

LATERAL AND UPLIFT DESIGN/INSPECTION CONSIDERATIONS

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LATERAL AND UPLIFT DESIGN/INSPECTION CONSIDERATIONS

- Overview of continuous load path
- Overview of different systems
- Different design considerations
- Pre-construction activities
- Construction concerns
- Post-construction

CONTINUOUS LOAD PATH

Simpson Strong-Tie® Wood Construction Connectors

Continuous Load Path

SIMPSON Strong-Tie

This drawing shows the connection points for a continuous load path from the rafters to the foundation of a two-story house. Building with a continuous load path is an essential part of creating a structure better able to withstand the forces of mother nature.

This drawing is for illustrative purposes only and should not be considered an engineered system. Refer to the page numbers for the full range of Simpson Strong-Tie® connectors. Consult a qualified Designer to ensure that correct connector quantities and installation methods are used to achieve the full design load values.

Typical Roof/Wall Connections
pp. 270-273, 277-279

Straps at Openings
pp. 262-269

Lateral Systems
Visit strongtie.com for more information

Typical Floor-to-Floor Connections
pp. 49-57, 262-269 and 280-281

Typical Foundation Connections
pp. 49-60

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339



DIFFERENT LATERAL RESISTANCE SYSTEMS

- Site-Built Shear Wall
- Pre-Fabricated narrow Shear Panels
- Multi-Story Rod Systems
 - Wind and Seismic
- Moment Frames



TYPICAL SITE BUILT SHEAR WALL

- Cast-in-place anchor bolts or cast-in-place strap hold downs
- Reinforcement by EOR/Designer
- Attached hold downs with proper fasteners
- Attached sheathing and nailing per shear wall schedule

TEMPLATED PRE-FABRICATED HOLD DOWN AND ANCHOR BOLTS



POST TENSION CABLES AND HOLD DOWN STRAPS READY FOR POUR



FINISHED PADS



COMPLETED SITE-BUILT SHEAR WALLS



SHEAR WALL NAILING SCHEDULE

SHEAR WALL SCHEDULE													
SHEAR MARK NO.	THICKNESS	PLYWOOD TYPE	NO. OF SIDES	NAILING SIZES	BLK'G	SPACING		ALLOWABLE SHEAR WALL VALUE	SILL PLATE			TOP PLATE CONNECTION W/SIMPSON 'A35' (SEE NOTE 3 & 6 BELOW)	
						EDGE	INTERM		SIZE	CONNECTION TO FOOTING INTERIOR NON RATED WALLS	CONNECTION TO FOOTING EXTERIOR RATED WALLS	INTERIOR NON RATED WALLS	EXTERIOR RATED WALLS
▲1	15/32"	STRUCTURAL I	ONE	10d COMMON	YES	6"	12"	340 PLF	3X	5/8" ∅ ANCHOR BOLTS AT 48" OC	5/8" ∅ ANCHOR BOLTS AT 40" OC	'A35' AT 16" OC	'A35' AT 16" OC
▲2	15/32"	STRUCTURAL I	ONE	10d COMMON	YES	4'	12"	510 PLF	3X	5/8" ∅ ANCHOR BOLTS AT 40" OC	5/8" ∅ ANCHOR BOLTS AT 32" OC	'A35' AT 8" O.C.	'A35' AT 8" O.C.
▲3	15/32"	STRUCTURAL I	ONE	10d COMMON	YES	3"	12"	665 PLF	3X	5/8" ∅ ANCHOR BOLTS AT 32" OC	5/8" ∅ ANCHOR BOLTS AT 24" OC	'A35' AT 8" O.C.	'A35' AT 8" O.C.
▲4	15/32"	STRUCTURAL I	ONE	10d COMMON	YES	2"	12"	870 PLF	3X	5/8" ∅ ANCHOR BOLTS AT 24" OC	5/8" ∅ ANCHOR BOLTS AT 16" OC	'A35' AT 8" OC	2-'A35' AT 12" OC
▲5	15/32"	STRUCTURAL I	BOTH	10d COMMON	YES	4'	12"	1020 PLF	3X	5/8" ∅ ANCHOR BOLTS AT 16" OC	5/8" ∅ ANCHOR BOLTS AT 16" OC	'A35' AT 8" O.C.	2-'A35' AT 10" OC
▲6	15/32"	STRUCTURAL I	BOTH	10d COMMON	YES	3"	12"	1330 PLF	3X	5/8" ∅ ANCHOR BOLTS AT 16" OC	5/8" ∅ ANCHOR BOLTS AT 8" OC	2-'A35' AT 12" O.C.	2-'A35' AT 8" OC
▲7	15/32"	STRUCTURAL I	BOTH	10d COMMON	YES	2"	12"	1740 PLF	3X	5/8" ∅ ANCHOR BOLTS AT 8" OC	5/8" ∅ ANCHOR BOLTS AT 8" OC	2-'A35' AT 8" O.C.	2-'A35' AT 8" OC

NOTES:

- FOR ADDITIONAL INFORMATION SEE GENERAL NOTES
- FOR SHEAR WALL NOTES SEE DETAIL 8 ON SHEET S1.2
- 'A35' INSTALLED BY SIMPSON SPECIFICATIONS and AS ALTERNATE USE DETAIL 20 ON SHEET S8.0
- SCREWS 'SDWS' INSTALLED BY SIMPSON SPECIFICATIONS.
- FASTENERS IN CONTACT WITH PRESSURE TREATED SILL PLATE SHALL BE HOT DIPPED ZINC COATED GALVANIZED or STAINLESS STEEL or SILICON BRONZE or COPPER
- WHEN REQUIRED 2 CLIP ANGLES, PROVIDE ONE AT ONE SIDE & OTHER AT OTHER SIDE STAGGERED. AS ALTERNATE ONE 'A35' AND OTHER SIDE ONE 'LTP4' STAGGERED.
- RATED WALLS MEAN FIRE RATED WALLS.SEE PLANS.
- EDGE NAILING ARE BOUNDARIES, PANEL EDGES, TOP and BOTTOM PLATE ATTACHMENT

6

SHEAR WALLS SCHEDULE

S1.2


SCALE: 1/8"=1'-0"

ALLOWABLE OFFSET TOLERANCE

Holddowns and Tension Ties

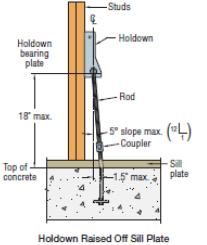
Simpson Strong-Tie® Wood Construction Connectors

General Information and Notes (cont.)

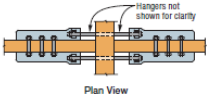


Holddown and Tension Tie General Notes:

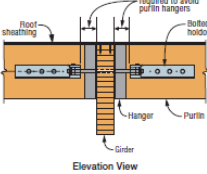
- Allowable loads have been increased for earthquake or wind load durations with no further increase allowed. Reduce where other loads govern.
- To obtain LRFD values for cast-in-place holddowns (STD and PA), multiply ASD seismic load values by 1.4 and wind load values by 1.6 (1.67 for 2015 and 2018 IBC). For post-installed holddowns, multiply allowable loads by 1.4. See evaluation reports for LRFD deflections.
- Use all specified fasteners.
- The Designer must specify anchor bolt type, length and embedment. See pp. 32-34 and 36-39 for SB and SSTB anchor bolts and pp. 42-43 for PA3 anchor bolts. See pp. 44-45 for anchor recommendations for each holddown. Refer to technical bulletin T-A-ANCHORSPEC at strongtie.com for anchor solutions for wind and low seismic applications.
- Simpson Strong-Tie® Anchor Designer is available for quick and easy design of anchors for wind and seismic conditions as well as cracked and uncracked concrete. See strongtie.com/anchordesigner.
- Anchor bolt nut should be finger tight plus 1/8 to 1/4 turn with a hand wrench, with consideration given to possible future wood shrinkage. Care should be taken not to over-tighten the nut. Impact wrenches should not be used.
- Post or beam by Designer. Minimum no. 2 or better unless noted otherwise. Tabulated loads are based on installation into the wide face of a minimum 3 1/2" wide solid or built-up post or beam (in a 3 1/2" wall), unless noted otherwise. Posts may consist of multiple members provided they are connected independently of the holddown fasteners. See strongtie.com/posts for common post allowable loads.
- Holddowns are for use in vertical or horizontal applications.
- Tension values are valid for holddowns installed flush or raised off the all plate.
- Deflection at Allowable Tension Load is determined by testing on wood posts and includes fastener slip, holddown deformation and anchor rod elongation for holddowns installed 5" above top of concrete (4 1/2" for HTT). Holddown deflections may be linearly reduced for design loads less than the allowable load.
- At 1 1/2" max. offset anchor bolt, holddowns may be installed raised up to 18" above the top of concrete with no load reduction provided that additional elongation of the anchor rod is accounted for.
- Tabulated loads for bolted holddowns may be doubled when holddowns are installed on opposite sides of the wood member. Designer must evaluate the allowable load of the wood member and the anchorage.
- Tabulated loads for nailed or screwed holddowns may be doubled when holddowns are installed on opposite sides of the wood member. Member must be thick enough to prevent opposing holddown fastener interference or the holddowns are offset to eliminate fastener interference. Designer must evaluate the allowable load of the wood member and the anchorage. See strongtie.com/posts for common post allowable loads.
- Structural composite lumber columns have sides that show either the wide face or the edges of the lumber strands/veneers known as the narrow face. Values in the tables reflect installation into the wide face. See technical bulletin T-C-SCLCLM at strongtie.com for load reductions due to narrow face installations.
- Some holddown models are available in stainless steel. Refer to engineering letter, L-C-SSHD for stainless-steel holddown allowable loads.



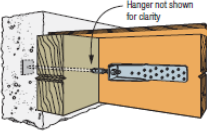
Holddown Raised Off Sill Plate



Plan View



Elevation View
Purlin-to-Purlin Cross-Tie Detail



Horizontal HTT Installation

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FLOOR TO FLOOR TRANSFER AND LATERAL RESISTANCE OF SECOND FLOOR



PRE-FABRICATED SHEAR WALLS



DRAG STRUT



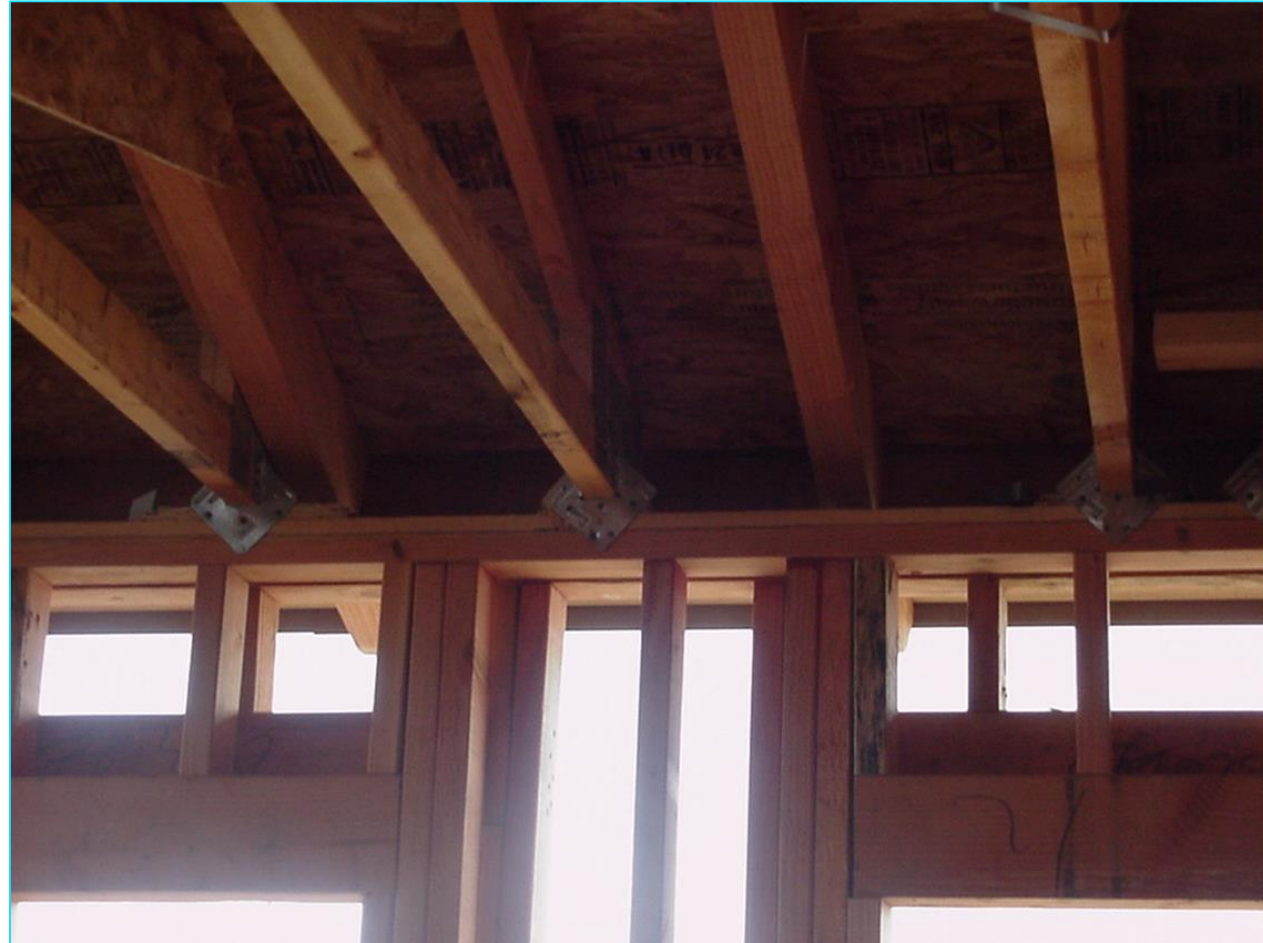
PRE-FABRICATED PLATED TRUSS



TRANSFER TOP PLATE TO TRUSS



INTERIOR UPLIFT



NEW APPROACH TO UPLIFT...

Fasteners Simplify Wind-Uplift Restraint

Building homes and structures with a continuous load path in regions of the country susceptible to high winds can now be accomplished from inside the structure with easy-to-install fasteners.

Tied-and-true metal connectors, fasteners and anchors are traditionally used as a system to connect the roof, floors and foundation together. But now there's another choice. Simpson Strong-Tie offers two structural fasteners designed for wind-uplift restraint: the Strong-Drive® SDWF Floor-to-Floor screw and the Strong-Drive SDWC Truss screw.

There are several key benefits to using structural fasteners for continuous load path connections, including:

- Fast installations (significantly faster than traditional methods)
- No predrilling
- No interference with finish materials on a wall face
- Multiple SDWC screws per connection can provide higher load capacity
- No interference in wall cavity with electrical, plumbing or insulation
- Floor-to-floor framing alignment is not critical
- Taking advantage of the structure's dead load results in fewer SDWC screws per connection and wider SDWF spacing
- Ease of installation — the SDWC and SDWF install from inside the structure (narrow or wide face of stud), eliminating exterior work on upper stories



Wind-Uplift Restraint

The Strong-Drive SDWC Truss screw provides a stud-to-bottom-plate or stud-to-top-plate connection and can be used to fasten trusses and rafters to top plates. It is designed to simplify continuous load path connections at the roof and foundation. The SDWC is available in a kit that includes 500 screws, two driver bits and two metal installation guides. The SDWC screw is code compliant (AWC-UES ER-262) and is for interior use only.

The Strong Drive SDWF Floor-to-Floor screw attaches upper and lower walls together from the top, spanning the floor system to create a strong connection between floors. When used with the TUW take-up washer, the SDWF screw simplifies the floor-to-floor wind-uplift-restraint connection.

The patented TUW take-up washer plays a key role in the long-term performance of the SDWF Floor-to-Floor screw when installed between the screw head and the sole plate of the upper floor. As the structure settles because of shrinkage and construction loading, the threaded portion under the head of the screw ratchets up through the tabs of the TUW. The interlock between the tabs of the take-up washer and the threads under the head of the SDWF screw prevents the screw from sliding back under load. This provides a simple yet reliable means of shrinkage compensation for up to ¼" per story. The SDWF screw is code compliant (ICC-ES ESR-3048), as is the TUW take-up washer (ICC-ES ESR-2320)—both are for interior use only.

When used together as a system with anchor bolts at the foundation, the SDWC and SDWF screws are a reliable, safe and economical solution for creating a continuous load path and resisting wind uplift. To learn more, call (800) 999-5099 or visit strongtie.com/sdwc and strongtie.com/sdwf.

Strong-Drive® SDWC Screws — Truss/Rafter-to-Plate Connection and Stud-to-Plate Connection



For illustrative purposes only. See installation specifications.

Strong-Drive SDWF Screw with TUW Take-Up Washer

Sill Anchor and Bearing Plate

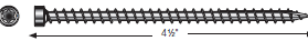
Strong-Drive SDWC Screws — Stud-to-Plate Connection

"When used with the TUW take-up washer, the SDWF screw simplifies the floor-to-floor wind-uplift-restraint connection."

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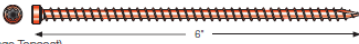
Fasteners Simplify Wind-Uplift Restraint

Strong-Drive®
SDWC TRUSS Screw



E-Coat

Size (in.)	Thread Length (in.)	Retail Pack		Mini-Bulk Bucket	
		Fasteners per Pack	Retail per Master Carton	Fasteners per Bucket	Model No.
0.152 x 4 1/4	4 1/4	50	6	500	SDWC15450-KT




Clear Zinc Coating (with Orange Topcoat)

Size (in.)	Thread Length (in.)	Retail Pack		Mini-Bulk Bucket	
		Fasteners per Pack	Retail per Master Carton	Fasteners per Bucket	Model No.
0.152 x 6	6	50	6	500	SDWC15600-KT


Metal installation guide and matched tolerance driver bit included in each kit.

Strong-Drive®
SDWF FLOOR-TO-FLOOR Screw



Length (in.)	Shank Diameter (in.)	Thread Length (in.)	16" - 30"		Model No.
			Hex Drive (in.)	Hex Drive (in.)	
16	0.27	5	5/8"	5/8"	SDWF-2716-TUW
20	0.27	5	5/8"	5/8"	SDWF-2720-TUW
24	0.27	5	5/8"	5/8"	SDWF-2724-TUW
26	0.27	5	5/8"	5/8"	SDWF-2726-TUW
30	0.27	5	5/8"	5/8"	SDWF-2730-TUW

Kit includes 25 Strong-Drive® SDWF Floor-to-Floor screws and TUW take-up washers, 100 Strong-Drive SD Connector screws, a 5/8" hex driver bit and a screw depth guide to ensure proper SDWF engagement with TUW.

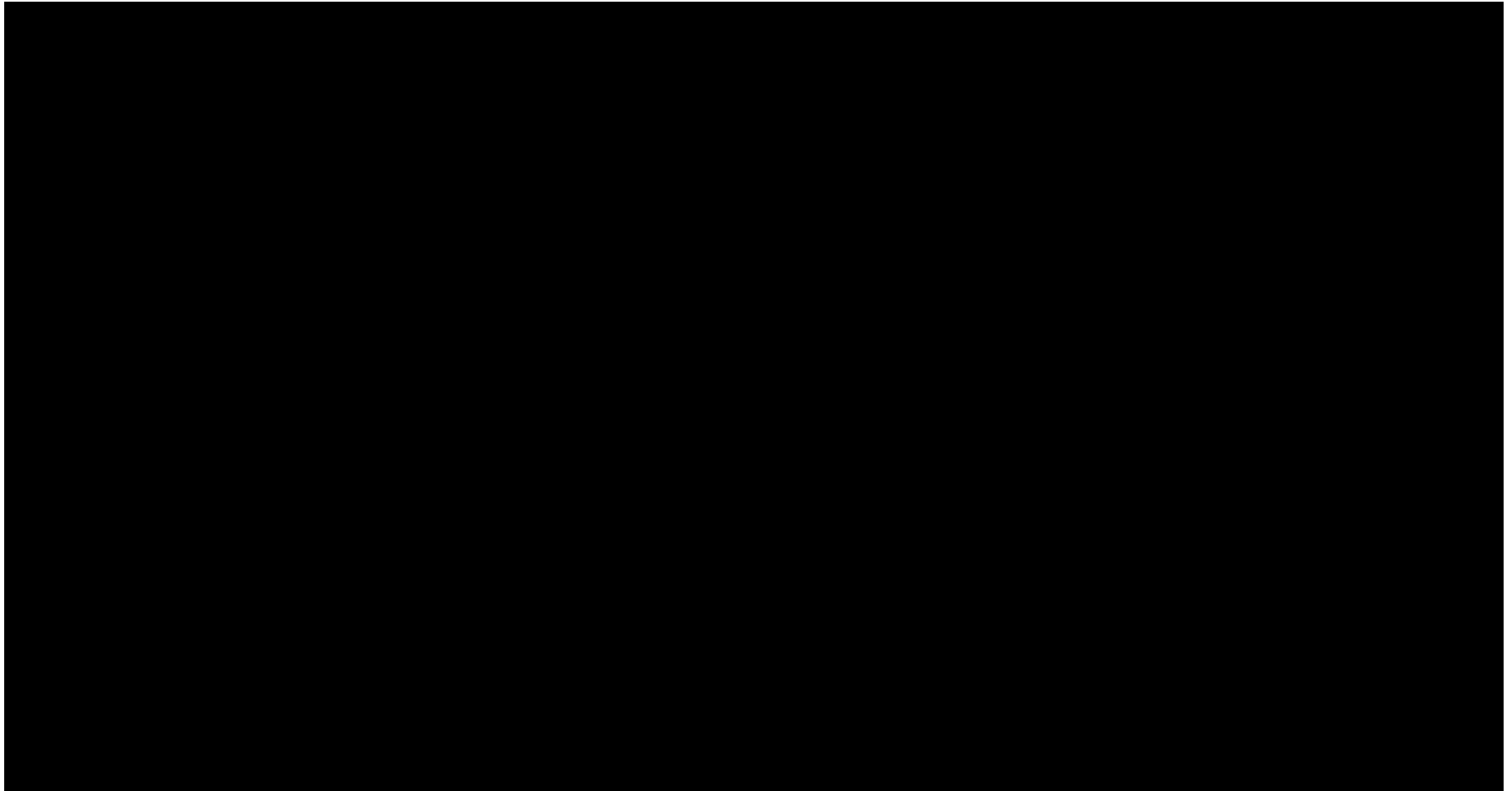


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(800) 999-5099
strongtie.com



SDWC & QUIK STICK



COLD FORMED STEEL CONSTRUCTION



COLD FORMED STEEL CONSTRUCTION

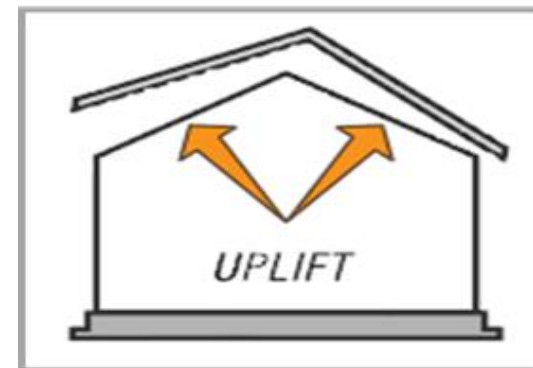


TYPICAL MID-RISE WOOD FRAMED BUILDING

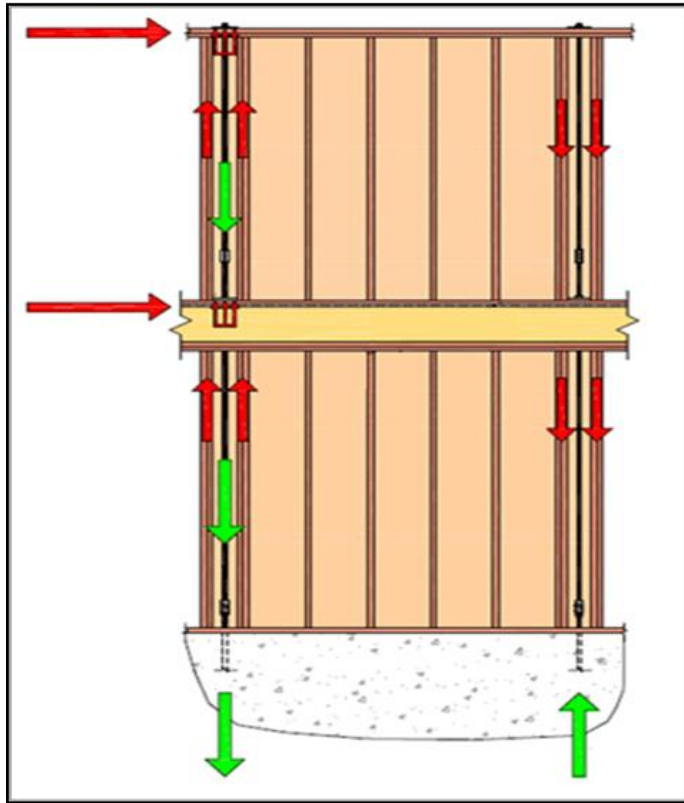


MULTI-STORY OVERTURNING AND UPLIFT

- **Overturning (Lateral)**
 - When a building weight cannot stabilize a structure under a lateral force, it causes the structure to rotate off its foundation.
- **Uplift (Vertical)**
 - As wind flows over the roof the wind creates a strong lifting effect, much like that of air flowing over an airplane wing.
 - *Different Forces = Different Systems*

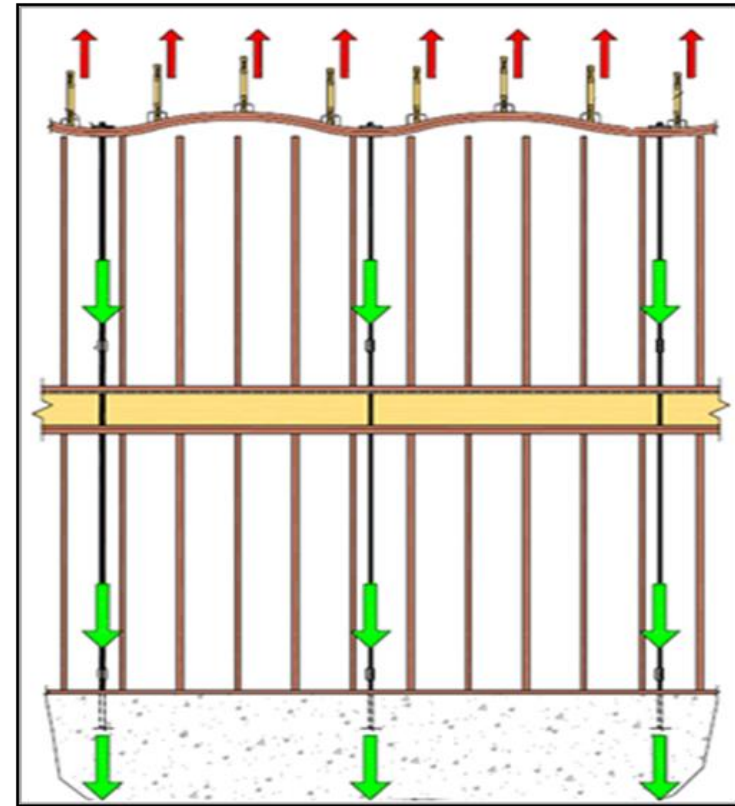


TWO DIFFERENT TYPES OF SYSTEMS



Key Differences:

- Rod location
- Load direction
- Framing Requirements
- Load path
- Shrinkage/ compression location



OVERTURNING (HOLD DOWNS & ROD SYSTEMS)

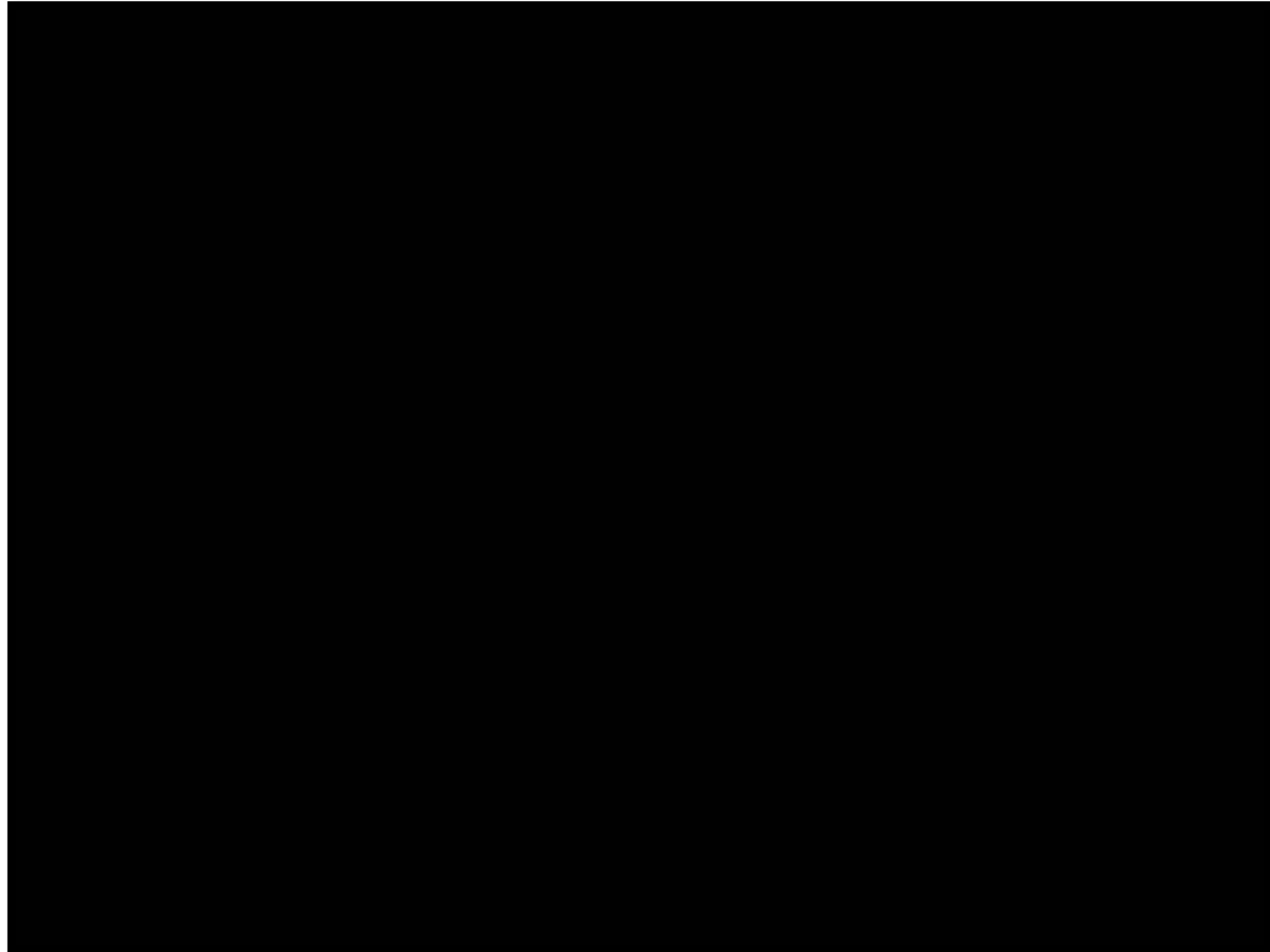


ROD SYSTEMS



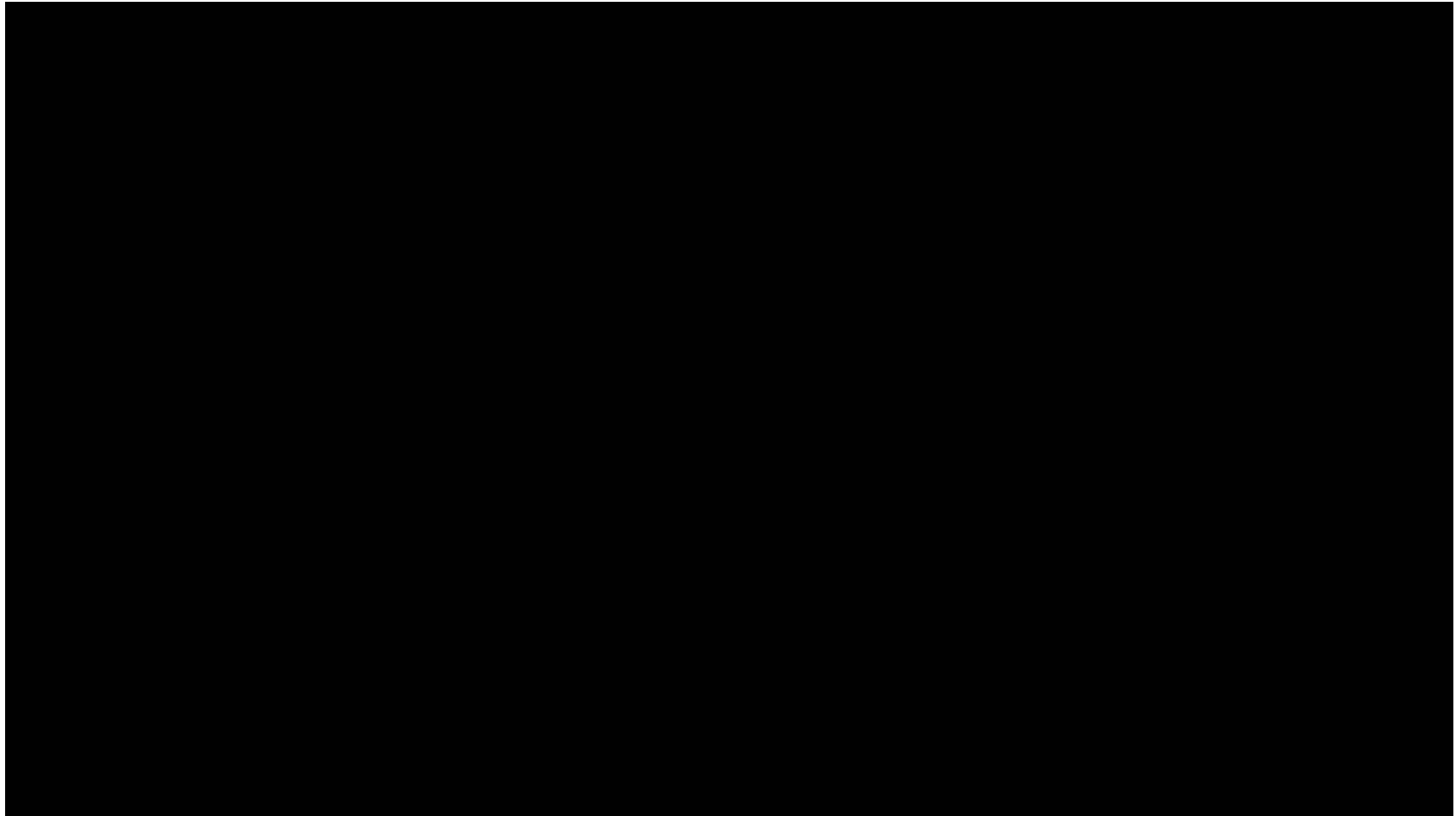


FAST BUILD AND MOVE...





HOW DID IT DO?



TYPICAL MID-RISE IN CONSTRUCTION





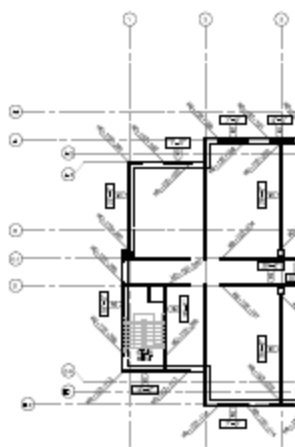
DESIGN PHASE

- Arch/Engineer communication
 - Manufacture spec vs. generic load call-out
- Manufacturer responsibility
- RFIs
- Mis-step of ordering too early in design process



SUBMITTALS

- Deferred submittals vs. hard spec
- Final construction docs review by manufacturer
- Document prep
 - Calculations
 - Installation details
 - Overlays and laminated cards



- FOUNDATION NOTES**
1. FOUNDATION SHALL BE CONCRETE ON GRADE.
 2. ALL REINFORCING SHALL BE EPOXY COATED.
 3. ALL REINFORCING SHALL BE #4.
 4. ALL REINFORCING SHALL BE TYPED.
 5. ALL REINFORCING SHALL BE TYPED.
 6. ALL REINFORCING SHALL BE TYPED.
 7. ALL REINFORCING SHALL BE TYPED.
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 11. ALL REINFORCING SHALL BE TYPED.
 12. ALL REINFORCING SHALL BE TYPED.

- STEEL CONNECTION NOTES**
1. ALL STEEL CONNECTIONS SHALL BE WELDED.
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 12. ALL STEEL CONNECTIONS SHALL BE WELDED.

SIMPSON Strong-Tie

ANCHOR TIEDOWN SYSTEM REQUEST FOR INFORMATION (RFI)

PROJECT: Homewood Suites – Aliso Viejo, CA DATE CREATED: 09/08/2014

IMPORTANCE: HIGH MEDIUM LOW SENT VIA: FAX EMAIL

PROJECT INFORMATION:
DATE OF PLANS: 07/02/2014

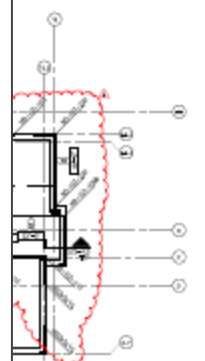
	COMPANY	CONTACT	PHONE NUMBER
ENGINEER:	DCI ENGINEERS		(949) 892-4950
ARCHITECT:	GENE FONG ASSOCIATES		(310) 209-7520

QUESTIONS	RESPONSES
We have noted a few locations in the contract documents in regards with tie down system which we would like clarification on. We have listed our concerns in the attached mark-up sheet. Please review and provide additional information if changes are required.	

ANSWER COMPANY:		ANSWERED BY (NAME):	
DATE ANSWERED:		SIGNATURE:	

Form: ES-A1SRFI

Project #: ES-140431B



QUESTION:
The contractor has noted that the anchor bolts are not shown in the foundation plan. Please provide details on the anchor bolt locations and specifications.

ANSWER:
The anchor bolts are shown in the foundation plan. Please refer to the notes for details on the anchor bolt locations and specifications.



FOUNDATION PLAN

GENE FONG ASSOCIATES
ARCHITECTS

HOMEWOOD SUITES
Hilton
110 NORTH DUNE
ALISO VIEJO, CA 92616

DESIGNED BY:
GENE FONG ASSOCIATES

PREPARED BY:
GENE FONG ASSOCIATES

DATE:
09/08/2014

PROJECT NO:
ES-140431B

SCALE:
AS SHOWN

DATE:
09/08/2014

FILE:
FOUNDATION PLAN

PROJECT:
ES-140431B

PROJECT NO:
ES-140431B

DCI ENGINEERS
REGISTERED PROFESSIONAL ENGINEER
CIVIL & STRUCTURAL
110 NORTH DUNE
ALISO VIEJO, CA 92616
TEL: (949) 892-4950
FAX: (949) 892-4951
WWW.DCIENGINEERS.COM

CONTRACT NO:
ES-140431B

DATE:
09/08/2014

PROJECT NO:
ES-140431B

S-2.1



SIMPSON STRONG-TIE COMPANY INC.
5555 W. Las Positas Blvd., Pleasanton, CA 94588.
(800) 569-6289
www.strongtie.com

Anchor Tiedown System

Component capacities for
Homewood Suites
110 Vantis Drive
Aliso Viejo, CA

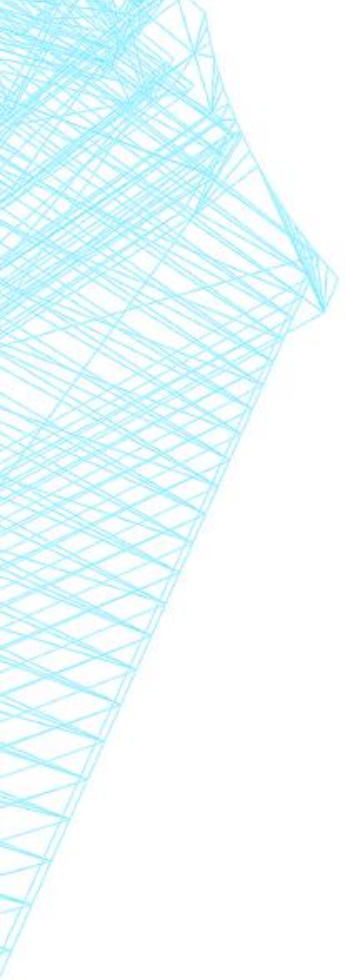
Prepared for
DCI Engineers

Structural Date of Plans
Aug 25, 2014

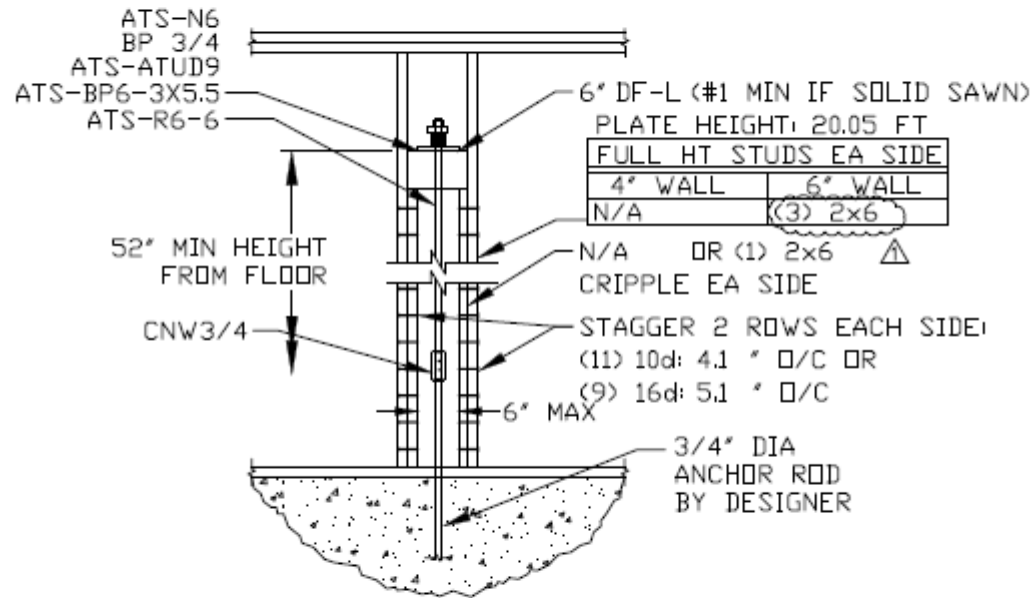
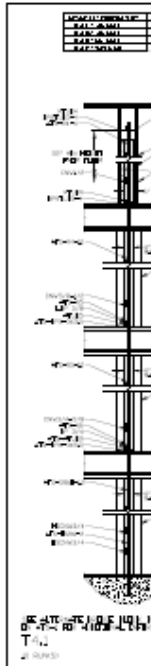
Architectural Date of Plans
Jul 28, 2014

Date of Report
Nov 12, 2014

Report by
H.DA



CUMULATIVE TENSION CAPACITY	INCREMENTAL BEARING CAPACITY
Level 1: 9.61 (kips)	Level 1: 10.44 (kips)



SEE ALTERNATE BRIDGE BLOCK DETAIL
ON ATS-1 FOR ADDITIONAL INFORMATION

T1.2

8 RUNKS)

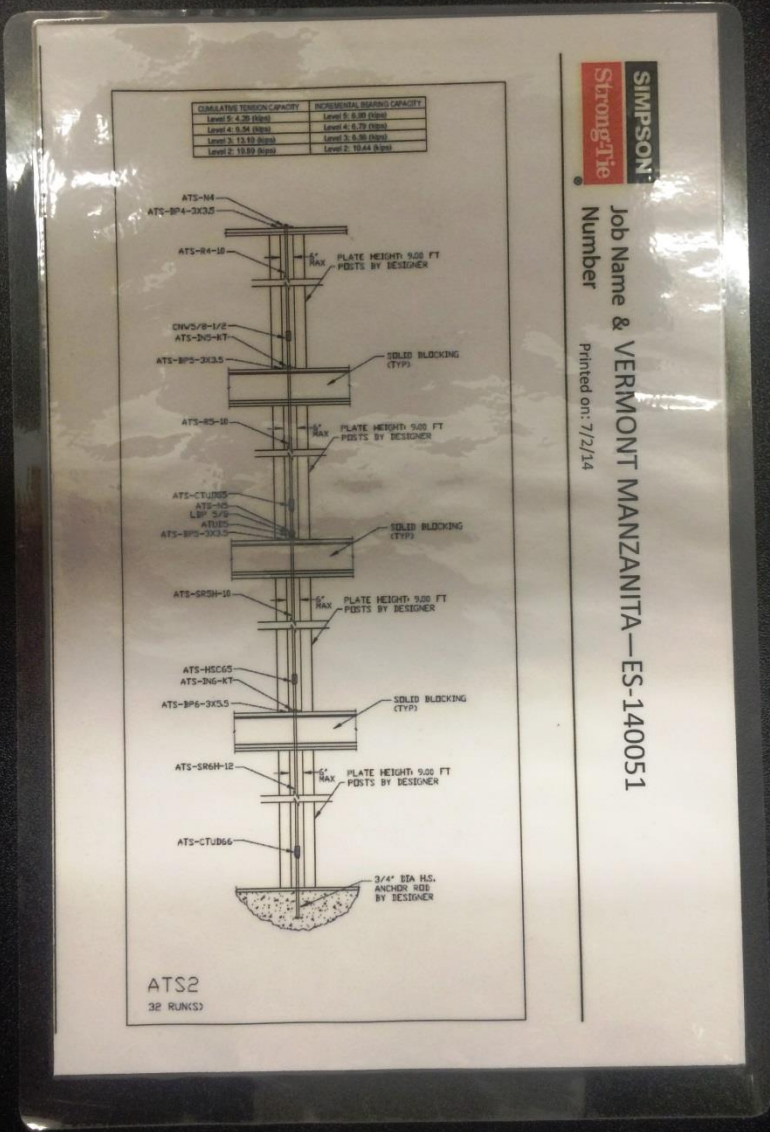
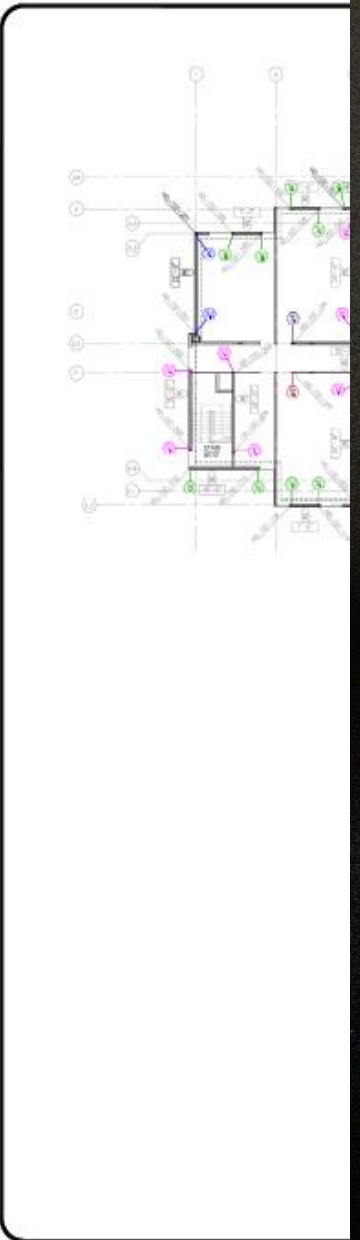
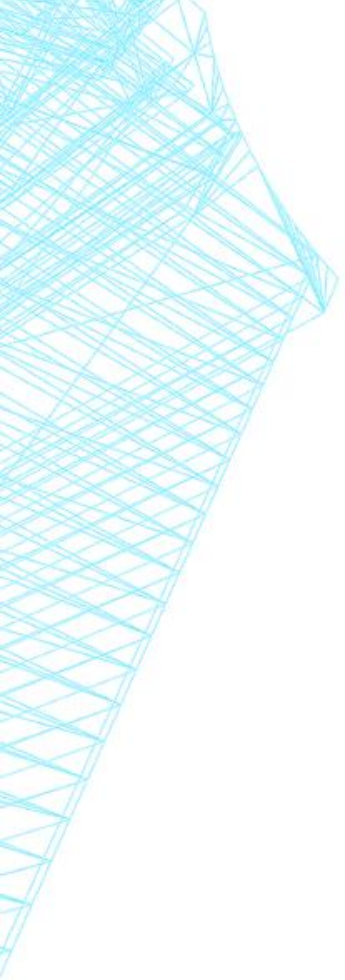


DATE	BY	CHKD	DATE

HICKWOOD STUDIOS
ARCHITECTURE INTERIOR DESIGN
1000 W. 10TH ST. #100
TULSA, OK 74106-3111
(918) 438-1111

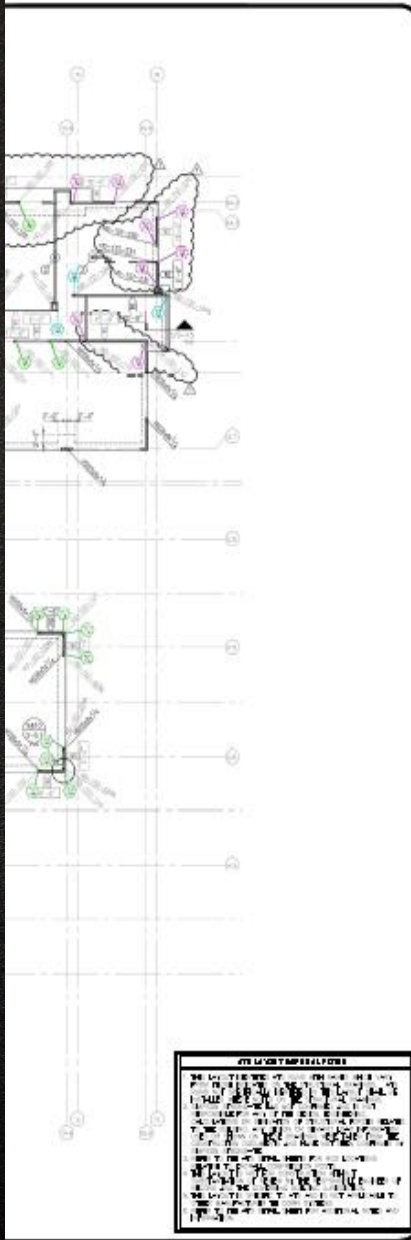
PROJECT NO.	DATE
11102014	11/15/2014

HEET
ATS-2
OF 3 HEET
ES-14821P



SIMPSON
Strong-Tie

Job Name & VERMONT MANZANITA—ES-140051
Number Printed on: 7/2/14



REV.	DATE	BY	DESCRIPTION



HOLD WOOD SUITS
NO TACKLE HEAVY
ALISO VIEJO, CA

DATE 11/22/14
SCALE N.T.S.
SHEET
OL-1
OF 1 SHEET
JOB NO. 1001
REV 1/03/14



PRE-CONSTRUCTION CONSIDERATIONS

- Anchorage issues
 - Inconsistent callouts
 - Responsibility
- Sub coordination
 - HVAC
 - Utilities
 - Plumber
 - Concrete
 - Framer
 - System termination (bridge block/top plate)



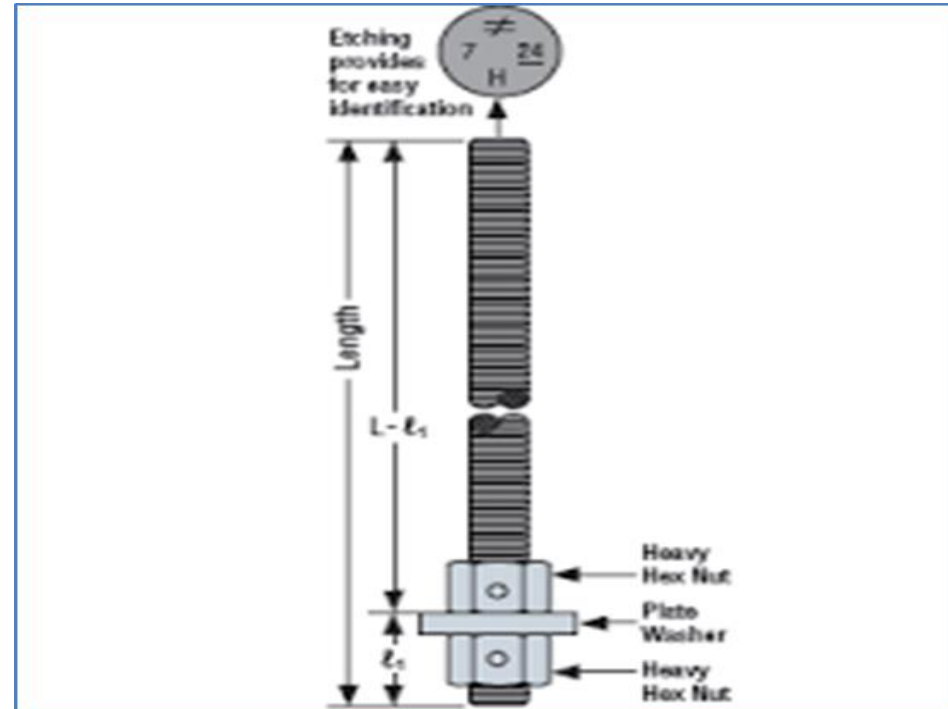
SHIPMENT

- Coordination with GC and sub
- Ship by floors
 - Stage shipments
 - Minimize potential missing parts
- Check in shipments with subs
 - Ongoing throughout the job
- Missing parts
- Inspection
 - Ensure understandings of jurisdiction inspector, EOR job walk and GC
- Post assessment of system with EOR, GC and subs

SHIPPING PALLETS



ANCHORAGE



OVERTURNING COMPONENTS

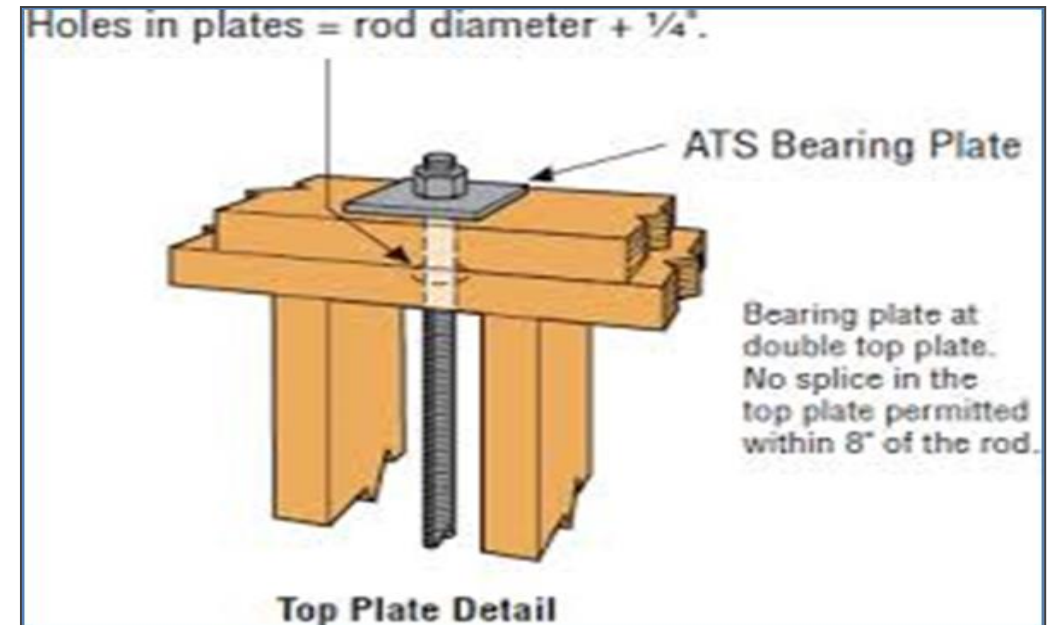


TERMINATION (OVERTURNING)


Top Plate



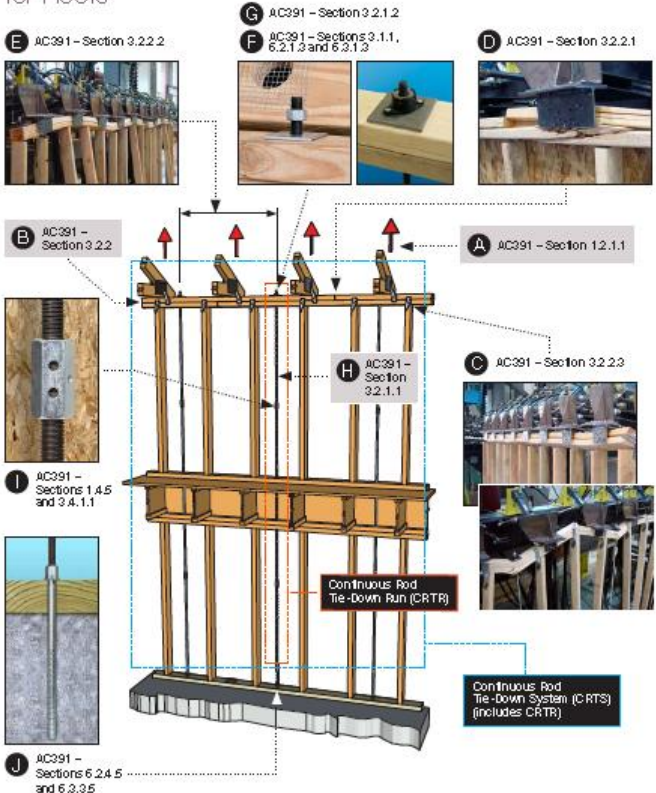
Bridge Block



UPLIFT RESTRAINT SYSTEMS

Strong-Rod™ URS 

Key Design Considerations for Uplift Restraint Systems for Roofs



A AC3091 – Section 12.1.1

B AC3091 – Section 3.2.2

C AC3091 – Section 3.2.2.3

D AC3091 – Section 3.2.2.1

E AC3091 – Section 3.2.2.2

F AC3091 – Sections 3.1.1, 6.2.1.3 and 6.3.1.2

G AC3091 – Section 3.2.1.2


H AC3091 – Section 3.2.1.1

I AC3091 – Sections 1.4.5 and 3.4.1.1

J AC3091 – Sections 6.2.4.5 and 6.3.3.5

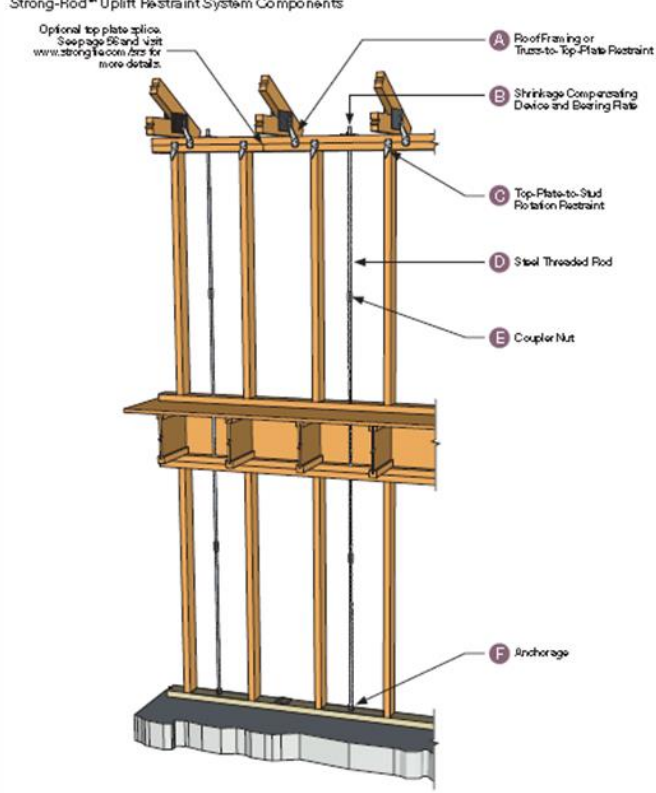
Continuous Rod Tie-Down Run (CRTR)

Continuous Rod Tie-Down System (CRTS) (includes CRTR)

Strong-Rod™ URS Components 

From the Roof to the Foundation

Strong-Rod™ Uplift Restraint System Components



Optional top plate splice. See page 56 and visit www.strongtie.com/urs for more details.

A Roof Framing or Truss-to-Top-Plate Restraint

B Shrinkage Compensating Device and Bearing Plate

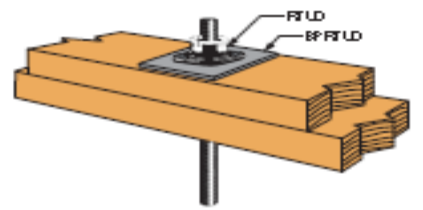
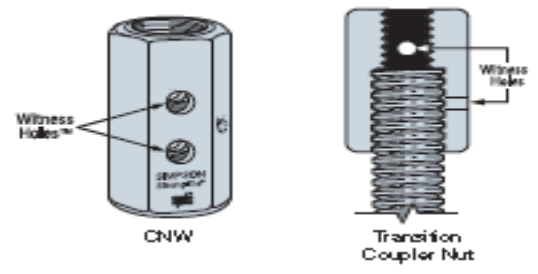
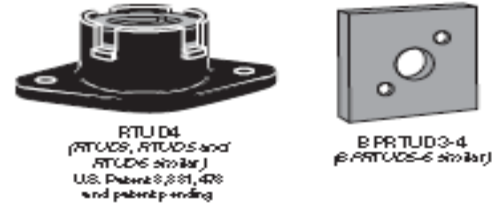
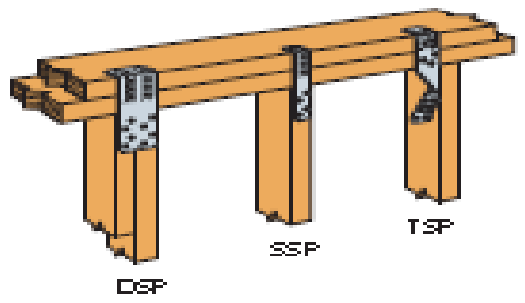
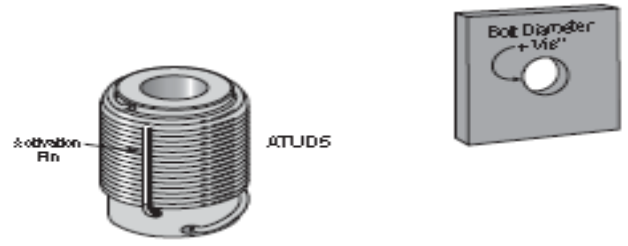
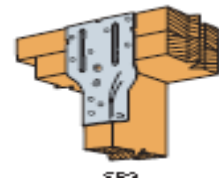
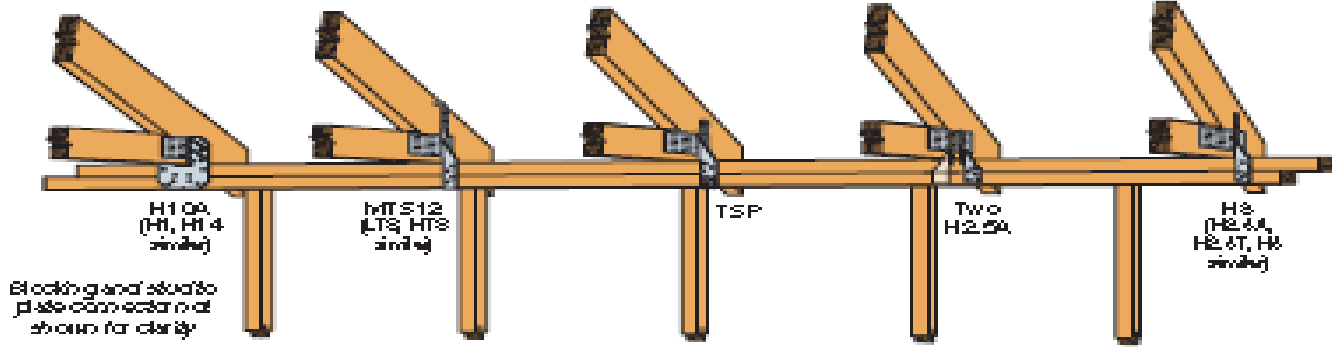
C Top-Plate-to-Stud Rotation Restraint

D Steel Threaded Rod

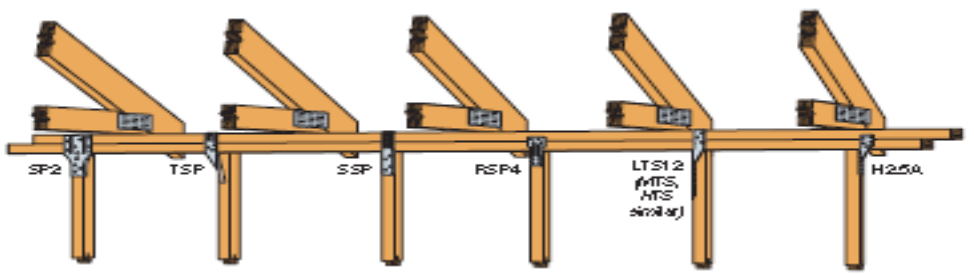
E Coupler Nut

F Anchorage

UPLIFT RESTRAINT SYSTEMS COMPONENTS



Typical Ratcheting Take-Up Device Assembly Installation



UPLIFT RESTRAINT SYSTEMS COMPONENTS



Strong-Drive® SDWC TRUSS Screw



Strong-Drive® SDWC TRUSS Screws



Strong-Drive® SDWF FLOOR-TO-FLOOR Screw Assembly

FASTENERS SIMPLIFY WIND-UPLIFT RESTRAINT

Building beams and joists with a concealed fastener in regions of the ceiling susceptible to high winds can be accomplished from inside the structure with key wind-resistant fasteners.

Truss and rafter end connections, fascia and soffits are traditionally used as a means to secure the roof, doors and foundation together. Our new hidden fasteners, Strong-Drive® TRUSS Screws and Strong-Drive® SDWF Floor-to-Floor screws and the Strong-Drive® SDWF Truss screws, provide several key benefits to using a concealed fastener for wind uplift restraint, including:

- Few visible fasteners (hidden fasteners)
- No painting
- No interference with finish materials
- Floor-to-floor fasteners secure joists
- Ease of installation. The SDWC and SDWF install from inside the structure, eliminating exterior work on upper stories.

Wind-Uplift Restraint

The Strong-Drive SDWC Truss screws provide a wind-resistant rafter or joist-to-truss connection and can be used to secure rafter and joist-to-truss connections. It is designed to simplify concealed fastener connections on the roof and foundation.

The SDWC is available in a kit that includes 300 screws, washers, nuts and an install instruction guide. The SDWC screw meets compliance (IAFMO-UEB-ER-2016) and is for interior use only.

The Strong-Drive SDWF Floor-to-Floor screws attach upper and lower joists together from the top opening of the floor joist to create a strong connection between floors. When used with the TUW (truss-up washer), the SDWF screw simplifies the floor-to-floor wind-uplift restraint connection.

The primary TUW (truss-up washer) plays a key role in the long-term performance of the SDWF Floor-to-Floor screw when installed between the screw and the side plate of the upper floor. As the rafter or joist because of some sagging over time may lead to the truss-up washer, the truss-up washer of the screw pushes up through the ribbed TUW. The truss-up washer then sits on the side of the ribbed washer and the truss-up washer at the head of the SDWF screw prevents the screw from sliding back under load. This provides a simple yet reliable means of attaching upper and lower joists together.

The SDWF screw meets compliance (ICC-ES ESR-2046) as well as TUW (truss-up washer) (ICC-ES ESR-2046) for use for interior use only.

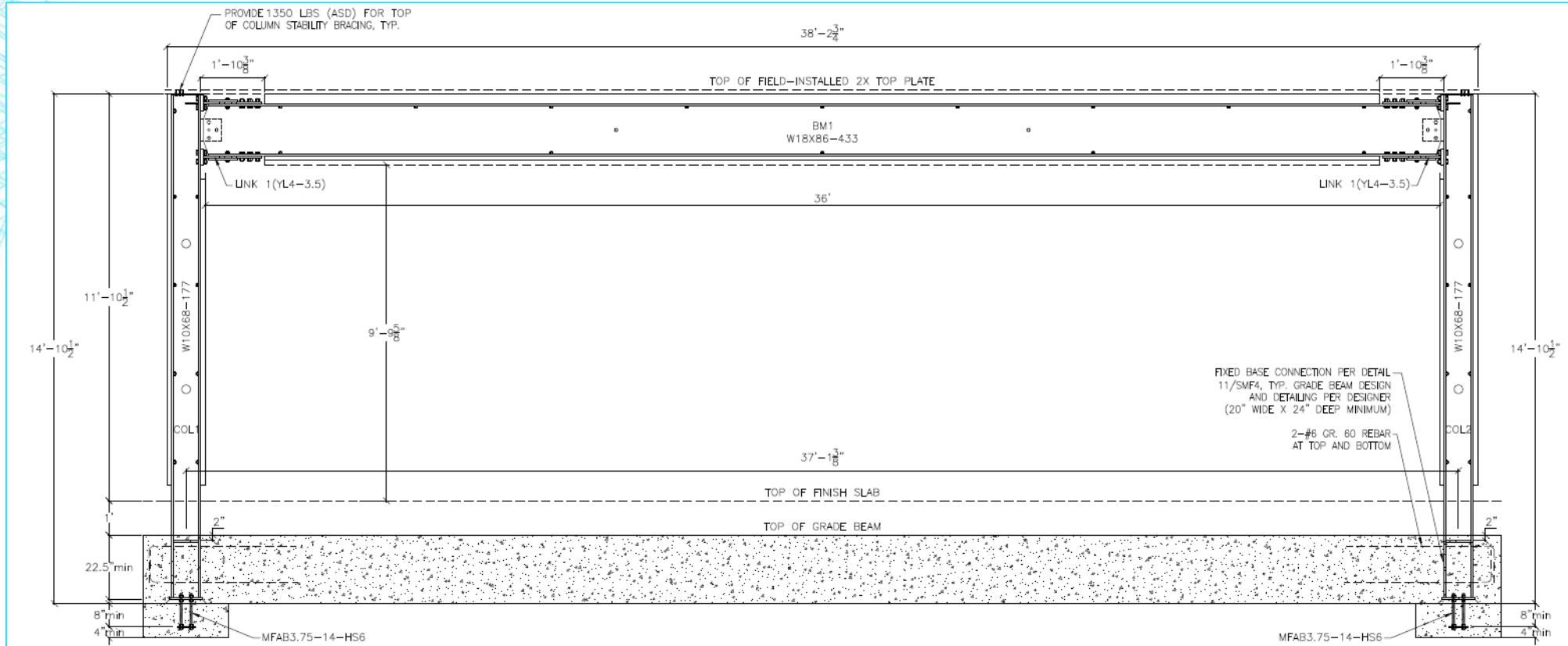
When used together as a rafter-to-truss connection in the foundation, the SDWC and SDWF Truss screws are a reliable, safe and concealed solution for creating a concealed fastener and roof-to-rafters uplift. To learn more, visit 800-393-3000 and visit strongtie.com/udr.

"When used with the TUW (truss-up washer), the SDWF screw simplifies the floor-to-floor wind-uplift restraint connection."

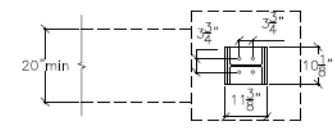
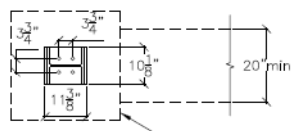
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MULTI FAMILY AND PRE-FAB WALLS AND MOMENT FRAMES





NOTE:
REFER TO GENERAL NOTES 9, 10, 11, AND 12 REGARDING
MINIMUM ANCHORAGE LENGTHS, ANCHORAGE EMBEDMENT, AND
FOOTING DIMENSIONS, REINFORCING, AND DESIGN.



THANK YOU

Questions?

