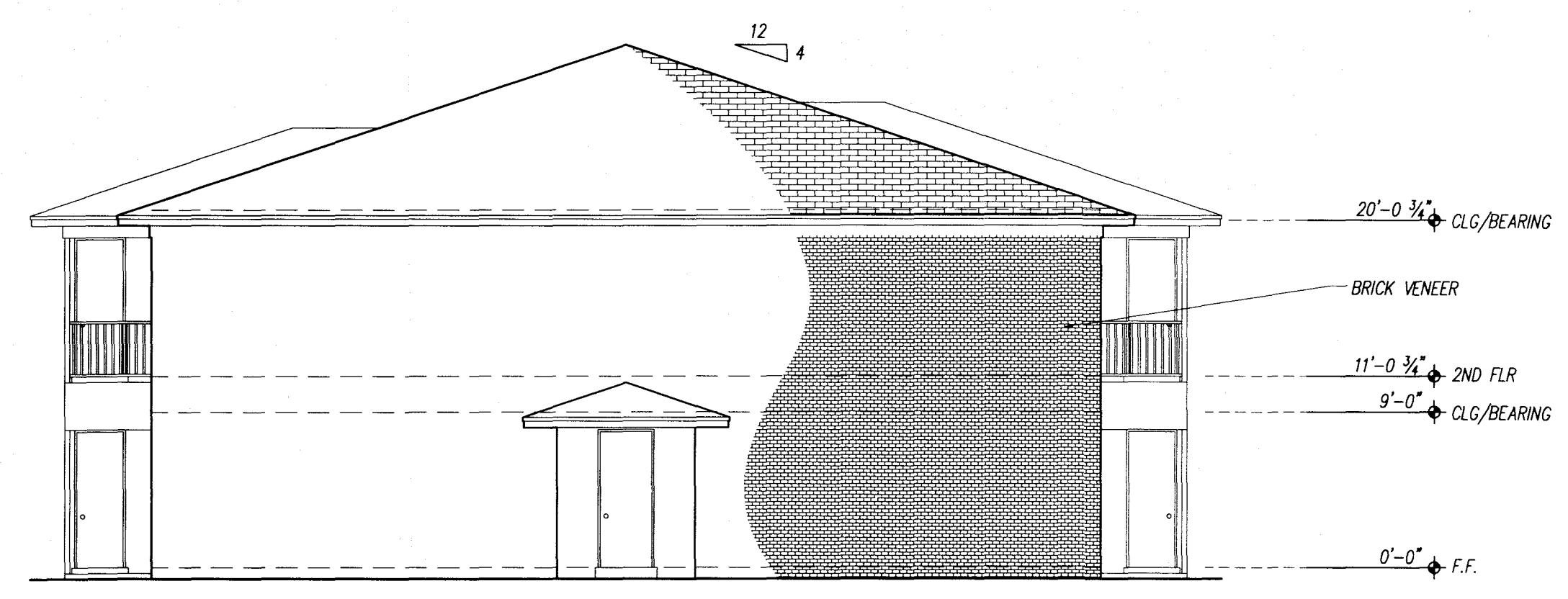
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LEFT SIDE ELEVATION
 SCALE: 1/8" = 1'-0"



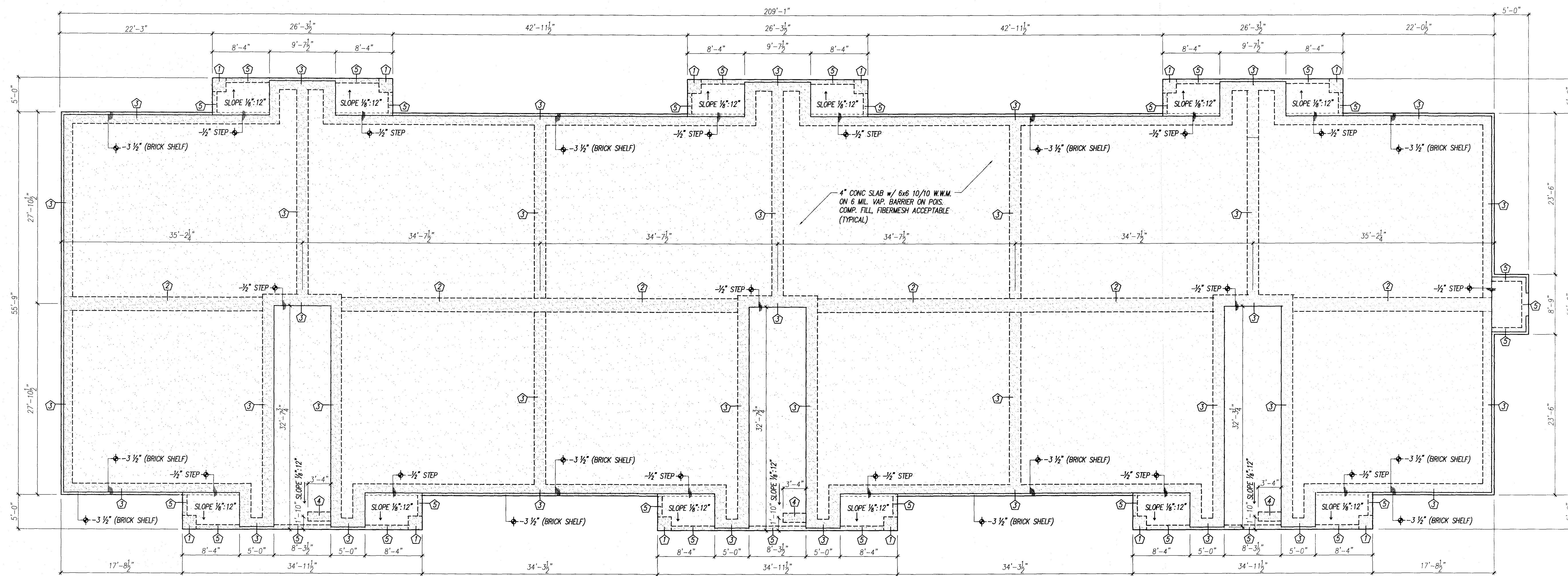
RIGHT SIDE ELEVATION
 SCALE: 1/8" = 1'-0"



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



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



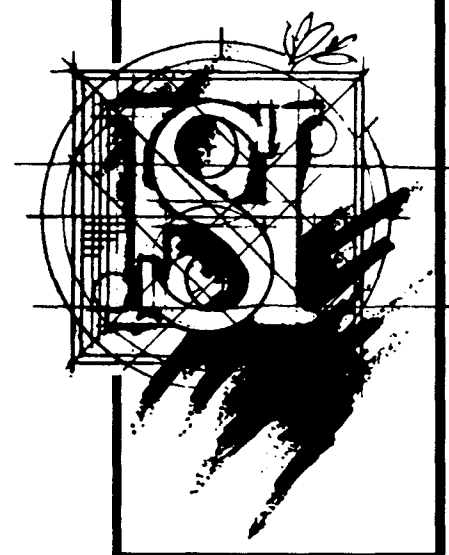
FOUNDATION KEY

①	24"x24"x18" FTG. w/ (4) #5's E.W.
②	24"x18" MONO. FTG. w/ (4) #5's CONT.
③	20"x18" MONO. FTG. w/ (3) #5's CONT.
④	16"x8" MONO. FTG. w/ (2) #5's CONT.
⑤	8"x8" MONO. FTG. w/ (1) #5 CONT.

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

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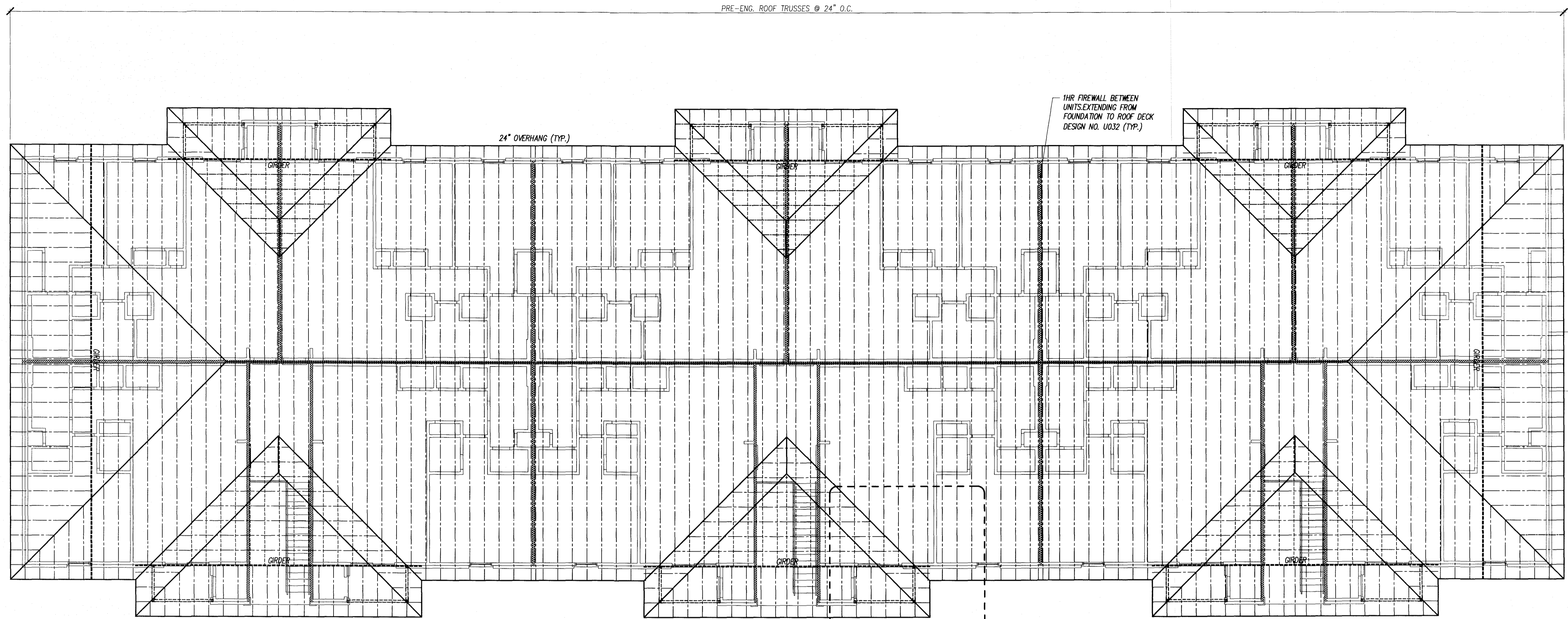
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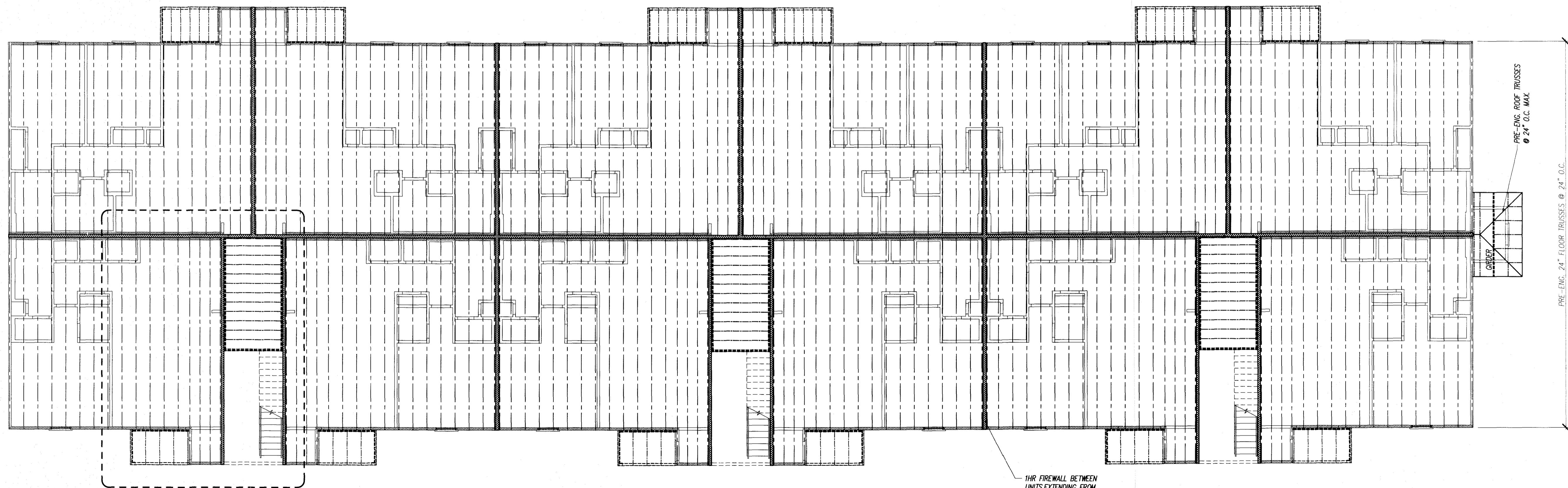
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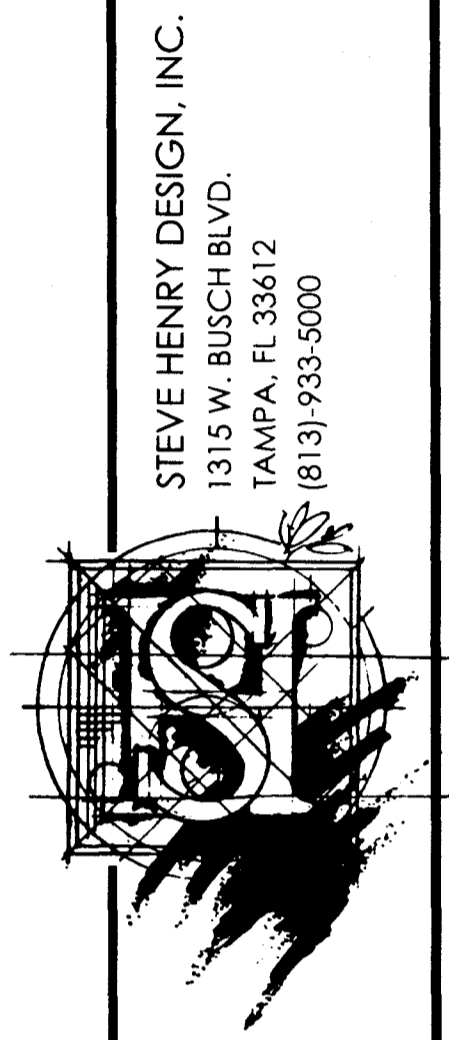
ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"



FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"

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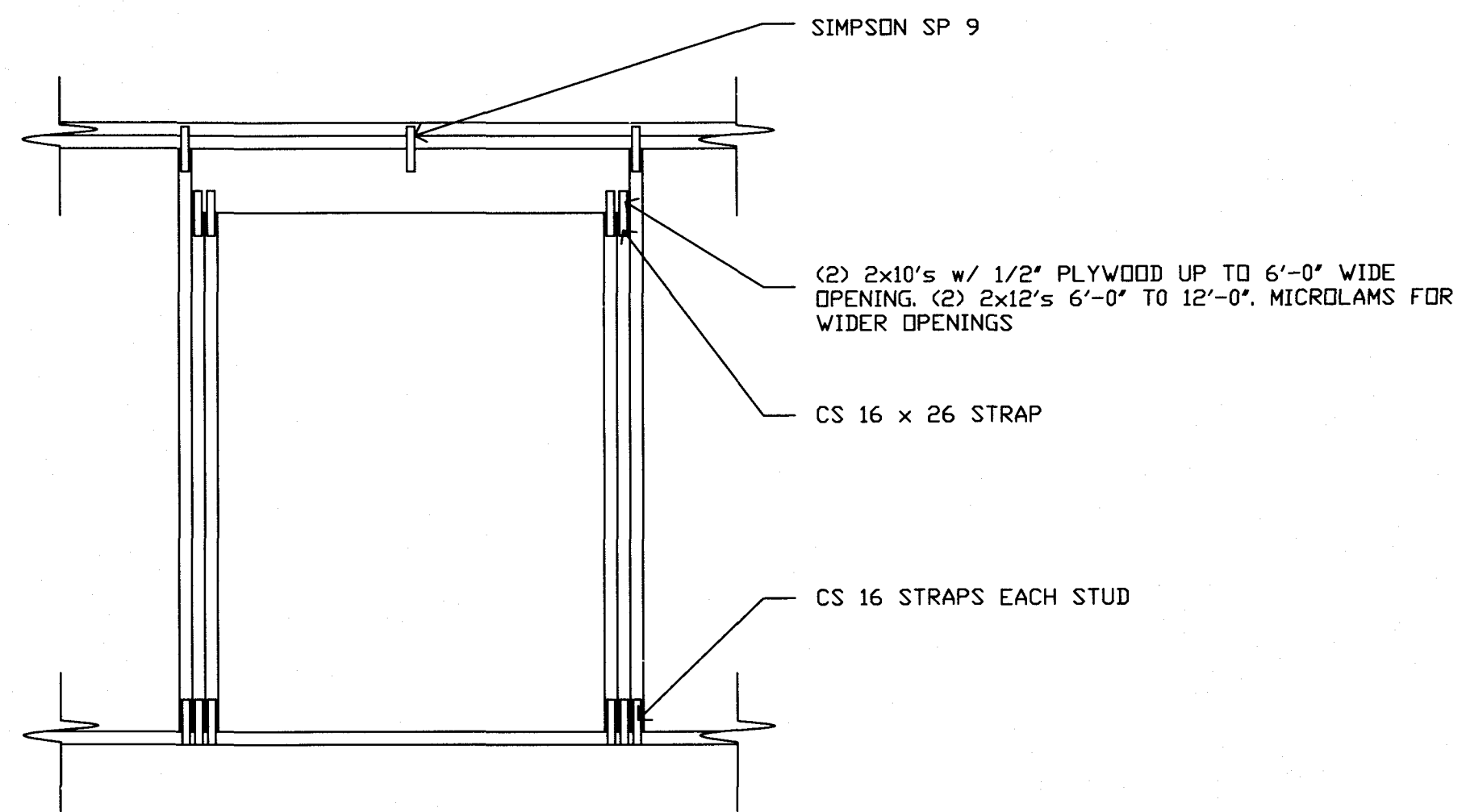
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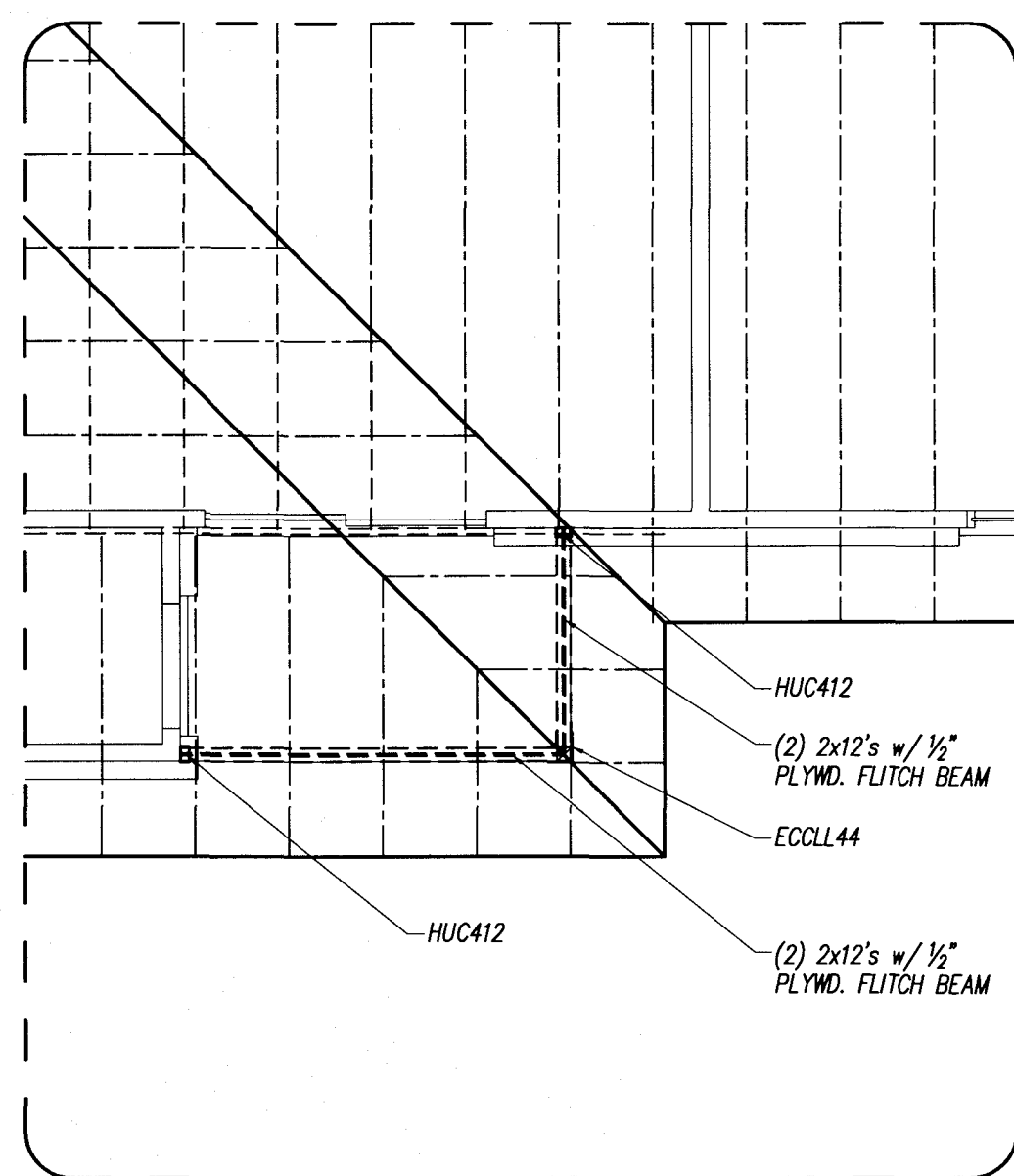
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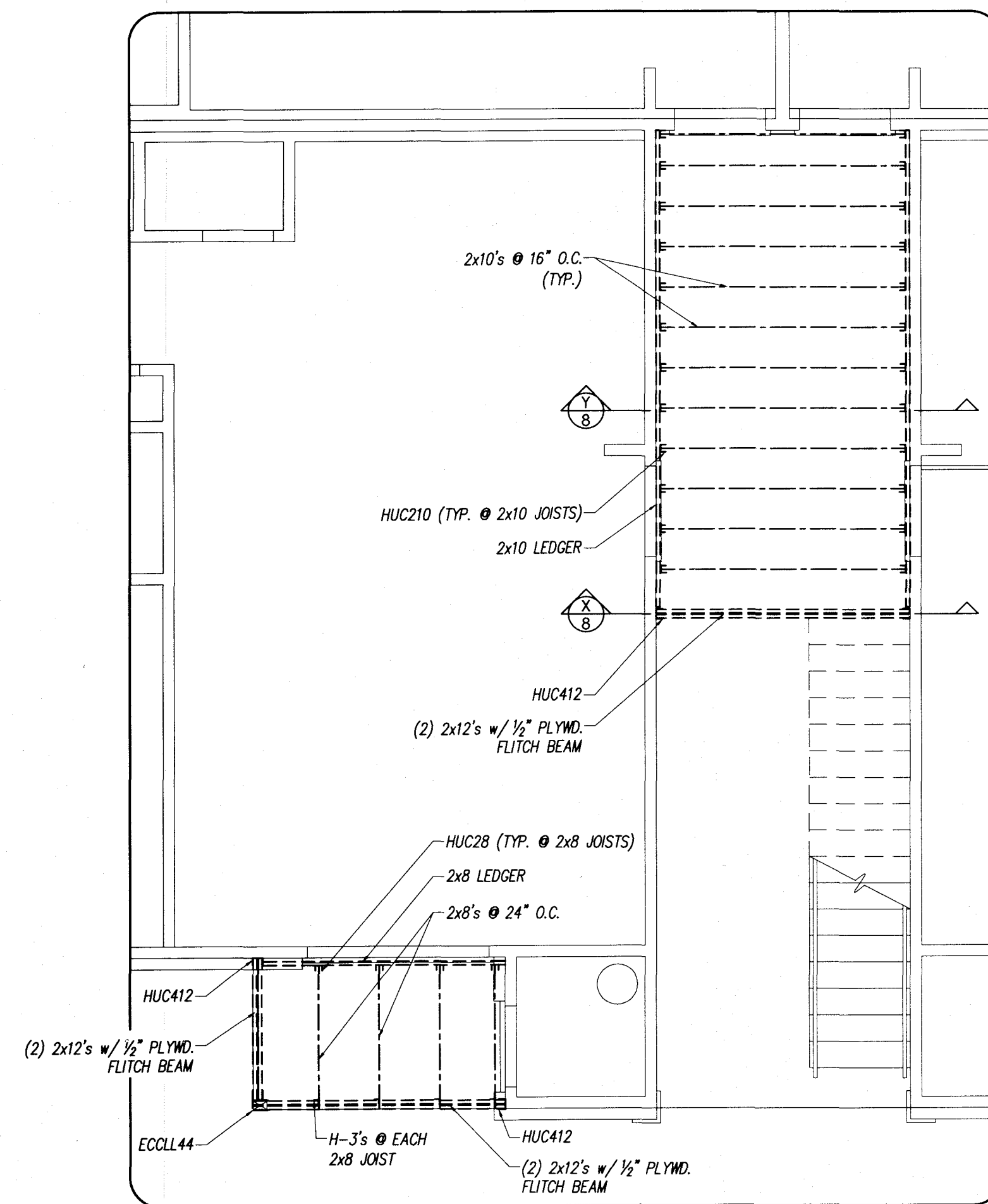
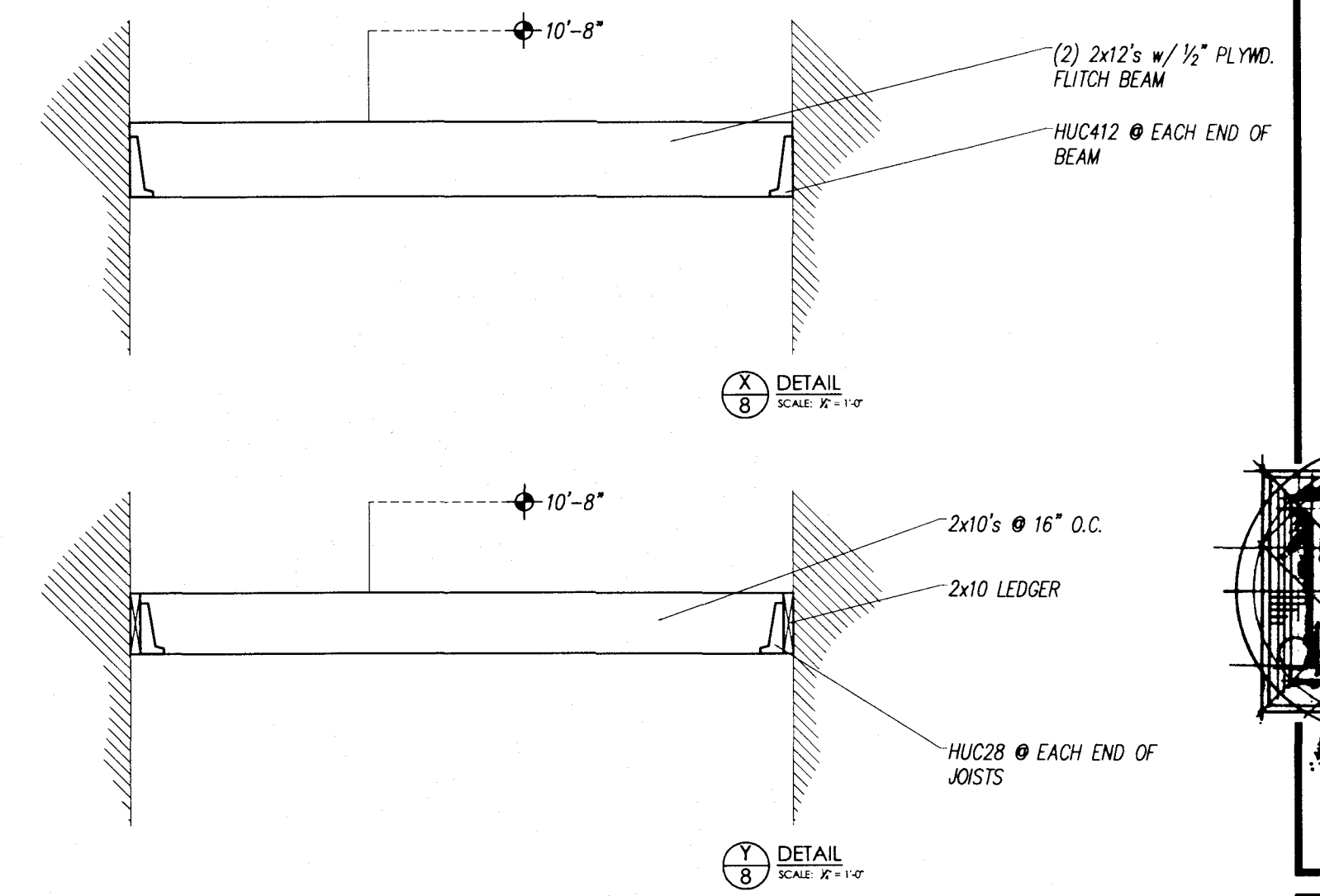
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DETAIL AT BEARING OPENING



EXTERIOR DECK
ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"



EXTERIOR DECK
FRAMING PLAN
SCALE: 1/4" = 1'-0"

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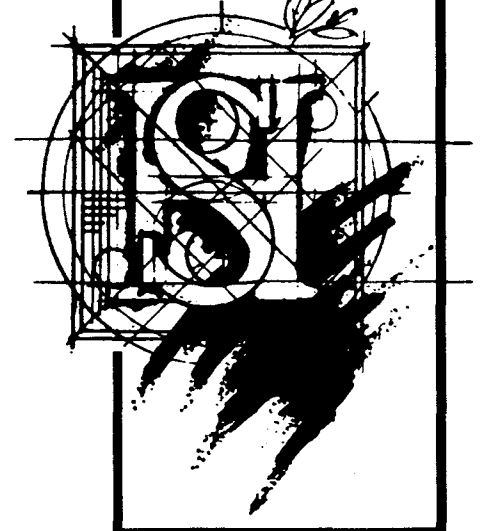
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SHEET NO.
8

I HEREBY CERTIFY THAT I HAVE REVIEWED THE ATTACHED DESIGN AND FIND IT TO BE COMPLIANCE WITH THE 2017 (6th Edition) FLORIDA BUILDING CODE

PETE ALFONSO JR.
ARCHITECT
 LIC # 8735
 1315 W. BUSCH BLVD.
 TAMPA, FL 33612
 PH (813) 231-5800

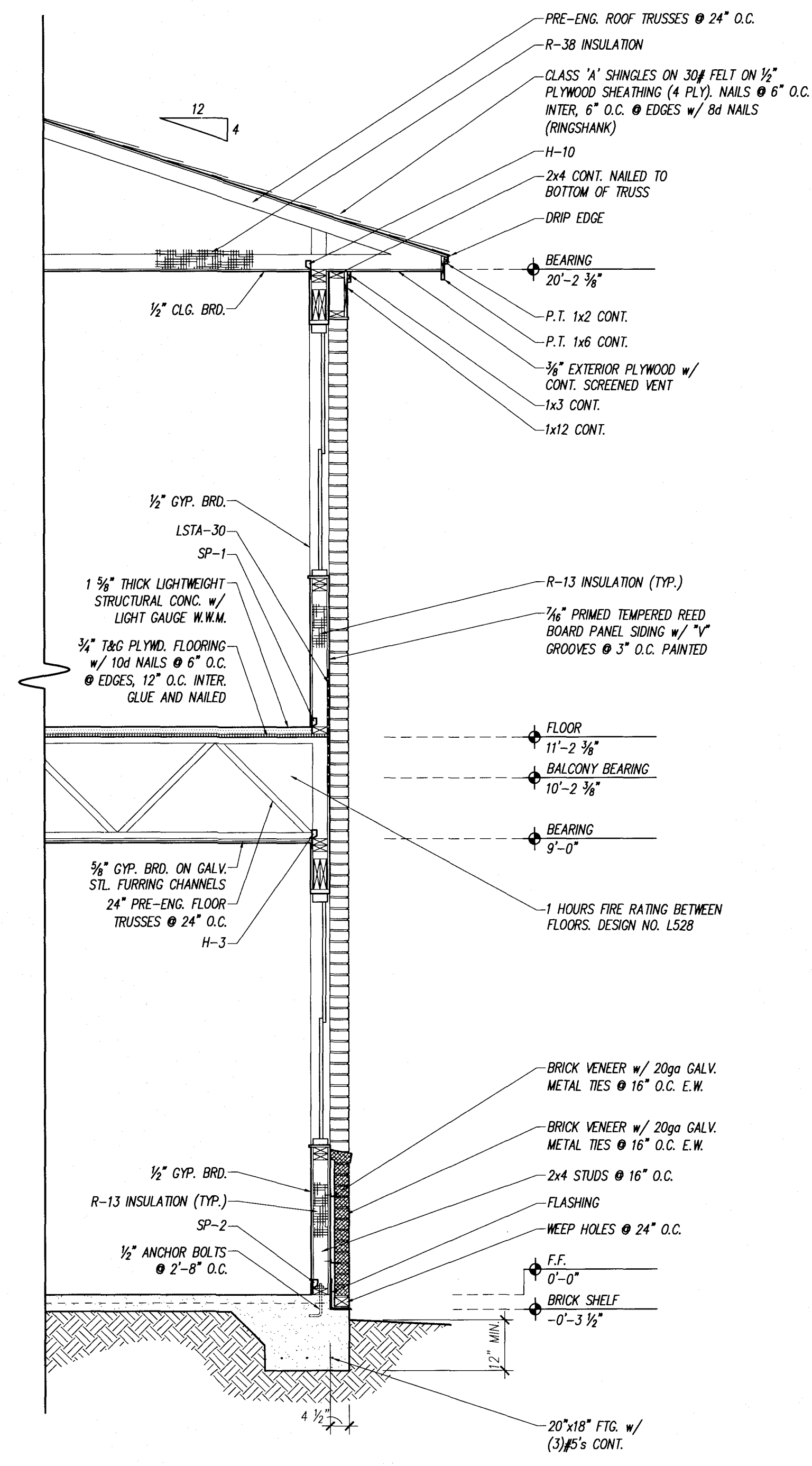
STEVE HENRY DESIGN, INC.
 1315 W. BUSCH BLVD.
 TAMPA, FL 33612
 (813) 933-5000



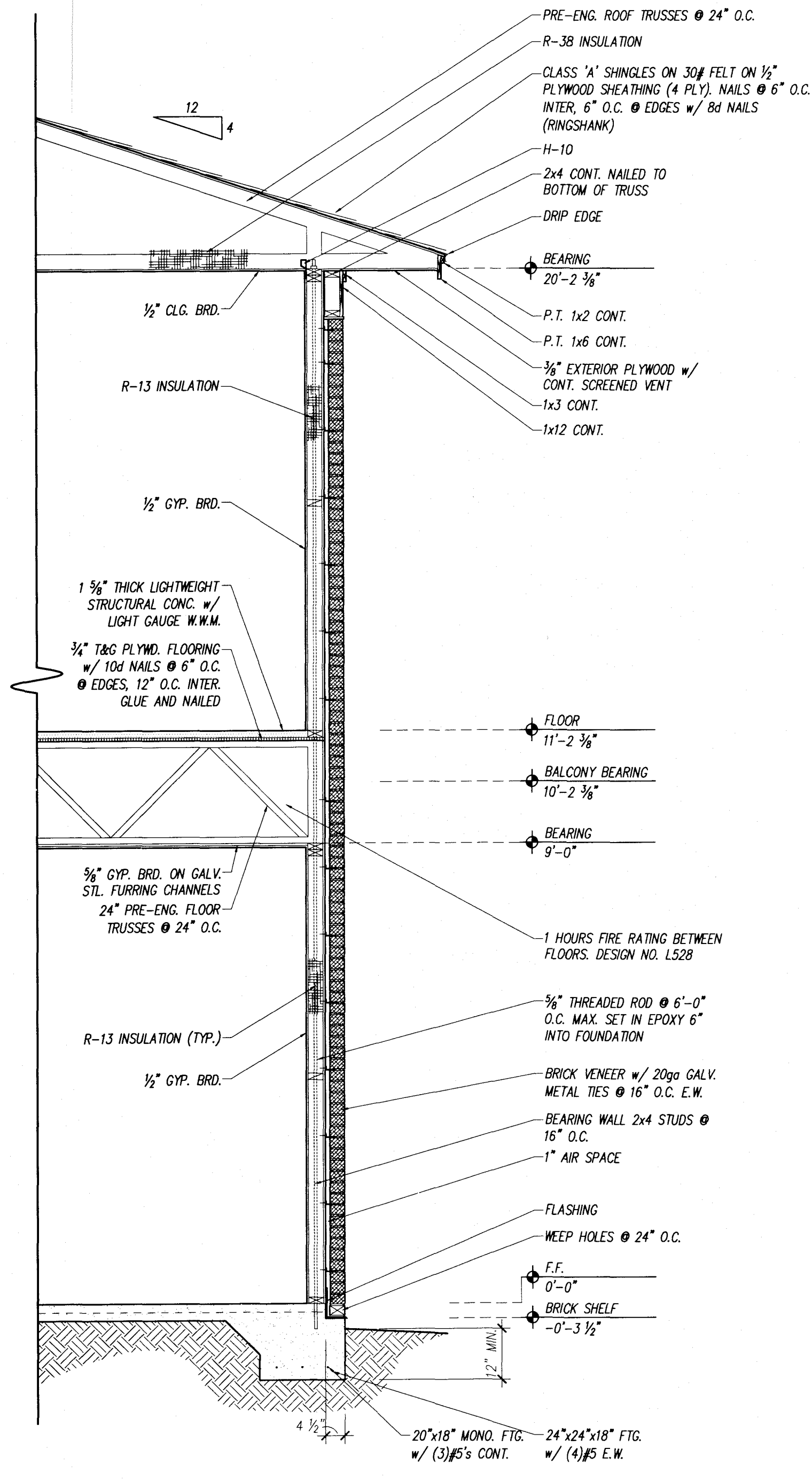
REBUILDING PLAN FOR:
NORMANDY APARTMENTS
 11110 N. 56TH STREET
 TEMPLE TERRACE, FLORIDA

DATE	JUNE 7, 2018
REVISION	

SHEET NO.	9
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B SECTION
 SCALE: 1/2" = 1'-0"

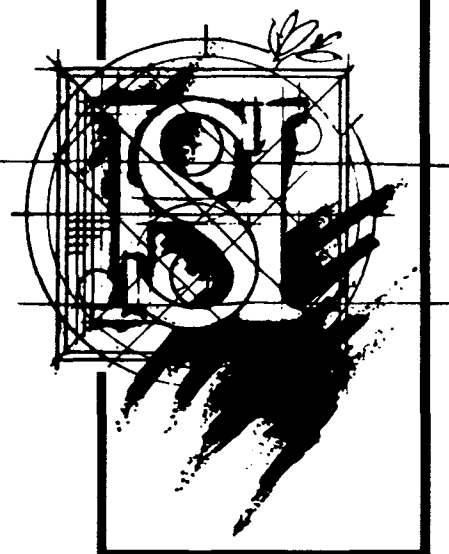


A SECTION
 SCALE: 1/2" = 1'-0"

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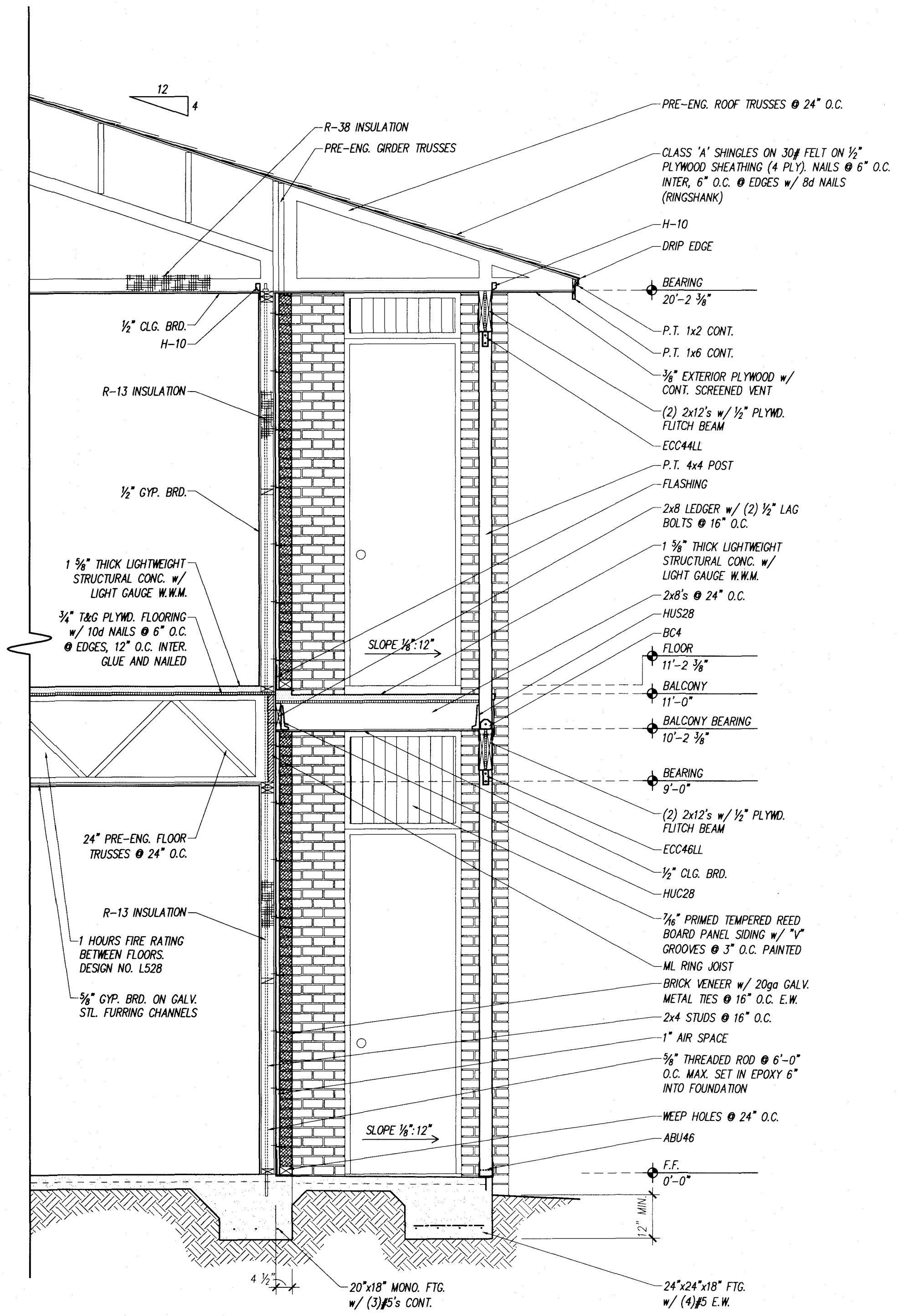
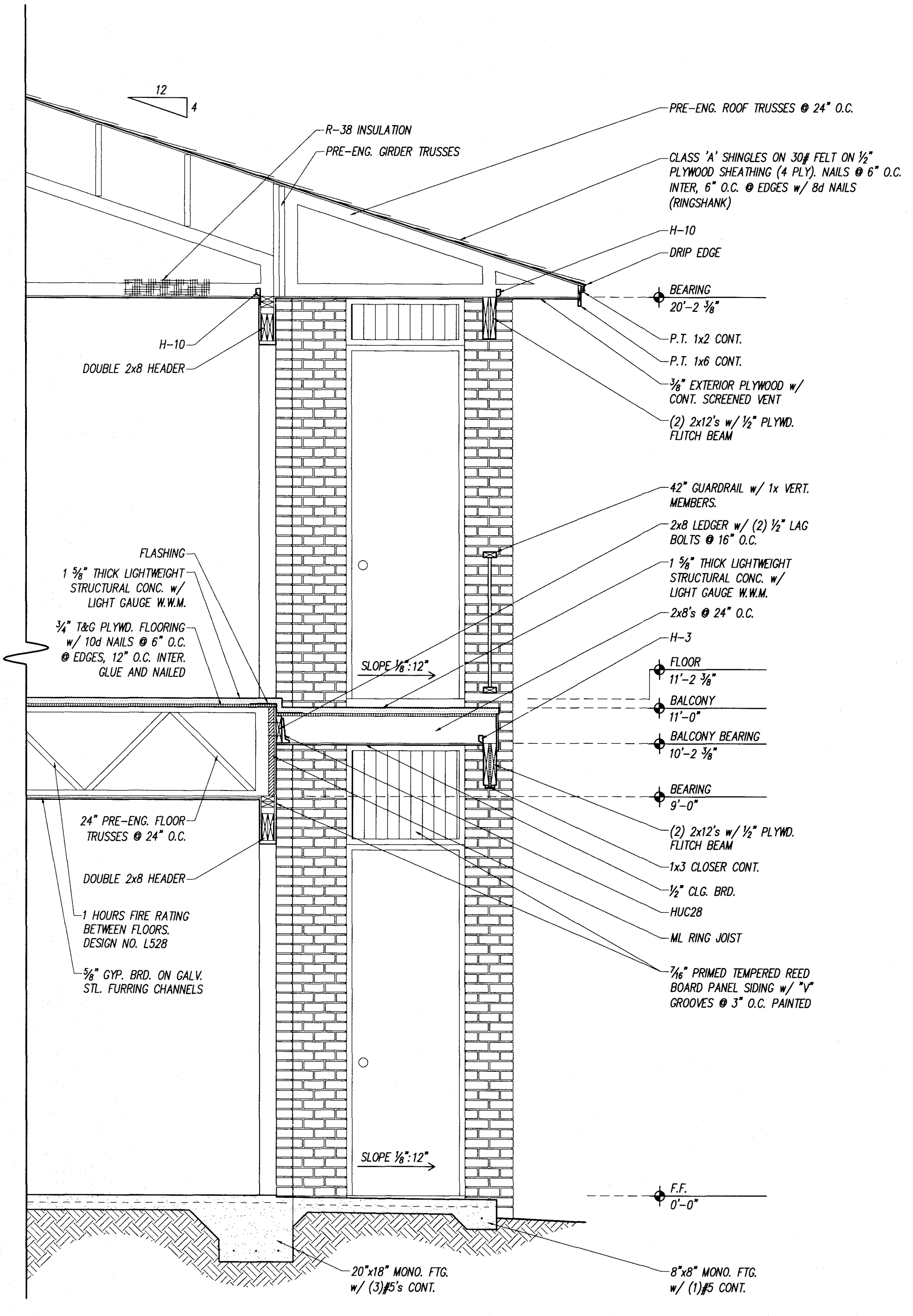
STEVE HENRY DESIGN, INC.
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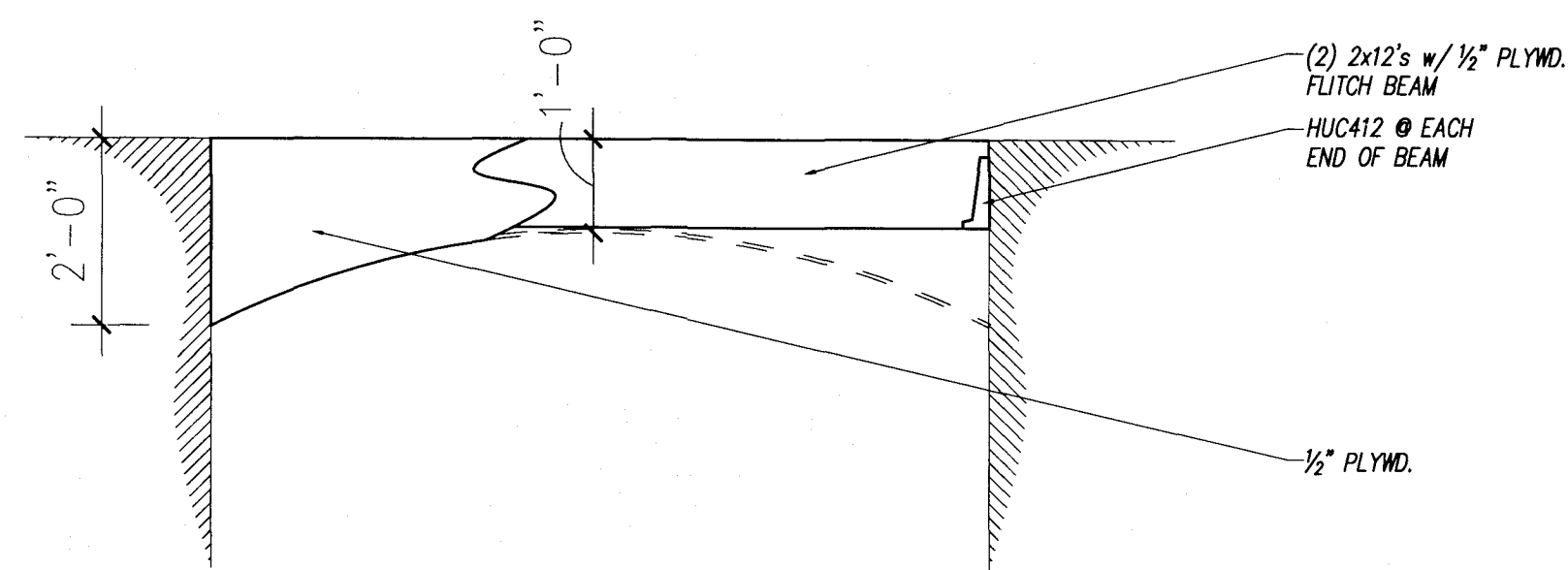


REBUILDING PLAN FOR:
NORMANDY APARTMENTS
 1110 N. 56TH STREET
 TEMPLE TERRACE, FLORIDA

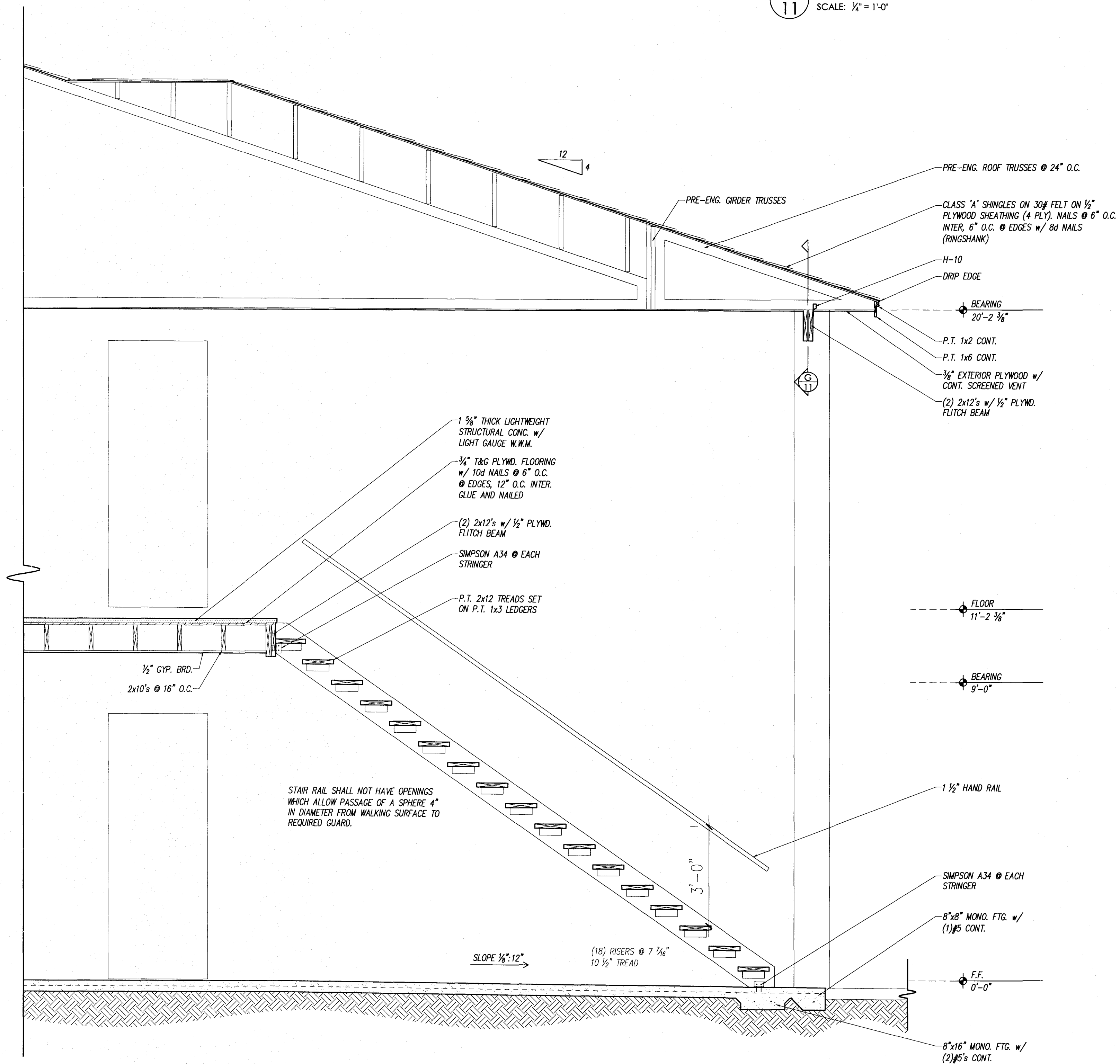
DATE	JUNE 7, 2018
REVISION	

SHEET NO.	10
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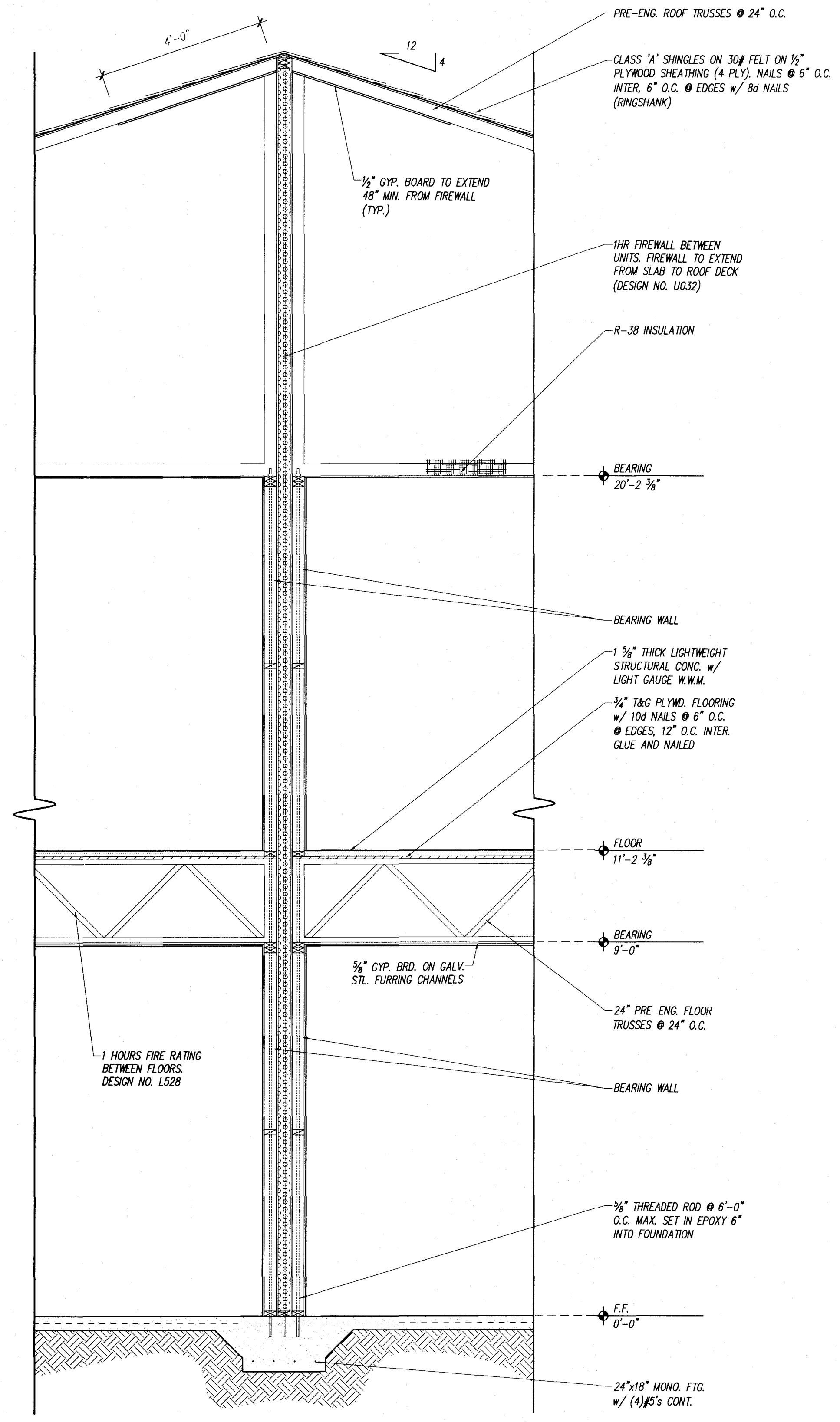




G DETAIL
SCALE: 1/2" = 1'-0"



F SECTION
SCALE: 1/2" = 1'-0"



E SECTION
SCALE: 1/2" = 1'-0"

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PETE ALFONSO JR.
ARCHITECT
LIC # 8735
1315 W. BUSCH BLVD.
TAMPA, FL 33612
PH (813) 231-5800

STEVE HENRY DESIGN, INC.
1315 W. BUSCH BLVD.
TAMPA, FL 33612
(813) 933-5000

REBUILDING PLAN FOR:
NORMANDY APARTMENTS
11110 N. 56TH STREET
TEMPLE TERRACE, FLORIDA

DATE	JUNE 7, 2018
REVISION	

SHEET NO.
11

HVAC NOTES - FLORIDA BUILDING CODE 6TH EDITION - EFFECTIVE 12/31/2017

THIS DESIGN COMPLIES WITH 6TH EDITION FLORIDA BUILDING, RESIDENTIAL, EXISTING RESIDENTIAL, MECHANICAL, AND ENERGY CODES.

RESIDENTIAL BASIS OF DESIGN - CONTRACTOR NOTES:

These HVAC drawings, heat load calculations, and energy calculations are based on the architectural drawings provided for permit application. This HVAC design and specifications are in accordance with manual J 8th edition room by room heat load calculation procedure. This design incorporates DOE "Right Size HVAC Design Guide", view online https://www.nrel.gov/docs/yt2011/53352.pdf. For duct design: https://energy.gov/sites/prod/files/2012/12/15/cas_duct_splitter_box_beach.pdf. Right size hvac systems are designed to operate continuously during climatic design conditions - outdoor climatic design conditions are listed in manual J table 1A (cooling season outdoor temperature extremes: Tampa=31, Sarasota=29, St. Petersburg=32) and the indoor temperatures are fixed by the energy code section FEC302 at 72 degrees for winter / 75 degrees for summer. Single stage cooling equipment will have no reserve equipment capacity included for record breaking outdoor temperatures, unusually low indoor temperatures, maintaining large amount of occupants, or any other item not listed on the "Total Building Summary Loads" page - shown on these drawings. For equipment selection designed to neutralize outdoor weather conditions, that can include the highest site recorded outdoor temperature, a lower than 75 degree indoor temperature, and occupancy quantities larger than code allowances, see section FEC403.1.3 for equipment selection. The capacity of staged cooling equipment can be no greater than 15% of the heat load calculations performed at the climatic design conditions (or the closest equipment capacity match available that neutralizes both the sensible and latent heat loads). The highest capacity of staged cooling equipment has no sizing limitations. HVAC installing contractor must use Manual D duct design procedure for designing the larger duct system associated with the staged capacity oversized equipment - or contact the original designer for an updated HVAC system design.

Using the architectural construction drawings, ACCA HVAC design procedures were performed: (1) room by room heat load calculations are performed to determine the buildings thermal zones and room by room demands in accordance with manual J 8th edition heat load calculation procedure (2) the heat load calculations were used to select the HVAC equipment capacities in compliance with manual S equipment selection procedure (3) the room by room demand calculations were used to design the duct system in accordance with manual D duct design (4) room air device type, size, and location were based on the rooms required cm demand, the duct type, and room geometry, in accordance with manual T room air distribution selection procedure (5) Florida energy calculations were performed based on the ACCA hvac design procedures shown above. Note: if a duct zoning control system is shown with multiple thermostats that are served from a single hvac system, Manual ZR was used for the thermal zone grouping and bypass duct design. All calculations performed are data linked to the 3D CAD energy modeling software program that is specific only to this building.

For detailed building envelope information (component values, insulation R values, NFRC glass values, component types and colors, quantity, etc.) see "Total Building Summary Loads" page shown on these hvac drawings. HVAC installer must field inspect the building envelope component types and sizes prior to any HVAC installation - be sure the building constructed matches the "Total Building Summary Loads" page, the room by room floor plan layout, and the energy code forms. Building envelope construction practice "semi tight" was used in the building infiltration calculations, field verify the building envelope (air barrier in contact with the thermal barrier) fully encapsulates the conditioned space. HVAC Installer must field verify sealed draft stops exist that are isolating the wall cavities from the exterior and/or hot vented attic spaces. Buildings with hot vented attic spaces require the air and thermal barriers to be located at the ceiling plane. Buildings with unvented attics / or single assembly roofs (solid flat, low slope, sealed pitched, open web flat truss) require the air and thermal layer be located at the roof plane. Note: acoustical tile ceilings are not air barriers, paper faced insulation is not an air barrier - thermal layers in contact with a grid ceiling are ignored in the heat load and energy code calculations.

The room air devices, air cm values, and branch duct sizes shown per room are based on the peak cooling season design conditions with hvac equipment capacities based on manual S equipment selection procedure for the buildings specific site location. This peak demand makes up approximately 15% of the cooling season, the remaining 85% of the cooling season (part load conditions) requires dedicated dehumidification equipment if year round control of indoor moisture content is expected. Year round moisture control is not part of this construction drawing and requires the latent heat load calculations are performed at part load design conditions, resulting in latent demands which are 20% higher when compared to the peak design conditions. Dedicated dehumidification equipment is required to control moisture content year round in Florida. Dehumidification equipment (Honeywell DH-90 or Ultra-Air XT150H) will monitor and control moisture content year round using a humidistat or dew point sensor. Provide ducted dedicated dehumidifier(s) for buildings that contain an unvented "sealed attic" space (example: spray foam insulation at roof deck underside or roof is insulated above the roof deck). Mount the dehumidifier(s) in the sealed attic near the roof peak. For buildings with a hot vented attic space, the dehumidification equipment is ducted to the conditioned space and controls the moisture content inside the conditioned space using a humidistat or dew point sensor. For healthier and cleaner indoor air, install a Plasma Air Model 600 ionizer (contact Cyrril John 913 898 9000 / Tom Barrow Co.) + a large capacity HEPA filter as shown on the HVAC equipment schedule.

These HVAC drawings, heat load calculations, and energy code forms were based on the architectural drawings provided for permit application. Any modifications to the building room layout, occupancy amount, building use or classification, building envelope component materials type and/or size must be communicated to the original HVAC designer. HVAC installer should red line sketch on these HVAC drawings any field changes to be made during construction and submit the "as built" red line sketch to the original HVAC designer for review and redesign - prior to any further HVAC installation. Alternate air ducts and air device sizes must be equal to the listed size shown, don't exceed a 3/1 aspect ratio on alternate duct sizes. Don't install a cooling system into a building that is missing a full building envelope. Installing HVAC contractor must provide a copy of the "permit set" HVAC drawings, HVAC calculations (Manual's J,S,D,T,ZR), and energy code forms to the building owner for approval. Installing HVAC contractor must perform the "owner survey" as shown in manual J 8th edition, Appendix 1, to discuss desired indoor temperatures, filtration, indoor air quality, year round moisture control, health issues that require special indoor conditions, interior mounted heat production equipment (both latent and sensible heat outputs), occupancy amounts above manual J maximums, and any information not shown on the "Total Building Summary Loads" page shown on these HVAC drawings.

CODE OFFICIAL - HVAC CONTRACTOR NOTES:

Florida Residential Code section abbreviations: FBC = Building, FMC = Mechanical, FEC = Energy

These HVAC drawings are not intended to show exact detail of every item required to meet the code requirements, see the isometric details for code section compliance references. The proposed duct routing is general in nature, field conditions and building structure may dictate the exact mounting configuration of the HVAC system(s). Florida building code sections are listed for each HVAC drawing symbol to be used in the construction. The code sections refer to the code sections for the fabrication or installation of any HVAC system component. These HVAC drawings comply with the Florida Building Codes 6th Edition (2017-2020) sections FBC101.4.2, FBC101.4.2, FBC101.4.6, FBC105.3.1.2, FBC107.3.5 "Mechanical" Plan review criteria.

1) HVAC installation must comply with the 6th edition Florida building codes, energy conservation codes, and mechanical codes effective 12/31/2017. Obtain all required permits and inspections per code sections FBC105, FBC107, and FBC101.

2) Ventilation air provided per FBC1203 + FMC401.2 + FEC403.6. This design includes mechanically induced controlled ventilation for buildings that contain a forced air ducting system, pressurizing the building interior during air handler operation, provided by a ventilation air duct and motorized damper as shown. In cases when the ventilation rate is satisfied by the building infiltration rate, no ventilation air duct will be shown. The ventilation rate may also be satisfied by use of properly sized windows to the outdoors per FBC1203.5, manually operated by the occupant. For large buildings with few occupants, the building envelope infiltration rate may satisfy the minimum ventilation rate required, see "Total Building Summary Loads" page for infiltration rate. Small buildings with many occupants will usually require a ventilation air duct, motorized damper, and ventilation air duct routed to an approved exterior location, see "Total Building Summary Loads" page for ventilation air cm amount. A mandatory blower door test, FEC402.4.1.2, must be performed to quantify the building's natural infiltration air cm rate and determine the design ventilation air cm amount will successfully pressurize the building's interior. The motorized ventilation air damper is dual controlled by both "run-time" and "manually on" control cycles. Installer may also add an air handler fan cyclor to provide automatic air exchange during part load conditions. Interlock the ventilation air damper motor with the air handler fan motor for "run time" cycling. The occupants may also select "fan-on" cycle for continuous ventilation when the outdoor conditions are favorable (low heat and low moisture content).

3) Coordinate location of all equipment, fans, air devices, and building penetrations with the general contractor. Coordinate air device locations with the electrical contractor (smoke detectors), G.C., and building owner - the proposed hvac air device locations are shown in the ideal location per Manual T room air device selection procedure, design alternate air device locations per Manual T. HVAC installer must field verify clearances and accessibility prior to fabrication or installation of the HVAC components. Protect the building structure per FMC302. Provide accessibility for elevated equipment per FMC306.5. Fabricate and install HVAC system components per FMC304 + FBC1307, and product manufacturers envelope penetration detail, FEC107.3.5 wind data for wall and roof penetrations. HVAC product installation instructions, HVAC equipment manufacturers installation instructions, and AHRI energy + equipment manufacturers expanded capacity ratings must be available on the construction site at all time of code official inspections per FBC110.

4) All exterior building penetrations and exterior mounted HVAC equipment, wall vent caps, roof vent caps, intake air vents, and relief air caps, etc. must comply with FBC1609 wind loads. HVAC installing contractor must supply engineered product or equipment ANSI AMCA 540 test information for attachment to the building envelope component per section FBC1609.1.2. A structural engineer's sealed drawing detail may be required for exterior equipment mounted above ground level per FBC1510.10. This hvac design does not provide structural, equipment, or hole tie down details. See structural engineer's drawings and details for equipment support and tie down info when equipment manufacturers engineered data is not available.

5) All duct sizes shown are clear interior "free area" duct dimensions based on FMC603.2 manual D duct design. Add 3" to listed sizes for R-6 exterior duct dimensions - add 4" to listed sizes for R-8 exterior duct dimensions. Fiberglass duct board shown is equal to Knauf 1.5", R-6, fabricate and install per SMACNA standards. Flexible ducts shown are equal to Alco 36 series R-6 class one air duct, not limited in length per FMC603.6.1.1. For prescriptive energy compliance method using form FEC402-2017, use R-8 supply ducts as required by energy code section R403.3.1. Construct all ducts per manufacturer's installation instructions and SMACNA standards for a maximum 1" w.g. Suspend and support the ducts from the building structure per FMC603. Use 26 gauge sheet metal or rigid foil face fiberglass duct board for rigid duct penetrations of private garages per FMC607.7 and protect ducts per FMC607. Mastic seal all ducts installed outside the building's thermal envelope per UL-161 and FMC603.9. Provide accessible volume control dampers in branch ducts per FMC603.18. General exhaust ducts used for exhaust fan duct, clothes dryer duct, make up air duct, and residential cooking appliance duct up to 14" in diameter (or equal free area in rectangular) are constructed from 28 gauge sheet metal "snap lock pipe", use SMACNA standards for required gauge of larger metal ducts, mastic seal ducts per table FMC603.9. Use flexible air ducts of 28 gauge sheet metal "snap lock pipe" for ventilation air ducts. Test ducts to 40 linear feet when using energy code compliance method 402 as required by FEC403.3.3.

6) Provide a condensate drain piping system per FMC307, and a refrigerant piping system per FMC1107. Extend condensate drain discharge 12" minimum from the building exterior wall, discharge to grass or other approved location, a condensate drywell may be required. Provide piping and supports for both condensate and refrigerant piping per FMC305.

7) Provide a balanced return air system per FMC601.6. All enclosed rooms require a 1" undercut on the interior door, allowing about 30 cm of air relief per 30" wide door. Habitable spaces require door undercut plus a means for air transfer or a ducted return air. Pressure differentials across the restricted room can't exceed 0.1 inch w.g. Enclosed rooms located on the building exterior envelope should be balanced slightly positive. Size ducted transfer air ducts free area 1.5 times larger than the supply air delivered to the enclosed room(s). Size direct through wall or door grilles at 50 square inches of grille free area to 100 cmf.

8) Attic mounted equipment must contain a shut off device to alert the home owner if the primary condensate drain line is not working properly. Using 16 point bold text, Post a "home owner notice" on the electrical service panel alerting the home owner that the HVAC air handler is located in the attic space, see FEC403.3.6 for full compliance description and "notice to home owner" language required. Provide a sealed attic access panel for hot vented attics, a safe workers access deck, an attic light fixture with switch, and an electrical plug outlet.

9) This design complies with climate zone 2A of the Florida energy conservation code design conditions FEC302, 72 degree heating set point and 75 degree cooling set point. Compliance demonstration is provided by energy conservation code form R402 prescriptive or R405 performance depending on construction type. The building envelope details are shown on the HVAC drawings basic design (see "Total Building Summary Loads") as required by FEC303.1. HVAC heat load calculations and HVAC equipment capacity selection per section FEC403.7.1.1 and FEC403.7.1.2. Air distribution thermal insulation value as required by FEC403.3.1 and FEC405.5.2. Duct sealing as required by FEC403.4.2. Refrigerant piping insulation per FEC403.4. And HVAC equipment controls per FEC403.1.

10) Upon completion of the HVAC system installation, per manual D chapter 16, test equipment operating capacities for both cooling and heating to verify the equipment is functioning to the listed capacity. Verify the air handler total air flow cm matches the HVAC equipment schedule or heat load calculation minimum system airflow rate. No duct system is self-balancing, adjust each room's branch duct volume damper to achieve the listed air flow values shown or to meet the building owner's needs. Use the air device volume damper for the last 10% of air balance to avoid noise at the air device face. Room air flow balance for buildings with concealed ducts can be accomplished during the "rough in" stage of construction, prior to concealment of ducts. With the building air barrier fully intact, install and operate the air handler until proper air flow is adjusted per room, a balanced return air path must also be present. Use a self-compensating air flow hood for airflow measurements, perform air balance procedure in accordance with manual B or NEBB standards. When required by code, provide the air balance report to the building owner and code officials. A blower door test must be performed to verify that the building envelope natural leakage rate does not exceed the infiltration or ventilation cm rate shown on the "Total Building Summary Loads" page, shown on these drawings.

11) HVAC equipment of proper operation: The thermostat is set to "auto" mode and will monitor the conditioned space temperature and provide heating, cooling, and ventilation when required. Upon a call for heating, the air handler fan interlock will open the ventilation air damper and operate the indoor fan and heat pump condenser - and/or electric heat strip until the space conditions are satisfied - use a 72 degree thermostat setting during the heating season. Upon a call for cooling, the air handler fan interlock will open the ventilation air damper and operate the indoor fan and heat pump condenser until the space conditions are satisfied - use a 75 degree thermostat setting during the cooling season. During favorable outdoor conditions, when the temperature and humidity is low - the thermostat may be set to "fan on" for continuous air circulation and introduction of ventilation air. For newly constructed homes to be energy code compliant (FEC403.1), the HVAC installer must set the programmable thermostat to provide heating up to 70 degrees and cooling down to 78 degrees. Be sure not to overcool the conditioned space - overcooling a building is defined as a temperature lower than the dew point temperature for the interior conditioned space - most buildings can easily be driven to dew point temperatures during part load conditions. Overcooling a building successfully requires specialized HVAC equipment and controls. The heat removal (sensible heat) and moisture removal (latent heat) must be de-coupled and independently controlled for buildings to achieve temperature lower than the "dew point safe" energy code set point of 78 degrees.

HVAC SYMBOLS - FLORIDA BUILDING CODE 6TH EDITION (2017-2020)

HVAC BASIS OF DESIGN - BUILDING ENVELOPE COMPONENTS - FECC103.2 + FECR103.2

BUILDING ENVELOPE COMPONENTS SHOWN ON THIS REPORT ARE DATA LINKED TO THE 3D SMART CAD HVAC FLOOR PLAN(S) SMART FIGURES. ANY CHANGES TO THE BUILDING ENVELOPE COMPONENT TYPES, COMPONENT AMOUNTS, BUILDING USAGE, INTERIOR ROOM LAYOUTS, OR BUILDING COMPASS ORIENTATION (NORTH ARROW) MUST BE COMMUNICATED TO THE ORIGINAL DESIGNER. CONDUCT AN OWNER SURVEY PER APPENDIX 1 "SURVEY", PAGE A1-1 TO ESTABLISH THE LISTED ITEMS ON THIS SUMMARY PAGE MEETS THE BUILDING OWNERS NEEDS. SEE "PROJECT REPORT" FOR BUILDING SITE CLIMATIC CONDITIONS AND INDOOR DESIGN CONDITIONS. ALSO SEE MANUAL D DUCT DESIGN REPORT(S) + "MANUAL S EQUIPMENT SELECTION" REPORT(S) FOR MORE DETAILED INFORMATION. SEE ENERGY FORMS FOR MINIMUM REQUIREMENTS OF ALL ITEMS.

DOOR U VALUES USED IN THE CALCULATIONS = 11D WOOD .39 (R=2.564) 11N METAL .35 (R=2.857) 11J FIBERGLASS .40 (R=2.5)

Component Description	Area Quan	Sen Loss	Lat Gain	Sen Gain	Total Gain
R405 SD: Glazing-FECR405.5.2 Two Pane Low E Sliding Glass Door, ground reflectance = 0.32, medium color blinds at 45° with 25% coverage, u-value 0.4, SHGC 0.25	33.3	427	0	316	316
R405 OP: Glazing-FECR405.5.2 Two Pane Low E Window Operable, ground reflectance = 0.23, outdoor insect screen with 50% coverage, medium color blinds at 45° with 25% coverage, u-value 0.4, SHGC 0.25	15	192	0	128	128
11J: Door-Metal - Fiberglass Core	20	384	0	324	324
12C-0sw: Part-Frame, R-13 insulation in 2 x 4 stud cavity, no board insulation, siding finish, wood studs	270	246	0	123	123
12C-0sw: Wall-Frame, R-13 insulation in 2 x 4 stud cavity, no board insulation, siding finish, wood studs	705.6	2,056	0	1,444	1,444
16B-38-ad: Roof/Ceiling-Under Attic with Insulation on Attic Floor (also use for Knee Walls and Partition Ceilings), vented attic, no radiant barrier, R-38 insulation, dark asphalt	838	698	0	1,112	1,112
Subtotals for structure:		4,003	0	3,447	3,447
People:	2		460	600	1,060
Equipment:			360	1,560	1,920
Lighting:	0			0	0
Ductwork:		1,136	291	1,289	1,580
Infiltration: Winter CFM: 0, Summer CFM: 0		0	0	0	0
Ventilation: Winter CFM: 30, Summer CFM: 30		1,055	1,079	528	1,607
AED Excursion:		0	0	88	88
Total Building Load Totals:		6,194	2,190	7,512	9,702

Check Figures			
Total Building Supply CFM:	400	CFM Per Square ft.:	0.477
Square ft. of Room Area:	838	Square ft. Per Ton:	1.031
Volume (ft³):	7,543	Air Turnover Rate (per hour):	3.2

Building Loads		
Total Heating Required Including Ventilation Air:	6,194 Btuh	6.194 MBH
Total Sensible Gain:	7,512 Btuh	77 %
Total Latent Gain:	2,190 Btuh	28 %
Total Cooling Required Including Ventilation Air:	9,702 Btuh	0.81 Tons (Based On 77% Sensible Capacity)

Notes

Rhvac is an ACCA approved Manual J and Manual D computer program. Calculations are performed per ACCA Manual J 8th Edition, Version 2, and ACCA Manual D. All computed results are estimates as building use and weather may vary. Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.

INTELLIGENT CAD DUCT FIGURES - GRAPHIC MANUAL D DUCT FITTINGS

DUCT VELOCITY SHOWN IS FEET PER MINUTE	SUPPLY AIR SIDE	RETURN AIR SIDE
	RIGID	FLEX
TRUNK DUCT	700 - 900	600 - 700
BRANCH DUCT	600 - 700	400 - 700

DUCT DESIGN SHOWN IS DATA LINKED TO THE MANUAL D DUCT DESIGN REPORTS. EVERY DUCT SECTION + FITTING SHOWN ARE INCLUDED IN THE CALCULATIONS TO DETERMINE THE MOST RESTRICTIVE AIR PATH. MANUAL D DUCT DESIGN DATA IS USED FOR AIR HANDLING EQUIPMENT SELECTION. THE MAXIMUM VELOCITIES USED ARE BASED ON MANUAL D SECTION 3 (PAGE 3-6) OF ACCA MANUAL D DUCT DESIGN.

HEAT PUMP SCHEDULE

AIR HANDLER MARK:	AHU-2
UNIT MANUFACTURER:	AMERICAN STND
UNIT MODEL NUMBER:	TAM7A0A24H
UNIT DIMEN H/W/D:	49.9x17.5x21.8
UNIT WEIGHT:	116
SUPPLY PLENUM SIZE:	14.5x14.35
RETURN PLENUM SIZE:	14.5x17.15
MANUAL D DUCT CFM:	600 / 415
SUPPLY FAN CFM / SP:	618 / 1 to 9
SUPPLY FAN HP:	1/2
VENTILATION AIR CFM:	45
AHU OFF / INFILTRATION:	31
UNIT PHASE / HERTZ:	1 / 60
UNIT VOLTAGE:	208 / 240
HEATER KW:	3.6 / 4.8
AHU + HEAT MOP:	25 / 30
CONDENSER MARK:	CU-2
NOMINAL A/C TONS:	1.5
UNIT MODEL NUMBER:	4A6H4018G1
UNIT VOLTAGE:	208/230 / 1 / 60
UNIT MCA / MOP:	9 / 15
UNIT DIMEN H/W/D:	29x33x30
UNIT WEIGHT:	161
COOL / OUTDOOR TEMP:	91 92 93
TOTAL COOLING KBTUH:	19.4 19.2 19.1
SENS. COOLING KBTUH:	14.5 14.4 14.3
LAT. COOLING KBTUH:	4.8 4.8 4.8
SENSIBLE HEAT RATIO:	0.75
AHRI @ 95: TC, SC, LC	18.8 14.1 4.7
AHRI #:	8933063
TOTAL HEATING KBTUH:	17.1
SEER / HSPF:	14.5 / 8.4
THERMOSTAT MODEL:	PROGRAM

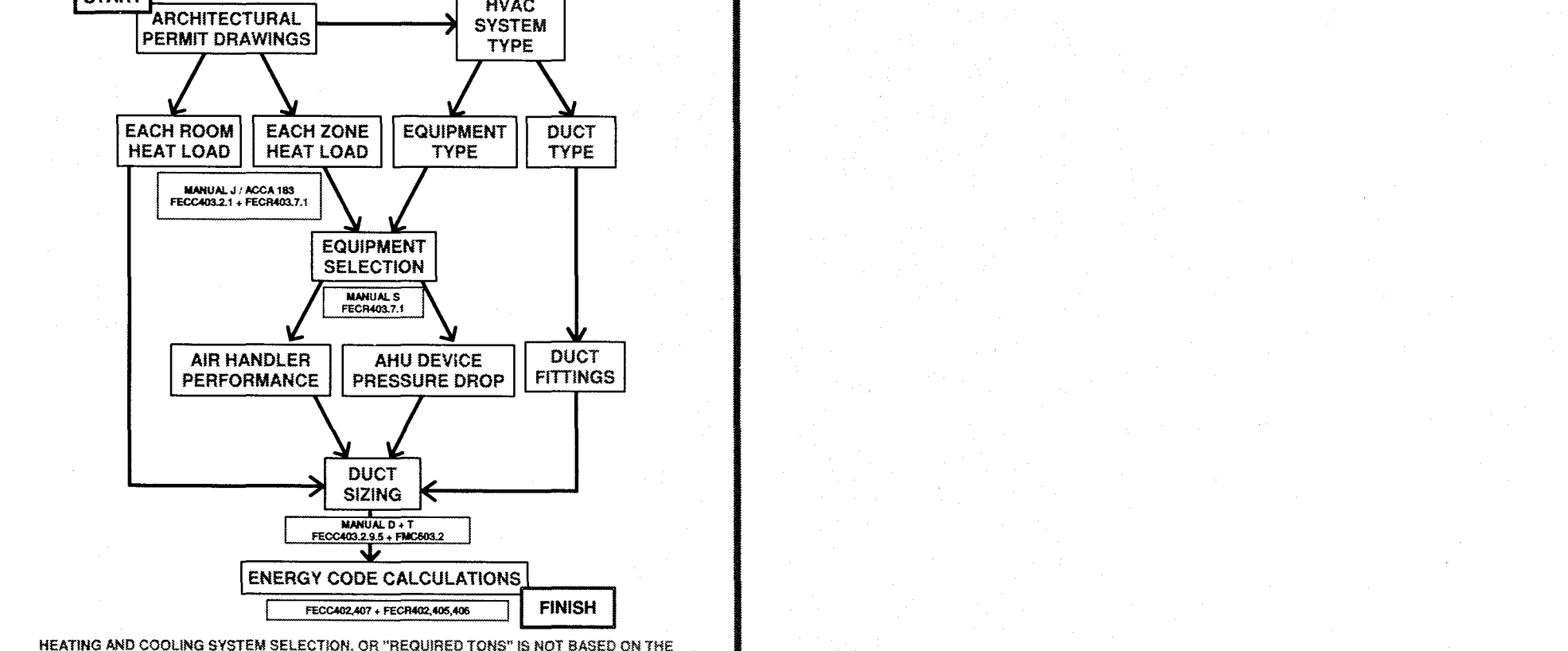
EXHAUST FAN SCHEDULE

FAN MARK:	EF-1
MANUFACTURER:	NUTONE
MODEL NUMBER:	QT-80
FAN TYPE:	CEILING
FAN CFM:	70
TOTAL PRESSURE:	3
FAN VOLTAGE:	120/1/60
FAN AMPERAGE:	7
FAN DIMEN L/W/H:	9X9X6
DUCT OUTLET SIZE:	4
DUCT INLET SIZE:	10X10
FAN WEIGHT:	12
NOTES:	1 - VENT TO EXTERIOR 2 - INTERLOCK WITH LIGHTS 3 - THERMOSTAT CONTROL 4 - INTERLOCK WITH SAME ZONE HVAC

HEAT PUMP SCHEDULE

AIR HANDLER MARK:	AHU-1
UNIT MANUFACTURER:	MITSUBISHI
UNIT MODEL NUMBER:	PVA-A12A7
UNIT DIMEN H/W/D:	50.25x17x21.55
UNIT WEIGHT:	105
SUPPLY FAN CFM / SP:	400 / 292
FAN VOLTAGE:	24
VENTILATION AIR CFM:	30
UNIT BREAK SIZE:	15
UNIT VOLTAGE:	208/230 / 1 / 60
CONDENSER MARK:	CU-1
NOMINAL A/C TONS:	1
UNIT MODEL NUMBER:	PUZ-A12NK7A
UNIT VOLTAGE:	208/230 / 1 / 60
UNIT MCA / BREAKER:	11 / 15
UNIT DIMEN H/W/D:	25x32x12
UNIT WEIGHT:	93
TOTAL COOLING BTUH:	12,000
SENS. COOLING BTUH:	9,000
LAT. COOLING BTUH:	3,000
TOTAL HEATING BTUH:	14,000
SENSIBLE HEAT %:	0.75
SEER / HSPF:	21.4 / 10.3
THERMOSTAT MODEL:	REMOTE

HVAC DESIGN PROCEDURE SCHEMATIC



HEATING AND COOLING SYSTEM SELECTION, OR "REQUIRED TONS" IS NOT BASED ON THE CONDITIONED AREA SQUARE FEET DIVIDED BY "SQUARE FOOTAGE" NUMBER. ABSOLUTE DESIGN PRACTICE "SQUARE FEET PER TON" IS FORBIDDEN BY THE FLORIDA BUILDING CODES. SELECTION OF HVAC EQUIPMENT, DUCT SIZES, AND AIR DEVICE SIZES ARE BASED ON EACH ROOMS HEAT LOAD DEMAND. CALCULATIONS ARE COMPASS ORIENTATION + CITY SPECIFIC.

Comfort System Designed By:
 HVAC Design Inc.
 813-865-2238
 FL BEFS 8647959
 neil@hvacedesign.com
 Designing HVAC in Florida 22+ Years
 Home of the complete HVAC "Energy Design"

HVAC Contractor Signature
 State License #

SCALE 1/4" = 1'-0"
 36"x24" ARCH D

PROJECT NAME: Normandy Apartments
 PROJECT ADDRESS: 11110 56th Street
 PROJECT CITY, ZIP: Temple Terrace Florida
 CONDITIONED SQ. FT.: 838 one bed / 954 two bed
 CLIMATE ZONE 2 CLASS: Apartment base + mirror

Orientation
 North

DRAWING DATE
 5/17/2018
 PERMIT SET

HVAC DRAWING
 1 OF 3

System 1 Room Load Summary									
Room No Name	Area SF	Htg Sens Btuh	Min Htg CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Min Clg CFM	Act Sys CFM
-Zone 1-									
1 Kitchen / Living	525	2,965	67	2-7	525	4,519	760	206	281
2 Bed 1	218	1,252	28	1-6	428	1,353	0	62	84
3 Bath	96	653	15	1-4	407	572	60	26	36
Ventilation Duct Latent		1,055				528	1,079		
Return Duct		268				540	247		
System 1 total	838	6,194	111			7,512	2,190	293	400
System 1 Main Trunk Size:	8x12 in.								
Velocity:	800 ft/min								
Loss per 100 ft.:	0.086 in.wg								

BASE PLAN

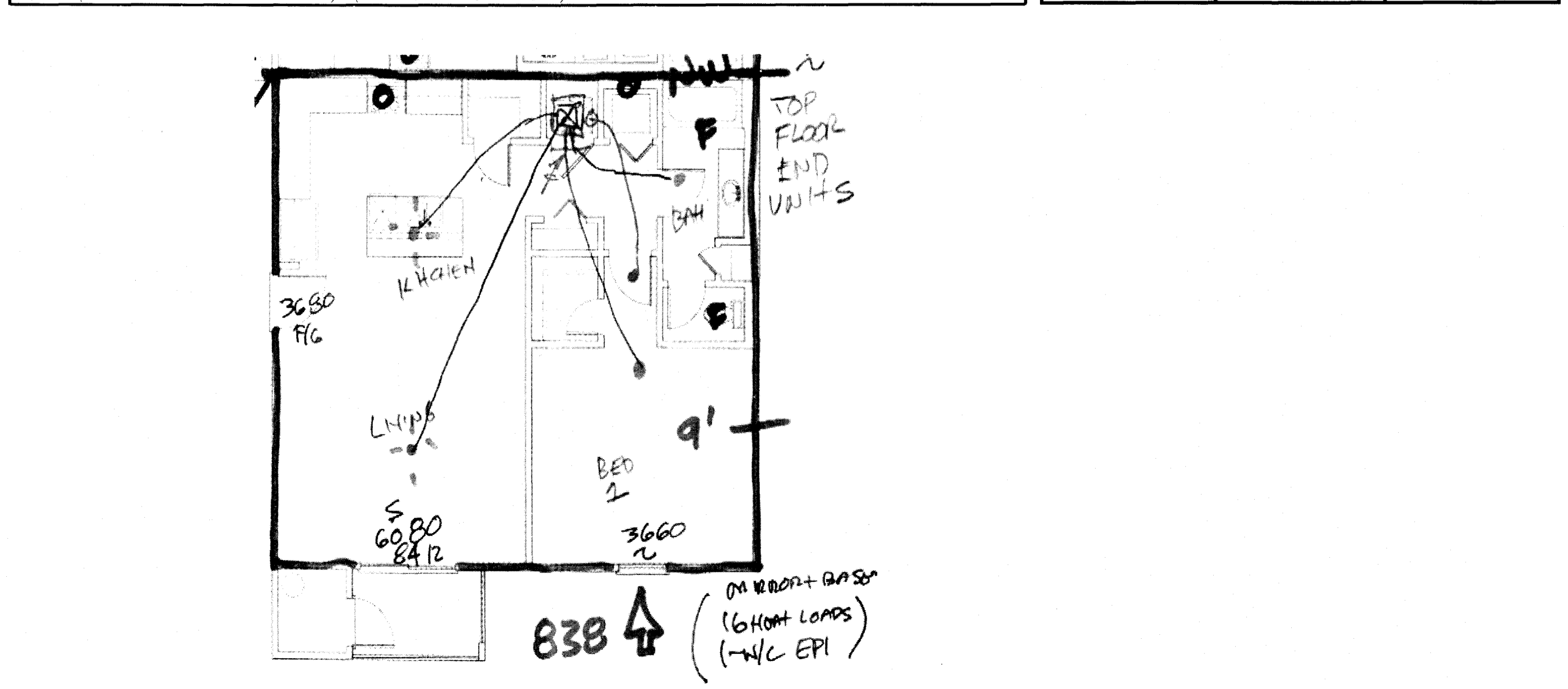
System 1 Room Load Summary									
Room No Name	Area SF	Htg Sens Btuh	Min Htg CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Clg Lat Btuh	Min Clg CFM	Act Sys CFM
-Zone 1-									
1 Kitchen / Living	525	3,029	69	2-7	525	4,552	760	207	281
2 Bed 1	218	1,279	29	1-6	428	1,363	0	62	84
3 Bath	96	668	15	1-4	407	577	60	26	36
Ventilation Duct Latent		1,055				528	1,079		
Return Duct		285				494	319		
System 1 total	838	6,317	113			7,513	2,290	295	400
System 1 Main Trunk Size:	10x10 in.								
Velocity:	576 ft/min								
Loss per 100 ft.:	0.106 in.wg								

BASE MIRROR PLAN

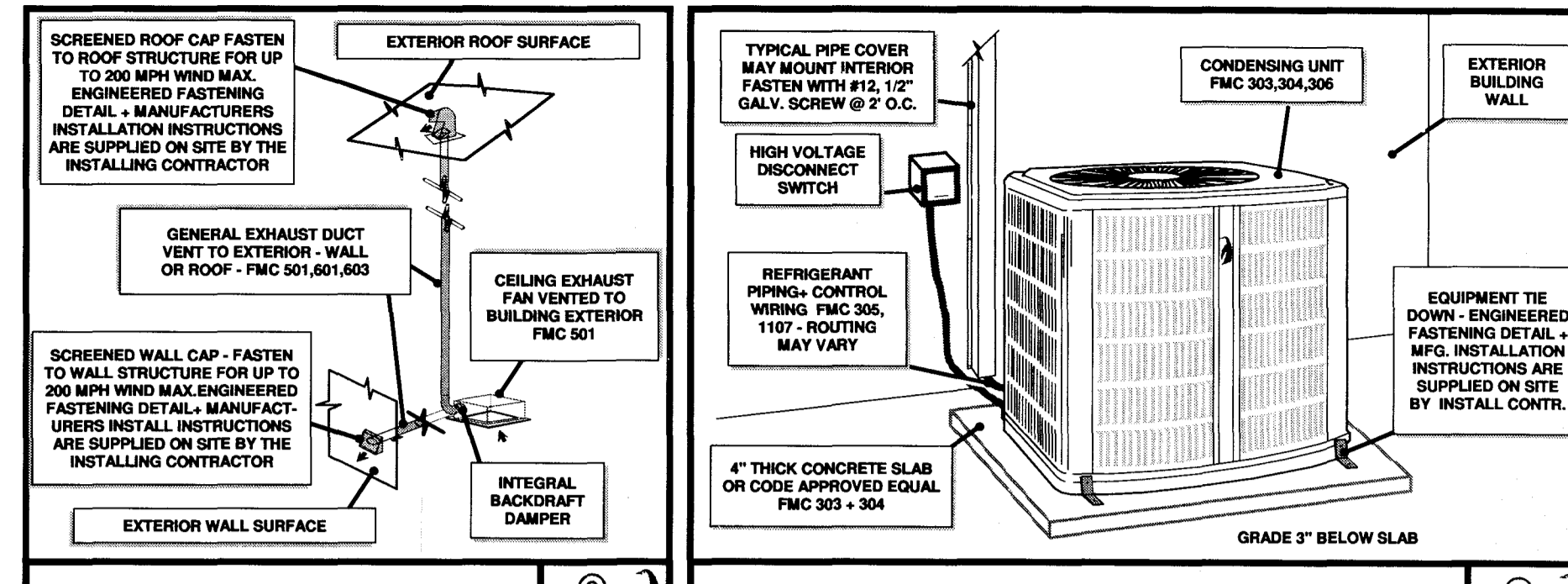
BUILDING EXPOSURE DIAGRAM - INPUT DATA FOR ROOM BY ROOM HEAT LOAD CALCULATIONS (NOT TO SCALE)

Temple Terrace	391300	average height	9.001	v =	7543	occupants	2	vent air cfm	30
R405.2 FECC (eff 12/31/2017)	23.8	COND AREA	838	# BEDS	1	BTUH DAILY	46052.4	BTUH HOURLY	1919
17900		19944		8208					

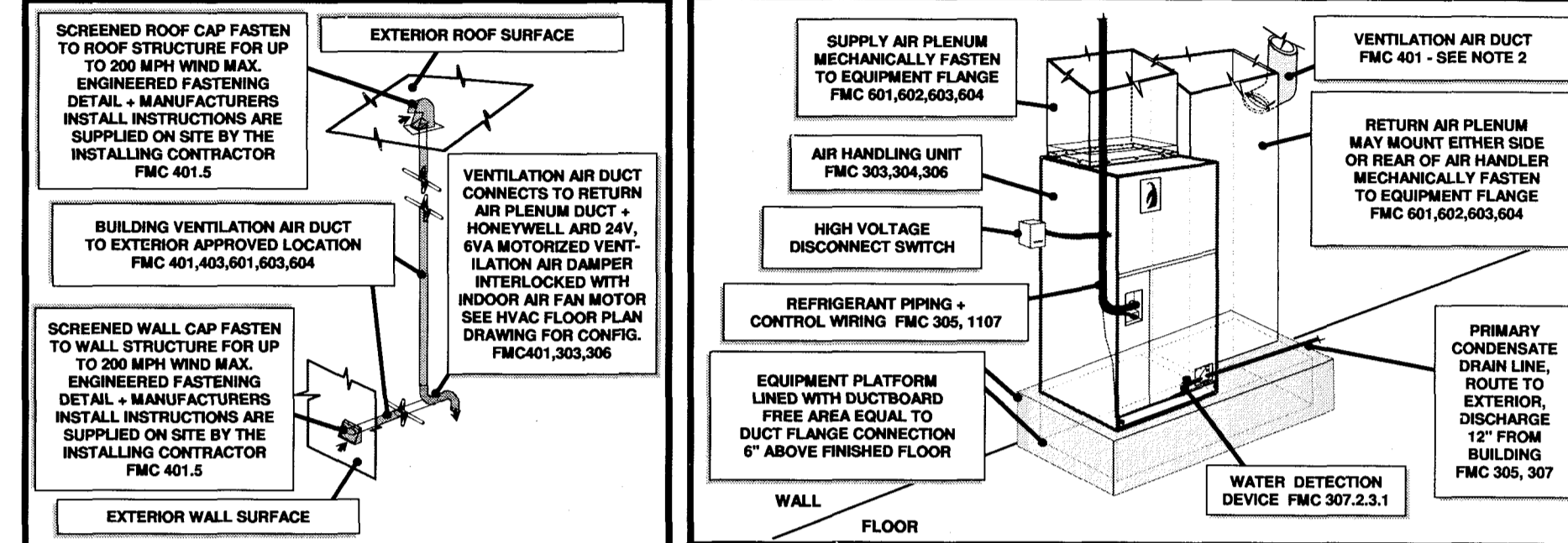
R405.2 DWELLING INTERNAL HEAT GAIN CALCULATOR
 17,900 + (23.8 * CONDITIONED FLOOR AREA) + (4104 * NUMBER OF BEDS + 1) = DWELLING DAILY INTERNAL GAINS



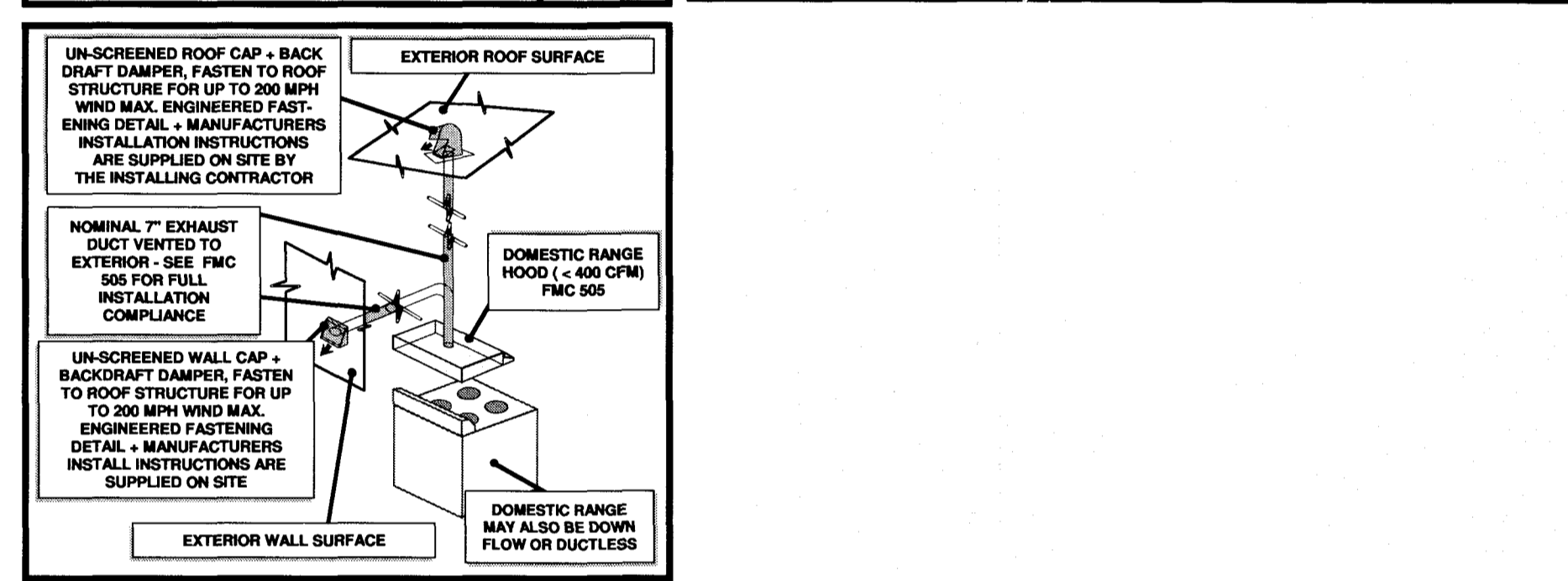
BUILDING COMPONENTS KEY			
EXTERIOR WALL EXPOSURE	12.74	CONDITIONED AREA	838
PARTITION WALL EXPOSURE	3	OCCUPANTS (CO2)	2
ROOM INTERIOR BORDER	12.0	LIGHTING (CO2)	1
FLOOR EXPOSURE	60/60	APPLIANCE (CO2)	1
CEILING/ROOF/DOOR EXPOSURE	10.0	SPACE HEAT TRANSFER ZONE	1
		DEFAULT OVERHEAD PROJECTION RATIO	1
		RETURN AIR DUCT	1
		SUPPLY AIR DUCT	1
		RETURN AIR DEVICE	1
		SUPPLY AIR DEVICE	1
		VENTILATION AIR	1
		HVAC EQUIPMENT	1
		SPRAY FOAM WALL	1
		GROUND REFLECTANCE	1
		EXHAUST FAN	1



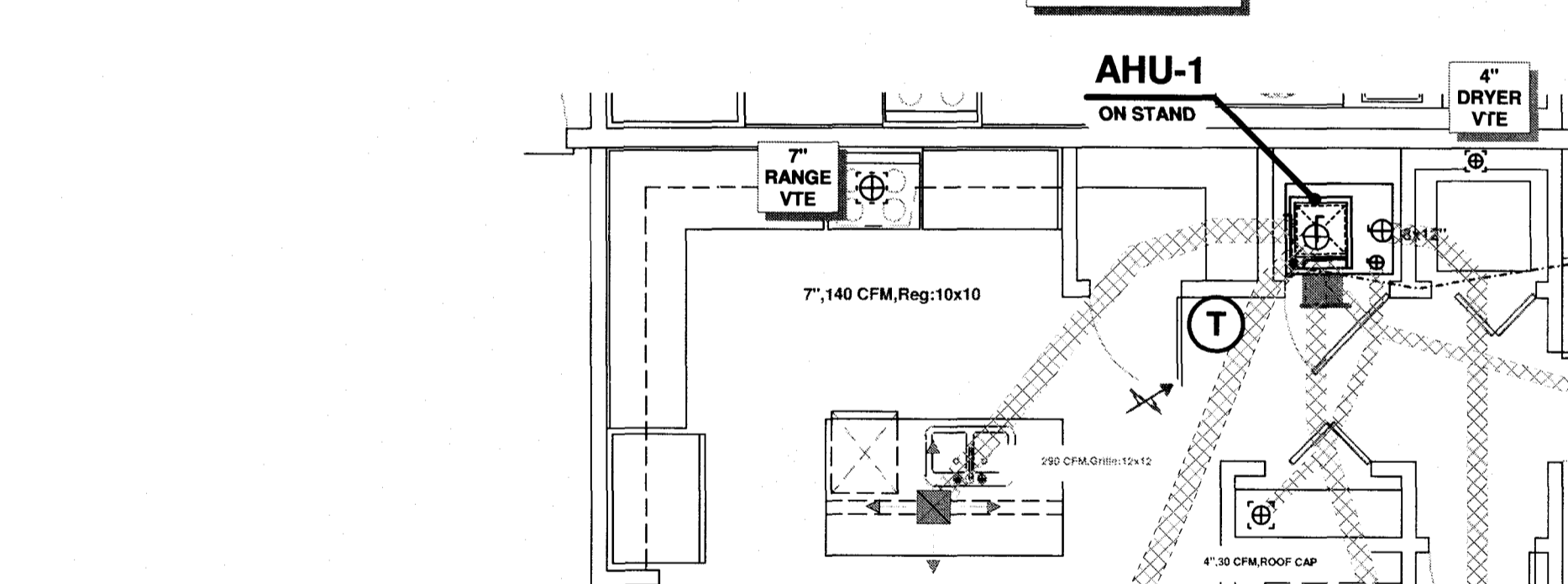
EXHAUST FAN DETAIL N.T.S.



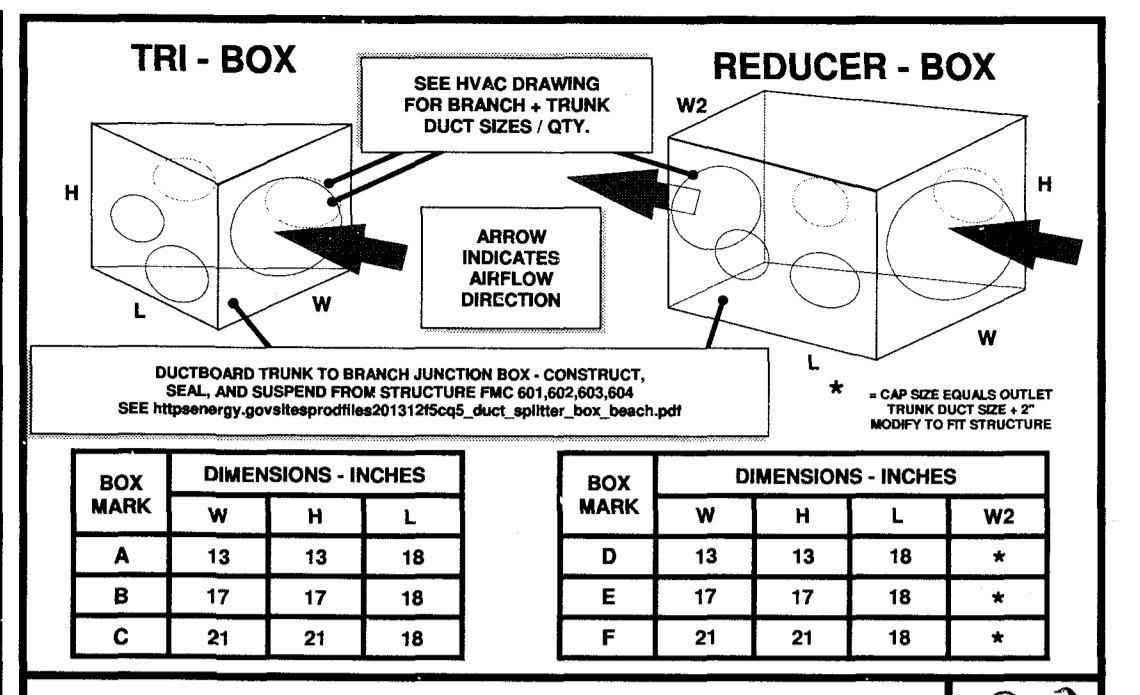
CONDENSER / SLAB DETAIL N.T.S.



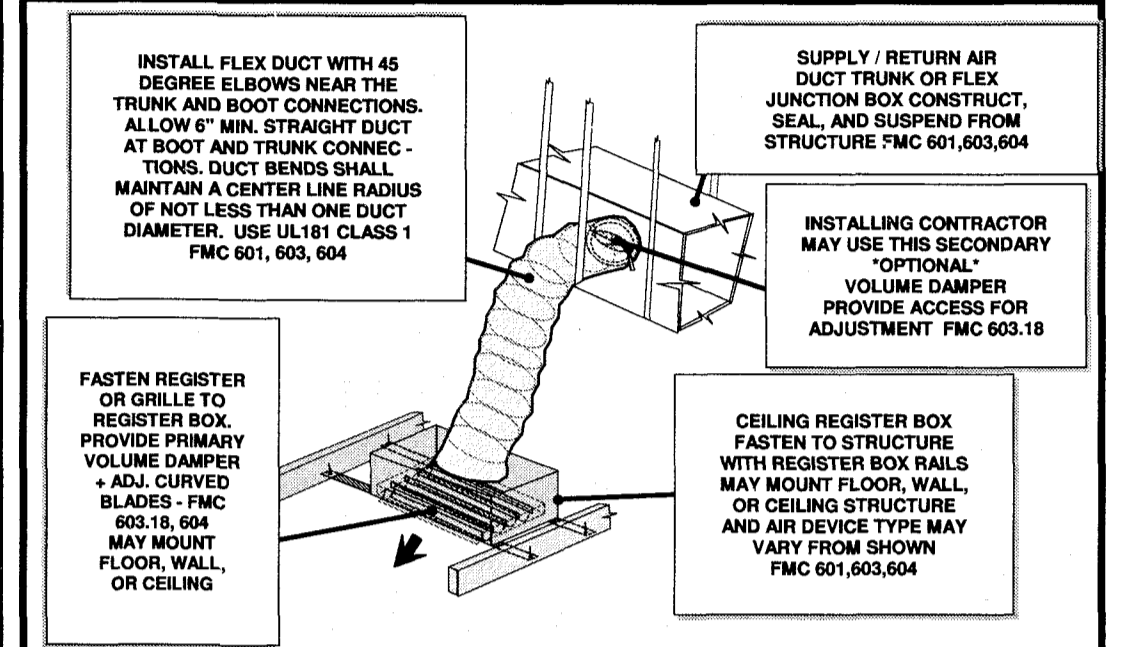
VENTILATION AIR DETAIL N.T.S.



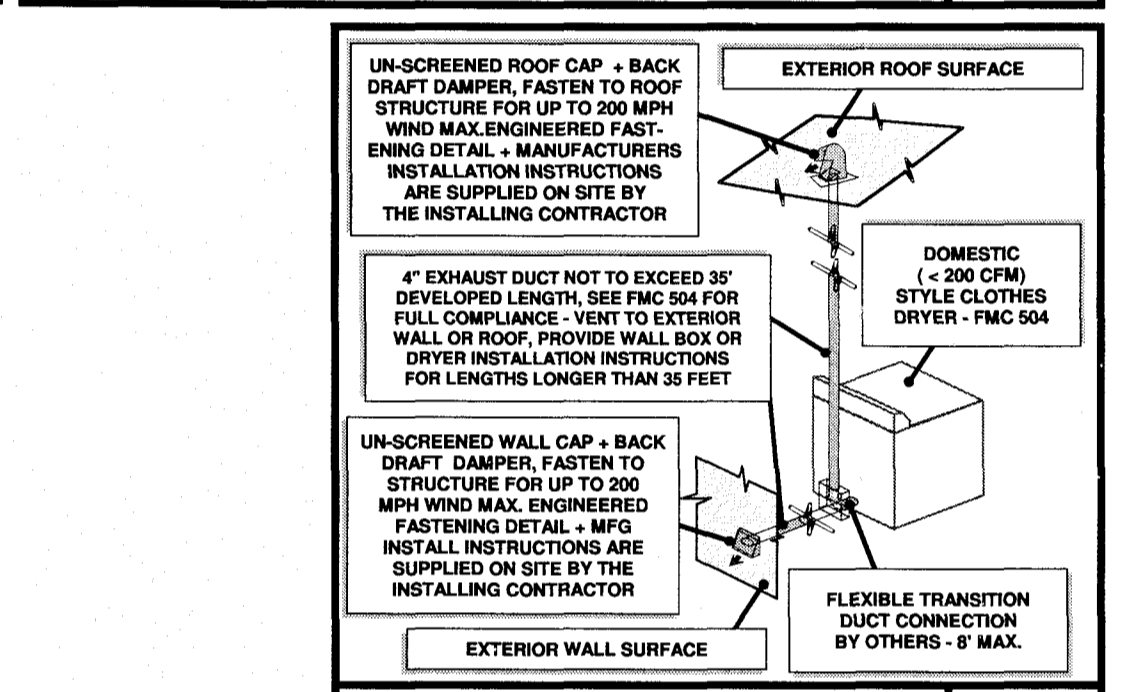
RANGE EXHAUST DETAIL N.T.S.



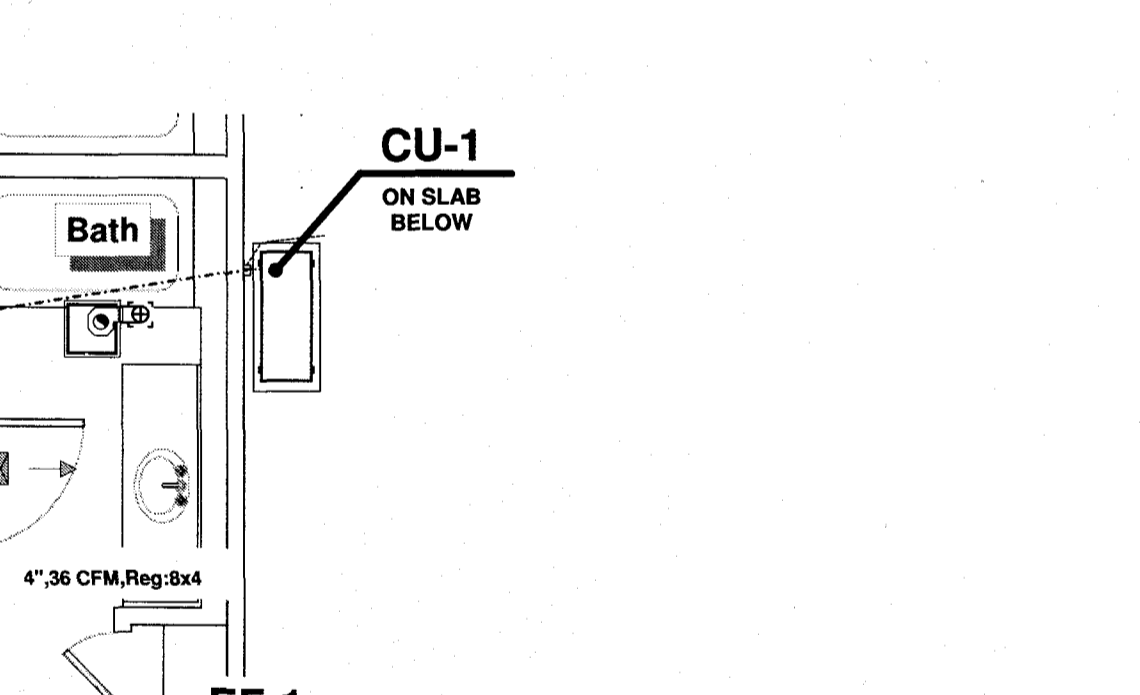
FLEX DUCT JUNCTION BOX DETAIL N.T.S.



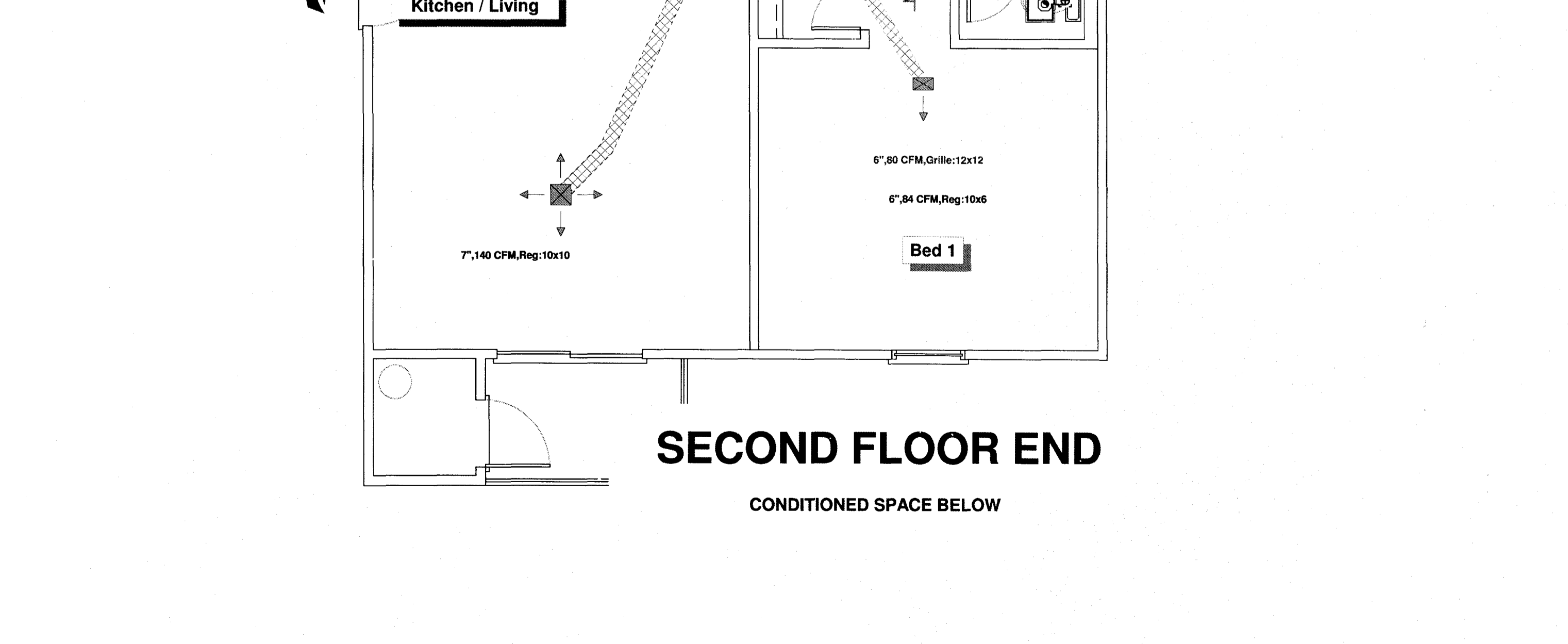
AIR HANDLER / VERTICAL + RISER DETAIL N.T.S.



DUCTBOARD / FLEX DUCT DETAIL N.T.S.



DRYER EXHAUST DETAIL N.T.S.



SECOND FLOOR END CONDITIONED SPACE BELOW

Comfort System Designed By:
 Neil Fimmel
 HVAC Designs Inc.
 813-885-2258
 FL BECS 884959
 neil@hvacdesigns.com
 Designing HVAC in Florida 32+ Years
 Intelligent CAD Energy Modeling
 "Home of the complete HVAC Energy Design"

HVAC Contractor Signature
 State License #

SCALE 1/4"=1'-0"
 36"x24" ARCH D

PROJECT NAME: Normandy Apartment 838 W
 PROJECT ADDRESS: 11110 56th Street
 PROJECT CITY, ZIP: Temple Terrace Florida
 CONDITIONED SQ. FT.: 838
 CLIMATE ZONE 2 CLASS: Apartment base + mirror

Orientation
 North

DRAWING DATE
 5/17/2018
 PERMIT SET

HVAC
 DRAWING
 2 OF 3

Rhvac - Residential & Light Commercial HVAC Loads
HVAC Designs
Tampa, FL 33615

Elite Software Development, Inc.
Normandy Apartment Base 954 s
Page 8

System 1 Room Load Summary

Room No Name	Area SF	Htg Sens Btuh	Min Htg CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Min Clg CFM	Act Sys CFM
1 Kitchen / Living	502	2,452	56	7.7	-	4,288	990	359
2 Bed 2	151	722	16	6	-	923	0	42
3 Bath 1	57	434	10	4	-	380	60	17
4 Bath 2	60	158	4	4	-	204	60	9
5 Bed 1	184	1,388	32	6	-	1,369	0	62
Ventilation		1,583				791	1,619	
Duct Latent						69		
Return Duct		436				888	410	
System 1 total	954	7,174	117			8,844	3,207	600

System 1 Main Trunk Size: 10x13 in.
Velocity: 666 ft/min
Loss per 100 ft: 0.086 in.wg

Duct size results above are from Manual D Ductsize.
Runout duct velocities are not printed with duct size results from Manual D Ductsize since they can vary within the room. See the Manual D Ductsize report for duct velocities and other data.

Cooling System Summary

	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Recommended	1.16	77% / 23%	10,737	3,207	13,944
Actual	1.55	77% / 23%	14,322	4,278	18,600

Equipment Data

Type:	Model:	Brand:	Description:	Efficiency:	Comment:	Sound:	Capacity:	Sensible Capacity:	Latent Capacity:	AHRI Reference No.:
Heating System	Air Source Heat Pump	AM7A0A2H21	American Standard	14.5 SEER		0	16,500 Btuh	14,322 Btuh	4,278 Btuh	8933063
Cooling System	Air Source Heat Pump	4A6H4018G1	American Standard	8.5 HSPF		0	18,600 Btuh	14,322 Btuh	4,278 Btuh	8933063

This system's equipment was selected in accordance with ACCA Manual S.
Manual S equipment sizing data: SODB: 91F, SOWB: 77F, WODB: 40F, SIDB: 75F, SIRH: 50%, WIDB: 72F, Sen. gain: 8,844 Btuh, Lat. gain: 3,207 Btuh, Sen. loss: 7,174 Btuh, Entering clg. coil WB: 65F, Entering hgt. coil DB: 69F, Clg. coil TD: 20F, Htg. coil TD: 40F, Req. clg. airflow: 326 CFM, Req. hgt. airflow: 117 CFM

Rhvac - Residential & Light Commercial HVAC Loads
HVAC Designs
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Elite Software Development, Inc.
Normandy Apartment Base 954 s
Page 3

System 1 Room Load Summary

Room No Name	Area SF	Htg Sens Btuh	Min Htg CFM	Run Duct Size	Run Duct Vel	Clg Sens Btuh	Min Clg CFM	Act Sys CFM
1 Kitchen / Living	502	2,452	56	2-7	672	4,287	990	359
2 Bed 2	151	722	16	1-6	394	923	0	42
3 Bath 1	57	434	10	1-4	365	380	60	17
4 Bath 2	60	158	4	1-4	196	204	60	9
5 Bed 1	184	1,388	32	1-6	584	1,369	0	62
Ventilation		1,583				791	1,619	
Duct Latent						68		
Return Duct		436				889	410	
System 1 total	954	7,174	117			8,844	3,207	600

System 1 Main Trunk Size: 10x14 in.
Velocity: 617 ft/min
Loss per 100 ft: 0.098 in.wg

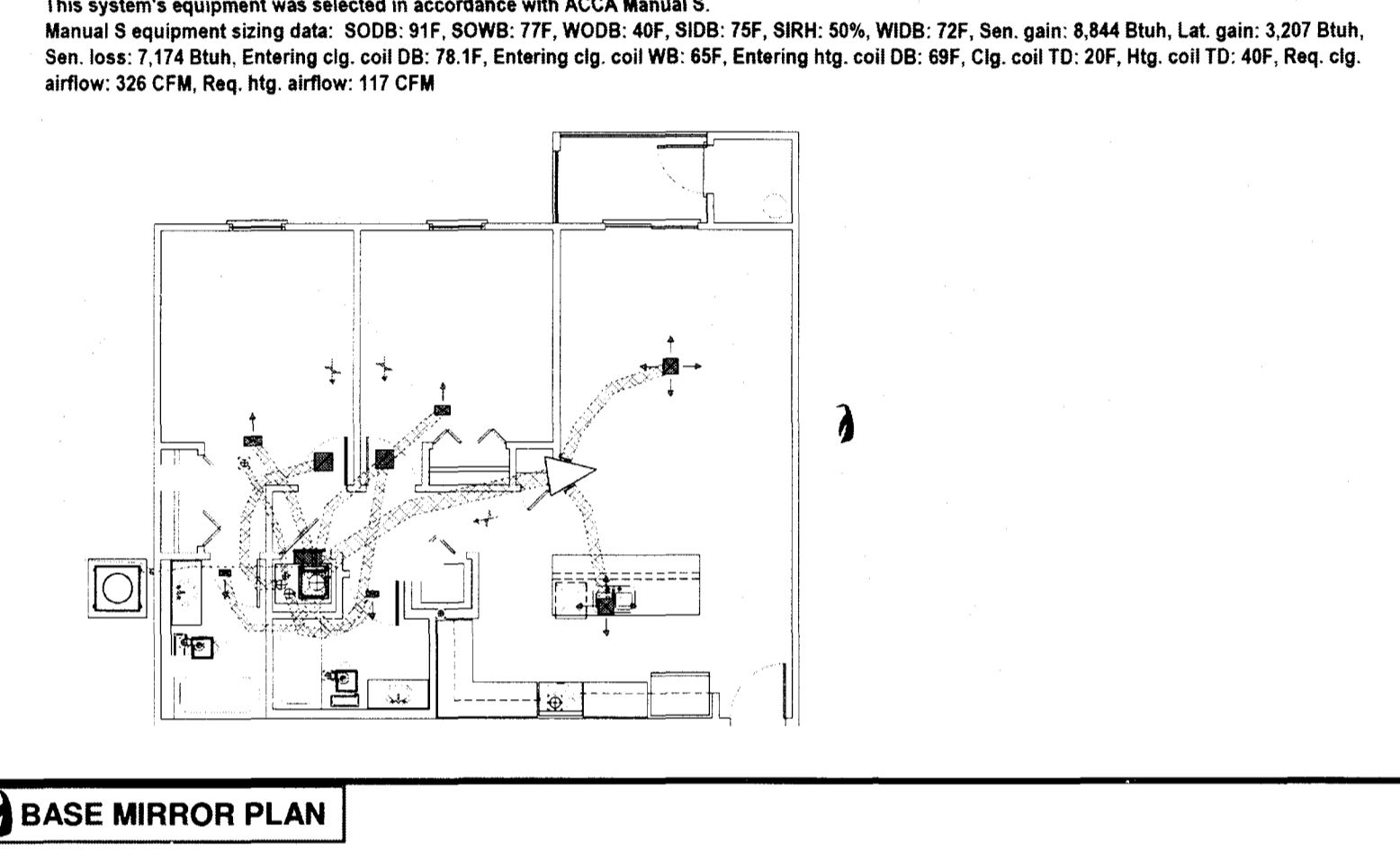
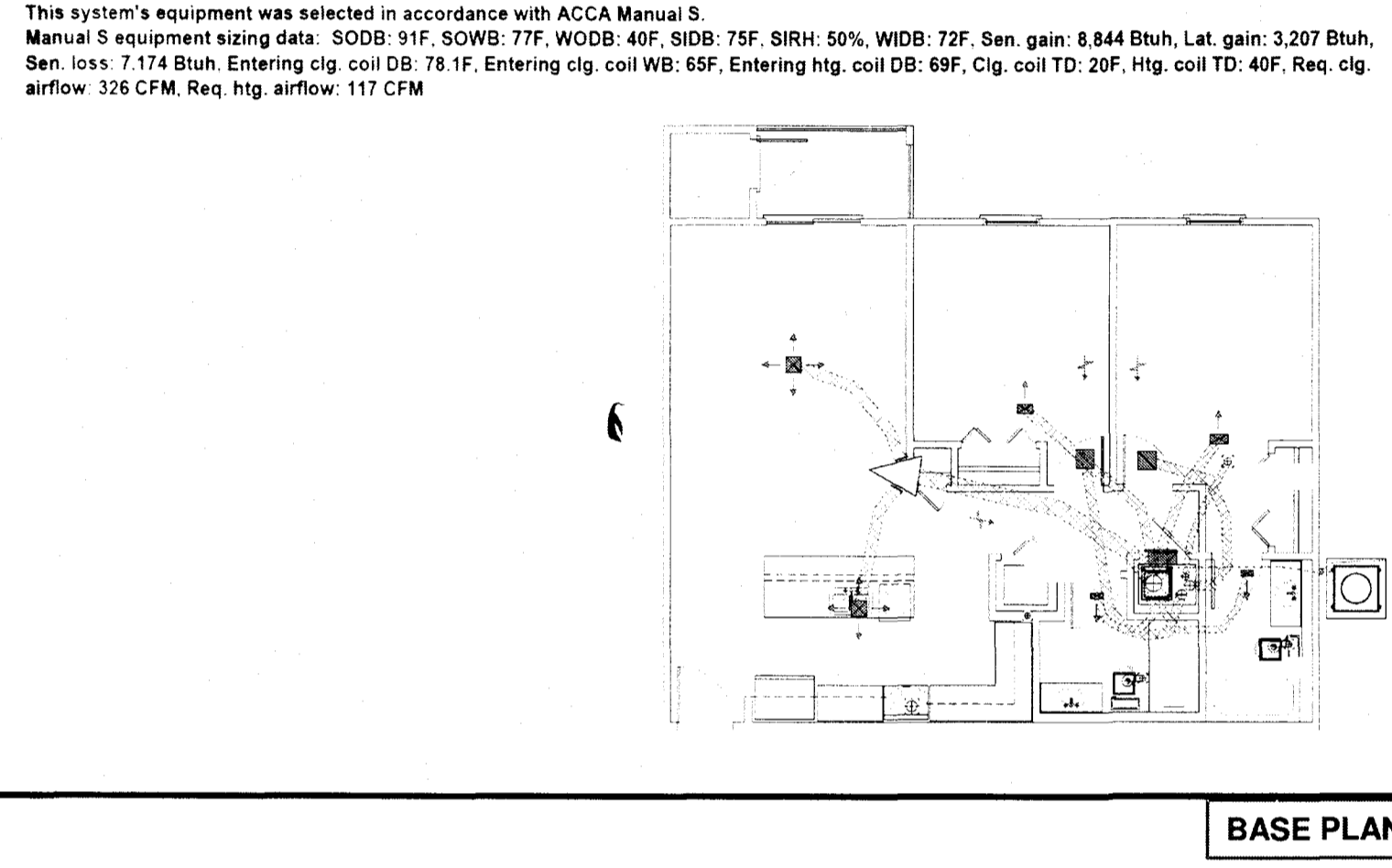
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	Cooling Tons	Sensible/Latent Split	Sensible Btuh	Latent Btuh	Total Btuh
Recommended	1.16	77% / 23%	10,737	3,207	13,944
Actual	1.55	77% / 23%	14,322	4,278	18,600

Equipment Data

Type:	Model:	Brand:	Description:	Efficiency:	Comment:	Sound:	Capacity:	Sensible Capacity:	Latent Capacity:	AHRI Reference No.:
Heating System	Air Source Heat Pump	AM7A0A2H21	American Standard	14.5 SEER		0	16,500 Btuh	14,322 Btuh	4,278 Btuh	8933063
Cooling System	Air Source Heat Pump	4A6H4018G1	American Standard	8.5 HSPF		0	18,600 Btuh	14,322 Btuh	4,278 Btuh	8933063

This system's equipment was selected in accordance with ACCA Manual S.
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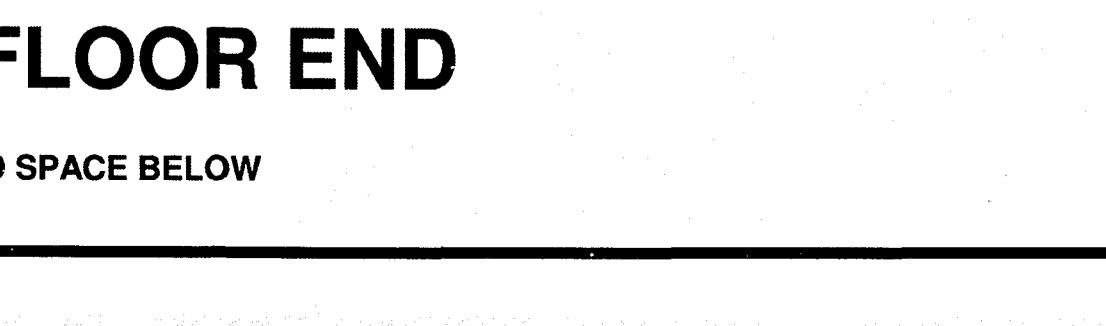
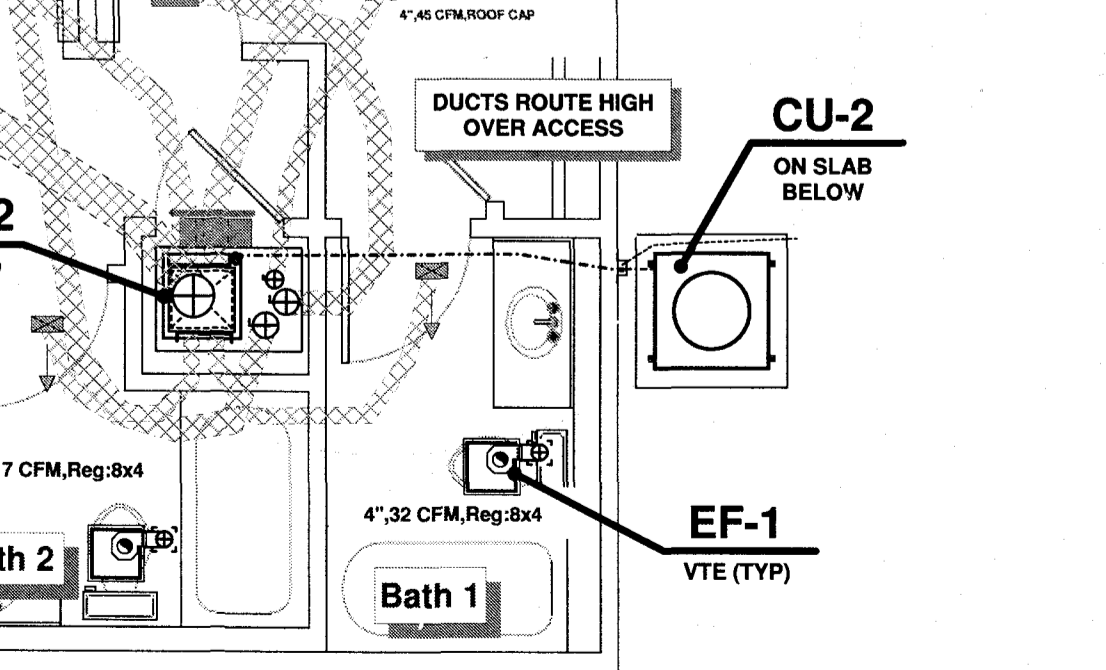
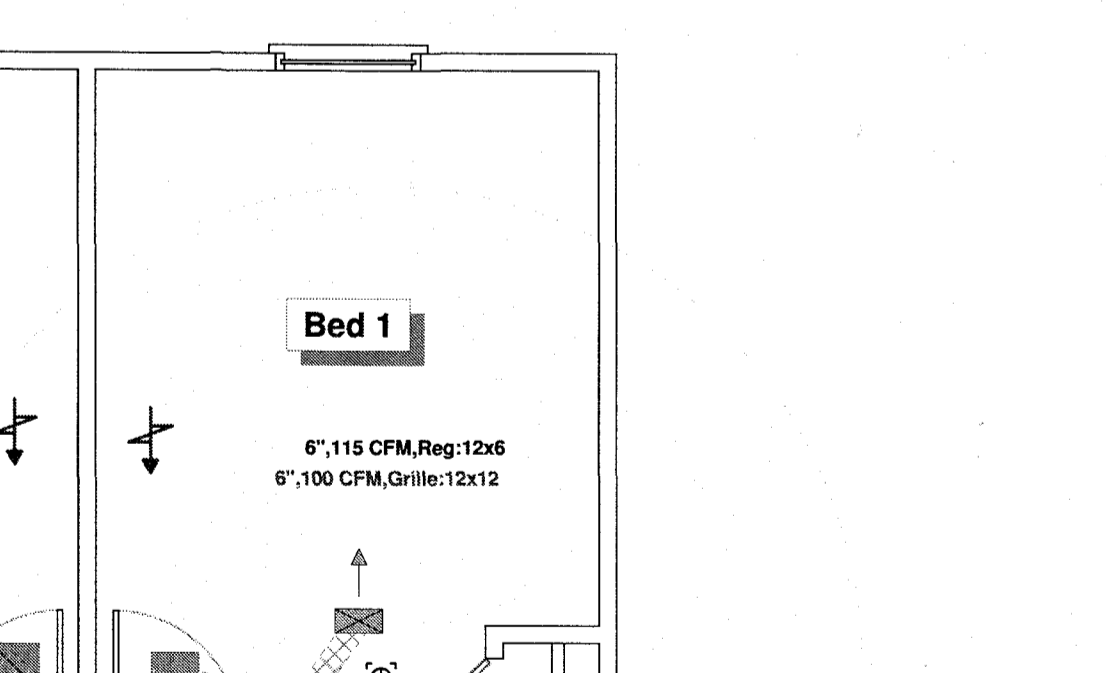
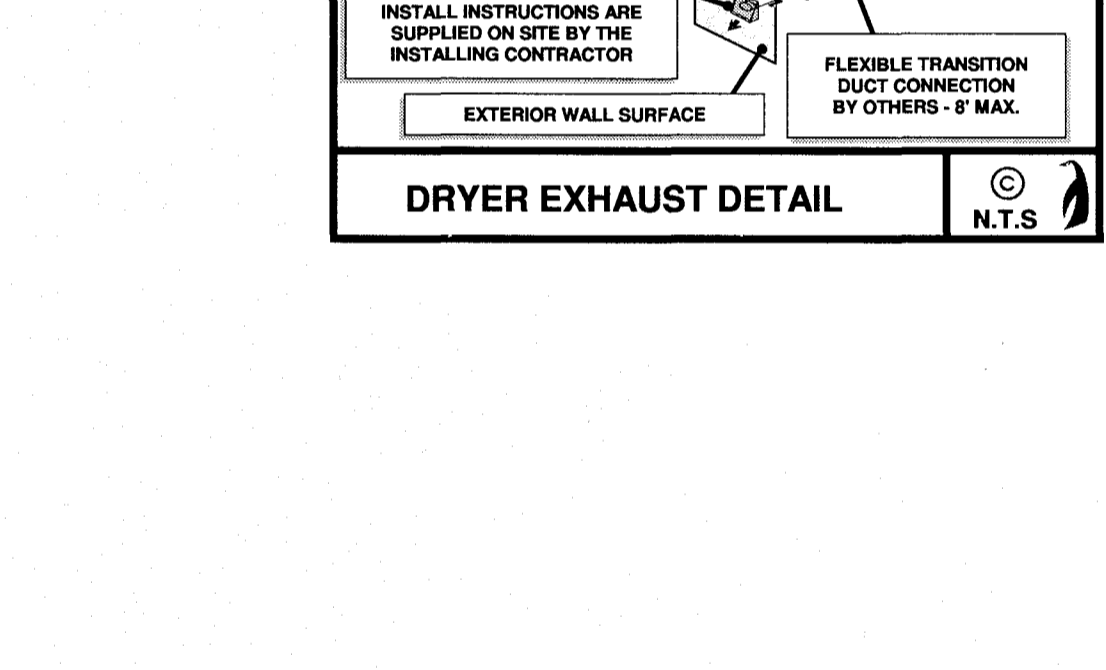
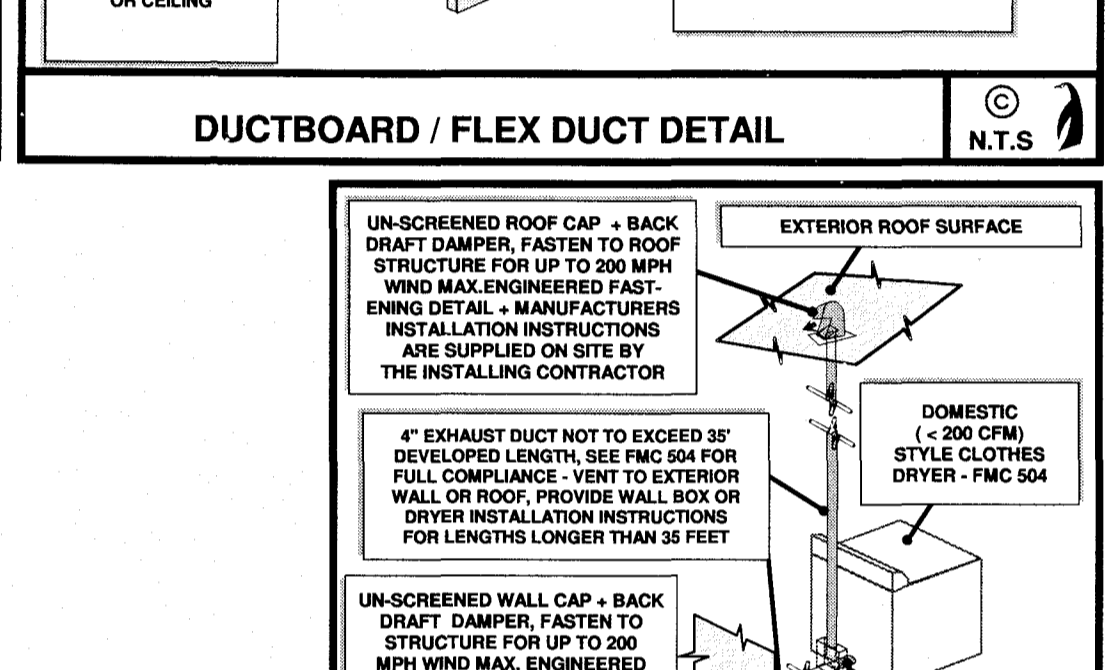
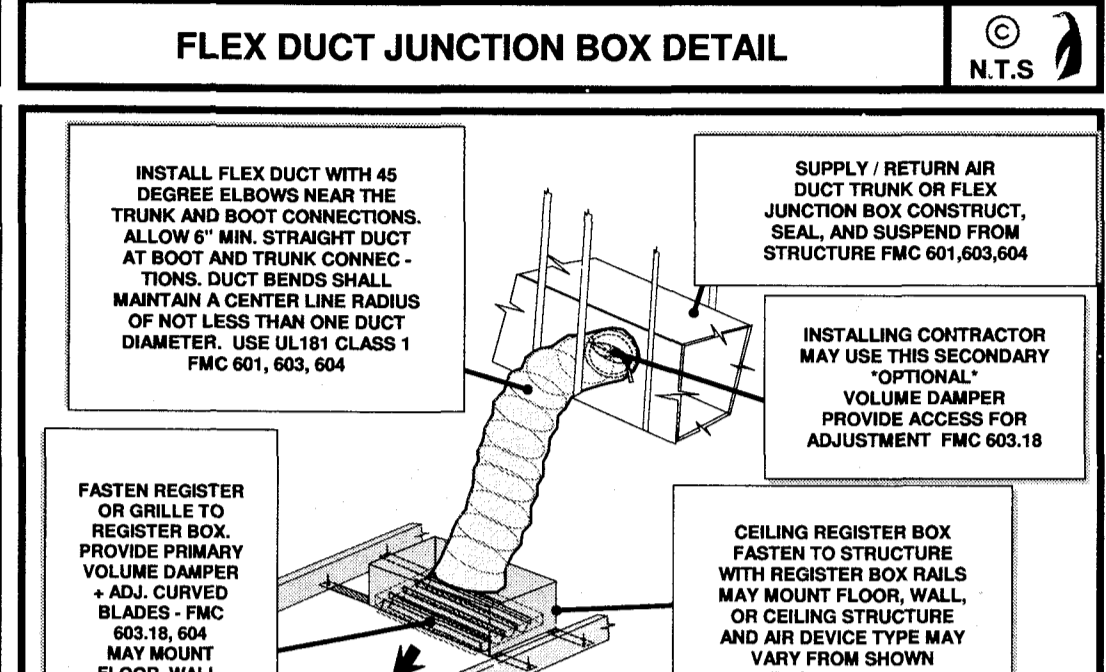
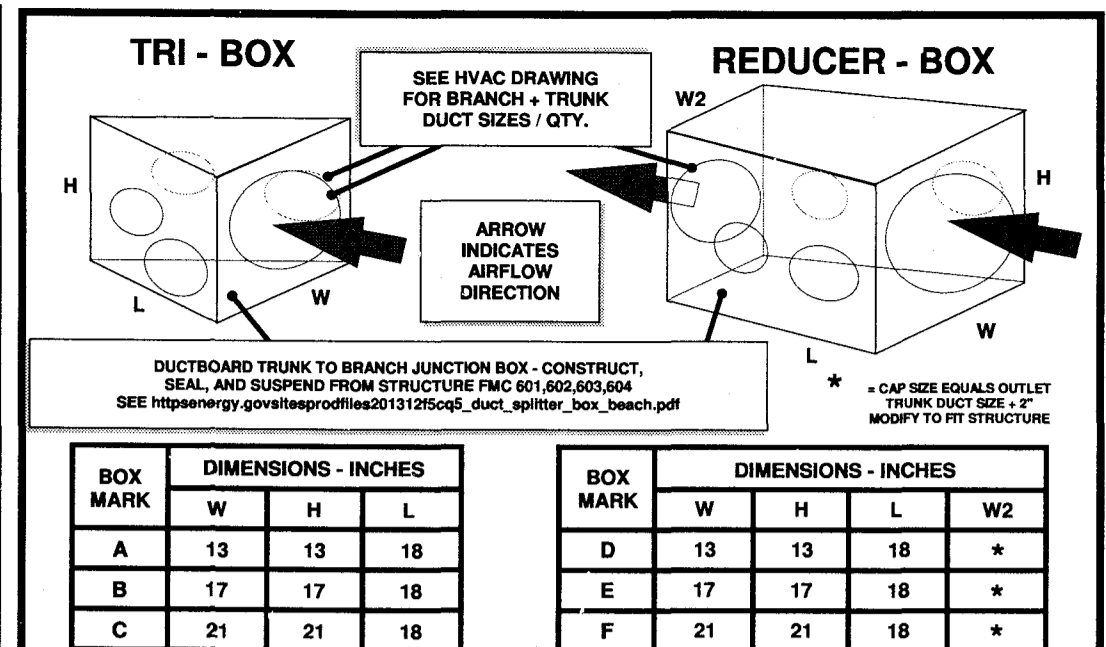
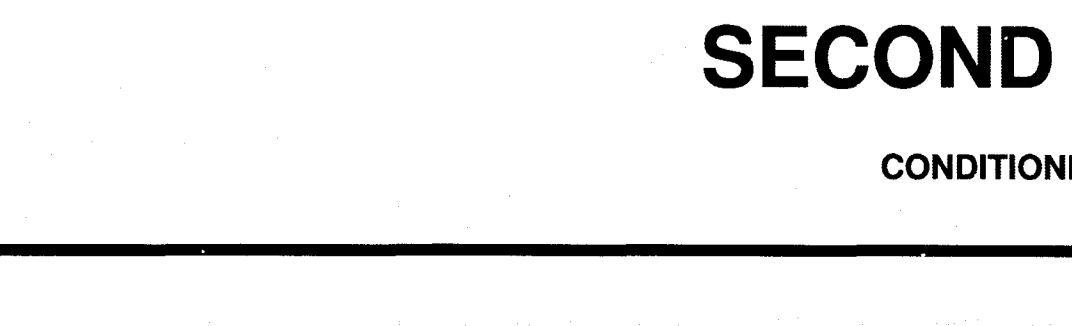
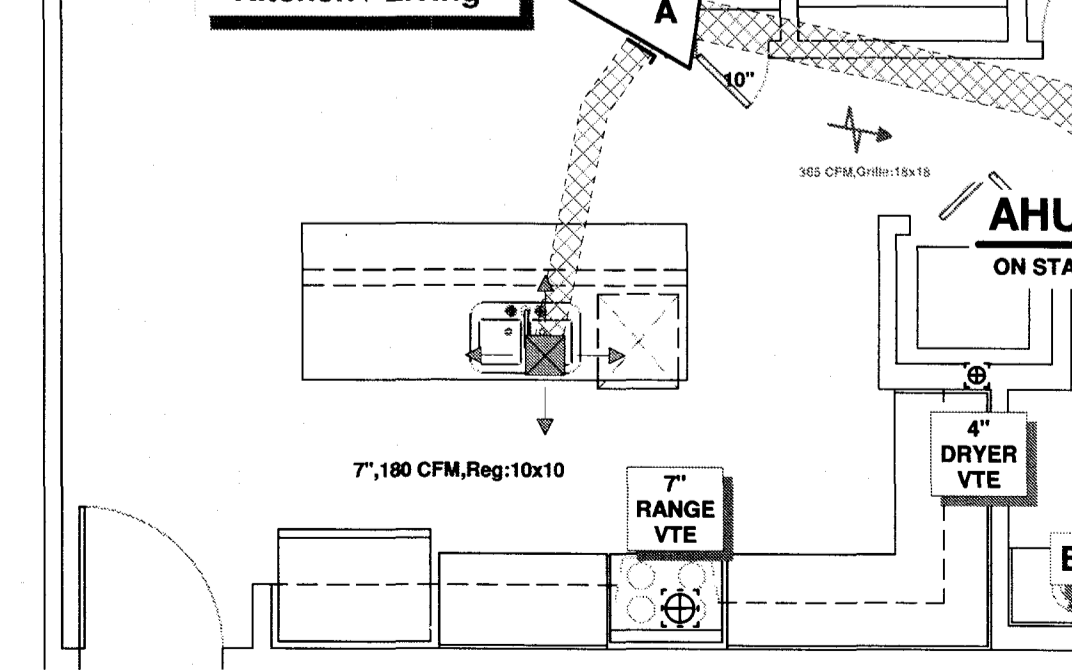
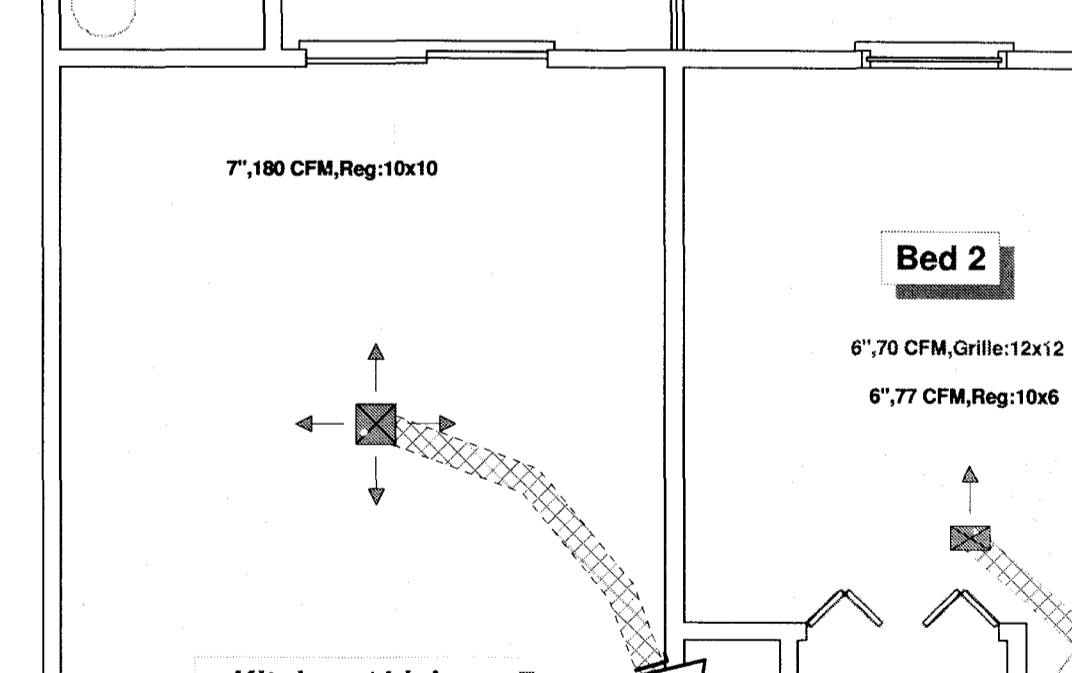
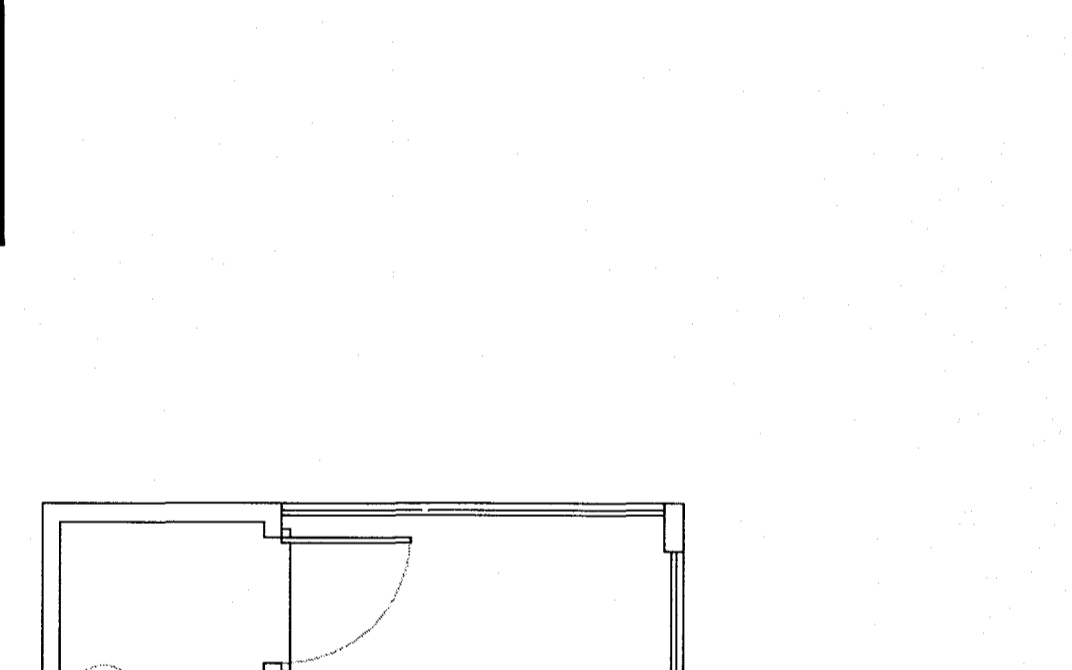
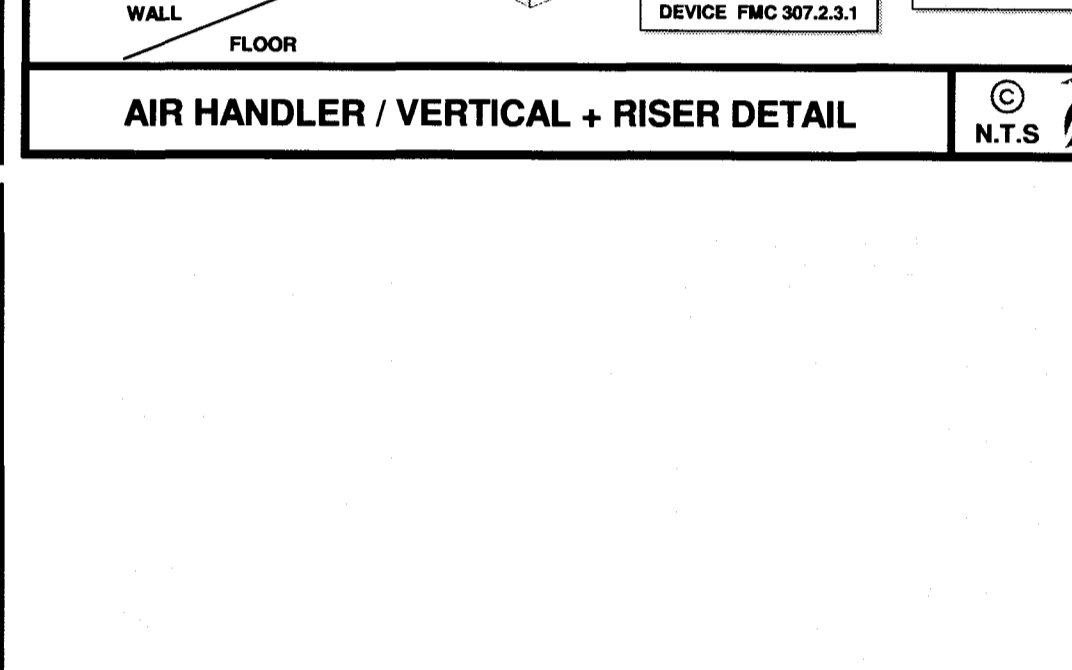
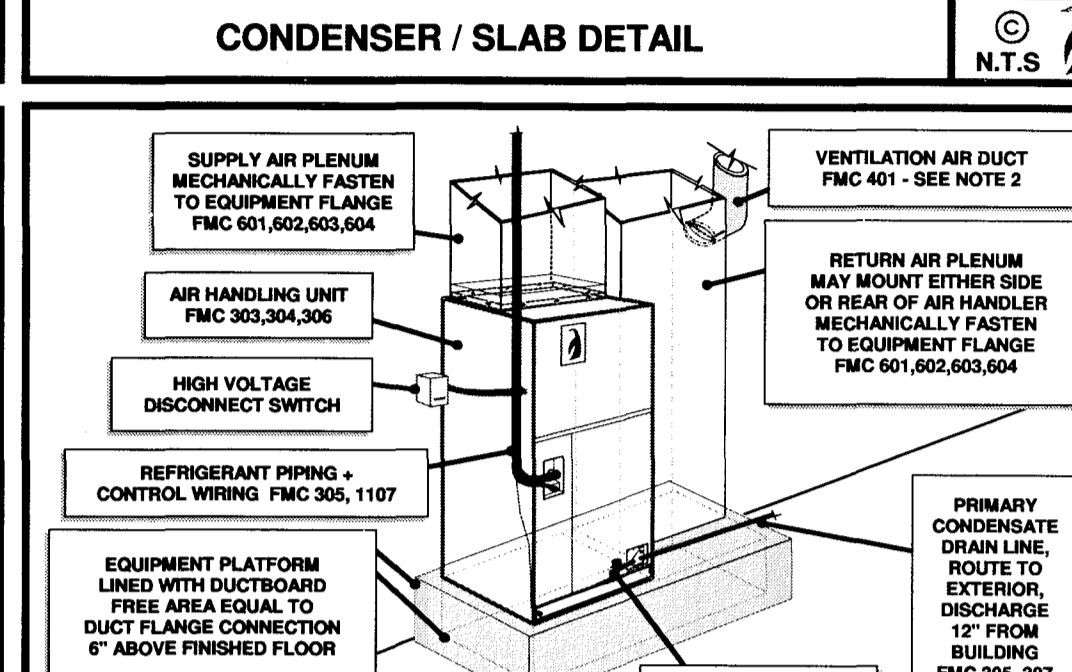
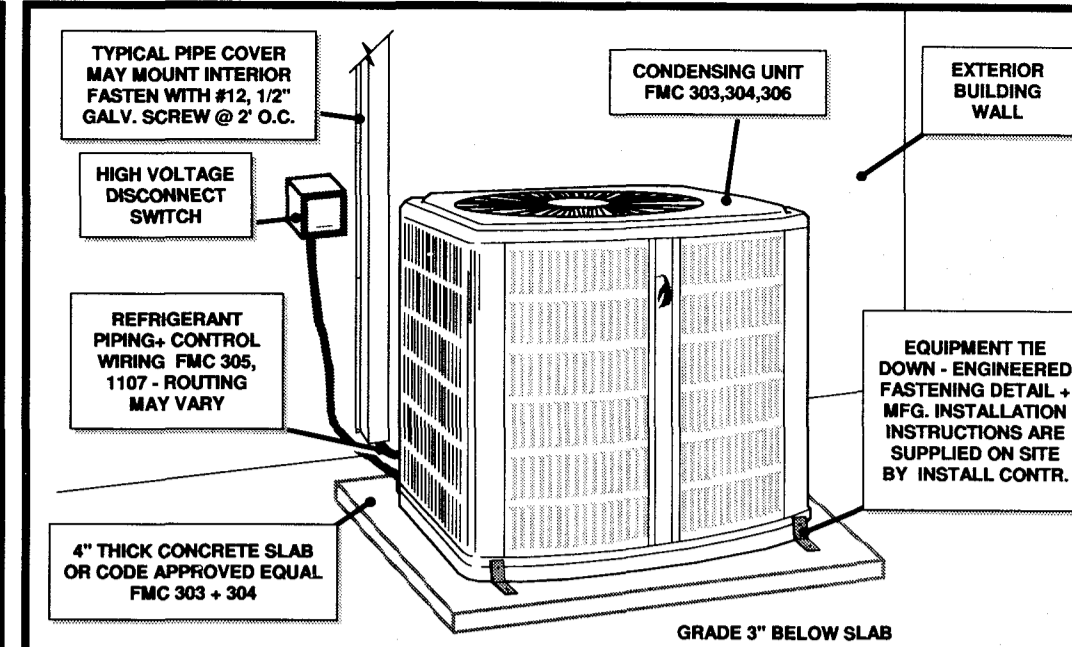
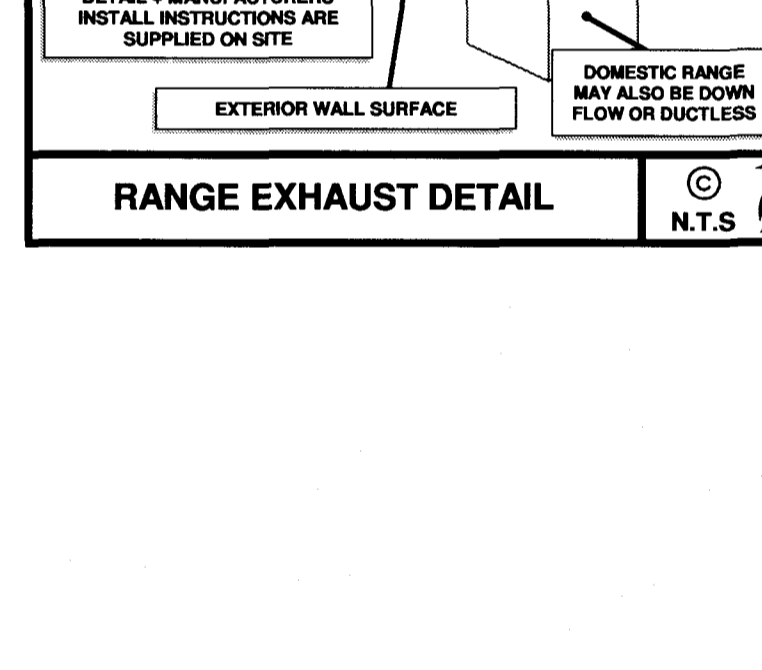
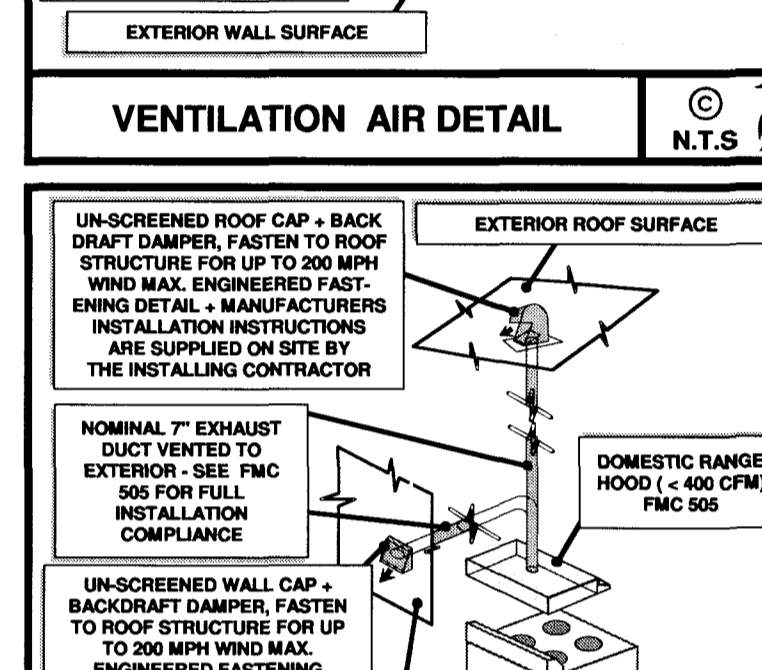
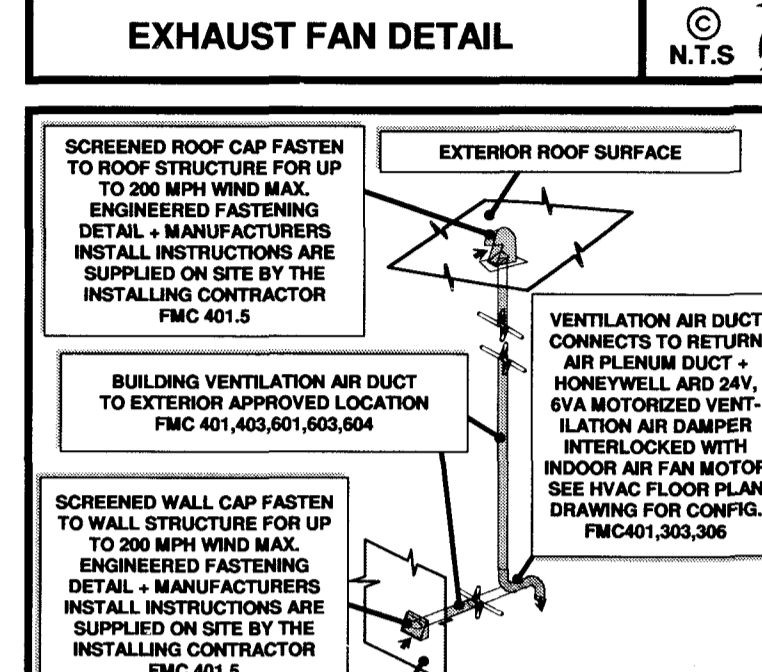
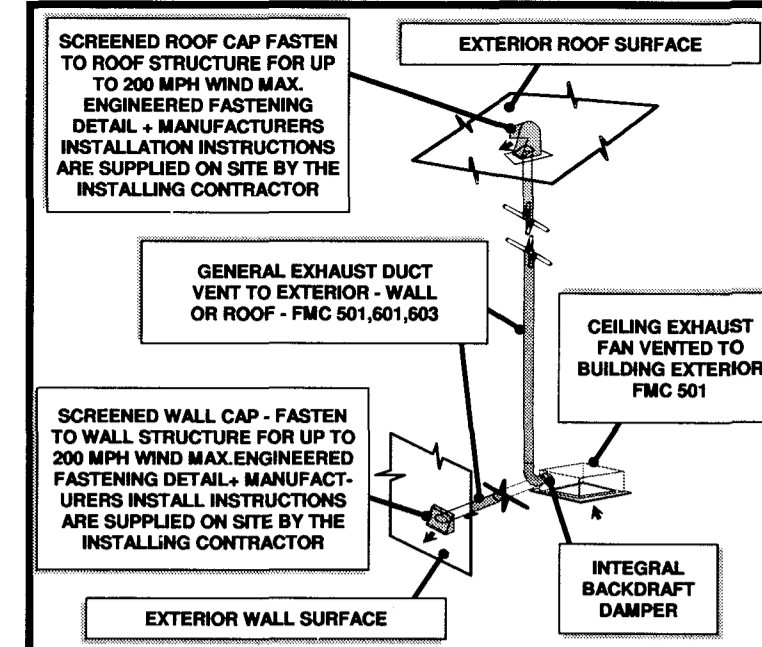
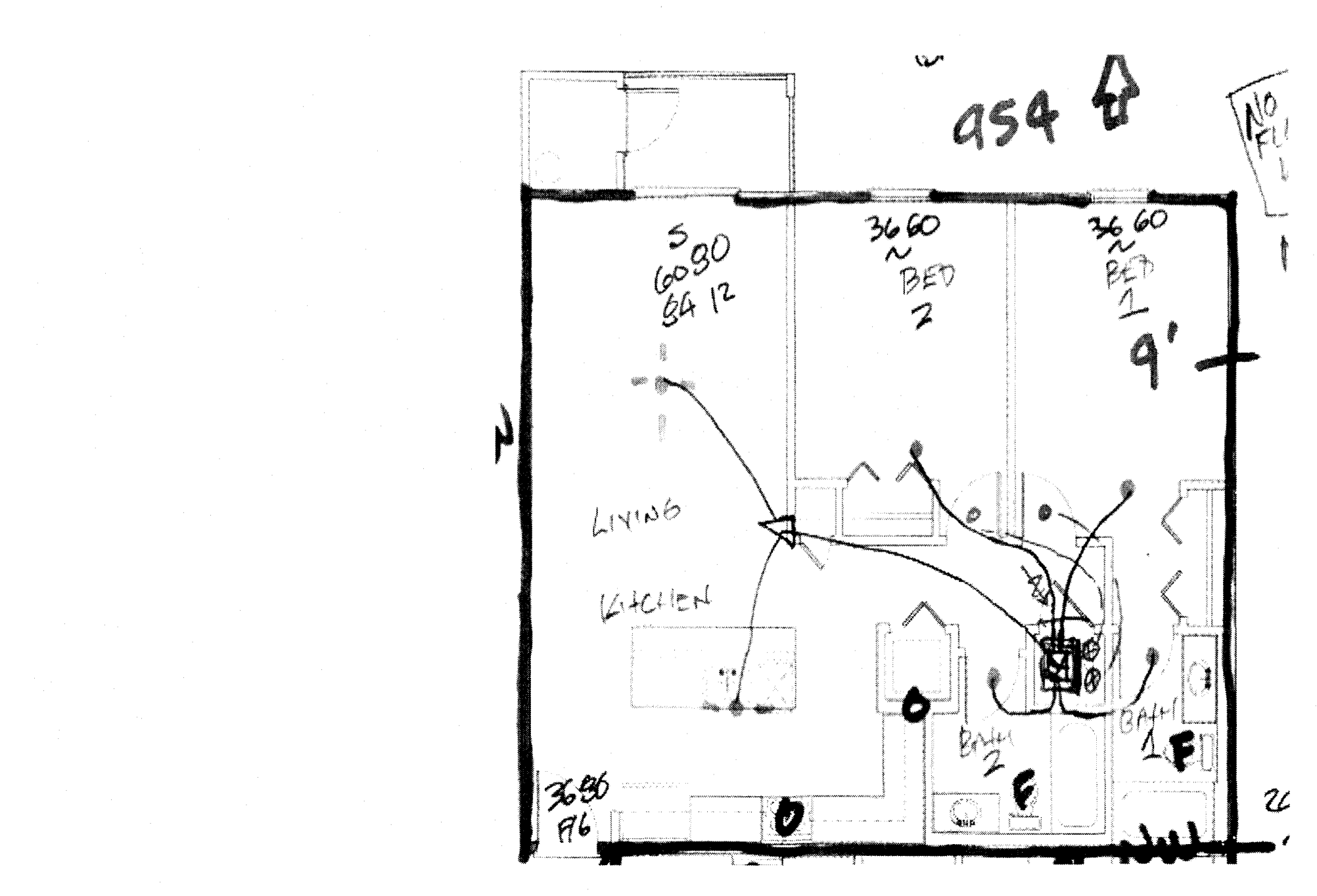


BUILDING EXPOSURE DIAGRAM - INPUT DATA FOR ROOM BY ROOM HEAT LOAD CALCULATIONS (NOT TO SCALE)

Temple Terrace	391300	average height	9.000	v =	8586	occupants	3	vent air cfm	45		
R405.5.2	FECC (eff 12/31/2017)	23.8	COND AREA	954	4104	# BEDS	2	BTUH DAILY	52917.2	BTUH HOURLY	2205
R405.5.2	DWELLING INTERNAL HEAT GAIN CALCULATOR										
17,900 + (23.8 * CONDITIONED FLOOR AREA) + (4104 * NUMBER OF BEDS + 1) = DWELLING DAILY INTERNAL GAINS											

BUILDING COMPONENTS KEY

EXPOSURE	U-FACTOR	CONDITIONED AREA	LOSS	RETURN AIR DEVICE
EXTERIOR WALL EXPOSURE	12.74	3	38	RETURN AIR DEVICE
PARTITION WALL EXPOSURE	3	3	9	SUPPLY AIR DEVICE
ROOM INTERIOR BORDER	12.0	3	9	VENTILATION AIR
FLOOR EXPOSURE	60/60	3	9	HVAC EQUIPMENT
CEILING/ROOF/TOP EXPOSURE	15.15	3	9	SYSTEM ZONE DAMPER
SPACE HEAT TRANSFER ZONE	15.15	3	9	SPRAY FOAM WALL
DEFAULT OVERBOARD PROTECTION BARRIER	15.15	3	9	GROUND REFLECTANCE
RETURN AIR DUCT	15.15	3	9	EXHAUST FAN
SUPPLY AIR DUCT	15.15	3	9	



Comfort System Designed By:
Neil Fimmel
HVAC Designs Inc.
813-865-2258
FL BEERS 884/959
neil@hvacedesigns.com
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HVAC Contractor Signature
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SCALE 1/4" = 1'-0"
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PROJECT NAME: Normandy Apartment Base 954 s
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CLIMATE ZONE 2 CLASS: Apartment base + mirror

Orientation
North

DRAWING DATE
5/17/2018
PERMIT SET

HVAC DRAWING
3 OF 3