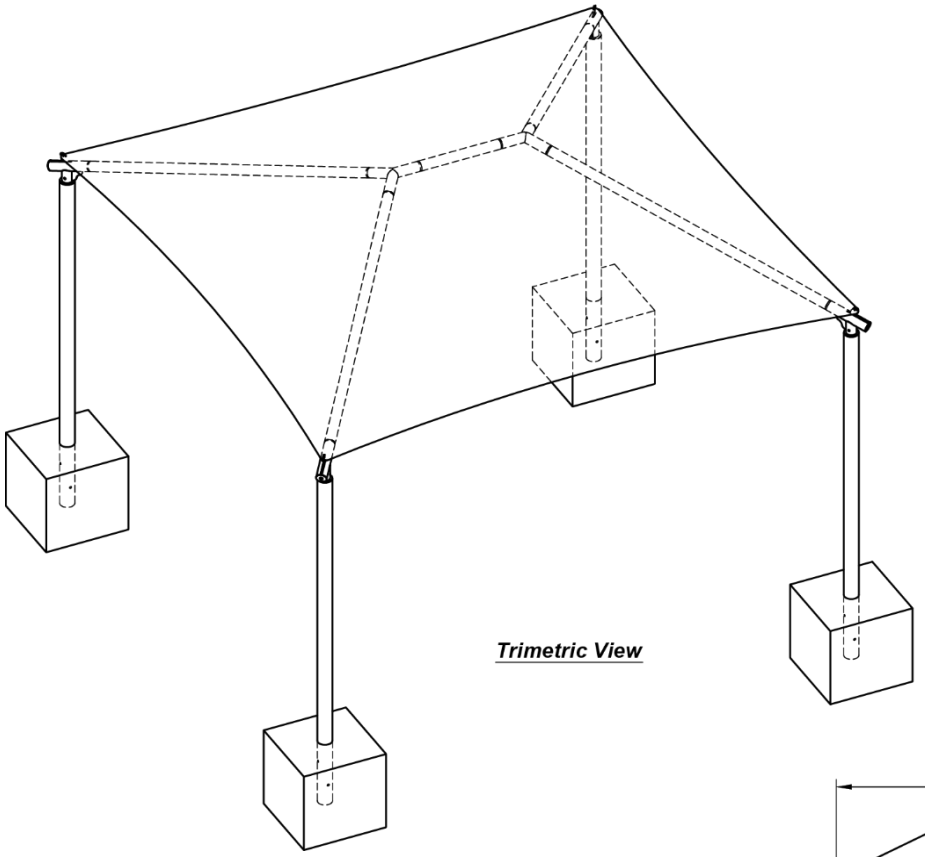
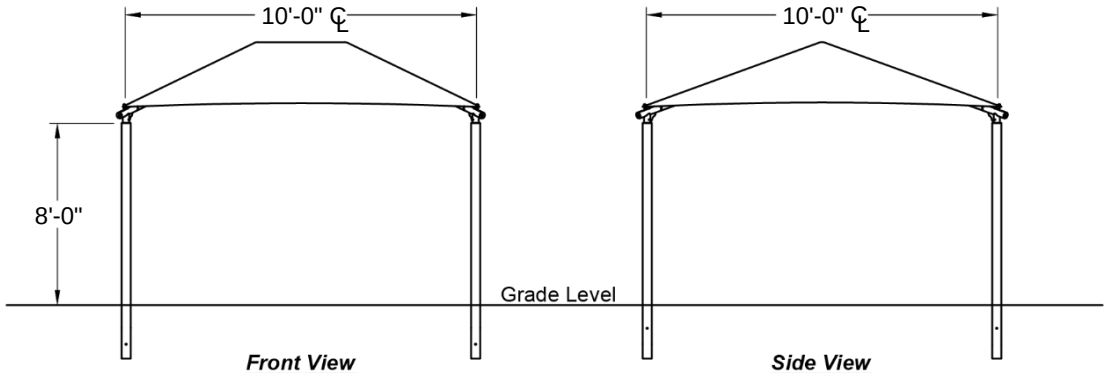
Ref. #	Part Description	Qty.
1	Column - Embedded	4
2	Elbow - Glide	4
3	Rafter - Swaged One End	4
4	Y-Joiner	2
5	Ridge Pole - Swaged Both Ends	1
6	Fabric Canopy - with Cable Insert	1
7	Frame Hardware Kit	1



Trimetric View



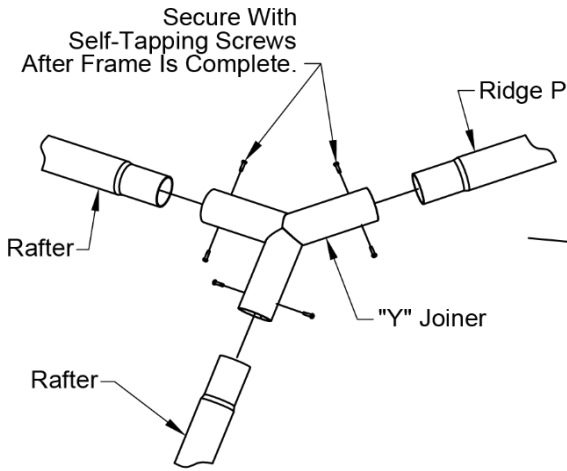
Front View

Side View

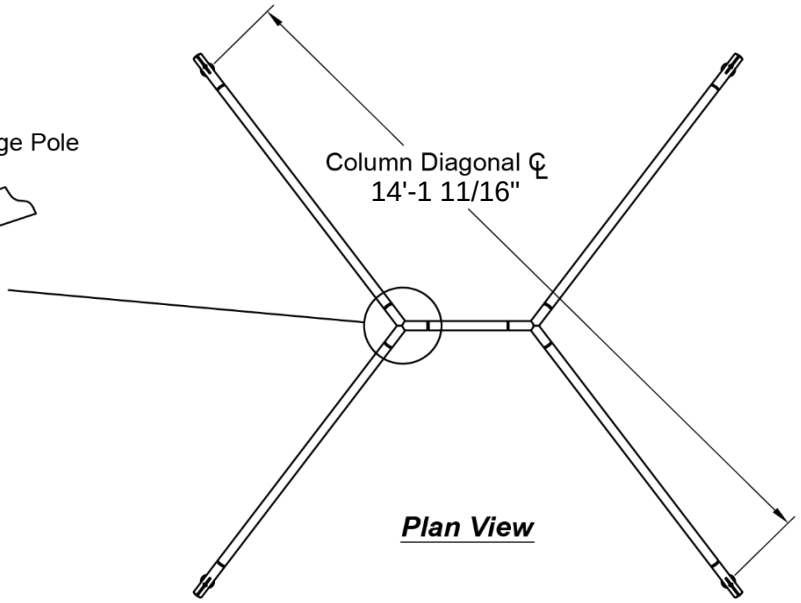
SD101008IG

150 Adamson Industrial Boulevard
Carrollton, GA 30117
1-888-829-8997

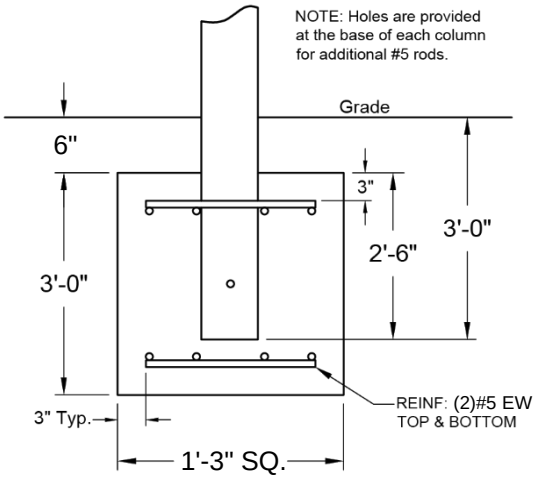
Description: Square 4-Column Hip Shade with Glide Elbows		
Scale: Varies	Shade Style: Hip Design	Sheet: 1 of 3
Date:	Units: Feet/Inches	Proposal No:



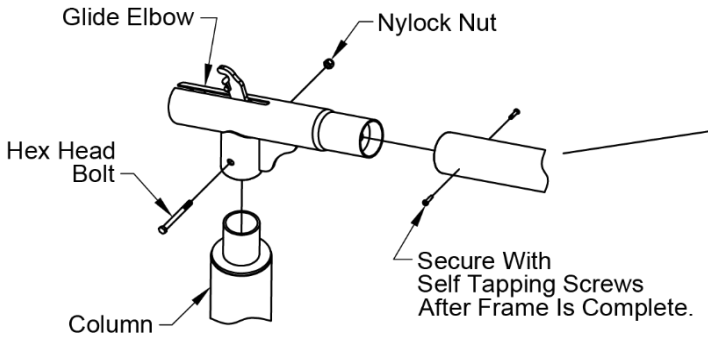
"Y" Connection



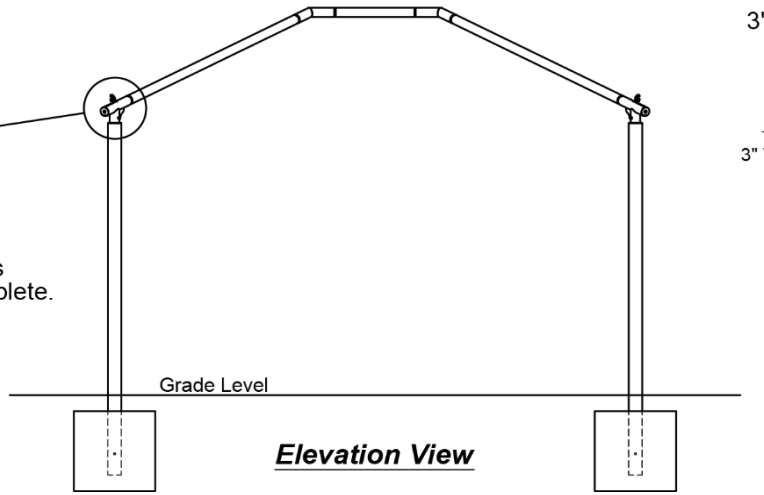
Plan View



Footing Detail

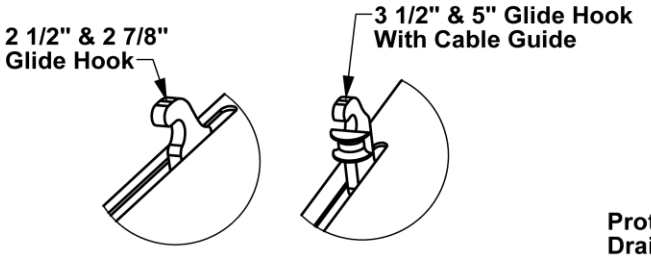


Elbow Connection



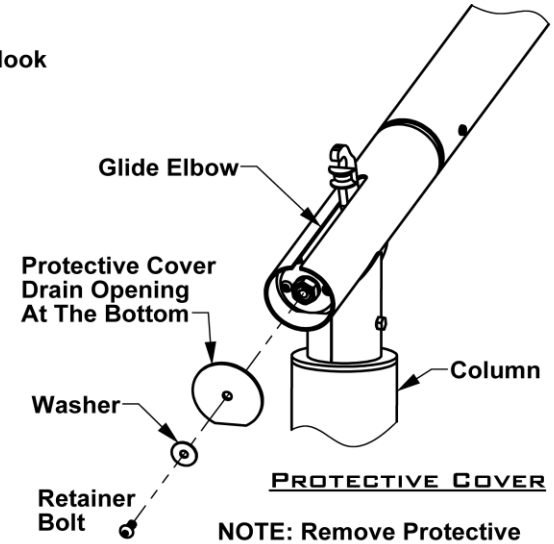
Elevation View

	Description: **Frame & Footing Details**	Sheet: **2 of 3**



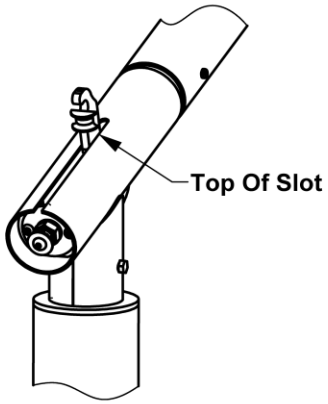
Hook Styles

NOTE: Larger Framework Will Have Glide Hooks With A Seperate Position For The Cable. For Standard Glide Elbows Both The Cable And Fabric Are Positioned Over Hook.



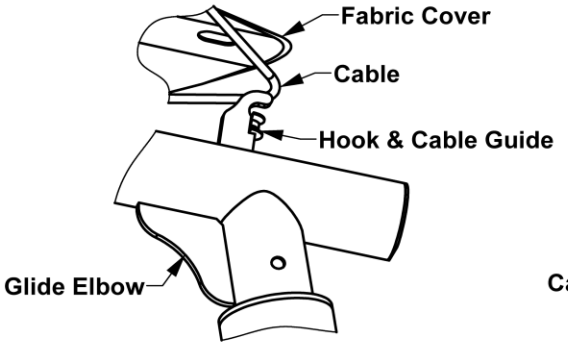
Protective Cover

NOTE: Remove Protective Cover From End Of Glide Elbows.



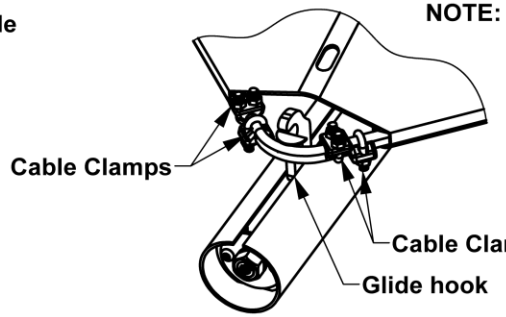
Glide Adjustment

NOTE: Rotate Hex Nut With Hand Tool To Adjust All Glide Hooks To The Top Of Slots Before Installing Fabric.



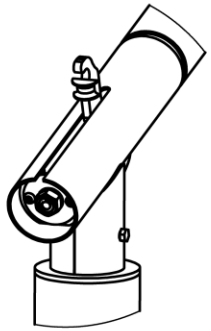
Fabric Installation

NOTE: Pull Cable Over Hook Into Cable Guide. Pull Hole In Fabric Corner Over Hook. This Applies To Three Of Four fabric Corners.



NOTE: Cross Cable Ends Within Cable Guide. Pull Cables Tight To Remove Any Slack. Secure With Two Cable Clamps On Either Side Of Guide. Pull Strap On Fabric Corner Over Hook Followed By The Hole In Fabric. Tuck Loose cable Ends Back Into Fabric Hems.

Secure Cable Ends



Fabric Tension

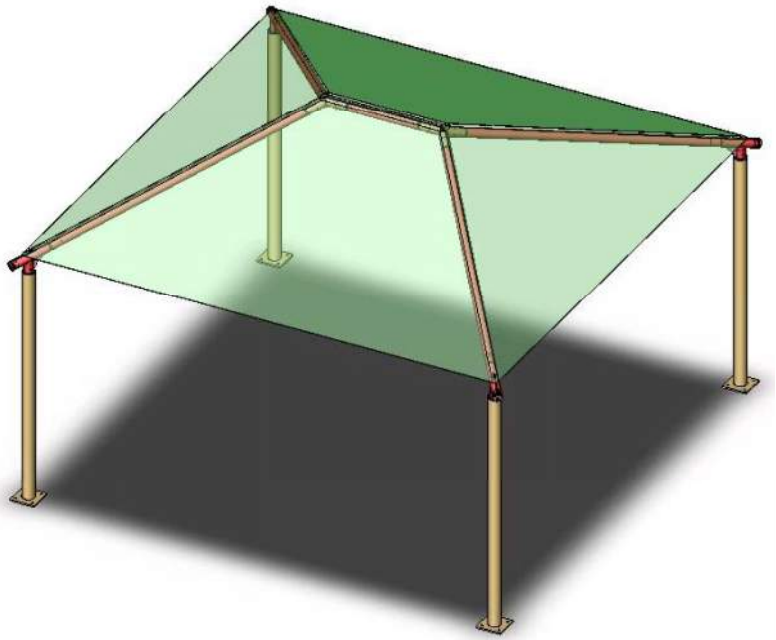
NOTE: Rotate Glide Hex Nuts Equally With Hand Tool To Adjust Cable And Fabric Tension.

	Description:	Sheet:
	Glide Elbow Details	3 of 3

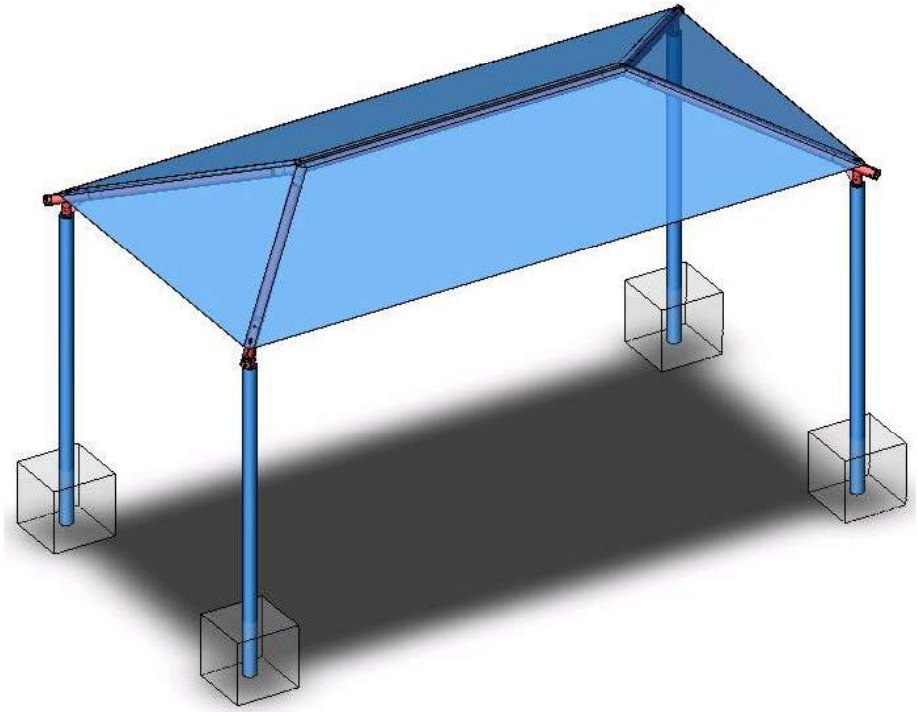
WARNING:

Cables must exit through holes under webbing to ensure spacing for the FOUR cable clamps.

Hip Shade Design Installation



Rectangular Embedded
Rectangular With Base Plates
Square Embedded
Square With Base Plates



Covers Both
Standard & Glide
Elbows

SHADE UNIT SITE PREPARATION

Using the provided plan view drawing of your unit, locate the position of all four support columns.

All loose asphalt, concrete and debris must be removed from the entire site prior to installation.

Site must be graded as close to level as possible to aid in unit construction. Special installation considerations must be implemented for sites that are not level.

The customer is responsible for checking local soil and drainage conditions within the site area. Proper drainage around the unit and the support columns is important. Inquire with local contractors in your area for drainage recommendations.

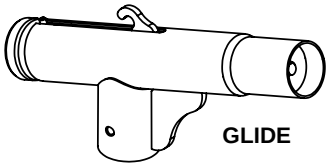
Site must be surveyed for underground hazards such as Electrical Cables, Phone Lines and Gas or Water Pipes. Serious injury or death could result if these hazards are not first located and marked within the site.

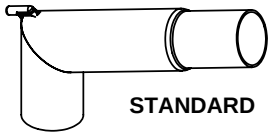
Never leave the job site unattended without making sure that all open holes are covered with material such as plywood. Rope off all unfinished construction to keep children away from site until job is complete.

REQUIRED TOOLS

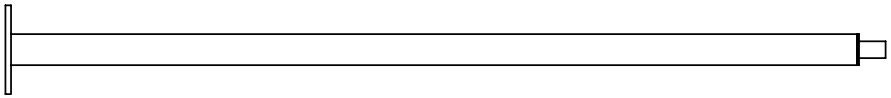
(A) Safety Glasses
(B) String Level, Magnetic Level
(C) Rubber Mallet
(D) Shovel / Post Hole Digger / Auger
(E) Tape measure
(F) Rechargeable Drill / Drill Bit Set
(G) Socket Set (SAE)
(H) Adjustable Wrench
(I) Center Punch
(J) Two Ladders (10’ recommended)
(K) Duct Tape
(L) One 2” x 8” x 16” Wood Length
(M) Multiple Scrap 2” x 4” x 8’ Lengths
(N) 1/2” x 4’ x 4’ Plywood Sheet
(O) Wheelbarrow / Loader

SHADE UNIT COMPONENT INVENTORY

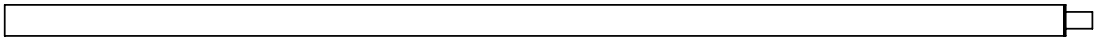


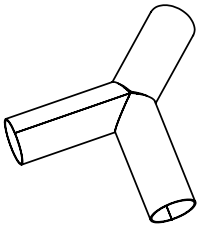


(4) Glide Or Standard Elbows

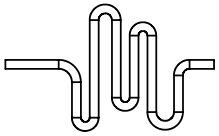


(4) Base Plate Or Embedded Columns



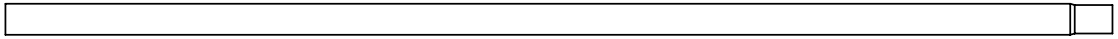


(2) "Y" Connections

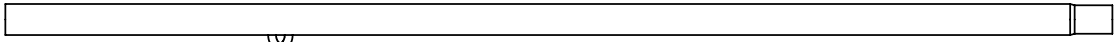


(1) Cable Length

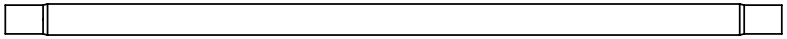
Cable Will Be Installed Within Fabric If Shade Has Glide Elbows.



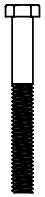
(4) Hip Rafters



Bracket Will Be Welded To One Rafter If Shade Structure Has Standard Elbows



(1) Ridge Pole



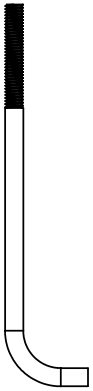
(4) Hex Head Bolts

(4) Nylock Hex Nuts

(4) Cable Clamps

Supplied With Shade Units Using Standard Elbows

(20) Self Tapping Screws

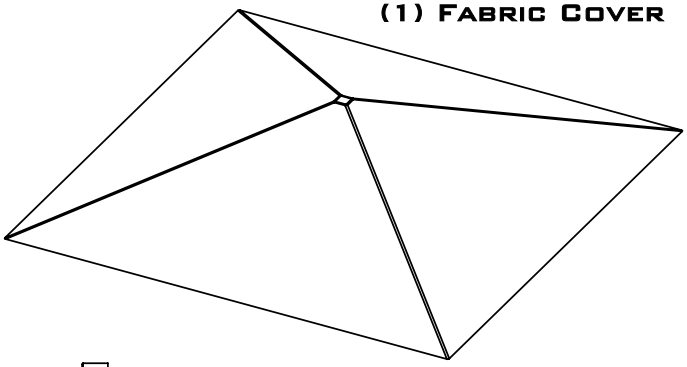


(16) Anchor Rods

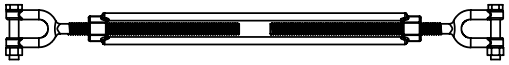
Supplied With 12" x 12" Or Larger Base Plate Columns.

(32) Anchor Rod Nuts

(32) Anchor Rod Washers

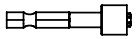


(1) Fabric Cover



Turnbuckle

Turnbuckle Is Supplied With Shade Units Using Standard Elbows.



Driver Tool

STEP #1:

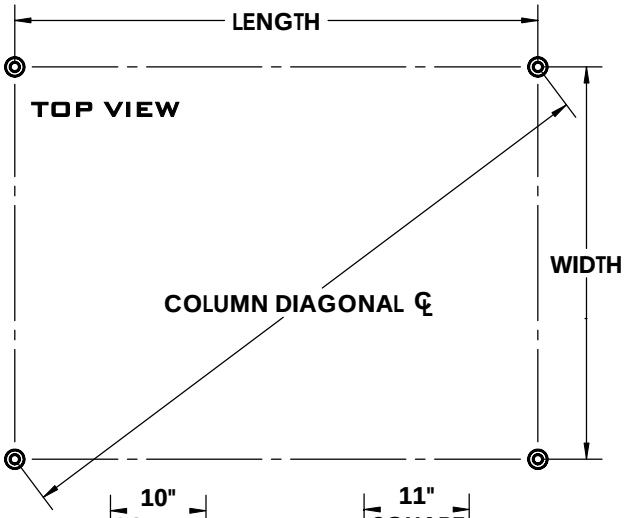
Locate and mark the positions of the four upright columns. Refer to the specific dimension information for your Shade unit provided in this packet.

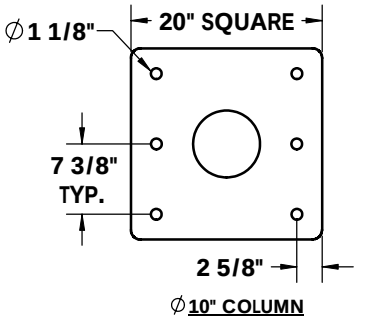
EMBEDDED COLUMNS:

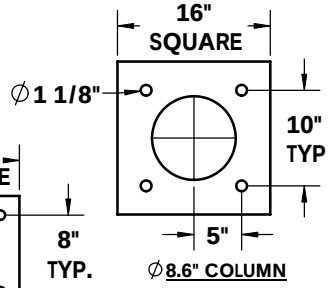
- -Excavate footings in accordance with the dimensions specified for your Shade unit. Refer to the specific dimensions provided for your unit within in this packet.
- -Place a 3" block in the bottom of each hole.
- -Place a column into each hole on top of each block.
- -Block and brace each column into position making sure that they are plumb and remain on centers. The distance between the columns at the top between cap centers must be correct.
- -Pour concrete around columns until it is three inches below grade level. Allow concrete to harden for 48-hours before proceeding to next step.

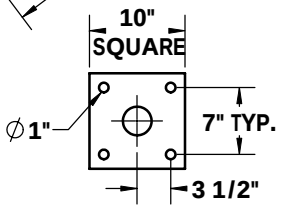
BASE PLATE COLUMNS:

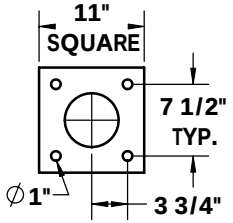
- -Excavate footings for concrete pads in accordance with the dimensions specified for your shade structure. Refer to the specific dimensions provided in this packet.
- -Cut the plywood sheet into four squares 2" larger than your base plates. Working from the center, mark off the hole pattern that applies to your base plate. Mark the center point of the column as well.
- -Drill four holes through the plywood at the outer marks. Make the holes slightly larger then the anchor diameter.
- -Insert the four anchors through the holes. Thread a nut completely over each anchor on top of the plywood. The four anchors should hang from the plywood.
- -Fill the footer holes with concrete to 4" below grade.
- -Place one Plywood sheet with anchors over each footer submersing the anchors into the concrete. Make sure the the center marks are on your column centers.
- -After the concrete has started to harden you must remove the hardware and plywood from each footer.
- -Let concrete harden for 48-hours.
- -Re-thread a nut over each anchor down to the concrete. Place a washer over each anchor followed by each column base plate. Adjust the nuts under the base plates to plumb each column. Insert a washer and thread a nut over each anchor tight against base plate.
- - Apply concrete Grout base between base plates and concrete.

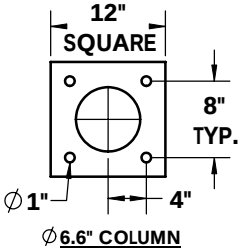


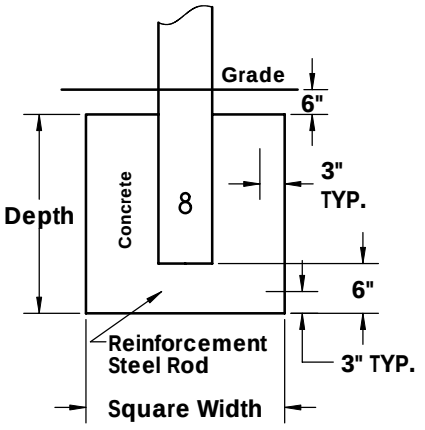




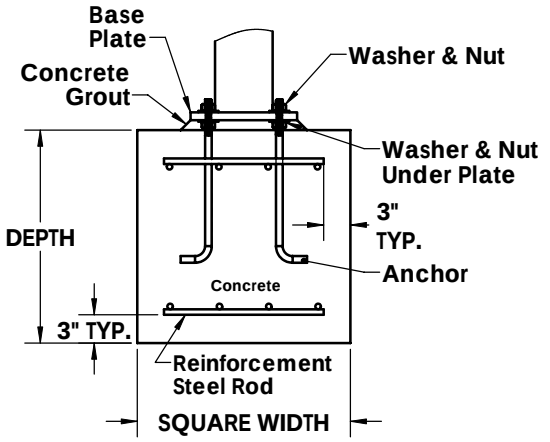




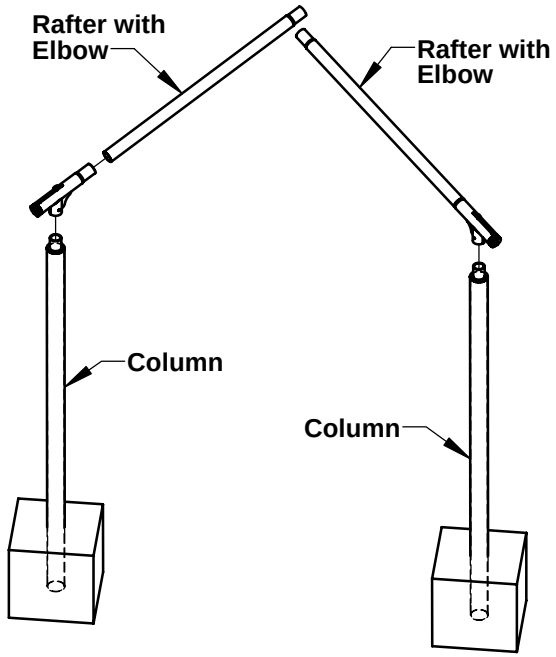




NOTE: A HOLE IS PROVIDED AT THE BASE OF EACH COLUMN FOR ONE #4 ROD



BASE PLATEAPPLICATIONS AND DIMENSION



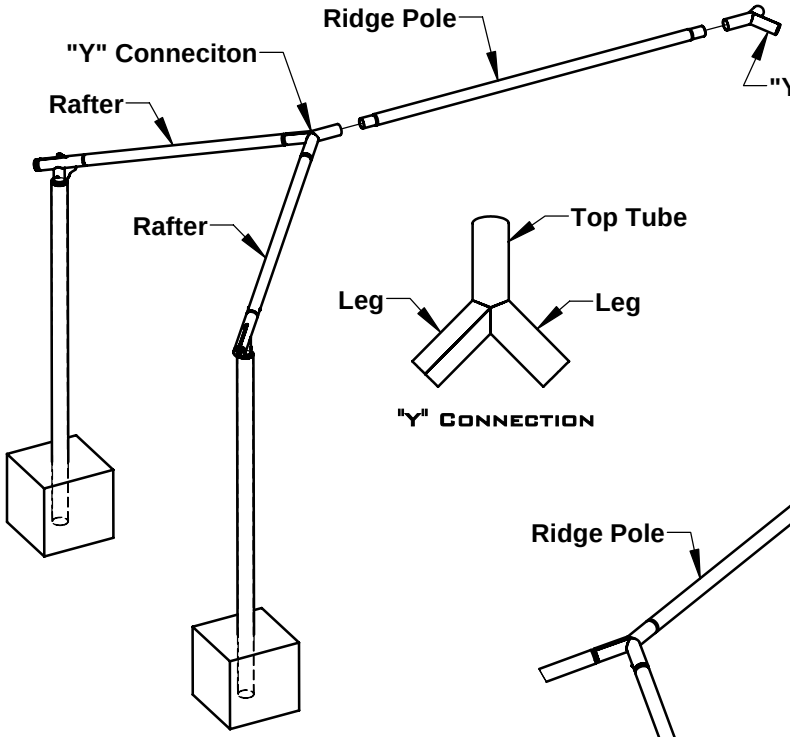
STEP #2:

-Begin the frame assembly by inserting the tappered ends of two elbows into the non-tappered ends of two rafters.
HELPFUL HINT: Wrap the joined parts with Duct Tape over the seam to hold them in place.

Standard Elbows:

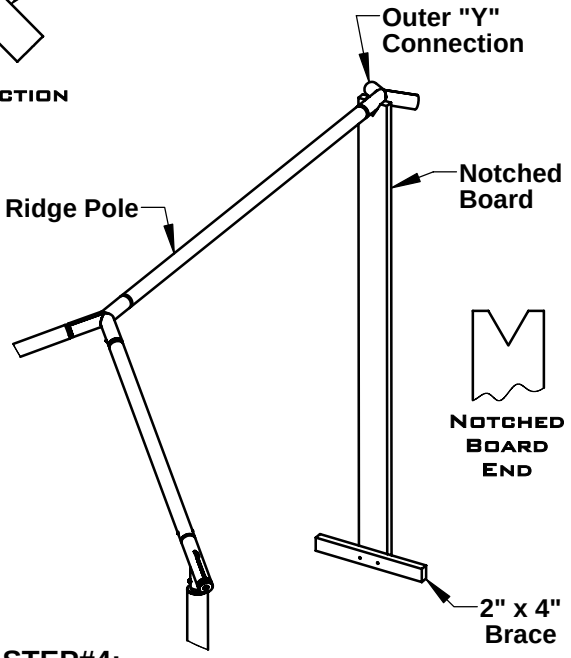
One of your four Rafters will have a welded turnbuckle bracket along its length. Location of this Rafter is optional but Turnbuckle Bracket must be toward ground.

-Using adequate manpower and ladders, lift the two rafter assemblies and slide open leg of elbow down over the top of the column cap.



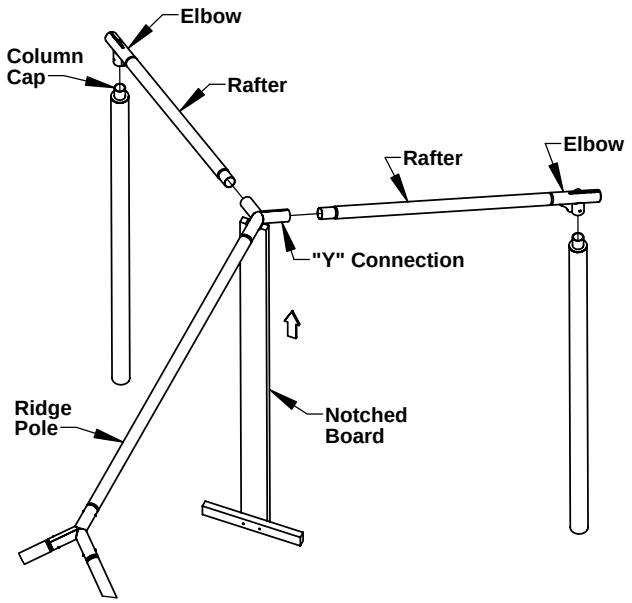
STEP #3:

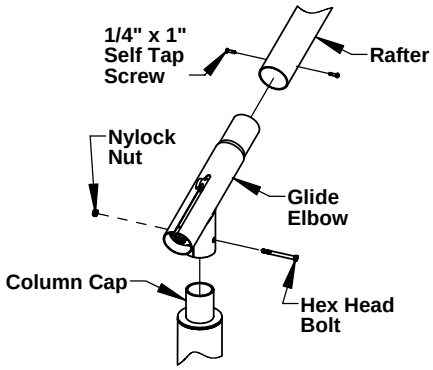
-Slide the legs of a "Y" Connection over the tappered ends of the assembled rafters.
-Insert one of the tappered ridge pole ends into the "Y" Connection top tube.
-Slide the top tube of the second "Y" over the remaining tappered Ridge Pole end.
-Wrap all joining seams with Duct Tape to hold them in place.

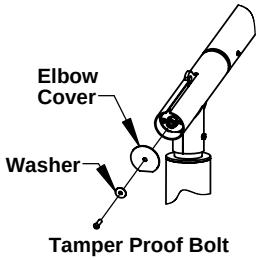


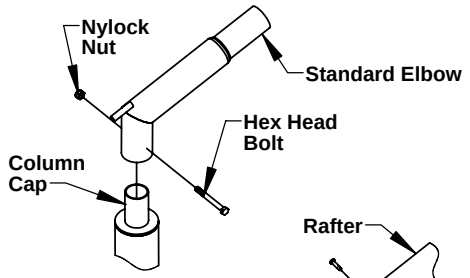
STEP#4:

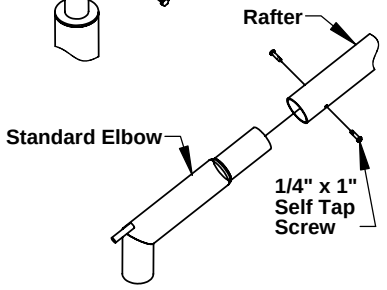
-Cut a vee notch in one end of the 2" x 8" that will craddle the "Y" Connection top tube. Cut length from the bottom of the board to equal height of ridge pole above ground. Add a 2" x 4" brace across the bottom. Place the boards under the outer "Y" to support the assembly.











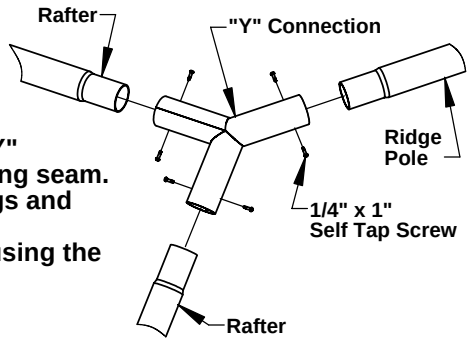
STEP#5:

- Insert the remaining two Elbows into the non-tappered ends of the remaining Rafters. Wrap seams with Duct tape.
- Insert the tappered ends of the Rafter assemblies into the suspended "Y" Connection.
- Raise the rafters now connected to the Ridge Pole and pull Elbow legs over remaining Column caps. Slide Elbow legs down over Column caps completely.

  HELPFUL HINT: Have a third person lift the board to raise the Ridge Pole when pulling Elbows into position. This will help locate the Elbow legs over the Column caps.

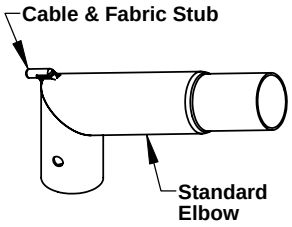
STEP#6:

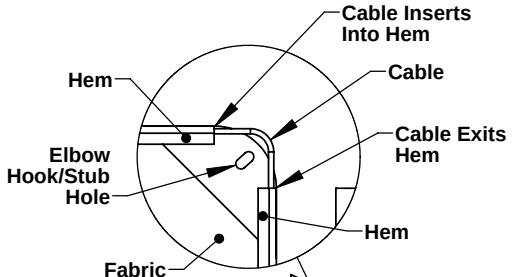
- At this point the frame is complete and all Duct Tape can be removed.
- Using a steel center punch, strike a point on one side of each elbow 2" above the column cap plate. Field drill a hole completely through the elbow and cap on your mark. Use a 7/16" bit for 3/8" bolts and a 9/16" bit for 1/2" bolts.
- Install the provided 3/8" or 1/2" hex head bolts through the hole and secure with a Nylock hex nut of the same size.
- Remove Protective Covers from Glide Elbows if applicable.
- Strike a point on each side of each Rafter 2" above the joining seam with the Elbow.
- Field drill a 3/16" hole through the rafter and Elbow end at each location.
- Install a self tapping screw in each hole using the provided tool and drill.

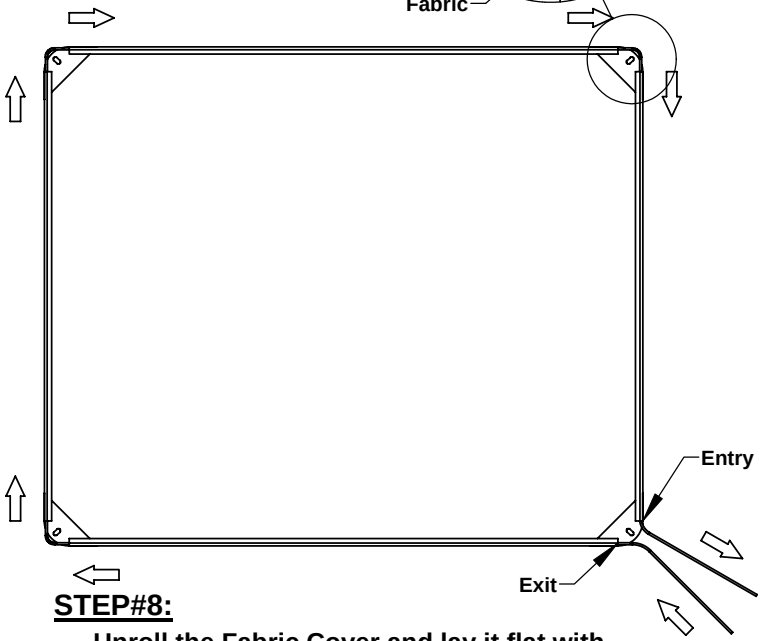


STEP#7:

- Strike a point on each side of the three "Y" Connection legs 2" above the Rafter joining seam.
- Field drill a 3/16" hole through the "Y" legs and Rafter end at each location.
- Install a self tapping screw in each hole using the provided tool and drill.

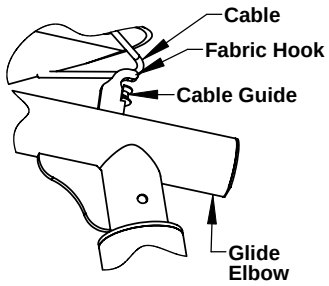


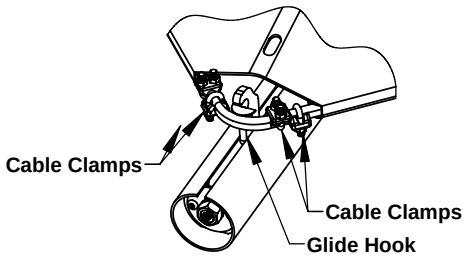




STEP#8:

- Unroll the Fabric Cover and lay it flat with the bottom (Hem side) up.
- Insert one end of the cable into the one of the two Hem openings at a corner. Feed the cable through the hem until it exits at the next corner. Pull the cable completely through leaving 1'- 3'" at the insertion end.
- Tuck the end that just exited back into the adjacent hem on the same corner.
- Repeat this procedure until both ends exit the same corner.





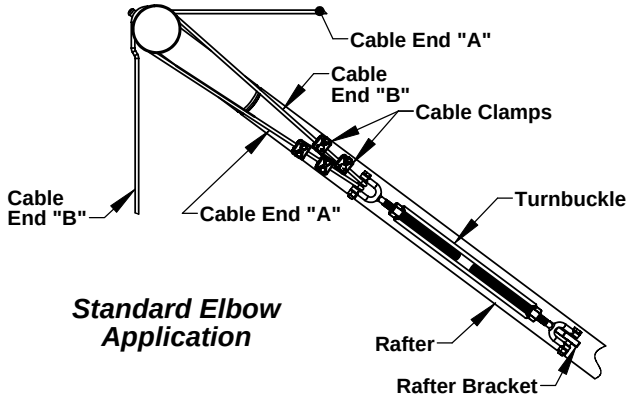
STEP#9:

Securing Fabric Cover

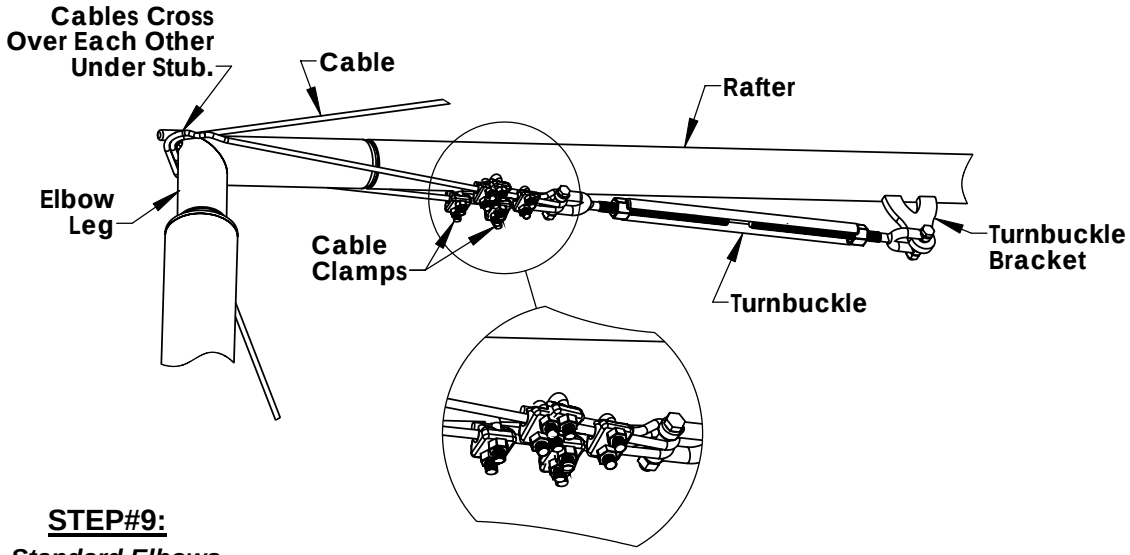
NOTE: Larger shades will have a Cable Guide at the base of the fabric hook to separate the cable from the fabric.

Before attaching fabric make sure that all glide hooks are in their highest position at the top end of the slot.

- Working from either end of the structure, pull the Fabric cover over the framework with the HEM SIDE DOWN.
- Start with one of the corners without the loose ends. Pull the cable over the hook and place in cable guide if applicable.
- Pull the Fabric Strap sewn to the corner underside over the hook.
- Pull the corner over the hook inserting hook through hole in fabric fabric.
- Repeat procedure at all corners without the loose ends. Be sure that cable is always below fabric. NOTE: Fabric will be tight and may need pulled over hooks.
- Cross cables over within the cable guide or hook at the remaining corner. Draw cables tight removing all slack. Secure the cables together with two clamps on either side of hook. Tuck loose cable ends back into fabric hems.



Standard Elbow Application



STEP#9:

Standard Elbows

-Locate the Rafter with the Turnbuckle Bracket. This will be the corner where the loose cable ends of the Fabric cover will be located.

-Starting at the corner diagonal to the loose cables, pull the cable and Fabric corner hole over the stub welded to the tip of the Elbow. Cable must go over first.

- Move to the adjacent two corners and repeat this procedure.
  NOTE: Fabric will be tight and may need pulled by rope and guided over stub.

- Attach one end of the supplied Turnbuckle to the Bracket. Extend the Turnbuckle to near full length leaving one inch of threads unused at each end.

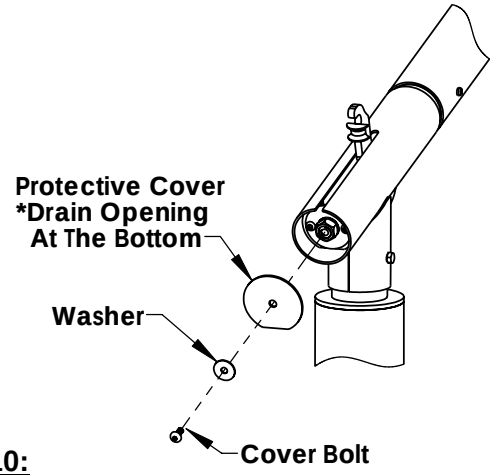
-Pull one of the loose cable ends around the Elbow leg under the stub. Run the cable end up the rafter and loop it through the remaining Turnbuckle end. Pull cable snug tight and secure snug tight with cable clamp.

- Repeat this procedure with remaining cable end crossing over the first cable under stub. Pull this cable as tight as possible before clamping.

- Pull Remaining Fabric corner hole over Elbow stub using rope if necessary.

- Re-adjust both cables as tight as possible before securing with two cable clamps per cable.

- Rotate Turnbuckle to apply more tension to cables being careful not to over tighten.



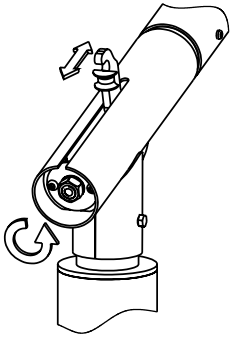
STEP#10:

Glide Elbow:

- Remove protective cover from Elbow end using standard Allen head wrench or provided T-45 Torx wrench.

STEP#11:

- Rotate Hex Nuts within Elbow ends the same amount at all corners to tension or loosen Fabric Cover. Be careful not to over tighten cable and fabric.
- Re-insert protective covers and secure with hardware.



ATTENTION!

Metal Shavings Must Be Removed To Prevent Corrosive Staining.