TABLE OF CONTENTS

5.27 SUPPLY OF CABLE BARRIER AND METAL POSTS

5.27.1 GENERAL

The Work consists of supplying cable barrier and metal posts for use as hazard avoidance barriers.

5.27.2 STANDARDS OF REFERENCE

All material supplied shall refer to the following standards, specifications or publications:

Alberta Transportation, Traffic Control Standards Manual

TEB drawings referenced in this specification are found in the manual entitled "Standard Drawings for Highway Construction" as published by Alberta Transportation.

Society of Automotive Engineers:

SAE J403 - Sept. 80 - Chemical Composition of SAE Carbon Steels

Canadian Standards Association:

CAN/CSA G40.20-M87 - General Requirements for Rolled or Welded Structural Quality Steel
CAN/CSA G40.21-M87 - Structural Quality Steel
CSA/CAN 3-G12-M78 - Zinc-Coated Steel Wire Strand
CSA W47.1-1983 - Certification of Companies for Fusion Welding of Steel Structures.
CSA W59-M1984 - Welded Steel Construction (Metal Arc Welding).
CSA G164-M1981 - Hot Dip Galvanizing of Irregularly Shaped Articles.

American National Standards Institute/American Society for Testing and Materials:

ASTM A307-86a - Carbon Steel Bolts and Studs, 60 000 psi Tensile Strength
ASTM A325M-86 - High-Strength Bolts for Structural Steel Joints (Metric).
ANSI/ASTM A536-84 - Ductile Iron Castings
ASTM A47-M84 - Ferritic Malleable Iron Castings (Metric)
ASTM B30-85a - Copper-Base Alloys in Ingot Form

5.27.3 MATERIALS

The Contractor shall supply all materials necessary to complete the Work. Previously installed material may not be used.

Prior to installing any cable barrier, the Contractor shall supply the Consultant with the material manufacturer’s certification that the material conforms with the specifications.

The Contractor shall supply the following major components in accordance with the applicable drawings:

Posts c/w ground plates	TEB 3.42
Hook bolts c/w double hex nuts	TEB 3.43
Galvanized steel cables (305 m rolls)	TEB 3.43

Tension bolts and ferrous castings	TEB 3.44
End fittings	TEB 3.44
Slicers and wedges	TEB 3.44
Pressed ferrules and cable fittings	TEB 3.44
Fabricated steel sections for anchor blocks	TEB 3.45

5.27.3.1 **Cables**

The barrier cable and the cable used for pressed ferrule and cable fittings shall conform to CSA/CAN 3-G12M for grade 110 steel wire strand, hot zinc coated (galvanized) or Class A electro-zinc-coated and shall be supplied in a continuous length of 305 metres on expendable reels.

The cable shall be a 13 mm diameter, 7-wire strand weighing approximately 228 kg per 300 m with a minimum breaking strength of 70 kN.

5.27.3.2 **Fittings**

Ferrous castings for the end fitting and splicer shall conform to ASTM A47M for malleable iron, grade 32510 or ASTM Designation A536 for ductile iron, type 60-45-10.

The tension bolt for the end fitting shall be SAE 1035 hot rolled fine grained steel, and the ferrule shall be SAE 1020 rolled steel, conforming to SAE J403. As an option, the tension bolt may contain a square or hex nut welded as shown in drawing TEB 3.44, conforming to low hydrocarbon classification CSA W59M.

The ferrous castings, tension bolt and ferrule shall be hot dip galvanized conforming to CSA G164M. The ferrule shall be galvanized after it has been pressed onto the cable.

Wedges shall be bronze conforming to ASTM B30 for alloy suitable for sand casting.

All fittings shall be so designed and be of such section as to develop the full strength of a single cable or cable assemblies, as the case may be.

Single cable assembly (minimum tensile strength of 100 kN)
Three cable assembly (minimum tensile strength of 300 kN)

5.27.3.3 **Posts and Fabricated Steel Sections for Anchor Blocks**

Posts shall be American Standard Beam Section. Posts, ground plates, brackets, and splice plates shall conform to CSA/CAN G40.21M, grade 230G.

5.27.3.4 **Hook Bolts and Nuts**

Hook bolts and nuts shall conform to ASTM A307-86a.

Self-drilling, self-tapping fasteners shall be #12-24-1.50 indented hex washer head, cadmium plated.

5.27.3.5 **Production**

5.27.3.5.1 General Requirements

Welding shall conform to CSA W59M and W47.1.

All components and associated hardware except for self-drilling, self-tapping fasteners shall be hot dip galvanized after fabrication and shall conform to CSA G164M.

All dimensions are subject to manufacturing tolerances unless otherwise indicated. The individual components shall be capable of being assembled to conform to the finished structure as indicated on the drawings.

5.27.3.5.2 Pressed Ferrule and Cable Fitting

The ferrules supplied are for use at the end of the fitting cable and shall be pressed onto the end of the fitting cable.

The ferrule shall not slip from the cable when tested under a tensile static load to the limit of cable breakage.

5.27.3.5.3 Marking

Coils and reels of the guardrail cable shall be identified by an attached, durable tag on which the following information is indelibly recorded:

Galvanized steel wire strand
Manufacturer's name
Nominal diameter of strand
Grade
Length of strand in metres
Weight of strand in kilograms per coil

5.27.4 EQUIPMENT

The Contractor shall supply all equipment necessary to complete the Work.

5.27.5 MEASUREMENT AND PAYMENT

Payment for the supply of cable barrier including all required hardware and posts will be included in the unit price bid per metre for "Cable Barrier - Supply and Install" in accordance with Specification 2.19, Guardrail and Guide Posts.