PART 1 GENERAL

1.1 RELATED SECTIONS

.1 Section 31 23 33.01 - Excavating, Trenching and Backfilling.

1.2 REFERENCES

.1 American Society for Testing and Materials (ASTM)

- .1 ASTM A313/A313M, Standard Specification for Stainless Spring Wire.
- .2 ASTM A764, Standard Specification for Metallic Coated Carbon Steel Wire, Coated at Size and Drawn to Size for Mechanical Springs.

.2 Canadian Standards Association (CSA)

- .1 CAN/CSA-G164, Hot Dip Galvanizing of Irregularly Shaped Articles.

PART 2 PRODUCTS

2.1 MATERIALS

.1 0.5m by 0.5m Gabion baskets:

- .1 Factory fabricated so that sides, ends, lid and internal diaphragms readily assemble at site into rectangular baskets of sizes as indicated.
- .2 Single unit construction or with joints having strength and flexibility equal to that of mesh.
- .3 When length exceeds horizontal width, provide diaphragms of same mesh as gabion walls to divide basket into equal cells of length not in excess of horizontal width.
- .4 Wire mesh gabions:
  - .1 Wire mesh to be uniform hexagonal pattern wire woven in triple twist pattern with openings of approximately 80 x 100 mm and fabricated to be non-ravelling. Perimeter edges of mesh to be securely selvedged so that joints formed by connecting selvedges are as strong as body of mesh.
  - .2 Wire to have following dimensions:
    - .1 Mesh: 3.0 mm diameter.
    - .2 Selvedges: 3.8 mm diameter.
    - .3 Binding: 2.0 mm diameter.
  - .3 Wire: hot dip galvanized with minimum coverage of 260 g/m to CSA G164.
  - .4 Interlocking wire fasteners: galvanized steel to ASTM A 764, finish 1, class 1, type 3.
- .5 Geogrid gabions:

.1 Geogrid mesh to be rigid type, uniform, square pattern, non corrosive, high density polyethylene with inhibitors added to resist deterioration by ultra-violet and heat exposure. Geogrid openings to be 50 x 50 mm.

.2 Geogrid to have following mechanical properties: Tensile modulus at 2% elongation: to ANSI/ASTM D638M, modified to manufacturer's recommendations, minimum 290 kN/m. Junction strength: to ANSI/ASTM D 638M, modified to manufacturer's recommendations, minimum 90% of single rib strength.

.2 Stone fill:

.1 Hard, durable, abrasion resistant such that it will not disintegrate from action of wetting and drying, wave action, freezing and thawing cycles.

.2 Minimum 100 mm to maximum 200 mm dimension for individual stones.

.3 Non-Woven Geotextile: medium-weight non-woven geotextile with the following (typical) properties:

Property	Value (Metric)	ASTM Test Method
Weight	150 g/m^2 (4.5 oz/sqyd)	D5261
Grab Tensile Strength	553 N	D4632
Grab Elongation	50%	D4632
Puncture CBR	311 N	D6241
Permittivity	2.00 sec^{-1}	D4491
Water Flow	4885 l/min/m^2	D4491
U.V. Stability	70% @ 500 hrs	D4355

PART 3 EXECUTION

3.1 INSTALLATION

.1 0.5m x 0.5m Gabions to be installed along south roadway shoulder in areas exhibiting high erosion, as directed by the department representative. Gabions to be placed between the new guardrail deep posts and edge of existing asphalt, with the top of gabion at 0.1m below the existing asphalt surface.

.2 Excavate for and backfill behind gabions in accordance with Section 31 23 33.01 – Excavating, Trenching and Backfilling.

.3 Follow manufacturer's instructions in assembling baskets.

.4 Provide 8 ounce/yard non-woven geotextile under, behind and over gabion baskets. Overlap where required minimum of 0.5m.

3.2 PLACING GABIONS

.1 Wherever possible, place baskets in position prior to filling with stones.

.2 Join adjacent baskets together at corners as recommended by manufacturer, so that joints are as strong as mesh.

3.3 FILLING BASKETS

.1 Tension geogrid gabions according to manufacturer's instructions before filling with stone. Do not release wall tension until sufficient stone fill has been placed to prevent wall slackening.

.2 On exposed faces of gabions, place stones by hand with flattest surfaces bearing against face mesh to produce satisfactory alignment and appearance.

.3 For wire mesh gabions, fill gabion cells in lifts not exceeding 300 mm and connect opposite walls with 2 tie wires after each lift.

.4 For geogrid gabions, fill cells in lifts not exceeding 300 mm and connect opposite walls with 2 polyethylene braids after each lift.

END OF SECTION