2

1 ®AutoTight Rod Holdown System Notes

Holdown System Design:
1. Holdown system conforms to the International Building Code (IBC) 2012 per 2014 OSSC Oregon Structural Specialty Code.
2. Required loads and system requirements per structural plans, dated 03/23/2018.
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 (ATS11) drawings are for location of run components only and may not reflect the correct number of compression posts. See Compression Post Schedule.
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 ATS11 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 and are for overturning loads only, not gravity loads.(U.N.O.)
6. Alternate compression post may be acceptable. Consult the factory for possible alternates.
7. Floor blocking lengths for TJI joists shall be 1/16" greater than floor joist height per APA EWS Z725C figure 1d.
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 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 2009 IBC – 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 2009 IBC – 2308.9.11 See applicable code.

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 10" minimum above concrete slab (U.N.O.).
3. AutoTight Anchor Bolt Embedments, if used, are called out on ATS12.

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 had 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

WDY
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ste 210
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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
N(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)
SYP	Southern Yellow Pine
SXX	Bearing plate, 4x or 6x wall
Typ	Typical
U.N.O.	Unless noted otherwise
W-XX	SAE 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"		

2 Threaded Rod and AT Take-Up Device Allowable Loads

Table 1h

2014 Oregon Structural Specialty Code (OSSC)

Rod Size			Allowable Tension (lbs)						
"Diameter (inches)"	Model	"Diameter & Thread"	A36 or F1554 Gr 36	A307	F1554 Gr 55	A449 or A325	A108-C1045	A193-B7 or F1554 Gr 105	A354-BD
3/8	R3	3/8"- 16 NC	2,400	2,490	3,110	4,970	4,970	5,180	6,215
1/2	R4	1/2"-13 NC	4,270	4,420	5,520	8,840	8,840	9,200	11,045
5/8	R5	5/8"-11 NC	6,670	6,900	8,630	13,810	13,810	14,380	17,255
3/4	R6	3/4"-10 NC	9,610	9,940	12,430	19,880	19,880	20,710	24,850
7/8	R7	7/8"-9 NC	13,080	13,530	16,910	27,060	27,060	28,190	33,825
1	R8	1" - 8 NC	17,080	17,670	22,090	35,340	35,340	36,820	44,180
1 1/8	R9	1-1/8" -7 NC	21,620	22,370	27,960	39,140	44,730	46,590	55,915
1 1/4	R10	1-1/4" -7 NC	26,690	27,610	34,510	48,320	55,220	57,520	69,030
1 3/8	R11	1-3/8" - 6 NC	32,300	33,410	41,760	58,470	66,820	69,600	83,530
1 1/2	R12	1-1/2" - 6 NC	38,440	39,760	49,700	69,580	79,520	82,830	99,400
1 3/4	R14	1-3/4"-5 NC	52,310	54,120	67,650	81,180	108,240	112,750	135,295
2	R16	2"-4.5 NC	68,330	70,960	88,360	106,030	141,370	147,240	176,710

Model Number	Rod Diameter (Max.)	Matl.	Dimensions (Inches)		Rated Take-Up (Inches)	Allowable Load Pounds	Average Ultimate Pounds	Δr (inches) Seating Increment	ΔA (inches) Deflection at Allowable Load
			Dia.	H					
AT4A-1.5	1/2"	Aluminum	1-1/2"	3.00"	1.50"	6,450	24,857	0.000"	0.011
AT4A-2.5				4.06"	2.50"				
AT6A-1.5	3/4"		2-1/8"	3.19"	1.50"	10,550	40,737		0.011
AT6A-2.5				4.19"	2.50"				
AT8A-1.5	1"		2-3/4"	3.50"	1.75"	20,750	66,170	0.000"	0.004
AT10A-1.5	1-1/4"		3-1/4"	3.50"	1.62"	28,050	85,767	0.000"	0.020
AT12A-1.5	1-1/2"								
AT16A-2.0	2"		4"	3.50"	2.07"	39,450	120,050	0.001"	0.011
AT 75	3/4"	Steel	2"	2.80"	1.10"	16,450	50,533	0.002"	0.024
AT 75-2.5			2"	4.00"	2.50"	15,200	54,728		0.021
AT 100	1"		2-1/4"	2.90"	1.10"	25,300	78,067		0.032
AT 125	1-1/4"		2-3/4"	2.86"	1.10"	34,500	104,683		0.016
AT 200-2.0	2"		4"	3.88"	2.18"	83,200	252,000	0.000"	0.009

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 ASTM F1554 Grade 55 Fu = 75, Fy = 55 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 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 notched for identification.
7. Automatic (AT) Take-Up Device by Commins Manufacturing Inc. Rod and Bearing Plates are listed in ICC ES report ESR-1344 (12/1/2013).

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. Recomended 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 finger tight. At termination level 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 or pin prior to wall enclosure per Detail 12.
6. Rod, couplers and AT device locations are per Holdown Run elevations on ATS11.
7. Run locations are per structural plans run call outs or AutoTight holdown run layout sheet(s).
8. Stress increase is not allowed with AISC 13th Edition capacities. (IBC 2006 & later)
9. Rod may be upgraded to higher capacity rod on a case by case basis.
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.

3 Bearing Plate Schedule and Allowable Loads

Table 2a Bearing Plate Allowable Loads

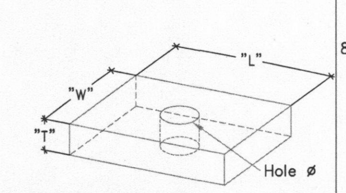
2015 International Building Code IBC (14th Ed. AISC & 2015 NDS)

Bearing Plate Part #	Plate Dimensions Thickness (in)	Width (in)	Length (in)	Hole Dia. (bolt size) (in)	Capacity DFL (lbs)	Wall Size
S5-3/4"	1/4	3	3	3/4	5,964	4x & 6x
S7-1"	3/8	3 1/2	3 1/2	1	7,863	
S7-1-1/4"	3/8		3 1/2	1 1/4	7,540	
S8-1-1/4"	3/8		4		7,962	
S11-1-1/4"	1/2		5 1/2		11,948	
S14-1-1/4"	3/4		7		13,373	
S16-1-1/4"	1		8		15,404	
S19-1-1/4"			9		18,842	
S25-1-1/4"	1 1/2		12		25,404	
L18-1-1/4"	1/2	5 1/2	5 1/2		19,292	6x
L20-1-1/4"	5/8		6		19,775	
L21-1-1/4"	3/4	5	7		21,029	
L25-1-1/4"	3/4	5 1/2	7 1/2		24,936	
L28-1-1/4"	1	5	9		27,279	
L30-1-1/4"	1	5 1/2	9		30,092	
L33-1-1/4"	1 1/8		10		33,529	
L37-1-1/4"	1 1/4		11		36,967	
L40-1-1/4"	1 1/4		12		40,404	
L18-1-1/2"	1/2		5 1/2	1-1/2	18,915	
L20-1-1/2"	5/8		6		19,427	
L25-1-1/2"	3/4		7 1/2		24,936	
L30-1-1/2"	1		9		29,739	
L33-1-1/2"	1 1/4		10		33,177	
L37-1-1/2"	1 1/4		11		36,614	
L40-1-1/2"	1 1/2		12		40,052	
L18-2"	1/2		5 1/2	2	17,965	
L20-2"	1/2		6		19,695	
L25-2"	1/2		7 1/2		23,693	
L30-2"	3/4		9		30,092	
L33-2"	1		10		32,287	
L37-2"	1		11		35,724	
L40-2"	1 1/4		12		39,462	

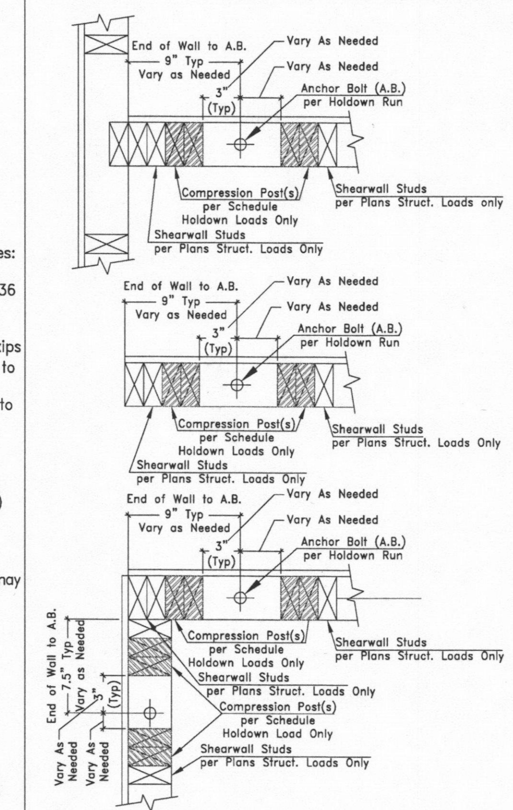
AutoTight Bearing Plate Schedule Notes:

Material:
1. Steel bearing plates are ASTM A36 Steel.
2. Number signifies approximate allowable bearing capacities in kips for DFL (625 psi) perpendicular to grain.
3. The following multiplier is used to reduce allowable load for other wood species.
   Southern Pine (SYP, 565 psi) x 0.90
   Spruce-Pine-Fir (SPF, 425 psi) x 0.68
   Hemlock-Fir (HF, 405 psi) x 0.65
4. Additional bearing plates 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. See Table for Rod Sized to match Plates.
5. Bearing plate locations per Holdown Run elevations on ATS11.
6. Plates may be upgraded to higher capacity plates on a case by case basis if they fit.

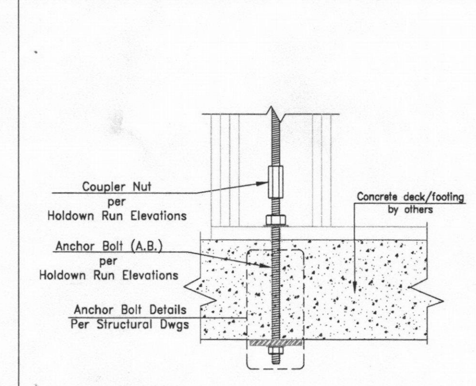


4 Typ. A. B. – Post Layout



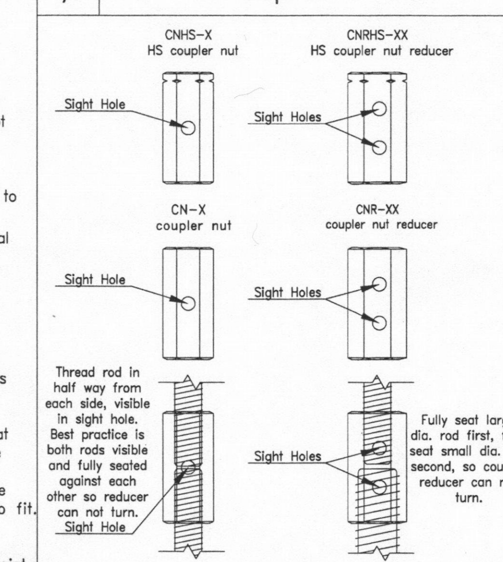
Anchor Bolt – Compression Post(s) Layout Notes:
1. Anchor Bolt (A.B.) layouts above are typical, but may not apply to all locations. Check Structural Plans for other specific Anchor Bolt location details.
2. Details of structural stud arrangements per EOR.
3. Typical clearance between the compression post, relative to the rod ℄, is 3" (6" total between post). Minimum clearance is 1-3/4" to the rod ℄ (3-1/2" total between post) for 1/4" clearance around AT Take-Up Device. Maximum distance between posts can be up to 10" or more at the discretion of the engineer.
4. Rod clearance hole shall be 1/4" to 1/2" oversized.
5. Some levels may require a bearing plate wider than 6". Check all floor/level compression post and bearing plates layout dimensions per Holdown Run Elevations to verify Anchor Bolt location.
6. When there are 3 or more compression posts, place 2 at the end of the shearwall and the remainder between the rod and the middle of the shearwall.
7. When 6 or more 2x posts are stacked, either place some in the next bay or adjust end bay spacing to fit. See Commins Catalog.
8. Blue marked Posts are to resist Holdown System reaction forces Only. White marked Studs are to resist structural loads Only.

6 Anchor Bolt Coupler Thru



Anchor Bolt Install Notes:
1. Anchor Bolts are typically 10" above the concrete slab
2. Minimum clearance above the mudsill is 1-1/2", to allow proper installation of coupler nut per Detail 7.
3. See ATS12 for embedment information.
4. If bolts are HDG the threads must be re-rolled for 6"min at each end.

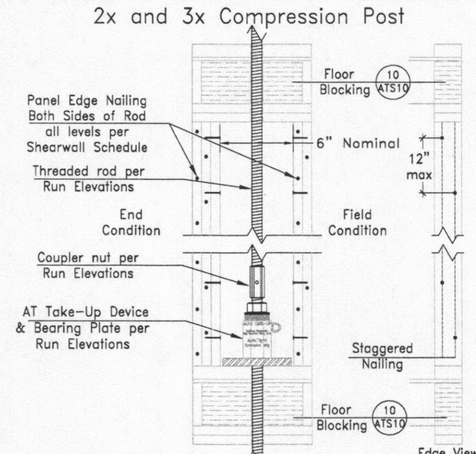
7 Coupler Nuts



Coupler Nut Notes:
1. The rod shall be threaded in half way from each side and be visible in the sight hole(s).
2. "X" in part # is the size in 1/8's of an inch

8 Comp. Post Nailing

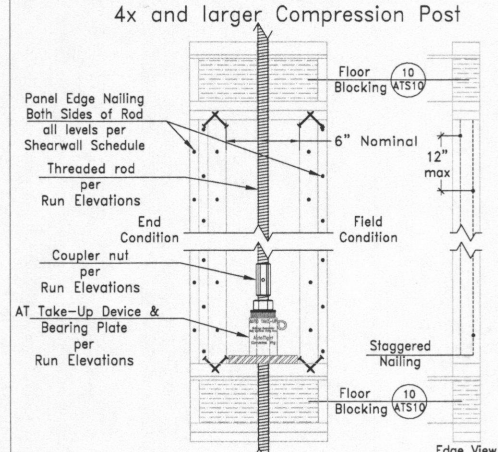
2x and 3x Compression Post



Compression Post (2x and 3x) Notes:
1. All full height 2x and 3x compression posts shall be staggered stitch nailed together @ 12" O.C., except at termination header floor/level.
2. Shear Panel nailing shall be per plans. If nails are spaced closer than 3" we recommend perimeter nails be staggered 1-1/2" to minimize wood splitting.
3. Cavity width may vary depending on field conditions.
4. Consult factory for other conditions. Too little space makes bearing plate installation difficult.

9 Comp. Post Nailing

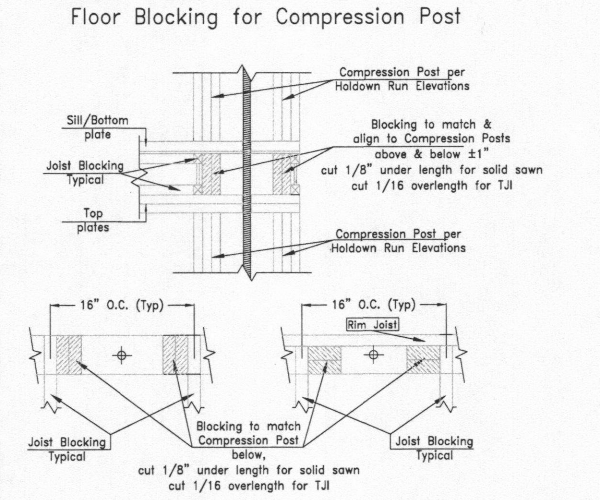
4x and larger Compression Post



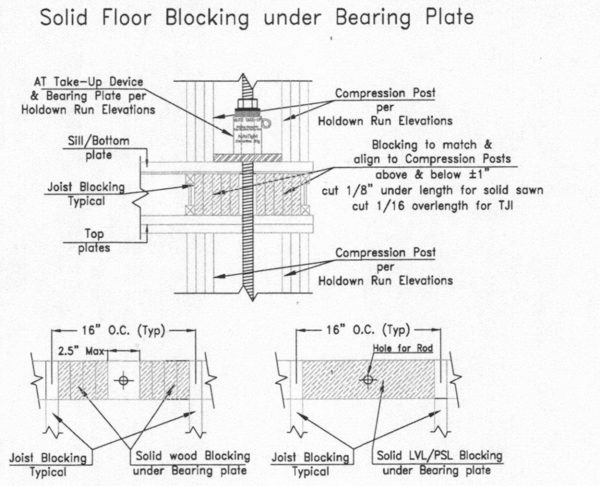
Compression Post (4x and larger) Notes:
1. All full height 4x and 6x comp posts shall receive toe nailing to top and bottom plate and panel edge nailing per structural plans.
2. Shear Panel nailing shall be per plans. If nails are spaced closer than 3" we recommend perimeter nails be staggered 1-1/2" to minimize wood splitting.
3. Panel edge nailing shall be the same as the Shearwall Schedule with additional row(s) of panel edge nailing located 3" O.C. on compression post x6 and larger.

10 Typ. Floor Blocking

Floor Blocking for Compression Post

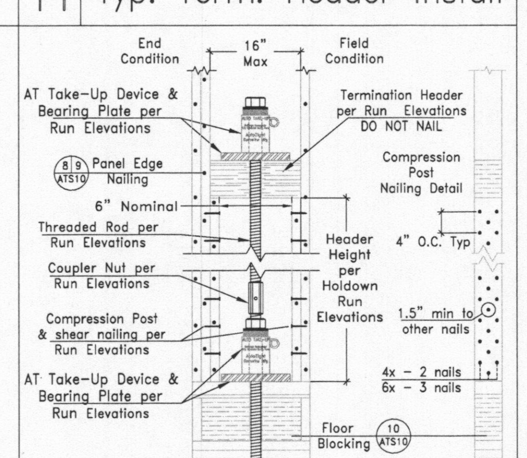


Solid Floor Blocking under Bearing Plate



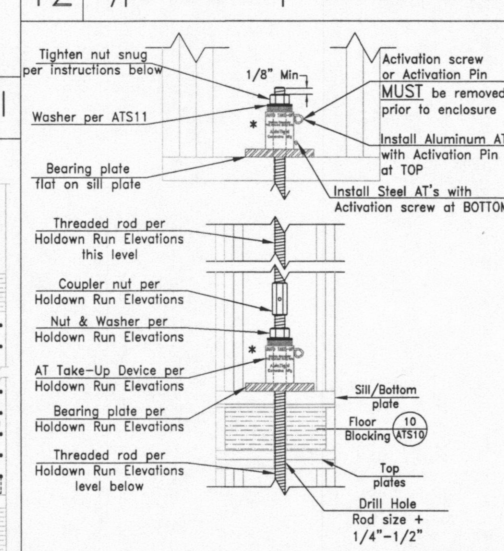
Floor Blocking Notes:
1. Floor blocking shall have 1/8" vertical clearance between wall plates or floors for solid sawn joists and 1/16" vertical interference for TJI joists.
2. All floor blocking shall be installed grain vertical.
3. Parallam may be substituted for solid sawn wood. Blocking must match compression post below or be solid blocked when under a bearing plate. Rod clearance hole for rod shall be rod size plus 1/4" – 1/2" oversized. Rod must move freely through holes after assembly.

11 Typ. Term. Header Install



Termination Header Notes:
1. Nail compression post next to shear wall stud per Holdown Run Elevations ATS11 nail quantity call out min. Face (stitch) nailing per Shear Nailing Detail (4x or 6x) with 16d sinkers and no splitting of the wood.
2. Shear Panel nailing shall be per plans. If nails are spaced closer than 3" we recommend perimeter nails be staggered 1-1/2" to minimize wood splitting.
3. Contractor/installer shall verify nailing pattern.
4. Additional compression post/studs shall be stitch nailed per Detail 8.
5. Rod clearance hole shall be 1/4" to 1/2" oversized.

12 Typ. Take-Up Device Install

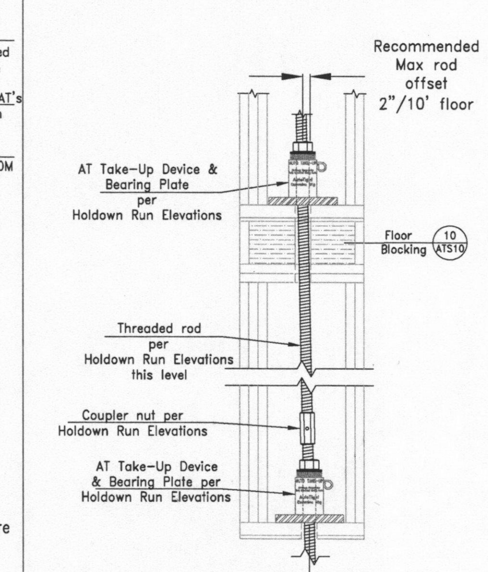


* Removal of activation screw or pin prior to wall closure is REQUIRED to activate the AT Take-Up Device.

Aluminum AT: Tighten nut finger tight, remove activation pin on Side & listen for "Quality Click".

Steel AT: Tighten nut finger tight, remove activation screw on Side.

13 Allowable Rod Offset



Rod Offset Notes:
1. Rod must move freely through holes after assembly.

14

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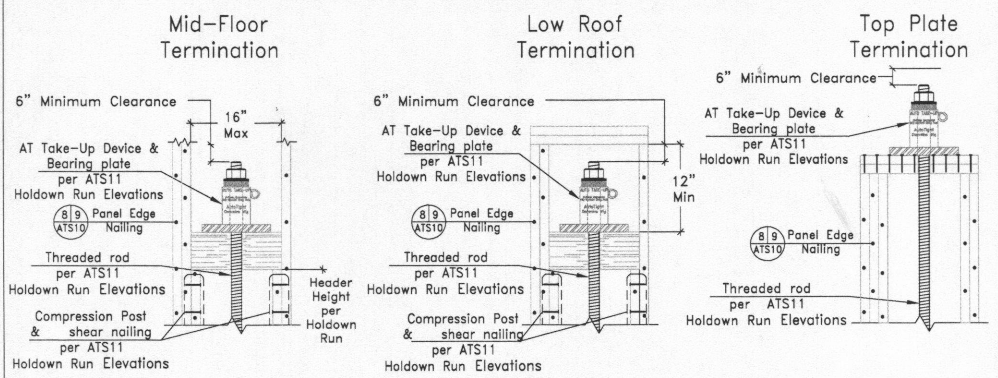
16 Alternate Run Terminations



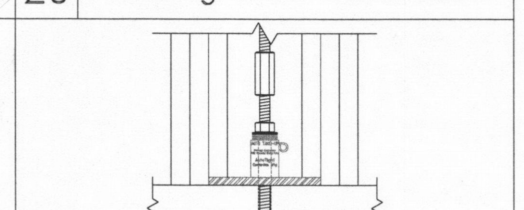
Alternate Run Termination Notes:
1. Refer to detail 11 for typical header installation.
2. Refer to ATS11 Holdown Run Elevations for number of shear nails required.
3. Change of termination type will change rod length requirements.
4. Clearance above the top of the rod must be greater than wood shrinkage per floor (detail 1, note 3) times the levels of the run. Rod may require field cutting.
5. Rod clearance hole shall be 1/4" to 1/2" oversized.
6. Top Plate Termination: Stitch Top Plates within 12" of rod 2 staggered rows 16d sinkers 4" O.C. No splices within 12" of rod.

17

18

19

20 Bearing Plate Installation



1. If Bearing Plate does not fit between the posts, the posts may be moved closer to the rod to allow one or more posts to rest completely on the Bearing Plate.
2. This arrangement is often built with stacks of 2x posts with some of the 2x posts resting on the Bearing Plate and the others on the sill plate.
3. If this will not work either shim the post with plywood the exact thickness of the plate or notch the post bottom by the thickness of the Bearing Plate. This option is more time consuming and it is harder to get a good fit.
4. The final distance between the compression posts is quite flexible. Spacing is typically between about 3" and about 10". For extremes, call the factory.

☒ No Exception Taken ☐ Make Corrections Noted
☐ Submit Additional/ Specified Items ☐ Revise and Resubmit

Checking by WDY is only for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Any action shown is subject to the requirements of the plans and specifications. The general contractor is responsible for: Dimensions which shall be confirmed at the jobsite; fabrication processes and techniques of construction; coordination of his work with that of all other trades; and the satisfactory performance of his work.

WDY, Inc.
Date: 11-01-2018
By: Brynn Adkins

City of Portland
REVIEWED FOR CODE COMPLIANCE
NOV 08 2018

STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 9, 2001
TROY D. LYVER, P.E.
RENEWAL: DEC. 31, 2018

17-196429-DFS 01
SCAN

AutoTight® Holdown System
www.comminsmfg.com
by Commins Manufacturing, Inc.
960B Guard St., Friday Harbor, WA 98250
P: 360.378.9484 F: 360.378.9485

No.	Revision	Date
1	Updated Plate Table	8/3/18

18-1789
Tree Farm
826 SE 3rd Ave,
Portland, OR 97214

Drawn: TFB Check: tbd Date: 06/13/18

Holdown Run Details

Not to Scale

ATS10

29 co

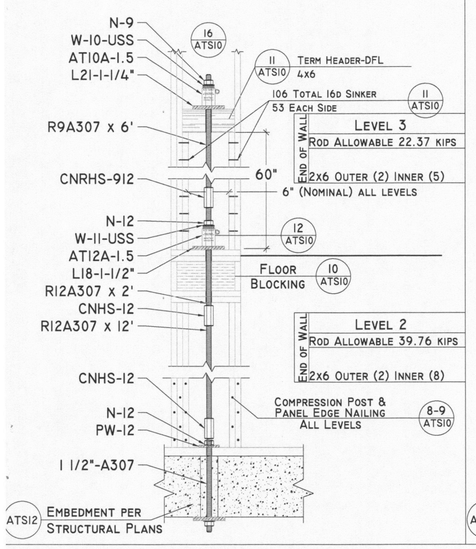
NOTES:

1. INSTALL ALL AT'S WITH ACTIVATION PINS, WITH ACTIVATION PIN END UP. INSTALL ALL AT'S WITH ACTIVATION SCREWS WITH THE ACTIVATION SCREW END DOWN.
2. ANY BEARING PLATE SPECIFIED MAY BE REPLACED WITH ANY BEARING PLATE THAT HAS AN EQUAL OR HIGHER LOAD RATING AND COMPATIBLE ROD DIAMETER.
3. EOR MUST VERIFY THAT ALL L TYPE (WIDE) PLATES ARE LOCATED IN 6X OR WIDER WALLS.
4. COMPRESSION POSTS ARE PER COMPRESSION LOADS ON PLANS S702.
5. COMPRESSION POST SIZES & COUNTS ARE FOR ALL STRUCTURAL LOADS. EOR MUST VERIFY.
6. COMPRESSION POSTS MAY BE ARRANGED AS DESIRED BY THE BUILDER AS LONG AS:
   A. THE TOTAL POST QUANTITY IS THE SAME AS OR GREATER THAN THE QUANTITY LISTED HERE.
   B. AND THERE IS AT LEAST 1 POST ON EACH SIDE OF EACH ROD.
   C. COMPRESSION POST WOOD SPECIES & GRADE IS DFL #2 OR BETTER.
   D. COMPRESSION POST LENGTHS SHOWN IN SCHEDULE ARE FOR CALCULATION PURPOSES ONLY. FRAMER IS RESPONSIBLE FOR ACTUAL POST LENGTHS.
   E. COMPRESSION POST NAIL COUNT IS TOTAL FOR THE WHOLE LAMINATED STACK.
7. IF A BEARING PLATE IS LONGER THAN THE SPACE BETWEEN POSTS IT IS PERMISSABLE TO ADJUST POST SPACING TO LAND FULLY ON OR FULLY BESIDE THE BEARING PLATES. OR, TO SHIM OR NOTCH PLATES PER ATSI0 DETAIL 20.
8. CONCRETE ANCHOR RODS SHALL EXTEND 10" MINIMUM ABOVE CONCRETE U.N.O.
9. ISOLATOR BUSHINGS ARE NOT REQUIRED IF BORATE IS USED TO PRESSURE TREAT SILL PLATES.
10. INSTALL TERM HEADER FLAT TO FILL WALL WIDTH. DO NOT NAIL. IT NEEDS TO FLOAT AS BUILDING SHRINKS AND SETTLES.
11. WHEN 12' ROD AND 2' ROD ARE ON THE SAME FLOOR OF THE SAME RUN, THEIR POSITIONS MAY BE SWITCHED AT THE INSTALLER'S OPTION.
12. IN MOST CASES EACH SHEAR WALL IS SECURED BY THE HARDWARE FROM THE FLOOR ABOVE ACTING THROUGH FLOOR PLATES AND BEARING BLOCKS.
    EXCEPTION: MID-FLOOR TERMINATIONS (OFTEN THE TOP FLOOR) IS SECURED THROUGH A TERMINATION HEADER AND NAILED TRIMMER STUDS.
13. THIS DRAWING IS NOT TO SCALE.
14. ROD DIAMETER IS DESIGNATED BY THE NUMBER AFTER R IN THE PART NAME IN 1/8TH'S OF AN INCH. I.E. R5=5/8" AND R10=1-1/4".
15. LOADS ARE DESIGNATED IN ASD.

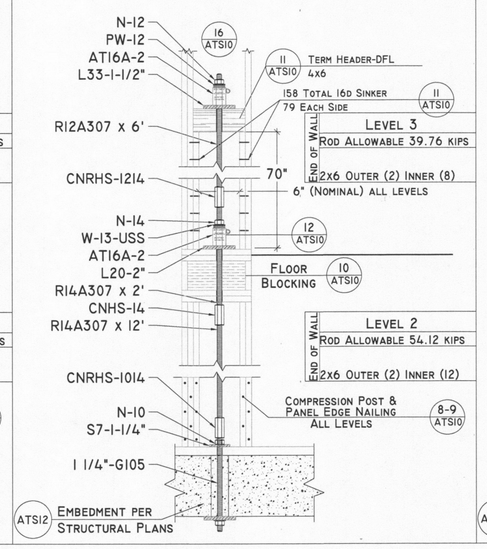
AT SUBSTITUTION NOTES:

1. ANY AT SPECIFIED MAY BE REPLACED WITH ANY OTHER AT THAT HAS A LOAD RATING EQUAL TO OR HIGHER THAN THE LOAD REQUIRED, TAKE-UP TRAVEL EQUAL TO OR HIGHER THAN THE SHRINKAGE REQUIRED AND IS COMPATIBLE WITH THE ROD DIAMETER.
2. AT8A MAY BE REPLACED WITH AT 100 OR AT10A AT SUPPLIER'S DISCRETION.
3. AT10A MAY BE REPLACED WITH AT12A OR AT 125 AT SUPPLIER'S DISCRETION.
4. AT12A MAY BE REPLACED WITH AT16A OR AT 200 AT SUPPLIER'S DISCRETION.
5. AT16A MAY BE REPLACED WITH AT12A OR AT 200 AT SUPPLIER'S DISCRETION.

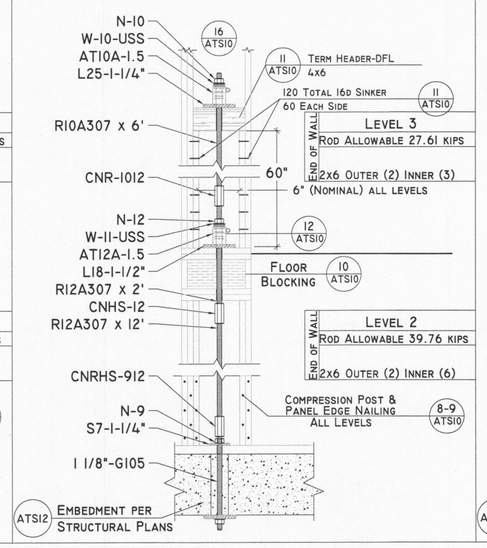
EW2AB



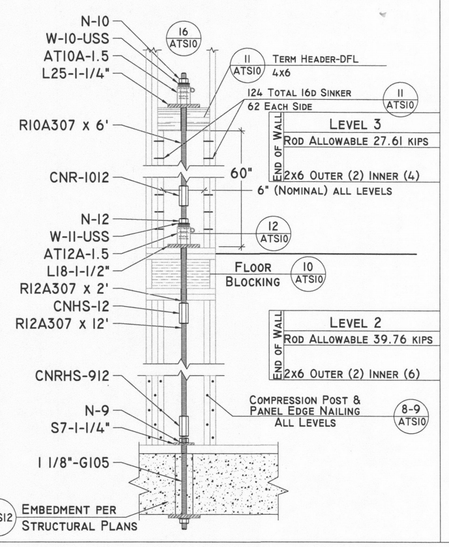
EW6



EW6.5



NSBI



AutoTight® Holdown System
www.comminsmfg.com
BY COMMINS MANUFACTURING, INC.
960B GUARD ST., FRIDAY HARBOR, WA 98250
T: 360.378.9484 F: 360.378.9485

No.	REVISION	DATE
1	REVISED LOADS & NOTE 5. ADDED 2 FLOORS TO NSB2.	9/17/18
2	REVISED LOADS & REMOVED NSB2.	10/11/18

☒ No Exception Taken ☐ Make Corrections Noted
☐ Submit Additional/ Specified Items ☐ Revise and Resubmit

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WDY, Inc.
Date: 11-01-2018
By: Brynn Adkins

City of Portland REVIEWED FOR CODE COMPLIANCE
NOV 08 2018
Permit Number

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 12894 OREGON JULY 9, 2001 TROY D. LYVER
RENEWAL: DEC. 31, 2019

18-1789
TREE FARM
826 SE 3RD AVE,
PORTLAND, OR 97214

DRAWN:	TFB	CHECK:	TBD	DATE:	6/13/18

Holdown Run Elevations
Not to Scale

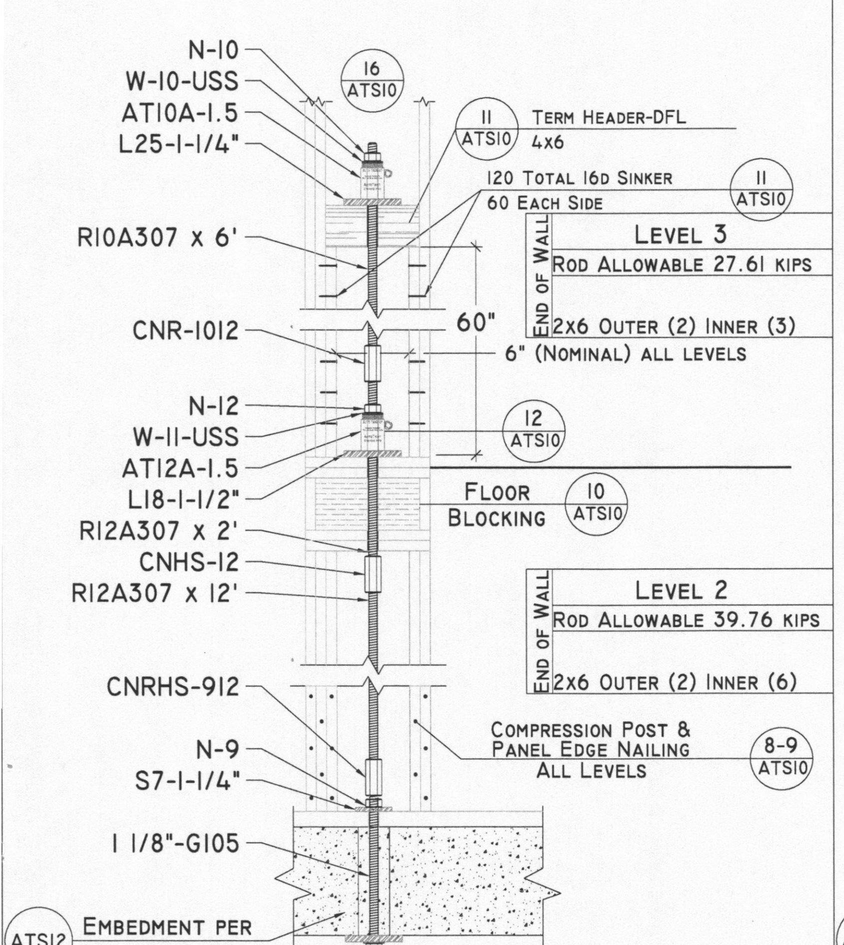
ATSII
SH 1

NOTES:
1. SEE SHEET 1 FOR GENERAL NOTES.

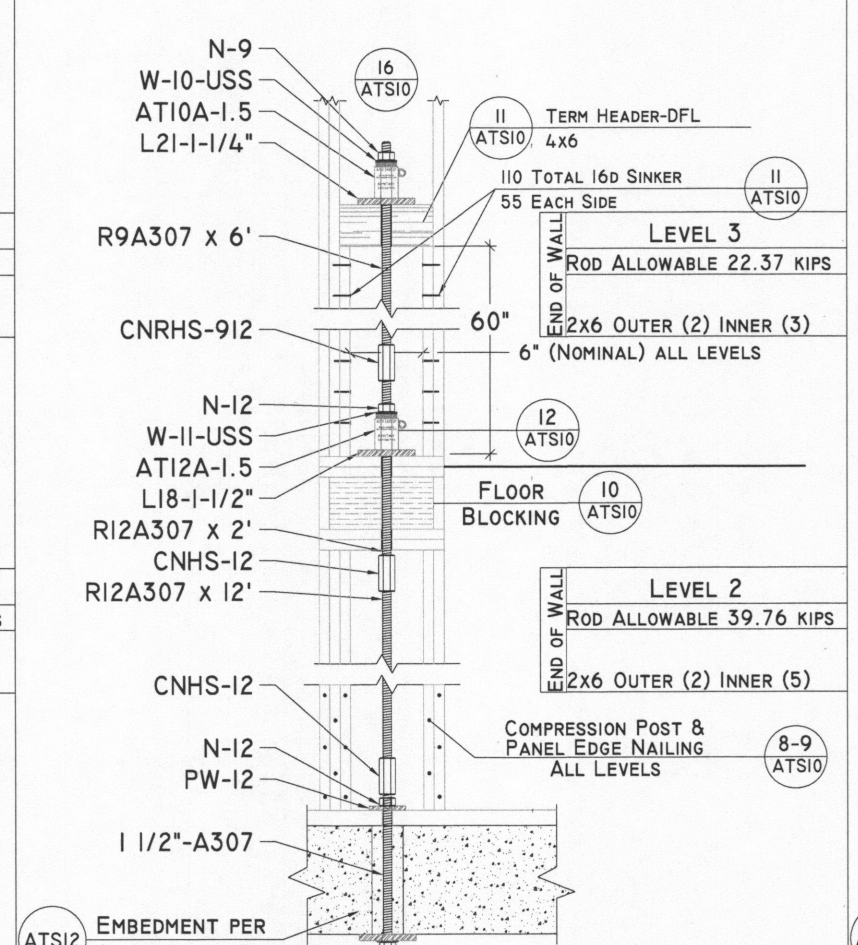
STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
OREGON
JULY 9, 2001
TROY D. LYVER, P.E.
RENEWAL: DEC. 31, 20 18

NSC1	NSC2	NSD	NSE	NSC.3

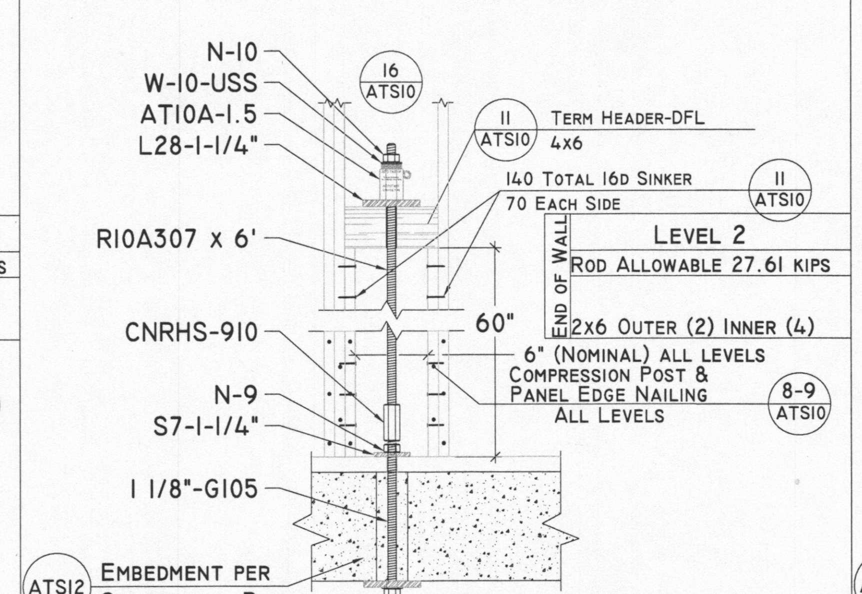
NSC1



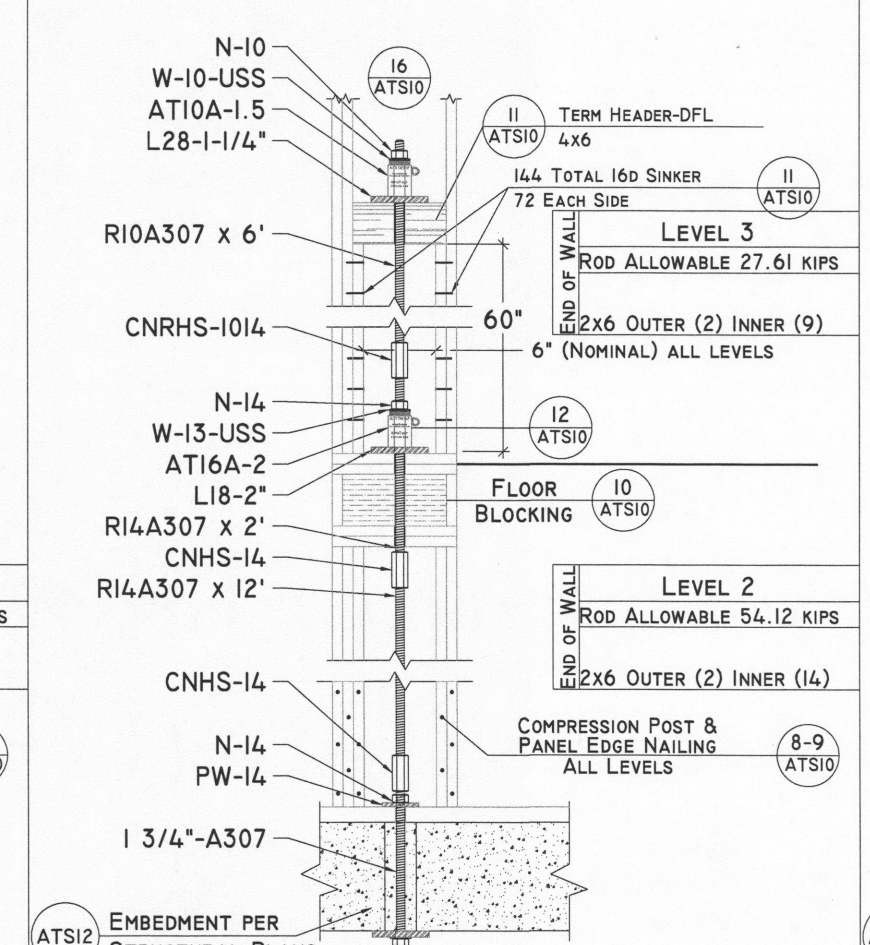
NSC2



NSD



NSE



NSC.3

☒ No Exception Taken
❑ Make Corrections Noted
❑ Submit Additional/ Specified Items
❑ Revise and Resubmit

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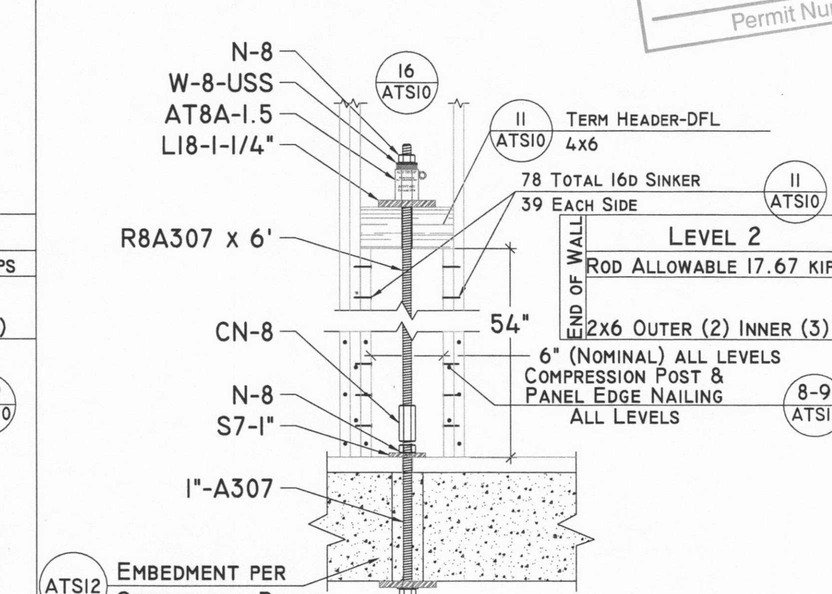

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NO.	REVISION	DATE
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2	REVISED LOADS & REMOVED NSB2.	10/11/18

18-1789
TREE FARM
826 SE 3RD AVE,
PORTLAND, OR 97214

DRAWN:	TFB	CHECK:	TBD	DATE:	6/13/18

Holdown Run Elevations

Not to Scale

ATS11
SH 2

Anchor Bolt Embedment Notes

Anchor Bolt Embedment Design:
1. Anchor Bolt Embedment Design conforms to the 2012 IBC & OSSC 2014.
2. Required loads and system requirements are per Final Shear Wall Layout Structural Plan Set S702 dated 03/23/2018.
3. Concrete strength is 3,500 psi.
5. Fabrication shall meet the requirements and specifications per Structural Plan general notes.
6. Embedment Rod strengths per ATS10 Table 1h.
7. Drawing is not to scale.
8. Fabrication shall meet the requirements and specifications per Structural Plan general notes.

Anchor Bolt Installation:
1. Contractor/installer shall verify anchor bolt size, thread pitch and material for correct location per structural plans and AutoTight holdown run layout sheet(s) ATS11.
2. Anchor Bolt location relative to the end of the shear wall shall be per ATS10 Details 4 and 6.
3. Anchor bolt shall be 10" minimum above concrete slab (U.N.O.).

Holdown System Design:
1. For system design see Holdown Run Details (ATS10), Holdown Run Elevations (ATS11), and Structural Drawing S702.
2. Defer to Structural Plans.
3. Fabrication shall meet the requirements and specifications per structural plan general notes.

Shop Drawing Disclaimer

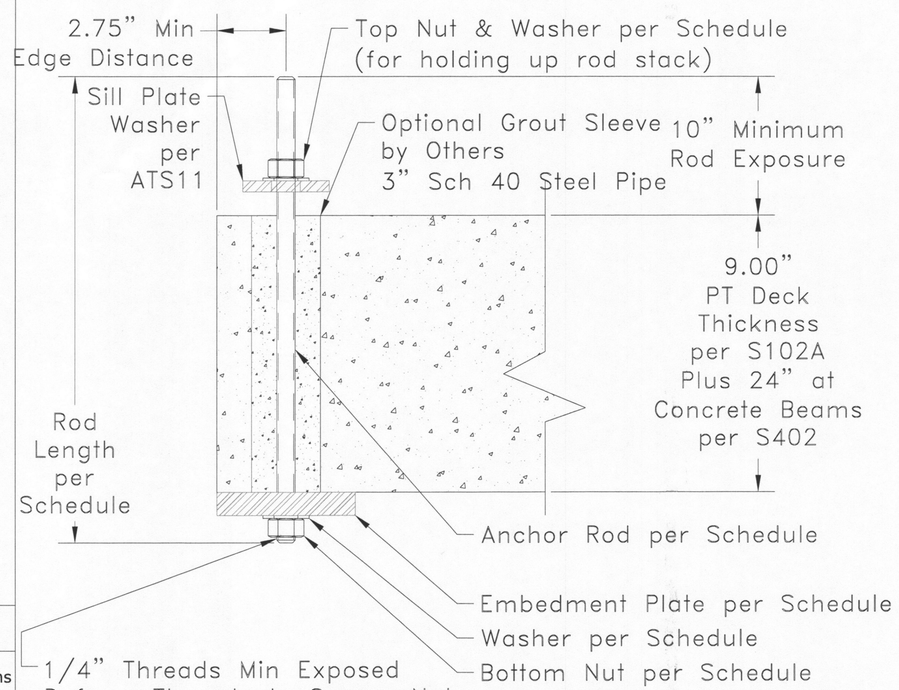
This design uses the construction plans and calculations provided by the Engineer of Record. No Attempt has been made on the part of Commins Manufacturing, Inc. to verify the values given in the calculations or design described by the construction drawings.

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

Structural Engineer of Record

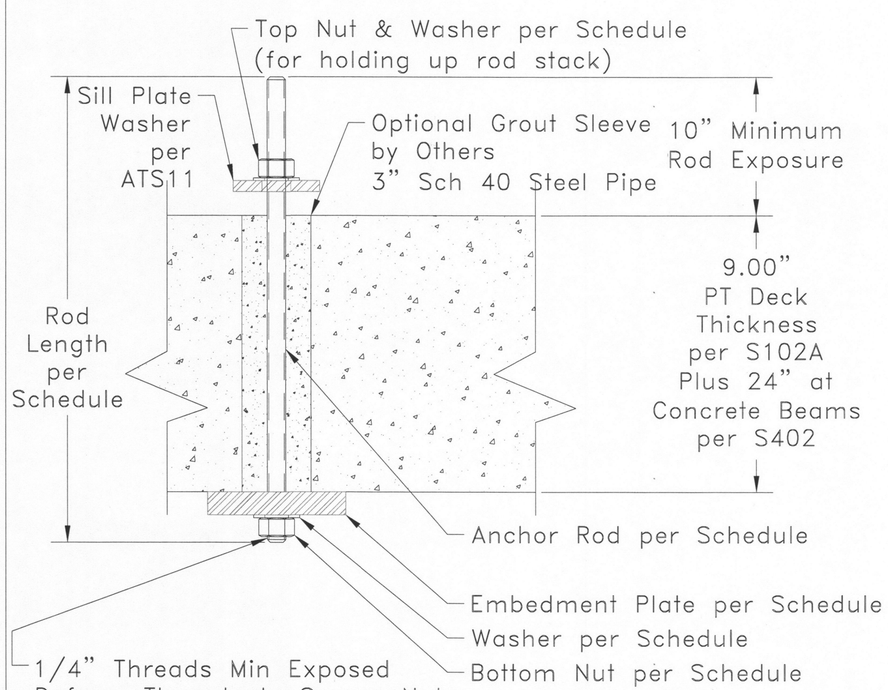
WDY
Greg Munsell
6443 SW Beaverton- Hillside Hwy
ste 210
Portland, OR 97221
503-203-8111

Slab Edge Condition Anchor



Concrete and Rebar
per Structural Plans S102A

Slab Interior Anchor



Concrete and Rebar
per Structural Plans S102A

AutoTight Anchor Bolt Embedment Schedule					
Run Name	Rod	Embedment Plate Size	Bottom Nut	Top Nut	Washer
NSC.3	R8A307 x 36"	EP-10C = 1"x5"x5"x1-1/16 HOC	N-8	N-8	W-8
EW6.5	R9G105 x 24"	EP-10C = 1"x5"x5"x1-3/16 HOC	NHS-9	N-9	W-9
NSB1, NSC1, NSD	R9G105 x 36"	EP-10C = 1"x5"x5"x1-3/16 HOC	NHS-9	N-9	W-9
EW6, NSB2	R10G105 x 36"	EP-10C = 1"x5"x5"x1-5/16 HOC	NHS-10	N-10	W-10
EW2ab, NSC2	R12A307 x 36"	EP-12 = 1"x5"x5"x1-9/16 HOC	N-12	N-12	W-12
NSE	R14A307 x 48"	EP-14 = 1"x5"x5"x1-13/16 HOC	N-14	N-14	W-14

Notes:
1. This drawing is only to show the Arrangement of the Autotight Components.
2. All concrete calculations are the responsibility of the EOR.
3. All Rods are black unfinished steel.
4. Field verify concrete depths at all locations. Consider Drop Caps, Drop Soffits Wall below etc.
5. Anchor rods are to be located by means of template. Anchor rods shall not be hand set or wet set.
6. Wire embedment securely to rebar to prevent motion during concrete pour.
7. OK to field cut rod to reduce lift-over. Do not violate minimum rod exposure.

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No.	Revision	Date

Drawn:	TFB	Check:	tbd	Date:	06/14/18

18-1789
Tree Farm
826 SE 3rd Ave,
Portland, OR 97214

Anchor Bolt Details
Not to Scale

ATS12

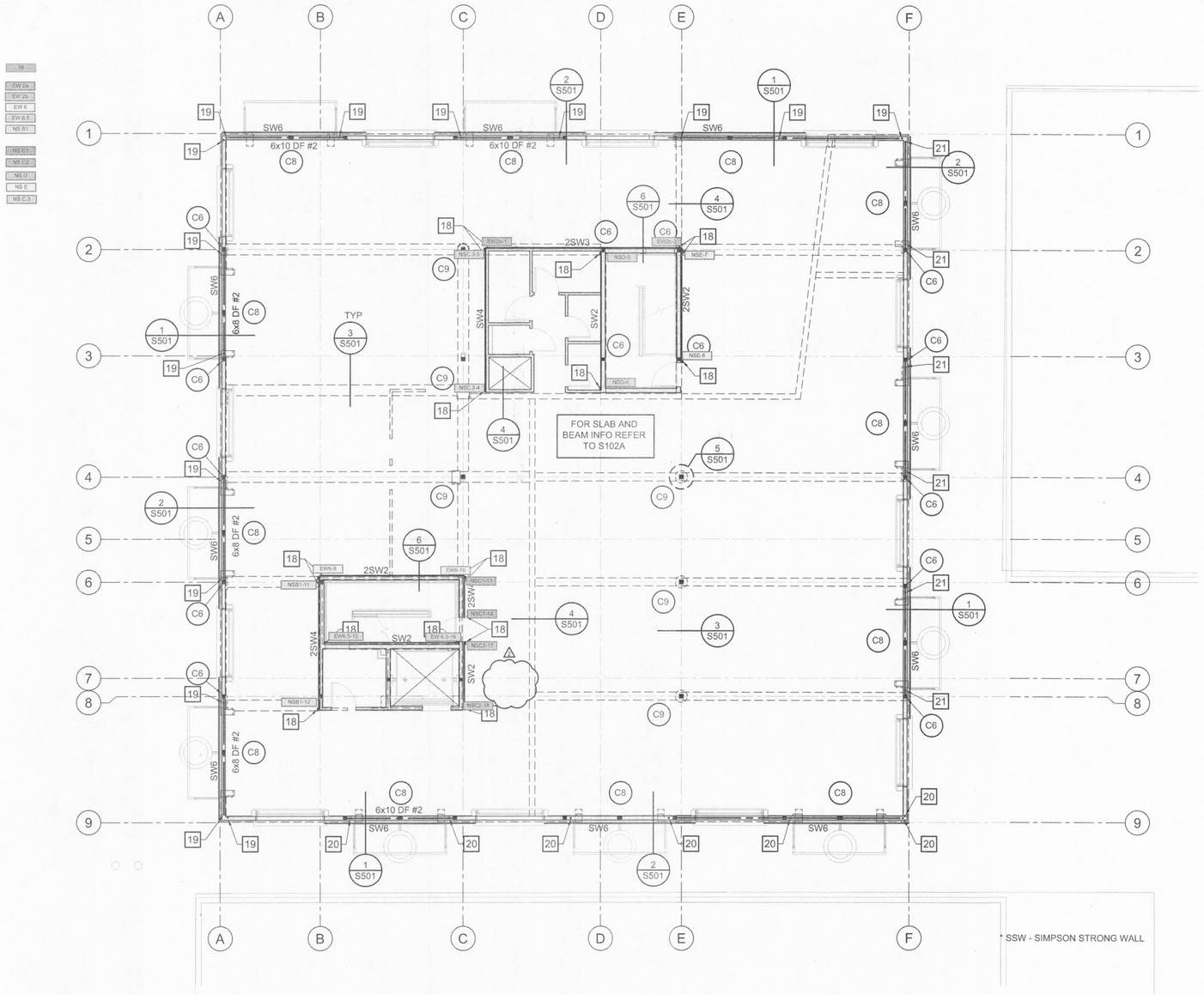
18-1789
Tree Farm
826 SE 3rd Ave,
Portland, OR 97214

AutoTight Tie-Down System
Run Locator
Date: 10/11/18
Rev 1

The Run Location overlay seen on this sheet were placed by:
Commins Manufacturing, Inc.

These plans originally generated by:
WDY Consulting Eng

Page number of original plans for reference:
S102
03/23/18



1 S102 SECOND FLOOR FRAMING PLAN
1/8" = 1'-0"

NORTH

The Purpose of the Run Locator Sheet is to determine the tie-down Run type needed for a particular shear wall location.

The marking in the colored icons contain the run types found on the sheets AT11, and run ID numbers.

Example: 5A-123 = Run 5A..... ID number 123

This in NOT a dimensional layout to determine where the run will be located in the wall. Wall layout is the responsibility of others.

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AutoTight® by Commins Manufacturing Continuous Rod Tie-Down System Run Locator Sheet

RL-1