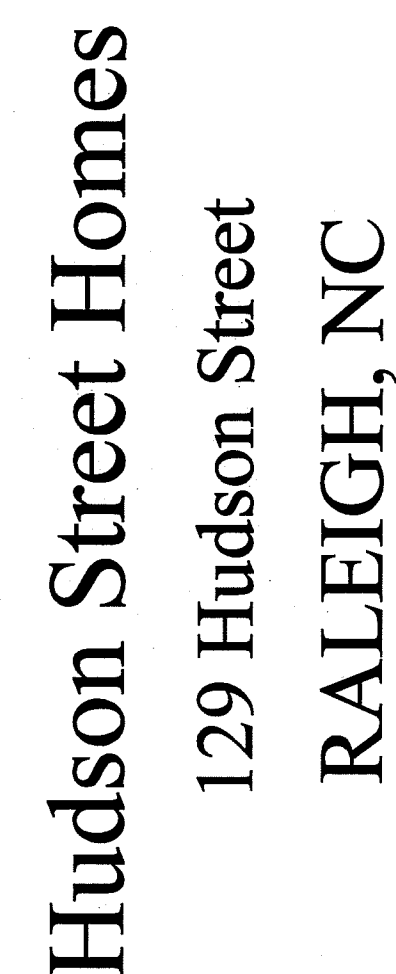
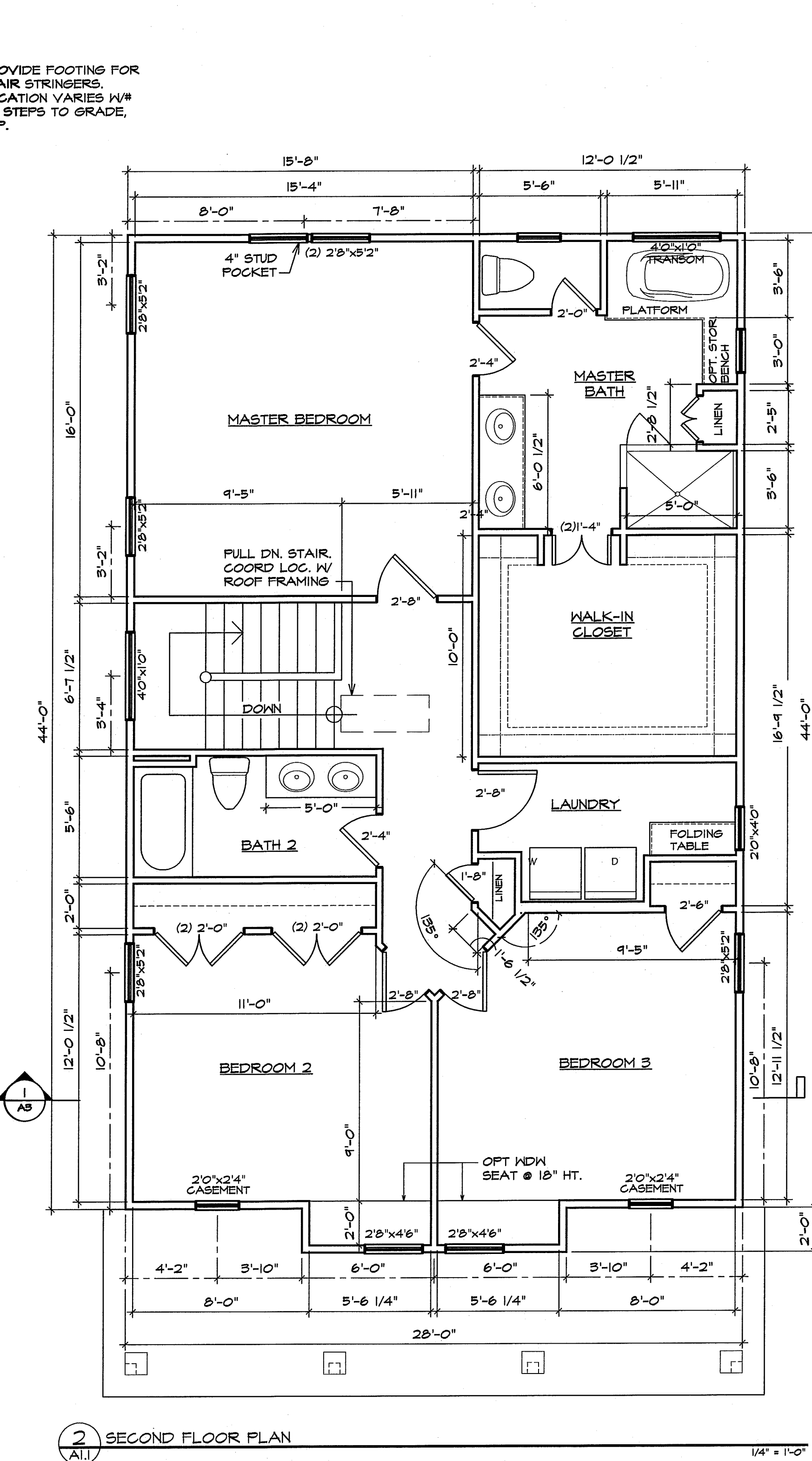
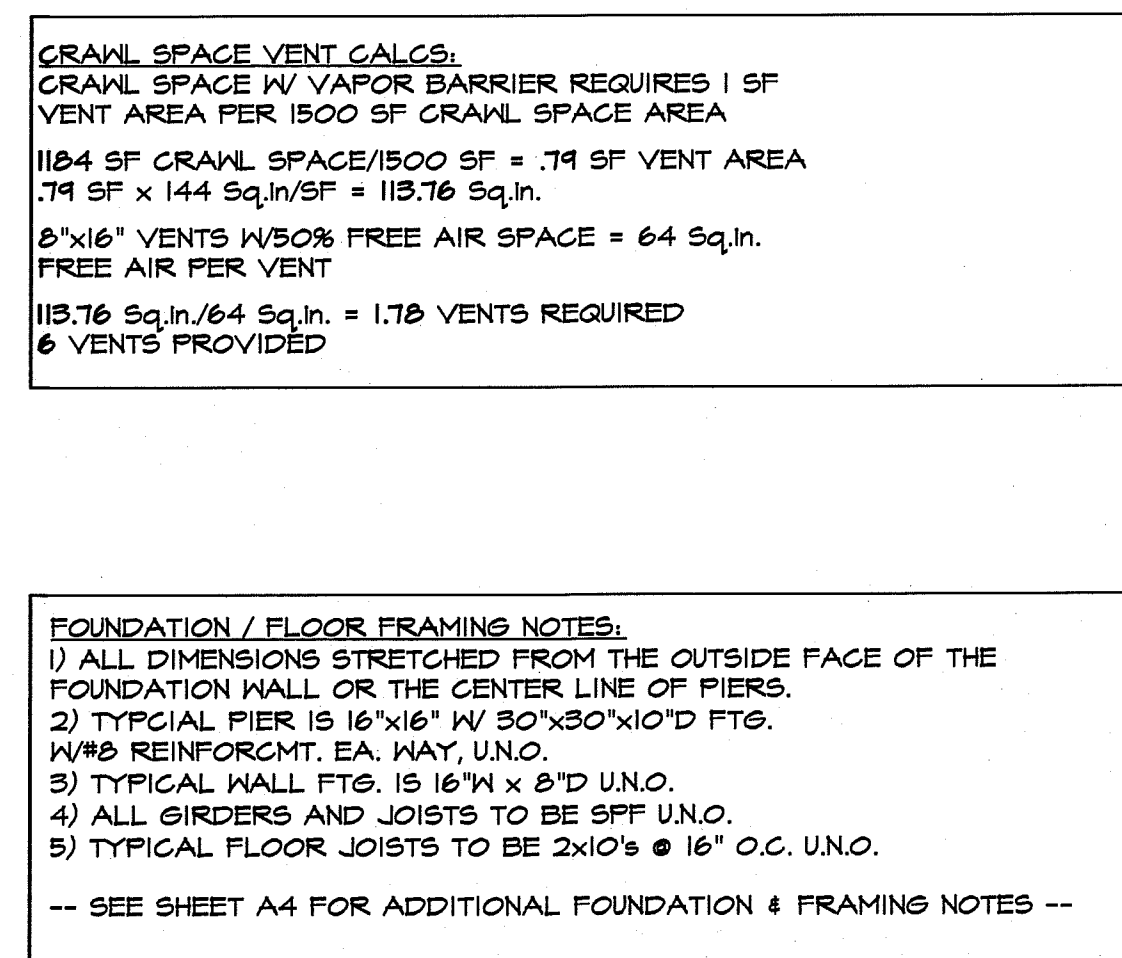


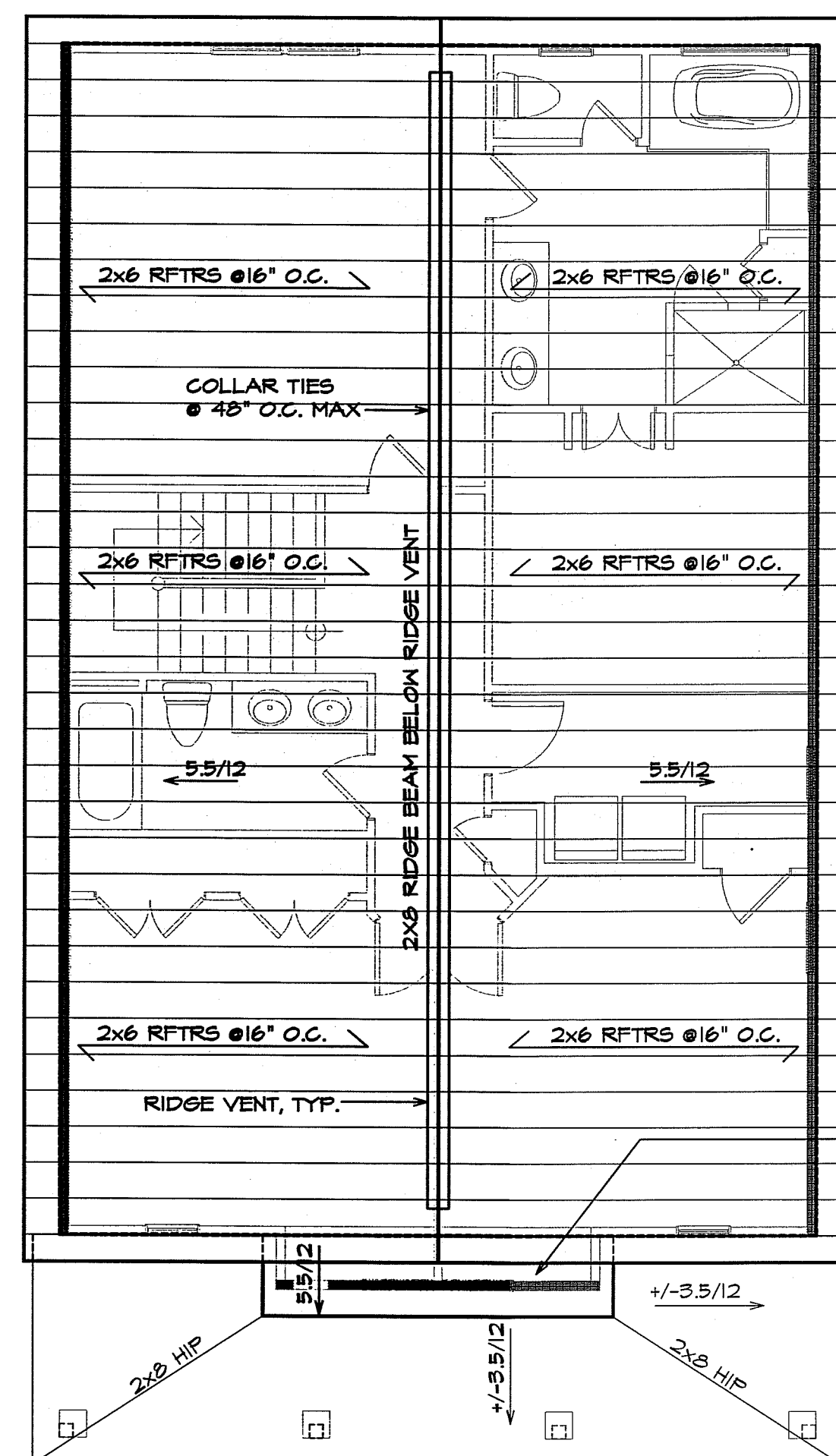
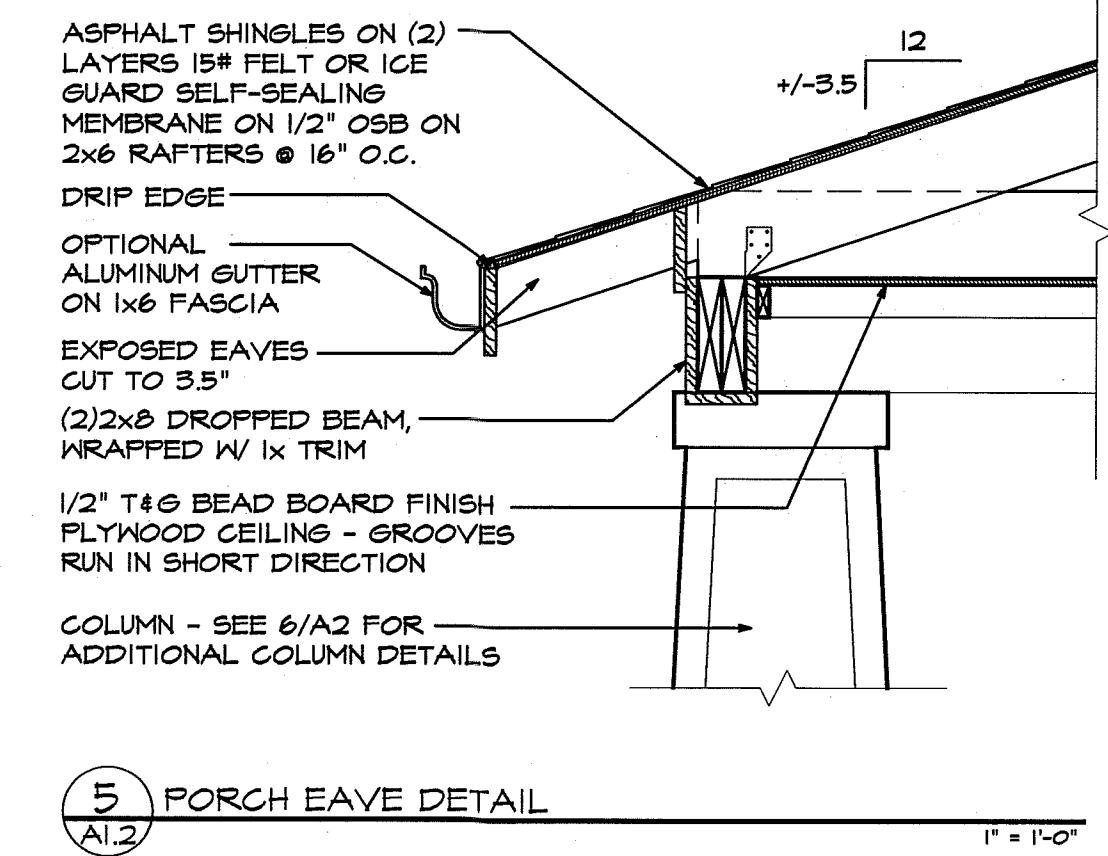
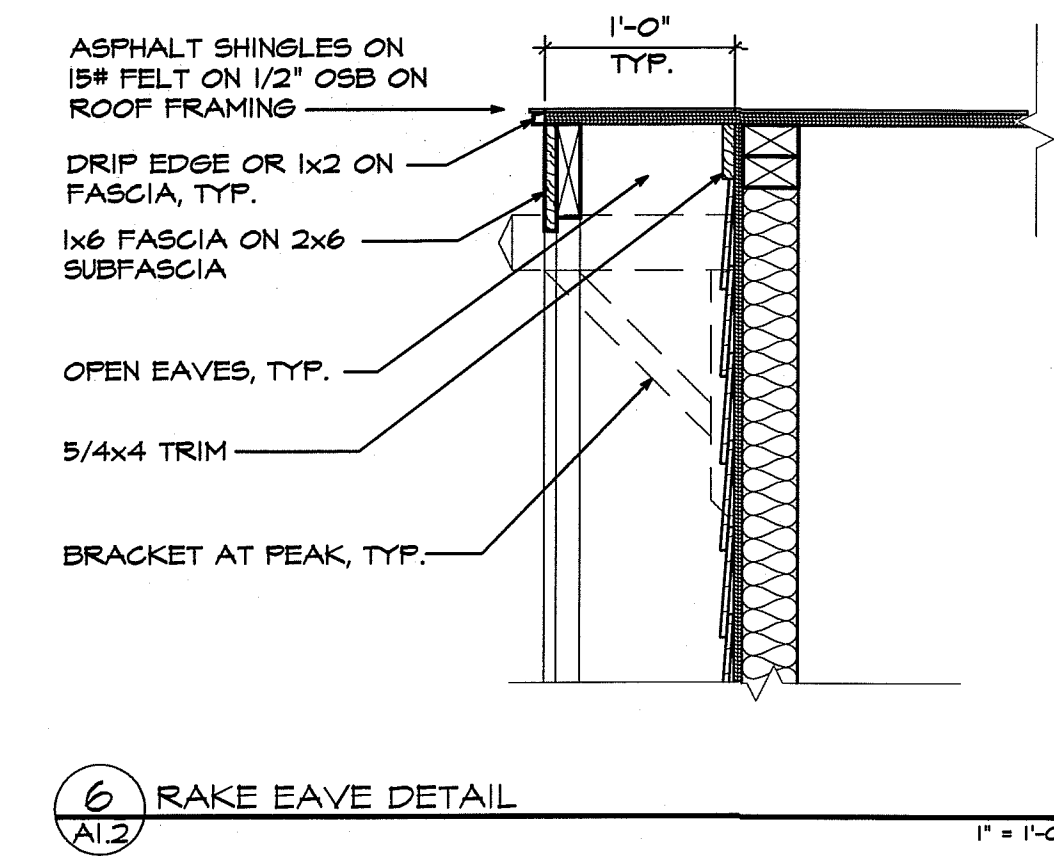
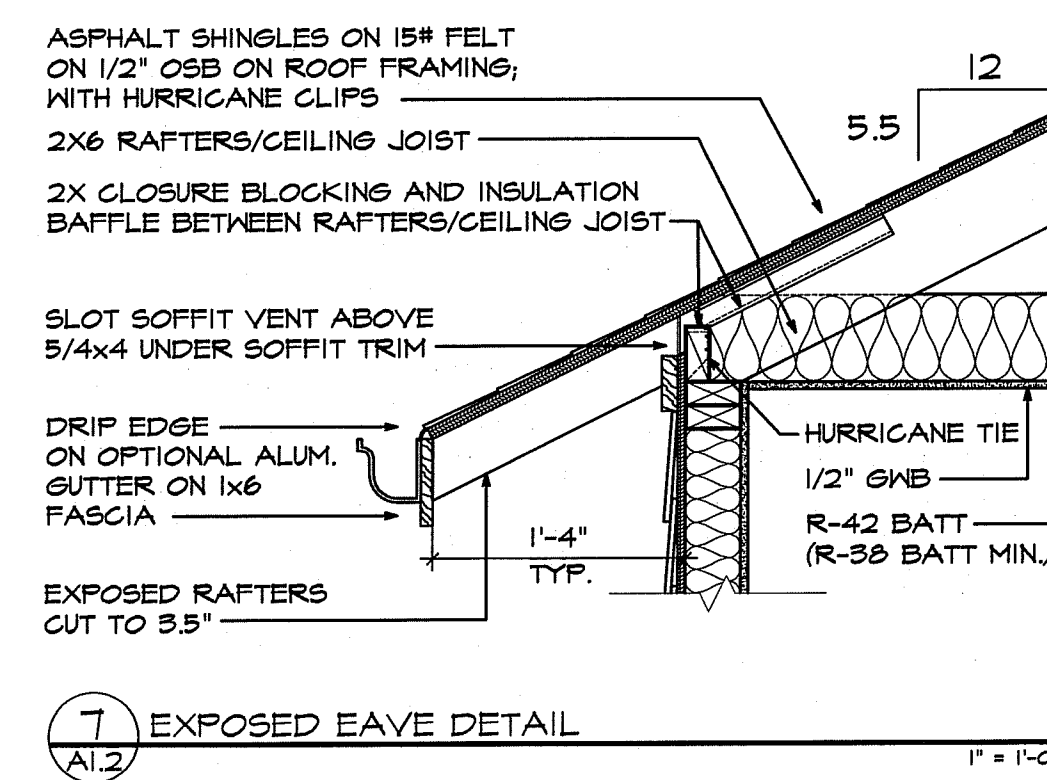
MAURER ARCHITECTURE

19 EAST HARGETT STREET, SUITE 300
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TEL. 919-829-4969 FAX. 919-829-0860

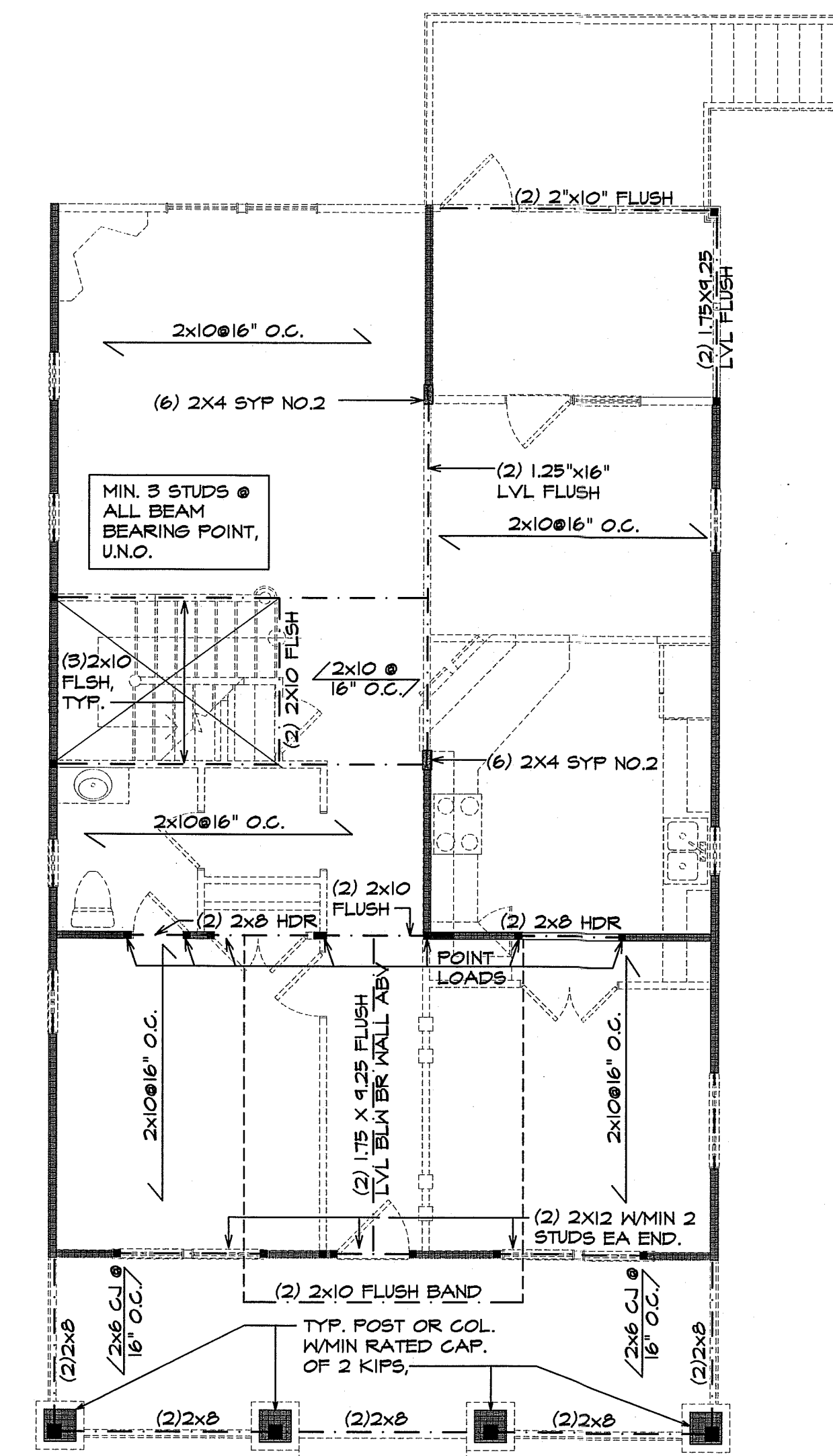
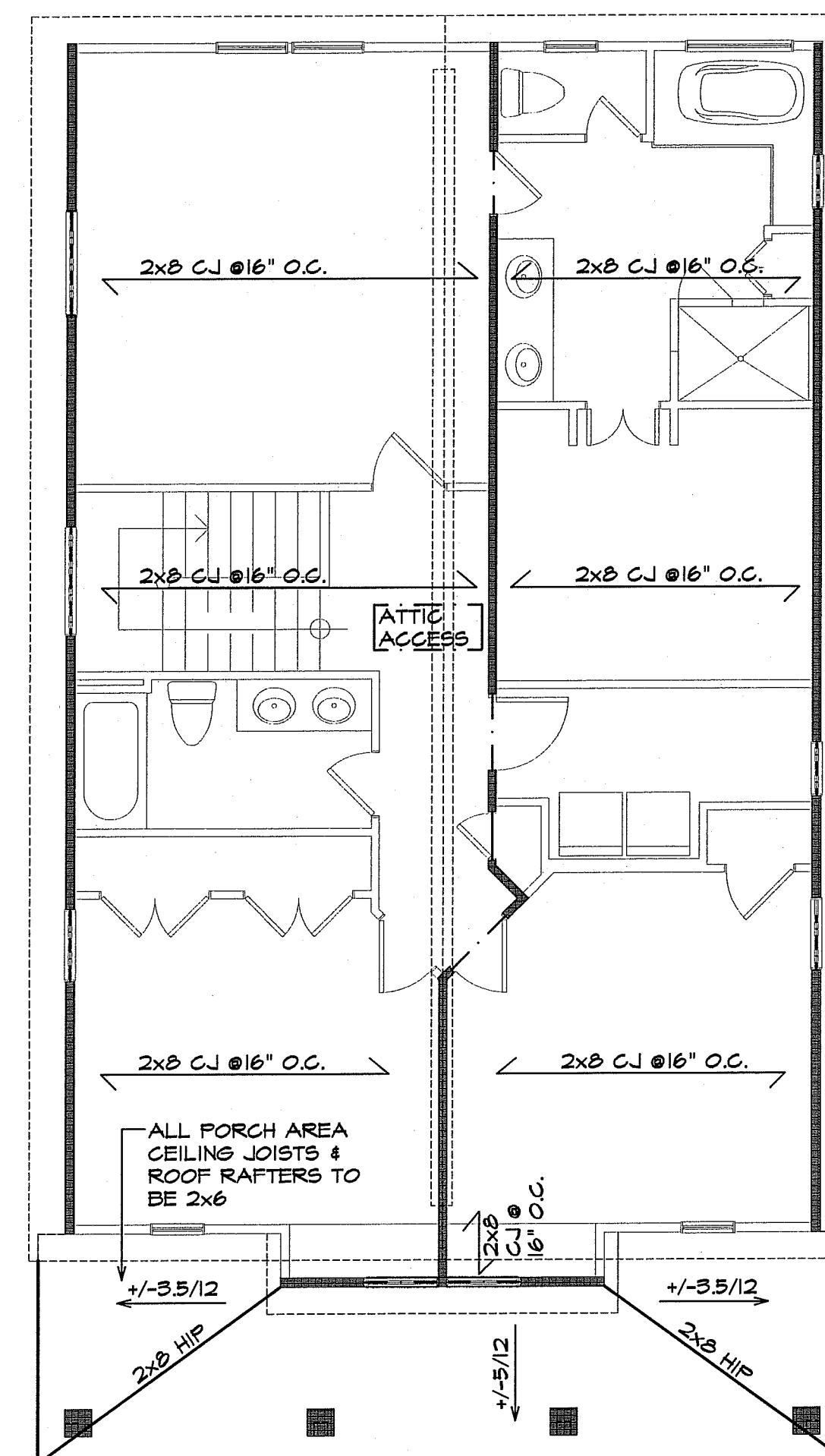
DATE	01/11/12
DR.	res
CH.	DSM
PROJ. #	10031.2
REVISIONS	DATE
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Floor Plans,
Foundation Plan,
Notes

A1.1



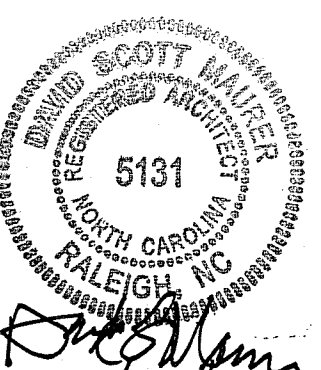
— ROOF RAFTERS OF
PROJECTING BAY TO
BE FRAMED W/ 2x6's
@ 16" O.C.



WALL LEGEND

	LOAD-BEARING WALL
	NON LOAD-BEARING WALL
	POINT LOAD

Hudson Street Homes
129 Hudson Street
RALEIGH, NC



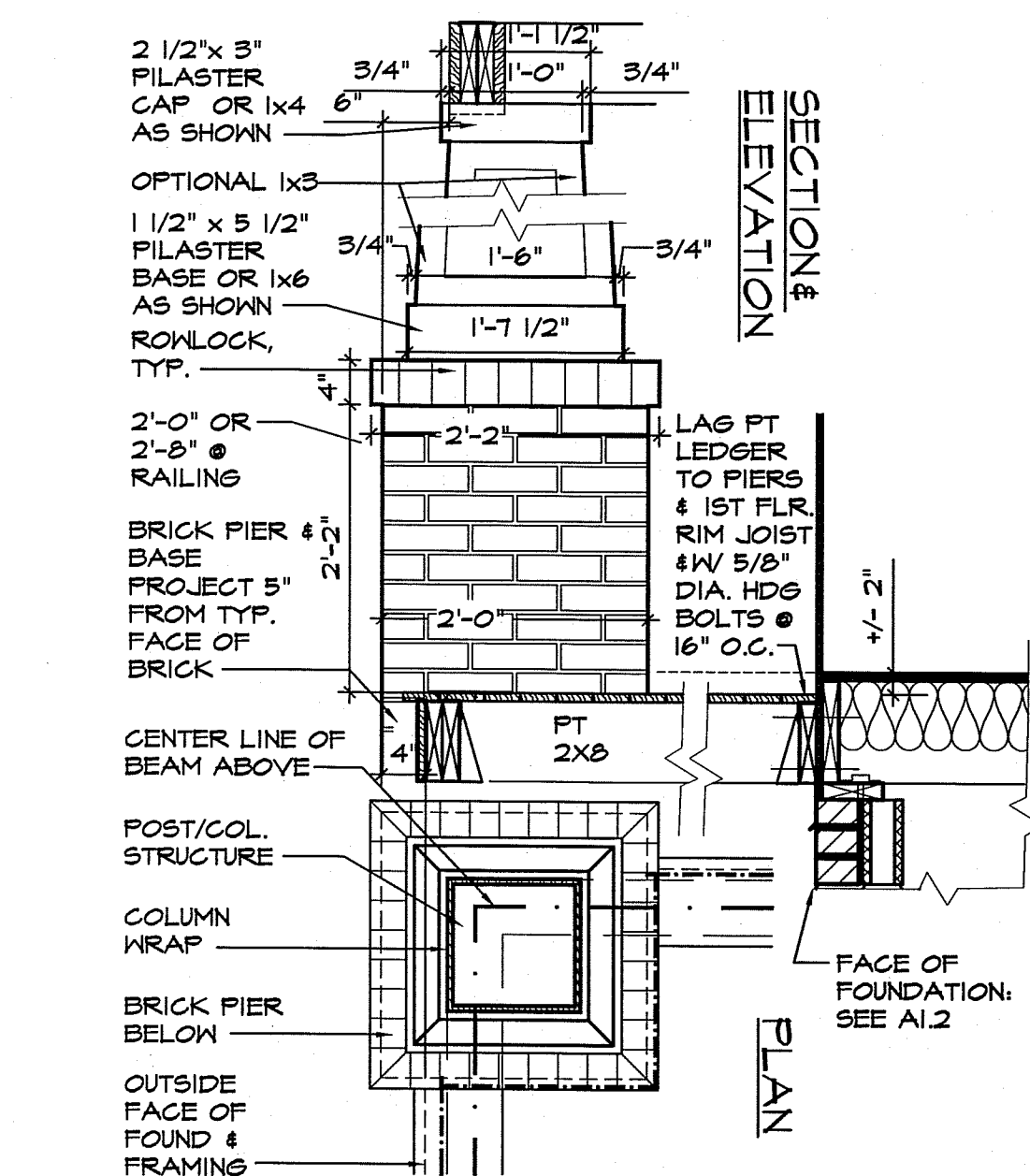
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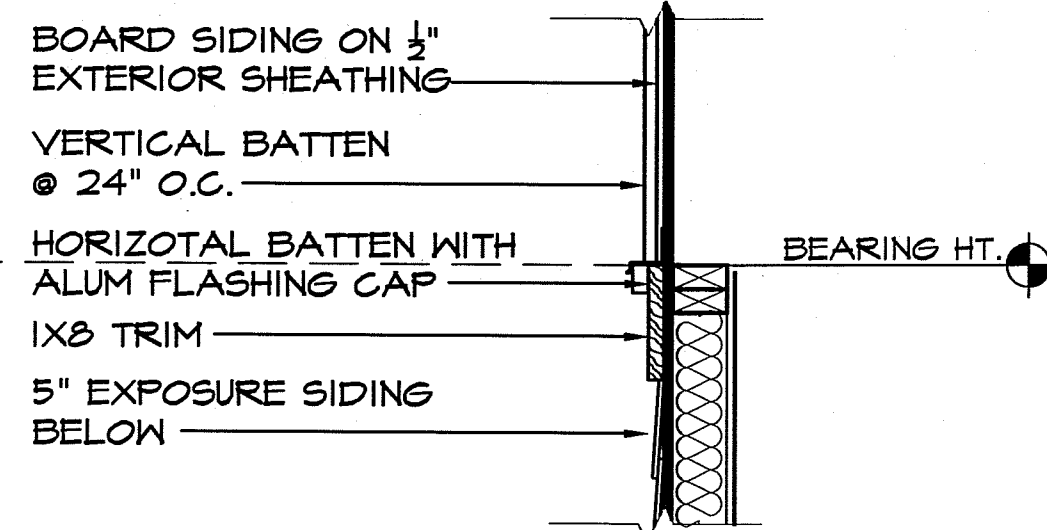
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CH.	DSM
PROJ. #	10031.2
REVISIONS	DATE
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Framing and Roof Plan

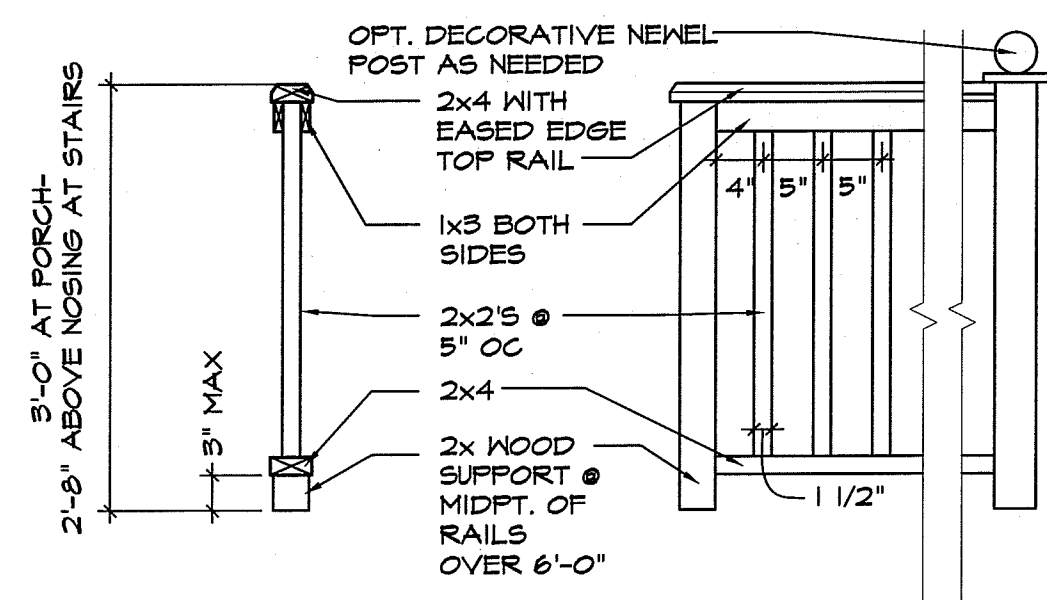
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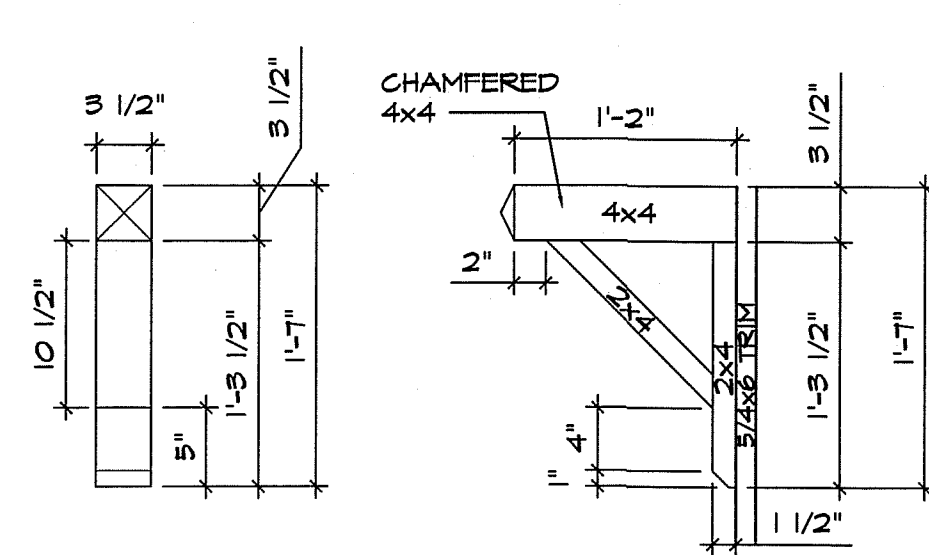
6 COLUMN DETAILS
A2 3/4" = 1'-0"



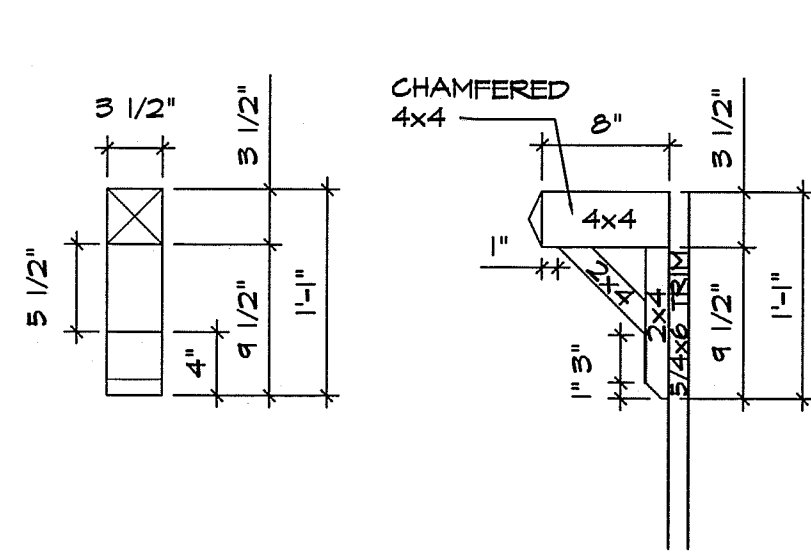
9 BOARD & BATTEN DRIP EDGE DETAIL
A2 3/4" = 1'-0"



8 PORCH RAIL DETAIL
A2 3/4" = 1'-0"



7 BRACKET DETAILS
A2 1" = 1'-0"



FRONT BAY PROJECTION BRACKET
1" = 1'-0"

GUARDRAIL AND HANDRAILS:

- 1) INSTALL GUARDS PER RESIDENTIAL BUILDING CODE. PORCHES, BALCONIES, RAMPS OR RAISED FLOOR SURFACES LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW SHALL HAVE GUARDS NOT LESS THAN 36" IN HEIGHT. OPEN SIDES OF STAIRS WITH A TOTAL RISE OF MORE THAN 30" IN HEIGHT MEASURED VERTICALLY FROM THE NOSING OF THE TREADS. REQUIRED GUARDS ON OPEN SIDES OF STAIRWAYS, RAISED FLOOR AREAS, BALCONIES AND PORCHES SHALL HAVE INTERMEDIATE RAILS OR ORNAMENTAL CLOSURES WHICH DO NOT ALLOW PASSAGE OF AN OBJECT 6" OR MORE IN DIAMETER. HORIZONTAL SPACING BETWEEN THE VERTICAL MEMBERS IN REQUIRED GUARDRAILS SHALL BE A MAXIMUM OF 4" AT THE NEAREST POINT BETWEEN MEMBERS.
- 2) INSTALL HANDRAILS PER RESIDENTIAL BUILDING CODE AT ALL PORCH STAIRS WITH MORE THAN 4 RISERS. HANDRAIL HEIGHT, MEASURED VERTICALLY FROM THE SLOPED PLANE ADJOINING THE TREAD NOSING, OR FINISH SURFACE OF RAMP SLOPE, SHALL NOT BE LESS THAN 30" AND NOT MORE THAN 36".

CLADDING VALUES

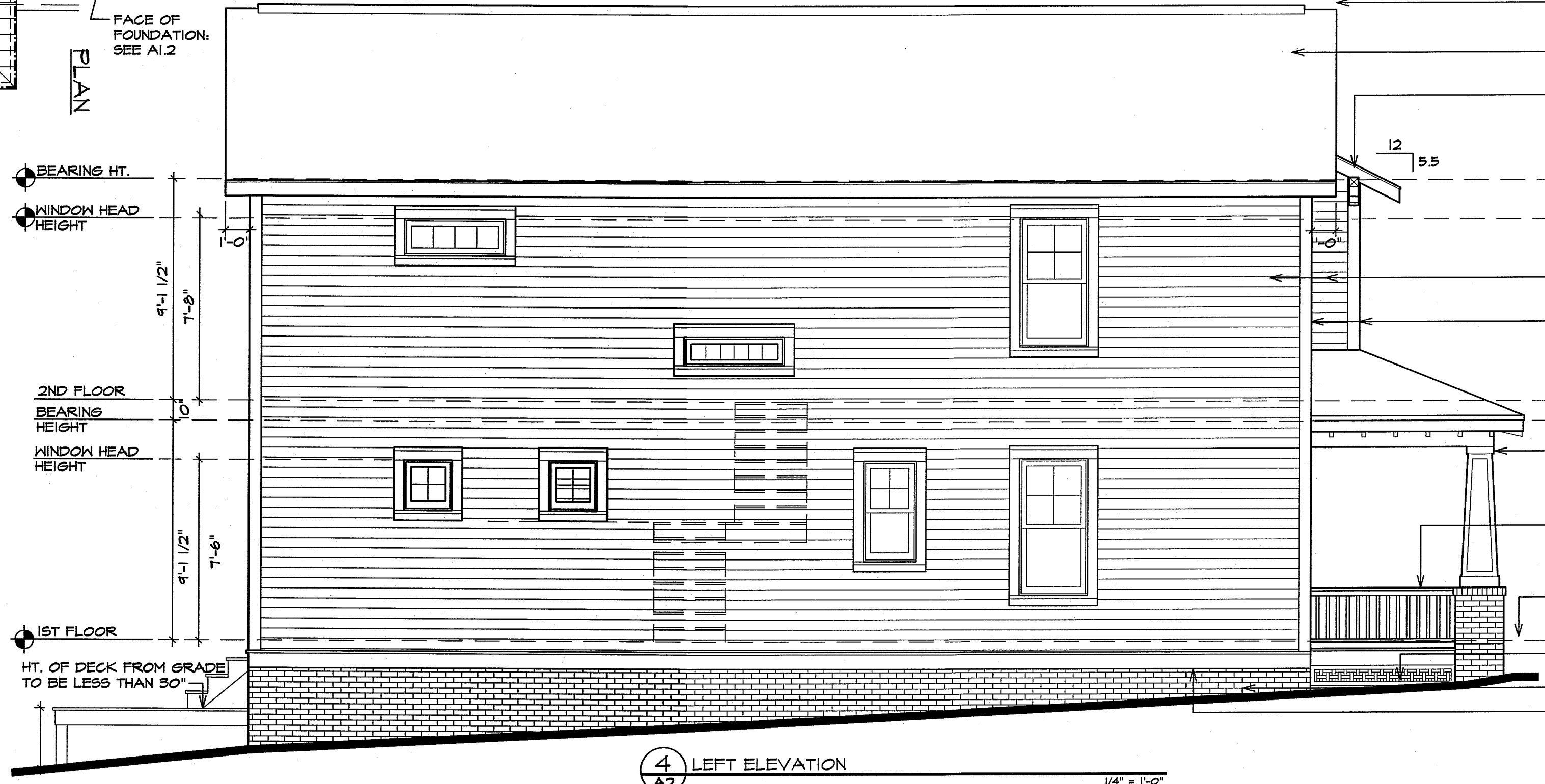
PROVIDE POS. AND NEG. WALL & ROOF CLADDING DESIGN VALUES. PLANS MAY STATE THAT WALL CLADDING IS DESIGNED FOR 24.1 LBS/SF OR GREATER POS. OR NEG. PRESSURE FOR HOUSES W/ MEAN ROOF HGT. OF 30 FT. OR LESS. ROOF VALUES, BOTH POS. & NEG., SHALL BE DESIGNED AS FOLLOWS:

- 45.4 LBS/SF FOR ROOF PITCHES OF 0/12 TO 2.25/12
- 24.8 LBS/SF FOR ROOF PITCHES OF 2.25/12 TO 1/12
- 21 LBS/SF FOR ROOF PITCHES OF 1/12 TO 12/12

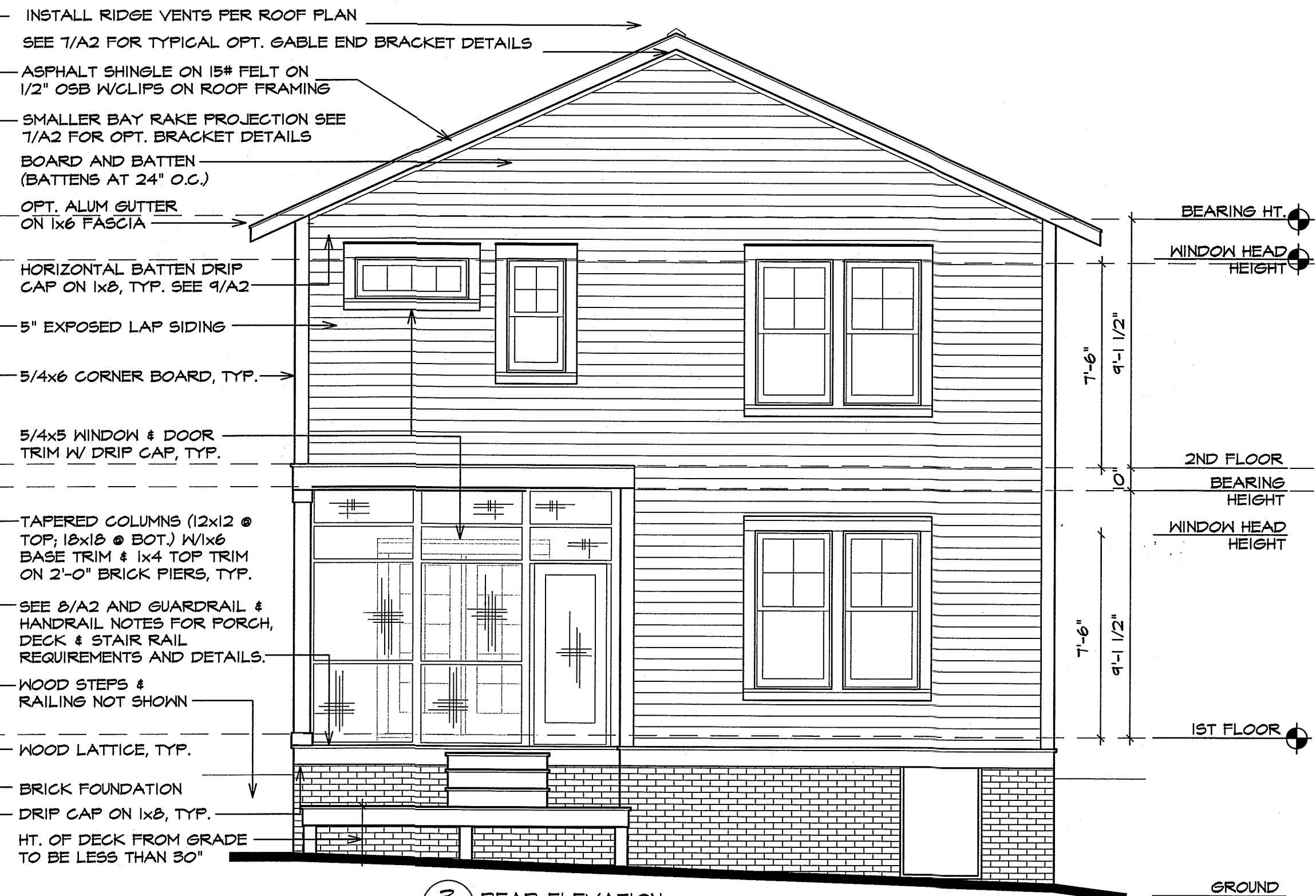
VALUES STATED ARE FOR ROOFS WITH A MEAN HGT. OF 30 FT. OR LESS. ROOFS W/ MEAN HGTS. GREATER THAN 30 FT. MUST SHOW SPECIFIC INFORMATION FOR CLADDING.

MEAN ROOF HEIGHT: 24'

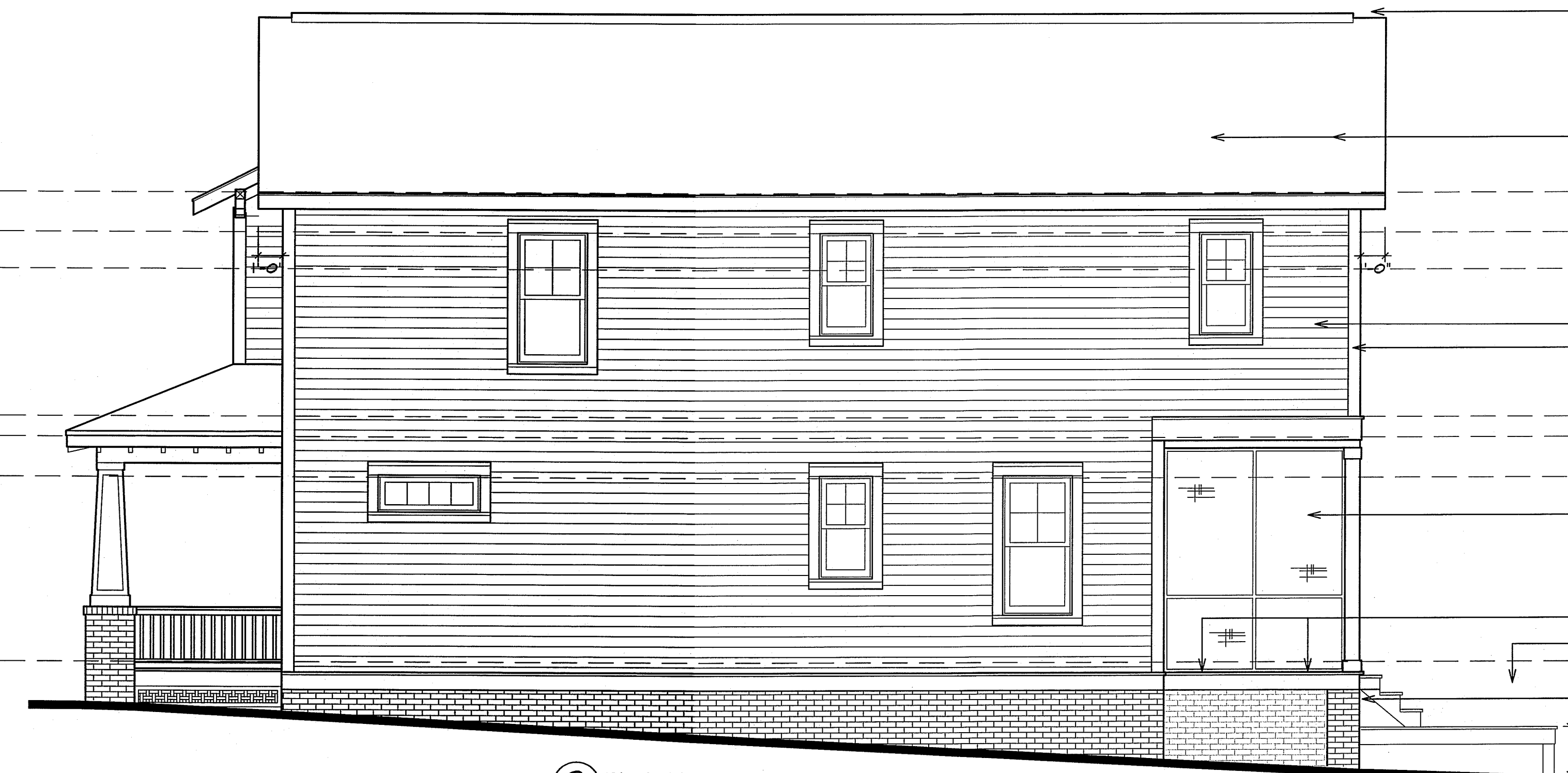
5 NOTES
A2



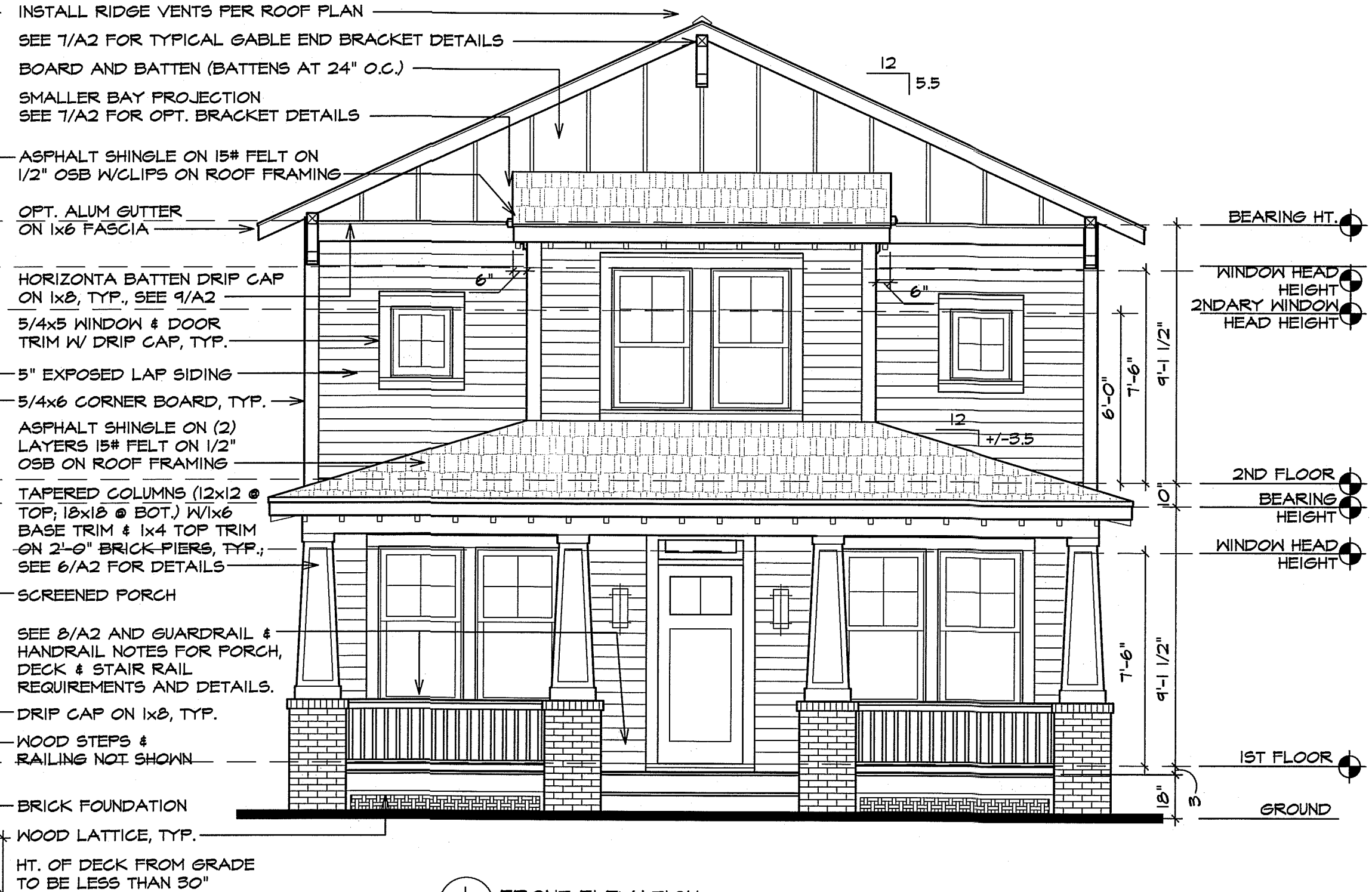
4 LEFT ELEVATION
A2 1/4" = 1'-0"



3 REAR ELEVATION
A2 1/4" = 1'-0"

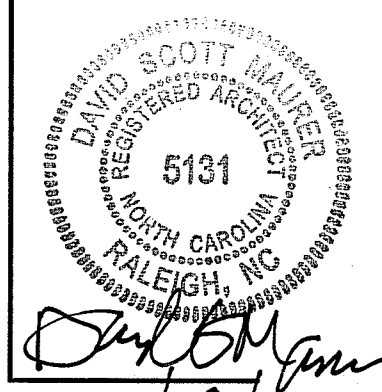


2 RIGHT ELEVATION
A2 1/4" = 1'-0"



1 FRONT ELEVATION
A2 1/4" = 1'-0"

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129 Hudson Street
RALEIGH, NC

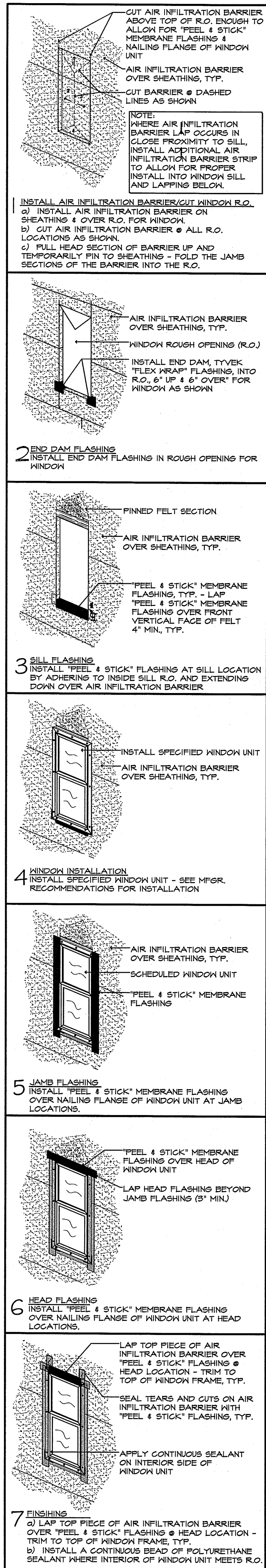


MAURER ARCHITECTURE
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CH.	DSM
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REVISIONS	DATE
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Elevations, Elevation Details

A2



WINDOW INSTALLATION DIAGRAM
NOT TO SCALE

TABLE N1101.2
(2009 EDITION NC RESIDENTIAL CODE)
CLIMATE ZONES BY COUNTY

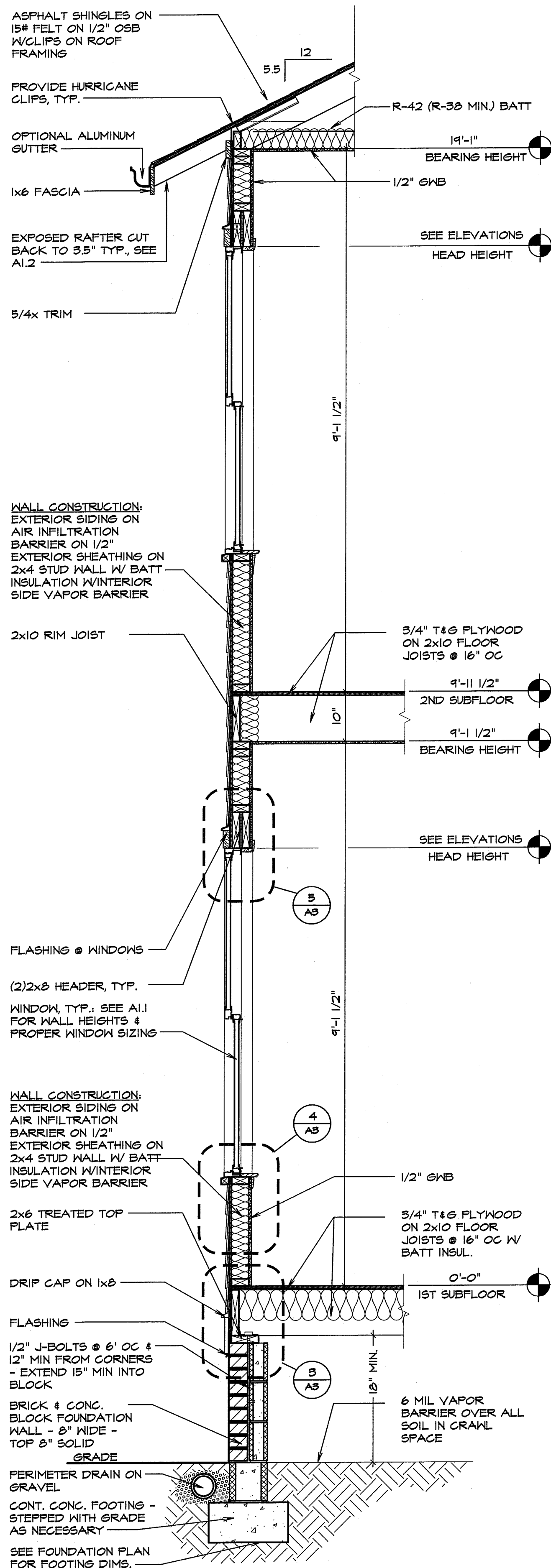
Zone 3	Randolph	Harnett
Anson	Richmond	Haywood
Beaufort	Robeson	Henderson
Bladen	Rowan	Hertford
Brunswick	Sampson	Iredell
Cabarrus	Scotland	Jackson
Camden	Stanly	Lee
Carteret	Tyrrell	Macon
Chowan	Union	Madison
Columbus	Washington	McDowell
Craven	Wayne	Nash
Cumberland	Wilson	Northampton
Currituck		Orange
Dare	Zone 4	Person
Davidson	Alamance	Polk
Duplin	Alexander	Rockingham
Edgecombe	Bertie	Rutherford
Gaston	Buncombe	Stokes
Greene	Burke	Surry
Hoke	Caldwell	Swain
Hyde	Caswell	Transylvania
Johnston	Catawba	Vance
Jones	Chatham	Wake
Lenoir	Cherokee	Warren
Martin	Clay	Wilkes
Mecklenburg	Cleveland	Yadkin
Montgomery	Davie	Zone 5
Moore	Durham	
New Hanover	Forsyth	Alleghany
Onslow	Franklin	Ashe
Pamlico	Gates	Avery
Pasquotank	Graham	Mitchell
Pender	Granville	Watauga
Perquimans	Guilford	Yancey
Pitt	Halifax	

TABLE N1102.1
(2009 EDITION NC RESIDENTIAL CODE)
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT a

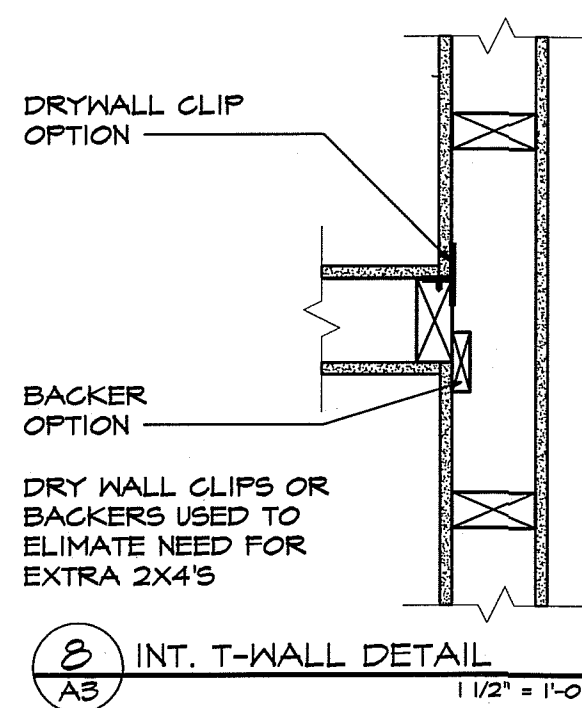
Climate Zone	Fenestration U-Factor	Skylights U-Factor	Glazed Fenestration SHGC	Ceiling R-Value	Wood Frame Wall R-Value	Floors	Basement walls	Slab perimeter R-value & depth
1	1.2	0.40	0.40	30	13	13	0	0
2	0.75	0.40	0.40	30	13	13	0	0
3	0.4	0.40a	0.40a	30h	13	19	0	5/13
4 except Marine	0.4	0.40	0.40	38h	13	19	10/13	5, 2 ft
5 and Marine 4	0.4	0.40	0.40	38h	19 or 13 + 5g	30r	10/13	10, 2 ft
6	0.35	NR	NR	49	19 or 13 + 5g	30r	10/13	10, 4 ft
7 and 8	0.35	NR	NR	49	21	30r	10/13	10, 4 ft

- a. R-values are minimums. U-factors and SHGC are maximums. R-19 insulation shall be permitted to be compressed into a 2x6 cavity.
- b. The fenestration U-factor column excludes skylights. The solar heat gain coefficient (SHGC) column applies to all glazed fenestration.
- c. The first R-value applies to continuous insulation, the second to framing cavity insulation; either insulation meets the requirement.
- d. R-5 shall be added to the required slab edge R-values for heated slabs.
- e. Deleted.
- f. Or insulation sufficient to fill the framing cavity, R-19 minimum. There is no requirement for R-30.
- g. "13+5" means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25% or less of the exterior, R-5 sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25% of exterior, structural sheathing shall be supplemented with insulated sheathing of at least R-2.
- h. NC Healthy Built Homes Recommendation: Flat ceilings (R38 Zone 3; R42 Zones 4&5)
- i. NC Healthy Built Homes Recommendation: Vaulted and tray ceilings (R38 Zone 3; R42 Zones 4&5)

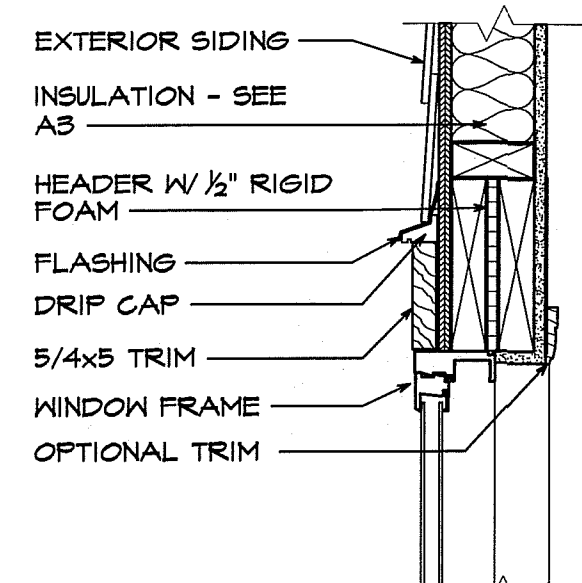
NORTH CAROLINA INSULATION REQUIREMENTS



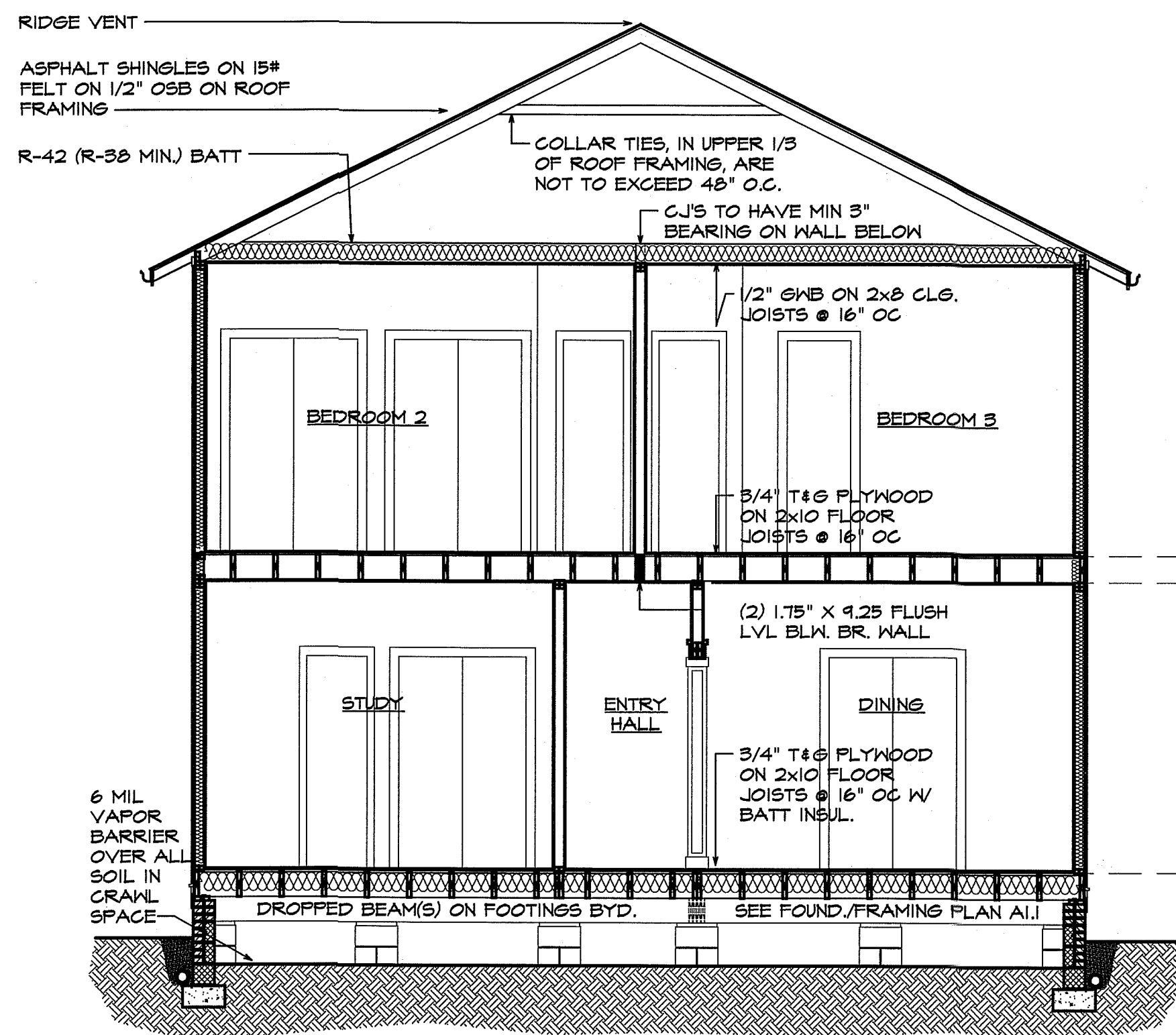
2 TYPICAL WALL SECTION
3/4" = 1'-0"



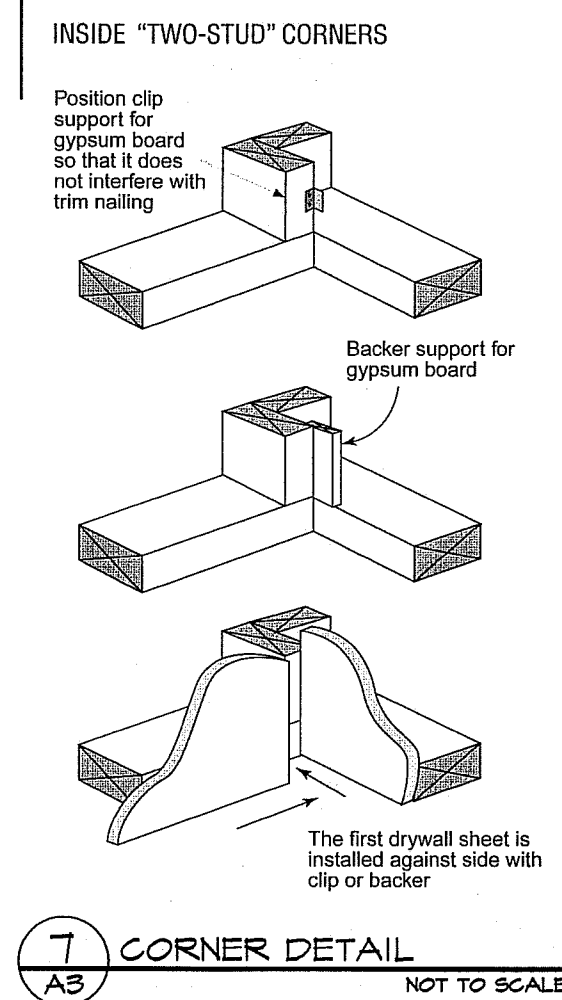
8 INT. T-WALL DETAIL
1/2" = 1'-0"



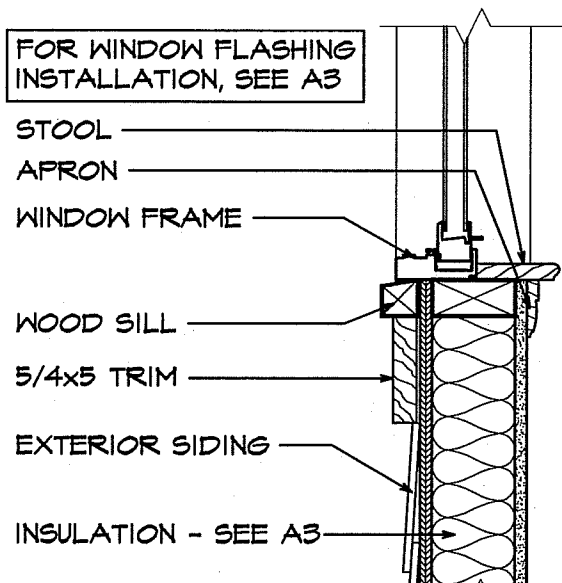
5 HEADER DETAIL
1/2" = 1'-0"



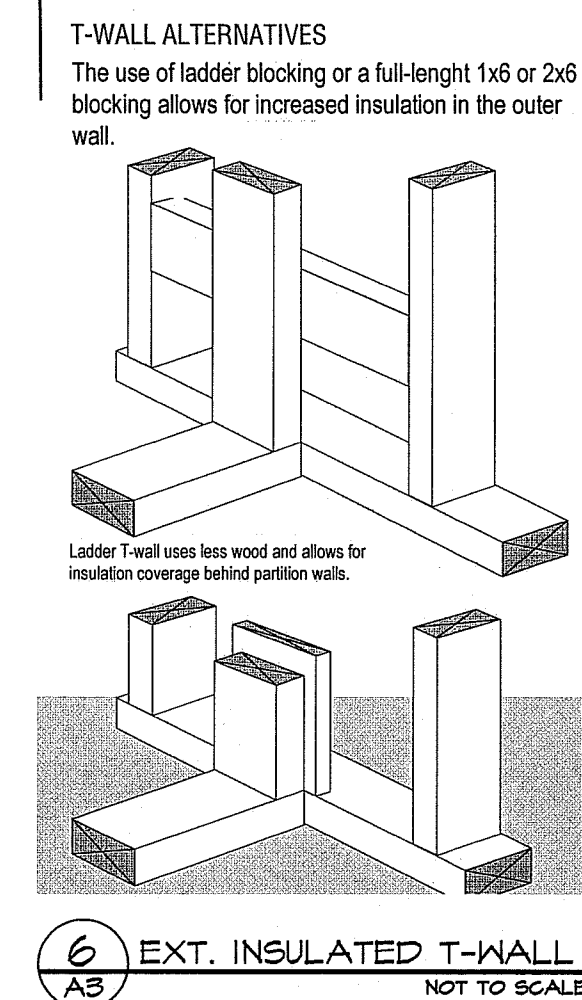
1 BUILDING SECTION
1/4" = 1'-0"



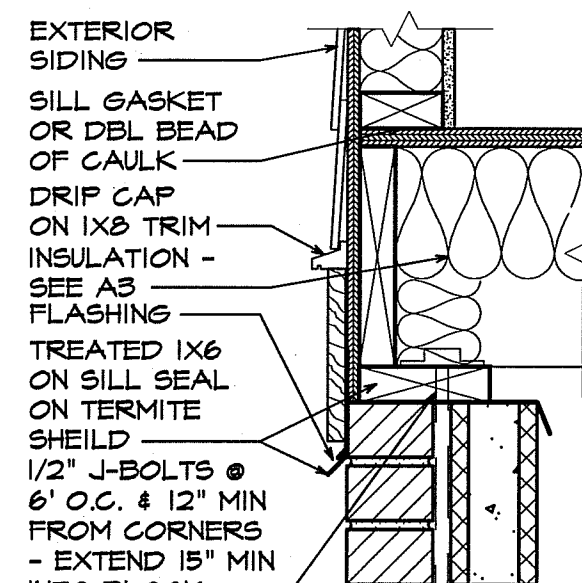
7 CORNER DETAIL
NOT TO SCALE



4 SILL DETAIL
1/2" = 1'-0"

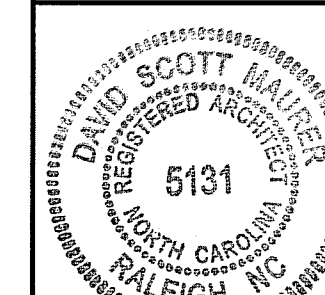
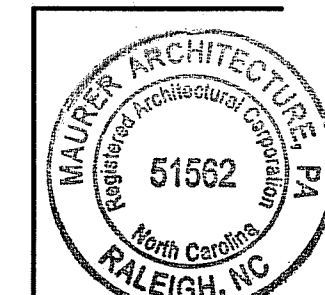


6 EXT. INSULATED T-WALL
NOT TO SCALE



3 SECTION DETAIL
1/2" = 1'-0"

Hudson Street Homes
129 Hudson Street
RALEIGH, NC



David Scott Maurer
1/14/12

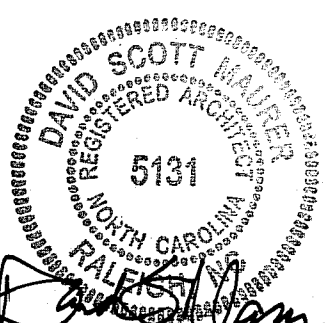
MAURER ARCHITECTURE

119 EAST HARGETT STREET, SUITE 300
RALEIGH, NC 27601
TEL. 919-829-4969 FAX. 919-829-0860

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Sections & Details

A3



DATE	01/11/12
DR.	res
CH.	DSM
PROJ. #	10031.2
REVISIONS	DATE
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Notes

A4

EXTERIOR WOOD FRAMED DECKS

- A deck is an exposed exterior wood floor structure which may be attached to the structure or freestanding. Roofed porches may be constructed using these provisions.
- Support posts for decks shall be supported on a cast-in-place concrete footing. See concrete specifications for concrete requirements. The size of the footing shall be noted on the plans.
- Lumber in contact with the ground, concrete or masonry shall be pressure treated in accordance with ANFA Standard C-15. All remaining deck lumber shall be pressure treated in accordance with ANFA Standard C-2 or a standard giving equal protection.
- When attached to a structure, the structure to which attached shall have a pressure treated wood band from the length of the deck, or metal flashing shall be used to prevent moisture from coming in contact with the untreated framing of the structure. The deck band and the structure band shall be constructed in contact with each other except on brick veneer structures and where plywood sheathing is required and properly lashed. Sliding shall not be installed between the structure and the deck band. If attached to a brick veneer structure, neither flashing nor a treated band for the brick structure is required. In addition, the treated deck band shall be constructed in contact with the brick veneer.
- The following schedule shall be used when the deck is supported at the structure by attachment:

All Structures Except Brick Veneer Structures		
Max. Joist Span	Fasteners	
8'-0"	5/8" HDG bolts @ 42" O.C.	4 2-12d HDG nails @ 8" O.C.
16'-0"	5/8" HDG bolts @ 20" O.C.	4 3-12d HDG nails @ 6" O.C.
Brick Veneer Structures		
Max. Joist Span	Fasteners	
8'-0"	5/8" HDG bolts @ 24" O.C.	
16'-0"	5/8" HDG bolts @ 16" O.C.	

Notes: min. edge distance for bolts is 2-1/2" min. nail penetration is 1-1/2"

- The following schedule shall be used for floor decking. Decking shall be SYP No.2.

Joist Spacing	Decking	
12" O.C.	1" S4S (nominal)	
16" O.C.	1-1/4" S4S (nominal) or 1" T&G (nominal)	
24" O.C.	2" S4S (nominal)	

- Support posts shall be SYP No.2. All post heights shall be measure from the top of the footing to the bottom of the girder. Consult architect for any post over 20'-0" in height.
- Posts shall be braced to provide lateral stability by one of the following methods:
 - When the deck floor height is less than 4'-0" and the deck is attached to the structure in accordance with this section lateral bracing is not required. When the band and the floor joists of the structure are parallel, full depth blocking shall be installed @ 24" O.C. for a min. of one joist space on the structure.
 - 2x6 diagonal vertical cross bracing may be provided in two perpendicular directions for freestanding decks or parallel to the structure at the exterior column line for attached decks. The 2x6s shall be attached to the posts with one 5/8" HDG bolt at each bracing member. Bracing shall run from the grade line to the bottom of the girder.
 - 4x4 wood knee brace may be provided on each column in both directions. The brace shall attach to each post at a point not less than 1/3 of the post length from the top of the post. The braces shall be angled between 45° and 60° from the horizontal. Attach each brace to the post and the girder with 1-5/8" HDG bolt at each end. This type of bracing requires a min. post size of 6x6.
 - Posts may be embedded in 3000 psi concrete for lateral stability as per the following schedule:

Post Size	Max. Tributary Area	Max. Height	Embedded Depth	Conc.
4x4	25 sf	8'-0"	2'-6"	1'-0"
6x6	25 sf	14'-0"	3'-6"	1'-8"

HANGER SCHEDULE

SIZE	SST HANGER	SIZE	SST HANGER
2x6	LU826	(2) 1.75 x 9.25 LVL	HU10(Max)
(2) 2x6	LU826-2	(3) 1.75 x 9.25 LVL	HU15S.50/10
(3) 2x6	LU826-3	(2) 1.75 x 11.875 LVL or (3) 1.75 x 11.875 LVL	HU12 (Max)
2x8	LU828	(3) 1.75 x 11.25 LVL or (3) 1.75 x 11.875 LVL	HU15S.50/10
(2) 2x8	LU828-2	(2) 1.75 x 14 LVL	HU16 (Max)
(3) 2x8	LU828-3	(2) 1.75 x 14 LVL	HU15S.50/10
2x10	LU830	(2) 1.75 x 16 LVL	HU19/14
(2) 2x10	HU8216-2	(3) 1.75 x 16 LVL	HU15S.50/10
(3) 2x10	LU8216-3	(2) 1.75 x 18 LVL	HU19/14
(4) 2x10	HU15210-4	(3) 1.75 x 18 LVL	HU15S.50/14
2x12	LU832	NOTES:	
(2) 2x12	HU8212-2	1. SST Denotes Simpson Strong Tie. Use hanger per schedule above (or equivalent metal hanger) unless hanger is noted on plans.	
(3) 2x12	HU212-3 (Max)	2. Install Hangers per manf. specifications.	

FLOOR FRAMING NOTES

- Floors shall be constructed in accordance with the requirements listed in the North Carolina Residential Building Code Chapter 5.
- Floors are designed for the uniformly distributed loads shown in the general structural notes. Special loading conditions must be reported to Maurer Architecture; Maurer Architecture is not responsible for floor defects resulting from unreported conditions.
- P denotes a point load from above. Provide solid blocking to foundation w/ the same number of studs as above.
- Install double joists or see truss manf. dwgs. for support under parallel non load bearing partitions above top.
- Floor sheathing shall be APA rated sheathing exposure 1 or 2, 3/4" T&G glued and attached to its supporting framing with 1-8d CC nail at 6" O.C. At panel edges and at 12" O.C. in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Panel and joints shall occur over framing.
- Joists framing into the side of a girder shall be supported by a 2x2 ledger or by manuf. recommended hangers.

WALL FRAMING NOTES

- Unless otherwise noted on the plans, all framing is assumed to be standard wood framing. Framing shall comply with the requirements of the North Carolina State Residential Code, chapter 6. Should a conflict occur between these drawings and the aforementioned code references the more stringent shall govern.
- Studs for wall framing shall consist of 2x nominal framing and be constructed in accordance with the requirements listed below. Studs listed in the following schedule shall have a maximum height of 10'-0":

Location	Stud Size	Grade	Spacing
Interior non-bearing walls	2x4	24" O.C.	
Interior bearing walls	2x4	Stud	16" O.C.
Exterior walls	2x4 spf	no.2	16" O.C.
- Studs shall be continuous from the sole plate to the double top plate at the ceiling or roof. Studs shall only be discontinuous at beams / headers for window or door openings. King studs shall be continuous with the same requirement as stud walls.
- All headers at ext. openings and at bearing walls shall be (2) 2x6 (unless noted otherwise). Provide continuous king studs on each side of the jack studs. Unless otherwise noted on the drawings provide jack studs in accordance with the following schedule:

Opening	No. of Jack Studs
less than 4'-0"	1 ea. End
4'-1" to 6'-0"	2 ea. End
6'-1" to 12'-0"	3 ea. End
over 12'-0"	4 ea. End, or see plans
- All beam bearing on timber framing shall have full bearing for the width of the beam and supported by a minimum of three studs. Where beams bear onto a wall parallel to the beam the beam shall have a minimum bearing length of 4'-1/2".
- Individual studs forming a column shall be attached together with one 10d CC nail @ 6" O.C. staggered. The stud column shall be continuous to the foundation or beam. The column shall be properly blocked at all floor levels to ensure proper load transfer.
- All exterior walls shall be sheathed per section R602.10.3 of the North Carolina State Residential Code. Wall sheathing shall be APA rated structural I sheathing. Wall sheathing shall be attached to its supporting wall framing with 4-1/2" O.C. At panel edges and @ 12" O.C. in panel field unless otherwise noted on the plans. Sheathing shall have a span rating constant with the framing spacing. Apply air infiltration barrier over the sheathing as required by the North Carolina Residential Code.

ROOF FRAMING NOTES

- Unless otherwise noted on the plans, all framing is assumed to be standard wood framing. Framing shall comply with the requirements of the North Carolina Residential Code, chapter 6.
- Roofs are designed for the uniformly distributed loads shown in the general structural notes. Special loading conditions must be reported to Maurer Architecture; Maurer Architecture is not responsible for defects resulting from unreported conditions.
- Roofs shall be framed with ROOF FRAMING at 24" O.C. unless noted otherwise. Trusses shall be designed and/or reviewed by a licensed structural engineer.
- At rafter and joist framing, a 2x4 collar tie (beam) shall be provided every third set of rafters. Ties shall be placed in the upper third of the roof and attached to each rafter with 4-12d CC nails.
- Proper roof drainage shall be maintained at all roof conditions.
- Roofs shall be sheathed with 15/32 APA rated structural sheathing exposure 1 or 2. Roof sheathing shall be continuous over two supports and attached to its supporting roof framing with 1-8d CC nail at 6" O.C. At panel edges and @ 12" O.C. in panel field unless otherwise noted on the plans. Sheathing shall be applied perpendicular to framing. Sheathing shall have a span rating constant with the framing spacing. Use suitable edge support by use of plywood clips or lumber blocking unless otherwise noted. Panel and joints shall occur over framing. Sheathing shall have a 1/8" gap at panel ends and edges as recommended in accordance with the APA.
- Apply building felt over the sheathing as required by the North Carolina Residential Code, with two layers for slopes 2/12 to 4/12 and one layer for slopes 4/12.
- Attach a Simpson H25A Hurricane Tie at every connection between trusses and top plates.

DESIGN LOADS

The following are design loads for Wake County, NC. For all other locations refer to the building code and any applicable local requirements.

- Building Codes
 - 2009 North Carolina Residential Code (2006 International Residential Code with North Carolina Amendments)
 - Minimum Design Loads for Building and Other Structures, ASCE 7-05.
- Roof Dead Load 15 PSF
- Roof Live Load 20 PSF
- Typical Floor Dead Load 10 PSF
- Floor Live Loads
 - Rooms other than sleeping rooms 40 PSF
 - Sleeping Rooms 30 PSF
 - Stairs 40 PSF
 - Decks 40 PSF
 - Exterior Balconies 60 PSF
- Wind Loads / Data
 - Basic Wind Speed (3 Second Gust) 100 MPH
 - Wind Importance Factor, IW 1.00
 - Exposure C
 - Walls (Component and Cladding) 25 PSF
 - Roofs (Component and Cladding)
 - Roof Slopes 2.25/12 to 1/12 34.8 PSF
 - Roof Slopes 1/12 to 12/12 21 PSF
- Seismic Loads/ Data
 - Seismic Use Group O.075
 - Spectral Response Coefficient, SDS 0.17g and 0.33g
 - Site Class D
 - Seismic Importance Factor, IS 1.00
 - Seismic Design Category B

GENERAL STRUCTURAL NOTES

- This structure is only stable in its completed form. The contractor shall provide all required temporary bracing during construction to stabilize the structure.
- The architect is not responsible for construction sequences, methods, or techniques in connection with the construction of this structure. The architect will not be held responsible for the contractor's failure to conform to the construction documents, should any non-conformities occur.
- Verification of assumed field conditions is not the responsibility of the architect. The contractor shall verify the field conditions for accuracy and report any discrepancies to Maurer Architecture before construction begins.
- This structure and all construction shall conform to all applicable sections of the North Carolina residential code and any local laws where the structure is to be constructed.

FOUNDATIONS & CRAWL SPACES

- Foundations shall conform to the requirements of the North Carolina Residential Building Code, Chapter 4. Should a conflict occur between these drawings and the aforementioned building code references the more stringent shall govern.
- The architect has not received a subsurface investigation. The foundation is based upon an assumed soil bearing capacity of 2000 psf net bearing. Verification of this assumed value is the responsibility of the owner or contractor should any adverse soil condition be encountered the architect must be contacted before proceeding.
- Foundations shall extend not less than 12 inches below the finished natural grade and in no case less than the frost line depth. Foundations are assumed to restrain earth pressures of 30 psf or less, unbalanced fill and foundation wall construction shall conform to tables 404.1 of the North Carolina Residential Building Code. Site topography has not been provided to Maurer Architecture. Report any unusual site conditions to Maurer Architecture before construction.
- Any fill shall be placed under the direction or recommendation of a licensed professional engineer. The resulting soil shall be compacted to a minimum of 95 percent maximum dry density.
- Excavation for footings shall be lined temporarily with a 6 mil polyethylene if placement of concrete does not occur within 24 hours of excavation.
- No concrete shall be poured against any subgrade containing water, ice, frost, or loose material.
- Enlarged perimeter footings are to be poured monolithically with wall footings. Reinforcement for wall footings, if any, shall run continuously through column footings.
- Crawl space vents to be 8"x16" w/ min. 50% free air, and shall be located within 3' of each corner unless closed crawl space. Crawl space door may serve as vent.
- Install 6 mil. vapor barrier below all slabs and on ground area within all crawlspaces.
- Provide min. 18x24 access panel or larger as required by the NC Mechanical Code when mechanical equipment is located in the crawlspace.
- Remove earth as required to achieve a minimum clearance from ground to underside of floor joists of 18".
- Provide foundation drains at all foundation walls. Coordinate location to daylight with owner.

CONCRETE

- Concrete shall have normal weight aggregate and a minimum compressive strength (fc) at 28 days as listed below:
 - Footings 3000 psi
 - Slabs-on-grade 4000 psi
 - Elevated Slabs 3500 psi
- Concrete shall be proportioned, mixed, and placed in accordance with ACI 318 latest edition "Building Code Requirements for Reinforced Concrete" and ACI 301 latest edition "Specifications for Structural Concrete for Building"
- Entrained air must be used in all concrete that will be exposed to freezing and thawing and deicing chemicals. Amount of air entrainment (percent) shall be in accordance with the following schedule with a range of -1 to +2 percentage points of the target value:
 - Footings 5%
 - Interior Slabs 0% see note below
 - Exterior Slabs 5%

Note: It is recommended that interior slabs to be given a smooth, dense, hard-finished finish not contain entrained air since blistering or delamination may occur. If slabs will be exposed to deicing or other aggressive chemicals contact Tightline Designs for proper air entrainment requirements.
- No admixtures shall be added to any structural concrete without written permission of the architect.

CONCRETE SLABS ON GRADE

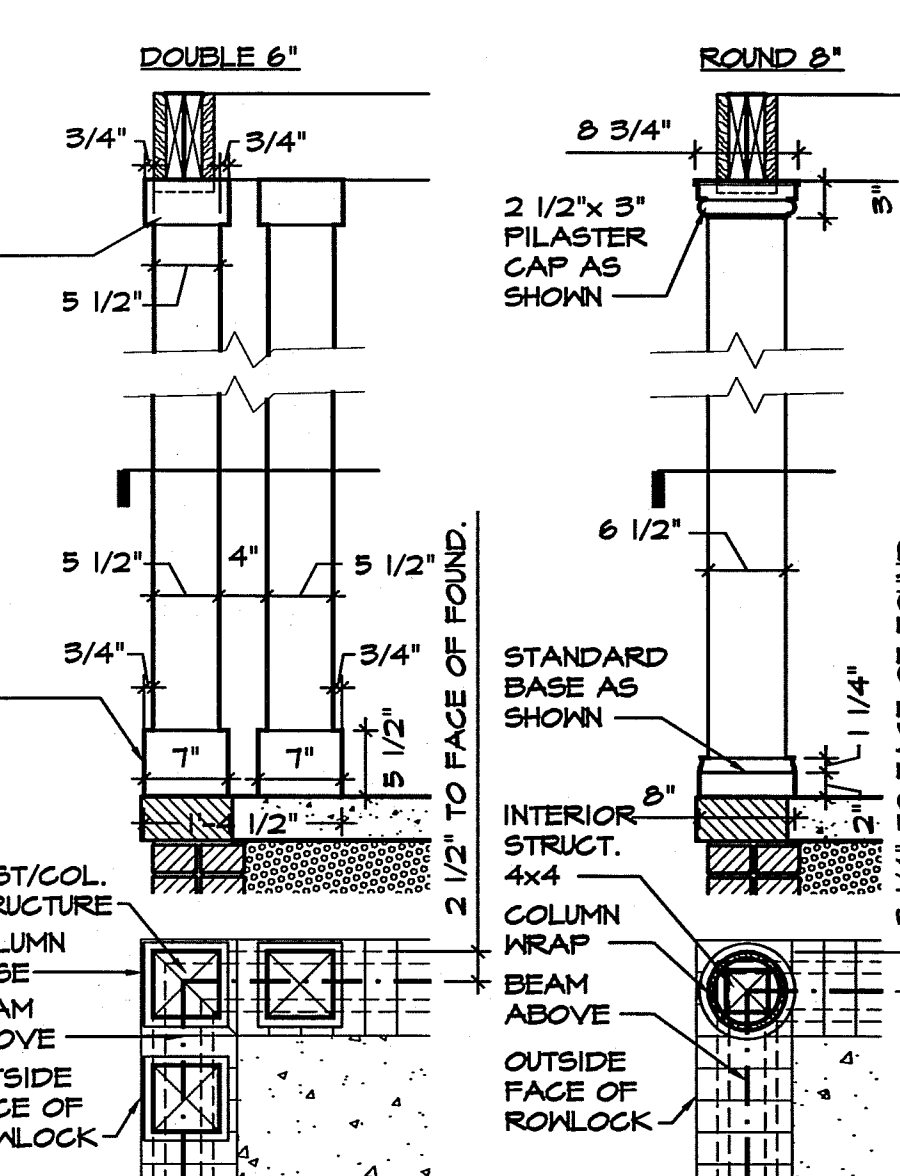
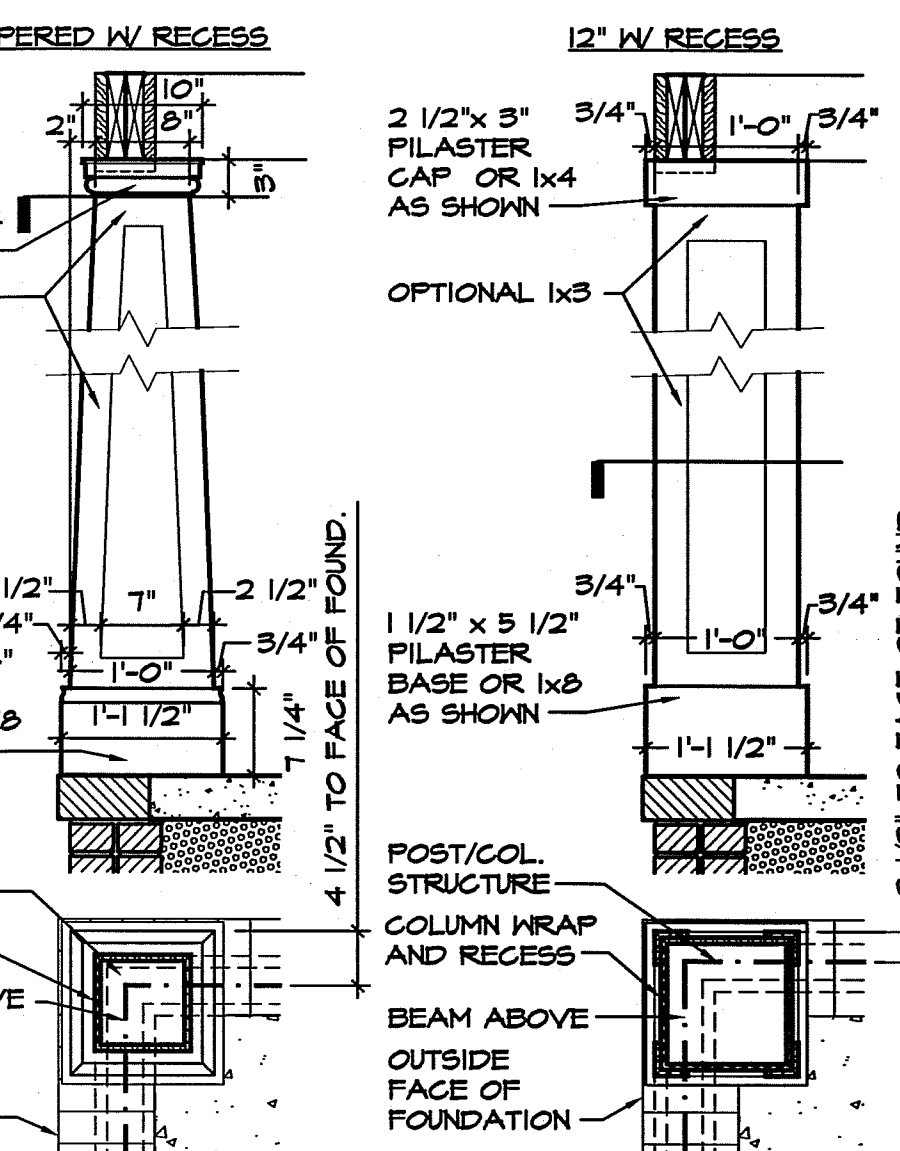
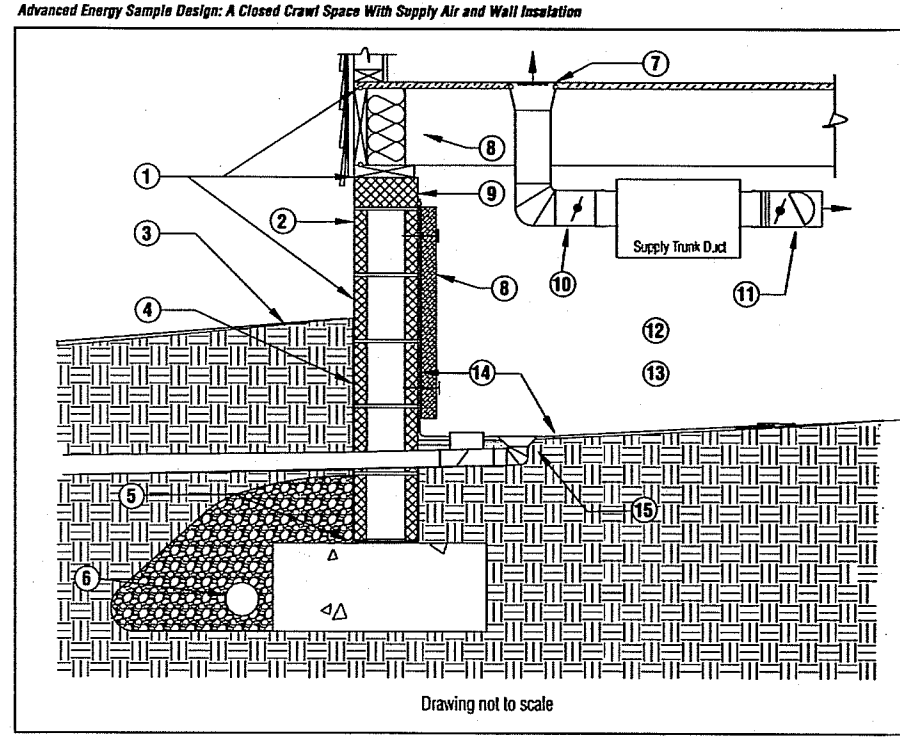
- Concrete slabs on grade shall be constructed in accordance with ACI 302.1-96 "Guide for concrete slab and slab construction"
- The architect is not responsible for differential settlement, slab cracking or other future defects resulting from unreported conditions.
- Control joints shall be spaced in slabs on grade at a maximum of 20'-0" O.C. Unless noted otherwise.
- Control joints shall be produced using conventional processes within 4 to 12 hours after the slab has been finished.
- Reinforcing steel shall not extend through the control joint.
- All welded wire fabric for concrete slab on grade shall be supplied in flat sheets
- All welded wire fabric for concrete slab on grade shall be placed 2" from top of slab. The WVF shall be securely supported during the concrete pour.

TIMBER

- Solid sawn wood framing shall conform to the specifications as listed in the National Forest Products Association "National Design Specification for Wood Construction" latest edition (NDS). The framing shall be of the species and grade as listed below:
 - Joists, Rafters, and Wood Girders and Beams: Spruce Pine Fir No. 2
 - Studs: Spruce Pine Fir No. 3 or Stud Grade
- LVL or PSL shall the following minimum design stresses:
 - E = 1.4 x 10E6
 - Fb = 2600 PSI
 - Fv = 285 PSI
 - Fc = 100 PSI
- Lumber in contact with concrete, masonry, or earth shall be pressure treated in accordance with ANFA standard C-15. All other exposed timber shall be treated in accordance with ANFA standard C-2.
- Nails shall be common wire nails unless otherwise noted.
- Log screws shall conform to ANSI / ASME standard B16.2.1-1981. Lead holes for log screws shall be in accordance with NDS specifications.
- Beams containing multiple piles of lumber shall have each ply attached to its adjacent ply with 3 12d CC nails @ 12" O.C.

Sample Design: Supply Air and Wall Insulation

- Seal exterior wall penetrations and sealing surfaces at top and bottom of sill plate and at top and bottom of band joint. Crawl space access panel(s) or door(s) must be air-sealed.
- No open foundation vents are allowed in exterior walls. Opening to vented crawlspace boundaries must be air-sealed with an access panel or permanent materials. Install floor vents per local residential code where required.
- Seal finished grade away from building per local residential code or 6 ft. drop per IBC. Provide a method to transport roof runoff away from the house. Gutters and downspouts are one such method.
- Damp-proof or waterproof the exterior wall surface when the crawl space floor is below exterior grade.
- Seal all plumbing, electrical, duct, cable, and other penetrations through the top-floor with fire-stop materials and caulk. Damp-proof or waterproof the foundations and foundation walls or exterior columns, but this may provide additional moisture control.
- Provide foundation drains to daylight per local residential code requirements.
- Seal all plumbing, electrical, duct, cable, and other penetrations through the top-floor with fire-stop materials and caulk. Damp-proof or waterproof the foundations and foundation walls or exterior columns, but this may provide additional moisture control.
- Seal all heating and cooling ductwork with a duct mastic system. Install all ductwork located in the crawl space with 1/2" water per local code requirement.
- Control moisture vapor in the crawl space with supply air from the house air conditioning system. Set supply air volume per local residential code requirement. Adjust as needed to control relative humidity in crawl space to desired level. Provide a humidity damper and other a balancing damper or control airflow register to control airflow. Multiple supply vents may be used to achieve the desired airflow and/or desired distribution of air. No return air vent is allowed in the crawl space.
- Terminate water heater drain, sump pump/pressure relief pipe, and A/C condensate drain to outdoors, or to an exterior pump that discharges to outdoors. Terminate all kitchen, bathroom and clothes dryer vents to outdoors.
- Any leak-flood furnace, water heater, or other appliance in a closed crawl space must be of a "leak proof" or "leak-free" design, ensuring that all air for combustion is piped directly from outside to the appliance and all combustion exhaust gases are piped directly from the appliance to outside.
- Cover 100% of the crawl space floor with a minimum 6-mil vapor retarder. Mechanically fasten and seal the vapor retarder material to the inside wall surfaces, leaving the required finish inspection gap at the top of the wall. Extend the vapor retarder on the interior columns of at least 4 inches above the crawl space floor. Seal all corners and edges with flexible foam seal and duct mastic or equivalent. Mechanically secure the ground vapor retarder as necessary.
- Seal the crawl space floor to one or more low points at floor perimeters. Space drains to daylight and include an accessible building value and 1/4-inch round screening. Catch drains and foundation drains (interior or exterior) must not be connected to the crawl space drain.



ALTERNATE COLUMN DETAILS (SLAB PORCH SHOWN)

3/4" = 1'-0"