BUBBLE ARCH, FOAM CURTAIN INSTALLATION MANUAL

Part # FOAMCURT000XXXX
FOAMBUBL000XXXX

TABLE OF CONTENT

Equipment Utilities

	FOAM CURTAIN ARCH FOAMCURT000XXXX	BUBBLE ARCH FOAMBUBL000XXXX
ELECTRICAL	115 VAC, 1 PH, 15AMPS FLA: 10AMPS (INCLUDING SIGN)	115 VAC, 1 PH, 15AMPS FLA: 10AMPS (INCLUDING SIGN)
HYDRAULIC	N/A	N/A
PNEUMATICS	10 SCFM @ 100 PSI (MAX)	N/A
WATER	FRESH: 5 GPM @ 40 PSI (MAX)	FRESH: 10 GPM @ 40 PSI (MAX)
CHEMICALS	2 OUNCES PER CAR (AVERAGE) @ 120CPH	2-4 OUNCES PER CAR (AVERAGE) @ 120CPH
OUTPUTS (CAR WASH CONTROLLER)	(1), ONE FOR CONTROL PANEL	(2), ONE FOR CONTROL PNL AND ONE FOR DLTN STN

Equipment Specifications and Features

- ☐ Convenient 115VAC Single Phase Supply Minimize Installation Cost
- ☐ Oversized Back Lit Sign Customizable to your Request
- ☐ Compact Design: Utilize only 3-0" of Tunnel Space
- ☐ Two Exiting foaming options: Triple Foam and Single Foaming Bubble Arch

Suggested Installation Tools and Materials

- ☑ MEASURING TAPE
- ☐ BALL PEN HAMMER
- ☐ WRENCHES ASSY
- ☐ SCREWDRIVERS ASSY
- ☐ HAMMER DRILL WITH 1/2IN WEDGE ANCHORS
- ☐ LEVEL
- ☐ LADDER
- ☐ SAFETY GOGGLES

Notes and safety Symbols

Where necessary, important points will be highlighted in this manual, using the following symbols:

NOTES: **PROVIDES FURTHER INFORMATION!**

STOP! **PRECAUTION TO TAKE TO AVOID EQUIPMENT MALFUNCTION OR ERROR!**

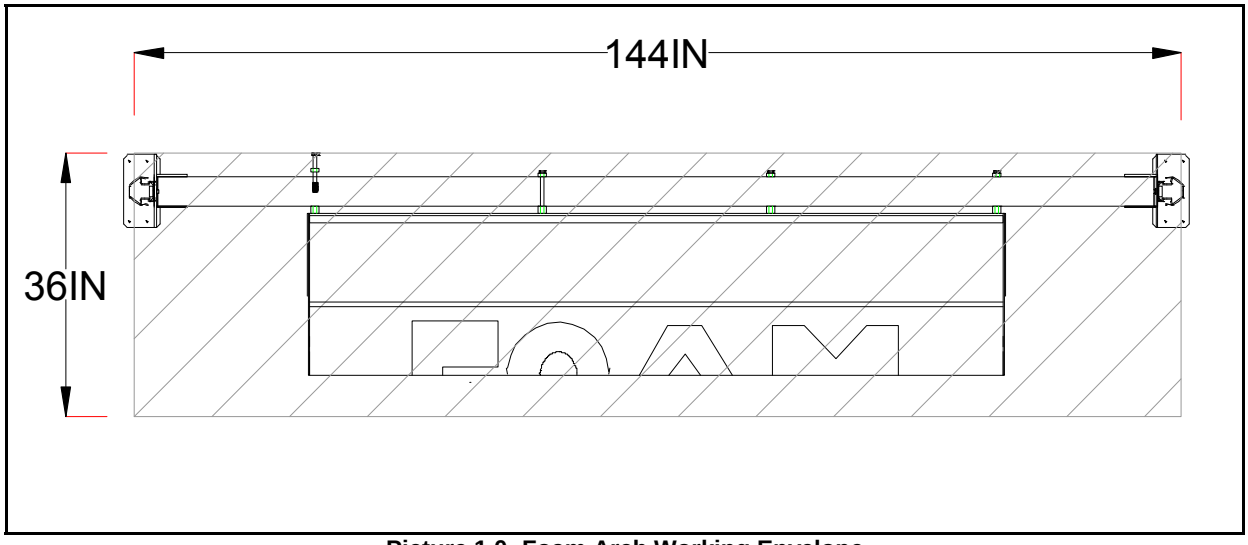
WARNING! **DANGEROUS SITUATION WHICH MAY CAUSE EQUIPMENT DAMAGES, PERSONAL INJURIES OR FATALITIES!**

Always follow all "Notes", "Warning" and instructions. Not doing so may have serious consequences on the overall performance of the washing equipment and/or the safety of the people working on and with the equipment!

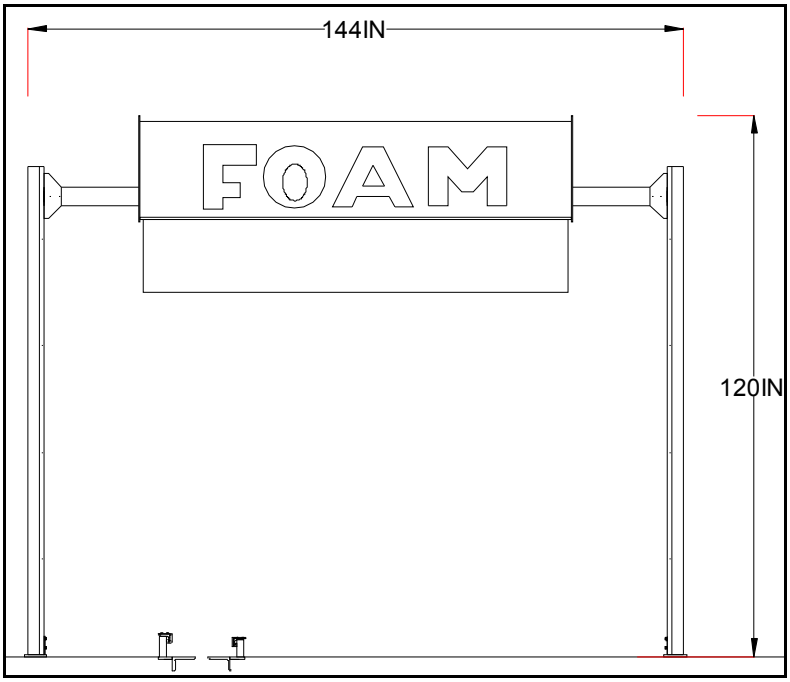
Installation Instruction for FOAM ARCHES :

☑ **Open** all boxes and crates and verify that you have all the required components as well as all your installation material.

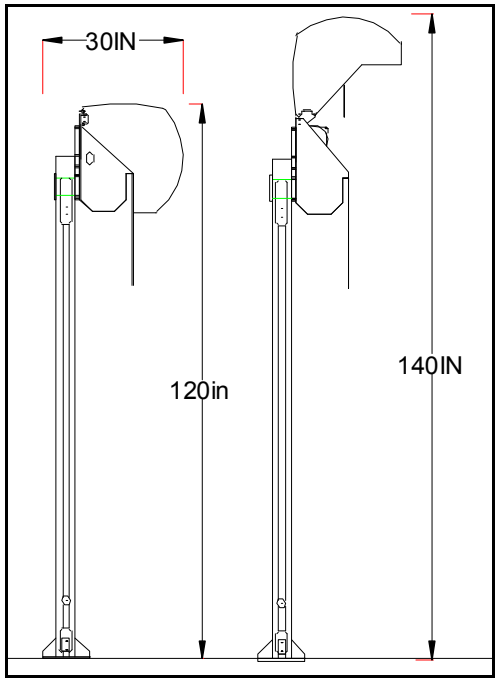
☐ **Locate** where the arch will be installed and, using the picture below, verify that the area is sufficiently large for your new foam arch working envelope (see Picture 1.0).



Picture 1.0: Foam Arch Working Envelope

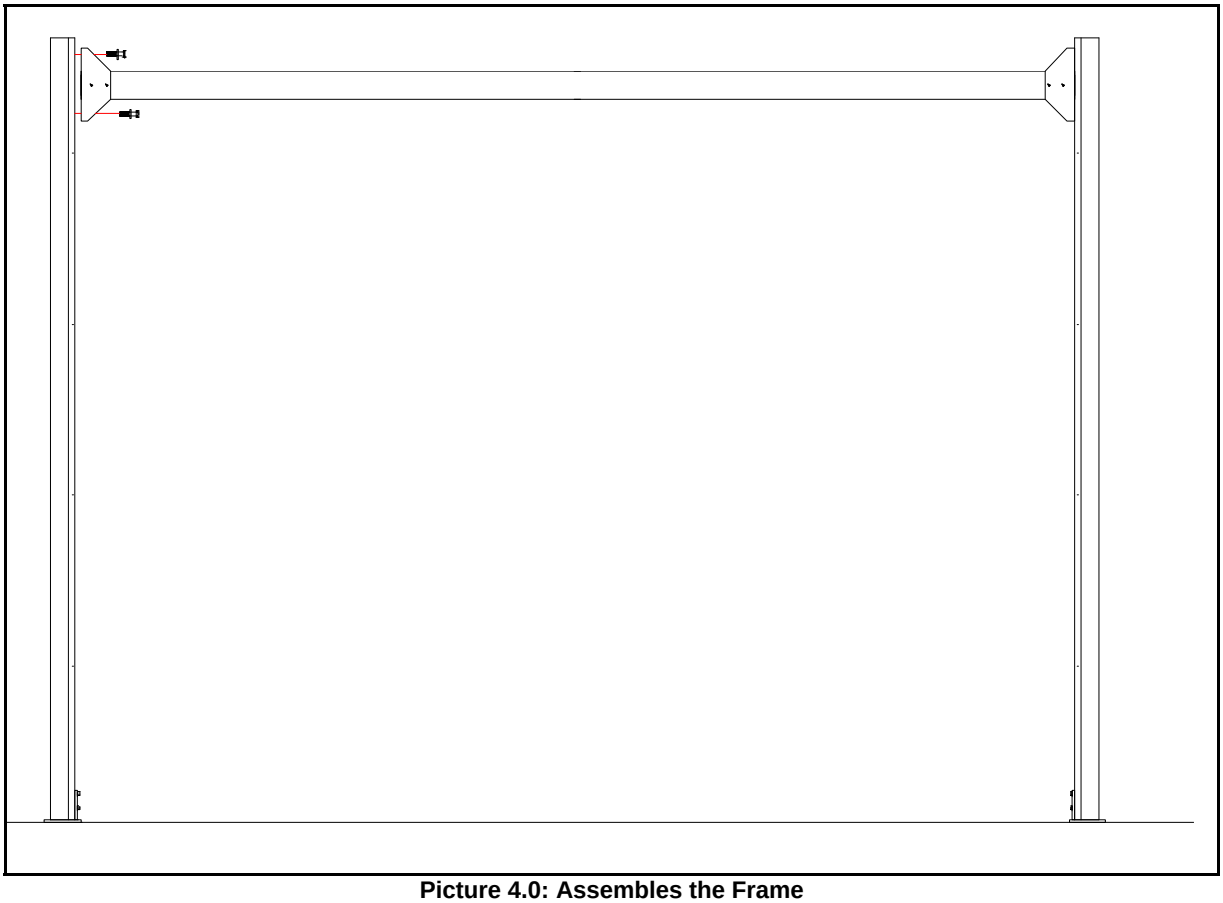


Picture 2.0: Foam Arch Overall Dimensions



Picture 3.0: Foam Arch Overall Height

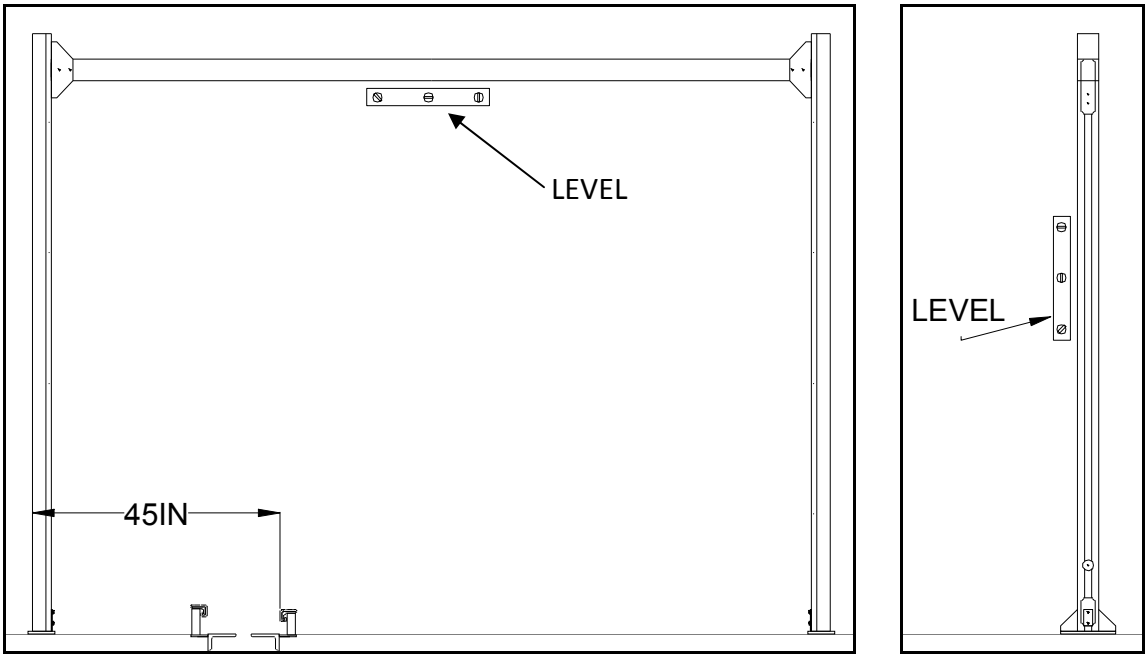
☐ **Assemble** the frame (like shown on Picture #4.0 below) in the area where the arch will be installed and stand the frame up. The fasteners are shipped secure to the leg (top of the legs).



Picture 4.0: Assembles the Frame

☐ **Position** the frame with the driver side **LEG OUTSIDE EDGE 45IN** away from the **INSIDE EDGE** of the **CONVEYOR INSIDE GUIDE RAIL**.

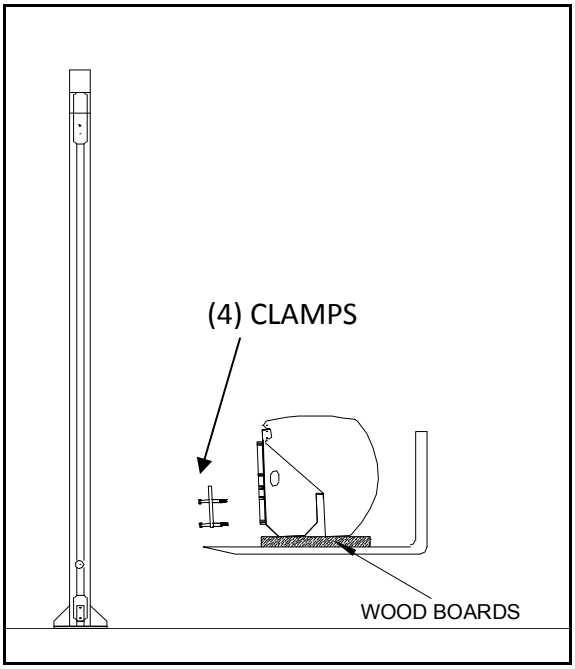
☐ **Secure** the frame to the floor using ½"X4-1/2" wedge anchor bolts. Level the arch as shown below and shim under the base plate if needed.



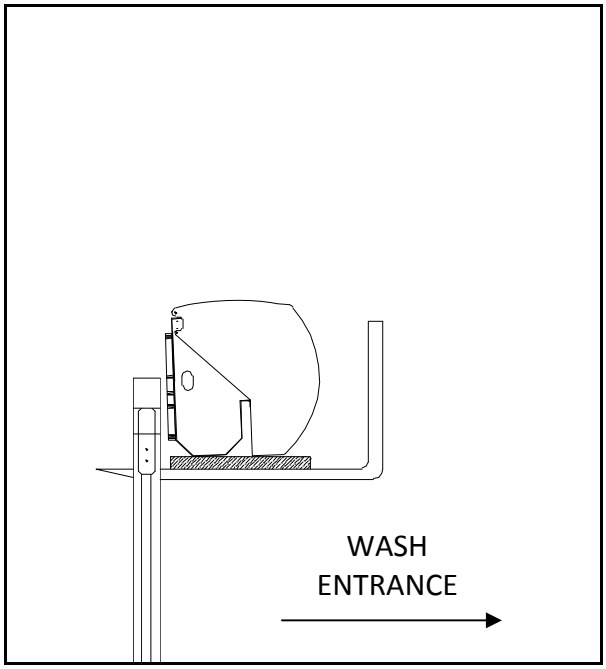
Picture 5.0: Level The Arch

☐ **Secure** the head assembly on wood boards and removes the four crossbeam clamp (see Picture #6.0). Lift the head assembly toward the entrance side of the arch and, using the four clamps, secure the head assembly to the 4X4 arch crossbeam (see picture #7.0). Do not tighten the clamps to the beam yet.

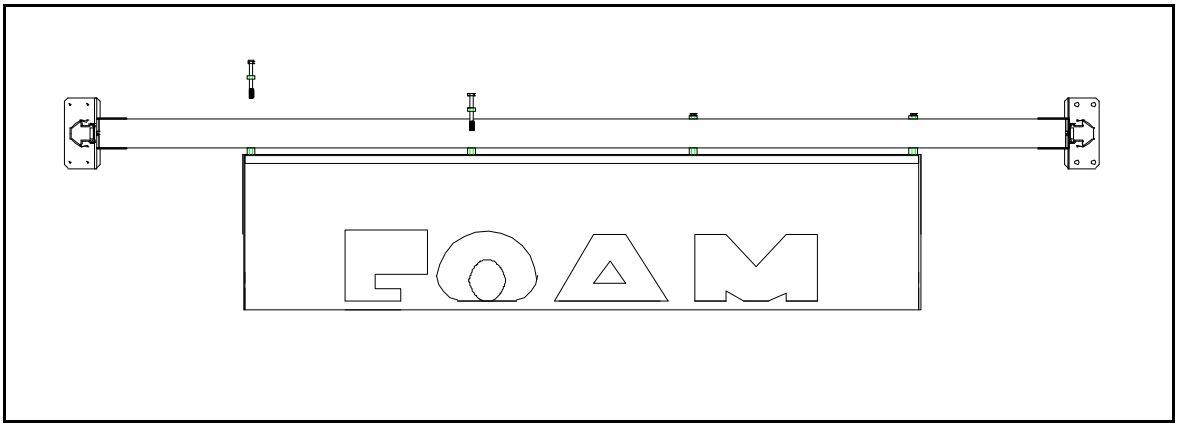
☐ **Centers** the head assembly onto the crossbeam, slowly drop the head assembly from the lifting device. This will allow the head to hang from the fasteners insuring that the head will be level when the fasteners are tightened. Then tighten the clamps to the beam. Open the front door and unroll down the vinyl strip.



Picture 6.0: Remove the Clamps



Picture 6.1: Raise the Head Assembly

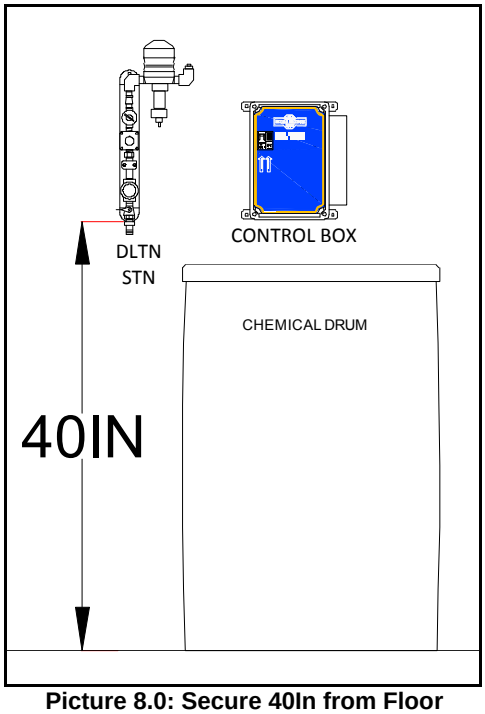


Picture 7.0: Secure the Clamps to the Beam

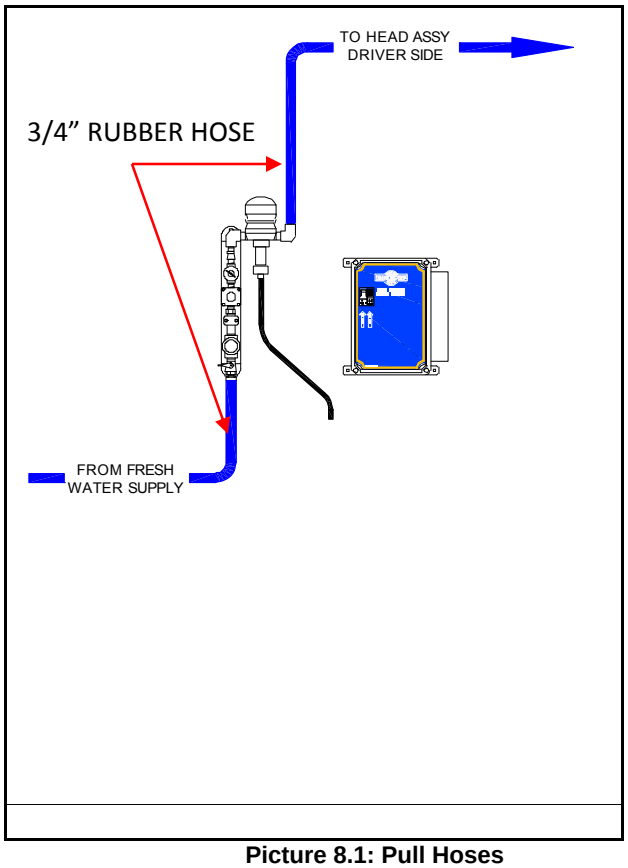
BUBBLE ARCH Utilities Installation :

☐ **Locate** the optional dilution station and secure it to a solid wall, at least 40 inches above the floor (see Picture #8.0). This will allow for sufficient room for a 55 gallons chemical drum to be position under the dilution station without interfering with its operation. Secure the optional control box close by.

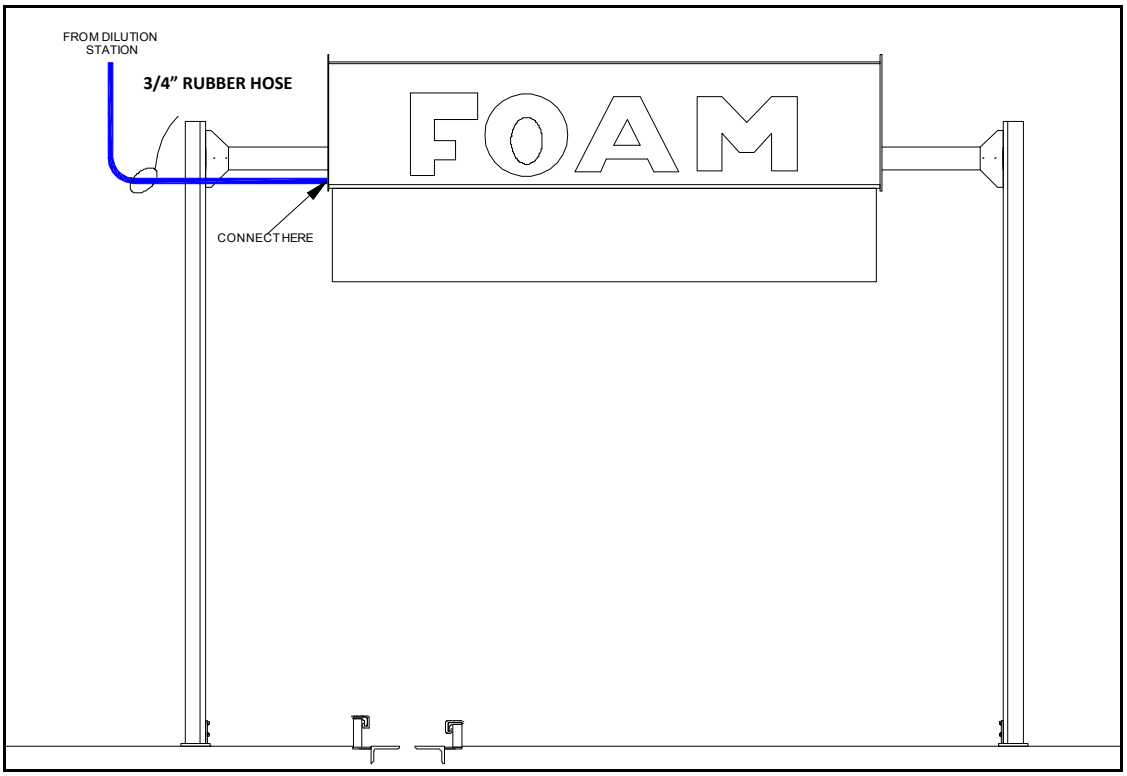
☐ **Pull** a hose 3/4" from a fresh water supply and connect to the dilution station inlet barb fitting (see Picture #8.1 below). Pull another 3/4" hose from the outlet barb fitting to the head assembly on driver side (see Picture #9.0).



Picture 8.0: Secure 40In from Floor



Picture 8.1: Pull Hoses

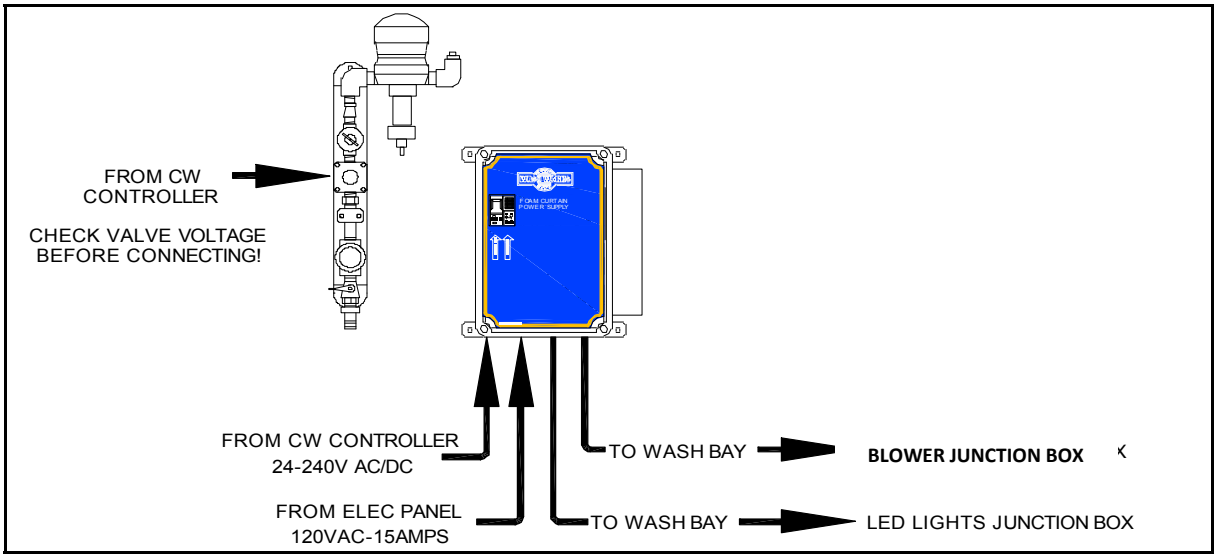


Picture 9.0: Secure Hose to the Head Assembly

☐ **Your** Bubble Arch needs **TWO FUNCTION OUTPUTS** signals from your car wash controller: One for the dilution station and one for the control box (see Picture #10.0). The signal for the dilution station **HAS TO BE OF THE SAME VOLTAGE THAN THE DILUTION STATION SOLENOID VALVE.** Verify the voltage of the dilution station before wiring. The signal to the control box can be anything between **24** to **240 VOLTS AC** or **D.**

WARNING!

WRONG VOLTAGE APPLIED TO THE DILUTION STATION WILL PERMANENTLY DAMAGE THE VALVE COIL AND MAY ALSO LEAD TO PERSONAL INJURIES



Picture 10.0: Electrical Runs

WARNING!

THE MATERIAL REQUIRED FOR CONNECTING THE ARCH IS THE CUSTOMER'S RESPONSIBILITY! ALL WORK HAS TO COMPLY WITH LOCAL AND NATIONAL CODES!

☐ **Pull** an electrical run from the car wash controller to the dilution station and connect the dilution station to a separate function output. This set up will allow the dilution station to run and refill the arch after the car leaves the arch and the blower turned off.

YOU MAY CONNECT THE DILUTION STATION ON THE SAME OUTPUT FUNCTION THAN THE CONTROL BOX IF THE WATER PRESSURE FEEDING THE DILUTION IS SUFFICIENT TO KEEP UP WITH THE ARCH WHEN RUNNING

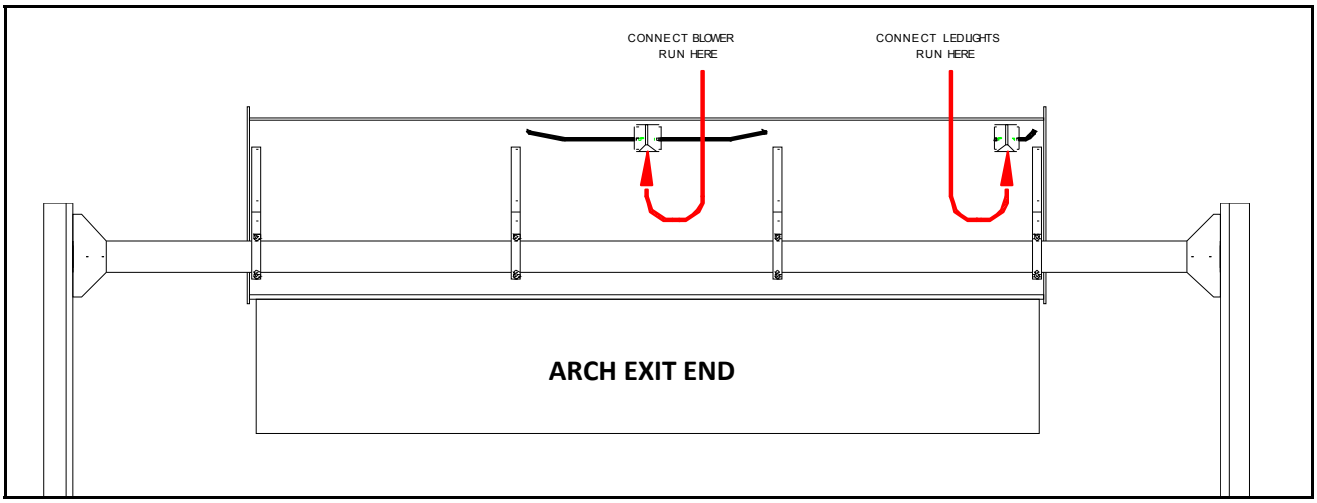
☐ **Pull** a second run from the car wash controller to the **CONTROL BOX**.

☐ **Run** a line from the **120VAC** building sub-panel to the **CONTROL BOX** and connect on a separate **15AMPS** circuit.

THE ARCH REQUIRES A SEPARATE 15AMPS, 120VAC, 1PH ELECTRICAL CIRCUIT

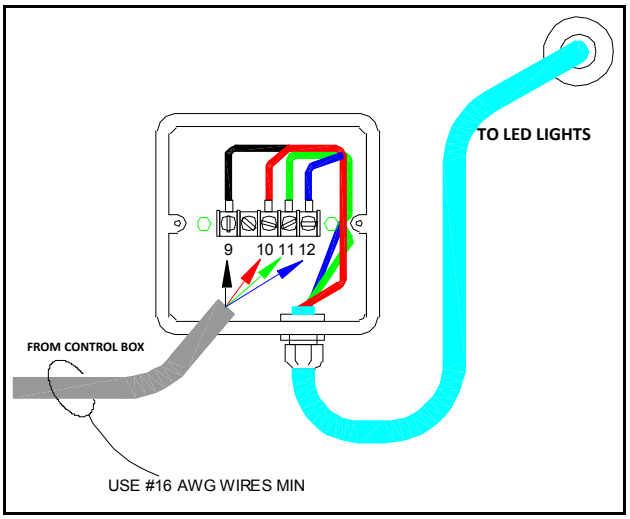
TO AVOID EQUIPMENT MALFUNCTION DO NOT CONNECT ANY OTHER ELECTRICAL DEVICE ON THE SAME CIRCUIT FEEDING THE ARCH

☐ **Run** two separate lines from the **CONTROL BOX** to the wash bay: one to the **LED JUNCTION BOX** and one to the **BLOWER JUNCTION BOX** (see picture #11.0).

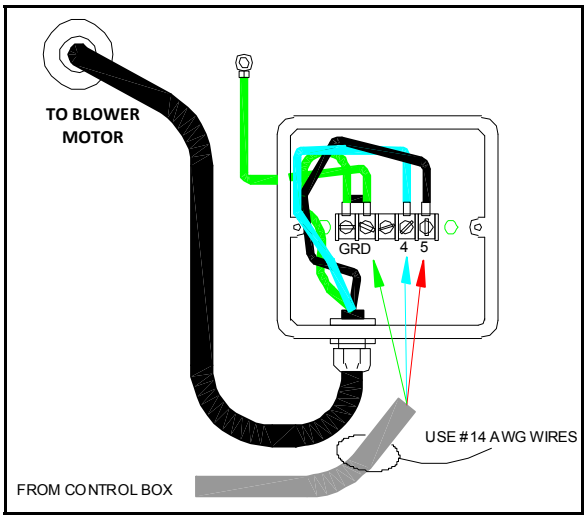


Picture 11.0: Arch Junction Boxes

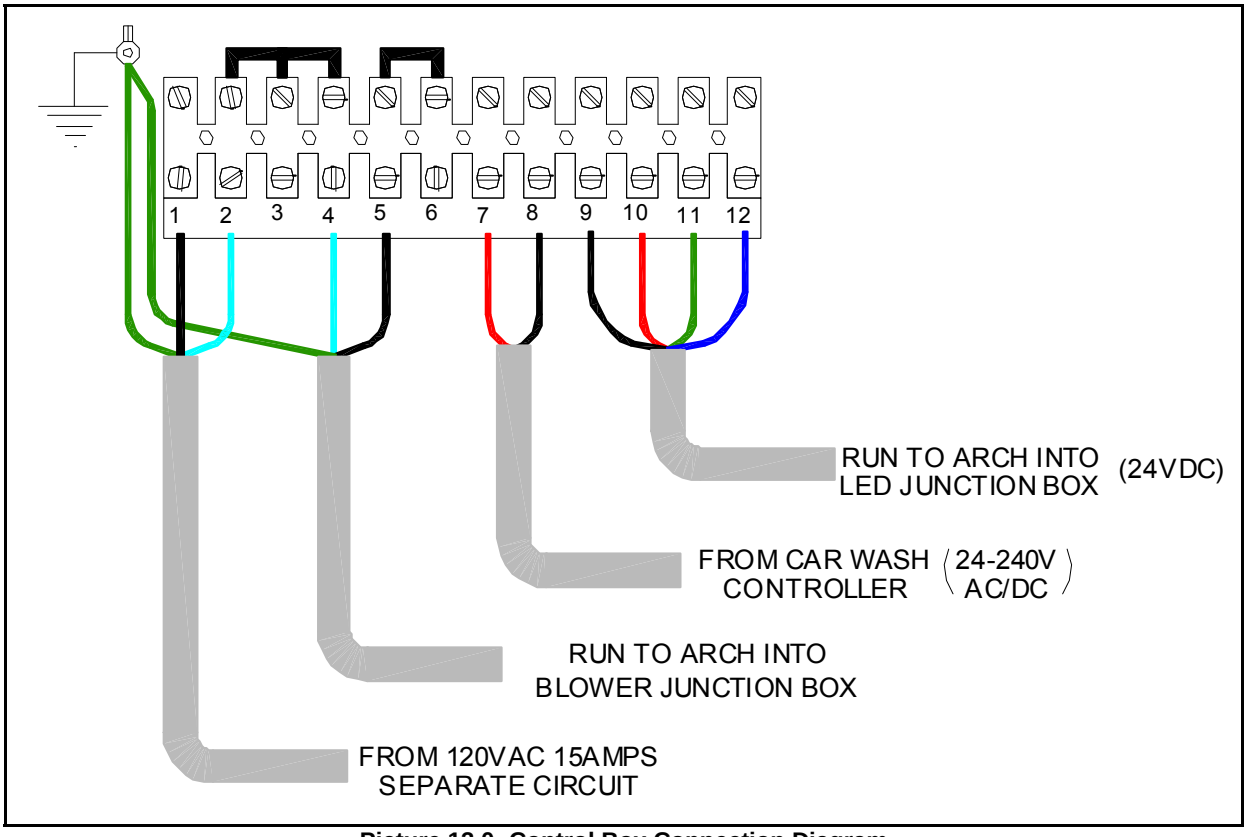
☐ **Connect** the **BLOWER** and the **LED** lights runs to each respective junction boxes using the connection diagrams below.



Picture 12.0: LED Junction Box



Picture 12.1: Blower Junction Box



Picture 13.0: Control Box Connection Diagram

WARNING!

RUN TWO SEPARATE LINES FOR BLOWER AND LED LIGHTS

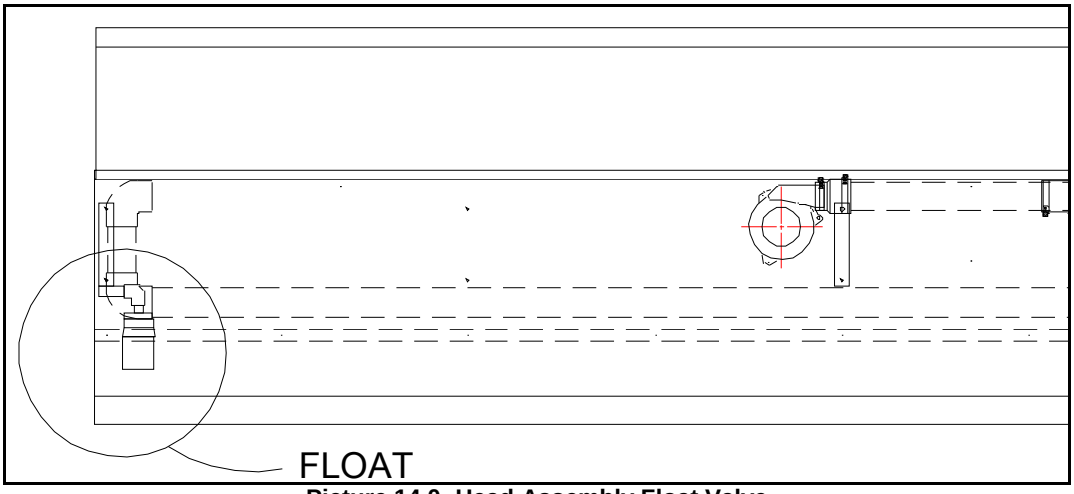
DO NOT RUN THE WIRES IN THE SAME CONDUIT

Starting-Up Your BUBBLE ARCH:

☐ **Disconnect** the 3/4" rubber feeding hose at the arch and turn the water **ON** to the Dilution Station. Drop the Dilution Station chemical suction line into the chemical drum. Set the **PUMP DILUTION RATIO** to about **300:1** (Follow Instructions on the **CHEMICAL PUMP** user manual).

☐ **Turn** the **DILUTION STATION FUNCTION OUTPUT ON** and let the water run until a solid column of chemical fills the chemical suction line up to the pump. Let it run until the solution feeding the arch is visibly mixed with chemicals. Turn the output function **OFF**.

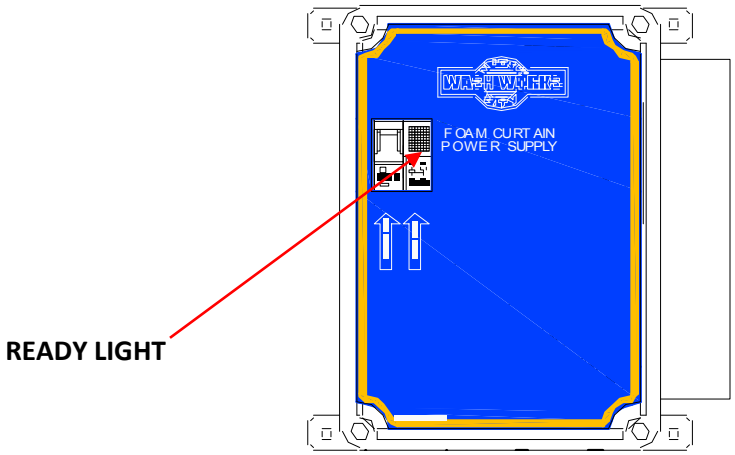
☐ **Reconnect** the hose to the arch and turn the dilution station **ON** again until the arch trough is filled with solution. Verify that the float stop the flow of solution when reached float level. Adjust the float height to keep the solution level close to the edge. Leave the dilution station **ON**.



Picture 14.0: Head Assembly Float Valve

☐ **Turn** the **CONTROL BOX BREAKERS ON**, close the cover and turn the **ARCH OUTPUT FUNCTION ON** and observe the **READY LIGHT TURN ON** (see Picture #15.0)**.** The blower is now running and the foam generated is flowing over the edge down onto the ground. Observe the bubble generated and change the concentration of the solution by adjusting the chemical pump: For "thicker" foam and bubbles increase the concentration of chemical. For lighter foam, decrease the concentration.

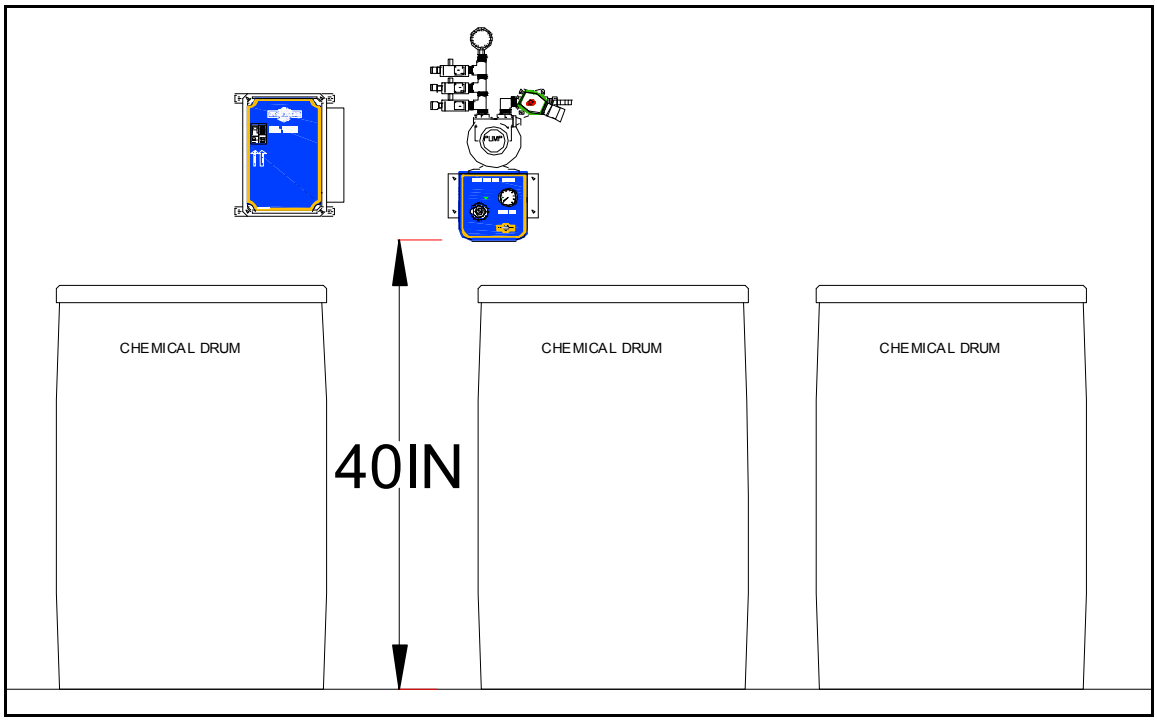
☐ **Finally,** turn both output off and program the ready signal output to turn **ON** slightly before the car reaches the arch while the dilution station output get to be programmed to turn **ON** with the car and turned OFF after the car is away, long enough to refill the trough with solution.



Picture 15.0: Control Box Ready Light

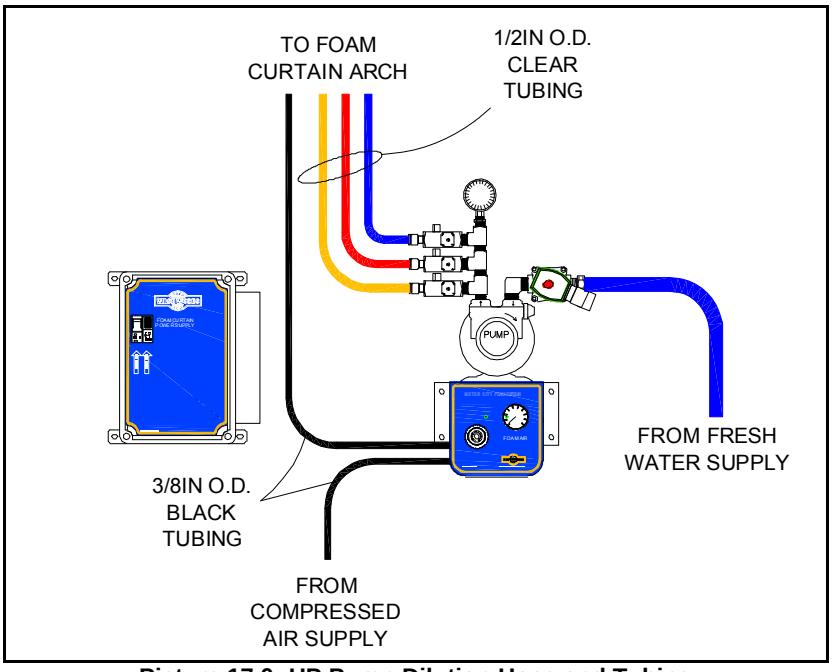
FOAM CURTAIN ARCH Utilities Installation :

☐ **Locate** the optional **HP PUMP DILUTION STATION** and secure it to a solid wall, at least 40 inches above the floor (see Picture #16.0). This will allow for sufficient room for a 55 gallons chemical drum to be position under the dilution station without interfering with its operation. Secure the optional control box close by.



Picture 16.0: HP Pump Dilution Station

☐ **Pull** a 1/2" hose from a fresh water supply and connect to dilution station inlet barb fitting (see Picture #17.0 below). Pull a 3/8" O.D. air line tubing from compressed air supply and connect to the air solenoid valve inlet located under the pump wall frame (see Picture #17.0).

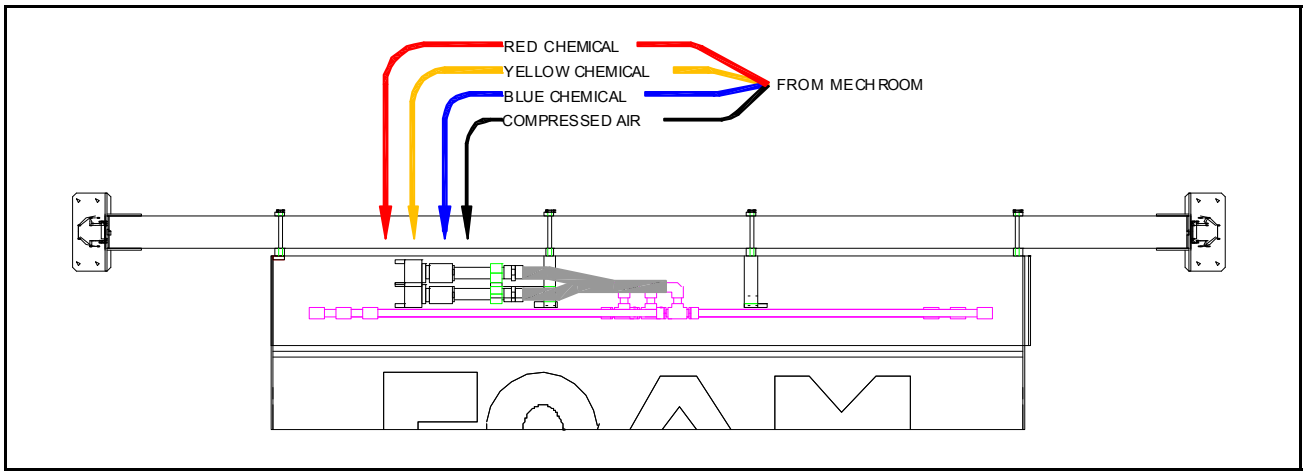


Picture 17.0: HP Pump Dilution Hose and Tubing

WARNING!

IT IS IMPERATIVE TO SUPPLY THE DILUTION STATION SYSTEM WITH "CLEAN DRY COMPRESSED AIR" ANY AMOUNT OF MOISTURE, VAPORIZED OIL OR ANY OTHER IMPURITIES WITHIN THE MAIN AIR SUPPLY MAY AFFECT THE PERFORMANCE OF THE EQUIPMENT AND LEAD TO PREMATURE WEAR OR MAJOR DAMAGE TO THE FOAM CURTAIN ARCH DELIVERY SYSTEM OR ITS COMPONENTS

☐ **Pull** three 1/2" O.D. air line from the pump injector outlets to the foamer generator located onboard of the arch (see pictures 17.0 and 18.0).



Picture 18.0: Arch Tubing View from Top

☐ **Your FOAM CURTAIN ARCH CONTROL BOX** needs **SEPARATE POWER SUPPLY** from the 120/220VOLT building electrical panel and **ONE FUNCTION OUTPUT** signals from your car wash controller: The signal to the control box can be anything between **24** to **240 VOLTS AC** or **DC.**

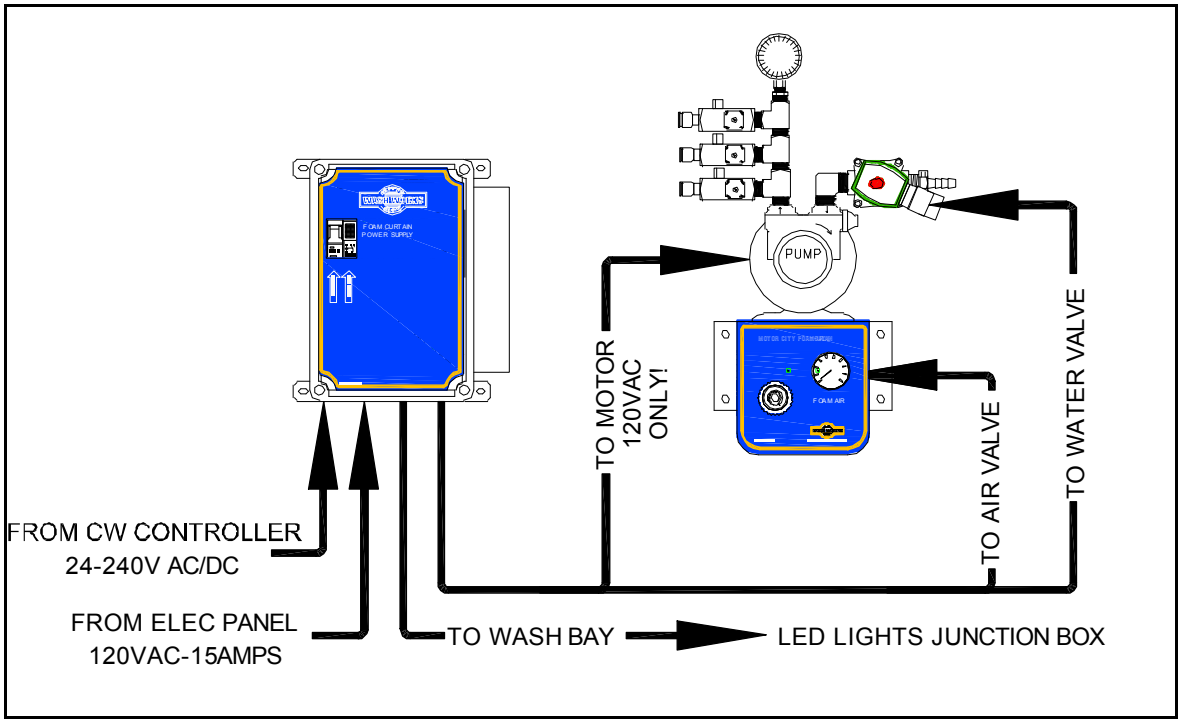
WARNING!

THE MATERIAL REQUIRED FOR CONNECTING THE ARCH IS THE CUSTOMER'S RESPONSIBILITY! ALL WORK HAS TO COMPLY WITH LOCAL AND NATIONAL CODES!

THE ARCH REQUIRES A SEPARATE 15AMPS, 120VAC, 1PH ELECTRICAL CIRCUIT

TO AVOID EQUIPMENT MALFUNCTION DO NOT CONNECT ANY OTHER ELECTRICAL DEVICE ON THE SAME CIRCUIT FEEDING THE ARCH

☐ **Run** a line from the **CAR WASH CONTROLLER** to the **CONTROL BOX** (see Picture 19.0)

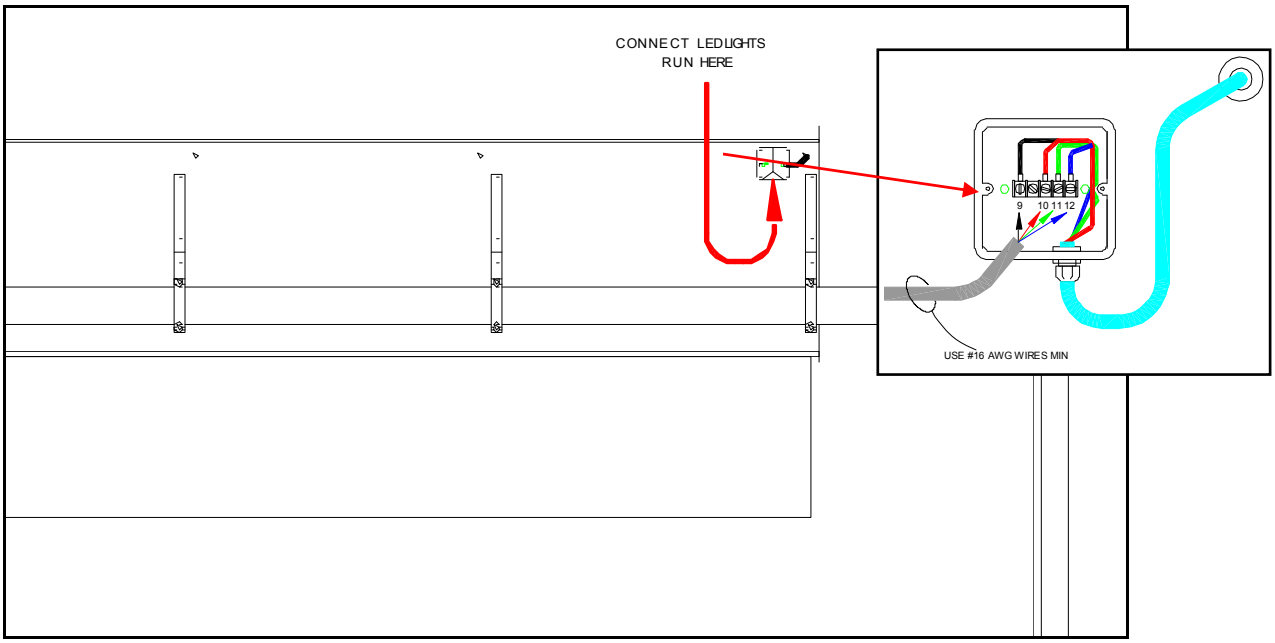


Picture 19.0: Electrical Runs

☐ **Run** also a line from the **120VAC** building sub-panel to the **CONTROL BOX** and connect on a separate **15AMPS** circuit.

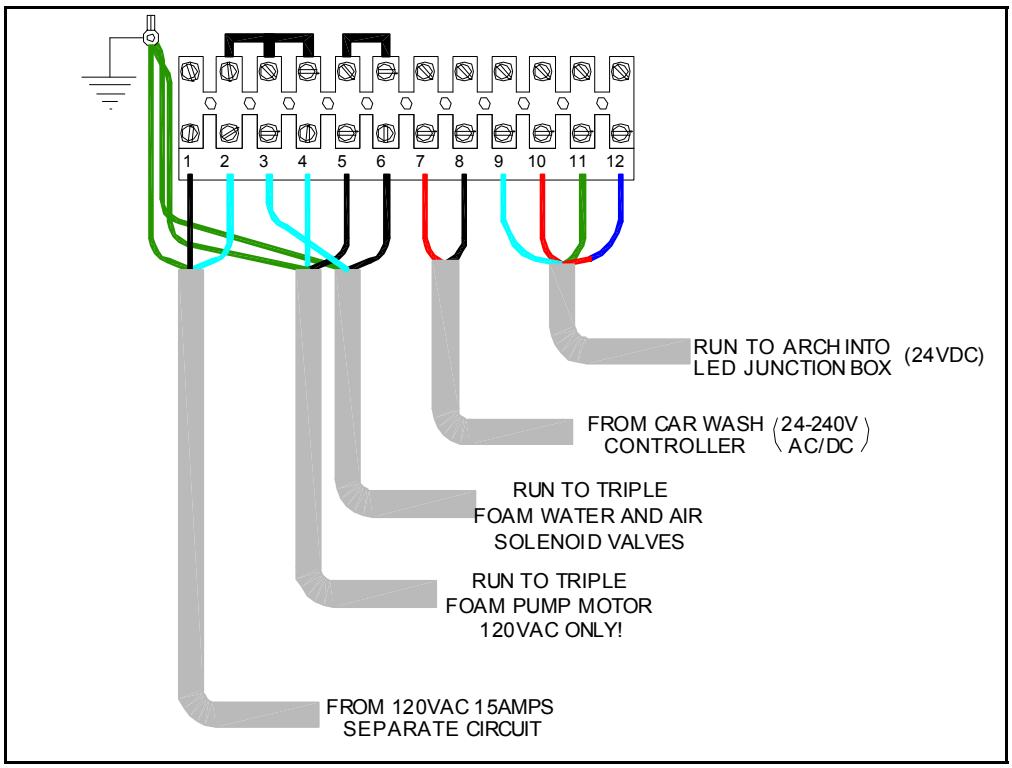
☐ **Run** a lines from the **CONTROL BOX** to the **PUMP MOTOR,** the **AIR VALVE** and the **WATER VALVE** and connect like shown on the picture #19.0. Use a junction box to connect all the three components. **USE #14AWG WIRES ONLY!**

☐ **Run** a separate lines from the **CONTROL BOX** to the **LED LIGHTS JUNCTION BOX** mounted on the exit end of the head assembly (see picture #20.0).



Picture 20.0: Led Light J Box

☐ **Connect** the wires in the control box following the schematic on picture #21.0



Picture 21.0: Electrical Connections Schematic

Starting-Up Your BUBBLE ARCH:

☐ **Disconnect** the 1/2" rubber feeding hose at the pump and turn the water **ON** to "flush" the line. Shut the water **OFF** and reconnect the hose.

☐ **Select** an injector "tip" according to the **CHEMICAL USAGE CHARTS** below. A **TURQUOISE** tip may use less chemical per car than using a **PINK**. Using a **PINK** instead may use more chemical but may generates foam with more vivid colors (when using triple foam for example).

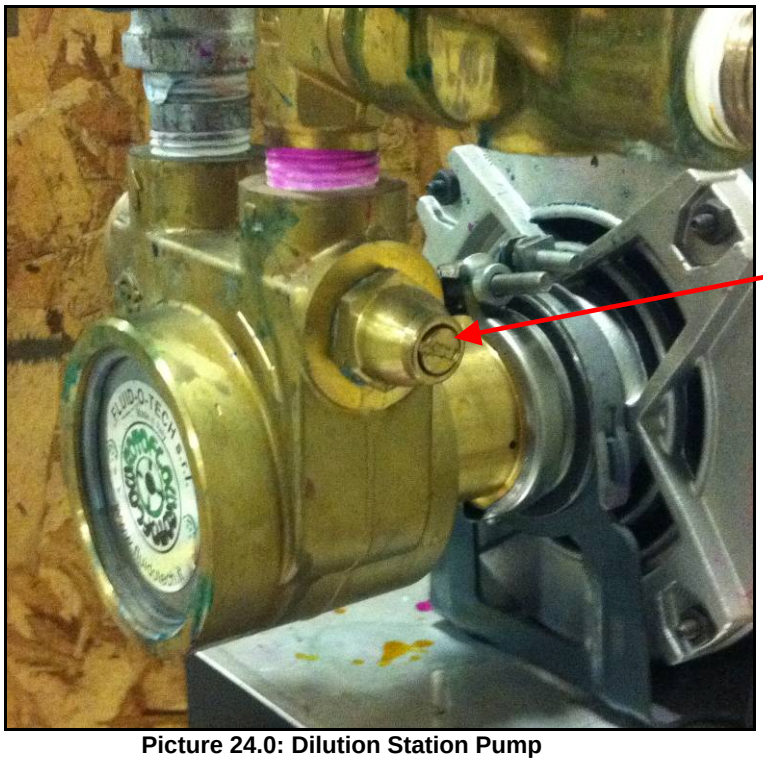
TIP COLOR (FOR 0.057'' INJECTOR)	CHEMICAL USAGE (PER COLOR)	CARS PER HOUR	TIME ON EACH CAR (sec)	CHEMICAL USAGE PER CAR 1 COLOR (oz)	CHEMICAL USAGE PER CAR 3 COLORS (oz)
TURQUOISE	1.33 OZ/MINUTE	60	60	1.33	3.99
		80	45	1.00	3.00
		100	36	0.80	2.40
		120	30	0.67	2.01
		140	25	0.57	1.71
		160	22	0.50	1.50
		180	20	0.44	1.32

Picture 22.0: Turquoise Tip Usage Chart

TIP COLOR	CHEMICAL USAGE (PER COLOR)	CARS PER HOUR	TIME ON EACH CAR (sec)	CHEMICAL USAGE PER CAR 1 COLOR (oz)	CHEMICAL USAGE PER CAR 3 COLORS (oz)
PINK	2.5 OZ MINUTE	60	60	2.50	7.50
		80	45	1.88	5.64
		100	36	1.50	4.50
		120	30	1.25	3.75
		140	25	1.07	3.21
		160	22	0.94	2.82
		180	20	0.83	2.49

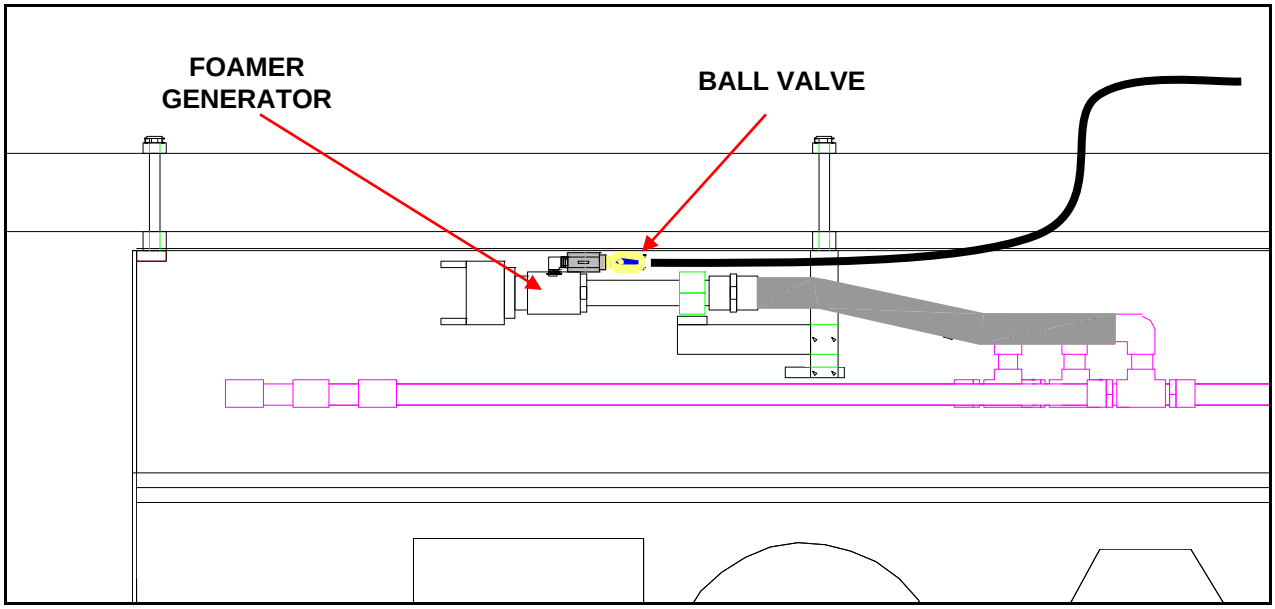
Picture 23.0: Pink Tip Usage Chart

☐ **Turn** the **CONTROL BOX BREAKERS ON**, close the cover and turn the **PUMP DILUTION STATION FUNCTION OUTPUT ON** and observe the **READY LIGHT TURN ON** (see Picture #15.0)**.** The pump is now running. Set the pressure on the gauge to about **100PSI** (see picture #24.0). Let the water run until a solid column of chemical fills all the chemical suction line up to the injectors. Let it run until the solution feeding the arch is visibly mixed with chemicals.



Picture 24.0: Dilution Station Pump

☐ **Increase** the air regulator gauge to a value between **20-40PSI** and go to the arch and notice foamer generator starting to foam. Balance the foam generation between the three foam generators by opening or closing the air supply ball valves mounted on each generator.



Picture 25.0: Ball Valve

☐ **Observe** the foam generated. You may change the concentration of the solution by adjusting the pressure of the pump or changing the injector tip.

☐ **Finally,** turn the output off and program the ready signal output to turn **ON** slightly before the car reaches the arch. Test with a car.

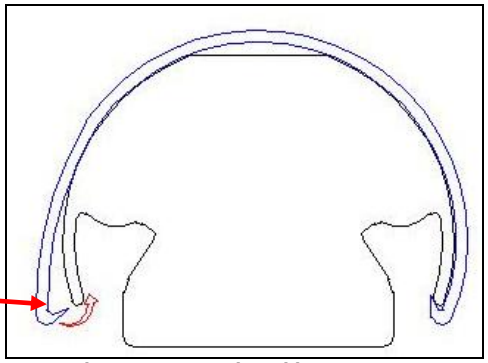
Color Skinz™ Wrap Installation

☐ **Locate** the boxes containing the **COLOR SKINZ™** wraps and install on each legs and frame cross beams.

Picture 26.0 Color Skinz™

SELECT THE PROPER COLOR SKINZ™ COVER. SNAP ONE SIDE OF THE LIPS, SLIDE THE COVER AROUND THE LEG AND FINALLY SNAP THE SECOND LIP PASSED THE EXTRUSION EDGE (see Picture #9-B)

Picture 26.1

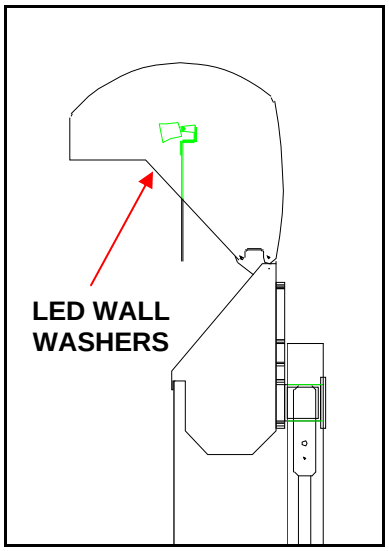


Picture 26.2 Color Skinz™

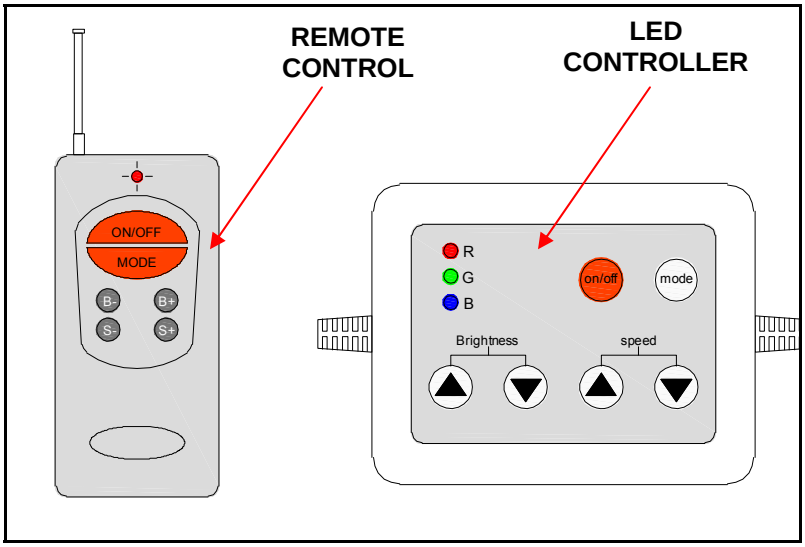
LED LIGHT REMOTE CONTROL:

☐ **Your** foaming arch comes with a set of **LED WALL WASHERS** mounted in the head cover (see picture #27.0). The wall washer LED light patterns are controlled by a LED controller located in the **CONTROL BOX** (see Picture 27.1).

☐ **Using** the "**MODE**" button (on either the LED controller in the control box or using the hand held remote unit) you may change the pattern and the resulting color in which the three colors (RED, GREEN and BLUE) will be lighting on the sign as well as the vinyl strip. Use the BRIGHTNESS and the SPEED button as needed.

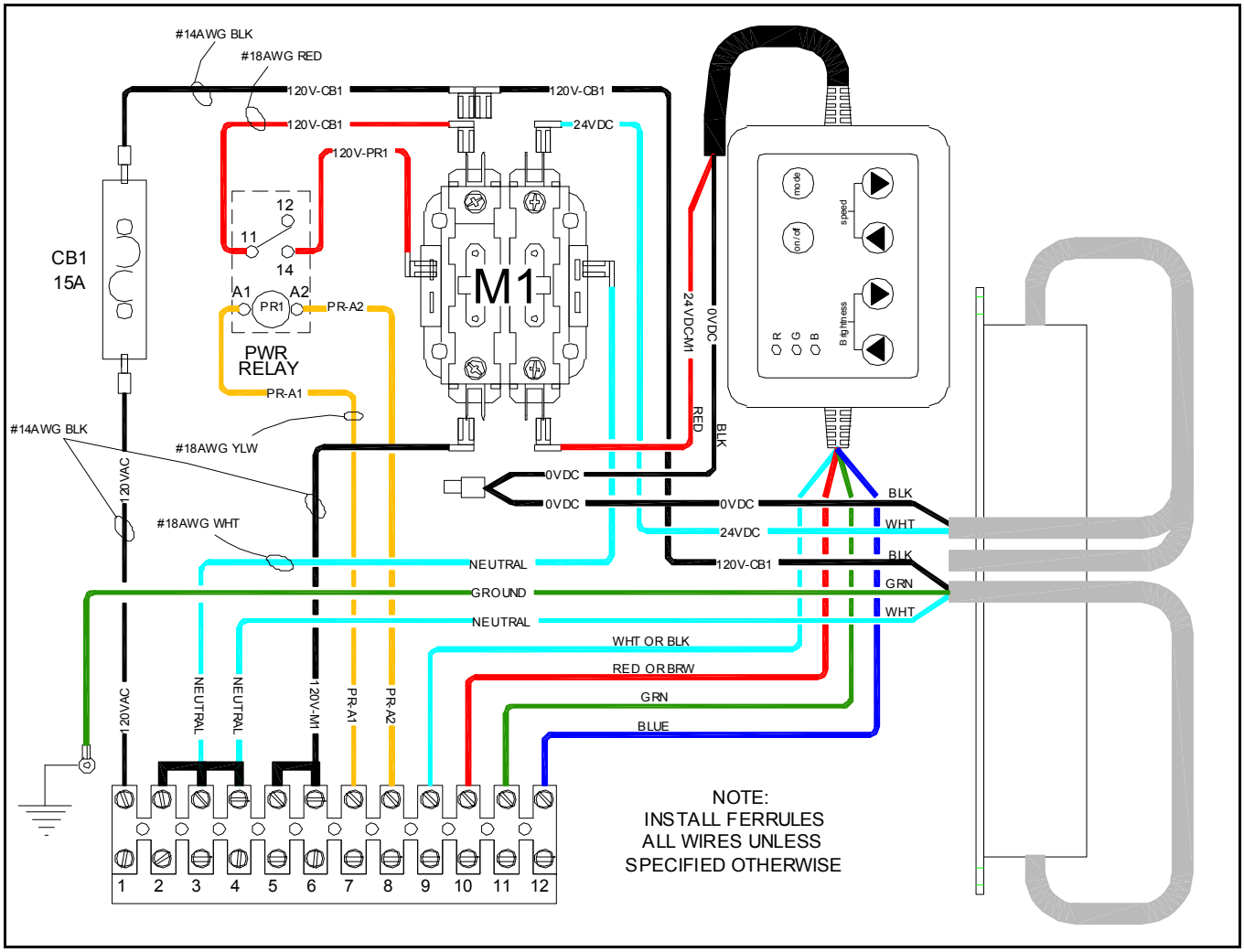


Picture 27.0 LED Wall Washer



Picture 27.1 LED Controller

Control Box Electrical Schematic:



Picture 28.0: Control Box Electrical Schematic

Optional Arch Light Kit: Part # ARCHLIGHTKITXXXX

Electrical Specifications:

Light Kit……..……..24VDC
Flasher Unit…….Supply: 120VAC, 2A
Control: ……24-250V AC/DC

Suggested Installation Tools and Materials

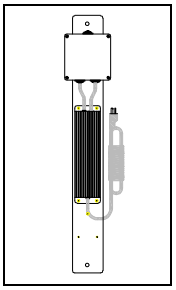
- ☑ 3/16” Socket Head (Allen) Wrench
- ☐ 1/8” Socket Head (Allen) Wrench
- ☐ 6’ Step Ladder
- ☐ Wire Stripper and Wire Ties
- ☐ 2 Conductors #14 AWG Low Voltage Cable
- ☐ Water Proof Wire Nuts

Installation Procedures:

☑ **Upon** receiving your MCWW Light Kit, open the box and verify that you have all the required components and there is no damage to the equipment. Verify also that you have all your installation material.

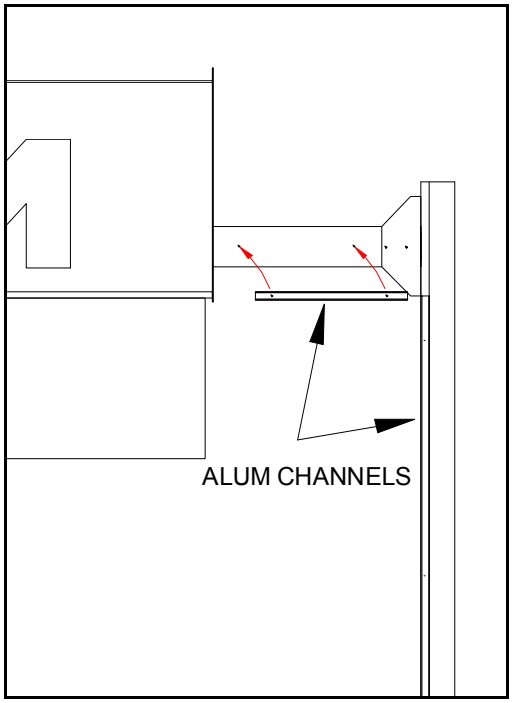
Picture 29.0: LED String

Picture 29.1: Other LED String

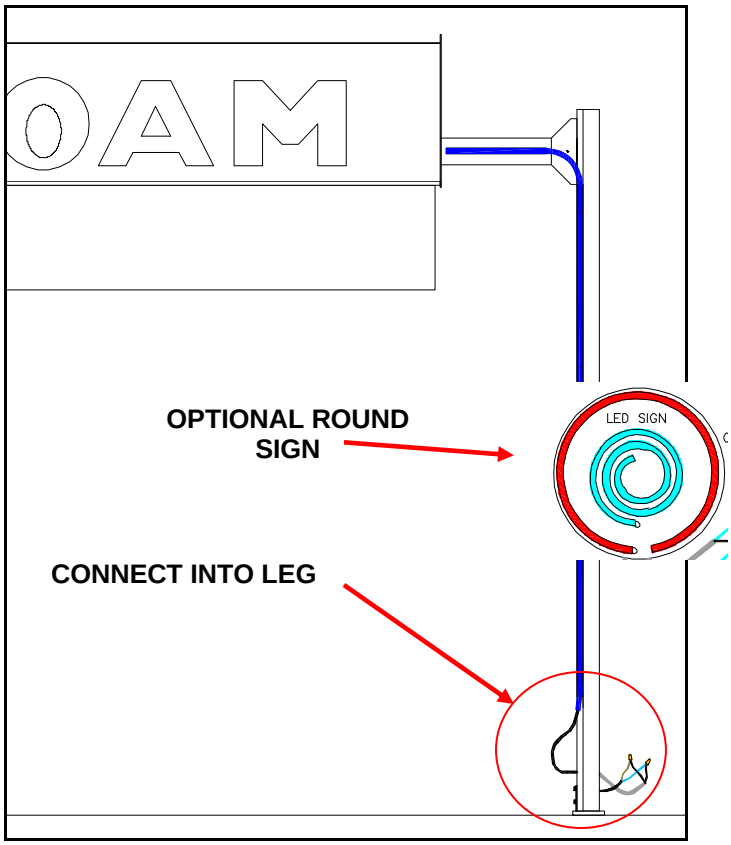


Picture 29.2: Flasher Unit

☐ **Locate** the aluminum channels and secure to the arch legs (see picture 27.0)



Picture 30.0 LED Aluminum Channels



Picture 30.1: LED String

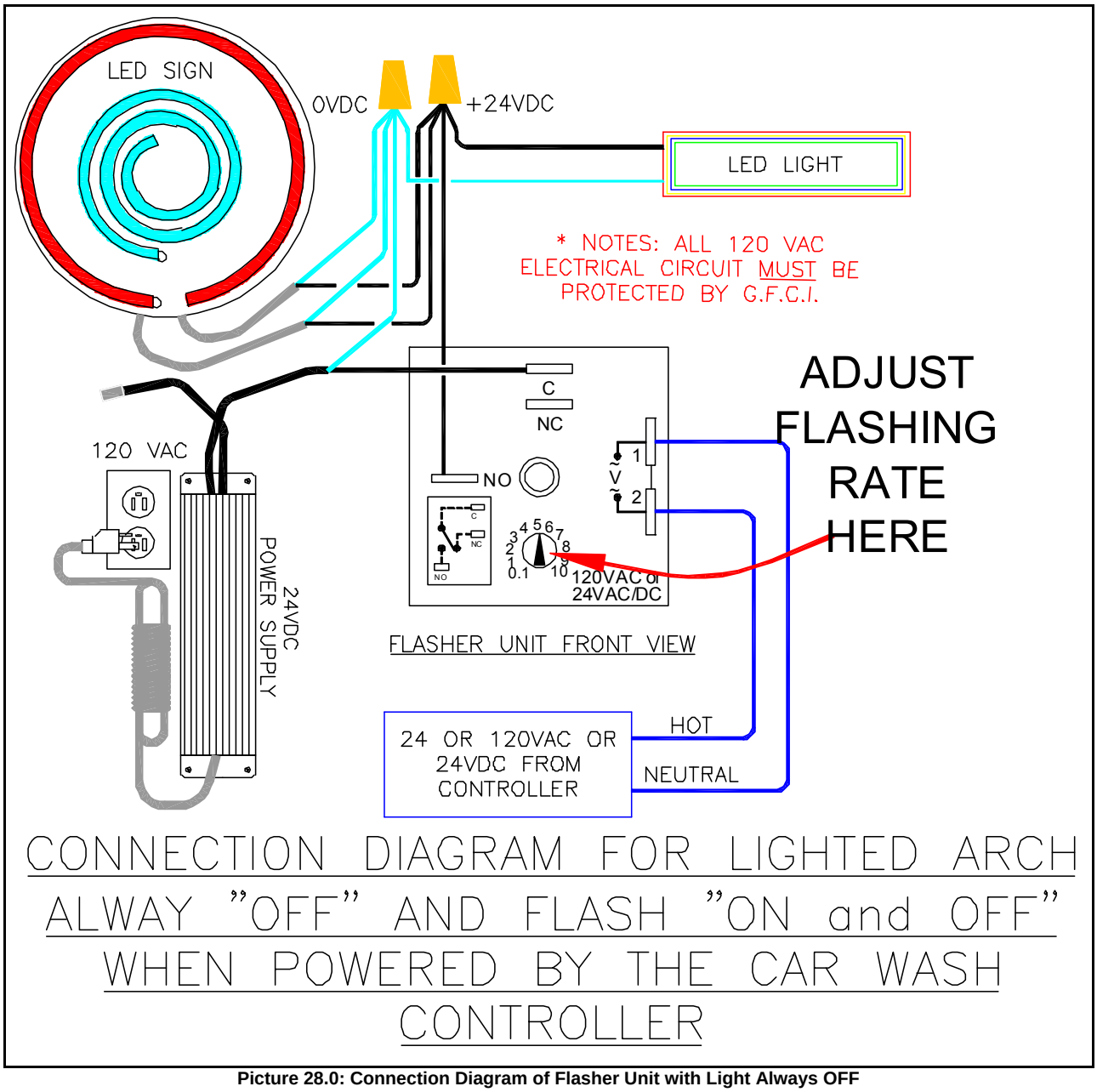
☐ **Install** the **LIGHT STRING** into the channels. Pull the cord thru the opening. Pull the cord thru the **UTILITY HOLE** located on the outside face of the leg.

☐ **Pull** a 2 Conductors PVC Jacket #14 AWG Low Voltage Cable from the mechanical room to the arch, pull the cable through the leg and connect to the LED string cord using **WATER RESISTANT** wire nuts (see Picture 27.1). Finally install the leg **Color Skinz™**.

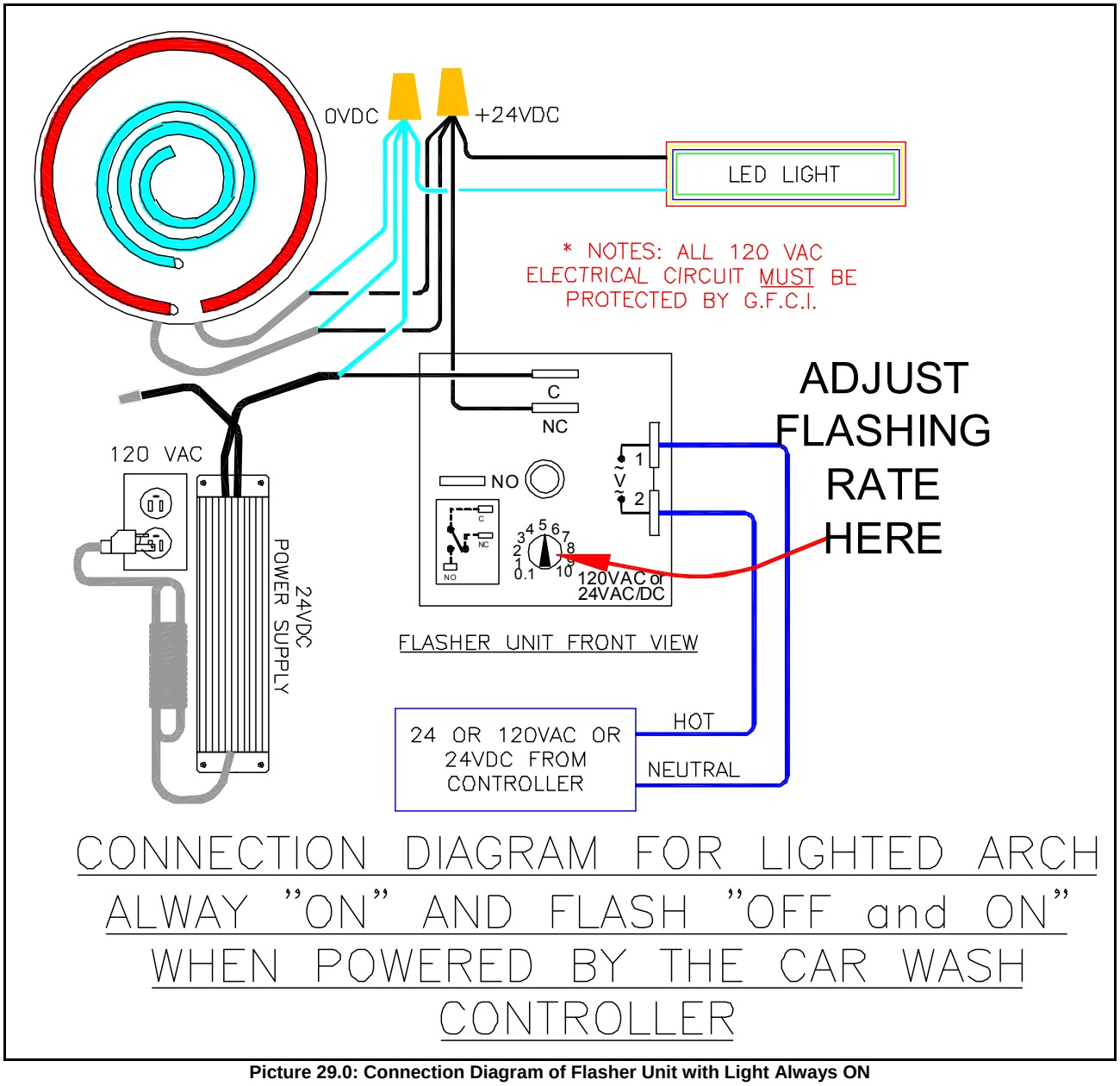
☐ **Install** the power supply in the Mechanical Room or in a dry area of the wash, close to a 120 VAC power outlet. Install the flasher assembly close to the power supply.

☐ Connect the cord end of the power supply to the flasher unit (see Picture 26.2) and to the 2c/14 cable of the **LED** light kit following one of the next **ELECTRICAL DIAGRAMS.**

Electrical Diagrams



Picture 28.0: Connection Diagram of Flasher Unit with Light Always OFF



Picture 29.0: Connection Diagram of Flasher Unit with Light Always ON

Warranty and Return Procedure:

Motor City Wash Works warrant this product to be free of defect in material and/or workmanship for a period of **one year** from the date of the purchase by the customer from MCWW. During the warranty period MCWW will at its discretion, at no charge to the customer, repair or replace this product if found defectives, with a new or refurbished unit, but not to include costs of removal or installation. Any product returned to MCWW for warranty has to have a **Return Material Authorization Number**. All shipping cost to MCWW is assumed by the customer. This is only a summary of **MCWW Limited Warranty**. Please, communicate with MCWW for our complete warranty.

Prior to returning any product to MCWW, the customer must call in for **Return Material Authorization Number** and a copy of our **Return Material Authorization** Form filled and completed. The **RMA** number must be written clearly on the outside of the shipping package and copy of the form must be included in the package.