TO: Director, Preliminary Plan Review Bureau

ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

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EFFECTIVE 3/7/1995

SUBJECT: SCREEN FENCING

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The attached specifications have been developed for combined use wherever screen fencing is required. The following guidelines will assist designers in selecting the proper pay items for a particular installation.

1. The standard weave and double weave slat specifications are designed to fulfill different screening functions as briefly discussed below:

   Standard Weave The standard weave insert slats do not provide "positive," or opaque, screening. In other words, it is possible to see between the slats, especially when the observer has a more or less right angle view of the fence. However, for many screen fences this slat specification would be satisfactory. For example, installations such as headlight glare screens and screen fences at maintenance areas would normally be satisfactory if they were the standard weave.

   The standard weave would also be suitable for junkyard screening where there is a considerable amount of vegetation between the highway and the junkyard or where the angle of view is such that the standard weave does not permit seeing between the slats.

   Double Weave The double weave insert slat specification was developed specifically to provide the "positive," or nearly opaque, screening of junkyards that the FHWA requires. As a result,this specification will probably be required for at least part of the fencing on junkyard control projects. Because the double weave insert slats are considerably more expensive than the standard weave slats, the standard weave should be used unless there is adequate justification and need to install the double weave.

2. It may be that on certain projects insert slats could be installed in existing fences even though the existing fences may not have been designed for the wind loads which result from inserting slats. Consideration will have to be given to the condition, type of construction, and height of the existing fence in addition to its protection from the wind prior to deciding whether or not to install slats in an existing fence.

3. Whenever new chain link fence is to be erected for the purpose of installing insert slats, it must be erected in accordance with the attached fence specification. These specifications were developed so the fencing could withstand the wind loads resulting from the installation of insert slats.

4. Because screen fencing erected according to these specifications requires a top rail, the fence must be placed outside the roadside clear area. In this way, the hazardous condition that may result from a collision with a top rail fence (that is, the top rail protruding into the passenger compartment of a vehicle) will be avoided.

Attachments

ITEM 15607.2312	OPTIONAL CHAIN LINK FENCE WITH TOP RAIL FOR ALUMINUM INSERT SLATS , 6 Foot High
ITEM 15607.2313	OPTIONAL CHAIN LINK FENCE WITH TOP RAIL FOR ALUMINUM INSERT SLATS , 8 Foot High
ITEM 15607.2314	OPTIONAL CHAIN LINK FENCE WITH TOP RAIL FOR ALUMINUM INSERT SLATS , 10 Foot High
ITEM 15607.2315	OPTIONAL CHAIN LINK FENCE WITH TOP RAIL FOR ALUMINUM INSERT SLATS , 12 Foot High

All of the provisions of Section 607 of the Standard Specifications shall apply except as herein modified.

Description This work shall consist of the construction of fence in accordance with these specifications, the applicable Standard Sheets, and in reasonably close conformity with the lines and grades shown on the plans or established by the Engineer.

MATERIALS Materials shall conform to the requirements specified on the plans and the applicable subsections of the materials specifications as follows:

Aluminum Fence Fabric	710-01
Galvanized Steel Fence Fabric	710-02
Vinyl Coated Steel Fence Fabric	710-03
Aluminum Coated Steel Fence Fabric	710-04
Steel and Iron Posts, Rails, Braces and Fittings for Chain-Link Fence	710-10.01

A. Fabric. The fabric shall conform to the requirements of § 710-01, "Aluminum Fence Fabric," § 710-02, "Galvanized Steel Fence Fabric," § 710-03, "Vinyl Coated Steel Fence Fabric" or § 710-04 "Aluminum Coated Steel Fence Fabric" except that the top and bottom selvage shall be knuckled rather than barbed.

B. Posts and Rails. Posts and rails shall conform to the requirements of § 710-10.01 "Steel and Iron Posts, Rails, Braces and Fittings for Chain Link Fence" except that all posts shall conform to the requirements specified in the following table:

Fence Height (ft.)	Posts
6'	3 1/2" nominal size ASTM Schedule 40 pipe @10' Post Spacing
8'	3 1/2" nominal size ASTM Schedule 80 pipe @8' Post Spacing

Fence Height (ft.)	Posts
10'	6" nominal size ASTM Schedule 40 pipe @10' Post Spacing
12'	6" nominal size ASTM Schedule 40 pipe @10' Post Spacing

Alternatives to the above structural members shall be judged on the basis of section moduli. The following table specifies the minimum acceptable section moduli:

Fence Height (ft.)	Section Modulus Required (in^3) 8' Post Spacing	Section Modulus Required (in^3) 10' Post Spacing
6	1.56	1.96
8	2.78	3.48
10	4.34	5.43
12	6.26	7.82

These moduli shall be determined using the structural properties of the element which exist in a plane parallel to the fence fabric. Corner posts shall have the minimum section modulus for posts in both planes of the fabric. Accessories and fittings shall be sized accordingly.

C. Top and Bottom Rails. Top and Bottom Rails shall be 1 1/2" nominal size ASTM Schedule 40 pipe or approved equivalents.

D. Color. The fencing shall be the color shown on the plans and as approved by the Engineer. Samples of the fencing materials showing the proposed color shall be submitted to the Engineer for his approval before any installation work has been started.

1/25/77

ITEM 15607.2412	VINYL COATED CHAIN LINK FENCE WITH TOP RAIL FOR ALUMINUM INSERT SLATS, 6 FOOT HIGH
ITEM 15607.2413	VINYL COATED CHAIN LINK FENCE WITH TOP RAIL FOR ALUMINUM INSERT SLATS, 8 FOOT HIGH
ITEM 15607.2414	VINYL COATED CHAIN LINK FENCE WITH TOP RAIL FOR ALUMINUM INSERT SLATS, 10 FOOT HIGH
ITEM 15607.2415	VINYL COATED CHAIN LINK FENCE WITH TOP RAIL FOR ALUMINUM INSERT SLATS, 12 FOOT HIGH

All of the provisions of Section 607 of the Standard Specifications shall apply except as herein modified.

Description This work shall consist of the construction of fence in accordance with these specifications, the applicable Standard Sheets, and in reasonably close conformity with the lines and grades shown on the plans or established by the Engineer.

MATERIALS Materials shall conform to the requirements specified on the plans and the applicable subsections of the materials specifications as follows:

Vinyl Coated Steel Fence Fabric	710-03
Plastic Coated Posts, Rails, Braces and Fittings for Chain-Link Fence	710-12

A. Fabric. The fabric shall conform to the requirements of § 710-03, "Vinyl Coated Steel Fence Fabric" except that the top and bottom selvage shall be knuckled rather than barbed.

B. Posts and Rails. Posts and rails shall conform to the requirements of § 710-12 "Plastic Coated Posts, Rails, Braces and Fittings for Chain Link Fence" except that all posts shall conform to the requirements specified in the following table:

Fence Height (ft.)	Posts
6'	3 1/2" nominal size ASTM Schedule 40 pipe @10' Post Spacing
8'	3 1/2" nominal size ASTM Schedule 80 pipe @8' Post Spacing
10'	6" nominal size ASTM Schedule 40 pipe @10' Post Spacing
12'	6" nominal size ASTM Schedule 40 pipe @10' Post Spacing

Alternatives to the above structural members shall be judged on the basis of section moduli. The following table specifies the minimum acceptable section moduli:

ITEM 15607.2412
ITEM 15607.2413
ITEM 15607.2414
ITEM 15607.2415 (Contd.)

Fence Height (ft.)	Section Modulus Required(in^3) 8' Post Spacing	Section Modulus Required (in^3) 10' Post Spacing
6	1.56	1.96
8	2.78	3.48
10	4.34	5.43
12	6.26	7.82

These moduli shall be determined using the structural properties of the element which exist in a plane parallel to the fence fabric. Corner posts shall have the minimum section modulus for posts in both planes of the fabric. Accessories and fittings shall be sized accordingly.

C. Top and Bottom Rails. Top and Bottom Rails shall be 1 1/2" nominal size ASTM Schedule 40 pipe or approved equivalents.

D. Color. The fencing shall be the color shown on the plans and as approved by the Engineer. Samples of the fencing materials showing the proposed color shall be submitted to the Engineer for his approval before any installation work has been started.

ITEM 15607.2512 - INSERT SLATS FOR SCREEN FENCING, STATDARD WEAVE, (6' HIGH)
ITEM 15607.2513 - INSERT SLATS FOR SCREEN FENCING, STANDARD WEAVE, (8' HIGH)
ITEM 15607.2514 - INSERT SLATS FOR SCREEN FENCING, STANDARD WEAVE, (10' HIGH)
ITEM 15607.2515 - INSERT SLATS FOR SCREEN FENCING, STANDARD WEAVE, (12' HIGH)

DESCRIPTION

Under this item the Contractor shall furnish and install aluminum slats in chain link fence where shown on the plans or ordered by the Engineer.

MATERIALS

The slats shall be made of either

Aluminum Alloy 5052 H19 or

Aluminum Alloy 6011 T81

The slats shall have a nominal width of 1 7/8" and shall be .009 to .0105 inches thick.

The aluminum slats to be inserted in the chain link fence shall have a baked on enamel finish of the color shown on the plans or approved by the Engineer.

The slats shall be accepted on the basis of the manufacturer's certification of compliance with the preceding requirements.

CONSTRUCTION DETAILS

The length of the aluminum slats shall be sufficient for proper attachment and extend the full height of the fence. The slats shall be installed in accordance with the recommendations of the manufacturer and directions of the Engineer. One locking slat shall be inserted every sixth link. Each slat shall be crimped and stapled with monel staples at the top and bottom of the fencing fabric or as approved by the Engineer.

METHOD OF MEASUREMENT

This work shall be measured by the number of linear feet of fence in which aluminum slats have been installed. The measurement shall be along the top of the fencing, center to center of posts.

BASIS OF PAYMENT

The Unit Price Bid shall include the cost of furnishing all labor, materials and equipment necessary to satisfactorily complete the work.

ITEM 15607.2612 - INSERT SLATS FOR SCREEN FENCING, DOUBLE WEAVE, (6' HIGH)
ITEM 15607.2613 - INSERT SLATS FOR SCREEN FENCING, DOUBLE WEAVE, (8' HIGH)
ITEM 15607.2614 - INSERT SLATS FOR SCREEN FENCING, DOUBLE WEAVE, (10' HIGH)
ITEM 15607.2615 - INSERT SLATS FOR SCREEN FENCING, DOUBLE WEAVE, (12' HIGH)

DESCRIPTION

Under this item the Contractor shall furnish and install aluminum slats in chain link fence where shown on the plans or ordered by the Engineer.

MATERIALS

The slats may be made of either

Aluminum Alloy 5052 H19 or
Aluminum Alloy 6011 T81

The slats shall have a nominal width of 1-7/8" and shall be .009 to .0105 inches thick.

The aluminum slats to be inserted in the chain link fence shall have a baked on enamel finish of the color shown on the plans or approved by the Engineer.

The slats shall be accepted on the basis of the manufacturer's certification of compliance with the preceding requirements.

CONSTRUCTION DETAILS

The length of aluminum slats shall be sufficient for proper attachment and extend the full height of the fence.

The slats shall be installed in accordance with figure (1) and the following specifications.

Slats shall be installed in every diagonal row of links on both sides of the fence fabric. The slats on the back side of the fence shall be woven through the fence every sixth link in the pattern shown on the attached drawing. The woven slats shall securely hold the slats on the front side of the fence against the fence fabric.

Each slat shall be crimped and stapled with monel staples at the top and bottom of the fencing fabric or as approved by the Engineer.

ITEM 15607.2612 - INSERT SLATS FOR SCREEN FENCING, DOUBLE WEAVE, (6' HIGH)
ITEM 15607.2613 - INSERT SLATS FOR SCREEN FENCING, DOUBLE WEAVE, (8' HIGH)
ITEM 15607.2614 - INSERT SLATS FOR SCREEN FENCING, DOUBLE WEAVE, (10' HIGH)
ITEM 15607.2615 - INSERT SLATS FOR SCREEN FENCING, DOUBLE WEAVE, (12' HIGH)

METHOD OF MEASUREMENT

This work shall be measured by the number of linear feet of fence in which aluminum slats have been installed. The measurement shall be along the top of the fencing, center to center of posts.

BASIS OF PAYMENT

The Unit Price Bid shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work.

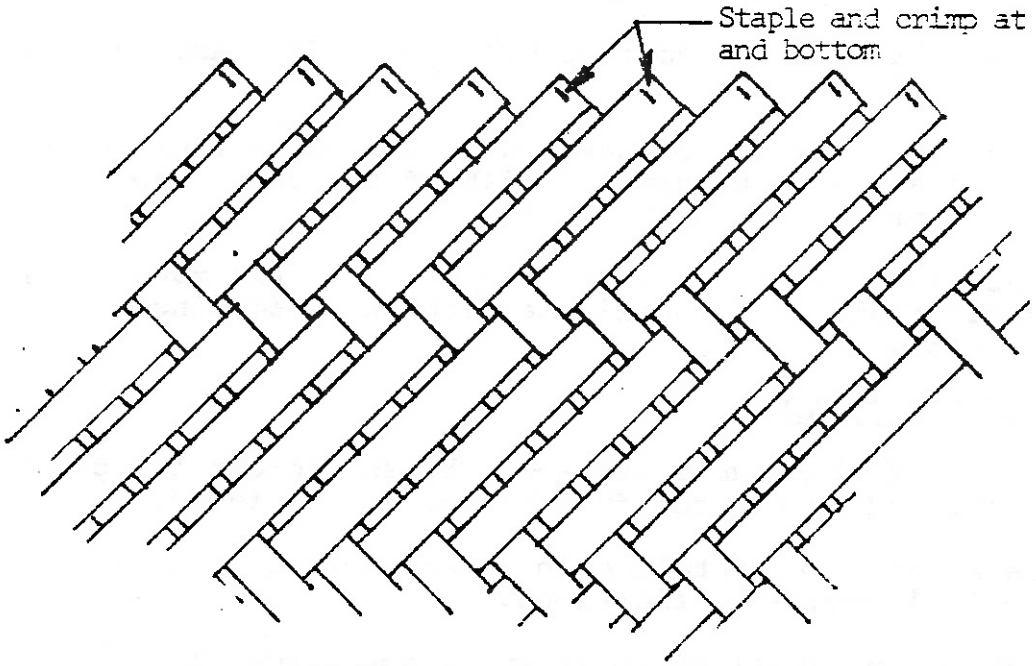

Figure 1 WEAVING PATTERN FOR INSERT SLATS

(Double Weave)

Note: The fence fabric has been omitted from this figure for the purpose of clarity.