City of Portland, Maine – Building or Use Permit Application

389 Congress Street, 04101, Tel: (207) 874-8703, FAX: 874-8716

Location of Construction:	Owner:	Phone:
16 Anderson Ave/L.D.I.	Tierney, Mark & Colleen	

Owner Address:	Lessee/Buyer's Name:	Phone:	BusinessName:

Contractor Name:	Address:	Phone:
Beaulieu Construction	10 Hickory Ln Gorham, ME 04038	892-0070

Past Use:	Proposed Use:	COST OF WORK:	PERMIT FEE:
Vacant Land	1-fam	$ 200,000.00	$ 1,020.00

FIRE DEPT. ☐ Approved ☐ Denied	INSPECTION: Use Group: Type:
Signature:	Signature:

Proposed Project Description:

Construct Single Family Dwelling w/rear decks

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

Action: Approved ☐ Approved with Conditions: ☐ Denied ☐

Signature: Date:

Permit Taken By:	Date Applied For:
Mary Gresik	06 October 1997

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal rules.
2. Building permits do not include plumbing, septic or electrical work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..

PERMIT ISSUED WITH REQUIREMENTS

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provisions of the code(s) applicable to such permit

Steven B. Beaulieu 06 October 1997

SIGNATURE OF APPLICANT Steve Beaulieu ADDRESS: DATE: PHONE:

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE PHONE:

White–Permit Desk Green–Assessor's Canary–D.P.W. Pink–Public File Ivory Card–Inspector

Permit No: 971135

PERMIT ISSUED

Permit Issued: OCT 16 1997

CITY OF PORTLAND

Zone: CBL: 105-I-015/016

Zoning Approval:

Special Zone or Reviews:

- ☒ Shoreland
- ☐ Wetland
- ☐ Flood Zone
- ☐ Subdivision
- ☒ Site Plan maj ☐ minor ☐ mm ☐

Zoning Appeal

- ☐ Variance
- ☐ Miscellaneous
- ☐ Conditional Use
- ☐ Interpretation
- ☐ Approved
- ☐ Denied

Historic Preservation

- ☒ Not in District or Landmark
- ☒ Does Not Require Review
- ☐ Requires Review

Action:

- ☐ Appoved
- ☐ Approved with Conditions
- ☐ Denied

Date:

CEO DISTRICT 4

COMMENTS

4-14-98 Did a framing inspection this date.
All ready to do the insulation rough plumbing checks on/s

10/30/98 Final OK (DC)

Inspection Record

Type	Date
Foundation:	
Framing:	4-14-98
Plumbing:	
Final:	
Other:	

BUILDING PERMIT REPORT

DATE: 17 OCT. 97 ADDRESS: 16 Anderson AVE, L.D.I.

REASON FOR PERMIT: To Construct a Single family dwelling.

BUILDING OWNER: Colleen & Mark Tierney

CONTRACTOR: Beaulieu Const.

PERMIT APPLICANT: Steve Beaulieu APPROVAL: *1 *2 *3 *4 *C *8 *9 *10 *11 *12 [redacted]
*16 *25, *26 *27, *28 *29, *30

USE GROUP R-3 BOCA 1996 CONSTRUCTION TYPE 5B

CONDITION(S) OF APPROVAL

X 1. This permit does not excuse the applicant from meeting applicable State and Federal rules and laws.

X 2 Before concrete for foundation is placed, approvals from the Development Review Coordinator and Inspection Services must be obtained. (A 24 hour notice is required prior to inspection)

X 3. Precaution must be taken to protect concrete from freezing.

X 4. It is strongly recommended that a registered land surveyor check all foundation forms before concrete is placed. This is done to verify that the proper setbacks are maintained. (NorthwasT Corner of Proposed deck Looks Like 0'.)

5. Private garages located beneath habitable rooms in occupancies in Use Group R-1, R-2, R-3 or I-1 shall be separated from adjacent interior spaces by fire partitions and floor/ceiling assembly which are constructed with not less than 1-hour fire resisting rating. Private garages attached side-by-side to rooms in the above occupancies shall be completely separated from the interior spaces and the attic area by means of ½ inch gypsum board or the equivalent applied to the garage means of ½ inch gypsum board or the equivalent applied to the garage side. (Chapter 4 Section 407.0 of the BOCA/1996)

X 6. All chimneys and vents shall be installed and maintained as per Chapter 12 of the City's Mechanical Code. (The BOCA National Mechanical Code/1993).

7. Sound transmission control in residential building shall be done in accordance with Chapter 12 section 1214.0 of the city's building code.

X 8. Guardrails & Handrails: A guardrail system is a system of building components located near the open sides of elevated walking surfaces for the purpose of minimizing the possibility of an accidental fall from the walking surface to the lower level. Minimum height all Use Groups 42", except Use Group R which is 36". In occupancies in Use Group A, B, H-4, I-1, I-2 M and R and public garages and open parking structures, open guards shall have balusters or be of solid material such that a sphere with a diameter of 4" cannot pass through any opening. Guards shall not have an ornamental pattern that would provide a ladder effect. (Handrails shall be a minimum of 34" but not more than 38". Use Group R-3 shall not be less than 30", but not more than 38".)

X 9. Headroom in habitable space is a minimum of 7'6".

X 10. Stair construction in Use Group R-3 & R-4 is a minimum of 10" tread and 7 3/4" maximum rise. All other Use group minimum 11" tread 7" maximum rise.

X 11. The minimum headroom in all parts of a stairway shall not be less than 80 inches. (6' 8")

X 12. Every sleeping room below the fourth story in buildings of use Groups R and I-1 shall have at least one openble window or exterior door approved for emergency egress or rescue. The units must be operable from the inside without the use of special knowledge or separate tools. Where windows are provided as means of egress or rescue they shall have a sill height not more than 44 inches (1118mm) above the floor. All egress or rescue windows from sleeping rooms shall have a minimum net clear opening height dimension of 24 inches (610mm). The minimum net clear opening width dimension shall be 20 inches (508mm), and a minimum net clear opening of 5.7 sq. ft.

13. Each apartment shall have access to two (2) separate, remote and approved means of egress. A single exit is acceptable when it exits directly from the apartment to the building exterior with no communications to other apartment units.

14 All vertical openings shall be enclosed with construction having a fire rating of at lest one (1)hour, including fire doors with self closer's

15. The boiler shall be protected by enclosing with (1) hour fire-rated construction including fire doors and ceiling, or by providing automatic extinguishment.

X 16. All single and multiple station smoke detectors shall be of an approved type and shall be installed in accordance with the provisions of the City's Building Code Chapter 9, Section 19, 920.3.2 (BOCA National Building Code/1996), and NFPA 101 Chapter 18 & 19 (Smoke detectors shall be installed and maintained at the following locations):

- In the immediate vicinity of bedrooms
- In all bedrooms

- In each story within a dwelling unit, including basements

In addition to the required AC primary power source, required smoke detectors in occupancies in Use Groups R-2, R-3 and I-1 shall receive power from a battery when the AC primary power source is interrupted. (Interconnection is required)

17. A portable fire extinguisher shall be located as per NFPA #10. They shall bear the label of an approved agency and be of an approved type.
18. The Fire Alarm System shall be maintained to NFPA #72 Standard.
19. The Sprinkler System shall maintained to NFPA #13 Standard.
20. All exit signs, lights, and means of egress lighting shall be done in accordance with Chapter 10 Section & Subsections 1023. & 1024. Of the City's building code. (The BOCA National Building Code/1996)
21. **No construction or demolition work shall begin until you have obtained permits for dumpsters or containers. A work Stop Order shall be issued if this requirement is not met.**
22. Section 25-135 of the Municipal Code for the City of Portland states, "No person or utility shall be granted a permit to excavate or open any street or sidewalk from the time of November 15 of each year to April 15 of the following year".
23. The builder of a facility to which Section 4594-C of the Maine State Human Rights Act Title 5 MRSA refers, shall obtain a certification from a design professional that the plans commencing construction of the facility, the builder shall submit the certification to the Division of Inspection Services.
24. This permit does not excuse the applicant from obtaining any license which may be needed from the City Clerk's office.
25. Ventilation shall meet the requirements of Chapter 12 Sections 1210. of the City's Building Code.
26. All electrical, plumbing and HVAC permits must be obtained by a Master Licensed holders of their trade.
27. All requirements must be met before a final Certificate of Occupancy is issued.
28. All building elements shall meet the fastening schedule as per Table 2305.2 of the City's Building Code. (The BOCA National Building Code/1996).
29. Ventilation of spaces within a building shall be done in accordance with the City's Mechanical Code (The BOCA National Mechanical Code/1993).
30. Please read and implement attached site plan review requirements.
31.
32.
33.
34.

P. Samuel Hoffses, Code Enforcement

cc: Lt. McDougill, PFD
Marge Schmuckal
J. M Wendel

SHORELAND ZONING REQUIREMENTS
(250' from High Water Mark)

WITHIN 75' OF NORMAL HIGH-WATER LINE:

- No construction
- There shall be no cleared openings.
- A well-distributed stand of trees and other vegetation, including existing ground cover, shall be maintained.
- Clearing of vegetation for development is not allowed, except to remove safety hazards.
- No cleared opening greater that 250 square feet in the forest canopy as measured from the outer limits of the tree crown is allowable., However a footpath not to exceed 10' in width as measured between tree trunks is permitted provided that a clear line of sight to the water through the buffer strip is not created.
- There shall be no accessory structures constructed, such as piers, docks, wharves, bridges, stairways, parking areas, and retaining walls. without permits and review.

BEYOND THE 75' SETBACK, WITHIN SHORELAND ZONE:

- There shall be permitted on any lot in any 10 year period, selective cutting of not more than 40% of the volume of trees 4" or more in diameter, measured 4.5 feet above ground level. Tree removal in conjunction with the development of permitted uses shall be included in the 40% calculations. Pruning of tree branches on the bottom 1/3 of the tree is permitted.
- In no event shall cleared openings for development, including but not limited to, principal and accessory structures, driveways, and sewage disposal areas, exceed in the aggregate, 25% of the lot area or 10,000 square feet, which ever is greater.

RE: Timber Harvesting:

- There can be no single clear cut openings greater than 10,000 square feet in the forest canopy (measured from the edge of the crown of trees).
- Clear cut openings greater than 5,000 square feet must be 100' apart.
- Clear cut openings must be included in the calculations of total volume removal.

A:SHORZONE
8/24/95

19970078
I. D. Number

CITY OF PORTLAND, MAINE
DEVELOPMENT REVIEW APPLICATION
PLANNING DEPARTMENT PROCESSING FORM
ADDENDUM

Tierney, Mark & Colleen	10/6/97
Applicant	Application Date
, Portland, ME	Little Diamond Ave/Anderson Av
Applicant's Mailing Address	Project Name/Description
Beaulieu Const/Steve	16 Anderson St
Consultant/Agent	Address of Proposed Site
892-0070	105-I-015/016
Applicant or Agent Daytime Telephone, Fax	Assessor's Reference: Chart-Block-Lot

Inspections Conditions for Approval

1. It is suggested that because the deck is very close to the required 75' setback from the high water mark, survey stakes be set prior to construction.
2. Separate permits shall be required for future decks, garage and/or pool.
3. Please read and implement the attached requirements concerning development within shoreland zoning.

CITY OF PORTLAND, MAINE
PUBLIC NOTICE

To All Building Permit Applicants and/or Contractors:

Effective immediately all temporary erosion control measures as shown on submitted site plans or as made part of a conditional approval of a site plan shall be installed, maintained, and inspected for proper functioning. Erosion control measures include but are not limited to silt fencing hay bales, stone check dams, earthen berms, stone lined swales, riprap embankments, riprap inlet/outlets of any pipe channel or culvert, sodded or grass strips, hay mulch cover on exposed soils, jute matting or erosion control blanket/matting, geotextile grids or webbing, and any provision approved by the City Engineer or Development Review Coordinator to decrease erosion or sedimentation.

All temporary and permanent erosion control measures shall be in conformance with the Maine Erosion and Sediment Control Handbook for construction: Best Management Practices as published by Cumberland County SWCD and the Maine Department of Environmental Protection. Consistent failure to install, maintain, or construct in an acceptable manner will result in a stop work order on the building permit. All erosion control measures shall be established in proposed areas of disturbed soils resulting from construction activities prior to actual construction unless a specific deadline has been made a condition of approval or agreed to by a Public Works Engineer or the Development Review Coordinator.

Effective immediately any request for Certificate of Occupancy will be denied if the above measures have not been addressed or completed. Only under extreme conditions, due to weather, shall the omission of the erosion control standards be included on the conditions for a Certificate of Occupancy, otherwise the request for a Certificate will be refused.

The City of Portland Planning Department and Public Works Department consider Erosion and Sediment Control Planning to be an absolutely necessary initial construction activity that requires as much attention and enforcement as building construction. For the protection of sensitive waterbodies, undisturbed lands, neighboring properties, established vegetated areas, and municipal drainage systems please pay careful attention to erosion and sediment control measures and conform to the notes, details, and conditions of approval as noted on your approved site plan. These controls must be installed and maintained continuously throughout the construction period. The City may inspect the site at any time to ensure compliance, and violations could result in work stoppage orders as indicated above.

We appreciate your prompt compliance with these requirements.

CITY OF PORTLAND
Planning and Urban Development Department

MEMORANDUM

TO: Joseph E. Gray, Jr., Director of Planning and Urban Development
Alexander Jaegerman, Chief Planner

FROM: James Seymour, Acting Development Review Coordinator

DATE: April 5, 1995

SUBJECT: Disclaimer Statement of Existing Poorly Drained Areas

It is the responsibility of the lot owner/homebuilder to assess drainage and provide for appropriate stormwater management design and engineering in an area which has evidence of poor hydrologic soil conditions, and/or a history of poor drainage, ponding, or soils saturation due to topography, fluctuation of seasonal ground water tables creating surface flooding, or as a result from rainfall events or snow/ice melts. The City of Portland is not responsible for resolving the drainage of land areas which could be described in any one of the above conditions.

The City of Portland Development Review Coordinator reviews lot grading for all single family homes to assure that field elevations will conform to the grades which exist at the abutting property line or to the grades which have been previously approved at the abutting property lines. The construction standards require that final foundation elevations be provided on site plans which are a minimum of 2 1/2 feet higher than street grades established at the frontage of the lot and provide positive drainage away from the entire foundation perimeter, including garage, and all basement accesses (ie. bulkheads, doorways and windows). As long as these standards are strictly enforced, most water problems on single family lots will be avoided. However, in locations with clear evidence of hydric soils, the following note shall be placed on all approved site plans:

> "The City of Portland Development Review Coordinator has reviewed and approved this plan. The lot is located in an areas that is subject to seasonal conditions of saturation by surface or groundwater. Approval of this plan does not constitute a guarantee that no water problems will be experienced by the homeowners in this vicinity. Homeowners are advised to exercise care and diligence to ensure that their home and yard is adequately constructed and graded for localized drainage conditions."

Revised 10/96

CITY OF PORTLAND, MAINE
SITE PLAN REVIEW (ADDENDUM)
CONDITIONS OF APPROVAL

APPLICANT: Mark & Colleen Tierney

ADDRESS: Portland, ME

SITE ADDRESS/LOCATION: 16 Anderson Ave – Little Diamond Island

DATE: 10/7/97

Review by the Development Review Coordinator is for General Conformance with ordinances and standards only and does not relieve the applicant, his contractors or agents from the responsibility to provide a completely finished site, including but not limited to: increasing or concentrating of all surface runoff onto adjacent or downstream properties, issues regarding vehicle sight distance, location of public utilities and foundation elevations.

CONDITIONS CHECKED OFF BELOW WILL BE ENFORCED FOR YOUR SITE PLAN

1. ✓ All damage to sidewalk, curb, street, or public utilities shall be repaired to City of Portland Standards prior to issuance of a Certificate of Occupancy.

2. ✓ Two (2) City of Portland approved species and size trees must be planted on your street frontage prior to issuance of a Certificate of Occupancy.

3. ✓ Your new street address is now 16 Anderson Ave, the number must be displayed on the street frontage of your house prior to issuance of Certificate of Occupancy.

4. ✓ The Development Review Coordinator (874-8300 ext. 8722) must be notified five (5) working days prior to date required for final site inspection. Please make allowances for completion of site plan requirements determined to be incomplete or defective during the inspection. This is essential as all site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

5. ✓ Show all utility connections: water, sanitary sewer, storm drain, electric, telephone, cable.

6. ____ A sewer permit is required for your project. Please contact Carol Merritt at 874-8300, ext. 8828. The Wastewater and Drainage section of Public Works must be notified five (5) working days prior to sewer connection to schedule an inspector for your site.

7. ✓ A street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

8. _____ As-built record information for sewer and stormwater service connections must be submitted to Parks and Public Works Engineering Section (55 Portland Street) and approved prior to issuance of a Certificate of Occupancy.

9. _____ The building contractor shall check the subdivision recording plat for pre-determined first floor elevation and establish the first floor elevation (FFE) and sill elevation (SE) to be set above the finish street/curb elevation to allow for positive drainage away from entire footprint of building.

10. ✓ The site contractor shall establish finish grades at the building foundation, bulkhead and basement windows to be in conformance with the first floor elevation (FFE) and sill elevation (SE) set by the building contractor to provide for positive drainage away from entire footprint of building.

11. ✓ A drainage plan shall be submitted to and approved by Development Review Coordinator showing first floor elevation (FEE), sill elevation (SE), finish street/curb elevation, lot grading, existing and proposed contours, drainage patterns and paths, drainage swales, grades at or near abutting property lines, erosion control devices and locations and outlets for the drainage from the property.

12. ✓ The Development Review Coordinator reserves the right to require additional lot grading or other drainage improvements as necessary due to field conditions.

13. ✓ INSTALL SILT FENCE DOWNGRADIENT OF THE HOUSE ALONG THE LOT WIDTH. STABILIZE ALL DISTURBED AREAS AS SOON AS POSSIBLE BUT NO LATER THAN 10 DAYS. KEEP DISTURBED AREA TO A MINIMUM.

cc: Katherine Staples, P.E., City Engineer

1997079
I. D. Number

CITY OF PORTLAND, MAINE
DEVELOPMENT REVIEW APPLICATION
PLANNING DEPARTMENT PROCESSING FORM
ADDENDUM

Tierney, Mark & Colleen
Applicant

10/8/97
Application Date

, Portland, ME
Applicant's Mailing Address

Little Diamond Ave/Anderson Av
Project Name/Description

Beaulieu Const/Steve
Consultant/Agent

Anderson St
Address of Proposed Site

882-0070
Applicant or Agent Daytime Telephone, Fax

105-I-016/019
Assessor's Reference: Chart-Block-Lot

DRC Conditions for Approval

Approved subject to Site Plan Review (addendum) Conditions of Approval #1, 2, 3 (16 Anderson Avenue), 4, 5, 7, 10, 11, 12, and 13 (Install silt fence downgradient of the house along the lot width. Stabilize all disturbed areas as soon as possible but no later than 10 days. Keep disturbed area to a minimum.

1997078
I. D. Number

CITY OF PORTLAND, MAINE
DEVELOPMENT REVIEW APPLICATION
PLANNING DEPARTMENT PROCESSING FORM

Tierney, Mark & Colleen
Applicant

10/6/97
Application Date

, Portland, ME
Applicant's Mailing Address

Little Diamond Ave/Anderson Av
Project Name/Description

Beaulieu Const/Steve
Consultant/Agent

16 Anderson St
Address of Proposed Site

892-0070
Applicant or Agent Daytime Telephone, Fax

106-I-015/016
Assessor's Reference: Chart-Block-Lot

Proposed Development (check all that apply): ☒ New Building ☐ Building Addition ☐ Change Of Use ☒ Residential
☐ Office ☐ Retail ☐ Manufacturing ☐ Warehouse/Distribution ☐ Parking Lot ☐ Other (specify)

Proposed Building square Feet or # of Units

24,256 Sq Ft
Acreage of Site

I-R2 zone
Zoning

Check Review Required:

☒ Site Plan (major/minor)
☐ Subdivision # of lots
☐ PAD Review
☐ 14-403 Streets Review
☐ Flood Hazard
☐ Shoreland
☐ Historic Preservation
☐ DEP Local Certification
☐ Zoning Conditional Use (ZBA/PB)
☐ Zoning Variance
☐ Other

Fees Paid: Site Plan $650.00 Subdivision Engineer Review $100.00 Date: 10/6/97

Inspections Approval Status: Reviewer Marge Schmuckal

☐ Approved
☒ Approved w/Conditions see attached
☐ Denied

Approval Date 10/16/97 Approval Expiration Extension to ☒ Additional Sheets Attached

☒ Condition Compliance
signature date

Performance Guarantee ☐ Required* ☐ Not Required

* No building permit may be issued until a performance guarantee has been submitted as indicated below

☐ Performance Guarantee Accepted
date amount expiration date

☐ Inspection Fee Paid
date amount

☐ Building Permit Issued
date

☐ Performance Guarantee Reduced
date remaining balance signature

☐ Temporary Certificate of Occupancy
date
☐ Conditions (See Attached)

☐ Final Inspection
date signature

☐ Certificate Of Occupancy
date

☐ Performance Guarantee Released
date signature

☐ Defect Guarantee Submitted
submitted date amount expiration date

☐ Defect Guarantee Released

CITY OF PORTLAND, MAINE
DEVELOPMENT REVIEW APPLICATION
PLANNING DEPARTMENT PROCESSING FORM

I. D. Number

Tierney, Mark & Colleen
Applicant
, Portland, ME
Applicant's Mailing Address
Beaulieu Const/Steve
Consultant/Agent
892-0070
Applicant or Agent Daytime Telephone, Fax

10/6/97
Application Date
Little Diamond Area/Anderson Av
Project Name/Description
Anderson St
Address of Proposed Site
108-I-016/018
Assessor's Reference: Chart-Block-Lot

Proposed Development (check all that apply): ☒ New Building ☐ Building Addition ☐ Change Of Use ☒ Residential
☐ Office ☐ Retail ☐ Manufacturing ☐ Warehouse/Distribution ☐ Parking Lot ☐ Other (specify)

Proposed Building square Feet or # of Units | 24,250 Sq Ft Acreage of Site | Zoning

Check Review Required:

☒ Site Plan (major/minor) ☐ Subdivision # of lots ☐ PAD Review ☐ 14-403 Streets Review
☐ Flood Hazard ☐ Shoreland ☐ Historic Preservation ☐ DEP Local Certification
☐ Zoning Conditional Use (ZBA/PB) ☐ Zoning Variance ☐ Other

Fees Paid: Site Plan $50.00 Subdivision Engineer Review $100.00 Date: 10/6/97

DRC Approval Status: Reviewer Jim Wendel

☐ Approved ☒ Approved w/Conditions see attached ☐ Denied

Approval Date 10/6/97 Approval Expiration 10/6/99 Extension to ☒ Additional Sheets Attached

☒ Condition Compliance Jim Wendel (signature) 10/6/97 (date)

Performance Guarantee ☐ Required* ☐ Not Required

* No building permit may be issued until a performance guarantee has been submitted as indicated below

☐ Performance Guarantee Accepted — date | amount | expiration date
☐ Inspection Fee Paid — date | amount
☐ Building Permit — date
☐ Performance Guarantee Reduced — date | remaining balance | signature
☐ Temporary Certificate Of Occupancy — date ☐ Conditions (See Attached)
☐ Final Inspection — date | signature
☐ Certificate Of Occupancy — date
☐ Performance Guarantee Released — date | signature
☐ Defect Guarantee Submitted — submitted date | amount | expiration date
☐ Defect Guarantee Released — date | signature

Applicant: Steve Beaulieu Date: 10/15/97

Address: 16 Anderson Ave. Little Diamond Island C-B-L: 105-I-15 & 16

CHECK-LIST AGAINST ZONING ORDINANCE

Date - New

Zone Location - IR-2

Interior or corner lot -

Proposed Use/Work - construct Single family Dwelling with deck

Sewage Disposal - private – city water

Lot Street Frontage - 70' req – 100' shown

Front Yard - 25' req – 75'+ shown

Rear Yard - 25' req' – 75' shown

Side Yard - 20' req (same for side st side) –

Projections - bulkhead on right

Width of Lot - 80' req – 100' shown

Height - 35' max Allowed – less than 35' shown

Lot Area - 20,000 ft min req – 24,100 ft shown

Lot Coverage/ Impervious Surface - 20% max – 4820 ft max

Area per Family -

20x22 = 440
20x22 = 704
28x28 = 336
12x28 = 264
12x22 = 264
1824 ft

Off-street Parking - 2 spaces

Loading Bays - N/A

Site Plan - minor/minor

Shoreland Zoning/ Stream Protection - yes within 250' – house just touched the side of 75' high water setback

Flood Plain - Map 14 Zone C flood is 8 feet 40' from high water mark

OK

MEMORANDUM

TO: Kandi Talbot, Planner
Code Enforcement

FROM: Jim Wendel, P.E., Development Review Coordinator

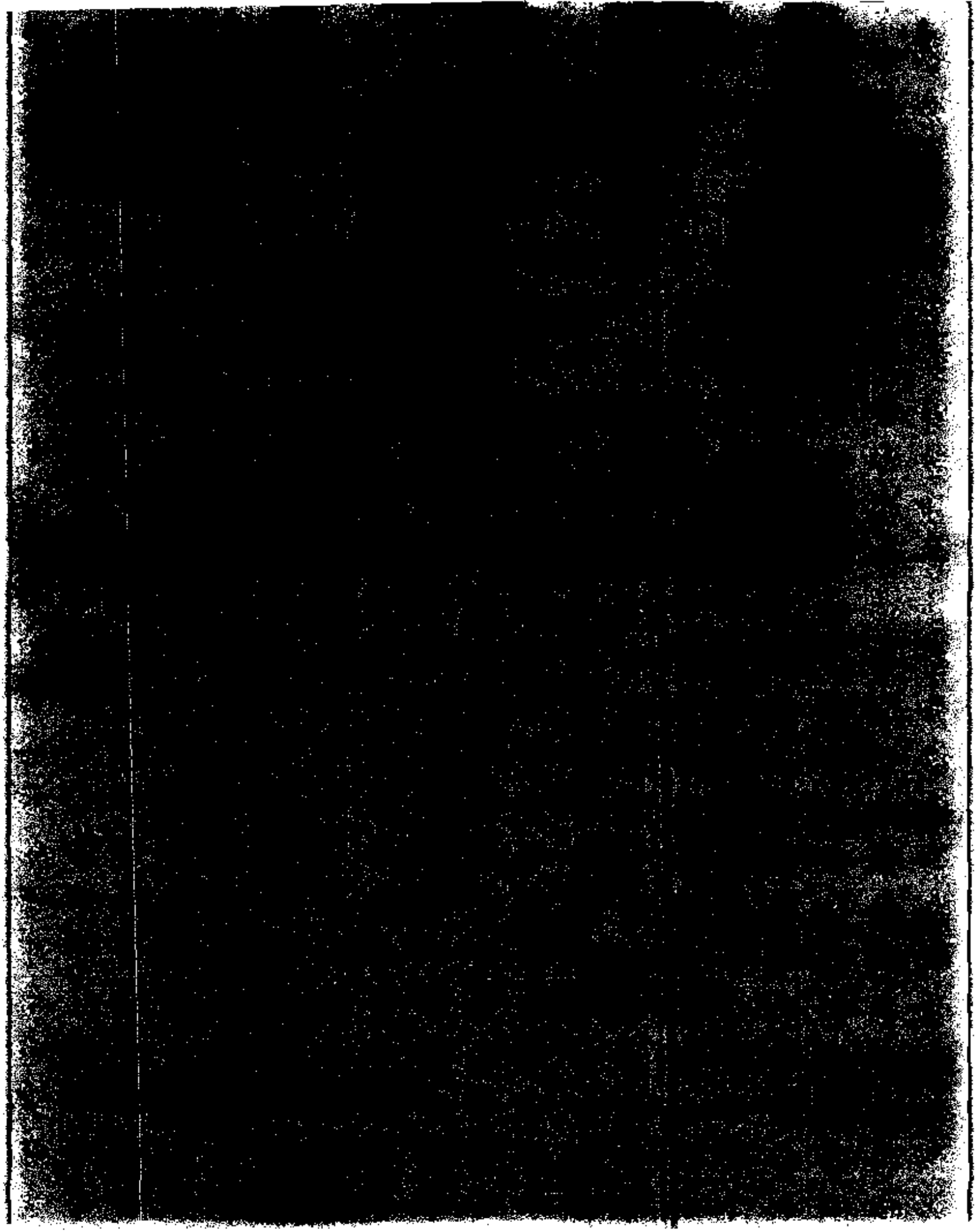
DATE: October 28, 1998

RE: Certificate of Occupancy
16 Anderson Ave Little Diamond Island (105-1-015/016)

A site visit on 10/28/98 was made to review the completion of the conditions of the site plan approval dated 10/8/97; my comments are:

It is my opinion that all of the conditions of the site plan approval have been satisfactorily completed **and a permanent certificate of occupancy can be issued** assuming code enforcement has no outstanding issues.

1350.16/disk#8/16andrsn



Anderson One, Richard

FOR YOUR BUILDER

Building Manual

City of Portland

FAX 1-508-779-2272

Additions:
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Air flow baffles: 12
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Fireplace: 40-43
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Rev. 12/85
6/86
9/87
3/88
2/89
2/90

Bow House, Inc., Bolton, Mass. 01740
(508) 779-6464 779-2271
FAX (508) 779-2272

BUILDING MANUAL

BOW HOUSE BUILDING MANUAL AND DETAIL BOOK

Bolton, Mass. 01740 (508)-779-6464

FAX 1-508-779-2272

As a collection of ideas gathered for Bow House by past builders, this manual is suggested as an aid. Good regional building practices should always be followed. For example, Bow House builds with poured concrete foundation, while in other parts of the country the use of concrete block is considered good building practice.

Each contractor shall be responsible for complying with all local building codes and requirements.

All written dimensions always take precedence over scaled drawings.

If there is any discrepancy between Bow House standard practice and your local code, or if you have any questions, please call Bow House for additional details.

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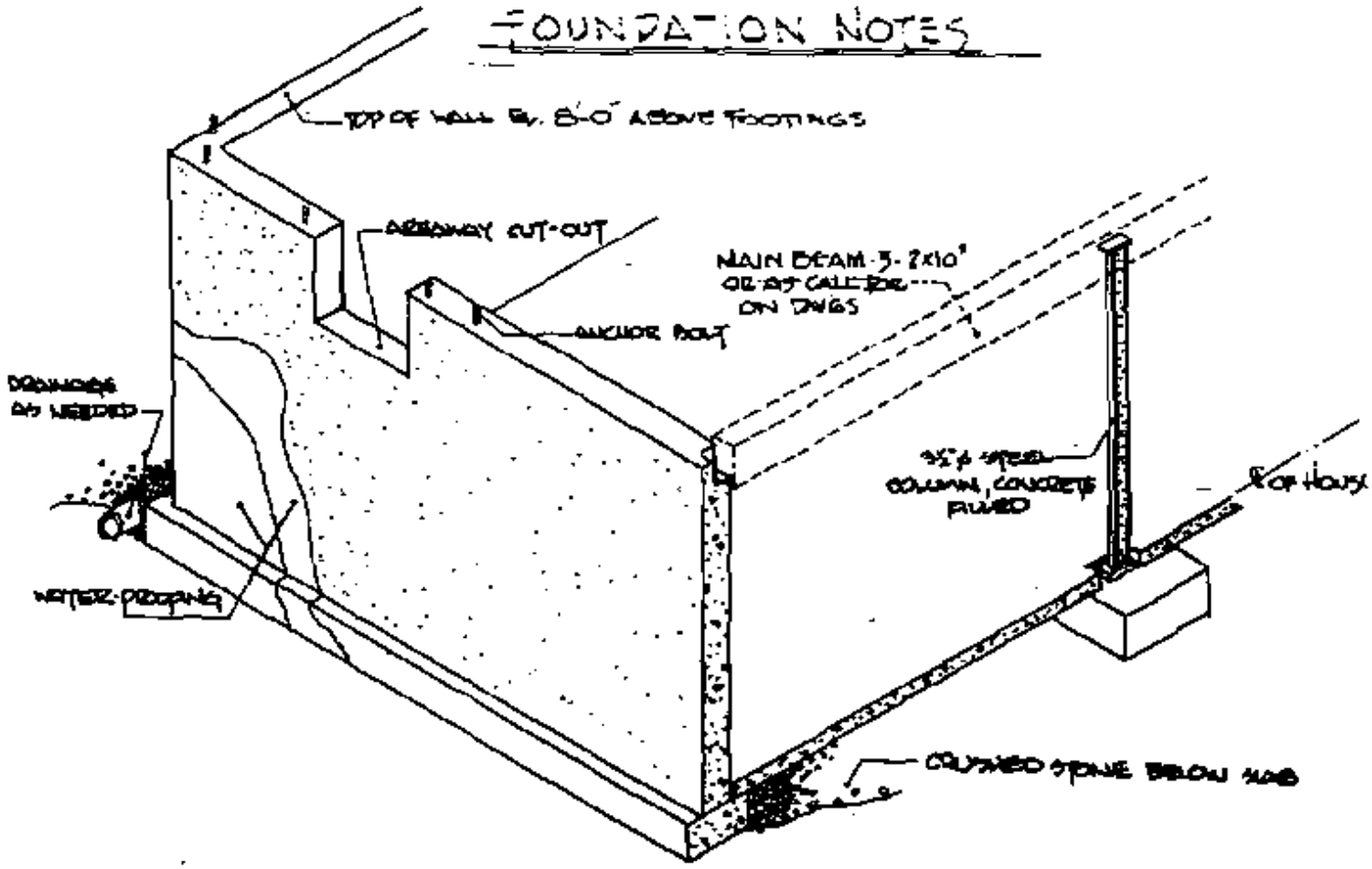
FOUNDATION NOTES



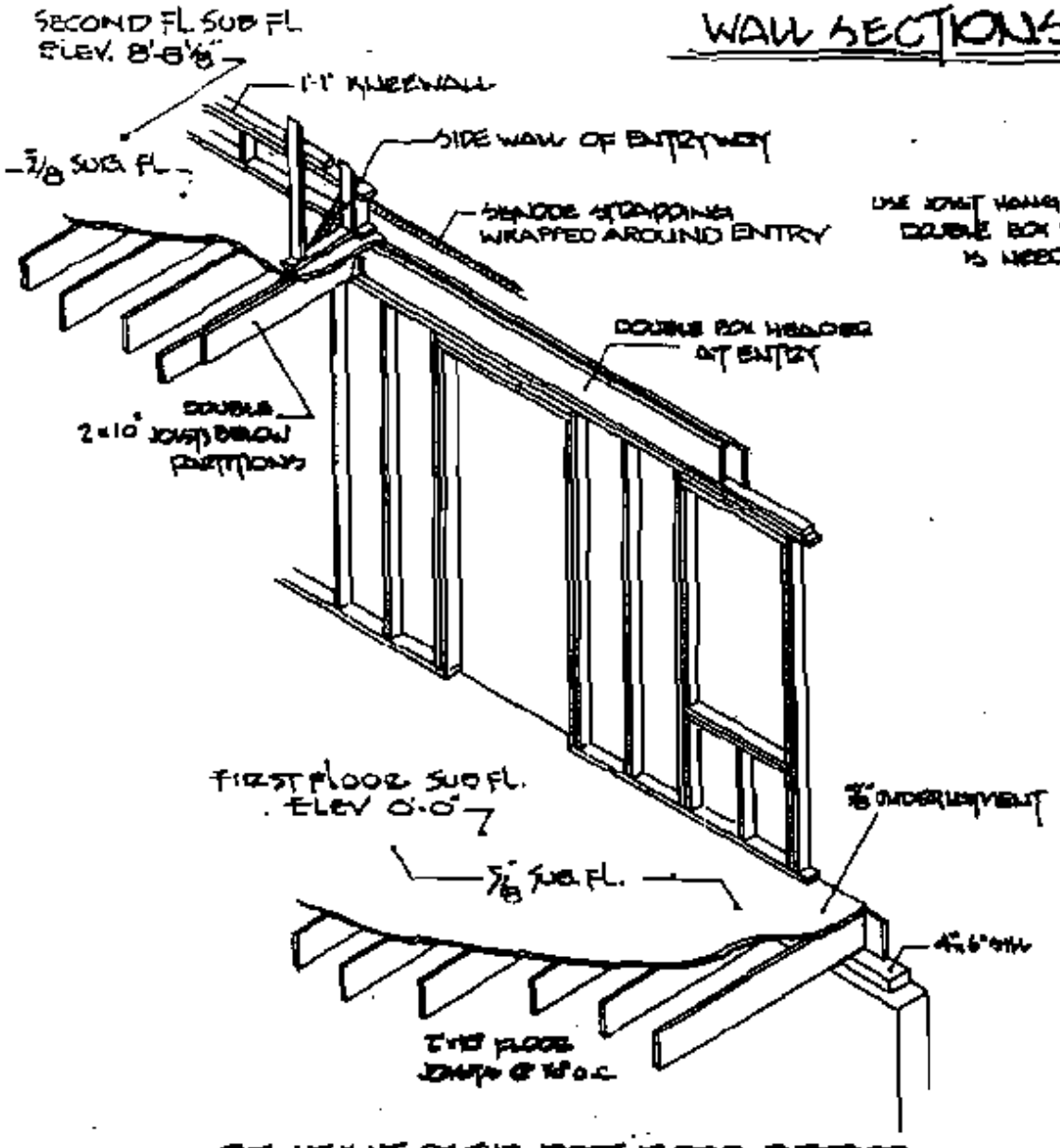
THE BOW HOUSE CAN BE BUILT ON A NUMBER OF DIFFERENT FOUNDATION SYSTEMS: FULL BASEMENT, CRAWL-SPACE, SLAB, ETC. THE TYPE OF FOUNDATION IS USUALLY A QUESTION OF LOCAL PRACTICES, & SITE CONDITIONS. NOTES PERTAINING TO THE FOUNDATION APPEAR ON THE WORKING DRAWINGS.

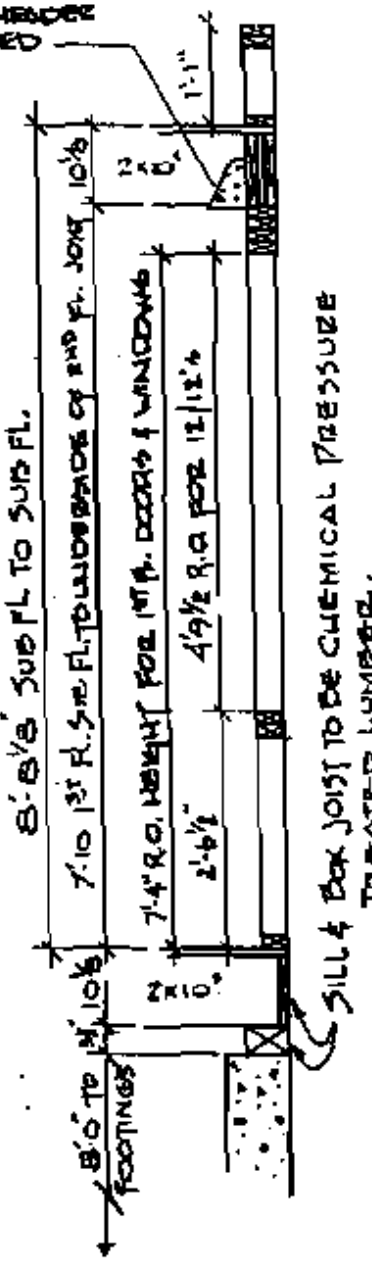
THE MOST COMMONLY USED BOW HOUSE FOUNDATION IS A FULL BASEMENT, WHICH USES POURED (3000 PSI) CONCRETE OR CONCRETE BLOCK WALLS. WALLS ARE GENERALLY 10" THICK AND 8'-0" HIGH, WHICH SET ON THE CENTER LINE OF THE FOUNDATION FOOTINGS. ADDITIONS FREQUENTLY HAVE FOUNDATION WALLS AT DIFFERENT HEIGHTS THE THE MAIN HOUSE.

WALK OUT BASEMENTS ARE ALSO A COMMON FOUNDATION FEATURE PARTICULARY ON SLOPING SITES. WHEREVER GRADE CHANGES OCCUR, THE BUILDING CONTRACTOR MUST EXERCISE GOOD BUILDING PRACTICES AND ADJUST EXTERIOR CONSTRUCTION, SUCH AS STAIRWAYS, BULKHEADS, ETC; TO ACCOMMODATE THE FINISH GRADE. IT IS ALSO MOST IMPORTANT THAT ALL FOOTINGS EXTEND BELOW THE FROST LINE.

A WORD ABOUT FINISH GRADES.. THE CLOSER TO THE BOTTOM OF THE CLAPBOARD SIDING THE BETTER. LOCAL CODES MAY DEFINE A MIN. ALLOWABLE DISTANCE. FINISH GRADING THE BOW HOUSE TO SIT LOW TO THE GROUND IS AN IMPORTANT ESTHETIC CONSIDERATION. TYPICAL OF EARLY AMERICAN HOUSES.

WALL SECTIONS





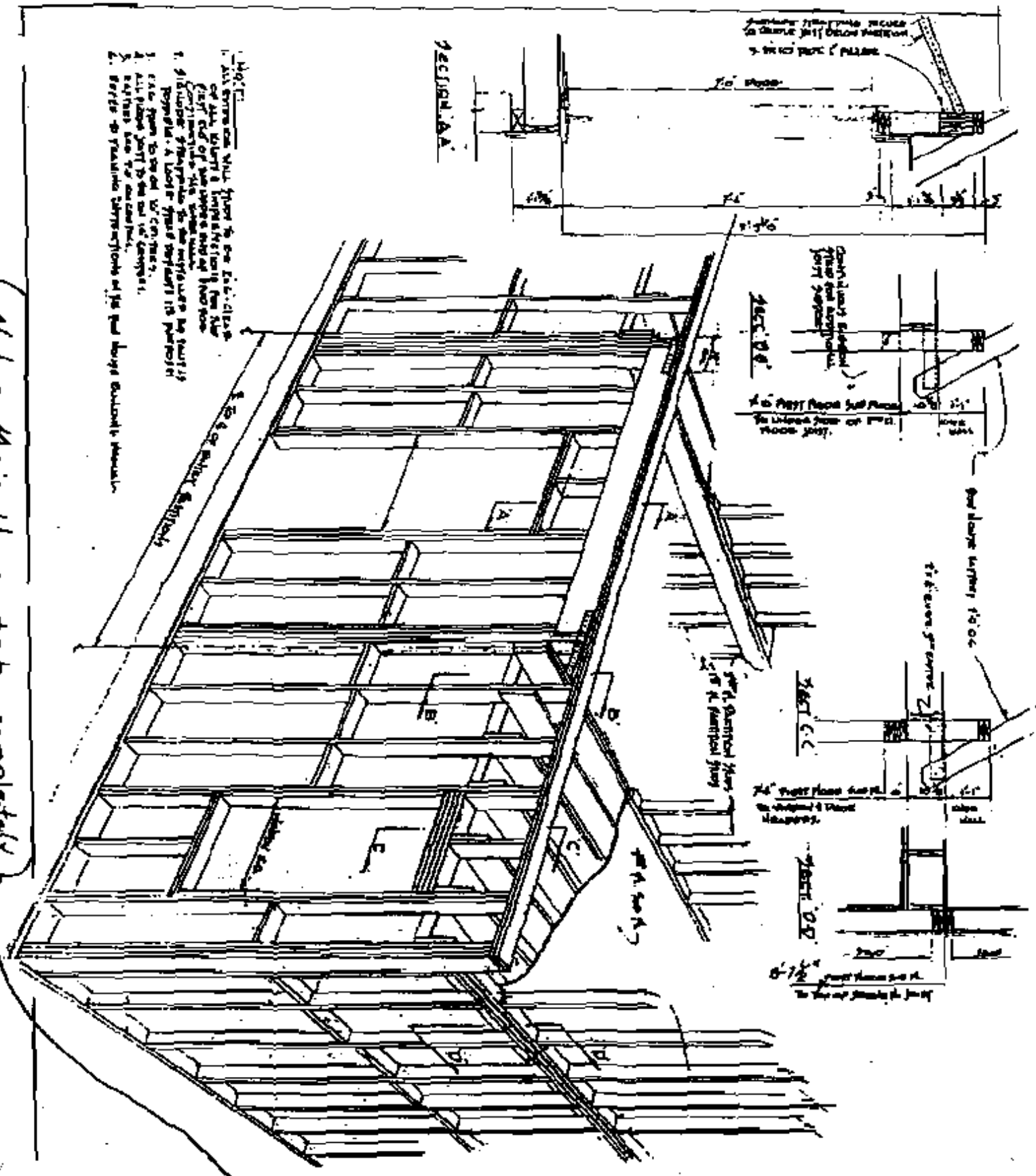
THE HEIGHT OF THE FIRST FLOOR EXTERIOR STUD WALL IS GOVERNED BY THE 7'-4" R.O. NEEDED FOR THE BOW HOUSE EXTERIOR DOORS; A FOOT 7" TALL.

STUDS ARE 7'-5½", SITTING ON A SINGLE SHOE PLATE, & TOPPED OFF WITH A DOUBLE PLATE. ALTERING THE STUD HEIGHT, OR CHANGING THE FLOOR-TO-FLOOR HEIGHT WILL MAKE PLACEMENT OF THE BOW HOUSE STUDS, & FIXTURES BEHIND IMPOSSIBLE.

A DOUBLE BOX HEADER IS USED AT THE ENTRYWAY TO ADD SUPPORT TO THE KNEEWALL, AS NO SECOND FLOOR JOISTS ARE CONTINUOUS AT THIS POINT. A 12" LONG PIECE OF SHEATHING STRAPPING IS ALSO PROVIDED TO SECURE THE KNEEWALL AT THIS POINT. THIS STRAP IS WRAPPED AROUND THE KNEEWALL, & IS SECURED TO THE DOUBLE JOISTS BELOW THE PARTITIONS THAT MAKE UP THE SIDE WALLS OF THE ENTRYWAY. A SLOT IS CUT IN THE SUB FLOOR SO THAT THE STRAP CAN PASS THRU, & CONNECT TO THE DOUBLE JOIST.

A DOUBLE BOX HEADER IS USED ABOVE ALL FIRST FLOOR DOORS & WINDOWS, & TAKES THE PLACE OF STANDARD HEADERS.

REVISED 7/25



Note: Main House to be completely

BOW HOUSES

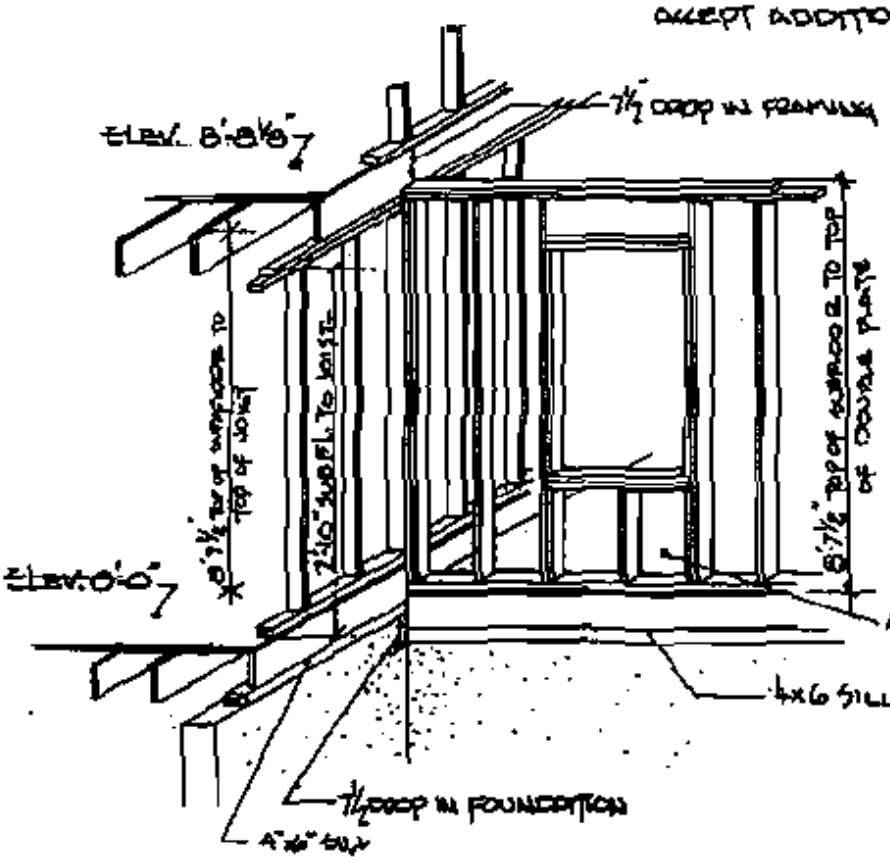
2"x6" wood studs 16" o.c.
Balloon Framing

WALL SECTIONS

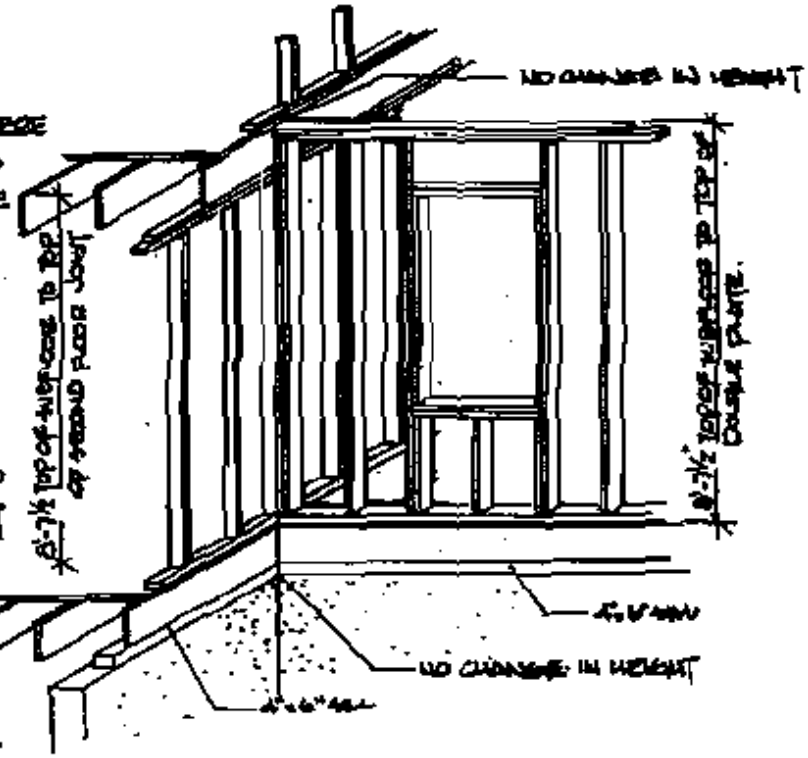
BEING OF CAPE COD STYLE, THE BOW HOUSE CAN READILY ACCEPT ADDITIONS OFF THE SIDE OR BACK; DURING THE INITIAL CONSTRUCTION, OR AS A LATER ADD-ON.

MANY OF THE ADDITIONS HAVE A CHANGE IN FLOOR HEIGHT. THE ADDITION FOUNDATION IS DROPPED 7½" LOWER THAN THE MAIN HOUSE FOUNDATION.

THE RESULT IS A 7½" STEP-DOWN FROM FINISHED FLOOR TO FINISHED FLOOR. THE TOP OF THE DOUBLE PLATE ON THE ADDITION WALL MUST BE 7½" BELOW THE TOP OF THE SECOND FLOOR JOISTS, AS SHOWN TO THE LEFT.



ON ADDITIONS THAT HAVE A COMMON FLOOR HEIGHT WITH THE MAIN HOUSE, THERE IS NO DROP IN FOUNDATIONS. 4"x6" SILLS ARE USED ON BOTH, & THE TOP OF THE ADDITION DOUBLE PLATE IS LEVEL WITH THE TOP OF THE MAIN HOUSE 2ND FLOOR JOISTS, AS SHOWN AT THE RIGHT.



WHEN AN ADDITION COMES OFF THE BACK OF A BOW HOUSE, IT IS IMPERATIVE THAT THE DOUBLE TOP PLATE OF THE ADDITION WALL BE AT THE SAME HEIGHT AS THE TOP OF THE SECOND FLOOR JOISTS. IF THIS IS NOT DONE, THE EXTERIOR TRIM WILL NOT WORK OUT. WHEN AN ADDITION OFF THE BACK OF A BOW HOUSE STEPS DOWN, THESE 2 POINTS MUST STILL BEAT THE SAME HEIGHT. THIS MEANS A DIMENSION OF 9'-3" FROM TOP OF SUBFLOOR TO TOP OF DOUBLE PLATE ON THE ADDITION WALL.

GABLE END ERECTION

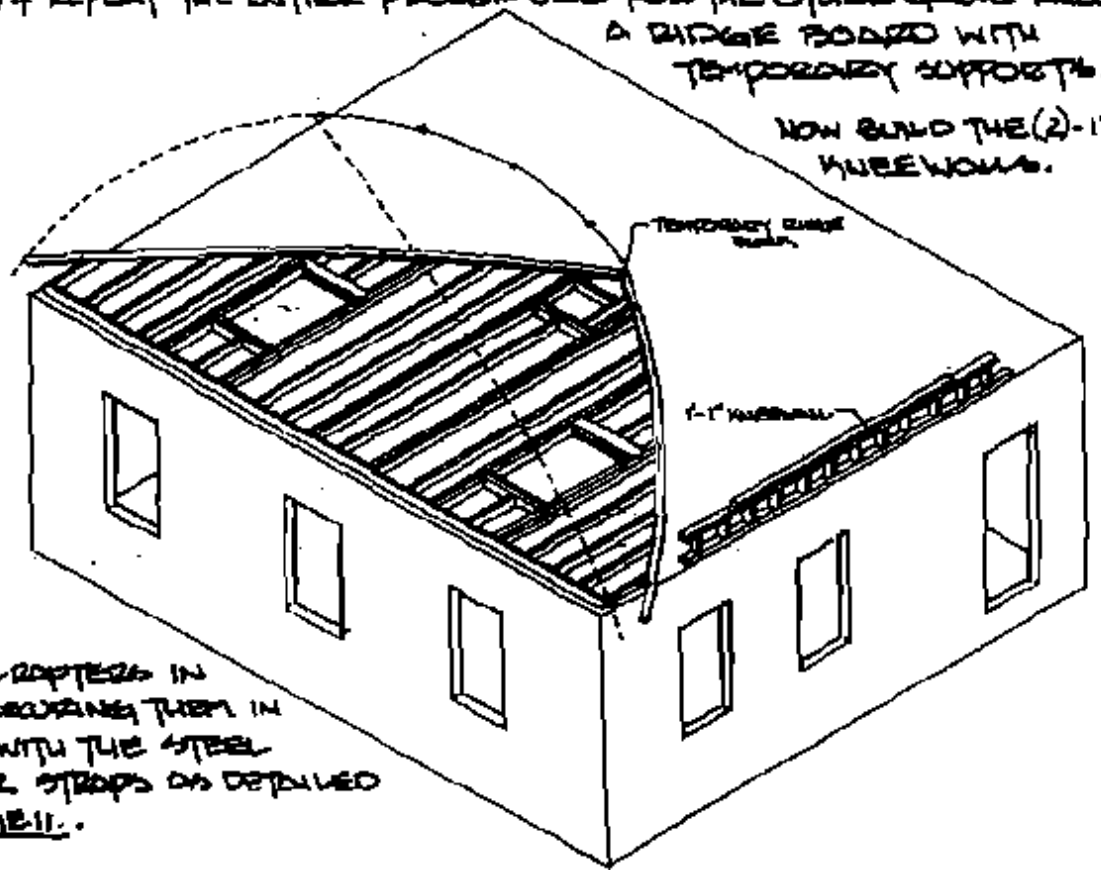
THE GABLE END CONSTRUCTION IS GENERALLY MUCH EASIER THAN IT APPEARS. HOWEVER, IT SETS THE TONE FOR A UNIFORM ROOF STRUCTURE, & NECESSITATES SPECIAL ATTENTION.

ALL OF THE BOW HOUSE LAMINATED RAFTERS ARE COLOR CODED BLACK & WHITE. ALL OF THE BLACK RAFTERS SHOULD BE PUT ON ONE SIDE OF THE HOUSE, & ALL OF THE WHITES ON THE OTHER. THE TAILS, BIRDS-MOUTH, & RIDGE LINE ARE ALL PRE-CUT ON THE RAFTERS, & ARE DELIVERED READY FOR INSTALLATION.

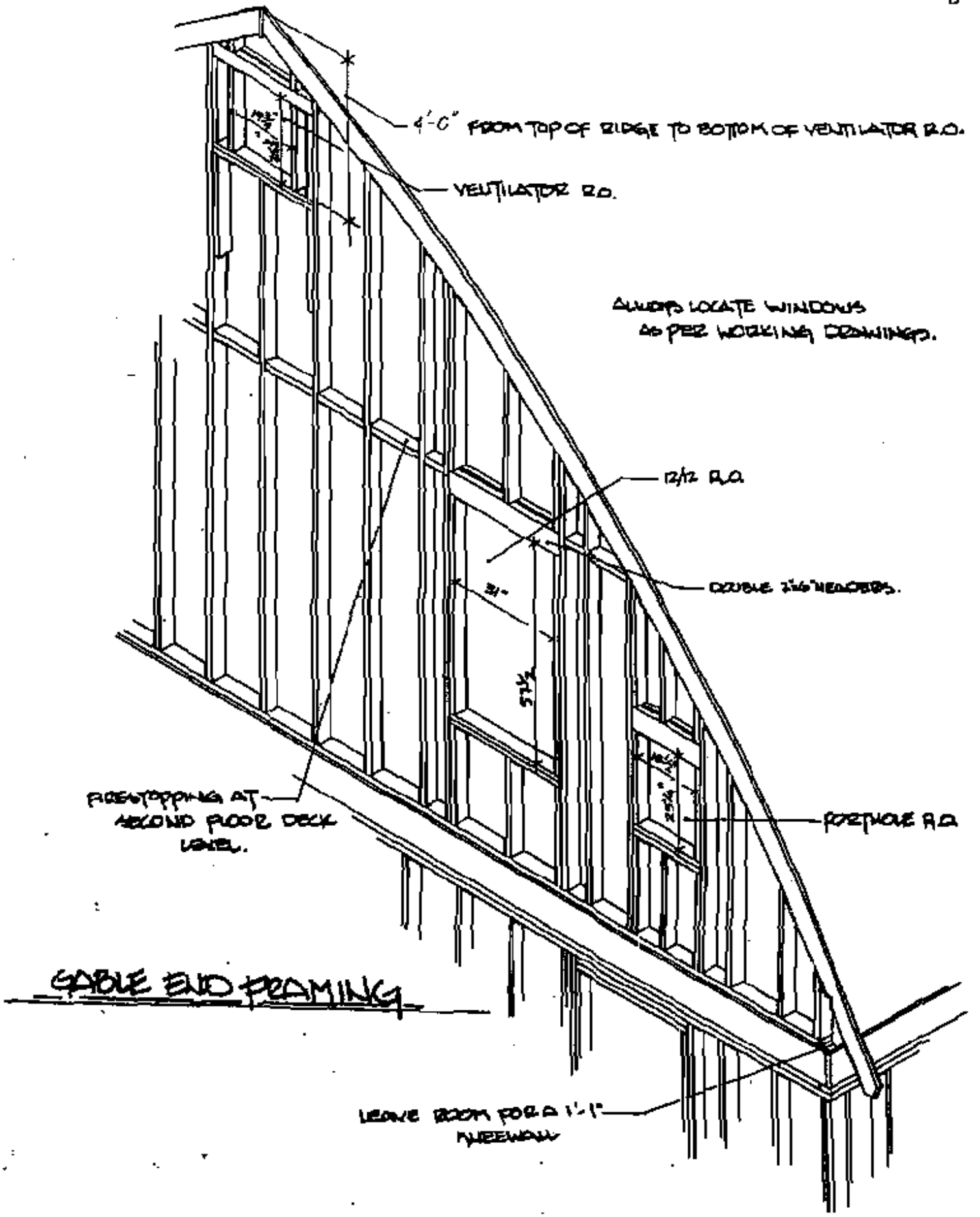
USE THE SECOND LEVEL DECK AS A PATTERN TABLE TO LAY OUT THE GABLE END WALL. FIRST, SNAP A CHALK LINE MARKING THE CENTER OF THE HOUSE. NEXT, LAY OUT A WHITE & A BLACK RAFTER TO FORM THE GABLE SECTION. PLACE A BLOCK BETWEEN THE 2 RAFTERS AT THE RIDGE CUT AS A TEMPORARY FORM FOR A 1"x8" RIDGE BOARD. REMEMBER TO BUILD THE GABLE PANEL TO SIT ON A 1'-1" KNEEWALL.

LOCATE, & FRAME OUT FOR THE BEEHIVE VENTILATOR & ALL GABLE END WINDOWS. IN MANY CASES A GABLE END CASEMENT WINDOW IS BUILT-OUT, & REQUIRES SPECIAL FRAMING AS NOTED ON PAGE 9. SOME BUILDERS APPLY THE EXTERIOR SHEATHING, WINDOWS, VENTILATOR, RAKE BOARD, TRIM, & SIDING AT THIS POINT. THIS ELIMINATES THE NEED FOR EXPENSIVE SCAFFOLDING LATER ON. LIFT THE ENTIRE GABLE INTO PLACE, (5 OR 6 ABLE BODIES ARE BEST FOR THIS JOB) & REPEAT THE ENTIRE PROCEDURE FOR THE OTHER GABLE END. BUILD A RIDGE BOARD WITH TEMPORARY SUPPORTS.

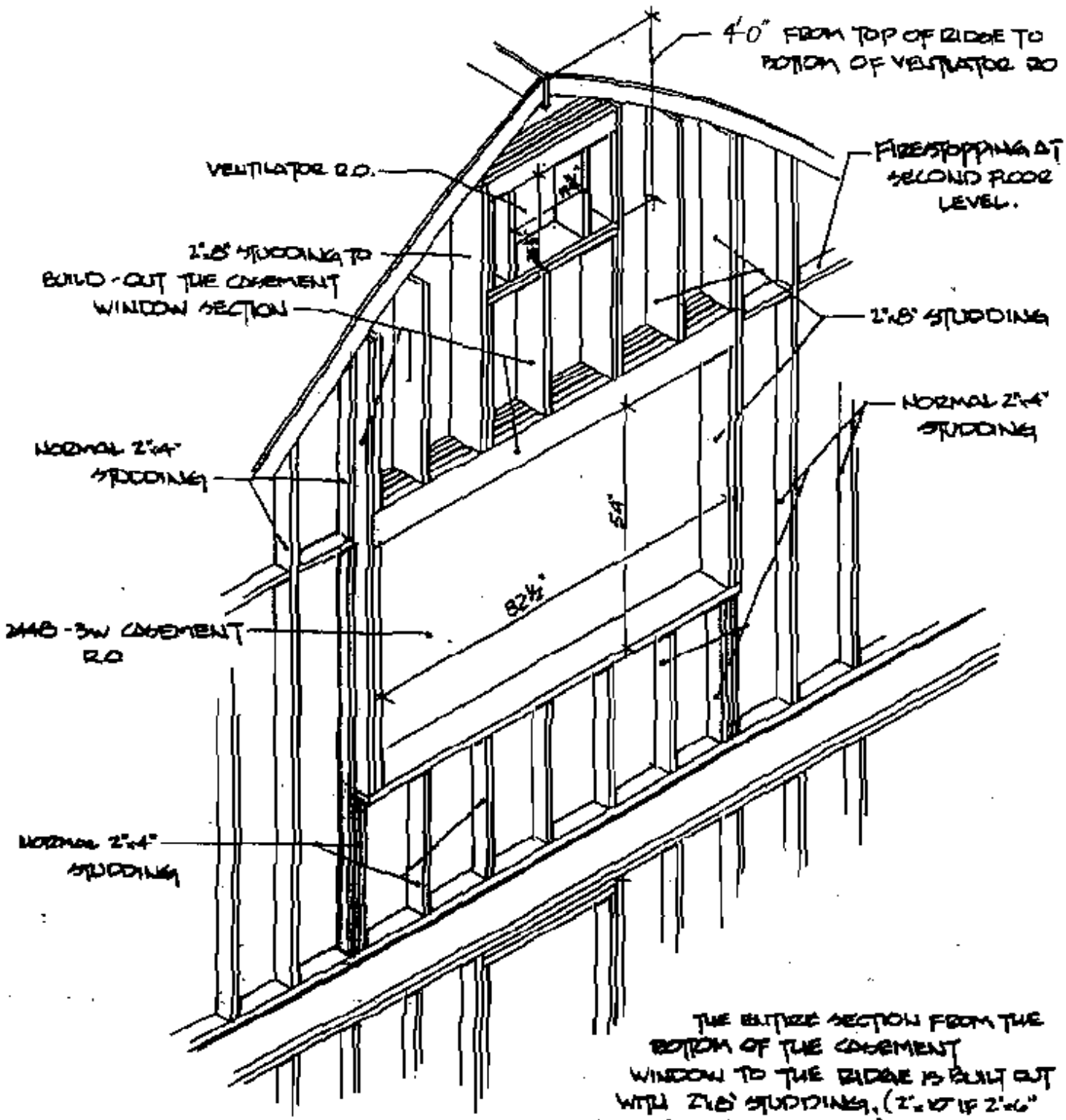
NOW BUILD THE (2) 1'-1" KNEEWALLS.



INSTALL RAFTERS IN PAIRS, SECURING THEM IN PLACE WITH THE STEEL ANCHOR STRAPS AS DETAILED ON PAGE 11.



GABLE END FRAMING



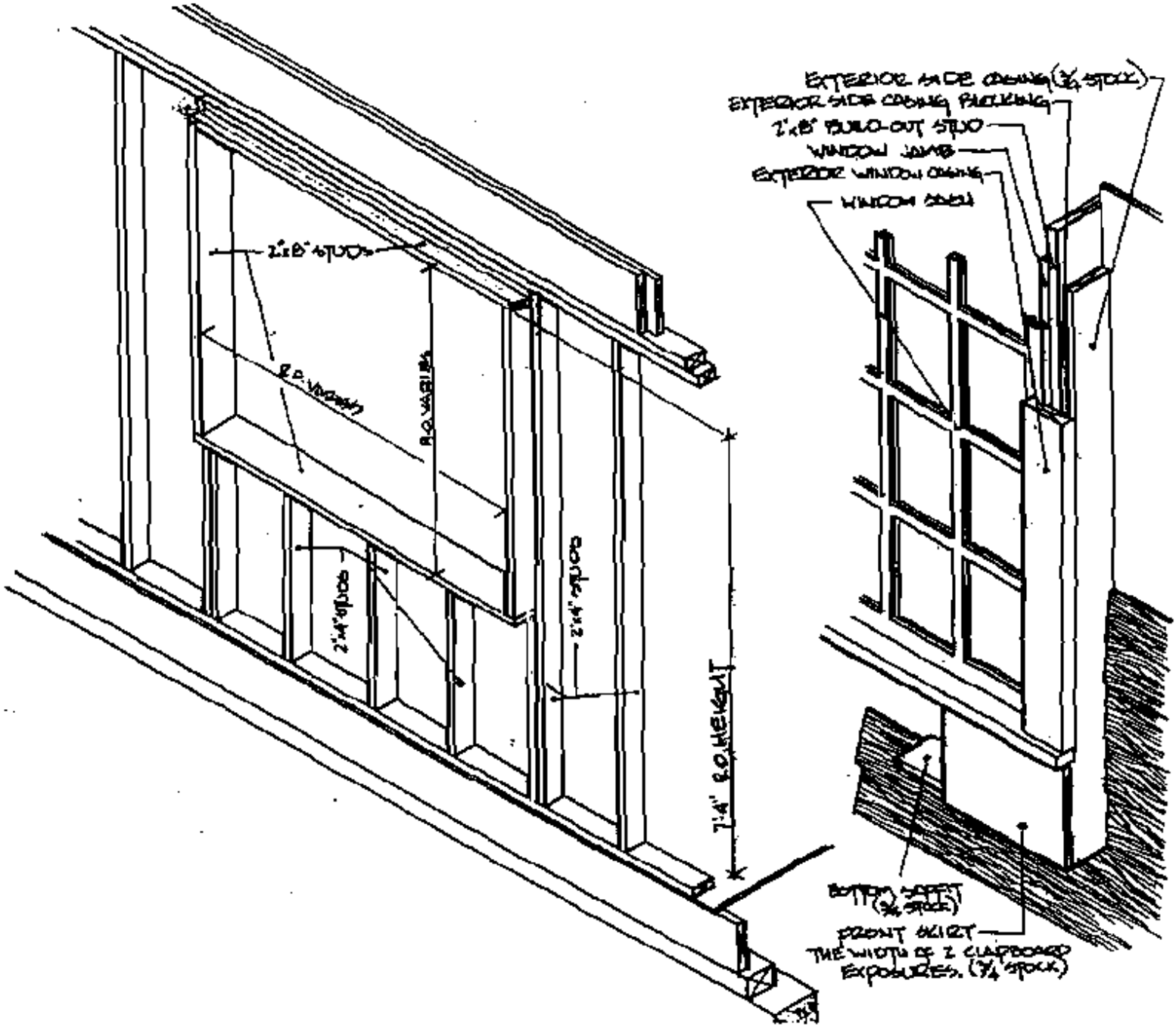
THE ENTIRE SECTION FROM THE BOTTOM OF THE CASEMENT WINDOW TO THE RIDGE IS BUILT OUT WITH 2"x8" STUDDING. (2"x10" IF 2"x6" WALL STUDDING IS USED). SEE PAGE 28 FOR RAKE BOARD TRIM ON BUILT-OUT CASEMENT WINDOW ELEVATIONS.

GABLE END FRAMING WITH PROJECTING CASEMENT WINDOW

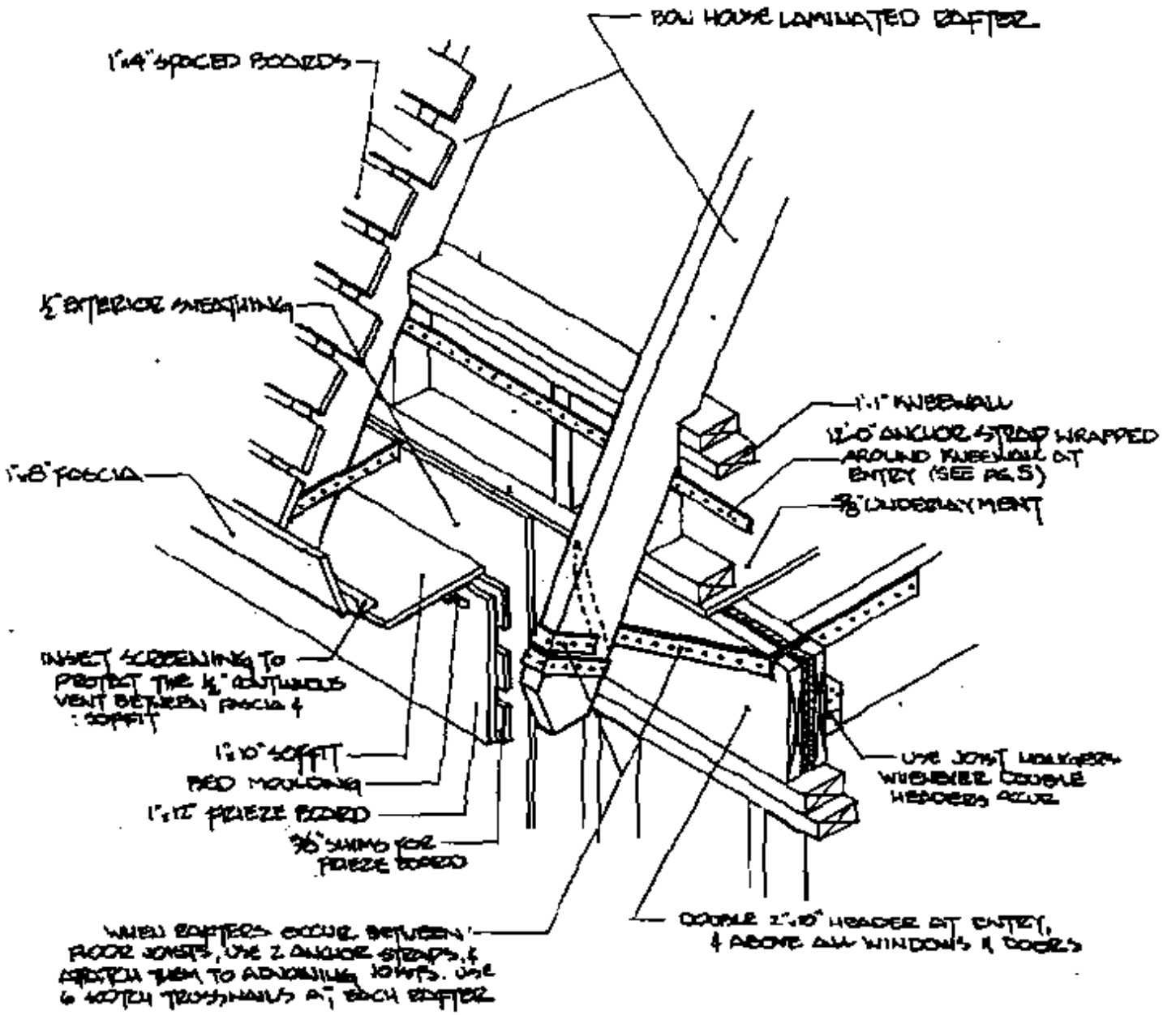
BUILT-OUT WINDOWS

THE EASIEST WAY TO FRAME FOR THE BUILT-OUT WINDOW IS TO PROJECT THE ROUGH OPENING WITH 2"x8" STUDS IN THE CASE OF 2"x4" EXTERIOR WALL STUDDING, OR WITH 2"x10" STUDS IF EXTERIOR WALLS ARE 2"x6"'s. THE EXAMPLE BELOW SHOWS 2"x8"'s WITH 2"x4" EXTERIOR WALLS.

TRIMMING THE BUILT-OUT IS SHOWN BELOW. THE EXTERIOR WINDOW CASING IS ATTATCHED TO THE WINDOW UNIT. SEE PAGE 14 FOR HEADER CASING REMOVAL. SCRAP WOOD IS USED AS A BLOCKING FOR THE SIDE CASING. SCRAP BLOCKING IS ALSO USED AS A NAILER FOR THE BOTTOM SOFFIT & FRONT SKIRT. THE FRIEZE BOARD, (NOT SHOWN) FOLLOWS THE PROJECTION OF THE BUILT-OUT SECTION



DETAIL AT KNEEWALL



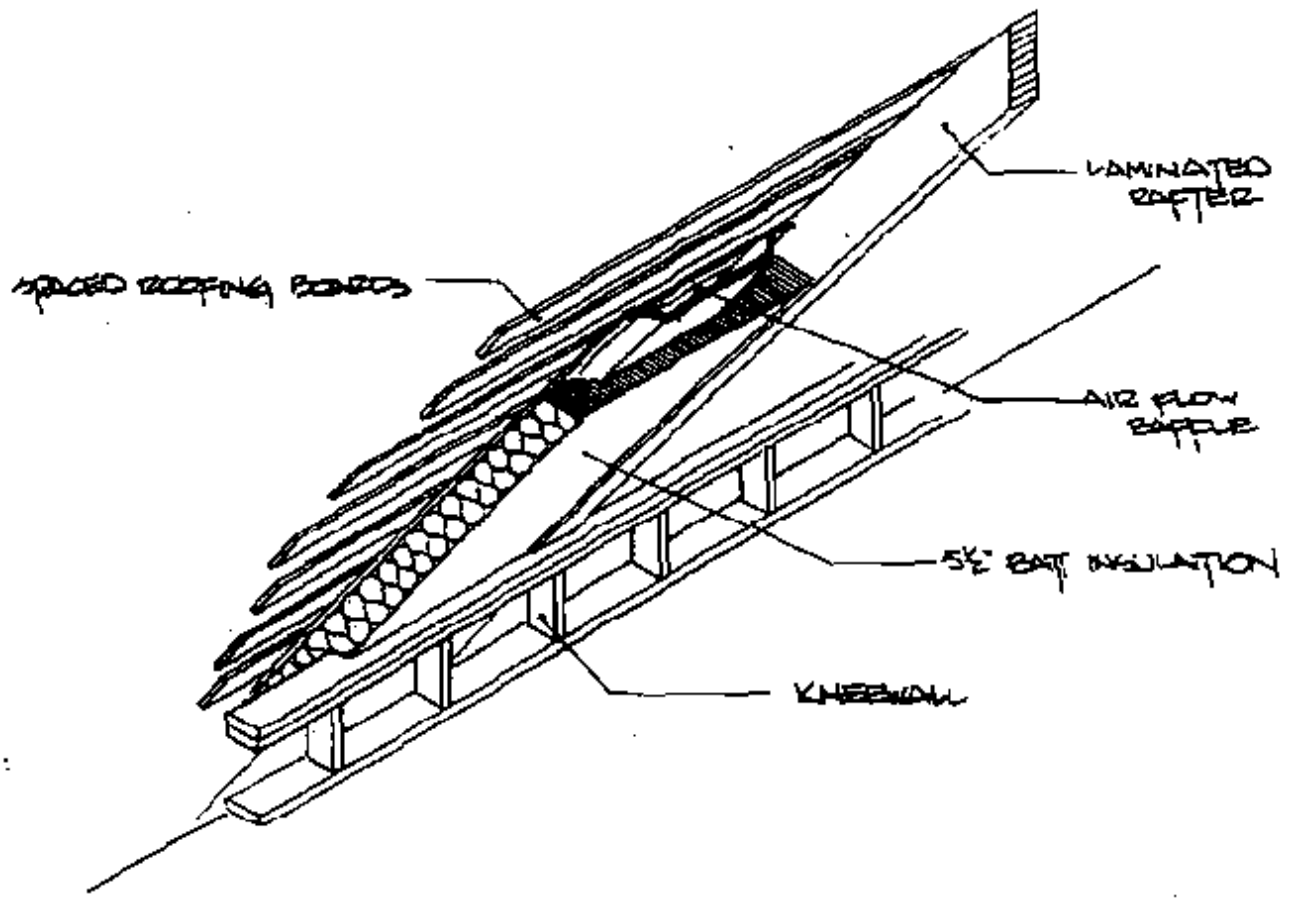
NOTE: FOR 30' WIDE BOW HOUSES A 1"x12" SOFFIT MAY BE SUBSTITUTED.

DETAIL OF AIR FLOW BAFFLE

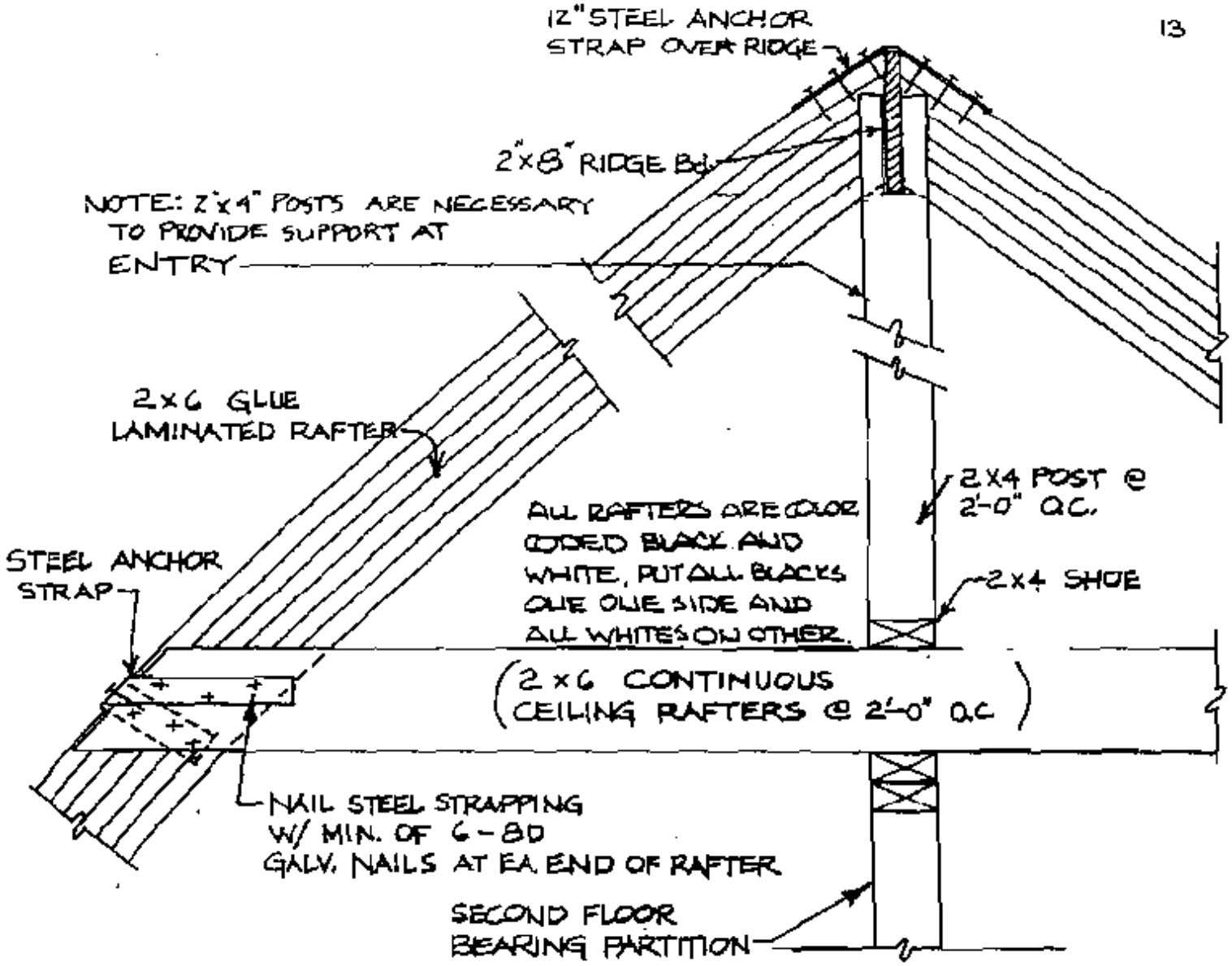
IT IS IMPORTANT TO INSURE A GOOD FLOW OF AIR FROM THE SOFFIT VENT TO THE ATTIC. INSULATION THAT IS DRESSED UP AGAINST THE ROOFING BOARDS WILL RESTRICT THIS FLOW OF AIR.

SEVERAL PRODUCTS ARE AVAILABLE THAT CREATE AN AIR SPACE BETWEEN THE BOARDS & INSULATION. THEY ARE GENERALLY 3'OR 4' IN LENGTH, EASY TO INSTALL & SHOULD RUN FROM THE KNEEWALL UP TO THE COLLAR TIES.

THEY COME IN PRESSED PAPER & STYROFOAM. THE STYROFOAM BAFFLE SEEMS TO BE A BETTER WEATHER RESISTANT MATERIAL, & HAS SOME INSULATION QUALITIES.



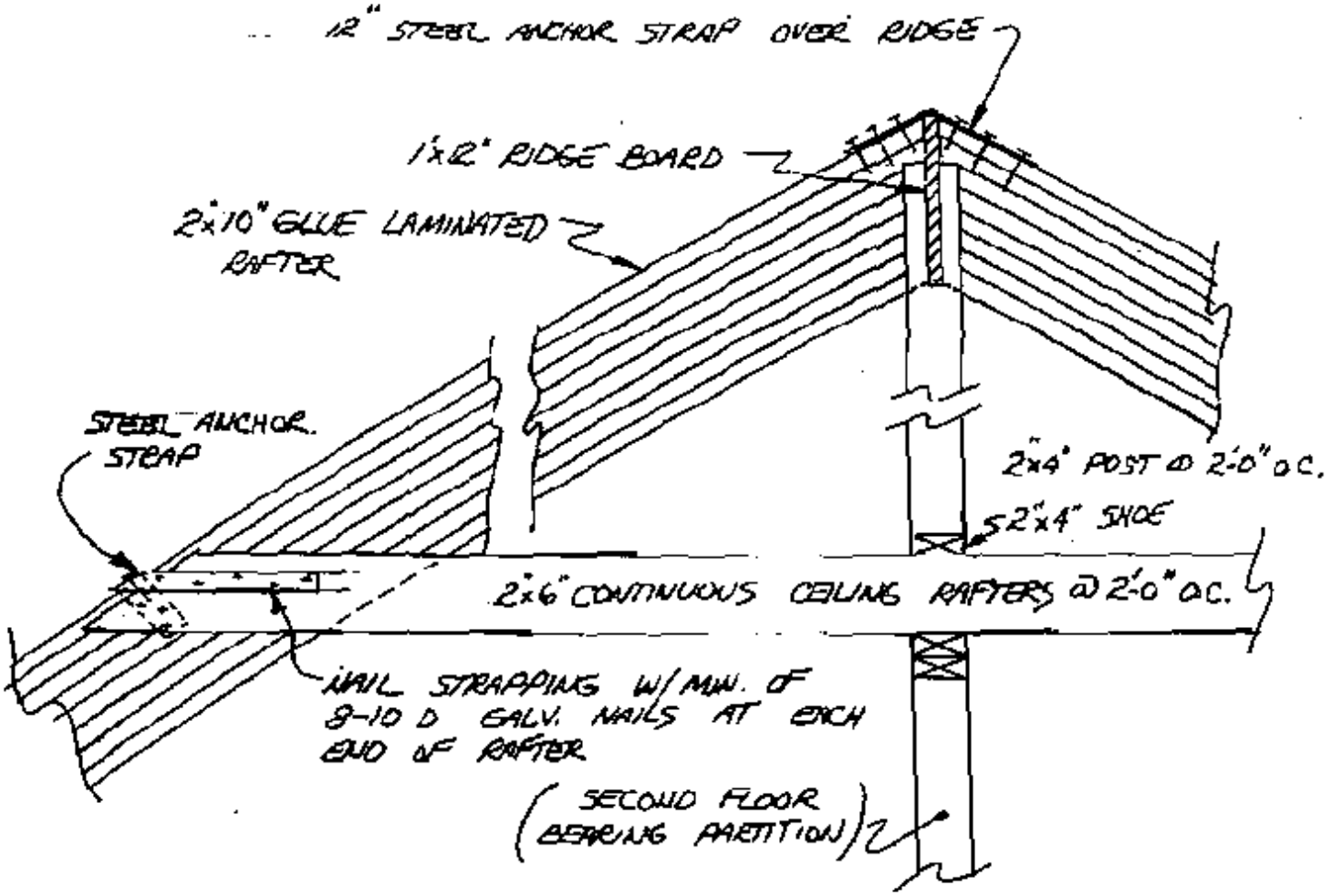
THE BAFFLES ARE USUALLY 11"OR12" WIDE, & IT SEEMS TO BE A GOOD PRACTICE TO USE 1 BETWEEN EACH RAFTER



SECTION AT CEILING RAFTER

INSTALLATION OF COLLAR TIES & ANCHOR STRAPS

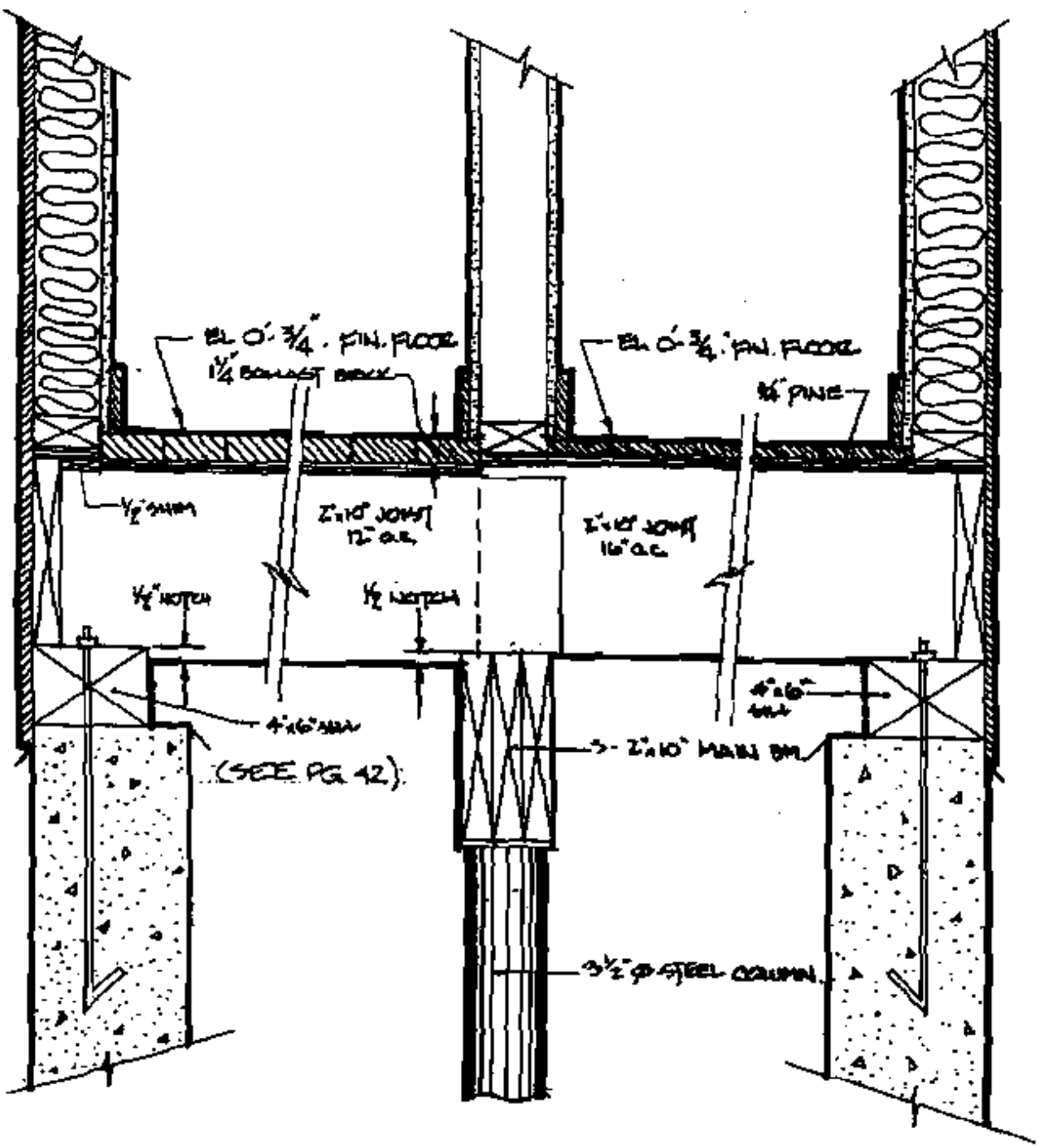
SCALE ½"=1'-0"



SECTION AT CEILING RAFTER
FOR 10" RAFTER

SCALE: 1"=1'-0"

BALLAST BRICK FLOOR FRAMING



FLOOR JOISTS TO BE NOTCHED ½" AT MAIN BEAM & SILL BELOW BALLAST BRICK FLOOR WHERE BRICK FLOOR IS TO BE AT SOME ELEVATION AS PLUS FLOORING.

EXTERIOR TRIM

1. INSTALL FASCIA BOARD:

   Install fascia on front and rear of main house in preparation for shingling roof.

2. INSTALL RAKE BOARD ON GABLE ENDS:

   First apply 5/8" spacer which will allow beveled siding to flt up under rake board.

   YOU ARE NOW READY TO SHINGLE THE ROOF. See detail, page 25.

3. INSTALL 6/4" PINE CORNER BOARDS:

   Always place wider of the two corner boards to front of house for best appearance.

4. INSTALL FRIEZE BOARD TOGETHER WITH DOORS AND WINDOWS:

   The frieze board forms the header trim for the doors and windows on the front and rear of the main house. This is a very important Bow House appearance feature.

   Front and rear windows are to be installed in rough openings by: FIRST REMOVING THE HEADER TRIM OF EACH. Tack nail units. Apply 5/8" Frieze boards shims.

   Now install frieze board. After the frieze board is installed, the windows should be loosened and wedged up to close any gap between the jamb trim and the frieze board, then nailed in place.

5. INSTALL PLANCIER:

   The plancier is installed so as to provide a ½" continuous slot vent along the fascia side. Any gap between the frieze and plancier will be closed by the bed moulding.

6. INSTALL BED MOULDING:

   Install bed moulding at intersection of frieze board and plancier as per detail, page 16.

7. LOCATE EXTERIOR LIGHT FIXTURES AT FRONT DOOR:

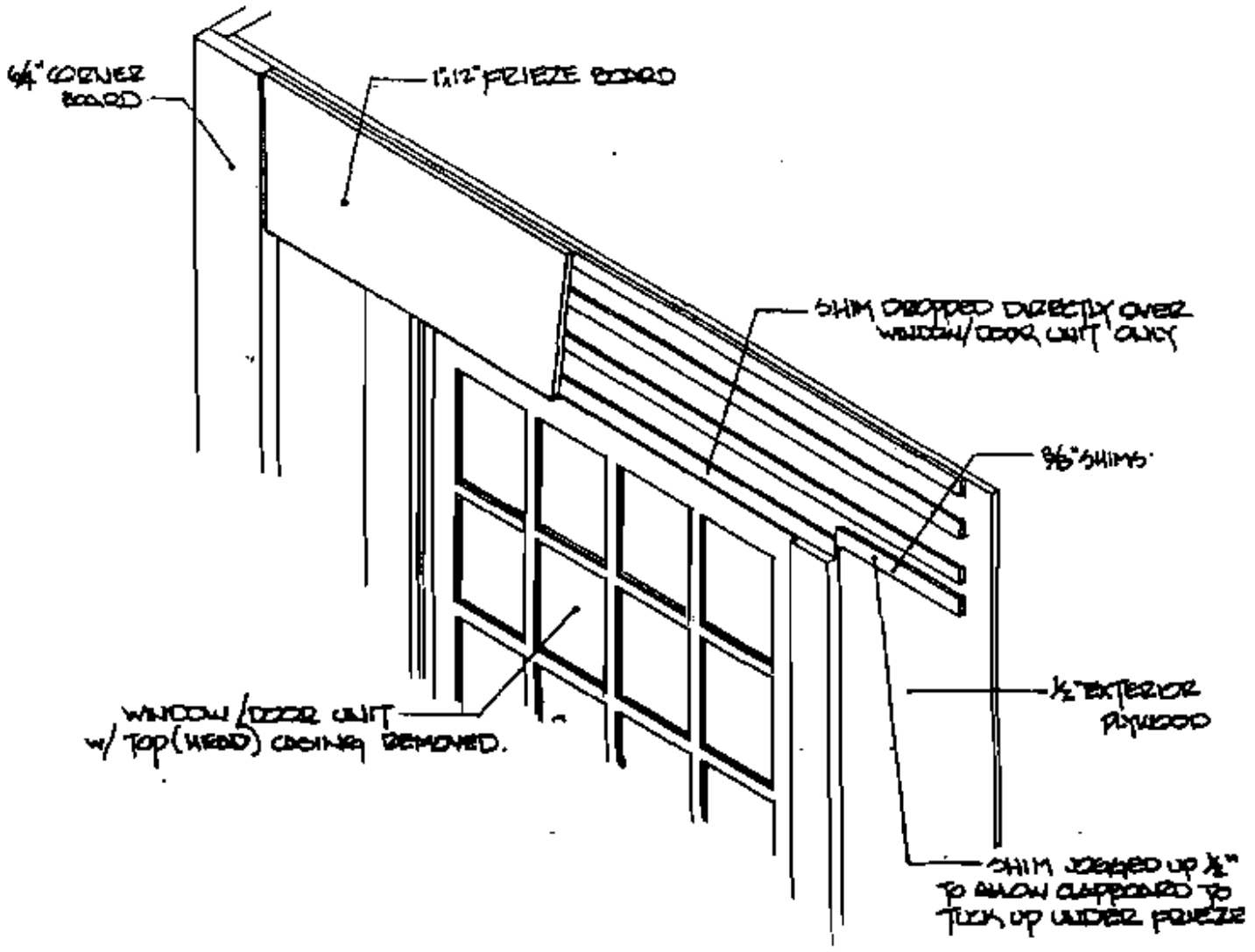
   Locate a 1" x 6" x 6" pine plate at about 6 feet above floor level and a minimum of 18" from door casing. About 24" when shutters are part of door finish. Tack nail only, adjust final location when applying beveled siding.

8. INSTALL WINDOW UNITS: (See Detail, next page)

9. APPLY BEVELED SIDING:

   See detail, page 24-25

WINDOW/DOOR UNIT INSTALLATION



The finished appearance of the window and door units on the front and back of the main house and addition is of major importance. All units must butt directly up to the frieze board. In order to do this, the top casing must be removed as shown above.

The 3/8" shims are used to build the frieze board out to the same plane as the side casings on window and door units. Shims should be jogged 1/2" higher than the bottom of the frieze board to allow clapboards to tuck-up underneath.

The 1/8" shim should be dropped to come even with the bottom of the frieze board above window/door units. This closes the gap between the frieze board and plywood sheathing. Note the location of this shim on the illustration above.

INSTALLATION OF DOORS

WITH PINTLE & STRAP HINGES

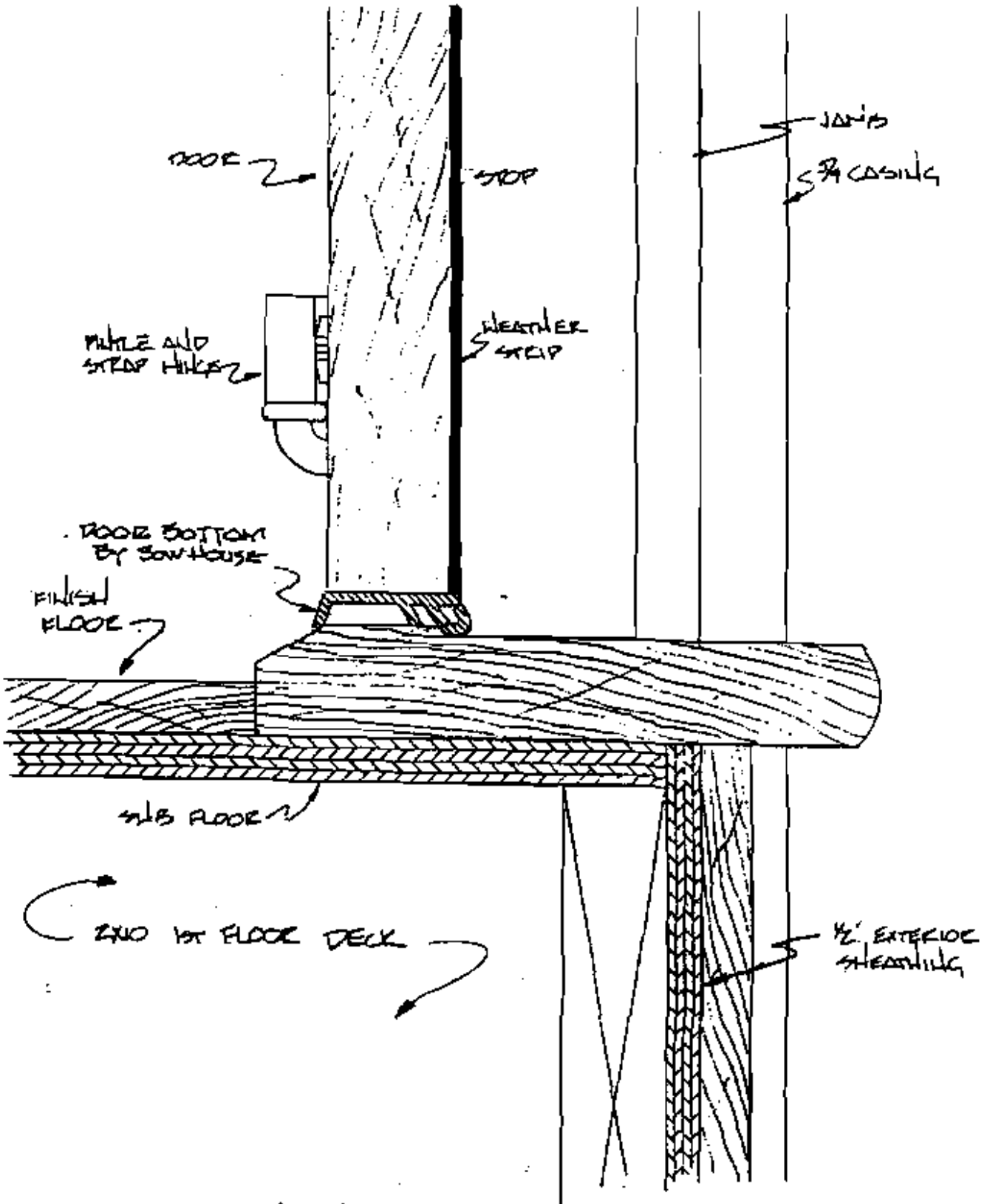
It is important that the rough opening for the door be constructed with 4x4 jack posts, or 4x6 in the case of 6 inch walls. The posts will be needed to hold the pintles later. (SEE DIAGRAM - page 18)

Construct the jamb as shown on pages 18 & 19. The interior casing must be applied at this time so that the pintle may be put on. The 9/16 shim will provide a pocket behind the casing so the wall board can tuck inside when it is applied later. The door stop should not be applied at this point but after the door is hung.

Now you must drill pilot holes through the casing at the locations specified on page 20. Drive the pintle all the way in, stopping just before the lip on the pintle meets the casing. If the pintle is not pointing straight up at this point, do not turn it in farther. This will only drag it along the casing. Instead back it out until it is pointing straight up.

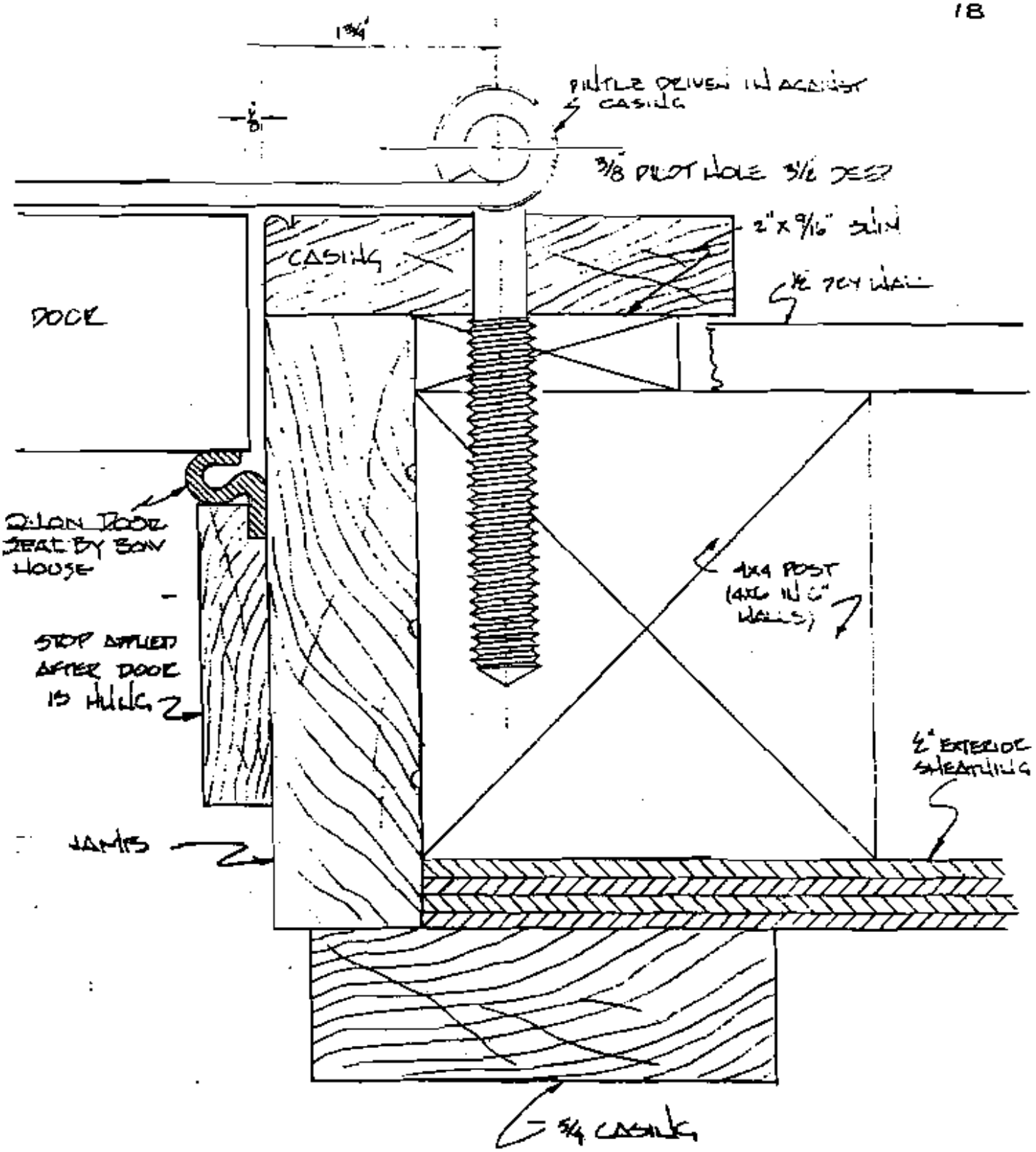
Place door in jamb and shim it up tight and even all around (about 1/8" all around). Be sure that the inside of door is flush with the interior casing. Place straps on the pintles and swing against the door, and screw tight against door. Remove shims and door should swing freely.

Now apply stop (REFER TO DIAGRAM - page 18) compressing the weatherstripping evenly around the door.



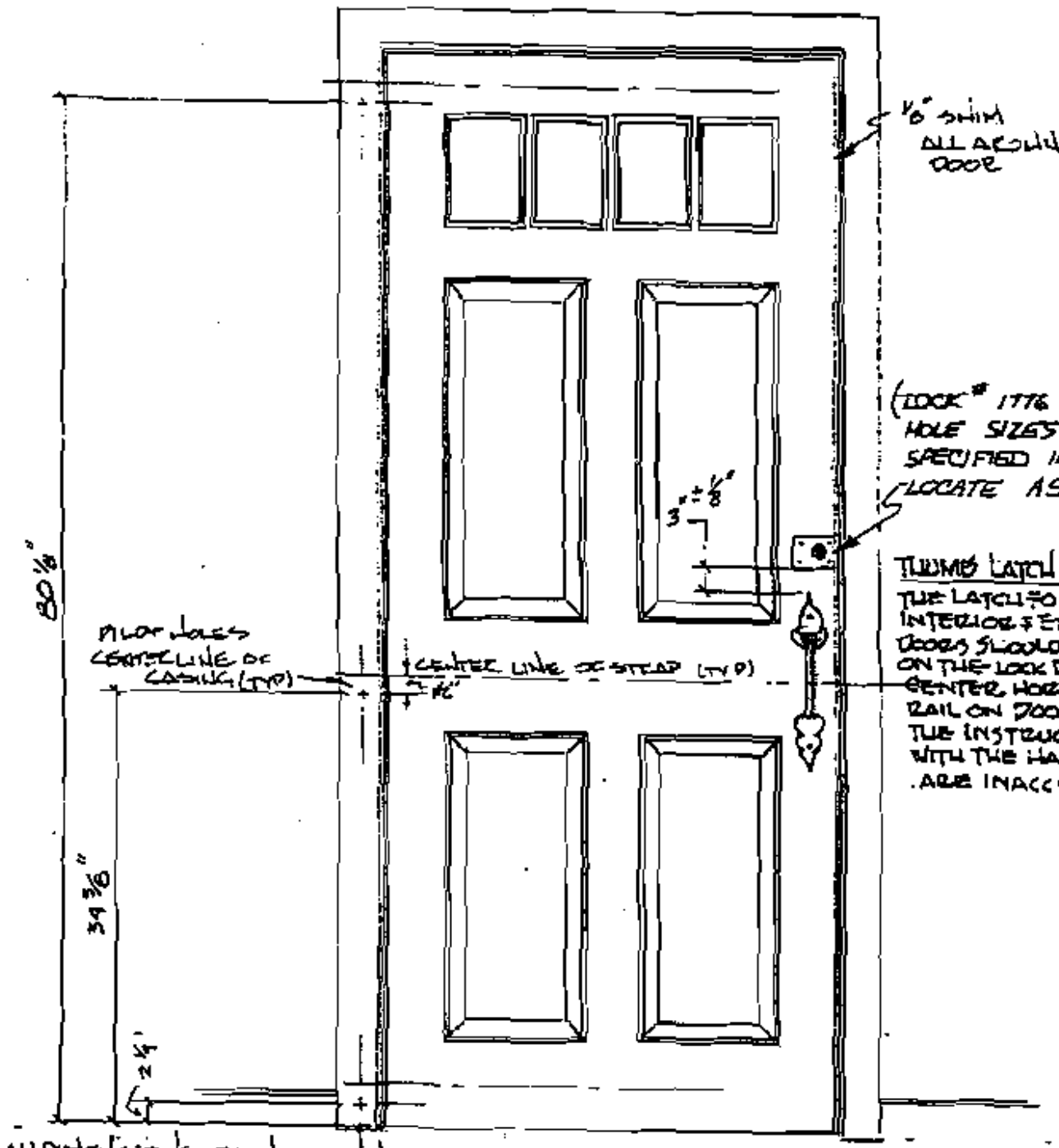
SECTION THRU THRESHOLD
(FRONT DOOR)

REVISED DEC 85



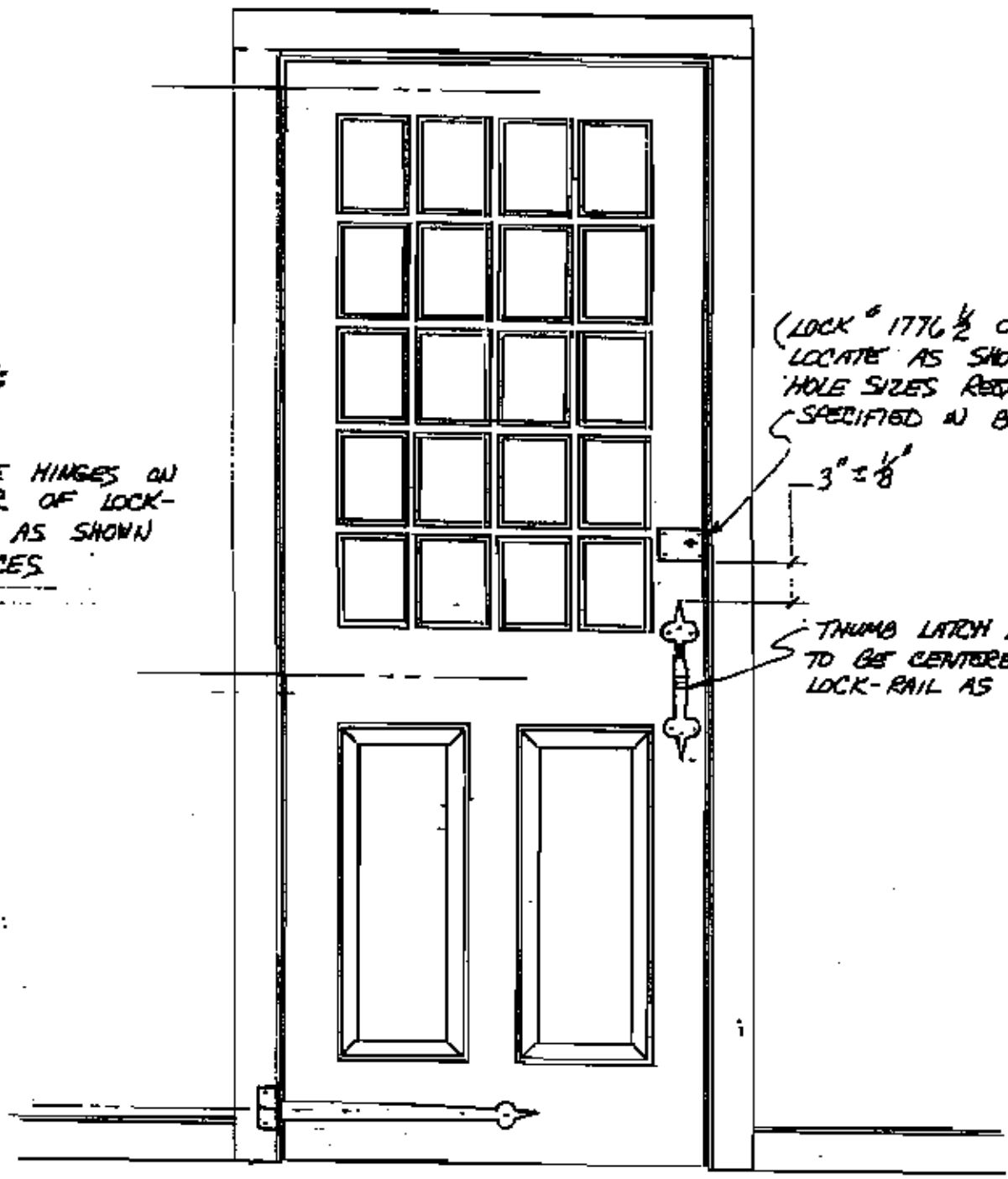
SECTION VIEW SHOWING HINGE & JAMB CONSTRUCTION
(FRONT DOOR)

REVISED DEC 85



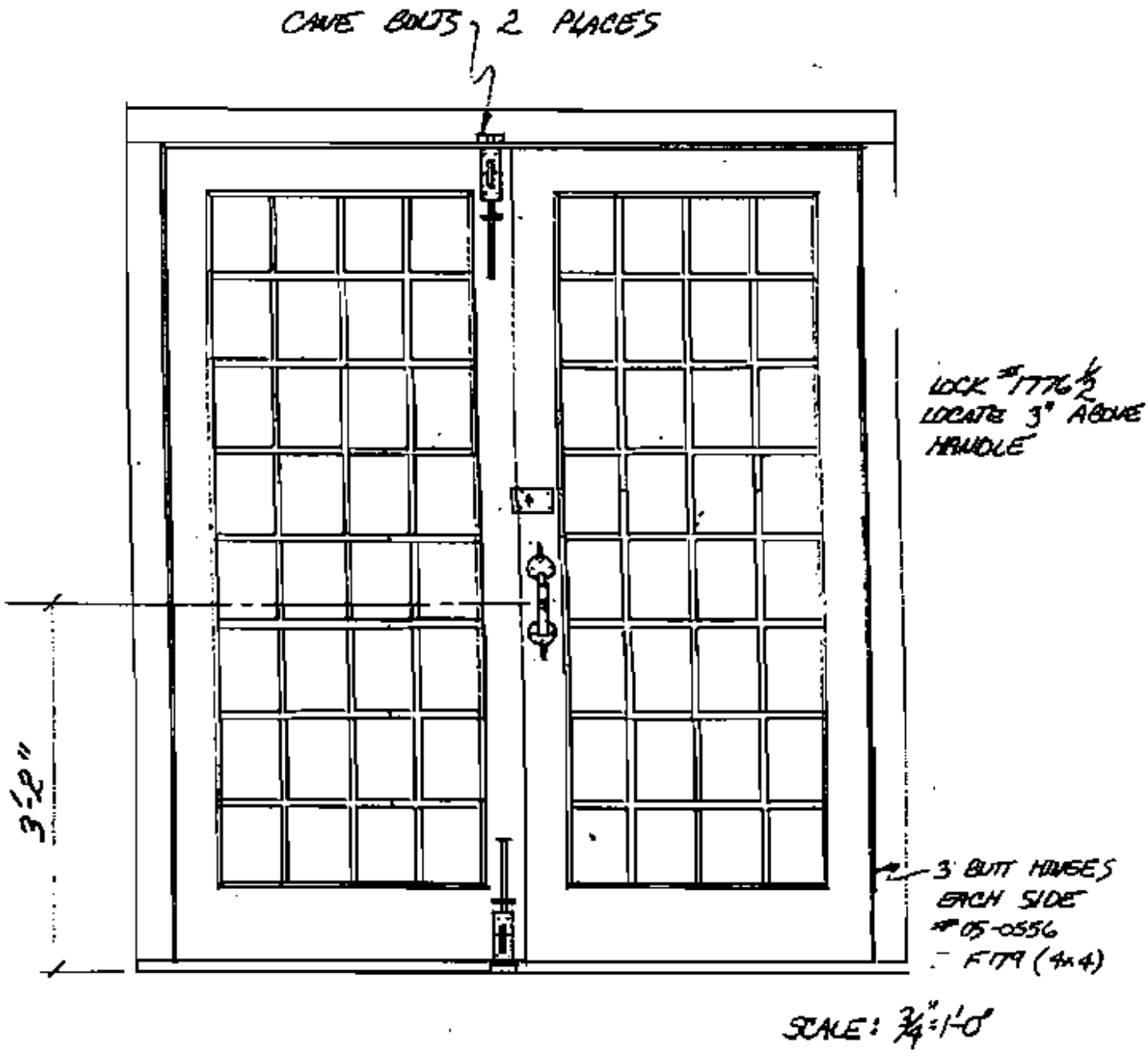
LOCATION OF PINTLE & STRAP HINGES
(FRONT DOOR)

REVISED DEC 85



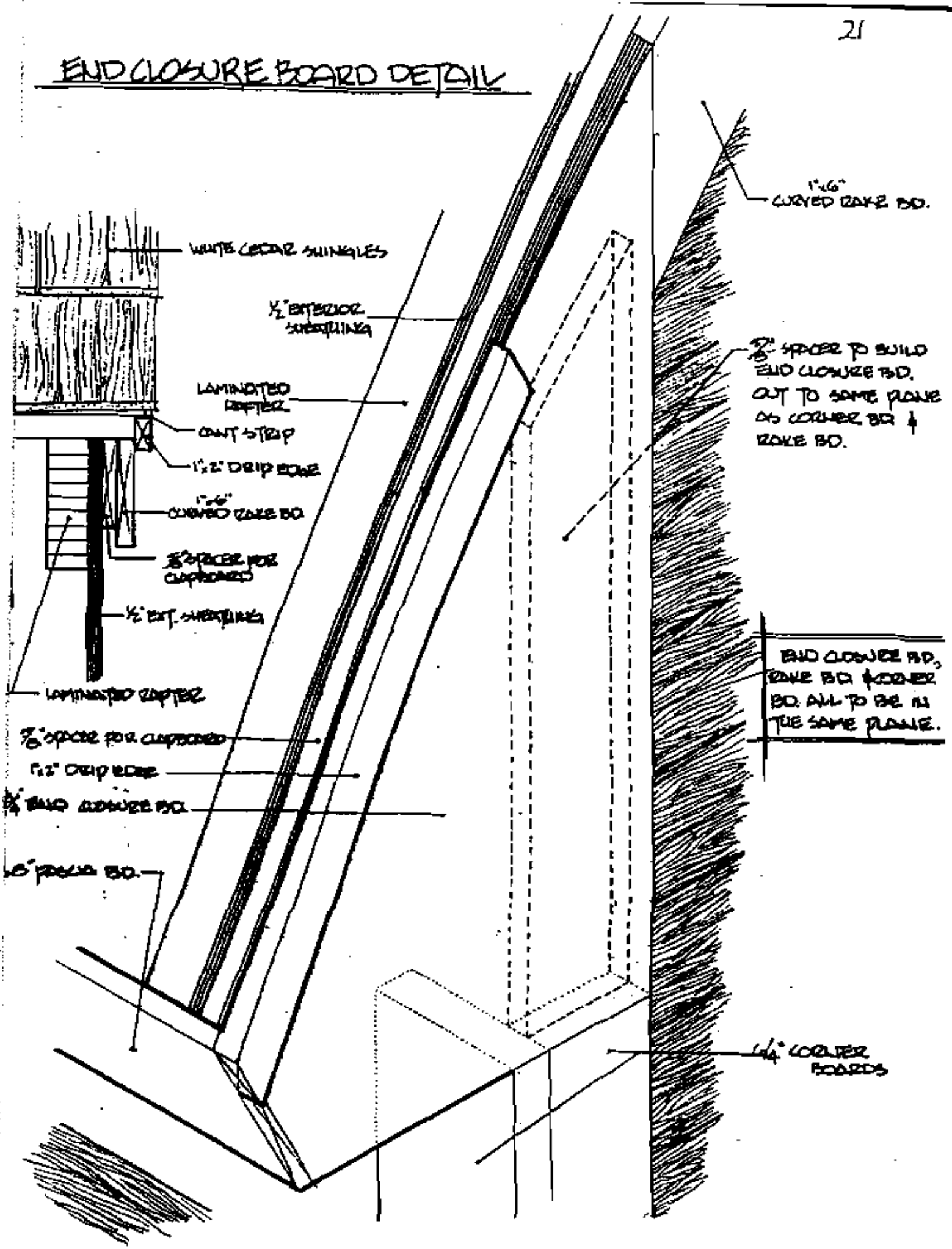
20 LITE DOOR & HARDWARE LOCATION

NOTE:
CHECK SWING OF FRENCH DOORS TO LOCATE HARDWARE ON THE PROPER DOOR.

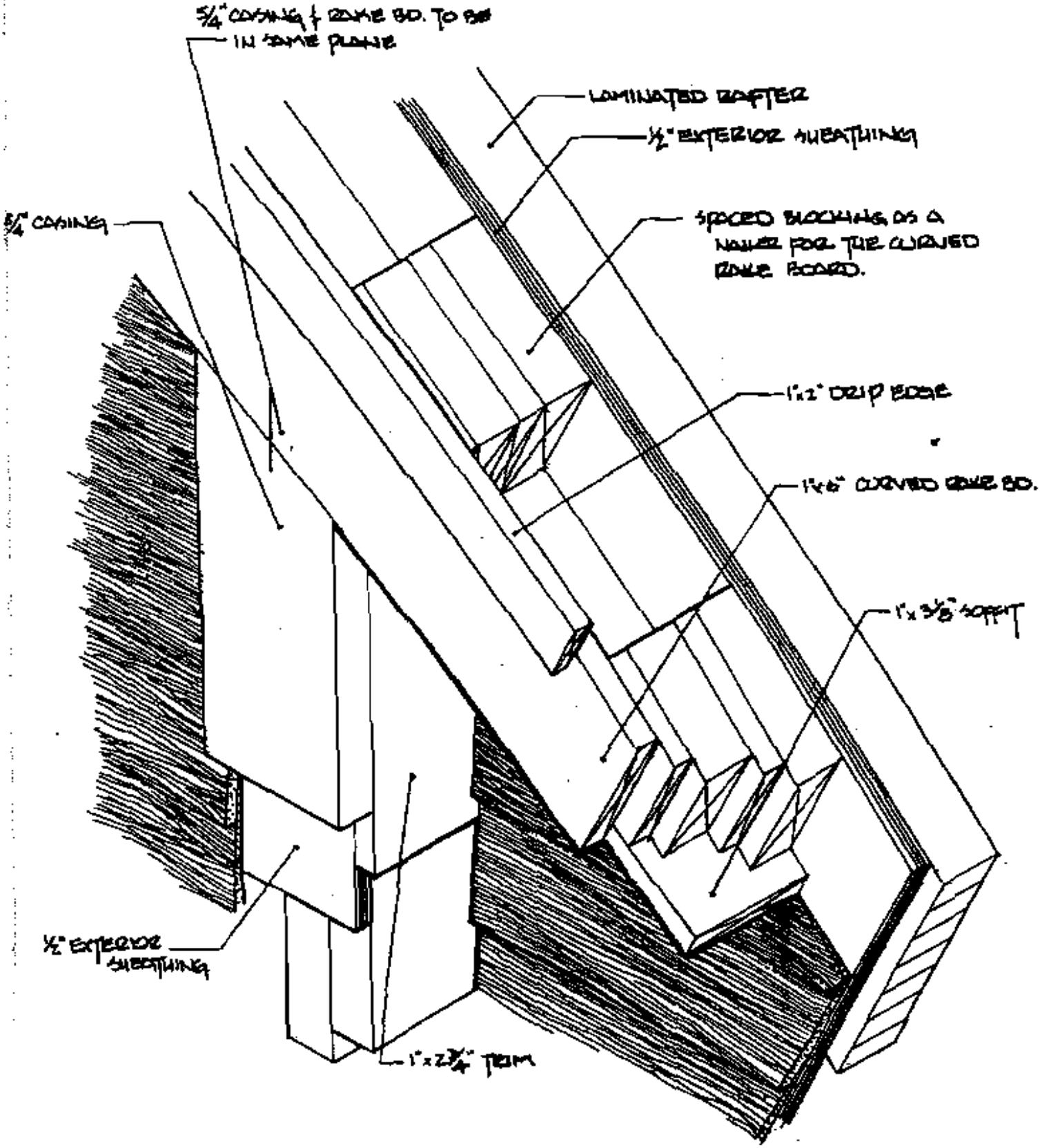


6°x7° FRENCH DOORS

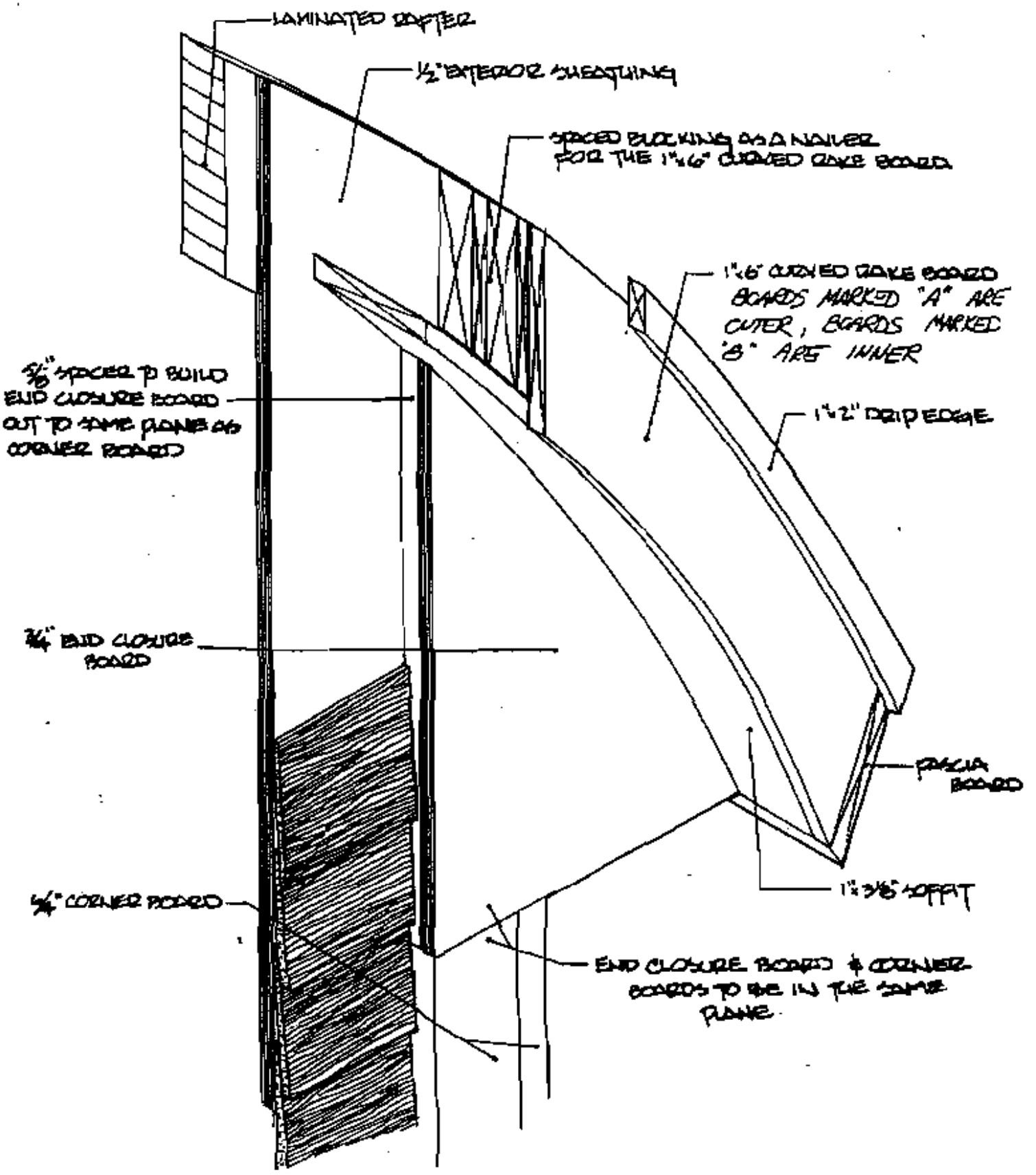
END CLOSURE BOARD DETAIL



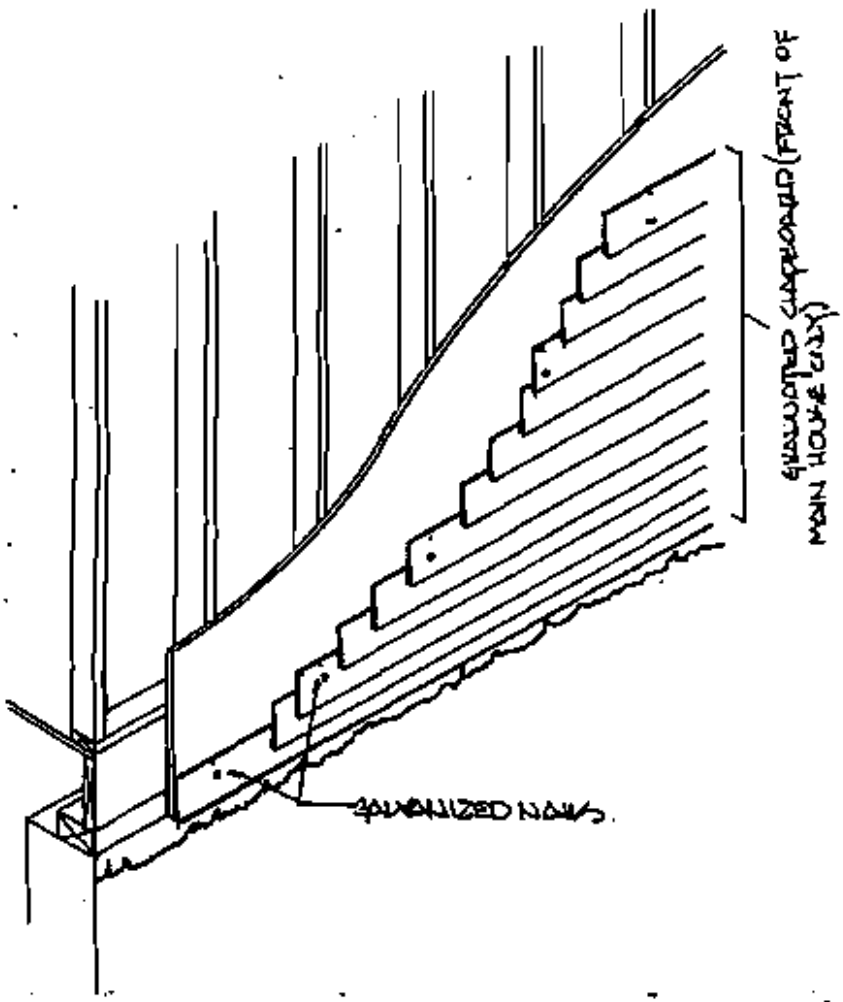
TRIM DETAIL FOR PROJECTING SECOND STORY CASEMENT WINDOWS



END CLOSURE BOARD DETAIL FOR SECOND STORY PROJECTING CASEMENT WINDOWS



INSTALLATION OF CLAP BOARD SIDING



1. For the best appearance of 5½" x ½" bevel siding, the material should be handled like finish material. Hot-dipped galvanized, aluminum nails are recommended. The nail should be driven at or just above the thin edge of the underlying piece in each stud crossing and the nail should be tapped flush with the surface of the siding. The nail should be snug, but not tight. This improves appearance by preventing cupping and permits seasonal adjustment to atmospheric conditions. Nails should be long enough to penetrate into studs at least 1½". Note that siding may be installed either side out, depending on whether a smooth or textured exterior is desired.

2. FRONT OF MAIN HOUSE ONLY. The exposure at the bottom of the wall should start at 2+3/4" and increase progressively to the 4½" exposure. 13 to 14 courses to the bottom of the front window sills. This can be done by marking the corner board and using snap lines. Historically, width decrease was a form of decoration used only on the front wall of the house. Standard exposure for the rest of the house is 4½" per course.

3. Red rosin paper is used around windows and doors. Metal flashing over windows, door and beehive ventilators, are used only on gable ends.

4. The bottom of a clapboard should be lined up with the bottom of the window sill. The bottom of a clapboard should also line up with the top of the gable windows. This is accomplished by carrying the eave wall coursing around the corner to the gable wall, lining the coursing across to the rear wall. Small adjustments can be made progressively to have the clapboard line with the second floor sills in the gable walls. It is better to measure the distance in advance and plan the coursing before the siding is installed. It is better to reduce the spacing and add an extra clapboard course than to try to stretch out weather exposure.

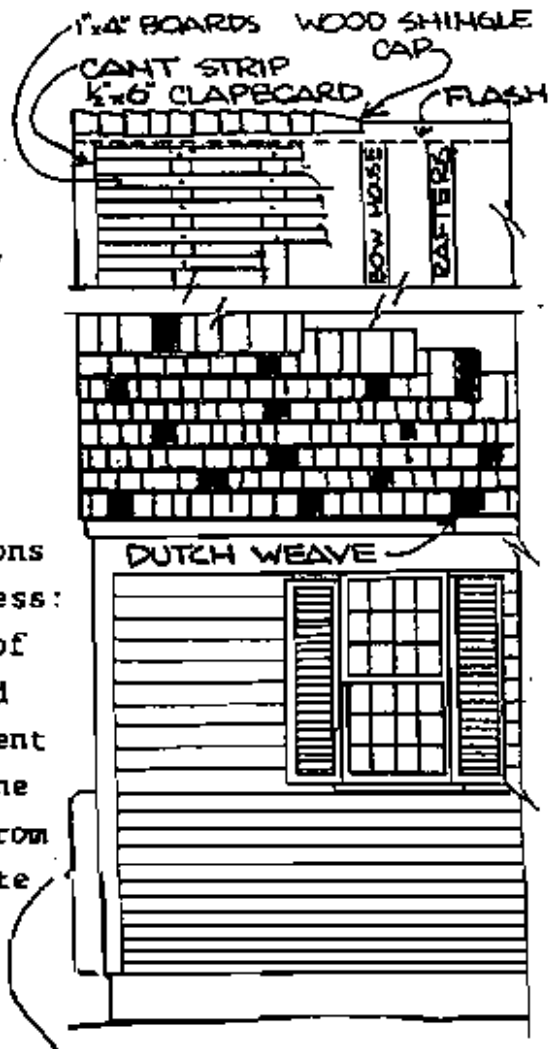
INSTALLATION OF ROOF SHEATHING AND WOOD SHINGLES

SHEATHING: Use 1 x 4 rough boards and not plywood with building paper as is the custom when asphalt shingles are used. Wood shingles must be able to breathe and therefore should be installed directly onto the spaced boards. DO NOT USE BUILDING PAPER, as it will trap moisture on the underside of the shingles, causing deterioration and reducing the life of the shingles by many years.

ROOF APPLICATION: Shingles normally are applied in straight, single courses. But application may be varied for the sake of achieving certain effects (thatch, serrated, weave and ocean wave applications are common styles). The following applies regardless: Shingles must be doubled at all eaves, and butts of first-course shingles should project 1 1/2" beyond the first sheathing board. Spacing between adjacent shingles (joints) should be 1/4". Joints in any one course should be separated not less than 1 1/2" from joints in adjacent courses, and joints in alternate courses should not be in direct alignment.

The courses are 5 inches to the weather. The "Dutch Weave" is done by placing an extra shingle on TOP of the installed rows at random or approximately one for every 4 to 5 feet horizontally.

PEAK FLASHING: Use 14" wide metal flashing installed under the wood shingle cap at the roof ridge. (7 inches each side of the ridge pole.)



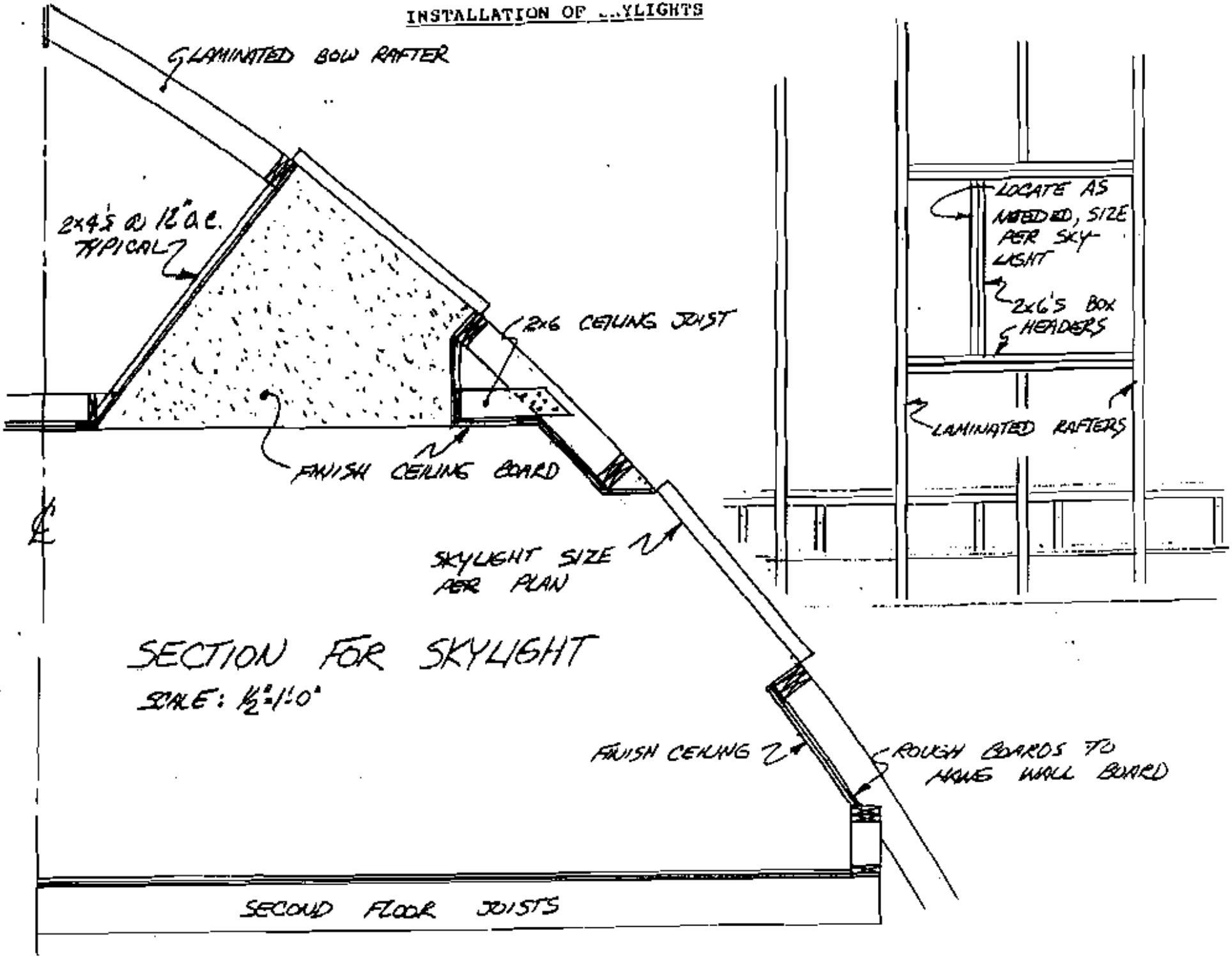
PROGRESSIVE PATTERN OF CLAPBOARD BEVELED SIDING IS USED ON THE FRONT OF THE MAIN HOUSE ONLY. (REF. TO PG. 24)

NOTE TO ROOFER: WHILE SHINGLING ROOF, BE SURE TO HOLD OUT ENOUGH 6" SIZE SHINGLES FOR RIDGE CAP

June 29, 1977

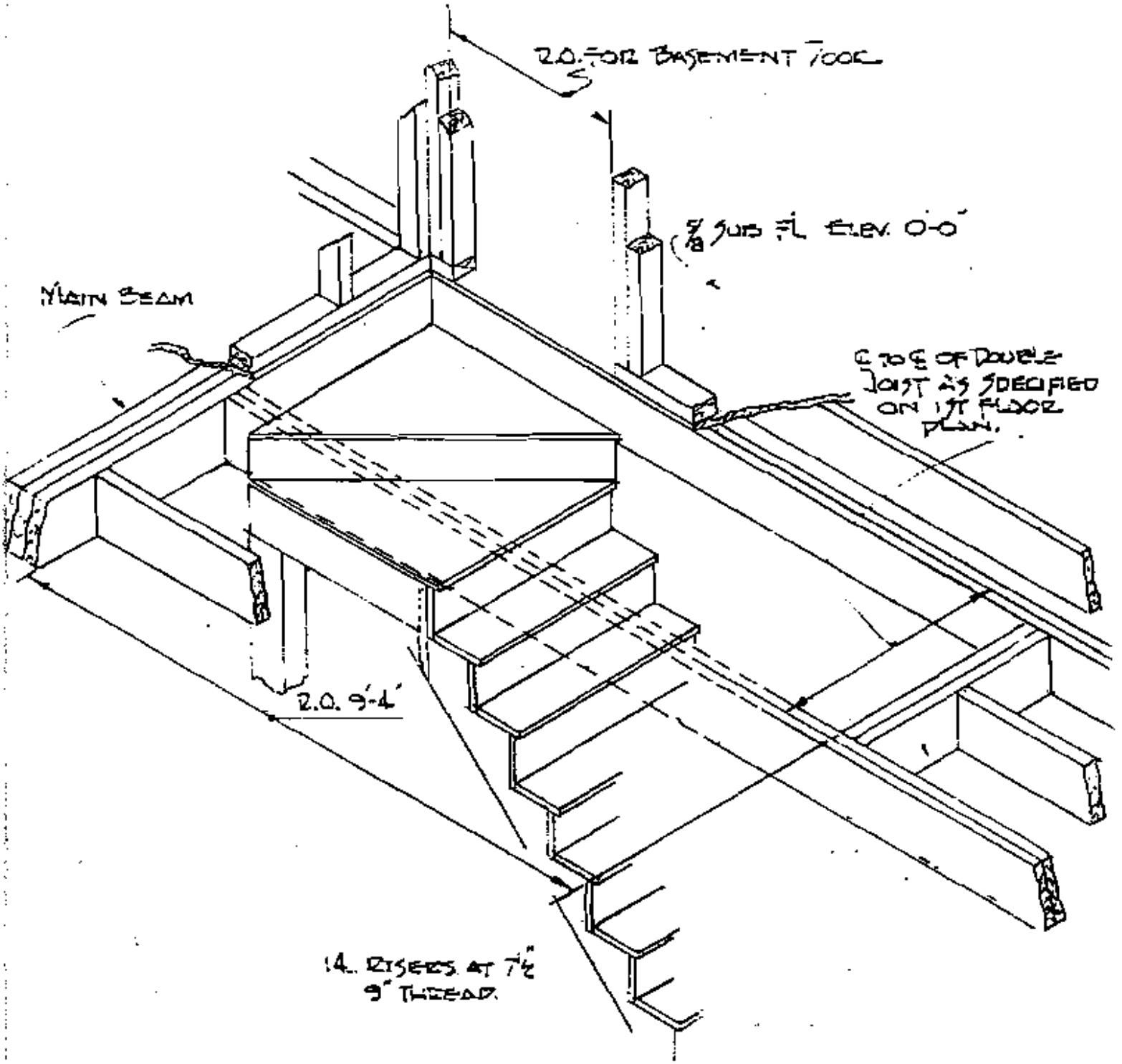
REVISED Dec 85

INSTALLATION OF ...YLIGHTS



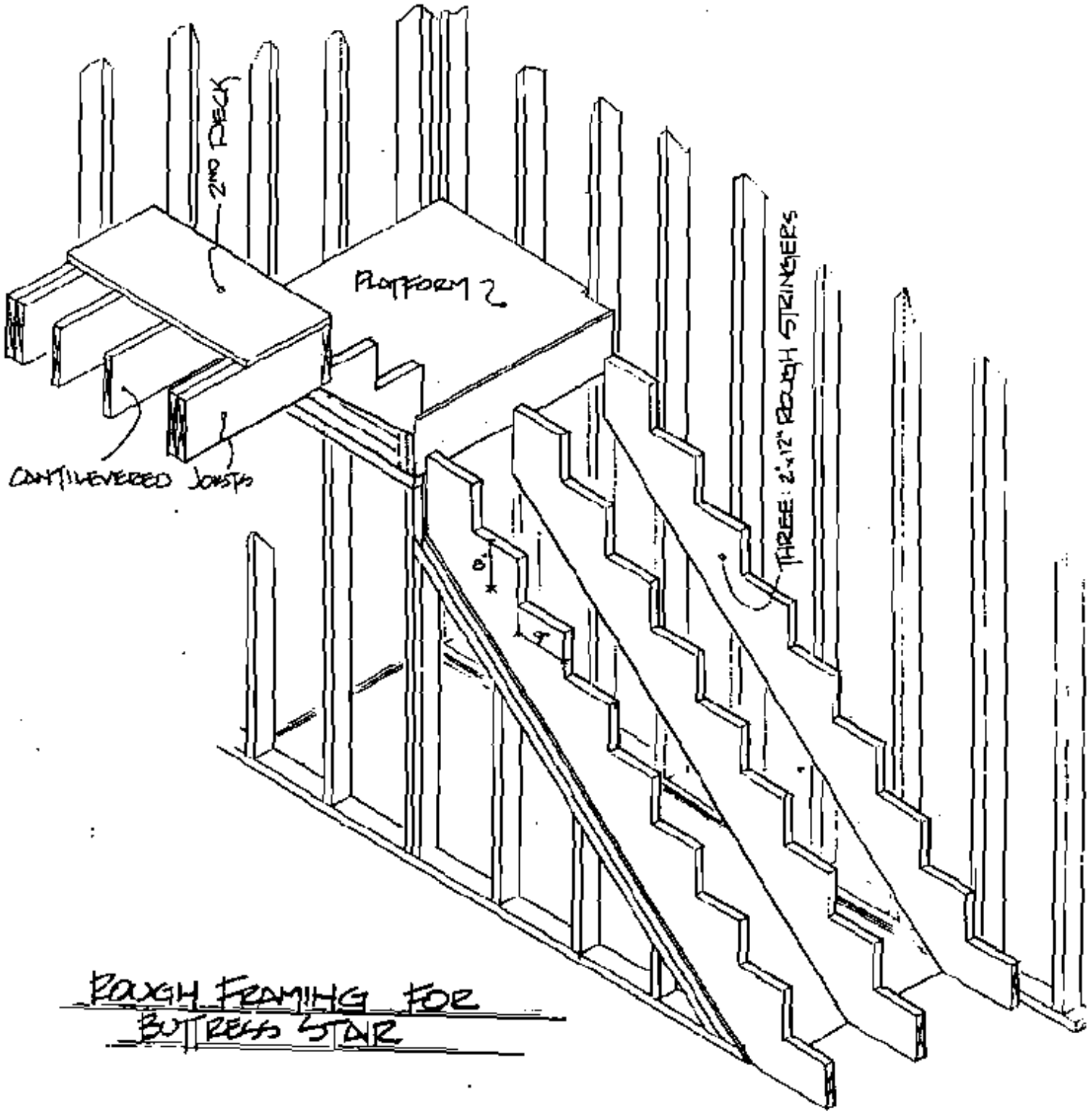
SECTION FOR SKYLIGHT

SCALE: ½"=1'-0"



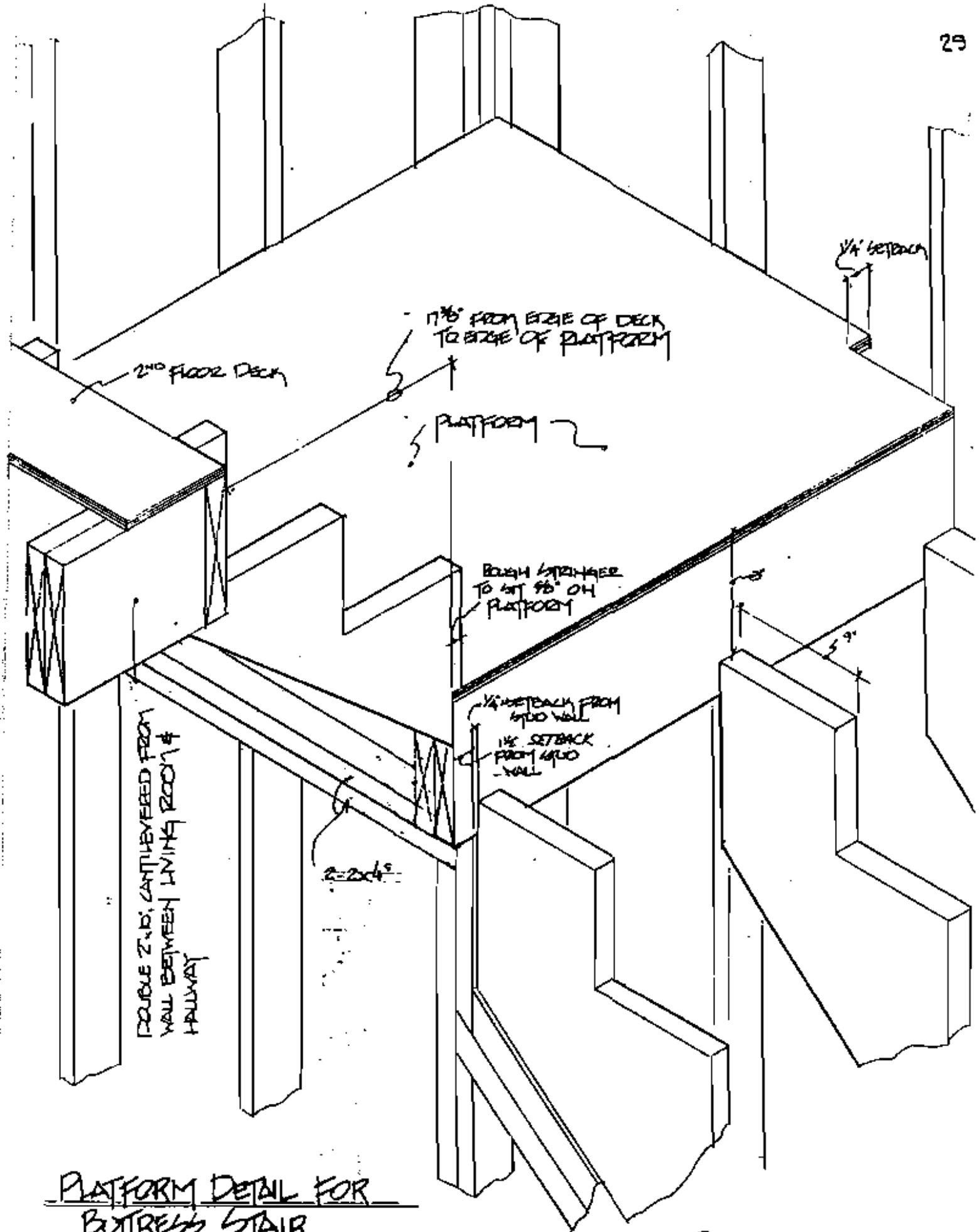
BASEMENT STAIR UNDER GOOD MORNING STAIRWAY

FIRST DECK TO PLATFORM: 10 RISERS @ 8" = 6'-8"
PLATFORM TO SECOND DECK: 3 RISERS @ 8" = 2'-0"
TOTAL 13 RISERS @ 8" = 8'-8"



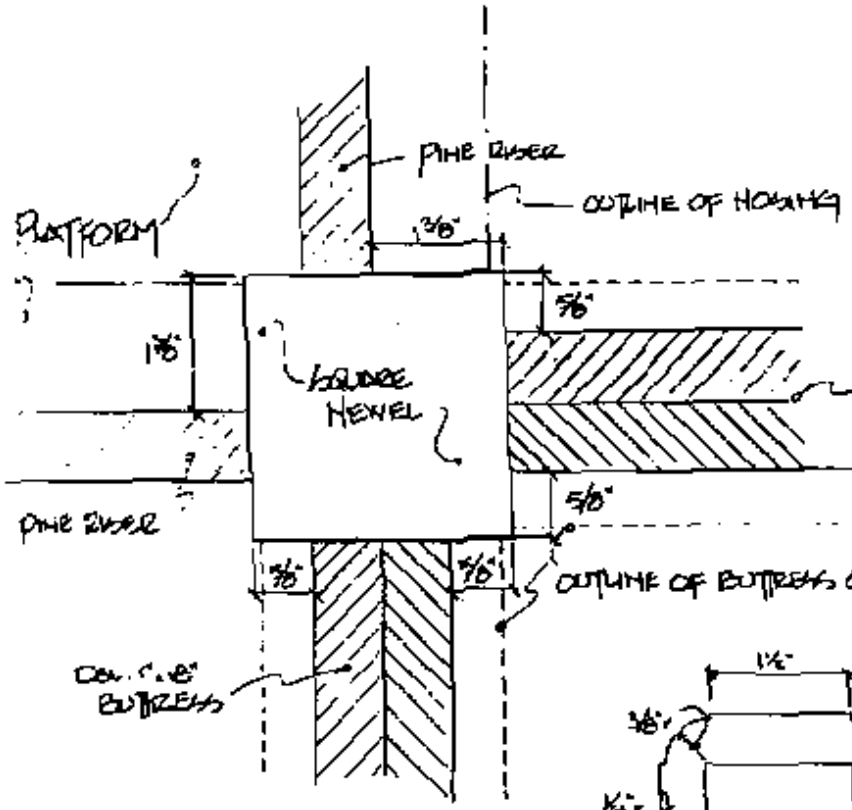
ROUGH FRAMING FOR BUTTRESS STAIR

REVISED DEC 85

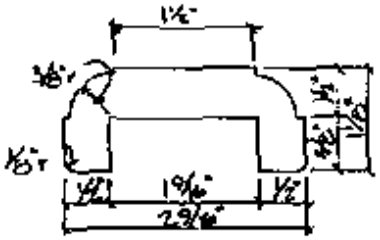


PLATFORM DETAIL FOR BUTTRESS STAIR

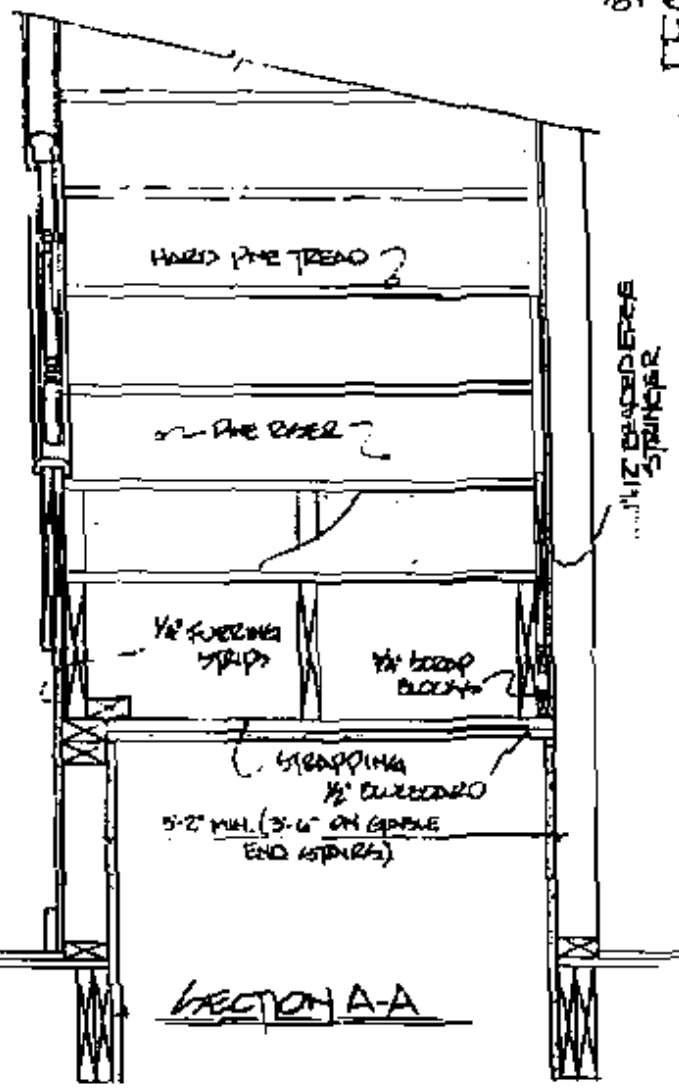
REVISED DEC. 85



PLAN VIEW OF PLATFORM NEWEL

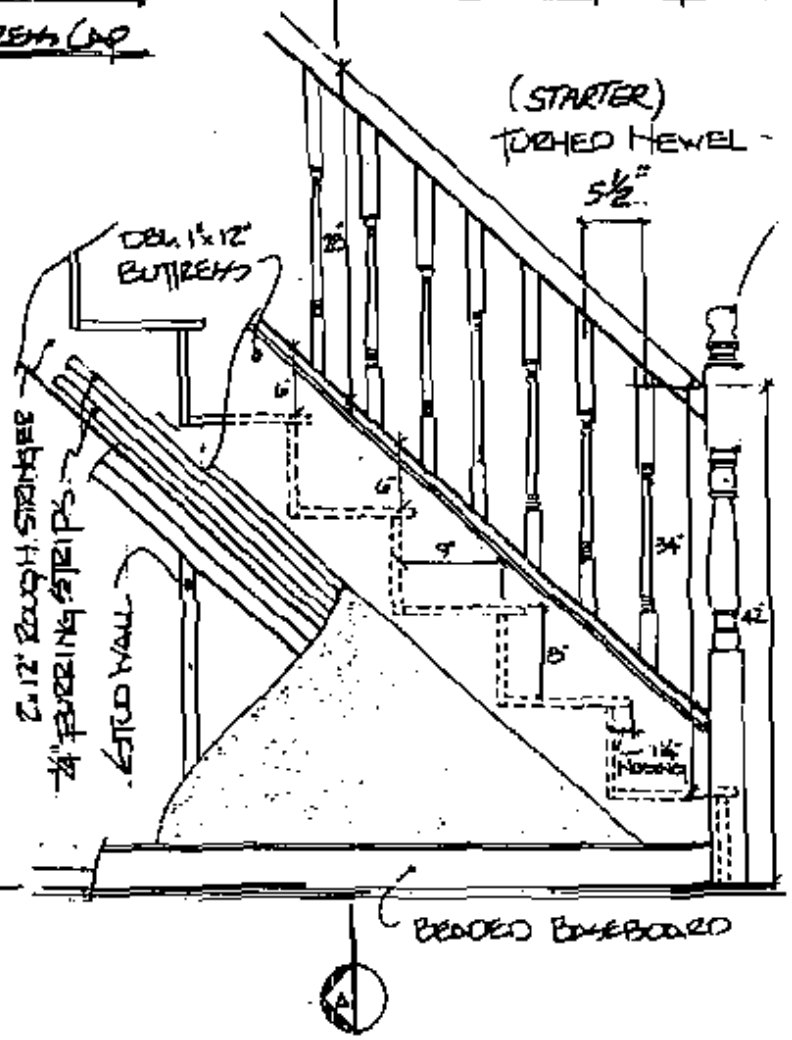


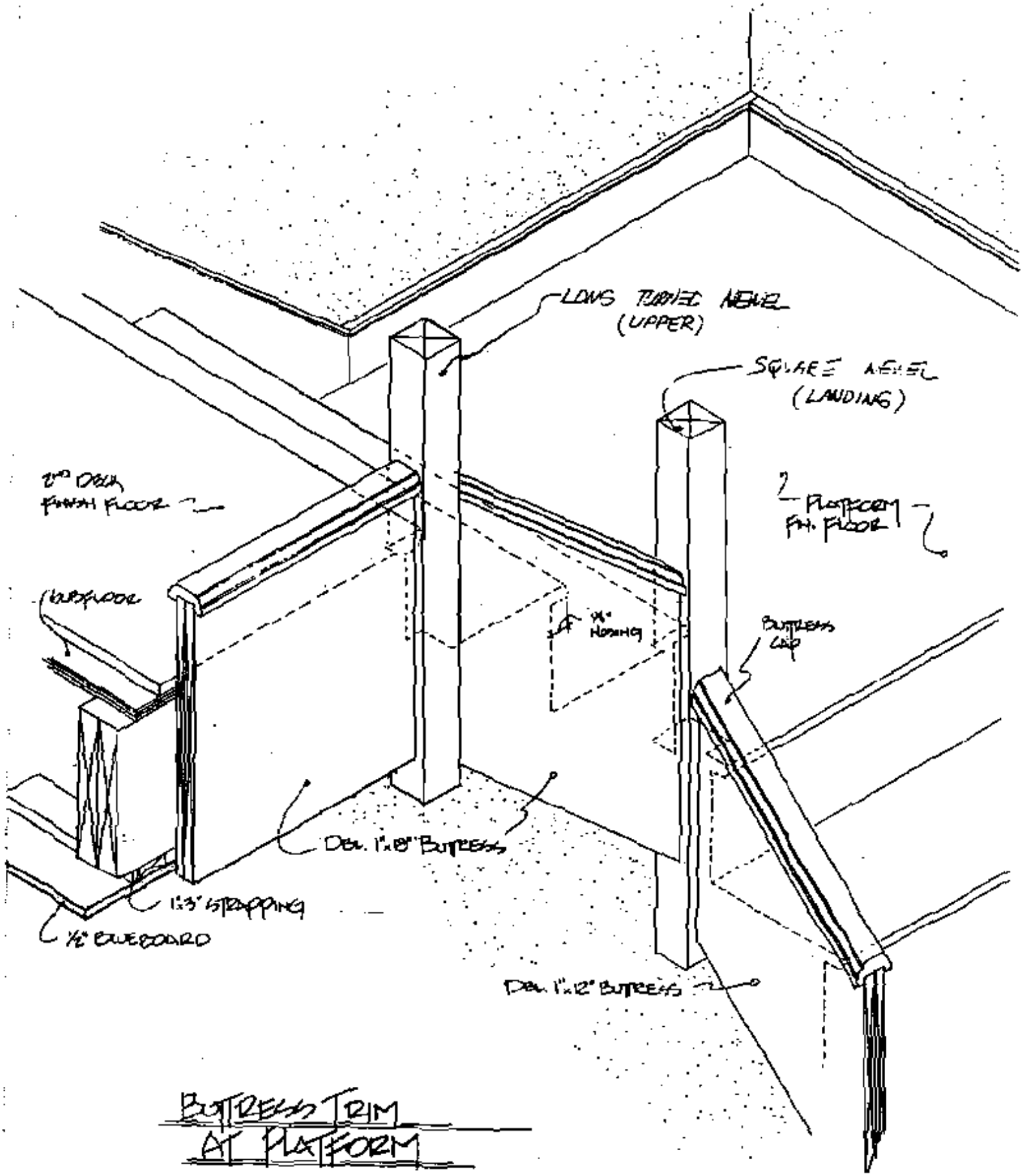
BUTTRESS CAP



SECTION A-A

BUTTRESS STAIR ELEVATION

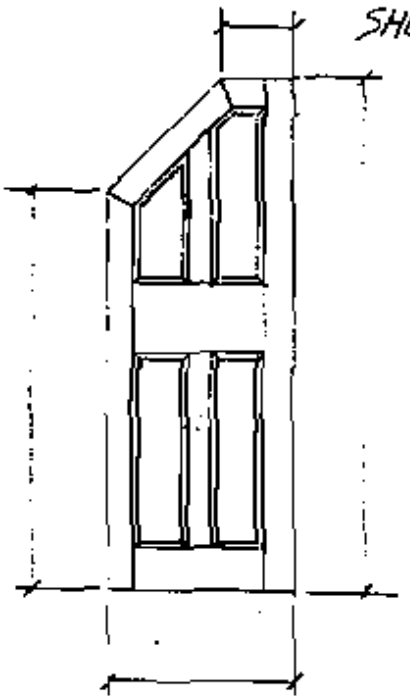


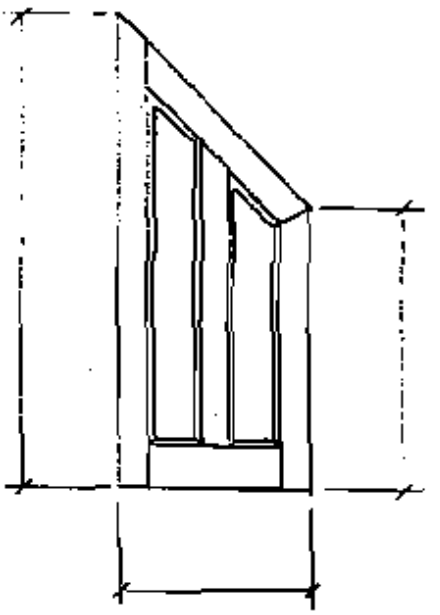


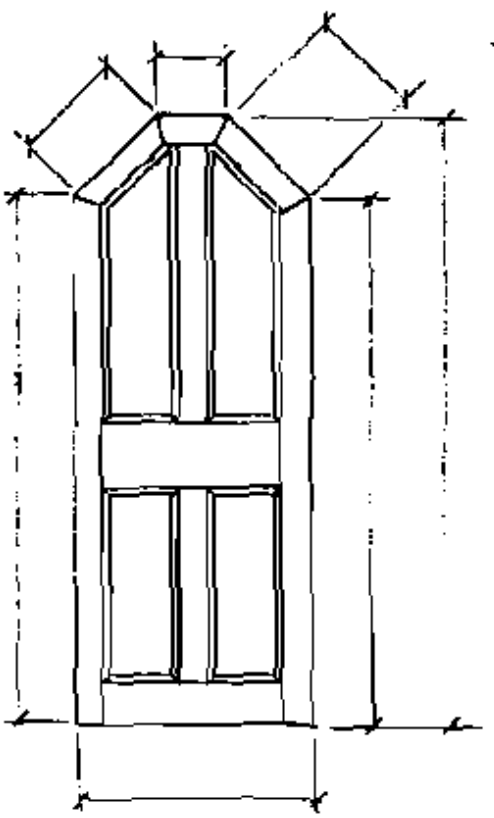
BUTTRESS TRIM
AT PLATFORM

CLIP EDGE DOOR STYLES, 1'10" AND LARGER WIDTH'S

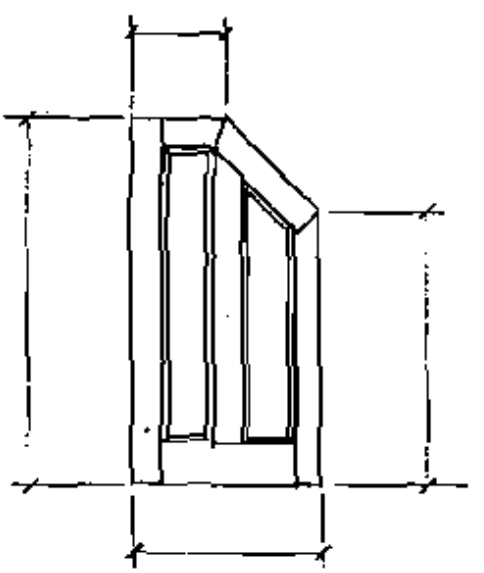
* DOOR MEASUREMENTS MUST BE WRITTEN ON PAPER AND SENT TO BOW HOUSE, NO DIMENSIONS TAKEN OVER THE PHONE. MEASUREMENTS NEEDED AS SHOWN ON DOORS BELOW.







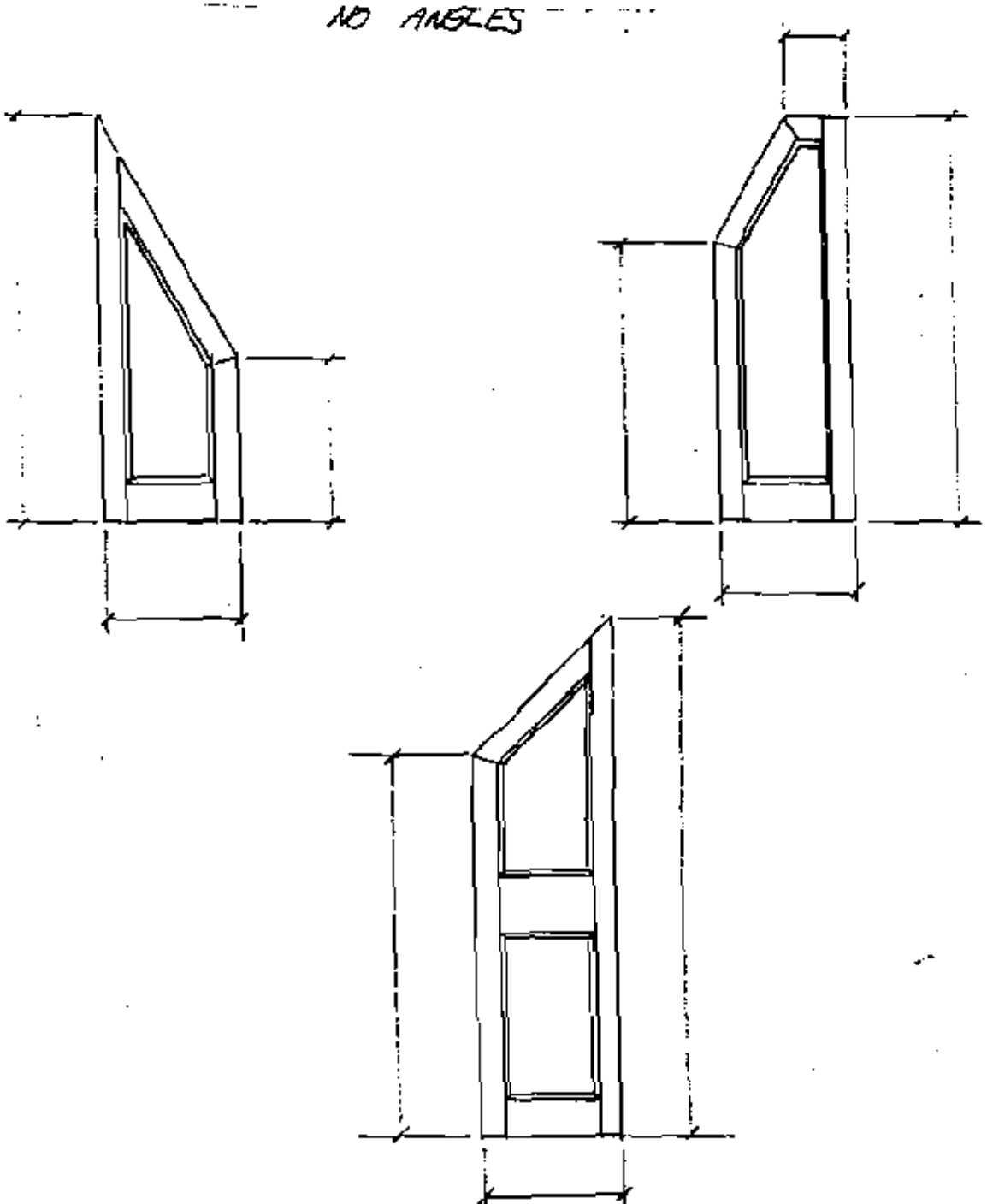
* LINEAR DIMENSIONS ONLY, NO ANGLES



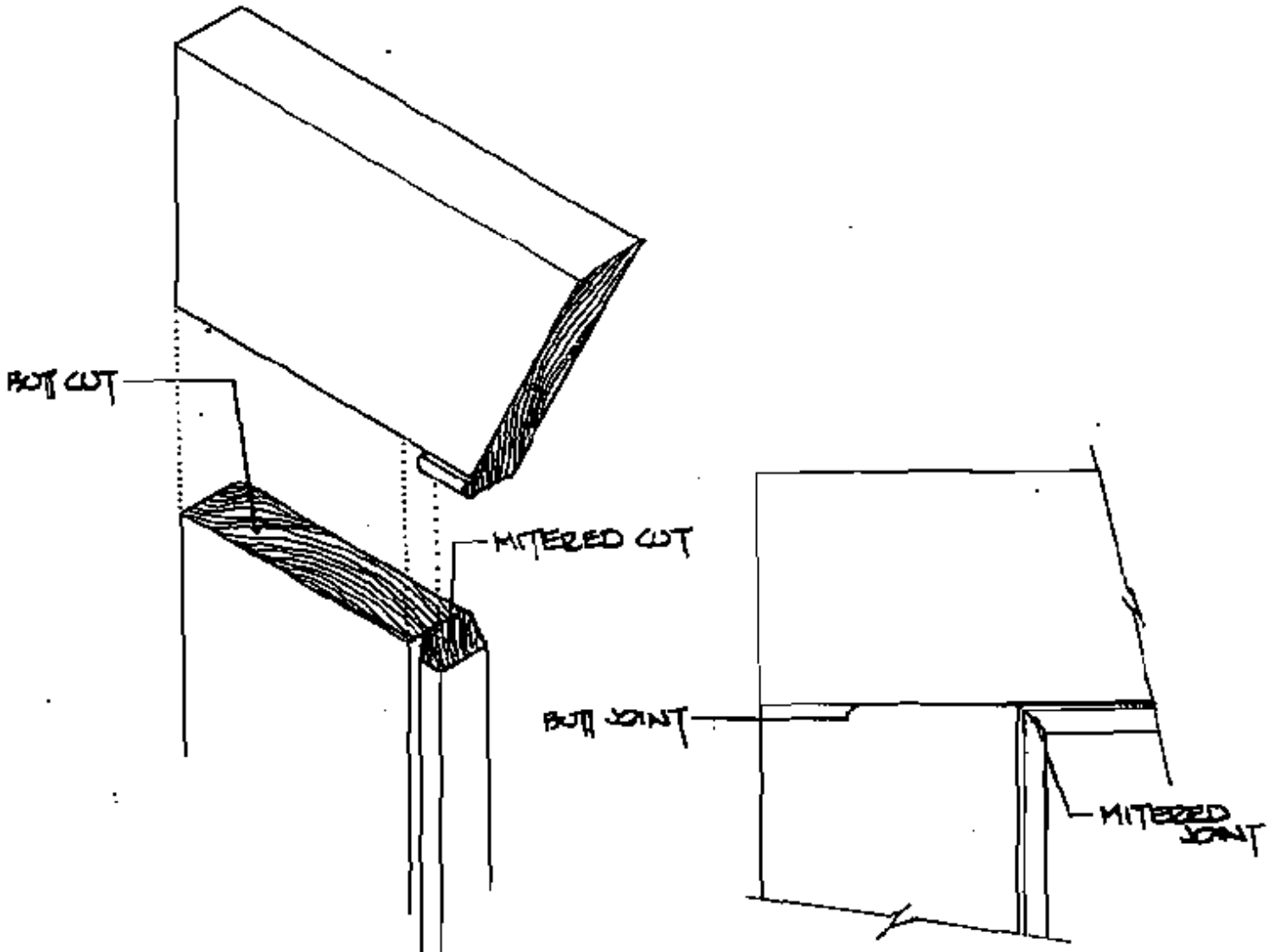
CLIP EDGE DOOR STYLES, 1-8" AND SMALLER WIDTH'S

* DOOR MEASUREMENTS MUST BE WRITTEN ON PAPER AND SENT TO BOW HOUSE, NO DIMENSIONS TAKEN OVER THE PHONE. MEASUREMENTS NEEDED AS SHOWN ON DOORS BELOW

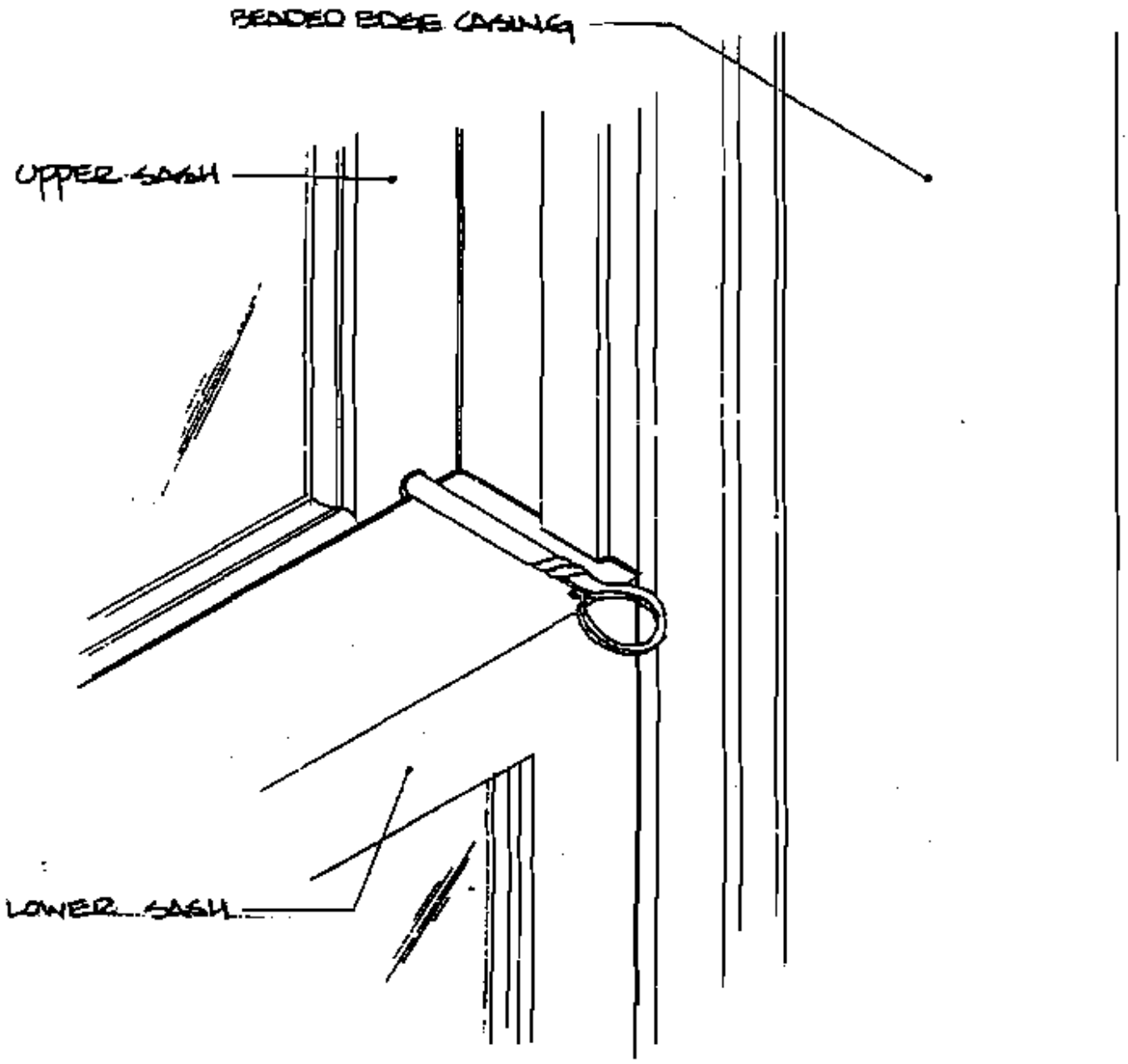
* LINEAR DIMENSIONS ONLY, NO ANGLES



DETAIL OF BEADED EDGE CASING

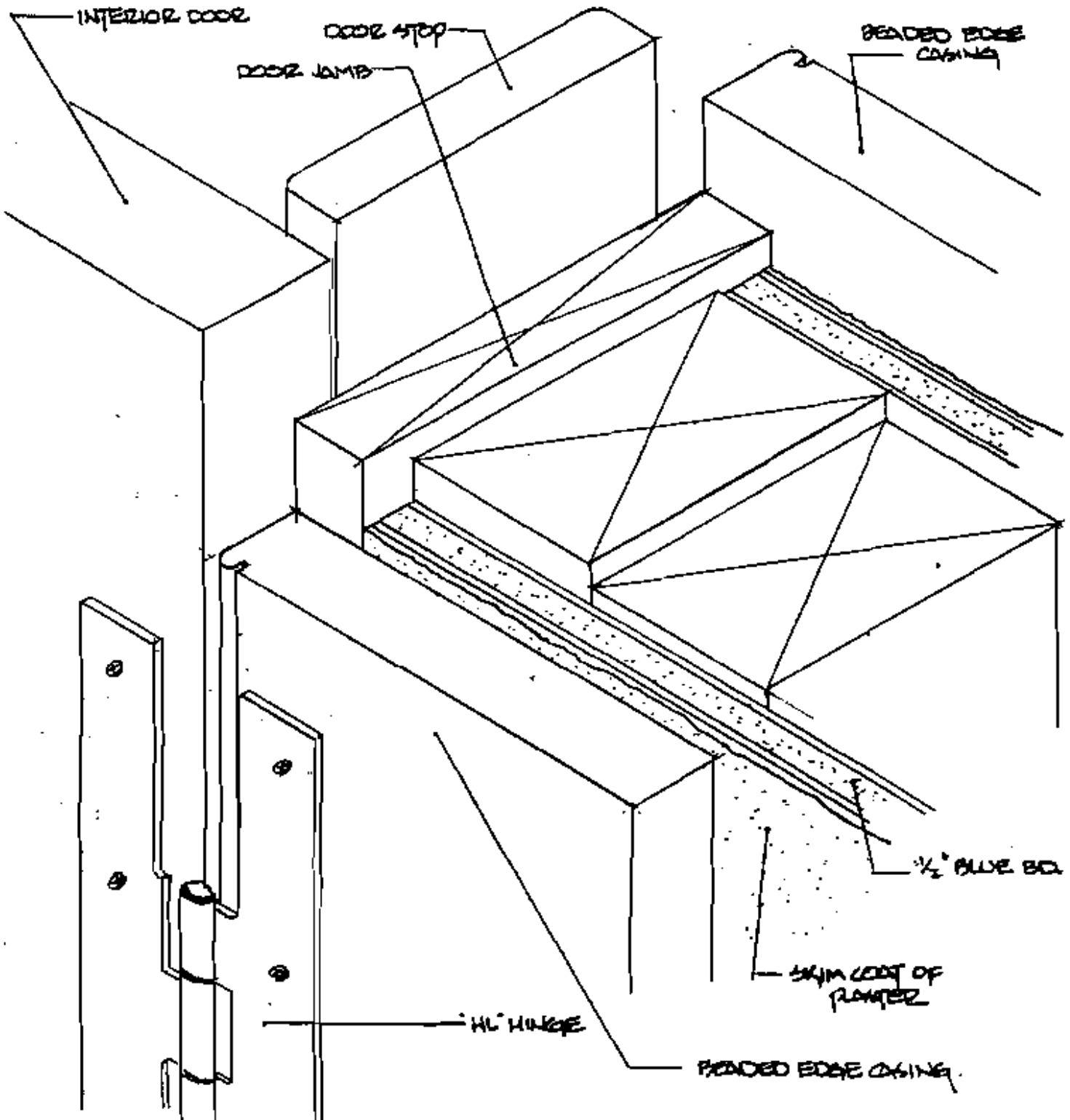


WINDOW PIN INSTALLATION

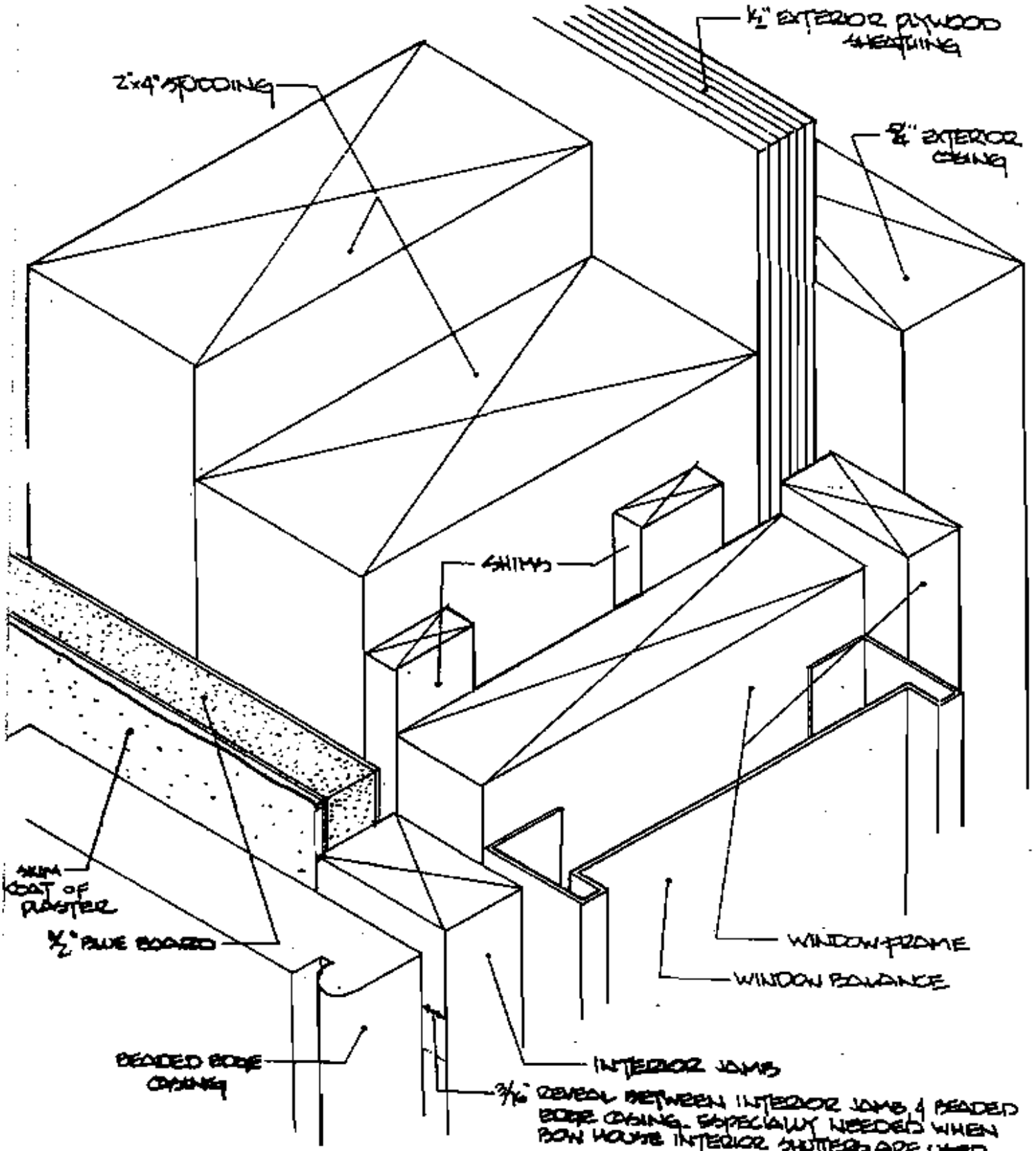


LOCATE WINDOW PIN AT RIGHT HAND SIDE OF DOUBLE HUNG WINDOWS.

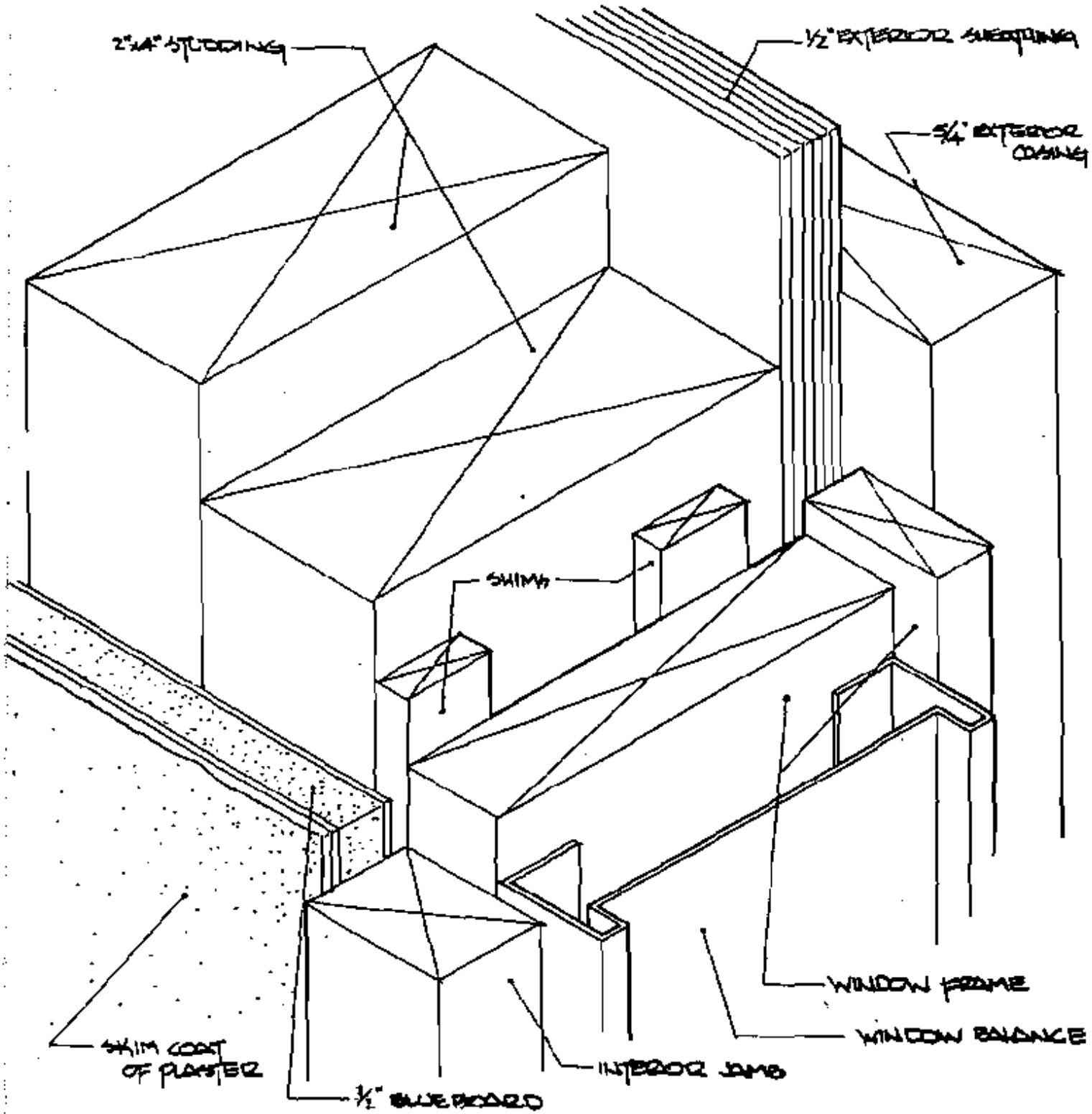
DOOR CASING DETAILS (INTERIOR)



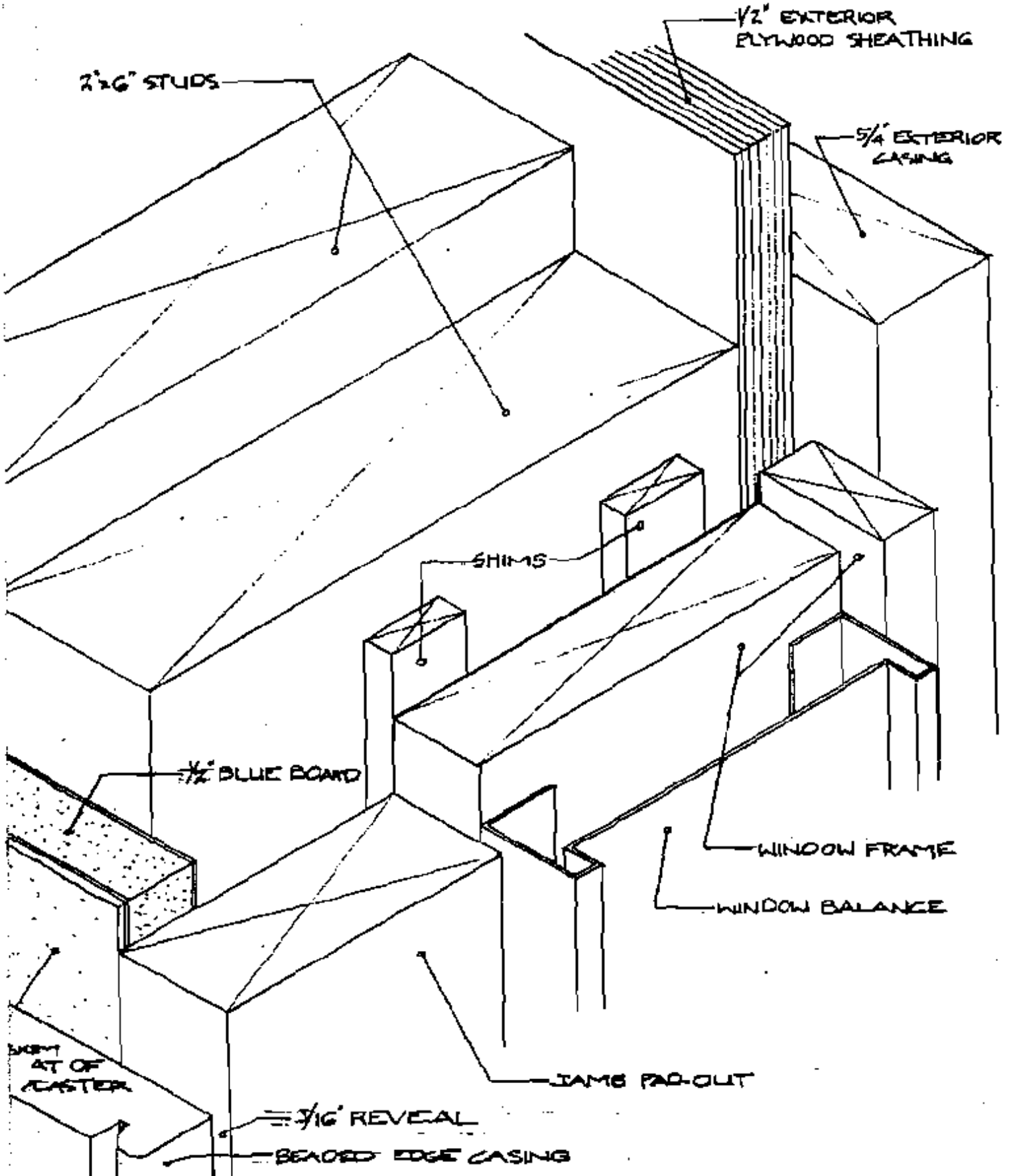
JAMB SECTION FOR 2"x4" EXTERIOR WALLS WITH FULL BEADED EDGE CASING



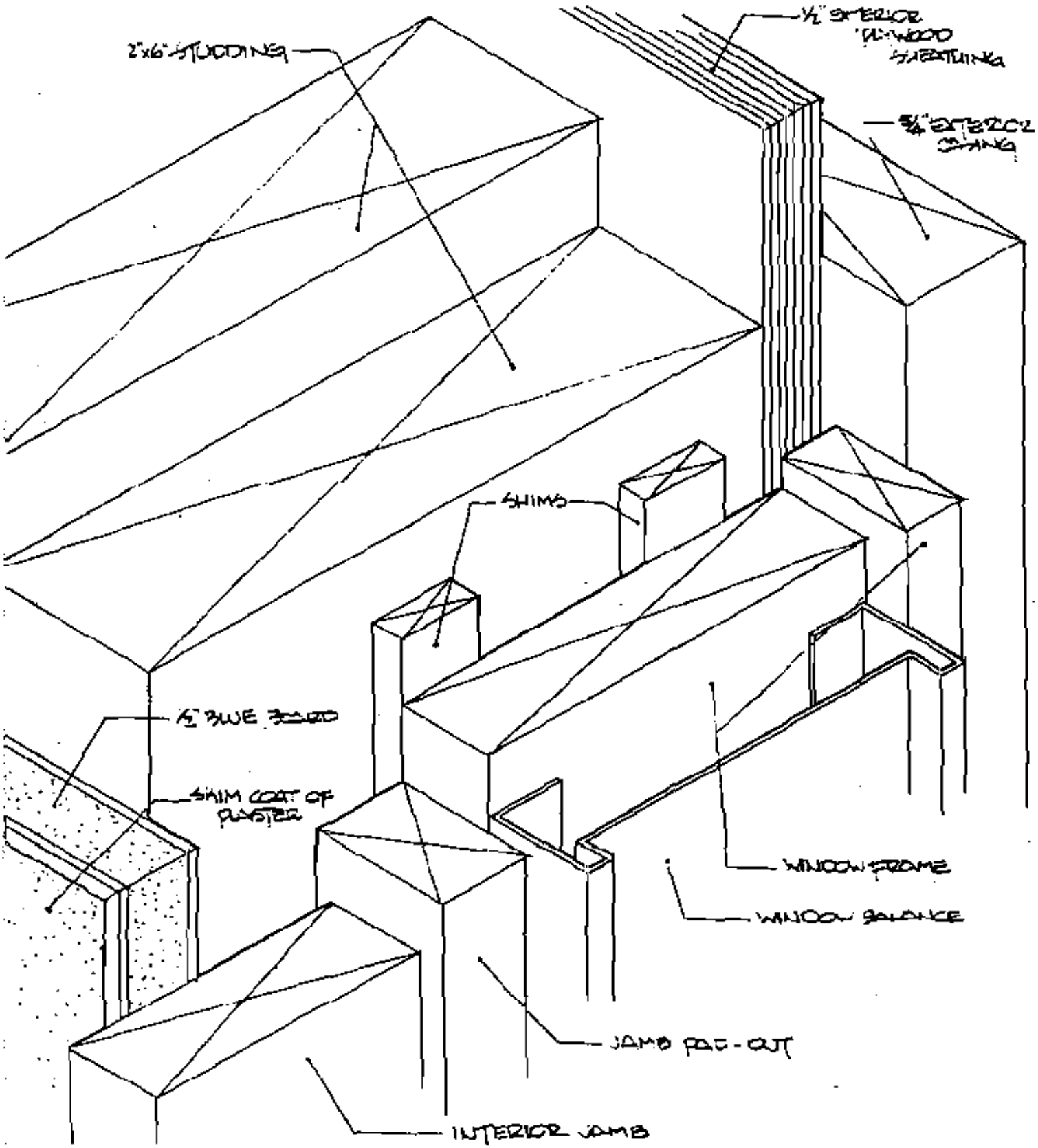
JAMB SECTION FOR 2"x4" EXTERIOR WALLS WITHOUT BEADED EDGE CASING



JAMB SECTION FOR 2x6" EXTERIOR WALLS W/ FULL BEADED CASING

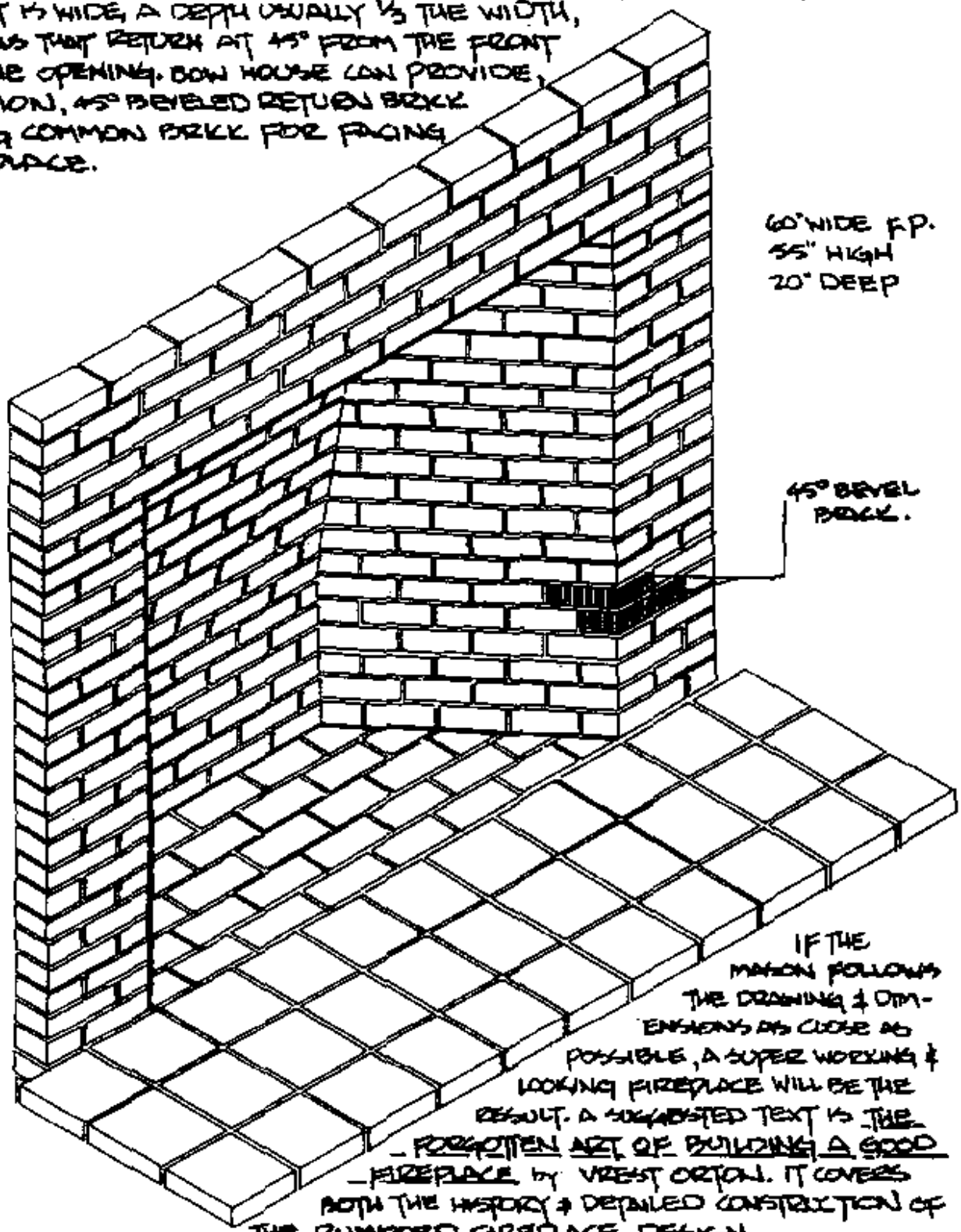


JAMB SECTION FOR 2"x6" EXTERIOR WALL WITHOUT BEADED EDGE CASING



THE MASON EXPERIENCED IN THIS STYLE FIREPLACE CAN ATTEST TO IT'S EXCEPTIONAL HEATING QUALITIES & AUTHENTIC APPEARANCE. THE UNINITIATED MASON WILL BE OBSTINANT; INSISTING IT WILL NEVER DRAW, ALWAYS SMOKE, & SHOW AN INCLINATION FOR THE LOW-SLUNG, RANCH-STYLE FIREPLACE.

ALL WE CAN SAY, IS THAT THE RUMFORD DESIGN WORKS WELL & HAS FOR NEARLY 2 CENTURIES. THE CHARACTERISTICS OF THIS STYLE ARE AN OPENING AS TALL AS IT IS WIDE, A DEPTH USUALLY 1/3 THE WIDTH, & SIDE WALLS THAT RETURN AT 45° FROM THE FRONT FACE OF THE OPENING. BOW HOUSE CAN PROVIDE, AS AN OPTION, 45° BEVELED RETURN BRICK & MATCHING COMMON BRICK FOR FACING THE FIREPLACE.



IF THE MASON FOLLOWS THE DRAWING & DIMENSIONS AS CLOSE AS POSSIBLE, A SUPER WORKING & LOOKING FIREPLACE WILL BE THE RESULT. A SUGGESTED TEXT IS THE FORGOTTEN ART OF BUILDING A GOOD FIREPLACE by VREST ORTON. IT COVERS BOTH THE HISTORY & DETAILED CONSTRUCTION OF THE RUMFORD FIREPLACE DESIGN.

THE RUMFORD FIREPLACE

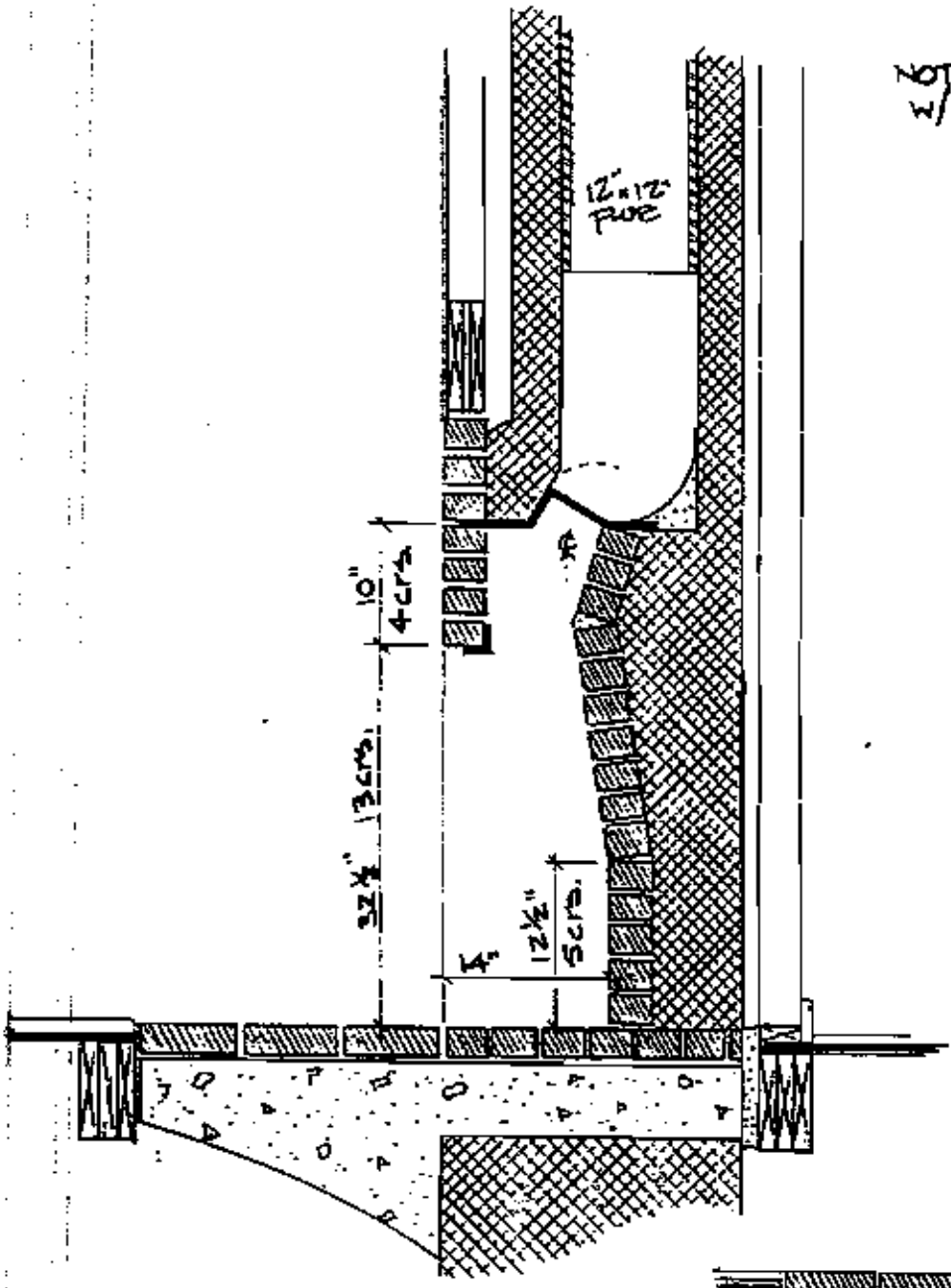
DATA FOR STANDARD BOW HOUSE FIREPLACES

FIREBOX OPENING (½" JOINTS)	MINIMUM FLUE SIZE	DAMPER SIZE	No. OF COURSES ¼" JOINTS	No. OF 45° A. BRICKS	No. OF 8¼" x 8¼" x 2" HEARTH TILES	HEARTH R.O.
84"W x 35"H x 12"D	8" x 8"	24"	10	20	10	10½" x 41½"
36"W x 32½"H x 14"D	12" x 12"	24"	13	26	24	25" x 66"
42"W x 35"H x 14"D	12" x 12"	30"	14	28	24	25" x 66"
48"W x 46"H x 16"D	12" x 18" OR TWO 8" x 12"	36"	18	36	27	28" x 74¼"
60"W x 55"H x 20"D	8" x 12" + 12" x 18" OR 18" x 18"	48"	22	44	30	25" x 82½"
					33	25" x 90¾"
72"W x 60"H x 24"D	12" x 18" + 12" x 18"	60"	24	48	36	25" x 99"
96"W x 61½"H x 32"D	2 - 18" x 18"	84"	27	54	60	33" x 123¾"

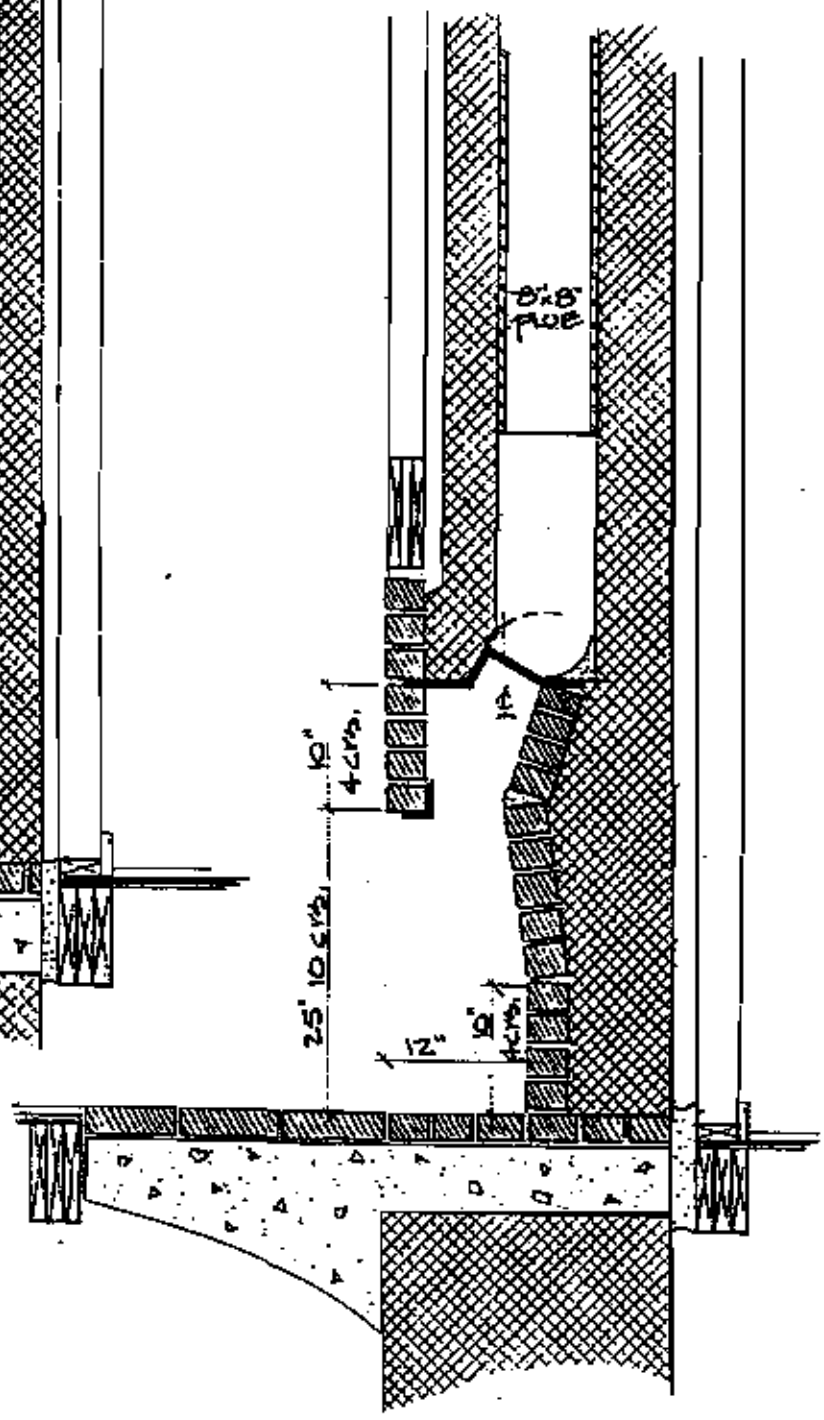
FIREPLACE DETAILS

ALL W/ ¼" MORTAR JOINTS

NOTE ℄ OF DAMPER IS IN LINE W/ FRONT OF FLUE



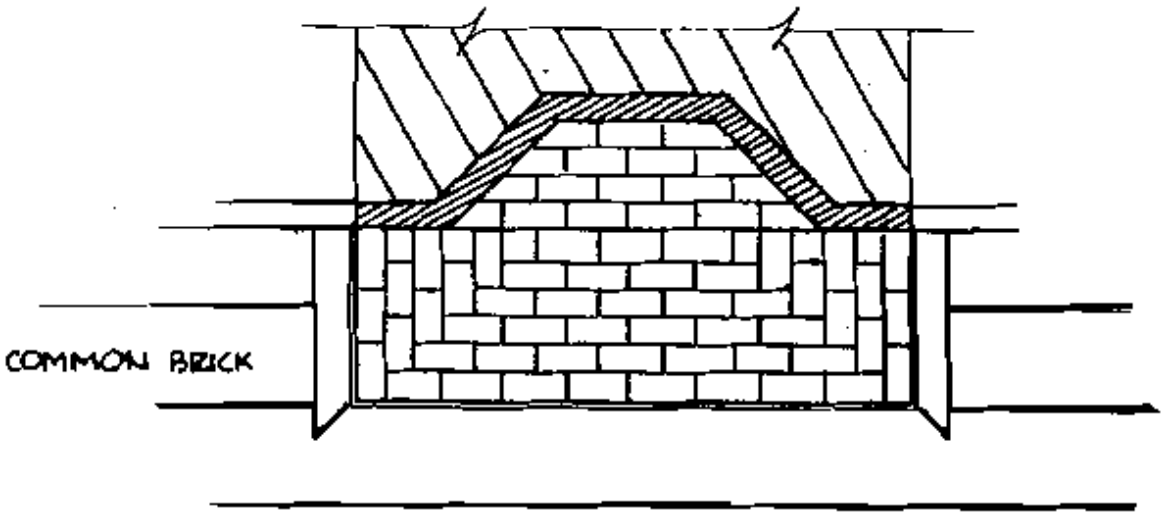
36" WIDE FIREPLACE

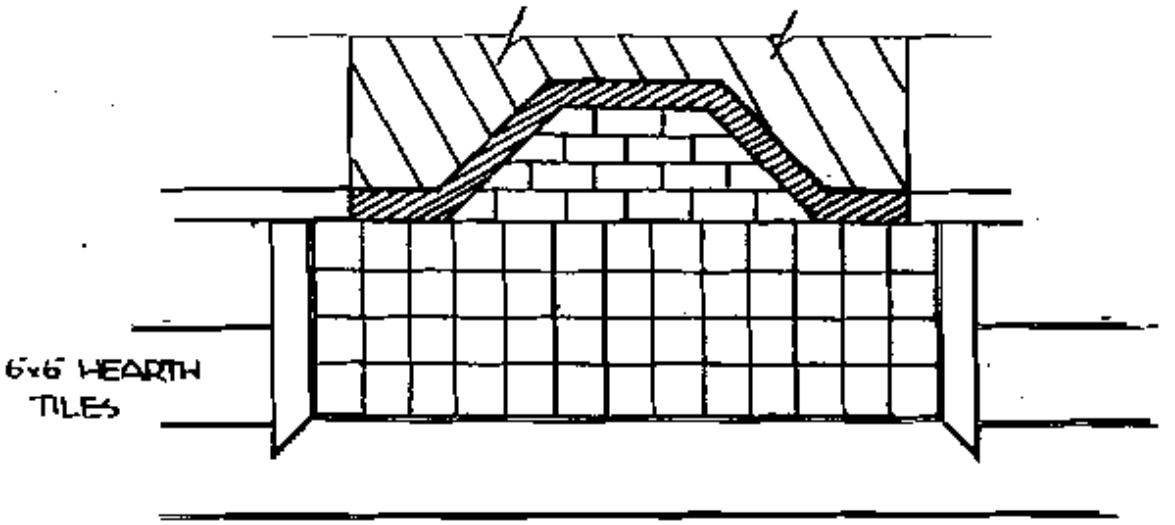


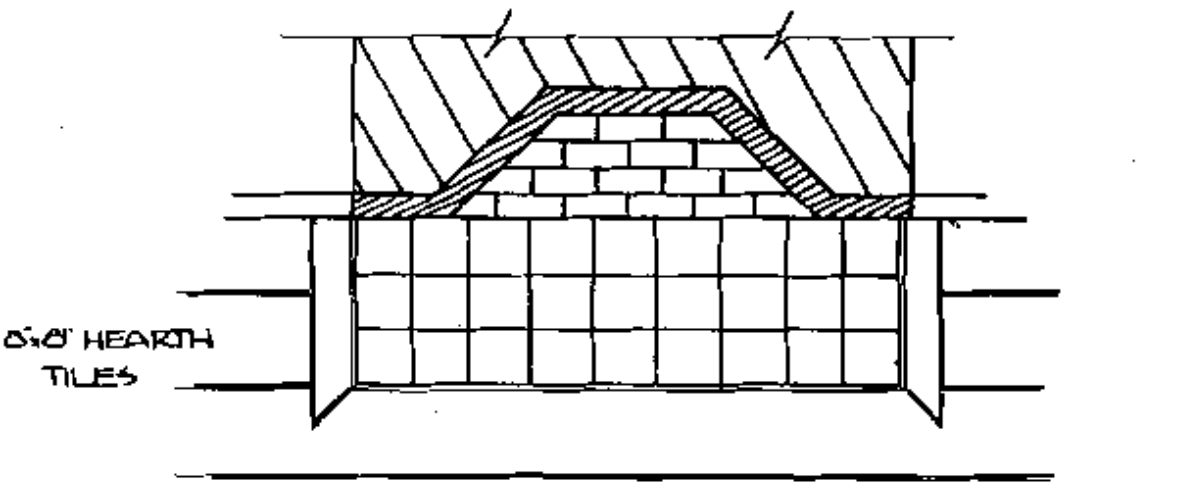
24" WIDE FIREPLACE

REVISED DEC, 85

HEARTH PATTERNS



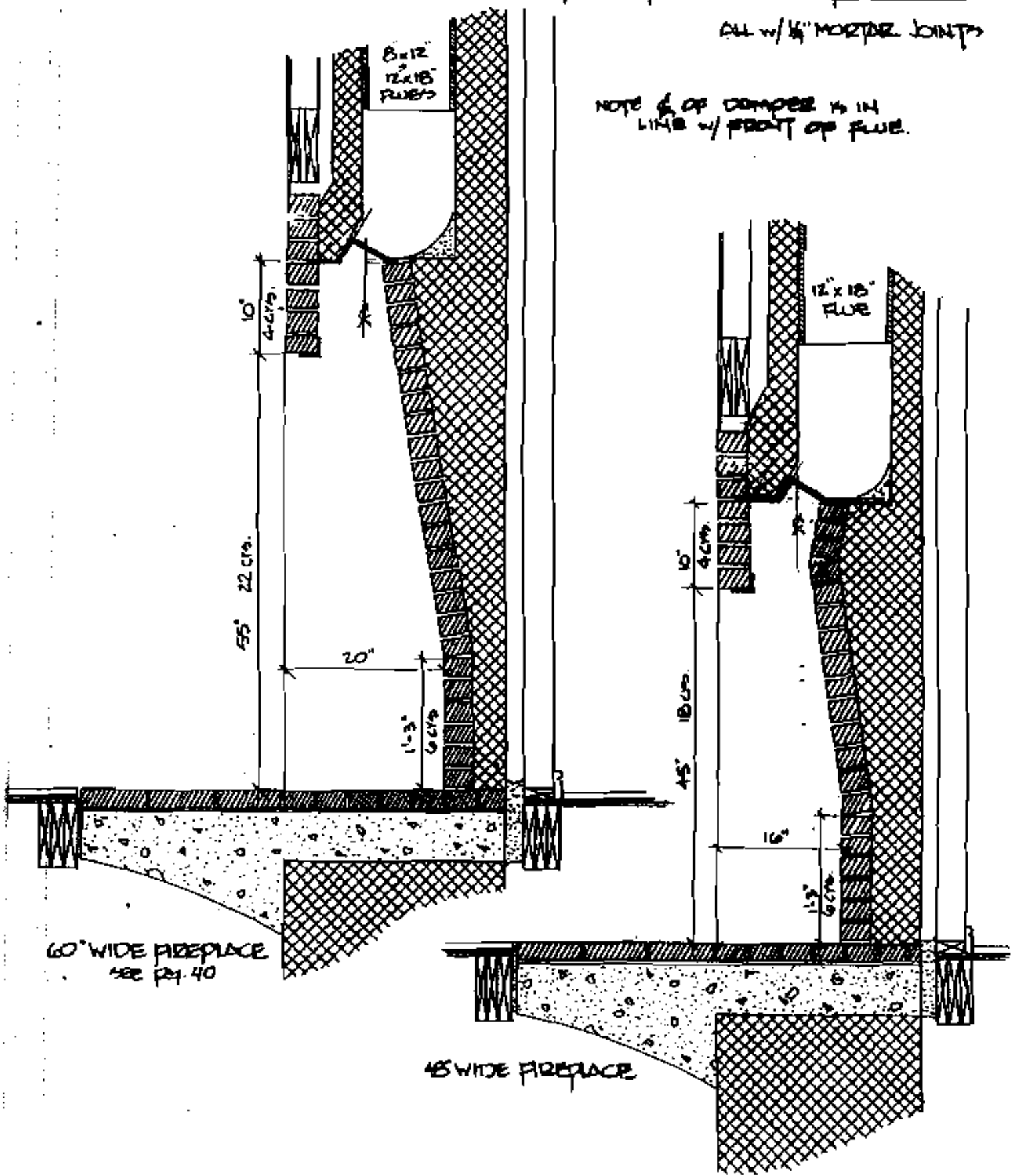




FIREPLACE DETAILS

ALL w/ ½" MORTAR JOINTS

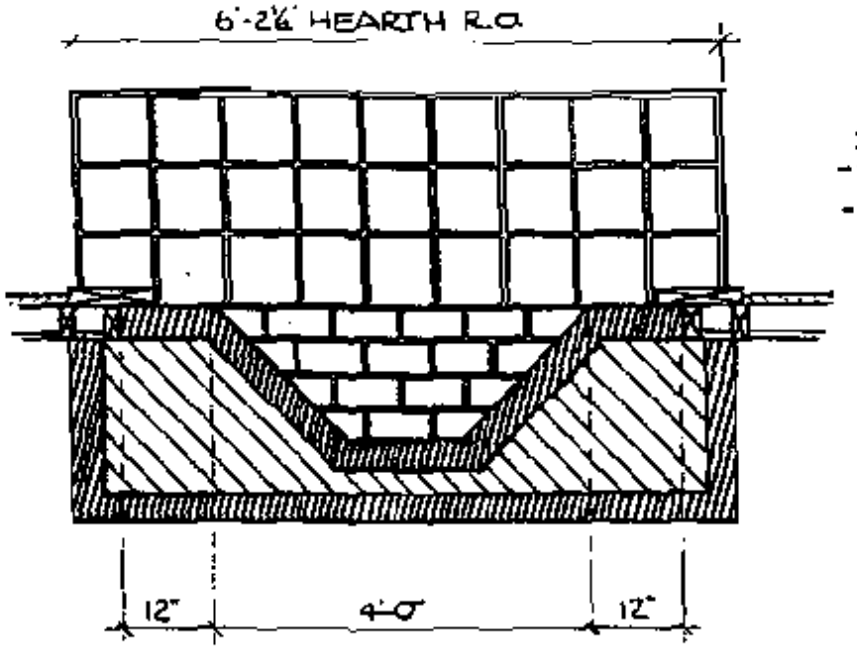
NOTE ℄ OF DAMPER ½ IN LINE w/ FRONT OF FLUE.



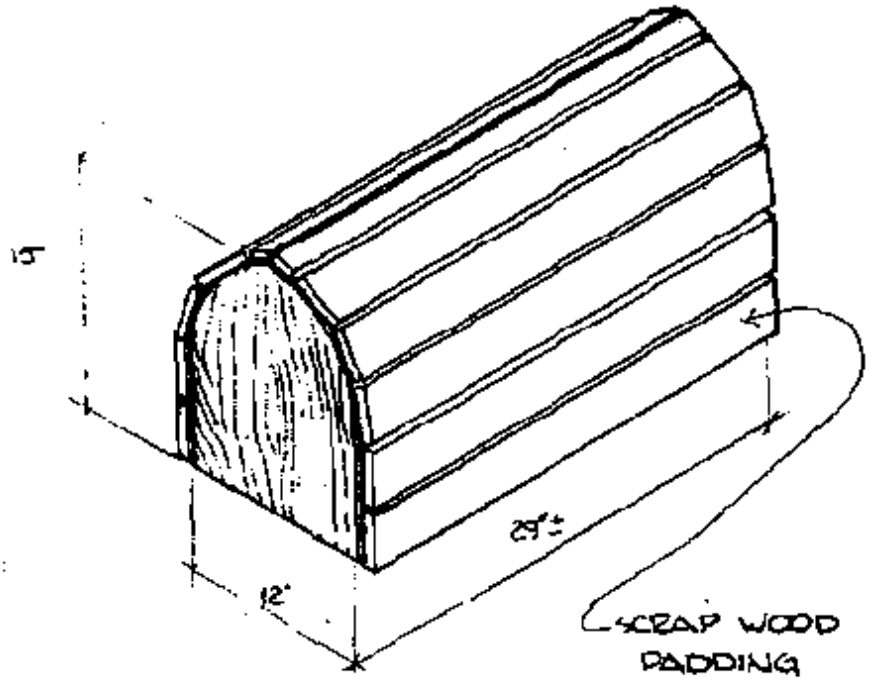
60" WIDE FIREPLACE
SEE PG. 40

45 WIDE FIREPLACE

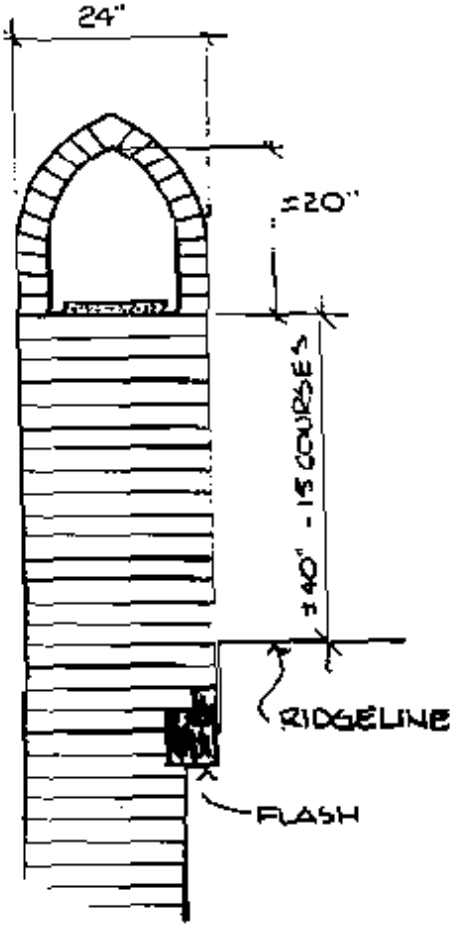
TYPICAL DETAILS FOR ADDITION FIREPLACES



48" w FIREPLACE
- w/ EXTERIOR CHIMNEY
- 45°& CORNER BRICK

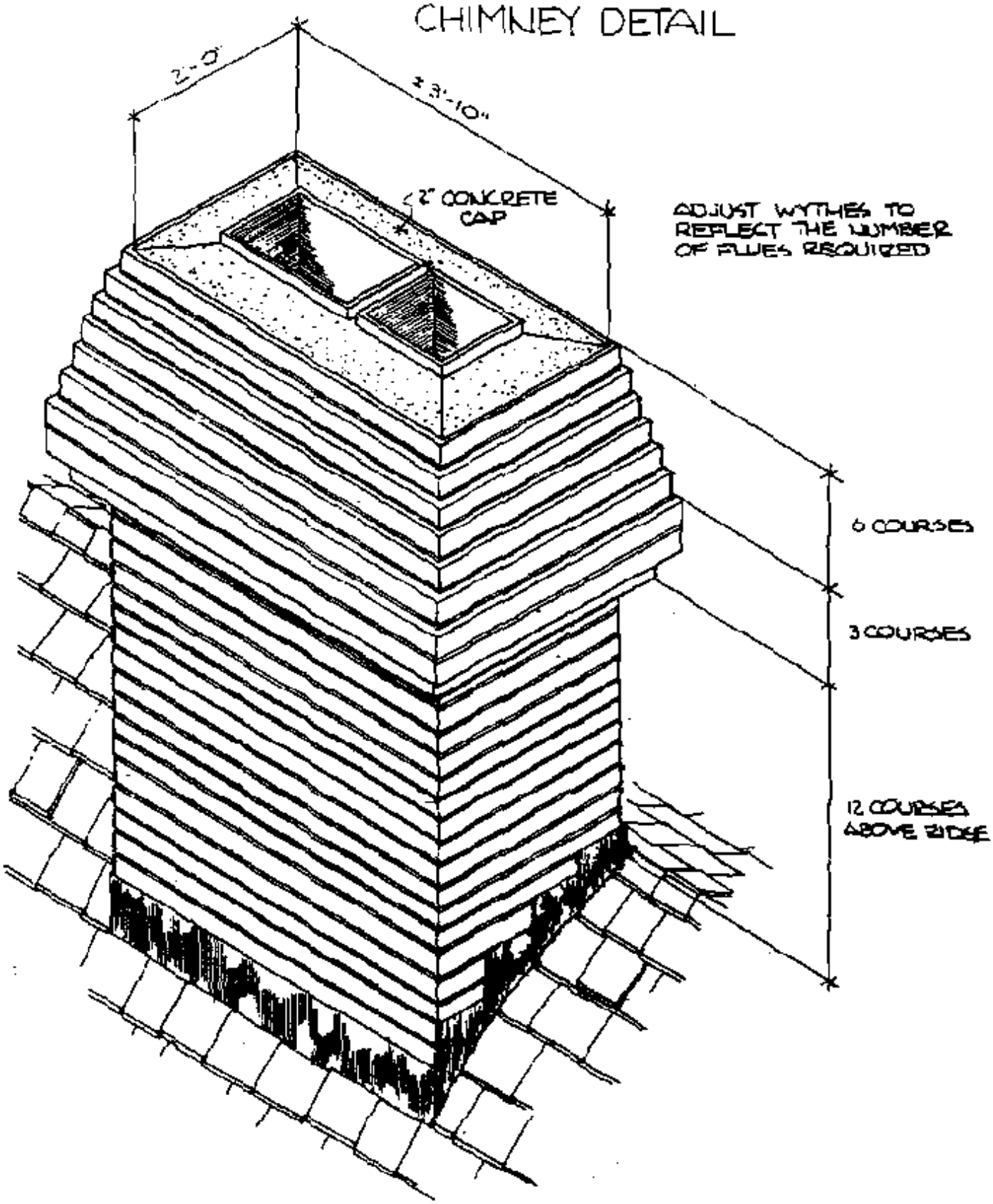


MASONRY FORM
- PAD MASONRY FORM WITH SCRAP WOOD TO OBTAIN PROPER FORM SIZE FOR YOUR PARTICULAR FLUE & CHIMNEY

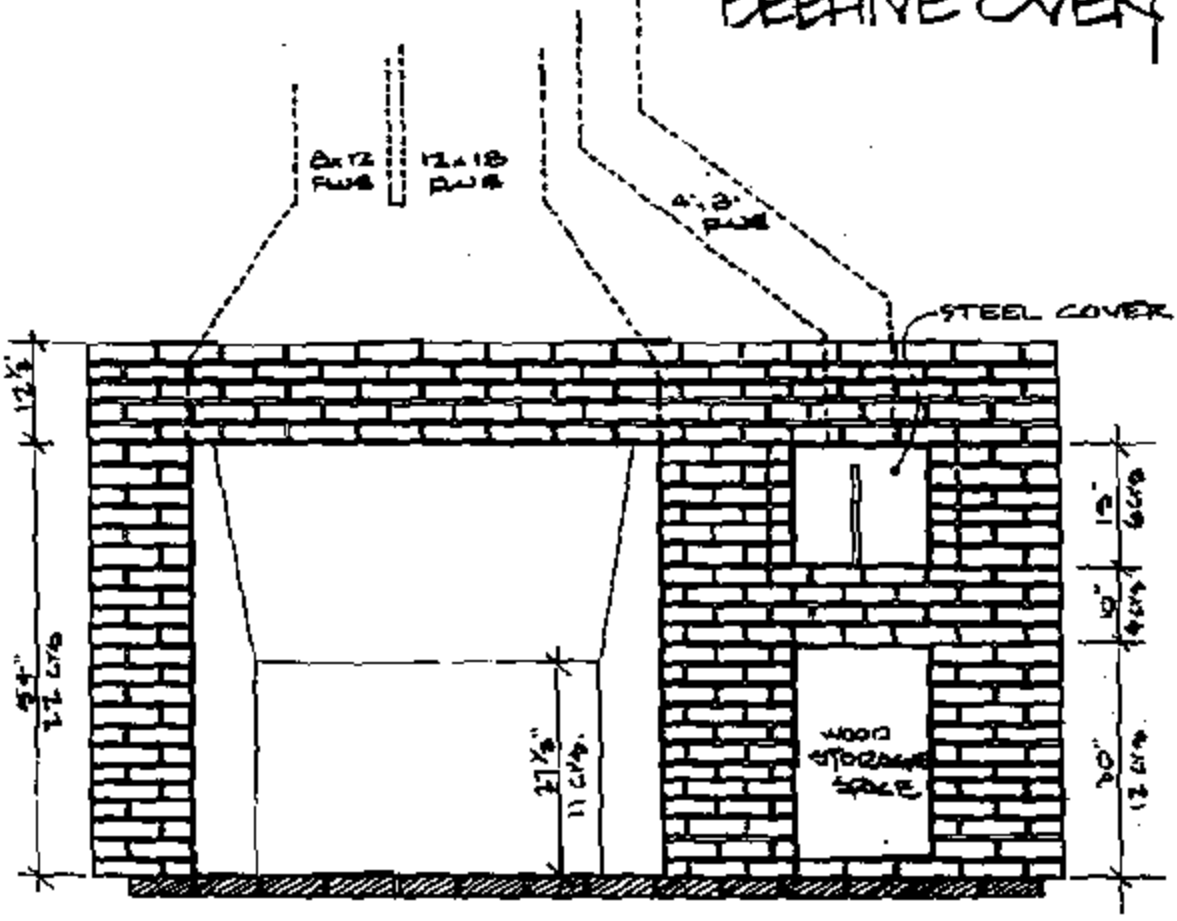


ELEVATION

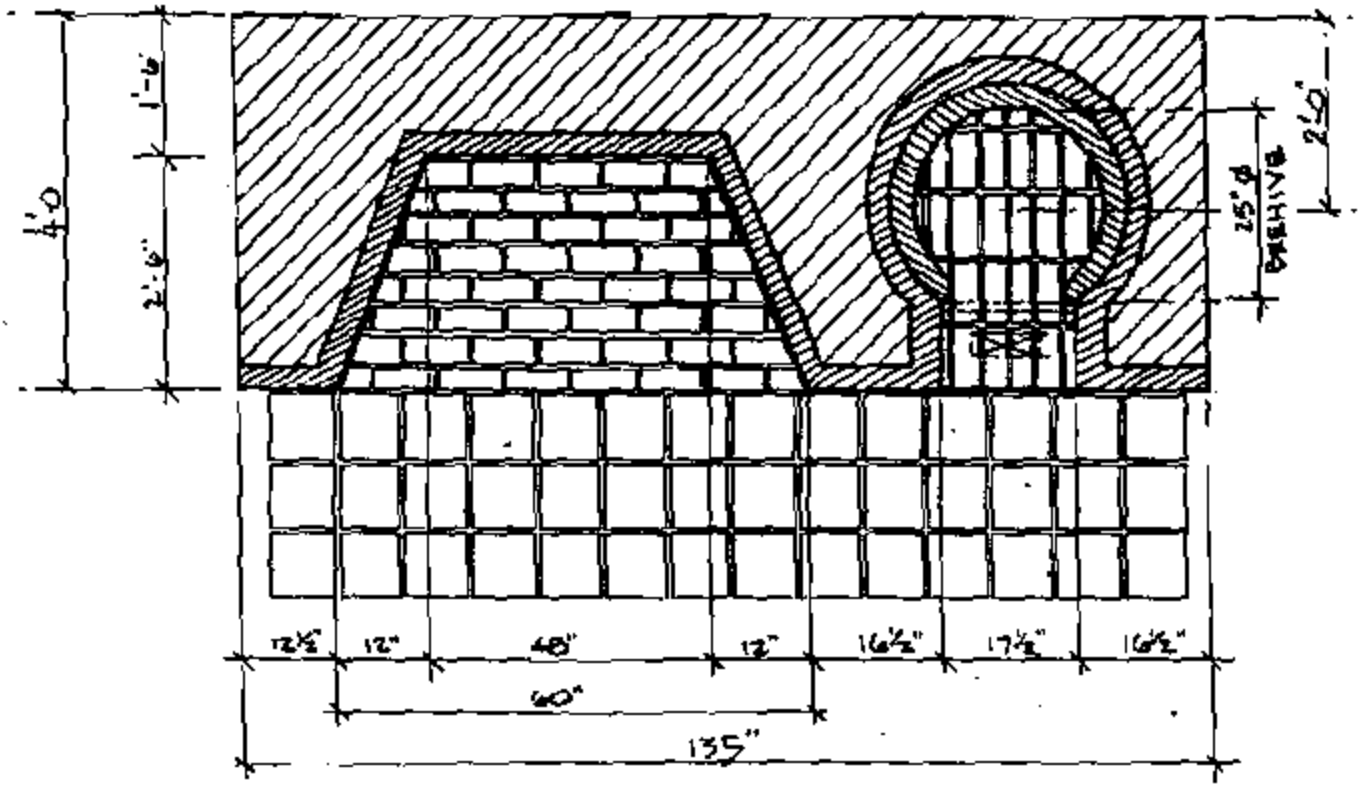
MAIN HOUSE
CHIMNEY DETAIL



60" COOKING FIREPLACE w/ BEEHIVE OVEN

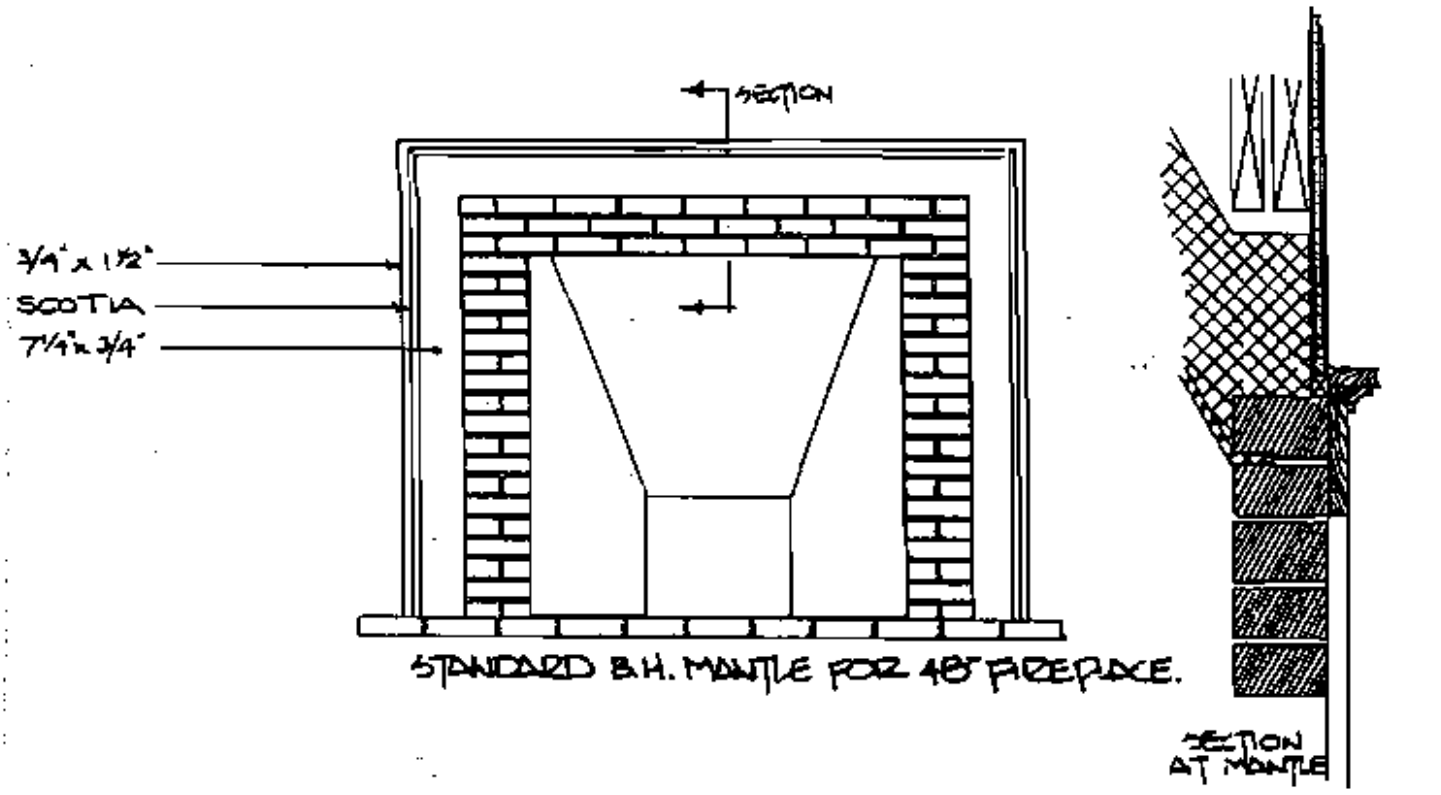


WE HAVE MORE DETAILED PLANS AVAILABLE UPON REQUEST.

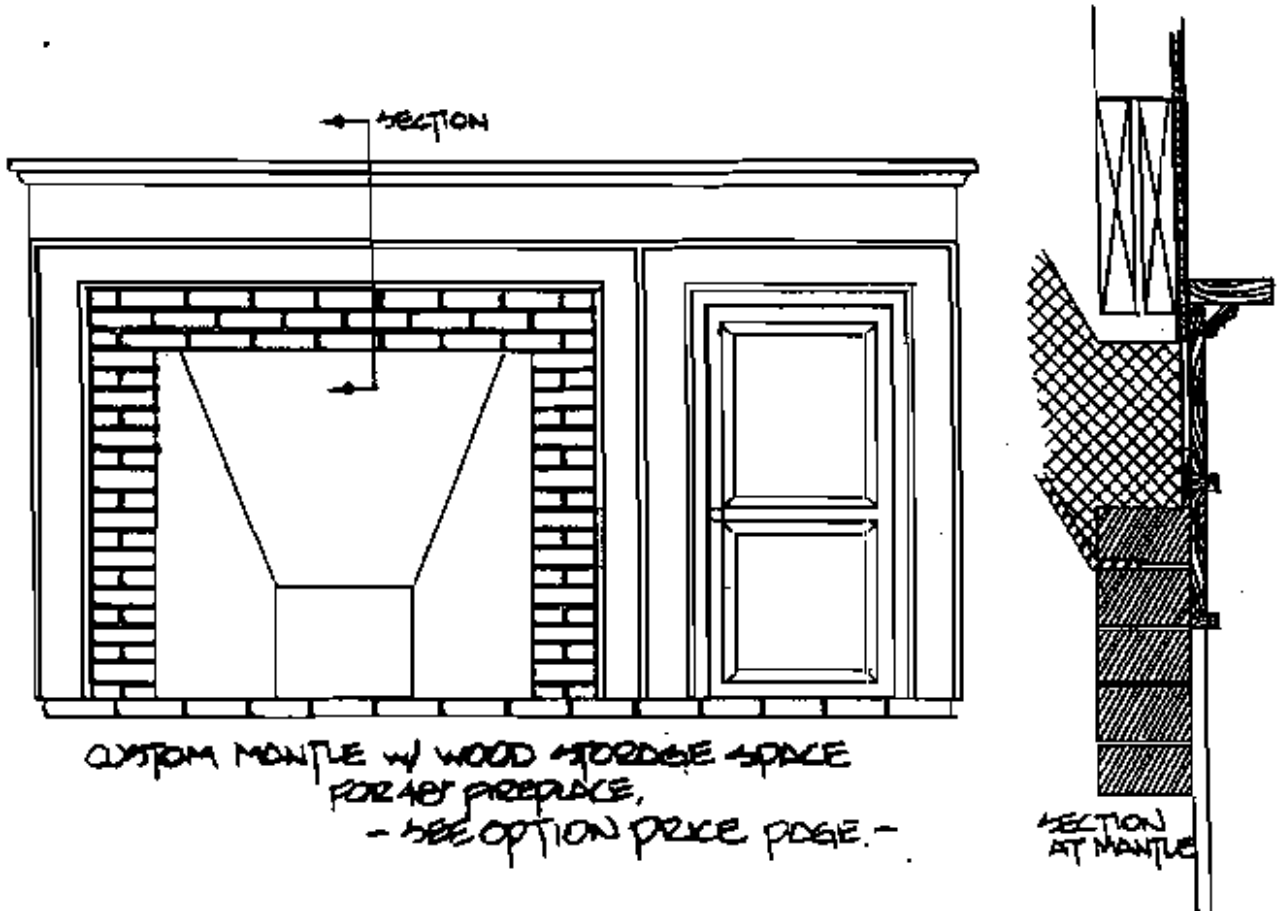


REVISED DEC 85

ROW HOUSE MANTLE



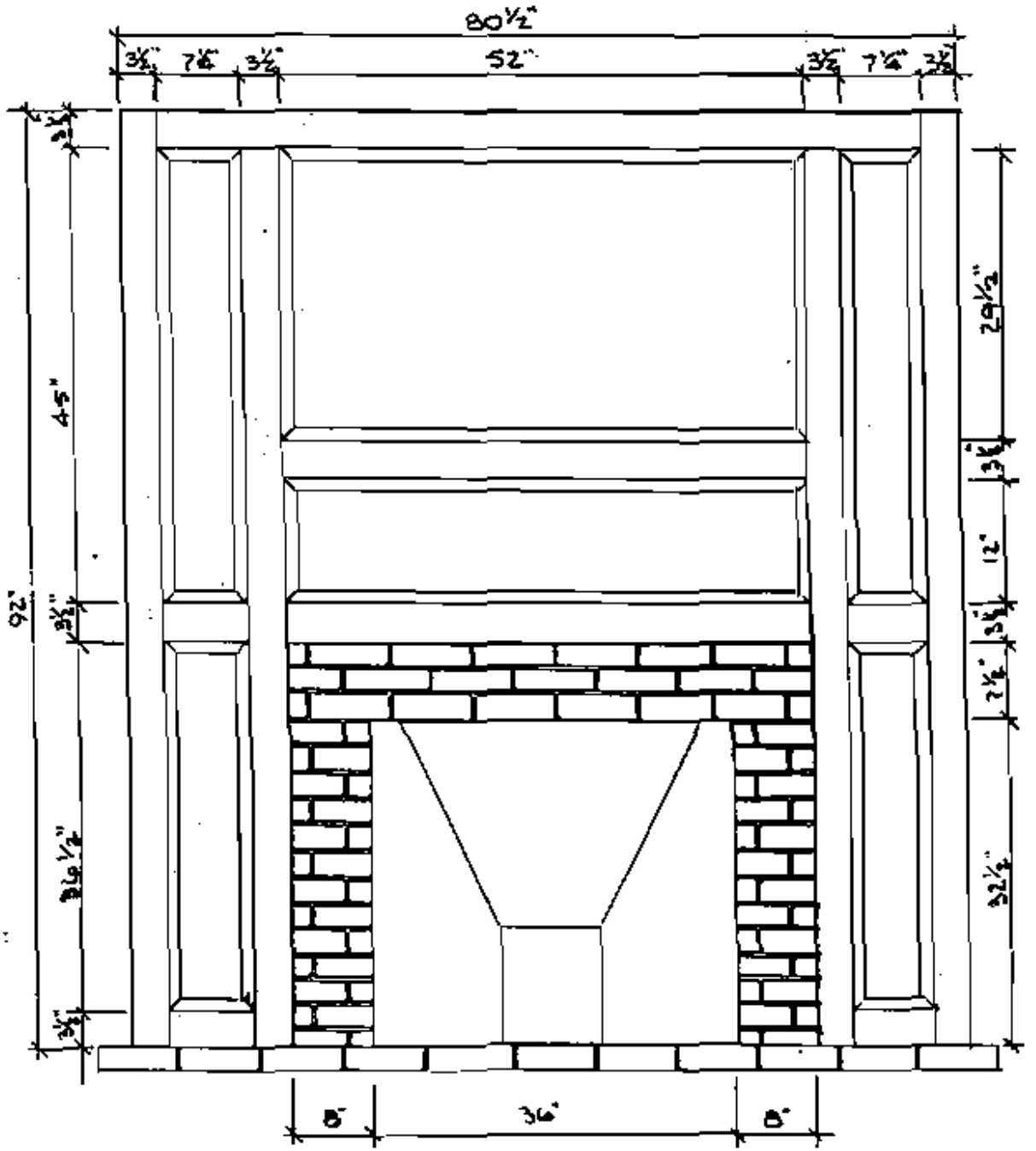
STANDARD B.H. MANTLE FOR 48" FIREPLACE.



CUSTOM MANTLE W/ WOOD STORAGE SPACE FOR 48" FIREPLACE,
- SEE OPTION PRICE PAGE. -

36" FIREPLACE MANTLE

SEE OPTION PRICE PAGE.



Wainscoting

If you are going to be installing wainscoting, remember to warn the following sub-contractors:

1. Ask the electrician to give you enough "slack" in the wires to allow some movement of the boxes such that you can optimize the position of the outlets. Try to avoid having them come up in the middle of the panels. They look better on the stiles. As there are codes governing maximum distance between outlets, bear this in mind too.

If you know you are staining the wainscoting ask for brown outlets at these boxes.

The wainscoting will be thicker than the sheetrock. Set the boxes accordingly.

2. There is no need to sheetrock behind wainscoting. You might want to bring the board a little lower than the position of the cap so that you can cut it off neatly.

3. Don't forget to put a vapor barrier between the wainscoting and the insulation. This should be done after the electrical box sites have been settled.

4. When installing wainscoting be sure to let the panels "float". Don't glue or nail them in place.

At Bow House we interchange the words "wainscoting" and "wood-wall". The latter should not be taken literally unless you tell us you plan to stain and not paint. We tend to use masonite for the panels as masonite makes for cleaner cuts. So be sure to let us know if you want pine panels!

INSTALLATION OF BALLAST BRICK FLOOR

Materials: Brick Chisel
Brick hammer
Quart caulking gun
Case of utility grade "construction adhesive"
10-15 gallons dry fine sand
1 gallons urethane varnish
4 " brush

NOTE: APPLY TAPE TO SUBFLOOR SEAMS TO PREVENT SAND FROM FALLING THROUGH.

Do: Use a running bond
Place "wire sides" of brick up.
Check your supply of brick, cubes vary in color, if they do, mix them up.
Lay the long axis of the brick across the short axis of the room.
Lay the floor before the base molding is in place.

Start from a center line and work to the walls. The bricks vary in size so a slight weaving is inevitable. A weave can compound if it isn't compensated for in the next several courses.

Lay down a bead of adhesive and simply push the brick down. The bricks should touch but in a way to allow the sand to flow in. Where the bricks are not uniform wider joints are inevitable. In practice joints run from 0" to 1/16". The purpose of the adhesive is to temporarily keep the brick in place. Lay the whole floor thusly.

After the bricks are down, flood the floor with the dry sand and brush in. Pound on the floor from the cellar occasionally to settle the sand.

A final sweep should leave the sand slightly below the level of the brick.

Liberally urethane the floor, flowing the urethane into the sand. The sand will tend to remain in the joint and not ride up on the brick.

If the sand has been saturated with urethane, it will come up as hard as mortar with the additional advantage of being flexible.

GOOD LUCK!

FLOORING - pine

The single most important item in having a tight fitting pine floor is that the boards be dry. Although the boards are kiln-dried, they arrive at 18% R.H. (Relative Humidity). The final R.H. of the flooring is 6-8% depending on your location.

The 1" x 12" pine supplied to you should be stored in the house at lease three weeks before being laid, at a temperature of 70° F, or at normal living temperature. Each board should be separated from the next by sticks, or spacers placed at the ends, and in the middle, where needed for support. A fan helps.

We have loanable, a Delmhorst moisture meter which would give you an accurate reading of the R.H.

The Eastern pine boards we supply are very flat and very straight but occasionally a board requires edge planning to ensure a tight fit. We nail strips to the floor and drive the boards up with oak wedges.

In damp times of the year, it is almost best to wait. We have had some clients who just laid the boards down, tacking with an occasional finish nail, then crowding the boards together at a drier time of the year. We have had clients who put the flooring down right after the roof was on so that the building traffic on the bare boards would add character; and it does.

The fourteen inch and wider Eastern pine boards which we can supply on an option basis are kiln-dried to 8% R.H. Unless they acquire moisture, they won't shrink. They are KD, S-3S, Allow 30% waste.

The boards should be face nailed. We can supply a 7d cut, flooring nail or a 7d cut, rosehead, clinch nail. The rosehead has a round on the top which acquires a polish if not set below the wood. A cut nail is less likely to split the board than a wire nail.

We recommend that the floor boards, or at least the edges, be stained before they are put down. If they do shrink there will be no white lines showing.

Clients who have installed a forced hot air heating system should consider a central air humidifier, as severe drying causes warping and cracking of all woodwork, including fine furniture. Dry air also encourages respiratory problems and skin discomfort.

INSTALLATION OF SHUTTERS AND HARDWARE

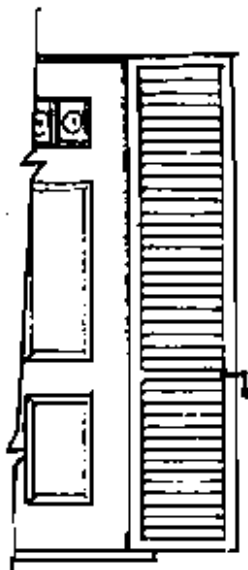
1) LOCATE SHUTTERS ONTO WINDOW:
Start by getting a ¼" shim-strip to set across window sill. This will position shutters for good operating clearances. Place shutters onto shim-strip in a closed position and center them by aligning them with vertical muntin of window.

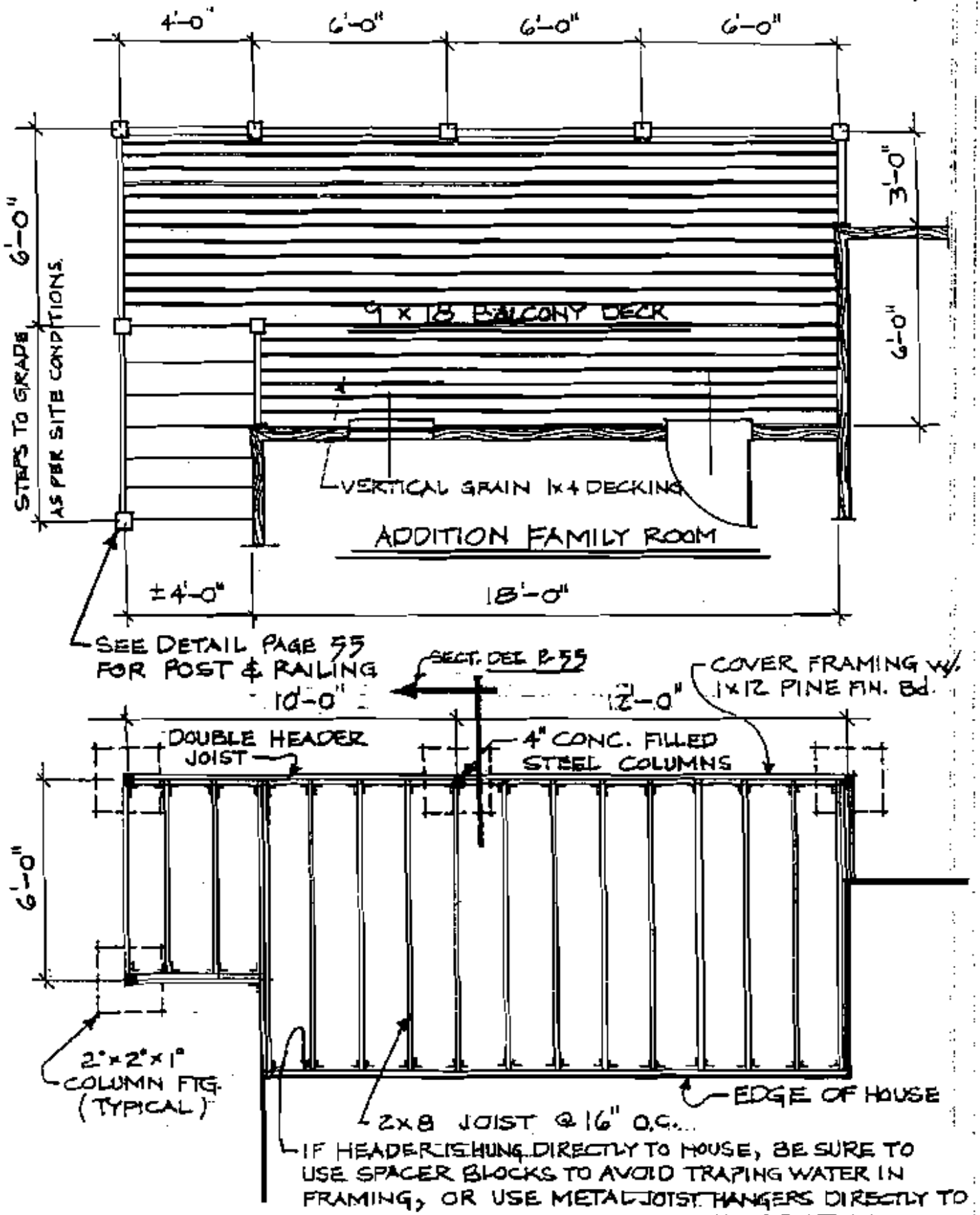
3) INSTALL SHUTTER DOGS:
To install shutter dogs (i.e., the hardware placed at the bottom of the shutter to hold it in an open position), you will need a ¼" drill. It is also handy to have an adjustable wrench to set the lag screw. Drill a ¼" hole for the lag screw, centered about 1½" below the base of the shutter so that when the dog is turned 90 degrees, the shutter can pass by the shutter dog.

INSIDE OUTSIDE

SHUTTER WHEN CLOSED

EXTERIOR SHUTTERS SHOULD BE HUNG TO PROPERLY SHADE AND VENTILATE HOUSE WHEN CLOSED. SLATS IN SHUTTER SHOULD BE ARRANGED AS IN DRAWING ABOVE.

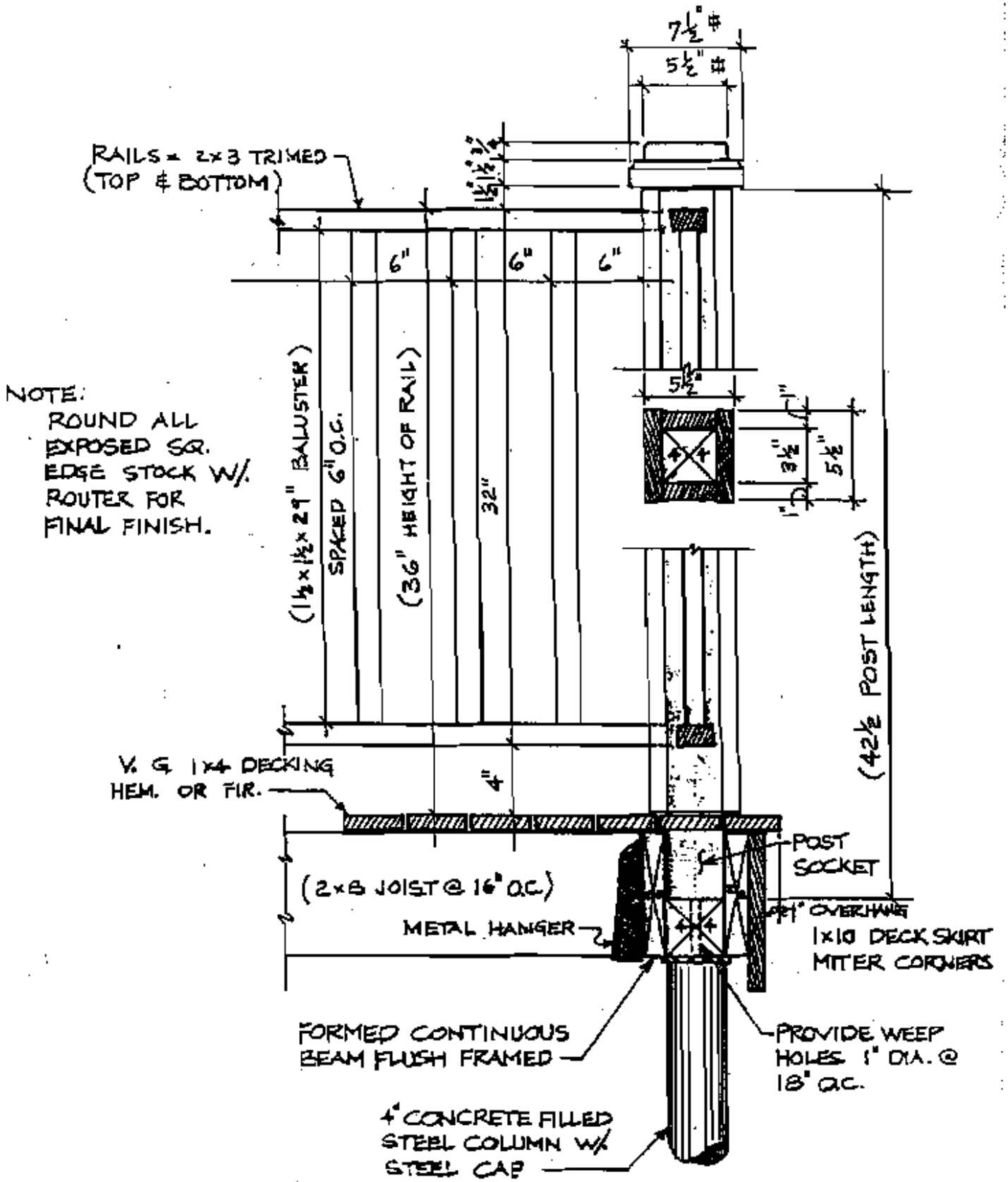




TYPICAL DECK FRAMING PLAN

SCALE: 1/4"=1'-0"

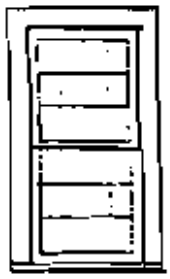
REVISED DEC. 85



SECTION DETAIL OF DECK, POST & RAILING

SCALE: ½" = 1'-0"

WINDOW SCHEDULE



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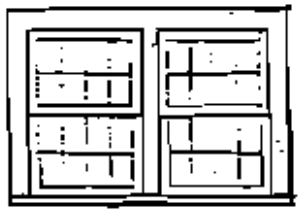

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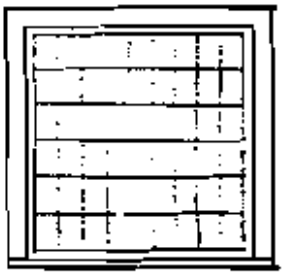

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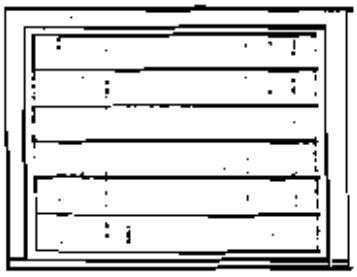

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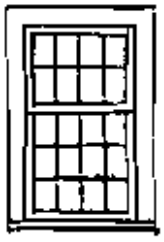

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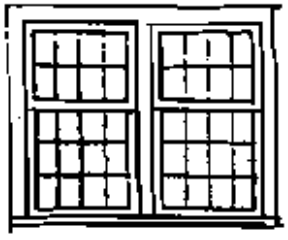

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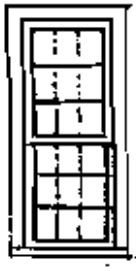

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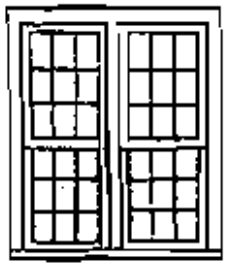

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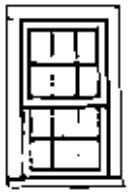

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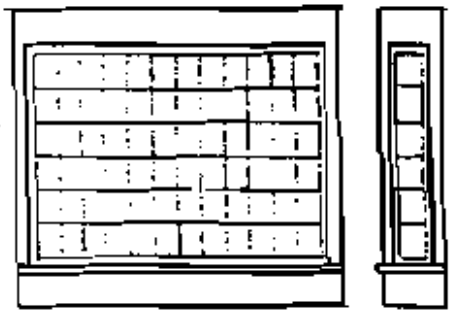

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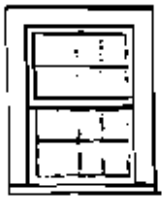

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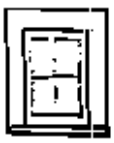
WINDOW SCHEDULE



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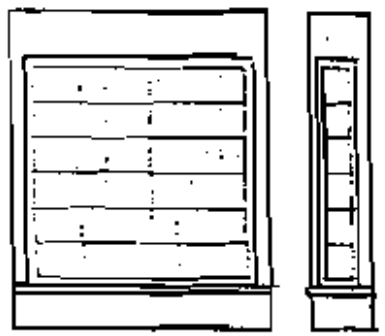

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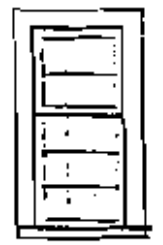

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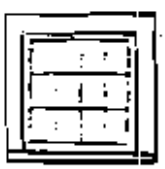
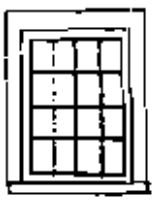


(17)

SCHEDULE			
NO	LAYOUT	SIZE	TYPE
1	12/12	31"x58"	DOUBLE HUNG
2	DOUBLE 12/12	62"x 58"	DOUBLE HUNG
3	DOUBLE 8/8	62"x 42"	DOUBLE HUNG
4	54 LITE	60½"x57¼"	STATIONARY
5	72 LITE	79"x58"	STATIONARY
6	8/12	31"x49½"	DOUBLE HUNG
7	DOUBLE 8/12	62"x 49¼"	DOUBLE HUNG
8	9/9	24½"x57½"	DOUBLE HUNG
9	DOUBLE 9/9	50"x 57½"	DOUBLE HUNG
10	6/6	24½"x42"	DOUBLE HUNG
11	72 LITE BOX	76¾"x 58¼"	STATIONARY
12	8/8	31"x41½"	DOUBLE HUNG
13	PORTHOLE	18½"x25½"	STATIONARY
14	ATTIC VENTILATOR	19¾"x25½"	SCREENED LOUVER
15	54 LITE BOX	60¾"x 58¼"	STATIONARY
16	6/6	24½"x49½"	DOUBLE HUNG
17	12 LITE SASH	30½"x32¼"	STATIONARY
18	2436 - 1WCH	28¼"x 42"	CASEMENT
19	2436 - 2WCH	55½"x 42"	CASEMENT
20	2448 - 2WCH	55½"x 54"	CASEMENT
21	2448 - 3WCH	83"x 54"	CASEMENT
22	4/4 (VERT.)	18½"x 42"	DOUBLE HUNG
23	4/4 (HORIZONTAL)	31"x 26"	DOUBLE HUNG
24	8 LITE SASH	31"x24½"	STATIONARY
25	12 LITE TRANSOM	16¼"x 77¾"	STATIONARY
26	T 12/12 (VERT)	31"x 89"	DOUBLE HUNG
27	T 16/16 (HORIZONTAL)	73"x93"	DOUBLE HUNG
28	T 12/12 (HORIZONTAL)	58"x93"	DOUBLE HUNG

Revised Dec 85

WINDOW SCHEDULE



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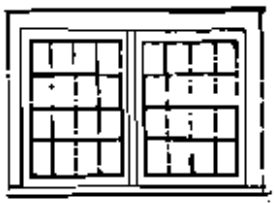

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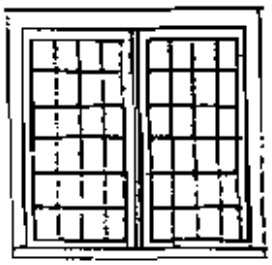

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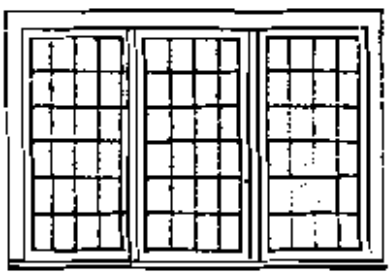

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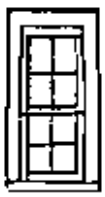

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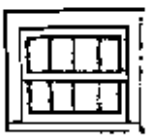

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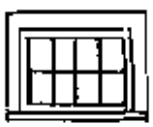

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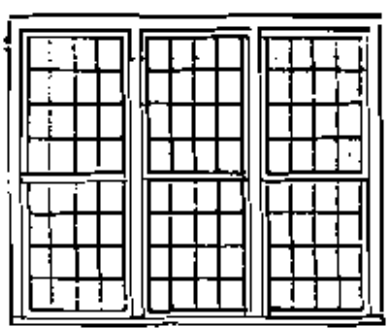

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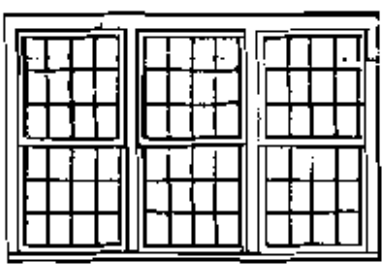


28.

PAINTING

The primary purpose of paint is to seal the wooden portions of a house that are susceptible to water induced rot. Painting the exterior of a Bow House should be done with protection of the product in mind over cosmetics.

It is quite alright to stain the red cedar siding, a good Cabot, Olympic, Benjamin Moore or other well known and reputable product can be used.

Some people have used a heavy bodied stain to do the millwork. This is tricky and should be used only in limited circumstances. The following items should NEVER be stained:

Exterior Doors

Sash

Shutters & Door blinds

These items require a coat of good quality prime plus two coats of finish paint, either oil based or latex. If latex is used, be sure that it does not freeze during application, or prior to use. It is our conviction that the primer used on exterior wooden surfaces should be oil based. It is our opinion that oil based top coats are superior to latex.

Knots bleed. The only thing we have found to be effective in most cases is "Exit" or an equivalent knot sealer. We send you some with the Package so use it in good health. In some cases it may have to be applied two or three times. If bleeding continues use shellac prior to priming or staining.

The front door is very susceptible to weather damage. It should receive a coat of oil base primer and two topcoats of oil based enamel. This should be done after all trimming has been done to the door and not before. When painting doors, remove all hardware and weatherstrip, and seal the top and bottom edges particularly well. These are where the end grain of the wood can be seen, and are the places where moisture will suck into wood like a sponge. Remember, if the water gets in, the door will be damaged.

Paint is supposed to form a seal between the putty and the window glass. The paint should come onto the glass by a sixteenth of an inch. If this seal is maintained, the system could last a hundred years.

If the paint is slopped on and trimmed off with a razor blade and the seal is broken, the putty will curl in three to five

years. If you trim with a razor, leave the sixteenth.

Don't ever use stain over putty. Stain "breathes" and allows putty to dry. Dry putty curls away from the glass and leaks ensue.

The trim of a house should be painted with the care that you would paint a wooden boat. Wherever you can see a point of entry for water, however small, it should get a double dose of paint and/or putty. If you choose to stain the exterior trim be prepared for a good deal of "checking." We suggest that if you are looking for a monochromatic effect you take a piece of stained clapboard to a good paint store and have a matching paint mixed for the trim.

Mildew does occur. Before restaining the clapboard, scrub down with trisodium phosphate and Chlorox and rinse well. This removes not only mildew, but road dirt, mud and so on. Don't repaint over mildew or dirt; it will spoil your job.

SOME TIPS

1. Paint exterior knots with shallac or with a white pigmented shellac prior to painting or priming. This keeps knots from bleeding through. See p. 59, ¶5.

2. It is of great benefit if the trim, i.e., cornerboards, rake boards can be painted before claphoarding.

3. Make sure that the pads for exterior light fixtures take into account the swing of door and windnw hlinds.

4. Some builders nail pieces of claphnard up the gable ends of the roof, with the wide edge toward the gable. This serves as a cant strip to keep the rain from dripping off the gable edge.

5. If using blueboard, it is hest to stain and varnish interior door and window trim prior tn plastering.

6. Wooden storm windows are slightly oversize and should be cut and fit before painting. Be sure to code each storm so that it goes back into the same window.

7. Tt is IMPERATIVE that exterior doors are painted as soon after delivery as possible, especially the top and bottom of the door.

8. Tf rigid insulation is to be used on the inside of the stud walls, adequate blocking must be provided at all corners to receive sheet rock screws.

INSTALLATION OF THUMB LATCHES

1. Drill hole per diagram. Top of hole at 37" or 2" below top of lock rail.

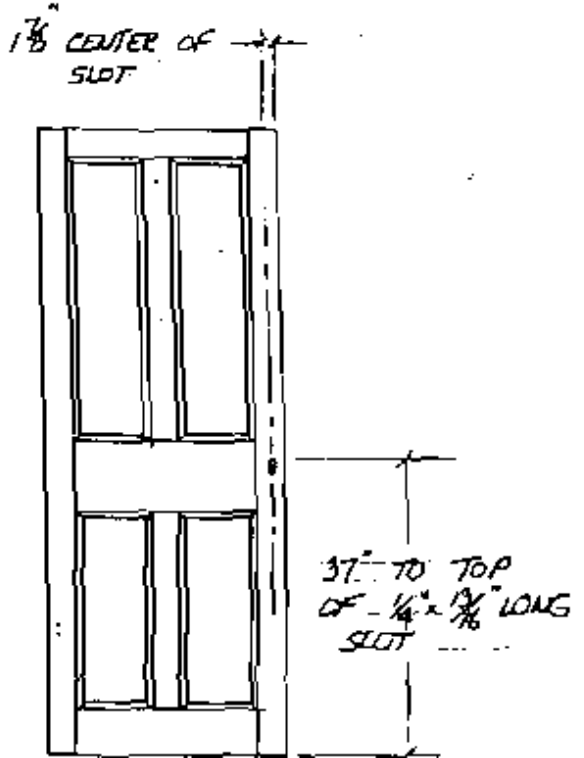
2. Install thumb latch and draft plate.

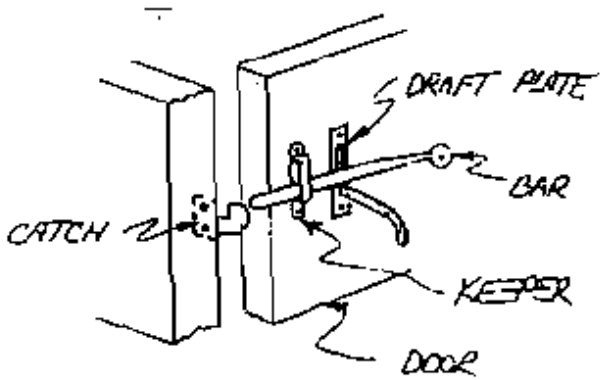
3. Set bar level on thumblatch to mark pivot screw. Bar need not protrude more than necessary to enlarge catch.

4. Set catch slot level with the bottom of bar.

5. Position keeper so that it makes the bar hit the catch midway up the slope.

A latch should latch with a finger push.





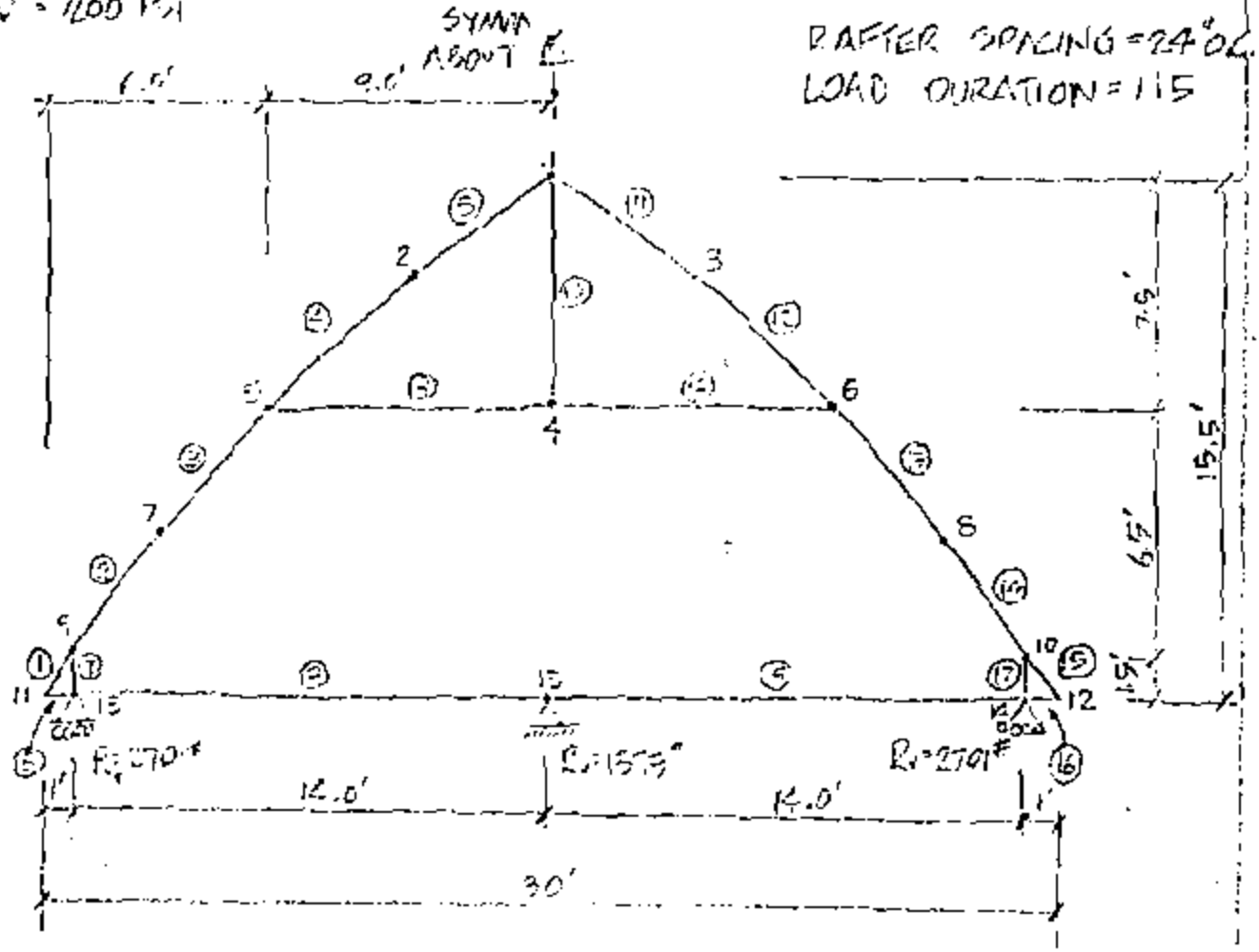
BOW HOUSE RAFTER

TOP RAFTER - 1½" x 9⅝" GLU-LAM
SO SP NID

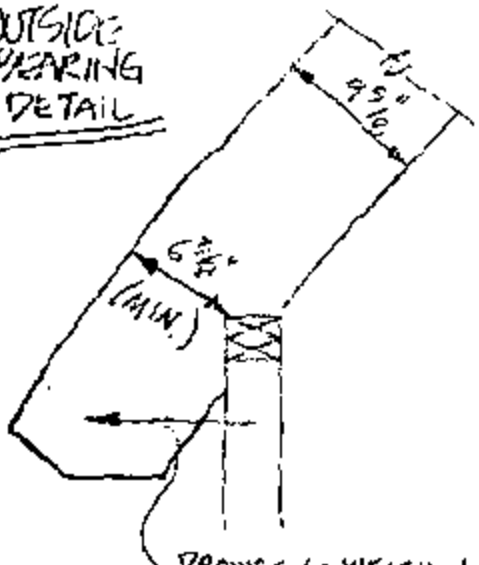
E = 1,900,000 PSI
F_c = 1750 PSI
$F_{c\perp}$ = 2300 PSI
F_b = 2400 PSI
F_v = 200 PSI

TOP CHORD LIVE LOAD = 55 PSF
TOP CHORD DEAD LOAD = 10 PSF
FLOOR LIVE LOAD = 40 PSF
FLOOR DEAD LOAD = 10 PSF
CEILING DEAD LOAD = 6 PSF

RAFTER SPACING = 24" O.C.
LOAD DURATION = 1.15

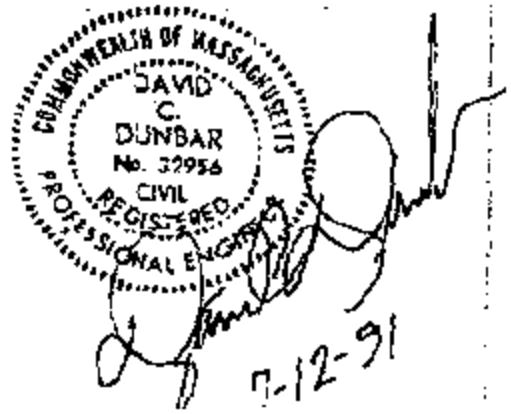


OUTSIDE BEARING DETAIL



PROVIDE CONNECTION FOR 912# ACTUAL AT THIS OUTSIDE

SEE ATTACHED SHEETS FOR STRESS CALCULATIONS.



7-12-91

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**********************************************
**  PURDUE PLANE STRUCTURES ANALYZER II **
**                                          **
****            VERSION 2.0               ****
**********************************************
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BOW HOUSE RAFTERS (WOOD FABRICATORS - N. BILLERICA, MA)

NUMBER OF NODES	= 15
NUMBER OF MEMBERS	= 19
NUMBER OF ROLLER SUPPORTS	= 2
NUMBER OF PINNED SUPPORTS	= 1
NUMBER OF FIRL SUPPORTS	= 0
NUMBER OF FIXED SUPPORTS	= 0

TABLE I ALLOWABLE MEMBER STRESSES IN PSI NORMAL LOAD DURATION

MEMBER GROUP	USE TYPE	ALLOWABLE BEND	COMP	TENS	WIDTH	DEPTH	MODULUS OF ELASTICITY	
1	S	1600.	1750.	1150.	1.500	9.625	1700000.	50 SP (1:6
2	UI	1150.	675.	600.	1.500	3.500	1300000.	2X4 SPF #2
3	SI	1000.	725.	450.	1.500	5.500	1300000.	2X6 SPF #2
4	SI	1450.	975.	495.	1.500	9.250	1500000.	2X10 SPF S
5	UI	24000.	27000.	22000.	0.100	2.000	29000000.	STEEL STRA
6	S	1600.	1750.	1150.	1.500	6.375	1700000.	NOTCH SECT

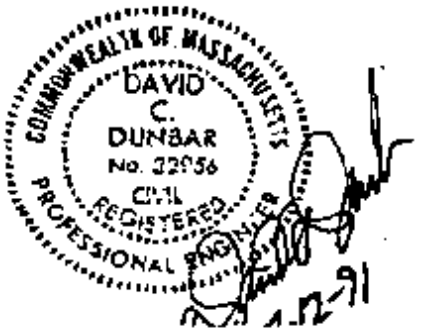
TABLE II NODE COORDINATES / REACTION CONDITIONS

NODE NO.	X-COORD (IN)	Y-COORD (IN)	REACTION TYPE	HORIZ DISPL	VERT DISPL
1	176.500	173.500			
2	124.000	138.500			
3	229.000	138.500			
4	176.500	96.000			
5	75.500	96.000			
6	277.500	96.000			
7	35.000	51.000			
8	318.000	51.000			
9	11.500	16.500			
10	341.500	16.500			
11	0.000	0.000			
12	353.000	0.000			
13	11.500	0.000	ROLL	1.00	0.00
14	341.500	0.000	ROLL	1.00	0.00
15	176.500	0.000	PIN	0.00	0.00

THE LOAD DURATION FACTOR IS 1.15

TABLE VI 3 THE STRUCTURE HAS UNIFORM LOADS AS FOLLOWS

MEMBER NUMBER	HORIZ COMP (PLF)	VERT COMP (PLF)
1	0.000	-130.000
2	0.000	-130.000
3	0.000	-130.000



3/6

4	0.000	-130.000
5	0.000	-130.000
8	0.000	-12.000
9	0.000	-100.000
11	0.000	-130.000
12	0.000	-130.000
13	0.000	-130.000
14	0.000	-130.000
15	0.000	-130.000
18	0.000	-12.000
19	0.000	-100.000

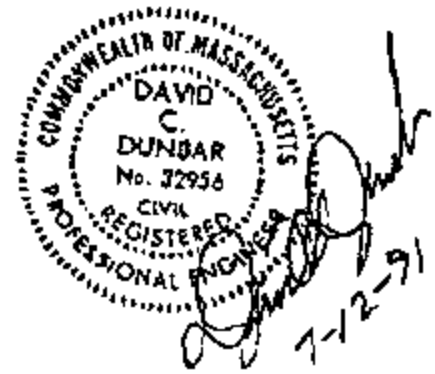


TABLE V MEMBER LAYOUT AND PROPERTIES

MEM #	NEG NO	NEG CO	POS NO	POS CO	MEMBER DIMENSIONS LENGTH	THICK	DEPTH	MOE	ENGINEERS OVERRIDES COLH	COLT	BLF	LUMBER
1	11	PN	9	RG	20.112	1.50	6.37	1700000.	0.00	0.00	0.00	NOTCH SECT
2	9	RG	7	RG	41.743	1.50	9.62	1700000.	102.00	0.00	0.00	50 SP (1:8
3	7	RG	5	RG	60.541	1.50	9.62	1700000.	102.00	0.00	0.00	50 SP (1:8
4	5	RG	2	RG	64.486	1.50	9.62	1700000.	128.00	0.00	0.00	50 SP (1:8
5	2	RG	1	PN	60.097	1.50	9.62	1700000.	0.00	0.00	0.00	50 SP (1:8
6	11	PN	13	PN	11.500	0.10	2.00	29000000.	0.00	0.00	0.00	STEEL STRA
7	13	PN	9	PN	16.500	1.50	3.50	1300000.	0.00	0.00	0.00	2X4 SPF #2
8	5	PN	4	RG	101.000	1.50	5.50	1300000.	0.00	0.00	0.00	2X6 SPF #2
9	13	PN	15	PN	165.000	1.50	9.25	1500000.	0.00	0.00	0.00	2X10 SPF S
10	4	PN	1	PN	77.500	1.50	3.50	1300000.	0.00	0.00	0.00	2X4 SPF #2
11	1	PN	3	RG	60.097	1.50	9.62	1700000.	128.00	0.00	0.00	50 SP (1:8
12	3	RG	6	RG	64.486	1.50	9.62	1700000.	128.00	0.00	0.00	50 SP (1:8
13	6	RG	8	RG	60.541	1.50	9.62	1700000.	102.00	0.00	0.00	50 SP (1:8
14	8	RG	10	RG	41.743	1.50	9.62	1700000.	102.00	0.00	0.00	50 SP (1:8
15	10	RG	12	PN	20.112	1.50	6.37	1700000.	0.00	0.00	0.00	NOTCH SECT
16	14	PN	12	PN	11.500	0.10	2.00	29000000.	0.00	0.00	0.00	STEEL STRA
17	14	PN	10	PN	16.500	1.50	3.50	1300000.	0.00	0.00	0.00	2X4 SPF #2
18	4	RG	6	PN	101.000	1.50	5.50	1300000.	0.00	0.00	0.00	2X6 SPF #2
19	15	PN	14	PN	165.000	1.50	9.25	1500000.	0.00	0.00	0.00	2X10 SPF S

********** RESULTS **********

TABLE VII REACTIONS

REACTION POINT	HOR. COMP. (LBS)	VERT. COMP. (LBS)	MOMENT (IN-LBS)
13	0.000	2700.583	0.000
15	0.000	1375.000	0.000
14	0.000	2700.583	0.000
SUM OF LOADS	0.000	-6776.167	-0.120E+07
SUM OF REACTS	0.000	6776.167	0.120E+07
DIFFERENCE	0.000	0.000	0.033

*** STRENGTH ANALYSIS ***

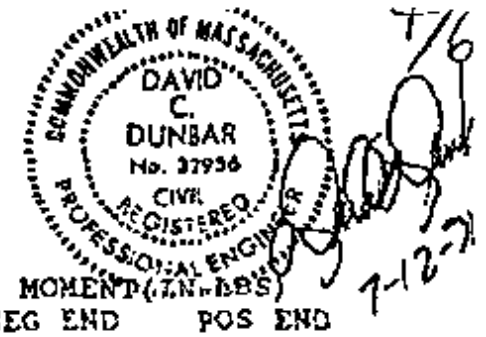


TABLE VIII MEMBER END ACTIONS

MEMBER #	AXIAL(LBS) NEG END	AXIAL(LBS) POS END	SHEAR(LBS) NEG END	SHEAR(LBS) POS END	MOMENT(IN-LBS) NEG END	MOMENT(IN-LBS) POS END
1	579.62	-477.41	-831.63	902.86	0.00	-17442.23
2	2131.48	-1921.07	225.36	-82.04	17442.23	-11026.13
3	1892.60	-1566.48	339.56	-46.05	11026.13	646.78
4	1368.68	-1022.40	340.69	54.48	-646.78	9875.03
5	1020.72	-705.23	80.11	393.12	-9875.03	0.00
6	-1013.69	1013.69	0.00	0.00	0.00	0.00
7	2013.08	-2013.08	0.00	0.00	0.00	0.00
8	208.84	-208.84	36.90	64.10	0.00	-1373.22
9	-1013.69	1013.69	687.50	687.50	0.00	0.00
10	-128.19	128.19	0.00	0.00	0.00	0.00
11	705.23	-1020.72	393.12	80.11	0.00	9875.03
12	1022.40	-1368.68	54.48	340.69	-9875.03	646.78
13	1566.48	-1892.60	-46.05	339.56	-646.78	-11026.13
14	1921.07	-2131.46	-82.04	225.36	11026.13	-17442.23
15	477.41	-579.62	902.86	-831.63	17442.23	0.00
16	-1013.69	1013.69	0.00	0.00	0.00	0.00
17	2013.08	-2013.08	0.00	0.00	0.00	0.00
18	208.84	-208.84	64.10	36.90	1373.22	0.00
19	-1013.69	1013.69	687.50	687.50	0.00	0.00

TABLE IX *** INTERACTION ANALYSIS ***

ALPINE STRESS CALCULATION CRITERIA 4

#	MEMBER TYP	NOTE	AX	CST + BD =	TOT	LOC RE -END MAX	M MAX	P	STRESSES PSI AX	BD	L/D	ALLOW PSI FA	FB
1	0		0.025	0.933	0.958	20.1	20.1		-50.	-1717.	11.00	2012.	1840.
2	0		0.073	0.409	0.483	0.0	0.0		-148.	-753.	11.00	2012.	1840.
3	0		0.065	0.259	0.324	0.0	0.0		-131.	-476.	11.00	2012.	1840.
4	0		0.037	0.237	0.274	55.6	55.6		-74.	437.	6.70	2012.	1840.
5	0		0.033	0.242	0.275	10.7	10.7		-67.	445.	6.56	2012.	1840.
6	3	2	0.200	0.000	0.200	11.5	11.5		5068.	0.	92.00	25300.	27600.
7	3		0.494	0.000	0.494	8.2	8.2		-383.	0.	8.80	776.	1322.
8	2		0.030	0.158	0.188	101.0	101.0		-25.	-182.	11.00	834.	1150.
9	2		0.128	0.795	0.923	82.5	82.5		73.	1326.	14.27	569.	1667.
10	3		0.035	0.000	0.035	77.5	77.5		24.	0.	41.35	690.	1322.
11	0		0.033	0.242	0.275	52.4	52.4		-67.	445.	6.56	2012	1840.
12	0		0.037	0.237	0.274	8.9	8.9		-74.	437.	6.70	2012.	1840.
13	0		0.065	0.259	0.324	60.5	60.5		-131.	-476.	11.00	2012.	1840.
14	0		0.073	0.409	0.483	41.7	41.7		-148.	-753.	11.00	2012.	1840.
15	0		0.025	0.933	0.958	0.0	0.0		-50.	-1717.	11.00	2012.	1840.
16	3	2	0.200	0.000	0.200	11.5	11.5		5068.	0.	92.00	25300.	27600.
17	3		0.494	0.000	0.494	8.2	8.2		-383.	0.	8.80	776.	1322.
18	2		0.030	0.158	0.188	0.0	0.0		-25.	-182.	11.00	834.	1150.
19	2		0.128	0.795	0.923	82.5	82.5		73.	1326.	14.27	569.	1667.

2--L/D RATIO FOR TENSION MEMBER EXCEEDS 80

TABLE X *** SHEAR STRESS ANALYSIS ***

MEMBER	MAX. SHEAR STRESS (PSI)	LOC. FROM NEG. END (IN)	MEMBER LENGTH (IN)
1	-141.63	20.112	20.112
2	23.41	0.000	41.743
3	35.28	0.000	60.541
4	35.40	0.000	64.486
5	-40.84	63.097	63.097
6	0.00	11.500	11.500
7	0.00	16.500	16.500
8	-11.65	101.000	101.000
9	74.32	0.000	165.000
10	0.00	77.500	77.500
11	40.84	0.000	63.097
12	-35.40	64.486	64.486
13	-35.28	60.541	60.541
14	-23.41	41.743	41.743
15	141.63	0.000	20.112
16	0.00	11.500	11.500
17	0.00	16.500	16.500
18	11.65	0.000	101.000
19	74.32	0.000	165.000

COMMONWEALTH OF MASSACHUSETTS
DAVID C. DUNBAR
No. 32936
CIVIL
REGISTERED
PROFESSIONAL ENGINEER

7-12-91

*** DEFLECTION ANALYSIS ***

TABLE XI MAXIMUM MEMBER DEFLECTIONS

MEMBER	MAX. DEFL. (IN)	LOC. FROM NEG. END (IN)	MEMBER LENGTH (IN)
1	0.073	20.112	20.112
2	0.091	21.706	41.743
3	-0.069	60.541	60.541
4	-0.174	64.485	64.486
5	-0.181	0.000	63.097
6	-0.061	0.000	11.500
7	0.092	16.500	16.500
8	-0.100	0.000	101.000
9	0.000	165.000	165.000
10	0.000	0.000	77.500
11	-0.181	63.097	63.097
12	-0.174	0.000	64.486
13	-0.069	0.000	60.541
14	0.091	20.037	41.743
15	0.073	0.000	20.112
16	-0.061	11.500	11.500
17	-0.092	16.500	16.500
18	-0.100	101.000	101.000
19	0.000	165.000	165.000

TABLE XII NODE DISPLACEMENTS

DISPLACEMENT

NODE NUMBER	HORIZONTAL (IN)	VERTICAL (IN)	ROTATIONAL (RADIANS)
1	0.000	-0.084	0.0000000
2	0.063	-0.175	0.0001277
3	-0.063	-0.175	-0.0001277
4	0.000	-0.086	0.0000000
5	0.002	-0.100	-0.0023855
6	-0.002	-0.100	0.0023855
7	-0.097	-0.006	-0.0012005
8	0.097	-0.006	0.0012005
9	-0.092	-0.005	0.0018256
10	0.092	-0.005	-0.0018256
11	-0.010	-0.061	0.0000000
12	0.010	-0.061	0.0000000
13	-0.008	0.000	0.0000000
14	0.008	0.000	0.0000000
15	0.000	0.000	0.0000000