CertainTeed

MASTER CRAFTSMAN

Education & Development Program

CertainTeed
SAINT-GOBAIN

Become a CertainTeed

MASTER CRAFTSMAN

The Bufftech® Education and Development Workbook is a key element in CertainTeed's Master Craftsman education and training program. We hope that you will use it to master the information critical to installing our vinyl fence products.

The more you know about Bufftech vinyl fence, the better able you'll be to recommend solutions and estimate jobs for your customers. Also, a mastery of the workbook is one of the components needed to benefit from the opportunities offered by the CertainTeed Building Solutions® Program.

After you have reviewed this workbook, you will be prepared to take the Master Craftsman Test, which will earn you valuable rewards. These rewards — and more importantly, the leg up you'll have on the competition — are not available to everyone, just to those who have successfully passed the test.

When you pass, you will:

- Receive a personalized Certificate of Completion that you can use to promote your professional services.
- Be listed as a Master Craftsman on our website, where potential customers can find you; the listing will include your name, company name, phone number, email address and a link to your website if you have one.

If you complete two or more Master Craftsman education programs, you'll receive:

- A certificate designating you as a Building Solutions® Specialist; your certificate will highlight the CertainTeed education programs you have successfully completed.
- Preferential listing on our contractor locator site when a consumer searches for multiple products at www.certainteed.com.

Table of Contents

Glossary

Aluminum channel Aluminum structural support used as a stiffener in rails.

Auger Hand or machine-operated tool with a screw-like shank for boring holes in soil.

Backfill Process of placing soil in construction; soil used as fill.

Blocking Method for supporting horizontal members, such as fence rails.

Brace Diagonal component of a gate; provides dimensional stability.

Bullet clip Gravity clip that is used to fasten rails to posts.

Caps Vinyl accessory placed on top of fence posts to provide a finished look and prevent water penetration.

Chalking White residue visible on the surface of a vinyl fence as it weathers.

Crimp lock Method for fastening rails inside posts. The rail is notched (crimped) so that it stays within the post once inserted.

Expansion and contraction All vinyl expands slightly when it heats up and contracts when it cools down as outside temperature changes.

EZ Set bracket Aluminum bracket system that fits over a steel post as an alternative installation method to secure and hold vinyl post in position.

Fence layout Section-by-section diagram of the proposed fence line.

Finish Refers to the texture and/or gloss level of vinyl fence.

Frost line Lowest level in soil that frosts or freezes. Frost line depth depends on winter temperatures, soil type and vegetation cover, and varies from 0" in warm regions to about 4' in cold-winter areas.

Gate Movable framework or solid structure that swings on hinges; controls entrance or exit through an opening in a fence.

Gate post stiffener Structural aluminum support used in gate hinge and latch posts to solidify as an alternative to traditional concrete and rebar method.

Gloss Describes amount of reflection or sheen on the surface of vinyl.

Good neighbor fence Fence that has the same look on both sides.

Lock ring Circular-shaped fastener with tabs that insert into rails for holding into posts.

On center (O.C.) Measure from the center of one object (e.g., a post) to the center of the next (post).

Picket end channel U-shaped channel attached to the posts on both ends of a privacy fence section.

PVC Polyvinyl chloride, the plastic resin used to manufacture “vinyl” fence.

Racking Method of installing fence on sloped terrain. Fence posts are plumb, but the rails are mounted at an angle so they parallel the grade.

Rail Horizontal pieces between fence posts.

Rebar Reinforcing bar, rods, round steel bars placed in end and gate posts to vertically reinforce the fence; No. 4 rebar is 1/2" diameter.

Scalloped Fence style in which the pickets follow a concave pattern high on both ends and low in the middle.

Slope Degree of incline of a hillside; measured in inches of rise per horizontal inches of run.

Snap cap Screw that comes with a vinyl washer and PVC cap to cover the screw head.

Stepping Method of installing fence on sloped terrain. Fence rails remain horizontal and posts are extended to accommodate the variance in the grade.

Tamp Compacting soil, fill material or concrete with repeated light blows using a flat tool or piece of lumber.

Wall mount brackets Aluminum bracket system used as an alternative installation method to fasten fence rails directly to walls or other structural surface.

Weep holes Openings drilled in bottom rails for drainage of water.

1. The Benefits of Vinyl Fence

Do you really need to add another fence material to your already wide product offering? Absolutely!

1.1 Homeowners Turn to Vinyl

Though relatively new, vinyl fences are becoming the preferred alternative to wood fences for seven main reasons:

1. Homeowners are questioning the safety of pressure-treated lumber. Their children play near treated fences and parents worry about the toxicity of possible by-products as treated wood ages. Also, there is concern about the safety of the sealants and stains used to maintain wood building products.
2. Decreasing supply and increased transportation costs have dramatically increased the prices for natural lumbers like cedar and redwood.
3. Homeowners are making purchase decisions that reflect their concerns about the environment and the ecological cost of harvesting trees for wood fences. Vinyl offers an alternative to the dwindling supply of quality wood.
4. Vinyl is virtually maintenance free. Homeowners don't want to sand and stain or paint wood fences annually. They continue to choose modern, maintenance-free building products over more traditional materials. Thus, they turn to vinyl because it never needs sealing, staining or painting. It is safe for their children and pets because it doesn't splinter and there is no exposed hardware.
5. Vinyl fence increases the value of their property and maintains the added value over time.
6. Vinyl fence features a "good neighbor" design, offering an attractive appearance on both sides of the fence.
7. Vinyl fence complements vinyl siding.

1.2 Quality Counts

Homeowners are willing to pay more for quality and CertainTeed building products are known for their high quality. Our 30 years of experience extruding vinyl profiles for siding and fence have made CertainTeed a leader in vinyl building products and services. We produce a competitively priced vinyl fence system while maintaining customer service and dealer support that are recognized by builders, remodelers and homeowners as the best in the industry.

While wood fences are not warranted and typically need to be replaced every 10 to 15 years or sooner, a Bufftech vinyl fence is protected by a lifetime limited transferable warranty and our exclusive 5-year SureStart™ material and labor protection.

Can you sell a product that, on the surface, looks pricier than wood? Certainly — once you demonstrate the significantly less maintenance and longer life of Bufftech vinyl fence.

1.3 Higher Profit Margins

For you, recommending a vinyl fence makes good business sense. First, vinyl is recognized as a premium building material. You won't be competing on price with the low-end weekend installers and you can position your business as the modern, professional alternative to dealers who offer only wood fences.

Second, in markets where severe weather — extreme heat and cold, salt air, high humidity, mold, mildew and termites — significantly reduces the life of wood products, home builders and owners are looking for a long-lasting, low-maintenance alternative to wood. A vinyl fence is that durable alternative.

Finally, Bufftech vinyl fence lets you spend less time installing each fence. Profits will improve because you won't:

- Spend time or money picking through warped, split and knotted wood
- Invest time or money in staining and sealing or painting
- Be called back to replace checked, cracked or warped boards

1.4 More Referrals

A Bufftech vinyl fence is an attention getter, even after years of use. It resists mildew better than wood. Most important, it keeps its like-new appearance for years. You can be assured of continued referrals, especially when homeowners experience the joys of a fence that:

- Does not splinter
- Stays cool to the touch
- Requires only occasional cleaning with water and mild detergent
- Will not rot or decay
- Is impervious to termites and other wood-boring insects
- Is backed by CertainTeed's lifetime limited transferable warranty and exclusive 5-year SureStart™ parts and labor protection

1.5 Building Responsibly™

CertainTeed respects the environment and is committed to manufacturing products in an ecologically sound manner. We support sustainable building and manufacturing practices with our full line of Bufftech vinyl fence products. When you choose Bufftech, you're making an environmentally responsible choice.

Green Manufacturing

Bufftech fence products are made in the USA at a facility that focuses on sustainability in every part of its operations. Built on a former brownfield site, the Buffalo, N.Y., manufacturing plant utilizes 100% hydropower and a closed-loop water system that saves more than 372 million gallons of water per year.

Reduced Waste

Bufftech is able to re-use scrap materials generated in production, resulting in reduced waste. Materials such as paper, plastic, oil, steel and lumber are recycled, rather than sent to landfills and incinerators as waste.

Recycled Content

Bufftech products contain 20% recycled content and are 99% recyclable.

Resource Conservation

Bufftech vinyl fence features a long life span and low maintenance, which helps to conserve natural resources. Bufftech fence is non-porous and will not develop mold or rot.

Low Environmental Impact

Bufftech fence never requires treating, painting or staining and doesn't emit harmful chemicals, reducing its impact on the environment.

Green Certification

Bufftech fence is GreenCircle Certified®, an independent, third-party evaluation system that confirms sustainable product development and material conservation.

2. Company History

Quality Made CERTAIN… Satisfaction GuaranTEED. More than just a slogan, it's our name. And since 1904, when the General Roofing Manufacturing Company began producing asphalt roofing materials, quality products and satisfied customers have been the hallmark of CertainTeed Corporation.

One Man's Dream

First established in 1904 by George M. Brown, the General Roofing Manufacturing Company was created to produce a less flammable and less expensive alternative to wood shingles. In 1917, the company changed its name to CertainTeed to reflect its expanding product line and Brown's business philosophy. In 1923, it began manufacturing gypsum wallboard for new home construction.

During World War II, CertainTeed lent its extensive management and production expertise to the war effort, but in 1946 began investigating the potential of a new product — fiber glass insulation. Within 10 years, CertainTeed was supplying roofing materials, gypsum and fiber glass insulation to the booming construction industry and had established itself as a leader in the country's effort to supply affordable housing for former GIs and their families.

In 1965, CertainTeed took its first step into PVC. Its later acquisition of Plains Plastic made CertainTeed a major manufacturer of plastic pipe. In 1969, the company began offering solid vinyl (PVC) siding to builders and contractors. The development of the fence business began in 1996 with the acquisition of Bufftech® vinyl fence and the development of EverNew® vinyl decking and railing. In 2006, CertainTeed added Panorama® composite railing to its product portfolio.

Today, CertainTeed is a leading North American manufacturer of ceilings; walls; vinyl and polymer siding and millwork; vinyl fence, vinyl and composite railing and vinyl decking; residential, commercial and mechanical insulation; and residential and commercial roofing.

Building Products Today

The Fence, Railing and Deck division, which supplies Bufftech vinyl fence, is just one of a number of operating groups that make up CertainTeed Corporation. Among approximately 20 manufacturers and over 30 brand names, CertainTeed is number one in sales of vinyl siding and accessories. More importantly, CertainTeed roofing and vinyl building products are consistently rated at the top for quality and performance by consumer and trade magazines alike.

From its humble beginnings in East St. Louis, Illinois, through two World Wars and the Great Depression, CertainTeed has become one of the nation's largest and most respected manufacturers of building products. Today, CertainTeed celebrates more than 100 years of leading the building industry with creative advancements, insightful solutions and unparalleled dedication to service.

3. Manufacturing

3.1 Raw Materials

The quality you've come to expect from CertainTeed building products is built in at the factory. From the time raw materials are manufactured until finished product is shipped to our customers, we control, inspect and test throughout every step of the manufacturing process. As part of ongoing quality assurance, we work with all our suppliers to develop tight specifications and test for their consistency. The result is a line of vinyl building products you can count on for superb appearance, durability and ease of installation — every time. Though our fence systems are referred to simply as "vinyl," vinyl fence is actually a precise blend of carefully tested and controlled materials, all of which contribute to their performance, durability and appearance.

Polyvinyl Chloride Resin

Polyvinyl chloride resin gives vinyl its name. PVC, which starts as a powder, is a thermoplastic, which means that when it is exposed to high temperatures in the manufacturing process, the compound can be shaped, embossed and formed. Eighty percent of the weight of vinyl fence is PVC resin. The remaining 20 percent is the critical micro-ingredients that impart the distinctive color, opacity, gloss, texture, impact resistance, flexibility and durability to the fence.

Color Technology

Color is carefully manufactured to meet our precise specifications. We select and test the pigment to verify that it is stable and has excellent weathering properties. To verify consistency, spectrophotometers carefully measure the color.

TiO_2

Titanium dioxide is a critical additive in vinyl because it protects PVC from potentially harmful UV rays. It acts to prevent the sun from degrading the resin. A manufacturer of low-cost vinyl products may attempt to use less TiO_2 because this additive is expensive. Without TiO_2, vinyl products could become cracked and brittle due to weathering. Unsuspecting customers will not notice the weathering for a few years.

ASA

Acrylic-Styrene-Acylonitrile is specially engineered to retain its color and mechanical properties under long-term exposure to ultraviolet light, moisture and heat. This is particularly important with darker shades, which tend to weather more quickly than lighter tones. The ASA formulation delivers a rich, long-lasting color that will resist fading for years to come.

Calcium Stearate

CertainTeed uses only fused granular calcium stearate. It helps the various ingredients in the PVC compound blend into a uniform, stable dispersion and aids in the manufacturing process. Its use particularly improves the fusion of the PVC compound and produces a uniform finish that resists cracking.

Waxes

Waxes prevent the PVC compound from sticking to the metal surfaces in the extrusion process. Wax also affects the gloss on the finished product, and it is always used in precise amounts to ensure a consistent, reproducible finish from batch to batch.

Impact Modifiers

Impact modifiers do just that. They make vinyl fence more resistant to the dings and dents that routinely occur during installation and use. Carefully selected and blended impact modifiers help vinyl fence and accessories withstand normal installation and use.

Stabilizers

Stabilizers are used to protect the PVC compound from degrading as it is heated and subjected to pressure. This keeps the plastic flexible. Also, additional UV stabilizers protect the color from oxidizing and fading.

3.2 Manufacturing Processes

Technical excellence, processing expertise and an unwavering commitment to quality characterize the equipment, processes and personnel at our vinyl fence manufacturing plant. Since the 1960s, CertainTeed has
been developing innovative products and processes to improve the look and durability of our polyvinyl chloride.

At the same time, tried-and-true manufacturing methods are tested and re-tested to ensure that you consistently receive the highest quality product.

Blending

The manufacturing process begins as resin is unloaded from railroad cars through an air-conveying system into huge silos, then is conveyed to a state-of-the-art computerized blending system where TiO_2 and other micro-ingredients are added to create the processing compound. This precise measuring of ingredients and uniform blending under proper heat conditions are critical for the production of uniform, high-quality products. After blending, the compound is conveyed to the extrusion line where it is carefully metered so a consistent amount enters the extruder.

Extrusion

Basically, extrusion is a process in which a thermoplastic resin (one that softens when heated and hardens when cooled) is pushed through a heated barrel and die by two large, precisely tooled screws. As they turn, the screws knead and thoroughly mix the PVC compound. Both the screws and the barrel of the extruder are heated, which melts the resin and makes it easier to mix and push. The heat (300° to 400° F) also accelerates the physical reaction (fusion) between the PVC and the micro-ingredients in the compound.

All vinyl fence products are extruded, but CertainTeed was the first to extrude all its fencing with twin-screw extruders. Twin-screw extrusion is preferable to single-screw extrusion because it heats and distributes material more evenly, resulting in a product with better physical properties. As the PVC compound is forced ahead of the rotating screws, the very tight tolerances in the double barrel promote complete fusion of the ingredients.

Color concentrate is added at the extruder, a technique that produces rich, durable color in every piece of fence.

Co-extrusion

Co-extrusion is the joining of two flows of molten PVC compound from two extruders in a single die to produce a single profile made of two layers of material: substrate and capstock. Co-extrusion allows us to concentrate the most important, expensive micro-ingredients in the capstock, which acts as a shield protecting the extrusion from the dangers of UV light.

Water Tank

The vinyl profile enters a water tank immediately after vacuum sizing. Once the hot profile is in the cooling tank, the temperature quickly drops and the final shape thermally sets.

3.3 Quality Control

Before, during and after they are manufactured, Bufftech fence systems are tested against a set of manufacturing and product specifications. These specs define the minimums, maximums and tolerances that a raw material or sample of a finished product must meet to satisfy either our standards, ASTM D1784 requirements or local and national building codes. While some of these tests don't appear to directly relate to the conditions the fence is exposed to during installation and use, they all contribute to the quality and durability of the final product.

4. Tools and Materials

Installing Bufftech fence is predictable and easy, if properly planned. An essential part of a trouble-free installation is having the materials on hand before you begin. Below are the tools and materials needed for installation.

4.1 Getting Started

- Site plans and permits
- Hammer
- String line
- Measuring tape
- Stakes
- Spray paint (marking post locations)

4.2 Digging Holes

- Shovel
- Post hole digger or auger (4" x 4" = 10", 5" x 5" = 12")
- Wrecking (tamping) bar posts

4.3 Installing Posts

- Wheelbarrow
- Concrete mix and gravel
- Garden hose
- Level
- Concrete tools
- Short length of wood (2x4) for tamping concrete

4.4 Installing Fence Sections

- Leveling blocks
- Shim stock
- Duct tape to seal rail ends

4.5 Assembling Gates

- Drop cloth
- Phillips screwdriver
- PVC cement
- Square
- #3 square drive bit
- Hacksaw, circular or chop saw (masonry blade)
- Drill & drill bits (1/8" for #8 screws; 1/4" for bullet clips and drain holes; 5/32" for hinge when using aluminum insert; 3/8" for lock rings on Post & Rail)

4.6 Installing Gates

- Wrenches for hinge (7/16"), 3/4" for Post & Rail

4.7 Filling End/Gate Posts with Concrete

- 1/2" rebar
- Rubber mallet (tap posts)
- Funnel, can or scoop
- Step ladder (higher fences)

4.8 Cleaning Up

- Bucket and sponge
- Soft Scrub™ type cleanser
- Scrub pad

5. Laying Out the Fence Line

5.1 Before You Begin

- Check with the utility companies for underground supply and power lines.
- If you are installing a fence along a property line, suggest that the homeowner have the property surveyed.
- Always check with local building authorities for any necessary permits and to verify fence and pool codes.

5.2 Laying Out the Fence Line

The first step in determining the fence layout is to walk the fence line. Make certain there are no obstacles and look for any changes in the terrain that will need to be accommodated. Next, stake out the fence line. Place stakes and string where you intend to install your fence. Decide the location and desired size of the gates and mark them along the string line. Remember: Gates come assembled in standard sizes or a custom size gate can be built. For all gates, allow 1-3/4" to 2" for the gate hardware.

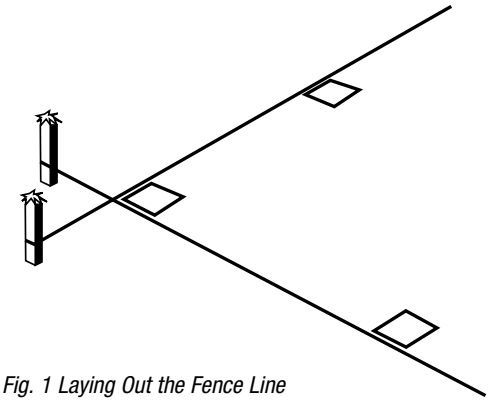


Fig. 1 Laying Out the Fence Line

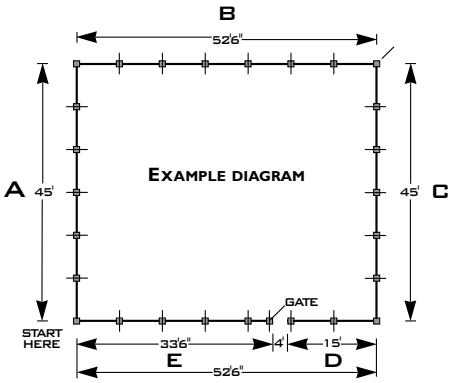


Fig. 2 Diagram

5.3 Laying Out the Fence

1. Take a rough measurement of the fence line.
2. Draw a diagram of the fence line, including the gate locations.
3. Identify each side or segment of the diagram with a letter (A,B,C, etc.). Start a new segment on both sides of each gate (D and E segments in example).
4. Measure the actual fence line. Write a measurement for every side or segment that is represented by a letter on the diagram. It is likely that standard fence sections will not exactly fit the fence layout, so you will have to decide which spacing method to use (proportional spacing or the remainder method) to accommodate the actual dimensions of the fence line. For proportional spacing, cut each fence section to the same width so that all the sections, even those next to gates and walls, are equally spaced. For the remainder method, install most of the fence sections as they are supplied. One fence section in each segment of the layout will be cut to fit the "remainder" space.
5. Using the chart below, determine the standard width of a fence section for the style you will be ordering.

Style	Width of Standard Section	Width of Gate
Cape Cod, Yorkshire	6'	50"
Danbury, Rothbury, Canterbury, Manchester, Baron, Countess, Monarch, Princeton, Victorian,Chesterfield, Galveston,Columbia, Imperial, Millbrook	8'	50"
New Lexington	8'	42-3/8"
Post & Rail		
2-Rail,	8'	72"
3-Rail, 4-Rail, Crossbuck	8'	96"

6. Ordering Materials

Drawing a diagram of your fence layout makes ordering materials easy. Draw your own diagram using graph paper or use the Bufftech diagram and order chart from your product catalog.

1. To determine the number of fence sections to order, divide the length of the segment by the width of a standard section of fence. Round up to the nearest whole number.

   For Post & Rail fence, multiply the number of sections by either 2, 3 or 4 (rails) to determine the number of 8' rails required. If ordering 16' rails, divide the number of rails by 2 and round up if necessary. Each rail requires two lock rings. Multiply the number of rails by two.

2. An end post is required for each side of the gate and/or where the fence stops. Identify the end posts needed for every side and/or segment of the diagram. (When a gate is located at the end of a fence line, a blank un-routed post — not an end post — is required for latching or hinging.)
   - Identify the corner posts on your diagram.
   - Determine the number of line posts. Split (mark) the segments of your diagram into the number of fence sections calculated from step 1. Each mark represents a line post. On the ordering chart, enter the number of line posts required for each segment in the diagram.

3. Determine the cap style (gothic external, interior flat, exterior flat, ball or New England cap) and quantity of post caps, ordering one cap for each post.

6.1 Gates

Assembled gates include all material and come in 50" width. (Chesterfield gates are 36-1/2", 50-1/2", 64-3/4"; New Lexington gates are 42-1/2", 50-1/2", 65-1/4".) For custom size gates, order a gate kit plus one additional fence section. For wider applications (double drive) order two gates (kits or assembled gates). Wider gates also will require a gate extension kit. Order one drop pin kit for each assembled gate or gate kit.

6.2 Post & Rail Gates

For 2-Rail, order 6' wide gate kit plus two (2) 8' rails. For 3 or 4-Rail, order 8' wide gate kit plus three (3) 8' rails for 3-Rail or four (4) 8' rails for 4-Rail. Kits come unassembled and rails may be cut to accommodate smaller openings. For wider openings (double drive) order two (2) gate kits. Order one (1) drop pin kit for each gate kit.

6.3 Concrete Requirements

All posts require concrete to be poured around the post base. All hinge and latch posts require concrete to fill the post inside, enough to cover the rebar and gate hardware (or insertion of the aluminum gate post stiffener).

Concrete Requirements for Posts[1]

Post Size	Fence Post	End Line or Corner Post	(if filling post with concrete) End Post	Gate Post
4 x 4	3'	100 lb	145 lb	150 lb
4 x 4	4'	100 lb	155 lb	165 lb
5 x 5	5'	140 lb	235 lb	260 lb
5 x 5	6'	140 lb	240 lb	275 lb
5 x 5	2 rail	140 lb	210 lb	230 lb
5 x 5	3 rail	140 lb	230 lb	250 lb
5 x 5	4 rail	140 lb	250 lb	280 lb

The total amount of concrete is based on the number of posts in the fence layout. To determine the total, multiply the number of line, corner, end and gate posts by the appropriate pounds/post. Divide the total pounds by either 60 or 80 (pounds of concrete per bag) to determine the number of bags to order.

6.4 Solidify Posts

Gate hinge and latch posts as well as end posts can be solidified by using an aluminum gate post stiffener inside each post or by filling post with concrete and rebar.*

Hinge and latch posts require two pieces of 1/2" rebar installed in opposing corners of the post. Length to extend from the bottom of hole to 12" from top of post.

End posts require two pieces of 1/2" rebar installed in opposing corners of the post. Length to extend from bottom of the hole to halfway up post.

6.5 Alternative Fence Installations

For fence systems on concrete, use steel posts. On concrete applications fence may be installed with 1-5/8" (4 x 4 post) or 1-7/8" (5 x 5 post) galvanized steel post set in hydraulic cement. EZ Set bracket bolts to post as a spacer. For wall mounting, use wall mount brackets.

EZ Set Bracket Installation Instructions on Concrete

- Core drill hole into concrete
- Minimum 4" deep
- Post centers will remain the same as normal installation
- Rails will have to be cut down to fit between steel post
- Fill hole with hydraulic cement. Insert steel post:
  For 4" vinyl post, set 1-5/8" OD steel post
  For 5" vinyl post, set 1-7/8" OD steel post
- Steel post should go at least halfway up the vinyl post
- Put EZ Set brackets together and slide over steel post
- Place one bracket on steel post below where the routed hole will be on your vinyl post
- Place other bracket just below the top of your steel post
- Slide vinyl post over steel post with EZ Set brackets

[1] Figures are based on a 10" hole for a 4 x 4 post, a 12" hole for a 5 x 5 post, both 30" deep.

* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking over time. This would not be covered by the warranty.

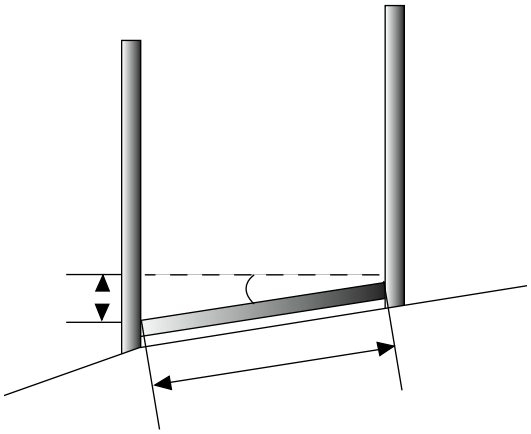
7. Variable Terrain Installation

7.1 Calculate Rise/Foot Angle

To determine the hole enlargement size, first calculate the slope rise/foot or the angle of the slope. Refer to the diagram and examples.

- Measure section length in inches
- Determine section rise by using line level and measuring vertical rise; measure rise in inches
- Divide rise by section length to get rise per inch
- Multiply by 12 to determine rise per foot

Example: 24" rise ÷ 96" length = .25 rise per inch =
3" rise per foot



Two methods for installing a fence on variable sloping terrain exist — stepping and racking.

For either method, divide slope evenly into all sections.

7.2 Stepping Method

With the stepping method, the rails remain horizontal and the posts are extended to accommodate the variance in terrain. Longer end posts should be used and holes for the opposite side of the post can be field fabricated with template kit and router or spiral saw to accept rails.

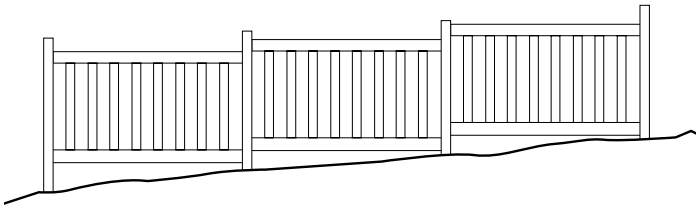


Fig. 3 Stepped Fence

7.3 Racking Method – 10˚ or Less

With the racking method, the horizontal rails will follow the sloping terrain.

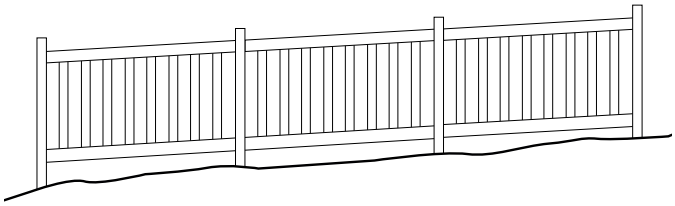


Fig. 4 Racked Fence

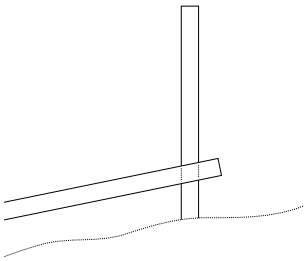
When installing multiple sections, it is advisable to use an end post and field fabricate the opposite side of the post to avoid a jagged fence line.

Depending on the severity of rack (and specific fence style), the following field fabrication may be necessary for proper installation:

1. Enlarge holes in post to accept rails
2. Enlarge holes in rail to accept pickets
3. Shorten picket length

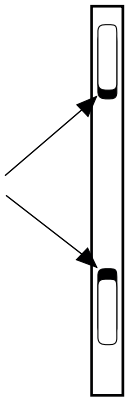
Note: Depending on severity of rack, post centers may need to be decreased. Be sure to verify prior to setting posts.

1. Enlarge holes in post to accept rails
   - Determine angle or slope
   - Place first post in hole and hold plumb
   - Place rail next to post (not in routed hole) at correct angle of grade



   - Mark rail where post crosses it on angle
   - Remove rail, measure the length of the drawn angle. Add 1/8" to this length to determine proper post hole size
   - Enlarge post holes

Note: Always open bottom of top hole and top of bottom hole to maintain proper fence height.



– Holes may be cut utilizing a template kit and router or spiral saw

– Determine location of holes on opposite side of line post by laying post across side of rail (align with routed hole) and marking exit position of rail on opposite side of post

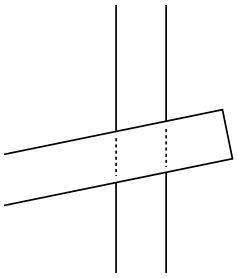
– Cut holes with template kit and router or spiral saw as previous

2. Enlarge holes in rail to accept picket

– Position rail at desired angle

– Hold picket plumb against side of rail

– Mark picket where rail crosses it on angle



– Measure the length of the drawn angle and add 1/8" to this length to determine proper rail hole size

– Enlarge holes with a spiral saw

Note: Always cut the same side of each hole to maintain spacing.

3. Shorten picket length

– For extreme racking situations, picket ends may need to be cut to accommodate rack

– Position top and bottom rails in routed post holes

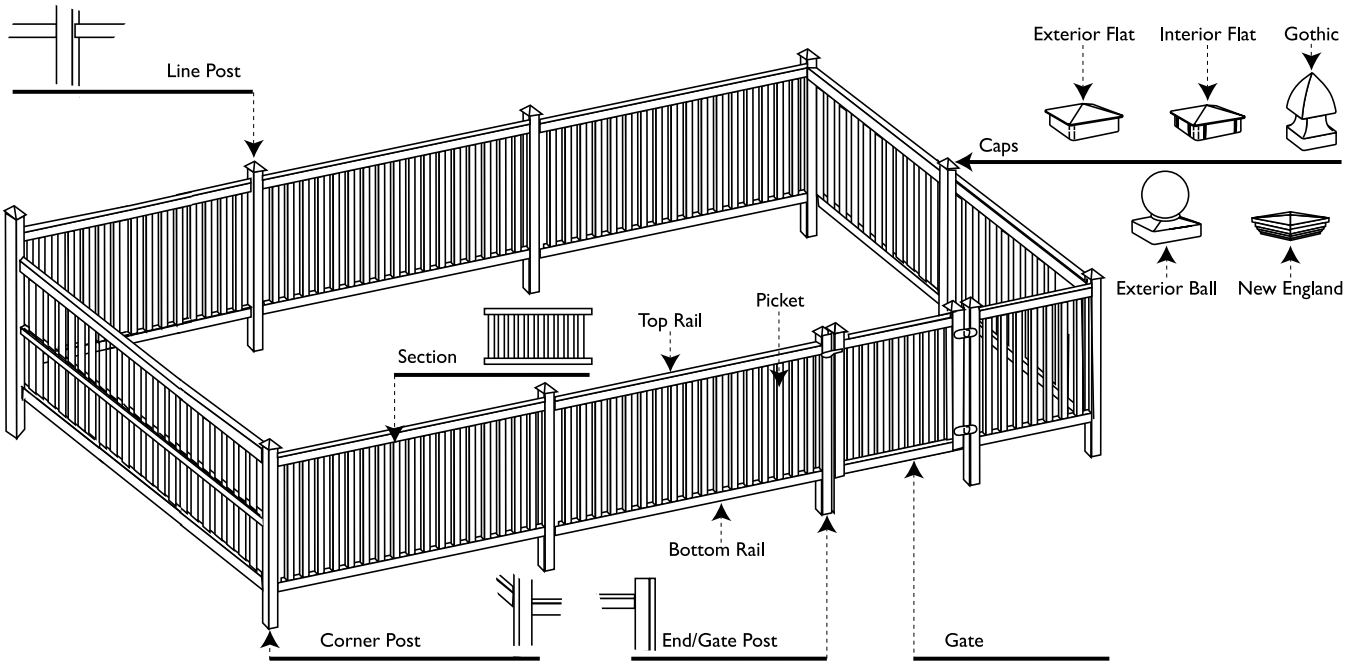
– Position picket next to rails so it is plumb and aligned with bottom side of bottom rail

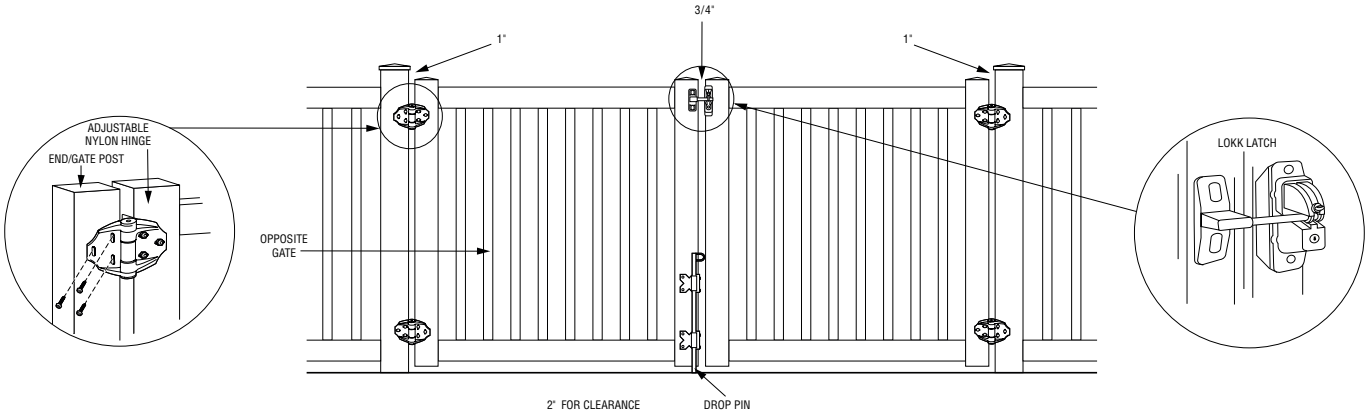
– Mark position where top of picket intersects with top of top rail; subtract 3/8" and cut picket to length

Note: For ribbed rails, top and bottom of picket will need to be aligned with internal rib.

8. Bufftech Vinyl Fence Components

Before you order materials, determine what you will need.





9. Product Offering

		Height	Racking	Post Size	Section Width	Picket Size	Picket Spacing	Code	
Privacy	**Galveston Smooth**	7', 8'	5° *	5" x 5"	96"	7/8" x 7" Tongue & Groove	N/A		
	Galveston CertaGrain	7', 8'	5° *	5" x 5"	96"	7/8" x 7" Tongue & Groove	N/A		
	Chesterfield Smooth	4', 5', 6'	10° *	5" x 5"	96"	7/8" x 7" Tongue & Groove	N/A		
	Chesterfield CertaGrain	4', 5', 6'	10° *	5" x 5"	96"	7/8" x 7" Tongue & Groove	N/A		
	Chesterfield CertaStucco	4', 5', 6'	10° *	5" x 5"	96"	7/8" x 7" Tongue & Groove	N/A		
	New Lexington	4', 5', 6'	7° *	5" x 5"	96"	5/8" x 11-3/8" Tongue & Groove	N/A		
Semi-Private	**Imperial Smooth**	3', 4'	10°	4" x 4"	96"	7/8" x 3"	7/16"		
		5', 6'	5°	5" x 5"					
	Imperial Select Cedar	4'	10°	4" x 4"	96"	7/8" x 3"	7/16"		
		5', 6'	5°	5" x 5"					
	Columbia	5', 6'	5°	5" x 5"	96"	7/8" x 6" Ribbed	4-9/16"		
	Millbrook	5', 6'	5°	5" x 5"	96"	7/8" x 6" Ribbed	13/16"		
Contemporary	**Baron Smooth**	3', 4'	10°	4" x 4"	96"	7/8" x 3"	2-15/16"		
		5', 6'	5°	5" x 5"					
	Baron Select Cedar	4'	10°	4" x 4"	96"	7/8" x 3"	2-15/16"		
		5', 6'	5°	5" x 5"					
	Princeton	3', 4'	10°	4" x 4"	96"	7/8" x 1-1/2"	1-3/4"		
		5', 6'	5°	5" x 5"					
	Countess	3', 4'	10°	4" x 4"	96"	7/8" x 1-1/2" 7/8" x 3"	2-5/16"		
		5', 6'	5°	5" x 5"					
	Monarch	3', 4'	10°	4" x 4"	96"	7/8" x 1-1/2" 7/8" x 3"	3"		
		5', 6'	5°	5" x 5"					
	Victorian	3', 4'	10°	4" x 4"	96"	7/8" x 1-1/2"	3-5/8"		
		5', 6'	5°	5" x 5"					
Classic	**Manchester**	3', 4'	5°	5" x 5"	96"	1-1/2" x 1-1/2"	1-9/16"		
	Canterbury	3', 4'	5°	5" x 5"	96"	1-1/2" x 1-1/2"	1-9/16"		
Traditional	**Danbury Smooth**	4'	5°	4" x 4"	96"	7/8" x 3"	2-15/16"		
	Danbury Select Cedar	4'	5°	4" x 4"	96"	7/8" x 3"	2-15/16"		
	Rothbury	4'	5°	4" x 4"	96"	7/8" x 3"	2-15/16"		
	Cape Cod	3', 4'	15°	4" x 4"	72"	7/8" x 3"	2-7/16"		
		5'	15°	5" x 5"					
	Yorkshire	3', 4'	15°	4" x 4"	72"	7/8" x 3"	2-7/16"		
Post & Rail	**Post & Rail Smooth**	3', 4', 5'	5°	5" x 5"	96"	N/A	N/A		
	Post & Rail CertaGrain	3', 4', 5'	5°	5" x 5"	96" White 72" Blend Colors	N/A	N/A		
	Crossbuck	4'	5°	5" x 5"	96"	N/A	N/A		

*Accents will reduce the amount of racking **Reinforced top rail for ColorLast® colors

Metal Rail Reinforcement	Rails	Color
Top, Middle, Bottom	2" x 6" Deco x 95" (Top/Bottom) 2" x 6" x 95" (Midrail)	White, Almond
Top, Middle, Bottom	2" x 6" Channeled x 95" (Top/Bottom) 2" x 6" x 95" (Midrail)	Natural Clay, Weathered Blend, Frontier Blend, Arbor Blend, Arctic Blend, Brazilian Blend, Sierra Blend, Honey Blend
Bottom**	2" x 6" Deco x 95"	White, Almond, Natural Clay
Bottom**	2" x 6" Channeled x 95"	White, Almond, Natural Clay, Weathered Blend, Timber Blend, Canyon Blend, Frontier Blend, Arbor Blend, Arctic Blend, Brazilian Blend, Sierra Blend, Honey Blend
Bottom	2" x 6" Channeled x 95"	Mission Ivory, Almond
Bottom	1-1/2" x 5-1/2" Deco x 95"	White, Almond
Bottom**	1-3/4" x 3-1/2" x 95-1/2"	White, Almond, Natural Clay
Bottom**	1-3/4" x 3-1/2" x 95-1/2"	White, Almond, Natural Clay, Weathered Blend, Timber Blend, Frontier Blend, Arbor Blend, Arctic Blend, Brazilian Blend, Sierra Blend
Bottom (Aluminum)	3-1/2" x 3-1/2" x 94"	White
Bottom	2" x 6" x 94-1/2" (Top/Bottom) 1-3/4" x 3-1/2" x 94-1/2" (Midrail)	White, Almond
Bottom**	1-3/4" x 3-1/2" x 95-1/2"	White, Almond, Natural Clay
Bottom**	1-3/4" x 3-1/2" x 95-1/2"	White, Almond, Natural Clay, Weathered Blend, Timber Blend, Frontier Blend, Arbor Blend, Arctic Blend, Brazilian Blend, Sierra Blend
Bottom	1-3/4" x 3-1/2" x 95-1/2"	White, Almond
Bottom	1-3/4" x 3-1/2" x 95-1/2"	White, Almond
Bottom	1-3/4" x 3-1/2" x 95-1/2"	White, Almond
Bottom	1-3/4" x 3-1/2" x 95-1/2"	White, Almond
Bottom	2" x 6" x 94-1/2" (Bottom) 2" x 3-1/2" x 95" (Top)	White, Almond
Bottom	2" x 6" x 94-1/2" (Bottom) 2" x 3-1/2" x 95" (Mid/Top)	White
Bottom	1-3/4" x 3-1/2" x 95-1/2"	White, Almond, Natural Clay
Bottom	1-3/4" x 3-1/2" x 95-1/2"	White, Almond, Natural Clay, Weathered Blend, Arbor Blend, Arctic Blend, Sierra Blend
Bottom	1-3/4" x 3-1/2" x 95-1/2"	White, Almond
None	1-3/4" x 3-1/2" x 71-1/2"	White
None	1-3/4" x 3-1/2" x 71-1/2"	White
None	1-1/2" x 5-1/2" Ribbed or 2" x 6" Ribbed	White, Almond
None	1-1/2" x 5-1/2" Ribbed (white) or 2" x 6" Ribbed (blend colors)	White, Weathered Blend, Arctic Blend, Brazilian Blend, Sierra Blend
None	1-1/2" x 5-1/2" Ribbed	White

Engineered for use in high wind and hurricane conditions.

Meets requirements of the ASTM that comply with local codes for swimming pool applications. Check with your local building code official as local codes may vary.

10. Installing Cape Cod and Yorkshire — Traditional Picket Fence

10.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

10.2 Dig Holes

- Dig holes 30" deep or to frost line
  - hole size for 5 x 5 posts = approximately 12"
  - hole size for 4 x 4 posts = approximately 10"
- Clean holes and check for straight walls

10.3 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post

10.4 Install Bottom Rail

- Tape the ends of any rail being inserted into a post that is to be filled with concrete to prevent concrete seepage
- Insert rail into post

  Note: Pickets will attach to rail on the side with the small (1/4") holes.
- Insert lock ring in end of rail
- Depress lock ring tabs and insert rail in post
- Tabs will recoil to hold rail in post

10.5 Install Second Post

- Insert second post in hole
- Insert bottom rail in post
- Insert block under bottom rail to position at correct fence height
- Fill hole around second post with concrete mix
- Tamp, level and square fence
- Assembly may be continued by installing all bottom rails first or one section at a time

10.6 Support and Secure

- Level and square fence
- To lower a post, place a wood block from corner to corner on the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

10.7 Install Pickets and Rails

- Insert top rail in post
- Depress lock ring tabs, insert top rail in post

10.8 Install Pickets

- For field assembly, insert hex washer head screw through large (3/4") pre-drilled hole in top rail
- Align pre-drilled hole in picket, tighten with 1/2" deep socket wrench or nut driver with clutchdrill (do not overtighten)
- Repeat for bottom rail
- Insert (3/4") hole plug into hole in back side of rail

10.9 Secure Rails

- Square pickets and rails
- Check for even picket spacing on each end of rail
- Top rail may be secured inside post with a #8 x 3/4" screw on each end

10.10 Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1" gap for hinge and 3/4" for latch and gate swing
- Block up gate to square with fence; rails should be level
- Gate hardware must be mounted to two sides of the post

10.11 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:

  A. Aluminum gate post stiffener

  – Slide aluminum gate stiffener inside hinge, latch or end posts with open end facing routed hole

  – Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post to hold in place

  – Insert post into ground

  – Fill hole with concrete around outside of post

  B. Concrete and rebar*

  – Use two pieces of 1/2" rebar in each hinge, latch and end post

  – Rebar should extend from the bottom of the hole to approximately 12" from the top of the post

  – Hold rebar in opposite corners of post with rebar separator clips

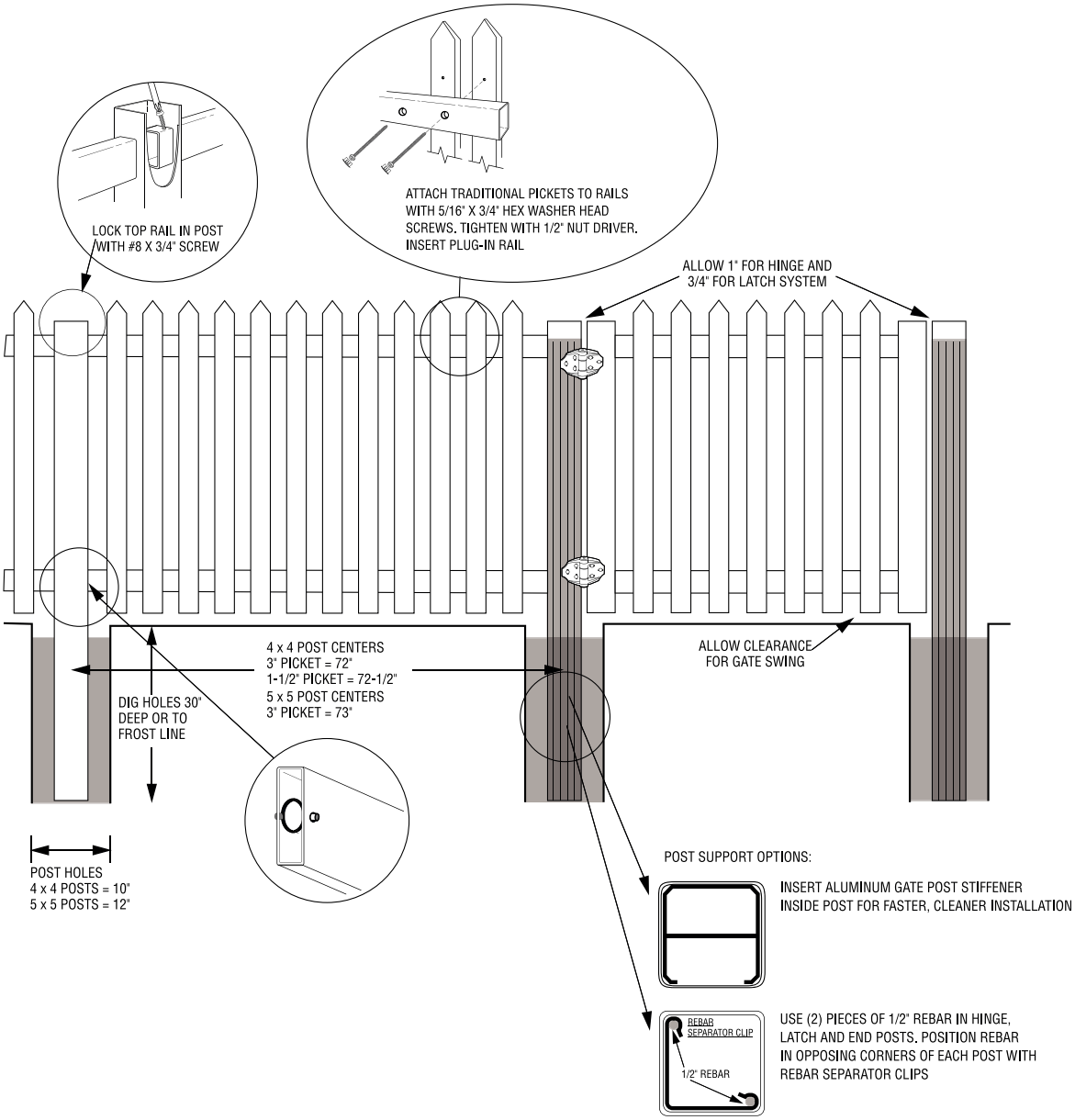
  – Fill post with concrete mix to cover rebar and hardware fasteners

  – Tamp post with a rubber mallet to eliminate air pockets

  – Leave gate on blocks for 72 hours to allow concrete to set

10.12 Install Caps

- Install post caps
- Caps may be secured with glue, silicone adhesive or #8 x 3/4" screws, caps and washers



* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

11. Installing Danbury (straight & concave), Danbury with Select Cedar Texture (straight & concave) and Rothbury (straight & concave) — Traditional Picket Fence

11.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

11.2 Dig Holes

- Dig holes 30" deep or to frost line
  - hole size for 4 x 4 posts = approximately 10"
- Clean holes and check for straight walls

11.3 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post

11.4 Install Bottom Rail

- Check bottom rail for drain holes
- Tape the ends of any rail being inserted into a post that is to be filled with concrete to prevent concrete seepage
- Insert lock ring in end of rail
- Depress lock ring tabs and insert rail in post
- Tabs will recoil to hold rail in post

11.5 Install Second Post

- Insert second post in hole
- Insert bottom rail in post
- Insert block under bottom rail to position at correct fence height
- Fill hole around second post with concrete mix
- Tamp, level and square fence
- Assembly may be continued by installing all bottom rails first or one section at a time

11.6 Support and Secure

- Level and square fence
- To lower a post, place a wood block from corner to corner on the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

11.7 Install Pickets

- Insert top rail in post with large holes facing down
- Insert pickets through holes in top rail
- Insert pickets in bottom rail. Pickets are crimped to hold in rail

11.8 Secure Rails

- Depress lock ring tabs, insert top rail in post
- Square pickets and rails
- Check for even picket spacing on each end of rail
- Top rail may be secured inside post with a #8 x 3/4" screw on each end

11.9 Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1" gap for hinge and 3/4" for latch and gate swing
- Block up gate to square with fence; rails should be level
- Gate hardware must be mounted to two sides of the post

11.10 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:

A. Aluminum gate post stiffener

– Slide aluminum gate stiffener inside hinge, latch or end posts with open end facing routed hole

– Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post to hold in place

– Insert post into ground

– Fill hole with concrete around outside of post

B. Concrete and rebar*

– Use two pieces of 1/2" rebar in each hinge, latch and end post

– Rebar should extend from the bottom of the hole to approximately 12" from the top of the post

– Hold rebar in opposite corners of post with rebar separator clips

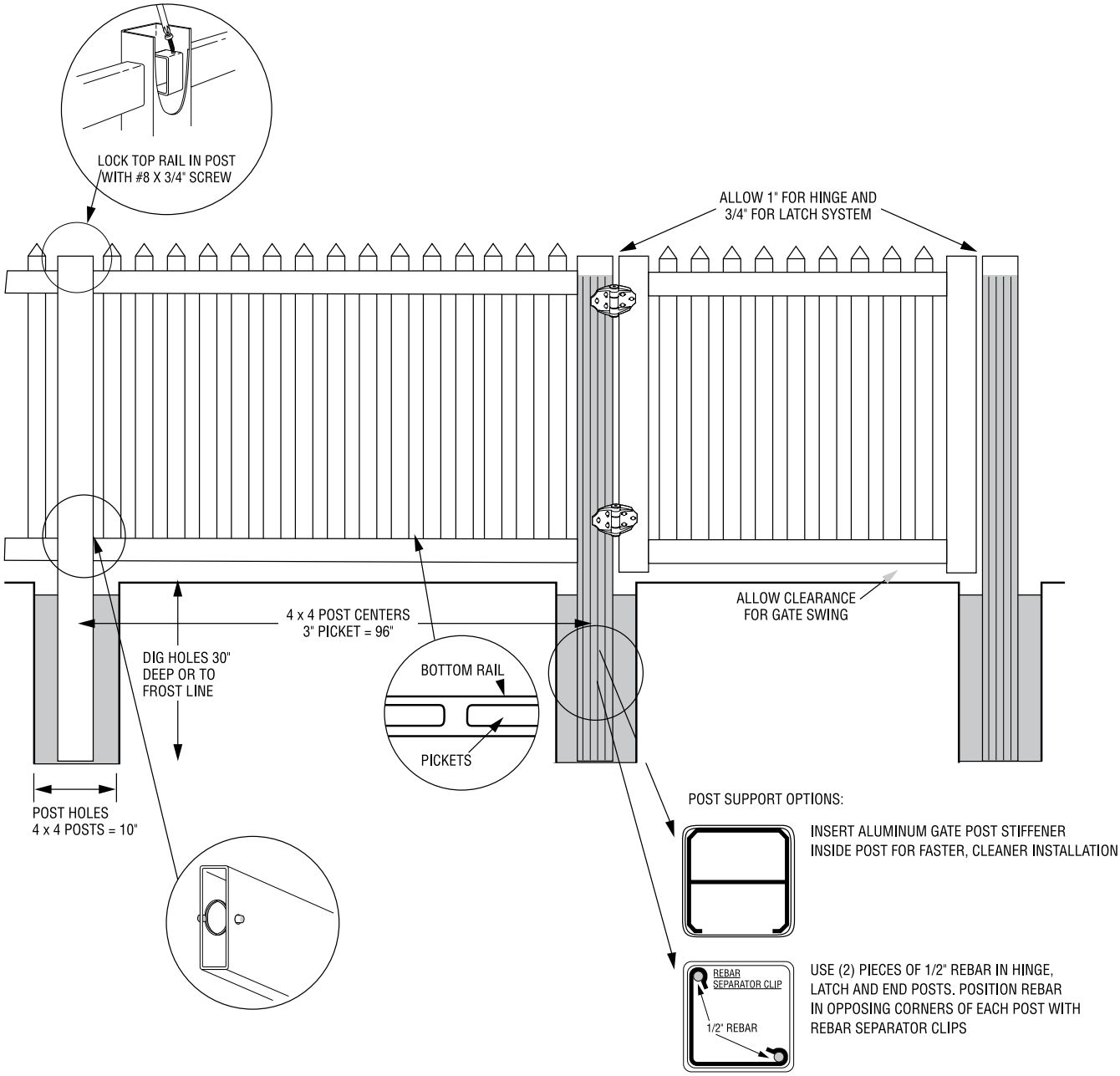
– Fill post with concrete mix to cover rebar and hardware fasteners

– Tamp post with a rubber mallet to eliminate air pockets

– Leave gate on blocks for 72 hours to allow concrete to set

11.11 Install Caps

- Install post caps
- Caps may be secured with glue, silicone adhesive or #8 x 3/4" screws, caps and washers



* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

12. Installing Baron, Baron with Select Cedar Texture, Countess, Monarch, Princeton and Victorian — Contemporary Picket Fence

12.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

12.2 Dig Holes

- Dig holes 30" deep or to frost line
  - hole size for 5 x 5 posts = approximately 12"
  - hole size for 4 x 4 posts = approximately 10"
- Clean holes and check for straight walls

12.3 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post

12.4 Install Bottom Rail

- Check bottom rail for drain holes
- Tape the ends of any rail being inserted into a post that is to be filled with concrete to prevent concrete seepage
- Insert lock ring in end of rail
- Depress lock ring tabs and insert rail in post
- Tabs will recoil to hold rail in post

12.5 Install Second Post

- Insert second post in hole
- Insert bottom rail in post
- Insert block under bottom rail to position at correct fence height
- Fill hole around second post with concrete mix
- Tamp, level and square fence
- Assembly may be continued by installing all bottom rails first, or one section at a time

12.6 Support and Secure

- Level and square fence
- To lower a post, place a wood block from corner to corner on the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

12.7 Install Pickets and Rails

- Insert middle rail (if applicable) in post with large holes facing down
- Insert pickets through holes in middle rail
- Insert pickets in bottom rail. Temporarily remove mid-rail ends from post. Insert top rail over pickets
- Insert mid-rail and top rail in post

12.8 Secure Rails

- Depress lock ring tabs, insert top rail in post
- Square pickets and rails
- Check for even picket spacing on each end of rail
- Secure rail inside post with a #8 x 3/4" screw (do this on both ends)
- Level mid-rail, secure rail to pickets with two #8 x 1-1/2" screws, snap caps and washers evenly spaced along rail

12.9 Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1" gap for hinge and 3/4" for latch and gate swing
- Block up gate to square with fence; rails should be level
- Gate hardware must be mounted to two sides of the post

12.10 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:

A. Aluminum gate post stiffener

– Slide aluminum gate stiffener inside hinge, latch or end posts with open end facing routed hole

– Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post to hold in place

– Insert post into ground

– Fill hole with concrete around outside of post

B. Concrete and rebar*

– Use two pieces of 1/2" rebar in each hinge, latch and end post

– Rebar should extend from the bottom of the hole to approximately 12" from the top of the post

– Hold rebar in opposite corners of post with rebar separator clips

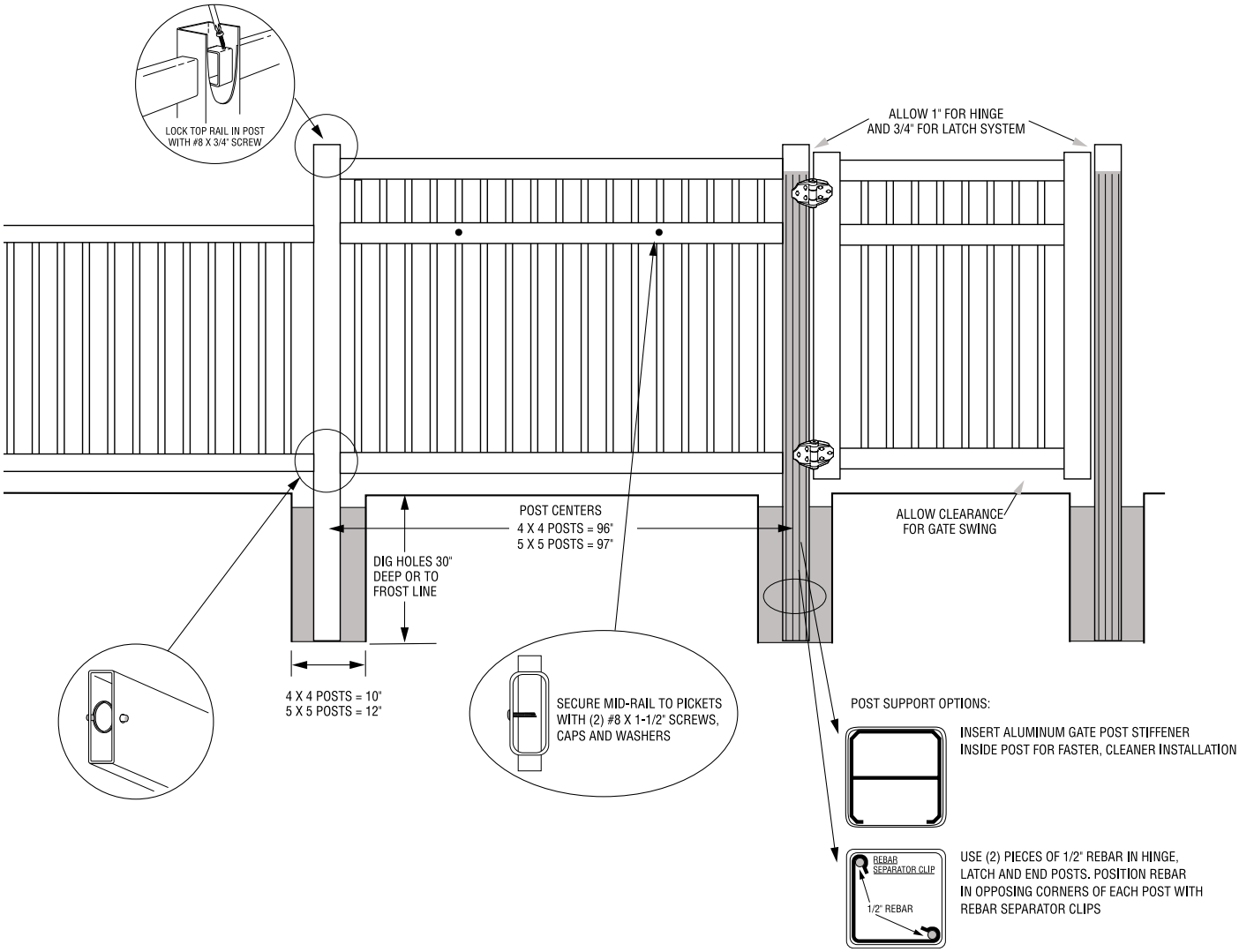
– Fill post with concrete mix to cover rebar and hardware fasteners

– Tamp post with a rubber mallet to eliminate air pockets

– Leave gate on blocks for 72 hours to allow concrete to set

12.11 Install Caps

- Install post caps
- Caps may be secured with glue, silicone adhesive or #8 x 3/4" screws, caps and washers



* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

13. Installing Manchester (straight & concave) and Canterbury (straight & swoop) — Classic Fence

13.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

13.2 Dig Holes

- Dig holes 30" deep or to frost line
  - hole size for 5 x 5 posts = approximately 12"
- Clean holes and check for straight walls

13.3 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post

13.4 Install Bottom Rail

- Tape the ends of any rail being inserted into a post that is to be filled with concrete to prevent concrete seepage
- Insert lock ring in each end of rail
- Depress lock ring tabs and insert rail in post. Tabs will recoil to hold rail in post

13.5 Install Second Post

- Insert second post in hole
- Insert bottom rail in post
- Insert block under bottom rail to position at correct fence height
- Fill hole around second post with concrete mix
- Tamp, level and square fence
- Assembly may be continued by installing all bottom rails first or one section at a time

13.6 Support and Secure

- Level and square fence
- To lower a post, place a wood block from corner to corner on the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

13.7 Install Rails & Pickets

- Middle and upper rails are routed with larger holes on the bottom for ease of installation and racking
- For Canterbury - Install mid-rail. Depress lock ring and insert rail into post. Insert short pickets into every second hole starting with the end hole. Pickets are factory crimped to hold in rail. Install top rail and insert longer pickets into remaining holes
- For Manchester - Depress lock ring and insert top rail in post. Pickets are factory crimped to hold in rail. Insert pickets through rail into bottom rail
- For Manchester Concave - eight longer pickets are supplied for in-field design and cutting
- Field cut pickets should be cut to size and then crimped, or drill a 1/4" hole in one side, 1" from the bottom
- Install bullet clip in hole and insert picket into rail
- For Canterbury Swoop - All long pickets need to be field cut. Measure from cap and cut off crimped end. Picket lengths are:

#1	31-7/8"	#8	38"
#2	32-3/4"	#9	38-7/8"
#3	33-5/8"	#10	39-3/4"
#4	34-1/2"	#11	40-5/8"
#5	35-3/8"	#12	41-1/2"
#6	36-1/4"	#13	42-3/8"
#7	37-1/8"	#14	43-1/2"

13.8 Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1" gap for hinge and 3/4" for latch and gate swing
- Block up gate to square with fence; rails should be level
- Gate hardware must be mounted to two sides of the post

13.9 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:

  A. Aluminum gate post stiffener

  – Slide aluminum gate stiffener inside hinge, latch or end posts with open end facing routed hole

  – Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post to hold in place

  – Insert post into ground

  – Fill hole with concrete around outside of post

  B. Concrete and rebar*

  – Use two pieces of 1/2" rebar in each hinge, latch and end post

  – Rebar should extend from the bottom of the hole to approximately 12" from the top of the post

  – Hold rebar in opposite corners of post with rebar separator clips

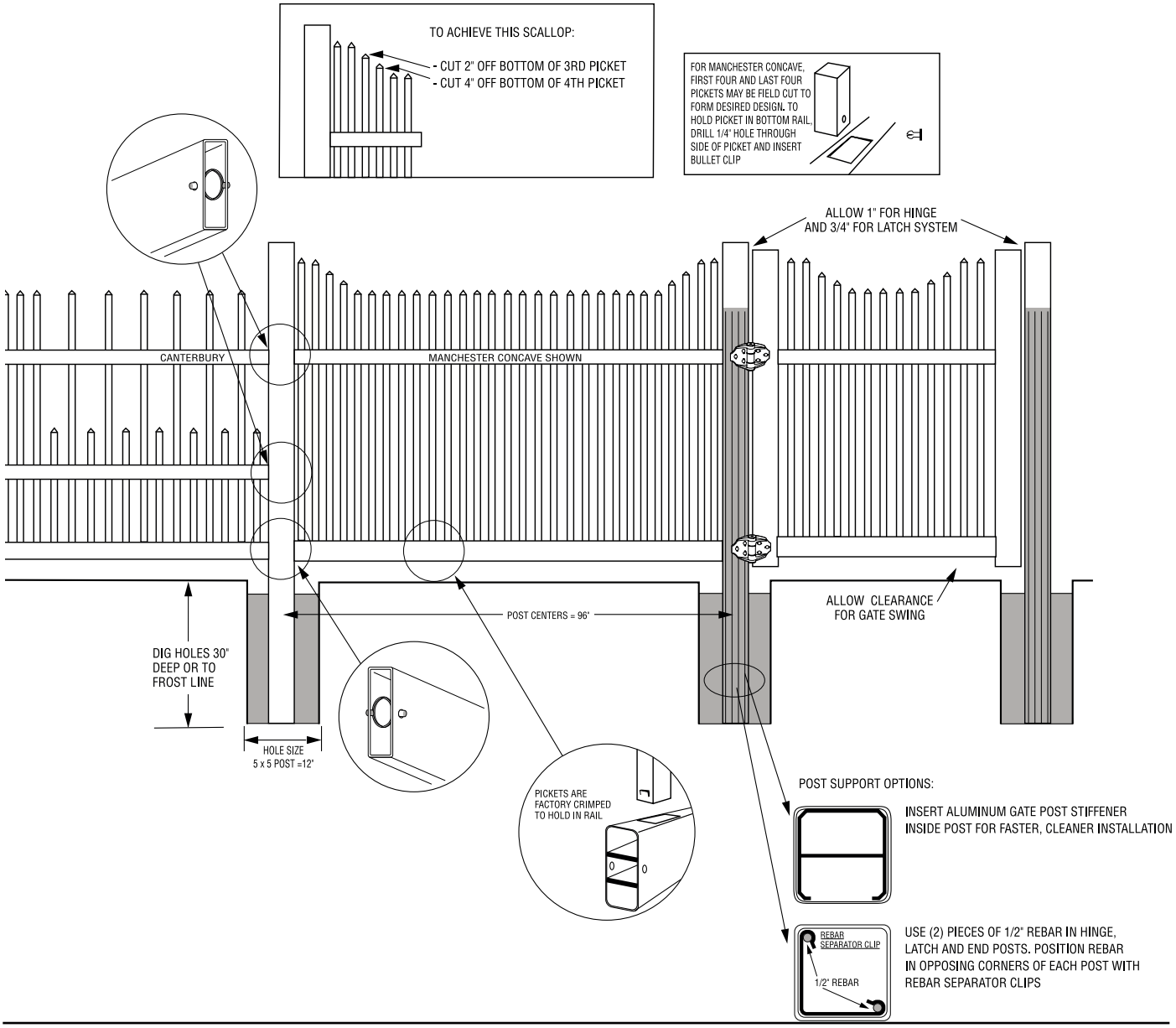
  – Fill post with concrete mix to cover rebar and hardware fasteners

  – Tamp post with a rubber mallet to eliminate air pockets

  – Leave gate on blocks for 72 hours to allow concrete to set

13.10 Install Caps

- Install post caps
- Caps may be secured with glue, silicone adhesive or #8 x 1-1/2" screws, caps and washers



* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

14. Installing Columbia — Semi-Private Fence

14.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

14.2 Dig Holes

- Dig holes 30" deep or to frost line
  – hole size for 5 x 5 posts = approximately 12"
- Clean holes and check for straight walls

14.3 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post

14.4 Install Bottom Rail

- Tape the ends of any rail going into a post that is to be filled with concrete to prevent concrete seepage
- Depress bullet clip and insert bottom rail in post; clip will drop down to hold rail in post

14.5 Install Second Post

- Insert second post in hole
- Insert bottom rail in post
- Insert block under bottom rail to position at correct fence height
- Fill hole around second post with concrete mix
- Tamp, level and square fence
- Assembly may be continued by installing all bottom rails first or one section at a time

14.6 Support and Secure

- Level and square fence
- To lower a post, place a wood block from corner to corner on the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

14.7 Install Mid-Rail

- Insert mid-rail in first post with larger routed holes facing in the down position
- Insert into second post (Note: This rail floats in post. No bullet clips are required)

14.8 Install Pickets and Top Rail

- Insert all pickets through mid-rail into bottom rail
- Temporarily remove mid-rail ends from post and pull the section forward
- Insert the top rail over the pickets starting at one end
- Insert the mid-rail and the top rail back into the posts
- Secure top rail inside post with a #8 x 3/4" screw

14.9 Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1" gap for the hinge and 3/4" for latch and gate swing
- Block up gate to square with fence; rails should be level
- Gate hardware must be mounted to two sides of the post

14.10 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:

  A. Aluminum gate post stiffener

  – Slide aluminum gate stiffener inside hinge, latch or end posts with open end facing routed hole

  – Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post to hold in place

  – Insert post into ground

  – Fill hole with concrete around outside of post

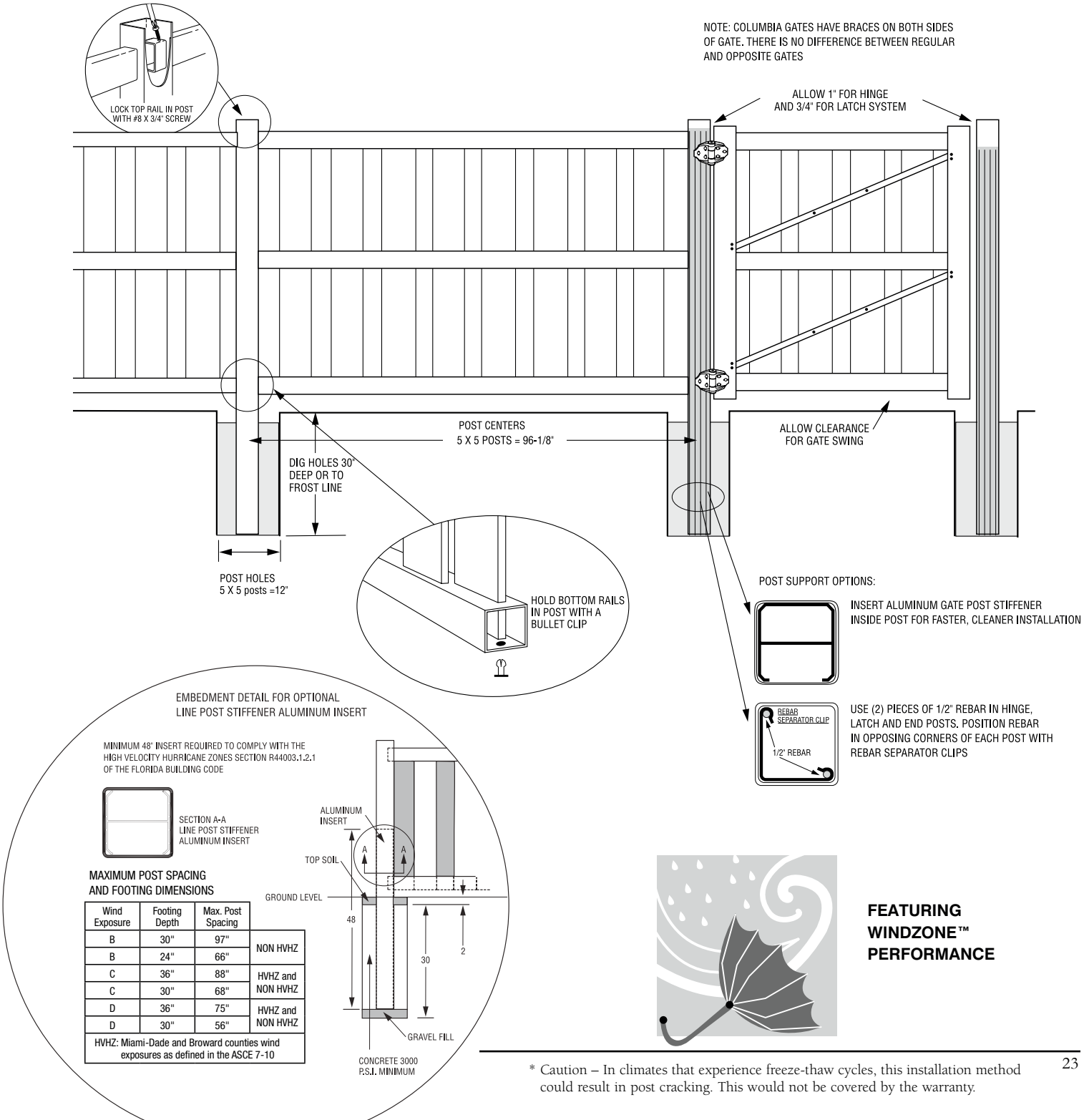
For accents, see page 36

B. Concrete and rebar*

- Use two pieces of 1/2" rebar in each hinge, latch and end post
- Rebar should extend from the bottom of the hole to approximately 12" from the top of the post
- Hold rebar in opposite corners of post with rebar separator clips
- Fill post with concrete mix to cover rebar and hardware fasteners
- Tamp post with a rubber mallet to eliminate air pockets
- Leave gate on blocks for 72 hours to allow concrete to set

14.11 Install Caps

- Install post caps
- Caps may be secured with glue, silicone adhesive or #8 x 3/4" screws, caps and washers



* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

15. Installing Imperial and Imperial with Select Cedar Texture — Semi-Private Fence

15.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

15.2 Dig Holes

- Dig holes 30" deep or to frost line
  - hole size for 5 x 5 posts = approximately 12"
  - hole size for 4 x 4 posts = approximately 10"
- Clean holes and check for straight walls

15.3 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post

15.4 Install Bottom Rail

- Check bottom rail for drain holes
- Tape the ends of any rail being inserted into a post that is to be filled with concrete to prevent concrete seepage
- Insert lock ring in end of rail
- Depress lock ring tabs and insert rail in post
- Tabs will recoil to hold rail in post

15.5 Install Second Post

- Insert second post in hole
- Insert bottom rail in post
- Insert block under bottom rail to position at correct fence height
- Fill hole around second post with concrete mix
- Tamp, level and square fence
- Fence assembly may be continued by installing all bottom rails first or one section at a time

15.6 Support and Secure

- Level and square fence
- To lower a post, place a wood block from corner to corner on the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

15.7 Install Pickets and Rails

- Insert mid-rail (if applicable) in post with large holes facing down
- Insert pickets through holes in mid-rail
- Insert pickets in bottom rail. Temporarily remove middle rail ends from post. Insert top rail over pickets
- Insert mid-rail and top rail in post

15.8 Secure Rails

- Depress lock ring tabs, insert top rail post
- Square pickets and rails
- Check for even picket spacing on each end of rail
- Secure rail inside post with a #8 x 3/4" screw (do this on both ends)
- Level mid-rail, secure rail to pickets with (2) #8 x 1-1/2" screws, snap caps and washers evenly spaced along rail

15.9 Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1" gap for hinge and 3/4" for latch and gate swing
- Block up gate to square with fence; rails should be level
- Gate hardware must be mounted to two sides of the post

15.10 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:

A. Aluminum gate post stiffener

– Slide aluminum gate stiffener inside hinge, latch or end posts

– Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post

– Insert post into ground

– Fill hole with concrete around outside of post

B. Concrete and rebar*

– Use two pieces of 1/2" rebar in each hinge, latch and end post

– Rebar should extend from the bottom of the hole to approximately 12" from the top of the post

– Hold rebar in opposite corners of post with rebar separator clips

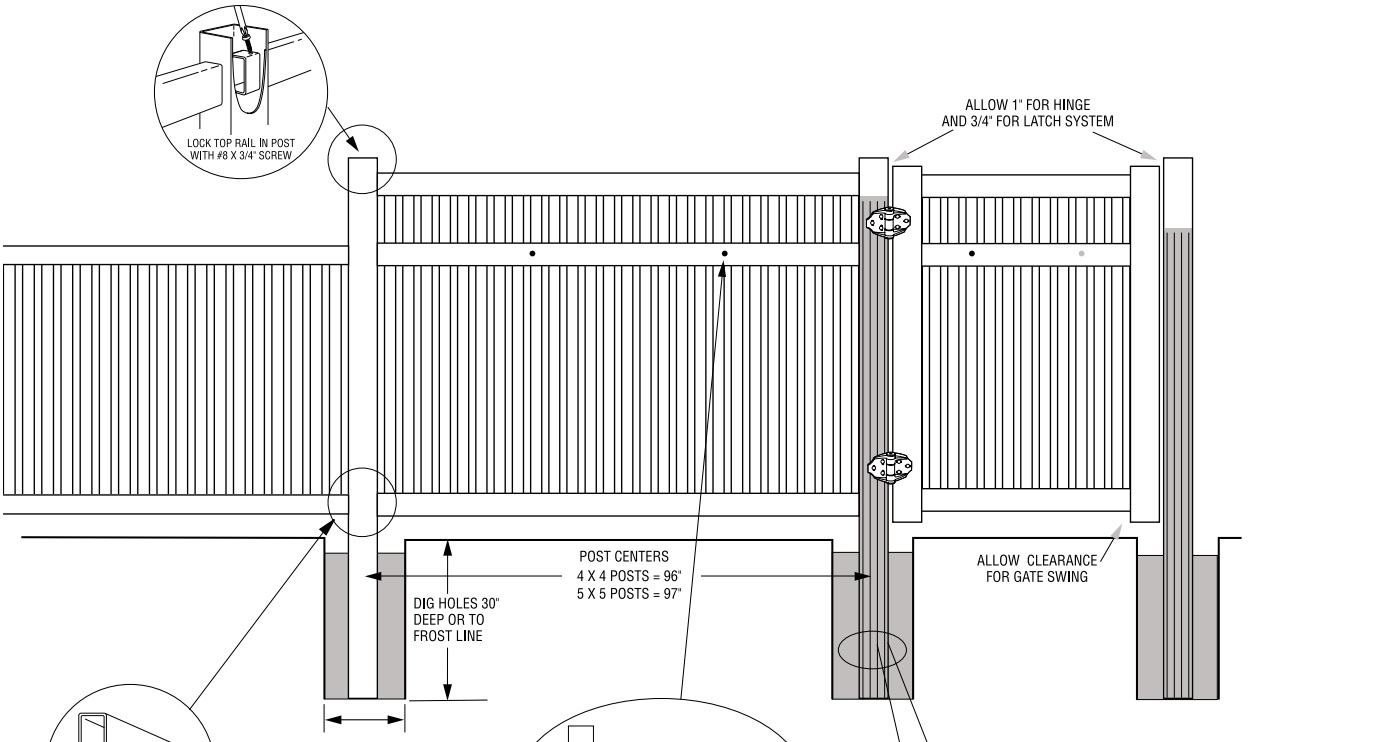
– Fill post with concrete mix to cover rebar and hardware fasteners

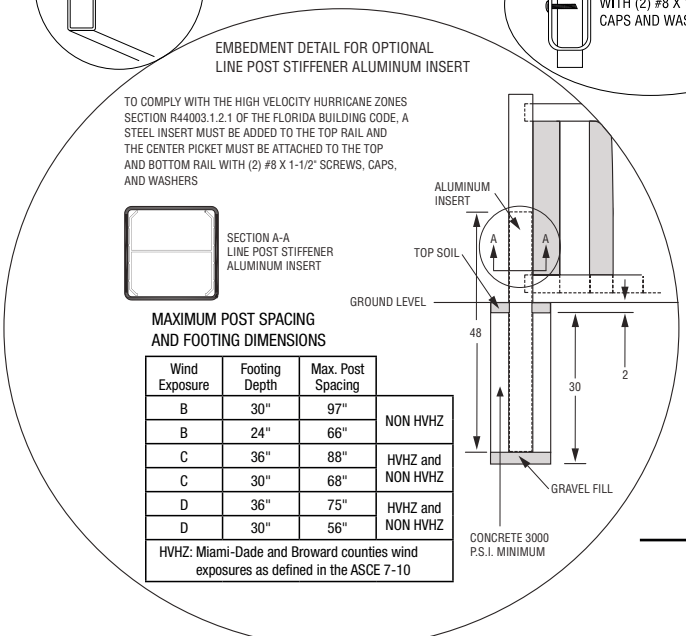
– Tamp post with a rubber mallet to eliminate air pockets

– Leave gate on blocks for 72 hours to allow concrete to set

15.11 Install Caps

- Install post caps
- Caps may be secured with glue, silicone adhesive or #8 x 3/4" screws, caps and washers





MAXIMUM POST SPACING AND FOOTING DIMENSIONS

Wind Exposure	Footing Depth	Max. Post Spacing	
B	30"	97"	NON HVHZ
B	24"	66"	
C	36"	88"	HVHZ and NON HVHZ
C	30"	68"	
D	36"	75"	HVHZ and NON HVHZ
D	30"	56"	
HVHZ: Miami-Dade and Broward counties wind exposures as defined in the ASCE 7-10			

FEATURING WINDZONE™ PERFORMANCE

* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

16. Installing Millbrook — Semi-Private Fence

16.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

16.2 Dig Holes

- Dig holes 30" deep or to frost line
  - hole size for 5 x 5 posts = approximately 12"
- Clean holes and check for straight walls

16.3 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post

16.4 Install Bottom Rail

- Tape the ends of any rail being inserted into a post that is to be filled with concrete to prevent concrete seepage
- Insert lock ring in each end of rail
- Depress lock ring tabs and insert rail in post
- Tabs will recoil to hold rail in post

16.5 Install Second Post

- Insert second post in hole
- Insert bottom rail in post
- Insert block under bottom rail to position at correct fence height
- Fill hole around second post with concrete mix
- Tamp, level and square fence
- Fence assembly may be continued by installing all bottom rails first or one section at a time

16.6 Support and Secure

- Level and square fence
- To lower a post, place a wood block from corner to corner on the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

16.7 Install Pickets and Rails

- Insert middle rail in post with large holes facing down
- Insert pickets through holes in middle rail
- Insert pickets in bottom rail. Temporarily remove middle rail ends from post. Insert top rail over pickets
- Insert middle rail and top rail in post

16.8 Secure Rails

- Square pickets and rails
- Check for even picket spacing on each end of rail
- Secure rail inside post with a #8 x 3/4" screw (do this on both ends)
- Level middle rail, secure rail to pickets with (2) #8 x 1-1/2" screws, snap caps and washers evenly spaced along rail

16.9 Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1" gap for hinge and 3/4" for latch and gate swing
- Block up gate to square with fence; rails should be level
- Gate hardware must be mounted to two sides of the post

16.10 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:

  A. Aluminum gate post stiffener

  – Slide aluminum gate stiffener inside hinge, latch or end posts with open end facing routed hole

– Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post to hold in place

– Insert post into ground

– Fill hole with concrete around outside of post

B. Concrete and rebar*

– Use two pieces of 1/2" rebar in each hinge, latch and end post

– Rebar should extend from the bottom of the hole to approximately 12" from the top of the post

– Hold rebar in opposite corners of post with rebar separator clips

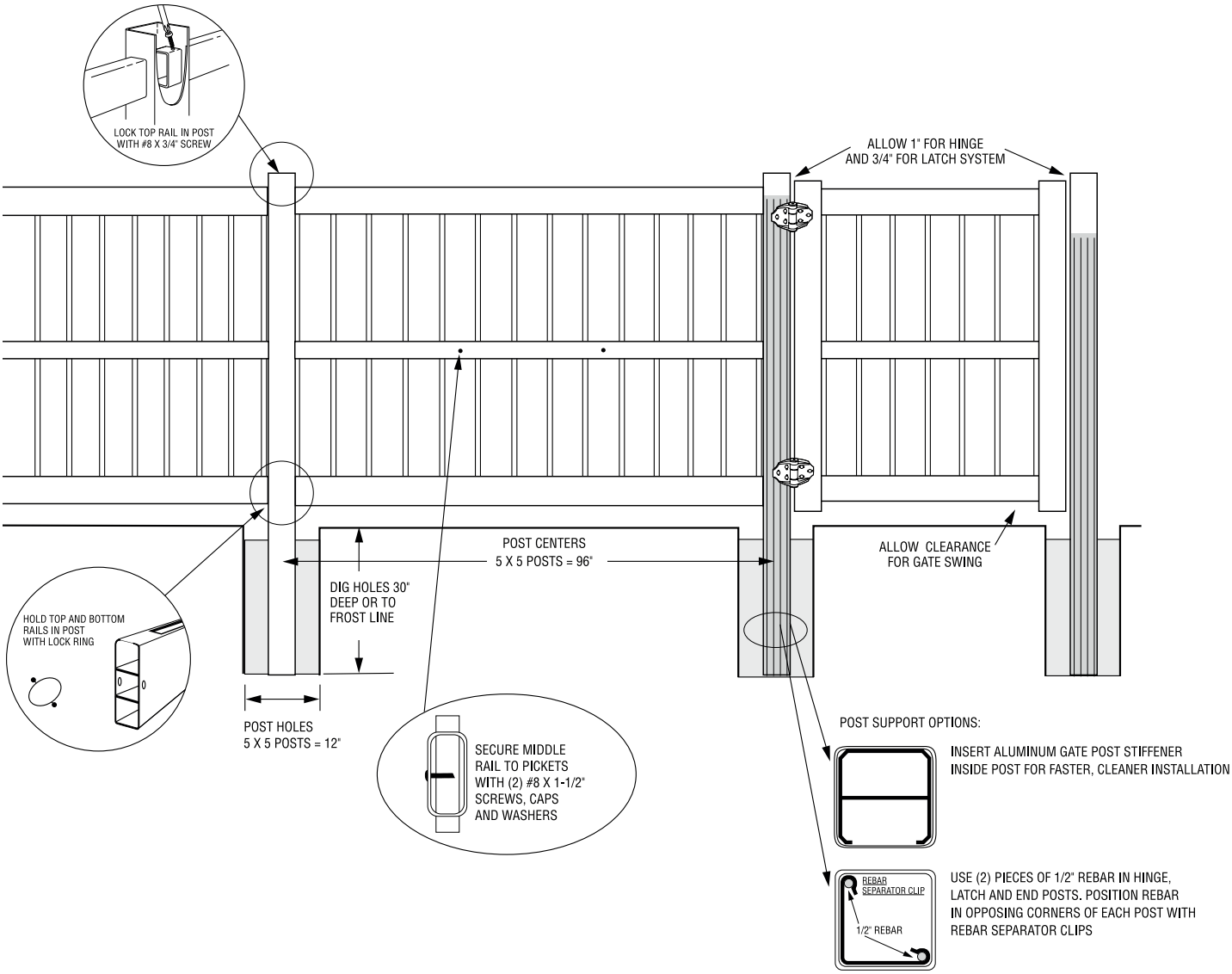
– Fill post with concrete mix to cover rebar and hardware fasteners

– Tamp post with a rubber mallet to eliminate air pockets

– Leave gate on blocks for 72 hours to allow concrete to set

16.11 Install Caps

- Install post caps
- Caps may be secured with glue, silicone adhesive or #8 x 3/4" screws, caps and washers



* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

17. Installing Chesterfield, Chesterfield with CertaGrain® Texture and Chesterfield with CertaStucco™ Texture — Privacy Fence

17.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

17.2 Dig Holes

- Dig holes 30" deep or to frost line
  - Hole size for 5 x 5 posts = approximately 12"
- Clean holes and check for straight walls

17.3 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post

17.4 Install Bottom Rail

- Tape the ends of any rail going into a post that is to be filled with concrete to prevent concrete seepage
- Insert lock ring in both ends of bottom rail
- Depress lock ring tabs, insert bottom rail in post
- Tabs will recoil to hold rail in post

17.5 Install Second Post

- Insert second post in hole
- Insert bottom rail in post
- Insert block under bottom rail to position of correct fence height
- Fill hole around second post with concrete mix
- Tamp, level and square fence
- Assembly may be continued by installing all bottom rails first or one section at a time

For accents, see page 36

17.6 Support and Secure

- Level and square fence
- To lower a post, place a wood block from corner to corner of the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

17.7 Picket End Channel

- When installing Arbor Blend, Arctic Blend, Brazilian Blend, Canyon Blend, Frontier Blend, Honey Blend, Natural Clay, Sierra Blend, Timber Blend or Weathered Blend, picket end channels are required (two per section)
- Cut end channel to length
- Center channel on post between routed holes
- Attach channel to post in four locations

17.8 Install Pickets and Rails

- Pickets are cut at a 5° angle to accommodate a 1' slope
- Insert pickets in bottom rail
- Insert top rail over pickets
- Depress lock ring tabs, insert top rail in post

17.9 Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1" gap for hinge and 3/4" for latch and gate swing
- Block up gate to square with fence; rails should be level
- Gate hardware must be mounted to two sides of the post

17.10 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:

  A. Aluminum gate post stiffener

  – Slide aluminum gate stiffener inside hinge, latch or end posts

  – Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post

  – Insert post into ground

  – Fill hole with concrete around outside of post

B. Concrete and rebar*

– Use two pieces of 1/2" rebar in each hinge, latch and end post

– Rebar should extend from the bottom of the hole to approximately 12" from the top of the post

– Hold rebar in opposite corners of post with rebar separator clips

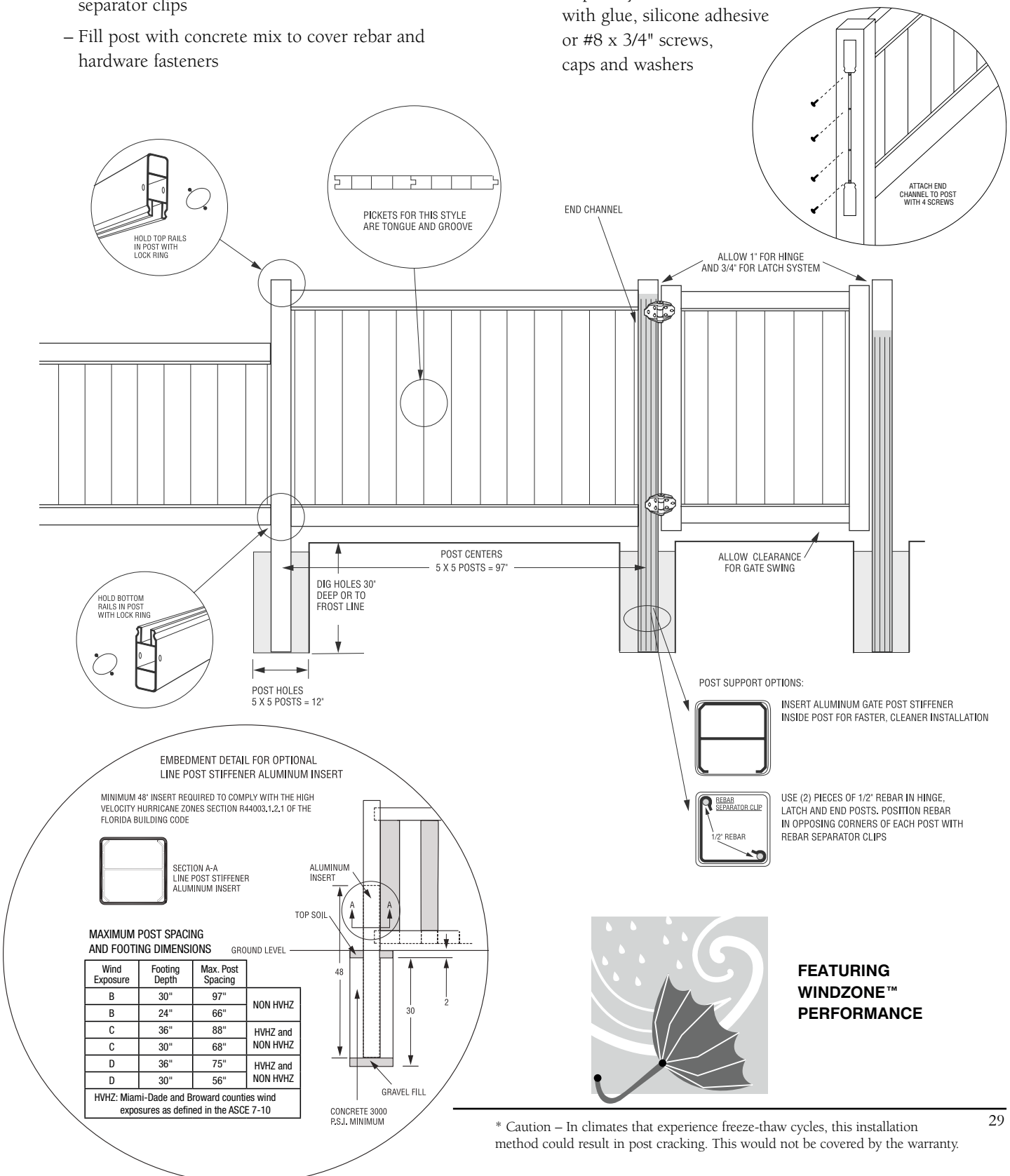
– Fill post with concrete mix to cover rebar and hardware fasteners

– Tamp post with a rubber mallet to eliminate air pockets

– Leave gate on blocks for 72 hours to allow concrete to set

17.11 Install Caps

- Install post caps
- Caps may be secured with glue, silicone adhesive or #8 x 3/4" screws, caps and washers



* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

18. Installing Chesterfield with Huntington and Westminster Accents — Privacy Fence

18.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

18.2 Dig Holes

- Dig holes 30" deep or to frost line
  - hole size for 5 x 5 posts = approximately 12"
- Clean holes and check for straight walls

18.3 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post

18.4 Install Bottom Rail

- Tape the ends of any rail being inserted into a post that is to be filled with concrete to prevent concrete seepage
- Insert lock ring in each end of rail
- Depress lock ring tabs and insert rail in post. Tabs will recoil to hold rail in post

18.5 Install Second Post

- Insert second post in hole
- Insert bottom rail in post
- Insert block under bottom rail to position at correct fence height
- Fill hole around second post with concrete mix
- Tamp, level and square fence
- Assembly may be continued by installing all bottom rails first, or one section at a time

18.6 Support and Secure

- Level and square fence
- To lower a post, place a wood block from corner to corner on the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

18.7 Picket End Channel

- Cut end channel to length
- Center channel on post between routed holes
- Attach channel to post in four locations

18.8 Install Pickets and Rails

- Insert pickets in bottom rail
- Insert top rail over pickets
- Depress lock rings tabs, insert top rail in post

18.9 Install Accents

- Huntington
  - Insert top 2 x 3-1/2 rail with larger holes facing down into post
  - Insert pickets through rail and lock into top fence section rail (pickets are factory crimped to hold in place)
  - To create desired scalloped effect, longer length pickets will need to be cut and then crimped or a bullet clip may be inserted to hold picket in rail
- Westminster
  - Insert bottom and side channels (overlap ends) into position on rail and posts, secure with #8 x 1-1/2" screws
  - Insert lattice into channels
  - Slide top channel over lattice
  - Insert top 2 x 3-1/2 rail into routed post holes
  - Secure top channel to 2 x 3-1/2 top rail with #8 x 1-1/2" screws

18.10 Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1" gap for hinge and 3/4" for latch and gate swing

- Block up gate to square with fence; rails should be level
- Gate hardware must be mounted to two sides of the post

18.11 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:

  A. Aluminum gate post stiffener

  – Slide aluminum gate stiffener inside hinge, latch or end posts

  – Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post

  – Insert post into ground

  – Fill hole with concrete around outside of post

  B. Concrete and rebar*

  – Use two pieces of 1/2" rebar in each hinge, latch and end post

  – Rebar should extend from the bottom of the hole to approximately 12" from the top of the post

  – Hold rebar in opposite corners of post with rebar separator clips

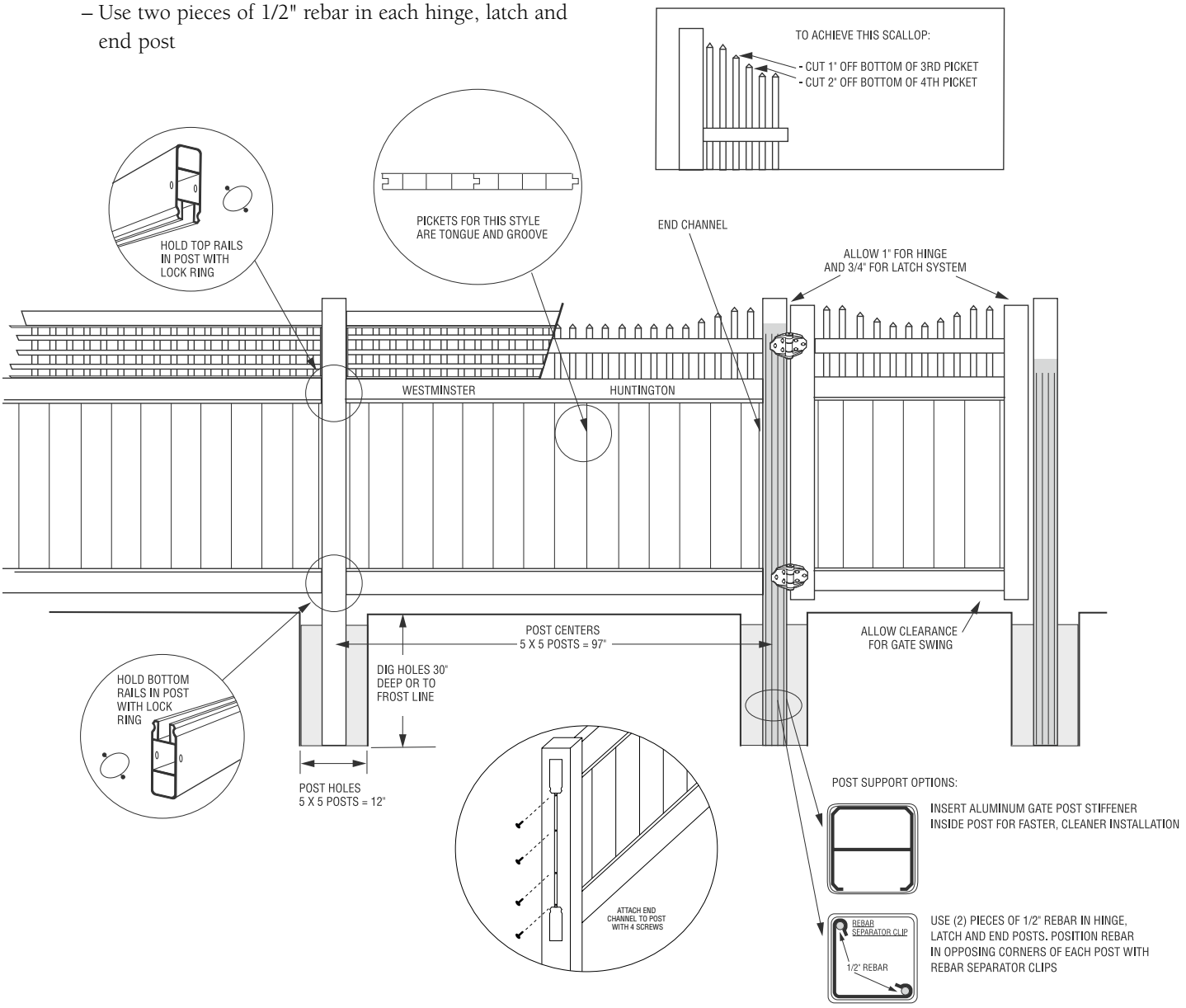
  – Fill post with concrete mix to cover rebar and hardware fasteners

  – Tamp post with a rubber mallet to eliminate air pockets

  – Leave gate on blocks for 72 hours to allow concrete to set

18.12 Install Caps

- Install post caps
- Caps may be secured with glue, silicone adhesive or #8 x 1-1/2" screws, caps and washers



* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

19. Installing Galveston and Galveston with CertaGrain® Texture — Privacy Fence

19.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

19.2 Dig Holes

- Dig holes 30" deep or to frost line
  – hole size for 5 x 5 posts = approximately 12"
- Clean holes and check for straight walls

19.3 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post

19.4 Install Bottom Rail

- Tape the ends of any rail going into a post that is to be filled with concrete to prevent concrete seepage
- Insert lock ring in both ends of bottom rail
- Depress lock ring tabs, insert bottom rail in post
- Tabs will recoil to hold rail in post

19.5 Install Second Post

- Insert second post in hole
- Insert bottom rail in post
- Insert block under bottom rail to position at correct fence height
- Fill hole around second post with concrete mix
- Tamp, level and square fence
- Assembly may be continued by installing all bottom rails first or one section at a time

19.6 Support and Secure

- Level and square fence
- To lower a post, place a wood block from corner to corner of the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

19.7 Picket End Channel

- When installing Arbor Blend, Arctic Blend, Brazilian Blend, Frontier Blend, Honey Blend, Natural Clay, Sierra Blend or Weathered Blend, picket end channels are required (four per section)
- Cut end channel to length
- Center channel on post between routed holes
- Attach channel to post in four locations

19.8 Install Pickets and Rails

- Insert pickets in bottom rail
- Insert mid-rail over pickets
- Depress lock ring tabs, insert mid-rail in post
- Insert next row of pickets in mid-rail
- Insert top rails over pickets
- Depress lock ring tabs, insert top rail in post

19.9 Hang Gate/Install Hardware

- Position gate between posts
- Allow 1" gap for hinge and 3/4" for latch and gate swing
- Block up gate to square with fence; rails should be level
- Gate hardware must be mounted to two sides of the post
- For complete details, see gate installation instructions in hardware box
- Galveston gate requires 3 hinges

19.10 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:

A. Aluminum gate post stiffener

For accents, see page 36

– Slide aluminum gate stiffener inside hinge, latch or end posts

– Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post

– Insert post into ground

– Fill hole with concrete around outside of post

B. Concrete and rebar*

– Use two pieces of 1/2" rebar in each hinge, latch and end post

– Rebar should extend from the bottom of the hole to approximately 12" from the top of the post

– Hold rebar in opposite corners of post with rebar separator clips

– Fill post with concrete mix to cover rebar and hardware fasteners

– Tamp post with a rubber mallet to eliminate air pockets

– Leave gate on blocks for 72 hours to allow concrete to set

19.11 Reinforce Posts

Concrete and Rebar

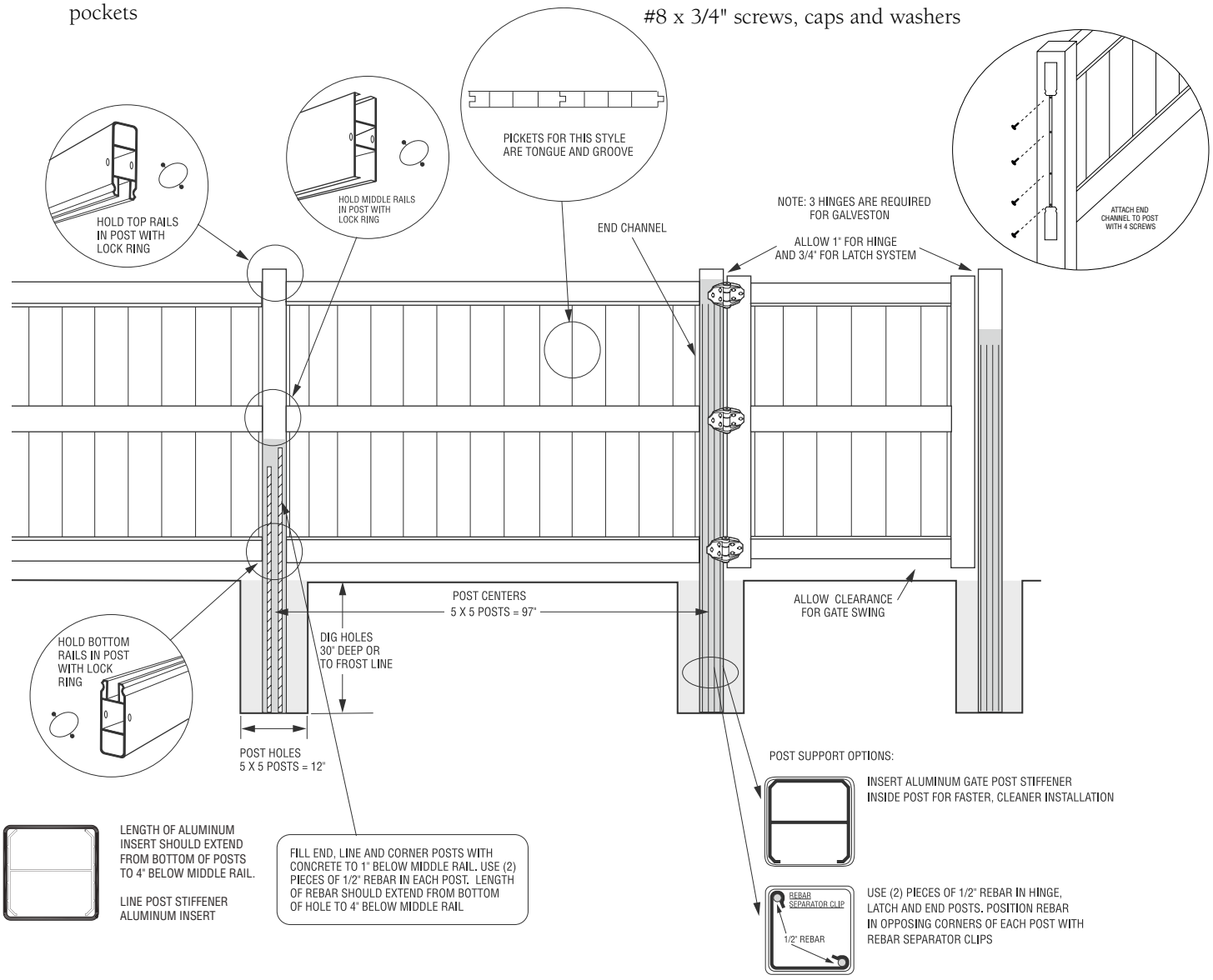
- Insert two pieces of rebar in all end, line and corner posts. Fill with concrete mix to cover rebar at a height 1" below middle rail
- Tamp post with a rubber mallet to eliminate air pockets

Aluminum Line Post Insert

- Length of aluminum insert should extend from bottom of posts to 4" below middle rail

19.12 Install Caps

- Install post caps
- Caps may be secured with glue, silicone adhesive or #8 x 3/4" screws, caps and washers



* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

20. Installing New Lexington — Privacy Fence

20.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

20.2 Dig Holes

- Dig holes 30" deep or to frost line
  - hole size for 5 x 5 posts = approximately 12"
- Clean holes and check for straight walls

20.1 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post

20.3 Install Bottom Rail

- Tape the ends of any rail going into a post that is to be filled with concrete to prevent concrete seepage
- Insert lock ring in both ends of bottom rail
- Depress lock ring tabs, insert bottom rail in post
- Tabs will recoil to hold rail in post

20.4 Install Second Post

- Insert second post in hole
- Insert bottom rail in post
- Insert block under bottom rail to position of correct fence height
- Fill hole around second post with concrete mix
- Tamp, level and square fence
- Assembly may be continued by installing all bottom rails first or one section at a time

20.5 Support and Secure

- Level and square fence
- To lower a post, place a wood block from corner to corner of the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

20.6 Picket End Channel

- Cut end channel to length
- Center channel on post between routed holes
- Attach channel to post in four locations

20.7 Install Pickets and Rails

- Pickets are cut at a 3 degree angle to allow for racking
- Insert pickets in bottom rail
- Insert top rail over pickets
- Depress lock ring tabs, insert top rail in post

20.8 Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1" gap for hinge and 3/4" for latch and gate swing
- Block up gate to square with fence; rails should be level
- Gate hardware must be mounted to two sides of the post

20.9 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:

  A. Aluminum gate post stiffener

  – Slide aluminum gate stiffener inside hinge, latch or end posts

  – Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post

  – Insert post into ground

  – Fill hole with concrete around outside of post

For accents, see page 37

B. Concrete and rebar*

– Use two pieces of 1/2" rebar in each hinge, latch and end post

– Rebar should extend from the bottom of the hole to approximately 12" from the top of the post

– Hold rebar in opposite corners of post with rebar separator clips

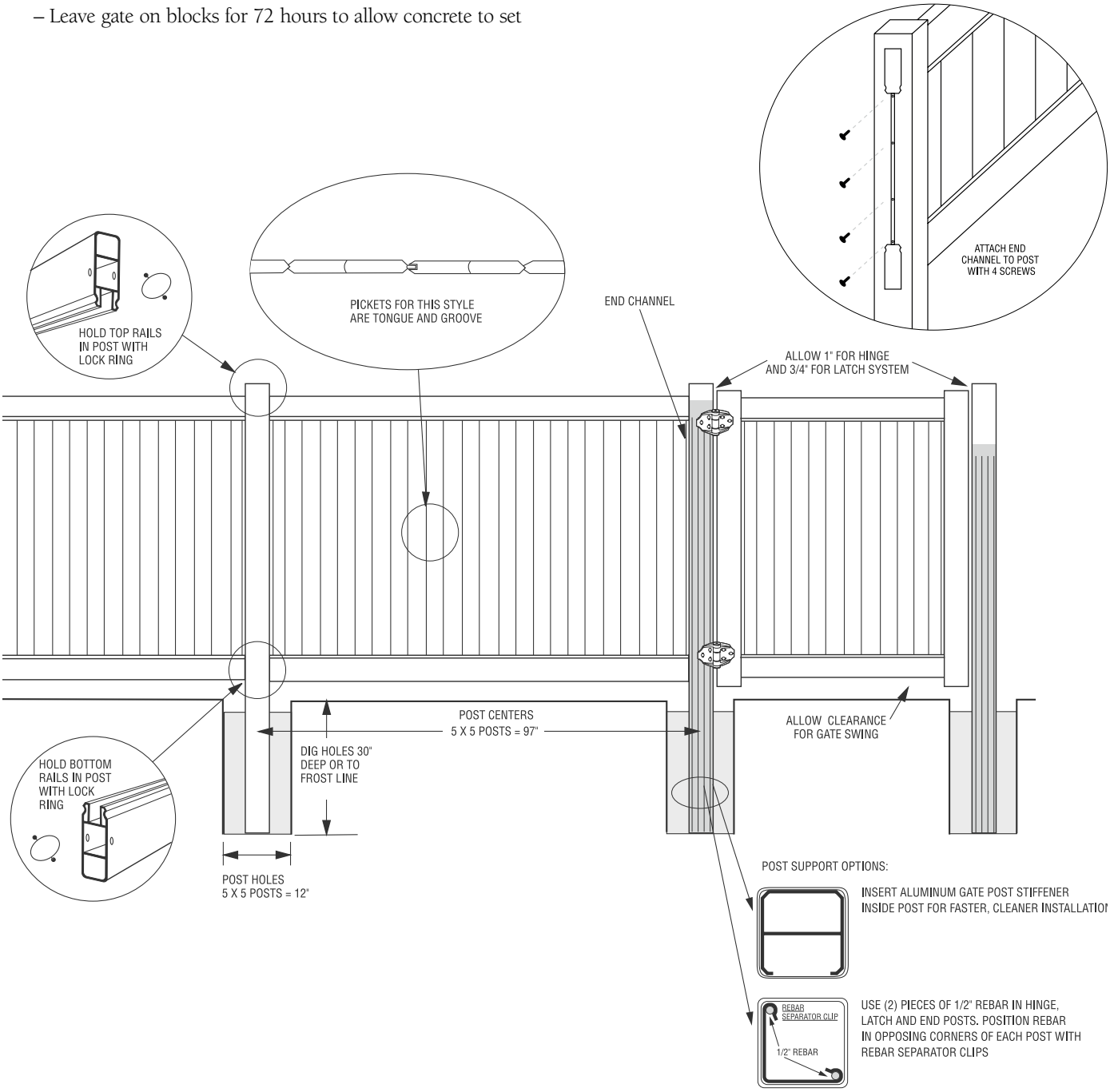
– Fill post with concrete mix to cover rebar and hardware fasteners

– Tamp post with a rubber mallet to eliminate air pockets

– Leave gate on blocks for 72 hours to allow concrete to set

20.9 Install Caps

- Install post caps
- Caps may be secured with glue, silicone adhesive or #8 x 3/4" screws, caps and washers



* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

21. Accent Fence — Lattice and Victorian

Once the main fence section is installed, proceed as follows:

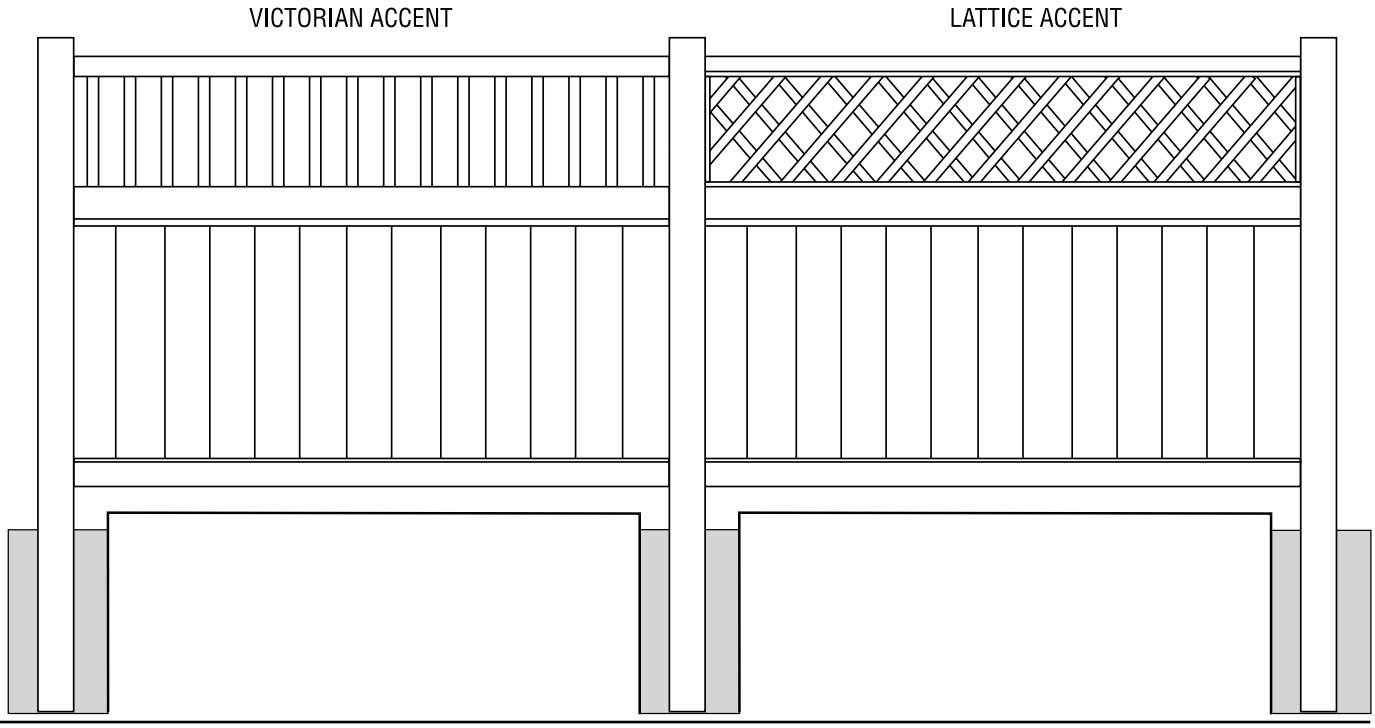
Lattice – Chesterfield, Galveston, Columbia

- Measure distance between inside faces of the posts
- Cut bottom channel to fit between posts
- Fasten bottom channel to top fence rail with #8 X 1-1/2" screws evenly spaced along the length
- Fasten side channels to posts with #8 X 1-1/2" screws
- Insert lattice into channels
- Slide top channel over lattice
- Insert top 2 X 3-1/2 rail into routed post holes
- Secure top channel to 2 X 3-1/2 top rail with #8 X 1-1/2" screws evenly spaced along the length

Victorian – Chesterfield, Chesterfield with CertaGrain® texture, Galveston, New Lexington

- Insert accent pickets in routed section top rail
- Insert top accent rail over pickets
- Insert both ends of top rail into routed post holes
- Secure top rail in position with #8 x 3/4" screws from inside the post

SHOWN WITH CHESTERFIELD FENCE



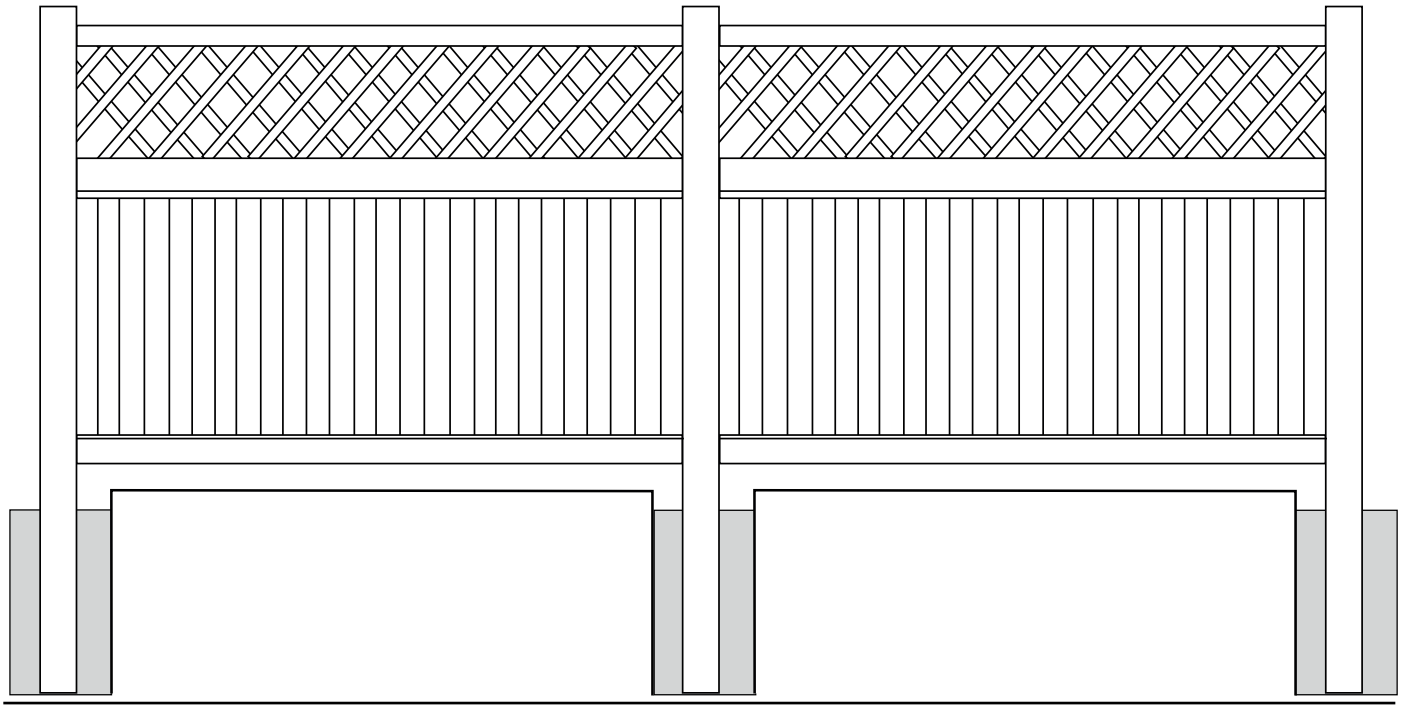
22. Accent Fence — New Lexington, Chesterfield with CertaGrain® Texture Style Lattice

Once the main fence section is installed, proceed as follows:

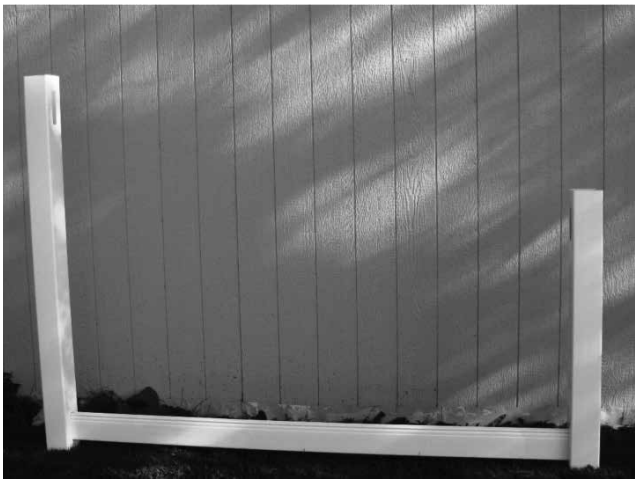
Lattice

- Leave one end of deco top rail out of post
- Starting at the end, slide lattice into top rail channel
- Insert rail into routed post, secure with lock ring
- Starting at the end, slide top channel over lattice
- Insert both ends of top channel into routed post
- Secure rail inside post with a #8 x 3/4" screw (do this on both ends)

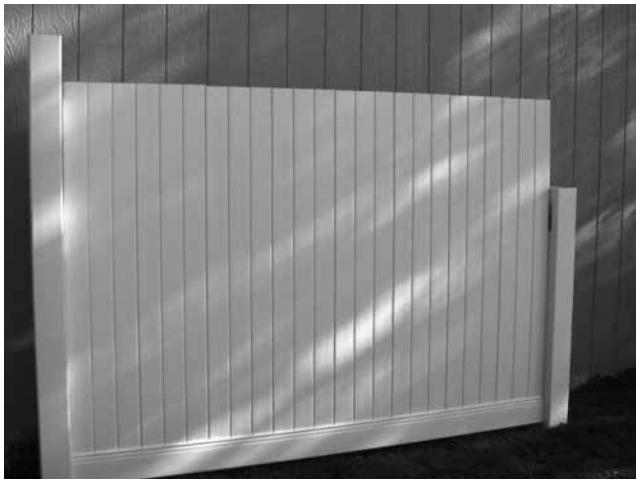
SHOWN WITH NEW LEXINGTON FENCE
LATTICE ACCENT



23. Installing Curved Rail — Includes: Concave, Convex, "S" Curve and Swoop



1. Set Posts

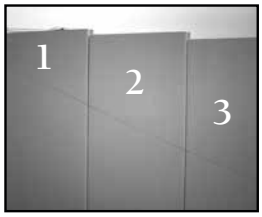


2. Insert Pickets in Bottom Rail

3. Insert Top Rail into Post Holes

4. Trace the Outline of the Rail onto the Pickets

Numbering each picket will help when installing



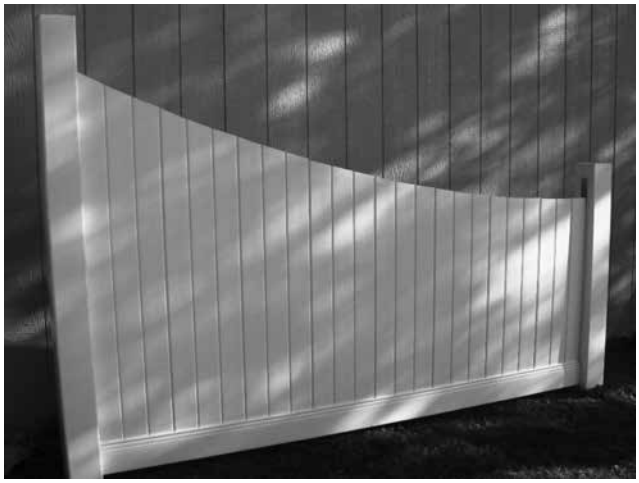
Curved Rail —
Includes: Concave, Convex, "S" Curve and Swoop

5. Cut Pickets

- Remember to wear safety glasses when cutting
- Use pencil line as guide only — DO NOT CUT ALONG PENCIL LINE
- Blade should cut approximately 1-1/4" above the line to allow picket to enter rail
- To practice safety, remove pickets and cut on a flat, secure surface

6. Picket End Channel

- Cut end channel to length
- Center channel on post between routed holes
- Attach channel to post infour locations



7. Insert Pickets into Bottom Rail

8. Slide Top Rail over Pickets

9. Insert Locking Rings

10. Insert Rail into Post Holes

24. Installing Post & Rail — Crossbuck, 2-Rail, 3-Rail and 4-Rail

23.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

23.2 Dig Holes

- Dig holes 30" deep or to frost line
  – hole size for 5 x 5 posts = approximately 12"
- Clean holes and check for straight walls

23.3 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post
- Fence may be installed post and bottom rails first, then upper rails

23.4 Install Rails

- Tape the ends of any rail going into a post that is to be filled with concrete to prevent concrete seepage
- Standard rails are supplied in 16 foot lengths
- For rolling terrain, rails may need to be cut to 95-1/2"
- The starting point for rails should be staggered from post to post for bottom/mid/top rail for maximum strength
- Insert lock ring into one end of rail by depressing tabs, insert in rail end and release
- Depress lock ring tabs to insert bottom rail in first post
- Tabs will recoil to hold rail in post
- If bottom rail is 16' long, slide rail through second post and then insert post in ground
- Insert lock ring in rail end, insert end into third post
- When installing rails leave a 1" gap between rail ends inside post to allow for expansion

23.5 Support and Secure

- Block up bottom rail to determine correct fence height
- Fill holes around posts with concrete mix
- Tamp, level and square
- Fence assembly may be continued by installing all bottom rails first or one section at a time
- To lower a post, place a wood block from corner to corner of the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

23.6 Crossbuck

- Insert lock rings in diagonal rails and insert into each post
  Note: Standard diagonal rails are cut to 97" to compensate for angle of install.

23.7 Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1-1/2" gap on hinge side of the gate and 1-1/4" on latch side to allow for the gate swing and hardware
- Block up gate to square with fence, rails should be level
- Gate hardware must be mounted to two sides of the post

23.8 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:
  A. Aluminum gate post stiffener
  – Slide aluminum gate stiffener inside hinge, latch or end posts with open end facing routed hole

– Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post to hold in place

– Insert post into ground

– Fill hole with concrete around outside of post

B. Concrete and rebar*

– Use two pieces of 1/2" rebar in each hinge, latch and end post

– Rebar should extend from the bottom of the hole to approximately 12" from the top of the post

– Hold rebar in opposite corners of post with rebar separator clips

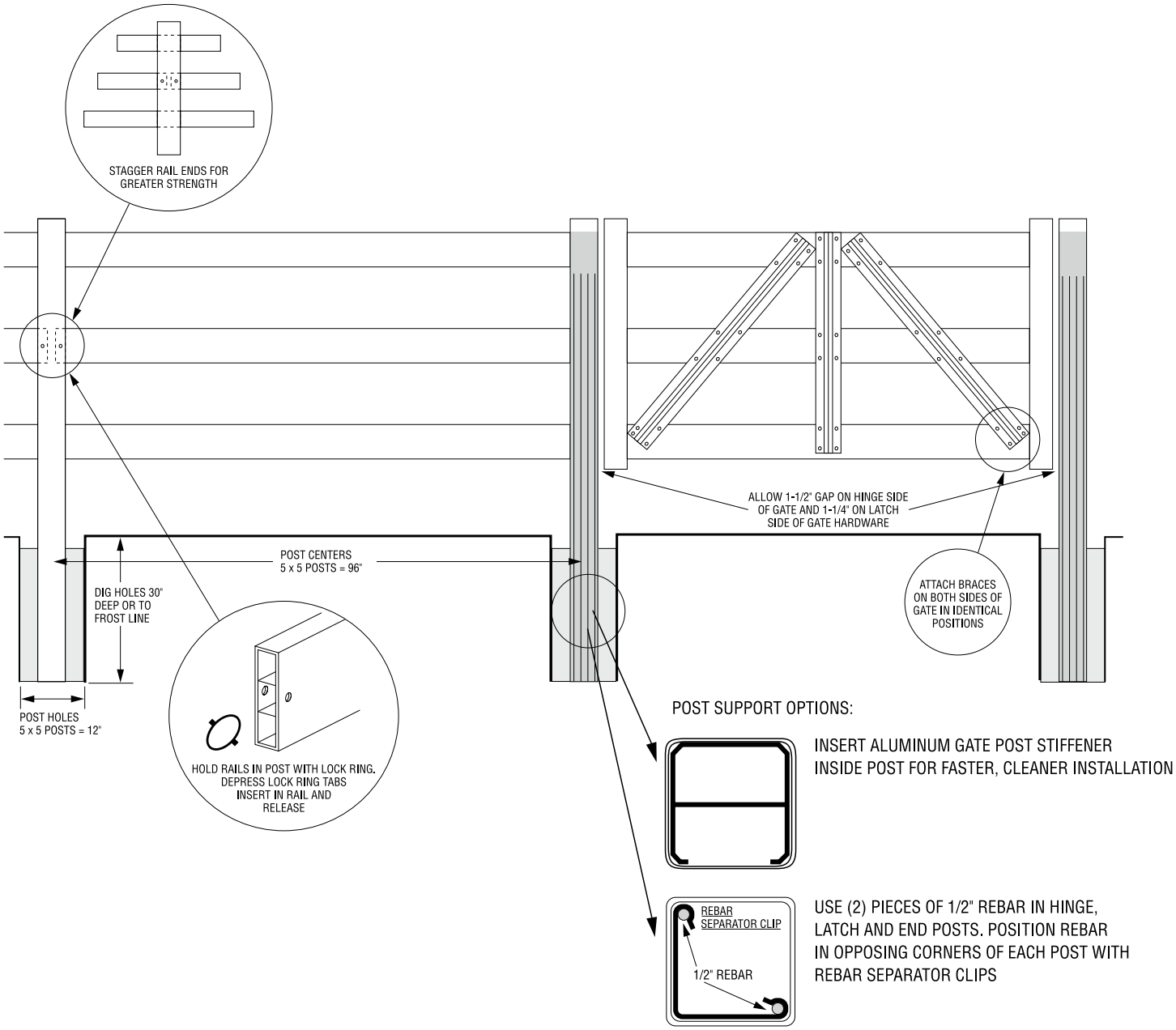
– Fill post with concrete mix to cover rebar and hardware fasteners

– Tamp post with a rubber mallet to eliminate air pockets

– Leave gate on blocks for 72 hours to allow concrete to set

23.9 Install Caps

- Install post caps by pressing in place inside post



* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

25. Installing Post & Rail with CertaGrain® Texture— 2-Rail, 3-Rail and 4-Rail

24.1 Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

*In climates where the temperature exceeds 100° Fahrenheit, we recommend installing Sierra Blend product on 6' post centers

24.2 Dig Holes

- Dig holes 30" deep or to frost line
  – hole size for 5 x 5 posts = approximately 12"
- Clean holes and check for straight walls

24.3 Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" or 4" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post
- Fence may be installed post and bottom rails first, then upper rails

24.4 Install Rails

- White product uses 1-1/2 x 5-1/2 rails
- Arctic Blend, Brazilian Blend, Sierra Blend and Weathered Blend use 2 x 6 rails
- Tape the ends of any rail going into a post that is to be filled with concrete to prevent concrete seepage
- Standard rails are supplied in 16 foot lengths for white (12 foot rails are available for Blend product)
- For rolling terrain, rails may need to be shortened
- The starting point for rails should be staggered from post to post for bottom/mid/top rail for maximum strength
- Insert lock ring into one end of rail by depressing tabs, insert in rail end and release
- Depress lock ring tabs to insert bottom rail in first post
- Tabs will recoil to hold rail in post
- Insert lock ring in rail end, insert end into third post
- When installing rails leave a 1" gap between rail ends inside post to allow for expansion

24.5 Support and Secure

- Block up bottom rail to determine correct fence height
- Fill holes around posts with concrete mix
- Tamp, level, and square
- Fence assembly may be continued by installing all bottom rails first or one section at a time
- To lower a post, place a wood block from corner to corner of the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

24.6 Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1-1/2" gap on hinge side of the gate and 1-1/4" on latch side to allow for the gate swing and hardware
- Block up gate to square with fence, rails should be level
- Gate hardware must be mounted to two sides of the post

24.7 Solidify Gate Posts

- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:

  A. Aluminum gate post stiffener

  – Slide aluminum gate stiffener inside hinge, latch or end posts

  – Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post

  – Insert post into ground

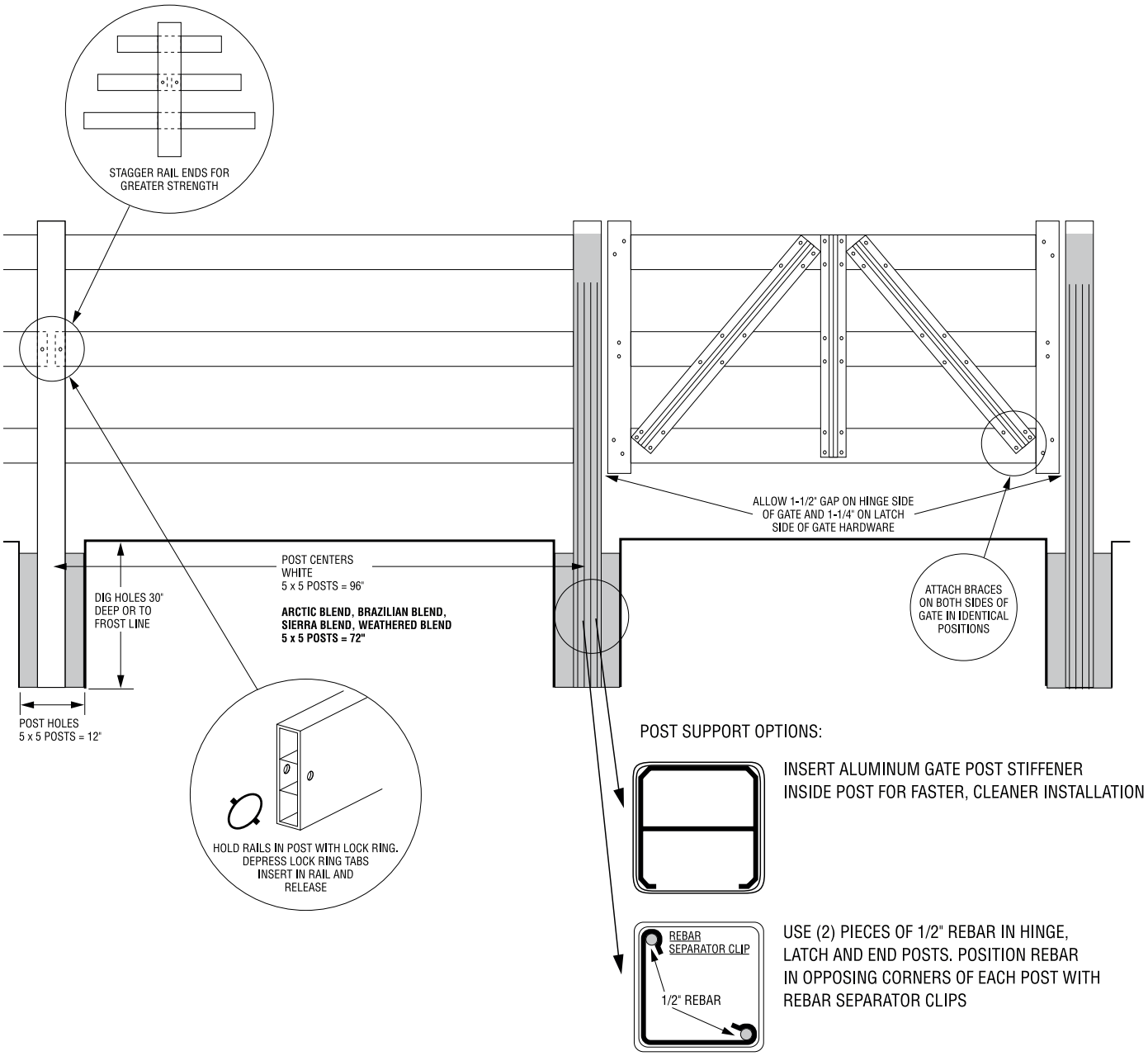
  – Fill hole with concrete around outside of post

B. Concrete and rebar*

- Use two pieces of 1/2" rebar in each hinge, latch and end post
- Rebar should extend from the bottom of the hole to approximately 12" from the top of the post
- Hold rebar in opposite corners of post with rebar separator clips
- Fill post with concrete mix to cover rebar and hardware fasteners
- Tamp post with a rubber mallet to eliminate air pockets
- Leave gate on blocks for 72 hours to allow concrete to set

24.8 Install Caps

- Install post caps by pressing in place inside post



* Caution – In climates that experience freeze-thaw cycles, this installation method could result in post cracking. This would not be covered by the warranty.

26. Jobsite Safety and Workmanship

The care and skill that you and your crew use on the jobsite can positively affect the outcome of the job as well as the reputation and profitability of your company. The National Association of Home Builders (NAHB) has assembled a set of suggestions for jobsite safety and care. This chapter highlights some of those recommendations.

25.1 Tools

One of the most important things you can do to make the job go smoothly is to make sure that all tools are in good shape and everyone understands how to use them properly.

- Maintain all hand tools and equipment in a safe condition and check regularly for defects. Do not use broken or damaged tools.
- Use double insulated tools or ensure that all tools are grounded. Protect all temporary power with ground fault circuit interrupters (GFCI). Plug into GFCI-protected generators or use GFCI extension cords.
- Equip all power saws with blade guards and turn off saws when not in use.
- Before you or your crew use pneumatic or power-actuated tools, make sure everyone has been trained and checked on their use.
- Wear proper eye protection, especially when using power tools.
- Never leave cartridges for pneumatic or power-actuated tools unattended. Keep equipment in a safe place and store according to the manufacturer's instructions.

25.2 Personal Protective Equipment

The Occupational Safety and Health Administration (OSHA) requires that workers wear applicable personal protective equipment.

- Falling debris is a hazard on any jobsite. Wear a hard hat.
- When cutting or drilling Bufftech fence, always wear safety glasses.
- Wear sturdy shoes or boots.

25.3 Housekeeping

Most fence installations involve working around the family and the neighborhood. For this reason, it is particularly important that the area be kept clean and free of unnecessary debris.

- Keep all walkways and stairways clear of trash and debris.
- Use and store tools and supplies away from walkways and doors.
- Scrap Bufftech pickets, rails, fasteners, boxes and other discarded material are tripping hazards. Dispose of scrap material in a dumpster or other trash receptacle.
- Exercise care around shrubs and flower beds.
- Use care when cutting steel channels as chips can cause rust stains.

25.4 Professionalism

Contractors rarely have the luxury of working alone. Your jobsite is often in the heart of a busy neighborhood, where your customers, their families and their neighbors can watch you work. For this reason, it is particularly important that you and your crew look and act professionally.

- Wear appropriate clothing.
- Watch your language.
- Pick up personal items and other trash that may accumulate during the day.
- Keep the homeowner informed of your progress.
- Follow up. A simple phone call or visit with the home-owner when the job is complete is an opportunity to answer minor questions and avoid unnecessary callbacks.

27. Taking the Master Craftsman Test

You've reviewed this workbook. Now you're ready to take the Master Craftsman Test. To successfully complete this course and quality for the rewards the CertainTeed Master Craftsman program offers, you must correctly answer 25 of the 26 questions on the test.

Take the test online at the web address below. Answer the questions and your results will be displayed immediately.

Take the test online at

http://www.certainteed.com/pro-center/master-craftsman-program-fence-decking-railing

The Master Craftsman Test

1. Vinyl fence is preferable to wood because
   a. homeowners question the safety of pressure-treated lumber
   b. lumber prices are steadily increasing
   c. vinyl fence is virtually maintenance free
   d. all of the above

2. Bufftech® fences are protected by
   a. a transferable 10-year warranty
   b. a 25-year warranty
   c. a lifetime limited transferable warranty
   d. a labor warranty only

3. Over the life of the fence, vinyl is less expensive than wood.
   a. true
   b. false

4. "Vinyl" fence is correctly called
   a. polypropylene fence
   b. polyvinyl chloride fence
   c. polyethylene fence
   d. polystyrene fence

5. TiO_2 is added to vinyl fence to protect it from
   a. harmful UV rays
   b. salt air
   c. acid rain
   d. air pollution

6. Impact modifiers
   a. don't work
   b. help the fence "bounce back"
   c. protect against cracks
   d. impart color to the vinyl

7. Vinyl fence is extruded, which means it is
   a. molded into long rails
   b. stamped out of a large sheet of vinyl
   c. pushed through a heated barrel and die by two screws
   d. all of the above

8. Co-extrusion
   a. allows CertainTeed to make two fence profiles at a time
   b. adds texture to the fence profile
   c. allows CertainTeed to extrude and cut the profiles simultaneously
   d. joins two flows of molten PVC in a single die

9. Vinyl fence expands and contracts when
   a. the outside temperature changes
   b. it ages
   c. it is painted
   d. it is attached with glue

10. CertainTeed has been manufacturing building materials since
    a. 1904
    b. 1924
    c. 1945
    d. 1962

11. The first step in ordering a Bufftech fence is
    a. determine the number of posts
    b. figure out where the gates will go
    c. lay out the fence line
    d. order fence sections

12. For ordering purposes, rough measurements are adequate.
    a. true
    b. false

13. Proportional spacing means that
    a. every section is the same width
    b. the last section is cut to fit the remaining space
    c. the gate is used to adjust for the odd space
    d. the fence will have to be special ordered

14. The remainder spacing method requires that
    a. every section is the same width
    b. the last section be cut to fit the remaining space
    c. the gate is used to adjust for the odd space
    d. the fence will have to be special ordered

15. All Bufftech fence styles are 8' wide.
    a. true
    b. false

16. When using end channels on privacy style fences
    a. channel must be attached to the post
    b. channel is just slipped over the pickets
    c. channels are installed at both ends of the section
    d. both a and c

17. Gate and latch posts can be solidified with
    a. a wood post
    b. an aluminum post insert
    c. filling post with concrete and rebar
    d. both b and c
    e. none of the above

18. There are three methods for installing fence on hilly or sloping ground: stepped, racked and sloped.
    a. true
    b. false

19. When installing fence on concrete a steel post can be used with EZ Set brackets.
    a. true
    b. false

20. The new aluminum frame gates require
    a. a smaller diagonal brace
    b. no diagonal brace
    c. no opposite leaf gate
    d. both b and c

21. CertaGrain® is
    a. added to product for color protection
    b. authentic woodgrain texture
    c. fence warranty protection
    d. none of the above

22. When getting started with installing your fence, you should
    a. be sure to call underground prior to digging
    b. plan where gates will be located
    c. stake out fence line
    d. none of the above
    e. all of the above

23. When installing Chesterfield privacy fence, post hole diameter should be approximately
    a. 8"
    b. 10"
    c. 12"
    d. 14"

24. SureStart™ stands for
    a. materials will deliver on time
    b. 5-year labor protection
    c. CertainTeed Bufftech installation manual
    d. CertainTeed's easy-to-use material order form

25. Vinyl fence complements vinyl siding.
    a. true
    b. false

26. Bufftech fence is GreenCircle Certified®, a third-party auditing process that confirms sustainable product development and material conservation.
    a. true
    b. false

Notes

Notes

Notes

Notes

ASK ABOUT ALL OF OUR OTHER CERTAINTEED® PRODUCTS AND SYSTEMS:

ROOFING • SIDING • TRIM • DECKING • RAILING • FENCE
GYPSUM • CEILINGS • INSULATION

www.certainteed.com http://blog.certainteed.com

CertainTeed Corporation
20 Moores Road
Malvern, PA 19355

Professional: 800-233-8990
Consumer: 800-782-8777

Code No. 40-40-80115

SAINT-GOBAIN