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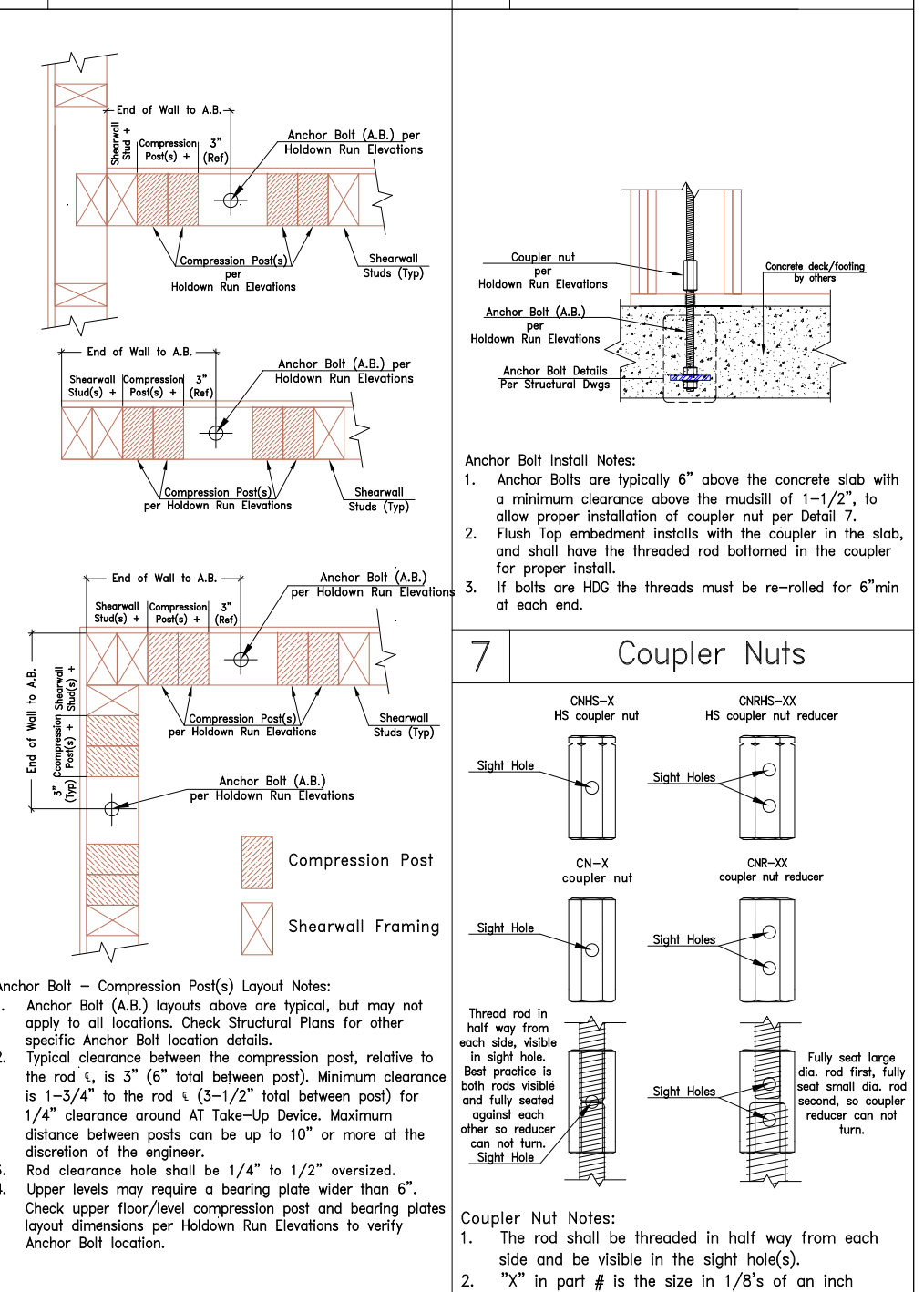
Date	Revision	No

Drawn: DWGBY / Check: CHKBY / Date: RWGDATE

CAT ID # _____
 Project Name _____
 Address _____
 City State Zip _____

Holdown Run Details
 Not to Scale
AT10

4 Typ. A.B. – Post Layout



3 Bearing Plate Schedule and Allowable Loads

Table 2a
 2009 International Building Code IBC
 Bearing Plate Allowable Loads
 (13th Ed. ASD, 2005 NDS)

Bearing Plate Part #	Thickness (in)	Width (in)	Length (in)	Hole Dia. (bolt size) (in)	*Capacity DFL (lbs)	*Wall Size
S4	3/16	2 1/2	2 1/2	3/4	4,120	4x & 6x
S4.5	5/16	2 3/4	2 3/4	3/4	5,003	
S5	1/4	3	3	3/4	5,964	
S6	1/4	3 1/4	3 1/4	3/4	7,002	
S7	3/8	3 1/2	3 1/2	3/4	7,963	
S8	3/8	4	4	3/4	8,281	
S10	1/2	5	5	3/4	10,322	
S12	5/8	6	6	3/4	12,360	
S14	3/4	7	7	3/4	13,665	
S16	1	8	8	3/4	15,996	
S8L	3/8	3 1/4	3 1/2	3/4	7,962	
S10L	1/2	4	4	3/4	10,009	
S12L	5/8	5	5	3/4	12,051	
S14L	3/4	6	6	3/4	13,373	
S16L	1	7	7	3/4	15,404	
S19	1	9	9	3/4	18,842	
S22	1 1/4	10	10	3/4	21,029	
S24	1 1/4	11	11	3/4	23,217	
S26	1 1/2	12	12	3/4	25,404	
S28	1 1/2	13	13	3/4	27,592	
S32	1 1/2	15	15	3/4	31,967	
S35	1 1/2	16	16	3/4	34,154	
S39	1 1/2	18	18	3/4	38,529	
S44	1 1/2	20	20	3/4	42,904	
L17	1/2	5	5 1/2	3/4	17,282	
L20	5/8	5 1/2	6	3/4	21,016	
L21	3/4	5	7	3/4	21,029	
L25	3/4	5 1/2	7 1/2	3/4	24,936	
L28	1	5	9	3/4	27,279	
L30	1	5 1/2	9	3/4	30,092	
L32	1	5	11	3/4	33,529	
SPW6	1/4	3	3	1/4	5,964	4x & 6x
SPW8	1/4	3	3	1/4	5,705	6x
SPW10	1/4	3	3	1/4	5,377	8x

AutoTight Bearing Plate Schedule Notes:
 Material:
 1. Steel bearing plates are ASTM A36 Steel.
 2. Number signifies approximate allowable bearing capacities in kips for DFL (625 psi) parallel to grain.
 3. The following multiplier is used to reduce allowable load for other wood species:
 Southern Pine (SPF, 565 psi) x 0.90
 Spruce-Pine-Fir (SPF, 425 psi) x 0.88
 Hemlock-Fir (HF, 405 psi) x 0.85
 4. Additional bearing plate sizes may be used for special high load requirements.
 Fabrication:
 1. The surface area of all bearing plates must have full contact on the supporting wood members.
 2. S series plates fit 4x and 6x walls.
 3. L series plates fit 6x walls only.
 4. Plates S8 – S16 fit 1" diameter rod and smaller.
 5. Plates S8L – S16L, S19 – S28 and L17 – L32 fit 1-1/2" diameter rod and smaller.
 6. Bearing plate locations per Holdown Run elevations on AT11.

2 Threaded Rod and AT Take-Up Device Allowable Loads

Table 1e
 2007 STATE OF CALIFORNIA BUILDING CODE (CBC)

Rod Size		Allowable Tension (lbs)					
"Diameter (inches)	Model	A36 or F1554 Gr 36	A307	A449 or A325	A108-C1045	A193-B7 or F1554 Gr 105	A354-BD
3/8	R3	2,400	2,490	4,970	4,970	5,180	6,215
1/2	R4	4,270	4,420	8,840	8,840	9,200	11,045
5/8	R5	6,670	6,900	13,810	13,810	14,380	17,255
3/4	R6	9,610	9,940	19,880	19,880	20,710	24,850
7/8	R7	13,080	13,530	27,060	27,060	28,190	33,825
1	R8	17,080	17,670	35,340	35,340	36,820	44,180
1 1/8	R9	21,620	22,370	39,140	44,730	46,590	55,915
1 1/4	R10	26,690	27,610	48,320	55,220	57,520	69,030
1 3/8	R11	32,300	33,410	58,470	66,820	69,600	83,530
1 1/2	R12	38,440	39,760	69,580	79,520	82,830	99,400
1 3/4	R14	52,310	54,120	81,180	108,240	112,750	135,295

Threaded Rod, Couplers, Nuts and AT Shrinkage Device Notes:
 Rod Material:
 1. Rod Part Name is the Rod Model followed by the abbreviated alloy name. For example R5A307 or R8B7.
 2. Alloy Strengths:
 ASTM A307 Fu = 60, Fy = 43 ksi., ASTM A36 Fu = 58, Fy = 36 ksi., ASTM F1554 Grade 36 Fu = 58, Fy = 36 ksi.
 ASTM A108-C1045 Fu = 120, Fy = 92 ksi., ASTM A449 (under 1" dia Fu = 120, Fy = 92 ksi.), ASTM A563 Grade A Fu = 105, Fy = 81 ksi., ASTM A193-B7 Fu = 120, Fy = 92 ksi., ASTM A325 (under 1" dia Fu = 120, Fy = 92 ksi.), ASTM A563 Grade C Fu = 105, Fy = 81 ksi., ASTM A193-B7 Fu = 120, Fy = 92 ksi., ASTM A354-BD Fu = 150, Fy = 130 ksi.
 3. All threaded rod is Uniform National Coarse (UNC or NC) threaded.
 4. High Strength rod is usually marked with Red paint. Consult Factory for additional information.
 5. High Strength Nuts are SAE Grade 8, ASTM 563-Grade C or A194-2H and are stamped for identification.
 6. Standard couplers conform to SAE Grade 2 or ASTM A-563 grade A.
 7. High strength (HS) couplers conform to SAE Grade 8, ASTM A563 Grade C or ASTM A194-2H and are stamped for identification.
 8. Automatic (AT) Take-Up Device by Commins Manufacturing Inc. Rod and Bearing Plates are listed in ICC ES report ESR-1344 issued November 1, 2007.

Fabrication:
 1. Threaded rod lengths may be adjusted as required, but rod diameter and material type must be the same per the floor/level call out.
 2. Cutting of rod on lower levels may result in incorrect (short) top floor termination length.
 3. Rod clearance holes between floors shall be 1/4" to 1/2" oversized. Silicone or caulking shall not be used at any time. A fire-rated Rockwool or a non-hardening FireStop (provided by others) shall be used, if required. Rod must move freely after assembly.
 4. Recommended maximum out of plumb for rod is 2" per 10' floor height (Detail 13) with no permanent bending of installed threaded rod.
 5. Coupler nuts shall have the threaded rod visible in the sight hole(s) per Detail 7.
 6. The AT Take-Up Device shall be secured with a nut and flat washer snug plus 1/2 turn. At termination level of the end of the rod shall be 1/8" minimum beyond the face of the nut. A final nut tightening just prior to closure of the wall is good practice, but not required. The AT Take-Up Device MUST be activated by removing the activation screw prior to wall enclosure per Detail 12.
 7. Rod, couplers and AT device locations are per Holdown Run elevations on AT11.
 8. Coupler nuts shall have the threaded rod visible in the sight hole(s) per Detail 7.
 9. Stress increase is not allowed with AISI 13th Edition capacities. (IBC 2006 & later)
 10. Other AT Automatic Take-Up devices may be substituted provided:
 The alternate Take-Up is sized to accommodate the threaded rod and has sufficient expansion and load capacity.

1 AutoTight Rod Holdown System Notes

Holdown System Design:
 1. Holdown system conforms to International Building Code (IBC) 2009 and 2007 California Building Code (CBC) and local jurisdiction.
 2. Required loads and system requirements per structural plans, dated XX/XX/20XX.
 3. Wood shrinkage is estimated at 1/4" per floor, based on structural plans wood specifications.
 4. Drawings are not to scale. Holdown run elevations (AT11) drawings are for location of run components only and may not reflect the correct number of compression posts. Check Compression Post call outs to the right of the run elevation.
 5. Fabrication shall meet the requirements and specifications per structural plan general notes.
 6. Engineer of Record is to review these drawings and upon approval the drawings will replace the holdown system per structural plans, unless noted otherwise (U.N.O.).

Compression Post Notes:
 1. Compression post shall be species, grade and size per structural plans (U.N.O.).
 2. Compression posts and headers shall have a maximum moisture content of 19%.
 3. Compression post or loads not specified, shall be equal to or exceed the required loads on Structural plans.
 4. Compression post call outs on AT11 are each side of the rod for 4x and 6x wall per holdown run and floor/level (U.N.O.).
 5. Compression post are in addition to shearwall framing members. (U.N.O.).
 6. Alternate compression post may be acceptable. Consult the factory for possible alternates.
 7. Floor blocking stud lengths shall be 1/8" less than in-between floor height for shrinkage.
 8. Compression post may be notched to exact thickness of steel bearing plate, if required. A plywood shim of the exact thickness of the steel bearing plate may be used, instead of notching. Additional compression post with required nailing shall be added, if exact notching requirements are not possible.
 9. Cutting or notching of compression post is permitted to a depth not to exceed 25% of its width per 2007 CalBC – 2308.9.10. Boring of compression post is permitted for a hole not greater than 40% of the width and no nearer than 5/8" to the edge per 2007 CalBC – 2308.9.11 See applicable code.

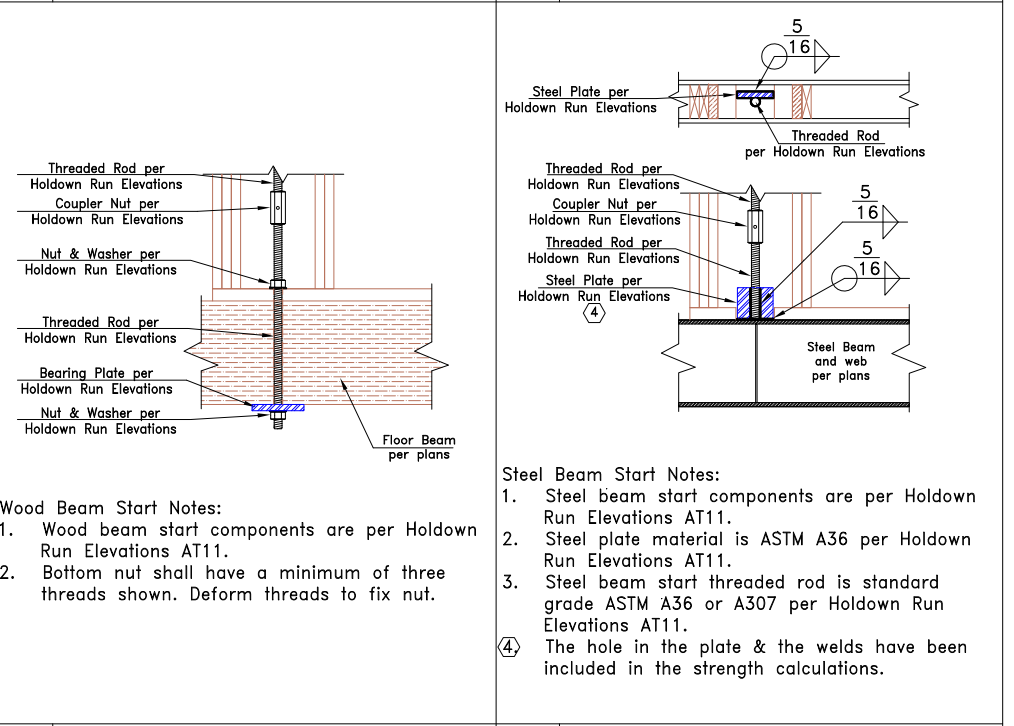
Anchor Bolt Embedments:
 1. Contractor/installer shall verify anchor bolt size, thread pitch and material for correct location per structural plans run call outs or AutoTight holdown run layout sheet(s).
 2. Anchor bolt shall be 6" minimum above concrete slab (U.N.O.).
 3. AutoTight Anchor Bolt Embedments, if used, are called out on AT12.

Shop Drawing Disclaimer
 Holdown design is by Commins Manufacturing, Inc. for the holdown system described in these shop drawings only. This design uses the construction plans and calculations provided by the Engineer of Record. No attempt has been made on the part of Commins Manufacturing, Inc. to verify the values given in the calculations or design described by the construction drawings.

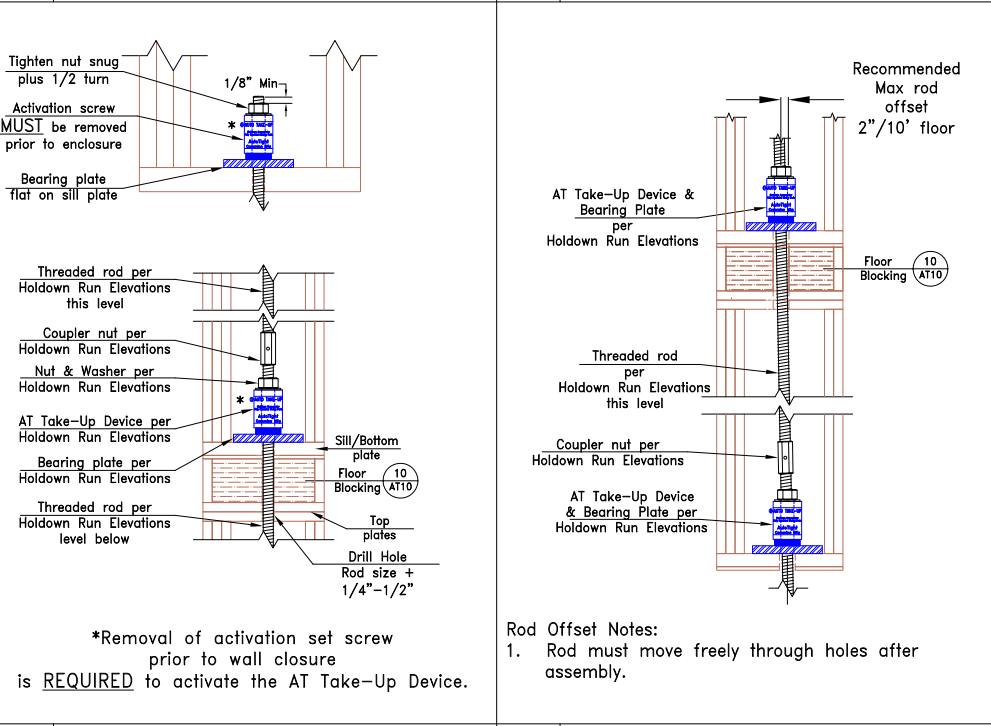
Abbreviations
 A.B. Anchor bolt per plan or schedule
 Alt Alternate option
 ATXX AutoTight Take-Up Device (installed with 75 & 75-2.5 (1/2", 5/8" or 3/4" rod) 100 (7/8" or 1" rod)
 125 (1 1/8" or 1 1/4" rod)
 CAT Commins AutoTight
 CN(HS) Coupler nut (HS are notched)
 CNR(HS) Coupler nut reducer (HS are notched)
 Dia Diameter
 DFL Douglas Fir-Larch
 HF Hemlock-Fir
 HS High strength
 LXX Bearing plate, 6x wall only
 Min Minimum
 Max Maximum
 W(HS)-XX Nut (HS have stamp grade ID)
 O.C. On center
 R-XX(HS) Threaded rod, (HS rod is black)
 SPF Spruce-Pine-Fir
 STD Standard strength (STD rod is zinc plated)
 STP Southern Yellow Pine
 SXK Bearing plate, 4x or 6x wall
 Typ Typical
 U.N.O. Unless noted otherwise
 W-Washer
 Rod, Nut & Washer Size
 -4 1/2" -9 1-1/8"
 -5 5/8" -10 1-1/4"
 -6 3/4" -12 1-1/2"
 -7 7/8" -14 1-3/4"
 -8 1"

Structural Engineer of Record
 Engineering Firm
 Project Engineer
 Address
 City, State Zip
 Tel:
 Fax:
 Email: @com

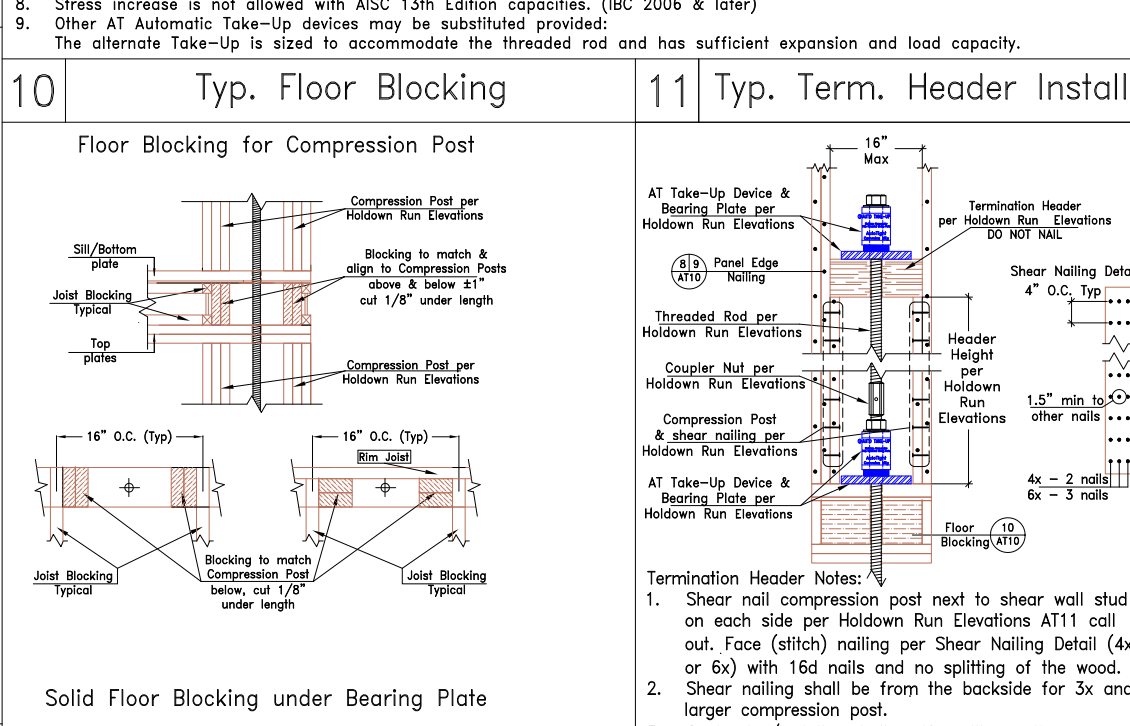
15 Steel Beam Start (SBS)



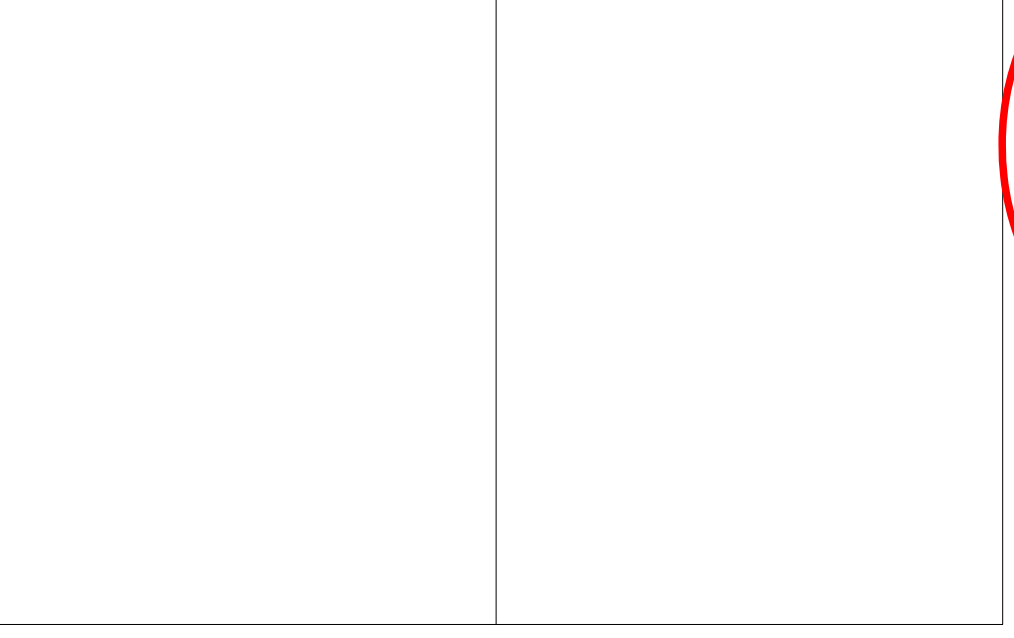
12 Typ. Take-Up Device Install



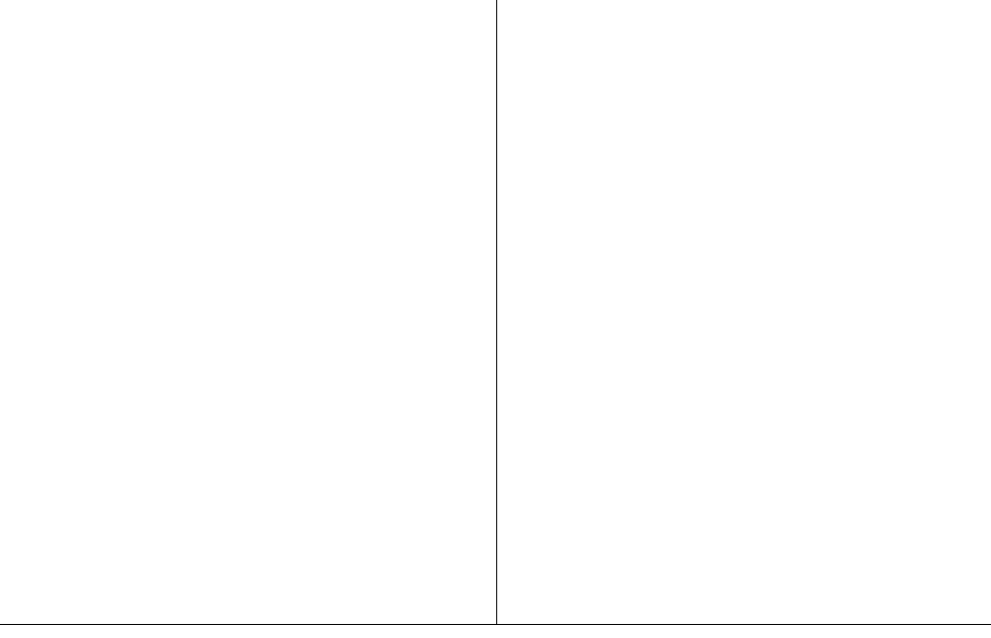
10 Typ. Floor Blocking



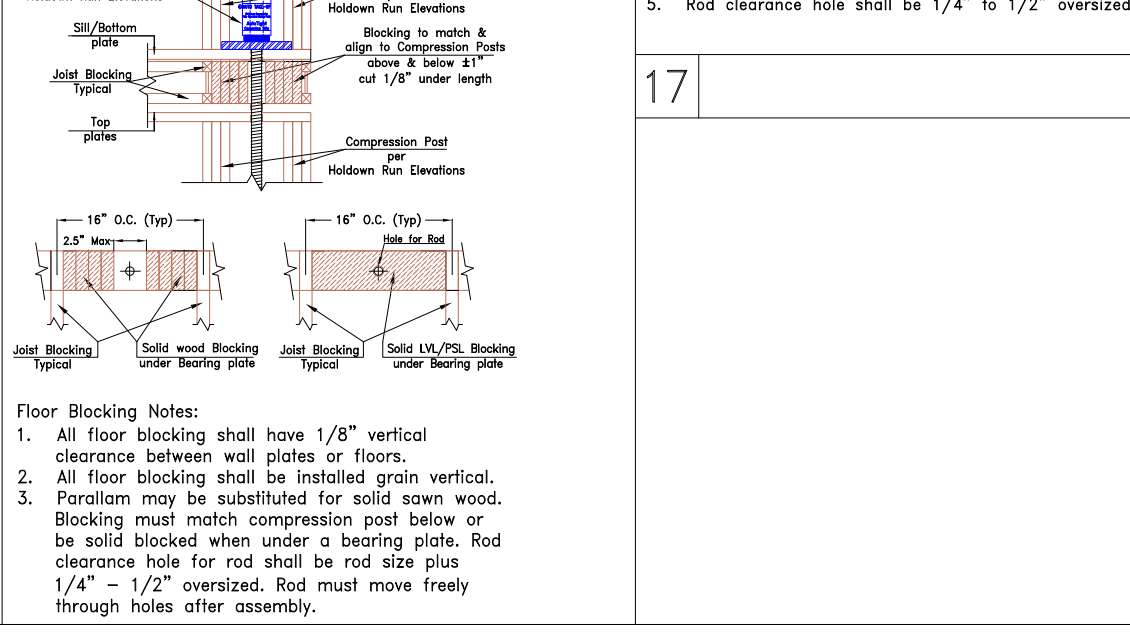
14 Wood Beam Start (WBS)



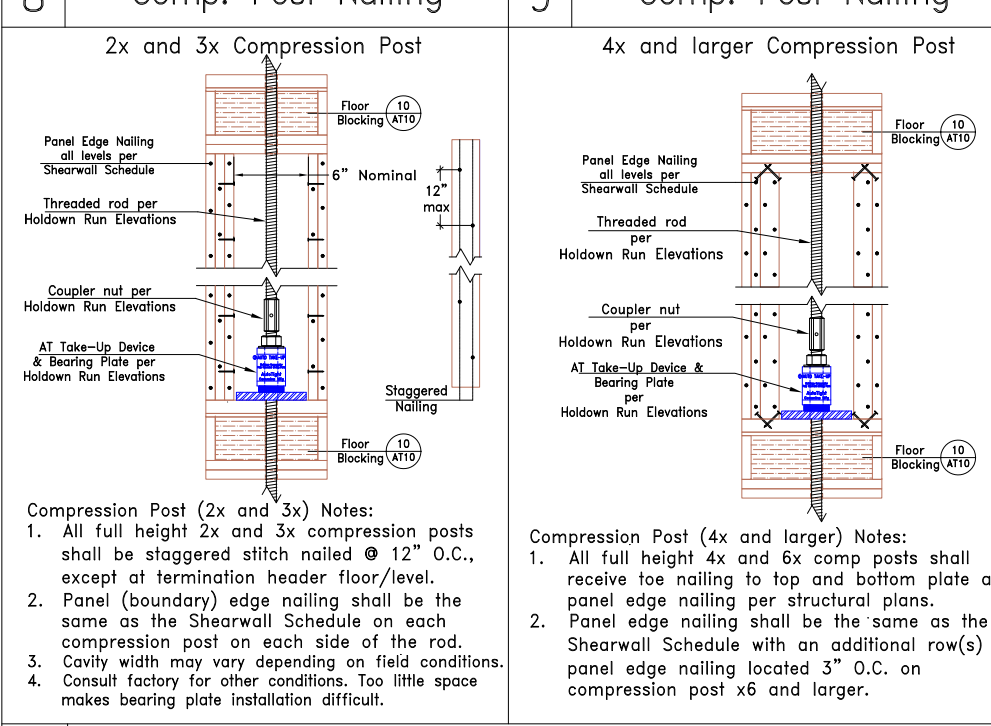
18 Rod Offset



11 Typ. Term. Header Install



8 Comp. Post Nailing



16 Alternate Run Terminations

