SAFER TRANSPORTATION THROUGH INNOVATION

BLAST-SAFE®

JET-BLAST/PERIMETER SECURITY FENCE

DESIGN BOOK

TRANSPO® INDUSTRIES, INC.

20 JONES STREET | NEW ROCHELLE, NY 10801-6098 | 914-636-1000

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TRANSPO® INDUSTRIES, INC.

Transpo Industries, Inc. manufactures a variety of innovative products and materials designed for improving airfield, road and bridge safety and preservation. The company's reputation as an expert in rehabilitation, preservation and safety has made Transpo a leading supplier since 1968.

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Blast-Safe®

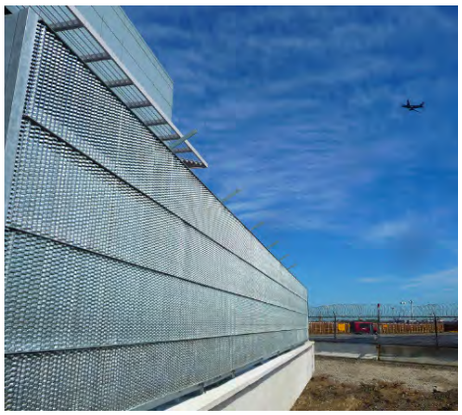
AIRPORT JET-BLAST BARRIER SYSTEMS

Jet-Blast Barrier Fence for Protecting Airport Assets

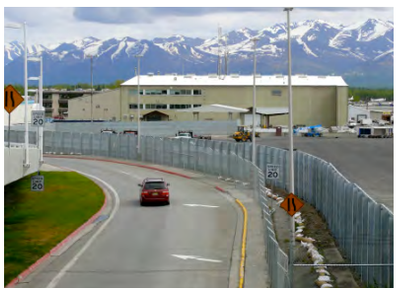
Transpo's Blast-Safe® Jet-Blast Barrier Fence provides positive protection for pedestrians, ground vehicles and other airport facilities that may be subjected to jet-blast hazards from nearby runways, taxiways and tarmacs.

The key component of the system is a unique double-reverse corrugated steel fabric, originally developed for NASA. Blast-Safe's® "open" structure allows jet-blast air to be diffused safely through the system, while preventing any penetration of sand, stones, or other damage-causing debris. The system also acts as security fence, noise attenuation barrier and glare screen for added safety benefits.

Blast-Safe® installations are custom designed to fit existing airport layout and geometry, promoting maximum utilization of limited right-of-way space.



Transpo engineers design each fence to meet the requirements of the facility owner.



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Blast-Safe®

AIRPORT JET-BLAST BARRIER SYSTEM

Features and Advantages

Narrow Profile:

Blast-Safe® installations, up to 14 ft high, incorporate stand-alone post connections, which minimizes lateral space occupied by the barrier. This design characteristic saves valuable facility land area, and allows placement of barrier in existing “tight” locations.

Superior Jet-Blast Protection:

The key component of Blast-Safe® is the double-reverse corrugated steel fabric, which safely diffuses high-velocity jet-blast streams, and prevents penetration of solid debris. The diffusion process offers superior protection because it physically dissipates jet-blast hazards.

Modular Construction:

Blast-Safe®’s modular components may be constructed on-site, or pre-assembled and quickly erected in place to minimize delays in airport operations.

Custom Designed:

Each Blast-Safe® installation is custom designed to ensure proper height, strength, and layout for your application. Access doors for personnel and equipment, lighting and other site-specific features are easily incorporated into the system for added safety and convenience.

Technical Data

Sizes:

Blast-Safe® is custom designed to fit a wide variety of site characteristics. Length, height, and strength of the system are varied depending on type, proximity, and operational conditions of adjacent aircraft. Typical Blast-Safe installations are 8,10,12, or 14 ft. high. Custom heights are available.

Materials:

Blast-Safe®’s sheathing is 25 gage double-reverse corrugated steel fabric, galvanized in accordance with ASTM A653, Coating Designation G90, All framing components are fabricated from standard structural steel shapes galvanized in accordance with ASTM A123. All hardware is structural grade and galvanized in accordance with ASTM A153. Steel-reinforced concrete footings area designed for site-specific jet-blast loading and local soil.

Design Plans and Specifications:

Transpo engineers are available to evaluate proposed Blast-Safe® locations, and prepare detailed construction plans and specifications in conjunction with airport staff and consulting engineers. We assure that each Blast-Safe installation meets the highest safety standards and provides the best solution for protecting your valuable airport assets.

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Need More Information?

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Contact the safety experts at Transpo to find out more about the various products we offer. If you need advice on how to install the product, the professionals at Transpo will guide you through the process. Project specific questions? We can assist you in creating a cost-effective, tailored solution for your project.

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ISO 9001:2008 REGISTERED FIRM

Transpo Blast-Safe®

Jet-Blast Deflector and Perimeter Security Fencing

GUIDE SPECIFICATION

PRODUCT DESCRIPTION:

Jet-Blast system shall be “Blast-Safe®”, a galvanized jet blast fence system, fully relocatable type, as manufactured by Transpo Industries, Inc., New Rochelle, NY, designed in accordance with Contract Documents. The Contractor shall furnish anchor bolts under the Section entitled “Concrete”. Anchor bolts shall be galvanized in accordance with ASTM A 153.

DESIGN CRITERIA:

Jet-Blast system shall be designed in accordance with the “AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals” and with applicable sections of the “AASHTO Standard Specifications for Highway Bridges” governing allowable fatigue and stress, as indicated on Contract Documents.

Jet-Blast system shall be designed to resist a 130mph jet-blast velocity, in the direction of applied jet-blast force as indicated on the plans.

SUBMITTALS

Shop drawings: Prior to commencing fabrication the Contractor shall submit detailed Shop Drawings of the Transpo Blast-Safe® system components and layout to the Engineer for approval in accordance with the section entitled “Working Drawings and Catalog Cuts”.

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Jet-Blast Deflector and Perimeter Security Fencing

MATERIALS

1. Post Base Plates and Gussets shall be fabricated from structural steel plate per ASTM A36.

2. End and Corner Posts shall be fabricated from structural steel tubing per ASTM A 500, Grade B.

3. Intermediate Posts shall be fabricated from structural steel I-beam per ASTM A992.

4. Horizontal Angle Braces and Tabs shall be fabricated from structural steel angle per ASTM A572, Grade 50.

5. Pipe Stiffeners shall be fabricated from Schedule 80 steel pipe per ASTM A53, Grade B, Type E, or ASTM A106 Galvanized and supplied with end caps.

6. Barrier Fabric shall be Double-Reverse Corrugated (DRC) steel sheet per ASTM A 653, Galvanized Coating Designation G90.

7. Anchor Bolts shall conform to ASTM F1554.

8. Structural Bolts shall conform to ASTM A325.

9. Nuts shall conform to ASTM A563, Grade DH.

10. Lock Washers shall conform to ANSI B-18-21-1.

11. Flat Washers shall conform to ASTM F436.

12. Welding Electrodes shall conform to E70XX, or approved equal.

13. Galvanized Coatings: All structural steel materials shall be galvanized after fabrication in accordance with ASTM A123, and all hardware shall be galvanized after fabrication in accordance with ASTM A153.

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CONSTRUCTION METHODS

Foundations

- Excavation for foundations shall extend to the depth shown on plans.
- Surrounding soil shall remain undisturbed using methods approved by the Engineer.
- Reinforcing Bars shall be placed in the locations shown on the plans.
- Anchor Bolts shall be located to match the specified bolt configuration of the Blast-Safe® base plates. The projection height of each anchor bolt shall be 3 1/2 in ± 1/2 in (89 mm ± 13 mm).
- Concrete shall be placed and consolidated in accordance with ACI standard procedures.
- Top surface of all foundations shall be smooth, level, and at the same elevation, ± 1/2 in (13 mm). Concrete shall cure for a minimum of fourteen (14) days prior to erection of Blast-Safe®.

Anchor Bolts

- Posts shall be positioned on the anchor bolts with leveling nuts installed under the base plate.
- Flat washers and nuts shall be placed on each anchor bolt on top of the base plate.
- Use leveling nuts to assure posts are plumb.
- All baseplate nuts shall be tightened on to the anchor bolts in accordance with American Institute of Steel Construction (AISC) Turn-of-Nut Tightening Methods.

Horizontal Angle Braces

- Horizontal Angle Braces shall be installed level and in the proper location as shown on the plans, and secured with bolts, lock washers and nuts. All nuts shall be tightened in accordance with American Institute of Steel Construction (AISC) Turn-of-Nut Tightening Methods.

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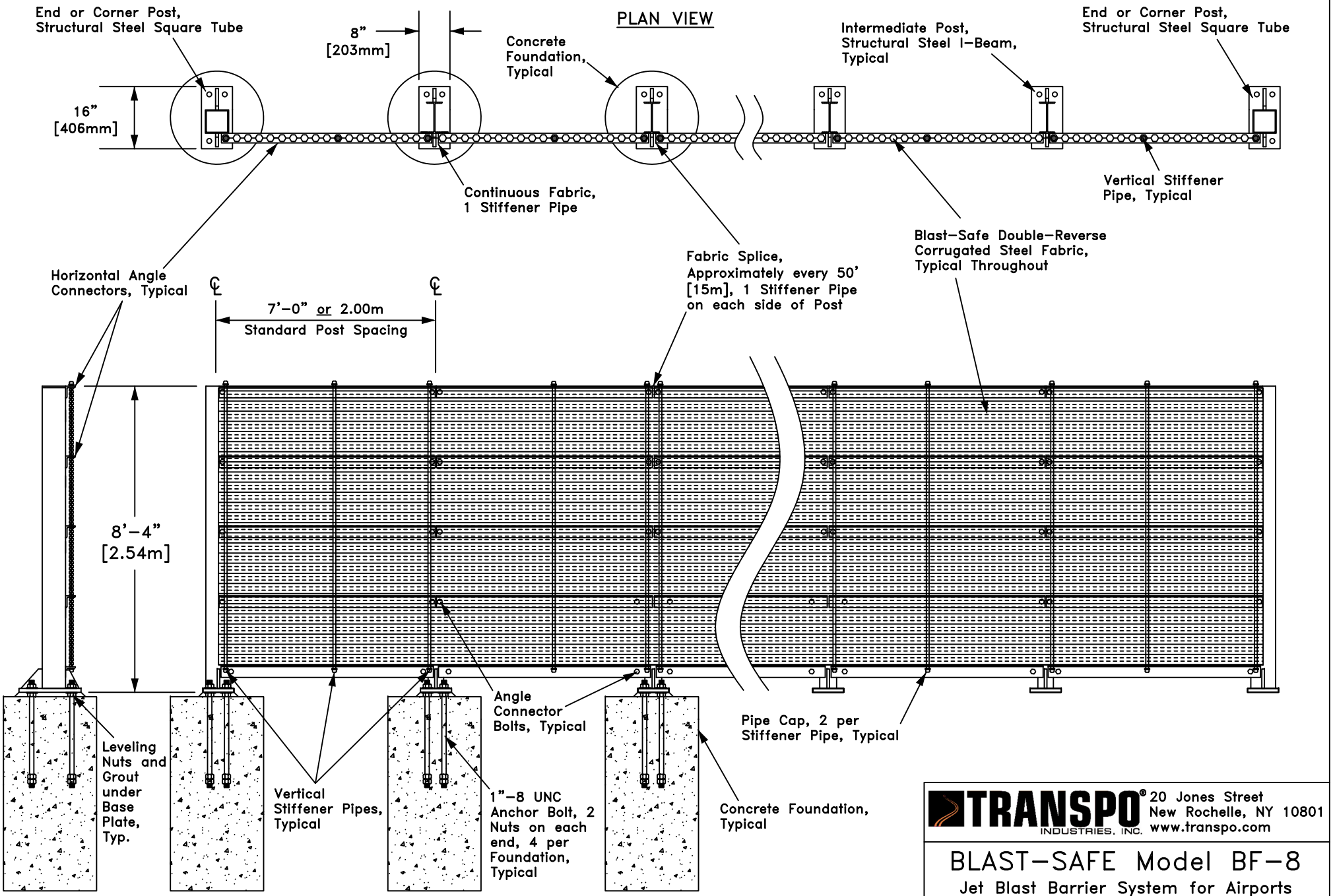
DRC and Pipe Stiffeners

Blast-Safe® Double-Reverse Corrugated (DRC) and Pipe Stiffeners shall be installed starting at the top end of the Blast-Safe®.

- Support the entire length of one roll of DRC and secure one end by inserting pipe stiffener with pipe cap installed on the top thru angle stiffeners on the top and bottom and openings in the DRC.
- Once one end of the DRC is secured, install pull kit, and come-along on the opposite end secured to a fixed post.
- DRC shall be pulled taut enough to install next pipe stiffener at the beginning end.
- Repeat until the entire top row of DRC is secured. Install the next roll of DRC under the top row with the same process until all rows of DRC are installed to the bottom of the frame.
- Before installing the next section cut off excess DRC, allow one full corrugation past the last pipe stiffener.
- DRC shall remain taut throughout its full length.
- DRC joints shall occur only at a post. DRC installation shall progress down the frame until all vertical pipe stiffeners have been installed.
- Pipe caps shall be secured to the bottom of each vertical pipe stiffener.



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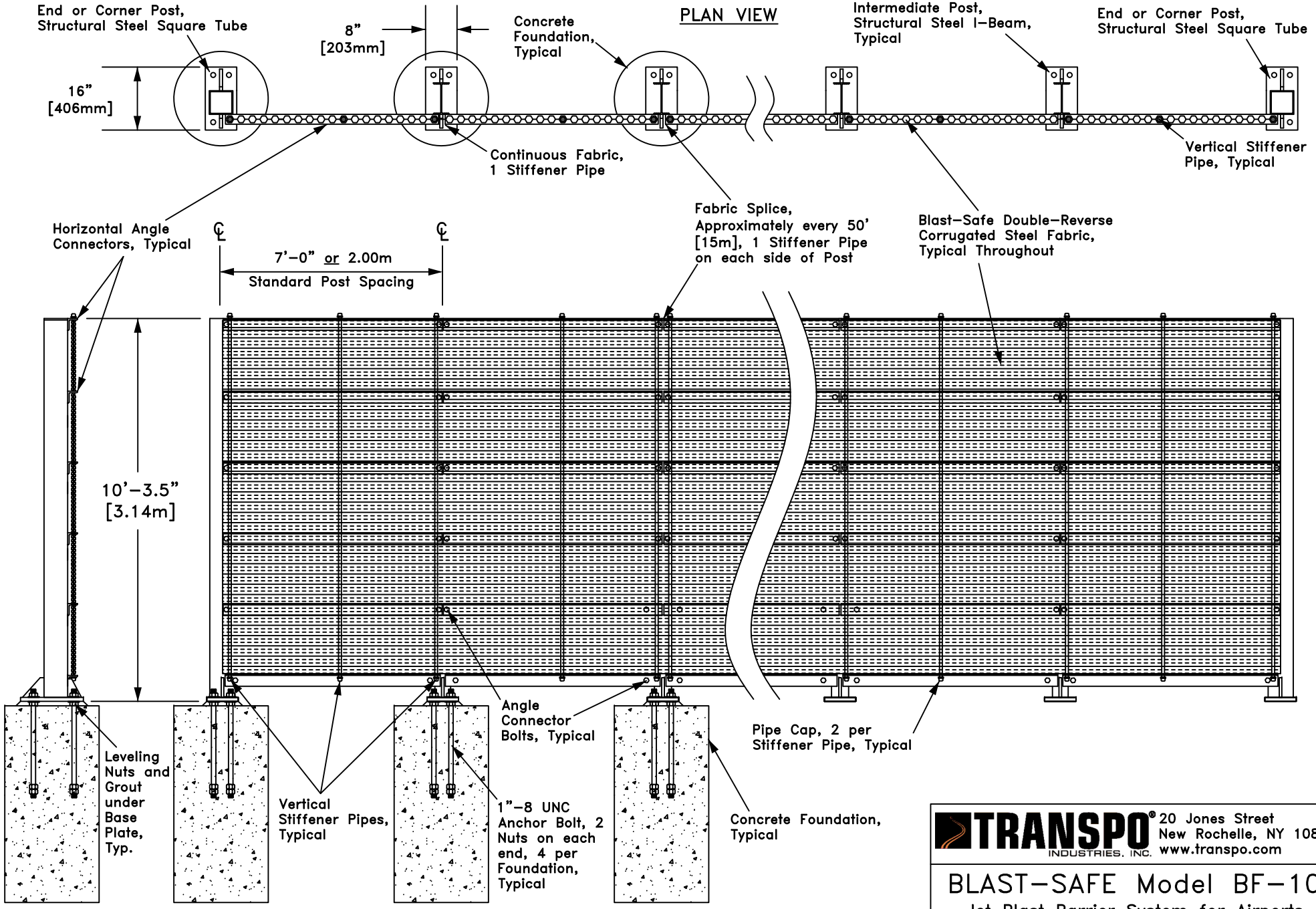
BLAST-SAFE Model BF-8

Jet Blast Barrier System for Airports

Scale: Not To Scale	Date: 1-March-2021
Drawing No. BF-8	Sheet: 1 of 1



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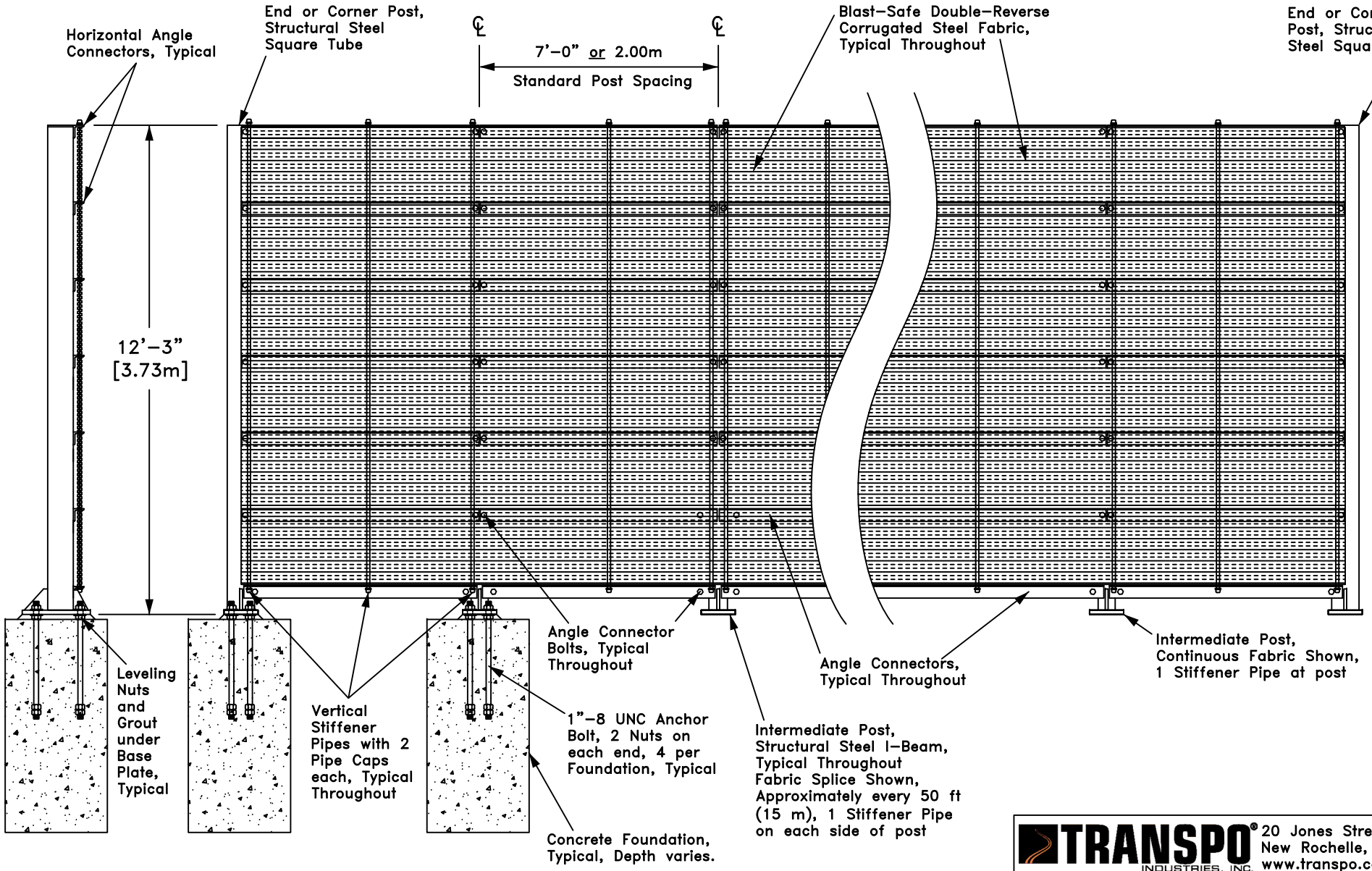
BLAST-SAFE Model BF-10

Jet Blast Barrier System for Airports

Scale: Not To Scale	Date: 1-March-2021
Drawing No. BF-10	Sheet: 1 of 1



SIDE VIEW

FRONT VIEW

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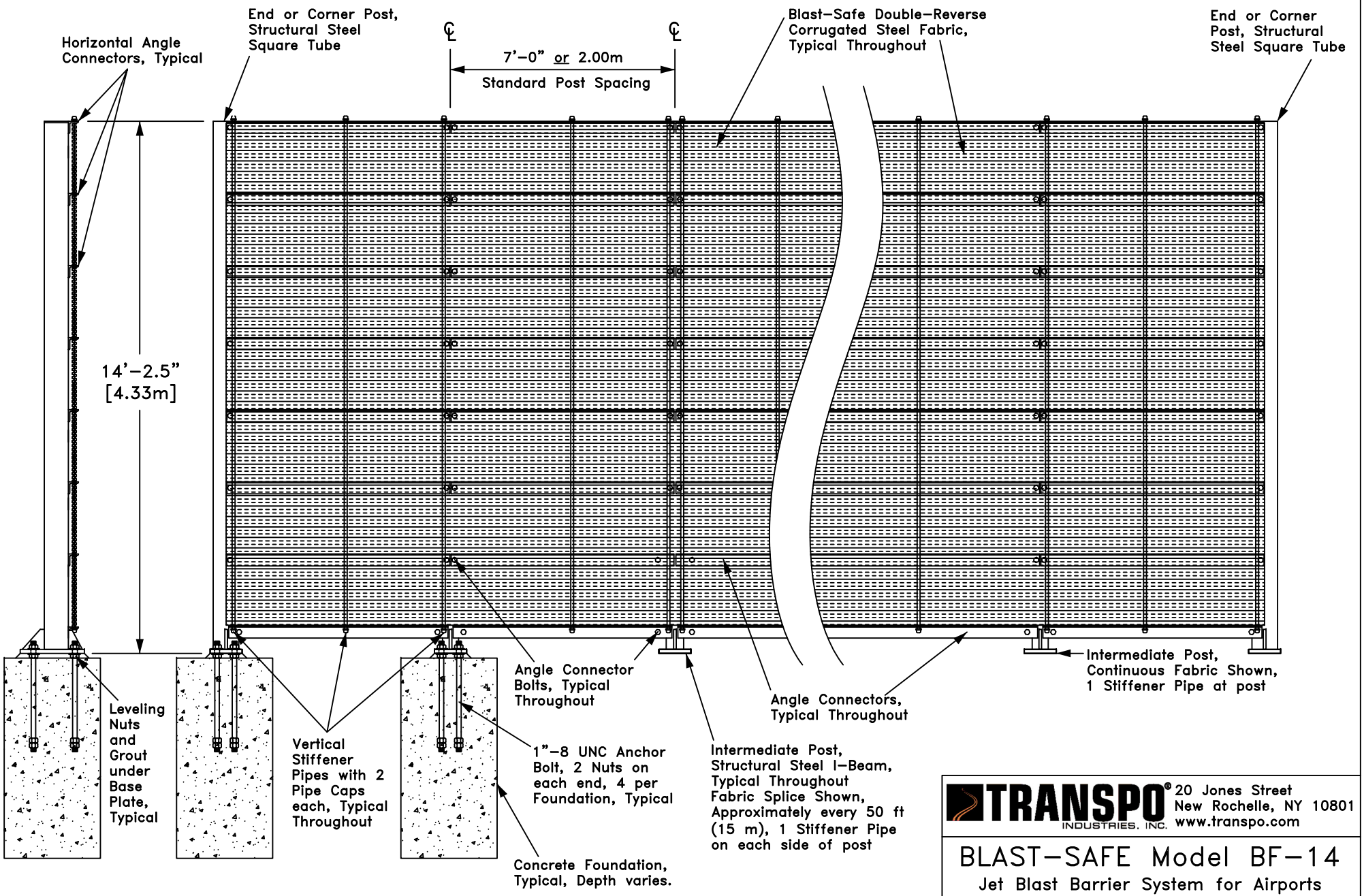
BLAST–SAFE Model BF–12

Jet Blast Barrier System for Airports

Scale: Not To Scale	Date: 1–March–2021
Drawing No. BF–12	Sheet: 1 of 1



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BLAST–SAFE Model BF–14

Jet Blast Barrier System for Airports

Scale: Not To Scale	Date: 1–March–2021
Drawing No. BF–14	Sheet: 1 of 1

Transpo Blast-Safe®

Jet-Blast Deflector and Perimeter Security Fencing

INSTALLATION INSTRUCTIONS

Footings and Post Installations

Working from the Blast-Safe® layout drawings provided by Transpo Industries, the footings shall be installed using the dimensions shown. Note: It is very important for all footings to be level with respect to each other. Leveling nuts under the base plates should be used to assure all posts are level and plumb. The footings are typically spaced 7'-0" (2.133m) on center. The anchor bolt pattern and dimensions are shown on the foundation detail sheet.

Assemble Framing

After the posts have been installed on the footings, install the angle connectors. Some angle connectors are fabricated for specific locations, refer to shop drawings for installation location.

After the frame is assembled check all posts to assure that they are level and plumb.
This is critical for installation of DRC fabric.

DRC Fabric

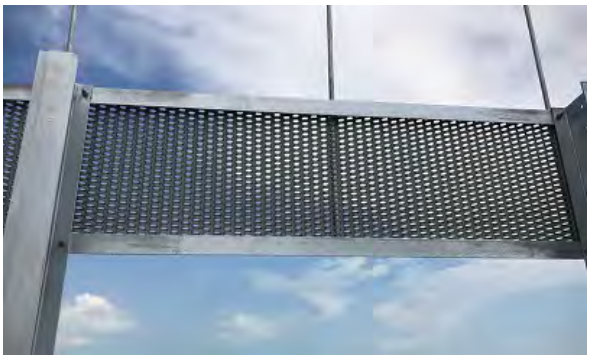
DRC fabric is banded in 50 foot rolls. Do not cut the banding until you are ready to start installation. Begin the installation of the fabric by lifting the entire 50 FT roll to the top of one end of the Blast-Fence® Using a pallet and forklift will facilitate the installation of the DRC. Remove the band **(careful not to cut the fabric)** and attach the DRC to the top row on one end post using a pipe stiffener.

Installation of DRC and Pipe Stiffeners

1) After installation of the first pipe stiffener at the end post unroll the 50ft roll of DRC. It is recommended that bungee cords be used at each post to hold the fabric in place against the face of the I Beam allowing it to move as tension is applied and pipe stiffeners are installed.
2) Attach the supplied pull kit and come-a-long to the free end of the DRC roll. Secure the come-a-long to a post beyond the end of the roll of DRC. Draw the fabric taut using the come-a-long, but Do Not stretch the DRC.

3) Starting at the end post, insert pipe stiffener with a pipe cap installed on the top thru the hole in the angle bracket and the DRC located between the first and second posts. Make sure the pipe stiffener extends thru the second row of angle connector.

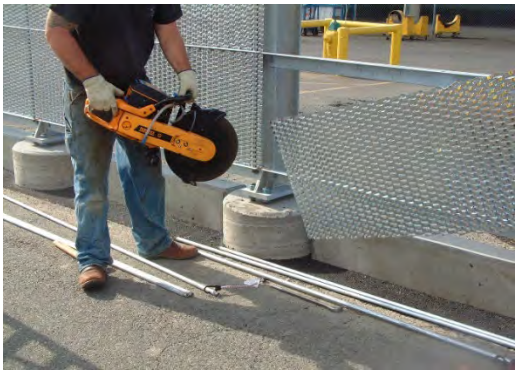
4) Align the DRC at the second post using the come-a-long. Do Not over stretch.the DRC. No more than a one inch “pull” or “release” is required to position the DRC for the pipe stiffener. Insert only one pipe stiffener at each wide flange post.



5) Continue installing the pipe stiffeners until the top first row of DRC is fully attached. Use the same method to install each row of DRC under the first row until all rows are installed.

Cutting the DRC

When you have secured the 50ft roll of DRC, you will need to cut the excess at the at the end of the roll (splice point). To cut the DRC**,** use a carbide tipped blade. Leave one full DRC corrugation beyond the last installed pipe stiffener.



DRC splice joints

The beginning of the DRC roll has a starter tab. This starter tab is placed over the cut edge of the previously installed roll. Secure the next roll with a pipe stiffener and continue the installation as described above.

Completion

To complete the final segment of the DRC it may be necessary to mount the come-a-long to a stationary fixture like a truck or backhoe. Once all of the DRC is in place make sure to install pipe caps on the bottom of each pipe stiffener.

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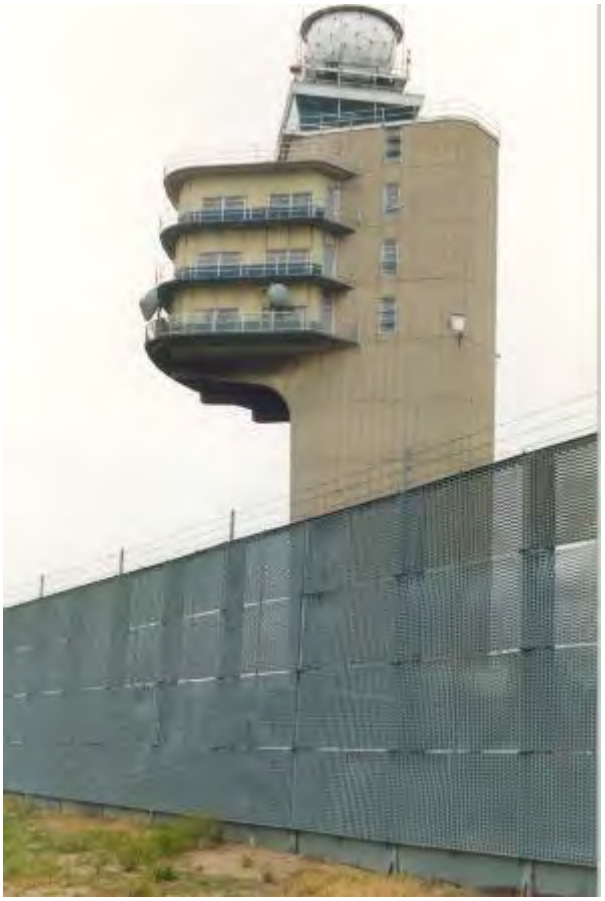


Safer Transportation Through Innovation

AIRFIELD SAFETY, MARKINGS AND REHABILITATION PRODUCTS

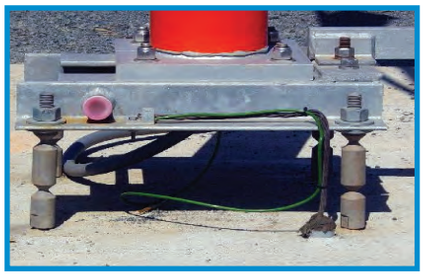
Transpo Industries, Inc. manufactures a variety of innovative products and materials designed to improve airfield safety. From polymer concrete used to rehabilitate runways, to supports that break away quickly and cleanly upon impact, to airfield markings that are as durable as they are colorful. Transpo's Airfield Safety Products and Materials will make any airfield safer.

Color-Safe®

Transpo Industries Color-Safe® Durable Airfield Markings are a methyl methacrylate (MMA) resin system used to produce the most durable, high definition markings on the market today. Color-Safe® is user-friendly, has excellent color retention, adheres to both asphalt and concrete, and can be applied in a wide range of temperatures.

Blast-Safe®

Transpo Industries Blast-Safe® Jet-Blast Deflector and Perimeter/ Security Fencing protects pedestrians and airport property from jet-blast hazards. Blast-Safe® is a unique double-reverse corrugated steel fabric that allows jet-blast air to be diffused safely through the system, while preventing any penetration of sand, stones, or other debris, and can include barbed wire for security.



Pole-Safe®

Transpo Industries Pole-Safe® Frangible Fuse Bolt System features frangible anchor bolt/base plate connections designed to be used with objects such as navigational or visual aids that are required by the FAA and ICAO to be mounted on frangible supports, when placed within the designated safety area.

T-17 Rapid Patch

Transpo Industries T-17 Polymer Concrete Patch is a fast setting, methyl methacrylate (MMA) polymer concrete used for fast, permanent repairs to runways and taxiways. Emergency repairs in the touch area are both costly and disruptive to airport operations. Transpo's T-17 polymer concrete cures to full hardness in less than 45 minutes.

Sealate®

Transpo Industries Sealate® Crack Sealer consists of specially formulated, high molecular weight methacrylate (HMWM) resin materials that strengthen and extend the life of concrete. With an easy single application, Sealate® deeply penetrates, quickly fills and bonds cracks, and seals pores in existing concrete including airport runways, taxiways, aprons, and parking structures.

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