



# Tandem® Wall Segmental Retaining Wall System Installation Guide





## Table of Contents

Tandem® Wall System .....	4
Collections .....	6
Tandem® Wall Components .....	8
Installation Instructions.....	10
Design Details .....	13
Geogrid Estimating Charts .....	23
Tandem® Column Installation Instructions .....	26
Tandem® Modular Outdoor Features Installation Instructions.....	30



# Tandem® Wall System

The Tandem Wall System is a revolutionary platform that allows a contractor to take a veneer system and provide the same performance as traditional retaining and free standing walls. The Tandem Wall System showcases the Stone-like aesthetics that homeowners prefer, while offering the contractor many job site efficiencies. As a complete system with column and modular grid options, Tandem provides both flexibility and continuity in a multitude of design options.



## Walls

Tandem Wall System designed by Belgard® provides the natural appearance of chiseled stone that will complement any hardscape project. The innovative, versatile system can be used to create attractive, curved or straight retaining and freestanding landscape walls. Great for use in a wide range of residential and light commercial hardscape projects.



## Columns

Building different types of columns can be achieved using the Tandem system. Easily construct Tandem columns with the steel grid to add an aesthetic touch to a wall, add columns to the end of a driveway or entryway or dress-up an existing deck post/wooden pillar with a stone-faced column.



## Modular Grid

Use Tandem Modular Grid to build privacy walls, outdoor benches and kitchens and many other applications. Easily construct outdoor living elements with the steel grids to add an aesthetic touch to your home and outdoor living space.

Dress up existent patios with a eye-catching deck skirt, hide unsightly garbage cans or air conditioning units with a privacy wall and enhance your driveway and walls with regal columns.

## Features and Benefits

### WALLS

- Meets the material requirements of ASTM C-1372
- Build curved or straight walls
- Free Standing or Retaining
- Offered in 3 sizes and faces to allow for design versatility and customization

### COLUMN KITS:

- Can be used to construct new columns or columns around existing posts
- Easily connect large veneers to the grid with connectors
- 3 different faces can be used to create new columns or update existing unsightly wooden posts

### MODULAR GRID:

- Modular grid can be used to construct virtually any structure up to 6ft. tall
- Easily attach the grids to a wooden structure and simply connect your veneers to the structure with connectors
- 3 different faces can now be added to unsightly existing structures or to create new outdoor living elements

### BENEFITS BY THE NUMBERS:

- Meets additional ASTM standards (C-1372 and C-1262)
- Free Standing walls up to 28"
- Exceeds 5,000 PSI compressive strength concrete
- Engineered 90° corners
- Gravity walls up to 3 feet
- Reinforced walls up to 8 feet







# Tandem® Collections

At Belgard® we believe in giving you options when you are outfitting your outdoor living space. The Tandem Wall Platform allows for three different face style designs that provided versatility to match or complement your existing outdoor living space.

## Features and Benefits



Lafitt Unit

Lafitt Ashlar Unit

### LAFITT TANDEM™:

- Classic look of natural stone
- 24 different facial textures & three color blends
- Minimum outside radius of 6'
- Exceeds 5,000 PSI compressive strength concrete



Lamina Tandem Unit

### LAMINA TANDEM™:

- Classic look of natural stacked stones
- 24 different facial textures & three color blends
- Minimum outside radius of 8'
- 6,000 PSI-exceeds ASTM C1372 by 100%



Melville Tandem Unit

### MELVILLE TANDEM™:

- Modern and contemporary finish
- Minimum outside radius of 6'
- Exceeds 5,000 PSI compressive strength concrete



## Lafitt

Laffitt Tandem provides a classic chiseled stone aesthetic look that beautifully enhances your outdoor living space. With the use of the Tandem Wall platform it allows the ability for 24 different facial textures and three color blend option. Create inviting and memorable backyard and light commercial spaces with Lafitt Tandem wall.



## Lamina

Lamina Tandem provides the look and feel of natural stacked stone with the versatility of installation options from the Tandem® Wall platform. The multi-cobble unit features a natural chiseled texture and the unique z-shape allows for a seamless connection between units. Create beautiful freestanding walls, retaining walls and outdoor entertaining features with Lamina Tandem.

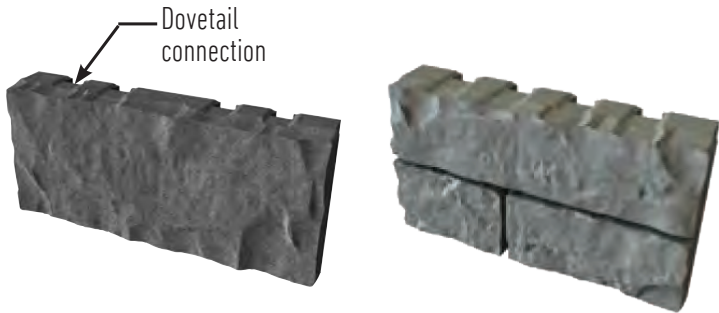


## Melville

Melville Tandem™ provides a modern, clean look and feel that will complement any outdoor space. The innovative, versatile system can be used to create attractive, curved or straight retaining and freestanding landscape walls. Great for use in a wide range of residential and light commercial hardscape projects.



# Tandem® Wall Components



Lafitt Tandem Unit      Lafitt Tandem Ashlar Unit

Small Unit	Lafitt Tandem™
Approx. Dimensions	7"H x 13 3⁄8"W x 2 5⁄8"D
Approx. Weight*	18 lbs.
Coverage	0.65 sq. ft.
Medium Unit	
Approx. Dimensions	7"H x 15 7⁄8"W x 2 5⁄8"D
Approx. Weight*	22 lbs.
Coverage	0.78 sq. ft.
Large Unit	
Approx. Dimensions	7"H x 18 1⁄2"W x 2 5⁄8"D
Approx. Weight*	25 lbs.
Coverage	0.91 sq. ft.
Cap	
Approx. Dimensions	3 1⁄4"H x 24"W x 15"D
Approx. Weight*	91 lbs.
Coverage	2 lin. ft.



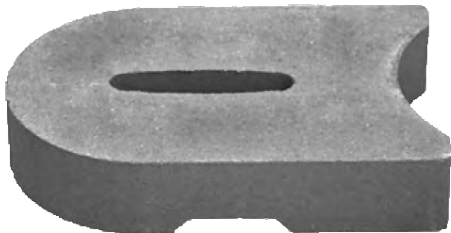
Lamina Tandem Unit

Small Unit	Lamina Tandem™
Approx. Dimensions	7"H x 15.8"W x 4.638"D
Approx. Weight*	18 lbs.
Coverage	0.65 sq. ft.
Medium Unit	
Approx. Dimensions	7"H x 18.5"W x 2.63"D
Approx. Weight*	21 lbs.
Coverage	0.78 sq. ft.
Large Unit	
Approx. Dimensions	7"H x 21.1"W x 2.638"D
Approx. Weight*	25 lbs.
Coverage	0.91 sq. ft.
Cap	
Approx. Dimensions	3 1⁄4"H x 24"W x 15"D
Approx. Weight*	91 lbs.
Coverage	2 lin. ft.



Melville Tandem Unit

Small Unit	Melville Tandem™
Approx. Dimensions	7 1⁄16"H x 13 1⁄16"W x 2 5⁄8"D
Approx. Weight*	17 lbs.
Coverage	0.65 sq. ft.
Medium Unit	
Approx. Dimensions	7 1⁄16"H x 15 1⁄16"W x 2 5⁄8"D
Approx. Weight*	20 lbs.
Coverage	0.78 sq. ft.
Large Unit	
Approx. Dimensions	7 1⁄16"H x 18 1⁄2"W x 2 5⁄8"D
Approx. Weight*	24 lbs.
Coverage	0.91 sq. ft.

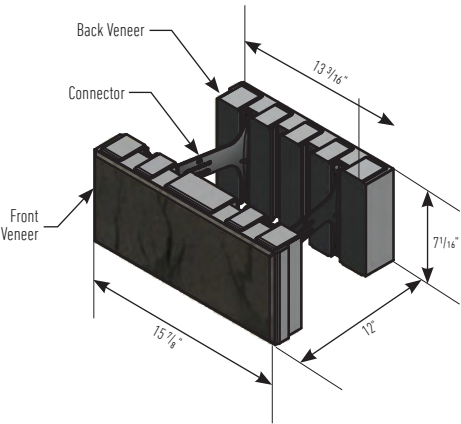


U Start® Base Block

One Size	Lamina Tandem™
Approx. Dimensions	18 7⁄16"H x 12"W x 3 1⁄2"D
Approx. Weight*	47 lbs
Coverage	1.31 lin. ft

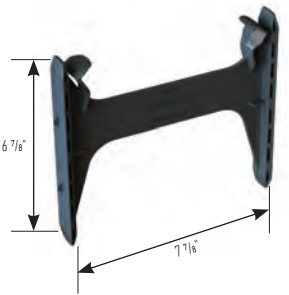
## CONNECTING MEMBER PRODUCT DATA

ASTM Standards	Property	Test Method	Value	Units
Physical	Specific Gravity	ASTM D 792	.930	G/CC
	Melt Mass Flow Rate	ASTM D1238	20	g/10 min
Mechanical	Tensile Strength	ASTM D 638	3,800	psi
	Tensile Elongation	ASTM D 638	5.0	%
	Flexural Modulus	ASTM D 790	175,000	psi
Impact	Notched Izod Impact	ASTM D 256	2.0	ft.-lb./in.
Thermal	Deflection Temperature Under Load	ASTM D648	175	°F



## FEATURES & BENEFITS

- Gravity wall height up to 3 feet without surcharge and reinforced walls up to 8'
- 2.6 connectors per sq. ft. of wall
- Polypropylene Copolymer
- 2 connectors per unit
- 3 bags of connectors for every pallet of panels
- Belgard's connector design creates structural integrity in curved or straight walls.



\*Weight may vary. Please check with your local Belgard representative for exact product specifications. Above values may change with materials.



# Installation Instructions

Visit **Belgard.com/Tandem** to watch installation video.



**STEP 1:** Remove all surface vegetation and debris. Select the length of the wall and excavate a trench the length of the wall and approximately 12" from top of final grade. Then place a minimum of 6" of dense graded aggregate and compact to 95% standard density or modified. It's not recommended to use a pea rock or a rounded type of material on the base.



**STEP 2:** Place the U Start Base Block® on the compacted gravel. Level the U Start units front to back as well as side to side. Making sure the units are fully level.



**STEP 5:** Once the Tandem Wall units have been placed. Run a string line along the back of the front or rear panel to assure you are keeping the wall units straight in line.



**STEP 6:** Place 3/4" crushed rock in between the panels to provide frictional connection and proper internal drainage.



**STEP 3:** Assemble the Tandem Wall units by inserting the Tandem Wall connectors into the dove tails. Make sure the front and rear panels are the same length.



**STEP 4:** Place the assembled Tandem Wall unit on the top of the U Start Base Block, making sure that the first course is centered on the base block. Check to make sure units are kept level.



**STEP 7:** Lightly hand compact the gravel in between the panels for proper compaction.



**STEP 8:** Place 12" of 3/4" drainage rock behind the rear panel of the wall. This will provide for proper drainage behind retaining walls.



# Installation Instructions *(cont'd)*



**STEP 9:** Set additional courses of the Tandem Wall. Making sure that you are keeping the wall in proper alignment. Backfill and compact each additional course.



**STEP 10:** When placing the cap on top of Tandem Wall, use a construction adhesive to secure the cap to the top of the wall.

**STEP 11:** Finished Project.



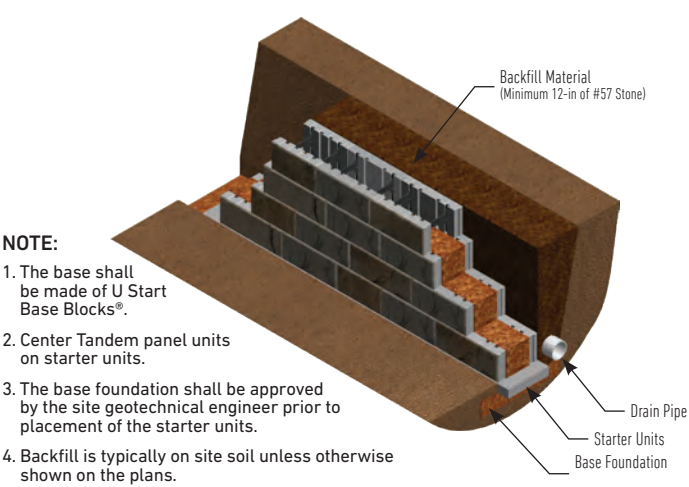
## Design Details



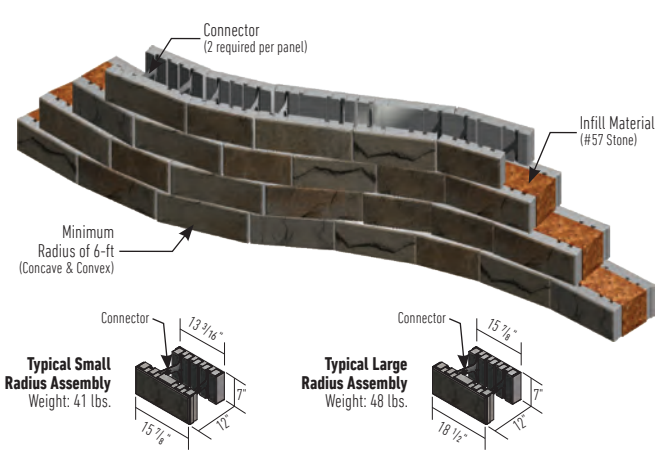


# Retaining Walls

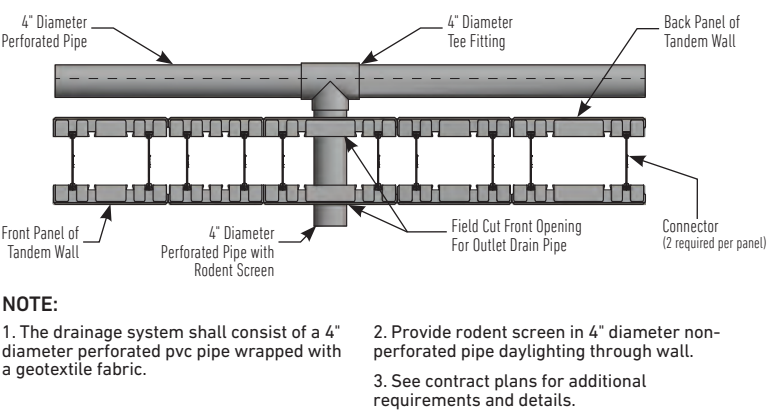
TYPICAL WALL BASE PAD (ISOMETRIC VIEW)



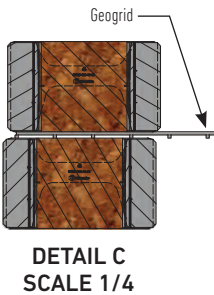
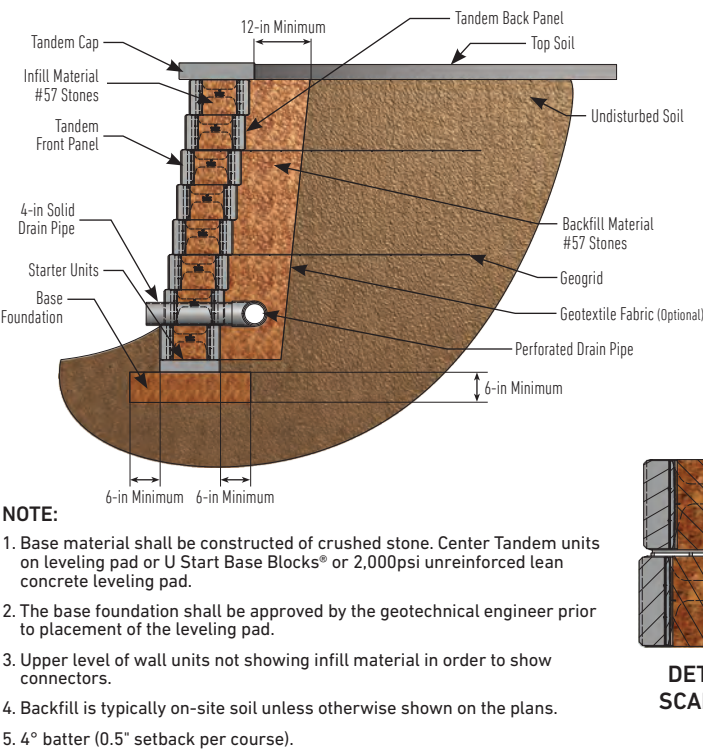
TYPICAL CURVED RETAINING WALL WITH SET-BACK



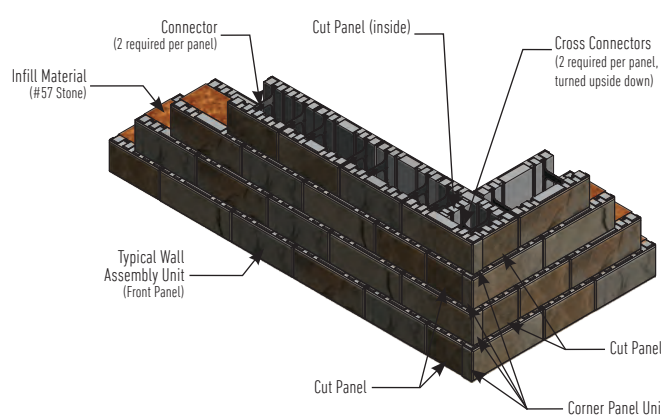
TYPICAL DRAINAGE OUTLET THROUGH WALL FACE DETAIL



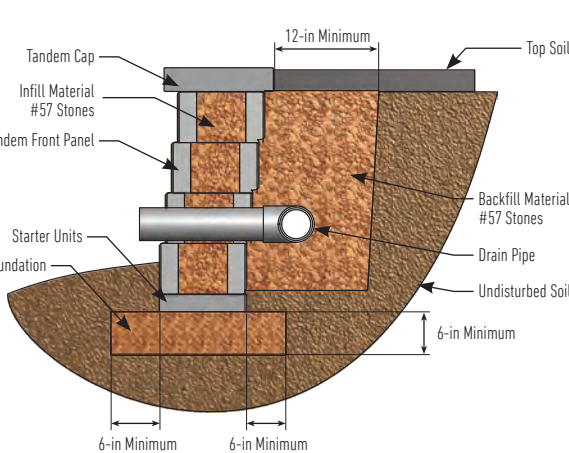
TYPICAL SECTION WITH GEOGRID



TYPICAL RETAINING WALL WITH 0.5" SET-BACK & 90° CORNER

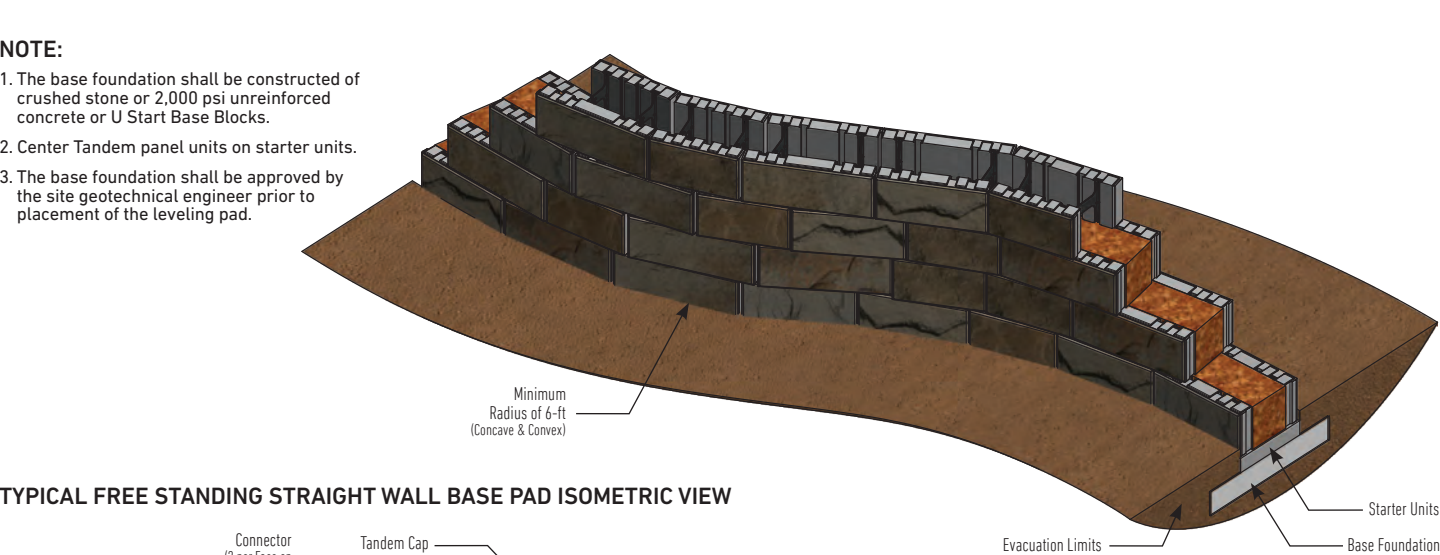


TYPICAL CROSS SECTION

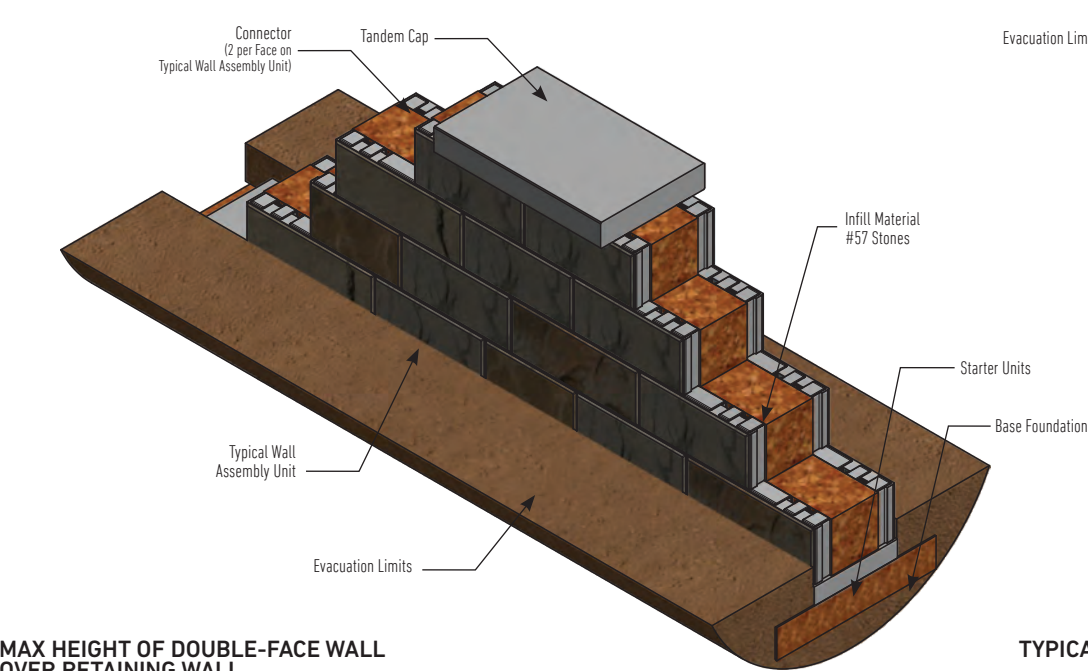


# Free Standing Walls

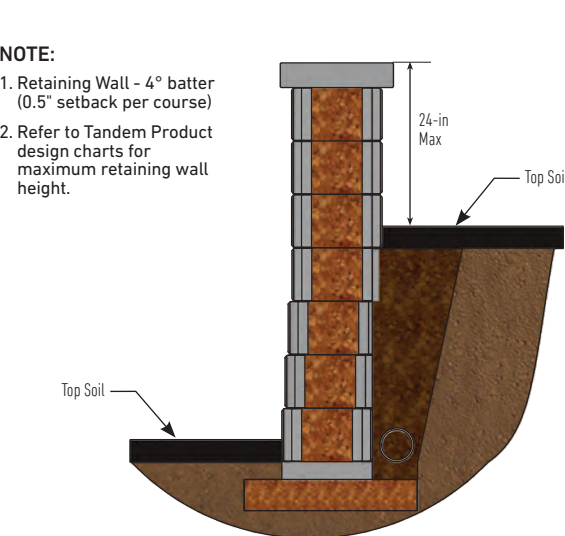
TYPICAL FREE STANDING CURVED WALL BASE PAD ISOMETRIC VIEW



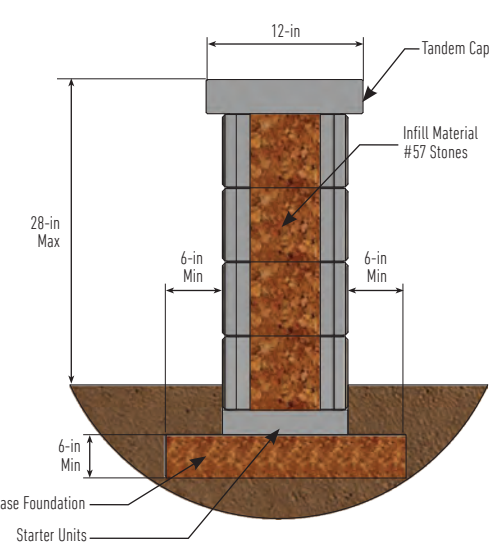
TYPICAL FREE STANDING STRAIGHT WALL BASE PAD ISOMETRIC VIEW



MAX HEIGHT OF DOUBLE-FACE WALL OVER RETAINING WALL



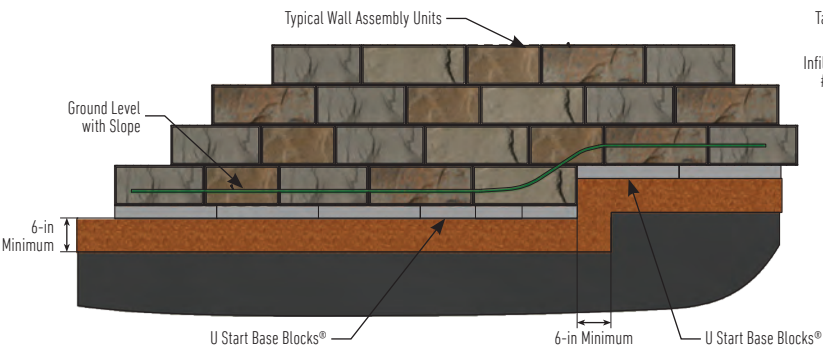
TYPICAL CROSS SECTION VIEW



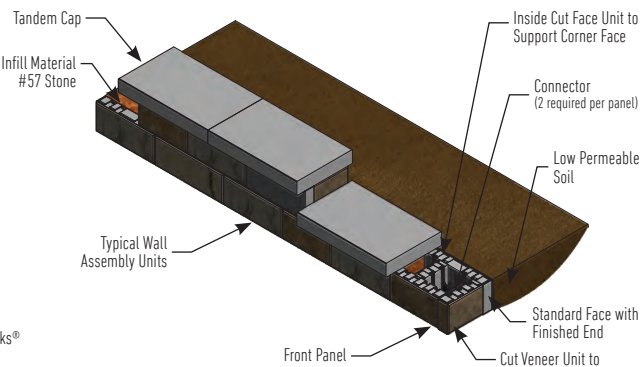


# Steps & Corners

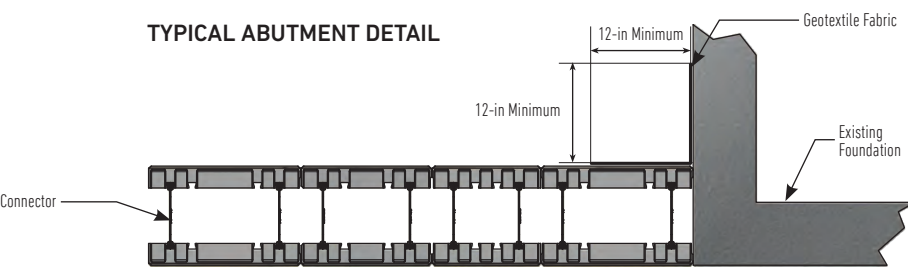
TYPICAL ELEVATION WALL WITH SLOPE



TYPICAL TOP OF WALL STEPS

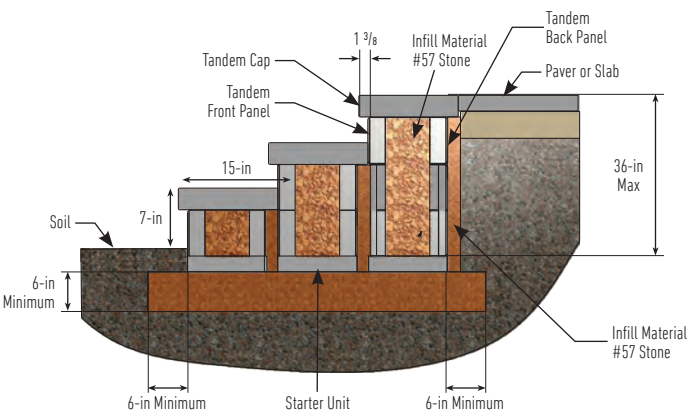
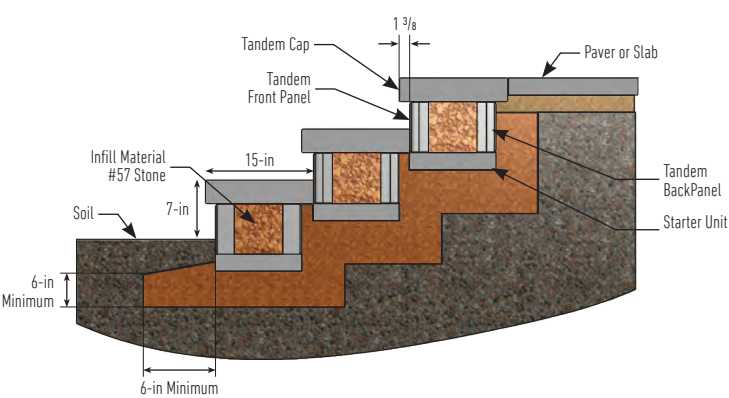
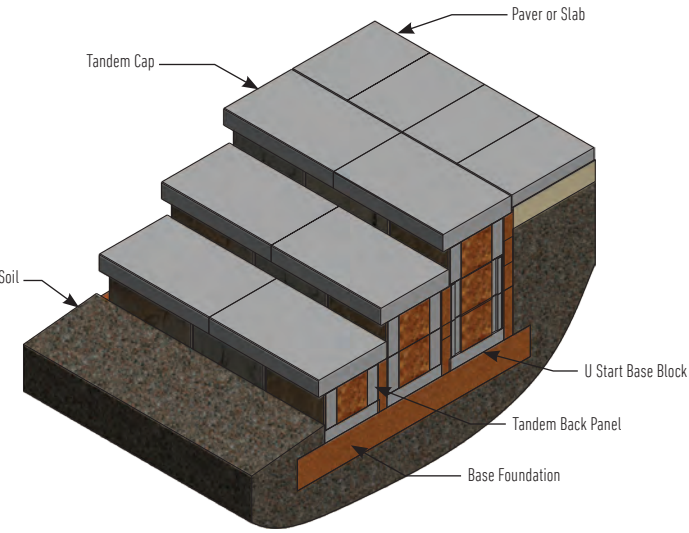
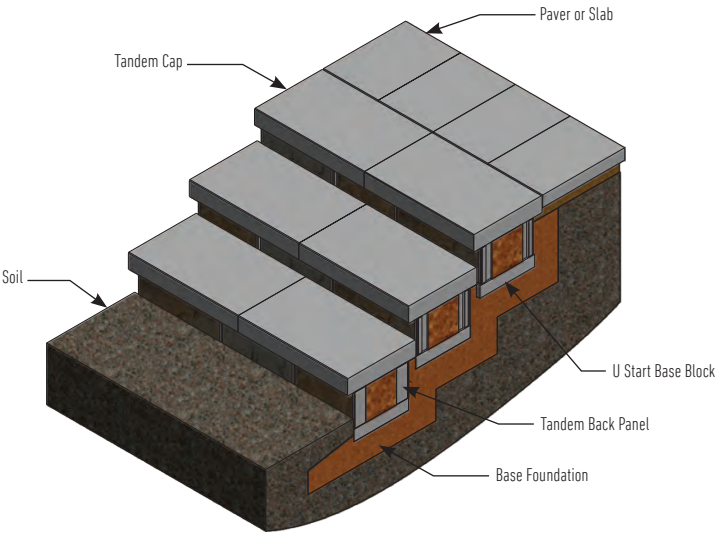


TYPICAL ABUTMENT DETAIL



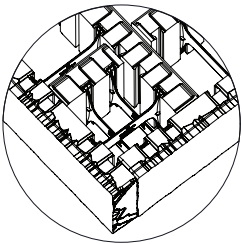
**NOTE:**  
Geotextile fabric shall be placed where the retaining wall abut to existing foundations as shown on the retaining wall site plans. Overlap all abutment joints 12" with minimum 24" fabric.

STEP DETAIL VIEWS:



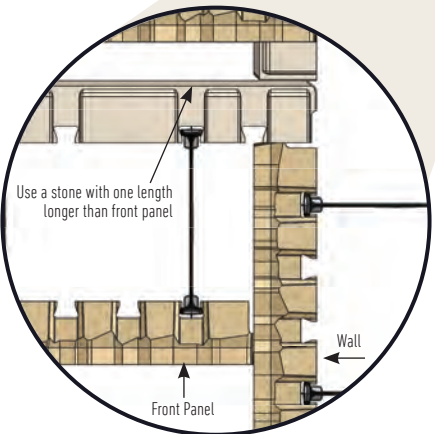
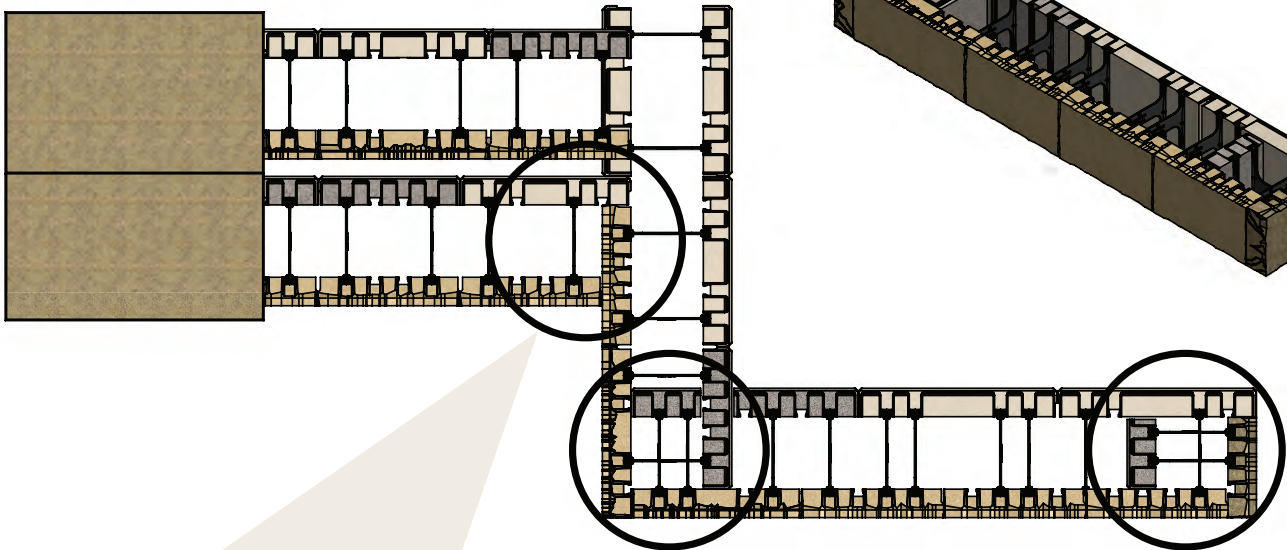
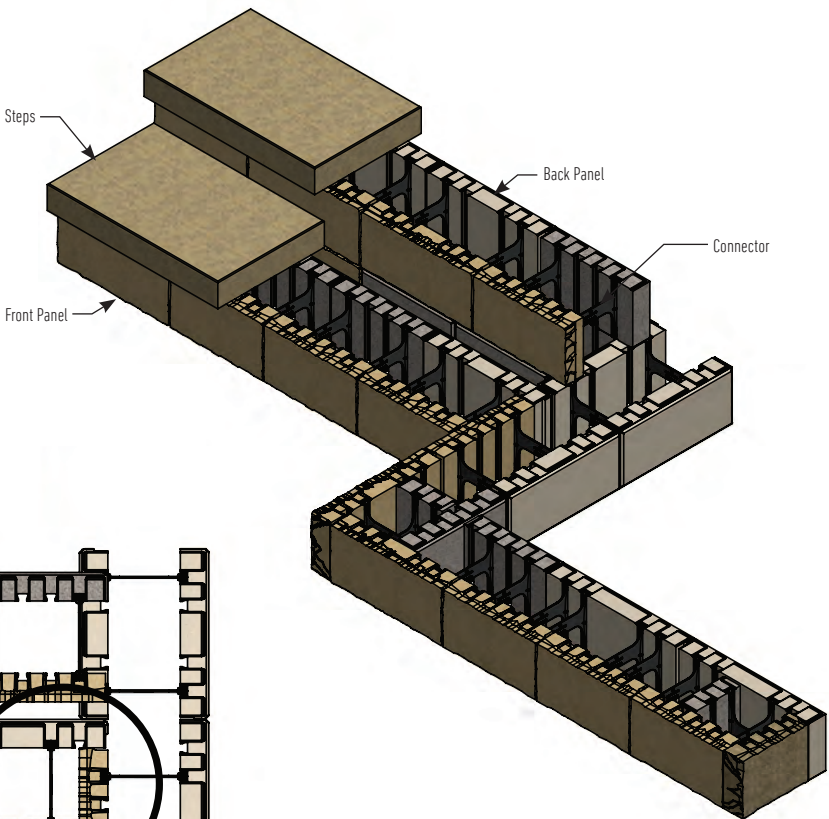
# Steps & Corners (cont'd)

TOP VIEW OF STEPS INTEGRATED INTO WALL

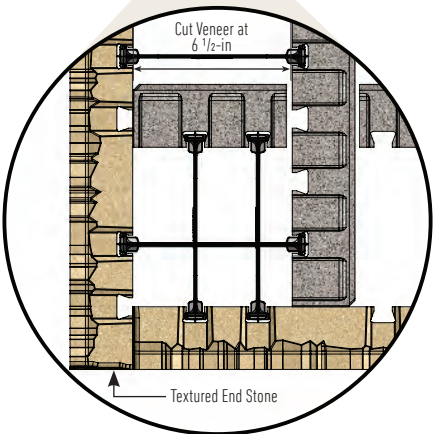


CORNER DETAIL

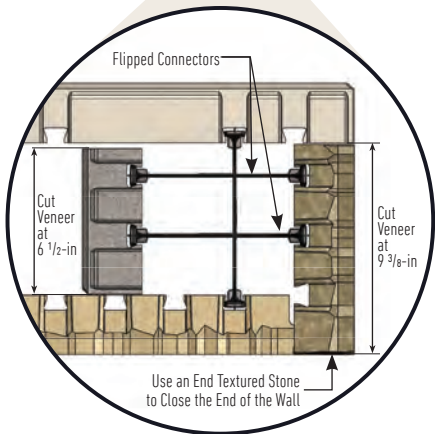
Connectors in corners and at ends of wall must be flipped to avoid interference



DETAIL: TYPICAL STEP INTEGRATION INTO WALL



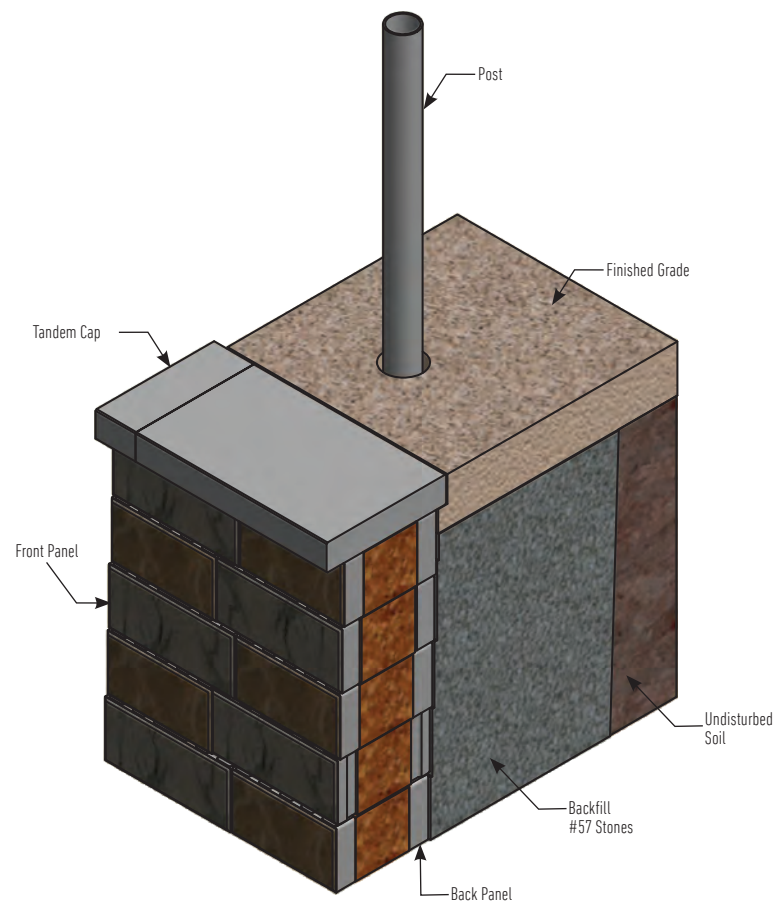
DETAIL: TYPICAL CORNER WALL



DETAIL: TYPICAL END OF WALL

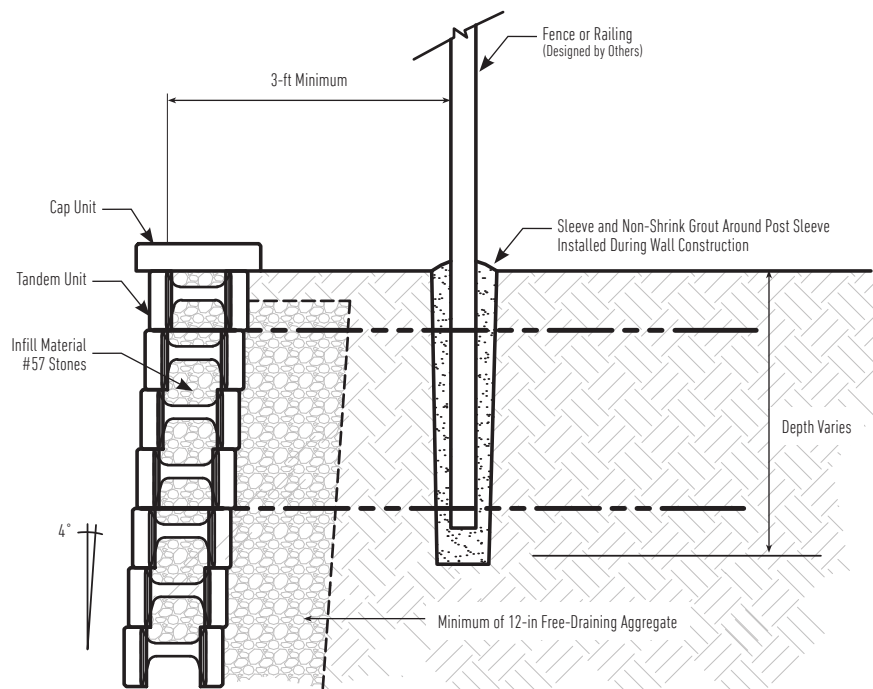


# Post Detail View



- NOTE:**
- 1. Geogrid shall be placed on level backfill and extended over connector and up to the face of the unit, pull grid taut and backfill. Stake as required.
  - 2. Backfill is typically onsite soil unless otherwise shown on the plans.
  - 3. Geotextile fabric as specified by the designing engineer and should be placed at the back of the stone, it is recommended to be used to prevent native soils from infiltrating into the infill material.

TYPICAL FENCE CROSS SECTION

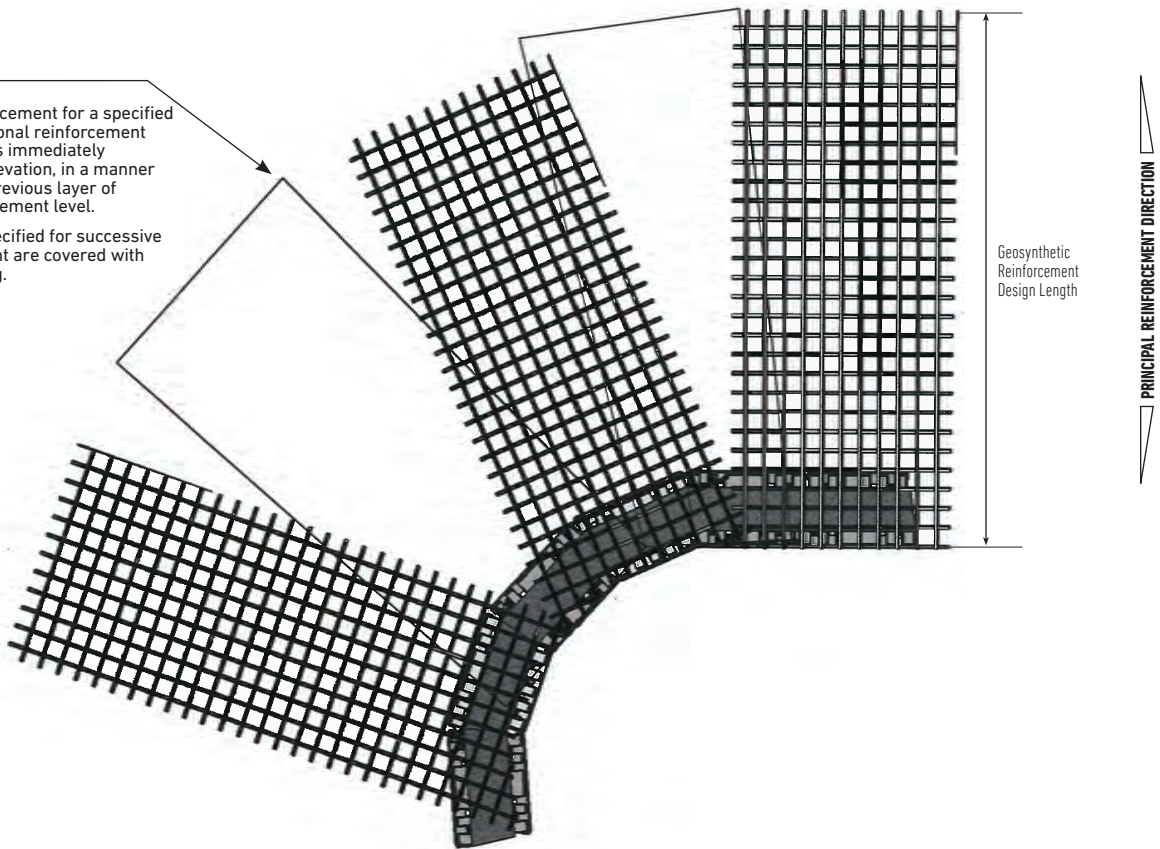


- NOTE:**
- 1. Redirect geogrid above drainage pipes as required to avoid obstructions with drainage pipes extending transversely through the reinforced zone.
  - 2. Reinforce the walls at the vertical obstruction as shown.
  - 3. Backfill is typically onsite soil unless otherwise shown on the plans.

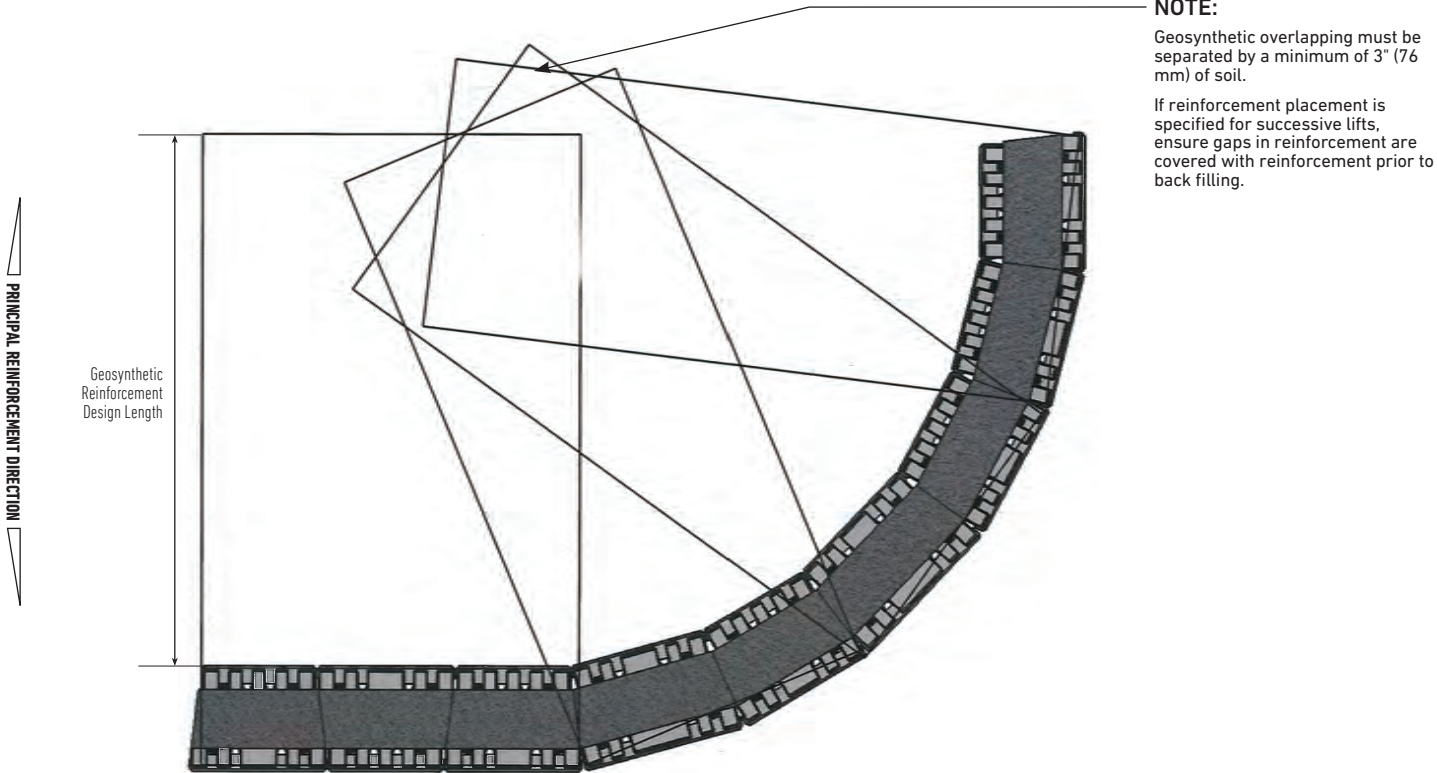
# Typical Geogrid Installation in Curves

REINFORCEMENT PLACEMENT FOR CONCAVE CURVES

- NOTE:**
- To complete placement of reinforcement for a specified placement elevation, place additional reinforcement on next course of segmental units immediately above the specified placement elevation, in a manner that eliminates gaps left by the previous layer of geosynthetic at specified reinforcement level.
- If reinforcement placement is specified for successive lifts, ensure gaps in reinforcement are covered with reinforcement prior to back filling.



REINFORCEMENT PLACEMENT FOR CONVEX CURVES



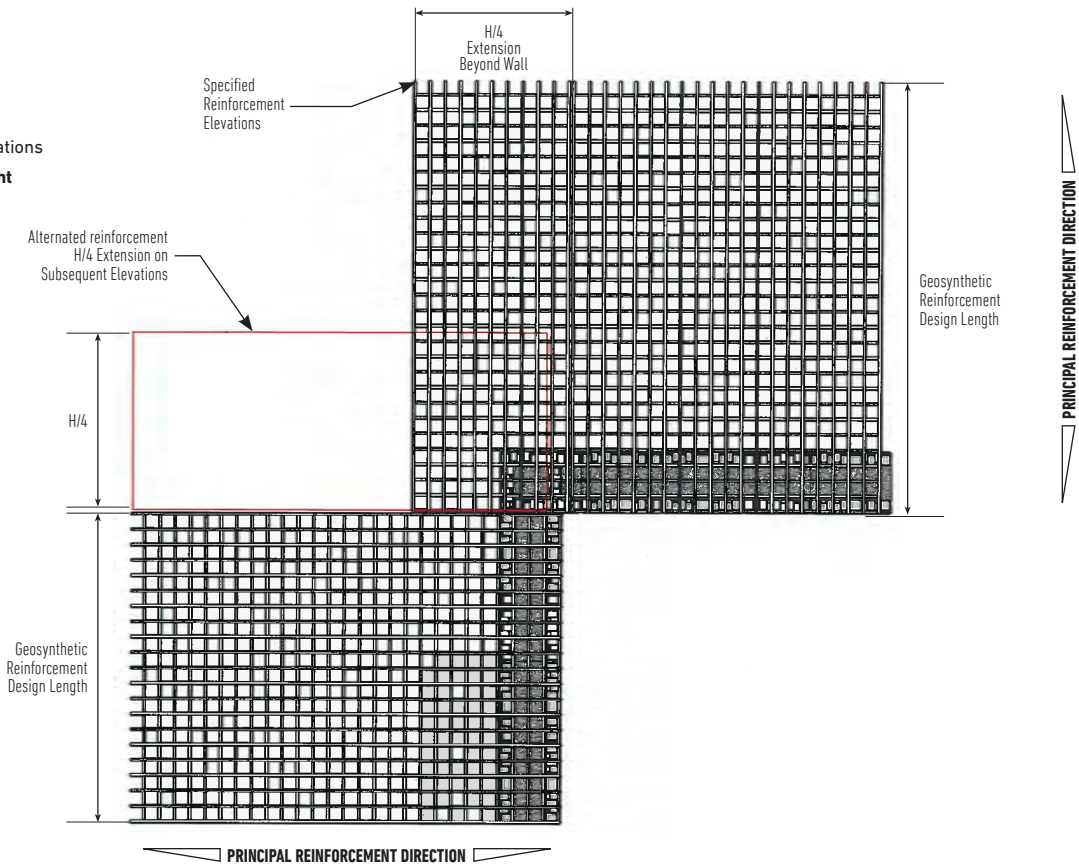
- NOTE:**
- Geosynthetic overlapping must be separated by a minimum of 3" (76 mm) of soil.
- If reinforcement placement is specified for successive lifts, ensure gaps in reinforcement are covered with reinforcement prior to back filling.



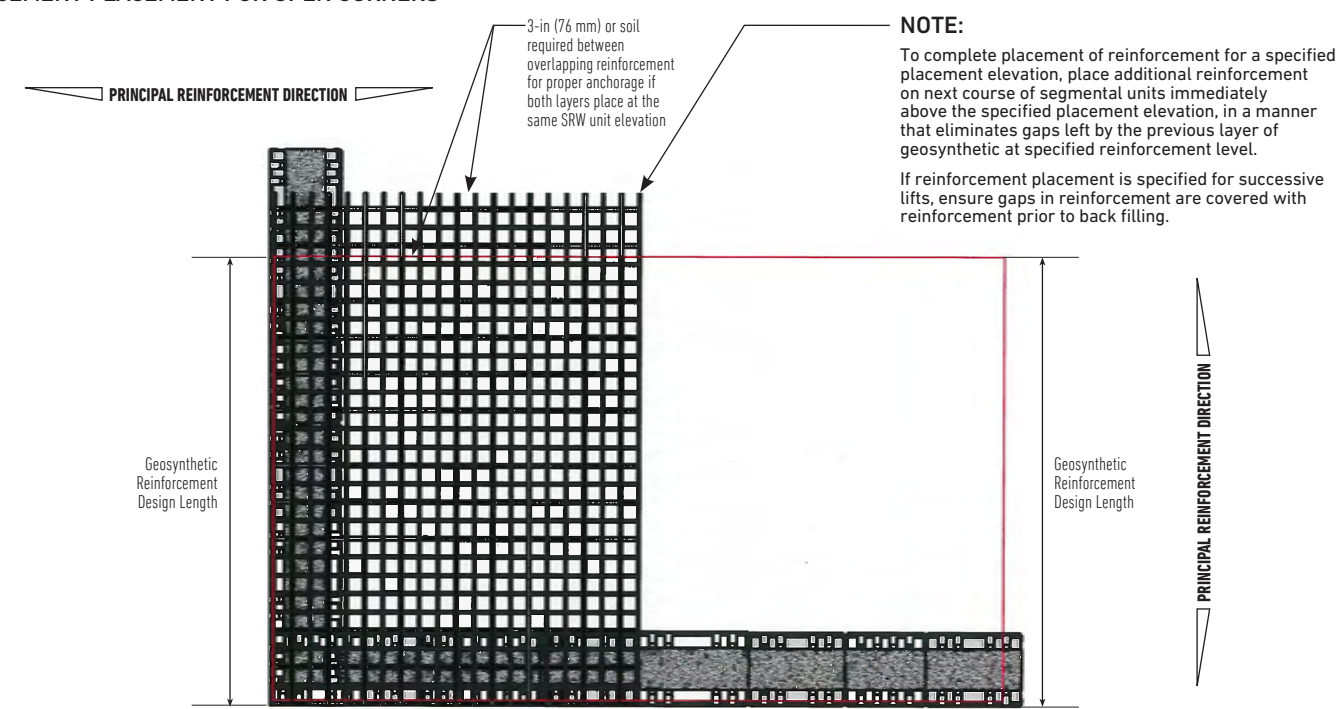
# Typical Geogrid Installation in Corners

## REINFORCEMENT PLACEMENT FOR CLOSED CORNERS

**NOTE:**  
Alternate placement of reinforcement extension on specified reinforcement elevations  
**H = Total Finished Wall Height**



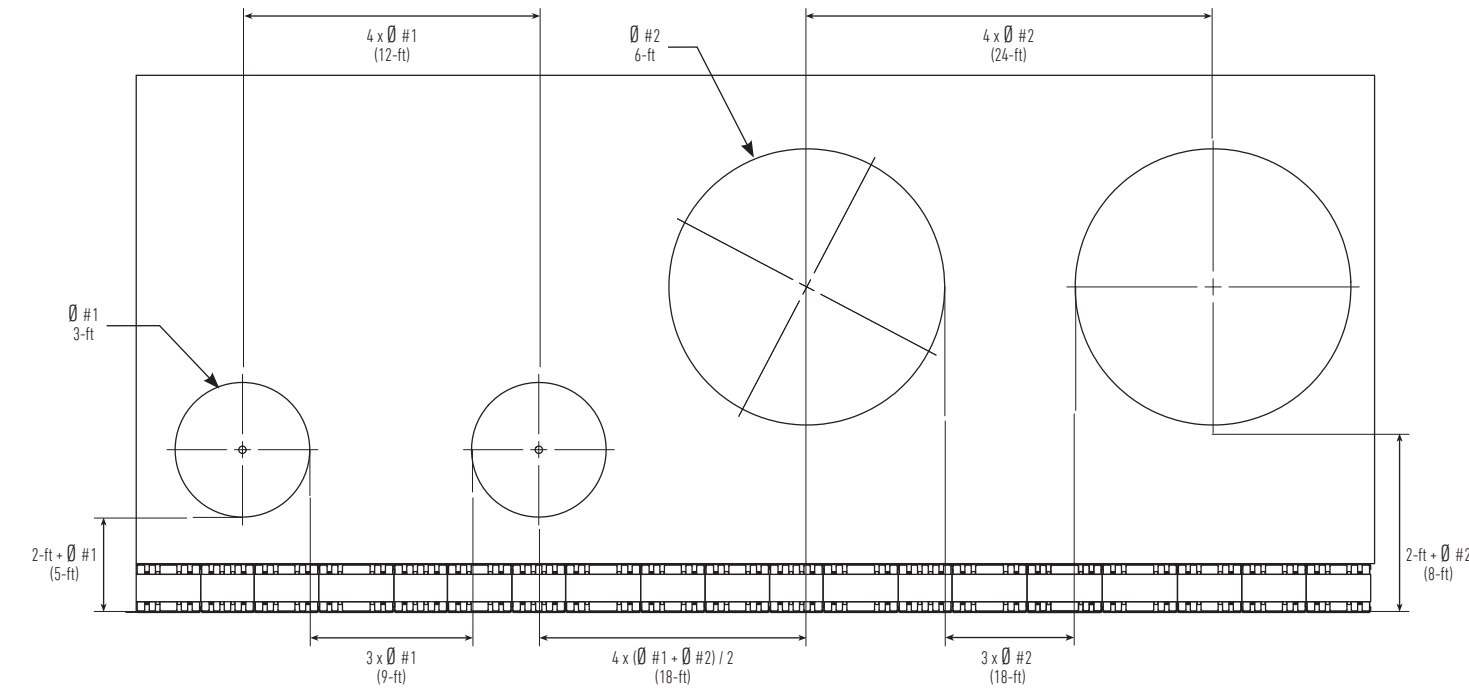
## REINFORCEMENT PLACEMENT FOR OPEN CORNERS



**NOTE:**  
Alternative to overlapping in a single course, reinforcement could be placed in perpendicular principal direction in the cross-over area on the subsequent course.

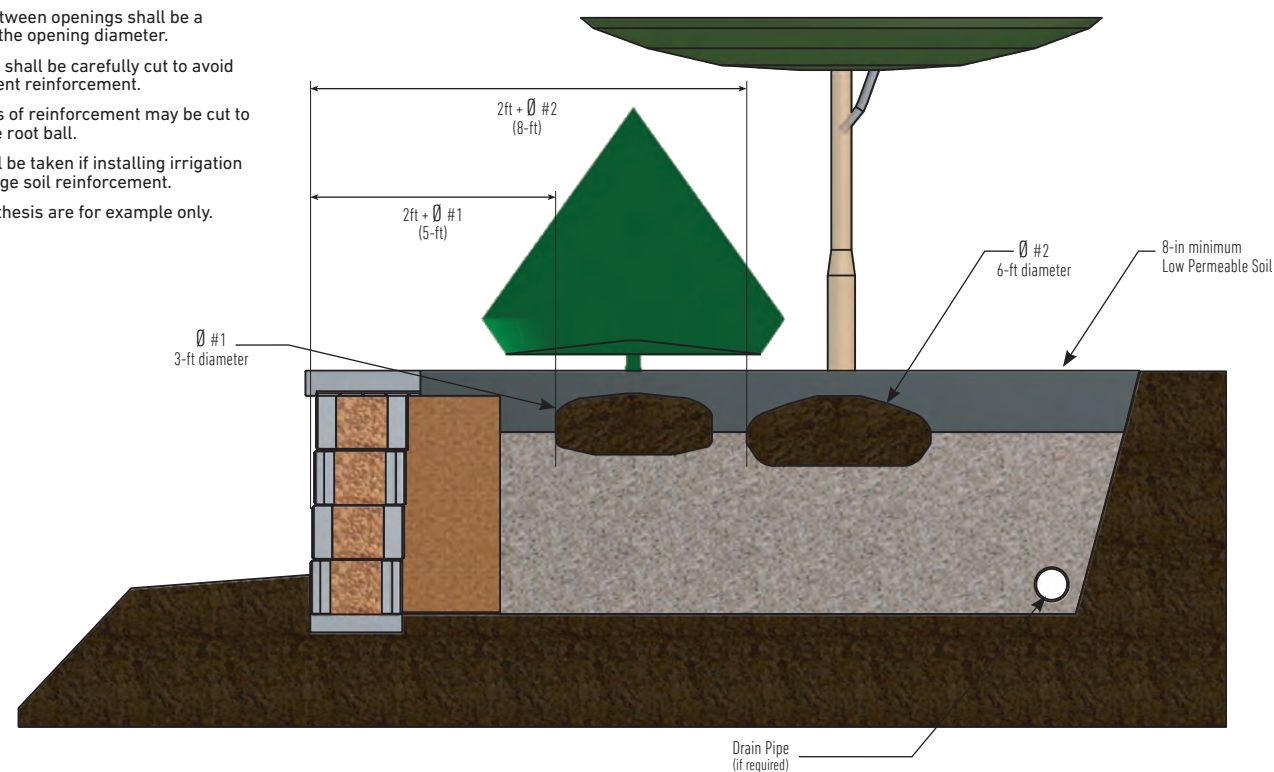
# Design Details: Typical Wall with Trees

## PLAN VIEW



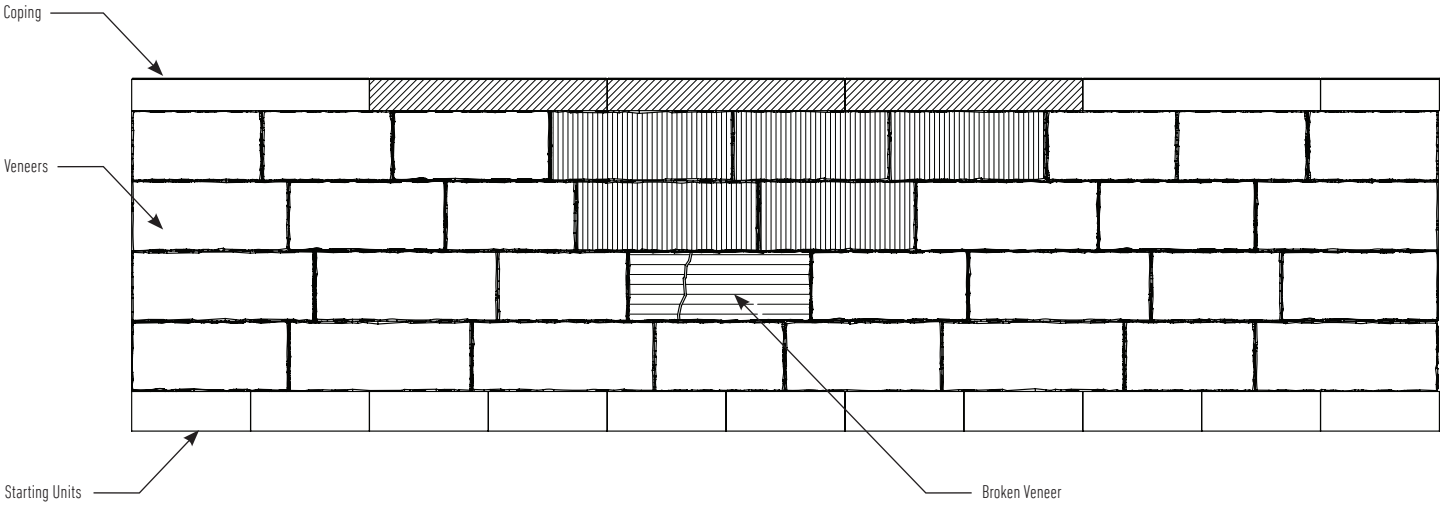
- NOTE:**
1. All planting offsets shall be a minimum of 2 feet + the opening diameter as measured from face of the wall
  2. Lateral spacing between openings shall be a minimum of 3 times the opening diameter.
  3. Soil reinforcement shall be carefully cut to avoid disturbance of adjacent reinforcement.
  4. Only top two layers of reinforcement may be cut to allow planting of tree root ball.
  5. Extreme care shall be taken if installing irrigation systems to not damage soil reinforcement.
  6. Numbers in parenthesis are for example only.

## SECTION VIEW

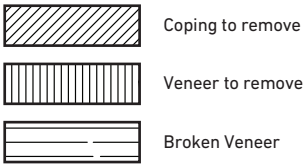




# Design Details: Broken Panel Replacement

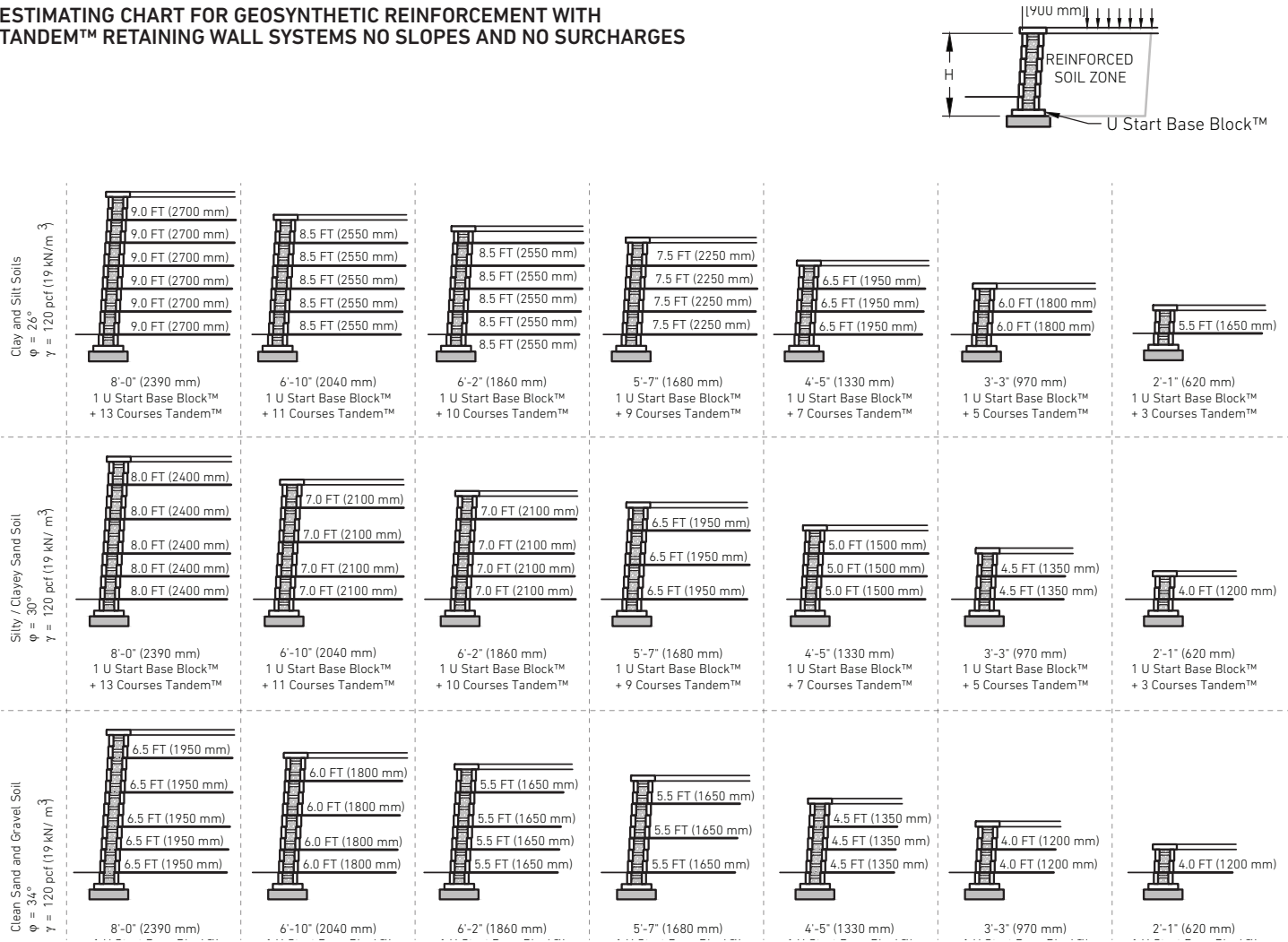


**NOTE:**  
Before replacing the broken veneer, remove all the veneers and copings  
From top of it in a "v" shape. Once the aggregates are drained from that space, replace the broken veneer  
And put back the other veneers before refilling the wall.



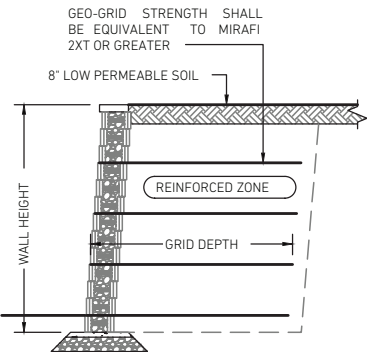
# Geogrid Estimating Charts

ESTIMATING CHART FOR GEOSYNTHETIC REINFORCEMENT WITH TANDEM™ RETAINING WALL SYSTEMS NO SLOPES AND NO SURCHARGES



**BELGARD® - TANDEM WALL™ REINFORCED GEOGRID DEPTHS (NO SURCHARGE)**

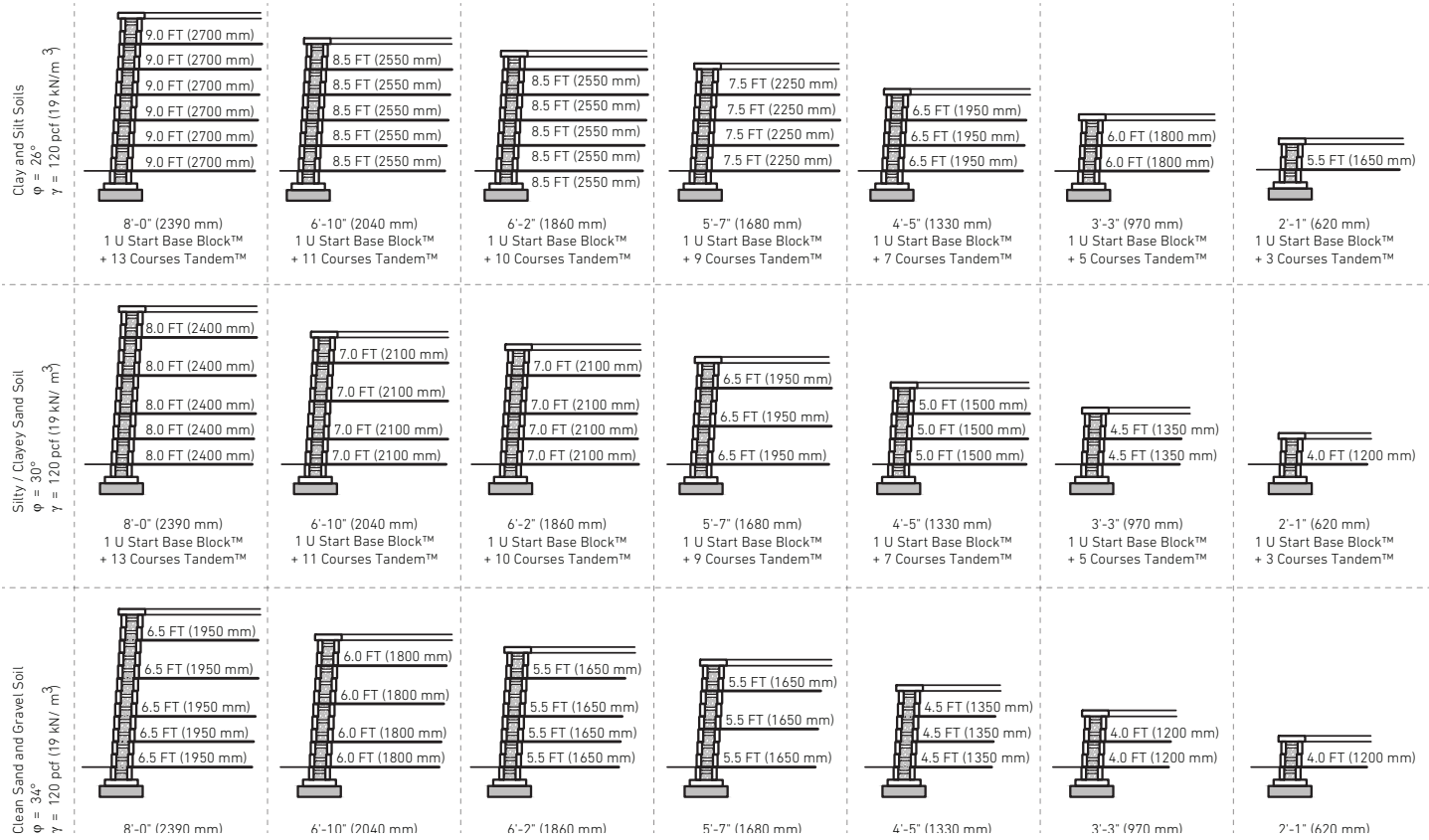
Notes: Calculations assume a unit weight of 120 LBS/CF Assumed for all soil types. Assumed  $\Phi$  angles for earth pressure calculations are: Select Granular = 34° Silty Sand = 30° and Sandy Lean Clay = 26° Non critical structures with safety factor >1.5. Sliding calculations assume 6" crushed stone leveling pad as compacted foundation material. The information provided is for preliminary design use only. A qualified Professional Engineer shall be consulted. Belgard accepts no liability for the improper use of these tables.





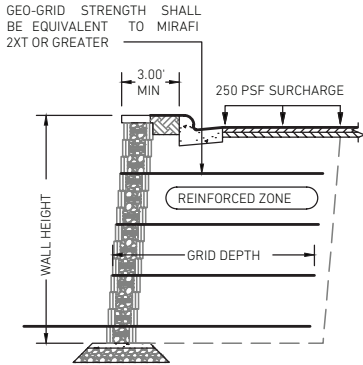
Geogrid Estimating Charts (cont'd)

ESTIMATING CHART FOR GEOSYNTHETIC REINFORCEMENT WITH TANDEM™ RETAINING WALL SYSTEMS 250 PSF SURCHARGE



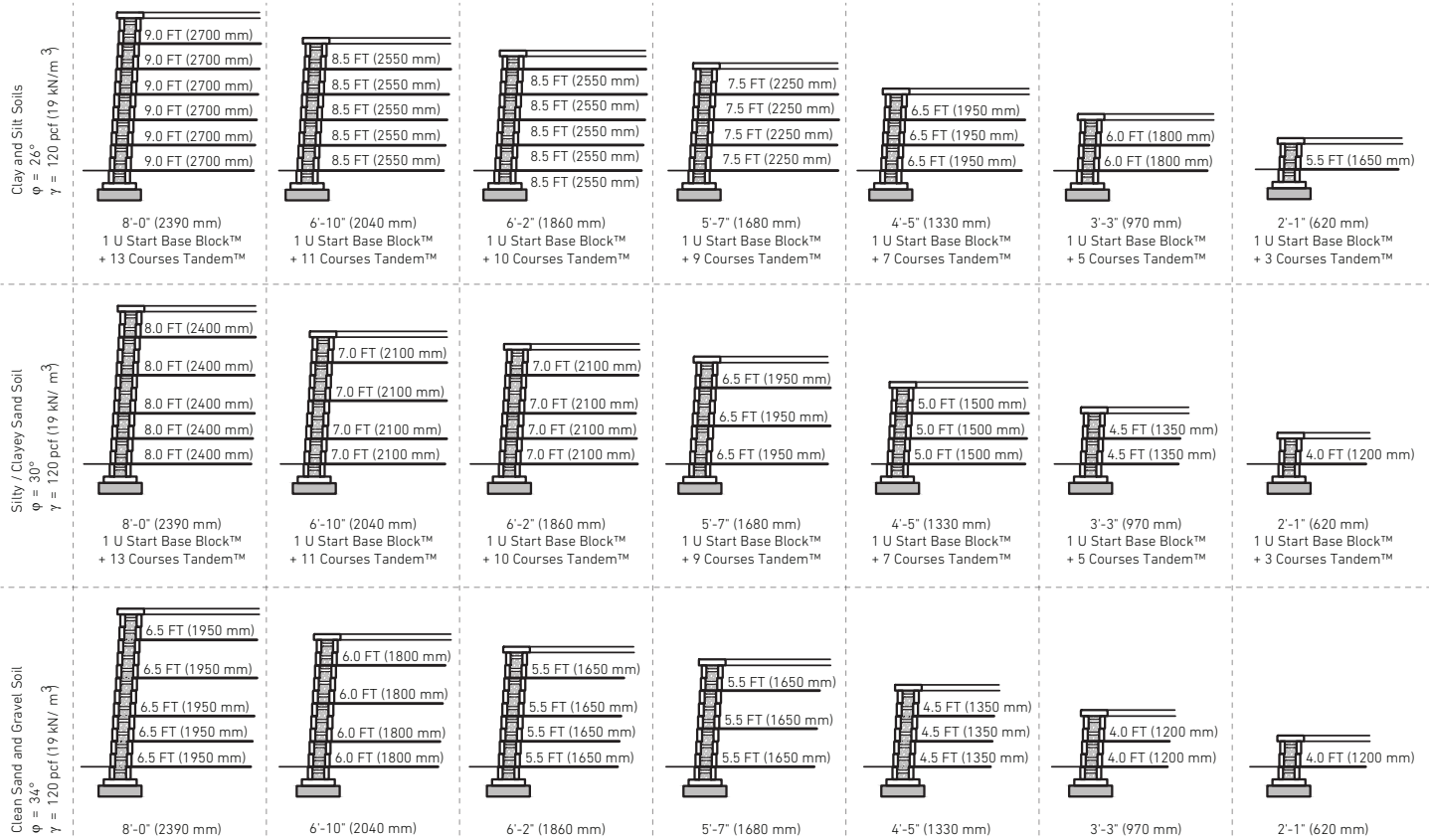
BELGARD® - TANDEM WALL™ REINFORCED GEOGRID DEPTHS (250 PSF LIVE LOAD)

Notes: Calculations assume a unit weight of 120 LBS/CF Assumed for all soil types. Assumed  $\phi$  angles for earth pressure calculations are: Select Granular =  $34^\circ$ , Silty Sand =  $30^\circ$  and Sandy Lean Clay =  $26^\circ$  Non critical structures with safety factor  $>1.5$ . Sliding calculations assume 6" crushed stone leveling pad as compacted foundation material. The information provided is for preliminary design use only. A qualified Professional Engineer shall be consulted. Oldcastle accepts no liability for the improper use of these tables.



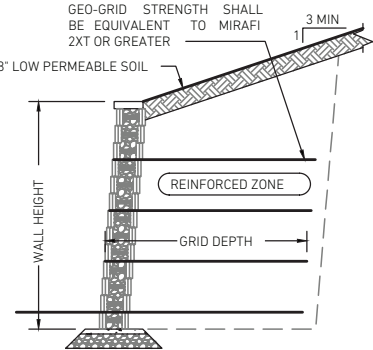
Geogrid Estimating Charts (cont'd)

ESTIMATING CHART FOR GEOSYNTHETIC REINFORCEMENT WITH TANDEM™ RETAINING WALL SYSTEMS



BELGARD® - TANDEM WALL™ REINFORCED GEOGRID DEPTHS (3H:1V BACK SLOPE)


Notes: Calculations assume a unit weight of 120 LBS/CF Assumed for all soil types. Assumed  $\phi$  angles for earth pressure calculations are: Select Granular =  $34^\circ$ , Silty Sand =  $30^\circ$  and Sandy Lean Clay =  $26^\circ$  Non critical structures with safety factor  $>1.5$ . Sliding calculations assume 6" crushed stone leveling pad as compacted foundation material. The information provided is for preliminary design use only. A qualified Professional Engineer shall be consulted. Oldcastle accepts no liability for the improper use of these tables.






# Tandem® Column Installation Guide

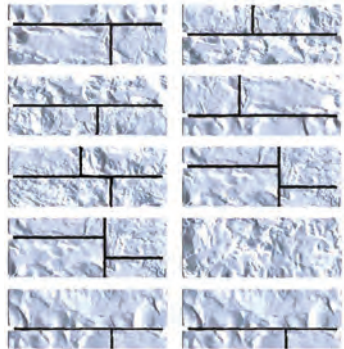
## TANDEM® COLUMN COMPONENTS




1 Column grid  
Final height: 42"



Connectors:  
50 connectors per bag  
(Enough for 1-42" column)




Pallet of panels  
21.8 square feet needed per column.  
Use modules G only (Lg Unit 18.5"w)  
24 of the long pieces are needed (21.6 sf)



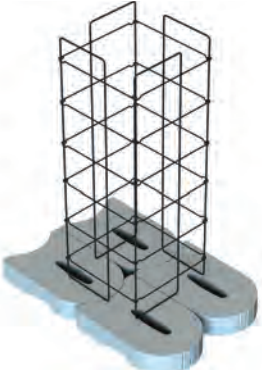
24" x 24"  
Lafitt® Column Cap  
(Sold Separately)

STEP 1




Install U Start Base Block®

STEP 2



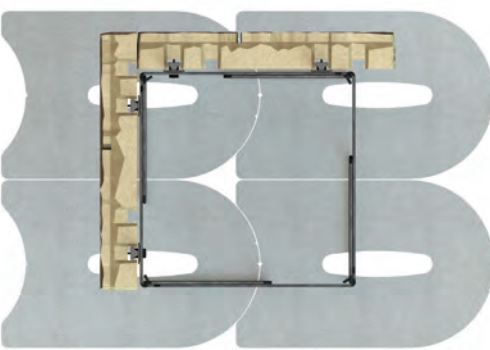
Place the grid on a prepared surface (minimum 6" dense graded aggregate)  
Make sure the outside perimeter of the grid is clear

STEP 3



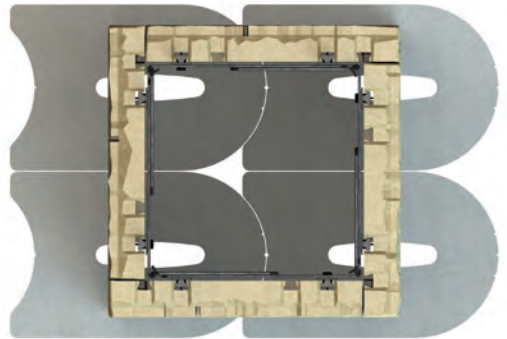
Take a panel and slide the supplied connectors into the dovetails until they snap onto the horizontal rod of the grid.

STEP 4



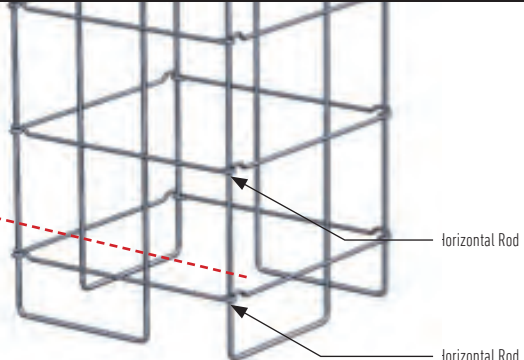
Take another stone and repeat the same process. Make sure you have a corner stone to finish the corner. Once installed, slide the stone along the horizontal axis to adjust the corner.

STEP 5



Once you have completed the first two rows, use a square to make sure the column is square and then fill the space with 3/4" clear aggregate. Fill the empty space with aggregates at every row.

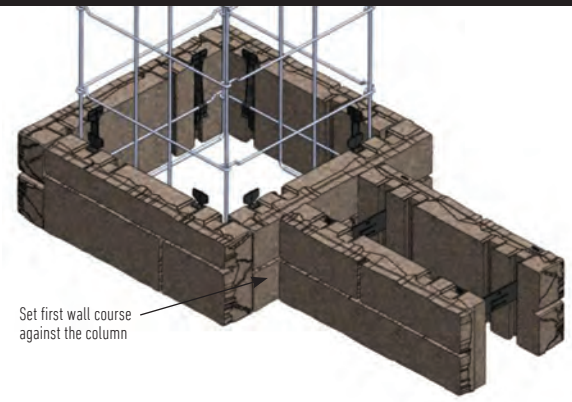
OPTIONAL



Horizontal Rod  
Horizontal Rod  
Cutting Line

If you have to cut the grid before installation on the base, you must cut the vertical rod at mid distance between two horizontal rods as shown below.

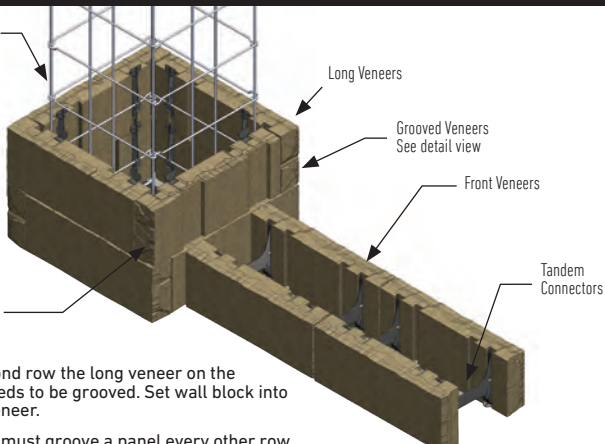
STEP 6



Set first wall course against the column

To integrate a wall into the column set the first course up against the column.

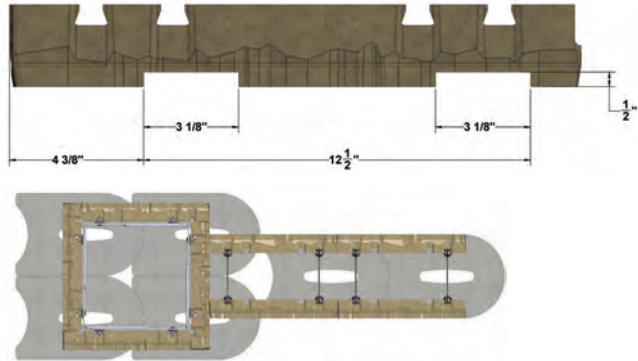
STEP 7



Column Grid  
Long Veneers  
Grooved Veneers See detail view  
Front Veneers  
Front Veneers  
Tandem Connectors

At the second row the long veneer on the column needs to be grooved. Set wall block into grooved veneer.  
**NOTE:** You must groove a panel every other row.

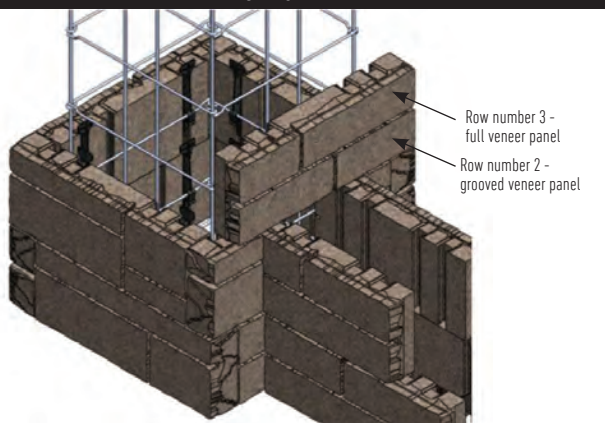
STEP 7: GROOVED VENEER DETAIL



Dimensions: 4 3/8", 3 1/8", 12 1/2", 3 1/8", 1 1/2"

Every other row will require a grooved veneer.

STEP 8



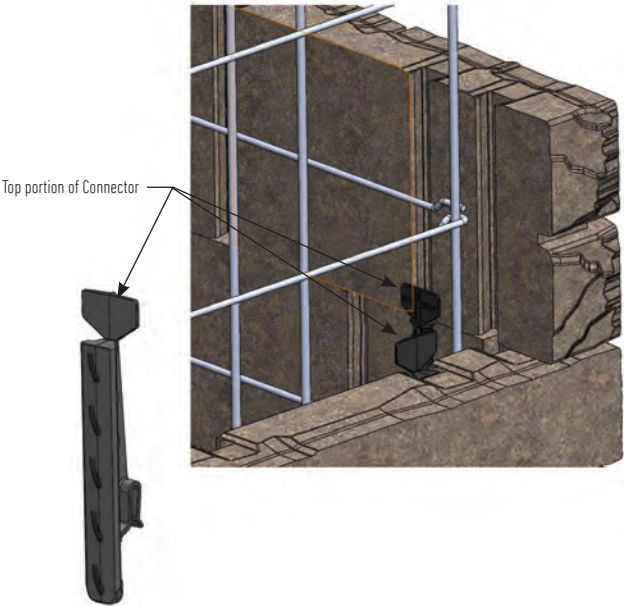
Row number 3 - full veneer panel  
Row number 2 - grooved veneer panel

When starting row 3 place full veneer panel across the top of grooved panel. The wall block in row 3 will butt up against column similar to row 1.



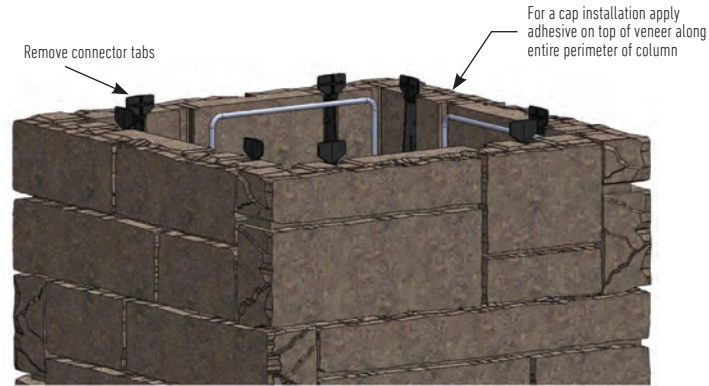
# Tandem® Column Installation Guide *(cont'd)*

STEP 9



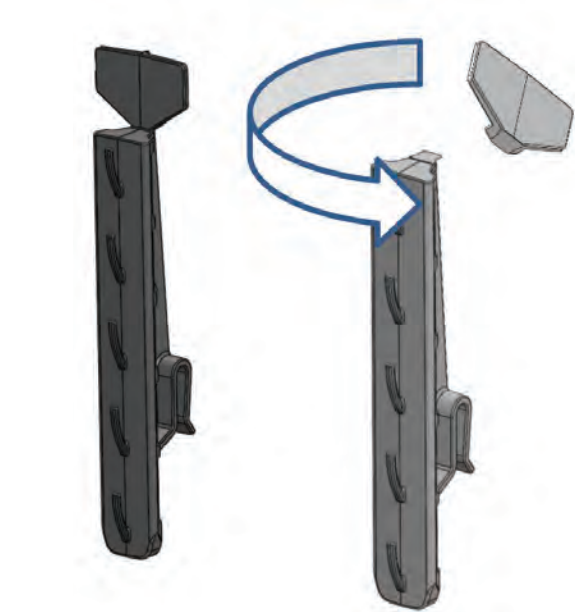
**IMPORTANT**  
When you are starting the second row, make sure the base of the top panel hits the top portion of the connector.

STEP 10



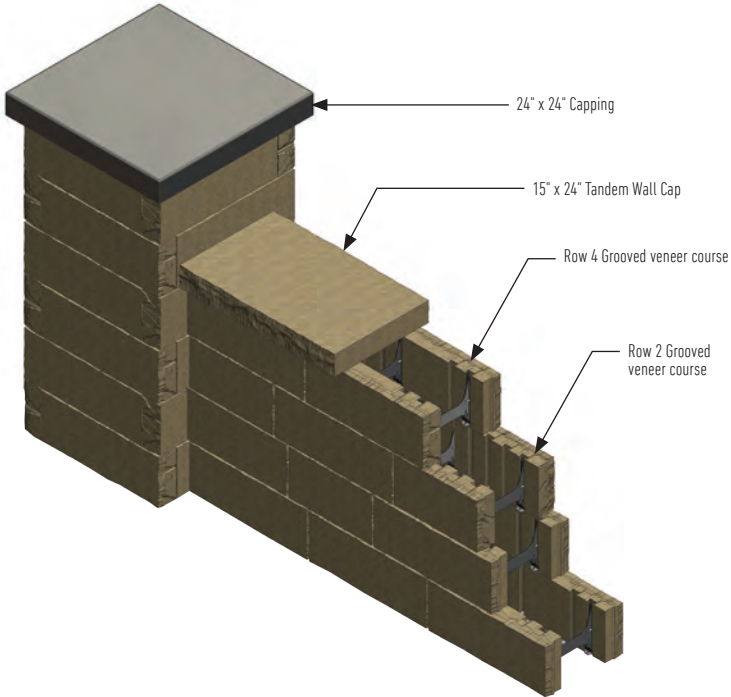
When you have reached the last row, cut the top portion of the connectors with pliers snippers or just by twisting the top portion with your hands.

STEP 11



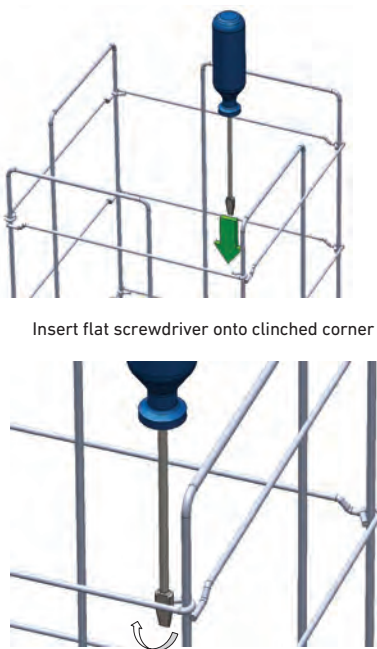
Apply glue on the top of the panels before putting on the capping.  
**IMPORTANT:** The capping must lay on the panels, not on the grid.

FINISHED WALL DETAIL



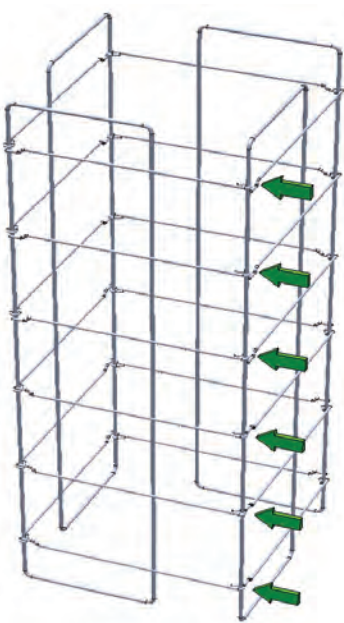
# Tandem® Column Around a Post Installation

STEP 1



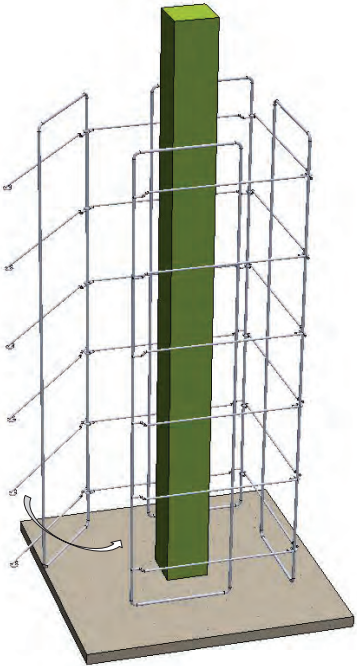
Torque until opening is big enough to clear vertical rod

STEP 2



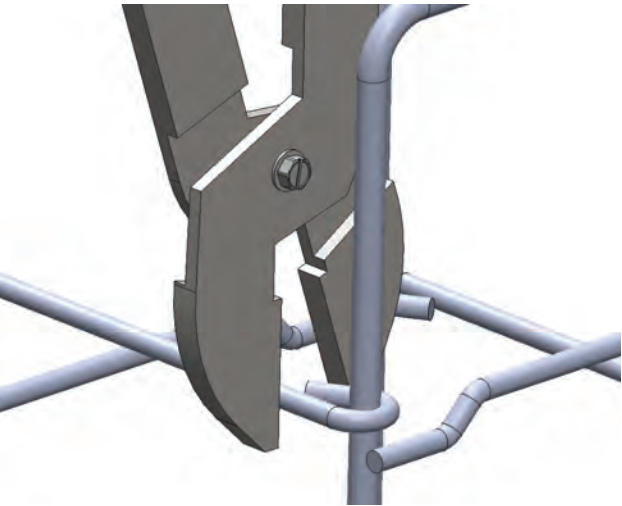
Do the same for all the corners

STEP 3



Surround the post with the cage

STEP 4



Clinch back all the opened corners using a vise



# Tandem® Modular Grid Installation Guide



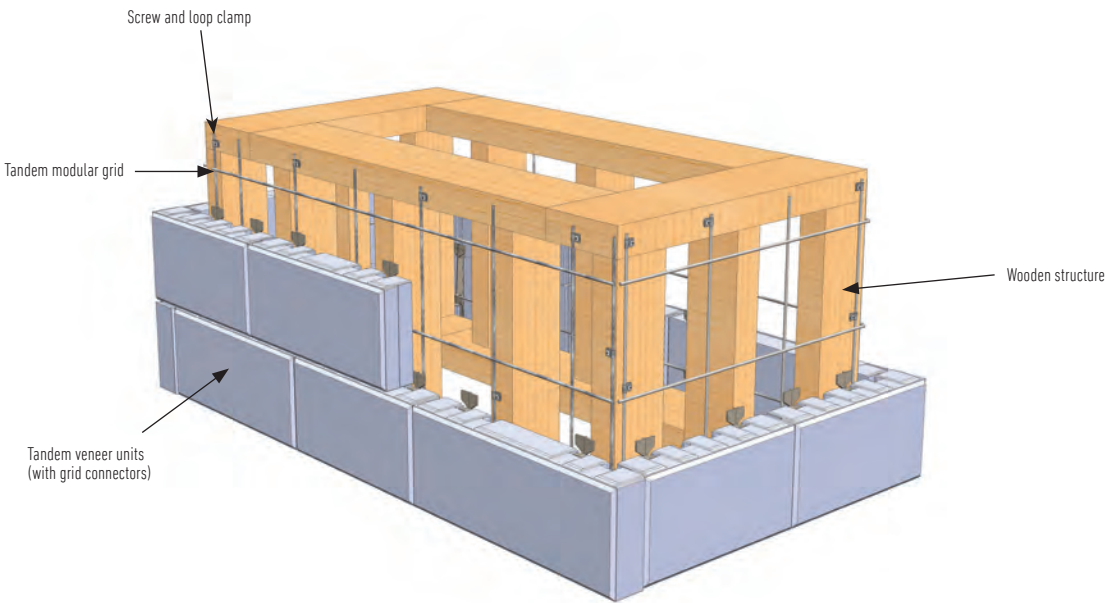
# Construction of Outdoor Living Components

The Tandem® system allows you to install different outdoor living components such as outdoor kitchens (barbecue, fridge, bar), patio furniture (bench and table), flower box, outdoor gas fireplace, privacy wall, fencing and deck skirting.

You can easily build all these features if you use the new Tandem Modular Grid.

### OUR SYSTEM HAS MULTIPLE BENEFITS:

- Provides a unified look for all the features of the landscaping design.
- Provides a durable, economical and maintenance-free solution.
- Offers great flexibility and unrestricted creativity regarding the configuration and size of components to be constructed.
- Offers a solution to difficult issues (e.g. deck skirting).
- Eliminates the use of cementitious products (mortar).

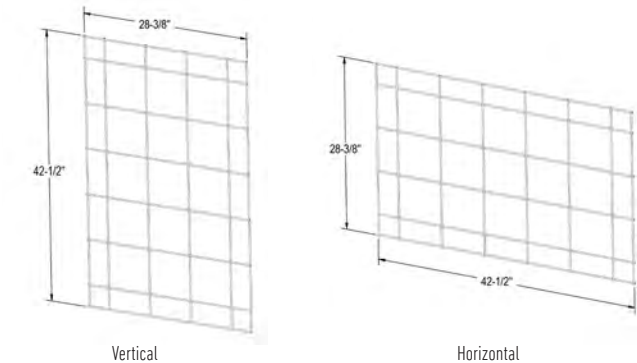


## Components

### TANDEM FAMILY UNITS



### MODULAR GRID



### CONNECTOR



### U START BASE BLOCK®



### BASIC PRINCIPLES

A set of Tandem Modular Grids is attached to a treated wood structure. Tandem veneers are then attached to the grids. Since veneer units are manufactured in multiples of 2 5/8", the overall dimensions of outdoor units should always be a multiple of 2 5/8" in order to avoid cuts. The wooden structure should be built taking into account the modular design of Tandem veneers. The same applies to the height, which must be a multiple of 7 1/16". The item is finished off with an appropriate capping module. You can construct a range of outdoor units of various dimensions.

### MAIN COMPONENTS OF THE SYSTEM

- Tandem Modular Grid, 28" x 42 1/2", including stainless steel screws and loop clamps for fastening. A modular grid covers a facing surface of 8.40 sqft. Each modular grid includes a kit of 25 connectors, 10 x 1 1/4" screws and 10 loop clamps.
- Tandem veneer units.
- Galvanized shelf angle (for deck skirting, privacy walls and fences) 2 1/2" x 2 1/2" x 8' (min 10 gauge, Z275 G90 galvanized steel, ASTM A653 Grade 33).
- Concrete capping module (Sold Separately)

### OTHER COMPONENTS (SOLD SEPARATELY)

- Treated Wood: 2x4, 2x6 and 2x8 boards, 4x4 or 6x6 posts, 4x8 plywood sheets (all wood should be treated against rot and must be category S-P-F #1 or better). Refer to the various suppliers' specific application sheets for details.
- Fiber cement panels 48" x 96" x 1/2".
- #10 screws of varying lengths, nuts, bolts and washers where required, all in stainless steel. It is not recommended to use treated wood screws (green ceramic) or metal plated screws (zinc, copper or other).
- Hilti Kwik Bolt®-type anchors (for concrete deck skirting).
- Simpson Strong-Tie-type hardware for construction of wood frame for deck.
- Custom countertops made of granite, quartz, marble and natural stone as alternatives to concrete tops.
- Cementitious adhesive for between each layer of veneers.



# Wood Framing for Tandem Modular Grid

You must always take the modular design of Tandem® veneers into account when constructing wood framing. The overall dimensions of outdoor units must always be a multiple of 2 5/8" in length and width and 7 1/16" in height. When installing the framing, remember that grids need a 5/8" space between the veneer and the frame.

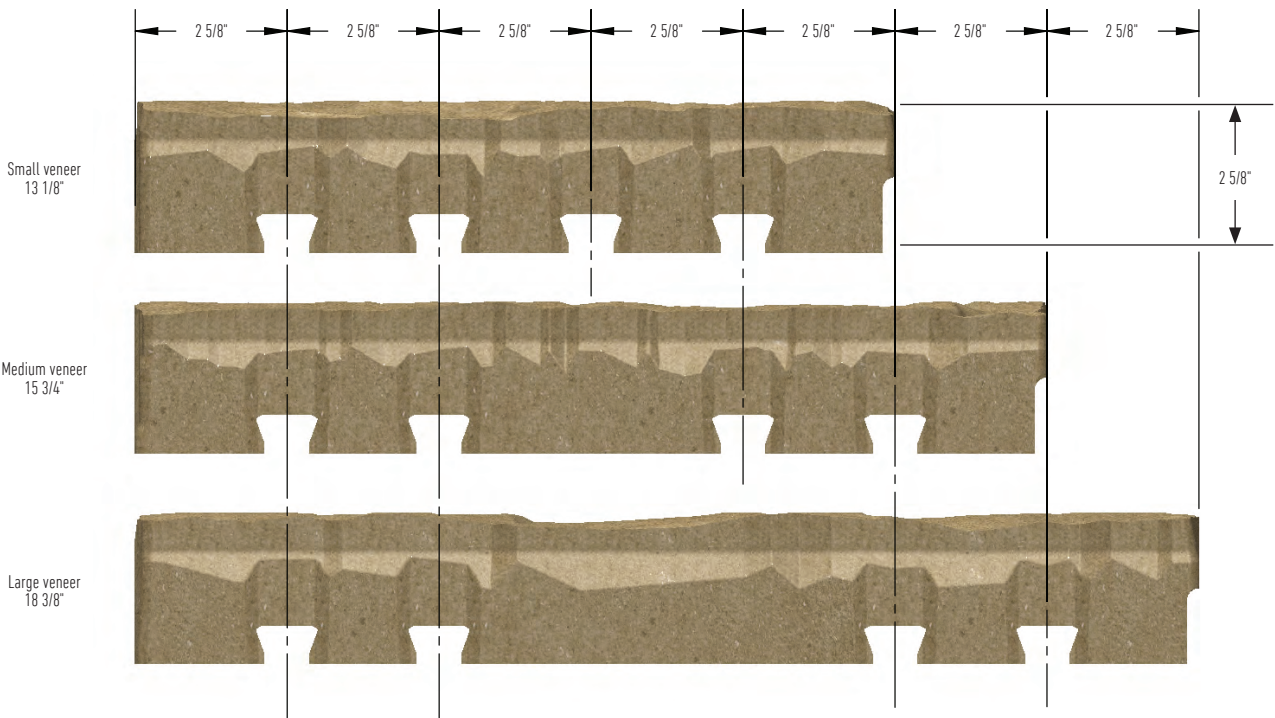
Bearing this in mind, the following tables show detailed measurements for the framing of units. These tables are very useful for quickly calculating the actual dimensions of the wood framing and the unit to be constructed to build the component without any veneers cut.

**NOTE:** When using a Dim A less than 15 13/16 cuts will be needed.

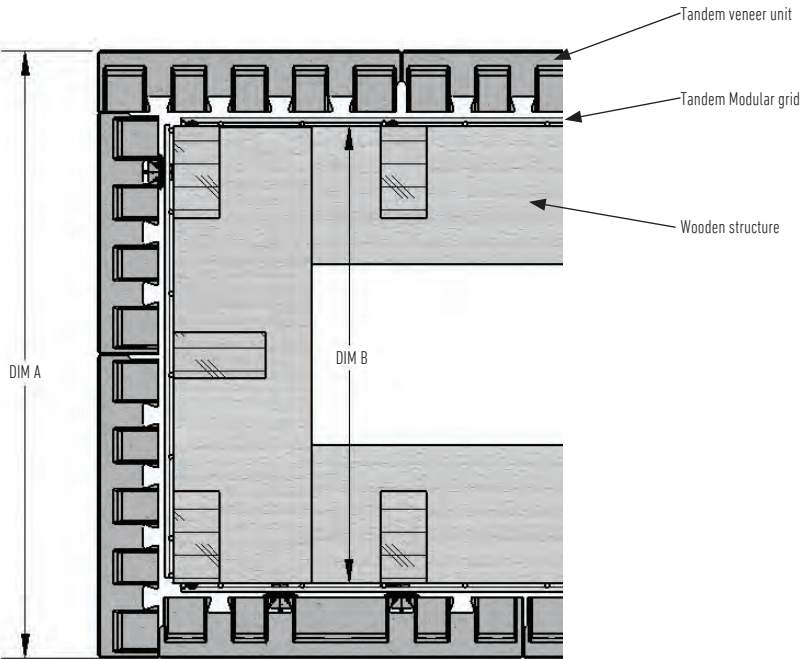
Table of component and its wood frame dimensions based on the modular format of veneers

DIM A (in)	DIM A (mm)	DIM B (in)	DIM B (mm)
7 15/16	201	1 3/8	35
10 9/16	268	4	102
13 3/16	335	6 5/8	169
15 13/16	402	9 5/16	236
18 7/16	469	11 15/16	303
21 1/8	536	14 9/16	370
23 3/4	603	17 3/16	437
26 3/8	670	19 13/16	504
29	737	22 1/2	571
31 5/8	804	25 1/8	638
34 5/16	871	27 3/4	705
36 15/16	938	30 3/8	772
39 9/16	1005	33 1/16	839
42 3/16	1072	35 11/16	906
44 13/16	1139	38 1/4	973
47 1/2	1206	40 15/16	1040
50 1/8	1273	43 9/16	1107
52 3/4	1340	46 1/4	1174
55 3/8	1407	48 7/8	1241
58 1/16	1474	51 1/2	1308
60 11/16	1541	54 1/8	1375
63 5/16	1608	56 3/4	1442
65 15/16	1675	59 3/8	1509
68 9/16	1742	62 1/16	1576
71 1/4	1809	64 5/8	1643
73 7/8	1876	67 5/16	1710
76 1/2	1943	69 15/16	1777
79 1/8	2010	72 5/8	1844
81 3/4	2077	75 1/4	1911
84 7/16	2144	77 7/8	1978
87 1/16	2211	80 1/2	2045
89 11/16	2278	83 1/8	2112
92 5/16	2345	85 3/4	2179
94 15/16	2412	88 7/16	2246
97 5/8	2479	91 1/16	2313
100 1/4	2546	93 11/16	2380
102 7/8	2613	96 5/16	2447
105 1/2	2680	99	2514

# Tandem Veneer Units – Modular Design



TYPICAL COMPONENT –  
PLAN VIEW





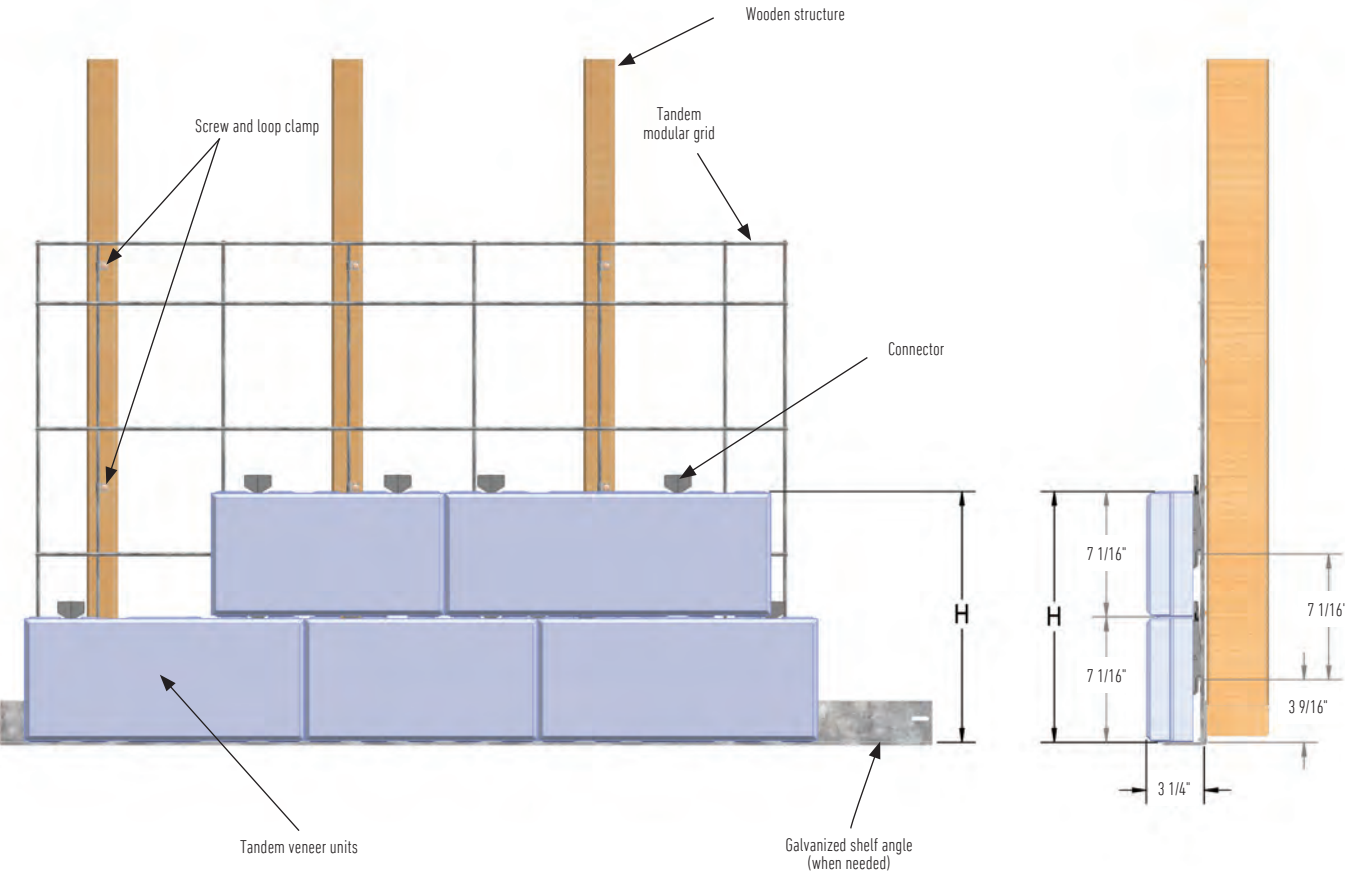
# Tandem Veneer Units – Modular Design *(cont'd)*

## TYPICAL COMPONENT –

### FRONT AND SIDE VIEW

Table – Height of components and its wood frame according to the modular design of veneer units (90 mm)

OF ROWS	HEIGHT (in)	HEIGHT (mm)
1	7 1/16	180 mm
2	14 3/16	360 mm
3	21 1/4	540 mm
4	28 5/16	720 mm
5	35 7/16	900 mm
6	42 1/2	1080 mm



**NOTE:** When a section of a unit has veneers that are not directly supported on the ground (foundation modules, pavers or concrete slabs), for example for installing doors, the veneers must be supported on shelf angle sections attached to the wood frame.

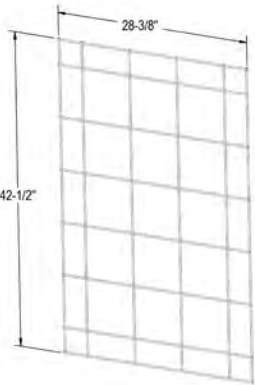
# Tandem Modular Grid

## TANDEM MODULAR GRID

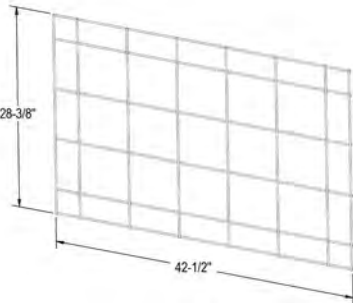
It is important to note that the units to be constructed must always be straight and have corners (inner and outer) forming a 90° angle. Therefore, making a corner is a common element in all construction plans. You can also refer to the plan view detail (page 5) to see how to make a 90° corner, taking into account the modular design of Tandem veneers and grids. When building the wood frame, keep in mind that you have to install Tandem grids. The flexibility of the grids are reversible meaning you can install it either, horizontally or vertically. Being able to rotate the grid increases installation and application versatility.

## DETAIL 1

### VERTICAL INSTALLATION



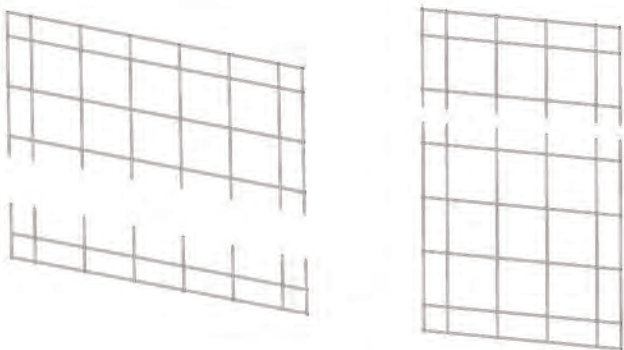
### HORIZONTAL INSTALLATION



You have to cut the grids when the unit you're building is smaller in size (height or length) than a complete grid of 28" or 42 1/2". It may be helpful to decide the direction of the grid so as to minimize cuts. To cut a grid, use any suitable tool like a grinder or bolt cutters.

To avoid making cuts in the veneers, simply follow the dimensions based on the modular design of the veneers shown in the previous tables (page 4).

**NOTE:** Cuts on grids must be made at the top. The first horizontal rod/rung is at mid-height of the veneer. Keep cut grids facing up and do not install a cut grid directly on ground/base layer.





# Tandem Modular Grid (cont'd)

The grid is attached with the loop clamps and screws supplied. Simply place the loop clamps around the vertical rods of the grid and then insert a screw into the wood frame. There are 10 loop clamps per Tandem grid. To secure a grid, the loop clamps should be evenly positioned, starting with the edge of the grid and moving towards the center. To ensure the solidity of the grid, use approximately one fastener (screw and loop clamps) per square foot of grid or 10 fasteners per square meter. To attach a grid to the wood frame, the vertical rods must be placed directly against the structure (see detail 1 on page 8).

Since the metal rods of the grids are spaced every 7 1/16", it's helpful if the intermediate posts of the wood framing are multiples of 7 1/16". This will increase the available attachment area for the grid. A continuous attachment area like plywood sheeting can also be used to provide a larger surface for attaching the Tandem grid.

When a unit requires more than one grid they should be installed one after the other. Install grids above or directly next to the previous grid.

VERTICAL RODS  
PLACED AGAINST  
WOOD STRUCTURE

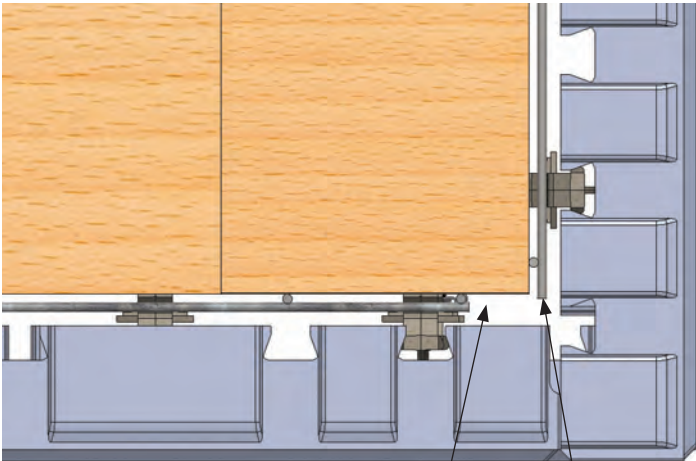


HORIZONTAL RODS  
PLACED AGAINST  
WOOD STRUCTURE



The horizontal rods should always be out.

DETAIL 2

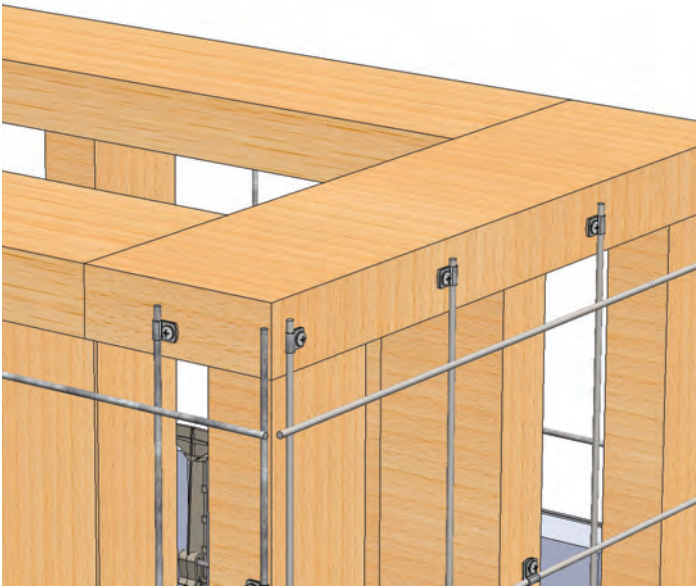


CUTTING INSTRUCTION OF  
MODULAR GRID (PLAN VIEW)

Keep the last vertical rod intact for better fixation

Leave free space to attach the loop changes

3D VIEW



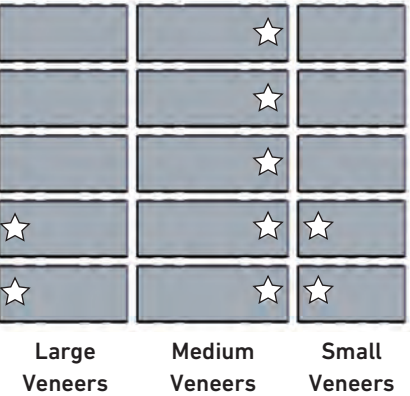
# Tandem Veneers

When the grids have been installed, just insert the veneers for the unit using the connectors specially designed for the purpose. We recommend using a minimum of 2 connectors per veneer for a solid job, but sometimes it can happen that a connector can't be inserted because of the grid's geometry. You can then secure the veneer by gluing it around other veneers with a construction adhesive.

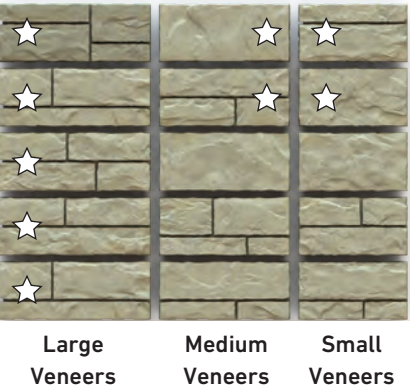
Normally, for a standard project, all formats of the veneer units are used randomly. As for retaining walls, always keep in mind the principle of staggering the vertical joints from one row to another to avoid unsightly stack bonds. For the corners, you need corner units just like constructing a pillar with steel grids (see "Building Pillars" section). But it should be noted that sometimes the construction of a short unit requires a larger quantity of the same format veneers, especially corner units (the quantity of corner units supplied comes to approximately one-third of a pallet). It is important to check this when calculating the quantity so as to have enough of the appropriate veneers on hand. Large veneers have a textured finished edge and should be used often. In some instances a small veneer will need to be used; small veneers also have a finished/textured edge.

**NOTE:** We recommend a layer of cementitious adhesive to be used between each layer.

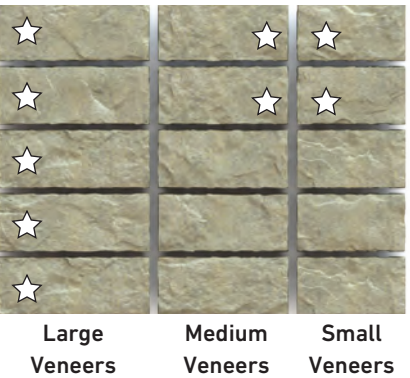
BACK VENEER  
Layer of Smooth Wall Veneer



TANDEM ASHLAR WALL FRONT VENEER  
Layer of Tandem Ashlar Wall Veneer



TANDEM WALL FRONT VENEER  
Layer of Tandem Textured Wall Veneer



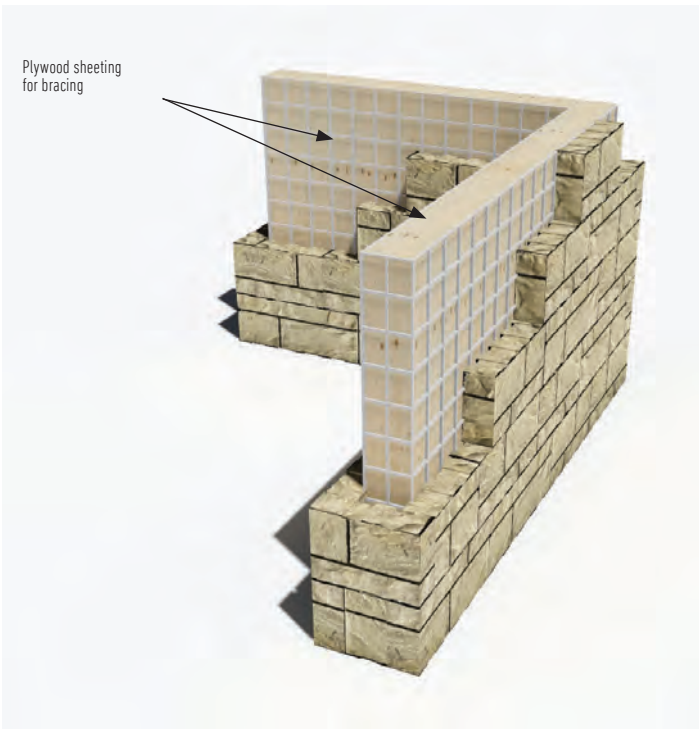
☆ = Corner Unit



# Bracing

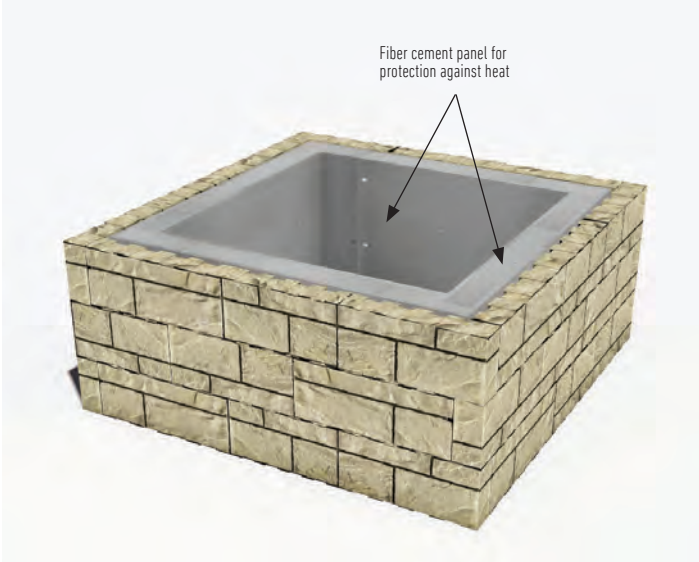
Some items require bracing panels like plywood sheeting, especially for privacy walls, fencing and deck skirting. These panels are needed to strengthen the wooden structure to withstand stress such as wind and to limit distortion under regular loads.

EXAMPLE OF BRACING (PRIVACY WALL)



Other units require the installation of fiber cement panels for heat insulation (barbecues and outdoor gas fireplaces) or as protection against moisture (flower boxes). In these situations, we recommend fiber cement panels of a minimum thickness of 1/2".

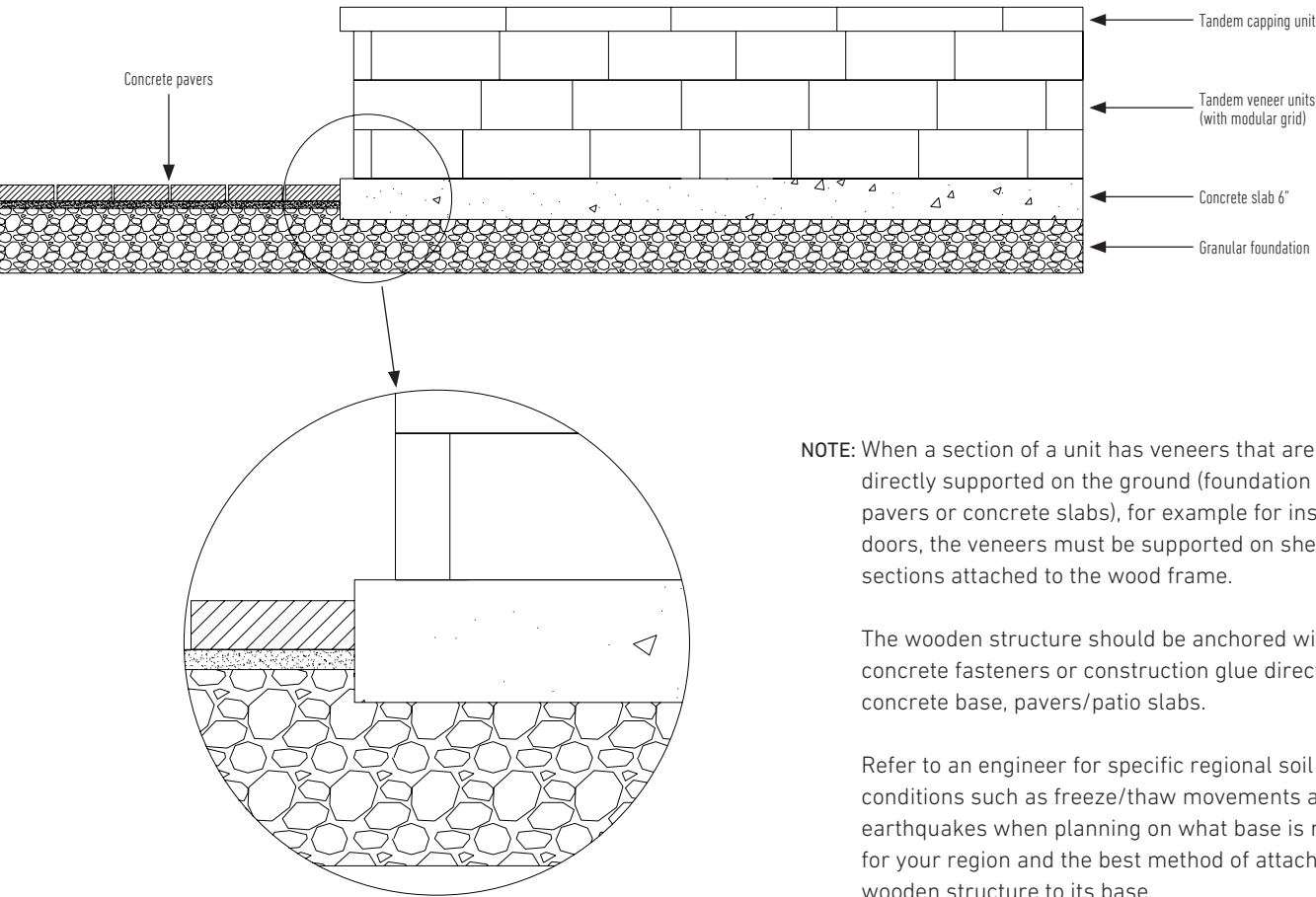
EXAMPLE OF A HEAT PROTECTION SET-UP



# Base Support for Outdoor Units

Outdoor units like a bench, flower box or outdoor fireplace can usually be built on a base of concrete foundation (starter modules) or placed directly onto concrete pavers. A granular base of compacted crushed stone should be laid before the foundation. However, we recommend that long or heavy units be supported on a concrete slab (minimum thickness of 6"). We also recommend that units like barbecues or tables with a single granite, quartz or marble top over their entire surface be supported on a reinforced concrete slab to prevent the top from breaking if the ground shifts. In each case, a compacted granular base should underlie the concrete slab.

COMPONENTS SUPPORTED ON A CONCRETE SLABS – CROSS SECTION



**NOTE:** When a section of a unit has veneers that are not directly supported on the ground (foundation modules, pavers or concrete slabs), for example for installing doors, the veneers must be supported on shelf angle sections attached to the wood frame.

The wooden structure should be anchored with concrete fasteners or construction glue directly to the concrete base, pavers/patio slabs.

Refer to an engineer for specific regional soil conditions such as freeze/thaw movements and earthquakes when planning on what base is necessary for your region and the best method of attaching the wooden structure to its base.



# Construction Lumber

Building the different units in this guide requires construction lumber for the framing: 2 × 4, 2 × 6 and 2 × 8 boards, 4 × 4 and 6 × 6 posts and plywood sheets. We recommend that all wood used outdoors be treated against rot according to established procedures approved by your local municipality/regional housing association. You should use S-P-F #1 or #2 wood, or better. This type of wood usually has a minimum life of 15 years without maintenance in normal outdoor conditions.

**NOTE:** Wooden components that have been cut or sawed should be treated with an anti-rot product.

### COMPLIANCE WITH CONSTRUCTION STANDARDS

In all circumstances, units to be constructed must always comply with the requirements of the National Building Code (version specific to your region) and local municipal bylaws and regulations.

# Building an Outdoor Gas Fire Pit

Note that the only type of fireplace recommended for this type of construction is a propane gas or natural gas fireplace. A wood fireplace is not recommended.

Construction should begin with laying a solid foundation that is leveled, compacted and well-drained.

The wood framing must be built according to the type of fireplace chosen. Dimensions are calculated using the data on shop drawings provided by the fireplace manufacturer. It may be necessary to add some extra parts like plywood shims for adjusting to the exact modular dimensions of the fireplace (Tandem modular veneers according to the wood frame design).

It is essential to install heat insulation. A fiber cement panel of a minimum thickness of 1/2" is recommended for adequate protection. The panels must be installed all around the heating element (burner).

You must also plan to install conduits in the ground for gas pipes and for electric cables if required.





# Building an Outdoor Kitchen



## BARBECUE, REFRIGERATOR, BAR

The wood frame must be constructed according to the type of barbecue chosen. Dimensions are calculated using data on the shop drawings provided by the barbecue manufacturer. Additional accessories such as a refrigerator or integrated cabinet doors are also possible. Naturally, you have to plan on adding pieces of wood to attach accessories to the wooden structure, like a frame in the case of doors. When purchasing supplies and appliances, you will usually find moldings to finish the edges (i.e. flange covering gap between accessories and stones).

It is essential to install protection from heat and sparks. A fiber cement panel of a minimum thickness of 1/2" or a double-skinned steel section if provided by the BBQ manufacturer is recommended for adequate protection. The panels must be installed all around the heating element (burner).

Finish off with concrete coping or panels of granite, quartz, marble or natural stone. The panels must be made to measure by specialized companies. You must make special provisions for handling and installation to avoid possible breakage. The panels are attached on top of the plywood with silicone adhesive to prevent movement.

Provide adequate means for venting gases when constructing the barbecue. (Refer to the barbecue manufacturer's recommendations for the position and size of the ventilation grid required).

You should also plan to install conduits for gas pipes and electric cables. The conduits may in certain cases be installed in the ground.

**NOTE:** Please refer to the operator's manual of your grill to ensure the correct ventilation is being included/installed. Each unit is different and in some cases vents are needed while in others they are not required. Consult with your grill manufacturer if needed.

# Building Patio Furniture (Table & Bench) and Flower Box

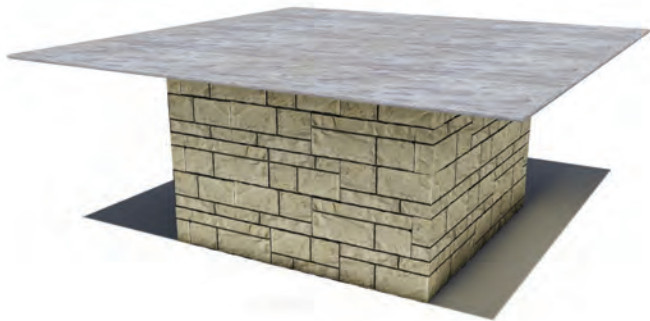
## TABLE

You can make a table by building a Tandem® unit (grid and veneers) to form the base and then adding a tabletop. The tabletop can be wood, granite, quartz, marble or natural stone.

Dimensions may vary. It is essential to leave a minimum space between the table edge and the base. At least 18" is needed for leg room.

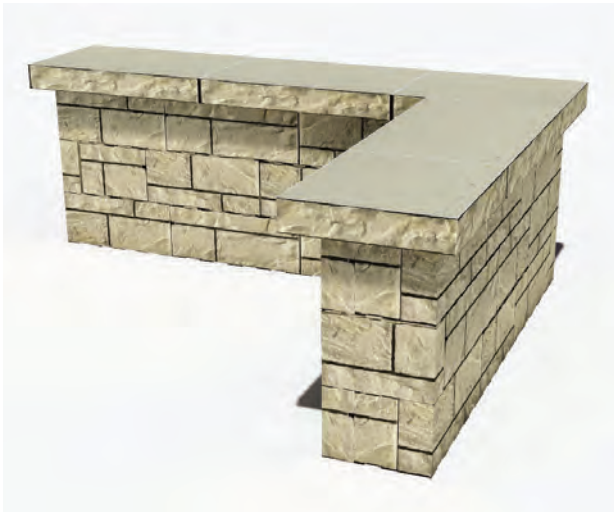
**NOTE:** Larger overhangs will require supports.

Granite, quartz or marble tabletop: the tabletop must be attached to the veneers with a silicone adhesive. We recommend that a tabletop resting on a Tandem unit be made from a single piece to increase rigidity and stability. This allows you to avoid adding a metal fastener to secure the tabletop to the structure for increased stability and extra protection where necessary. For very large tabletops, it is recommended to install steel supports (angles) to better stabilize the whole unit. You should inquire from the tabletop supplier what are the optimal sizes and thicknesses for stability and security and to avoid possible breakage.



## BENCH

You can make a bench by building a structure for the base and simply adding a concrete coping unit for the seat. Bench dimensions can vary, but it may be helpful to make your decision based on available coping units in order to avoid cuts. For a typical bench, the coping will be of the Tandem cap (15" x 24" 3 1/4").



## FLOWER BOX

It is recommended to install a fiber cement panel and a geomembrane to protect the wood against deterioration caused by vegetable and mineral materials (plants and soil). You should provide water drainage when building the structure.

For the coping, use Tandem cap (15" x 24" 3 1/4") products for retaining walls.





# Building Privacy Walls and Fences

When you’re building a fence or when you want to hide or conceal various pieces of equipment (e.g. pool filter, heat pump) or utility items (e.g. trashcans or storage bins), the Tandem® modular grid system is just what you need.

Fencing is mostly built with treated wood posts (structural, select quality) supported by cast-in-place concrete foundations (Sonotubes) for the main structure. An intermediate structure in treated wood boards is then installed between the posts to attach the fence components of Tandem modular grids and veneers. A shelf angle is fixed to the base of the structure to provide continuous support for the weight of the veneers. The shelf angle (2 1/2" x 2 1/2" x 8") is attached to the base of the structure (wood poles and boards forming the stringer) with suitable screws (#10 x 3 1/2") every 8". This shelf angle can be cut to the size of the unit under construction.

The wooden structure between the posts, combined with the shelf angle, supports the weight of the walls and transfers it to the foundations. Fences and privacy walls must rest on pillars (Sonotubes) and concrete foundations to transfer the weight of the walls to the ground. The foundations are also necessary to prevent the walls from collapsing due to the force of the wind.

The dimensions of the foundations in this guide were calculated to respect the weight-bearing capacity of the soil and to limit irregular subsidence that could lead to distortions in the wall. Calculations were made for soil conditions of an allowable bearing capacity of ≥ 1800 psf. For different soil conditions, we recommend consulting a qualified engineer. The foundation must be built to withstand local frost conditions. The depth of frost in this guide is 6'. The use of screw piles is not recommended for this type of application.

Privacy walls are made with the same main structure to which a perpendicular section is added to obscure non-aesthetic items.

The maximum height of a fence or a privacy wall is limited to 6 ft. *(See note on bottom of page 45)*

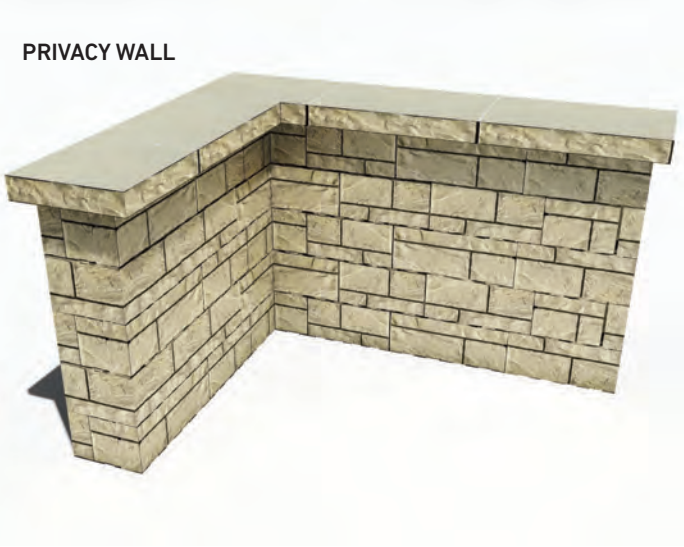
The maximum length of a wall facade between posts is 8 ft.

The unit can be built to display its aesthetic appearance on one side or both sides simultaneously.

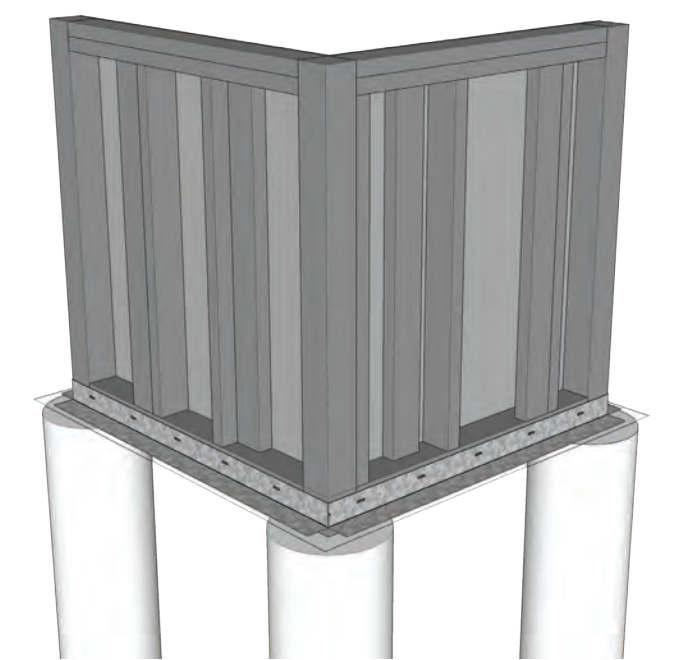
The wood frame must integrate a bracing panel such as a sheet of 1/2" treated plywood to provide a continuous attachment area and stabilize the structure to withstand loads. To finish the walls, attach a cap on top of the wood frame, either in concrete (sizes to be decided on site) or metal (custom bent by a specialized company). Tandem cap (15" x 24" 3 1/4") can be used to finish the top of a fence or privacy wall. Only if the top of the wall is roughly 12" wide.

The capping unit is fixed with a suitable concrete adhesive spread

on the wooden structure and the top of veneers. It may be useful to fix the wooden structure to the concrete cap with a metal attachment to provide additional wind protection.



PRIVACY WALL ON CONCRETE PILLAR (SONOTUBE) - CONSTRUCTION DETAILS OF WOODEN STRUCTURE



# Privacy Walls and Fences *(cont'd)*

Since unit components will vary according to height from zero to 1.8 m (6'), we present the main minimum requirements in table form.

## DESIGN DATA FOR FENCES

Fence with veneer on one side

HEIGHT	Ø PILASTER	FOOTING	EMBEDDING POST	POST	STRUCTURE
0 to 4 ft – Option 1	12 in / 300 mm	Ø 24 in / 600 mm	24 in / 600 mm	4 × 4*	2 × 4
0 to 4 ft – Option 2	12 in / 300 mm	16 in × 16 in / 400 mm × 400 mm	24 in / 600 mm	4 × 4*	2 × 4
0 to 4 ft – Option 3	24 in / 600 mm	N/A	24 in / 600 mm	4 × 4*	2 × 4
4 to 5 ft – Option 1	12 in / 300 mm	Ø 24 in / 600 mm	24 in / 600 mm	6 × 6**	2 × 6
4 to 5 ft – Option 2	12 in / 300 mm	16 in × 16 in / 400 mm × 400 mm	24 in / 600 mm	6 × 6**	2 × 6
5 to 6 ft – Option 1	12 in / 300 mm	Ø 24 in / 600 mm	24 in / 600 mm	6 × 6**	2 × 6
5 to 6 ft – Option 2	12 in / 300 mm	20 in × 20 in / 500 mm × 500 mm	24 in / 600 mm	6 × 6**	2 × 6

Fence with veneer on both sides

HEIGHT	Ø PILASTER	FOOTING	EMBEDDING POST	POST	STRUCTURE
0 to 4 ft – Option 1	12 in / 300 mm	Ø 24 in / 600 mm	24 in / 600 mm	4 × 4*	2 × 4
0 to 4 ft – Option 2	12 in / 300 mm	20 in × 20 in / 500 mm × 500 mm	24 in / 600 mm	4 × 4*	2 × 4
4 to 5 ft – Option 1	12 in / 300 mm	Ø 24 in / 600 mm	24 in / 600 mm	6 × 6**	2 × 6
4 to 5 ft – Option 2	12 in / 300 mm	20 in × 20 in / 500 mm × 500 mm	24 in / 600 mm	6 × 6**	2 × 6
5 to 6 ft – Option 1	12 in / 300 mm	Ø 24 in / 600 mm	24 in / 600 mm	6 × 6**	2 × 6
5 to 6 ft – Option 2	12 in / 300 mm	22 in × 22 in / 550 mm × 550 mm	24 in / 600 mm	6 × 6**	2 × 6

## DESIGN DATA FOR PRIVACY WALLS

Wall with veneer on one side

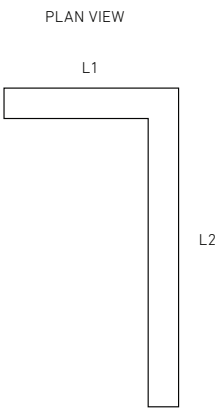
HEIGHT	Ø PILASTER	FOOTING	EMBEDDING POST	POST	STRUCTURE
<b>L1 and L2 Configuration = 1.2 m (4 ft)</b>					
0 to 3 ft	16 in / 400 mm	N/A	24 in / 600 mm	4 × 4*	2 × 4
3 to 6 ft – Option 1	24 in / 600 mm	N/A	24 in / 600 mm	6 × 6	2 × 6
3 to 6 ft – Option 2	12 in / 300 mm	16 in × 16 in / 400 mm × 400 mm	24 in / 600 mm	6 × 6	2 × 6
3 to 6 ft – Option 3	12 in / 300 mm	Ø 24 in / 600 mm	24 in / 600 mm	6 × 6	2 × 6
<b>L1 Configuration = 2.4 m (8 ft) and L2 = 1.2 m (4 ft)</b>					
0 to 4 ft – Option 1	24 in / 600 mm	N/A	24 in / 600 mm	4 × 4*	2 × 4
0 to 4 ft – Option 2	12 in / 300 mm	16 in × 16 in / 400 mm × 400 mm	24 in / 600 mm	4 × 4*	2 × 4
4 to 5 ft – Option 1	24 in / 600 mm	N/A	24 in / 600 mm	6 × 6**	2 × 6
4 to 5 ft – Option 2	12 in / 300 mm	16 in × 16 in / 400 mm × 400 mm	24 in / 600 mm	6 × 6**	2 × 6
4 to 5 ft – Option 3	12 in / 300 mm	Ø 24 in / 600 mm	24 in / 600 mm	6 × 6**	2 × 6
5 to 6 ft – Option 1	12 in / 300 mm	16 in × 16 in / 400 mm × 400 mm	24 in / 600 mm	6 × 6**	2 × 6
5 to 6 ft – Option 2	12 in / 300 mm	Ø 24 in / 600 mm	24 in / 600 mm	6 × 6**	2 × 6

Wall with veneer on both sides

HEIGHT	Ø PILASTER	FOOTING	EMBEDDING POST	POST	STRUCTURE
<b>L1 and L2 Configuration = 1.2 m (4 ft)</b>					
0 to 4 ft	16 in / 400 mm	N/A	24 in / 600 mm	4 × 4*	2 × 4
4 to 6 ft – Option 1	12 in / 300 mm	16 in × 16 in / 400 mm × 400 mm	24 in / 600 mm	6 × 6**	2 × 6
4 to 6 ft – Option 2	12 in / 300 mm	Ø 24 in / 600 mm	24 in / 600 mm	6 × 6**	2 × 6
<b>L1 Configuration = 2.4 m (8 ft) and L2 = 1.2 m (4 ft)</b>					
0 to 3 ft	24 in / 600 mm	N/A	24 in / 600 mm	4 × 4*	2 × 4
3 to 4 ft – Option 1	12 in / 300 mm	16 in × 16 in / 400 mm × 400 mm	24 in / 600 mm	4 × 4*	2 × 4
3 to 4 ft – Option 2	12 in / 300 mm	Ø 24 in / 600 mm	24 in / 600 mm	4 × 4*	2 × 4
4 to 6 ft – Option 1	12 in / 300 mm	20 in × 20 in / 500 mm × 500 mm	24 in / 600 mm	6 × 6**	2 × 6
4 to 6 ft – Option 2	12 in / 300 mm	Ø 24 in / 600 mm	24 in / 600 mm	6 × 6**	2 × 6

N/A: Not Applicable \* 4 × 4 SFP Wood Select Structural \*\* 6 × 6 #1 SFP Wood

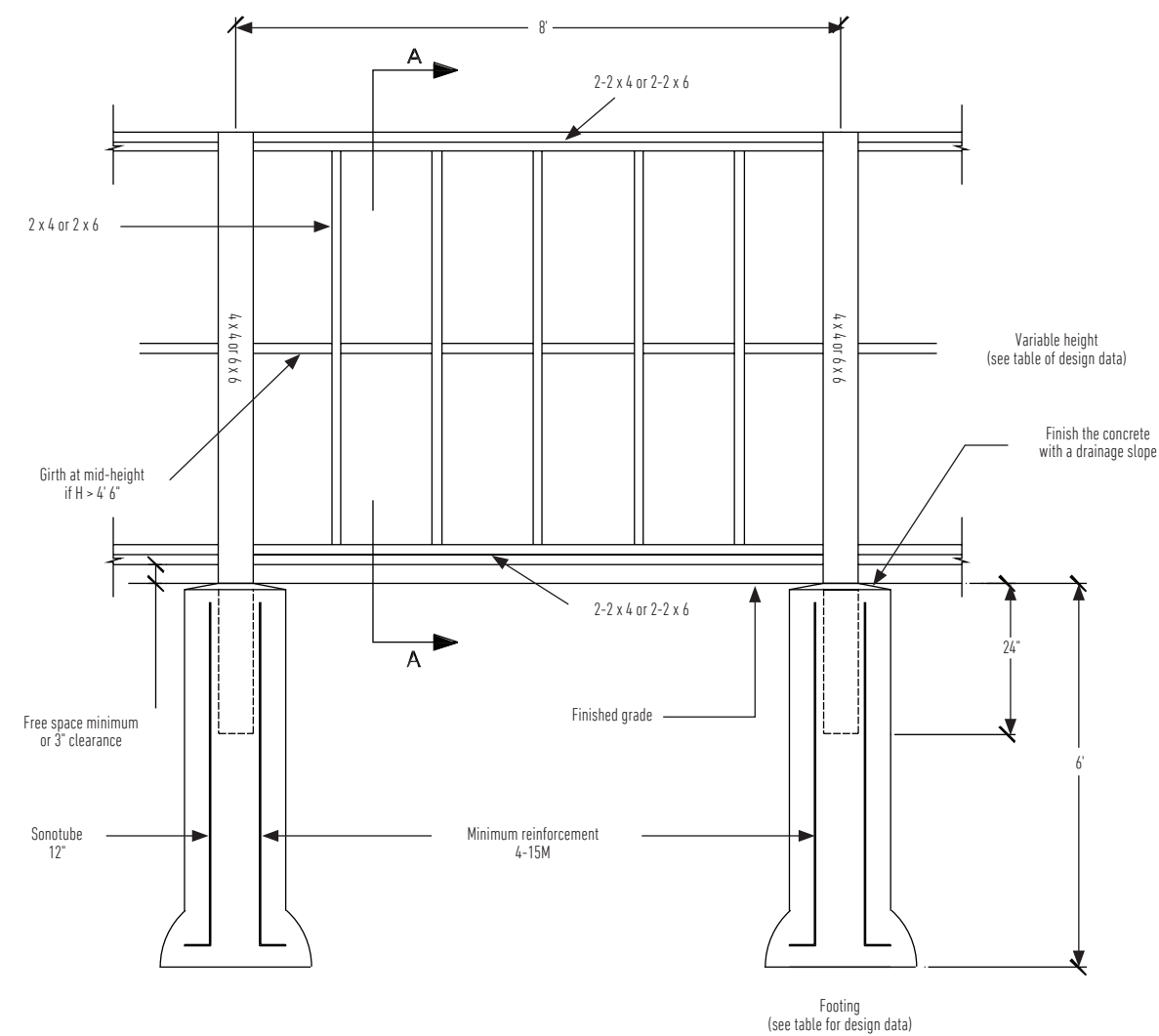
**NOTE:** The base of concrete pillars should normally have a wider section in the ground for a footing. The footing can take two shapes, square or round. There are round footings on the market, sold as Bigfoot, which can be used for the construction of pillars. Square footings must be made on site with wooden formwork.





# Privacy Walls and Fences (cont'd)

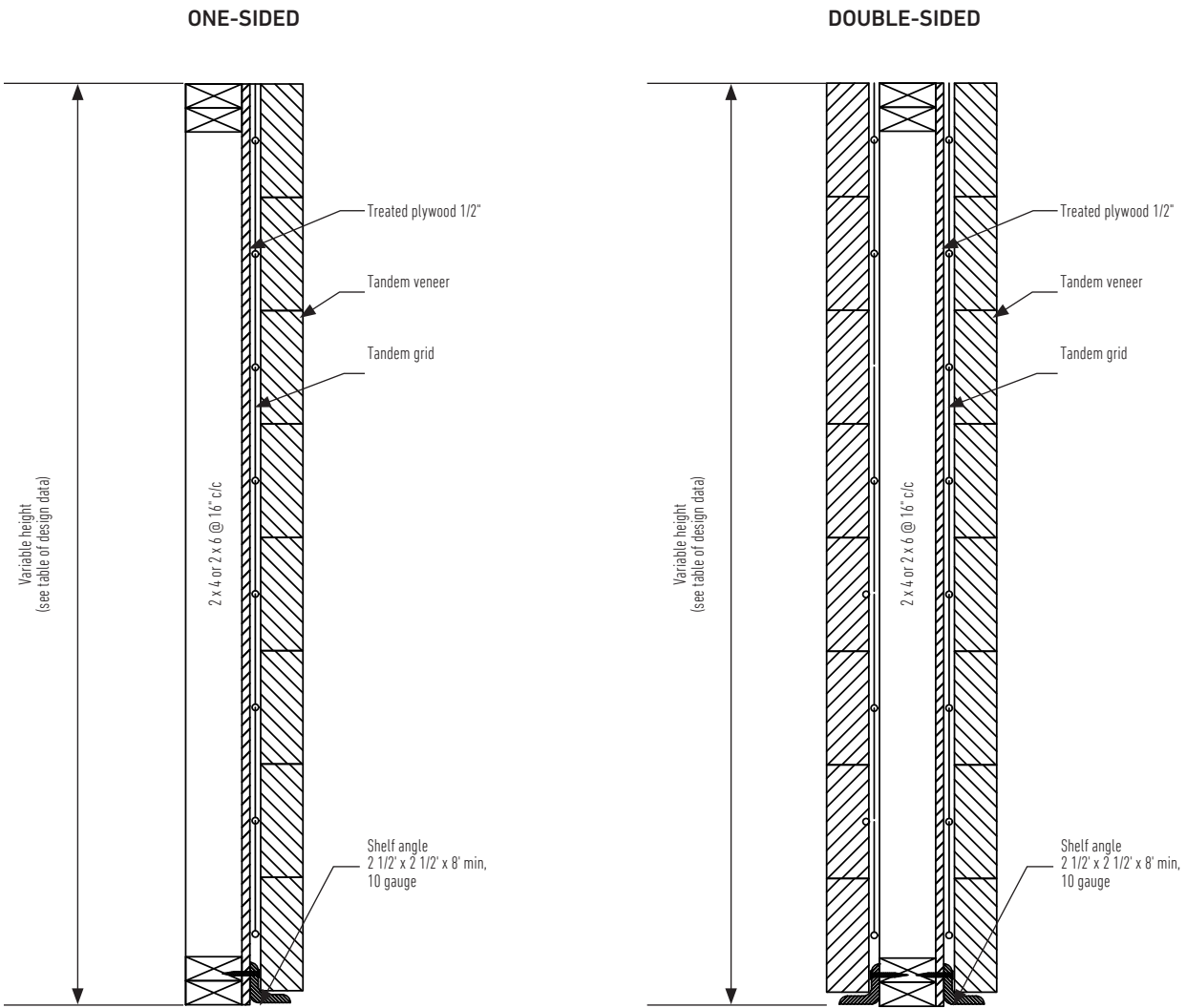
TYPICAL FRONT VIEW



**NOTE:** The details shown here are only valid for the application suggested in this guide, taking into account the prescribed limitations. You are strongly recommended to engage a structural engineer or specialist in the field to validate structural design details for other configurations or for different soil conditions (lower or higher load capacity, presence of blocks, support on rock, etc.).

# Privacy Walls and Fences (cont'd)

CROSS-SECTION A-A

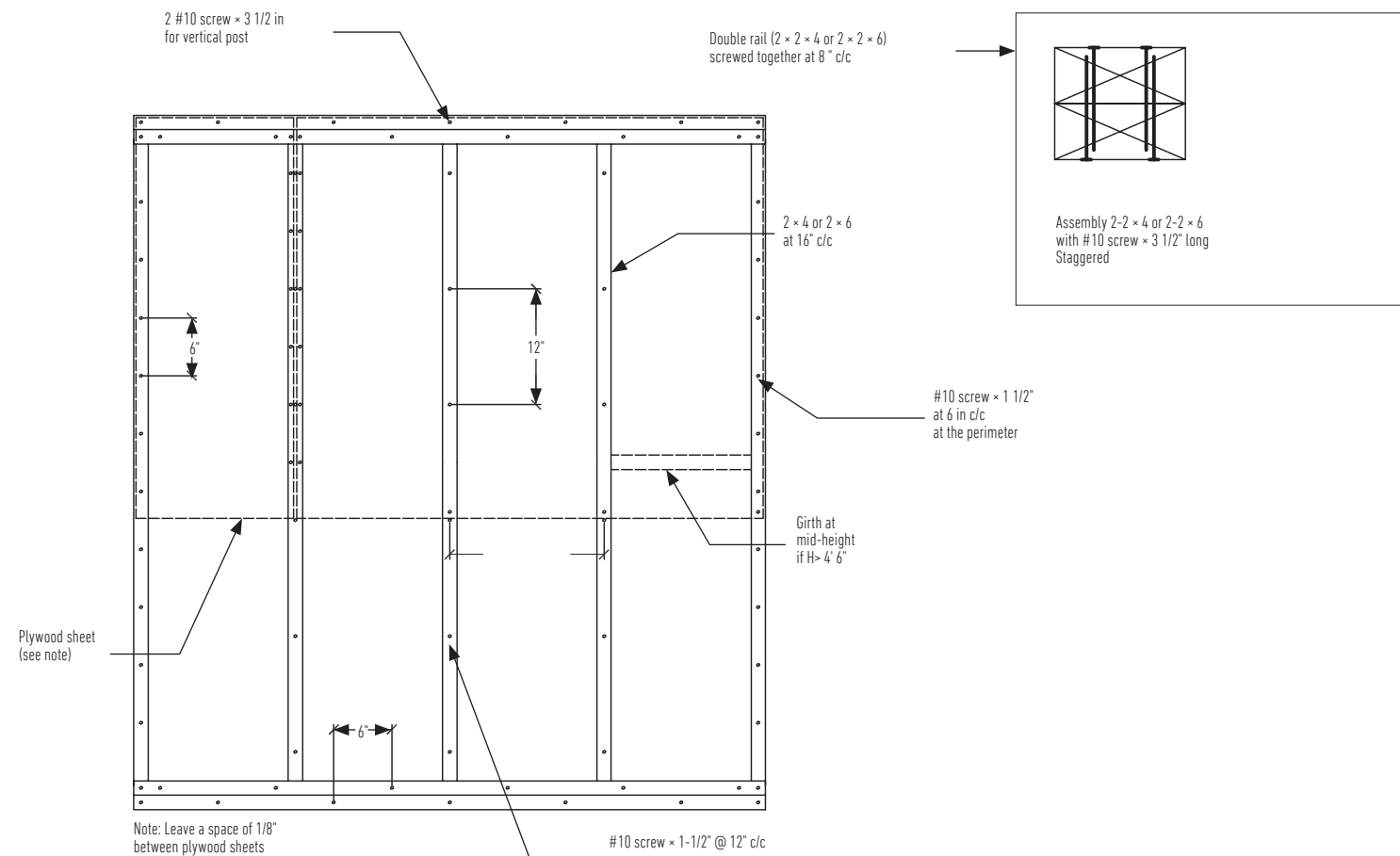


**NOTE:** We recommend  
#10 x 3 1/2" SS screw @ 8" c/c.  
The oblong holes on the Shelf  
Angle are spaced at 8" c/c.



## Privacy Walls and Fences *(cont'd)*

### SCREW DIAGRAM OF COMPONENTS OF WOODEN STRUCTURE



## Design Assumptions

The construction of privacy walls or fences must take into account the following assumptions:

Wall weight (grid and veneers): 28 lbs/sq ft

Wind: 20 lbs/sq ft

Minimum allowable bearing capacity of soil: 1,575 lbs/sq ft

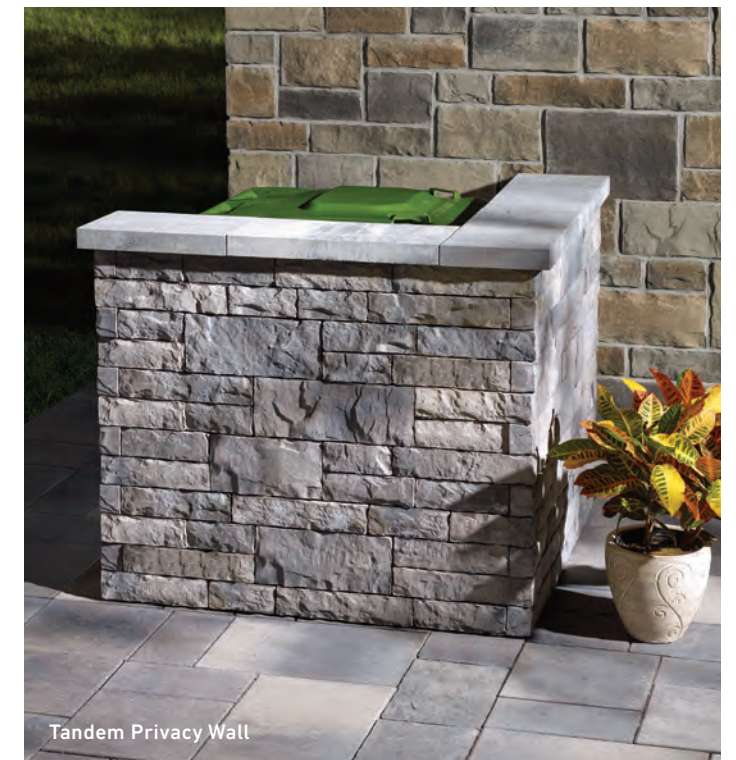
Density of soil around pillars and foundations ( $\gamma$ ): 115 lbs/cu ft

Backfill must be compacted around Sonotubes and spread footings

Minimum depth of foundations: 6 ft away from frost (consult an engineer to check the typical depth of frost for your area)

**NOTE:** Design assumptions do not take into account earthquake effects. It may be necessary to consult an engineer.

Leave a free space under the Tandem® wall of at least 3" to ensure proper ventilation and adequate room for the potential effects of freezing and thawing.





# Building Deck Skirting

Applications: new wood or concrete decks, or existing concrete decks. Another application of the Tandem® grid consists of covering the free space under a deck by building a Tandem wall around it. Tandem veneers are supported by a galvanized shelf angle and a wood frame fixed to the deck (wood or concrete). The wood frame consists of treated plywood to provide a continuous attachment area for the grid, and vertical bracing to stabilize the structure and withstand lateral loads such as the wind. The whole structure is supported by appropriate foundations (screw piles for wooden decks and concrete foundations for concrete decks).

Maximum height of Tandem wall: 5'.

To install deck skirting on existing concrete structures, you must first ensure that the initial structure (the deck itself) can bear the additional weight of new covering components: wooden structure, shelf angle and Tandem veneers. For this kind of project, it is strongly recommended to engage a structural engineer or specialist in the field to validate the structural design details for adequate load bearing.

In all cases, it is necessary to minimally comply with the design criteria shown below:

Wall weight (grid and veneers): 28 lbs/sq ft

Wind: 20 lbs/sq ft

Overload: 40 lbs/sq ft

**NOTE:** Design assumptions do not take into account earthquake effects. It may be necessary to consult an engineer.

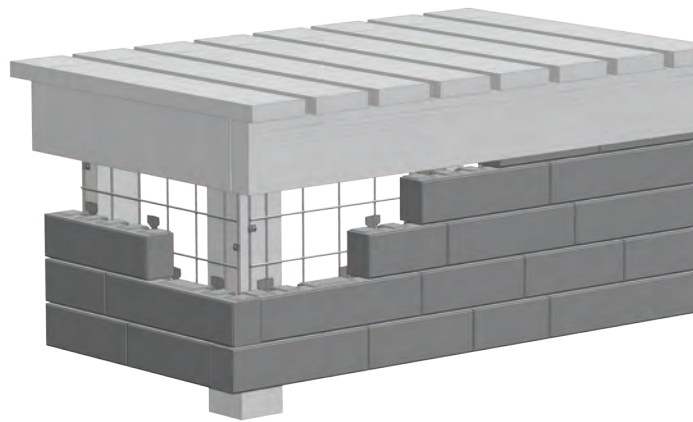
Minimum allowable bearing capacity of soil: 1575 lbs/sqft.

Minimum depth of foundations in soil: 6' away from frost (consult an engineer to check the typical depth of frost for your area).

Leave a free space under the Tandem wall of at least 3" for soil movement.

**NOTE:** As there is no direct access from the top of a unit (since the Tandem wall is built under the deck), it will be impossible to attach the last row of veneers to the Tandem grid with connectors. Simply glue the last row of veneers to the second-to-last row with a construction adhesive.

The sketches shown here have been designed to withstand the additional loads of Tandem walls. The details shown are valid for applications suggested in this guide. It is strongly recommended to engage a structural engineer or specialist in the field to validate structural design details for other configurations.



# Building Deck Skirting | Concrete Deck

## CONCRETE DECK

To cover a concrete deck, you must comply with additional minimum design criteria detailed below:

The minimum thickness of the slab should be 5 1/2"

The slab should be reinforced with a minimum 1/2" diameter rebar at 12" c / c in both directions and positioned at the center of the slab. The concrete deck should be supported by pillars of reinforced concrete (Sonotubes), 8" in diameter with a minimum footing of 24" or larger in diameter.

The compressive strength of the concrete (slab and pillars) must be at least 4350 psi with 5% to 8% entrained air.

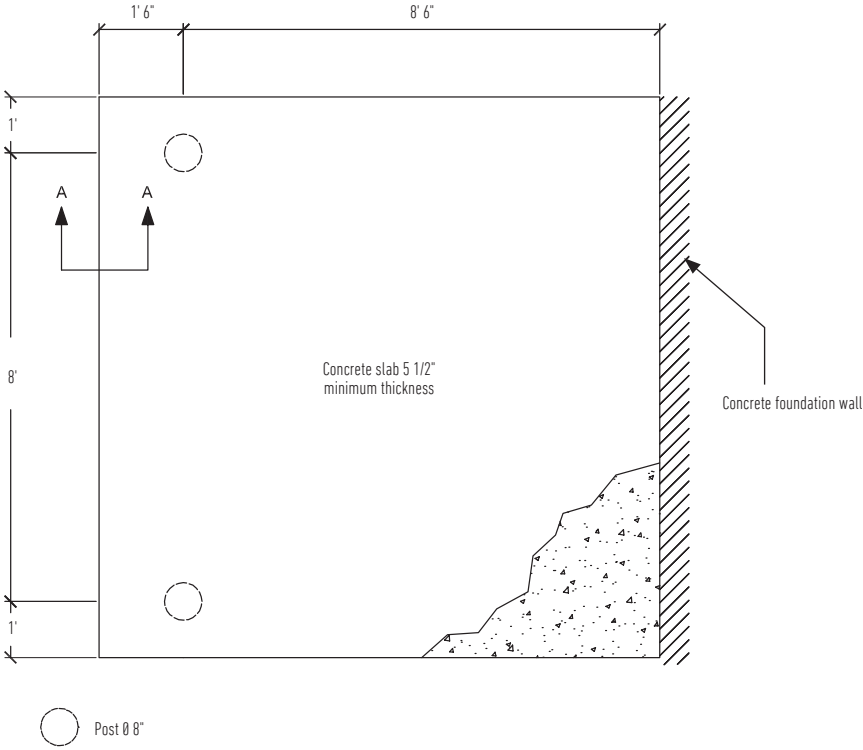
Maximum distance between pillars: 8'

Maximum overhang of concrete slab: 2'

To attach the components of the wooden structure to the concrete slab, you should use mechanical anchors like Hilti Kwik Bolt® TZ (1/2" diameter by 5 1/2" long) or equivalent (not supplied by Belgard).

Leave a space of at least 1/2" between the top of the Tandem® wall and the underside of the concrete slab.

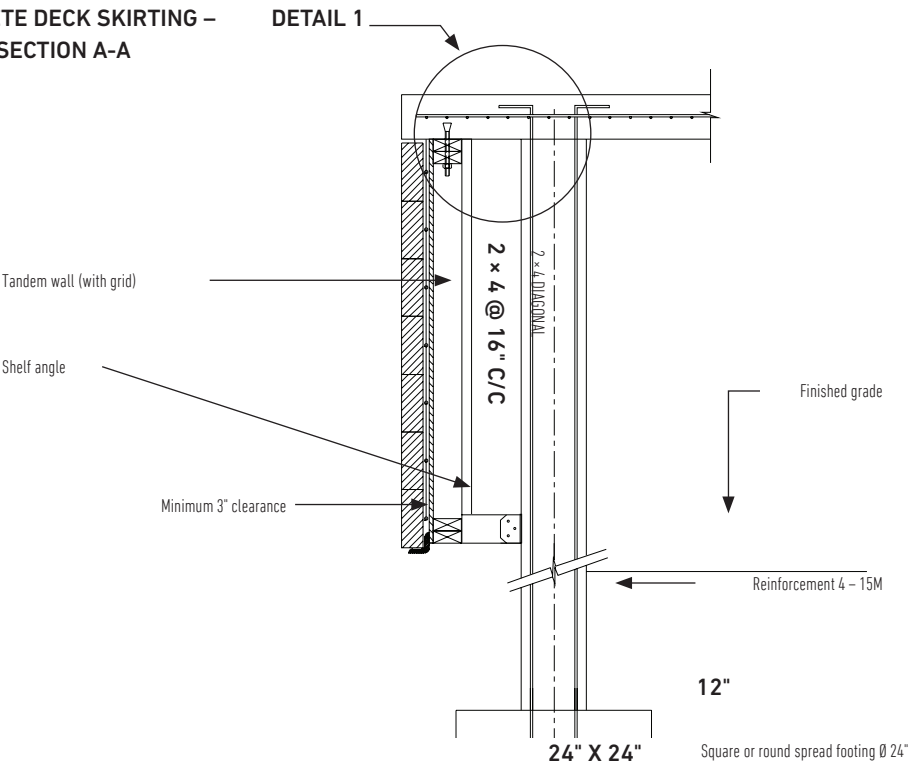
## CONCRETE DECK SKIRTING – PLAN VIEW



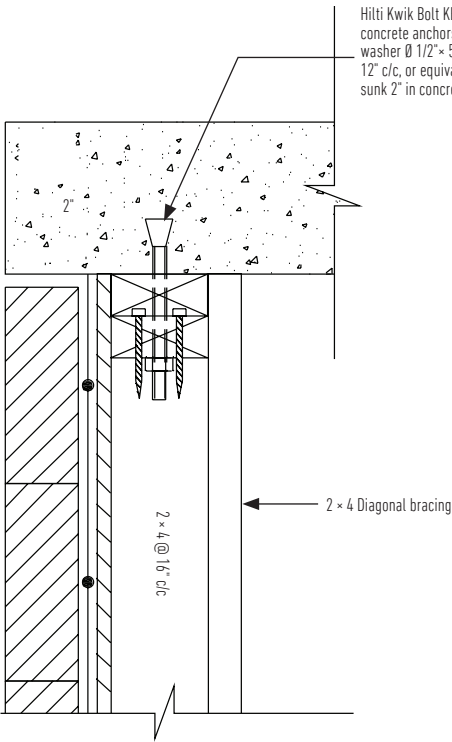


# Building Deck Skirting | Concrete Deck *(cont'd)*

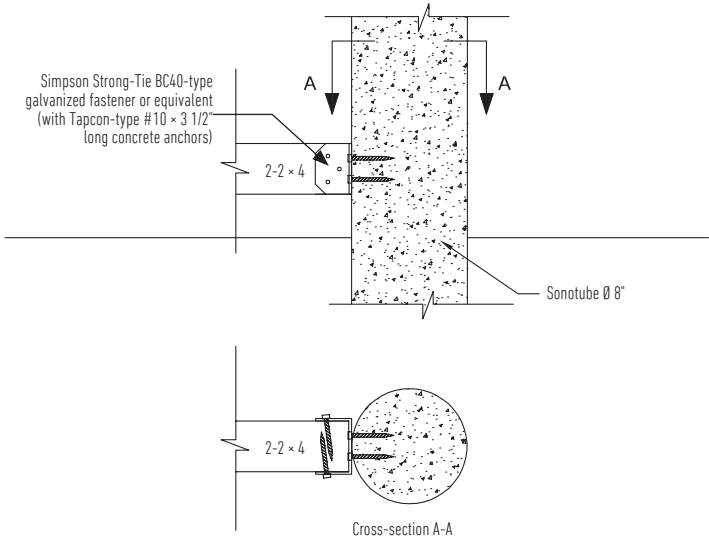
CONCRETE DECK SKIRTING –  
CROSS-SECTION A-A



DETAIL 1



DETAIL 2



# Building Deck Skirting | Wooden Deck

**Warning: We recommend installing a Tandem wall only for new wooden decks to be built according to the minimum specifications and data detailed below.**

The wooden deck should be built with a structure composed of 2 x 8 joists spaced every 16" or less. The deck beams must be made of at least two 2 x 8 boards.

The beams are supported on 4 x 4 (89 x 89 mm) wooden posts. The posts themselves are supported on screw piles designed for this purpose (helicoil piles).

Maximum length of wood joists in both directions: 8'.

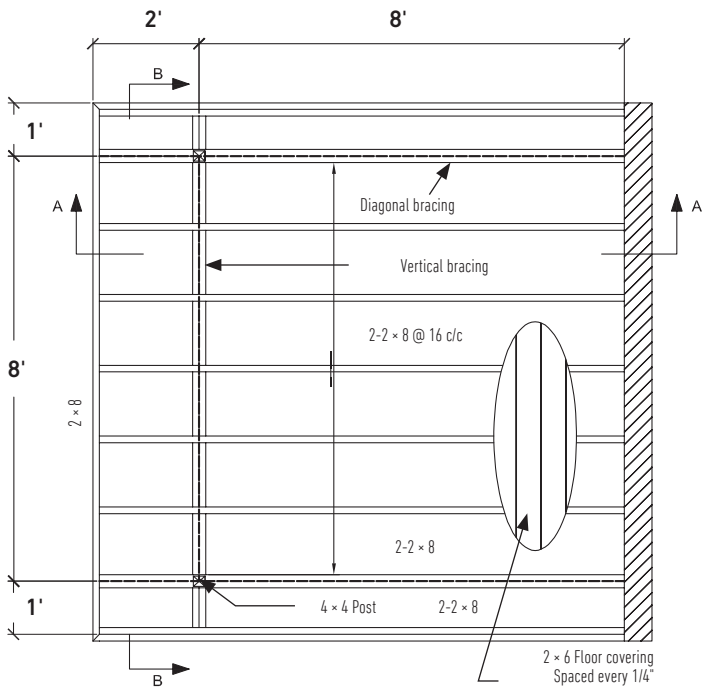
Minimum overhang of 12" and maximum overhang of 24".

To attach the components of the wooden structure to the deck joists, you should use #10 stainless steel wood screws.

Simpson Strong-Tie hardware (or equivalent) should be used.

A waterproofing membrane must be installed on top of the wood frame to protect the wood from water saturation and rot (in the case of wood board flooring with free space). The membrane can be omitted for waterproof deck flooring such as fiberglass.

It is recommended to leave a space of 1/8" to 1/4" between the wooden boards of the deck for ventilation under the deck so as not to trap moisture.



WOODEN DECK SKIRTING –  
CROSS-SECTION A-A

**A** Simpson Strong-Tie LUS 26 and LUS 26-2 (GA 18) galvanized steel joist hangers, or equivalent

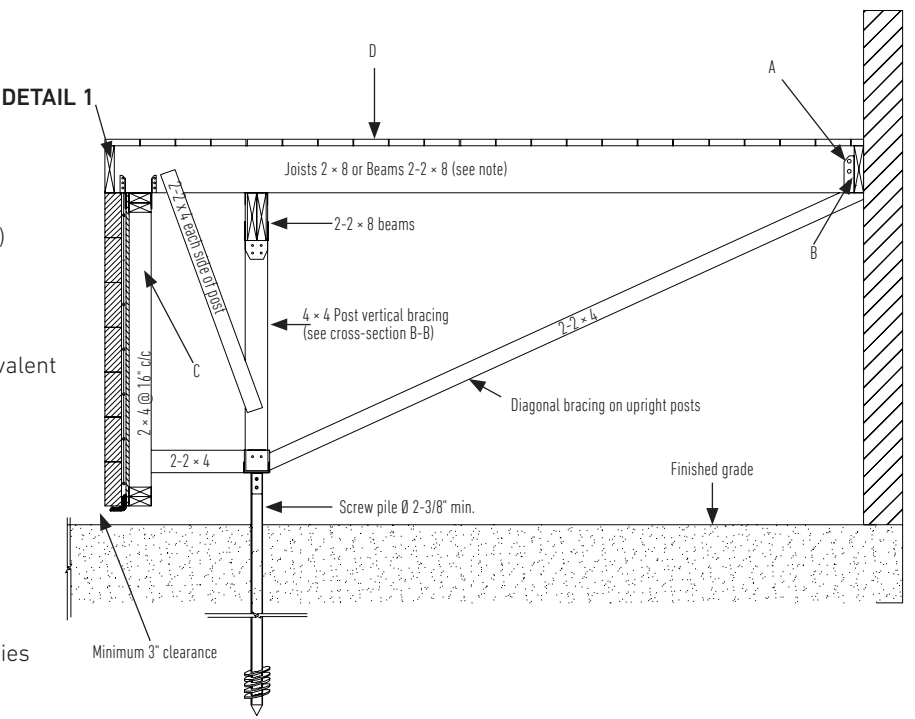
**B** 2x8 continuous rail attached to foundation wall with Hilti KB-TZU 1/2 in x 5 1/2" anchors, or equivalent

Alternative: joists resting on foundation wall.

**C** Diagonal brace at mid-height for wall over 4" tall

**D** Floor coverings 2 x 6 spaced at 1/4"

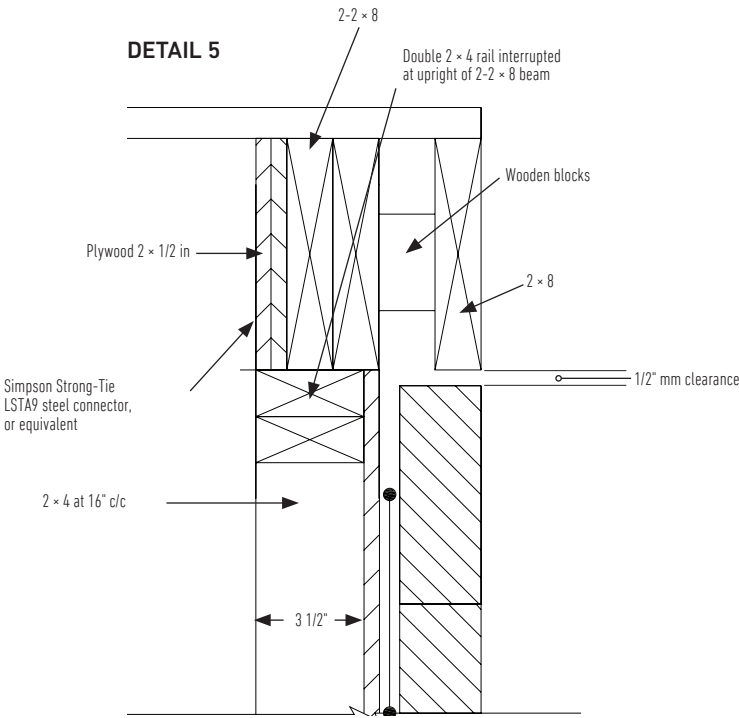
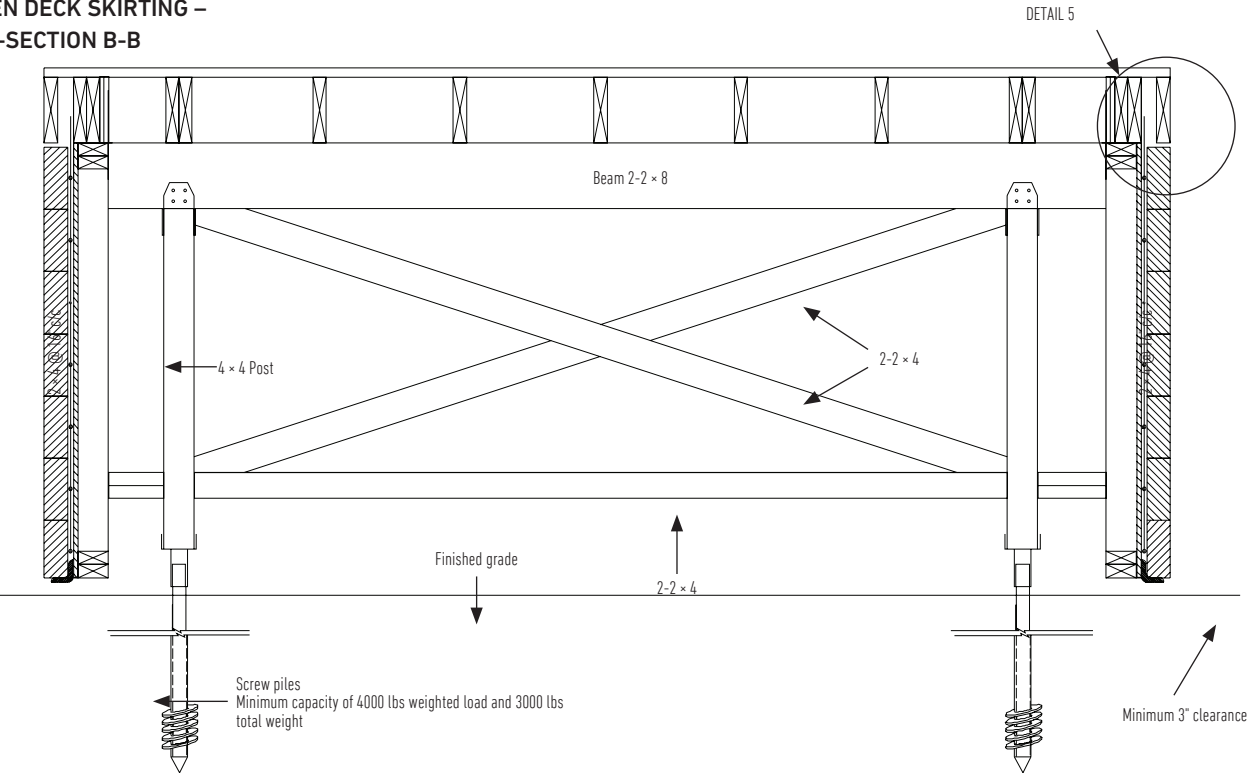
NOTE: During construction, 2 x 4 posts should face floor joists to enable construction of assemblies



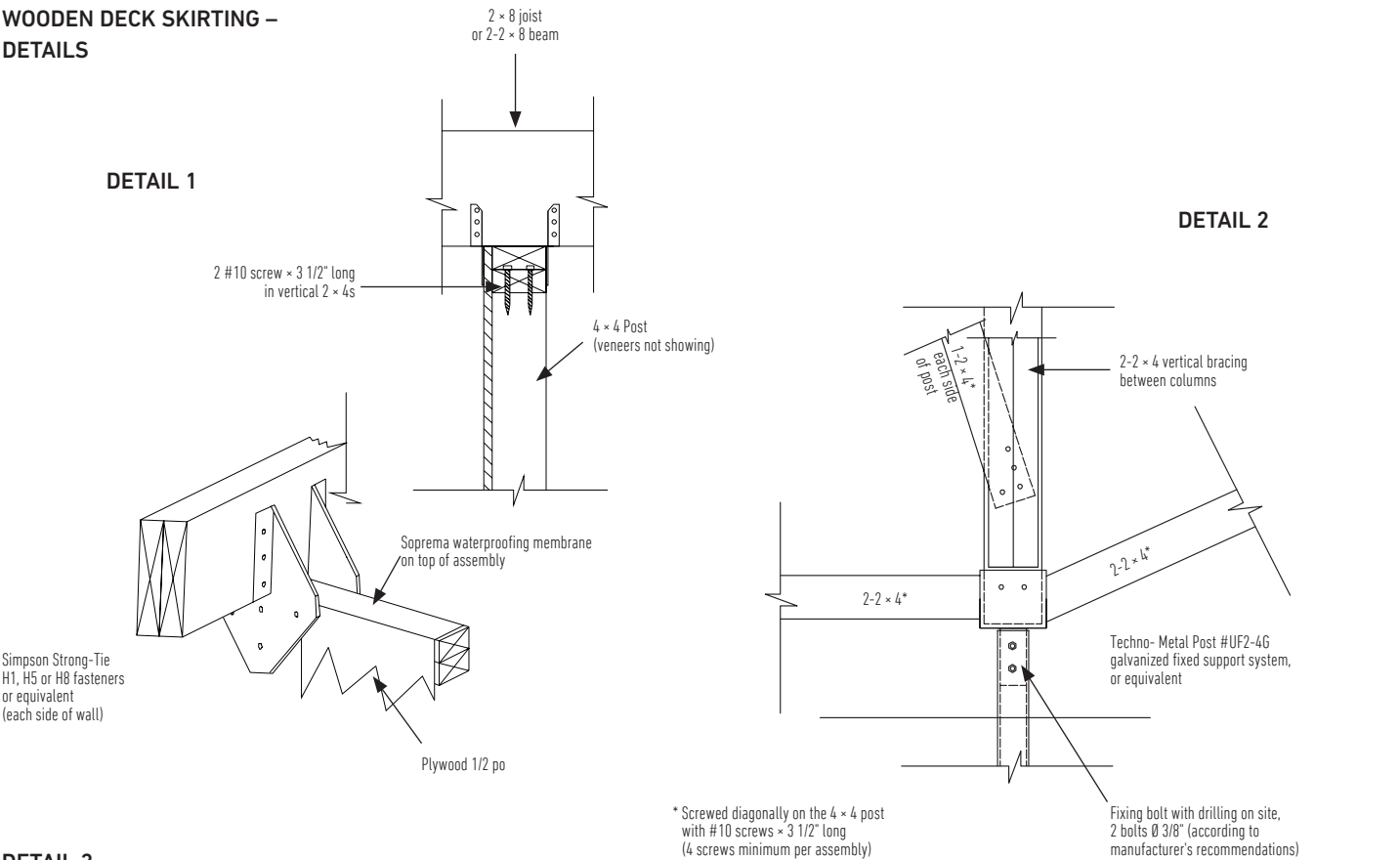


# Building Deck Skirting | Wooden Deck (cont'd)

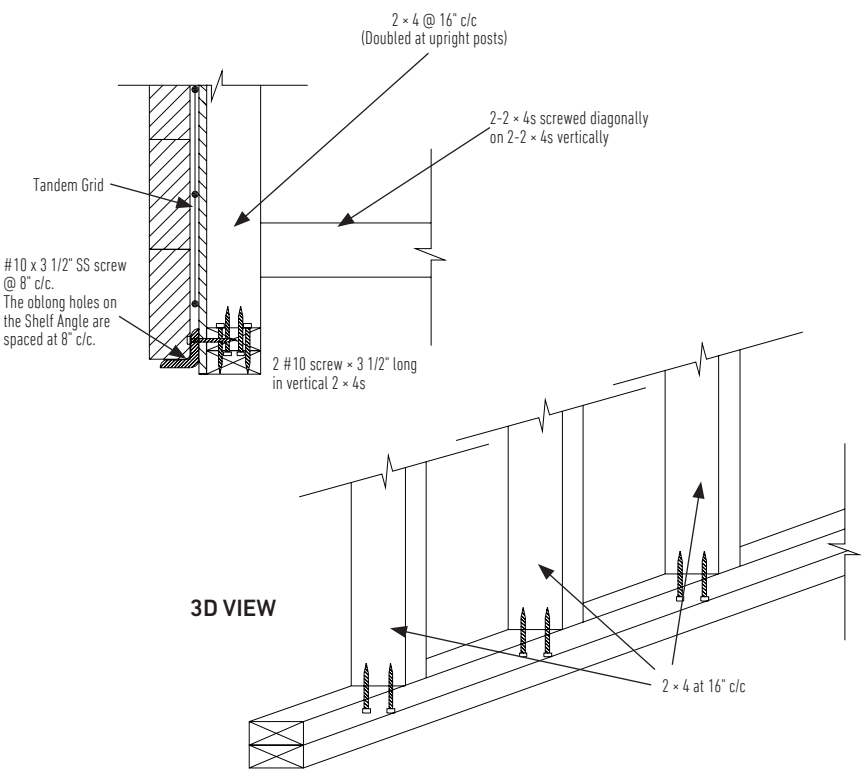
WOODEN DECK SKIRTING –  
CROSS-SECTION B-B



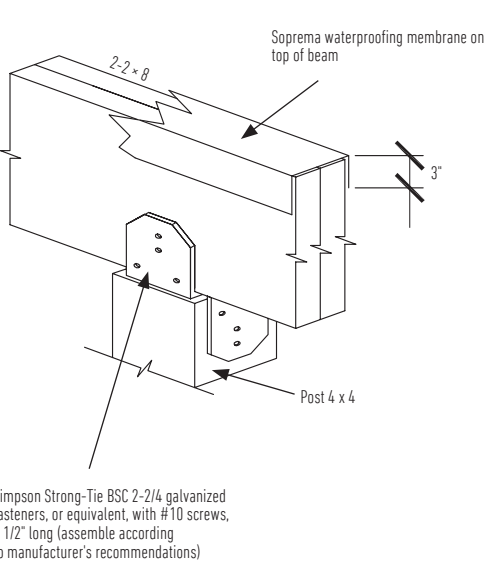
WOODEN DECK SKIRTING –  
DETAILS



DETAIL 3



DETAIL 4







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