Chain Link Fence Manufacturers Institute Security Fencing Recommendations

(CLF-SFR0111)

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CHAIN LINK FENCE MANUFACTURERS INSTITUTE

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Chain link fencing has been the product of choice for security fencing for over 60 years because of its strength, corrosion resistance, "see thru capabilities", ease of installation, versatility, variety of product selection and value. A chain link fence is one of the primary building blocks for a facility's perimeter security system.The physical security barrier provided by a chain link fence chain link fence provides one or more of the following functions:

- Gives notice legal boundary of the outermost limits of a facility
- Assists in controlling and screening authorized entries into a secured area by deterring entry elsewhere along the boundary.
- Supports surveillance, detection, assessment, and other security functions by providing a zone for installing intrusion detection equipment and closed-circuit television (CCTV).
- Deters casual intruders from penetrating a secured area by presenting a barrier that requires an overt action to enter.
- Demonstrates the intent of an intruder by their overt action of gaining entry.
- Causes a delay to obtain access to a facility, thereby increasing the possibility of detection.
- Creates a psychological deterrent.
- Reduces the number of security guards required and frequency of use for each post.
- Optimizes the use of security personnel while enhancing the capabilities for detection and apprehension of unauthorized individuals.
- Demonstrates a corporate concern for facility security
- Provides a cost effective method of protecting facilities

SECURITY PLANNING:

Chain link fence enhances the goals of good security planning. In-depth security planning takes into consideration the mission and function, environmental concerns, threats, and the local area of the facility to be secured. This can be translated into an A-B-C-D method that points out the values of chain link fencing to a security program.

1. AIDS to security. Chain link fencing assists in the use of other security equipment, such as the use of intrusion detectors, access controls, cameras, etc. Chain link fences can be employed as aids to protection in an exterior mode or an internal protected property, as a point protection, and for general protection as required.
2. BARRIERS for security. These can be buildings, chain link fences, walls, temporary checkpoints, etc.
3. CONTROLS support the physical security chain link fences and barriers, such as an access control system tied into vehicle gates and pedestrian portals, various level identification badges and temporary badges, security escorts, and internal procedures.
4. DETERRENTS such as a chain link fence, guards, lighting, signage, and checkpoint control procedures are a few of the deterrents that ensure intruders will consider it difficult to successfully gain access.

When properly used, the aspects of the A-B-C-D method reinforce and support each other. Thus a chain link fence is also a deterrent, and a barrier, if need be. By combining A-B-C-D, sufficient obstacles are created to prevent an intruder from obtaining information that is being worked on during the day in the controlled access area and then is protected at night, weekends, and holidays through the implementation of the security in-depth concept.

More importantly, keep in mind that a chain link fence is the common denominator of the A-B-C-D system and will reduce overall risk, secure the environment, and reduce security costs if designed and installed properly. However, believing that a fence will eliminate all illegal access is not prudent. A fence system will only delay or reduce intrusion.

In order to ensure the effectiveness of the facility security fence program, it is recommended that a maintenance program be developed for the proper maintenance of the fence system, gates, gate operators and related access controls.

DESIGNING A SECURITY FENCE:

When designing a security fence refer to the CLFMI Product Manual CLF-PM0610, CLFMI Tested and Proven Performance of Security Grade Chain Link Fencing Systems CLF- TP0211, ASTM F1712 “Standard Specification for Steel Chain Link Fencing Materials Used for High Security Applications,” ASTM F 2611 “Standard Guide for the Design and Construction of Chain Link Security Fencing”, and ASTM F2781 “Standard Practice for Testing Forced Entry, Ballistic, and Low Impact Resistance of Security Fence Systems”.

DESIGN FEATURES AND CONSIDERATIONS

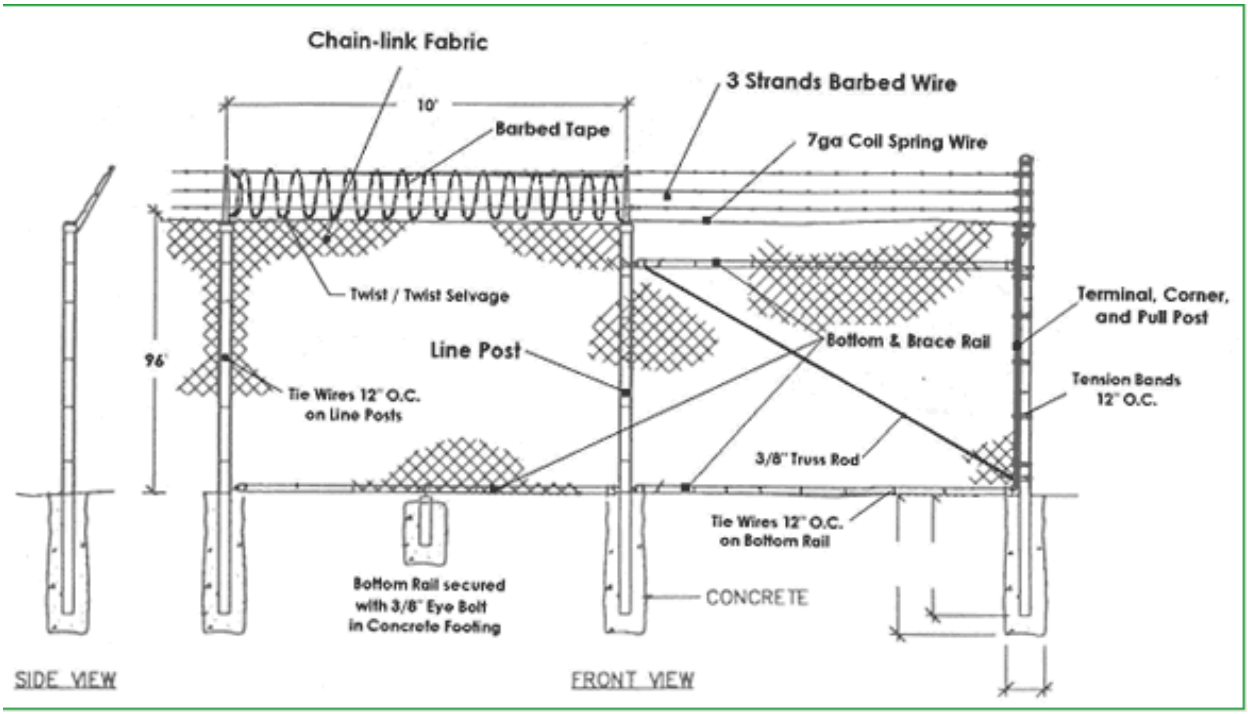
Some basic design features to consider that enhance security:

- **Height** - the higher the barrier the more difficult and time consuming to broach.
- **Eliminating top rail** - the omission of a rail at the top of the fence eliminates a handhold thus making the fence more difficult to climb. A 7-gauge coil spring wire can be installed in place of the top rail.
- **Adding barbed wire** - the addition of three or six strands at the top of the fence increases the level of difficulty and time to broach. When using the three-strand 45-degree arm it is recommended to angle the arm out from the secured area.
- **Bolt/peen, screw/security head or rivet barbed wire arms,** bands, boulevard clamps, gate post hinges to posts for added security.
- **Adding barbed tape** - stainless steel barbed tape added to the top and in some cases the bottom of the fence greatly increases the difficulty and time to broach.
- **Adding bottom rail** - the addition of a bottom rail that is secured in the center of the two line post using a 3/8" diameter eye hook anchored into a concrete footing basically eliminates the possibility of forcing the mesh up to crawl under the fence. The bottom of the fence with or without bottom rail should be installed no greater than 2" above grade.
- **Bury the chain link fabric** - Burying the fabric 12" or more will also eliminate the possibility of forcing the mesh up.
- **Color chain link fabric** - one of the security features of a chain link fence is visibility, allowing one to monitor what is taking place inside or outside of the fence line more efficiently. Color polymer coated chain link fabric enhances visibility, especially at night. Complete polymer coated systems, coated fabric, fittings, framework and gates, not only increases visibility, but also provides greater corrosion resistance, especially for use in areas adjacent to the seacoast.
- **Double row of security fencing**- it is not uncommon to add and additional line of internal security fencing 10 to 20 feet inside the perimeter fence. In many cases double rows of fencing are used with sensors and detectors, or with a perimeter patrol road in area between the fences.
- **Clear zone** - In wooded or high grass areas it is advisable to clear and grub a clear zone on either side of the fence to aid surveillance.

- **Internal security fencing** - many situations require the need of a separate interior fence to add another level of security for a particular building, piece of equipment, or location.
- **Peen all bolts** - this eliminates the removal of the bolt nut.
- **Addition of a sensor system** - this adds another level of security to the fence system.
- **Addition of lighting** - increases visibility as well as raises the level of psychological deterrent.
- **Signage** - installed along the fence line, signs are important to indicate private secured areas; violators may be subject to arrest, and possibly noting the presence of alarms and monitoring systems.

Project inspection:

Improper material or installation can have a dramatic effect on the required security. It is important to verify that the projects materials are in compliance with the contract specifications and that the fence has been installed properly. Procurement or facility managers may want to consider a mandatory requirement of their reviewing material certifications and shop drawings prior to start of the project. This will ensure that proper products will be installed, and that specific installation guidelines have been provided. CLFMI offers a Field Inspection Guide document to assist in this process.



Typical detail of an eight foot high with one foot, 3-strand barbed wire security fence.

Reference is made to various fence specifications; complete information can be obtained be contacting the following:

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NOTICE: The above information has been provided as a public service to assist in the design of appropriate security fencing. The Chain Link Fence Manufacturers Institute disclaims any responsibility for the design and operation of specific security fence systems.