

HUSSMANN®/CHINO

Installation
& Operation
Manual

HEDN (02,03,04,05), HED COMBO, HEDW05
HEDN HOT END DISPLAY

REV. 0709

HUSSMANN®

HEDN (02,03,04,05) HED COMBO HEDW05
HED HOT CASE FAMILY



P/N IGH-T-HEDN, HEDN COMBO, HEDW-0709

INSTALLATION & OPERATION GUIDE

General Instructions

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This Booklet Contains Information on:

HED HOT CASES

Self Service Hot cases designed to fit within a lineup of multidec self service cases or at the end of a lineup.

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.

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

HUSSMANN®/CHINO

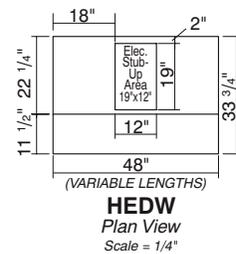
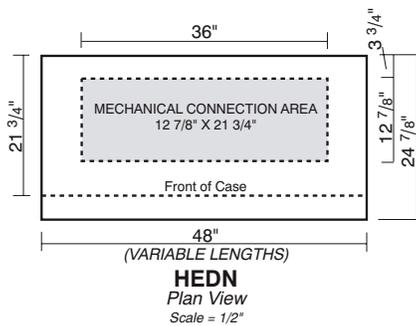
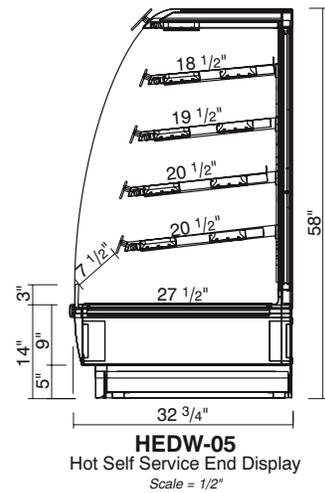
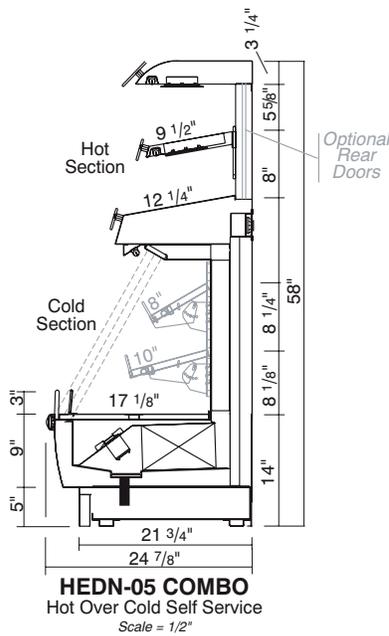
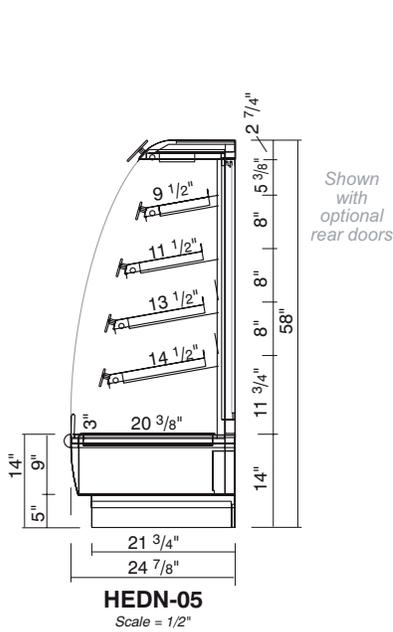
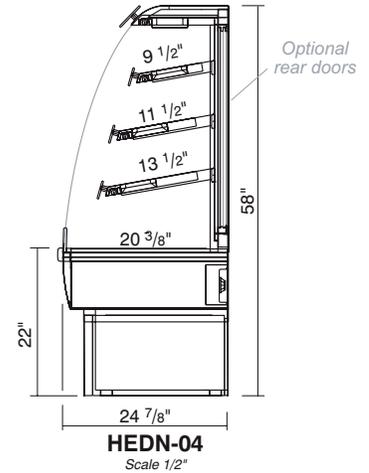
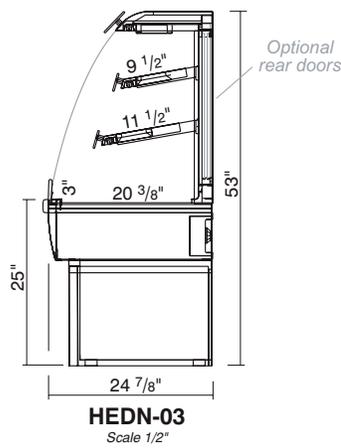
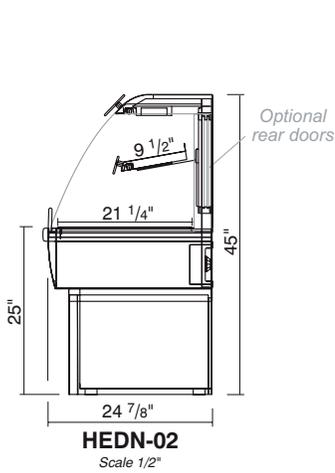
A publication of HUSSMANN® Chino
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 (909) 590-4910
 (800) 395-9229



**ATTENTION
INSTALLER**

This equipment is to be installed to comply with the applicable NEC, Federal, State, and Local Plumbing and Construction Code having jurisdiction.

Cut and Plan Views



Installation

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.

ALL CASES WERE LEVELED AND JOINED PRIOR TO SHIPMENT, TO INSURE THE CLOSEST POSSIBLE FIT WHEN CASES ARE JOINED IN THE FIELD.



TO AVOID REMOVING CONCRETE FLOORING, BEGIN LINEUP LEVELING FROM THE HIGHEST POINT OF THE STORE FLOOR.

Leveling/Joining Instructions

Check floor where cases are to be set to see if it's level. 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. Mark the difference, and place the appropriate number of shims required to maintain high - point level.

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.

Installation (Cont'd)

Boston Series 2000

NOTE: Flexible top: Over cut vinyl 1/8" for every 4' section for the flexible top to ensure a proper fit.

NOTE: Rigid Top: Do not over cut.



1. Attach the base and end/corner cap to the desired surface by inserting #8 pan head screws through the pre-slotted holes in both the end cap and the base. Insert screws through the two holes of end cap and tighten.



- 2a. **Flexible Top:** Butt end of the vinyl top against end/corner cap. While applying pressure, bend back vinyl top so that vinyl legs are positioned within the base grooves. Roll vinyl top over full length of base, then tap with rubber mallet to ensure vinyl is securely locked into the base.

- 2b. **Rigid Top:** Snap the Rigid Top over the Rigid Base.



3. If necessary wipe clean with any household cleaning product.

Helpful Hints:

- For best results, before cutting, install a scrap piece of base into vinyl top to achieve a clean cut.
- Set the uncoiled flexible vinyl at room temperature 24 hours prior to installation.
- Lubricate the inside of the vinyl with soapy water or silicone before installing.
- Over cut the flexible vinyl and compression fit. Adding the additional materials will compensate for stretching which occurs during installation.

Boston 2000 Eco Series



1. Attach the base and end/corner cap to the desired surface by inserting #8 pan head screws through the pre-slotted holes in both the end cap and the base. Insert screws through the two holes of end cap and tighten.



- 2a. **Flexible Top:** Butt end of the vinyl top against end/corner cap. While applying pressure, bend back vinyl top so that vinyl legs are positioned within the base grooves. Roll vinyl top over full length of base, then tap with rubber mallet to ensure vinyl is securely locked into the base.

- 2b. **Rigid Top:** Snap the Rigid Top over the Rigid Base.



3. If necessary wipe clean with any household cleaning product.

Helpful Hints:

- For best results, before cutting, install a scrap piece of base into vinyl top to achieve a clean cut.
- Set the uncoiled flexible vinyl at room temperature 24 hours prior to installation.
- Lubricate the inside of the vinyl with soapy water or silicone before installing.
- Over cut the flexible vinyl and compression fit. Adding the additional materials will compensate for stretching which occurs during installation.

Installation (Cont'd)

Boston 1000 Series

NOTE: Flexible top: Over cut vinyl 1/8" for every 4' section for the flexible top to ensure a proper fit.

NOTE: Rigid Top: Do not over cut.

Installation



1. Attach the base and end/corner cap to the desired surface by inserting #8 pan head screws through the pre-slotted holes in both the end cap and the base. Insert screws through the two holes of end cap and tighten.



- 2a. **Flexible Top:** Butt end of the vinyl top against end/corner cap. While applying pressure, bend back vinyl top so that vinyl legs are positioned within the base grooves. Roll vinyl top over full length of base, then tap with rubber mallet to ensure vinyl is securely locked into the base.

- 2b. **Rigid Top:** Snap the Rigid Top over the Rigid Base.



3. If necessary wipe clean with any household cleaning product.

Helpful Hints:

- For best results, before cutting, install a scrap piece of base into vinyl top to achieve a clean cut.
- Set the uncoiled flexible vinyl at room temperature 24 hours prior to installation.
- Lubricate the inside of the vinyl with soapy water or silicone before installing.
- Over cut the flexible vinyl and compression fit. Adding the additional materials will compensate for stretching which occurs during installation.

Electrical

Wiring Color Code

STANDARD CASE WIRE COLOR CODE CODIGO DE COLORES DE LOS ALAMBRES PARA LAS VITRINAS ESTANDAR CODE COULER POUR FILS DE BOITIER 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

CASE MUST BE GROUNDED



DANGER

BEFORE SERVICING
ALWAYS DISCONNECT ELECTRICAL
POWER AT THE MAIN DISCONNECT
WHEN SERVICING OR REPLACING ANY
ELECTRICAL COMPONENT.

This includes (but not limited to) Heaters and Lights.

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.

The receptacle that is provided on the exterior back of these models is intended for computerized scales with a five amp maximum load, not for large motors or other high wattage appliances. It should be wired to a dedicated circuit.

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 and 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 "Wiring Diagram" 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.

Operation

Controls

Pictured on page 10 is an HED with the appropriate controls. All the HED's have the same controls, however, as the number of shelves and case lengths vary, the number of these controls does also. Each is clearly labeled on the control panel.

Daily Startup

1. Check to make sure all switches are starting in the "OFF" position
2. Flip O/H Light switches to "ON" position. When the switch is flipped to "on" position, the light will go on. If it does not, turn the switch to the off position and tell your maintenance department the case is not getting power.



DANGER

The case metal and the light bulbs become extremely hot when in use.

DO NOT Touch Hot Case or Lights With bare hands!

3. Wait an hour before loading pre - heated product*.
*These cases are not designed to cook or heat - up food. Food must be at 150°-160°F BEFORE loading into the case. Check food temperature with a thermometer before putting in case.
4. After one hour, measure the product temperature by using a food thermometer.
5. Adjust if necessary, increase or decrease (whichever is appropriate) both dials, one number at a time until the desired temperature has been reached. Measure the product temperature with a thermometer an hour after re - setting the case temperature.

Operation Tips

1. Check the food to make sure the temperature is correct. Hot foods should be held at a minimum of 140°F.
2. When restocking case, rotate older product to front of case, load newer product in the back.
3. Clean spills as soon as they occur to avoid baked on food soil.

Shut-down and Cleaning

1. Unload product from case.
2. Turn the switch for the Overhead Lights and the Griddle Heat control to the "OFF" position.
3. Allow the case to cool for at least 30-45 minutes before cleaning.
4. Clean the decks of the case with a mild soapy solution and a sponge.



DANGER

DO NOT FLOOD!

Use only enough solution necessary to clean surface. Water must not drip down the case!
Never use ammonia based cleansers, abrasive cleansers, or scouring pads.

5. Wipe soap residue off with a sponge and clear, clean water. Using caution not to put too much water on the shelf.
6. Dry with clean towel or paper towel.
7. Polish and clean glass with a good glass cleaner.

Operation (Cont'd)

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. Salts in a properly maintained water softener are your friends. If you are not sure of the proper water treatment, call a treatment specialist.

5. Keep your Food Equipment Clean

Use alkaline, alkaline chlorinated 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 it 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

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)

Operation (Cont'd)



DANGER

Parts of the case exterior, shelves and light bulbs become extremely hot when in use.
USE EXTREME CAUTION!

START-UP

OVERHEAD LIGHTS ON / OFF

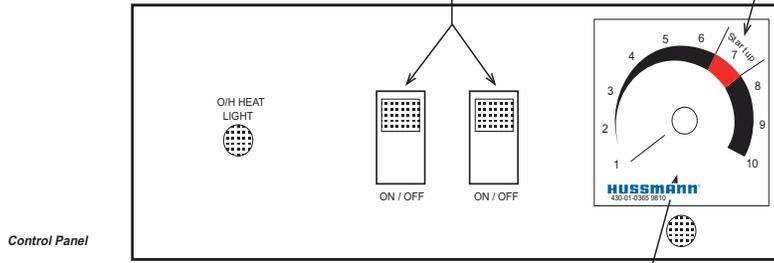
GRIDDLE TEMPERATURE

TURN SWITCHES ON

INITIAL SETTING "7"

Check to make sure all lights come on at start-up. If they do not contact your Service Department

Allow case preheat for 45 minutes prior to loading
NOTE: This equipment is not designed to heat-up or cook food. Food must be 150° - 160° when put in display.



ADJUST TEMPERATURE

1. Measure **PRODUCT** temperature hourly by inserting a food thermometer into the food. Proper holding temperature is 140°.
2. To change temperature, increase or decrease Overhead Heat by one number at a time. Adjust the griddle temperature as necessary. Measure product temperature again in one hour. Readjust if necessary.

SHUTDOWN

1. Turn all switches and dials to "OFF" position.
2. Allow case to cool and clean.

Operation Tips

1. Check the food temperature frequently with a thermometer to make sure it is proper holding temperature. Hot foods should be held at 140°.
2. Do not display more food than will be sold within a 4 hour period.
3. When restocking, bring older food to front, stock fresher food in back.
4. Clean spills as soon as they happen.
5. Oils and splatter will drastically shorten bulb life.



DANGER

Parts of the case exterior, shelves and light bulbs become extremely hot when in use.
DO NOT Touch Hot Case or Lights with bare hands!

Nightly Cleaning

1. Turn case off and unload product.
2. Allow the case to cool for at least 30-45 minutes.
3. Clean the shelves and deck with a mild cleaning solution and sponge. Never use ammonia based cleansers, abrasive cleansers, or scouring pads. **WRING OUT CLOTH / SPONGE THOROUGHLY BEFORE CLEANING!**
4. Wipe residue off with a sponge and clear, clean water.
5. Dry with clean cotton or paper towel.
6. Polish and clean glass with a good glass cleaner



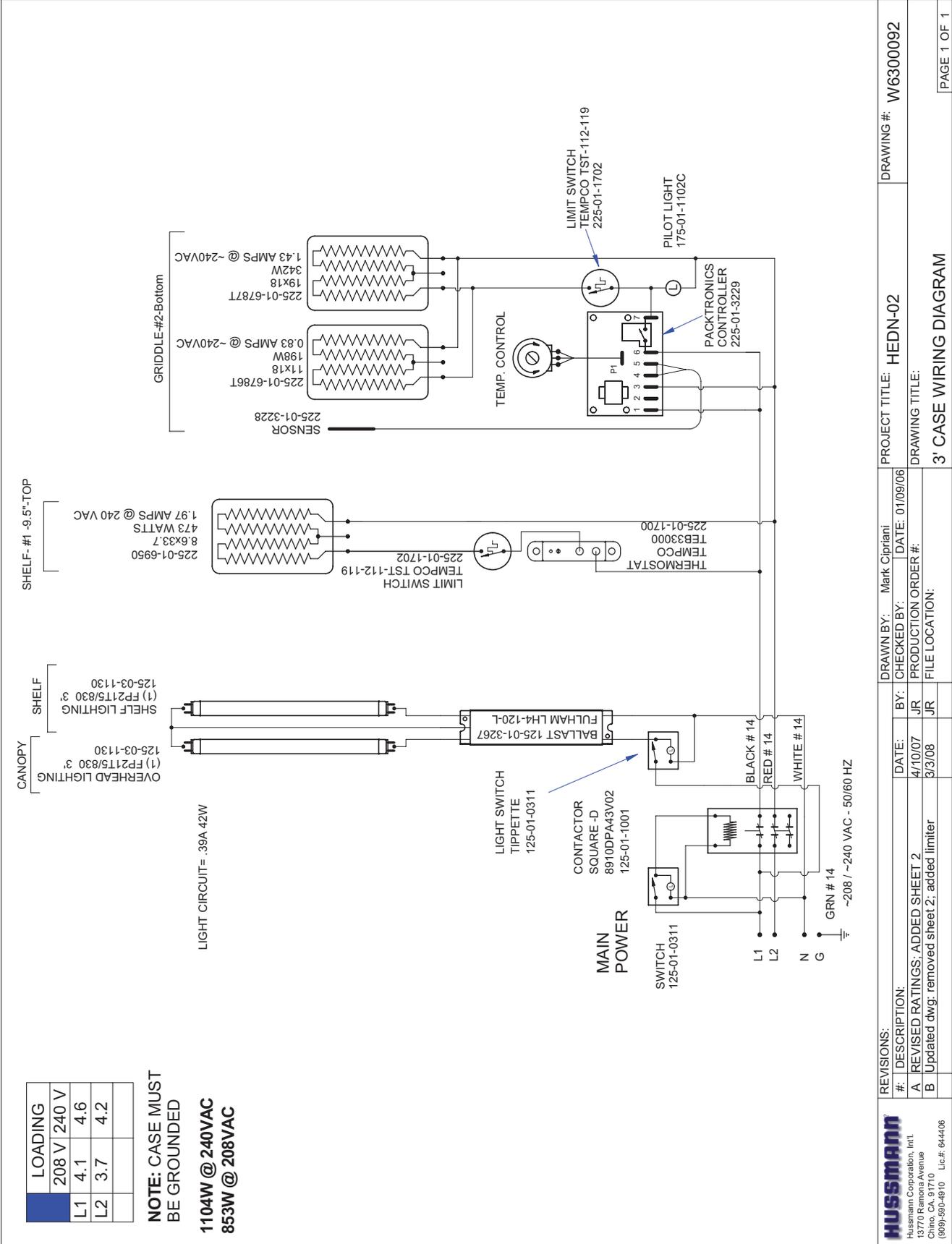
DANGER

DANGER OF ELECTRICAL SHOCK OR CASE DAMAGE
USE THE MINIMUM AMOUNT OF LIQUID WHEN CLEANING!

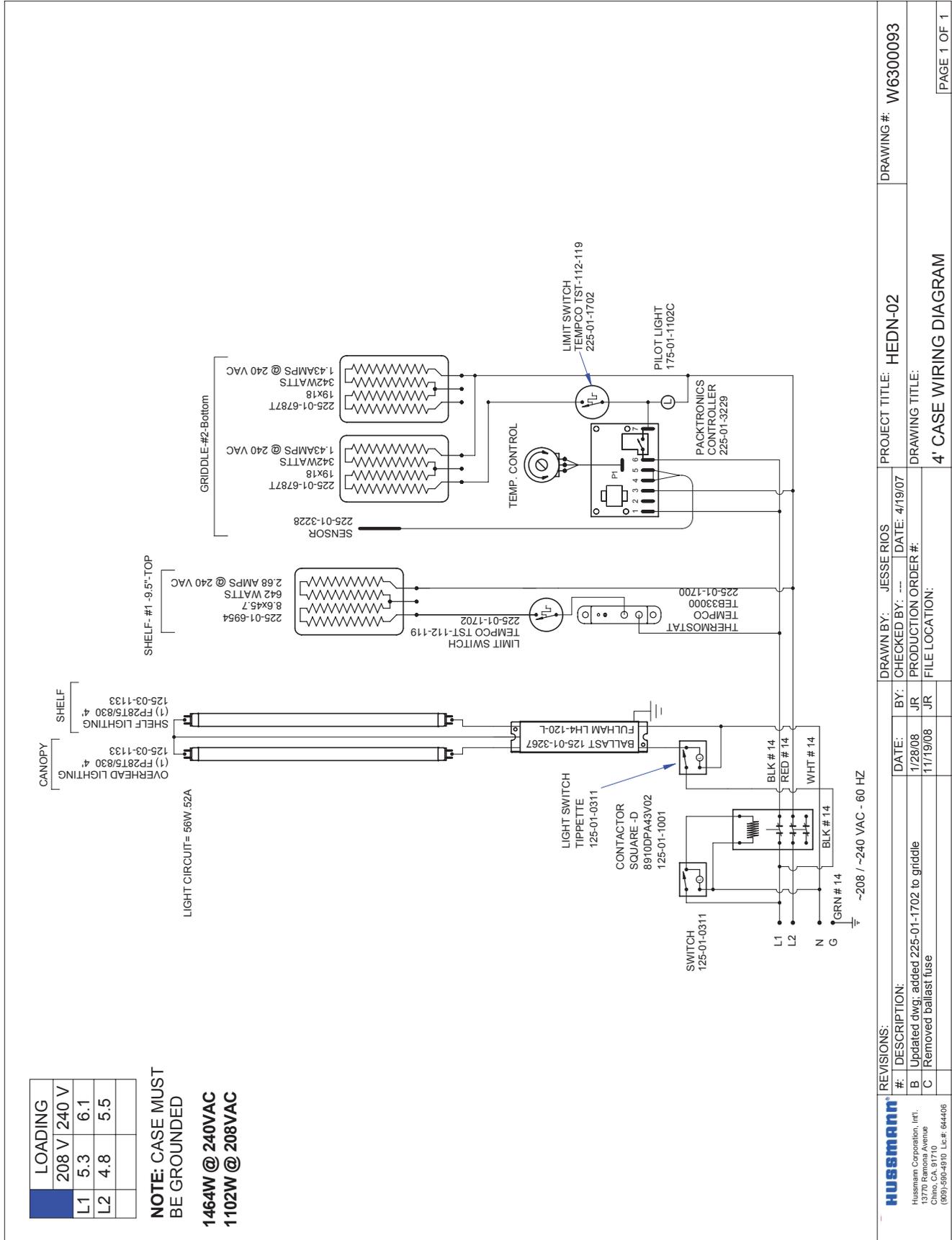
Electrical Wiring Diagrams

HEDN-02	3'	W6300092
	4'	W6300093
	5'	W6300094
	6'	W6300095
	8'	W6300096
HEDN-03	3'	W6300086
	4'	W6300097
	5'	W6300098
	6'	W6300099
	8'	W6300100
HEDN-04	3'	W6300101
	4'	W6300102
	5'	W6300103
	6'	W6300104
	8'	W6300084
HEDN-05 Hot/Cold Combo WITHOUT TOP SHELF	3'	W6300105
	4'	W6300091
	4'	W6300127
	5'	W6300106
	6'	W6300081
	6'	W6300126
	8'	W6300107
HEDW-02	3'	W6300108
	4'	W6300109
	5'	W6300110
	6'	W6300111
	8'	W6300112
HEDW-03	3'	W6300113
	4'	W6300082
	5'	W6300114
	6'	W6300115
	8'	W6300116
HEDW-04	3'	W6300117
	4'	W6300118
	5'	W6300119
	6'	W6300120
	8'	W6300121
HEDW-05	3'	W6300122
	4'	W6300083
	5'	W6300123
	6'	W6300124
	8'	W6300089

Wiring Diagrams



Wiring Diagrams (Cont'd)



LOADING	208 V	240 V
L1	5.3	6.1
L2	4.8	5.5

NOTE: CASE MUST BE GROUNDED

1464W @ 240VAC
1102W @ 208VAC

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(909) 596-4910 Lic.# 644406

REVISIONS:
DESCRIPTION:
B Updated dwg; added 225-01-1702 to griddle
C Removed ballast fuse

DATE: 1/28/08
BY: JR
FILE LOCATION: 11/19/08

DATE: 4/19/07
BY: ---
PRODUCTION ORDER #: ---

DRAWN BY: JESSE RIOS
CHECKED BY: ---

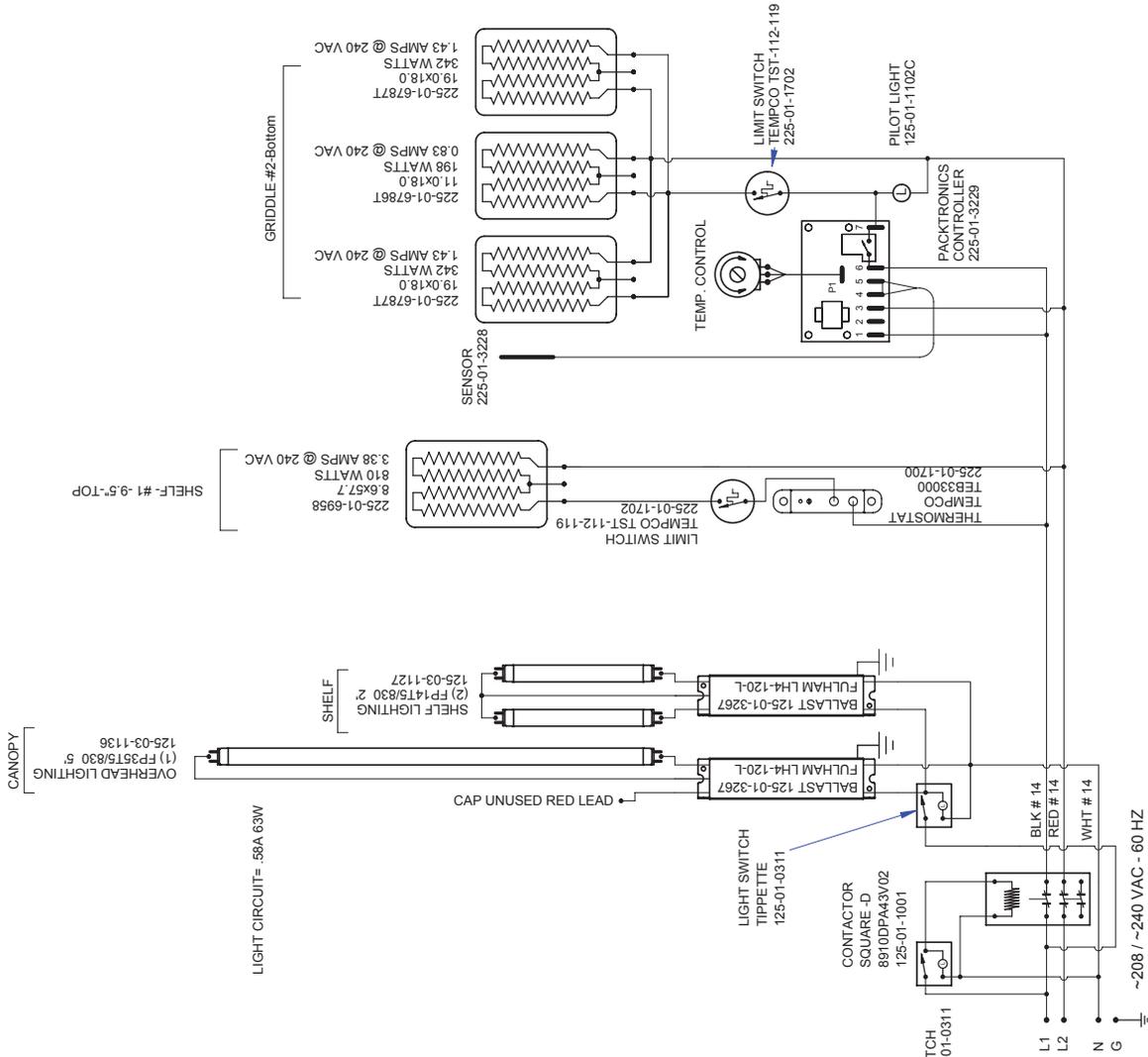
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DRAWING #: W6300093

DRAWING TITLE: 4' CASE WIRING DIAGRAM
PAGE 1 OF 1

Wiring Diagrams (Cont'd)

LOADING	208 V	240 V
L1	6.7	7.6
L2	6.1	7.1

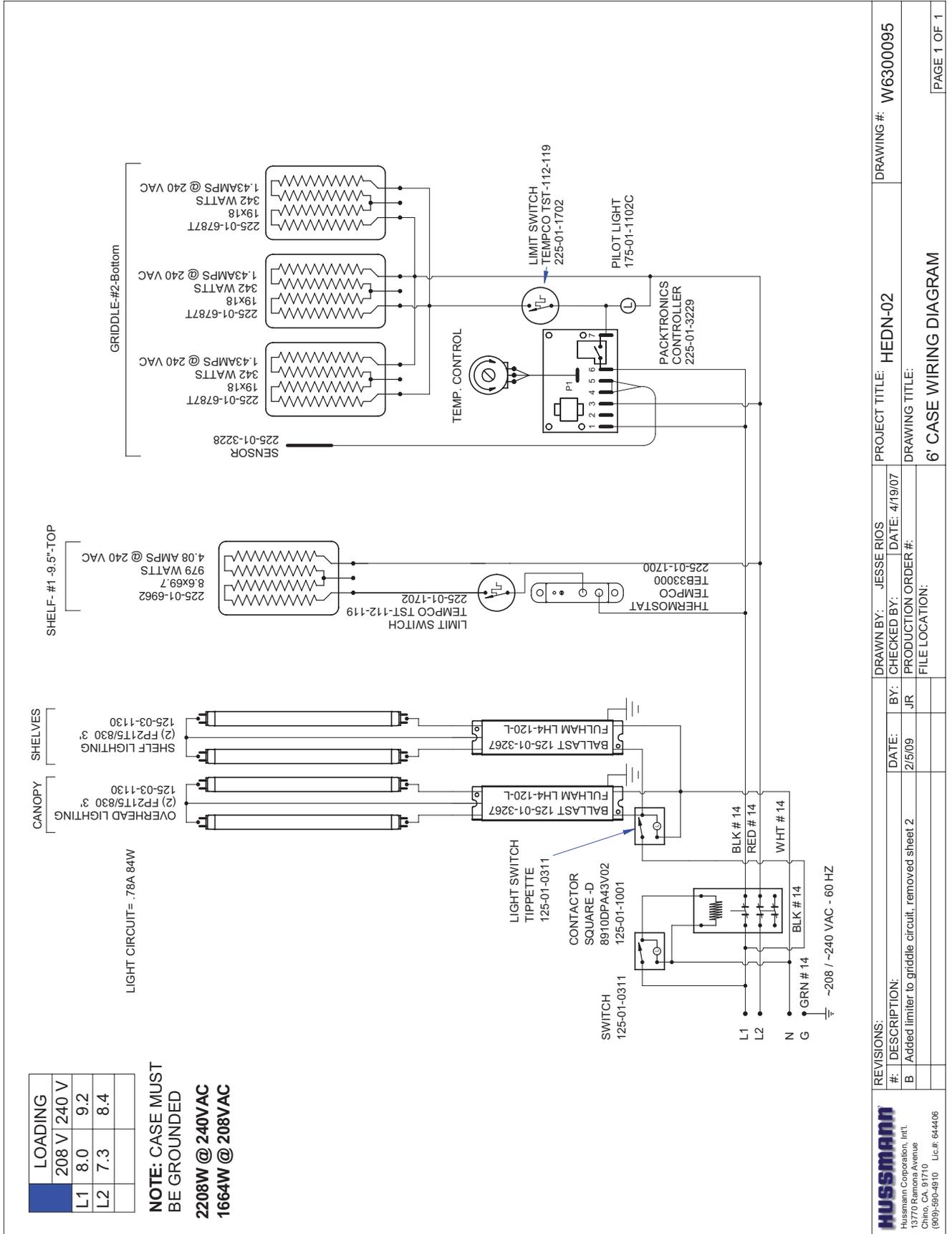
NOTE: CASE MUST BE GROUNDED
1824W @ 240VAC
1394W @ 208VAC



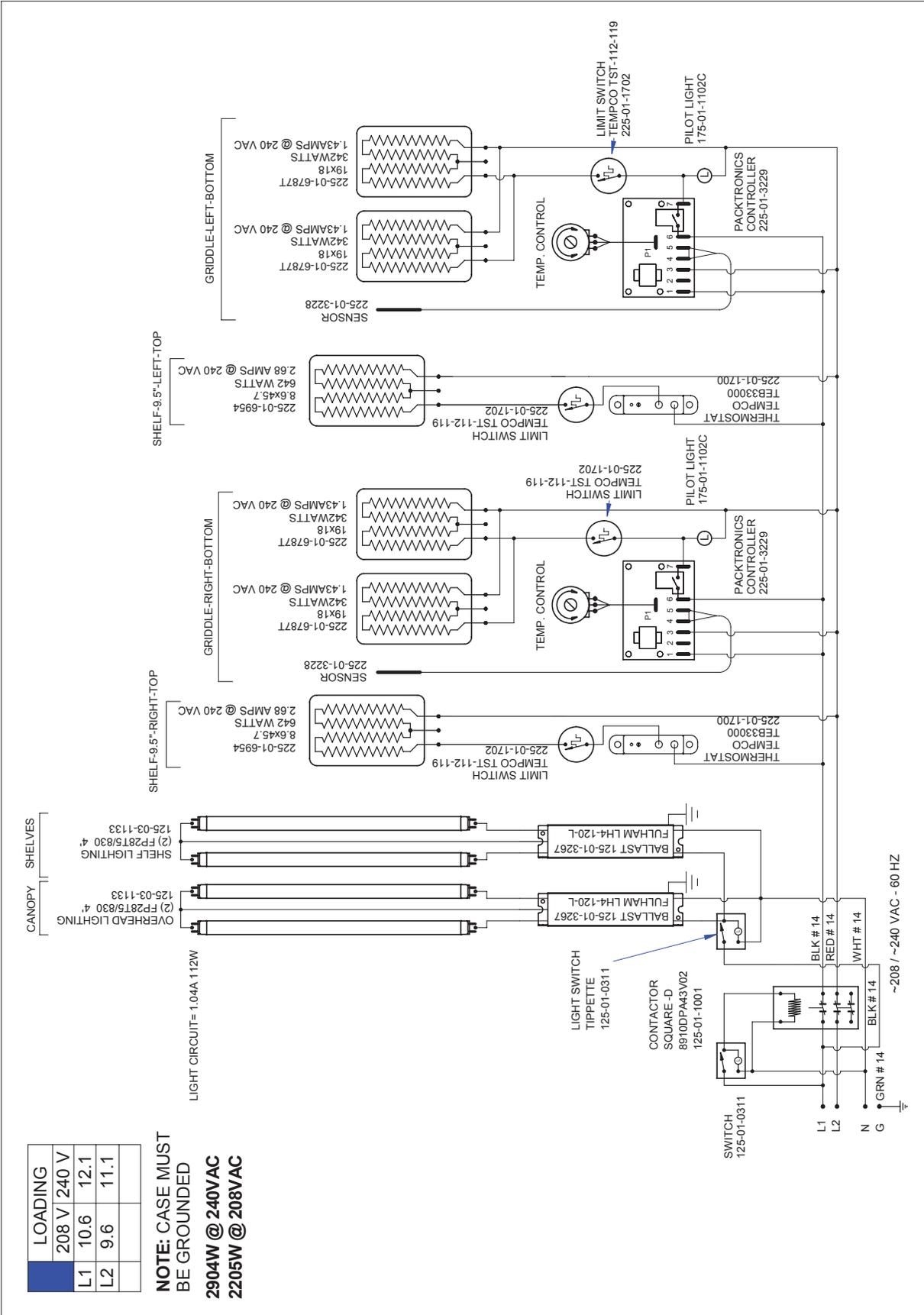
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#	DESCRIPTION:	DATE:	DATE:
B	Removed ballast fuse; removed sheet 2	11/19/08	4/19/07
C	Added limiter to griddle circuit	2/5/09	
FILE LOCATION:		DRAWING TITLE:	
		5' CASE WIRING DIAGRAM	
			PAGE 1 OF 1

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Wiring Diagrams (Cont'd)

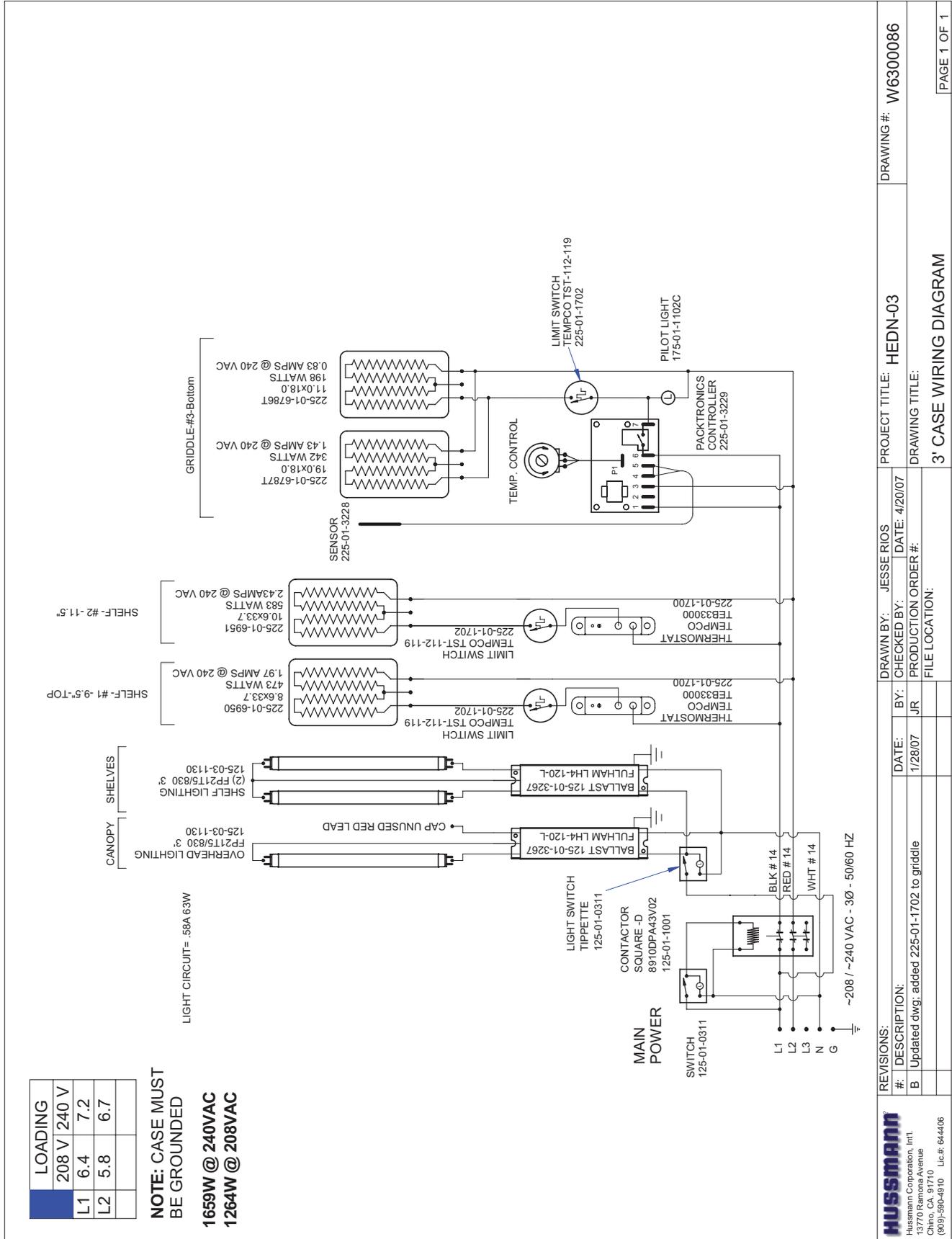


Wiring Diagrams (Cont'd)



REVISIONS: # 1 DESCRIPTION: B Added limiters to griddles; removed sheet 2	DRAWN BY: JESSE RIOS CHECKED BY: --- DATE: 4/19/07	PROJECT TITLE: HEDN-02 DRAWING #: W6300096
DATE: 2/6/09 BY: JR PRODUCTION ORDER #: FILE LOCATION:	DRAWING TITLE: 8' CASE WIRING DIAGRAM	
HUSMANN Hussmann Corporation, Int. 13770 Ramona Avenue Chino, CA 91710 (909) 596-4910 Lic# 944406		PAGE 1 OF 1

Wiring Diagrams (Cont'd)



LOADING	208 V	240 V
L1	6.4	7.2
L2	5.8	6.7

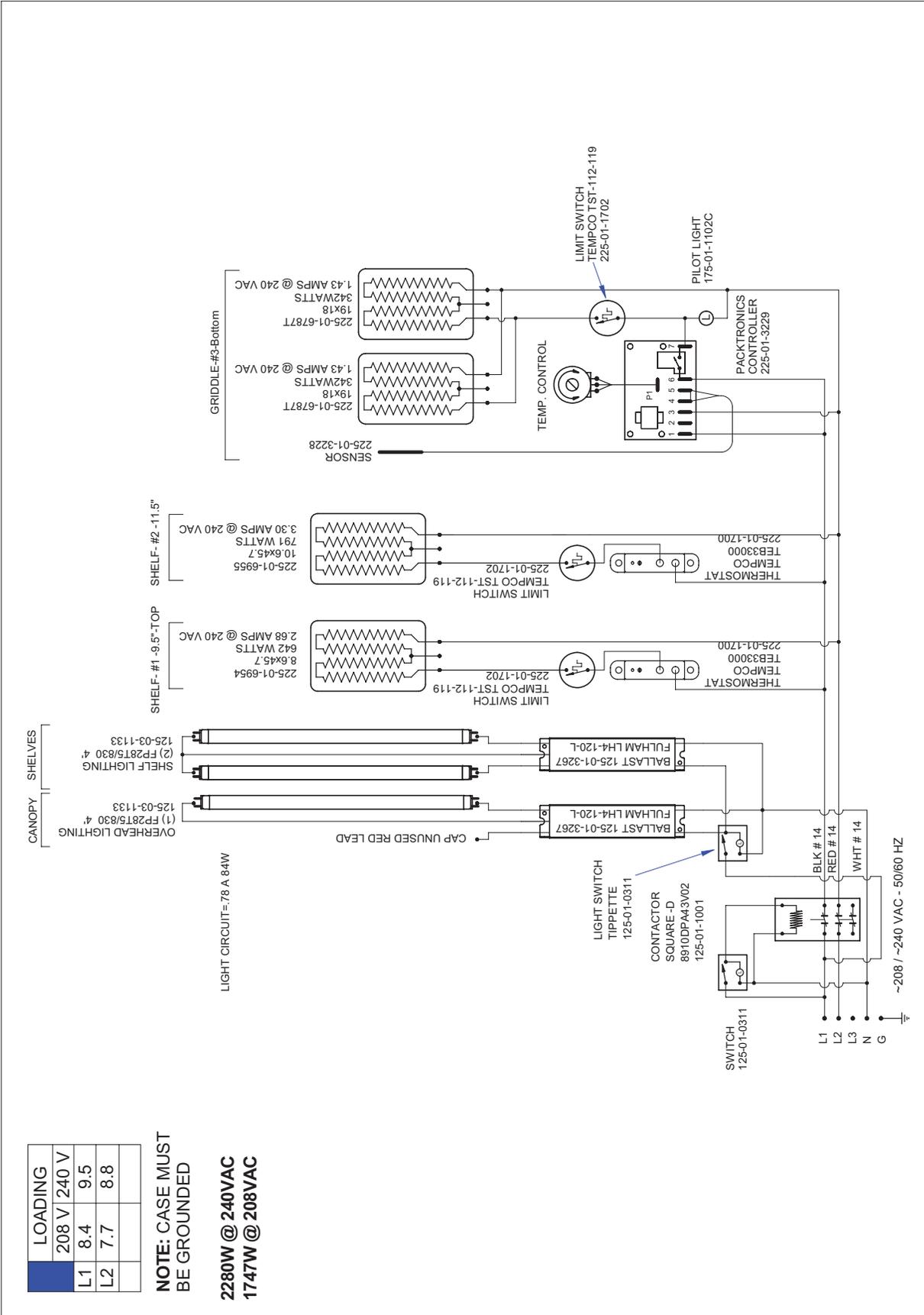
NOTE: CASE MUST BE GROUNDED

1659W @ 240VAC
1264W @ 208VAC

LIGHT CIRCUIT= 56A 63W

HUSSMANN Hussmann Corporation, Inc. 13770 Wilshire Avenue Chatsworth, CA 91310 (800)-590-4810 Lic.# 644406		REVISIONS: # : DESCRIPTION: B Updated dwg; added 225-01-1702 to griddle	DRAWN BY: JESSE RIOS CHECKED BY: DATE: 4/20/07 BY: JR PRODUCTION ORDER #: FILE LOCATION:	PROJECT TITLE: HEDN-03 DRAWING #: W6300086
3' CASE WIRING DIAGRAM				
PAGE 1 OF 1				

Wiring Diagrams (Cont'd)



LOADING	208 V	240 V
L1	8.4	9.5
L2	7.7	8.8

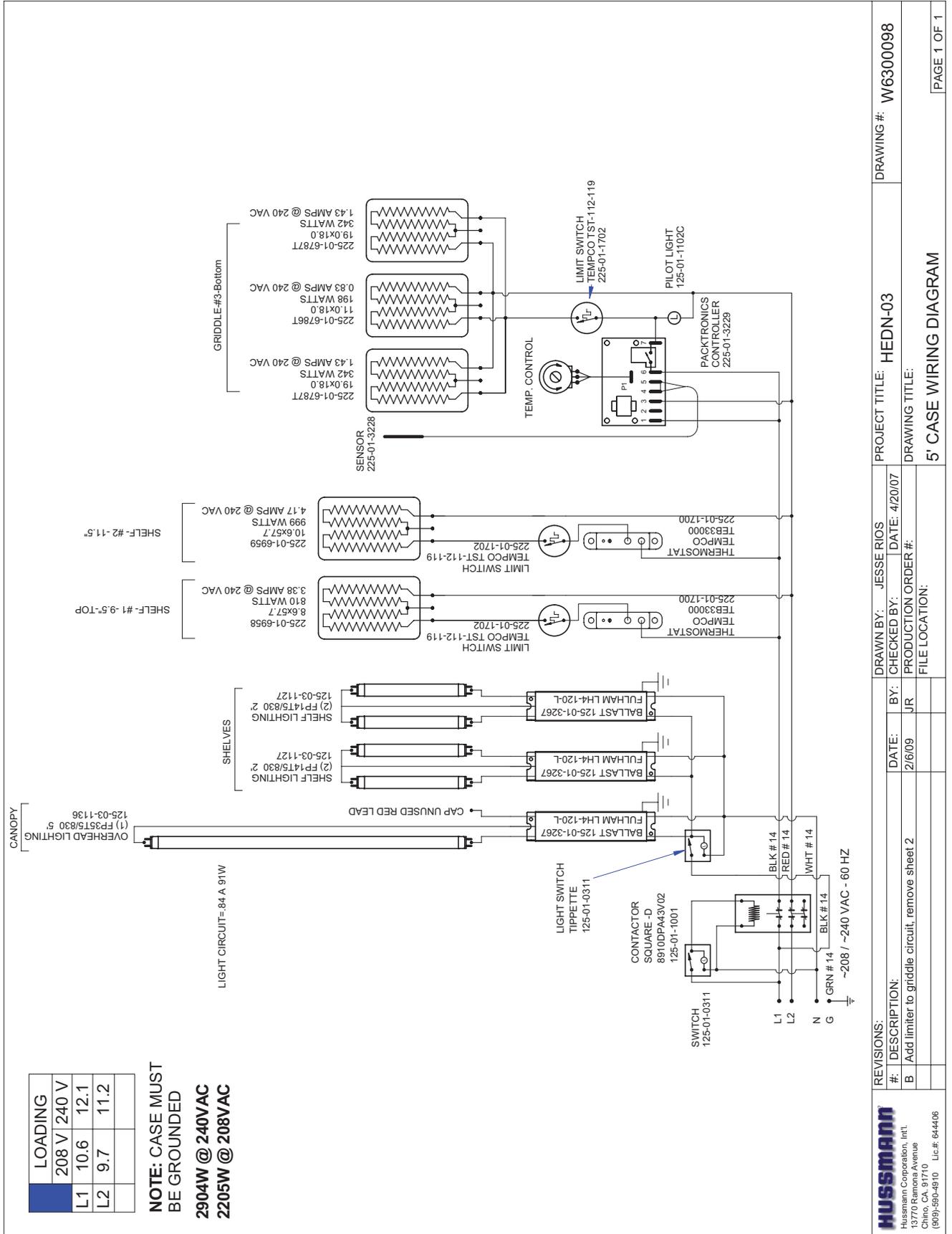
NOTE: CASE MUST BE GROUNDED

2280W @ 240VAC
1747W @ 208VAC

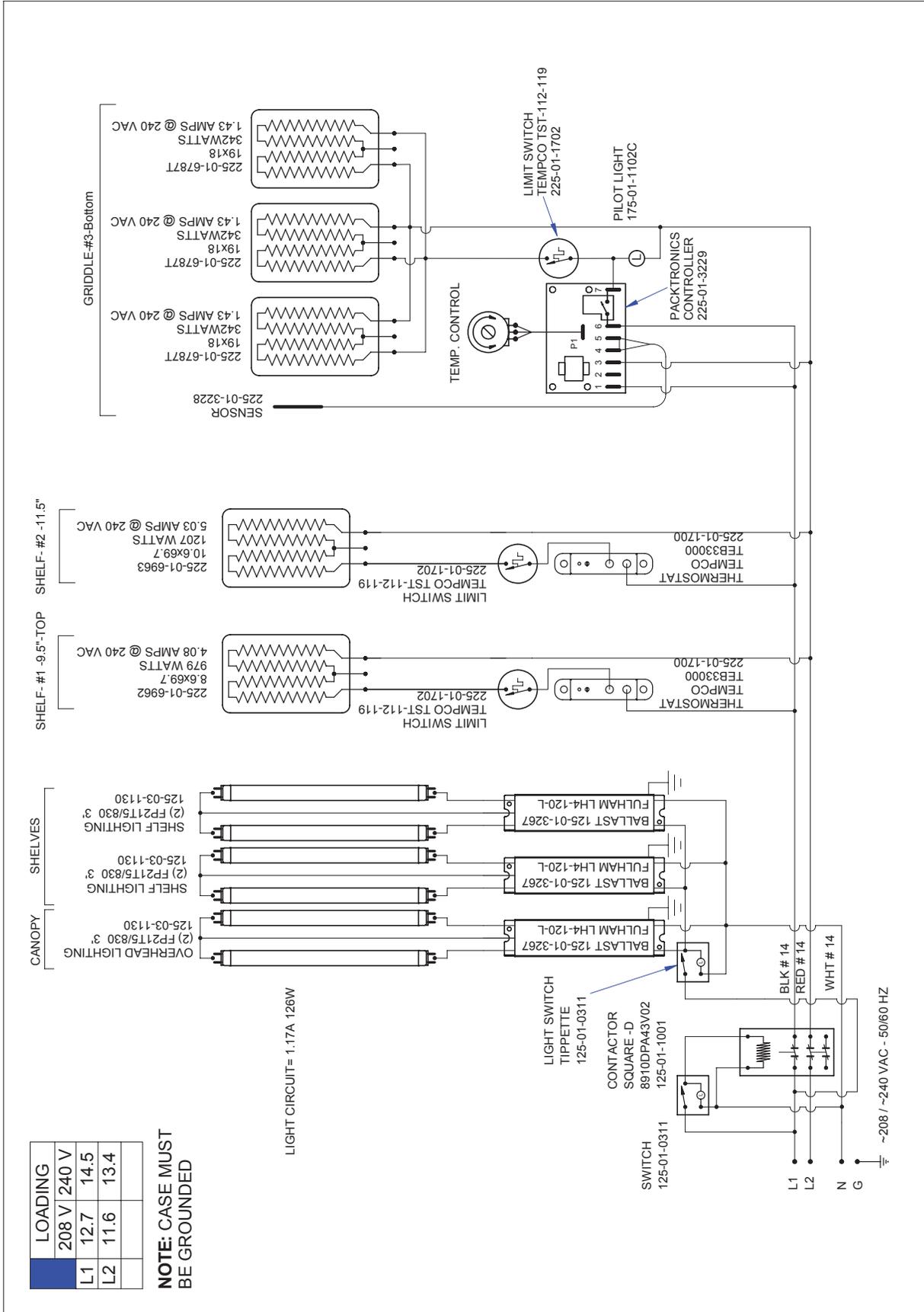
REVISIONS: # 1 DESCRIPTION: Updated dwg; added limiter to griddle circuit # 2 Updated dwg; added limiter to griddle circuit		DRAWN BY: JESSE RIOS CHECKED BY: [] DATE: 4/20/07 PRODUCTION ORDER #: []	PROJECT TITLE: HEDN-03 DRAWING TITLE: 4' CASE WIRING DIAGRAM	DRAWING #: W6300097 PAGE 1 OF 1
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 13770 Channing Avenue
 Channing, CA 95710
 (909) 590-4810 Lic.# 644406

Wiring Diagrams (Cont'd)

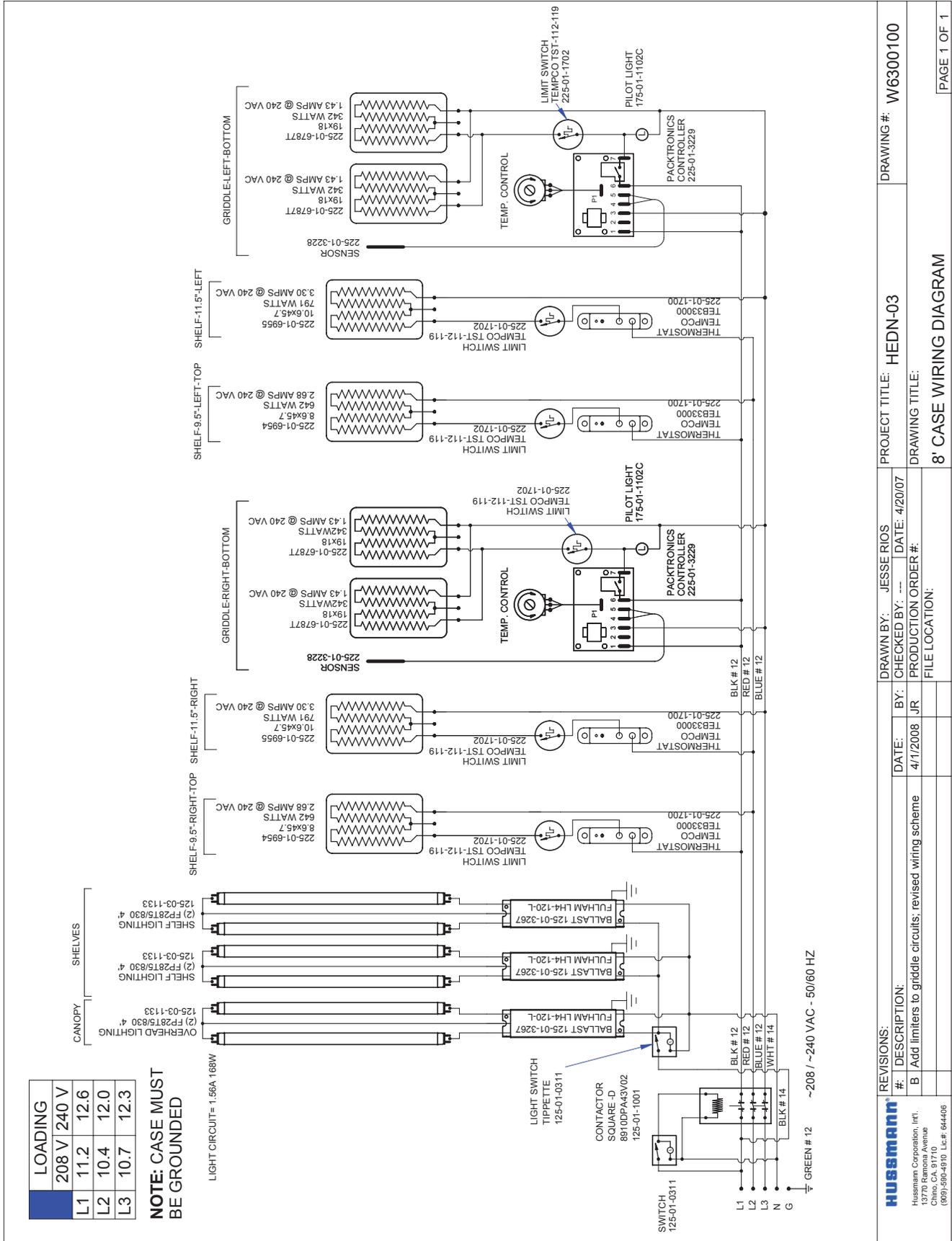


Wiring Diagrams (Cont'd)



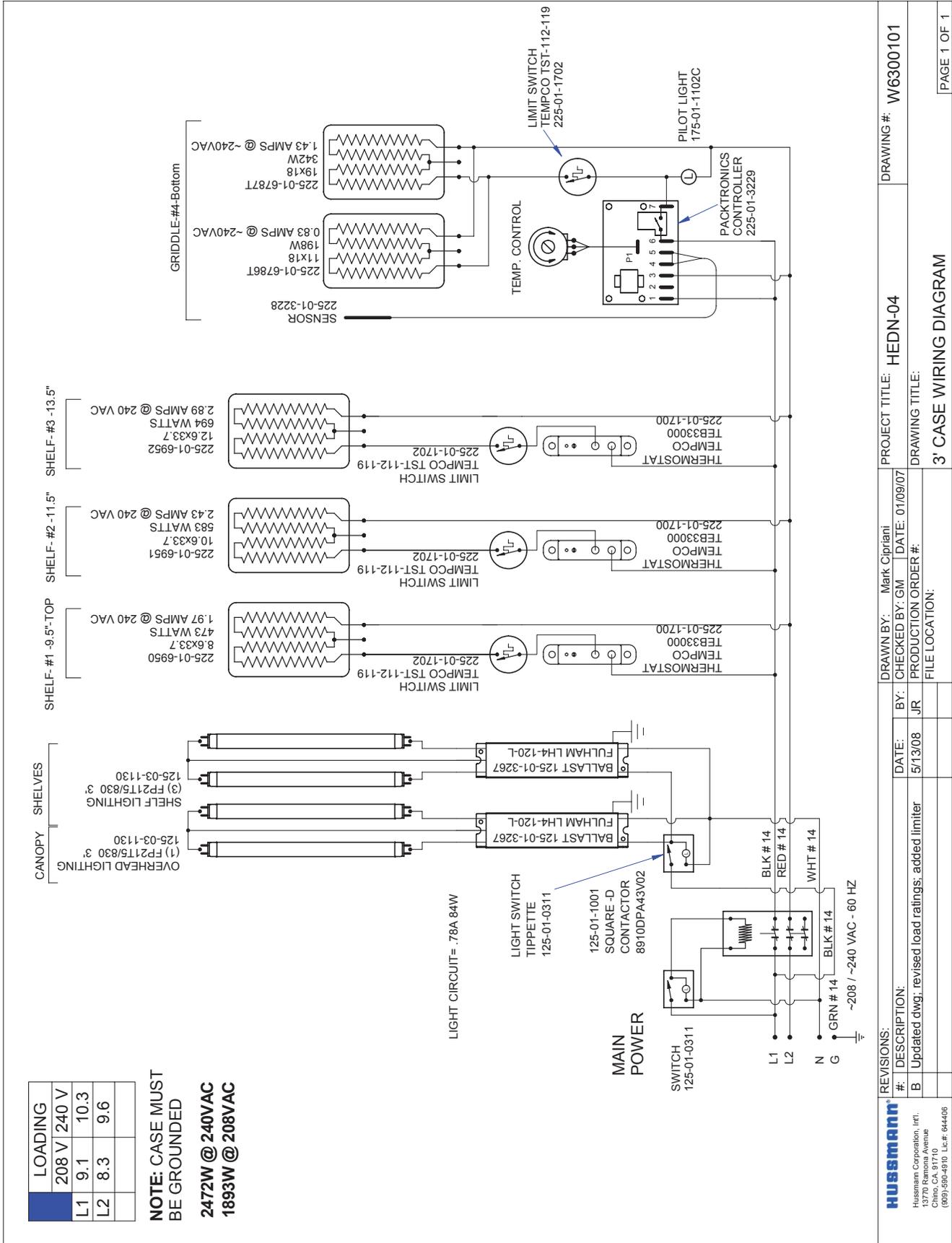
REVISIONS: # : DESCRIPTION: B Updated dwg; removed sheet 2; added limiter to griddle		DRAWN BY: JESSE RIOS CHECKED BY: --- DATE: 4/20/07	PROJECT TITLE: HEDN-03 DRAWING #: W6300099
DATE: 3/17/08 BY: JR PRODUCTION ORDER #:		DRAWING TITLE: 6' CASE - WIRING DIAGRAM	
FILE LOCATION:		PAGE 1 OF 1	

Wiring Diagrams (Cont'd)

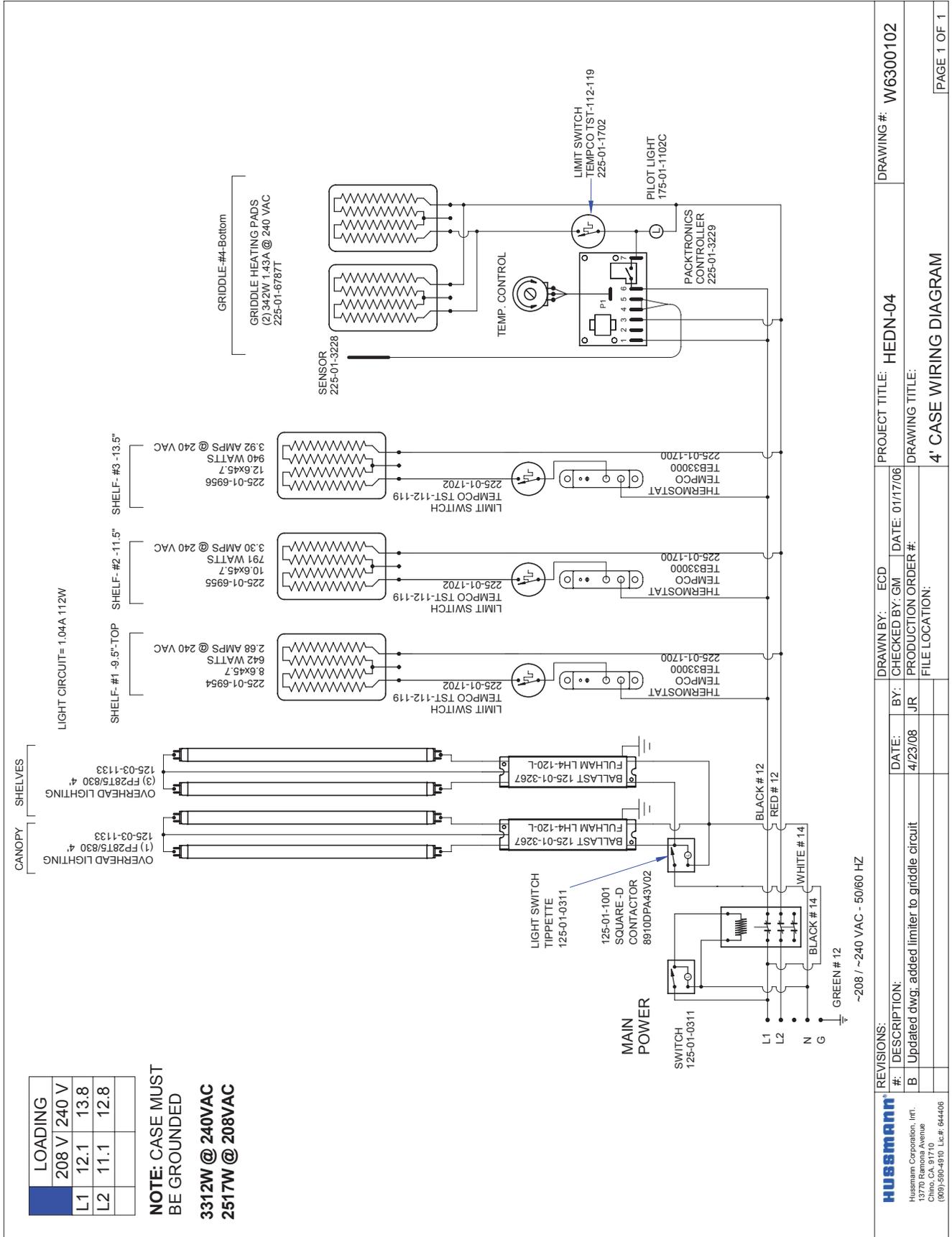


HUSMANN Husmann Corporation, Int. 13770 Ramona Avenue Chino, CA 91710 (909) 596-4910 Lic# 644406	REVISIONS: # 1 DESCRIPTION: B Add limiters to griddle circuits; revised wiring scheme	DATE: 4/1/2008	BY: JR	DRAWN BY: JESSE RIOS	CHECKED BY: ---	DATE: 4/20/07	
PROJECT TITLE: HEDN-03				DRAWING #: W6300100			
FILE LOCATION:				DRAWING TITLE: 8' CASE WIRING DIAGRAM			
PAGE 1 OF 1							

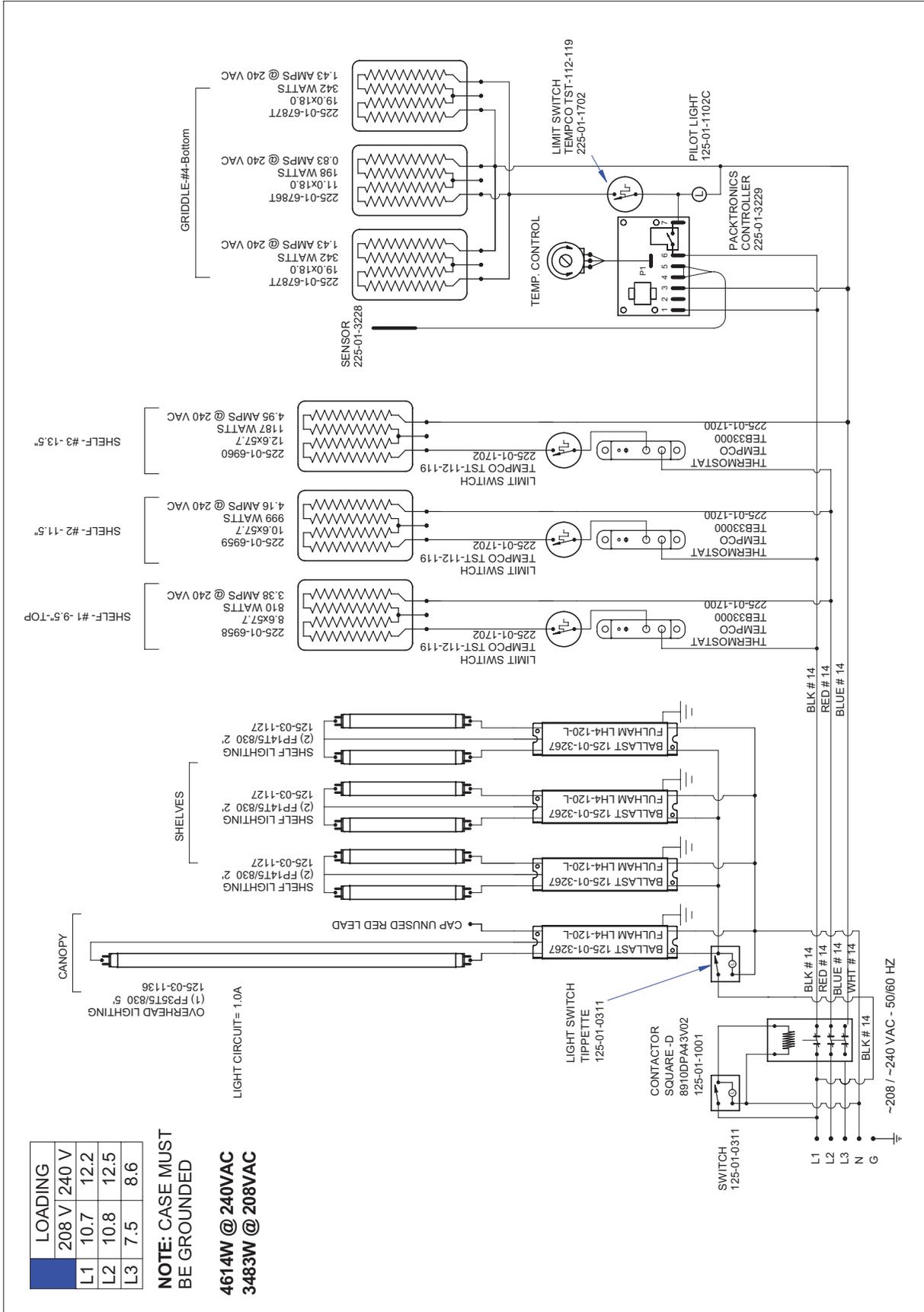
Wiring Diagrams (Cont'd)



Wiring Diagrams (Cont'd)



Wiring Diagrams (Cont'd)



LOADING	208 V	240 V
L1	10.7	12.2
L2	10.8	12.5
L3	7.5	8.6

NOTE: CASE MUST BE GROUNDED

4614W @ 240VAC
3483W @ 208VAC

LIGHT CIRCUIT = 1.0A

REVISIONS:
 #: DESCRIPTION:
 B Add limiter to griddle circuit; remove sheet 2
 # PRODUCTION ORDER #:
 FILE LOCATION:

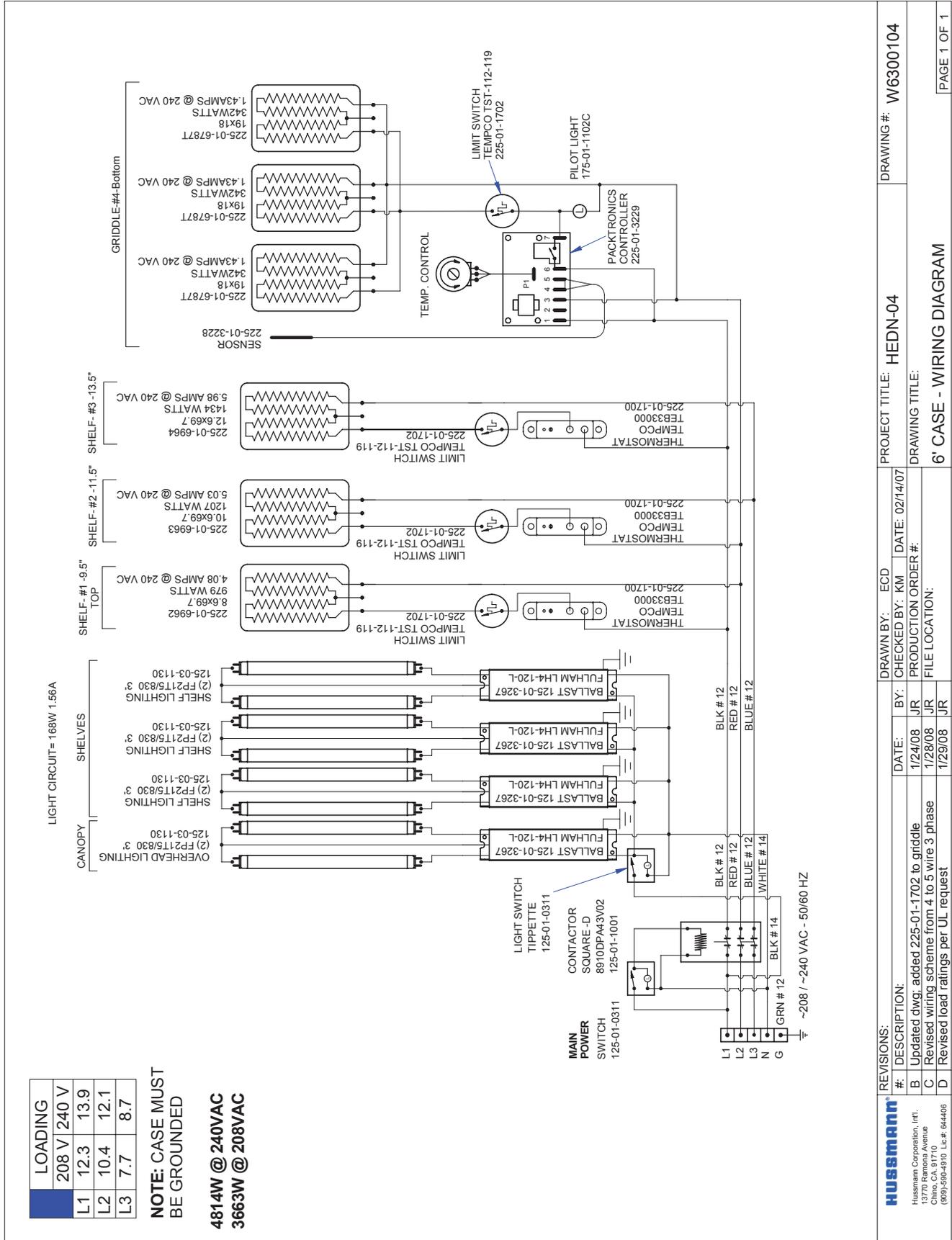
DRAWN BY: JESSE RIOS
 CHECKED BY: DATE: 4/23/07
 BY: JR PRODUCTION ORDER #:
 DATE: 6/9/08

PROJECT TITLE: HEDN-04
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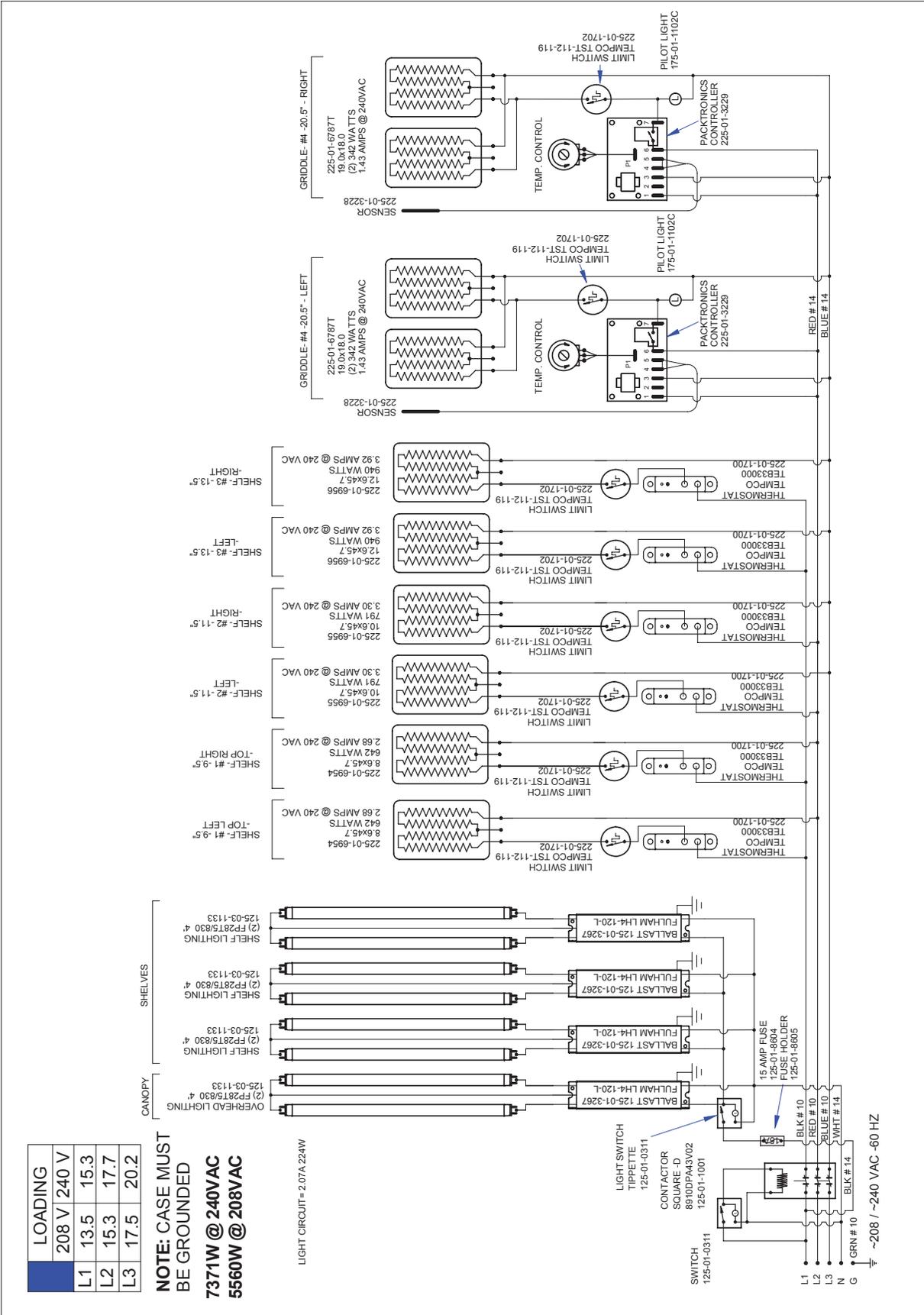
DRAWING TITLE: 5' CASE WIRING DIAGRAM
 PAGE 1 OF 1

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Wiring Diagrams (Cont'd)



Wiring Diagrams (Cont'd)



LOADING	208 V	240 V
L1	13.5	15.3
L2	15.3	17.7
L3	17.5	20.2

NOTE: CASE MUST BE GROUNDED
7371W @ 240VAC
5560W @ 208VAC

LIGHT CIRCUIT= 2.07A 224W

REVISIONS:

#	DESCRIPTION:	DATE:	BY:	DATE:
1	Added limiters to griddle circuits, removed sheet 2	2/6/09	JR	5/1/07

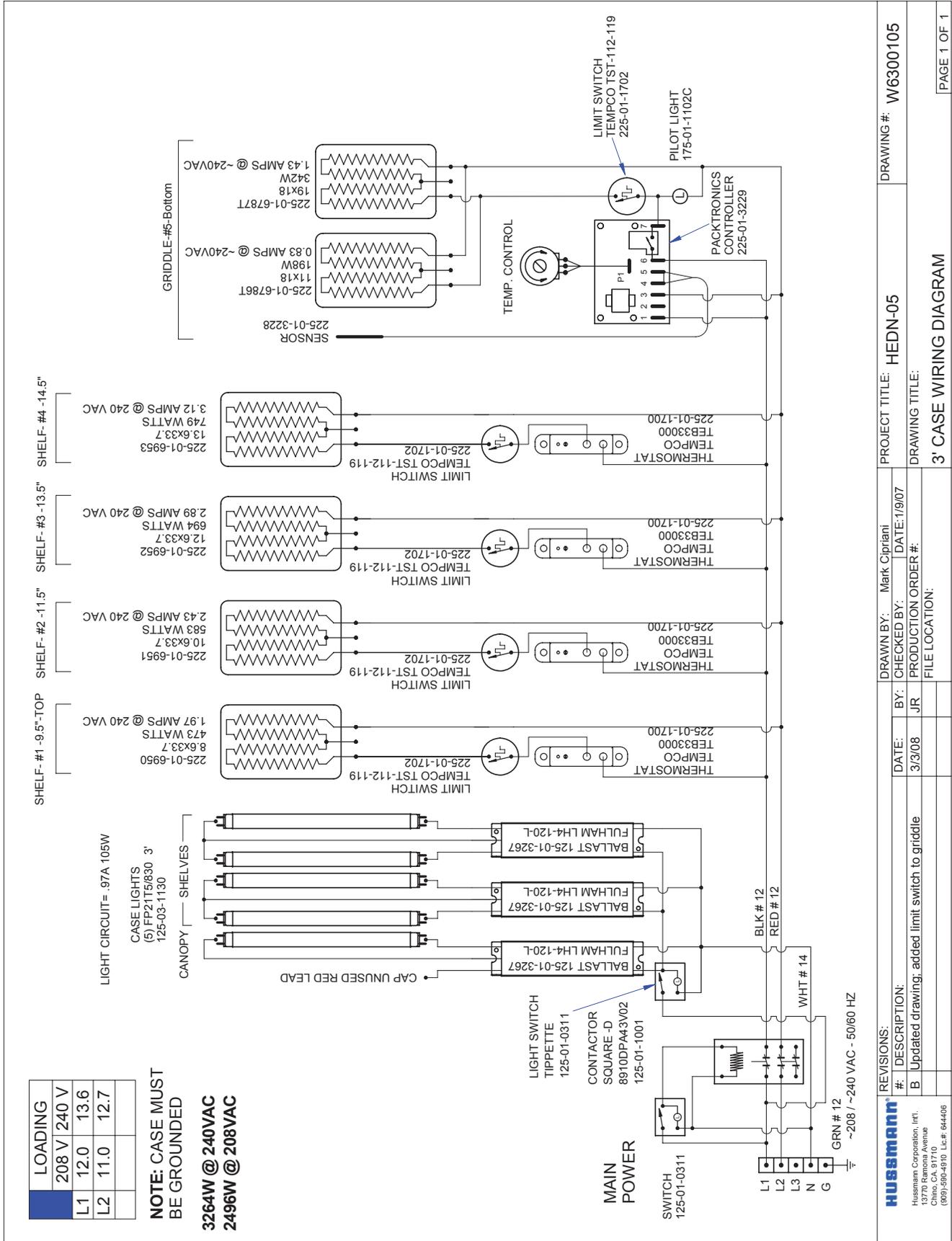
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DRAWING TITLE: 8' CASE - WIRING DIAGRAM
DRAWING #: W6300084
FILE LOCATION:

DRAWN BY: JESSE RIOS
CHECKED BY: ---
DATE: 5/1/07
PRODUCTION ORDER #:

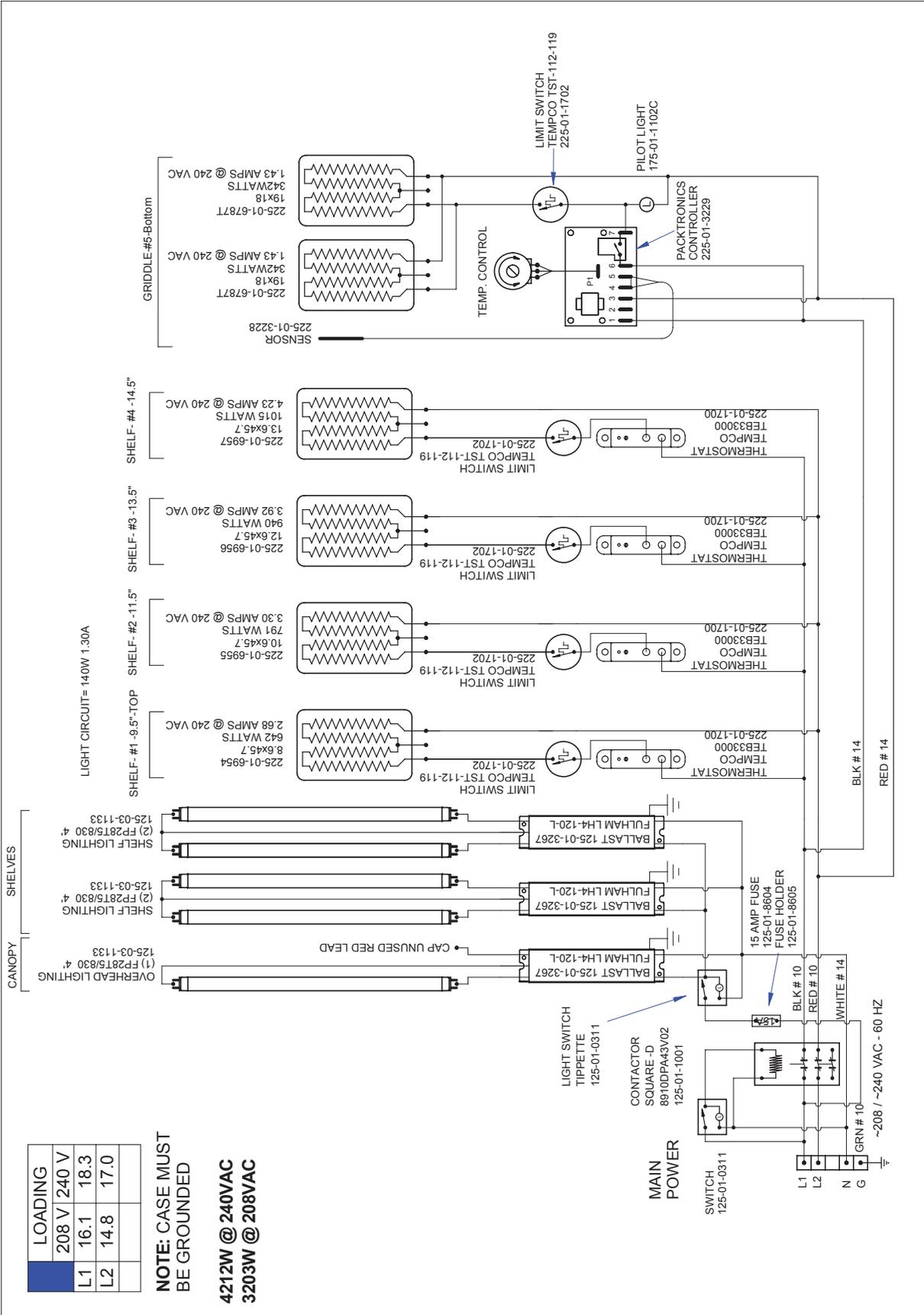
HUSMANN
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 Chino, CA 91710
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PAGE 1 OF 1

Wiring Diagrams (Cont'd)



Wiring Diagrams (Cont'd)



LOADING	208 V	240 V
L1	16.1	18.3
L2	14.8	17.0

NOTE: CASE MUST BE GROUNDED

4212W @ 240VAC
3203W @ 208VAC

REVISIONS:

#	DESCRIPTION:	DATE:	BY:
B	Updated dwg: revised load ratings; added fuses	1/30/08	JR
C	Added fuses	4/7/08	JR
D	Removed branch circuit fuses	11/18/08	JR

PROJECT TITLE: HEDN-05
DRAWING #: W6300091

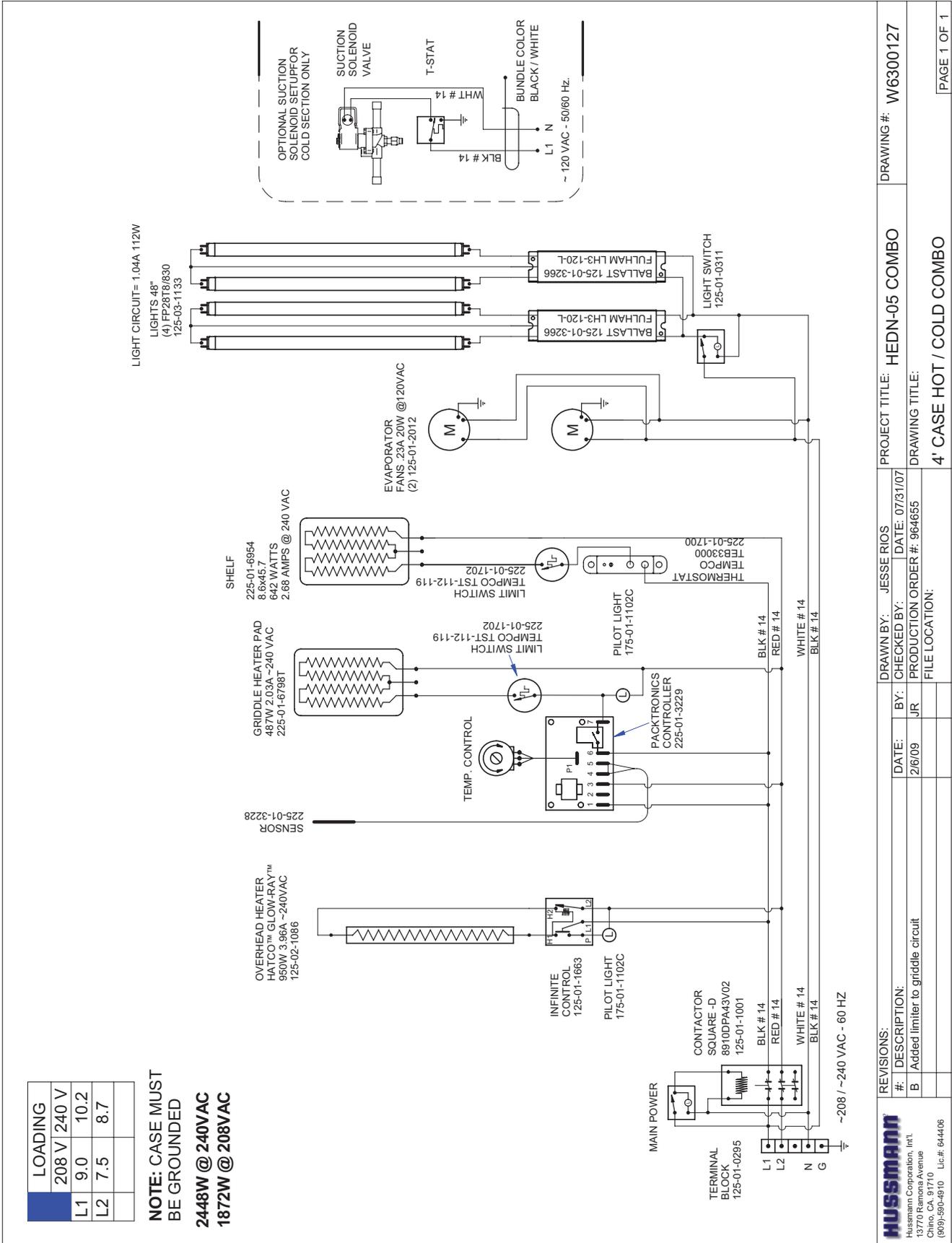
DRAWN BY: Mark Cipriani
CHECKED BY: ---
DATE: 01/19/07

PRODUCTION ORDER #:
FILE LOCATION:

DRAWING TITLE: 4' CASE WIRING DIAGRAM

PAGE 1 OF 1

Wiring Diagrams (Cont'd)

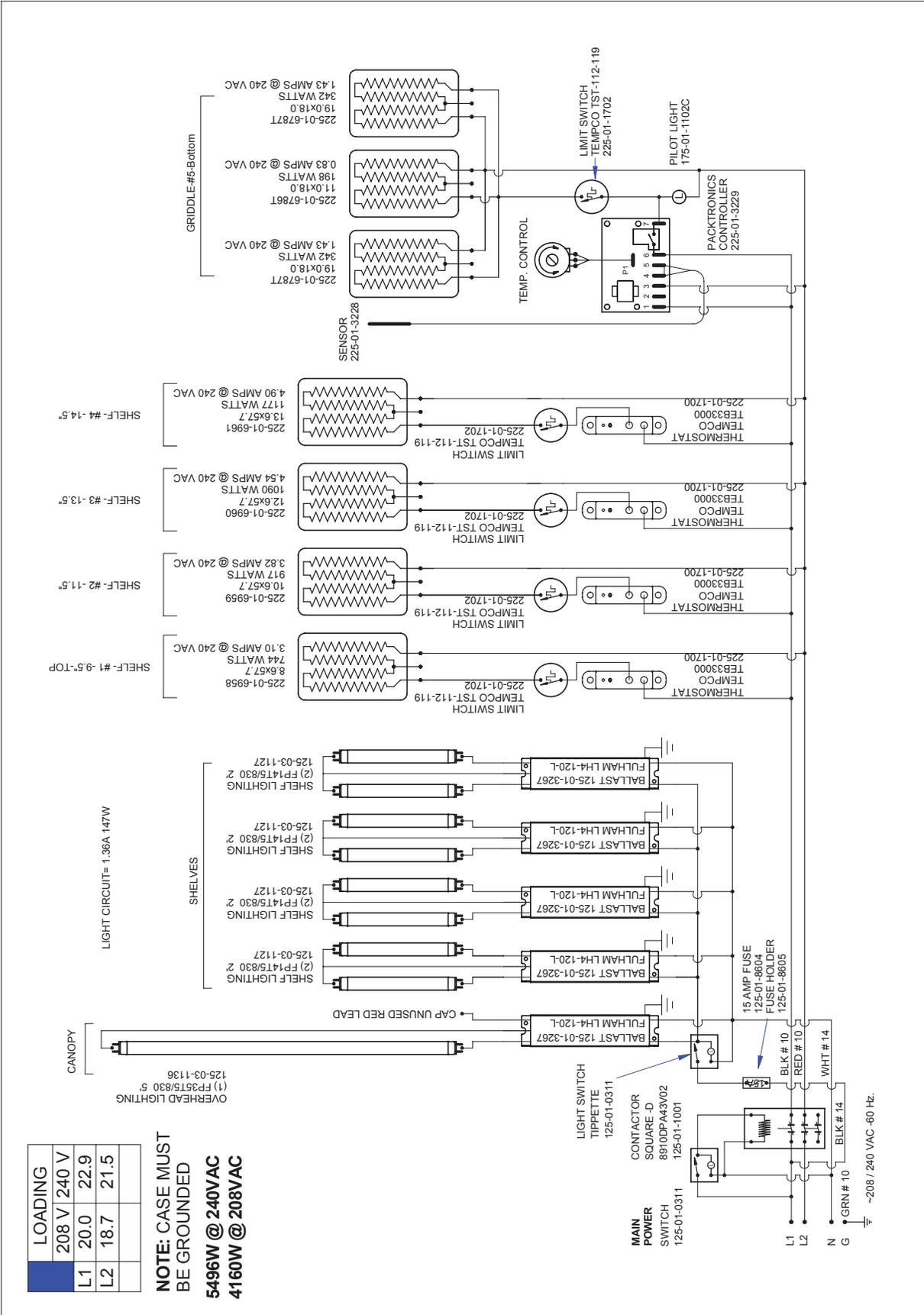


LOADING	208 V	240 V
L1	9.0	10.2
L2	7.5	8.7

NOTE: CASE MUST BE GROUNDED
2448W @ 240VAC
1872W @ 208VAC

HUSSMANN Hussmann Corporation, Inc. 13770 Mustang Avenue Cedar Rapids, IA 52404 (800) 590-4810 Lic.# 644406		REVISIONS:	
#:	DESCRIPTION:	DATE:	BY:
B	Added limiter to griddle circuit	2/6/09	JR
DRAWING TITLE: 4' CASE HOT / COLD COMBO		DRAWING #: W6300127	
PROJECT TITLE: HEDN-05 COMBO		DATE: 07/31/07	
DRAWING TITLE: 4' CASE HOT / COLD COMBO		PRODUCTION ORDER #: 964655	
FILE LOCATION:		DRAWING TITLE:	

Wiring Diagrams (Cont'd)



LOADING	208 V	240 V
L1	20.0	22.9
L2	18.7	21.5

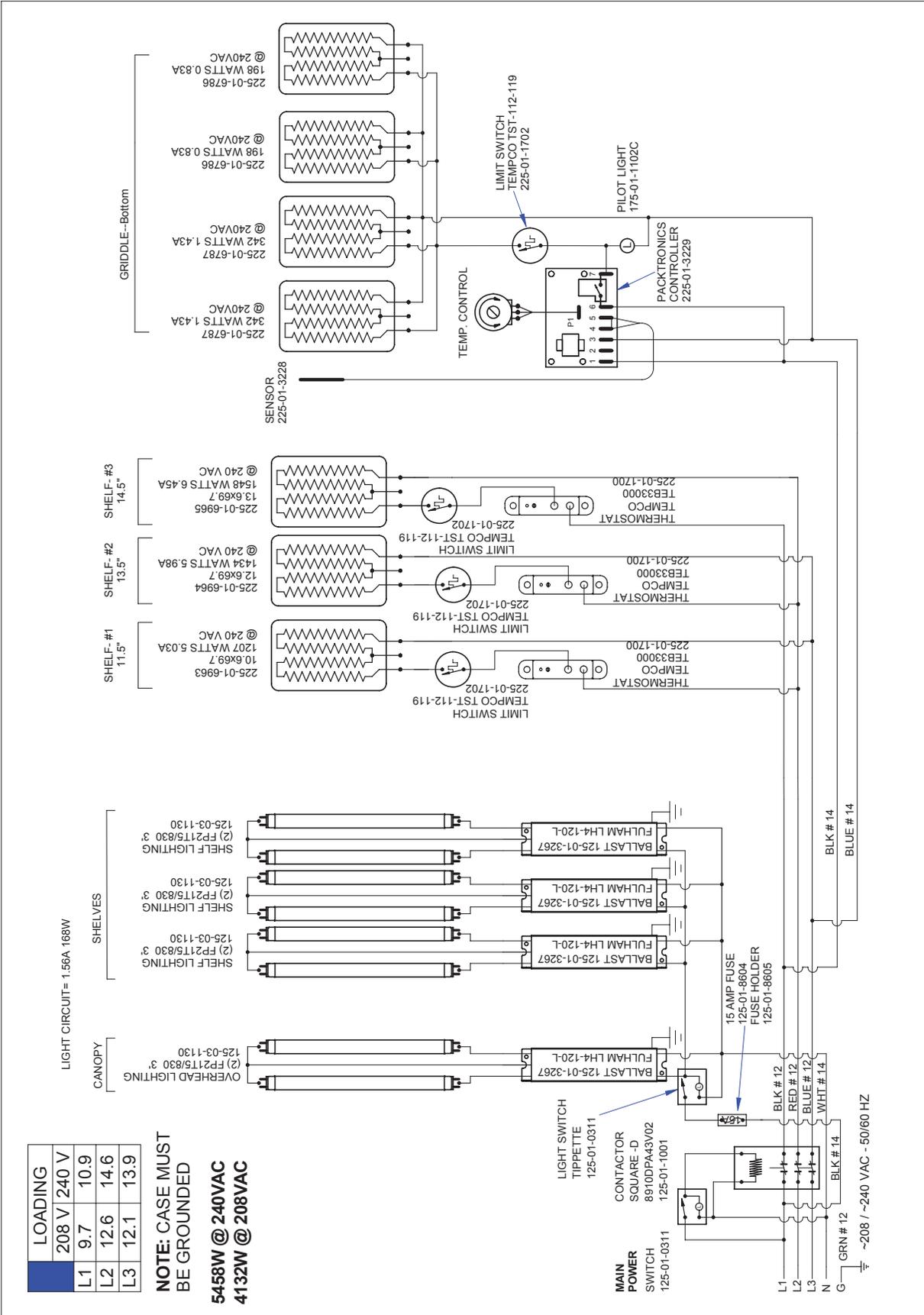
NOTE: CASE MUST BE GROUNDED
5496W @ 240VAC
4160W @ 208VAC

REVISIONS: # 1 DESCRIPTION: B Update dwg. add limiter to griddle circuit

DRAWN BY: ECD DATE: 01/17/07
 CHECKED BY: XXX
 BY: JR DATE: 2/6/09
 PRODUCTION ORDER #:
 FILE LOCATION:

PROJECT TITLE: HEDN-05 DRAWING #: W6300106
 DRAWING TITLE: 5' CASE WIRING DIAGRAM
 PAGE 1 OF 1

Wiring Diagrams (Cont'd)

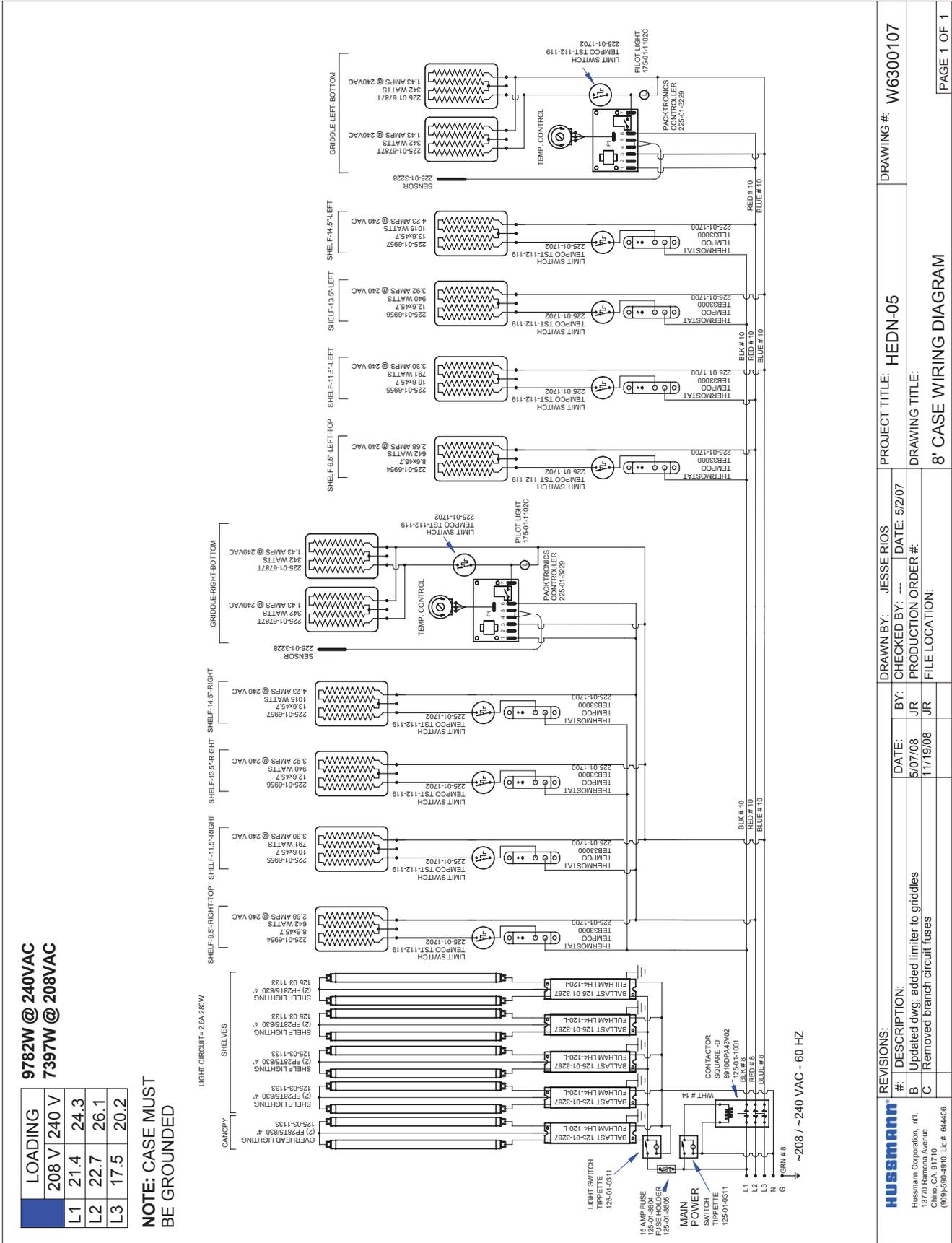


LOADING	208 V	240 V
L1	9.7	10.9
L2	12.6	14.6
L3	12.1	13.9

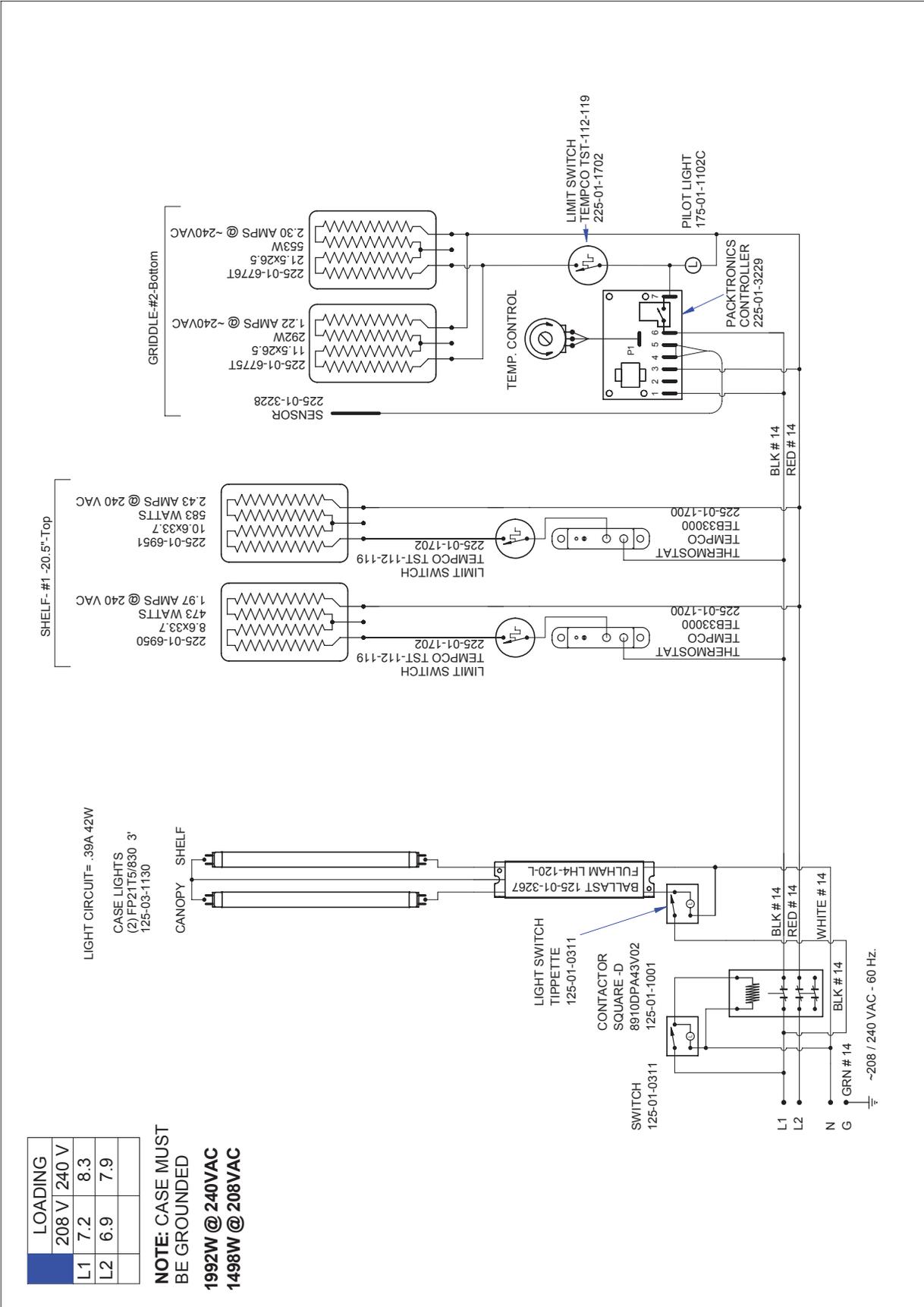
NOTE: CASE MUST BE GROUNDED
5458W @ 240VAC
4132W @ 208VAC

REVISIONS: # DESCRIPTION: C Griddle circuit corrections: connections missing D Revise Load Ratings per UL input test E Removed branch circuit fuses		DRAWN BY: JESSE RIOS CHECKED BY: --- DATE: 2/11/08 2/12/08 11/19/08	PROJECT TITLE: HEDN-05 W/O TOP SHELF DRAWING TITLE: 6' CASE - WIRING DIAGRAM	DRAWING #: W6300126 PAGE 1 OF 1
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Wiring Diagrams (Cont'd)



Wiring Diagrams (Cont'd)

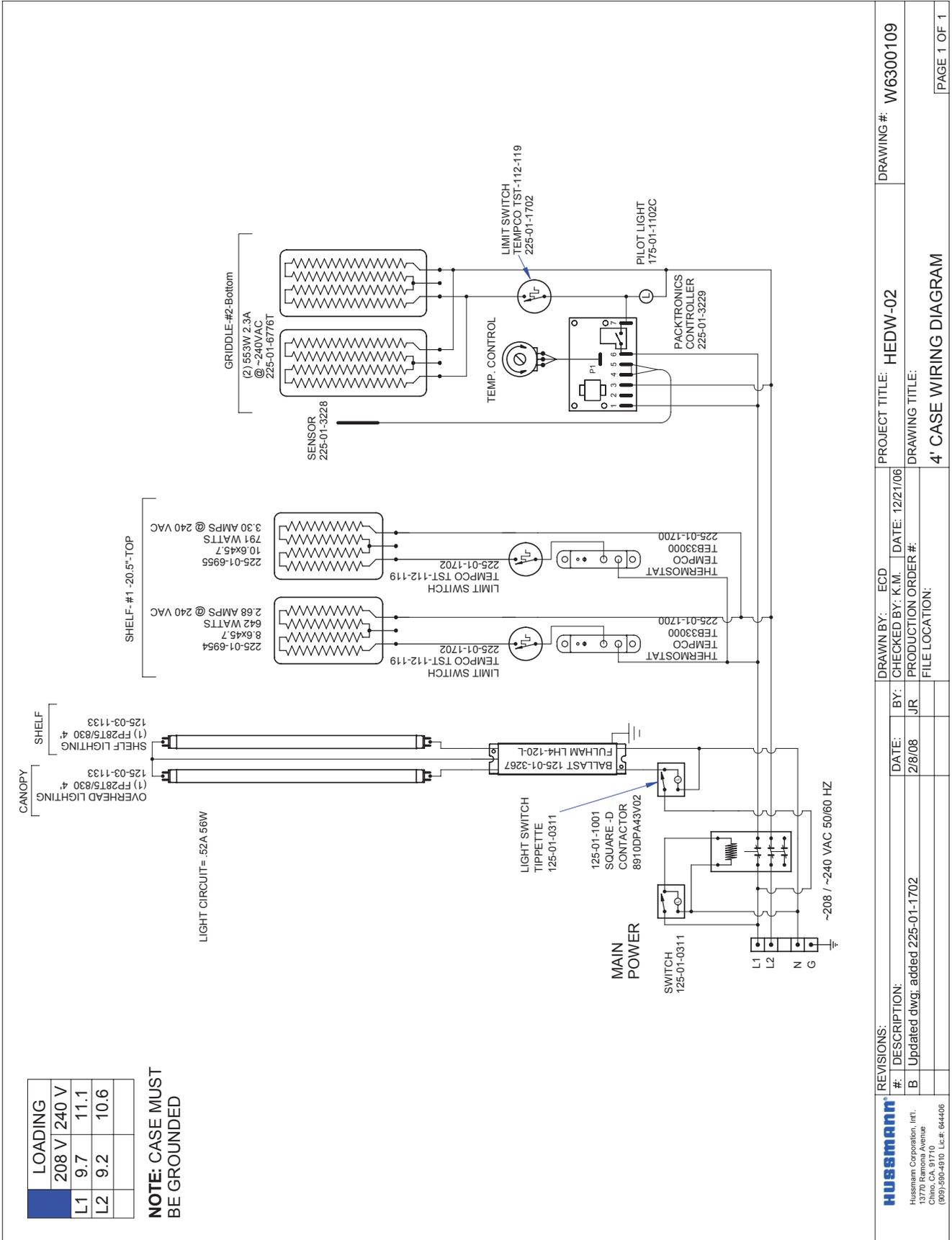


LOADING	208 V	240 V
L1	7.2	8.3
L2	6.9	7.9

NOTE: CASE MUST BE GROUNDED
1992W @ 240VAC
1498W @ 208VAC

REVISIONS: # DESCRIPTION: A Updated drawing, removed ballast fuses, Added Sheet # 2 B Added limiter to griddle circuit		DRAWN BY: Mark Cipriani CHECKED BY: DATE: 01/09/07 PRODUCTION ORDER #: FILE LOCATION:	PROJECT TITLE: HEDW-02 CASES DWG #: W6300108
DATE: 5/9/07 BY: JR 2/5/09 JR		DRAWING TITLE: 3' CASE WIRING DIAGRAM	
		PAGE 1 OF 1	

Wiring Diagrams (Cont'd)

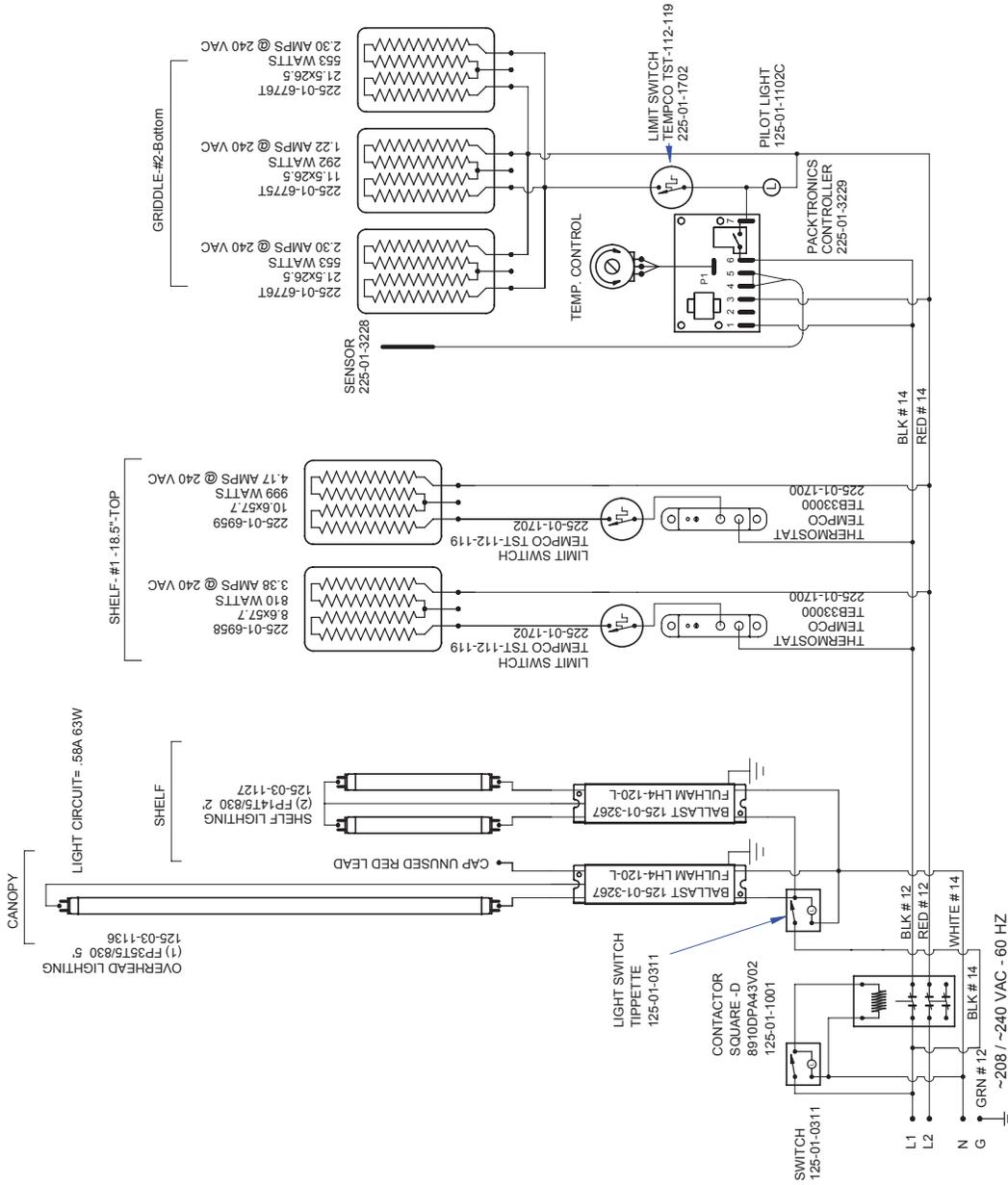


HUSMANN		PROJECT TITLE: HEDW-02		DRAWING #: W6300109	
Hussmann Corporation, Int. 13770 Ramona Avenue Chino, CA 91710 (909) 596-4910 Lic# 944406		DRAWN BY: ECD		DATE: 12/21/06	
REVISIONS:		CHECKED BY: K.M.		DATE: 12/21/06	
# 1 DESCRIPTION:		BY: JR		PRODUCTION ORDER #:	
B Updated dwg; added 225-01-1702		DATE: 2/8/08		FILE LOCATION:	
4' CASE WIRING DIAGRAM					
PAGE 1 OF 1					

Wiring Diagrams (Cont'd)

LOADING	208 V	240 V
L1	12.2	14.0
L2	11.6	13.4

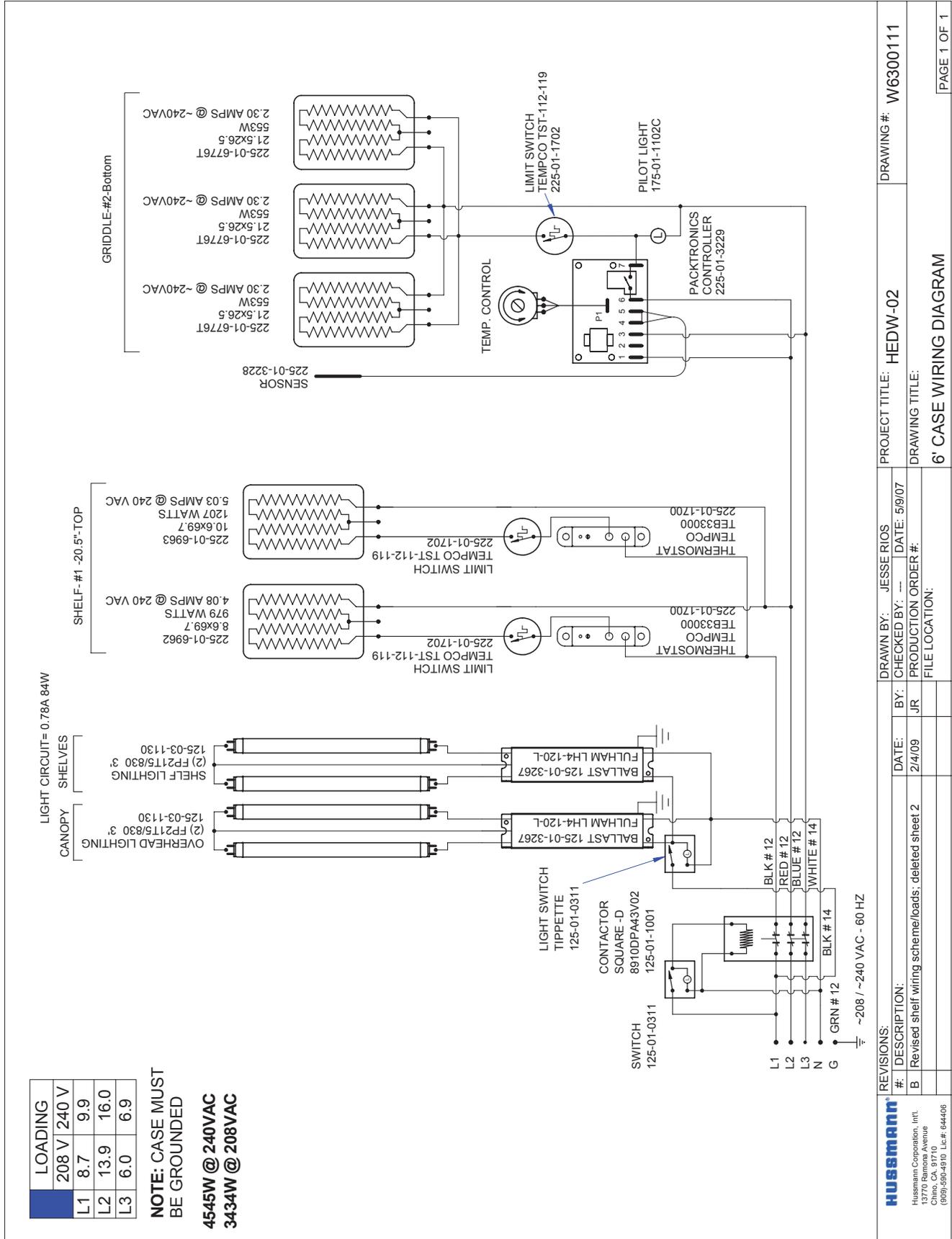
NOTE: CASE MUST BE GROUNDED
3360W @ 240VAC
2538W @ 208VAC



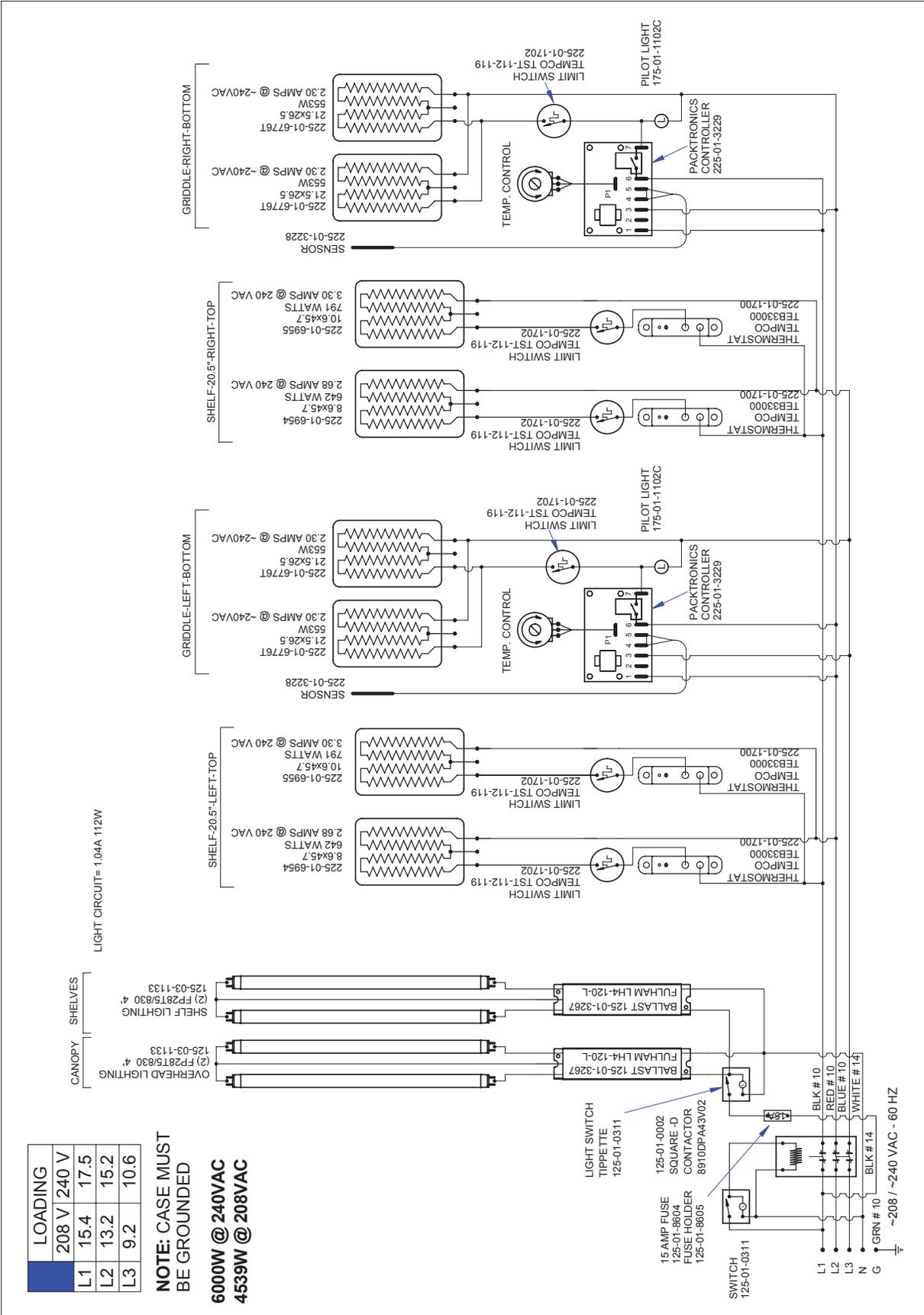
REVISIONS:		PROJECT TITLE: HEDW-02	DRAWING #: W6300110
#:	DESCRIPTION:	DRAWN BY: JESSE RIOS	DATE: 5/9/07
B	Added limiter to griddle; removed sheet 2	CHECKED BY: JR	PRODUCTION ORDER #:
		FILE LOCATION:	DRAWING TITLE: 5' CASE WIRING DIAGRAM
			PAGE 1 OF 1

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Wiring Diagrams (Cont'd)



Wiring Diagrams (Cont'd)

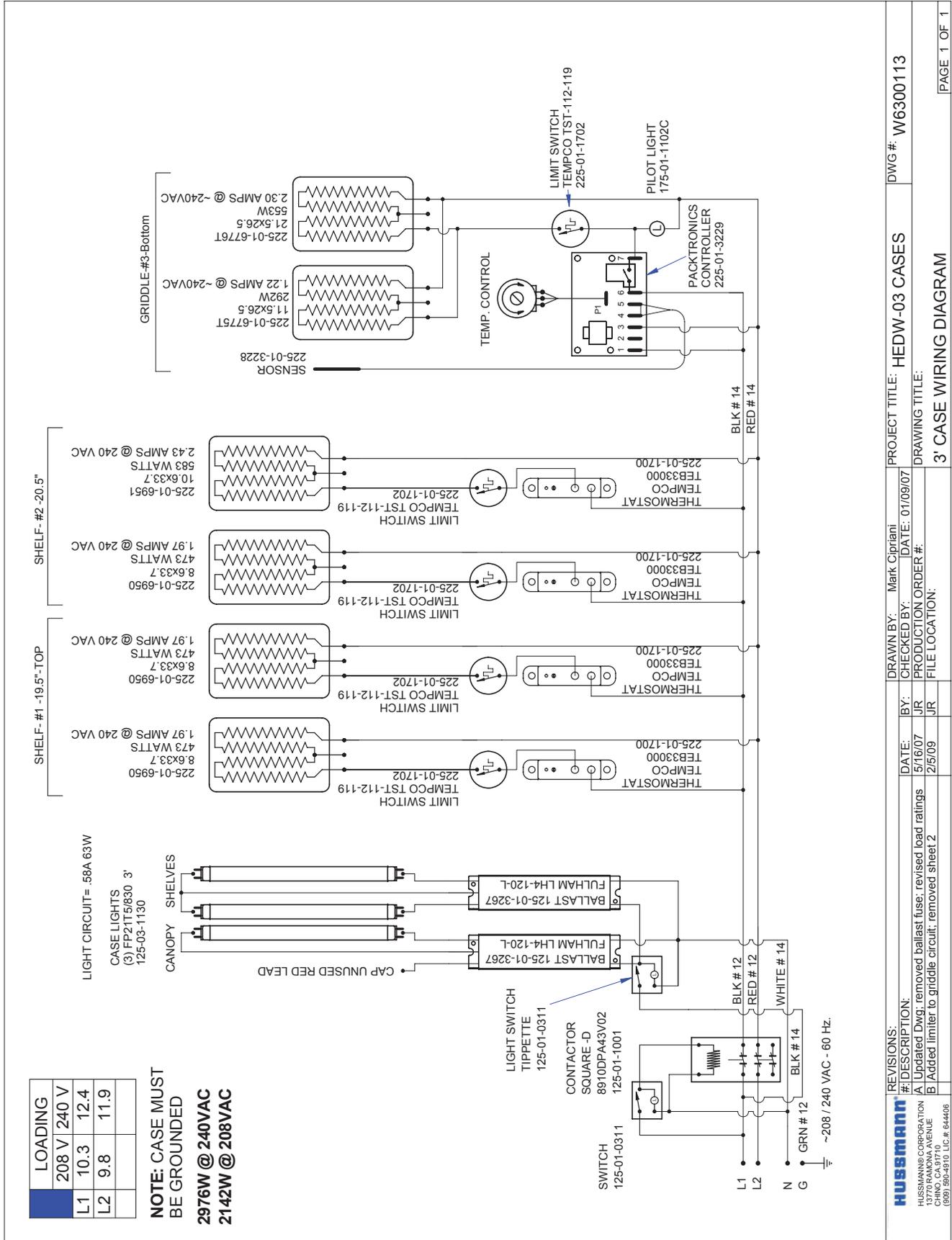


LOADING	208 V	240 V
L1	15.4	17.5
L2	13.2	15.2
L3	9.2	10.6

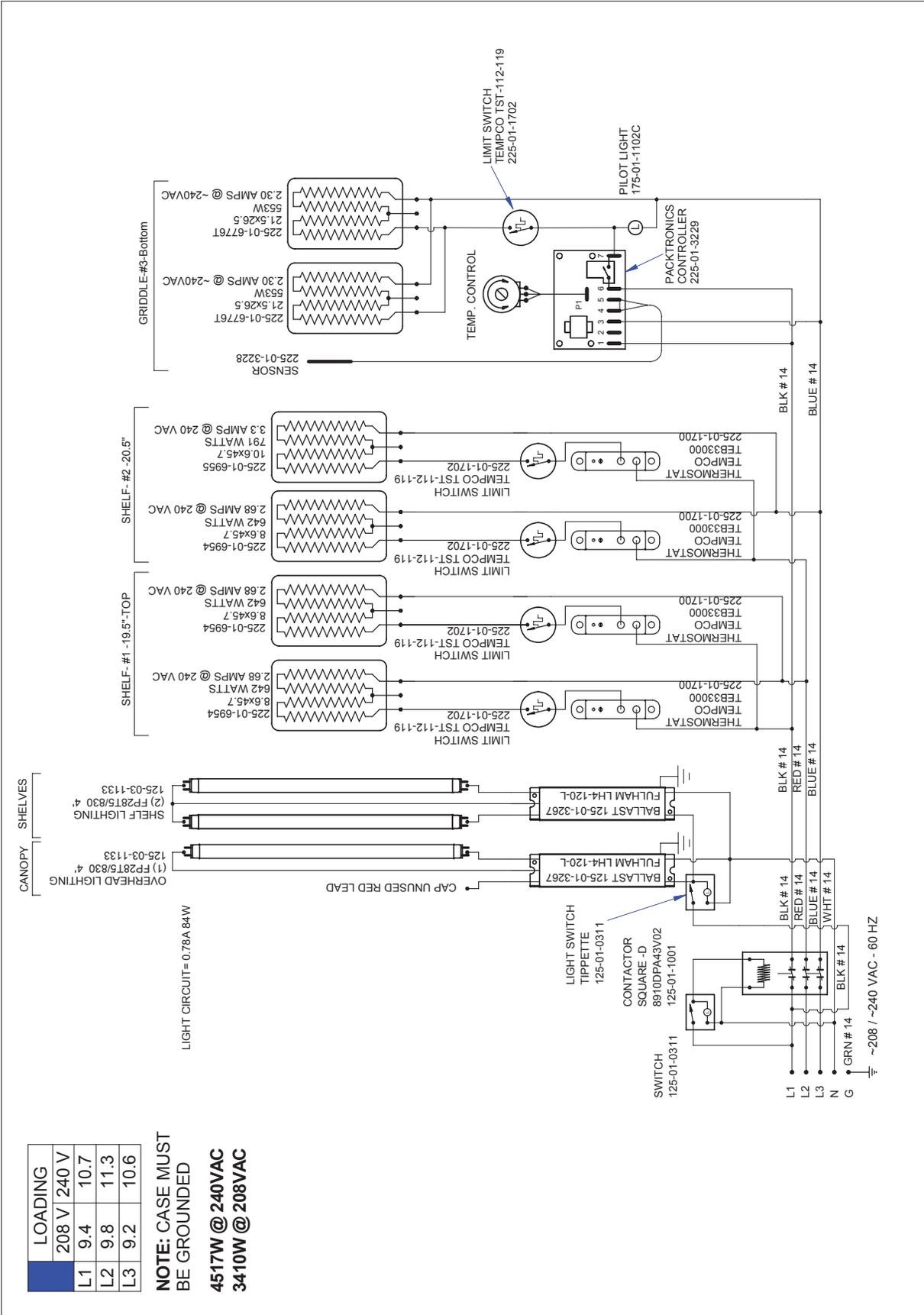
NOTE: CASE MUST BE GROUNDED
6000W @ 240VAC
4539W @ 208VAC

REVISIONS: # 1 DESCRIPTION: B Added limiters to griddle; revised wiring scheme/loads		DRAWN BY: JESSE RIOS CHECKED BY: --- DATE: 5/9/07	PROJECT TITLE: HEDW-02 DRAWING TITLE: 8' CASE WIRING DIAGRAM
FILE LOCATION:		PRODUCTION ORDER #:	DRAWING #: W6300112
(2) F2815/830 4 (2) F2815/830 4 (2) F2815/830 4 (2) F2815/830 4		BY: JR DATE: 2/4/09	PAGE 1 OF 1

Wiring Diagrams (Cont'd)



Wiring Diagrams (Cont'd)



LOADING	208 V	240 V
L1	9.4	10.7
L2	9.8	11.3
L3	9.2	10.6

NOTE: CASE MUST BE GROUNDED
4517W @ 240VAC
3410W @ 208VAC

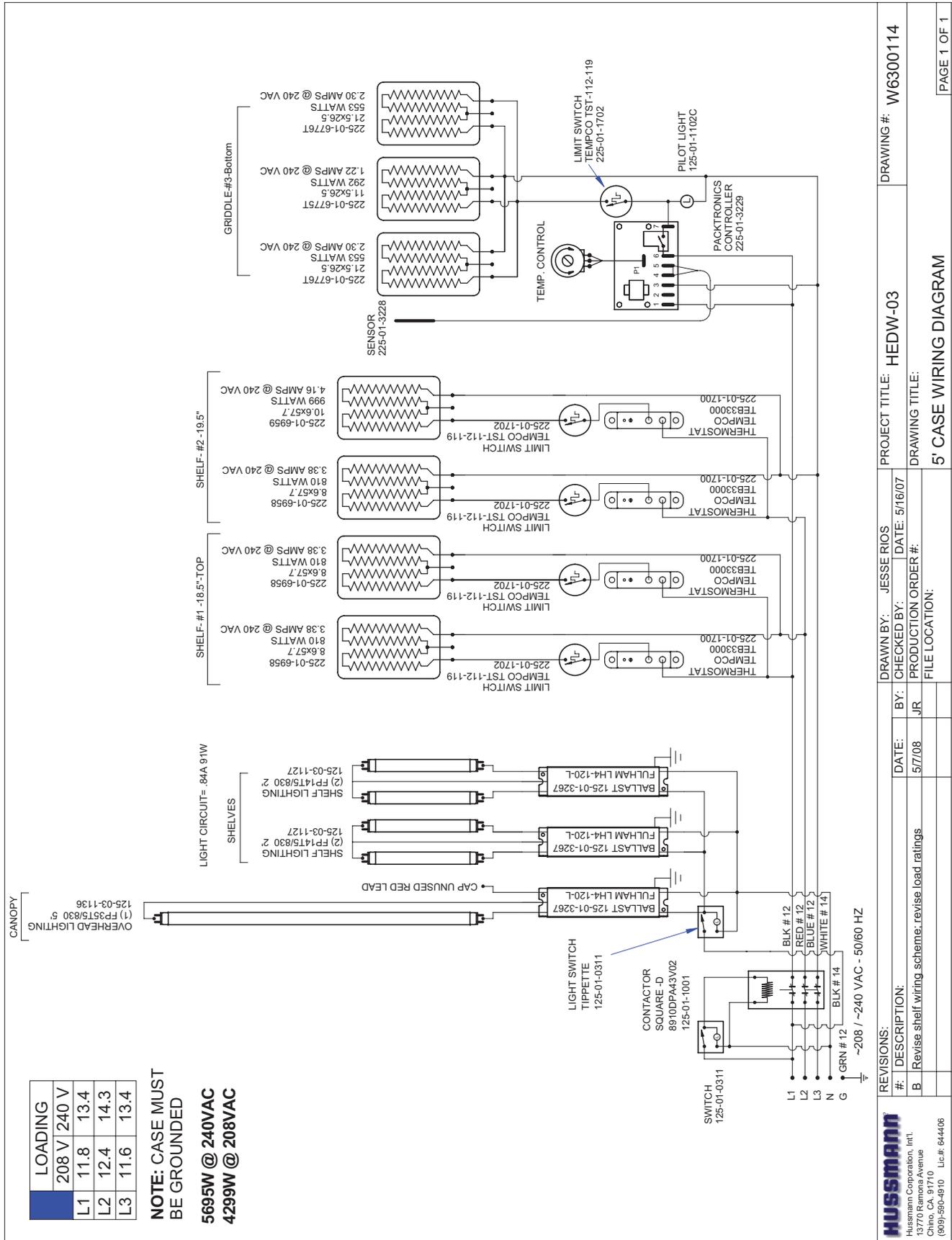
REVISIONS:

#	DESCRIPTION:	DATE:	BY:	CHECKED BY:	DATE:
B	Add limiter to gridle circuit; remove sheet 2	6/4/08	JR	JR	5/7/07
C	Re-arrange shelf wiring scheme; ease of assembly	1/13/09	JR	JR	

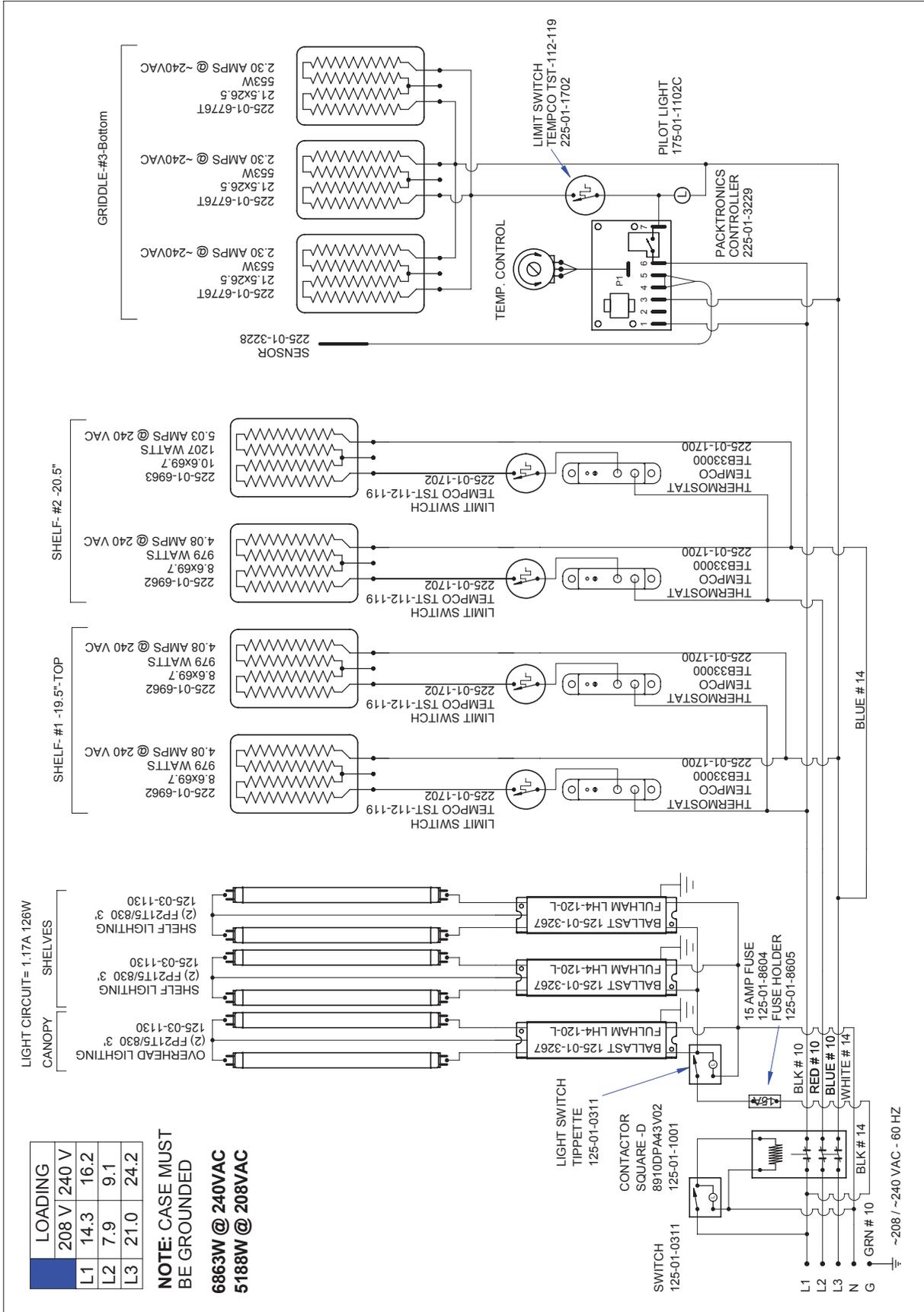
PROJECT TITLE: HEDW-03
DRAWING TITLE: 4' CASE WIRING DIAGRAM
DRAWING #: W6300082
FILE LOCATION:

HUSSMANN
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 Chino, CA 91710
 (909) 596-4910 Lic.# 644406

Wiring Diagrams (Cont'd)



Wiring Diagrams (Cont'd)



LOADING	208 V	240 V
L1	14.3	16.2
L2	7.9	9.1
L3	21.0	24.2

NOTE: CASE MUST BE GROUNDED
6863W @ 240VAC
5188W @ 208VAC

REVISIONS:

#	DESCRIPTION:	DATE:	BY:	CHECKED BY:	DATE:
B	Revise shelf wiring scheme	5/7/08	JR		5/16/07
C	Remove branch circuit fuses	11/19/08	JR		

PROJECT TITLE: HEDW-03
DRAWING #: W6300115

DRAWING TITLE: 6' CASE - WIRING DIAGRAM
FILE LOCATION:

DRAWN BY: JESSE RIOS
DATE: 5/16/07

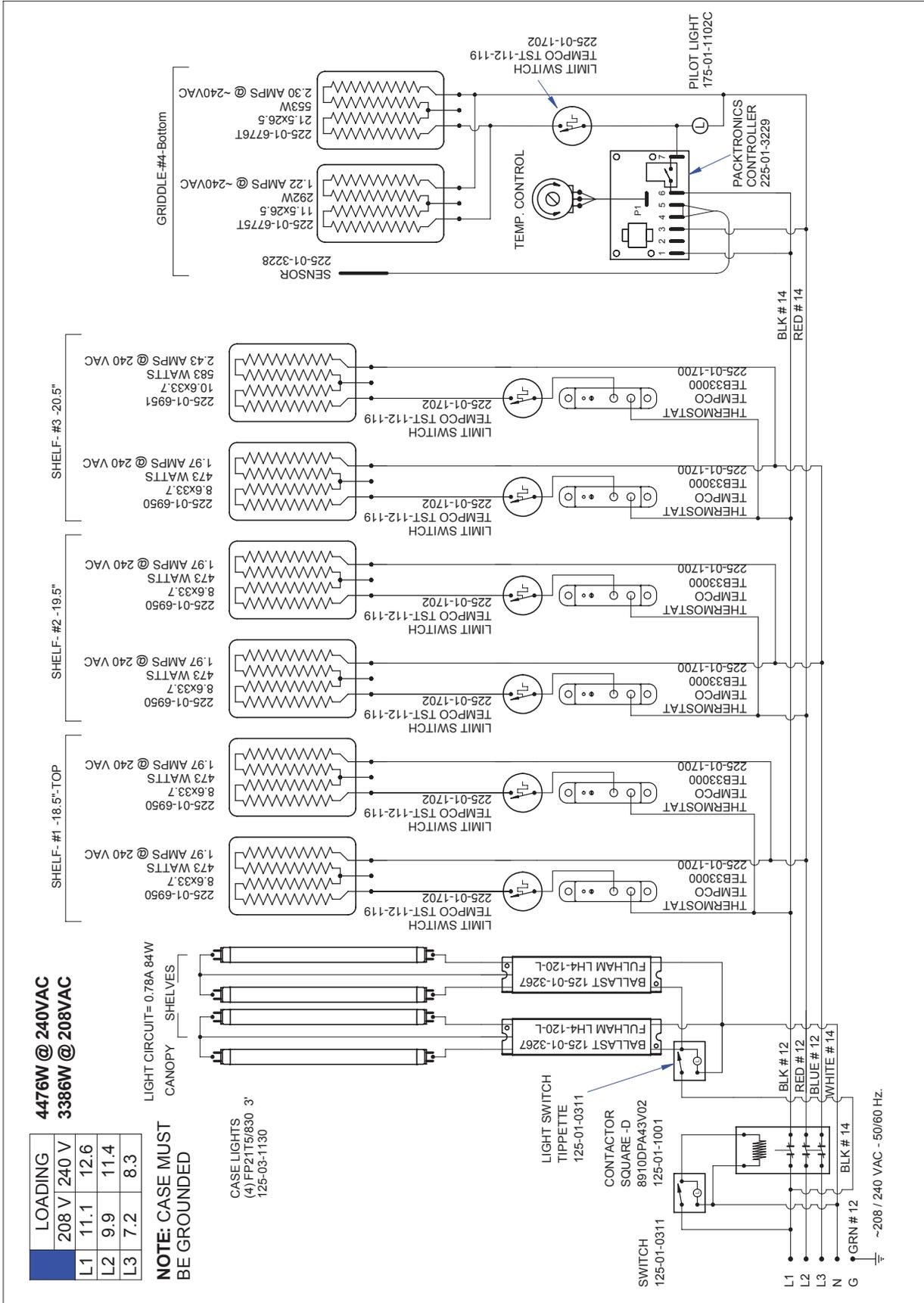
PRODUCTION ORDER #:

DATE: 5/7/08
BY: JR

DATE: 11/19/08
BY: JR

PAGE 1 OF 1

Wiring Diagrams (Cont'd)



4476W @ 240VAC
3386W @ 208VAC

LOADING	208 V	240 V
L1	11.1	12.6
L2	9.9	11.4
L3	7.2	8.3

NOTE: CASE MUST BE GROUNDED

CASE LIGHTS
(4) FP21T5/830 3'
125-03-1130

LIGHT CIRCUIT = 0.78A 84W
CANOPY SHELVES

PROJECT TITLE: HEDW-04 CASES DWG # W6300117

REVISIONS:

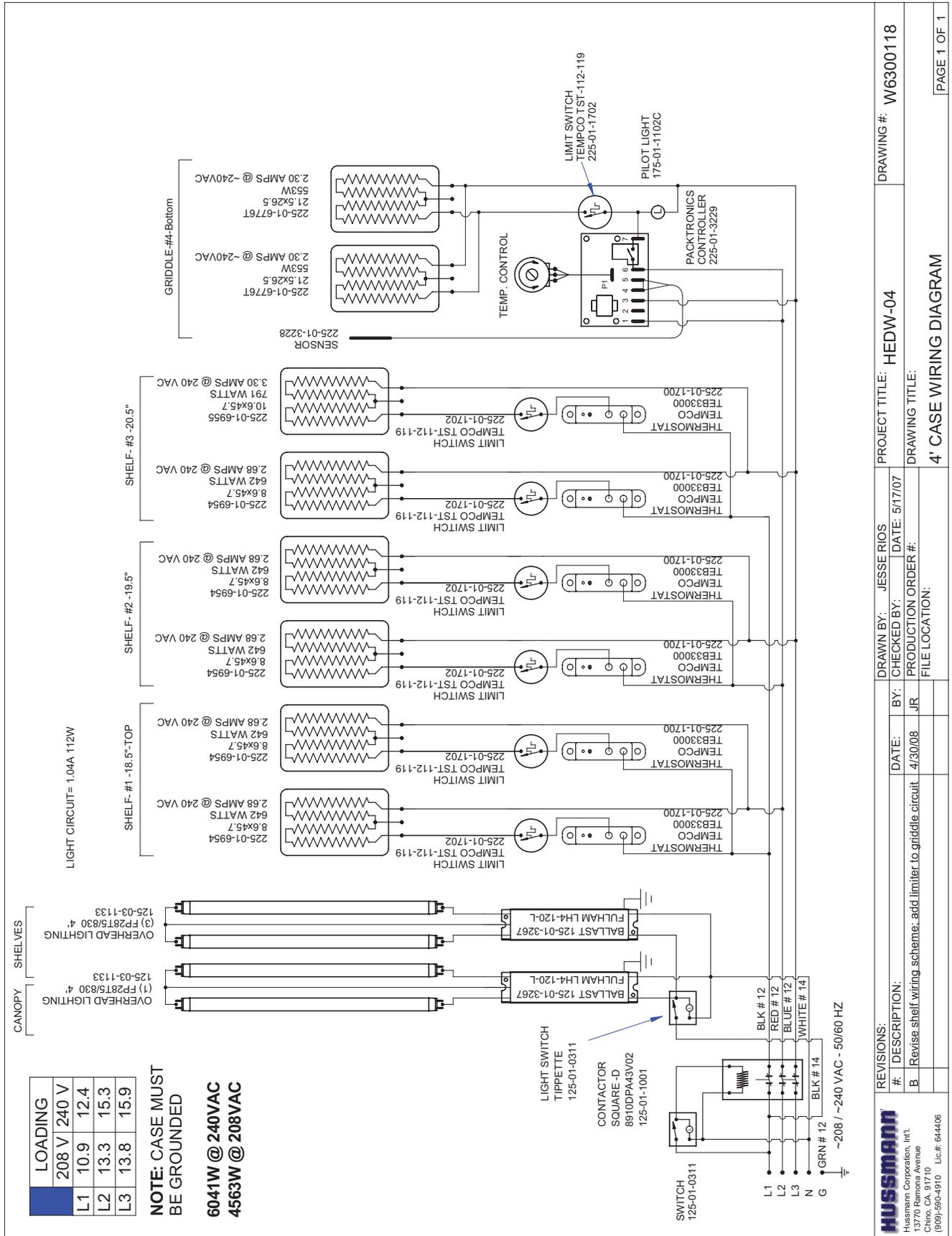
#	DESCRIPTION	DATE	BY
A	Updated dwg; revised load ratings; added sheet 2	5/17/07	JR
B	Revised shelf wiring scheme; revised load ratings	5/6/08	JR
C	Add limiter to gridle circuit	6/3/08	JR

DRIVEN BY: Mark Cipriani
CHECKED BY: DATE: 1/9/07
PRODUCTION ORDER #:
FILE LOCATION:

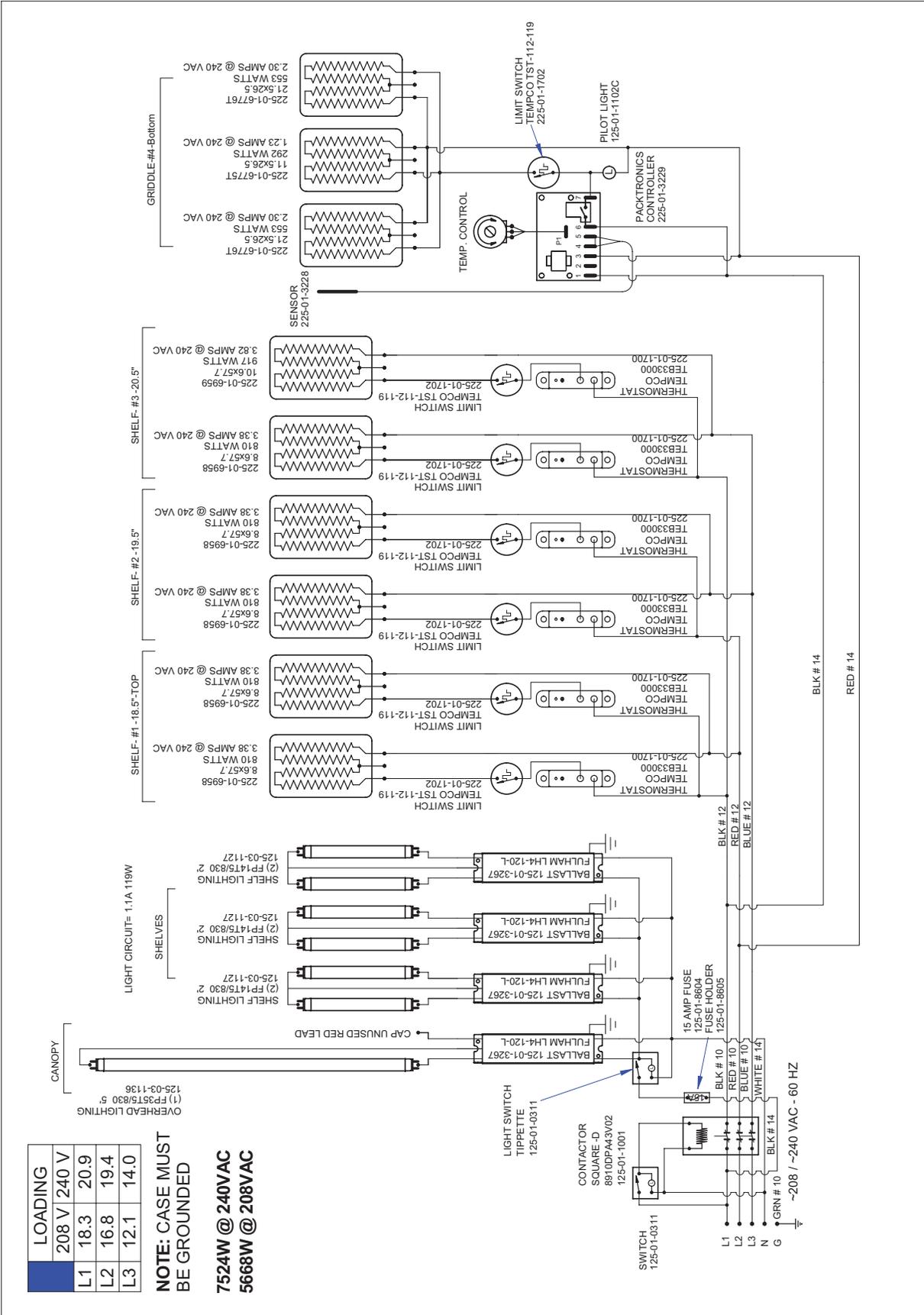
DRAWING TITLE: 3' CASE WIRING DIAGRAM
PAGE 1 OF 1

HUSSMANN CORPORATION
13720 RAMONA AVENUE
CHINO, CA 91710
(909) 890-4910 LIC # 644406

Wiring Diagrams (Cont'd)



Wiring Diagrams (Cont'd)



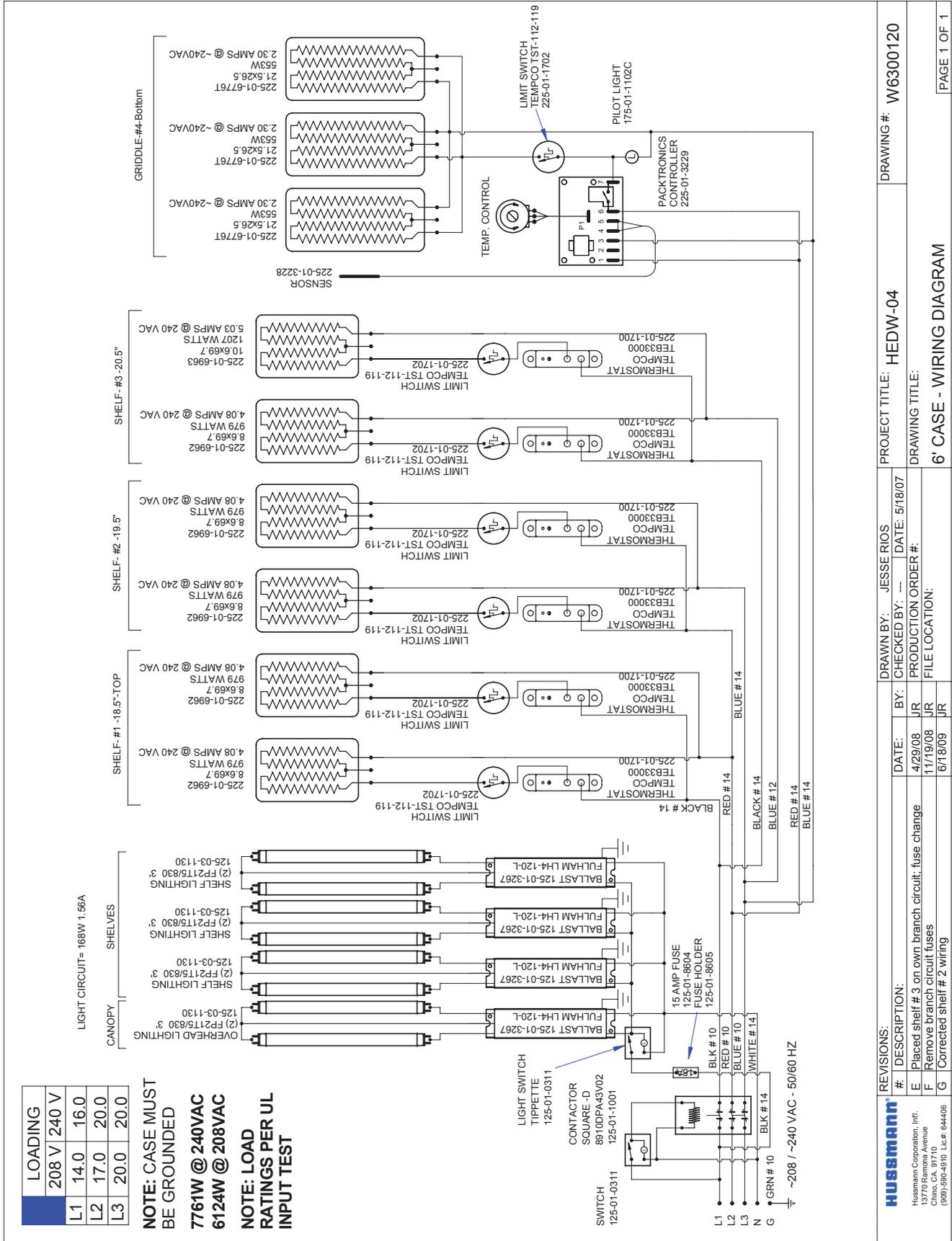
LOADING	208 V	240 V
L1	18.3	20.9
L2	16.8	19.4
L3	12.1	14.0

NOTE: CASE MUST BE GROUNDED
7524W @ 240VAC
5668W @ 208VAC

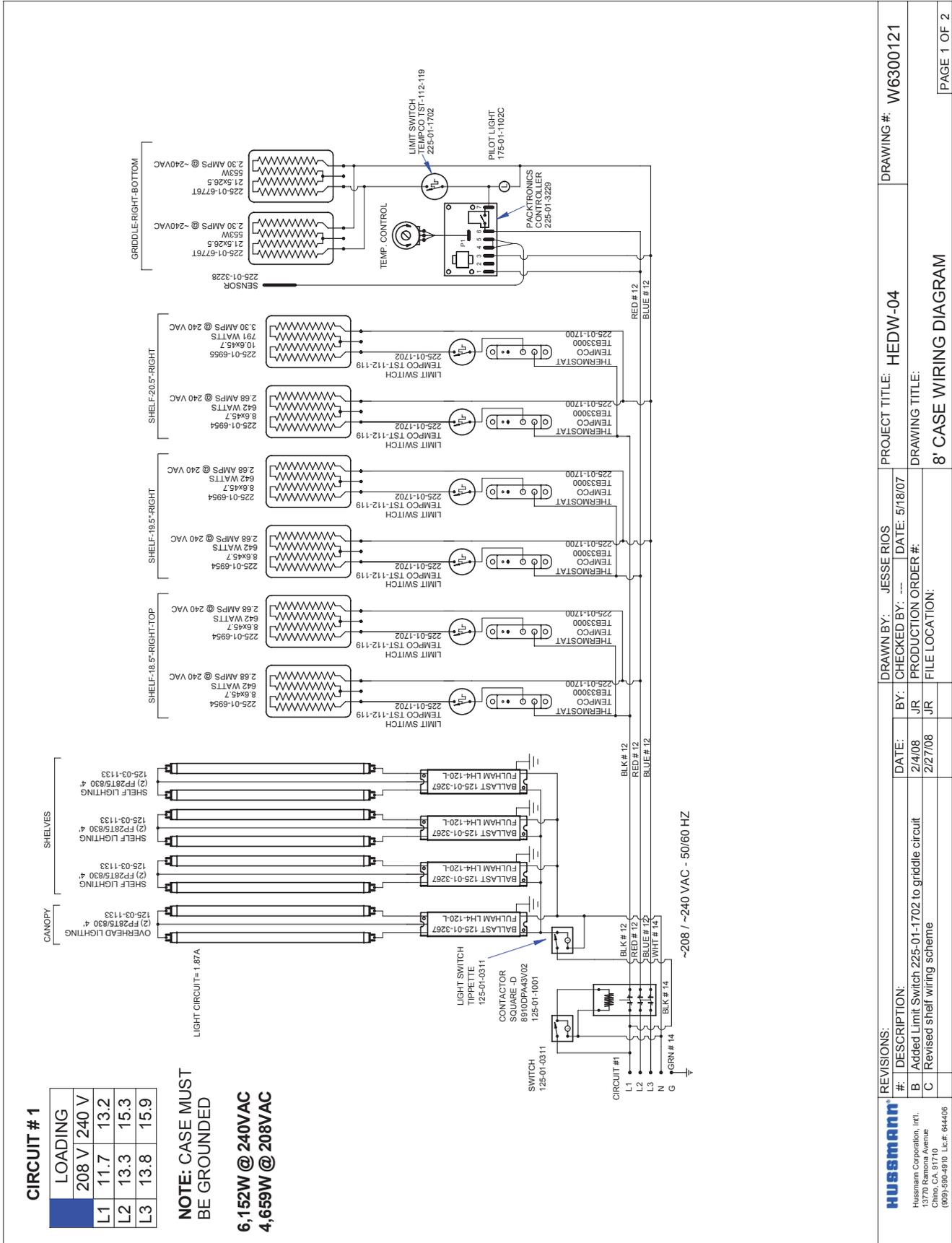
REVISIONS:		DRAWN BY: JESSE RIOS	PROJECT TITLE: HEDW-04	DRAWING #: W6300119
#	DESCRIPTION:	DATE:	BY:	CHECKED BY:
B	Revised shelf wiring and load ratings: fuse change	4/30/08	JR	DATE: 5/17/07
C	Removed branch circuit fuses	11/19/08	JR	PRODUCTION ORDER #:
			FILE LOCATION:	DRAWING TITLE:
				5' CASE WIRING DIAGRAM
				PAGE 1 OF 1

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Wiring Diagrams (Cont'd)



Wiring Diagrams (Cont'd)

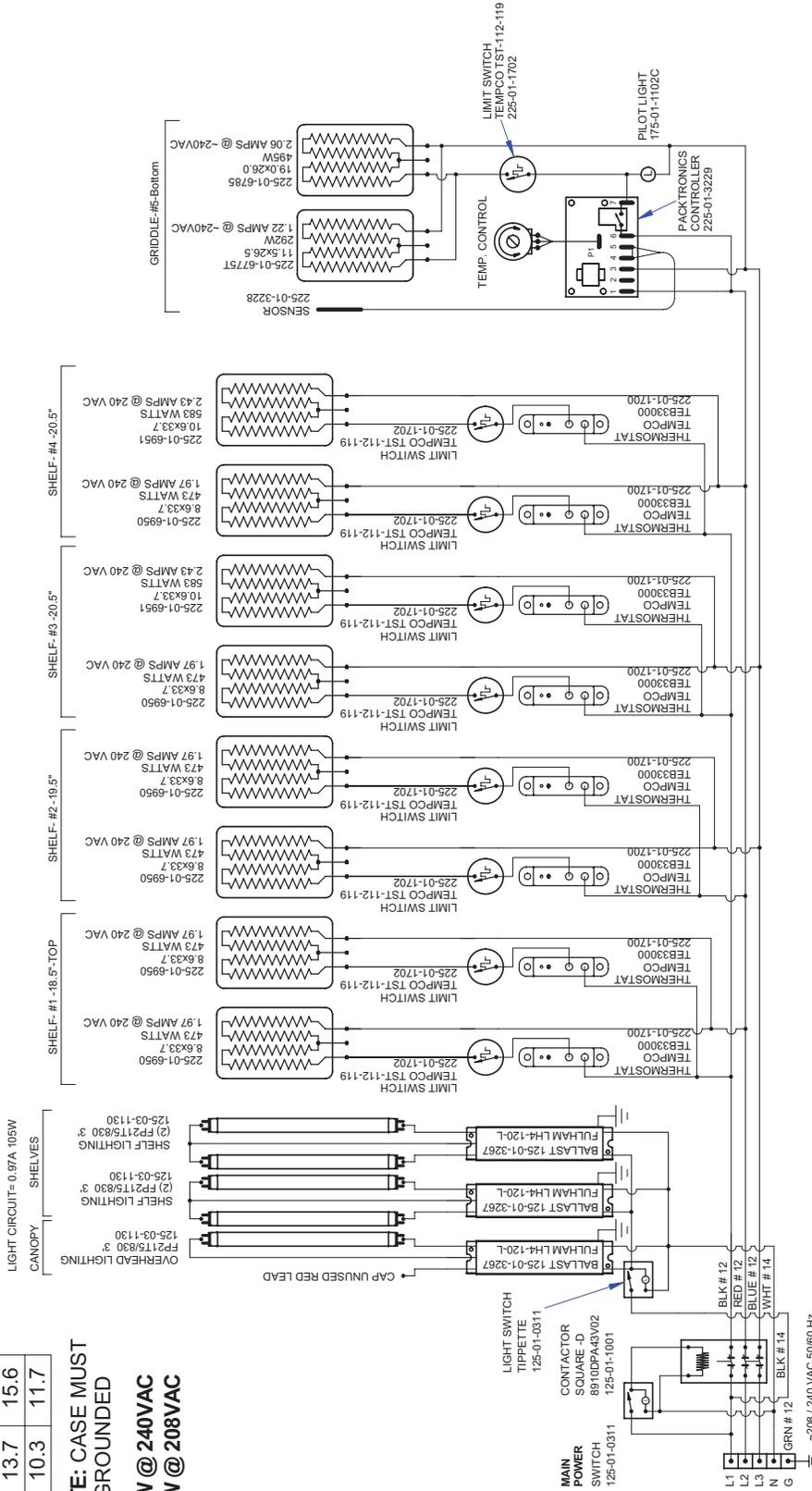


Wiring Diagrams (Cont'd)

LOADING	208 V	240 V
L1	12.0	13.7
L2	13.7	15.6
L3	10.3	11.7

NOTE: CASE MUST BE GROUNDED

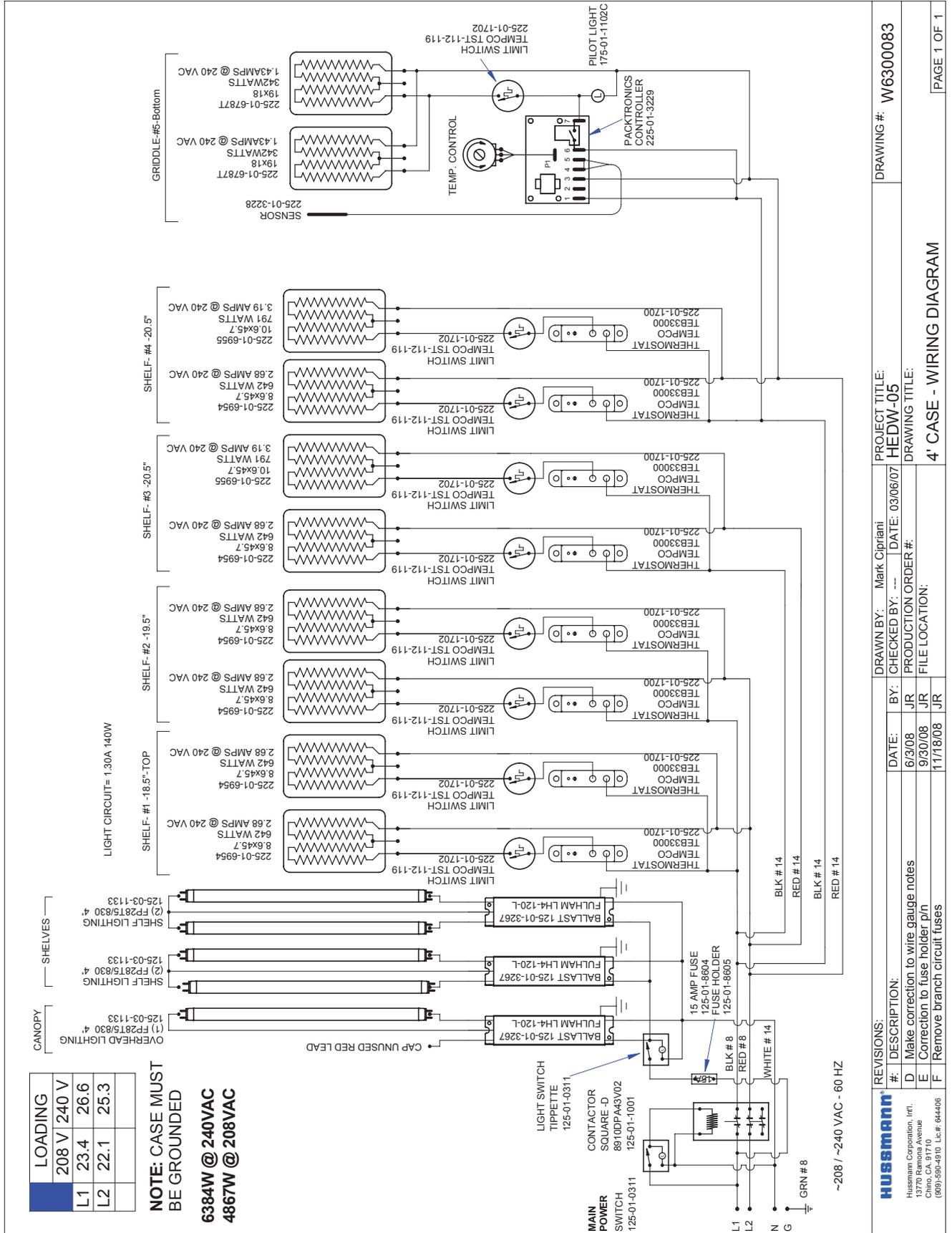
4896W @ 240VAC
3704W @ 208VAC



REVISIONS:		DRAWN BY: Mark Cipriani	PROJECT TITLE: HEDW-05 CASES	DRAWING #: W6300122
#	DESCRIPTION:	BY:	CHECKED BY: GM	DATE: 1/8/07
B	Revised loads ratings, 4 wire to 5 wire, 3 phase change	JR		
C	225-01-6785 was 225-01-6776T	JR	PRODUCTION ORDER #:	
			FILE LOCATION:	
			3' CASE WIRING DIAGRAM	PAGE 1 OF 1

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13770 Cass Street
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Wiring Diagrams (Cont'd)



LOADING	208 V	240 V
L1	23.4	26.6
L2	22.1	25.3

NOTE: CASE MUST BE GROUNDED
6384W @ 240VAC
4867W @ 208VAC

REVISIONS:

#	DESCRIPTION	DATE	BY	CHECKED BY	DATE
D	Make correction to wire gauge notes	6/3/08	JR	---	03/06/07
E	Correction to fuse holder p/n	9/30/08	JR	---	---
F	Remove branch circuit fuses	11/18/08	JR	---	---

PROJECT TITLE: HEDW-05
DRAWING TITLE: 4' CASE - WIRING DIAGRAM
DRAWING #: W6300083

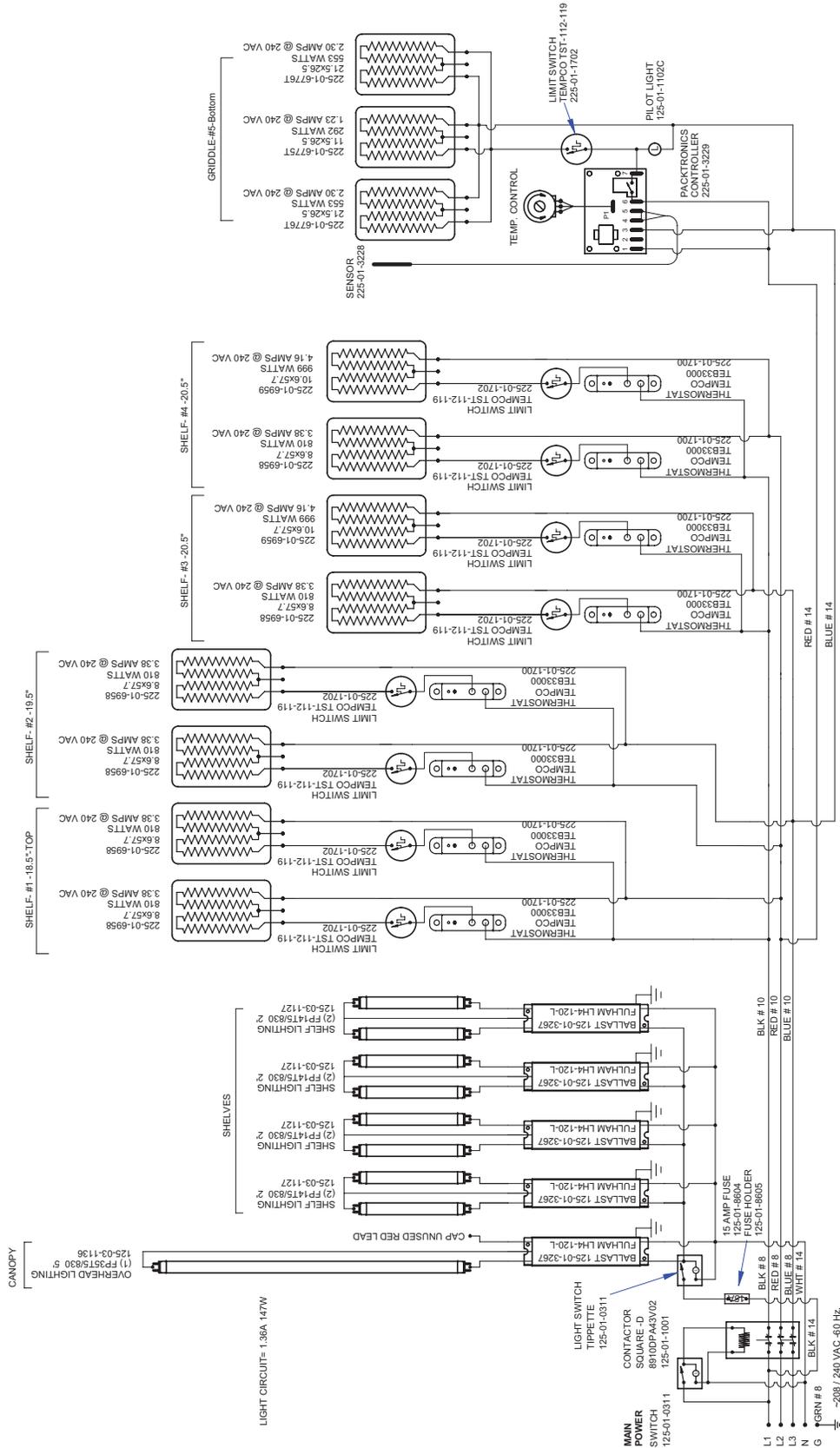
DRAWN BY: Mark Cipriani
DATE: 03/06/07
FILE LOCATION:

PAGE 1 OF 1

Wiring Diagrams (Cont'd)

NOTE: CASE MUST BE GROUNDED
9727W @ 240VAC
7338W @ 208VAC

LOADING	208 V	240 V
L1	20.3	23.2
L2	23.3	26.9
L3	17.5	20.1



REVISIONS:

#	DESCRIPTION:	DATE:	BY:	CHECKED BY:	DATE:
C	Changed 15A fuses to 20A for shelf 3 and 4	3/19/08	JR	JESSE RIOS	5/18/07
D	Removed branch circuit fuses	11/20/08	JR		
E	Dwg correction: L3 input wire missing	1/13/09	JR		

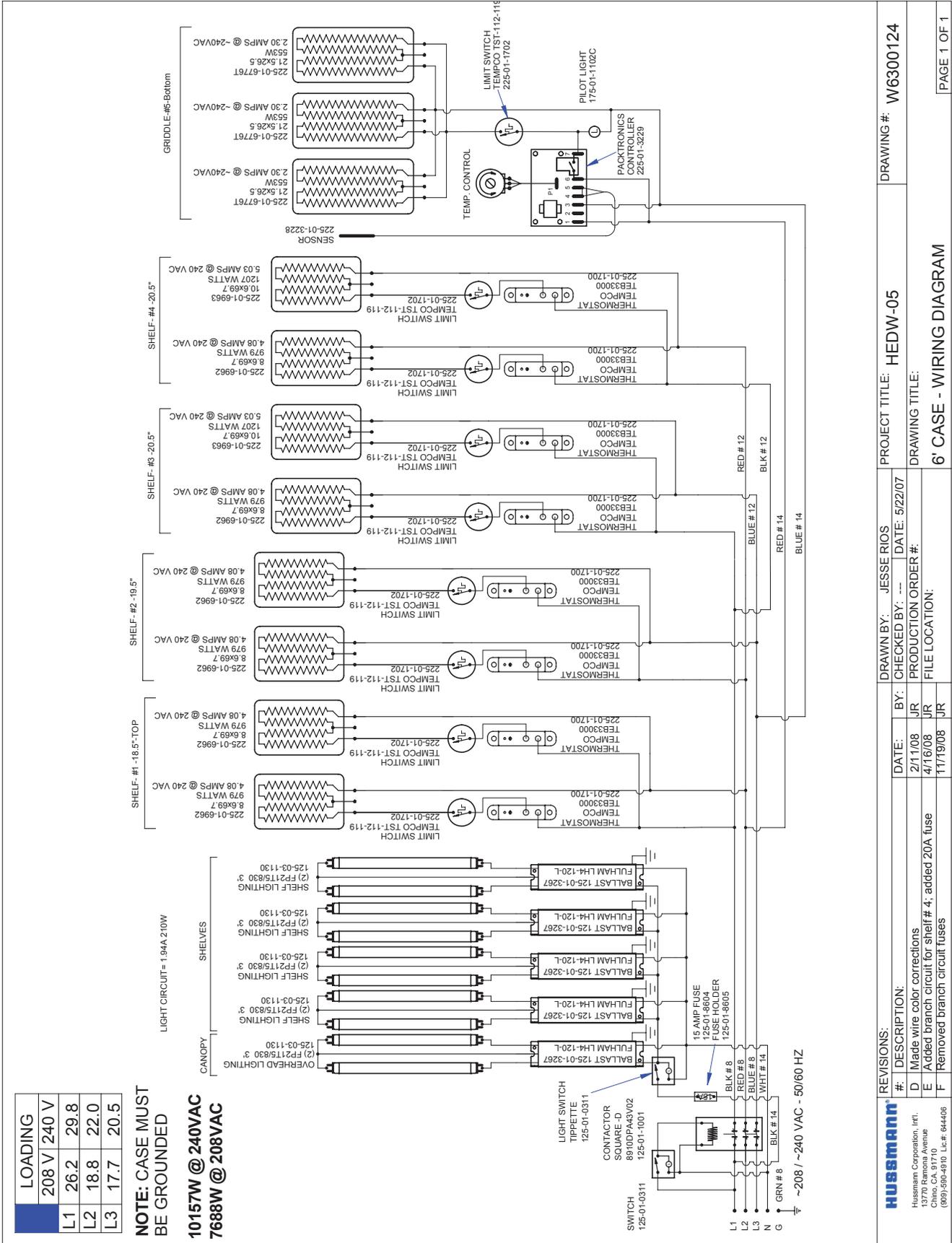
PROJECT TITLE: **HEDW-05** DRAWING #: **W6300123**

DRAWING TITLE: **5' CASE WIRING DIAGRAM**

PAGE 1 OF 1

HUSSMANN
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 13770 Calkins Avenue
 Chicago, IL 60640
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Wiring Diagrams (Cont'd)



PROJECT TITLE: HEDW-05
DRAWING #: W6300124

DRAWN BY: JESSE RIOS
CHECKED BY: ---
DATE: 5/22/07

PRODUCTION ORDER #:
FILE LOCATION:

DATE: 2/11/08
BY: JR

DATE: 4/16/08
BY: JR

DATE: 11/19/08
BY: JR

DATE: ---
BY: ---

DATE: ---
BY: ---

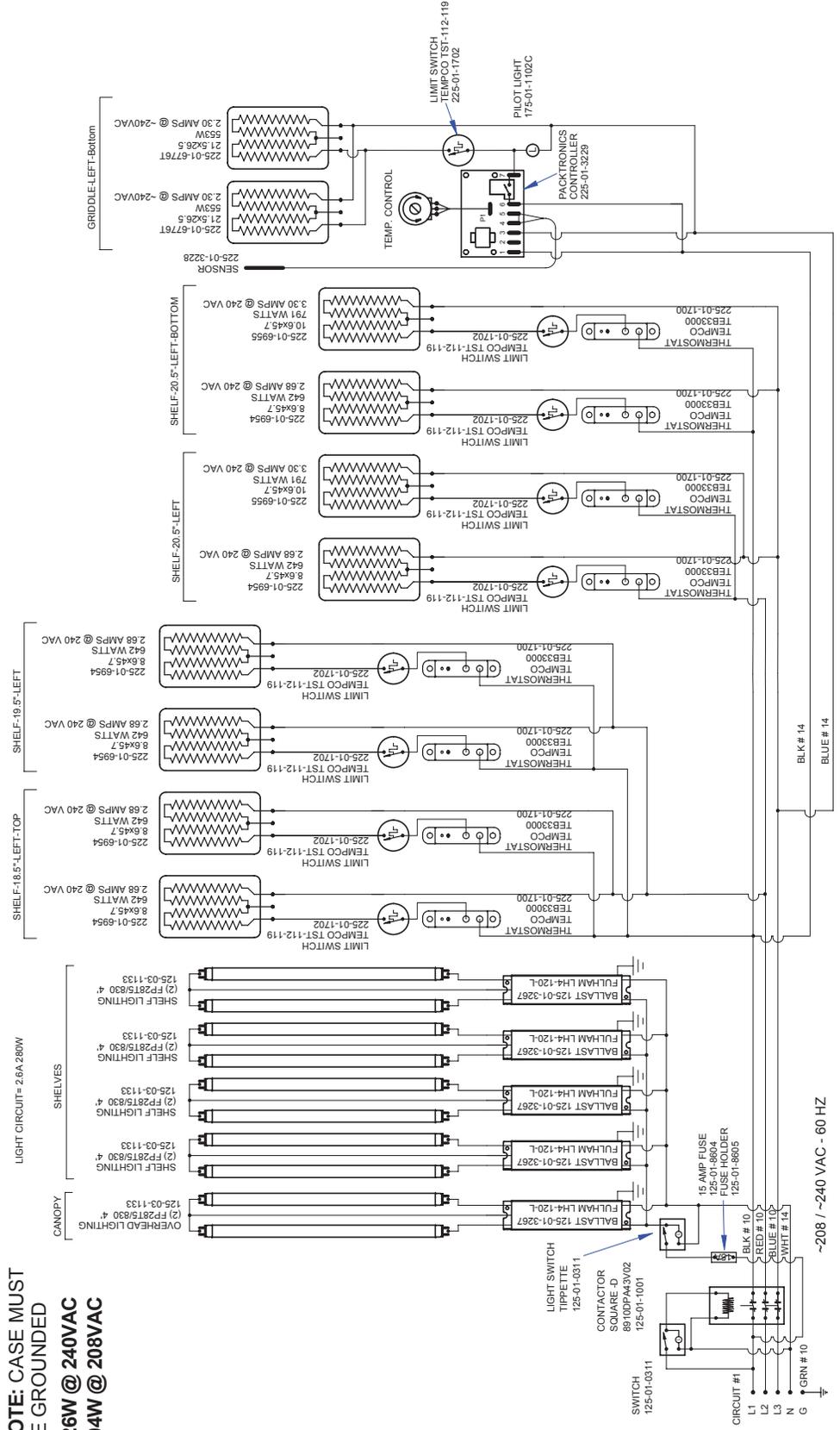
DATE: ---
BY: ---

Wiring Diagrams (Cont'd)

CIRCUIT #1

LOADING	208 V	240 V
L1	21.1	23.9
L2	14.5	16.7
L3	14.4	16.6

NOTE: CASE MUST BE GROUNDED
7926W @ 240VAC
6004W @ 208VAC



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REVISIONS:

#	DESCRIPTION:	DATE:	BY:	CHECKED BY:	DATE:	DRAWN BY:
A	Updated dwg. Added fuses; revised load ratings	5/22/07	JR	---	11/17/06	D.QUAN
B	Revise shelf wiring scheme, load ratings; fuse change	4/30/08	JR	---	---	---
C	Remove branch circuit fuses	11/11/08	JR	---	---	---

PROJECT TITLE: HEDW-05 - WITH 225-01-1700
DRAWING #: W6300089
DRAWING TITLE: 8' CASE - WIRING DIAGRAM
FILE LOCATION: ---
DATE: 11/17/06
BY: JR
CHECKED BY: ---
DATE: 11/17/06
DRAWN BY: D.QUAN

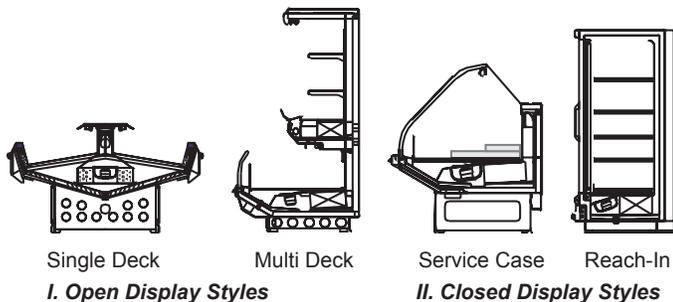
PAGE 1 OF 2

Appendices

Appendix A - Temperature Guidelines - Refrigerated

The refrigerators should be operated according to the manufacturer’s published engineering specifications for entering air temperatures for specific equipment applications. Table 1 shows the typical temperature of the air entering the food zone one hour before the start of defrost and one hour after defrost for various categories of refrigerators. Refer to Appendix C for Field Evaluation Guidelines.

Type of Refrigerator	Typical Entering Air Temperature
I. OPEN DISPLAY	
A. Non frozen:	
1) Meat	28°F
2) Dairy/Deli	32°F
3) Produce	
a. Processed	36°F
b. Unprocessed	45°F
B. Frozen	0°F
C. Ice Cream	-5°F
II. CLOSED DISPLAY	
A. Non frozen:	
1) Meat	34°F
2) Dairy/Deli	34°F
3) Produce	
a. Processed	36°F
b. Unprocessed	45°F
B. Frozen	0°F
C. Ice Cream	-5°F



Hot

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

Appendix B - Application Recommendations - Refrigerated

1.0 Temperature performance is critical for controlling bacteria growth. Therefore, the following recommendations are included in the standard. They are based on confirmed field experience over many years.

1.1 The installer is responsible for following the installation instructions and recommendations provided by Hussmann for the installation of each individual type refrigerator.

- 1.2 Refrigeration piping should be sized according to the equipment manufacturer’s recommendations and installed in accordance with normal refrigeration practices. Refrigeration piping should be insulated according to Hussmann’s recommendations.
- 1.3 A clogged waste outlet blocks refrigeration. The installer is responsible for the proper installation of the system which dispenses condensate waste through an air gap into the building indirect waste system.
- 1.4 The installer should perform a complete start-up evaluation prior to the loading of food into the refrigerator, which includes such items as:
 - a) Initial temperature performance, Coils should be properly fed with a refrigerant according to manufacturer’s recommendations.
 - 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) At the same time, checks should be made of the store dry-bulb and wet-bulb temperatures to ascertain that they are within the limits prescribed by Hussmann.
 - d) Complete start - up procedures should include checking through a defrost to make certain of its adequate frequency and length without substantially exceeding the actual needs. This should include checking the electrical or refrigerant circuits to make sure that defrosts are correctly programmed for all the refrigerators connected to each refrigeration system.
 - e) Recording instruments should be used to check performance.

Hot

- 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.

Appendices (Cont'd)

Appendix C - Field Recommendations - Refrigerated Recommendations for field evaluating the performance of retail food refrigerators and hot cases

1.0 The most consistent indicator of display refrigerator performance is temperature of the air entering the product zone (Refrigerated see Diagram 1, Appendix A). In practical use, the precise determination of return air temperature is extremely difficult. Readings of return air temperatures will be variable and results will be inconsistent. The product temperature alone is not an indicator of refrigerator performance.

NOTE: Public Health will use the temperature of the product in determining if the refrigerator 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 refrigerators will keep food at the FDA Food Code 1993 temperature for 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 determine whether a display refrigerator 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 probe or sensing element of the thermometer should be located in the airstream where the air first enters the display or storage area, and not more than 1 inch away from the surface and in the center of the discharge opening.
- c) **READING** - It should first be determined that the refrigerator is refrigerating and has operated at least one hour since the end of the last defrost period. The thermometer reading should be made only after it has been allowed to stabilize, i.e., maintain a constant reading.
- d) **OTHER OBSERVATIONS** - Other observations should be made which may indicate operating problems, such as unsatisfactory product, feel/appearance.

- e) **CONCLUSIONS** - In the absence of any apparent undesirable conditions, the refrigerator should be judged to be operating properly. If it is determined that such condition is undesirable, i.e., the product is above proper temperature, checks should be made for the following:
 1. Has the refrigerator been loaded with warm product?
 2. Is the product loaded beyond the "Safe Load Line" markers?
 3. Are the return air ducts blocked?
 4. Are the entering air ducts blocked?
 5. Is a dumped display causing turbulent air flow and mixing with room air?
 6. Are spotlights or other high intensity lighting directed onto the product?
 7. Are there unusual draft conditions (from heating/air-conditioning ducts, open doors, etc.)?
 8. Is there exposure to direct sunlight?
 9. Are display signs blocking or diverting airflow?
 10. Are the coils of the refrigerator iced up?
 11. Is the store ambient over 75°F, 55% RH as set forth in ASHRAE Standard 72 and ASHRAE Standard 117?
 12. Are the shelf positions, number, and size other than recommended by Hussmann?
 13. Is there an improper application or control system?
 14. Is the evaporator fan motor/blade inoperative?
 15. Is the defrost time excessive?
 16. Is the defrost termination, thermostat (if used) set too high?
 17. Are the refrigerant controls incorrectly adjusted?
 18. Is the air entering the condenser above design conditions? Are the condenser fins clear of dirt, dust, etc.?
 19. Is there a shortage of refrigerant?
 20. Has the equipment been modified to use replacements for CFC-12, CFC-502 or other refrigerant? If so, have the modifications been made in accordance with the recommendations of the equipment manufacturer? Is the refrigerator charged with the proper refrigerant and lubricant? Does the system use the recommended compressor?

Appendices (Cont'd)

Hot

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 cases will keep food at the FDA Food Code 1993 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 determine whether a display refrigerator 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.

Appendix D - Recommendations to User - Refrigerated

1.0 Hussmann Corporation provides instructions and recommendations for proper periodic cleaning. The user will be responsible for such cleaning, including the cleaning of low temperature equipment within the compartment and the cooling coil area(s). Cleaning practices, particularly with respect to proper refrigerator unloading and warm-up, must be in accordance with applicable recommendations.

- 1.1 Cleaning of non frozen food equipment should include a weekly cleaning of the food compartment as a minimum to prevent bacteria growth from accumulating. Actual use and products may dictate more frequent cleaning. Circumstances of use and equipment design must also dictate the frequency of cleaning the display areas. Weekly washing down of the storage compartment is also recommended, especially for equipment subject to drippage of milk or other liquids, or the collection of vegetable, meat, crumbs, etc. or other debris or litter. Daily cleaning of the external areas surrounding the storage or display compartments with detergent and water will keep the equipment presentable and prevent grime buildup.
- 1.2 Load levels as defined by the manufacturer must be observed.
- 1.3 The best preservation is achieved by following these rules:
 - a) Buy quality products.
 - b) Receive perishables from transit equipment at the ideal temperature for the particular product.
 - c) Expedite perishables to the store's storage equipment to avoid unnecessary warm-up and prolonged temperature recovery. Food store refrigerators are not food chillers nor can they reclaim quality lost through previous mishandling.
 - d) Care must be taken when cross merchandising products to ensure that potentially hazardous vegetable products are not placed in non refrigerated areas.
 - e) Display and storage equipment doors should be kept closed during periods of inactivity.
 - f) Minimize the transfer time of perishables from storage to display.
 - g) Keep meat under refrigeration in meat cutting and processing area except for the few moments it is being handled in processing. When a cut or tray of meat is not to be worked on immediately, the procedure should call for returning it to refrigeration.
 - h) Keep tools clean and sanitized. Since mechanical equipment is used for fresh meat processing, all such equipment should be cleaned at least daily and each time a different kind of meat product comes in contact with the tool or equipment.
 - i) Make sure that all refrigeration equipment is installed and adjusted in strict accordance with the manufacturer's recommendations.
 - j) See that all storage and refrigeration equipment is kept in proper working order by routine maintenance.

Appendices (Cont'd)

Hot

- 1.0 Hussmann should provide 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 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° 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, and stock fresher food on top.
 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°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.
 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	

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

Service Record

Last service date: By:

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