

Setting Posts – Chain Link

Objective: By mastering this lesson, you will be able to set chain link fence posts so that the fence is both pleasing to the eye and functional.

Equipment: String line, level, post hole digger, stakes, hammer, sludge hammer, marking paint, marker or crayon, 20'+ tape measure, 200'+ tape measure, shovel, spade, ladder, wheel barrow or hand held mechanical earth drill.

Key Questions:

1. What equipment will I need to set posts?
2. How do I know how deep and what diameter to dig my holes?
3. How do I dig the post holes?
4. How do I know what height to set my post?
5. How about pouring cement?
6. How do I stab the post?
7. How do I eye the posts in to place?
8. What about gate posts?
9. What are the most common safety obstacles to overcome when setting posts?

Process:

What equipment will I need to set posts? Though there are some tools that you will use on every project, you will have to take into consideration terrain and access to determine others. If the terrain is sloped to where you can not operate a skidsteer than you will have to use a mechanic auger or hand dig.

How do I know how deep and what diameter to dig my holes? While reviewing the project, inquire if there are a set of plans and specifications illustrating how deep and to what diameter the post footing are to be dug. If this information is not available, the following depths are recommended:

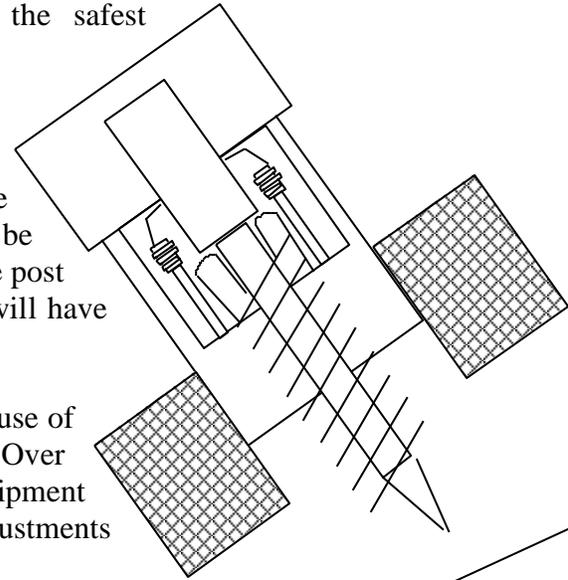
	Depth	Diameter
Residential Chain link	36"	6"-8"
Commercial Chain link	42"	8" – 9"
Commercial Gate Posts	48"	10" – 12"
Cantilever Gate Posts	48"	12" w/ slits in the posts





How do I dig the post holes? Based on terrain (slope) and access, you will need to decide if you can use a mechanical auger or skidsteer. Though a skidsteer is always a benefit in reducing labor, it may not be the safest application.

When digging the posts holes, it is important that you keep your auger vertical (plumb) to assure that the holes are not dug at an angle. This will prove to be critical when placing the posts. If dug at an angle, you will be unable to keep the posts on the string because the bottom of the post hits the side of your incorrectly and angled hole. Thus, you will have to hand-dig the hole to accommodate the post.



To avoid this from happening, have a spotter inform you with use of hand signals as to moving left to right and forward and back. Over time, you will become comfortable with digging with this equipment that you can identify the pitch of the auger and make these adjustments yourself.

Check the depth of your holes each time you dig or mark your auger to the proper depth. Be cautious of dirt falling back into the hole after digging. This will cause unnecessary hand digging.

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How do I know what height to set my post? If your fabric is to rest on top of grade, this is the industry standard for setting chain link fence posts.

Terminal posts:	2" above the height of the fence.
Line posts:	3' below the height of the fence.
Terminal posts with barbwire	14" above the height of the fence.
Cantilever Gate Posts	12" minimum above height of fence.
	(More on this in the gate section.)

As with any standard, there are exceptions. Please find some of the most common ones below:

Terminal Posts:

1. Slope. When the fence is installed on a slope, the vertical distance from the top to the bottom of fabric will grow substantially. Thus, you must adjust your post height accordingly.



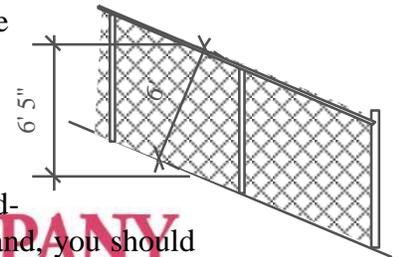


2. Three Way + Tie In. There may be more than one fence line tying into the posts. Thus, requiring additional post height to accommodate all the end bands.
3. Step-up. If you are adjoining two fence lines and one steps-up at the terminal post, you will have to set your terminal post to the higher elevation.
4. Gate Posts. Consider the swing or slid of your gate and you may

have to raise your gate posts to be sure your gate will operate properly, i.e. a curb or rise/fall in grade where the gate stores.

Line Posts:

Slope. When the fence is installed on a slope, the vertical distance from the top to the bottom of fabric will grow substantially. Thus, you must adjust your line post height accordingly. A slight 20 degree angle may cause you to raise your post 4" – 5".



How about pouring cement? Cement will be provided by either hand-mixing or from a ready-mix concrete truck. While working around portland, you should be wearing safety glasses and a respirator. After contact with your skin, please make sure that you wash your skin as to remove the materials. Portland is a chemical that can damage your lungs, eyes and skin.

If hand mixing cement in an engine powered mechanical mixer, a standard mix is 10:1. So, ten scoops of gravel to one scoop of portland. Allow the materials to fully blend together and then slowly add water as to form a consistency firmer than a milk shake. A one yard mixer drum will hold approximately 30 scoops of gravel from a flat edge shovel (not a grain shovel). Shovel the cement into the fence hole as to avoid any overspill and unnecessary cement slag on the post. Wipe the post clean before the cement hardens. If you fail to do this, you will find your self chiseling the cement from the posts at a later date.



If using cement from a concrete truck, there are several steps in preparing to pour.

1. Always pour from the highest elevation down. This will present less jolting of the truck while the driver slips his clutch. Going downhill, the driver will use his brakes with less fatigue and smoother control.
2. Always pour from the driver side. This provides for better vision on behalf of the

3. driver, assuring better accuracy and watchfulness.
3. Place as many chutes on the truck as possible. This allows the cement to pour less aggressively down and allows for more control. Furthermore, you will be able to keep cement on the chute while traveling from hole to hole.
4. When the truck arrives, request to take a look at the cement. Again, it should be a little firmer than a milk shake. The driver carries over fifty gallons of water that can be added to make the cement more runny and travel down the chute easier.
5. Communicate with the driver and discuss what hand signals he uses to release/engage the chute, spin the barrow to discharge concrete, slow the barrow, and stop the barrow. There are a series of hand signals that should be used in communicating with the driver.



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 6. Align the truck so that the chute is almost perpendicular to the truck and ends just short of the fence line. This will give you some latitude in moving the chute from hole to hole and maintain easy visibility with the driver.

7. Using a paddle, slowly allow the cement to fill the hole. You will want to move the string line away from the hole to avoid cement from popping-up and hitting you in the face.



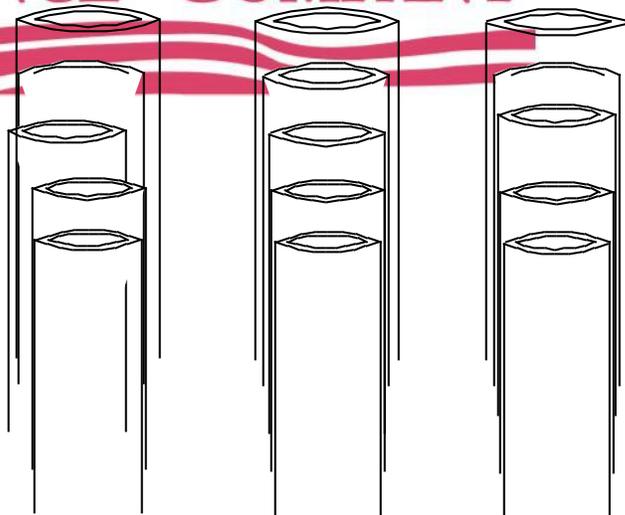
- Once filled, wedge the paddle as to prevent any cement from sliding off the chute between holes.
8. If you find yourself having to shovel the portland off the chute, add water. One gallon of water per one yard of concrete will increase the slump by approximately one inch.
 9. If you find concrete coming-out of the chute too fast and creating cow pies between the holes. Stop the truck and ask the driver if he can slow the barrow. Or if he has another idea. Most of these

drivers have poured thousand of yards of concrete and can provide some valuable assistance.

How do I stab the posts? After you have marked all your posts to the proper height and laid the post out so as to avoid the concrete truck, follow the steps below:

1. Mark all your post with a black permanent marker or crayon. Make sure that the mark is very visible.
2. Check to make sure that the string line is in proper alignment and free from any obstacles.
3. Grab the post. Holding the level against the side of the post, gently stab the post in the center of the footing approximately a 1/4" off the string. Make sure you are on the correct side of the string. Do not ever set the post against the string. The post may actually be pushing the string line out of alignment.
4. Keeping the post level, gently twist down into the footing so that the mark is at the same elevation as the grade. Do not try to prematurely eye the post-in.
5. Check to make sure that the post is approximately 1/4" off the string, level in both directions before moving-on to the next post.

How do I eye the posts in to place? Someone once said that "a fence is judged by the eye so it should be installed by the eye." That is half true. The intent is to make the fence line roll and flow, taking-out the spikes and pits. This is truly an art and makes a fair fencer a great fencer. Also, it is tough to put in writing. Look at the three sets of post to your right. Can you tell which fence line is set correctly?



The fence line to the left has posts out of alignment, causing the fence line to form an "S."

The fence line to the far right has posts that are set either too high or too low. This will form a jagged look from the side.

The fence line in the middle is perfect for alignment in and out of the fence line; and the posts flow.

To accomplish this visual effect, there are several steps to follow;

1. Start at one end of the freshly stabbed fence line.
 2. Check to make sure that the first three line posts are set to grade and plumb. Then, using these three posts as your benchmark, place yourself slightly above the first line post (you may need a ladder or bucket to stand-on. Be careful) to create the visual effect above. This is like sighting a rifle.
 3. With you on a ladder behind the first posts, another individual will stand at the fourth post with a level. You will instruct him to first raise or lower the posts to achieve that even flow shown above. As he does this; he should inform you how far the post is above or below the mark. Too far above grade and the fabric will be unacceptable high off the ground. Too far below grade and the fabric will rest on the ground and push far above the top rail. Rule of thumb is you can raise a post 2" in either direction. More if you are prepared to fill-in or scrap off grade, meaning you have a slight spike or pit in the fence line.
 4. If you can not achieve a satisfactory height, you may have to go to the next posts and raise or lower it. Or come back to the previous post and do the same in attempt to blend the fence line.
 5. Once you have achieved the height, you will instruct your assistant to push the post in or out to achieve vertical alignment.
 6. Once this is achieved, your assistant should re-level the post "in the fence line" and gently compact the cement around the post, providing a domed footing that sheds water away from the post. Then go on to the next post.
 7. You can generally sight in about five posts before having to move your ladder.
- ★ Remember to always keep at least two posts that have been eyed-in in front of you to serve as a sight for the next five posts.

What about gate posts? Gate posts are set according to the gate, allowing the gate to travel without encountering an obstruction. When setting gate posts, consider the following:

1. When setting swing gate posts, consider the highest elevation of the grade below the gate that the leaf will encounter as it completes its swing from full closed to full open. Whatever the difference in the elevation from that point to where the gate post is being set, add that to your overall post height.
2. When setting cantilever gate posts, consider the highest elevation that the gate will encounter as it completes its travel from full open to full closed. Whatever the difference in the elevation from that point to where the gate post is being set, add that to your overall post height. Remember cantilever gates must roll on a level plane so the two roller posts should be set to the same elevation creating a level plane.

What are the most common safety obstacles to overcome when setting posts? Setting posts generally poses the greatest safety obstacles in the fence installation process. These are the most common.

1. Back Injury. This injury will most likely occur as a result of lifting posts, shoveling or from improperly using a mechanical auger, not bending at the knees and forcing the machine out of the hole.
2. Equipment Injury. Digging post holes involves using high speed, high powered augers that are driven by powerful motors and hydraulics. You must stay clear of the moving parts or these augers can get twisted-up around clothing and limbs, causing serious injury.
3. Open post holes. These create a fall hazard for you and others. Never leave holes open overnight.



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