Instruction Manual

SCS

Stainless Cable Solutions

Aluminum Railing

Stainless Railing

Cable Railing

Trellis Systems

Maintenance Free

316 Stainless Steel

Virtually Invisible

Light Strong Durable

Custom Colors

The Clear Choice!

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Aluminum Railing

Aluminum Railing

Stainless Cable Solutions has engineered our railing systems to comply with current building codes. Variations of installation are not recommended. SCS encourages customers to read the instructions before calling SCS for support.

Tools:

1: Pencil **2:** Tape Measure **3:** Level **4:** Square **5:** Speed Square **6:** String Line

7: Hammer **8:** Rubber Mallet **9:** Drill **10:** Impact Driver w/ #40 Torx Bit

11: Diablo Carbide Tip Chop Saw Blade 84– 92 tooth **12:** Drill Bits 5/32" 5/16" 3/8"

13: Grinder w/ Cut Off Disc **14:** 10 mm 11mm Socket Wrench **15:** File

1: Install Base Plates:

1a: Keep all bags on posts do not mar finish!

1b: Make a jig to hold posts on bench . Set two doubled up 2x4s 2 5/16 " apart.

1c: Apply small amount of grease on base plate screws_ BPS100.

1d: Drive BPS100 with impact driver w/ Torx #40 bit.

1e: Base Plates mount on bottom of post with hole 2 1/2" from bottom of post.

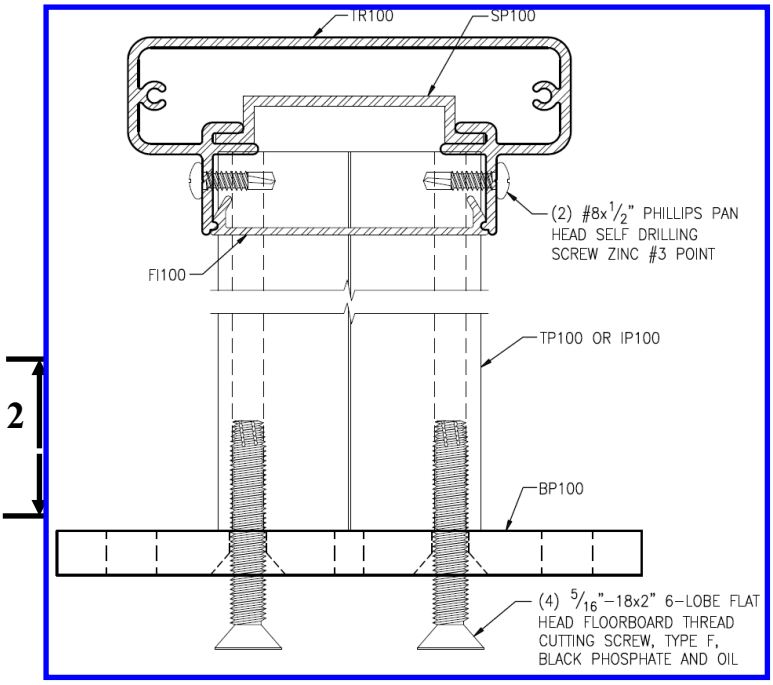
2: Fascia Mount:

2a: Drill 3/8" holes on fascia mount portion of the posts. Space holes out as far as possible.

THROUGH BOLT ONLY FOR FASCIA MOUNTED POSTS !

2b: Install bottom post caps before mounting.

Figure 1: Aluminum Rail Assembly



Mounting Posts

3: Install Posts

3a: Install blocking at all post locations. Lag bolts must penetrate 4” at all locations.

Pre Drill Shank at 3/8” .
Drill Pilot Lag : 9/32” Softwood 5/16” Hardwood

3b: Install all termination posts FIRST shim and plumb FOLLOW SCS LAYOUT!

3c: If you have one post with BASEPLATE on the 90 degree corner set posts so the single set of holes face the return. LOCK T SIDE!

3d: Set string line on outside of termination posts. Space and set intermediate posts plumb on string line evenly. Again, follow SCS layout doc. Use common sense and space posts evenly on all runs.

Figure 2: Lag Mounting Assembly

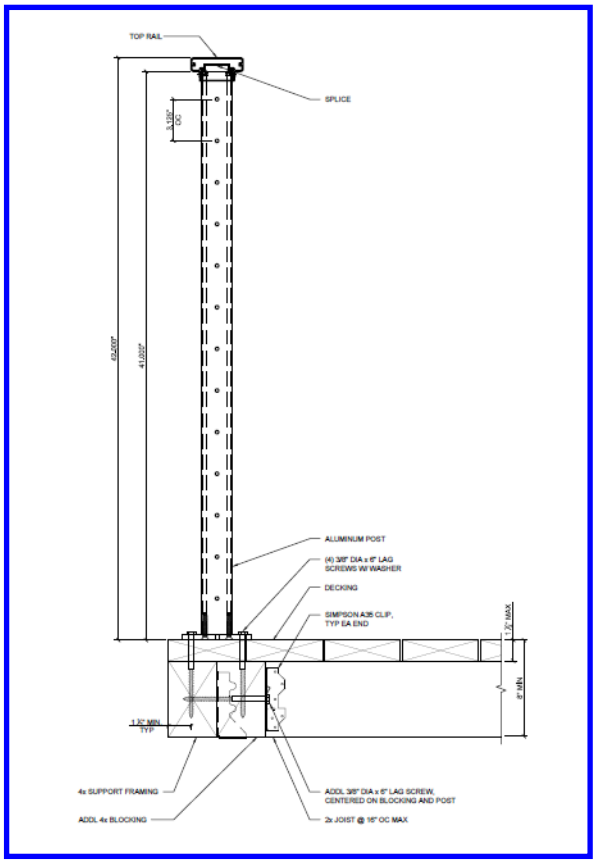
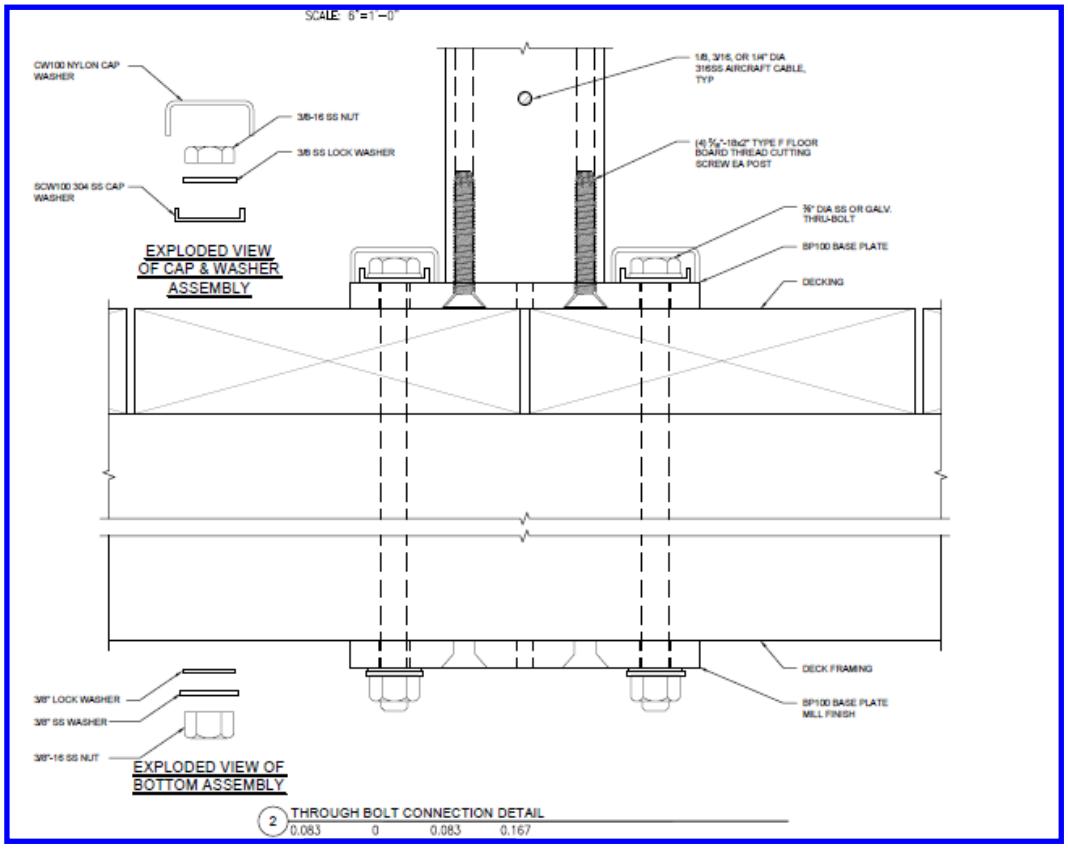
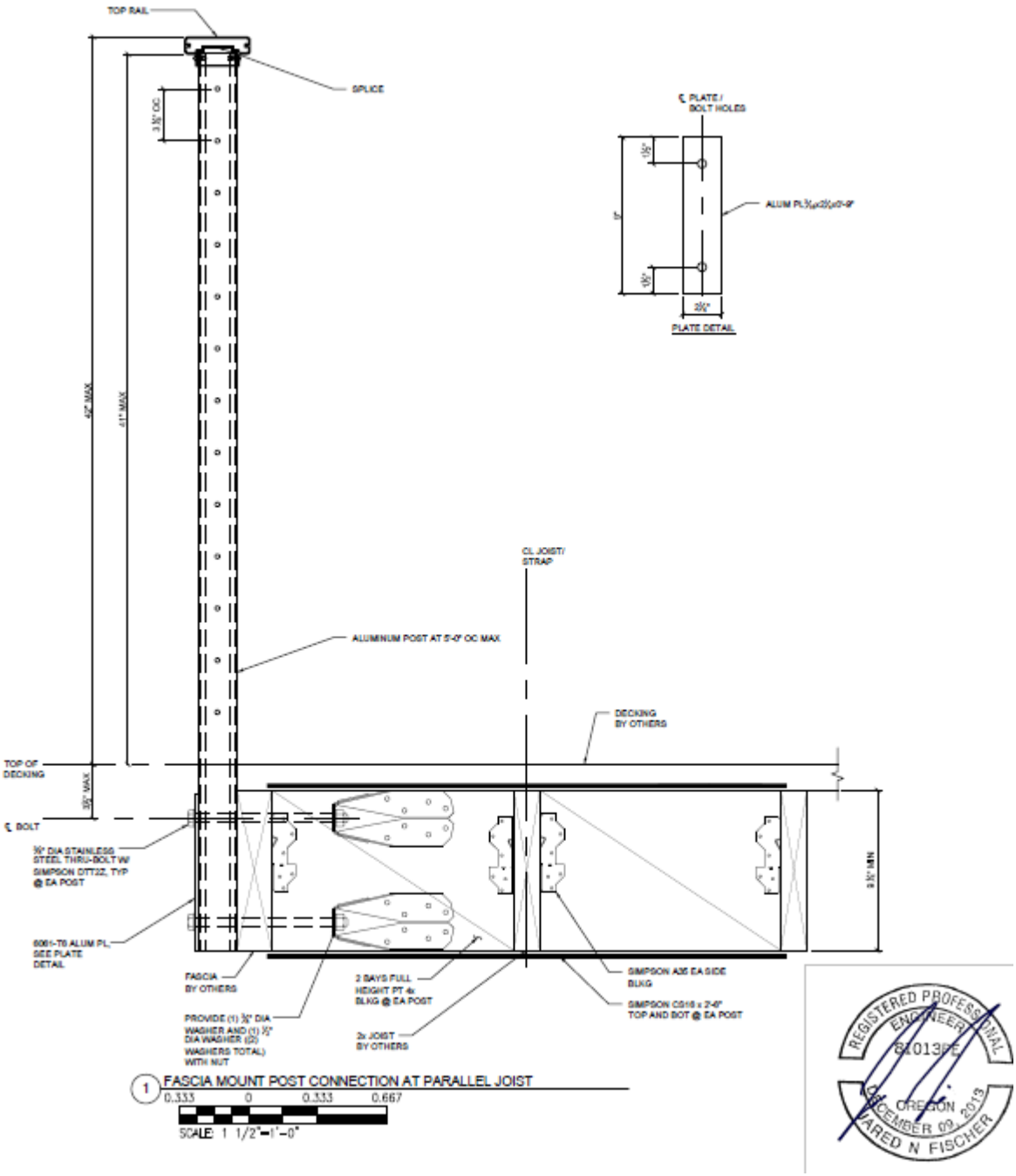


Figure 3: Through Bolt Assembly



Fascia Mount Post



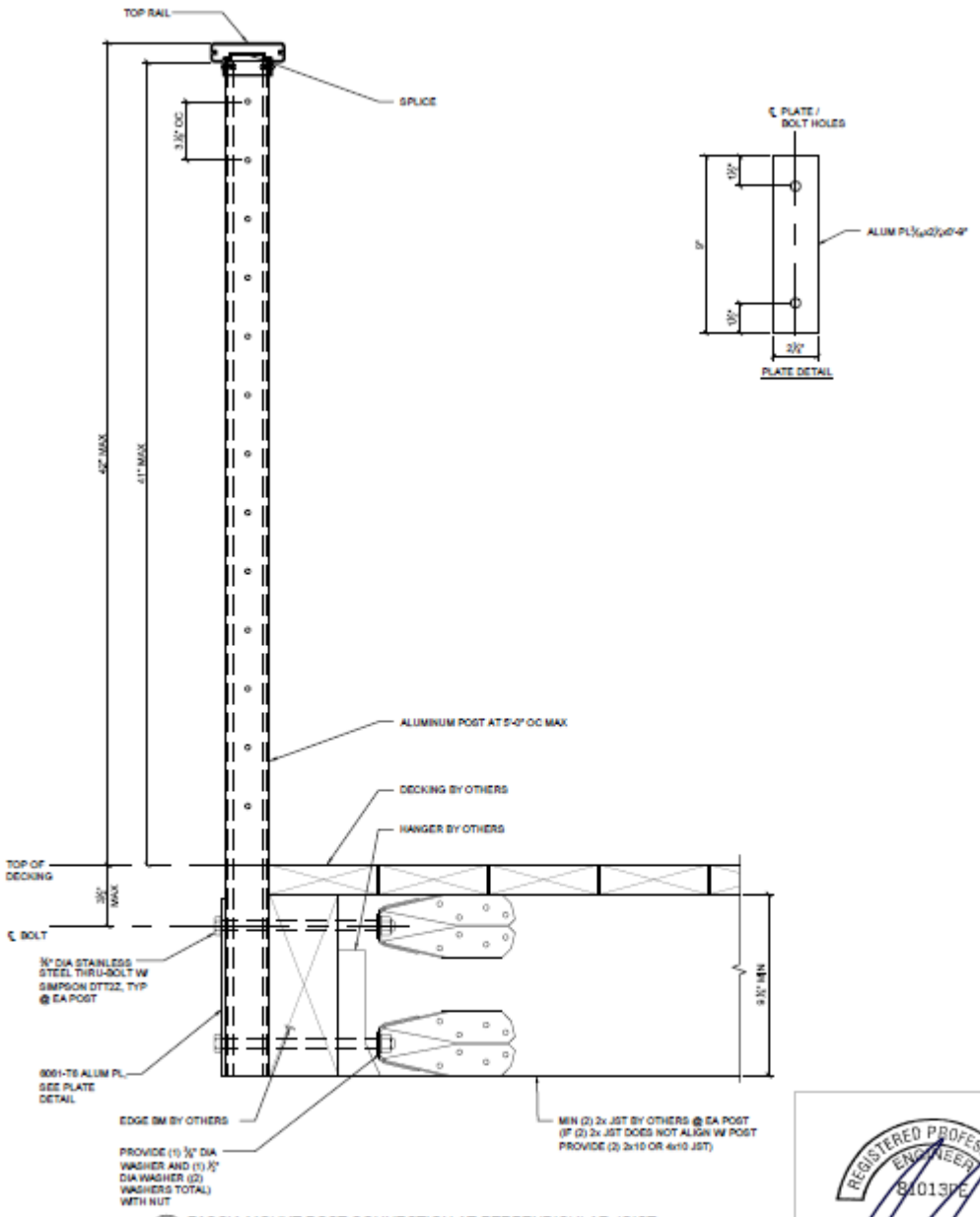
6: Fascia Mount Posts_ Parallel Joist

6a: Drill 3/8 " holes in rim joist. MATCH up holes on Fascia Mt. Backing Plate _FMBP100

6b: Install thru bolts.

6c: Install SCW100 and LOCK washer ONLY on outside face. Do not stack with flat washer. You will not be able to snap on the plastic CW100 over lag head.

Fascia Mount Posts



Post Layout

4: Post Layout

4a : Install all marked termination posts at there location marked on SCS layout. Bags are marked do not take bags off posts.

4b: Make sure that the single hole on all 90 degree corner posts face the correct way for the lock Ts!

4c: Intermediate posts should be laid out evenly for all runs. Posts should not exceed 5 ‘ OC spacing. FOLLOW SCS LAYOUT!

4d: Posts inner edges on outside corners on fascia mount should not exceed 3” .

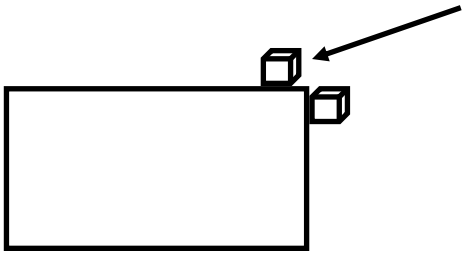
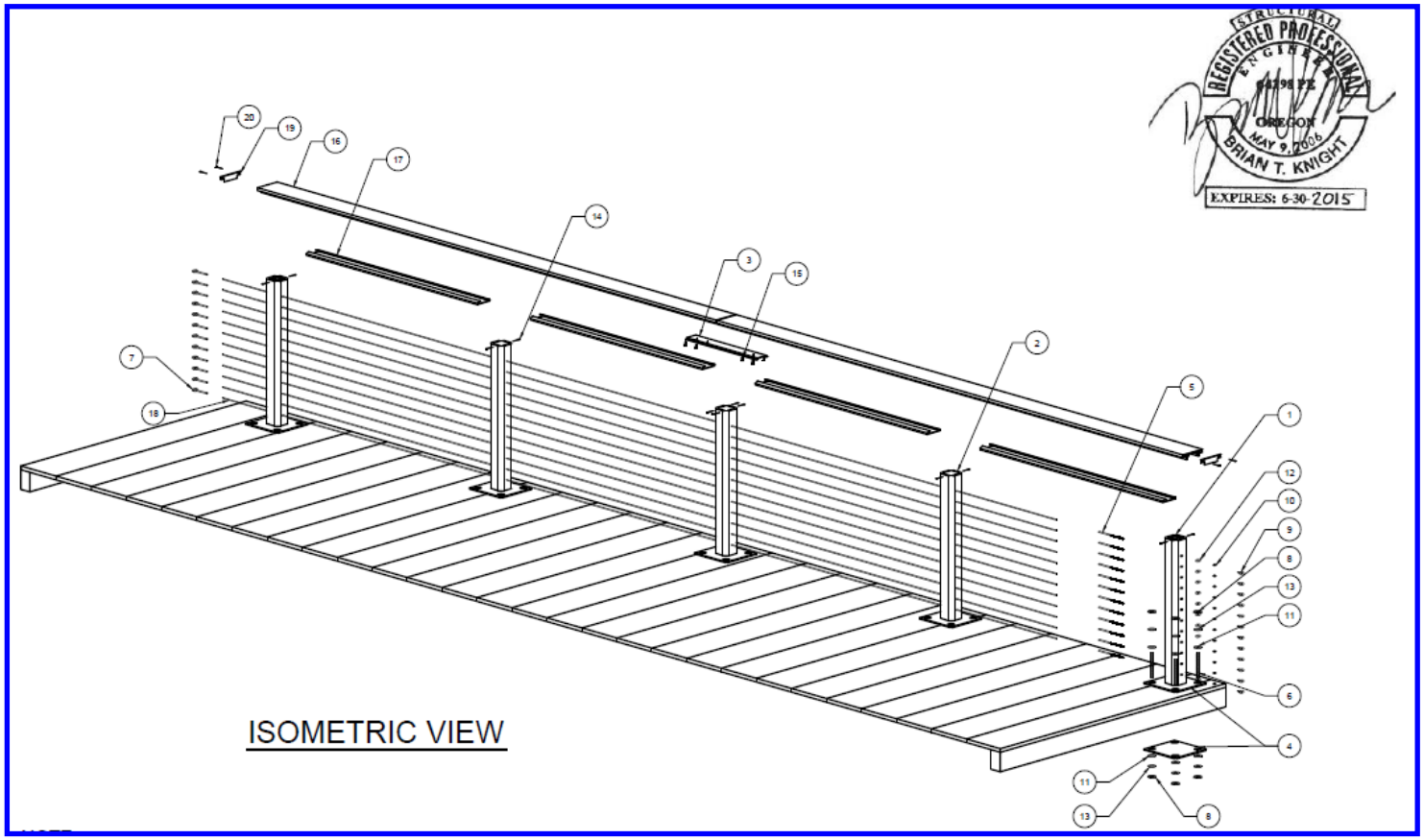


Figure 4: Parts List

ITEM	P/N	PART NAME
1	TP100	41" TERMINATION POST
2	IP100	41" INTERMEDIATE POST
3	SP100	SPLICE PLATE
4	BP100	BASE PLATE
5	TT100	THREADED TENSIONING TERMINAL OR TURNBUCKLE
6	TR375	THREADED ROD, SS, 3/8
7	BT249	BUTTON TERMINAL
8	SSN375	HEX NUT, SS, 3/8
9	ACN25	ACORN NUT, SS, 1/4
10	SSN25-R	HEX NUT, SS, 1/4
11	SCW100	STAINLESS CAP WASHER
12	SSW25	STAINLESS WASHER
13	LBLW38	LOCK WASHER, SS, 3/8
14	SDS100	#10 x 5/8" SS18-8 SELF DRILLING PAN HEAD SCREW
15	SDS100	#10 x 5/8" SS18-8 SELF DRILLING PAN HEAD SCREW
16	TR100	TOP RAIL
17	FI100	FLAT INFILL
18	WIRE ROPE	1/8", 3/16", OR 1/4" DIA.
19	EC100	END CAP
20	ECS100 X2	#6 x 3/4 316 SS END CAP SCREW

Figure 5: Aluminum Railing Assembly



Top Rail Attachment

5: Top Rail Attachment

5a: Use as long of top rail as possible.

5b: Join all straight connections or butt joints over the center of posts.

5c: Pre - drill 5/64“ directly in center of post and screw fast with #10 X 5/8 “ _ SD100.

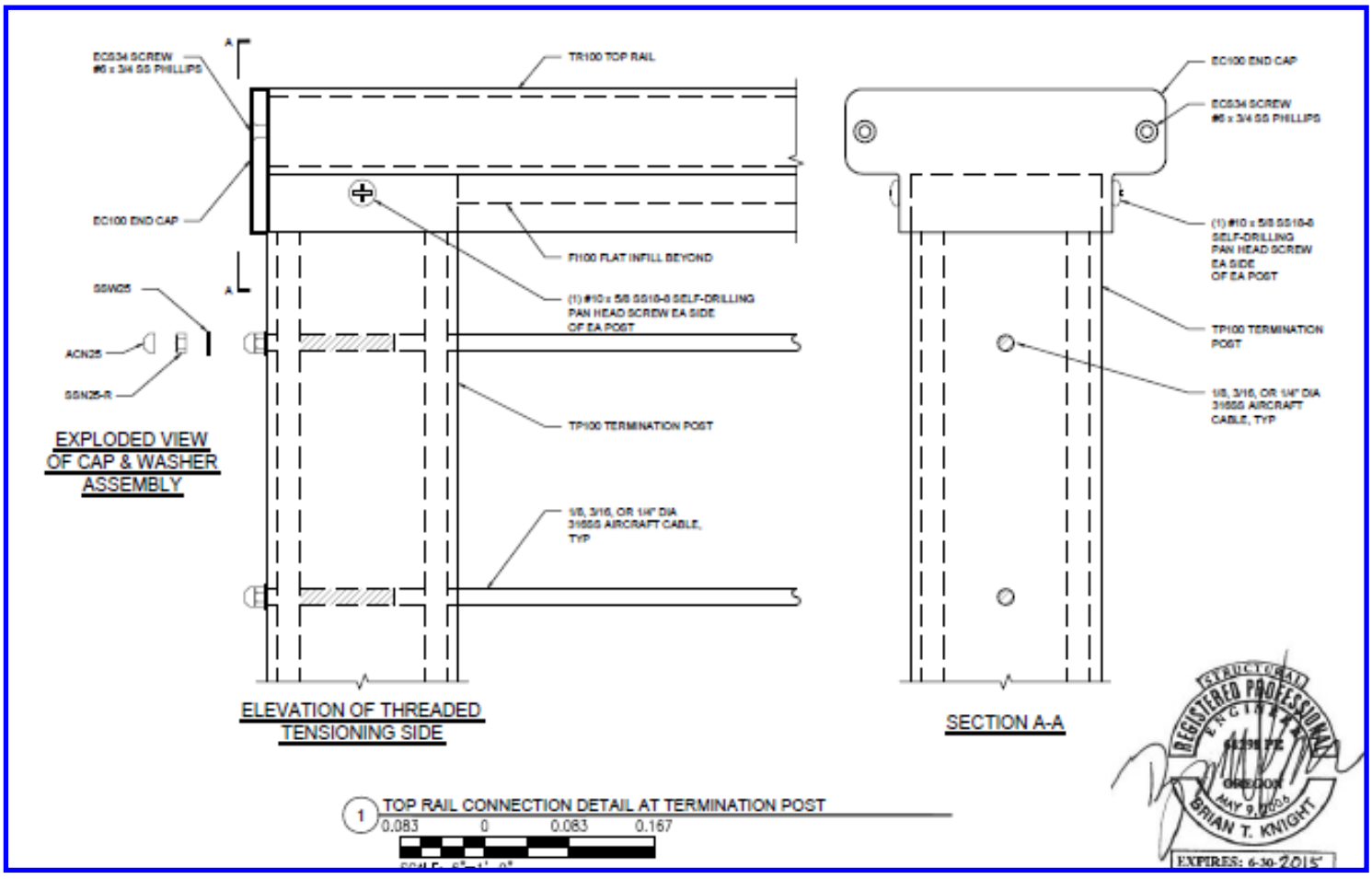
5d: Cut Flat Infill to fit in between the posts. Make sure flat infill is TIGHT between posts to prevent rattling.

Note: If flat infill is loose apply a staggered dab of clear silicone on inside edges of flat infill to prevent rattling.

Note: Cut top rail and flat infill with a diablo blade on your chop saw. 82– 92 tooth .

Wear eye and hearing protection!

Figure 6: Top Railing Assembly



Splice Installation

6: Splice all Joints

6a: Break all joints over center of posts.

6b: Install splices inside top rail channel. SCS splices are pre welded at 90 degrees and 135 degrees.

Note: If your project has a angle that is not standard you will have to cut this angle on the splice material. Take the splice to a welder in your area and have them tacked.

Note: If you are a caveman carpenter use JB Weld.

6c: Pre– Drill all holes 5/64" as illustrated and screw fast with SDS100.

Figure 5: Butt Joint Assembly

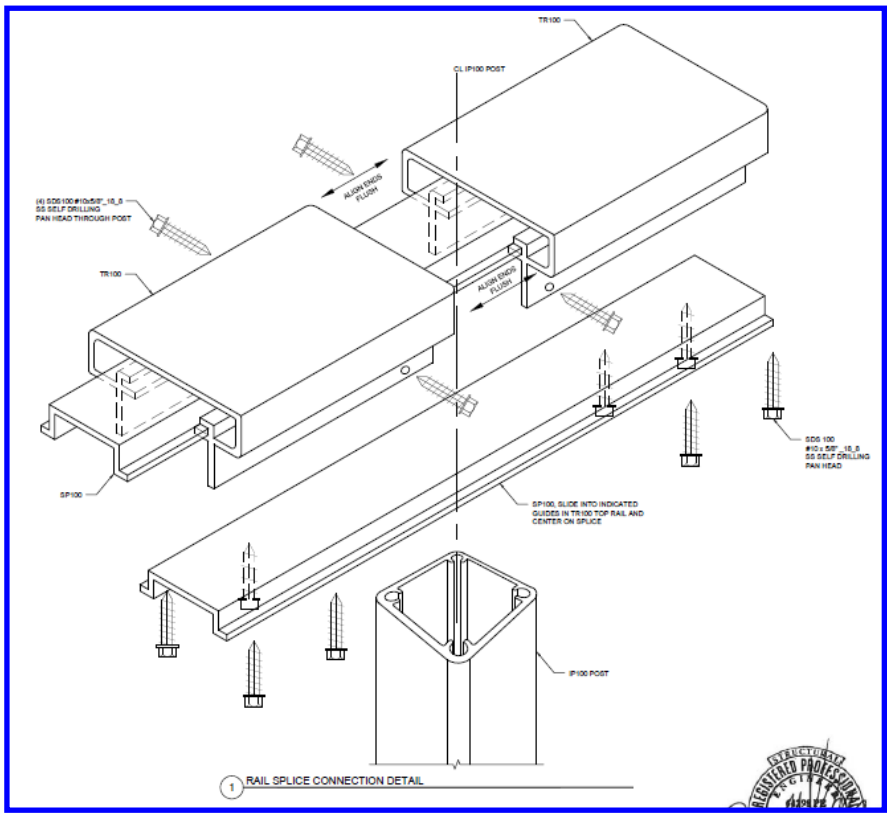
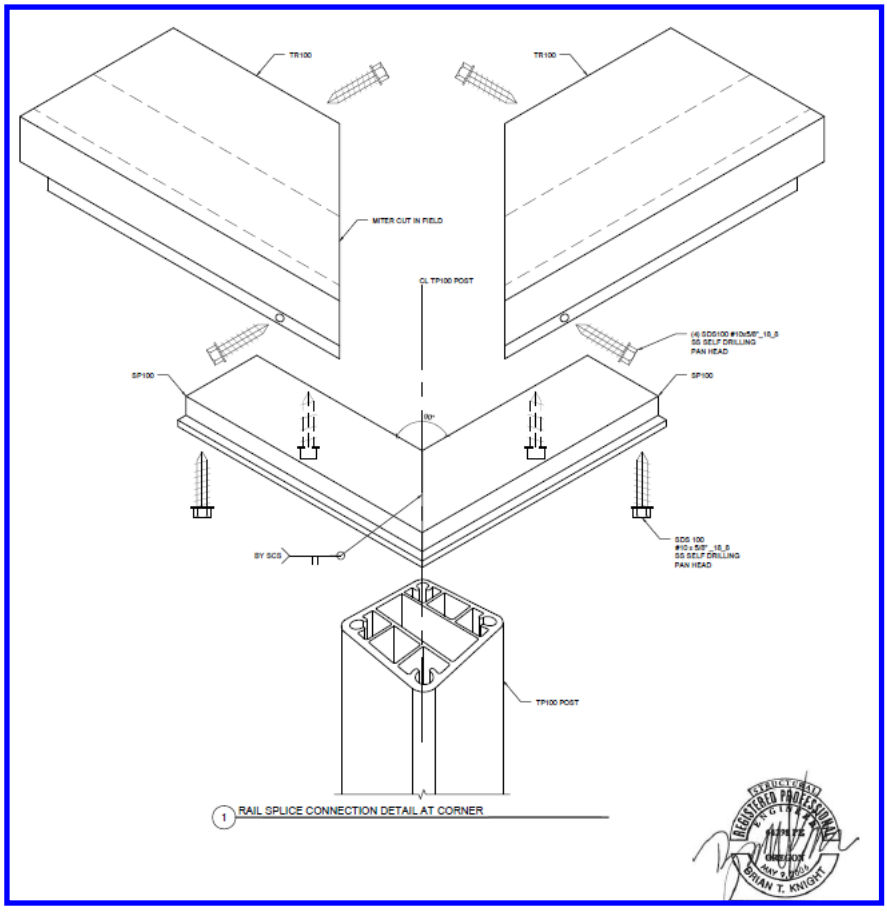


Figure 6: 90 Degree Miter Joint Assembly



Install End Caps

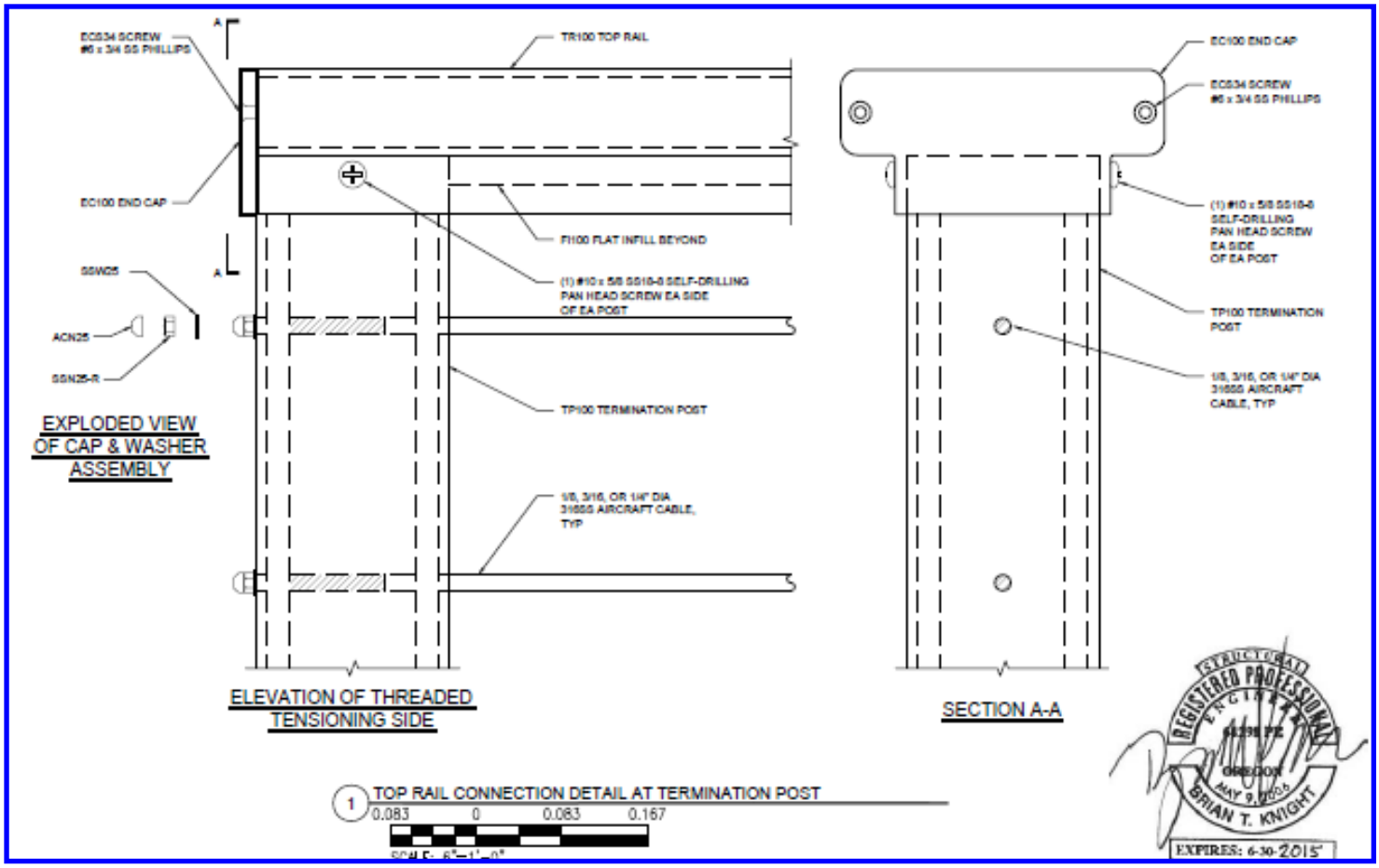
7: Install End Caps

7a: Screw fast end caps with ECS34 End Cap Screw #6 X 3/4 ss Phillips

7c: Lubricate Screw

7b: HAND DRIVE ONLY!

Figure 7 End Cap Assembly



Installing Cables

8: Install Cables

8a: Slide cables through termination post and let termination or tensioning terminal rest on outside face.

8b: Feed cable through all intermediate posts to the other side. Make sure you count your holes and are feeding the cable correctly.

8c: Hand swage the opposite hardware in the field and install. (See Hand Swage Instructions)
Note: If you are machine swaging the hardware in the field with the M1 tool watch provided video.

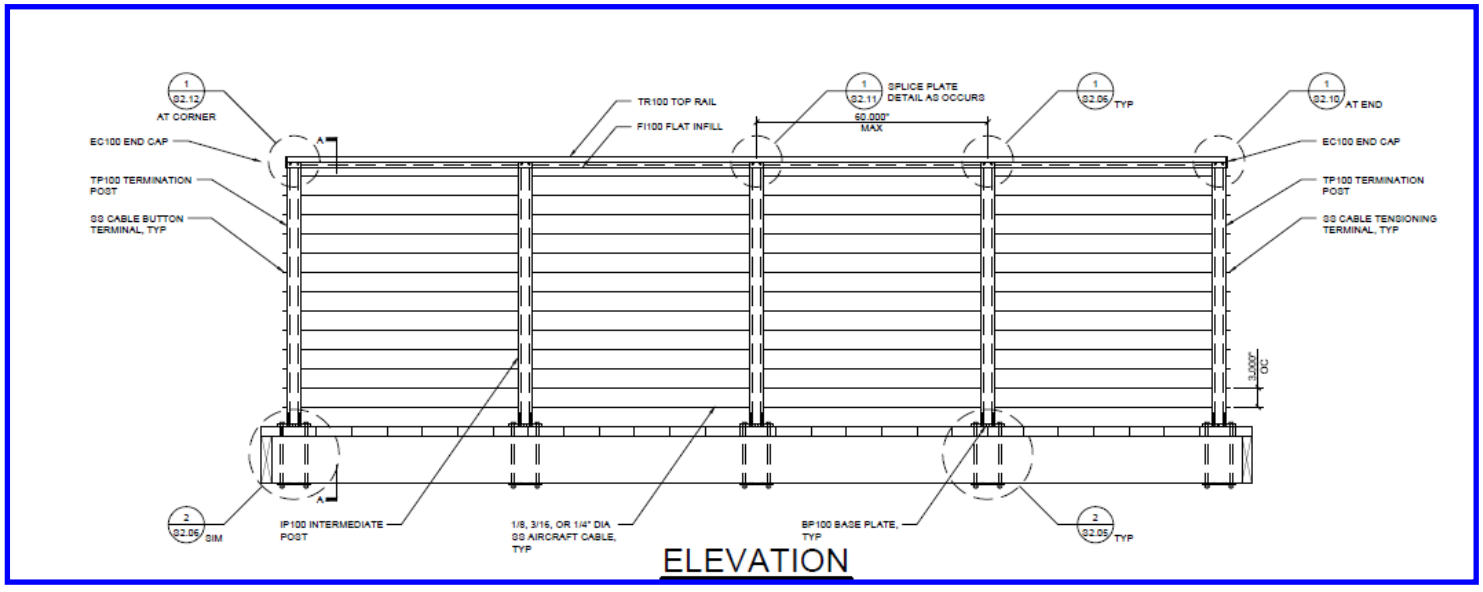
8d: Repeat until all strands are installed.

8e: Tension all cables to 250 lbs. Start from center and work back and forth top and bottom. Use common sense. Be careful not to over tension, stainless is notorious for locking up. (Galling)

8f: Double nut and cut off the excess stud with a STAINLESS cutoff disc on a 4" grinder.
Do not contaminate the stainless with mild steel dust. It will rust.

8g: Clean slag with bastard file. Remove double nut. Install stainless acorn nut.

Figure 8 : Cable Assembly



Hand Swage Instructions

Hand Swage Tensioning Terminal Instructions;

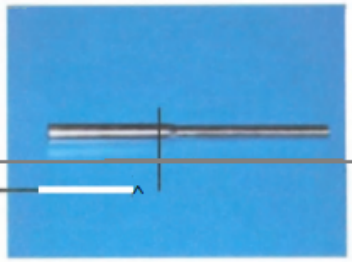
Step #1:Organize Tools

1: Hand Swaging Tool * Rental
2:C9 Felco Cable Cutter Rental
3: Permanent Marker
4: Personal Protective Equipment
5: Micrometer or Caliper **
6: Grinder with cut off disc, dremel tool or hacksaw
7: Bastard File
8: Vise Grips
9: Husky 10 mm &11mm box end ratchet wrenches

*Failure to use the proper SCS swaging tool to hand swage SCS fittings voids all warranties.
**After swage dimensions must be:

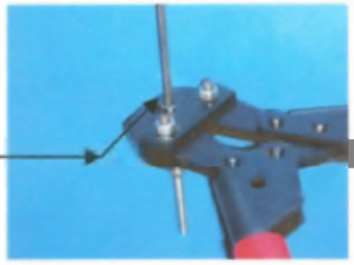
- .185 for 1/8" cable
- .265 for 3/16" cable

Step #2: Pull the cable tight against the termination fitting on the opposite termination post. Line up the cable and hold the fitting on the side of the post on the corresponding hole. Leave 1/2" of threaded stud exposed on the outside face of the post. Mark the cable at the BOTTOM of the swage. Cut the cable on the mark with the Felco C9 rental tool.
Note: Open all turnbuckles 50 % before you hand swage the opposite end.



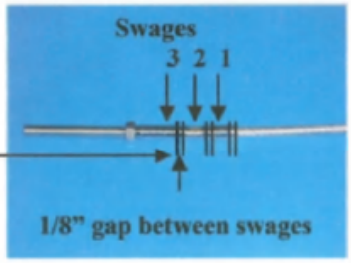
Step #3: Slide the cable into the fitting 1/4" and bend the cable slightly. Push the cable into the fitting until it bottoms out on the inside of the swage. Mark the cable at the edge of the fitting to insure that the cable does not slip out while hand swaging the terminal.

Step #4: Hand swage the first crimp starting 1/8" from the cable edge of the fitting. Use correct die hole for the proper size fitting. The small hole is for 1/8" fittings and the large hole is for 3/16".



SCS Hand Swage Tensioning Terminals are designedfor low load applications. The fittings when installed properly are rated to 50 % of 7X7 cable construction. HSTT's are not recommended in commercial applications where they will be subject to abuse.

Step #5: Move the swaging tool up the fitting to the second swage position. Insure there is a 1/8" gap between all **THREE** hand swage crimps. Rotate the tool or fitting 90 degrees before each hand swage this prevents the "banana effect". **The HSTT must be hand swaged THREE times.**



Step #6: Check all after swage dimensions on your fittings.

- .185" for 1/8" cable
- .265" for 3/16" cable

Step #7: Slide the HSTT into the 5/16" hole in your posts. Place a washer and nut on the back side. Grip the cable with vise grips and a small scrap of leather to prevent the cable from spinning and being damaged. Tension all the tensioning nuts (10mm)on the HSTT to 150 lbs per cable.*
*A tension gauge is available for rent upon request.

Step #8: Repeat Steps **#2** - #7 for the rest of your cables. Tension the cables from the inside out working back and forth .You might have to re-tension some center cables when finished.

Step #9: Place sacrificial nuts on all the bolts and tighten slightly. Cut the excess bolt off with 1/8" cut off disc on grinder or like tool. WEAR SAFETY GLASSES! File any remaining burrs on the end of the bolt.

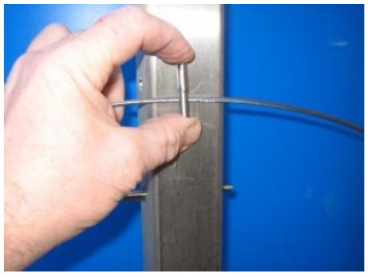
Step #10: Remove the sacrificial nuts and install finished acorn nuts (11mm).

Lock T Instructions

Lock T Hand Swage Instructions

Step 1: Pull cable tight onto tensioning terminal on opposite end. Line up cable with corresponding hole. Mark cables at ½ the post width directly in the middle. Cut the cable with the Felco cutters.

1:



Step 2: Slide Lock T onto cable slot first. Insure that the notch/slot is opposite of the bitter end of the cable. Cable should be flush with outside edge.

2:

Step 3: Place fitting in the 1/8" hole on the hand swaging tool. **3b:** Hold the edge of the tool 1/8" off of notched side and hand swage one time. Compress hand swaging tool until it bottoms out.

3:

3b:

4:

Step 4: Remove terminal from hand swaging tool. Turn fitting 90 degrees and re - insert into hand swaging tool. Move tool towards bitter end of the cable 1/8" away from last swage mark. (Repeat Steps 3- 4) Swage the fitting twice compressing the tool completely insuring that after swage dimensions are as follows. **AFTER SWAGE DIMENTIONS MUST BE: .185"**

Step 5: Remove Lock T from swaging tool. Grab swaged side with vise grips and lock in place. Pre- bend the cable 90 degrees to the fitting.

5:

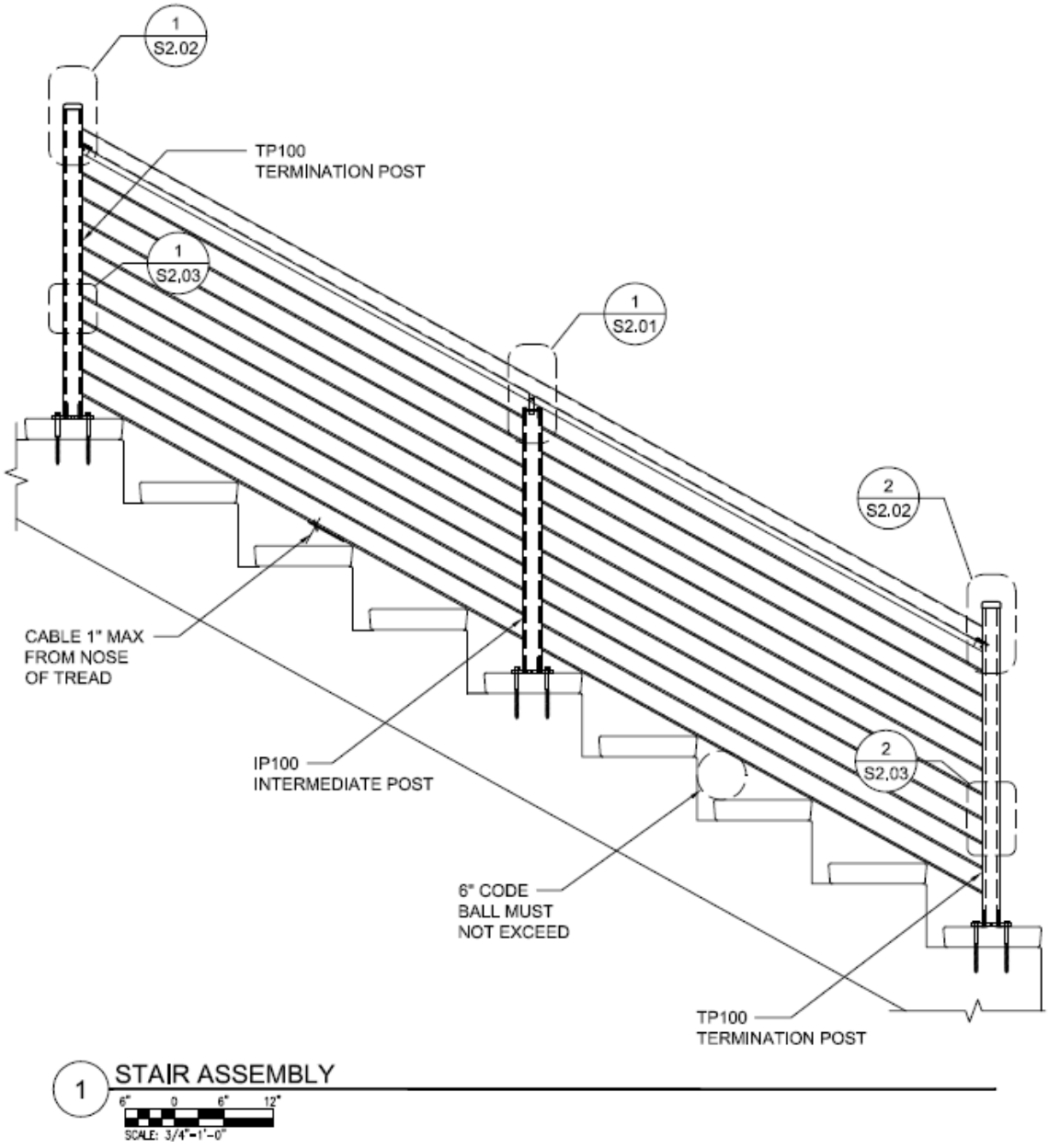
6:

7:

Step 6: Insert the Lock T fitting into the post insuring that cable is running in corresponding holes.
7: Pull cable tight and tension cable to 300 lbs. per strand.

Stair Assembly

Figure 9: Stair Railing Assembly

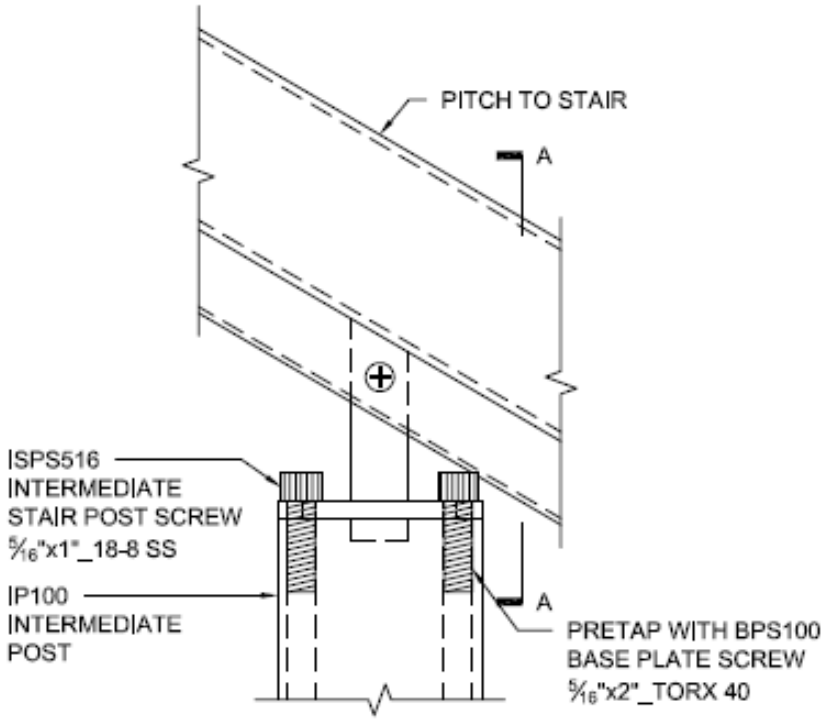


Stainless Stair Post Installation Video:
https://www.youtube.com/watch?v=yHJqzK2qh9M

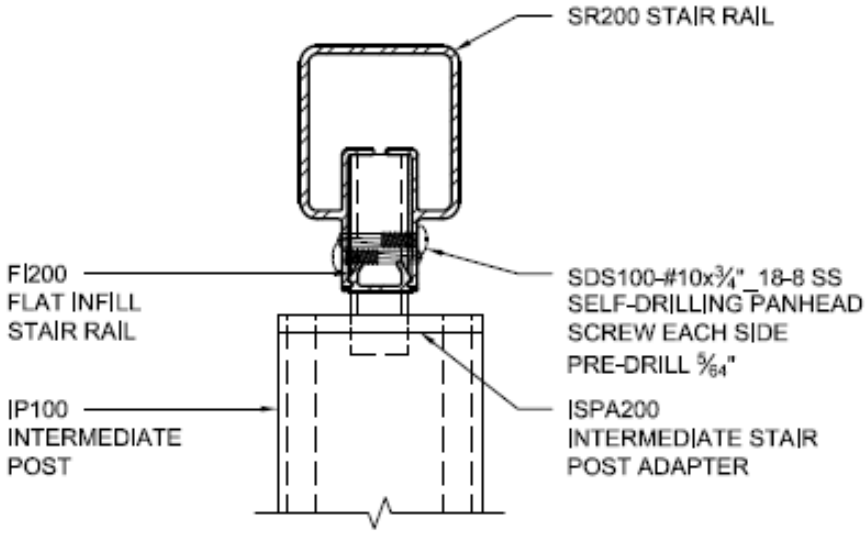
Warning:
Stairs are one of the toughest things to do in the construction world. If you are a home owner who thinks he is a carpenter get ready for a rude awaking. General contractors who do not do this all the time struggle with stairs. Throw in a material like metal that most have not worked with and it is a recipe for disaster. SCS tries to supply instructions for all applications but again, every stair is different. Hire a contractor if you do not know what plumb, level and square is and fully understand the complexities' of stairs. SCS will provide support but you must know your limitations.

Intermediate Stair Post Rail Connection

Figure 10: Intermediate Stair Post Rail Assembly



STAIR RAIL ASSEMBLY
ELEVATION



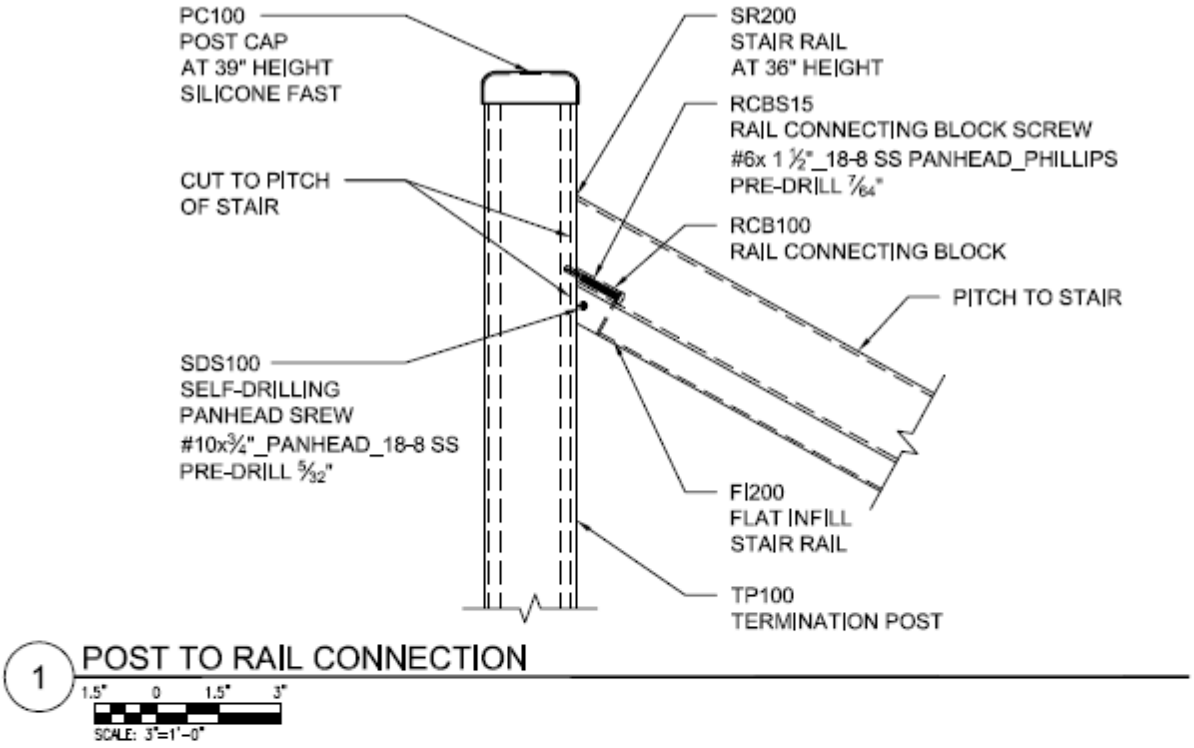
STAIR RAIL ASSEMBLY
SECTION A-A

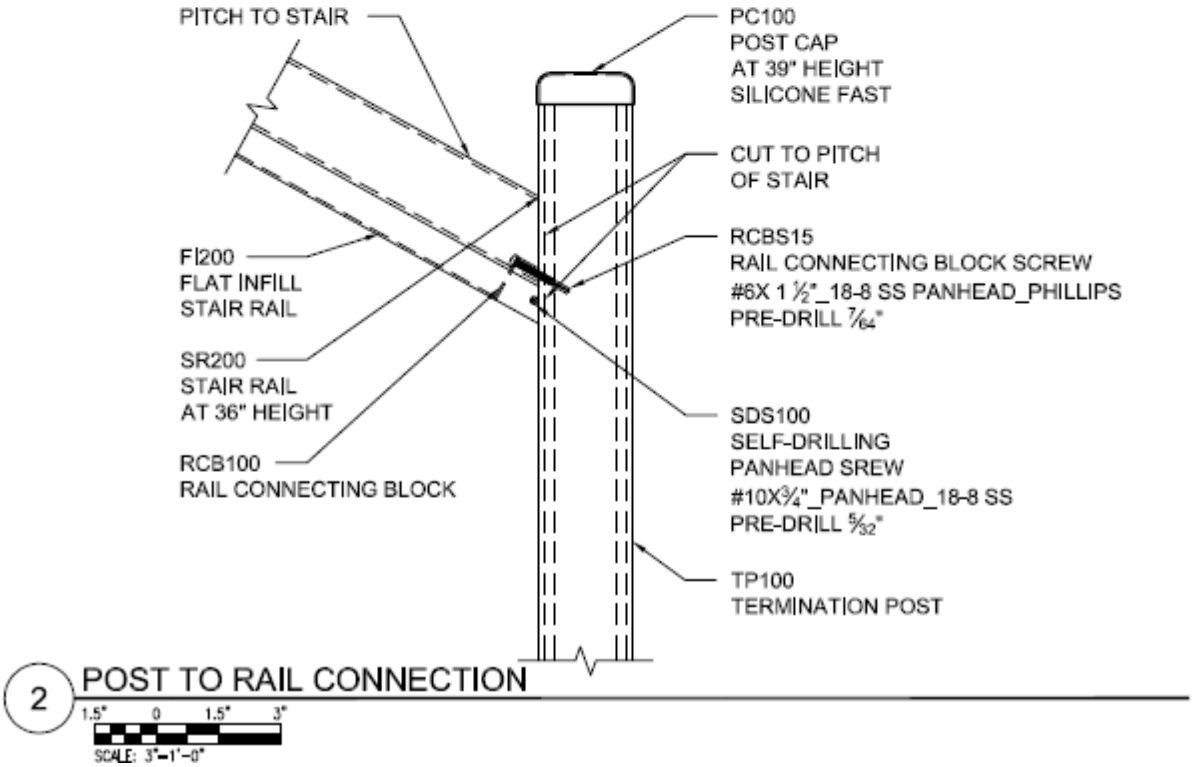
1 TOP STAIR RAIL CONNECTION DETAIL

1" 0 1" 2"
SCALE: 6"=1'-0"

Stair Post Railing Connection

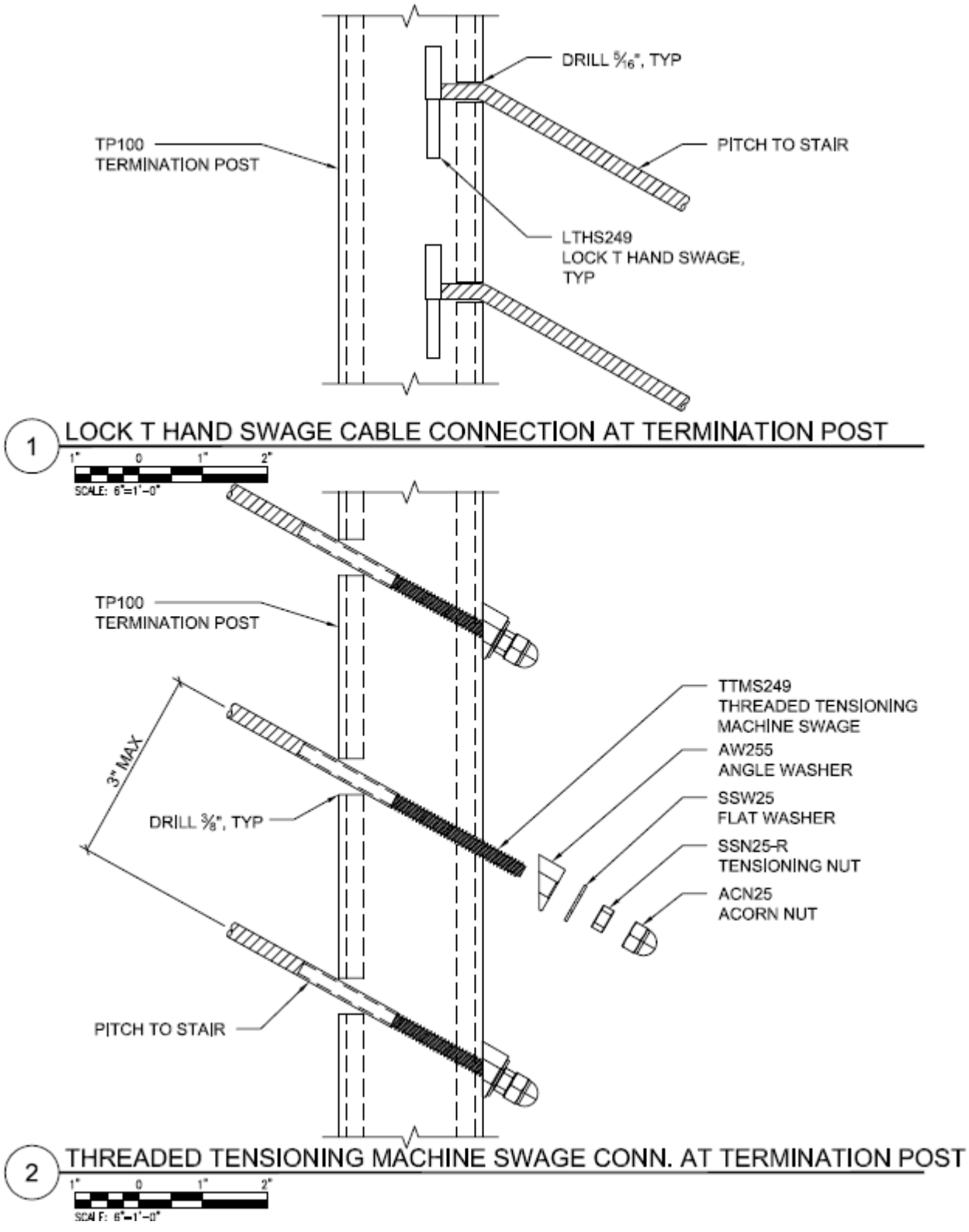
Figure 11: Stainless Railing Assembly





Stair Post Cable Connections

Figure 12: Stair Railing Cable Connection

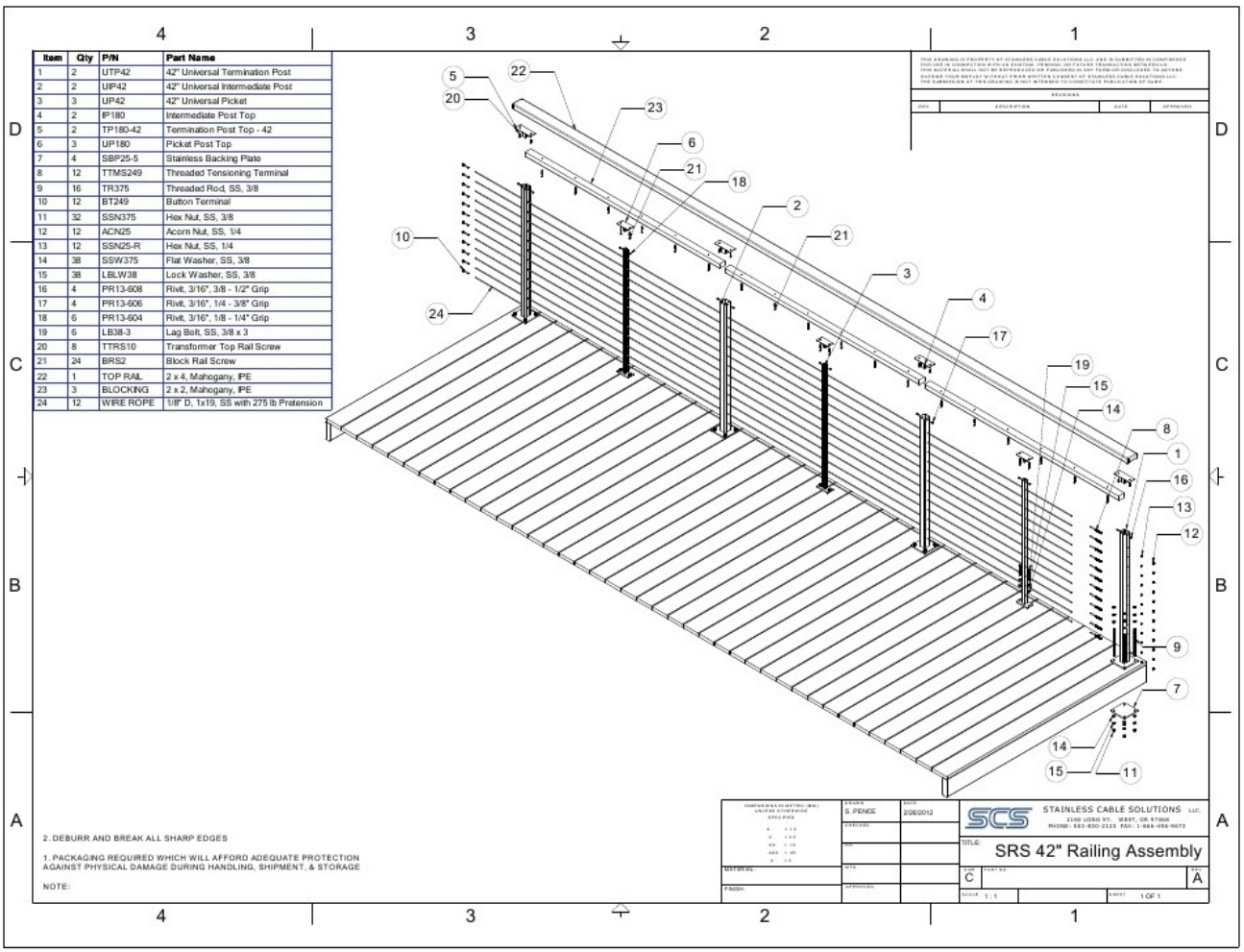


Stainless Post Instructions

General Text Instructions

1: Install all Termination Posts
2: Set String Line.
3: Set Intermediate Posts 6’ OC.
4: Set Pickets in between Intermediate Posts at 3’ OC.
5: Install Transformer Tops_ Rivet In Place
6: Install Wood Top Rail_ Miter Angles and Butts over CENTER of posts. Bisket Joint all joints
7: Install Blocking UNDER Top Rail
8: Install Cables

Figure 13: Stainless Post Assembly



Stainless Post Layout & Mounting

Stainless Post Layout:

1: Install termination posts.
2: Intermediate posts to be set at 6’ OC maximum.
3: Picket mounted to BOTTOM of blocking at 3’ OC maximum.

Mounting

1: Blocking to be installed at all post lag location with 4” minimum lag penetration.

Figure 14: Stainless Post Layout

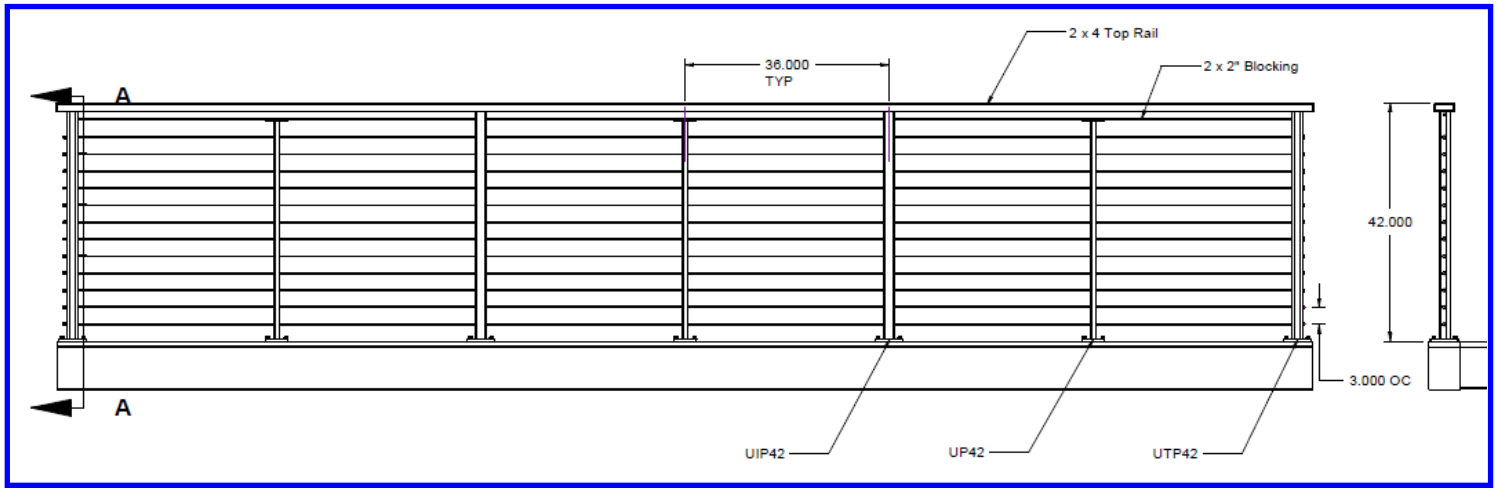
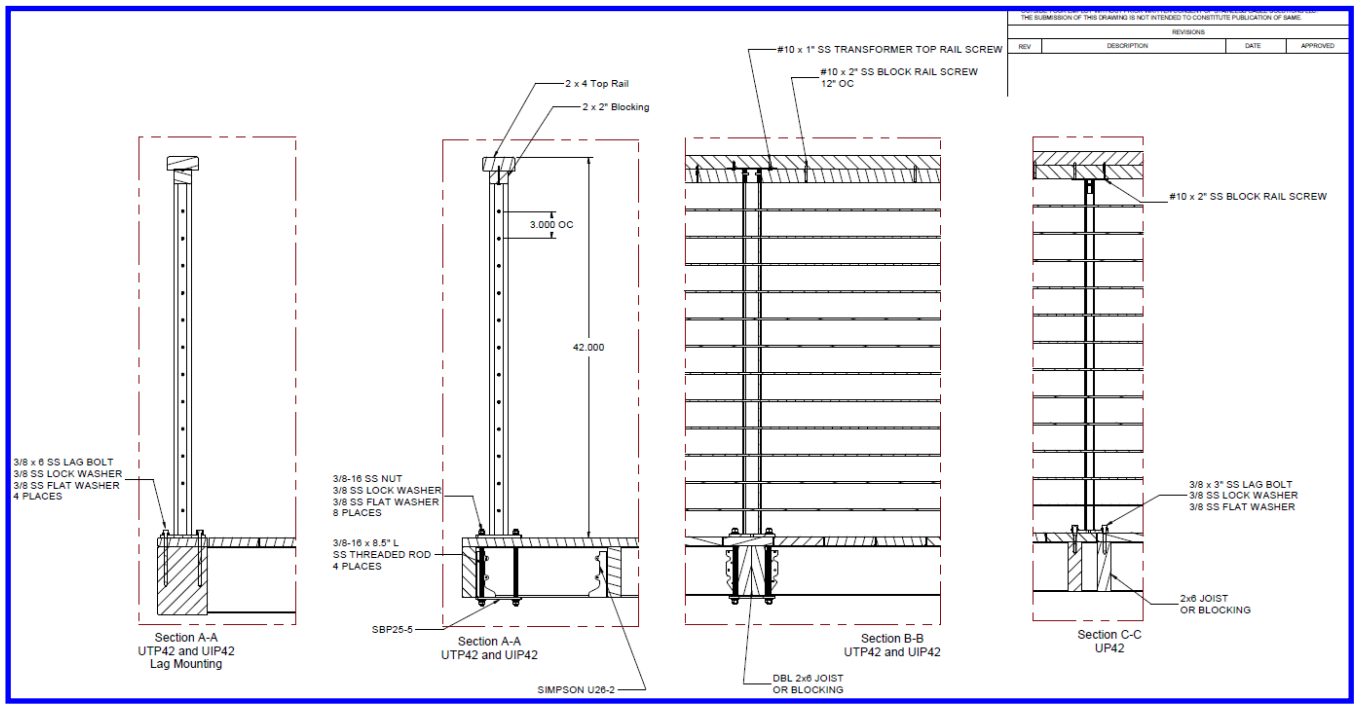


Figure 15: Lag Bolt Mounting Assembly

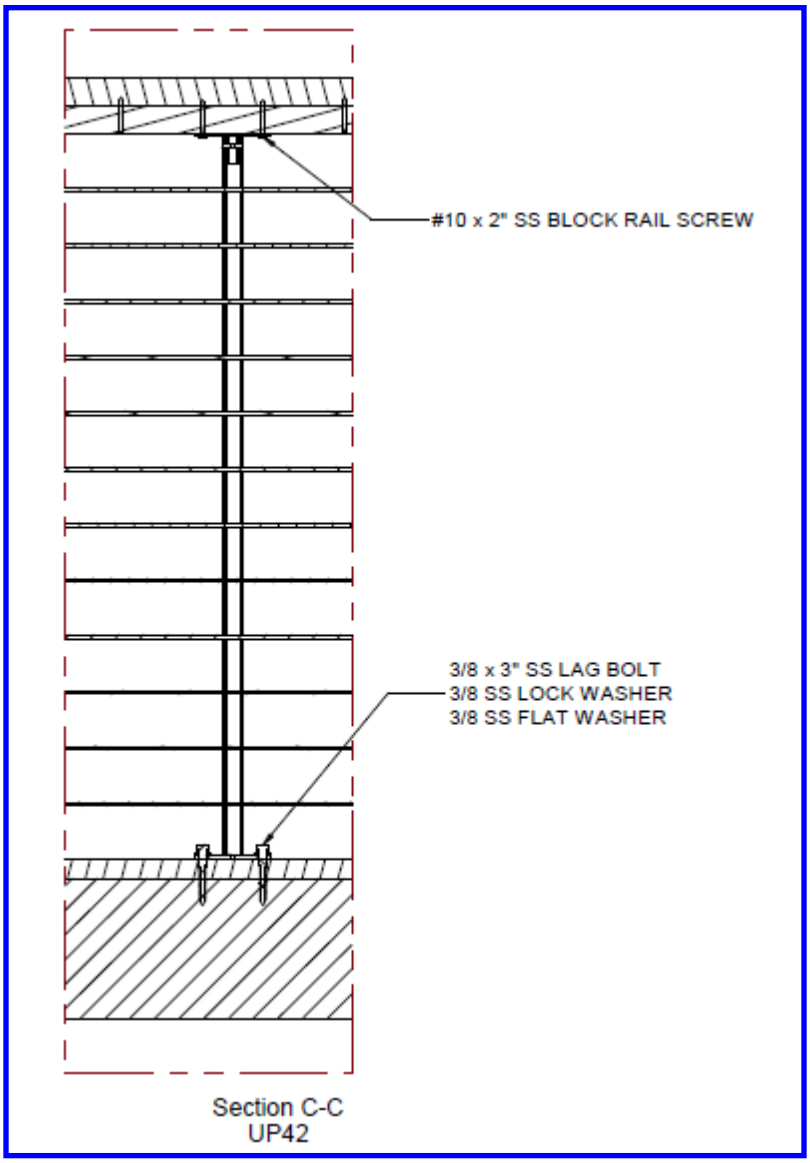


Stainless Picket Installation

Figure 16: Picket Assembly

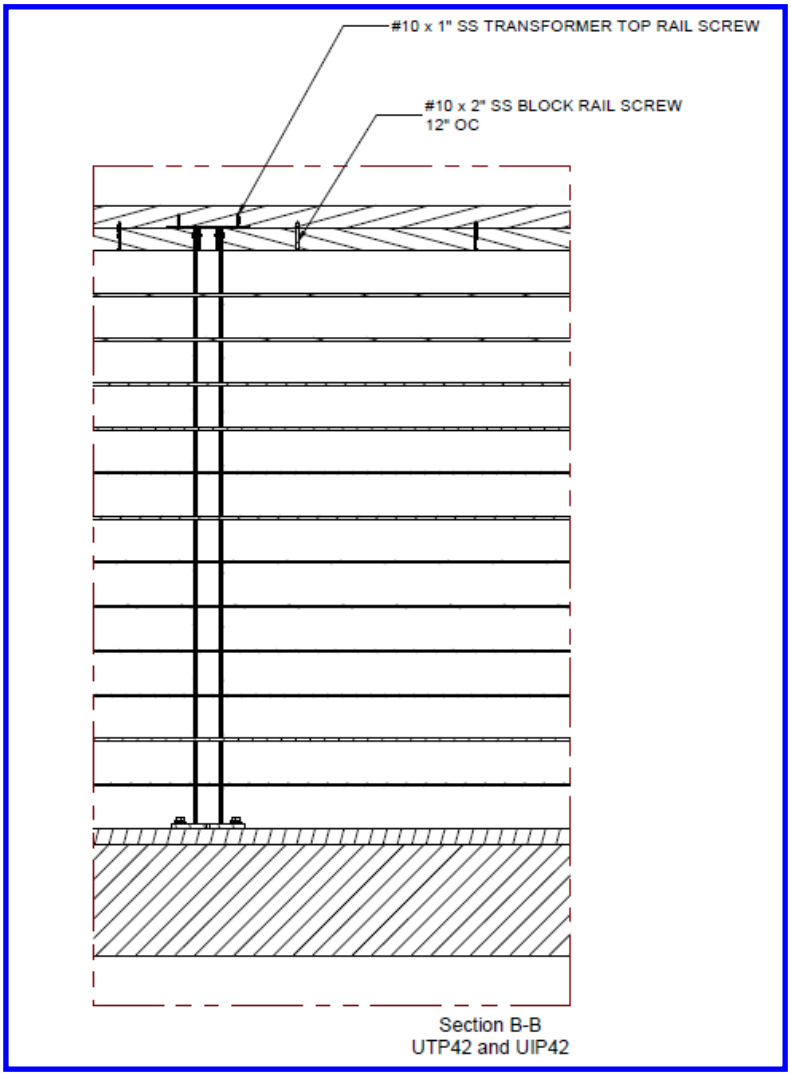
Stainless Picket Installation:

1: Install blocking at all picket locations.
2: Mount pickets with 3/8 x 4” lags.
3: Pre Drill :
Shank at 3/8” .
Pilot : 9/32” Softwood
Pilot : 5/16” Hardwood
4: Install flat washer LBW38 and lock washer LBLW38.
5: Use bar soap on lag threads. Drive with 9/16” socket wrench. Do not use impact driver!
6: Install picket post tops.
7: Slide o– rings over top insert.
8: Slide into picket until flush
9: Hog out pre drilled holes to 3/16” for rivets. Insert BOTH rivets pop in place
10: Screw up through picket post top into the blocking with # 8 X 2 1/2” Block to Rail Screw_ BRS25. Pre-drill all with 1/8” drill bit . Soap all screws DO NOT SNAP OFF HEADS !



Transformer Top Installation

Figure 17: Top Rail & Blocking Assembly



Transformer Top Installation:

1: Slip transformer tops into stainless post. Ensure that you put the 90 degree and 135 degree tops at right location.

Follow SCS layout.

2: Drill 3/16” holes in line with cable holes on each side of the post and rivet fast.

Wood Top Rail Adapter

WTRA180 _WOOD TOP RAIL ADAPTER INSTRUCTIONS

Step 1: Pre Thread Holes with BPS100_ Base Plate Screw
Use Torx # 40 Bit and Impact Driver

Step 2 : Drive in the WTRAS100_ Wood Top Rail Adapter Screw
Make sure that the WTRA lines up correctly with cables drill hole pattern.

Router WTRA180 into top rail to hide edges. Countersink heads of WTRAS100.

LED Lighting Installation

1: Drill thru your blocking and feed LED wire thru weep hole on starting post. Make sure you are by the nearest 110 V outlet that you have. Mount post after you pull ALL wire thru the post.

2: Lay LED wire across the tops of all your posts.

3: Tie an over hand knot in between each post directly in the center of each post.

4: Cut loop in knot and wire like kind wires together.

LED Lighting Installation

5: Twist wires and wire nut together.

TEST EACH LIGHT as you go !

6 : Install all your top rail. DO NOT pinch wire in between post and top rail . Feed wire on TOP of all splices.

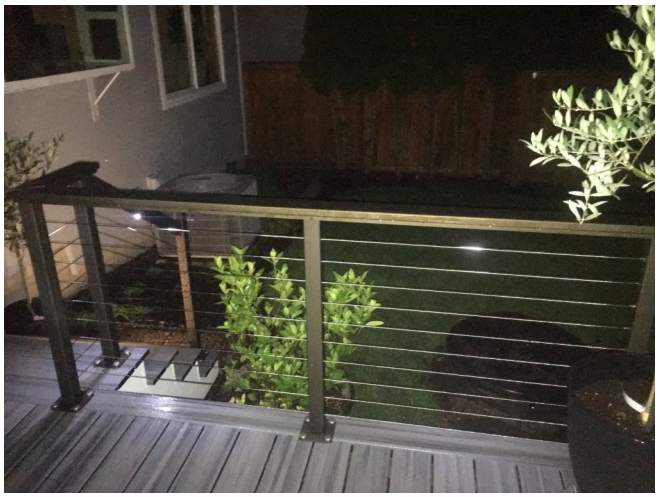
7: Cut your flat infill to size . Drill a 3/8” hole in the center of your flat infill for LED light

8: Insert rubber grommet into hole. Make sure you have the flat infill in the grove of the grommet.

LED Lighting Installation

9: Install LED light in rubber grommet. Bend wire slightly so you can snap flat infill in place. Place staggered dabs of silicone on edges of flat infill to prevent rattling BEFORE you snap in place.

10: Plug your transformer into the 110 V outlet in a DRY location. Wire in your remote control. Wire the LED into the remote. ENJOY!



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