AutoTight® Holdown System

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Project Information

1.Bid Date:*	5/10/11	2.Project ID#	75-49846	3.Revision #:	0	4.Takeoff By:	ME	5.Runs:	81
6.Project:*	The Sample Project					7.Distributor:			
Address:	960B Guard Street					Contact:			
City, ST, ZIP:	Friday Harbor, WA 98250					Address:			
9.Est. Start Date		11.#of Bldgs	1			City, ST, ZIP:			
10.Plan Set*	Bid Set	12.Plan Date	1/29/11			Phone:		Cell:	
Building / Site Plan Notes:						Fax:			
						e-mail:			
						13.Ship to City, ST, ZIP:			
15.Engineer Firm:	AutoTight Designer					16.Contractor:			
EOR/Contact:						Contact:			
Address:	P.O. Box 3338					Address:			
Suite/Unit:	Suite 2					Suite/Unit:			
City, ST, ZIP:	Friday Harbor WA 98250					City, ST, ZIP:			
Phone:	360-378-9484	Cell:				Phone:		Cell:	
Fax:						Fax:			
e-mail:						e-mail:			

Structural Holdown System Information				18.Complete CAT System		21.Detail OK	22.DWG #	23.Detail/Note
19.Design Code:*	IBC_2009	State of Washington Bldg Code	Main/State/Local			√	S.1	1/29/11
25.Reqd Loads per:	Schedule	1/29/11	<- Include Drawing Date			√	S5.6	1/29/11

30.Take-Up Device at Each Level	Yes	Add'l Run Notes	
31.Est. Wood Shrinkage*, in/floor	1/4		
32.Elongation Max Between Connections (in)	0.200		

33.Run Termination Type*	Top Plate Termination	34.Wood Beam Starts	Yes	35.Steel Beam Starts	Yes

Threaded Rod / Couplers		Wood Specifications	We assume	44.Detail OK	45.DWG #	46.Detail/Note
36.Standard Rod Type	A307	40.Shearwall Plates*	DFL	√	S.2	
37.High Strength Rod Type	C1045	41.Studs per Plans	DFL	√	S.2	
38.Higher Strength Rod Type	A193-B7	42.Post per Plans	DFL #1	√	S.2	
39.Extra High Strength Rod	A354-BD	43.Floor Joist*	11 7/8" TJI	√	S2.3	

Story Heights (Carpet to Carpet):			Wall Plates		Joist+Floor Plywood		Comp Post Height		48.Elev.	49.Additional Wood Notes:
51.Floor/Level*	52.ft.*	53.in.*	Sill (in.)	Top (in.)	Between	in.	ft.	in.		
6th	10	0	1 1/2	3			9	7 1/2		
5th	10	0	1 1/2	3	4 & 5	12 5/8	8	6 7/8		
4th	10	0	1 1/2	3	3 & 4	12 5/8	8	6 7/8		
3rd	10	0	1 1/2	3	2 & 3	12 5/8	8	6 7/8		
2nd	10	0	2 1/2	3	1 & 2	12 5/8	8	5 7/8		

Anchor Rod Embedments			55.CAT Embeds	**No**	56.Original Plan Embed Details		√	S5.6	
Embed Type	57.PT Deck		58.Footing		59.Wall				
Depth/Width in	60.Thickness		61.Depth		62.Width				
63.Concrete PSI							**Anchor Bolt Above Slab**		
64.Hot Dipped Galvanized (HDG) Rod Required		No	65.Embedment Chairs Supplied				**+ 6 inches**		

Non-CAT System Embedment Rod Size, Thread Pitch and Material Type must be Verified Before Ordering

66.Additional Embed Notes:	

AutoTight® Holdown System

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AutoTight® Load Justification Table

The Sample Project

Friday Harbor, WA 98250

Structural Engineer:
AutoTight Designer

Date:
5/10/11

PROJECT ID #:
75-49846

P.O. Box 3338
Suite 2
Friday Harbor WA 98250
360-378-9484

Rev #
0

201.Elongation Components
System Stretch

Run count:
81

By:
ME

Run		5A				5B				3A				1A-SBS						
Count		64				8				5				4						
CAT Run Type		CAT-5 (T54321)				CAT-5 (T54321)				CAT-3 (T31)				CAT-1 (T1)						
Tension =	T	Required Loads per level	Allowable Load (k)	Differential Load (k)	Stretch Load (k)	Required Loads per level	Allowable Load (k)	Differential Load (k)	Stretch Load (k)	Required Loads per level	Allowable Load (k)	Differential Load (k)	Stretch Load (k)	Required Loads per level	Allowable Load (k)	Differential Load (k)	Stretch Load (k)	Story Heights (Carpet to Carpet)		Cumlative Est. Wood Shrinkage
Compression =	*C*		Rod	AT	System (in)		Rod	AT	System (in)		Rod	AT	System (in)		Rod	AT	System (in)			
Floor / Level		(kips)	Ø - Type	Plate	Limit (in)	(kips)	Ø - Type	Plate	Limit (in)	(kips)	Ø - Type	Plate	Limit (in)	(kips)	Ø - Type	Plate	Limit (in)	ft	in	Total (in.)
6th	T	5.10	6.90	5.10	5.10	6.50	6.90	6.50	6.50									10	0	1 1/4
			R5A307	AT6A-1.5	0.133		R5A307	AT6A-1.5	0.159											
	C		5/8"-A307	S5	0.200		5/8"-A307	S7	0.200											
5th	T	5.90	6.90	0.80	5.90	10.75	13.53	4.25	10.75									10	0	1
			R5A307	AT6A-1.5	0.114		R7A307	AT 100	0.125											
	C		5/8"-A307	S5	0.200		7/8"-A307	S7	0.200											
4th	T	6.90	6.90	1.00	6.90	10.90	13.53	0.15	10.90	4.50	9.94	8.50	8.50					10	0	3/4
			R5A307	AT6A-1.5	0.134		R7A307	AT 100	0.101		R6A307	AT6A-1.5	**0.241**							
	C		5/8"-A307	S5	0.200		7/8"-A307	S7	0.200		3/4"-A307	S10	0.200							
3rd	T	7.50	9.94	0.60	7.50	16.00	17.67	5.10	16.00	8.50	9.94			8.20	9.94	8.20	8.20	10	0	1/2
			R6A307	AT6A-1.5	0.097		R8A307	AT 100	0.144	*	R6A307				R6A307	AT6A-1.5	0.139			
	C		3/4"-A307	S5	0.200		1 "-A307	S7	0.200		3/4"-A307				3/4"-A307	S8	0.200			
2nd	T	9.20	9.94	1.70	9.20	27.80	46.59	11.80	27.80	16.00	17.67	7.50	16.00			***Stl Beam***		10	0	1/4
			R6A307	AT6A-1.5	0.127		R9B7	AT 125	0.197		R8A307	AT 100	0.159							
	C		3/4"-A307	S5	0.200		1 1/8"-B7	S12L	0.200		1 "-A307	S7	0.200							
Anchor Rod			**3/4"-A307**	Reset Run			**1 1/8"-B7**	Reset Run			**1 "-A307**	Reset Run				Reset Run				

Design Code(s): IBC_2009 State of Washington Bldg Code
DWG: S.1 Date: 1/29/11
Required Loads: Schedule
DWG: S5.6 Date: 1/29/11

Take-Up Devices AT75, AT100 and AT125 provide for 1.1" shrinkage, AT75-2.5 provides for 2.5" of shrinkage.
See Commins ICC-ESR-1344 and COLA RR 25480 for additional information.
S8 Bearing Plate shown by color and size (Plates Marked)
Plates with "S" Prefix fit 3-1/2" wall number signifies allowable load in kips and have 3/4" or 1" clearance holes.
Plates with "L" Preffix fit 5-1/2" wall and have a 1-1/4" Clearance hole for use with the AT125.
Plates with "L" Suffix have a 1-1/4" Clearance hole for use with the AT125.
Tension Load reflects the maximum capacity of the specified rod.
Differential Load is the load transferred into the building at that load transfer point.
Runs modified by combining runs and skipping floors. Subject to EOR acceptance.
Rod Elogation (Stretch) Calculations;
{Required Load (lbs.) per level for Rod x Stretch Length (in.)} / {Tensile Diameter (in.) of Rod x 29,000,000 (Young's Modulus)}
Stretch Length is the distance between a Termination Point, Anchor / Beam Start / Top Floor Termination and/or Differential Point.
System stretch includes Delta R. (the contribution due to reversal of direction of force applied to system)
Tie down systems now have an elongation limit of 0.180 for rod only and 0.200 for the tie down system and 0.250 for the tie down system plus the top plate.
The note "Call Commins" in a cell means the load or another parameter exceeds standard capabilities.
Please call the factory at 360-378-9484 for solutions to extreme conditions.

Date: 5/10/11 **Rev #** 0 **By:** ME

CAT Holdown System Materials - All Levels

Project:	The Sample Project			**Run #**	**5A**	**5B**	**3A**	**1A-SBS**	**Run Totals**
Project ID #:	75-49846			**Stories**	**5**	**5**	**3**	**1**	
Buyer:				**Runs**	**64**	**8**	**5**	**4**	**81**
Contact:				**6**					
Phone:				**5**	R5A307	R5A307			**1 standard AT**
Fax:				**4**	R5A307	R7A307			**2.5" expansion AT**
Distributor:				**3**	R5A307	R7A307	R6A307		**2 Stacked AT's**
Salesmen:				**2**	R6A307	R8A307	R6A307	R6A307	
Phone:				**1**	R6A307	R9B7	R8A307		**Quantities**

Items				**Run #**	**5A**	**5B**	**3A**	**1A-SBS**	**Item**
Part #		Description			**Items per run**				**Total**
Auto Take-Up Devices									
AT 100	25.3k	(Pallet = 576)	1.1"			3	1		29
AT 125	34.5k	(Pallet = 320)	1.1"			1			8
AT6A-1.5	13.579k	(Pallet = 1152)	1.5"		5	1	1	1	337
Bearing Plates									
S5	5.9k	0.229" (1/4") x 3" x 3" BPHS343	3/4"		5				320
S7	7.8k	3/8 x 3½ x 3½ BPHG1	1"			4	1		37
S8	8.2k	3/8 x 3¼ x 4	1"					1	4
S10	10.3k	1/2 x 3¼ x 5	1"				1		5
S12L	12.0k	5/8 x 3¼ x 6	1¼"			1			8
Steel Beam Weld Plates									
EP-7A		5/8" x 3" x 3"						1	4
Threaded Rods									
R5A307 x 10'		5/8" - 11 NC - A307			3	1			200
R6A307 x 1'		3/4" - 10 NC - A307						1	4
R6A307 x 10'		3/4" - 10 NC - A307			2		2	1	142
R7A307 x 10'		7/8" - 9 NC - A307				2			16
R8A307 x 10'		1" - 8 NC - A307				1			8
R8A307 x 12'		1" - 8 NC - A307					1		5
R9B7 x 12'		1 1/8" - 7 NC - B7				1			8
Sighted Coupling Nuts									
CN-5		5/8" - 11 NC			2				128
CN-6		3/4" - 10 NC			2		1	1	137
CN-7		7/8" - 9 NC				1			8
CN-8		1" - 8 NC					1		5
CNHS-9		1 1/8" - 7 NC				1			8
Coupling Nut Reducers									
CNR-56		5/8" - 3/4"			1				64
CNR-57		5/8" - 7/8"				1			8
CNR-68		3/4" - 1 "					1		5
CNR-78		7/8" - 1"				1			8
CNR-89		1" - 1 1/8"				1			8
Nuts									
N-5		5/8" - 11 NC			3	1			200
N-6		3/4" - 10 NC			2		1	1	137
N-7		7/8" - 9 NC				2			16
N-8		1" - 8 NC				1	1		13
NHS-9		1 1/8" - 7 NC				1			8
Washers									
W-5		5/8" SAE Flat			3	1			200
W-6		3/4" SAE Flat			2		1	1	137
W-7		7/8" SAE Flat				2			16
W-8		1" SAE Flat				1	1		13
W-9		1 1/8" SAE Flat				1			8
CAT Holdown System Materials Total:									4150

CAT Holdown System Material

Complete CAT Holdown System
(Embedments Not Included)

Date	**5/10/11**
By	**ME**
Rev #	**0**

Building Project:	**Distributor:**
The Sample Project **Friday Harbor, WA 98250**	

CAT ID # 75-49846

Qty	CAT Part #	Description
Auto Take-Up Devices		
29	AT 100	Auto Take-Up Device, 1 in.,1.1" shrinkage
8	AT 125	Auto Take-Up Device, 1 in.,1.1" shrinkage
337	AT6A-1.5	Aluminum Auto Take-Up Device, 3/4 in.,1.5" shrinkage
Bearing Plates		
320	S5	Bearing Plate, 0.229" (1/4") x 3" x 3" BPHS343, 3/4" hole
37	S7	Bearing Plate, 3/8 x 3½ x 3½ BPHG1, 1" hole
4	S8	Bearing Plate, 3/8 x 3¼ x 4, 1" hole
5	S10	Bearing Plate, 1/2 x 3¼ x 5, 1" hole
8	S12L	Bearing Plate, 5/8 x 3¼ x 6, 1¼" hole
Steel Beam Weld Plates		
4	EP-7A	Steel Beam Start Plate, 5/8" x 3" x 3"
Threaded Rods		Standard Rod Finish: Black
200	R5A307 x 10'	Threaded Rod, 5/8" - 11 NC - A307 x 10', Black
4	R6A307 x 1'	Threaded Rod, 3/4" - 10 NC - A307 x 1', Black
142	R6A307 x 10'	Threaded Rod, 3/4" - 10 NC - A307 x 10', Black
16	R7A307 x 10'	Threaded Rod, 7/8" - 9 NC - A307 x 10', Black
8	R8A307 x 10'	Threaded Rod, 1" - 8 NC - A307 x 10', Black
5	R8A307 x 12'	Threaded Rod, 1" - 8 NC - A307 x 12', Black
8	R9B7 x 12'	Threaded Rod, 1 1/8" - 7 NC - B7 x 12', Black
Sighted Coupling Nuts		
128	CN-5	Sighted Coupler Nut, 5/8" - 11 NC , Grade 2
137	CN-6	Sighted Coupler Nut, 3/4" - 10 NC , Grade 2
8	CN-7	Sighted Coupler Nut, 7/8" - 9 NC , Grade 2
5	CN-8	Sighted Coupler Nut, 1" - 8 NC , Grade 2
8	CNHS-9	Sighted Coupler Nut, 1 1/8" - 7 NC , Grade 8
Coupling Nut Reducers		
64	CNR-56	Coupler Nut Reducers, 5/8" - 3/4" , Grade 2
8	CNR-57	Coupler Nut Reducers, 5/8" - 7/8" , Grade 2
5	CNR-68	Coupler Nut Reducers, 3/4" - 1 " , Grade 2
8	CNR-78	Coupler Nut Reducers, 7/8" - 1" , Grade 2
8	CNR-89	Coupler Nut Reducers, 1" - 1 1/8" , Grade 2
Nuts		
200	N-5	Nut, 5/8" - 11 NC , Grade 2
137	N-6	Nut, 3/4" - 10 NC , Grade 2
16	N-7	Nut, 7/8" - 9 NC , Grade 2
13	N-8	Nut, 1" - 8 NC , Grade 2
8	NHS-9	Nut, 1 1/8" - 7 NC , Grade 8
Washers		
200	W-5	Washer, 5/8" SAE Flat
137	W-6	Washer, 3/4" SAE Flat
16	W-7	Washer, 7/8" SAE Flat
13	W-8	Washer, 1" SAE Flat
8	W-9	Washer, 1 1/8" SAE Flat
CAT Holdown System Materials Total:		

T: 360.378.9484
F: 360.378.9485

Commins Manufacturing, Inc.
960B Guard St., Friday Harbor, WA 98250