# PLANNING AND INSTALLATION GUIDE
ORNAMENTAL STEEL FENCE

1 Plan

Draw your fence plan on the grid below.

NOTES _____

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Sample Fence Layout

PROPERTY LINE / GATE / HOUSE / P= Post
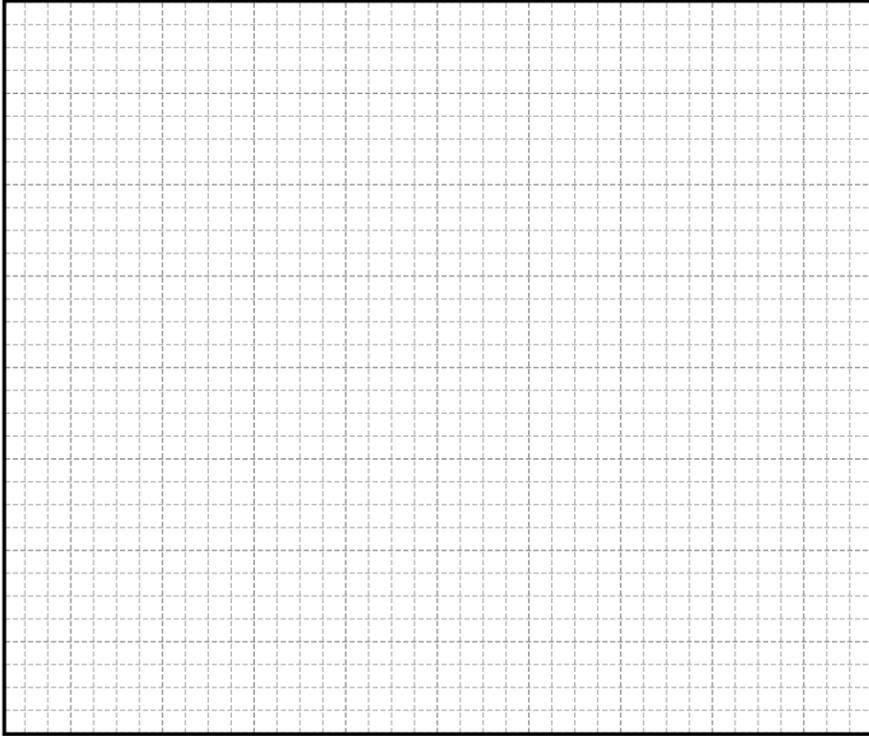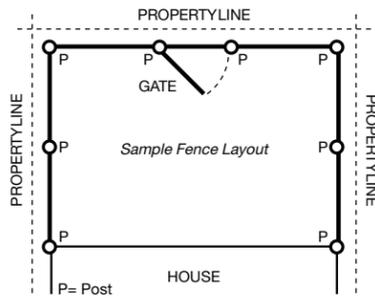
The following charts will help you determine the correct heights for panels, posts and the proper spacing for panels and gates.

Comparison of Heights

Fence Height (Post Height Above Ground)	Panel Height	Flanged Post Height	Post w/o Flange Minimum Length
3' (36")	32"	36"	54"
3-½' (42")	38"	42"	60"
4' (48")	44"	48"	66"
5' (60")	58"	60"	78"
6' (72")	70"	72"	90"

Post Spacing for Gates

Actual Gate Width	Actual Opening Between Posts	
	Using Standard Gate Hardware Kit	Gate with Lockbox Using Standard Gate Hardware Kit
33"	36"	35-¾"
39"	42"	41-¾"

Post Spacing for Panels

Panel Length			Post Spacing (Center-to-Center)		
Basic Grade	Standard Grade	Premium Grade	Basic Grade	Standard Grade	Premium Grade
94"	93"	92"	96-½"	95-½"	94-½"

Before You Start Your Project, Remember:

Tape measure, post hole digger, hoe, shovel, wrench, pliers, carpenter's level, wheel barrow, gloves, rope, string, wood stakes, and chalk line.

2 Components Needed

Qty	Description	Qty	Description	Qty	Description
For 100 ft of Fence, You'll Need		**For 150 ft of Fence, You'll Need**		**For 200 ft of Fence, You'll Need**	
13	Fence Panels	19	Fence Panels	25	Fence Panels
1	Gate *	1	Gate *	1	Gate *
15	Posts	21	Posts	27	Posts
13	Mounting Brackets	19	Mounting Brackets	25	Mounting Brackets
1	Gate Hardware Kit	1	Gate Hardware Kit	1	Gate Hardware Kit
20	Bags of Quick Set Concrete	28	Bags of Quick Set Concrete	36	Bags of Quick Set Concrete

NOTE: For surface mounting installation you will need to use masonry or anchor bolts with flanged posts.
* Quantities may vary based on application.

3 Choose Panels, Gates & Accesories

Description	Quantity To Use	Part #	
Panel	Quantity varies based on application	F2GHDS93X32	US(Black) WUS(White) NWUS(Navajo)
Gate	Quantity varies based on application	G2GHDS33X32	
Post / Post with Flange	One per panel, plus one, plus one additional for each gate	P254P FP236P	
Mounting Bracket	One pack of four per panel	MBF	
Gate Hardware Kit	1 kit per gate	GHKD	
Gate Cane Bolt	1 per gate	GCB	
Masonry Anchor	One pack of four per post, if needed	MA250	
Gate Flat Wall Hardware Kit	1 kit per gate	GFWHK	
Gravity Latch Kit	1 kit per gate	GLK	
Plastic Post Tops	1 per post	PPC2.0C	
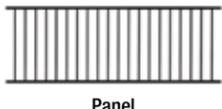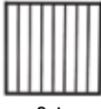
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IMPORTANT
Before you start working it is important to check:

- That fence footings do not cross legally established property lines. If you are uncertain, refer to the real estate agent's line plot or consult a professional surveyor.

- Locally adopted building codes for specific code applications and requirements. A permit may be required.

- With your local utility companies for the location of underground cables or pipelines.

Fig.1
Sample Fence Layout
PROPERTY LINE
GATE
HOUSE
P= Post
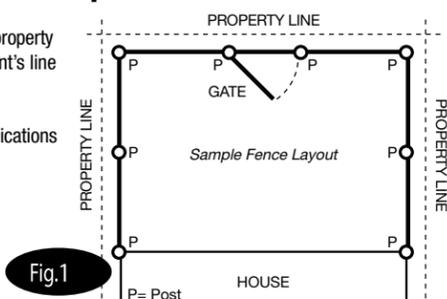
1 Layout Your Fence

Read this instruction sheet completely before starting work. Accurately laying out your fence line is the most critical step.
STEP 1
Locate the boundary lines to your property.
STEP 2
Drive stakes into the ground along the property line and stretch a string taut between each stake. Extend the string approximately 24" beyond the end of the property line (Fig. 1). It is recommended that all posts be set approximately 6" inside of the property line so that the post footings do not encroach onto the adjoining property.
STEP 3
Mark the location of each terminal post with a stake (end posts, corner posts and gate posts are called terminal posts). When determining the location of gate posts, refer to the chart on reverse side for actual gate opening sizes.
NOTE: If you are using flanged posts to mount your fence onto concrete or wood, use a chalk line instead of a string line to mark the fence line. Anchor the flanged posts with MA250 masonry anchors (on concrete) or lag screws (on wood).

2 Installing Fence Over Sloped Terrain

If you are installing your fence over sloped terrain, there are two options.
A. STEPPING THE FENCE PANELS (Special Order)
All styles can be stepped to follow the slope of the terrain (Fig 2). When laying-out a stepped installation, putting the posts closer together will lessen the gap below the fence on the low end of the slope.
B. ADJUSTABLE PITCH FENCE PANELS
Columbia style fencing is available in adjustable pitch panels (special order) which allow you to adjust the panel to follow the slope of the terrain (Fig. 3). When laying-out adjustable pitch fence panels over a sloped terrain, measure your post spacing following the slope.
NOTE: For a stepped installation you will need to use longer posts.

Fig. 2
Fig. 3
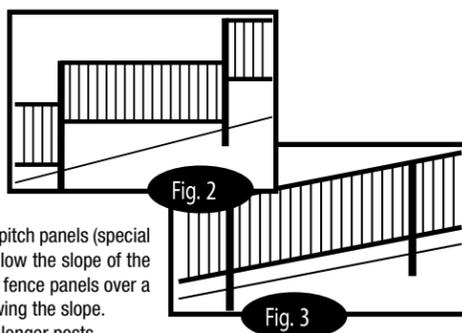
3 Setting Your Terminal Posts

Although post depth and hole diameter will be determined by local weather and soil conditions, holes for terminal posts and line posts are typically dug 8" in diameter, 18"-24" deep with sloped sides (Fig. 4).
STEP 1
Dig all terminal post holes.
STEP 2
Position the post in the hole. The post should be centered in the hole and must be square with the fence line so that the sides of the post parallel the string line. Check the post on the two adjacent sides with a carpenter's level and adjust as necessary so that it is plumb. The height of the fence above the ground is determined at this time as well. Refer to the chart on reverse side.
STEP 3
Pour concrete around the post, fill to 2" below ground level. You may need to tie off the posts using stakes and string to keep them from moving while the concrete cures. Once the concrete is completely dry, fill the remainder of the hole with dirt.
STEP 4
After the terminal post footings have hardened enough to remain stable, stake and stretch a string line taut across the tops of the posts on each end of the fence line to designate the desired height of the line posts (Fig. 5).

Fig. 4
2"
18"
8"

Fig. 5
String
Terminal Posts
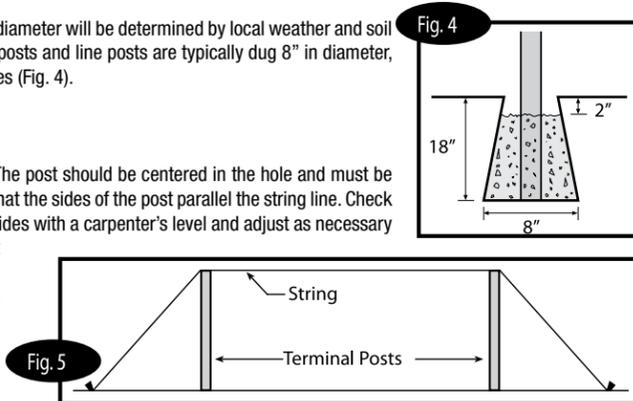
## 4 Locating and Setting Your Line Posts

STEP 1
Working along the string line, stake out the position of all line posts. If your line of fence does not work out to even increments of standard fence sections, you will need to trim a fence panel to fit the odd spacing on the end. If this becomes necessary, consider trimming an even amount off of each end of the panel so that the space from the last picket to the post remains consistent (Fig. 6). For aesthetic reasons, you may want to consider splitting the difference and trimming the panel on each end of your fence line, or trimming a portion off of each panel in your fence line, so that all panels are the same size. Choose the option that works best and and position line posts accordingly.
STEP 2
Dig all line post holes.
STEP 3
Set all line posts as you did the terminal posts, using the string line at the top of the posts to determine the proper post height.

Cut
Cut
Fig. 6
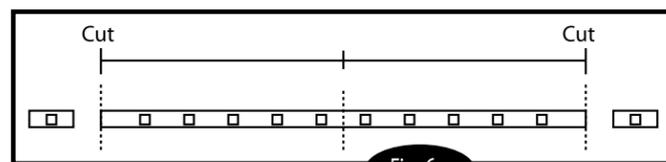
5 Hanging Your Fence Panels

If you cut fence sections, the length of the rails should be 1/2" less than the opening between posts. Cut ends must be thoroughly cleaned, primed with a zinc-rich primer and painted with a high-quality rust inhibiting enamel paint to ensure against corrosion of the exposed metal.
STEP 1
Place all four of the fence mounting brackets into the ends of the panel rails with the tabs facing downward.
STEP 2
Place the panel between the posts and align the top of the panel with the top of the post. Place blocks under the panel to hold it at the desired height. Mark the location of the mounting holes in the four mounting brackets.
STEP 3
Remove the panel and drill 1/8" diameter pilot holes in the posts where marked.
STEP 4
Replace the fence panel (with the mounting brackets still in the rails) and secure to the posts with the screws provided.

6 Hanging Your Gates

The following instructions detail hanging a gate using a standard gate hardware kit. If using another type of hardware, consult the installation instructions included with that hardware.
STEP 1
On the hinge side of the gate, drill a 7/16" diameter hole 5" down from the top of the gate and one 5" up from the bottom of the gate (Fig. 7). Remove the outer nut on both hinge hanger bolts and adjust the inner nut so that when the bolt is inserted into the holes you've drilled in the gate frame, approximately 1" or more of threads are exposed. Replace outer nuts finger-tight and position the bolts so that the short end of the top bolt points up and the short end of the bottom bolt points down. Tighten the outer nuts.
STEP 2
Position the gate in the opening and place blocks under the gate to achieve the desired height. Remove the nut and bolt from one hinge hanger bracket and slip the clamp onto the post. Position the hinge hanger bracket so that the bottom hinge hanger bolt is well seated in the bracket. Replace the nut and bolt and tighten.
STEP 3
Repeat step 2 to attach the top hinge hanger bracket.
STEP 4
Adjust the gate to hang squarely in the opening using the nuts on the hanger bolts. For example, if the latching side of the gate sags downward, "tighten" the nuts at the top or "loosen" the nuts at the bottom.
**STEP 5**
Position the gravity latch striker bar on the gate at the desired height (mount striker bar to the outside of the gate to make the gate swing out, mount on the inside to make the gate swing in). Mark the position of the hole in the striker bar mounting plate. Drill 1/8" inch pilot holes in the post where marked. Replace the striker bar and mount it to the post with the screws provided.
STEP 6
Remove the nut and bolt from the latch. Slip the clamp onto the post and position it so that the striker bar engages the latch smoothly. Replace the nut and bolt and tighten.
NOTE: For double gates, purchase two hardware kits: 1 gate hardware kit and 1 cane bolt. Mount the hinges and latch as described above for single gates. Mount the striker bar to the gate which will be used primarily for opening and entering. Mount the latch and the cane bolt to the gate which will be primarily stationary. Mount the cane bolt as described on the back of the package.

Fig. 7
5"
5"
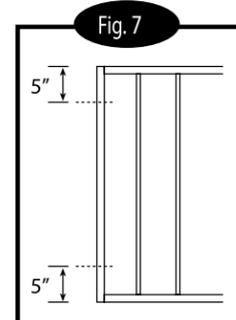
7 Touch-Up and Clean-Up Of Installation

Clean material as necessary with a soft rag and mild soap to remove dirt and any concrete that may have splashed onto the material. Rinse with clean water to remove all soap.
NOTE: First Alert products are constructed of steel for strength and durability. Due to the nature of steel, exposed, scratched or scraped areas will rust. Immediately upon completion of your installation, clean, prime and paint all areas damaged during handling and installation. Periodically check fence for signs of wear and oxidation and repaint as necessary.

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