Project Specification

High Security Fences & Gates

PROJECT NAME

[The Date here]	Issued for Tender	
Your logo here	Project name here	Job NO.
		Specification NO. [as per our drawing no]
		Reference NO. [as per our reference no]
		Sheet 0 of 0

[Your project name here]

High Security Fences and Gates [The Date here]

SECTION A1 HIGH SECURITY FENCES AND GATES

PART 1 – GENERAL

1.1 Scope

A. This specification covers material requirements and installation of security fencing and gates, for the [Project name here] located in [Project location].

1.2 Work Included

A. Furnish and install fence and gates, and accessories as required and shown.

1.3 References Codes and Standards

A. CSIR, SABS, North Atlantic Treaty Organization (NATO) and International Aviation Authority Organization (ICAO).

CSIR Test	980289, 050036, 050056, T09998
SABS Test	2536/YM139
Nato Stock	5600/99-458-7474
ICAO	ICAO Security Manual
ASTM	F2453 / F2453M - 05(2011)e

1.4 Submittals

A. Certificate of compliance for materials and coatings

B. Shop drawing for gates

C. Submittal requirements are identified within the Specification.

D. Quality control program shall be submitted to the Engineer for review prior to commencement of any work.

PART 2 – PRODUCTS

2.1 General

A. All steel materials shall be of good commercial quality, galvanized steel.

B. All pipes shall be galvanized, one piece without joints. Furnish moisture proof caps for all posts.

C. Zinc coating shall be smooth and essentially free from lumps, globs, or points.

D. Miscellaneous material shall be galvanized.

F. All posts shall be set in minimum 14 MPa (2000 psi) (28-day compressive strength) concrete, 25 mm (1 in) aggregate; no air entrapment.

2.2 Suggested Manufacturer: Cochrane USA – ClearVu The Invisible Wall

2.3 Description of Fence System (As per drawing number _____)

A. Post: Cochrane Taper Post

ASTM A 53/A53M – 07, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.

ASTM A36/A36M – Standard Specification for Carbon Structural Steel

Canadian General Standards Board (CGSB).

CAN/CSA W47.1 – Certification of Companies for Fusion Welding of Steel Structures.

CAN/CSA-S136 – North American Specification for the Design of Cold-Formed Steel Structural Members.

Post shall be ___ ft long Cochrane Taper Locking Post.

Post width shall be 3.5”/85 mm - tapering to 2”/45 mm with a depth of3.5”/ 85 mm.

Post shall include ‘Locking Recess Mechanism’ to secure panel edge.

Post shall be sealed with a UV stabilized polymer cap and fitted with a 12mm or as required base pin.

Post finish shall be 'Hot Dipped Galvanized then Marine Fusion Bond Coated'.

B. Panel: Cochrane – ClearVu

ASTM F2453/F 2453M – Standard Specification for Welded Wire Mesh Fence Fabric
Canadian General Standards Board (CGSB).

CAN/CSA W59-M – Welded Steel Construction

Panel shall be of 10ft width and ___ ft in height.

Panel aperture size (centres) shall be 3” x ½ “.

The panel shall be reinforced with 4 x 2”/50 mm deep 'v' formation horizontal recessed bands (rigidity)

Panel shall have 2 x 2 ½ “flanged along sides (internal fixtures- all fixtures shall be on the inside of fence line)

Panel shall have 2 x 2 ½ “ flanges along top and toe (integrated rigid angle, anti scale locating devices).

Panel post shall have a flush panel post finish with no climbing aid.

COATING:

ASTM A 90/A90M – 07, Standard Test Method for Weight of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings.
The Master Painters Institute (MPI) – Architectural Painting Specification Manual – March 1998
MPI #18, Organic Zinc Rich Primer.

ASTM A 653/A653M – 03, Standard Specification for Steel Sheet, Zinc-Coated Galvanized or Zinc-Iron Alloy-Coated Galvannealed by the Hot-Dip Process.

ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.

ASTM A123 – Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron & Steel Products.

ASTM A153 – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

ASTM A879/A879M – Standard Specification for Steel Sheet, Zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface.

Canadian General Standards Board (CGSB).

CAN/CGSB 1.181-99, Ready – Mixed Organic Zinc – Rich Coating.

CAN/CSA G164-M92 (R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.

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Panel shall be affixed to post over 48 line wires using 8 x Double bolt comb clamps and 8 x Single bolt comb clamps using 24 x Anti vandal bolts.

Panel and fixtures shall be galvanized then Marine Fusion Bond Coated.

E. Fence Corner Configuration. The fence configuration should not have any sharp corners and all angles at changes of direction should be a minimum of 130 degrees.

2.4 Gates

2.4.1 Swing Gates

A. All connections and joints shall be welded to form rigid frames or assembled with corner fittings.

B. Hinges shall not twist or turn under the action of the gate, shall be so arranged that a closed gate cannot be lifted off the hinges to obtain entry.

2.4.2 Sliding Gates

A. Gate frame fabrication and miscellaneous items shall be similar to Swing Gates.

C. All fittings, brackets and rear wheel tracks shall be standard manufactured products for the intended application.

PART 3 – EXECUTION

3.1 General

A. Install all fencing and gates in accordance with the drawings, specifications, instructions, and as specified lines and grades indicated. Line posts shall be spaced at intervals not exceeding 3.3 m (10 ft). Terminal posts shall be set at abrupt changes in vertical and horizontal alignment.

3.2 Posts

A. Post holes shall be cleared of loose material. Waste material shall be spread where directed by Engineer. The ground surface irregularities along the fence line shall be eliminated to the extent necessary

SUBMITTALS

.1 Product data:

.1 Submit copies of manufacturer's Product data in accordance with Section _____ indicating:

.1 Performance criteria, compliance with appropriate reference standard, characteristics, limitations.

.2 Product transportation, storage, handling and installation requirements.

.2 Submit WHMIS MSDS – Material Safety Data Sheets in accordance with Section 01 59 00 – Safety.

.2 Shop drawings:

.1 Submit shop drawings in accordance with Section 01 33 23 indicating:

.1 Adjacent construction, elevations and details, dimensions gauges, finishes and relationship to adjacent construction.

.2 Show methods of fastenings, accessory items required, gate details, structural header design and design computations, and other pertinent data and information.

.3 Samples:

.1 Submit following samples in accordance with Section 01 33 00.

.1 300 mm square mesh pre-galvanized, then marine fusion bond coated black.

.2 300 mm length of post hot dip galvanized, then marine fusion bond coated black.

QUALITY ASSURANCE

.1 Manufacturer Qualifications: Minimum of five (5) years experience manufacturing decorative metal fences and gates of the type specified, able to provide test reports showing compliance with specified performance characteristics, and able to provide on-site technical representation to advise on installation.

1.5 DESIGN REQUIREMENTS

.1 ***Decorative metal fences, gates, and their foundations shall be designed and certified by a Professional Engineer to resist lateral loads of _____ and vertical loads of _____ in accordance with ASCE/OBC Subsection 4.1.10.1 (1) (f) and 4.1.10.1 (2) to (4).***

.2 ***Custom metal fences, gates, guide rails, appurtenances, and their foundations shall be designed and certified by a Professional Engineer to resist lateral loads of _____ and vertical loads of _____ in accordance with OBC Subsection 4.1.10.1 (1) (f) and 4.1.10.1 (2) to (4).***

1.6 SHOP DRAWINGS

.1 ***Submit shop drawings in accordance with Section_____of the fabrication and installation details of items, components and assemblies listed in Part __***

.2 ***For Custom fences and gates, guide rails, and appurtenances, indicate lateral strength, anchoring details to concrete foundation, dimensions, gauges, tensile and yield strength of members and welds, post settings and post interspaces.***

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B. Posts shall be set plumb, and follow the indicated alignment. All posts shall be set to the depth indicated on the design documents. Concrete shall be thoroughly consolidated around each post, free of voids, and finished with a domed shaped surface, with the base of dome at grade elevation. Concrete shall be allowed to cure prior to installing any additional components to the posts.

C. Concrete footings shall be carried down to at least the depth indicated on the design documents and shall not be smaller than the dimensions shown. Where a rock layer is encountered within the required depth to which the post is to be erected, a hole of a diameter slightly larger than the largest dimension of the post may be drilled into the rock and the post grouted in. Then the regular concrete footing shall be placed between the top of the rock and the top of the footing elevation as shown on the design documents. Posts shall be approximately centered in their footings. All concrete shall be placed promptly and consolidated by tamping or other approved methods.

D. Where the ground is firm enough to permit excavation of the post hole to neat lines, the concrete may be placed without forms by completely filling the hole. Curing may be achieved by covering the concrete with not less than four inches of loose moist material immediately after placing concrete, or by using a curing compound. All excess material from footings, including loose material used for curing, shall be disposed of as directed by the Engineer

E. Where the ground cannot be satisfactorily excavated to neat lines, forms shall be used to place concrete for footings. Under these conditions the earth and forms coming in contact with the concrete shall be moistened and all ponded water shall be removed from the hole

prior to placing concrete. When forms are removed, the footing shall be backfilled with moistened material, and thoroughly tamped. The top of the concrete shall then be covered with not less than 100 mm (4 in) of loose moistened material or use curing compound if the 7-days cure is not completed. All excess material from footings, including loose material used for curing, shall be disposed of as directed.

Gates

Gates shall be installed at the locations shown. Hinged gates shall be mounted to swing as indicated. Latches, stops, and keepers shall be installed as required. Slide gates shall be installed as recommended by the manufacturer.

Adjusting

A. Gate: Adjust gate to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.

B. Lubricate hardware and other moving parts.

Lusio Filiba

BALang & I.R.

AIA CES (HSW)Accredited Provider
Business Development

Tel: +1 202.434.8163
Mobile: +1 202.549.3431

lfiliba@cochrane.co
www.cochranesteel.com

Capitol Hill, 601 Pennsylvania Ave, NW, South Building

Suite 900, Washington DC, 20004


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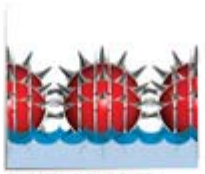
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