

Installation
& Operation
Manual

REV. 1024

HUSSmann®/CHINO

**Q-H HOT FOOD FAMILY
SINGLE-DECK SERVICE
HOT FOOD CASE**

HUSSmann®

Q-H Hot Food Family
SINGLE-DECK SERVICE HOT FOOD CASE



INSTALLATION & OPERATION GUIDE

1. General Instructions

HUSSMANN®/CHINO

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This Booklet Contains Information on:

Q-H: Hot Food Cases

Shipping Damage

All equipment and separately packaged accessories should be carefully removed, and thoroughly examined for shipping damage during unloading. This equipment has been carefully inspected at our factory and the carrier has assumed responsibility for its safe arrival. If it is indeed damaged, either apparent or concealed a claim must be filed with carrier.

Apparent Loss or Damage

If there is an obvious loss or damage, it must be noted on the freight bill or express receipt and signed by the carrier's agent; otherwise, carrier may refuse claim. The carrier will supply necessary claim forms.

Concealed Loss or Damage

When loss or damage is not apparent until after equipment is uncrated, a claim for concealed damage is made. Make request in writing to carrier for inspection within 15 days and retain all packaging. The carrier will supply inspection report and required claim forms.

Shortages

Check your shipment for any possible shortages of material. If a shortage should exist and is found to be the responsibility of Hussmann Chino, notify Hussmann Chino. If such a shortage involves the carrier, notify the carrier immediately, and request an inspection. Hussmann Chino will acknowledge shortages within ten days from receipt of equipment.

Hussmann Chino Product Control

The serial number and shipping date of all equipment has been recorded in Hussmann's files for warranty and replacement part purposes. All correspondence pertaining to warranty or parts ordering must include the serial number of each piece of equipment involved, in order to provide the customer with the correct parts.

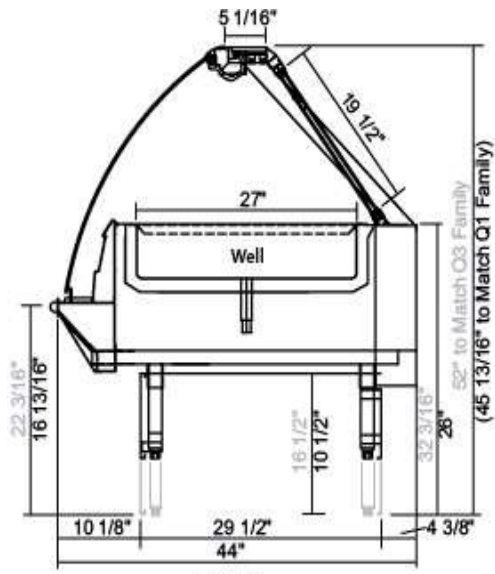
Keep this booklet with the case at all times for future reference.

2. Table of Contents

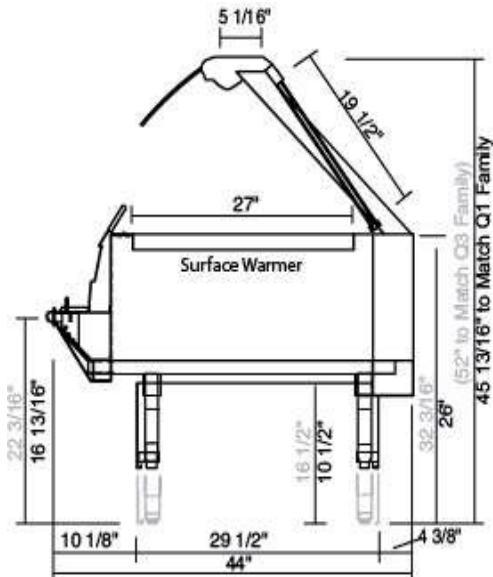
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3. Cut and Plan Views

Engineering
Cross Section

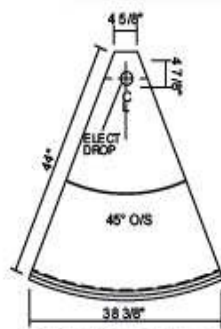


Q-HC
Single Deck Hot Service - Curved Glass

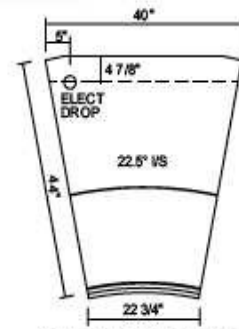


Q-HC-SS
Single Deck Hot Self-Service - Curved Glass

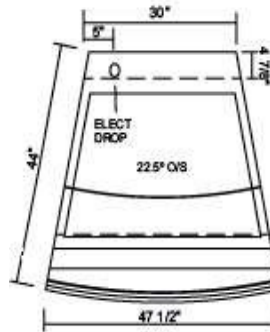
Engineering
Plan View



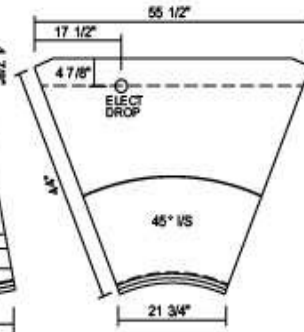
Q-HC 45° Outside Wedge
Planview



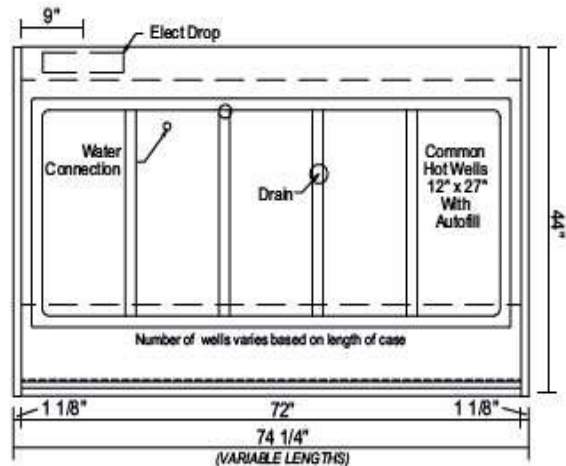
Q-HC 22.5° Inside Wedge
Planview



Q-HC 22.5° Outside Wedge
Planview



Q-HC 45° Inside Wedge
Planview



Q-H Plan View
Straight Section

4. Installation

Leveling/Joining Instructions

1. Check floor where cases are to be set to see if it's level then determine where the highest part of the floor is. Cases will be shimmed off this point. Using case blueprints, measure off and mark on floor the exact dimensions of the case footprint. Snap chalk line for front and back position of base rail. Mark location of each joint front and back. Use a transit to find the highest point along both lines.

IMPORTANT: It is imperative that cases be leveled front to back and side to side prior to joining. A level case is necessary to ensure proper operation, water drainage, glass alignment, and operation of the hinges supporting the glass. Leveling the case correctly will solve most hinge operation problems.

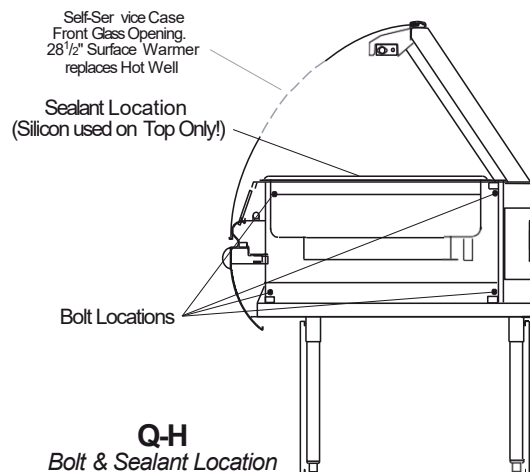


AVOID REMOVING CONCRETE BEGIN LINEUP AT HIGHEST POINT of Store Floor.
All cases were leveled and joined prior to shipment to ensure closest possible fit when cases are joined in the field.

2. Position first case in lineup, remove shipping supports and level. To level the case, twist the adjustable foot in a clockwise or counterclockwise direction to lengthen or shorten the leg. Case must be raised using shipping supports, to prevent damage to case. With the aid of the shipping supports, the case may be lifted with the forklift or pushed into proper position for setting. If a wedge is used in the middle of a line up, the wedge must be set off the highest point on the floor FIRST, with the rest of the lineup being leveled from it.
3. Set second case within one (1) foot of the first case. Remove the shipping brace facing the first case only, and level case by twisting the feet as in the first case. Remove front and rear panels closest to the case joints.
4. Apply liberal bead of case joint sealant (butyl) between cases along bulkhead (See diagram).
DO NOT USE PERMAGUM!
 Permagum does not allow cases to draw up tight, and therefore leaves gaps at the joint.
5. Bolt cases together and remove the remaining shipping supports.
6. Place stainless strap over joint seam (if applicable), attach via butyl or rivets.
7. Recheck all bolts.

Should glass need readjustment after leveling, see "Maintenance Section" of this guidebook.

Bolt and Sealant Locations



Common End Between Unlike Cases and Hot Cases

Bolt end onto case using bolts provided in predrilled holes behind front panel through bracket provided, and in the rear behind the rear access panel on the bottom. Hot case are only bolted in two places.

Finishing Touches

(Perform after plumbing and electrical)

Access Panels

All electrical and drain access panels are clearly labeled on the deck of the stand.

Installing Splashguard

After merchandisers have been leveled and joined and all electrical and plumbing work has been completed, install the splashguards. After adjusting brackets flush with the floor, position splashguard up behind the front panel first-then position the lower portion over the previously adjusted brackets. Splashguards may be sealed to the floor using a vinyl cove base trim. The size of trim needed will depend on how much the floor is out of level.

Installation (Cont'd)

NOTE: The splashguard must be removable to access components behind it.

1. Remove all dirt, wax etc from the area of the splashguard to ensure a secure adhesion.
2. Apply a good contact cement to the trim, allowing for proper dry-time.
3. Install trim to the splashguard so that it is flush with floor.

Do not seal trim to floor!

Line Up Tab



Line Up Plate



Q-1 Glass Adjustment

Proper adjustment of the side-to-side position on the glass clamp on Vieler Streamline hardware such as used on Hussmann Q series service cases is critical to proper operation of the glass hardware. Failure to properly adjust the glass clamp can result in failure of the hardware and possible injury to personnel.

When setting or repairing cases, the glass clamp is frequently adjusted from side to side once the cases are set in order to control glass gaps or compensate for poorly installed case line ups. Due to the unique design of this type of hardware, using practices common to other types of hardware can result in the above failures.

Step 1: Level Case

The canopy hardware and glass gaps are set at the factory for proper fit with the Cases Square and level. Before attempting to do any adjustment of the canopy hardware, ensure that the cases are set square and level. Additionally, the adjoining cases must be pulled together tightly.

To adjust the front glass please follow these steps
Before you start any adjustments make sure the cases are level, Front to Back and side to side



Step # 2

To level the cases remove the front and rear close-offs, You can adjust the Height by turning the base leg adjusters



When you turn the leg adjuster clock-wise the case will go up.

When you turn the leg adjuster counter clock-wise the case will go down.

Installation (Cont'd)

IMPORTANT: Attempting to compensate for poor installation practices by manipulating the canopy hardware will result in unsatisfactory workmanship and possibly cause hardware failure and/or injury.

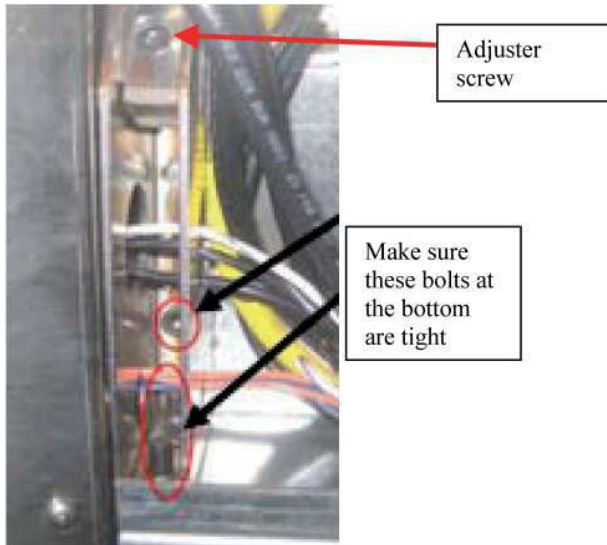
Step 3: Adjusting Glass Height

After the cases are set and level, rear covers must be removed to access the glass height adjusters

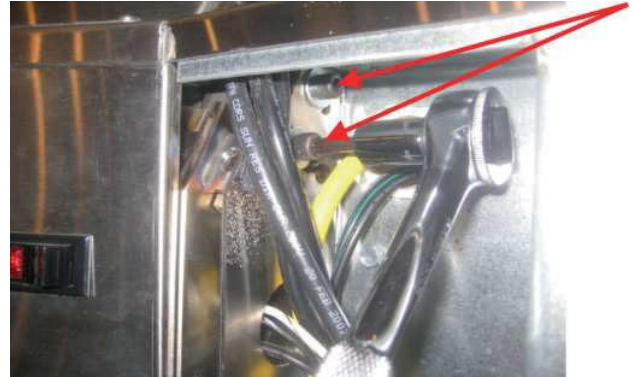


Some cases have wrapping boards installed, the wrapping boards need to be removed to be able to remove the small rear covers. Unhook at K-99 bracket. Remove the small rear covers under each rear canopy arm to access the arm adjusters.

Step # 4

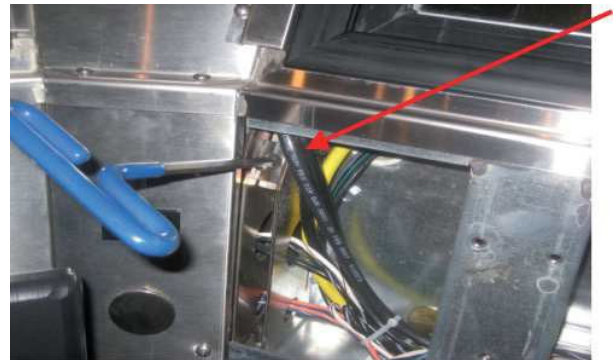


Loosen the two lock screws on the side (do not remove)



To properly adjust the height of the glass requires that both hinge arms of each section of glass be loosened before attempting to change the glass position.

Turning the bolt clock-wise, the front glass will go down. Turning the bolt counter clock-wise, the front glass will go up.



Installation (Cont'd)

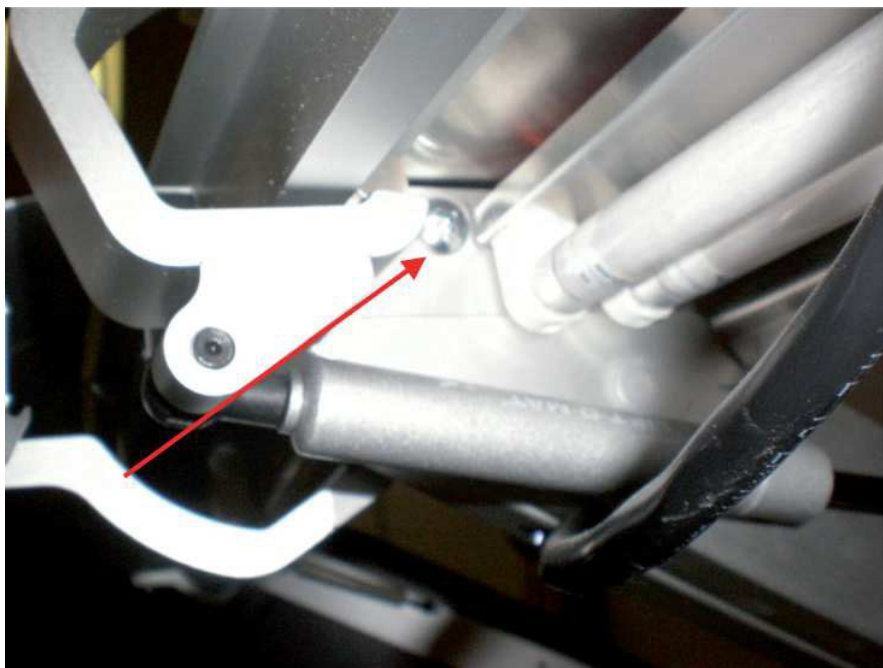


Glass must be parallel to ledge when viewed from front.

IMPORTANT: Attempting to compensate for poor installation practices by manipulating the canopy hardware will result in unsatisfactory workmanship and possibly cause hardware failure and/or injury.

Step 5: Glass Side to Adjustment

The glass gaps can be slightly optimized by moving the glass and glass clamp assembly side to side. This should be done as the final adjustment only after the glass/canopy height of the cases are set and leveled to each other. The canopy hardware on adjoining Q Series cases should be screwed together with the 1/4"-20 THD screws included with the cases. There are threaded holes provided in the stationary portion of the top hardware for this purpose.



Installation (Cont'd)

To adjust glass to glass gaps see the following.



To properly adjust the glass gaps requires that both hinge arms of each section of glass be loosened before attempting to change the glass position.

To shift the glass side to side or front to back at the glass clamp open the glass and loosen the TORX T-15 screw.

To shift the glass side to side or front to back at the glass clamp

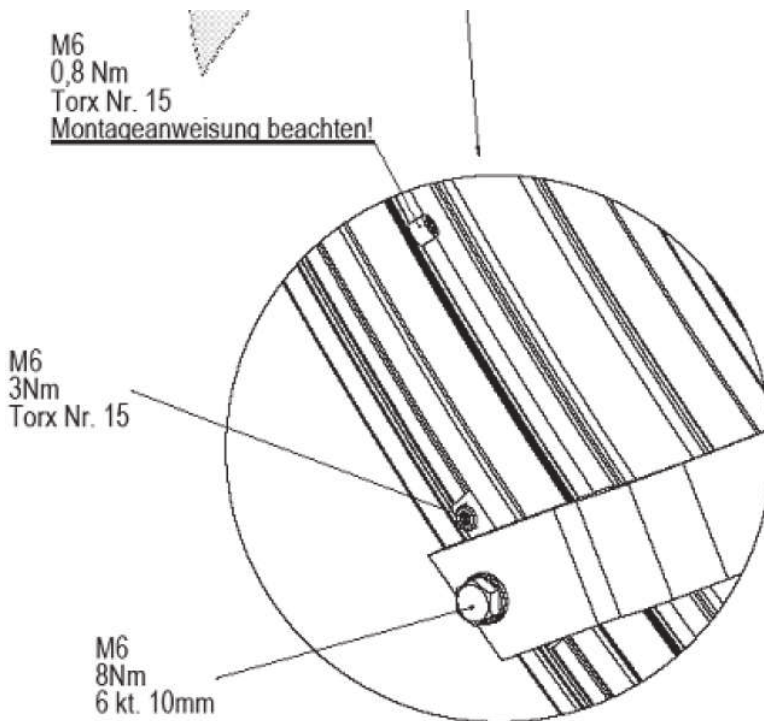
#1 Open the glass and loosen the Torx T-15 screw

2 Loosen the #10 MM bolt on both sides of the glass as needed



Installation (Cont'd)

Torque Specs:



IMPORTANT: Attempting to change the glass position by loosening only one side or by forcing the clamp sideways will result in damaging the hardware and its eventual failure. Loosening the hinge arms requires loosening the attachment screws and setscrews on both hinge arms on the section of glass.

IMPORTANT: It is critical to use the proper size Torx or Hex wrench for the fasteners to avoid stripping the fasteners.

NOTE: LOCTITE MUST BE APPLIED TO SCREWS BEFORE INSTALLATION AND MUST REAPPLY LOCTITE IF SCREWS HAVE BEEN REMOVED EXPIRING THE INTIAL APPLICATION FOR READJUSTMENT PURPOSES.

Installation (Cont'd)

Loosen the fasteners only as needed to allow the glass clamp to slip to the desired position.

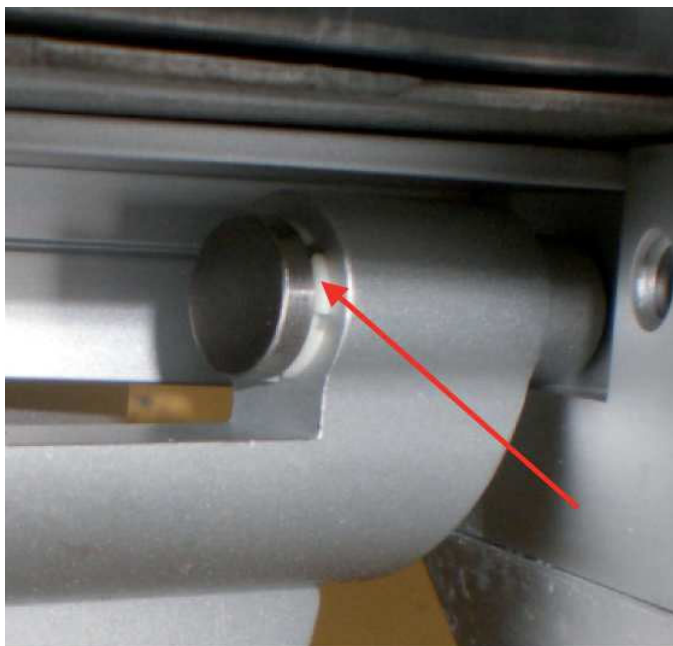
Reposition the glass and glass clamp assembly as needed and verify its position by carefully closing the glass to check clearances.

Once the glass is in the desired position, retighten the fasteners at the hinge arms with the proper wrench.

Recheck the glass position and double check that the fasteners are properly torqued.

IMPORTANT: It is critical that the hinge arm washers or bushings that fasten the hinge arms to the stationary portion of the upper glass hardware do not have any side pressure on them. Even the slightest side pressure will result in the failure of the hardware. If the retaining clips or hinge arm washers or bushings at each hinge arm have any side pressure it is necessary to repeat the adjustment procedure.

When properly adjusted, the hinge arm washers or bushings will have a slight side-to-side free play.



Installation (Cont'd)

Bumper Installation Instructions



Step 1: Make sure the aluminum channel and end caps are installed.



Step 2: Use silicone lubricant to help the bumper slide into the channel.



Step 3: Starting on one end: while inserting the bumper, push it up against the end cap to prevent the bumper from shrinking after installation (when it gets cold).



Step 4: As you insert the bumper into the channel with one hand, pull the bumper toward you with the other to open the inside lips. Slowly apply pressure by rolling the bumper into the track.

NSF Compliant Sealing of The Case to The Floor

When the appliance is designed to be sealed to the floor or countertop the following procedure must be followed to establish proper sanitary operation. First, ensure the floor area is clean and free from debris. Begin by positioning the appliance in its designated installation spot, ensuring sufficient clearance on the back and sides according to the specified "Clearances" for proper ventilation. Next, level the appliance from front to back and side to side, as described in "Method for Leveling." Once level, outline the base of the appliance on the floor. Then, lift and support the front of the appliance. Apply a bead of NSF-approved sealant to the floor, positioned about 1/2 inch (13 mm) inside the front part of the outline. The bead should be substantial enough to cover the entire appliance surface when lowered onto it. Afterward, raise and support the rear of the appliance and apply the sealant to the floor along the remaining three sides. Finally, carefully lower the appliance and inspect it to ensure a complete seal around the entire perimeter and clean off any extra sealant as necessary. Once the appliance is sealed in accordance with these procedures, the result is intended to prevent liquid spillage on adjacent surfaces of the floor or countertop from passing under inaccessible portions of the equipment.

5. Plumbing

Waste Outlet

The waste outlet is located under the hot wells and can be accessed from the back. Drain is 1" copper. A stub is provided for extending to sink. Drain must be run in a material that will withstand a 150°F (66°C) (or more) temperature, such as copper.

Water Supply Connection

The well fill water hose on these models will need to be connected to a water supply. The water connection is 1/2" and consists of a hand gate valve. If the water pressure exceeds 45 psi, a water pressure regulating valve should be installed in the supply line, and set at 30-35 psi outlet pressure. The pressure regulating valve is not supplied by Husmann.



**Do not plumb below the sliding plate on the side of the hot well!
Doing so may interfere with the ability to adjust the water within the well!**



Damage may occur if cold water is fed into a preheated hot well too quickly!

For a quick preheat time, the customer may want to pipe in hot water. If hot water is piped into the case, temperature of water supply must not exceed 150°F (66°C). In areas where water contains a heavy mineral content, it may be a good idea to install a cartridge-type water filtration system.

Proper water depth is 1". These cases come equipped with an auto-fill system designed to slowly feed in water to maintain the proper water level, and prevent damage incurred when cold water is fed too fast into a hot well. In common well configurations, the water level is regulated by adjusting the probe on the inside of the well. In multi-well configurations, use the sliding plate at the rear of the case to adjust the float level. The water level is maintained in direct relation to the vertical position of the plate. The water feeds in slowly, so it is not necessary to shut water off during cleaning. It is advisable to allow a number of hours for the system to refill. If necessary, the case may also be filled manually, with the use of buckets.


NOTE: Some local codes may require the installation of check valves in the water supply.

6. Electrical

Wiring Color Code

STANDARD CASE WIRE COLOR CODE CODIGO DE COLORES DE LOS ALAMBRES PARA LAS VITRINAS ESTANDAR CODE COULER POUR FILS DE BOTTIER NORMALISE		
COLOR DESCRIPTION	DESCRIPCION	DESCRIPTION
■ GROUND	TIERRA MASA	MASSE
■ ANTI-SWEAT	ANTICONDENSACION	ANTI-SUINTEMENT
■ LIGHTS	LUCES	ECLAIRAGE
■ RECEPTACLES	ENCHUFES	PRISE DE COURANT
■ T-STAT/SOLENOID 230VAC	TERMOSTATO/SOLENOIDE (230VAC)	SOUPAPE A SOLENOID (230 VAC)
■ T-STAT/SOLENOID 115VAC	TERMOSTATO/SOLENOIDE (115VAC)	SOUPAPE A SOLENOID (115 VAC)
■ T-STAT/SOLENOID 24VAC	TERMOSTATO/SOLENOIDE (24VAC)	SOUPAPE A SOLENOID (24 VAC)
■ FAN MOTORS	VENTILADORES	VENTILATEUR
■ BLUE CONDENSING UNIT	UNIDAD DE CONDENSACION	UNITE DE CONDENSATION

USE COPPER CONDUCTORS ONLY
UTILISEZ LES CONDUCTEURS DE CUIVRE SEULEMENT
UTILICE LOS CONDUCTORES DE COBRE SOLAMENTE
430-01-0338 R101003



DANGER

BEFORE SERVICING

ALWAYS DISCONNECT ELECTRICAL

POWER AT THE MAIN DISCONNECT

WHEN SERVICING OR REPLACING ANY

ELECTRICAL COMPONENT.

This includes (but not limited to) Fans, Heaters

Thermostats, and Lights.

Wiring and Serial Plate Amperage

Field Wiring must be sized for component amperes stamped on the serial plate. Actual ampere draw may be less than specified. Case amperes are listed on the wiring diagram, but always check the serial plate.

Electrical Circuit Identification

An electrical junction box is provided under left hand button end of case. A terminal block is also located there - 3Ø 240/ 208 volts with a neutral should be provided.

Electrical Receptacles (When Applicable)

The receptacles located on the exterior of the merchandiser are intended for scales and lighted displays. They are not intended nor suitable for large motors or other external appliances.

7. User Information

Food Handling and Hot Food Equipment

These hot tables are for short-term holding and display of precooked hot foods. They are not intended to cool or reheat food. The temperature of the food should be approximately 160°F when first put into the hot table.

These hot tables are best suited when used in a cafeteria type application where the food is held and served rapidly, within a few hours. Any attempt to use the hot table to display large amounts of food for long periods of time will result in dehydrated, overcooked and unsafe food. The quality of food will progressively worsen as the length of time increases.

The deterioration of product quality is a function of time and temperature. All products are affected even though in a gravy or other liquid. They may appear to withstand the temperature better than "dry" foods such as fried chicken but this is not necessarily true. ALL foods will continue to be affected by prolonged exposure to elevated temperatures.

The following guidelines are provided only as a general guide for the use of this equipment. The local health agency for your area can provide specific temperature requirements.

Critical attention must be given to the heat controls for these hot tables. Both the upper and lower heat controls must be adjusted to achieve proper food temperatures. Hot foods should be held at a minimum temperature of at least 140°F (60°C) according to 1995 FDA Food Code. However, increasing the temperature too high will also cause the food to overcook, dry out, lose its flavor, texture and color. Food held for prolonged periods at high temperatures will also lose some of their nutritional value.

Different foods will require different control settings. The type of food, the quantities of food and length of time that it is to remain in the hot table must be considered when establishing control settings. Therefore, it must be the user's responsibility to establish the correct control settings to maintain the food at the safest, tastiest and most saleable condition.

**FOOD TEMPERATURES CAN BE
ACCURATELY DETERMINED ONLY
THROUGH THE USE OF FOOD
THERMOMETERS!**

Important Operation Tips:

- Preheat case 30 minutes before loading product using higher settings.
- Never place food directly into warmer. Always use an inset and pan.
- Never pour water into a dry preheated warmer. This may damage the unit. Always pour water into

warmer BEFORE preheating. Always use water in case wells, as it provides even heat and humidity.

- Too much water or too much heat will cause excessive condensation on the front glass, decreasing visibility.
- Make sure all pans are in the well units no matter the configuration.
- Using thermometer, check product before loading in case (150° - 160°F).
- Always use warmer in wet operation when warming thick food items.
- Stir thick foods such as chili, fudge and chowders often to keep foods uniformly heated and prevent scorching.
- At start, set wells to "7", and overhead heat to "5". After loading, recheck temperature every 1/ hour to see that unit is operating properly. Adjust the thermostat (a higher number for hotter and a lower number for cooler) to maintain product temperature of 140°F+ (60°C) minimum. The setting will depend on the type of product being displayed and how much there is in the well. Be sure to test product temperature with a thermometer frequently for good product maintenance.
- Keep cover(s) on insets to maintain food quality and temperature.
- Food must always be placed into a display pan over the well, never directly into the well.
- Food should not be stacked above the top of the pan. Food above the top of the pan will dry out rapidly.
- Food juice or gravy should be stirred frequently and any meats should be basted with the gravy. Stir and rotate foods as needed. Wipe up spills immediately for eye appeal now, and easier cleaning later.
- Food should be rotated periodically from the bottom to top.
- If practical, the food should be covered during slow sale periods to reduce dehydration.
- At end of the day, remove product and let case cool. Then clean with soap and water (use oven cleaner on the difficult spots). Polish and clean glass with a good glass cleaner.

Controls

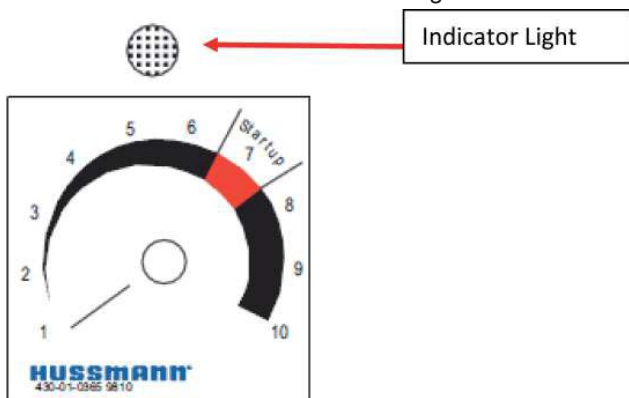
The controls to regulate the temperature of the well heaters, griddle, and the overhead heat are located at the rear of the case.

Note: Condensation will accumulate on the front glass if the hot well setting is greater than 7.

User Information (Cont'd)

Hot Well/Soup Well Operating Instructions

Each hot unit has an individual heater with a separate control. These are thermostatically controlled with an indicator light showing when the heater has cycled on and is heating. The light above each control knob indicates when the well heater is heating.



These units are for short-term holding and display of precooked hot foods. They are not intended to cool or reheat food. The temperature of the food entering the display should be approximately 160°F when first inserted.

Any attempt to use the hot unit to display large amounts of food or soup for long periods of time will result in dehydrated, overcooked and unsafe food. The quality of the food will progressively worsen as the length of time increases.

The deterioration of product quality is a function of time and temperature. All products are affected even though in gravy or other liquid. They may appear to withstand the temperature better than “dry” foods such as fried chicken but this is not necessarily true. All foods will continue to be affected by prolonged exposure to elevated temperatures.

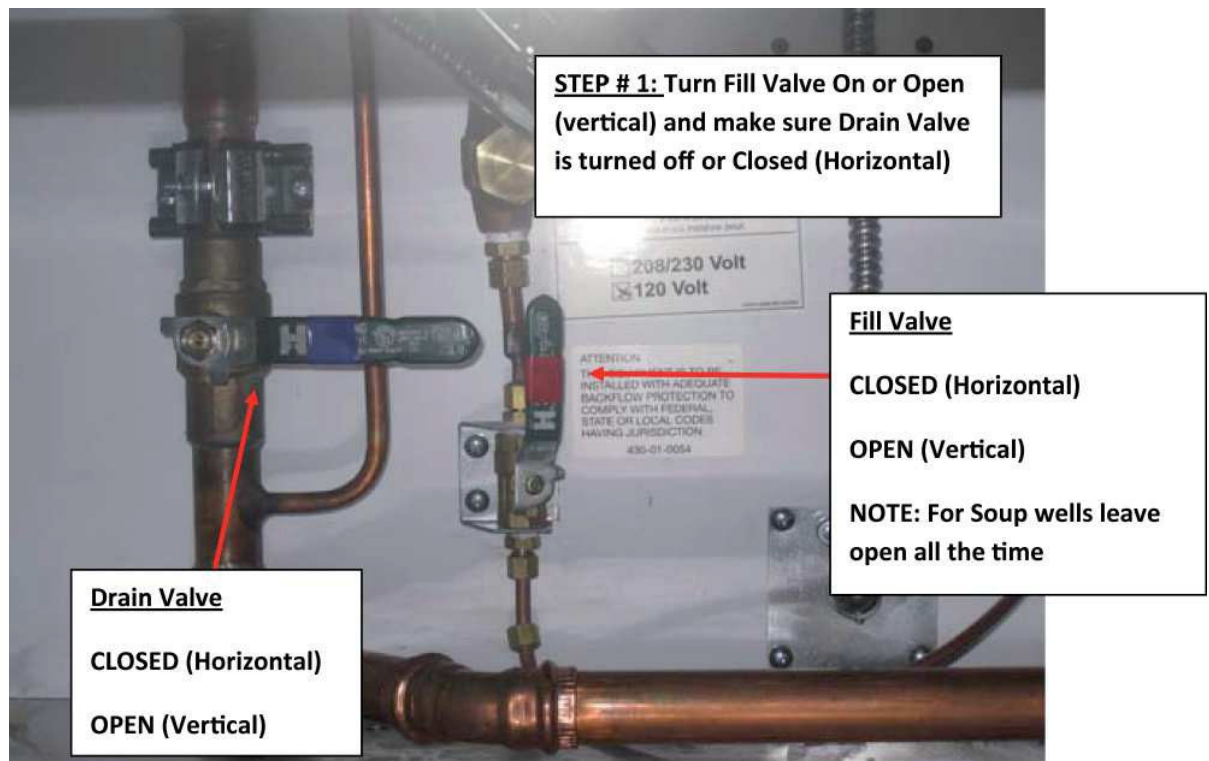
The following guidelines are provided only as a general guide for the use of this equipment. The local health agency for your area can provide specific temperature requirements.

Critical attention must be given to the heat controls for these hot tables/soup bars. Both the upper and lower heat controls (soup only require lower control) must be adjusted to achieve proper food temperatures. Hot foods should be held at a constant temperature of at least 140°F (60°C) (minimum FDA requirements to prevent spoiling). However, increasing the temperature too high will also cause the food to overcook, dry out, lose its flavor, texture and color. Food held for prolonged periods at high temperatures will also lose some of their nutritional value.

Different foods require different control settings. The type of food, the quantities of food and length of time that it is to remain in the hot table must be considered when establishing control settings. Therefore, it must be the user’s responsibility to establish the correct control settings to maintain the food at the safest, tastiest and saleable condition.

User Information (Cont'd)

Startup:



To fill the well:

- Turn the fill valve to open position.
- Close the drain valve.

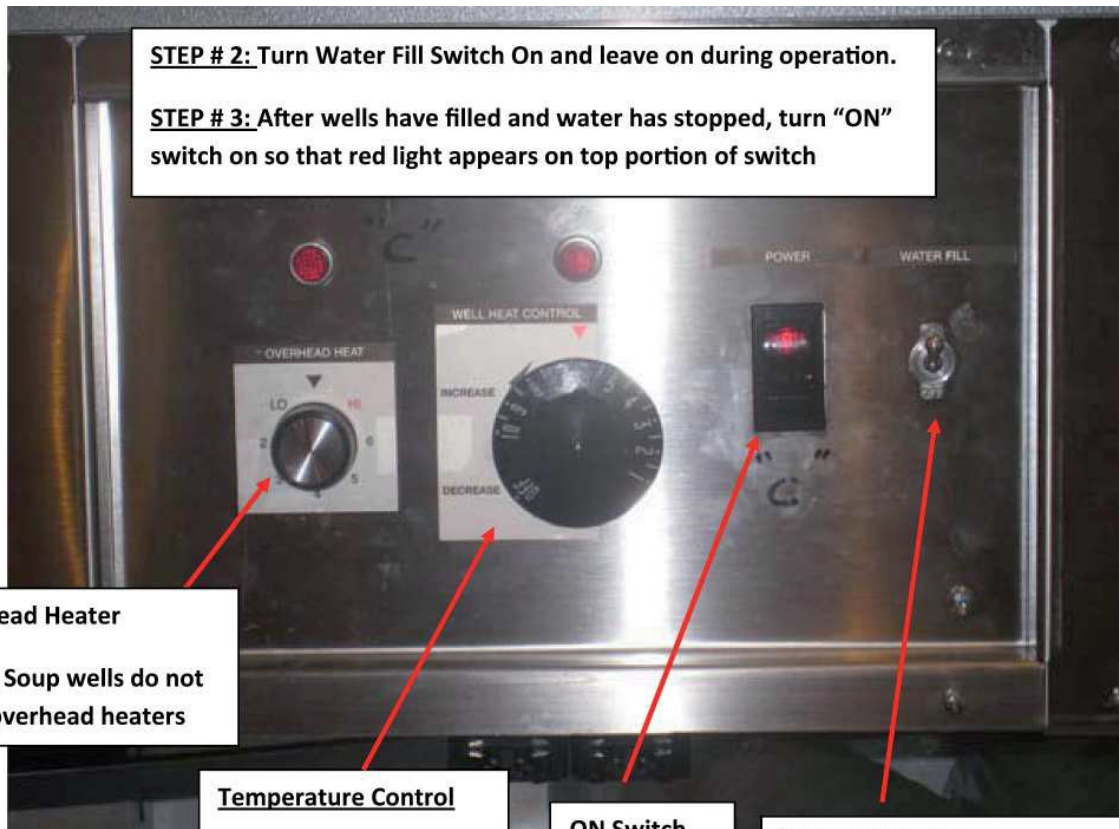
To drain the well:

- Turn the fill valve to the closed position.
- Open the drain valve.

User Information (Cont'd)

STEP # 2: Turn Water Fill Switch On and leave on during operation.

STEP # 3: After wells have filled and water has stopped, turn "ON" switch on so that red light appears on top portion of switch



Overhead Heater

NOTE: Soup wells do not have overhead heaters

Temperature Control

Suggested: "7"

ON Switch

Water Fill Switch

Turn on for operation, must stay on

NOTE: Soup wells do not have a switch there is an automatic fill

Operation:

- Turn the water fill switch on.
- After wells have filled turn "ON" switch on.
- Set temperature control to '7" setting. Adjust as necessary.
- Adjust overhead heater as necessary.

Shutting down:

- Turn "ON" switch off.
- Turn water fill switch off.
- Close fill valve.
- Open drain valve.
- Once the water is drained, close the drain valve.

User Information (Cont'd)

Overhead Heating System

Overhead heaters and fluorescent lights are located above each well to provide both top heat and illumination.

To obtain the proper food temperatures, the well heater and overhead heater must be adjusted. Maximum limits should be avoided to prevent overcooking or drying out of food.

Note: Soup Wells do not have overhead heaters.

Food temperatures can be accurately determined only through the use of food thermometers!

Important Food Handling Tips:

1. Preheat case 30 minutes before loading product.
2. Never place food directly into the warmer. Always use an inset.
3. Food must be displayed in a single layer, in contact with the heat source at all times.
4. Using thermometer, check product before loading in case (150°-160°).
5. At start, set control to "7". After loading, recheck temperature every ½ hour to see that unit is operating properly. Adjust the temperature to maintain a product temperature of 140°F (60°C) and above. The setting will depend on the type and quantity of product being displayed. Be sure to test product temperature with a thermometer frequently for good product maintenance.
6. Food should be rotated periodically.
7. At the end of the day, remove product and let case cool. Then clean with soap and water.

Care and Cleaning

Long life and satisfactory performance of any equipment is dependent upon the care it receives. With this in mind, all of the exposed work surfaces of these hot tables have been made entirely of easy to clean stainless steel.

Stainless steel is one of the easiest materials to clean and keep clean. Normally it is just a matter of wiping spills off the surface when they happen followed by a thorough cleaning with soap and water at the end of the day. Frequent and regular cleaning will prevent the buildup of baked on difficult to remove spills. Many types of cleansers are available and safe to use on stainless steel. However, ordinary steel wool and steel brushes should not be used. Small particles of the steel may become imbedded into the stainless steel surfaces that will eventually rust and stain.

General Cleaning Rules

1. Allow surfaces to cool before handling.
2. Clean frequently and regularly.
3. Rinse thoroughly after cleaning.
4. Remove surface spills immediately with a damp cloth.

Cleaning Cases

1. Turn temperature control knob to OFF position.
2. Remove insets and adapters (if used).
3. Allow unit to cool completely.
4. Drain water from wells using large hand valve. It is not necessary to read just the water level plate.
5. Wipe entire unit with clean cloth and mild detergent.

The EXTERIOR surfaces of these hot tables must be cleaned with a mild detergent and warm water to protect and maintain their attractive finish. Never use abrasive cleaners or scouring pads.

TO REMOVE "BAKED-ON" SPLATTER, GREASE OR LIGHT DISCOLORATION TO STAINLESS STEEL

STEELCLEANSING AGENT	METHOD OF APPLICATION
Grade F Italian Pumice	Scour or rub with damp cloth
Liquid NuSteel	Scour with small amount on dry cloth
Paste NuSteel	On Dry Cloth
Household Cleansers	Rub with damp cloth
Coopers S.S. Cleaner	
Allen S.S Polish	

User Information (Cont'd)

To Remove Heat Tint Or Heavy Discoloration

CLEANSING AGENT	METHOD OF APPLICATION
Allen Stainless Steel Polish	Small amount on damp cloth
Birdsall "Staybright"	Rub with damp cloth
Wyandotte	
Bab-O	
Nusteel	Rub with stainless steel wool

Stainless Steel Cleaning and Care

There are three basic things, which can break down your stainless steel's passivity layer and allow corrosion.

1. Mechanical Abrasion

Mechanical Abrasion means those things that will scratch the steel's surface. Steel Pads, wire Brushes, and Scrapers are prime examples.

2. Water

Water comes out of our tap in varying degrees of hardness. Depending on what part of the country you live in, you may have hard or soft water. Hard water may leave spots. Also, when heated, hard water leaves deposits behind that if left to sit, will break down the passive layer and rust your stainless steel. Other deposits from food preparation and service must be properly removed.

3. Chlorides

Chlorides are found nearly everywhere. They are in water, food and table salt. One of the worst perpetrators of chlorides can come from household and industrial cleaners.

Don't Despair! Here are a few steps that can help prevent stainless steel rust.

1. Use the Proper Tools

When cleaning your stainless steel products, take care to use non-abrasive tools. Soft Clothes and plastic scouring pads will NOT harm the steel's passive layer. Stainless steel pads can also be used but the scrubbing motion must be in the same direction of the manufacturer's polishing marks.

2. Clean With the Polish Lines

Some stainless steels come with visible polishing lines or "grain". When visible lines are present, you should ALWAYS scrub in a motion that is parallel to them. When the grain cannot be seen, play it safe and use a soft cloth or plastic scouring pad.

3. Use Alkaline, Alkaline Chlorinated or Non-chloride Containing Cleaners

While many traditional cleaners are loaded with chlorides, the industry is providing an ever increasing choice of non-chloride cleaners. If you are not sure of your cleaner's chloride content contact your cleaner supplier. If they tell you that your present cleaner contains chlorides, ask for an alternative. Also, avoid cleaners containing quaternary salts as they also can attack stainless steel & cause pitting and rusting.

4. Treat your Water

Though this is not always practical, softening hard water can do much to reduce deposits. There are certain filters that can be installed to remove distasteful and corrosive elements. If you are not sure of the proper water treatment, call a treatment specialist.

5. Keep your Food Equipment Clean

Use alkaline or non-chlorinated cleaners at recommended strength. Clean frequently to avoid build-up of hard, stubborn stains. If you boil water in your stainless steel equipment, remember the single most likely cause of damage is chlorides in the water. Heating cleaners that contain chlorides has a similar effect.

6. RINSE, RINSE, RINSE

If chlorinated cleaners are used you must rinse, rinse, rinse and wipe dry immediately. The sooner you wipe off standing water, especially when sit contains cleaning agents, the better. After wiping the equipment down, allow it to air dry for the oxygen helps maintain the stainless steel's passivity film.

7. Never Use Hydrochloric Acid (Muriatic Acid) on Stainless Steel

8. Regularly Restore/Passivate Stainless Steel

To Remove Lime Deposits

Use a de-liming agent so deposits do not build up. If your area's water has a high mineral content, it may be wise to install a cartridge type filtration system to minimize buildup.

DO NOT USE ANY HIGHLY CAUSTIC CLEANERS ON WARMERS. USE OF THESE MAY CAUSE DAMAGE OR CORROSION TO THE UNIT.

Do not allow ammonia to stand in warmer. Doing so may cause damage or corrosion.

User Information (Cont'd)



IMPORTANT INFORMATION

Rinse unit thoroughly with vinegar and water. The vinegar will neutralize any detergent residue.

Close drain valve and allow water to refill. Due to the small diameter feed line, this water fills at an extremely slow rate, so it is advisable to begin refilling immediately after cleaning - a number of hours before heating and loading with product. Water will automatically fill to the same level it was when it was drained.

Plexiglass and Acrylic Care

Clean with plenty of nonabrasive soap (or detergent) and lukewarm water, using the bare hand to feel and dislodge any caked-on dirt. A soft, grit-free cloth, sponge, or chamois may be used, but only as a means of carrying the water to the plastic. Dry with a clean damp chamois or clean soft cloth such as cotton flannel. Hard, rough cloths paper towels will scratch the acrylic, and should not be used.

CAUTION

CLEANING PRECAUTIONS

When cleaning:

- Do not use high pressure water hoses
- Do not introduce water faster than waste outlet can drain
- NEVER INTRODUCE WATER ON SELF CONTAINED UNIT WITH AN EVAPORATOR PAN
- NEVER USE A CLEANING OR SANITIZING SOLUTION THAT HAS AN OIL BASE (these will dissolve the butyl sealants) or an AMMONIA BASE (this will corrode the copper components of the case)
- TO PRESERVE THE ATTRACTIVE FINISH:
- DO USE WATER AND A MILD DETERGENT FOR THE EXTERIOR ONLY
- DO NOT USE A CHLORANITED CLEANER ON ANY SURFACE
- DO NOT USE ABRASIVES OR STEEL WOOL SCOURING PADS (these will mar the finish)

Waxing

If after removing dirt and grease, the acrylic can be waxed with a good grade commercial wax. This will improve the appearance of the surface by filling in most minor scratches. Wax should be applied in a thin even coat, and brought to a high polish by rubbing lightly with a dry clean soft cloth, such as a cotton flannel. Excessive rubbing may cause scratching and/or buildup an electrostatic charge, which attracts dust and dirt to the surface. Blotting with a clean damp cloth is recommended to remove charge.

Antistatic Coatings

For acrylic used indoors, antistatic coatings successfully prevent the accumulation of electrostatic charge for periods of several months, if the surface is not washed or wiped down with a wet cloth. Between applications of the antistatic coatings, the parts need only be dusted with a soft clean cloth to maintain a good appearance. In use, liquid antistatic coatings should be applied in a very thin even coat. If beads appear as it is applied, the coat is too thick and the excess should be removed with another cloth. Allow the coating to dry, then bring to a high gloss with a soft cloth.

Non-Glare Glass

The high optical clarity of this glass is possible due to special coatings on the glass surface itself. To preserve this coating and the optical clarity, keep the glass clean.


Water is the only solution recommended to be used to clean the non-glare glass. The damage to the glass from improper, caustic solutions is irreparable.

In addition to cleaning the glass with the recommended product, there are precautions that should be taken when working and cleaning the inside of the case.

- When cleaning the inside of the cases, we recommend that the glass be fully opened and covered to prevent solutions from splashing onto the glass and ruining the coating on the inside.

8. Maintenance

Electrical Precautions




DANGER

BEFORE SERVICING
ALWAYS DISCONNECT ELECTRICAL
POWER AT THE MAIN DISCONNECT
WHEN SERVICING OR REPLACING ANY
ELECTRICAL COMPONENT.
 This includes (but not limited to) Fans, Heaters
 Thermostats, and Lights.

Replacing Overhead Heat Elements

Tubular heating units are designed to last through many hours of use. Should there be a need to replace one, unclip the rod and replace. The tubular heating unit specifications are printed on the unit itself.




DANGER

Tubular Heating Units
are EXTREMELY HOT
Never touch until the case has
had ample time to cool down

Tips and Troubleshooting

Before calling for service if something seems wrong, check the following:

1. Check electrical power supply to the equipment for connection.
2. Check fixture loading. Overstocking case will affect its proper operation.



IMPORTANT
INFORMATION

FOR PROMPT SERVICE
When Contacting the Factory regarding problems.
Be sure to have the Case MODEL and
SERIAL NUMBER Handy. This Information
is on a plate located on the case itself.

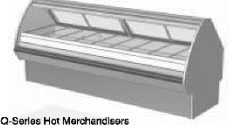
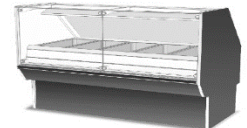
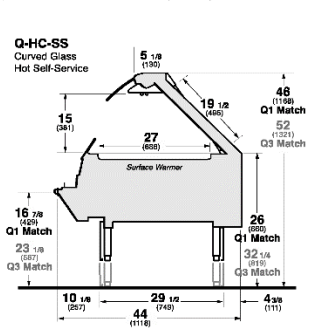
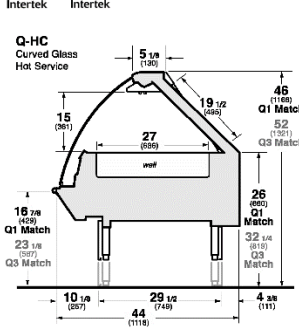
9. Specification



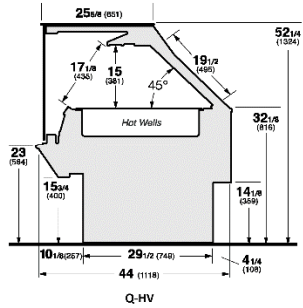
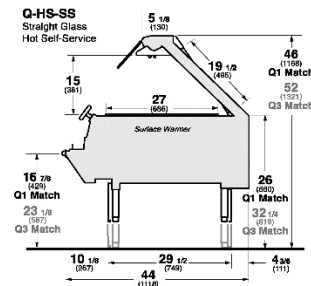
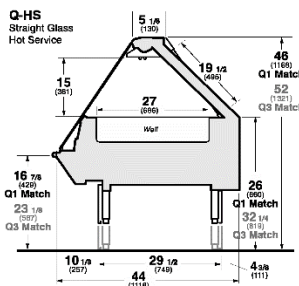
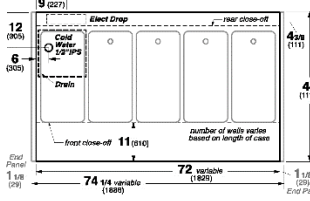
SINGLE DECK HOT CASE

HUSSMANN - Q-HC, Q-HV, Q-HC-SS, Q-HS, Q-HS-SS (CHINO)

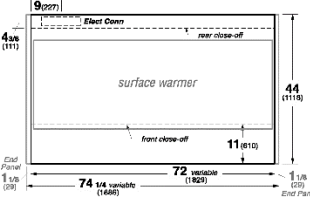
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QHC, QHS Q-Series Hot Merchandisers

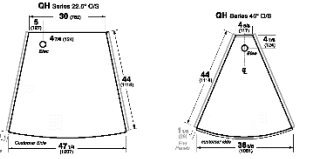


QH-SS Q-Series Hot Merchandisers



SERVICE CASE W/WELLS

SELF-SERVICE CASE W/SURFACE WARMERS



ELECTRICAL DATA:

SURFACE WARMER	VOLTS	PH	HZ	TOTAL WELLS	WATTS	AMPS	FANS / CASE	TOTAL FANS		WIRES **	
								AMPS	WATTS		
4'	HOT	240	1	60	NA	3048	12.7	2	0.28	24	4
5'	HOT	240	3	60	NA	4350	18.1	3	0.42	36	5
6'	HOT	240	3	60	NA	4359	18.2	3	0.42	36	5
8'	HOT	240	3	60	NA	5812	24.2	4	0.56	48	5
10'	HOT	240	3	60	NA	8700	36.2	6	0.84	72	5
12'	HOT	240	3	60	NA	8718	36.3	6	0.84	72	5
22.5° O/S	HOT	240	1	60	NA	2313	9.64	N/A	N/A	N/A	4
45° O/S	HOT	240	TBD	60	NA	TBD	TBD	TBD	TBD	TBD	TBD

CANOPY LIGHTS T-5		OPTIONAL LEDGE LIGHTS T-5		TOTAL LIGHTS T-5	
AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
0.39	42	0.26	28	0.65	70
0.52	56	0.32	35	0.84	91
0.65	70	0.39	42	1.04	112
0.78	84	0.52	56	1.30	140
1.04	112	0.65	70	1.69	182
1.17	126	0.78	84	1.95	210
0.26	28	TBD	TBD	TBD	TBD
TBD	TBD	TBD	TBD	TBD	TBD

LEGEND	
N/A -	AVAILABLE
TBD -	DETERMINED
SBO -	SUPPLIED BY OTHERS
EXTERNAL END PANEL WIDTH KEY	
# OF END PNL'S	PNL WIDTH (IN.)
1	1.125
2	2.25

HOT WELLS	VOLTS	PH	HZ	TOTAL WELLS	WATTS	AMPS	FANS / CASE	TOTAL FANS		WIRES **	
								AMPS	WATTS		
4'	HOT	240	3	60	3600	15.0	2	0.28	24	5	
5'	HOT	240	3	60	4	4900	20.0	3	0.42	36	5
6'	HOT	240	3	60	5	6000	25.0	3	0.42	36	5
8'	HOT	240	3	60	6	7200	30.0	4	0.56	48	5
10'	HOT	240	3	60	8	9800	40.0	6	0.84	72	5
12'	HOT	240	3	60	9	10800	45.0	6	0.84	72	5

CANOPY LIGHTS T-5		OPTIONAL LEDGE LIGHTS T-5		TOTAL LIGHTS T-5	
AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
0.39	42	0.26	28	0.65	70
0.52	56	0.32	35	0.84	91
0.65	70	0.39	42	1.04	112
0.78	84	0.52	56	1.30	140
1.04	112	0.65	70	1.69	182
1.17	126	0.78	84	1.95	210

COMBINATION WARMERS / WELLS	VOLTS	PH	HZ	TOTAL WELLS	WATTS	AMPS	FANS / CASE	TOTAL FANS		WIRES **
								AMPS	WATTS	
8'	HOT	240	3	60	TBD	TBD	4	0.56	48	5
10'	HOT	240	3	60	TBD	TBD	6	0.84	72	5
12'	HOT	240	3	60	TBD	TBD	6	0.84	72	5

CANOPY LIGHTS		OPTIONAL LEDGE LIGHTS		TOTAL LIGHTS	
AMPS	WATTS	AMPS	WATTS	AMPS	WATTS
0.78	84	0.52	56	1.30	140
1.04	112	0.65	70	1.69	182
1.17	126	0.78	84	1.95	210

** INCLUDES GROUND WIRE

OPTIONS/NOTES:

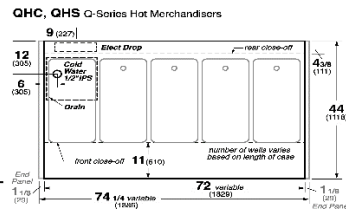
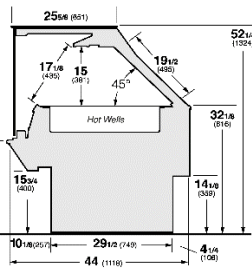
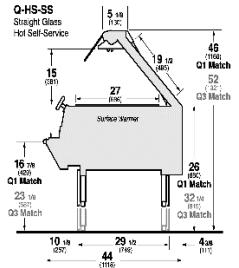
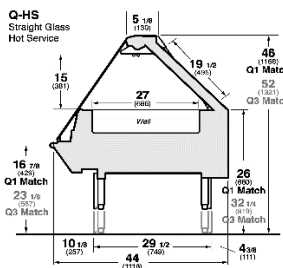
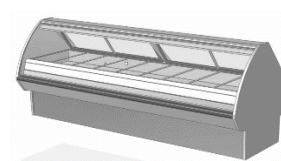
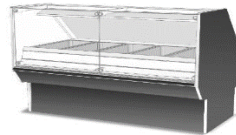
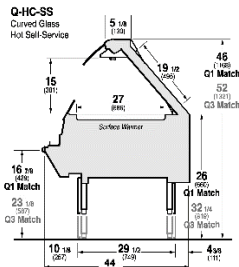
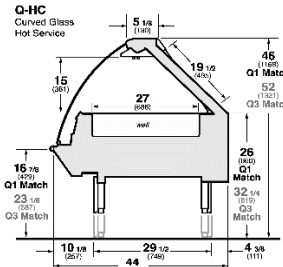
- NOTE: CASES MUST BE GROUNDED
- NOTE: LED LIGHTS ARE NOT AVAILABLE ON HOT CASES AT THIS TIME.

Specification Sheets



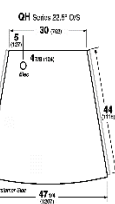
SINGLE DECK HOT CASE
 HUSSMANN - Q-HC, Q-HV, Q-HC-SS, Q-HS, Q-HS-SS 208V (CHINO)

8/3/2021

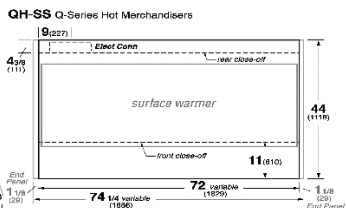
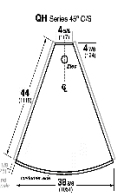


SERVICE CASE W/WELLS

SELF-SERVICE CASE W/SURFACE WARMERS



Q-HV



ELECTRICAL DATA:

SURFACE WARMER	VOLTS	PH	HZ	TOTAL WELLS	WATTS	L1	L2	L3	FANS / CASE	WIRES **	OPTIONAL LEDGE LIGHTS T-5 *		
											AMPS	WATTS	
4'	HOT	208	1	60	NA	2787	13.4	12.8	NA	2	4	0.26	28
5'	HOT	208	1	60	NA	3224	15.5	14.6	NA	3	4	0.32	35
6'	HOT	208	3	60	NA	5284	14.7	14.1	15.2	3	5	0.39	42
8'	HOT	208	3	60	NA	3062	7.7	6.5	11.3	4	5	0.52	56
10'	HOT	208	3	60	NA	5068	17.4	9	15.8	6	5	0.65	70
12'	HOT	208	3	60	NA	7805	23.2	20.9	20.9	6	5	0.78	84
22.5" O/S	HOT	208	1	60	NA	1789	8.6	8.4	NA	NA	4	TBD	TBD
45" O/S	HOT	208	1	60	NA	1801	8.7	8.4	NA	TBD	4	TBD	TBD

LEGEND		
NA	NOT AVAILABLE	
TBD	TO BE DETERMINED	
CKT	CIRCUIT	
SBO	SUPPLIED BY OTHERS	
EXTERNAL END PANEL WIDTH KEY		
# OF END PNLS	END PNL WIDTH (IN.)	TOTAL ADDED LENGTH (IN.)
1	1.125	1.125
2	1.125	2.25

HOT WELLS	VOLTS	PH	HZ	TOTAL WELLS	WATTS	L1	L2	L3	FANS / CASE	WIRES **	OPTIONAL LEDGE LIGHTS T-5 *		
											AMPS	WATTS	
4'	HOT	208	1	60	3	5325	26.6	24.9	NA	2	4	0.26	28
5'	HOT	208	3	60	4	8257	23.6	27.8	17.4	3	5	0.32	35
6'	HOT	208	3	60	5	10063	30.6	29.5	23.7	3	5	0.39	42
8' CKT 1	HOT	208	3	60	6	8514	24.5	23.2	23.2	4	5	0.52	56
CKT 2	HOT	208	3	60	NA	3602	7.5	15	7.5	NA	5	NA	NA
10' CKT 1	HOT	208	3	60	8	8982	23.7	26.5	22.1	6	5	0.65	70
CKT 2	HOT	208	3	60	NA	4323	9.0	18	9.0	NA	5	NA	NA
12' CKT 1	HOT	208	3	60	6	8998	26.2	23.2	23.2	6	5	0.78	84
CKT 2	HOT	208	3	60	3	9583	26.6	26.6	26.6	NA	5	0.78	84

COMBINATION WARMERS / WELLS	VOLTS	PH	HZ	TOTAL WELLS	WATTS	L1	L2	L3	FANS / CASE	WIRES **	OPTIONAL LEDGE LIGHTS T-5 *	
											AMPS	WATTS
8'	HOT	208	3	60	TBD	TBD	TBD	TBD	4	5	0.52	56
10'	HOT	208	3	60	TBD	TBD	TBD	TBD	6	5	0.65	70
12'	HOT	208	3	60	TBD	TBD	TBD	TBD	6	5	0.78	84

* LIGHTS AND FANS INCLUDED IN TOTAL LOADS
 ** INCLUDES GROUND WIRE

OPTIONS/NOTES:

- 1) NOTE: CASES MUST BE GROUNDED
- 2) NOTE: LED LIGHTS ARE NOT AVAILABLE ON HOT CASES AT THIS TIME.

10. Electrical Wiring Diagrams

Q-HC-4SV-P	Q-HC-4 W/GRIDDLE	4'	W6600038
Q-HC-4-SV	Q-H 42" SW, CAL ROD TOP 208V	4'	W6600641
Q-HC-4SV-W	QH-4' W/3 INDIVIDUAL WELLS 43D (208V)	4'	W6600079
Q-HC-4SV-W	QH-4' W/3 INDIVIDUAL WELLS 43DA (208V)	4'	W6600567
Q-HC-4-SV-W	QH-4' W/3 GANGED WELLS (208V)	4'	W6600646
Q-HC-5-SV-W	Q-H W/4 WELL INDIVIDUAL WARMERS	5'	W6600153
Q-HC-5-SV-W	Q-H W/4 WELL GANGED WARMERS	5'	W6600919
Q-HC-5-SS-P	Q-H W/54" HATCO SW	5'	W6600458
Q-HC-5-HOT	Q-HOT 4 WELL CALROD TOP 208V	5'	W6600815
Q-HC-6-SV-P	Q-H with Heater Pads (PREP)	6'	W6600087
Q-HC-6-SV-W-SW	Q-H W/3 WELLS & 24" SURFACE WARMER	6'	W6600148
Q-HS-6-SV-W	Q-H SW DECK, CAL ROD TOP	6'	W6600902
Q-HC-6-SV-W	Q-H WITH 5 INDIVIDUAL WARMERS	6'	W6600084
Q-HC-6	Q-HV-6 5-WELL GANGED 20" CAL RODS	6'	W6600536
Q-HC-6	Q-HV-6 5-WELL GANGED 20" CAL RODS	6'	W6600469
Q-HC-6-W	Q-HC-6. 60-S SW, CAL RODS 208V	6'	W6600723
Q-HC-6-SV-W	Q-H WITH 5 INDIVIDUAL WARMERS 208V	6'	W6600574

Electrical Wiring Diagrams (Cont'd)

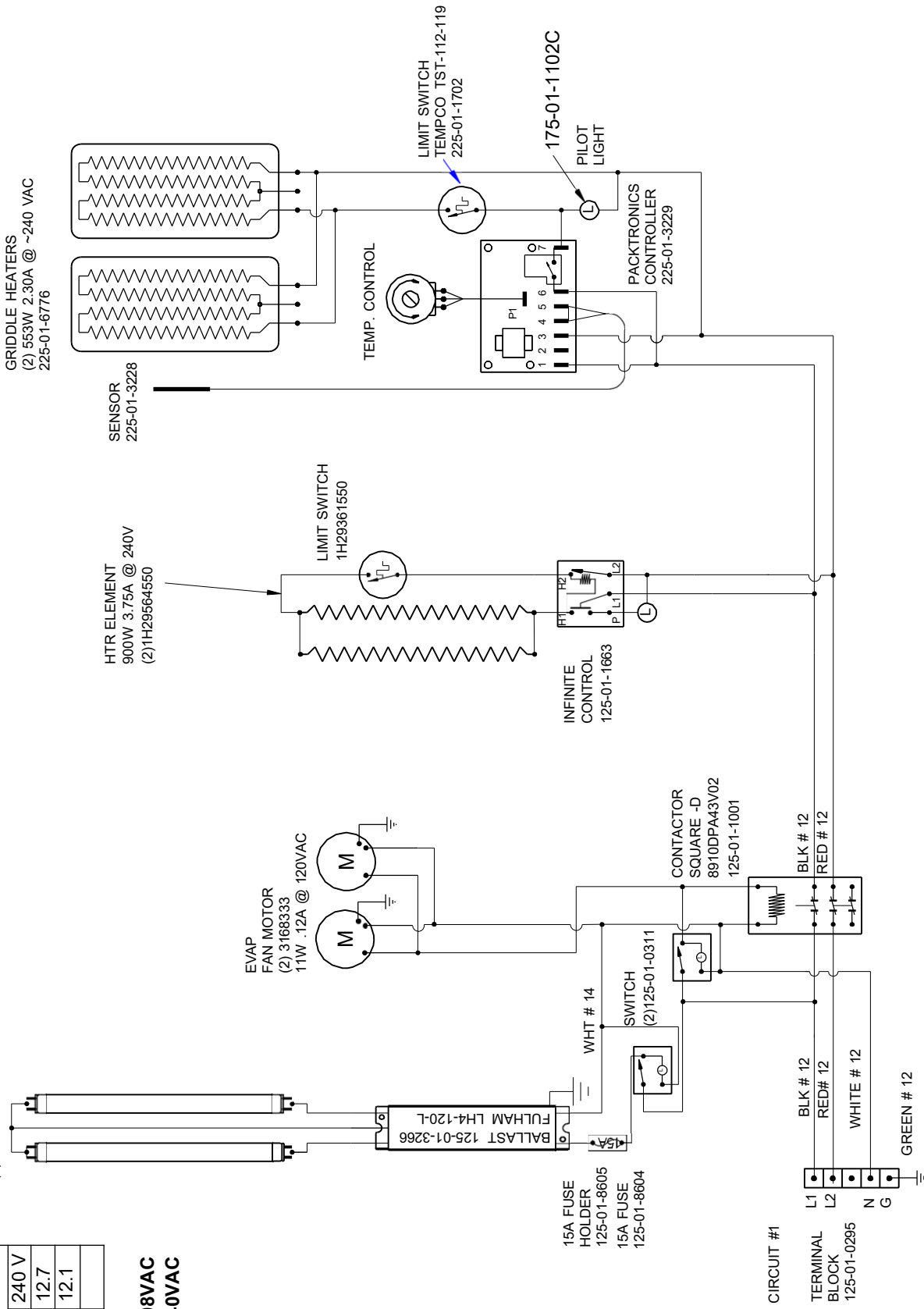
Q-HC-8-SV-W	Q-H WITH HATCO SURFACE WARMERS	8'	W6600182
Q-HC-8SV-P	Q-H with Heater Pads (PREP)	8'	W1750050
Q-HC-8-SS-G	Q-H with Heater Pads (SELF-SERVICE)	8'	W6600021
Q-HC-8SV-W	Q-H WITH (6) INDIVIDUAL WARMERS	8'	W6600023
Q-HC-8SV-W	Q-H WITH (6) INDIVIDUAL WELLS 240V	8'	W6600480
Q-HS-8	Q-H WITH (6) INDIVIDUAL WELLS 208V	8'	W6600686
Q-HS-8	Q-H WITH 6-WELL GANGED CAL ROD 208V	8'	W6600817
Q-HC-10-SS-P	Q-H W/2-54" HATCO SW	10'	W6600459
Q-HS-10	Q-H WITH (8) INDIVIDUAL WARMERS 208V	10'	W6600693
Q-HC-10-H	Q-H W/ 8 INDIVIDUAL WELLS DRY WELLS	10'	W6600694
Q-HS-10	Q-H W/2-54" SW, CAL ROD TOP 208V	10'	W6600733
Q-HS-10	Q-H W/2-4 WELL, CAL ROD TOP 208V	10'	W6600736
Q-HC-12-SV-W	Q-H WITH 9 INDIVIDUAL WARMERS	12'	W6600085
Q-HC-12-SV-W	Q-H WITH 10 INDIVIDUAL WARMERS	12'	W6600345
Q-HC-12-SV-W	Q-H WITH 9 INDIVIDUAL WARMERS	12'	W6600607
Q-HC-12SV-P	Q-H with Heater Pads & LED LEDGE LIGHTS	12'	W6600082

CIRCUIT #1

LOADING	208 V	240 V
L1	11.0	12.7
L2	10.5	12.1
L3		

3037W @ 208VAC
3048W @ 240VAC

F21/T5-36"
(2)125-03-1129 LIGHT CIRCUIT= 0.39A 42W



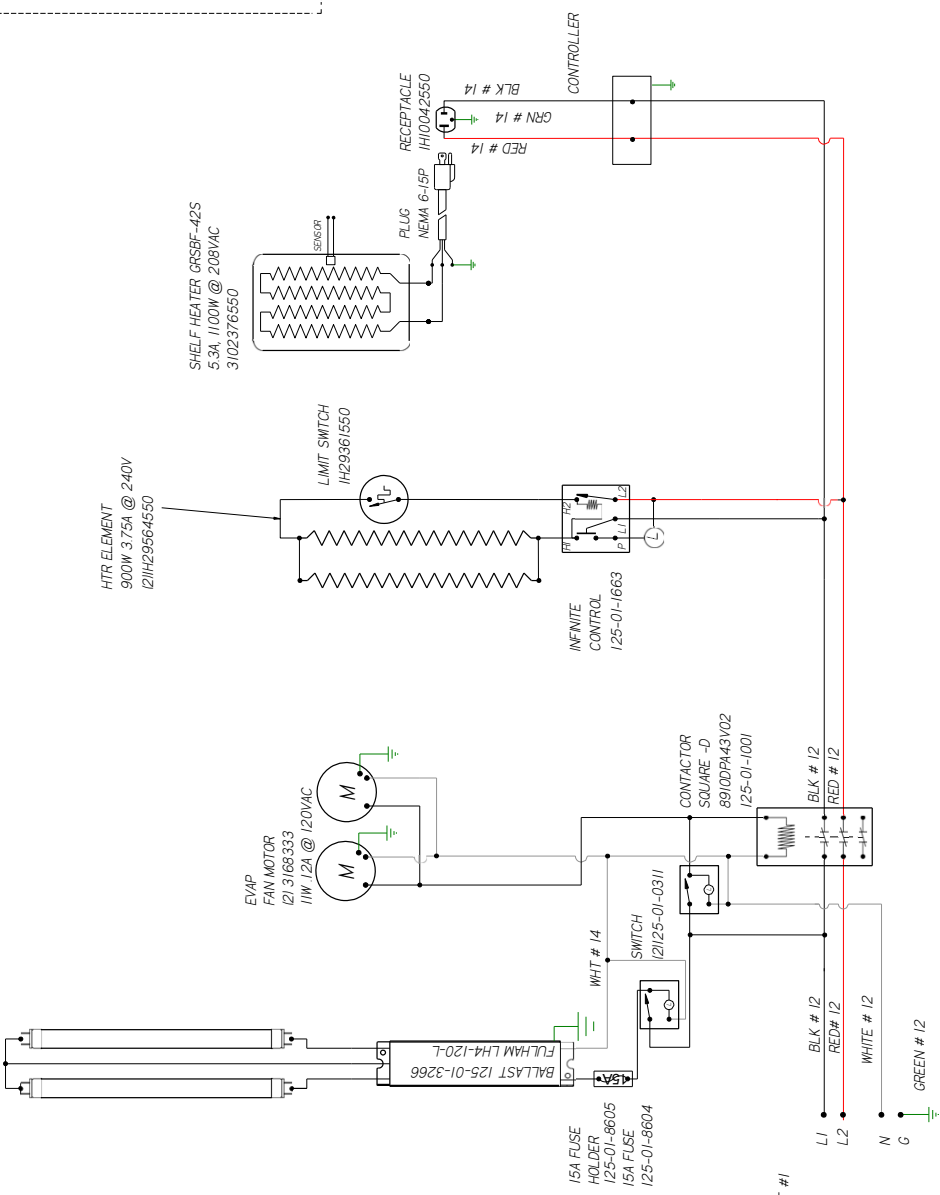
HUSMANN Hussmann Corporation, Inc. 13770 Ramona Avenue Chino, CA 91710 (909) 590-4910 Lic.#: 644406		REVISIONS: # DESCRIPTION: B ECN-CAP-0003963 Revised Circuit Loads C ECN-COD-0017537 CHANGED TOP FAN	DRAWN BY: CRAIG BOOREY CHECKED BY: _____ DATE: 7/2/12 DATE: 11/16/16 DATE: 2/2/23	PROJECT TITLE: Q-H PRODUCTION ORDER #: _____ FILE LOCATION: CB	DRAWING #: W6600038
Q-HC-4SS-P W/TOP GRIDDLE					PAGE 1 OF 1

CIRCUIT #1

LOADING	
L1	134
L2	128
L3	

278TW @ 208VAC

F21/175-36"
121/25-03-1129 LIGHT CIRCUIT= 0.39A 42W



- NOTES:**
1. PRINTED DOCUMENT REQUIRED SETTING. ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

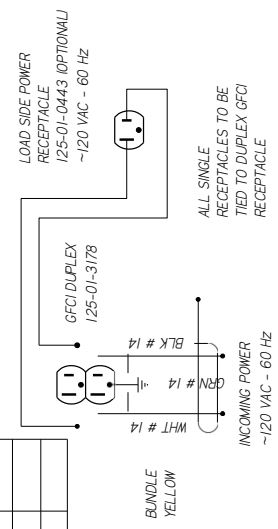
REVISION HISTORY

REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-CAP-0020428	12-5-19	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-CAP-0017537	2-2-23	CHANGED TOP FAN	CB	CB	CB

CIRCUIT # 2 optional

LOADING	
L1	150
L2	
L3	

NOTE FOR GFCI PROTECTION: IF MORE THAN ONE SINGLE RECEPTACLE IS USED IN CONJUNCTION WITH A GFCI DUPLEX RECEPTACLE "DOWNSTREAM" ON THE LOAD SIDE, THE SUM OF ALL RECEPTACLES SHOULD NOT BE MORE THAN 15A



UL COLOR CODES / ABBREVIATIONS

RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = OR
YL GRAY = GY	OR VIOLET = VT

FABRIK 14GA WIRE

FACTORY LOGA WIRE	---
FIELD WIRE	----

DO NOT SCALE DRAWING
SHEET 1 OF 1

LIGHT CIRCUIT= 0.39A 42W
 F21/830 T5-36"
 (2)125-03-1128

AIR SWEEP
 FAN MOTOR
 (2) 3168333
 11W .12A @ 120VAC

(3) WARMERS
 MODEL#HWBH-43D
 208 VAC 6.0 AMPS
 1650 WATT @240
 3035373550

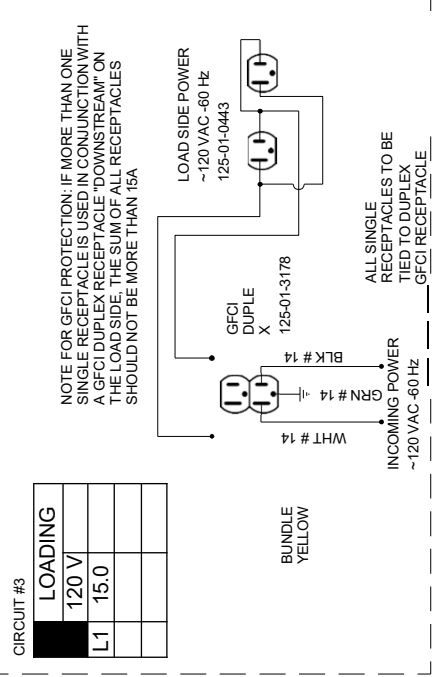
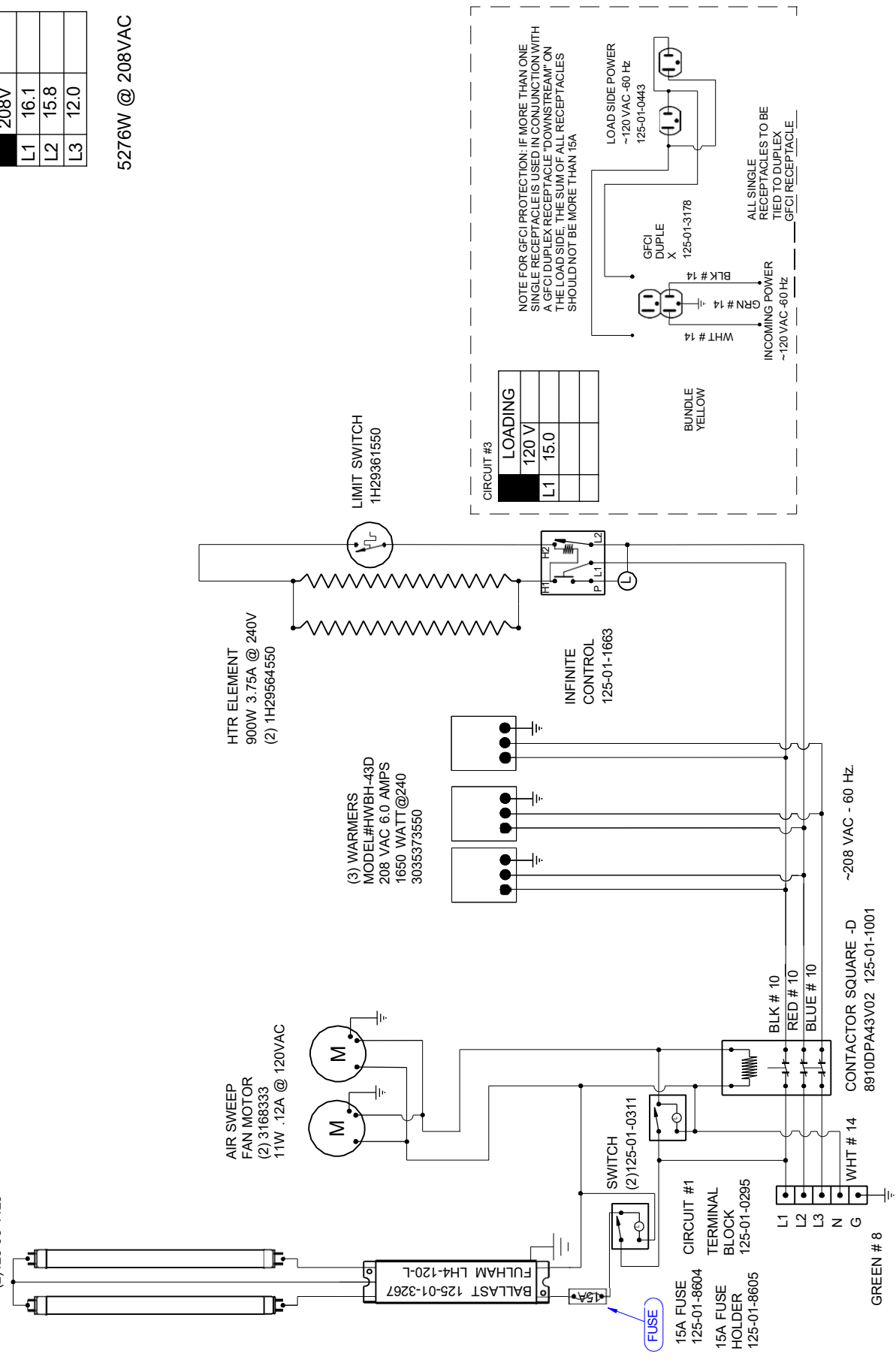
HTR ELEMENT
 900W 3.75A @ 240V
 (2) 1H29564550

INFINITE
 CONTROL
 125-01-1663

LIMIT SWITCH
 1H29361550

CIRCUIT #1	LOADING
	208V
L1	16.1
L2	15.8
L3	12.0

5276W @ 208VAC



CIRCUIT #3	LOADING
	120 V
L1	15.0

BUNDLE
 YELLOW

HUSMANN
 Hussmann Corporation, Inc.
 13770 Ramona Avenue
 Chino, CA 91710 Lic.#: 644406
 (909)-590-4910

REVISIONS:
 # DESCRIPTION DATE BY
 B CN#720718 Changed Drawing Number In Titleblock 7/8/13 CB
 C ECN-CAP-0015600 Changed to 208V Wells 2/19/19 CB
 D ECN-COD-0017537 Changed Top Fan 2/2/23 CB

DRAWN BY: CRAIG BOOREY PROJECT TITLE: QH DRAWING #: W6600079
 CHECKED BY: DATE: 5/2/13
 PRODUCTION ORDER #: 524131
 FILE LOCATION: Q-HC-4-SV-W

GREEN # 8

REVISION HISTORY			
REV	ECN	DATE	REVISION DESCRIPTION
B	ECN-CAP-0020429	12-11-19	ADDED DRY PART NUMBER
C	ECN-CAD-0017537	2-2-23	CHANGED TOP FAN

REV	ECN	DATE	REVISION DESCRIPTION
B	ECN-CAP-0020429	12-11-19	ADDED DRY PART NUMBER
C	ECN-CAD-0017537	2-2-23	CHANGED TOP FAN

REV	ECN	DATE	REVISION DESCRIPTION
B	ECN-CAP-0020429	12-11-19	ADDED DRY PART NUMBER
C	ECN-CAD-0017537	2-2-23	CHANGED TOP FAN

REV	ECN	DATE	REVISION DESCRIPTION
B	ECN-CAP-0020429	12-11-19	ADDED DRY PART NUMBER
C	ECN-CAD-0017537	2-2-23	CHANGED TOP FAN

REV	ECN	DATE	REVISION DESCRIPTION
B	ECN-CAP-0020429	12-11-19	ADDED DRY PART NUMBER
C	ECN-CAD-0017537	2-2-23	CHANGED TOP FAN

CIRCUIT #1	LOADING
L1	194
L2	191
L3	116

6016W @ 208VAC

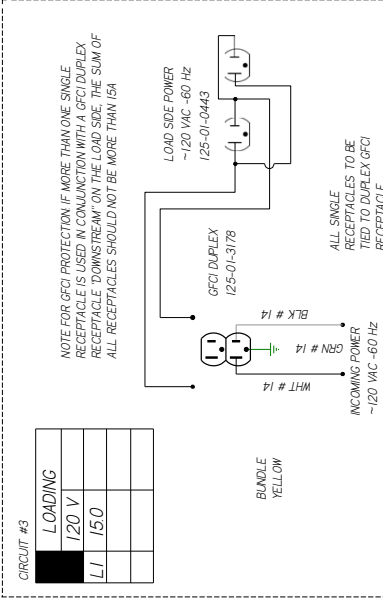
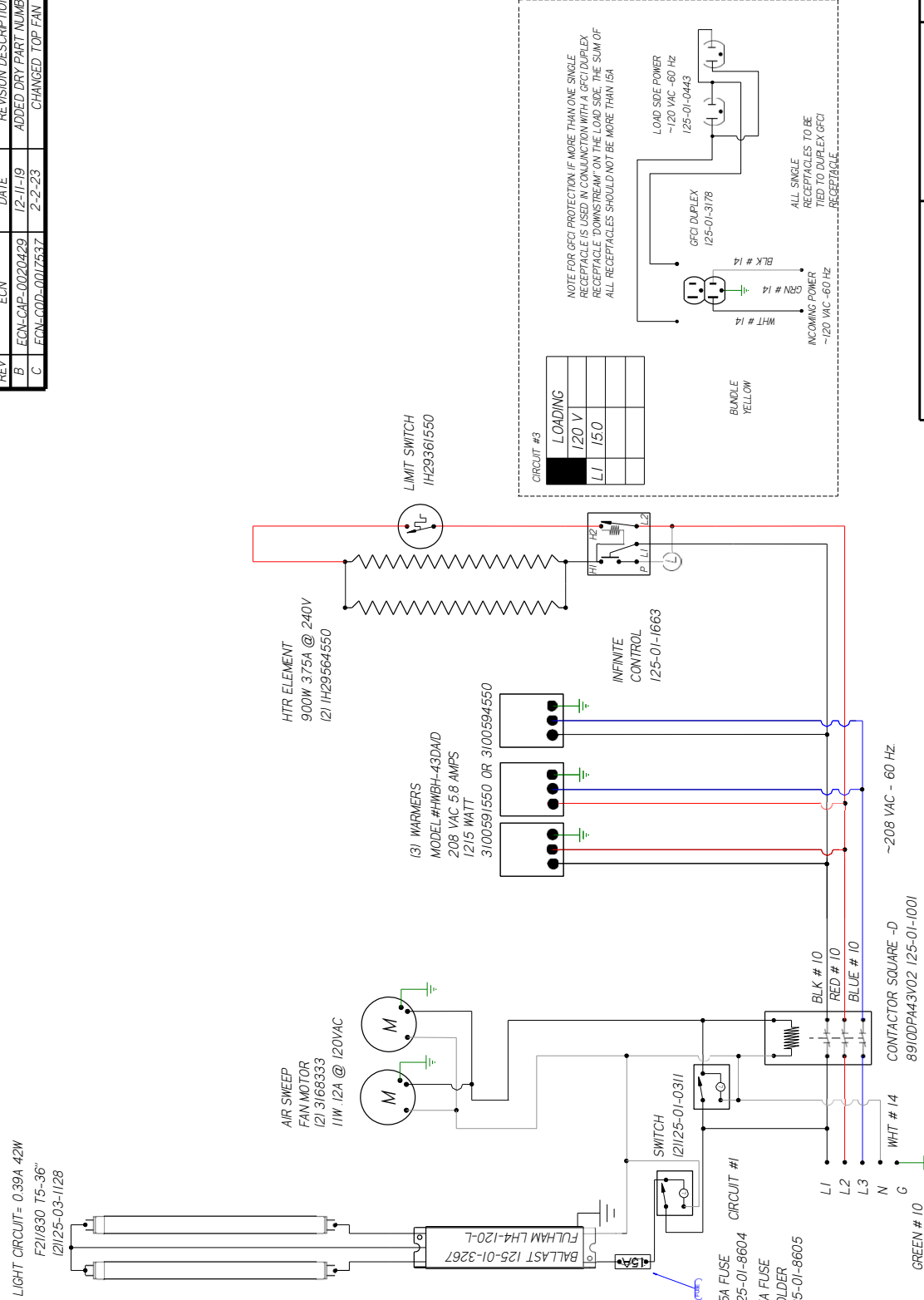
LIGHT CIRCUIT= 0.39A 42W
F21/830 T5-36"
I21/25-03-1128

AIR SWEEP
FAN MOTOR
I21 3168333
11W 1.2A @ 120VAC

HTR ELEMENT
900W 3.75A @ 240V
I21 IH29564550

WARMERS
MODEL #HWBH-43DMD
208 VAC 3.8 AMPS
I215 WATT
3100591550 OR 3100594550

LIMIT SWITCH
IH29361550



HUSSMANN
DIAGRAM-Q-HC-4-SV
-W

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 1 OF 1

W600567

UL COLOR CODES / ABBREVIATIONS
 RED = RD
 BLACK = BK
 BLUE = BL
 YELLOW = YL
 GRAY = GR
 WHITE = WT
 GREEN = GN
 BROWN = BN
 ORANGE = OR
 VIOLET = VT

- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING. ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

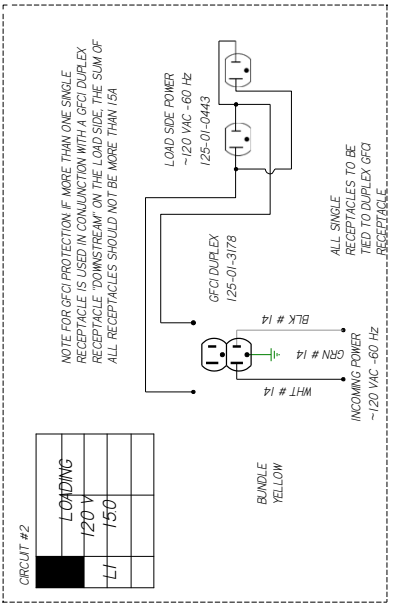
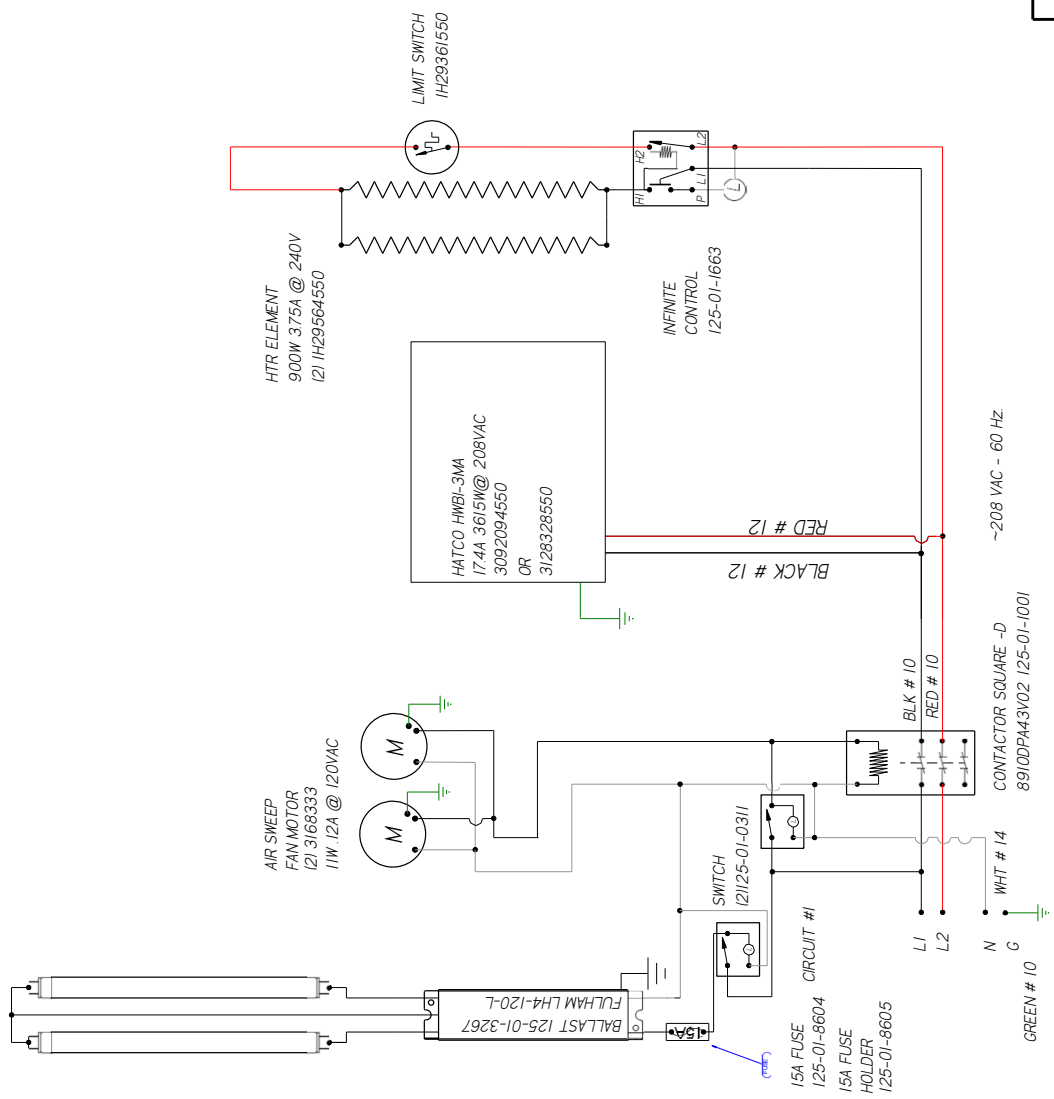
REVISION HISTORY			
REV	ECN	DATE	REVISION DESCRIPTION
B	ECN-000-0013662	5-19-21	ADD HOT WELL PART NUMBER
C	ECN-000-0017537	2-2-23	CHANGED TOP FAN

REV	BY	CHKD	BY	APPR	BY
CB					
CB					
CB					

CIRCUIT #1	LOADING
	208V
L1	256
L2	249

5325W @ 208VAC

LIGHT CIRCUIT= 0.39A 42W
F21/830 T5-36"



HUSSMANN
DIAGRAM-Q-HC-4-SV
-W

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

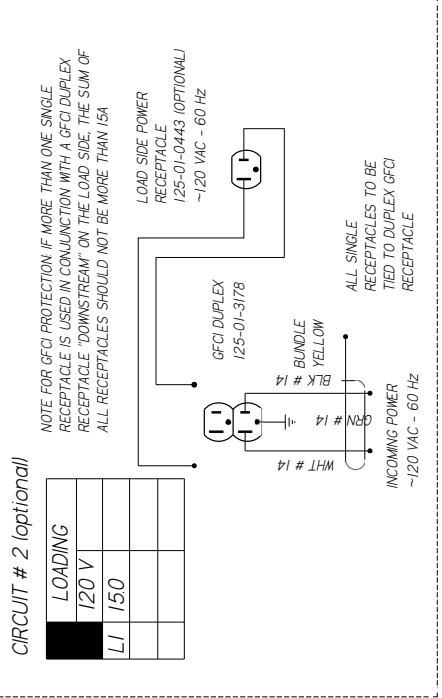
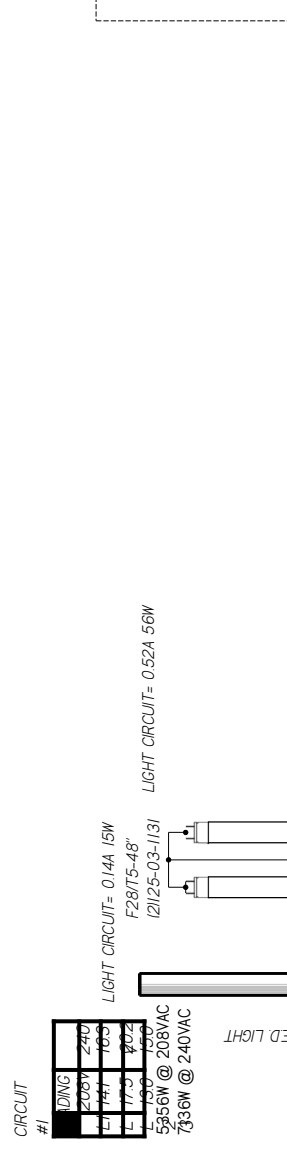
DO NOT SCALE DRAWING
SHEET 1 OF 1

UL COLOR CODES / ABBREVIATIONS
 RED = RD
 BLACK = BK
 BLUE = BL
 YELLOW = YL
 GRAY = GR
 WHITE = WT
 GREEN = GN
 BROWN = BN
 ORANGE = OR
 VIOLET = VT

- NOTES:
 1. PRINTED DOCUMENT REQUIRED SETTING. ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	889896	20/05/022	RELEASED TO PRODUCTION	CS	CS	CS
B	ECN:CAP-0044507	20/09/007	ADDED GFCI	CS	CS	CS
C	ECN:GD-0077597	20/23/00202	CHANGED TOP FAN	CS	CS	CS

CIRCUIT #1	LOADING
206V	240
L1	150
L2	150
L3	150

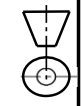


HUSSMANN
DIAGRAM-Q-HS-5-SV
-W

MATERIAL - NA
 DATE DRAWN - 6-22-15
 DRAWN BY - CRAIG BOOREY
 REVIEWED BY - CRAIG BOOREY
 APPROVED BY - CRAIG BOOREY
 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 THIRD ANGL
 DECIMALS .XX +0.3 .XXX
 ±0.0 ANGLES ± 2°
 PROJECTION

W6600153 | C

NOTES:
 CASE MUST BE GROUNDED



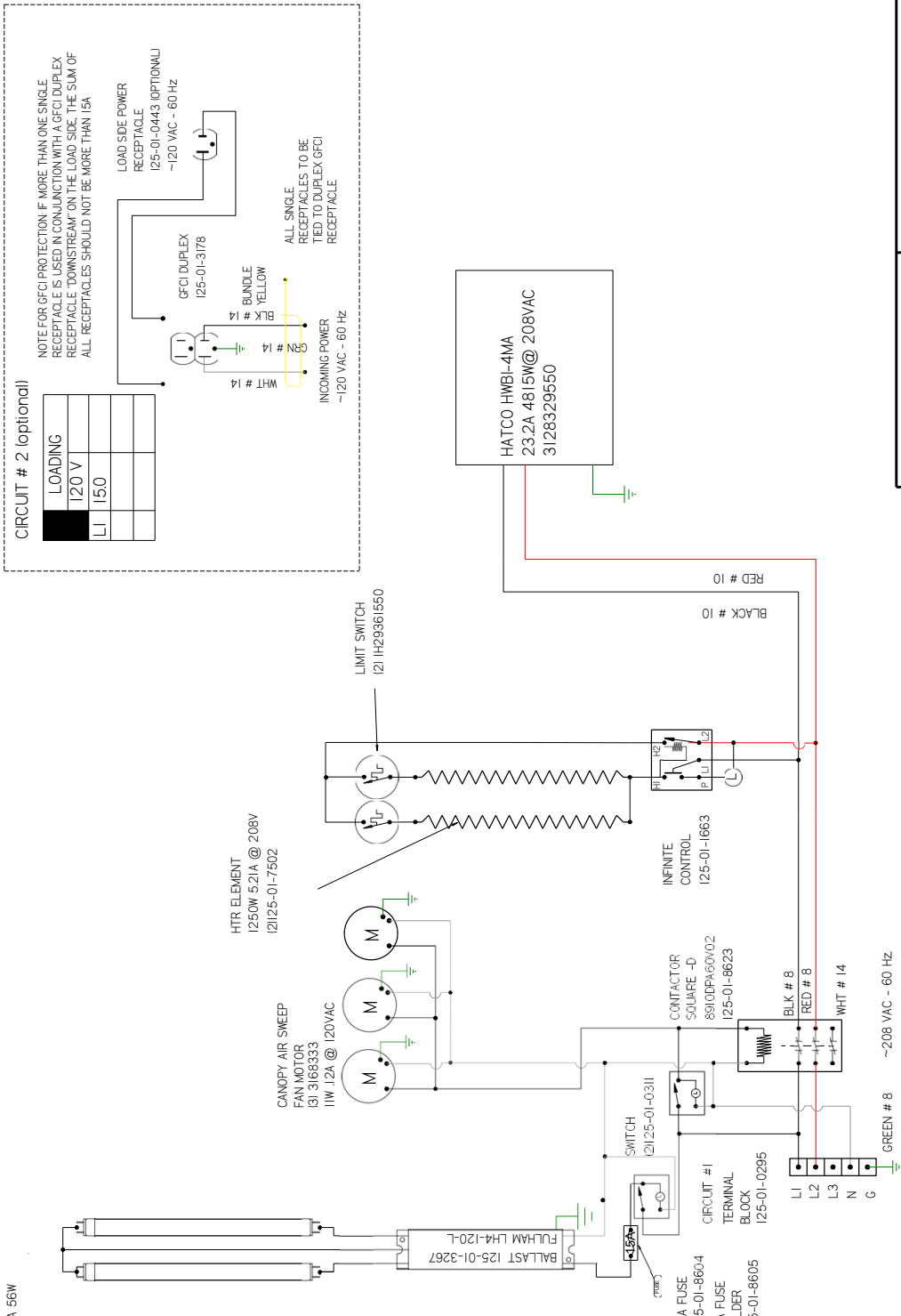
REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-000-0017549	5-1-23	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-000-0017550	5-1-23	REVISED DIAGRAM NUMBER	CB	CB	CB

CIRCUIT #1	LOADING
208V	
120V	
L1	150
L2	
L3	
N	
G	

7284W @ 208VAC

3

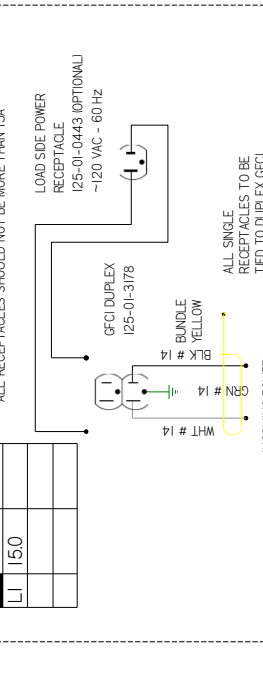
(2) F287T5-48"
LIGHT CIRCUIT= 0.52A 56W



CIRCUIT # 2 (optional)

LOADING	
120 V	
L1	150
L2	
L3	
N	
G	

NOTE FOR GFCI PROTECTION IF MORE THAN ONE SINGLE RECEPTACLE IS USED IN CONJUNCTION WITH A GFCI DUPLEX RECEPTACLE "DOWNSTREAM" ON THE LOAD SIDE, THE SUM OF ALL RECEPTACLES SHOULD NOT BE MORE THAN 15A



HUSSMANN
DIAGRAM-Q-HC-5-SV
-W
W6600919
SHEET 1 OF 1

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = OR
YL GRAY = YL GRAY	OR VIOLET = OR VIOLET
VT	

WIRE MARKER COLORS/ABBREVIATIONS	
BLACK = MBK	MAROON = MAROON
BLUE = MBL	MNR ORANGE = MNR ORANGE
BROWN = MBR	MO PINK = MPI
DARK BLUE = MDBL	PURPLE = MP
MDB GREEN = MDBG	RED = MR
LIGHT BLUE = ML	YELLOW = MYL

- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

CIRCUIT #1

LOADING	208V	240V
L1	1500	1750
L2	1480	1690
L3	1520	1760

3224W @ 208VAC
4296W @ 240VAC

F28T5-48"
I2125-03-1131

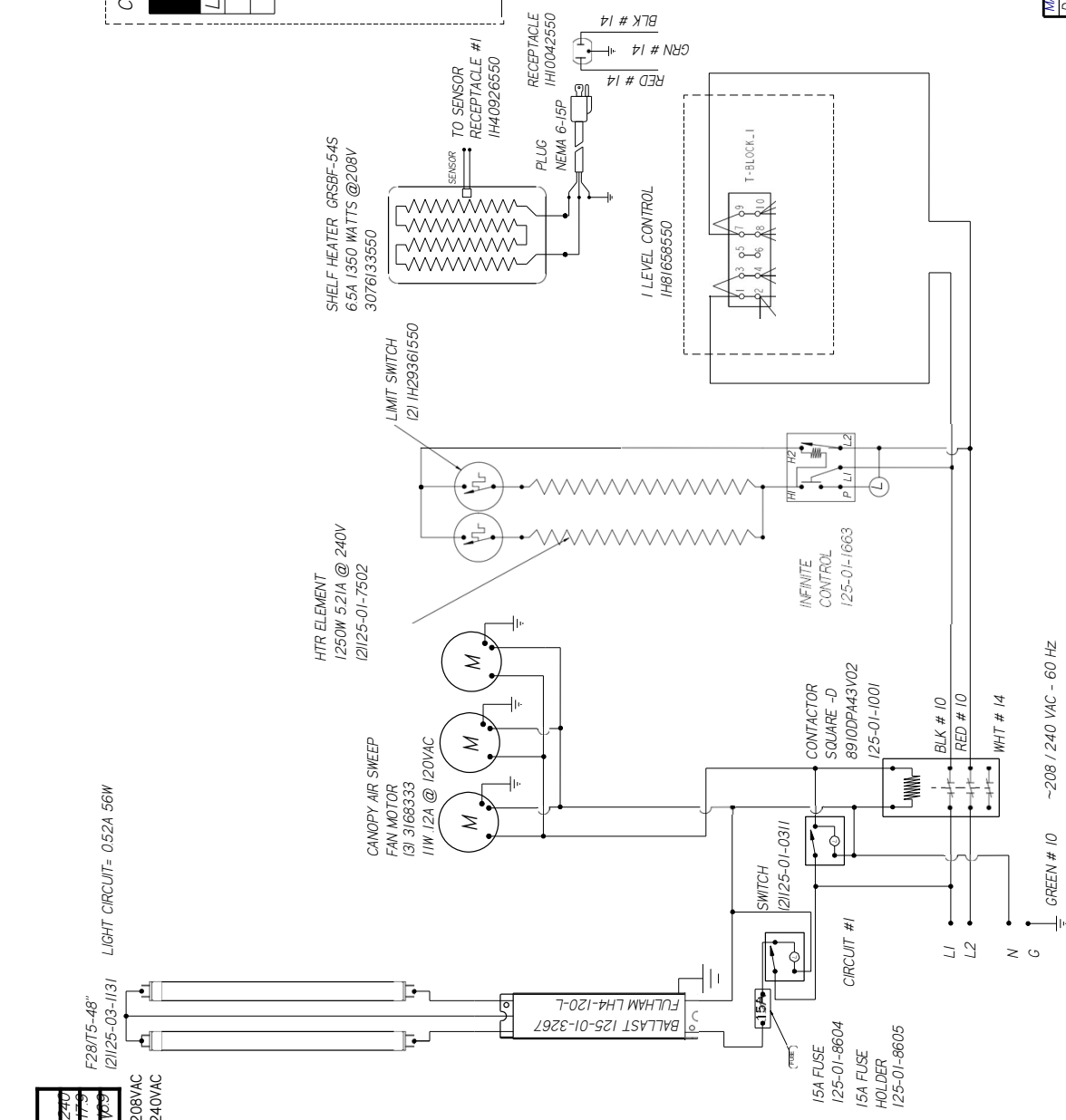
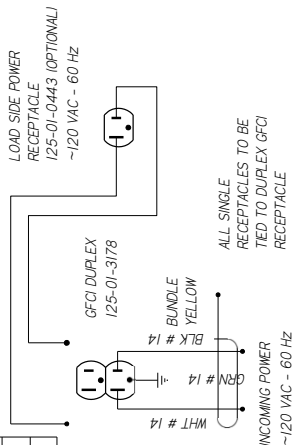
LIGHT CIRCUIT= 052A 56W

REV	EN	DATE	REVISION DESCRIPTION	REV BY	CHK BY	APP BY
A	EON-CAP-014686	2018/01/02	RELEASED TO PRODUCTION	CB	CB	CB
B	EON-COD-017537	2023/02/02	CHANGED TOP FAN	CB	CB	CB

CIRCUIT # 2 optional

LOADING	120 V	120 V
L1	150	
L2		
L3		

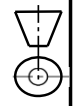
NOTE FOR GFCI PROTECTION IF MORE THAN ONE SINGLE RECEPTACLE IS USED IN CONJUNCTION WITH A GFCI DUPLEX RECEPTACLE "DOWNSTREAM" ON THE LOAD SIDE, THE SUM OF ALL RECEPTACLES SHOULD NOT BE MORE THAN 15A



MATERIAL - NA
DATE DRAWN - 10-2-18
DRAWN BY - CRAIG BOOREY
REVIEWED BY - CRAIG BOOREY
APPROVED BY - CRAIG BOOREY
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
DECIMALS .XX +0.3 .XXX
ANGLES ± 2'
PROJECTION

HUSSMANN®
DIAGRAM-Q-HC-5-SS
REF -
SHEET NO. -
P
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
DECIMALS .XX +0.3 .XXX
ANGLES ± 2'
PROJECTION

NOTES:
CASE MUST BE GROUNDED
WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED



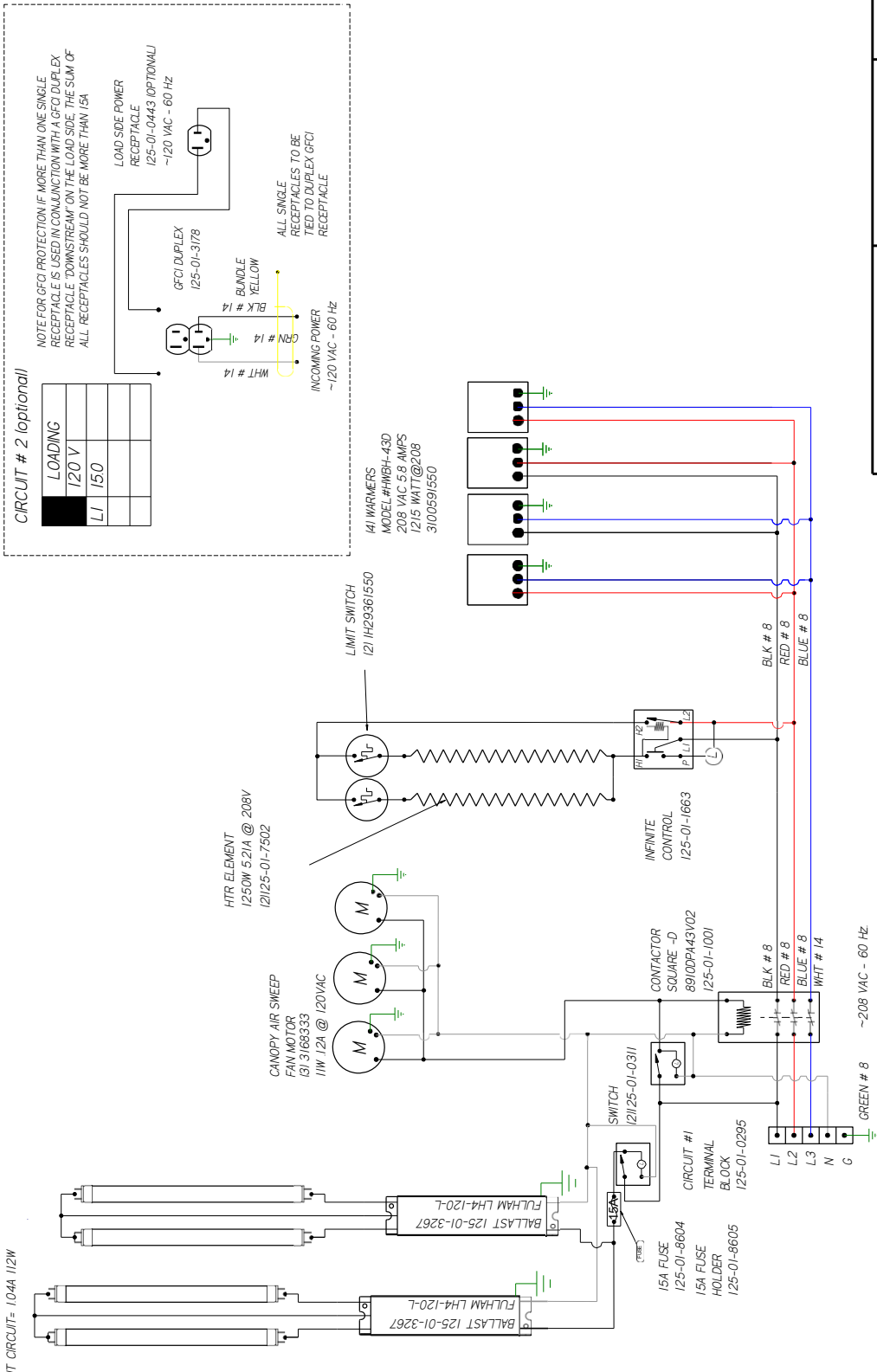
REVISION HISTORY			
REV	ECN	DATE	REVISION DESCRIPTION
A	ECN-000-0014472	7-30-21	RELEASED TO PRODUCTION
A	ECN-000-0017537	2-2-23	CHANGED TOP FAN

CIRCUIT #1	
LOADING	REV BY / CHK'D BY
208V	AL
L1 200W	CB
L2 200W	CB
L3 275W	CB
L4 175W	CB

CIRCUIT #2 (optional)	
LOADING	REV BY / CHK'D BY
120V	AL
L1 150	CB

41 F28/15-48"
LIGHT CIRCUIT= 1.04A 112W

89257W @ 208VAC
3



NOTE FOR GFCI PROTECTION IF MORE THAN ONE SINGLE RECEPTACLE IS USED IN CONJUNCTION WITH A GFCI DUPLEX RECEPTACLE "DOWNSTREAM" ON THE LOAD SIDE, THE SUM OF ALL RECEPTACLES SHOULD NOT BE MORE THAN 15A

ALL SINGLE RECEPTACLES TO BE TIED TO DUPLEX GFCI RECEPTACLE

INCOMING POWER ~120 VAC - 60 HZ

LOAD SIDE POWER RECEPTACLE 125-01-0443 (OPTIONAL) ~120 VAC - 60 HZ

411 WARMERS
MODEL #HMBH-43D
208 VAC 5.8 AMPS
121.5 WATT @ 208
3100591550

WIRE MARKER COLORS/ABBREVIATIONS	
MAROON =	MBK
BLACK =	MBL
BLUE =	MBR
BROWN =	MBP
DARK BLUE =	MBG
DBB GREEN =	MBG
LIGHT BLUE =	MBL
MAROON =	MT
MMR ORANGE =	GN
MG PINK =	BN
MP PURPLE =	MP
MR RED =	MR
MYL YELLOW =	MYL
WHITE =	WT
GREEN =	GN
BROWN =	BN
ORANGE =	OR
OR VIOLET =	VT
YL GRAY =	GY

UL COLOR CODES / ABBREVIATIONS	
FACTORY 14GA WIRE	---
FACTORY 10GA WIRE	---
FIELD WIRE	---

DO NOT SCALE DRAWING
SHEET 1 OF 1

HUSSMANN
DIAGRAM-Q-HC-5-
HO T 3-PHASE

W6600815
REV B

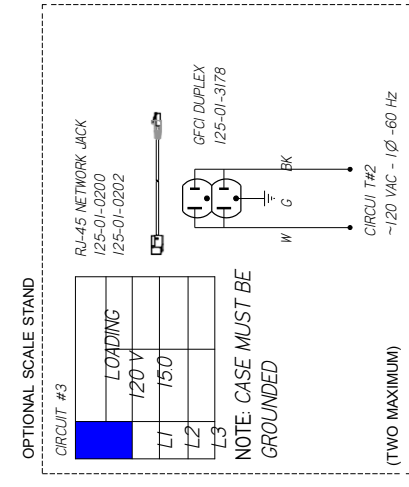
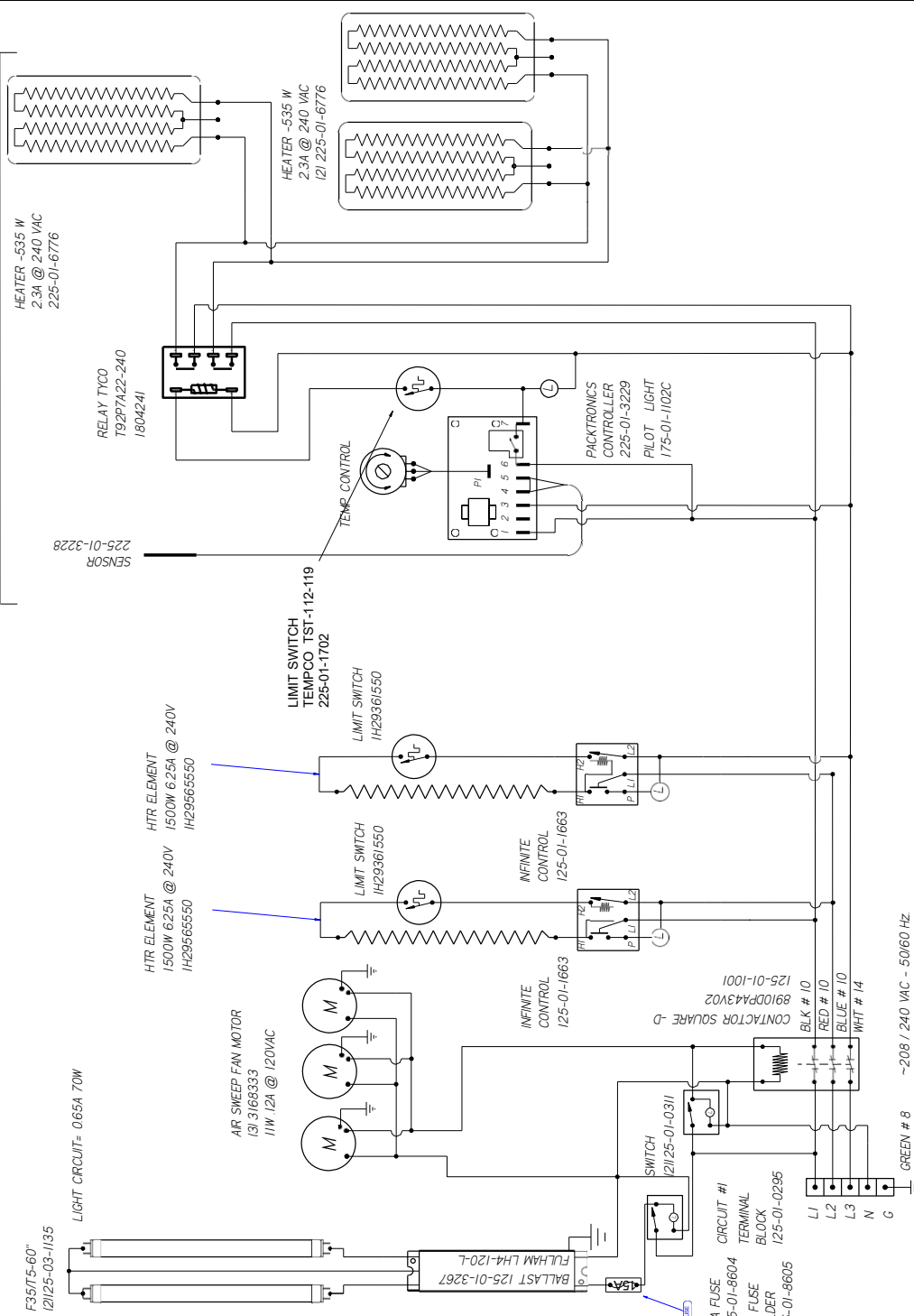
- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING. ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

CIRCUIT #1	LOADING
208V	240
120	142
100	120
114	132
114	132

4443W @ 208VAC
5629W @ 240VAC

REVISION HISTORY						
REV	ECN	DATE	DESCRIPTION	REV BY	CHK BY	APPR BY
A	749631	2013/07/08	NEW DIAGRAM	CB	CB	CB
B	749653	2013/07/09	CHANGED RELAY WIRING	CB	CB	CB
C	749653	2013/08/02	MATCH FLM REVISION	CY	CY	CY
D	ECN-001-007637	2023/02/02	CHANGED DPF FAN	CB	CB	CB

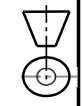
FLAT SURFACE WARMERS



MATERIAL - N/A	
DATE DRAWN - 7/18/13	ECN# -
DRAWN BY - CRAIG BOOREY	735331 REF - NEW
REVIEWED BY - CRAIG BOOREY	DIAGRAM REF - NEW
APPROVED BY - CRAIG BOOREY	DIAGRAM REF - NEW
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: THIRD ANGLE PROJECTION	
DECIMALS XX +0.3, XXX ±0.0	ANGLES ± 2°

HUSSMANN
DIAGRAM -
Q-HC-6-SV-P
W6600087 | D

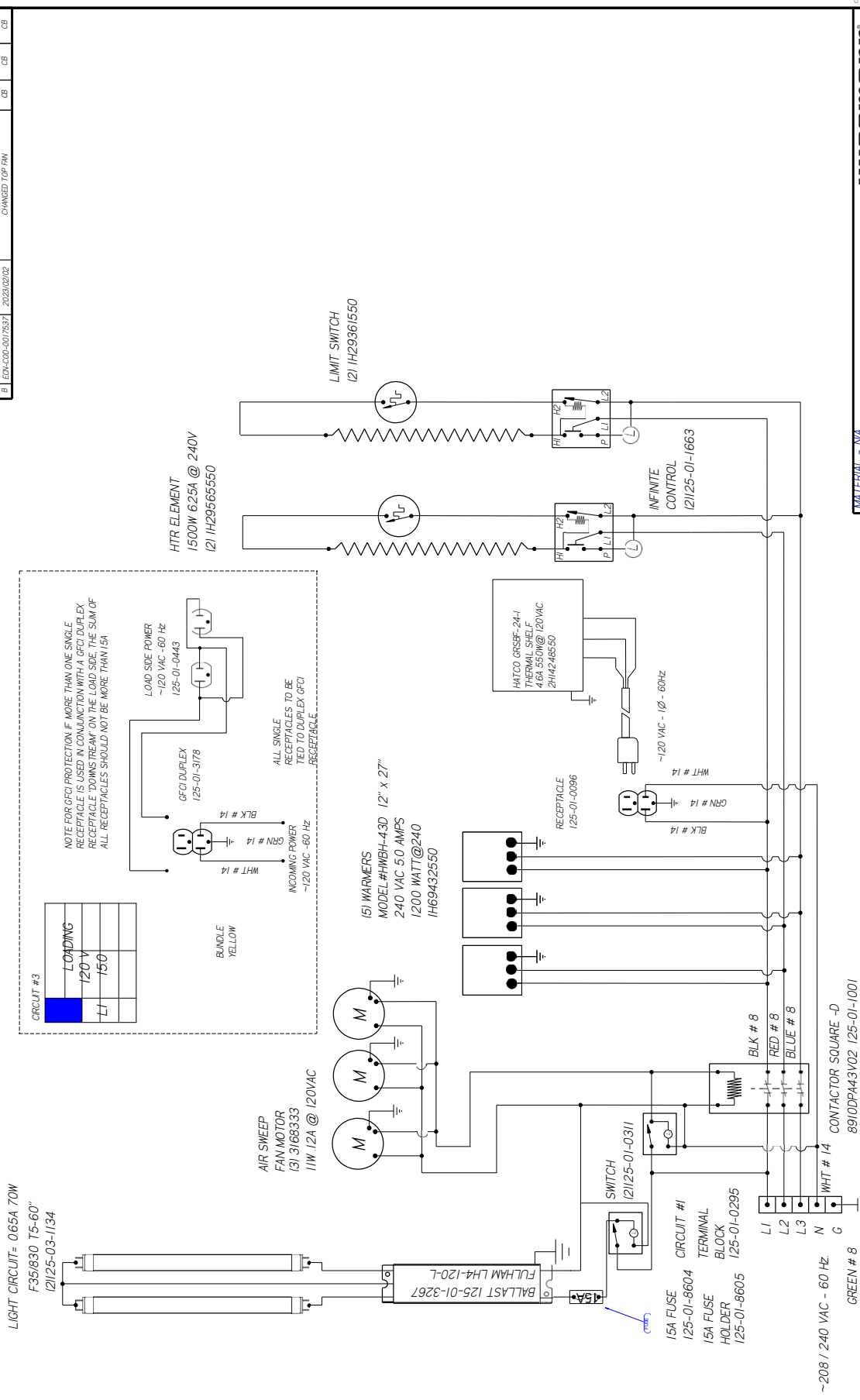
NOTES:
CASE MUST BE GROUNDED



REVISION HISTORY			
REV	ECN	DATE	DESCRIPTION
A	983529	20/05/2023	RELEASED TO PRODUCTION
B	EDN-CDD-0017837	20/02/2022	CHANGED TOP FAN

CIRCUIT #1	LOADING
L1	208V
L2	240V
L3	150V
N	100V
G	100V

5284W @ 208VAC
7025W @ 240VAC

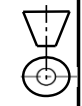


MATERIAL - NA	
DATE DRAWN - 5-29-15	CONW - 983529
DRAWN BY - CRAIG BOOREY	REF -
REVIEWED BY - CRAIG BOOREY	SHEET NO -
APPROVED BY - CRAIG BOOREY	THIRD
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:	
DECIMALS .XX ±0.3 .XXX	ANGL
±0.0	E
	PROJECTION

HUSSMANN
DIAGRAM-Q-HC-6
W/3 WELLS, 24"
SW

W6600148 | B

NOTES:
CASE MUST BE GROUNDED



CIRCUIT #3

LOADING
120V
150
L1
L2
L3

NOTE: CASE MUST BE GROUNDED

(TWO MAXIMUM)



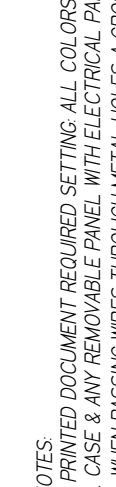
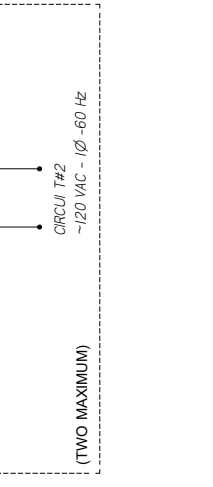
OPTIONAL SCALE STAND

CIRCUIT #3

LOADING
120V
150
L1
L2
L3

NOTE: CASE MUST BE GROUNDED

(TWO MAXIMUM)



REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0016850	1-19-23	RELEASED TO PRODUCTION	CB	CB	CB

REVISION HISTORY	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	1-19-23	RELEASED TO PRODUCTION	CB	CB	CB

REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-COD-0016850	1-19-23	RELEASED TO PRODUCTION	CB	CB	CB

REVISION HISTORY	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	1-19-23	RELEASED TO PRODUCTION	CB	CB	CB

REVISION HISTORY	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	1-19-23	RELEASED TO PRODUCTION	CB	CB	CB

REVISION HISTORY	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	1-19-23	RELEASED TO PRODUCTION	CB	CB	CB

REVISION HISTORY	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	1-19-23	RELEASED TO PRODUCTION	CB	CB	CB

REVISION HISTORY	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	1-19-23	RELEASED TO PRODUCTION	CB	CB	CB

REVISION HISTORY	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	1-19-23	RELEASED TO PRODUCTION	CB	CB	CB

REVISION HISTORY	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	1-19-23	RELEASED TO PRODUCTION	CB	CB	CB

REVISION HISTORY	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	1-19-23	RELEASED TO PRODUCTION	CB	CB	CB

REVISION HISTORY	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	1-19-23	RELEASED TO PRODUCTION	CB	CB	CB

UL COLOR CODES / ABBREVIATIONS	WHITE = WT
RED = RD	GREEN = GN
BLACK = BK	BROWN = BN
BLUE = BL	ORANGE = OR
YELLOW = YL	OR VIOLET = OR VIOLET
GRAY = GR	VT

WIRE MARKER COLORS/ABBREVIATIONS	MAROON =
BLACK = MBK	MMR ORANGE =
BLUE = MBL	MG PINK = MFI
BROWN = MBR	PURPLE = MP
DARK BLUE =	RED = MR
DOB GREEN = MG	YELLOW = MYL
LIGHT BLUE =	

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 1 OF 1

UL COLOR CODES / ABBREVIATIONS	WHITE = WT
RED = RD	GREEN = GN
BLACK = BK	BROWN = BN
BLUE = BL	ORANGE = OR
YELLOW = YL	OR VIOLET = OR VIOLET
GRAY = GR	VT

WIRE MARKER COLORS/ABBREVIATIONS	MAROON =
BLACK = MBK	MMR ORANGE =
BLUE = MBL	MG PINK = MFI
BROWN = MBR	PURPLE = MP
DARK BLUE =	RED = MR
DOB GREEN = MG	YELLOW = MYL
LIGHT BLUE =	

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 1 OF 1

UL COLOR CODES / ABBREVIATIONS	WHITE = WT
RED = RD	GREEN = GN
BLACK = BK	BROWN = BN
BLUE = BL	ORANGE = OR
YELLOW = YL	OR VIOLET = OR VIOLET
GRAY = GR	VT

WIRE MARKER COLORS/ABBREVIATIONS	MAROON =
BLACK = MBK	MMR ORANGE =
BLUE = MBL	MG PINK = MFI
BROWN = MBR	PURPLE = MP
DARK BLUE =	RED = MR
DOB GREEN = MG	YELLOW = MYL
LIGHT BLUE =	

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 1 OF 1

UL COLOR CODES / ABBREVIATIONS	WHITE = WT
RED = RD	GREEN = GN
BLACK = BK	BROWN = BN
BLUE = BL	ORANGE = OR
YELLOW = YL	OR VIOLET = OR VIOLET
GRAY = GR	VT

NOTES:

1. PRINTED DOCUMENT REQUIRED SETTING. ALL COLORS BLACK & WHITE

2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.

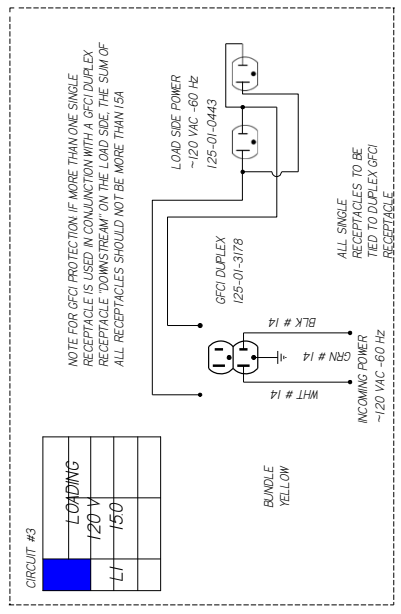
3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

REV	EN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
1	EWV-735339	20/07/2013	RELEASED TO PRODUCTION	CB	CB	CB
2	EWV-CAR-0007285	20/07/2010	CHANGED TERMINAL BLOCK	CB	CB	CB
3	EWV-CAR-0020428	20/09/2009	ADDED 208V HOT WELL	CB	CB	CB
4	EWV-CAR-0020432	20/09/2009	ADDED 208V HOT WELL	CB	CB	CB
5	EWV-COB-0007337	20/03/2012	CHANGED TOP FAN	CB	CB	CB

CIRCUIT #1	LOADING
L1	150
L2	
L3	
N	
G	

7938W @ 208VAC
 10558W @ 240VAC

LIGHT CIRCUIT= 0.65A 70W
 F35/830 T5-60"
 12/125-03-1/34

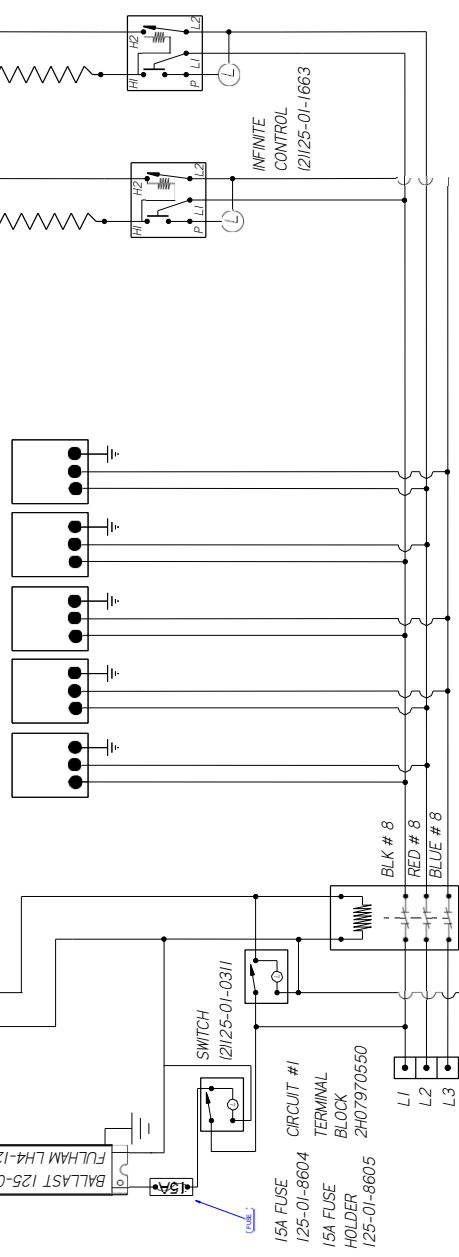


151 WARMERS
 MODEL #HWBH-43D 12" x 27"
 240 VAC 5.0 AMPS
 1200 WATT@240
 IH69432550 OR
 3100594550 208V
 3092096550

AIR SWEEP
 FAN MOTOR
 131 3168333
 11W 12A @ 120VAC

LIMIT SWITCH
 121 IH29361550

HTR ELEMENT
 1500W 6.25A @ 240V
 121 IH29565550



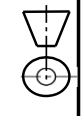
-208 / 240 VAC - 60 Hz
 8910DP443V02 125-01-1001

HUSSMANN
Q-HC-6-SV-W

MATERIAL - NA
 DATE DRAWN - 7/3/13
 DRAWN BY - CRAIG BOOREY
 REVIEWED BY - CRAIG BOOREY
 APPROVED BY - CRAIG BOOREY
 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
 TOLERANCES ARE:
 FRACTIONS XX ±0.3, XXX
 DECIMALS .XX ±0.3, .XXX
 ANGLES ± 2'
 PROJECTION

ECN# - 735331 REF - NEW
 DIAGRAFEET LOE J

W6600084 | E



NOTES:
 CASE MUST BE GROUNDED

CIRCUIT #1

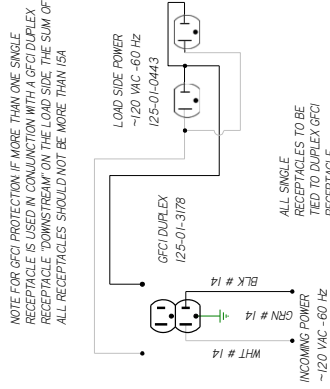
LDING	
208V	
L1	
L2	
L	
41/4	

2
8834W @ 208VAC

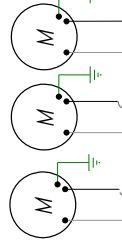
LIGHT CIRCUIT = 0.65A 70W

F351830 T5-60"
12125-03-1134

CIRCUIT #2	LOADING
	120V
	L1
	150



AIR SWEEP
FAN MOTOR
(3) 3168333
11W 12A @ 120VAC



HTR ELEMENT
1500W 6.25A @ 240V
121 IH29565550



LIMIT SWITCH
121 IH29361550

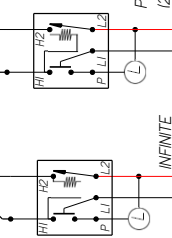
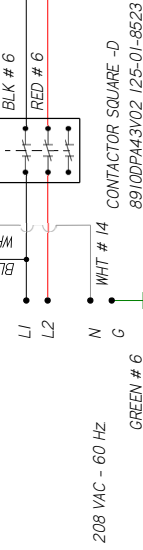


CIRCUIT #1

SWITCH
12125-01-0311

15A FUSE
125-01-8604
15A FUSE
HOLDER
125-01-8605

CONTACTOR SQUARE -D
89100PA43V02 125-01-8523



REVISION HISTORY			
REV	ECN	DATE	REVISION DESCRIPTION
C	ECN-000-0011845	10-13-20	ADDED WIRE GAUGES
D	ECN-000-0017537	2-2-23	CHANGED TOP FAN

REVISION HISTORY			
REV	BY	CHKD	BY
C	CB	CB	CB
D	CB	CB	CB

HUSSMANN
DIAGRAM-Q-HV-6

FACTORY 14GA WIRE
_FACTORY 10GA WIRE
_ _ _ _ _ FIELD WIRE
DO NOT SCALE DRAWING
SHEET 1 OF 1

UL COLOR CODES / ABBREVIATIONS
 RED = RD
 BLACK = BK
 BLUE = BL
 YELLOW = YL
 GRAY = GR
 WHITE = WT
 GREEN = GN
 BROWN = BN
 ORANGE = OR
 OR VIOLET = VT

- NOTES:
 1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
 2. CASE MUST BE GROUNDED
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

W6600536
1/1

REVISION HISTORY			
REV	EN	DATE	DESCRIPTION
A	ECN-CAP-001484	2018/02/25	RELEASED TO PRODUCTION
B	ECN-COD-0017357	2023/02/02	CHANGED TOP FAN

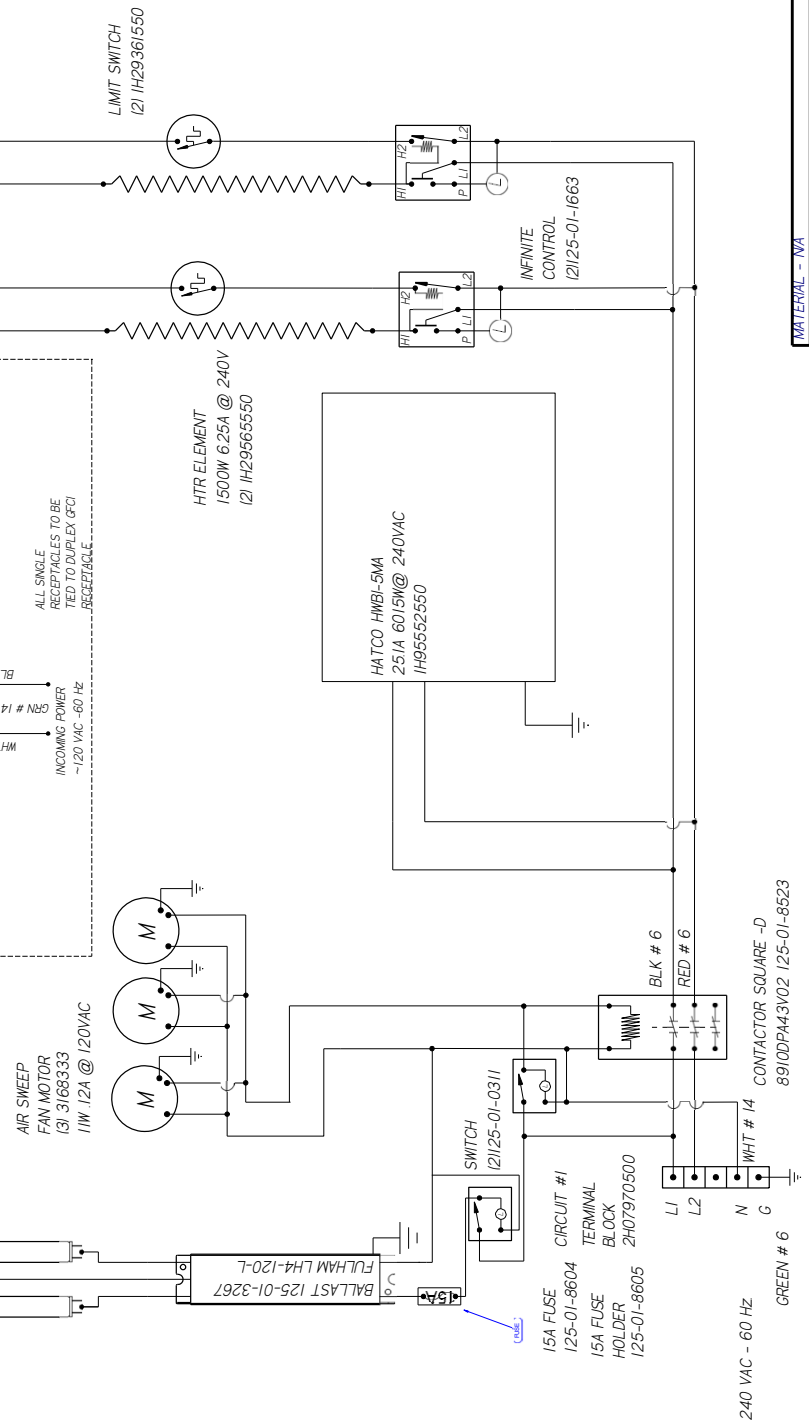
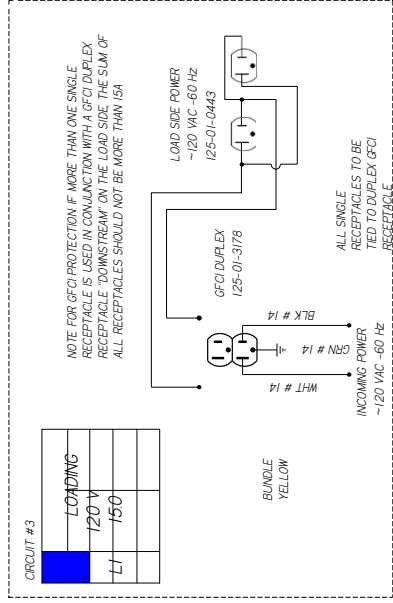
CIRCUIT #1	LOADING
240V	
L1	150
L2	150
L3	0

2
9288W @ 240VAC

LIGHT CIRCUIT= 0.65A 70W
F351830 T5-60"
12125-03-1134

CIRCUIT #3

LOADING
120V
L1
L2
L3



HUSSMANN
DIAGRAM-Q-HV-6

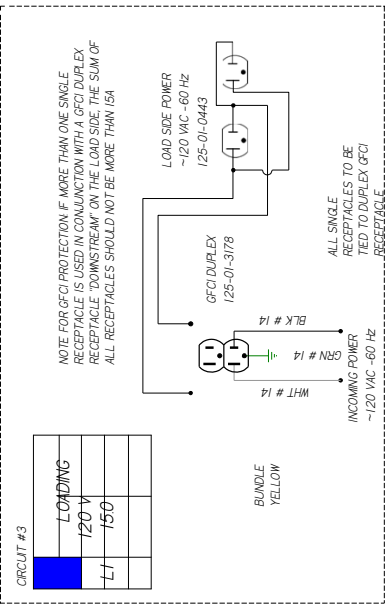
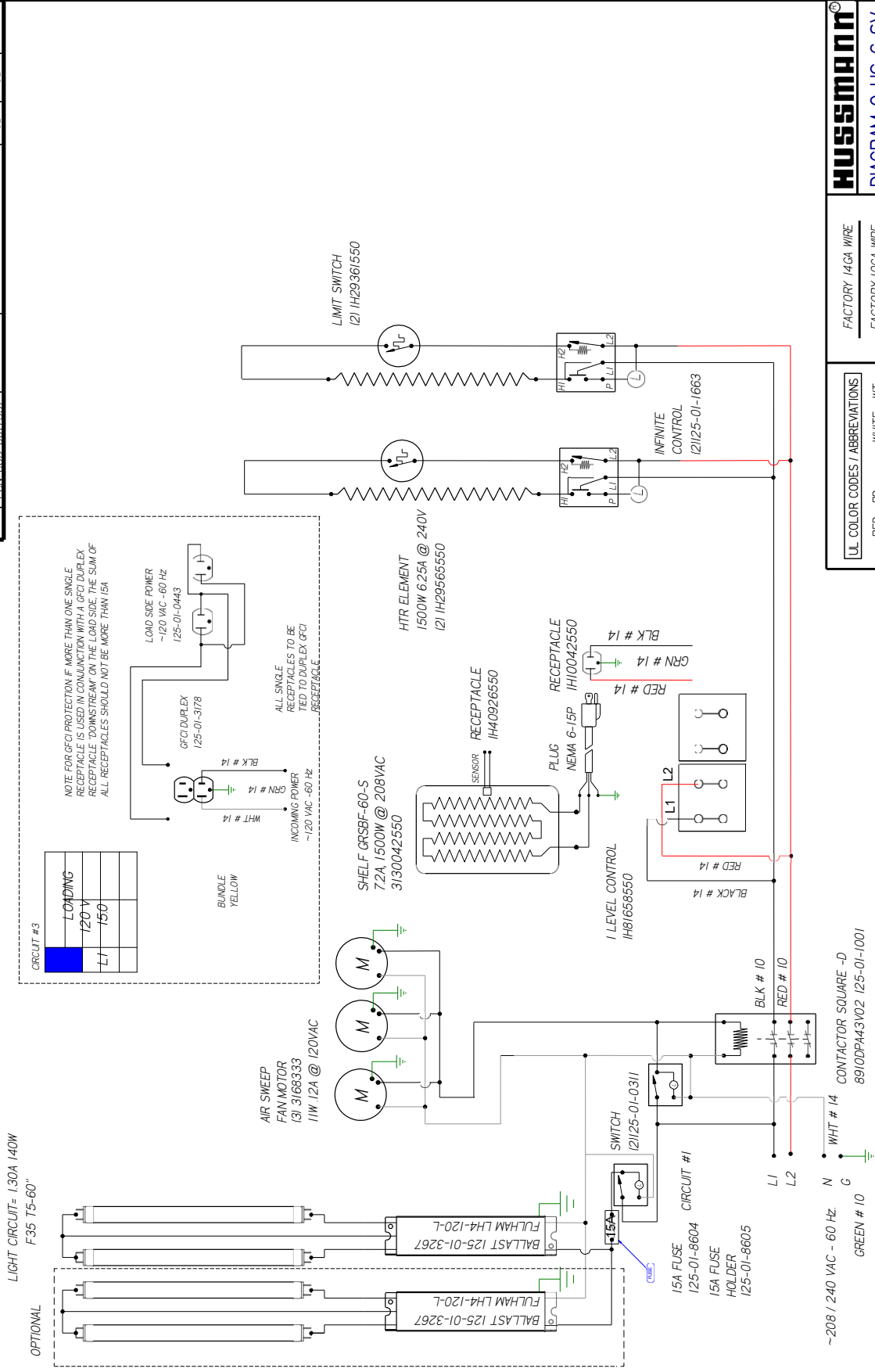
MATERIAL - NA
DATE DRAWN - 10-25-18
DRAWN BY - CRAIG BOOREY
REVIEWED BY - CRAIG BOOREY
APPROVED BY - CRAIG BOOREY
ECON-CAP-001484
REF -
SHEET 1 OF 1
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
THIRD ANGL
E
DECIMALS .XX +0.3 .XXX
±0.0 ANGLES ± 2°
PROJECTION

NOTES:
CASE MUST BE GROUNDED
WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED



CIRCUIT #	REV	DATE	DESCRIPTION	BY	CHKD BY	APPR BY
4326W @ 208VAC	A	10-2-20	RELEASED TO PRODUCTION	CB	CB	CB
	B	2-2-23	CHANGED TOP FAN	CB	CB	CB

REVISION HISTORY						
REV	ECN	DATE	DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-000-0011843	10-2-20	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-000-0017537	2-2-23	CHANGED TOP FAN	CB	CB	CB



CIRCUIT #3	
LOADING	
120V	
L1	
L2	

- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING. ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

HUSSMANN
DIAGRAM-Q-HC-6-SV
 -W
 W6600723 | B

FACTORY 14GA WIRE
 -FACTORY 10GA WIRE
 -FIELD WIRE
 -DO NOT SCALE DRAWING
 SHEET 1 OF 1

UL COLOR CODES / ABBREVIATIONS
 RED = RD
 BLACK = BK
 BLUE = BL
 YELLOW = YL
 GRAY = GR
 WHITE = WT
 GREEN = GN
 BROWN = BN
 ORANGE = OR
 VIOLET = VT

REVISION HISTORY			
REV	ECN	DATE	DESCRIPTION
D	ECN-000-0011330	6-23-20	OPTIONAL 2ND ROW LIGHTS
E	ECN-000-0017537	2-2-23	CHANGED TOP FANS

REV	BY	CHKD	BY
	CB	CB	CB
	CB	CB	CB
	CB	CB	CB

REV	BY	CHKD	BY
	CB	CB	CB
	CB	CB	CB
	CB	CB	CB

REV	BY	CHKD	BY
	CB	CB	CB
	CB	CB	CB
	CB	CB	CB

REV	BY	CHKD	BY
	CB	CB	CB
	CB	CB	CB
	CB	CB	CB

REV	BY	CHKD	BY
	CB	CB	CB
	CB	CB	CB
	CB	CB	CB

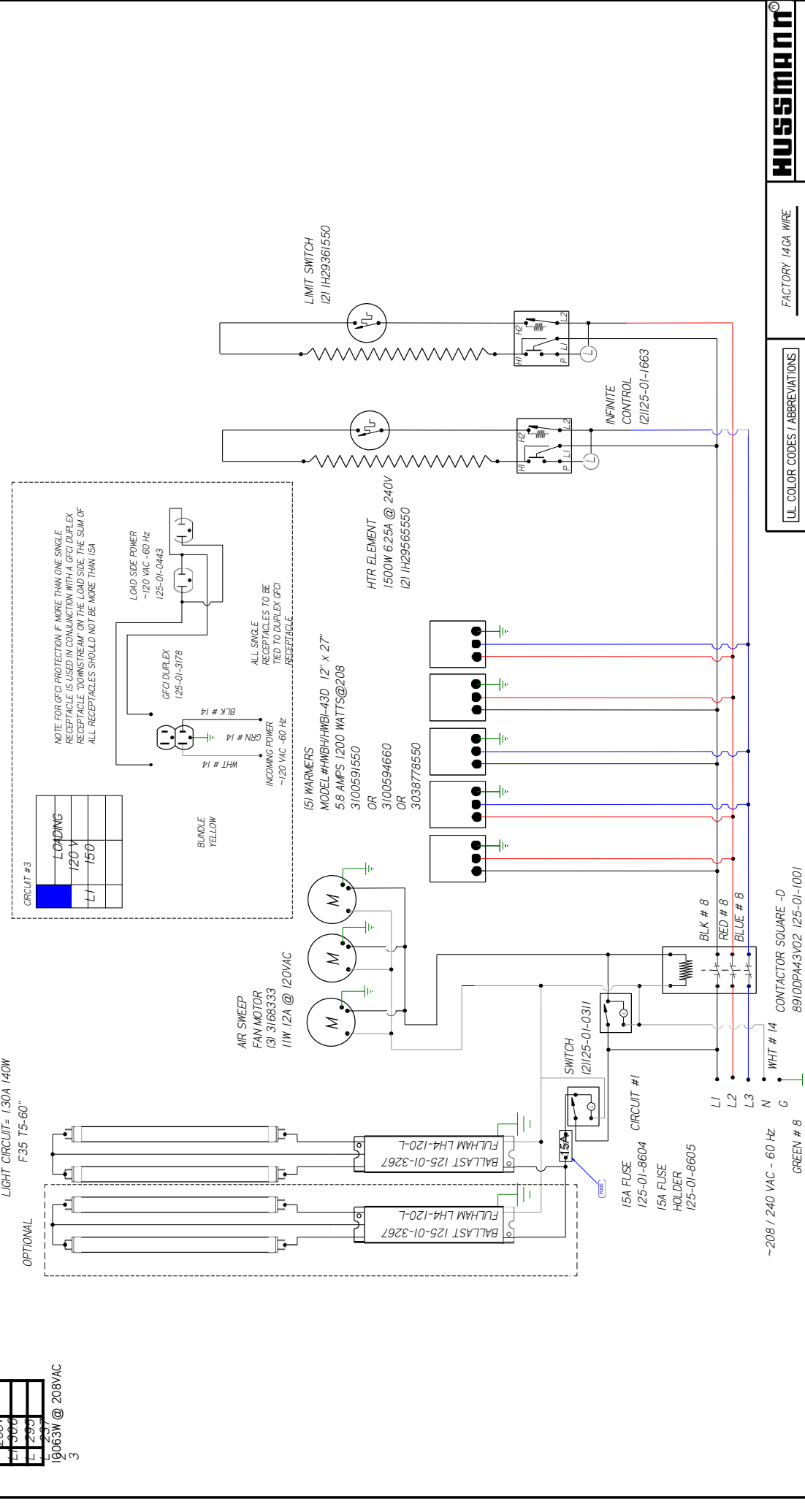
REV	BY	CHKD	BY
	CB	CB	CB
	CB	CB	CB
	CB	CB	CB

REV	BY	CHKD	BY
	CB	CB	CB
	CB	CB	CB
	CB	CB	CB

REV	BY	CHKD	BY
	CB	CB	CB
	CB	CB	CB
	CB	CB	CB

REV	BY	CHKD	BY
	CB	CB	CB
	CB	CB	CB
	CB	CB	CB

REV	BY	CHKD	BY
	CB	CB	CB
	CB	CB	CB
	CB	CB	CB



NOTES:

1. PRINTED DOCUMENT REQUIRED SETTING. ALL COLORS BLACK & WHITE
2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

UL COLOR CODES / ABBREVIATIONS

- WHITE = WT
- GREEN = GN
- BROWN = BN
- ORANGE = OR
- OR VIOLET = VT
- RED = RD
- BLACK = BK
- BLUE = BL
- YELLOW = YL
- GRAY = GR

HUSSMANN
DIAGRAM-Q-HC-6-SV
-W

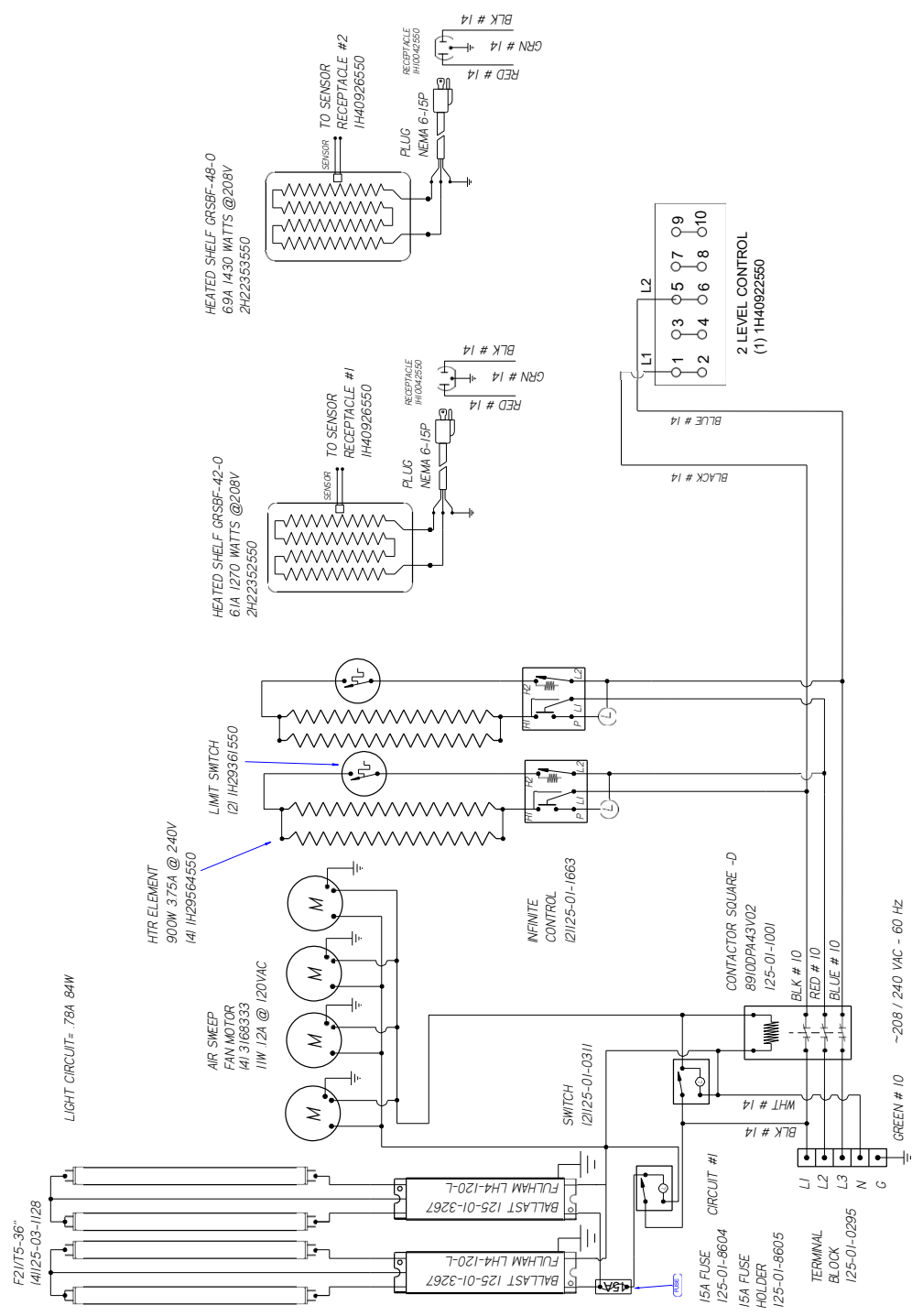
FACTORY 14GA WIRE
 -FACTORY 10GA WIRE
 -FIELD WIRE
 -DO NOT SCALE DRAWING
 SHEET 1 OF 1

W6600574 | E

REVISION HISTORY			
REV	EN	DATE	DESCRIPTION
A	01/06/03	20/06/06	RELEASED TO PRODUCTION
B	ECM-CDD-0078337	20/02/02	CHANGED TOP FANS

CIRCUIT #1	
INDG	240
208V	240
L1	00
L2	00
L3	00
N	00
G	00

3062W @ 208VAC
4060W @ 240VAC



MATERIAL - NA	
DATE DRAWN - 1-6-16	ECNF - 1018503
DRAWN BY - CRAIG ROOREY	REF -
REVIEWED BY - CRAIG ROOREY	SHEET NO. -
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	THIRD ANGLE
TOLERANCES ARE:	DECIMALS .XX +0.3 .XXX
	±.010
	ANGLES ± .2°

HUSSMANN
DIAGRAM-Q-HC-8-SV
-W

W6600182 | B

PROJECTION



NOTES:
CASE MUST BE GROUNDED

CIRCUIT #1

	LOADING
208 V	240 V
L1	15.8
L2	16.9
L3	10.4
	12.1

5176W @ 208VAC
6886W @ 240VAC

GRIDDLE HEATERS
 (2) 553W 2.30A @ ~240 VAC
 225-01-6776

GRIDDLE HEATERS
 (2) 553W 2.30A @ ~240 VAC
 225-01-6776

SENSOR
 225-01-3228

SENSOR
 225-01-3228

LIMIT SWITCH
 TEMPCO TST-112-119
 225-01-1702

LIMIT SWITCH
 TEMPCO TST-112-119
 225-01-1702

LIGHT CIRCUIT= .78A 84W

HTR ELEMENT
 900W 3.75A @ 240V
 (4) 1H29564550

AIR SWEEP
 FAN MOTOR
 (4) 3168333
 11W .12A @ 120VAC

INFINITE
 CONTROL
 (2)125-01-1663

SWITCH
 (2)125-01-0311
 CONTACTOR SQUARE -D
 8910DPA43V02
 125-01-1001

TERMINAL
 BLOCK
 125-01-0295

GREEN # 10 ~208 / 240 VAC - 60 HZ.

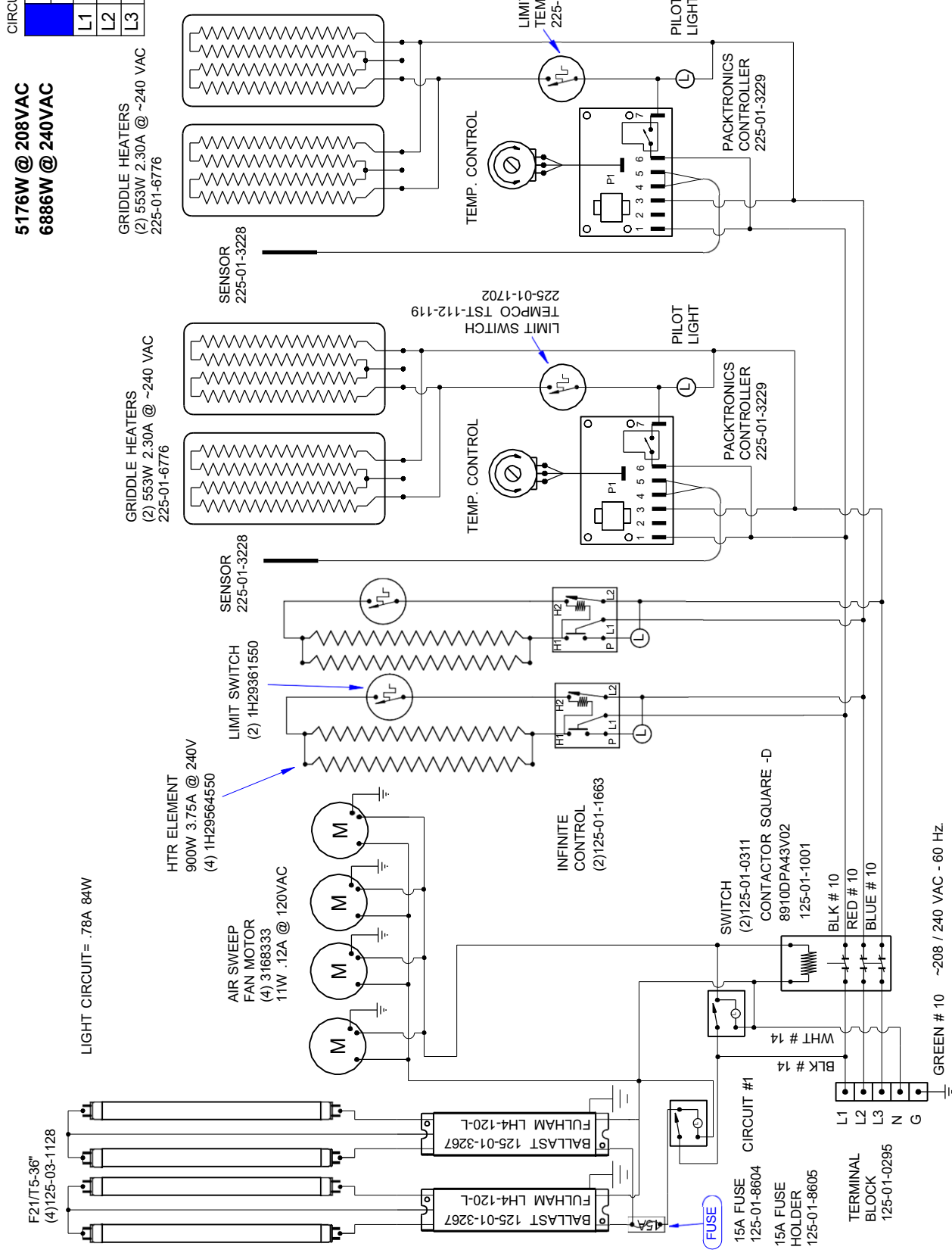
F21/T5-36"
 (4)125-03-1128

BALLAST 125-01-3267
 FULHAM LH4-120-L

15A FUSE
 125-01-8604

15A FUSE
 HOLDER
 125-01-8605

WHT # 14
 BLK # 14
 BLK # 10
 RED # 10
 BLUE # 10



HUSMANN
 Husmann Corporation, Inc.
 13770 Ramona Avenue
 Chino, CA 91710
 (909) 590-4910 Lic.#: 644406

REVISIONS:

#	DESCRIPTION	DATE	BY
B	Place fans in-line with main power switch	4/16/09	JR
C	Updated calroids and limit switches; revised load ratings	3/15/10	JR
D	ECN-COD-0017537 Changed Top Fans	2/2/23	CB

DRAWN BY: JESSE RIOS PROJECT TITLE: Q-H DRAWING #: W1750050
 CHECKED BY: DATE: 9/15/08 PRODUCTION ORDER #: 603659 DRAWING TITLE: Q-HC-8SV-P
 FILE LOCATION:

PAGE 1 OF 1

CIRCUIT #1

5176W @ 208VAC
6886W @ 240VAC

LOADING	208 V	240 V
L1	15.8	18.0
L2	16.9	19.6
L3	10.4	12.1

LIGHT CIRCUIT= .78A 84W

GRIDDLE HEATERS
(2) 553W 2.30A @ ~240 VAC
225-01-6776

GRIDDLE HEATERS
(2) 553W 2.30A @ ~240 VAC
225-01-6776

HTR ELEMENT
900W 3.75A @ 240V
(4) 1H29564550

SENSOR
225-01-3228

SENSOR
225-01-3228

SENSOR
225-01-3228

AIR SWEEP
FAN MOTOR
(4) 3168333
11W .12A @ 120VAC

LIMIT SWITCH
(2) 1H29361550

LIMIT SWITCH
TEMPCO TST-112-119
225-01-1702

LIMIT SWITCH
TEMPCO TST-112-119
225-01-1702

INFINITE
CONTROL
(2)125-01-1663

TEMP. CONTROL

TEMP. CONTROL

15A FUSE
125-01-8604
15A FUSE
HOLDER
125-01-8605

SWITCH
(2)125-01-0311
CONTACTOR SQUARE -D
8910DPA43V02
125-01-1001

TERMINAL
BLOCK
125-01-0295

GREEN # 10 ~208 / 240 VAC - 60 HZ.

HUSSMANN
Hussmann Corporation, Inc.
13770 Ramona Avenue
Chino, CA 91710
(909) 590-4910 Lic.#: 644406

REVISIONS:
DESCRIPTION:
B ECN-COD-0017538 CHANGED TOP FANS

DRAWN BY: CRAIG BOOREY
CHECKED BY: CB
DATE: 2/3/23
DATE: 1/11/12
PRODUCTION ORDER #: 622989

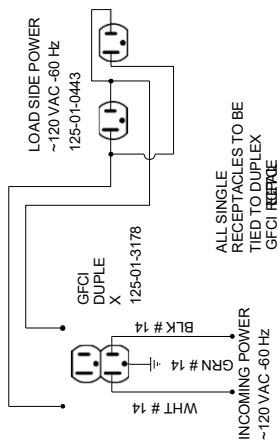
PROJECT TITLE: Q-H
DRAWING TITLE: Q-HS-8-SS-G

DRAWING #: W6600021
PAGE 1 OF 1

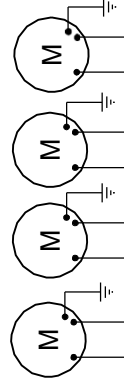
LIGHT CIRCUIT= 0.78A 84W
 F21/830 T5-36"
 (4)125-03-1128

CIRCUIT #3	
LOADING	
120 V	
L1	15.0
L2	
L3	

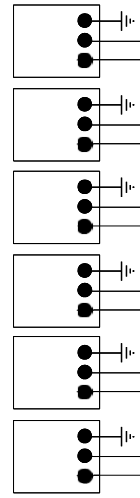
NOTE FOR GFCI PROTECTION: IF MORE THAN ONE SINGLE RECEPTACLE IS USED IN CONJUNCTION WITH A GFCI DUPLEX RECEPTACLE "DOWNSTREAM" ON THE LOAD SIDE, THE SUM OF ALL RECEPTACLES SHOULD NOT BE MORE THAN 15A



AIR SWEEP FAN MOTOR
 (4) 3168833
 11W .12A @ 120VAC



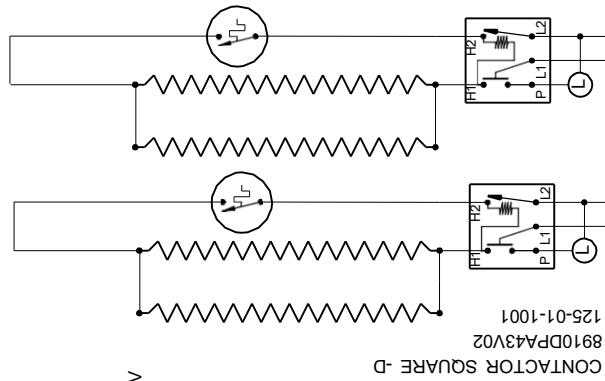
(6) WARMERS
 MODEL#HWBH-43D 208 VAC
 7.9 AMPS
 240 VAC 6.9 AMPS
 1650 WATT @240
 1H69432550



CIRCUIT #1	
LOADING	
208 V	240 V
L1	25.0
L2	23.9
L3	27.6

8742W @ 208VAC
 11653W @ 240VAC

LIMIT SWITCH
 (2) 1H29361550
 HTR ELEMENT
 900W 3.75A @ 240V
 (4) 1H29564550



15A FUSE
 125-01-8604
 15A FUSE
 HOLDER
 2H07970550
 125-01-8605

SWITCH
 (2)125-01-0311

CIRCUIT #1
 TERMINAL
 BLOCK
 2H07970550

CONTRACTOR SQUARE -D
 8910DPA43V02 125-01-1001

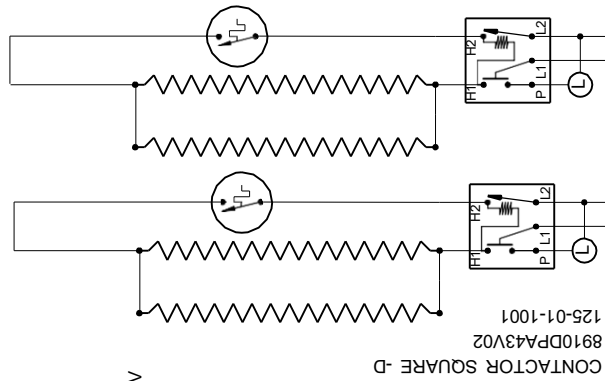
INFINITE CONTROL
 (2)125-01-1663

CIRCUIT #2
 TERMINAL
 BLOCK
 125-01-0295

CONTRACTOR SQUARE -D
 8910DPA43V02
 125-01-1001

CIRCUIT #2	
LOADING	
208 V	240 V
L1	6.4
L2	12.9
L3	6.4

3086W @ 208VAC
 4157W @ 240VAC



INFINITE CONTROL
 (2)125-01-1663

CONTRACTOR SQUARE -D
 8910DPA43V02
 125-01-1001

CIRCUIT #2
 TERMINAL
 BLOCK
 125-01-0295

CONTRACTOR SQUARE -D
 8910DPA43V02 125-01-1001

INFINITE CONTROL
 (2)125-01-1663

CIRCUIT #1
 TERMINAL
 BLOCK
 2H07970550

CONTRACTOR SQUARE -D
 8910DPA43V02 125-01-1001

INFINITE CONTROL
 (2)125-01-1663

CONTRACTOR SQUARE -D
 8910DPA43V02 125-01-1001

REVISIONS:

#	DESCRIPTION	DATE	BY
B	ECN-CAP-0007285 CHANGED TERMINAL BLOCK	4/10/17	CB
C	ECN-CAP-0010805 REVISED WELL PART NUMBER	12/1/17	CB
D	ECN-COD-0017538 CHANGED TOP FANS	2/3/23	CB

DRAWN BY: CRAIG BOOREY
 CHECKED BY: _____
 DATE: 3/16/12
 PROJECT TITLE: QH
 DRAWING #: W6600023

HUSSMANN
 Hussmann Corporation, Inc.
 13770 Ramona Avenue
 Chino, CA 91710
 (909) 590-4910 Lic.#: 644406

Q-HC-SV-W 8' WITH INDIVIDUAL WELLS
 FILE LOCATION:
 DRAWING TITLE:
 PRODUCTION ORDER #: 565061

~208 / 240 VAC - 60 Hz.
 GREEN # 8
 WHT # 14
 BLK # 10
 RED # 10
 BLUE # 10

PAGE 1 OF 1

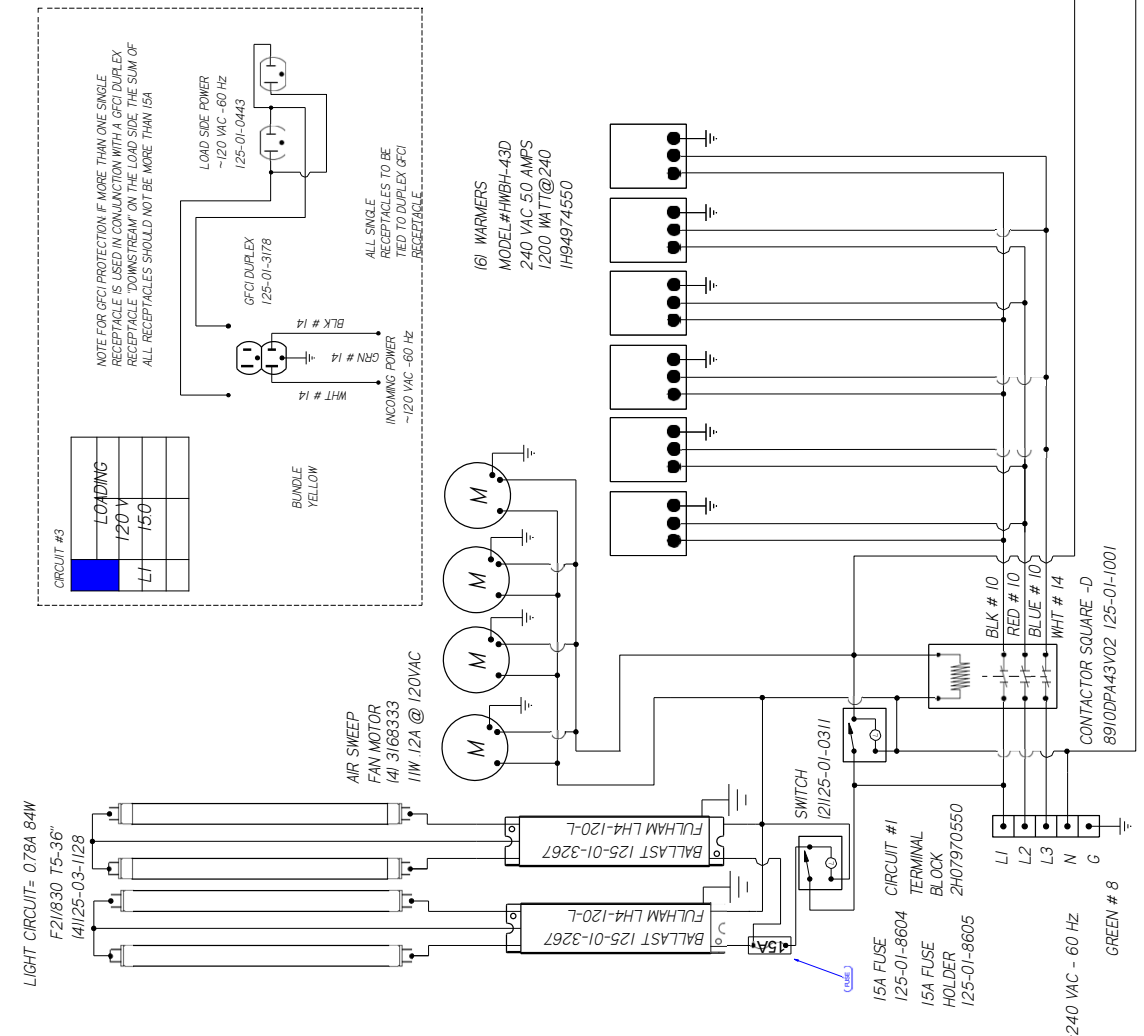
REVISION HISTORY		REV	DATE	DESCRIPTION	BY	CHK BY	APPR BY
1	REVISED TO PRODUCTION	01	20/01/15		CB	CB	CB
2	CHANGED TOP FANS	02	20/30/2013		CB	CB	CB

LOADING	
240V	
L1	21.3
L2	200
L3	200

8494W @ 240VAC

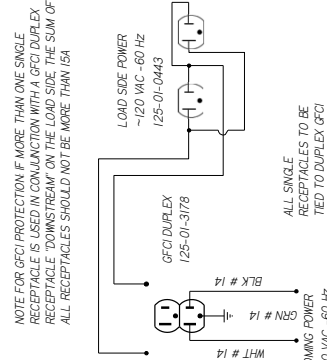
LOADING	
240V	
L1	7.5
L2	150
L3	7.5

4157W @ 240VAC



CIRCUIT #3

LOADING	
120V	
L1	150



HUSSMANN
DIAGRAM-Q-HC-8-SV

MATERIAL - N/A
DATE DRAWN - 11-15-18
DRAWN BY - CRAIG BOOREY
REVIEWED BY - CRAIG BOOREY
APPROVED BY - CRAIG BOOREY

REF -
ECON-CAP-0015583
SHEET 1 OF 1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
THIRD ANGLE PROJECTION
DECIMALS .XX +0.3, XXX ±0.0
ANGLES ± 2°

W6600480 | B

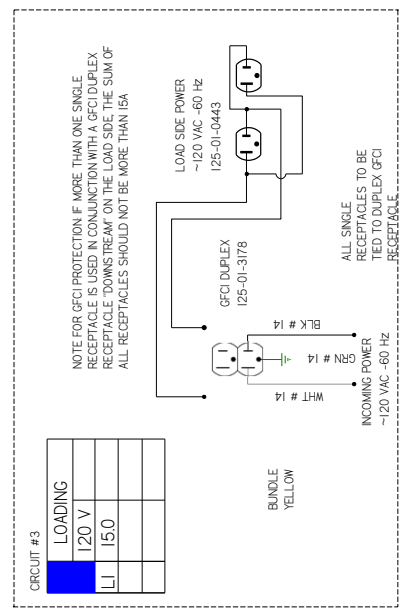
NOTES:
CASE MUST BE GROUNDED
WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

LOADING	
208 V	
L1	245
L2	232
L3	232

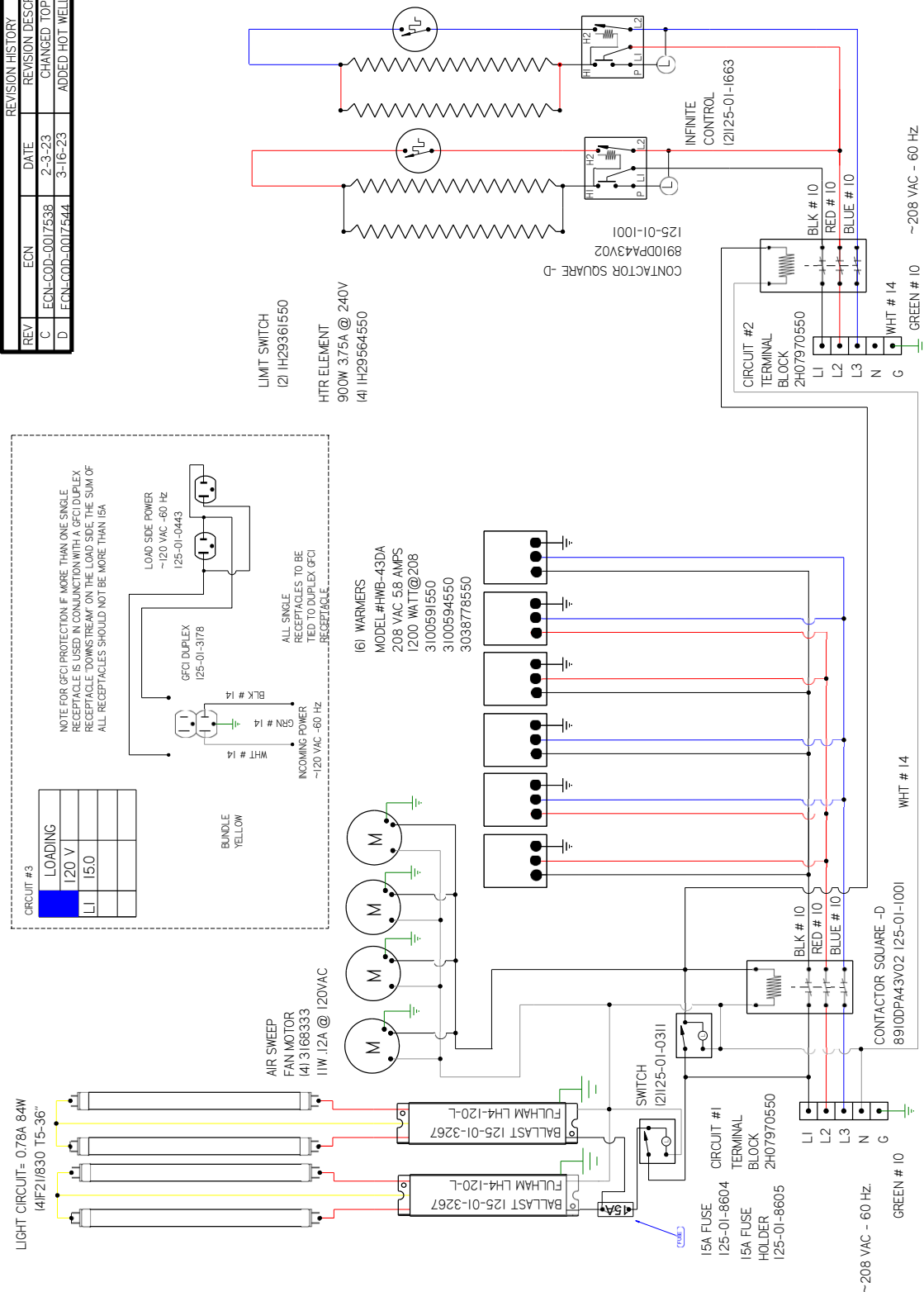
8514W @ 208VAC

LOADING	
208 V	
L1	7.5
L2	15.0
L3	7.5

3602W @ 208VAC



REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
C	ECN-COD-0017538	2-3-23	CHANGED TOP FANS	CB	CB	CB
D	ECN-COD-0017544	3-16-23	ADDED HOT WELL PART #	CB	CB	CB



HUSSMANN

DIAGRAM-Q-HS-8

FACTORY 14GA WIRE

FACTORY LOGA WIRE

FIELD WIRE

DO NOT SCALE DRAWING

SHEET 1 OF 1

W6600686

UL COLOR CODES / ABBREVIATIONS

RED = RD

BLACK = BK

BLUE = BL

YELLOW = YL

GRAY = GR

WHITE = WT

GREEN = GN

BROWN = BN

ORANGE = OR

OR VIOLET = VT

- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

REVISION HISTORY			
REV	ECN	DATE	REVISION DESCRIPTION
A	ECN-COD-0014494	8-13-21	RELEASED TO PRODUCTION
B	ECN-COD-0017538	2-3-23	CHANGED TOP FANS

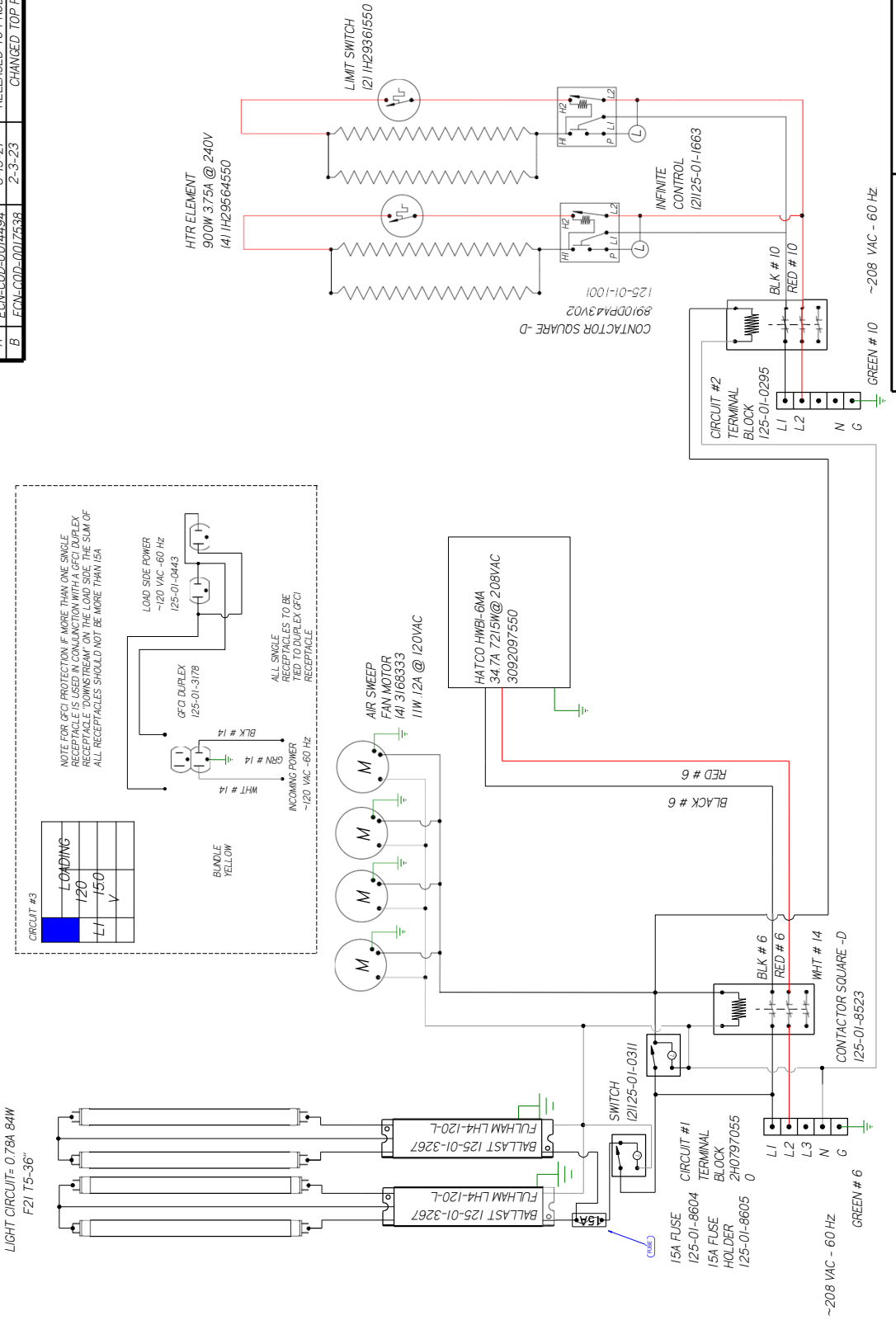
REV	BY	CHKD	BY
CB	CB	CB	CB
CB	CB	CB	CB

CIRCUIT #1	LOADING
200V	
150V	
120V	

7488W @ 208VAC

CIRCUIT #2	LOADING
200V	
150V	
120V	

3120W @ 208VAC



UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = OR
GRAY = GR	VIOLET = VT

WIRE MARKER COLORS/ABBREVIATIONS	
BLACK = MBK	MAROON = MR
BLUE = MBL	MMR ORANGE = MO
BROWN = MBR	MG PINK = MP
DARK BLUE = MD	PURPLE = MP
DOB GREEN = MG	RED = MR
LIGHT BLUE = ML	YELLOW = MYL

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

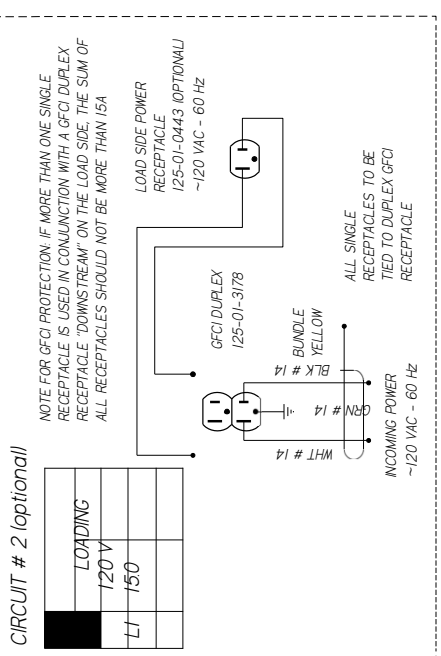
DO NOT SCALE DRAWING
SHEET 1 OF 1

NOTES:
 1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

HUSSMANN
 DIAGRAM-Q-HS-8-SV
 -W
 W6600817

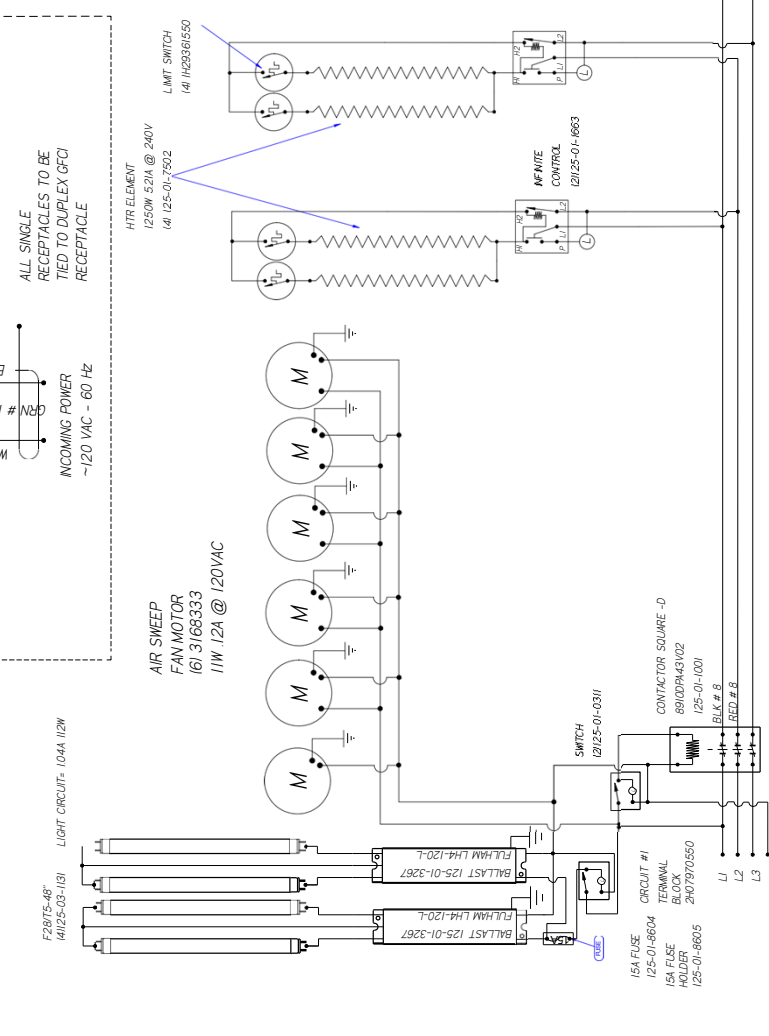
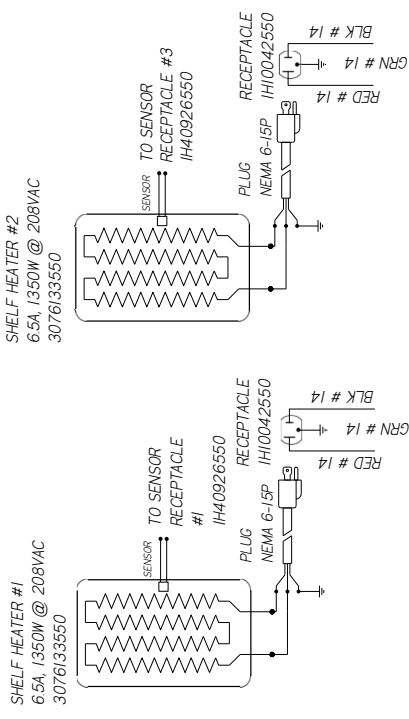
REVISION HISTORY			
REV	EN	DATE	DESCRIPTION
A	ECN-CAP-0014936	2018/01/02	RELEASED TO PRODUCTION
B	ECN-CAP-0014942	2018/01/02	RELABEL WIRE COLOR
C	ECN-CAP-0017638	2023/02/03	CHANGED TOP FANS

REV	EN	DATE	DESCRIPTION
A	ECN-CAP-0014936	2018/01/02	RELEASED TO PRODUCTION
B	ECN-CAP-0014942	2018/01/02	RELABEL WIRE COLOR
C	ECN-CAP-0017638	2023/02/03	CHANGED TOP FANS



CIRCUIT #1	LOADING
	208 V 240 V
L1	17.4 18.1
L2	9.0 10.4
L3	15.8 18.2

5068 W @ 208VAC
6748 W @ 240VAC



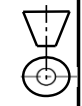
HUSSMANN
DIAGRAM-Q-HC-10-
S S-P

MATERIAL - NA
 DATE DRAWN - 10-2-18
 DRAWN BY - CRAIG BOOREY
 REVIEWED BY - CRAIG BOOREY
 APPROVED BY - CRAIG BOOREY
 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 DECIMALS .XX +0.3, .XXX
 ANGLES ± 2°
 PROJECTION

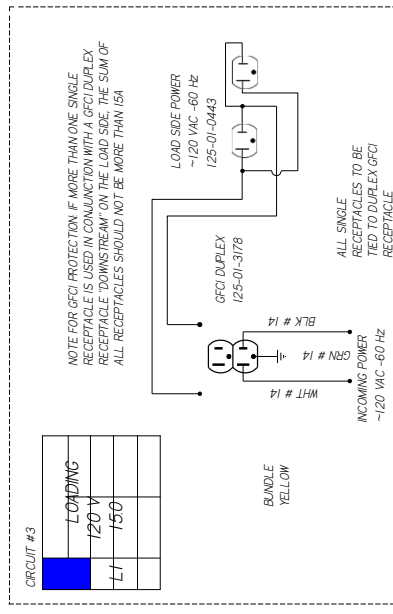
REF -
 SHEET 1 OF 1
 THIRD

W6600459 | C

NOTES:
 CASE MUST BE GROUNDED
 WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED



LIGHT CIRCUIT- 104A 112W
141 F281T5-48"



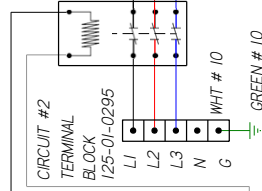
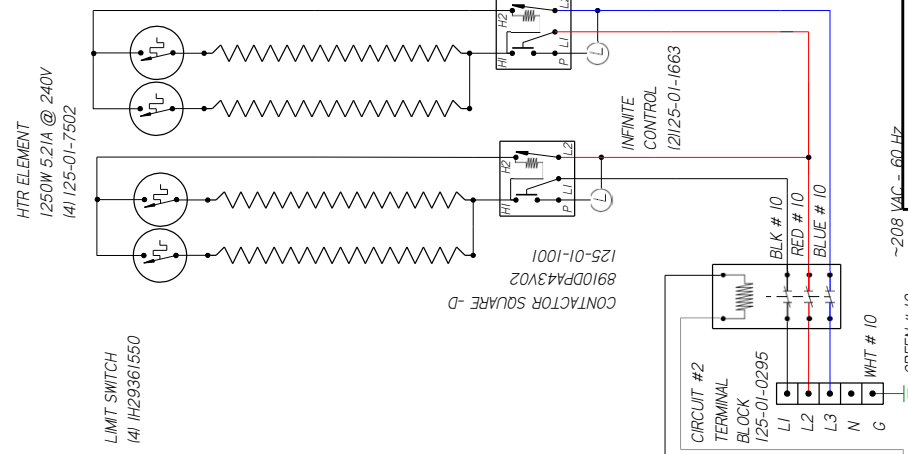
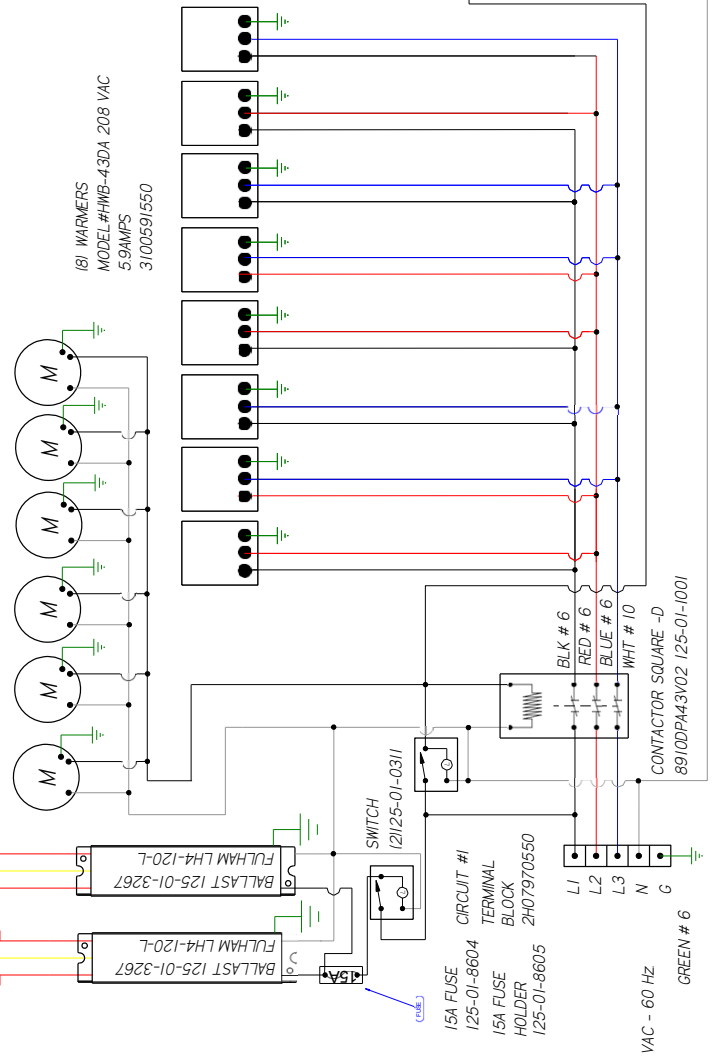
REVISION HISTORY			
REV	ECN	DATE	REVISION DESCRIPTION
A	ECN-000-001132L	5-14-20	RELEASED TO PRODUCTION
B	ECN-000-0017538	2-6-23	CHANGED TOP FANS

CIRCUIT #2	
208 V	
L1	90
L2	180
L3	90

CIRCUIT #1	
208 V	
L1	309
L2	348
L3	290

4323W @ 208VAC

11372W @ 208VAC



HUSSMANN

DIAGRAM-Q-HS-10

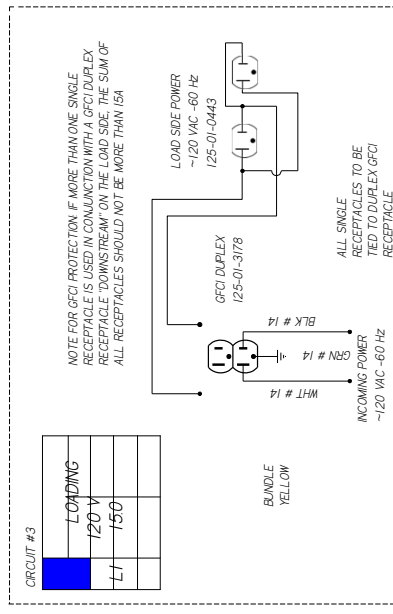
FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE
DO NOT SCALE DRAWING
SHEET 1 OF 1

UL COLOR CODES / ABBREVIATIONS
 RED = RD
 BLACK = BK
 BLUE = BL
 YELLOW = YL
 GRAY = GR
 WHITE = WT
 GREEN = GN
 BROWN = BN
 ORANGE = OR
 VIOLET = VT

W6600693

- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING. ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

LIGHT CIRCUIT- 104A 112W
141 F281T5-48"



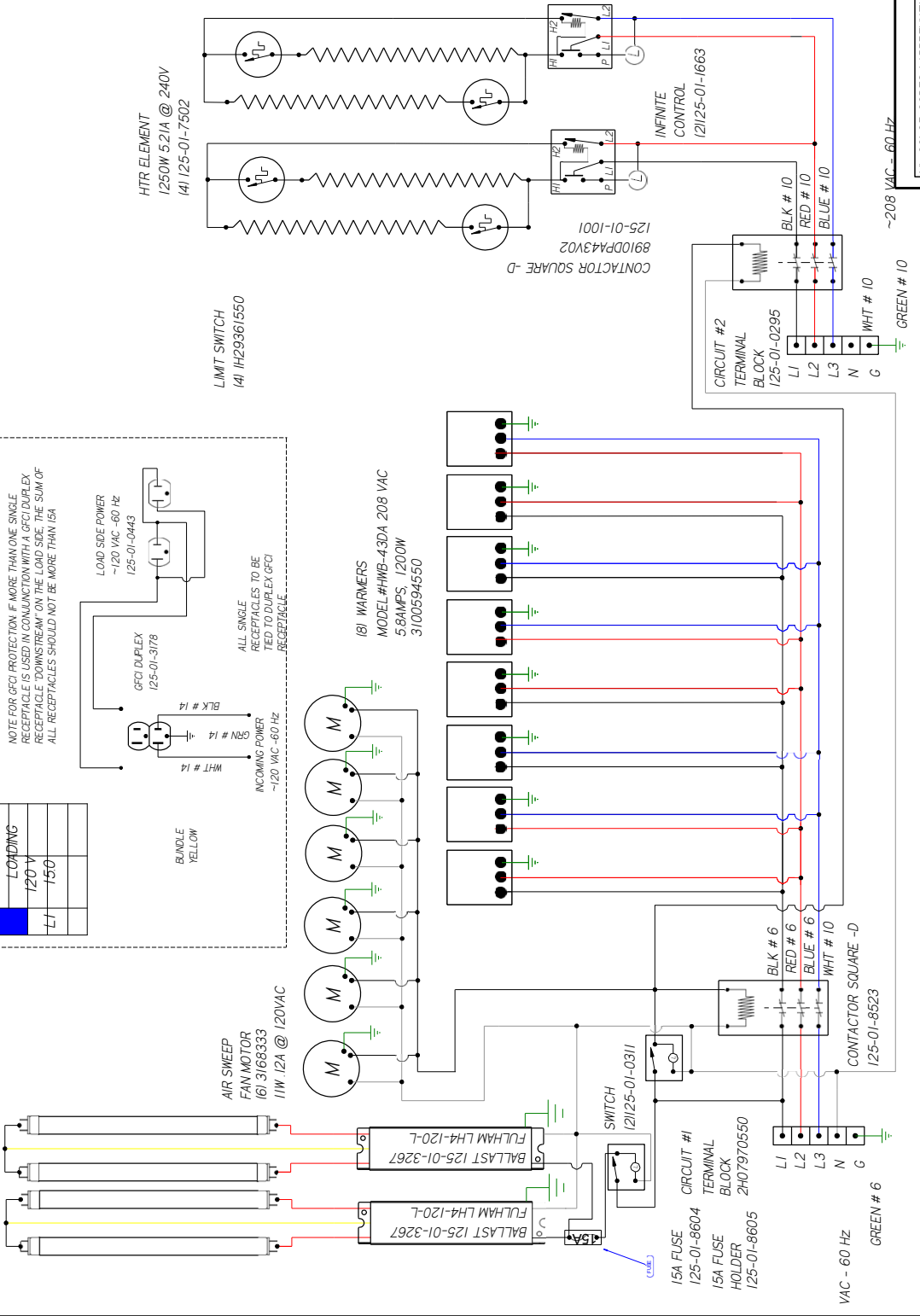
REVISION HISTORY			
REV	ECN	DATE	REVISION DESCRIPTION
B	ECN-000-0011328	6-17-20	REVISED CONTACTOR PART #
C	ECN-000-0017538	2-6-23	CHANGED TOP FANS

CIRCUIT #1	
LOADING	
208 V	
L1	309
L2	348
L3	290

11372W @ 208VAC

CIRCUIT #2	
LOADING	
208 V	
L1	208
L2	180
L3	90

4323W @ 208VAC



HUSSMANN

DIAGRAM-Q-HC-10-
H DRY WELLS

W6600694

SHEET 1 OF 1

UL COLOR CODES / ABBREVIATIONS

- RED = RD
- BLACK = BK
- BLUE = BL
- YELLOW = YL
- GRAY = GR
- WHITE = WT
- GREEN = GN
- BROWN = BN
- ORANGE = OR
- VIOLET = VT

FACTORY 14GA WIRE

FACTORY 10GA WIRE

FIELD WIRE

DO NOT SCALE DRAWING

- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING. ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

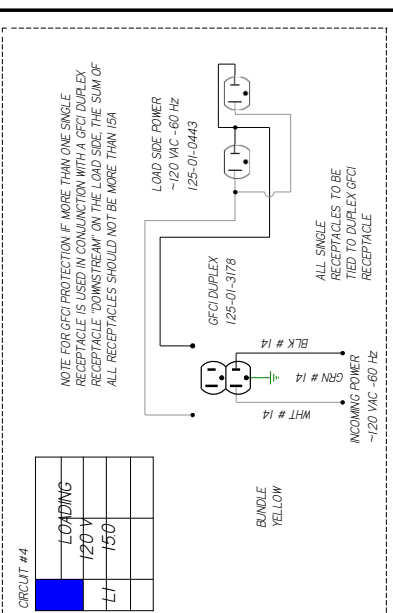
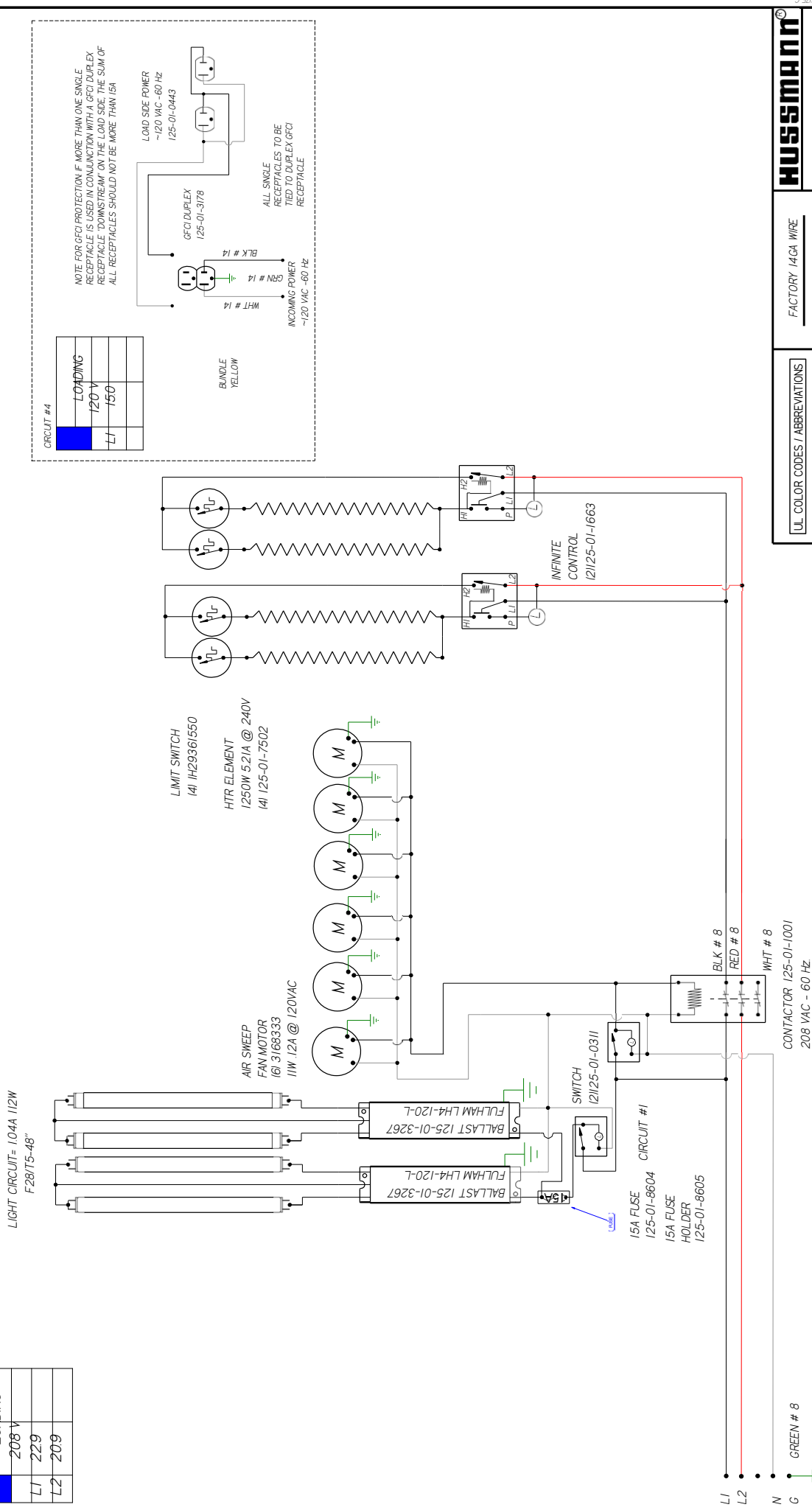
REVISION HISTORY			
REV	ECN	DATE	REVISION DESCRIPTION
A	ECN-000-0011849	11-3-20	RELEASED TO PRODUCTION
B	ECN-000-0017538	2-6-23	CHANGED TOP FANS

REV	BY	CHKD	BY
CB	CB	CB	CB
CB	CB	CB	CB

CIRCUIT #1	LOADING
L1	208 V
L2	229
L3	209

CIRCUIT #4	LOADING
L1	120 V
L2	150

4767W @ 208VAC
F28/T5-48"



HUSSMANN
DIAGRAM-Q-HS-10

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

UL COLOR CODES / ABBREVIATIONS
 RED = RD
 BLACK = BK
 BLUE = BL
 YELLOW = YL
 GRAY = GR
 WHITE = WT
 GREEN = GN
 BROWN = BN
 ORANGE = OR
 VIOLET = VT

DO NOT SCALE DRAWING
SHEET 1 OF 2

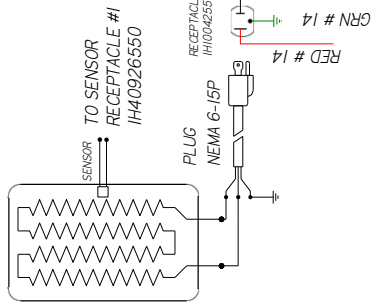
NOTES:
 1. PRINTED DOCUMENT REQUIRED SETTING. ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

CIRCUIT #2

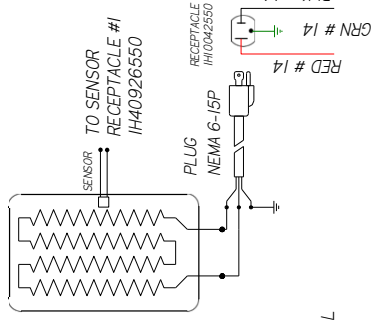
0101	0102	0103	0104
0105	0106	0107	0108
0109	0110	0111	0112
0113	0114	0115	0116

2700 WATTS@208V

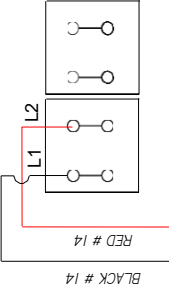
SHELF HEATER GRSBF-54 S
6.5A 1350 WATTS @208V
3076133550



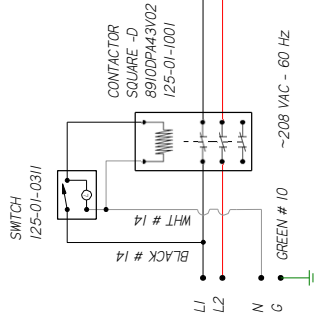
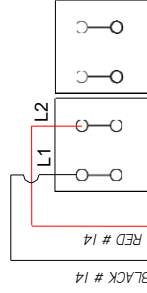
SHELF HEATER GRSBF-54 S
6.5A 1350 WATTS @208V
3076133550



1 LEVEL CONTROL
IH81658550



1 LEVEL CONTROL
IH81658550



NOTES:

1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

UL COLOR CODES / ABBREVIATIONS

RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = OR
GRAY = GR	VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE

DO NOT SCALE DRAWING
SHEET 2 OF 2

HUSSMANN

DIAGRAM-Q-HS-10

W6600733

B

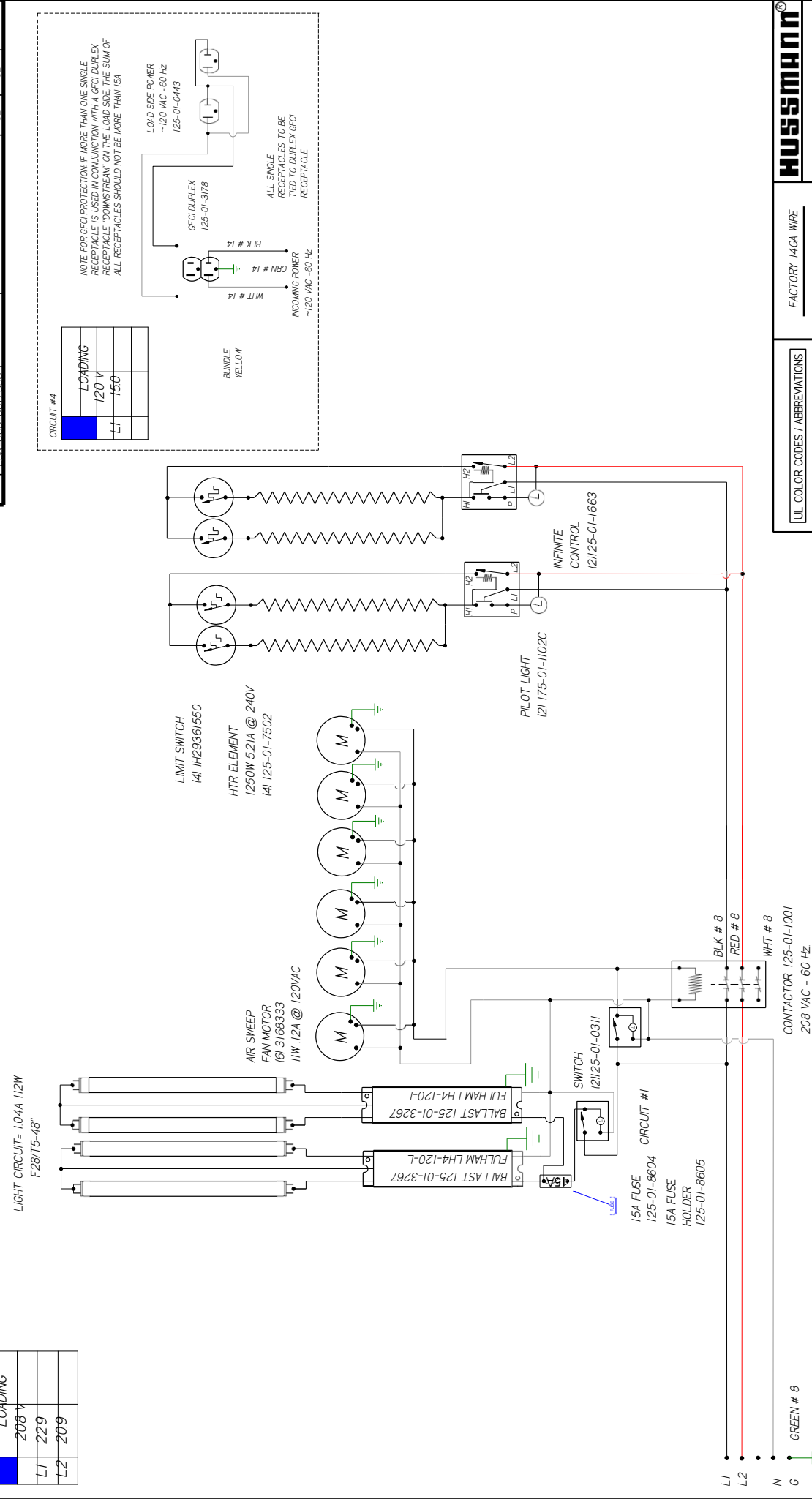
REV

REVISION HISTORY			
REV	ECN	DATE	REVISION DESCRIPTION
A	ECN-000-0011850	11-5-20	RELEASED TO PRODUCTION
B	ECN-000-0017538	2-6-23	CHANGED TOP FANS

CIRCUIT #1	
LOADING	REV BY/CHKD BY
L1	CB
L2	CB
L7	CB
L9	CB

CIRCUIT #4	
LOADING	REV BY/CHKD BY
L1	CB
L2	CB
L7	CB
L9	CB

4767W @ 208VAC
 LIGHT CIRCUIT= 104A 112W
 F28/75-48"



HUSSMANN
 DIAGRAM-Q-HS-10

FACTORY 14GA WIRE
 FACTORY 10GA WIRE
 FIELD WIRE
 DO NOT SCALE DRAWING
 SHEET 1 OF 3

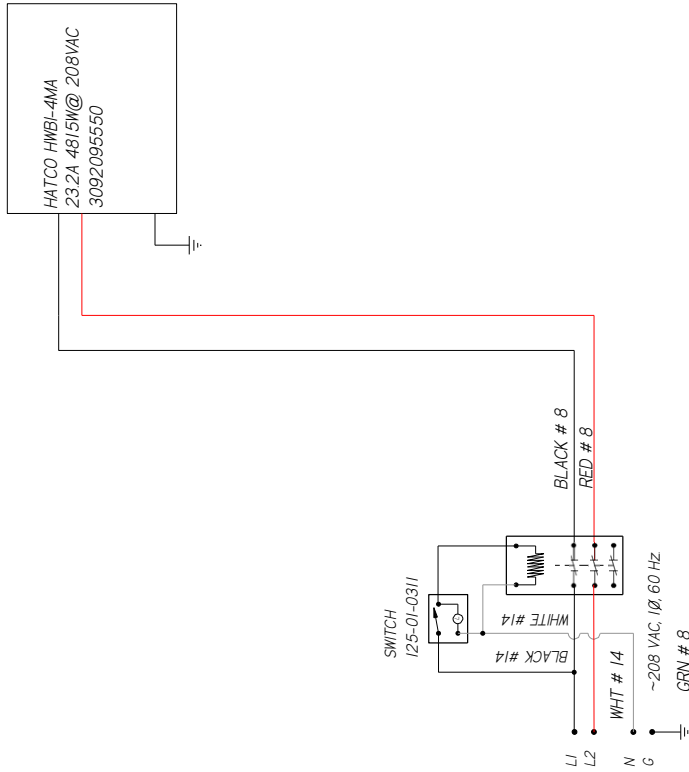
UL COLOR CODES / ABBREVIATIONS
 RED = RD
 BLACK = BK
 BLUE = BL
 YELLOW = YL
 GRAY = GR
 WHITE = WT
 GREEN = GN
 BROWN = BN
 ORANGE = OR
 VIOLET = VT

NOTES:
 1. PRINTED DOCUMENT REQUIRED SETTING. ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

CIRCUIT #2

WIRING	
208V	
L1 208	
L2 208	

48.15 WATTS @ 208V



HUSSMANN	FACTORY 14GA WIRE
DIAGRAM-Q-HS-10	FACTORY LOGA WIRE
	FIELD WIRE
	DO NOT SCALE DRAWING
	SHEET 2 OF 3

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE =
GRAY =	OR VIOLET =
	VT

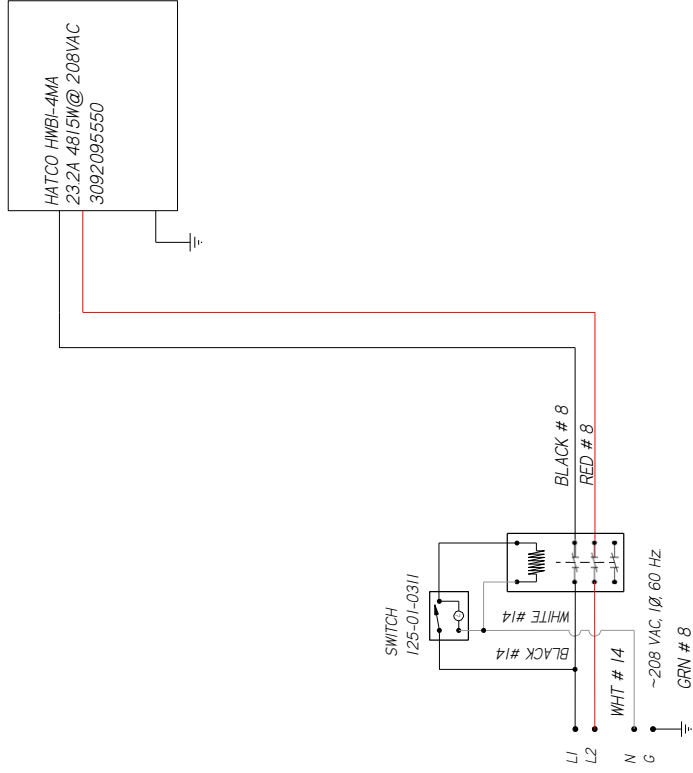
- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

W6600736 | B

CIRCUIT #3

2015	2016	2017	2018	2019	2020
------	------	------	------	------	------

4815 WATTS @ .208V



CIRCUIT #3

HUSSMANN DIAGRAM-Q-HS-10	
FACTORY 14GA WIRE FACTORY 10GA WIRE FIELD WIRE	--- - - - . . .
UL COLOR CODES / ABBREVIATIONS RED = RD BLACK = BK BLUE = BL YELLOW = YL GRAY = GR	WHITE = WT GREEN = GN BROWN = BN ORANGE = OR VIOLET = VT
DO NOT SCALE DRAWING	SHEET 3 OF 3

- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

W6600736 | B

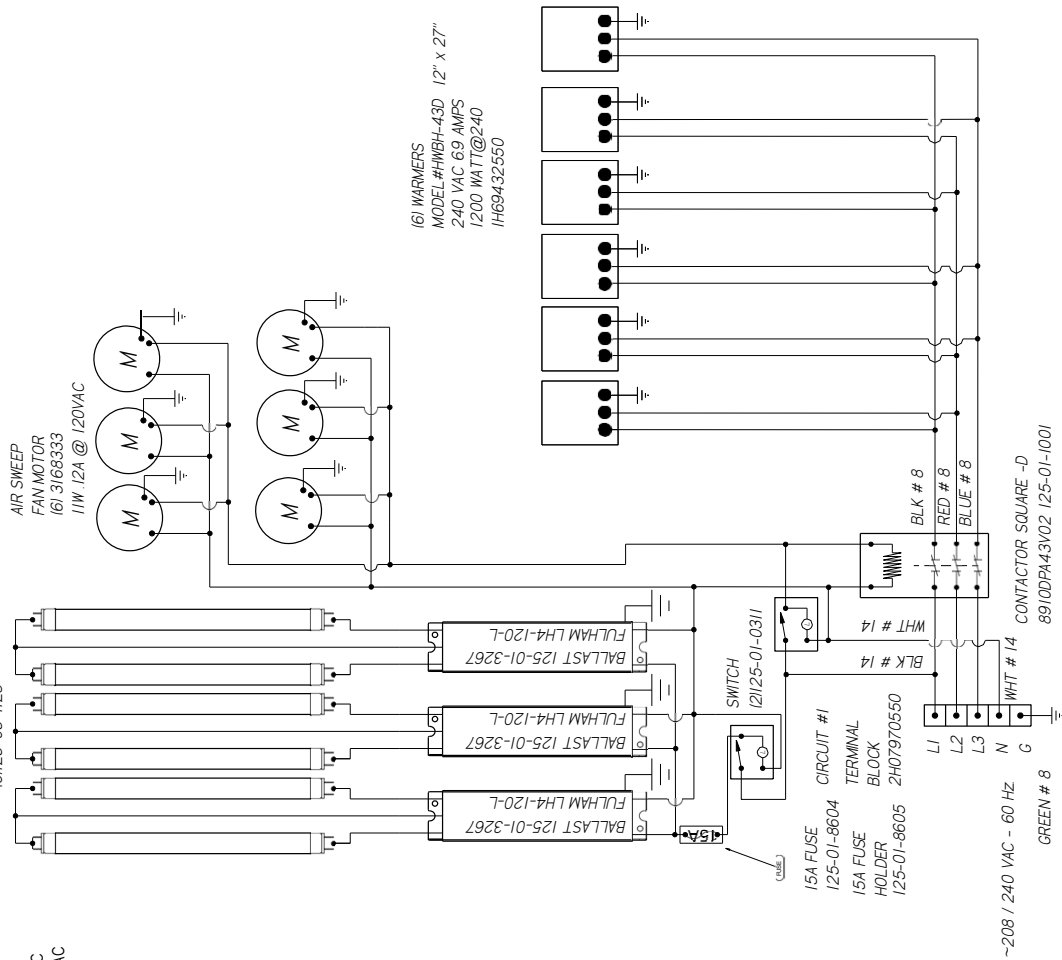
CIRCUIT #1

LOADING	240
L1	239
L2	239
L3	239
N	240
G	240

88.4W @ 208VAC
187.50W @ 240VAC

LIGHT CIRCUIT= 117A 120W

F21175-36"
161125-03-1128



161 WARMERS
MODEL #HMBH-43D 12" x 27"
240 VAC 69 AMPS
1200 WATT@240
IH69432550

~208 / 240 VAC - 60 HZ
GREEN # 8
CONTACTOR SQUARE -D
8910DPA43V02 125-01-001

REV	ECN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	ECN-735331	2018/07/03	RELEASED TO PRODUCTION	CB	CB	CB
B	ECN-CAP-0007285	2017/04/10	CHANGED TERMINAL BLOCK	CB	CB	CB
C	ECN-CAP-0016865	2018/07/25	REVISED HOT WEL-AMPS, BALANCED LOADS	CB	CB	CB
D	ECN-CAP-0077338	2023/02/06	CHANGED TOP FANS	CB	CB	CB

REVISION HISTORY

MATERIAL - NA

DATE DRAWN - 7/3/13

DRAWN BY - CRAIG ROOREY

REVIEWED BY - CRAIG ROOREY

APPROVED BY - CRAIG ROOREY

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES ARE:

THIRD ANGL

DECIMALS .XX +0.3 .XXX

+0.0 ANGLS ± 2°

PROJECTION

ECN# - 735331 REF - NEW

DIAGRAM SHEET 1 OF 2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCES ARE:

THIRD ANGL

DECIMALS .XX +0.3 .XXX

+0.0 ANGLS ± 2°

HUSSMANN

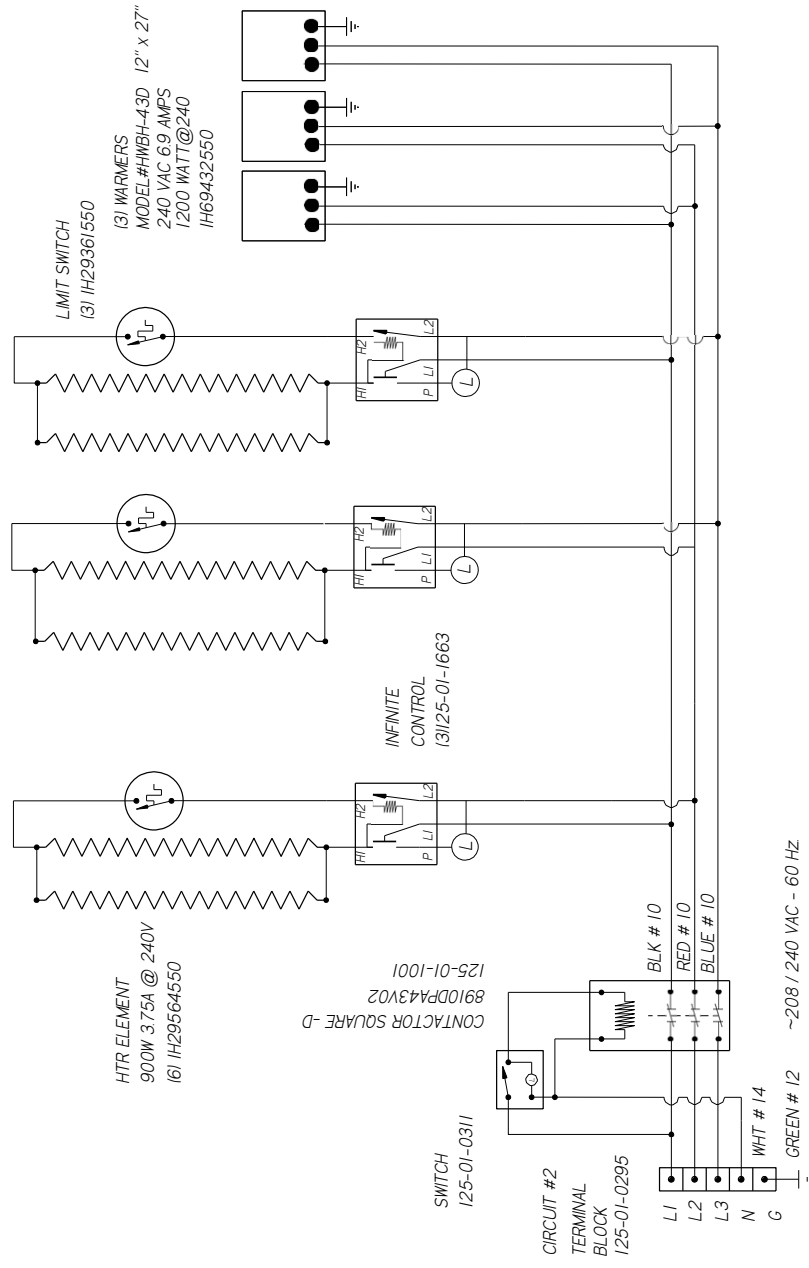
Q-HC-12-SV-W

W6600085 | D

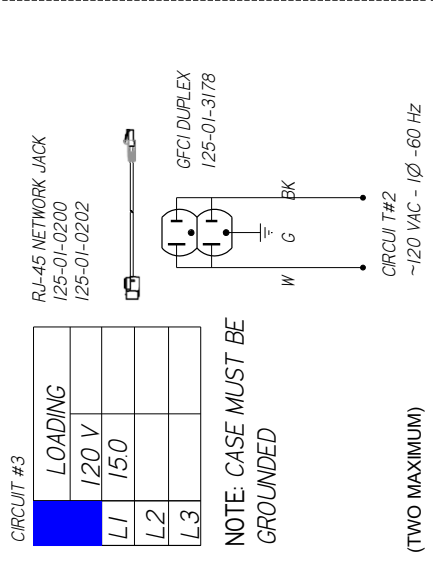
CIRCUIT #2

LOADING	240V	240
L1	100	210
L2	100	210
L3	100	210

6665W @ 208VAC
8854W @ 240VAC



OPTIONAL SCALE STAND



RJ-45 NETWORK JACK
125-01-0200
125-01-0202

GFCI DUPLEX
125-01-3178

LOADING	120 V
L1	150
L2	
L3	

NOTE: CASE MUST BE GROUNDED

(TWO MAXIMUM)

MATERIAL - NA
DATE DRAWN - 7/3/13
DRAWN BY - CRAIG BOOREY
REVIEWED BY - CRAIG BOOREY
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
DECIMALS .XX +0.3 .XXX
±0.0
ANGLES ± 2°
PROJECTION
E
ANGL
THIRD

ECN# - 735331 REF - NEW
DIAGRAM # 2 OF 2

HUSSMANN
Q-HC-12-SV-W

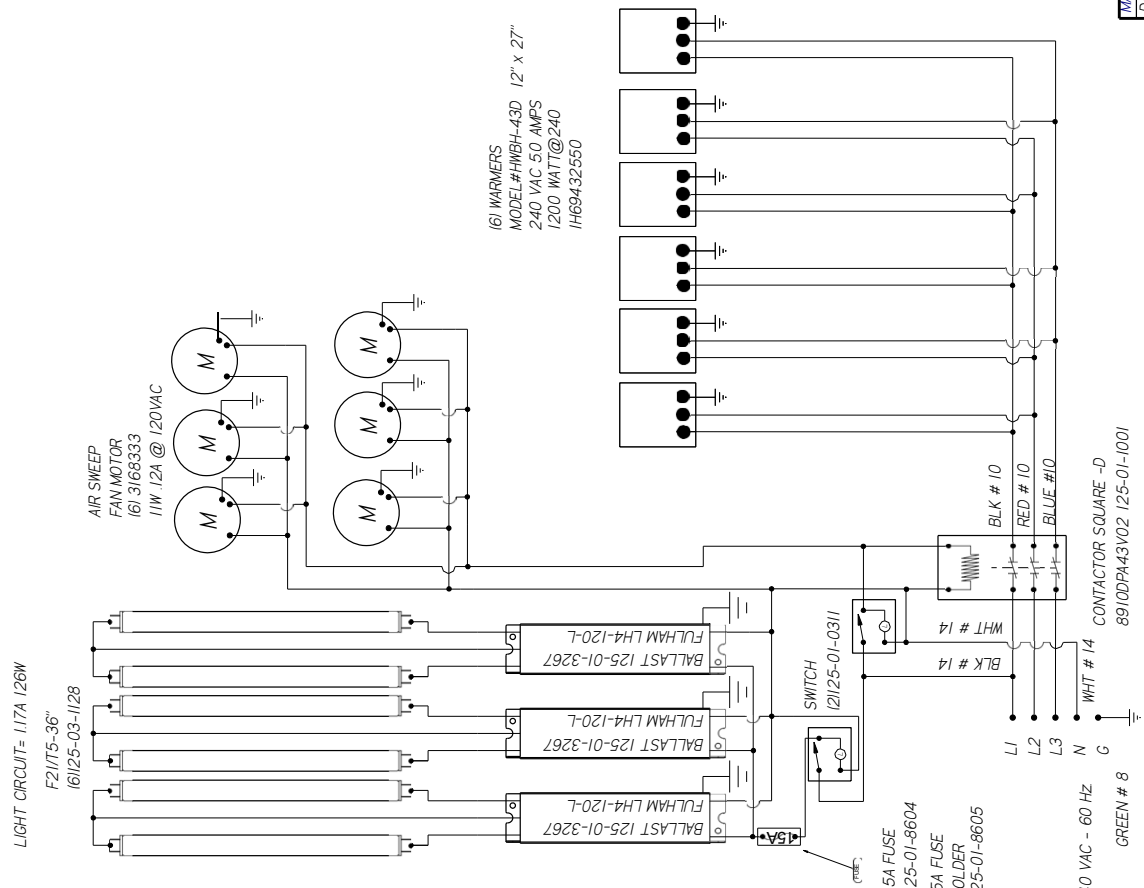
W6600085 | D

CIRCUIT #1

DRNG	210	220	230	240
L1	197	220	240	260
L2	173	200	220	240

6449W @ 208VAC
8891W @ 240VAC

REVISION HISTORY				
REV	EN	DATE	REVISION DESCRIPTION	REV BY / CHD BY / APPR BY
A	EON-CAP-0010804	2017/6/20	RELEASED TO PRODUCTION	CB / CB / CB
A	EON-COD-0017338	2023/02/06	CHANGED TO FF FANS	CB / CB / CB



HUSSMANN
DIAGRAM-Q-HC-1Z-S V-W
W6600345 | B

MATERIAL - N/A
DATE DRAWN - 12-1-17
DRAWN BY - CRAIG BOOREY
REVIEWED BY - CRAIG BOOREY
APPROVED BY - CRAIG BOOREY
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
THIRD ANGL
E
DECIMALS XX +0.3, XXX
±0.0
ANGLES ± 2'
PROJECTION

EON-CAP-0010804 REF -
SHEET 1 OF 2
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
THIRD ANGL
E
DECIMALS XX +0.3, XXX
±0.0
ANGLES ± 2'
PROJECTION

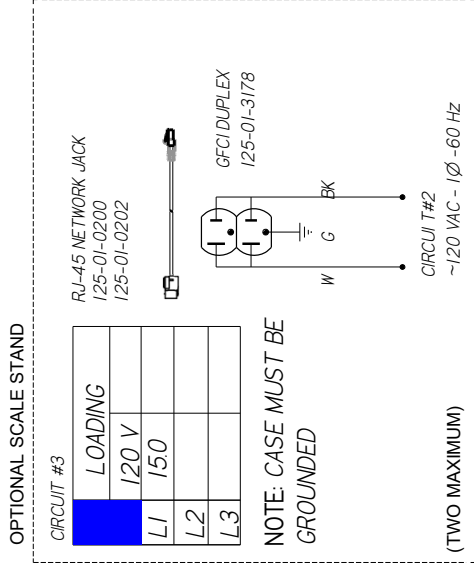
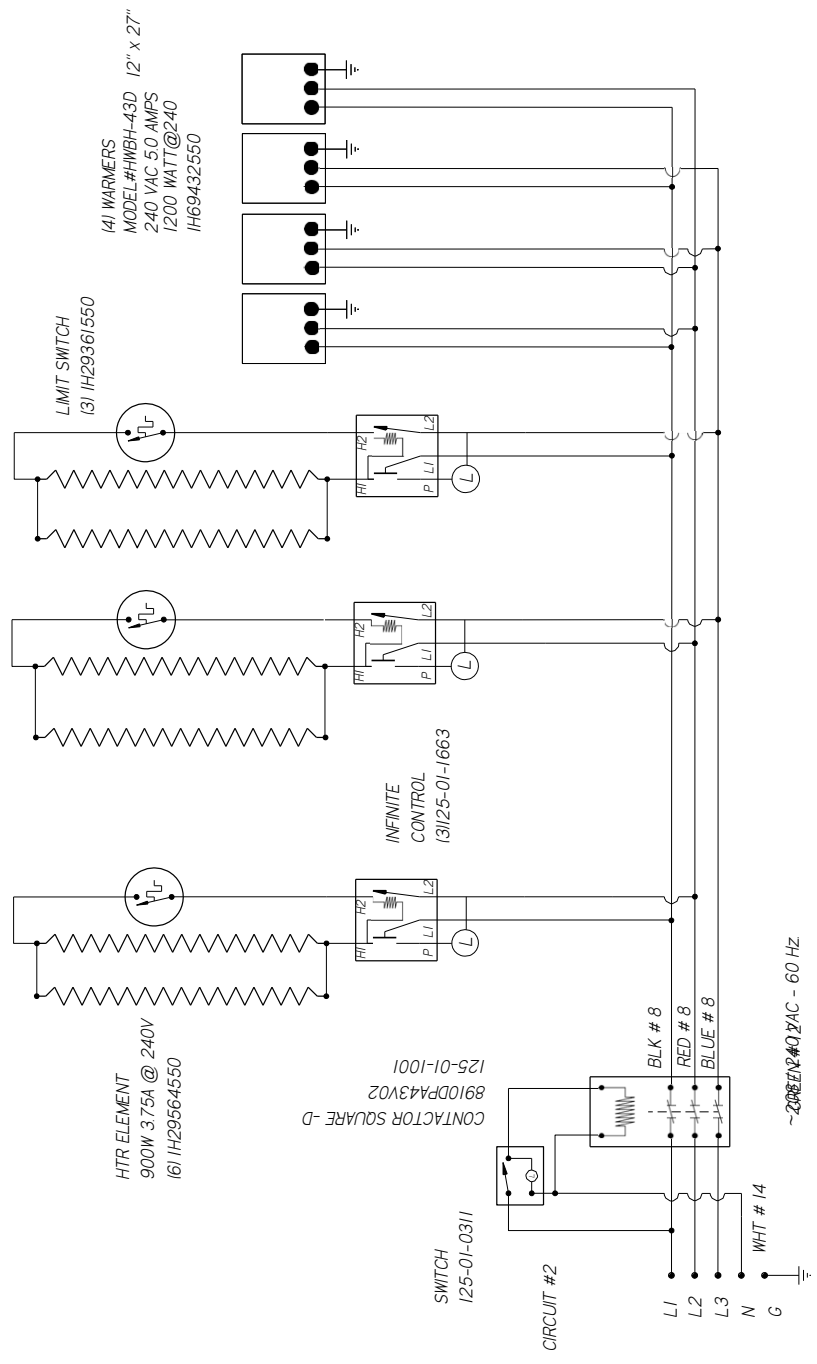
NOTES:
CASE MUST BE GROUNDED
WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

REVISION HISTORY			
REV	EN	DATE	DESCRIPTION
A	EDY-CAP-0010804	2017/8/20	RELEASED TO PRODUCTION
A	EDY-COD-0017638	2023/02/06	CHANGED TOP FANS

CIRCUIT #2

LOADING	240V	240V
L1	200W	500W
L2	200W	500W
L3	200W	500W

8850W @ 208VAC
1878W @ 240VAC



HUSSMANN
DIAGRAM-Q-HC-12-
S V-W

MATERIAL - NA
 DATE DRAWN - 12-1-17
 DRAWN BY - CRAIG BOOREY
 REVIEWED BY - CRAIG BOOREY
 APPROVED BY - CRAIG BOOREY
 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 DECIMALS .XX +0.3 .XXX
 ANGLES ± 2°
 PROJECTION

REF -
 SHEET 2 OF 2
 THIRD

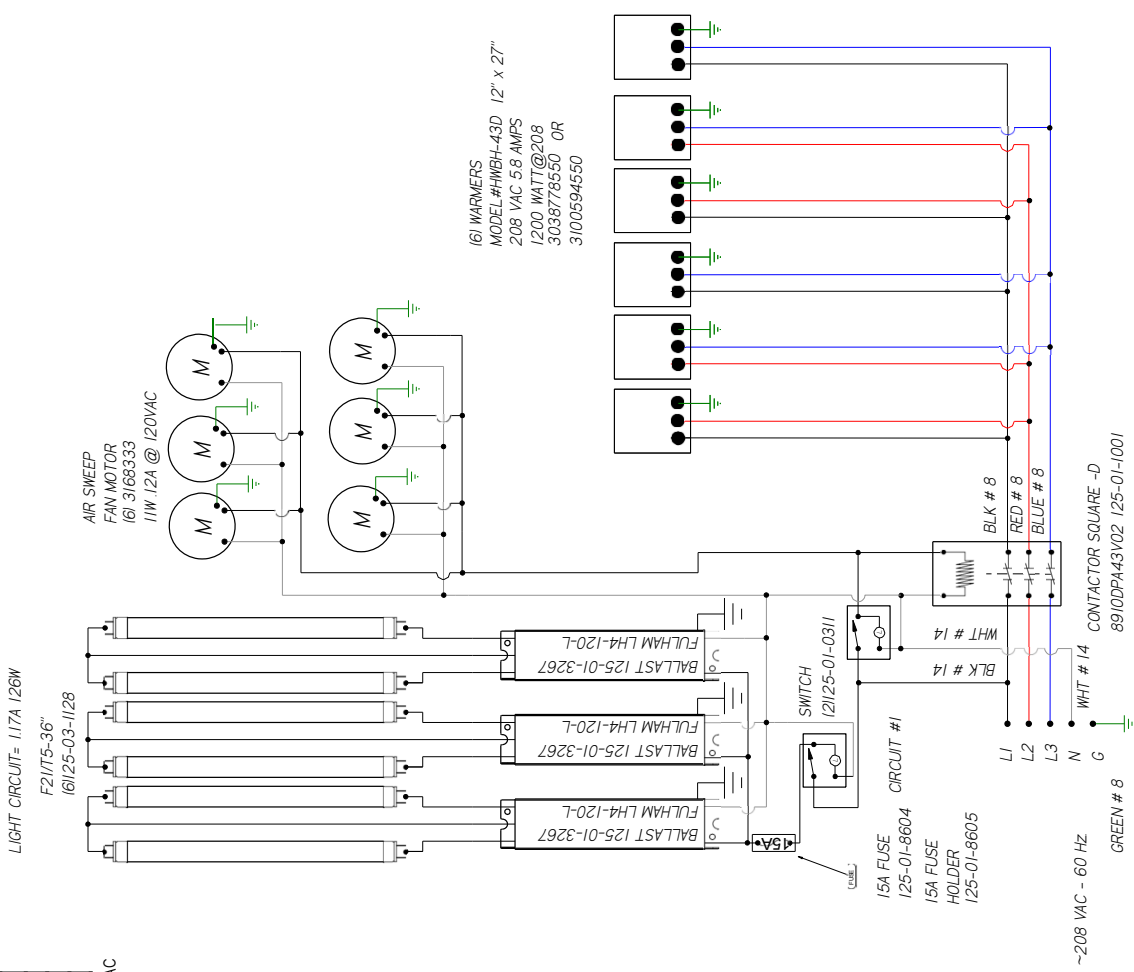
ECON-CAP-0010804
 REF -

W6600345 | B

NOTES:
 CASE MUST BE GROUNDED
 WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

REVISION HISTORY			
REV	ECN	DATE	REVISION DESCRIPTION
B	ECN-CAP-0019899	12-2-19	ADDED HOT WELL PART#
C	ECN-CAP-0017538	2-6-23	CHANGED TOP FANS

CIRCUIT #1	
WIRING	
200V	
202	
202	
202	
202	
8598W @ 208VAC	
3	



- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING: ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

UL COLOR CODES / ABBREVIATIONS	
RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = OR
YL GRAY = GY	OR VIOLET = VT

FACTORY 14GA WIRE	---
FACTORY 10GA WIRE	---
FIELD WIRE	---

DO NOT SCALE DRAWING	SCALE
SHEET 1 OF 2	

HUSSMANN
DIAGRAM-Q-HC-12-W

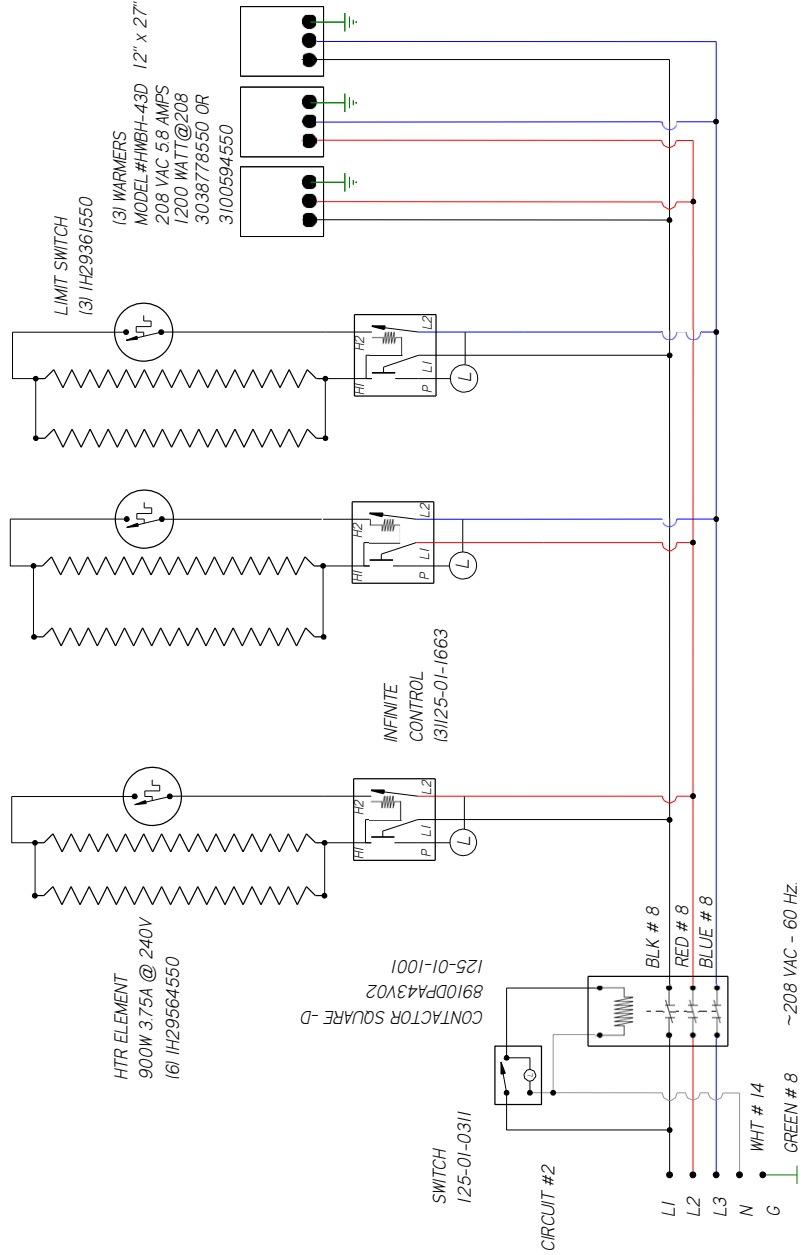
W6600607
 C

CIRCUIT #2

LOADING	
200V	
200V	
200V	
200V	

9563W @ 208VAC

3



OPTIONAL SCALE STAND

CIRCUIT #3	
LOADING	
120 V	
L1	
L2	
L3	

NOTE: CASE MUST BE GROUNDED

(TWO MAXIMUM)

RJ-45 NETWORK JACK
125-01-0200
125-01-0202



GFCI DUPLEX
125-01-3178

CIRCUIT #2
~120 VAC - 1Ø - 60 HZ

- NOTES:
1. PRINTED DOCUMENT REQUIRED SETTING. ALL COLORS BLACK & WHITE
 2. CASE & ANY REMOVABLE PANEL WITH ELECTRICAL PARTS MUST BE GROUNDED.
 3. WHEN PASSING WIRES THROUGH METAL HOLES A GROMMET MUST BE USED

UL COLOR CODES / ABBREVIATIONS

RED = RD	WHITE = WT
BLACK = BK	GREEN = GN
BLUE = BL	BROWN = BN
YELLOW = YL	ORANGE = OR
GRAY = GR	VIOLET = VT

FACTORY 14GA WIRE
FACTORY 10GA WIRE
FIELD WIRE
DO NOT SCALE DRAWING
SHEET 2 OF 2

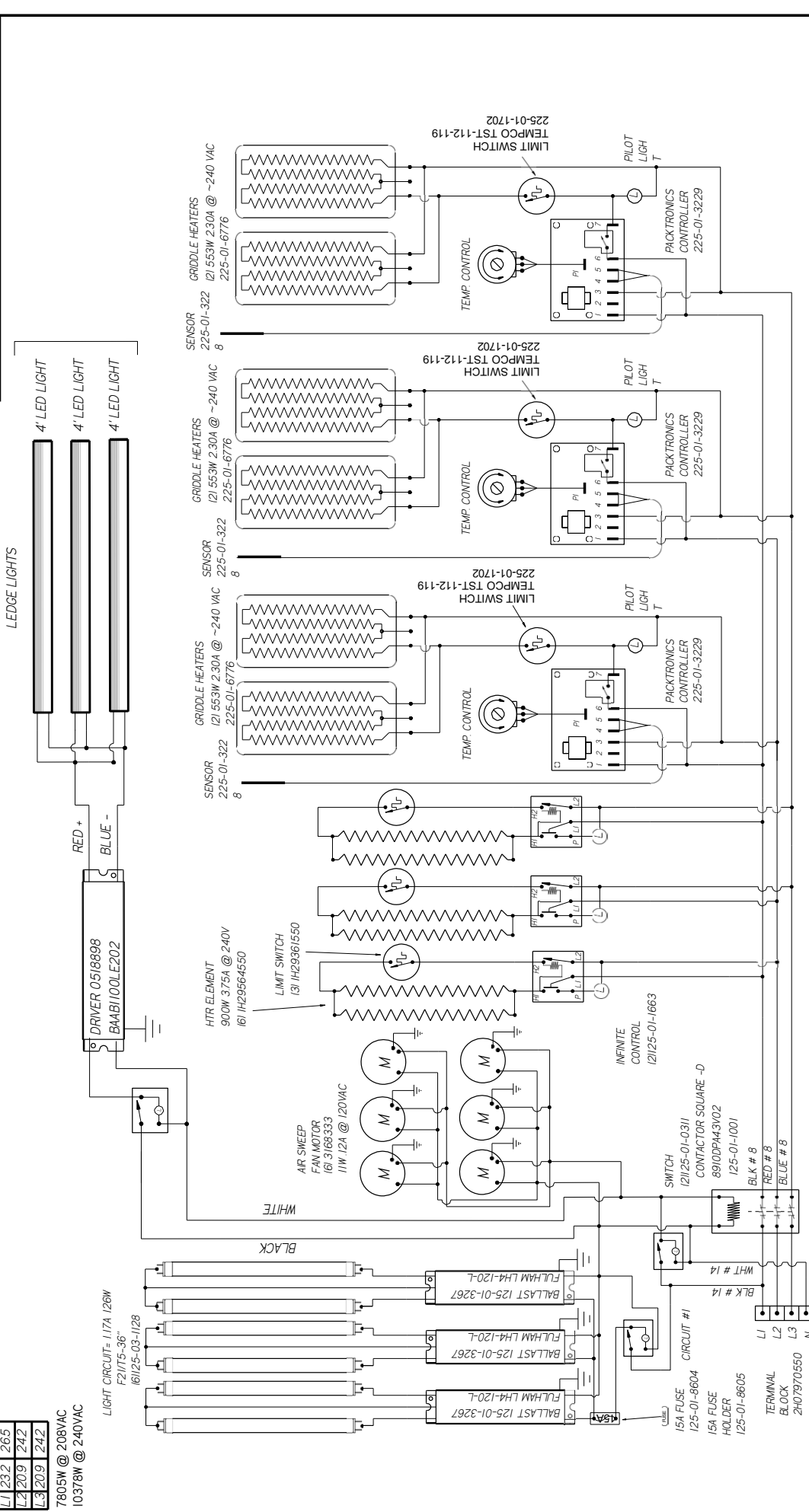
CIRCUIT #1

L1	232	240V
L2	209	242
L3	209	242

7805W @ 208VAC
10378W @ 240VAC

REVISION HISTORY

REV	EN	DATE	REVISION DESCRIPTION	REV BY	CHKD BY	APPR BY
A	EDW/7333/1	20/09/04	RELEASED TO PRODUCTION	CB	CB	CB
B	EDW/CA/007285	20/10/10	CHANGED TERMINAL BLOCK	CB	CB	CB
C	EDW/CD/007638	20/09/06	CHANGED TOP FANS	CB	CB	CB



HUSSMANN
Q-HC-12-SV-P
WLEDGE LIGHTS

MATERIAL - NA
DATE DRAWN - 6/14/13
DRAWN BY - CRAIG BOOREY
REVIEWED BY - CRAIG BOOREY
APPROVED BY - CRAIG BOOREY
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
DECIMALS .XX +0.3 .XXX
±0.0
ANGLES ± 2°
PROJECTION

ECN# - 735331 REF - NEW
DIAGRAM SHEET 1 OF 1

W6600082 | C

NOTES:
CASE MUST BE GROUNDED



12. Troubleshooting Guide

Problem	Possible Cause	Possible Solution
Product not holding temperature.	Ambient conditions may be affecting the case operation.	Check case position in store. Is the case located near an open door, window, electric fan or air conditioning vent that may cause air currents? Case must be located minimum 15 Ft away from doors or windows. Cases are designed to operate at 55% Relative humidity and a temperature of 75°F.
	Unit not preheated.	Preheat case before loading product.
	Heat settings too low	Adjust shelf/griddle control setting.
	Low voltage.	Using volt meter make sure line voltage matches serial plate voltage.
	Product held too long	Hold product for recommended time.
	Product not placed correctly in case.	Place product in case per recommendations.
	Product not hot when placed in case.	Place prepackaged hot food in case.
No shelf heat.	Faulty shelf heater.	Check and replace if necessary.
	Faulty control.	Check and replace if necessary.
	Loose wiring on heater.	Check wiring/electrical connections.
	Temperature setting "Off".	Increase shelf heat setting.
No griddle heat.	Faulty griddle heater.	Check and replace if necessary.
	Faulty control.	Check and replace if necessary.
	Loose wiring on heater.	Check wiring/electrical connections.
	Temperature setting "Off".	Increase griddle heat setting.
No hot/soup well heat.	Faulty hot/soup well.	Check and replace if necessary.
	Loose wiring on hot/soup well.	Check wiring/electrical connections.
Main Power switch on but case is inoperative.	Open Circuit.	Check to see that cord is plugged in if plug is provided. Check wiring/electrical connections for hard wired cases. Check line voltage. Check power switch and replace if defective.
Condensation on glass.	Ambient conditions may be affecting the case operation.	Check case position in store. Is the case located near an open door, window, electric fan or air conditioning vent that may cause air currents? Case must be located minimum 15 Ft away from doors or windows. Cases are designed to operate at 55% Relative humidity and a temperature of 75°F.
	Inadequate air circulation.	Check if air sweep fans are functioning, check electrical connections.
	There is not enough heat provided in the airflow.	Check if air sweep heater is functioning, check electrical connections.
	There are glass gaps on the side of the case.	See glass adjustment section.
	Glass is not completely shut.	Close glass correctly.
	Calrods may not be working.	Check calrod operation.
	Well control setting is too high.	Check that well setting is not above "7" on control knob.

Troubleshooting (Cont'd)

Problem	Possible Cause	Possible Solution
Large gap is visible on bottom of front glass or glass can't be opened because it is too low.	Glass Height adjusters need to be adjusted.	See Glass Adjustment section.
Large gaps are visible in between glass panels or glass rubs against end panel.	Glass/glass clamp assembly needs to be adjusted.	See Glass Adjustment section.
Front glass does not stay open and falls closed.	Glass shock/piston may need to be replaced.	Case should be serviced by a qualified service technician.
Lights do not come on.	Ballast/light socket wiring.	Check electrical connections. See Electrical Section and check wiring diagram.
	Ballast needs to be replaced.	Case should be serviced by a qualified service technician. See Electrical Section.
	Lamp socket needs to be replaced.	Case should be serviced by a qualified service technician.
	Lamp needs to be replaced.	See Maintenance Section.
	Light Switch needs to be replaced.	Case should be serviced by a qualified service technician.

13. Appendices

Appendix A. - Temperature Guidelines

- 1.0 Hot cases are tested to maintain all hot food at 140°F - 150°F. These cases are not designed to heat up or cook food. It is the user's responsibility to stock the hot food cases immediately after the cooking of the food with a pulp temperature of at least 150°F to 160°F.

Appendix B. - Application Recommendations

- 1.0 The installer should perform a complete start-up evaluation prior to the loading of food into the hot food case, which includes such items as:
- a) Initial temperature performance, Griddles and Hot Wells.
 - b) Observation of outside influences such as drafts, radiant heating from the ceiling and from lamps. Such influence should be properly corrected or compensated.
 - c) Complete start-up procedures should include
 1. Heat/display lamps are lighting.
 2. Indicator lamps on control panel(s) are working
 3. Auto-fill is functioning properly (Service cases)
 4. Hot Griddles are functioning.

Appendix C. - Field Recommendations

- 1.0 The most consistent indicator of display hot case performance is temperature of the product itself.

NOTE: Public Health will use the temperature of the product in determining if the hot case will be allowed to display potentially hazardous food. For the purpose of this evaluation, product temperature above the FDA Food Code 1993 temperature for potentially hazardous food will be the first indication that an evaluation should be performed. It is expected that all hot case will keep food at the FDA Food Code 1993 temperature for potentially hazardous food.

1. The following recommendations are made for the purpose of arriving at easily taken and understood data which, coupled with other observations, may be used to determine whether a hot case is working as intended:
 - a) **INSTRUMENT** - A stainless steel stem-type thermometer is recommended and it should have a dial a minimum of 1 inch internal diameter. A test thermometer scaled only in Celsius or dually scaled in Celsius and Fahrenheit shall be accurate to 1°C (1.8°F). Temperature measuring devices that are scaled only in Fahrenheit shall be accurate to 2°F. The thermometer should be checked for proper calibration. (It should read 32°F when the stem is immersed in an ice water bath).
 - b) **LOCATION** - The thermometer must be inserted into the food itself to acquire proper food pulp temperature.
 - c) **READING** - The thermometer reading should be made only after it has been allowed to stabilize, i.e., maintain a constant reading. Loading Product: Cases should be allowed to heat up for one hour before product is loaded. Temperature adjustments: Allow 4 hours after adjustment has been made before testing pulp temperature of product.
 - d) **OTHER OBSERVATIONS** - Other observations should be made which may indicate operating problems, such as unsatisfactory product, feel/appearance.

Appendices (Cont'd)

Appendix D. - Recommendations to User

- 1.0 Hussmann has provided instructions and recommendations for proper periodic cleaning. The user will be responsible for such cleaning, including the cleaning of equipment within the compartment and the hot area(s). Cleaning practices, particularly with respect to proper refrigerator unloading and warm-up, must be in accordance with applicable recommendations.
 1. Allow the case to preheat for one hour prior to loading.
 2. Hot foods should enter the case directly after cooking or no lower than 150° - 160°F. The Hot Cases are not designed to heat up or cook food.
 3. Self Service - be sure to display product in single layer in direct contact with heating surface.
 4. All griddle type units are designed to maintain temperatures above the FDA guideline of 140°F. This is product temperature, not air or griddle temperature. Due to the open design of these units, they must be loaded with product for proper operation. When units are empty, they experience rapid rise of heated air from air outside the case. This action gives empty units a false, lower than desired, temperature reading. Loading the case traps the air at the griddle, raising temperatures to the 165°F to 185°F range, keeping product well above the FDA guidelines. Remember, these units must be loaded with product to maintain safe product temperature.
 5. Check the food pulp temperature frequently with a thermometer to make sure it is at the proper holding temperature. Hot foods should be at 140°F. The thermometer must be inserted into the food itself for the proper temperature.
 6. Do not display more food than will be sold within a 4 hour period.
 7. When restocking, bring older food to the front.
 8. Clean spills as soon as they happen.
 9. Fingerprints and food splatter will drastically shorten bulb life. Clean splatter off the bulbs immediately with a soft cloth. When handling bulbs, wear cotton gloves or use a cotton rag/towel.
 10. When "freshening" foods such as macaroni and cheese with added water, heat the water in a clean container until it is 10°F to 20°F above the desired holding temperature of the food. This will keep the food at a safe serving temperature. Depending on the amount of water, the temperature can drop 10°F to 20°F in as little as five minutes.
 11. When transferring hot foods in the heated merchandiser to clean pans, preheat the clean pan. Transferring hot foods to room temperature pans can cause the temperature of the food to drop 20°F or more thus causing food to be at an unsafe serving temperature.
 12. Clean spills as they happen simply by wiping with a cloth. Be sure to use a dry cloth on very hot surfaces to prevent steam burns.

For further technical information, please log on to <http://www.hussmann.com/products/QH.htm> or <http://www.hussmann.com/products/QH.htm>



This warning does not mean that Hussmann products will cause cancer or reproductive harm, or is in violation of any product-safety standards or requirements. As clarified by the California State government, Proposition 65 can be considered more of a ‘right to know’ law than a pure product safety law. When used as designed, Hussmann believes that our products are not harmful. We provide the Proposition 65 warning to stay in compliance with California State law. It is your responsibility to provide accurate Proposition 65 warning labels to your customers when necessary. For more information on Proposition 65, please visit the California State government website.

Service Record

Last service date: By:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
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_____	_____
_____	_____

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The *MODEL NAME* and *SERIAL NUMBER* is required in order to provide you with the correct parts and information for your particular unit. They can be found on a small metal plate on the unit. Please note them below for future reference.

MODEL:

SERIAL NUMBER:
