

## ATTICS

1. Attics spaces having 30" or greater vertical clear height require a minimum 22" X 30" attic access. Sec. 807.1.
2. Enclosed attics and enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters shall have cross ventilation for each separate space by ventilating openings protected against the entrance of rain or snow. The net free ventilating area shall be 1/150 of the area of the space or 1/300, provided at least 50% and not more than 80% of the required vents are in the upper portion of the area at least 3' above eave or cornice vents with the balance provided by eave or cornice vents of the ventilation may be 1/300 if a 1 perm vapor barrier is installed on the warm side of the ceiling. Sec. 806.2.

## BATHROOMS

1. The center line of water closet shall be not less than 15" from adjacent walls/partitions or 12" from a tub. A minimum 21" clearance is required in front of water closets. Sec 307.2
2. Shower compartments shall have at least 1,024 sq. in. of floor area and be of sufficient size to encompass a circle with a diameter not less than 30". Sec 3209.
3. The wall area above built-in tubs having shower heads and in shower compartments shall be finished with a smooth, hard and non-absorbent surface to a height of not less than 6' above the floor. If gypsum board is used as a base or backer board for adhesive application of tile or similar material, it shall be a type manufactured for that use. Sec 702.4 & 702.4.2
4. Bathrooms and water closets rooms shall be provided with glazing not less than 3 sq. ft., 1/2 of which must be operable, or a mechanical ventilation system. Ventilation shall be either intermittent---50cfm or continuous 20cfm. For rooms larger than 75 sq.ft., the intermittent ventilation shall provide 5 air changes per hour. Ventilation shall be exhausted directly to the outside.

BRACE WALL PANELS <sup>1</sup>			
Construction Method <sup>2,3</sup>			
Seismic Zone	Condition	1---2---3---4---5---6---7---8	Brace Panel and Length <sup>4</sup>
0, 1 and 2A	One story, top of two or three story.	x---x---x---x---x---x---x---x	Each end and not more than 25 feet on center.
	First story of two story or second story of three story	x---x---x---x---x---x---x---x	
	First story of three story	x---x---x---x <sup>5</sup> ---x---x---x---x	
2B, 3 and 4	One story , top of two story or three story	x---x---x---x---x---x <sup>6</sup> ---x---x	Each end and not more than 25 feet on center
	First story of two story or second of three story	x---x---x---x <sup>5</sup> ---x---x <sup>6</sup> ---x---x	Each end and not more than 25 feet on center but not less than 25% of building length <sup>7</sup>
	First story of three story	x---x---x---x <sup>5</sup> ---x---x <sup>6</sup> ---x---x	Each end and not more than 25 feet on center but not less than 40% of building length <sup>7</sup>

1--This table specifies min. requirements for braced panels which form interior or exterior braced wall lines.

2-- See Section 602.10 for full details on wall bracing.

3-- See Section 602.10.1.4 for alternate brace panel requirement.

4-- Building length is the dimension parallel to the braced wall length.

5-- Gypsum wallboard applied to support at 16 inches on center.

6-- For bracing cripple walls see Section 602.9 & 602.9.1.

7-- The required lengths shall be doubled for gypsum board applied to only one face of a braced wall panel.

Cut Plate Tied with 24 gage steel angle or equivalent

Offset joists 48" or use splice plates (See Section 602.3.3)

FIREBLOCK AROUND PIPE

SINGLE OR DOUBLE TOP PLATE

WALL STUDS See Section 602.3

Header—See Table 602.7

JACK STUDS OR TRIMMERS

BOTTOM PLATE

SOLID BLOCKING

SUBFLOOR

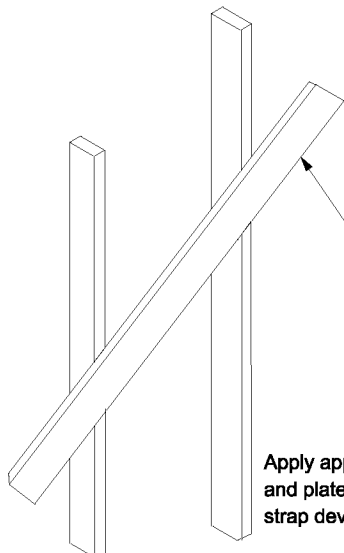
FLOOR JOISTS

FOUNDATION CRIPPLE WALL SEE Section 602.9

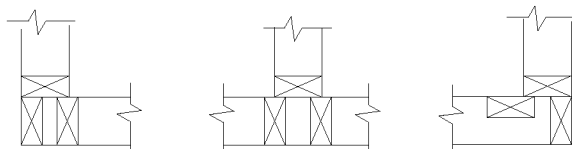
SILL PLATE

FOUNDATION WALL STUDS

Anchor Bolts Embedded in Foundation 6'-0" O.C. Max. (See Local Code Req)



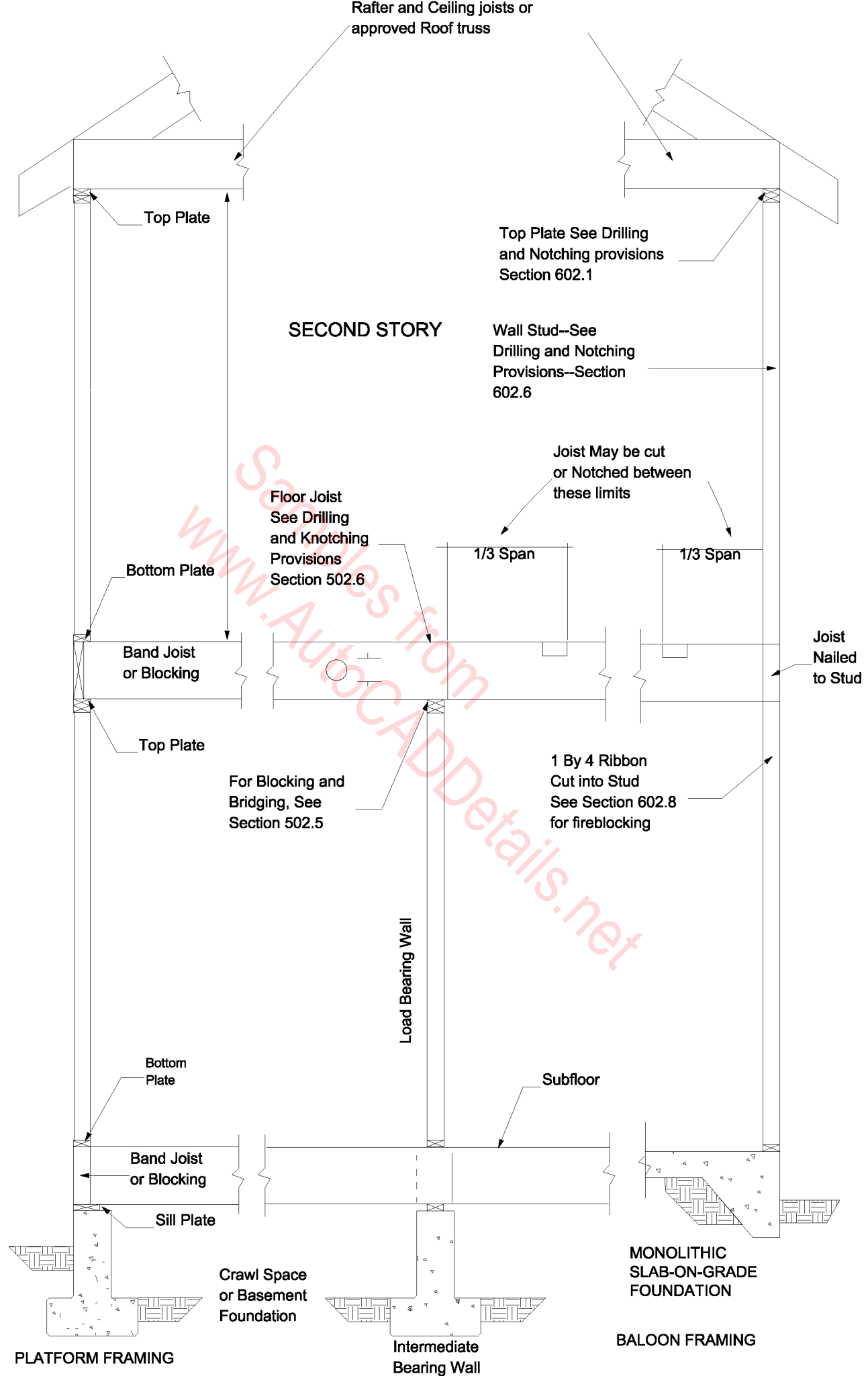
1" By 4" Diagonal Brace let In Studs



NOTE: A Third stud and/or partition intersection backing studs may be omitted through the use of wood backups. Cleats, metal drywall clips or other approved devices that will serve as an adequate backing for the facing material.

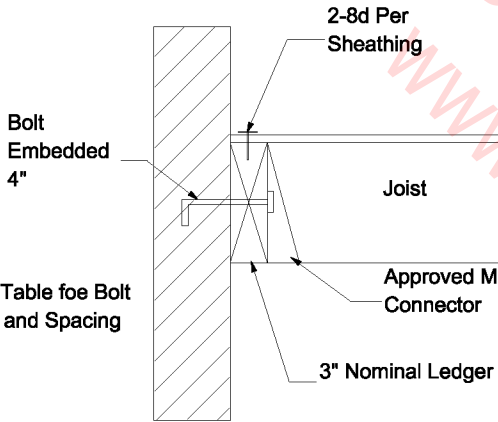
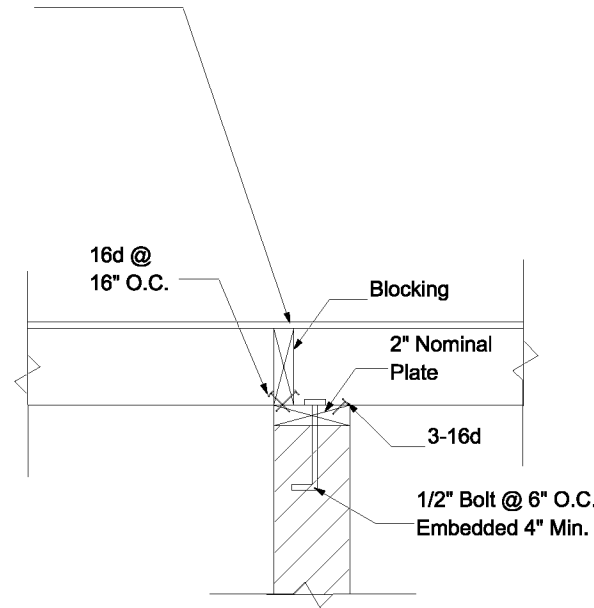
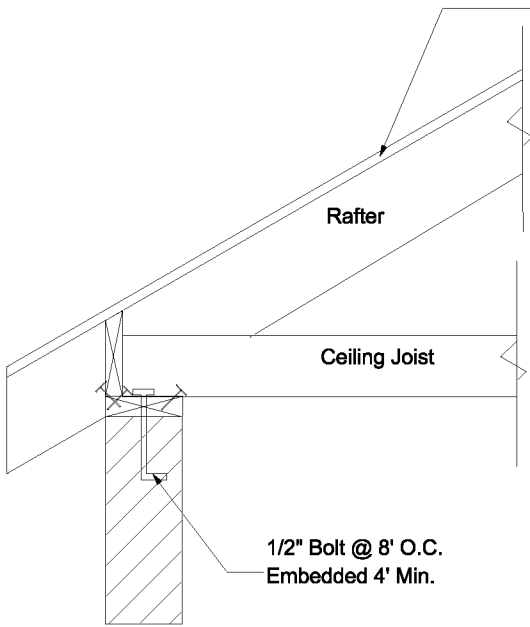
Apply approved sheathing or brace exterior walls with 1" X 4" Braces let into studs and plates and extending from bottom plate to Top plate or other approved metal strap devices installed in accordance with the MFG specs. (See Section 602.10)

# FRAMING DETAILS



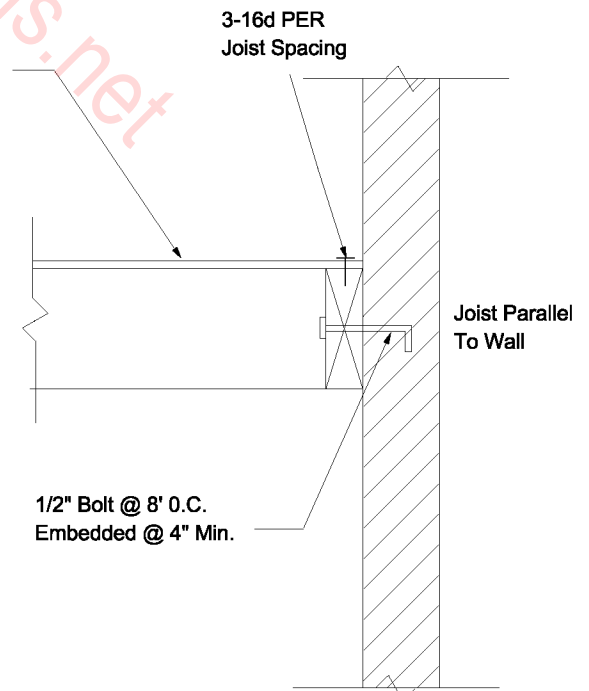
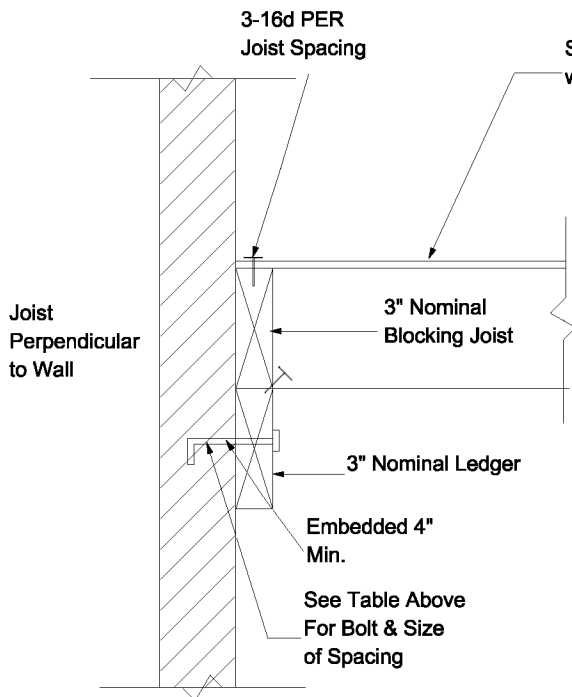
TYPICAL WALL, FLOOR AND ROOF FRAMING

Sheathing Nailed in Accordance with Table No. 602.2 (1)



LEDGER BOLT SIZE AND SPACING

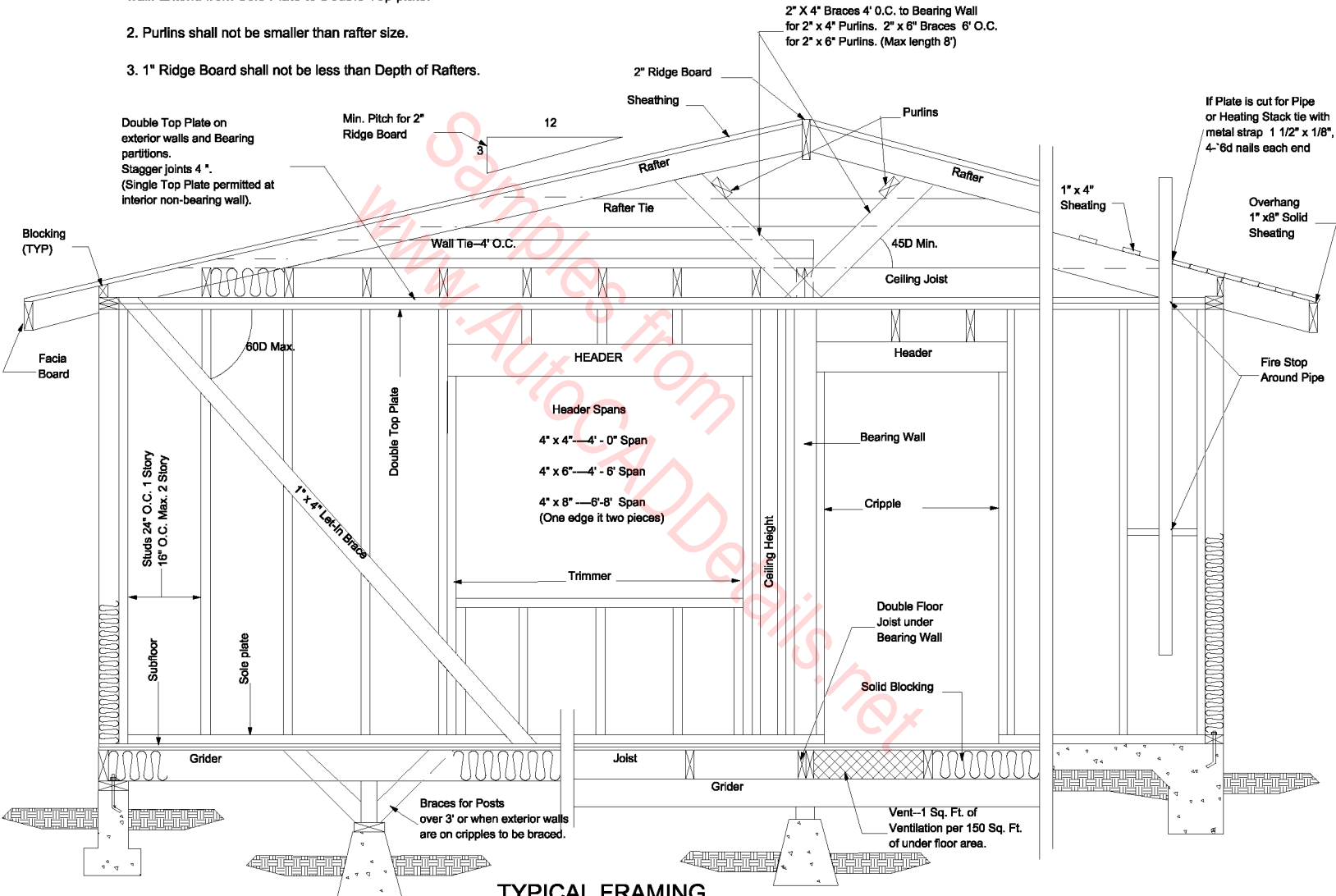
JOIST SPAN	BOLT SIZE AND SPACING	
	ROOF	FLOOR
10'	1/2" @ 2'-6" 7/8" @ 3'-6"	1/2" @ 2'-0" 7/8" @ 2'-9"
10 -15'	1/2" @ 1'-9" 7/8" @ 2'-6"	1/2" @ 1'-4" 7/8" @ 2'-0"
15' 20'	1/2" @ 1'-3" 7/8" @ 2'-0"	1/2" @ 1'-0" 7/8" @ 1'-6"



Anchorage Requirements for Masonry Walls Located in Seismic Zone 0, 1 or 2 and where Wind Loads are less than 30 pounds per square foot

**NOTES:**

1. Let-In Beace Required at each end of wall and every 25 L.F. of wall. Extend from Sole Plate to Double Top plate.
2. Purlins shall not be smaller than rafter size.
3. 1" Ridge Board shall not be less than Depth of Rafters.



**TYPICAL FRAMING**

(Use Local Code Requirements)

## DECAY AND TERMITE PROTECTION

1. The following locations require the use of decay-resistant or pressure treated wood: Sec 322.1
  - A. In the crawl space, wood joists with less than 18" clearance and wood girders with less than 12" clearance to exposed earth.
  - B. All sills which rest on concrete or masonry exterior walls.
  - C. Sills and sleepers on a concrete or masonry slab which is in direct contact with the ground.
  - D. The ends of wood girders entering exterior masonry or concrete walls having a clearance of less than 1/2" on tops, sides and ends.
  - E. Wood siding, sheathing and wall framing on the exterior of a building having a clearance of less than 6" from the ground.
  - F. Wood structure members supporting moisture-permeable floors or roofs which are exposed to the weather, such as concrete or masonry slabs, unless separated from such floors or roofs by an impervious moisture barrier.
  - G. Wood furring strips or other wood framing members attached directly to the interior of exterior masonry or concrete walls below grade except when an approved vapor retarder is applied to the interior of the exterior walls.
  - H. All wood in contact with the ground and which supports permanent structures intended for human occupancy shall be approved wood suitable for ground contact use.
  - I. Posts, poles and columns supporting permanent structures intended for human occupancy which are embedded in concrete in direct contact with the ground or embedded in concrete exposed to the weather shall be approved pressure treated wood suitable for ground contact use.
2. All fasteners except 1/2" diameters or greater steel bolts, used in treated wood are required to be hot-dipped galvanized steel, stainless steel or other approved corrosion resistant fasteners. Sec 322.3. All nails and staples used to fasten roof coverings shall be corrosion resistant. Tab 903.1.
3. Wood columns shall be approved treated wood unless supported by piers projecting 2" above the floor or finish grade and separated by an approved impervious barrier. Sec 322.1.4.
4. All surfaces (inside and outside) of steel columns shall be given a shop coat of rust-inhibitive paint, except for corrosion resistant steel and steel treated with coatings to provide corrosion resistance. Sec 408.2



## DUPLEX REQUIREMENTS

1. Dwellings units in two-family dwellings shall provided the following: Sec. 320.
  - A. Units shall be separated from each other by wall and/or floor assemblies of not less than one-hour fire-resistive construction. When floor assemblies are required to be fire-resistive, the supporting construction shall have an equal or greater fire-resistive rating.
  - B. The separation shall extend to and be tight against the exterior walls and to the underside of the roof sheathing. Sec 320.1 & 320.1.1.
  - C. Electrical boxes on opposite sides of the wall are required to be separated by a horizontal distance of at least 24".
  - D. Townhouse units shall be separated from each other as specified in Sec 320.2.
  - E. Wall and floor-ceiling assemblies separating units shall provide airborne sound insulation for wall and both airborne and impact sound insulation for floor-ceiling assemblies. The sound insulation shall meet a Sound Transmission Class of 45. Penetrations in the assembly for pipes, ventilating or exhaust ducts shall be sealed or treated to maintain the required rating. Sec 320.3.

## EXITING

1. At least 1 side-hinged exit door not less than 3"x6'-8" shall be provided from the residence. The minimum width of a wallway or exit access is 3'. All egress doors shall be readily operable from the inside without the use of a key or special knowledge or effort. Sec. 310.4 & 311.1.
2. A minimum 3'x3' landing is required on each side of an egress door except at the top of an interior flight of stairs, provided the door does not swing over the stairs. The floor or landing shall be not more than 1 1/2" lower than the top of the threshold, except the landing at the exterior of an exterior doorway shall not be more than 8" below the top of the threshold and shall be a minimum of 36" in the direction of travel. Sec 312.1
3. Egress ramps shall have a maximum slope of 1:8. Handrails shall be provided as noted below on at least one side of all ramps exceeding a 1:12 slope. A minimum 3'x3' landing shall be provided at the top and bottom of ramps where doors open onto the ramp and where ted ramp changes direction. Sec 313.
4. All sleeping rooms shall have at least 1 exterior door or operable window approved for emergency egress or rescue. The doors/windows must be operable from the inside ro a full opening without the use od separate tools. Egress windows are required to have a minimum net clear opening height of 22" and a minimum net clear opening wifht of 20" and minimum net clear opening area of 5.7 SF (except grade floor windows not more than 44" above or below the exterior finish grade may have a minimum net clear opening of 5 SF). The sill height may not be more than 44" from the floor. Sec 310.
5. Any addition to a dwelling shall not be adjacent to, block, or preclude the use of exixting required emergency egress windows from sleeping rooms. Sec 117.2 & 310.
6. Provide safety glazing including, but not limited to the following locations: Each unit of glazing shall be permanently identified by the MFG. Sec 308. Some of these are as follows:
  - A. Galzing in ingress and means of egress doors.
  - B. Galzing in, patio door assemblies and panels in swinging doors.
  - C. Glazing in storm doors.
  - D. Glazing in doors for hot tubs, whirlpools, saunas, steam rooms, bathtubs and showers. Glazing in any part of a building wall enclosing these compartments where the bottom edge of the glazing is less than 60" measured vertically above any standing or walking surface.
  - E. Glazing in an individual fixed or operable panel adjacent to a door where the nearest vertical edge is within a 24" arc of the door in a closed position and whose bottom edge is less than 60" above the floor or walking surface except when there is an intervening wall or other permanent barrier between the door and the glazing.
  - F. Glazing that meets all the following conditions: In lieu of safety glazing, a protective bar ( 1 1/2" height minimum) may be installed on the accessible side(s) of the glazing 36" +2" above the floor. The bar shall be capable of withstanding a horizontal load of 50 psi without contacting the glass. Sec 308.4.
    - 1). Exposed area of an individual pane greater than 9 SQ Ft.
    - 2). Bottom edge less than 18" above the floor.
    - 3). Top edge greater than 36" above the floor.
    - 4). One or more walking surfaces within 36" horizontally of the glazing.
  - G. All glazing in railing regardless of an area or height above a walking surface including structural baluster panels and nonstructural in-fill panels.
  - I. Galzing in walls and fences enclosing indoor or ourdoor swimming pools and spas when the bottom edge of the pool side is less than 60" above the walking surface and within 36" horizontally of a walking surface.
  - J. Safety glazing for the following products, materials and uses are exempt from the above requirements
    - 1) Lead glass panels, faceted and decorative glass, or mirrors mounted on a wall or solid door panel.
    - 2). Outboard panels in insulating glass when the bottom edge is 25' above grade, roof, or other horizontal surface adjacent to glass exterior walking surface.

## FLOORS & FLOOR COVERING

1. Fill material under slabs shall be compacted to assure uniform support and shall not exceed 24" for clean sand or gravel and 8" for earth. Sec 505.2.1. A 4" base course consisting of clean graded sand, gravel or crushed stone passing a 2" sieve and retained on a 1/4" sieve shall be placed on the prepared subgrade when the slab is below grade. The base course is not required when the slab is well-drained or sand-gravel mixture soils. Sec. 505.2.2.
2. Floor joists/girders spans shall conform with Tables 502.3.3a & .3b.
3. Floor joists shall have 2" thick solid blocking the full depth of the joist at the ends of the joists except where both ends are nailed to a header, band or rim joist or adjoining stud. Joists having a depth-to-thickness ratio exceeding 6:1 based on nominal dimensions shall be supported laterally by solid blocking, diagonal bridging or a 1x3 bridging nailed to the bottom of the joist at intervals not exceeding 10'. Manufactured joists shall be blocked per MFG's requirements.
4. Floor joists shall have a bearing of not less than 1 1/2" on wood or metal and 3" on masonry or a 1x4 ribbon strip and nailed to the adjacent stud. Sec 502.4.
5. Where MFGed joists are used, a similar MFG rim joist shall be used rather than sawn rim joists per MFG, instructions.
6. Joists under and parallel to bearing partitions shall be doubled or a beam adequate to support the load shall be used.  
Sec. 502. 3.3.
7. Openings in floor framing shall be framed with a header and trimmer joists. For openings not exceeding 4', the header joist may be a single member the same size as the floor joist. When the header joist span exceeds 4', the trimmer joists and header joists shall be doubled and of sufficient cross-section to support the floor joist framing into the header. Approved hangers shall be used for the header joist to trimmer joists' connections when the header joist span exceeds 6'. Sec. 502.8. If supporting heavy loads, or the joists have an excessive span, additional supports may be required.
8. Holes bored in joists shall not be within 2" of the top or bottom of the joists and the diameter shall not exceed 1/3 the depth of the joists. Notches in the top or bottom of the joists shall not exceed 1/6 the depth nor be located in the middle 1/3 of the span. Cantilevered joists shall not be notched unless reduced properties and lumber defects are considered in the design. Sec.502.6.1.
9. Plywood floor sheathing shall have a minimum panel ID#24/16 for joists 16" O.C. and #48/24 for joists 24" O.C. For spans exceeding 2', approved T&G 1 1/8" plywood or 2" T&G floor decking is required. Plywood is required to be installed perpendicular to supports. Sec. 503.2.2 & Table 503.2.1.1(1).
10. Panel span rating for plywood and wood structural panels floor sheathing shall meet Table 503.2.1(1) or 503.2.1(2).

## FOUNDATION

1. Exterior walls located less than 3' from property lines and 6' from adjacent structures shall have a minimum of one-hour construction. Sec. 302.1. Note: If your building is closer than these distance, contact the local Planning Department to verify their minimum clearance.
2. Cut or fill slopes shall not be steeper than 2 horizontal to 1 vertical unless a soil investigation report is submitted. Sec. 401.6.
3. Structures placed on or adjacent to slopes steeper than 3 horizontal to 1 vertical, ascending or descending, shall comply with Sec. 401.6.1.
4. The top surface of the footing shall be level; provide stepped footings where the bottom surface of the footings exceed 1 vertical in 10 horizontal. Sec. 403.1.1.
5. Footing and foundations shall be constructed of masonry, concrete or approved treated wood. Exterior footings, columns and piers shall extend below the frost line, which is a minimum of 12" below finish grade soil. Sec. 403.1.
6. Concrete shall have the following minimum compressive strength: Table 402.2. Concrete in item A and B below shall be air entrained when subject to freezing during construction and all concrete in items C and D shall be air entrained. Total air content shall not be less than 5% or more than 7%. See Fig 402.2.
  - A. Basement walls and foundation not exposed to weather: 2500 PSI.
  - B. Basement and interior slabs on grade (except garage floor): 2500 PSI.
  - C. Foundation or basement walls or other vertical walls exposed to the weather: 3000 PSI.
  - D. Carport slabs, garage floor slabs, porches and steps exposed to the weather: 3500 PSI.
7. Footing and wall sizes shall be as follows: These footing sizes are based on an allowable soil pressure of 1500 PSF. On soil with lower allowable soil pressure, footing sizes shall be designed by a registered engineer. (See Fig 403.
8. When footing & foundation are placed separately, either provide a keyway to prevent lateral displacement or they must be tied together by a minimum #3 vertical rebars 4' O.C. Sec 401.2 Tab 404.1b & AIM #92-26.
9. If reinforcement is provided in the footing, one piece of the footing rebar (min. #4) is required to be extended 1' above the plate as a ground rod to the electrical panel. If a piece is bent and tied, it must have a min. 12" leg tied to a min. 20' long rebar in the footing. Sec 403.4.
10. Foundation walls shall extend at least 6" above the finish grade. Sec 404.1.6. Foundation walls shall be constructed as specified in Table 404.1.1(1) or 404.1.4/404.1.6. This project is located in earthquake zone 3. If soil stability is in question, a soil analysis by a Registered Engineer may be required. Not that sandy soil is considered to be unstable, requiring the use of Table 404.1.1(2). Any design deviating from these tables will be required to be designed by a registered engineer. With expansive soils, provide soils report and engineered footing design/retaining walls.
11. Foundation plates shall be bolted with min. 1/2" bolts embedded at least 7" into concrete or masonry and spaced not more than 6' apart with a min. of two bolts per piece with one bolts within 12" of each end of each piece.
12. Provide sill sealer between the wall and foundation where foundation wall encloses a heated space. Sec. C401.8.2.
13. Crawl space foundation ventilation requires 2 SF/150 SF of under-floor area. At least one vent shall be within 3' of each corner. Vent openings shall be provided with corrosion-resistant wire mesh with the least dimension being 1/8". Sec 409.1
  - A. The area may be reduced to 1/1500 of the under-floor area where the ground surface is treated with a approved vapor barrier material and one such ventilation opening is within 3' of each corner of the building.
  - B. Ventilation openings may be vented to the interior of buildings where warranted by climatic controls.
  - C. Mechanical ventilation may be provided at a rate of 1 cfm for each 50 SF of crawl space floor area. Supply air may be from outdoors of the conditioned space with an exhaust opening equal in size to the supply opening.
  - D. Ventilation openings may be omitted on one side.
14. Provide a minimum 18" x 24" access opening to under-floor crawl space. Sec 409.2. If the furnace is installed in the crawl space, the opening must be large enough to remove the largest piece of equipment but not less than 22" x 30" Sec 1401.6

## GARGAE REQUIREMENTS

1. Attached garages require the following minimum fire-protection. Sec 309.1.

A. Openings from a garage directly into a sleeping room are not permitted.

B. Openings between a garage and residence shall be equipped with solid wood doors not less than 1 3/8" in thickness or a 20 minute rated door.

C. The garage shall be separated from the dwelling and its attic area by means of 1/2" gypsum board applied to the garage side of the wall. Where separation is a floor-ceiling assembly, the structure supporting the separation shall also be protected with 1/2" gypsum board.

D. Ducts penetrating the wall separating the dwelling from the garage are permitted providing they are constructed of steel having a thickness not less than 26ga. and having no supply or return air openings into the garage. When a vibration isolator is used in the garage duct, it must be installed at least 18" from the penetration. Vibration isolators shall be installed as per Sec. 1901.2.2, Sec 309.1.1.

E. Garage and carport floors shall be an approved noncombustible material. The vehicular parking area shall be sloped toward the vehicle entry doorway. Sec. 309.3.

F. All appliances generating a glow, spark or flame and all electrical outlets installed in the garage shall be installed with burners, burner ignition devices, or heating elements and switches at least 18" above the floor level. Appliances installed in a garage shall be protected against damage by vehicles. Sec. 1307.3.

## INSULATION REQUIREMENTS

A. The residential energy code allows for selection of one of nine prescriptive insulation paths, providing the homeowner or builder ops for sun tempered situations, limited house size, log homes, variables in insulation in specific locations, etc. Path #1 was based on cost-effectiveness, while the other paths are based on energy equivalence with Path #1. Unless specific information is received outlining the path followed and specific insulation standards met, the building department will review the building for conformance with Path #1. The following specific standards are applicable for Path #1: Appendix C, Tab. C401.1(1).

1. Windows, Class 40: Allwindows must be labeled showing the class. Site built windows are not permissible with this path.
  2. Doors . Main entry door (maximum 24 SF)  $U=.54$ ; other doors  $U=.20$ . Documentation must be provided to the inspector showing the appropriate U value.
  3. Wall Insulation. R-21 Advanced framing R-19 may be substituted.
  4. Underfloor Insulation: R-25. Foundation perimeter insulation may NOT be substituted for the underfloor insulation.
  5. Ceilings: Flat ceilings R-38; vaulted ceilings (ceiling pitch 2:12 or greater) R-30 (ceiling insulation less than R-38 may not be in more than 1/2 of heated area), except that vaulted areas less than 150 SF total area may be R-21.
  6. Skylights: (Class 50) area may not exceed 2% of the roof area. Skylights (Class40) are unlimited in area.
  7. Forced Air Ducts: R-8 in all unheated areas.
  8. Basement Walls: R-21 extending from the bottom of the above-grade subfloor to the top of the below-grade finished floor.
  9. Slab Floor Edge: R-15 Insulation must be placed from the top of the slab down 24" or from the top down to the bottom of the slab and horizontally back under the slab for a total of 4". For monolithic slabs, insulation must extend from the top of the slab down to the bottom of the thickened edge. Above grade protection must be provided for insulation installed on the exterior side of the slab. All slab edges at junctures between heated and unheated spaces must be insulated.
- B. Insulation facing, such as vapor barriers, shall not be exposed in the attic, crawl space or any other area unless the flame-spread of the facing material is 25 or less and smoke density is not greater than 450. Sec. 319.1.
- C. If plastic foam insulation is exposed, it shall be approved to be exposed or shall be protected as required in Sec. 317
- D. Provide a vapor barrier with 1 perm dry cup rating or less on the warm side (in winter) of all insulation in exterior walls and interior floors (except garage concrete slab floors) of heated residential buildings. In all exterior ceilings without an attic space above, an approved vapor barrier having a 0.5 perm dry cup rating or less shall be installed on the warm side of the insulation. Lap edges at the framing members. Sec. C401.9.1.

## Interior Requirements

1. In all habitable rooms (living room, dining room, kitchen, bedrooms, family room, etc. ) provide natural light and ventilation by means of windows equal to 10% of the room area, 1/2 of which shall be operable. In lieu of operable exterior openings for ventilation, a mechanical ventilating system providing .35 air changes per hour in the room or a whole-house mechanical ventilation system capable of supporting outdoor ventilation air of 15 cfm per occupant be provided. Glazing may be omitted provided mechanical ventilation as noted above and artificial light is provided. The artificial light shall be capable of producing an average illumination of 6 foot-candles over the area of the room at a height of 30" above the floor. Sec 303.
2. Habitable rooms, hallways, bathrooms, toilet and laundry rooms and basements are required to have a ceiling height of 7' measured to the lowest projecting element. Beams spaced not less than 4'.O.C. may project not more than 6" below the required ceiling height. Where the ceiling slopes, the minimum height must be maintained in 1/2 the required room area, with no portion of the required floor area less than 5' in height. Basements without habitable spaces shall have ceilings not less than 6' 8" except under beams, girders, ducts or other obstructions, where the ceiling height shall be 6'-4". Sec 305.
3. Minimum room sizes: habitable rooms must be at least 70 SF with 7' minimum width; kitchen must be at least 50 SF.

## LUMBER GRADING

1. All load-bearing dimension lumber is required to be identified by grade by a mark or certificate of inspection issued by an approved agency. Sec 502.1, 602.1 & 802.1. Unless noted otherwise on the plans, all structural lumber is to be: Joists, rafters and beams up to 4" thick--Douglas Fir #2 or better; Beams, posts and timbers greater than 4" in thickness--Douglas Fir #1 or better.
2. If other lumber is to be used, advise the Building Official/Inspector.  
NOTE: Construction, Standard and Utility are not equivalent to 1,2 &
3. Joists, rafters headers and beams are all assumed to be installed on edge.



## Mechanical, Plumbing, Electrical

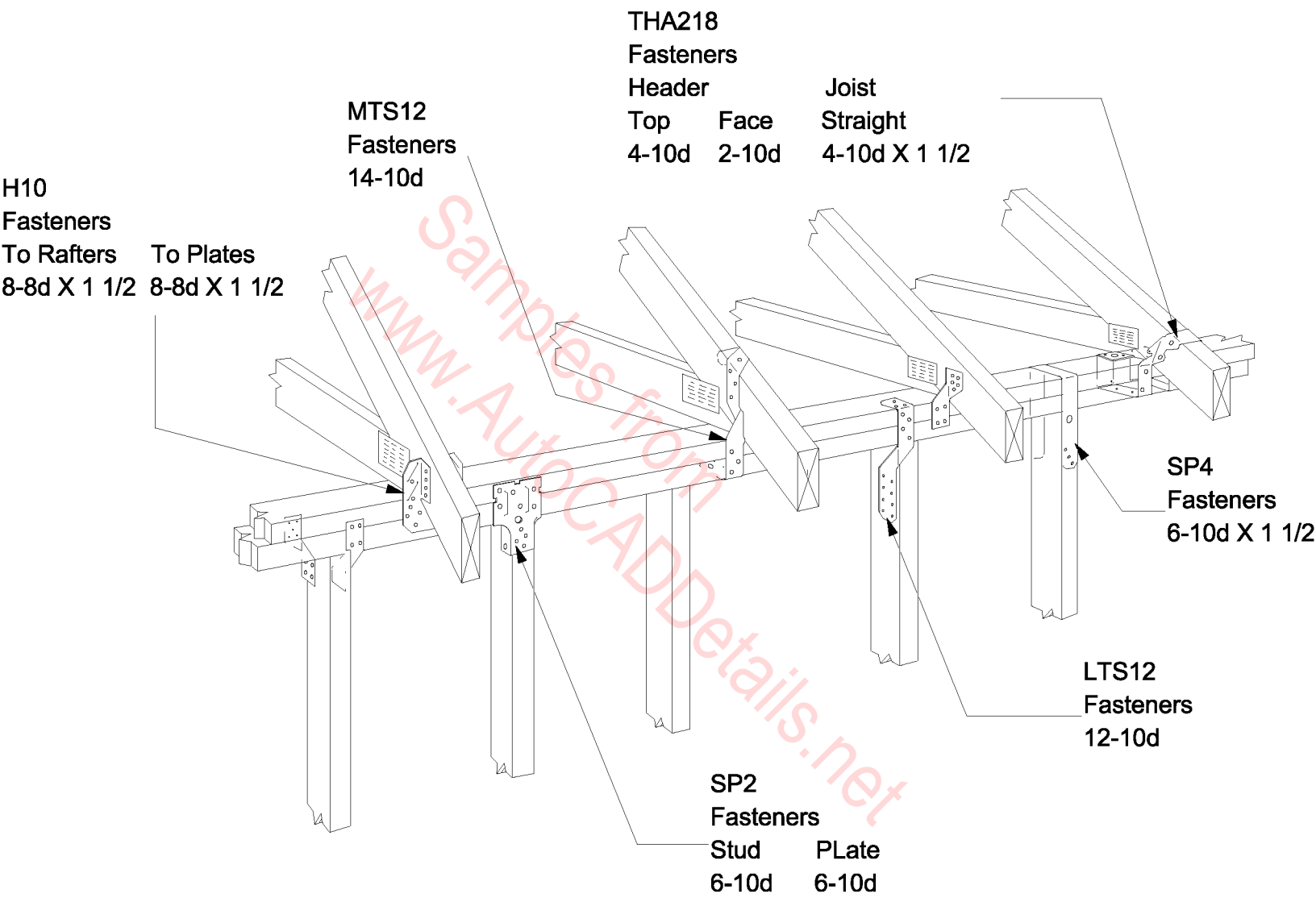
1. Smoke detectors shall be installed in each sleeping room, outside each separate sleeping area in the immediately vicinity of the bedrooms and on each additional story of the dwelling, including basements. In dwellings with split levels, a smoke detector need to be installed only on the upper level provided the lower level is less than 1 full story below the upper level, unless there is a door separating the levels, in which case s detector is required on both levels. All detectors shall be interconnected such that the actuation of one alarm will actuate all the alarms in the individual unit providing an alarm which will be audible in all sleeping areas. Required smoke detectors shall receive their primary power from the building wiring when such wiring is served from a commercial source and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Sec. 316.1.
2. Required smoke detectors shall not be located within kitchens or garages. Ionization smoke detectors shall not be located closer than 3' horizontally from the door to a kitchen; the door to a bathroom containing a tub or shower; or the supply register of a force air heating or cooling system. A smoke detector installed within 20' (direct linear path) of a cooking appliance shall be photoelectric or the detector shall have an approved alarm silencing means. Sec. 316.1
3. For any additional or alteration requiring a building permit, the entire building shall be provided with smoke detectors located as required for new buildings. Smoke detectors installed under this provision need not be interconnected unless other remodeling considerations require removal of the appropriate wall and ceiling coverings to facilitate concealed interconnected. Sec 316.1
4. Heating: Each thermostat shall be capable of being let from 55degrees F--75 degrees F. Cooling equipment: Each thermostat shall be capable of being set for 70 degrees F--85 degrees F only. Sec. C501.3.1
5. Free standing or built-in ranges require a vertical clearance above the cooking top not less than 30" to unprotected combustibles or 24" if protected by noncombustible material. Vented ranges hoods shall be vented to the outside by a single-wall pipe constructed of galvanized steel, stainless, copper or other approved material. The duct shall have a smooth interior surface, be substantially airtight and shall be equipped with a back-draft damper. Open top btoler units shallbe provided with a hood complying with Sec. 1804 or incorporate an integral exhaust system listed for use without a hood. Self venting ranges or unvented hoods shall be installed in accordance with their listings. Sec. 1802.1. 2201.1, 2202.
6. Clothes dryer exhaust vents shall convey products of combustion and moisture to the exterior. They shall not be connected with sheet-metal screws or other fastening means extending into the vent. They shall be equipped with back-draft dampers. Ducts shall be constructed of minimum .016" ridid metal with joints running in the direction of airflow. Transition ducts shall not be concealed within construction. Ducts shall terminate with a full opening exhaust hood. The maximum length of a 4" vent shall not exceed 25' from the dryer location to wall or roof termination. Length reductions of 2.5' for 45 degree bends and 5' for 90 degree bends are required. Installations when this length is exceeded shall be installed in accordance with the MFG's installation instructions. Sec. 1801.
7. Wood stoves must be installed as per their installation instructions and must be labled indicating they meet emissions requirements. Wood stoves installed in an alcove must be specifically approved for such installation. Used wood stoves must comply with Sec. 1307.5
8. Fireplaces and masonry chemneys shall be installed per Chapter
10. A minimum 2" clearance to combustible wood framinf is required. Sec 1001.
9. Gas water heaters shall not be installed in a bedroom, closet, bathroom or utility room unless is a direct vent appliance or complies with Sec 2307.

# MOISTURE CONTROL REQUIREMENTS

1. Drains shall be provided around all concrete or masonry foundations enclosing habitable or usable spaces located below grade ( except where the foundation is installed in well drained ground or sand-gravel mixture soils) Sec 405.1
2. Provide an approved vapor barrier (either 55# roll roofing, 6 mil polyethylene (over 4" clean sand base course for concrete slab if below grade) or other approved vapor barrier: Sec. 405.2.2 & C401.9.2
  - A. between a concrete floor slab and the prepared subgrade with joints lapped 12" minimum. The vapor barrier may be omitted in DETACHED garages, utility buildings, other unheated accessory structures and exterior flatwork not likely to be enclosed and heated at a later date. Sec. 505.2.3.
  - B. in a crawl space for ground cover with joints 12" minimum and turned 12" up the foundation wall.
3. Damp proofing foundation walls shall be installed as follows: Sec 406.1
  - A. Masonry foundation walls enclosing basements shall be damp-proffed by applying not less than 3/8" of Portland cement parging to the wall from footing to finish grade. The parging shall be covered with a coat of approved bituminous material applied at the recommended rate. For habitable rooms see items "C".
  - B. Concrete construction enclosing basements shall be damp proffed by applying a coat of approved bituminous material to the wall from the footing to the finish grade at the recommended rate.
  - C. Where a high water table or other severe soil-water conditions are known to exist, exterior foundation walls of habitable rooms or storage space below grade be waterproofed with membranes extending from the top of the footing to the finish grade. The membrane shall consist of either 2-ply hot-mopped felts, 6-mil PVC, 55# roofing, 40 mil polymer or equivalent material. The laps in the waterproofing membrane shall be sealed. Sec. 406.2
4. Where there is evidence that the groundwater can rise to within 6" of the finished grade at the building perimeter or that surface water does not readily drain from the buildin site, the grade in the under-floor space shall be a high as the outside grade, unless an approved drainage system is provided. Sec 409.4.

## ROOF & CEILINGS

1. The roof shall be designed to sustain dead loads plus live loads. Sec. 801.2. The ground snow load is 25 psf.
2. Roof shall be design for a wind load of 90MPH or as perscribed by your local code. Provide a continuous uplift path from the foundation to the roof. This included:
  - (A) Nailing pattern to tie wall sheathing to foundation plate, provide adequate connections for beams to columns thus having a good lateral force resisting system, additional nailing for gable end trusses at roof sheathing and end wall joints, providing positive connection. NOTE: Toe-nailing rafters or trusses to walls is not adequate.
3. All trusses are required to be designed and stamped by an Registered Engineer. Provide truss engineering as required by Building Official at the job site prior to inspections. Trusses shall not be altered without a stamped design by an Architect or Engineer. Lateral bracing noted on the truss engineering must be installed. Sec. 802.9
4. The bottom chord of the truss is required to be designed to support a minimum live load of 20 psf where the following three conditions exists:
  - (1) The design live loads shall be applied to portions of the bottom chord that are capable of containing a rectangle 42" high by 2' wide, or greater. located within the plane of the truss.
  - (2) The rectangle shall fit between the top of the bottom chord and the bottom of any other truss member.
    - (A) The attic area is accessible by a permanent stairway or pull-down stairway; and
    - (B) The truss has a bottom chord pitch less than 2:12 and
    - (C) There are two or more adjacent trusses with the same web configuration.



**SEISMIC AND HURRICANE TIES FOR JOISTS & PLATES**  
**USING SIMPSON TIES W/FASTENERS Contractor's Choice**

# SHEARWALL SCHEDULE

MARK	SHEARWALL MATERIAL	NAILING	SILL PLATE ATTACHMENT
1	1/2" Gypsum Board One Face unlocked	5d COOLER Nails @ 7" O.C.	1/2" Diameter Bolts @ 48" O.C.
2	1/2" Gypsum Board One Face Blocked	5d COOLER Nails @ 7" O.C.	1/2" Diameter Bolts @ 48" O.C.
3	1/2" Gypsum Board One Face Blocked	5d COOLER Nails @ 4" O.C.	1/2" Diameter Bolts @ 48" O.C.
4	1/2" Gypsum Board Two Faces UnBlocked 3/8" Plywood or OSB	8d COMMON Nails @ 6" O.C. Edges & 12" O.C. Field	1/2" Diameter Bolts @ 32" O.C.
5	One Face, (16" Stud spacing, Typ. 3/8" Plywood or OSB	8d COMMON Nails @ 4" O.C. Edges & 12" O.C. Field.	1/2" Diameter Bolts @ 32" O.C.
6	One Face, (16" Stud Spacing, Typ) 3/8" Plywood or OSB	8d COMMON Nails @ 3" O.C. Edges & 12" O.C. Field.	1/2" Diameter Bolts @ 24" O.C.
7	One Face, (16" Stud Spacing, Typ.)	5d COOLER Nails @ 7" O.C.	1/2" Diameter Bolts @ 16" O.C.

**NOTE:**

1. All Anchor Bolts shall be placed as specified and within 12" of the end of wall.
2. See "HOLDOWN" Schedule for holdown requirements and designations.
3. REFER to PLANS for SHEAR WALL locations.
4. 1/2" DIA. RAMSET/REDHEAD Truebolt Wedge Anchors with 6" Embedment (ICBO #1372) May be substituted for anchor bolts at interior walls only.
5. HILTI "DN" Shot pins at 8" O.C. May be substituted for anchor bolts at interior walls only.
6. Framing at panel edges shall be 3" nominal or wider and nails staggered at edges.

**TYPICAL  
HOLDOWNS:**

**FLOOR TO FLOOR  
STRAPS HOLDOWNS:**

"Simpson PHAD42

"Simpson" CS20

"Simpson" HPAHD22

"Simpson" CS16

"Simpson" LTT20B W/10-16d to  
Stud & 1/2" Dia Anchor Bolt,  
Min. 12" embedment w/standard  
cut washer.

"Simpson HIT22 W/ 5/8" Dia.  
Anchor Bolt, Min. 12" embedment.

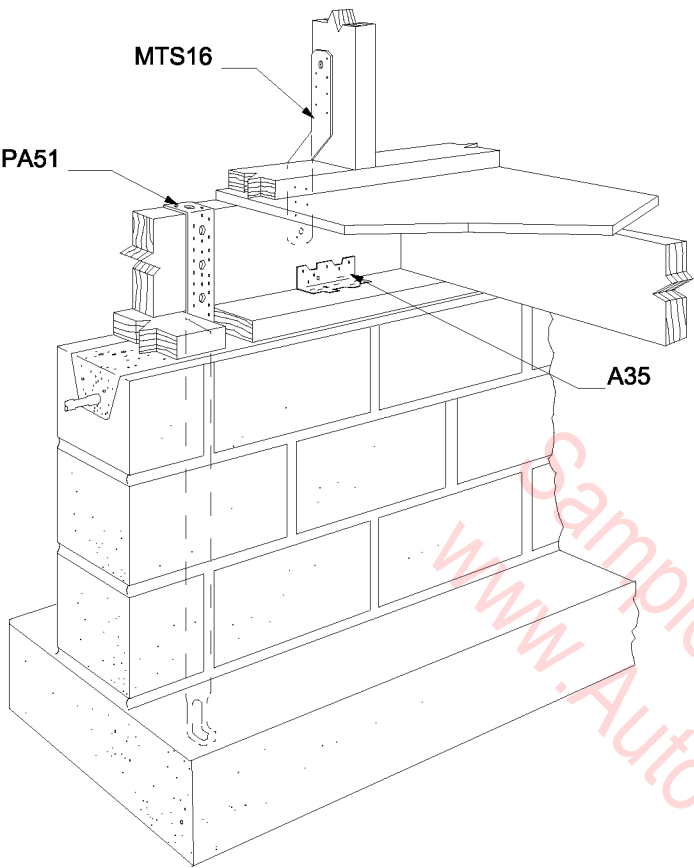
## SHEATHING/ROOF REQUIREMENTS

1. Plywood roof sheathing and wood structural panels shall not exceed the allowable spans indicated by the panel ID # located on the panel and shall comply with Table 503.2.1.1(1) or 503.2.1.1(2).
2. Appropriate valley flashing is required for all roof coverings. Sec 903.2.
3. Storm drainage: Where expansive or collapsible soils are known to exist, a controlled method of water disposal from roofs that will collect and discharge all roof drainage to the ground surface at least 5" from foundation walls or to an approved drainage system is required. Sec 801.3.
4. Roof covering: Note Changing the roofing material requires prior approval.
  - A. The roofing material must be an approved material as specified in Sec 903--909. Sec 901.3.

NOTE: If tile, clay or concrete shingles roof is planned but not shown on the plans, advise the building department. The additional weight of the tile will affect the structure design of the building.
  - B. The roof covering is required to be capable of accommodating the loads i Table 301.2(1). The wind loading for you area must be met. Sec 901.2.
  - C. Roof covering may not be installed on roofs having a pitch less than the following: Sec. 903--909.
    - (1) Composition shingles--2:12; if less than 4:12, the installation must comply with Sec 903.1.
    - (2) Tile, Clay or concrete shingles--3:12. Sec. 906.2
    - (3) Wood Shingles--3:12; if less than 4:12, they shall be installed with reduced exposure or over an underlayment of not less than one ply of No.15 felt. Sec 908.3.1.
    - (4) Wood Shakes--4:12 unless installed over an underlayment of not less than No. 15 felt. Sec 909.3.2.
      - (a) Wood shakes shall ve certified and labeled #1 grade conforming to CSSB. Sec 909.2 & 909.3.5.
      - (b) In snow areas, wood shakes are required to be installed over solid sheathing with an underlayment of not less than No. 15 felt. Table 908.3.
  - D. Metal sheeting-- Verify minimum pitch with MFG's installation instructions. Sec 905

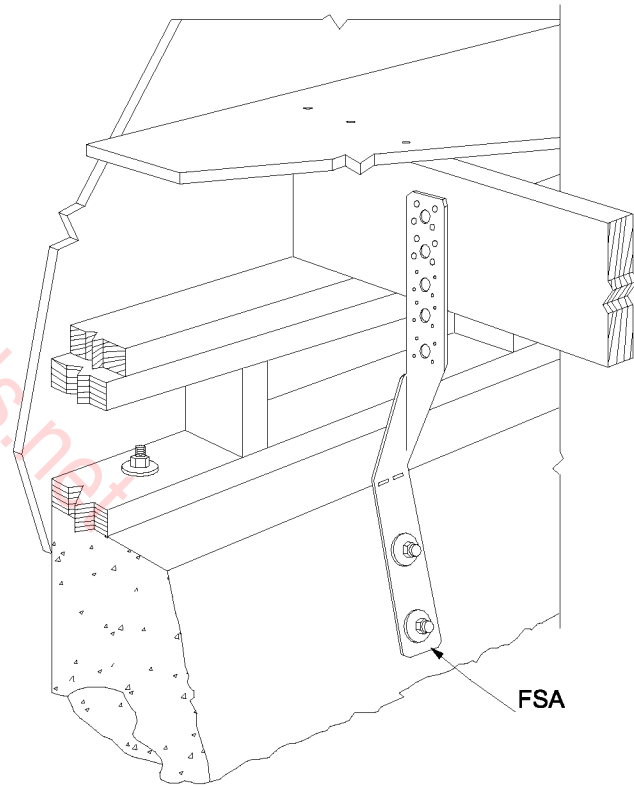
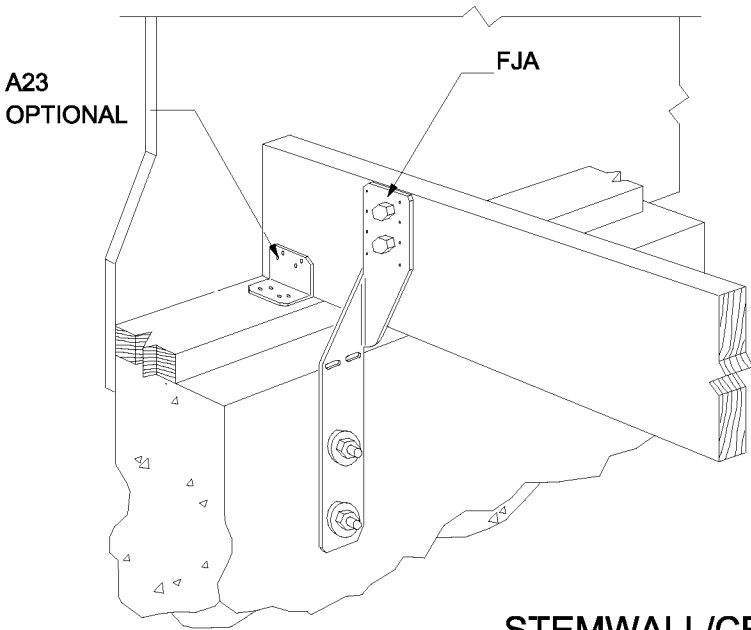
# STAIRS REQUIREMENTS

1. Porches, balconies or raised floor surfaces located more than 30" above the floor or grade below shall have guardrails not less than 36" height measured vertically from the nosing of the treads. Required guardrails shall have such that a 4" diameter sphere cannot pass through. The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway may be of such size that sphere 4" in diameter cannot pass through. Sec. 315
2. Stair maximum riser height is 8" and minimum tread depth is 9". Stairs having more than 3 risers require a handrail. Handrails are required to be 30"--38" in height above the nosing of the treads and shall be continuous the full length of the stair. Ends shall be returned or shall terminate in newel posts or safety terminals. The handicap portion of the handrail shall be not less than 1 1/4" nor more than 2 5/8" in cross-section dimension, or the shape shall provide an equivalent gripping surface. It shall have a smooth surface with no sharp corners. The minimum headroom clearance is 6'-8" measured from the nosing of the treads. The minimum stairway width is 3', except 30" is acceptable if another stairway 3' wide is provided from the floor. Sec 314.1 Ex.2
3. Winding stairs are required to have a minimum width of tread not less than 6" and at least 9" at a point 12" from the side where the treads are narrower. Sec 314.4
4. Spiral stairs are required to have a minimum width of 26" with each tread having a 7 1/2" minimum tread width at 12" from the narrow edge. All treads shall be identical and the rise shall be no more than 9 1/2". A minimum headroom of 6' 6" is required. Sec 314.5
5. Enclosed accessible space under stairs shall have walls and soffits protected on the enclosed side with 1/2" gypsum board. Sec. 314.8.
6. Interior stairs shall be provided with an artificial light source located in the immediate vicinity of each landing at the top and bottom of the stair. Exterior stairs shall be provided with an artificial light source located in the immediate vicinity of the top landing of the stair. Controls for the lighting shall be as specified in the Electrical Code Art 440.2.1. Sec 303.4.



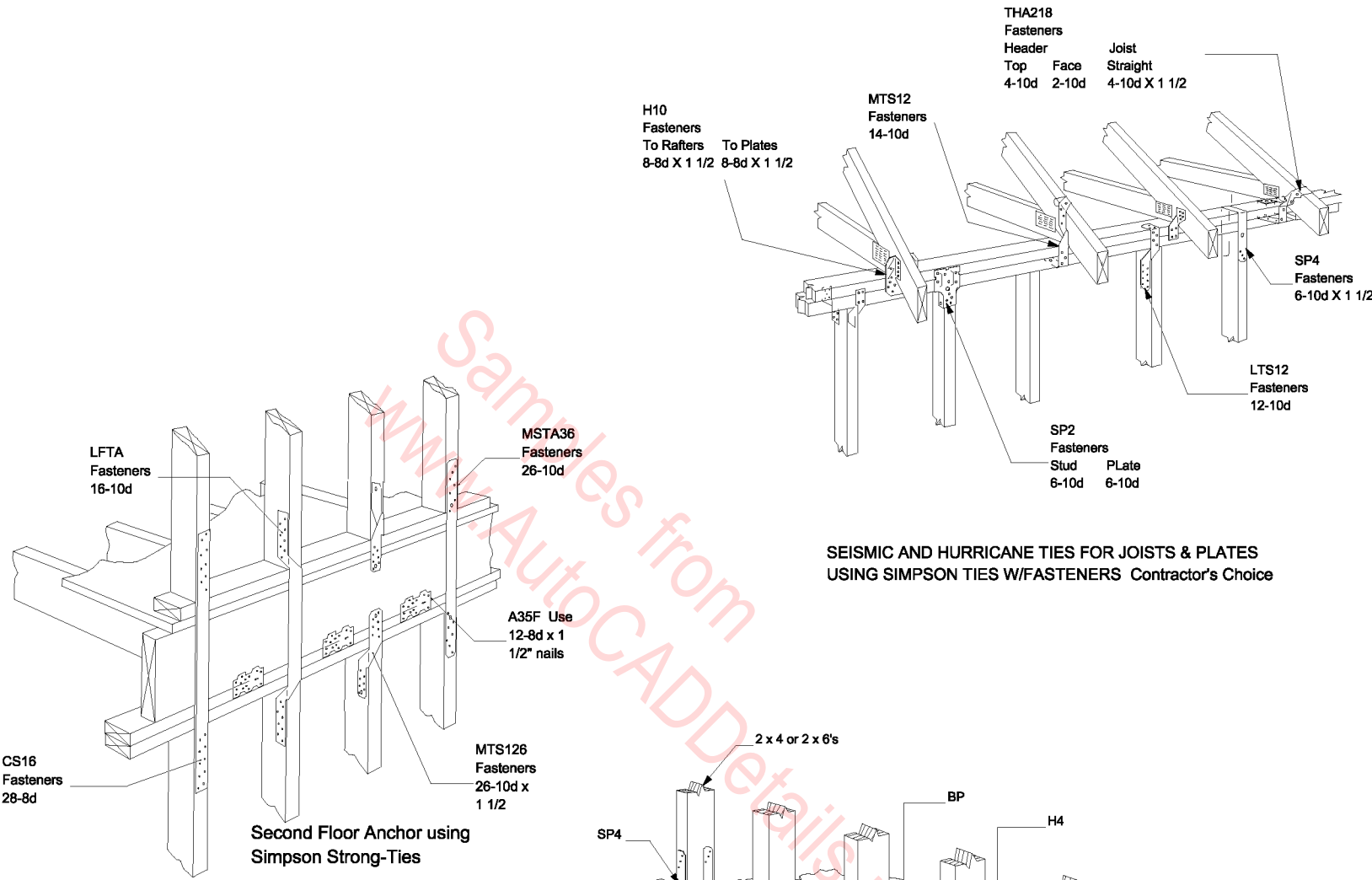
NOTE:

See Simpson catalog for correct fasteners and allowable loads.



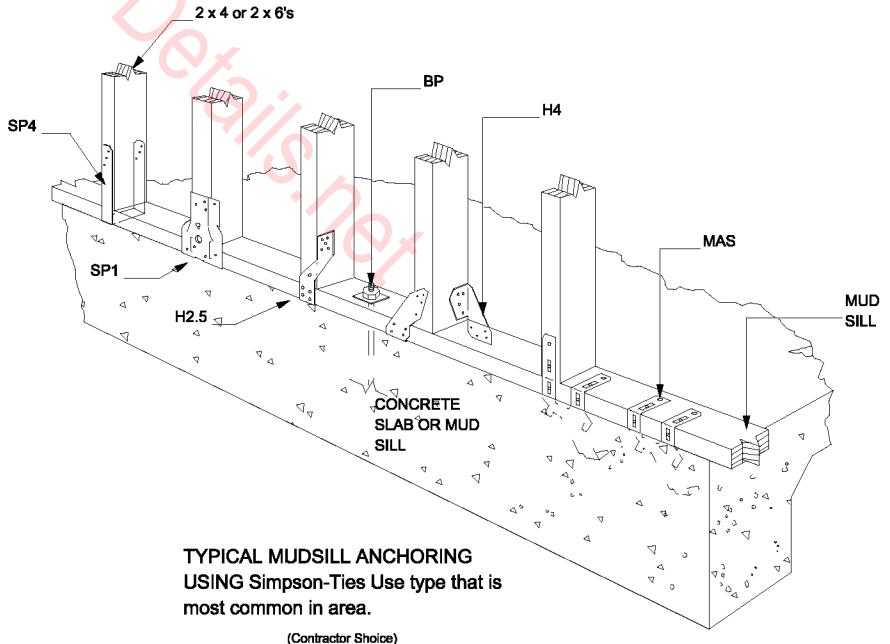
**STEMWALL/CRAWLSPACE CONNECTIONS**  
( Contractor's Choice)





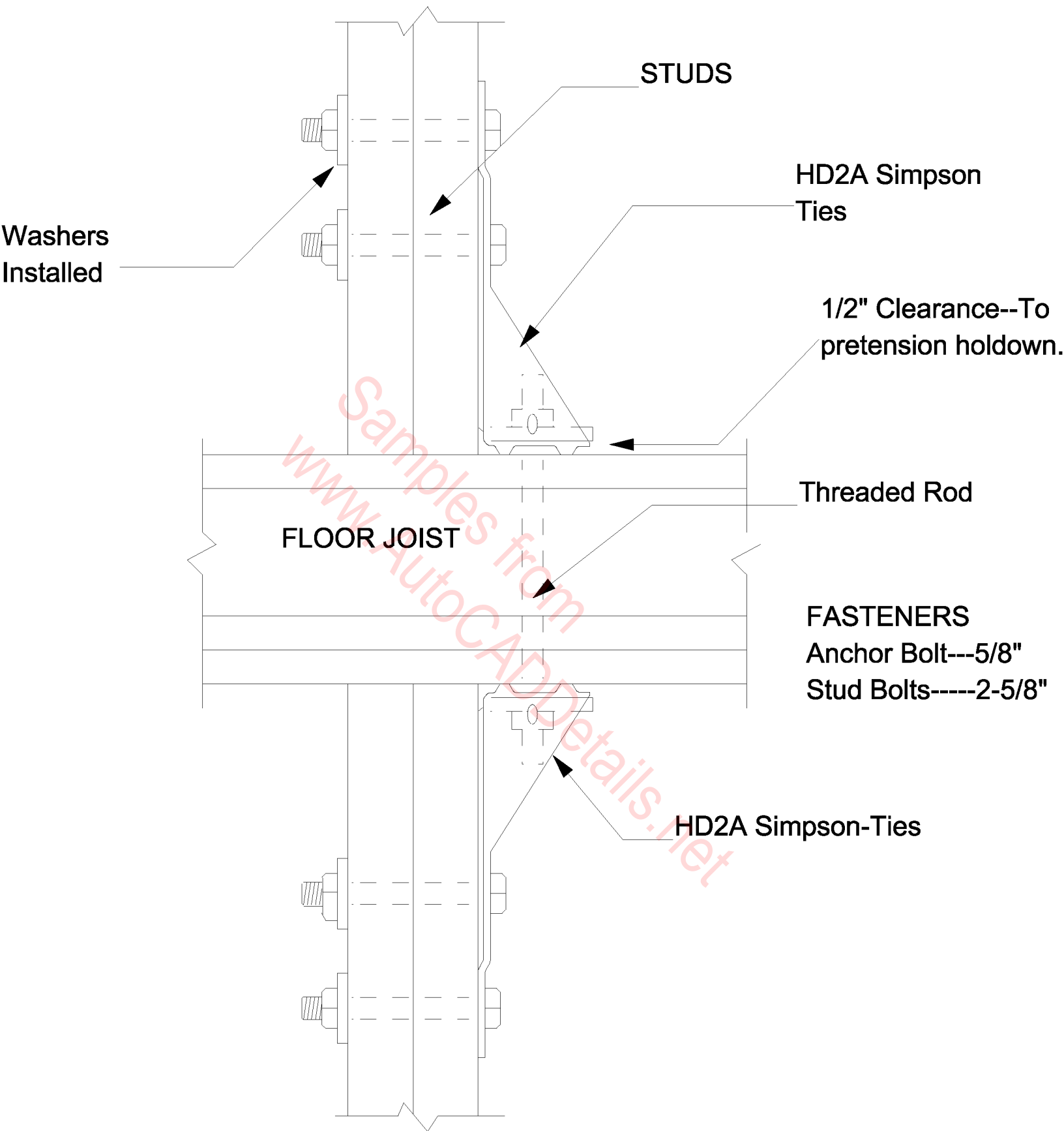
SEISMIC AND HURRICANE TIES FOR JOISTS & PLATES USING SIMPSON TIES W/FASTENERS Contractor's Choice

**Simpson Anchoring System**



TYPICAL MUDSILL ANCHORING USING Simpson-Ties Use type that is most common in area.

(Contractor Choice)



**Between Floors Installation  
Using SIMPSON HD2A Holdowns**

Fasteners  
Anchor Bolts  
Diameter  
5/8" or 3/4"

Stud Bolts  
3/4"

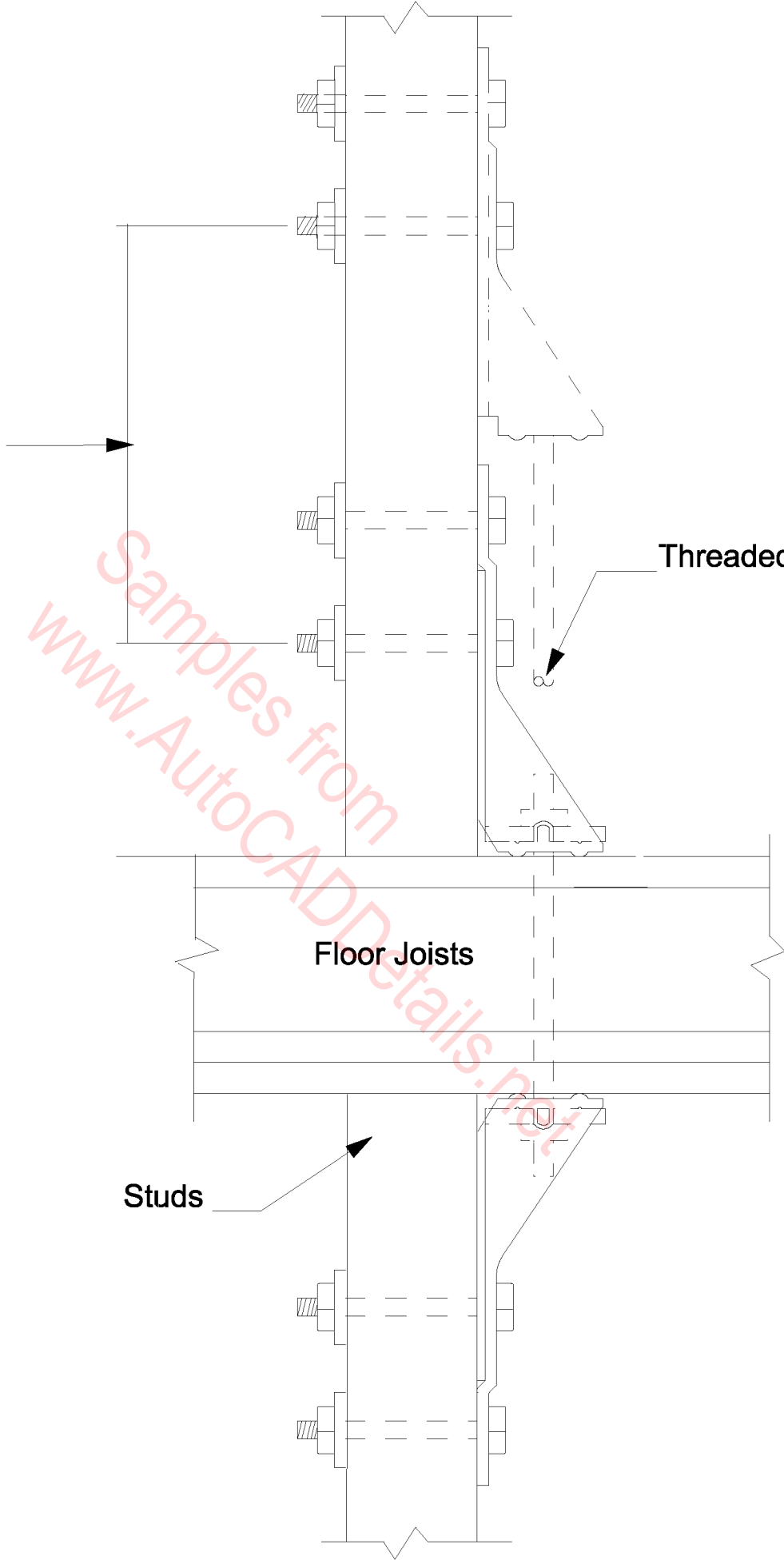
Threaded Rod

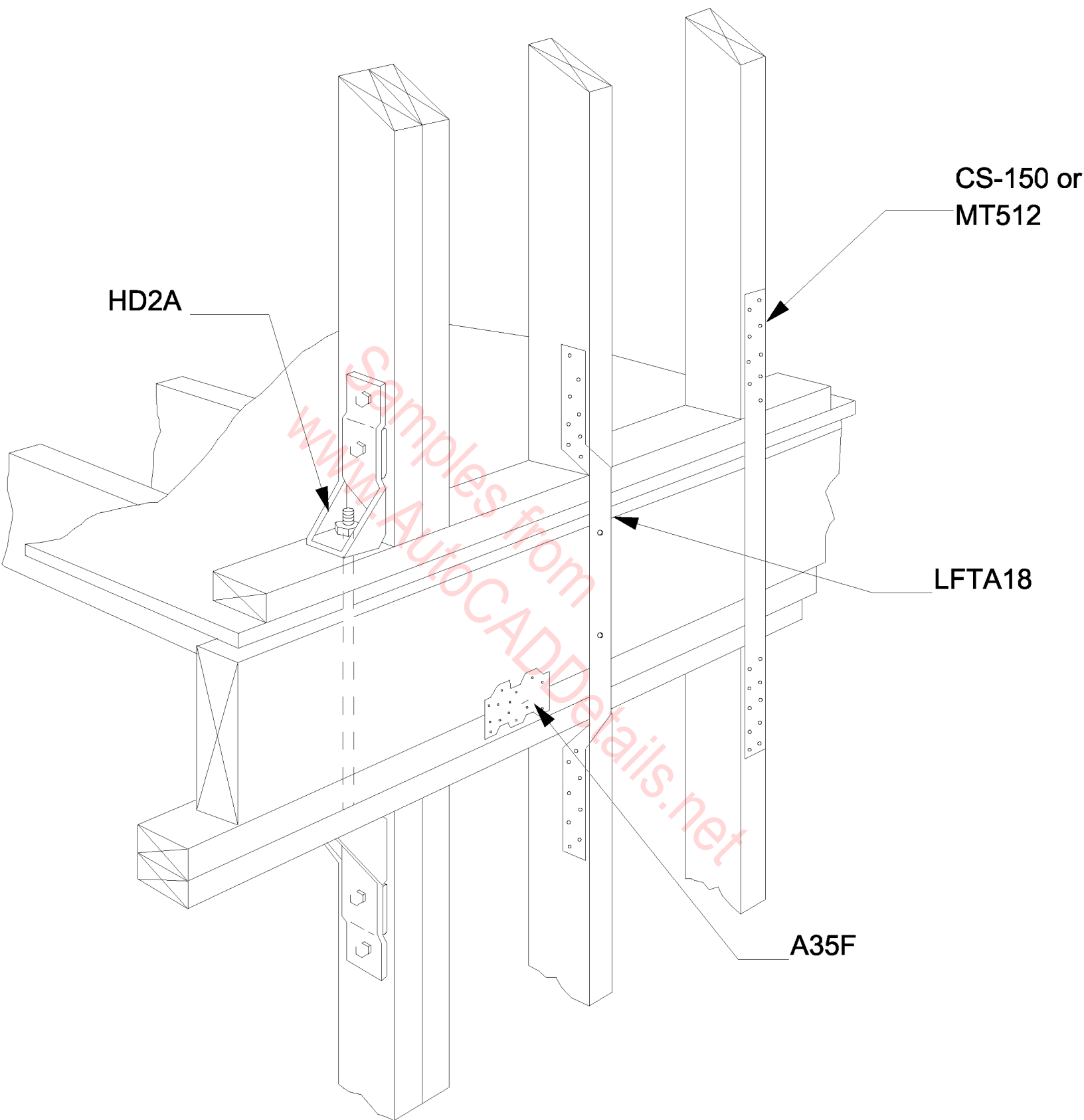
Floor Joists

Studs

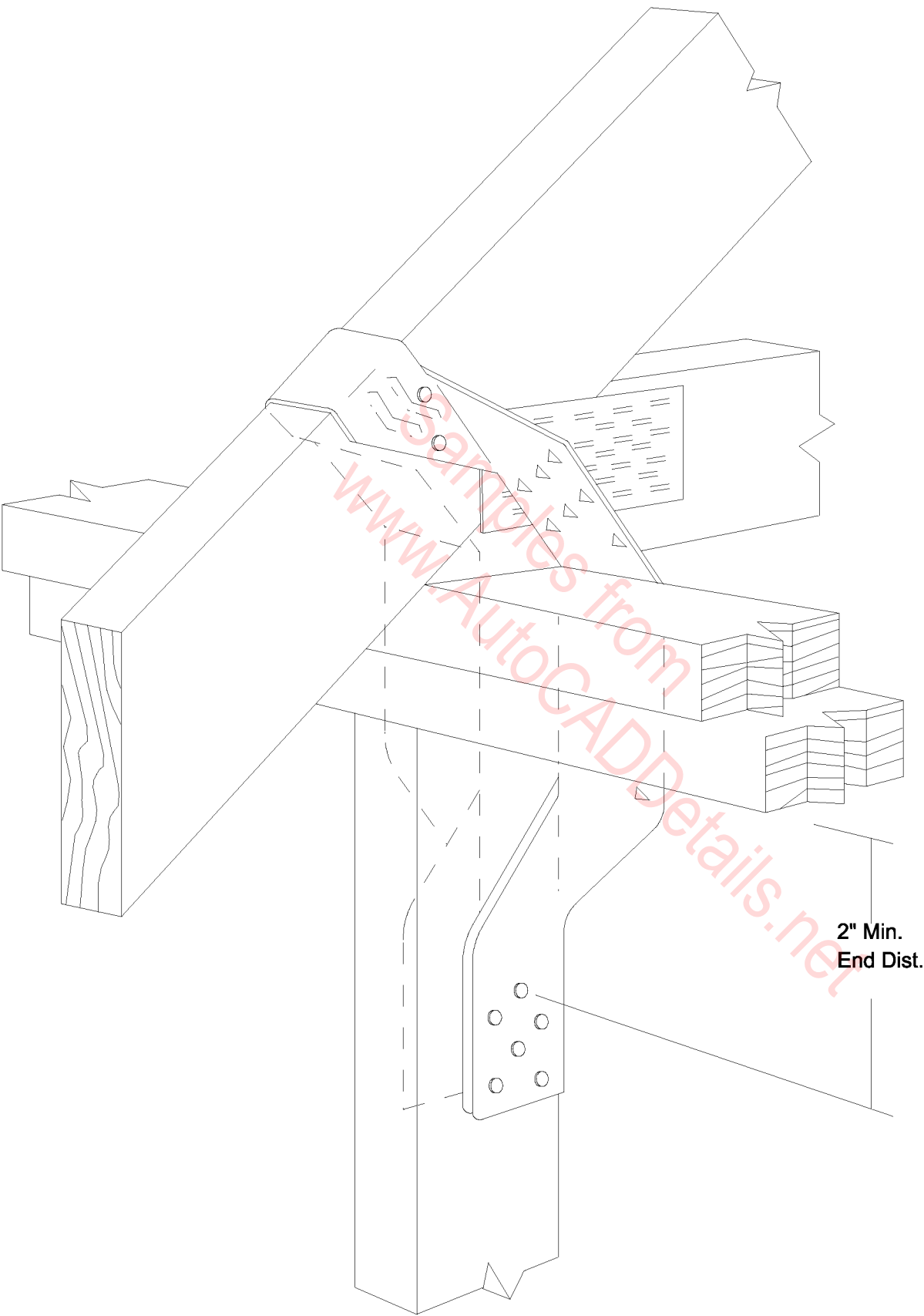
Samples from  
www.AutoCADDetails.net

Typical Ties Between Floors  
Using Simpson HD5A





**First Floor To Second Floor Connections -  
Simpson Strong Tie Connectors**



**FASTENERS**

To: Rafters-----4-10d x 1 1/2

To: Plates-----4-10d x 1 1/2

To: Studs-----12-10d x 1 1/2

2" Min.  
End Dist.

**H15 Seismic & Hurricane Ties**

H1-- Fasteners  
To Rafters--6-8d x 1 1/2"  
To Plate--4-8d

SP4 Fasteners  
6-10d x 1 1/2"

MST18--Fasteners  
14-10d Nails

2x6 Cripple

Header

2x6 Sill

Double 2x6  
Studs

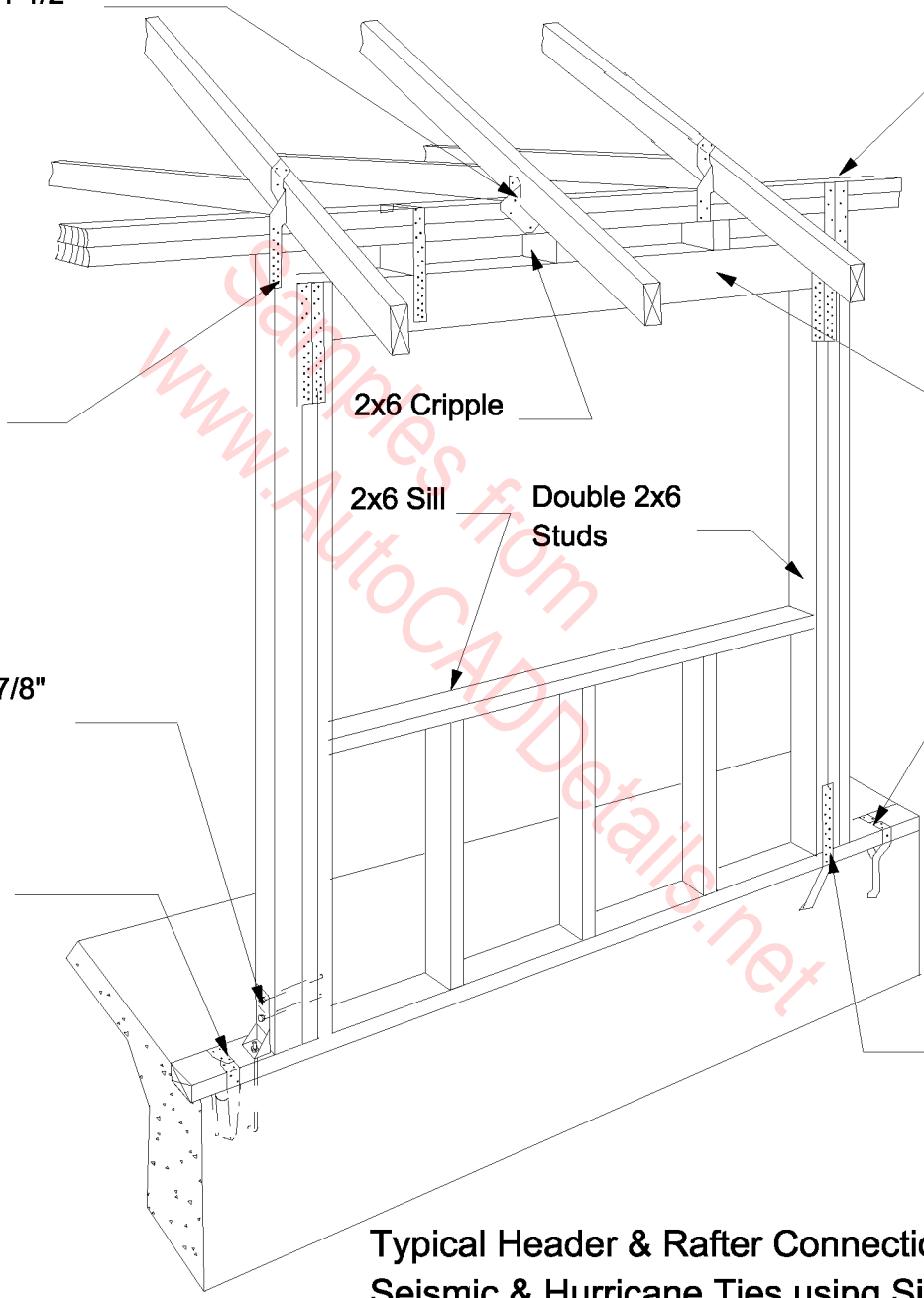
HD6A--Anchor Bolts 7/8"  
Stud Bolts--2-7/8"

MBA15 Fasteners  
Sides, 2-10d x 1 1/2"  
Top, 4 10d x 1 1/2"

MA6 Fasteners  
Sides--4-10d x 1 1/2"  
Top---4-10d x 1 1/2"

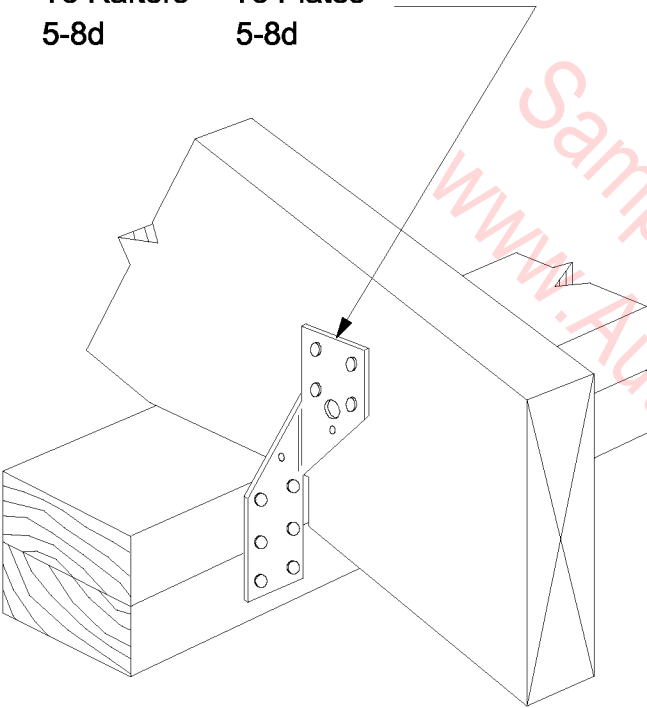
HPAD22 8 inch pour  
Fasteners 21-16d Nails  
Bolts 4- 1/2" dia.

Typical Header & Rafter Connections with  
Seismic & Hurricane Ties using Simpson-Ties



Fasteners  
To Rafters  
5-8d

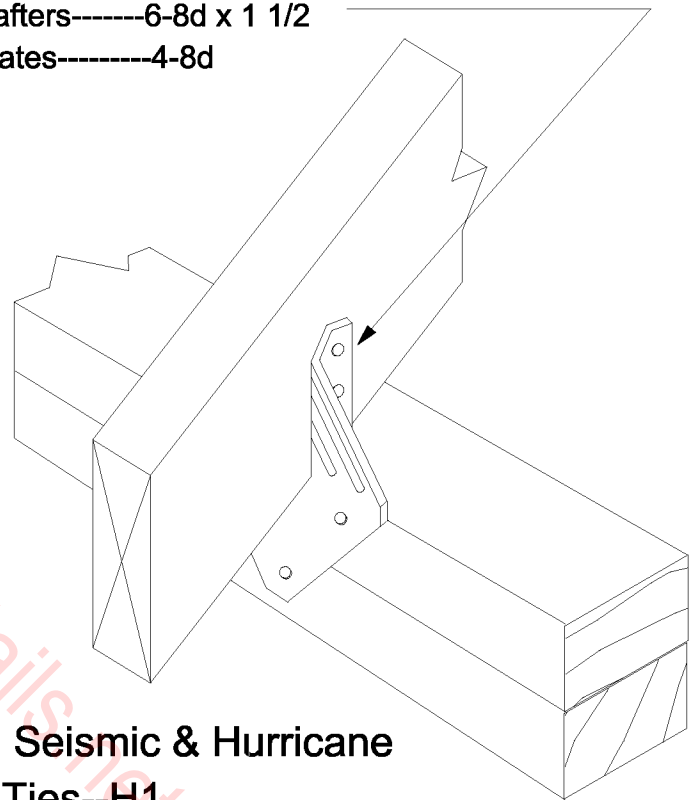
To Plates  
5-8d



Seismic & Hurricane  
Tie-H2.5

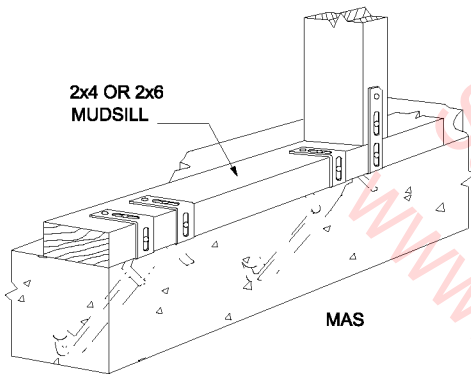
Fasteners

To: Rafters-----6-8d x 1 1/2  
To: Plates-----4-8d

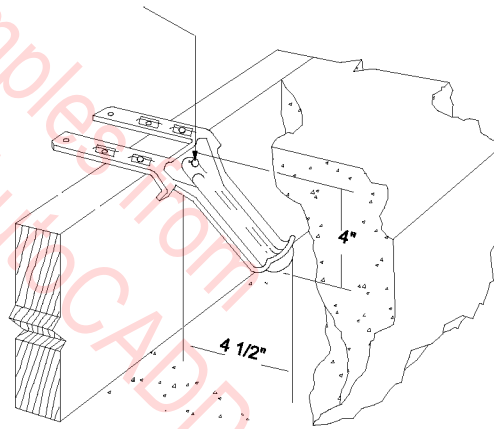


Seismic & Hurricane  
Ties--H1

Typical Hurrican Ties  
(Contractor Choice)

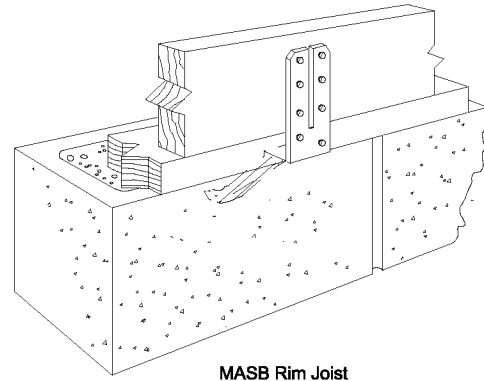
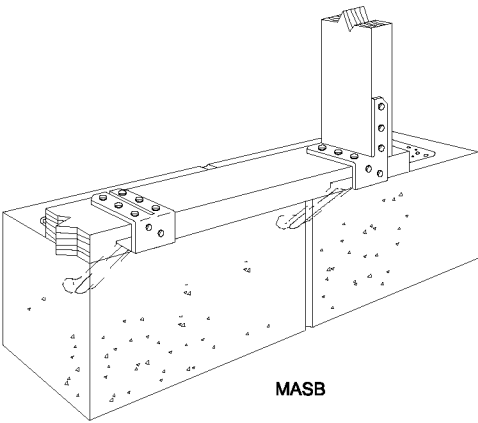
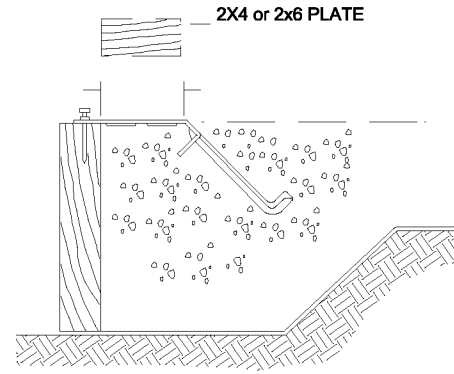


FOR INSTALLATION EASE, NAIL  
ONE DUPLEX INTO SIDE FORM  
BOARD



Mudsill Anchor Singleside - Installation Cut-away

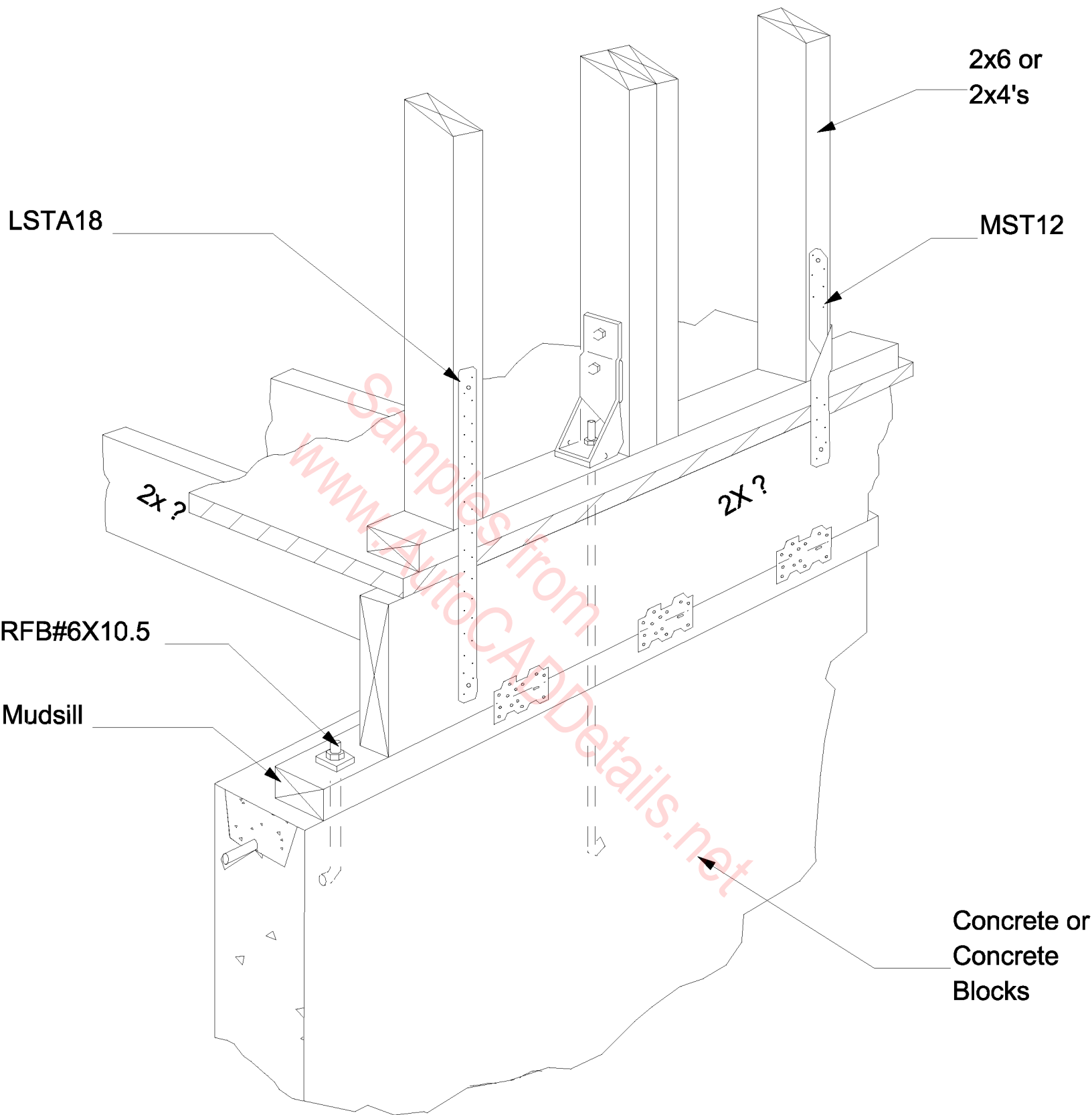
MAS



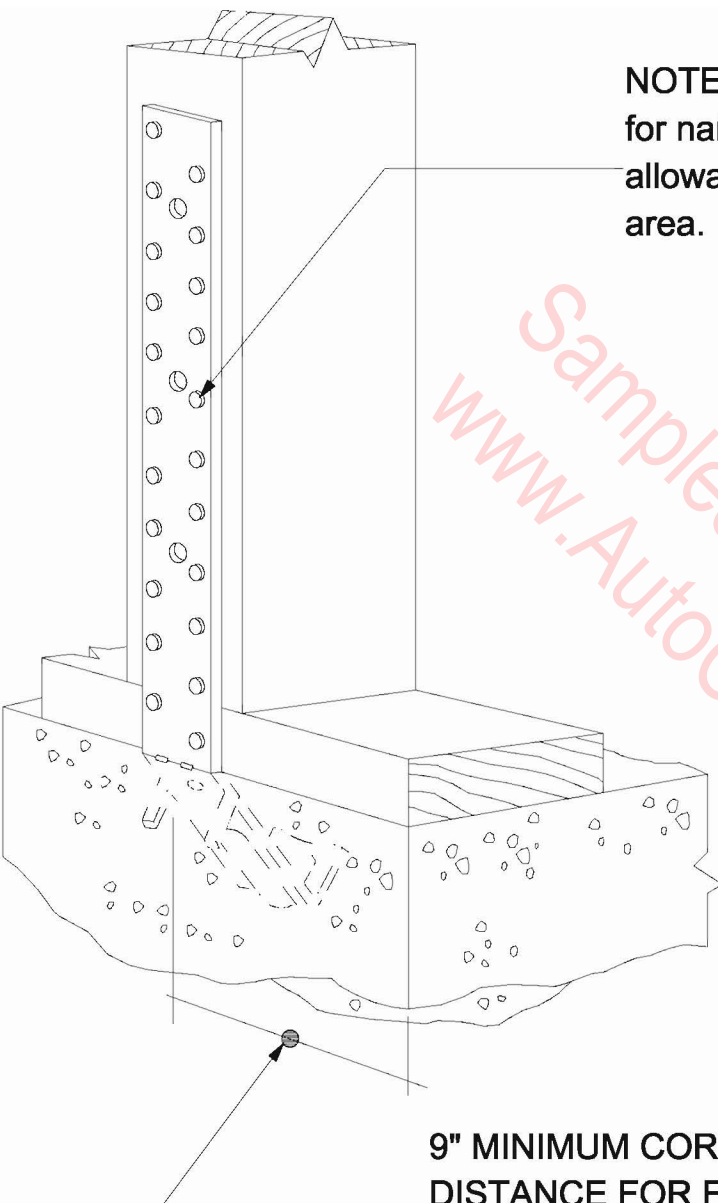
NOTE: See Simpson catalog  
for proper fasteners and  
allowable loads for your code  
requirements.

## MUDSILL ANCHOR (Contractor's Choice)





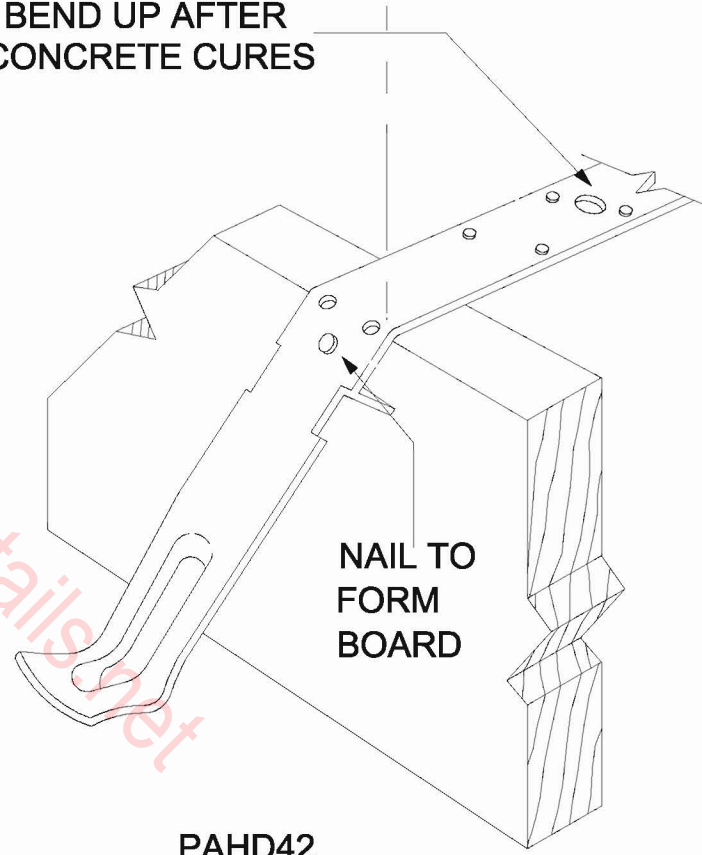
**Foundation Holddowns using Simpson Strong Ties.**



**NOTE:** See Simpson catalog  
for nailing schedule and  
allowable loads for your code  
area.

Samples from  
[www.AutoCADDetails.net](http://www.AutoCADDetails.net)

**BEND UP AFTER  
CONCRETE CURES**

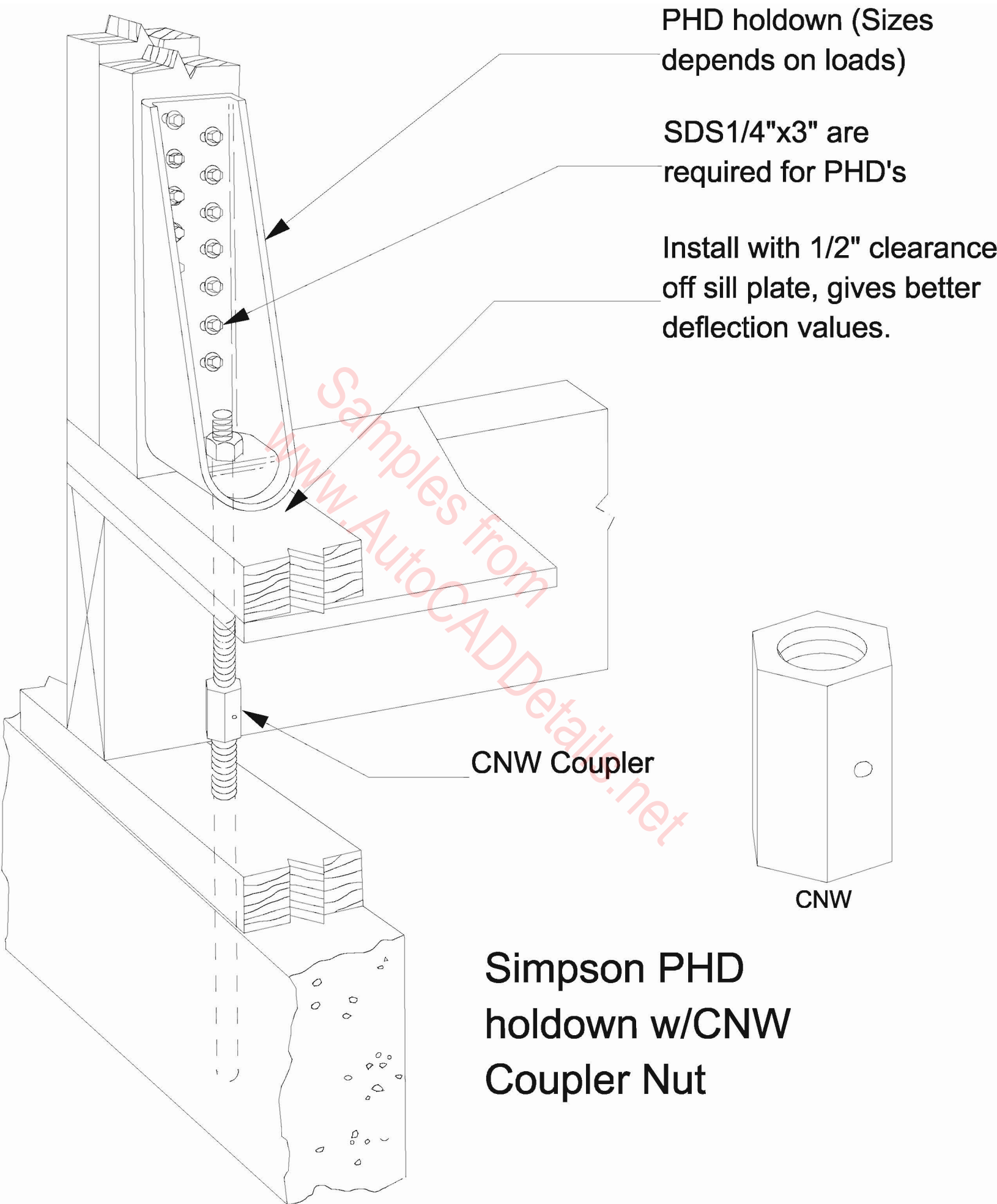


**NAIL TO  
FORM  
BOARD**

**PAHD42**

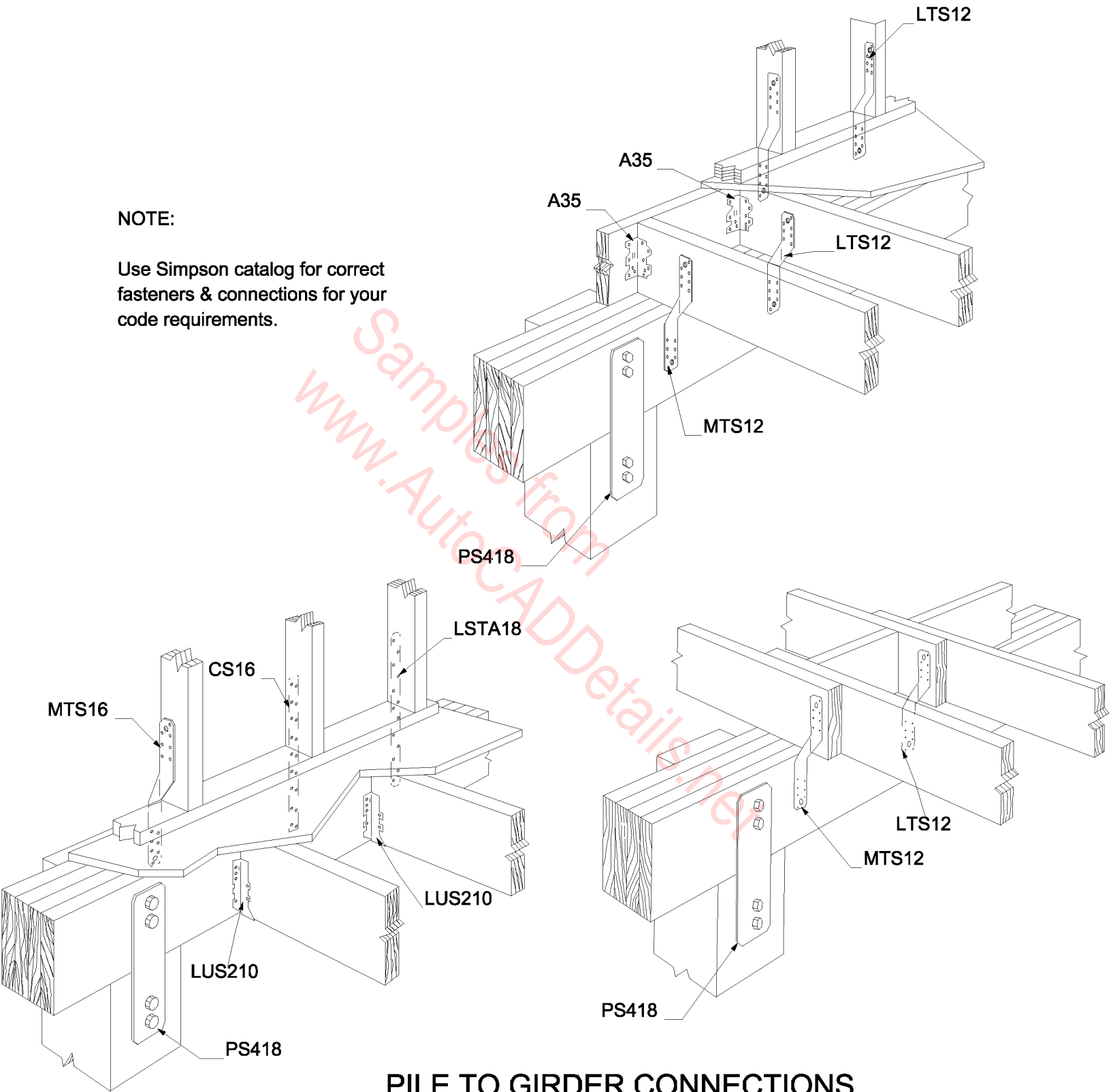
**9" MINIMUM CORNER  
DISTANCE FOR FULL  
VALUES.**

## **PAHD42 Installation**

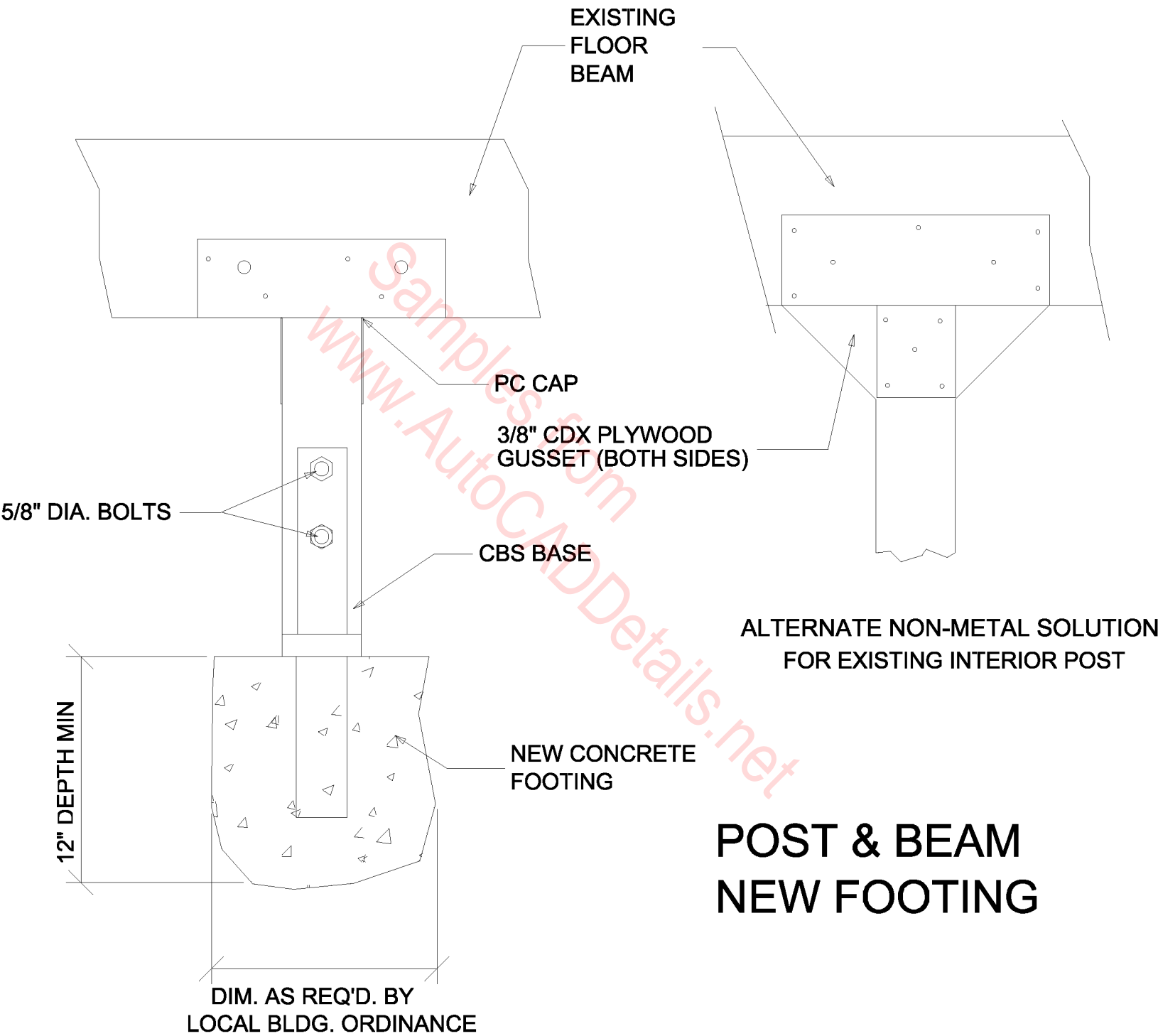


**NOTE:**

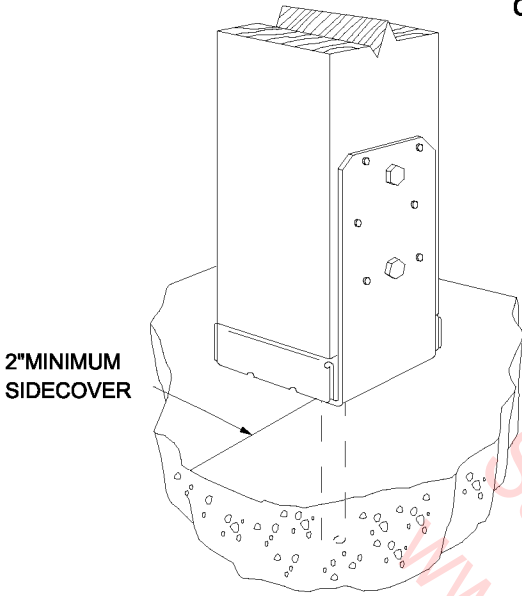
Use Simpson catalog for correct fasteners & connections for your code requirements.



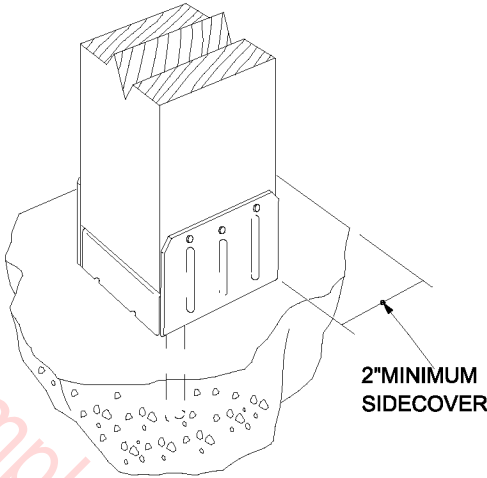
**PILE TO GIRDER CONNECTIONS  
(Contractors choice)**



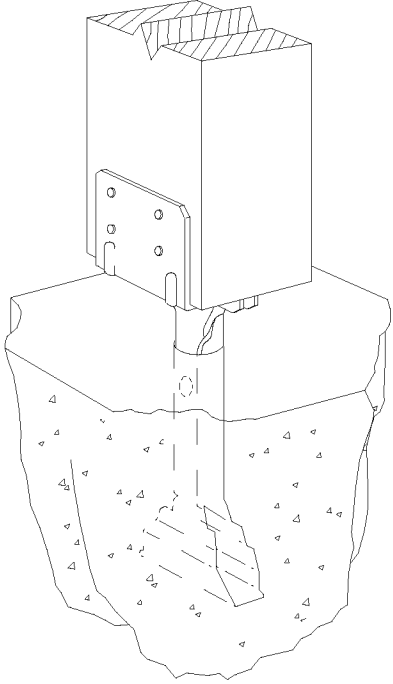
NOTE: See Simpson catalog for proper attachments and allowable loads for your code area.



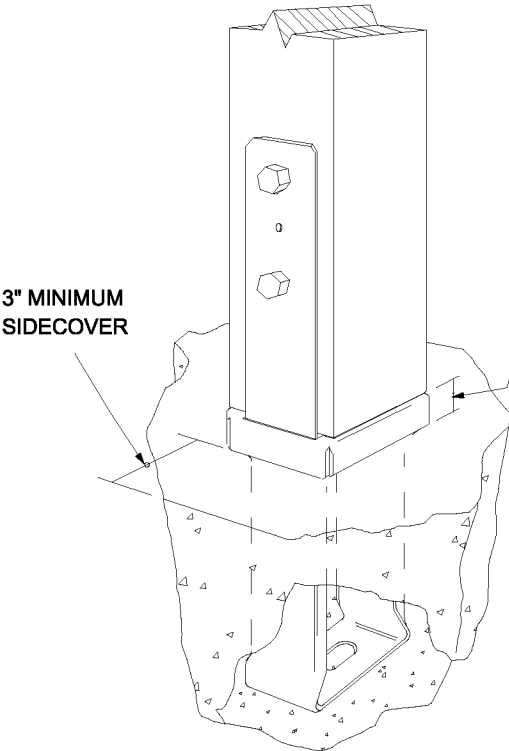
ABU44



ABE44

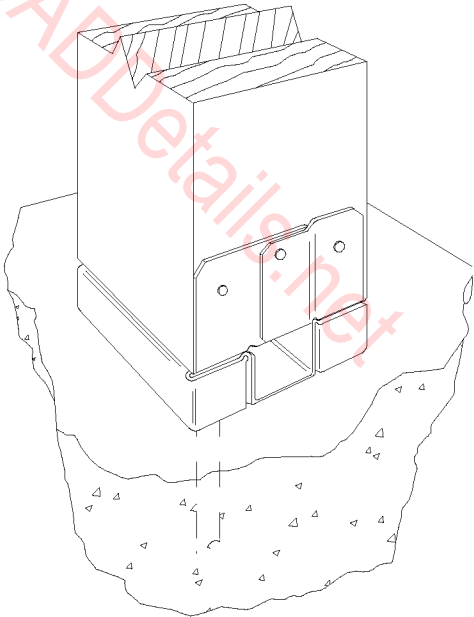


EPB44A

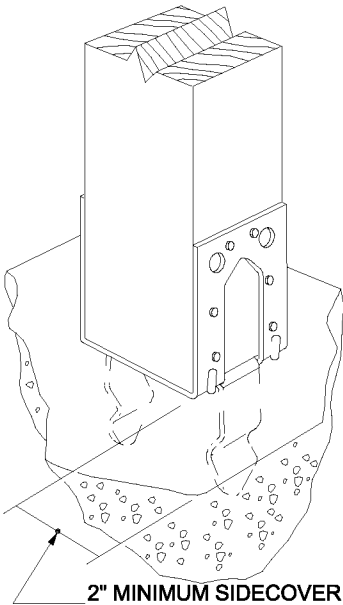


CBS44

1" STANDOFF SATISFIES CODE REQUIREMENTS



ABA44

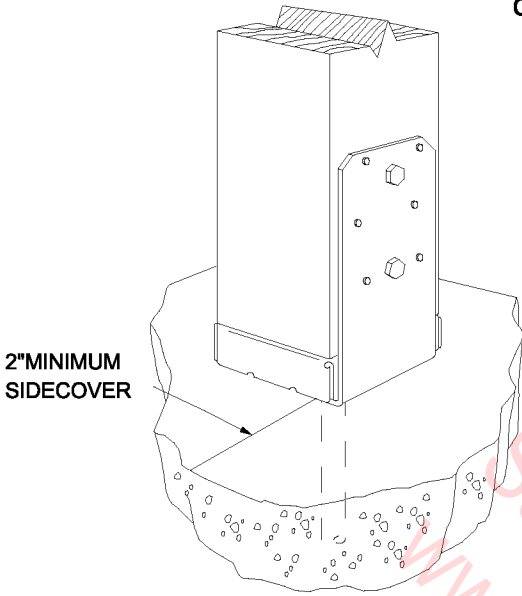


PB44

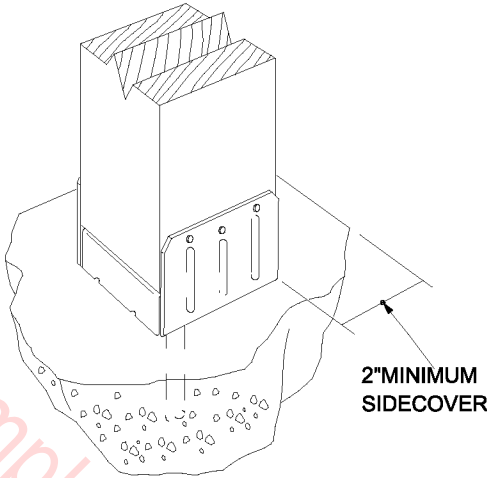
# POST AND COLUMN BASES

(Contractors Choice)

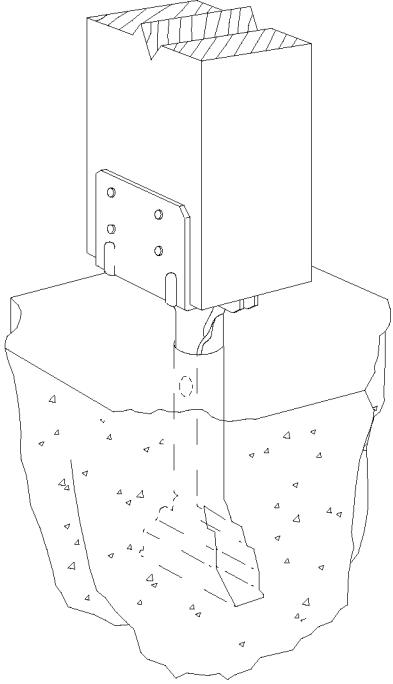
NOTE: See Simpson catalog for proper attachments and allowable loads for your code area.



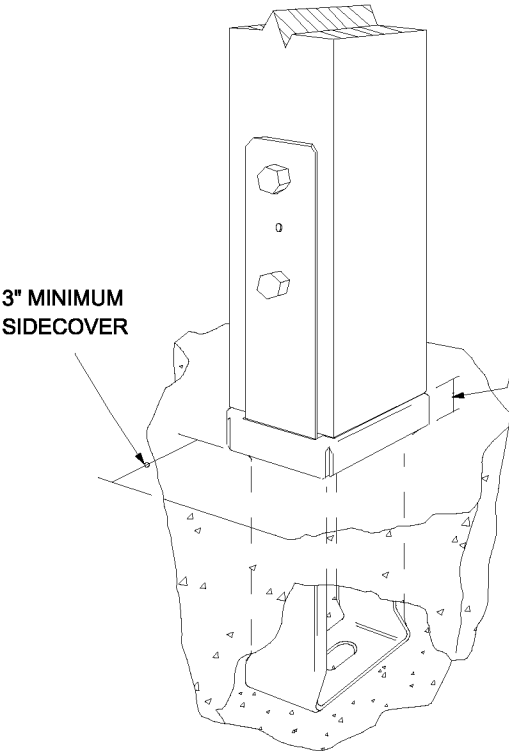
ABU44



ABE44

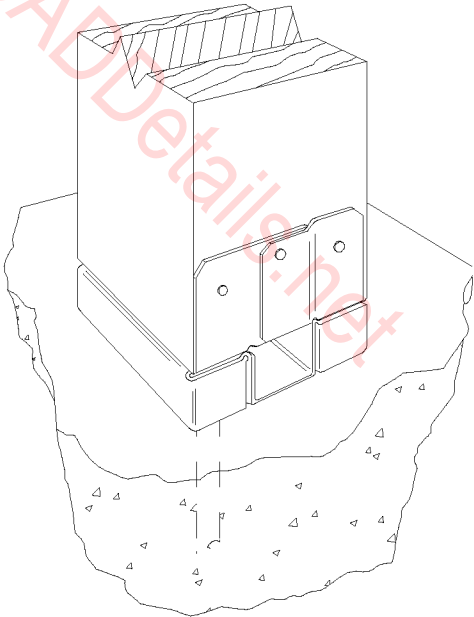


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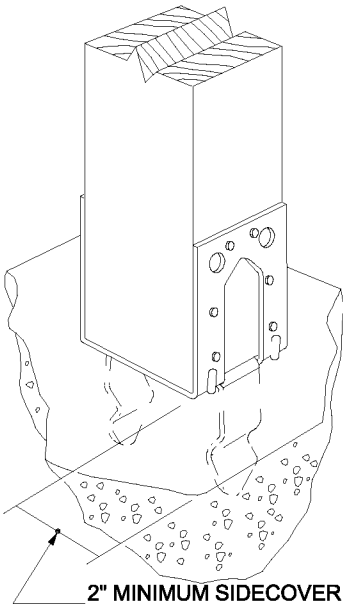


CBS44

1" STANDOFF SATISFIES CODE REQUIREMENTS



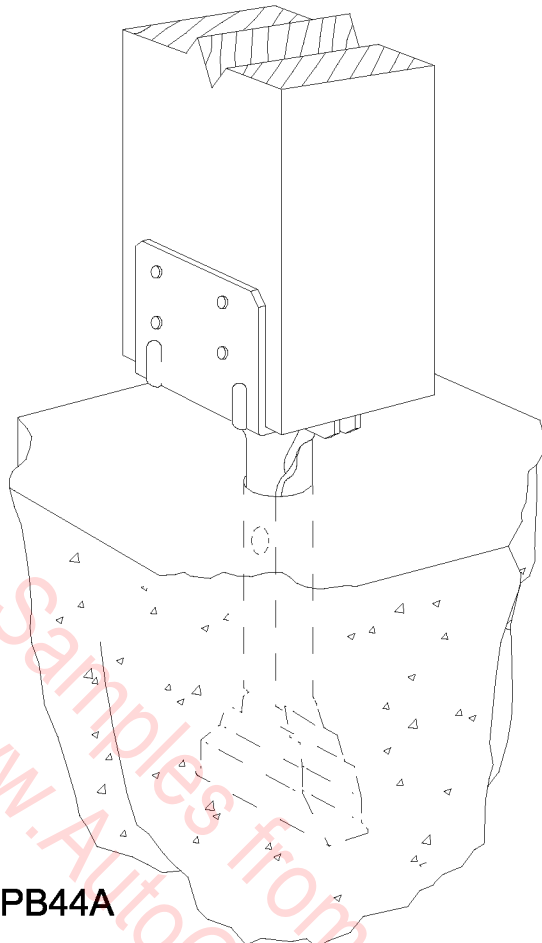
ABA44



PB44

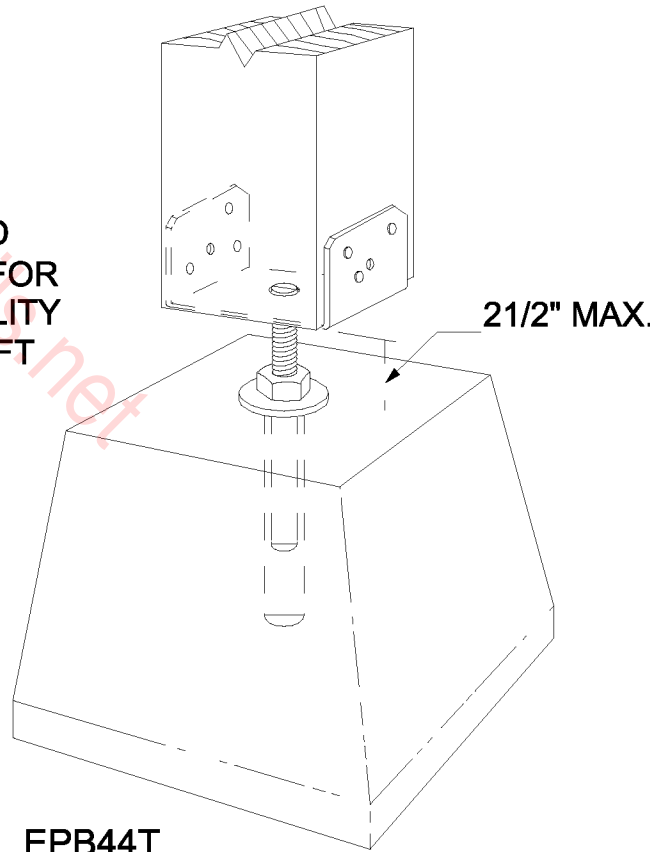
# POST AND COLUMN BASES

(Contractors Choice)

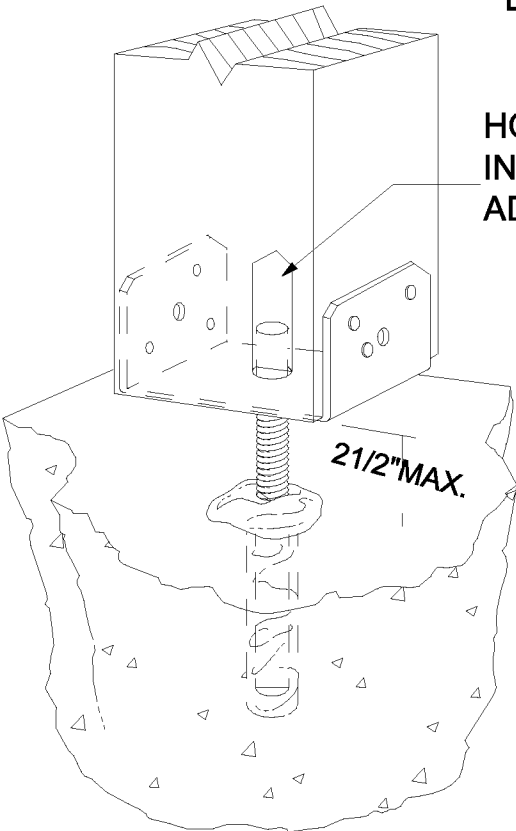


HOLE DRILLED INTO POST FOR ADJUSTABILITY

NUT AND WASHER FOR ADJUSTABILITY NO UPLIFT

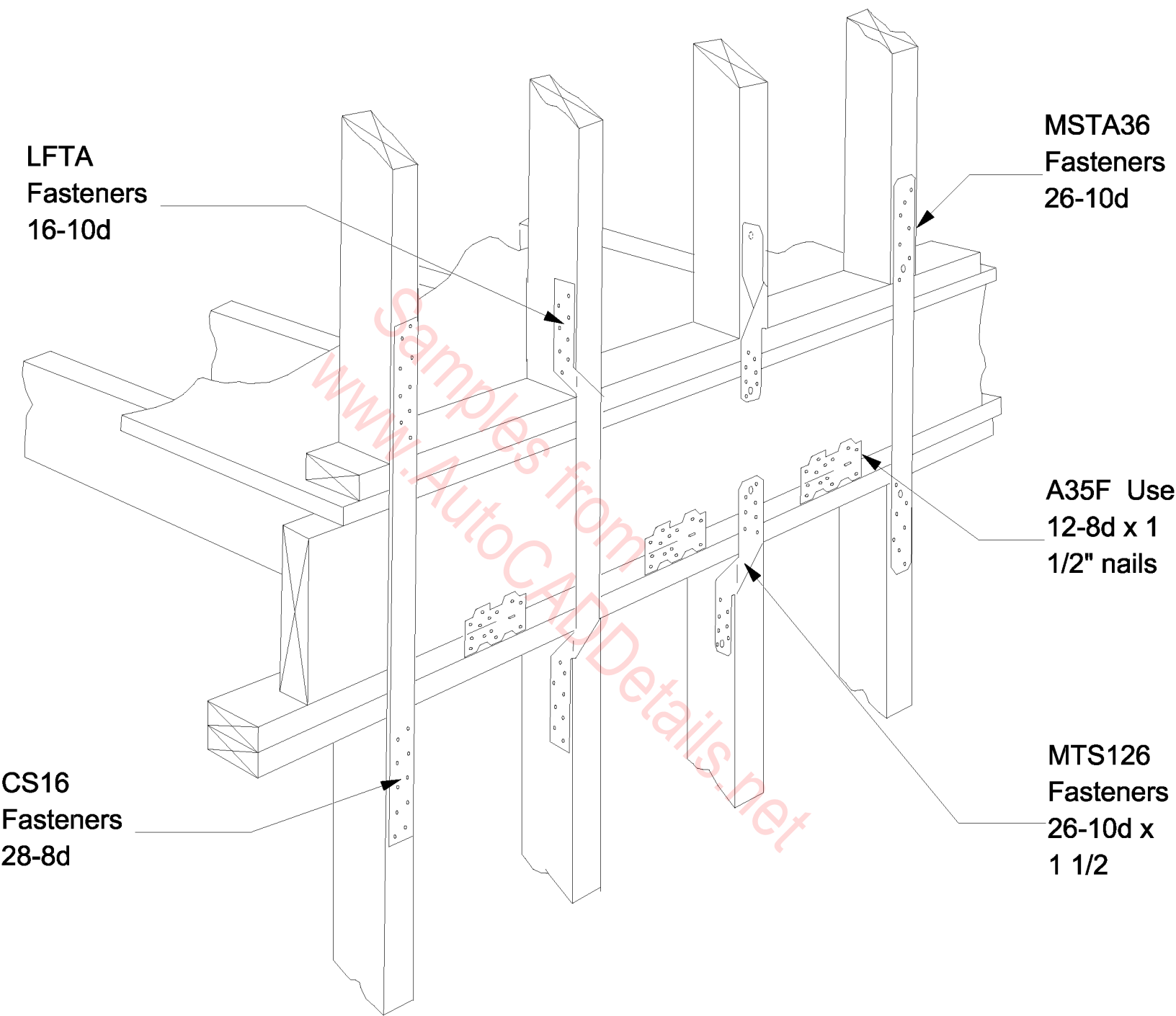


EPOXY OR CAST IN PLACE FOR UPLIFT

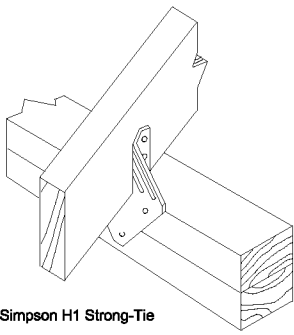


**POST BASE**  
**(Contractor's Choice)**

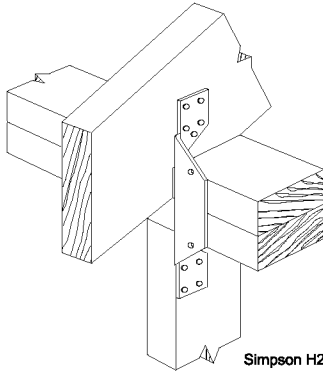




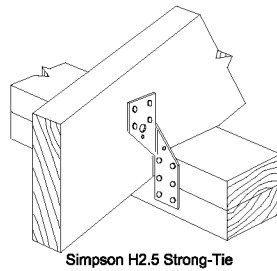
**Second Floor Anchor using  
Simpson Strong-Ties**



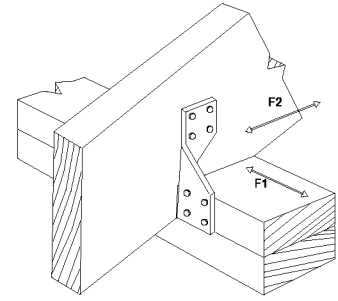
Simpson H1 Strong-Tie



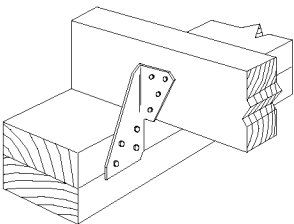
Simpson H2 Strong-Tie



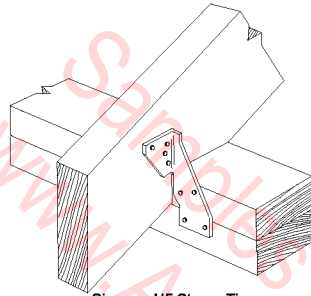
Simpson H2.5 Strong-Tie



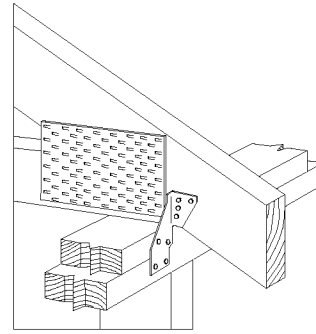
Simpson H3 Strong-Tie



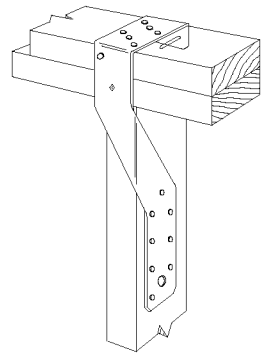
Simpson Strong-Tie  
H4



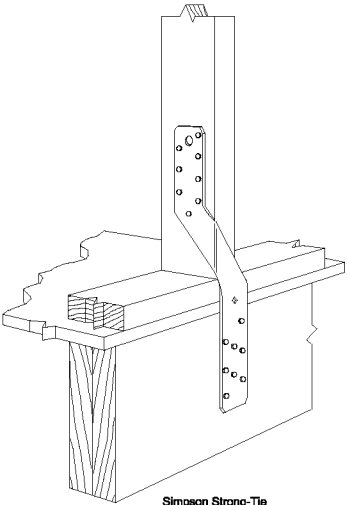
Simpson H5 Strong-Tie



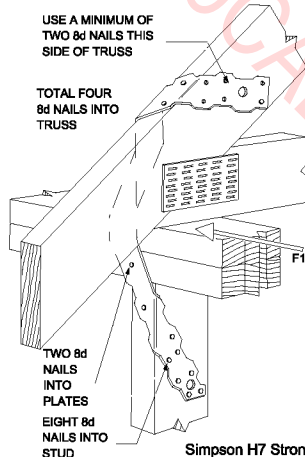
Simpson H5 Strong-Tie



Simpson H6 Strong-Tie



Simpson Strong-Tie  
H6

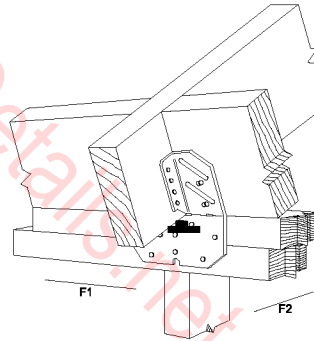


USE A MINIMUM OF  
TWO 8d NAILS THIS  
SIDE OF TRUSS

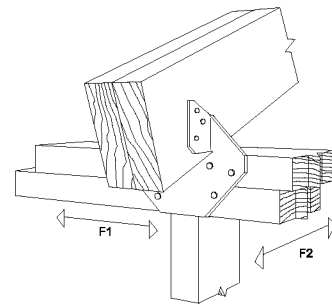
TOTAL FOUR  
8d NAILS INTO  
TRUSS

TWO 8d  
NAILS  
INTO  
PLATES  
EIGHT 8d  
NAILS INTO  
STUD

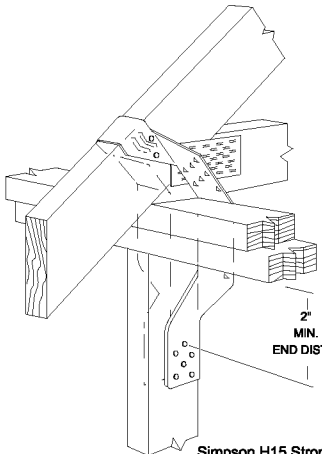
Simpson H7 Strong-Tie



Simpson H10 Strong-Tie



Simpson H10-2 Strong-Tie



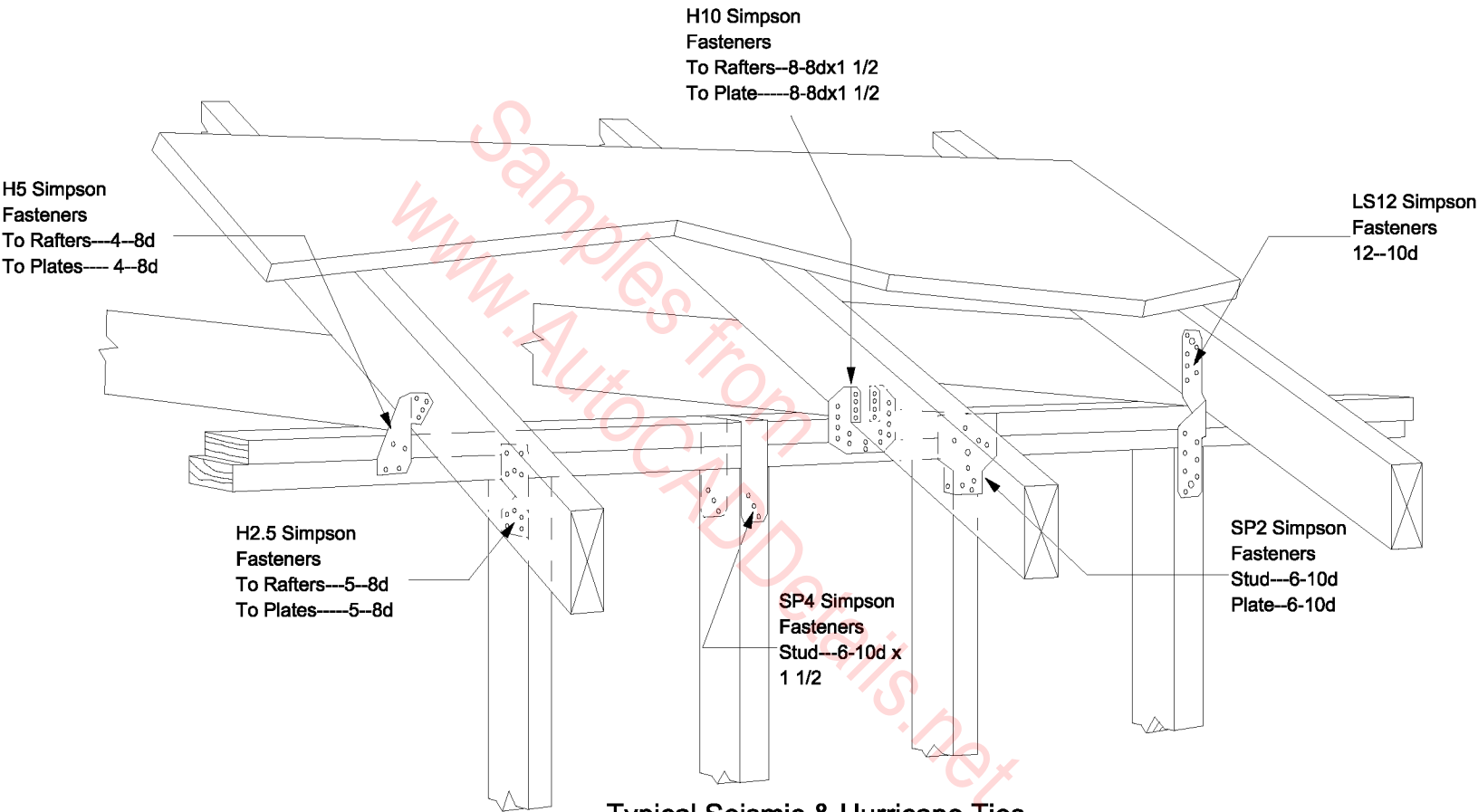
Simpson H15 Strong-Tie

NOTE:  
H15 acomodates pitches  
from 0:12 to 7:12

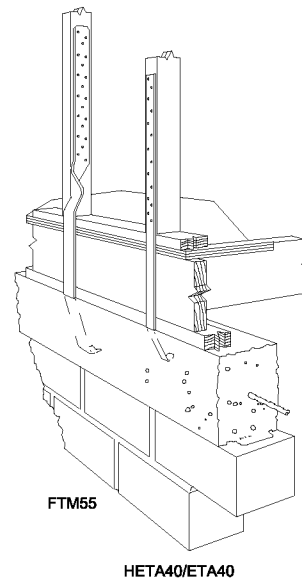
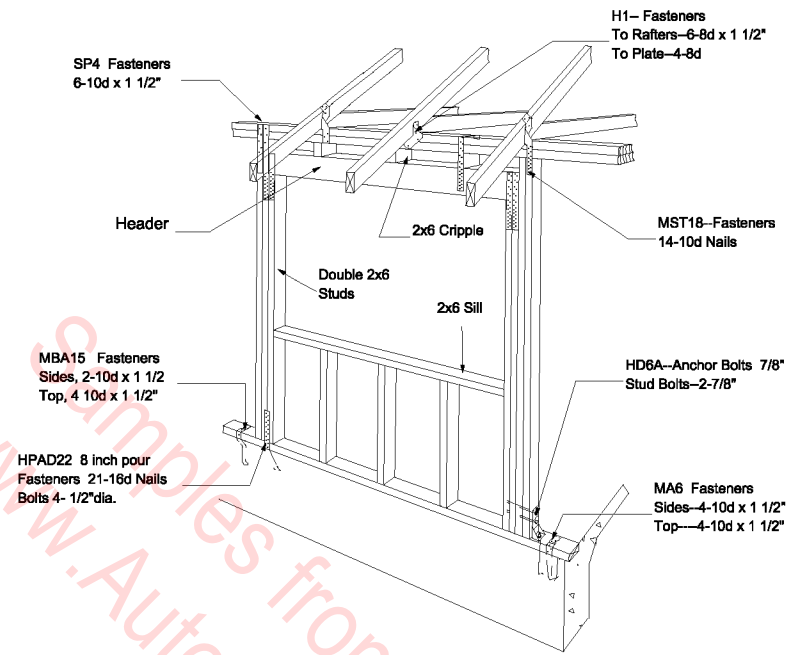
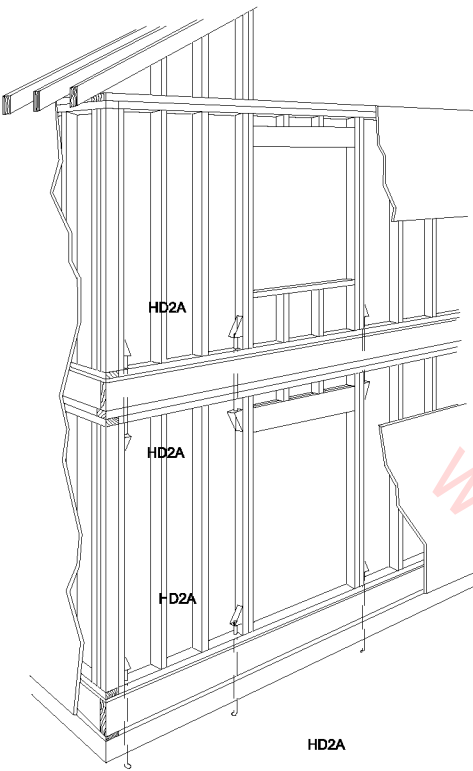
2"  
MIN.  
END DIST.

## SEISMIC AND HURRICANE TIES

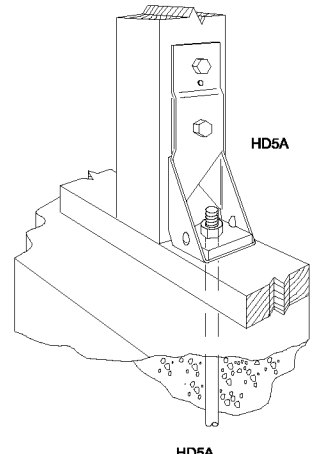
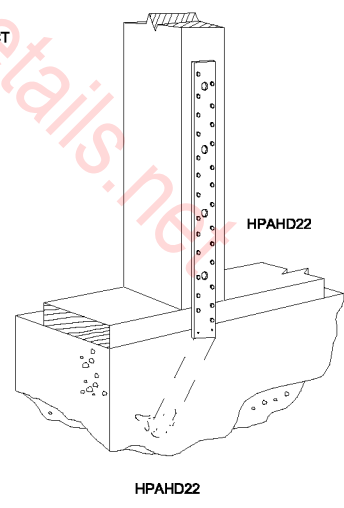
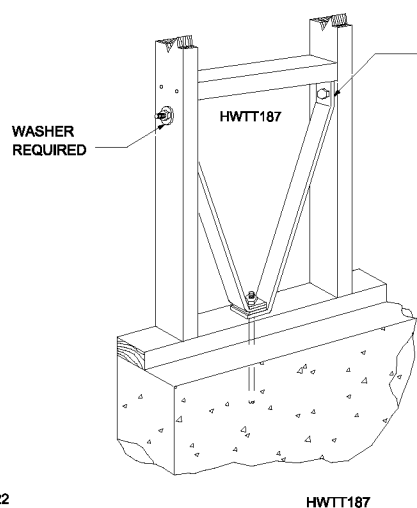
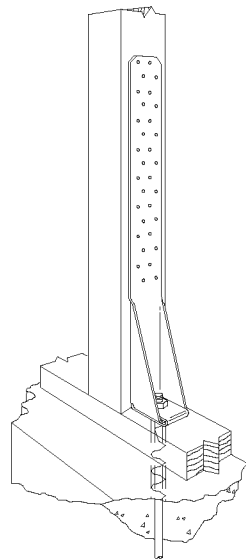
(Contractor Choice)



**Typical Seismic & Hurricane Ties**  
**Using Simpson Products**  
 Contractor's Choice



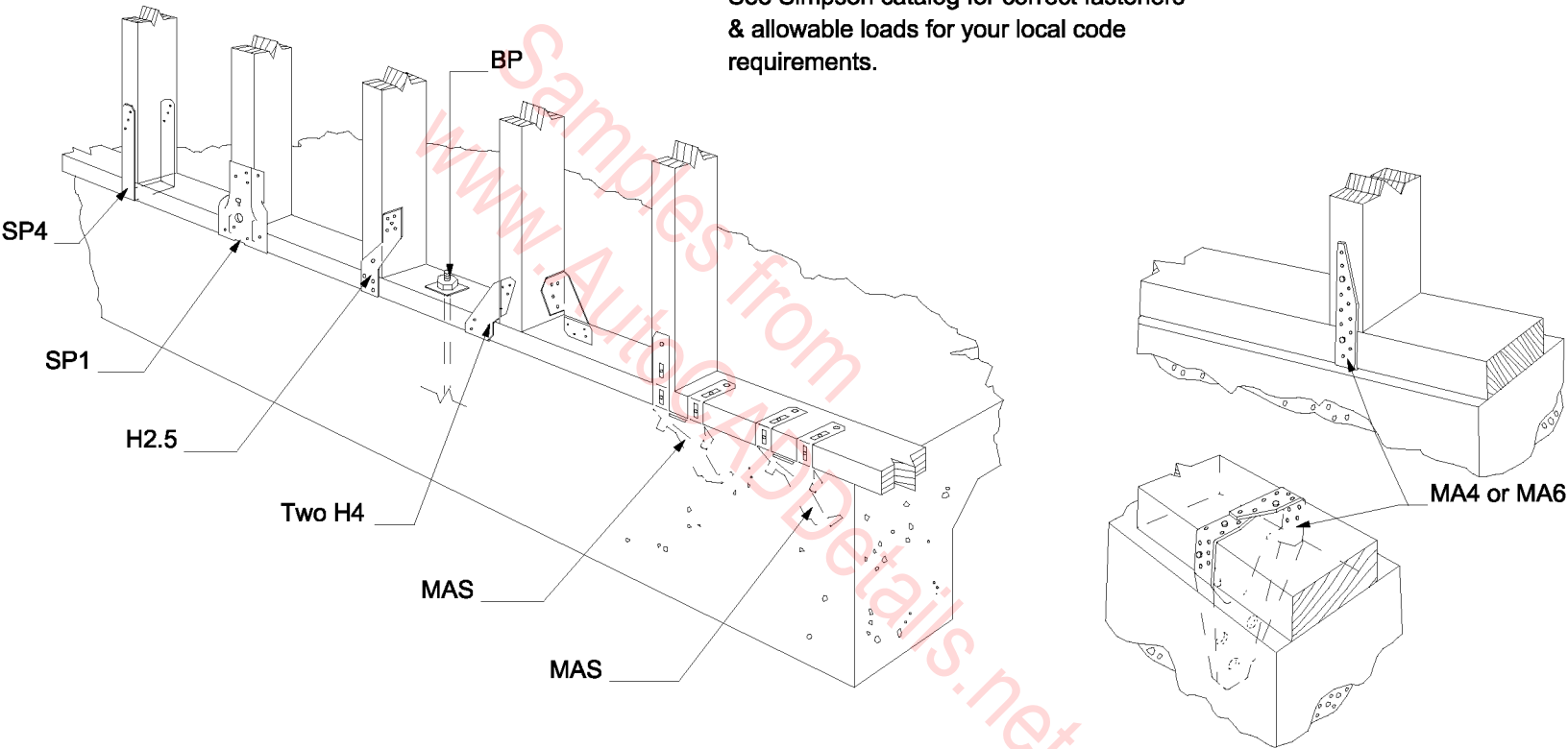
Typical Header & Rafter Connections for Seismic & Hurricane Ties using Simpson Strong -Ties



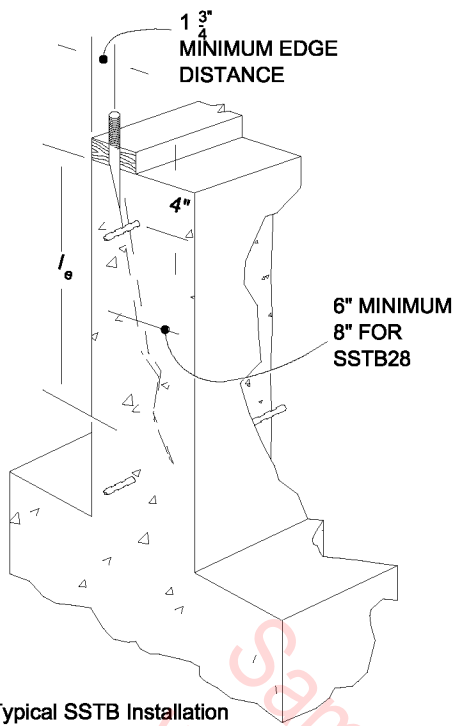
SHEARWALL HOLDOWN CONNECTIONS  
(Contractor choice as per code requirement)

NOTE:

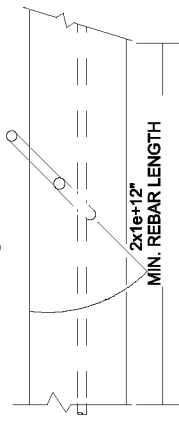
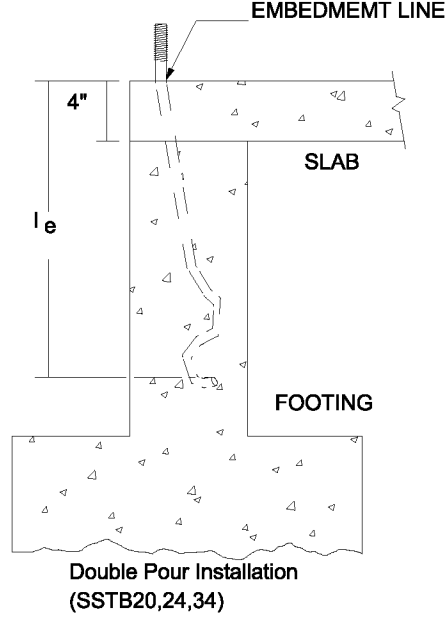
See Simpson catalog for correct fasteners  
& allowable loads for your local code  
requirements.



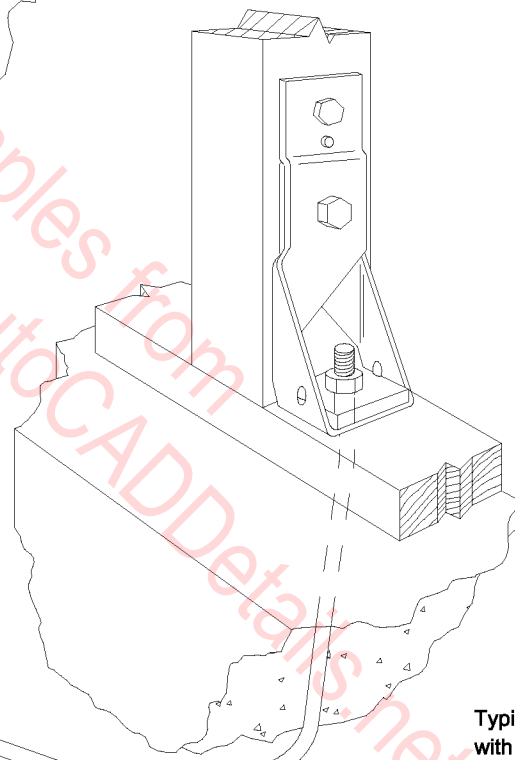
**SILL PLATE TO FOUNDATION CONNECTIONS**  
(Contractor's Choice)



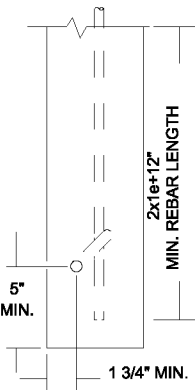
Typical SSTB Installation



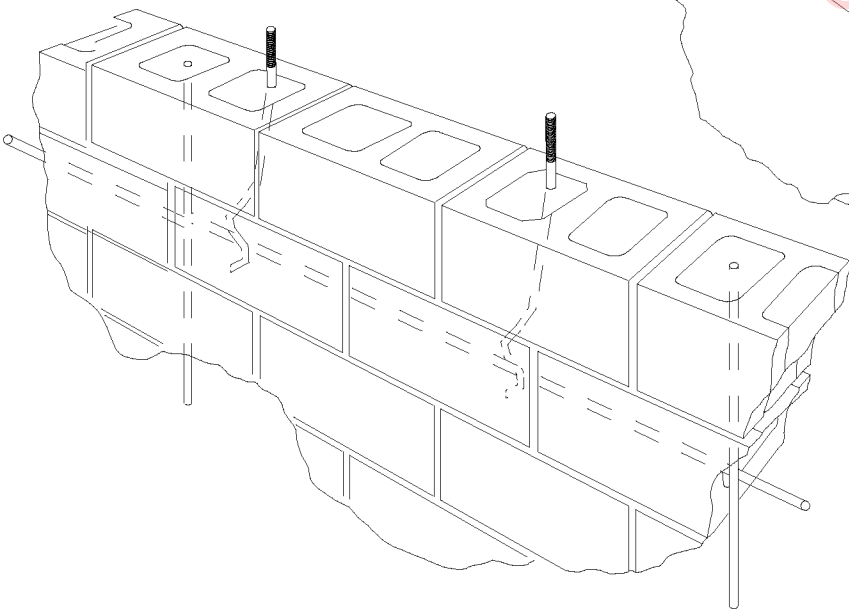
Continuous Stemwall



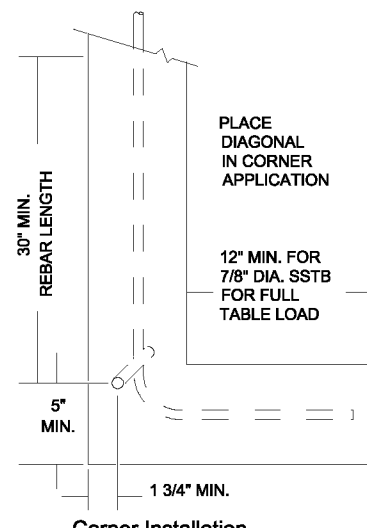
Typical SSTB Installation with mudsill and holdown



End Wall



SSTB (in Concrete Block)

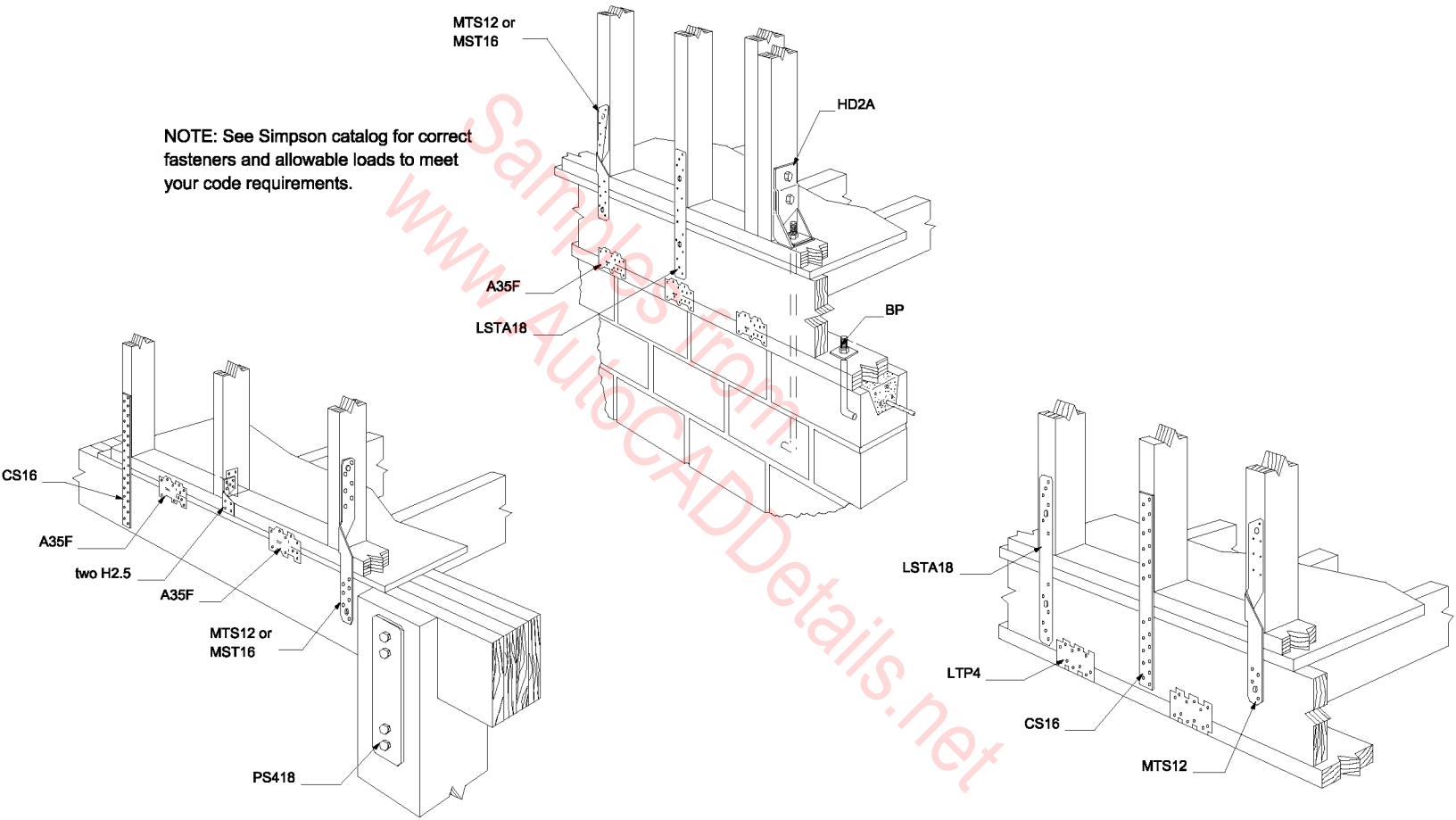


Corner Installation

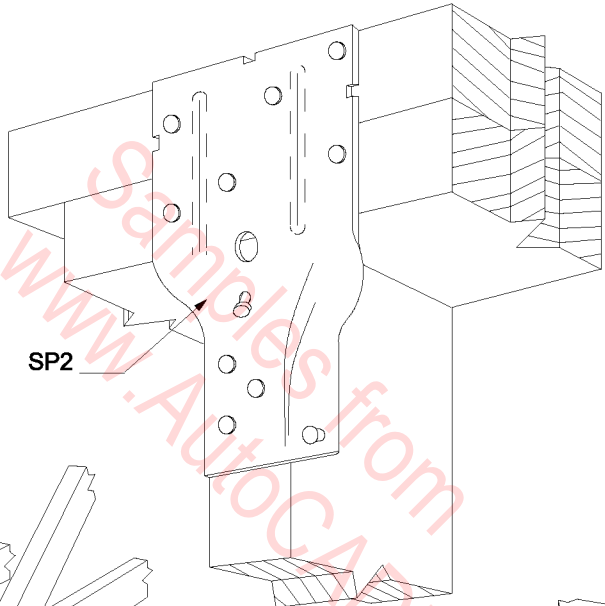
**TYPICAL SSTB ANCHOR BOLT INSTALLATION**

Samples from  
www.AutoCADDetails.net

NOTE: See Simpson catalog for correct fasteners and allowable loads to meet your code requirements.

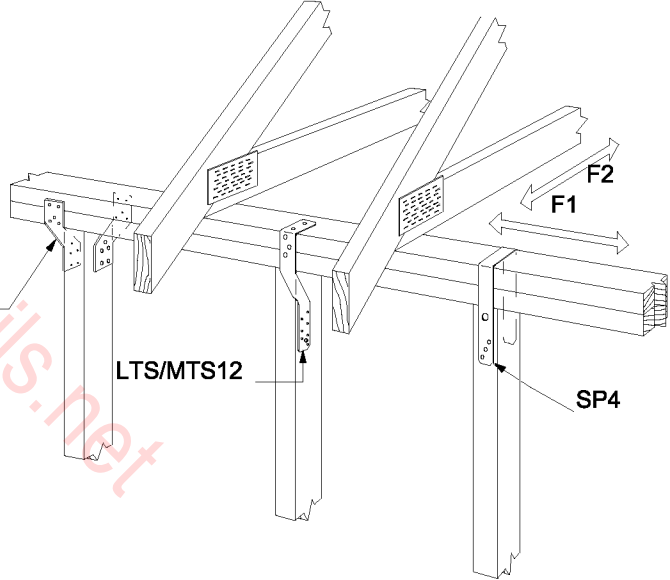
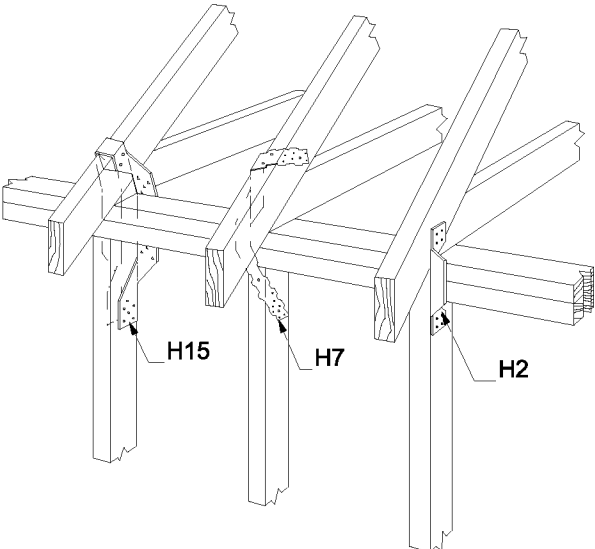


STUD TO BAND JOIST CONNECTIONS  
(Contractor's Choice)



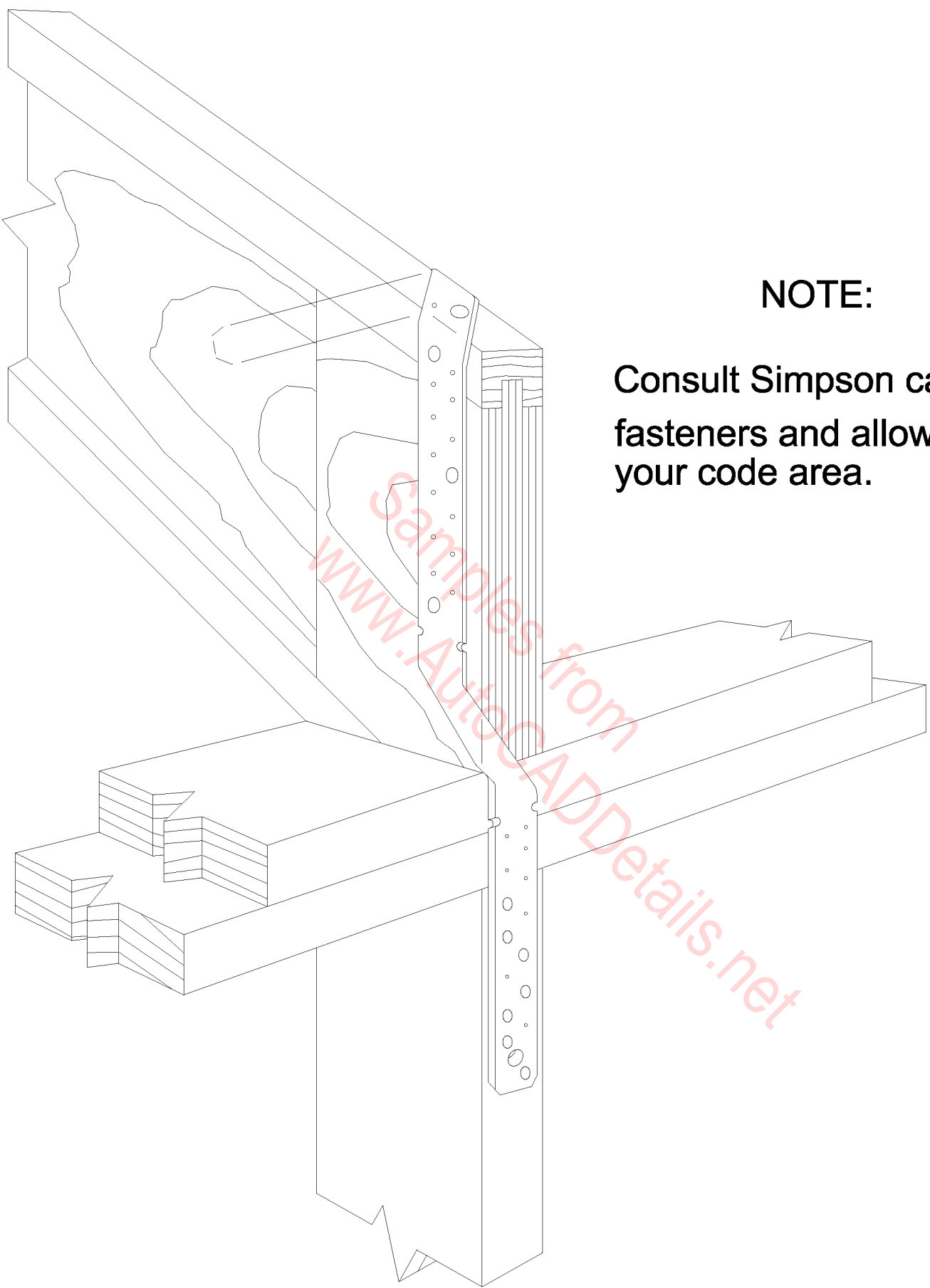
**NOTE:**

See Simpson catalog for proper fasteners and allowable loads for your code area.



**TOP PLATE TO STUD  
(Contractor's Choice)**





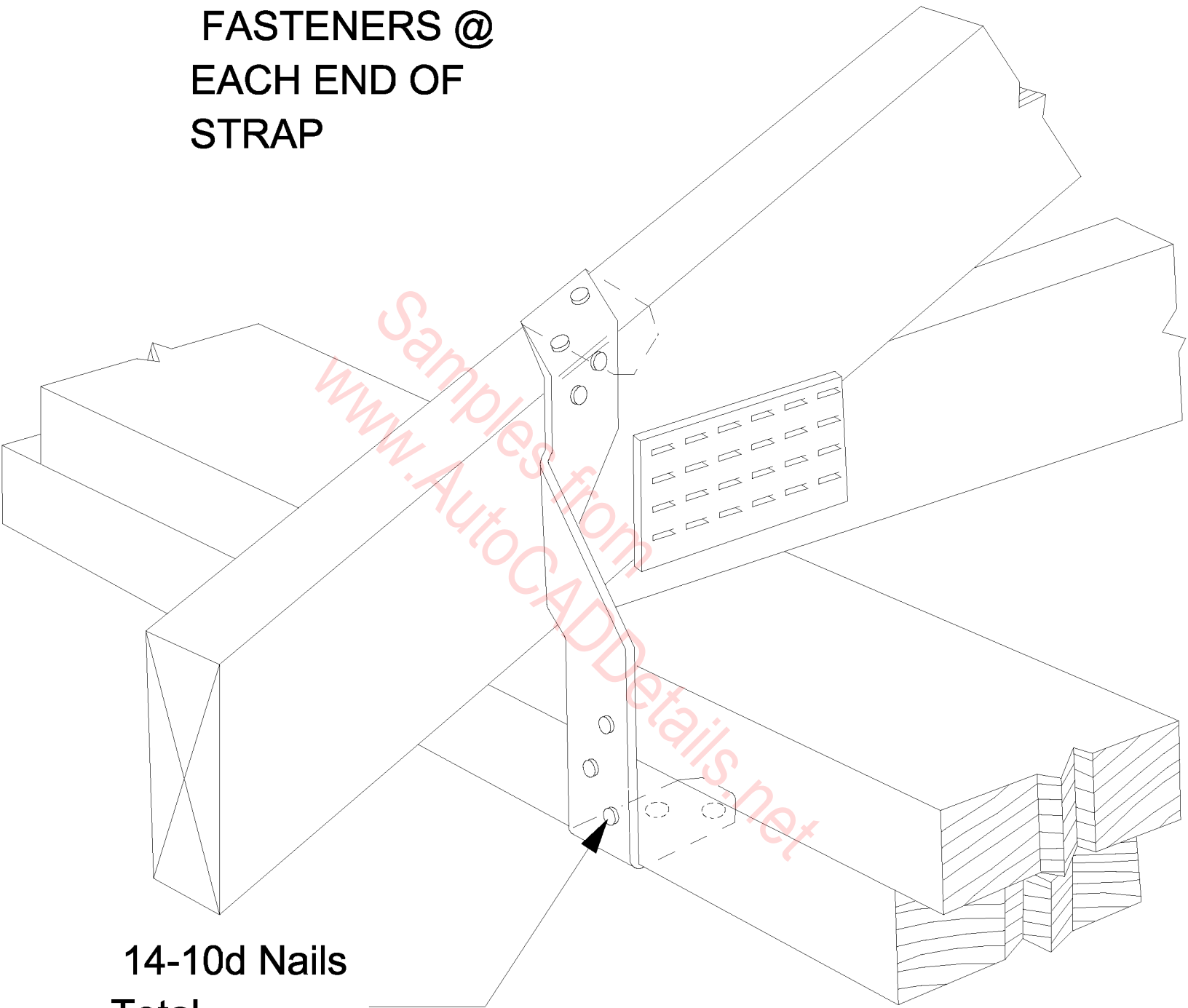
**NOTE:**

Consult Simpson catalog for fasteners and allowable loads for your code area.

**MTS30 (flush to stud)**

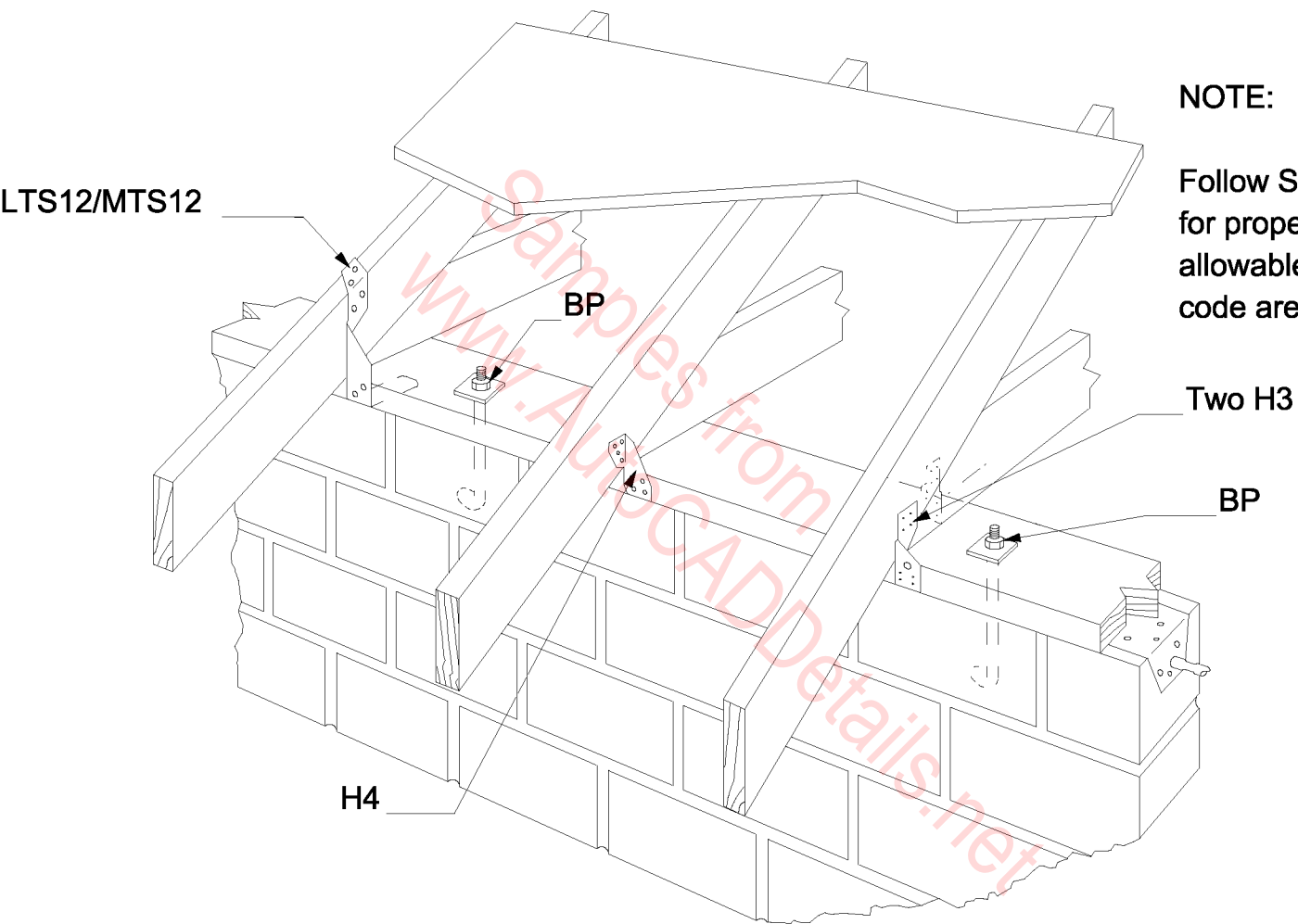
**TRUSS AND RAFTER TO STUD**

**FASTENERS @  
EACH END OF  
STRAP**



**14-10d Nails  
Total**

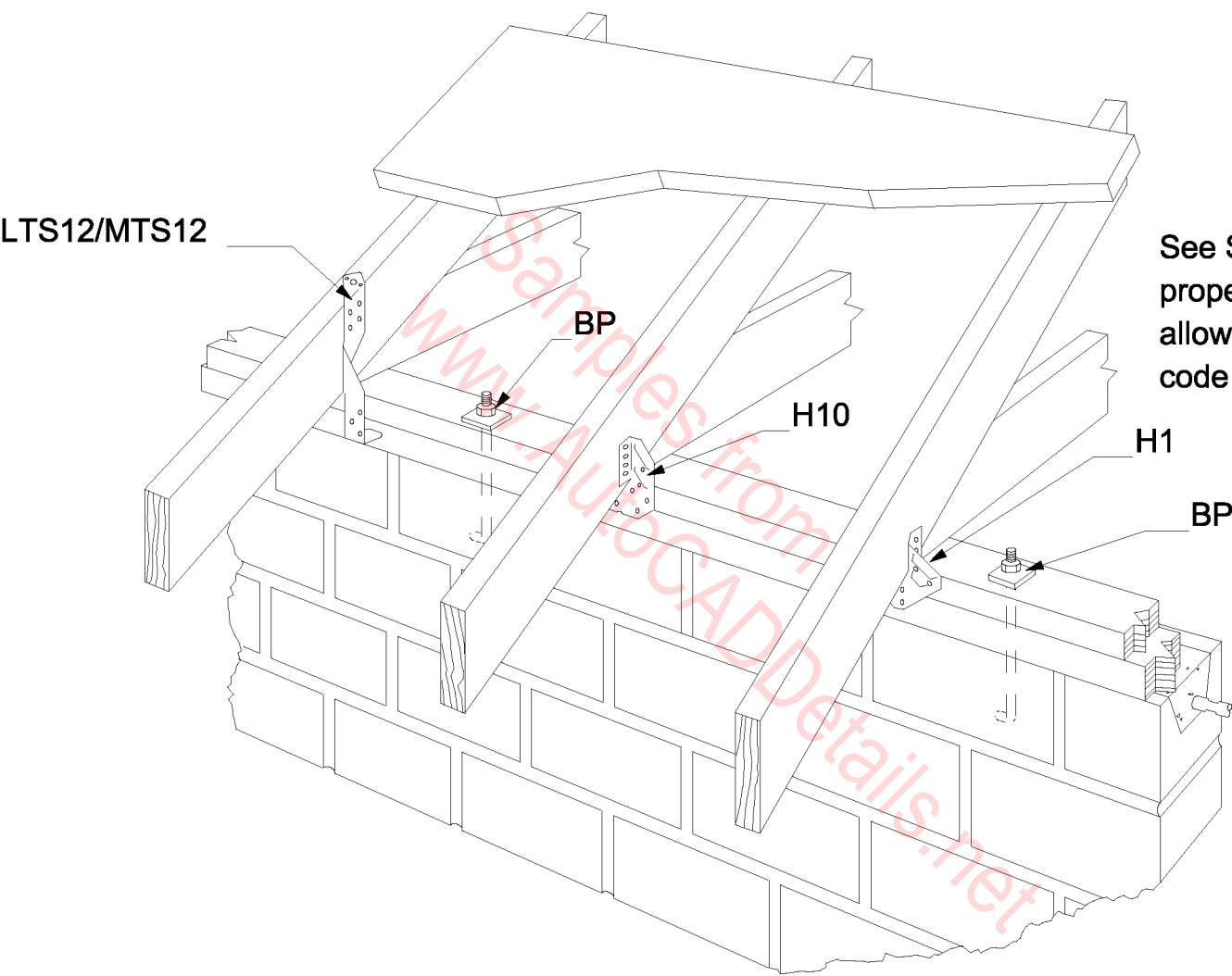
**Truss-To-Top Plate Tie-MTS Series**



**NOTE:**

Follow Simpson catalog for proper fasteners and allowable loads for your code area.

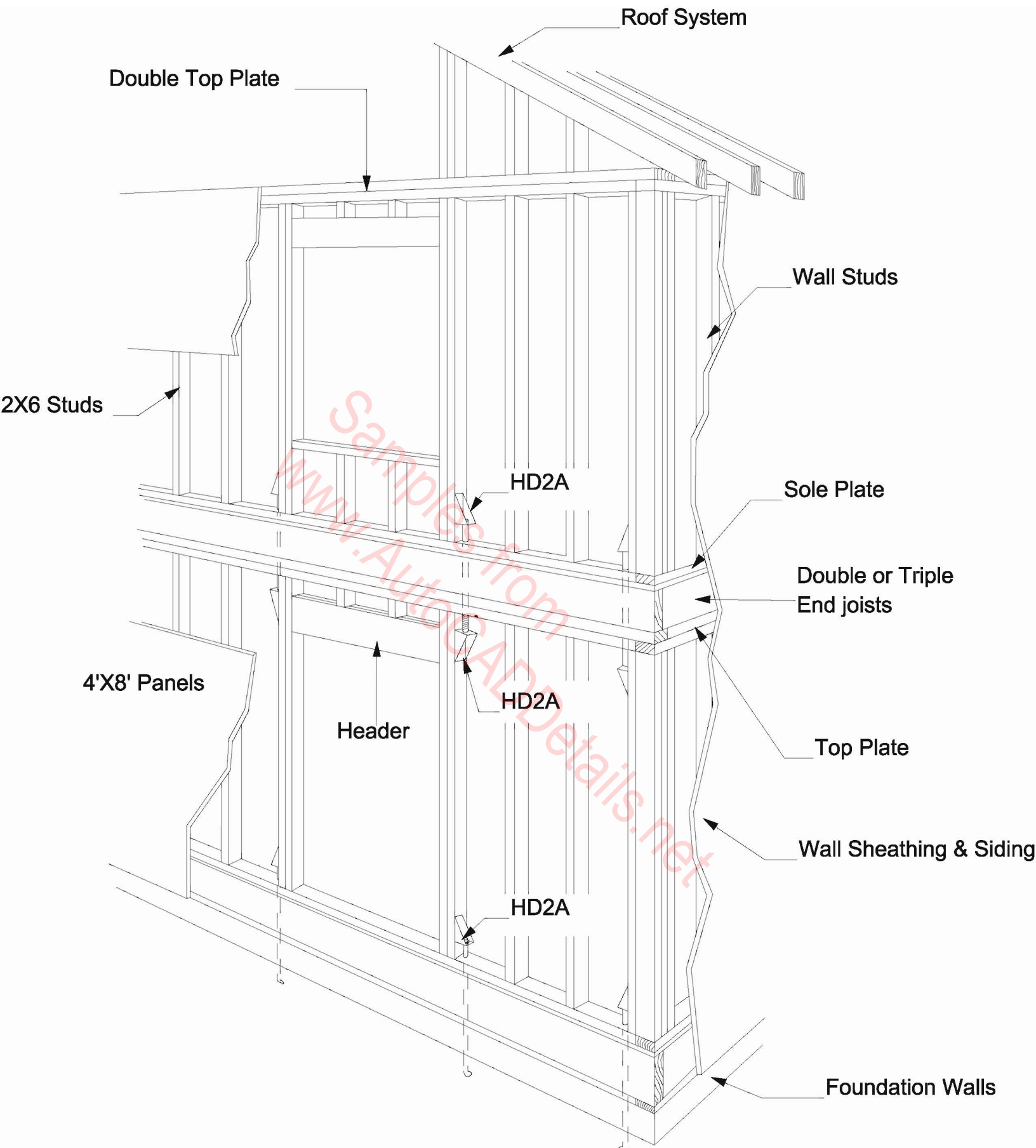
## TRUSS/RAFTER TO CMU SINGLE PLATE



**NOTE:**

See Simpson catalog for proper fasteners and allowable loads for your code requirements.

## TRUSS/RAFTER TO CMU DOUBLE TOP PLATE



**Two Story Exterior Wall  
with Simpson HD2A  
Holdowns**

## WALL BRACING

A. All exterior walls in one and top of 2 or 3 story buildings shall be provided lateral bracing at each end and every 25 feet of wall length by one of the methods in Table 602.10 of the 2000 Building code. The 1st story of 2 or 3 story may only use item 3 in the table. If these are not practical, engineering by a Registered engineer may be provided showing the lateral bracing design. Sec. 602.10

1). Approved metal strap device installed in accordance with MFG's specifications.

2). Approved structural sheathing, i.e. plywood, wafer board, etc. Braced panels must be provided complying with Sec. 602.10. Exception #1 or #2.

B. Seismic Zone 3. All exterior walls in the 1st story of 2 story or second story of 3 story, 25% of wall length to be sheathed and first story of 3 story 40% of wall length to be sheathed.

C. Foundation cripple walls shall be framed of studs not less than the studs above. If over 4' in height, they shall have the size required for an additional story. Sec. 602.9. When 14" in height, they shall be provided with lateral support. Stud walls less than 14" in height shall be sheathed with wood structural panels attached to both the top and bottom plates or constructed of solid blocking. Sec 602.9.1.

D. Steel wall framing methods shall comply with Sec. 603.

E. Maximum diameter of holes bored in bearing walls is 40% (60% in interior nonbearing or exterior studs or bearing studs if studs are doubled and not more than two successive studs are bored). Maximum notching in bearing wall studs is 25% (40% in nonbearing parations). When sills or plates of exterior walls are cut for pipes by more than 50% of its width, the plate shall be reinforced with 24 gauge steel angle or other equivalent support spanning the distance between the appropriate studs. Sec 602.6

F. Fire stopping is required in the following locations: Sec 602.8. Fire stopping shall consists of 2" nominal lumber, two thickness of 1" nominal lumber with broken lap joints, one thickness of 23/32" wood structural panel with joints backed with 23/32" structural panel, 1/2" gypsum board or 1/4" cement based mill board. Unfaced fiberglass batt insulation maybe used provided it fills the entire cross section of the wall cavity to a minimum height of 16" measured vertically. Sec 608.8.1

1. In concealed spaces of studs walls including furred spaces not to exceed 10' horizontal and at the ceiling and floor levels.

2. At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings, cove ceilings, etc.

3. In concealed spaces between stair stringers, at the top and bottom of the run and wall cavity in line with the stringers.

4. In openings around vents, pipes, ducts, chimneys and fireplaces at ceiling and floor levels.

G. Approved corrosion-resistive flashing shall be provided at top and sides of all exterior windows and door openings in such a manner as to be leak proof, except that self-flashing windows having a continuous lap of not less than 1/8" over the sheathing around the perimeter of the opening, including corners, do not require additional flashing. Simular flashing shall be installed at the intersection of chemneys or other masonry construction, with frame walls, under and at the ends of masonry, wood or metal coping and sills;

above all projecting wood trim at wall and roof intersections; under build-in gutters; at junction of chemneys and roofs; in all roof valleys and around all roof openings. Sec 703.8.

H. Utility grade stud cannot be spaced more than 16" O.C. or 8' height bearing wall or 10' nonbearing wall. Sec 602.2 exception and Table 602.3 (5).

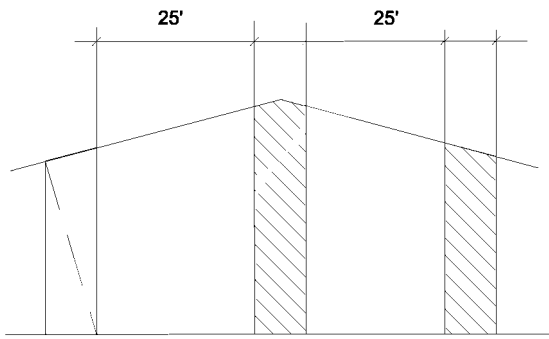
I. Asphalt-saturated felt or other material shall be applied over studs or exterior wall sheathing of exterior walls. Sec 703.2.

J. Approved weather-resistive exterior siding material is required.

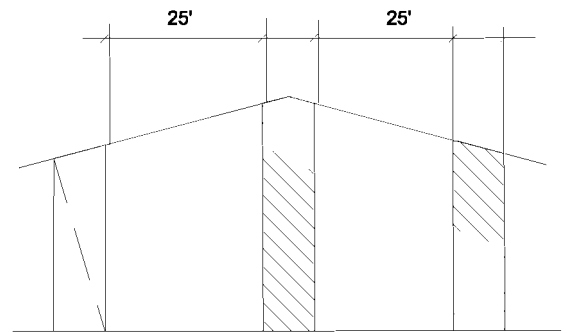
Sec 703.1. T-1-11 siding without an approved subsiding cannot be used with stud spacing exceeding 16" O.C. unless it is labeled accordingly, Tab 703.4.

SEISMIC ZONES 0, 1 AND 2

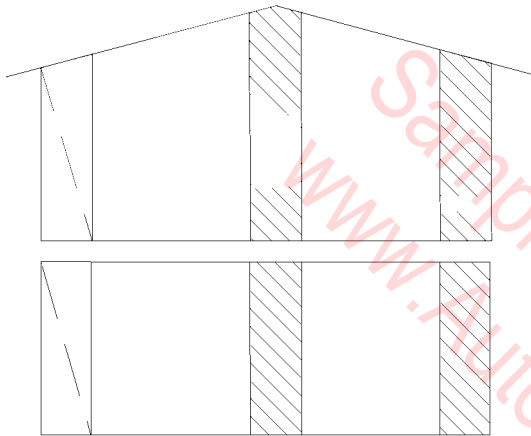
SEISMIC ZONES 3 AND 4



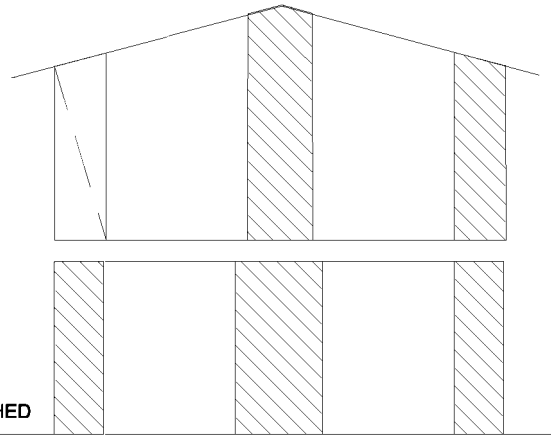
ONE STORY



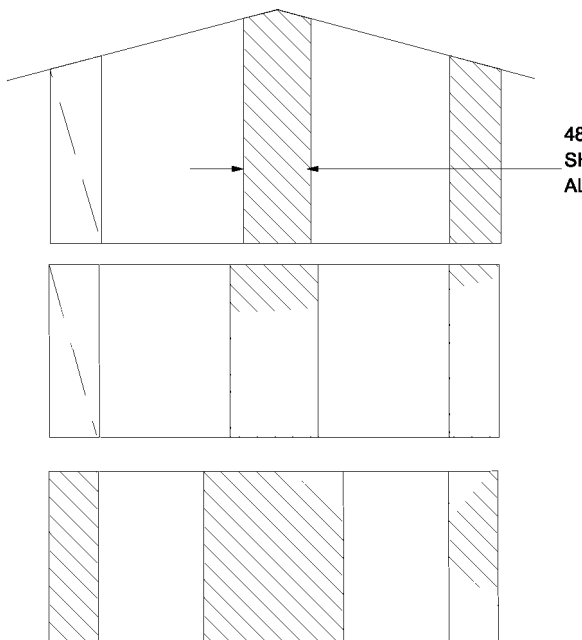
ONE STORY



TWO STORY

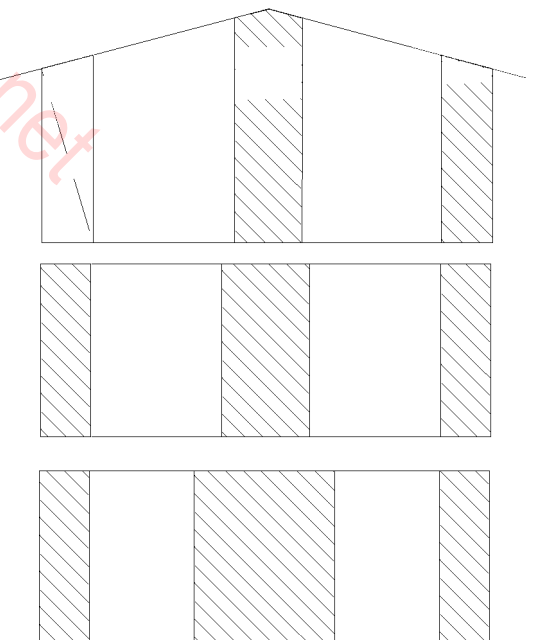


TWO STORY



THREE STORY

48" MIN.  
SHEATHED PANEL  
ALL CASES



THREE STORY

25%  
SHEATHED

40%  
SHEATHED

WALL BRACING

## WALL CONSTRUCTION TABLE

### TYPE

- |   |  |
|---|--|
| A | Ext. Walls w/ 15/32" Min. Sheathing<br>8d 6" O.C. Edges, 12" O.C. Field Blocking Edges   |
| B | Inter. Walls w/ (2) 1/2" Min. Gypsum Board<br>w/ 5d cooler or wallboard nails 7" O.C. w/<br>Blocked Edges, Staggered Joints.   |
| C | Inter. Walls w/ 3/8" C-D Plywood over<br>5/8" Gypsum w/10d common or Galv.<br>Box 4" O.C. Edges, 12" O.C. Field, Except 6" O.C.<br>Field for 3/8" or 7/16" panels on 24" Studs Spacing |
| D | Samed as "A" 4" O.C.edge nailing.  |
| E | Same as "D" except structural 1 grade.<br>Panels, per UBC Standard 23-2.   |
| F | Type F: Same as "E" except nailed 3" O.C. edges.   |
| G | 15/32" APA Rated sheathing each side: Use 4x Studs<br>each end of panel section: Stagger joints: Blocked Edges:<br>8d 4" O.C. Field.   |



## WALLS

1. All openings in bearing walls shall be provided adequate headers. Header sizes are required as noted on the plan or per Table 602.7. Sec 602.7.

## WOOD

1-----Lumber grades: Douglas Fir--Larch

Studs	2"x4"	Standard D.F. or better
	2"x6"	D.F. #2
Beams and Headers		D.F. #1
Glu-Lam Beams	3 1/8x15" and smaller	22 Fir
	Typ Beams	24 Fir
Joists and Rafters		D.F. # W or as noted

2.-----Plywood roof sheathing to be 1/2" c-o w/ext glue group I. I.D. 32/16 lay face grain perpendicular to supports w/typical plywood nailing 8d nails and 6" o.c. edges and 12" o.c field (unless noted otherwise); C-CX exterior where exposed.

3.-----All nailing to conform to One and Two Family Dwelling Specialty Code, Table 602.3.

4.-----Naturally durable or pressure-treated wood shall be used for those portions of wood members which form the structure supports of buildings, balconies, porches or similar permanent building appurtenances when such members are exposed to the weather without adequate protection from a roof eave or overhang.

Such members include horizontal members such as girders, joists and decking. Vertical members such as posts, poles and columns.