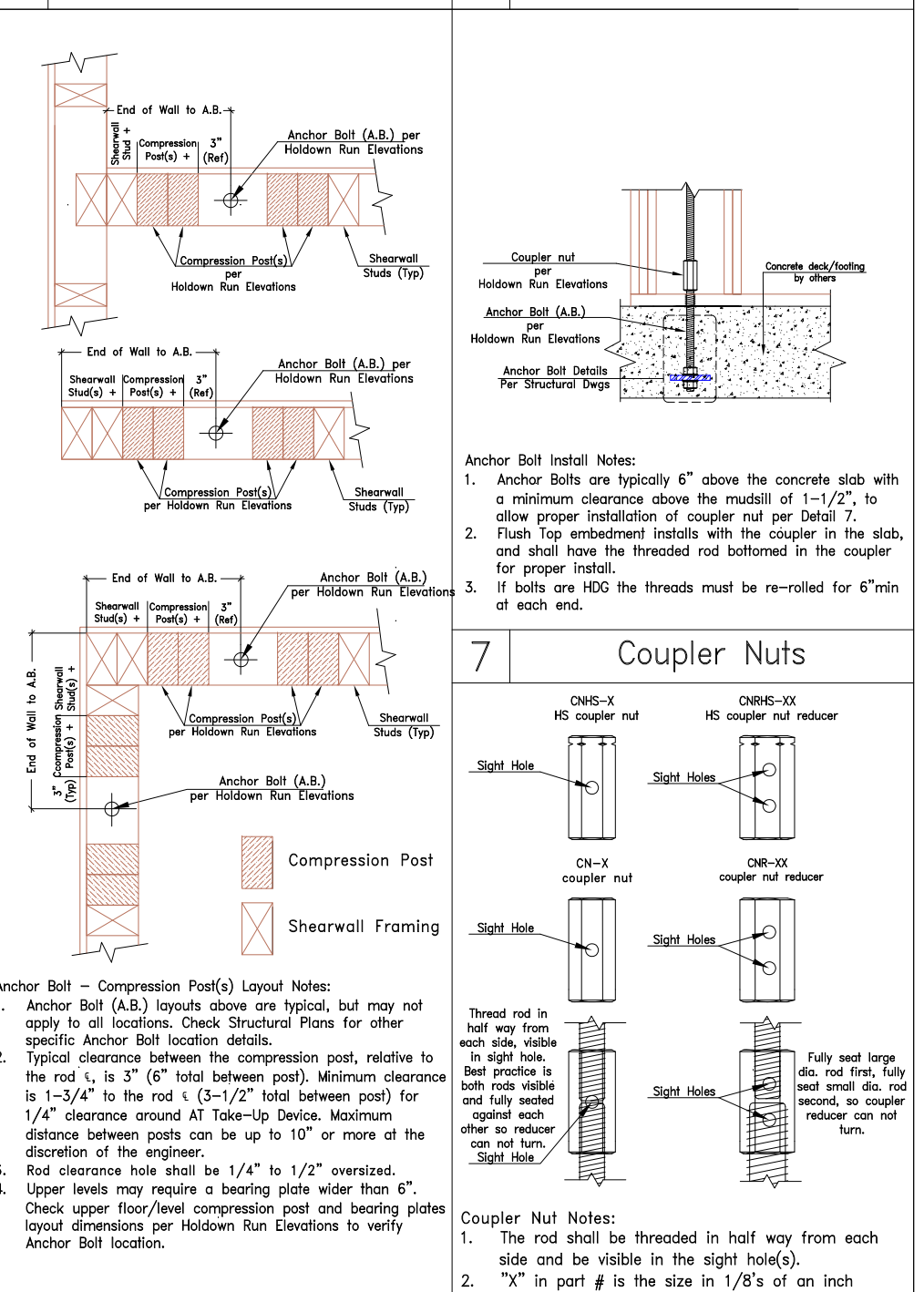


Date	Revision	No

CAT ID # _____
 Project Name _____
 Address _____
 City State Zip _____
 Drawn: DWGBY / Check: CHKBY / Date: _____

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 #	Plate Dimensions			Hole Dia. (bolt size)	Capacity DFL (lbs)	Wall Size
	Thickness (in)	Width (in)	Length (in)			
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		5,003	
S5	1/4	3	3		5,964	
S6	1/4	3 1/4	3 1/4		7,002	
S7	3/8	3 1/2	3 1/2		7,963	
S8	3/8		4		8,281	
S10	1/2		5		10,322	
S12	5/8		6		12,360	
S14	3/4		7		13,665	
S16	1		8		15,696	
S8L	3/8	3 1/4	4	1 1/4	6x	
S10L	1/2		5			7,962
S12L	5/8		6			12,051
S14L	3/4		7			13,373
S16L	1		8			15,404
S19			9			18,842
S22	1 1/4		10			21,029
S24			11			23,217
S26			12			25,404
S28			13			27,592
S32	1 1/2		15	1 1/4	6x	
S35			16			31,967
S39			18			34,154
S44			20			38,529
L17	1/2	5	5 1/2			17,282
L20	5/8	5 1/2	6			21,016
L21		5	7			21,029
L25	3/4	5 1/2	7 1/2			24,936
L28		5	9			27,279
L30	1	5 1/2	9			30,092
L32		5	11	33,529		
SPW6			3/4	5,964	4x	
SPW8			1	5,705	6x	
SPW10	1/4	3	3	1 1/4	5,377	6x

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 1h
 2007 Oregon Structural Specialty Code (OSSC)

Rod Size	Allowable Tension (lbs)							
	"Diameter (inches)	Model	"Diameter & Thread"	A36 or F1554 Gr 36	A307	A449 or A325	A108-C1045	A193-B7 or F1554 Gr 105
3/8	R3	3/8"-16 NC	2,400	2,490	4,970	4,970	5,180	6,215
1/2	R4	1/2"-13 NC	4,270	4,420	8,840	8,840	9,200	11,045
5/8	R5	5/8"-11 NC	6,670	6,900	13,810	13,810	14,380	17,255
3/4	R6	3/4"-10 NC	9,610	9,940	19,880	19,880	20,710	24,850
7/8	R7	7/8"-9 NC	13,080	13,530	27,060	27,060	28,190	33,825
1	R8	1"-8 NC	17,080	17,670	35,340	35,340	36,820	44,180
1 1/8	R9	1-1/8"-7 NC	21,620	22,370	39,140	44,730	46,590	55,915
1 1/4	R10	1-1/4"-7 NC	26,690	27,610	48,320	55,220	57,520	69,030
1 3/8	R11	1-3/8"-6 NC	32,300	33,410	58,470	66,820	69,600	83,530
1 1/2	R12	1-1/2"-6 NC	38,440	39,760	69,580	79,520	82,830	99,400
1 3/4	R14	1-3/4"-5 NC	52,310	54,120	81,180	108,240	112,750	135,295

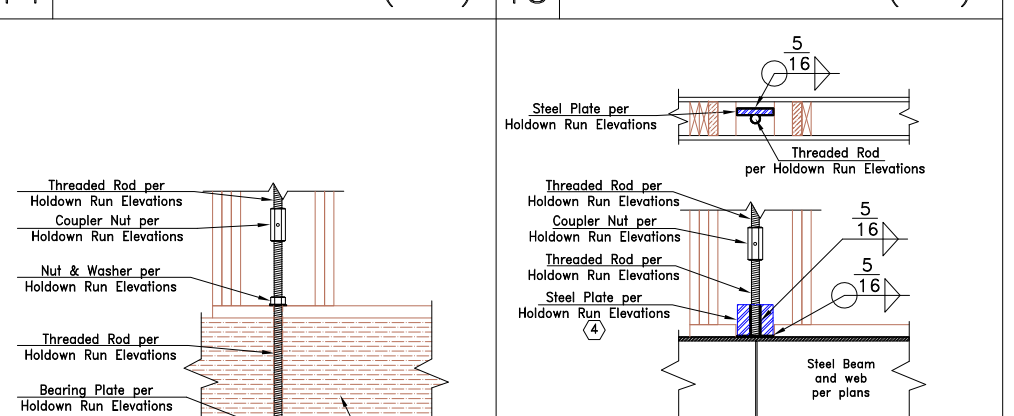
Model Number***

Model Number***	Rod Diameter (Max.)	Matl.	Dimensions (Inches)	Rated Take-Up (Inches)	Allowable Load Pounds	Average Ultimate Pounds	Δr (inches) Increment	ΔA (inches) Deflection at Allowable Load
AT4A-1.5	1/2"	Aluminum	1-1/2"	3"	7,273	24,857	0.000**	0.014
AT4A-2.5	3/4"	Aluminum	2-1/2"	4-1/16"	13,579	40,737	0.002***	0.024
AT6A-1.5	3/4"	Steel	2-1/8"	3-3/16"	16,450	50,533	0.002***	0.020
AT6A-2.5	1"	Steel	3-1/8"	4-1/8"	25,300	78,067	0.002***	0.032
AT 75-2.5	1"	Steel	2-1/4"	3-1/8"	34,500	104,683	0.002***	0.016

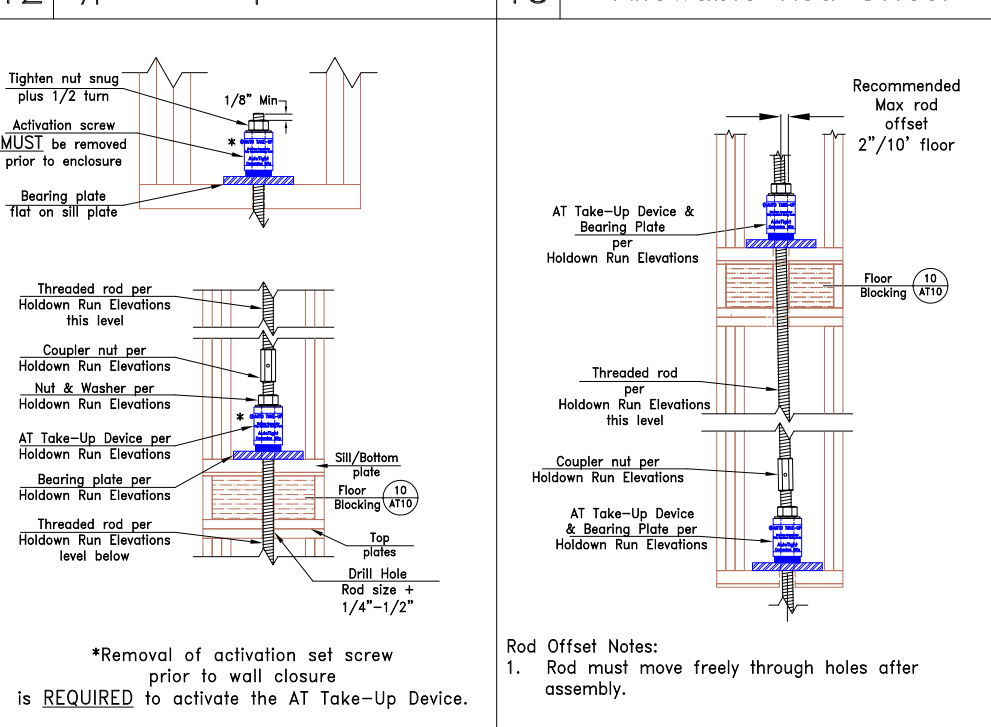
Threaded Rod, Couplers, Nuts and AT Shrinkage Device Notes:
 Rod Material:
 1. Rod Part Name is the Rod Model followed by the abbreviated alloy name. For example R5A307 or R8B7.
 2. Alloy Strengths:
 ASTM A307 Fu = 60, Fy = 43 ksi., ASTM A36 Fu = 58, Fy = 36 ksi., ASTM F1554 Grade 36 Fu = 58, Fy = 36 ksi.
 ASTM A108-C1045 Fu = 120, Fy = 92 ksi., ASTM A449 (under 1" dia Fu = 120 Fy = 92 ksi.)(1.12"-1.50" dia Fu = 105, Fy = 81 ksi.)(1.75" dia Fu = 90, Fy = 58 ksi.)
 ASTM A325 (under 1" dia Fu = 120 Fy = 92 ksi.)(1.12"-1.50" dia Fu = 105, Fy = 81 ksi.)(1.75" dia Fu = 90, Fy = 58 ksi.)
 ASTM F1554 Grade 105, Fu = 125, Fy = 105 ksi., ASTM A354-BD, Fu = 150, Fy = 130 ksi.
 ASTM A193-B7, Fu = 125, Fy = 105 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.
 Standard Nuts are SAE Grade 2 or ASTM 563-Grade A
 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.
 High strength (HS) couplers conform to SAE Grade 8, ASTM A563 Grade C or ASTM A194-2H and are stamped for identification.
 7. 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. Cutting of rod on lower levels may result in incorrect (short) top floor termination length.
 2. 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.
 3. Recommended maximum out of plumb for rod is 2" per 10' floor height (Detail 13) with no permanent bending of installed threaded rod.
 4. Coupler nuts shall have the threaded rod visible in the sight hole(s) per Detail 7.
 5. 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.
 6. Rod, couplers and AT device locations are per Holdown Run elevations on AT11.
 7. Run locations are per structural plans run call outs or AutoTight holdown run layout sheet(s).
 8. Stress increase is not allowed with AISI 13th Edition capacities. (IBC 2006 & later)
 9. 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.

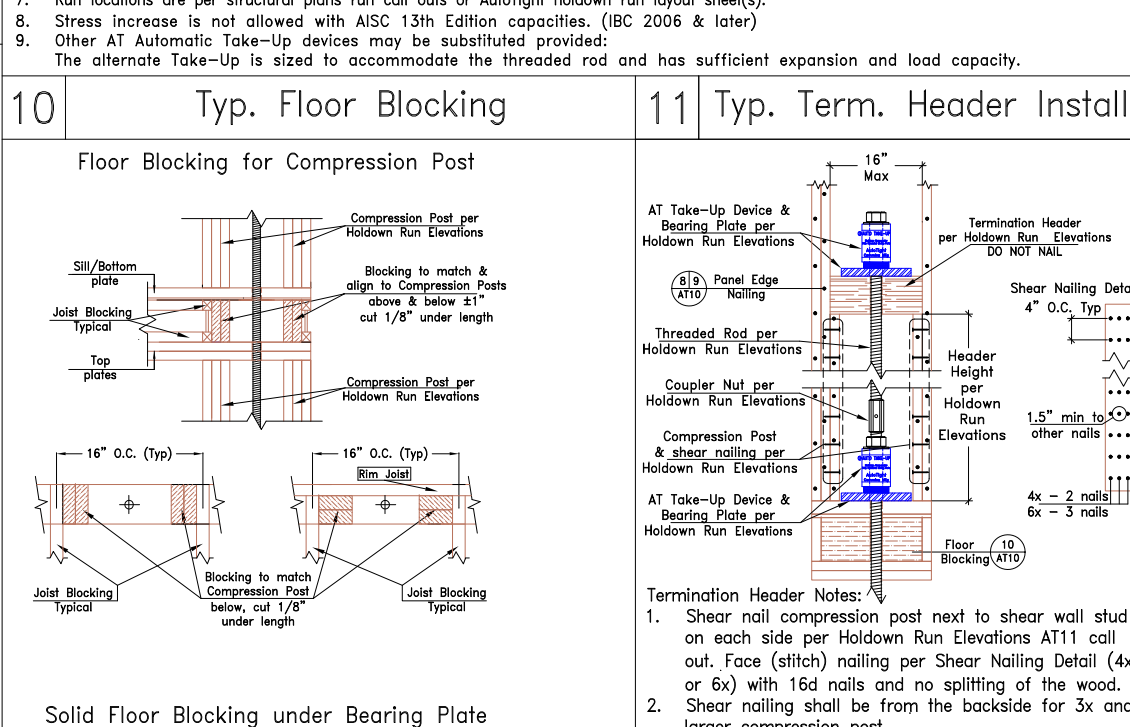
7 Coupler Nuts



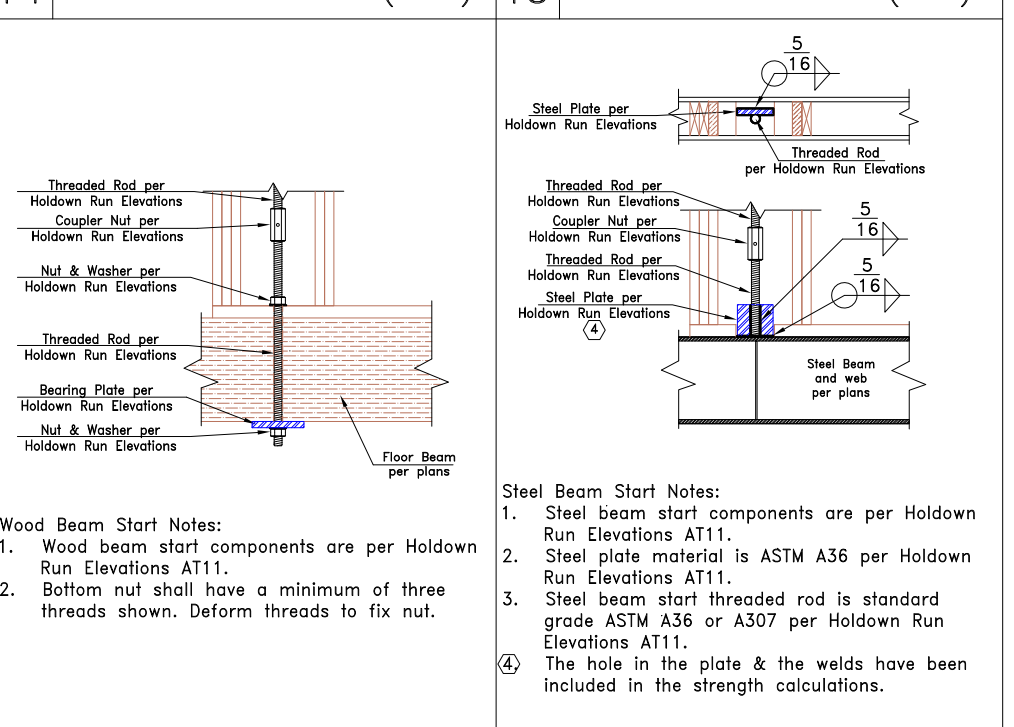
12 Typ. Take-Up Device Install



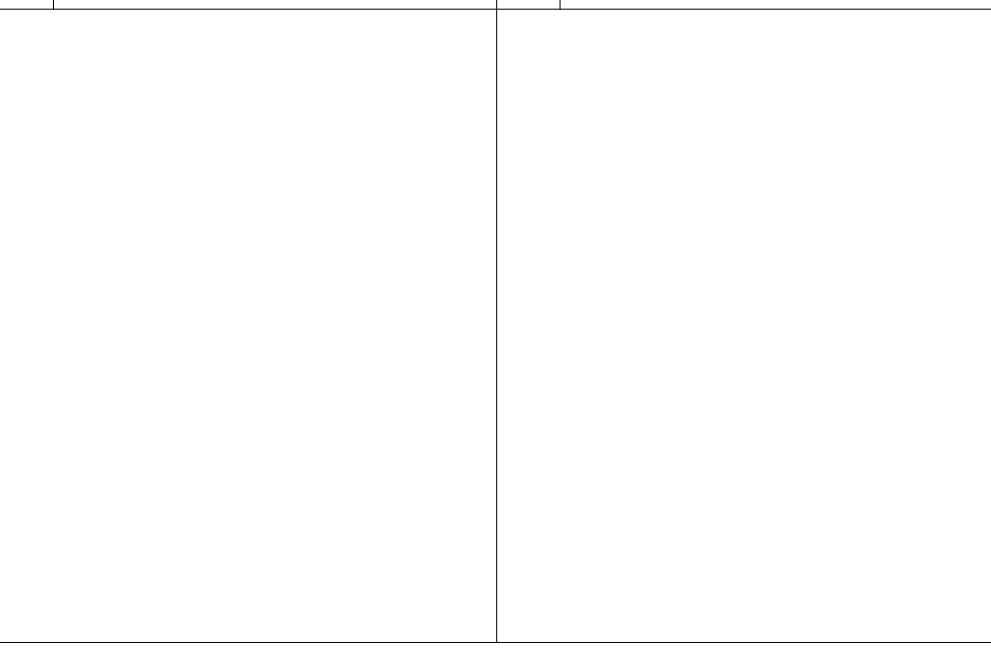
10 Typ. Floor Blocking



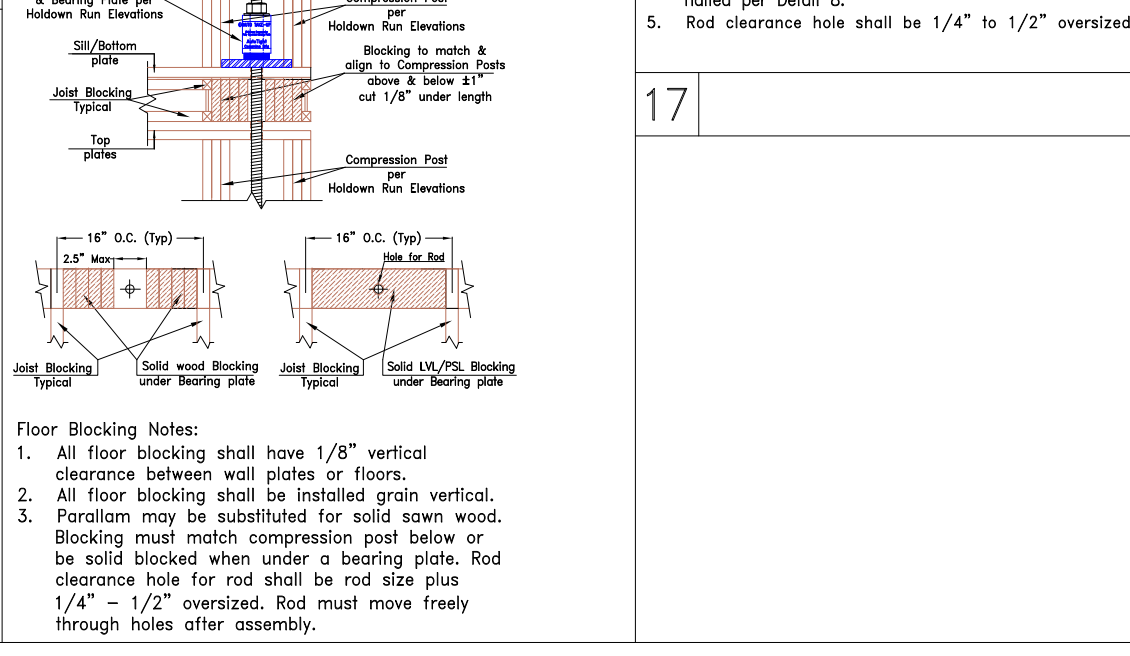
14 Wood Beam Start (WBS)



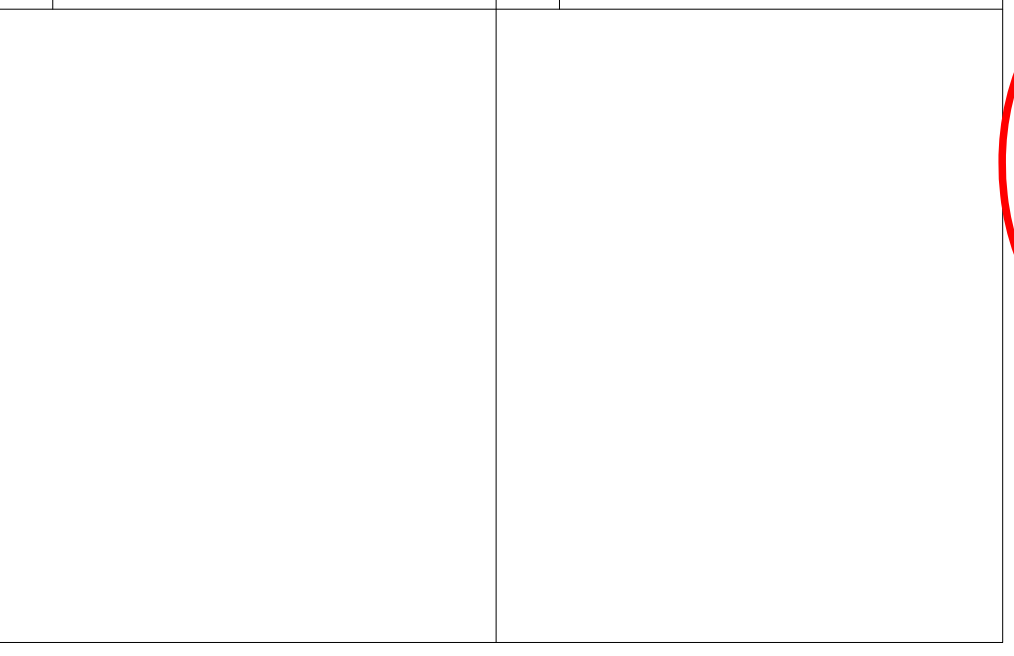
18 Removal of activation set screw



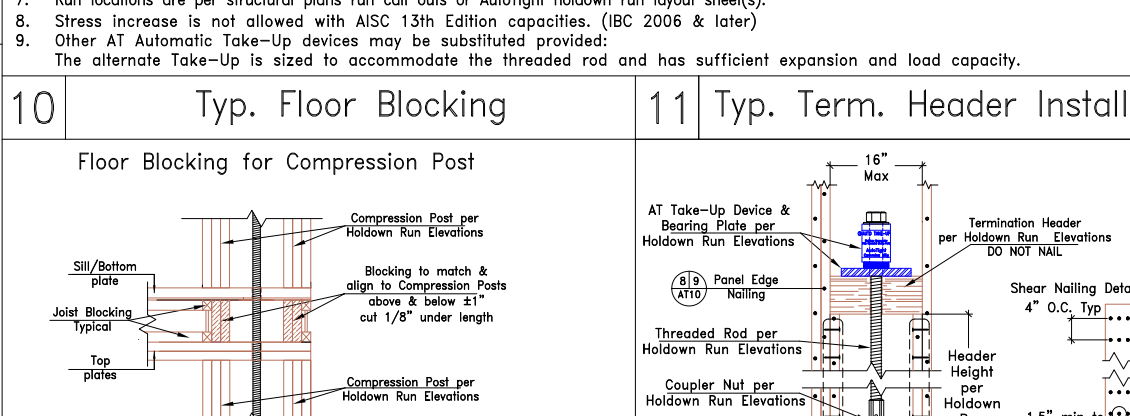
17 Solid Floor Blocking under Bearing Plate



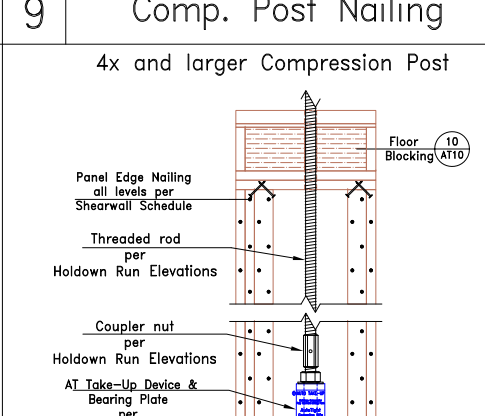
16 Alternate Run Terminations



8 Comp. Post Nailing



9 Comp. Post Nailing



1 AutoTight Rod Holdown System Notes

Holdown System Design:
 1. Holdown system conforms to International Building Code (IBC) 2009 per 2007 OSSC Oregon Structural Specialty Code.
 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 elevation (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.

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.

The Engineer of Record is responsible for the structural design of the building and the ability of the design to transfer loads imparted to the structure by the holdown system.

Structural Engineer of Record

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

16 Comp. Post Nailing

