SECTION 02451

GUARDRAILS

PART 1 GENERAL

1.01 WORK INCLUDED

A. Constructing anchor blocks and approach ends.

B. Guardrail assembly including appurtenant work to make connections to existing structures, if required.

PART 2 PRODUCTS

2.01 Meet all requirements of AASHTO M-180.

2.02 METAL BEAM RAILS

A. Corrugated sheet steel made of open hearth or electric furnace steel shaped into a "W" shaped beam with a projected width of not less than 2 inches and a depth of not less than 3".

B. Class "A" guardrail: not less than 10 gauge; Class "B" guardrail not less than 12 gauge.

C. Blanked to proper shape, fabricated, and ready for assembly when delivered. No punching, drilling, cutting or welding will be permitted in the field.

D. Straight, uniform sections rolled or rounded to eliminate sharp edges. Reject warped or deformed plates.

E. Holes in the beam at posts shall be slotted to facilitate erection and permit expansion and contraction.

F. All steel guardrail members shall be marked by the manufacturer or fabricator indicating brand name, gauge, weight, coating weight per square foot, and manufacturer's heat number.

G. Requirements for Beam Strength:

Class	Gauge of Sheet	Traffic Face Up Maximum		Traffic Face Down Maximum	
		Load Lb.	Deflection Inches	Load Lb.	Deflection Inches
A	10	2000	2.0	1600	2.0
A	10	3000	3.0	2400	3.0
B	12	1500	2.0	1200	2.0
B	12	2000	3.0	1600	3.0

2.03 TERMINAL OR END SECTIONS

A. Formed from open hearth or electric furnace steel with a thickness not less than 12 gauge material.

2.04 POSTS

A. Copper bearing steel "H" sections conforming to ASTM A-36 and galvanized in accordance with ASTM A-123.

2.05 GUARDRAIL HARDWARE

A. Splice bolts, anchor bolts, and nuts shall conform to the requirements of ASTM A-307 and shall be galvanized in accordance with ASTM A-153.

B. End caps, splice joints, anchor assemblies and all other items to complete the railing shall meet the requirements of ASTM A-36 and shall be galvanized in accordance with AASHTO M-111 or ASTM A-153.

2.06 GUARDRAIL DIMENSIONS

A. In accordance with Tennessee Department of Transportation standard drawings SGR-1 through 10 inclusive, and M-42-151 through 155 inclusive.

PART 3 EXECUTION

3.01 POSTS

A. Set all posts reasonably true to the lines and grades shown on the plans or established by the Engineer.

B. Dig or drill holes to the depth indicated on the plans; or drive posts by approved methods and equipment, provided the posts are in the proper position and free of distortion and burring or any other damage.

1. Size all postholes that are dug or drilled to permit proper setting of the posts, and allow sufficient room for backfilling and tamping.
2. Backfill and tamp holes with selected earth or other suitable materials in layers not to exceed 4 inches in thickness. When backfilling and tamping is completed, the posts or anchors shall be held securely in place.
3. Backfill postholes that are drilled in rock and holes for anchor posts or devices shall be backfilled with concrete.

END OF SECTION