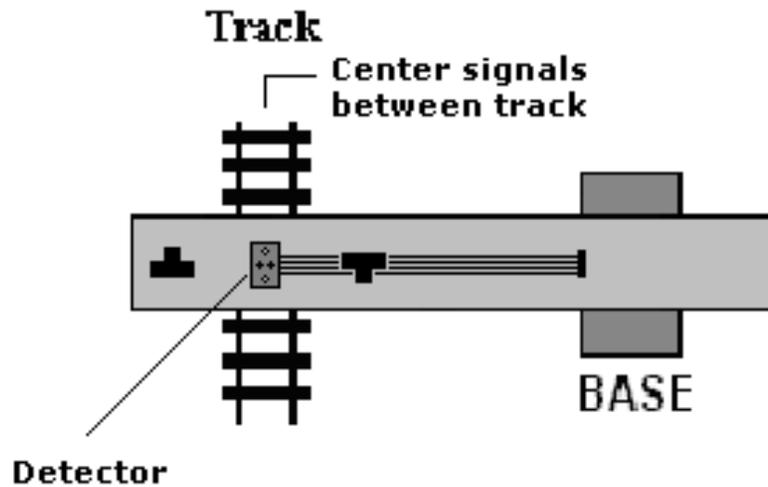


The Bridge and the Environment

The bridge is weather resistant but please take care that it is protected from the elements. Cover it with plastic or a container that will protect it from inclement weather. In climates where there is severe weather, it is best to take the signal inside. Don't forget about those critters which can mangle the bridge in nothing flat!

Figure 3



South Bend Signal Company

ATSF Cantilever Signal Bridge

AC310



AC300 Manual 2015

Preparing the Bridge for Operation

This bridge has been designed from your specification. It may have from 1 to four signals. Before using the bridge, some choices have to be completed.

Mode of Operation: Automatic Block Signaling (ABS)

The signal bridge is capable of two modes of operation. These modes are **Simulated ABS and Real-Time ABS**.

Simulated ABS: This is the default mode of operation for the bridge. When a train passes under the bridge the signals will drop to red. After a pre-designated time period the signal will change to yellow for the designated time and then return to green. The yellow aspect will be displayed after the red regardless of track conditions. If you want the minimum amount of wiring then choose Simulated ABS mode. Go to the section entitled **(Simulated ABS Setup)**.

Real-Time ABS Mode: In real-time ABS mode the signal will drop to red when a train passes under the bridge. The bridge will send information to the next signal behind that the current block is occupied. When the train is clear of the bridge the signal will turn to green. The yellow aspect for the signals is controlled by the track conditions for the next block ahead. When the next block ahead is occupied, the signal on the bridge will be yellow until the block ahead is clear. Of course if a train passes under the bridge signal it will drop to red regardless of the track conditions ahead. This mode of operation requires wiring the I/O wires from the signal to the signal ahead and behind the bridge. To setup the bridge for real-time mode, go to the section entitled **(Real-time ABS Setup)**.

3. The outer most end of the cantilever should be centered over the track.
4. Once you have determined the proper distances the signal can then be mounted at this location. We suggest using a piece of treated lumber for the base making sure that it is securely embedded next to the road.
5. Mark holes on the mounting surface to receive the five screws provided. Drill 3/32nd inch holes to receive the screws. Insert the screws and tighten. See **Figure 3** on the back for the proper placement of the bridge in relation to the track/tracks.

Installing Detectors

The bridge is packaged with detectors for A & C and/or B & D signal configurations. The detectors are centered between the rails under the bridge. Use the 3/8th inch screws provided. The wires are installed between the ties and plug into the bridge base. The IR light shines upward toward the train. When a train is under the bridge the IR light is reflected back and received by the detector and sets the signal to red. (See Fig.1).

Powering the Bridge

The Bridge can be powered from two sources a 12 volt battery or 12 volt DC power source. Please do not use old accessory terminals from railroad throttles. Make sure that the voltage is around 12 volts. There are two black wires from the signal base which are connected to the power source. It does not matter which wire is connected to which terminal from the power source. The circuitry will rectify the power source and regulate the voltage on the control board.

Installing the Bridge

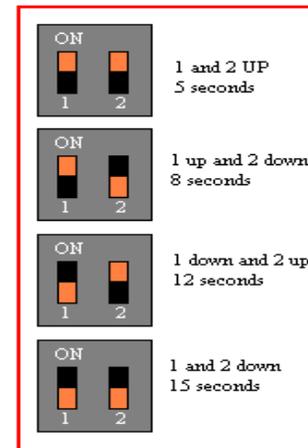
The signal should be placed next to the track so that the following conditions are met:

1. The signal should have proper clearance for rolling stock. Place the widest piece of rolling stock on the track closest the bridge as a gauge. And mount the signal according to the space required.
2. The bridge should be installed with proper clearance from the top of the rail to the bottom of the signal bridge cantilever. Use the tallest piece of rolling stock to use as a gauge. Make sure that there is clearance for the IR emitter which protrudes from the bottom of the cantilever.

Simulated ABS Setup

For **simulated ABS Mode** do the following:

1. Remove the base plate on the bottom of the bridge by laying the signal on its back (the side with the ladder) and removing the four screws holding the base in place. The I/O wires are inside the housing but will not be used.
2. Determine the amount of time that you want the signal to be red and yellow. On the board there is a pair of dipswitches which can change the amount of time the signal is red and yellow. The default time is 5 seconds. If you choose this time you can replace the base plate and go to the section entitled (**Powering the Bridge**).
3. If you want to change the amount of time from 5 seconds to a longer amount of time you have to change the dip switch settings. You can use a small screw driver to move the switches to the setting that you want. Use the chart below to determine the time.

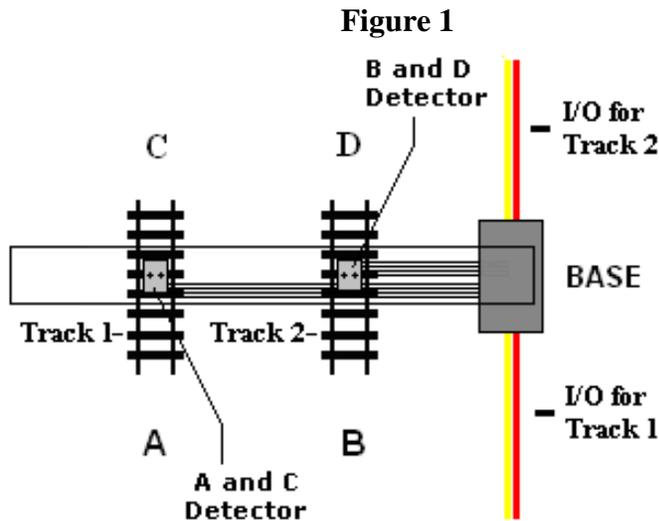


After setting the time you want replace the base plate and got to the section entitled (**Powering the Bridge**).

Real-time ABS Setup

For **real-time ABS mode** do the following:

1. Real-time mode requires that you have other American classic signals or bridges on your railroad and you are going to use real-time mode for these signals as well. There are two **I/O** wires for each track/signals on the bridge inside the base. Use Figure 1 below while making connections between signals.

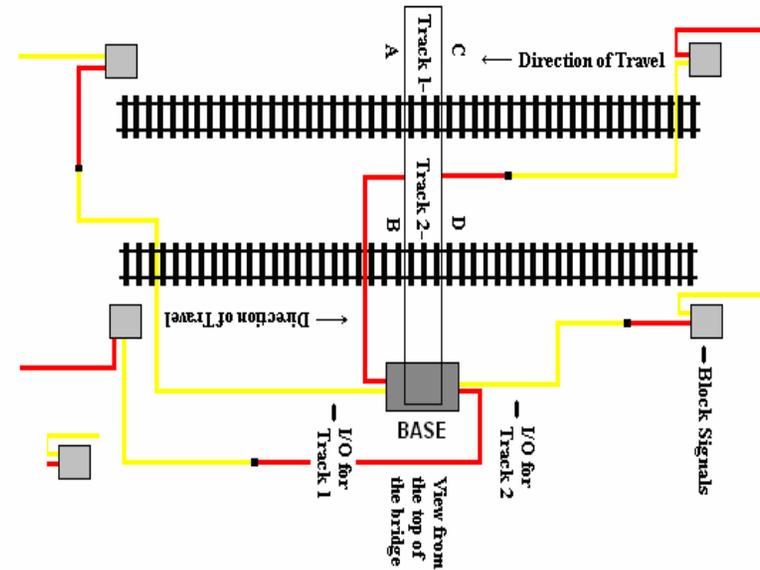


2. Remove the base plate from the base housing by removing the four screws. Note that there are two sets of I/O wires, one for each track (red and yellow). If your signal configuration is **AC** or **BD** then you will only need to use the set of wires for the corresponding track. The other set of wires can be left inside the base housing. The holes left can be plugged with silicon. Strip the ends of the wires and inset them through the base housing.
3. Remove the ABS jumper on the board and place the jumper on just one post so that in the future if you want to change

the bridge to simulated ABS mode you will have the jumper available. Replace the base plate with the four screws provided.

4. Use the following diagram to make wire connections between the bridge and other signals on the railroad.

Figure 2



Note that each red connects to the yellow wire of the signal behind the bridge and each yellow from the bridge connect to the red wire of the signal ahead of the bridge. Make sure that each yellow wire connects to each red wire. Failure to do so may damage the control board.