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BavSonic™
Universal Telephone Audio
With Vehicle Detector Option
Installation and Service Manual

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BavSonic™ Universal Telephone Audio

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Important Safety Instructions

1. READ THESE INSTRUCTIONS
2. KEEP THESE INSTRUCTIONS
3. HEED ALL WARNINGS
4. FOLLOW ALL INSTRUCTIONS
5. DO NOT USE THIS APPARATUS NEAR WATER
6. CLEAN ONLY WITH A DRY CLOTH
7. DO NOT BLOCK ANY VENTILATION OPENINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS
8. DO NOT INSTALL NEAR ANY HEAT SOURCES SUCH AS RADIATORS, HEAT REGISTERS, STOVES OR OTHER APPARATUS (INCLUDING AMPLIFIERS) THAT PRODUCE HEAT
9. PROTECT THE POWER CORD FROM BEING WALKED ON OR PINCHED PARTICULARLY AT PLUGS, CONVENIENCE RECEPTACLES AND THE POINT WHERE THEY EXIT THE APPARATUS
10. ONLY USE ATTACHMENTS/ ACCESSORIES SPECIFIED BY THE MANUFACTURER
11. REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL. SERVICING IS REQUIRED WHEN THE APPARATUS HAS BEEN DAMAGED IN ANY WAY, SUCH AS POWER-SUPPLY CORD OR PLUG IS DAMAGED, LIQUID HAS BEEN SPILLED OR OBJECTS FALLEN INTO THE APPARATUS, THE APPARATUS HAS BEEN EXPOSED TO RAIN OR MOISTURE, DOES NOT OPERATE NORMALLY OR HAS BEEN DROPPED.

Additional Safety Instructions

WARNING – TO REDUCE THE RISK OF FIRE OR ELECTRONIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

BavSonic™ Universal Telephone Audio Features

The BavSonic™ Universal telephone intercom interface module connects the intercom system of the two outside remote drive-thru lanes to the telephone system. This is a full duplex audio system for maximum intelligibility. The incoming audio levels are adjustable at each telephone station.

The customers at the remote-drive-thru locations can call the inside by depressing the CALL BUTTON on either lane. This initiates a call to the telephones in the building that are programmed to receive them. The employees can access each remote lane from the telephones that are given access. If a customer presses the call button and the call is not answered in approximately one minute the call is terminated for 10 seconds then another attempt is made. This will happen five times at which point the interface will reset itself awaiting the next activation of the call button.

Telephone Interface

Power is supplied to the interface through a 110v power cord and is protected by a 1 amp breaker. **Note:** This universal TA system is not compatible with the Samsung DCS compact phone system. If you are using this phone system, please contact the factory at 1-800-937-3322. The customer will supply the connections from the telephone system to an area under the counter adjacent to the drive-thru window.

Telephone system requires a standard loop start CO line for each lane.

Intercom Connections

There are intercom boards located in both the window lane and remote lane. These boards are connected to the telephone interface via standard CAT 5 wiring. The termination is a type 568B. The red and blue connectors are RJ45. Red cabling designates lane one. Blue cabling designates lane two. Each intercom board has a LED, which indicates that it is receiving power.

The outgoing audio levels are adjusted at the intercom audio board. The intercom audio board for the window is attached to the black laminated filler panel under the transaction drawer. The intercom audio board for the TransTrax is located on the customer speaker panel, inside a weatherproof enclosure, of the customer unit located on the outside island. After adjustments are made, be careful not to pinch any wires during reassembly of the weatherproof enclosure.

Plug J1 is for the speaker connection. The connector is a 3-position with positions 1 & 3 being the speaker. For the outside board, plug J2 is an 8-position Microfit, for the inside board, plug J2 is an 8-position RJ45. Plug J3 is for the call button connections. The connector is a 4-position with positions 2 & 3 being the button. Note that positions 1 & 4 are 19vdc power with position 4 being positive. Plug J4 is for the microphone connection. This connector is a 2-position.

Please see page 6 for an overall wiring diagram of the intercom section. Note that the wire tie on the case is for strain relief of the Lane 2 connection.

It is recommended to install the RJ45 connector directly onto the end of the CAT5 cable for the window lane (lane 1), and to strip and install the wires for the remote (lane 2) directly into the screw terminals of the green Phoenix connector. For situations where tooling is not available to attach the RJ45 to the end of the CAT5 cable for the window lane, we have included a wiring pigtail, (P/N 22066011, see page 10) that can be spliced onto the cable with the crimp connectors provided. For situations where it is preferable not to remove the RJ45 from the Remote lane's cable we have provided a RJ45 to Terminal Barrier Adapter harness, (P/N 22209591, see page 10), that can be plugged onto the RJ45 connector of the Cat5 cable and then, after removing the green terminal barrier shipped on the Interface box, plugged directly into the box.

Installation with KSU type Telephone System

The Universal Telephone Audio Interface can be used in conjunction with most KSU type telephone systems. The following information is generic for most systems. If additional information is needed please consult the factory.

The telephone connections on the Universal Telephone Audio Interface are standard RJ11 jacks. There are two two-wire telephone cords that are provided with the interface that should be used to connect the Universal Telephone Audio Interface to the RJ45 connection of the telephone system. One cord is for the WINDOW lane the other for the REMOTE lane.

Please see page 8 for a wiring diagram of the connection to the telephone system. The CO port should be programmed for loop start. If there is a programmable delay between off hook and connection of the audio path it should be adjusted to the minimum.

Panasonic KX-TG4000B Installation

The Universal Telephone Audio Interface can be used in conjunction with any multi-line telephone. The following information is specific to a four line Panasonic system, other systems will be similar. If additional information is needed please consult the factory.

The telephone connections on the Universal Telephone Audio Interface are standard RJ11 jacks. The single four wire telephone cord that is provided with the Panasonic base unit should be used to connect the Universal Telephone Audio Interface to the telephone base unit. Please refer to the drawing on page 9.

Note that both WINDOW and REMOTE lines are available on both jacks of the Universal Telephone Audio Interface. When the cable is inserted into the WINDOW jack, the WINDOW is line 1 and the REMOTE is line 2. When the cable is inserted into the REMOTE jack, the REMOTE is line 1 and the WINDOW is line 2.

Four lane installations require two Universal Telephone Audio Interfaces. One interface is connected to the line 1/2 input and the other interface is connected to the line 3/4 input of the base unit.

Vehicle Detector Installation Instructions

The following instructions assume the sensor is being installed on an exterior wall, near a drive-up window. When mounting in another application, only certain steps will apply. In mounting the sensor to anything, the centerline of the sensor should be 16" above the driveway surface. Illustrations of underground tube mounting are shown on pages 16 – 18.

NOTE: When installed directly to a Telephone Interface, there is no sensitivity adjustment for the Vehicle Detector.

NOTE: The Vehicle Detector's field of detection cannot read through steel objects. The Vehicle Detector Sensor must be mounted rigid, as any movement of the sensor will likely cause either false or missed signals.

1. Measure and mark the location of the sensor, (page 20 & 21). **Note: Position the sensor more than 4'-6" from any moving metal object, including the drawer, to avoid false tripping of the detector.**
2. Using a center punch, mark only the locations for the top and wire chase holes.
3. Drill a pilot or anchor sized hole for a #6 screw for the top mounting screw.
4. Drill the wire chase hole to 5/8" diameter.
5. Using the molded sensor cover and one of the screws, temporarily mount the cover to the wall, to pattern match mark the bottom-mounting hole to insure a proper fit. **Note: Make sure that you completely cover the 5/8" hole with the molded cover before drilling the bottom hole.**
6. Remove the cover to drill the pilot or anchor hole for the bottom screw.
7. From inside the building, feed the connecting cable through the 5/8" hole to the outside of the building.

8. Attach the sensor assembly to the connecting cable.
9. Assemble the molded cover and the sensor assembly with #6 screws, (see page 22), feed the cable back into the wire chase hole, and attach the sensor and housing to the wall. If the sensor and housing is in a position where it could be exposed to water, the top and sides of the housing should be caulked to the wall to prevent the sensor from getting wet.
Note: When running the cable inside the building, be sure to leave enough slack near the wire chase so that the cable connector can be pulled to the outside of the building for servicing the sensor.
10. Rout the connecting cable to the Customer Base Audio Board's location.
11. Attach connecting cable to the Vehicle Detector Harness, and then the Vehicle Detector Harness to the Call Button connector on the Customer Base Audio Board.
12. Connect the Call Button connecting cable to the 4 position connector with the White/Black and Black wires.
13. Secure all of the connecting cables.
14. Apply power to the Telephone Interface to power the system. **Note: The sensor will have both the Green and the Yellow LEDs lit indicating the sensor is either "Tripped" or needs to be taught its surroundings.**
15. To "Teach" the sensor its surroundings, clear the area of any ferrous objects that would not normally be there, (carts, tools, vehicles, etc.), out to 10 to 15 feet.
16. At the Vehicle Detector Harness, short together the pins in the 4 position connector that has the Blue and Grey wires. This can be done by plugging in a call button and quickly pressing and releasing it or a quick touch with a flat bladed screw driver. The Yellow LED on the sensor, if visible, will flash 12 times and then turn off. The learn process will take about 10 – 15 seconds.

Note: To mount inside a TransTrax® tube, layout the tube and drill the mounting hole with the 3/16" drill bit provided (see page 15). Insert the mount through the opening in the tube, and slide it down until the screw hole aligns, and can be tightened to the mount. Feed the cable to the Customer Base Audio Board to connect to the Vehicle Detector Harness.

Vehicle Detector Operation

During the first 30 seconds after "Power Up" there is a delay in indicating that a vehicle is present, and the interface will ignore the Call Button being pressed.

When a vehicle pulls into the sensors range, the Telephone Interface will receive a signal as though the Call Button has been pressed and ring the telephone server. If the position of the sensor keeps it "Tripped" while the vehicle is at the window or remote unit, once the contact to the customer has been made and disconnected, the Interface will not "Re-ring" the phone system and will ignore any Call Button signals.

When the vehicle pulls clear of the sensors range and it resets, there is a 30 second delay of the signal of the next vehicle before the Interface rings the phone system again. If the Teller/Technician makes audio contact with the customer, then the Vehicle Detectors signal and any further Call Button signals are ignored.

Troubleshooting the Telephone Interface System

The Universal Telephone Audio Interface uses a Subscriber Line Interface Circuit (SLIC) to provide a Central Office (CO) line output. The CO line output is a standard two-wire tip ring connection with loop start. This CO line output can be connected to a telecom test set, standard telephone or Key Service Unit (KSU) for testing.

There are three states that CO line output can be in. Note that these are voltages that would normally appear on digital multi-meter, Values will differ if measured on an oscilloscope.

- 1) With or without the CO line connected and the receiver on hook the supervisory voltage should be approximately 26Vdc. Note that a flashing RED LED indicates that the system is running.
- 2) With the CO line connected and the receiver off hook the voltage should be approximately 6.5Vdc. Note that a separate YELLOW LED labeled OFF HOOK is provided for each channel to monitor this condition.
- 3) With the CO line connected, the receiver on hook or without the CO line connected and the YELLOW LED labeled RINGING illuminated the voltage should be approximately 55Vac at 20 Hz.
- 4) Without a CO connected and shorting pins 2 & 3 together will cause the OFF HOOK LED to illuminate. Note that if the intercom is connected the audio will most likely squeal due to feedback.

If any of these voltages are not present please consult the factory for assistance.

Troubleshooting the Vehicle Detector LED Status

Sensor LED – Yellow

On – Vehicle Present

Off – No Vehicle Present

Sensor LED – Green

On – Power is on

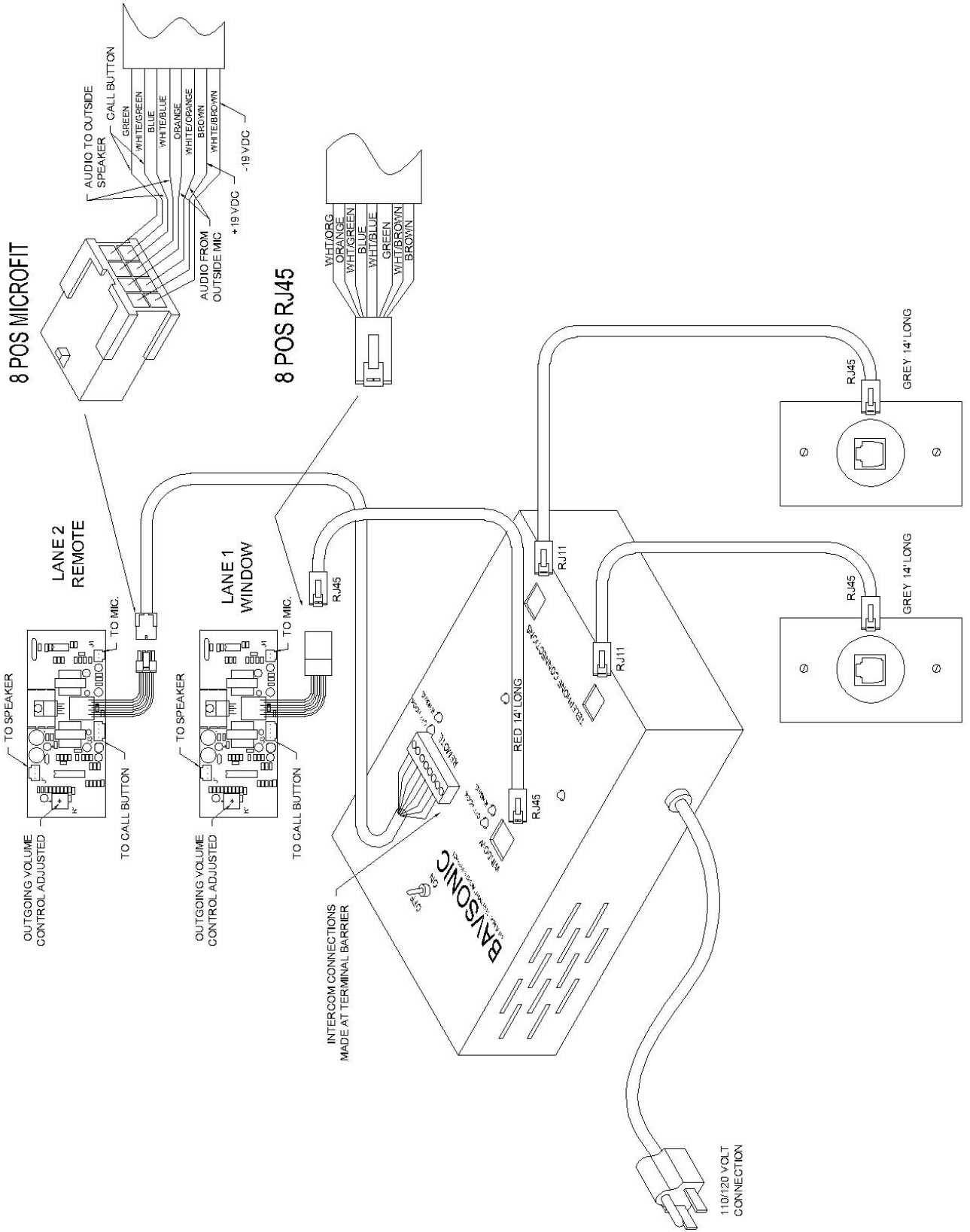
Off – Power is off

The Sensor Red LED will flash during the calibration, (Teach) mode.

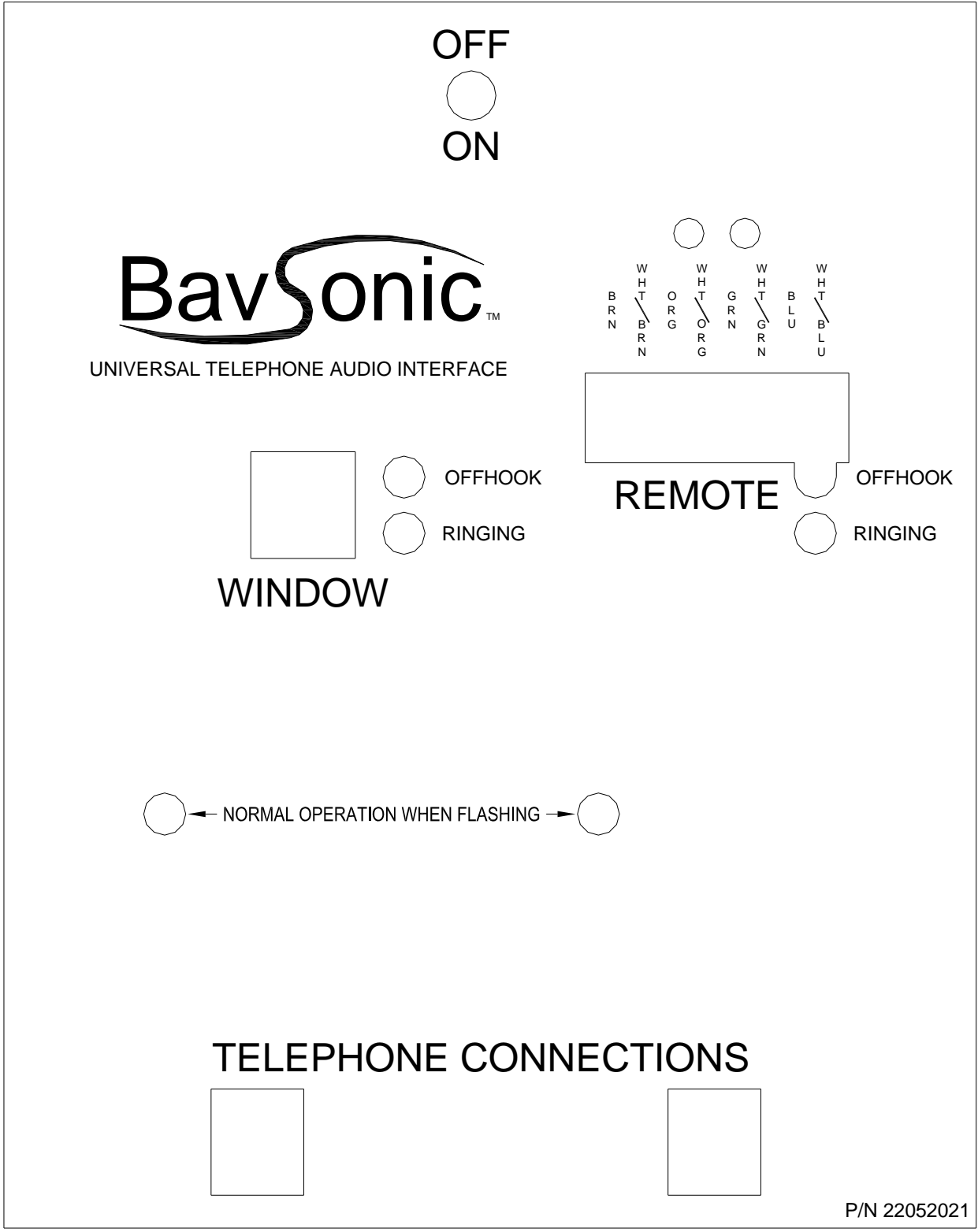
If the Sensor Yellow LED is on steady with no vehicle present, the calibration, (Teach), procedure needs to be performed.

If you have any questions, please contact the factory at 1-800-937-3322

Intercom Wiring Diagram

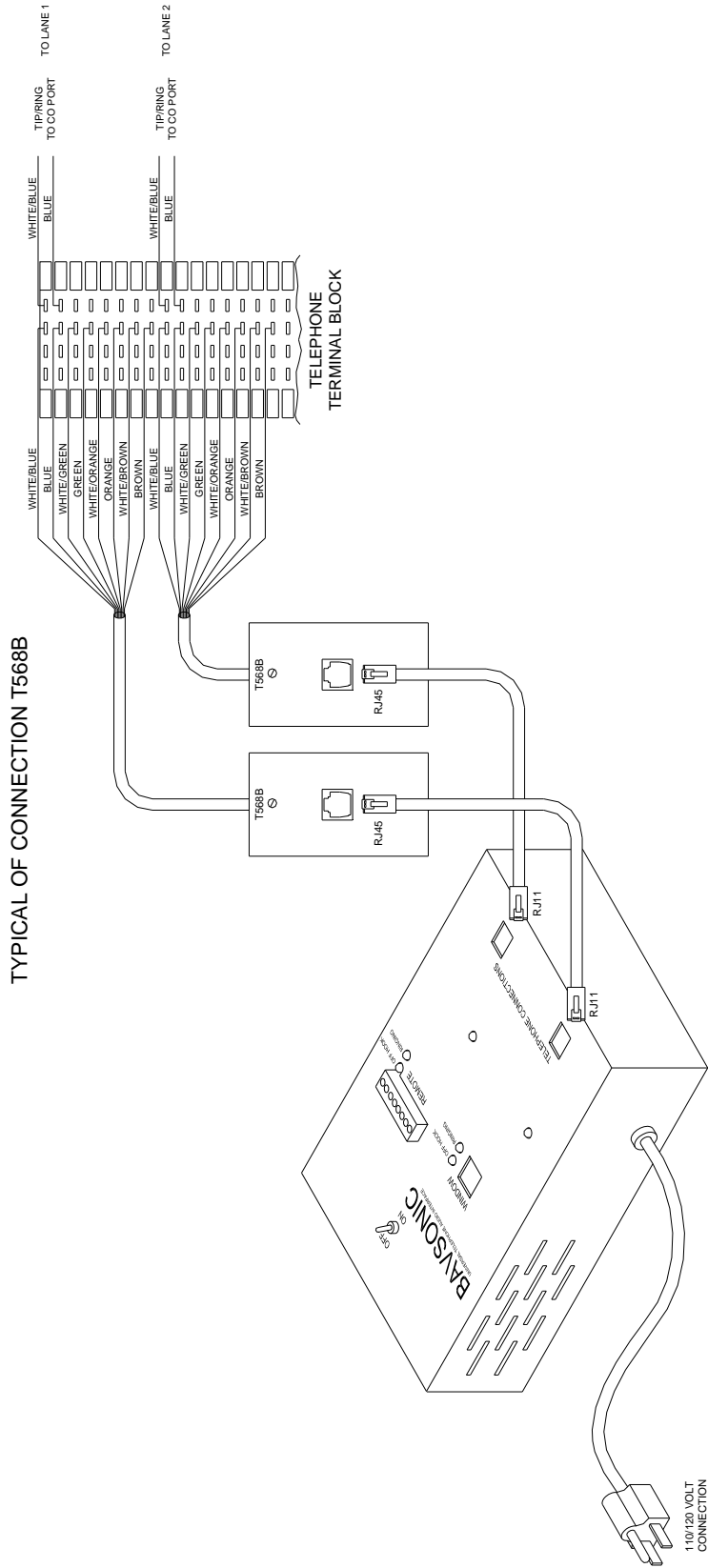


Interface Label Diagram



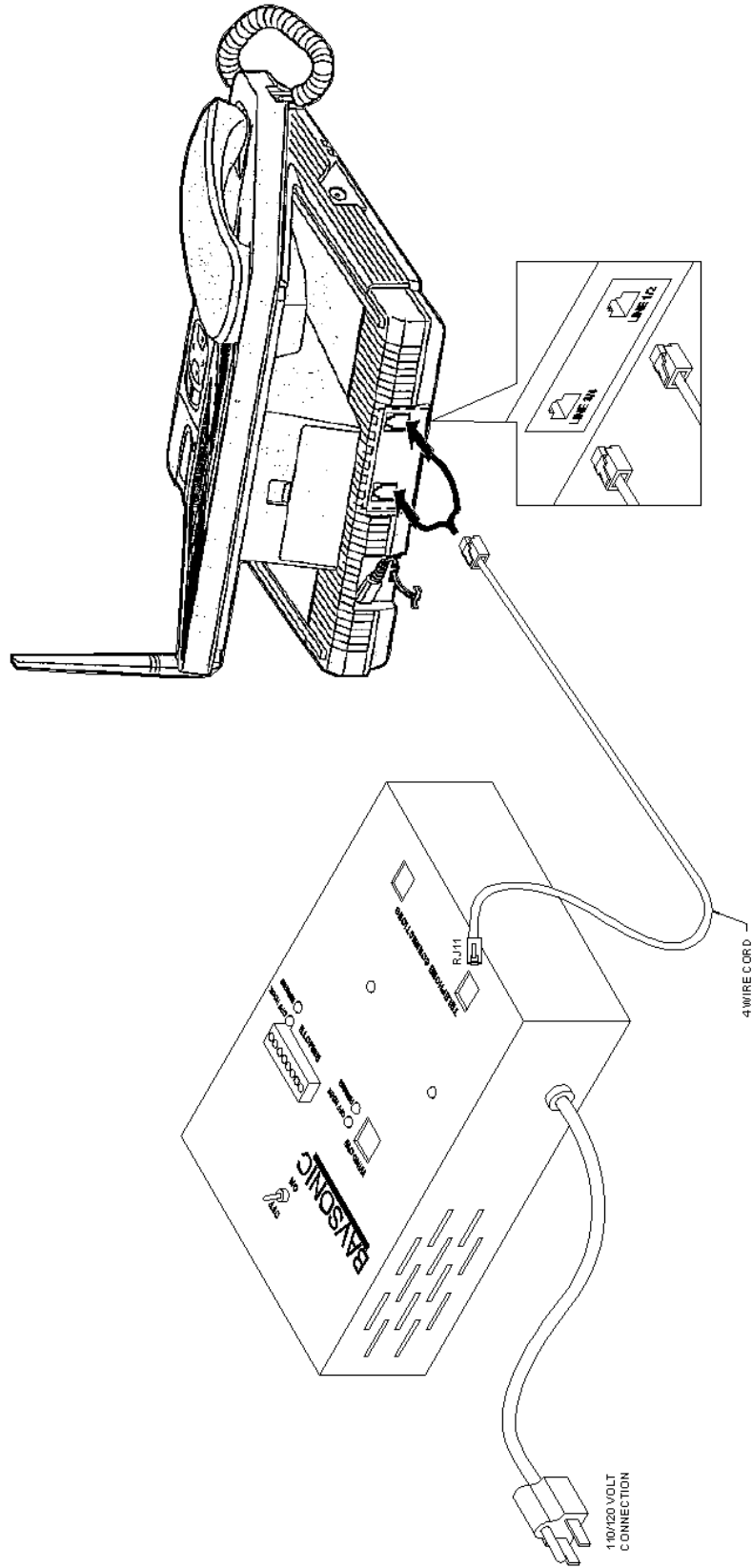
P/N 22052021

KSU Telephone System Wiring Diagram



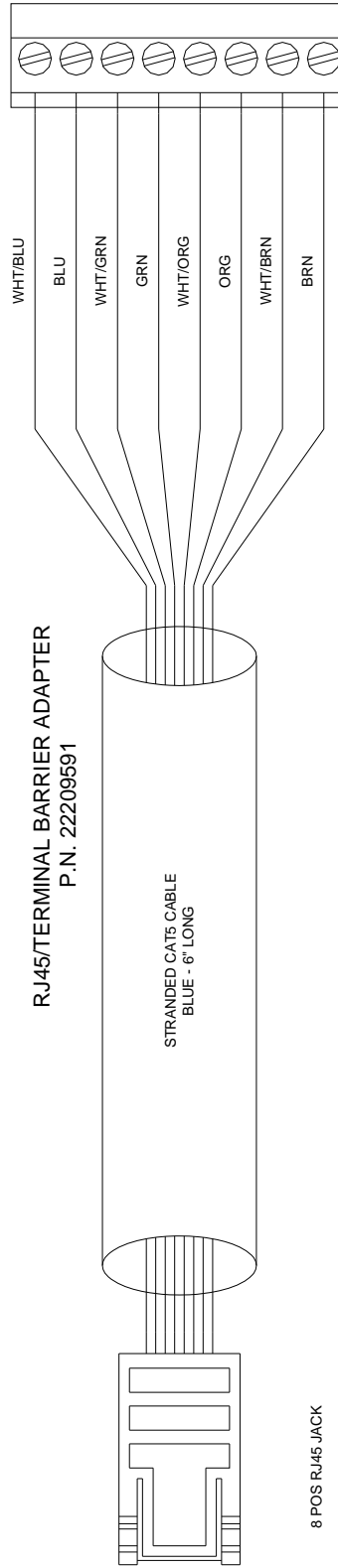
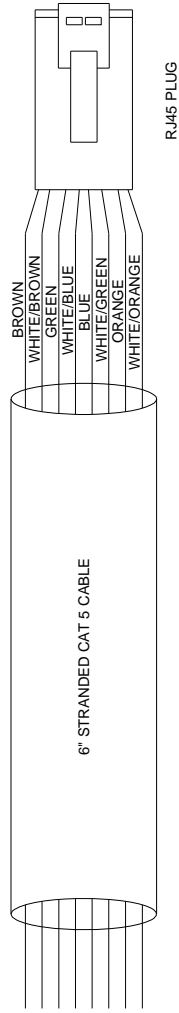
Panasonic KX-TG400B Wiring Diagram

PANASONIC KX-TG400B CONNECTIONS



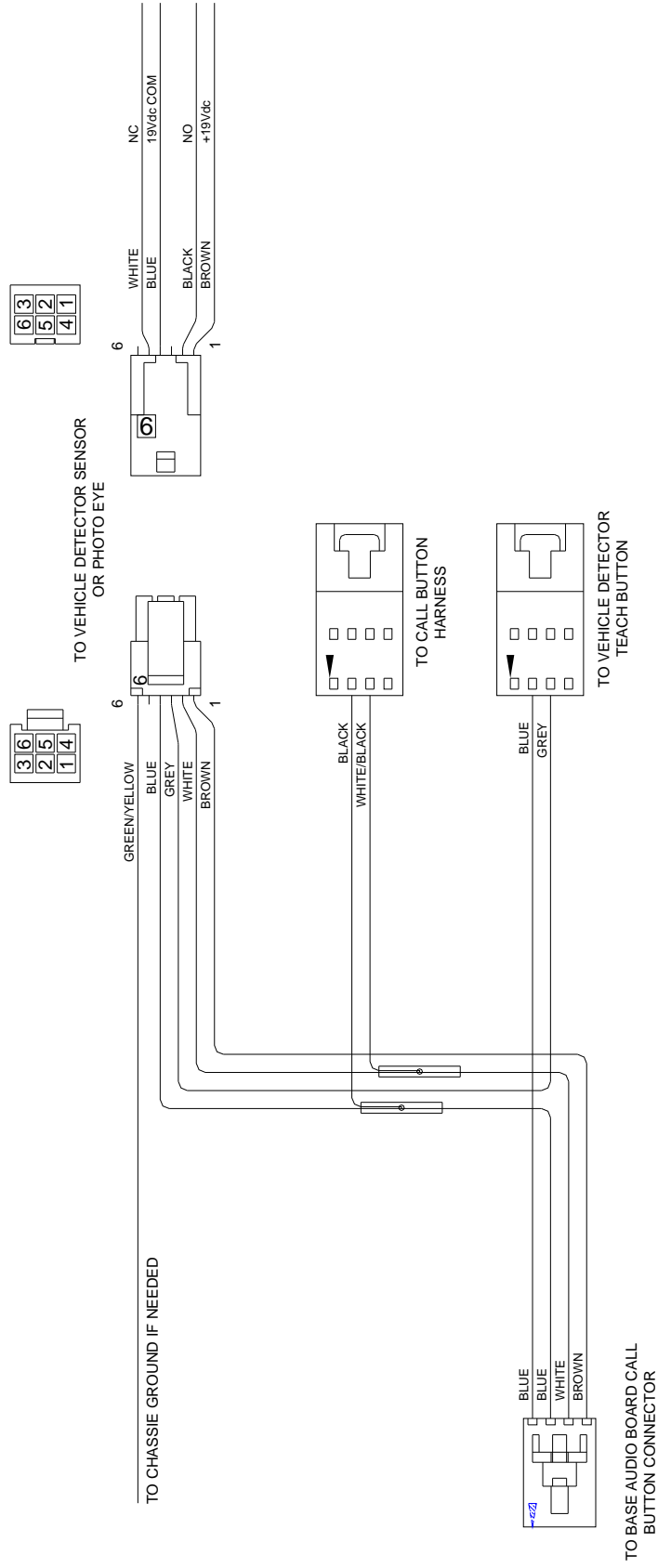
Lane Connections at Interface

RJ45 PIGTAIL
P.N. 22066011

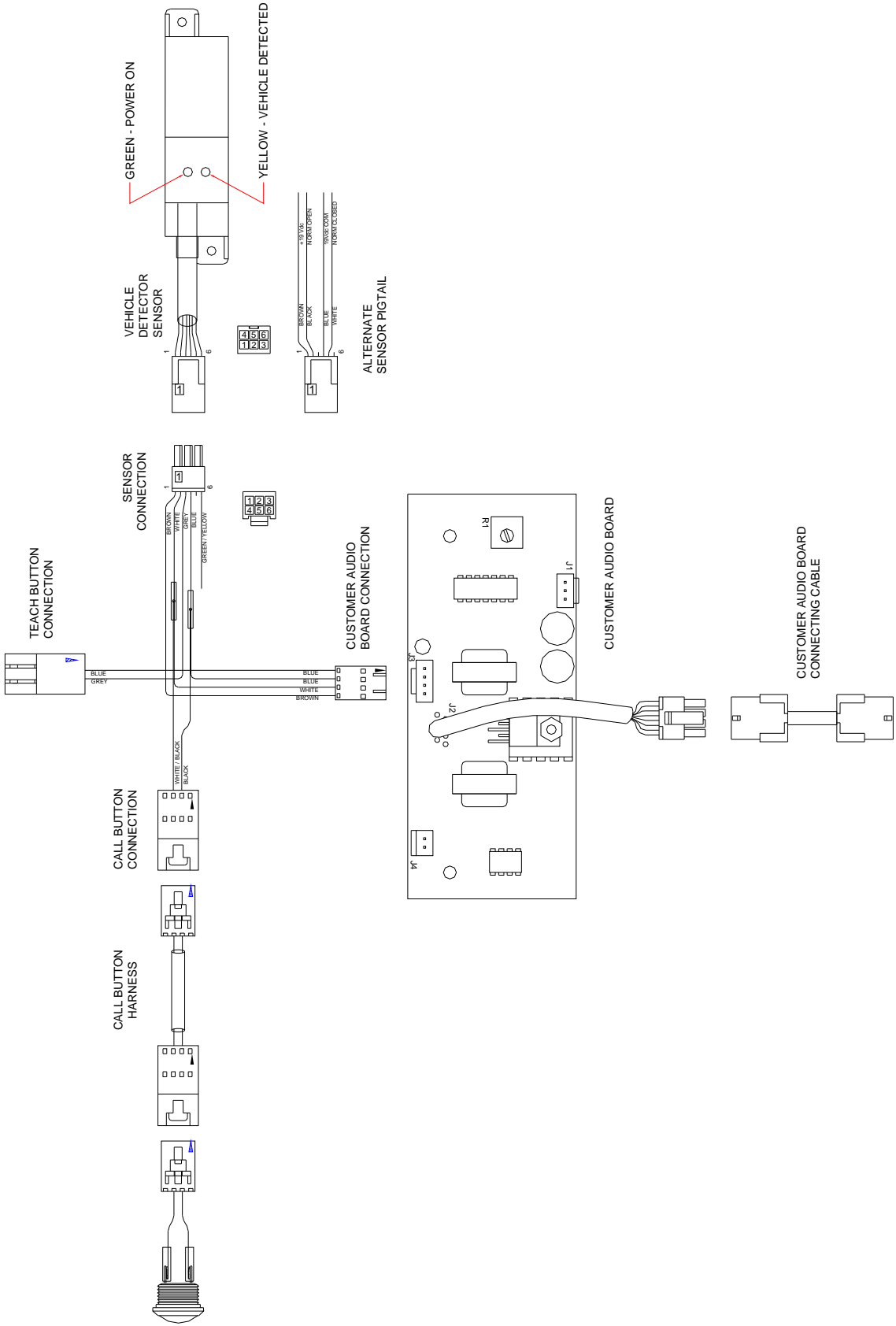


8 POS PHOENIX TERMINAL BARRIER

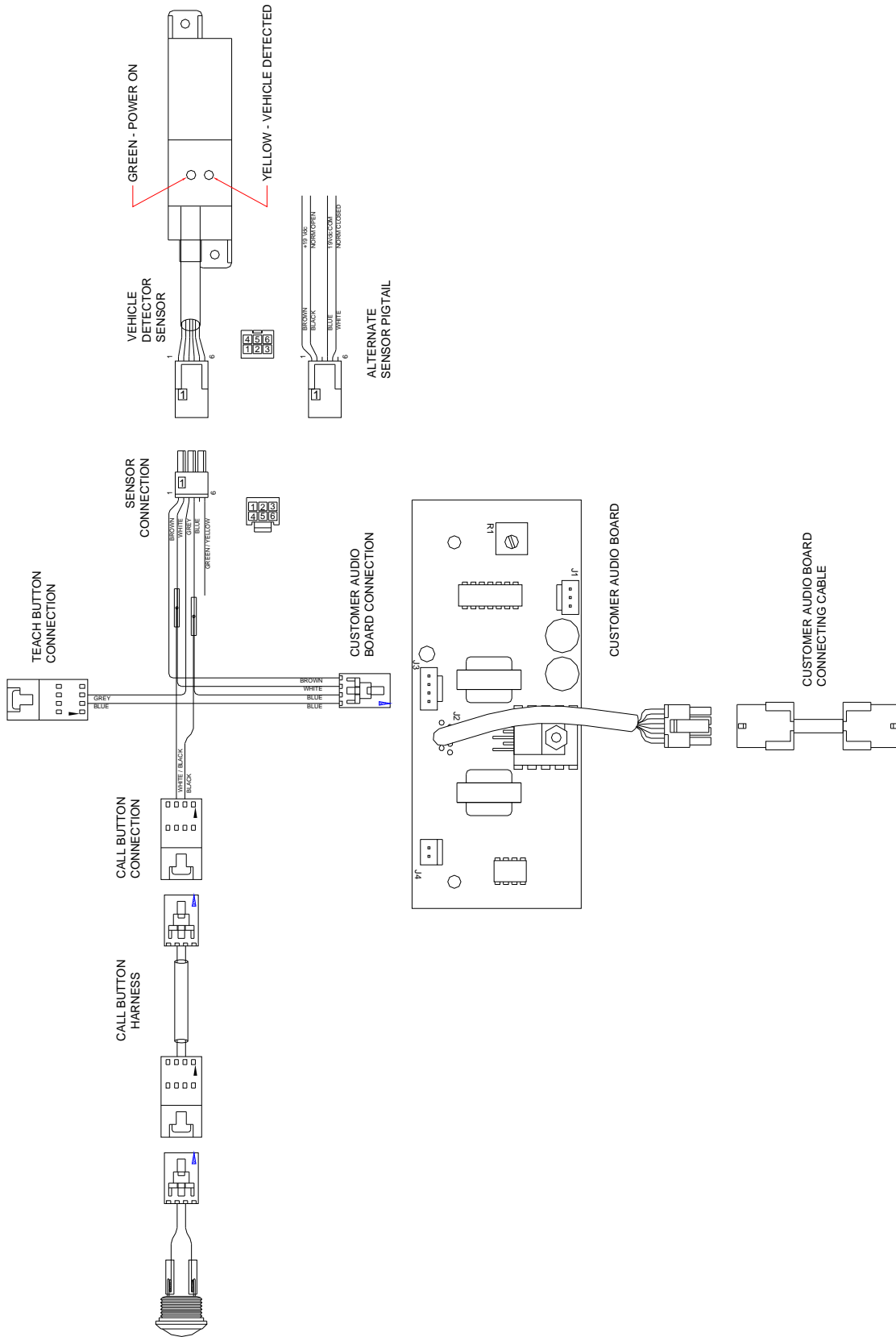
Vehicle Detector Harness



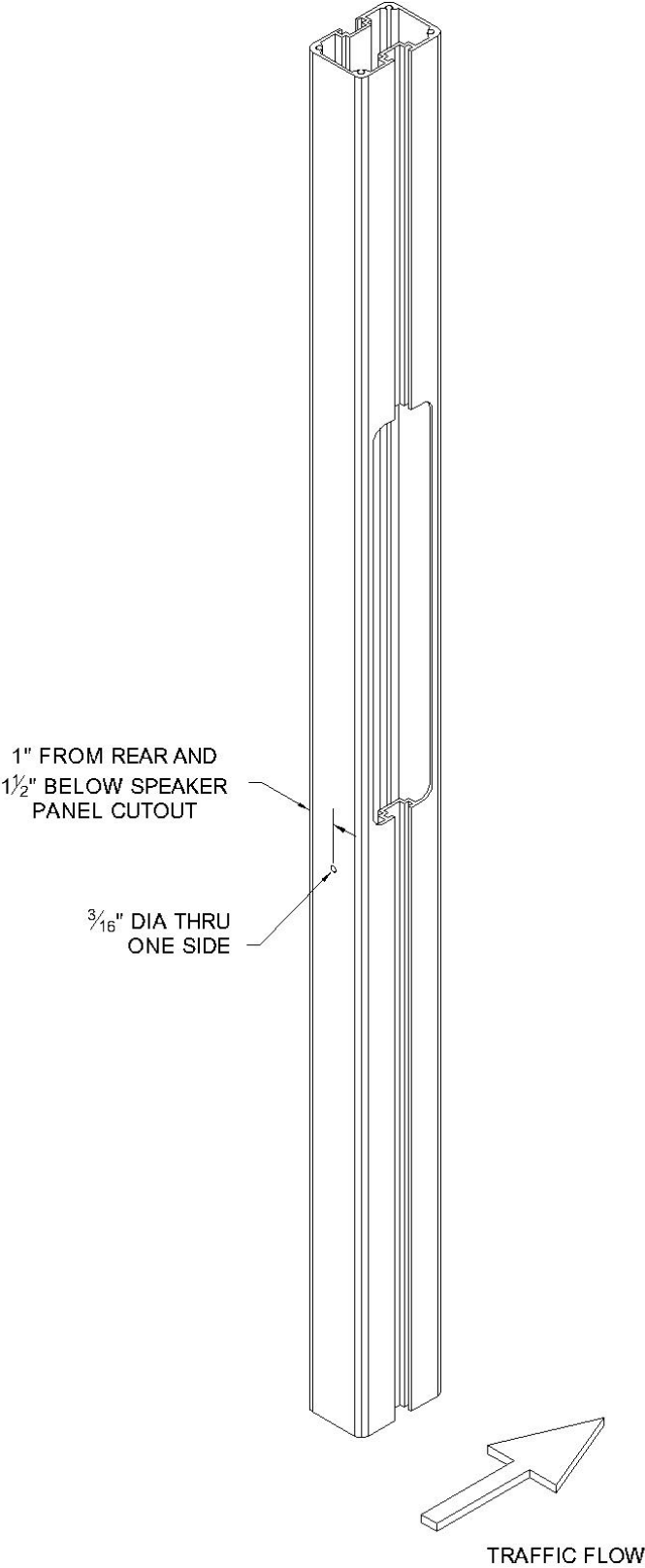
Detector Harness Connections for Green Customer Audio Board



Detector Harness Connections for Blue Customer Audio Board

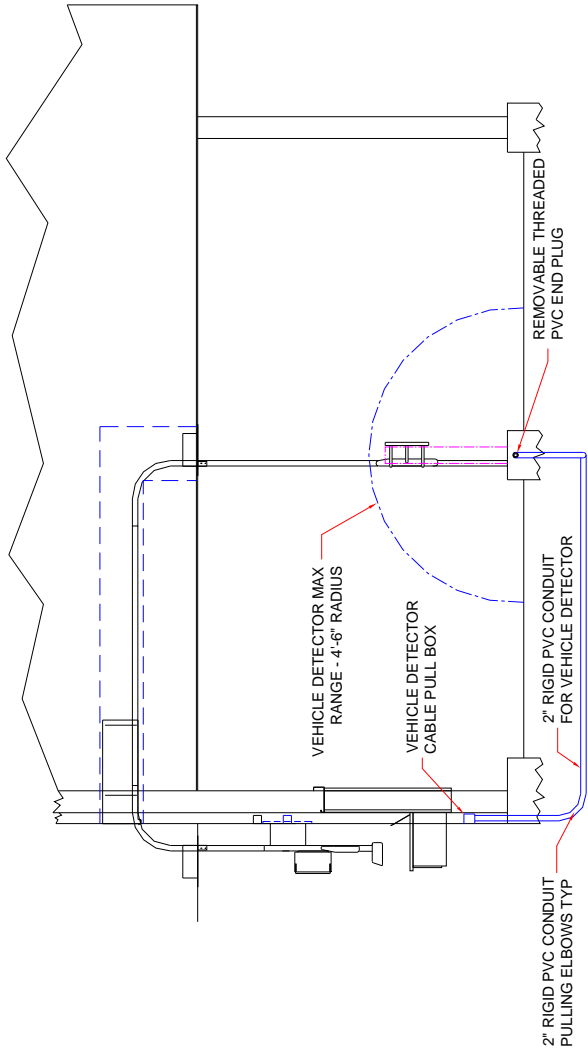
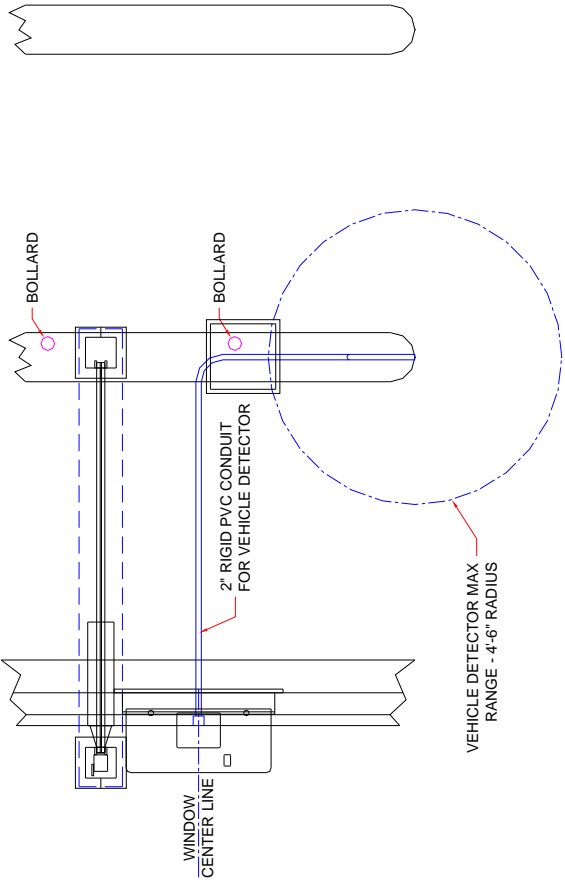
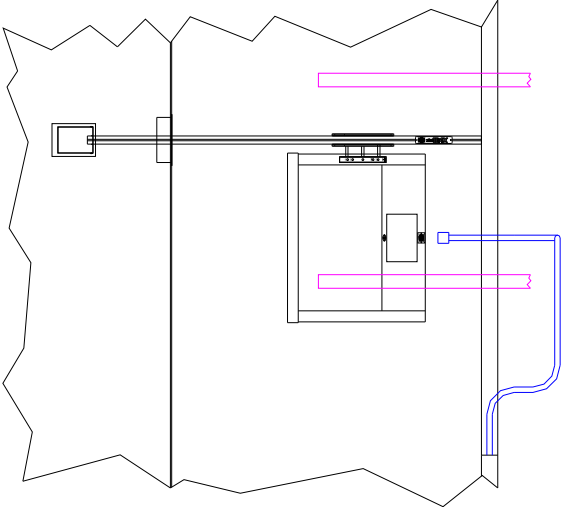


TT Mounting Illustration

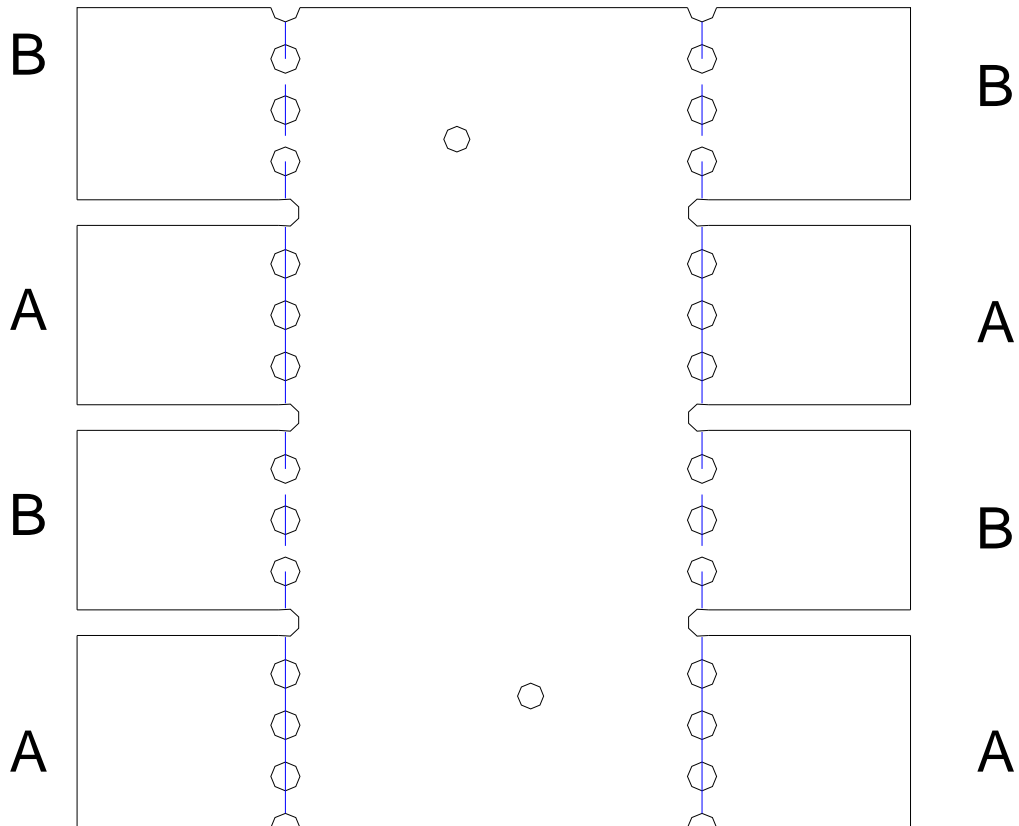


Typical Layout of Underground Routing of Conduit

(For Vehicle Detector mounted in end of Island)

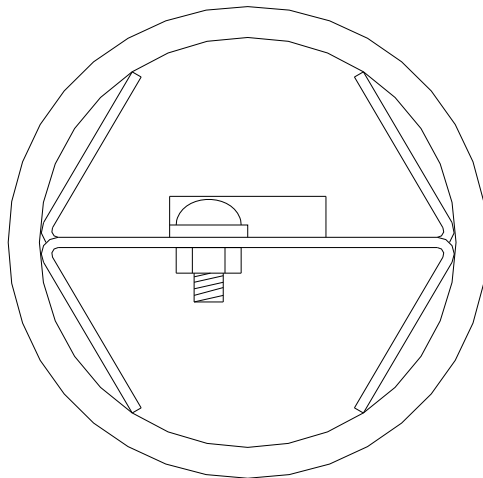


Pipe Mounting Bracket Illustration



HAND BEND TABS UP AND DOWN SO
BRACKET WILL FIT SNUG INTO 2" PVC PIPE.

A = BEND TAB UP
B = BEND TAB DOWN



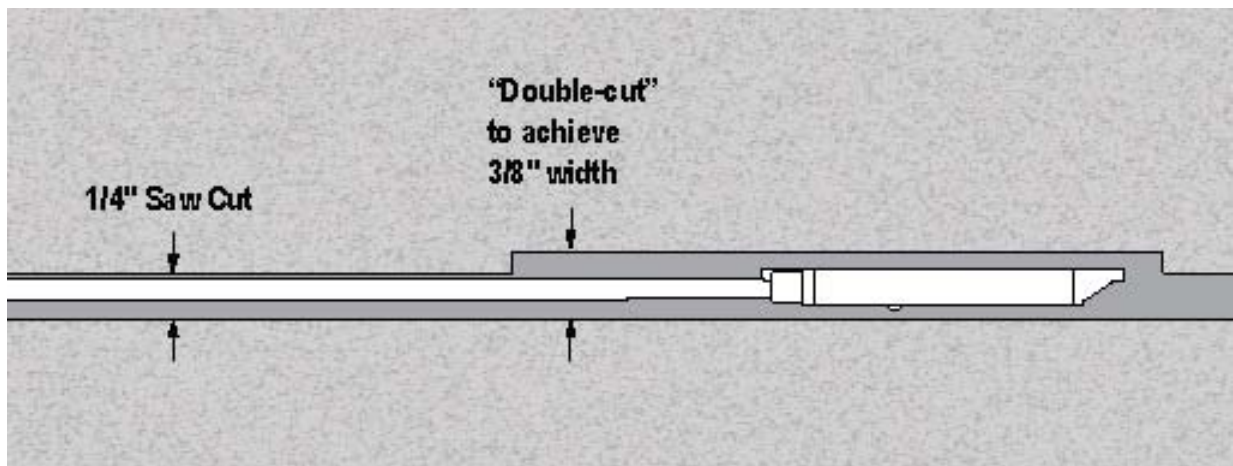
Pipe Mounting Illustration



Below-Grade Installation Instructions

The sensor should be mounted in the center of the vehicle traffic lane. The axles of the vehicles provide the most effective and most repeatable magnetic field changes.

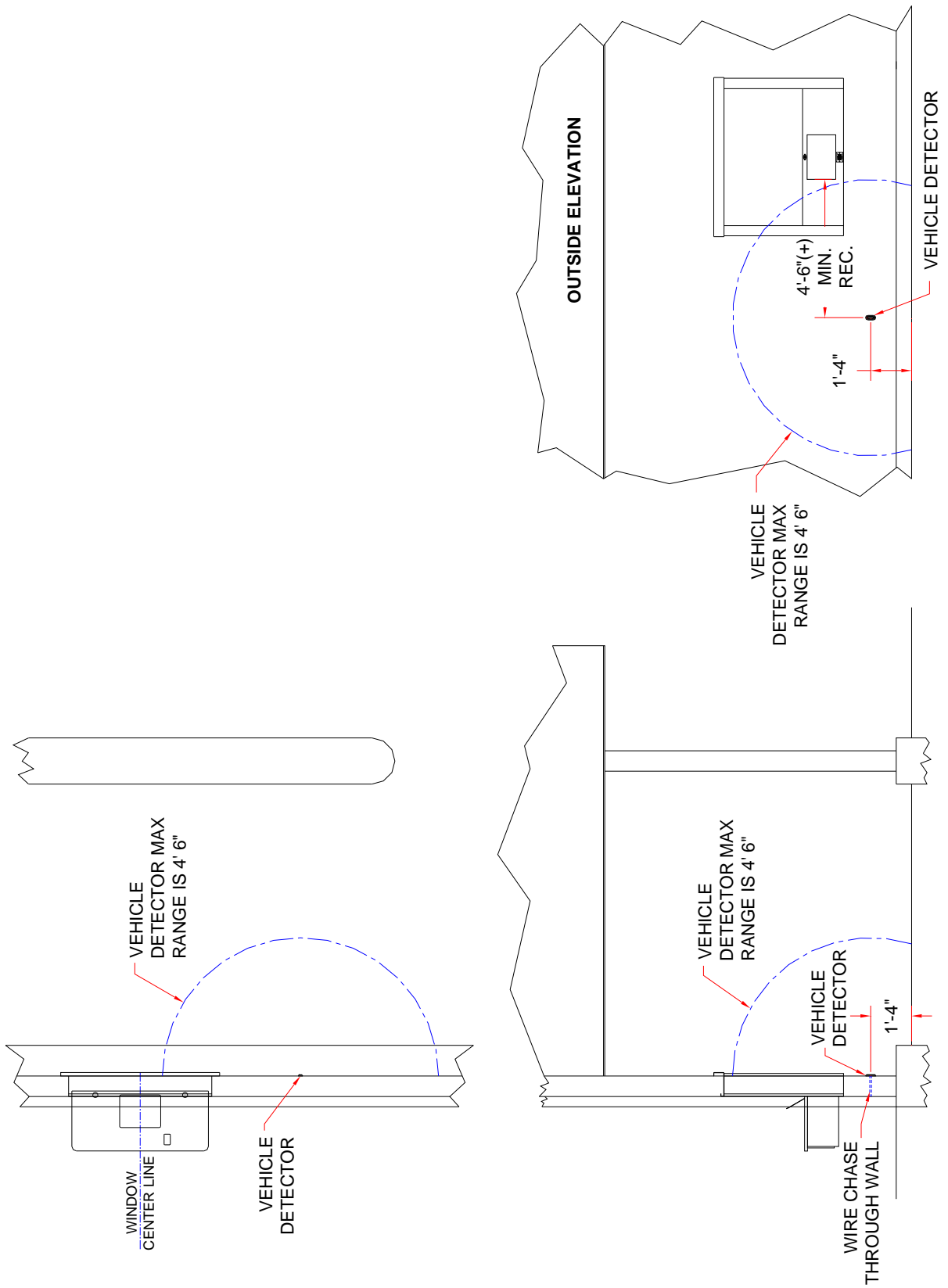
The sensor can be mounted in pavement within a single 3/8" saw cut. The cable will fit into slots as narrow as 1/4" wide. If the cut is narrower than 3/8", a double cut is needed where the sensor is to be installed. The cut should be 2" to 4" deep. Rebar or other metal embedded in the pavement will not affect the performance of the sensor.



Use an air hose to remove loose particles and moisture from the saw cut. Lay the sensor and cable into the saw cut. Fill the saw cut with loop or pavement sealant. **Caution: Do not use heated asphalt to fill the saw cut.** Using a thin object like a putty knife, work the sealant around the sensor and cable to eliminate trapped air.

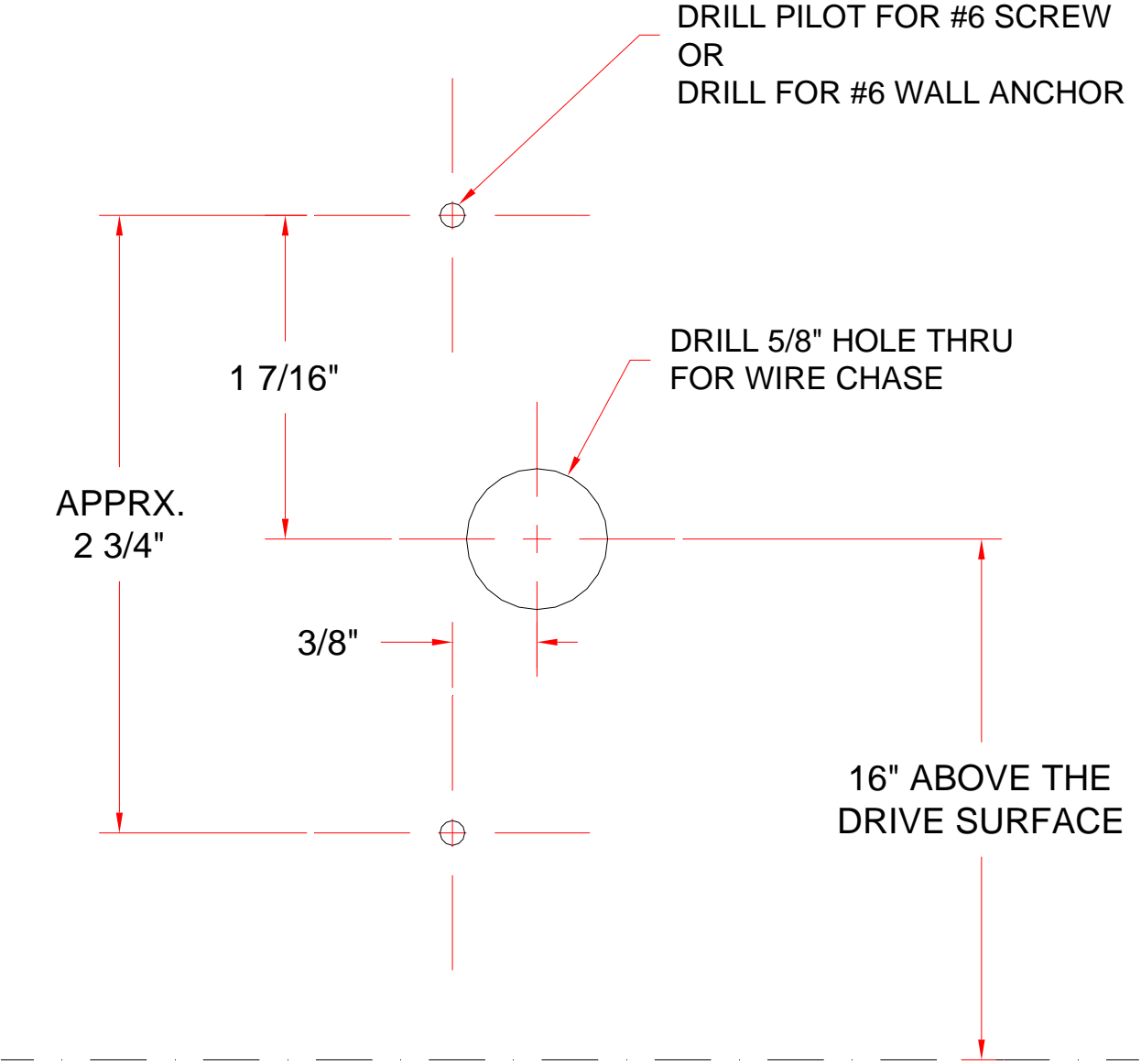
To remove the sensor simply pull the sensor cable straight up which will pull the cured sealant and sensor from the saw cut.

Wall Mount Position and Dimension



OUTSIDE DRILL DIMENSIONS

(NOT TO SCALE)



Sensor and Cover Assembly



Installation and service tool list for audio

1/8" And 3/8" Flathead Screwdrivers
#0 And #2 Phillips Screwdrivers
1/16" And 3/32" Allen Wrenches
1/2" Open-End Wrench
1/4", 5/16", 11/32", 3/8", And 1/2" Nut Drivers
Wire Cutters
Wire Strippers
Wire Crimpers
RJ45 Connector Crimpers & Connectors
Volt Meter
Electric Drill
Drill Bits
Level
7/8" Unibit
Fish Tape
Loctite

