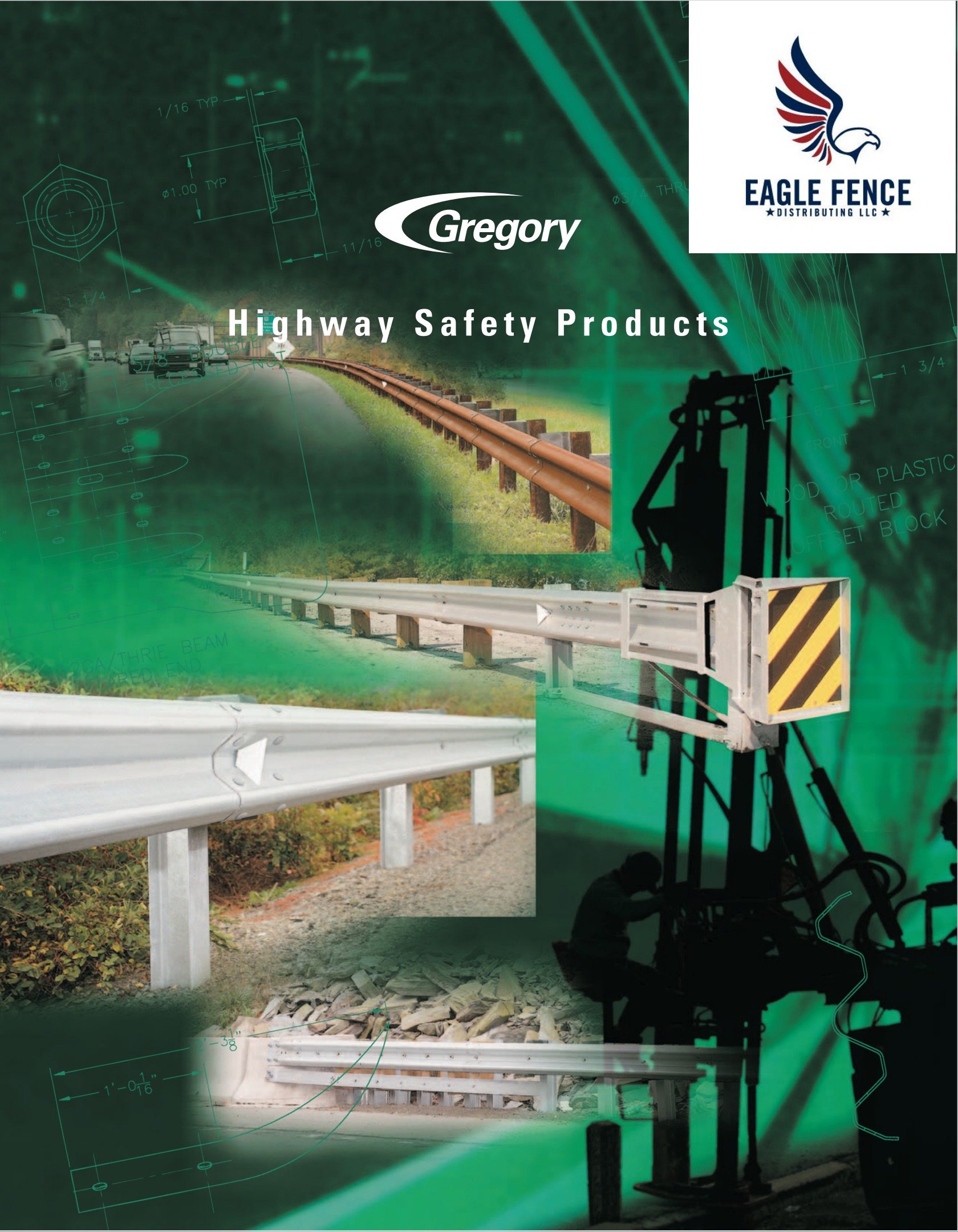
EAGLE FENCE
★DISTRIBUTING LLC★

Gregory

# Highway Safety Products



## A Tradition of Excellence

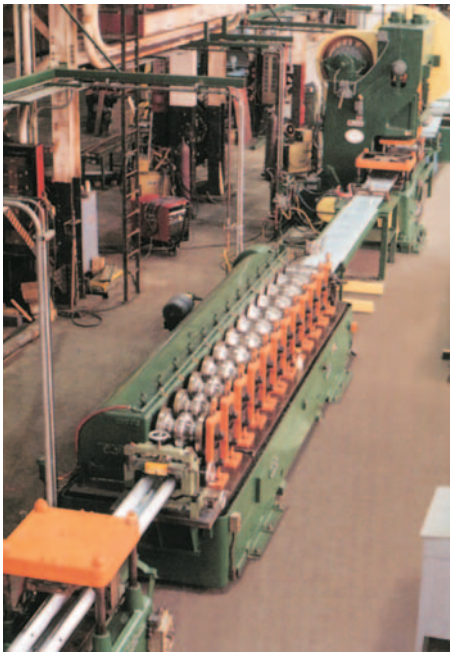
**Family owned and operated for five generations, Gregory Industries has over 100 years of experience in galvanizing, metal processing and roll-forming that assure you of expert quality in all of our products.**

# Developing, producing and delivering safety solutions

**Superior manufacturing, service and advanced galvanizing technology make Gregory the first choice in Highway Safety Products.**

## Engineering and Technical Support

Gregory Industries builds engineering excellence into every product. Whether highway safety products, G-strut, C-section fence framework or custom fabrications, our galvanizing and manufacturing experience combined with our commitment to superior quality are your assurances of exceptional value. This same technical support will help you select the right combination of highway safety products to meet design requirements and performance specifications.



## Manufacturing Capabilities

Gregory Industries excels at converting ideas into quality highway safety and custom metal products. At the heart of our capabilities is a continuous galvanizing process that provides inherently high-quality, consistent-thickness, zinc-coated steel sheet that can be formed into W-Beam and Thrie-Beam Guardrail or custom profiles. Gregory manufacturing capabilities include plate burning with CNC plasma-cutting and CNC flame-cutting equipment, plus secondary punching, sawing, shearing, drilling and forming operations. With an inventory of several grades of steel plus all the ancillary components needed for highway guardrail systems and end treatments, Gregory is ready to serve you.

### Gregory's continuous galvanizing produces quality beyond other methods and offers:

- Superior corrosion resistance
- Easier assembly
- Cleaner holes means better fit
- Safer handling
- Minimal alloy formation provides superior abrasion resistance
- COMPETITIVE PRICING

# to meet the challenges of America's Highways.

## Gregory Value

Gregory customers enjoy the time and money-saving value of having every component needed for a project, plus the benefit of a knowledgeable staff, just a call away. Additional value comes through the exclusive Gregory Delivery System: the combination of Gregory's own fleet of trucks and expediting services that assures delivery on-time at the job site.

## Customer Service

We place an emphasis on customer service at Gregory Industries. We not only want to assure that you are satisfied with all aspects of your order, we want to remain your supplier for years to come. Proven products, knowledgeable sales professionals, and delivery assurance are our commitments to your full satisfaction.

## Products



# Continuous galvanizing... the Gregory difference.

Gregory expertise at galvanizing steel provides the highest quality highway guardrail products. Uniform and smooth zinc coating across the entire surface of the guardrail provides superior performance against corrosion resistance plus advantages in handling safety and installation.

The key is Gregory's ability to galvanize entire steel coils before roll-forming rather than after. This process is called continuous galvanizing and conforms to AASHTO M 180 and ASTMA653.

Continuous galvanizing of steel coils before fabrication has significant benefits over other coating methods. This unique process provides a thicker, purer zinc coating that is nearly 100% pure zinc. Hot-dip galvanizing after fabrication yields 50% or more iron-zinc alloy containing 10% or more iron. The difference becomes visible when guardrail is exposed over periods of time outdoors: alloy-type coatings will discolor to a rusty tint while continuous galvanized coating will remain gray for the life of the coating.

An additional benefit of continuous galvanized steel is that the zinc coating is more ductile than the alloy coating of post-

fabrication, batch-dip methods. This ductility provides superior abrasion resistance during the rigors of construction and throughout the service life of the guardrail.

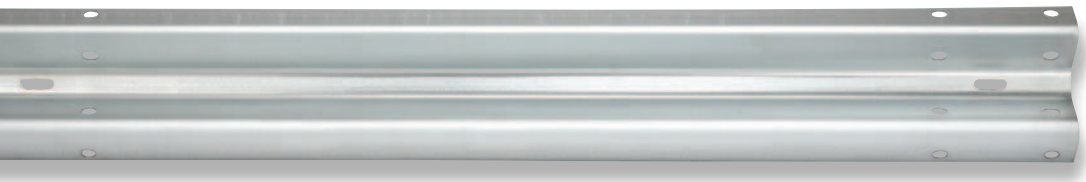
The Gregory continuous galvanizing process can provide true Type 1 or Type 2 coating specifications in accordance with AASHTO M 180 specifications. Batch-dip galvanizing operations do not have this degree of control.

## Advantages of Gregory continuous-process galvanized guardrail:

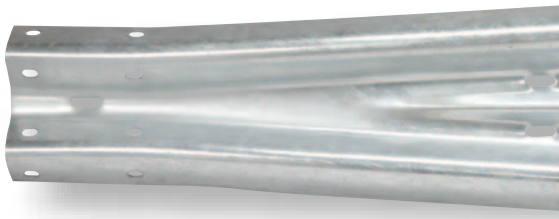
1. *Uniform zinc coating eliminates weak spots in corrosion resistance*
2. *Easier assembly: no build-up at bolt holes and splice locations*
3. *Safer handling: smooth edges without injurious points and hooks*
4. *Clean holes and slots: punched after galvanizing for accurate dimensions*
5. *Nearly 100% pure zinc coating will not discolor for life of coating*
6. *4 to 5-times lower lead content minimizes environmental impact*

# Quality and consistency for every installation

**W-beam**



**Transition**



Roadside safety begins with installation of quality guardrail products from Gregory. Contractors prefer Gregory W-beam and Thrie-beam guardrail for the benefits of consistent quality that makes installation easier while offering a long service life. All Gregory highway safety products conform to AASHTO and ASTM specifications. Whether your project calls for weak-post, strong-post, W-beam or Thrie-beam, curved or straight sections, Gregory products are designed as a system that assures consistency for fast, safe installation. Gregory W-Beam and Thrie-Beam guardrail products benefit from the continuous galvanizing process. This process forms the heart of a comprehensive guardrail system for every installation which includes: standard and special length panels, convex and concave curved panels, terminal end sections, NCHRP 350 end treatments, steel and wood posts, and standard guardrail fasteners. Gregory curved guardrail beams are available for concave or convex applications in standard radii of 5 feet (1.5 meters) to 150 feet (45.7 meters). Worker safety and ease of handling are added benefits of Gregory guardrail products.

Thrie-beam

Weathering steel guardrail with a rustic finish is available with all the same custom lengths, forming and punching as standard galvanized beam.

Continuous process galvanizing eliminates rough edges and points that can cause cuts or more serious injuries. And since the galvanized coating is consistent, sections fit together easily which saves time and labor.

It is easy to see why Gregory is the convenient one-stop vendor for all your highway safety installation projects. Contact your Gregory representative today to find out more about the Gregory difference.

# Make Gregory your source for complete guardrail systems including Standard End Sections and NCHRP 350 Approved End Treatments

## Standard End Sections

- W-Beam Flared End
- W-Beam Buffer (Single-Double)
- W-Beam Bridge Connector
- Thrie Beam Flared End
- Thrie Beam Buffer (Single-Double)
- Thrie Beam Bridge Connector
- W-Thrie Beam Transition Section

**Gregory supplies complete highway safety guardrail systems for every specification. Starting with continuous-galvanized W-beam and Thrie-beam guardrail, Gregory can meet your full project requirements with standard end sections and energy-absorbing end treatments for wood post or steel post design.**

**As your expert highway safety products supplier, Gregory can recommend the safety solutions that meet the specifications for your project. With a large inventory of products, you can count on Gregory to have the right products on your job site when you need them.**

## Gregory has three end treatment models that save lives:

### FLEAT™

- **F**lared **E**nergy **A**bsorbing **T**erminal
- The only flared engery absorbing end terminal to meet NCHRP 350
- 37.5-feet long with seven breakaway posts for Test Level 3
- Variable offset from 2.5-feet to 4-feet reduces site grading
- Use with standard 12.5-foot guardrail sections
- Works with wood or steel breakaway posts
- Test Level 2 version available with five breakaway posts
- Interchangeable components with SKT and FLEAT-MT

### FLEAT-MT™

- **Fl**ared **E**nergy **A**bsorbing **T**erminal – **M**edian **T**erminal
- Attaches directly to median double-sided W-Beam
- 37.5-feet long for Test Level 3
- Use with standard 12.5-foot guardrail sections
- Works with wood or steel breakaway posts
- Interchangeable components with SKT and FLEAT
- Fast installation and repair

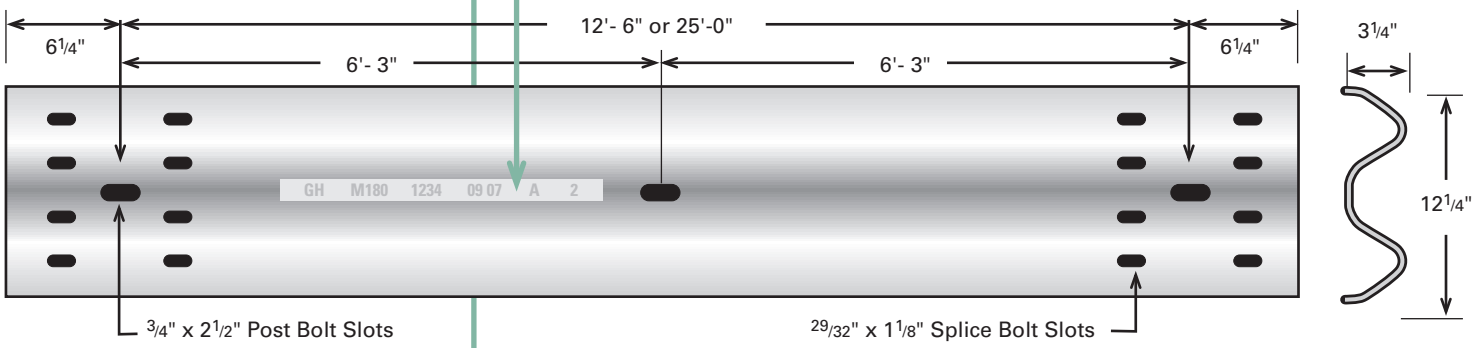
### SKT™

- **S**equential **K**inking **T**erminal
- 50-feet long with eight breakaway posts for Test Level 3
- Use with either 12.5-foot or 25-foot long guardrails
- Available with 2, 4, or 8 foundation tube designs
- The highest performance tangent end terminal on the market
- Activates with lower forces than other tangent terminals
- Easy to remove reusable head
- Test Level 2 version available with five breakaway posts
- Components interchangeable with FLEAT and FLEAT-MT

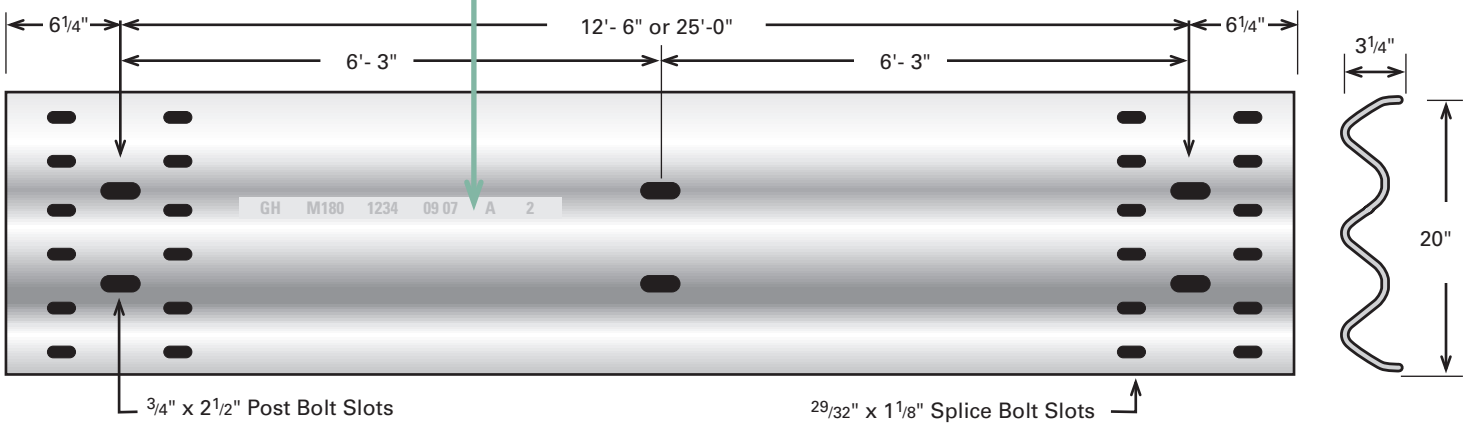
### Stamping Code


1. MANUFACTURER **GH** = Gregory Highway
2. AASHTO Specifications
3. MILL HEAT NUMBER CODE
4. GALVANIZED LOT
   09 = Week (9th week)
   07 = Year (2007)
5. CLASS
   **Class A** = 12 gauge **Class B** = 10 gauge
6. TYPE
   **Type 1** = Zinc coated 1.8 oz/ft$^2$ (550 g/m$^2$) minimum single spot
   **Type 2** = Zinc coated 3.6 oz/ft$^2$ (1100 g/m$^2$) minimum single spot
   **Type 3** = Uncoated steel
   **Type 4** = Weathering steel

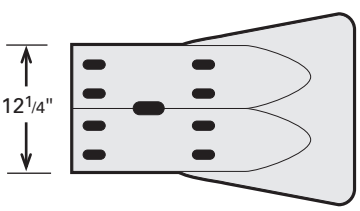
### W-Beam Rail

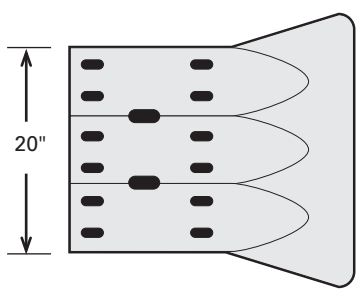


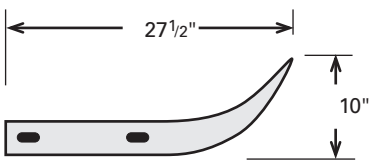

### Thrie-Beam Rail



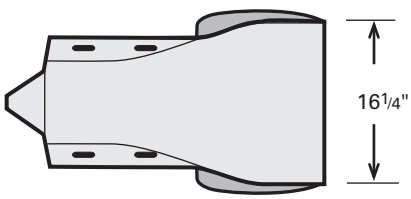

### Flared End Section (12 ga)

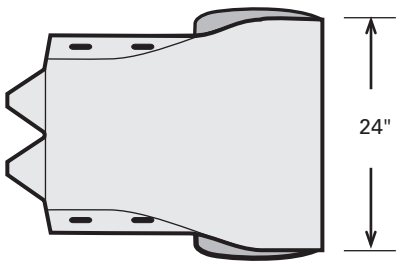


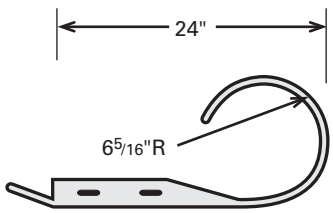



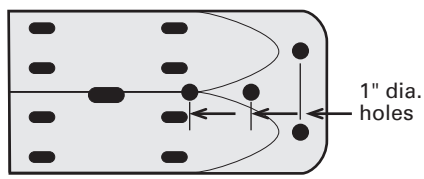

### Buffer End Section (12 ga)

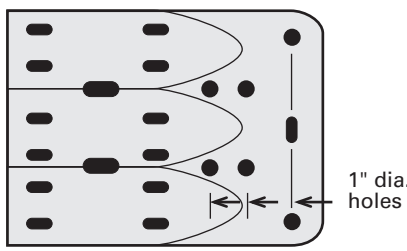


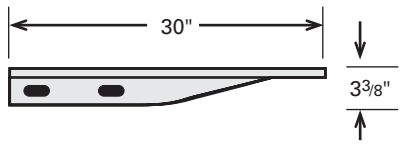




### Terminal Connector Parapet (10 ga)



## Convex & Concave Guardrail

Rail sections to be installed on curves having a radius of 5 feet to 150 feet can be curved in our fabricating facilities prior to delivery.

Rail can be curved either convex or concave as required. Terms convex or concave refer to the direction curved, inward or outward, relative to the traffic face of the rail.

## To find the Radius for a curved rail:

Step 1: Starting at the last post in the straight run (point A), lay cloth tape along the path that the curved guide rail will follow.

Step 2: Mark-off two points along the curved cloth tape: one at 6'-3", (point B) and the second at 12'-6" (point C).

Step 3: Pull string directly from starting point (point A) to the second mark-off point (point C).

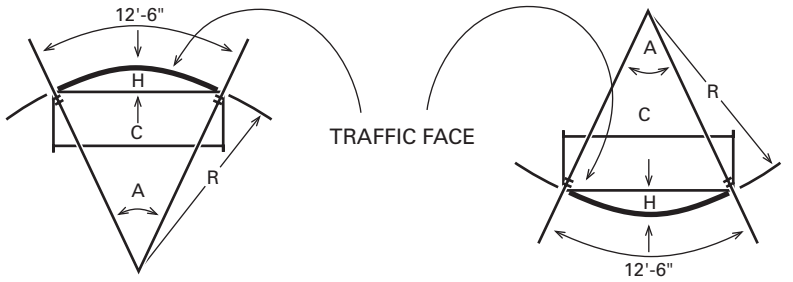
Step 4: Measure from the first mark-off point (point B) over to the mid-point of the taut string. This measurement (D) is the rise.

Step 5: Check the chart to find the Radius (R), given the Rise (D). Example: a Rise of $3\frac{7}{8}$" would result in a Radius of 60 feet.

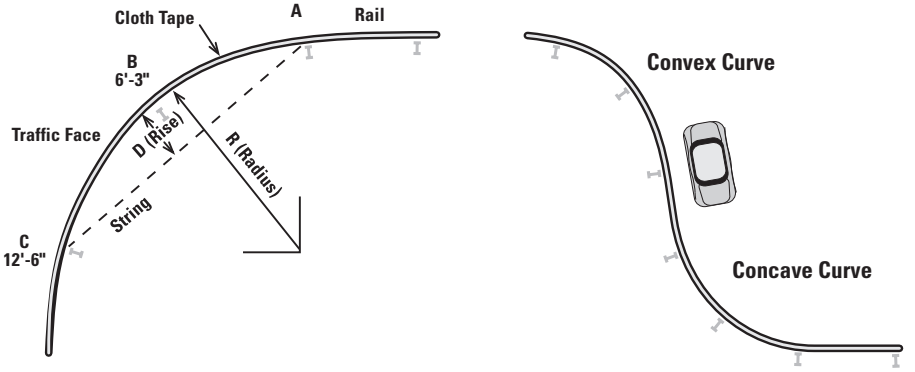
**The diagrams & chart provide data for locating posts and curves.**

Note: Follow the steps above for each piece of rail section in the curved run. The arc may not be consistent and each consecutive piece of rail may differ in radius from the previous one.

## Functions of 12'- 6" arc for different radii




| Radii | Angle | Chord | Height (Rise) |
|---|---|---|---|
| 5 | 143° 14' | 9'-5 7/8" | 3'-5" |
| 10 | 71° 37' | 11'-8 3/8" | 1'-10 3/4" |
| 15 | 47° 45' | 12'-1 3/4" | 1'-3 3/8" |
| 20 | 35° 49' | 12'-3 5/8" | 11 5/8" |
| 25 | 28° 39' | 12'-4 1/2" | 9 3/8" |
| 30 | 23° 52' | 12'-4 7/8" | 7 3/4" |
| 35 | 20° 28' | 12'-5 1/8" | 6 5/8" |
| 40 | 17° 53' | 12'-5 3/8" | 5 7/8" |
| 45 | 15° 55' | 12'-5 1/2" | 5 1/4" |
| 50 | 14° 19' | 12'-5 5/8" | 4 5/8" |
| 55 | 13° 01' | 12'-5 5/8" | 4 1/4" |
| 60 | 11° 56' | 12'-5 3/4" | 3 7/8" |
| 65 | 11° 01' | 12'-5 3/4" | 3 5/8" |
| 70 | 10° 14' | 12'-5 3/4" | 3 3/8" |
| 75 | 9° 33' | 12'-5 3/4" | 3 1/8" |
| 80 | 8° 57' | 12'-5 7/8" | 3" |
| 85 | 8° 26' | 12'-5 7/8" | 2 3/4" |
| 90 | 7° 58' | 12'-5 7/8" | 2 5/8" |
| 95 | 7° 32' | 12'-5 7/8" | 2 1/2" |
| 100 | 7° 10' | 12'-5 7/8" | 2 3/8" |
| 110 | 6° 31' | 12'-5 7/8" | 2 1/8" |
| 120 | 5° 58' | 12'-6" | 2" |
| 130 | 5° 31' | 12'-6" | 1 3/4" |
| 140 | 5° 07' | 12'-6" | 1 5/8" |
| 150 | 4° 47' | 12'-6" | 1 1/2" |




STARK COUNTY-HOME OF THE PRO FOOTBALL HALL OF FAME

## Gregory Industries – Generations of Steel Expertise

Gregory Industries has a proud legacy of metals expertise. Beginning with our earliest roots in Brooklyn, New York, the Thomas Gregory Galvanizing Works was established in 1896. Built on the core values of quality products and business integrity, the firm thrived with expansion into new facilities in New Jersey, New York and Pennsylvania.

The present day firm was founded in 1957 by T. Raymond Gregory. With pioneering efforts in large-capacity kettles and the later combination of roll-forming and continuous galvanizing, Gregory Industries grew in success and reputation by supplying exceptional-quality galvanized steel to numerous industries.

Today Gregory Industries is regarded as a leader in proprietary manufactured products, continuous galvanized coatings and metalworking services. Traditions of quality, service and excellence remain commitments to our customers along with fresh approaches to innovation and competitive value.

**1896**

Thomas Gregory founds the Thomas Gregory Galvanizing Works (TGGW) in the Greenpoint section of Brooklyn, NY.

### Gregory operating divisions include:

- **Highway Safety Products Division**
- **Coil Products Division**
- **Fence Products Division**
- **G-Strut Framing Division**
- **Metal Processing Division**
- **Transportation and Logistics Division**

***Gregory Industries.***
***Continuing a tradition of excellence.***

Gregory

*HIGHWAY SAFETY PRODUCTS DIVISION*

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