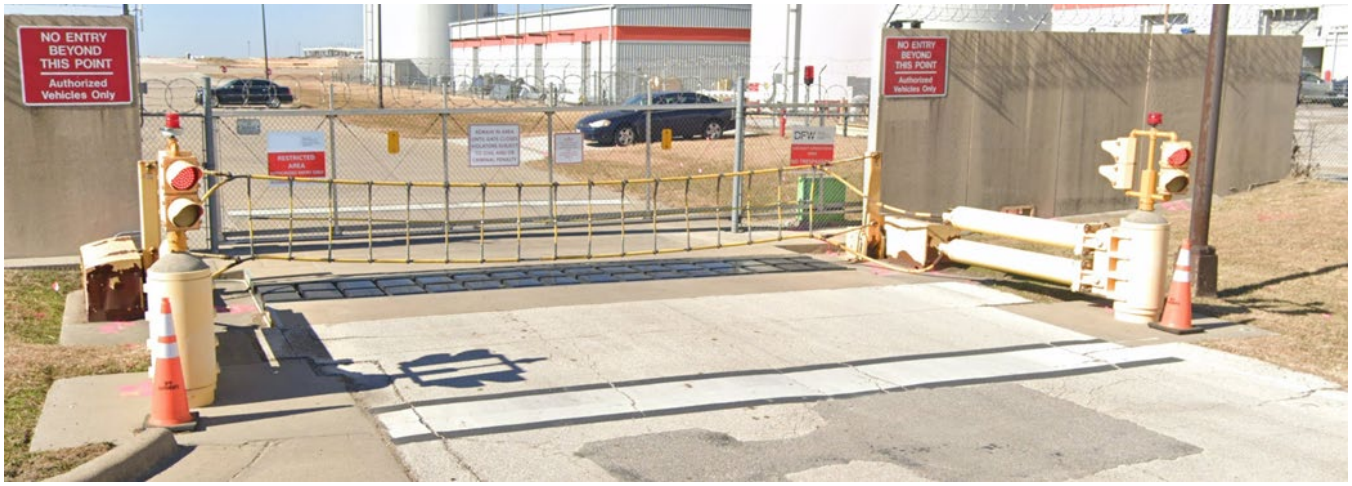
Figure 3-7. Net Barrier at a CAT X Airport



Source: Google Maps

3.4 Fencing

Control of airport perimeters has been a long-standing requirement for both operational and security reasons. Fencing is the most common method of controlling open areas on airport perimeters.

For more information on perimeter control and fencing please refer to PARAS 0015: *Guidance for Airport Perimeter Security* and PARAS 0028: *Recommended Security Guidelines for Airport Planning, Design, and Construction.*

Most of the airports interviewed indicated that their perimeter fence was constructed out of 6 to 10-foot chain-link fencing with a barbed or concertina razor wire topper to meet federal standards and recommendations.[2] This style of fencing is the most cost-effective option to meet the minimum recommendations outlined by the FAA, and it is relatively easy and inexpensive to replace if it is damaged. In environments where corrosion is more likely, such as near salt water, a plastic-coated material may be desirable.

> One airport installed a brick wall with fencing along the top. The airport indicated that the brick was chosen for aesthetic purposes, but also serves to suppress some of the noise traveling to nearby neighborhoods, as well as reduce sightlines into restricted areas of the airport.

Some fencing options can include specialized technology posts that enable the airport to add cameras, perimeter lighting, sensors, and other technology along the perimeter.

A secondary layer of fencing provides additional protection from intruders on foot or in a vehicle. A double-layered set up can be configured with fencing and other barriers, such as vehicle arresting systems.

[2] FAA AC 150/5370-10H Part 10

APPENDIX A: CASE STUDY – DAL: CABLE LOOP VEHICLE ARRESTING SYSTEM

WHAT WAS THE CHALLENGE?

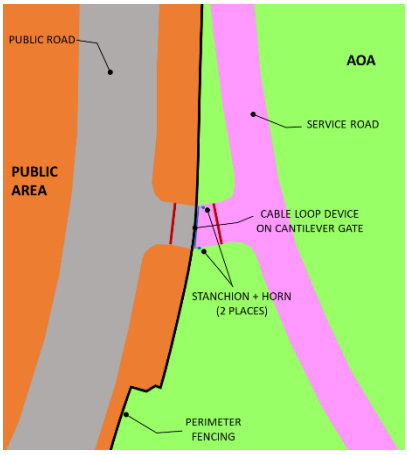
As an urban airport, Dallas Love Airport (DAL) faces the challenge of city streets that extend to the border of airport property (Figures A-1 and A-2).

Figure A-1. Typical Perimeter Gate from Public Road to AOA

Vehicle access gates that are near public streets need to be hardened against intrusion, whether intentional (e.g., vehicle ramming) or inadvertent (e.g., drunk drivers).

In 2010, a driver involved in a police chase breached the DAL perimeter. Due to this incident, the airport determined that their perimeter gates needed to be upgraded to prevent future breaches, but they did not want to significantly increase the footprint of the gates due to the limited Vehicle Gate Approach Area.

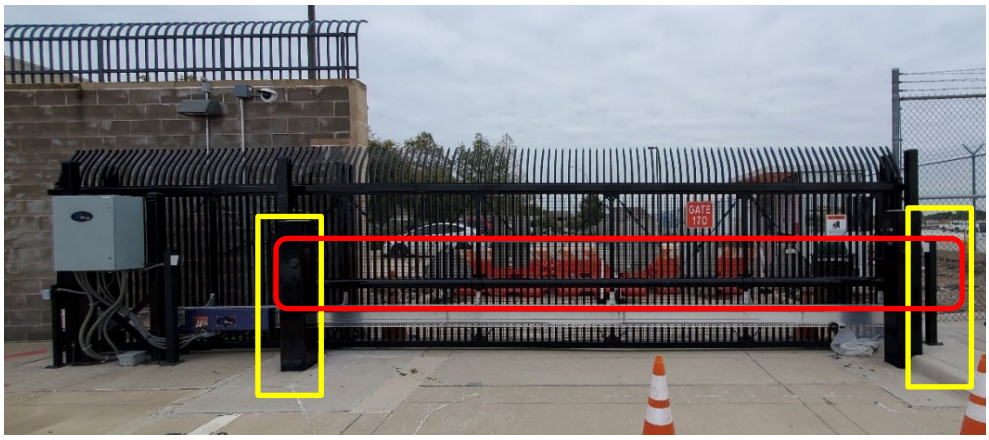
Figure A-2. Layout Schematic



HOW WAS THE CHALLENGE ADDRESSED?

DAL retrofitted some of their existing gates with a cable loop barrier. These K- and M-rated beam-and-cable barriers attach directly to the gates, as shown in Figure A-3, hardening them against breaches while maintaining a similar gate footprint.

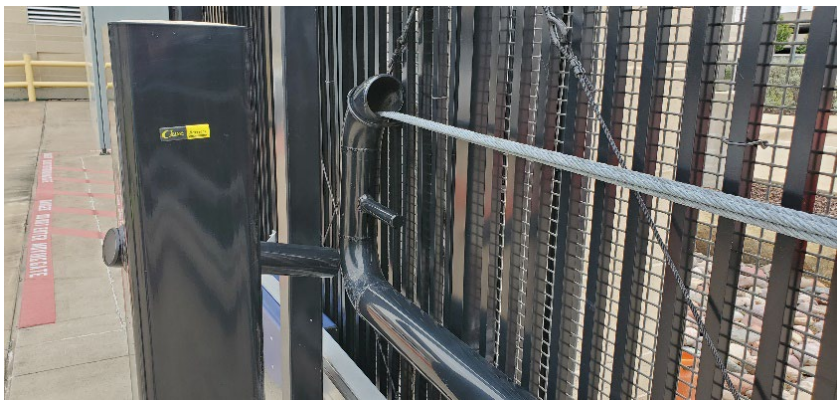
Figure A-3. Cable Loop Device (Red) and Stanchions with Horns (Yellow)



The system attaches to the existing gates by U-bolts (Figure A-4) and moves with the gate during normal operations. If a vehicle attempts to breach the gate, the cable loop is caught by "horns" on ground anchors (Figure A-5) and the vehicle is stopped.

Figure A-4. Attachment via U-Bolts

Figure A-5. Detail of Cable Loop Device and Stanchion with Horn



Because the cable loop could provide footholds for a person attempting to climb the gate, anti-climb mesh was also added to the outside of the gate (Figure A-6).

Figure A-6. Anti-Climb Mesh

WHAT BENEFITS ARE OFFERED BY THE CHOSEN SOLUTION?

The gates are hardened against brute-force intrusion by unauthorized vehicles.

In the event of a vehicle crash, the barrier arms provide full protection to the gates, eliminating the need to replace a gate if a car rams into it.

Anti-climb mesh adds an additional layer of security.

WHAT COSTS OR EFFORTS WERE REQUIRED TO IMPLEMENT THE CHOSEN SOLUTION?

Anchor posts had to be installed on both ends of each gate, and the cable loop hardware had to be attached to the gate.

Prior to installation, the airport needed to determine whether the existing mechanized gate operators could function with the additional weight of the cable loop hardware.

Because the cable loop added potential footholds, anti-climb mesh was also added to the exterior side of the gate.

WHAT OTHER SOLUTIONS WERE CONSIDERED?

Full replacement of the gates was determined to be cost prohibitive.

Addition of crash barriers would have required significant expansion of the gate footprint.