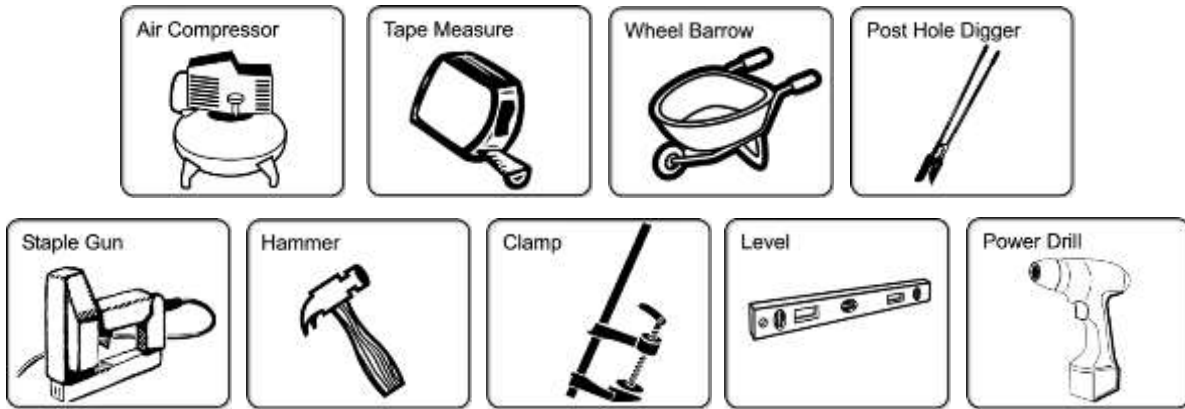
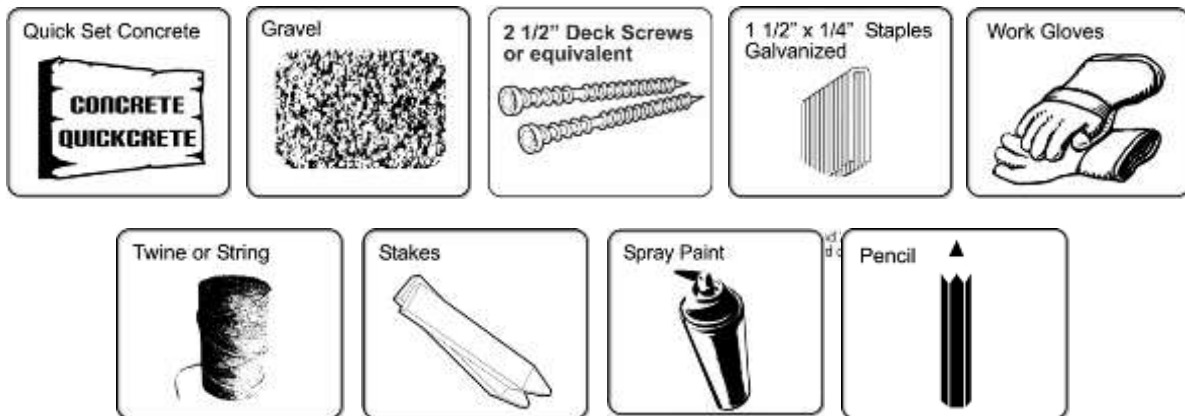


# Composite Fencing Installation Instructions

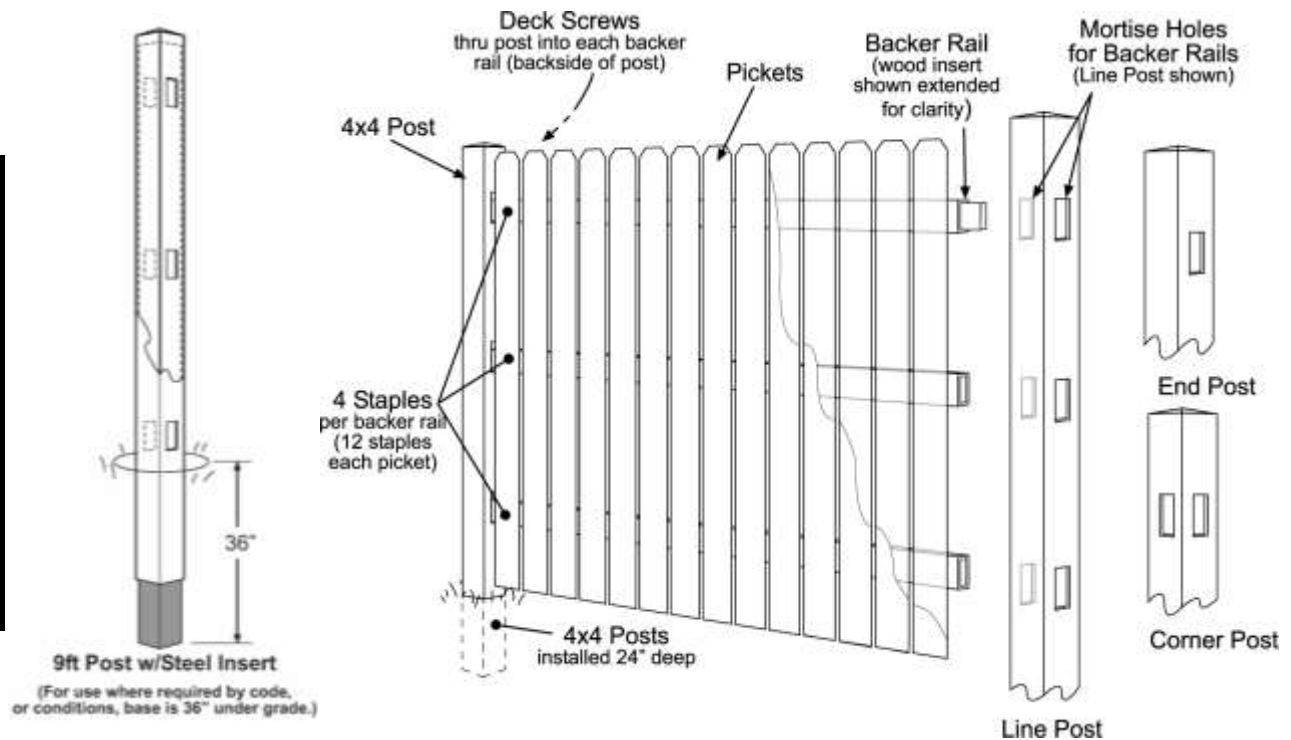
## INSTALLATION TOOLS:



## SUPPLIES:



## ITEMS USED IN A 6' SECTION:



## Prior to installing fencing:

- Prior to digging, confirm location of underground utilities with local authorities.
- Apply for permits if required by local authorities and codes.
- Local zoning laws, neighborhood associations and/or historic districts may regulate size, type, placement and ability of fencing. Ensure compliance prior to installation.
- A 9ft post with a steel insert is available where 36" of post penetration is required.
- **Due to variation in picket width, minor adjustments to gapping may be required. Care should be taken to ensure that spacing does not result in too large of gap at the end posts.**

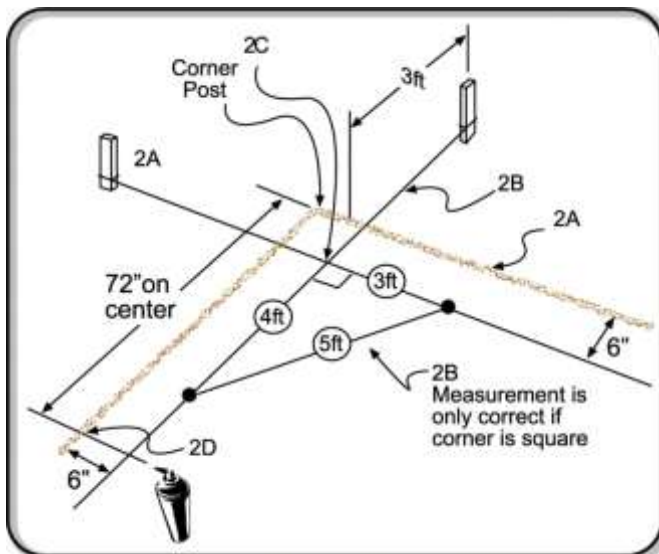
## Step 1: Planning

Determine total area to be fenced.

- Total the length of fence required, dividing by 6 to establish the number of 6' sections.
  - Site-Built installation: Ensure 14 pickets/3 rails for each 6' run (17, if installing Shadow Box or Board on Board Style, see Step 6).
  - Pre-Built Panels: Determine number of 6' panels required.  
**Note: Pre-Built Panels can only be installed on absolutely flat terrain. Panels are available in limited markets only as most terrain is not level.**
- Make adjustments for odd widths at the back corners or build partial sections equally. Example: if you have 8 feet left in a run, consider building two 4ft sections rather than a 6ft and a 2ft.
- Determine the number of posts (end, corner, & line), and gate post (with 12 gauge steel insert) & gate location (if applicable).
- Installations are facilitated with the use of an air compressor or air driven staple gun. Approved fasteners are ¼" - ½" crown x 1 ½" galvanized or stainless steel staples, minimum 18ga.

## Step 2: Layout

2A. Establish total area to be fenced. Insert stakes 6" inside of proposed area extending an additional 3' laterally so as not to disturb string lines when digging post holes.



2B. Attach string line to staked area. Verify corners are square using the 3' x 4' x 5' method.

2C. Fence corners are determined by where strings intersect.

2D. Mark locations for subsequent posts starting with the first location and measuring every 72" on center (from post center to post center).

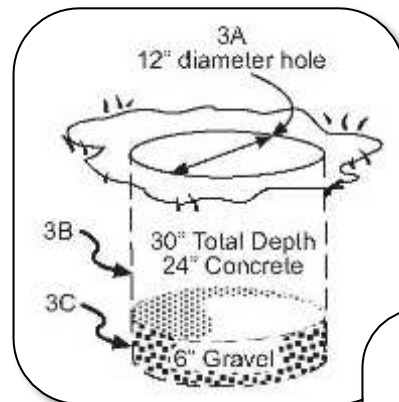
2E. Mark gate location and size. Allow 42" from post to post for a 42" gate.

2F. Place proper post (end, corner, line, and gate) at each location.

Tip: When marking measurements with spray paint, mark both the ground and string (see illustration).

### Step 3: Dig Post Holes

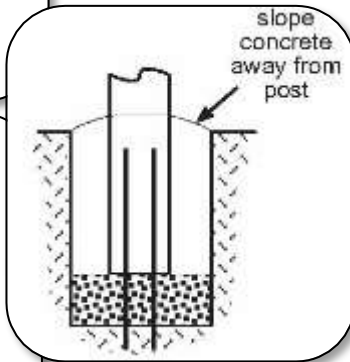
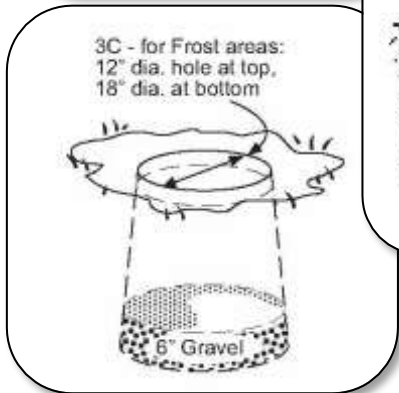
Note: The first post installed is customarily an end or corner post.



3A. Dig all holes 12" in diameter x 30" deep making sure not to interfere with strings or stakes. **Note: when using 9' posts, total depth should be 42".**

3B. Clean holes and check for straight walls (or bell shaped for frost line applications – see Note below).

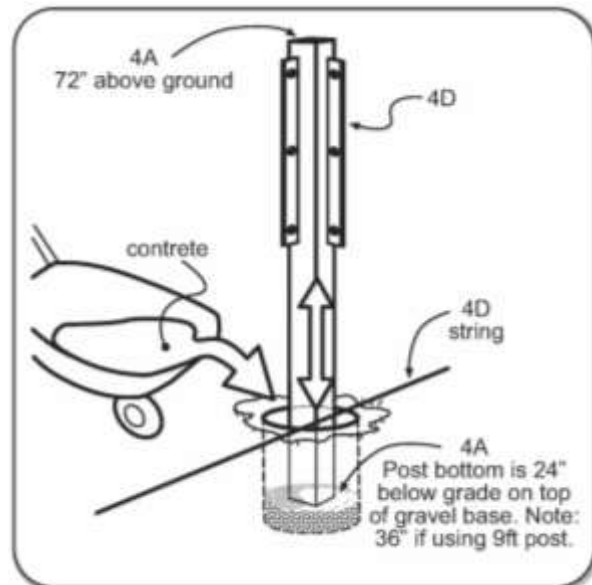
3C. Fill all holes with a 6" layer of gravel to allow for drainage and establish a firm base for the post.



**Note Frost Lines:** Consult local building codes in regards to depth of hole if frost lines are applicable. A "bell" shaped hole, with 6" of gravel, and concrete filled slightly above grade may help reduce the chance of frost swell. If depth needs to be increased, fill with gravel / concrete accordingly to ensure post is 72" from level of ground to top of post. In extreme Northern climates, driving re-enforcing rods through gravel and area filled with concrete, may be beneficial. **Always slope concrete away from post for proper drainage.**

### Step 4: Set All Posts

Accurately locating posts a minimum of 72" above the ground, and 72" on center (67 3/4" between posts), is critical for accurate fence installation. **Pickets will buckle if installed incorrectly and are within contact of the ground.**



Quick-Set Concrete Mix estimate per post hole: 120 lbs.

4A. Insert initial post. Verify post is 72" from ground to post top (and 24" below ground, or 36" using 9ft post). Make sure post is next to string, but not touching.

4B. Fill hole around post with concrete.

4C. Tamp concrete in hole to eliminate air pockets. Slightly taper top of concrete above grade for drainage.

4D. Square and plumb post. *Ensure continued accuracy of marked measurements from Step 2D. Allow concrete to set and cure per manufacture instructions before continuing with installation.*

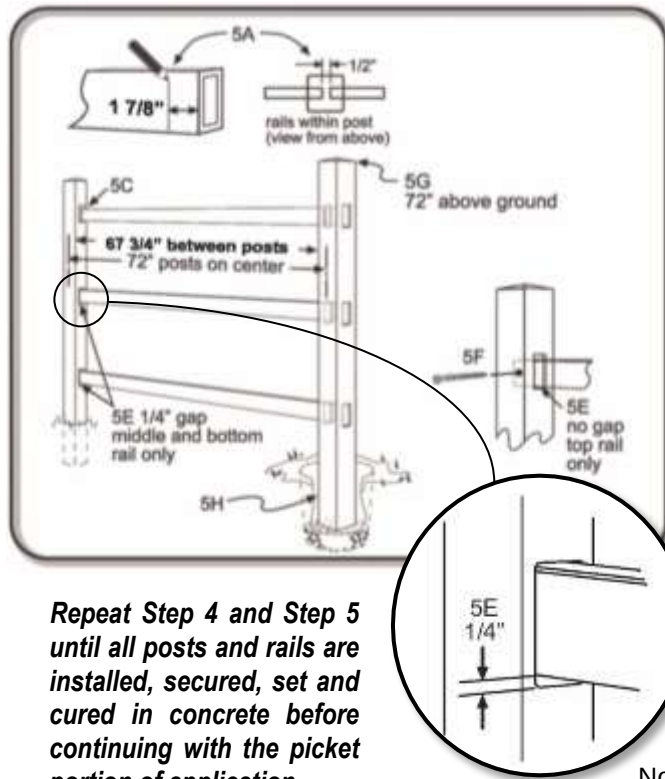
4E. *Ensure continued accuracy of marked measurements from Step 2D.*

### Pre-Built Panel Installation: (flat terrain only) – skip to Pre-Built Installation page

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## Step 5: Site-Built Backer Rail Installation (3-rail system)

Install rails only after posts are fully cured in concrete. An alternately method is to use this pattern after initial post is fully cured in concrete: Post > Rails > Post > Rails > etc.



**Repeat Step 4 and Step 5 until all posts and rails are installed, secured, set and cured in concrete before continuing with the picket portion of application.**

5A. Mark line 1 7/8" from edge of each rail indicating the distance each rail should be inserted into posts. Measurement will ensure the necessary 1/2" spacing between rail ends inside the post.

5B. Position second post next to string, but not touching.

5C. Insert 3 rails to 1 7/8" mark into mortise holes.

5D. Verify 72" from post center to post center, verify post is plumb.

5E. Secure top rail resting in mortise hole. **Position and secure middle and bottom rails 1/4" from bottom of holes** (use a 1/4" shim as guide and remove after rail is secured to the post).

5F. Secure all rails by drilling pilot holes through backside of posts and into rails. Secure, **but do not overdrive**, using a single color matched #8 x 2 1/2" composite deck screw, into each rail.

5G. Verify top of post is minimum 72" above ground.

5H. Fill hole with concrete and secure post with temporary bracing if necessary. Slightly taper top of concrete above grade for drainage.

Note: Make adjustments for odd widths by cutting backer rail to required width ensuring the 1 7/8" additions on each rail end to fit into mortise openings.

## Step 6: Site-Built Picket Installation

Note: good preplanning is helpful when partial sections are required. For example, if after assembling sections, 8ft are remaining, it may look better to create two 4ft sections, rather than a 6ft & a 2ft. Measuring and careful planning before starting can also allow starting & ending with two similar length partial sections, rather than having them both at one end. **Due to variation in picket width, minor adjustments to gapping may be required. Care should be taken to ensure that spacing does not result in too large of gap at the end posts.**

Install pickets using staples. Approved fasteners are:

- 1/4" x 1 1/2" galvanized staples, applied parallel with the grain, not across or against it.
- 1/4" x 1 1/2" stainless steel staples, also applied parallel with the grain, not across or against it.
- The use of nails or screws is not recommended.



⇒ **Traditional:** Pickets are fastened to the same side of the rail with the rail on the inside of the fenced area. Gaps allow for wind passage relief and minimal thermal or moisture expansion. Tip: common nails can be used as picket gap aids: for 1/8" gap use a 6D nail, for a 3/16" gap use a 16D, and for a 0.2" gap use a 20D.



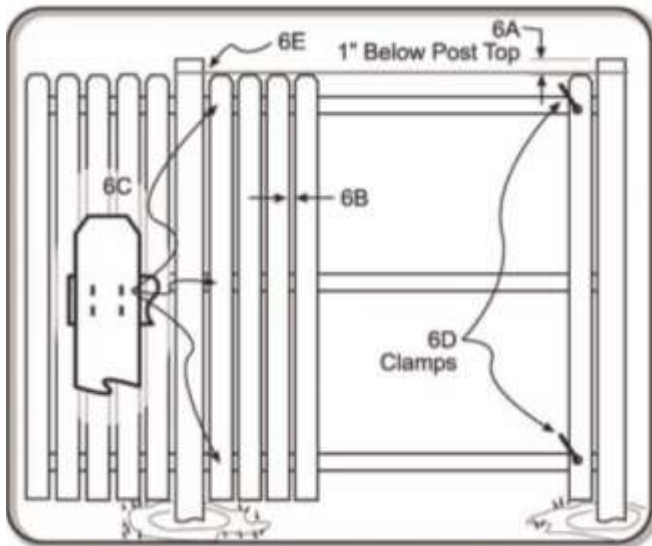
⇒ **Shadow Box Method of Installation:** This style requires a norm of 17 dog-ear pickets (9 on one side and 8 on the other). Pickets are fastened on alternating sides of the backer rails. Fasten the two end pickets 1/8" from post on same side, then install 7 remaining pickets at equal spacing for a total of 9 base pickets on one side. Center the remaining 8 picket on the other side of the backer rail over the spaces created from the 9 picket side.



⇒ **Board on Board Method of Installation:** This style requires a norm of 17 dog-ear pickets (9 base and 8 overlap) and 1 1/2" staples. Pickets are fastened to the same side of the backer rail with the backer rail located on the inside of the fenced area. Fasten the two end pickets 1/8" from post, and then install 7 remaining pickets at equal

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spacing for a total of 9 pickets on the back row. Center the front row of 8 pickets over the spaces created by the back. Back row pickets must be fastened in a manner that does not interfere with overlapping pickets (Step 6C). Fasten front pickets through back, four 1 1/2" staples each. **Make sure front picket staples pass through rear pickets and not into the void behind the front row.**



Begin by inserting posts into post holes; verify depth & plumb, then fill with concrete to set all posts. (Note: post must be minimum 72" above ground). Slightly taper top of concrete above grade for drainage.

6A: Install picket tops 1" below post top. Pickets installed 1" below the top of post line ensures pickets are 2" above ground line. **Pickets will buckle if installed incorrectly and are within contact of the ground.**

6B. Staple initial picket with 1/4" gap from post & 3/16" between pickets. Use level to ensure picket installed at true vertical. **Use 1/4" shims under bottom & middle backer rails when securing. Remove after securing rails to allow for slight thermal expansion.**

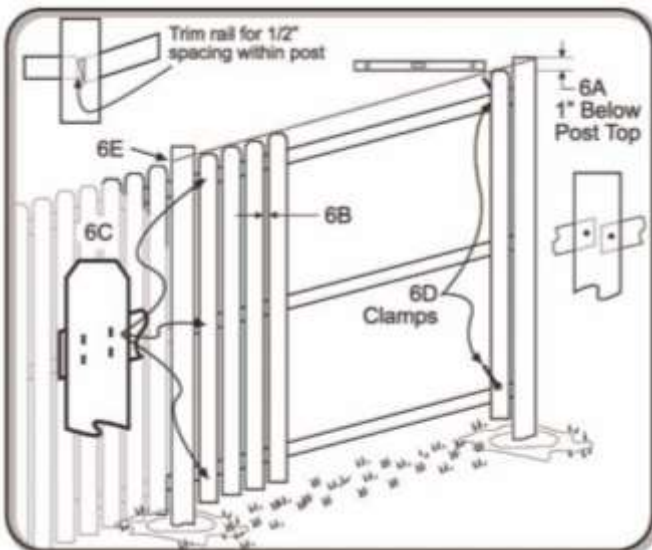
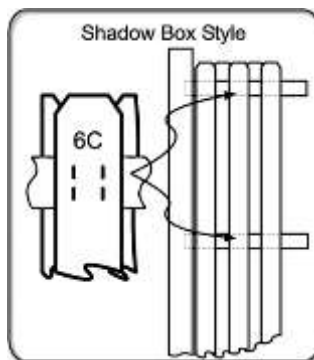
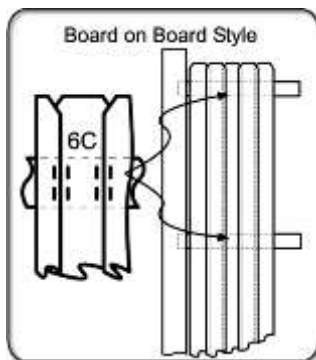
6C. Use 12 staples per picket: 4 into each backer rail applied in a **box pattern** parallel with the grain See diagrams to the left.

6D. Clamp final picket 1/4" away from unsecured opposite post, 1" below post top.

6E. Use a string line between posts to ensure level installation.

6F. Return to initial picket and install subsequent pickets from secured post towards unsecured post.

6G. Once all pickets in run are installed, remove clamp from final picket.



### Sloped Ground Installation: (site-built only)

WoodShades™ mortise holes can accommodate up to 16 degrees of slope without any hole adjustment. Depending on the slope, the 67 3/4" between the posts may shrink slightly. The backer rails may need to be trimmed to accommodate the slope and/or the final picket cut to fit required spacing. Use the top corner of the initial or final picket (whichever is higher) as a guide point to follow the contour of the ground.

**Repeat above indicated steps until installation is complete.**

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## Pre-Built Panel Installation: (complete Steps1 - 4 before proceeding to this step)

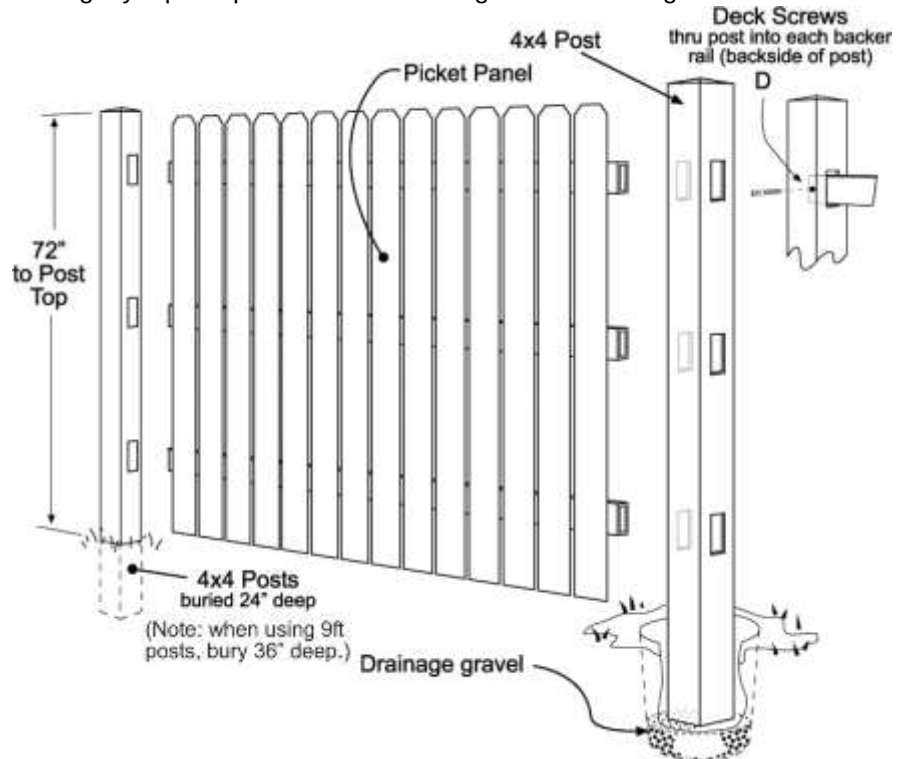
*Pre-Built Panels are designed for level ground use only and should never be installed in sloped areas; panels do not rack.* In the instance of sloped ground, purchase individual pickets, backer rails and posts, and follow Site-Built installation instructions. Panels are available in only in limited markets and feature a dog-ear picket style.

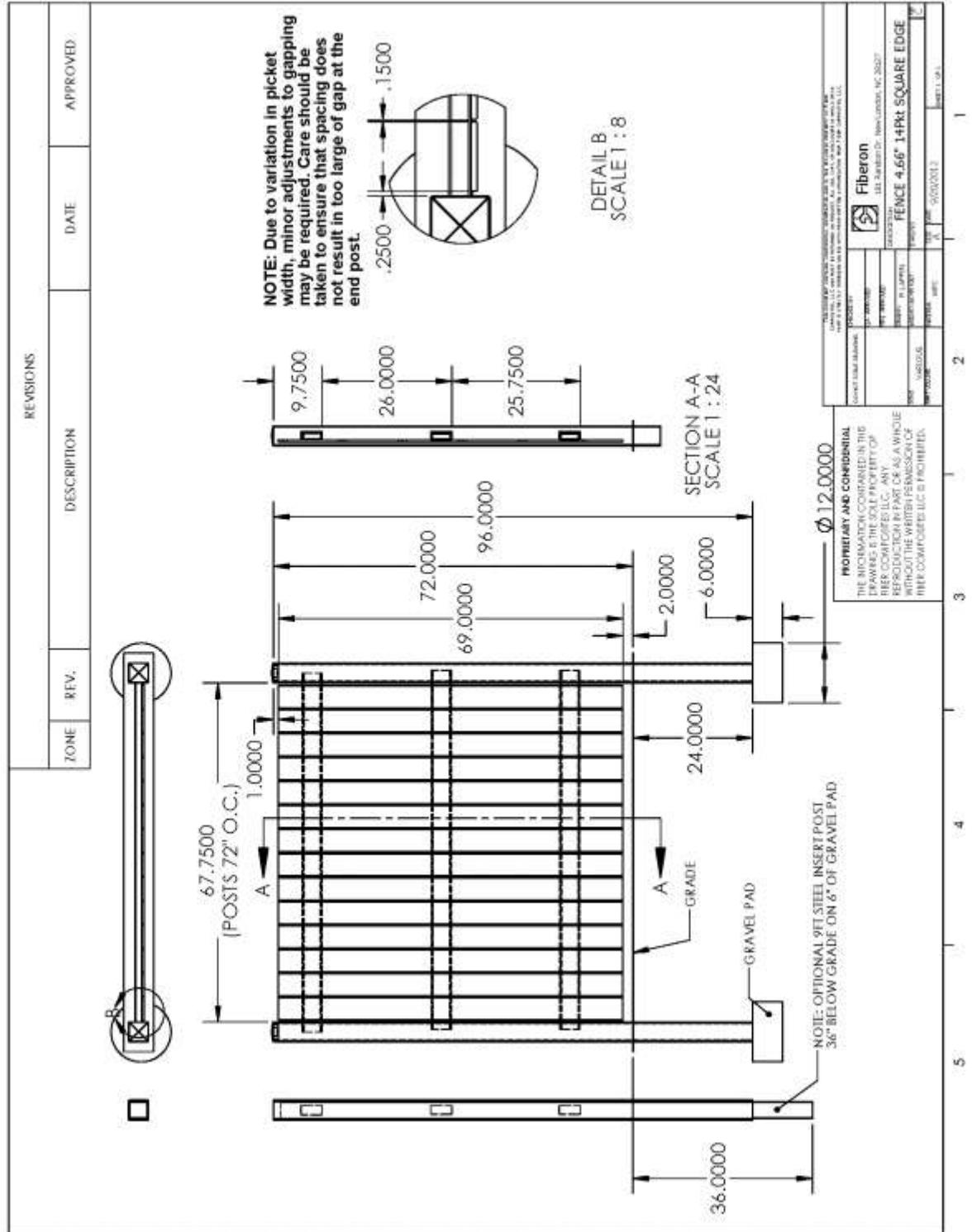
*Quick-Set Concrete Mix recommended for installation.*

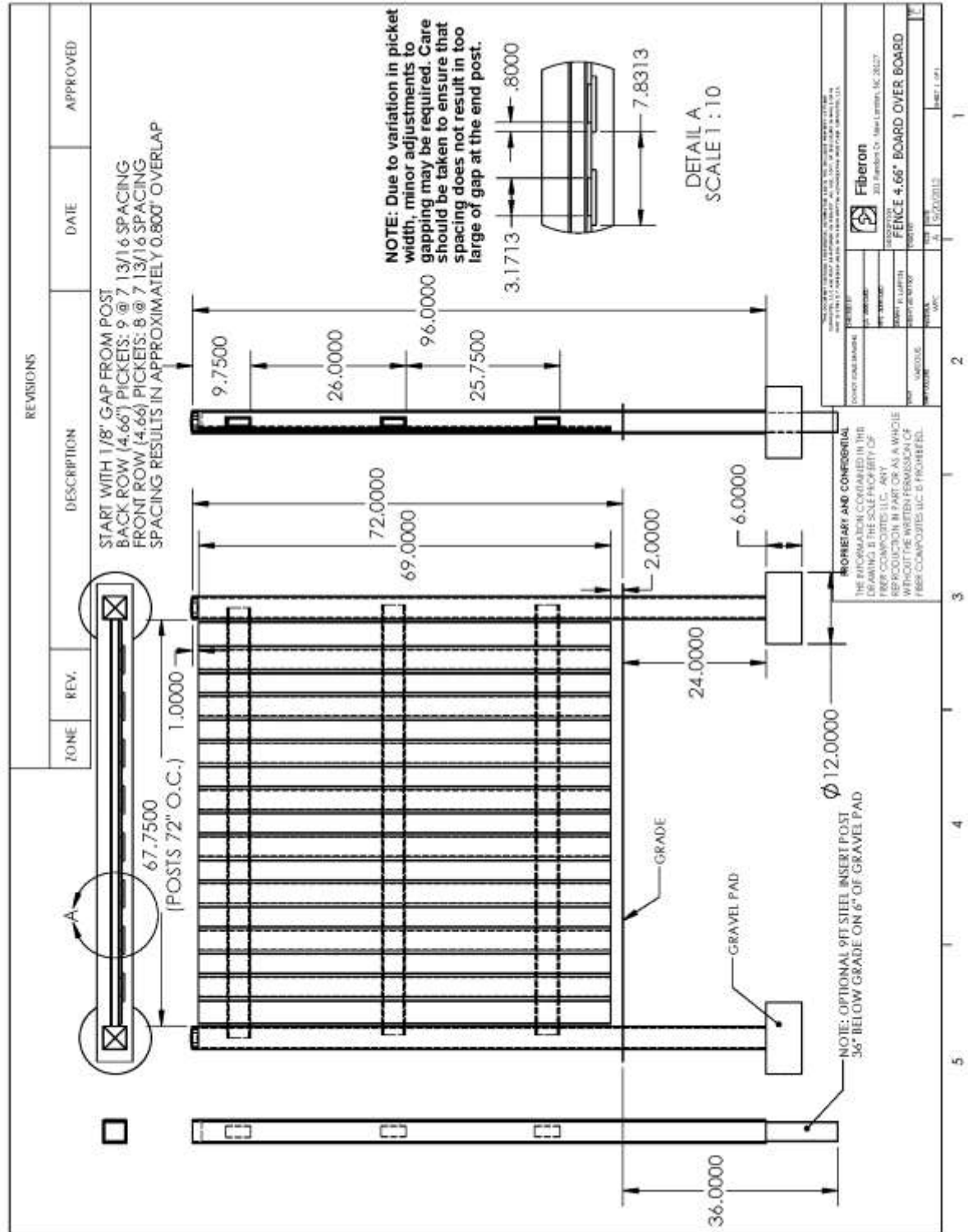
Composite Fencing is a Mortised Post system. The panels are installed in a pattern, thus installation is as follows: Post > Panel > Post > Panel > Post > Panel > etc.

- A. Ensure initial post is set in concrete. Allow to fully cure per manufacturer instructions.
- B. Position second post; do not set in concrete at this time.
- C. Insert Pre-Built Panel into set post, then unset post.
- D. Ensure unset post is plumb. Drill pilot holes through the backside of the set post and into the rail. Secure the rail, using single color matched #8 x 2 1/2" composite deck screw, into ends of each rail. *Make certain top of post is 72" above ground level.* Pour concrete. Allow to fully cure before continuing panel installation. Slightly taper top of concrete above grade for drainage
- E.

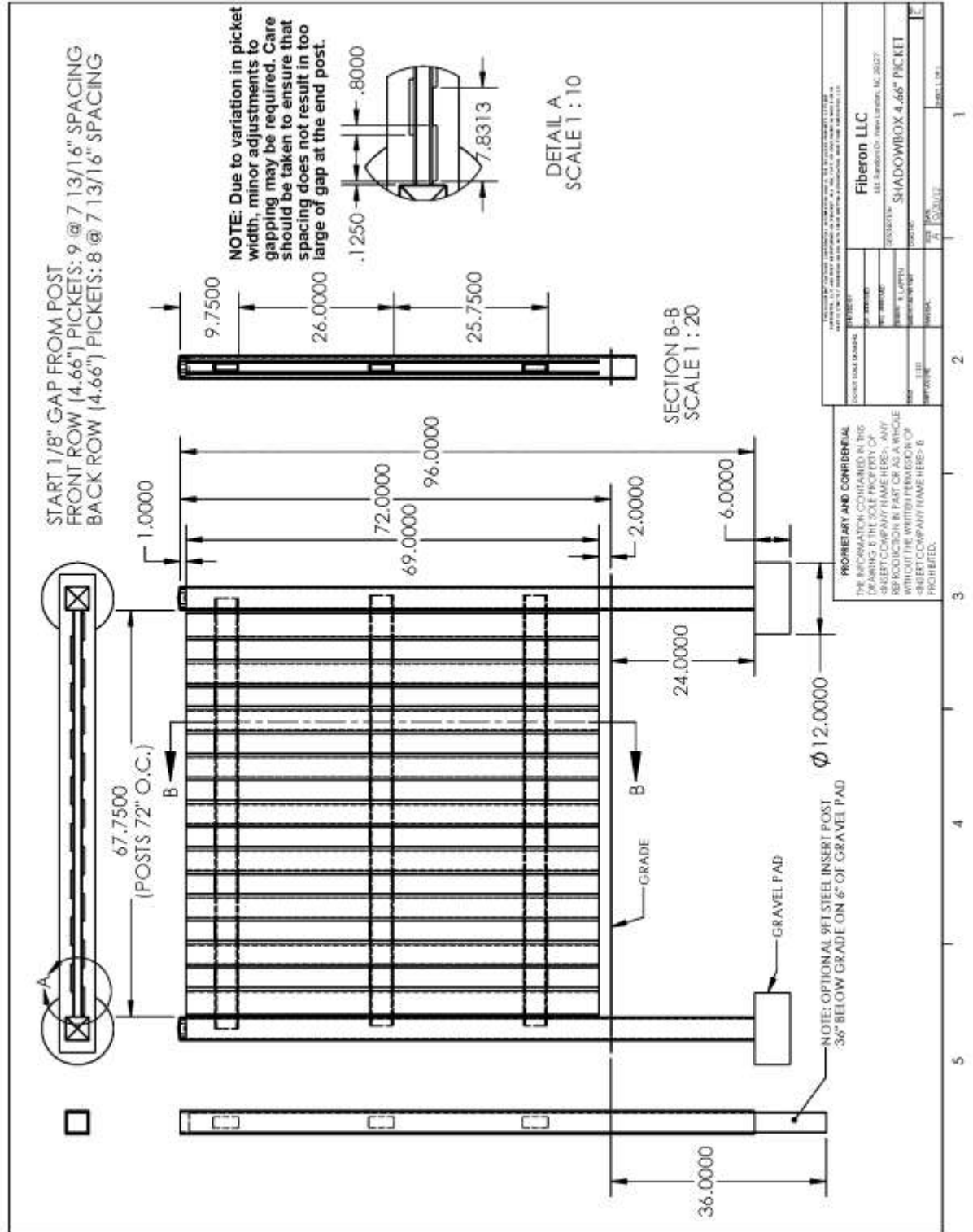
Make adjustments for odd widths by gently prying off necessary pickets to expose the backer rails. Cut the backer rails to required width ensuring the additional 1 7/8" on both sides to fit into mortis openings. Install using above indicated instructions.







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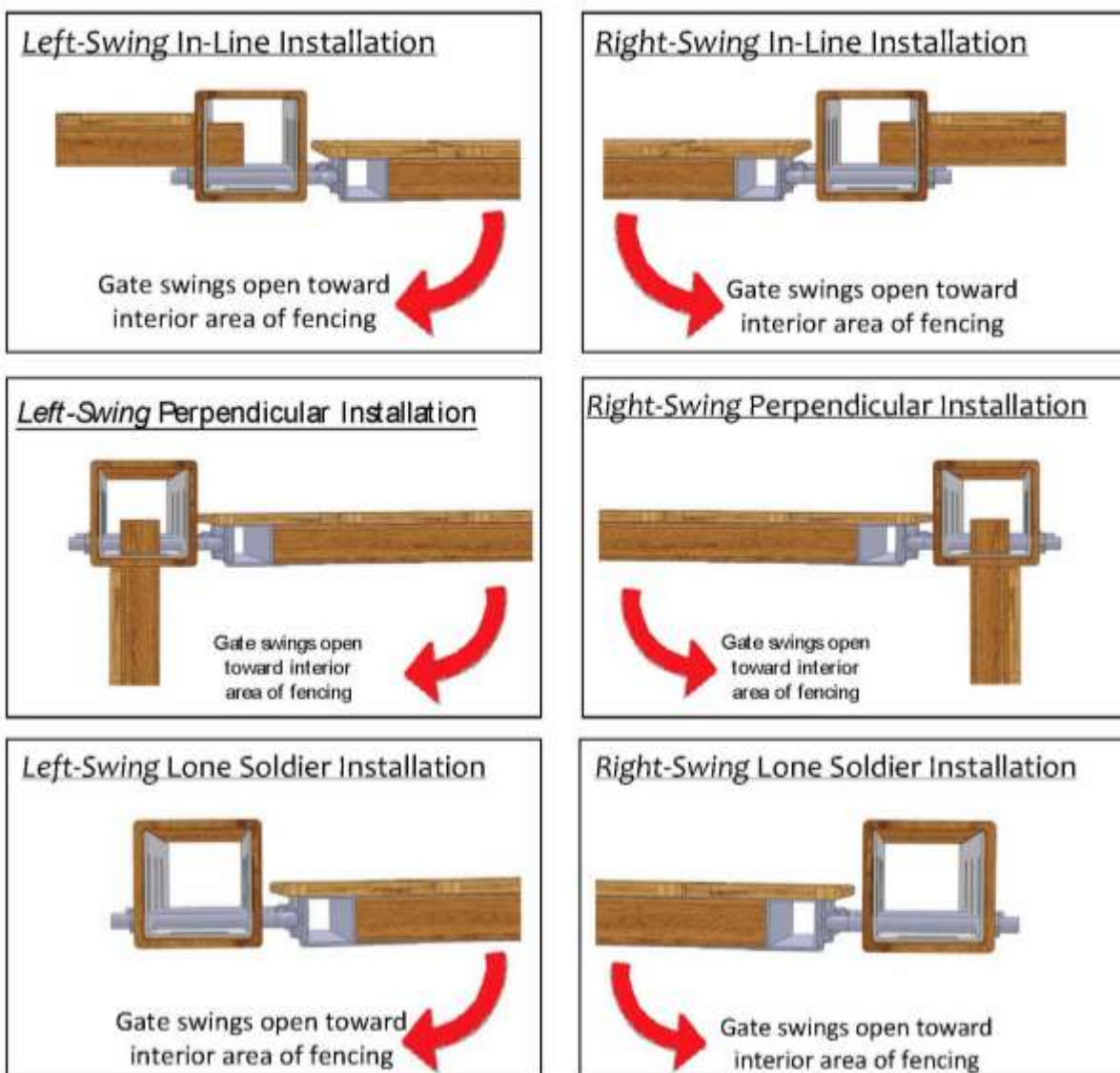
## **Gate Installation: Install on Level Ground Only, single row of pickets only**

Additional tools needed for Gate Installation:



When installing a gate post, orientation of the steel insert is critical. It may be necessary to remove the insert and position it correctly for your application. Note: Hinge pins must go through two walls of the steel insert.

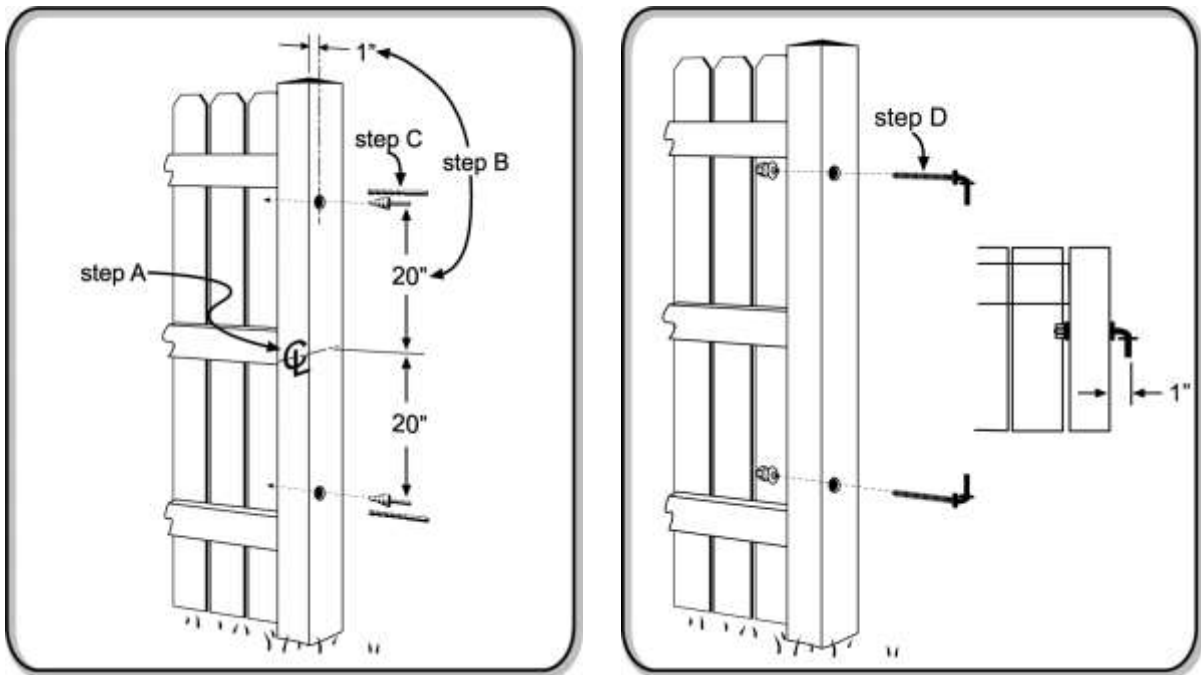
**PLEASE NOTE:** When installing Gate Posts, it is critical that the “U” shaped metal insert is installed with its open section oriented towards outside of the fenced area. (Note: pickets mounted on inside of gate swing can restrict opening.)



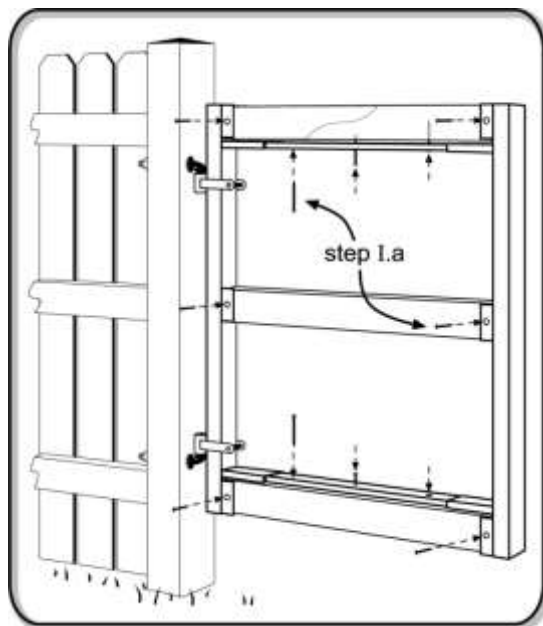
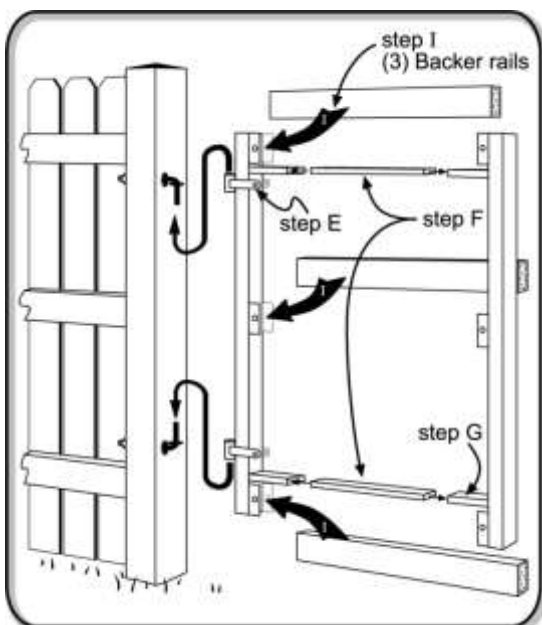
**NOTE: Before proceeding, make sure the steel insert is oriented correctly!**

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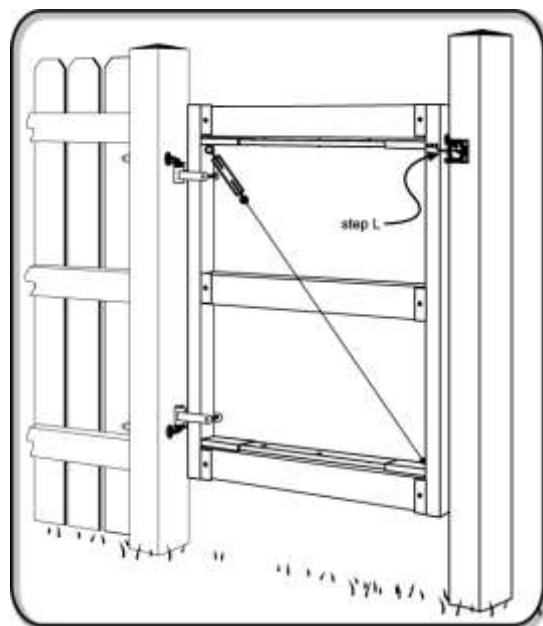
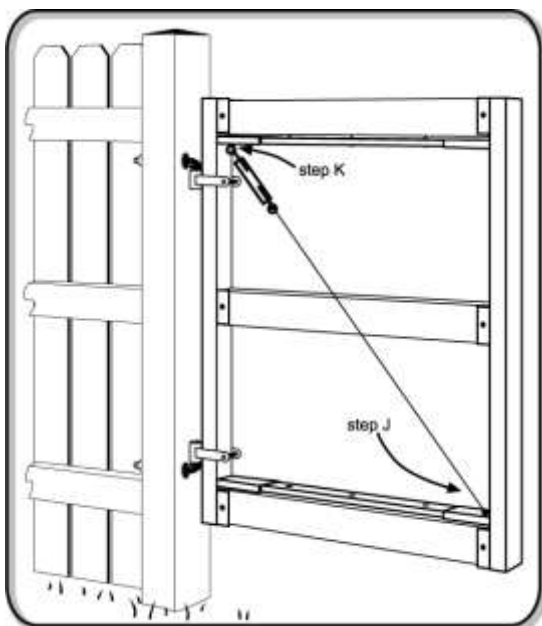
The Adjustable Gate Frame is designed to swing in. Locate hinges on back edge of gate post for proper latch installation, approximately 1" offset towards back edge of post from centerline.



- A. Locate the center point between the top and bottom rails.
- B. Measure up and down approximately 20" and make a mark 1" from the back edge of the post.
- C. Using a 5/8" high speed steel or vari-bit, drill a pilot hole for the hinge pins. Hole must penetrate both sides of post for hinge pin.
- D. Insert hinge pin through leaving approximately 1" to outside of hinge pin. Install bottom hinge facing upward and top hinge facing downwards to prevent gate from being lifted off its hinges. Install washer and nut; do not over-tighten.

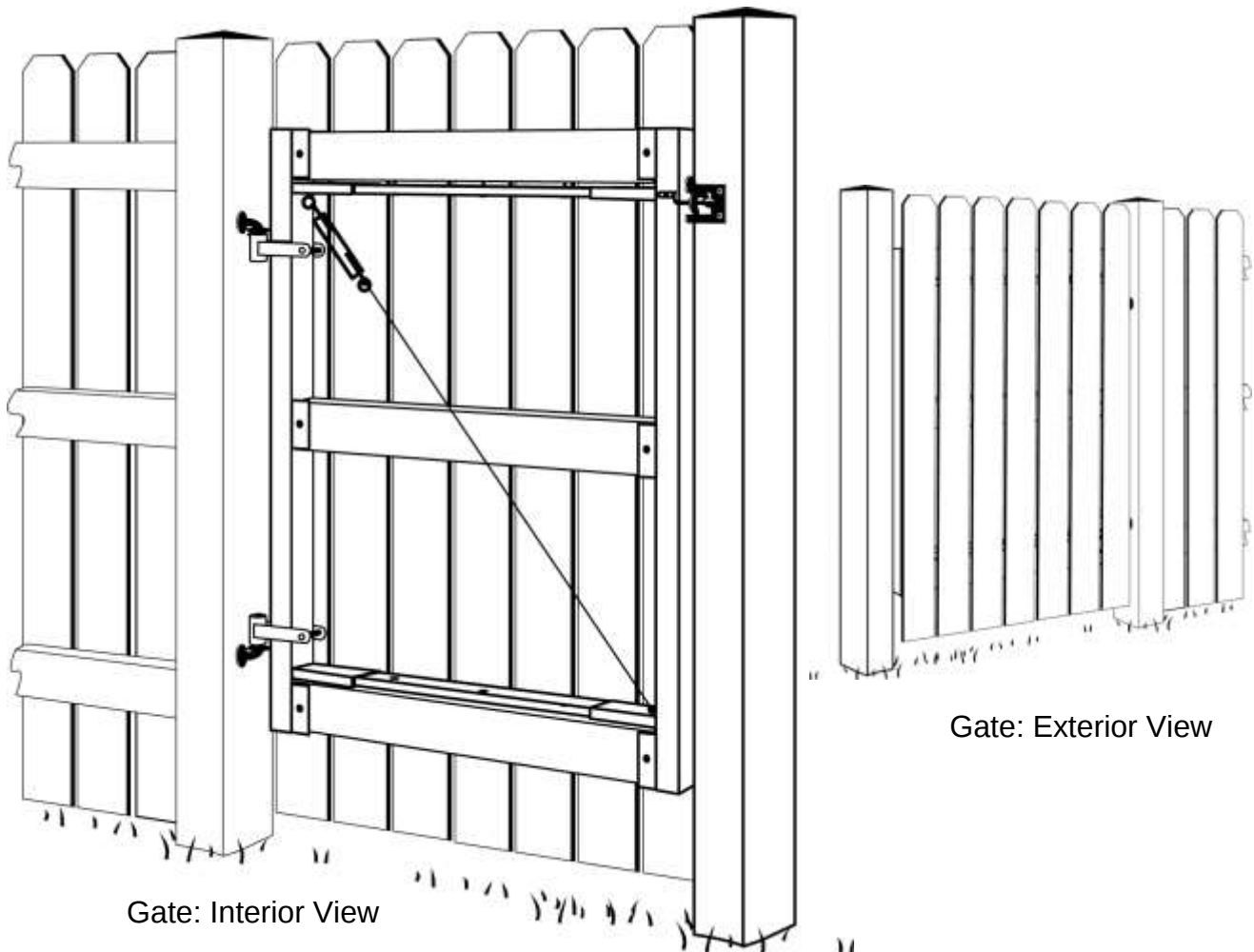


- E. Hang the hinge side of the Adjustable Gate Frame on the post using the frame hinges provided.
- F. Insert the two 1" Spreader bars into the slip members on the frame (be sure that the holes in the spreader bar are facing up and down).
- G. Slide the latch side of frame onto the spreader bars.
- H. Swing the gate to the closed position and adjust the frame to approximately 1" between the frame and post.
- I. Measure, cut and install the 3 backer rails into the frame
  - a. Secure backer rails to spreader bars and gate frame using supplied screws in locations indicated.



- J. Install the "S" Hook for the truss cable kit into the hole at the bottom of the gate on the latch side.
- K. Install the truss cable kit by hooking the turnbuckle into the hole at the top of the gate on the hinge side. Use the clamp provided to secure the cable, cut off excess. Adjust turnbuckle to mild tension. Ensure truss cable is on opposite side from picket installation.
- L. Install the Latch Bar to gate frame, then the Latch Keeper to the post.

- M. Install Stop using the carriage bolt and nylock nut provided.
- N. Install fence pickets with 4" of above ground clearance, using galvanized staples as indicated on Picket Installation Section on Fence Installation Instructions Set. Note:
  - a. Installing the initial gate picket with an overhang will minimize the visual gap between post and frame.
  - b. Make sure to install the initial and end gate picket using supplied self tapping screws through the gate frame.
- O. Adjusting the turnbuckle on the truss cable to fine tune the latch to desired fit.

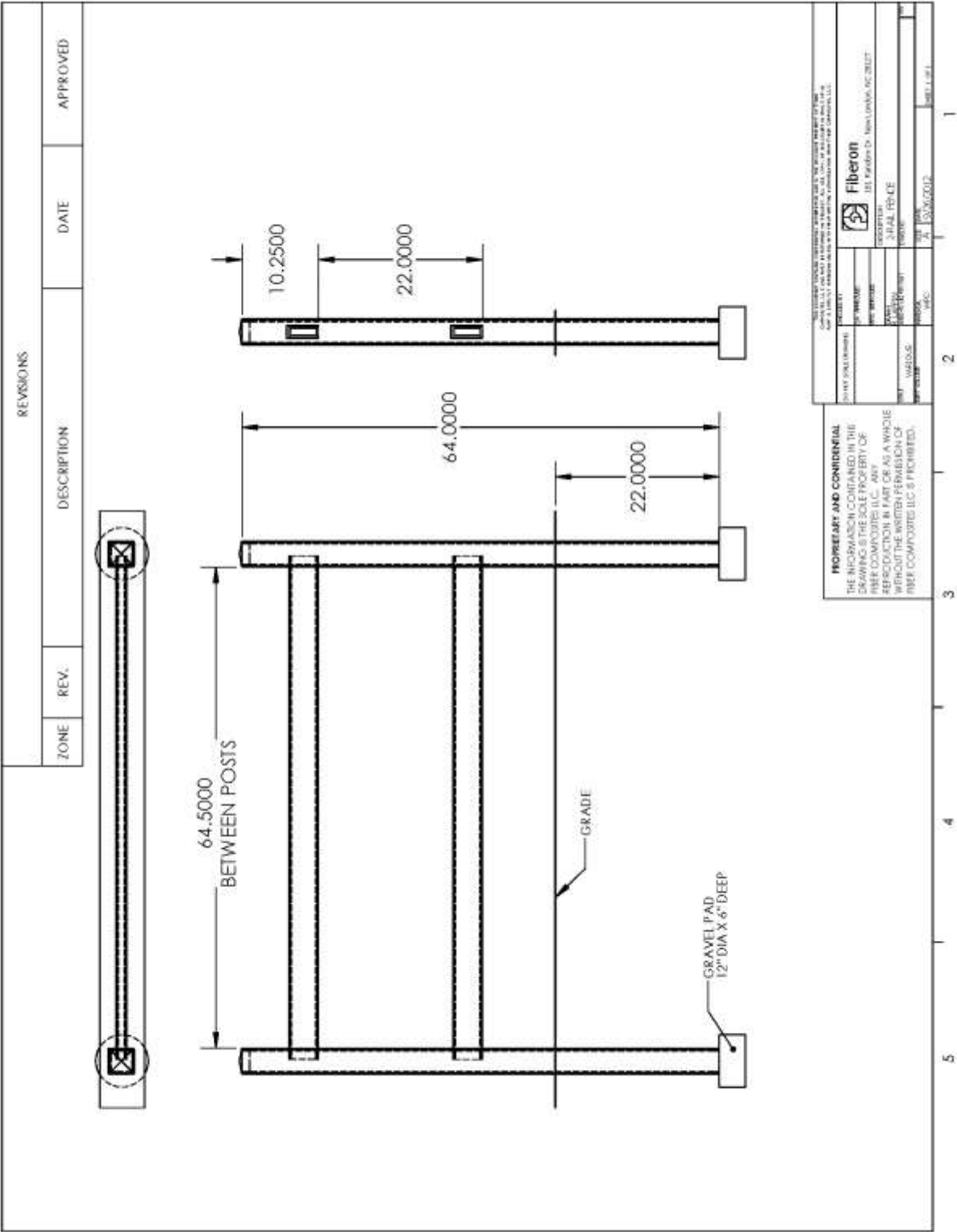


## Driveway Gates:

Driveway gates are generally 8' or 10' openings for double swing gates. These can be extremely heavy and should never be hung off a "lone soldier post" (a single post unconnected with the rest of the fence). If the location of the driveway gate is at the end of a run, construct a "short return" connected to each hanging post to create extra strength ("L" or "T" shaped).

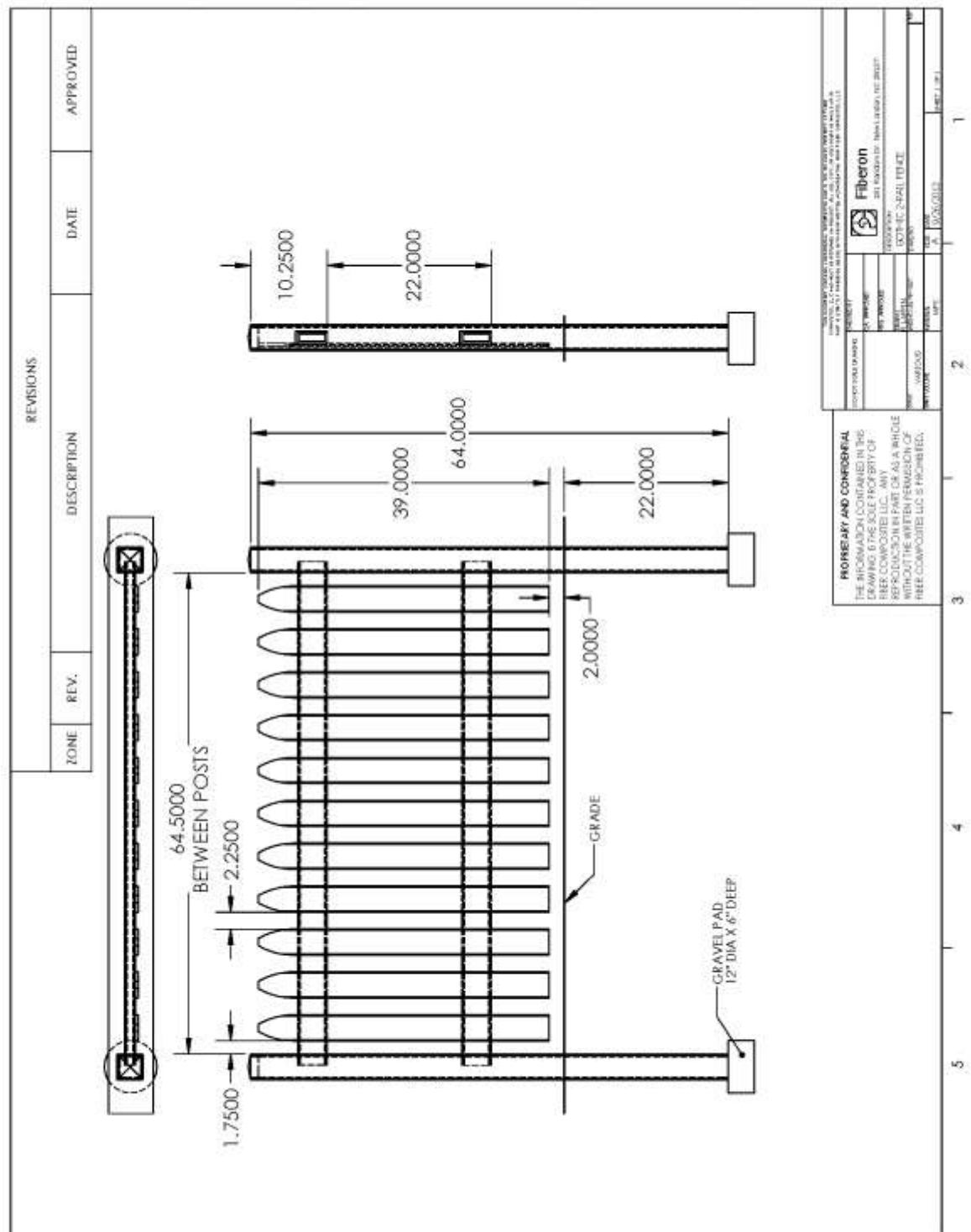
Center support wheels are required in instances where driveway gate is wider than 9' total (more than 4 ½' wide swing, each side). The drive gates should be supported by a center swivel wheel under each side to alleviate the weight (see: [www.hardwaresource.com](http://www.hardwaresource.com) – click on cane bolts, gate wheels, gate closures, Heavy Duty Gate Wheel - SKU#215350). Center support wheels are optional on gates with less than 4 ½' wide swings.

**TWO-RAIL FENCE:**



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## TWO-RAIL 11-PICKET GOTHIC FENCE:



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