BETAFENCE®
1000

Installation manual

BETAFENCE

Overview

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4. Mesh Installation
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1. Betafence Installation Consideration

Betafence provides fencing systems that are customized to meet the specific needs of our customer. Each installation is unique as we provide both structurally integrated and aesthetically balanced solutions.

These installation instructions are provided as a, “general guideline.” Before beginning an installation, please review the approved submittal/installation drawings carefully to ensure proper understanding of the system, as well as any specific engineered requirements before any fence install to make sure you have a complete understanding of each fence project. If drawings do not explain certain specifics of fence erecting, or you have any questions concerning material or installation methods, contact your Betafence field representative, so he or she can address the issue internally to make any changes on the job specifics.

If there are any questions about any of the parts or methods concerning installations, contact Betafence at 972-878-7000

1. Betafence Installation Consideration

BEFORE INSTALLATION

Before you begin installation, we recommend that you review your local regulations. Check with appropriate jurisdictions (e.g. state, local, subdivision, etc.) for:

- Mandatory Setbacks
- Permissible Heights
- Style Limitations
- Required Permits
- Regulations/Codes

Contact all local utility companies to flag all buried cables, pipelines, etc.

Water, gas, phone, electric, cable TV, etc., as well as property owner's buried security cable or anything else that could be underground.

Determine Legal Boundaries of property. Because fence footings must not extend beyond your legally established property line, you will need to know the exact location of that line to be able to mark it prior to installation. If you are uncertain, refer to the real estate plot plan or consult a professional surveyor.

1. Betafence Installation Consideration

SITE PREPARATION

The initial layout should be free of hazards, obstacles and debris. Notify Contractor of unsatisfactory conditions. Do not proceed with work until conditions are satisfactory to the installer.

The slope should be considered prior to installation of most security mesh styles. Grading may be necessary to achieve desired results. When possible, it is best to have all slopes to be consistent. If there is slope, fence mesh will have to be:

1 stepped up or down, or

2 cut to match biased grade with mesh following along graded slope (see installation drawings)

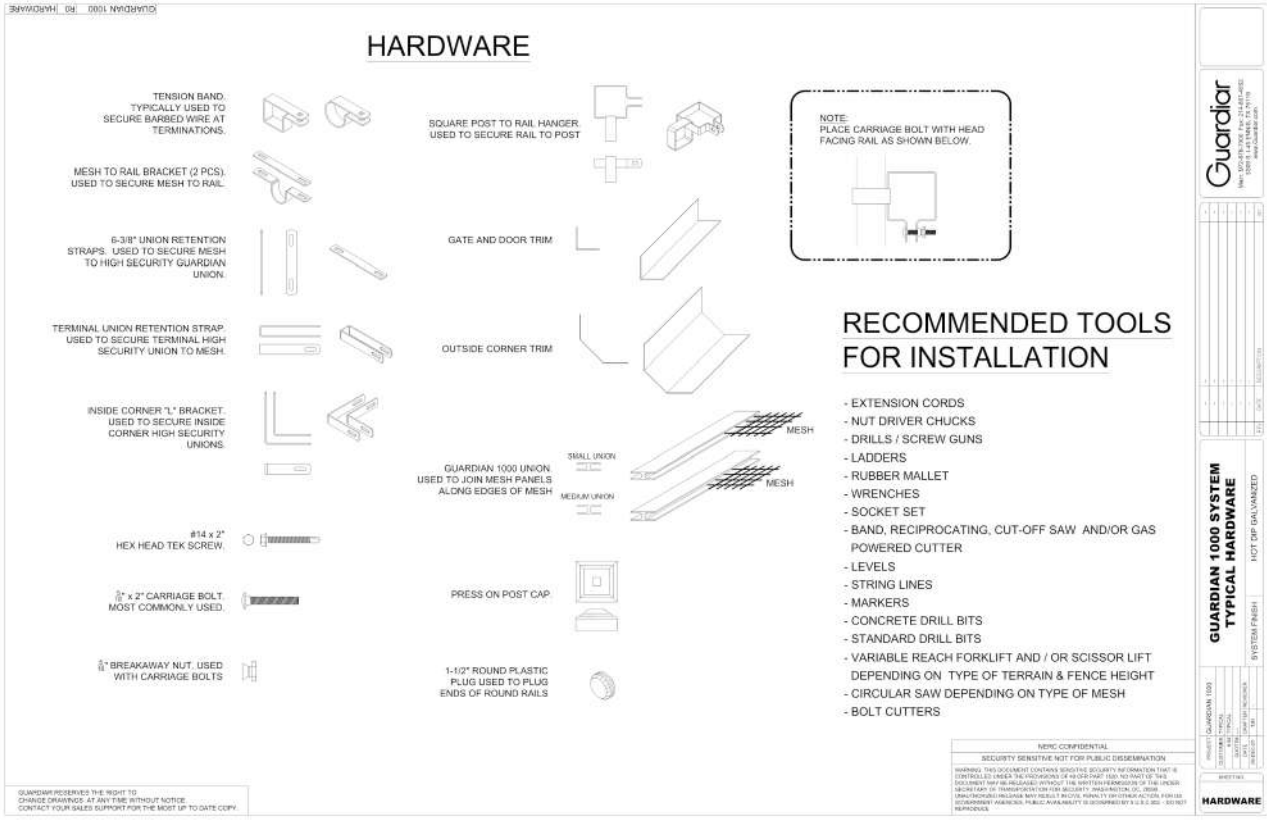
PRODUCT HANDLING

Handle fence components carefully to protect finish coating from any scuffs, abrasion or other damage during unloading, storage, and installation. Much time and care goes in to getting the material onsite undamaged.

Some examples of careful handling include wrapping the forks with a protective layer such as plastic or carpet and using wood drayage to set the material on in order to prevent damage to the finish.

1. Betafence Installation Consideration

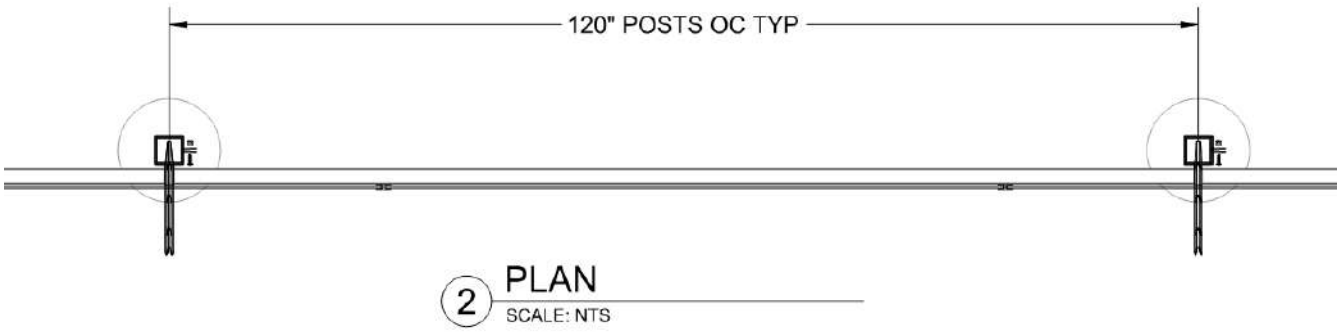
HARDWARE



2. Post installation

- Space posts at dimensions indicated in the approved installation drawings within design maximum tolerances.
- Post spacing will vary from one project to another.

2. Post installation



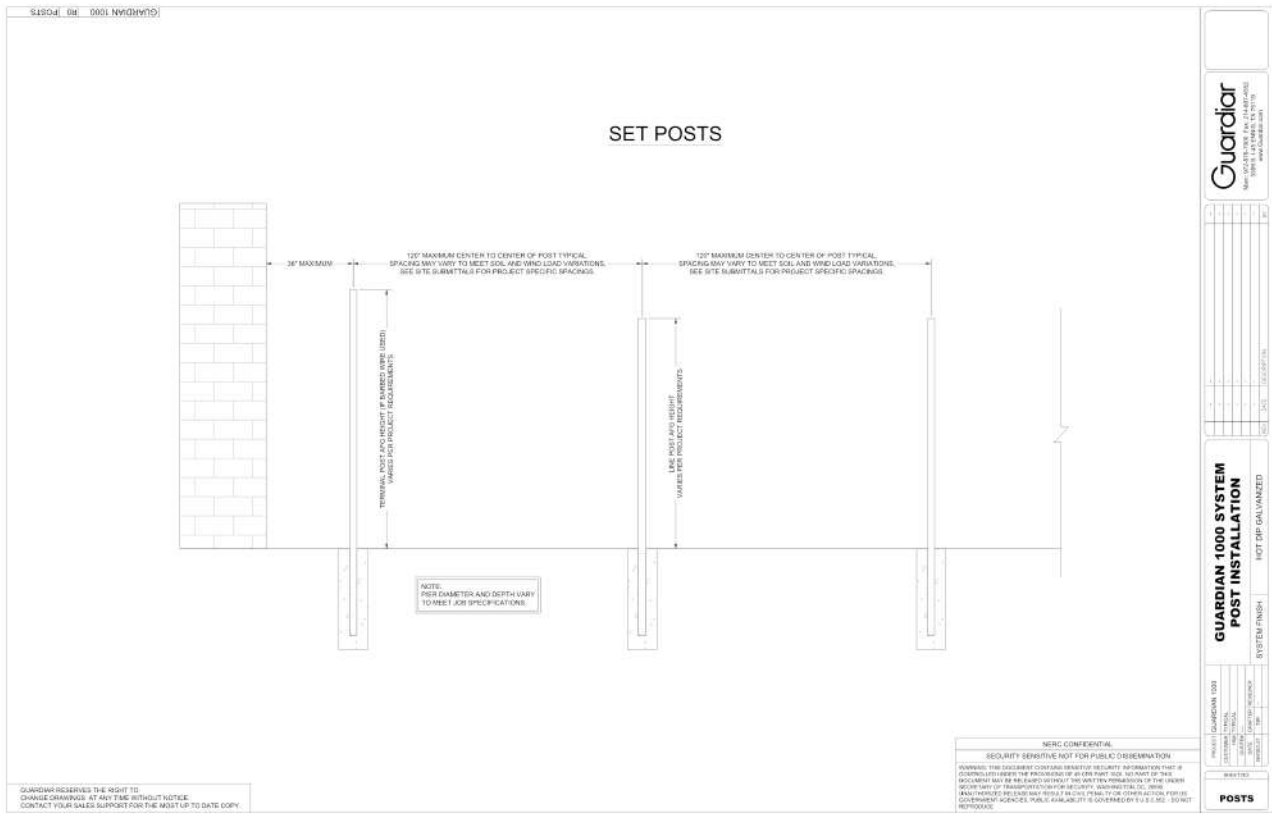
2 PLAN
SCALE: NTS

Maximum post spacing is critical to meet engineered wind loads, and to ensure proper gate openings. Post spacing is not critical for the fence itself, allowing for easier and faster installation. There is generally a ,+2" tolerance on the post spacing. Your specific Guardiar Site Drawings, Post spacing can vary from project to project as well as within a project.

Know your required spacing limits prior to digging. Dig post holes at designated points, using pre-approved method(s) of digging. Pay particular attention to post and pier type, as your project may have multiple post types and ground conditions along any given fence run to accommodate for a multitude of things, including but not limited to, soil bearing capacity, cameras, grounding, lights, gates, etc. There are multitude of methods of digging. This is critical to know in advance in order to develop your install plan.
Other things to consider: 1) Are you installing an anti-dig barrier?

2) Are you in a utility substation, requiring grounding?

2. Post installation

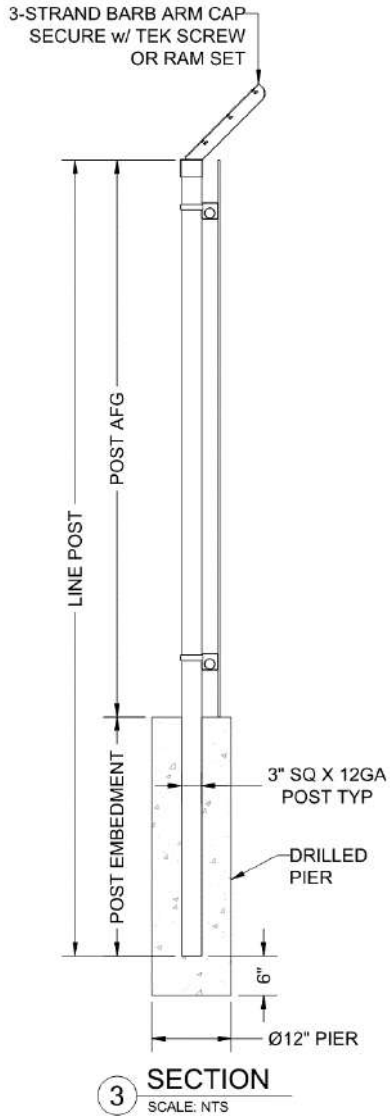


2. Post installation

The depth and diameter of the hole may vary depending on local wind load requirements and soil conditions. Regardless of the depth of the hole, post height (from the ground line) should match as indicated on the installation drawings. Center posts in holes for maximum wind load stability.

2. Post installation

- Place rebar, if required, in each hole before concrete pour.
- Surround each post with concrete in a continuous pour.
- Trowel finish around posts, sloping downward to direct water away if pouring to final grade.
- Before the concrete sets, double check that the posts are set plumb, aligned, at correct height and spacing as determined by approved installation drawings.



2. Post installation

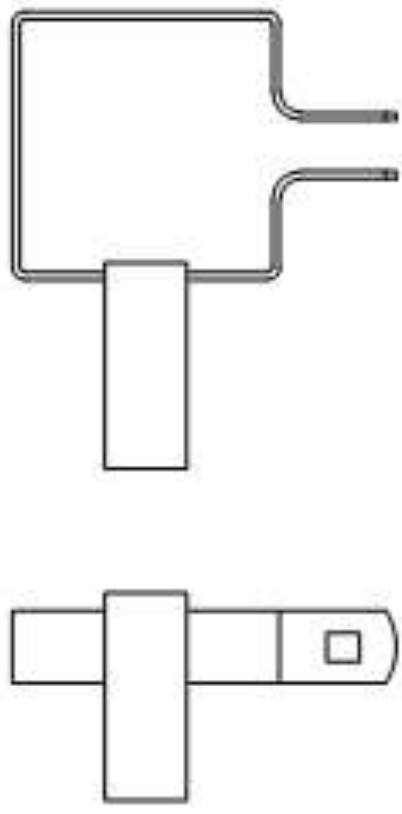
Post may need to be stabilized in position during placement and finishing operations until concrete is sufficiently cured. Please refer to concrete instructions to determine the cure time.

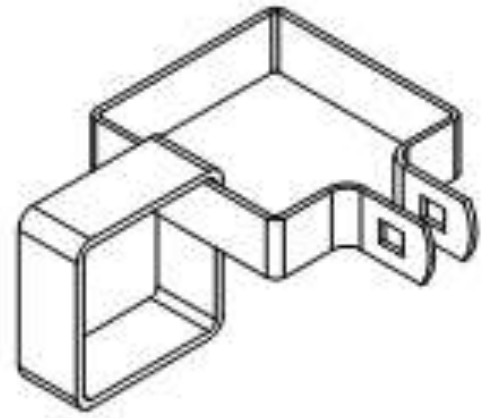
Ideally, once posts are set and piers are sufficiently cured to allow for mesh installation, bring all ground to finish grade per project specifications. This will allow to mesh to rest at grade, unless otherwise specified, while installing.

3. Rail hanger installation

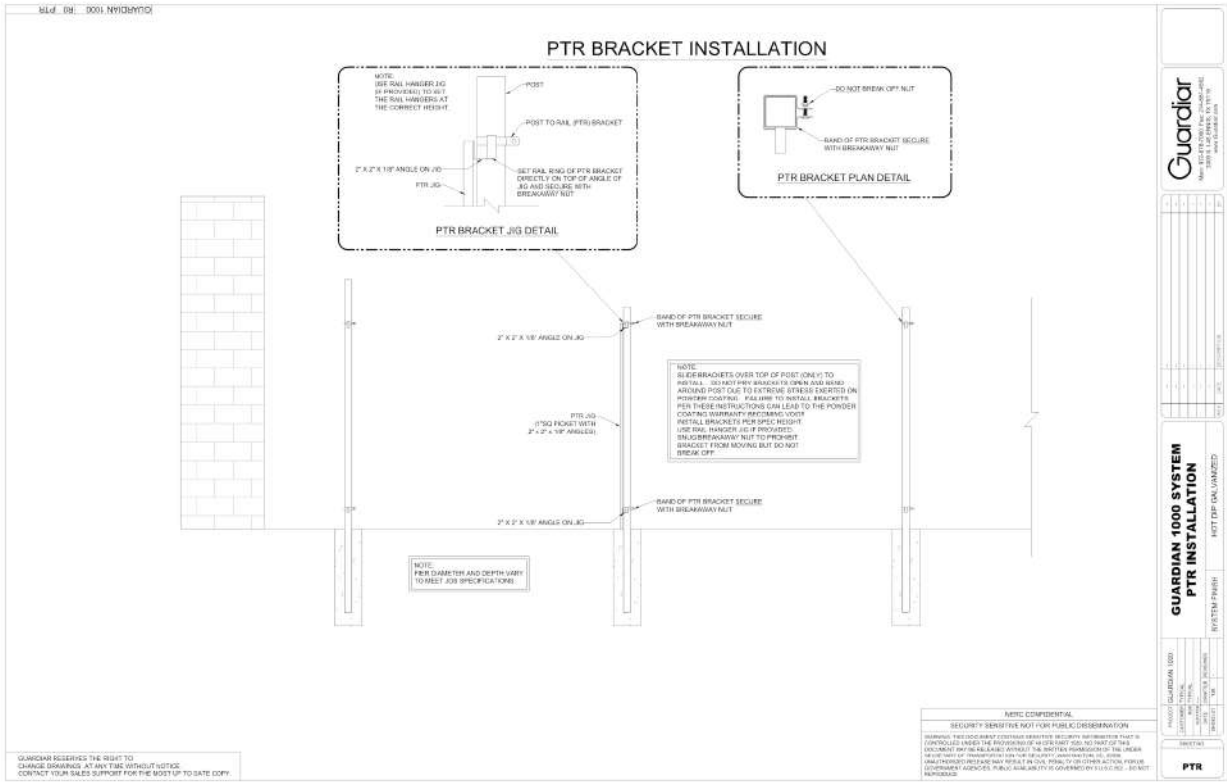
The Guardiar Guardian system uses our patented EZ-Up style. This is to allow for more labor efficient installation. Only use brackets specified for this project, as detailed on approved installation drawings. **Pay special attention to the different bracket types** (i.e., terminals, inside and outside corners, etc.).
Field welding of any kind is generally not needed.

The Guardian system is designed for minimal or no field welding. If welding is required, follow paint and galvanizing and/or powder coat protective finished. Contact sales rep for touchup procedure documents.



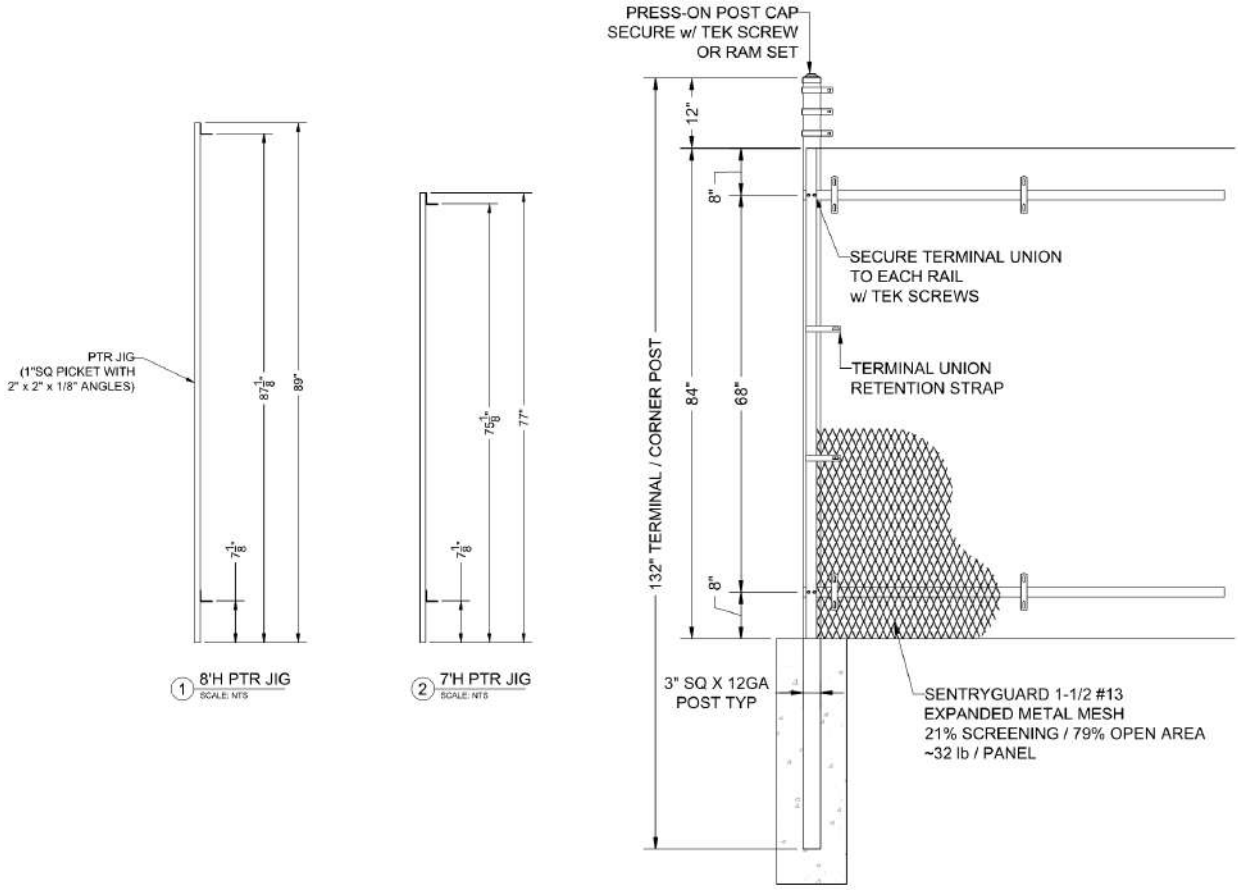


3. Rail hanger installation



3. Rail hanger installation

Using provided jig, designed specifically for this installation, or measurements from installation drawings, install rail hangers using hardware provided at the correct height specified in approved installation drawings.



3. Rail hanger installation

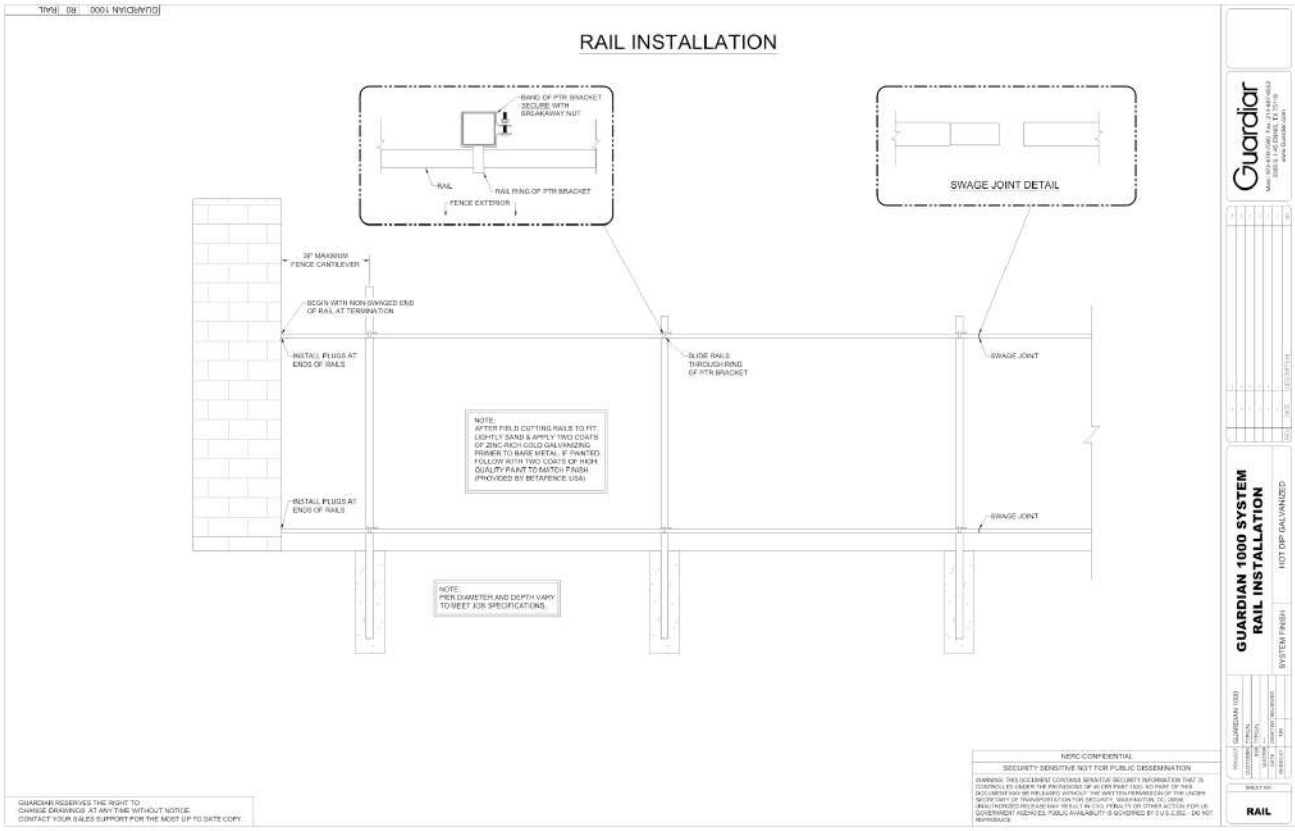
All the Post to Rail brackets should be slid down from the top of the post. Installing these brackets by opening them up to wrap around the post is an inappropriate installation method which may void the warranty for these brackets, if the finish is damaged by this process. Use a drill with a clutch or hand wrench. Do not break the nut. Tighten the breakaway nut just snug enough to prohibit the bracket from moving. This will allow for adjustment of bracket if necessary after completion of rail installation. Refer to approved installation drawings for correct orientation of rail hangers (off-set of band). Continue this process until all rail hangers are installed.

4. Rail installation

Starting with the non-swaged end to minimize waste, insert the rails through the rail hanger brackets. This allows the use of the swaged end if needed somewhere else, when the rail is cut to fit at the end of the fence run. At gate openings at the specified measurement per approved drawings.

Cut the rails to fit, and anchor the jambs to the pier, or set in concrete (see installation drawings). Once the rails are installed, the brackets can be adjusted up or down to give the rails a smooth continuous look, allowing for minor deviations. Do not worry about looseness of the rail in the bracket. This is normal and will fit snug once mesh and brackets are installed and tightened.

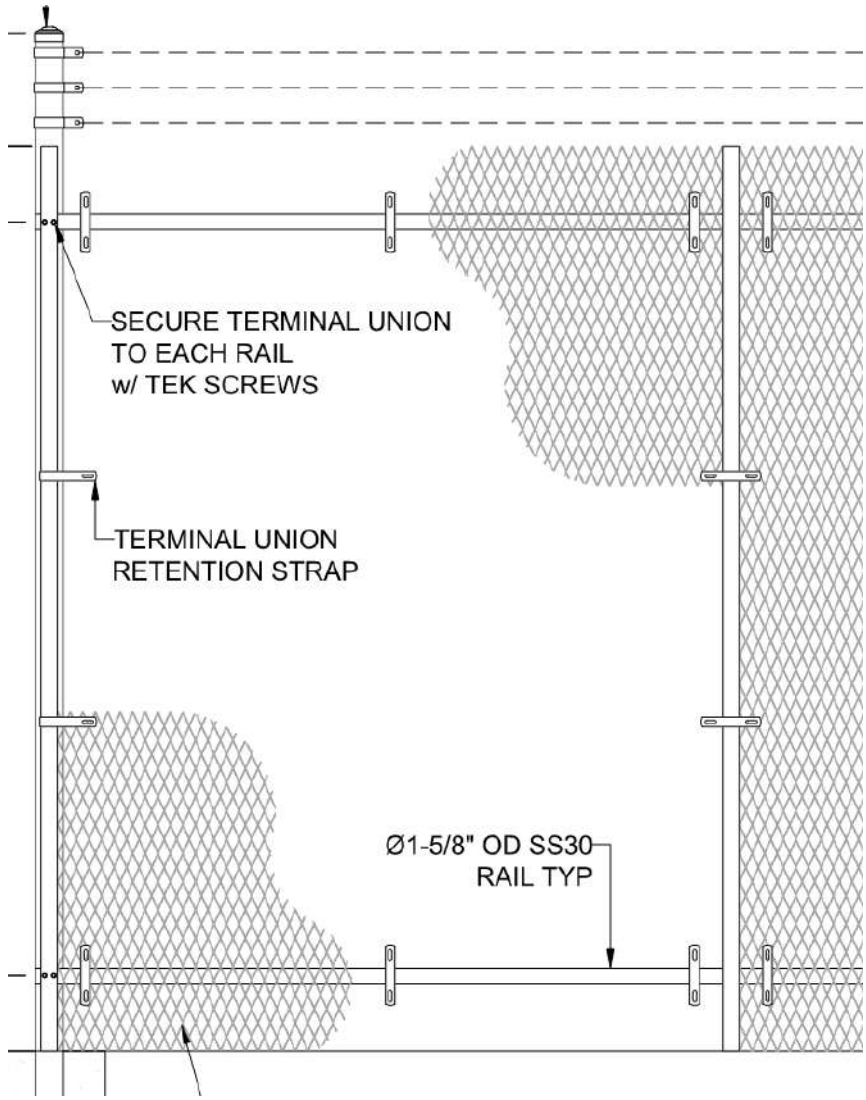
4. Rail installation



5. Mesh installation

Avoid unnecessary cutting, drilling and welding of pre-finished fence mesh panels and components to protect product warranty. If necessary to cut, drill or weld, or otherwise modify product due to field conditions, please repair factory finish in accordance with Guardiar supplied touch-up paint and/or cold galv. As needed in accordance with touch-up instructions in section 8 below. Field fitting hardware may be necessary at corners less than 90 degrees and more than 10 degrees.

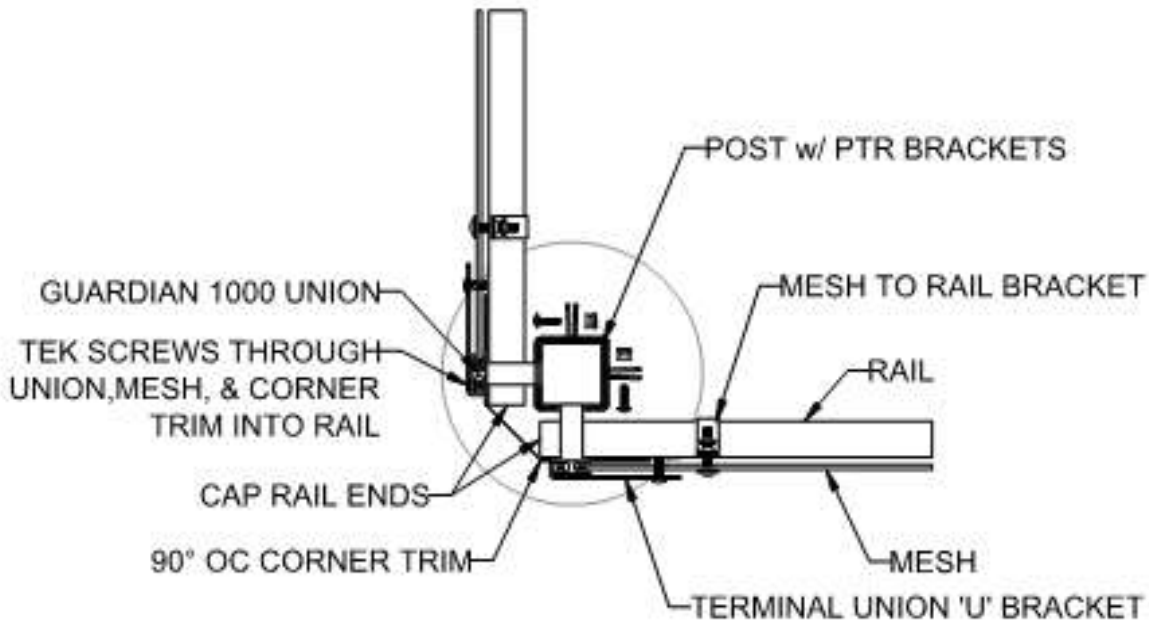
With post to rail brackets and rails correctly installed, place the union in the correct position, depending on your starting point (i.e., outside corner, inside corner, gate).



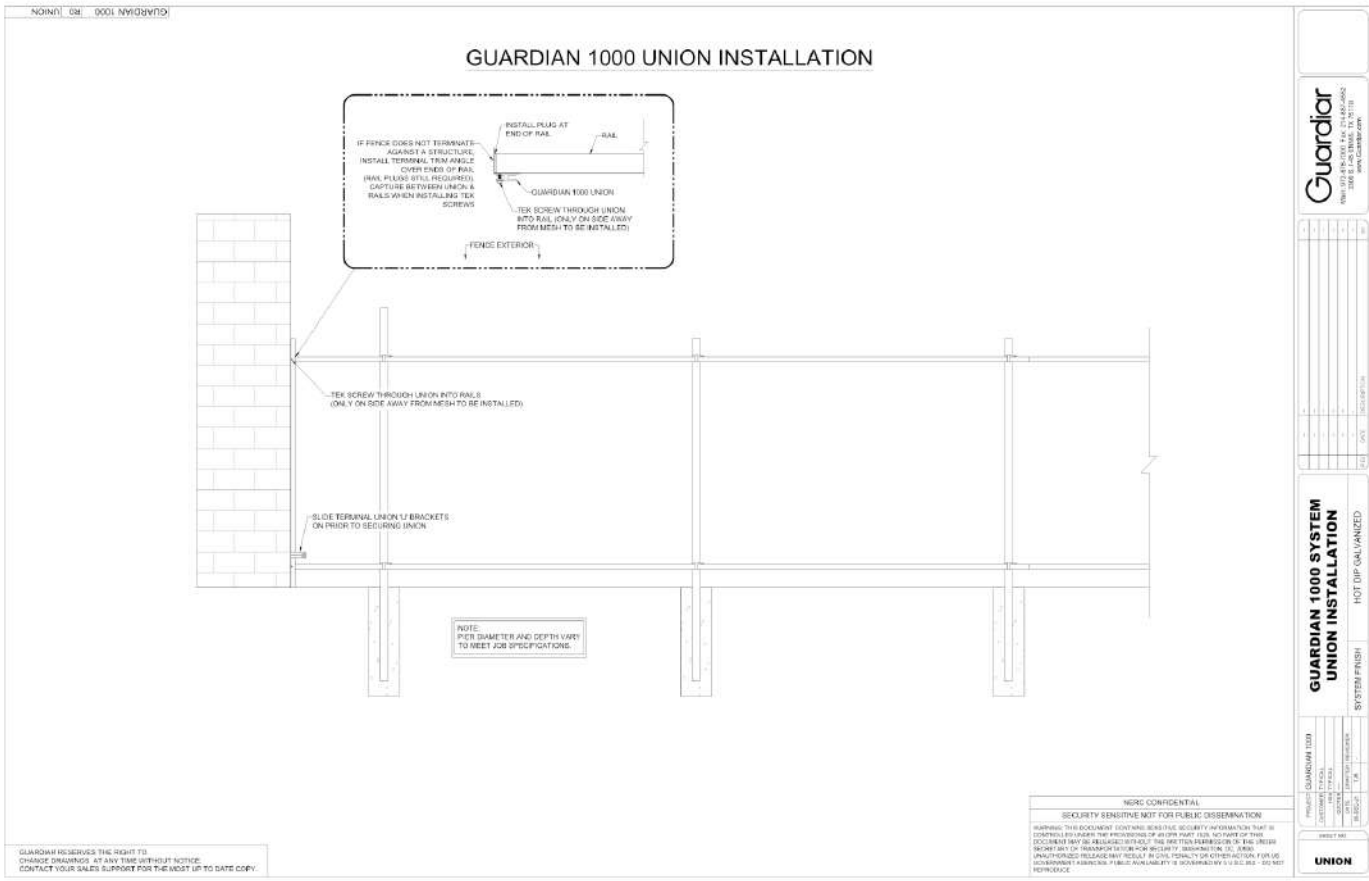
5. Mesh installation

Note: all trim pieces are designed to attach under the union with the bolt also going through the trim. Do not place the trim in the union channel because this will allow an easy breach point (see detail on installation drawings).

Use correct brackets and hardware for the particular starting point as shown in installation drawings. Make sure terminal union retention straps are placed on the terminal union before securing the trim under the union. Once the union is in place, snug it to the terminal post to rail brackets to secure union but do not break nut, then begin installing the mesh.



5. Mesh installation

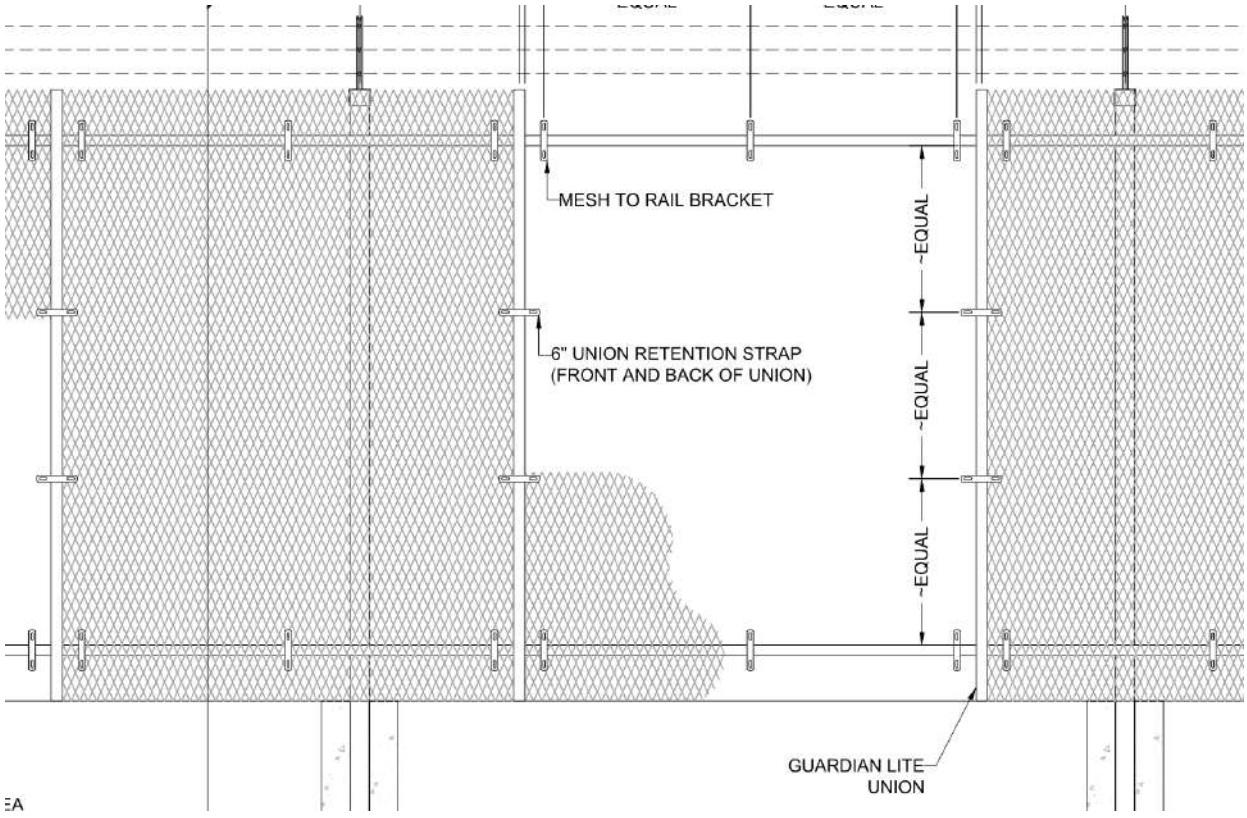


5. Mesh installation

Depending on the mesh type, pay particular attention to the mesh orientation. Install the mesh to **match** the orientation on the **gates** or, if no gates were provided, look at the installation drawings.

Make sure all mesh panels are installed facing the same way, since there is a real top and bottom and you will notice the sheen difference if installed incorrectly.

Proper installation of mesh is done by sliding the mesh into the union channel.

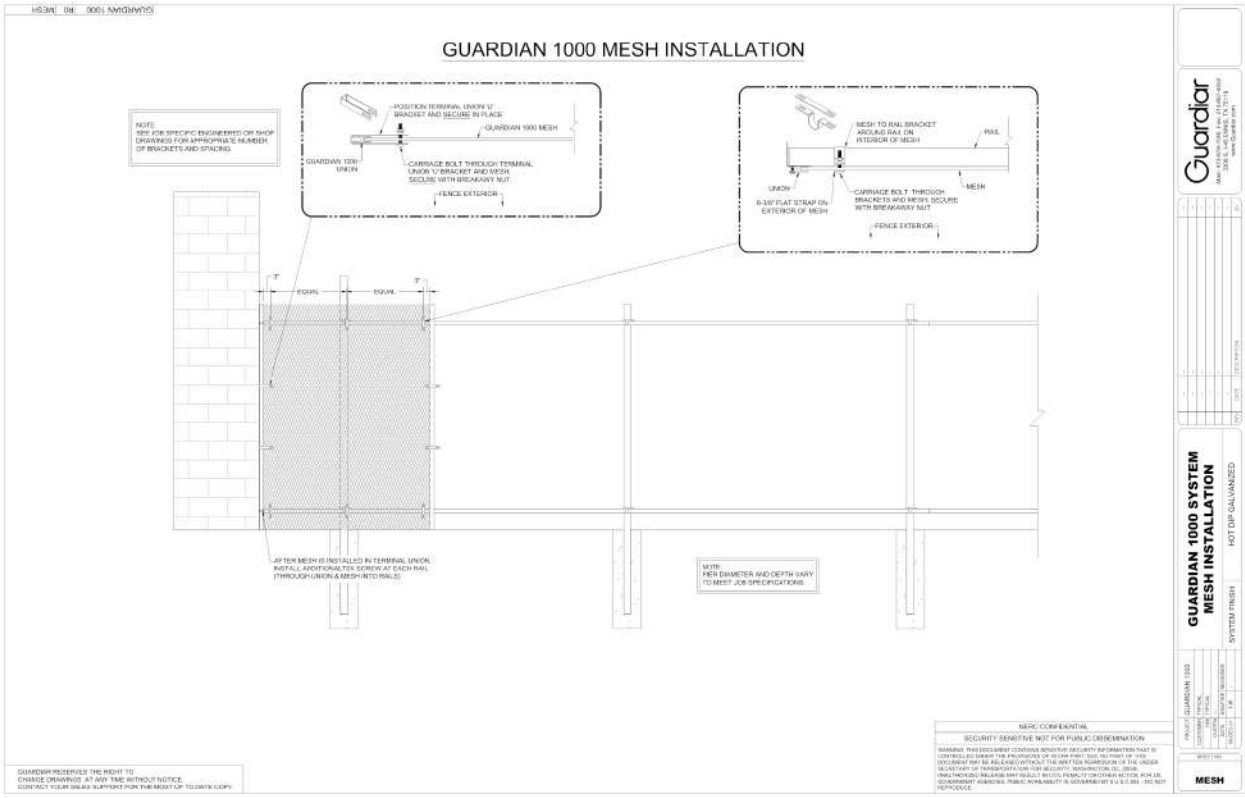


5. Mesh installation

Using the correct mesh to rail bracket and hardware provided, attach enough brackets to the mesh to hold secure. For expediency, use only enough to secure the mesh.

Additional brackets and hardware can be applied after the panels are installed. Slide your next union onto that panel of mesh, followed by the next panel of mesh, again attaching enough brackets to hold mesh in place. Continue until you have reached the end of that fence run.

5. Mesh installation

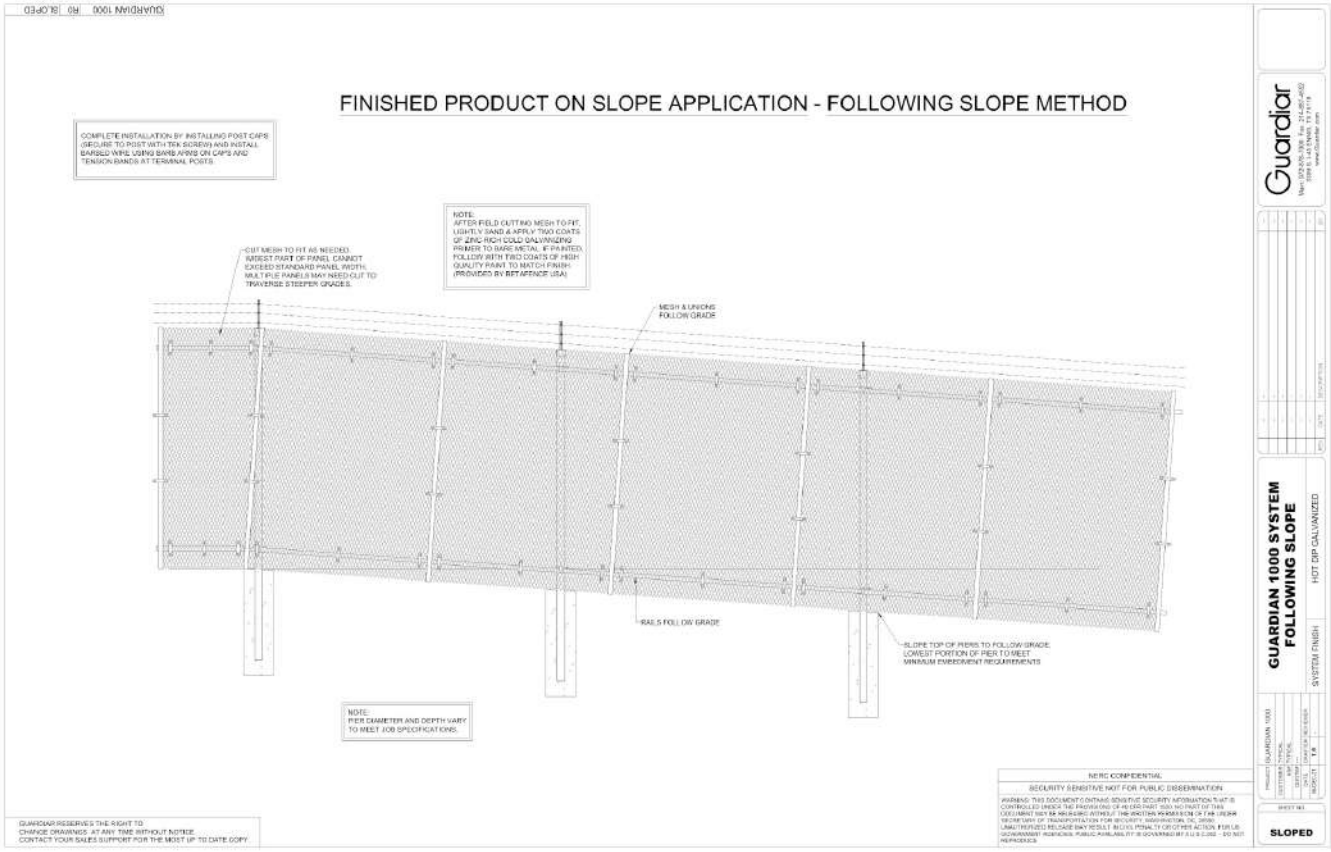


5. Mesh installation

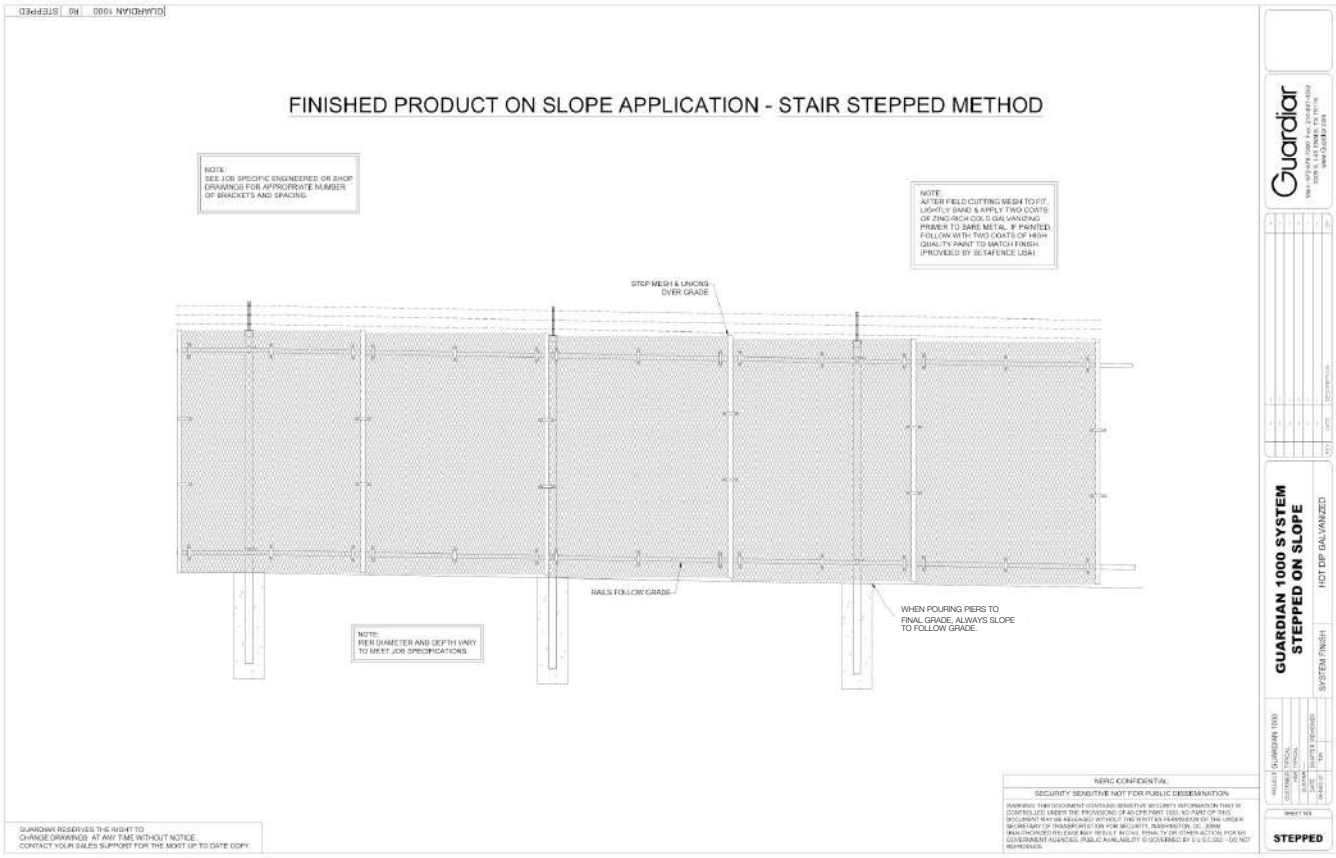
For areas of grade change, either step the mesh up or down, or cut the mesh to follow the slope depending on the severity of the slope, and customer preference.

Two or three panels from the end of the fence line, measure the remaining distance. If you are going to be left with less than a full mesh width at the end of any run, the fence mesh can be cut to fit. Refer to approved installation drawings for details. If the last panel of mesh needed is very small, cut the last two or three panels to obtain a more balanced look.

5. Mesh installation



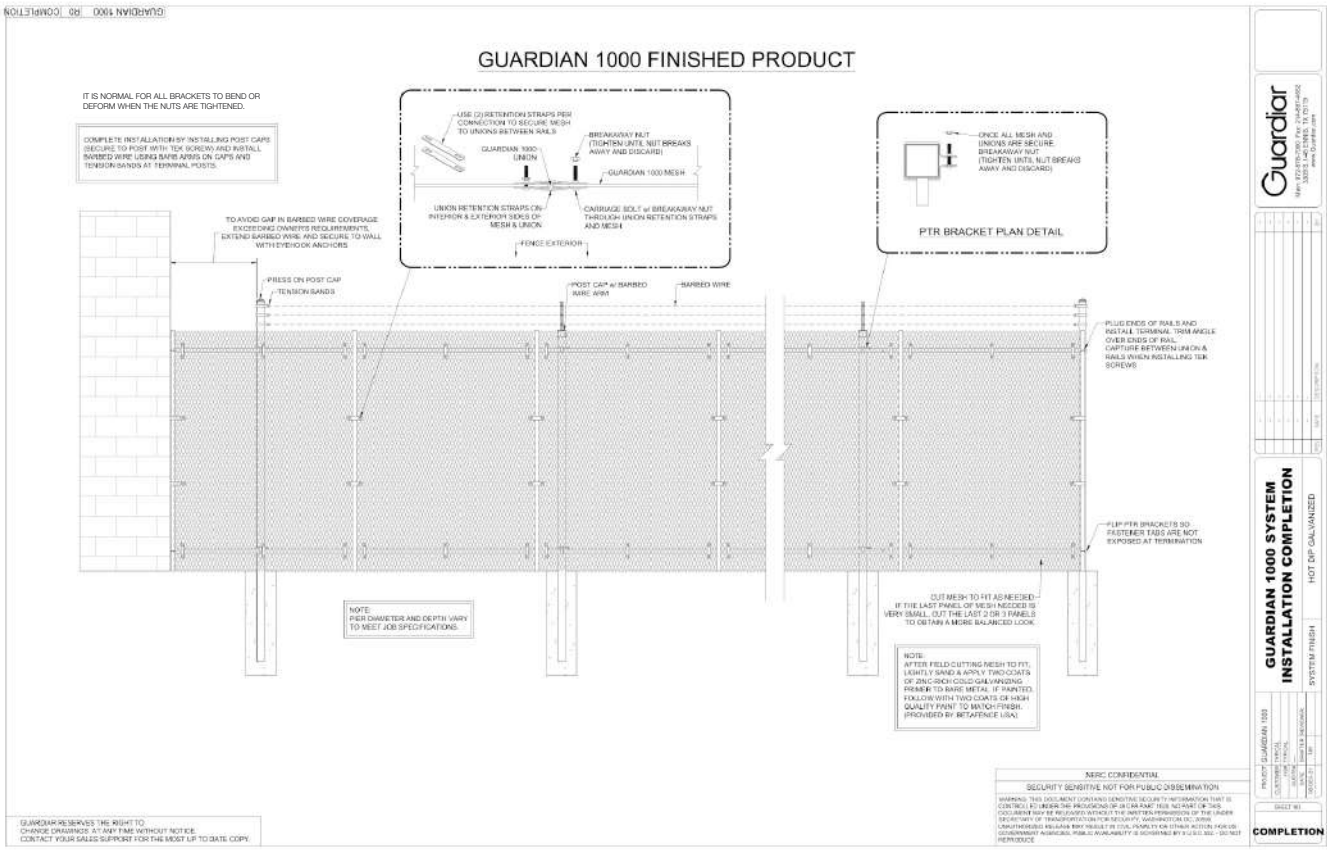
5. Mesh installation



6. Final securing

- Once the mesh installation is well under way, the final securing may begin.
- Attach all remaining brackets and hardware.
- All nuts should be securely fastened with a constant drill speed until breakaway nuts break.
- Remove and discard that portion of the nut.

6. Final securing



7. Touch-up

Touch-up necessary areas by light sanding, then apply two coats of zinc-rich cold galvanizing primer, 93% or higher zinc, (typically provided by Guardiar) followed by two coats of high quality acrylic lacquer paint (may or may not be provided by Guardiar) to match finish. Testing for final color match should always be performed and allowed sufficient dry time prior to full implementation of project touch up. All touch up should be stored in a temperature controlled environment. Follow all manufacturer storage and application recommendations.

For aerosol application, apply with dauber or brush when necessary to prevent overspray and minimize total area covered. Note: field applied touch-up cannot match the performance of factory applied finishes and should be limited in use.

8. Field support contact information

Doug Winters

Product Support Specialist

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Betafence.com