



# Auto Sentry® flex

Installation Guide- Version 2.6



Defining the World of Car Wash Technology

Innovative Control Systems provides a toll-free number for customers and installers who have questions pertaining to the installation:

1-800-246-3469

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Innovative Control Systems, Inc.

81 Highland Avenue

Bethlehem, PA 18017

(610) 881-8000

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# CHAPTER 1: Introduction

This document was written to assist technicians and electricians during the installation of the Auto Sentry® *flex*. This guide should be supplied to the electrician prior to the installation of conduit and wiring to ensure the Auto Sentry® *flex* system is installed properly.

A thorough understanding of electrical wiring, installation, codes, and safety protocols is required. Additionally, some familiarity with car wash tunnel equipment and installation is recommended. No prior experience with the Auto Sentry® *flex* is required.

Faulty installations are the major cause of system malfunctions. The Auto Sentry® *flex* system must be installed exactly as described in this manual to ensure its reliability and proper operation.

**WARNING: Failure to properly install the Auto Sentry® *flex* system will void the warranty and could result in serious injury or death.**

Innovative Control Systems provides a toll-free number for customers and installers who have questions pertaining to the installation:

1-800-642-9396

By reading the information and performing the procedures in this manual you should be able to:

- Install the Auto Sentry® *flex* unit
- Install the Auto Sentry® *flex* system level wiring and communications wiring

## Rules for Installation

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- Before you begin, please read this entire manual.
- Wiring can be contained in rigid PVC conduit or metal conduit.
- All wiring connections must be installed by a licensed electrician who must meet all local and national codes.
- High-voltage (AC) and low-voltage (DC) must not be combined in a common conduit, junction box, or wire trough.
- Power for the Auto Sentry® *flex* and any peripherals must come from the dedicated UPS, supplied by ICS.
- The Auto Sentry® *flex* and peripheral equipment must be properly grounded. See “Wire Gauge and Conduit Size” on page 30 for more information.
- Check through all boxes and cartons before disposing of them. Look for any manuals, cables, connectors, and other items.

## Related Documents

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The following document is available for further reference:

- *Auto Sentry® flex User Manual*

## Warning Markings

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The symbol below, found on equipment or hardware, indicates you should consult accompanying documentation before proceeding.



**WARNING:** Consult accompanying documentation before proceeding.

## Cleaning

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Wipe exterior of unit with damp cloth to clean. Do not use chemicals or cleaning agents.

## Inspection Information

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Preventative maintenance involves an inspection of the Auto Sentry® flex unit daily, looking for loose connections or any damage.

# CHAPTER 2: Site Layout

Careful planning for the layout of the site will help eliminate possible problems with the start-up of your system and will ensure continued, reliable system operation.

- All wiring connections must be installed by a licensed electrician that must comply with all local recommended standards.

## Location

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The Auto Sentry® *flex* unit has been designed to operate in an outdoor environment.

- The unit itself contains three hinged-panel doors. The unit must be located with enough clearance for the doors to open easily, without interfering with access.
- The unit must be located so that conduit connections can be easily made and the internal components can be accessed.

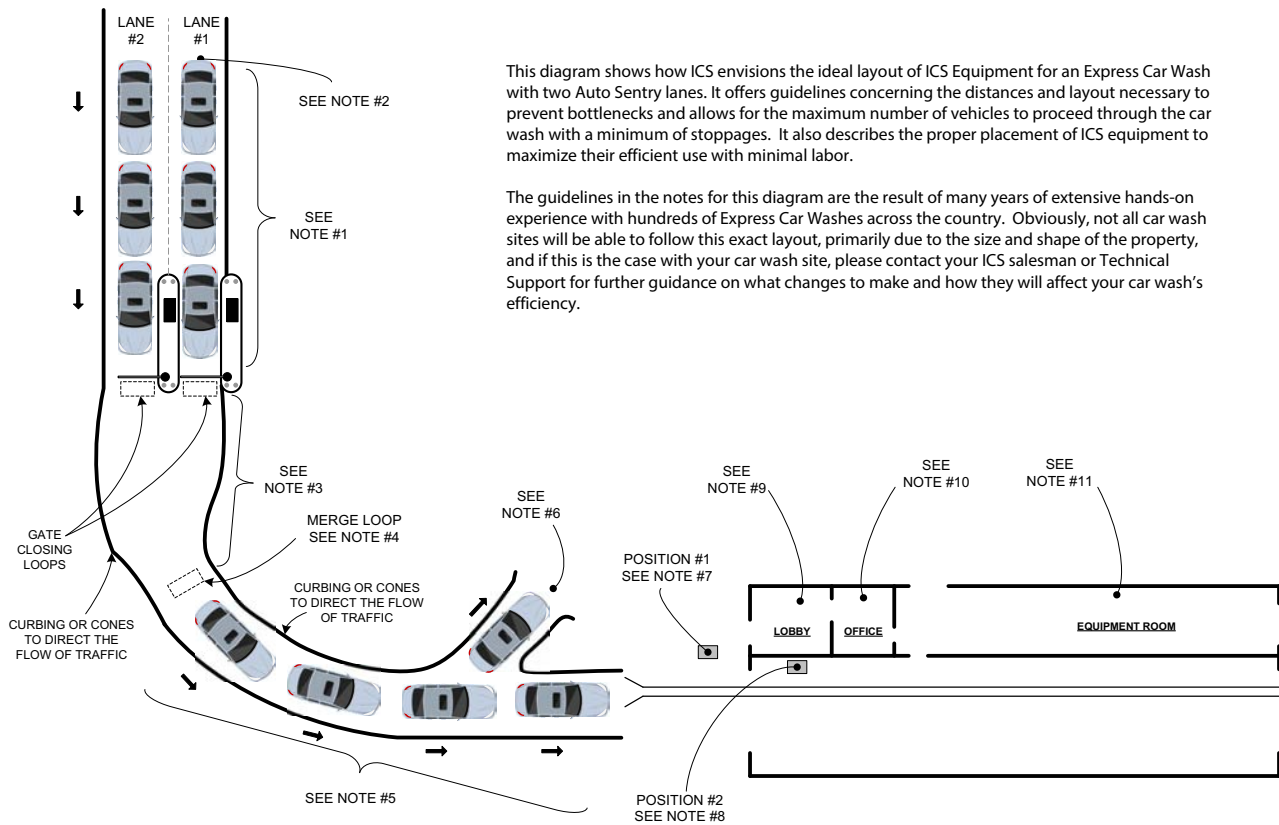
## Car Wash Drawings

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Your car wash layout may be different from the following drawings. Most of these drawings are examples for a Two Lane Layout Express Car Wash. See your site specific System Installation Drawings for your car wash layout.

# Dual Lane Car Wash Layout

## CAR WASH LAYOUT



This diagram shows how ICS envisions the ideal layout of ICS Equipment for an Express Car Wash with two Auto Sentry lanes. It offers guidelines concerning the distances and layout necessary to prevent bottlenecks and allows for the maximum number of vehicles to proceed through the car wash with a minimum of stoppages. It also describes the proper placement of ICS equipment to maximize their efficient use with minimal labor.

The guidelines in the notes for this diagram are the result of many years of extensive hands-on experience with hundreds of Express Car Washes across the country. Obviously, not all car wash sites will be able to follow this exact layout, primarily due to the size and shape of the property, and if this is the case with your car wash site, please contact your ICS salesman or Technical Support for further guidance on what changes to make and how they will affect your car wash's efficiency.

**Figure 1. Two Lane Car Wash Layout (typical for Express Car Wash)**

**NOTE #1:** The distance available before the Auto Sentry island should allow, minimally, for the lane to accommodate three to four vehicles, including the vehicle at the Auto Sentry.

**NOTE #2:** This is lane #1. It is the lane that is farthest to the left when approaching the Auto Sentry to purchase a wash. The subsequent lane is lane #2. This is important when referencing which lane, and therefore traffic gate, the merge loop will be wired to.

**NOTE #3:** The distance from the gate closing loops to the merge loop is determined by how quickly and safely the two Auto Sentry lanes can safely funnel down to a single lane prior to a vehicle reaching the correlator.

**NOTE #4:** The merge loop is placed where only one vehicle may pass at a time and centered in the lane. If the vehicles at lanes 1 & 2 simultaneously purchase car washes, only one can go forward at a time. If the gate for lane #1 opens, the gate in lane #2 will remain closed until the vehicle from lane #1 has passed completely over and beyond the merge loop, thus keeping the vehicles in the proper order within the stack. If the merge loop has been properly located, then there should be no possibility of the vehicle from lane #2 passing the vehicle from lane #1, thereby keeping vehicles in their proper order.

**NOTE #5:** The distance from the merge loop to the correlator, minimally, should accommodate three to four cars, but having the space for six or more vehicles has proven to be best. These cars would be On Stack.

**NOTE #6:** A pull-out lane is not a requirement, but car washes have installed them in the event that a customer changes their mind about getting a car wash after they have purchased one. It is also useful in allowing customers that have loose items in their truck bed to pull off to the side and remove the items without disrupting the flow of vehicles entering the tunnel. If a pull-out lane is utilized, it should be placed after the merge loop and as close to the attendant's position as possible. This will allow the first car to pass over the merge loop, thus releasing the gate for a vehicle in the other lane that has finished purchasing a car wash and is waiting for their gate to open.

**NOTE #7:** The stainless steel cabinet that houses the Touch Input Terminal or the Washpad should be placed where it would be most convenient for the car wash attendant to use. At car washes where the correlator and conveyor fully extend beyond the actual entrance of the tunnel, to the point that a vehicle is completely on the conveyor and has not yet entered the tunnel, the stainless steel cabinet could also be outside the entrance of the tunnel as shown in this drawing (Position #1). Ideally it is placed right behind where the attendant will normally be standing when assisting customers, so that the attendant need only turn to manipulate either the Touch Input Terminal or the Washpad. In this configuration, the gate / Auto Sentry control box can also be installed inside the stainless steel cabinet.

**NOTE #8:** If the correlator does not extend beyond the tunnel entrance by any appreciative distance and the vehicle inside the building when loaded onto the conveyor, then the stainless steel cabinet should be mounted inside the tunnel, again, just behind where the attendant would be standing when assisting customer (Position #2). At times, a stainless steel cabinet may not be used and the Touch Input Terminal and Washpad will just be mounted to the wall of the tunnel. In either of these two configurations, do not install the gate / Auto Sentry control box inside the tunnel as the box and switches recommended by ICS are not waterproof.

## **Figure 2. Notes for a typical Two Lane Car Wash Layout (Express Car Wash)**

**NOTE #9:** A room, functioning as a lobby, is always located at the entrance of the tunnel on the driver's side. The Touch POS Computer and its accompanying equipment are to be placed in this room. This is to facilitate the attendant adjusting and editing the Stack as needed. In this scenario, the server computer also acts as the Point Of Sale (POS) computer. This is the best configuration for your wash in order to utilize the ICS equipment to its fullest capabilities.

ICS Equipment to be installed in the Lobby:

- Touch POS (if there is only one computer on site, then it would act as both the Touch POS and the Site Server.)
- Cash Drawer
- Gate/Auto Sentry Control Box – the person using this should be able to see the Gates and Auto Sentries from wherever this is mounted.

**NOTE #10:** An additional room, functioning as an office, can be located anywhere within the car wash. The site server computer and accompanying equipment can be placed in this room. The function of the site server in the office is two-fold:

1. The computer in this room is the site server.
2. Allows the manager, owner, and accountant to view and extract financial reports and information needed without interfering with the normal operations of the wash.

ICS equipment to be installed in the office:

- Site server computer with monitor
- Printer
- ICS Power Distribution Box
- SIO Control Box
- Network Router
- Network Switch

Other Items, supplied by Site, to be installed in the office:

- DSL or Cable modem connection point
- High Speed DSL or Cable modem
- RJ-11 Telephone Jack
- Low voltage conduit junction box

Other items, supplied by the site, to be installed in the office:

- 100/1000 Base-T Wall Plate
- ICS dedicated 120 VAC electrical outlet from the power distribution box

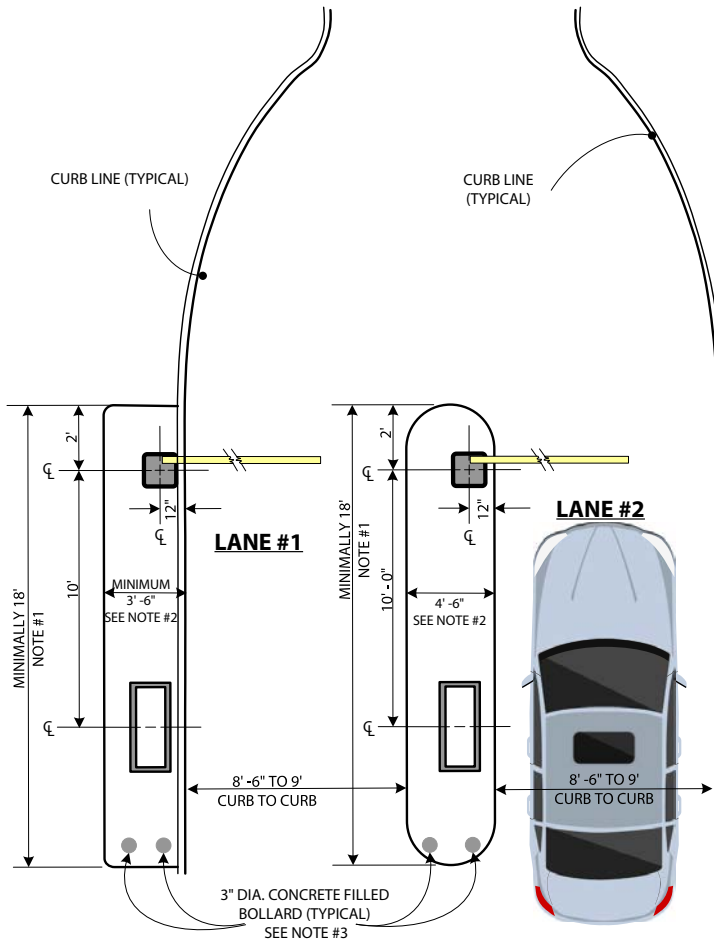
**NOTE #11:** The equipment room may be on either the driver's side or the passenger's side of the tunnel, but it is generally preferable to have the equipment room on the same side of the tunnel as the site server computer thus preventing having to run conduit and wire across the tunnel. This configuration also prevents the attendant from having to cross the conveyor in the event of needing to go to the equipment room.

ICS equipment to be installed in the equipment room:

- Tunnel Master WBC Controller, if included in system.

**Figure 3. Notes for a typical Two Lane Car Wash Layout (Express Car Wash)**

# Auto Sentry® flex Dual Lane Layout Detail



**NOTE #1:** The length of the island should be determined by the car wash owner, but ICS recommends that the island be a minimum of 18' - 0" in length. This will provide for adequate space for the proper placement of the Auto Sentry and its gate. If menu signs and other items are to be installed on the island, then it is the car wash owner's responsibility to increase the length of the island to accommodate these additional items.

**NOTE #2:** The width of the inside island should be a minimum of 3' - 6" but ICS highly recommends 4' - 6". Outside lane should be a minimum of 4' - 6" for easier servicing of the Auto Sentry by the attendant. This measurement, along with the proper placement of the Auto Sentry, will prevent the rear of the Auto Sentry from hanging over into another drive-thru lane and provides ample room for vehicles to pass through the lanes without striking the rear of an Auto Sentry.

**NOTE #3:** While it is at the car wash owner's discretion, ICS highly recommends the installation of bollards at the entrance end of the islands to minimize the chances of vehicles striking and damaging an Auto Sentry or traffic gate. Bollards should be located so that they provide protection to ICS equipment but also offer ample clearance so that the equipment can be easily installed, serviced, and maintained.

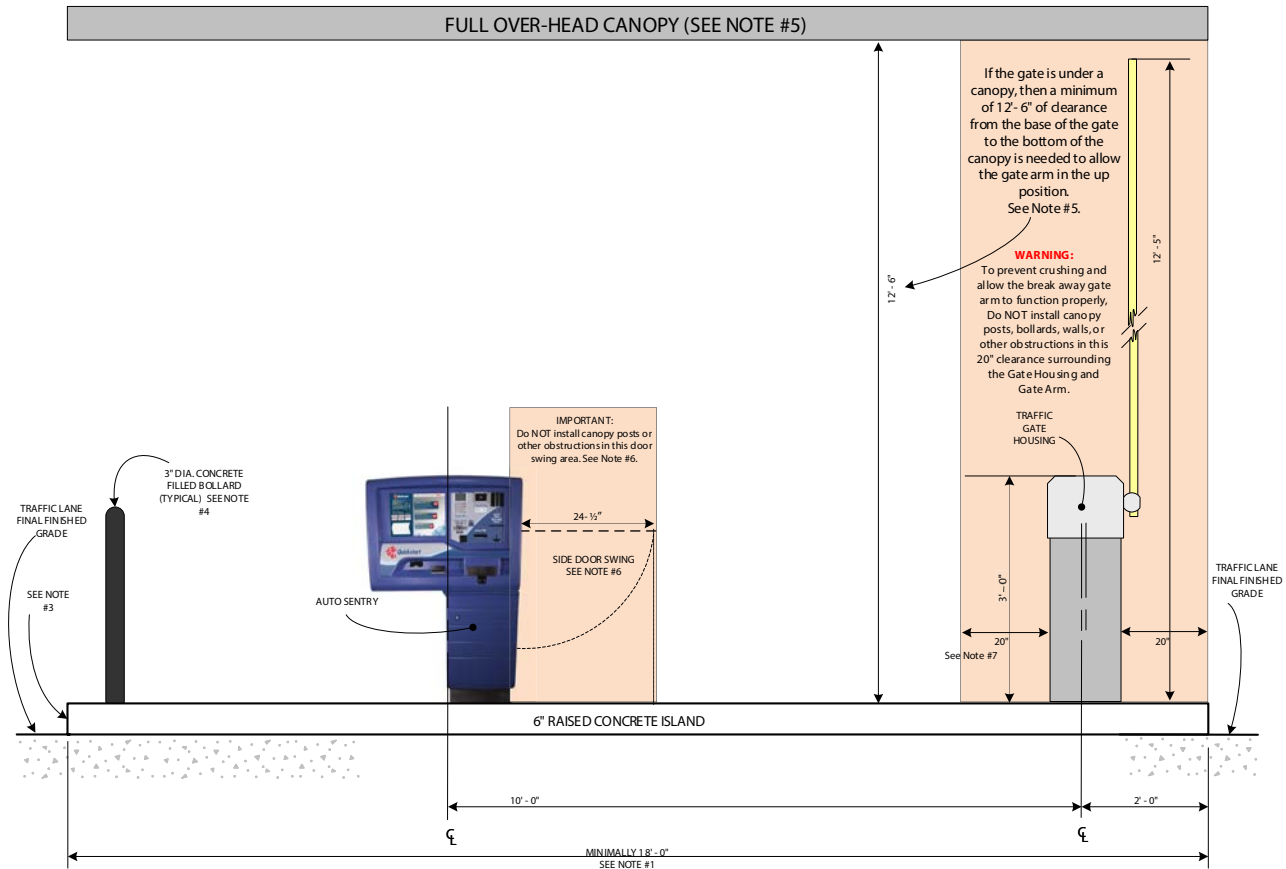
**WARNING:** Do not install the bollards or any equipment or walls within 20" clearance of the gate housing and gate arm. This is to prevent crushing and allow the gate arm to break away properly.

**IMPORTANT:** Installation and mounting of the Auto Sentry and traffic gates are the responsibility of the car wash site and must be completed before the arrival of an ICS technician.

**Gate is optional for In-Bays**

**Figure 4. Auto Sentry® flex Layout Detail (Express Car Wash Dual Lane)**

# Auto Sentry® flex Island Detail (In Lane View)



**Figure 5. Auto Sentry® flex Island Detail Requirements (In Lane View)**

## Island Detail Notes

**NOTE #1:** The length of the island should be determined by the car wash owner, but ICS recommends that the island be a minimum of 18' - 0" in length. This will provide for adequate space for the proper placement of the Auto Sentry and its gate. If menu signs and other items are to be installed on the island, then it is the car wash owner's responsibility to increase the length of the island to accommodate these additional items.

**NOTE #2:** ICS highly recommends that the width of the islands be a minimum of 4' - 6" for the safety of the attendants when servicing. This measurement, along with the proper placement of the Auto Sentry, will prevent the rear of the Auto Sentry from hanging over into another drive-through lane and provides ample room for vehicles to pass through the lanes without striking the rear of an Auto Sentry.



**NOTE #3:** The height of the island, above the final finished grade upon which a vehicle will rest, must be 6". This will ensure that the Auto Sentry is at the optimum height for customers using the Auto Sentry while seated in their vehicles.

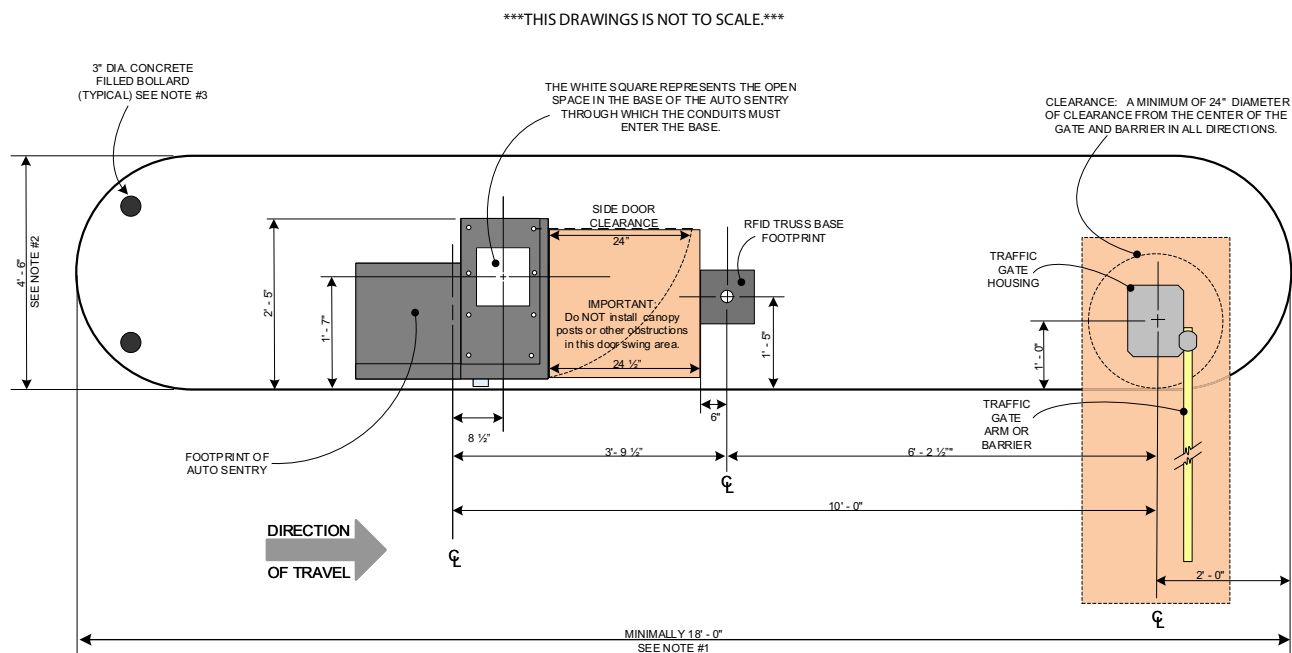
**NOTE #4:** At the car wash owner's discretion, the installation of bollards at the entrance end of the island is highly recommended and will minimize the chances of vehicles striking and damaging an Auto Sentry or Traffic gate. Bollards should be located so that they provide protection to ICS equipment but also offer ample clearance so that the equipment can be easily installed and maintained.

**NOTE #5:** Any canopy that is above both the Auto Sentry and the optional Traffic Gate must be a minimum of 12' - 6" from the base of the gate to the bottom of the canopy to allow the gate to open fully without striking the canopy.

**NOTE #6:** The bill dispenser is in the base of the terminal and swings open 2' - 1/2" towards the exit end of the island. This must be taken into consideration when setting canopy posts. When dual post canopies are used, there must be a 2' - 6" clearance on the right side of the terminal. If the inside width is not at least 60" then the post must be mounted to the rear of the payment terminal which will require a minimum of 1' - 6" from the Auto Sentry. Contact an ICS Representative if there is any concern regarding canopy placement.

**NOTE #7: WARNING:** (If optional Gates are installed) Do not install bollards or any equipment within 20" clearance of the gate housing and gate arm. This is to prevent crushing and allow the gate arm to break away properly.

## Auto Sentry® flex Island Detail (Top View)



**Figure 6. Auto Sentry® flex Island Detail (Top View)**

# Traffic Gate Foundation Detail

SCALE: 1" = 1' - 0"

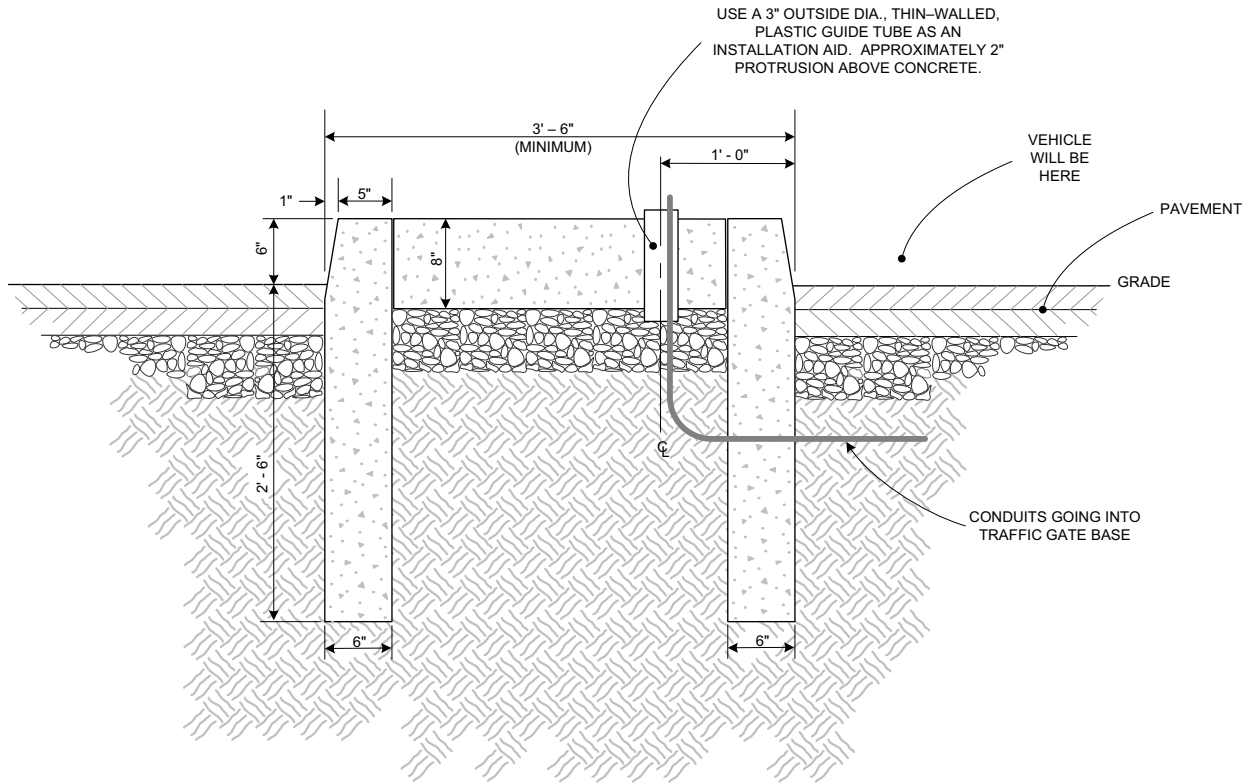


Figure 7. Traffic Gate Foundation Detail

# Bollard and Curb Detail

## CURB and BOLLARD DETAIL

SCALE: 1" = 1' - 0"

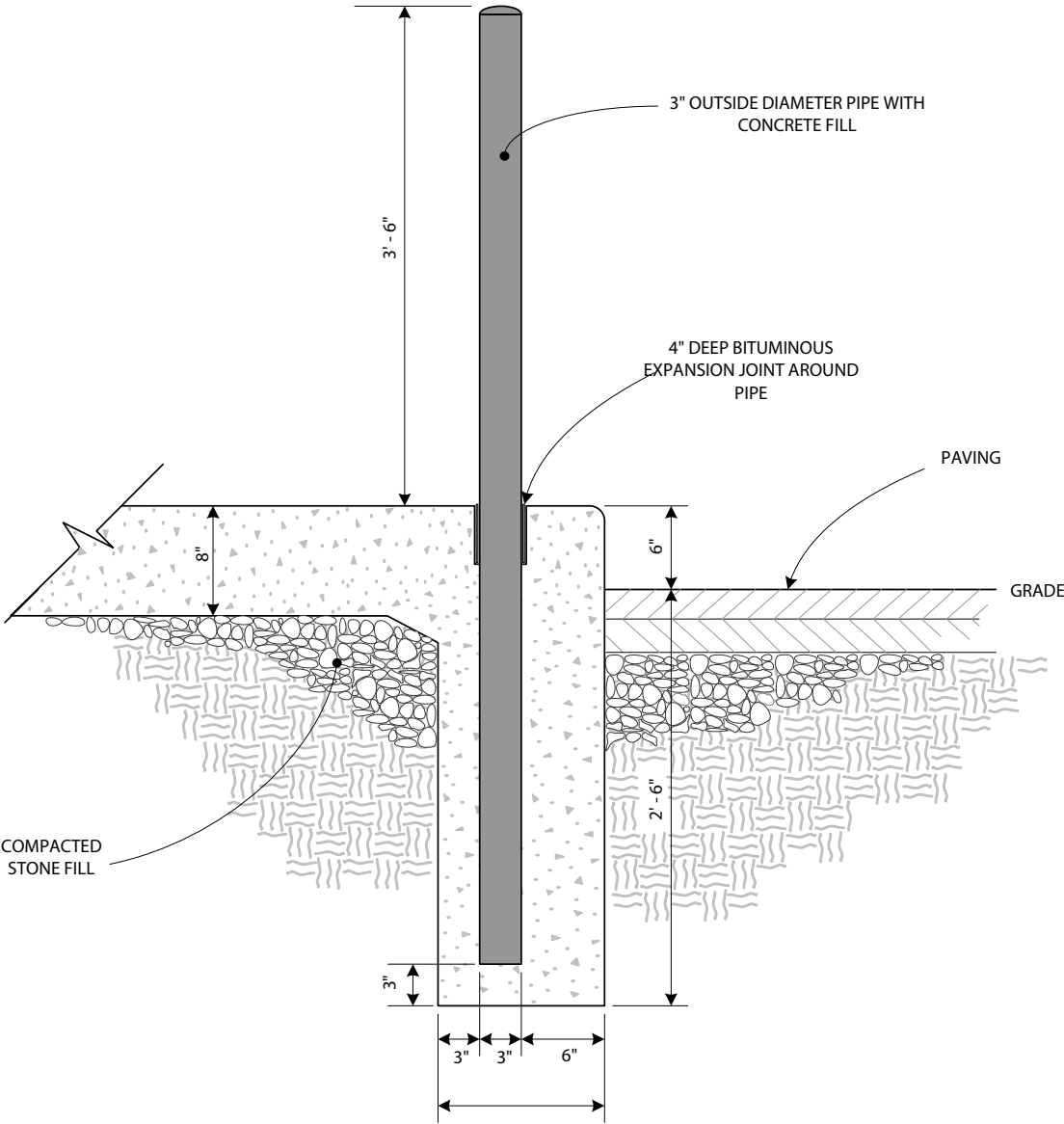


Figure 8. Bollard and Curb Detail

# Dual Lane Vehicle Sense and Loop Layout

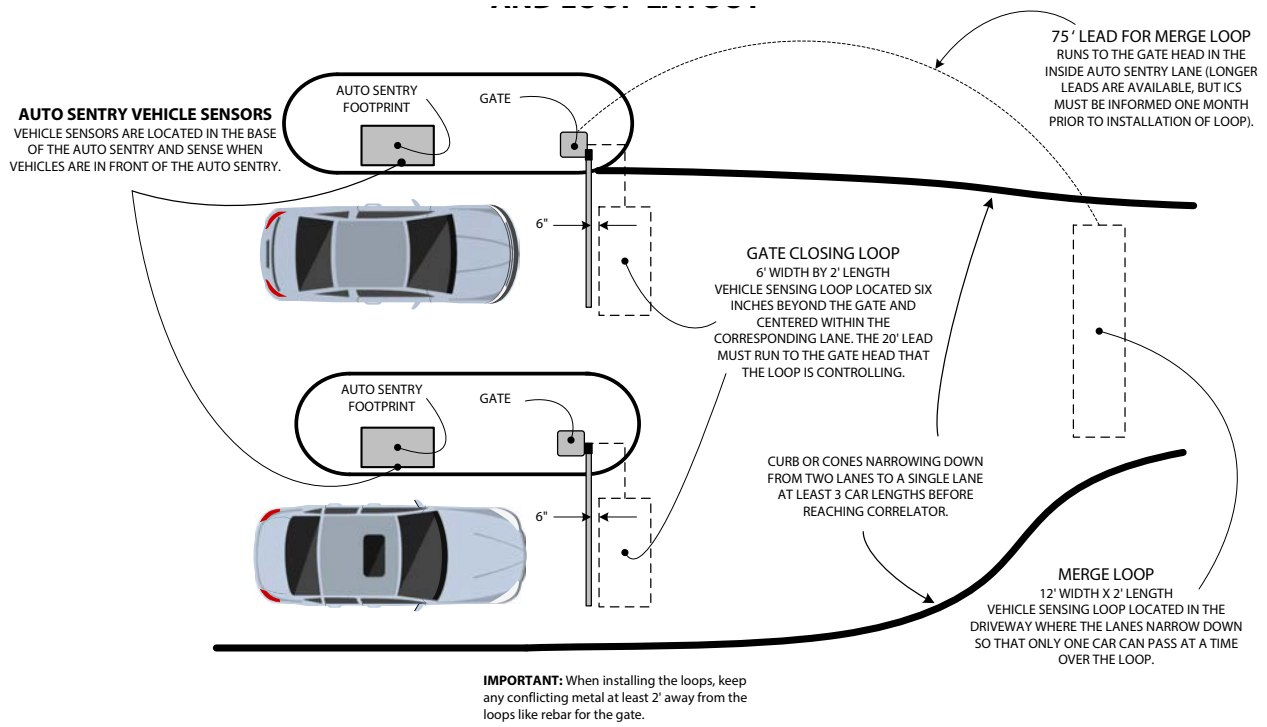
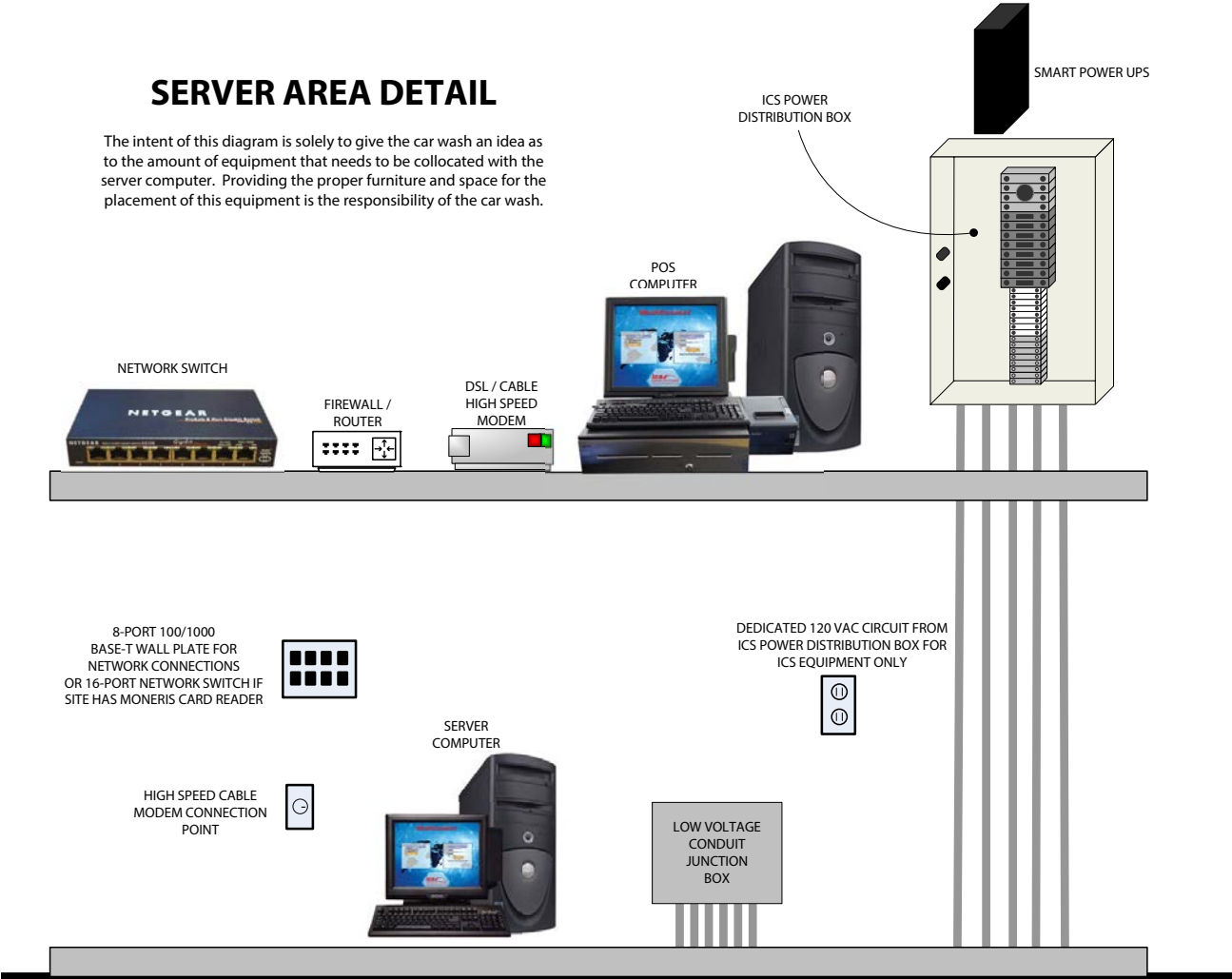


Figure 9. Dual Lane Sense Vehicle and Loop Detail

# Server Area Detail



**Figure 10. Server Area Detail**

# Conduit Detail

The Conduit Detail in this example is for a dual lane Express Car Wash with the Tunnel Master WBC installed. See your System Installation drawings for your specific car wash.

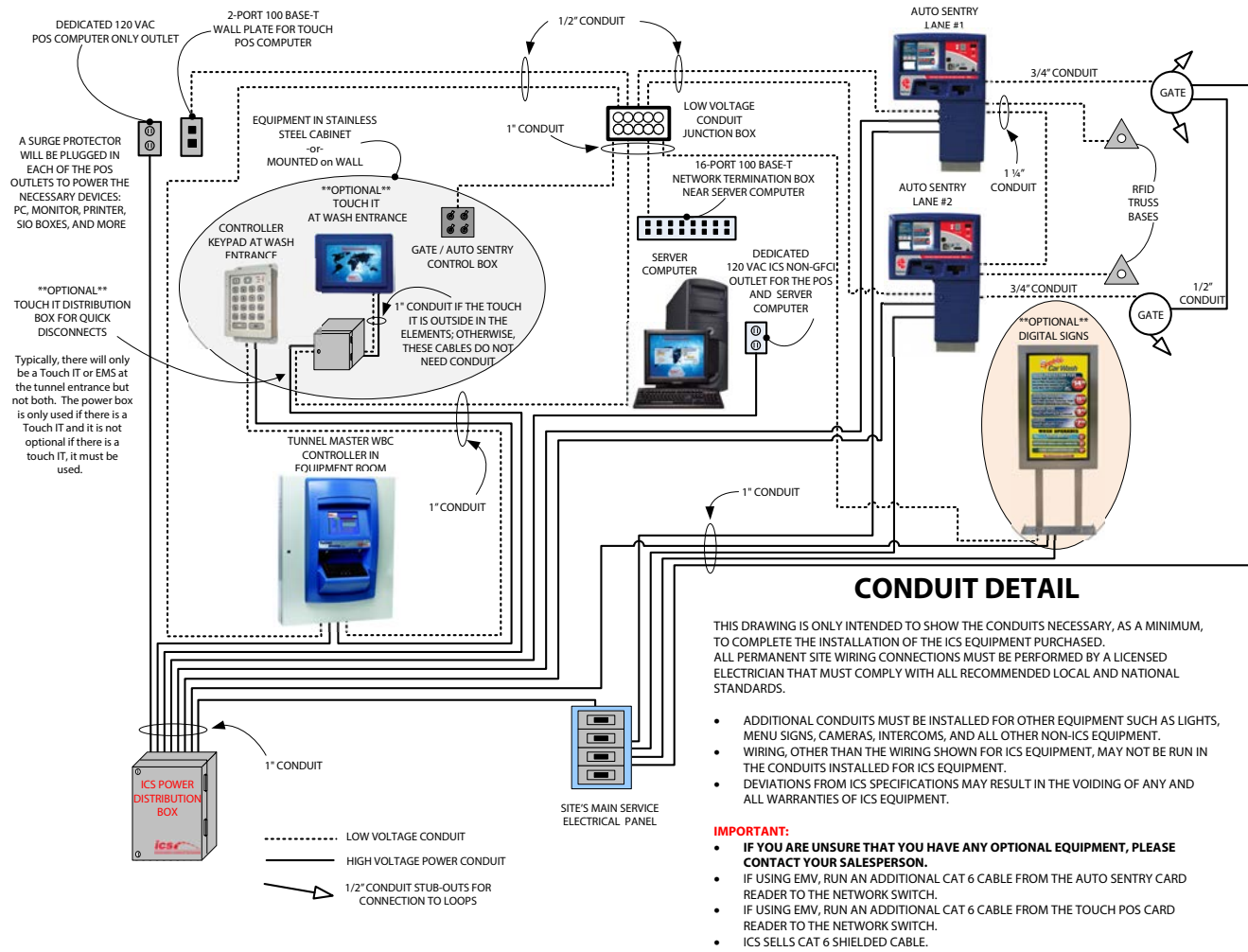


Figure 11. Conduit Detail Dual Lane

# Conduit Detail Dual Lane Express Car Wash

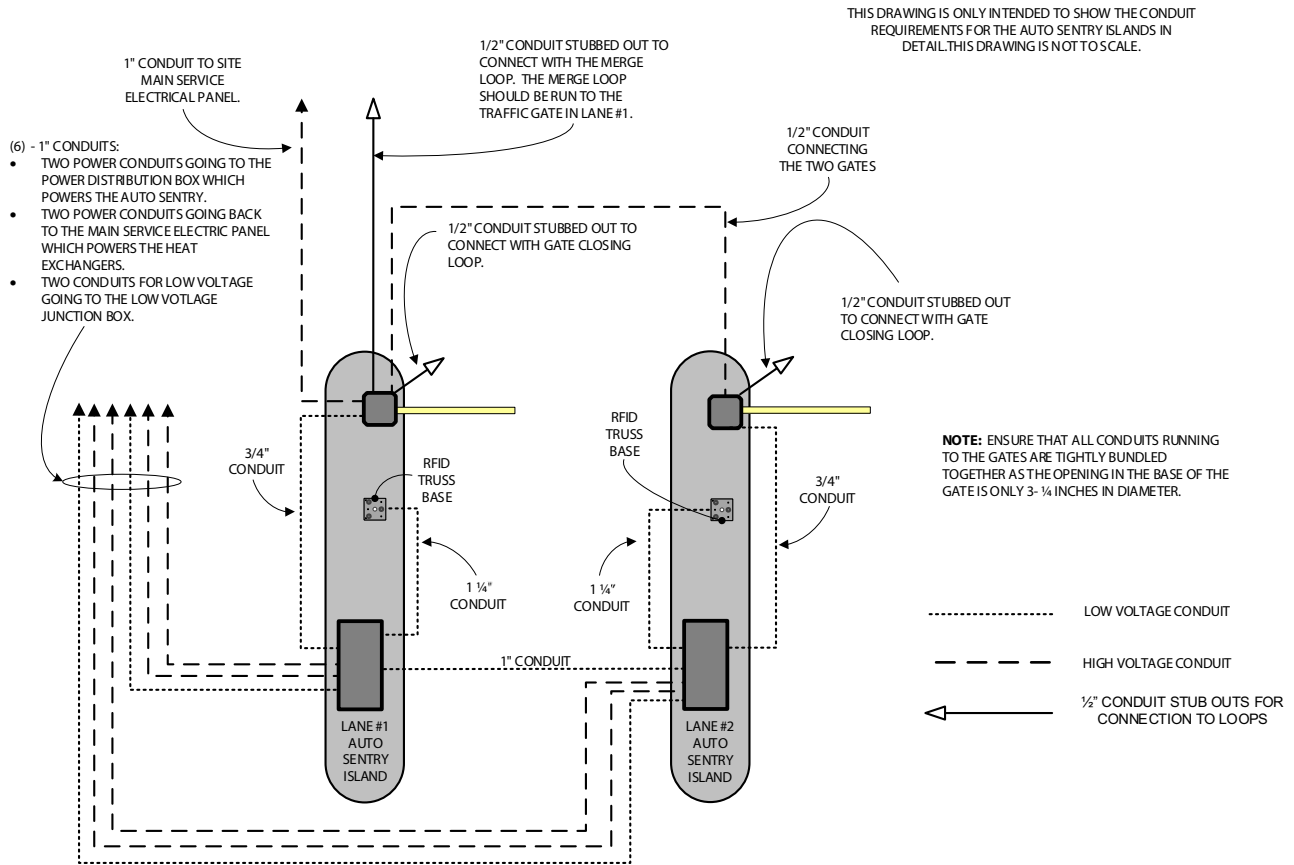


Figure 12. Conduit Layout Dual Lane (Express Car Wash)

# Power Layout Dual Lane

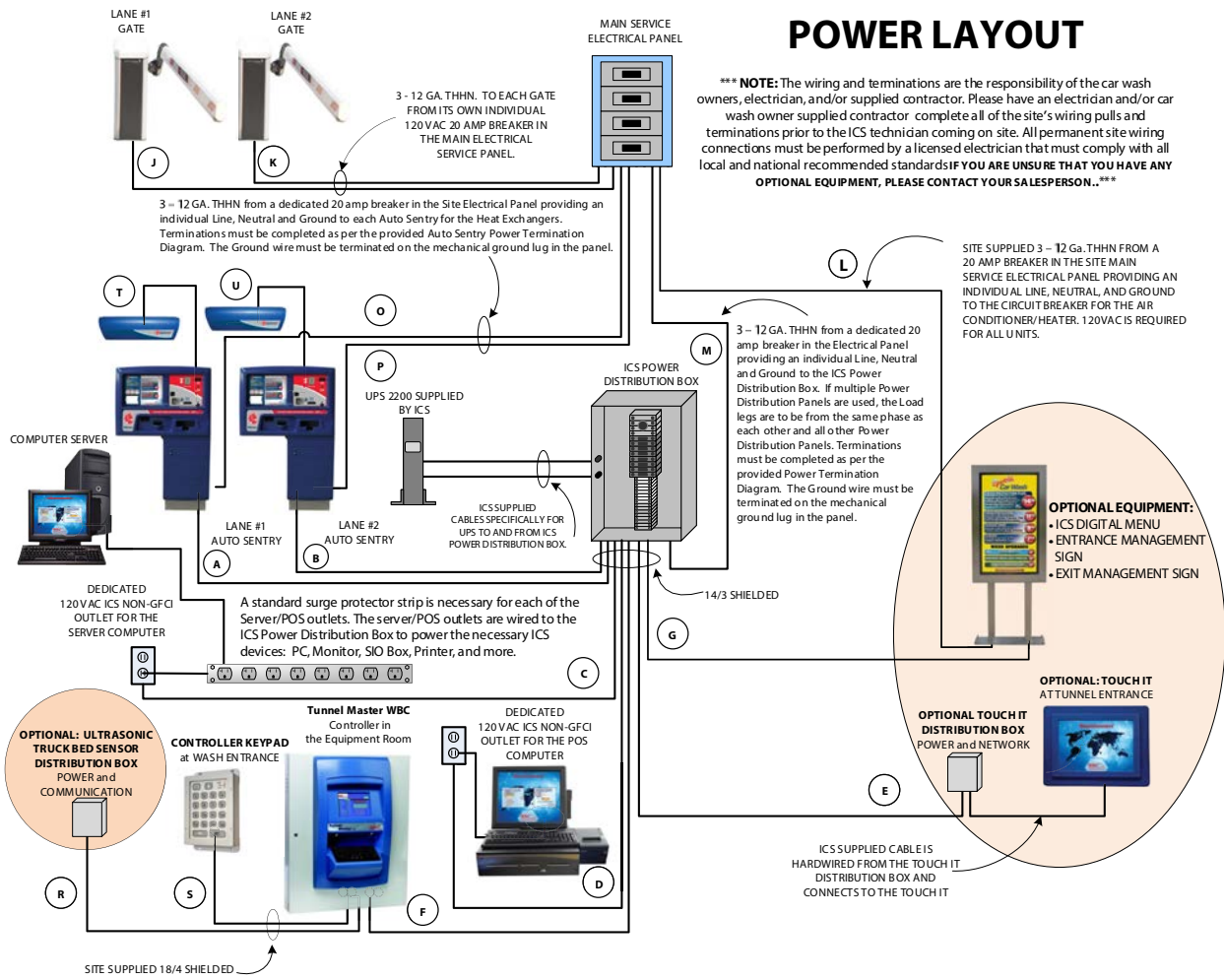


Figure 13. Dual Lane Power Layout (Express Car Wash)



# Dual Lane Power Wire Schedule

## POWER WIRING SCHEDULE

\*\*\* NOTE: The wiring and terminations are the responsibility of the car wash owners, electrician, and/or supplied contractor. Please have an electrician and/or car wash owner supplied contractor complete all of the site's wiring pulls and terminations prior to the ICS technician coming on site. All permanent site wiring connections must be performed by a licensed electrician that must comply with all local and national recommended standards.\*\*\*

WIRE TYPE	PROVIDED BY	TERMINATION LOCATIONS	TERMINATED BY
14/3 SHIELDED	ICS	FROM ICS POWER DISTRIBUTION BOX TO LANE #1 AUTO SENTRY FLEX (120 VAC)	ELECTRICIAN
14/3 SHIELDED	ICS	FROM ICS POWER DISTRIBUTION BOX TO LANE #2 AUTO SENTRY FLEX (120 VAC)	ELECTRICIAN
14/3 SHIELDED	ICS	FROM ICS POWER DISTRIBUTION BOX TO SERVER COMPUTER NON-GFCI OUTLET (120 VAC)	ELECTRICIAN
14/3 SHIELDED	ICS	FROM ICS POWER DISTRIBUTION BOX TO POS COMPUTER NON-GFCI OUTLET (120 VAC)	ELECTRICIAN
14/3 SHIELDED	ICS	FROM ICS POWER DISTRIBUTION BOX TO TOUCH IT DISTRIBUTION BOX (120 VAC)**OPTIONAL**	ELECTRICIAN
ICS SUPPLIED	ICS	FROM TOUCH IT POWER DISTRIBUTION BOX TO TOUCH IT (120 VAC)**OPTIONAL**	ELECTRICIAN
14/3 SHIELDED	ICS	FROM ICS POWER DISTRIBUTION BOX TO WBC CONTROLLER RELAY BOX (120 VAC)	ELECTRICIAN
14/3 SHIELDED	ICS	FROM ICS POWER DISTRIBUTION BOX TO ICS DIGITAL MENU (120VAC), ENTRANCE SIGN (120VAC), EXIT SIGN (120 VAC)**OPTIONAL**	ELECTRICIAN
3 – 12 GA. THHN	ELECTRICIAN	FROM MAIN SVC ELECTRICAL PANEL TO LANE #1 GATE TRANSFORMER (120 VAC)	ELECTRICIAN
3 – 12 GA. THHN	ELECTRICIAN	FROM MAIN SVC ELECTRICAL PANEL TO LANE #2 GATE TRANSFORMER (120 VAC)	ELECTRICIAN
3 – 12 GA. THHN	ELECTRICIAN	FROM MAIN SVC ELECTRICAL PANEL TO **ICS DIGITAL MENU/**EXIT SIGN*(120 VAC) OR **ENTRANCE MANAGEMENT DISPLAY (120 VAC) **OPTIONAL	ELECTRICIAN
3 – 12 GA. THHN	ELECTRICIAN	FROM MAIN SVC ELECTRICAL PANEL TO ICS POWER DISTRIBUTION BOX (120 VAC)	ELECTRICIAN
3 – 12 GA. THHN	ELECTRICIAN	FROM SITE ELECTRICAL PANEL BREAKER TO LANE #1 AUTO SENTRY FLEX (120 VAC)	ELECTRICIAN
3 – 12 GA. THHN	ELECTRICIAN	FROM SITE ELECTRICAL PANEL BREAKER TO LANE #2 AUTO SENTRY FLEX (120 VAC)	ELECTRICIAN
18/4 SHIELDED	ELECTRICIAN	FROM WBC CONTROLLER RELAY BOX TO TRUCK BED SENSOR BOX (24 VDC)	ELECTRICIAN
18/4 SHIELDED	ELECTRICIAN	FROM WBC CONTROLLER RELAY BOX TO CONTROLLER KEYPAD (12 VAC)	ELECTRICIAN
ICS Special Cable	ELECTRICIAN	FROM AUTO SENTRY FLEX TO RFID ALL IN ONE READER ANTENNA ENCLOSURE LANE #1	ELECTRICIAN
ICS Special Cable	ELECTRICIAN	FROM AUTO SENTRY FLEX TO RFID ALL IN ONE READER ANTENNA ENCLOSURE LANE #2	ELECTRICIAN

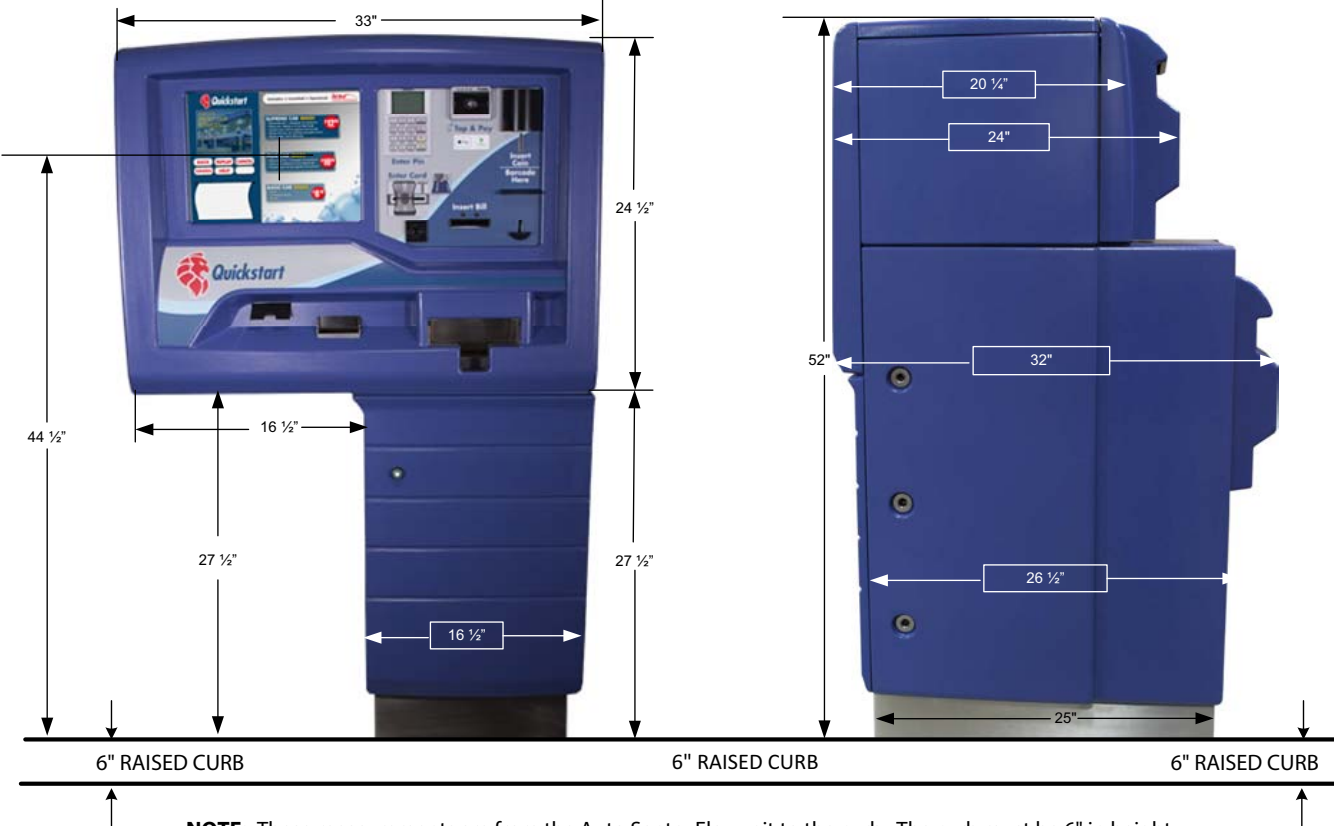
**NOTE:** ALL WIRING FOR ICS EQUIPMENT IS TO BE RUN BY AN ELECTRICIAN AND MUST BE A SINGLE CABLE FROM POINT TO POINT. SPLICING OF WIRES IS NOT ALLOWED.

**Figure 14. Dual Lane Power Wire Schedule**

# Auto Sentry® flex Measurements

## AUTO SENTRY FLEX

THE AUTO SENTRY FLEX IS THE PRIMARY POINT-OF-SALE FOR THE EXPRESS CAR WASH. IT IS PLACED OUTSIDE AT THE ENTRANCE END OF THE CAR WASH WITH A CANOPY PLACED OVER IT.



**NOTE:** These measurements are from the Auto Sentry Flex unit to the curb. The curb must be 6" in height from the final grade line. If you cannot install the Auto Sentry on a 6" curb, then a 6" riser is necessary.

Figure 15. Auto Sentry® flex Measurements

# Auto Sentry® flex Base Placement (Top View)

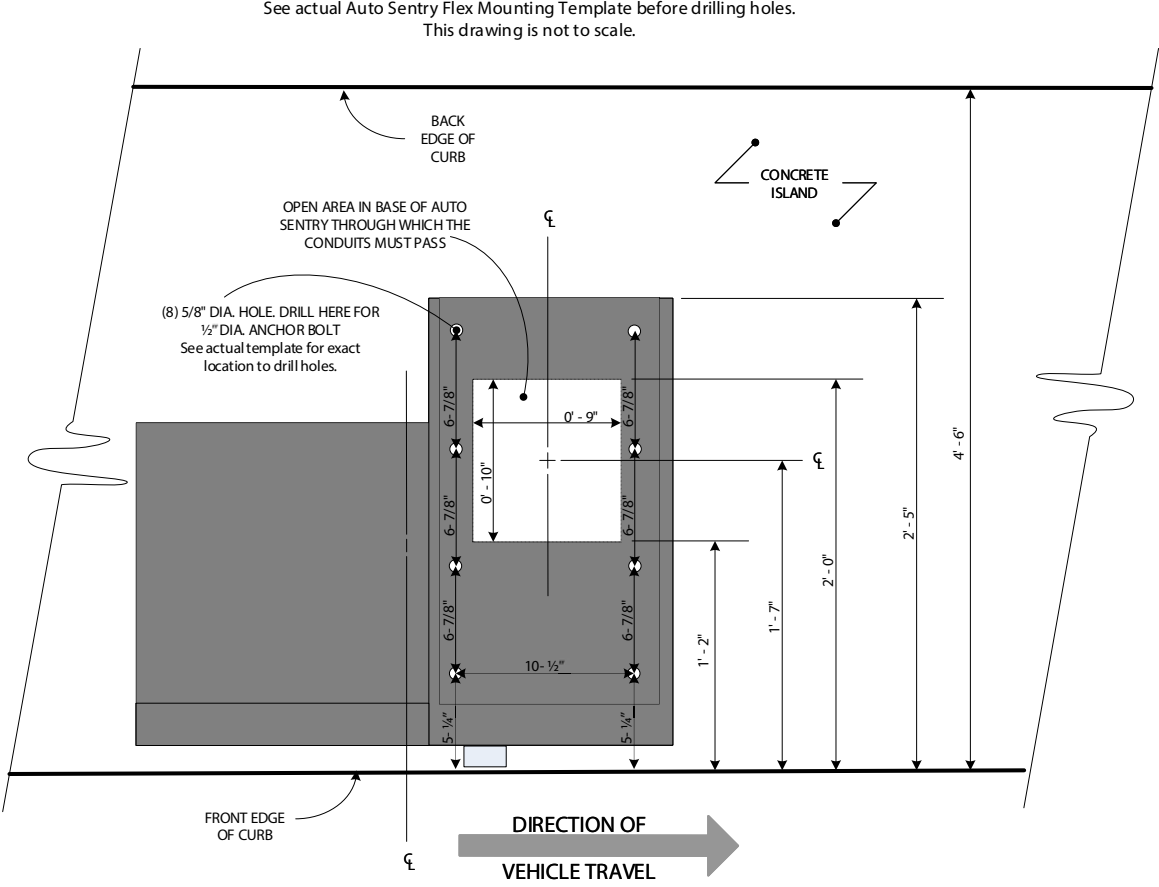


Figure 16. Auto Sentry® flex Base Placement (Top View)

## Door Swing Clearance (Top View)

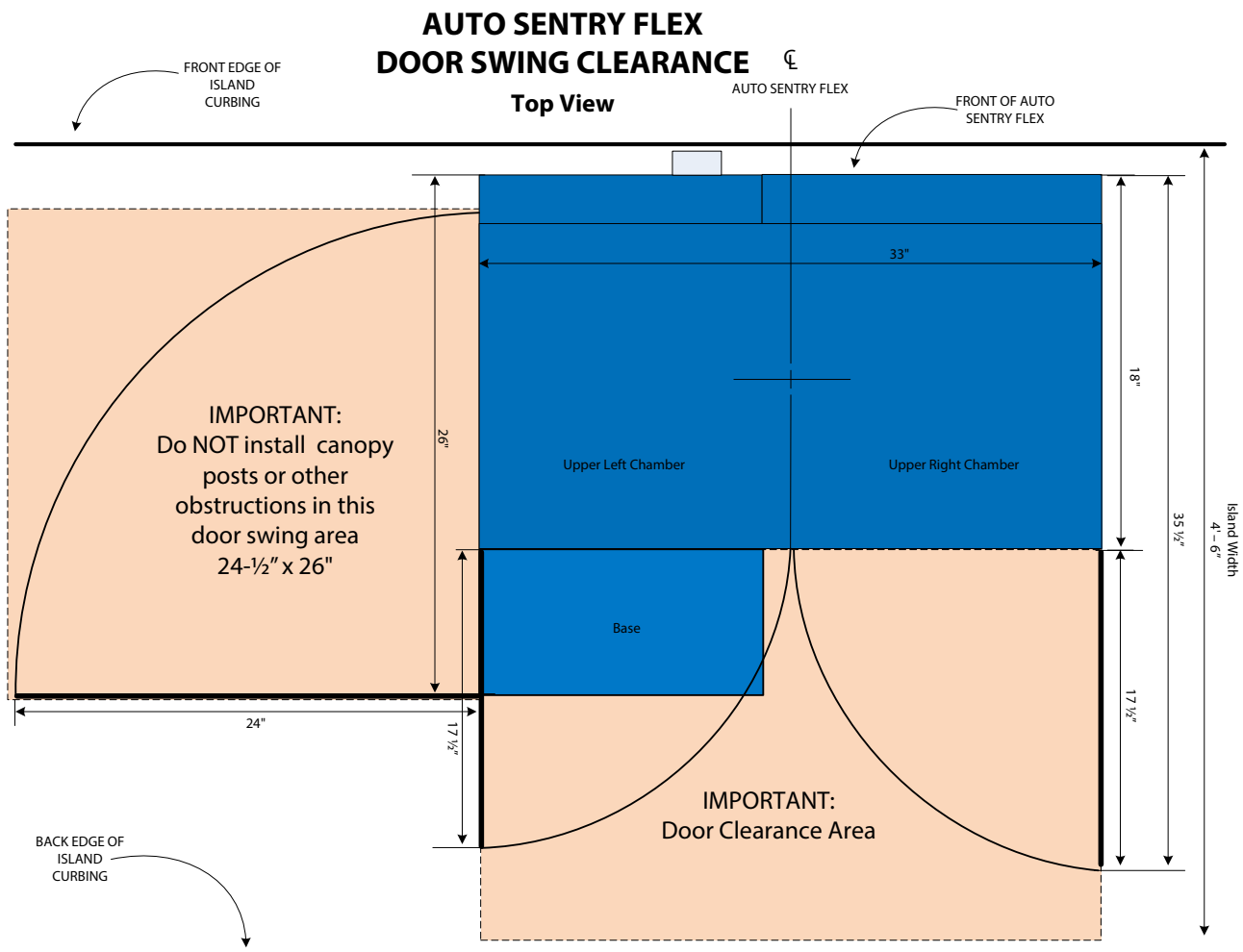


Figure 17. Door Swing Clearance (Top View)

## Auto Sentry® flex Power Requirements

- Electrician must provide a dedicated 120 V AC, 15 A circuit to power the unit. This dedicated circuit must supply the UPS. The UPS will supply power to the unit.
- Electrician must provide a separate dedicated 120 V AC, 15 A line for heat exchanger wiring.
- The unit must be properly grounded. See "Wire Gauge and Conduit Size" on page 30 for more information.

## Auto Sentry® flex Wiring Guidelines

---

When running wires to and from the Auto Sentry® flex unit, follow these guidelines:

- Run conduit and wire up through stainless-steel base into unit.
- Run a Cat 6 cable up through the bases into the unit for the network.
- If operating EMV equipment, run a separate Cat 6 cable up through the base into the unit for the secure credit card reader only.
- For an existing site, use a hole saw to drill new conduit holes through stainless steel base if necessary. File and tape edges of new holes before affixing conduit.
- Use wiring ties and wire clamps inside the unit to contain wires.
- All conduit runs should meet local and national codes. Conduits shall be properly connected and securely fastened to the boxes with listed conduit hubs, and should be tightened to the torque specs of the manufacturer.

## Conduit Wiring Guidelines

---

- All conduit must be rigid PVC or metal.
- High-voltage (AC) and low-voltage (DC) must not be combined in a common conduit, junction box, or wire trough.

## Grounding

---

The Auto Sentry® flex and peripheral equipment must be properly grounded.

### Recommended and Accepted Grounding Methods

Proper system grounding is an extremely important part of the system installation. Grounds for all system devices should be wired to the breaker panel ground bus bar which, in turn, should be grounded to a ground rod. A conduit ground does not provide a sufficient ground. It is recommended that the neutral and ground bus bars be bonded together when it is not prohibited by local codes.

The universal ground symbol identifies the grounding terminal located in the upper-left chamber, bottom left side near terminal blocks. A second ground is marked and located in the base, bottom-left side. This is the dedicated 120 V line for the heat exchanger.



**WARNING:** Ground wire must be connected to the ground terminals. Failure to properly ground the unit could result in unit failure and/or bodily injury.

**IMPORTANT:** Improper grounding will void equipment warranty.

## Equipment Dimensions, Measurements, and Ratings

Dimension	Amount	Notes
Width	34"	—
Height	52"	—
Depth	32"	Includes heat exchanger cover panel.
Weight	400 lbs.	—
Operating Temperature Range	- 20 °F to 140 °F - 29 °C to 60 °C	—
Frequency	50/60 Hz	—
Supply Voltage	120 - 240 V AC	Intended for permanently connected supply.
Max. Amps.	10 Amps @ 120 V AC 5 Amps @ 240 V AC	—
IPX Rating	NEMA 5X	Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against incidental contact with the enclosed equipment; to provide a degree of protection against falling dirt, rain, sleet, snow, windblown dust, splashing water, and hose-directed water from water jets at any direction; and that will be undamaged by the external formation of ice on the enclosure. Including protection against corrosion.

**Table 1: Dimensions, Measurements and Ratings**

## Wire Gauge and Conduit Size

When planning the orientation of the wiring runs, follow the applicable ICS wiring diagrams and consider the layout of the components at the site. See the table below to determine conduit size.

—	½	¾	1	1 ¼	1 ½	2	2 ½	3
<b>AWG 14</b>	13	24	39	69	94	154	—	—
<b>AWG 12</b>	10	18	29	51	70	114	164	—
<b>AWG 10</b>	6	11	18	32	44	73	104	160
<b>AWG 8</b>	3	5	9	16	22	36	51	79
<b>AWG 6</b>	1	2	6	11	15	26	37	57
<b>AWG 4</b>	1	1	4	7	9	16	22	35
<b>AWG 3</b>	1	1	3	6	8	13	19	29
<b>AWG 2</b>	1	1	3	5	7	11	16	25
<b>AWG 1</b>	1	1	1	3	5	8	12	18

**Table 2: Max. Number of Wires (THHN) in a Given Conduit Size**

# CHAPTER 3: Communications Wiring

This section describes wiring for RS-422 and RS-485 communications.

## Installation Requirements

---

- All peripheral equipment connected to the RS-232 ports must be Listed, have an Electronics Industrial Association (EIA) standard RS-232 communications protocol and not be installed over a hazardous location.
- RS-232 communication must not exceed 100 feet. RS-232 communication wires must be in a separate PVC conduit from any AC wires.
- Communications equipment signal wires must also be run in separate rigid PVC or metal conduit, separate from any power conduits.
- Up to three Cat 6 cables may be needed to run to the Auto Sentry Flex:
  - (1) Cat 6 Cable for the Auto Sentry Flex System
  - (1) Cat 6 Cable if using the EMV credit card reader (Moneris)

## Port Assignments

---

Device	Port Type and Location
Gift Card Dispenser	COM Port 1
Bill Acceptor	COM Port 2
Coin Acceptor	COM Port 3
Bill Dispenser	COM Port 4
SIO Board	COM Port 6
Touch Screen	USB
Credit Card Reader (Standard)	USB
Hecon Receipt Printer	USB
Barcode Reader	USB (Virtual COM Port 5)
Coin Hoppers	SIO Board

**Table 3: Port Assignments**

# Low Voltage Layout Dual Lane

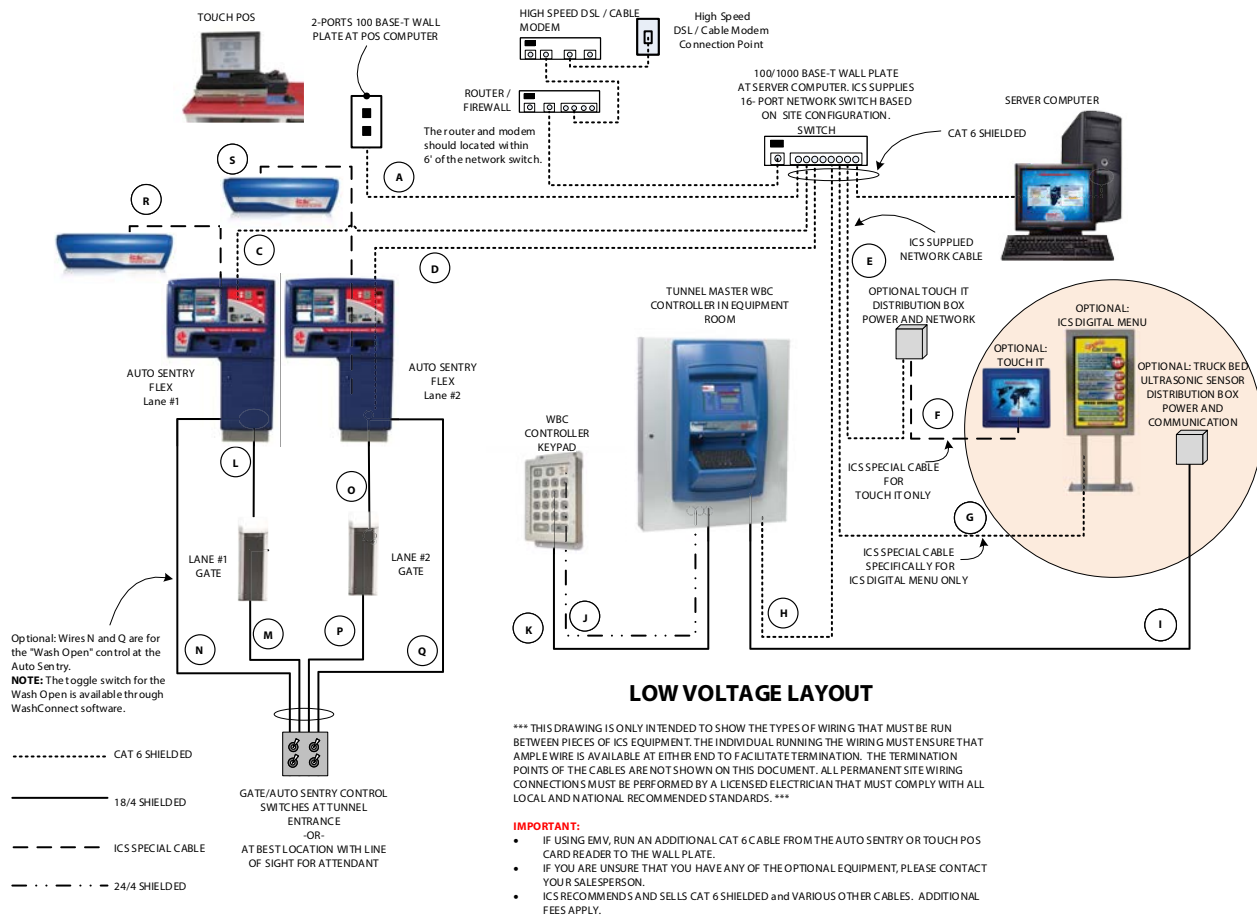


Figure 18. Low Voltage Layout Dual Lane



# Low Voltage Wire Schedule

**IMPORTANT:** The wiring and terminations are the responsibility of the car wash owners, electrician, and/or supplied contractor. All of the sites wiring pulls and terminations must be completed by a licensed electrician and/or car wash owner supplied contractor prior to ICS technician coming onsite. All permanent site wiring connections must be performed by a licensed electrician that must comply with all local and national recommended standards.

ID	WIRE TYPE	PROVIDED BY	TERMINATION LOCATIONS	TERMINATED BY
A	CAT 6 SHIELDED CAT 6 SHIELDED	ICS	FROM 100/1000 BASE-T WALL PLATE TO POS COMPUTER PLATE* *IF EMV, RUN ADDITIONAL FROM 100/1000 BASE-T WALL PLATE TO TOUCH POS CARD READER	ELECTRICIAN ELECTRICIAN
C	CAT 6 SHIELDED CAT 6 SHIELDED	ICS	FROM 100/1000 BASE-T WALL PLATE TO LANE #1 AUTO SENTRY FLEX* *IF EMV, RUN ADDITIONAL WALL PLATE TO LANE #1 AUTO SENTRY FLEX CARD READER	ELECTRICIAN ELECTRICIAN
D	CAT 6 SHIELDED CAT 6 SHIELDED	ICS	FROM 100/1000 BASE-T WALL PLATE TO LANE #2 AUTO SENTRY FLEX* *IF EMV, RUN ADDITIONAL WALL PLATE TO LANE #2 AUTO SENTRY FLEX CARD READER	ELECTRICIAN ELECTRICIAN
E	CAT 6 SHIELDED	ICS	FROM 100/1000 BASE-T WALL PLATE TO TOUCH IT DISTRIBUTION BOX **OPTIONAL EQUIP** <b>NOTE:</b> ICS SUPPLIES 16-PORT NETWORK SWITCH BASED UPON SITE CONFIGURATION. 24/4 SHIELDED CABLE CAN BE USED IN PLACE OF 18/4 SHIELDED CABLE.	ELECTRICIAN
F	ICS CABLE	ICS	FROM TOUCH IT DISTRIBUTION BOX TO TOUCH IT **OPTIONAL**	ELECTRICIAN
G	CAT 6 SHIELDED	ICS	FROM 100/1000 BASE-T WALL PLATE TO THE ICS DIGITAL MENU/EMS **OPTIONAL EQUIP**	ELECTRICIAN
H	CAT 6 SHIELDED	ICS	FROM 100/1000 BASE-T WALL PLATE TO WBC CONTROLLER	ELECTRICIAN
I	18/4 SHIELDED	ELECTRICIAN	FROM WBC TO THE ULTRASONIC SENSOR DISTRIBUTION BOX	ELECTRICIAN
K	18/4 SHIELDED	ELECTRICIAN	FROM WBC CONTROLLER TO CONTROLLER KEYPAD	ELECTRICIAN
L	18/4 SHIELDED	ELECTRICIAN	FROM LANE #1 AUTO SENTRY FLEX TO LANE #1 GATE	ELECTRICIAN
M	18/4 SHIELDED	ELECTRICIAN	FROM GATE / AUTO SENTRY CONTROL BOX TO LANE #1 GATE	ELECTRICIAN
N	18/4 SHIELDED	ELECTRICIAN	FROM GATE / AUTO SENTRY CONTROL BOX TO LANE #1 AUTO SENTRY FLEX	ELECTRICIAN
O	18/4 SHIELDED	ELECTRICIAN	FROM LANE #2 AUTO SENTRY FLEX TO LANE #2 GATE	ELECTRICIAN
P	18/4 SHIELDED	ELECTRICIAN	FROM GATE / AUTO SENTRY CONTROL BOX TO LANE #2 GATE	ELECTRICIAN
Q	18/4 SHIELDED	ELECTRICIAN	FROM GATE / AUTO SENTRY CONTROL BOX TO LANE #2 AUTO SENTRY FLEX	ELECTRICIAN
R	ICS SPECIAL CABLE	ELECTRICIAN	FROM LANE#1 AUTO SENTRY TO RFID READER/ANTENNA ENCLOSURE IN LANE #1	ELECTRICIAN
S	ICS SPECIAL CABLE	ELECTRICIAN	FROM LANE#2 AUTO SENTRY TO RFID READER/ANTENNA ENCLOSURE IN LANE #2	ELECTRICIAN

**NOTE:** ALL WIRING FOR ICS EQUIPMENT TO BE RUN BY AN ELECTRICIAN AND MUST BE A SINGLE CABLE FROM POINT TO POINT. SPLICING OF WIRES IS NOT ALLOWED.

**Figure 19. Low Voltage Wire Schedule**

# Programming the Sonic Sensor or Sense Car in an Auto Sentry® flex HD

\*\*\*NOTE: THIS PROGRAMMING GUIDE IS FOR THE ROUND WHITE/GREEN SONIC SENSOR LOCATED IN THE BASE OF THE AUTO SENTRY FLEX HD -- NOT THE ORANGE SENSOR\*\*\*

1. Unlock and open the Auto Sentry flex HD base door.
  2. Place an object in front of the car sensor at the same distance away from the Auto Sentry Flex HD where a car would normally park when at the payment terminal at approximately 32". (Use a large object like a metal sign or something similar). See Fig. 1.
  3. With the object in place, touch the white Program Sense Car wire to the +24 orange terminal block and hold while the sensor flashes yellow. Hold until the car sensor flashes red, then hold for a few more seconds. See Fig. 3.
  4. Move the wire off of the +24 orange terminal block. See Fig. 3.
  5. Move the object away from the area.
  6. Touch the white programming wire to the -24 Blue terminal block, until the sensor flashes red. See Fig. 3.
  7. Move the wire off of the -24 Blue terminal block. See Fig. 3.
  8. Test the sonic sensor by pulling a car up to the Auto Sentry flex HD. The sense car lights up on the SIO board.
- NOTE: If no signal, you can remove 3P9 cable and jump pins 3 and 4 on the board and check car sense light.
9. Close and lock the Auto Sentry flex HD base door.



Figure 1. Sonic Sensor or Sense Car on exterior of the Auto Sentry Flex HD



Figure 2. Sonic Sensor or Sense Car in the base of the Auto Sentry flex HD

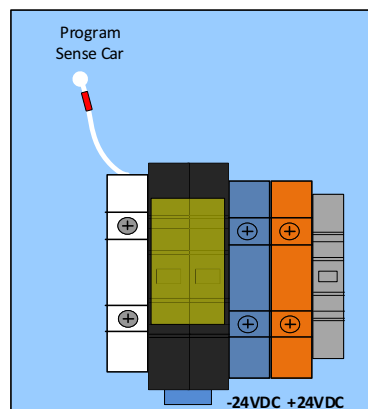


Figure 3. Terminal blocks in base of the Auto Sentry flex HD

Figure 20. Sense Car Programming

# CHAPTER 4: Parts Identification

This chapter provides details on identifying exterior, interior components, and locations. Both exterior and interior components, wires, accessories, and the rest are available for purchase or reorder.

The Auto Sentry® *flex* also includes 11 plastic panels to fit the exterior of the metal unit. Panels may be purchased separately.

**NOTE:** If you cannot find the part in the following diagrams, contact ICS sales for more information: 1-800-642-9396.

# Exterior Components



Figure 21. Auto Sentry® flex Chip and PIN Exterior (Verifone® shown)

#	ICS Part Number	Description	#	ICS Part Number	Description
1	PIN pad* varies by processor:		7	CONTACTLESS READER* varies by processor:	
	CPFDPINAD	First Data® Verifone® UX100 PIN Pad (Shown in Figure 23)		CPFDCONTREAD	First Data® Verifone® UX400 (Shown in Figure 23)
	CPMOPINPAD	Moneris® Canada UX100 PIN Pad		CPFDCONTREAD1	First Data® ID TECH® NFC
2	AS2TOUCH15Z2	15" touch screen		CPMOCONTREAD	Moneris® Canada Verifone® UX400
	3	Card Reader* varies by processor:		8	SCN-000002-00
CPFDCARDREAD		First Data® Verifone® UX300 (Shown in Figure 23)	9	AS2COINACC	Coin acceptor
CPFDCARDREAD1		First Data® ID TECH® VP5300	10	CAMERAASSM1	Camera assembly
ASCARDREAD1ASK		Transaction Express® ID TECH®	11	AS3BILLACCU2800	Bill acceptor, upstacker
CPMOCARDREAD		Moneris® Canada Verifone® UX300	12	AS2COINACC	Coin acceptor and coin return cup
4	ASPRHEC	USB Printer	13	AS2COINFLIP	Coin flip door (not shown)
5	ASSPEAKER	Speaker for the Auto Sentry	14	AS2BILLDISPFLIP	Bill dispenser flip door (not shown)
6	AS2INTERCOMSP	Speaker for intercom			
NOT SHOWN:					
	AS2INTERCOMBTN	Intercom push button not shown but would be located next to the Coin Acceptor.		SENSOR-18MML	Replacement Sensor only not shown.
	AS3CARDCHUTE	Gift card dispenser chute not available with Chip and PIN.		ASLOOPELECEYEAS	Sonic Sensor assembly not shown.
	Gift card dispenser	Not available with Chip and PIN.			

Table 4: Auto Sentry Flex Exterior

## Interior Components Upper-Left Chamber (Non-EMV)

Interior components vary by credit card processor. The components shown below are for a non-EMV Auto Sentry flex.

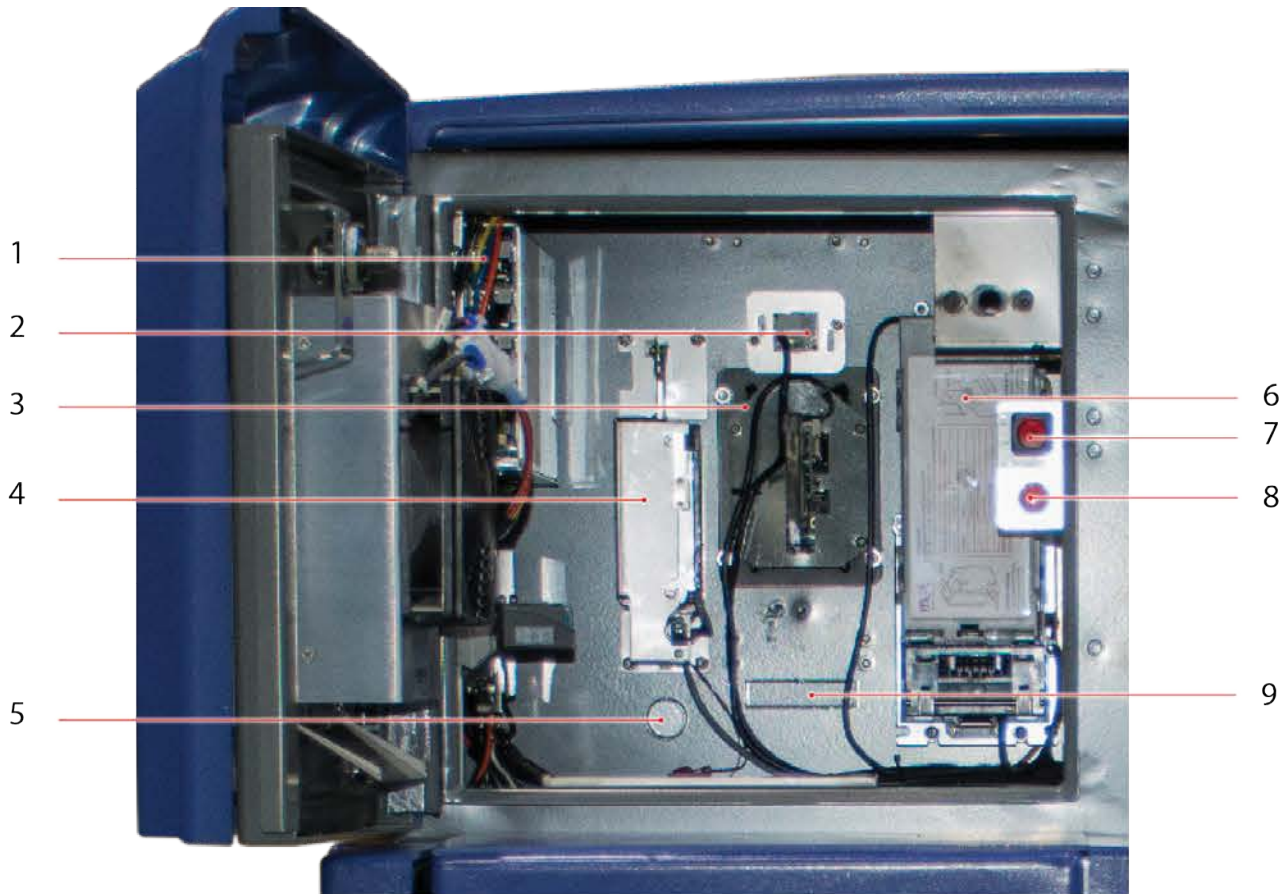


Figure 22. Upper-left Chamber Components

#	ICS Part Number	Description	#	ICS Part Number	Description
1	AS2PWRC	Power supply +5 +12 +24 +36 V DC	5	AS2INTERCOMBTN	Intercom button
2	CAMERAASSM	Camera assembly		ASINTERCOMCNT	Intercom switch
3	ASCARDREAD1ASK	Transaction Express® ID TECH® Card Reader	6	AS3BILLACCU2800	Bill Acceptor
4	AS2COINACC	Coin acceptor	7	ASPSSWITCH	Power Switch Illuminated
			8	ASPUSHBUT	Push button for service
			9	AS3CARDCHUTE	Gift Card or Wash Book Card dispenser

Table 5: Upper-left Chamber Components

## Interior Components Upper-Left Chamber (Non-EMV)



**Figure 23. Upper-left Chamber Components (Non-EMV)**

#	ICS Part Number	Description
1	ASCARDREAD1SP	Security plate for the card reader
2	ASEMIFILTER	EMI filter for AC V
3	H/CCONTROLBD1	Heater/cooler control board
4	ASTERMB	Terminal Blocks
	AS2TERMBRK10	10-Amp fuses US
	AS2TERMBRK6	6-Amp fuses US
	BREAKER5AMP	5-Amp fuses EU
	AS2TERMBLOCKGND	(2 or 3) Terminal block, ground
	AS2TERMBLOCKW	(2) Terminal block, AC, white

**Table 6: Upper-Left Chamber Components (Non-EMV)**



## Interior Components Upper-left Chamber (Chip and PIN)

Payment parts vary based on the credit card processor in the upper-left chamber.



**Figure 24. Interior Components Upper-left Chamber (Chip and PIN)**

#	ICS Part Number	Description
1	<b>Contactless reader* varies by processor:</b>	
	CPFDCONTREAD	First Data Verifone® UX400 (Shown in Figure 26)
	CPFDCONTREAD1	First Data® ID TECH® NFC
	CPMOCONTREAD	Moneris® Canada Verifone® UX400
2	<b>PIN pad* varies by processor:</b>	
	CPFDPINAD	First Data® Verifone® UX100 PIN Pad* (Shown in Figure 26)
	CPMOPINPAD	Moneris® Canada UX100 PIN Pad*
3	CAMERAASSM1	Camera assembly (Location is shown) This is an optional feature
4	AS3ENCSECW1	Security Wall
5	<b>Card Reader* varies by processor:</b>	
	CPFDCARDREAD	First Data® Verifone® UX300 (Shown in Figure 26)
	CPFDCARDREAD1	First Data® ID TECH® VP5300
	ASCARDREAD1ASK	Transaction Express® ID TECH® Card Reader
	CPMOCARDREAD	Moneris® Canada Verifone® UX300
	NOTE:	Gift/Wash Card Dispenser (not available with Chip N PIN)

**Table 7: Upper-Left Chamber Components (Chip and PIN)**

# Interior Coin Hopper in Upper-Right Chamber



Figure 25. Upper-right chamber Coin Hopper

#	ICS Part Number	Description
1	ASCOINHOP25	Coin hopper for 0.25 denominations
1	ASCOINHOP01	Coin hopper for 0.01 denominations
1	ASCOINHOP05	Coin hopper for 0.05 denominations
1	ASCOINHOP100	Coin hopper for 1.00 denominations

Table 8: Coin Hopper Part Numbers



# Interior Components Upper-Right Chamber

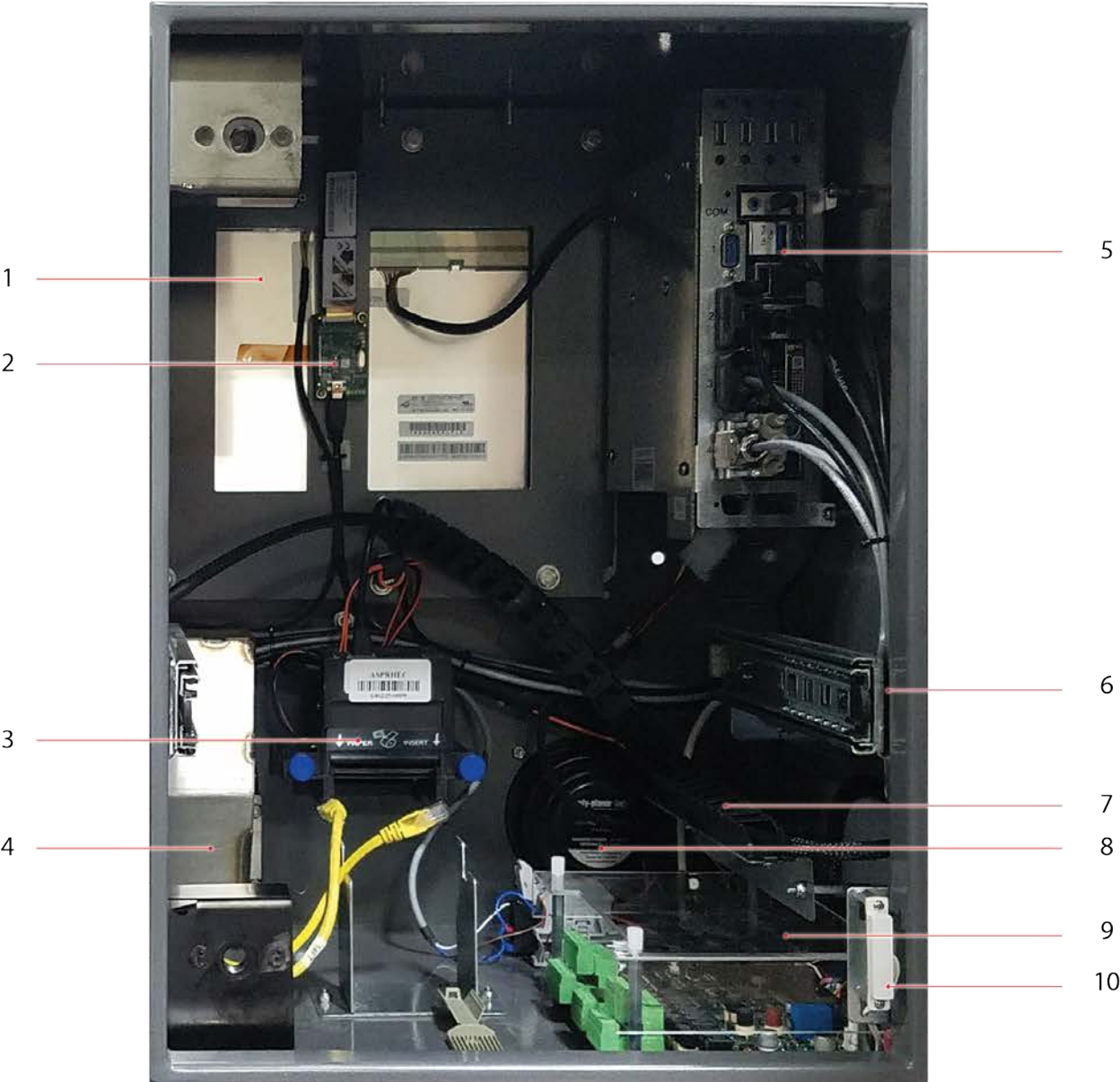


Figure 26. Interior Components, Upper-Right Chamber



Figure 27. Electronic Vibration Detector

	ICS Part Number	Description
1	AS3DISPASSM1	Secure Heavy Duty (Bolted) Display includes screen and mounted panel for screen. Models after October 2016 use this display
	AS3DISPASSM	Standard (Screwed) Display includes screen and mounted panel for screen. Models after October 2016 do not use this display
2	AS2TOUCH15ZCNC	Touch Controller Card
3	ASPRHEC	Receipt printer
4	AS3ENCCRC	Coin cup
5	MB1-AS3-0-A	Mother board
6	AS3ENCHCHAINBKT	Bracket
7	AS2CHAIN	Cable chain for coin drawer
8	ASSPEAKER	Speaker
9	ASBSIO	SIO board***
10	AS3DRSW	Switch, Door Trigger Magnetic (2 pieces included for complete switch)
11	VIBRATIONSEN	Electronic Vibration Detector Only
	VIBRATIONSENASSM	Electronic Vibration Detector System Kit
	DISPIN15N	Inverter for 15" display* (not shown)
	AS2BDHOPPER	Coin hopper board** (not shown)
	ASLOOPELECEYEAS	Electric eye sensor assembly

**Table 9: Upper-Right Chamber Interior Components**

\* Used on models before October 2013.

\*\* Coin hopper board is only used if PIO board is present.

\*\*\* Models before 2014 may have been a PIO board. Upgrade to SIO is available.

# Rear Door Components



Figure 28. Rear Door Components Interior

	ICS Part Number	Description
1	ASDRLOCK ASDRKEY	Door lock Door lock key
2	AS3HEATCOOL-1	Heat assembly

Table 10: Rear Door Components Interior

# Security Locks



Figure 29. Security Locks

#	ICS Part Number	Description	#	ICS Part Number	Description
Flex Head, Figure 29			Flex Base, Figure 29		
1	AS3ENCCFRMDBLHDL	Double security lock frame (Top of Flex head)	3	AS3ENCFRMBSDL	Single lock frame (Base of Auto Sentry Flex)
2	AS3ENCCFRMSGLHDL	Single security lock frame (Bottom of Right Chamber)		AS3ENCBUSHBSDL	Bushing
	AS3ENCBUSHHDL	Bushing		AS3ENCBLTBSDL	Bolt
	AS3ENCCFRMDBLHDL	Bolt		AS3ENCBKBSDL	Block
	AS3ENCHBLKHDL	Block			

Table 11: Security Locks

# Base of Auto Sentry, Right-side

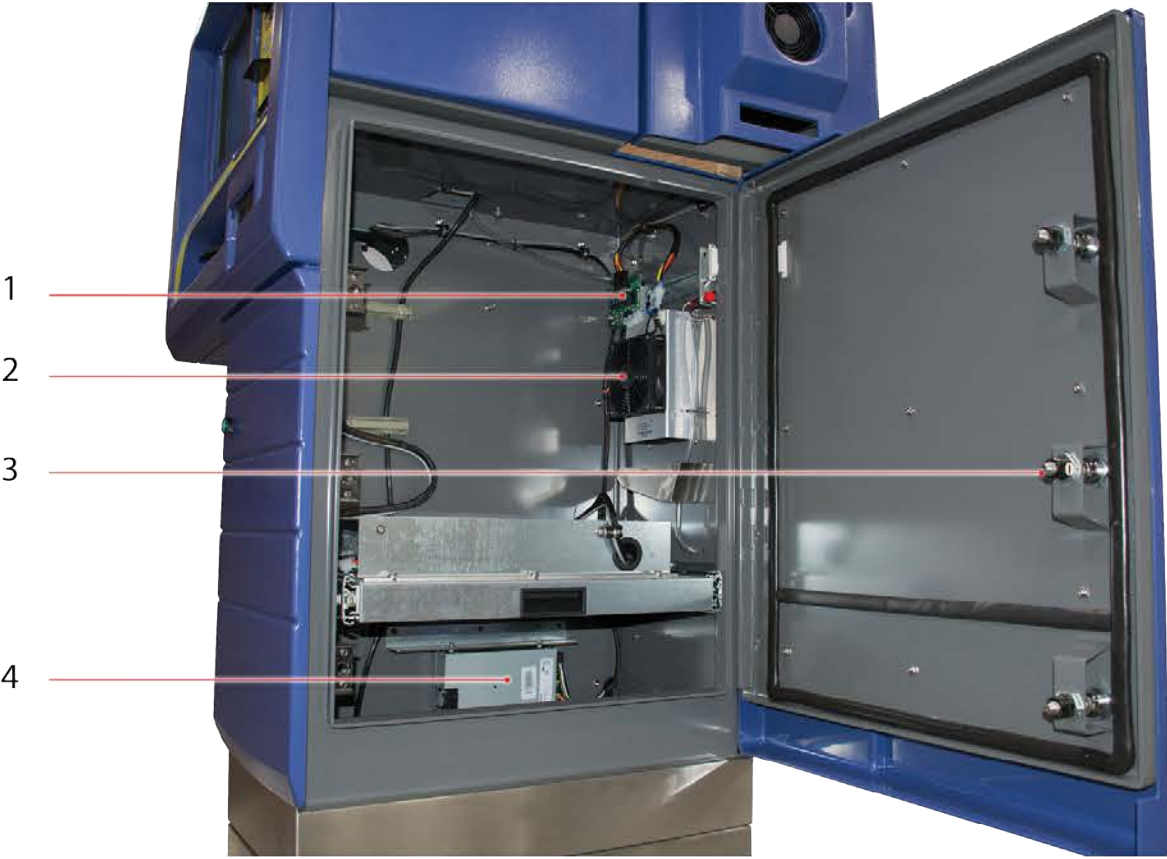


Figure 30. Base of Auto Sentry, Right-side

	ICS Part Number	Description
1	AS3HEATCOOL-1	Heat exchanger
2	ASDRLOCK ASDRKEY	Door lock Door lock key
3	PWRSUP24V	Power supply
4	H/CCONTROLBD1	Heating/cooling control board in the base

Table 12: Base of Auto Sentry, Right-side

## Base of Auto Sentry® flex

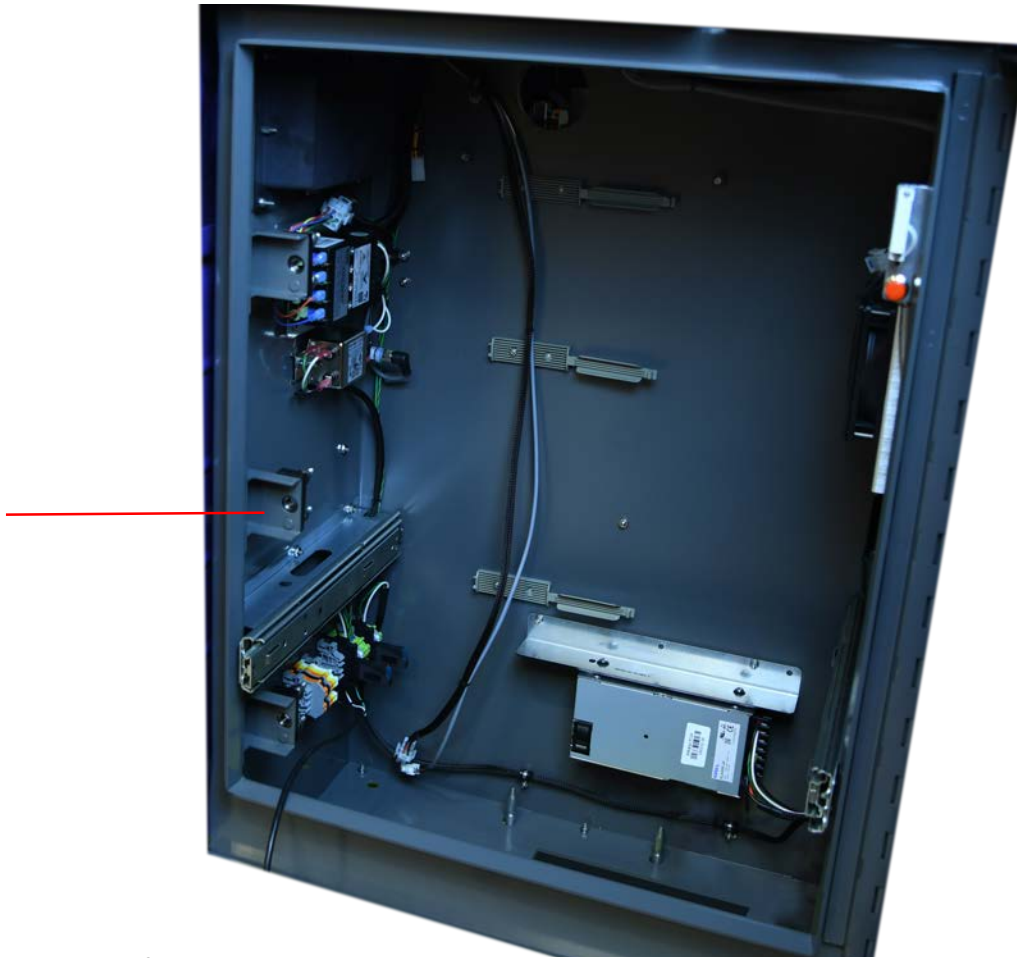


Figure 31. Base of the Auto Sentry with Gen Mega Bill dispenser tray

#	ICS Part Number	Description	#	ICS Part Number	Description
1	AS3ENCBILLCUP	Bill dispensing cup where the bills drop down for customer's retrieval			
2	APR9900PLUS*	Auto Passport system—RFID tag reader. *Only available for replacement on existing models.			
3	(This is part of the Enclosure)	Bill Dispenser track			
4	1 AS2TERMB 1 AS2TERMBLOCKB 1 AS2TERMBLOCKW 1 AS2TERMBRK10 1 BREAKER52P	Power terminal blocks for the heat exchanger in the base of the Auto Sentry 10 Amp fuse US 10 Amp fuse EU			
5	AS2CBL61	Universal Bill Dispenser COM Cable Wires run behind bill dispenser			

Table 13: Side Chamber with Bill Dispenser Tray



#	ICS Part Number	Description	#	ICS Part Number	Description
		<b>Original Bill Dispenser Power Cable</b>			
	AS3CBL03D	First Generation Auto Sentry Flex had a dedicated 3-PIN Power Cable for the bill dispenser			
				<b>BILL DISPENSERS:</b>	
				BDNMD50ASM	Talaris (DeLaRue) Single Bill Dispenser
				BD3NMD50DASM	Talaris (DeLaRue) Dual Bill Dispenser
				BD-GEND-A	Gen Mega Bill Dispenser Dual Only (Shown)
				BD400ASM	Fujitsu Bill Dispenser
				BD3400DASM	Fujitsu Dual Bill Dispenser

**Table 13: Side Chamber with Bill Dispenser (Continued)Tray**

### Bill Dispenser Drawer

If you ordered your Auto Sentry with bill dispenser, the drawer is installed. It is universal and handles all upright walls for all the dispensers. If they never had a bill dispenser, this drawer will need to be ordered.

### Bill Dispenser Mounting Tray

The tray mounts between the walls on which the bill dispenser mounts to. The following notes will breakdown the mounting tray ordering details:

- 1 If the Auto Sentry did not have a bill dispenser installed, and you are placing an order for a bill dispenser for the first time, a mounting tray will need to be ordered.
- 2 If currently have a Dela rue bill dispenser and are changing to a Fujitsu or a GenMega®, new side walls and a tray will need to be ordered.

- 3 If currently have a MultiMech® bill dispenser and are changing to a Fujitsu or GenMega, no need to order because the drawer tray is the same for all of these bill dispensers. However, if making the change to a GenMega only, new side walls will need to be ordered.



**Figure 32. Auto Sentry Flex with Fujitsu Bill Dispenser Tray**



**Figure 33. Talaris (DeLaRue) Bill Dispenser (Triple)**



## Plastic Panel Identification

The Auto Sentry® *flex* includes 11 plastic panels. The following drawings identify the part numbers for each panel.

### Top View



Figure 34. Top Panel of Auto Sentry Flex Top View

	ICS Part Number	Description
1	AS3TP AS3TP-G	Top panel (Blue) Top panel (Gray)

Table 14: Top View

## Bottom View



Figure 35. Auto Sentry Flex Bottom View

Location	ICS Part Number	Description
1	AS3BF	Bottom filler panel (Blue)
	AS3BF-G	Bottom filler panel (Gray)

Table 15: Bottom View

## Front View



Figure 36. Auto Sentry Flex Front View

Location	ICS Part Number	Description
1	AS3FP1A	Front panel with front facing scanner (Blue)
	AS3FP-G1A	Front panel with front facing scanner (Gray)
2	AS3FPL	Front panel lower (Blue)
	AS3FPL-G	Front panel lower (Gray)

Table 16: Front View

# Rear View



Figure 37. Auto Sentry Flex Rear View

Location	ICS Part Number	Description
1	AS3RDL AS3RDL-G	Rear door left (Blue) Rear door left (Gray)
2	AS3RP AS3RP-G	Rear panel (Blue) Rear panel (Gray)
3	AS3RDR AS3RDR-G	Rear door right (Blue) Rear door right (Gray)

Table 17: Rear View

# Left-side View

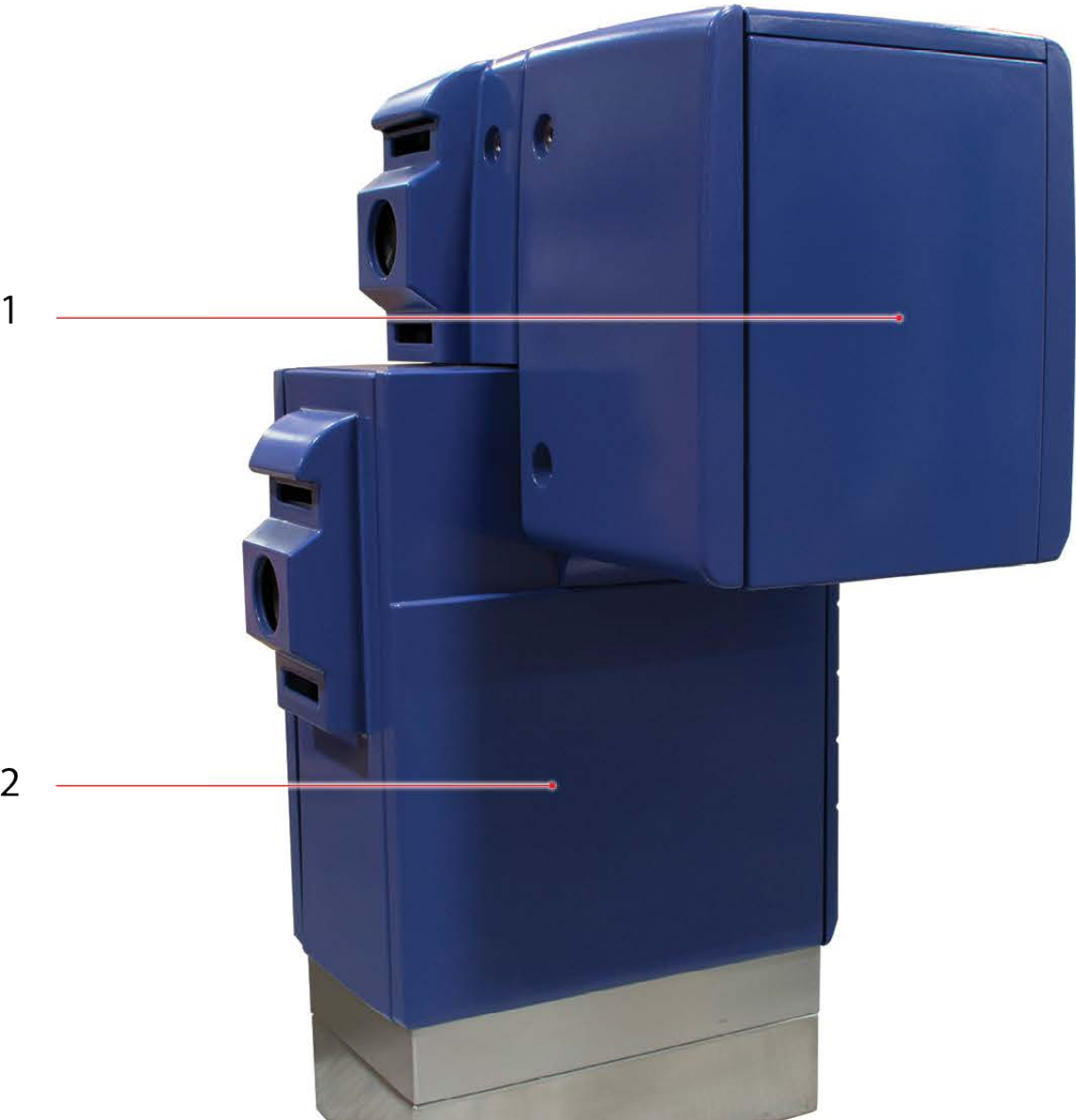


Figure 38. Auto Sentry Flex Left-Side View

Location	ICS Part Number	Description
1	AS3LPU AS3LPU-G	Left panel upper (Blue) Rear door right (Gray)
2	AS3LPL AS3LPL-G	Left panel lower (Blue) Left panel lower (Gray)

Table 18: Left-Side View

# Right-Side View



Figure 39. Auto Sentry Flex Right-Side View

Location	ICS Part Number	Description
1	AS3RPU	Right panel upper (Blue)
	AS3RPU-G	Right panel upper (Gray)
2	AS3SD	Side door (Blue)
	AS3SD-G	Side door (Gray)

Table 19: Right-Side View



# Index

## A

Amperage, 30  
AS2BDHOPPER, 42  
AS2BILLDISPFLIP, 36  
AS2CBL61, 46  
AS2CHAIN, 42  
AS2COINACC, 36, 37  
AS2COINFLIP, 36  
AS2INTERCOMSP, 36  
AS2PWRC, 37  
AS2TERMB, 46  
AS2TERMBLOCKB, 46  
AS2TERMBLOCKGND, 38  
AS2TERMBLOCKW, 38, 46  
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# Document Change History

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**Table 20: Document Change History**

Document Version	Date(s)	Contributor Initials	Description
1.0	07/23/2010	BB, DP, MR, TB, JL-S	First release.
2.0	11/22/2016- 8/17/17	WS, TR, BM	Second release.
2.5	7/11/19-1/7/20	WS, NR, AC	Third release. Drawings and images have been updated. Removal of old RFID and addition of new all-in-one RFID reader/antenna.



If you have any questions or concerns, please contact ICS Technical Support: 800-246-3469.

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