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**LOCAL HISTORIC DISTRICT:** Dilworth

**PROPERTY ADDRESS:** 2222 Sarah Marks Avenue

**SUMMARY OF REQUEST:** Addition

**OWNER:** Richard & Lindsay Howarth

**APPLICANT:** Lindsay Howarth

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**Details of Proposed Request**

*Existing Conditions*

The existing 1 story house was constructed in 1929 and listed as a contributing structure. A portion of the house is within the required 35' rear yard. New construction within the required rear yard requires a variance from the Zoning Board of Adjustment.

*Proposal*

The proposal is a second story addition at the rear of the home. Full size windows and other trim details will match existing. Two small windows will be used from an existing dormer that will be removed. Wood lap siding will match existing. The addition is approx. 6' taller than the existing house from ridge to ridge.

**Policy & Design Guidelines for Additions (p. 36)**

Additions to existing structures in Local Historic Districts have a responsibility to complement the original structure. Additions should reflect the design, scale and architectural style of the original structure. The following guidelines are intended to encourage addition designs that are compatible with the existing structure, while not fully mimicking the original design.

1. All additions will be reviewed for compatibility by the following criteria:	
a. <b>Size</b>	<i>the relationship of the project to its site</i>
b. <b>Scale</b>	<i>the relationship of the building to those around it</i>
c. <b>Massing</b>	<i>the relationship of the building's various parts to each other</i>
d. <b>Fenestration</b>	<i>the placement, style and materials of windows and doors</i>
e. <b>Rhythm</b>	<i>the relationship of fenestration, recesses and projections</i>
f. <b>Setback</b>	<i>in relation to setback of immediate surroundings</i>
g. <b>Materials</b>	<i>proper historic materials or approved substitutes</i>
h. <b>Context</b>	<i>the overall relationship of the project to its surroundings</i>

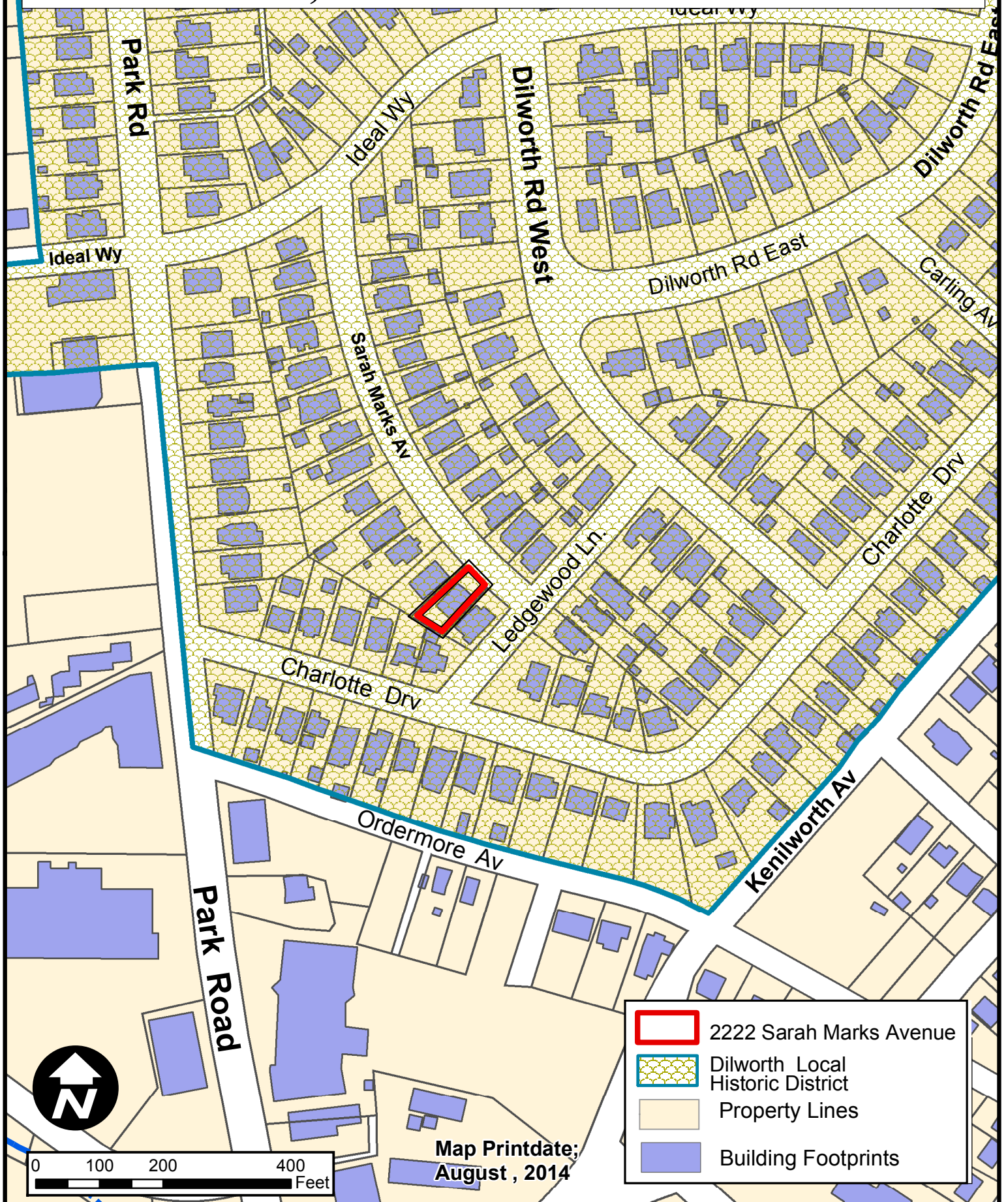
2. Additions must respect the original character of the property, but must be distinguishable from the original construction.
3. All additions to the front or side of existing properties must be of a design that is sensitive to the character and massing of the existing structure.
4. Additions to the front or side of existing structures that are substantially visible from a street must go before the full Commission.

**Staff Analysis**

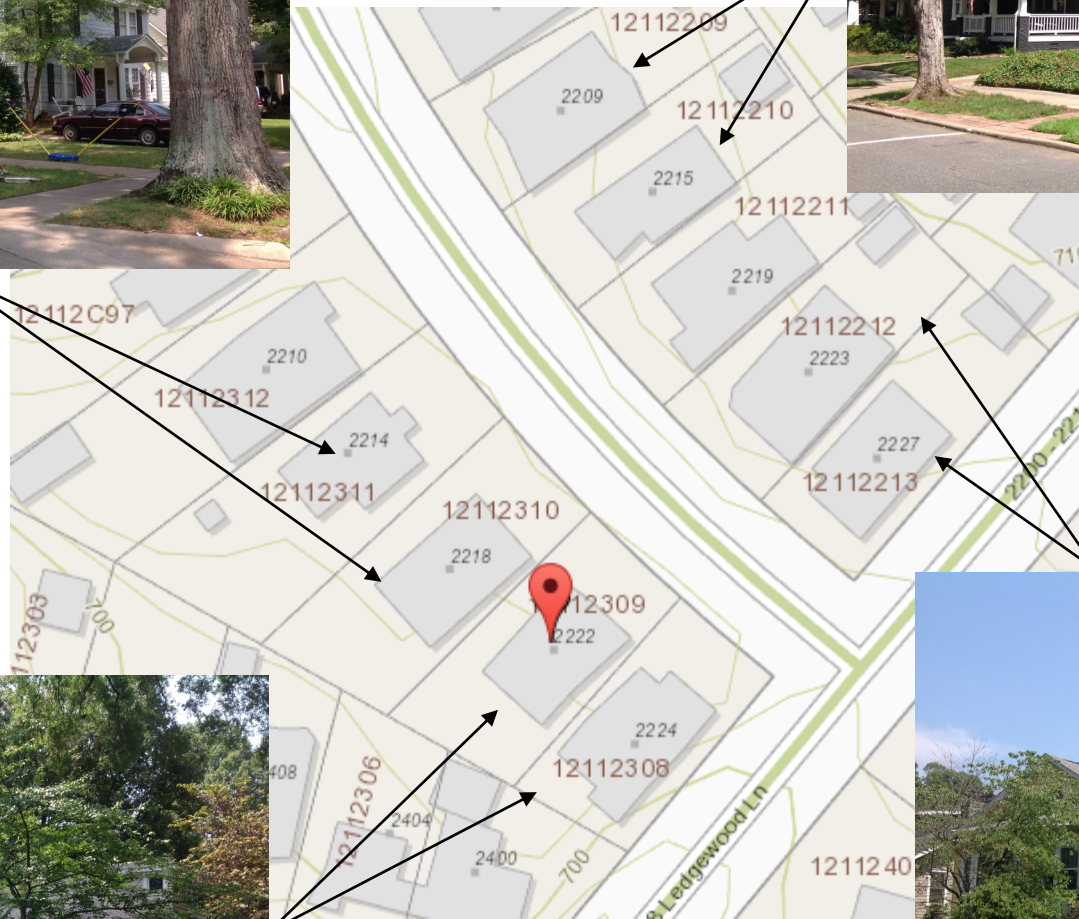
The Commission will determine if the proposed addition meets the applicable guidelines.

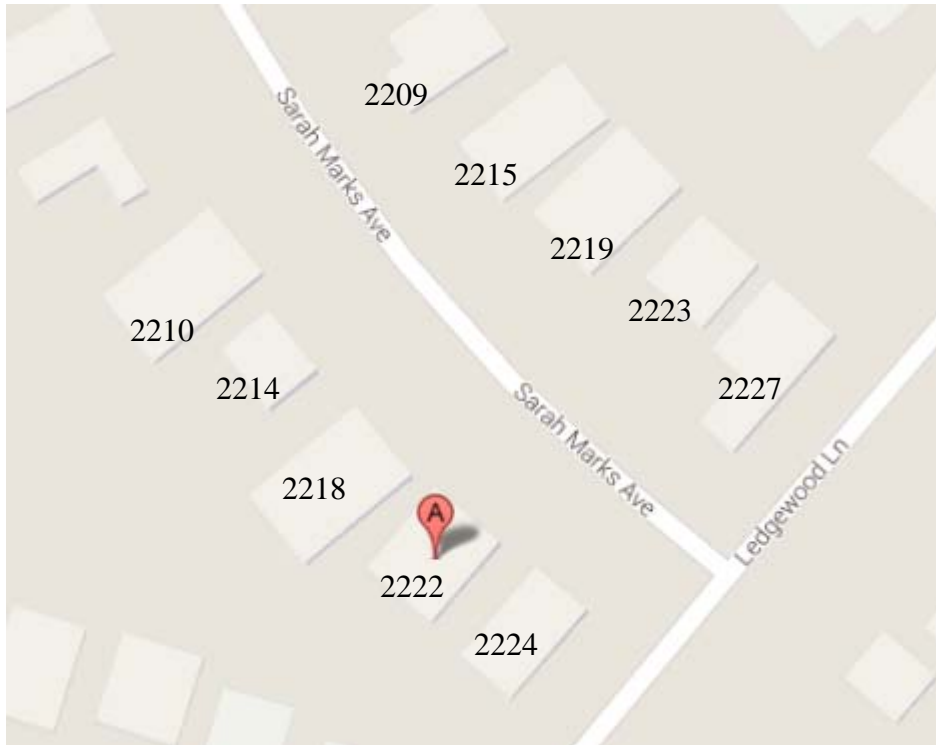
# *Charlotte Historic District Commission - Case 2014-152*

## *Historic District; Dilworth*









**2222 Sarah Marks Ave:**





**2218 Sarah Marks Ave: (Directly to Right)**



**2214 Sarah Marks Ave: (Two Houses to Right)**



**2210 Sarah Marks Ave: (Three Houses to Right)**



**2209 Sarah Marks Ave: (Across the Street)**





**2215 Sarah Marks Ave: (Across the Street)**



**2219 Sarah Marks Ave: (Across the Street)**



**2223 Sarah Marks Ave: (Across the Street)**



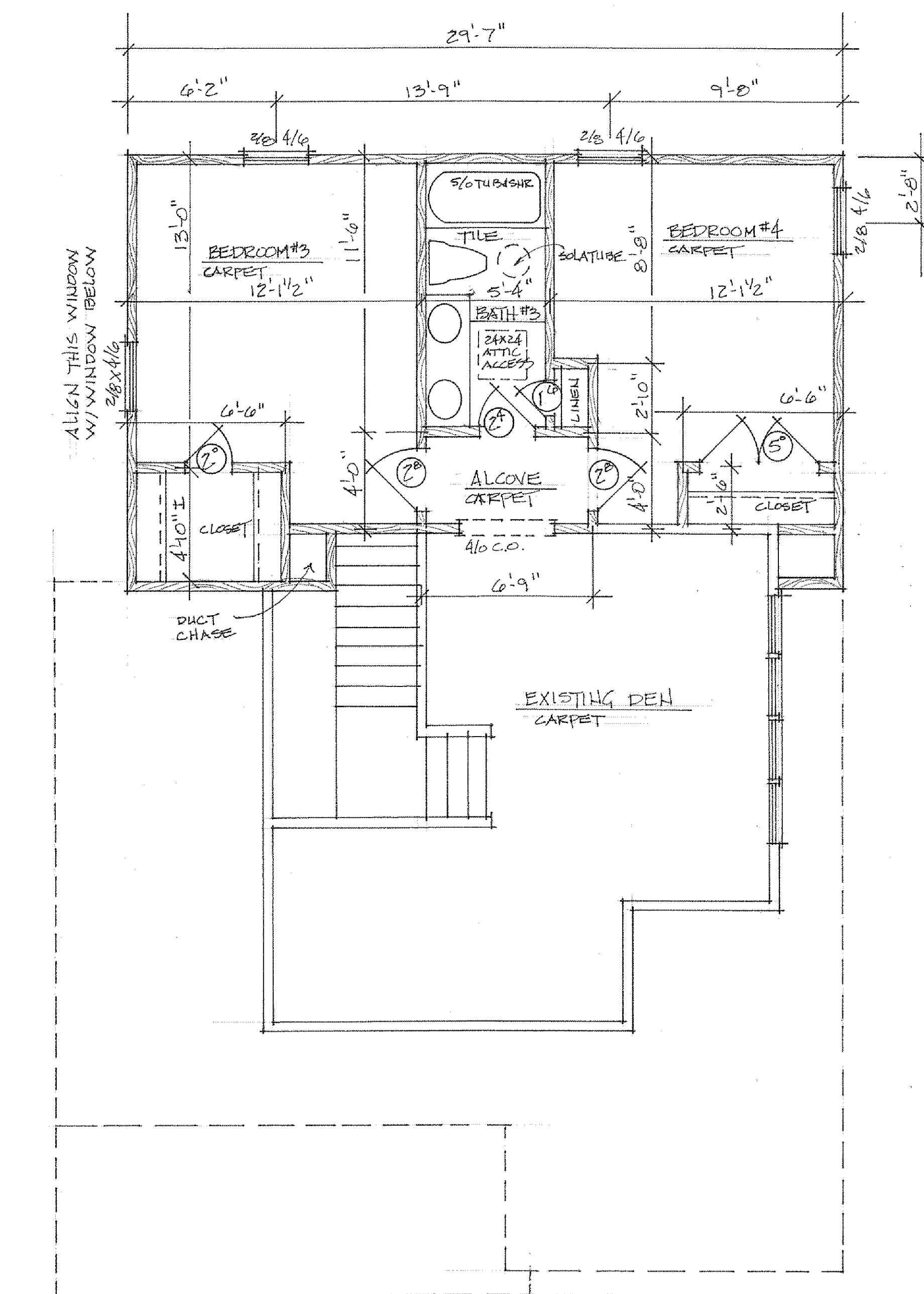
**2227 Sarah Marks Ave: (Across the Street)**



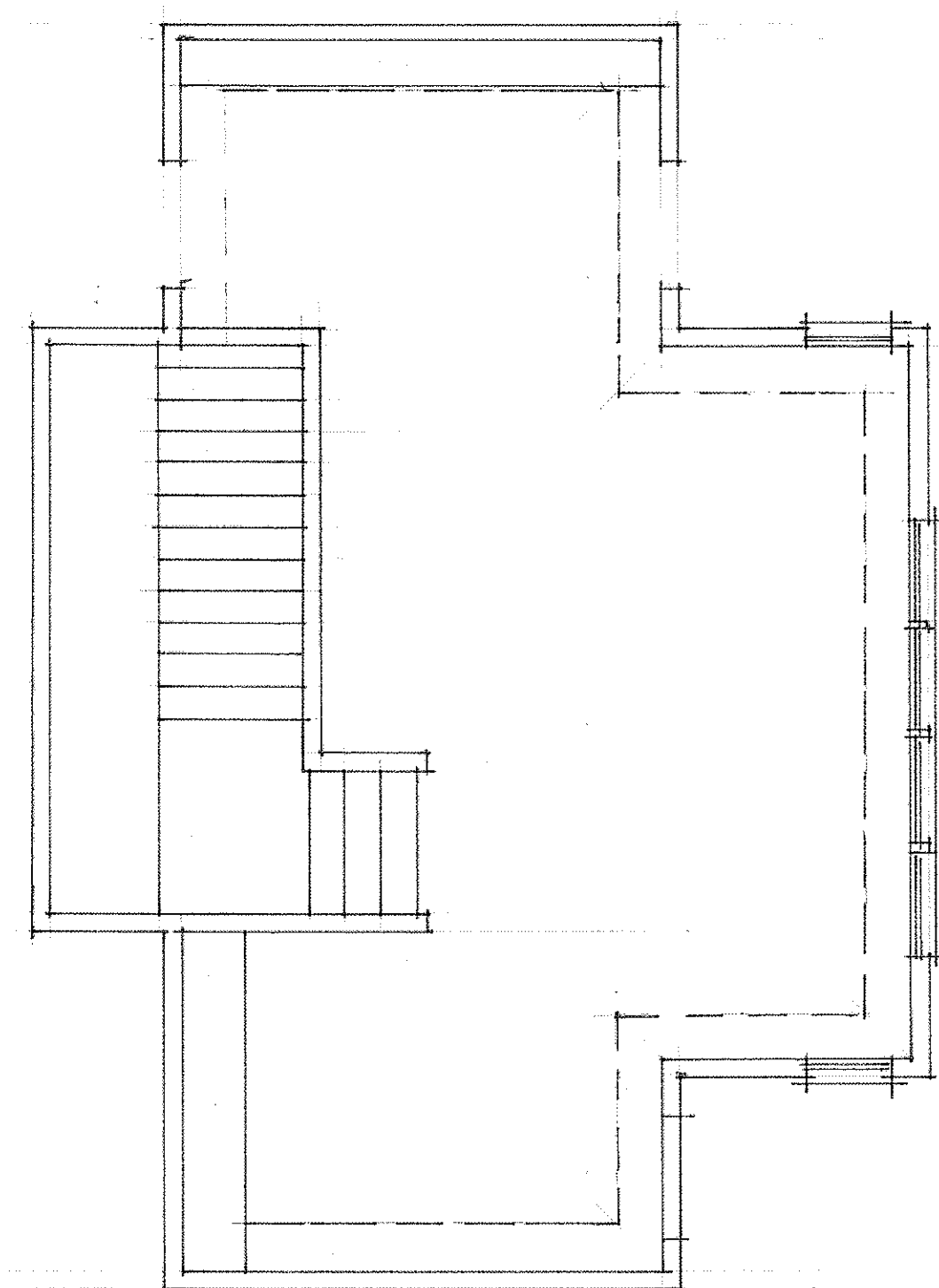
**2224 Sarah Marks Ave: (Directly to Left)**



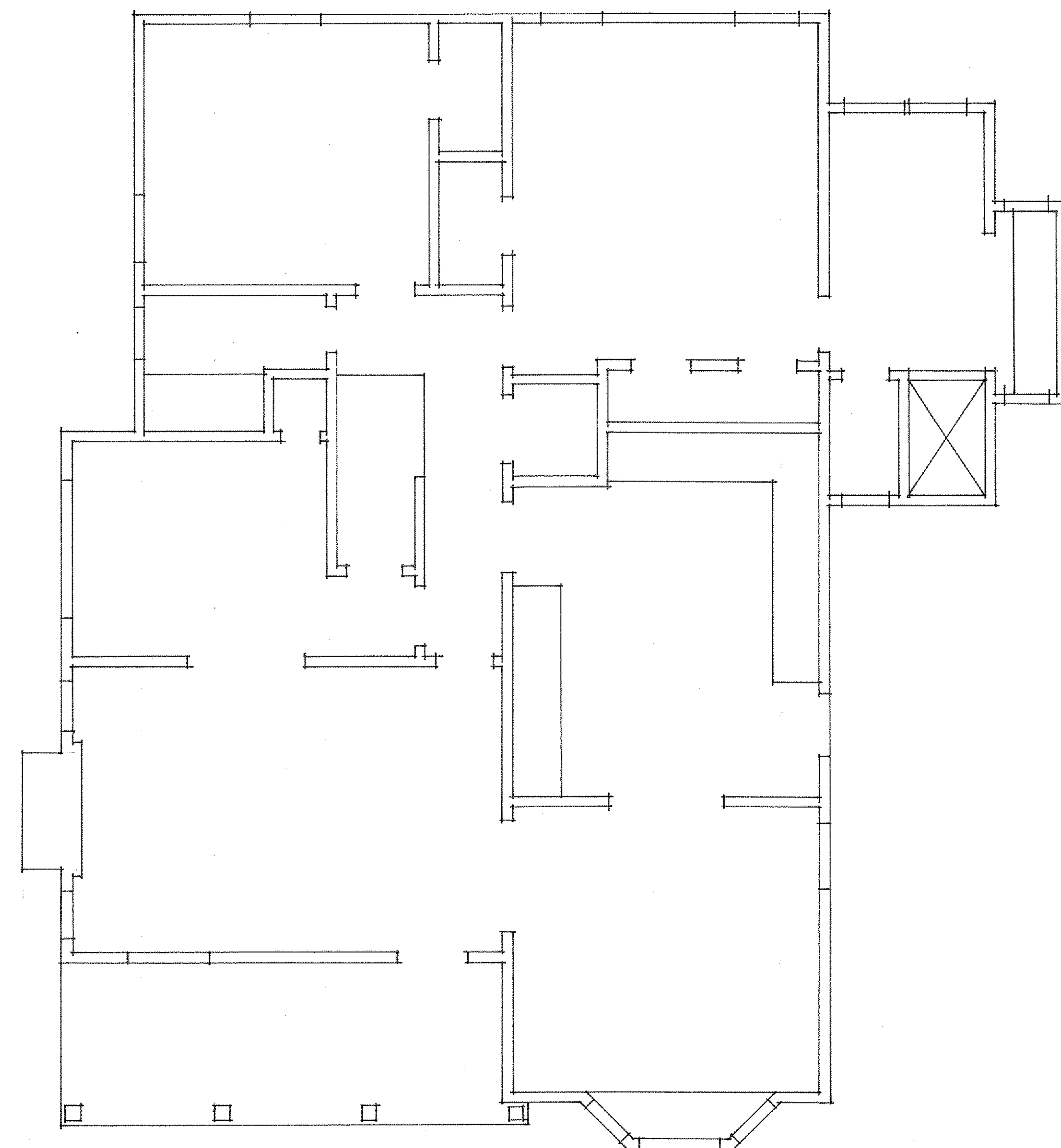




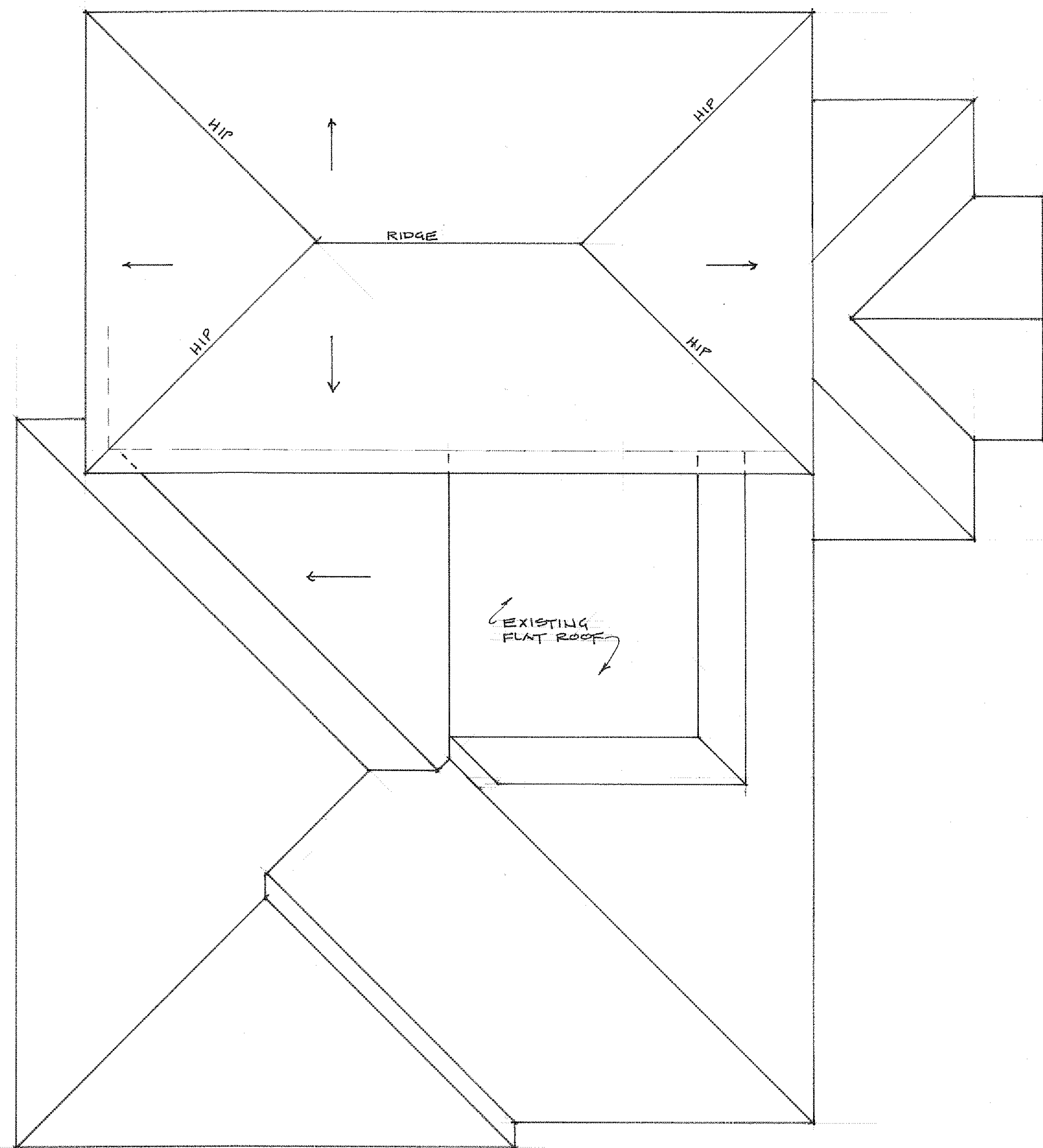
REVISED SECOND FLOOR PLAN  
1/4"=1'-0"



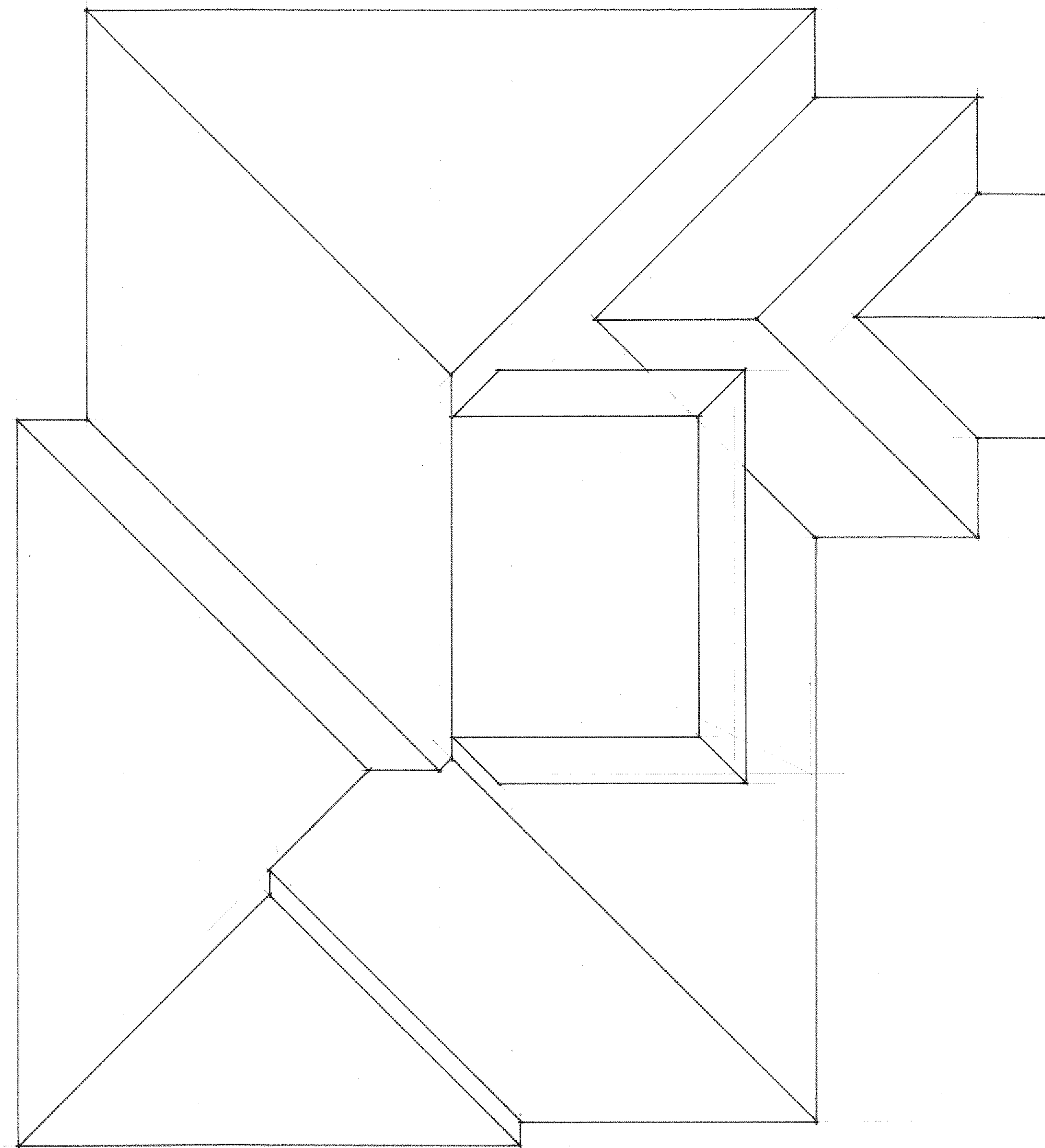
EXISTING SECOND FLOOR PLAN  
1/4" = 1'-0"



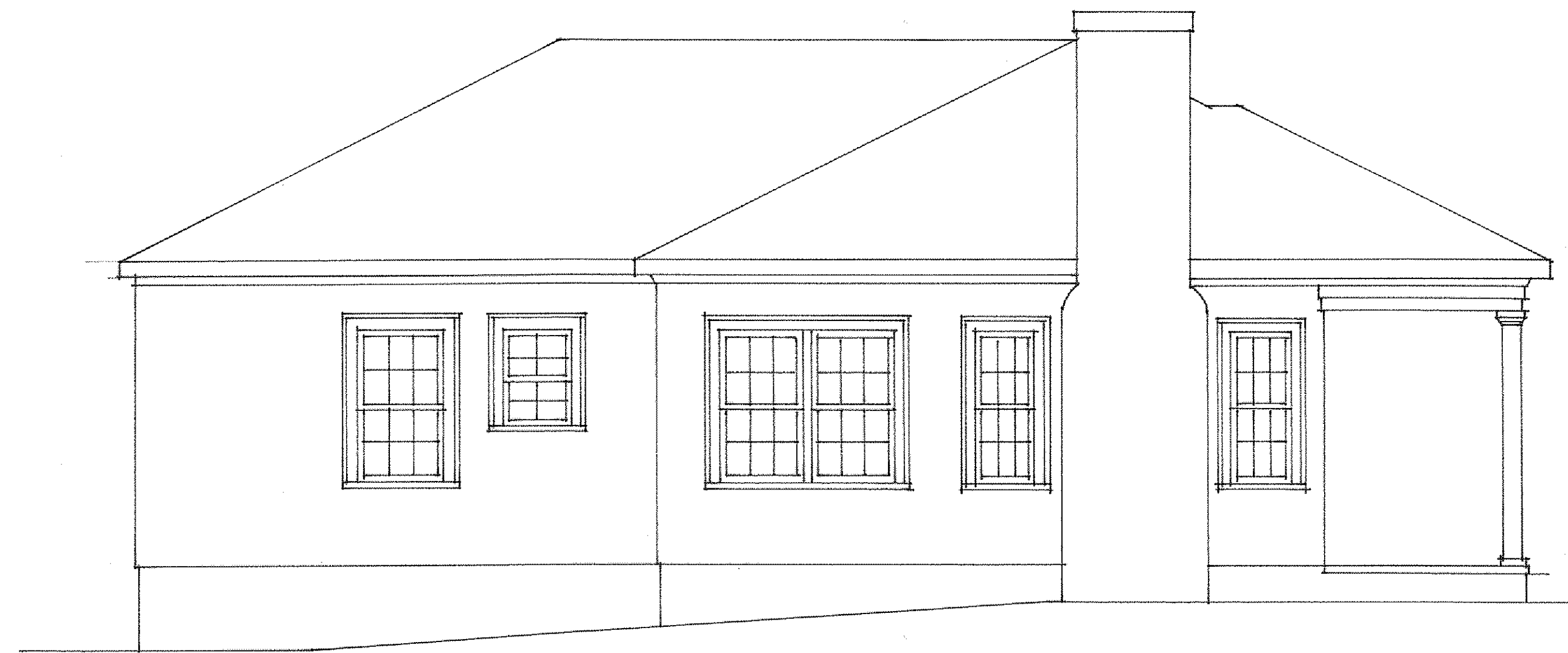
EXISTING FIRST FLOOR PLAN  
1/4"=1'-0"  
NO WORK THIS FLOOR. FOOTPRINT  
OF HOUSE DOES NOT CHANGE.



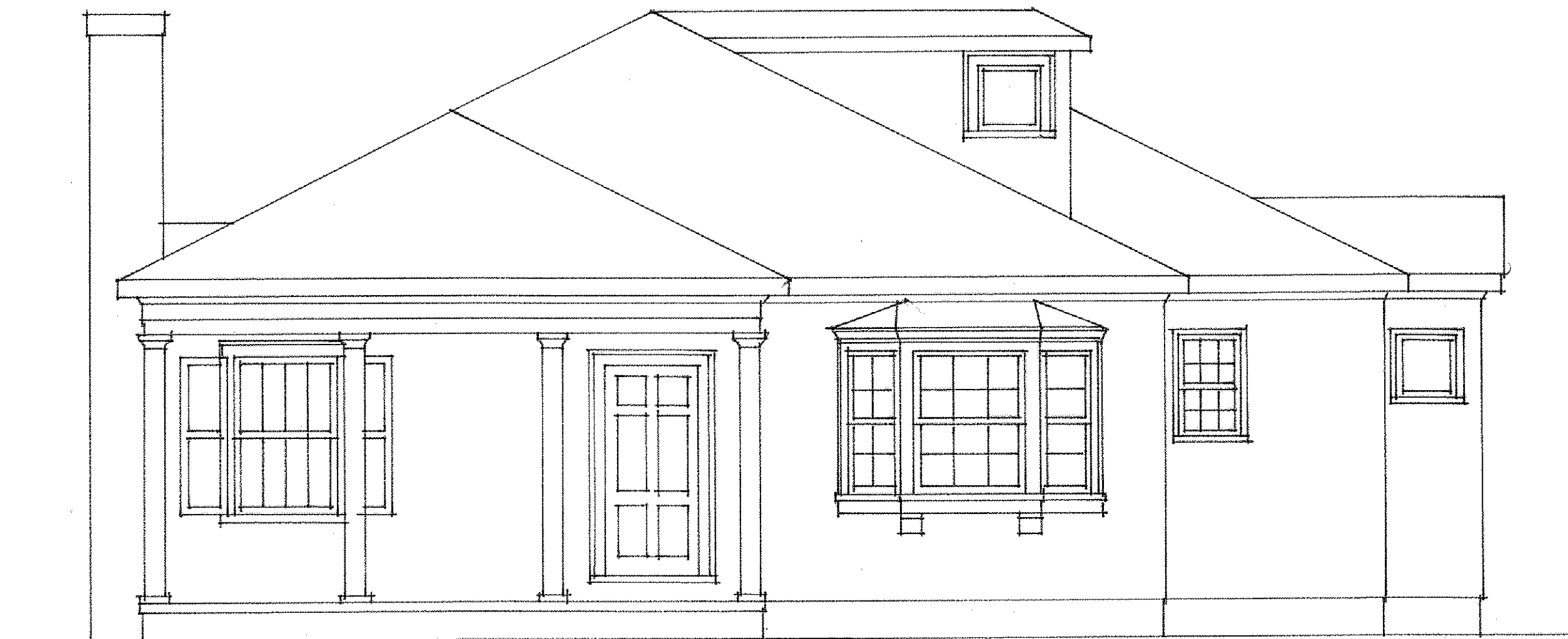
REVISED FLOOR PLAN  
1/4"=1'-0"



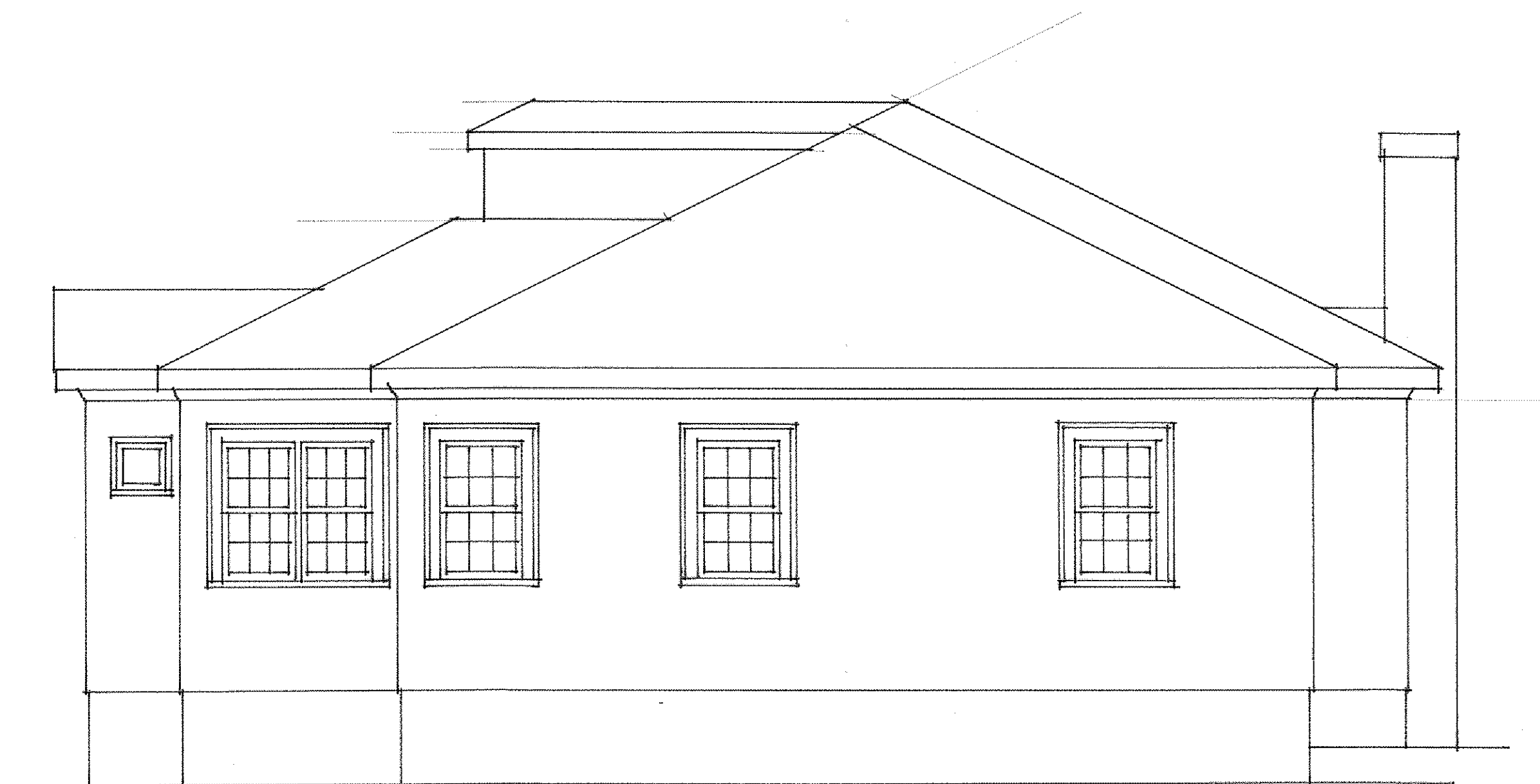
EXISTING ROOF PLAN  
1/4"=1'-0"



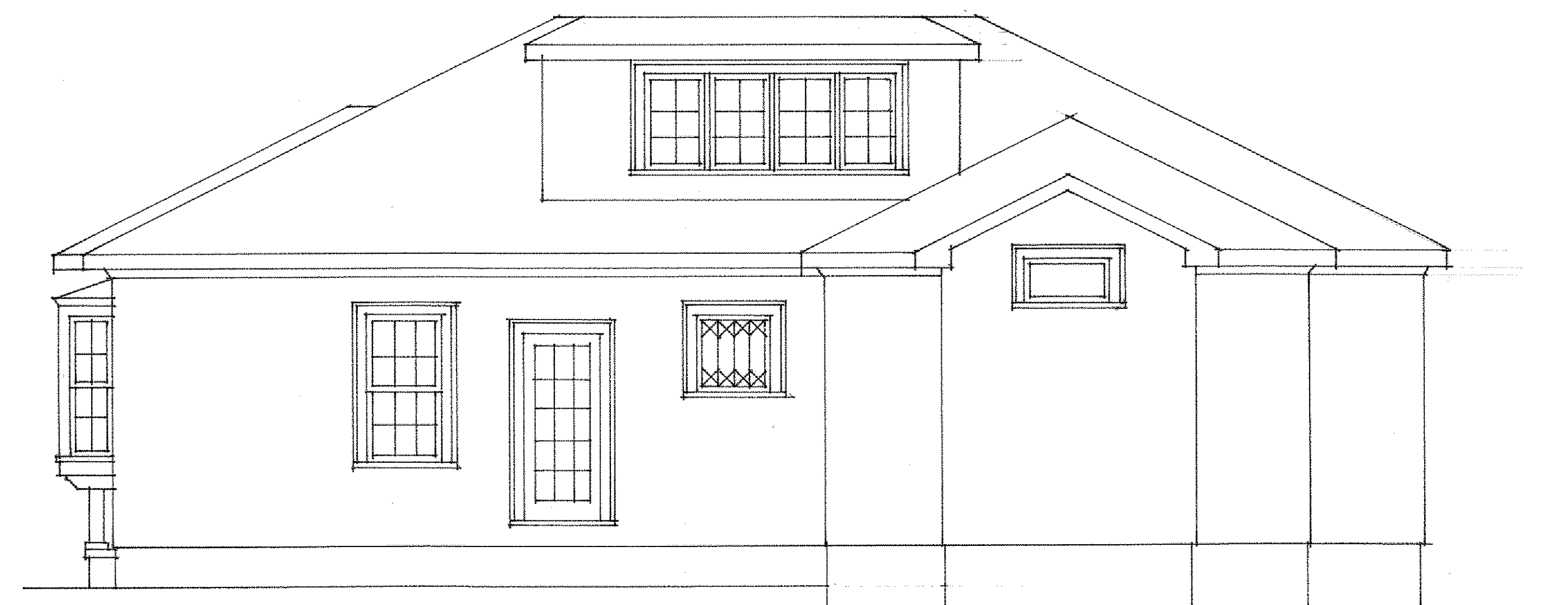
EXISTING LEFT SIDE ELEVATION  
1/4"=1'-0"



EXISTING FRONT ELEVATION  
1/4"=1'-0"



EXISTING REAR ELEVATION  
1/4"=1'-0"



EXISTING RIGHT SIDE ELEVATION  
1/4"=1'-0"

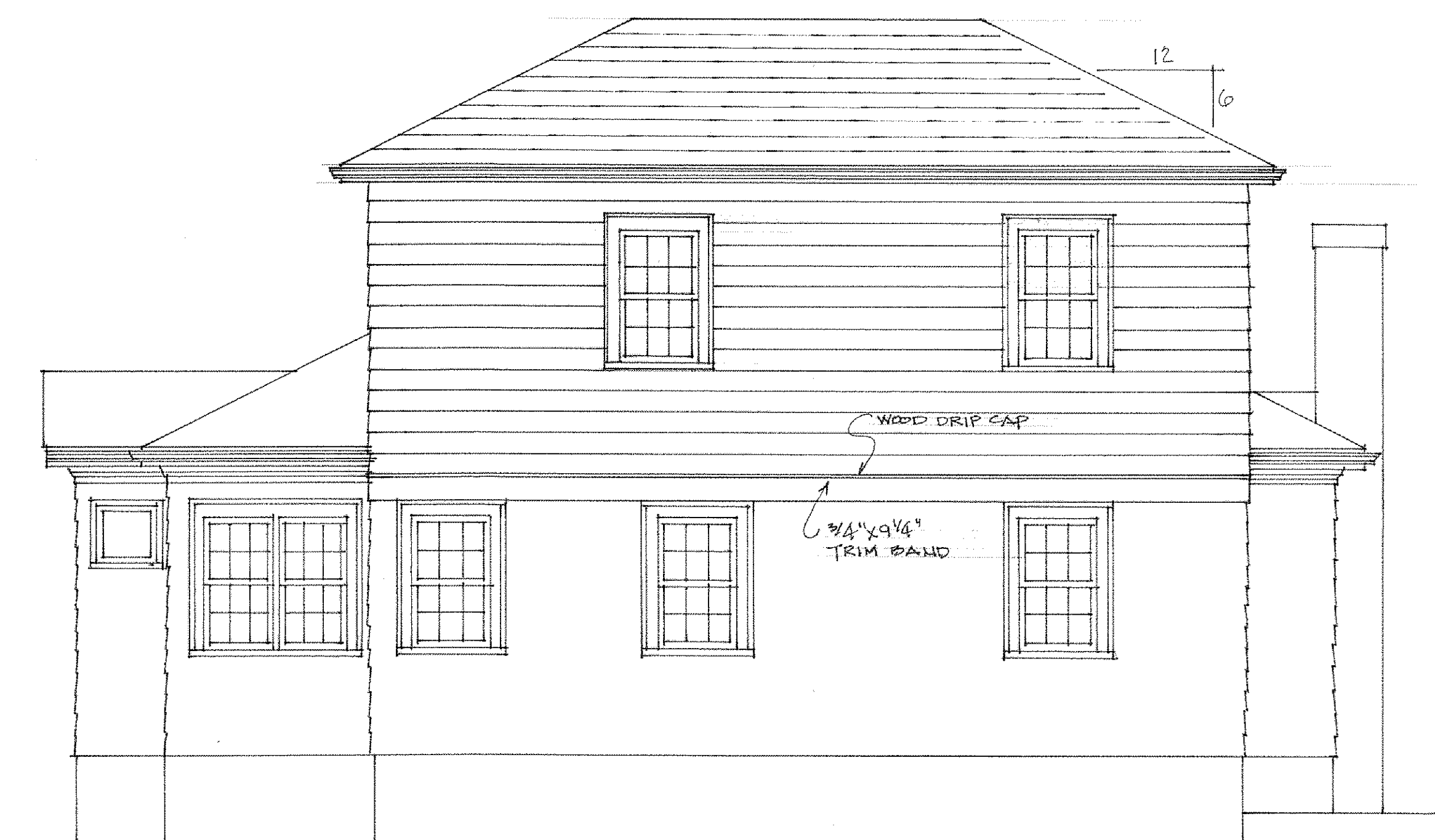




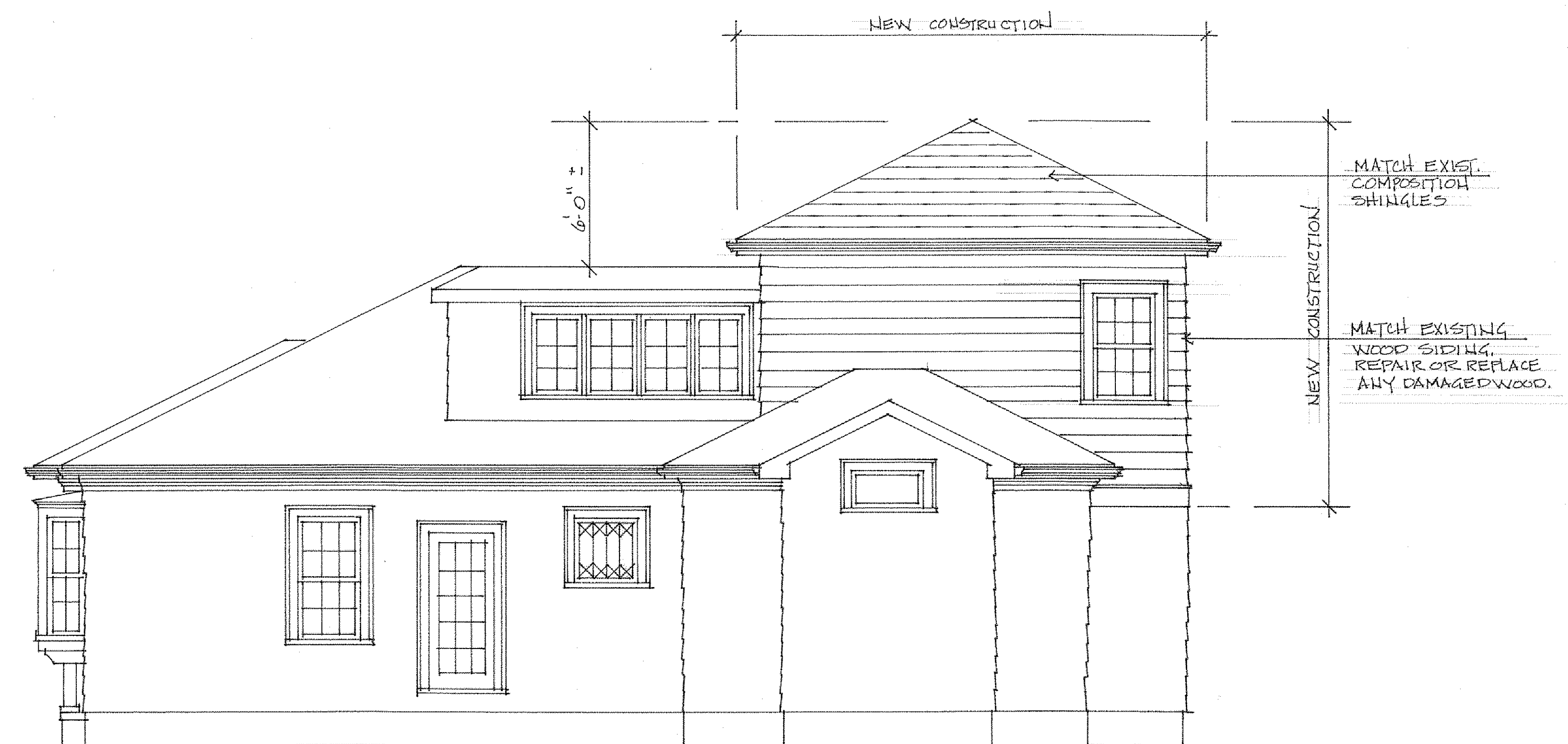
LEFT SIDE ELEVATION  
1/4"=1'-0"



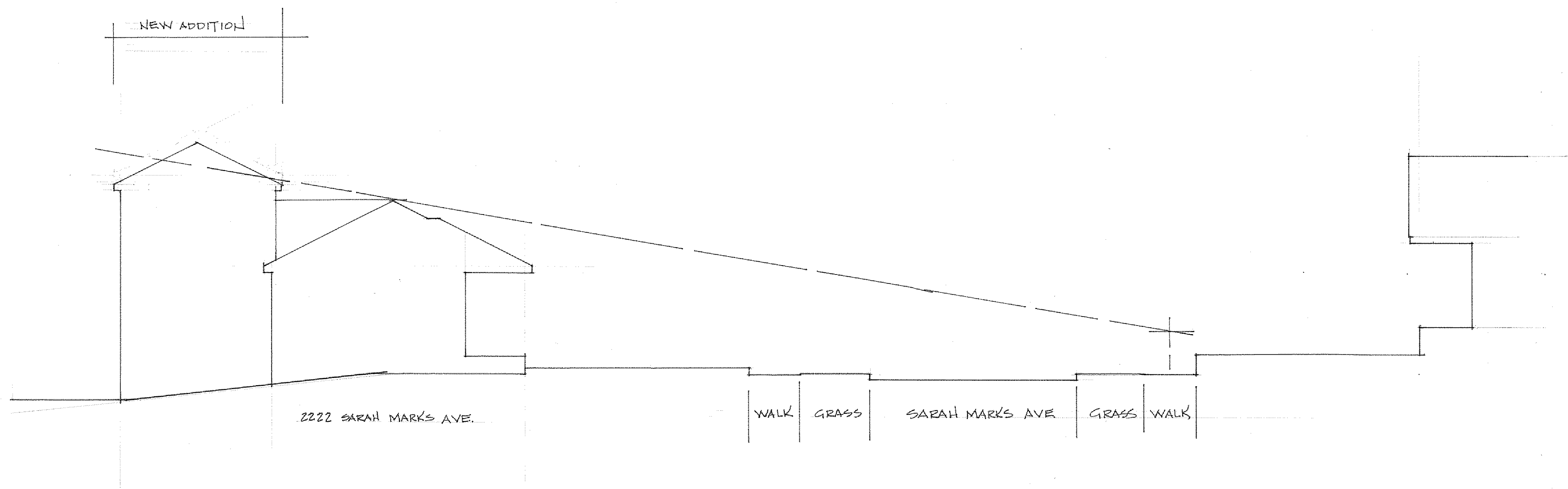
FRONT ELEVATION  
1/4"=1'-0"



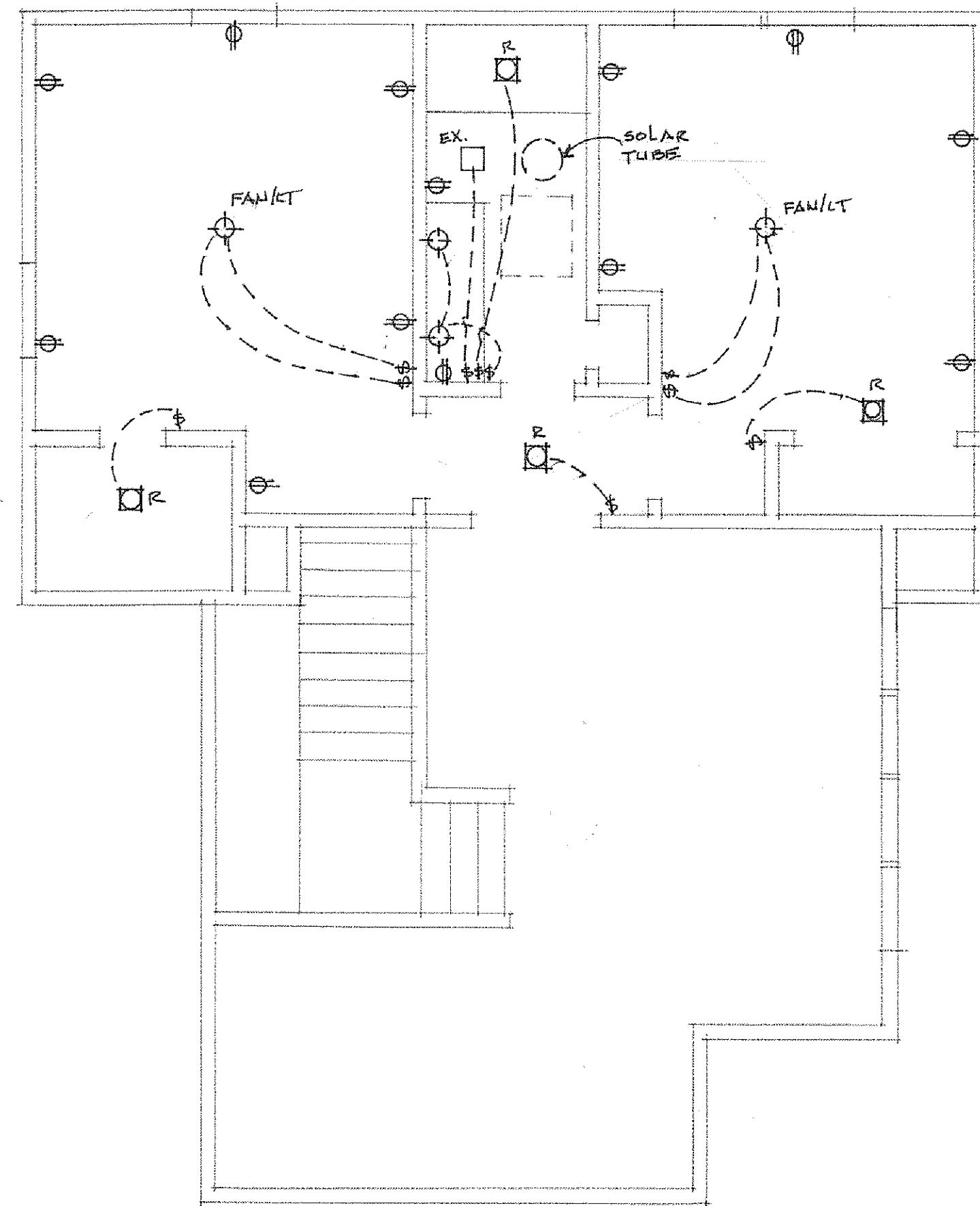
REAR ELEVATION  
1/4"=1'-0"



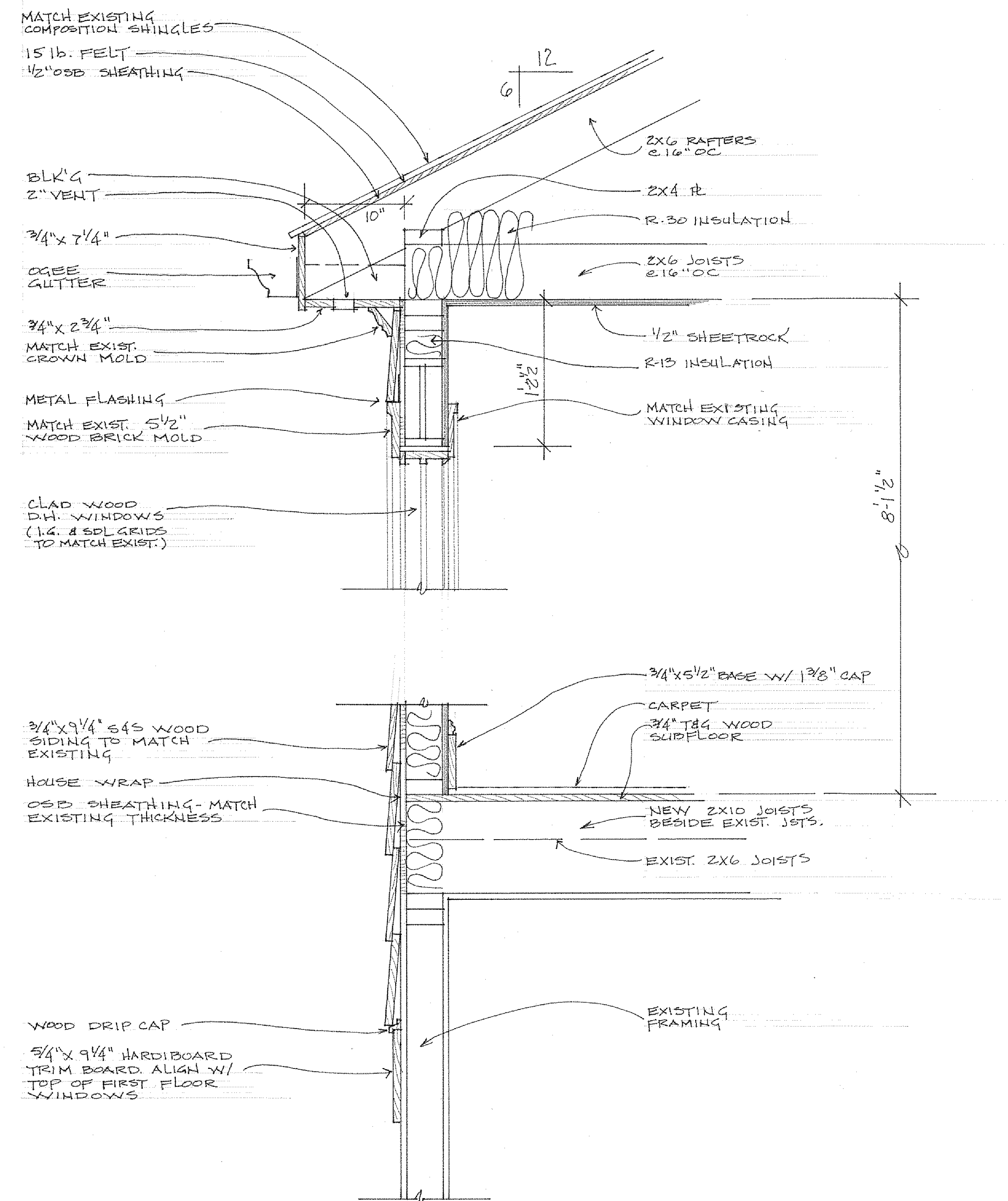
RIGHT SIDE ELEVATION  
1/4"=1'-0"



PERSPECTIVE STREET VIEW



ELECTRICAL PLAN  
1/4"=1'-0"



NEW WALL SECTION  
1 1/2"=1'-0"

Addition to

Howarth Residence

2222 Sarah Marks Ave. Charlotte, NC

Custom Residential Design by

Ken James

9628 Twin Falls Court Mint Hill, NC

704-277-2788



1. DESIGN LOADS:

- 1.1 Design loads are all dead loads plus:
- A. Main floor live loads (kitchen level) .....40 PSF
- B. All other floors .....40 PSF
- C. Balconies .....60 PSF
- D. Decks .....50 PSF
- E. Suspended Garages .....50 PSF
- and 2000 Pound Point Load at any Location
- F. Attic floor live loading with the following:
- i. Areas accessible by permanent stairs .....30 PSF
- ii. With Storage .....20 PSF
- iii. Without Storage .....10 PSF
- G. Roof live load .....20 PSF
- H. Wind load .....90 MPH (3 Second Gust)
- I. Conforms with Seismic Design Criteria for Zone C.
- J. Snow load .....20 PSF
- 1.2 All designs are in accordance with the 2012 North Carolina Residential Building Code, designed using ASD 2301.2.1 for all wood and steel structural elements and LRFD 2301.2.2 for all concrete structural elements..

2. FOOTINGS AND FOUNDATIONS:

- 2.1 Soil bearing capacity assumed as 2000 PSF unless noted otherwise or as determined by standard penetrometer test.
- 2.2 All continuous wall footings for one or two-story houses are 10" thick x 20" wide. Reinforcing in footings should be two (2) #4 bars if not noted on the plans. Reinforcement not required by Code, unless footings are on disturbed soil or compacted fill.
- 2.3 All interior piers are 8"x16" CMU up to a maximum height of 32". All piers over 32" high must be filled with Type S mortar. Maximum height for 8"x16" filled pier is 6'-4". Piers larger than 8"x16" are noted on the plans or as required by height. Pier cap blocks should be 8" of solid masonry.
- 2.4 Footings for 8"x16" piers are 20"x30"x10" unless noted otherwise. Reinforcing to be as noted on plans.
- 2.5 Concrete shall have a compressive strength of 3000 PSI in 28 days unless noted otherwise. No concrete shall be poured in temperatures below 40° Fahrenheit unless heat to be provided during curing for two days. The bottom of all footings must be a minimum of 12" below grade.
- 2.6 All rebar splices shall be a minimum of 2'-0" unless otherwise noted.
- 2.7 Any special foundations for structures shall be designed by a Licensed Professional Engineer upon receiving soil capacity specifications for all soil considered to affect the structure.
- 2.8 Chimney footing sizes are shown on the structural design drawings. Masonry or Isokern style chimney footings must be a minimum of 12" thick with 12" projection on all sides.
- 2.9 Foundation walls back-filled with soil and supporting structural framing shall be constructed as shown on detail sheet.
- 2.10 Special retaining wall designs to be shown on detail sheet.

NOTE: ALL POINT LOADS FROM ROOF BRACES, JACK STUDS, AND BEAM SUPPORTS - WHETHER WOOD OR STEEL - CANNOT BEAR ON SHEATHING ALONE. BLOCKING EQUAL TO OR BETTER THAN THE SPECIFIED STUDS OR COLUMN PROVIDED FOR POINT LOAD SUPPORT MUST BE CARRIED THROUGH ALL CONSTRUCTION TO THE FOUNDATION.

3. FRAMING CONSTRUCTION - OTHER THAN ROOF:

- 3.1 Crawlspce girders and band as noted on plans. Maximum clear span to be 4'-8" (6'-0" o/c spacing of piers) unless noted otherwise.

To avoid most cracking in finished hardwood floors over any girders, use the following procedure:

- A. Nailing Patterns
- i. All floor joists must be toe-nailed to their support girders with a minimum of 3-8d nails at each end from each side. Larger nails will split and render the toe-nail ineffective. No end-nailing through the girder or band is permitted except for temporary construction purposes.
- ii. If dropped girders are used, end-lap all joists 12" minimum and side-nail each with a minimum of 3-16d nails at each end of each joist. Ledger strips should be nailed with 3-16d nails at each joist end, with nails spaced 3" apart.
- iii. Nail multiple-member built-up girders with three rows of 16d nails staggered at 32" o/c, 2" down from the top, 2" up from the bottom, and at mid-depth. Use 3-16d nails at each end of each piece in the joints through the members making up the multiple-girder. This nailing pattern will insure a tight floor from outside of house to outside so that when the framing shrinks during the first heating season, the shrinkage will be uniformly distributed over the entire floor.
- If the girder nailing pattern is omitted, then the shrinkage will accumulate over the girders and an objectionable crack will develop in the finished hardwood floor over the girder line.
- B. At all girders where the joists change direction, install bridging at 6" o/c for a minimum of six joist spacings beyond any joist direction change. This will insure shrinkage distribution over the floor and not let it accumulate at the girder.
- C. There must be wood blocking through-bolted to the steel beam with joist toe-nailed and attached to the beam with metal hangers under any hardwood floors that pass over a steel beam supporting floor joists.





3. FRAMING CONSTRUCTION - OTHER THAN ROOF (CONTINUED):

- 3.2 All crawlspace framing lumber must be Southern Yellow Pine. All remaining floors may be Spruce Pine Fir #2 unless noted otherwise.
- 3.3 Steel beams must have 5-2x4 jack studs under each end support unless noted otherwise on the structural plans. All studs must be nailed together with two (2) vertical rows of 16d nails at 8" o/c, unless noted otherwise.
- 3.4 LVL beams must have 3-2x4 jack studs under each end support unless noted otherwise on the structural plans. All studs must be nailed together with two (2) vertical rows of 16d nails at 8" o/c, unless noted otherwise.
- 3.5 Masonry lintels:
- A. For spans up to 6 ft: Use 3½"x3½"x¼" steel angles.
- B. For spans from 6 ft to 10 ft: Use 5"x3½"x5/16" steel angles.
- C. For spans from 9 ft to 18 ft: Use a pair of 9 gauge wires in each of the first 3 courses of brick on a 5"x3½"x5/16" steel angle. Lap all 9 gauge wire splices 12" minimum and extend wires 12" minimum into jambs. Temporarily support steel angle before laying masonry. Shoring may be removed seven days following the installation of masonry.
- D. When structural steel beams with bottom plates are used to support masonry, the bottom plate must extend the full length of the steel beam. This provides support to the ends of the plate by bearing on the adjacent masonry jambs. The beam should be temporarily shored prior to laying the masonry. The shoring may be removed five days after laying the masonry.
- 3.6 All masonry or stone veneer over lower roofs must have a structural steel angle lag bolted to the adjacent wall studs to prevent sliding of the veneer. A minimum of a triple rafter must be installed below masonry climbs. Thin-set veneer attachments provided by the contractor may supercede this specification. Please verify the alternative attachment procedure with the Engineer of Record.
- 3.7 All rafter braces must have 2 studs from the wall top plate through all floors solid to the foundation or supporting beam below. No braces shall be attached to the top wall plate without studs directly under them.
- 3.8 Where non-bearing parallel partitions fall between floor joists, 2x4 ladders @ 16" o/c must be placed perpendicular to the joists to support the plywood decking or double joist installed directly below wall.
- 3.9 All wood I-joists must be braced in accordance with the manufacturer's directions plus any details shown on the plans. Load bearing partitions, jacks, beams and column supports must be solidly blocked through the floor as the joists and plywood may not be able to carry the concentrated point loads. All point loads must be carried to the foundations with blocking and/or beams. (NOTE: All beams and double joists, etc., have been shown for a load bearing purpose. Placement of the load carrying members shown in the plans in locations other than under the structural element they are intended to carry is the responsibility of the contractor. Exact beam locations are not to be scaled from the framing plans.)
- 3.10 All two-story open rooms with full height openings must be braced to resist pressure resulting from 90 MPH design fastest-mile wind speed or as prescribed for specified wind zones per ASCE 7-98. Any special wall reinforcing shall be shown on the plans provided. Two-story open rooms must be balloon-framed with 2x6s @ 16" o/c as a minimum (no exceptions.)
- 3.11 Stud walls to be listed below unless otherwise noted on the structural plans:
- A. Interior One & Two Story Walls (with intermediate floors)
- i. Load bearing .....2x4 @ 16" o/c
- ii. Non load bearing .....2x4 @ 16" o/c
- B. Interior Three Story Walls
- i. Load bearing (2nd & 3rd Floor).....2x4 @ 16" o/c
- ii. Load bearing (1st Floor).....2x4 @ 12" o/c
- or 2x6 @ 16" o/c
- 2x4 @ 16" o/c
- iii. Non-load bearing.....2x4 @ 16" o/c
- C. Basement Walls
- i. Load bearing.....2x4 @ 12" o/c
- ii. Non-load bearing.....2x4 @ 16" o/c
- D. Exterior Walls
- Exterior walls for three stories shall be 2x6 @ 16" o/c with ½"x4"x8' OSB sheathing or C-DX plywood over entire exterior.
- 3.12 Headers shall be as shown on the plans.
- 3.13 When ceiling joists are parallel to an exterior wall and rafters bear on the exterior stud wall's top plate, tie the rafters near the top plate to the ceiling joists with 6' long 2x6 runners at 4' o/c across the top of the ceiling joists.
- 3.14 At all bay windows, each panel shall be nailed to each adjacent panel with 5-16d nails tied together with metal strapping nailed at four locations between floors with a minimum of 2-16d nails in each panel at each strap. This will help prevent vertical cracking in the panel joints due to horizontal oscillation of the panels.
- 3.15 At all stairs, every stud at each stringer must be nailed to each stringer with a minimum of 2-16d nails. This will help prevent cracking between the wallboard and the top of the base molding due to vertical oscillation of the stair stringers.
- 3.16 Steel pipe columns must be in contact with the supported member and continue solid to the supporting masonry or concrete foundation. No intermediate wood blocking should be used as it will crush.

4. FOUNDATION WALLS

- 4.1 All full height foundation walls are shown on structural detail sheet.
- 4.2 All masonry or concrete basement wall construction must be inspected by the County Building Official, Architect, or Engineer for compliance with structural specifications.
- 4.3 Where full-height foundation or basement walls run parallel to floor framing, blocking must be provided between joists at 3'-0" o/c for not less than six joist spacings out from wall.
- 4.4 Details of any earth retaining structures not attached to the house structure will be shown on separate details. (These walls may be designed only after grade conditions are known.)

5. ROOF CONSTRUCTION

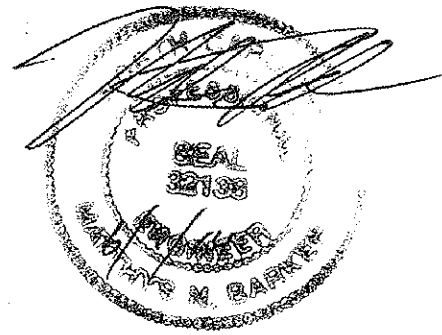
- 5.1 Rafters shall be 2x6 SPF @ 16" o/c for standard weight shingles except as noted. They are to be cut into hips, ridges, etc., unless noted as over-built.
- 5.2 Collar ties shall be 2x6 @ 48" o/c at all ridges unless noted otherwise and located a minimum 3' below the ridge. Collar ties may be closer to ridge if alternate bracing provided. Vaulted ceilings require special collar tie details or structural ridge beam. See plans as required.
- 5.3 A minimum of three collar ties shall be used at all ridges even if two ties must be put on one set of rafters.
- 5.4 All hips and ridges are a size larger than the rafters framing into them unless noted otherwise.
- 5.5 All hogs on ceiling joists or rafters are 8' long 2-2x6 hog troughs unless noted otherwise. Rafters may be spliced over hogs.
- 5.6 Gable end framing must be braced parallel to ridges with a minimum of 2x6 diagonal braces @ 6' o/c along the gable wall to the interior ceiling joists. Braces are to bear on 2-2x6 hogs and to gable wall at approximately mid-height of gable wall. Braces shall be at approximately a 45° angle. Other bracing may be used if it meets the Engineer's approval.
- 5.7 Carry braces to partitions or beams below. Never brace rafter hogs to 2-2x6 hogs on ceiling joists, unless shown on plans.
- 5.8 Ceiling joists when erected parallel to rafters must be sistered to rafters and nailed with 3-16d nails at each rafter. If a kneewall is used and ceiling joists cannot touch rafters, then rafters must be braced to the ceiling joists with 2x4 diagonal rafter ties spaced @ 48" o/c. Reverse collar ties may be used behind kneewalls.
- 5.9 Roof Plan Legend:
- A.  or  Indicates location of roof brace at rafter level.
- B.  Arrow away from brace point indicates direction of roof brace to partition, beam or other brace point below.
- C.  Arrow into brace point indicates a vertical or almost vertical roof brace to partition, beam or other brace point below.
- D. All roof braces are 2-2x4 "T" nailed with 16d nails @ 9" o/c vertically from top to bottom. All braces longer than 10' must be braced horizontally in two directions at mid-height or be increased to 2-2x6s.
- E. Maximum spacing of roof braces is to be as follows:
- i. For 2-2x6 hog ..... 6'-0" o/c
- ii. For 2-2x8 hog ..... 7'-6" o/c

6. WALL BRACING PER R 602.10

This structure has been analyzed by the professional engineer of record for lateral loading. It has been designed using continuous sheathing fastened to the exterior wall framing with 8d nails at 6" on center on edge and 12" on center in the field, to meet and exceed the intent of The 2012 North Carolina Residential Building Code. Where braced wall lines require additional reinforcing, engineered walls sections and hold downs have been provided.

All 800# hold downs are to be Simpson LSTA15 or MST15 vertical straps fastened to a minimum of a two stud pocket and the floor band.

EMF- Engineered Moment Frame



STRUCTURAL  
ENGINEER

SUSTAINABLE ENGINEERING &  
EFFICIENT DESIGNING, PLLC

PO BOX 88470  
CHARLOTTE, NC 28227-7018

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ARCHITECT:  
KJAMESDESIGNS

PROJECT NAME AND ADDRESS:

HOWARTH RESIDENCE  
2222 SARAH MARKS AVE.  
CHARLOTTE, NC

SEED

SUSTAINABLE ENGINEERING & EFFICIENT DESIGNS, PLLC.

DRAWING TITLE:

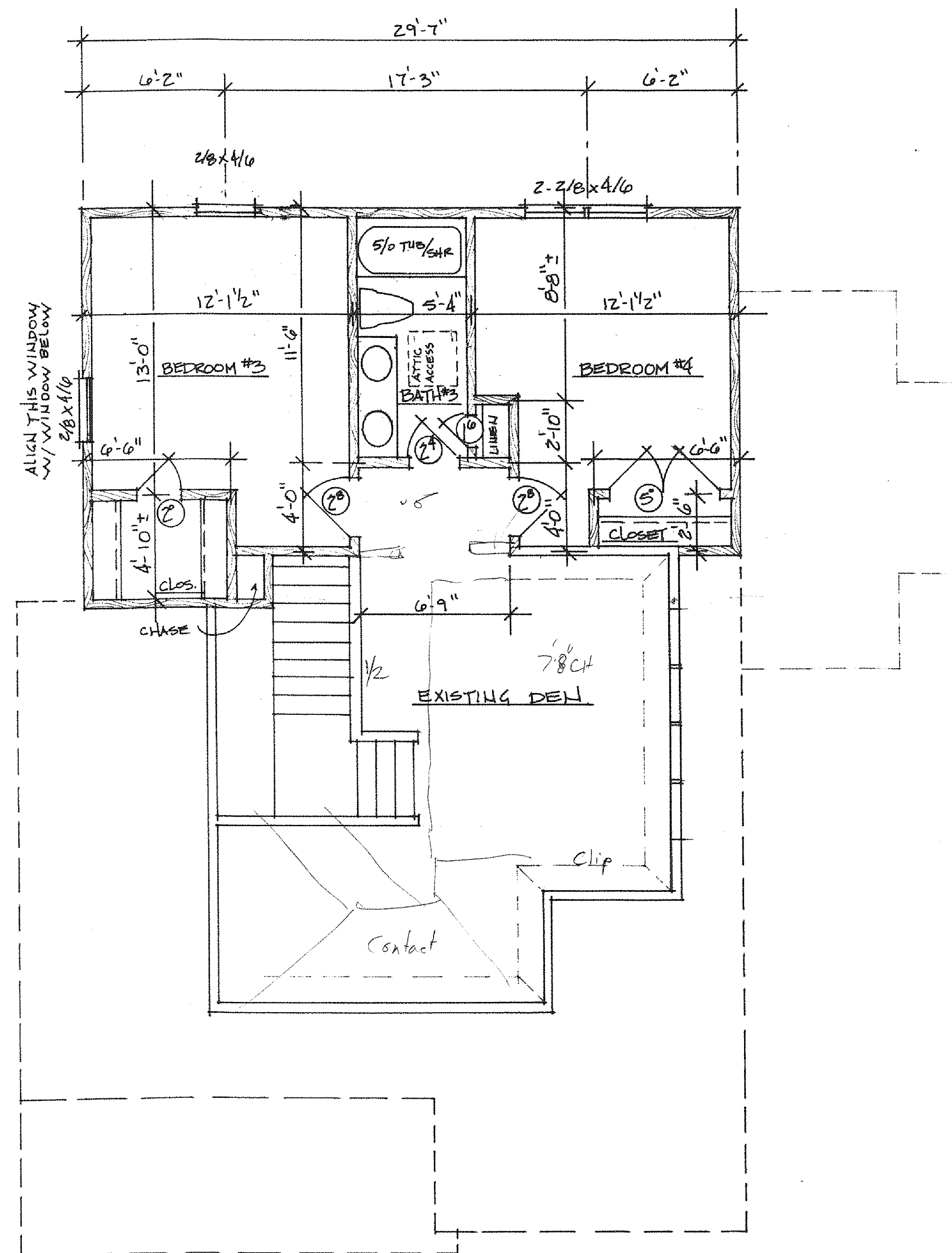
GENERAL NOTES

DATE:  
JUNE 9, 2014

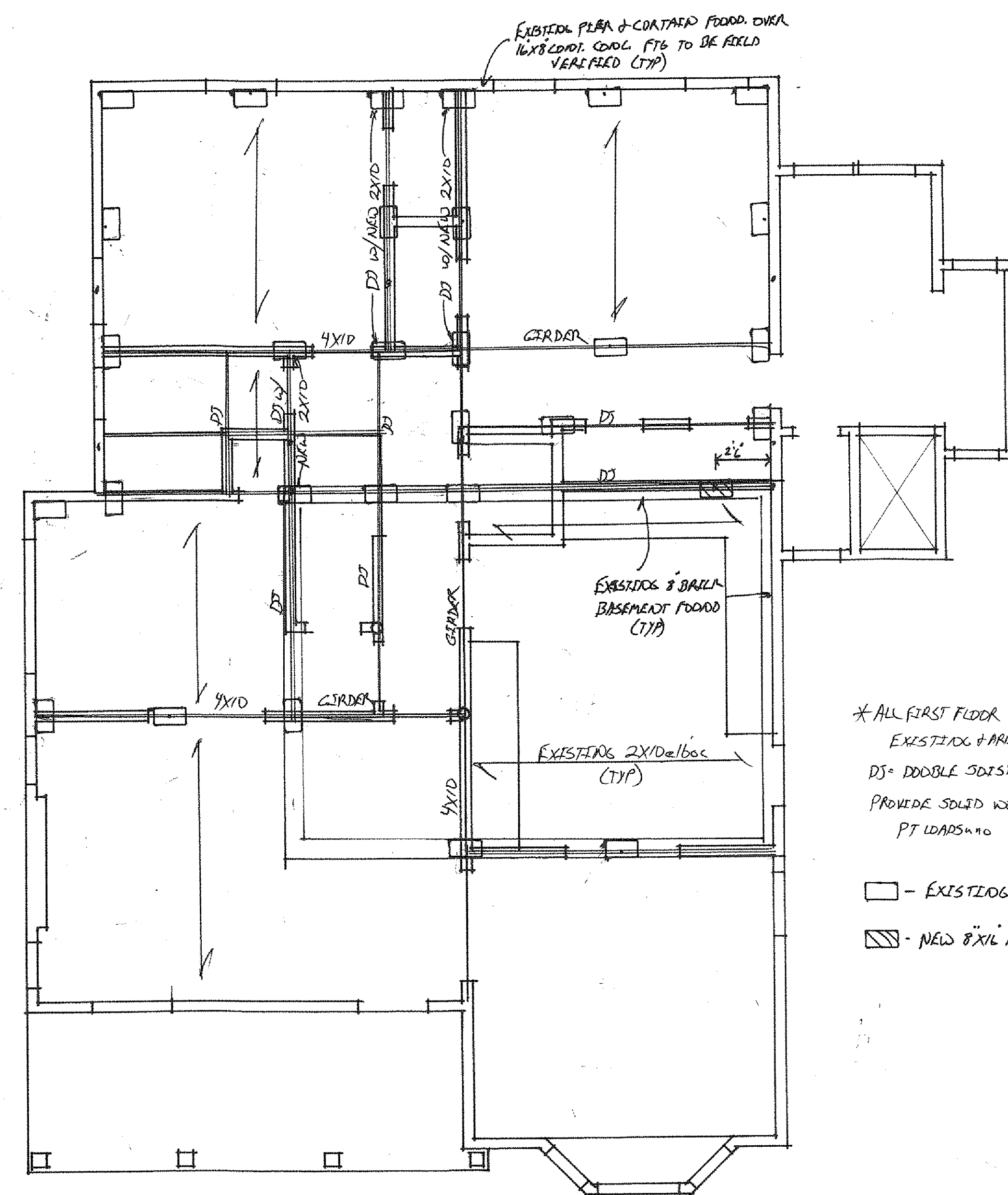
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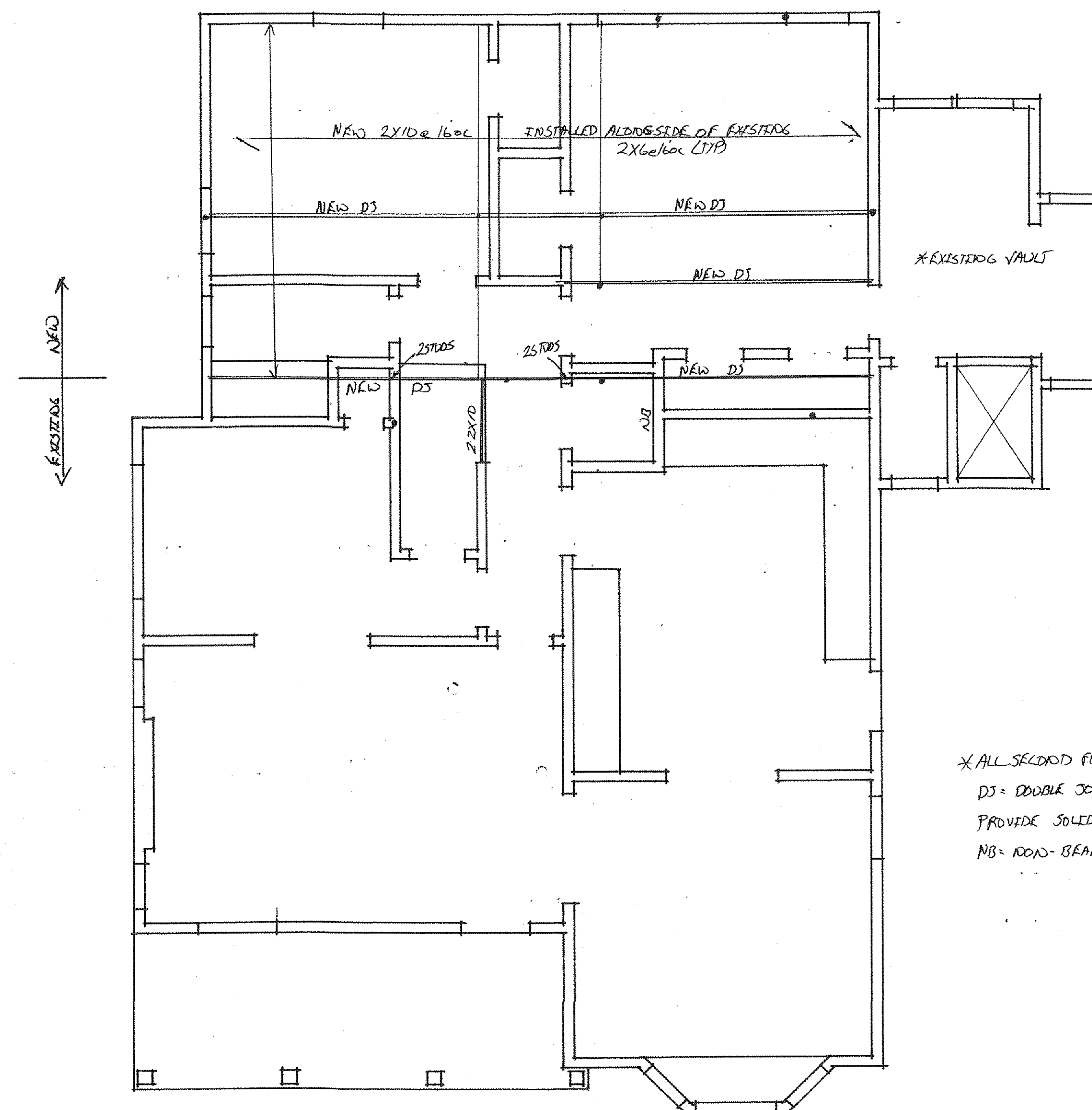
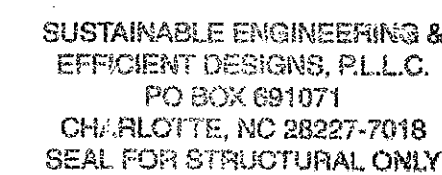
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REVISED SECOND FLOOR PLAN  
1/4"=1'-0"

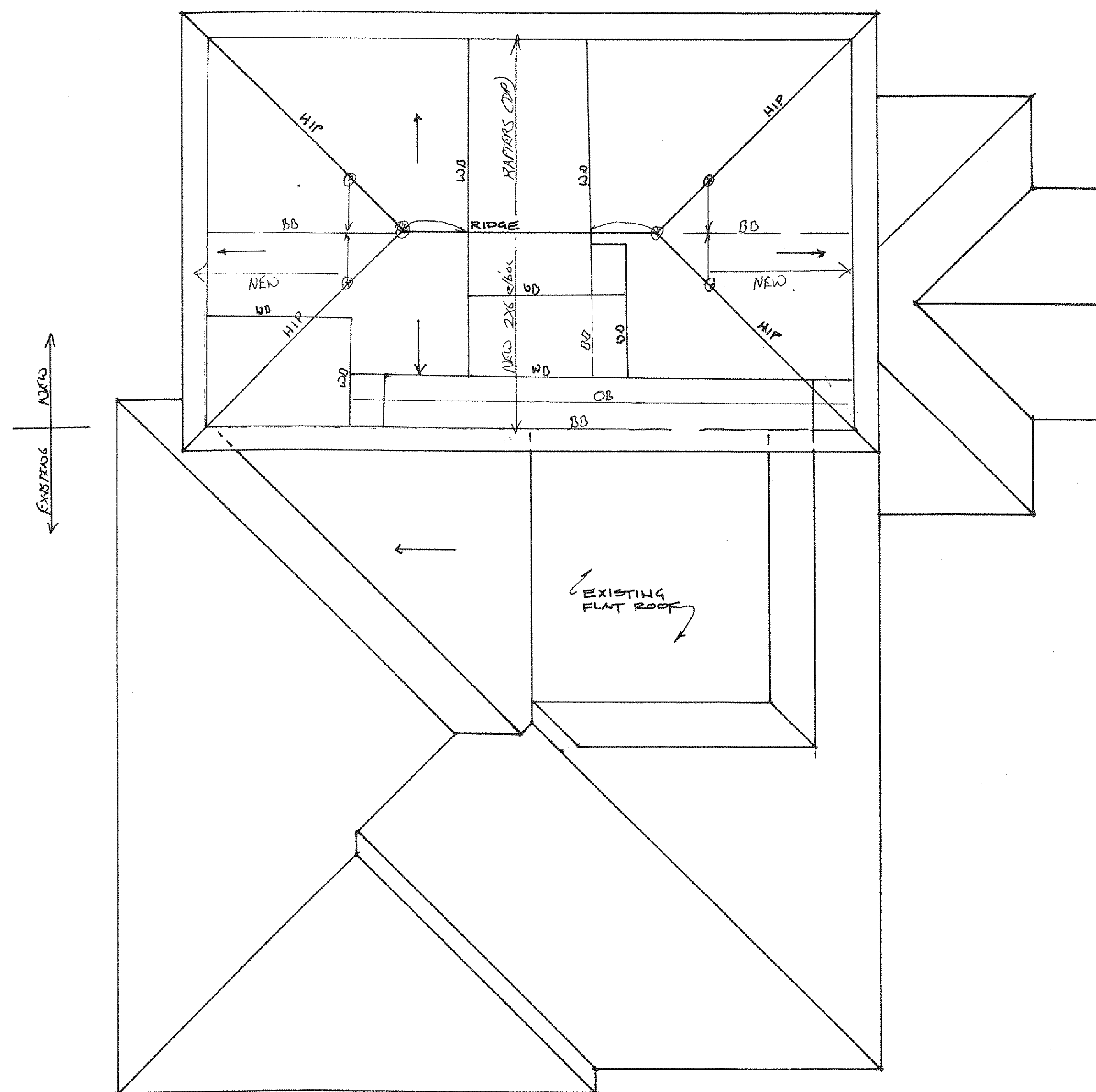




EXISTING FIRST FLOOR PLAN  
1/4"=1'-0"

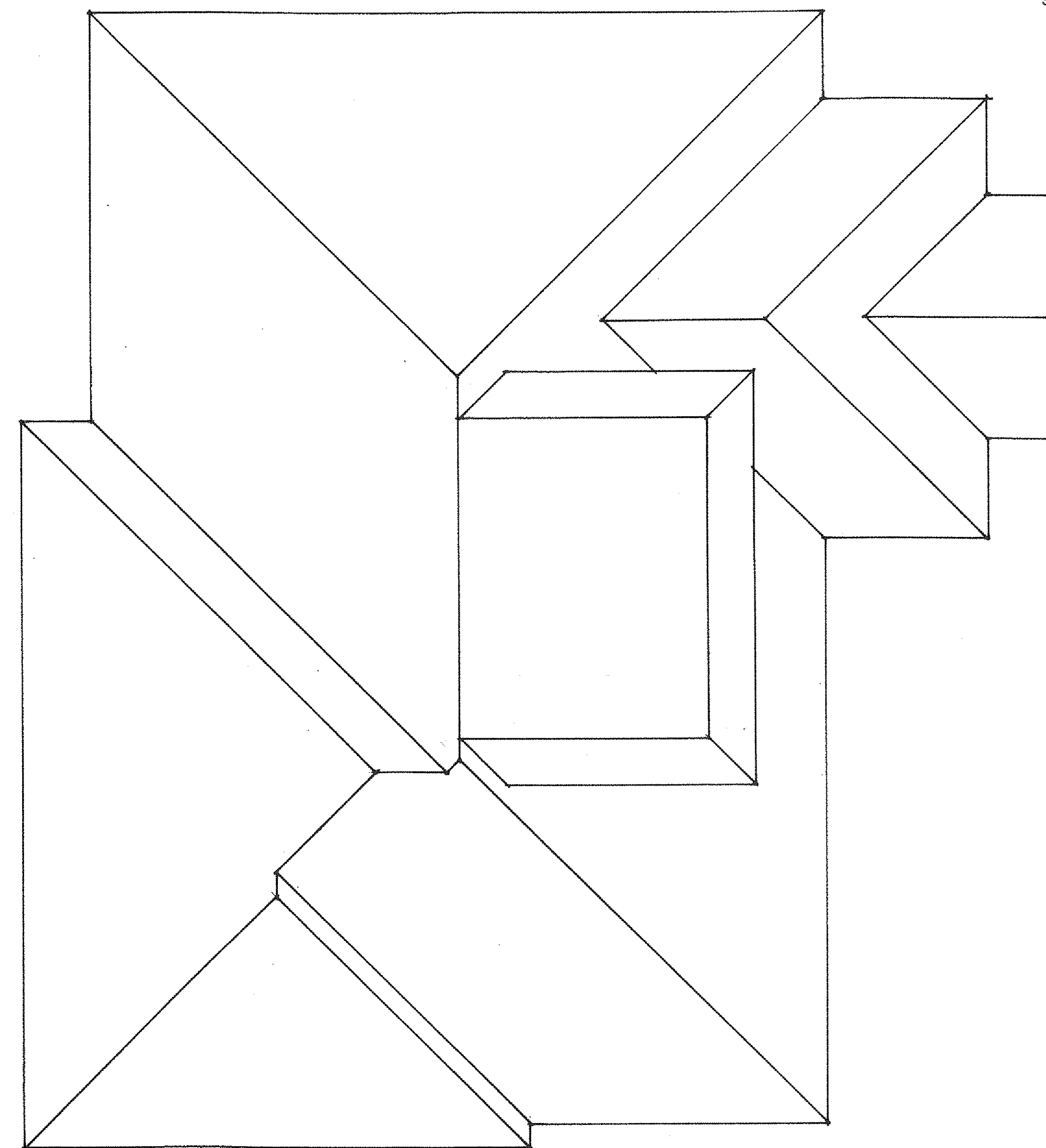
X ALL SECOND FLOOR FRAMING IS EXISTING AND  
 DJ = DOUBLE JOIST  
 PROVIDE SOLED WOOD BLOCKING UNDER ALL PT LDOAPS AND  
 NB = NON-BEARING



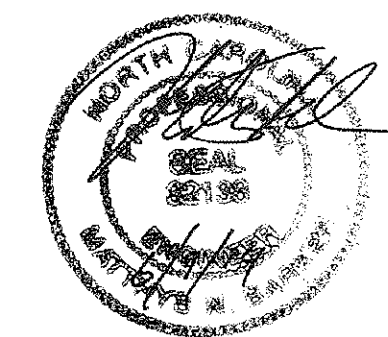


REVISED FLOOR PLAN  
1/4"=1'-0"

\* ALL NEW RAFTERS ARE 2X6 @ 16" o.c.  
ALL NEW RIDGES ARE 2X10 @ 24" o.c.  
COLLAR TIES @ 48" o.c.  
ALL NEW HIPs ARE 2X10 @ 16" o.c.  
WB = WALL BRAD  
BB = BRAM BELOW  
OB = OVERBOLD



EXISTING ROOF PLAN  
1/4"=1'-0"



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