

STAFF REPORT 7-24-2019 MEETING  
APPLICATION NUMBER 19-6335  
ADDRESS: 3466 BURNS  
HISTORIC DISTRICT: INDIAN VILLAGE  
APPLICANT: BEN CARBURY  
DATE OF STAFF VISIT:

PREPARED BY: J. ROSS

### PROPOSAL

Erected ca. 1914, the building located at 3466 Burns is a 1 1/2-story, bungalow-plan building. The resource features brick exterior cladding, a side-gabled roof and 6/1 wood, double-hung windows. Wood, 8-light casement windows are also located at the rear elevation. A deteriorated 20'x22' concrete slab and adjacent concrete parking apron is located in the parcel's rear yard. A concrete ribbon driveway leads from the sidewalk to the rear yard's concrete slab/parking apron.



**3466 Burns**



**3466 Burns rear yard, current appearance. Existing concrete slab**



**3466 Burns, existing ribbon driveway**

With the current proposal, the applicant is seeking the Commission's approval for the replacement of the existing ribbon driveway and concrete slab/apron at the rear yard with a new ribbon driveway and concrete slab/apron of the same dimensions, footprint, and location. The application also includes the erection of a new 20'x22' garage at the rear yard. The new garage will be erected according to the following description:

- Side gabled roof with black asphalt roofing
- Exterior walls to be clad with lapped composite/hardi siding with a faux wood grain finish or lapped textured OSB siding boards (color Dark Greyish olive with yellowish white trim)
- Aluminum gutters and downspouts (color Dark Greyish olive)
- Aluminum, single paneled overhead garage door at front elevation (color not provided)
- Aluminum, single man door at side elevation (see the attached for location alternatives)
- Wood beardboard soffits
- Horizontal sliding vinyl windows at side elevations (color not specified)

## STAFF OBSERVATIONS

It is noted that the parcel currently does not include a garage, although a map dating from 2002 indicates that a garage had been extant at the site in the recent past. A review of Google earth images revealed that the garage had been demolished/removed by 2018. The new garage is located well to the rear of the home and will be minimally visible from the public right-of-way. It is staff's opinion that the proposed new building is generally compatible with the existing historic home. However, staff does question the durability/lifespan of the proposed textured OSB siding/cladding.

## ELEMENTS OF DESIGN

(1) The level of the eaves of a proposed new structure having as much or more significance for compatibility as the room height, an average eave or cornice height shall be determined by the same process as that described above. The proposed new structure shall have a height at the eaves, or cornice, of not less than ninety (90) per cent of the average determined from existing structures, and in no case shall the eaves or cornice of the proposed structure be lower than the lowest eave or cornice height used in the computation, nor higher than the highest.

(2) Proportion of buildings' front facades. Proportion varies in the district, depending on age, style, and location in a specific subdivision. Height being established by the standards above, proportion will be established by permitting no proposed building or addition to create a front facade wider or narrower than those existing on the same block.

(3) Proportion of openings within the facade. Window openings are virtually always taller than wide; several windows are sometimes grouped into a combination wider than tall. Window openings are always subdivided, the most common window type being guillotine sash, whose area are generally further subdivided by muntins. Facades have approximately fifteen (15) per cent to thirty-five (35) per cent of their area glazed: Sun porches with a very high proportion of glass subdivided by mullions and muntins are common.

(4) Rhythm of solids to voids in front facades. In buildings derived from classical precedents, voids are usually arranged in a symmetrical and evenly-spaced manner within the facade. In examples of other styles, especially those of neo-Tudor and Victorian substyles, voids are arranged with more freedom, but usually in a balanced composition.

(5) Rhythm of spacing of buildings on streets. The spacing of the buildings is generally determined by the setback from the side lot lines; these tend to be consistent, even though lot width may vary. Because of the existence of several subdivisions and their related subdivision and deed restrictions, the placement of buildings on lots varies from area to area in the district. In the case of very wide properties, two (2) conditions exist. A very wide site may have a house placed centrally upon it, with extensive side yard space; this occurs only with extremely large houses by district standards. A more typical placement of houses of average size for the district is at the side of the wide site, placed normally in relation to one of the adjoining houses. The rest of the property is a side yard on the other side of the house, and the entrance is often oriented toward that side yard.

(6) Rhythm of entrance and/or porch projections. In those examples of classical inspiration, entrances and porches, if any, tend to be centered on the front facade. Other examples display

more freedom with entrance and porch placement, with some having the main entrance at the side. Porches, often permanently enclosed sun porches, are often placed at the side of the building.

(7) Relationship of materials. The majority of the buildings are faced with brick, while many are partially or totally stucco. There are some stone buildings; clapboard is rare, and almost never the sole material. Wood shingle is occasionally used as a wall covering, usually at the second floor level, and never as the sole material. Roofing includes slate, tile, and wooden and asphalt shingles. Stone trim is common. Wood is almost universally used for window frames and other functional trim, and is used in many examples for all trim. Because of the existence of several subdivisions and their related deed restrictions, the exterior textures and materials may vary from block to block in the district.

(8) Relationship of textures. The most common relationship of textures in the district is that of the low-relief pattern of mortar joints in brick contrasted to the smooth surface of wood or stone trim. The use of stucco or concrete, with or without half-timbering, as a contrast to brick surfaces is not unusual. Tile, slate, or wood shingle roofs have particular textural values where they exist. Asphalt shingles, generally, have little textural interest, even in those types which purport to imitate some other variety.

(9) Relationship of colors. Natural brick colors (red, yellow, brown, buff) predominate in wall surfaces. Natural stone colors also exist. Where stucco or concrete exists, it is usually left in its natural state, or painted in a shade of cream. Roofs are in natural colors (tile and slate colors, wood colors) and asphalt shingles are predominantly within this same dark color range. Paint colors often relate to style. The classically inspired buildings, particularly neo-Georgian, generally have woodwork painted white, cream or in the range of those colors, including "putty." Doors and shutters are frequently dark green or black. Colors known to have been in use on buildings of this type in the eighteenth or early nineteenth centuries on similar buildings may be considered for suitability. Buildings of Medieval inspiration (notably neo-Tudor) generally have painted woodwork and window frames of dark brown or cream color. Half-timbering is almost always stained dark brown. Queen Anne or late Victorian examples may have several paint colors on a single facade. These tend to be dark in tone and frequently of the "earth tone" family. The original colors of any house, as determined by professional analysis, are always acceptable for that house, and may provide suggestions for similar houses.

(10) Relationship of architectural details. These generally relate to style. Neo-Georgian buildings display classic details, mostly in wood, and sometime in stone. Areas commonly, but not always, treated are porches, shutters, window frames, cornices, and dormer windows. Details on Mediterranean style or vernacular buildings are often done in stone, brick, tile, and sometimes in stucco. They include arched windows, door openings, and porches. Buildings of medieval inspiration tend to have details in the form of carved wood or carved stone ornament on window frames, door frames, and eaves. Queen Anne or late Victorian style buildings tend to have details in wood, stone, or molded brick commonly embellishing cornices, window frames and door frames. In general, the various styles are rich in architectural details.

(11) Relationship of roof shapes. Roofs with triangular gables and hip roofs predominate. A few examples of the gambrel-type roof exist. Complex arrangements of the gabled and/or hip types, with subsidiary roofs, are not unusual. Dormers are common. Flat roofs exist primarily on porches and sunrooms, and other minor elements; large hip roofs sometimes have relatively



small flat sections in the center.

(12) Walls of continuity. The major wall of continuity is created by the buildings, with their uniform setbacks within the blocks. New buildings should contribute to this wall of continuity. Where gaslights are sufficiently numerous, and where trees in rows have survived in sufficient numbers, minor walls of continuity are created. Fences across side lots contribute to the major wall of continuity where placed at the front yard setback line.

(13) Relationship of significant landscape features and surface treatment. The typical treatment of individual properties is a flat front lawn area in grass turf, often subdivided by a walk leading to the front entrance, and sometimes with a walk at the side leading to the rear. Materials for such walks are concrete, brick, or stone, or combinations of those materials. Some front yards have rectangular raised earthwork terraces upon which the house stands. These unpaved terraces have sloping embankments or brick and/or stone retaining walls at the change of grade. Foundation plantings, often of a deciduous character, characteristic of the period 1895-1930, are present virtually without exception. Hedges between properties, and ornamental front yard fences or hedges are not uncommon. The American elm is virtually extinct in the district, though once the dominant tree. Replacement trees should be characteristic of the area and period, though only a disease-resistant American elm would be a practical choice. Plantings of new trees should be directed toward the restoration of the former straight-line rows of large trees on the front yards and "tree lawns." Straight side driveways leading from the street to rear garages exist, but alley-facing garages are common, particularly in the southern portion of the district. Where alley-facing garages are common, the lack of driveways lends a unity to the succession of front lawns. Driveway materials include concrete, brick and gravel. Side lots are not uncommon in the district, and a number of these form a part of the original site plan for the residence. Such side lots are usually landscaped, often fenced at or near the setback line, and very occasionally contain paved areas such as a tennis court. The street right-of-way of eighty (80) feet combined with a pavement width of between twenty-four (24) and twenty-nine (29) feet creates wide "tree lawns" or berm areas, which adds to the generous ambience of the urban landscape of the district. Street pavements are now asphalt; cut stone curbs still exist in portions of the district. Alleys are frequently paved with brick, particularly where alley facing garages are common. Fencing ranges widely in type; fencing in public view was generally designed to compliment the style, design material, and date of the residence.

(14) Relationship of open space to structures. Open space in the district occurs in the form of vacant land, a city park, school yards for the Waldorf and Nichols Schools, and side lots. Where an original or early arrangement of a house and grounds included and still includes landscaped lots which form part of the landscaping plan for the residence, such landscaped lots are significant landscape features.

(15) Scale of facades and facade elements. There is a variety in scale from block to block and style to style; most houses have a large and substantial appearance. The size and complexity of facade elements and details either accentuate or subdue the scale of the facades. Facade elements have been determined by what is appropriate for the style. Large wings at the front are atypical, while small wings at the side, usually in the form of sunrooms and sun porches, are common. Window sash are usually subdivided by muntins, which affects the apparent scale of the windows within the facades.

(16) Directional expression of front elevations. In general, the expression of direction is neutral.

(17) Rhythm of building setbacks. Because of the existence of various subdivisions and their related subdivision and deed restrictions, setbacks vary from area to area within the district, though they are consistent within each block or area. The varying designs of the houses, occasionally with slight setbacks in the facades, cause the houses to relate to the front setback line in different ways; this creates a slight variation in the setback line. Nevertheless, within each block or area a wall of continuity is created.

(18) Relationship of lot coverage. Lot coverage ranges from fifty (50) per cent to twelve (12) per cent or less in the case of homes with large yards. Most homes are in the twenty (20) per cent to thirty (30) per cent range of lot coverage.

(19) Degree of complexity within the facade. The degree of complexity has been determined by what is typical and appropriate for a given style. The classically inspired buildings usually have simple, rectangular facades with varying amounts of ornamentation. Other styles, such as "Queen Anne" and those of Medieval inspiration, frequently have facades complicated by gables, bays, slight setbacks, porches, and occasionally, turrets.

(20) Orientation, vistas, overviews. While most of the buildings are oriented toward the street, it is not unusual for an entrance to face the side, especially in the case of a landscaped side lot or corner house.

The street facade in these cases is well coordinated with the rest of the street facades. Garages are frequently oriented either toward an alley or a side street; almost all garages are detached and at the rear of the lot. In those few cases where pre-1930 houses have attached garages, they are at the rear and are entered from the side or rear. The doors of such attached garages are generally not visible from the street.

(21) Symmetric or asymmetric appearance. Neo-Georgian and other classically inspired buildings are generally symmetrical. Other styles, including the neo-Tudor, are generally asymmetrical, but balanced compositions.

(22) General environmental character. The Indian Village District, with its long, straight streets, its hierarchy of walls of continuity (lamps, trees, buildings) and its large, dignified homes, has an urban, substantial, low density residential character.

## RECOMMENDATION

It is staff's opinion that the erection of the proposed new garage will not result in the removal of historic materials or alteration of features and spaces that characterize the property and that the garage itself is generally compatible with the existing historic home. Staff therefore recommends that the Commission issue a Certificate of Appropriateness (COA) for the work as proposed because it meets the Secretary of the Interior's Standards for Rehabilitation, standards # 2.) *The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided and # 9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment. 10.) New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would*

*be unimpaired.* However, staff does recommend that the Commission issue the project COA with the following conditions:

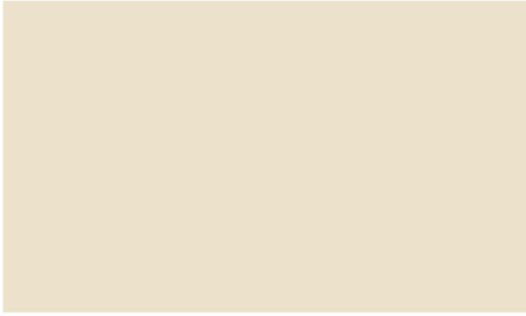
- The garage shall be clad with lapped composite/Hardi siding with a smooth finish/texture.
- The color of the exterior doors and windows shall be yellowish white, to match home's the trim color
- The applicant shall provide HDC staff the dimensions of the existing hardscape and the proposed new/replacement hardscape (driveway approach, ribbon driveway, and rear yard parking apron) so that they might verify that the new will replicate the old/existing. If the application proposes to expand the existing hardscape footprint, HDC staff shall forward this portion of the proposal to the Commission for review at a future meeting
- The windows proposed for the new garage shall be wood, wood (with luminum cladding), or aluminum



**B:14 Dark Grayish  
Olive**

**MS: 10Y 2/2**

**Color proposed for exterior cladding**



**C:4 Yellowish  
White**

**MS: 5Y 9/1**

**Color proposed for trim**



# HISTORIC DISTRICT COMMISSION PROJECT REVIEW REQUEST

CITY OF DETROIT  
PLANNING & DEVELOPMENT DEPARTMENT  
2 WOODWARD AVENUE, ROOM 808, DETROIT, MI 48226

DATE: 5/17/19

## PROPERTY INFORMATION

ADDRESS: 3466 Burns, Detroit AKA: \_\_\_\_\_  
HISTORIC DISTRICT: Indian Village

## APPLICANT IDENTIFICATION

Property Owner/Homeowner     Contractor     Tenant or Business Occupant     Architect/Engineer/Consultant

NAME: Ben Carby COMPANY NAME: Sell your house fast

ADDRESS: P.O. Box 510672 CITY: Livonia STATE: MI ZIP: 48151

PHONE: 734-277-9760 MOBILE: 716-374-5086 EMAIL: buffalo rental property@gmail.com

## PROJECT REVIEW REQUEST CHECKLIST

Please attach the following documentation to your request:

- Photographs** of ALL sides of existing building or site
- Detailed photographs** of location of proposed work (photographs to show existing condition(s), design, color, and material)
- Description of existing conditions** (including materials and design)
- Description of project** (including an explanation as to why replacement--rather than repair--of existing and/or construction of new is required)
- Detailed scope of work** (formatted as bulleted list)
- Brochure/cut sheets** for proposed replacement material(s) and/or product(s)

### NOTE:

Based on the scope of work, additional documentation may be required  
See [www.detroitmi.gov/hdc](http://www.detroitmi.gov/hdc) for scope-specific requirements

**SUBMIT COMPLETED REQUESTS TO: [HDC@DETROITMI.GOV](mailto:HDC@DETROITMI.GOV)**



# 3466 Burns Garage and Driveway replacement

4 Exterior Photos of all sides of house:













**Detailed Photos of Location of proposed Work:**



**Old Garage Slab**





**2 Lines of concrete up through the side of the house**



























**Description of Existing Condition:**

Between the sidewalk and 5 feet past the back of the house the driveway is 2 rows of concrete with grass inbetween them. After that there is a left turn sweep and then a 20x22 garage slab. There is no garage on the slab, it was demolished by the previous owner or owners

**Description of the project:**

We plan on removing the entire concrete driveway and garage slab and replacing it exactly as it was. There will be no modifications to layout or sizes of the current driveway and slab. We will then build a 20x22 2 car garage on the garage slab.

Please see the below site plan which is both the current site plan and the proposed site plan since there is no changes in location or sizing to be made.

**Detailed Scope of Work:**

1. Remove driveway and slab
2. Repour concrete driveway and slab
3. Frame garage and build soffits and fascia and add gutters
4. Side garage
5. Add lighting fixtures

**Brochure/Cut Sheet**

1. Garage Details:

- a. Garage Roof color: See below: Dual Black



	<b>5 7/8" EXPOSURE</b>
	<b>FASTLOCK™ SEALANT</b>
	<b>IKO® ADVANTAGE SIZE</b>
	<b>FULL COVERAGE</b> (100 SQ FT/3 BUNDLES)

## IKO's Most Popular Shingle Gives You an (Almost) Unfair Advantage.

**IKO Cambridge architectural laminate shingles in IKO's special Advantage size.** Their exposure is bigger than most in their class, to go down fast and easy. And with full coverage, the job costs associated with extra bundles and the labor to install them are lowered, too.

Proper installation is vital for effective weather resistance. That's why we've enlarged our nail line to guide installers for correct nail placement and made our Fastlock™ modified bitumen sealant thick and aggressive to promote a strong bond.

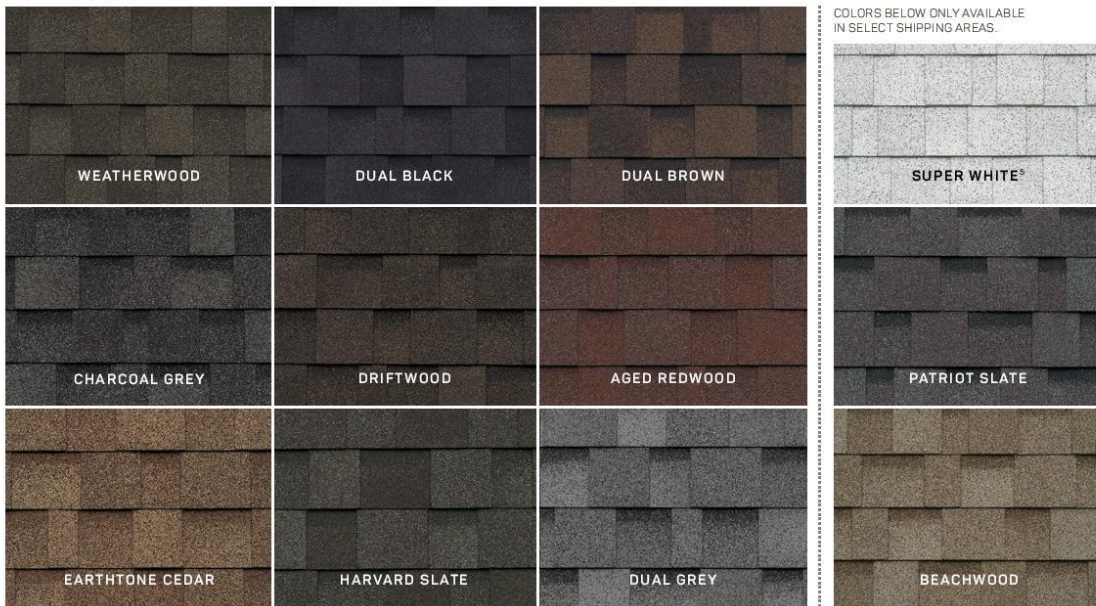
Homeowners will get the high-end designer architectural appearance without the high-end designer cost.



# Cambridge™



SPECIFICATIONS <sup>3</sup>	Limited Warranty <sup>1</sup>	Limited Lifetime	Dimensions (L x W)	40 7/8 in (1038 mm) x 13 3/4 in (349 mm)	STANDARDS <sup>4</sup>	ASTM D3462
	Iron Clad Protection <sup>1</sup>	15 Years	Exposure	5 7/8 in (149 mm)		ASTM D3018
	Limited Wind Warranty <sup>1</sup>	110 mph (177 km/h)	Coverage Per Bundle	33 1/3 ft <sup>2</sup> (3.1 m <sup>2</sup> )		ASTM D7158 - Class H
	Limited High Wind Warranty Upgrade <sup>1,2</sup>	130 mph (210 km/h)				ASTM D3161 - Class F
	Blue-green Algae Resistant <sup>1</sup>	Yes	Shingles Per Square	60		ASTM E108 - Class A
						CSA A123.5



COLORS BELOW ONLY AVAILABLE IN SELECT SHIPPING AREAS.

To ensure complete satisfaction, please view several full size shingles and an actual roof installation prior to final color selection as the shingle swatches and photography shown online, in brochures and in our app may not accurately reflect shingle color, and do not fully represent the entire color blend range, nor the impact of sunlight.

<sup>1</sup> See Limited Warranty at IKO.com for complete terms, conditions, restrictions, and application requirements. Shingles must be applied in accordance with application instructions and local building code requirements. <sup>2</sup> High Wind Application is required. <sup>3</sup> All values shown are approximate. <sup>4</sup> Products developed with reference to these Standards. **Note:** Product and color availability may vary by region. Products with Miami Dade NOA and Florida Product Approval listings are available. Please contact IKO for details. The information in this literature is subject to change without notice. We assume no responsibility for errors that may appear in this literature. Find out more about our products now by talking to an IKO Sales Representative, your professional roofing contractor or contact us directly at **United States 1-888-IKO-ROOF (1-888-456-7663)**, **Canada 1-855-IKO-ROOF (1-855-456-7663)** or visit our website at: **IKO.COM**.



<sup>5</sup> Cambridge Super White is CRRG® listed and ENERGY STAR® qualified in the US.

b. Siding: HardiePlank Cedarmill Fiber Cement Lap Siding



c. Soffits:





- d. Fascia: standard 1 by wood boards
- e. Light fixtures:



- f. Siding Paint color: B:14 Dark Greyish olive
- g. Trim paint color: C-5 Yellowish White
- h. Gutter paint color: B:14 Dark Greyish olive





**Building Materials List for Behm Design Plan #440-0**

www.behmdesign.net 1-800-210-6776  
 ~ Local building code approved substitutions may be made to this list ~  
 Variations in construction methods and materials can require modification  
 of this list. Every attempt is made for greatest accuracy, but typographical  
 or human error is possible. Quantities verification by the materials supplier  
 is recommended before materials package is finalized and/or shipped.

**Rough Framing**

2 x 4 x 92-1/2" HF/DF exterior "stud" wall framing ----- 82 pcs.  
 2 x 4 HF/DF No. 2 wall top plate material ----- 168 lf  
 2 x 4 HF/DF No. 2 lookouts material -----12' lengths - 4 pcs.  
 2 x 4 HF/DF No. 2 pressure-treated bottom plate ----- 84 lf  
 3-1/2 x 11-1/4 LVL Header 2950Fb 2.0E -----19'-9" length -- 1 pc.  
 2 x 6 DF No. 1 Header ----- 8' length -- 1 pc.  
 2 x 6 DF No. 1 Header -----10' length -- 2 pcs.  
 2 x 3 HF/DF No. 2 Soffit Framing Material ----- 92 lf  
 Trusses : 6 in 12 slope, 20' span (incl. 2 end trusses)-----12 trusses

**Sheathing Materials**

7/16" o.s.b. wall sheathing -----4 x 8 sheet-- 24 sheets  
 15/32" Roof 5-ply C-D APA Plywood, ext. glue P.I. 24/0 -----4 x 8 sheet --23 sheets

**Vapor Barrier**

Roof 15# bituminous felt paper in 36" wide roll----- 254 lf  
 Wall 7# bituminous felt paper in 40" wide roll ----- 300 lf  
 Floor .006" black polyethylene membrane----- 440 sf

**Siding Materials**

8" textured o.s.b.siding boards with 1" lap ----- 644 sf siding area  
 Trim: 5/4 x 3 ----- 8' length -- 4 pcs.  
 Trim: 5/4 x 4 ----- 8' length -- 13 pcs.  
 Trim: 5/4 x 4 -----17' length -- 1 pc.  
 Fascia: 1 x 6 ----- 48 lf  
 3/8" thk. soffit material -----4 x 8 sheet -- 6 sheets  
 Rakeboard: 2 x 6 -----14' length -- 4 pcs.

**Roofing Materials**

Composition Roofing Shingles----- 635 sf roof area  
 Ridgevent material----- 22 lf

**Window and Door Assemblies**

3030 sliding window(s)----- 2 ea.  
 16'-0" x 7'-0" sectional garage door----- 1 ea.  
 3068 exterior door----- 1 ea.

**Metal Parts & Misc.**

Anchor bolts: 1/2" dia. x 10" ASTM A-307 w/ hex nuts----- 14 pcs.  
 Flat washer for 1/2" dia: 2" square x 3/16" thick stl. pl.----- 14 pcs.  
 Anchor bolts: 5/8" dia. x 14" ASTM A-307 w/ hex nuts----- 2 pcs.  
 Flat washer for 5/8" dia: 2" square x 3/16" thick stl. pl.----- 2 pcs.  
 Simpson H10 connectors ----- 20 pcs.  
 Simpson STHD14 hold-down straps ----- 4 pcs.  
 Simpson MST24 nailing strap ----- 2 pcs.  
 16d sinker nails ----- 50 lbs.  
 8d common nails @ 145 nails / lb. ----- 25 lbs.  
 Drip flashing for window/door heads----- 25 lf

~ To advise corrections, call 1-800-210-6776 Thank you.~  
 (note: electrical components and finishing materials not included in this list)



**GARAGE PLAN #440-0**  
 20' x 22'

**Truss Requirements**

Truss design drawings. Truss construction documents shall be prepared by a registered design professional and shall be provided to the building official and approved prior to installation. These construction documents shall include, at a minimum, the information specified below. Truss shop drawings shall be provided with the shipment of trusses delivered to the job site.

1. Slope or depth, span and spacing;
2. Location of joints;
3. Required bearing widths;
4. Design loads as applicable;
5. Top chord live load (including snow loads);
6. Top chord dead load;
7. Bottom chord live load;
8. Bottom chord dead load;
9. Concentrated loads and their points of application;
10. Controlling wind and earthquake loads;
11. Adjustments to lumber and metal connector plate design value for conditions of use;
12. Each reaction force and direction;
13. Metal connector plate type, size, thickness or gage, and the dimensioned location of each metal connector plate except where symmetrically located relative to the joint interface;
14. Lumber size, species and grade for each member;
15. Connection requirements for:
  - 15.1. Truss to truss girder;
  - 15.2. Truss ply to ply; and
  - 15.3. Field splices.
16. Calculated deflection ratio or maximum deflection for live and total load;
17. Maximum axial compression forces in the truss members to design the size, connections and anchorage of the permanent continuous lateral bracing. Forces shall be shown on the truss construction documents or on supplemental documents; and
18. Required permanent truss member bracing location.

**Building Code Compliance**

This planset was prepared to comply with the prescriptive requirements of the International Residential Code (IRC)

**Parameters For Design**

Wind Speed: 100 mph

Wind Exposure: "B"

Seismic Category: A, B and C

Snow Load: 30# / sq.ft.

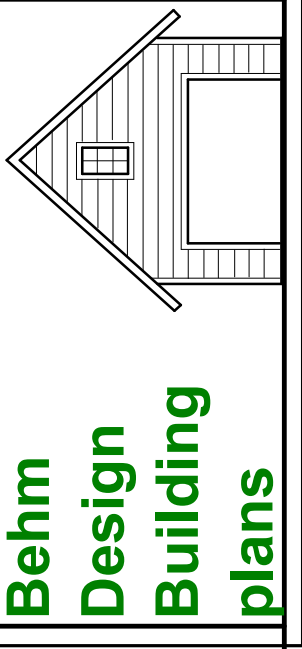
**Building Categories and Data**

Occupancy Classification: "U"

Construction Type: "V"

Grade-To-Ridge Height: 14'-2"

Gross Building Area: 440 sf



QUESTIONS?...CALL  
 1-800-210-6776  
 www.behmdesign.com

PLAN NO.  
 440-0

DESIGN BY:  
 JUB  
 DATE: updated 05/17

SHEET CONTENTS:  
 Pictorial View Of Design  
 Project Data  
 Building Materials List

SHEET  
 1  
 OF 8

**BRACED WALLS AS PER IRC  
R602.10. AS APPLICABLE  
FOR LOCAL CODES**

( SHOWN: - - - - - )

EXTERIOR BRACED WALLS (MIN. 48")  
NAIL SIDING PANELS OR SHEATHING  
W/ 8d @ 6" o.c., EDGES AND @ 12"  
O.C.,  
FIELD AND BLOCK AT HORIZ. PANEL  
JOINTS.  
PROVIDE ALTERNATE BRACED WALL  
PANELS AS INDICATED.

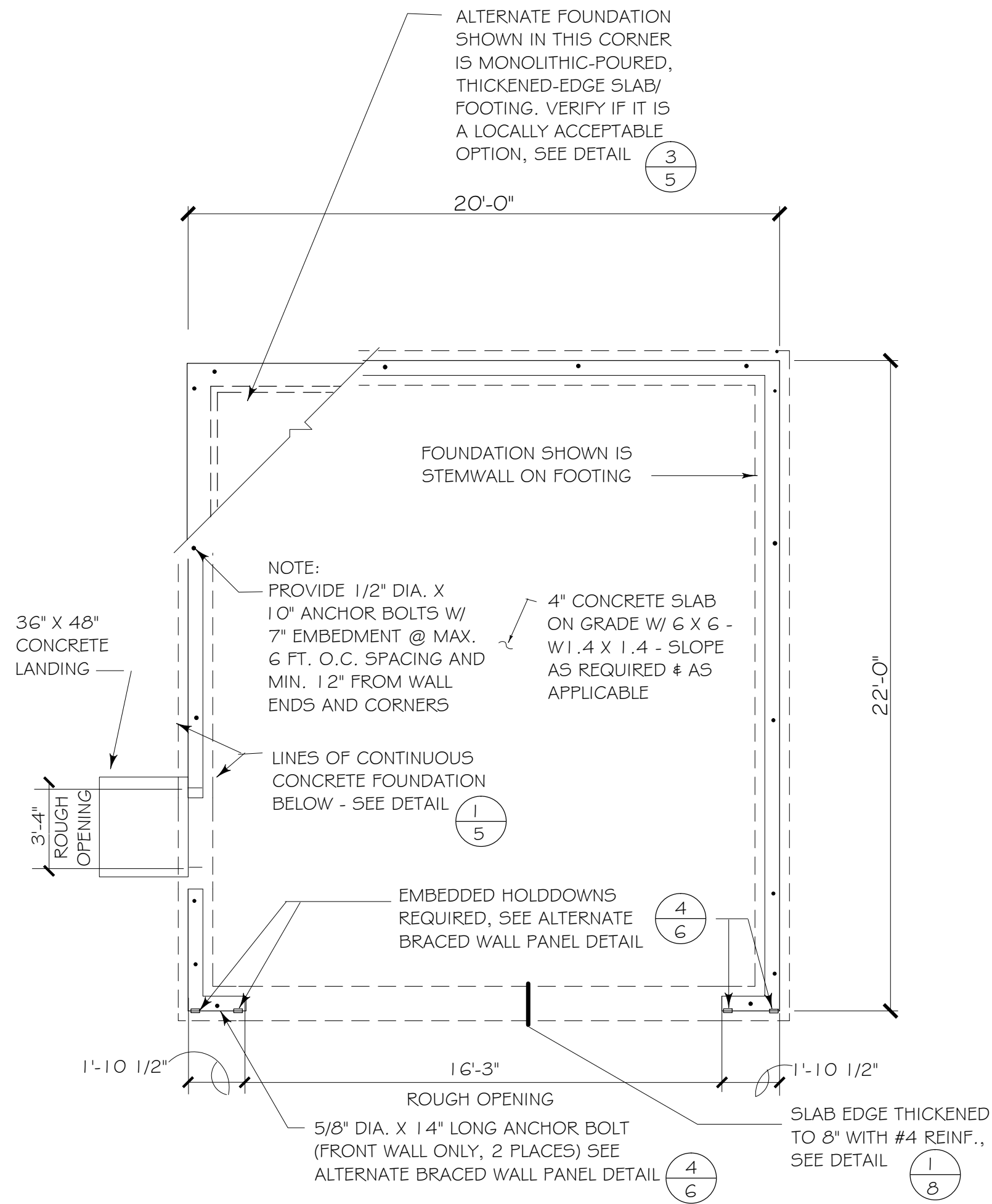
NOTE:  
FLOOR PLAN DIMENSIONS  
ARE TO FACE OF FRAMING  
OR CENTERLINE OF BEARING,  
TYP. AS SHOWN

NOTE:  
DOOR AND WINDOW HEADERS  
SHALL BE 2- 2 X 6 UNLESS  
OTHERWISE NOTED

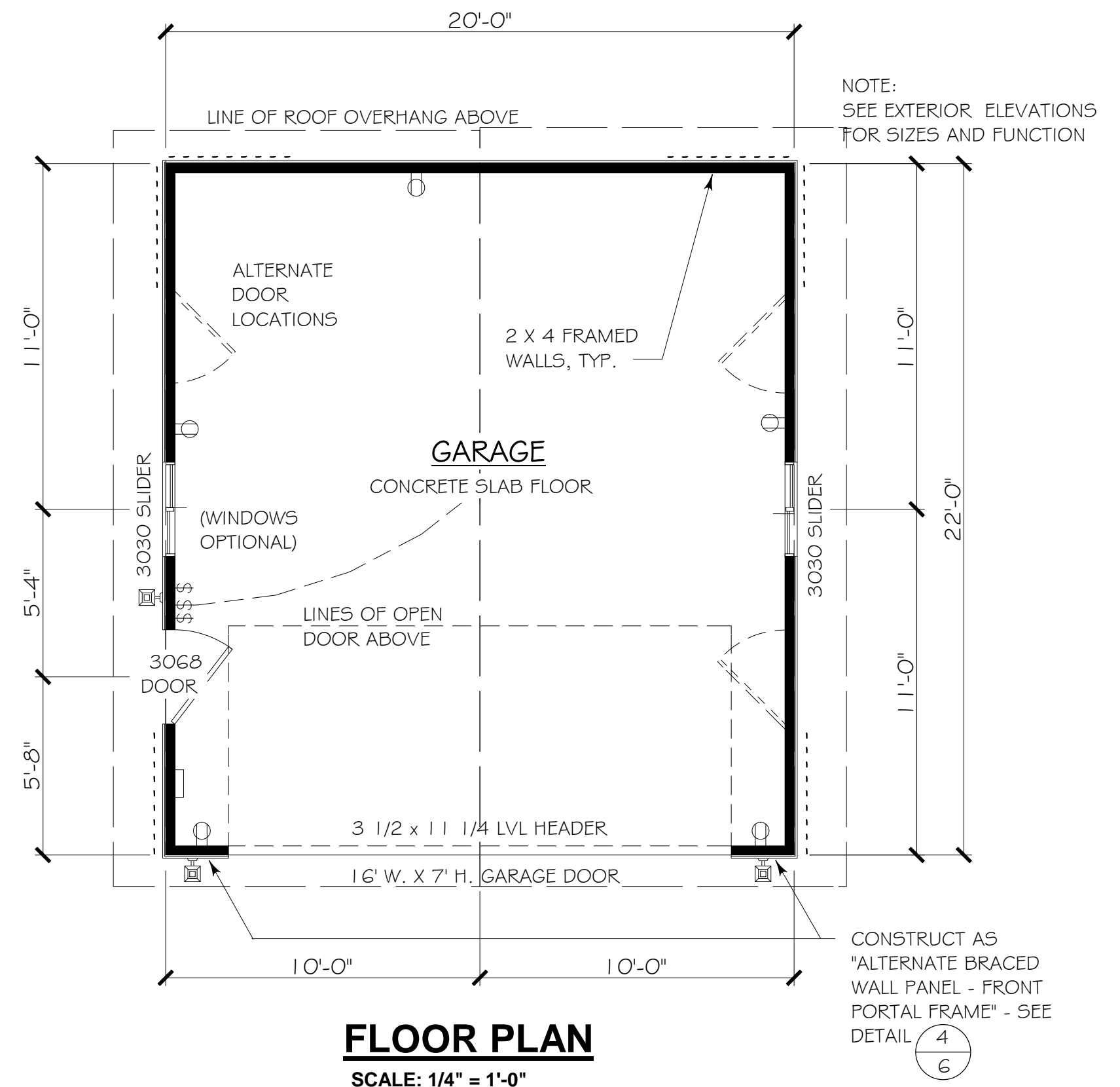
NOTE:  
FOUNDATION PLAN DIMENSIONS  
ARE TO FACE OF CONCRETE OR  
CENTERLINE OF BEARING, AS SHOWN

**LEGEND**

- Ⓢ SWITCH LOCATION
- ⊙ CEILING MOUNTED LIGHT FIXTURE
- ⊕ 110 VOLT DUPLEX OUTLET
- ⊕ EXTERIOR WALL-MTD. LIGHT FIXTURE
- ELECTRIC PANEL OR SUB-PANEL LOCATION, INSTALL PER LOCAL CODES

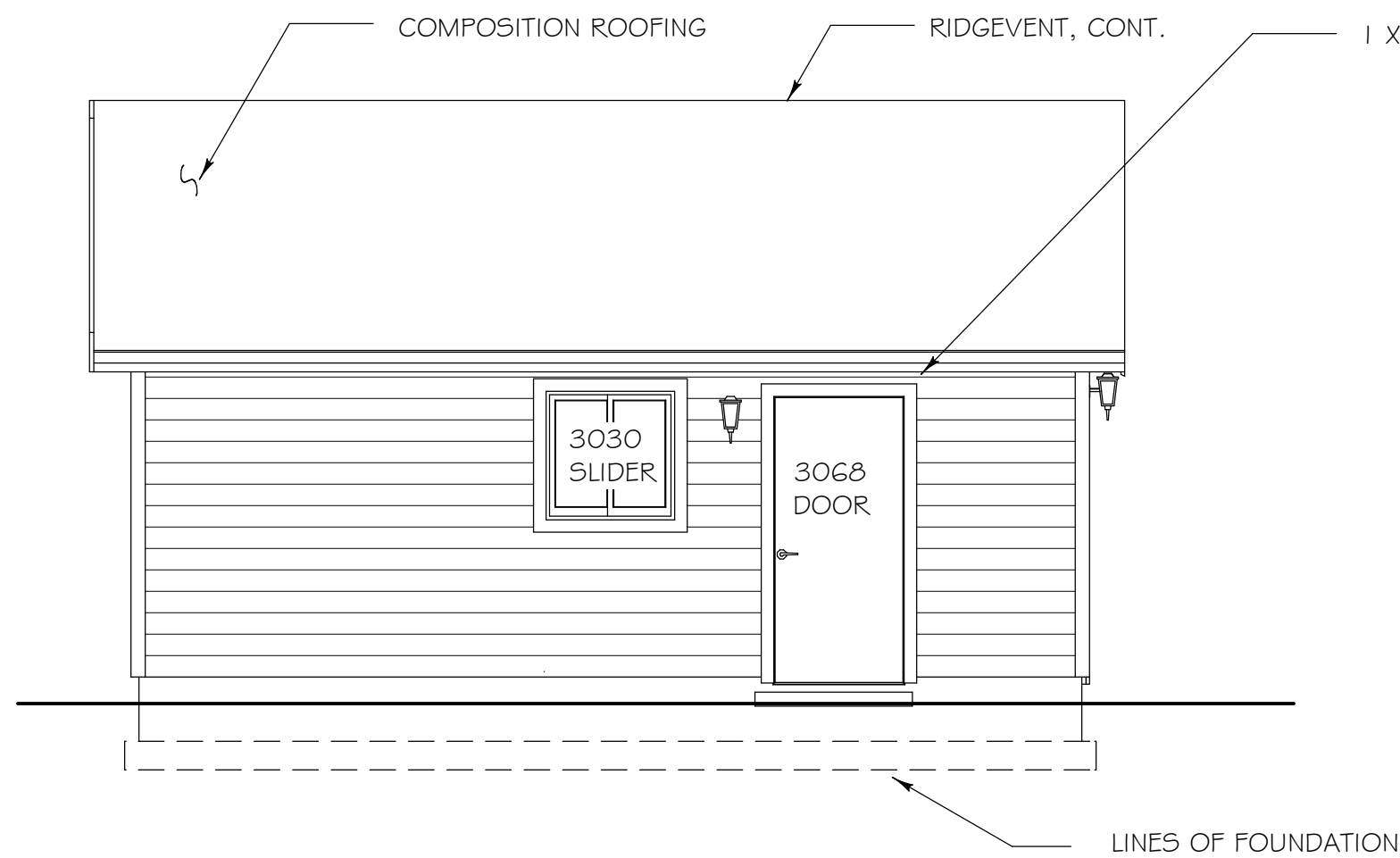


**FOUNDATION PLAN**  
SCALE: 1/4" = 1'-0"



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





**LEFT SIDE WALL ELEVATION**

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

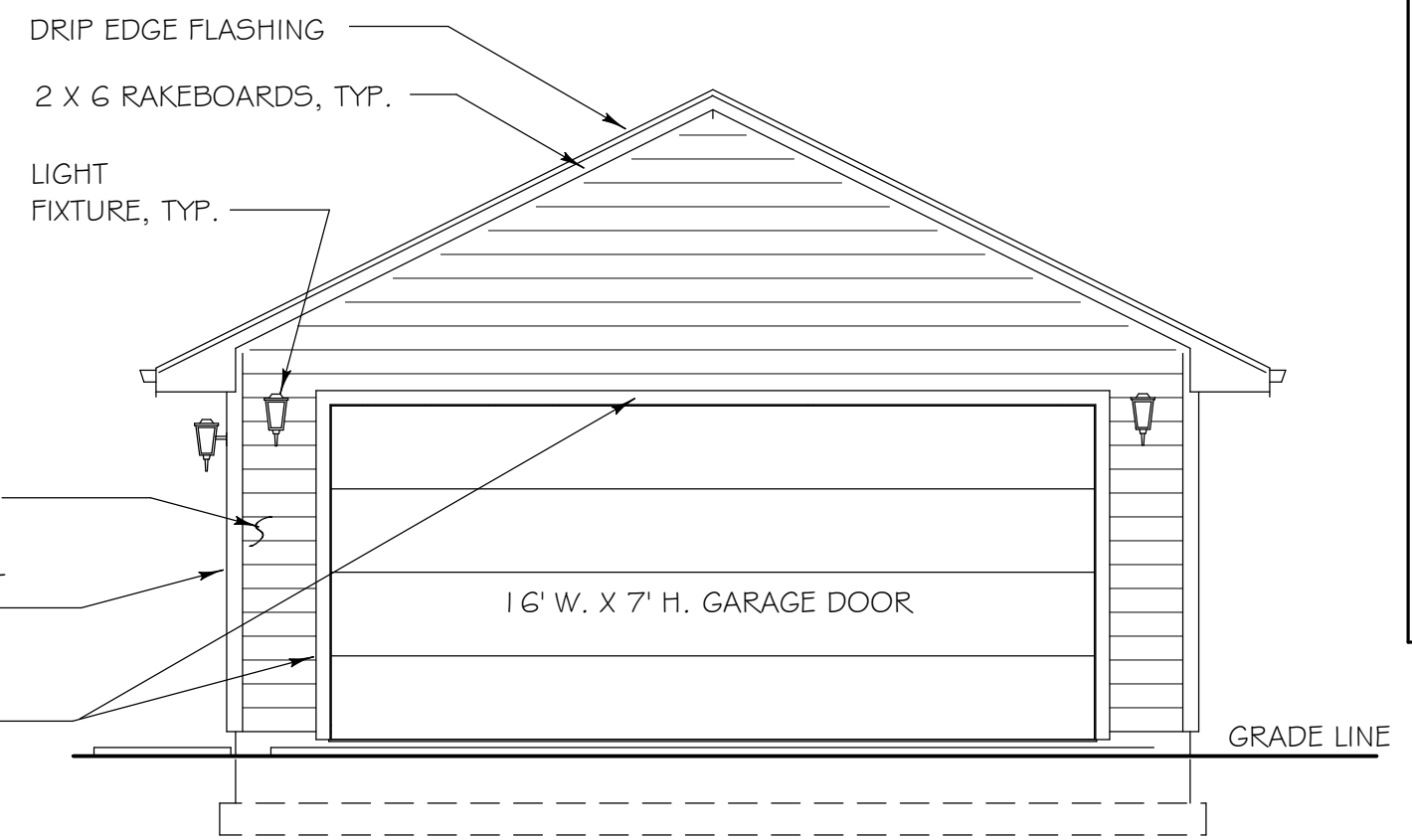
ALTERNATE SIDING:  
7/16" TEXTURED O.S.B SIDING  
(OR 1/2" PLYWOOD) PANELS  
OVER 7# FELT VAPOR BARRIER

SIDING:  
8" X 7/16" TEXTURED O.S.B.  
SIDING BOARDS, OVER 7# FELT  
VAPOR BARRIER, OVER SHEATHING  
(APPROVED ALTERNATE SIDING  
MATERIALS MAY BE SUBSTITUTED)

5/4 X 4 / 5/4 X 3 CORNER BOARDS-  
BUTT SIDING

5/4 X 4 WRAP TRIM - BUTT SIDE  
MEMBERS TO TOP AND BOTTOM

NOTE:  
FOR ALTERNATIVE SIDING BOARDS  
USE 1X TRIM BOARDS AND NAIL OVER  
SIDING PANELS



**FRONT ELEVATION**

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

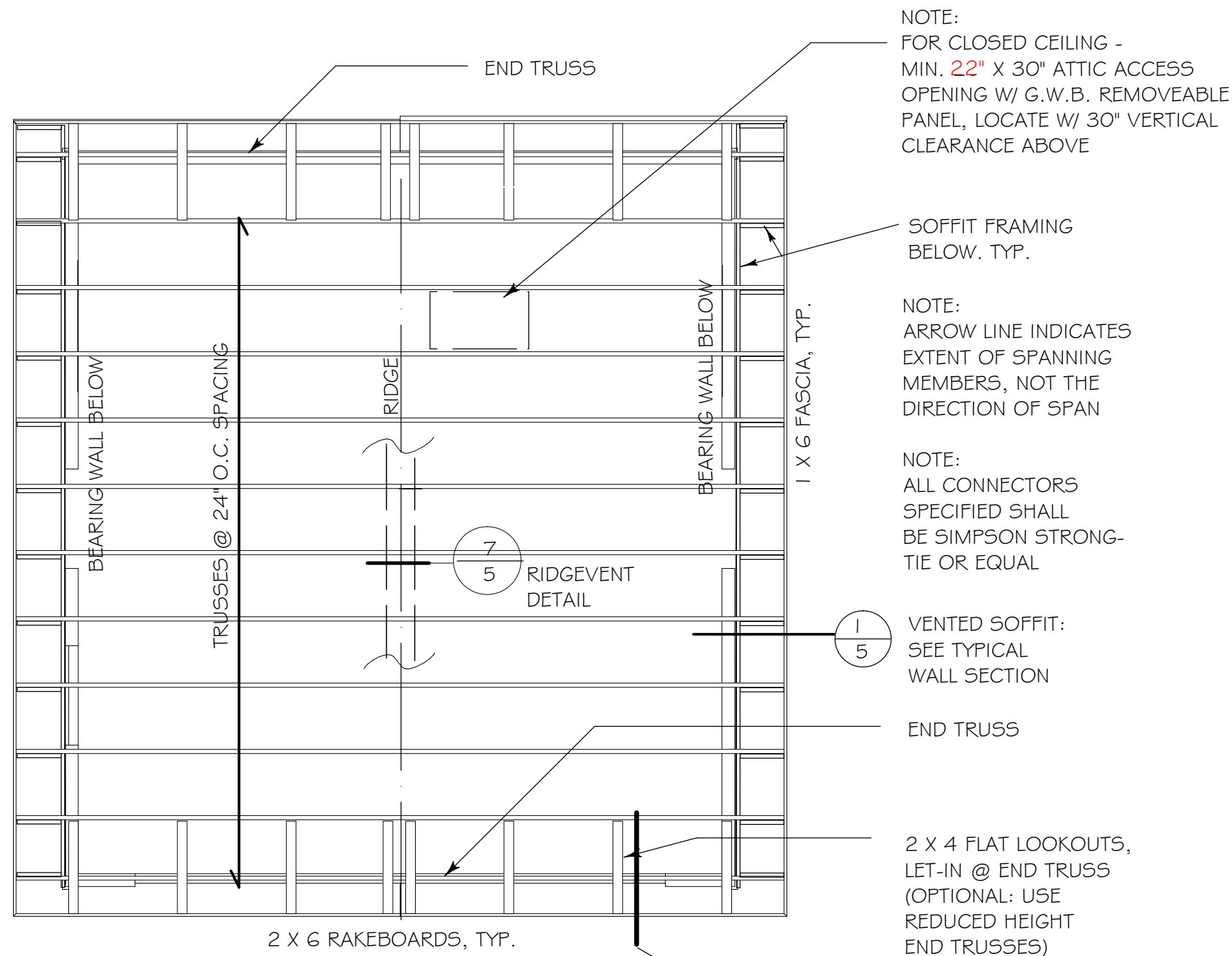
**TRUSS NOTES:**

1. ALL TRUSSES SHALL CARRY MANUFACTURERS STAMP.
2. ALL TRUSSES SHALL BE INSTALLED & BRACED TO MANUFACTURERS SPECIFICATIONS.
3. ALL TRUSSES WILL NOT BE FIELD ALTERED WITHOUT PRIOR BUILDING DEPT. APPROVAL OF ENGINEERING CALCULATIONS.
4. ALL TRUSSES SHALL HAVE DESIGN DETAILS & DRAWINGS ON SITE FOR FRAMING INSPECTION.
5. NON BEARING WALLS SHOULD BE HELD DOWN FROM THE TRUSS BOTTOM CHORD W/ SIMPSON STC TO INSURE THAT THE TRUSS BOTTOM CHORD WILL NOT BEAR ON THE WALL.
6. ALL CONNECTIONS OF RAFTERS, JACK OR HIP TRUSSES TO MAIN GIRDER TO BE PROVIDED BY TRUSS MANUFACTURE.

NOTE:  
NOMINAL WINDOW SIZES ARE  
SHOWN: FEET/INCHES WIDE  
X FEET/INCHES HIGH, TYP. -  
VERIFY FRAMED OPENING  
REQUIRED BY PRODUCT MFR.

NOTE:  
FLASH OPENINGS AND PROVIDE  
WEATHERSTRIPPING AS REQUIRED  
BY LOCAL CODES

NOTE:  
NOTES AND MATERIALS INDICATED  
IN THIS ELEVATION ARE TYPICAL  
FOR ENTIRE BUILDING AS APPLIC.



**ROOF FRAMING PLAN**

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

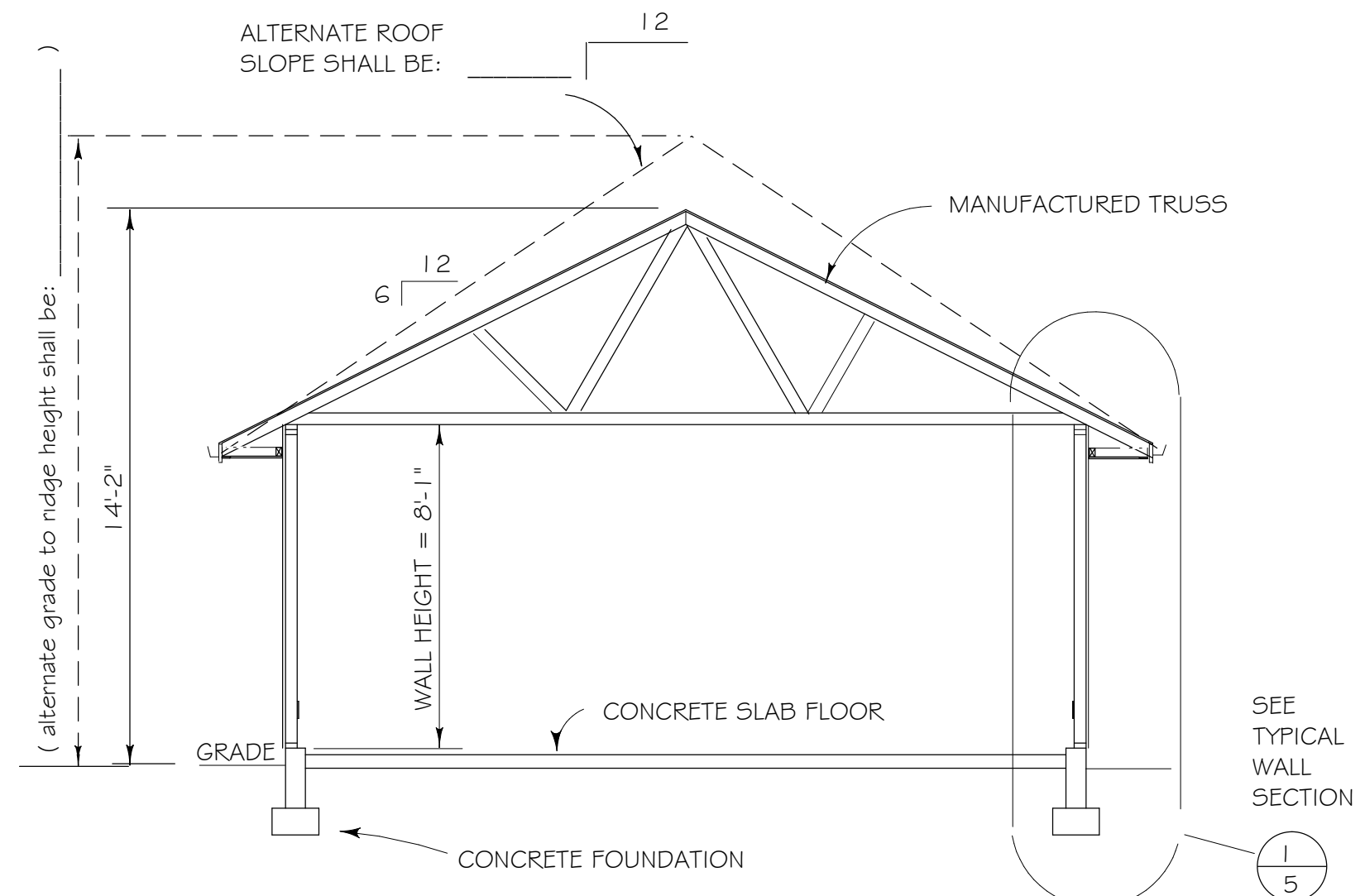
NOTE:  
FOR CLOSED CEILING -  
MIN. 22" X 30" ATTIC ACCESS  
OPENING W/ G.W.B. REMOVEABLE  
PANEL, LOCATE W/ 30" VERTICAL  
CLEARANCE ABOVE

NOTE:  
ARROW LINE INDICATES  
EXTENT OF SPANNING  
MEMBERS, NOT THE  
DIRECTION OF SPAN

NOTE:  
ALL CONNECTORS  
SPECIFIED SHALL  
BE SIMPSON STRONG-  
TIE OR EQUAL

NOTE:  
VENTED SOFFIT:  
SEE TYPICAL  
WALL SECTION

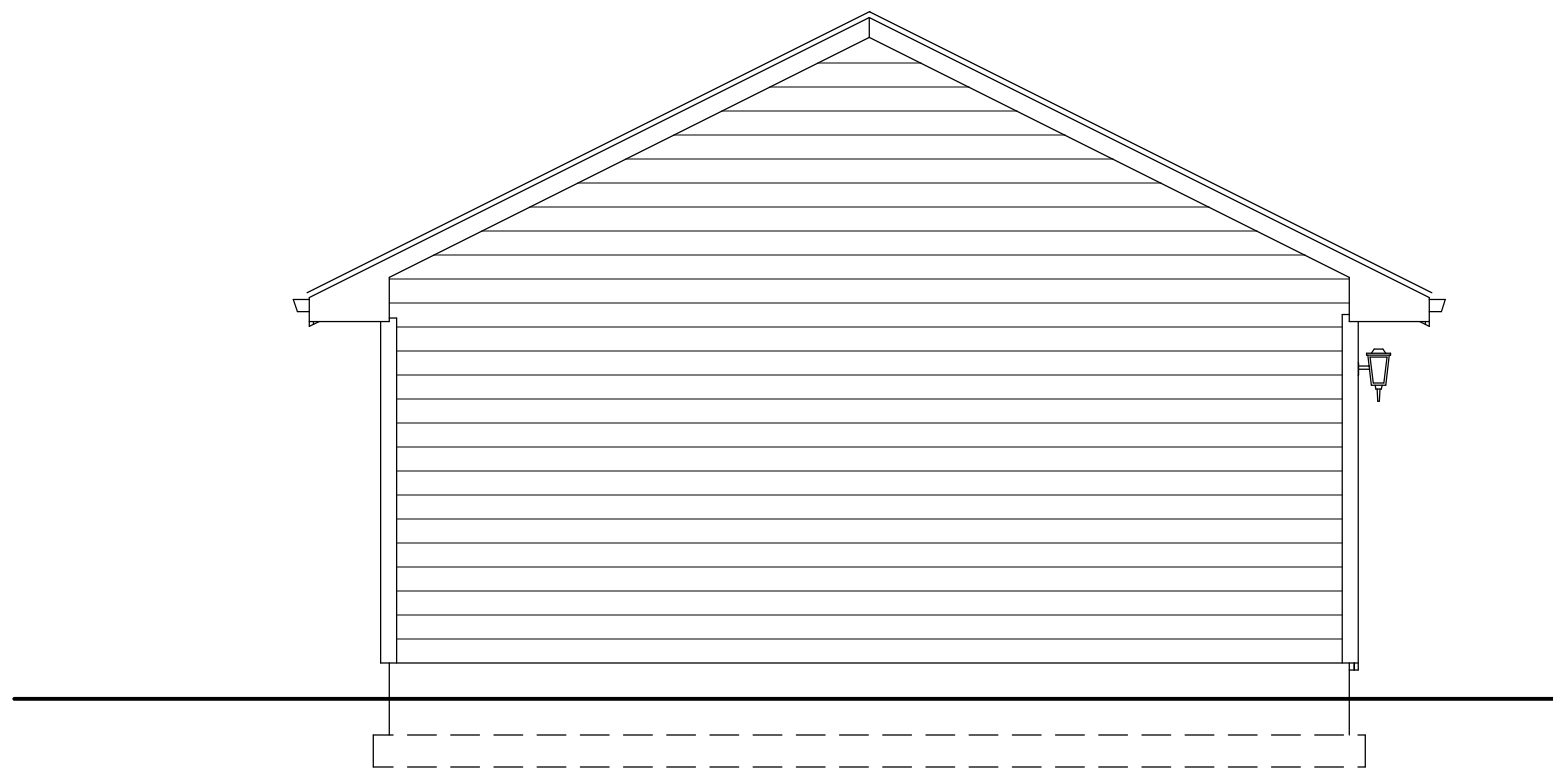
NOTE:  
2 X 4 FLAT LOOKOUTS,  
LET-IN @ END TRUSS  
(OPTIONAL: USE  
REDUCED HEIGHT  
END TRUSSES)



**CROSS-SECTION**

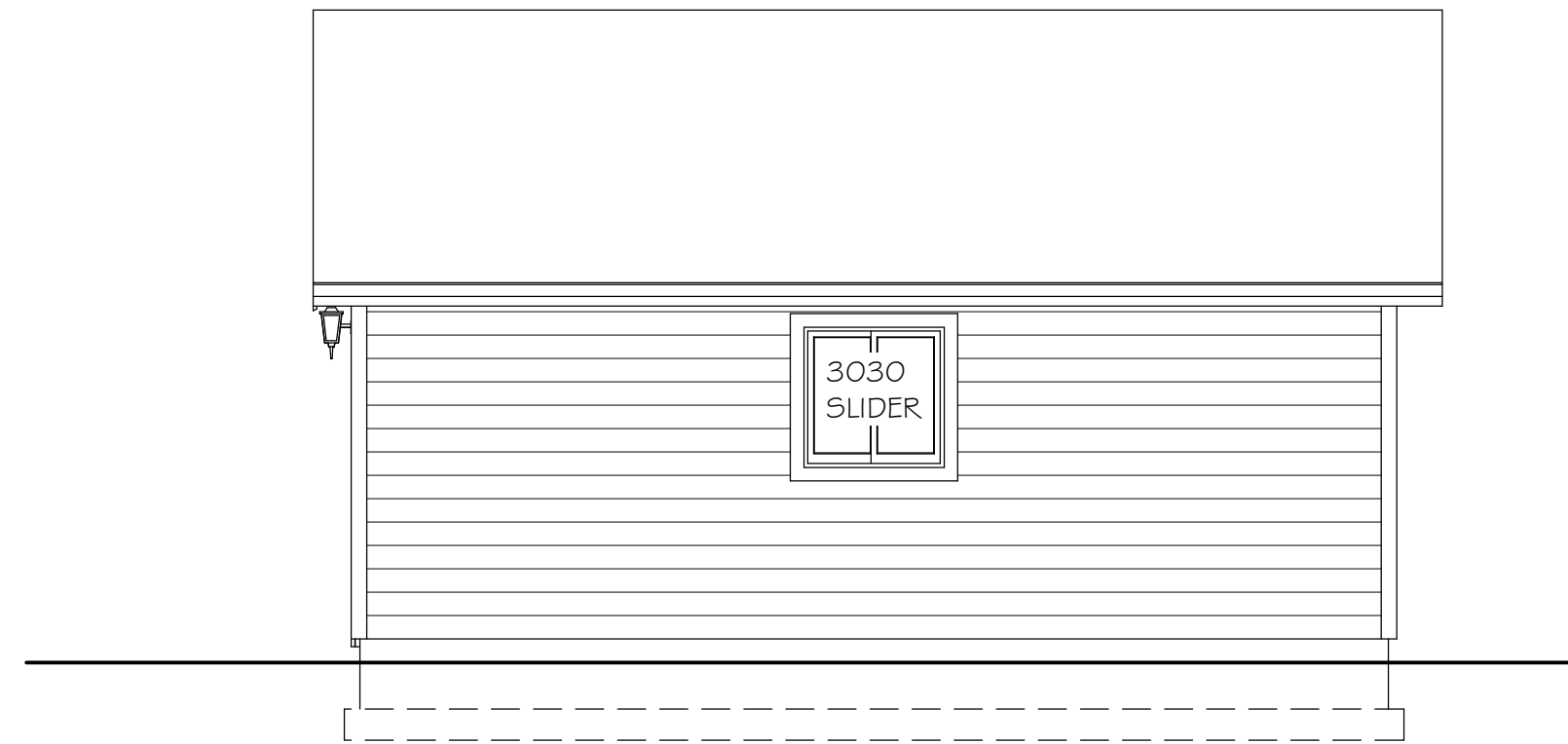
SCALE: 1/4" = 1'-0"

NOTE:  
FOOTING/STEMWALL FOUNDATION  
SHOWN. FOR ALTERNATIVE  
THICKENED-EDGE FOUNDATION  
SEE DETAIL



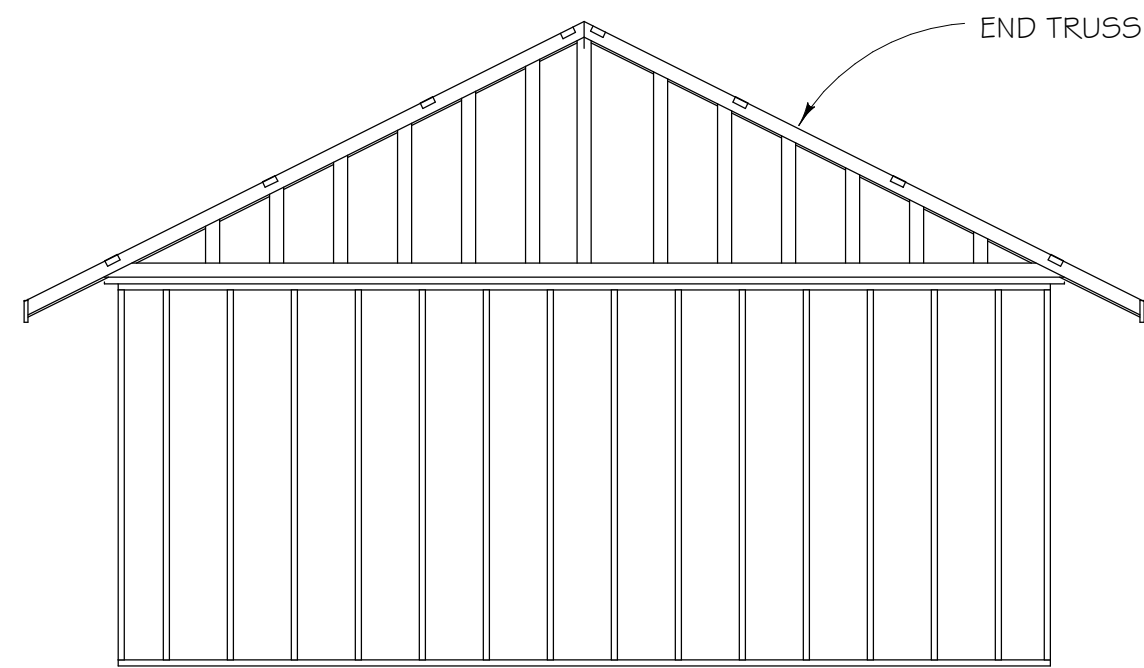
**REAR ELEVATION**

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



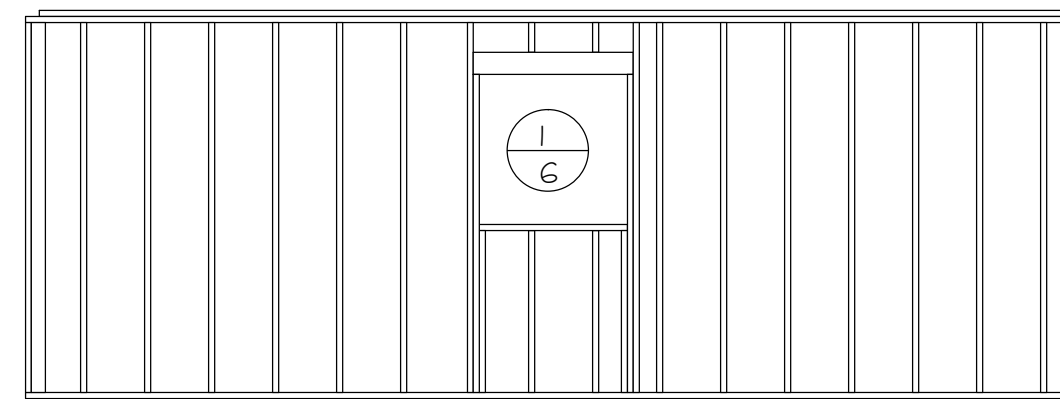
**RIGHT SIDE ELEVATION**

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



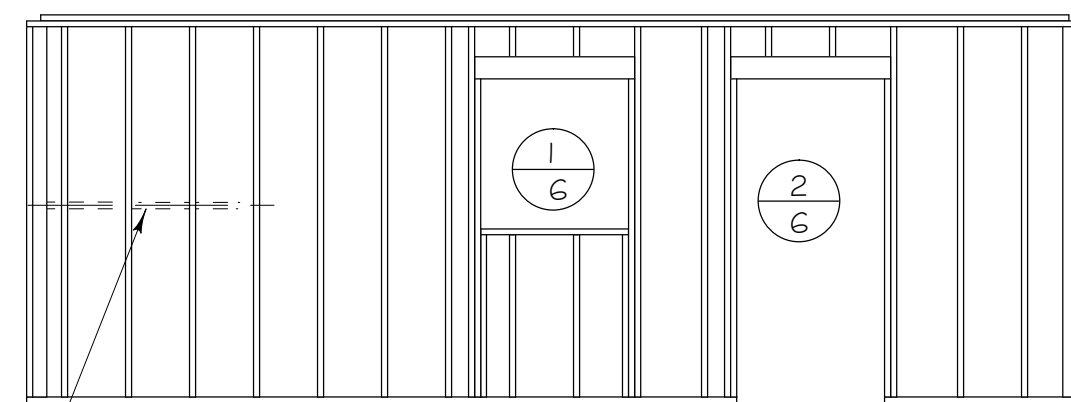
**REAR WALL FRAMING ELEVATION**

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



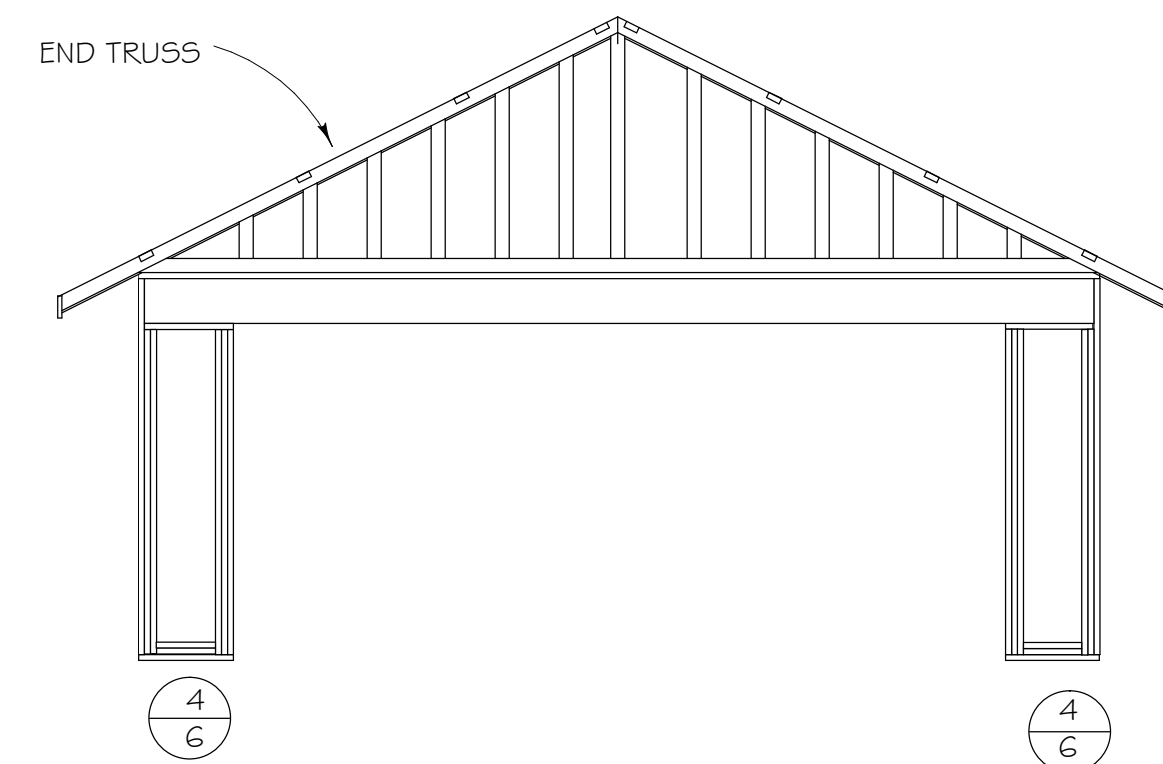
**RIGHT SIDE WALL FRAMING ELEVATION**

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

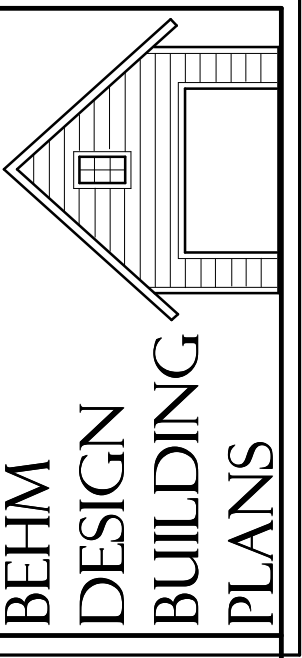


NOTE:  
FOR HORIZONTALLY APPLIED WALL SHEATHING PROVIDE 2 X 4 HORIZONTAL BLOCKING BETWEEN STUDS FOR PANEL EDGE NAILING AT BRACED WALLS

**LEFT SIDE WALL FRAMING ELEVATION**



**FRONT WALL FRAMING ELEVATION**



QUESTIONS? CALL

1-800-210-6776

WWW.BEHMDESIGN.COM

PLAN NO.

440-0

DESIGN BY:

JJB

DATE:

12/09

SHEET CONTENTS:

RIGHT SIDE ELEVATION

LEFT SIDE ELEVATION

WALL FRAMING ELEVATIONS

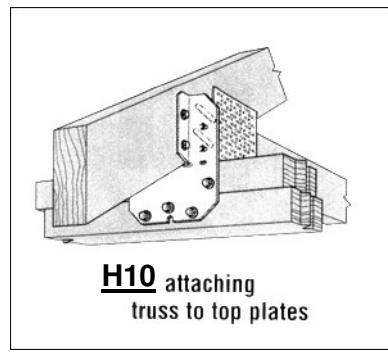
SHEET

4

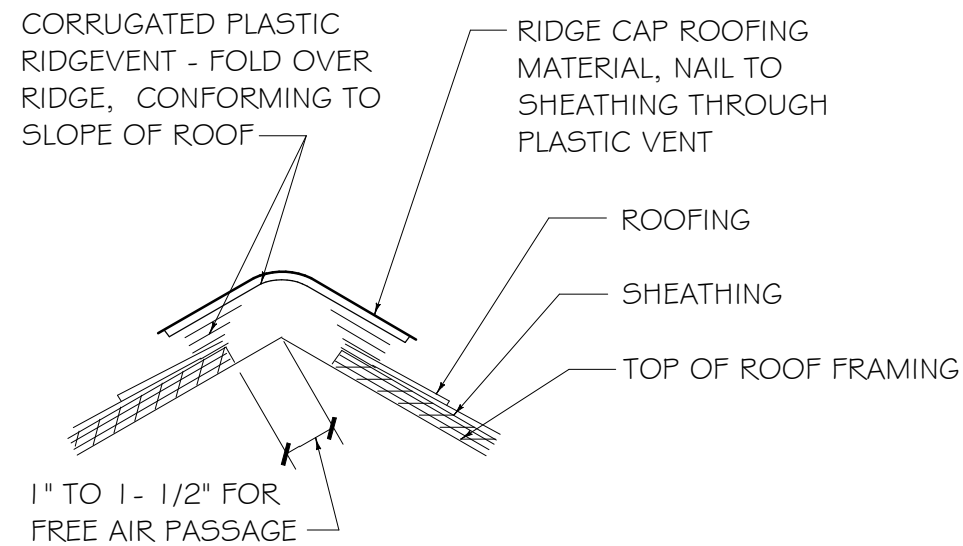
OF 8

COPYRIGHT BEHM DESIGN

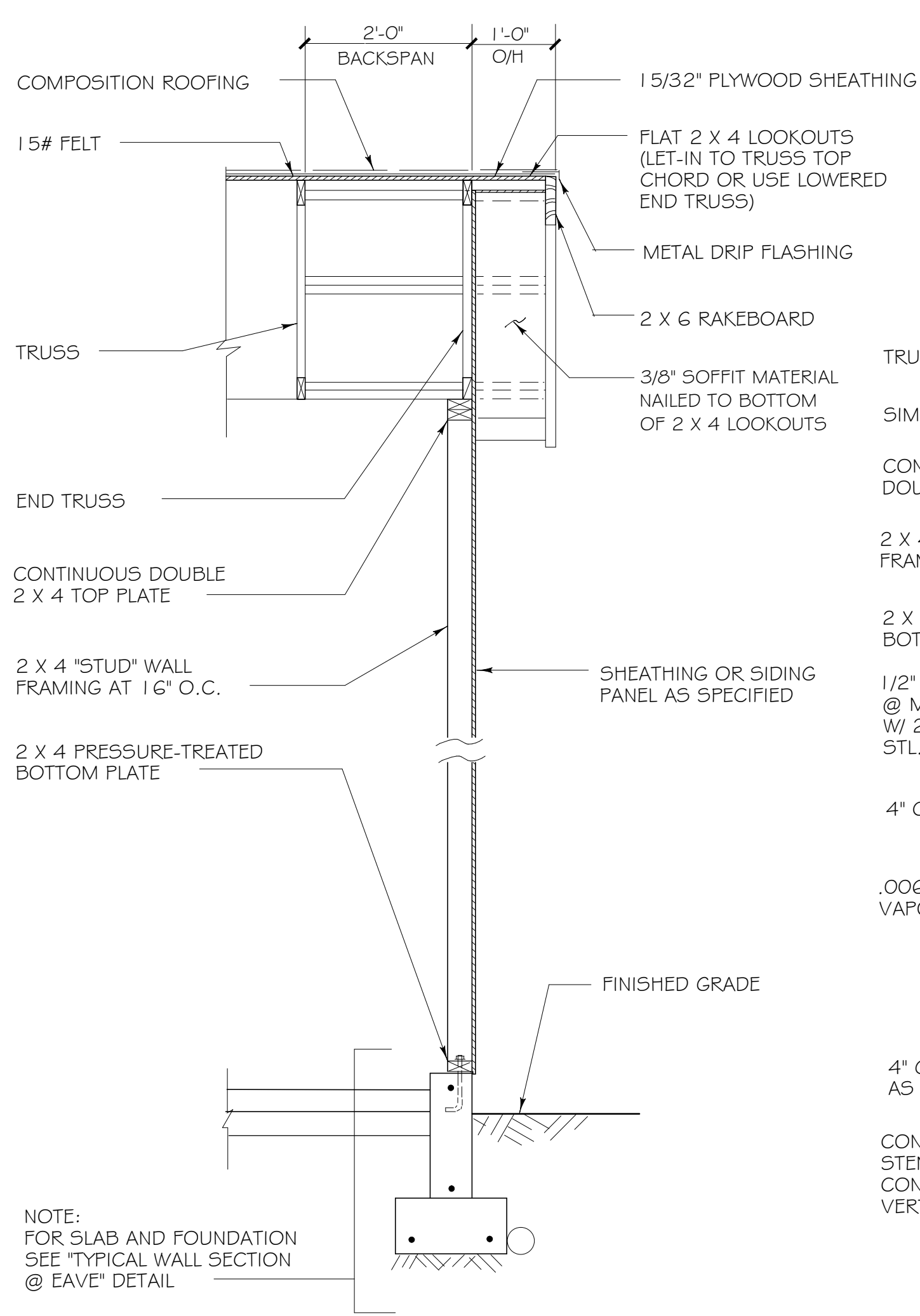




## SIMPSON CONNECTORS

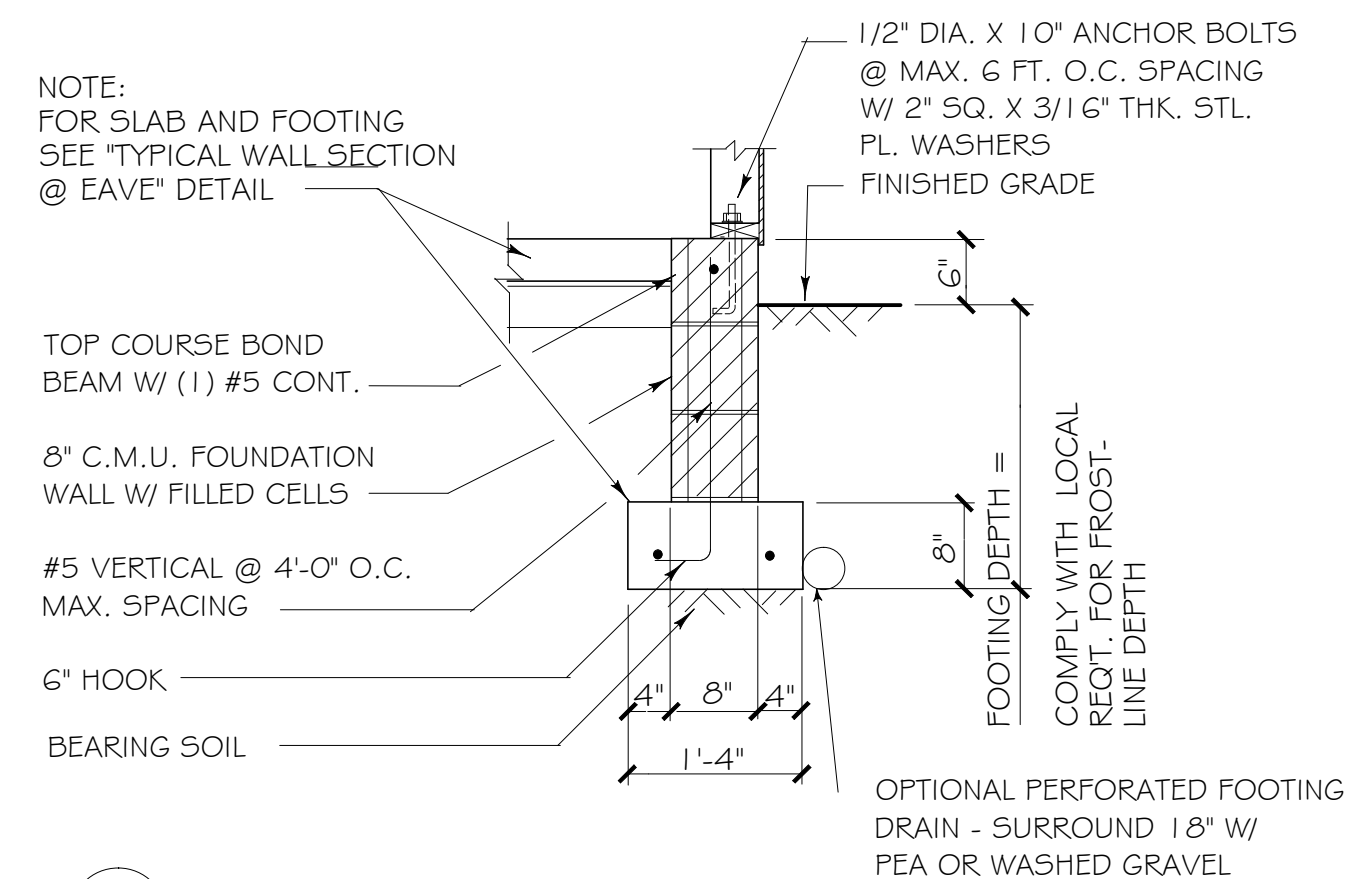


### 7 RIDGEVENT DETAIL



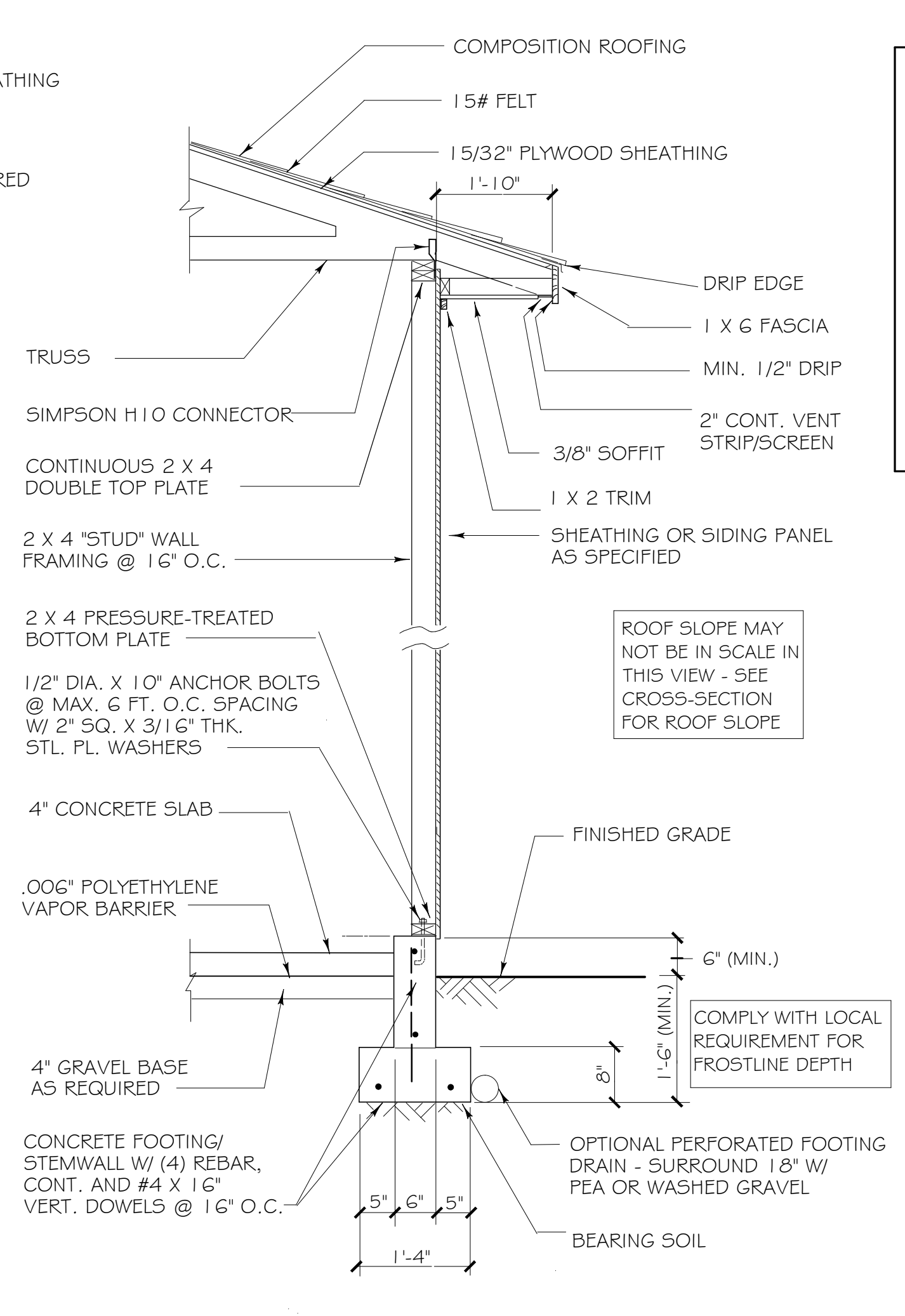
### 2 TYPICAL WALL SECTION @ GABLE

SCALE: 3/4" = 1'-0"



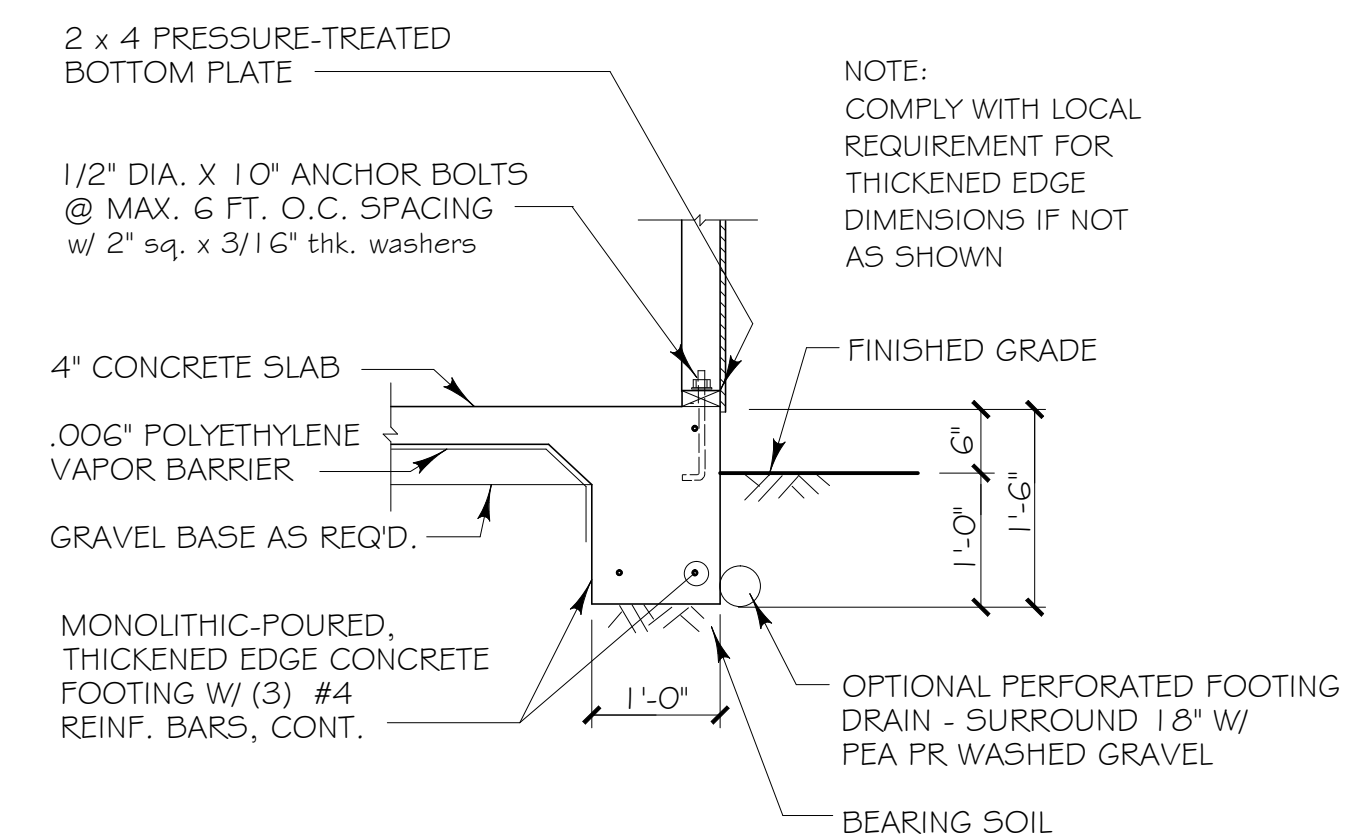
### 4 BLOCK FOUNDATION WALL DETAIL

SCALE: 3/4" = 1'-0"



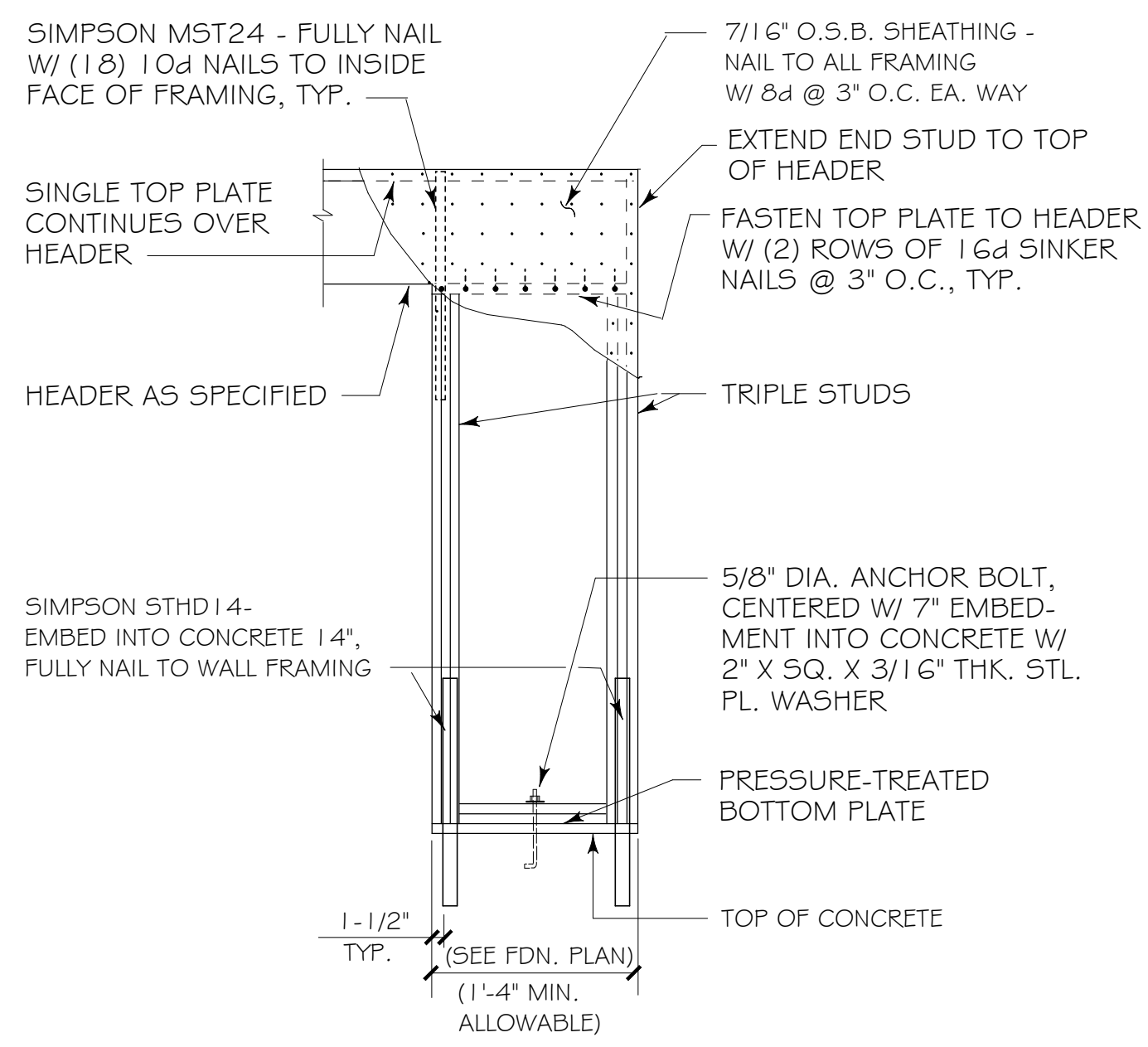
### 1 TYPICAL WALL SECTION @ SOFFIT

SCALE: 3/4" = 1'-0"



### 3 MONOLITHIC FOOTING DETAIL

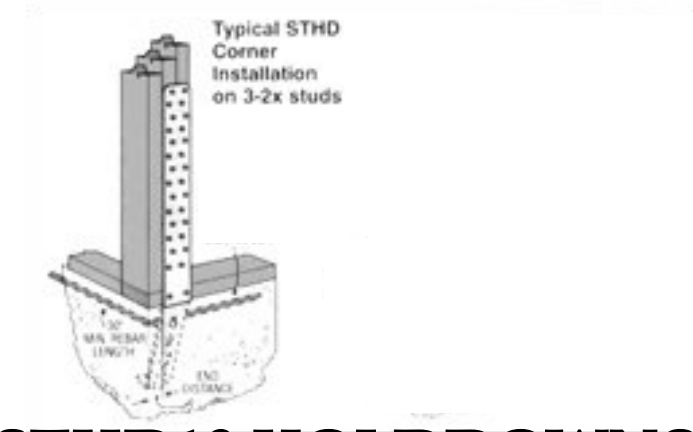
SCALE: 3/4" = 1'-0"



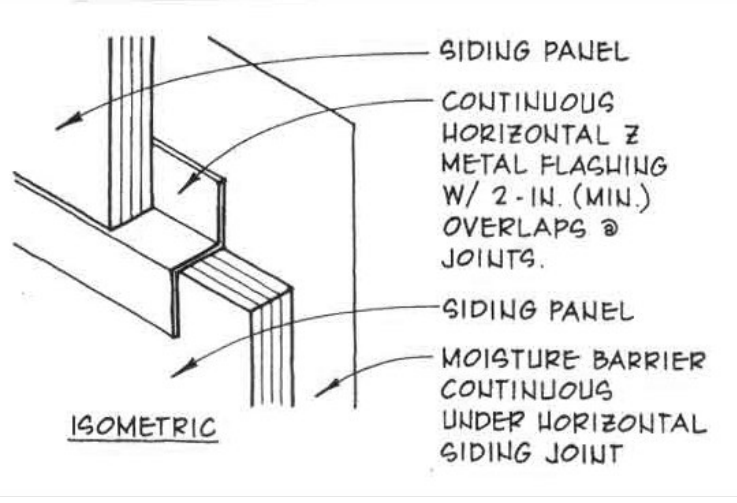
(DOUBLE PORTAL FRAME)  
(mirror detail for other side)

**4 ALTERNATE BRACED WALL PANEL DETAIL**

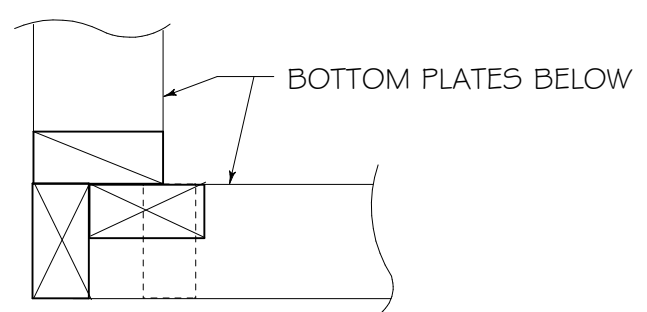
SCALE: 3/4" = 1'-0"



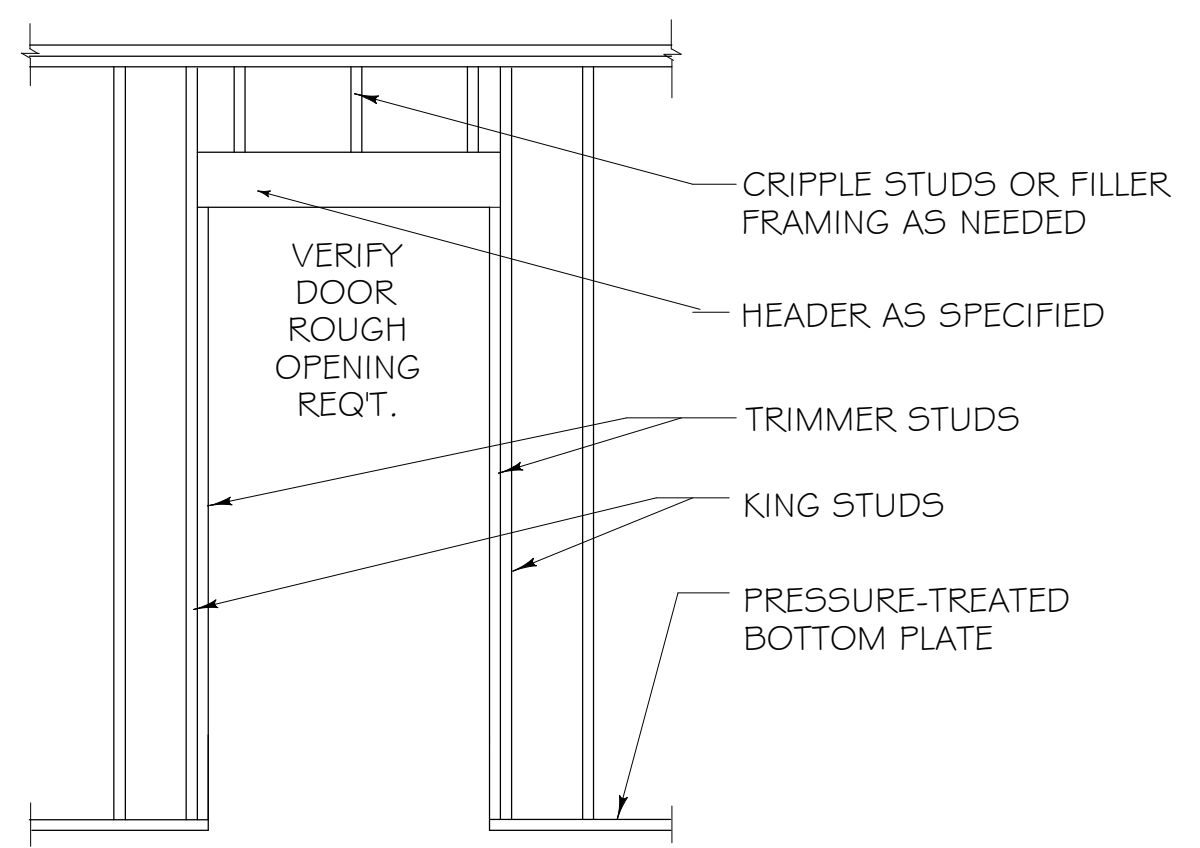
**STHD10 HOLDDOWNS**



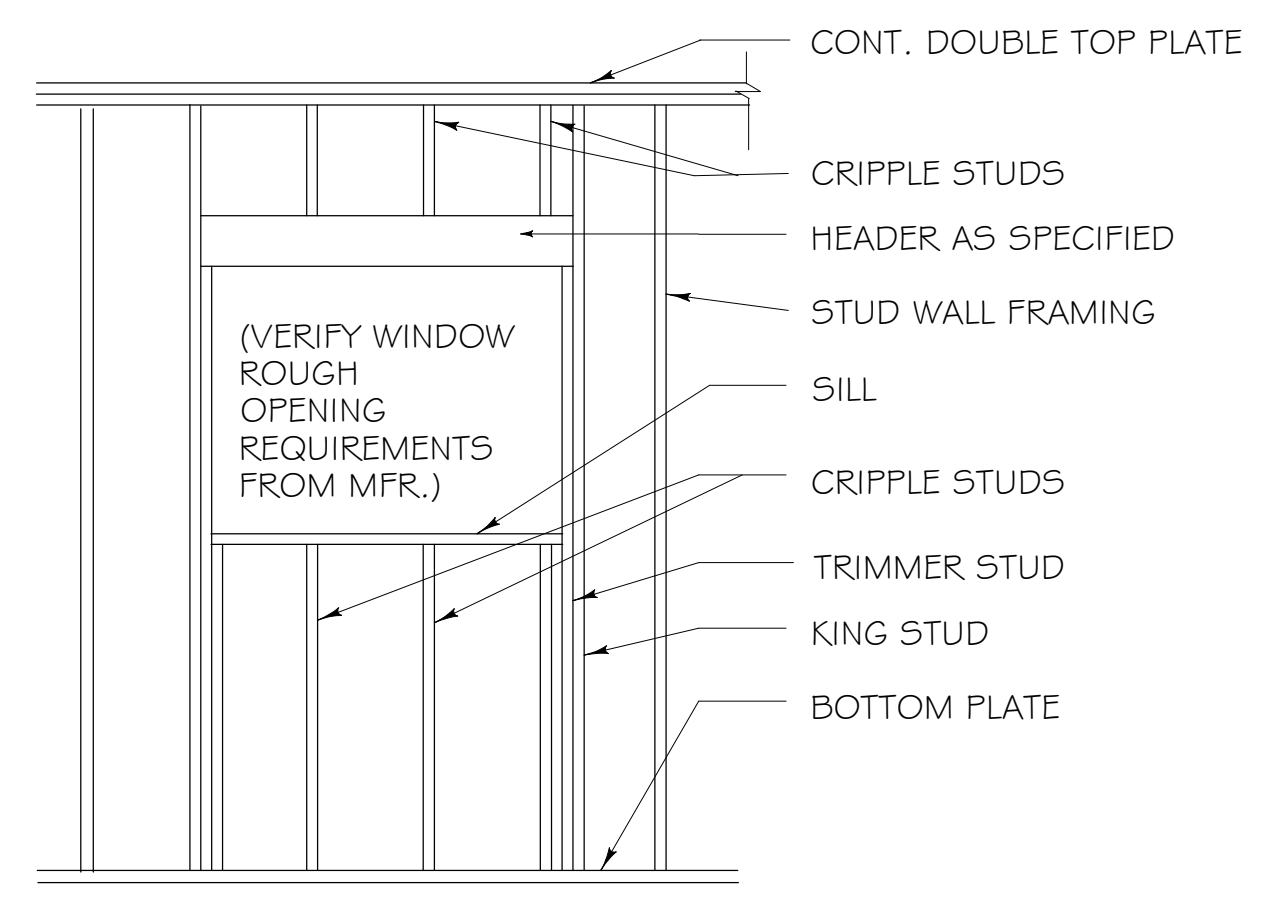
**5 FLASHING DETAIL (ALTERNATE PANEL SIDING ONLY)**



**STUDS @ CORNER (PLAN VIEW)**



**2 DOOR OPENING DETAIL**



**1 WINDOW OPENING DETAIL**



# STRUCTURAL/GENERAL NOTES & SPECIFICATIONS

## A. General

The following notes shall clarify and supplement the working drawings.

## B. Codes & Standards

International Residential Code (IRC) -  
ACI-318; ACI SP-15 / M.B.M.A Manual  
(and comply with all local applicable codes as required by Building Official)

## C. Live Loads

Roof.....30 lbs/sf  
Floors.....40 lbs/sf  
Stairs & Exist ..... 100 lbs/sf  
Wind.....100 mph  
Seismic zone...A, B, C  
Earth Pressure .....30lbs/cf equiv. Fluid pressure

## D. Soil & Foundation Data

- Soil bearing data not available. Assumed soil bearing capacity = 1500 lbs/sf.
- Extend all footings down to undisturbed soil of the specified strength with a minimum depth of 1'-6" below adjacent grade, or as required by local building official, based on local frost line depth.
- Center all footings on columns and walls unless specifically dimensioned otherwise.
- Compacted fill to be well graded and granular with not more than 5% passing a 200 sieve. Place in 8-inch loose lifts and compact to 95% modified AASHO density at optimum moisture.

## E. Cast-In-Place Concrete and Reinforcing Steel

- Concrete of the following 28-day strength: 5 sack cement/cy (min. 2500 psi); max. 6 gal water/sack for all structural concrete, including foundations and slabs on grade. Maximum sized aggregate 3/4". Maximum slump 4". Add Master Builders Pozzoloth per manufacturer's recommendations to all concrete except footings. Concrete for exterior walks to be air entrained (5% air).
- Reinforcing steel ASTM A-615 grade 40/60. Use grade 40 for temperature steel, stirrups and dowels. Detail, fabricate and place in accordance with the latest edition of A.C.I. 'Manual Of Standard Practice'.
- Concrete cover on reinforcing steel (clear dimensions):  
Suspended slabs.....3/4"  
Beams & columns (to ties).....1 1/2"  
Non-exposed vertical faces.....1"  
Vertical faces exposed to earth or weather..2"  
Bottom of footings.....3"  
Slabs-on-grade (from top).....1 1/2"
- Lap all field splices 24 diameters with minimum of 12". Bend outer wall footing bars 12 inches or use corner bars at all corners and wall intersections.
- Provide min. one continuous #4 bar at top and bottom of foundation walls w/ #4 at 12" o.c. where wall height exceed two feet. Provide min. two continuous #4 bars in footings. Dowel foundation walls to footings w/ #4 x 1'-6" long @ 16" o.c. Embedded 6" into footing. (No shear keys required)
- Reinforce around wall and slab openings, with sides of 12" or greater, with two #5 bars extending 24" beyond corners on all four sides. Provide one extra #5 diagonal bar, 4'-0" long, at each corner.
- Slabs-on-grade: Roll sub grade and moisten before pour. Saw cut crack control joints within 24 hours of pour or install Zip-Strip, with maximum of 12'-0" for 4" non-reinforced slabs and 40'-0" for reinforced slabs. (min. reinforcing: w6 x 6 - w1.4 x 1.4, supported)
- Vibrate all concrete. Segregation of materials to be prevented. Test cylinders not required.
- Place no fill against foundation or basement walls until floors are in place or walls have been adequately shored to resist lateral earth pressures.

## F. Masonry (as applicable)

- Hollow masonry units: F'M=1350 (half & half c.m.u.)  
Mortar type S: 1 pc, 1/2 lime putty, 4 sand  
Grout: 2000 psi pea gravel concrete (7 sack)
- Reinforcing steel: ASTM A-615, grade 40.
- Place grout in lifts no greater than 4'-0" height.
- Wall reinforcing:  
.....6" walls: #4 vertical @ 48" o.c. w/ #9 wire horiz. Joint reinf. @ 8" o.c.  
.....8" walls: #5 vertical @ 48" o.c. w/ 3/16" dia. wire horiz. Joint reinf. @ 8" o.c.  
Install two bars in corners, wall intersections, wall endings and around openings. Lap all bars 20 inches and joint reinforcing, 12 inches. Use corner bars for outer bars in bond beams and at intersecting walls.
- Anchor brick veneer to wood framed wall as detailed with 22 ga. X 7/8" x 7" galvanized corrugated wall ties @ 16" o.c. ea. Way with one Simpson n20a nail.

## G. Timber and Wood Framing

- Substitution of wood species identified herein may be as approved by local Building Official and material strength and capacities shall equal or exceed that of the species identified herein.
- All lumber to be graded per book 16 of the West Coast Lumber Inspection Bureau:  
HF/DF no. 2 for joists, rafters, light framing, plates and bracing  
DF no. 1 for posts and beams  
HF/DF "stud" for stud wall framing
- Joists and rafters (lumber) shall have 2" nominal thick solid blocking at supports.
- Comply with the latest edition of the NFPA 'National Design Specification' as modified by the applicable code for all structural timber requirements.
- Spike laminated members together w/ 10d nails @ 12" o.c., staggered. Splice laminations at supports only.
- Provide cut washers for all bolts bearing on wood.
- All nails shall be common wire nails.
- Glue-laminated timbers, Douglas Fir, A.I.T.C. grading: combination 24F-V3 for simple spans: 24F-V8 for cantilevered spans. Dry conditions of use. Architectural appearance grade where exposed to view. Fabrication plant A.I.T.C. inspected./ Wrap individual members.
- Plywood: Roof sheathing to be 15/32" C-D int-apa plywood with exterior glue, P.I. 24/0 (use 5-ply for panelized roofs) Nailing 8d @ 6" o.c. at panel edges and 8d @ 12" o.c. at intermediate supports. Sub-flooring to be 3/4" C-D-apa plywood with exterior glue, P.I. 32/16. Use T&G if no underlayment. Glue and nail with 10d @ 6" o.c. at panel edges and @ 10" at intermediate supports.
- Pre-fabricated trussed members to be designed by applicable state licensed engineer in accordance with requirements shown in the drawings. Contractor shall verify as-framed dimensions and conditions prior to truss fabrication and coordinate as required. All engineering data shall be made available for submittal to the Building Official as required.

## H. Structural Steel

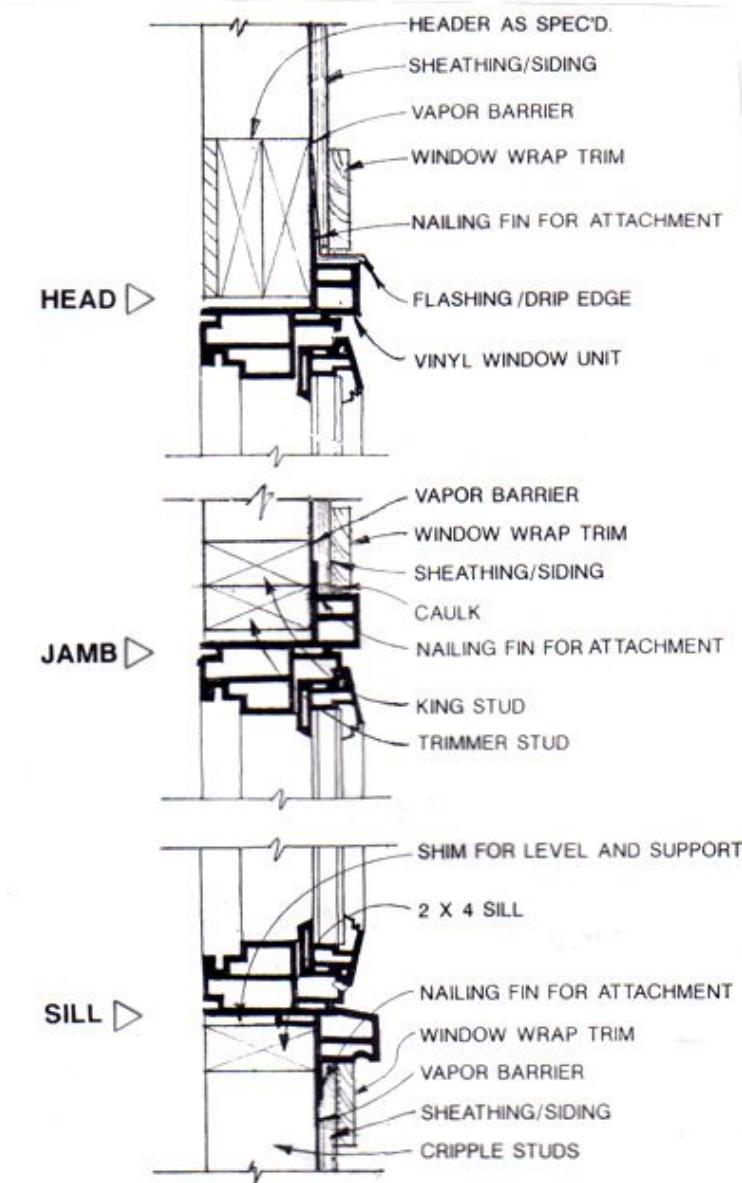
- All steel, except tubing: ASTM A-36. Pipe: ASTM A-53, Type E or S, grade B. Tubular section: ASTM A500, grade B. All bolts: ASTM A-307
- All fabrication, erection and detailing shall be in accordance with the latest edition of the 'Manual Of Steel Construction' of the American Institute Of Steel Construction.
- All welding by WABO certified welders in accordance with the 'Welding Handbook' by the American Welding Society.
- All welds 3/16" min. continuous fillet welds using ASWA5, E70XX electrodes.
- Provide washers on all bolted connections.
- All steel not embedded in concrete or masonry shall receive one shop coat of an approved primer paint. Apply two coats of heavy asphaltic paint to all steel exposed to earth.
- Furnish complete shop drawings prior to fabrication.

## I. Miscellaneous

- Contractor shall verify all site conditions and dimensions in field.
- Provide temporary bracing as required until all permanent connections and stiffening have been installed.
- Verify size and locations of all openings in floor, roof and walls and coordinate with electrical and mechanical work.
- Pre-fabricated items shall be handled and installed in accordance with manufacturers' recommendations. Pre-fabricated

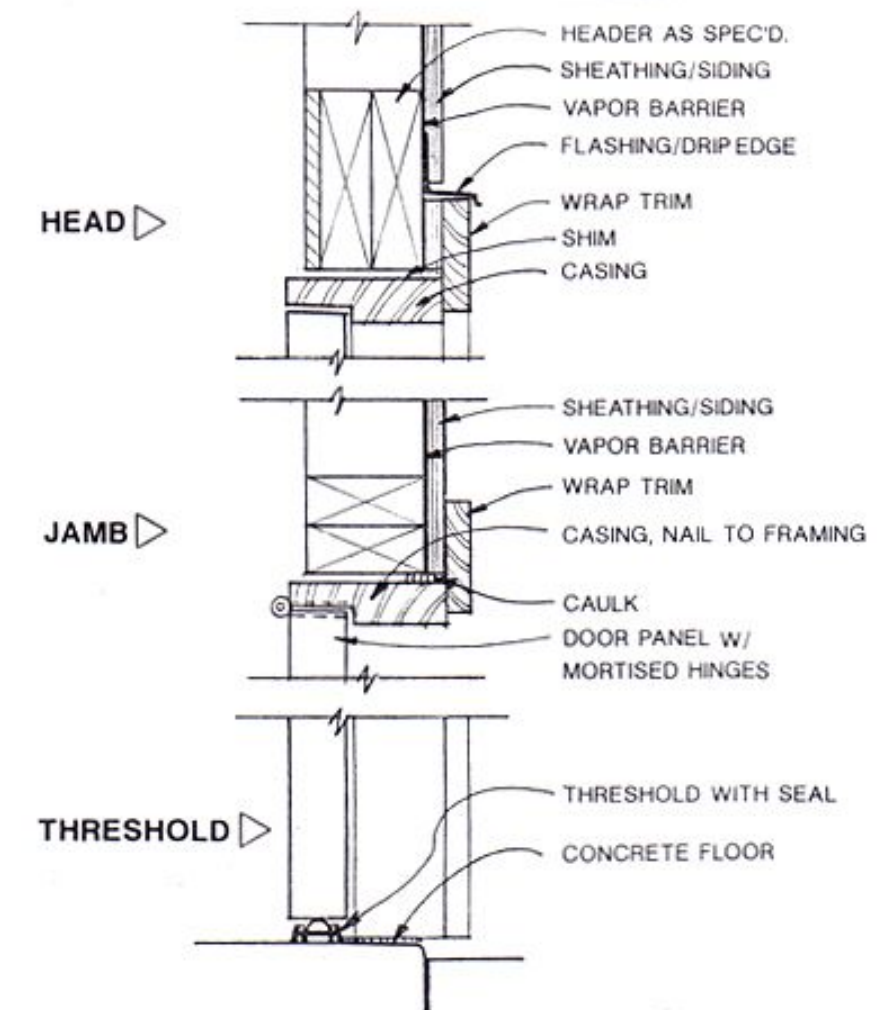
assemblies shall be coordinated with any as-built conditions by the contractor regarding dimensions, clearance and applicable building code requirements.

- All HVAC equipment shall be determined by owner and/or contractor specific to this project and comply with all applicable codes. Performance data and distribution layout shall be provided by mechanical subcontractor. Submittals shall be coordinated by the contractor as required by the Building Official.
- It is the intent of these drawings and specifications to comply with the requirements of the applicable Building Code and all other relevant codes and ordinances. Any discrepancies, omissions or errors shall be brought to the attention of the designer for clarification or correction before beginning the work. It is the responsibility of the general contractor to seek clarification or correction if needed.



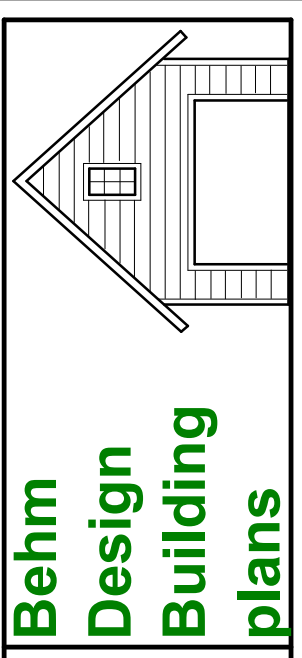
## WINDOW DETAILS

(NOT TO SCALE)



## DOOR DETAILS

(NOT TO SCALE)



QUESTIONS?...CALL  
1-800-210-6776  
www.behmdesign.com

PLAN NO.  
**440-0**

DESIGN BY:  
JJB  
DATE:

SHEET CONTENTS:  
STRUCTURAL/GENERAL NOTES  
WINDOW DETAILS  
DOOR DETAILS

SHEET  
**7**  
OF **8**



# - FASTENING REQUIREMENTS -

**TABLE R602.3(3)**  
**REQUIREMENTS FOR WOOD STRUCTURAL PANEL WALL SHEATHING USED TO RESIST WIND PRESSURES<sup>a,b,c</sup>**

MINIMUM NAIL Size	MINIMUM WOOD STRUCTURAL PANEL SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (inches)	MAXIMUM WALL STUD SPACING (inches)	PANEL NAIL SPACING		MAXIMUM WIND SPEED (mph)			
				Edges (inches o.c.)	Field (inches o.c.)	Wind exposure category			
Penetration (inches)				B	C	D			
6d Common (2.0" x 0.113")	1.5	24/0	3/8	16	6	12	110	90	85
8d Common (2.5" x 0.131")	1.75	24/16	7/16	16	6	12	130	110	105
				24	6	12	110	90	85

For SI: 1 inch = 25.4 mm, 1 mile per hour = 0.447 m/s.  
 a. Panel strength axis parallel or perpendicular to supports. Three-ply plywood sheathing with studs spaced more than 16 inches on center shall be applied with panel strength axis perpendicular to supports.  
 b. Table is based on wind pressures acting toward and away from building surfaces per Section R301.2. Lateral bracing requirements shall be in accordance with Section R602.10.  
 c. Wood Structural Panels with span ratings of Wall-16 or Wall-24 shall be permitted as an alternate to panels with a 24/0 span rating. Plywood siding rated 16 oc or 24 oc shall be permitted as an alternate to panels with a 24/16 span rating. Wall-16 and Plywood siding 16 oc shall be used with studs spaced a maximum of 16 inches on center.

**TABLE R602.3(4)**  
**ALLOWABLE SPANS FOR PARTICLEBOARD WALL SHEATHING<sup>a</sup>**

THICKNESS (inch)	GRADE	STUD SPACING (inches)	
		When siding is nailed to studs	When siding is nailed to sheathing
3/8	M-1 Exterior glue	16	—
1/2	M-2 Exterior glue	16	16

For SI: 1 inch = 25.4 mm.  
 a. Wall sheathing not exposed to the weather. If the panels are applied horizontally, the end joints of the panel shall be offset so that four panels corners will not meet. All panel edges must be supported. Leave a 1/16-inch gap between panels and nail no closer than 1/4 inch from panel edges.

**TABLE R602.3(1)**  
**FASTENER SCHEDULE FOR STRUCTURAL MEMBERS**

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER <sup>a,b,c</sup>	SPACING OF FASTENERS	
			Edges (inches)	Intermediate supports (inches)
<b>Roof</b>				
1	Blocking between joists or rafters to top plate, toe nail	3-8d (2 1/2" x 0.113")	—	—
2	Ceiling joists to plate, toe nail	3-8d (2 1/2" x 0.113")	—	—
3	Ceiling joists not attached to parallel rafter, laps over partitions, face nail	3-10d	—	—
4	Collar tie rafter, face nail or 1 1/4" x 20 gage ridge strap	3-10d (3" x 0.128")	—	—
5	Rafter to plate, toe nail	2-16d (3 1/2" x 0.135")	—	—
6	Roof rafters to ridge, valley or hip rafters: toe nail, face nail	4-16d (3 1/2" x 0.135") 3-16d (3 1/2" x 0.135")	—	—
<b>Wall</b>				
7	Built-up corner studs	10d (3" x 0.128")	24" o.c.	—
8	Built-up header, two pieces with 1/2" spacer	16d (3 1/2" x 0.135")	16" o.c. along each edge	—
9	Continued header, two pieces	16d (3 1/2" x 0.135")	16" o.c. along each edge	—
10	Continuous header to stud, toe nail	4-8d (2 1/2" x 0.113")	—	—
11	Double studs, face nail	10d (3" x 0.128")	24" o.c.	—
12	Double top plates, face nail	10d (3" x 0.128")	24" o.c.	—
13	Double top plates, minimum 48-inch offset of end joints, face nail in lapped area	8-16d (3 1/2" x 0.135")	—	—
14	Sole plate to joist or blocking, face nail	16d (3 1/2" x 0.135")	16" o.c.	—
15	Sole plate to joist or blocking at braced wall panels	3-16d (3 1/2" x 0.135")	16" o.c.	—
16	Stud to sole plate, toe nail	3-8d (2 1/2" x 0.113") or 2-16d (3 1/2" x 0.135")	—	—
17	Top or sole plate to stud, end nail	2-16d (3 1/2" x 0.135")	—	—
18	Top plates, laps at corners and intersections, face nail	2-10d (3" x 0.128")	—	—
19	1" brace to each stud and plate, face nail	2-8d (2 1/2" x 0.113") 2 staples 1 1/4"	—	—
20	1" x 6" sheathing to each bearing, face nail	2-8d (2 1/2" x 0.113") 2 staples 1 1/4"	—	—
21	1" x 8" sheathing to each bearing, face nail	2-8d (2 1/2" x 0.113") 3 staples 1 1/4"	—	—
22	Wider than 1" x 8" sheathing to each bearing, face nail	3-8d (2 1/2" x 0.113") 4 staples 1 1/4"	—	—
<b>Floor</b>				
23	Joist to sill or girder, toe nail	3-8d (2 1/2" x 0.113")	—	—
24	1" x 6" subfloor or less to each joist, face nail	2-8d (2 1/2" x 0.113") 2 staples 1 1/4"	—	—
25	2" subfloor to joist or girder, blind and face nail	2-16d (3 1/2" x 0.135")	—	—
26	Rim joist to top plate, toe nail (roof applications also)	8d (2 1/2" x 0.113")	6" o.c.	—
27	2" planks (plank & beam - floor & roof)	2-16d (3 1/2" x 0.135")	at each bearing	—
28	Built-up girders and beams, 2-inch lumber layers	10d (3" x 0.128")	Nail each layer as follows: 32" o.c. at top and bottom and staggered. Two nails at ends and at each splice.	
29	Ledger strip supporting joists or rafters	3-16d (3 1/2" x 0.135")	At each joist or rafter	

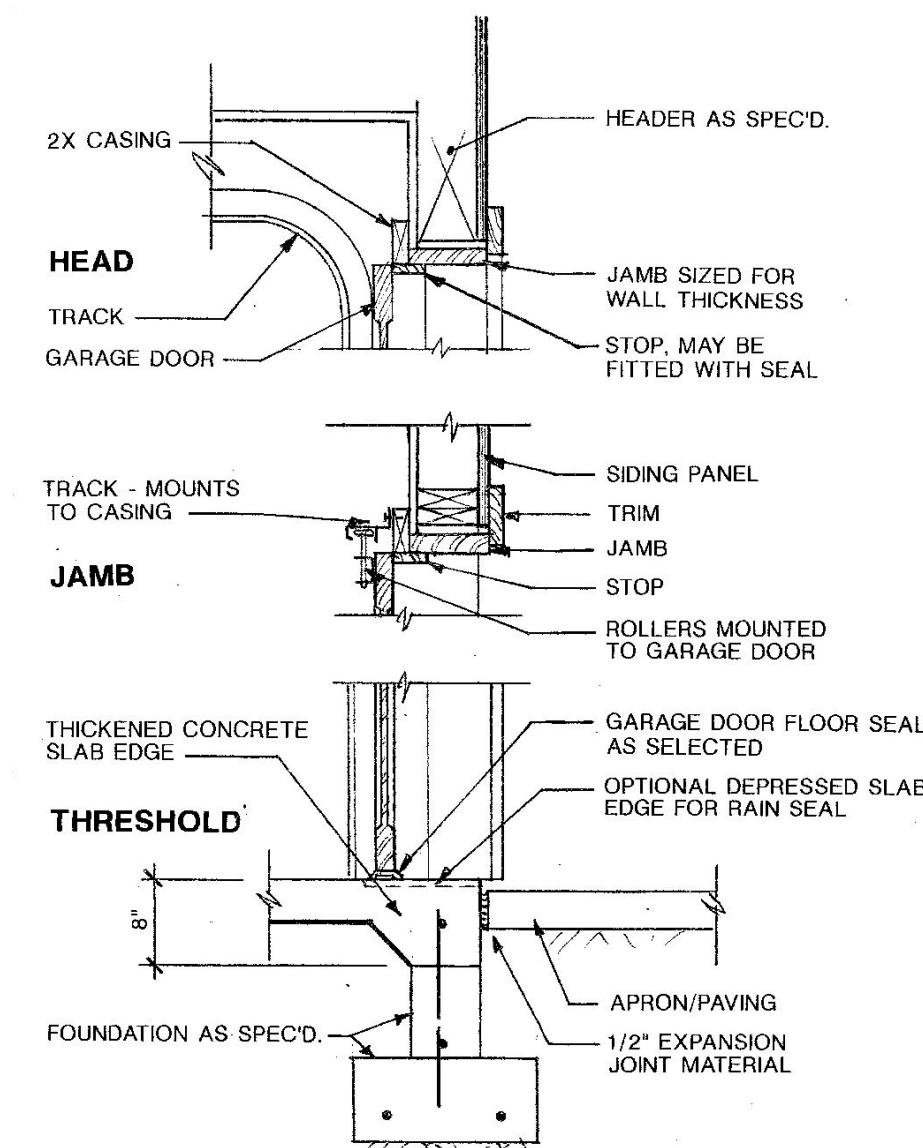
ITEM	DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER <sup>a,b,c</sup>	SPACING OF FASTENERS	
			Edges (inches)	Intermediate supports (inches)
<b>Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing</b>				
30	3/8" - 1/2"	6d common (2" x 0.113") nail (subfloor wall) 8d common (2 1/2" x 0.131") nail (roof)	6	12 <sup>e</sup>
31	5/16" - 1/2"	6d common (2" x 0.113") nail (subfloor, wall) 8d common (2 1/2" x 0.131") nail (roof) <sup>f</sup>	6	12 <sup>e</sup>
32	19/32" - 1"	8d common nail (2 1/2" x 0.131")	6	12 <sup>e</sup>
33	1 1/8" - 1 1/4"	10d common (3" x 0.148") nail or 8d (2 1/2" x 0.131") deformed nail	6	12
<b>Other wall sheathing<sup>b</sup></b>				
34	1/2" structural cellulosic fiberboard sheathing	1/2" galvanized roofing nail, 7/16" crown or 1" crown staple 16 ga., 1 1/4" long	3	6
35	25/32" structural cellulosic fiberboard sheathing	1 3/4" galvanized roofing nail, 7/16" crown or 1" crown staple 16 ga., 1 1/2" long	3	6
36	1/2" gypsum sheathing <sup>d</sup>	1 1/2" galvanized roofing nail; staple galvanized, 1 1/2" long; 1 1/4" screws, Type W or S	7	7
37	5/8" gypsum sheathing <sup>d</sup>	1 3/4" galvanized roofing nail; staple galvanized, 1 3/4" long; 1 3/8" screws, Type W or S	7	7
<b>Wood structural panels, combination subfloor underlayment to framing</b>				
38	3/4" and less	6d deformed (2" x 0.120") nail or 8d common (2 1/2" x 0.131") nail	6	12
39	7/8" - 1"	8d common (2 1/2" x 0.131") nail or 8d deformed (2 1/2" x 0.120") nail	6	12
40	1 1/8" - 1 1/4"	10d common (3" x 0.148") nail or 8d deformed (2 1/2" x 0.120") nail	6	12

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 0.447 m/s; 1ksi = 6.895 MPa.  
 a. All nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.  
 b. Staples are 16 gage wire and have a minimum 7/16-inch on diameter crown width.  
 c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.  
 d. Four-foot-by-8-foot or 4-foot-by-9-foot panels shall be applied vertically.  
 e. Spacing of fasteners not included in this table shall be based on Table R602.3(2).  
 f. For regions having basic wind speed of 110 mph or greater, 8d deformed (2 1/2" x 0.120) nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet, up to 35 feet maximum.  
 g. For regions having basic wind speed of 100 mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6 inches on center. When basic wind speed is greater than 100 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall framing.  
 h. Gypsum sheathing shall conform to ASTM C 1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C 208.  
 i. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at all floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.

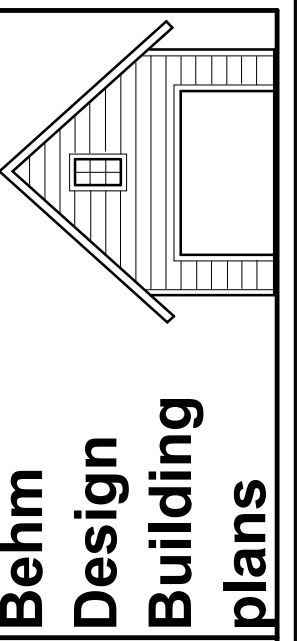
**TABLE R602.3(2)**  
**ALTERNATE ATTACHMENTS**

NOMINAL MATERIAL THICKNESS (inches)	DESCRIPTION <sup>a,b</sup> OF FASTENER AND LENGTH (inches)	SPACING OF FASTENERS	
		Edges (inches)	Intermediate supports (inches)
<b>Wood structural panels subfloor, roof and wall sheathing to framing and particleboard wall sheathing to framing<sup>f</sup></b>			
up to 1/2	Staple 15 ga. 1 1/4"	4	8
	0.097 - 0.099 Nail 2 1/4"	3	6
	Staple 16 ga. 1 1/4"	3	6
	0.113 Nail 2"	3	6
19/32 and 5/8	Staple 15 and 16 ga. 2"	4	8
	0.097 - 0.099 Nail 2 1/4"	4	8
23/32 and 3/4	Staple 14 ga. 2"	4	8
	Staple 15 ga. 1 1/4"	3	6
	0.097 - 0.099 Nail 2 1/4"	4	8
	Staple 16 ga. 2"	4	8
1	Staple 14 ga. 2 1/4"	4	8
	0.113 Nail 2 1/4"	3	6
	Staple 15 ga. 2 1/4"	4	8
	0.097 - 0.099 Nail 2 1/2"	4	8
<b>SPACING OF FASTENERS</b>			
<b>Floor underlayment; plywood-hardboard-particleboard<sup>d</sup></b>			
<b>Plywood</b>			
1/4 and 5/16	1 1/4 ring or screw shank nail—minimum 12 1/2 ga. (0.099") shank diameter	3	6
	Staple 18 ga., 7/8, 3/16 crown width	2	5
11/32, 3/8, 15/32, and 1/2	1 1/4 ring or screw shank nail—minimum 12 1/2 ga. (0.099") shank diameter	6	8 <sup>e</sup>
19/32, 5/8, 23/32 and 3/4	1 1/2 ring or screw shank nail—minimum 12 1/2 ga. (0.099") shank diameter	6	8
	Staple 16 ga. 1 1/2"	6	8
<b>Hardboard<sup>d</sup></b>			
0.200	1 1/2 long ring-grooved underlayment nail	6	6
	4d cement-coated sinker nail	6	6
	Staple 18 ga., 7/8 long (plastic coated)	3	6
<b>Particleboard</b>			
1/4	4d ring-grooved underlayment nail	3	6
	Staple 18 ga., 7/8 long, 3/16 crown	3	6
3/8	6d ring-grooved underlayment nail	6	10
	Staple 16 ga., 1 1/8 long, 3/8 crown	3	6
1/2, 3/4	6d ring-grooved underlayment nail	6	10
	Staple 16 ga., 1 1/4 long, 7/8 crown	3	6

For SI: 1 inch = 25.4 mm.  
 a. Nail is a general description and may be T-head, modified round head or round head.  
 b. Staples shall have a minimum crown width of 7/16-inch on diameter except as noted.  
 c. Nails or staples shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater. Nails or staples shall be spaced at not more than 12 inches on center at intermediate supports for floors.  
 d. Fasteners shall be placed in a grid pattern throughout the body of the panel.  
 e. For 5-ply panels, intermediate nails shall be spaced not more than 12 inches on center each way.  
 f. Hardboard underlayment shall conform to ANSI/AHA A135.4.



## 1 GARAGE DOOR DETAILS



QUESTIONS?...CALL  
1-800-210-6776  
www.behmdesign.com

440-0

PLAN NO.

DESIGN BY:  
JUB  
DATE: 04/11

SHEET CONTENTS:  
CODE REQUIREMENTS FOR FASTENERS AND SHEATHING  
GARAGE DOOR DETAILS

SHEET  
**8**  
OF  
**8**



2 Car Garage slab

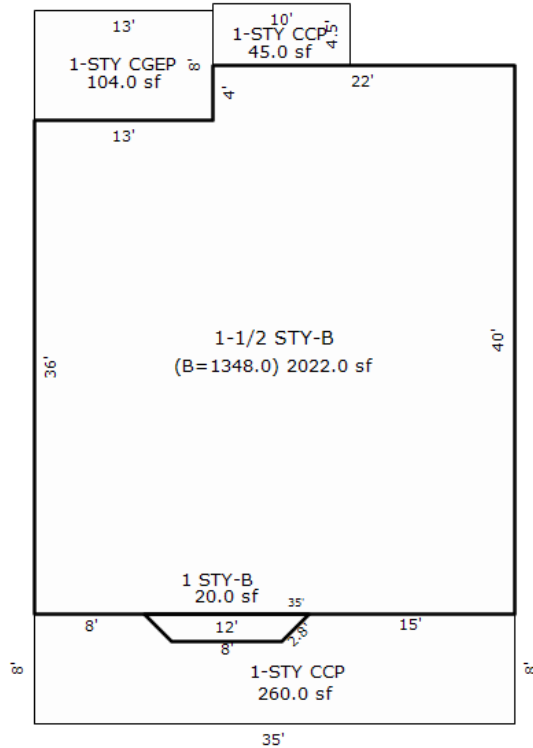
20'

22'

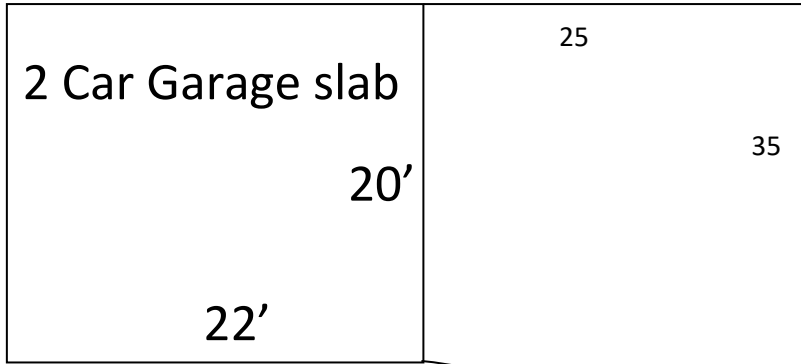
Notes:

New Garage Slab, New driveway

The Driveway and garage slab will be replaced to match the original design and size of the existing, but damaged driveway and garage slab. We have made efforts to exactly duplicate the original historical design.



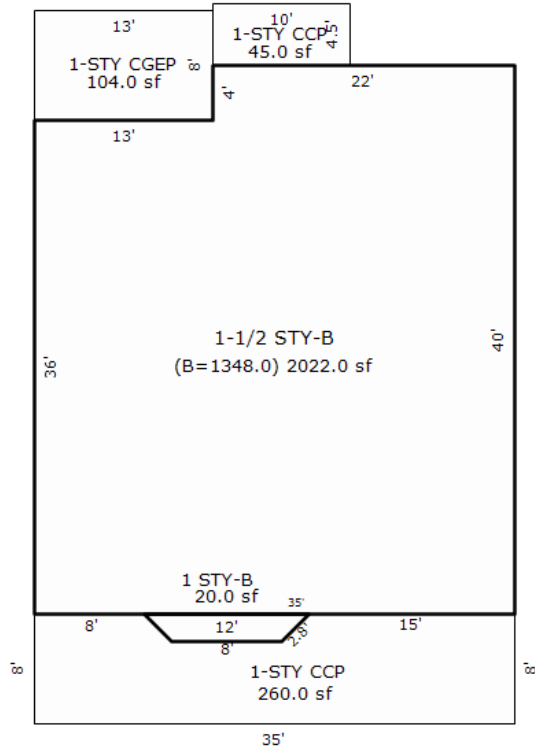
Sidewalk



Notes:

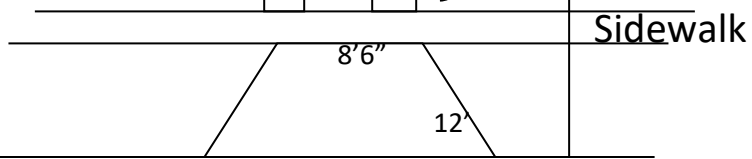
New Garage Slab, New driveway

The Driveway and garage slab will be replaced to match the original design and size of the existing, but damaged driveway and garage slab. We have made efforts to exactly duplicate the original historical design.



150 ft

Each strip of concrete is 24in



Sidewalk

13'