PART 1 - GENERAL

1.1 DESCRIPTION
Detention and protection screens consist of a sub-frame, main frame with wire cloth and support assembly, detention lock and bolt, hinges and all fittings and anchors required.

1.2 RELATED WORK
A. Frames for detention doors: Section 08 11 13, HOLLOW METAL DOORS AND FRAMES.
B. Hardware: Section 08 71 00, DOOR HARDWARE.
C. Color of finish paint: Section 09 06 00, SCHEDULE FOR FINISHES.
D. Preparation and finish of frames: Section 09 91 00, PAINTING.

1.3 MANUFACTURERS QUALIFICATIONS
A. Approval by Resident Engineer is required of products of proposed manufacturer or supplier, and will be based upon submission by Contractor of certification.
B. Contractor certifies that the manufacturer regularly and presently manufactures detention and protection screens as one of his principal products.
C. Contractor certifies that the manufacturer's product submitted has been in satisfactory and efficient operation on three installations similar or equivalent to this project for three years. Submit list of installations. List shall include name of project and owner and location of project.

1.4 SUBMITTALS
A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
B. Samples: One completely finished detention screen // detention door // protection screen // as specified. Upon approval, screen may be installed on the job.
C. Shop Drawings: Complete details (1/2 full scale), showing details of construction and anchorage, relation to details of the door and clearances required and door operators.
D. Manufacturer's Certificates:
   1. Indicating manufacturers qualification specified.
   2. Indicating wire screen cloth meets the requirements specified.
E. Manufacturer's Literature and Data:
   1. Detention Screen.
   2. Protection Screen.
   3. Detention Door.

1.5 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.

B. American Society of Mechanical Engineers (ASME):
   B18.6.2-98(R-2005) Slotted Head Cap Screws, Square Head Set Screws, and Slotted Headless Set Screws.
   B18.6.4-98 Thread Forming and Thread Cutting Tapping Screws and Metallic Drive Screws.

C. American Society for Testing and Material (ASTM):
   A653/A653M Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.

PART 2 - PRODUCTS

SPEC WRITER NOTE: Make material requirements agree with applicable requirements specified in the referenced Applicable Publications. Update and specify in both only that, which applies to the project.

2.1 WIRE CLOTH

Stainless steel wire cloth woven from 0.7 mm (0.028-inch) diameter Type 302 or 304 stainless steel wire, woven 12 mesh, double crimped.

2.2 SHEET STEEL

ASTM A653/A653M

2.3 FABRICATION

A. Make screens units without muntins and design to be mounted flush with trim, frame or wall face.

B. Fabricate scribe members from 1.5 mm (0.0598-inch) thick sheet steel and install at head and jambs of openings.

C. Where lightproof shade occurs, limit swing of screen to 90 degrees.

D. Frames: Weld corners of fixed and hinged frames continuously. Outside reinforcements or projections will not be permitted. Dress weld smooth so as to be inconspicuous. Round exposed edges and corners.

E. Drill and tap fixed frames for adjustment against scribe members. Drill head rail of hinged frames on room side for installation of shade brackets. Locate holes on center line of rail, 38 mm (1-1/2 inches) outside edges of stiles.
F. Reinforce frames lighter than 2.5 mm (0.105-inch) thick steel at locks and hinges with steel plates not less than 5 mm (3/16-inch) thick.

G. Provide rubber cushion plugs (bumpers) on lock between fixed and hinged frames. Locate bumpers 150 mm (6-inches) from top and bottom on side of frame where lock bolts or slides occur.

//H. Size internal diameter of sleeves to give a 3 mm (1/8-inch) clearance for socket and of crank handles. Flare sleeves uniformly (but not cut) at free end and to clear crankshafts when frame is swung open. Secure sleeves by either spot welding or concealed screws. Grind end of sleeve flush with frame. Round exposed edges of drilled hole in frame and dress smooth. Clearance between free end of sleeve and interior surface of frame (fixed or movable) may not exceed 1 mm (1/32-inch.)//

2.4 PROTECTION SCREENS

A. Reinforce hinged frames over four feet in height horizontally or vertically, or both if width exceeds five feet.

B. Screens Unit - Type "C": Screen unit consists of fixed sub-frame of 2.2 mm (0.0897-inch) thick steel channels with a "Z" (zee) shaped sill and a hinged main frame of 3 mm (0.120-inch) thick steel. Design frames to form supplemental cover totally concealing hinges and lock when unit is closed.

C. Screen Unit - Type "D": Screen unit consists of a fixed sub-frame of not less than 2.5 (0.105-inch) thick "Z" (zee) shaped members and a hinged main frame.

1. Fabricate hinged frames of not less than 2.5 mm (0.105-inch) thick channel shaped members having an extended inner flange. Form flange edge with a right angle return forming a channel to receive wire cloth retaining strip.

2. Screening Attachment: Bend screening to fit over the screen frame and attach using a 1.5 mm (0.060-inch) thick retaining angle, continuous on all four sides. Clamp screening between retaining angle and return edge of hinged frame with hardened steel machine screws spaced approximately 125 mm (5 inches) on center.

2.5 DETENTION DOOR SCREEN

A. Make side and top door frame members 150 mm (6 inches) wide and bottom rail 300 mm (12 inches) wide.

B. Door unit consist of fixed sub-frame of not less than 2.5 mm (0.105-inch) thick steel channel shapes without sill, and hinged main frame of not less than 2.5 mm (0.105-inch) thick channel shapes. House operating mechanism within the main frame to which screen panel is attached with either leaf springs or coil springs. Provide a formed, one
piece 2.5 mm (0.105-inch) thick removable cover and an 1.5 (0.060-inch) thick adjustable channel scribe members at head and jambs into which fixed frame fits.

C. Reinforce hinged frame bottom rail longitudinally from within at mid-point and bottom with steel channels welded to frame.

D. Secure removable cover to reinforcing members and housing channel with machine screws spaced approximately 200 mm (eight inches) on centers.

2.6 HARDWARE

A. Operating hardware shall be extra heavy duty type.

B. Locks for Door Screens: Provide concealed locking system for each screen consisting of one, bit-key operated locking mechanism having a minimum of two operable, concealed 13 mm (1/2-inch) diameter case-hardened steel bolts. Locate bolts near the top and bottom of screen. Design bolts to engage adjustable strike or keepers in the sub-frame when bit key is rotated in lock.

C. Construct bit key lock of steel construction with three brass tumblers having beryllium copper springs. Fabricate lock case from steel using two piece construction having three brass pedestal bearing supports attached to the lower half of the case to support the slide bar, tumblers, case and cover. Fabricate slide bar of lock from steel with hardened steel guide tumbler block.

D. Make provisions to insure that the bit key can not be removed except when the bolts are in a locked (extended) position. //Locks shall be keyed alike//. Design locks so as to be operated by existing attendant's key established for the VA Medical Center.// Furnish ____ bit keys. Make keys from forged steel or solid bronze with chromium or cadmium plated finish.// Furnish hardware templates to steel door frame manufacturer.//

2.7 FINISH

After surface treatment of the frame, apply two coats of baked-on enamel to all surfaces before the wire cloth is installed and secured into the frame.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Install screen units that can be readily removed without damage to new or existing work and to effectively exclude insects.

B. Secure screen units to frame with steel case hardened machine screws, spaced at approximately 375 mm (15 inches) on centers.

C. Provide screw fastenings of type, size and head as recommended by manufacturer of screen units.
D. Anchor screen units to wood with stainless steel flathead wood screws at sill and stainless steel round head wood screws at head, mullions and jambs. Toggle bolts may be used if they do not interfere with sash balances or weights at jambs or mullions.

--- END ---