FHWA NJ 2003-014

Good Neighbor Privacy Fence

FINAL REPORT (Volume 3)
December 2004

Submitted by

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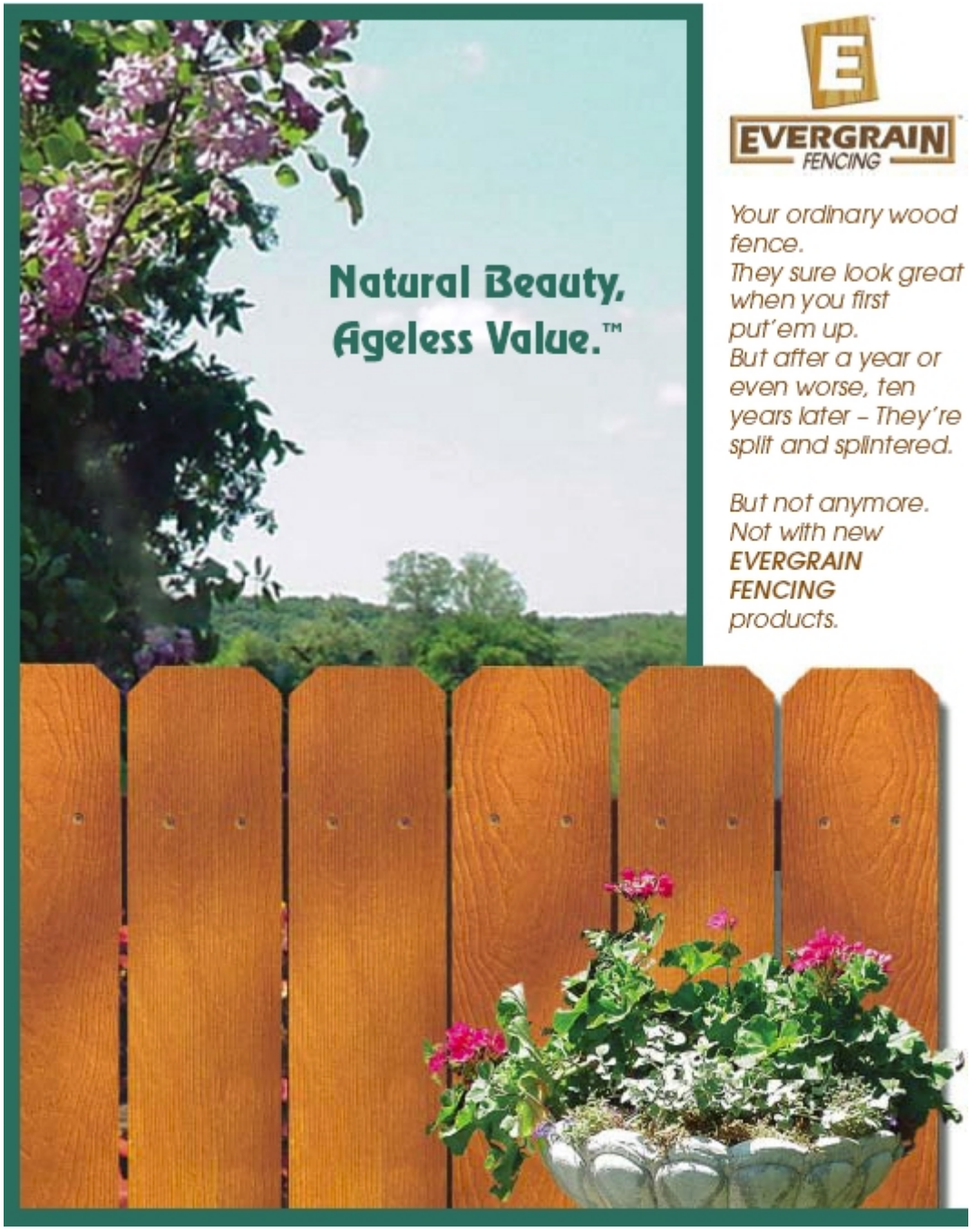
In cooperation with

New Jersey
Department of Transportation
Bureau of Research
and
U.S. Department of Transportation
Federal Highway Administration

APPENDIX 4 – ENGINEERED WOOD
(Continued)

Epoch Composite Privacy Fencing

Product information on Evergrain Fencing by Epoch. Installation and Maintenance Guidelines.


Natural Beauty,
Ageless Value.™
EVERGRAIN
FENCING
Your ordinary wood fence.
They sure look great when you first put'em up.
But after a year or even worse, ten years later – They're split and splintered.
But not anymore.
Not with new
EVERGRAIN
FENCING
products.

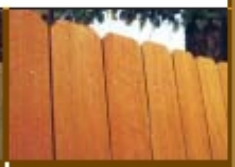
BEAT NATURE'S BEST™

EVERGRAIN Composite Wood Fencing Products

EVERGRAIN FENCING

EVERGRAIN is a composite fencing product made with recycled material. It has the true look of wood, and it's low maintenance. It does not require painting or weatherproofing. EVERGRAIN fencing products – they stand the test of time.

Wood Fence



EVERGRAIN Fence

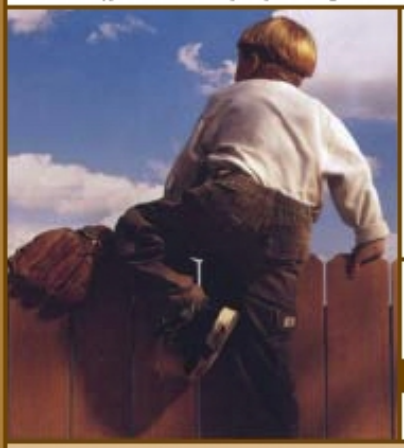
FEATURES

- Deep wood grain appearance on front side, smooth finish on back.[1]
- Low maintenance.
- Skirting to complete professional finish.
- Minimal moisture absorption.
- Virtually none of the problems common to maintaining wood decks.
- Easy to install.
- Contains recycled materials.
- Ten-year limited warranty.

BENEFITS

- Colors: Cedar and Redwood.[2]
- No need to ever paint or stain. Saves time and money.
- True, good looks of natural wood.
- Warranted against rotting, splintering, splitting and termite damage.[3]
- Uses existing tools and fasteners to install.
- Worry Free protection.

[1] To fully appreciate the variety of wood grain patterns in EVERGRAIN FENCING, view several full-length boards.
[2] Reproduction of these colors is as accurate as modern printing will permit. As with any composite product, minor color variations will occur. View several full-length boards prior to final color selection. Colors of boards will weather to a lighter shade within the first 12 weeks of exposure to the elements.
[3] For a copy of the limited warranty, see your stocking Lumber Dealer or Fencing Installation Contractor, visit www.evergrain.com or call the number listed below.



INSTALLATION – Installation is easy. You use the same tools and fasteners when installing EVERGRAIN as you would when installing natural wood. So there's no extra work or time involved.

HANDLING – Special care should be taken when handling EVERGRAIN fencing products. Because they are heavier and more flexible than wood, do not attempt to lift or carry more than you can handle safely at one time.

COLORS*

CEDAR REDWOOD

*Reproduction of these colors is as accurate as modern printing will permit. View several full-length boards prior to final color selection.

Distributed by:

STANDARD FENCE BOARD SIZES

Lumber sizes and dimensions

Nominal Size	Actual Size
1/2" X 6" X 6' or 8'	1/2" X 5-1/2"
Skirting (8')	1/2" X 11-3/4"

All tolerances +/- 1/16"

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EPOCH Composite Products, Inc.
P.O. Box 567, Lamar, Missouri 64759
Technical Services: 1-800-641-4691
Warranty Services: 1-800-441-7190
Sales Office: 1-800-405-0546
Fax: 417-682-9563

www.evergrain.com

EPOCH FENCING

JP48004

Installation Instructions

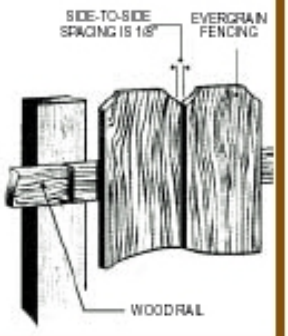
EVERGRAIN FENCING by EPOCH

•CUTTING

When working with EVERGRAIN fencing, saw blades and router bits with carbide tips are recommended. For best results, use blades with two teeth per inch. To avoid clogging when drilling holes, frequently remove shavings by raising the drill bit out of the hole.

•SPACING

EVERGRAIN fencing will expand and contract with changes in temperature. The amount of expansion and contraction will vary depending upon board size. Smaller boards will expand less than larger boards. When installing EVERGRAIN fencing, side-to-side spacing should be a minimum of 1/8" between adjacent boards.



•FASTENING

EVERGRAIN fencing can be fastened by screws, nails, or pneumatic fasteners. The fastening decision is solely the responsibility of the contractor, installer or homeowner. EPOCH does not recommend or endorse any specific fastening system. Like wood, pre-drilling the end/edges of the boards is necessary to avoid splitting or cracking the material.
To receive maximum performance and minimize the possibility of rust staining, it is recommended that hot dipped galvanized or stainless steel fasteners be used. A greater force is required to drive nails into fencing, especially when installing in cold temperatures.

When installing fasteners into fencing always wear safety glasses & gloves.

• NAILS • Hold nails by hand until they are driven 1/2 the length of the fastener into the fencing.

- WOOD SCREWS - In colder temperatures we recommend pre-drilling fastener holes no larger than the diameter of the shaft of the wood screw or nail being used.

• STRING LINE • The use of a string line to align fasteners/boards is recommended to enhance the appearance of your fence (Do not use a chalk line).

• SELF-TAPPING SCREWS • Pre-drilling is not usually necessary when using self-tapping screws or trim head screws.

- FINISHING TOUCH - Fence boards will swell over fastener heads. Gently hammer the material down to cover the fastener head. To minimize this from occurring pre-drill fastener holes.

• PNEUMATIC NAILER • When using pneumatic nail guns, follow the nail gun manufacturer's installation and safety instructions.

•POST INSTALLATION

EVERGRAIN fencing systems can be installed using any of these three post systems:

1. **Standard wood 4 X 4 posts rated for ground contact**: Posts should be installed a maximum of 8 feet on center. All posts should be installed a minimum of 24 inches deep.

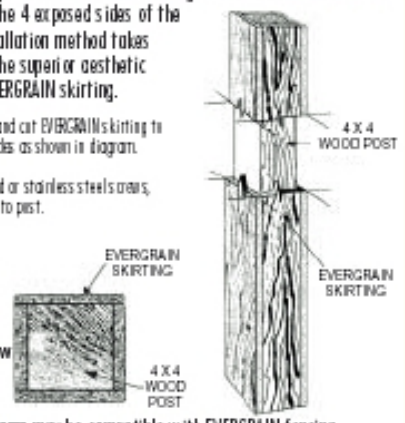
   NOTE: Climatic conditions in some areas of the country may require deeper installation below the frost line. In areas subject to frost heave, it is recommended that the post bottoms be set a minimum of 6 inches below the frost line. Please check local code and standard practices for your area.

2. **Standard wood 4 X 4 post rated for ground contact with EVERGRAIN skirting**: Rip a piece of EVERGRAIN skirting the same dimension as the post to cover the 4 exposed sides of the post. This installation method takes advantage of the superior aesthetic qualities of EVERGRAIN skirting.

   A. Measure posts and cut EVERGRAIN skirting to cover all four sides as shown in diagram.

   B. Using galvanized or stainless steel screws, attach skirting to post.

   C. Screws must be a minimum of 1-1/2" long.



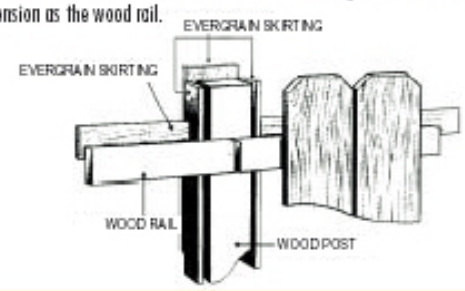
3. **Metal post systems** may be compatible with EVERGRAIN fencing. Consult the post manufacturer for compatibility and specific instructions about the type of metal post to be used.

•RAIL INSTALLATION

EVERGRAIN fencing systems can be installed using any of the following railing systems. In all installations the top rail must be no more than 6 inches from the top of the fence boards.

1. Standard wood 2 X 4 rail: Conventional three-rail installation method.

2. Standard wood 2 X 4 rail with EVERGRAIN skirting that's the same dimension as the wood rail.



Rev. 12/02

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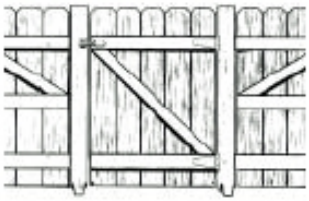
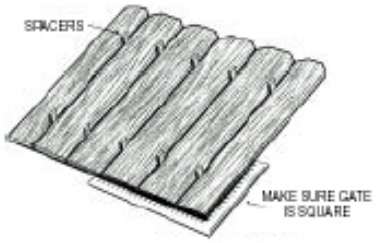
Installation Instructions • Side 2

• GATE INSTALLATION EVERGRAIN fencing materials can be used to build gates provided adequate bracing is used to support the gate. A "Z" braced gate will provide support when using EVERGRAIN fencing. However, because EVERGRAIN fencing is heavier than wood, gates should not exceed 4 feet in length without special structural support.



• BUILDING A "Z" BRACE GATE

1. Measure fence opening and determine how many boards are needed. Allow for 1/8 inch space between boards and, if necessary, rip the two outside boards to minimize narrow boards from occuring on one side. Lay out the boards in a flat position and insert a 1/8" spacer between boards. Be sure that the gate is square.



2. Cut the wood 2 x 4 rails as long as the gate is wide and position them on the fence boards. Attach the braces by installing two (2) 1-3/4 inch galvanized deck screws into each board staggering the screws as shown. Remove the spacers after the rails have been securely attached.

3. To install the angled brace, place a 2 X 4 in position on top of the horizontal braces and mark it for the cuts. After cutting, install with two (2) 1-3/4 inch galvanized screws to each fencing board, staggering the screws for added rigidity.

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• STANDARD EVERGRAIN FENCE BOARD SIZES & DIMENSIONS

Nominal Size	Actual Size
1/2" X 6" X (6' or 8')	1/2" X 5-1/2"
Skirting (8')	1/2" X 11-3/4"

All tolerances +/- 1/16"

• CLEANING Mild stains may be removed with common deck powerwash detergent containing sodium hypochlorite. Tougher, ground-in stains can be cleaned with products containing phosphoric acid.

• **OIL OR GREASE** • Gently scrub stained area with degreasing cleanser as soon as possible.

• **FOLLOWING CLEANING** • Flush the surface of fencing with water to remove any excess cleaning agents.

• **IMPORTANT NOTE** • Sanding the surface to remove stains is not recommended. This tends to eliminate the wood grain texture and will damage the lasting beauty of the finish.

• HANDLING OF FENCING EVERGRAIN Fencing is heavier and more flexible than traditional wood products. Use care and do not attempt to lift or carry more fencing than you can safely handle at one time. Proper clothing and safety glasses should be worn at all times when working with fencing.

Determination of the effectiveness, suitability, and safety of any application or use of EVERGRAIN fencing is solely the responsibility of the Owner and/or Contractor. Building code regulations vary, and the Owner and/or Contractor should consult local building and safety codes for specific requirements prior to the application of EVERGRAIN fencing.

• WARRANTY INFORMATION EPOCH Composite Products, Inc. provides a 10-year limited warranty for EVERGRAIN Products. For a copy of the limited warranty see your stocking Lumber Dealer, Fencing Installation Contractor or contact EPOCH Composite Products, Inc., P. O. Box 567, Lamar, Missouri 64759. Also available at **www.evergrain.com** or **www.epochwood.com.** Returns or claims for fencing product due to any condition that was clearly apparent prior to application/fastening of product, will not be considered after fencing has been applied/fastened to fence structure, posts, rails, etc.

IMPORTANT EVERGRAIN PRODUCT INFORMATION

- In order to determine the most desirable layout, view all fencing boards prior to cutting or fastening.
- Discuss any desired material changes with the supplier prior to cutting or fastening the fencing to the structure.
- Like wood, every piece of EVERGRAIN fencing is different. The weathering process for EVERGRAIN fencing products will vary due to region, climate, rain, sunlight exposure, etc. Some variation in fence shade will appear due to weathering that will occur on the supplier's yard prior to shipment and due to different product lots.
- EVERGRAIN fencing colors Redwood and Cedar will weather to a reasonably consistent color, with some naturally appearing variation.
- Composite fencing has a softer, more flexible feel than wood primarily during the heat of summer. This is a natural condition that will not affect the ability of the fencing to perform as warranted.

EPOCH

EPOCH Composite Products, Inc.
P.O. Box 567
Lamar, Missouri 64759

- Technical Services: 1-800-641-4691
- Warranty Services: 1-800-441-7190
- Sales Office 1-800-405-0546
- Fax 417-682-9563

www.evergrain.com

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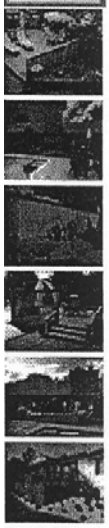
EVERGRAIN DECKING
By EPOCH

HOME | DECKING | FENCING | RAILING | FAQ's | LIFE CYCLE | MARKETING | EPOCH | DEALER SEARCH

GALLERY



EVERGRAIN™ Fencing Features & Benefits

-Delivers the beauty of natural wood, with virtually none of the problems common to maintaining a wood fence.

-Composite construction eliminates splinters and split boards when applied according to manufacture's instructions. and sends termites scurrying to your neighbor's fence.
-Is warranted against rotting for 10 years.
-Natural wood-like grain[1] enhances its beauty.
-Cedar and Redwood[2] colors to compliment every home...in square-top and dog-ear styles.
-As easy to install as natural wood with no special tools necessary.
-Made with more than 50% recycled materials to reduce environmental impact.
-Ten Year limited warranty.

1. To fully appreciate the variety of wood grain patterns in EVERGRAIN™ fencing, view several full-length boards. 2. Reproduction of these colors is as accurate as is possible within the limitations of internet browsing. View several full-length boards prior to final color selection. As with any composite product, color variations will occur.

EPOCH™ COMPOSITE PRODUCTS, INC.

About EPOCH | Contact EPOCH | EPOCH Warranty

EVERGRAIN DECKING By EPOCH






EVERGRAIN™ Fencing Installation & Maintenance Guidelines

EVERGRAIN™ Fencing Products have been designed to be virtually maintenance-free materials. They provide superior weather resistance not found in traditional wood products. EVERGRAIN™ Fencing won't rot when subjected to nature's moisture, and are free of knots and weak spots so commonly found in other wood products. Click any index link below for specific installation and maintenance topics, or scroll down to view all the topics.

Working With EVERGRAIN™ Fencing

EVERGRAIN™ Fencing material outperforms traditional wood board products and can be installed using the tools and techniques common with the installation of natural wood boards.

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Installation Requirements

- Requires no special tools.
- Can be installed using pneumatic tools.
- Provides a consistent fastening surface without knots or weak spots.
- Works with most fasteners.
- Saws, drills, and nails just like traditional wood.
- Will not split or splinter when applied according to manufacture's instructions.

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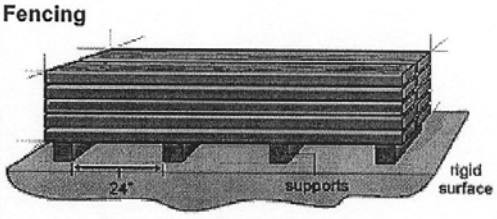
Storage of EVERGRAIN™ Fencing

EPOCH™ products should be stored only on a rigid flat surface. When stacking EPOCH™ products use vertically aligned supports beginning at each end and spaced no more than 24 inches apart throughout the length of the product.



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Safely Handling EVERGRAIN™ Fencing

EVERGRAIN™ fencing is heavier and more flexible than traditional wood products. Use care and do not attempt to lift or carry more fencing than you can safely handle at one time. Proper clothing and safety glasses should be worn at all times when working with fencing.

Determination of the effectiveness, suitability, and safety of any application or use of EVERGRAIN™ fencing is solely the responsibility of the Owner and/or Contractor. Building code regulations vary, and the Owner and/or Contractor should consult local building and safety codes for specific requirements prior to the application of EVERGRAIN™ fencing.

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Cutting EVERGRAIN™ Fencing

When working with EVERGRAIN™ fencing, saw blades and router bits with carbide tips are recommended. For best results, use blades with two teeth per inch. To avoid clogging when drilling holes, frequently remove shavings by raising the drill bit out of the hole.

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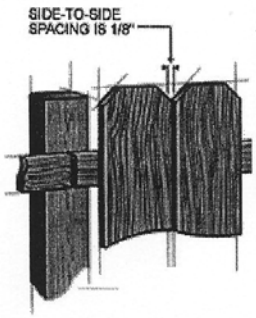
Spacing EVERGRAIN™ Fencing



EVERGRAIN™ Fencing will expand and contract with changes in temperature. The amount of expansion and contraction will vary depending upon board size. Smaller boards will expand less and larger board sizes will expand more. When installing EVERGRAIN™ Fencing, side-to-side spacing should be a minimum of 1/8" between adjacent boards.

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Fastening EVERGRAIN™ Fencing

EVERGRAIN™ fencing can be fastened by screws, nails, or pneumatic fasteners. The fastening decision is solely the responsibility of contractor, installer or homeowner. EPOCH™ does not recommend or endorse any specific fastening system. Like wood, pre-drilling the end/edges of the board is necessary to avoid splitting or cracking the material.

To receive maximum performance and minimize the possibility of rust staining, it is recommended that hot dipped galvanized or stainless steel fasteners be used. A greater force is required to drive nails into fencing, especially when installing cold temperatures.

When installing fasteners into fencing always wear safety gloves and glasses.

- **NAILS** - Hold nails by hand until they are driven 1/2 the length of the fastener into the fencing.

- **SCREWS** - In colder temperatures we recommend *pre-drilling fastener holes no larger than the diameter of the shaft of the screw* being used.

- **STRING LINE** - The use of a string line to align fasteners/boards is recommended to enhance the appearance of your fence (Do not use a chalk line).

- **SELF-TAPPING SCREWS** - Pre-drilling is not usually necessary when using self-tapping screws or trim head screws.

- **FINISHING TOUCH** - Fence boards will swell over fastener heads. Gently hammer the material down to cover the fastener head. To minimize this from occurring pre-drill fastener holes.

- **PNEUMATIC NAILER** - When using pneumatic nail guns follow the nail gun manufacturer's installation and safety instruction.

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Removing Stains
Mild stains may be removed with a common deck power wash detergent containing sodium hypochlorite. Tougher, ground in stains can be cleaned with cleaners containing phosphoric acid.

- OIL OR GREASE - Gently scrub stained area with degreasing cleanser as soon as possible.

- FOLLOWING CLEANING - Flush the surface of fencing with water to remove any excess cleaning agents.

- IMPORTANT NOTE - Sanding the surface of EPOCH™ products to remove stains is not recommended. This tends to eliminate the wood grain texture and will damage the lasting beauty of the finish.

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Standard EVERGRAIN™ Fencing Sizes (All tolerances +/- 1/16")

Nominal Size 1/2" x 6" x (6' or 8')	**Actual Size** 1/2" x 5-1/2"
Skirting(8')	1/2" x 11-3/4"

Note: All fence boards are available in square-top and dog-ear styles.

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EVERGRAIN™ Fencing Support Chart
Maximum recommended fence height (board length) per number of support rails:

Fence Board Height (length of EVERGRAIN™ fencing)	**Number of Rail (wood) Supports** (Horizontal rail supports)
4'	2 rails
6'	3 rails
8'	4 rails

EVERGRAIN™ FENCING IS A NONSTRUCTURAL CONSTRUCTION PRODUCT.

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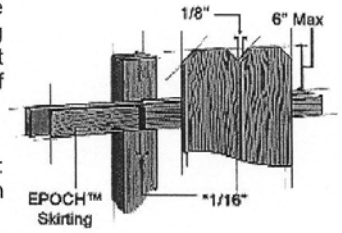
Rail Installation

EVERGRAIN™ fencing systems can be installed using either of these two railing systems. In all installations the top rail must be no more than six inches from the top of the fence boards.



1. Standard wood 2" x 4" rail: Conventional three-rail installation method.

2. Standard wood 2" x 4" rail with EPOCH skirting that's the same dimension as the wood rail.

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Post Installation

EVERGRAIN™ fencing systems can be installed using any of these three post systems:

1. Standard wood 4 x 4 rated for ground contact: Posts should be installed a maximum of 8 feet on center. All posts should be installed a minimum of 24 inches deep.

   Note: Climactic conditions in some areas of the country may require deeper installation below the frost line. In areas subject to frost heave, it's recommended that the post bottoms be set at a minimum of 6 inches below the frost line. Please check local codes and standard practices for your area.

2. Standard wood 4 x 4 rated for ground contact with EVERGRAIN™ skirting: Rip a piece of EPOCH™ skirting the same dimension as the post to cover the four exposed sides of the post. This installation method takes advantage of the superior aesthetic qualities of EVERGRAIN™ skirting.

   A. Measure posts and cut EVERGRAIN™ skirting to cover all four sides as shown in diagram.

   B. Using galvanized or stainless steel screws, attach skirting to post

   C. Screws must be a minimum of 1-1/2" long.

3. Some metal post systems may be compatible with EVERGRAIN™

fencing. Consult the post manufacturer for specific instructions about the type of metal post to be used.

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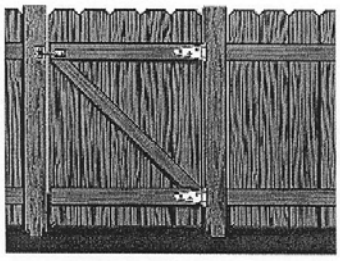
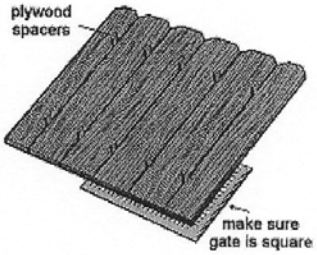
Gate Installation

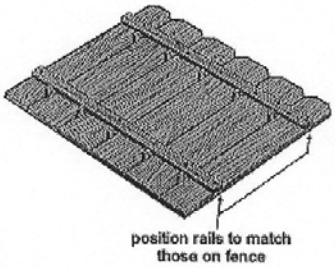


EVERGRAIN™ fencing pickets can be used to build gates provided adequate bracing is used to support the gate. A "Z" braced is reccomend. However, because EVERGRAIN™ fencing is heavier than wood, gates should not exceed 4 feet in length without special structural support.

Z-Brace Gate

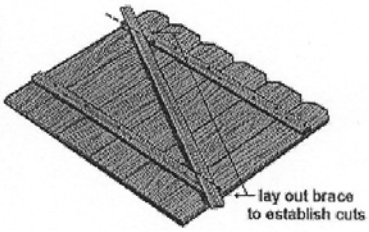
1. Measure fence opening and determine how many boards are needed. Allow for 1/8 inch space between boards and, if necessary, rip the two outside boards so you don't have one very narrow board on one side. Layout the boards in a flat position and insert a 1/8 inch spacer between boards. Be sure that the gate is in-square.





2. Cut the horizontal 2 x 4 braces as long as the gate is wide and position them on the rails so they match the fence rails. Attach the braces by installing two (2) 1-3/4 inch galvanized deck screws into each board, staggering the screws as shown. Remove the spacers after the rails have been securely attached.

3. To install the angled brace, place a 2 x 4 in position on top of the horizontal braces and mark it for the cuts. After cutting, install with two (2) 1-3/4 inch screws to each fencing board, staggering the screws for added rigidity.



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EVERGRAIN DECKING
By EPOCH






EVERGRAIN™ Fencing Specifications
EVERGRAIN™ Fencing is available in these popular sizes:

Nominal Size	Actual Size
1/2" x 6" x (6' or 8')	1/2" x 5-1/2"
Skirting(8')	1/2" x 11-3/4"

All tolerances +/- 1/16"
Note: All fence boards are available in square-top and dog-ear styles.

Technical/Structural Specifications

MSDS

EPOCH™ COMPOSITE PRODUCTS, INC.

EVERGRAIN DECKING By EPOCH

GALLERY

Designing with EVERGRAIN™ Decking and Fencing by EPOCH™.

EVERGRAIN™ decking and fencing materials make beautiful decks and fences...decks and fences that stand out with their beauty and stand up to the best and worst Mother Nature can throw at them. But more than that, EVERGRAIN™ decking and fencing materials can be used, much like conventional wood, to add unique and appealing accents to your backyard projects. Here are just a few ideas...

- Create a beautiful and functional lattice wall using EVERGRAIN™ decking material...or use EPOCH™ fencing, ripped into narrow strips, to accent an outdoor planter.

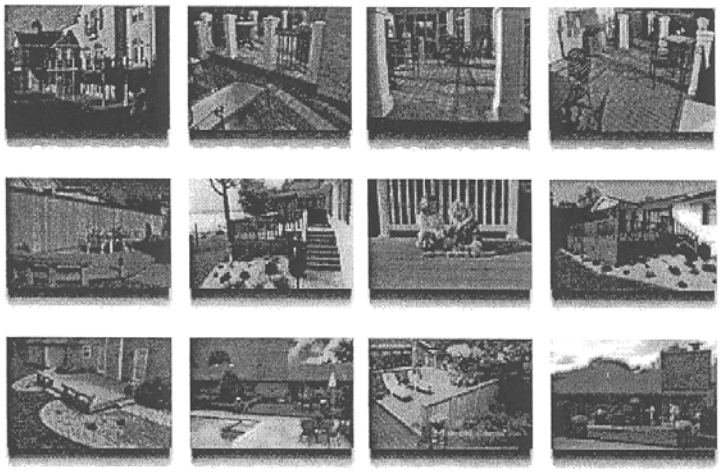
- Cover wooden bench seats with EVERGRAIN™ decking or skirting to give your deck a matching color.

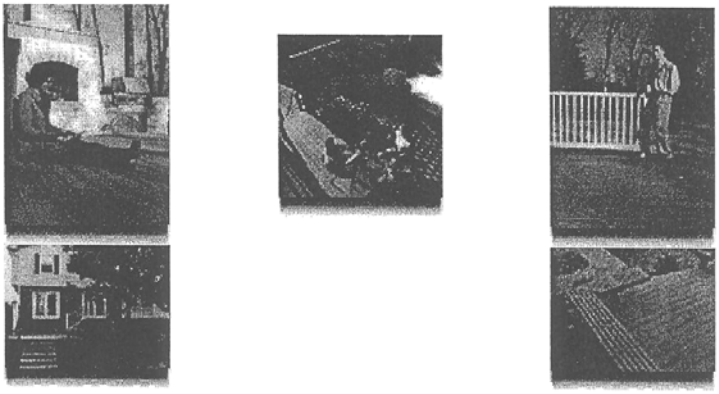
- Lengthen the life of your railing with EVERGRAIN™ decking–beautiful and they won't rot.

How are you using EVERGRAIN™ Decking and Fencing products by EPOCH™ to make your home more beautiful? Send us a photo of your deck or fence to display in our gallery. Click here to contact us with ideas.

Designing with EVERGRAIN™ Decking

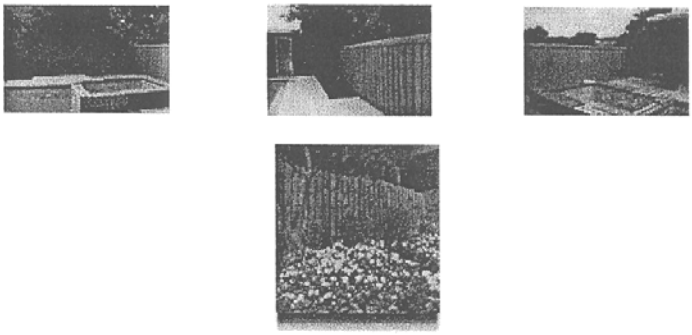
(Click on an Image to Enlarge)





Designing with EVERGRAIN™ Fencing

(Click on an Image to Enlarge)



Designing with EVERGRAIN™ Railing

EVERGRAIN™ Un-Weather/Weathered Designs

(Click on an Image to Enlarge)


un-weathered


weathered


un-weathered


weathered

EPOCH™ COMPOSITE PRODUCTS, INC.

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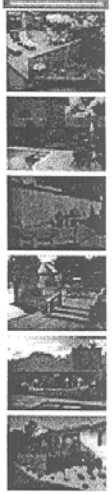
EVERGRAIN DECKING By EPOCH

HOME | DECKING | FENCING | RAILING | FAQ's | LIFE CYCLE | MARKETING | EPOCH | DEALER SEARCH

GALLERY



We are in the process of creating this search. Not all dealer locations may be listed. If you cannot find a dealer listed near you please call 800.405.0546 for more information.

Following are the Dealers within 10 miles of zipcode 07728

BUILDER'S GENERAL
222 THROCK MORTON ST.
FREEHOLD, NJ 07728
Phone: (888) 863-9600
Fax: (732) 863-9183
. .
Distance in Miles = 0

Total 1 dealers found in your search.

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GALLERY

FAQ's - MATERIAL CONTENT

Q: What is it made of?
A: It is made of approximately 50% plastic & 50% wood fiber. (contains recycled material)

Q: Will the wood fiber on the surface deteriorate?
A: Each piece is encapsulated in plastic and deterioration will be minor, however it will lighten slightly.

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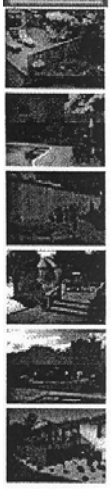
GALLERY



FAQ's - COLOR/FADING

Q: Will the product fade?
A: Yes. Colors of the boards will weather to a lighter shade within the first 12 weeks of exposure to the elements. However, the EVERGRAIN™ colors Grey, Cedar, Redwood, and Cape Cod Grey stay in the same color family. Driftwood will fade to a silver grey color.

Q: Is the color throughout the material?
A: Yes.

Q: Will the color on every board be the same as material made at a different time?
A: No. Some variation will occur due to the natural pigments of the raw materials. However most minor variations will fade with normal weathering. Try to use material from the same date code (stamped on end of board) whenever possible.

Q: Why do my Grey boards have a brown cast?
A: Due to the sawdust in the board this may occur, however, this will diminish with normal weathering.

Q: What colors does it come in?
A: All products are available in Grey, Cedar, Redwood, Driftwood & Cape Cod Grey.

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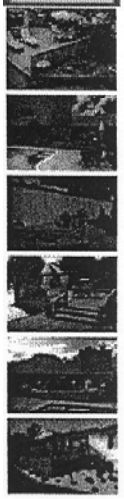
EVERGRAIN DECKING By EPOCH



FAQ's - STAINS/WATER/MILDEW

Q: Will it grow mold or mildew?
A: If it is not cleaned periodically, mold and mildew can grow on a dirty surface.

Q: How do I get stains out?
A: Minor stains may be removed with hot water and soap. However tough stains (oil or grease) may require cleaners with Phosphoric acid. (Use of cleaners will lighten surface)

Q: Can I paint / stain / water seal the product?
A: No. The product will not absorb these products adequately.

Q: Can I use sandpaper to remove stains?
A: We do not recommend it since it will eliminate the wood grain texture.

Q: Will the water from our swimming pool damage the material?
A: No, in fact it is ideal for around pools.

Q: Will salt/ice melter damage it?
A: No

Q: Will it absorb water?
A: It will absorb very little water.

POLYWOOD FENCES

Product information on Polywood plastic lumber, technical data.

POLYWOOD INC
PLASTIC LUMBER

125 National Road
Edison, NJ 08817
732-248-8810
800-915-0043
Fax: 732-248-8828
www.polywood.com

February 7, 2003

Professor Walter Konon
NJIT Civil Engineering Department
Newark, NJ 07102

Dear Professor Konon,

Thank you for contacting us regarding your interest in POLYWOOD™ recycled plastic lumber for the NJDOT privacy fence project.

Our product, manufactured exclusively in Edison, NJ, is a solid, all-plastic lumber as contrasted with wood pulp/plastic and fiberglass/plastic composites or vinyl. It is manufactured through a patented materials process which results in excellent performance characteristics which exceed those of wood with regard to longevity and low maintenance in a wide variety of uses.

It is non-porous, will not rot or splinter, does not absorb moisture, is impervious to insect infestation, never needs to be treated or painted, is graffiti-resistant and is resistant to UV degradation. The mechanical properties of our product remain static over time even when put in continuous contact with standing water, sea air, salt and sand.

Environmentally, POLYWOOD™ is non-toxic, not harmful to animals and will not leach or bleed arsenic, heavy metals or chemicals into soil or water, making it superior to creosote- or chromated copper arsenate (CCA)-treated wood. It also removes the disposal costs associated with these hazardous materials. POLYWOOD™ can also reduce greenhouse gas emissions by sequestering more than three times the amount of carbon as wood, rendering the carbon inert for decades.

In a test of 11 manufacturers, our product has been rated "...one of the most structural commercially produced plastic lumber materials available" by an independent test lab using newly developed ASTM test methods for plastic lumber. Our product has been used in very diverse applications, from small projects (fences, tables and benches, and decks), to highly engineered projects by the US Army Corps of Engineers (substructures in bridges and observation platforms).

Enclosed please find the information you requested. If you have any questions, please do not hesitate to call. I look forward to speaking with you after you have had the opportunity to review this material and hope we have the opportunity to work with you on this project.

Very truly yours,

James J. Kerstein
President

JJK/jc
Enc.

POLYWOOD INC

MANUFACTURERS OF POST-CONSUMER RECYCLED PLASTIC LUMBER

What is POLYWOOD ?

POLYWOOD™ is a post-consumer recycled plastic lumber which is used as a durable, low maintenance alternative building material. It has an attractive grainy finish and comes in colors to complement any outdoor decor. Our product is available in the most common dimensional lumber sizes, or already assembled in a variety of outdoor items such as picnic tables, benches, roll-up walkways, trash can holders, planters, bike racks and fencing.

Are all plastic lumber products the same?

No. **POLYWOOD™** is manufactured from a patented blend of plastics. It is 100% plastic - not a sawdust/plastic or fiberglass/plastic composite - and it contains no fillers. Our "*Advantage*" product is considerably stronger than 11 other manufacturers tested in a study conducted by Rutgers University and the US Army Corps of Engineers. Polywood's "structural" grade material has also been tested by the Corps of Engineers as being 2-1/2 times stiffer than the average plastic lumber.

Is plastic lumber the same as traditional lumber?

No. **POLYWOOD™** is an excellent alternative to conventional lumber. It is tougher, more resilient and more flexible than treated wood and it has many properties which make it superior: It does not splinter, warp, or corrode and is mildew-resistant. It is unaffected by termites or other insects, rodents, worms or marine parasites. It is also resistant to heat, cold, salt and acids. Unlike wood, plastic lumber will melt but does not support combustion. Any fumes released are non-toxic to humans, pets or the environment.

What is plastic lumber used for?

POLYWOOD™ is an ideal alternative to wood and concrete for home, recreational, municipal, agricultural and marine use. Some typical applications include: decking, railings, steps and risers, landscape ties, fencing, framing materials for gardens and paths, playgrounds, fitness courses, stadium seating, walkways, posts, planters, picnic tables and benches, retaining walls, piers, docks, and boardwalks.

Does plastic lumber need any special treatment?

Because **POLYWOOD™** is non-porous it does not absorb moisture. This "sealed" surface prevents the rot, cracking and staining normally associated with wood and wood/plastic composites. The colors are molded in so painting is neither required nor recommended. Most common surface marks, such as graffiti, can be removed with a commercial solvent. Occasional washing with a hose should be all the "treatment" needed.

Is plastic lumber easy to work with?

POLYWOOD™ can be cut, drilled, sanded, mitered, routered or fastened using conventional tools with carbide blades and tips. Plastic lumber has exceptional screw and nail retention and fastenings usually hold better than in wood.

Why is using plastic lumber better for the environment?

Using **POLYWOOD™** plastic lumber instead of wood means no trees are harvested or tropical rainforests destroyed. Unlike pressure-treated wood, plastic lumber will not leach or bleed toxins or carcinogens into the soil or water. By converting plastic scrap into a long-lived product, plastic lumber reduces the amount of plastics in landfills.

Is plastic lumber more expensive than wood?

How valuable is your time? **POLYWOOD™** allows you to enjoy your investment, not invest in your enjoyment. Our product is competitively priced with premium hardwoods and exhibits greater savings over the length of time during which it does not have to be treated, painted, sanded or replaced due to weather or insect damage.

POLYWOOD INC PLASTIC LUMBER · 125 National Road · Edison, NJ 08817 · 732-248-8810 · 800-915-0043 · 732-248-8828 (FAX)

POLYWOOD INC

MANUFACTURERS OF POST-CONSUMER RECYCLED PLASTIC LUMBER

ABOUT THE COMPANY

Polywood, Inc., as a manufacturer of 100% post-consumer recycled plastic lumber, converts the rigid plastic containers which would otherwise pollute our soil and waterways or be discarded into landfills into products with excellent performance characteristics. We are proud to represent one of the few industries which operates in a pro-business, pro-environment manner. By manufacturing a sustainable building product which can be recycled, our company helps to complete a "green" circle.

PRODUCTS

Polywood, Inc. manufactures a full line of plastic lumber in various dimensional sizes which can be used for decks, docks, fencing, boardwalks, fitness courses and other applications where durability, moisture resistance and low maintenance make it preferable to wood. We also sell park and recreational site amenities such as picnic tables, benches, car stops, bike racks, trash can holders, planters and roll-up walkways and specialty items such as colonial spindles.

CHARACTERISTICS

POLYWOOD plastic lumber is 100% plastic. It contains no fillers and is not a wood/plastic or fiberglass/plastic composite. Plastic lumber exhibits greater flexibility, more resiliency, and greater toughness on a stress/strain curve than wood. These engineering qualities allow plastic lumber to absorb more energy on impact while making the plastic more resistant to strain and cracking than treated wood. Tests show plastic lumber resisting wear and tear to $1/10^{th}$ of an inch over a fifty year period.

It is non-porous, will not rot or splinter, does not absorb moisture, is impervious to insect infestation and marine borers, will not rot when submerged, is graffiti-resistant, and never needs to be treated. Colorant with UV inhibitors and light-fast pigments is added during the manufacturing process to protect against fading and UV degradation. The resultant lumber is colored throughout eliminating the need for painting.

Our product is non-toxic and will not leach or bleed arsen, heavy metals or chemicals into the soil or water. **POLYWOOD** plastic lumber will burn if ignited but does not support combustion. Fumes from burning do not present any toxic danger.

WHY POLYWOOD PLASTIC LUMBER?

Unlike other plastic lumber products, **POLYWOOD** is extrusion molded from a patented formula which makes it "...one of the most structural commercially produced plastic lumber materials available." This unique difference means a stiffer board which spans a greater distance without sagging.

EASE OF USE

Plastic lumber is extremely easy to work with. Standard tools allow for mitering, routering, drilling and sawing. Wide-toothed carbide blades and tips are recommended to reduce wear and tear on tools. The material can be planed or sanded. **POLYWOOD** will accept nails and screws without any advanced preparation although pre-drilling is recommended. As a result of the friction created when nailing and drilling, fasteners hold better than in treated lumber. We recommend using stainless steel fasteners in all outdoor applications.

AND FINALLY...

Our knowledgeable sales and technical staff is available to assist you with any product, design or applications questions.

POLYWOOD INC PLASTIC LUMBER · 125 National Road · Edison, NJ 08817 · 732-248-8810 · 800-915-0043 · 732-248-8828 (FAX)

POLYWOOD INC

Sampling of Major Projects/Vendors Supplied

Polyties™ Engineered Composite Crossties
- Chicago Transit Authority (CTA)
- New Jersey Transit Authority (NJT)
- New York City Transit (MTA)
- Delaware River Port Authority (PATCO)
- Black River & Western Railroad
- Canadian Pacific
- Southeast Pennsylvania Transit Authority (SEPTA)
- Washington Metro Area Transit Authority (WMATA)
- Bay Area Rapid Transit (BART)
- Army/Navy Joint Facility at Crane, IN

Vehicular Bridge for Fire Access Road - NJ Dept of Parks & Forestry
- Taberncle, NJ

Pedestrian/Vehicular Bridge - US Army Corps of Engineers
- Fort Leonard Wood, MO

Handicap-Accessible Fishing Piers/Observation Platforms - US Army Corps of Engineers
- Fort Belvoir, VA

Park and Site Amenities (Picnic Tables, Benches, Bike Racks, Trash Receptacles); Lumber
- Delhi Township, OH
- Borough of Lakehurst, NJ
- Town of Secaucus, NJ
- NJ Vietnam Veterans Memorial
- Municipal Pool, Paramus, NJ
- Burlington County Bridge Commission
- Ewing Township
- Morris County Library
- US Postal Service
- Wakefern Foods
- PATH

Park and Site Amenities; Lumber - Contracts
- State of NJ
- State of MA
- Broward County Cooperative, Broward County, FL

Park and Site Amenities - Material Specifications
- NYC Parks and Recreation Department

Other Projects
- Beach Walkovers - Loch Arbor, NJ, Allenhurst, NJ
- Marsh Walkway - Secaucus, NJ
- Fishing Pier Railings - Hoboken Waterfront Redevelopment
- Gazebo - Borough of East Rutherford

Department of Environmental Protection

PRESS OFFICE
CN 402
Trenton, New Jersey 08625-0402

Christine Todd Whitman, *Governor*
Robert C. Shinn, Jr., *Commissioner*

NEWS

Release: June 17, 1999
99/80

CONTACT: Loretta O'Donnell or Amy Collings
(609) 984-1795 or 292-2994

PARTNERSHIP FORMED TO INCREASE MARKET FOR RECYCLED PRODUCTS

The New Jersey Buy Recycled Business Network is being reorganized and expanded as part of a state effort to strengthen the market for recycled materials by increasing the number of businesses buying products with recycled content.

The network, which has been run in cooperation with the state Department of Environmental Protection (DEP) since 1993, has formed a partnership with the Association of New Jersey Recyclers to offer member businesses more services and increase demand for recycled products.

"The network can influence the decision making of manufacturers and lead to an increase in the production of recycled products in New Jersey, new jobs and economic gains," said DEP Commissioner Bob Shinn.

A governing board for the network has been established to lead that effort, chaired by Joseph Verga of Bell Atlantic Co. in West Orange and Steven Rinaldi with DEP's Bureau of Recycling and Planning.

"Undoubtedly, the reorganization of the network resulting from this partnership will lead to a more dynamic, proactive and efficient 'Buy Recycled' organization," Verga said.

The other five board members are: Al Fralinger of PSE&G Co., who also is president of the Association of New Jersey Recyclers; Peter Marcalus of Marcal Paper Mills, Inc., Elmwood Park; Jeff Brown of Rainbow Eco Specialties in Fairfield, Jim Kerstein of Polywood, Inc. in South Plainfield, and Aletha Spang of Recycling Unlimited in Holmdel.

"Through this partnership, the message of the network will spread to more and more New Jersey businesses and result in an increase in demand for recycled products thereby strengthening recycling markets and recycling in general," Fralinger said.

The new board will establish an annual work plan and scope of services for the year 2000. DEP will provide funding through this year and will move administration of the program to the Association of NJ Recyclers.

"The purchase of recycled products by companies creates the demand that is essential to the continued success of recycling efforts. Purchasing recycled products not only promotes environmental goals but is a practical procurement strategy that can be readily incorporated into day-to-day operations," Shinn said.

For further information, contact Steven Rinaldi in the Bureau of Recycling and Planning at 609-984-3438 (Srinaldi@dep.state.nj.us) or Marie Kruzan at the Association of NJ Recyclers at 908-722-7575 (anjr@erols.com).

PLASTICS NEWS

May 14, 2001 Crain's International Newspaper for the Plastics Industry $5 per copy

Standards set for lumber

By Angie DeRosa
PLASTICS NEWS STAFF

AKRON, OHIO — Picture this: engineers specifying joists and beams made of recycled plastic in construction applications. They even have the option to specify structural-grade plastic lumber.

Now, at least, the ground is broken on that utopian view: As of April 10, the American Society for Testing and Materials formally approved a standard for recycled plastic lumber decking.

"This document is a big leap forward," said Rich Lampo, a materials engineer with the U.S. Army Corps of Engineers who was the document's secondary author. "What we're striving for is to be able to provide all the tools to design all-plastic structures."

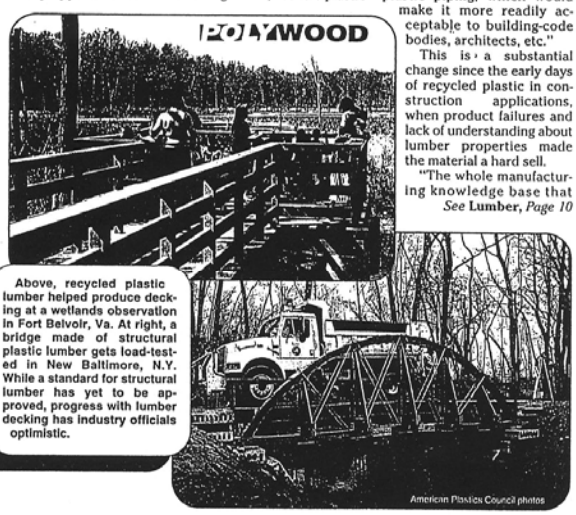
The standard, titled "Standard Specification for Polyolefin-Based Plastic Lumber Decking Board," covers plastic lumber that is greater than 50 percent resin by weight, said Prabhat Krishnaswamy, the primary author, and vice president of Engineering Mechanics Corp. of Columbus, Ohio.

"It is a major accomplishment for the marketing of plastic lumber into residential decking applications," he said. "What this standard implies is that manufacturers can now put an ASTM stamp on their plastic lumber, as they do with plastic piping, which would make it more readily acceptable to building-code bodies, architects, etc."

This is a substantial change since the early days of recycled plastic in construction applications, when product failures and lack of understanding about lumber properties made the material a hard sell.

"The whole manufacturing knowledge base that

See Lumber, Page 10



Above, recycled plastic lumber helped produce decking at a wetlands observation in Fort Belvoir, Va. At right, a bridge made of structural plastic lumber gets load-tested in New Baltimore, N.Y. While a standard for structural lumber has yet to be approved, progress with lumber decking has industry officials optimistic.

American Plastics Council photos

Lumber standard bridging troubled waters

Continued from Page 1

wasn't there before is there now," said Donna Stusek, administrator with the Ohio Department of Natural Resources' Division of Recycling and Litter Prevention. "We're hoping now that recycled lumber won't get a bad rap. A lot of it failed early on."

Of the $70 million to $90 million decking market, plastic lumber now accounts for a 30-40 percent market share, said Alan Robbins, Akron-based president of the Plastic Lumber Trade Association.

Important issues needed to be addressed for plastic lumber to reach that point, Lampo said. The material could not be measured by traditional methods used for plastic or wood.

"Taking coupon-level pieces would be almost impossible because you have so many variations of plastic lumber," he said in a May 2 telephone interview. "Each manufacturer, almost, has its own species. There was no sense in trying to regulate that. We have set some minimums relative to performance, to mechanical and physical properties. You can make it out of whatever you want, as long as you meet the standards."

Test methods are now specified for compressive qualities, density, flexural and sheer properties, thermal expansion, creep testament and fastener withdrawal, Krishnaswamy said.

The standard is a starting point, not a finishing point, Robbins said. The legwork accomplished while completing the decking-board standard has set the pace for others in progress.

ASTM standards that currently are in draft form include a specification for structural-grade plastic lumber, flexural properties of marine piles, guides for the testing of plastic lumber and plastic decking construction.

> 'The whole manufacturing knowledge base that wasn't there before is there now. We're hoping now that recycled lumber won't get a bad rap.'
>
> Donna Stusek
> Ohio Department of Natural Resources

"Now the products have some good science behind them," Robbins said. "People purchasing these materials can hold onto them. This really allows these products to move in the marketplace and allows people to understand the material."

Some of the science is especially significant, said Rob Krebs, communications director for the American Plastics Council of Arlington, Va.

"They've found that the plastic lumber actually gets stiffer over time ... unlike wood that not only may need to be treated with harsh chemicals [but also] is subject to eventual disintegration," he said.

Research during the past six years revealed that ultraviolet rays cause polymers to cross-link, Krebs said.

At ReNew Plastics in Luxembourg, Wis., sales manager Lonnie Vincent feels that the recycled plastic lumber his company produces for decking applications finally has been validated.

"Now you can go up against the lumber guys and have a valid product," Vincent said. "The engineers will be able to specify this in. Before, there wasn't a standard. They didn't have anything to compare it to."

The six-year effort gained support from the APC, the Ohio Department of Natural Resources, the New York State Department of Economic Development and the Plastic Lumber Trade Association.

Where Everything Really Is Made of Plastic

Polywood founder Jim Kerstein was born to be an entrepreneur. "I grew up in a family where there were a lot of privately owned businesses," says Kerstein, 43, whose Edison company recycles plastic scrap into building materials for the construction trade. One of Kerstein's grandfathers was a diamond cutter while the other owned a butcher shop. Kerstein's father was in the business of renovating buildings."

"Talking about business was always part of our family dinner table conversations," Kerstein says.

Founded in 1996, Polywood produces an industrial grade material called plastic lumber. "Many companies make decking and fencing from plastic," Kerstein says. "We wanted to make railroad ties, marine pilings and telephone poles."

Polywood recycles the material from high-density polyethylene, the kind used in plastic utensils, milk jugs and Styrofoam coffee cups. The company grinds up tons of such items to produce its lumber, which Kerstein says weathers better than wood. He says the average wooden railroad tie lasts 20 years while Polywood's ties are expected to last at least 50 years.

Polywood revenue has grown from $407,000 in 1999 to $1.4 million in 2000 to $1.9 million last year. Kerstein says revenue could reach $3.5 million this year. At the same time, "we're seeing a drop in our costs as we get more orders and improve our technology," he says.

Kerstein graduated from George Washington University in Washington, D.C., in 1980 with a bachelor's degree. After a stint as an accountant at Ernst & Young, he left in 1984 to join Plaza Plastics, a South Plainfield manufacturer of plastic coat hangers.

Kerstein moved to California to open a Plaza Plastics plant and subsequently earned a degree in human resources management development in 1990 from Chapman University in Orange, California. He rose to become president of Plaza Plastics, then left after its sale in 1994.

Kerstein first heard about plastic lumber being used in construction in 1992."I always wanted to have a business-to-business relationship," he says, "not selling to consumers at home. That always seemed like a trickier sale."

While Polywood started out producing fences and decks, Kerstein was eager to explore other uses for recycled plastic. He contacted researchers at Rutgers University who had developed a patented formula for all plastic lumber that Polywood is now licensed to use "That patent allowed us to make our plastic a lot stronger," says Kerstein.

"We developed the first recycled plastic lumber 14 years ago," says Tom Nosker, an assistant research professor at Rutgers. Nosker says all-plastic structures can be as strong as those made from virtually any other material. "We were frustrated for many years that there were no manufacturers of recycled plastic lumber in the state," he says.

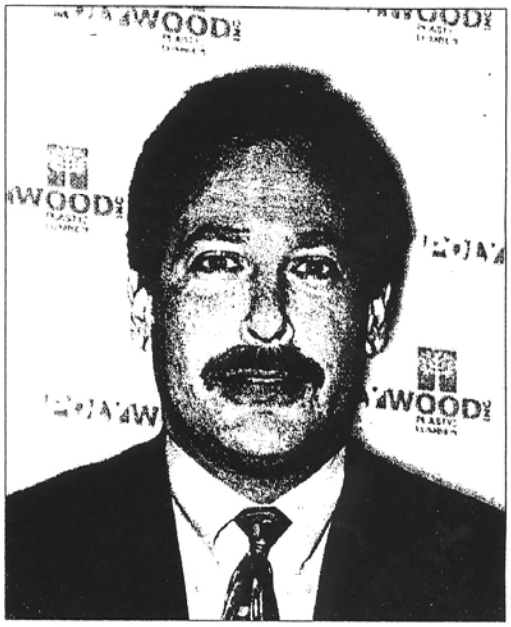
Polywood's plastic ties are now used in rapid transit tracks in Chicago and Washington, D.C. Other clients include SEPTA, the Philadelphia-area transit authority. NJ Transit is also exploring the use of the ties. And the U.S. Army Corps of Engineers is considering Polywood's plastic lumber for bridges, walkways and observation decks.

Polywood material has already been used in bridge construction. In 1999 it was incorporated into a 25-ft. span for jeeps and pedestrians at Fort Leonard Wood in Missouri. That structure was fortified with a steel foundation.

Meanwhile, "the New Jersey Parks and Forestry Department is using our lumber to build an all-plastic materials bridge in the Pine Barrens to full federal highway standards," say Kirstein. The bridge is on a fire road designed to give firefighters quick access to a blaze. "It's one of the first of its kind in the U.S.," Kerstein says of the bridge.

Kerstein is encouraging his two daughters to learn about entrepreneurship, perhaps hoping they will follow him into the business. Says he: "People at back-to-school nights all know we do recycling." ■

| João-Pierre S. Ruth



Kerstein's plastic lumber secures mass transit tracks in Chicago and Washington.

POLYWOOD INC
PLASTIC LUMBER
125 National Road
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732-248-8810
800-915-0043
Fax: 732-248-8828
www.polywood.com

The technical data for POLYWOOD plastic lumber is as follows:

"ADVANTAGE"

Mechanical Properties	Test Methods	Average Yields
Compressive Stress at 3% Strain	ASTM D6108-97	2,900 psi 20.0 MPa
Compressive Modulus	ASTM D6108-97	138,000 psi 952 Mpa
Flexural Stress at 3% Strain	ASTM D6109-97	3,890 psi 26.8 MPa
Flexural Modulus	ASTM D6109-97	168,180 psi 1,160 MPa
Coefficient of Friction	ASTM D-1894	Kinetic 0.676 Static 0.682
Coefficient of Thermal Expansion	ASTM D-1895	5.167×10^{-5} in/in/°F 9.3×10^{-5} cm/cm/°C
Specific Gravity and Density	ASTM D6111-97	0.84 g/cm^3

STRUCTURAL

Mechanical Properties	Test Methods	Average Yields
Specific Gravity	ASTM D6111-97	0.85 - 0.90
Density	ASTM D6111-97	53-56 lb/ft.^{3}
Coefficient of Thermal Expansion	ASTM D696-91	.00005 in./in./°F (max.)
Compressive Strength (Compression Parallel to Grain)	ASTM D6108-97	4,300 psi
Compressive Strength (Compression Perdicular to Grain)	ASTM D6108-97	1,200 psi
Permanent Deformation Under Load (Compression Perpendicular to Grain)	ASTM D6108-97	0.0135 in.
Modulus of Elasticity (Compression)	ASTM D6108-97	170,000 psi
Flexural Strength	ASTM D6109-97	3,000 psi
Modulus of Elasticity (Flexure)	ASTM D6109-97	220,000 psi (avg.) 200,000 psi (min.)
Shear Strength (Calculated)	ASTM D6109-97	1,500 psi
Mechanical Fastener Screw Spike Pullout	ASTM D6117-97	15,000 lb.

psi: pounds per square inch

SPAN TABLES - Deck Mode

SINGLE SPAN

4/24/01

Live Load = 60 Pounds Per Sq.Ft.

NOMINAL SIZE	MAXIMUM SPAN D.F. = 180		MAXIMUM SPAN D.F. = 240		MAXIMUM SPAN D.F. = 360	
	(in.)	(ft.)	(in.)	(ft.)	(in.)	(ft.)
2X6,2X8,2X10	15.87	1.32	14.76	1.23	13.34	1.11
3X8, 3X10	23.27	1.94	21.66	1.80	19.57	1.63

Live Load = 80 Pounds Per Sq.Ft.

NOMINAL SIZE	MAXIMUM SPAN D.F. = 180		MAXIMUM SPAN D.F. = 240		MAXIMUM SPAN D.F. = 360	
	(in.)	(ft.)	(in.)	(ft.)	(in.)	(ft.)
2X6,2X8,2X10	14.76	1.23	13.74	1.14	12.42	1.03
3X8, 3X10	21.66	1.80	20.15	1.68	18.21	1.52

Live Load = 100 Pounds Per Sq.Ft.

NOMINAL SIZE	MAXIMUM SPAN D.F. = 180		MAXIMUM SPAN D.F. = 240		MAXIMUM SPAN D.F. = 360	
	(in.)	(ft.)	(in.)	(ft.)	(in.)	(ft.)
2X6,2X8,2X10	13.96	1.16	12.99	1.08	11.74	0.98
3X8, 3X10	20.48	1.71	19.06	1.59	17.22	1.44

Live Load = 120 Pounds Per Sq.Ft.

NOMINAL SIZE	MAXIMUM SPAN D.F. = 180		MAXIMUM SPAN D.F. = 240		MAXIMUM SPAN D.F. = 360	
	(in.)	(ft.)	(in.)	(ft.)	(in.)	(ft.)
2X6,2X8,2X10	13.34	1.11	12.42	1.03	11.22	0.93
3X8, 3X10	19.57	1.63	18.21	1.52	16.46	1.37

Live Load = 140 Pounds Per Sq.Ft.

NOMINAL SIZE	MAXIMUM SPAN D.F. = 180		MAXIMUM SPAN D.F. = 240		MAXIMUM SPAN D.F. = 360	
	(in.)	(ft.)	(in.)	(ft.)	(in.)	(ft.)
2X6,2X8,2X10	12.84	1.07	11.95	1.00	10.79	0.90
3X8, 3X10	18.83	1.57	17.52	1.46	15.83	1.32

Live Load = 160 Pounds Per Sq.Ft.

NOMINAL SIZE	MAXIMUM SPAN D.F. = 180		MAXIMUM SPAN D.F. = 240		MAXIMUM SPAN D.F. = 360	
	(in.)	(ft.)	(in.)	(ft.)	(in.)	(ft.)
2X6,2X8,2X10	12.42	1.03	11.55	0.96	10.44	0.87
3X8, 3X10	18.21	1.52	16.95	1.41	15.31	1.28

CONTINUOUS DECK MODE

Criteria for Pedestrian Deck
0.25"max. deflection with a 250 pound concentrated load

NOMINAL SIZE	ACTUAL SIZE Width	Depth	MAXIMUM SPAN (in.)	(ft.)
	(in.)	(in.)	0.00	0.00
2X6	5.50	1.50	28.36	2.36
2X8	7.50	1.50	31.44	2.62
2X10	9.50	1.50	34.02	2.84
3X8	7.50	2.50	52.41	4.37
3X12	11.25	2.50	59.99	5.00

POLYWOOD, INC. PLASTIC LUMBER
125 National Road - Edison, NJ 08817
732-248-88110 - 800-9115-0043 - 732-248-8828 (FAX)

PRODUCTS AVAILABLE

Advantage Lumber	Structural Lumber	Park and Site Furniture
1 x 4 x 12'	2 x 6 x 12'	•Picnic Tables
1 x 6 x 12'	2 x 8 x 12'	Low-Profile Leg (Easy Access)
Colonial Spindle	2 x 10 x 12'	8 ft.; 6ft.
2 x 2 x 42"	3" (round) x 12'	Wheelchair Accessible (Easy Access)
2 x 2 x 12'	3 x 8 x 8'	8 ft. (8' top; 6' seat)
2 x 4 x 12'	3 x 8 x 12'	6 ft. (6' top; 4' seat)
2 x 6 x 12'	3 x 12' x 12'	Hexagonal
2 x 8 x 12'	4" (round) x 12'	Octagonal
2 x 10 x 12'	4 x 4 x 12'	•Park Benches - 6 ft. * (with back)
3" (round) x 12'	4 x 6 x 12'	•Team Benches - 6 ft.* (no back)
3 x 8 x 8'	6 x 6 x 12'	•Roll-Up Walkways
3 x 8 x 12'	Table Leg	30" width
3 x 12' x 12'	Park Bench Leg	36" width (wheelchair access)
4" (round) x 12'		42" width (wheelchair access-optimal)
4 x 4 x 12'		•Trash Can Holders - 32/33 gal.*
4 x 6 x 12'		•Bike Racks - 6 ft.*
6 x 6 x 12'		

Colors available: **Beachwood, Chestnut, Gray, Cedar, White** and **Black.**
Structural formula available in Black only except by special agreement.
Lumber may be cut to length - additional charges apply

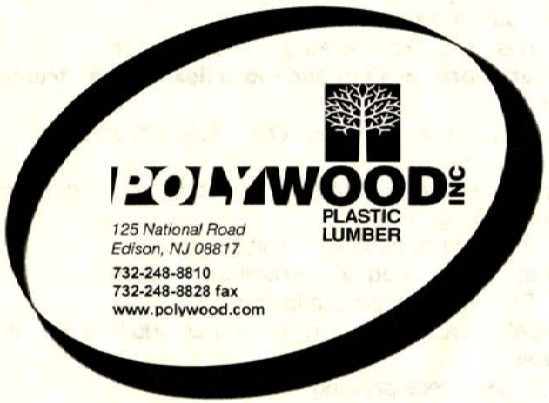
***other sizes available - call for information**

SPECIAL DISCOUNTED PRICING AVAILABLE FOR MUNICIPAL AND GOVERNMENTAL AGENCIES

MUNICIPAL, RECREATIONAL, INDUSTRIAL, MARINE AND AGRICULTURAL APPLICATIONS INCLUDE...

Polyties™ Engineered Composite Crossties
Park benches and picnic tables · Bus benches
Picnic tables for wheelchair accessibility
Parking lot car stops · Trash bins · Bicycle racks
Boardwalks and walkways · Fitness courses
Golf course benches, walkways, bridges
Playground equipment · Stadium seating
Decks · Landscape ties · Privacy fencing · Planters
Boat docks · Boat ramps · Floating docks
Bridge walkways · Dock facings and fenders
Beach walkovers · Shore erosion protection · Safety barriers
Pallets · Steps and risers · Mailbox posts
Guardrail blockouts · Road marker reflector posts

Setting the Standards for Sustainable Alternatives



125 National Road
Edison, NJ 08817
732-248-8810
732-248-8828 fax
www.polywood.com

Plastic lumber manufactured from curbside recyclables has become one of the most popular materials for outdoor projects because of its durability, low maintenance, and ease of installation.

Printed on Recycled Paper

POLYWOOD™ PLASTIC LUMBER

Is solid, 100% plastic with no fillers - not a sawdust/plastic or fiberglass/plastic composite
- Diverts post-consumer plastics from the waste stream into the marketplace

Will not leach or bleed toxins or carcinogens into the soil or water
- A long-lived, low-maintenance product

Has a beautiful wood-like appearance in colors to complement any outdoor decor
- Does not splinter, warp, or corrode and is mildew-resistant

Unaffected by termites or other insects, rodents, worms or marine parasites
- Has exceptional screw and nail retention

Tougher, more resilient and more flexible than treated lumber
- No trees are harvested or tropical rainforests destroyed

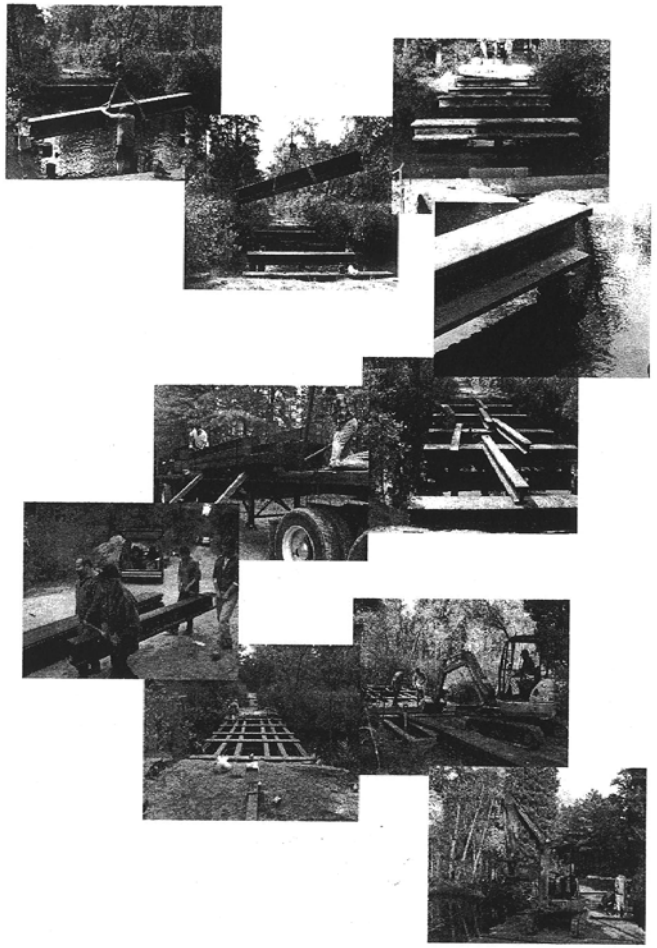
Non-porous, does not absorb moisture and will not rot when submerged
- Resistant to heat, cold, salt and acids

Competitively priced with premium hardwoods
- Does not support combustion

An excellent alternative to treated woods in moist, humid climates
- Never needs painting

Graffiti-resistant
- Can be cut, drilled, sanded, mitered, routered or fastened using conventional tools

Colors will lighten or fade over time creating a "weathered" wood look



Replacement of Mullica River Bridge
Wharton State Forest

APPENDIX 5
CHAIN LINK PRIVACY FENCING

Available slat types to make chain link fence a visual screen, contract specifications, NYCDOT details.

DURA SLATT

DuraSlatt™

02830FRP
BuyLine 6343

Maintenance Free Fiberglass Fillerstrip System for Chain Link Fences

Site Screening for

INDUSTRY
RECREATION
INSTITUTIONS
MUNICIPALITIES
SHOPPING CENTERS
CORRECTION CENTERS
GOVERNMENT FACILITIES
MILITARY INSTALLATIONS
APARTMENT/CONDO COMPLEXES

Beautify - Secure - Protect

Site Screening with

DuraSlatt™

fiberglass fillerstrips

Horizontal/Vertical DuraSlatt installation beautifies this boundary/perimeter fence

BEAUTY

Screen in, or screen out unsightly areas with DuraSlatt. From auto junk yards to small supermarket garden shops. Use colors and feature stripping to harmonize or contrast with surrounding landscape and buildings.

SECURITY

DuraSlatt secures chain link fences by preventing climbers from getting a toe and finger hold. DuraSlatt is ideal for securing electric company service yards, chemical storage areas, public swimming pools, wherever there is a potential hazard to youngsters.

PROTECTION

DuraSlatt is a wind barrier. It provides protection from the wind for tennis courts, swimming pools and activity yards. The degree of privacy varies by the strip insert pattern.

MAINTENANCE FREE

DuraSlatt fiberglass fillerstrips are durable. They are acrylic modified and UV light stabilized for maximum weatherability and color fastness. With the DuraSlatt system, the strips are securely fastened. They are vandal-proof and won't blow out.

Add a new dimension with Signage and Graphics

Don't stop at wind or site screening. Use the chain link fence to show off trademarks or logos, display an advertising - public service message or add a design motif to enhance the decorative effect of the fence. Contact the DuraSlatt manufacturer for complete details.

Where to use DuraSlatt

- Airports
- Landfills
- Junk yards
- Tennis courts
- School yards
- Race Tracks
- Railroad yards
- Swimming pools
- Car dealerships
- Highway screening
- Chemical plant storage
- Electric service companies

DuraSlatt fiberglass fillerstrips for use as slatting and screening in chain link fences are manufactured by FRP SYSTEMS, Inc.

FRP personnel have over 10 years experience in the fabrication, sale and installation of fiberglass fillerstrips.

Continuing product improvements, creative design applications and innovative installation techniques have made DuraSlatt the premier slatting/screening material available to the chain link fence industry.

DuraSlatt fillerstrips are fabricated from large sheets of the best quality fiberglass reinforced polyester materials.

The strips are impervious to most chemical and corrosive atmospheres, unaffected by high moisture conditions or weather extremes and will not rot, rust, corrode or mildew.

Acrylic-modified, light stabilized resins and quality pigments assure long-lasting, highly fade-resistant colors.

TYPES OF APPLICATION

HORIZONTAL

This is the most common and economical method. Easily installed, it gives excellent wind and site screening. Logos and graphics are easily incorporated into the fence.
Screening: 73% - 75%

VERTICAL

This method is used primarily for "area enhancement" where screening is not a prime factor. Good around air-conditioning units.
Screening: 65% - 67%

DIAGONAL

This method gives more privacy than the horizontal or vertical methods. It is used most often in residential installations and where more screenability is desired.
Screening: 83% - 85%

HORIZONTAL/VERTICAL

This method requires twice as much material and installation time as the horizontal or vertical methods, but does offer more privacy.
Screening: 90% - 92%

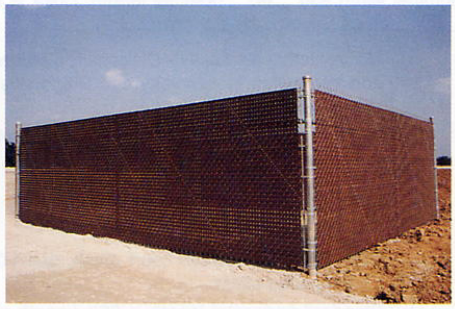
HORIZONTAL/DIAGONAL

This method is becoming quite popular for use in dumpster enclosures behind shopping centers, fast food restaurants, apartments & condominium complexes.
Screening: 94% - 96%

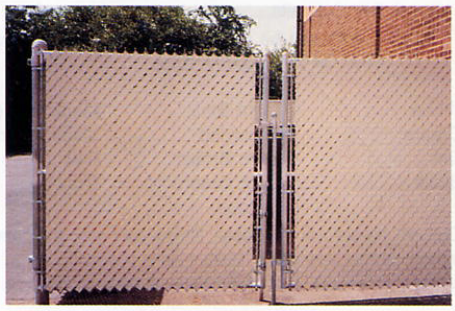
DOUBLE DIAGONAL

Where maximum screenability is required this is the method used. The chain link fence becomes virtually a "wall".
Screening: 96% - 98%

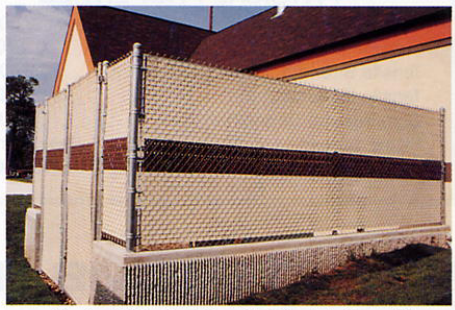
Horizontally installed DuraSlatt fillerstrips with contrasting feature strips



Horizontal/Vertical DuraSlatt installation screens this equipment storage yard



Horizontal/Diagonal DuraSlatt installation retains privacy around dumpster area



Horizontal/Vertical DuraSlatt installation, with feature strips, screens an air-conditioner unit

DuraSlatt™

SPECIFICATIONS GUIDE

DuraSlatt fiberglass fillerstrips, as manufactured by FRP SYSTEMS, for use as screening in chain link fencing shall be fabricated from a durable, semi-rigid fiberglass reinforced plastic composed of glass fiber reinforcements, high quality polyester resins, pigments and fillers. The strips are to be installed __(1)__, as per manufacturer's recommendations and are to be securely fastened in the fence by means of __(2)__. They are to be .06" nominal thickness, __(3)__ nominal width and __(4)__ nominal length. Color is to be __(5)__, or as selected by the owner.

(1). Horizontally - Vertically - Diagonally - Horizontally and Vertically - Horizontally and Diagonally - Double Diagonally.

(2). 1 piece Nylon Rivets - Aluminum Pop Rivets.

(3). For 9 ga. 2" mesh fabric:
Horizontal width is 1.20"
Vertical " " 1.06"
Diagonal " " 1.75"
Note: For 1-3/4" Tennis court mesh, use 1.06" width for horizontal strips.

(4). Standard horizontal length is 96". Length of vertical and diagonal strips will vary with the height and mesh of the fabric. Consult manufacturer for additional details.

(5). Colors can be selected from the standard colors offered by the manufacturer.

White	Light Blue	Medium Blue
Cream	Redwood	Medium Green
Tan	Dark Brown	Red
Black	Dark Green	Gray
	Orange	

Custom colors are available. Strips can also be painted to match almost any color. Heavy duty industrial alkyd enamel is used to assure color stability and fade-resistance.

PHYSICAL PROPERTIES

Flexural Strength	12,000 psi
Flexural Modulus	1.0 x 10^6 psi
Tensile Strength	8,000 psi
Tensile Modulus	1.0 x 10^6 psi
Compression Strength	2,000 psi
Flame Spread	less than 200
Ignition Point	750-800° F

FRP SYSTEMS, INC.

321 Marble St., P. O. Box 272, Joliet, IL 60434-0272
Telephone 815-723-5345 • Warehouse 815-725-1414
FAX: 815-723-0207

A PARTIAL LIST OF NATIONAL INSTALLATIONS

Waste Management, Inc.
Ford Motor Company
Mobil Oil
K mart Corporation
Norfolk & Southern Rwy.
McDonald's
Builders Square
City of Chicago
Burger King
Monsanto Chemical
7-Eleven
O'Hare Field
Unocal
Burlington Northern
Pizza Hut
McDill AFB
Arlington Park
Commonwealth Edison
Material Service
Handy Andy
Dominick's
Taco Bell
White Hen Pantry
Midway Airport
Enterprise Rent-A-Car

IFIA International Fence Industry Association

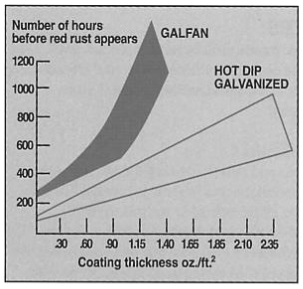
MEMBER U.S. TENNIS COURT AND TRACK BUILDERS ASSOCIATION

PRINTED IN U.S.A

GREGORY FENCE

When Specifying Fence, Make the BEST Choice. Consider these facts...

Superior Corrosion Protection



THREE OPTIONS TO CHOOSE FROM:

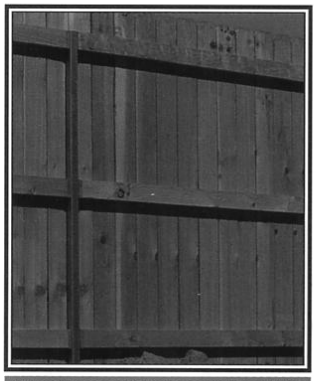
1) Zinc Coated — coated on a continuous coating line with 4 ounces of zinc per square foot in accordance with ASTM F1043 type A (combination of F669 and F1234). This is the heaviest amount of zinc available on any fence framework on the market.

2) Galfan Coated — (generically referred to as zinc — 5% aluminum mischmetal alloy). Coated on a continuous coating line with 2 ounces of Galfan per square foot in accordance with ASTM F1043 Type C (combination of F669 and F1234). This advanced coating not only provides superior corrosion protection (one ounce of Galfan provides up to three times the protection than one ounce of zinc). It is also a NO LEAD coating.

3) PVC Coatings — for installation where aesthetics are important, specify Gregory polyvinyl chloride (PVC) coated color systems. Green, brown, and black are standard. The PVC coating is formulated to resist peeling, cracking and chipping and is applied to both inside and outside framework surfaces by the thermal fusion process that prevents voids and porosity. All fence materials have corrosion resistant coating under the PVC as a double measure of protection if the PVC is damaged.

Greater Strength

Stronger than full weight schedule 40 pipe. Roll formed "C" sections and top rail are made from 50,000# minimum yield steel per ASTM A570, and their efficient shape achieves greater strength perpendicular to the fence line where it is needed.



Wood fence utilizing C post per ASTM F537 and the U.S. Dept. of Defense

Open Channel Design

The unique open channel of the "C" post eliminates condensation buildup on the inside of the post which leads to premature red rust and possible failure, an inherent problem with all tubular products.

Easily Driven

"C" posts can be mechanically driven in lieu of a concrete set. And due to their design, drive much easier than tubular posts, and self anchor more effectively, too.

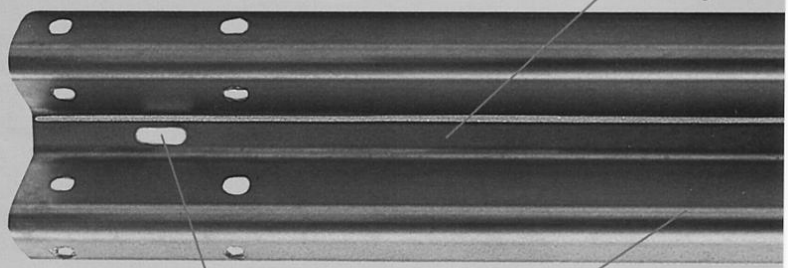
Widely Accepted

With all these advantages it's easy to see why all the major specifying bodies, including ASTM, Federal Specification RRF191/3D, AASHTO, the FAA and hundreds of architectural firms have incorporated roll-formed "C" section framework in their chain link fence standards.

The Advantage of Gregory Guardrail

Gregory has the ability to galvanize entire steel coils before the roll forming process. This continuous galvanizing technique results in a product with a uniform and smooth zinc coating across the entire surface of the guardrail.

Gregory's continuously galvanized guardrail panels meet ASHTO M180 specification and set a new standard of safety for guardrail installation.



Gregory Fence Non-Restrictive Specifications for Chain Link Fence

This non-restrictive specification is written in performance style, emphasizing strength and coatings and includes pipe alternates to the roll-formed sections. All components shown are non-proprietary, commercially available and in conformance with ASTM Standards.

Included in each specification is an option to mechanically drive the C-Section post 3'0" into the ground. This construction method has been used for many years and it is now specified and used by several state highway departments and a number of power companies. The depth of 3'0" has evolved through actual experience as the best overall post setting. Drive construction means less heavy equipment on graded and finished surfaces, less excess dirt from post holes, and less chance for posts heaving in frost.

When designing for a high security application, additional barb wire and fabric with smaller mesh openings should be considered.

SCOPE:

This specification covers chain link fence materials, including chain link fabric, framework, gates, and fittings.

BARBED WIRE:

(When Required) Shall be aluminum coated double strand 12-1/2 gage twisted wire with 14 gage, 4 point round aluminum barbs spaced on approximately 5" centers conforming to ASTM-A585.

FABRIC:

Chain link fabric shall be either zinc-aluminum alloy coated per ASTM-A1345 Class 2, zinc coated per ASTM-A392 Class 2 or aluminum coated per ASTM-A491. Fabric shall be woven from 9 gauge (coated size) wire in 2" mesh. Fabric 60" (1.52 m) high and under shall be knuckled at both selvages. Fabric 72" (1.83 m) high and over shall be knuckled at one selvage and twisted and barbed at the other selvage.

LINE POSTS:

Line posts shall be C-Section roll-formed from steel conforming to ASTM-A570 grade 50, 1.875 X 1.625" with minimum bending strength of 274 pounds under a 6' cantilever load continuous coated with 2 ounces of zinc-aluminum alloy per ASTM-F1043* Type C or 4 ounces of zinc coated per ASTM-F1043* Type A, or 2.375" O.D. standard weight Schedule 40 galvanized pipe with minimum bending strength of 233 pounds under a 6' cantilever load coated with 1.8 ounces of hot dipped zinc in accordance with ASTM-F1083.

TOP AND BRACE RAIL:

Top and brace rails shall be roll-formed section of 1.625" X 1.25" channel shaped rail with minimum vertical bending strength of 263 pounds on 10' span continuous coated with 2 ounces of zinc-aluminum alloy per ASTM-F1043* Type C or 4 ounces of zinc coated per ASTM-F1043* Type A, or 1.66" O.D., standard weight Schedule 40 galvanized pipe with minimum vertical bending strength of 235 pounds on 10' span coated with 1.8 ounces of hot dipped zinc in accordance with ASTM-F1083. Top rail couplings 6" minimum in length shall be spaced at maximum 21' centers. Fabric tie wire shall be spaced at 24' maximum centers.

TERMINAL POSTS:

All end, corner, and pull posts shall be 2.875 O.D. galvanized standard weight pipe with minimum bending strength of 443 pounds on 6' cantilever load coated with 1.8 ounces of hot dipped zinc in accordance with ASTM-F1083. Gate posts shall be of the following sizes for single swing gates or one leaf of double gates:

Leaf Width	Gate Post	lbs/Lin. Ft.
Up to 6'	3" O.D. Pipe	5.79
Over 6' to 13'	4" O.D. Pipe	9.11
Over 13' to 18'	6-5/8" O.D. Pipe	18.97
Over 18'	8-5/8" O.D. Pipe	28.55

GATES:

Gate frames shall be tubular shaped, 1.90" outside diameter with welded or steel fitted corners. Braces, and trusses shall be furnished when necessary.

GENERAL:

Posts and rails shall be roll formed, open seam, self-draining shapes or standard weight Schedule 40 pipe, all galvanized in accordance with ASTM-F1043* Type A or C. All fittings shall be pressed steel or malleable iron and shall be hot dip galvanized conforming to ASTM-A153. Tie wires shall be minimum 9 gage aluminum or 11 gage galvanized steel. Line and terminal posts to be of sufficient length to allow for approximately 36" settings into concrete footing. Diameter of footings to be 10" for line posts, and 12" for terminal posts. Maximum spacing of line posts to be 10'0" unless noted on drawing. Elevation, property line stakes and grade stakes will be established by owner. Fence to follow ground line unless otherwise provided for in this specification. All material is subject to testing. Mill certificates will be submitted for approval upon request of owner.

** F1043 (combination of F669 and F1234)*

P&H TUBE

LIFECOAT/LCX SPECIFICATIONS

LIFECOAT RESIDENTIAL FRAMEWORK SIZES

	Fence Industry O.D.	Decimal Equiv.	Gage	Wt/Ft
Rail	1⅜"	1.315"	17	0.740
Line Post	1⅝"	1.660"	16	1.107
Line Post	2"	1.900"	16	1.274
Terminal Post	2½"	2.375"	16	1.604

SECTION PROPERTIES—LIFECOAT TENNIS COURT FRAMEWORK

	Fence Industry O.D.	Nominal Pipe Size	Decimal Equiv.	Wt/Ft	Section Modulus	Min. Yield Strength	Bending Strength (in-lb)
Rail	1⅝"	1¼"	1.660"	1.588	0.1729	55,000	9,510
Line Post	2½"	2"	2.375"	3.117	0.4881	55,000	26,840
Terminal Post	3"	2½"	2.875"	3.531	0.6868	55,000	37,770

SECTION PROPERTIES—LIFECOAT "LCX" INDUSTRIAL FRAMEWORK

	Fence Industry O.D.	Nominal Pipe Size	Decimal Equiv.	Gage	Wt/Ft	Section Modulus	Min. Yield Strength	Bending Strength (in-lb)
Rail	1⅝"	1¼"	1.660"	13	1.588	0.1729	55,000	9,510
Line Post	2"	1½"	1.900"	13	1.831	0.2316	55,000	12,740
Line Post	2½"	2"	2.375"	12	2.638	0.4204	55,000	23,120
Terminal Post	3"	2½"	2.875"	11	3.531	0.6868	55,000	37,770
Gate Post	4"	3½"	4.000"	11	4.973	1.3776	55,000	75,770

SECTION PROPERTIES—LIFECOAT COMMERCIAL FRAMEWORK

	Fence Industry O.D.	Nominal Pipe Size	Decimal Equiv.	Gage	Wt/Ft	Section Modulus	Min. Yield Strength	Bending Strength (in-lb)
Rail	1⅝"	1¼"	1.660"	16	1.107	0.1250	50,000	6,250
Line Post	2"	1½"	1.900"	16	1.274	0.1662	50,000	8,310
Terminal Post	2½"	2"	2.375"	16	1.604	0.2652	50,000	13,260
Gate Post	3"	2½"	2.875"	11	3.531	0.6868	50,000	34,340

WARRANTY

Subject to the terms and conditions of this limited warranty, P&H TUBE DIVISION of SOUTHWESTERN PIPE, INC., a Delaware Corporation, warrants only that LIFECOAT Fence Framework is free from defects in material and workmanship and, under normal and proper usage, will not rust or corrode externally for a period ending upon the earlier to occur of the date fifteen (15) years from the date of original purchase or the date of transfer by the original purchaser. By way of example only and not by way of limitation, "normal and proper usage" does not include physical damage or abrasion to the protective coating. This limited warranty does not apply to the chain link fence fabric, or other parts and hardware of the fence system other than the tubular fence framework products manufactured by P&H TUBE DIVISION.

ASTM
Color Coating

The Lifecoat/LCX powder coating meets or exceeds ASTM Specifications. (F 1234—90A.)

Division of Southwestern Pipe

SPAX **P&H TUBE**

430 Hamilton Rd., P.O. Box 5217, Bossier City, LA 71171
(318) 742-0021, FAX (318) 742-0027

LCX SPECIFICATIONS, INDUSTRIAL

1. SCOPE

This specification covers polymer coated/hot dip galvanized LIFECOAT "LCX" high tensile steel pipe for heavy industrial fence framework.

2. METHOD OF MANUFACTURE

Pipe used for fence framework shall be cold rolled and electric-resistance-welded from steel conforming to ASTM A-569 and hot dip galvanized to ASTM A-525 G-90 zinc weight both inside and outside the pipe. The outside then receives a conversion coating and a fusion bonded polyester powder coating.

3. APPLICABLE DOCUMENTS

3.1 American Society for Testing and Materials (ASTM) Standards:

- A-569 –Specification for Steel, Carbon Hot-Rolled Sheet and Strip, Commercial Quality
- A-90 –Test for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles
- B-6 –Specification for Zinc Metal (Slab Zinc)
- B-117 –Specification for Salt Spray Testing of Coatings
- D-1735–Specification for Humidity Testing of Coatings
- E-8 –Tension Testing of Metallic Materials
- E-376 –Measuring Coating Thickness by Magnetic-Field or Eddy-Current Test Methods
- F-669 –Standard Specification for Strength Requirements of Metal Posts and Rails for Industrial Chain Link Fence
- F1234 –Standard Specification for Protective Coatings on Steel Framework for Fences

4. WEIGHT OF ZINC COATING

4.1 The minimum weight of zinc coating shall be 0.9 ounces per square foot. The weight of coating expressed in ounces per square foot shall be calculated by dividing the total weight of zinc inside plus outside, by the total area, inside plus outside, of the surface coated.

4.2 The weight of coating shall be determined on an individual specimen randomly selected from the lot.

4.3 The weight of zinc coating shall be determined by the method contained in ASTM A-90 or E-376.

5. ZINC PHOSPHATE CONVERSION COATING

5.1 The zinc phosphate conversion coating shall be applied to the outside of the pipe to a minimum weight of 250 micrograms/sq. in.

6. COLORED COATING PROPERTIES

The following properties are based on the application of 3.0 mils of TGIC cured thermosetting polyester powder coatings applied over zinc phosphate pretreatment of galvanized steel:

6.1 DAMAGE RESISTANCE:

Pencil Hardness	H
Gardner Impact	160 Inch Pounds
Flexibility	Pass ⅛" Mandrel
Adhesion	No failure with 1/16" cross hatch

6.2 CORROSION RESISTANCE:

Salt Spray–Scribed	1/16" Creepage at 1000 hours (ASTM B 117)
Humidity Cabinet	2500 hours–no blisters (ASTM D-1735)

6.3 WEATHERING RESISTANCE:

Weatherometer	Minimal change after 1000 hours
ASTM G26	No loss in adhesion; Excellent color retentior Minimum chalking

6.4 CHEMICAL RESISTANCE:

Substance	Effect on Coating
Gasoline	None
Alcohol	None
Sodium Hydroxide	None
Ammonium Hydroxide	None
Nitric Acid	None
Sulfuric Acid	None
Mineral Spirits	None

7. DIMENSIONS AND TOLERANCES

7.1 The nominal dimensions shall be as shown in Table 1.

7.2 Tolerances for weight per foot requirements shall not vary more than plus or minus 5% from that prescribed in Table 1.

8. PROPERTIES AND BENDING STRENGTHS

8.1 The material, as represented by a test specimen, shall conform to the strength requirements prescribed in Table 1.

8.2 The bending strength of post, top rails or braces shall comply with the requirements of ASTM F-669 Standard Specification for Strength Requirements of Metal Posts and Rails for Industrial Chain Link Fence.

9. INSPECTION AND CERTIFICATION

9.1 The manufacturer shall afford the inspector representing the purchaser all reasonable facilities to satisfy him that the material is being furnished in accordance with this specification.

9.2 Upon request of the purchaser, the manufacturer shall furnish certification that the materials ordered were produced and tested in accordance with this specification.

PIPE SIZES AND BENDING STRENGTHS

TABLE 1 — LIFECOAT "LCX" FENCE FRAMEWORK

Fence Industry O.D.	Nominal Pipe Size I.D.	Decimal Equiv.	Standard Gauge	Wt./Ft.	Section Modulus	Minimum Yield Strength	Bending Moment (lb./in.)	Calculated Bending Strength at Minimum Yield		
								10′ Beam	4′ Cant.	6′ Cant.
1⅜"	1¼"	1.660	13	1.588	.1729	55,000	9,510	317	198	132
2"	1½"	1.900	13	1.831	.2316	55,000	12,470	425	265	177
2½"	2"	2.375	12	2.638	.4204	55,000	23,120	771	482	321
3"	2½"	2.875	11	3.531	.6868	55,000	37,770	1259	787	525
4"	3½"	4.000	11	4.973	1.3776	55,000	75,770	2526	1579	1052

FORMULAS: Bending Moment (in-lb) = Section Modulus x Yield Strength
Bending Strength for Free Supported Beam (lbs) = 4 x Bending Moment (lb-in)/Length (in)
Bending Strength for Cantilever Beams (lbs) = Bending Moment (lb-in)/Length (in)

BENDING STRENGTH COMPARISON

TABLE 2 — LIFECOAT "LCX" vs A-53 GR F—SCHED. 40 PIPE

Fence Industry O.D.	Nominal Pipe Size I.D.	Decimal Equiv.	Wall	Wt./Ft.	Section Modulus	Minimum Yield Strength	Bending Moment (lb./in.)	Calculated Bending Strength at Minimum Yield		
								10′ Beam	4′ Cant.	6′ Cant.
1⅜"	1¼"	1.660	13	1.588	.1729	55,000	9,510	317	198	132
		1.660	Sch. 40	2.273	.2346	30,000	7,040	235	147	98
2"	1½"	1.900	13	1.831	.2316	55,000	12,470	425	265	177
		1.900	Sch. 40	2.718	.3262	30,000	9,790	326	204	136
2½"	2"	2.375	12	2.638	.4204	55,000	23,120	771	482	321
		2.375	Sch. 40	3.653	.5606	30,000	16,820	561	350	234
3"	2½"	2.875	11	3.531	.6868	55,000	37,770	1259	787	525
		2.875	Sch. 40	5.793	1.0640	30,000	31,920	1064	665	443
4"	3½"	4.000	11	4.973	1.3776	55,000	75,770	2526	1579	1052
		4.000	Sch. 40	9.109	2.3939	30,000	71,820	2394	1496	998

FORMULAS: Bending Moment (in-lb) = Section Modulus x Yield Strength
Bending Strength for Free Supported Beam (lbs) = 4 x Bending Moment (lb-in)/Length (in)
Bending Strength for Cantilever Beams (lbs) = Bending Moment (lb-in)/Length (in)

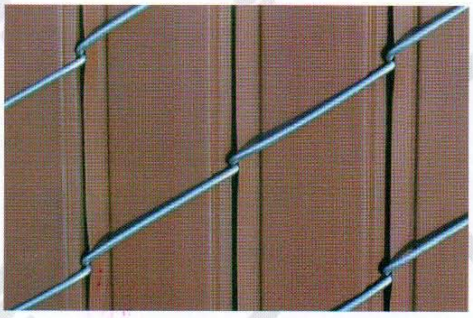
PRIVACY LINK

PrivacyLink™

Privacy is Security

PrivacyLink™

COMMERCIAL • RESIDENTIAL • INDUSTRIAL



Re-inforced Vinyl Fencing™

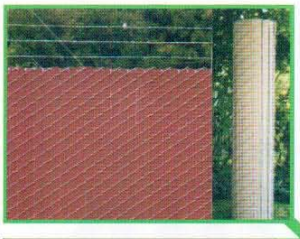
Privacy Decorative Slats "PRE-WOVEN" into the wire

*Privacy*Link™

Buyers Choice

3 1/2" x 5" mesh

is a supreme privacy fabric with slats already in the wire. Is available in 9 and 10 gauge galvanized before weaving (GBW) wire (1.2 oz.) and available in 9 gauge galvanized before weaving (GBW) wire (2.0 oz.) and 9 gauge aluminized wire. Slats and wire are available in 8 different colors. (see below for colors).



*Privacy*Master™

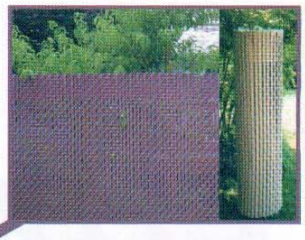
2" mesh

is a supreme privacy fabric with slats already in the wire. Is available in 9 and 11 gauge galvanized before weaving (GBW) wire (1.2 oz.) and available in 9 gauge galvanized before weaving (GBW) wire (2.0 oz.) and 9 gauge aluminized wire. Slats and wire are available in 8 different colors. (see below for colors).

*Slat*Link™

2" mesh

is a semi-private fabric with slats already in the wire. Is available in 9 and 11 gauge galvanized before weaving (GBW) wire (1.2 oz.) and available in 9 gauge galvanized before weaving (GBW) wire (2.0 oz.) and 9 gauge aluminized wire. Slats and wire are available in 8 different colors. (see below for colors).



Specifications	*Privacy*Link™ 3 1/2" x 5" Mesh Buyers Choice	*Privacy*Master™ 2" Mesh	*Slat*Link™ 2" Mesh
Wind load and Privacy factor–approximately	95%	95%	75%
Available in 9 or 11 gauge galvanized before weaving (GBW) Type II class IV wire (1.20 oz.)	No	Yes	Yes
Available in 9 or 10 gauge galvanized before weaving (GBW) Type II class IV wire (1.20 oz.)	Yes	No	No
Available in 9 gauge galvanized before weaving (GBW) Type II class V wire (2.0 oz.)	Yes	Yes	Yes
Available in 9 gauge finish 10 gauge core fused and bonded vinyl coated wire–7 colors available–see below	Yes	Yes	Yes
Available in 9 gauge aluminized wire	Yes	Yes	Yes
Self-locking double wall slats (No staples)	Yes	Yes	Yes
Chain link manufactured up to 12' high	Yes	Yes	Yes
Available in 25' rolls, with 5' increment	Yes	Yes	Yes
Slats already inserted into chain link fabric	Yes	Yes	Yes
Available in 9 different colors below	Yes	Yes	Yes
Fifteen Year Pro-Rata Limited Warranty	Yes	Yes	Yes

Supreme Privacy

Chain Link now available with privacy slats already in the fence. there is no labor required to install slats— saves time and money!

Warranty

Each fence product has a fifteen year Pro-rata limited warranty.

SLAT COLORS

Forest Green, Redwood, Gray, Dark Brown, Beige, White, Black, Royal Blue, Sky Blue

WIRE/CHAIN LINK COLORS

Forest Green, Redwood, Gray, Dark Brown, Beige, White, Black, Galvanized Wire

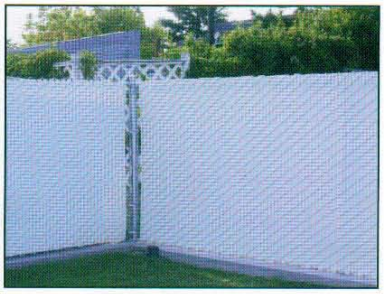
Any color of slat is available with any color of wire. Colors are approximations.

*Privacy*Link™
P.O. Box 295, Hyde Park, Utah 84318
Tel: (800) 574-1076 (435) 563-1058 Fax: (435) 563-1062
www.eprivacylink.com info@eprivacylink.com

AFA Member

*Privacy*Link™ the Company

Since 1994, ***Privacy*Link** has been manufacturing the most complete line of pre-inserted chain link products for the fencing industry. With our customer service, quality and prices – you'll be satisfied with ***Privacy*Link** as your choice. ***Privacy*Link** ships domestic and internationally.



Quality • Service • Price

*Privacy*Link™ Advantages

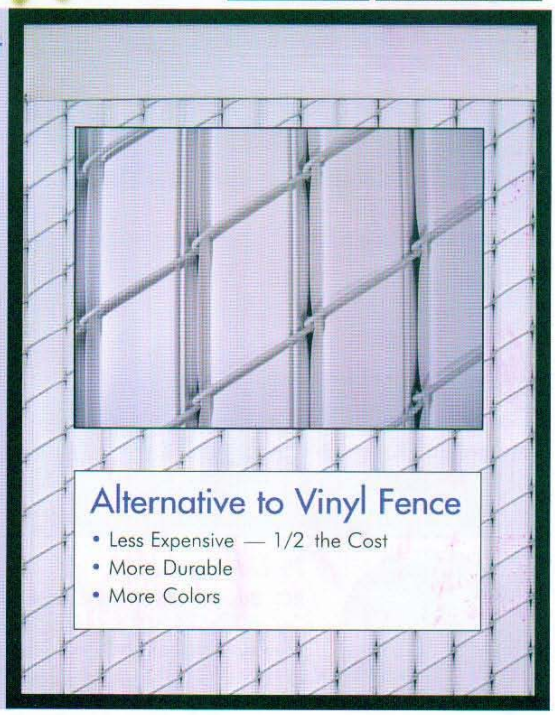
- Labor Savings
- More Private
- Decorative
- Cost Efficient
- Sound barrier
- Wind Screen
- No Staples Used
- Theft Resistant
- Maintenance Free
- Less Installation Time
- Environmental Control
- Virtually Non-climbable
- Availiable in 2" or 3 1/2" x 5" Mesh
- Available in 9, 10 or 11 Gauge

Supreme Privacy

The Vinyl Fence Look For Half The Cost

Vinyl fence is very expensive and commands top dollar for the end user, often leaving the potential customer unable to afford it with no alternatives. That's where our ***Privacy*Link** product comes into the picture! We offer a privacy fence with white PVC coated wire, white slats and dressed with a white top cap that looks much like a vinyl fence, is considerably sturdier, comes in nine different colors and is less than half the cost. We market our ***Privacy*Link** fabric as a "re-inforced vinyl fence" because of its unique 3 1/2" x 5" mesh that does not take on the standard 2" x 2" mesh look that most people know and judge chain-link by. A great choice for those searching for a great looking vinyl like fence at an affordable price.

Our products have been installed at IBM, Proctor & Gamble, Wendy's, Staples, U.S. Airforce, Naval Bases, Churches, Schools, Fire Stations and thousands of residential areas. (See installations at www.eprivacylink.com)



Architectural Reference Specification

Re-inforced Vinyl Fence

While it is the intent of this specification is to assist the professional specifier in making an informed choice or components and installation techniques, this is still a general specification. Certain details such as framework sizes, post spacing and concrete footer sizes must be tailored to the specifics of the job site. Wind loading data, freeze-thaw rates and other site conditions must be considered.

PART 1 GENERAL

1.1 Summary

This specification details the components and requirements for complete fence systems incorporating:

*Privacy*Link™
*Privacy*Master™
*Slat*Link™

Work Included
The contractor shall provide labor, materials and all necessary accessory items for the installation of the privacy fencing systems specified herein.

1.3 Related Work

- General Conditioner
- Earthwork
- Concrete

1.4 System Description

The privacy fencing system shall be a complete system made up of chain link fence fabric (Re-enforced vinyl fence fabric) with pre-installed polyethylene slats, framework, fittings, gates and incidental accessory items.

1.5 Quality Assurance

Installer Qualifications: Company specializing in performing the work of this section with minimum five (5) years documented experience.

1.6 References

ASTM D638	Standard Test Method for Tensile Properties of Plastics
ASTM D746	Standard Test Method for Brittleness
ASTM D747	Standard Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam
ASTM D1238	Standard Test Method for Flow Rates of Thermoplastics by Extrusion Plastomaster
ASTM D1505	Standard Test Method for Density of Plastics by the Density-Gradient Technique

All ASTM Standards referenced in this specification

1.7 Submittals

Shop drawings, manufacturer's product data and samples, plan layout including spacing of components, accessories and post details shall be submitted for approval.

Before Weaving	After Weaving
1.2 is class one	1.2 is type II class 4
2.0 is class two	2.0 is type II class 5

PART 2 PRODUCTS

2.1 Manufacturers

The Re-enforced vinyl fence fabric with pre-inserted slats shall by manufactured by ***Privacy*Link**, LLC P.O.Box 295, Hyde Park, Utah 84318.. The manufacturer may be contacted at 800-574-1076, 435-563-1058 or via fax at 435-563-1062. The manufacturer's web site is located at http://www.eprivacylink.com and E-Mail may be sent to info@privacylink.com.
All other components of the system such as framework, fittings and gates, shall be manufactured by various standard fence industry manufacturers.

2.2 Materials

Re-enforced vinyl fence fabric {choose one of the following three products A, B or C}

A. ***Privacy*Link**™
{The advantage over *Privacy*Master is lower cost. The cost savings is due to less labor for slats to be inserted in the larger mesh.}
The chainlink fabric shall be:
Height{choose one}
3', 42", 4',5',6',7',8',10',12' high.
Fabric Diameter and finish{choose one}
A. 3-1/2 x 5" mesh by 9 ga. (0.148") galvanized before weaving per ASTM A817, 1.2oz Type II Class 4.
OR
B. 3-1/2 x 5" mesh by 10 ga. (0.135") galvanized before weaving per ASTM A817, 1.2oz Type II Class 4.
OR
C. 3-1/2 x 5" mesh by 9 ga. finish (10 ga. core) vinyl coated by the thermally fused and bonded method per ASTM F-668, class 2b.
OR
D. 3-1/2 x 5"" mesh by 9 ga. (0.148") aluminized before weaving per ASTM A491, Type I.
OR
E. 3-1/2 x 5" mesh by 9 ga. (0.148") galvanized before weaving per ASTM A817, 2.0oz Type II, Class 5.
Fabric Color {choose one when using c. above}
The vinyl coated wire fabric shall be black, brown, beige, dark green, white, gray or redwood.
The privacy slats which are pre-inserted at the time of manufacture shall be double wall, self locking and approx. 2.85" wide to provide a tight fit in the fence fabric. The slats shall be manufactured from virgin, high density polyethylene and shall be {choose one} white, redwood, dark brown, forest green, beige, gray, black, royal blue and sky blue (color chart available from the manufacturer on request). ***Privacy*Link**™ provides approx. 95% screening.

B. ***Privacy*Master**™
{The advantage over *Slat*Link is more density of screening.}
The chainlink fabric shall be:
Height{choose one}
3', 42", 4',5',6',7',8',10',12' high.
Fabric Diameter and finish{choose one}
A. 2" mesh by 9 ga. (0.148") galvanized before weaving per ASTM A392, Type II, Class 4.
OR
B. 2" mesh by 11 ga. (0.120") galvanized before weaving per ASTM A392, Type II, Class 4.
OR
C. 2" mesh by 9 ga. finish (10 ga. core) vinyl coated by the thermally fused and bonded method per ASTM F668, class 2B.
OR
D. 2" mesh by 9 ga. (0.148") aluminized before weaving per STM A491, Type I. Fabric color {choose one when using c above}
OR
E. 2" mesh by 9 ga. (0.148") galvanized before weaving per ASTM A392, 2oz Type II, Class 5.
The vinyl coated chainlink fabric shall be black, brown, beige, dark green, white, gray or redwood.
The privacy slats which are pre-inserted at the time of manufacture shall be double wall, self locking and approx. 1-1/2" wide to provide a tight fit in the fence fabric. The slats shall be manufactured from virgin, high density polyethylene and shall be {choose one} white, redwood, dark brown, forest green, beige, gray, black, royal blue and sky blue (color chart available from the manufacturer on request). *Privacy*Master™ provides approx. 95% screening.

C. ***Slat*Link**™
The chainlink fabric shall be:
Height{choose one}
3', 42", 4',5',6',7',8',10',12' high.
Fabric Diameter and finish{choose one}
A. 2" mesh by 9 ga. (0.148") galvanized before weaving per ASTM A392, Type II, Class 4.
OR
B. 2" mesh by 11 ga. (0.120") galvanized before weaving per ASTM A392, Type II, Class 4.
OR
C. 2" mesh by 9 ga. finish (10 ga. core) vinyl coated by the thermally fused and bonded method per ASTM F668, class 2B.
OR
D. 2" mesh by 9 ga. (0.148") aluminized before weaving per ASTM A491, Type I.
OR
E.2" mesh by 9 ga. (0.148") galvanized before weaving per ASTM A392, 2oz Type II, Class 5.

Fabric Color {choose one when using c. above}
The vinyl coated wire fabric shall be black, brown, beige, dark green, white, gray or redwood.
The privacy slats which are pre-inserted at the time of manufacture shall be double wall, self locking and approx. 1-1/4" wide to provide a tight fit in the fence fabric. The slats shall be manufactured from virgin, high density polyethylene and shall be {choose one} white, redwood, dark brown, forest green, beige, gray, black, royal blue and sky blue (color chart available from the manufacturer on request). *Slat*Link provides approx. 75% screening.

2.3 FRAMEWORK

Per ASTM F-1043
Standard Specification for Strength and Protective Coatings on Metal Industrial Chain Link Fence Framework {special consideration to wind loadings should be considered.
Fittings
Per ASTM F-626
Standard Specification for Fence Fittings
Swing Gates
Per ASTM F-900
Standard Specification for Industrial and Commercial Swing Gates
Slide Gates
Per ASTM F01184
Standard Specification for Industrial and Commercial Horizontal Slide Gates

PART 3 EXECUTION

3.1 Preparation
Prepare the grade and remove surface irregularities if any, which may interfere with the installation of the fence.

3.2 Installation
Per ASTM F-567
Standard Practice for Installation of Chain Link Fence

3.3 Clean Up
Contractor shall clean the job site of excess materials and debris. Material from post hole excavations shall be scattered uniformly away from the posts.

***Privacy*Link**™
P.O. Box 295 Hyde park, Utah 84318
Tel: (800) 574-1076 (435) 563-1058 Fax: (435) 563-1062
www.eprivacylink.com info@eprivacylink.com

AFA Member

*Privacy*Link™ Limited Warranty

(October 1, 1998)

This LIMITED WARRANTY is extended only to the original consumer of *Privacy*LinkTM and is valid only with respect to consumers within the United States of America and provinces within the Sovereign Nation of Canada and/or those consumers that purchase direct or indirectly from an authorized Distributor of *Privacy*LinkTM.

***Privacy*LinkTM is manufactured from GBW 9 gauge, 10 gauge, & 11 gauge class IV wire with a zinc coating of 1.20 Oz. *Privacy*LinkTM PVC coated wire is a PermabondTM durable PVC coating which is thermally fused and bonded to a galvanized steel core wire by a fluidized-bed process. Gauge '9' finish. '10' gauge core. The slats used are manufactured from virgin High Density Polyethylene (HDPE) with additives to protect the slats from rapid deterioration by the sun's ultraviolet (UV) rays. Slats are not effected by normal temperature variation from -76 F to +160 F and are only warranted within these specs.**

***Privacy*LinkTM warrants on a PRORATED basis for a period of (15) years from date of original purchase. Should *Privacy*LinkTM prove defective by reason of improper workmanship (not installation) or material, *Privacy*LinkTM will replace the said product for a proportionate amount based on the fifteen (15) year limited warranty period listed below.**

PRORATED ADJUSTMENT ALLOWANCE

1st Year	100%	6th Year	60%	11th Year	25%
2nd Year	100%	7th Year	52%	12th Year	20%
3rd Year	83%	8th Year	45%	13th Year	15%
4th Year	76%	9th Year	38%	14th Year	10%
5th Year	68%	10th Year	32%	15th Year	5%

This Warranty schedule is based on the original purchase price or the current suggested retail schedule which ever is greater at the time of replacement. Any adjustment is for merchandise only, and does not include any reinstallation cost, freight or other related costs. It is very important to retain a proof of purchase, since this warranty is void without the original sales slip or evidence of purchase.

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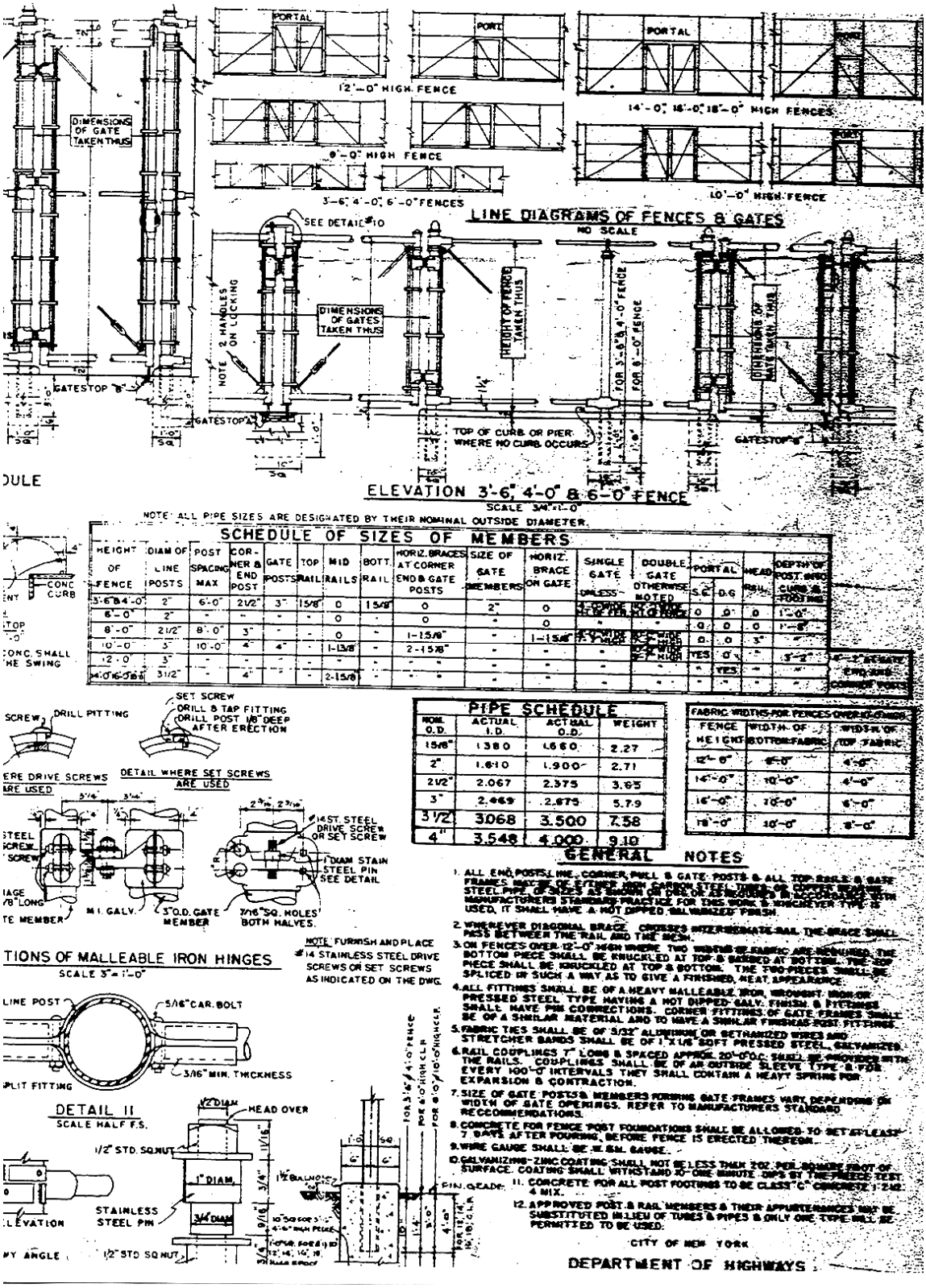
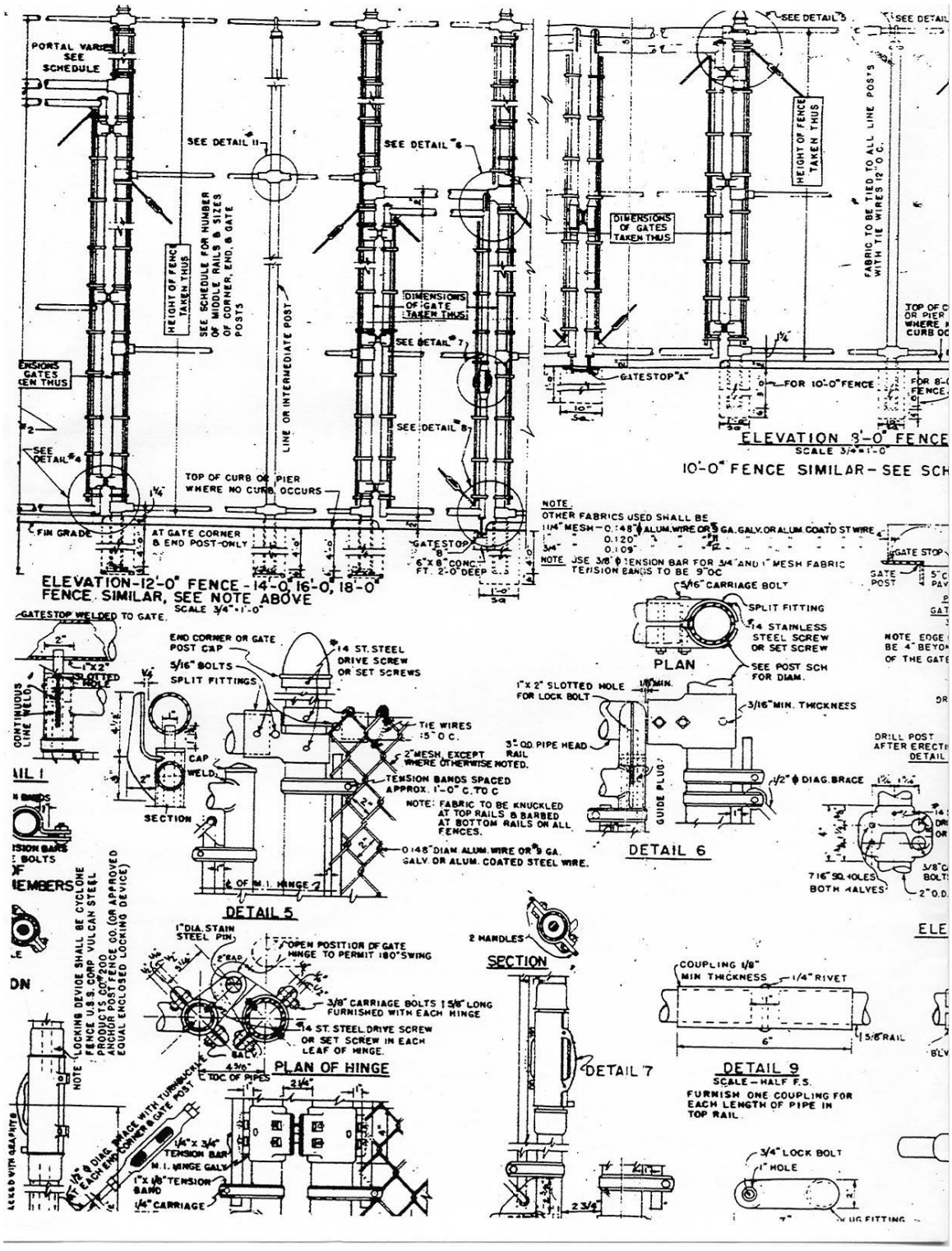
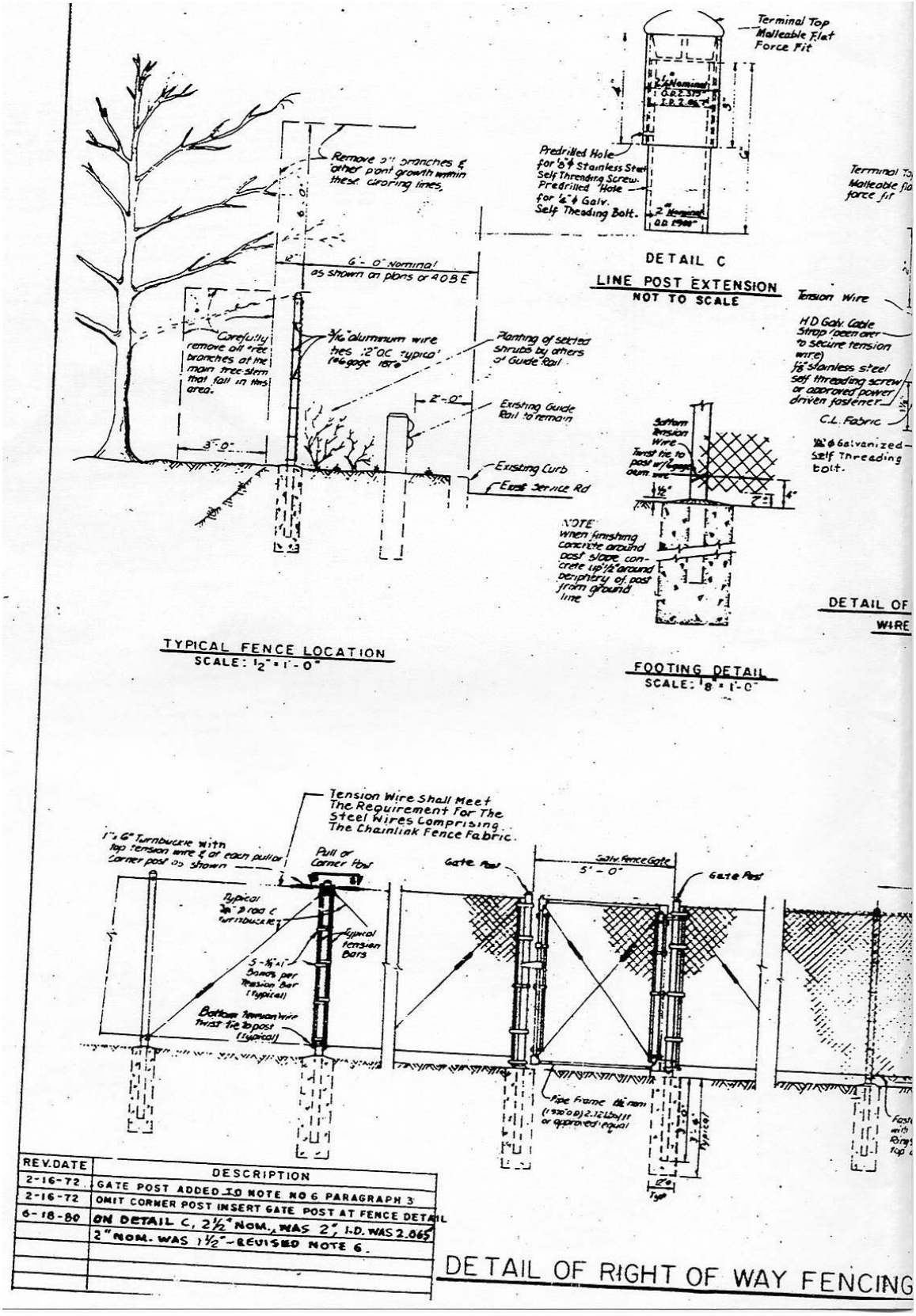
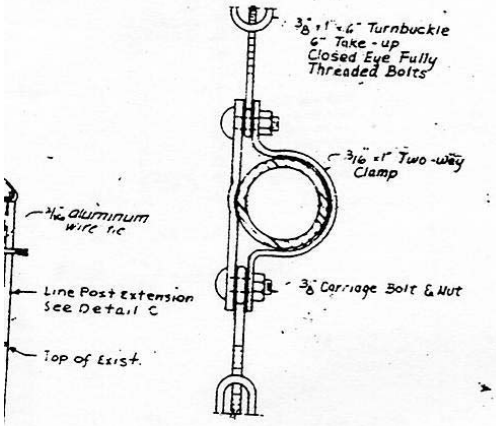


NYC DOT Chain Link Fence Detail


PORTAL VARIES SEE SCHEDULE
SEE DETAIL "11"
SEE DETAIL "6"
HEIGHT OF FENCE TAKEN THUS
SEE SCHEDULE FOR NUMBER OF MIDDLE RAILS & SIZES OF CORNER, END, & GATE POSTS
LINE OR INTERMEDIATE POST
DIMENSIONS OF GATE TAKEN THUS
SEE DETAIL "7"
SEE DETAIL "8"
SEE DETAIL "4"
TOP OF CURB OR PIER WHERE NO CURB OCCURS
FIN GRADE
AT GATE CORNER & END POST ONLY
GATESTOP "B"
6"X 6" CONC. FT. 2'-0" DEEP
ELEVATION-12'-0" FENCE-14'-0" 16'-0, 18'-0 FENCE SIMILAR, SEE NOTE ABOVE
SCALE 3/4"=1'-0"
SEE DETAIL "5"
DIMENSIONS OF GATES TAKEN THUS
FABRIC TO BE TIED TO ALL LINE POSTS WITH TIE WIRES 12'0 O.C.
GATESTOP "A"
FOR 10'-0" FENCE
ELEVATION 8'-0" FENCE
SCALE 3/4"=1'-0"
10'-0" FENCE SIMILAR-SEE SCH
NOTE.
OTHER FABRICS USED SHALL BE
1 1/4" MESH-0.148" ϕ ALUM. WIRE OR 9 GA. GALV. OR ALUM. COATD ST WIRE
1" - 0.120"
3/4" - 0.109"
NOTE USE 3/8" ϕ TENSION BAR FOR 3/4" AND 1" MESH FABRIC
TENSION BANDS TO BE 9"OC
GATESTOP WELDED TO GATE.
1"X2" SLOTTED HOLE
END CORNER OR GATE POST CAP
5/16" BOLTS
SPLIT FITTINGS
14 ST. STEEL DRIVE SCREW OR SET SCREWS
TIE WIRES 15" O.C.
2" MESH, EXCEPT WHERE OTHERWISE NOTED.
TENSION BANDS SPACED APPROX. 1'-0" C. TO C
NOTE: FABRIC TO BE KNUCKLED AT TOP RAILS & BARBED AT BOTTOM RAILS OR ALL FENCES.
0.148" DIAM. ALUM. WIRE OR 9 GA. GALV. OR ALUM. COATED STEEL WIRE.
CAP
WELD
SECTION
℄ OF M.I. HINGE
DETAIL 5
5/16" CARRIAGE BOLT
SPLIT FITTING
14 STAINLESS STEEL SCREW OR SET SCREW
SEE POST SCH FOR DIAM.
PLAN
1"X 2" SLOTTED HOLE FOR LOCK BOLT
1/8" MIN.
3/16" MIN. THICKNESS
3" OD PIPE HEAD RAIL
GUIDE PLUG
1/2" ϕ DIAG. BRACE
DETAIL 6
7/16" SQ. HOLES BOTH HALVES
2" O.D.
DRILL POST AFTER ERECTI
DETAIL
GATE POST
GATE STOP
NOTE EDGE BE 4" BEYON OF THE GATE
1" DIA. STAIN STEEL PIN
OPEN POSITION OF GATE HINGE TO PERMIT 180° SWING
2" RAD.
3/8" CARRIAGE BOLTS 1 5/8" LONG FURNISHED WITH EACH HINGE
14 ST. STEEL DRIVE SCREW OR SET SCREW IN EACH LEAF OF HINGE.
GALV.
PLAN OF HINGE
℄ TOC OF PIPES
2 HANDLES
SECTION
DETAIL 7
COUPLING 1/8" MIN THICKNESS
1/4" RIVET
6"
1 5/8" RAIL
DETAIL 9
SCALE - HALF F.S.
FURNISH ONE COUPLING FOR EACH LENGTH OF PIPE IN TOP RAIL.
3/4" LOCK BOLT
1" HOLE
NOTE LOCKING DEVICE SHALL BE CYCLONE FENCE U.S.S. CORP VULCAN STEEL PRODUCTS OR APPROVED EQUAL ENCLOSED LOCKING DEVICE)
1/2" ϕ DIAG. BRACE WITH TURNBUCKLE AT EACH END CORNER & GATE POST
1/4" X 3/4" TENSION BAR
M.I. HINGE GALV.
1" X 1/8" TENSION BAND
1/4" CARRIAGE



REV. DATE	DESCRIPTION
2-16-72	GATE POST ADDED TO NOTE NO 6 PARAGRAPH 3
2-16-72	OMIT CORNER POST INSERT GATE POST AT FENCE DETAIL
6-18-80	ON DETAIL C, 2 1/2" NOM. WAS 2", I.D. WAS 2.065"
	2" NOM. WAS 1 1/2" - REVISED NOTE 6.



SECTION B-B

DETAIL OF TOP TWO WAY CLAMP OF TENSION WIRE TO POST AND TURNBUCKLES

NOT TO SCALE

A-A

SION AND TENSION

T TO POST

LE

NOTES

1. The tension wire shall be secured at the top with a two-way clamp at each seventh post for 6'-0" high or at each fifth post for 8'-0" high fencing so that the max. untied span of tension wire does not exceed 36'-0" for 6'-0" high or 32'-0" for 8'-0" high fence. Whereas, if the total length of damaged fabric to be replaced is less than 16'-0", no tension wire shall be installed, but the damaged top rail shall be replaced with new top rail. New tension wires shall be installed only when damages to top or bottom rails have been incurred and replacement is necessary.

2. Corner posts shall be used at sharp breaks in vertical grade and changes in horizontal alignment of 15° and over. Intermediate Pull Posts shall be installed along tangent fence runs and shall be spaced at intervals not exceeding 250'.

3. All fabrication and installation details of this fencing are shown on the contract plans. Any proposed changes by the Contractor shall be submitted in writing, explaining the reason for such requested change and supplemented by clear shop drawings defining the Contractors proposal.

4. Layout of chain link fence post locations shall be performed by the Contractor in accordance with the intent of the Contract Plans. All such layout shall be checked and approved by the Engineer prior to erection of fence.

5. The fence shall be carefully aligned to a uniform grade by the Contractor. Before the posts are permanently affixed, the Engineer shall inspect the line and grade, order any necessary adjustments and approve the final alignment in that section of fencing.

6. Materials: All new "Right-of-Way" fence to be no higher than six(6'-0") feet. All posts shall be standard weight galvanized steel pipe conforming to the requirements of A.S.T.M. designation A 120-63T, except that the pipe shall be unthreaded and untested for water pressure. All new posts to be set in-place with a concrete footing.

Line Post Top: Industrial grade galvanized malleable flat casting for 2" Nominal Dia. Line Post.

Gate, End, corner & Pull Post Tops: Malleable flat arc terminal top galvanized casting inside fit for standard 2½" Nominal Dia. Post.

Tension Bars: 72" long 1"x¼" flat galvanized steel tension bars.

Tension Bands: Heavy weight ⅜"x1" galvanized steel tension bands for a 2½" Nom. Dia., minimum wt. 42lbs. The carriage bolt to be supplied for each of these bands shall be gal. steel ⅜"x1½" carriage bolt and nut.

The Contractor shall supply to the Engineer, catalog cuts of all fittings and connections to be used in the contract for the Engineers approval. The above list of fittings and connections shall be deemed only a listing of typical parts to be used in construction of fence, all other fittings and connections required for a proper fence installation shall be used by the Contractor. These unde-signated fittings and connections shall be good grade galvanized steel of a quality comparable or superior to these fittings and connections designated.

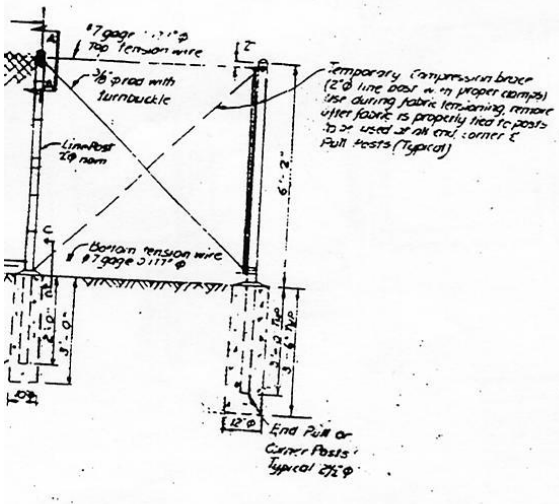
Fence Fabric: shall be hot-dipped galvanized steel fabric with the zinc coating not less the 2# per sq. ft. or aluminum-coated steel fabric meeting the requirements of A.S.T.M. Specification A 181 except that base metal shall have a nominal strength of 80,000 p.s.i. after weaving.

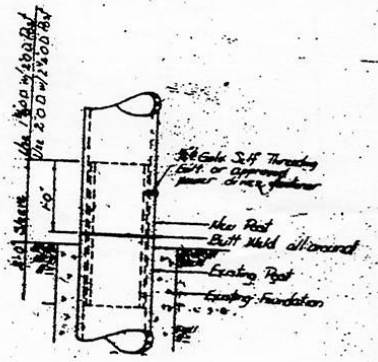
The size of the mesh opening and nominal Dia. of fabric wire shall be 2" inches and 0.148 inches respectively and shall be knuckled top & bottom.

7. When fences terminate at structures, the other spaces between the fences and structure shall not exceed 6".

8. Gore Treatment: 150'-0" of clear area from the point of gore will hereafter be maintained.

9 For fence heights other than those shown, refer to H-4071 for size of fence posts and size of members and fabrics. Omit top and bottom rails





SECTION C-C

DETAIL OF RIGID SPLICE INSTALLATION OF NEW POST TO EXISTING POST BASE

NOT TO SCALE

CITY OF NEW YORK

TRANSPORTATION ADMINISTRATION

DEPARTMENT OF

APPENDIX 6
METAL PANEL PRIVACY FENCING

Available styles, contract specifications.

Residential Privacy Fence

Residential Privacy Fence

ROHN Residential Privacy Fence is an easy to install, maintenance free fencing which will keep its crisp look for years to come.

ROHN Residential Privacy Fence provides screening for:

- Factories
- Military Facilities
- External Air Conditioning Units
- Wide Open Areas
- Residences
- Swimming Pools
- Cellular Sites
- And countless other applications!

Maintenance Free!

The bonded color finish over galvanized steel means a virtually maintenance free installation. The panels and rails do not warp or rot, and the finish resists fading, chalking or peeling.

Residential Privacy Paneling from ROHN retains its attractive finish, eliminating the need for tedious repairs or replacements, making it a great investment over time.

Blends With The Environment

Panels are finished on both sides and assembled on alternating sides of the horizontal rails so there is no "front or back" to the finished installation. Both sides are identical, visually attractive, and allow airflow while maintaining privacy.

Strong and Durable but Easy to Install

ROHN Residential Privacy Paneling combines the strength and durability of galvanized steel with the attractive appearance of a semi-gloss Duranar High Performance Fluorocarbon color coating. Individual panels are precision roll formed, giving the finished installation the gentle angles and rounded edges not available with other types of construction. Stock color is Polar White.

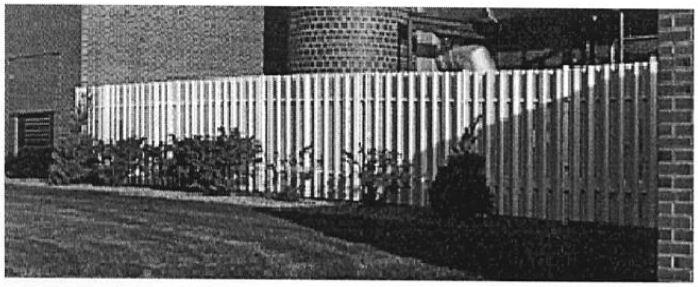
ROHN Residential Privacy Paneling is easy to install. A unique design places the rails inside the panels so each 8' assembled section can "rack" to almost any contour, maintaining a custom built appearance. Because each panel can be stepped up or down, the "stairstep" appearance which can be a problem with other sectional installations is not a problem with ROHN Residential Privacy Paneling.

Back to ROHN Residential Privacy Fence Specifications

More Photos

Privacy Paneling Fence

Attractive and Durable Color-Coated Galvanized Steel



ROHN Privacy Paneling is an easy to install, maintenance free fencing which will keep its crisp look for years to come.

ROHN Privacy Paneling provides screening for:

- Factories
- Military Facilities
- External Air Conditioning Units
- Wide Open Areas
- Residences
- Swimming Pools
- Cellular Sites
- And countless other applications!

Maintenance Free!

The bonded color finish over galvanized steel means a vitually maintenance free installation. The panels and rails do not warp or rot, and the finish resists fading, chalking or peeling.

Privacy Paneling from ROHN retains its attractive finish, eliminating the need for tedious repairs or replacements, making it a great investment over time.

Blends With The Environment

Panels are finished on both sides and assembled on alternating sides of the horizontal rails so there is no "front or back" to the finished installation. Both sides are identical, visually attractive, and allow airflow while maintaining privacy.

Strong and Durable but Easy to Install

Privacy Paneling combines the strength and durability of galvanized steel with the attractive appearance of a semi-gloss Duranar High Performance Flourocarbon color coating. Individual panels are precision roll formed, giving the finished installation the gentle angles and rounded edges not available

with other types of construction. Stock colors are White, Canyon Brown, Redwood and Bronze.

ROHN Privacy Paneling is easy to install. A unique design places the rails inside the panels so each 8' assembled section can "rack" to almost any contour, maintaining a custom built appearance. Because each panel can stepped up or down, the "stairstep" appearance which can be a problem other sectional installations is not a problem with ROHN Privacy Paneling.

More Photos

Swimming Pool	Carport	Industrial Site
Cellular Site	Gate	Close-up of post
Air Conditioning Screening	Commercial Site	Satellite Dish Screening

Privacy Fence Specifications

1.1.0 Scope

1.1.1 The following specification covers design, materials, maintenance and installation of R0HN Privacy Paneling.

1.2.0 General

1.2.1 Sections are 8' nominal in length and include 21 vertical panels, required number of horizontal rails and necessary hardware for assembly.
1.2.2 Appearance of Privacy Paneling installation is identical on both sides, with no "front" or "back" facing differences.

1.3.0 Design

1.3.1 Paneling is designed as a horizontal rail and vertical roll formed panel construction to be assembled into sections of 8' nominal lengths.
1.3.2 Panels are to be joined at vertical mounting posts anchored in 3' of concrete.

1.4.0 Materials

1.4.1 Vertical roll formed panels are .017 minimum A446 Grade E full-hard steel, 80,000 pound minimum P.S.I. Quantity 21 per 8' section.
1.4.2 Horizontal rails are 1-1/4" x 1-1/2" x 92-7/16", .074 minimum steel.
1.4.2.1 Quantity 2 per 8' section for sections 8' or less in height.
1.4.2.2 Quantity 3 per 8' section for sections 10' and 12' in height.
1.4.3 Posts are 3' in length in excess of panel height to allow in-ground anchoring.
1.4.3.1 For lengths up to 9', posts are 3" or 4" in diameter, schedule 40.
1.4.3.2 For lengths up to 11' to 12', posts are 4" in diameter, schedule 40.
1.4.3.3 For lengths 13' and over, posts are 4" in diameter, schedule 80.
1.4.4 Fasteners are to be drive nails, bolts and rivets as required, all corrosion resistant.
1.4.5 Top channels (4' and 5' high sections, optional on other heights) are .017 minimum A446 Grade E full-hard steel, 80,000 pound minimum P.S.I. and standard on all Residential Privacy Fence.
1.4.6 Sections are shipped disassembled. All materials and hardware required for installation (exclusive of concrete) are provided with each 8' section.

1.5.0 Finish

1.5.1 Horizontal rails and posts are galvanized to G-60 specifications. Vertical panels are galvanized to G-90 specifications.
1.5.2 Panels are bonded with Duranar high performance Fluorocarbon color coating, oven-baked over a primer coat. Finish colors may be Canyon Brown, Polar White or Bronze.

1.6.0 Sizes

1.6.1 Available standard panel heights are 4', 5', 6', 8', 10' and 12'. Assembled panel sections are 8' long (nominal). Actual centerline of posts will be 8'-1" or 8'-2", depending on post diameter.

1.6.2 Individual roll formed panels are 5" wide.

1.7.0 Gates

1.7.1 Gates are available as single gates, double drive gates, single rolling cantilever gates and double rolling cantilever gates.

1.8.0 Maintenance

1.8.1 R0HN Privacy Paneling is virtually maintenance free.

1.9.0 Installation

1.9.1 ROHN Privacy Paneling is to be installed according to printed installation directions provided by ROHN.

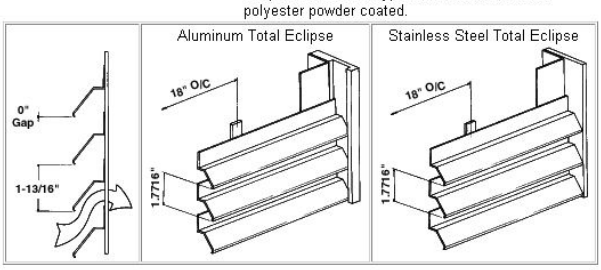
Specifications subject to change without notice. 001996 ROHN.

TOTAL ECLIPSE DESIGN

Characteristics: Offered in both aluminum and stainless steel, the Total Eclipse panel design provides 100% direct visual screening. Screening does not affect air circulation.

Applications: Perfect for equipment, trash and parking garage applications.

Specify: Resistance welded steel, extruded aluminum or stainless steel Total Eclipse design has formed extruded inclined main barson 1-13/16" centers. Cross bars are on centers up to 18". Steel Total Eclipse is hot dip galvanized to ASTM 123. Total Eclipse aluminum is 6063 extrusions. Total Eclipse stainless is type 304 stainless. All are polyester powder coated.



See Colored Coatings

Ametco Manufacturing Corporation
4326 Hamann Parkway, P.O. Box 1210
Willoughby, OH 44096
Phone: 1-800-321-7042
Fax: 440-951-2542

AMETCO MANUFACTURING CORPORATION

Architectural Quality Steel Fencing

Railings | Fencing & Gates | Window Guards | Benches | Sun Shades

- Panel Designs
- Color Coatings
- Master Specifications
- Literature
- PDF's
- Home
- E-mail

Powder Coat Color Chart

Standard Colors

White	Cal Gray	Cream
Moss Green	Red Barons	Bronze Mat
Light Ivory	Black Velvet	Pale Green
Light Blue	Safety Yellow	Blue Streak
Charlie Brown	Safety Orange	+Silver

+ Clear coat required for weather resistance. Additional charges for clear coat.

Note: These are color reproductions and approximate the actual color as closely as possible considering variations in monitor calibration. If you require a more accurate color chart please call, write or e-mail us.

APPENDIX 7
CONCRETE PRIVACY FENCING

FADDIS CONCRETE PRODUCTS

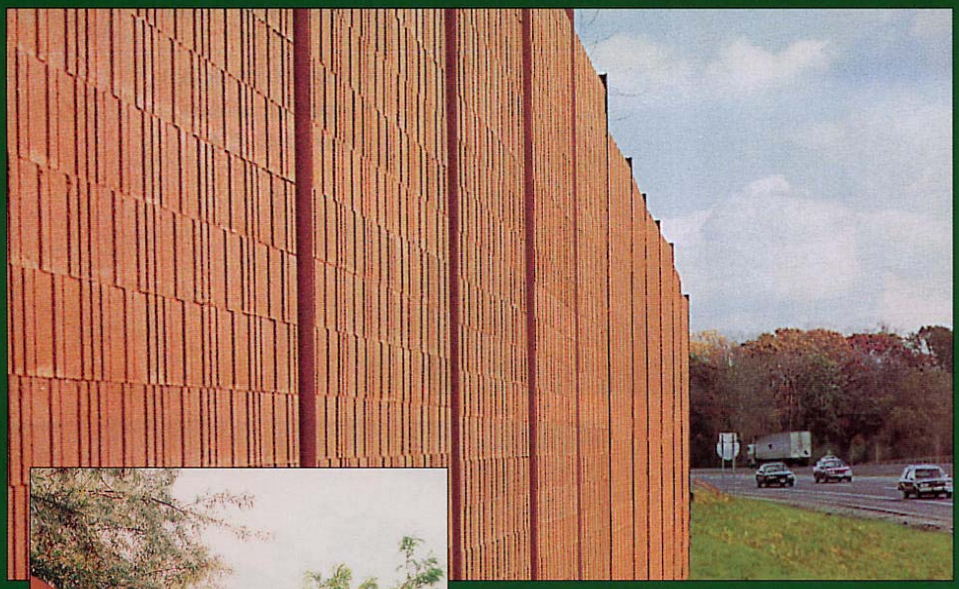
Product information on Faddis screen walls, available styles, specifications and detail drawings.

02862/FAD
BuyLine 7786

A Leader And Innovator In The Concrete Products Business Since 1947

Faddis concrete products

Concrete Noise Barriers and Screen Walls



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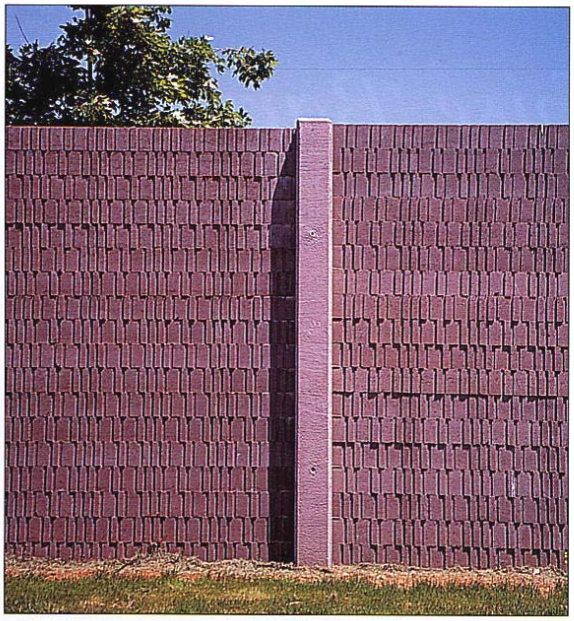
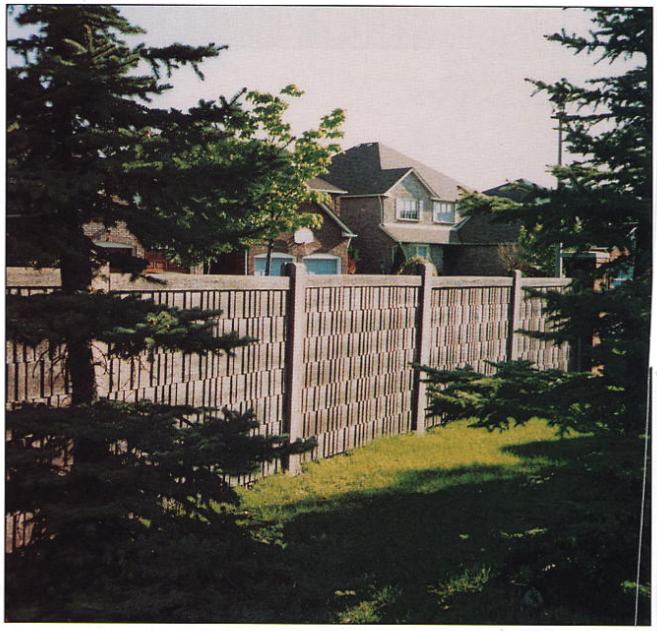
Fax: 610-873-8431

The Hessian Series



- Unique design hides horizontal seams
- Offset pattern helps dissipate noise
- Meets design specifications for D.O.T.'S

- Installs with minimal loss of trees and plant life
- Provides peace and quiet from noise
- Fits any terrain



Full Engineering Drawings and Specifications Available on Request

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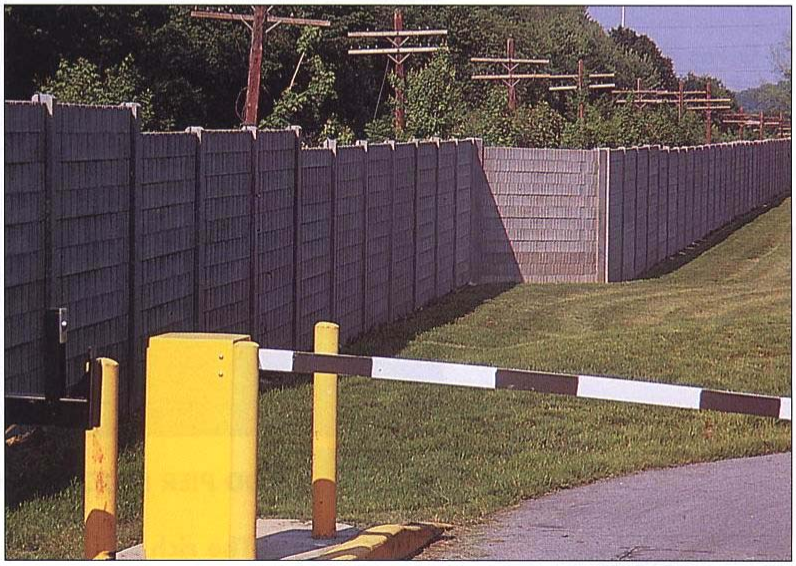
Faddis concrete products

02862/FAD
BuyLine 7786

- Enhances the environment
- Keeps noise and intruders away



- Adapts to existing conditions
- Controls noise from loud machinery

Full Engineering Drawings and Specifications Available on Request

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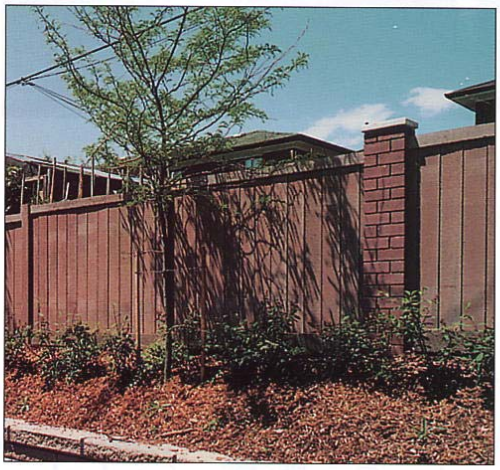
3

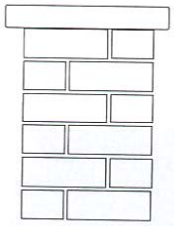
The Victory Series

- Gives appearance of wood
- Ideal for boundaries between industrial and residential areas
- Heights: 5'0", 6'0", 6'8", 8'0", 9'0"



ADD PIER BLOCK COLUMNS

- The rich look of hand-laid masonry
- Designed to hold beams and panels
- Low cost and fast to install



The 4" high courses are available in pier widths of either 15½" or 20".

ADD ACCENT PANELS

- Accent panels provide striking look
- Fluted pattern one side, smooth on reverse
- Can be used as a stand-alone system

Full Engineering Drawings and Specifications Available on Request

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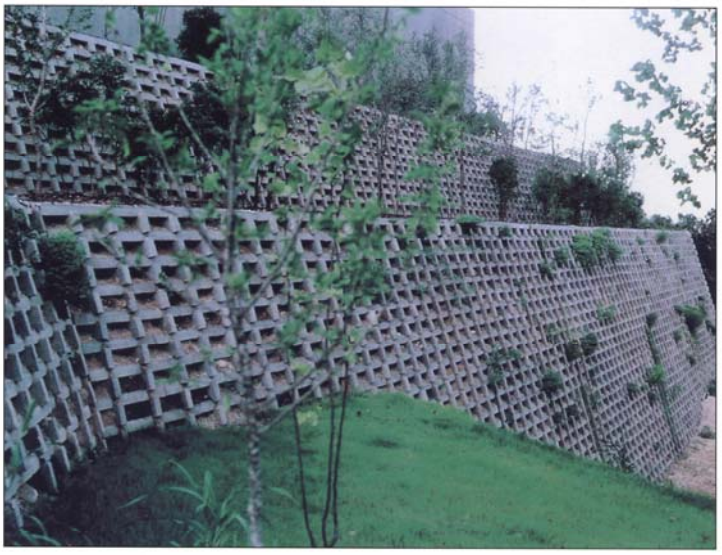
The Wicker Series

FADDIS CONCRETE

- Classic basket weave pattern
- Mix & match colors
- Add many design choices

Crib Wall

- Lightweight components allows easy assembly
- Heights in excess of 50 ft
- Open face provides for natural plant cover
- Cost saving over "poured-in-place" walls



Full Engineering Drawings and Specifications Available on Request

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5

Kentucky Post and Rail

- Adds time honored elegance to estates, ranches and farms
- For the owner with more to do than repair fences

The Pennwall Series

- Ideal for residential use
- No power equipment required
- For the "Do-It-Yourselfer"
- Panels reversible for unique patterns

Full Engineering Drawings and Specifications Available on Request

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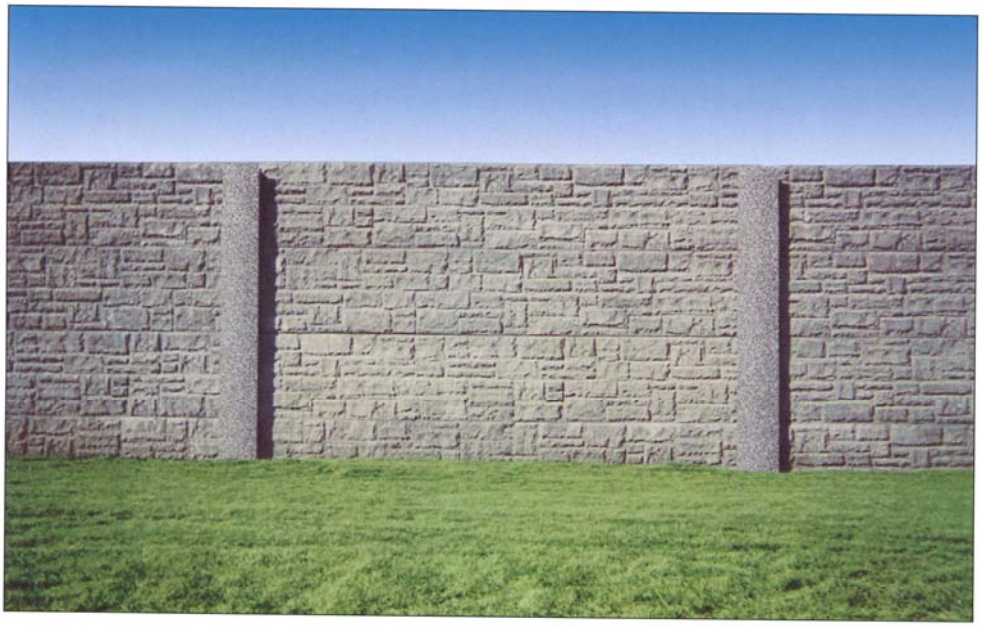
Stone Wall Series

FADDIS CONCRETE

- Economy of installation
- Excellent freeze-thaw test results
- Highly resistant to chloride penetration from de-icing salts
- Brick and other patterns available (see cover photo)



Full Engineering Drawings and Specifications Available on Request

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7

A Leader And Innovator In The Concrete Products Business Since 1947

FADDIS CONCRETE

Since 1947, Faddis Concrete Products has grown into one of the most innovative manufacturers of concrete products in the nation. By keeping pace with the constant evolution in concrete technology and using the expertise garnered over half a century, Faddis offers products that are without question "State-of-the-Art".

Faddis conducts continuous testing and QC programs on both process and production. Using a specially formulated concrete mix, Faddis provides concrete with exceptional properties including:

- High strength
- Increased bond to aggregate materials
- Superior resistance to salt scaling
- Increased electrical resistivity
- Increased abrasion and erosion resistance
- Increased bonding to reinforcement
- Superior resistance to freeze/thaw activity
- Negligible chloride ion permeability

Product name	Noise wall	Privacy	Boundaries	Standard heights	Colors
The Hessian	✔	✔	✔	Up to 30 feet	N,S,B
The Victory	✔	✔	✔	5 to 9 feet	B
The Wicker	✔	✔	✔	Up to 10 feet	N,S,B
The Pennwall	—	✔	✔	Up to 6 feet	N,S,B
Crib wall	✔	✔	✔	50+ feet	N
Kentucky rail	—	—	✔	4 & 5 feet	N
Pier block	—	—	—	N/A	R
Shore wall Retaining wall	✔	✔	✔	Up to 10 feet	N,B
Stone Wall	✔	✔	✔	Up to 40 feet	N,S,B

Colors: N= natural gray, S= salmon, B= brown, R=brick red

A Short List of Uses

- Highway sound panels
- Residential walls
- Schools
- Commercial properties
- Housing developments
- Senior housing
- Parks & recreation
- Plant security
- Shopping centers
- Airports
- Landfills
- Swimming pools

Why Faddis Concrete Products

- Long lasting
- Noise control
- Color available
- Virtually maintenance free
- Excellent value
- Ease of installation
- Fire resistant
- Aesthetically pleasing

FADDIS CONCRETE PRODUCTS
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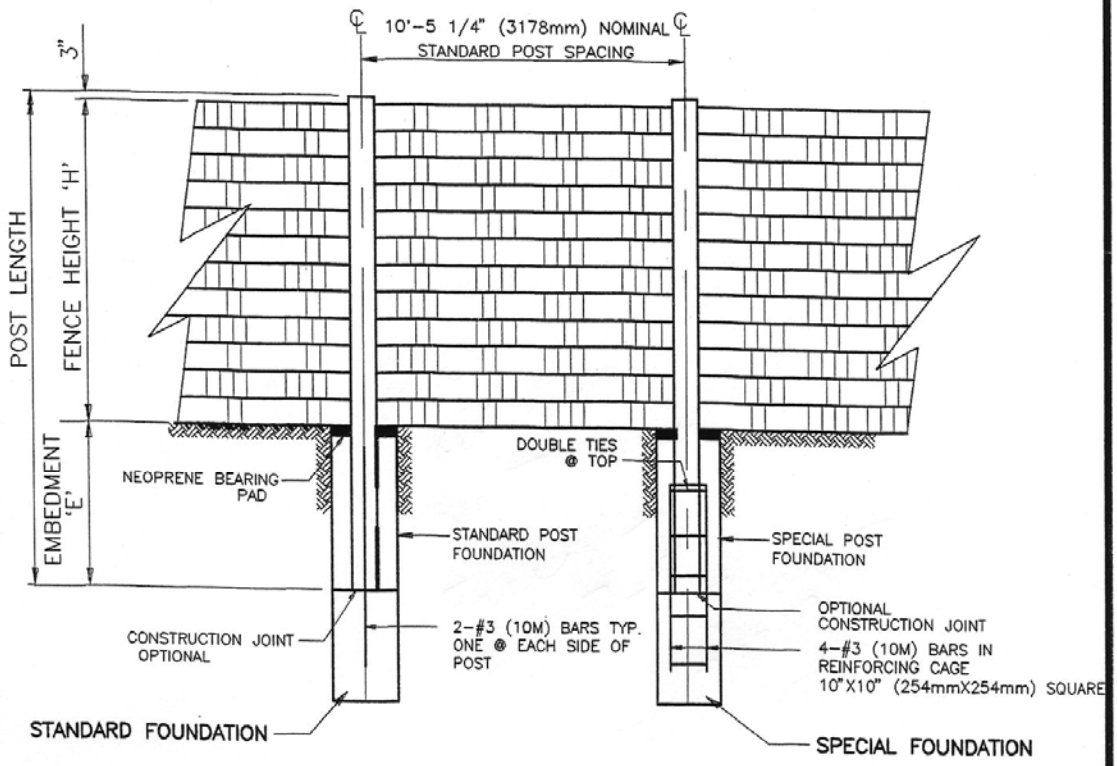
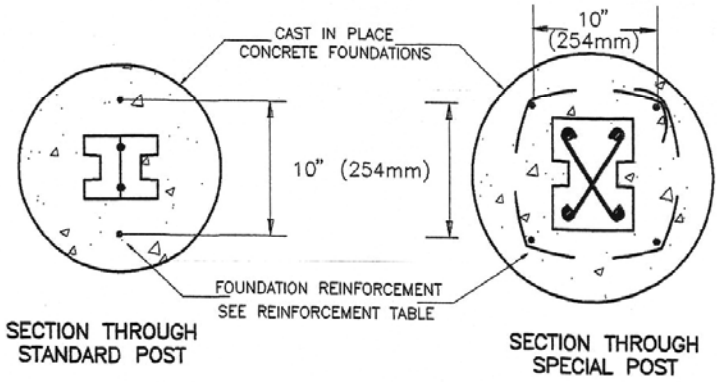
Tel: 610-269-4685 • Fax: 610-873-8431
Web site: www.faddis.com

TYPICAL HESSIAN 10FT ELEVATION





0	12/16/98	HESSIAN 10FT SERIES
REVISION	DATE	DESCRIPTION

SUBJECT TO REVISION WITHOUT NOTICE | Scale NOT TO SCALE

FADDIS CONCRETE PRODUCTS
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DOWNINGTOWN, PA 19335
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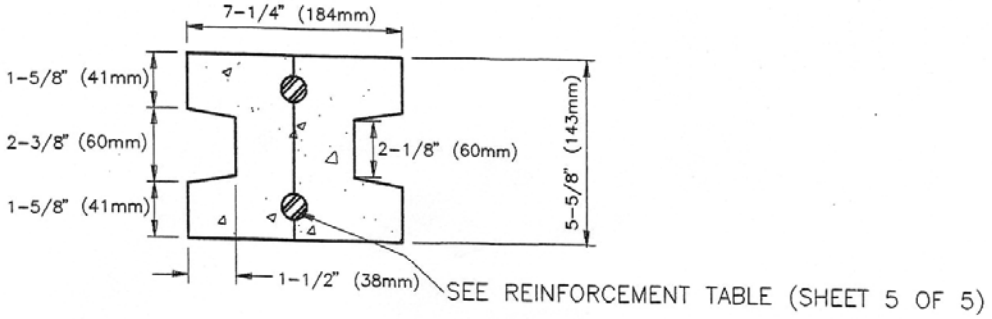
HESSIAN SERIES 10FT CONCRETE NOISE BARRIER/SCREEN WALL

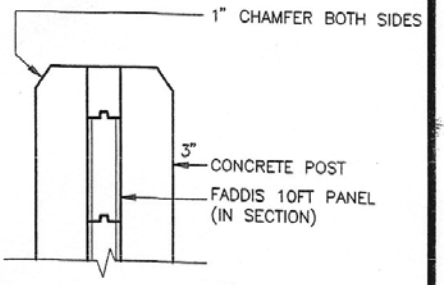
DRAWING FADCQ10 | SHEET NO. 1 OF 5

"H" POST DETAILS

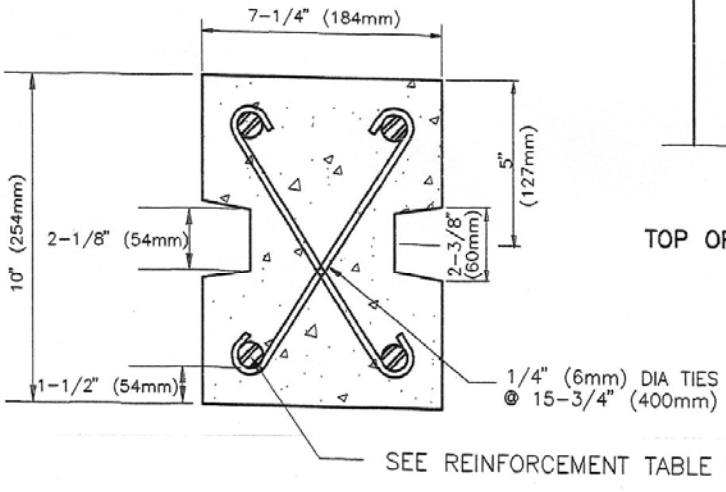
LENGTH = 144" (3.657m)
= 126" (3.200m)
= 110" (2.794m)



STANDARD POST



TOP OF POST DETAIL



SPECIAL POST (REQUIRES INCREASED POST SPACING)

REVISION	DATE	DESCRIPTION
0	12/16/98	HESSIAN 10FT SERIES

SUBJECT TO REVISION WITHOUT NOTICE | Scale NOT TO SCALE

FADDIS CONCRETE PRODUCTS
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DOWNINGTOWN, PA 19335
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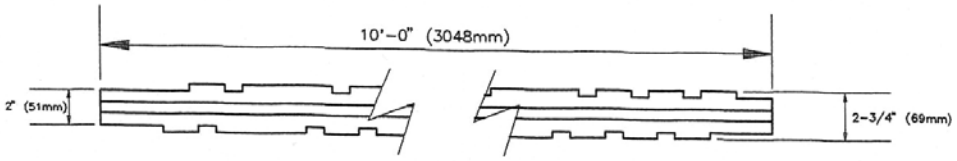
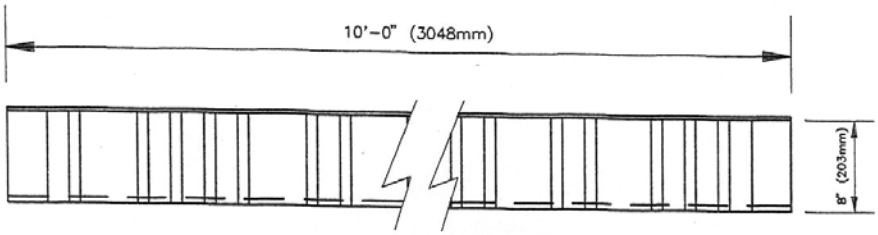
HESSIAN SERIES 10FT CONCRETE NOISE BARRIER/SCREEN WALL

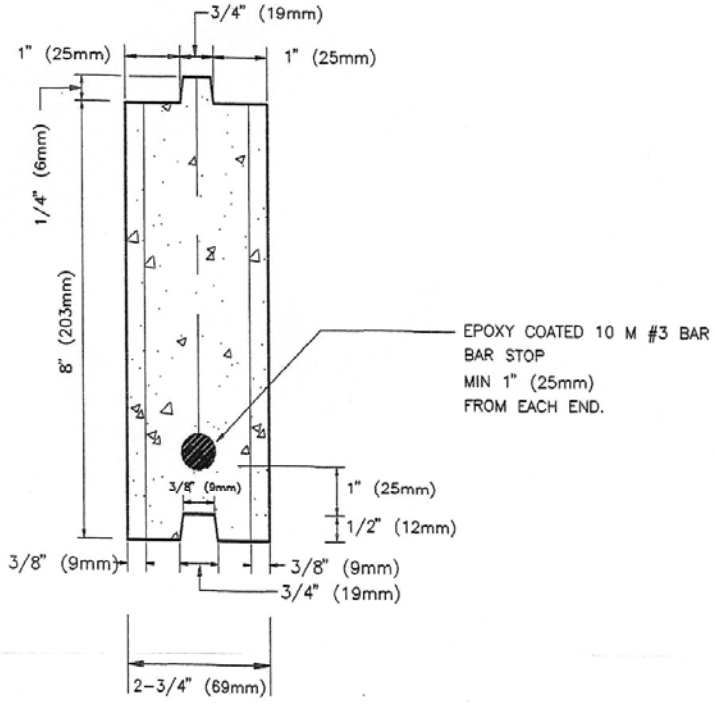
DRAWING FADCQ10 | SHEET NO. 2 OF 5



PLAN



STANDARD PANEL ELEVATION



STANDARD SECTION
OF HESSIAN 10FT PANEL

0	12/16/98	HESSIAN 10FT SERIES
REVISION	DATE	DESCRIPTION

SUBJECT TO REVISION WITHOUT NOTICE — Scale NOT TO SCALE

FADDIS CONCRETE PRODUCTS
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DOWNINGTOWN, PA 19335
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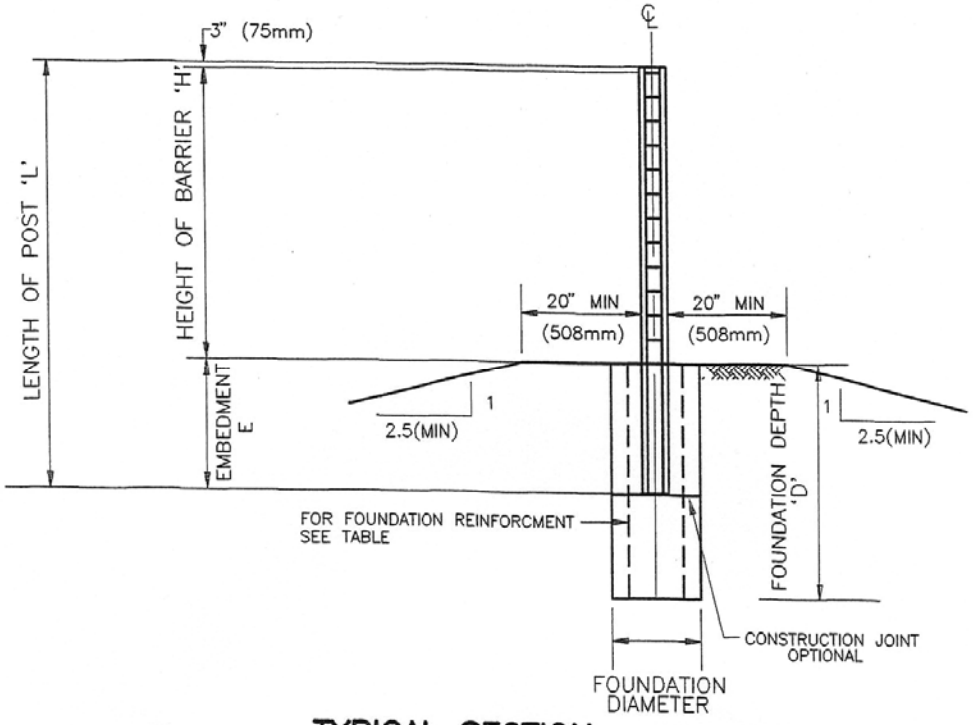
HESSIAN SERIES 10FT CONCRETE NOISE BARRIER/SCREEN WALL

DRAWING FADCQ10 — SHEET NO. 3 OF 5



TYPICAL SECTION

GENERAL NOTES:

1. THE STRUCTURES SHOWN ON THE DRAWING HAVE BEEN BEEN DESIGNED IN GENERAL CONFORMANCE WITH THE REQUIREMENTS OF THE NATIONAL BUILDING CODE AND THE ONTARIO BUILDING CODE.
2. DESIGN WIND LOAD = 0.92 kPa (20.0 PSF).
3. REFER TO SECTION FOR MINIMUM BERM PROFILE WHERE REQUIRED.
4. MINIMUM CONCRETE STRENGTH AT 28 DAYS FOR :
   PANELS, POSTS AND BEAMS = 28 MPa (4000 psi)
   FOUNDATIONS (POST EMBEDMENT) = 20 MPa (3000 psi).
   CONCRETE IN PANELS AND POSTS TO INCORPORATE A 5% MICROSILICA ADDITIVE IF DRY, OR 10% IF SLURRY, TO BE 970 S AS MANUFACTURED BY ELKEM, INC., ALLOY WV AND DISTRIBUTED BY CONSTRUCTION CONCRETE SUPPLY.
5. ALL REINFORCING STEEL TO BE EPOXY COATED DEFORMED BARS TO C.S.A. G30.12, GRADE 400 WITH MINIMUM YIELD STRENGTH OF 400 MPa (58 KSI), OR CONFORMING WITH ASTM A615, GRADE 60, UNLESS OTHERWISE NOTED ON PLAN.
6. THE SIZE AND DEPTHS OF FOUNDATIONS (POST EMBEDMENT) HAVE BEEN DESIGNED TO BE IN ORIGINAL SOIL OR MADE GROUND WITH THE FOLLOWING MINIMUM REQUIREMENT:
   A) UNIT WEIGHT OF SOIL = 20.4 kN/M3 (130 PCF) FOR ORIGINAL SOIL OR MADE GROUND COMPACTED TO 95% PROCTOR.
   B) PASSIVE SOIL COEFFICIENT Kp = 4.0
7. IF SOIL CONDITIONS ARE LESS THAN THAT SPECIFIED, FOOTINGS SHALL BE REDESIGNED BY A PROFESSIONAL ENGINEER.

0	12/16/98	HESSIAN 10FT SERIES
REVISION	DATE	DESCRIPTION

SUBJECT TO REVISION WITHOUT NOTICE — Scale NOT TO SCALE

FADDIS CONCRETE PRODUCTS
3515 KINGS HIGHWAY
DOWNINGTOWN, PA 19335
(800) 207-4059 FAX - (610) 873-8431

HESSIAN SERIES 10FT CONCRETE NOISE BARRIER/SCREEN WALL

DRAWING FADCQ10 — SHEET NO. 4 OF 5

DESIGN CHARTS

TABLE

POST	POST LENGTH–L		BARRIER FENCE HEIGHT H		EMBEDMENT E		FOUNDATION DEPTH D		FOUNDATION DIAMETER	
STANDARD	9'–2"	2794 mm	4'–0"	1219 mm	4'–11"	1499 mm	5'–0"	1524 mm	1'–0"	305 mm
	9'–2"	2794 mm	4'–8"	1422 mm	4'–3"	1295 mm	5'–0"	1524 mm	1'–0"	305 mm
	9'–2"	2794 mm	5'–4"	1626 mm	3'–7"	1092 mm	5'–0"	1524 mm	1'–0"	305 mm
	9'–2"	2794 mm	6'–0"	1829 mm	2'–11"	889 mm	6'–0"	1829 mm	1'–0"	305 mm
	10'–6"	3200 mm	6'–8"	2032 mm	3'–7"	1092 mm	6'–0"	1829 mm	1'–0"	305 mm
	10'–6"	3200 mm	7'–4"	2235 mm	2'–11"	889 mm	6'–6"	1981 mm	1'–6"	457 mm
	12'–0"	3658 mm	8'–0"	2438 mm	3'–9"	1143 mm	7'–0"	2134 mm	1'–6"	457 mm
	12'–0"	3658 mm	8'–6"	2642 mm	3'–1"	940 mm	7'–0"	2134 mm	1'–6"	457 mm
	12'–0"	3658 mm	9'–4"	2845 mm	2'–5"	737 mm	7'–6"	2286 mm	1'–6"	457 mm
SPECIAL	16'–11"	5156 mm	10'–0"	3048 mm	1'–9"	533 mm	7'–6"	2286 mm	1'–6"	457 mm
	16'–11"	5156 mm	10'–8"	3251 mm	6'–0"	1829 mm	8'–0"	2438 mm	1'–6"	457 mm
	18'–1"	5512 mm	11'–4"	3454 mm	6'–6"	1981 mm	8'–6"	2591 mm	1'–6"	457 mm
	18'–8"	5715 mm	12'–0"	3658 mm	6'–6"	1981 mm	9'–0"	2743 mm	1'–6"	457 mm
	19'–11"	6071 mm	12'–8"	3861 mm	7'–0"	2134 mm	9'–6"	2896 mm	1'–6"	457 mm
	21'–1"	6426 mm	13'–4"	4064 mm	7'–6"	2286 mm	10'–0"	3048 mm	1'–6"	457 mm
	25'–1"	7645 mm	16'–4"	4978 mm	8'–6"	2591 mm	13'–0"	3962 mm	2'–0"	610 mm

TABLE: POST REINFORCEMENT

POST	BARRIER FENCE HEIGHT H	POST REINFORCEMENT
STANDARD	4'0" TO 6'8" 1219 TO 2032 (mm)	2–#5 (15M)
	7'4" TO 9'4" 2235 TO 2845 (mm)	2–#6 (20M)
SPECIAL	10'0" TO 12'0" 3048 TO 3658 (mm)	4–#5 (15M)
	12'8" TO 13'4" 3861 TO 4064 (mm)	4–#6 (20M)
	16'4" 4978mm	4–#7 (25M)

TABLE: FOUNDATION REINFORCEMENT

POST	BARRIER FENCE HEIGHT H	REINFORCEMENT IN FOUNDATION	
STANDARD	4'0" TO 6'8" 1219 TO 2032 (mm)	(2–#3 X 3.5')	2–10M X 1070
	7'4" TO 9'4" 2235 TO 2845 (mm)	(2–#3 X 4.0')	2–10M X 1220
SPECIAL	10'0" TO 12'0" 3048 TO 3658 (mm)	(4–#3 X 4.0' + .25" TIES @ 12")	4–10M X 1220 + 6MM TIES @305
	12'8" TO 13'4" 3861 TO 4064 (mm)	(4–#3 X 4.0' + .25" TIES @ 12")	4–10M X 1220 + 6MM TIES @305
	16'4" 4978 (mm)	(4–#5 X 6.0' + .25" TIES @ 12")	4–15M X 1830 + 6MM TIES @305

DRAWINGS AND TABLES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

0	12/16/98	HESSIAN 10FT SERIES
REVISION	DATE	DESCRIPTION

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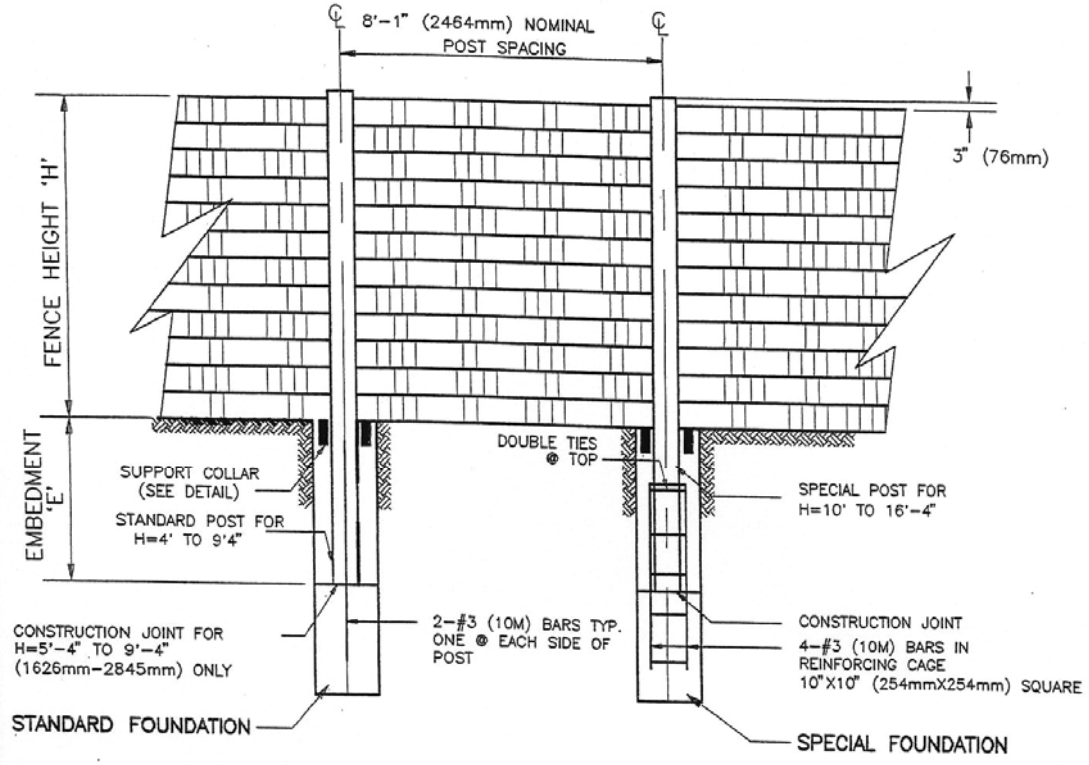
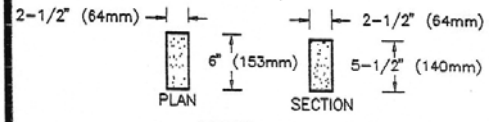
HESSIAN SERIES 10FT CONCRETE NOISE BARRIER/SCREEN WALL

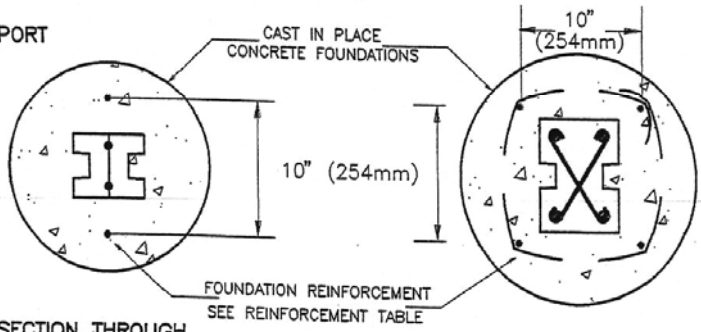
DRAWING FADCQ10 | SHEET NO. 5 OF 5

TYPICAL CQ8 ELEVATION





DETAIL OF CONCRETE SUPPORT COLLAR



SECTION THROUGH STANDARD POST

SECTION THROUGH SPECIAL POST

	No.	Revisions	Date	By
Design				
Drawn				
Checked				
Approved				
Date				

SUBJECT TO REVISION WITHOUT NOTICE

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DOWNINGTOWN, PA 19335
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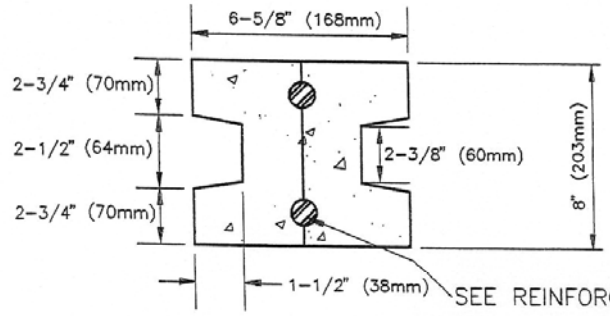
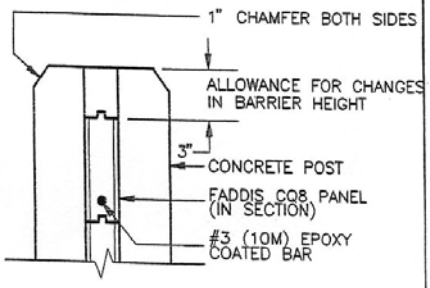
CQ8-SERIES CONCRETE NOISE BARRIER/SCREEN WALL

DRAWING FADCQ8 | SHEET NO. 1 OF 5

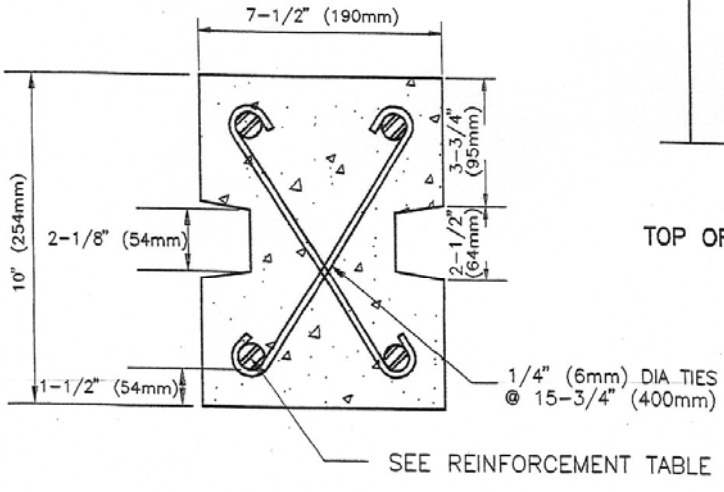
POST DETAILS



STANDARD POST



TOP OF POST DETAIL



SPECIAL POST

	No.	Revisions	Date	By
Design				
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Date				

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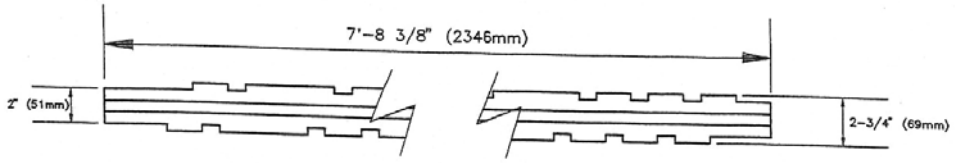
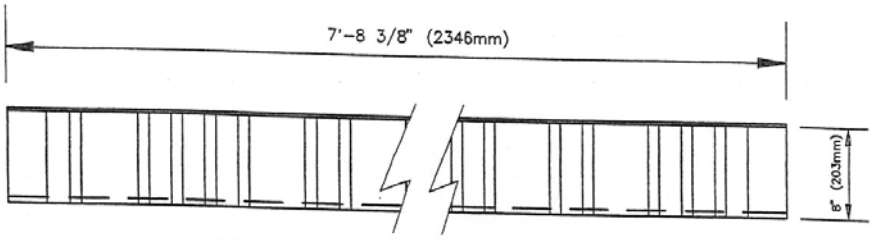
CQ8-SERIES CONCRETE NOISE BARRIER/SCREEN WALL

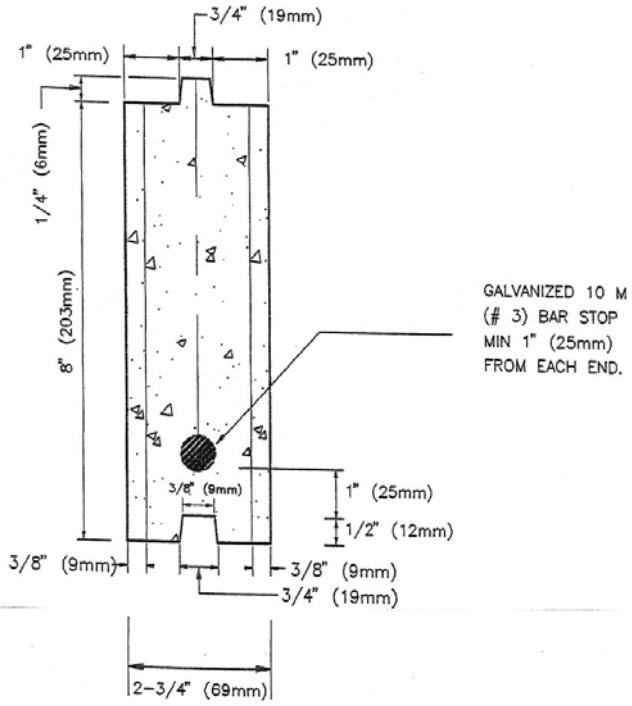
DRAWING FADCQ8 | SHEET NO. 2 OF 5



PLAN



STANDARD PANEL ELEVATION



STANDARD SECTION
OF CQ8 PANEL

	No.	Revisions	Date	By
Design				
Drawn				
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Date				

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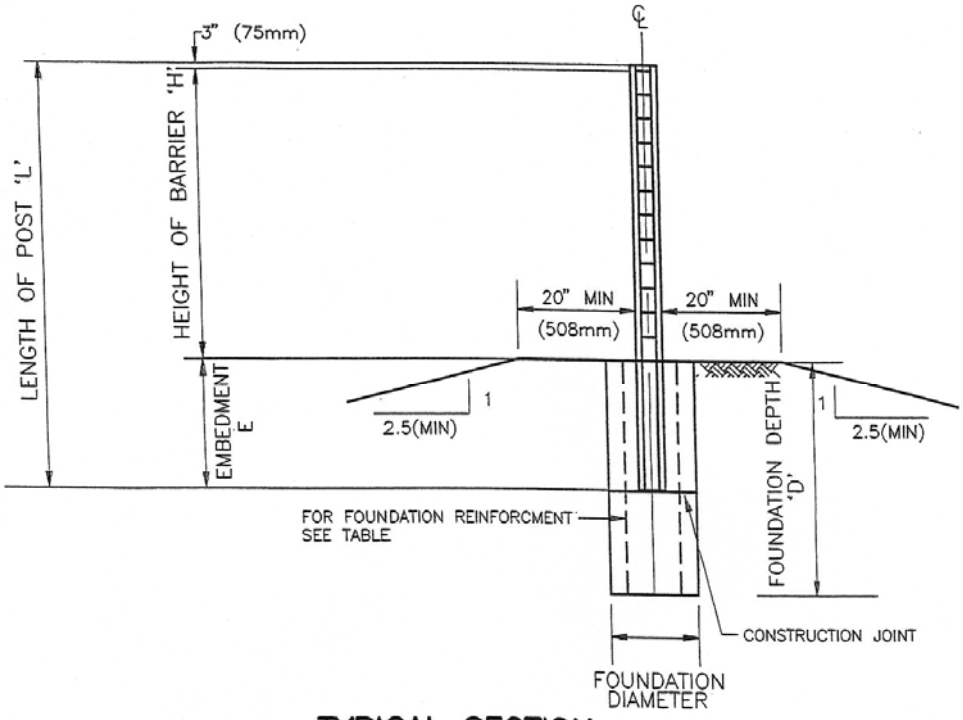
CQ8-SERIES CONCRETE
NOISE BARRIER/SCREEN WALL

DRAWING FADCQ8 | SHEET NO. 3 OF 5



TYPICAL SECTION

GENERAL NOTES:

1. THE STRUCTURES SHOWN ON THE DRAWING HAVE BEEN BEEN DESIGNED IN GENERAL CONFORMANCE WITH THE REQUIREMENTS OF THE NATIONAL BUILDING CODE AND THE ONTARIO BUILDING CODE.
2. DESIGN WIND LOAD = 0.92 kPa (20.0 PSF).
3. REFER TO SECTION FOR MINIMUM BERM PROFILE WHERE REQUIRED.
4. MINIMUM CONCRETE STRENGTH AT 28 DAYS FOR :
   PANELS, POSTS AND BEAMS = 28 MPa (4000 psi)
   FOUNDATIONS (POST EMBEDMENT) = 20 MPa (3000 psi).
   CONCRETE IN PANELS AND POSTS TO INCORPORATE A 5% MICROSILICA ADDITIVE IF DRY, OR 10% IF SLURRY, TO BE 970 S AS MANUFACTURED BY ELKEM, INC., ALLOY WV AND DISTRIBUTED BY CONSTRUCTION CONCRETE SUPPLY.
5. ALL REINFORCING STEEL TO BE EPOXY COATED DEFORMED BARS TO C.S.A. G30.12, GRADE 400 WITH MINIMUM YIELD STRENGTH OF 400 MPa (58 KSI), OR CONFORMING WITH ASTM A615, GRADE 60, UNLESS OTHERWISE NOTED ON PLAN.
6. THE SIZE AND DEPTHS OF FOUNDATIONS (POST EMBEDMENT) HAVE BEEN DESIGNED TO BE IN ORIGINAL SOIL OR MADE GROUND WITH THE FOLLOWING MINIMUM REQUIREMENT:
   A) UNIT WEIGHT OF SOIL = 20.4 kN/M3 (130 PCF) FOR ORIGINAL SOIL OR MADE GROUND COMPACTED TO 95% PROCTOR.
   B) PASSIVE SOIL COEFFICIENT Kp = 4.0
7. IF SOIL CONDITIONS ARE LESS THAN THAT SPECIFIED, FOOTINGS SHALL BE REDESIGNED BY A PROFESSIONAL ENGINEER.

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CQ8-SERIES CONCRETE
NOISE BARRIER/SCREEN WALL

DRAWING FADCQ8 | SHEET NO. 4 OF 5

DESIGN CHARTS

TABLE

POST	POST LENGTH—L		BARRIER FENCE HEIGHT H		EMBEDMENT E		FOUNDATION DEPTH D		FOUNDATION DIAMETER	
STANDARD	9'–2"	2794 mm	4'–0"	1219 mm	4'–11"	1499 mm	5'–0"	1524 mm	1'–0"	305 mm
	9'–2"	2794 mm	4'–8"	1422 mm	4'–3"	1295 mm	5'–0"	1524 mm	1'–0"	305 mm
	9'–2"	2794 mm	5'–4"	1626 mm	3'–7"	1092 mm	5'–0"	1524 mm	1'–0"	305 mm
	9'–2"	2794 mm	6'–0"	1829 mm	2'–11"	889 mm	6'–0"	1829 mm	1'–0"	305 mm
	10'–6"	3200 mm	6'–8"	2032 mm	3'–7"	1092 mm	6'–0"	1829 mm	1'–0"	305 mm
	10'–6"	3200 mm	7'–4"	2235 mm	2'–11"	889 mm	6'–6"	1981 mm	1'–6"	457 mm
	12'–0"	3658 mm	8'–0"	2438 mm	3'–9"	1143 mm	7'–0"	2134 mm	1'–6"	457 mm
	12'–0"	3658 mm	8'–8"	2642 mm	3'–1"	940 mm	7'–0"	2134 mm	1'–6"	457 mm
	12'–0"	3658 mm	9'–4"	2845 mm	2'–5"	737 mm	7'–6"	2286 mm	1'–6"	457 mm
SPECIAL	16'–11"	5156 mm	10'–0"	3048 mm	1'–9"	533 mm	7'–6"	2286 mm	1'–6"	457 mm
	16'–11"	5156 mm	10'–8"	3251 mm	6'–0"	1829 mm	8'–0"	2438 mm	1'–6"	457 mm
	18'–1"	5512 mm	11'–4"	3454 mm	6'–6"	1981 mm	8'–6"	2591 mm	1'–6"	457 mm
	18'–9"	5715 mm	12'–0"	3658 mm	6'–6"	1981 mm	9'–0"	2743 mm	1'–6"	457 mm
	19'–11"	6071 mm	12'–8"	3861 mm	7'–0"	2134 mm	9'–6"	2896 mm	1'–6"	457 mm
	21'–1"	6428 mm	13'–4"	4064 mm	7'–6"	2286 mm	10'–0"	3048 mm	1'–6"	457 mm
	25'–1"	7645 mm	16'–4"	4978 mm	8'–6"	2591 mm	13'–0"	3962 mm	2'–0"	610 mm

TABLE: POST REINFORCEMENT

POST	BARRIER FENCE HEIGHT H	POST REINFORCEMENT
STANDARD	4'0" TO 6'8" 1219 TO 2032 (mm)	2–#5 (15M)
	7'4" TO 9'4" 2235 TO 2845 (mm)	2–#6 (20M)
SPECIAL	10'0" TO 12'0" 3048 TO 3658 (mm)	4–#5 (15M)
	12'8" TO 13'4" 3861 TO 4064 (mm)	4–#6 (20M)
	16'4" 4978mm	4–#7 (25M)

TABLE: FOUNDATION REINFORCEMENT

POST	BARRIER FENCE HEIGHT H	REINFORCEMENT IN FOUNDATION	
STANDARD	4'0" TO 6'8" 1219 TO 2032 (mm)	(2–#3 X 3.5')	2–10M X 1070
	7'4" TO 9'4" 2235 TO 2845 (mm)	(2–#3 X 4.0')	2–10M X 1220
SPECIAL	10'0" TO 12'0" 3048 TO 3658 (mm)	(4–#3 X 4.0' + .25" TIES @ 12")	4–10M X 1220 + 6MM TIES @305
	12'8" TO 13'4" 3861 TO 4064 (mm)	(4–#3 X 4.0' + .25" TIES @ 12")	4–10M X 1220 + 6MM TIES @305
	16'4" 4978 (mm)	(4–#5 X 6.0' + .25" TIES @ 12")	4–15M X 1830 + 6MM TIES @305

DRAWINGS AND TABLES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

	No.	Revisions	Date	By
Design				
Drawn				
Checked				
Approved				
Date				

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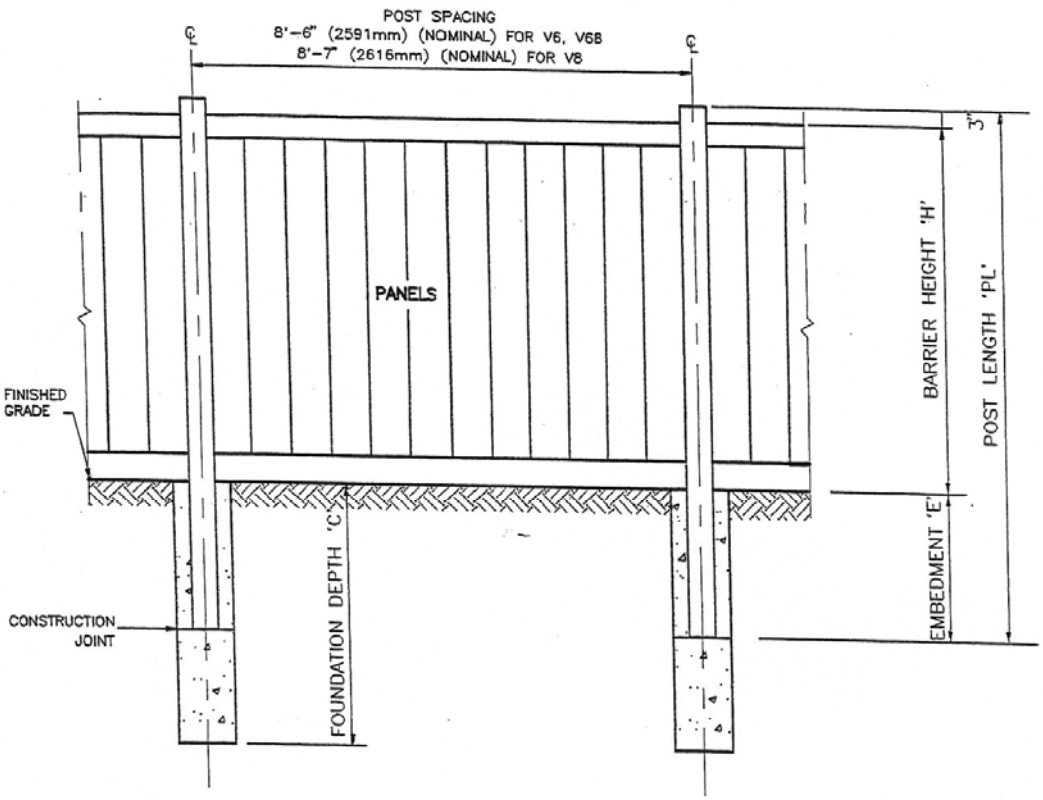
CQ8–SERIES CONCRETE NOISE BARRIER/SCREEN WALL

DRAWING FADCQ8 | SHEET NO. 5 OF 5



ELEVATION FOR V6, V68, AND V8

TABLE:

SERIES	POST LENGTH 'PL'	BARRIER HEIGHT 'H'	MIN. EMBEDMENT 'E'	FOUNDATION DEPTH 'C'	POST REINF. 'R'
V6	9'-7" (2921mm)	6'-4" (1930mm)	3'-0" (940mm)	4'-6" (1372mm)	2-#5 (15M)
V68	9'-7" (2921mm)	6'-8" (2032mm)	2'-5" (737mm)	5'-0" (1524mm)	2-#5 (15M)
V8	11'-11" (3632mm)	8'-0" (2438mm)	3'-5" (1041mm)	5'-0" (1524mm)	2-#6 (20M)

	No.	Revisions	Date	By
Design				
Drawn				
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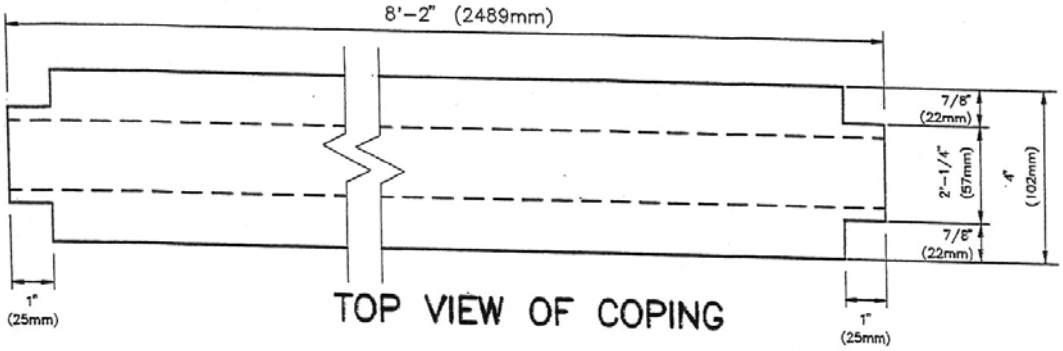
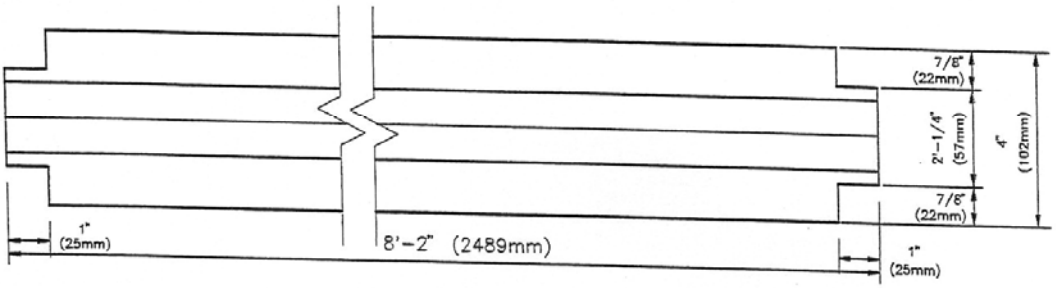
V-SERIES CONCRETE
NOISE BARRIER/SCREEN WALL

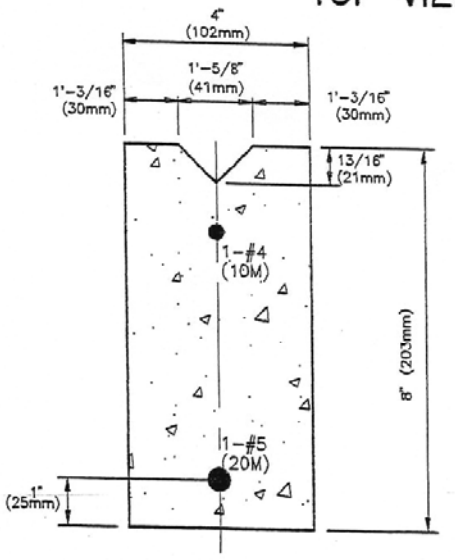
DRAWING FADV-SER | SHEET NO. 1 OF 5



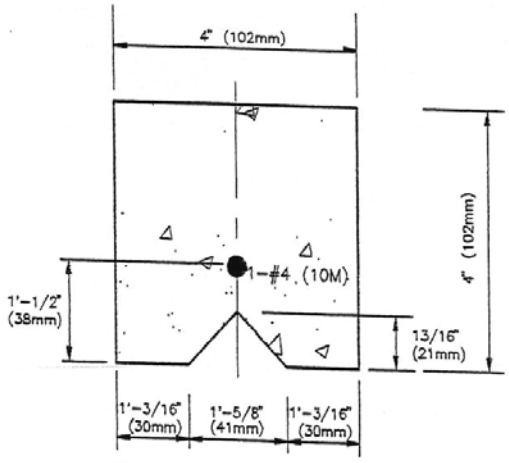
TOP VIEW OF COPING



TOP VIEW OF BOTTOM BEAM



BOTTOM BEAM SECTION



COPING SECTION

	No.	Revisions	Date	By
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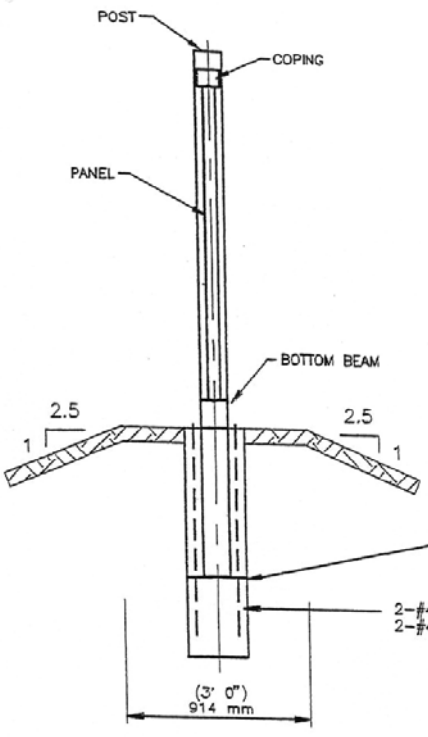
V-SERIES CONCRETE
NOISE BARRIER/SCREEN WALL

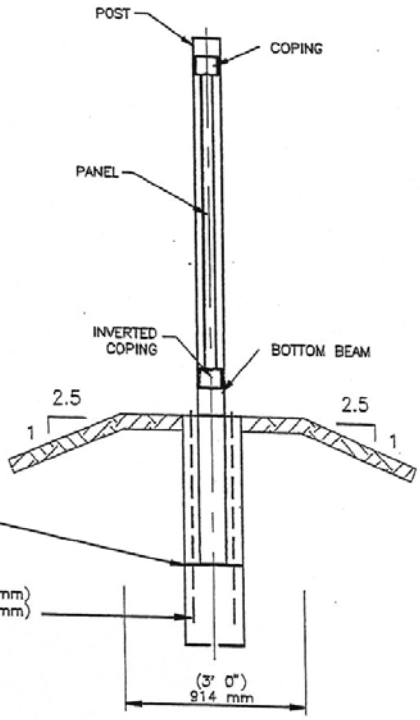
DRAWING FADV-SER | SHEET NO. 3 OF 5



MINIMUM REQ'D TOP OF BERM WIDTH

SECTION FOR V6 AND V8

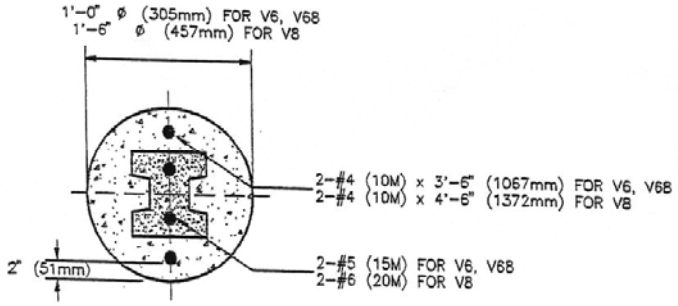
(NOT TO SCALE)



MINIMUM REQ'D TOP OF BERM WIDTH

SECTION FOR V68

(NOT TO SCALE)



SECTION THROUGH POST AND FOUNDATION

	No.	Revisions	Date	By
Design				
Drawn				
Checked				
Approved				
Date				

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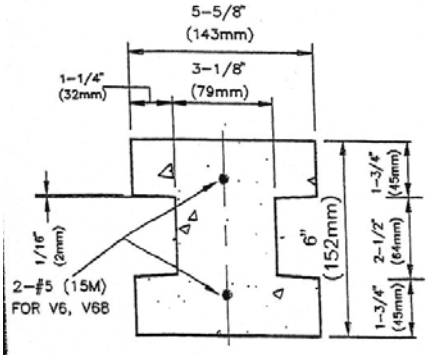
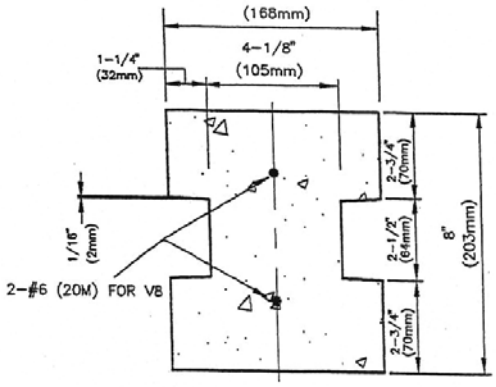
V-SERIES CONCRETE
NOISE BARRIER/SCREEN WALL

DRAWING FADV-SER | SHEET NO. 4 OF 5



SECTION THROUGH POST FOR V6 AND V68
SCALE 1:6



SECTION THROUGH POST FOR V8
SCALE 1:6

GENERAL NOTES:

1. THE STRUCTURES SHOWN ON THE DRAWING HAVE BEEN BEEN DESIGNED IN GENERAL CONFORMANCE WITH THE REQUIREMENTS OF THE NATIONAL BUILDING CODE AND THE ONTARIO BUILDING CODE.
2. BOTTOM BEAM DESIGN BASED ON PHYSICAL LOAD TESTS BY RECOGNIZED TEST LABORATORY.
3. DESIGN WIND LOAD = 20.0 PSF.
4. REFER TO SECTIONS FOR MINIMUM BERM PROFILES.
5. MINIMUM CONCRETE STRENGTH AT 28 DAYS FOR :
   PANELS, POSTS AND BEAMS = 28 MPa (4000 psi)
   FOOTINGS (POST EMBEDMENT) = 20 MPa (3000 psi).
   CONCRETE IN PANELS AND POSTS TO INCORPORATE A 5% MICROSILICA ADDITIVE IF DRY, OR 10% IF SLURRY, TO BE 970 S AS MANUFACTURED BY ELKEM, INC., ALLOY, WV AND DISTRIBUTED BY CONSTRUCTION CONCRETE SUPPLY.
6. ALL REINFORCING STEEL TO BE EPOXY COATED DEFORMED BARS TO C.S.A. G30.12, GRADE 400 WITH MINIMUM YIELD STRENGTH OF 400 MPa (58 KSI), OR CONFORMING WITH ASTM A615, A616, A617, GRADE 60, UNLESS OTHERWISE NOTED ON PLAN.
7. THE SIZE AND DEPTHS OF FOOTINGS (POST EMBEDMENT) HAVE BEEN DESIGNED TO BE IN ORIGINAL SOIL OR MADE GROUND WITH THE FOLLOWING MINIMUM REQUIREMENT:
   A) UNIT WEIGHT OF SOIL = 130 lbs PER CU. FT. FOR ORIGINAL SOIL OR MADE GROUND COMPACTED TO 95% PROCTOR.
   B) PASSIVE SOIL COEFFICIENT Kp = 4.0
8. IF SOIL CONDITIONS ARE LESS THAN THAT SPECIFIED, FOOTINGS SHALL BE REDESIGNED BY A PROFESSIONAL ENGINEER.

THESE DRAWINGS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

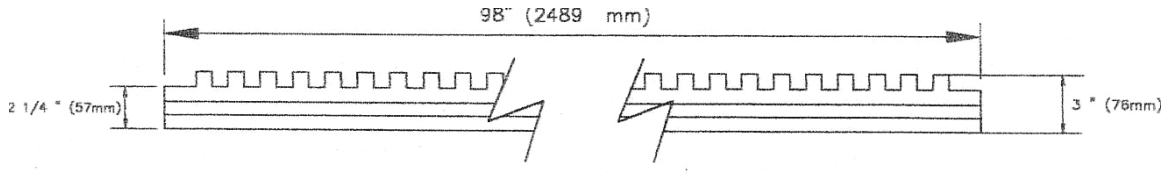
	No.	Revisions	Date	By
Design				
Drawn				
Checked				
Approved				
Date				

SUBJECT TO REVISION WITHOUT NOTICE | Scale NOT TO SCALE

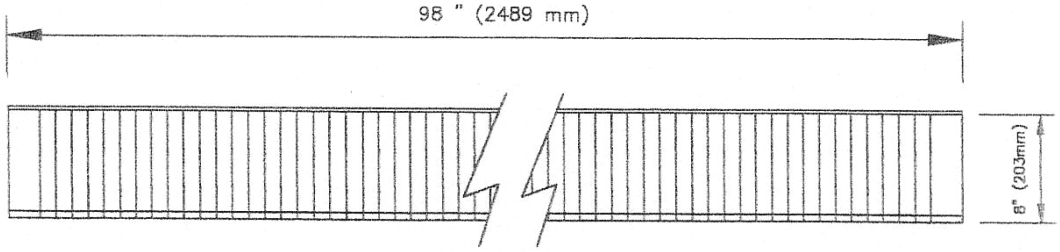
FADDIS CONCRETE PRODUCTS
3515 KINGS HIGHWAY
DOWNINGTOWN, PA 19335
(800) 207-4059 FAX - (610) 873-8431

V-SERIES CONCRETE
NOISE BARRIER/SCREEN WALL

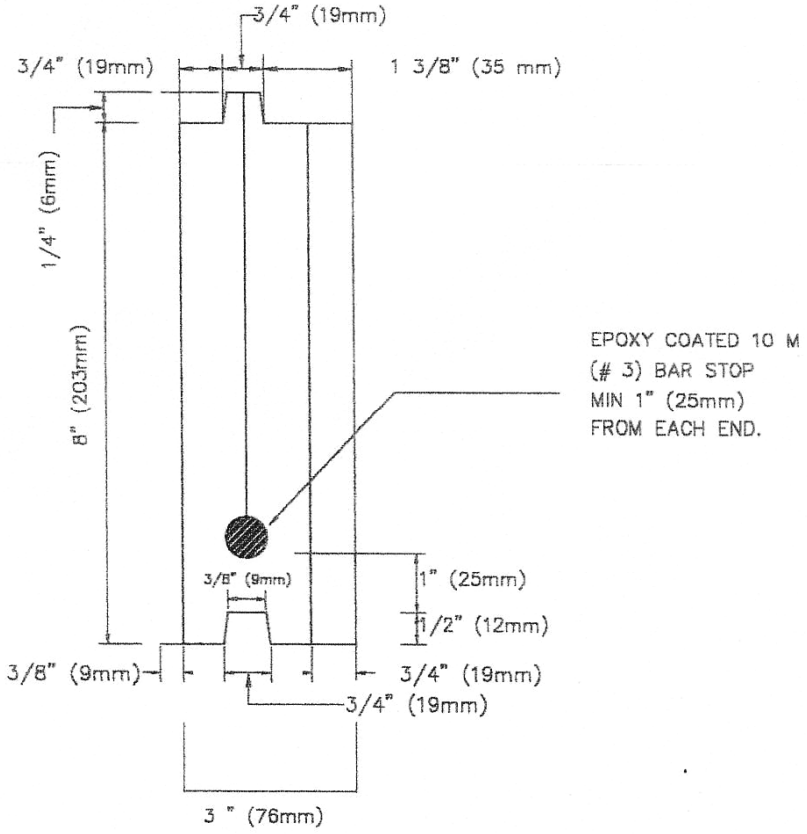
DRAWING FADV-SER | SHEET NO. 5 OF 5



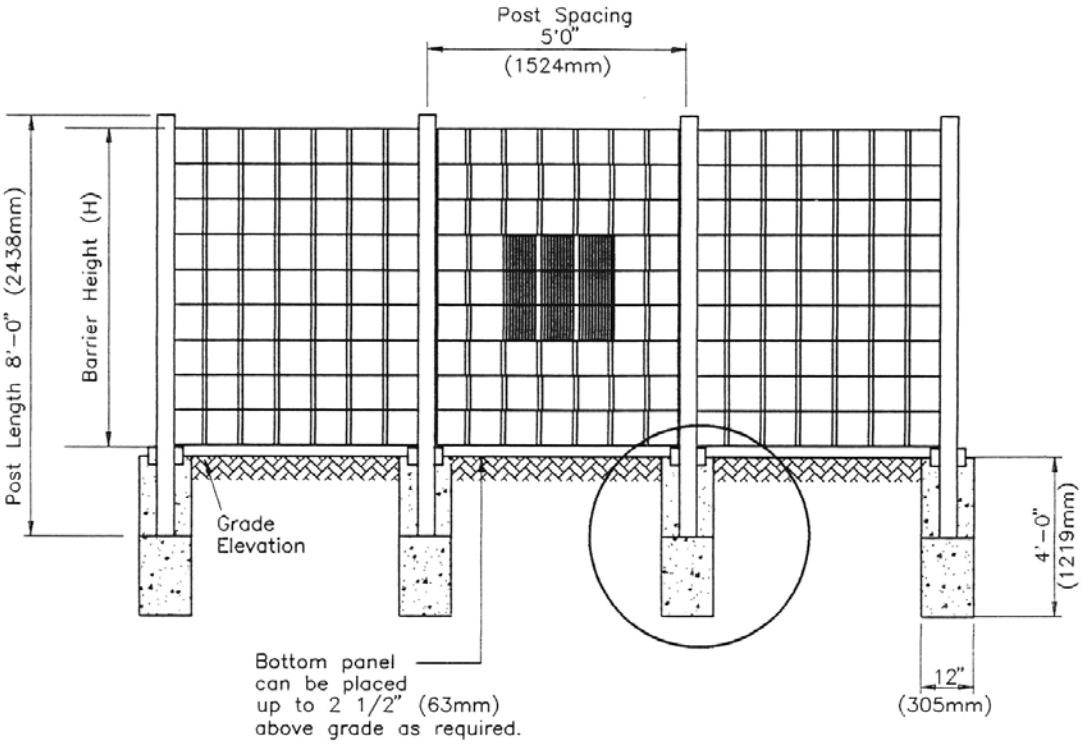
PLAN



VICTORY ACCENT PANEL ELEVATION

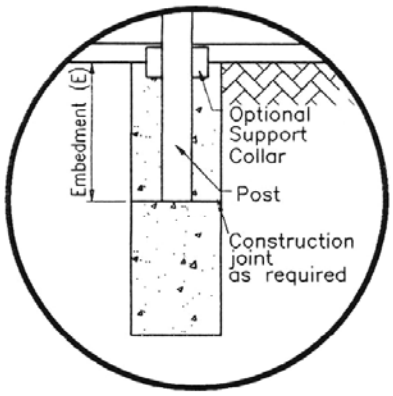


SECTION
OF VICTORY ACCENT PANEL



ELEVATION

BARRIER FENCE HEIGHT (H)	EMBEDMENT (E)
4'-0" (1219mm)	4'-0" (1219mm)
4'-8" (1422mm)	3'-3" (991mm)
5'-4" (1626mm)	2'-9" (838mm)
6'-0" (1829mm)	1'-11" (584mm)



FOOTING DETAIL

	No.	Revisions	Date	By
Design				
Drawn				
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Date				

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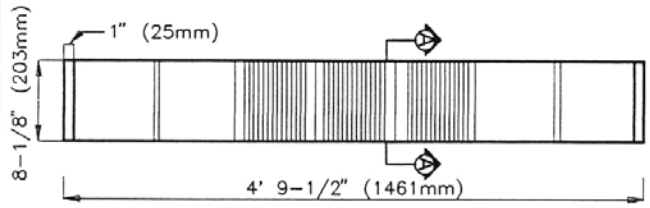
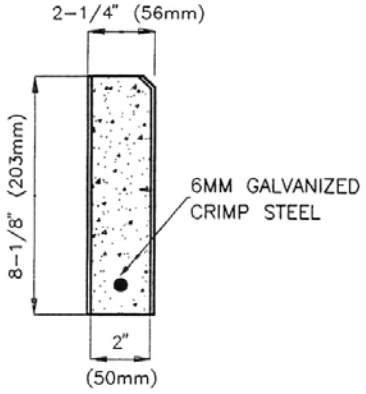
PENN WALL SERIES CONCRETE
SCREEN WALL

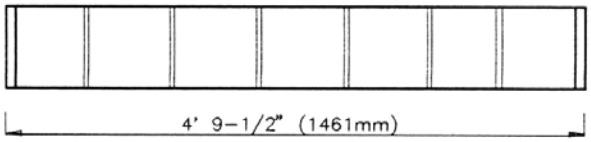
DRAWING FAD-LIR | SHEET NO. 1 OF 3



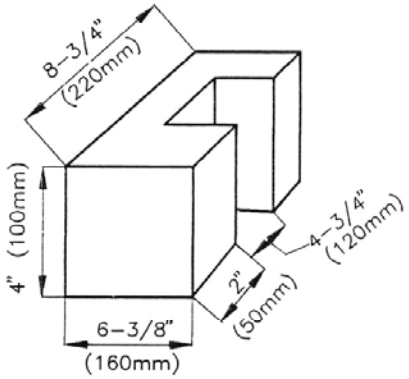
L.I.R. PANEL FRONT ELEVATION



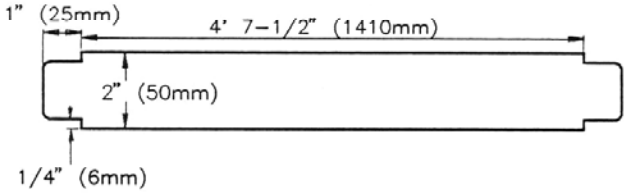
SECTION A-A



L.I.R. PANEL REAR ELEVATION



SUPPORT COLLAR
(OPTIONAL)



PANEL PLAN VIEW

	No.	Revisions	Date	By
Design				
Drawn				
Checked				
Approved				
Date				

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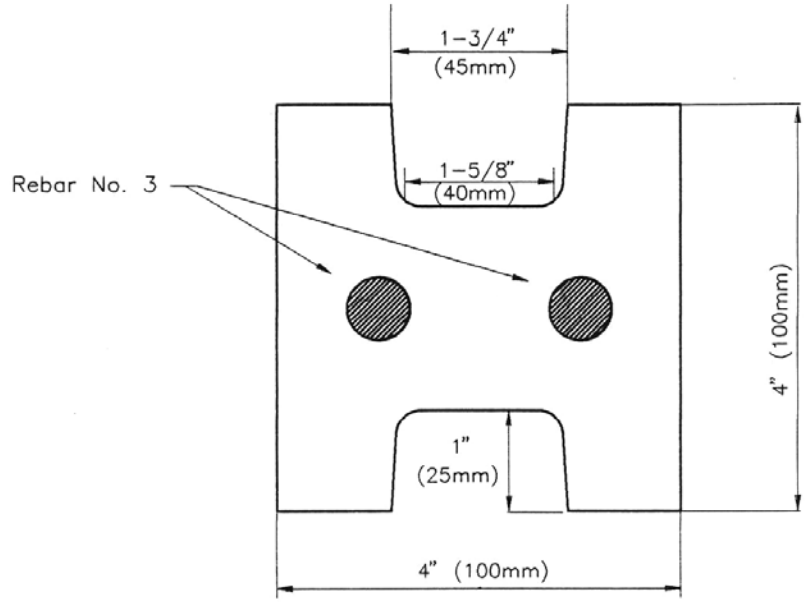
PENN WALL SERIES CONCRETE
SCREEN WALL

DRAWING FAD-LIR | SHEET NO. 2 OF 3



POST CROSS SECTION

GENERAL NOTES

DESIGN UNLESS NOTED, DESIGN IS ULTIMATE STRENGTH DESIGN FOR CONCRETE. THE STRUCTURES SHOWN ON THE DRAWING HAVE BEEN DESIGNED IN GENERAL CONFORMANCE WITH THE REQUIREMENTS OF THE NATIONAL BUILDING CODE AND THE ONTARIO BUILDING CODE.

DESIGN WIND LOAD--20 P.S.F.
DESIGN WIND SPEED--60 M.P.H.
PANEL FACE DENSITY--20 LBS/S.F. (MIN)

CONCRETE CONCRETE STRENGTH IN POSTS AND PANELS AT 28 DAYS SHALL IN NO CASE BE LESS THAN 27.6 M. Pa (4000 PSI)
CONCRETE SHALL CONFORM WITH C.S.A. SPECIFICATION A23.

REINFORCING REINFORCING STEEL FOR POSTS TO BE GRADE 400 WITH A MINIMUM YIELD STRENGTH OF 60 K.S.I..
REINFORCING STEEL FOR PANELS TO BE GRADE 108 OR 110 WITH A MINIMUM YIELD STRENGTH OF 100 K.S.I.

FOUNDATION THE FOUNDATION IS DESIGNED TO BE IN MADE GROUND COMPACTED TO A MINIMUM OF 90% MODIFIED PROCTOR DENSITY OR IN ORIGINAL GROUND. IN BOTH CASES, THE GROUND SHALL HAVE A MINIMUM UNIT WEIGHT OF 110LBS PER CUBIC FOOT AT THE IN SITU MOISTURE CONTENT.

	No.	Revisions	Date	By
Design				
Drawn				
Checked				
Approved				
Date				

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(800) 207-4059 FAX - (610) 873-8431

PENN WALL SERIES CONCRETE
SCREEN WALL

DRAWING FAD-LIR | SHEET NO. 3 OF 3

SUPERIOR CONCRETE PRODUCTS

Product information on Superior Concrete Products screening walls, available styles, specifications and detail drawings, color chart, contract specifications.

SUPERIOR CONCRETE PRODUCTS

Proven Leaders of Precast Concrete Fences and Screening Walls

The Best Fence Around Homes

HOMEOWNERS

Textured to match the true look of wood, brick and stone, SUPERIOR-COBBLESTONE™, SUPERIOR-LEDGESTONE™, SUPERIOR-BRICK™ and SUPERIOR-WOOD™ wall and rail systems add value, permanent beauty and security to your home. An enduring feature of your home that requires no maintenance, these systems are manufactured with glass fiber and steel reinforced panels, posts and trim caps. Systems are versatile to match any landscape and architectural style, adding many years of pride, upgraded appearance, curb appeal and resale value.

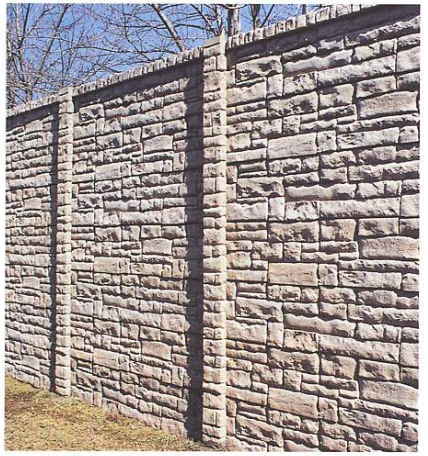
Designer Fencing

Each wall system has deep texturing on both sides to provide endless beauty and a neighbor-friendly presence. Whether a wood, brick or stone look is desired, Superior has the system for you. Where a screening wall is not required, Superior's rail system may be the answer. From a 10-foot wall or a 5-foot high 4-rail fence, Superior's systems are the best fences around your home. If a custom look is desired at an affordable price, look no more. A full palette of colors is available. From a natural color to a broad spectrum of earth tones and whites, Superior systems easily compliment the look of your home. Superior's products are easily integrated with precast concrete lattice panels, balustrades, cast stone trim caps and wrought iron fences. To complete your fence, Superior can provide a wide variety of gates to compliment the look and beauty of the wall.

Secure Structure

The fence blends into your property, adding privacy and security while creating an effective barrier against noise and wind.

Because there is no mechanical bond between the panel and posts, the fence will easily withstand soil and wind movements. Where other systems have fallen down due to floods, high winds and even earthquakes, Superior's walls have been documented to withstand no damage.



No Maintenance

Because the color is blended directly into the concrete mix before casting, no maintenance is required to keep its permanent beauty. Visual details like wood grain, mortar lines, and the "classic brick" look are maintained indefinitely. There is no painting, rotting, burning, termite damage or cracking.

Cost Effective

An attractive alternative to stone, brick or wood fences, Superior wall systems are cost-effective over the life of the fence. Permanency is the key. No repair or periodic replacement is required. Added benefits include enhanced curb appeal, increased resale value and the potential to share costs with neighbors. These benefits ensure for a long-term and sound investment.

Choose the Fence of a Lifetime

SUPERIOR-COBBLESTONE™, SUPERIOR-LEDGESTONE™, SUPERIOR-BRICK™ and SUPERIOR-WOOD™

- Beautiful for a lifetime
- Cost competitive
- No maintenance
- Increased value of property
- Upgraded appearance to home and neighborhood
- 5-year limited warranty

Unique Benefits

Benefits that add up to permanent beauty, security and enduring value.

- Cost-effective
- Warm appearance of wood, brick or stone
- Same texture on both sides and neighbor friendly
- Seamless appearance
- Maintenance-free
- No periodic replacement
- Impervious to weather, water and termites
- Cannot rot or burn
- Permanent color
- Security and strength of concrete
- Effective barrier against noise and wind
- Withstands ground movements
- Functions in all climates
- Simple, rapid and clean installation
- Installation requires no heavy equipment
- Modularized for future expansion

For information regarding products, sales and installation, contact:

SUPERIOR CONCRETE PRODUCTS

800-942-9255 • 817-261-0194 FAX

P.O. Box 201625 • Arlington, TX 76006 • 817-277-9255 tel

The Best Fence Around Commercial, Industrial & Utility Projects

Economically Sound

Superior Concrete Products' SUPERIOR-COBBLESTONE™, SUPERIOR-LEDGESTONE™, SUPERIOR-BRICK™ and SUPERIOR-WOOD™ wall systems deliver the benefits of brick or stone at less cost.

With the look of wood, brick or stone, Superior's systems are custom-made to match your specifications and requirements. The glass fiber and steel reinforced precast concrete walls and rail systems are precision-manufactured to provide a durable, reliable and maintenance free product.

Turnkey Service

Working closely with your project managers, engineers and construction personnel, Superior ensures a standard of excellence that will benefit both owner and neighborhood for years to come. Superior will handle every aspect of the project from providing stamped and sealed drawings, obtaining the permit through installation and customer service. Both the manufacturer and installer of the product, Superior guarantees high quality workmanship and service.

Approved Masonry Substitute

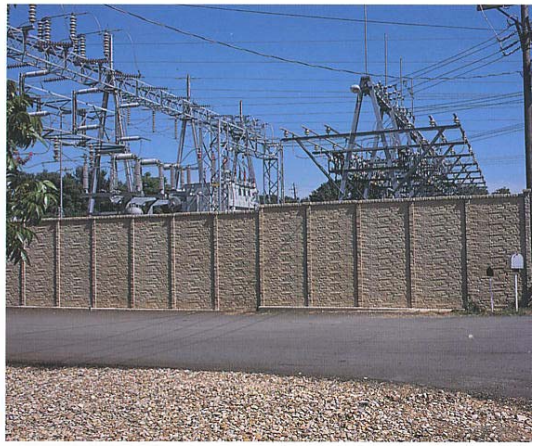
Most local authorities approve Superior's walls as a substitute for masonry construction. Where the local authorities may not be familiar with Superior's products, we will work with you and the agency to assist in the approval process. Manufactured and designed to blend with the local environment, Superior's walls are as permanent and attractive as hand-laid brick or stone but much more cost-effective.

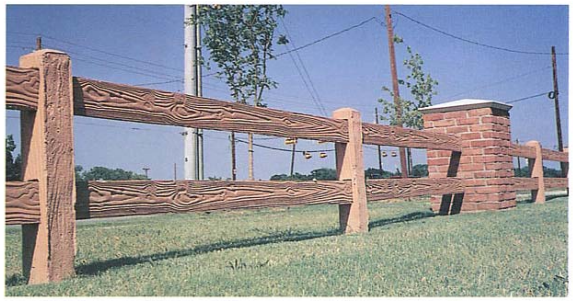
Advantages for Commercial and Industrial Projects

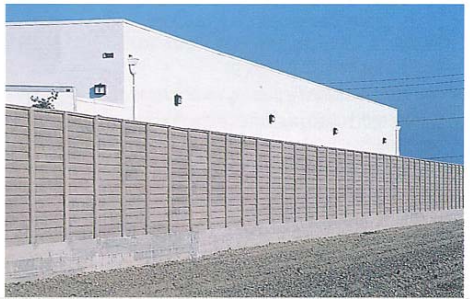
- Permanent screening walls that meet local code requirements for wind load, sound attenuation and aesthetics quality
- Long history of satisfied clients, neighborhoods and municipalities
- Performs better than wood. More attractive than chainlink. Costs less than brick or stone
- Cost efficiency helps speed bidding process. Preliminary estimates provided with no obligation
- Speed of construction and installation helps meet completion deadlines
- No continuous foundation required
- Deal with one contractor for turnkey service, design, engineering, permits, manufacture, installation and warranty
- Excellent screening qualities between commercial and residential properties
- Unaffected by freeze/thaw cycles
- Effective sound barrier to minimize noise transmission
- Fence products are designed, engineered, manufactured and installed to project specifications

Advantages for Utility Projects

- More cost-effective than poured concrete, brick or stone
- Quickly secures the perimeter around electrical substations, natural gas compressor stations and water storage facilities at a savings
- Permanent, aesthetically pleasing visual screens
- Satisfies both building authorities and budgetary requirements
- No continuous foundation required
- Meets code for decorative wall at less cost
- Meets wind loading requirements







Unique Benefits

Benefits add up to cost-effective projects that meet the needs and satisfaction of the community and owner.

- Durable, reliable and robust
- High quality workmanship
- One stop shop: one company for sales, design, engineering, manufacturing, installation and customer service
- Maintenance-free
- Easily customized to match project's decor
- Aesthetically pleasing — satisfies neighbors and compliments neighborhood
- Warm appearance of wood, brick or stone
- Impervious to weather, water and termites
- Cannot rot or burn and color is permanent
- Security and strength of concrete
- Effective barrier against noise and wind
- Withstands ground movements
- Functional in all climates
- Simple, rapid and clean installation
- Installation requires no heavy equipment
- Modularized for future expansion

For information regarding products, sales and installation, contact:

SUPERIOR CONCRETE PRODUCTS

800-942-9255 • 817-261-0194 FAX

P.O. Box 201625 • Arlington, TX 76006 • 817-277-9255 tel

The Best All-Around Value

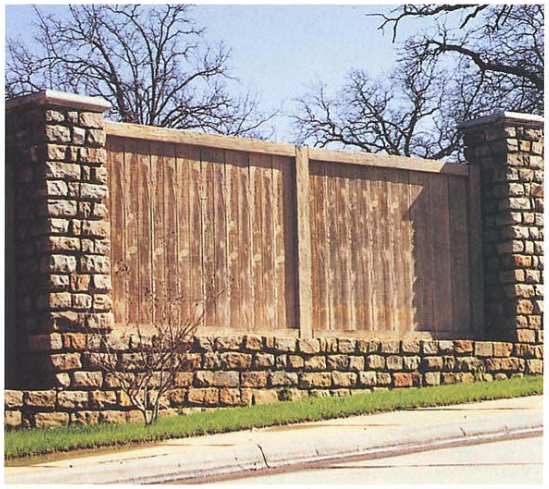
Superior Concrete Products introduces SUPERIOR-FENCE™, the all-new screening wall that truly ranks superior to other products in strength, durability and price. Manufactured by the leader in precast concrete fences and walls, SUPERIOR-FENCE features the look and feel of traditional Cedar in maintenance-free precast concrete. Ideal for home or commercial use, this attractive wall adds value and appeal around any property, and can last a lifetime.

Superior Construction and Design

SUPERIOR-FENCE™ features a never-before-possible vertical Cedar design, available only from Superior Concrete Products. This "neighbor-friendly" product features deep Cedar texture on both sides. Uniquely engineered, the panels can be stacked either horizontally or vertically to provide a harmonious look with your building and landscape. The fence is set eight feet on-center from post-to-post. Broader expanses between posts make SUPERIOR-FENCE appear more like natural wood. Made of high-strength concrete and additional reinforcement, SUPERIOR-FENCE earns its name for exceptional design features and value.

Customized Configurations, Colors

SUPERIOR-FENCE™ is available in varying heights up to eight feet, and in eight standard earth-tone colors, ranging from rich Desert Tan to deep Charcoal. Pigments are actually mixed with the concrete. Custom colors can be special-ordered to match any decor. Decorative trim caps are included with the SUPERIOR-FENCE, as in all Superior Concrete Products. The modular design makes SUPERIOR-FENCE easy to move, reconfigure or expand. This fence can be easily integrated with other Superior Concrete Products, such as wrought iron and brick.



Safe, Private, Maintenance Free

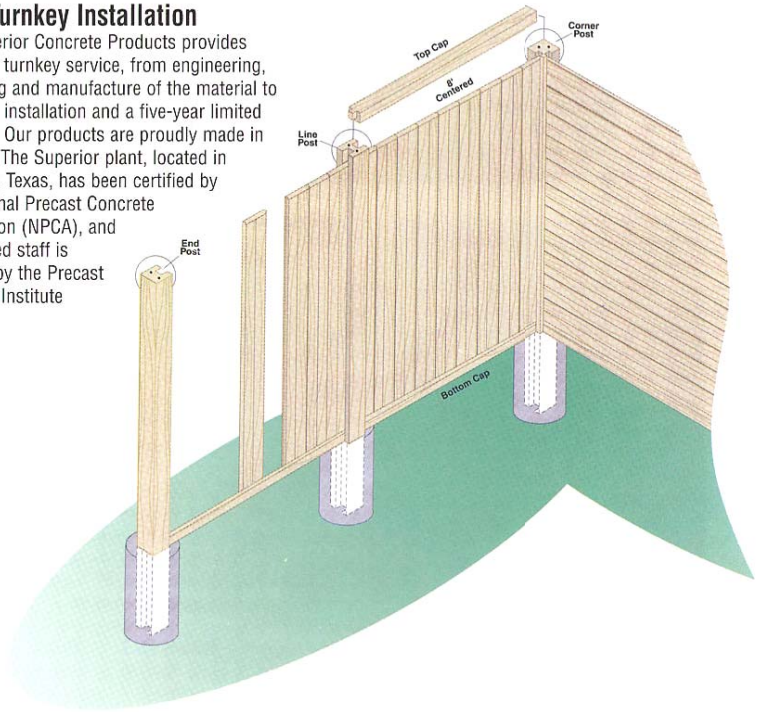
The SUPERIOR-FENCE™ provides excellent privacy, added safety, and forms an effective barrier against sound and wind. Unlike natural wood, this fence will not crack, rot, burn, or sustain termite damage. The product easily withstands extreme soil and wind movement, freeze/thaw cycles, and never needs painting. Visual details such as wood grain last indefinitely.

Cost Effective

SUPERIOR-FENCE™ is the cost-effective alternative to stone, brick or wood fences. No other fence or wall provides so many lasting benefits for so little. Our customer surveys confirm: "this is the product you've been waiting for, truly the best value in any fence."

Fast, Turnkey Installation

Superior Concrete Products provides complete turnkey service, from engineering, permitting and manufacture of the material to shipping, installation and a five-year limited warranty. Our products are proudly made in the USA. The Superior plant, located in Cleburne, Texas, has been certified by the National Precast Concrete Association (NPCA), and our trained staff is certified by the Precast Concrete Institute (PCI).



Unique Benefits

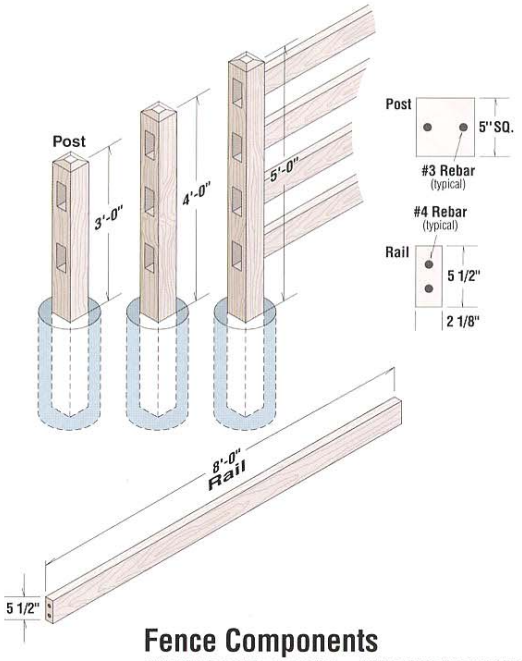
- Superior strength and lifetime durability
- Installed eight-feet on-center from post-to-post
- Modular units are easy to move, and expand
- Withstands shifting terrain and extreme temperatures
- Available in a variety of colors
- Easily integrated with gates, trim and other fences
- An effective barrier against sound and wind
- Adds safety and privacy to any property
- Five year limited warranty
- Made in the USA and certified for quality
- The best fence value on the market today
- Maintenance free
- Ideal for home or commercial use
- Looks like a traditional Cedar fence

SUPERIOR-FENCE™
is available only at

SUPERIOR CONCRETE PRODUCTS

800-942-9255 • 817-261-0194 FAX
P.O. Box 201625 • Arlington, TX 76006 • 817-277-9255 tel
Email: SUPERIOR-FENCE@prodigy.net
www.concretefence.com

Proven leader in precast concrete fences and walls since 1986



Specifications

- Panels, posts and rails have same texture on both sides.
- Integral color and concrete are thoroughly mixed and vibrated, and attain a strength of 4,000 psi at 28 days.
- Fiberglas® reinforced panels and rebar reinforced posts and rails. Rebar conforms to ASTM A615, grade 40.
- Wall posts are set five feet apart. Ranch Rail posts are set eight feet apart.
- Post footing depth varies with soil conditions, wind load and fence height.
- Loading: Each screen fence is designed to meet the local building codes. Wind loading and surcharge loads, will be applied to the panels, columns and foundation components.
- Foundations: Site specific geotechnical information used for each design.
- Noise Reduction: Equivalent to masonry as a reflective sound barrier.

Unique Benefits

Superior Concrete Products' wall systems offer many unique benefits.

- Warm appearance of wood, brick or stone
- Versatile design
- Permanent color
- Cost-effective
- Security and strength of concrete
- Effective wind and sound barrier
- Same texture on both sides
- Seamless appearance
- Quick, clean installation
- Functional in all climates
- Flexes with ground movement
- Impervious to weather and termites
- Cannot rot or burn
- No maintenance

For information regarding products, sales and installation, contact:

Fence Components

SUPERIOR COBBLESTONE™ and SUPERIOR LEDGESTONE™
- Posts, post caps, panels and panel caps.

SUPERIOR-BRICK™
- Posts, post caps, panels and panel caps.

SUPERIOR-WOOD™
- Posts, panels and panel caps.

SUPERIOR-RAIL™
- Posts and rails.

SUPERIOR CONCRETE PRODUCTS

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P.O. Box 201625 • Arlington, TX 76006 • 817-277-9255 tel

Services & Product Specifications

Superior Concrete Products

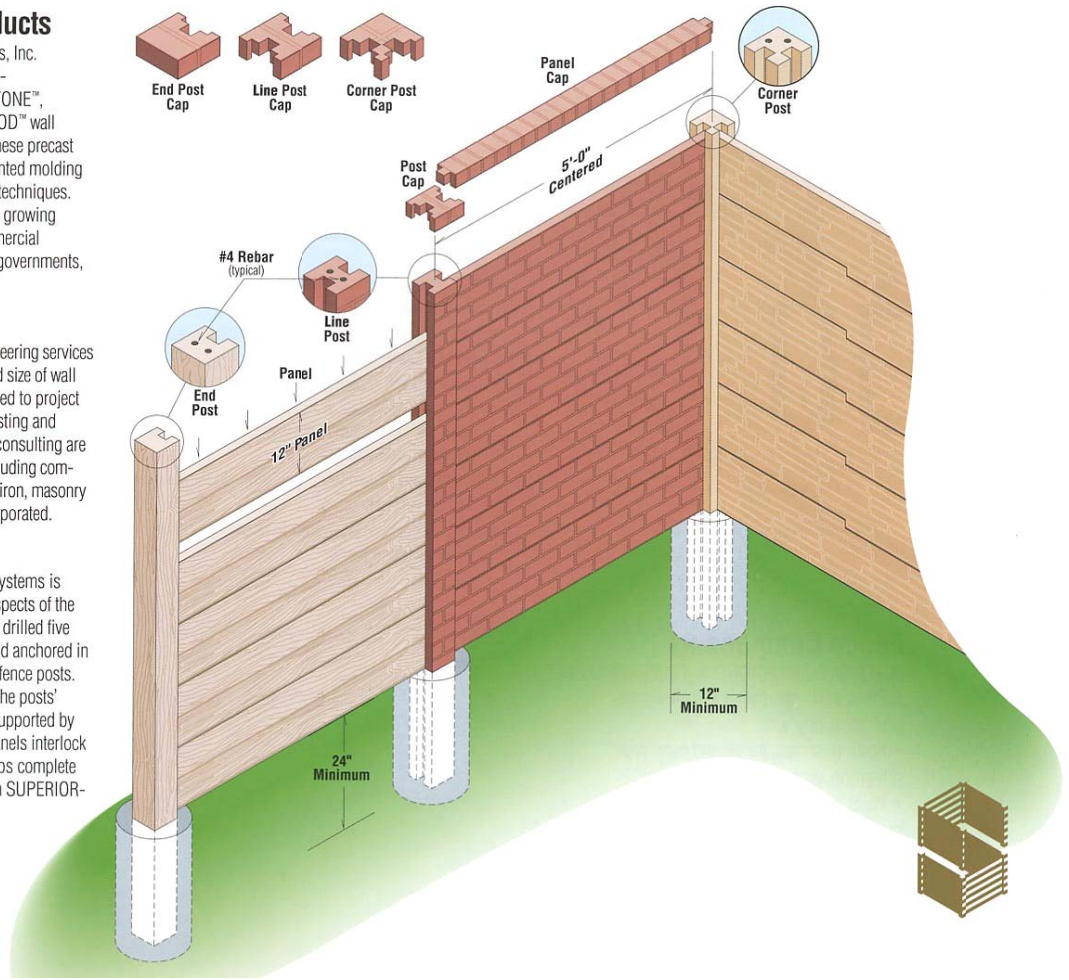
Since 1986, Superior Concrete Products, Inc. has manufactured and installed SUPERIOR-COBBLESTONE™, SUPERIOR-LEDGESTONE™, SUPERIOR-BRICK™ and SUPERIOR-WOOD™ wall systems from offices in Arlington, Texas. These precast concrete systems are produced using patented molding equipment and proprietary manufacturing techniques. They are specified as fences of choice by a growing number of architects, residential and commercial builders, contractors, municipal and state governments, and others in the construction industry.

Design Engineering

Superior Concrete provides design engineering services for every job. The color, strength, texture and size of wall system components can be custom designed to project specifications prior to manufacture. Soil testing and evaluation, fence design and architectural consulting are available services. Finishing treatments, including combining a Superior wall system with wrought iron, masonry columns, and gates of choice, can be incorporated.

Installation

Installation of Superior Concrete wall systems is quick and clean. Superior will handle all aspects of the installation process. Posts are set into piers drilled five feet apart. The posts are aligned, leveled and anchored in concrete footings, similar to other types of fence posts. Precast panels are inserted into and down the posts' tracks. The bottom panel keys into and is supported by the footing around each post. Additional panels interlock and stack in one foot increments. Panel caps complete the installation. Post caps are included with SUPERIOR-STONE™ and SUPERIOR-BRICK™.



The Best Fence Around Residential Developments

PLANNED RESIDENTIAL DEVELOPMENTS

Give Your Development the Beauty of Brick or Stone For Less

Superior Concrete Products' SUPERIOR-COBBLESTONE™, SUPERIOR-LEDGESTONE™, SUPERIOR-BRICK™ and SUPERIOR-WOOD™ wall and rail systems deliver the benefits of brick or stone at less cost.

With the look of wood, brick or stone, Superior's systems were created to match the aesthetics and architecture of any community. The glass fiber and steel reinforced precast concrete walls and rail systems are precision-manufactured to provide a durable, reliable and maintenance free product.

Many developers combine Superior's cost-efficient wall systems with masonry columns and wrought iron for a rich look that builders and homeowners appreciate. Superior's wall systems do not require a continuous foundation. Installed quickly without the need of heavy equipment, the systems can be easily repaired if camaged by collision.

Superior's walls have the same wood, brick or stone appearance on both sides. An excellent barrier to sound, wind, fire and sand, they require no maintenance. Also, a good choice for your entry and monument walls.

Advantages for Planned Developments

- Permanent perimeter walls that compliment the development theme
- Costs less or competitive with masonry
- More curb appeal than wood
- Can be easily integrated with other materials: stone, brick, and wrought iron for a custom appearance
- Infinite design capabilities through custom color and finishing treatments
- No continuous foundation required
- Deal with one contractor for turnkey service, design, engineering, permits, manufacture, installation and warranty
- Excellent screening qualities to define residential areas
- Effective sound barrier against highway or shopping center noise
- Meets wind loading requirements
- Fence products are designed, engineered, manufactured and installed to project specifications
- Ideal for low retaining walls and enclosures

Unique Benefits

Benefits add up to an economically sound development with appeal and pride.

- Cost-effective
- Upgraded appearance to development
- Adds curb appeal
- Perimeter wall can be readily matched to interior fences to add continuity to development
- Warm appearance of wood, brick or stone
- Easily customized to compliment look and feel of development
- Same texture on both sides and neighbor friendly
- Easily integrates with masonry columns or wrought iron fencing
- Signage options
- Maintenance-free
- No replacement
- Impervious to weather, water and termites
- Cannot rot or burn
- Permanent color
- Security and strength of concrete
- Effective barrier against noise and wind
- Withstands ground movements
- Functions in all climates
- Simple, rapid and clean installation
- Installation requires no heavy equipment
- Easily repaired in case of damage by collision
- Modularized for future expansion and easy access on perimeter and interior applications
- 5-year limited warranty

For information regarding products, sales and installation, contact:

SUPERIOR CONCRETE PRODUCTS

800-942-9255 • 817-261-0194 FAX

P.O. Box 201625 • Arlington, TX 76006 • 817-277-9255 tel

The Best Fence Around Municipal Projects

Performance That's More Versatile Than Brick Without the Cost

Superior Concrete Products' SUPERIOR-COBBLESTONE™, SUPERIOR-LEDGESTONE™, SUPERIOR-BRICK™ and SUPERIOR-WOOD™ wall systems deliver the benefits of brick or stone at less cost.

With the look of wood, brick or stone, Superior's fences make an ideal system for parks, recreational facilities and buffers between residential and commercial properties. The glass fiber and steel reinforced precast concrete walls and rail systems are precision manufactured to provide a durable, reliable and maintenance free product.

Our fences are aesthetically pleasing, permanent, secure and excellent noise barriers. They effectively screen municipal operations like fire and police stations, water storage facilities, and waste treatment facilities from adjacent residential or commercial property.

A Good Use of Public Funds

Superior's wall systems are a sound investment of tax collars because not only is the capital expenditure less than a conventional masonry wall but they require no maintenance. The system has been designed and manufactured to withstand soil, temperature and wind movements that can damage more conventional products. They do no rot, are impervious to weather and infestation, and do not require painting. If damaged by collision, the modular panels can quickly be replaced.

Design to Match Any Style

Superior's wall systems can be custom designed to meet the specifications and requirements of the designated project. Custom color and finishing combinations make it possible to match virtually any existing wall, architectural style or aesthetic consideration. Painting and highlighting grout lines further enhance the appearance and value of your project.

Advantages for Municipal Applications

- Permanent screening walls that meet local code requirements
- Solid history of satisfied municipalities and governmental agencies
- More durable than wood. More attractive than chainlink. Costs less than brick or stone
- Low-cost system helps approval process
- Projects can be phased to meet various procurement guidelines
- Speed of construction and installation helps meet completion deadlines
- No continuous foundation required
- Deal with one contractor for turnkey service, design, engineering, permits, manufacture, installation and warranty
- Excellent screening qualities between commercial and residential properties
- Unaffected by freeze/thaw cycles
- Meets specified wind load requirements
- Effective sound barrier against highway and commercial noise
- Fence products are designed, engineered, manufactured and installed to project specifications
- Secures the perimeter around water storage facilities, electrical substations and waste treatment operation centers
- Ideal for parks and recreational facilities
- Attractive enclosure for dumpsters and sanitation equipment

MUNICIPAL & STATE GOVERNMENTS

Unique Benefits

Benefits add up to an economically sound and attractive investment.

- Low cost
- Aesthetically pleasing — satisfies neighbors and compliments neighborhood
- No maintenance
- Company with a solid history and proven track record
- One stop shop: one company for sales, design, engineering, manufacturing, installation and customer service
- Warm appearance of wood, brick or stone — same texture on both sides and neighbor friendly
- Impervious to weather, water and termites
- Cannot rot or burn
- Permanent color
- Security and strength of concrete
- Effective barrier against noise and wind
- Withstands ground movements
- Functional in all climates
- Simple, rapid and clean installation
- Installation requires no heavy equipment
- Modularized for future expansion
- 5-year limited warranty

For information regarding products, sales and installation, contact:

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P.O. Box 201625 • Arlington, TX 76006 • 817-277-9255 tel

Color Chart

Pueblo

Sand

Taupe

Terra Cotta

Buff

Desert Tan

Titanium

Charcoal

Natural

Color is impaired with an iron oxide pigment and integral (mixed in) with the concrete. Colors are offered for any product and texture. In actual practice, product color may vary from that shown on this chart. Superior Concrete Products reserves the right to change colors without notice. White and custom colors will be provided at an additional cost.

SUPERIOR CONCRETE PRODUCTS

800-942-9255 • 817-261-0194 FAX

1203 Raider Drive • Euless, TX 76040

817-277-9255 tel • www.concretefence.com

PRODUCT & SERVICE OFFERINGS

Superior Concrete Products provides a turnkey service, which includes the manufacture and installation of high–quality decorative precast concrete screening walls, sound barriers and rail fencing.

Products have the look of stone, brick or wood. All products are manufactured in Superior's USA, **NPCA** Certified Plant with high strength concrete (4,500 psi @ 28 days) and steel reinforcement (minimum 2-#4 rebar in screening wall posts and 3 horizontal strand 9 gauge galvanized wire mesh in panels).

Offerings include:

Services:

- 3D Digital Imaging - new
- Permits
- Manufacturing
- Installation including footing
- 5-year warranty and
- Customer support

Products:

- Screening and Sound Walls
  - SUPERIOR-COBBLESTONE™ (New)
  - SUPERIOR-LEDGESTONE™
    - Stone Textured – both sides
    - 1' high to 14' high
    - 5' Post: Post
    - Integral Color

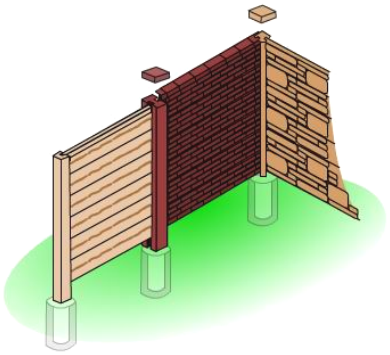
- SUPERIOR-BRICK™
  - Brick Textured – both sides
  - 1' high to 14' high
  - 5' Post:Post
  - Integral Color

- SUPERIOR-BRICK™
  - Brick Textured – both sides
  - 1' high to 14' high
  - 5' Post:Post
  - Integral Color

- SUPERIOR-WOOD™
  - Wood Textured – both sides
  - 1' high to 14' high
  - 5' Post:Post
  - Integral Color

- SUPERIOR-FENCE™
  - Cedar Look Textured – both sides
  - 6' high to 8' high
  - 8' Post:Post
  - Vertical or Horizontal Panel Alignment
  - Integral Color

- Rail Fence (8' Post:Post)
  - SUPERIOR-RAIL™
  - Wood Textured – both sides
  - 2-Rail (3' high)
  - 3-Rail (4' high)
  - 4- Rail (5' high)
  - Integral Color



Superior Concrete Products is NPCA certified

Since 1986, Superior Concrete Products, Inc. has **manufactured** and **installed** SUPERIOR-WOOD™, SUPERIOR-BRICK™ and SUPERIOR-STONE™ wall systems from offices in Arlington, Texas. These precast concrete systems are produced using patented molding equipment and proprietary manufacturing techniques. They are specified as fences of choice by a growing number of architects, residential and commercial builders, contractors, municipal and state governments, and others in the construction industry.

Design Engineering

Superior Concrete provides design engineering services for every job. The color, strength, texture and size of wall system components can be custom designed to project specifications prior to manufacture. Soil testing and evaluation, fence design and architectural consulting are available services. Finishing treatments, including combining a Superior wall system with wrought iron, masonry columns, and gates of choice, can be incorporated.

Installation

Installation of Superior Concrete wall systems is quick and clean. Superior will handle all aspects of the installation process. Posts are set into piers drilled five feet apart. The posts are aligned, leveled and anchored in concrete footings, similar to other types of fence posts. Precast panels are inserted into and down the posts' tracks. The

Installation

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Technical Specifications

General

1. Screening/Sound wall systems and Split Rail fence systems.
2. Decorative reinforced precast concrete modular component systems.
3. Screening and sound walls include posts, panels and caps. Split rail fences include posts and rails.
4. Precast concrete shall have a minimum compression strength of 4,500 psi @ 28 days.
5. Fiberglas and steel reinforced components. All reinforcing steel shall conform to ASTM – A615, Grade 60. All ties and stirrups shall conform to the requirements of ASTM –A 615, Grade 40.
6. Systems manufactured in integrally colored earth tones. Custom, white and premium colors are available.
7. Systems are anchored to ground by poured concrete piers, 5' on-center (wall systems) and 8' on-center (SUPERIOR-FENCE and rail systems). A continuous foundation/footing running the length of the wall is not required.
8. Method of post attachment to concrete footing/pier shall be by embedment in poured concrete. Depth of concrete pier, and embedment of post shall be as shown on Shop Drawing.
9. Pier depth varies with soil conditions, wind load and fence height.
10. Loading: Wind loading and surcharge loads, will be applied to the panels, columns, and foundation components per local building code requirements.

Materials

1. Wall system:
    a. SUPERIOR-STONE™, SUPERIOR-BRICK™ and SUPERIOR-WOOD™ wall systems with heights up to 15'. SUPERIOR-FENCE wall system with heights up to 8'.
    b. Panels, posts and caps to have same texture on both sides.
        i. SUPERIOR-STONE – stacked stone.
        ii. SUPERIOR-BRICK – classic brick.
        iii. SUPERIOR-WOOD – horizontal lap-wood.
        iv. SUPERIOR-FENCE - vertical or horizontal "cedar" look.
    c. Includes decorative textured panel caps and post caps (SUPERIOR-BRICK and SUPERIOR-BRICK only).
    d. Posts are set five feet apart (maximum). SUPERIOR-FENCE posts are set eight feet apart.
    e. Posts shall have a typical cross sectional dimension of 5" as measured from face-to-face.
    f. Panels shall have typical dimensions of 56 5/8" long by 12" high by 1 ¾" wide at its maximum dimension.

2. Rail system:
    a. SUPERIOR 2-RAIL™ (3' high from grade to top of post), SUPERIOR 3-RAIL™ (4' high from grade to top of post) and SUPERIOR 4-RAIL™ (5' high

2. Rail system:

    a. SUPERIOR 2-RAIL™ (3' high from grade to top of post), SUPERIOR 3-RAIL™ (4' high from grade to top of post) and SUPERIOR 4-RAIL™ (5' high from grade to top of post).
    b. Posts and rails have "wood" texture on both sides.
    c. Posts are set eight feet apart (maximum).
    d. Posts have a typical cross sectional dimension of 5" as measured from face-to-face.
    e. Rails have typical dimensions of 7'-10 3/4" long by 5 1/2" high by 2 1/4" wide.

Benefits

1. Versatility – heights as needed and easily modified to meet a wide range of wind loads and special requirements,
2. Reliability- High-strength high-performance concrete (4,500 psi @ 28 days),
3. Durability – Engineered to last, improved reinforcement,
4. Quality - National Precast Concrete Association (NPCA) "Certified" factory – only 60 factories in the US are similarly certified,
5. Expertise - Prestressed/Precast Concrete Industry (PCI) "Certified" technical team,
6. Assurance – Quality controlled manufacturing, and
7. Local Content - products manufactured in the USA.

Superior Concrete Products
1203 Raider Drive
Euless, Texas 76040
Phone: 817-277-9255 / 800-942-9255
Fax: 817-261-0194

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes:

1. Superior Concrete Products precast concrete screening walls, perimeter fences and noise walls and installation instructions as required for complete, high-quality and long lasting walls.
2. Division 2: Concrete Fences.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 3 Section “Cast-in-Place Concrete” for concrete for post footings below grade.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Project, including General and Supplementary Condition Division 1 Specification Sections, apply to this Section.

1.3 REFERENCES:

A. PCI’s MNL-117 “Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products”

B. PCI's MNL-120 "PCI Design Handbook – Precast and Prestressed Concrete"
C. ACI 318 (ACI 318M) "Building Code Requirements for Reinforced Concrete"
D. ACI 305R – "Hot-Weather Placement"
E. ACI 306R – "Cold-Weather Placement"
F. CRSI's "Manual of Standard Practice" for fabricating, placing and supporting reinforcement.
G. ASTM A82 – "Reinforcing Wire"
H. ASTM A615 – "Reinforcing Bars"
I. ASTM C33 – "Coarse Aggregate"
J. ASTM C33 – "Fine Aggregate"
K. ASTM C150 – "Portland Cement"
L. ASTM C260 – "Air-Entraining Admixture"
M. ASTM C494 – "High-Range, Water-Reducing Admixture"
N. ASTM C979 – "Coloring Agent"
O. ASTM C1107 – "Non-Shrink Grout"
P. ASTM C1116 – "Synthetic Fiber-Reinforced Concrete"
Q. ASTM E90-75 "Standard Recommended Practice for Laboratory Measurements of Airborne Sound Transmission Loss of Building Partitions"

1.4 SUBMITTALS

A. General: Submit the following according to the Conditions of the Project and Division 2 Specification Sections.

1. Product Data: Furnish manufacturer's literature for each architectural precast concrete screening wall or noise barrier.
2. Color Chart: Show full range of available colors.
3. Shop Drawings: Provide working drawings indicating all information necessary for precasting screening wall or noise barrier elements. Drawings shall illustrate the shape and dimension of precast components; the size, quantity and details of the reinforcing steel; the quantity, type, size and details of connection and lifting hardware (if needed); the size and location of drain openings; and any additional details necessary. Drawings shall bear the seal of a registered professional engineer.
4. Design Calculations: When required, furnish design calculations which include a summary of all design parameters used, including material types, strength values, allowable stresses, assumed loads and load combinations. Calculations shall be submitted covering the range of heights and loading conditions on the project. Calculations shall bear the seal of a registered professional engineer.
5. Samples: Furnish samples of each type, texture and color of concrete screening wall or noise barrier units required for Project.
6. Certification: Furnish manufacturer's certificate of certification by the National Precast Concrete Association (NPCA) or an equivalent organization such as the Precast/Prestressed Concrete Institute's (PCI).

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has experience with architectural precast concrete screening wall or noise barrier projects with same material and of similar scope to that indicated for this Project with a successful construction record of in-service performance. Installer must submit the names, location, phone number and of three references as well as description of the project successfully completed for each reference.

B. Single-Source Responsibility:

1. Obtain concrete fence materials manufactured in the United States from a single source.

C. Manufacturer Qualifications: Engage a firm experienced in producing precast concrete screening wall or noise barrier units in accordance to those indicated for this Project and with a record of success in-service performance, as well as sufficient production capacity to produce required units without delaying the Work.

1. Manufacturer must own a manufacturing facility that produces precast concrete screening wall and noise barrier units.
2. Manufacturer shall be certified by the National Precast Concrete Association (NPCA) or an equivalent organization such as the Precast/Prestressed Concrete Institute's (PCI) Plant Certification Program and be designated a PCI Certified Plant for Group A1 – Architectural Concrete.
3. Manufacturer shall be registered and approved by authorities having jurisdiction.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify layout information for fences and gates shown on the Drawings in relation to the property survey and existing structures. Verify dimensions by field measurements.

B. All existing fence or fence line obstructions to be removed by owner prior to commencement of work.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, products that may be incorporated in the work include, but are not limited to, the following:

1. Superior Concrete Products
Contact: Barry Stevens, Ph.D.
1203 Raider Drive
Euless, Texas 76040
Phone: 817-277-9255 / 800-942-9255
Fax: 817-261-0194

2. Product shall be manufactured by a NPCA (National Precast Concrete Association) certified factory in the USA.

3. Installer shall be bondable and provide Payment and Performance bonds.

2.2 MATERIALS

A. SUPERIOR-COBBLESTONE™, SUPERIOR-LEDGESTONE™, SUPERIOR-BRICK™ or SUPERIOR-WOOD™ Wall system (panels and posts):

1. 6’ or 8’ high
2. Panels and posts shall have a cobblestone stone (SUPERIOR-COBBLESTONE), ledgestone (SUPERIOR-LEDGESTONE™), brick (SUPERIOR-BRICK™) or horizontal “shiplap” wood (SUPERIOR-WOOD™) texture on both sides.
3. Includes textured panel caps and post caps.
4. Panel, Posts and caps shall be normal weight concrete having sand and gravel or crushed stone aggregates mixed with ASTM-C150, Type I or Type III Portland Cement and shall have minimum compression strength of 5,000 psi @ 28 days.
5. Integral color and concrete to be thoroughly mixed and vibrated.
6. Fiberglas reinforced panels and rebar reinforced posts and rails. Rebar conforms to ASTM A615, grade 40.
7. Wall posts set five feet apart, or per manufacturer’s recommendations.
8. Post footings: 5’ on-center (maximum), see Section D.
9. Loading: Wind loading and surcharge loads, will be applied to the panels, columns, and foundation components per local building code requirements.

B. SUPERIOR-COBBLESTONE, SUPERIOR-LEDGESTONE , SUPERIOR-BRICK™ or SUPERIOR-WOOD Components Dimensions

1. Posts shall have a typical cross sectional dimension of 5” as measured from face-to-face.
2. Posts shall be reinforced with 1- #4 rebar, each face (6’ high fence) or 1- #5 rebar, each face (8’ high fence).
3. Method of post attachment to concrete footing/pier shall be by embedment in poured concrete. Depth of concrete pier and embedment of post shall be as shown on Shop Drawing.
4. Panels shall have typical dimensions of 56 5/8” long by 12” high by 2” wide at its maximum dimension and no less than 1 ¾” wide at its minimum dimension.
5. Panels shall have tongue and groove construction (SUPERIOR-COBBLESTONE, SUPERIOR-BRICK™ or SUPERIOR-WOOD) or rabbit joint construction (SUPERIOR-LEDGESTONE.)
6. Panels shall be reinforced with 9 gauge galvanized wire mesh having 3 horizontal bars and at least 4 vertical bars. Wire mesh to be centered in mold with Sparfix mesh wheel #RWO5MS by Conac.
7. Panel caps shall have typical dimensions of 56 1/2” long by 2” high by 4” wide.
8. Panel caps shall be reinforced with 1-#4 rebar positioned in mold with rebar clip #RCL 75 by Conac.

C. Color

1. Integrally colored.
2. As selected from manufacturer’s full range of standard colors.
3. White or custom colors can be provided at an additional cost.

D. Piers (Post Footings) Design – In accordance with local codes and soil conditons

1. 5’ on-center (maximum)
2. Diameter: Per Manufacturer’s Recommendation, but not less than 12” (typical)

3. Depth: Per Manufacturer's Recommendation, but not less than 4'-3" (typical- 6' high fence) or 5'-0" (typical- 8' high fence)
4. Reinforcement: none unless diameter is greater than 12" than 4-#4 vertical rebar and #3 ties 12" on-center with 3-#3 ties at top
5. Concrete shall be normal weight concrete having sand and gravel or crushed stone aggregates mixed with ASTM-C150, Type I or Type III Portland Cement and shall have a minimum compression strength of 3,000 psi @ 28 days.

E. Noise Reduction

1. Precast concrete screening wall shall perform as a reflective sound barrier
2. Sound Transmission loss through the wall shall be at least 12 dB as determined from ASTM E 90-97.
3. Certification of noise shall be required.

2.3 GENERAL

A. This Project has been designed in accordance with International Building Code, 2000 Edition, 90 mph wind load.

B. Loads Criteria:

1. Soil Type: silty sand or sandy clay
2. Soil Compaction: 95% Std. Proctor
3. Wind Load: TBD
4. Safety Factor: 1.2
5. Working Design Stress WDS = 133%
6. Seismic Design: Zone 0.5

2.4 CONCRETE

A. Concrete Material

1. Concrete shall be normal weight concrete having sand and gravel or crushed stone aggregates, mixed with ASTM-C150, Type I or Type III Portland Cement to meet the minimum compressive strengths as follows.
   a. Panels &Posts: 5,000 psi @ 28 days
   b. Footings & Piers: 3,000 psi @ 28 days
   c. Sidewalks & Non-structural: 2,500 psi @ 28 days
2. Water used for concrete shall be clean water and free from injurious amounts of oils, alkalis, Organic or other deleterious substances.
3. All concrete permanently exposed to the weather shall contain an air entraining admixture resulting in 3 to 6% entrained air or as recommended by the manufacturer.

B. Reinforcing Materials:

1. All reinforcing steel shall be deformed type bars and conform to ASTM – A615, Grade 60, placed as shown on the drawings.
2. All ties and stirrups shall conform to the requirements of ASTM –A 615, Grade 40.

C. Color: As selected from manufacturer's full range of colors.

PART 3 – EXECUTION

3.1 INSTALLATION

A. General: Install per manufacturer's recommendations.

1. Reinforcing Workmanship:
   a. Reinforcement steel shall be fabricated in accordance with the CRSI Standard Details. Reinforcing bars shall be cold-bent only. Use of heat to bend reinforcement steel shall be cause for rejection.
   b. Reinforcement steel, bars and wire fabric shall be thoroughly cleaned before placing and again before the concrete is placed, shall be accurately positioned and secured in place. Provide standard bar charts for all beam steel off the ground.
   c. Install all reinforcement with the following clearances between reinforcing steel and face of concrete.
      1) Footing, pier or beam bottom: 3"
      2) Earth-formed pier of beam sides: 2"
      3) Formed footing, pier or beam sides exposed: 1"
      4) Precast exposed to weather: panels ¾"; posts 1 ¼"
   d. Splices within continuous unscheduled reinforcing steel shall have a minimum lap of 30 bar diameters.

2. Soils:
   a. Footing size is based on soil properties at site.

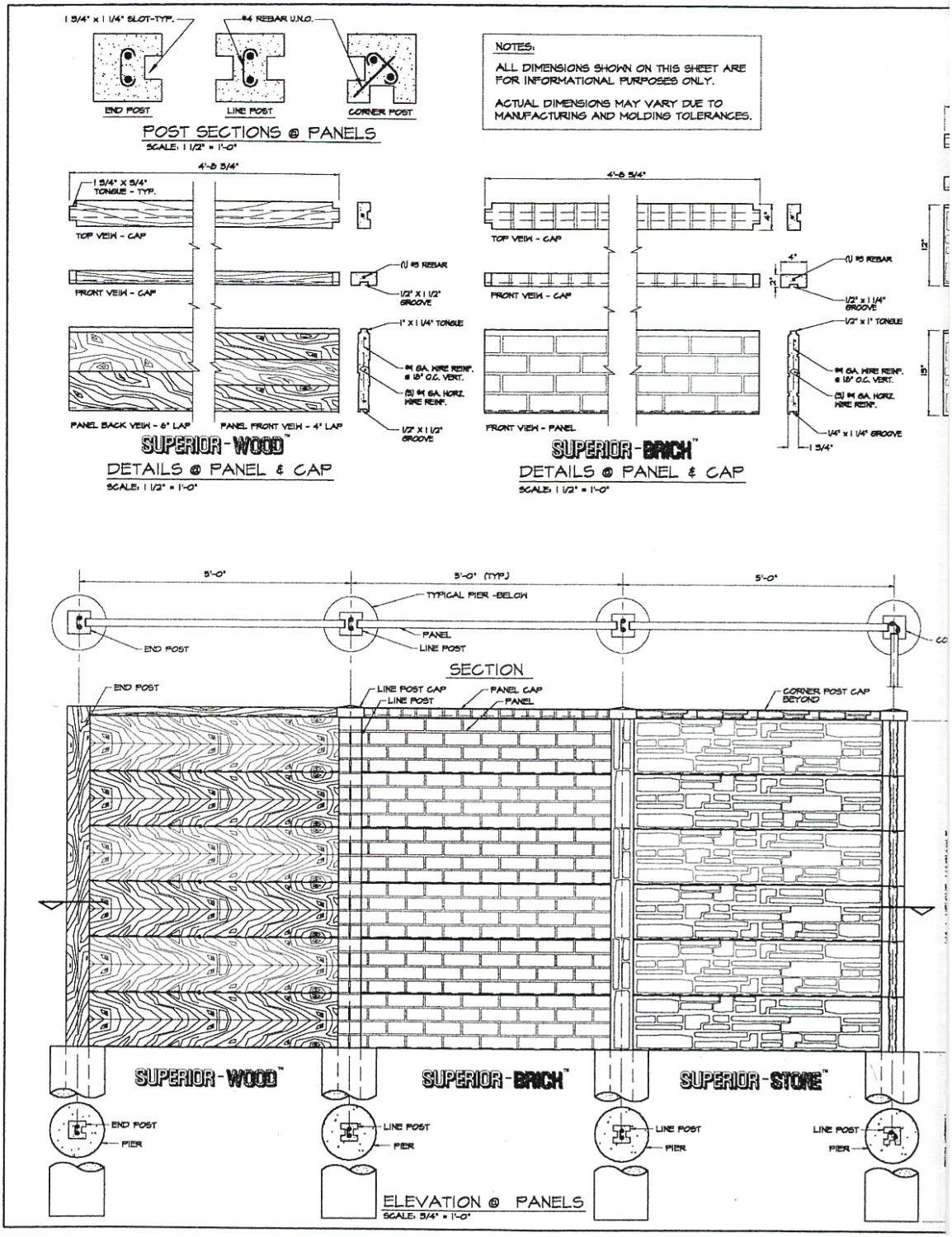
3. Concrete Workmanship
   a. Fresh poured concrete shall be tamped into place by steel rammer, slicing tools or mechanical vibrator until concrete is thoroughly compact and without void.
   b. Make excavations for footing to undisturbed soil of to the depth noted on the drawings. Leave the bottom-bearing surface clean and smooth. If footing excavations are made deeper than intended, only concrete shall be used for fill. Remove all loose material from grade beam excavations prior to concrete pour.

B. Align and level posts and panels to be plumb.

3.2 DAMAGED UNITS

A. Replace panels and other components of work that have been damaged.

B. Cleaning: Prior to Substantial Completion clean surfaces of fence as recommended by fence manufacturer.



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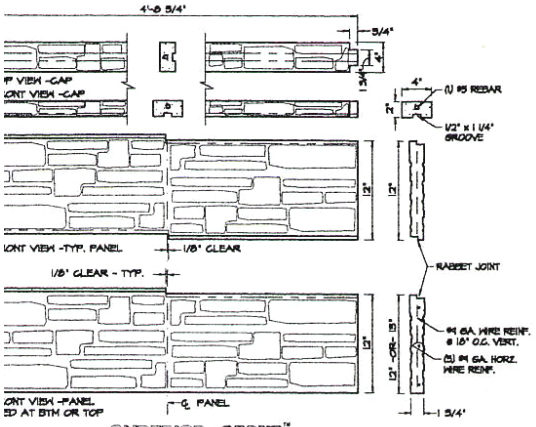
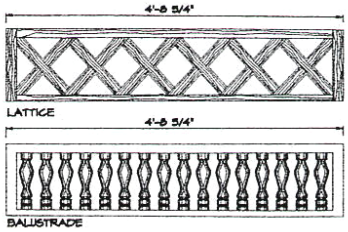


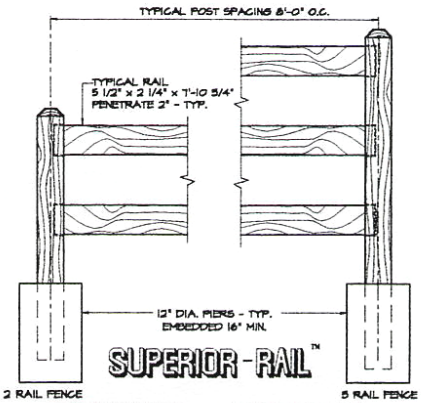
SUPERIOR-STONE™

DETAILS @ PANEL & CAP

SCALE: 1 1/2" = 1'-0"



DETAIL OF OPTIONAL PANELS



ELEVATION - SUPERIOR-RAIL

SCALE: 3/4" = 1'-0"

SPECIFICATION DATA
Pre-Cast Concrete Fencing

1. PRODUCT NAME

Pre-cast Fencing: SUPERIOR-BRICK, SUPERIOR-WOOD, SUPERIOR-STONE and the SUPERIOR-RAIL Fence System.

2. MANUFACTURER

Superior Concrete Fence of Texas, Inc. P.O. Box 201625, Arlington, Texas 75006-1625, (817) 277-9255. All products manufactured in USA by a NPCA certified plant.

3. PRODUCT DESCRIPTION

Basic Use: Product is intended for residential and commercial exterior fencing and screening walls.

- Fencing and screening walls separating properties.
- Decorative and Architectural Fencing.
- Sound barriers
- Corral Fencing
- Equestrian Trails
- Golf Courses
- Subdivisions
- Planters

Limitations: Should not be used alone as a retaining wall for the support of soils or other structural elements.

Composition and Materials: A mix of high strength portland cement meeting or exceeding the requirements of ASTM-C150, natural aggregates, and iron oxide colors placed and cast within factory molds. Filled molds are vibrated. After setup of mix, the cast product is stripped from molds, cured, and packaged for shipment.

Sizes: Screening Fencing. Screening fence columns are typically placed at 6'-0" centers with the screen fence panels being 12 inches in height and approximately 1 inches in thickness. Overall height of the fence system can be designed to heights in excess of 12'-0" dependent upon local codes and site soil conditions. Rail Fencing. Rail fence posts are typically placed at 8'-0" centers and will include either two or three rail (3'-0" or 4'-0" in height respectively).

4. TECHNICAL DATA

Concrete Mix:
Compressive strength - F'c=4,500 psi.
Reinforcing Steel:
Steel yield strength - Fy=40,000 psi.
Loading: Each screen fence is to be designed to meet the local building codes as the apply. Wind loading and Surcharge loads as they occur, will be applied to the panels, columns, and foundation components.

Foundations: Site specific geotechnical information to be used for each design.

5. INSTALLATION

The posts are positioned and erected by site-casting the column or post into a drilled pier. The pier size, depth and reinforcement is constructed as specified within site specific Engineered Drawings. After the posts are accurately spaced, plumbed and leveled, they are braced, until the pier concrete has obtained it's initial strength. With the posts erected, the panels are manually slid into place. Where post spacing must be less than 5'-0", the panels are saw cut to a length as required to fit. Post caps and panel caps are bonded into place by applying a silicone based adhesive between the cap and fence component.

Specialties & Options:

- Concrete mow strips:
- Gates:
- Architectural panels: lattice wrought iron and balustrade configurations may be substituted within the fence system.
- Drainage: Panels can be arranged to allow for continuous or intermittent drainage beneath the fence.

6. AVAILABILITY AND COST

Availability: Available from manufacturer's authorized suppliers including the following:
Superior Concrete Fence of Texas, Inc. P.O. Box 201625, Arlington, Texas 75006-1625, (817) 277-9255

Cost: Product is priced based on height per lineal foot.

7. MAINTENANCE

Most applications require no maintenance. Where excessive dust or dirt are prevalent, product can be washed down occasionally.

8. TECHNICAL SERVICES

Technical personnel are available for consultation with architects, engineers, city officials and owners to discuss type, application and site specific engineering requirements, etc.

REVISIONS

SUPERIOR-WOOD™/SUPERIOR-BRICK™/SUPERIOR-STONE™/SUPERIOR-RAIL™

Manufactured By
SUPERIOR CONCRETE PRODUCTS
PO BOX 201625 ARLINGTON TX 76006
1 (800) 942-9255 (817) 277-9255

DATE:
DRAWN: PAGE
JOB:
SHEET F1
OF 1 SHEET(S)

DESIGNER CONCRETE MODULAR WALLS
FENCESTONE

Product information on Designer Concrete Fences, available styles, specifications, and detail drawings.

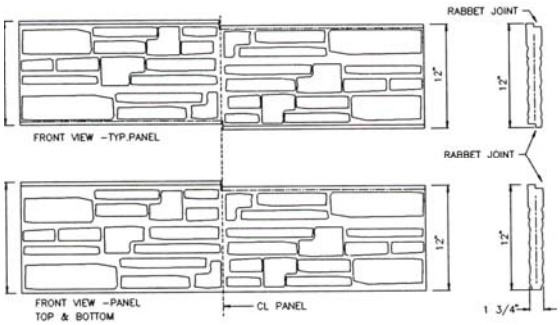
FENCESTONE WALL SYSTEM

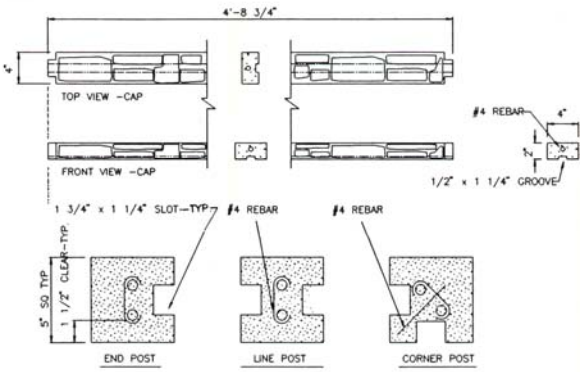
The Fencestone™ Wall System unites the warm ambiance of "dry stacked" stone with economical, lasting precast concrete panels, posts and caps. Utilizing steel and fiber reinforcement in high strength colored concrete, Fencestone™ will fulfill any requirement for an attractive, maintenance free wall. The timeless beauty of rugged stone, crafted with clefts and crevices is shared equally on both sides of the site assembled wall.

Throughout the day, shadows cast by the sun, accentuate the texture of the wall surface. 1 foot by 5 foot panels meet invisibly in recesses created by the deeply defined stone impressions.

The innovative characteristics of Fencestone™ will enhance with distinction, both your project and your reputation.

DETAILS



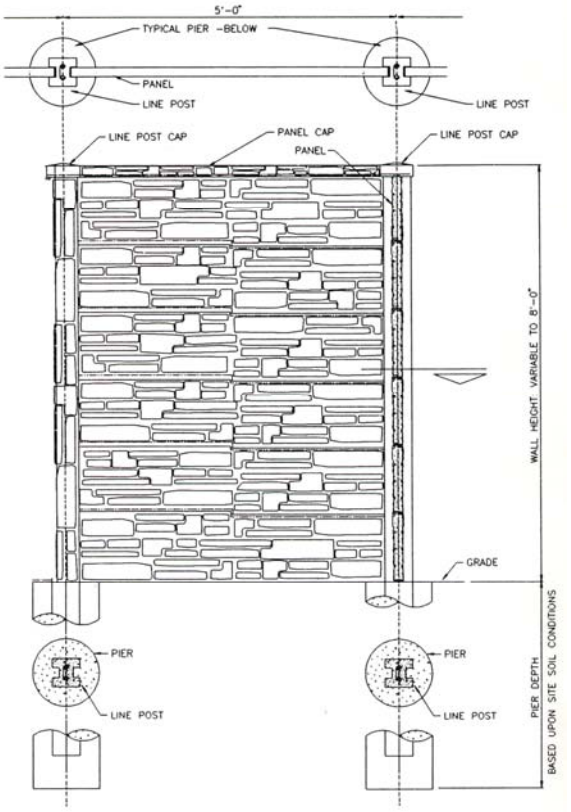


POST SECTIONS

Fencestone™ Walls are used as:

Perimeter Walls	**Landscape Walls**
Property Line Dividers	**Community Monument Walls**
Highway Sound Barriers	**Planters Walls**
Security and Privacy Fences	**Pool and Patio Screens**

- **Warm Aesthetic Appearance**
- **Versatile In Design And Application**
- **No Maintenance**
- **Cost Effectiveness**
- **Same Texture On Both Sides**
- **Invisible Panel Interlock**
- **Panel And Post Cap Trim Included**
- **Color That Endures**
- **Quick, Clean Installation**
- **Functional In Any Climate**



SPECIFICATIONS

- Panels, posts and caps have texture on both sides.
- Integral color and concrete is thoroughly mixed and vibrated and shall attain a minimum strength of 4000 psi at 28 days
- Galvanized steel mesh reinforced panel and rebar reinforced posts. Rebar conforms to A.S.T. M. A615, grade 40.
- Posts are set 5 feet apart.
- Post footing depth varies with soil conditions, wind load and height.

Information requests relating to products, availability, and production equipment contact:

AMERICAN TECHNOCRETE, LLC
4925 Sepulveda Blvd.
Sherman Oaks, CA 91403
Telephone: 818.990.3362 or 800.624.WALL
Fax: 818.990.3382 www.technocrete.com

YOUR LOCAL REPRESENTATIVE

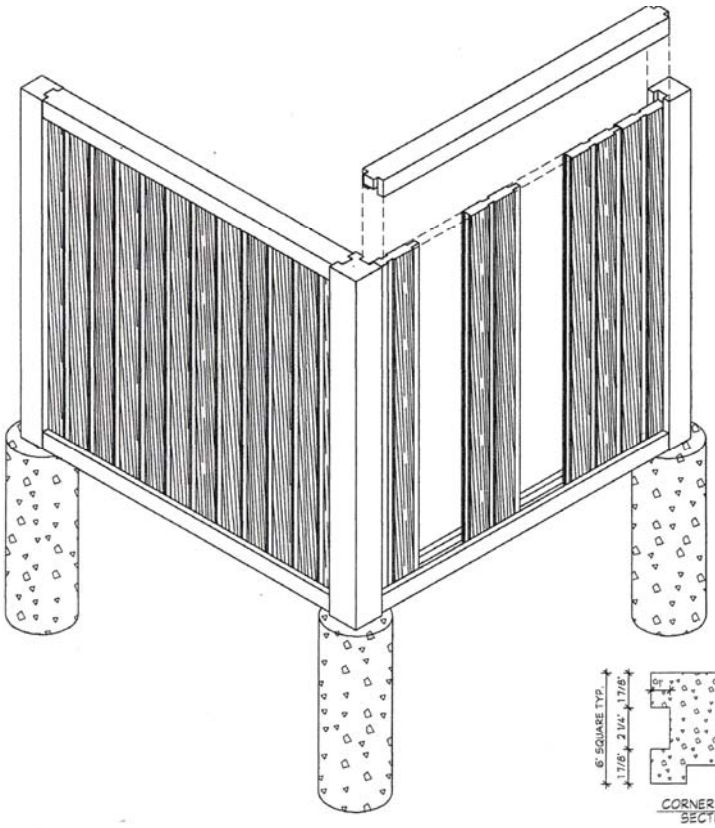
CEDARCRETE®

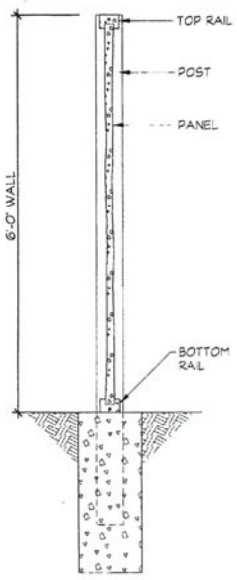
CONCRETE FENCE

Cedarcrete® has a deep woodgrain pattern on both sides and is manufactured from steel-reinforced colored concrete. By resisting weather, insects and rotting, Cedarcrete® displays its natural beauty and maintenance free attributes as a privacy fence, subdivision perimeter wall or sound barrier.

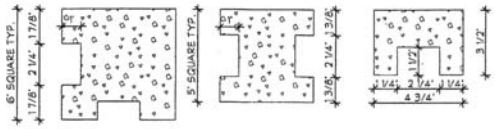
Concrete support posts are set in foundations six feet apart and the foot wide "boards" are placed into a precast concrete foundation between the posts. Because of the deep overlap created by a tongue and groove interlock between the panels, complete privacy is ensured.

By securing the interlocking panel cap to the top of the wall, a finished look is achieved.





CEDARCRETE® WALL SECTION



CORNER POST SECTION | LINE POST SECTION | TOP / BOTTOM RAIL SECTION

SPECIFICATIONS

- Panels, post and cap have texture on both sides.
- Concrete with integral color is thoroughly mixed and vibrated, and shall attain a minimum strength of 4000 psi at 28 days.
- Steel reinforced posts, panels and caps. Rebar conforms to A.S.T.M. A615, grade 40.
- Posts are set 6 ft. apart.
- Post footing depth varies with soil conditions, wind load and finished height.

- Warm aesthetic appearance
- Versatile in design and application
- No maintenance
- Same texture on both sides
- Invisible panel interlock
- Complete privacy
- Openings possible for airflow
- Top and bottom panel cap
- Integral color that endures

YOUR LOCAL REPRESENTATIVE

DESIGNER CONCRETE FENCES
4925 Sepulveda Blvd.
Sherman Oaks, Ca 91403
Tel: 818.990.3362 Fax: 818.990.3382

Website: designerconcrete.com
Email: info@designerconcrete.com

Cedarcrete® Fences are used as:

Perimeter walls	**Landscape walls**
Property line dividers	**Planter walls**
Sound Barriers	**Pool and Patio fences**
Security Walls	**Privacy fences**

SECTION 03453

PRECAST CONCRETE WALLS AND FENCES

For best results, display hidden notes to specifier.

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Architectural precast concrete wall panels and posts/columns.

B. Supports, anchors, and attachments.

C. Grouting under panels and inside columns.

1.2 RELATED SECTIONS

A. Section 03300 - Cast-In-Place Concrete: Footings with embedded reinforcing bar in center of column locations, for grouting.

1.3 REFERENCES

A. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International; 1999.

B. ACI 318 - Building Code Requirements for Reinforced Concrete and Commentary; American Concrete Institute International; 2002.

C. ASTM A 36/A 36M - Standard Specification for Carbon Structural Steel; 2001.

D. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2001a.

E. ASTM A 185 - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete; 2001.

F. ASTM C 33 - Standard Specification for Concrete Aggregates; 2001a.

G. ASTM C 150 - Standard Specification for Portland Cement; 2002.

H. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete; 2001.

1.4 DESIGN REQUIREMENTS

A. Design Engineer Qualifications: Design precast concrete units under direct supervision of a Professional Structural Engineer experienced in design of precast concrete and licensed in the State in which the Project is located.

B. Design units to withstand design loads as calculated in accordance with applicable local code, and erection forces. Calculate structural properties of units in accordance with ACI 318.

C. Design units to withstand static loads and anticipated dynamic loading, including positive and negative wind loads and thermal movement loads.

D. Design and size components to withstand seismic loads and sway displacement as calculated in accordance with applicable local code.

1.5 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's information on concrete sealers.

C. Shop Drawings: Indicate layout, unit locations, configuration, reinforcement, connection details, support items, location of lifting devices, dimensions, openings, and relationship to adjacent materials.
   1. Include details of mix designs.
   2. Include structural design calculations.

1.6 DELIVERY, STORAGE, AND PROTECTION

A. Handling: Lift and support precast units only from support points.

B. Blocking and Lateral Support During Transport and Storage: Use materials that are clean, non-staining, and non-harmful to exposed surfaces. Provide temporary lateral support to prevent bowing and warping.

C. Protect units to prevent staining, chipping, or spalling of concrete.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Licensee of Verti-Crete, LLC; P.O. Box 2347, Sandy Utah 84091. ASD. Tel: (801) 571-2028. Fax: (801) 576-1595. sales@verti-crete.com. www.verti-crete.com.
   1. O-Well Precast; 16500 S. Pony Express Road, P.O. Box 2347, Sandy, Utah 84091. Tel: (801) 571-5041. Fax: (801) 576-1595. Email:clyde@owellprecast.com.
   2. Advanced Precast; #458 70 Val Vista Drive, Suite A 3, Gilbert, AZ. 85296. Tel: (480) 510-8127. Fax: (435) 654-9970. Email: preber@advancedprecast.com.
   3. Tektoniks Corp; 306 W. Moore Street, Walla Walla, WA 99362. Tel: (509) 529-8424. Fax: (509) 522-1415.
   4. Platinum Development; 563 W. 500 So., Bountiful, Utah 84010. (Idaho Licensee).
   5. Crest Precast; 609 Kistler Drive, La Crescent, MN 55947-1721.
   6. _____.
   7. _____.

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 PRECAST CONCRETE

A. Fence and Wall Panels: Finished both sides with the same design.
   1. Thickness: _____.

2. Thickness: As indicated on drawings.
3. Height: 6 feet (1830 mm).
4. Height: 8 feet (2440 mm).
5. Height: 10 feet (3050 mm).
6. Heights: As indicated on drawings.
7. Width: 12 feet (3660 mm).
8. Pattern: Cobble, with flat border.
9. Pattern: Ashlar, with flat border.
10. Pattern: Drystack, with flat border.
11. Patterns: As indicated on drawings.

B. Columns: Finished on all sides; hollow core for grouting.
1. Size: 20 inches (510 mm) square.
2. Size: 16 inches (405 mm) square.
3. Height: To match panel height.
4. Pattern: Same design as panels.
5. Pattern: As indicated on drawings.
6. Cap: One-piece precast concrete cap, sloped to drain.

2.3 MATERIALS

A. Concrete: Minimum 5000 psi (34 MPa), 28 day strength, air entrained to 5 to 7 percent in accordance with ACI 301.
1. Cement: ASTM C 150, Type I - Normal Portland type.
2. Fine and Coarse Structural Aggregates: ASTM C 33.
3. Water: Clean and not detrimental to concrete.
4. Air Entrainment Admixture: ASTM C 260.

B. Form Liners: Polyurethane.

C. Steel Welded Wire Reinforcement: ASTM A 185, plain type.

D. Connecting and Support Devices: ASTM A 36/A 36M steel; hot-dip galvanized in accordance with ASTM A153/A 153M.

E. Grout: Non-shrink, non-metallic, minimum 4,000 psi (28 MPa), 28 day strength.

F. Sealer: Penetrating water-based silicone water repellent, tinted in color selected by Architect from manufacturer's standard selection; spray or roller applied.

G. Sealer: Clear penetrating water-based silicone water repellent; spray or roller applied.

2.4 FABRICATION

A. Use rigid molds, constructed to maintain precast unit uniform in shape, size, and finish.

B. Use form liners in accordance with manufacturer's instructions.

C. Maintain consistent quality during manufacture.

D. Fabricate connecting devices, plates, angles, items fit to steel framing members, inserts, bolts, and accessories. Fabricate to permit initial placement and final attachment.

E. Embed reinforcing steel, anchors, inserts plates, angles, and other cast-in items.

F. Locate hoisting devices to permit removal after erection.

G. Cure units to develop concrete quality, and to minimize appearance blemishes such as non-uniformity, staining, or surface cracking.

H. Minor patching in plant is acceptable, providing structural adequacy and appearance of units is not impaired.

I. Ensure exposed-to-view finish surfaces of precast units are uniform in color and appearance.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that site and foundations are ready to receive work of this section.

3.2 PREPARATION

A. Provide for erection procedures and induced loads during erection. Maintain temporary bracing in place until final support is provided.

3.3 ERECTION

A. Erect units without damage to shape or finish. Replace or repair damaged panels.

B. Erect units level and plumb within allowable tolerances.

C. Align and maintain uniform horizontal and vertical joints as erection progresses.

D. Fasten units in place with mechanical connections.

E. Exposed Joint Dimension: 1/2 inch (12 mm).

3.4 ERECTION TOLERANCES

A. Plan Location from Benchmarks or Corner Stakes: Plus or minus 3/8 in (9.5 mm).

B. Top Elevation from Nominal Top Elevation: Plus or minus 3/8 inch (9.5 mm).

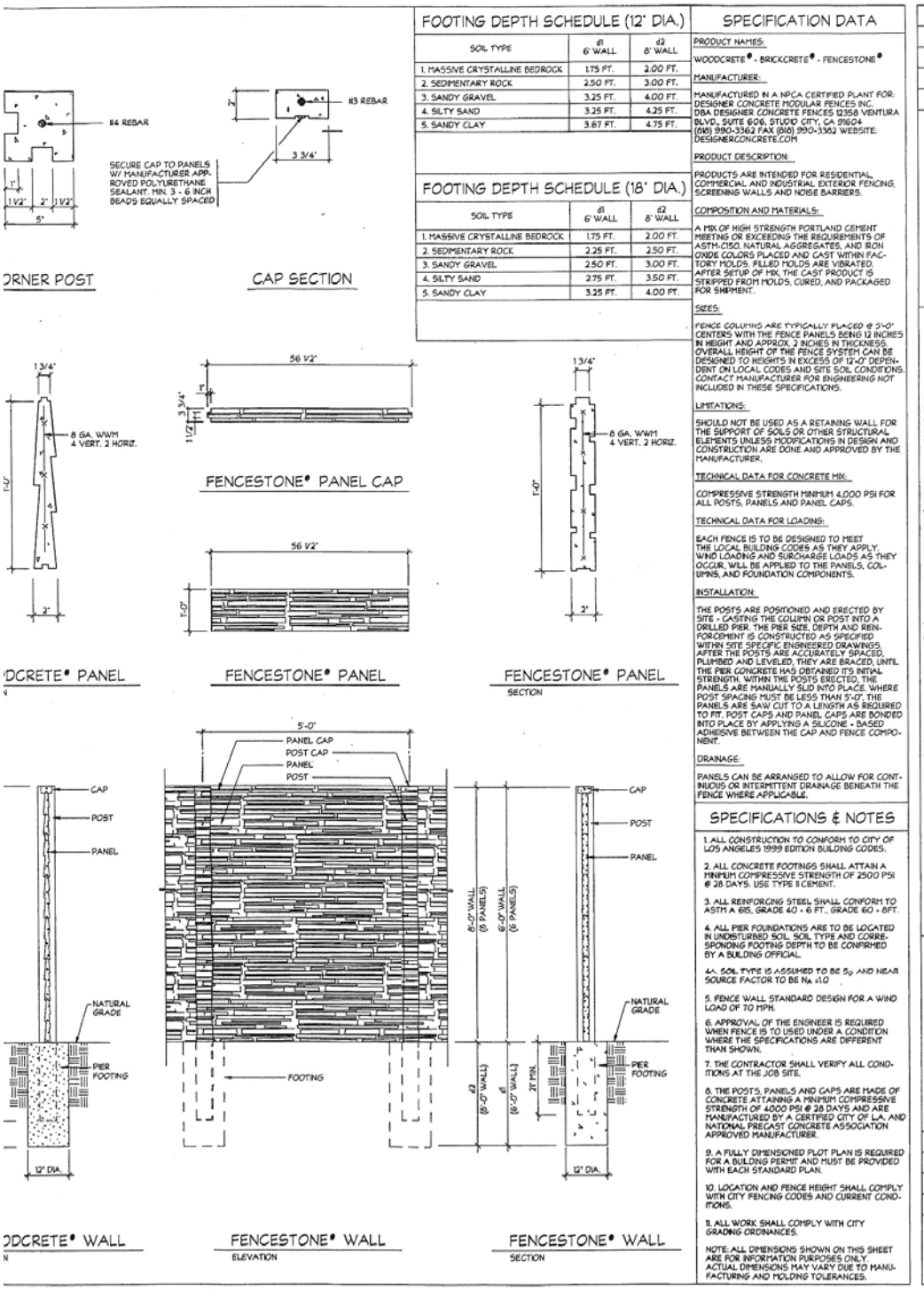
C. Maximum Plumb Variation Over Height of Structure or 100 ft (30 m) (whichever is less): Plus or minus 1/2 inch (12.5 mm).

D. Exposed Joint Dimension: Plus or minus 3/16 inch (4.5 mm).

E. Maximum Jog in Alignment of Matching Faces or Edges: Plus or minus 3/16 inch (4.5 mm).

F. Differential Bowing or Camber as Erected Between Similar Adjacent Members: Plus or minus 3/16 inch (4.5 mm).

END OF SECTION



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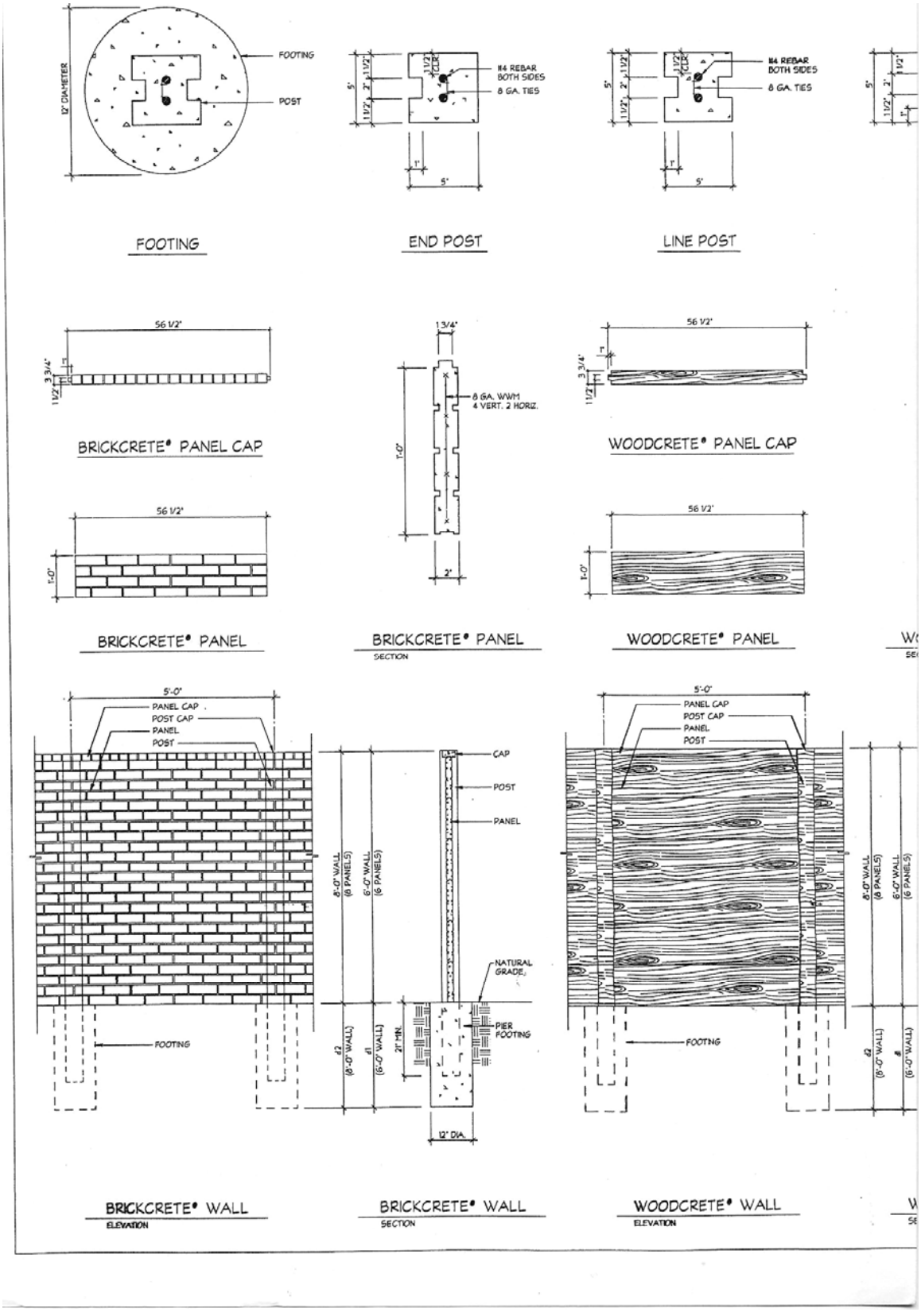
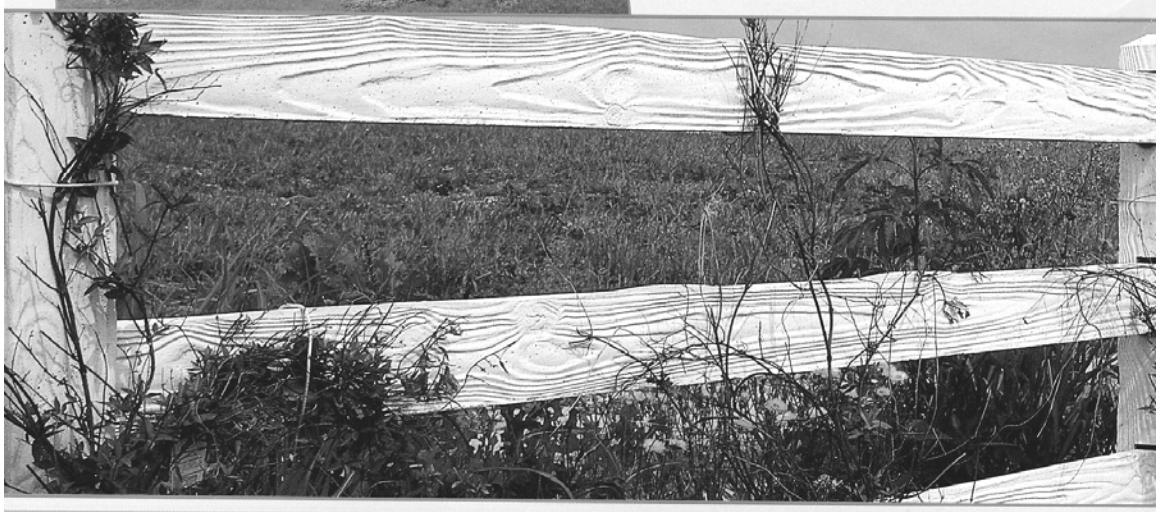


WOODCRETE®

BRICKCRETE™

FENCESTONE™



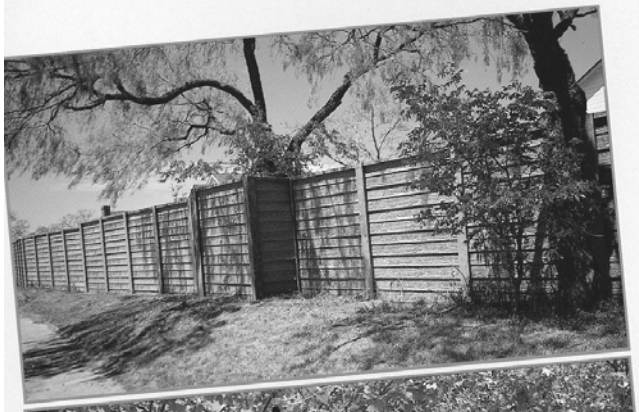
WOODCRETE® AND BRICKCRETE®

The Systems consist of concrete posts, panels and rails. Steel reinforced and integrally colored, each component is precision molded to achieve the greatest definition of texture on both sides, creating the visual impact of crafted wood and used brick.

1 by 5 foot panels slide down the track between the I shaped posts. After the bottom panel is carefully leveled, the subsequent panels interlock with one another. The top panel is then crowned with a caprail for a finished look.

Unique to the industry, the panels feature our exclusive tongue and groove interlock which makes it possible for the panels to join invisibly, therefore, there's no distinction where the individual panels meet.

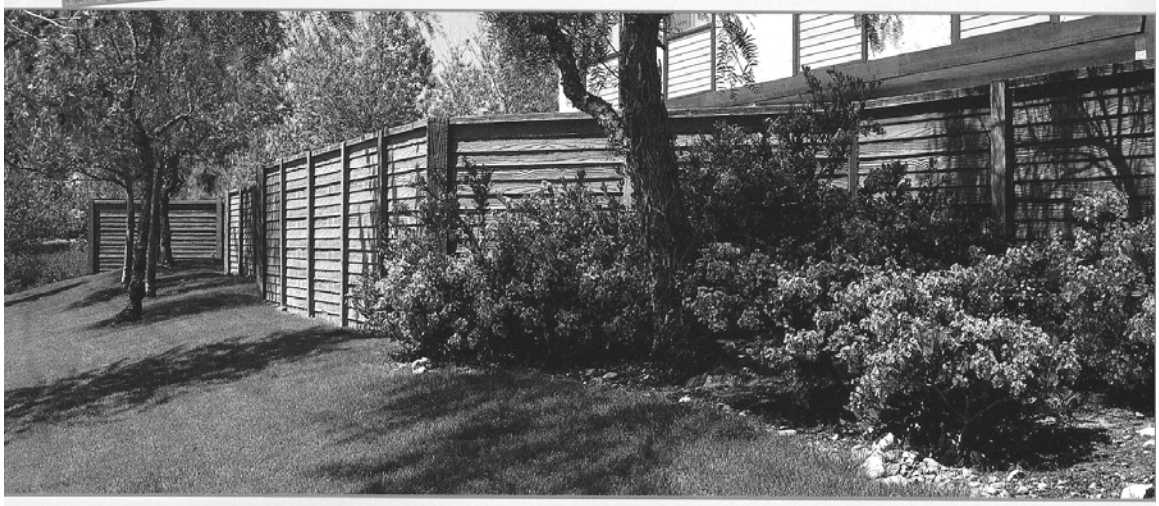
Woodcrete and Brickcrete Wall Systems offer design flexibility that is compatible with any architectural or landscape style. Painting isn't necessary, yet is an option to match or accent any color scheme. Woodcrete lattice or wrought iron can be easily interchanged with panels to complement fence design.



WOODCRETE® WALL SYSTEM

Combines the beauty of a wood fence with the durability of concrete. Because it is strong and enduring, miles of the system have been successfully installed as:

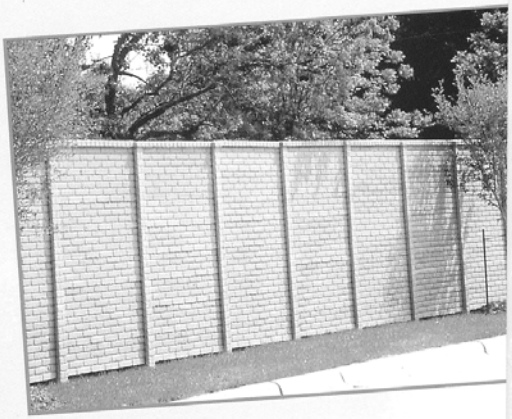
PERIMETER WALLS
PROPERTY LINE DIVIDERS
SECURITY AND PRIVACY FENCES
HIGHWAY SOUND BARRIERS
LANDSCAPE WALLS
POOL AND PATIO SCREENS
TRASH AND EQUIPMENT ENCLOSURES
PLANTER BOXES
COMMUNITY MONUMENT WALLS

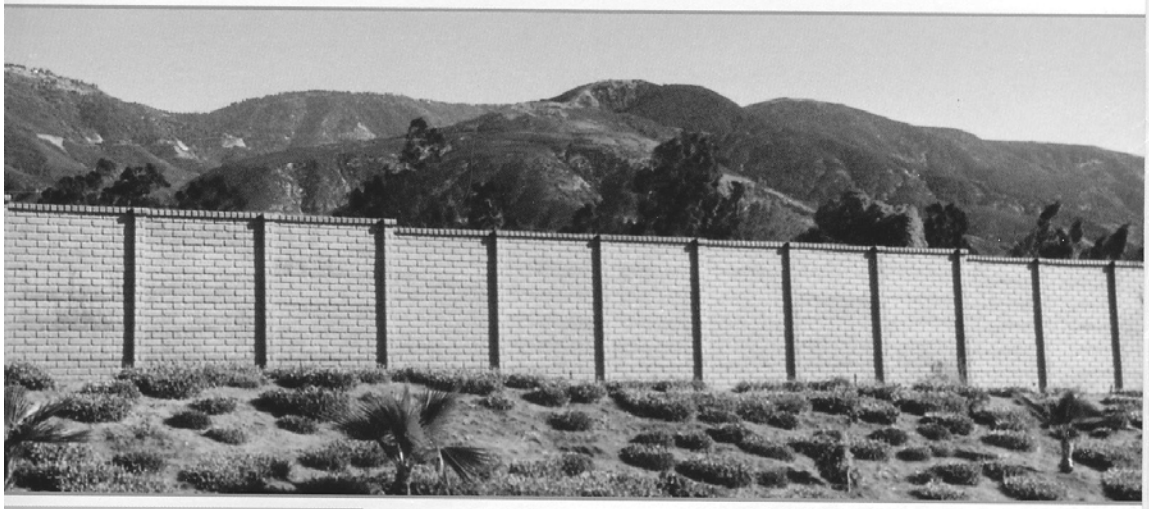


BRICKCRETE® WALL SYSTEM

Over the years, used brick treatments have continually added a sense of warmth and everlasting value to homes. Brickcrete captures the aesthetic qualities of used brick in economical precast concrete.

Using a special manufacturing process, our concrete panels are chipped and pitted so that the surface assumes the character of a used brick and mortar wall. Color variation is achieved with the use of a two-colored concrete mix. The mortar lines are detailed during the manufacturing process. After placing the top panel, the Brickcrete cap is affixed to complete the traditional motif.





WOODCRETE® RAIL SYSTEM

Features a rugged woodgrain texture on all sides of the posts and rails, including the distinctive post tops. The traditional beauty of the system makes it ideal for estates and ranches, bridle trails, homes, golf courses, parks and livestock corrals. Although uniform integral color is standard, once installed, the fence can be easily painted.

Steel reinforced rails and posts will not deteriorate and the system is safe from horse chewing and termites.

The Woodcrete Rail System is available in two, three or four rail heights.

THE COMPANY

Woodcrete® and Brickcrete® were first developed by Los Angeles based American Technocrete Corporation in 1982. Since that time, the systems have become increasingly specified by architects, residential and commercial builders, contractors and others in the construction industry.

State of the art molding equipment and patented precast fences have been the trademark of our company since its inception.

Our ongoing endeavor is the continued development of new precast concrete fence products, available from an expanding network of manufacturers throughout the United States.

FENCE INSTALLATION

Installation is easy due to the system's simple design. The I shaped posts are set into 12-inch diameter holes drilled five feet apart, the posts are then aligned, leveled and anchored in a concrete footing similar to other types of fence posts.

The panels then insert into and down the track of the posts. The bottom panel keys into and is supported by the footing around each post. The additional panels interlock and stack in one foot increments.

The fence is complete once our unique cap rail trim is installed.

WOODCRETE® AND BRICKCRETE® OFFER SIGNIFICANT BENEFITS COMPARED WITH OTHER FENCES:

- **Warm aesthetic appearance**
- **Versatile design**
- **No maintenance**
- **Cost effectiveness**
- **Same texture on both sides**
- **Invisible panel interlock**
- **Cap rail trim included**
- **Color that endures**
- **Quick, clean installation**
- **Functional in any climate**
- **Can not rot or burn**
- **No termites**
- **No "bad" side**

SPECIFICATIONS

- Panels, posts, and rails have equal texture on both sides.
- Integral color and concrete is thoroughly mixed & vibrated and shall attain a strength of 4000 psi at 28 days.
- Steel mesh reinforced panels and rebar reinforced posts & rails. Rebar conforms to A.S.T.M. A615, grade 40.
- Posts are set 5 feet apart. Ranch Rail Posts are set 8 feet apart.
- Post footing depth varies with soil conditions, wind load and height.

Information requests relating to products, availability, and production equipment contact:

AMERICAN TECHNOCRETE, LLC
4925 Sepulveda Blvd.
Sherman Oaks, CA 91403
Telephone: 818.990.3362 or 800.624.WALL
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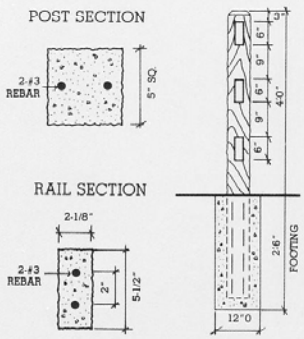
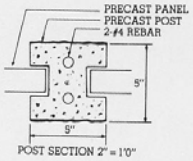
YOUR LOCAL REPRESENTATIVE:

OR CALL (800) 624-WALL

WOODCRETE® RAIL

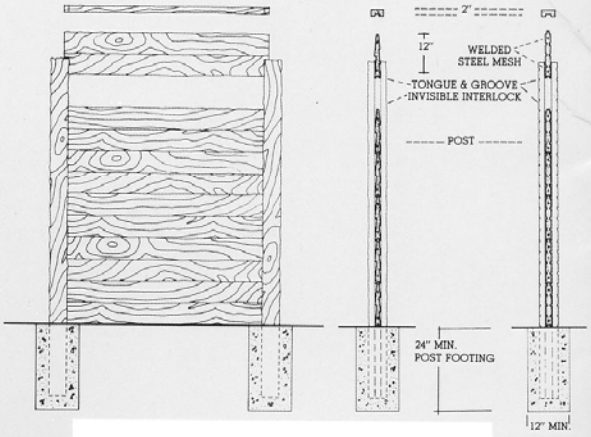




POST SECTION 2" = 1'0"

WOODCRETE® WALL

BRICKCRETE® WALL



SPECIFICATIONS

DESIGNER CONCRETE FENCES

818.990.3362 • Fax 818.990.3382
info@designerconcrete.com

4925 Sepulveda Blvd.
Sherman Oaks, CA 91403

Designer Concrete Fences
Precast concrete fencing products notes and requirements:

All products to be manufactured in plant certified by the National Precast Concrete Association to the standards of:

Minimum concrete strength of 5000 psi.

3/8" pea gravel mix with CNI corrosive inhibitor.

Rebar conforms to ASTM A615, Grade 60 and centered in components with plastic wheels and/or chairs.

Secondary fiber reinforcement in all posts, panels, and rails.

Colored with integral iron oxide pigment by Davis Color.

Deep natural textures on all posts, panels, and rails.

WOODCRETE® BRICKCRETE® FENCESTONE® CEDARCRETE®

DESIGNER CONCRETE FENCES

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WOODCRETE® BRICKCRETE® FENCESTONE® CEDARCRETE®

PAUL S. VENEKLASEN & ASSOCIATES
CONSULTING • DESIGN • RESEARCH • TESTING
Architectural Acoustics • Auditorium Functional Design • Audio/Visual Design • Environmental/Industrial Noise • Aero-Acoustics • Vibration
1711 Sixteenth Street, Santa Monica, California 90404 (310) 450-1733 (213) 870-9268 Fax: (310) 396-3424

26 April 1995

AMERICAN TECHNOCRETE CORPORATION AND SUBSIDIARIES
3518 Cahuenga Blvd. West
Suite 200
Los Angeles, CA 90068

Subject: Use of Woodcrete/Brickcrete Wall as a sound barrier.

Gentlemen:

Barriers are often used by acousticians and noise control engineers to reduce the noise from sources such as traffic, railroads, mechanical equipment, and many others. The noise reduction is achieved because the sound must diffract over the top or around the sides of the barrier. This diffraction scatters the sound so that less of it reaches the listener. The practical limit of noise reduction which can be achieved by means of a barrier is 24 dB.

When choosing a barrier structure, the engineer wants to be sure that the sound which goes through the barrier is insignificant in comparison with the sound which diffracts over the barrier. Since the limit of noise reduction for a barrier is 24 dB, if a barrier provides a transmission loss of about 34 dB, this condition is assured. However, in most practical applications of barriers, the noise reduction which is achieved is much less than 24 dB, especially at low frequencies. In these situations, transmission losses of much less than 34 dB are quite adequate.

According to Western Electro-Acoustic Laboratory, Inc. (WEAL) Sound Transmission Loss Test Report TL95-146, your product achieves transmission loss (TL) of greater than 34 dB in most one-third octave bands above 80 Hz. A transmission loss of 29 dB was measured at 80 Hz. Even if the barrier configuration was such that a noise reduction of 24 dB was achieved at 80 Hz (which is very unlikely), the fact that your product has a TL of 29 dB in that band would only compromise the noise reduction by 1 dB to 23 dB.

In conclusion, I would say that your product could function as barrier structure in almost every conceivable situation. As an acoustical consultant, I would not have any hesitation to approve your product to be used for any specified barriers. If you have any questions or if we can be of further assistance, please feel free to call.

Sincerely,

Gary E. Mange

Gary E. Mange
Acoustical Engineer

D:\LAB\BRICKCRT.LTR

WESTERN ELECTRO - ACOUSTIC LABORATORY, INC.

RESEARCH • CONSULTING • CALIBRATION • INSTRUMENTATION

1711 Sixteenth Street, Santa Monica, California 90404 (310) 450-1733 (213) 870-9268 Fax: (310) 396-3424

26 April 1995

REPORT
SOUND TRANSMISSION LOSS TEST NO. TL95-146

CLIENT: AMERICAN TECHOCRETE CORPORATION and Subsidiaries (Designer Concrete Products, Inc. and Superior Concrete Fence of Texas)

TEST DATE: 19 April 1995

INTRODUCTION

The methods and procedures used for this test conform to the provisions and requirements of ASTM Procedure E90-90, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions*. Details of the procedure will be furnished upon request. The test chamber source and receiving room volume are 79.9 and 78 cubic meters respectively. Western Electro-Acoustic Laboratory is accredited by the United States Department of Commerce, National Institute of Standards and Technology under the National Voluntary Accreditation Program (NVLAP) for this test procedure. This test report relates only to the item(s) tested. Any advertising which utilizes this test report or test data must not imply product certification or endorsement by WEAL, NVLAP, NIST or the U.S. Government.

DESCRIPTION OF TEST SPECIMEN

The test specimen was an American Technocrete Corporation precast concrete wall system. The specimen was assembled by inserting 12 inch (0.3 m) high steel reinforced, tongue and groove concrete panels down the tracks of two "I" shaped concrete posts spaced 5 feet (1.52 m) on center. On the tongue of each panel a thick bead of silicone was applied to seal into the groove of the next panel or top cap. After the specimen was assembled, a thick bead of silicone was applied to the vertical joints at the posts on one side of the specimen only. The specimen was sealed into the test chamber opening with a heavy duct seal putty around the entire perimeter on both sides. The net outside frame dimensions of the assembly were 64 inches (1.63 m) wide by 73 inches (1.85 m) high. The overall weight of the assembly was 842 lbs. (382 kg) for a calculated surface density of 26.0 lbs./ft^2 (127 kg/m^2).

RESULTS OF THE MEASUREMENTS

One-third octave band sound transmission loss values are tabulated on the attached sheet. ASTM minimum volume requirements are met at 125 Hz and above. The Sound Transmission Class rating determined in accordance with ASTM E-413 was STC-35.

Respectfully submitted,
Western Electro-Acoustic Laboratory, Inc.

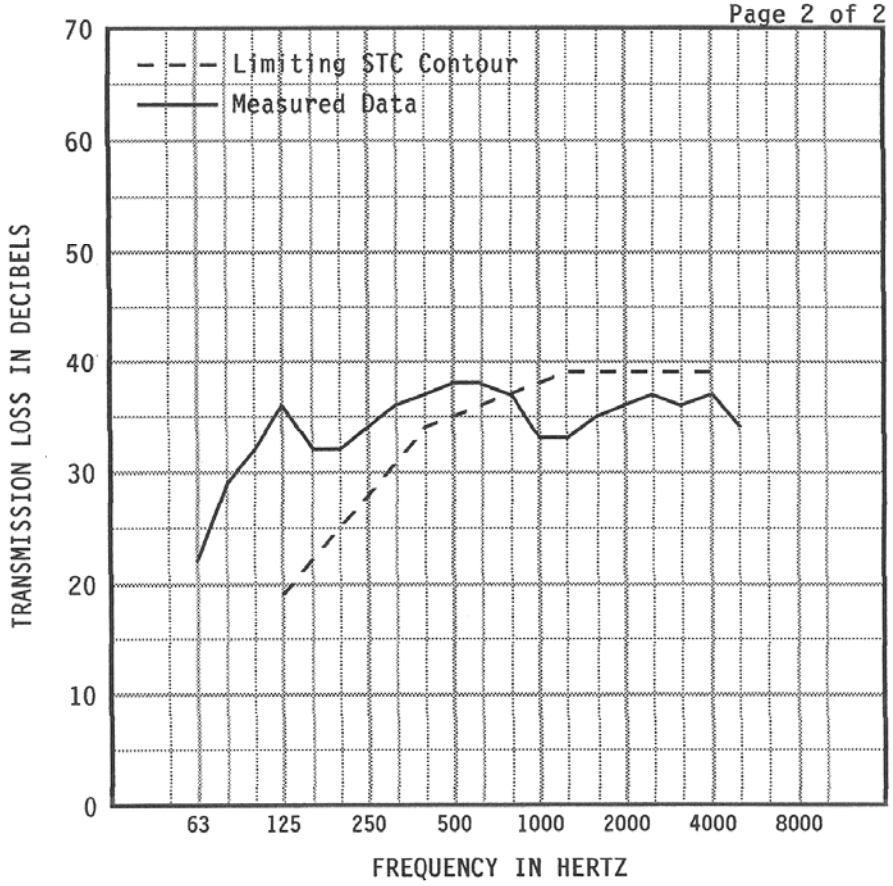
Approved:

Jose C. Ortega

Gary E. Mange

NVLAP ACCREDITED BY THE NATIONAL BUREAU OF STANDARDS, NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM FOR SELECTED TEST METHODS FOR ACOUSTICS.

WESTERN ELECTRO-ACOUSTIC LABORATORY, INC.
Report No. TL95-146



1/3 OCT BND CNTR FREQ	63	80	100	125	160	200	250	315	400	500
TL in dB	22	29	32	36	32	32	34	36	37	38
95% Confidence in dB deficiencies	3.93	2.77	4.57	2.30	1.18	1.54	0.90	0.70	0.97	0.74
1/3 OCT BND CNTR FREQ	630	800	1000	1250	1600	2000	2500	3150	4000	5000
TL in dB	38	37	33	33	35	36	37	36	37	34
95% Confidence in dB deficiencies	0.61	0.51 (0)	0.48 (5)	0.73 (6)	0.43 (4)	0.53 (3)	0.42 (2)	0.39 (3)	0.47 (2)	0.44

EWR	OITC
40	35

Specimen Area: 32.44 sq.ft.
Temperature: 70.7 deg. F
Relative Humidity: 57 %
Test Date: 19 April 1995

STC
35 (25)

NVLAP ACCREDITED BY THE NATIONAL BUREAU OF STANDARDS, NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM FOR SELECTED TEST METHODS FOR ACOUSTICS.

COLOR GROUP: Subtle

COLOR GROUP: Standard

Concrete:

What color do you want?

Concrete is ideal for driveways, walks, patios, floors, walls and structural applications. Available everywhere, concrete is so common and used for so many things that it's just taken for granted it only comes in one color. Davis Colors™ mix right in to transform ordinary concrete into structures that stand out or pavement that blends in. They're strong, durable and last as long as the concrete. Installation is cleaner and easier than toppings, stains or coatings and requires less labor. There are premium colors which are bold and intense, standard

SANDSTONE
0.75 LB 5237

CANYON
0.5 LB 160

SANTA FE
0.75 LB 1117

MOCHA
1 LB 6058

RUSTIC BROWN
2 LBS 6058

PEBBLE
0.5 LB 641

DUNE
0.5 LB 6058

OUTBACK
0.5 LB 677

SEQUOIA SAND
1 LB 641

YOSEMITE BROWN
2 LBS 641

Color name, number and dose-rate to mix with each 94 lb. sack of cement.

SILVERSMOKE
0.25 LB 8084★ or 1.25 LBS 860

LIGHT GRAY
0.5 LB 8084★ or 2.5 LBS 860

OMAHA TAN
1 LB 5084

HARVEST GOLD
2 LBS 5084

Base color sample

The base color of concrete affects final color. This card simulates colored concrete made with Type II gray cement, sand and water to achieve 4" slump (uncolored reference shown at left). Job-site results may differ. Like all natural materials, variation is normal in concrete whether colored or not.

DARK GRAY
1 LB 8084★ or 5 LBS 860

BAYOU
1 LB 6130

COCOA
2 LBS 6130

★ ***Caution:*** *8084 not recommended with air-entrained concrete. See back for information.*

COLOR GROUP: Premium

colors that add less than a dollar per square foot, and subtle shades for any budget. As the leading producer of colors for concrete since 1952, we offer the widest spectrum available. The hardest thing about colored concrete may be deciding what color you want.

SANGRIA
1.5 LBS 1117

TILE RED
3 LBS 1117

BRICK RED
4 LBS 160

SAN DIEGO BUFF
1.5 LBS 5237

SUNSET ROSE
1 LB 160

BAJA RED
2 LBS 160

TERRA COTTA
4 LBS 10134
Concrete only

SPANISH GOLD
3 LBS 5084

SOUTHERN BLUSH
1 LB 10134

SALMON
2 LBS 10134

MESA BUFF
2 LBS 5447
Standard

PALOMINO
3 LBS 5447

FLAGSTONE BROWN
3 LBS 641

MESQUITE
1 LB 677

TAUPE
2 LBS 677

SIERRA
2 LBS 61078

ADOBE
4 LBS 61078

KAHLUA
4 LBS 677

PEWTER
1 LB 860

COBBLESTONE
2 LBS 860
Standard

GRAPHITE
2 LBS 8084★

WILLOW GREEN
3 LBS 5376

GREEN SLATE
3 LBS 3685

DESIGNER CONCRETE FENCES

818.990.3362 • Fax 818.990.3382
sales@designerconcrete.com

4925 Sepulveda Blvd.
Sherman Oaks, CA 91403

7/10/2002

Walter Konon
NJIT
CE Department
Newark, NJ 07102

Re: **Woodcrete®**, **Brickcrete®** and **Fencestone®** plus **NEW! Cedarcrete®** Modular Concrete Fences.

Dear Walter:

It is our pleasure to enclose product literature on our most recent fence design, **Cedarcrete®** - the first vertical woodgrain concrete fence with a "board on board" pattern on both sides. **Cedarcrete®** now joins the nation's most recognized modular concrete fences **Woodcrete®**, **Brickcrete®**, and **Fencestone®** as the latest innovation in design for privacy fencing that lasts.

To achieve the highest quality, all of our engineered products are manufactured in a plant certified by the National Precast Concrete Association under strict quality control guidelines and offer the following advantages:

- **Textured finish on both sides.**
- **Integral color - no painting.**
- **Invisible panel interlock.**
- **Manufactured with steel and fiber reinforced concrete.**
- **Easy repair in the event of damage.**

If you would like to see further examples of product applications, please visit our website at www.designerconcrete.com

Over the past 20 years, our products have been widely approved, specified and installed. We are confident that one of our products will have architectural compatibility with the community in which your project is located and we look forward to the opportunity of working with you.

Sincerely,

DESIGNER CONCRETE FENCES

Russ Krier
Sales Manager

B4,S2,N2,R2

WOODCRETE® BRICKCRETE® FENCESTONE® CEDARCRETE®

CONCRETE HOMES
Building Systems

PCA PORTLAND CEMENT ASSOCIATION

Fencing

Beauty

Concrete fences are so versatile, you can choose whatever style you want. Rail fences, "brick" walls, "stone" walls; they're just some of the possibilities with concrete. When choosing a solid wall, they are attractive ways to hide unsightly things like dumpsters or equipment. Concrete fences can also be used as privacy fences for backyard swimming pools or hot tubs.

Protection and Longevity

How would you like a fence you don't have to paint every year? Or one that doesn't rot or fall victim to a swarm of hungry termites? How about a wall that is bulletproof? Concrete fences allow you to have the durability a wood or chain link fence can not give. There is no need for paint or treatments. Your concrete fence will last for years to come, giving you the protection, privacy and durability you expect from concrete.

Value

Because they are maintenance-free, concrete fences are less expensive than wood and chain link fences in the long run. You won't have to buy paint or sealer every year. You won't have to worry about replacing it because of environmental damage. Concrete fences and walls are functional in all climates.

Because of its thermal mass, concrete walls block sound and strong winds much better than wood sound barriers. This is very helpful when living near a busy highway, schools, commercial buildings or other noisy areas. In addition, solid concrete panels are highly resistant to vandalism.

Concrete fencing is the worry-free way to give yourself the privacy and protection you expect from a fence, while giving you permanent beauty that can be enjoyed for years to come.

*Photos courtesy of **Dynamic Precast**, **Modern Precast**, **Stone Fence Co.** and **Superior Fence**.

Partial List of Producers/Suppliers of Fencing

Disclaimer

Allan Block Corporation
P.O. Box 390288
Edina, MN 55439
(952) 835-5309
Fax: (952) 835-0013
www.allanblock.com

American Technocrete
12358 Ventura Blvd., Suite 606
Studio City, CA 91604
(818) 990-3362 Fax: (818) 990-3382
www.technocrete.com

Barkman Concrete Limited
Winnipeg Office
900 Gateway Road
Winnipeg, MB R2K 3L1 Canada
(800) 342-2879
Fax: (204) 663-4854
www.barkmanconcrete.com

Steinbach Office
#12 Hwy. South
Steinbach, MB R0A 2A0 Canada
(800) 461-2278
Fax: (204) 326-5915

Dynamic Precast
385 Morris St.
Sebastopol, CA 35472
(707) 829-2664
www.dynamicprecast.com

Modern Precast
370 W. 1550 S.
Salt Lake City, UT 84115
(888) 466-1374 or (801) 466-1374
Fax: (801) 466-4825
www.modernprecast.com

ROHN Industries, Inc.
3595 W. State Road 28
Frankfort, IN 46041
(765) 654-4491 Fax:(765) 659-2722
www.rohnnet.com

Stone Fence Co.
39 Seven Hills Lane
Marshfield, MO 65706
(417) 830-1253
www.stonefence.com

Superior Fence
www.concretefence.com

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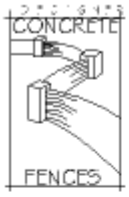
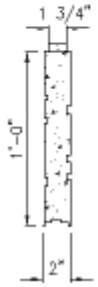
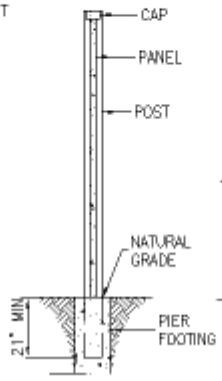
PHONE: (818) 990-3362
FAX: (818) 990-3473
www.designerconcrete.com



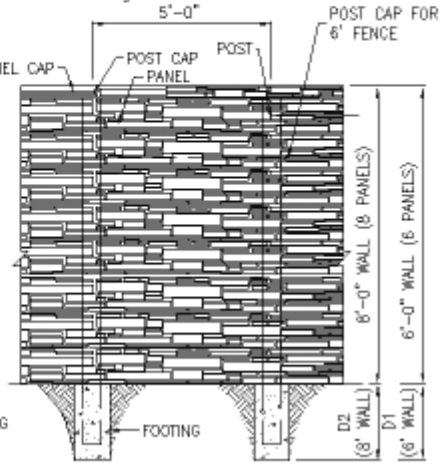
☑ SELECT DESIRED WALL HEIGHT
☐ 8'-0"
☐ 6'-0"



FENCESTONE PANEL - SECTION



FENCESTONE WALL - SECTION



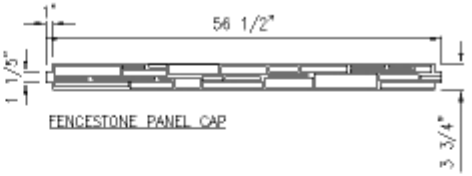
FENCESTONE WALL - ELEVATION

FOOTING DEPTH SCHEDULE (12" DIA)

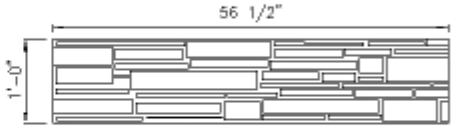
SOIL TYPE	D1 6' WALL	D2 8' WALL
1. MASSIVE CRYSTALLINE BEDROCK	1.75'	2.00'
2. SEDIMENTARY ROCK	2.50'	3.00'
3. SANDY GRAVEL	3.25'	4.00'
4. SILTY SAND	3.25'	4.25'
5. SANDY CLAY	3.67'	4.75'

FOOTING DEPTH SCHEDULE (18" DIA)

SOIL TYPE	D1 6' WALL	D2 8' WALL
1. MASSIVE CRYSTALLINE BEDROCK	1.75'	2.00'
2. SEDIMENTARY ROCK	2.25'	2.50'
3. SANDY GRAVEL	2.50'	3.00'
4. SILTY SAND	2.75'	3.50'
5. SANDY CLAY	3.25'	4.00'



FENCESTONE PANEL CAP



FENCESTONE PANEL

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 516-008A.

FENCESTONE WALL SYSTEM

SECTION AND ELEVATION

516-008A TO BE USED IN CORRESPONDENCE WITH 516-008B.

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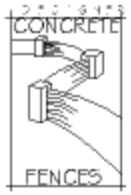
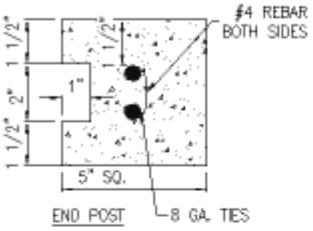
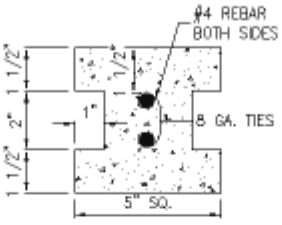
FAX: (818) 990-3473
www.designerconcrete.com

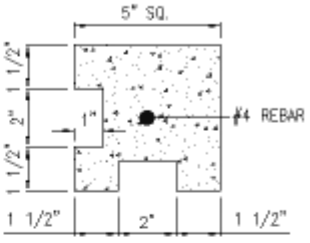




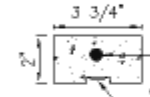
END POST



LINE POST

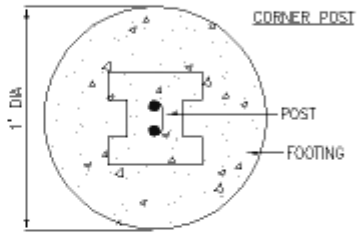


CORNER POST



CAP SECTION

SECURE CAP TO PANELS WITH MANUFACURER APPROVED, POLYURETHANE SEALANT MIN. 3-6" BEADS EQUALLY SPACED.



FOOTING

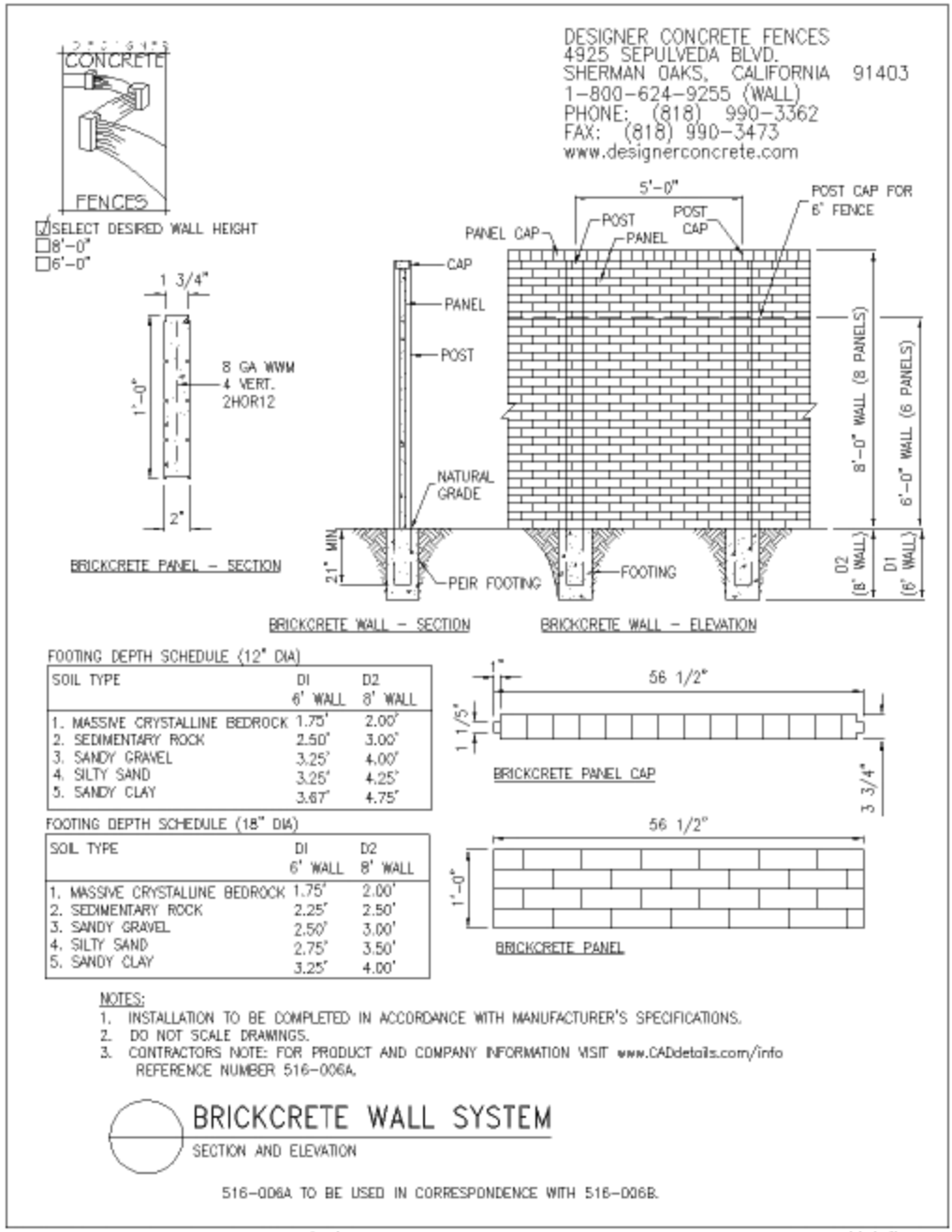
NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
4. FIBER REINFORCEMENT IN ALL POSTS, PANELS AND CAPS.
5. ALL PIER FOUNDATIONS ARE TO BE LOCATED IN UNDISTURBED SOIL.
6. FENCE WALL STANDARD DESIGN FOR A WIND LOAD OF 70 MPH.
7. APPROVAL OF AN ENGINEER IS REQUIRED WHEN THE FENCE IS USED UNDER A CONDITION WHERE THE SPECIFICATIONS ARE DIFFERENT THAN SHOWN.
8. POSTS, PANELS AND CAP ARE MADE OF CONCRETE ATTAINING A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI @ 28 DAYS AND MANUFACTURED BY AN AMERICAN TECHNOCRETE LICENSED MANUFACTURER.
9. FENCESTONE ®: STACKED STONE TEXTURED ON ALL POSTS, PANELS AND CAPS.
10. INTEGRAL COLOR BY DAVIS COLORS OR APPROVED EQUAL.
11. LOCATION AND FENCE HEIGHT SHALL COMPLY WITH CITY FENCING CODES.
12. ALL WORK SHALL COMPLY WITH CITY GRADING ORDINANCES.
13. ALL DIMENSIONS SHOWN ON THIS SHEET ARE FOR INFORMATION PURPOSES ONLY. ACTUAL DIMENSIONS MAY VARY DUE TO MANUFACTURING AND MOLDING TOLERANCES.
14. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 516-008B.

FENCESTONE WALL SYSTEM

DEATILS AND SPECIFICATIONS

516-008B TO BE USED IN CORRESPONDENCE WITH 516-008A.



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FAX: (818) 990-3473
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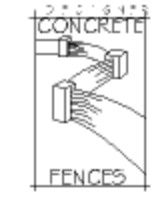

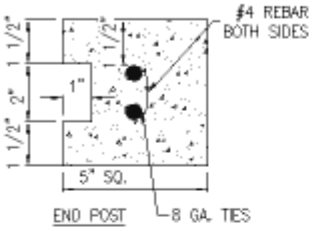

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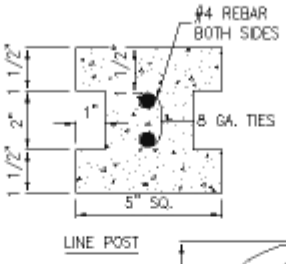
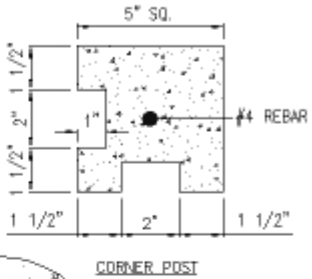
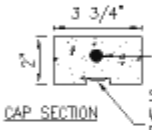


LINE POST

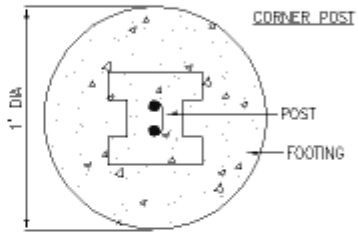


CORNER POST



CAP SECTION

SECURE CAP TO PANELS
WITH MANUFACURER APPROVED.
POLYURETHANE SEALANT MIN.
3-6" BEADS EQUALLY SPACED.



FOOTING

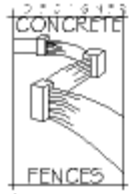
NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
4. FIBER REINFORCEMENT IN ALL POSTS, PANELS AND CAPS.
5. ALL PIER FOUNDATIONS ARE TO BE LOCATED IN UNDISTURBED SOIL.
6. FENCE WALL STANDARD DESIGN FOR A WIND LOAD OF 70 MPH.
7. APPROVAL OF AN ENGINEER IS REQUIRED WHEN THE FENCE IS USED UNDER A CONDITION WHERE THE SPECIFICATIONS ARE DIFFERENT THAN SHOWN.
8. POSTS, PANELS AND CAP ARE MADE OF CONCRETE ATTAINING A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI @ 28 DAYS AND MANUFACTURED BY AN AMERICAN TECHNOCRETE LICENSED MANUFACTURER.
9. BRICKCRETE ®: CHIPPED AND PITTED BRICK TEXTURE ON ALL POSTS, PANELS, AND CAPS.
10. INTEGRAL COLOR BY DAVIS COLORS OR APPROVED EQUAL.
11. LOCATION AND FENCE HEIGHT SHALL COMPLY WITH CITY FENCING CODES.
12. ALL WORK SHALL COMPLY WITH CITY GRADING ORDINANCES.
13. ALL DIMENSIONS SHOWN ON THIS SHEET ARE FOR INFORMATION PURPOSES ONLY. ACTUAL DIMENSIONS MAY VARY DUE TO MANUFACTURING AND MOLDING TOLERANCES.
14. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 516-006B.

BRICKCRETE WALL SYSTEM

DEATILS AND SPECIFICATIONS

516-006B TO BE USED IN CORRESPONDENCE WITH 516-006A.



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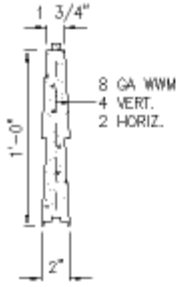
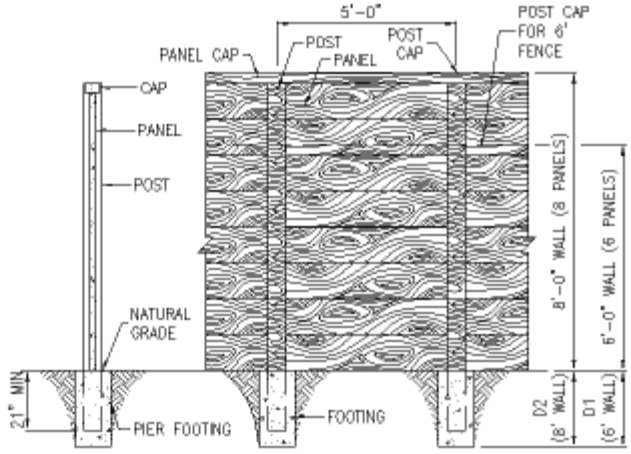
☑SELECT DESIRED WALL HEIGHT
☐8'-0"
☐6'-0"



WOODCRETE PANEL - SECTION



WOODCRETE WALL - SECTION

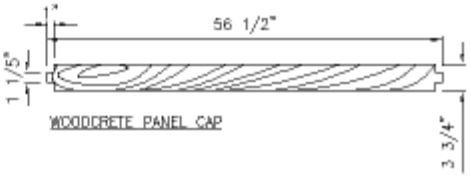
WOODCRETE WALL - ELEVATION

FOOTING DEPTH SCHEDULE (12" DIA)

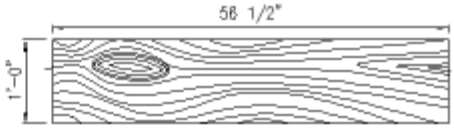
SOIL TYPE	D1 6' WALL	D2 8' WALL
1. MASSIVE CRYSTALLINE BEDROCK	1.75'	2.00'
2. SEDIMENTARY ROCK	2.50'	3.00'
3. SANDY GRAVEL	3.25'	4.00'
4. SILTY SAND	3.25'	4.25'
5. SANDY CLAY	3.67'	4.75'

FOOTING DEPTH SCHEDULE (18" DIA)

SOIL TYPE	D1 6' WALL	D2 8' WALL
1. MASSIVE CRYSTALLINE BEDROCK	1.75'	2.00'
2. SEDIMENTARY ROCK	2.25'	2.50'
3. SANDY GRAVEL	2.50'	3.00'
4. SILTY SAND	2.75'	3.50'
5. SANDY CLAY	3.25'	4.00'



WOODCRETE PANEL CAP



WOODCRETE PANEL

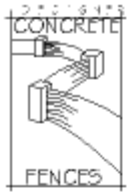
NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 516-007A.

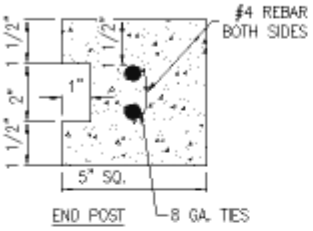
WOODCRETE WALL SYSTEM

SECTION AND ELEVATION

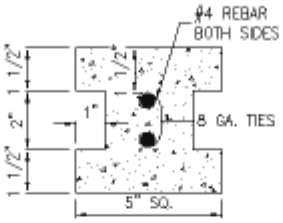
516-007A TO BE USED IN CORRESPONDENCE WITH 516-007B

DESIGNER CONCRETE FENCES
4925 SEPULVEDA BLVD.
SHERMAN OAKS, CALIFORNIA 91403
1-800-624-9255 (WALL)
PHONE: (818) 990-3362
FAX: (818) 990-3473
www.designerconcrete.com

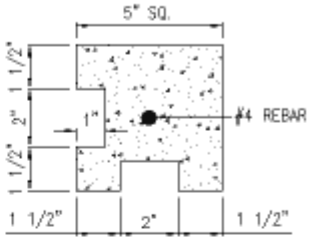




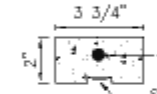
END POST



LINE POST

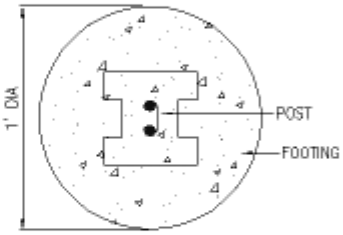


CORNER POST



CAP SECTION

SECURE CAP TO PANELS
WITH MANUFACURER APPROVED.
POLYURETHANE SEALANT MIN.
3-6" BEADS EQUALLY SPACED.



FOOTING

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
4. FIBER REINFORCEMENT IN ALL POSTS, PANELS AND CAPS.
5. ALL PIER FOUNDATIONS ARE TO BE LOCATED IN UNDISTURBED SOIL.
6. FENCE WALL STANDARD DESIGN FOR A WIND LOAD OF 70 MPH.
7. APPROVAL OF AN ENGINEER IS REQUIRED WHEN THE FENCE IS USED UNDER A CONDITION WHERE THE SPECIFICATIONS ARE DIFFERENT THAN SHOWN.
8. POSTS, PANELS AND CAP ARE MADE OF CONCRETE ATTAINING A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI @ 28 DAYS AND MANUFACTURED BY AN AMERICAN TECHNOCRETE LICENSED MANUFACTURER.
9. WOODCRETE®: DEEP NATURAL WOOD GRAIN TEXTURE ON ALL POSTS, PANELS AND CAPS
10. INTEGRAL COLOR BY DAVIS COLORS OR APPROVED EQUAL.
11. LOCATION AND FENCE HEIGHT SHALL COMPLY WITH CITY FENCING CODES.
12. ALL WORK SHALL COMPLY WITH CITY GRADING ORDINANCES.
13. ALL DIMENSIONS SHOWN ON THIS SHEET ARE FOR INFORMATION PURPOSES ONLY. ACTUAL DIMENSIONS MAY VARY DUE TO MANUFACTURING AND MOLDING TOLERANCES.
14. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 516-007B.

WOODCRETE WALL SYSTEM

DEATILS AND SPECIFICATIONS

516-007B TO BE USED IN CORRESPONDENCE WITH 516-007A.

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1-800-624-9255 (WALL)
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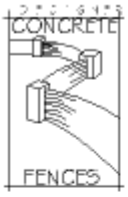
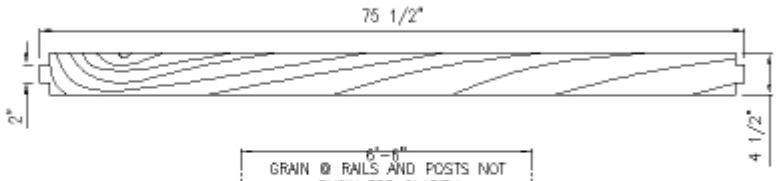
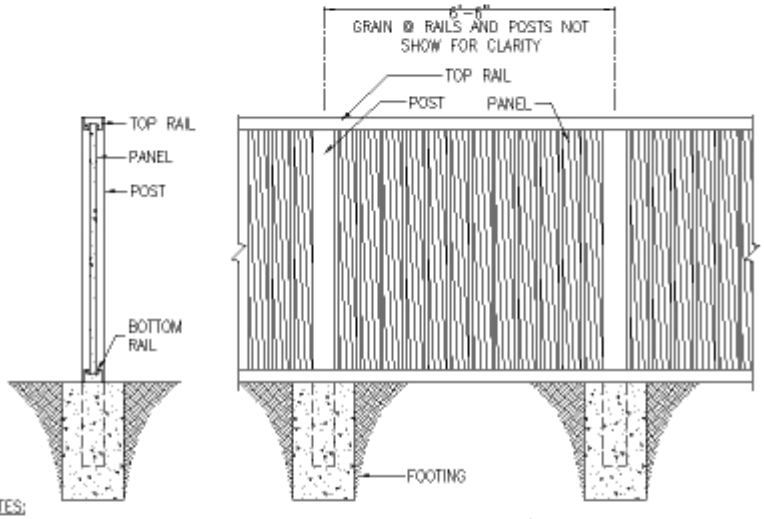
FAX: (818) 990-3473
www.designerconcrete.com







NOTES:

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2. DO NOT SCALE DRAWINGS.
3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
4. FIBER REINFORCEMENT IN ALL POSTS, PANELS AND CAPS.
5. ALL PIER FOUNDATIONS ARE TO BE LOCATED IN UNDISTURBED SOIL.
6. FENCE WALL STANDARD DESIGN FOR A WIND LOAD OF 70 MPH.
7. APPROVAL OF AN ENGINEER IS REQUIRED WHEN THE FENCE IS USED UNDER A CONDITION WHERE THE SPECIFICATIONS ARE DIFFERENT THAN SHOWN.
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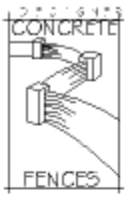
13. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info REFERENCE NUMBER 516-002.

CEDARCRETE WALL SYSTEM

SECTION AND ELEVATION



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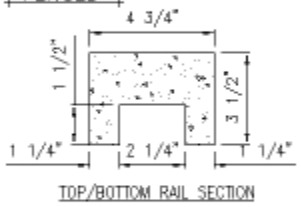
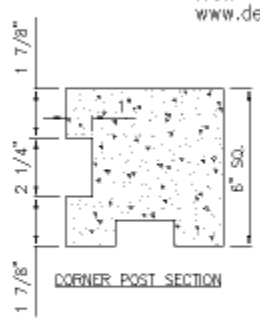
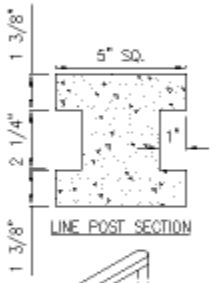


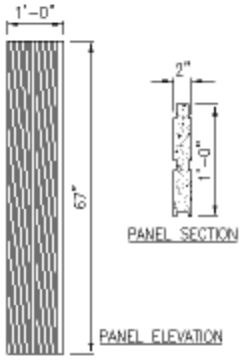
TOP/BOTTOM RAIL SECTION



CORNER POST SECTION

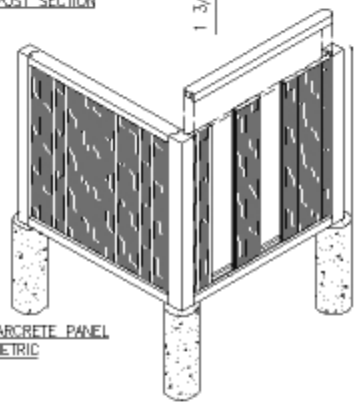


LINE POST SECTION



PANEL ELEVATION

PANEL SECTION



CEDARCRETE PANEL ISOMETRIC

NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWINGS.
3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
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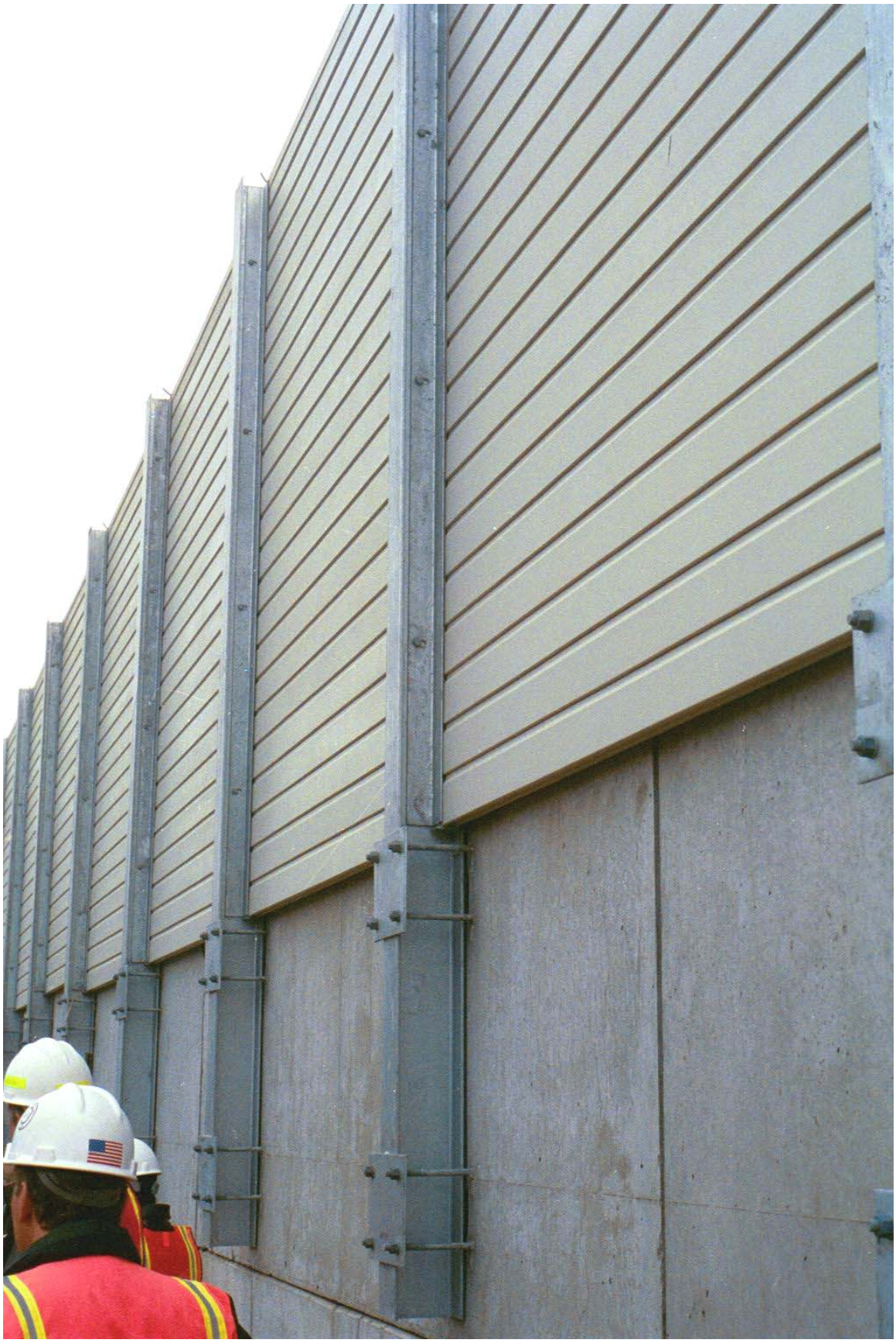
CEDARCRETE WALL SYSTEM

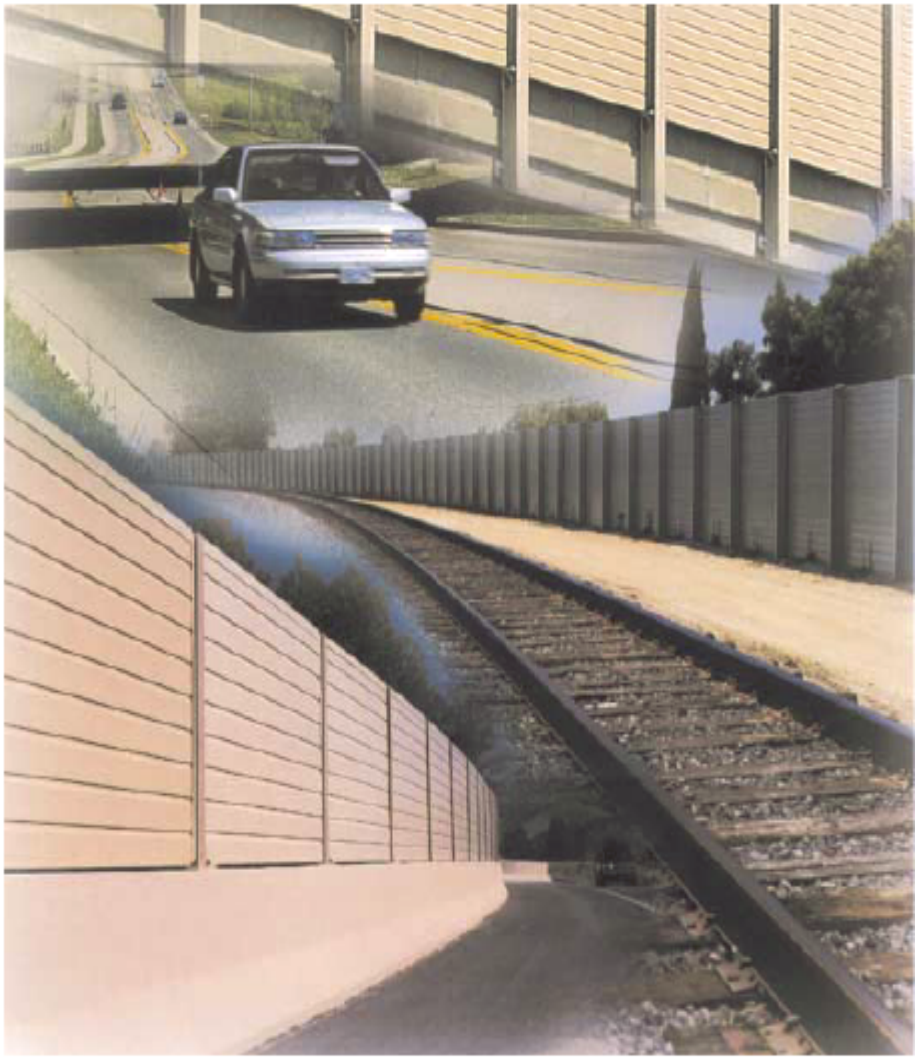
PANEL, ISOMETRIC

APPENDIX 8
FIBERGLASS PRIVACY FENCING

Product information and material specifications.



THE SOUND BARRIER™



Delivering superior sound reduction while offering a unique environmental solution through the **USE OF POST CONSUMER SCRAP RUBBER TIRES.**

CARSONITE® INTERNATIONAL

REDUCES NOISE AND ENVIRONMENTAL POLLUTION

The revolutionary new Sound Barrier System from Carsonite is designed for use along highways, mass transit lines, crowded residential roads and other high-traffic areas where noise is a concern. It features tongue and groove, modular sections made from fiberglass-reinforced polymer composite that are *filled with ground, recycled tire waste*.

According to figures from the U.S. Environmental Protection Agency, approximately one tire per American is generated each year, yet only about 15 percent of scrap tires are recycled. A ten-foot high, one-mile long Carsonite Sound Barrier consumes up to 211,000 pounds of scrap tires or about 20,800 tires. The scrap rubber used in Carsonite's Sound Barrier is taken from breakdown plants already in operation. Other products made from scrap tires stay in the waste stream, while Carsonite's solution **removes** scrap tires from the waste stream entirely.

A ten-foot high, one-mile long Carsonite Sound Barrier consumes up to 211,000 pounds of scrap tires or about 20,800 tires.

SUPERIOR SOUND REDUCTION

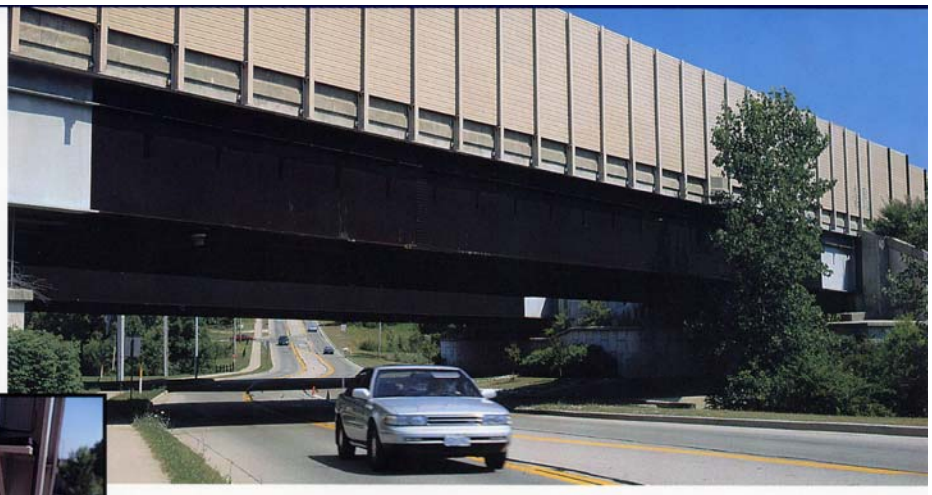
Registered A Sound Transmission Class Of 36

Carsonite's Sound Barrier System is dramatically superior in sound reduction than conventional sound walls. When tested by Riverbank Acoustical Laboratories, the Sound Barrier System registered a Sound Transmission Class of 36. This high sound transmission rating means sound levels behind the Sound Barrier System are significantly reduced.

The Sound Barrier also reduces noise on its facing side. The system exceeds guidelines set for N.R.C. (Noise Reduction Coefficient) and wind loads required by AASHT and State Departments of Transportation. It registered N.R.C. of 0.15, which is more sound absorptive than co crete and significantly better than wood.

* AASHTO American Association of State Highway and Transportation Officials

The Sound Barrier's lightweight design allows it to be installed on existing structures without requiring additional reinforcement of the structure.



MODULAR, LIGHTWEIGHT DESIGN

Installation Is Easy — No Heavy Crane Required

The Carsonite Sound Barrier is lightweight and can be easily installed using a simple post and foundation design. The modules measure up to 15' (4.5 m) wide and 6' high each and are stacked on top of each other to attain the desired height. The ends are anchored in "H" shaped steel or concrete supports set into the ground.

Because the *Sound Barrier sections weigh only 7.5 pounds per square foot,* no heavy crane is required for installation. This provides a significant advantage when installing the Sound Barrier on a busy roadway, because less traffic lanes need to be closed to accommodate heavy lifting equipment. And fewer installers are required.

FIRE, WEATHER AND VANDAL RESISTANT

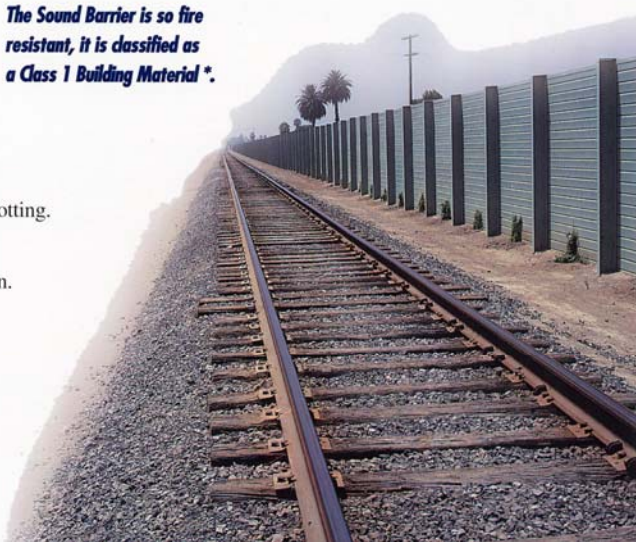
Composites Offer Superior Expected Life Cycle

The Sound Barrier sections are manufactured by Carsonite using a pultrusion process which provides a strong and durable wall. The composite fiberglass material has been used for decades worldwide in demanding, outdoor applications and offers a number of key advantages over conventional sound wall materials:

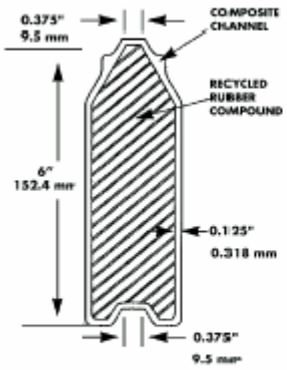
- Withstands harsh weather conditions — no peeling or rotting.
- Will not corrode from chemicals or salt.
- Protected by U.V. inhibitors to prevent solar degradation.
- So fire resistant it is classified as a Class 1 Building Material *suitable for indoor construction!
- Tensile and compressive strength of over 60,000 psi.

(*As defined by the Uniform Building Code.)

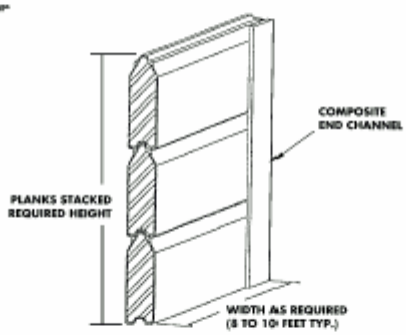
The Sound Barrier is so fire resistant, it is classified as a Class 1 Building Material *.



BARRIER PLANK ASSEMBLY



SECTION OF ASSEMBLED WALL WITH 3 STRUCTURED PLANKS



SPECIAL FEATURES

- Exceeds AASHTO and DOT sound wall guidelines.
- More effective than concrete, metal or wood.
- Provides positive use for un-wanted tire waste.
- Modular, lightweight design.
- Easy installation without a heavy crane.
- Naturally fire resistant.
- Withstands harsh weather and corrosive elements.
- Available in heights up to 28 feet (8.5 m) and in virtually any color or with variable shading..

PHYSICAL PROPERTIES OF CARSONITE COMPOSITE*

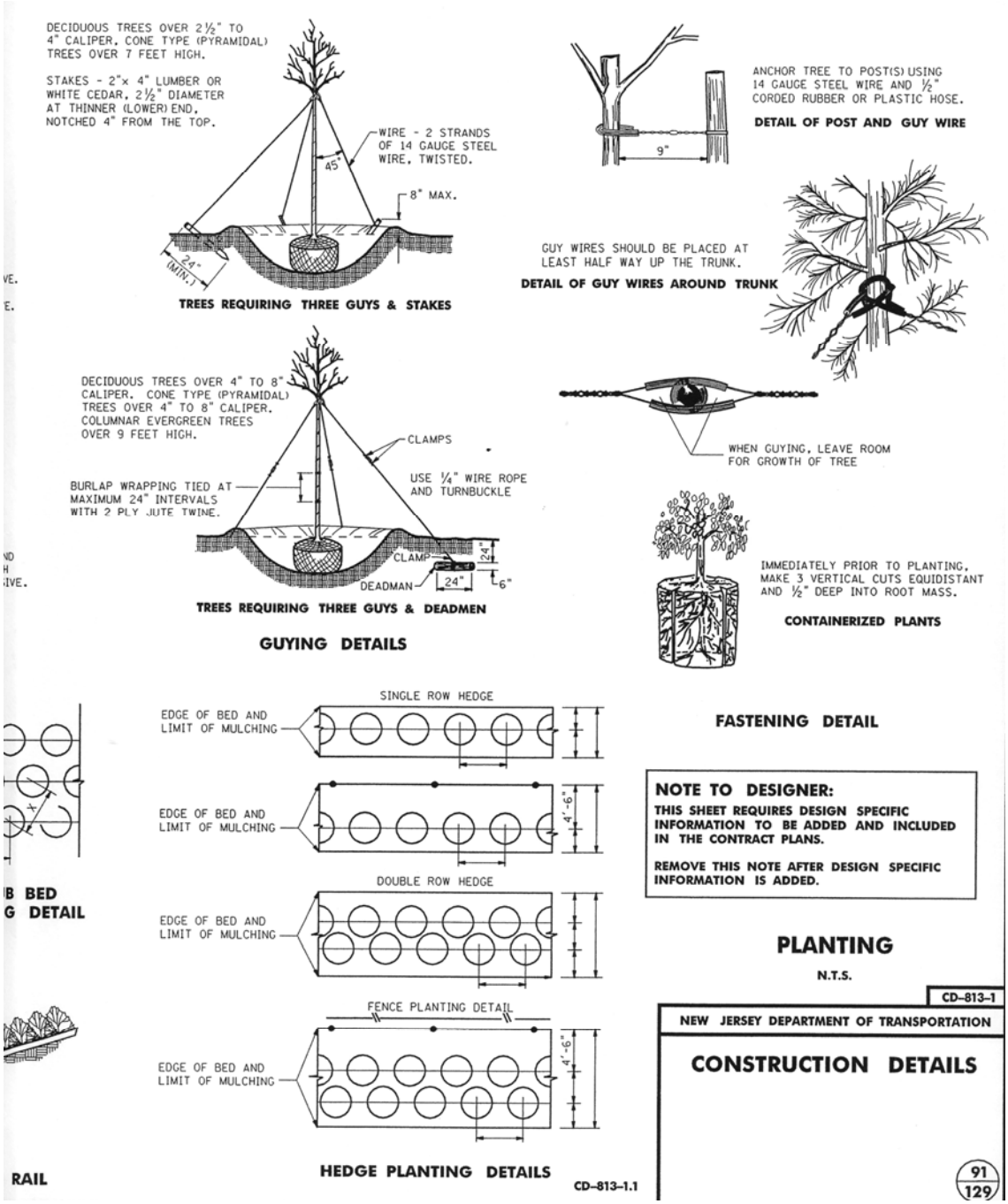
		ASTM
Flex Strength	75,000 psi	D790
Tensile Strength	75,000 psi	D638
Compressive Strength	60,000 psi	D695
Tensile Modulus	4,300,000 psi	D638
Specific Gravity	1.88 (typ)	D792

These properties are valid over a temperature range of -40° to +140°F.
*Physical test reports available upon request.

Distributed By:

APPENDIX 9
BERMS & SHRUBS PRIVACY FENCING

Planting details, suitable plant types.



continued on next page

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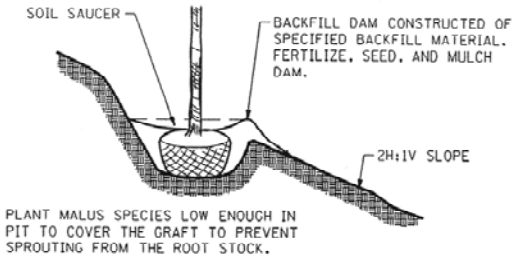
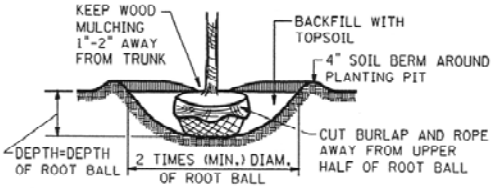


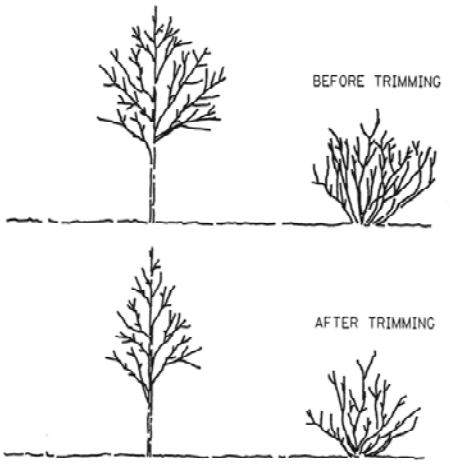
TREE PLANTING – 2H:1V SLOPE



B & B MATERIAL

BARE ROOT MATERIAL

TREE & SHRUB PLANTING DETAIL

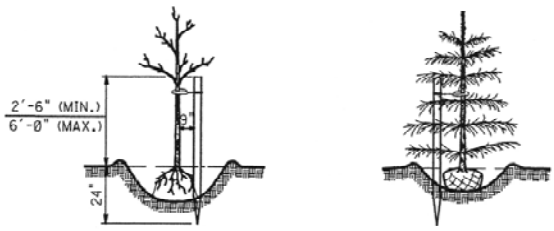


DAMAGED BRANCHES SHALL BE TRIMMED OFF BELOW THE POINT OF INJURY. THE CENTRAL TRUNK OR "LEADER" SHOULD BE LEFT INTACT AND THE SIDE BRANCHES SHOULD BE SHORTENED BY APPROXIMATELY ONE-THIRD TO ONE-HALF OF PREVIOUS SEASON'S GROWTH. BROKEN ROOTS SHALL BE CUT OFF ABOVE THE BREAK AND BRUISED ENDS CUT OFF CLEANLY.

WHEN PLANTING A YOUNG SHRUB, THIN TOP GROWTH BY ONE-THIRD TO BALANCE THE TOP WITH THE ROOTS. PRUNE JUST ABOVE A BUD AND RETAIN THE NATURAL SHAPE OF THE SHRUB.

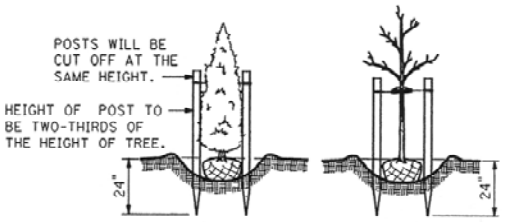
PRUNING TREES WHEN PLANTING

POSTS - 2" x 2" x 8 FOOT LUMBER, STAINED DARK BROWN, OR 8 FOOT WHITE CEDAR POST 2" TO 3" DIAMETER AT THE THINNER (LOWER) END OF THE POST.



TREES REQUIRING ONE STAKE

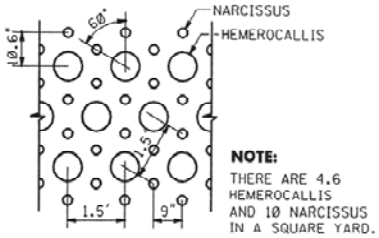
DECIDUOUS TREES (EXCEPT SALIX) 1" TO 1½" CALIPER, INCLUSIVE. CONE TYPE (PYRAMIDAL) TREES 3 FEET TO 5 FEET HIGH, AND COLUMNAR EVERGREEN TREES 4 FEET TO 7 FEET HIGH, INCLUSIVE.



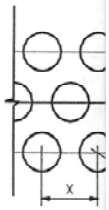
TREES REQUIRING TWO STAKES

DECIDUOUS TREES OVER 1½" TO 2½" CALIPER, INCLUSIVE. ALL SALIX REGARDLESS OF HEIGHT, CALIPER, BARE ROOT OR BALLED AND BURLAPPED. CONE TYPE (PYRAMIDAL) TREES 5 FEET TO 7 FEET HIGH AND COLUMNAR EVERGREEN TREES 7 FEET TO 9 FEET HIGH, INCLUSIV

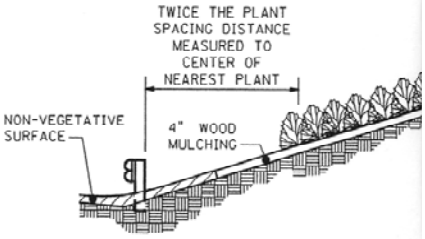
STAKING DETAILS



HEMEROCALLIS AND NARCISSUS BED PLANTING DETAIL



SHRUB PLANTING



SHRUB PLANTING BEHIND GUIDE

APPENDIX 10
FREEHOLD TOWNSHIP FENCE ORDINANCE

Typical fence ordinance.

(d) The height of a personal earth terminal shall not exceed 12 feet.

(e) The main reflector shall not exceed a diameter of ten feet.

(f) All wiring or connecting cables between a personal earth terminal and the principal building shall be buried underground.

(g) A personal earth terminal shall be so located and shall be effectively screened from view by natural plants, trees or other suitable sight barriers, which shall be maintained in good condition in order to minimize visibility of the earth terminal from any adjacent property or public street as approved by the planning board.

(h) Only one personal earth terminal shall be permitted on any property.

(i) A personal earth terminal may only be erected on a lot containing a principal structure and may only be used by residents of the principal building on the property in question. Any connection, by cable or otherwise, to adjacent properties shall constitute a violation of yard and setback requirements.

d. No sign, nameplate, display or advertising device of any kind whatsoever shall be inscribed upon or attached to any chimney, tower, tank or other structure without approval of the planning board.

e. In the M-1 Zone District, building height may be increased to 75 feet provided that buildings which exceed 50 feet in height shall be set back not less than 200 feet from all front property lines, 125 feet from all side and rear property lines and 200 feet from all residential zones.

18-37.4 *One Principal Building Only.* Except as might be hereinafter specifically provided, there shall not be more than one principal residential building erected on any lot.

18-37.5 *Frontage and Direct Access.* No development shall take place upon a lot which does not have frontage upon and direct access to a public street improved to meet requirements of the township or for which such improvements have been guaranteed in accordance with requirements and established in the land subdivision and site plan regulations of this chapter. Limited access highways shall not be deemed to be "frontage" for purposes of this chapter.

18-37.5.1 *Reverse Frontage Lots.* No development shall be designed to create reverse frontage lots except for lots which will abut limited

access expressways or principal arterial roadways (those having at least two lanes in each direction).

Whenever reverse frontage lots are to be allowed, the development plans must provide for a 150 foot buffer easement within which shall be an earthen berm, at least four feet high. The buffer easement area and berm shall be landscaped and maintained consistent with the requirements of subsection 18-40.2 b, c, d, e and g; however, no fencing or other structures may be placed within such buffer easement. The development approval shall further provide for the maintenance of the buffer easement by the homeowner.

18-37.6 *Front Yards.*

a. Any yard facing a public street shall be considered a front yard and shall conform to the minimum front yard requirements established for the zone in which the yard is located for principal structures. Accessory structures limited to swimming pools, fences, flagpoles, lamp posts, ornamental objects, seasonal decorations, landscaping accessories, and permitted tool shed or similar storage building shall be permitted within a reverse frontage yard provided, however, that no such structure or use shall encroach into any required buffer area or within 25 feet of the street line whichever is greater.

b. No accessory structures shall be erected in any front yard, with the exception of:

1. Flag poles.
2. Signs.
3. Lamp posts.
4. Ornamental objects.
5. Seasonal decorations.
6. Landscaping accessories.

c. No front yard in any residential zone shall be used for the storage of vehicles exceeding 10,000 pounds and/or the parking of boats, trailers or equipment. Other vehicles which are in operating condition and which are parked on an improved driveway or parking area are permitted.

d. On a parcel of land situated between parallel streets, the front yard is defined as the area situated between the street line and a minimum front building line. (See subsection 18-3.150.) In such circumstances, fences, or other accessory uses or structures which are constructed in the rear yard may be built to the street line provided they do not exceed three feet in height. Any fence or other accessory

from access automobile parking areas, particularly for any uses which require large volumes of trucking traffic.

18-40 Fence and Buffer Regulations.

18-40.1 *Fence Regulations.*

a. Fences in residential zones may be erected, altered or reconstructed to a height not exceeding six feet above ground level when located to the rear of the front building line and not exceeding three feet in height when located in front of the building line or in a front yard. For the purpose of erecting a fence on a corner lot, the facade where the main (front) door is located shall be considered the front of the house. A fence up to six feet in height may be erected to the rear and side of the house adjacent to the side street as follows: The fence may begin at the rear corner of the house nearest the intersection to a distance calculated at half the required front setback for the zone, and then run parallel with the side street and extend to the property line. (Also see subsection 18-37.6 for lots having frontage on two parallel streets.)

b. Fences in business and/or industrial zones may be erected to a height not to exceed six feet above ground level in any yard, except that open wire fences may be erected to a height not to exceed eight feet above ground level for security purposes.

c. All fences must be erected entirely within the property line. No fence shall be erected within any public right-of-way.

d. On farms only, open wire fences may be erected to a height not to exceed six feet in height within any part of the farm premises. Any other type fence may be erected to a height not to exceed four feet when located within 25 feet of any street line, and six feet when located more than 25 feet from a street line.

e. Barbed wire fences shall not be permitted except on farms and in the industrial zone. When used in the business and/or industrial zones, barbed wire may only be used when needed for security purposes and must be mounted on top of a fence having a minimum height of six feet above ground level.

f. Electrically charged fences may be used only on farms. All electrically charged fences shall be posted with signs designed to warn persons of their presence and nature.

g. All fences shall be maintained in a safe, sound and upright condition and shall be erected with the framework or supporting structure facing the inside of the lot.

h. No fence shall be erected which is embedded with or made of pieces of glass, sharpened metal, or sharp or otherwise hazardous material, nor shall any fence be erected which is intended to injure persons or animals. (This prohibition shall not apply to barbed wire fences.)

18-40.2 *Landscaping and Buffer Regulations.*

a. Where any commercial property abuts a residential zone, a landscape buffer strip in accordance with schedule of area, yard and building requirements under the heading Width and Buffer Zone shall be permanently maintained along the property line abutting the residential zone.

b. Buffer areas shall consist of lawn areas and massed evergreen and deciduous trees and shrubs planted in a manner that will provide a continuous visual screen throughout the entire year. The planning board shall determine the interval of spacing between plants based upon the species of tree or shrub. In no event shall the species chosen take longer than five years to provide a continuous visual screen.

c. Evergreen and deciduous shrubs shall have a minimum height of three feet when planted.

d. Required buffers may be used for no other purpose than as a buffer. The only structures which may be erected within a buffer area are fences as elsewhere regulated in this chapter.

e. The height of shrubs planted in a buffer area shall be measured from the ground level around the base of the shrub to the topmost part of the shrub, once the shrub has been properly planted in the ground.

f. All nonpaved areas on properties used for any purpose other than farming shall be suitably landscaped with trees, shrubs, grass, and other suitable landscaping materials.

g. Where an area required for a buffer is already wooded, it shall be suitably supplemented with trees, shrubs, grass and other landscaping materials to meet the intent of this section.