HUSSMANN®/Chino

ESH/ESHS Hot Food Family

Single-Deck Service Hot Food Case

Installation & Operation Manual

Rev. 0010

HUSSMANN®

ESH/ESHS Hot Food Family

Single-Deck Service Hot Food Case

ESH Combo with pedestal option

p/n IGHT-ESH/ESHS-0010

INSTALLATION & OPERATION GUIDE

Table of Contents

THIS BOOKLET CONTAINS INFORMATION ON:

ESH / ESHS: Hot Food Cases

SHIPPING DAMAGE

All equipment should be thoroughly examined for shipping damage before and during unloading.
This equipment has been carefully inspected at our factory and the carrier has assumed responsibility for safe arrival. If damaged, either apparent or concealed, claim must be made to the 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

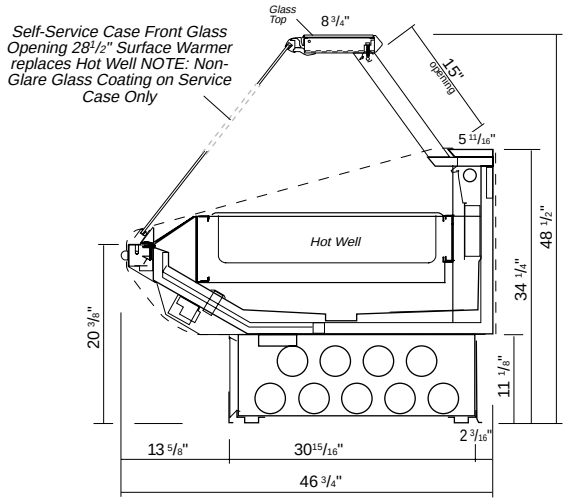
The serial number and shipping date of all equipment has been recorded in Hussmann's files for warranty and replacement part purposes. All correspondence pertaining to warranty or parts ordering must include the serial number of each piece of equipment involved, in order to provide the customer with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

The Hussmann warranty is printed on the back of this guide.

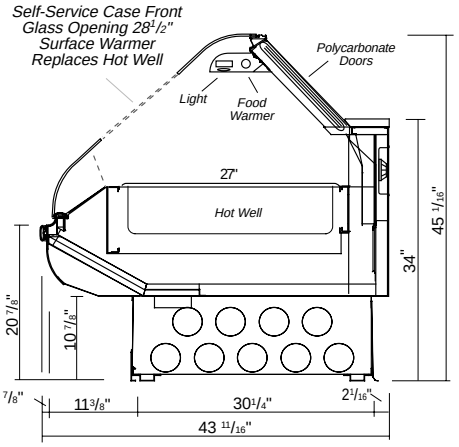
Keep this booklet with the case at all times for future reference.

HUSSMANN®/Chino
A publication of
Hussmann® Chino
13770 Ramona Avenue • Chino, California 91710
(909) 628-8942 FAX
(909) 590-4910
(800) 395-9229

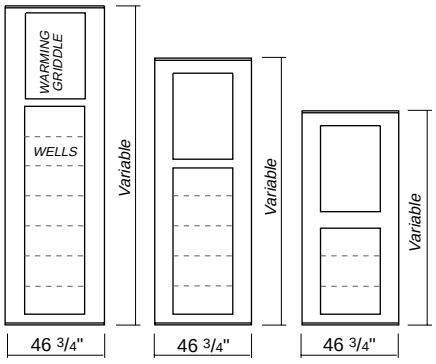
Cut & Plan Views



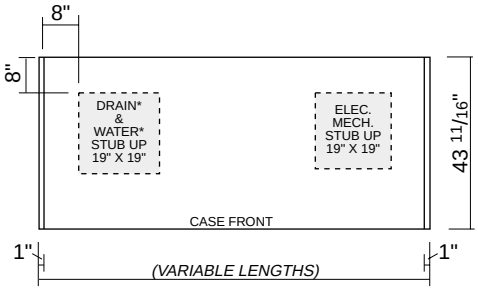
ESHS
Service Hot



ESH (-SS)
Hot Foods



COMBO CASES
Plan View



Plan View
* WATER & DRAIN ON HOT SERVICE CASE ONLY

Installation

UNCRATING THE STAND

Place the fixture as close to its permanent position as possible. Remove the top of the crate. Detach the walls from each other and remove from the skid. Unbolt the case from the skid. The fixture can now be lifted off the crate skid. **Lift only at base of stand!**

EXTERIOR LOADING

These models have **not** been structurally designed to support excessive external loading. **Do not walk on their tops**; This could cause serious personal injury and damage to the fixture.

SETTING AND JOINING

The sectional construction of these models enable them to be joined in line to give the effect of one continuous display. A joint trim kit is supplied with each joint.

CAUTION

Before Rasing the Glass retighten all screws along clamshell!

LEVELING

IMPORTANT! IT IS IMPERATIVE THAT CASES BE LEVELED FROM FRONT TO BACK AND SIDE TO SIDE PRIOR TO JOINING. A LEVEL CASE IS NECESSARY TO INSURE PROPER OPERATION, WATER DRAINAGE, GLASS ALIGNMENT, AND OPERATION OF THE HINGES SUPPORTING THE GLASS. LEVELING THE CASE CORRECTLY WILL SOLVE MOST HINGE OPERATION PROBLEMS.

NOTE: A. To avoid removing concrete flooring, begin lineupleveling from the highest point of the store floor.

B. When wedges are involved in a lineup, set them first.

C. If there is a problem with the hinge operation, first check if case is level. The mini top hardware may have become loosened during shipping (ESHS Only). If it does not look level, call Hussmann Chino immediately for the shim kit needed to level the mini top hardware, and continue with the following instructions. (If problem still persists, see "Clamshell Screw Adjustment" section – ESH only).

All cases were leveled and joined prior to shipment to insure the closest possible fit when cases are joined in the field. When joining, use a carpenters level and shim legs accordingly. Case must be raised correctly, under legs where support is best, to prevent damage to case.

LEVELING/JOINING INSTRUCTIONS

1. Check level of floor where cases are to be set. Determine the highest point of the floor; cases will be set off this point.
2. Set first case, and adjust legs over the highest part of the floor so that case is level. Prevent damage – case must be raised under leg or by use of 2x6 or 2x4 leg brace. Remove side and back leg braces after case is set.
3. Set second case as close as possible to the first case, and level case to the first using the instructions in step one.
4. Apply masking tape 1/8" in from end of case on inside and outside rear mullion on both cases to be joined.
5. Apply liberal bead of case joint sealant (butyl) to dotted area shown in (Fig.2,#1) of first case. Apply heavy amount to cover entire shaded area.

DO NOT USE PERMAGUM!

It is the contractor's responsibility to install case(s) according to local construction and health codes.

6. Slide second case up to first case snugly. Then level second case to the first case so glass front, bumper and top are flush.
7. To compress buytl at joint, use two Jurgenson wood clamps. Make sure case is level from front to back and side to side on inside bulkheads at joint.
8. Attach sections together via a 2 bolts located in the base of the case. Secure the overhead structure by bolting the bracket, located inside behind lights.

CAUTION

Do not use cam locks to pull cases together!

9. Apply bead of buytl to top of bulkheads and slip on stainless steel bulkhead cap. Also apply buytl to seam between overhead light tubes.
10. **VERY IMPORTANT!** Apply liberal amounts of black buytl to area under interior lower legs and fill all voids down to bulkhead.
11. Use finger to smooth buytl as thin as possible at masking tape on inside and outside of rear mullion (apply additional buytl if necessary). Remove tape applied on line #3.

CORNER WEDGES

Corner wedges are attached via front and rear camlocks. Use a 7mm allen wrench to turn the locks. Do not over-tighten! Join the top by using a joint bracket (included in joint kit) with 3/8" bolts.

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.

Installation cont.

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

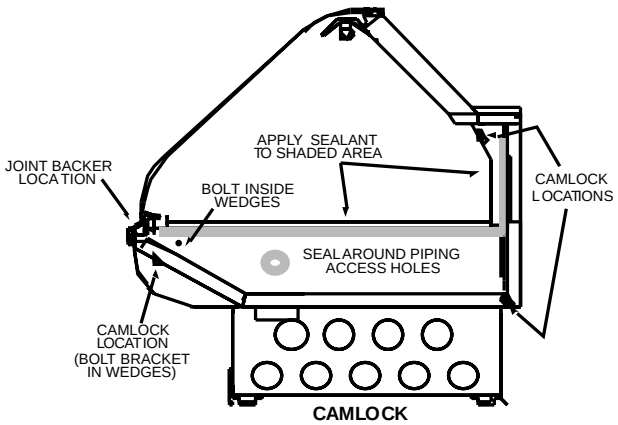
After merchandisers have been leveled and joined and all electrical and plumbing work has been completed, install the splashguards. After adjusting brackets flush with the floor, **position splashguard up behind the front panel first**—then position the lower portion over the previously adjusted brackets. 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.

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

1. Remove all dirt and 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!

BOLT AND SEALANT LOCATIONS



CAMLOCK & SEALANT LOCATIONS

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 Hussmann.

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.

WARNING

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!

WARNING

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

Electrical

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 COLOR CODE

L1	BLACK
L2	ORANGE
L3	BLUE
NEUTRAL	WHITE

NOTE: High Leg Connection Orange Only

CASE MUST BE GROUNDED

ELECTRICAL CIRCUIT IDENTIFICATION

Standard lighting for all models will be full length fluorescent lamps located within the case at the top.
The switch controlling the lights, the plug provided for digital scale, and the thermometer are located at the rear of the case mullion.

ELECTRICAL SERVICE 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.

FIELD WIRING & SERIAL PLATE AMPERAGE

Field Wiring must be sized for component amperes printed on the serial plate. Actual ampere draw may be less than specified. Most component amperes are listed in the “Case Specs” section, but always check the serial plate.

BALLAST LOCATION

Ballasts are located within the access panel that runs the length of the rear of the case. Refer to diagram on page 6.

Replacing Tubular Heating Units

Undo wire clamps. Bend supporting clips out of the way and remove rod.

Replacing Fluorescent Bulbs

Overhead Fluorescent lamps are designed to last through many hours of use. Should there be a need to replace one, it is as simple as replacing a standard fluorescent light bulb.

DANGER

Tubular Heating Units are EXTREMELY HOT!

Never touch until the case has had ample time to cool down!

1. Turn light switch to OFF before replacing any lighting components.
2. Remove lamp by gently twisting / rotating it in a froward or backward motion until the bulb slides out of the track.
3. Insert new lamp by feeding the prongs into the track, and twisitng it until you feel a "click" meaning that the lamp is set.
6. Turn switch on.

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. Self Service griddle type merchandiser using Granite tiles require a longer preheat period.
* 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°).
* 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 1/2 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.

All **griddle type units** are designed to maintain termperatures 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.*

Food must be displayed in a single layer in direct contact with the griddle at all times.

CONTROLS

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

OVERHEAD HEATING SYSTEM

Tubular heating units are located above each well to provide top heat. To obtain the proper food temperatures, the well heaters, griddles, and heat lamps must be adjusted. Maximum limits should be avoided to prevent overcooking or drying out food.

WELL HEATING SYSTEM

The heating well is thermostatically controlled with an indicator light showing when the heater has cycled on and

is heating. The pilot lamp beside the control knob indicates when the well heater is heating.

AUTO-FILL OPERATION

Hussmann hot cases are equipped with an internal auto fill system that allows automatic filling of the heating pans. The water level is preset and automatically regulated. The proper water level is 1 inch.

START-UP

1. Close drain valve.
2. Turn all black toggle switches (Water, Fill, Lights) on. The well will begin to fill approximately 15 seconds after the switch is turned on. Fill to 1" depth.

WARNING

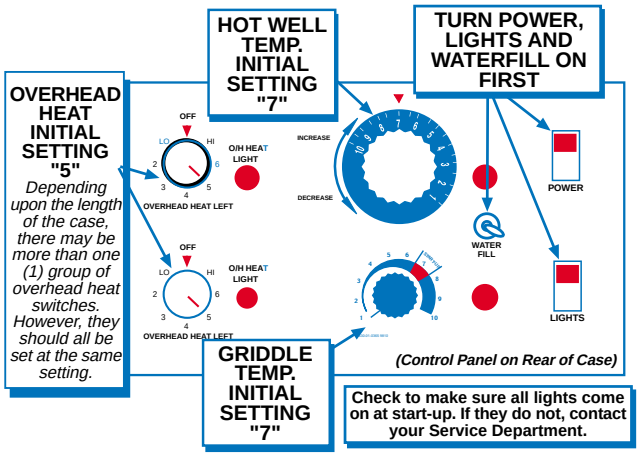
Damage may occur if cold water is fed into a preheated hot well too quickly!

3. Turn all overhead heat to the "5" position.
4. After the well has begun to fill, turn the well heater and griddle dial to the "7" position.

DANGER

Do not turn on the well heater if there is no water in the unit or damage will occur!

5. Place empty pans in the case to help the case preheat faster. The unit will take approximately 45 minutes to preheat. It is also important that the small pan divider bars are installed properly between each pan. These dividers provide a seal around each individual pan and are necessary to maintain the proper temperature of the food products. Extra dividers should be stored outside of the case.



SHUTDOWN

1. Remove all usable food.
2. Turn off all heat and light controls.
3. Turn well heater control to off.
4. Open water drain to drain water from the well. In its open position, the valve handle will point in the same direction as the drain pipe.
5. Thoroughly clean all stainless steel surfaces by washing them down with a mild soapy solution with a bacteria killing agent. NOTE: When cleaning hot well area, pay special attention to the auto-fill sensor. It should be kept clean or the water in the well could possibly fill to capacity and overflow. Clean occasionally with a mild cleaning solution. Wiping it dry will help ensure that the sensor operates properly.
6. Wipe down non-glass areas on the outside of the case.

CASE CLEANING

Long life and satisfactory performance of any equipment are dependent upon the care given to it. To insure long life, proper sanitation and minimum maintenance costs, the fixture should be thoroughly cleaned frequently. The interior bottom may be cleaned with any domestic soap or detergent based cleaners. Sanitizing solutions will not harm the interior bottom, however, these solutions should always be used according to the manufacturer's directions. It is essential to establish and regulate cleaning procedures. This will minimize bacteria causing discoloration which leads to degraded product appearance and significantly shortening product shelf life.

Soap and hot water are not enough to kill this bacteria. A sanitizing solution must be included with each cleaning process to eliminate this bacteria.

1. Scrub thoroughly, cleaning all surfaces, with soap and hot water.
2. Rinse with hot water, but do not flood.
3. Apply the sanitizing solution according to the manufacturer's directions.
4. Rinse thoroughly.
5. Dry completely before resuming operation.

CLEANING GLASS & MIRRORS

Only use a soft cloth and mild glass cleaner for cleaning any glass or mirrored components. Be sure to rinse and/or dry completely.

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. Windex® or Glass Plus® are the only solutions 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.

PRECAUTION

CLEANING PRECAUTIONS

WHEN CLEANING:

- **Never Use a Cleaning or Sanitizing Solution that has an OIL BASE (these will dissolve the butyl sealants) or 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 Abrasives or Steel Wool Scouring Pads (these will mar the finish)**

PLEXIGLASS & ACRYLIC CARE

Improper cleaning not only accelerates the cleaning cycle but also degrades the quality of this surface. Normal daily buffing motions can generated static cling attracting dust to the surface. Incorrect cleaning agents or cleaning cloths can cause micro scratching of the surface, causing the plastic to haze over time.

CLEANING

Hussmann recommends using a clean damp chamois, , or a paper towel marked as dust and abrasive free with **210® Plastic Cleaner and Polish** available by calling Sumner Labs at **1-800-542-8656**. Hard, rough cloths or paper towels will scratch the acrylic and should not be used.

ANTISTATIC COATINGS

The **210®** has proven to be very effective in not only cleaning and polishing the Plexiglass surface, but also providing anti-static and anti-fog capabilities. This product also seals pores and provides a protective coating.

- DO NOT USE ABRASIVES OR STEEL WOOL SCOURING PADS (these will mar the finish)

Lift-up Glass

IMPORTANT!
READ BEFORE RAISING FRONT GLASS :

The top cylinders, which allow the raising and lowering of the glass, have been carefully tested for proper tension. However, during shipment, the clamshell screws can work themselves out and/or the lubricant inside may have settled. This settling may cause excessive or uneven tension on the glass - to the point of breakage.

CAUTION

Before Rasing the Glass retighten all screws along clamshell!

After installing new cylinders, it is advisable to perform these three easy steps before completely raising the front glass.

1. Slowly raise and lower each glass section 6 times, to a height of 6".
2. Increase the height to 12", and raise and lower the glass 6 more times.
3. Finally, raise the glass to it's full extension. This should release any settled lubricant in the cylinders, and prevent any stress on the front glass. (1)(3)

ESH Curved Glass

Replacement

BROKEN GLASS REMOVAL

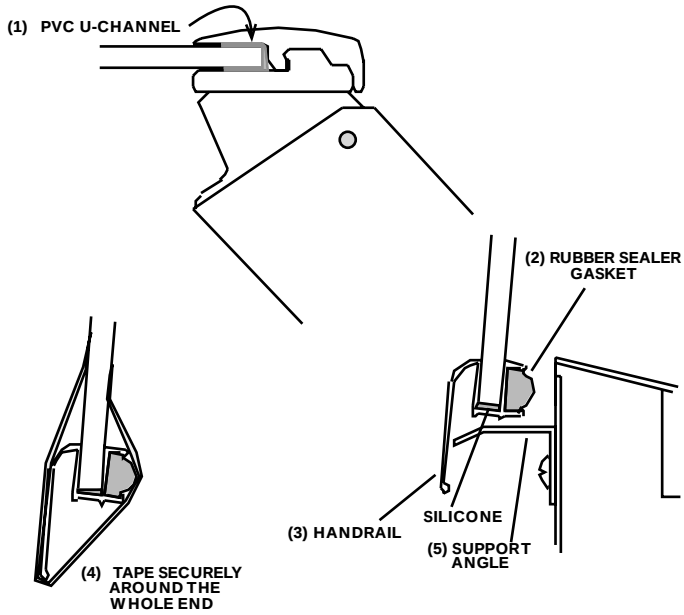
1. Loosen set screws along clamp.
2. Remove plastic PVC channel (1) between clamshell and glass.
3. Use new plastic PVC channel. Lift off top of clamshell, and clean off any particles. Replace clamshell (Do Not Tighten).

NEW GLASS PREP

1. Centering rubber gasket (2) on handrail, slide all but outer 3" of gasket into handrail.
2. Apply 3/8" bead of buytl to outer 2" of handrail, and insert remaining gasket. Trim to length of handrail.
3. Apply 3/8" bead of buytl to bottom of glass receiver (3) on handrail.
4. Center handrail on glass. Firmly push onto bottom edge of glass.
5. Tape securely (4), and allow 12 hours to cure.

NOTE: Do not tape where glass support angles are located on case (approximately 11-13" from ends).

CLAMSHELL ASSEMBLY

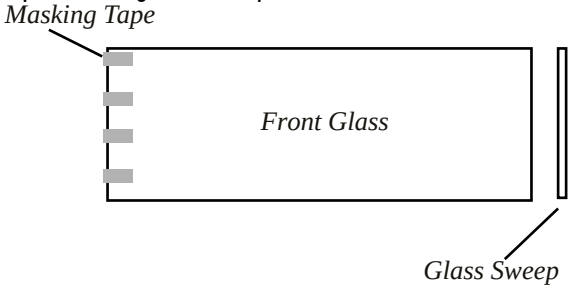


INSTALL GLASS

1. Place PVC U-channel **(1)** on glass.
2. With one person holding each end of the glass, lift up and place top of glass inside clamshell (glass will be in fully open position.) Center glass within clamshell.
3. With one person holding the glass in the clamshell, tighten the two set screw on each end and two equally spaced set screws in the center of the glass to about 4 ft/lbs.
4. Open and close glass gently, checking to see that the alignment can be corrected by releasing the set screws enough to move the glass forward and backward.
5. Glass should rest squarely on glass support angles **(5)**. If not, they can be adjusted by loosening the screw that attaches them to the case.
6. After glass is aligned, tighten set screws.
7. Attach wipes to appropriate edge of glass filling gap between adjacent pieces of glass. See "Installing Glass Sweep" section for complete instructions.
8. Leave taped glass closed for 12 hours.

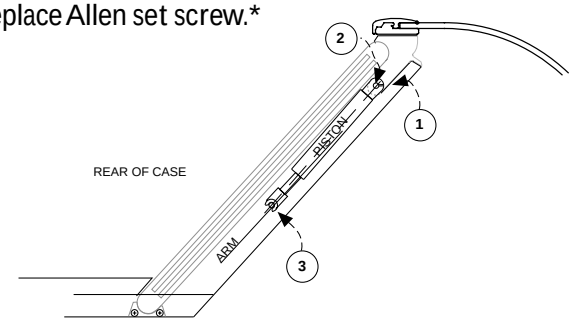
INSTALLING GLASS SWEEP

After installing new glass onto a case, it is important to replace the glass sweep.



PISTON REPLACEMENT

1. OPEN GLASS. Glass must remain open throughout procedure.
2. Loosen Allen set Screw (1).
3. While holding onto piston, remove and save pin (2).
4. Slide piston out.
5. Slide new piston in making sure the U-shaped end fits around pin at bottom of arm (3).
6. Line up upper pin with arm, arm with strut, and replace pin.
7. Replace Allen set screw.*



*After installing either piston, prime them as outlined in the "Read

Before Raising Glass" warning found in the "Installation Instructions" section of this booklet.

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.

ESHS Straight Glass

IF GLASS DOES NOT CLOSE/STAY OPEN PROPERLY-LEVEL MINI TOP HARDWARE

During shipping, it is possible that the mini top hardware housing the pistons and armature has been jostled out of position. This affects the opening angle of the glass.

1. Be sure mini top hardware is level front to back by placing a level along the top of the mini top housing at each hinge location. **If it is not, you will need a shim kit before you can correct. Order from Hussmann Chino.**
2. Remove top glass and panel at top of hardware housing.
3. Mark position of hardware (glass) in relation to case before loosening hex screw using masking tape applied on mini top hardware and case, and pen. Hex screw allows realignment of glass angle and position front to back.
4. Raise glass and loosen hex screw. (See item/diagram #6 on page 13.)
5. Shim to adjust until level using shims available from Hussmann Chino (16 or 20 gauge stainless steel).
6. Check angle by using level placed on top of mini top hardware. Note: a 6" level will fit perfectly within access area.
7. Remove $1^1/_4$" chrome cap at front of case arm support. The removal of this cap allows finger access to hold nut plate while tightening hex screw.
8. Hold nut plate and tighten hex screw.
9. If there is still a problem with glass staying open over-level by adding an addition shim under front of case.

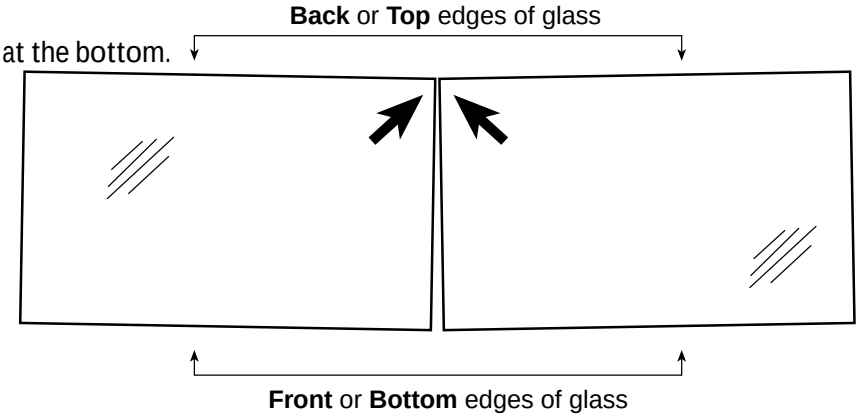
NOTE: BEFORE MAKING ANY OF THE

RECOMMENDED ADJUSTMENTS, VERIFY THAT THE CASE(S) HAVE BEEN LEVELED PROPERLY.TIPS & TROUBLESHOOTING

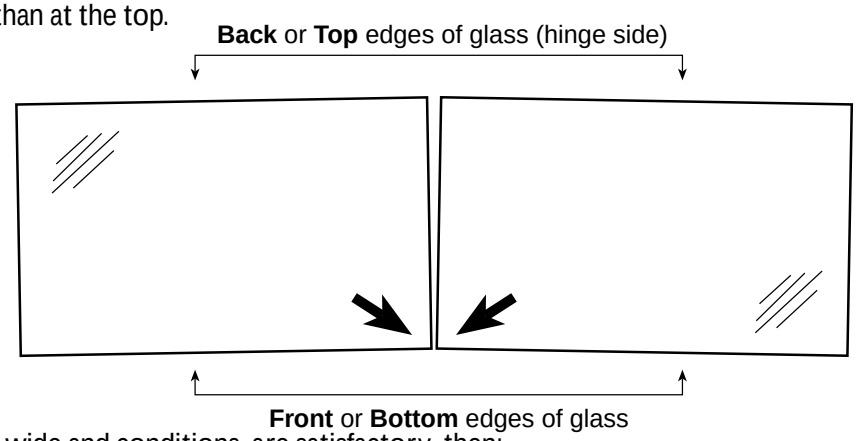
Before calling for service if something seems wrong, check the following:

1. INSPECT THE GAP BETWEEN THE GLASS PANELS

A. If pinched at the top:
Gap is more narrow at the top than at the bottom.
Then see Item 4 / Uneven Gap.



B. If pinched at the bottom:
Gap is more narrow at the bottom than at the top.
Then see Item 4 / Uneven Gap



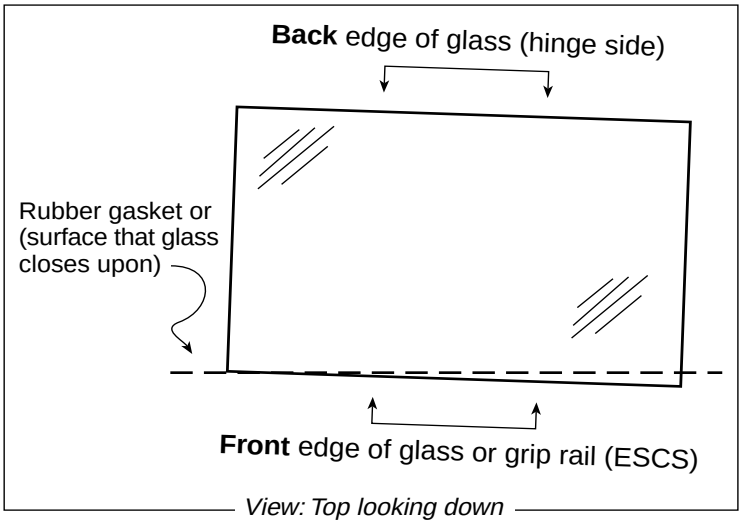
C. If gap is even, but too narrow or too wide and conditions are satisfactory then:
Item 6 / Front and Back Adjustment..
Typical gap = 3/16" to 1/4"

2. CHECK CLOSING ACTION OF THE GLASS PANEL

Test each panel by gently pushing it to close. Does the glass panel bounce or wobble as it closes?

A glass panel that does not close smoothly and neatly, most likely is misaligned with the front edge of the glass and the surface or edge which it closes upon. Refer to diagram at the right.

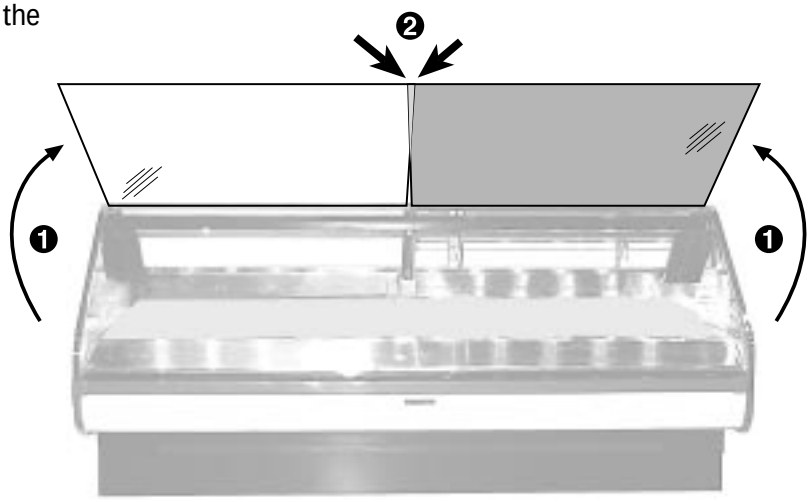
To correct problem
Go to Item 5.



3. CHECK OPENING ACTION OF GLASS PANELS

A. Lift up adjacent glass panels at the same time and note the following:

B. Do the corners of the glass maintain an even gap throughout the travel of the panels? And do the corners touch or overlap at any point?



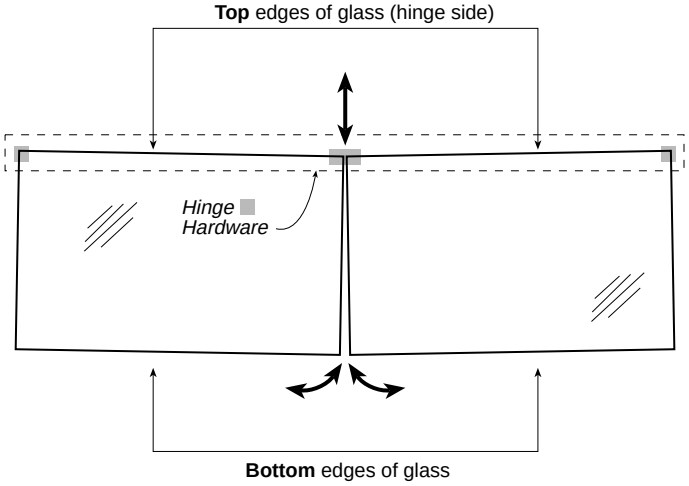
To correct problem
Go to items 4 & 5.

4. STRATEGIES FOR CORRECTING UNEVEN GAP AND OPENING OVERLAP PROBLEMS

VERTICALLY adjust the hinge(s) to even the gap

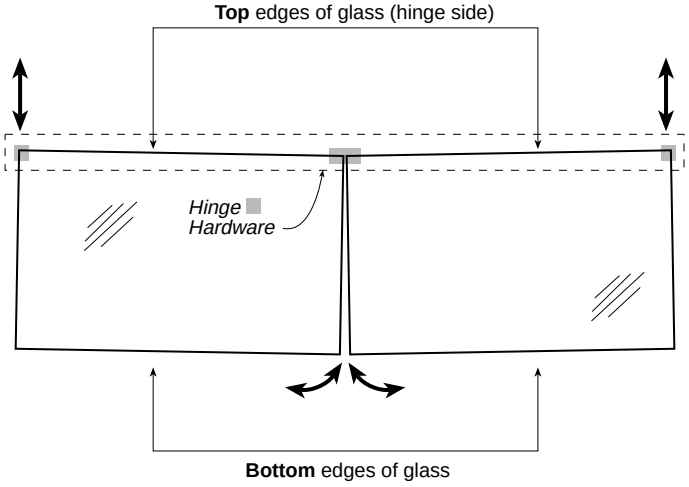
A. Adjust center hinge (Outer hinges stationary)

As this diagram indicates, raising the middle hinge draws the bottom edges closer together. Whereas lowering the hinge widens the gap.



B. Adjust outside hinges (Center hinge stationary)

This diagram indicates that raising the outside hinges widens the gap at the bottom; whereas, lowering the outside hinges will draw the bottom edges closer together.



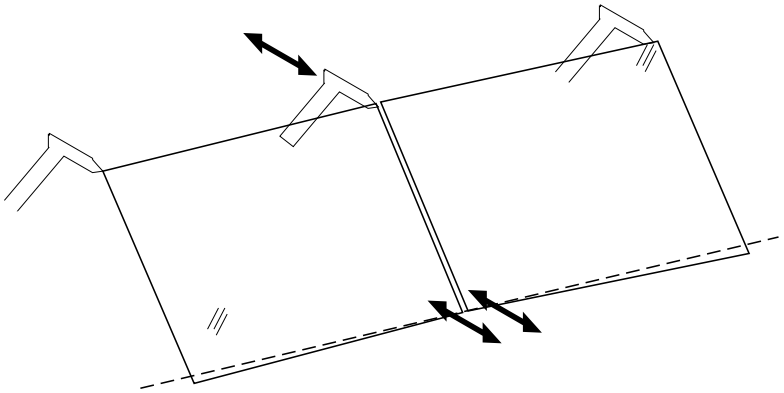
Which hinge(s) should I adjust first?

In most cases the center hinge is the first candidate, but if it cannot be adusted because, either the adjusment screw is maxed out or no additional shims can be added or removed, then obviously the outer hinges must be adjusted

For RGSMS/RGSD…/FS cases go to Item 5 / Correcting Glass Bounce.

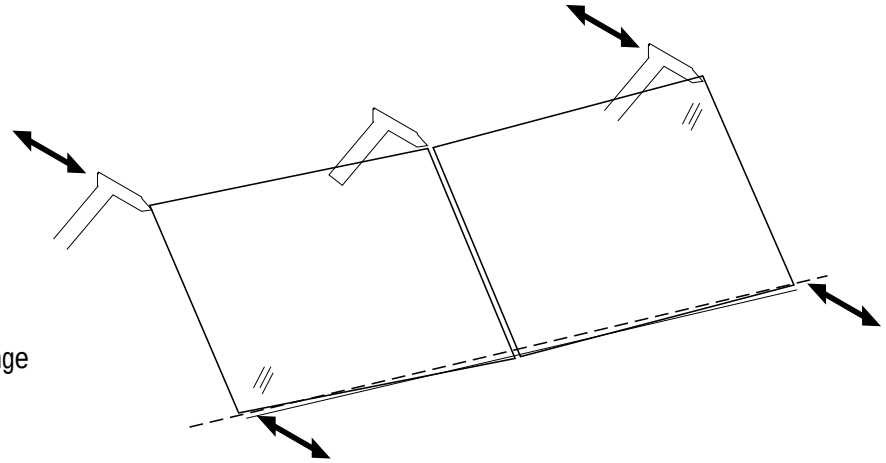
5. STRATEGIES FOR CORRECTING GLASS BOUNCE AND OPENING OVERLAP PROBLEMS

ADJUST HINGES FRONT – BACK.



A. Adjust center Hinge (Outer hinges stationary)

As this diagram indicates, pulling the middle hinge further back, pulls the inside edges closer to the surface or edge which the glass rests upon.And pushing the middle hinge to the front, pushes the inside edges further away from the surface or edge which the glass rests upon.



B. Adjust outside hinges (Center hinge stationary)

As this diagram indicates, pulling the outside hinge further back, pulls the outside edge closer to the surface or edge which the glass rests upon.And pushing the middle hinge to the front, pushes the inside edges further away from the surface or edge which the glass rests upon.

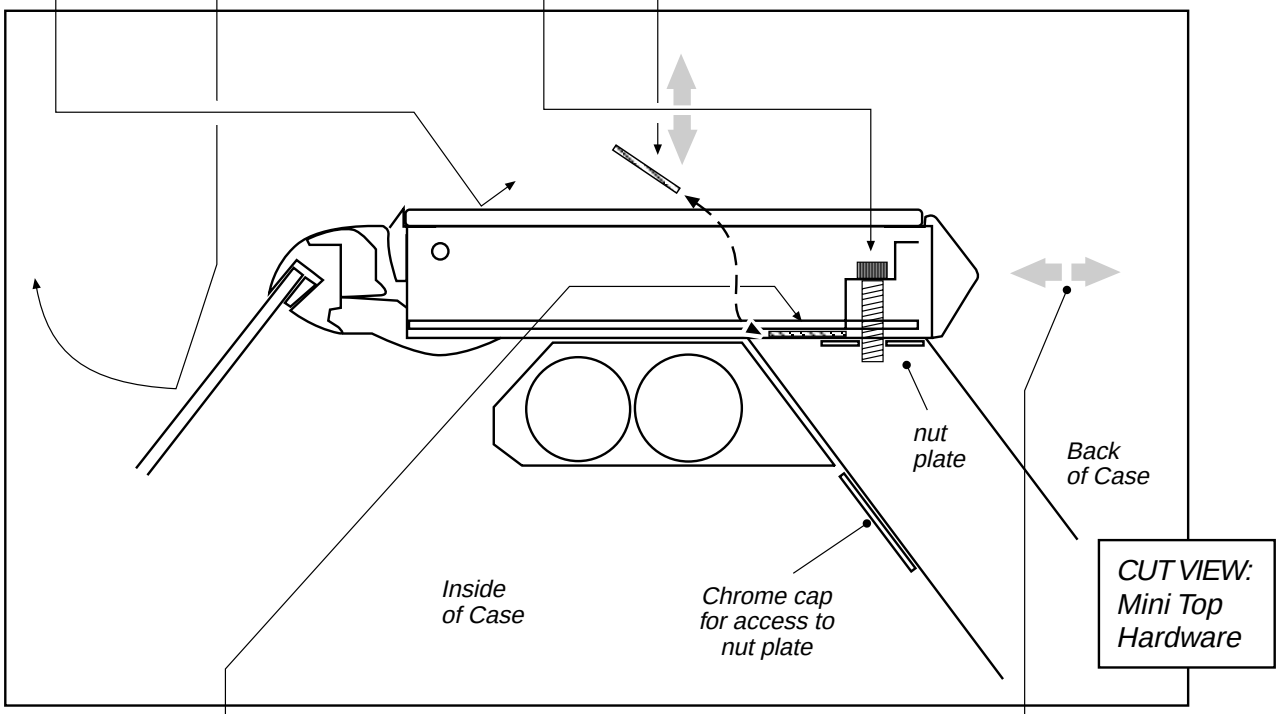
Which hinge(s) should I adjust first?

In most cases the center hinge is the first candidate, but if the arm/mini-cam is at its maximum or minimum position, then obviously the outer hinges must be used.

6. VERTICAL AND FRONT TO BACK ADJUSTMENT AND OPENING OVERLAP PROBLEMS

• VERTICAL ADJUSTMENT

1. Remove top glass and panel enclosing mini-top hardware.
2. Lift open glass panel(s) and relieve tension on hinge.
3. Loosen hex screw (1/4" allen). Remove chrome access plate in order to hold nut plate.
4. Add or remove shims as needed. (see note on shims below)
5. Close glass panel(s) and check alignment Retighten hex screw and reinstall removed components.



• FRONT– BACK ADJUSTMENT

1. Remove top glass and panel enclosing mini-top hardware.
2. Estimate amount of adjustment and make pencil mark on the
3. Lift open glass panel(s) and relieve tension on hinge.
4. Loosen hex screw (1/4" allen) slightly. Remove chrome access plate in order to hold nut plate.
5. Slide the mini-top forward or backward to the mark in step 2. Check alignment of glass. Retighten components.

NOTE: Standard shim thickness is 1/16"

TIPS & 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.

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.

Case Specifications

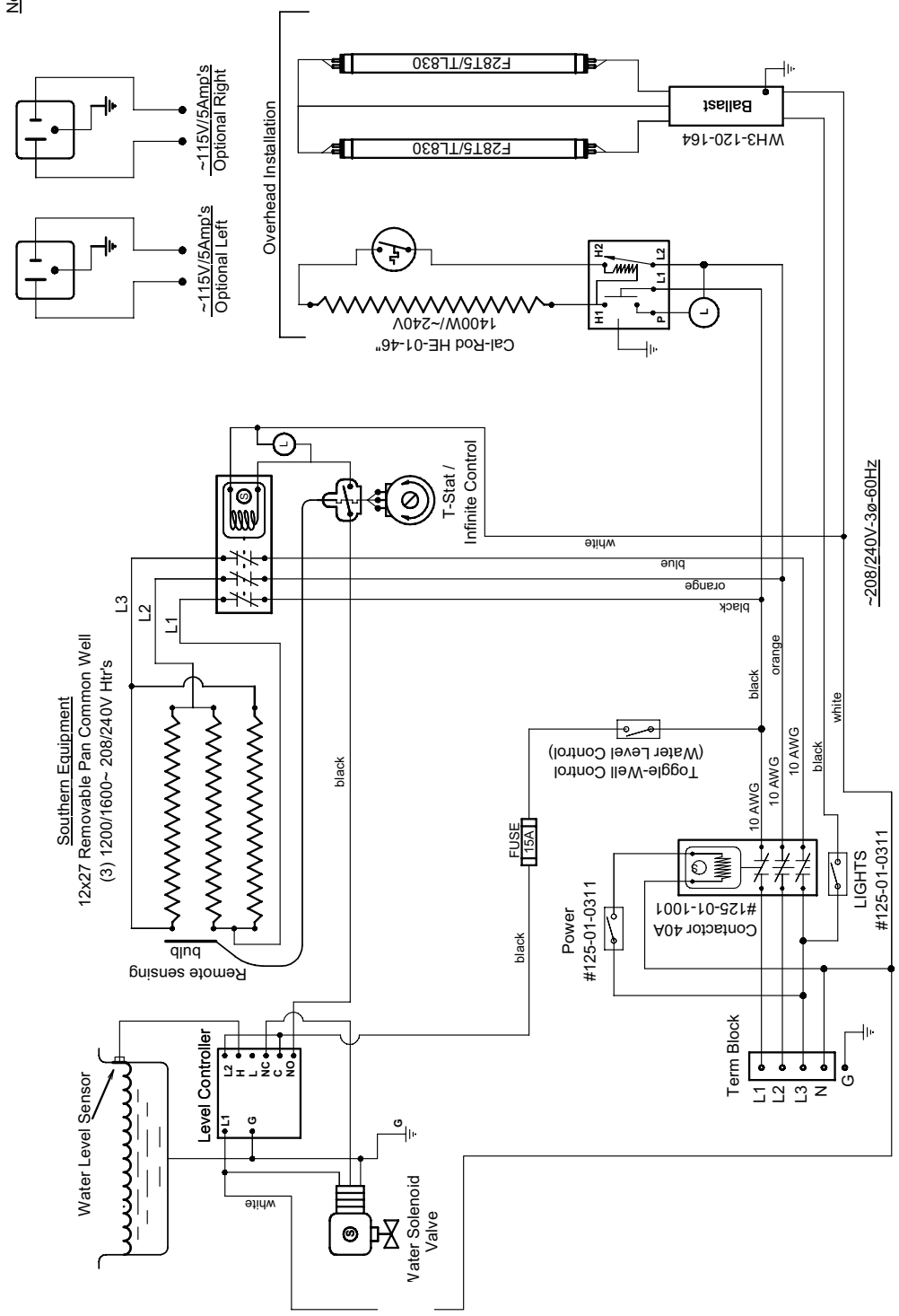
MODEL	LENGTH	WELLS PANS	GRIDDLES QTY.	GRIDDLES SIZE	SHELF LEVELS	VOLTS	CIRCUIT 1 PHASE	CIRCUIT 1 Loads	CIRCUIT 2 PHASE	CIRCUIT 2 Loads	WIRING Diagram Number	Remarks
Common Well Service												
ESH, ESHS												
	4'	3				208	3Ø	16	-		W6000001	
						240	3Ø	18	-		W6000001	
	5'	4				208	3Ø	19	-		W6000002	
						240	3Ø	22	-		W6000002	
	6'	5				208	3Ø	21	-		W6000003	
						240	3Ø	25	-		W6000003	
	7'	6				208	3Ø	21	1Ø	9	W6000004	
						240	3Ø	24	1Ø	10	W6000004	
	8'	7				208	3Ø	25	1Ø	11	W6000005	
						240	3Ø	28	1Ø	12	W6000005	
	9'	8				208	3Ø	28	1Ø	12	W6000006	
						240	3Ø	32	1Ø	14	W6000006	
	10'	9				208	3Ø	32	1Ø	13	W6000007	
						240	3Ø	36	1Ø	15	W6000007	
	11'	10				208	3Ø	35	1Ø	15	W6000008	
						240	3Ø	41	1Ø	17	W6000008	
	12'	11				208	3Ø	40	1Ø	17	W6000009	
						240	3Ø	45	1Ø	19	W6000009	
Self Service												
ESH-SS, ESHS-SS												
	4'		1	4'		208	1Ø	10			W6000010	
						240	1Ø	11			W6000010	
	5'		1	5'		208	1Ø	13			W6000011	
						240	1Ø	15			W6000011	
	6'		1	6'		208	1Ø	15			W6000012	
						240	1Ø	17			W6000012	
	8'		2	4'		208	1Ø	24			W6000032	
						240	1Ø	28			W6000032	
	12'		2	6'		208	3Ø	22			W6000015	
						240	3Ø	25			W6000015	
Combination												
ESH-Combo, ESHS-Combo												
	6'	3	1	2'		208	3Ø	19			W6000014	
						240	3Ø	22			W6000014	
	8'	3	1	4'		208	3Ø	23			W6000016	
						240	3Ø	26			W6000016	
	10'	5	1	4'		208	3Ø	18	3Ø	15	W6000017	
						240	3Ø	20	3Ø	18	W6000017	
	12'	7	1	4'		208	3Ø	25	3Ø	14	W6000018	
						240	3Ø	28	3Ø	16	W6000018	

MODEL	LENGTH	WELLS PANS	GRIDDLES QTY.	GRIDDLES SIZE	SHELF LEVELS	VOLTS	CIRCUIT 1 PHASE	CIRCUIT 1 Loads	CIRCUIT 2 PHASE	CIRCUIT 2 Loads	WIRING Diagram Number	Remarks
Individual Wells Service												
ESH, ESHS												
	4'	3				208	3Ø	17			W6000019	
						240	3Ø	19			W6000019	
	6'	5				208	3Ø	21			W6000021	
						240	3Ø	25			W6000021	
	8'	6				208	3Ø	30			W6000022	
						240	3Ø	35			W6000022	
	10'	8				208	3Ø	20	3Ø	20	W6000025	
						240	3Ø	24	3Ø	24	W6000025	
	12'	10				208	3Ø	23	3Ø	25	W6000027	
						240	3Ø	26	3Ø	27	W6000027	
Combination												
ESH-Combo, ESHS-Combo												
	6'	3	1	2'	208	3Ø	19				W6000028	
					240	3Ø	22				W6000028	
	8'	3	1	4'	208	3Ø	17				W6000029	
					240	3Ø	20				W6000029	
	10'	5	1	4'	208	3Ø	18	3Ø	13		W6000030	
					240	3Ø	20	3Ø	15		W6000030	
	12'	6	1	4'	208	3Ø	21	1Ø	20		W6000031	
					240	3Ø	24	1Ø	23		W6000031	

Electrical Schematics

	Loads, amp	
	~208V	~ 240V
L1	15.6	18.0
L2	15.6	18.0
L3	11.0	12.7

Note: case must be grounded



HUSSMANN®

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

Revisions:				
No.	Description:	Date:	By:	

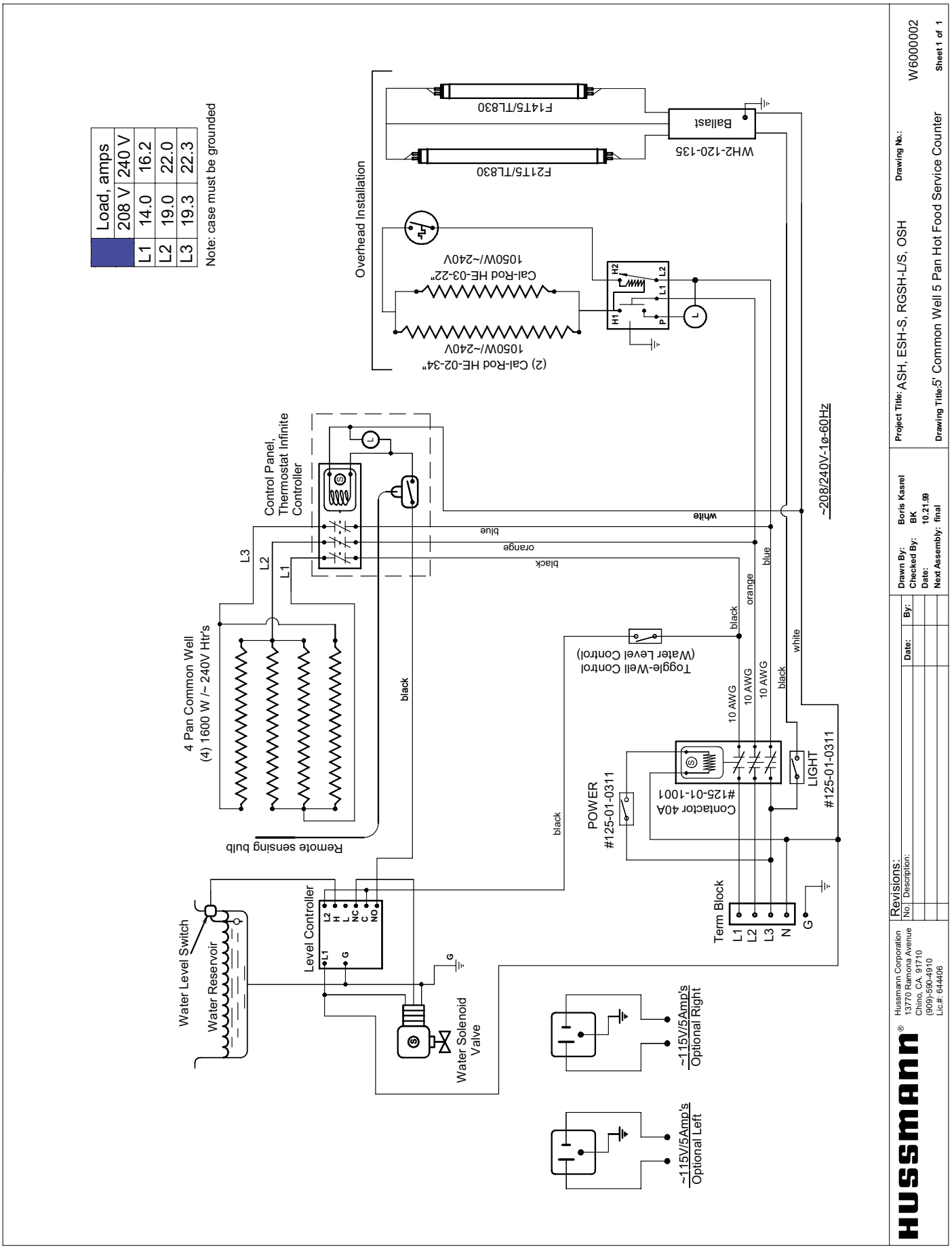
Drawn By: Boris Kasrel
Checked By: BK
Date: 10.21.99
Next Assembly: final

Project Title: ASH, ESH-S, RGSH-L/S, OSH Common Well, Removable Pans Hot Food Service Counter

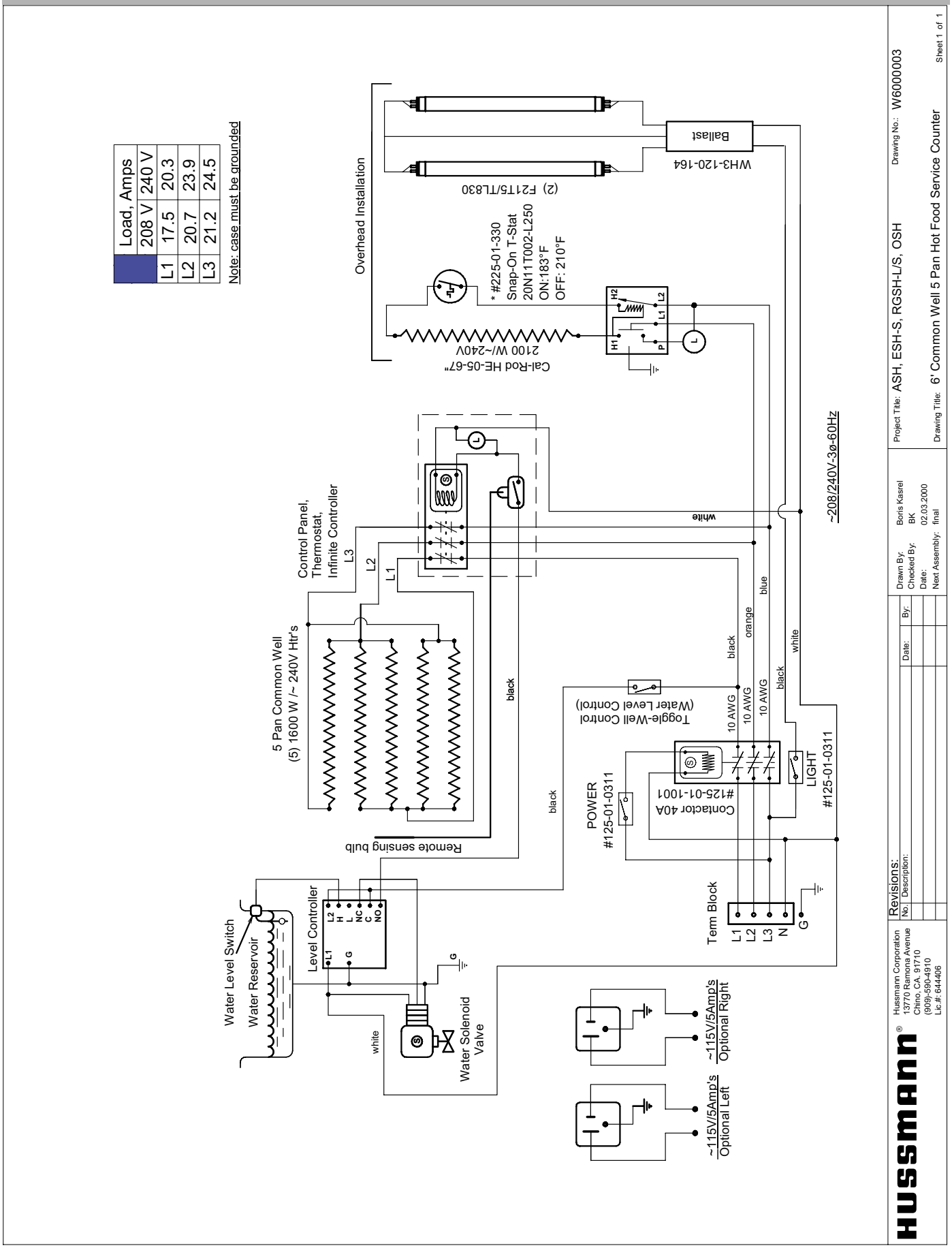
Drawing Title: 4'Lg Common Well 3 Removable Pans Wiring

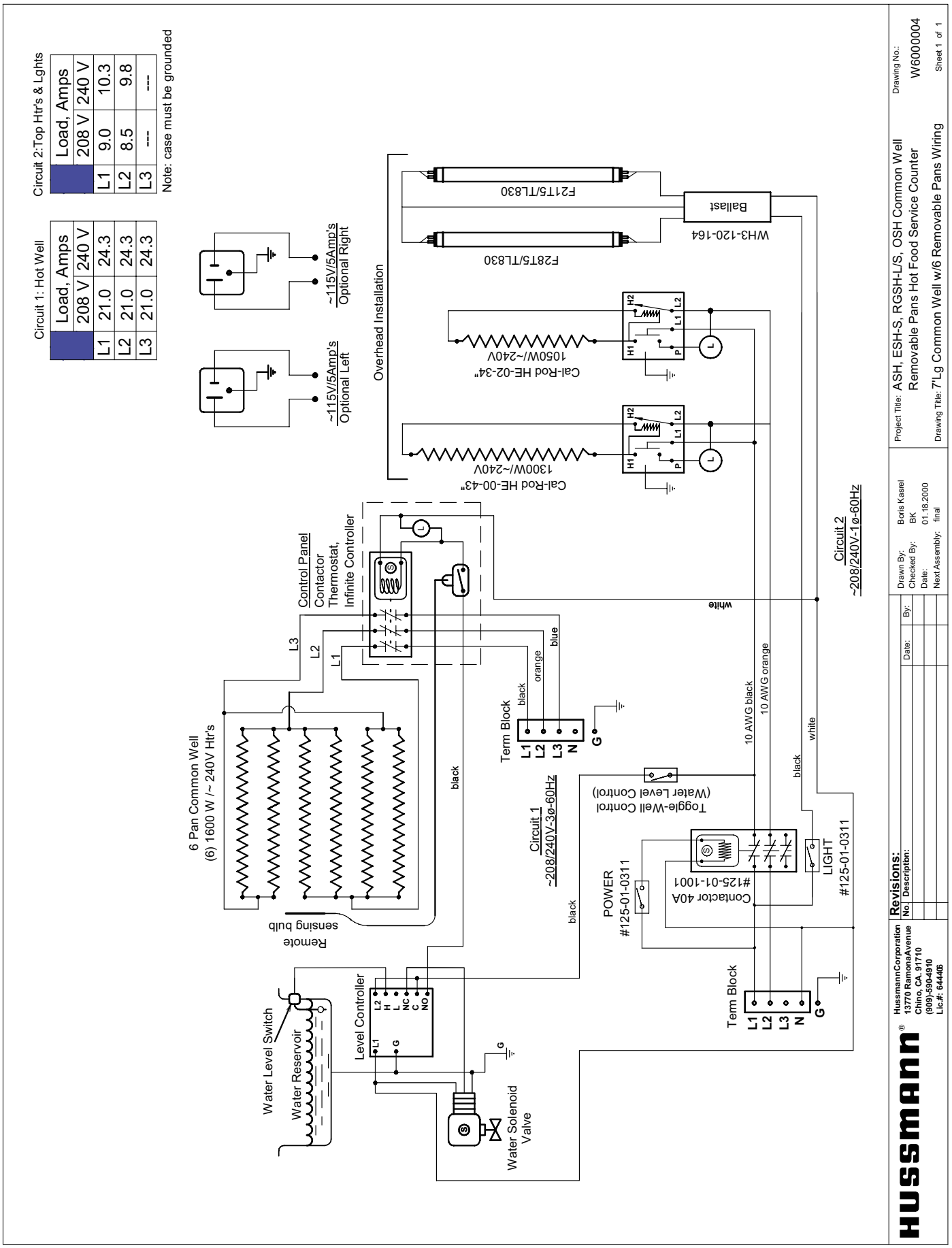
Drawing No.: W6000001

Sheet 1 of 1

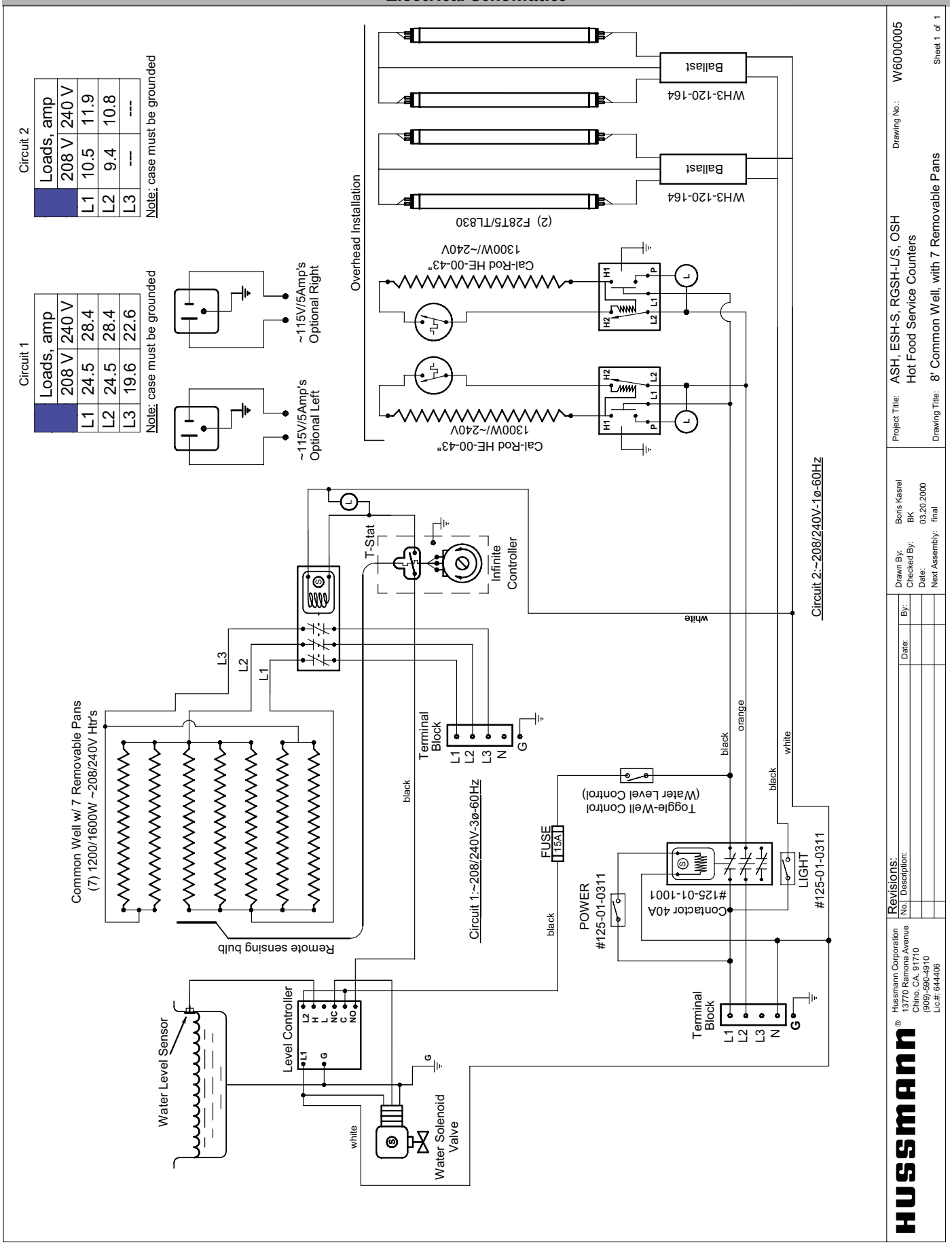


Electrical Schematics

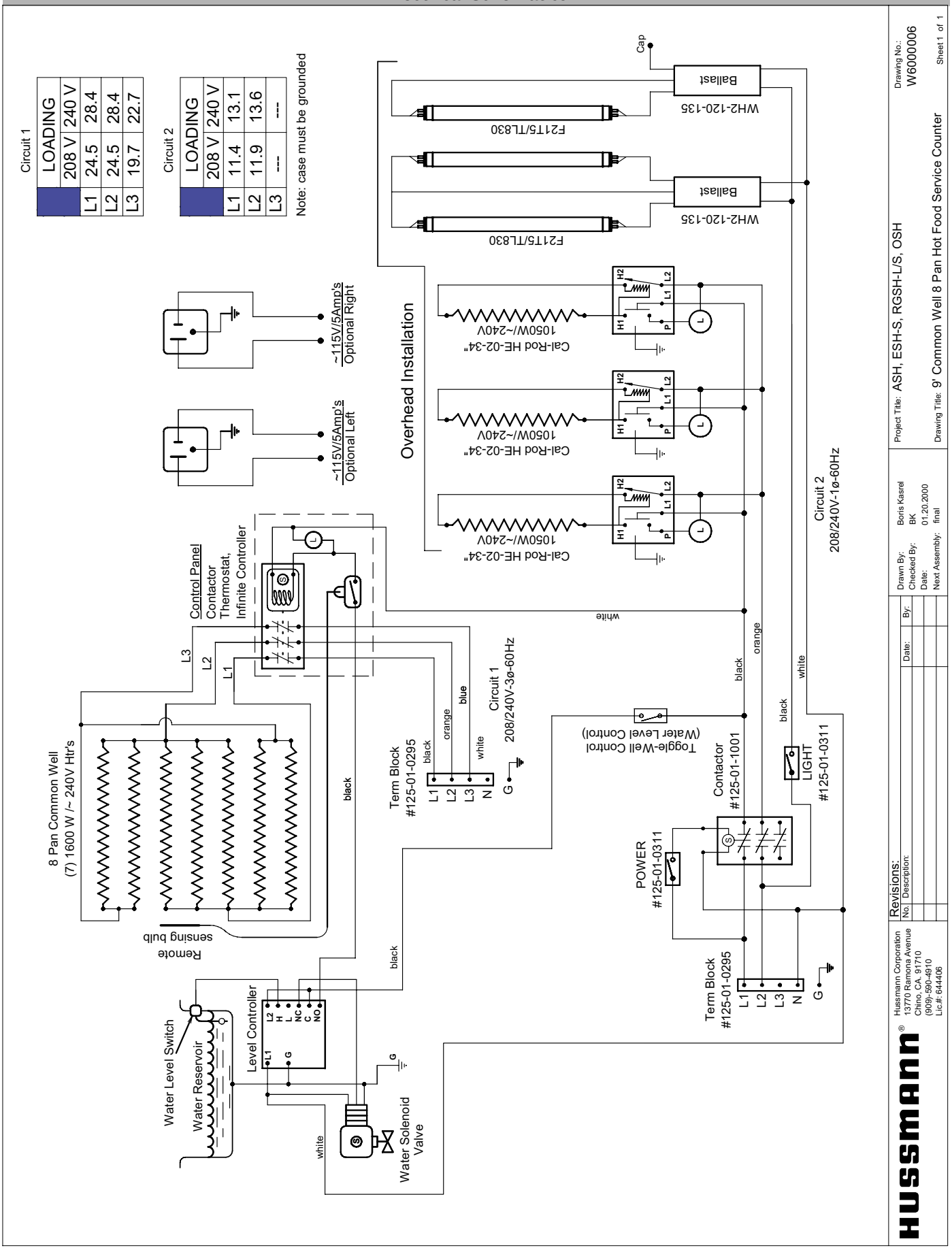


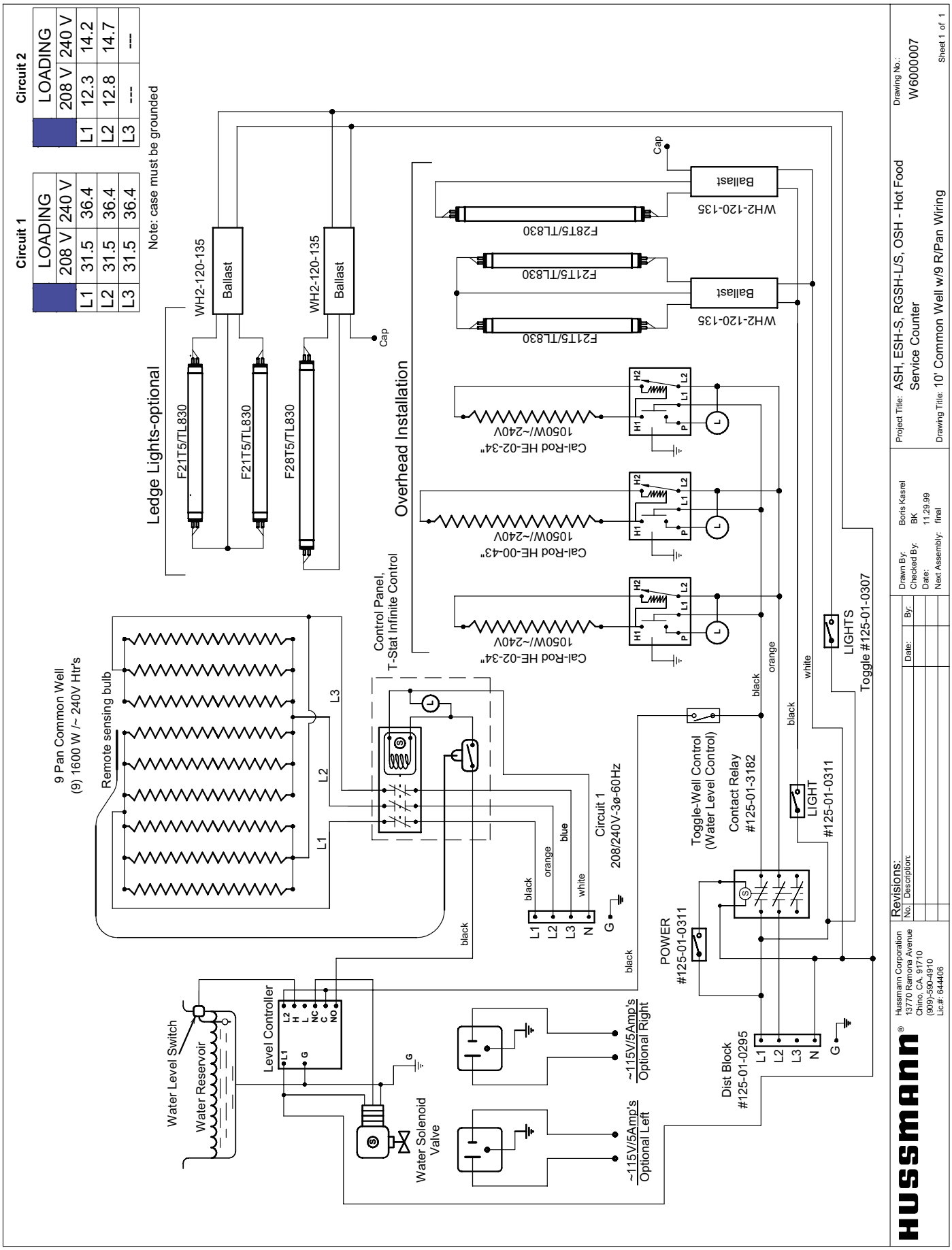


Electrical Schematics

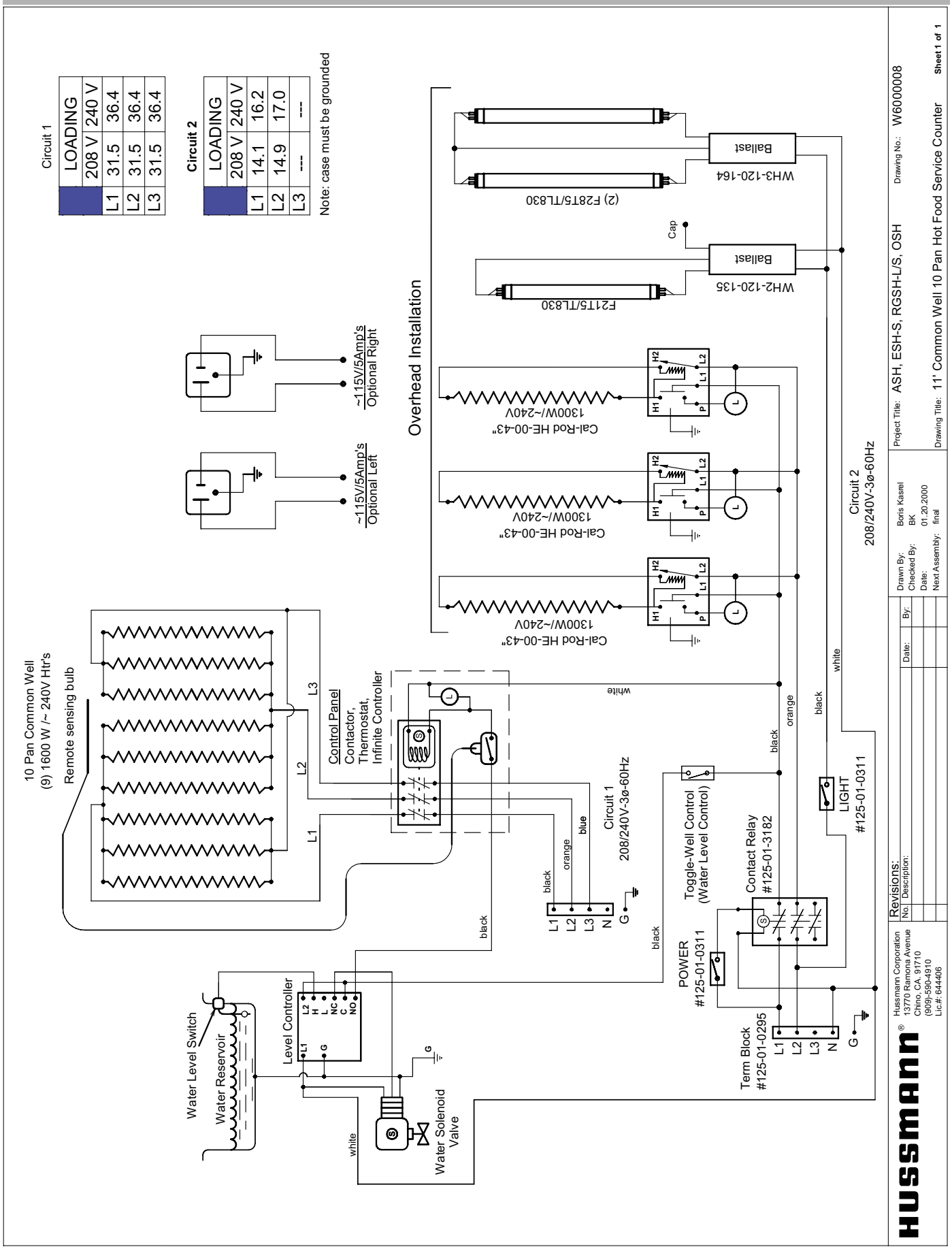


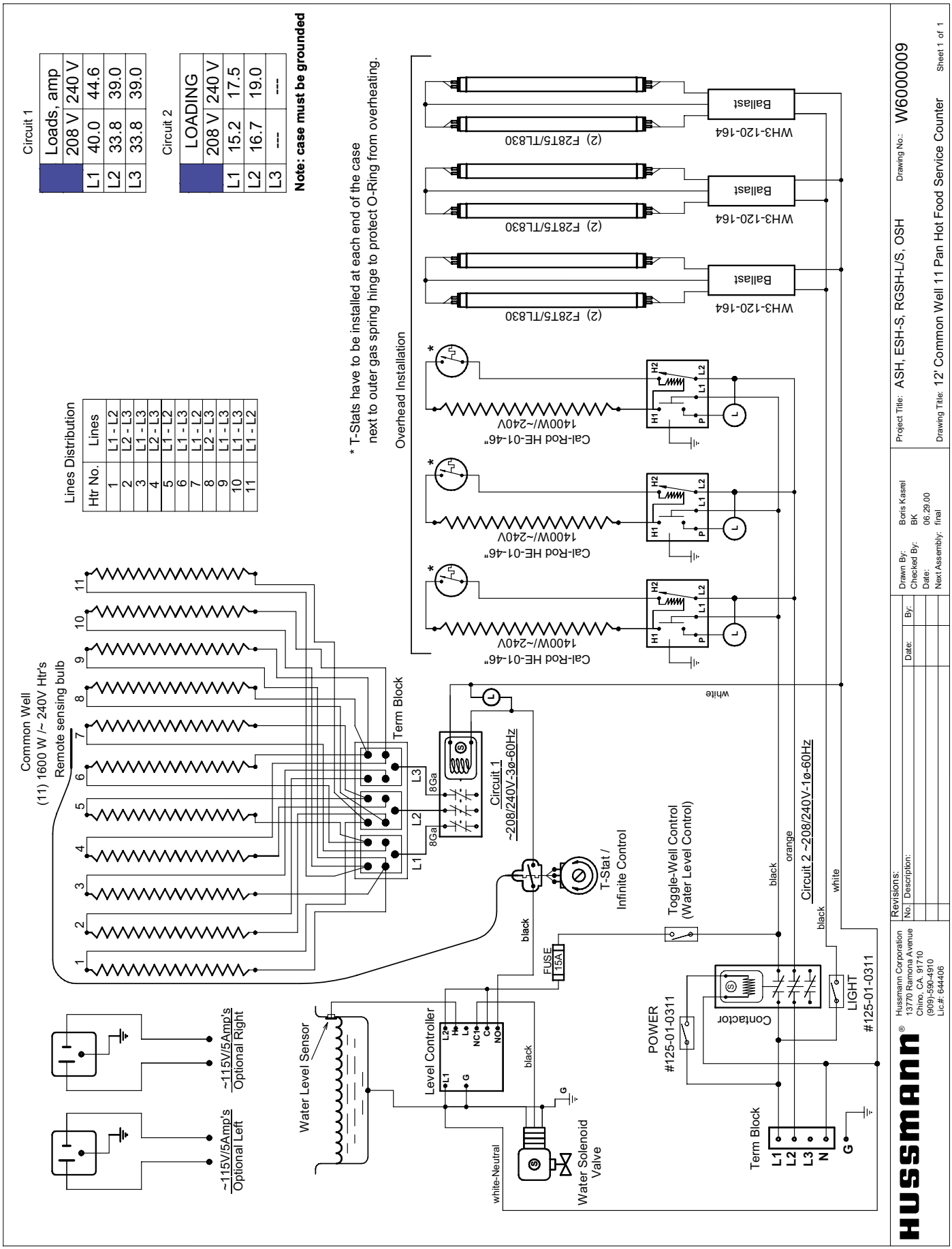
Electrical Schematics



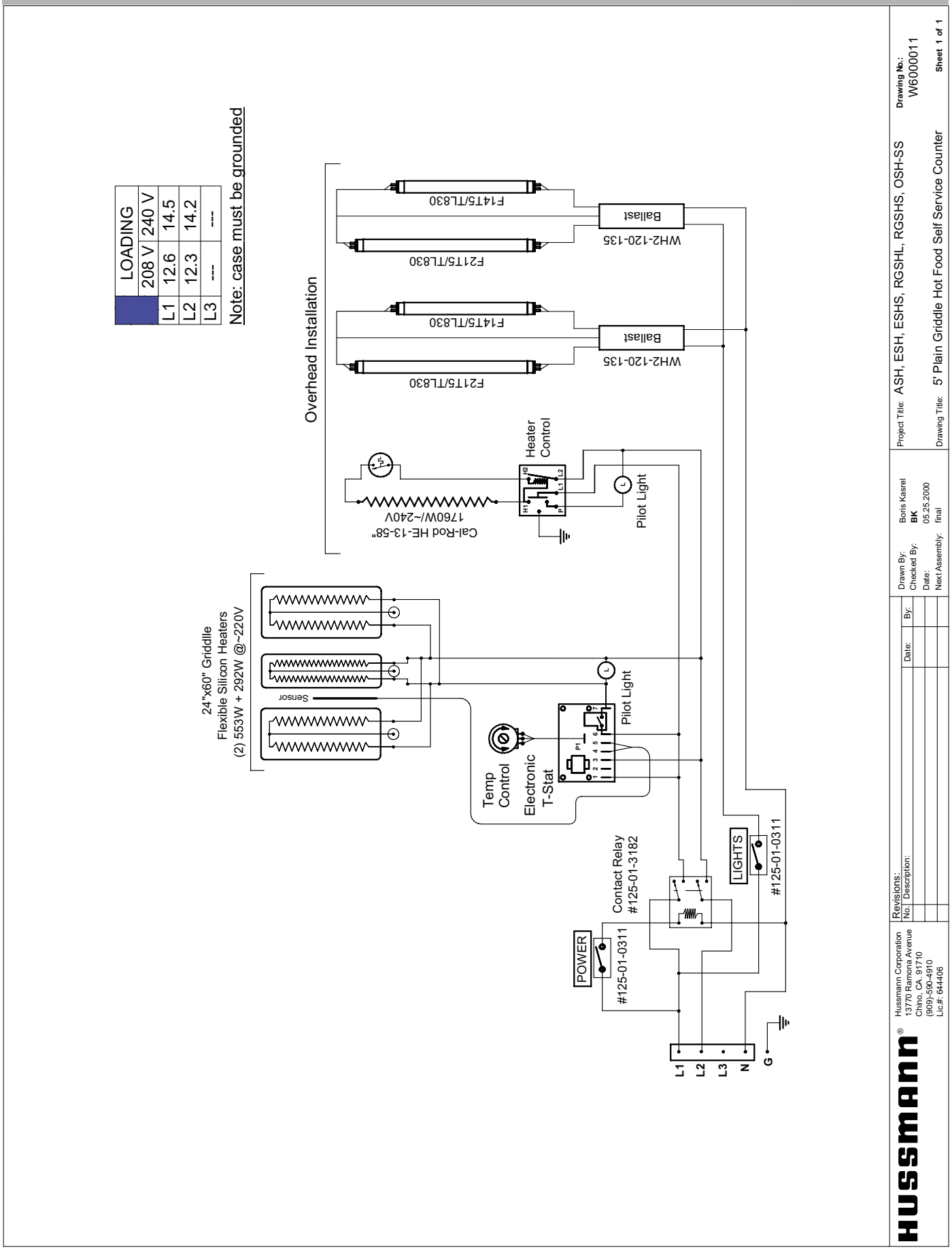


Electrical Schematics



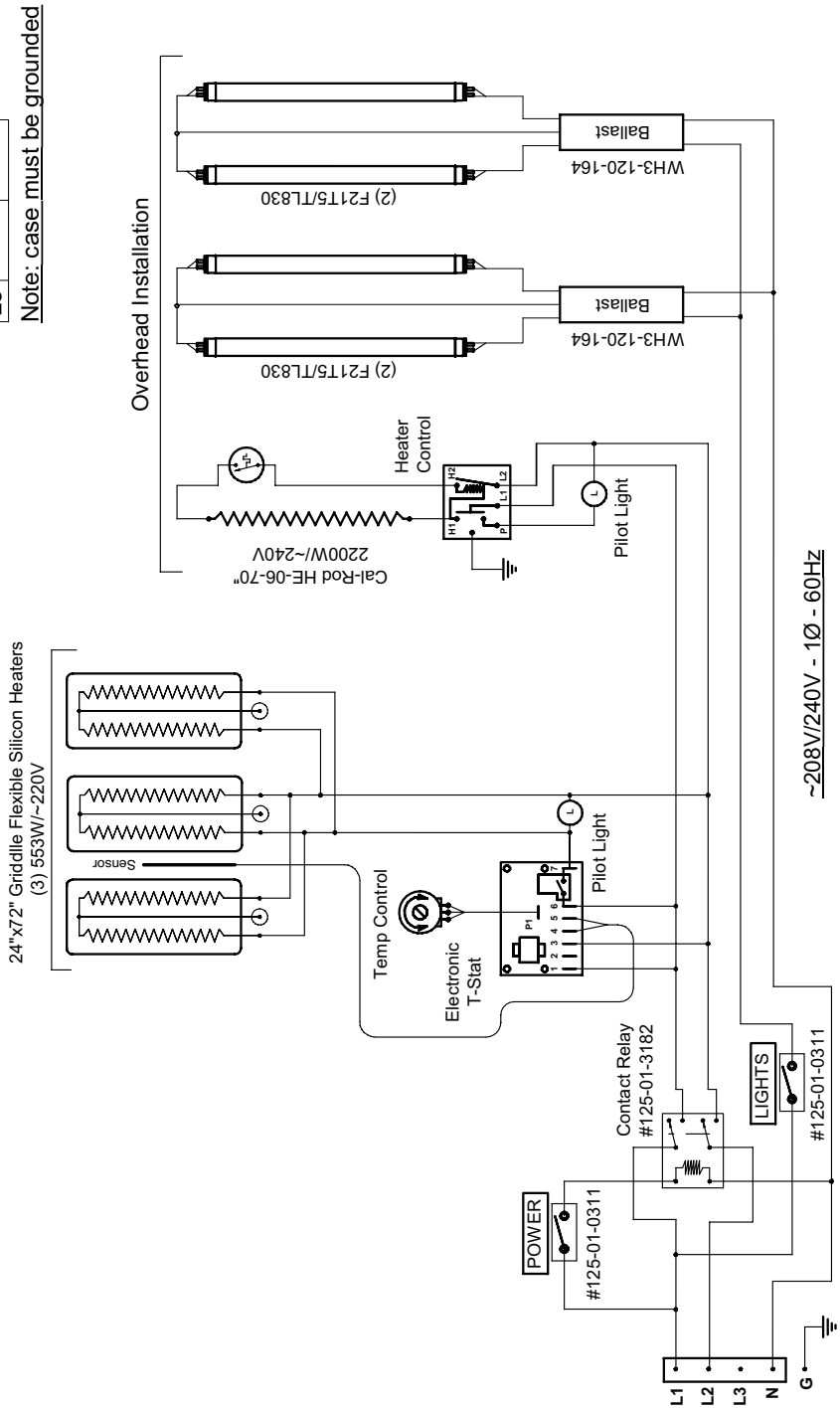


Electrical Schematics



	Loads,Amp	
	208 V	240 V
L1	15.0	17.3
L2	14.7	17.0
L3	---	---

Note: case must be grounded



HUSSMANN®

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

Revisions:

No.	Description:	Date:	By:

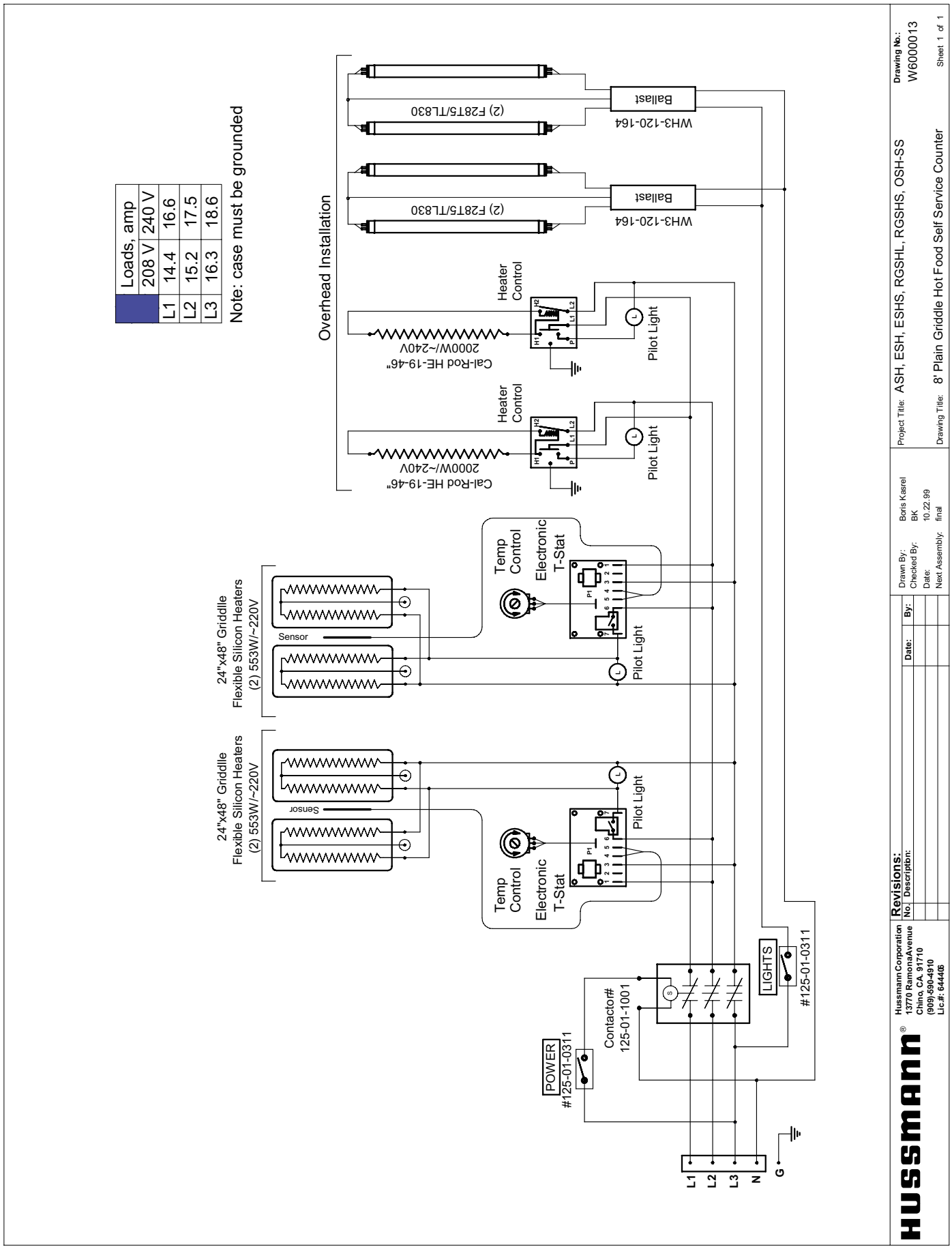
Drawn By: Boris Kasrel
Checked By: BK
Date: 05.25.2000
Next Assembly: final

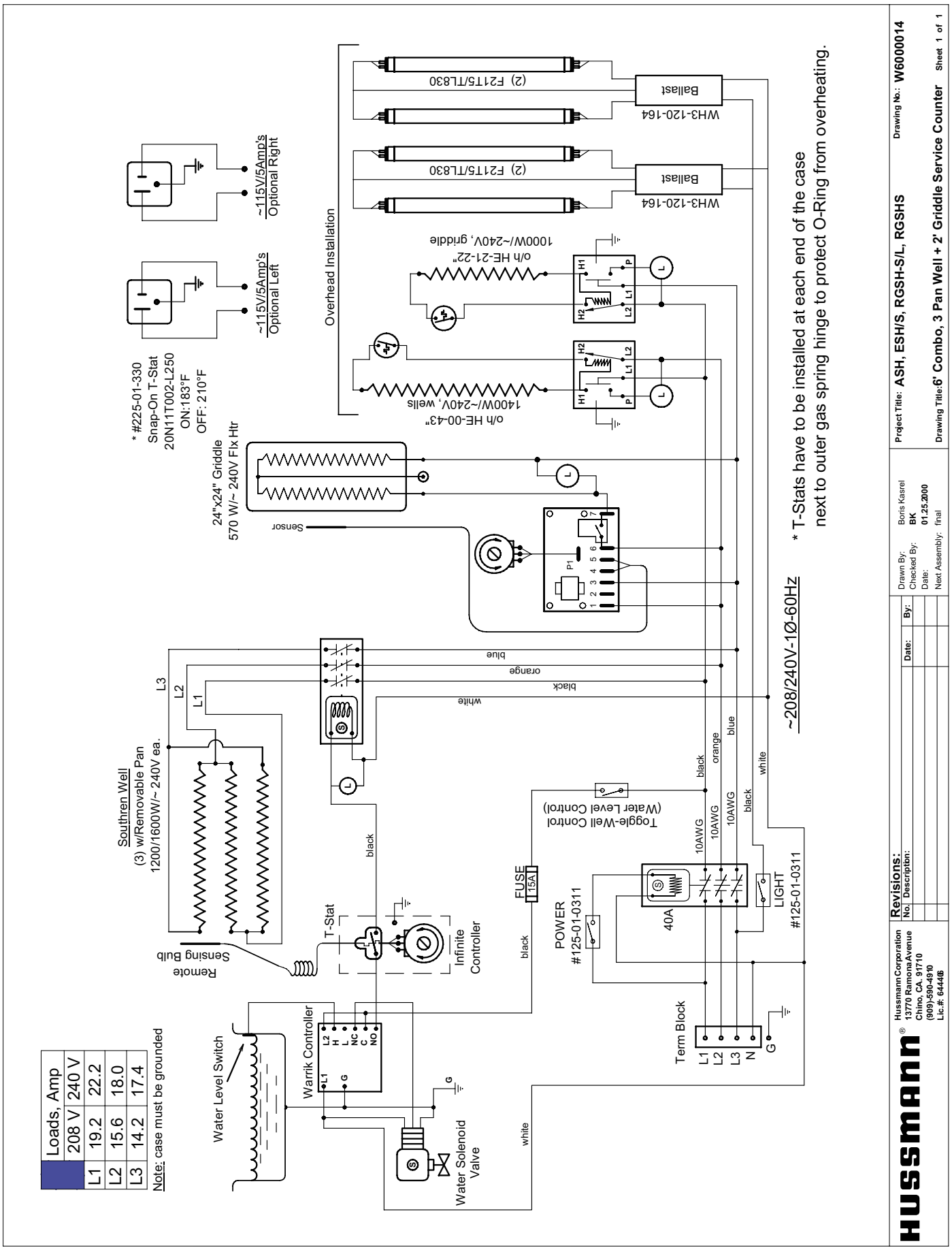
Project Title: ASH, ESH, ESHS, RGSHL, RGSHS, OSH-SS

Drawing Title: 6' Plain Griddle Hot Food Self-Service Counter

Drawing No.: W6000012

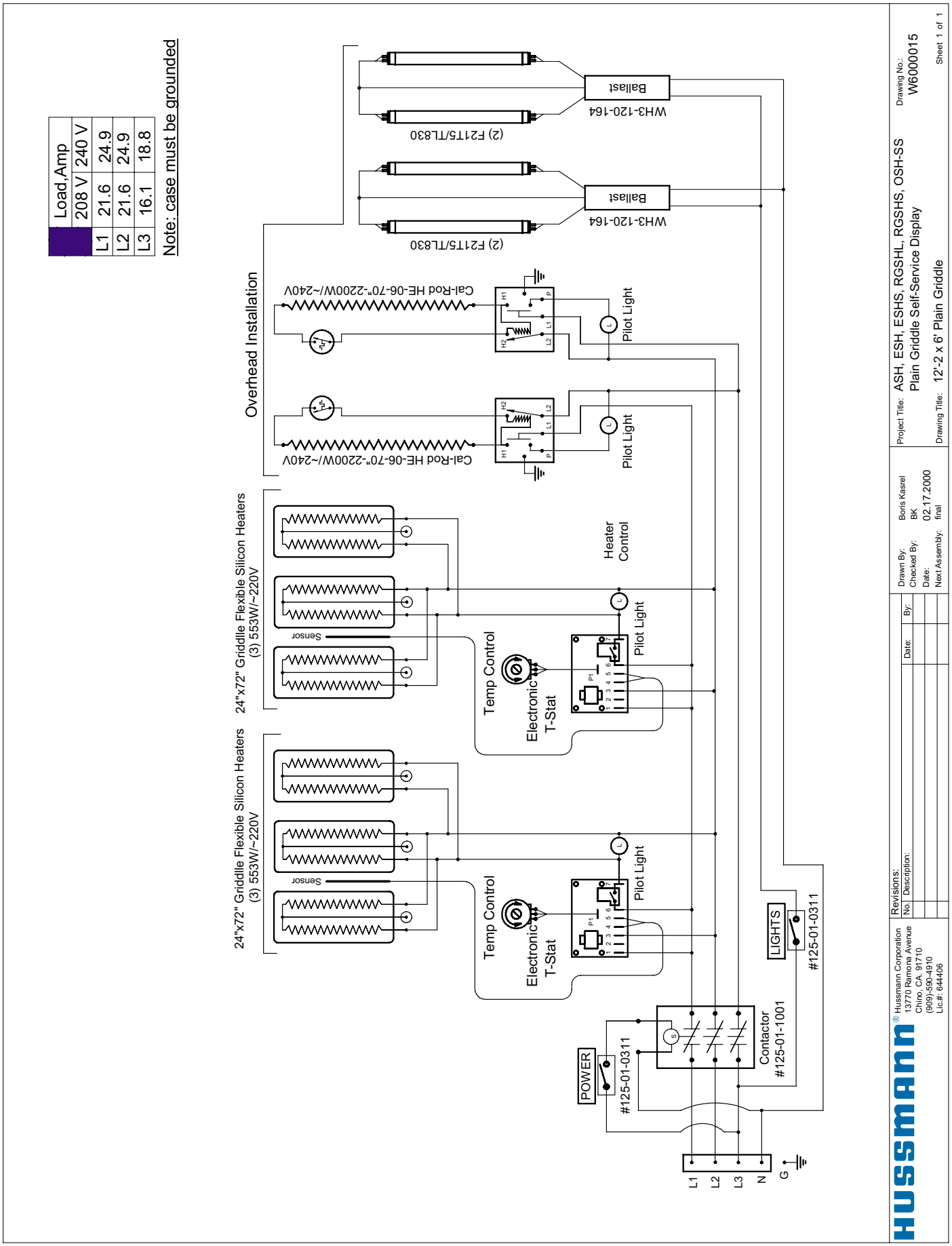
Sheet 1 of 1

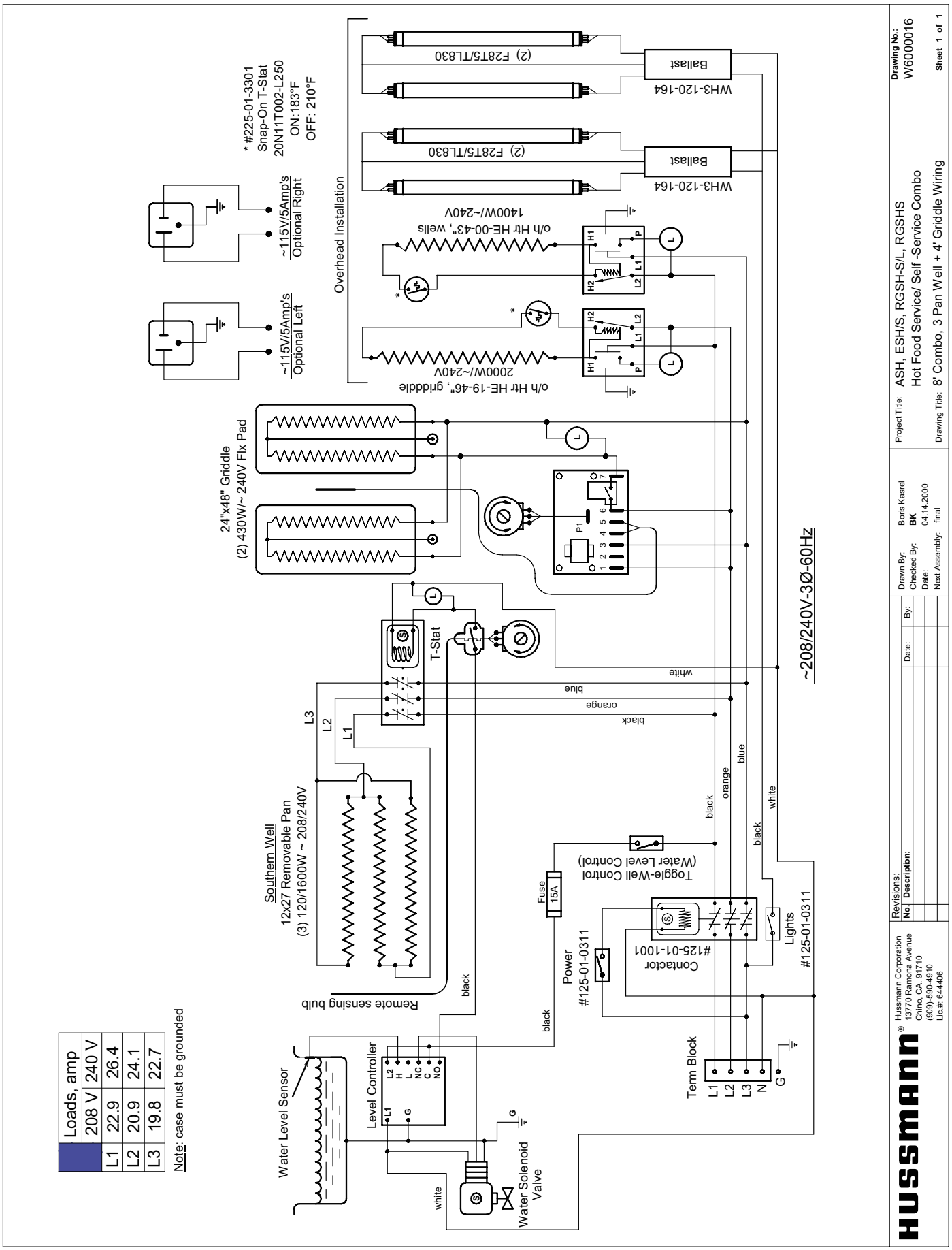


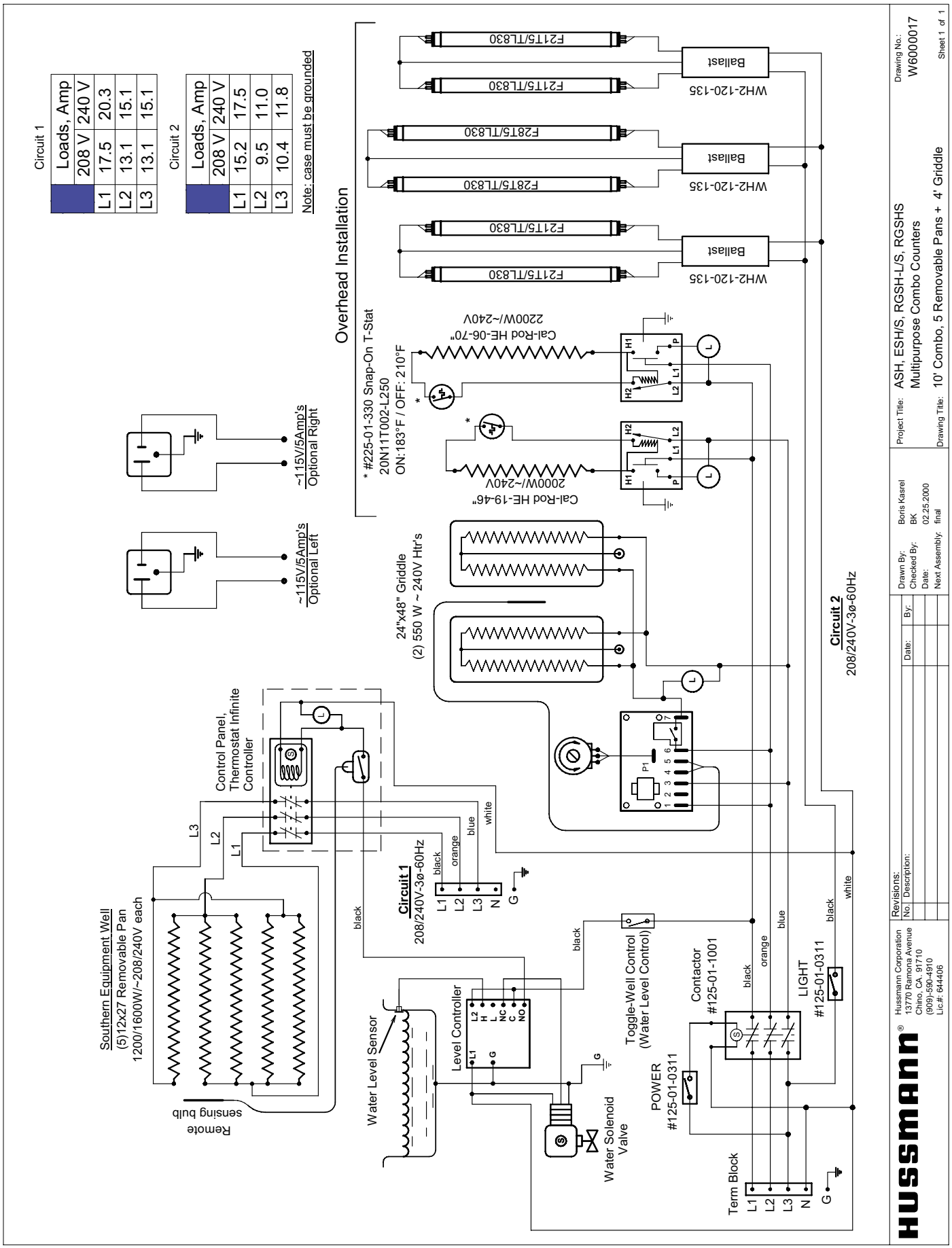


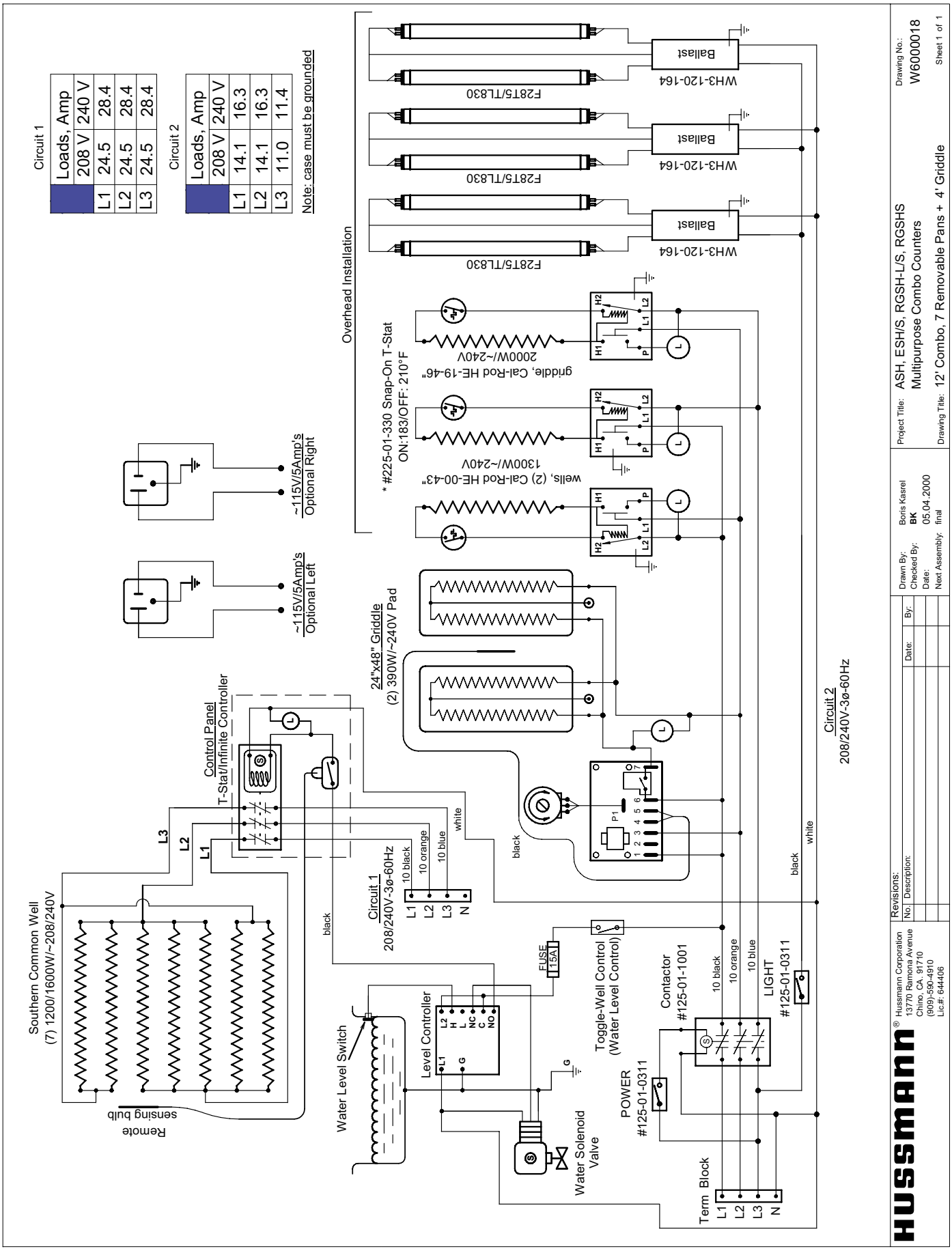
Load,Amp	208 V	240 V
L1	21.6	24.9
L2	21.6	24.9
L3	16.1	18.8

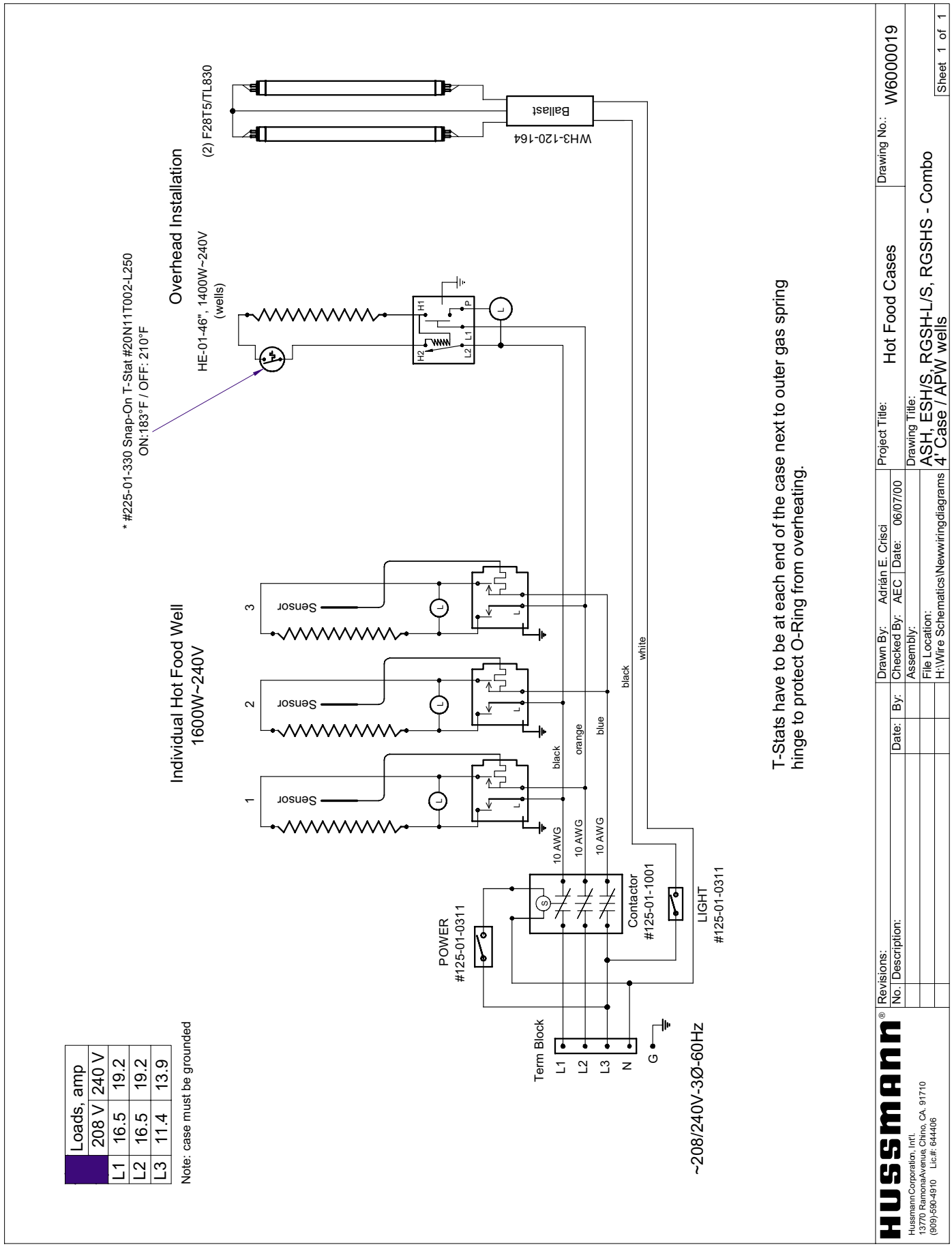
Note: case must be grounded

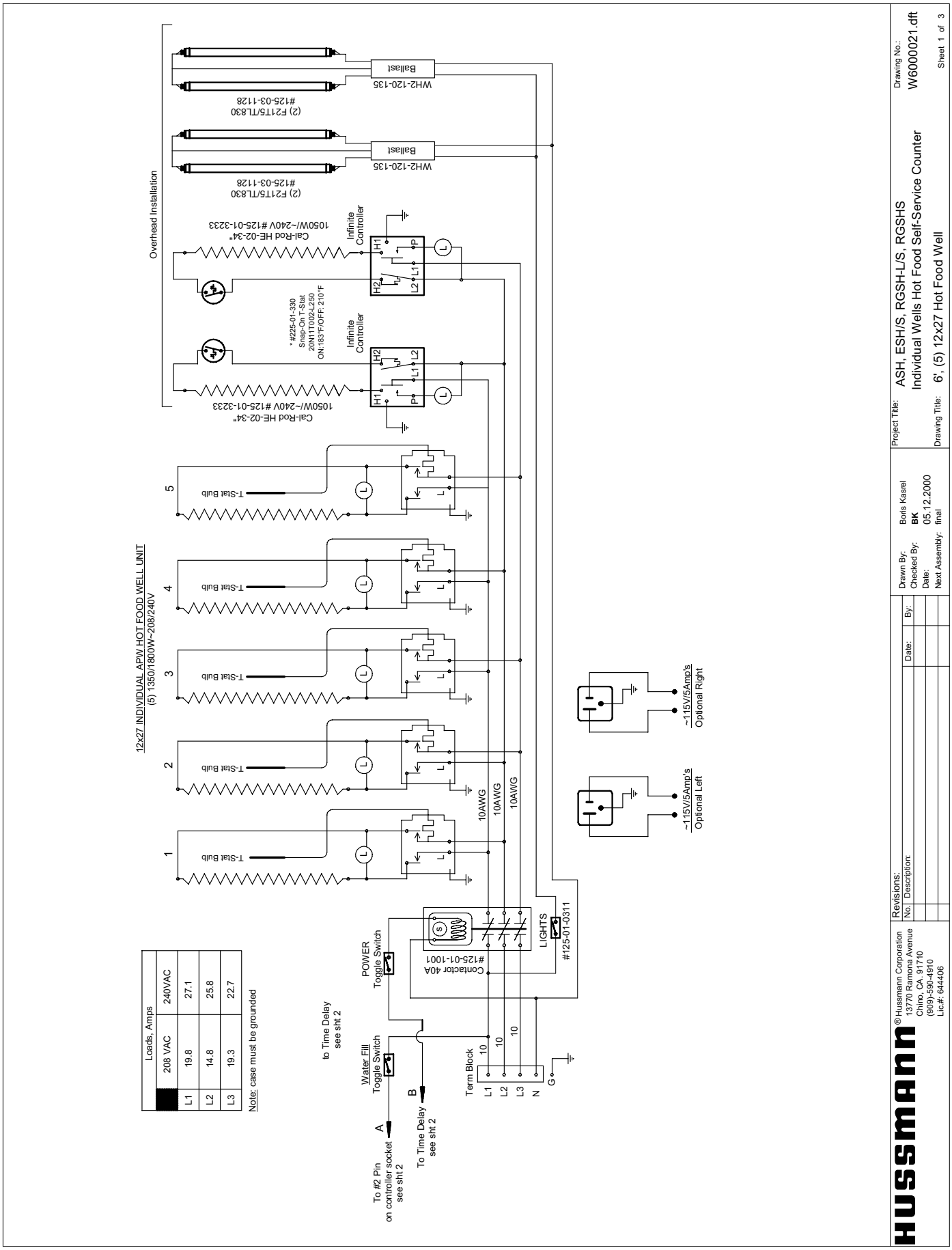


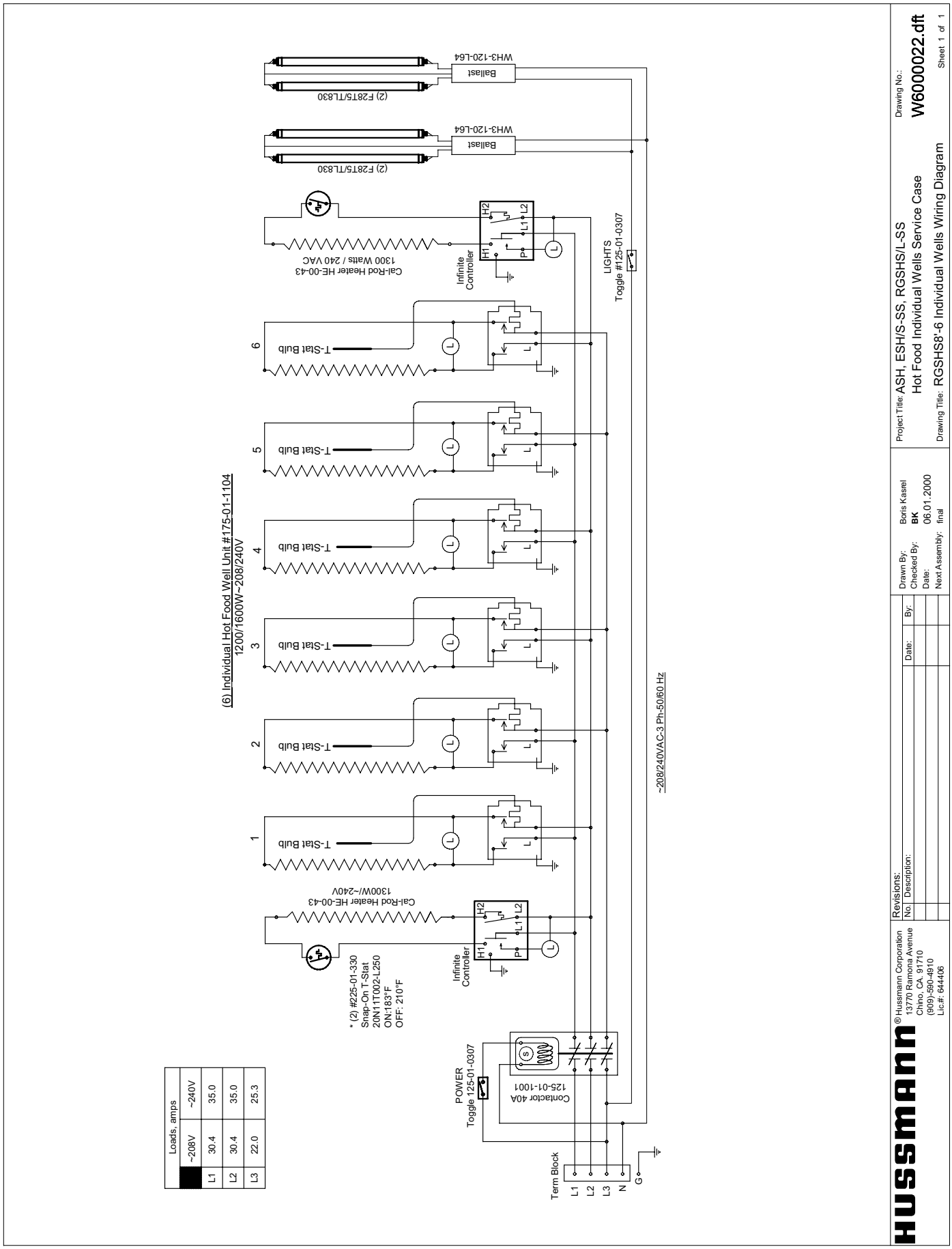


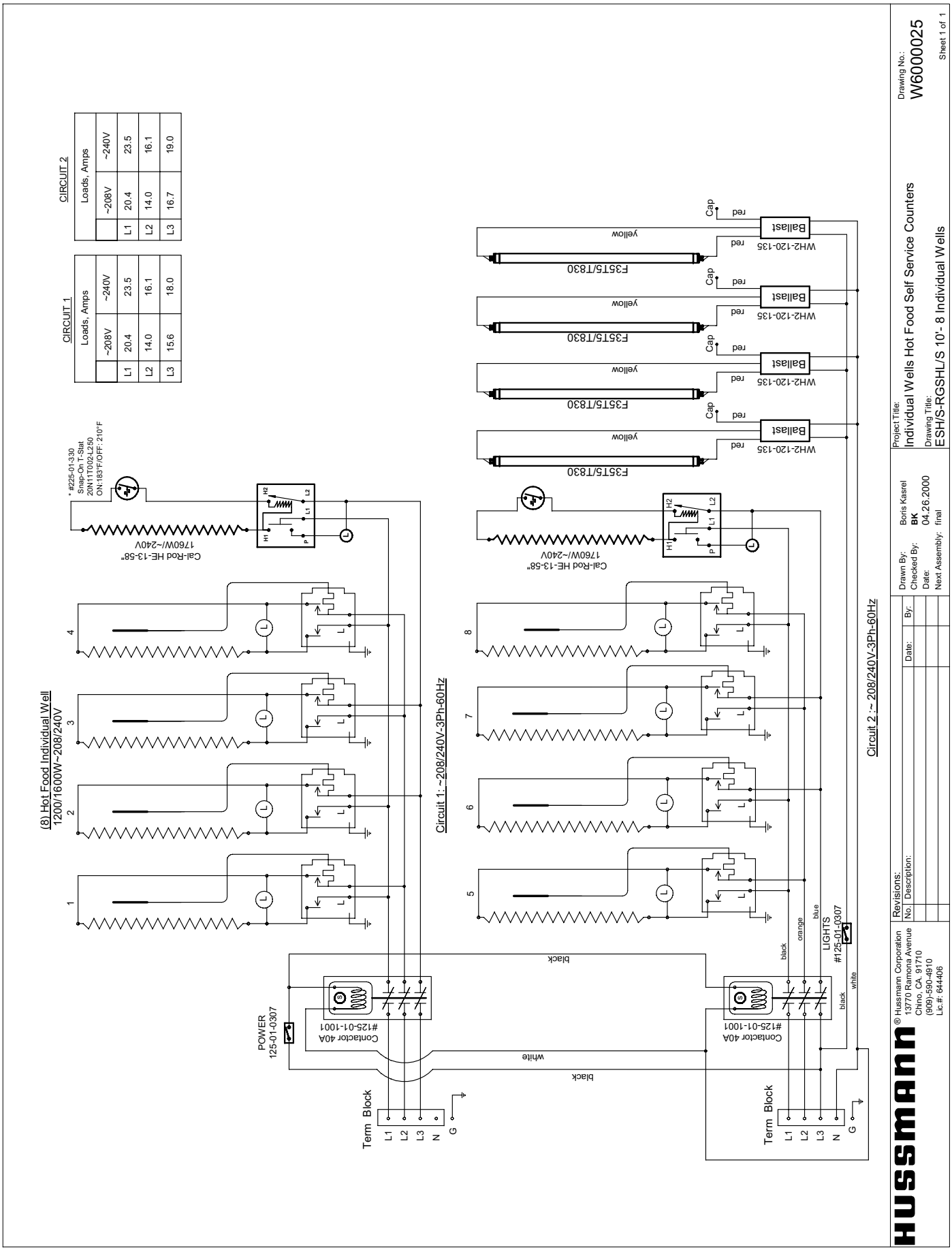


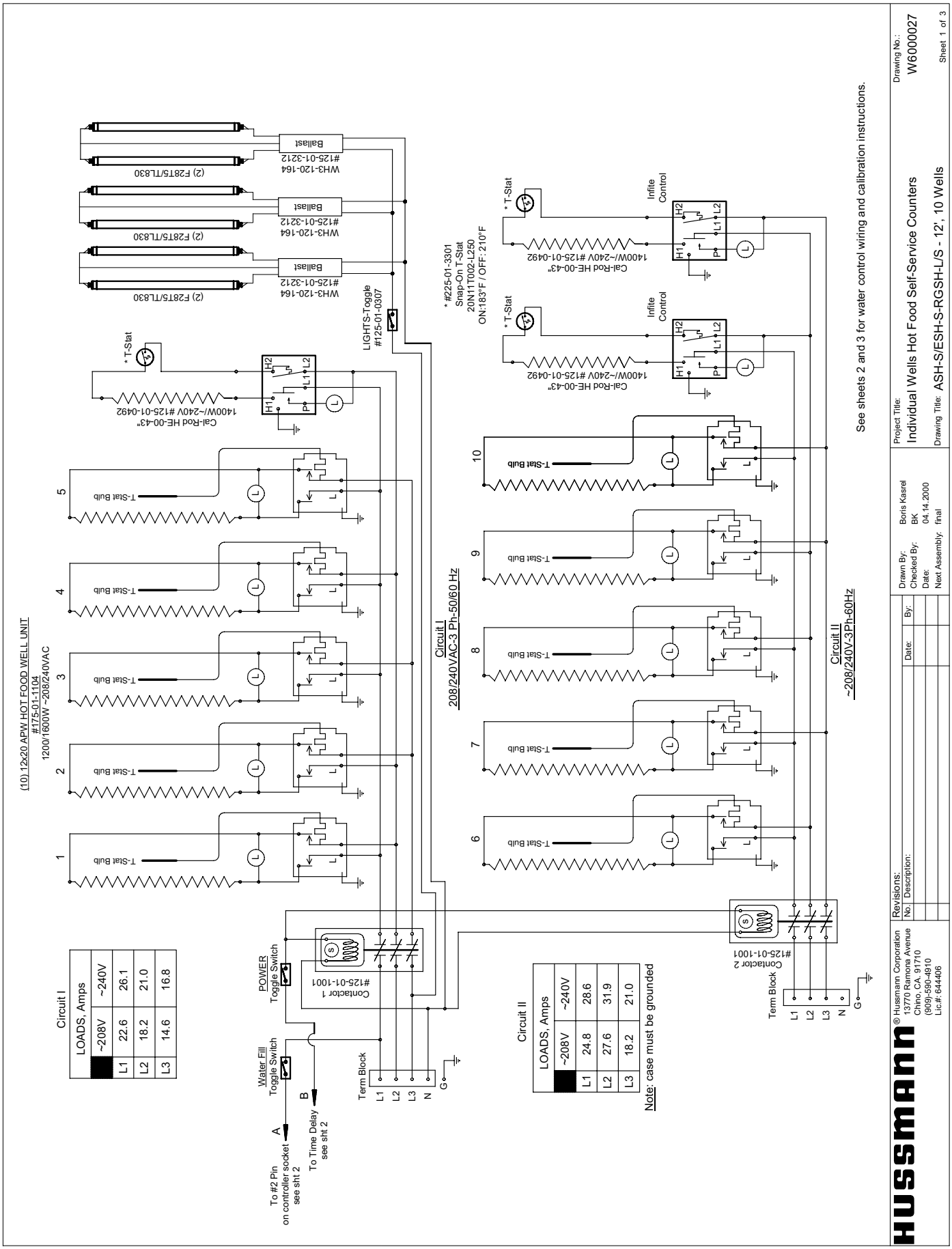


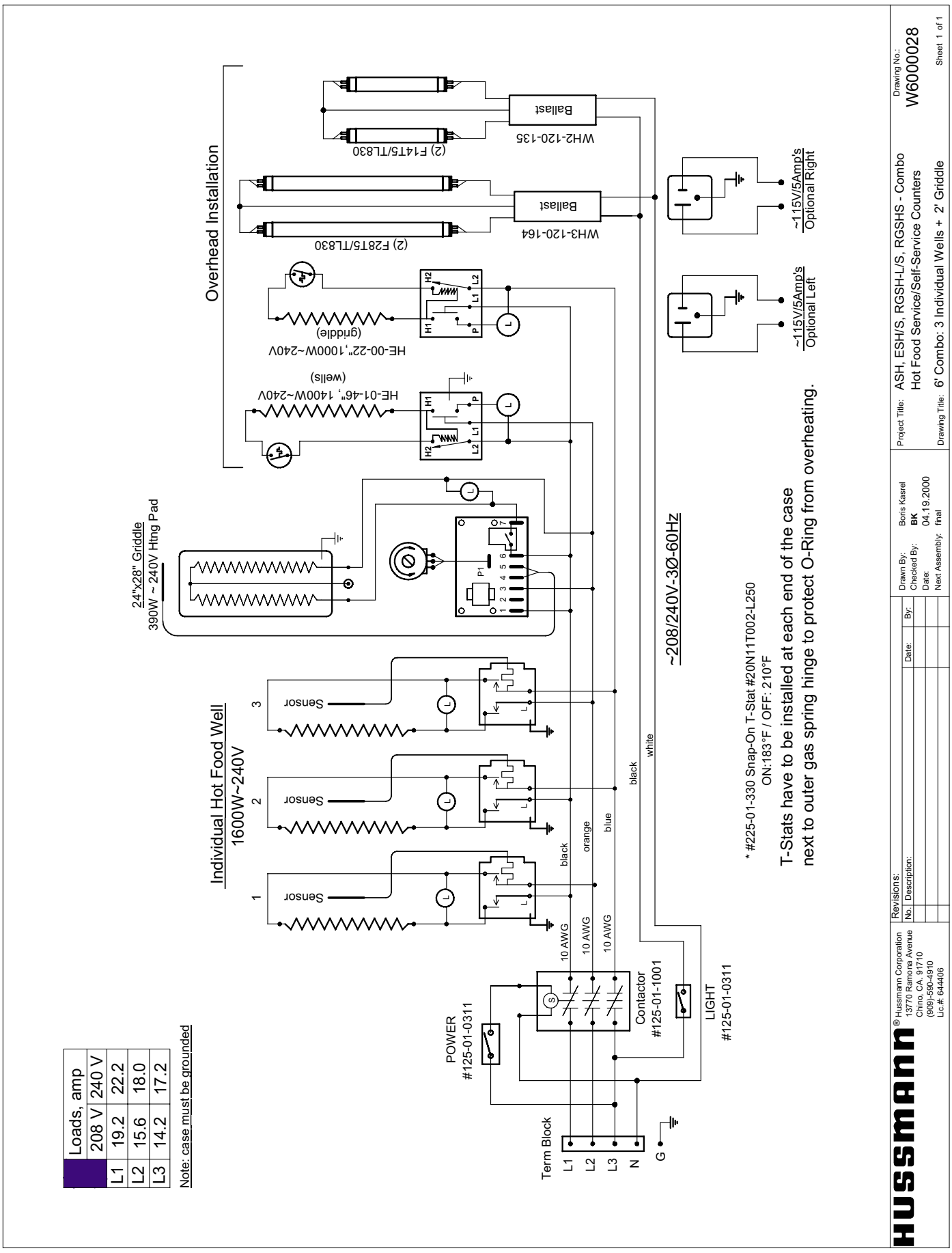


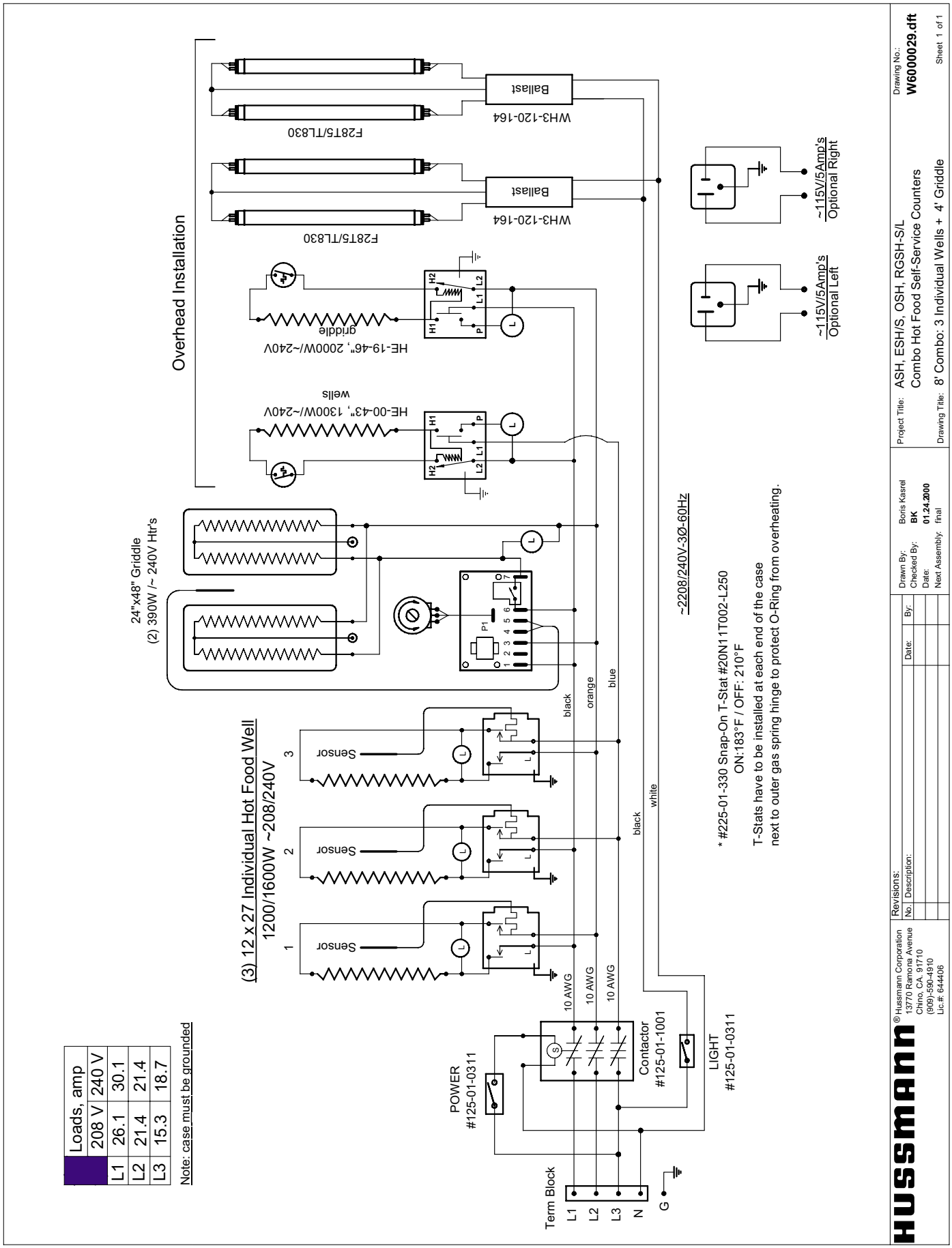












Loads, amp	
208 V	240 V
L1 26.1	30.1
L2 21.4	21.4
L3 15.3	18.7

Note: case must be grounded

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

Revisions:			
No.	Description:	Date:	By:

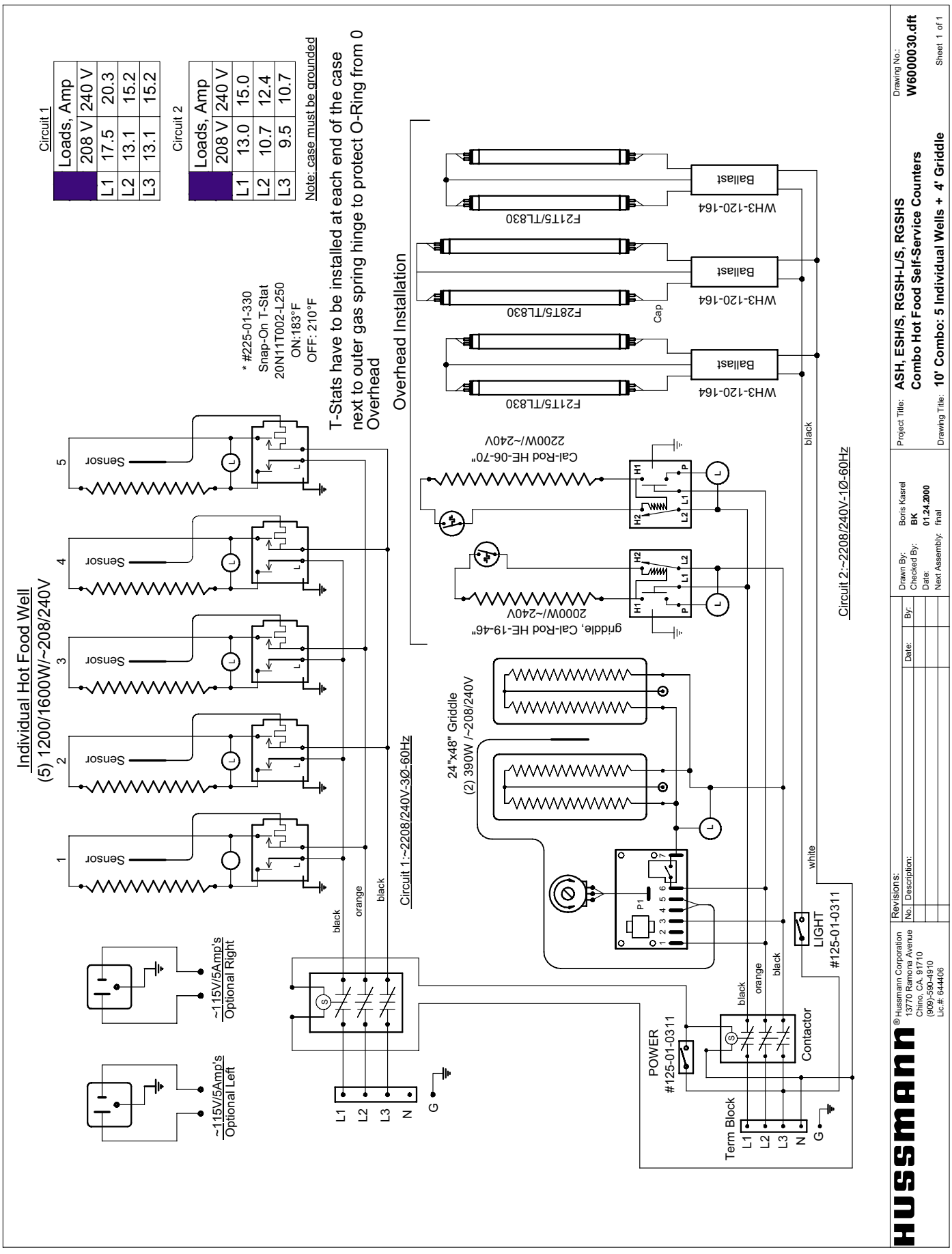
Drawn By: Boris Kasrel
Checked By: BK
Date: 01.24.2000
Next Assembly: final

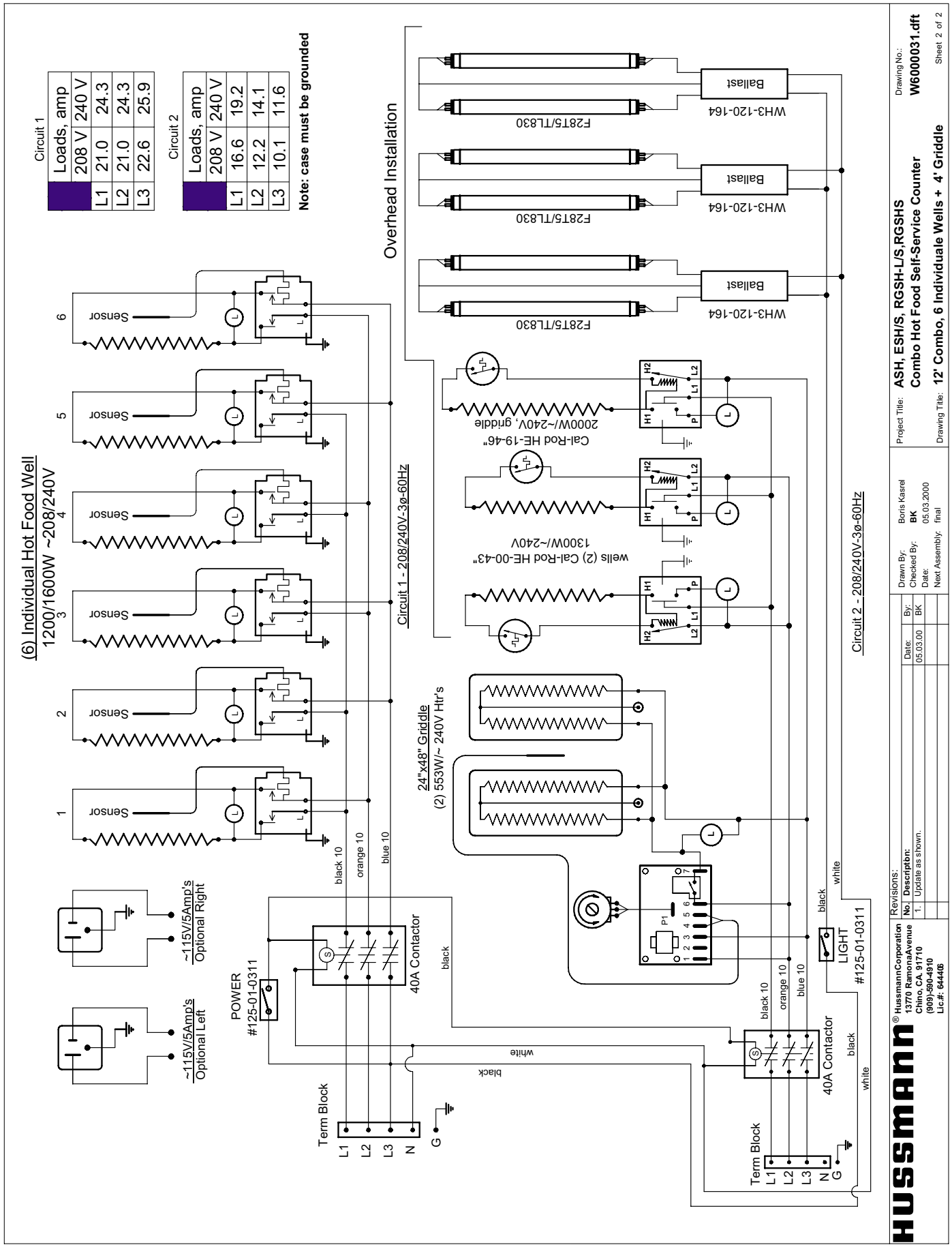
Project Title: ASH, ESH/S, OSH, RGSH-S/L
Combo Hot Food Self-Service Counters

Drawing Title: 8' Combo: 3 Individual Wells + 4' Griddle

Drawing No.: **W6000029.dft**

Sheet 1 of 1





APPENDIX A. – Temperature Guidelines

1.0 Hot cases are tested to maintain all hot food at 140° - 150°. 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° to 160°.

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 for.

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 1995 temperature for potentially hazardous food will be the first indication that an evaluation should be performed. It is expected that all hot cases will keep food at the FDA Food Code 1995 temperature to prevent the sale of potentially hazardous food.

1.1 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 determined whether a display fixture 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 1 hour 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.

APPENDIX D. – Recommendations to user

1.0 Hussmann has 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 fixture 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 and/or wire rack.
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°. 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° 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° to 20° 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° 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.

13. Turn the equipment off and allow to cool before cleaning.
14. To remove "baked-on" splatter from Stainless Steel, the following may be used

Grade F Italian Pumice	Scour or rub with a damp cloth
Liquid Nusteel	Scour with a small amount of a dry cloth
	Paste NuSteel
Household Cleaners	Rub with a damp cloth
Coopers Stainless Steel Cleaner	
Allen Stainless Steel Polish	

HUSSMANN®

Limited Warranty

This warranty is made to the original user at the original installation site and is not transferable.

Hussmann merchandisers are warranted to be free from defect in material and workmanship under normal use and service for a period of one (1) year from the date of original installation (not to exceed fifteen (15) months from the date of shipment for the factory). **Hussmann Impact Modular Coils are warranted for a total of five (5) years based upon the above criteria**. Hussmann's obligation under this warranty shall be limited to repairing or exchanging any part or parts, without charge F.O.B. factory or nearest authorized parts depot within said period and which is proven to the satisfaction of the original manufacturing plant warranty group to be thus defective.

Hussmann covers the entire case or refrigeration product and all its components (except for lamps, driers, fuses, and other maintenance type replacement parts) for the one (1) year warranty period.

Additionally, Hussmann warrants for a total period of three (3) years all sealed, multi-glass assemblies except those used in sliding doors on closed meat display cases. If within three (3) years from the date of installation (not to exceed thirty-nine (39) months from the date of shipment from factory), it shall be proven to the satisfaction of the originating factory warranty group that there is impaired visibility through the multi-glass assemblies thereof caused by moisture between the glasses, the multi-glass assembly will be replaced free of charge, F.O.B. factory. This additional warranty excludes accident, misuse, or glass breakage.

On Hussmann manufactured self-contained display cases, Hussmann agrees to repair or exchange, at its option, the original motor/compressor unit only with a motor/compressor of like or of similar design and capacity if it is shown to the satisfaction of Hussmann that the motor/compressor is inoperative due to defects in factory workmanship or material under normal use and service as outlined in Hussmann's "Installation Instructions" which are shipped inside new Hussmann equipment. Hussmann's sole obligation under this warranty shall be limited to a period not to exceed five years from date of factory shipment.

On Hussmann refrigeration systems, an additional (4) year extended warranty for the motor/compressor assembly is available, but must be purchased prior to shipment to be in effect. Hussmann reserves the right to inspect the job site, installation and reason for failure.

The motor/compressor warranties listed above do not include replacement or repair of controls, relays, capacitors, overload protectors, valve plates, oil pumps, gaskets or any external part on the motor/compressor replaceable in the field, or any other part of the refrigeration system or self-contained display case.

THE WARRANTIES TO REPAIR OR REPLACE ABOVE RECITED ARE THE ONLY WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, MADE BY HUSSMANN WITH RESPECT TO THE ABOVE MENTIONED EQUIPMENT, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS, AND HUSSMANN NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT, ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH THE SALE OF SAID EQUIPMENT OR ANY PART THEREOF.

THIS WARRANTY SHALL NOT APPLY TO LOSS OF FOOD OR CONTENTS OF THE EQUIPMENT DUE TO FAILURE FOR ANY REASON. HUSSMANN SHALL NOT BE LIABLE:

- For payment of labor for any removal or installation of warranted parts;
- For any repair or replacements made without the written consent of Hussmann, or when the equipment is installed or operated in a manner contrary to the printed instructions covering installation and service which accompanied such equipment;
- For any damages, delays, or losses, direct or consequential which may arise in connection with such equipment or part thereof;
- For damages caused by fire, flood, strikes, acts of God or circumstances beyond its control;
- When the equipment is subject to negligence, abuse, misuse or when the serial number of the equipment has been removed, defaced, or altered;
- When the equipment is operated on low or improper voltages
- When the equipment is put to a use other than normally recommended by Hussmann (i.e. deli case used for fresh meat);
- When operation of this equipment is impaired due to improper drain installation;
- For payment of refrigerant loss for any reason;
- For costs related to shipping or handling of replacement parts.

Hussmann Corporation, Corporate Headquarters: Bridgeton, Missouri, U.S.A. 63044 August 1, 1998

Service Record

Last service date: **By:**

HUSSMANN®/Chino

Additional copies of this publication may be obtained by contacting:

Hussmann® Chino
13770 Ramona Avenue • Chino, California 91710
(909) 628-8942 FAX
(909) 590-4910
(800) 395-9229

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: