

## 1 GENERAL

### 1.01 REFERENCES

- .1 American Society for Testing and Materials (ASTM)
  - .1 ASTM C117-95, Standard Test Methods for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.
  - .2 ASTM C131-96, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
  - .3 ASTM C136-96a, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
  - .4 ASTM D422-63 (1998), Standard Test Method for Particle-Size Analysis of Soils.
  - .5 ASTM D698-00a, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft<sup>3</sup>) (600kN-m/m<sup>3</sup>).
  - .6 ASTM D1557-00, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000ft-lbf/ft<sup>3</sup>) (2,700kN-m/m<sup>3</sup>).
  - .7 ASTM D1883-99, Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.
  - .8 ASTM D4318-00, Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.

### 1.02 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Divert unused granular material from landfill to local facility as approved by the Departmental Representative.

## 2 PRODUCTS

### 2.01 GENERAL

- .1 Granular sub-base material for the road shall be Pit Run Gravel.
- .2 Granular base material for the road shall be 25 mm Crushed Gravel:

### 2.02 MATERIALS

- .1 Pit Run Gravel: River sand and gravel free from silt, clay, loam, friable or soluble materials, vegetative matter and conforming to the following grading:
  - .1 Gradation to be within the following limits when tested to ASTM C136-06 and ASTM C117-04 and giving a smooth curve without sharp breaks when plotted on a semi-log chart.

Sieve Sizes (Square Openings)	Percent Passing by Weight
200 mm	100 of Total Sample
150 mm	96 - 100 of Total Sample
75 mm	60 - 80 of Total Sample
25 mm	70 - 100 of Material Passing 75 mm Sieve
4.75 mm	25 - 63 of Material Passing 75 mm Sieve
1.18 mm	14 - 41 of Material Passing 75 mm Sieve
0.6 mm	7 - 30 of Material Passing 75 mm Sieve
0.15 mm	3 - 18 of Material Passing 75 mm Sieve
0.075 mm	2 - 9 of Material Passing 75 mm Sieve

- .2 Any grading variation from the above is at the discretion of the Departmental Representative, however, the percent of material passing 0.075 mm sieve shall not exceed 2/3 of the material passing the 0.6 mm sieve.
- .3 The pit run gravel shall be free of any form of coating.
- .4 Pit run gravel containing clay, loam or other deleterious materials will be rejected.
- .5 No oversize material is tolerated.
- .2 25 mm Crushed Gravel conforming to the following grading:
  - .1 Gradation to be within following limits when tested to ASTM C136-06 and ASTM C117-04, and giving a smooth curve without sharp breaks when plotted on a semi-log grading chart.

Sieve Sizes (Square Openings)	Percent Passing by Weight
25.0 mm	100
20.0 mm	95 - 100
10.0 mm	60 - 80
4.75 mm	40 - 60
2.36 mm	28 - 48
600 micron	13 - 29
300 micron	9 - 21
150 micron	6 - 15
75 micron	4 - 10

- .2 At least 50% of the material retained on the 4.75 mm sieve shall have two or more fractured faces.
- .3 Any gravel containing clay, loam or other deleterious materials will be rejected.

### 3 EXECUTION

#### 3.01 PLACING

- .1 Place granular sub-base after subgrade is inspected and approved by the Departmental Representative.
- .2 Construct granular sub-base to depth and grade in areas indicated.
- .3 Ensure no frozen material is placed.

- .4 Place material only on clean unfrozen surface, free from snow or ice.
- .5 Begin spreading sub-base material on crown line or high side of one-way slope.
- .6 Place granular sub-base materials using methods which do not lead to segregation or degradation.
- .7 For spreading and shaping material, use spreader boxes having adjustable templates or screeds which will place material in uniform layers of required thickness.
- .8 Place material to full width in uniform layers not exceeding 150 mm compacted thickness. The Departmental Representative may authorize thicker lifts if specified compaction can be achieved.
- .9 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
- .10 Remove and replace portion of layer in which material has become segregated during spreading.

### 3.02 COMPACTION

- .1 Compact to density of not less than 100% corrected Standard Proctor Density.
- .2 Shape and roll alternately to obtain smooth, even and uniformly compacted sub-base.
- .3 Apply water as necessary during compaction to obtain specified density.
- .4 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by the Departmental Representative.
- .5 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.

### 3.03 PROOF ROLLING

- .1 For proof rolling use standard roller of 45400 kg gross mass with four pneumatic tires each carrying 11350 kg and inflated to 620 kPa. Four tires arranged abreast with centre to centre spacing of 730 mm maximum.
- .2 Obtain approval from the Departmental Representative to use non standard proof rolling equipment.
- .3 Proof roll at level in sub-base as indicated. If non standard proof rolling equipment is approved, the Departmental Representative to determine level of proof rolling.
- .4 Make sufficient passes with proof roller to subject every point on surface to three separate passes of loaded tire.
- .5 Where proof rolling reveals areas of defective subgrade:
  - .1 Remove sub-base and subgrade material to depth and extent as directed by the Departmental Representative.
  - .2 Backfill excavated subgrade sub-base material and compact in accordance with this section.
  - .3 Replace sub-base material and compact.
- .6 Where proof rolling reveals areas of defective sub-base, remove and replace in accordance with this section at no extra cost.

**3.04 SITE TOLERANCES**

- .1 Finished sub-base surface to be within 10 mm of elevation as indicated but not uniformly high or low.

**3.05 PROTECTION**

- .1 Maintain finished sub-base in condition conforming to this section until succeeding base is constructed, or until granular sub-base is accepted by the Departmental Representative.

**END OF SECTION**

## 1 GENERAL

### 1.01 REFERENCES

- .1 American Society for Testing and Materials (ASTM)
  - .1 ASTM C117-[95], Standard Test Methods for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.
  - .2 ASTM C131-[96], Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
  - .3 ASTM C136-[96a], Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
  - .4 ASTM D422-[63(1998)], Standard Test Method for Particle-Size Analysis of Soils.
  - .5 ASTM D698-[00a], Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft<sup>3</sup>) (600kN-m/m<sup>3</sup>).
  - .6 ASTM D1557-[00], Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000ft-lbf/ft<sup>3</sup>) (2,700kN-m/m<sup>3</sup>).
  - .7 ASTM D1883-[99], Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.
  - .8 ASTM D4318-[00], Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.

### 1.02 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Divert unused granular material from landfill to local facility as approved by the Departmental Representative.

## 2 PRODUCTS

### 2.01 MATERIAL

- .1 .1 25 mm Crushed Gravel conforming to the following gradation:
  - .1 Gradation to be within the following limits when tested to ASTM C136-01 and ASTM C117-95, and giving a smooth curve without sharp breaks when plotted on a semi-log grading chart.

<u>Sieve Sizes</u> <u>(Square Openings)</u>	<u>Percent Passing by Weight</u>
25.0 mm	100
20.0 mm	95 - 100
10.0 mm	60 - 80
4.75 mm	40 - 60
2.36 mm	28 - 48
600 micron	13 - 29
300 micron	9 - 21
150 micron	6 - 15
75 micron	4 - 10

- .2 At least 50% of the material retained on the 4.75-mm sieve shall have two or more fractured faces.
- .3 Any gravel containing clay, loam or other deleterious materials will be rejected.

### 3 EXECUTION

#### 3.01 SEQUENCE OF OPERATION

- .1 Place granular base after sub-base surface is inspected and approved by the Departmental Representative.
- .2 Placing
  - .1 Construct granular base to depth and grade in areas indicated.
  - .2 Ensure no frozen material is placed.
  - .3 Place material only on clean unfrozen surface, free from snow and ice.
  - .4 Begin spreading base material on crown line or on high side of one-way slope.
  - .5 Place material using methods which do not lead to segregation or degradation of aggregate.
  - .6 For spreading and shaping material, use spreader boxes having adjustable templates or screeds which will place material in uniform layers of required thickness.
  - .7 Place material to full width in uniform layers not exceeding 150 mm compacted thickness. Departmental Representative may authorize thicker lifts (layers) if specified compaction can be achieved.
  - .8 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
  - .9 Remove and replace that portion of layer in which material becomes segregated during spreading.
- .3 Compacting
  - .1 Compact to density of not less than 100% corrected Standard Proctor Density

- .2 Shape and roll alternately to obtain smooth, even and uniformly compacted base.
- .3 Apply water as necessary during compacting to obtain specified density.
- .4 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by Departmental Representative.
- .5 Correct surface irregularities by loosening and adding or removing material until surface is within specified tolerance.
- .4 Proof rolling
  - .1 For proof rolling use standard roller of 45400 kg gross mass with four pneumatic tires each carrying 11350 kg and inflated to 620 kPa. Four tires arranged abreast with centre to centre spacing of 730 mm.
  - .2 Obtain approval from Departmental Representative to use non standard proof rolling equipment.
  - .3 Proof roll at level in granular base as indicated. If use of non standard proof rolling equipment is approved, Departmental Representative to determine level of proof rolling.
  - .4 Make sufficient passes with proof roller to subject every point on surface to three separate passes of loaded tire.
  - .5 Where proof rolling reveals areas of defective subgrade:
    - .1 Remove base, sub-base and subgrade material to depth and extent as directed by Departmental Representative.
    - .2 Backfill excavated subgrade with sub-base material and compact in accordance with Section 32 11 16.01 - Granular Sub-Base.
    - .3 Replace sub-base material and compact in accordance with Section 32 11 16.01 - Granular Sub-base.
    - .4 Replace base material and compact in accordance with this Section.
  - .6 Where proof rolling reveals defective base or sub-base, remove defective materials to depth and extent as directed by Departmental Representative and replace with new materials in accordance with Section 32 11 16.01 - Granular Sub-base and this section at no extra cost.

### 3.02 SITE TOLERANCES

- .1 Finished base surface to be within plus or minus 10 mm of established grade and cross section but not uniformly high or low.

### 3.03 PROTECTION

- .1 Maintain finished base in condition conforming to this Section until succeeding material is applied or until acceptance by Departmental Representative.

**END OF SECTION**

**1 GENERAL****1.01 REFERENCE STANDARDS**

- .1 ASTM International
  - .1 ASTM C 117-13, Standard Test Method for Materials Finer than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
  - .2 ASTM C 136/C 136M-14, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
  - .3 ASTM C 309 03, Liquid Membrane Forming Compounds for Curing Concrete.
  - .4 ASTM D 1751, Standard Specification For Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
  - .5 ASTM D 698-12e2, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft<sup>3</sup>) (600 kN-m/m<sup>3</sup>).
- .2 CSA Group
  - .1 CSA-A23.1-14/A23.2-14, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete, Including Update No. 1 2015.
  - .2 CSA B651-2012 Accessible Design for the Built Environment.

**1.02 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, and limitations.
- .3 Inform Departmental Representative of proposed source of materials and provide access for sampling minimum 4 weeks prior to commencing work.
- .4 If materials have been tested by accredited testing laboratory approved by Departmental Representative within previous 2 months and have passed tests equal to requirements of this specification, submit test certificates from testing laboratory showing suitability of materials for this project.

**1.03 DELIVERY, STORAGE AND HANDLING**

- .1 Waste Management and Disposal:
  - .1 Separate waste materials for reuse and recycling in accordance with Section 01 47 21 - Waste Management and Disposal.



**2 PRODUCTS****2.01 MATERIALS**

- .1 Concrete mixes and materials: in accordance with Section 03 30 00 - Cast-in-Place Concrete.
- .2 Reinforcing steel: in accordance with Section 03 20 00 - Concrete Reinforcing.
- .3 Joint filler Curing Compound: in accordance with Section 03 30 00 - Cast-in-Place Concrete.
- .4 Granular base: material to Section 31 11 16.01 - Aggregate Materials and following requirements:
  - .1 Type 1, 2 or 3 fill.
  - .2 Crushed stone or gravel.
  - .3 Gradations: within limits specified when tested to ASTM C 136 and ASTM C 117.
- .5 Non-staining mineral type form release agent: chemically active release agents containing compounds reacting with free lime to provide water-soluble soap.
- .6 Fill material: to Section 31 11 16.01 - Aggregate Materials and following requirements:
  - .1 Type 1, 2 or 3 fill.
  - .2 Crushed stone or gravel.
  - .3 Gradations: within limits specified when tested to ASTM C 136 and ASTM C 117. Sieve sizes to CAN/CGSB-8.1.
- .7 Curing Agent: to ASTM C 309, Type 1.
- .8 Expansion Joint Filler: Premoulded bituminous fibre board, conforming to ASTM D 1751.

**3 EXECUTION****3.01 GRADE PREPARATION**

- .1 Do grade preparation work in accordance with Section 31 23 33.01 - Excavating, Trenching and Backfilling.
- .2 Construct embankments using excavated material free from organic matter or other objectionable materials.
  - .1 Dispose of surplus and unsuitable excavated material in approved location on site off site.
- .3 When constructing embankment provide for minimum m shoulders, where applicable, outside of neat lines of concrete.
- .4 Place fill in maximum 150 mm layers and compact to minimum 95% of maximum dry density to ASTM D 698.

**3.02 GRANULAR BASE**

- .1 Obtain Departmental Representative's DCC Representative's Consultant's approval of subgrade before placing granular base.
- .2 Place granular base material to lines, widths, and depths as indicated.
- .3 Compact granular base in maximum 150 mm layers to minimum 95% of maximum density to ASTM D 698.

**3.03 CONCRETE**

- .1 Obtain Departmental Representative DCC Representative's Consultant's approval of granular base and reinforcing steel prior to placing concrete.
- .2 Do concrete work in accordance with Section 03 30 00 - Cast-in-Place Concrete.
- .3 Immediately after floating, give sidewalk surface uniform broom finish to produce regular corrugations not exceeding 2 mm deep, by drawing broom side to side across sidewalk.
- .4 Provide edging as indicated with 10 mm radius edging tool.
- .5 Slip-form pavers equipped with string line system for line and grade control may be used if quality of work acceptable to Departmental Representative DCC Representative Consultant can be demonstrated. Hand finish surfaces when directed by Departmental Representative DCC Representative Consultant.

**3.04 TOLERANCES**

- .1 Finish surfaces to within 3 mm in 3 m as measured with 3 m straightedge placed on surface.

**3.05 EXPANSION AND CONTRACTION JOINTS**

- .1 Install tooled transverse contraction joints after floating, when concrete stiff, but still plastic, at intervals of m.
- .2 Install expansion joints as indicated as directed by Departmental Representative DCC Representative Consultant at intervals of 6 m.
- .3 When sidewalk adjacent to curb, make joints of curb, gutters and sidewalk coincide.

**3.06 ISOLATION JOINTS**

- .1 Install isolation joints around manholes and catch basins and along length adjacent to concrete curbs, catch basins, buildings, or permanent structure.
- .2 Install joint filler in isolation joints in accordance with Section 03 30 00 - Cast-in-Place Concrete as indicated.
- .3 Seal isolation joints with sealant approved by Departmental Representative DCC Representative Consultant.

**3.07 TACTILE WALKING SURFACE INDICATORS**

- .1 Install tactile walking surface indicators at curb ramp edges, where indicated on drawings and in accordance with local municipal bi-laws.

**3.08 CURING**

- .1 Cure concrete by adding moisture continuously in accordance with CSA-A23.1/A23.2 to exposed finished surfaces for minimum 1 day after placing, or sealing moisture in by curing compound as directed by Departmental Representative DCC Representative Consultant.
- .2 Where burlap used for moist curing, place two prewetted layers on concrete surface and keep continuously wet during curing period.
- .3 Apply curing compound evenly to form continuous film, in accordance with manufacturer's requirements.

**3.09 BACKFILL**

- .1 Allow concrete to cure for 7 days prior to backfilling.
- .2 Backfill to designated elevations with material as directed by Departmental Representative DCC Representative Consultant.
  - .1 Compact and shape to required contours as indicated as directed by Departmental Representative DCC Representative Consultant.

**3.10 LINSEED OIL TREATMENT**

- .1 Apply two coats of linseed oil mixture uniformly to surfaces of curbs, walks and gutters, after concrete has cured for specified curing time and when surface of concrete clean and dry.
- .2 Linseed oil mixture to consist of 50% boiled linseed oil and 50% mineral spirits by volume.
- .3 Apply treatment when air temperature above 10 degrees C.
- .4 Apply first coat at 135 mL/m<sup>2</sup>.
- .5 Apply second coat at 90 mL/m<sup>2</sup> when first coat has dried.

**3.11 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

**END OF SECTION**

**1. General****1.1 REFERENCES**

- .1 ASTM A116 - Metallic-Coated Steel Woven Wire Fence Fabric.
- .2 ASTM A121 - Zinc-Coated (Galvanized) Steel Barbed Wire.
- .3 ASTM A123/A123M - Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products.
- .4 ASTM A153 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- .5 ASTM A392 - Zinc-Coated Steel Chain-Link Fence Fabric.
- .6 ASTM A1011/A1011M - Standard Specification for Steel, Sheet, and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy With Improved Formability.
- .7 ASTM F567 - Installation of Chain-Link Fence.
- .8 ASTM F668 - Poly (Vinyl Chloride) (PVC) and Other Organic Polymer-Coated Steel Chain-Link Fence Fabric.
- .9 ASTM F1043 - Strength and Protective Coatings on Metal Industrial Chain Link Fence Framework.
- .10 ASTM F1083 - Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.
- .11 CLFMI (Chain Link Fence Manufacturers Institute) - Product Manual.

**1.2 SYSTEM DESCRIPTION**

- .1 Fence Height: as indicated on Drawings.
- .2 Line Post Spacing: At intervals not exceeding 3 metre.
- .3 Fence Post and Rail Strength: Conform to ASTM F1043 Heavy Industrial Fence quality.
- .4 Pedestrian Swing Gate System shall be designed as an exterior security swing gate. When the gate is in the closed position, it shall be impossible for the gate to be opened except by electrical means.

**1.3 SUBMITTALS**

- .1 Comply with requirements of Section 01 33 00..
- .2 Product Data: Provide data on fabric, posts, accessories, fittings and hardware.
- .3 Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, and schedule of components.
- .4 Manufacturer's Installation Instructions: Indicate installation requirements, post foundation anchor bolt templates.

- .5 Provide wiring diagrams and electrical connection requirements for security gate.

#### 1.4 QUALITY ASSURANCE

- .1 Perform Work in accordance with CLFMI - Product Manual.

#### 1.5 QUALIFICATIONS

- .1 Manufacturer: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

### 2. Products

#### 2.1 MATERIALS

- .1 Framing (Steel): to ASTM A1083; hot rolled steel strip, cold formed to pipe configuration, longitudinally welded construction, minimum yield strength of 345 MPa; coating conforming to ASTM F1043 Type B on pipe exterior and interior.
- .2 Mesh Wire: to ASTM A392 zinc coated wire fabric, nominal 3mm Ø thickness, hot-dipped galvanized to 490 g/m<sup>2</sup>.
- .3 Concrete: Normal Portland cement, 20 MPa @ 28 days, 50 mm to 80 mm slump, 20 mm aggregate, 6% air entrainment.

#### 2.2 COMPONENTS

- .1 Line Posts: 100 mm O.D., 5.43 kg/m.
- .2 Corner, Terminal and Straining posts: 100 mm O.D., 11.28 kg/m.
- .3 Top and Brace Rail: 60 mm O.D., 3.38 kg/m plain end, sleeve coupled.
- .4 Post Caps: Cast aluminum, sized to post diameter, set screw retained.
- .6 Line Post Eye tops: Cast aluminum.
- .7 Rail Ends: Cast aluminum.
- .10 Fittings: Sleeves, bands, clips, tension bars, fasteners and fittings galvanized steel.
- .8 Fabric: CLFMI Heavy Industrial diamond mesh, interwoven wire, top selvage twisted tight, bottom selvage knuckle end closed.
- .9 Bottom tension Wire: 3.0 mm steel single strand hot-dipped galvanized to 490 g/m<sup>2</sup>
- .13 Barbed Tape: Stainless steel, 0.6 thick x 25mm wide, coil diameter of 600 mm, die stamped to produce 4 barbed points at 100 mm on centre; cold clench over galvanized steel core.
- .14 Privacy Slats: Vinyl strips, sized to fit fabric weave, colour as selected by Minister.

- .15 Security Gate:
  - .1 Fabricate gate similar to adjacent fence construction. Incorporate necessary reinforcing and steel plates required to accommodate security hardware.
  - .2 swing gate shall be pre-assembled, pre-hung and tested at the manufacturer's location.
  - .3 Provide an electric strike in the gate jamb. The electric strike shall unlock / release as activated by a card reader. Provide means of latching gate into electric strike.
  - .4 Provide door closer installed on head portion of gate. Closer shall be suitable for exterior application and sized to suit gate.
  - .5 Provide top and bottom needle bearing hinges per gate. Hinges shall have a thrust capacity of 600 lbs per gate.
  - .6 In the event of power failure provide for manual keyed entry both sides of gate.
  - .7 Provide minimum 150mm long "D" pulls both sides of gate.

### **3. Execution**

#### **3.1 INSTALLATION**

- .1 Install to alignment specified, line posts, corner posts, gate posts and top rails to provide rigid structure for height as indicated on drawings.
- .2 Maximum spacing of posts: 3.0 m on centre
- .3 Install line and corner posts plumb.
- .4 Set posts in cylindrical cast-in-place concrete footings sized to suit post size. Footing depth to be minimum  $\frac{3}{4}$  length of post height.
- .5 Set posts to within 150 mm from bottom of concrete footing.
- .6 Set top of concrete footing 50 mm above finished grade. Slope top of footing to ensure water run off.
- .7 Position bottom of fabric 50 mm above finished grade with tension wire stretched taut between posts.
- .8 Align top of posts to ensure that top rail varies gradually with changes in ground elevations.
- .9 Pass top rail through line post tops to form continuous bracing. Install 150 mm long couplings mid-span at pipe ends.
- .10 Fasten fabric to top rail, line posts, braces and bottom tension wire with 3.5 mm wire ties maximum 500 mm centres.
- .11 Attach fabric to corner posts with tension bars and tension bar clips. Stretch fabric between posts at intervals of 30.0 m maximum.
- .12 Install straining post at 90 m approximately.

- .13 Install privacy slats as indicated on drawings.
- .14 Install barbed tape as detailed on drawings, including installation above rolling shutter structure and at building. Co-ordinate installation of barbed tape on building with roofing subtrade.
- .15 Install pre-assembled security gate in location indicated. Test and adjust gate to ensure proper operation.

**END OF SECTION**