

Whittier Access Tunnel



During May, 2000, Tolltex commissioned a toll collection system at the Whittier Access Tunnel located near Anchorage, Alaska. The system consists of three (3) lanes of manual collection equipment, lane controller, plaza computer system, 100BaseT LAN, and modem communications for processing credit card transactions. The major components of the system are described below.



Toll Terminals - The terminals were custom fabricated to meet the toll classification requirements of the system. The housings are stainless steel and feature a hinged, lockable top. For feedback to the collector, the buttons illuminate when pressed by the use of back-lit LED's.

Each lane includes a **Receipt Printer** fabricated of stainless steel and linked to the lane controller via serial RS-422 communications.



Tolltex Whitter Lane System



Each booth includes a Tolltex [RoadMate](#) embedded controller that is used to consolidate digital input and output signals (shown here mounted on booth wall, lower right). The RoadMate reduces the number of cables needed to be installed between the toll booth and the plaza computer building where the lane controller is located. The RoadMate processes the signals and communicates to the lane controller via a serial link.



Each lane includes a Tolltex [Island Traffic Signal](#) with Red/Green lenses and a violation alarm. The alarm has a flashing beacon and a bell. The signals are controlled by the lane controller.

Loops were used for vehicle counts and to reset the signal back to Red after a vehicle is processed.

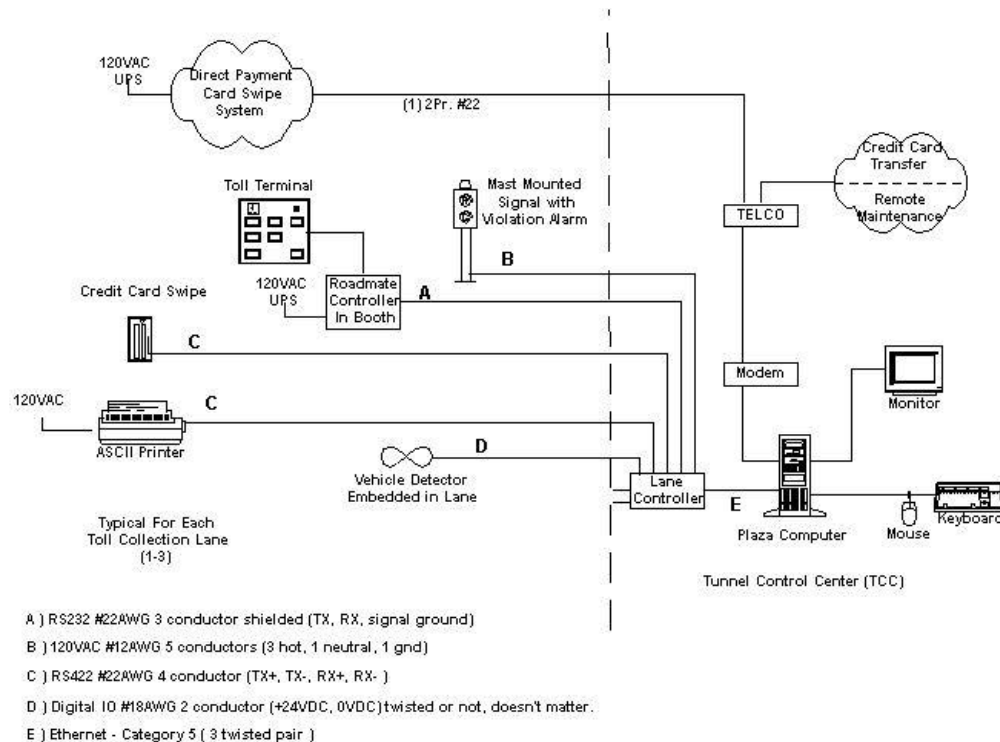


For budgetary reasons, a single lane controller was used to support the three lanes. The controller was located in the plaza building and it was connected to the plaza computer system via a 100BaseT LAN.

It featured a 266MHz processor, 256 MB RAM, 9.1 GB hard disk, 16 port serial multiplexer, and the necessary support for the digital input and output devices located in the lanes.

The diagram below illustrates the system by showing the connections from one of the three (3) lanes to the lane controller and on to the plaza computer system. The "dotted" vertical line separates the lane area from the plaza building. Each lane includes a toll terminal, receipt printer, island traffic signal with violation alarm, magnetic card reader, and a loop detector. The card reader is used by the collectors to open the lane and to process non-revenue cards for authorized users.

The lane controller is located inside the plaza building along with the plaza computer system, laser printer, monitor, and modem. A 100BaseT (100MB) Ethernet links the lane controller to the plaza computer. As a transaction is generated, it is sent to the plaza computer where it is stored in the database. Each vehicle generates a detail transaction. Summary records are also generated and stored on the plaza computer.





The Plaza Computer System (PCS) software is developed in "C" and features a graphic user interface that is driven by the use of a mouse. The system is designed to accept credit cards for the payment of the toll. Several times a day, the plaza will batch the credit card transactions and send them to a processing center. The number and time when the transfers are made can be set in the configuration settings of the system. Reports are generated from the plaza system by using a laser printer. The plaza computer also includes a 120MB removable backup device for archiving data.

The screen shown below sets the modem configuration including the number and time(s) when credit card data will be transferred.

Credit Data Transfer Modem Setup

11:15 Thursday March 01, 2001 Screen ID: AL003

Device Settings

Modem Device: Dialing Response Time: Dial Retry:

Command Settings

Initialization: Auto Answer Ring Count: (set to 0 to disable)
Dial: Go On Hook (Hangup):
Escape: Return to Data Mode:

Batch Transfer Settings

| | |
|--|---|
| Merchant Number: <input type="text" value="700000000181"/> | Transfer Time 1: <input type="text" value="0"/> : <input type="text" value="0"/> <input type="checkbox"/> Disabled |
| Client Number: <input type="text" value="2"/> | Transfer Time 2: <input type="text" value="8"/> : <input type="text" value="0"/> <input type="checkbox"/> Disabled |
| Terminal Number: <input type="text" value="1"/> | Transfer Time 3: <input type="text" value="16"/> : <input type="text" value="0"/> <input type="checkbox"/> Disabled |

Displaying current Modem setup information. To update, please enter new data and hit save.