

Spec Home (for Mike Todd)

Wind Load Analysis Requirements

Lot 4, Addition 6, Forest County Subdivision, Columbia County, Florida

(In Compliance with the 2020 Florida Building Code)

Prepared By: Marty J. Humphries, P.E. # 51976
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Description of Residence:

Footprint: 66' wide by 64' deep overall with small front covered entry and 24'8" w x 10' rear porch and two car garage on front right of home (see plan 1134 B by Mike Todd)

Walls: 2x4 SPF stud wall with studs 16" O.C. with 7/16" OSB sheathing, house-wrap and hardiboard lap siding.

Roof Structure: Pre-engineered roof trusses at 2' on center and 15/32" OSB or CDX plywood sheathing

Roof Type: Hip roof primarily with two small gables at front of home (analyzed for 2' eaves and porches)

Foundation: Stem-wall (See Attached Details)

Windload Data and Exposure:

Basic Wind Speed = 120 mph

Importance Factor = 1.0

Exposure category = B

Height and Exposure Adjustment Coefficient = 1.0

Residential Occupancy = Group R3

Mean roof height = 17'

Roof Cross Slope = 7:12

Eave Overhang= (Analyzed for 2' eaves and porch areas)

Wall Height = 9'

Shear Wall locations = exterior walls (all walls 3' in length or greater)

Component and Cladding Pressures = Roof (Zone 1=11.1,-22.1, Zone 2=11.1,-33.3, Zone 3=11.1,-35.6), Wall (Zone 4=15.5,-16.9, Zone 5=15.5,-20.8) (units are psf)



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Nailing Pattern Requirements:

- Wall sheathing: Shall be 7/16" Oriented Strand Board(OSB) nailed with 8d common nails 4" on center around edges(including around doors and windows) and 6" on center interior. Full-depth blocking shall be installed at horizontal joints in sheathing.
- Roof sheathing: Shall be 15/32" OSB or 15/32" CDX plywood sheathing nailed with 8d ring-shank nails 6" on center including overhang areas.
- Top wall plate: Nail with 2-12d common nails 16" O.C. (average)

Strapping and Anchor Requirements:

- truss to exterior wall plate, interior load-bearing plate, and porch beam locations: Install Simpson model H10A hurricane anchor each truss to bearing location. Install Simpson HCP and H3 for hip trusses and Simpson H2.5A for jack trusses under 10' in length. For double ply trusses install Simpson H10A-2 and one Simpson H3 clip.
- wall strap tie requirements: 2x4 exterior walls – at each door or window 4' or less in width install one Simpson model SP4 at each side - top and bottom of the wall. For each door or window over 4' in width install two Simpson model SP4's at each side - top and bottom of the wall. For garage door install 3 Simpson SPH4's each side top and bottom of the wall. For interior load bearing walls install Simpson SP4 top and bottom of the wall 32" on center and each side of door openings. All other exterior wall locations install 1-SP4 top and bottom of wall 48" on center.
- Porch 4x4 or 6x6 PT columns: Install Simpson ABU44/ABU66 anchor at the base and two Simpson LSTA12's at top.
- Front Porch Header to Home Connection: Install Simpson HUC48 hanger
- Rear Porch Header to Home Connection: Install Simpson HUCQ412 hanger, connect with Simpson 1/4" x 2 1/2" screws.

Porch Ceilings :

Install 1x4 lathes 16" on center and nail with 2-8d nails at each truss and install solid metal or solid vinyl soffit material.

Foundation Requirements:

- Stemwall: Minimum size of footer shall be 10" x 20" wide with 2-#5 rebar continuous and 1-#5 vertical rebar 48" on center. All cells shall be filled with concrete. 5/8" by 10" anchor bolts with 2" plate washers shall be installed 3' on center, each side of doors, and 9" from corners. (3000 psi concrete min.) Porch stemwall footer may be reduced to 16" in width. (See additional details for brick veneer locations)

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Header Requirements:

Windows & Doors: For windows or doors 4' or less in width - Header shall be 2 - #2 SYP 2x10's with 15/32" OSB or CDX plywood between nailed with 4-12d nails 10" on-center. For windows or doors greater than 4' in width - header shall be 2 - #2 SYP 2x12's with 15/32" OSB or CDX plywood between nailed with 4-12d nails 10" on-center. For garage door opening header shall be 2 - 1.75" x 14" LVL's (Fb=2250 min., 1.5E min.) nailed with 4-12d nails 10" on center.

Porch Headers: For front porch, header shall be 2- #2 SYP 2x8's with 15/32" OSB or CDX plywood between nailed with 4-12d nails 10" on-center (9' col. spacing max.)
For rear porch, header shall be 2 - #2 SYP 2x12's with 15/32" OSB or CDX plywood between nailed with 4-12d nails 10" on-center.

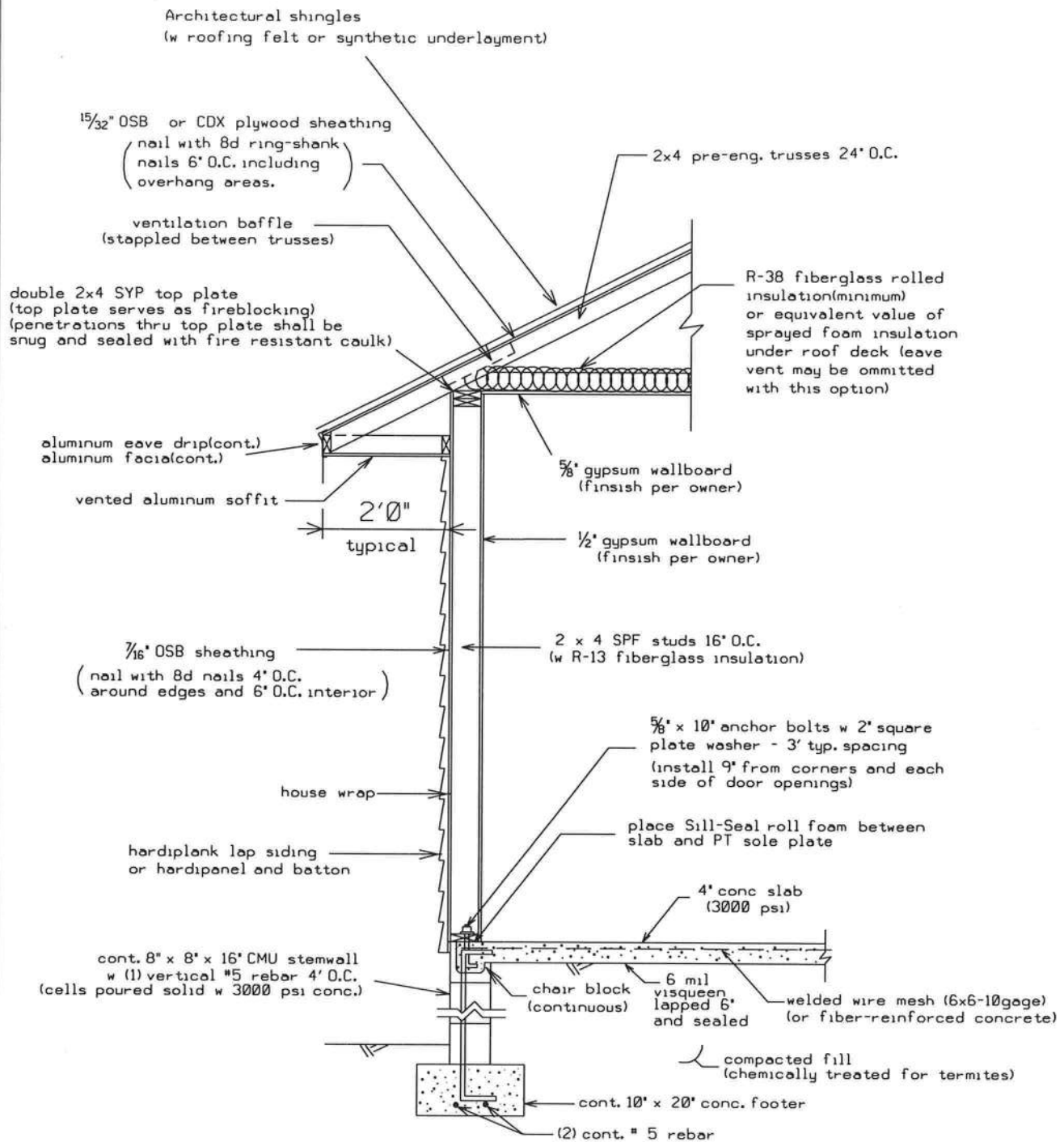
Gable Bracing and Strapping Requirements:

(See Attached Detail)

Note: Equivalent capacity anchors may be substituted, installed in accordance with the manufacturers requirements.



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WALL TYPICAL (N.T.S.)

Note: see sheets 1, 2 & 3 for additional requirements

Note: see detail for brick veneer locations

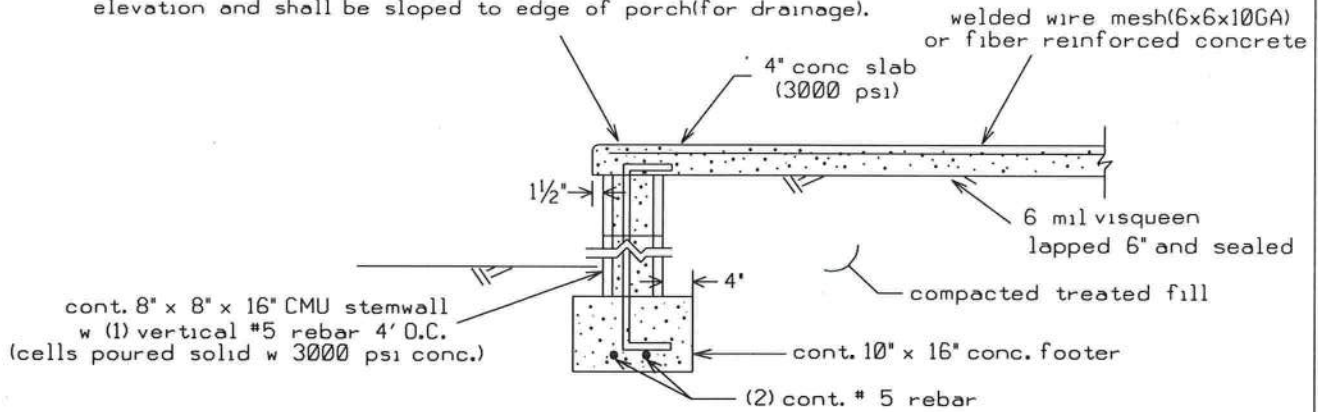
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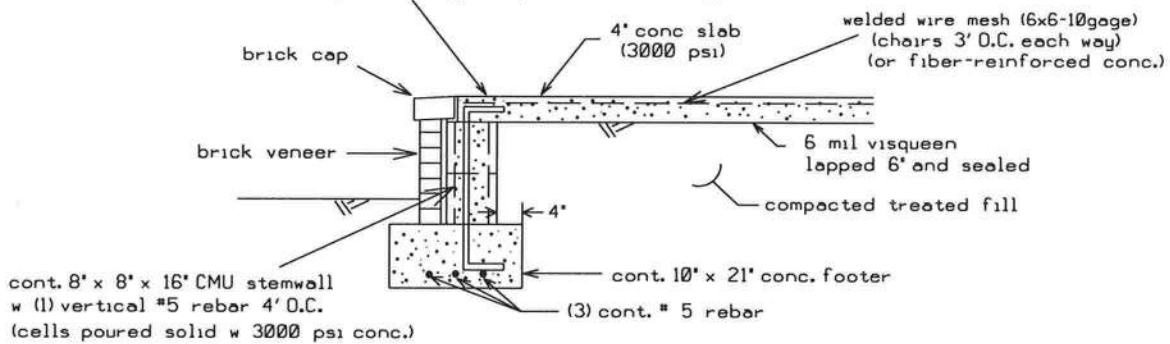
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Porch shall be dropped 3' below finished interior slab elevation and shall be sloped to edge of porch (for drainage).

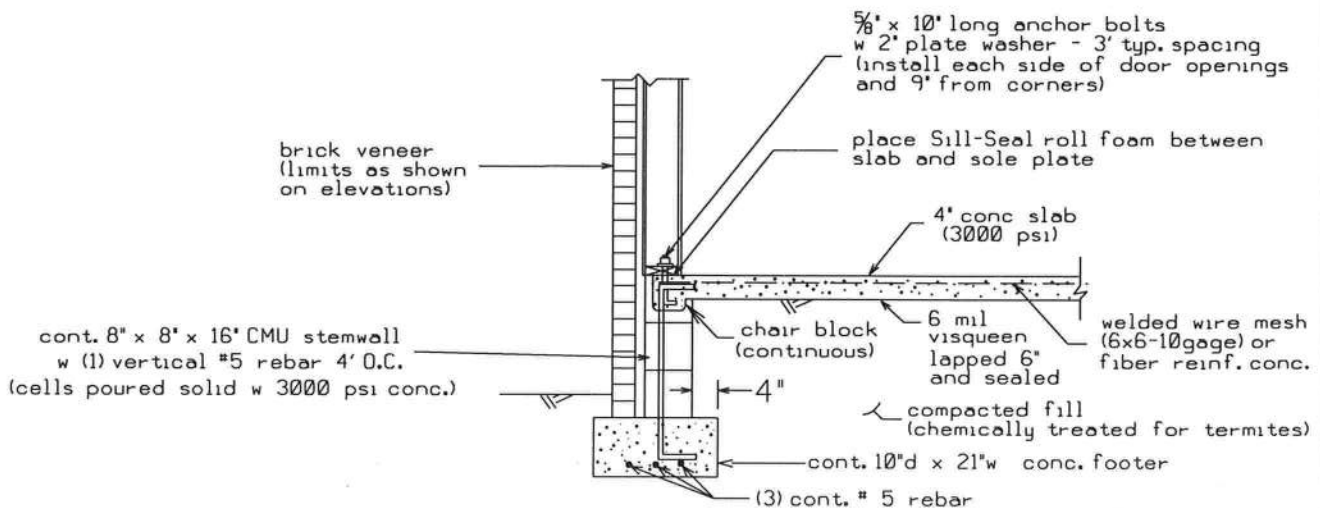


PORCH FOUNDATION (N.T.S.)

Porch shall be dropped 3' below finished interior slab elevation and shall be sloped to edge of porch (for drainage).



PORCH FOUNDATION AT BRICK VENEER LOCATIONS (N.T.S.)



WALL FOUNDATION AT AY BRICK VENEER LOCATIONS (N.T.S.)

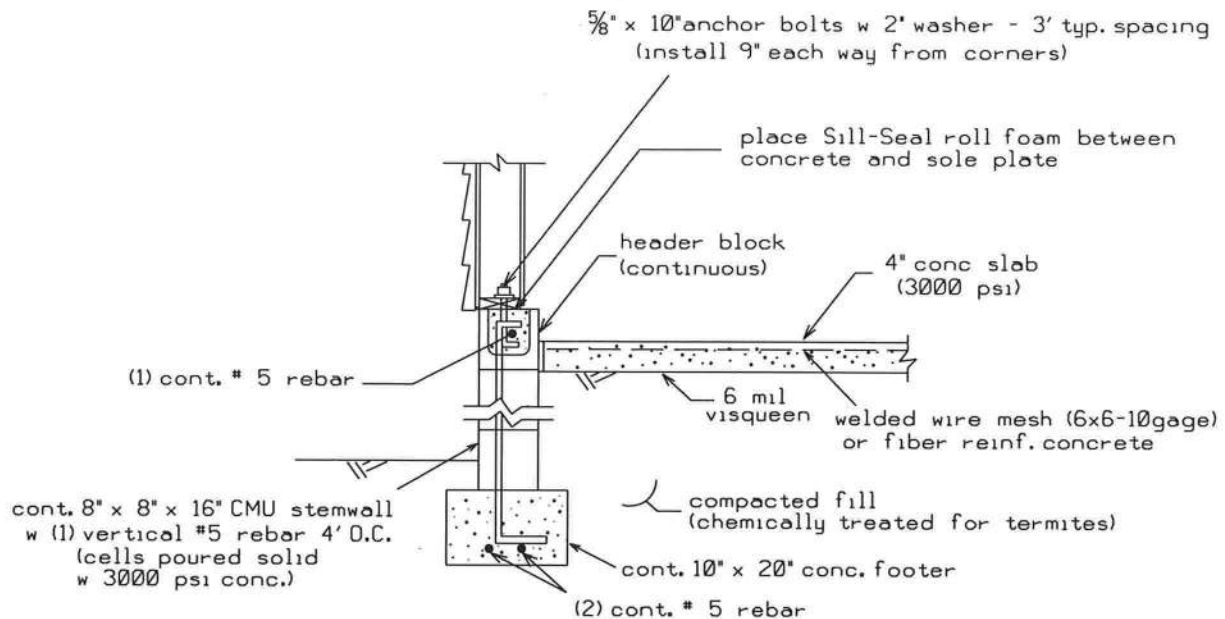
Note: see sheets 1, 2 & 3 for additional requirements

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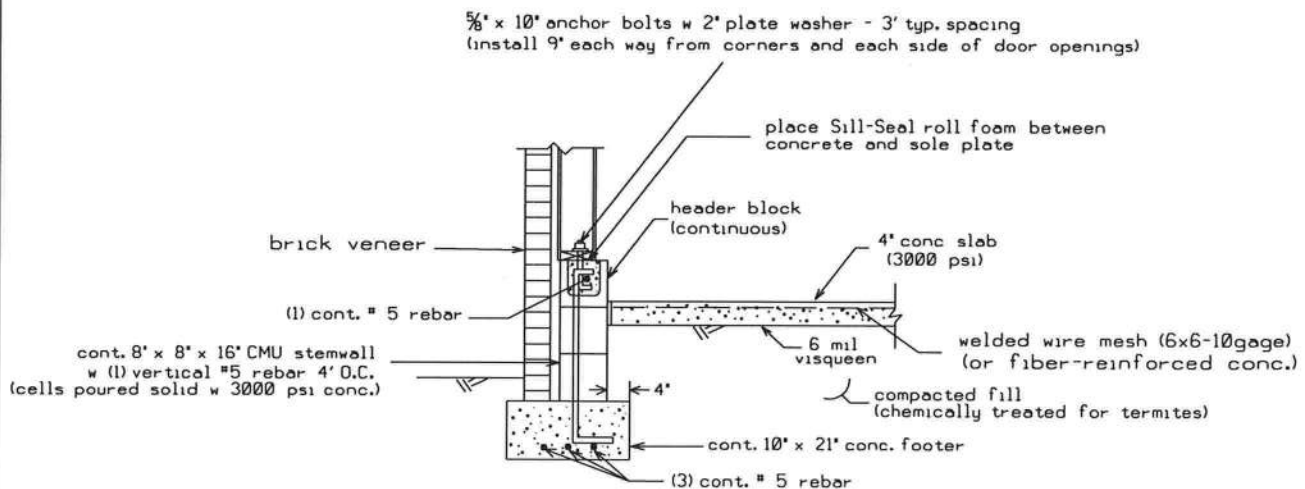
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GARAGE STEMWALL WITH FLOATING SLAB(N.T.S.)



GARAGE STEMWALL WITH FLOATING SLAB AT BRICK VENEER LOCATIONS (N.T.S.)

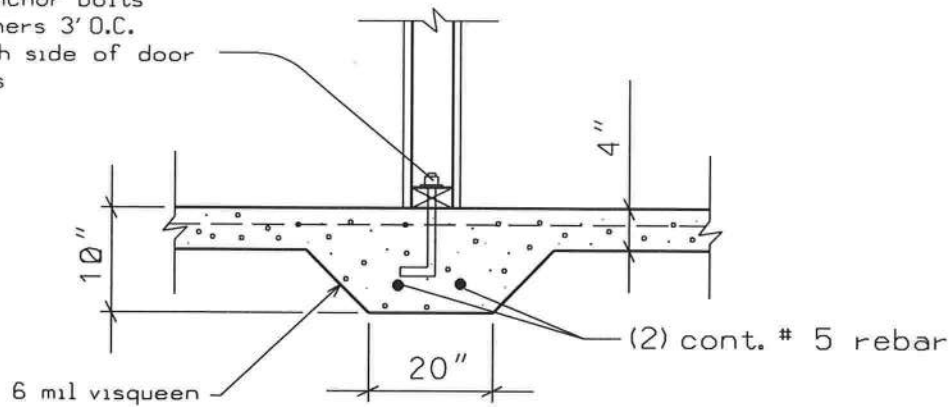
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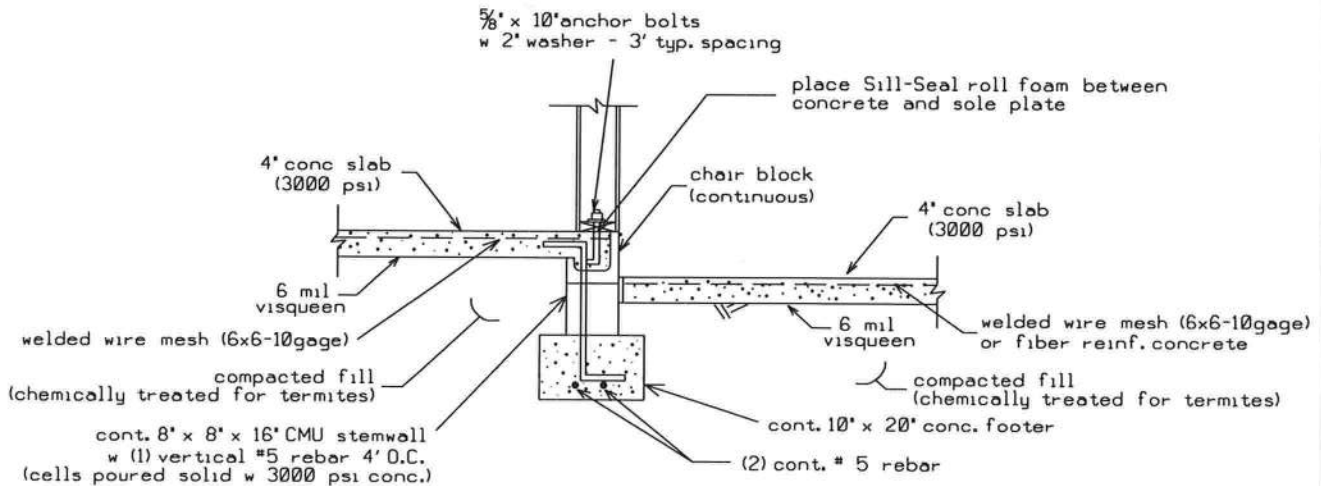
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$\frac{5}{8}$ " x 10" anchor bolts
w 2" washers 3' O.C.
and each side of door
openings



INTERIOR MONOLITHIC FOOTER (N.T.S.) (located as required by Truss Package)



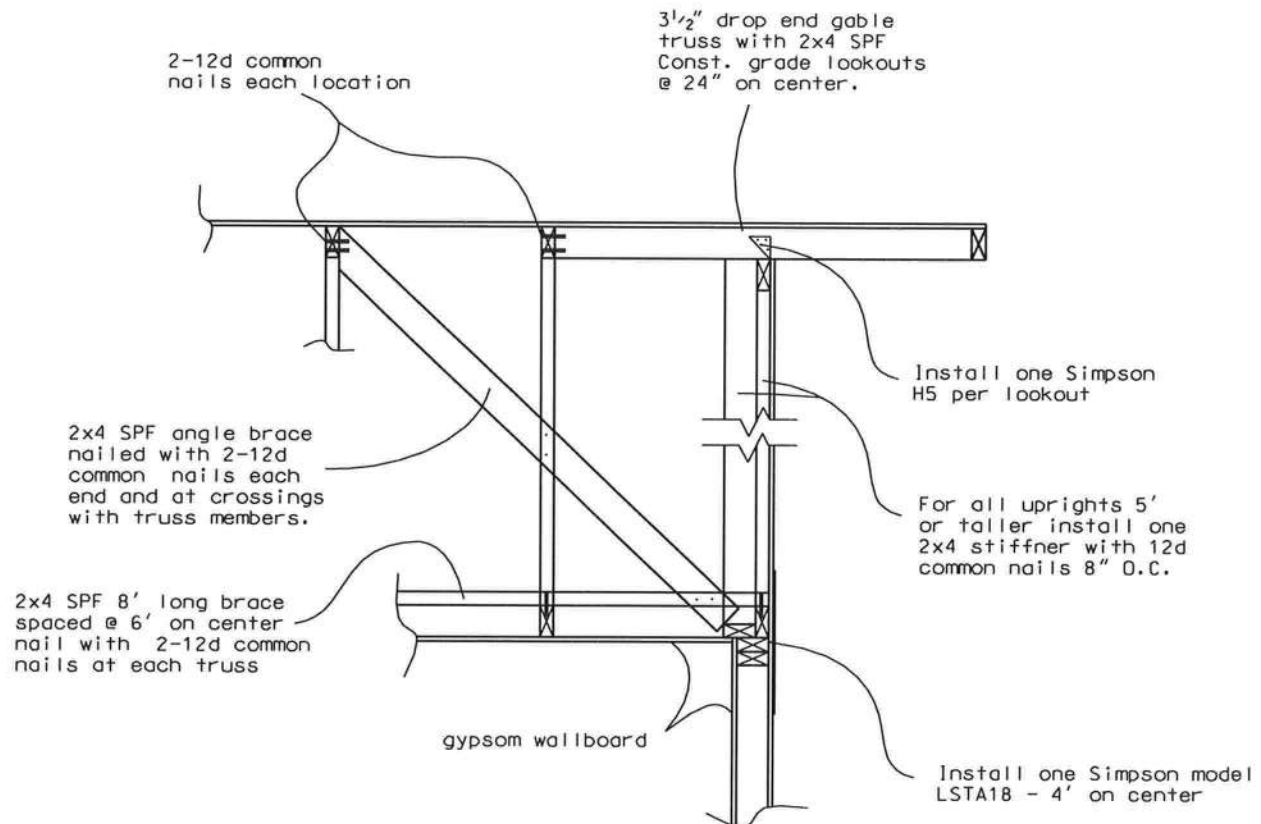
INTERIOR GARAGE STEMWALL WITH FLOATING SLAB (N.T.S.)

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GABLE END BRACING DETAIL (N.T.S.)

NOTE: Gable end trusses shall be dropped 3 1/2" for construction of lookouts & overhang.

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