PART 1 - GENERAL

1.1 REFERENCES

.1 ASTM International
.1 ASTM A 53/A 53M-12, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
.2 ASTM A 90/A 90M-13, Standard Test Method for Weight [Mass] of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings.
.3 ASTM A 653/A 653M-15e1, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
.4 ASTM A 123/A 123M-15, Standard Specification for Zinc (Hot Dip Galvanized) coatings on Iron and Steel Products.

.2 Canadian General Standards Board (CGSB)
.1 CAN/CGSB-138.1-96, Fabric for Chain Link Fence.
.2 CAN/CGSB-138.2-96, Steel Framework for Chain Link Fence.
.3 CAN/CGSB-138.3-96, Installation of Chain Link Fence.
.4 CAN/CGSB-138.4-96, Gates for Chain Link Fence.
.5 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.

.3 Master Painters Institute (MPI)
.1 Architectural Painting Specification Manual - current edition.

.4 U.S. Environmental Protection Agency (EPA) / Office of Water
.1 EPA 832/R-92-005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:
.1 Submit manufacturer's instructions, printed product literature and data sheets for fence fabric, posts, baseplates, rails and gate and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Shop Drawings:
.1 Site plan showing layout of fence including posts, location with dimensions, location of gate and opening size, elevation of fence and gate and details of attachments.
.2 Indicate details, components and finishes of components and accessories.

1.3 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and

address.

.3 Storage and Handling Requirements:
.1 Store materials off ground, in accordance with manufacturer's recommendations.
.2 Store and protect fence and gate materials from damage.
.3 Replace defective or damaged materials with new.

.4 Packaging Waste Management: remove for reuse and return of packaging materials as specified in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Chain-link fence fabric: to CAN/CGSB-138.1.
.1 Type 1, Class A, medium style.
.2 Height of fabric: nominal 1829 mm.

.2 Posts, braces and rails: to CAN/CGSB-138.2, Schedule 40, galvanized steel pipe. Dimensions as follows:
.1 Terminal posts (O.D.): 89 mm.
.2 Line posts (O.D.): 60 mm.
.3 Top rail (O.D.): 43 mm.

.3 Base plates:
.1 At terminal posts: 150 mm x 150 mm x 8 mm thick, complete with four holes.
.2 At line posts: 127 mm x 127 mm x 8 mm thick, complete with four holes.

.4 Fasteners: epoxy adhesive anchoring system, size to suit.

.5 Top and bottom tension wire: to CAN/CGSB-138.2, single strand, galvanized steel wire, 4.66 mm (6 gauge).

.6 Tie wire fasteners: aluminum wire.

.7 Tension bar: to ASTM A 653/A 653M, 5 x 20 mm minimum galvanized steel.

.8 Gate frames: to ASTM A 53/A 53M, galvanized steel pipe, standard weight 45 mm outside diameter pipe for outside frame, 35 mm outside diameter pipe for interior bracing.
.1 Size: 1220 wide x height of fence.
.2 Fabricate gate with electrically welded joints, and painted with zinc pigmented paint after welding.
.3 Fasten fence fabric to gate with knuckle selvage at top.
.4 Furnish gates with galvanized malleable iron hinges, latch and latch catch with provision for padlock which can be attached and operated from either side of installed gate.
.1 Refer to Section 08 71 00 – Door Hardware for coordination with padlock requirement.

.9 Fittings and hardware: to CAN/CGSB-138.2, galvanized steel.
.1 Tension bar bands: 3 x 20 mm minimum galvanized steel or 5 x 20 mm minimum aluminum.
.2 Post caps to provide waterproof fit, to fasten securely over posts and to carry top rail.
.3 Turnbuckles to be drop forged.

.10 Organic zinc rich coating: to CAN/CGSB-1.181.

.11 Sealant: refer to Section 07 92 00 – Joint Sealants.

2.2 FINISHES

.1 Galvanizing:
.1 For chain link fabric: to CAN/CGSB-138.1 Grade 2.
.2 For pipe: 550 g/mý minimum to ASTM A 90.
.3 For other fittings: to ASTM A 123/A 123M.

PART 3 - EXECUTION

3.1 EXAMINATION

.1 Verification of Conditions: verify conditions of substrate previously installed under other Sections or Contracts are acceptable for fence and gate installation in accordance with manufacturer's written instructions.
.1 Visually inspect substrate.
.2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
.3 Proceed with installation only after unacceptable conditions have been remedied.

3.2 ERECTION OF FENCE

.1 Fabric to be installed at exterior side of fence line.

.2 Erect fence along lines as indicated on concrete pad.
.1 Refer to Structural for concrete pad.
.2 Fasten terminal post and line post base plates to concrete pad on base plates with fasteners indicated.
.3 Apply sealant at fasteners and baseplates.

.3 Space line posts maximum 3 meters apart, measured parallel to ground surface.

.4 Space straining posts at equal intervals not to exceed 150 m if distance between end or corner posts on straight continuous lengths of fence over reasonably smooth grade, is greater than 150 m.

.5 Install corner post where change in alignment exceeds 10 degrees.

.6 Install end posts at end of fence and at buildings.
.1 Install gate posts on both sides of gate openings.

.7 Install fence fabric after concrete has cured.

.8 Install brace between end and gate posts and nearest line post, placed in centre of panel and parallel to ground surface.
.1 Install braces on both sides of corner and straining posts in similar manner.

.9 Install caps.

.10 Install top rail between posts and fasten securely to posts and secure waterproof caps and overhang tops.

.11 Install bottom tension wire, stretch tightly and fasten securely to end, corner, gate and straining posts with turnbuckles and tension bar bands.

.12 Lay out fence fabric. Stretch tightly to tension recommended by manufacturer and fasten to end, corner, gate and straining posts with tension bar secured to post with tension bar bands spaced at 300 mm intervals.
.1 Knuckled selvedge at bottom.
.2 Knuckled selvedge selvedge at top.

.13 Secure fabric to top rails, line posts and bottom tension wire with tie wires at 450 mm intervals.
.1 Give tie wires minimum two twists.

.14 Install grounding rods.

3.3 INSTALLATION OF GATES

.1 Install gate in location as indicated.

.2 Set gate bottom approximately 40 mm above concrete pad surface.

.3 Install padlock supplied by Section 08 71 00 – Door Hardware.

.4 Adjust as required for smooth operation.

3.4 TOUCH UP

.1 Clean damaged surfaces with wire brush removing loose and cracked coatings. Apply two coats of organic zinc-rich paint to damaged areas.

3.5 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.3 Waste Management: separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.