

McGUIRE ETR-T

ELECTRIC VEHICLE
RESTRAINT



OWNER'S MANUAL & INSTALLATION GUIDE

IMPORTANT: Thoroughly read and understand entire contents of this manual prior to installation and/or operation of this equipment.

CAUTION: Be sure that installation and maintenance are performed by authorized personnel.

TABLE OF CONTENTS

SECTION	PAGE
Introduction.....	1
Definition and Function.....	2
Overview of Potential Hazards.....	3
Safety Practices.....	4
Installation Instructions.....	5-6
Optional Mounting Plate.....	7
General Arrangement Drawing.....	8-9
Electrical Schematics.....	10-13
Field Wiring Diagram.....	14-16
Operation Instructions.....	17-19
Restraint Bypass/Manual Operation (Power Outage).....	19
Maintenance and Service/Trouble-Shooting Guide.....	20
Preventive Maintenance Checklist.....	21
Linear Actuator / PLC / Electrical Specifications.....	22
Control Panel Diagram.....	23
Control Panel Drawings and Dimensions.....	24-25
Exterior Lights.....	26
Exploded View Parts Diagram.....	27
Parts Lists.....	28
Signs.....	29
PLC Outputs/Inputs.....	30-31
Warranty.....	Back Cover

INTRODUCTION

Do not install, operate or service this W.B. McGuire ETR Series Vehicle Restraint until you have read and understand the entire contents of this manual.

Congratulations! You have purchased one of the industry's finest electrically operated and safety oriented vehicle restraint devices, the ETR Series from the W.B. McGuire Company. When properly installed, serviced and operated, this vehicle restraint can offer substantially improved dock safety conditions.

The ETR Series by the W.B. McGuire Company is part of a dock safety equipment concept, designed to provide a safer work place for personnel involved at shipping and receiving dock areas. All those who install, operate and service this equipment should observe all safety considerations and should read this manual and understand all installation, operation and maintenance instructions and functions before attempting to install, operate or service this vehicle restraint. Pay special attention to all warnings and/or caution statements.

Important Note: The W.B. McGuire Company recommends the use of minimum 4" thick bumpers with this vehicle restraint.

Contact your authorized W.B. McGuire Company distributor or a Technical Support Representative at 1-800-624-8473 for the answer to any questions

DEFINITION AND FUNCTION

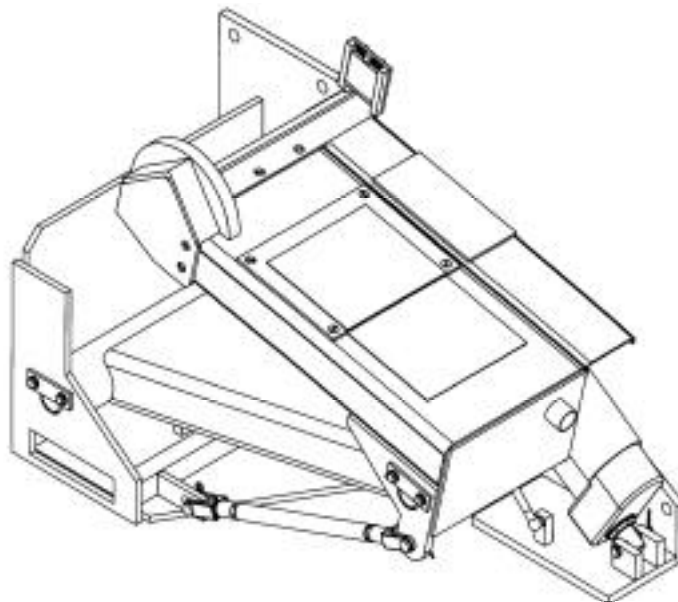
The W.B. McGuire ETR-T Vehicle Restraint is a device designed to be fully electric in operation and self-aligning with an intact and proper Rear Impact Guard (RIG), assembly on the truck/trailer rear. Its function is to aid in the prevention of possible accidents at the dock. When properly installed, serviced and operated the restraint is designed to safely capture the RIG at the trailer rear. This vehicle restraint will then aid in the prevention of premature trailer separation from the dock by creating a barrier noticeable to the truck driver should the driver accidentally try to pull the truck/trailer away while it is being serviced. It will also assist in the prevention of excessive trailer movement away from the dock during the loading/unloading process. This trailer "creep" can create a situation whereby an unsafe void is created between the face of the dock and the rear end of the trailer. The prerequisite for proper restraint engagement is a trailer parked firmly against a minimum 4" thick bumper with the brakes locked and an intact and proper RIG. If trailer is equipped with air ride, all air must be released when trailer is parked at dock. The restraint is then operated by pushing the "RAISE" button. Pushing the "STORE" button will lower the unit to a safe stored position. The dock attendant controls the activation/deactivation of the restraint solely from the inside of the building. The operation of the trailer restraint is predicated on the presence of an intact and proper RIG. The size and location of an intact and proper RIG is now a Federal Mandate in reference to size and location of the RIG. If the trailer is not properly equipped with an intact and proper RIG, the dock attendant **MUST** take alternative action. (See important note below.)

IT IS THE RESPONSIBILITY OF THE DOCK ATTENDANT TO DETERMINE THE TRAILER HAS BEEN SECURED TO THE DOCK POSITION BEFORE LOADING/UNLOADING, TAKING ALL OF THESE FACTORS INTO ACCOUNT.

IMPORTANT NOTE: The dock attendant or driver should determine if a safe restraint condition cannot be achieved, and may choose to apply an alternative method with such vehicles (i.e., wheel chocks or equivalent).

The W.B. McGuire Company provides, in addition to the restraint, two exterior caution signs (one standard read and one reverse read), one inside caution/operation sign and control panel with communication light system designed to enhance communication between dock personnel and the truck driver.

NOTE: At times the trailer may move forward just enough to effectively trap the RIG against the safety barrier of the restraint. It will require the driver to back the trailer up slightly to enable the restraint to be restored.



OVERVIEW OF POTENTIAL HAZARDS

The W.B. McGuire ETR-T Vehicle restraint is designed to provide a safer work place at shipping and receiving dock areas. Read this manual completely before attempting to install, use or service this equipment. Give special attention to all warning and safety instructions. If you do not understand an instruction or have questions, contact your local representative or the W.B. McGuire Technical Support Team immediately at 1-800-624-8473.

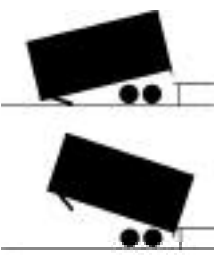


In this section and those that follow, the words **Danger**, **Warning**, and **Caution** are used to emphasize the important safety information. The Word:

DANGER means that severe injury or death will result from failure to follow instruction.

WARNING means that severe injury or death will result from failure to follow instruction.

CAUTION means that property damage or injury can result from failure to follow instructions.

The word **NOTE** is used to indicate important steps to be followed or important considerations.

POTENTIAL HAZARD	EFFECT	PREVENTION
 <p>TIPPING TRAILERS</p>	<p>WARNING: can cause serious injury or death.</p>	<p>Chock Wheels and use stabilizing jacks when trailer is not hooked to tractor.</p> <p>Do Not move trailer while loading or unloading.</p> <p>Store restraint before moving trailer.</p>
 <p>MOVING EQUIPMENT</p>	<p>WARNING: can cause serious injury or death.</p>	<p>Do Not stand between truck and dock when truck is entering or leaving.</p> <p>Always operate restraint from dock.</p> <p>Keep hands and feet clear of pinch points.</p> <p>Do Not take linear actuator apart.</p>
 <p>ELECTRICAL SHOCK</p>	<p>DANGER: will cause serious injury or death.</p>	<p>Turn Off and Lock Out and Tag Out Power before touching wires or working in box.</p> <p>If no power disconnect is provided, station a second person by the control panel to insure no unauthorized use.</p>
SAFETY INSTRUCTIONS		
<p>Before Operation or servicing</p> <ol style="list-style-type: none"> 1. Read manual carefully. Only trained personnel should use this equipment. 2. Do not stand in between truck and dock when the truck is moving. 3. Park trailer firmly against dock bumpers. 4. Use wheel chocks or stabilizing jacks if trailer is not attached to tractor, the bumper is missing or damaged. 5. Restraint should be clear of obstructions and operating properly. 6. Keep hands and feet clear of pinch points. 		<p>Operation and After Operation</p> <ol style="list-style-type: none"> 1. Keep clear of restraint while it is moving. 2. Be sure that trailer has been restrained before loading or unloading. 3. Do not attempt to lift the restraint manually or with other equipment. Call service representative. 4. Make sure the restraint is stored after the trailer leaves. Check to see that the unit has been reset and the alarm is on. <p>Maintenance</p> <ol style="list-style-type: none"> 1. Barricade the dock area before working on unit. 2. Turn off and lock out power before working on unit.

SAFETY PRACTICES

WARNING: Read and understand all safety practices and operating instructions before installing, operating or servicing the vehicle restraint. Failure to follow the safety practices may result in property damage, serious bodily injury or death.

CAUTION: The installer and/or operator MUST be very familiar with the operation, function and various parts of the the W. B. McGuire Company vehicle restraint PRIOR to installation and/or operation. It is IMPERATIVE that the installer and/or operator read, and fully understand, the entire contents of this manual. **Be certain to read and understand all warning and caution statements contained in this manual prior to any installation, operation or servicing of this unit.**

1. Do not operate this equipment while under the influence of drugs or alcohol.
2. Do not stand in the driveway between the vehicle restraint and a truck backing or pulling away.
3. Be sure the vehicle restraint is properly engaged and the trailer is held in place before attempting to load or unload a trailer.
4. Do not use the vehicle restraint if it looks broken or does not seem to work right. Tell your supervisor immediately.
5. Do not operate the vehicle restraint with materials or people in front of the restraint. Only operate restraint with no obstructions or a trailer to engage.
6. Be certain that equipment or people are free of the trailer before allowing the vehicle restraint to be stored and the trailer to depart.
7. Keep clear of the vehicle restraint when it is moving. Never place your hands, arms, feet or legs in a position where a moving vehicle restraint could cause injury. **If in doubt, do not do it!**
8. Do not attempt to manually lift the vehicle restraint with personnel or other equipment. If the vehicle restraint is not working properly using the operation instructions in this manual, do not use the restraint. Contact your authorized W. B. McGuire representative or the W. B. McGuire Company.
9. Check to make sure the vehicle restraint has returned to a safe stored position after you have used the STORE button and the truck has pulled away. Also check to see the unit has automatically restored and the alarm has come on in the event of operation with no rear impact guard present.
10. Never attempt to work on, service or repair the vehicle restraint without properly marking the area at the dock and in front of the unit. If electrical, make sure the power source has been turned off and locked out per OSHA REG. 1970.147.
11. If electrical and a power disconnect, by others, is provided place it in the OFF position and LOCKOUT/TAGOUT (OSHA REG 1970.147) prior to doing any work on the body of the restraint. If no power disconnect is provided or cannot be found then station a second person by the control panel to insure no unauthorized use, **POWER MUST BE TURNED OFF.**
12. Damage to the vehicle restraint, personal injury or death can result from abuse and/or negligent use of this equipment.
13. If you have any questions, or if a malfunction occurs which is not understood, ask your supervisor to contact your authorized W. B. McGuire representative or the W. B. McGuire Company for assistance PRIOR to attempting any corrective measures.

ETR-T INSTALLATION INSTRUCTIONS

CAUTION: Installation to be performed by authorized, experienced personnel **ONLY!**

WARNING: ALWAYS USE SAFE WORK HABITS! Read and understand entire contents of this manual, paying particular attention to all warning, caution and important statements before attempting to install, service or operate this restraint. Failure to observe these and other safe work habits may result in property damage, personal injury or death.

NOTE: The W. B. McGuire Company recommends the use of minimum 4" thick bumpers with this restraint.

Equipment Check

1. Remove packaging from restraint. Check that all items listed in check list below to ensure that all components are included.

- | | |
|--|--|
| <input type="checkbox"/> A. Restraint Unit | <input type="checkbox"/> G Outside Light Assembly |
| <input type="checkbox"/> B. Control Handle | <input type="checkbox"/> H. Inside Light/Control Box Assembly |
| <input type="checkbox"/> C. Hardware Box | <input type="checkbox"/> I. Owner's/installation Manual |
| <input type="checkbox"/> D. Outside Sign - Mirrored | <input type="checkbox"/> J. New Construction Mounting Plate (optional) |
| <input type="checkbox"/> E. Outside Sign - Standard | <input type="checkbox"/> K. Edge of Dock Blockout |
| <input type="checkbox"/> F. Inside Caution/Operating Instructions Sign | (optional, used when installing with EOD leveler) |

2. Check the vehicle restraint for possible damage that may have occurred in transit. If any damage, contact your supervisor for proper handling, or the W. B. McGuire Company or your authorized W. B. McGuire distributor.

DO NOT INSTALL A DAMAGED RESTRAINT!

Dock Face Mounting Area Check

1. Check the dock face for proper construction. Check for any possible obstructions. Make sure the dock face is plumb and at a 90° from driveway grade.
2. Any curve up from driveway to dock face (water runoff area) must be removed and turned into a 90° angle before mounting vehicle restraint to the dock face.
3. Dock face must be constructed out of concrete. Any other material consult your W. B. McGuire Representative.

Installing the vehicle restraint

CAUTION: Refer to the installation diagram(s) on the following pages for dimensional data and to ensure proper installation.

WARNING: Observe all safety warnings and safety practices before proceeding with installation procedures and before working on or around vehicle restraint.

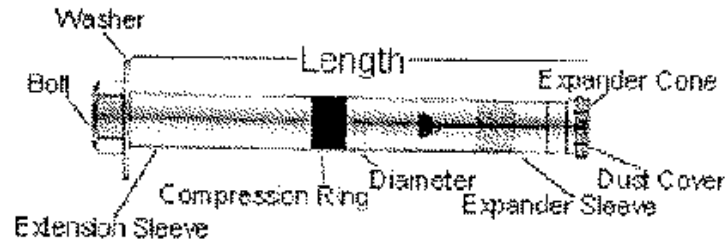
1. Mark centerline of door opening on face of dock, below dock leveler.
2. Position mount plate of restraint as shown on the installation diagram.

NOTE: If ETR-T is being installed with an Edge of Dock leveler, skip step 3 and proceed to step 3A.

3. Mount restraint to dock face and flush with grade with ten (10) 5/8" x 6" long Rawl-Bolt #6945 concrete bolts through the ten (10) 11/16" diameter holes provided in the backplate. (All perimeter fasteners by others.) Torque all bolts to 100 Ft. Lbs.

Note: If blockout from 2" to 3" projection, use 5/8" dia. x 8-1/2" long bolt #6947.

ETR-1 INSTALLATION INSTRUCTIONS (continued)



Rawl Bolt Guide:

#6945 (5/8" x 6") for use with thick wall concrete construction

#6947 (5/8" x 8") for use on optional 2"- 3" blockout.

STEP 3A, INSTALLATION WITH EOD LEVELER

Mount blockout (optional extra by the W. B. McGuire Company) to dock face, flush with grade, with ten (10) 5/8" x 6" long - Rawl-Bolt #6945 concrete bolts through the ten (10) 11/16" diameter holes provided in the blockout. An alternative to bolts can be the Rawl double Machine Bolt Anchor #9530. (All perimeter fasteners by others.) Torque bolts down to 100 Ft. Lbs.

After mounting blockout to dock face, mount restraint to blockout with ten (10) 5/8" x 2 1/4" Grade 8 bolts with lock washers, flat washers and nuts (by others).

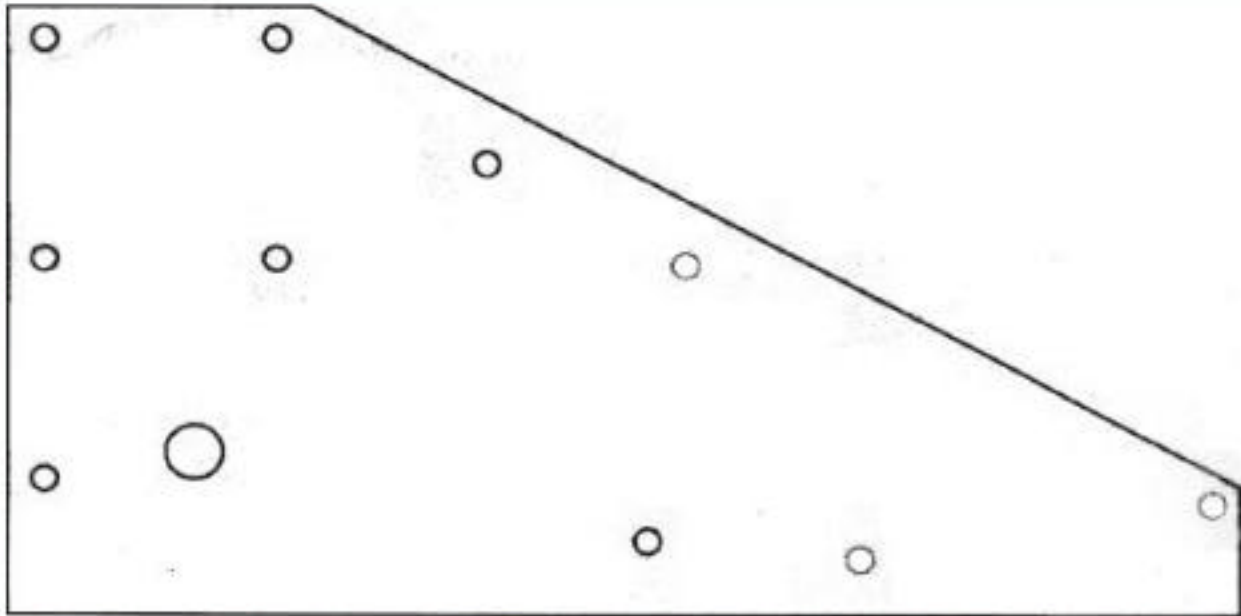
4. Mount the outside standard sign to the right side of door opening (facing building) at approximately 7' off grade to the top of the sign. Mount the mirrored sign 14" above the standard sign. Mount both signs far enough to the right of the door jamb to allow for the installation of dock seals or shelters if required. Mount inside "Caution" sign to the left side of door opening looking out, approximately 5-1/2' from floor.
5. Using suitable fasteners, mount the outside light assembly between the two "Caution" signs mounted on the outside dock wall in step 5 above.
6. Using suitable fasteners, mount the control panel to the inside wall approximately 6" below the "Caution" sign.
7. Mount junction box to dock face to right side of door opening (facing building) in line with outside lights and signs approximately 18" from grade.
8. See section "Field Wiring Diagram" for electrical hook-up. All field wiring must be done by a licensed electrician.
9. When running conduit into light box, use watertight connections. Recommend either 3/4" straight fitting (LT75m-Thomas & Betts or equal) or 90° 3/4" fitting (LT975m-Thomas & Betts or equal).
10. Use flex conduit to route wires from upper arm to control box leaving enough slack to allow for full range of motion of restraint. Recommend 3/4" Seal-tite non-metallic or equal.

MOUNTING BACKPLATE

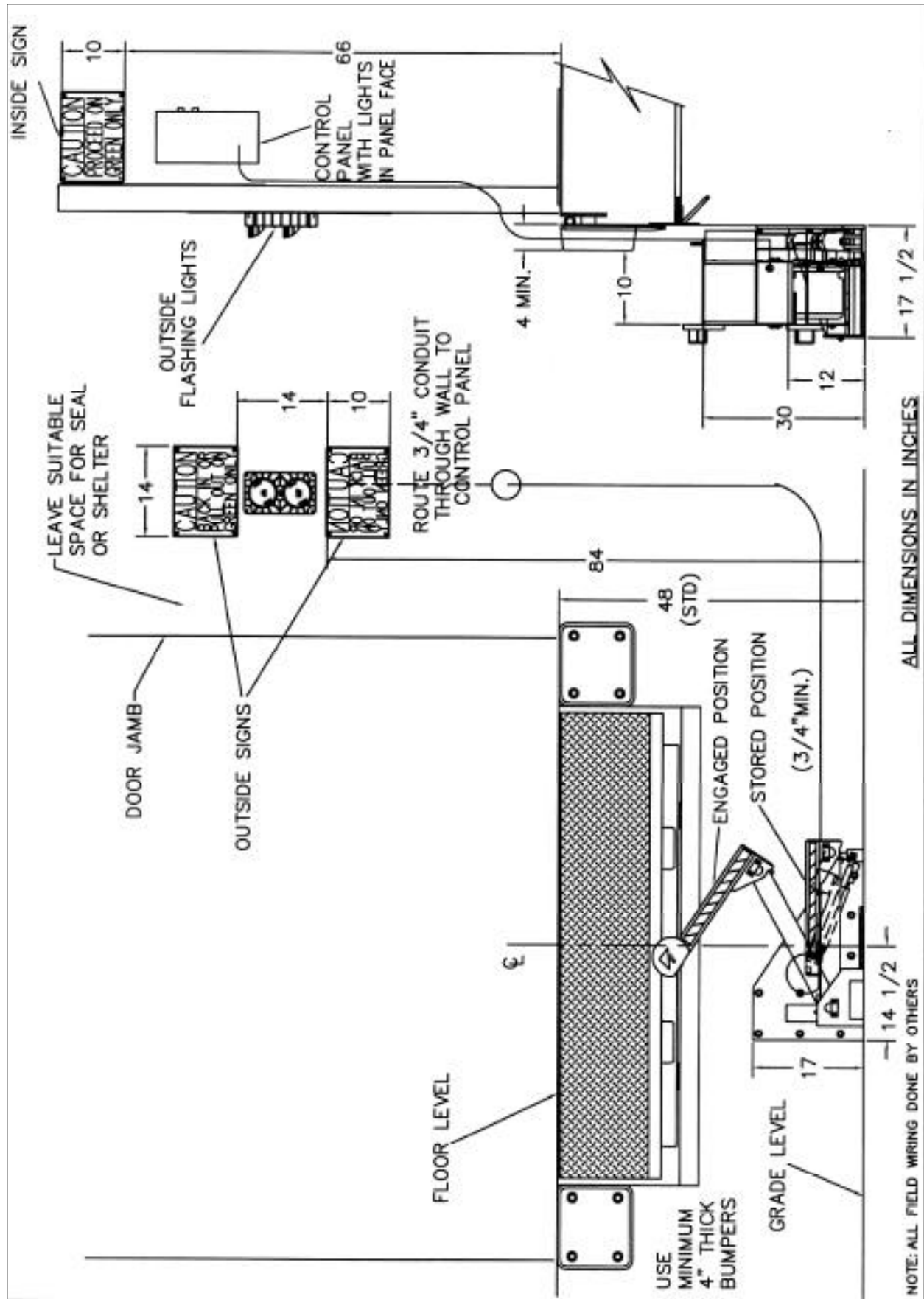
CAUTION:

BE SURE TO USE ALL MOUNTING HOLES AS ILLUSTRATED BELOW.

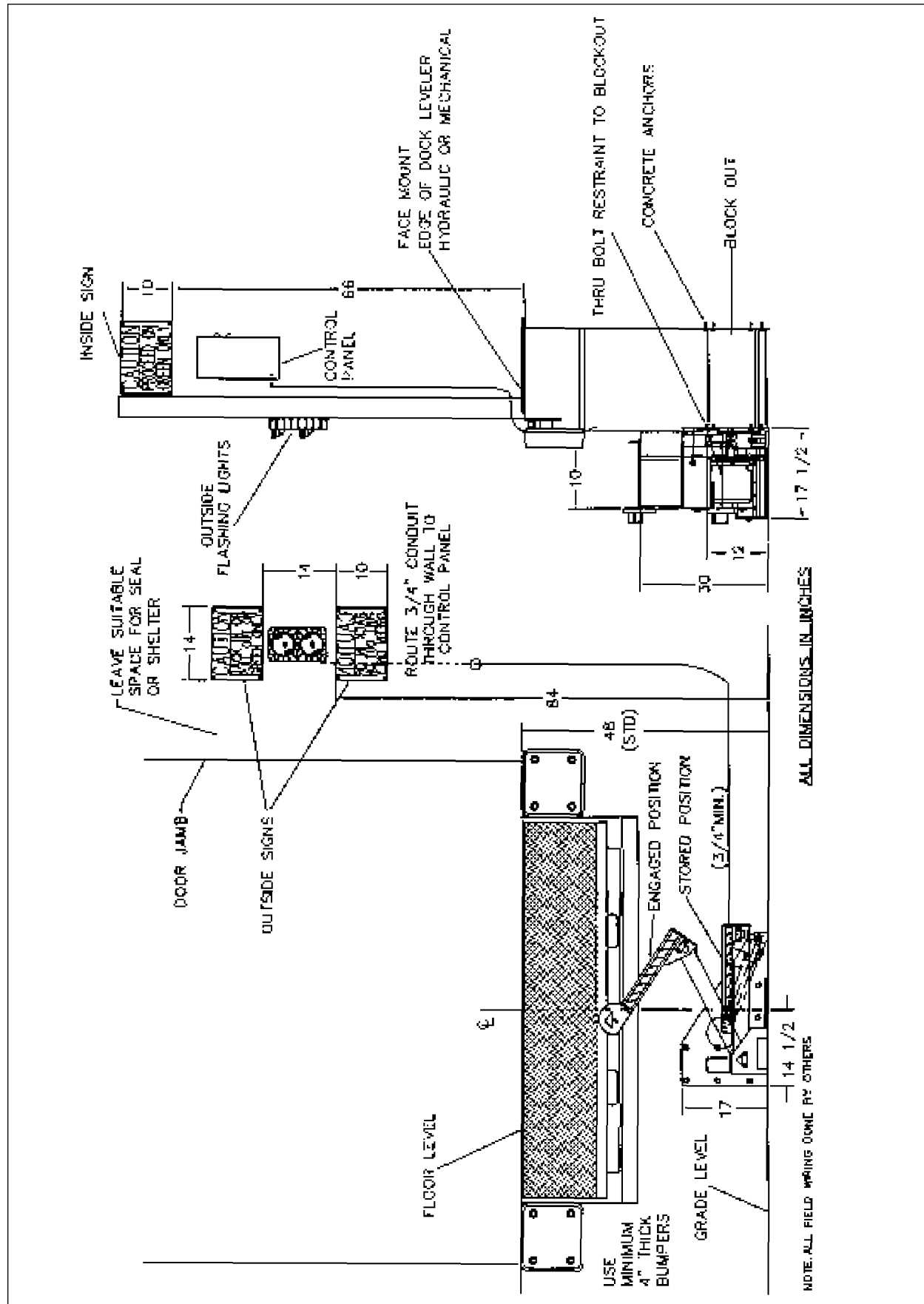
The following pages will describe the mounting process and hardware needed for proper mounting of the ETR-T.



ETR-T INSTALLATION WITH LEVELER

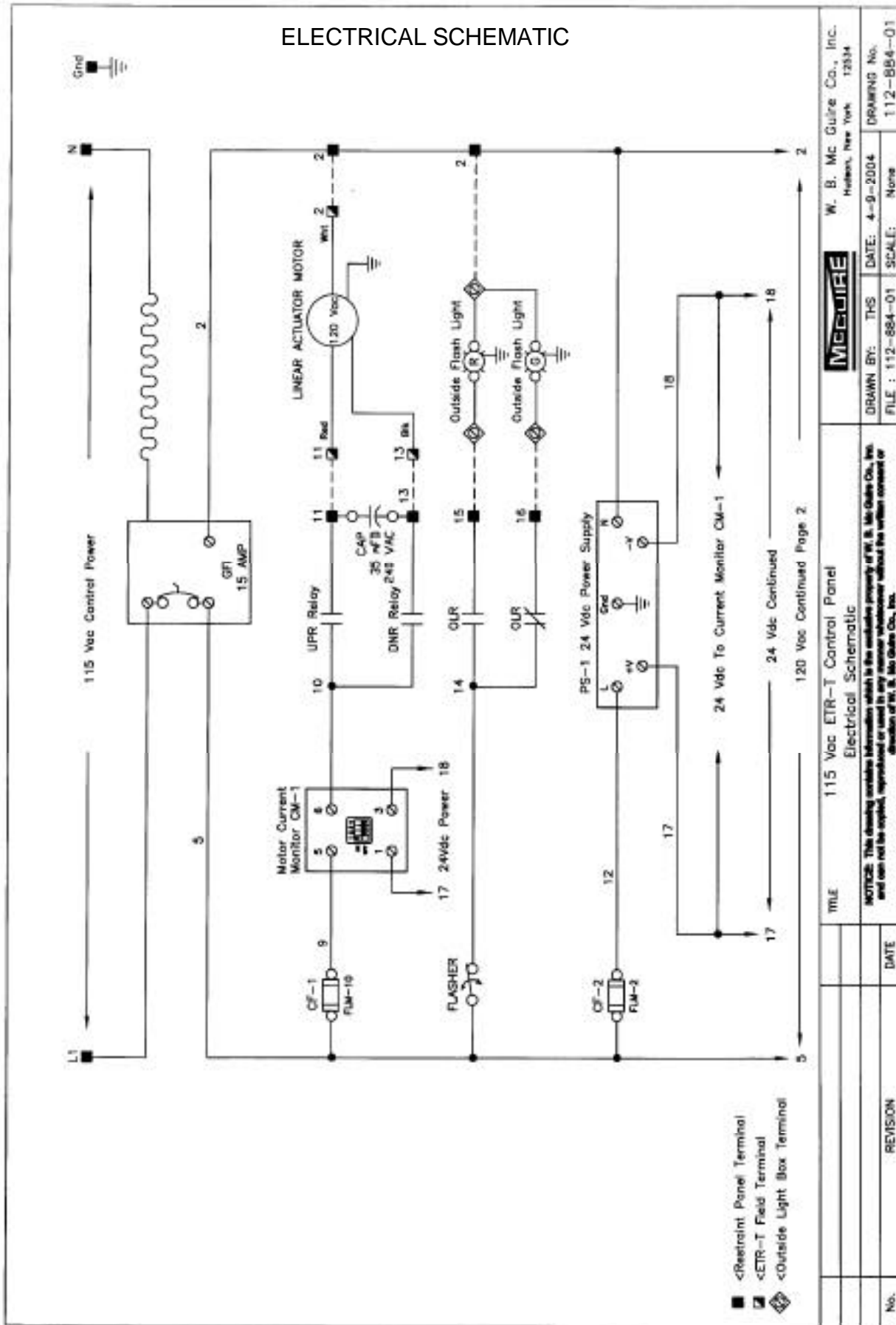


ETR-T INSTALLATION WITH EDGE OF DOCK



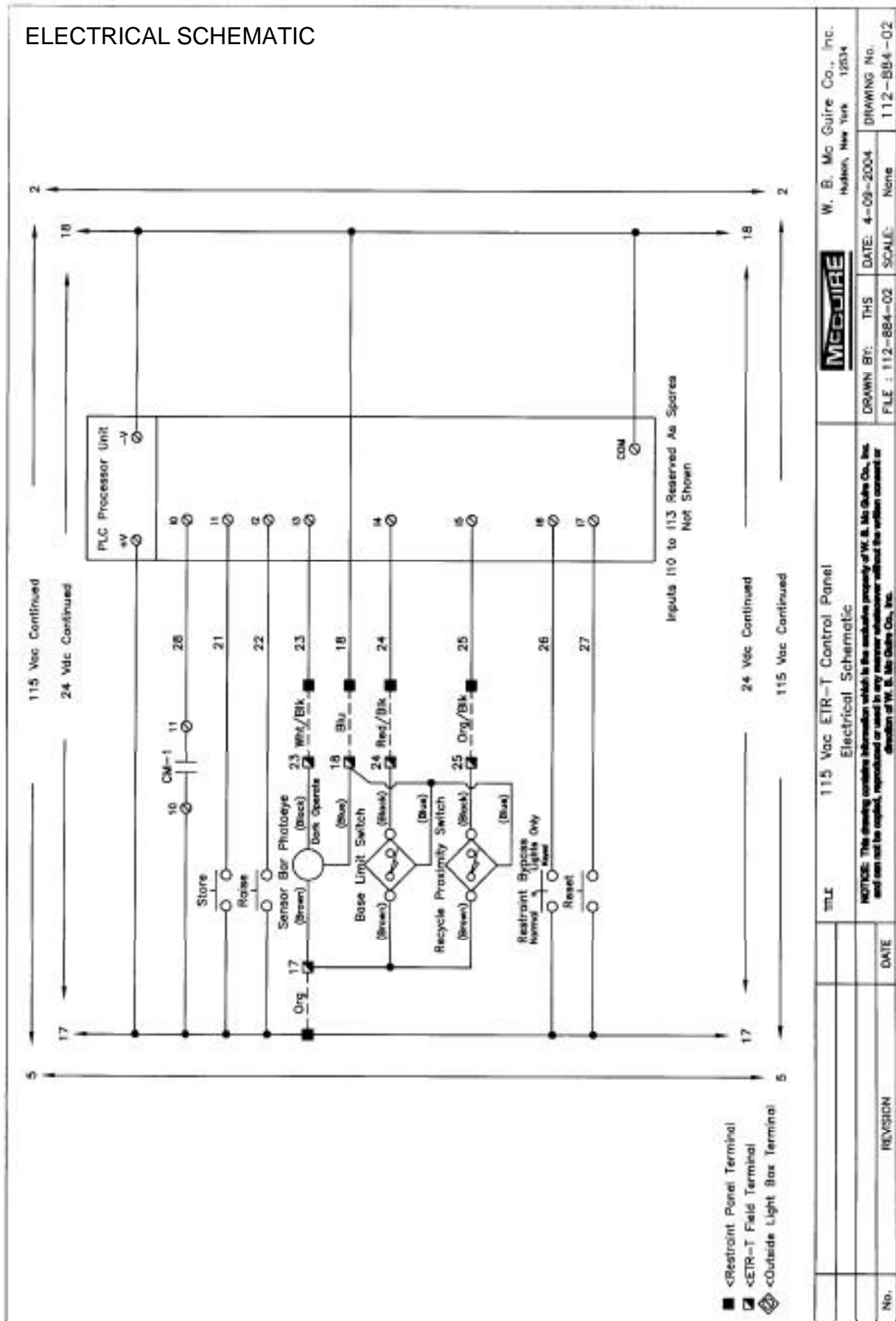
115 Vac ETR-T Control Panel

ELECTRICAL SCHEMATIC



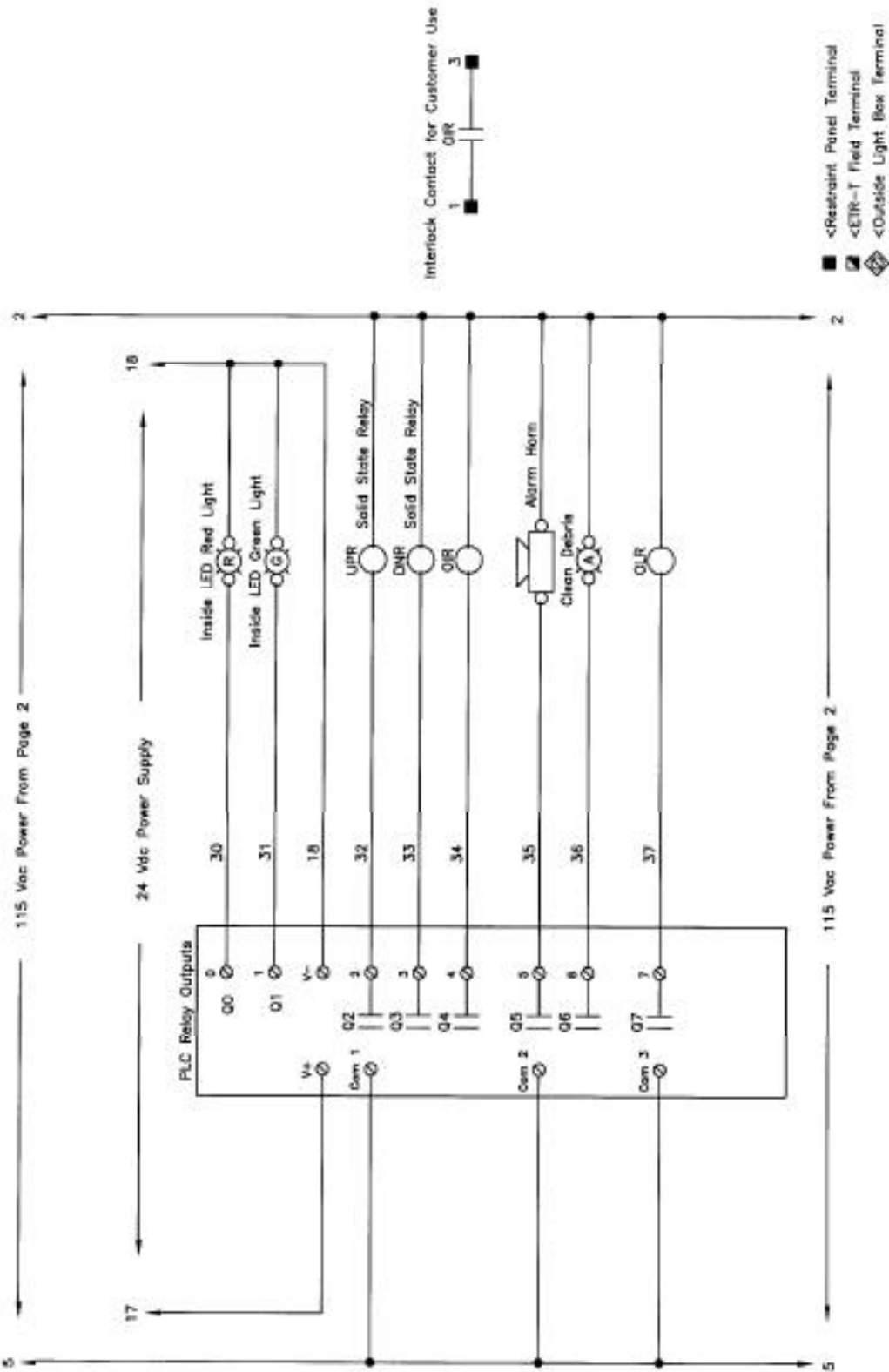
115 Vac ETR-T Control Panel (continued)

ELECTRICAL SCHEMATIC



115 Vac ETR-T Control Panel (continued)

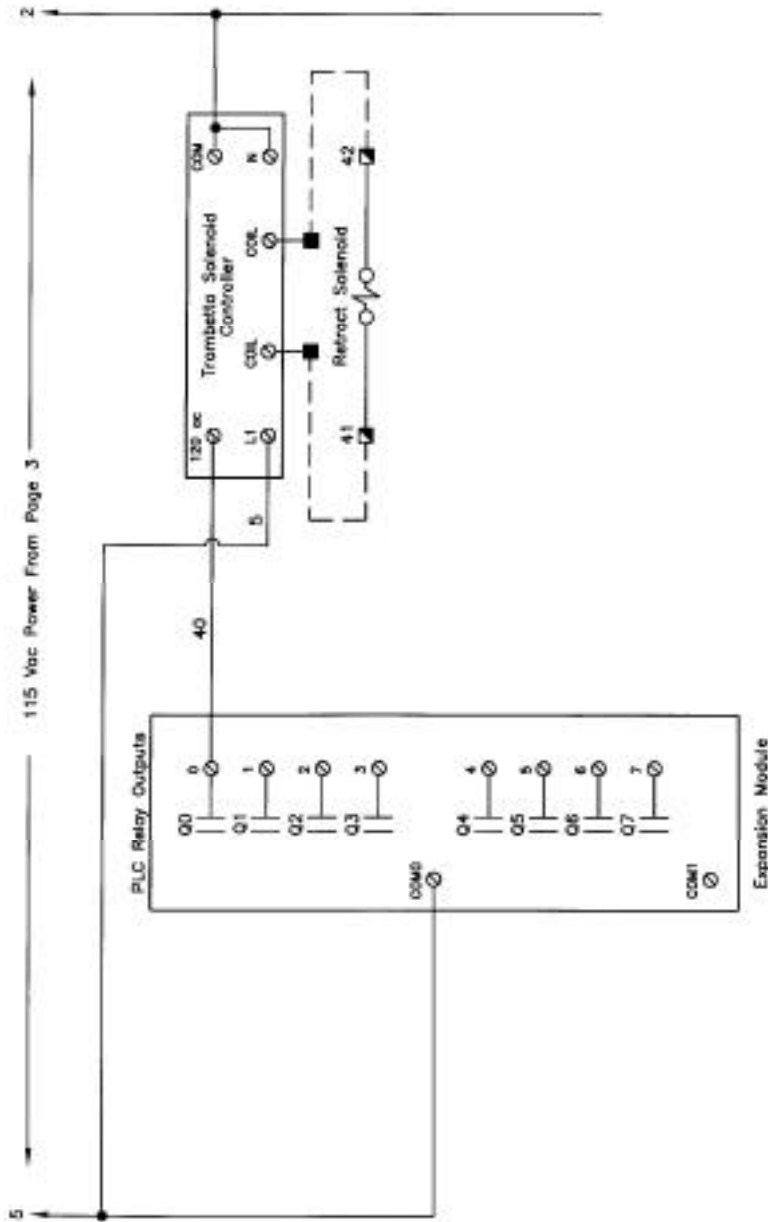
ELECTRICAL SCHEMATIC



		W. B. Mc Quire Co., Inc. Hudson, New York 12534	
TITLE: 115 Vac ETR-T Control Panel Electrical Schematic		DRAWN BY: THIS DATE: 4-08-2004 FILE: 112-BB4-03 SCALE: None	
NOTICE: This drawing contains information which is the exclusive property of W. B. Mc Quire Co., Inc. and can not be copied, reproduced or used in any manner whatsoever without the written consent or direction of W. B. Mc Quire Co., Inc.		DRAWING No. 112-BB4-03	
No.	REVISION	DATE	

115 Vac ETR-T Control Panel (continued)

ELECTRICAL SCHEMATIC

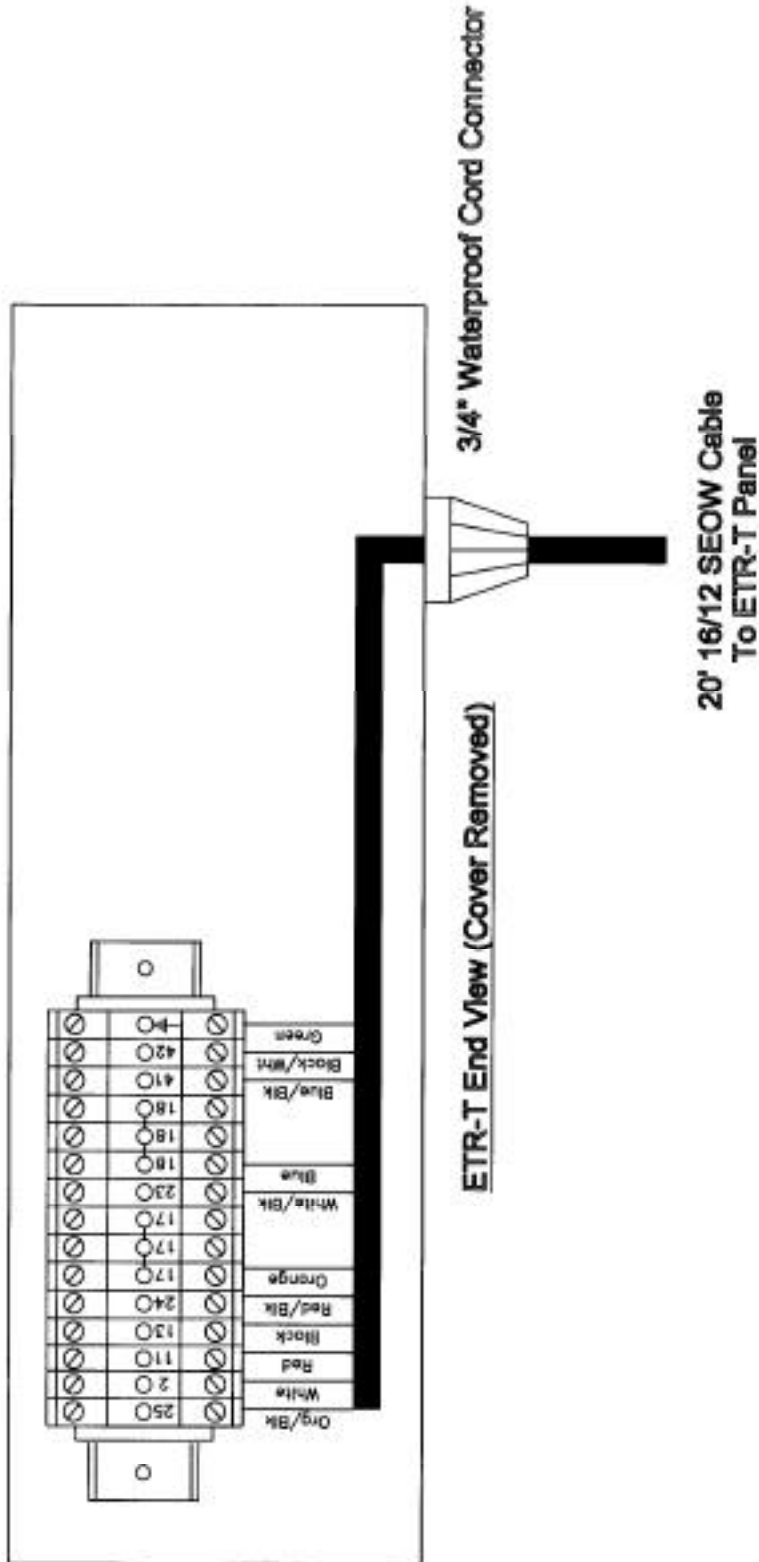


- <Retract Panel Terminal
- <ETR-T Terminal
- ◇ <Outside Light Box Terminal

115 Vac ETR-T Control Panel		W. B. Mc Guire Co., Inc.	
Electrical Schematic		Hudson, New York 12534	
DATE	4-09-2004	DRAWING No.	112-884-D4
FILE	112-884-D4	SCALE	None
<p>NOTE: This drawing contains information which is the exclusive property of W. B. Mc Guire Co., Inc. and can not be supplied, reproduced or used in any manner whatsoever without the written consent or direction of W. B. Mc Guire Co., Inc.</p>			
No.	REVISION	DATE	

115 Vac ETR-T Control Panel (continuned)

TERMINAL STRIP LAYOUT

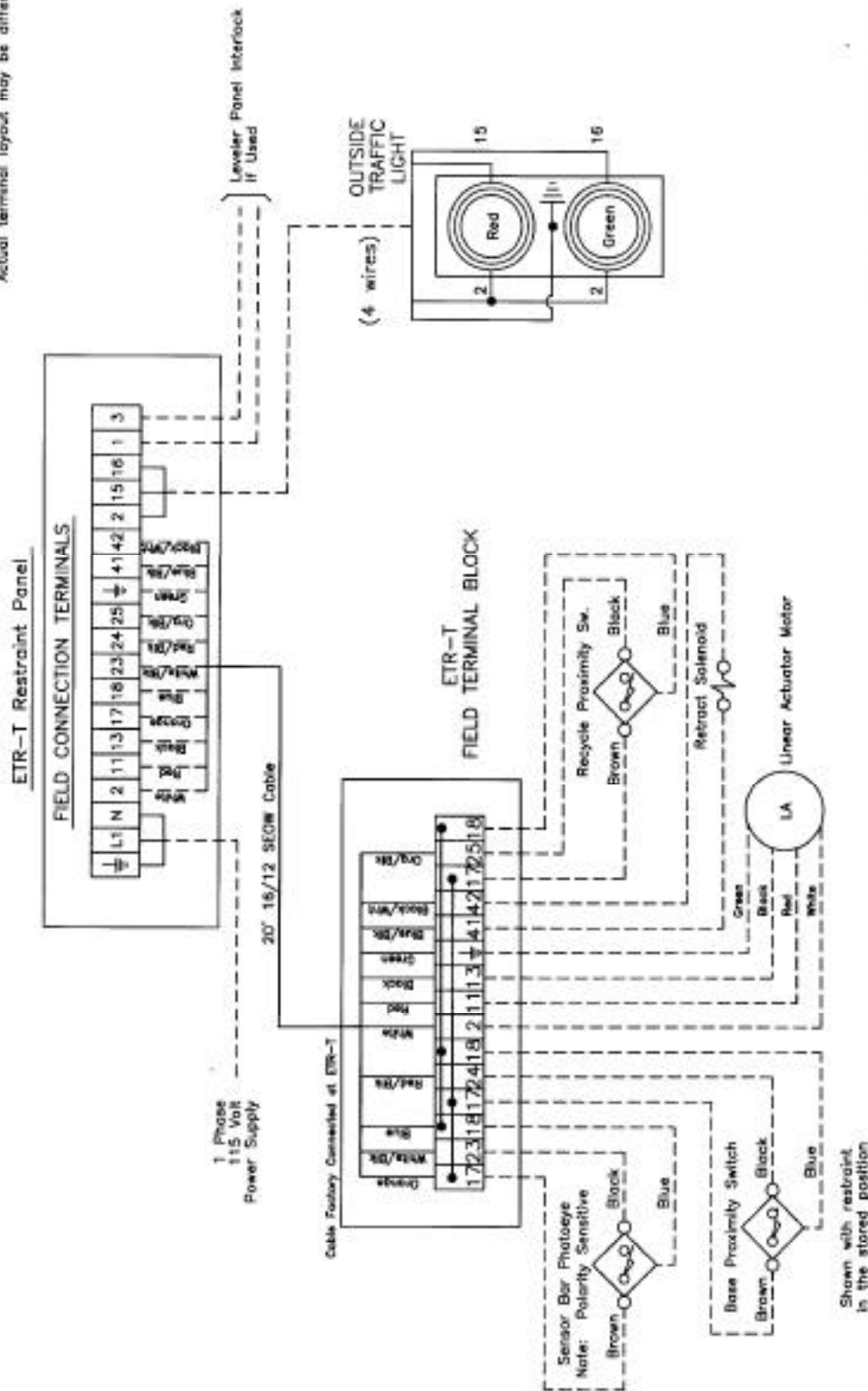


--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

115 Vac ETR-T Control Panel (continued)

FIELD CONNECTIONS

Note: Terminals shown in diagrammatical o
Actual terminal layout may be different



Field Wiring By Others

TITLE		115 Vac ETR-T Control Panel		W. B. Mc Guire Co., Inc.	
		Field Connections		Hudson, New York 12534	
NOTES: This drawing contains information which is the exclusive property of W. B. Mc Guire Co., Inc. and can not be copied, reproduced or used in any way without the written consent of W. B. Mc Guire Co., Inc.		DRAWN BY: TMS		DATE: 4-09-2004	
REVISION		FILE: 612-138		SCALE: None	
No.		DRAWING No.		612-138	

WIRING

To connect motor for proper voltage and rotation, refer to connections diagram on nameplate or inside terminal/conduit box. If power factor correction capacitors are used for individual motor power factor correction, do not exceed maximum recommended value.

All aspects of the installation must conform to the requirements of the NEC, including Article 430 (Motor Circuits and Controllers), and all local codes. Wherever possible, each motor should be powered from a separate circuit of adequate capacity to keep voltage drop to a minimum during starting and running. Increase wire size where motor is located a distance away.

TABLE A – Minimum Wire Sizes for Three-Phase Motors

Motor HP	25 to 50 Feet			100 Feet			150 to 200 Feet		
	200V	230V	460V	200V	230V	460V	200V	230V	460V
3/4	14	14(16)*	14(18)*	12	14	14(18)*	8	10	14(16)*
1	14	14(16)*	14(18)*	10	12	14(18)*	8	10	14
1-1/2	12	14	14(18)*	10	10	14(16)*	6	8	14
2	12	12	14(18)*	8	10	14(16)*	6	6	12
3	10	12	14(18)*	8	8	14	4	6	12

(*) Type S, SO, SJ, SJO, etc. flexible cable wire sizes. See NEC Article 400 for ampacity.

Note: Above wire sizes based on approximate 5% voltage drop during starting; copper conductors; and 75° C THHN type wire.

TABLE A – Minimum Wire Sizes for Single-Phase Motors

Motor HP	25 Feet		50 Feet		100 Feet		150 Feet		200 Feet	
	115V	230V	115V	230V	115V	230V	115V	230V	115V	230V
3/4	12	14(18)*	8	14	6	12	4	10	3	8
1	10	14(16)*	8	14	4	10	4	8	2	8
1-1/2	10	14(16)*	6	12	4	10	2	8	1	6
2	8	14	6	12	3	8	2	6	1/0	6
3	8	10	4	10	2	8	1/0	6	2/0	4

(*) Type S, SO, SJ, SJO, etc. flexible cable wire sizes. See NEC Article 400 for ampacity.

Note: Above wire sizes based on approximate 5% voltage drop during starting; copper conductors; and 75° C THHN type wire.

ETR-T OPERATION INSTRUCTIONS

1. READ AND UNDERSTAND ALL INSTRUCTIONS, WARNINGS AND DANGERS BEFORE OPERATING UNIT.
2. Trailer should be backed tight against bumpers, brakes set and if equipped with air ride ALL AIR MUST BE RELEASED.
3. Check to be sure that a RIG is present and in good condition. If a RIG is not present or is damaged, use BYPASS OPERATING INSTRUCTIONS.

NORMAL OPERATING INSTRUCTIONS

1. If the trailer has satisfactory RIG, press the RAISE button. The restraint will raise until it contacts the RIG.
2. With positive contact, inside light is steady green and the outside light will flash red. Operator MUST visually inspect to insure RIG is entrapped before servicing the trailer.
3. The trailer may now be loaded / unloaded, PROCEED WITH CAUTION. After loading or unloading, return the dock leveler to the stored position, press the STORE button and unit will lower to the stored position.
4. Once the restraint is in the stored position, the outside light will flash GREEN and the inside light steady RED.

FAULT MODES

- A. If no RIG is sensed while raising, the HORN will sound and the inside lights will flash. The unit will then store itself. Press RESET once to silence the HORN and follow BYPASS OPERATING INSTRUCTIONS.
- B. If unit can not store, the HORN will sound, inside lights will flash and the CLEAN DEBRIS light will turn on and horn will sound. Unit will raise up until the recycle sensor is activated. RAISE and STORE buttons will not operate and outside lights will remain flashing RED.
 - Verify the unit has engaged the RIG and press the RESET button once to silence the HORN. YOU MUST notify the driver not to depart the dock.
 - Secure the trailer with wheel chocks or by other means and clear the debris by use of a broom or other means. DO NOT GO UNDER THE TRAILER!!!!
 - Once the debris is cleared, press and HOLD the RESET button until the CLEAN DEBRIS light turns off. Repeat steps if the light does not turn off.
- C. If no trailer and the outside light is RED, CLEAR DEBRIS light is on and the HORN sounds, the unit will need to be cleared of debris, ice or snow.

BYPASS OPERATING INSTRUCTIONS

1. When the restraint is in stored position, the trailer must be manually secured to the dock by wheel chocks or other means.
2. Turn the keyed INTERLOCK to the LIGHTS ONLY position. The inside lights will flash RED AND GREEN and the outside light will be RED.
3. PROCEED WITH CAUTION. After the loading / unloading is completed, return the leveler to stored position. Return INTERLOCK to NORMAL which changes the outside light flashing to GREEN and the inside light steady RED.
4. The truck may now depart and the ETR-T Restraint is ready to accept another trailer at the dock.

FOR OPERATION / TECHNICAL QUESTIONS CALL 1-800-624-8473.

ETR-T OPERATION INSTRUCTIONS (continued)

WARNING: Before operating the vehicle restraint, read and understand all Safety Practices found in this manual. Use by untrained personnel can result in property damage, serious bodily injury or death. Read and understand complete Operation Instructions before attempting to operate this vehicle restraint. Follow all OSHA regulations regarding the use of this equipment. **Do not use the vehicle restraint if it is broken or does not function properly.** Contact your authorized W. B. McGuire Service Representative or the W. B. McGuire Company.

WARNING: Trucks must be secured at the dock. ALWAYS be certain that the vehicle restraint has attained a safe and proper connection with the rear impact guard (RIG) of the trailer. **Where a safe restraint condition cannot be achieved, alternative methods must be used with such vehicles (i.e., wheel chocks or blocks).**

1. Truck should be backed against bumpers and brakes set.
2. Before engaging restraint, a visual check should be made to ensure that a RIG is present. If the RIG is damaged or not present, use an alternate method to secure truck at dock such as wheel chocks, then refer to **Restraint Bypass Operating Instructions** following this section. The restraint bypass selector should be in the **NORMAL** position.
3. After confirming that a RIG exists on the truck, push the "RAISE" button, the restraint arm will raise until it contacts the RIG. The photoeye will detect positive RIG contact. The inside light will turn steady GREEN, while the outside light remains flashing RED.
4. After positive contact is made, the linear actuator motor reverses for two (2) seconds, retracting to its home position to allow restraint to float with up and down motion of the trailer. The leveler interlock relay contact will close in the restraint panel allowing the operation of the dock leveler (if equipped).
5. If positive RIG contact HAS NOT BEEN ACHIEVED, the audible alarm will sound steadily. The linear actuator will recycle, returning the restraint to the stored position. The outside light will flash RED and inside light will flash alternately, alerting the dock attendant that positive contact has not been made. Press "RESET" once to silence the "HORN." The operator must proceed to the **Restraint bypass operating instructions**. The attendant must secure the trailer by other means, i.e. (wheel chocks, or block) before entering the trailer.

To reset unit, only after trailer has been loaded/unloaded. Attendant can remove wheel chocks or blocks to allow truck to leave. Turn key switch to lights only mode, then back to normal mode. The lights will go to normal operation: Inside light will be steady RED, the outside light will be GREEN.

6. When positive RIG contact has been achieved, the dock attendant should make a visual check. The normal loading/unloading operation may begin. The restraint will float with the vertical movement of the trailer, ensuring that positive contact is maintained during operations.
7. After normal loading/unloading operations are finished, return the dock leveler to its stored position. Push the "STORE" button to return the restraint to the stored position. The inside light will turn RED and the outside light will flash GREEN.

ETR-T OPERATION INSTRUCTIONS (continued)

8. If **Restraint will not store due to foreign object**. After loading the truck and restraint is being stored, a foreign object could block restraint from completely storing. In this event, the following will happen:
- Inside light will flash GREEN / RED, outside light will be flashing RED.
 - Actuator will stop on its retract motion, then unit raises as alarm sounds.
 - The “CLEAN DEBRIS” light will be activated. Do not load/unload trailer at this time.

The attendant must do the following:

- Inform driver not to depart
- Chock the truck wheels
- Clean out the foreign object.
- Do not go under the trailer.
- Remove wheel chock
- Press button and hold the “RESET” button until “CLEAN DEBRIS” light is off.
- Restraint is ready for normal operation.

9. The truck may now depart safely. The unit is ready to accept another truck at the dock. Repeat the entire operation sequence for each trailer received at the dock.

RESTRAINT BYPASS OPERATION

WARNING: Using the Restraint Bypass Operation means that positive contact with the RIG has not been made. Make sure the truck is secured by wheel chocks or other means.

1. When contact with RIG has not been made, and restraint has self restored, manually secure the truck by wheel chocks or other methods. Turn the restraint bypass selector to the LIGHTS ONLY mode. The inside lights will alternate GREEN and RED indicating the truck has not been secured by the restraint and the outside light will flash RED. If restraint is interlocked with leveler, the lights only mode will allow the user to operate the dock leveler.
2. After step #1 is completed, loading/unloading operations may begin.
3. After loading/unloading is completed, the operator must return the dock leveler to its stored position. Wheel chocks (or other means of securing the trailer) must be removed and stored.
4. Turn the INTERLOCK SELECTOR to the NORMAL position. The inside RED light will be on, and the outside light will be flashing GREEN. The restraint is ready to accept another trailer.

MANUAL RESTRAINT OPERATION (POWER OUTAGE)

1. If the restraint is in the up position, and positive contact with the RIG is made, and loss of electrical power occurs, use the control handle from dock level, and insert between dock and trailer after you have stored any dock leveler. Position the control handle on the upper arm, one inch in front of the reflector.
2. Push down on the upper arm until the restraint rests in its stored position. The truck is safe to pull away from the dock.

WARNING: DUE TO LOSS OF ELECTRICAL POWER, PLC CONTROL AND COMMUNICATION LIGHT SYSTEM WILL NOT OPERATE. VISUAL CHECK AND MANUAL RESTRAINT (WHEEL CHOCKS) WILL BE REQUIRED.

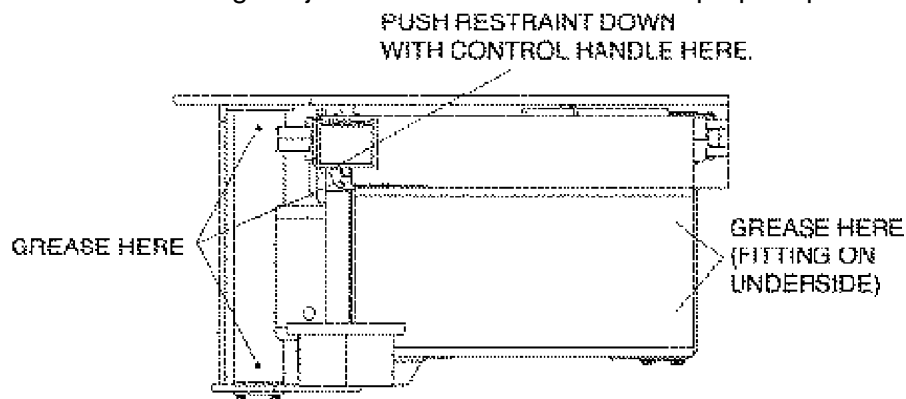
WARNING: IF ANY OF THE OPERATIONAL FEATURES OF THIS VEHICLE RESTRAINT DO NOT FUNCTION AS PREVIOUSLY STATED, DO NOT USE THE VEHICLE RESTRAINT! CONTACT YOUR AUTHORIZED W. B. McGUIRE SERVICE REPRESENTATIVE OR W. B. McGUIRE TECHNICAL SUPPORT AT 1-800-929-2553.

ETR-T MAINTENANCE AND SERVICE

On site maintenance personnel can follow the enclosed service and trouble-shooting instructions or you can arrange for professional service through your authorized W. B. McGuire distributor.

1. Turn power off and lock out and tag out (OSHA code 1970.147) before performing maintenance on restraint.
2. An operational check should be made daily to ensure the unit is functioning properly, that it travels its full upward stroke and that there are no worn or damaged parts which could result in the failure of equipment and/or personal injury. Clean & remove debris daily.
3. Check to ensure that the warning labels are in place and legible. Also insure that the yellow and black striped tape is in place. Also ensure all caution signs are in place.
4. Lubricate the unit monthly with a liberal amount of a light weight, low temp grease. There are four (4) grease fittings; two (2) at each end of the lower restraint arm. Any excess grease should be wiped away to prevent the attraction of foreign matter that may impede the operation of the restraint. Refer to illustration below for grease fitting locations.
5. Check all mount bolts for tightness monthly. Torque to 100 Ft. Lbs.
6. Keep ETR-T clean of debris & foreign objects at all times to ensure its proper operation.

LUBRICATION POINTS



TROUBLE-SHOOTING GUIDE

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
Restraint arm does not rise.	A. Inoperative gas spring. B. Binding. C. No electrical power.	A. Replace gas spring. B. Determine cause and correct as necessary. C. Determine cause and correct as necessary.
Restraint arm does not stay down when returned to stored position.	A. Latch not engaging.	A. Check to see if latch is rotating freely. B. Check for broken return spring.
Restraint arm rises slowly or does not rise to its full upward travel.	A. Binding. B. Weak gas spring.	A. Determine cause and correct as necessary. B. Replace as required.
Light system does not operate.	A. No power. B. Inoperative photo eye or limit switch. C. Burned out LED	A/B. Determine cause and correct as necessary. C. Replace LED

ETR-T PREVENTIVE MAINTENANCE CHECKLIST

Mechanical / Electrical Vehicle Restraint

NOTE: Quarterly PM recommended

Customer:	Dock #	Dock #	Dock #	Dock #
Restraint Model:	Serial #:	Serial #:	Serial #:	Serial #:
1	Keep restraint clean and free of debris at all times			
2	Inspect restraint arms and lubricate all pinned joints			
3	Inspect engagement plate			
4	Inspect gas strut, lubricate sockets			
5	Inspect and lubricate latches			
6	Inspect all welds			
7	Tighten anchor bolts			
8	Inspect condition of safety labels and caution signs			
9	Inspect communication light system			
10	Inspect control panel			
11	Inspect actuator, lubricate inside tube			
12	Inspect all electrical connections			
13	Inspect store switch			
14	Inspect restore proximity switch			
15	Inspect and regularly clean photo eye and reflector			
16	Inspect audible alarm			
17	Cycle unit for proper operation			

Dock #	Comment or Description of Needed Repair(s)	Approval	Completed

Customer Signature	Date	Technician Signature	Date
Phone Number	PMP-5A	Assistants signature	Date

LINEAR ACTUATOR SPECIFICATIONS

- 115 VAC Volt DC motor
- Weather-protected
- Overload clutch
- 1,000 pound load capacity
- Steel spur gears in drive system
- Maintenance free operation
- Stainless steel extension tube
- Thermal overload protected
- Temperature range of -30 degrees F to 150 degrees F
- Zinc housing

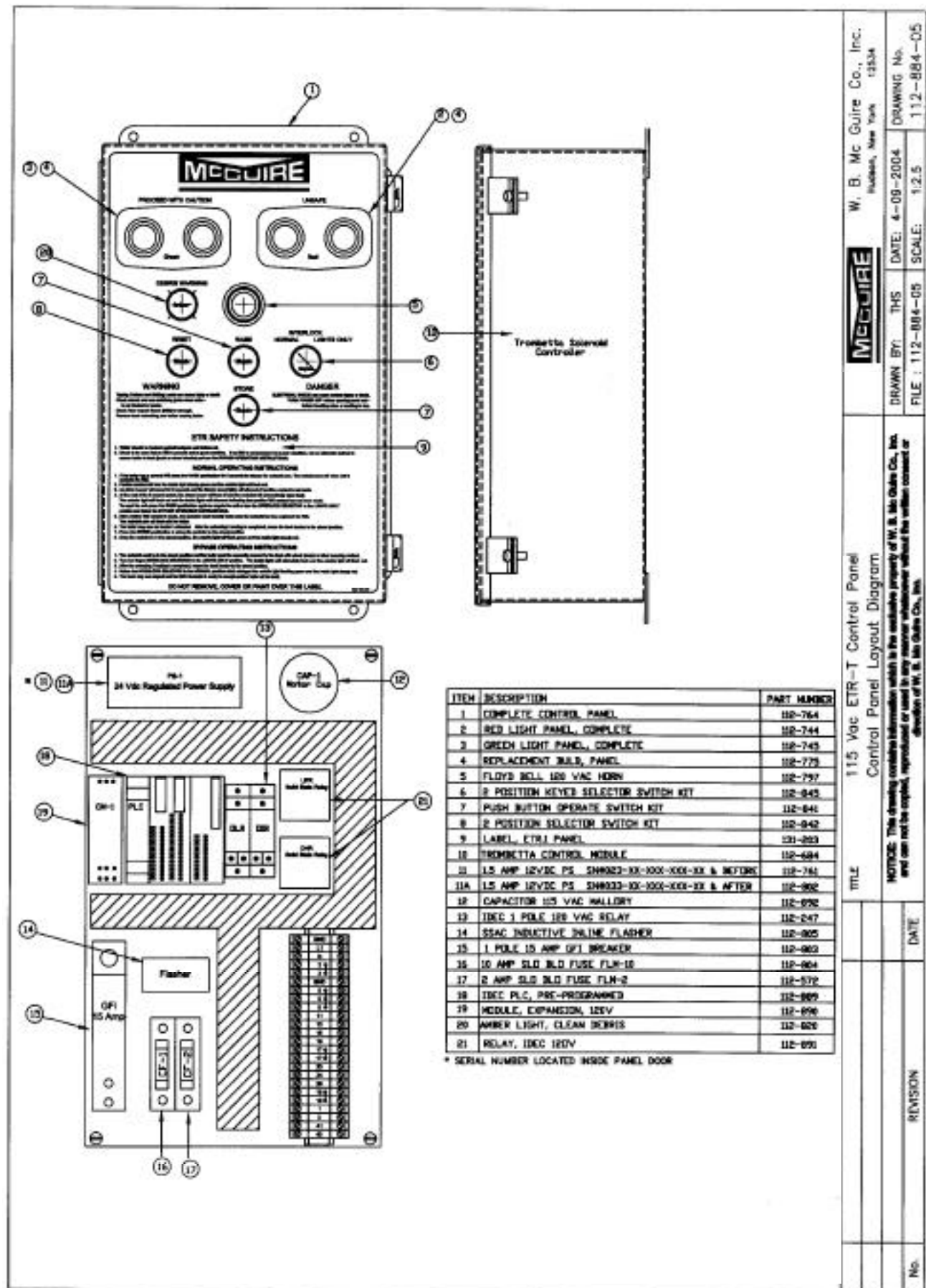
ELECTRICAL SPECIFICATIONS

- 115 Volt AC, 20 Amp., 60 Hz, Single Phase Power required for proper amperage-draw operation.
- Incoming power supply by others to be 115 Volt AC, 60 Hz Single Phase.
- 20 Amp. minimum Rated Fused Disconnect with 10 Amp. Non-Time Delay Fuse, all by others, is to be part of incoming power supply by others and located right before the control panel.
- Power Supply Disconnect or Protection Device by others is to be supplied at time of installation and hook-up. It is suggested that type THHN Copper Wire minimum be used.
- 2 Amp and 10 Amp protection supplied inside control panel at appropriate areas.
- Internal Ground Fault Interrupt (GFI) supplied within Control Panel.

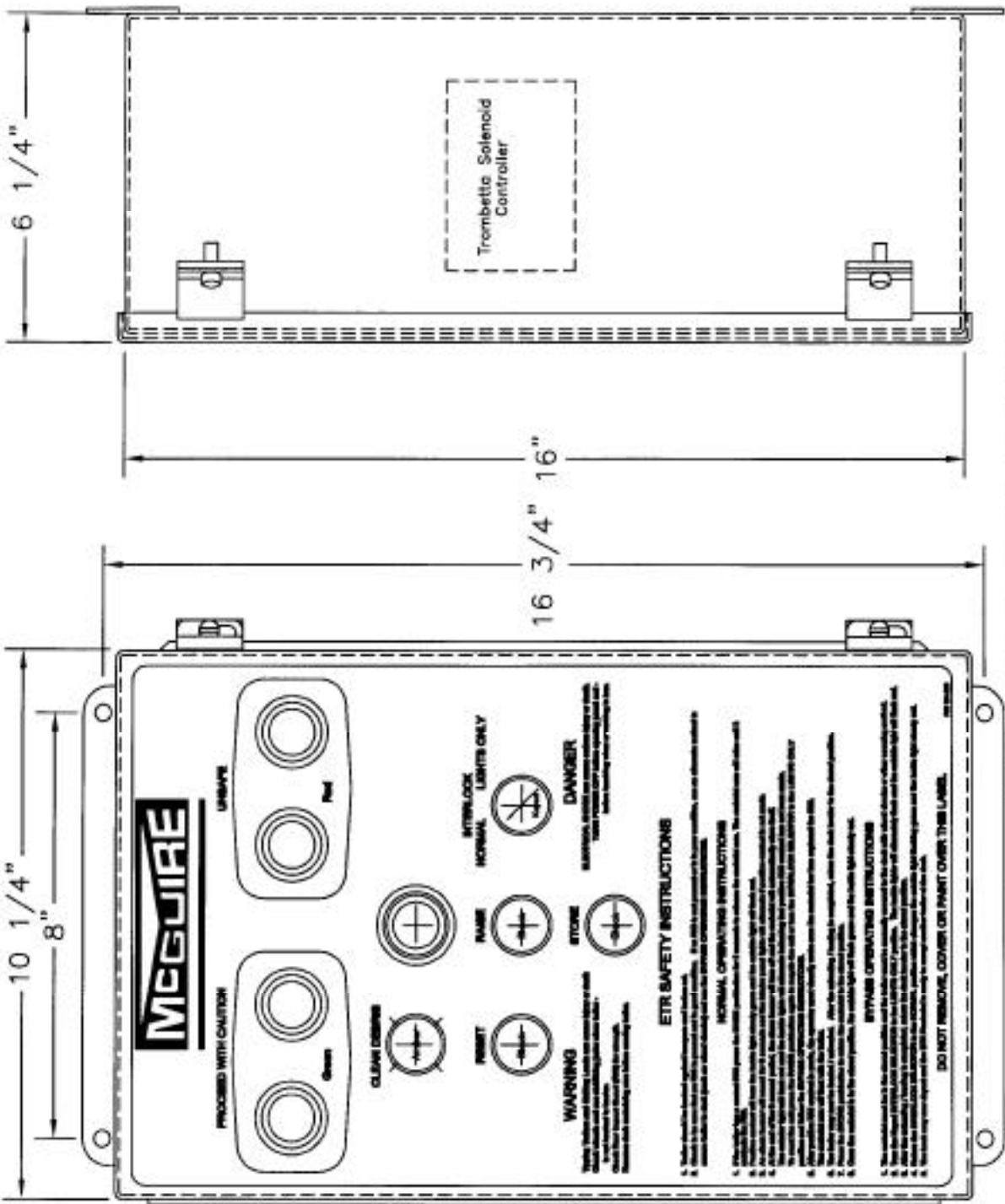
ETR-T CONTROL PANEL SPECIFICATIONS



CONTROL PANEL

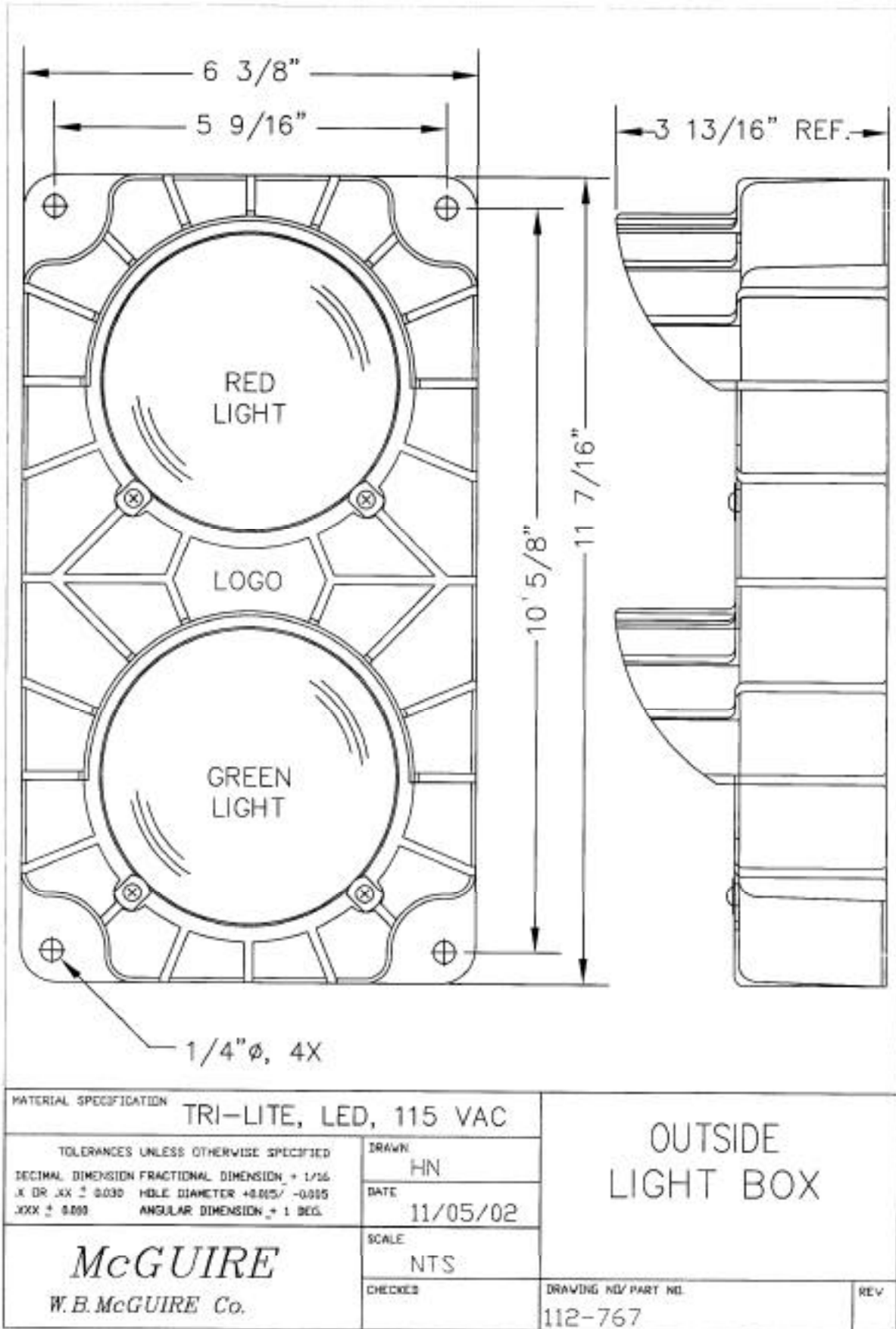


CONTROL PANEL DRAWINGS AND DIMENSIONS

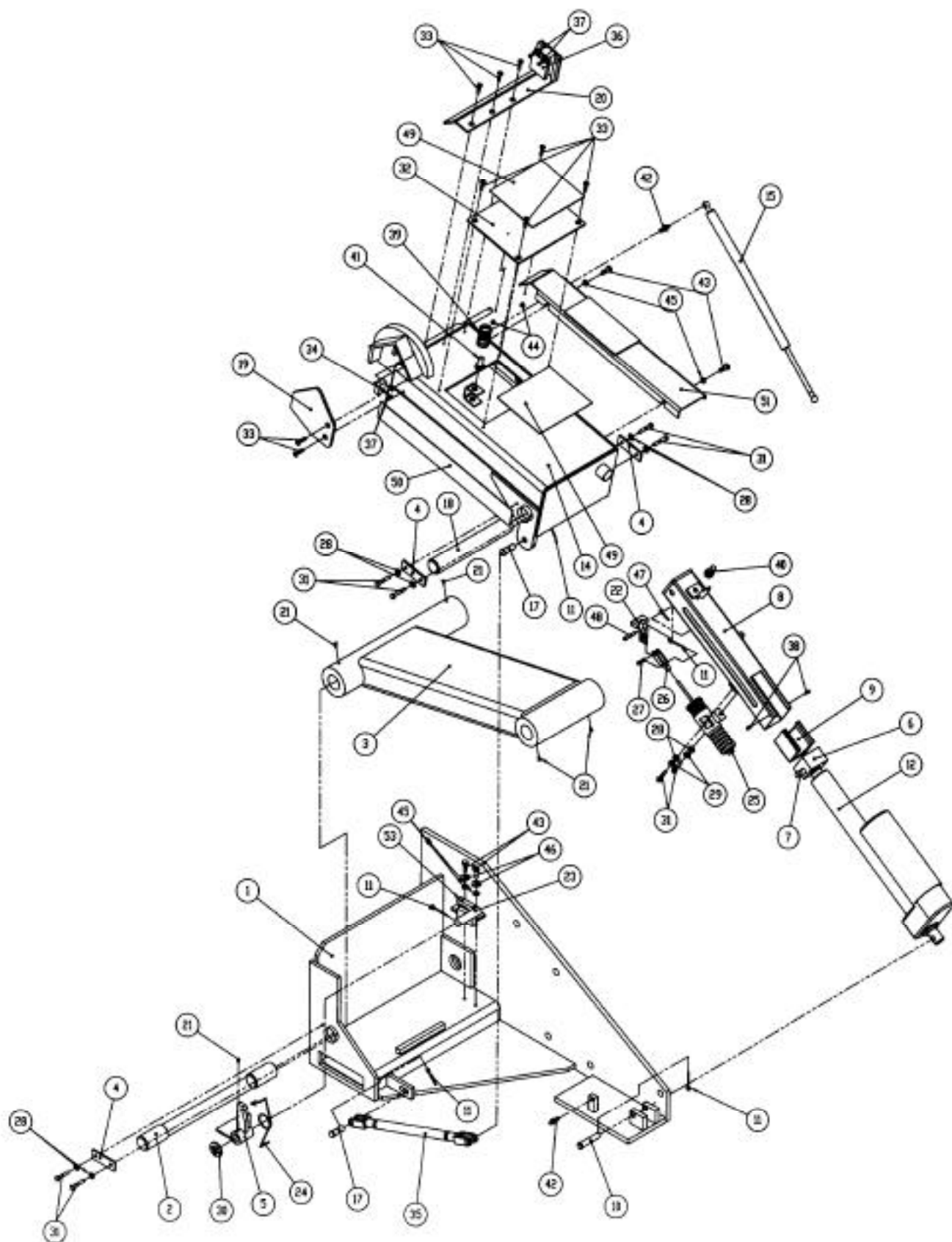


Notes: Exterior Lights to be Tri Light LED Type
Enclosure is Nema 12 Rated

ETR-T EXTERIOR LIGHTS



ETR-T EXPLODED VIEW PARTS DIAGRAM



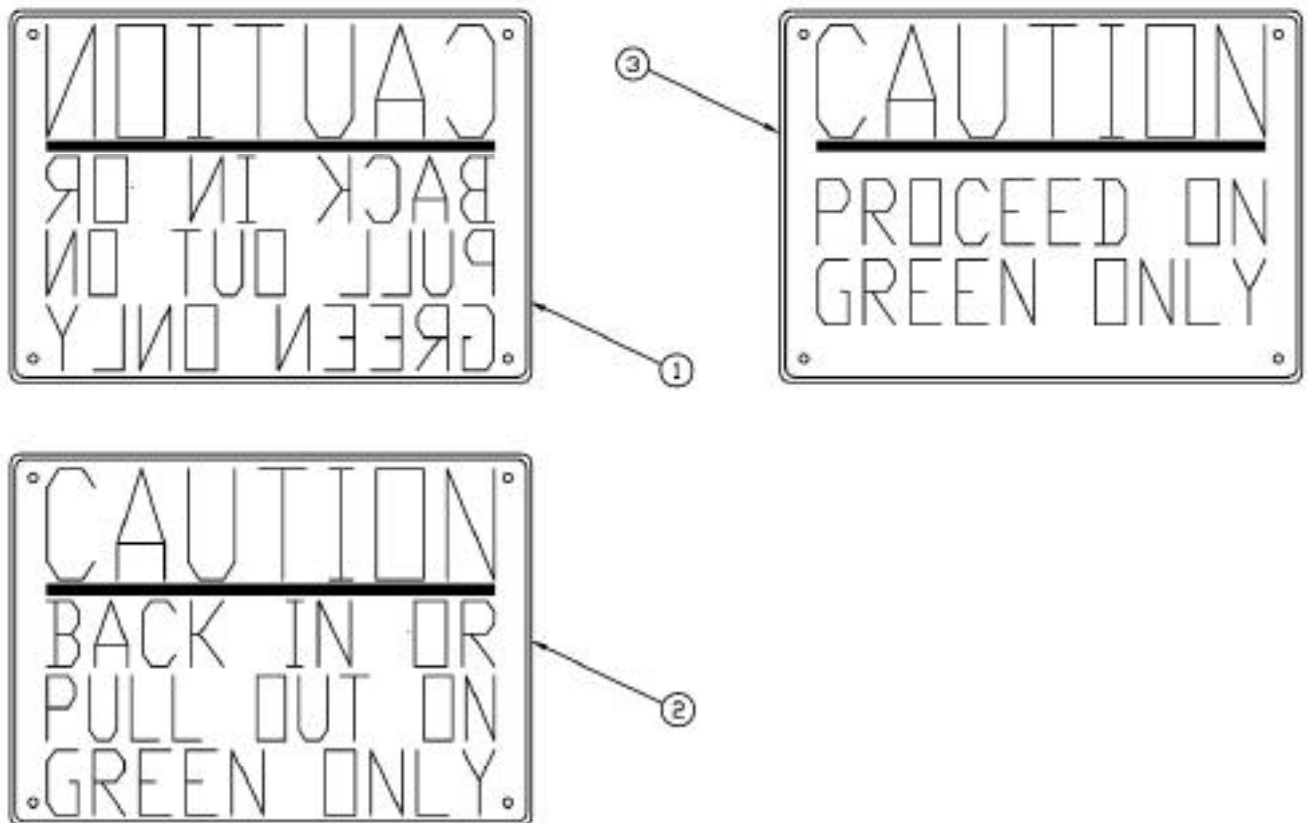
ETR-T PARTS LIST

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	612-130	FRAME ASSY, ETR	1
2	622-074	PIN, 1-1/2" DIA X 17-5/16"	1
3	612-128	LOWER ARM WELDMENT	1
4	622-075	RETAINER 7 GA X 1 X 3	3
5	612-140	2ND LATCH ASSY, ETR	1
6	622-154	ACTION PISTON	1
7	113-362	SPRING ROLL PIN, ETR	1
8	612-131	TUBE WELDMENT ASSY, ETR-T	1
9	622-171	GUIDE SLEEVE, ETR	1
10	113-068	PIN, CLEVIS, .5 DIA X 2.5" L ZINC PL	1
11	113-073	PIN, COTTER, 1/8" X 1-1/2" LG	5
12	112-762	1000 LB ACT, 115 VAC, W/O BRAKE	1
14	612-129	UPPER ARM, ETR-T	1
15	113-363	GAS SPRING, 250 #STUDS AND CLIPS	1
17	113-183	PIN, YOKE/ASSY, #2708-1/2-6A PLT	2
18	622-073	PIN, 1-1/2 DIA X 10" LG	1
19	622-260	SENSOR COVER ETR	1
20	612-136	REF. MOUNT ASSY	1
21	113-112	GREASE FITTING	5
22	612-107	LITTLE LATCH ASSY ETR	1
23	612-133	2ND LATCH MOUNT, ETR-T	1
24	113-365	TORSION SPRING ETR	1
25	112-769	SOLENOID SILICONE BOOT	1
26	113-298	YOKE	1
27	113-348	PIN	1
28	121-056	LDC WASHER 1/4"	8
29	121-055	SAE WASHER 1/4	2
30	121-066	SAE WASHER 3/4	1
31	122-154	HEX BOLT 1/4-20 X 1-1/2	8
32	622-251	PLATE UPPER ARM ASSY	1
33	122-214	SCR, FLATHEAD SLOTTED, 1/4-20X.5	9
34	112-881	PHOTO EYE SENSOR	1
35	612-137	3rd LINK ASSY	1
36	112-749	SQ REFLECTOR FOR PHOTO EYE	1
37	122-006	BLT, SLY-RD. HEAD/PLD, 8-32 X 1/2	4
38	122-210	SCREW, TEK, PHILLIP, #6 X 1/2	2
39	113-336	SPR, H-D/EXT, E0650-055-1750M	1
40	112-882	PROXIMITY SWITCH, ACTUATOR TUBE	1
41	112-700	PROXIMITY SWITCH	1
42	113-293	BALL STUD SUSPA 10 MM	2
43	122-215	BOLT, HEX HEAD, 5/16-18 X 7/8	4
44	122-216	TRUSS HEAD SCREW #10-32 X 1/4" LG	2
45	121-057	LOCK WASHER 5/16	4
46	121-060	WASH, FL/PLD, 5/16"	2
47	113-374	PIN, COTTER, 3/32 x 3/4	1
48	113-373	PIN, CLEVIS, .25 DIA X 1-1/4 LG	1
49	131-160	DECAL	1
50	131-154	3" WARNING TAPE	.01
51	612-135	COVER ASSY	1
* 52	131-218	LABEL, FORK LIFT HERE	1
* 53	122-217	SETSCREW, 1/4-20 X 1"	1
* 54	131-212	LABEL, DO NOT FORK HERE	1
* 55	602-061	OWNERS MANUAL	1
* 56	612-068	CONTROL HANDLE	1
* 57	612-138	CONTROL PANEL KIT, SIGNS, LIGHTS ECT	1
* 58	612-139	FIELD KIT - PART OF 612-138	1
* 59	112-884	CONTROL, PANEL ETR/T ONLY	1

* Items shown with asterisk not shown for clarity.

ETR-T SAFETY SIGNS

ITEM	DESCRIPTION	PART NUMBER
1	EXTERIOR CAUTION SIGN (MIRROR IMAGE)	131-163
2	EXTERIOR CAUTION SIGN	131-162
3	INTERIOR CAUTION SIGN	131-164



Normal inputs and outputs in the up position with ICC bumper sensed

OUTPUTS

PLC

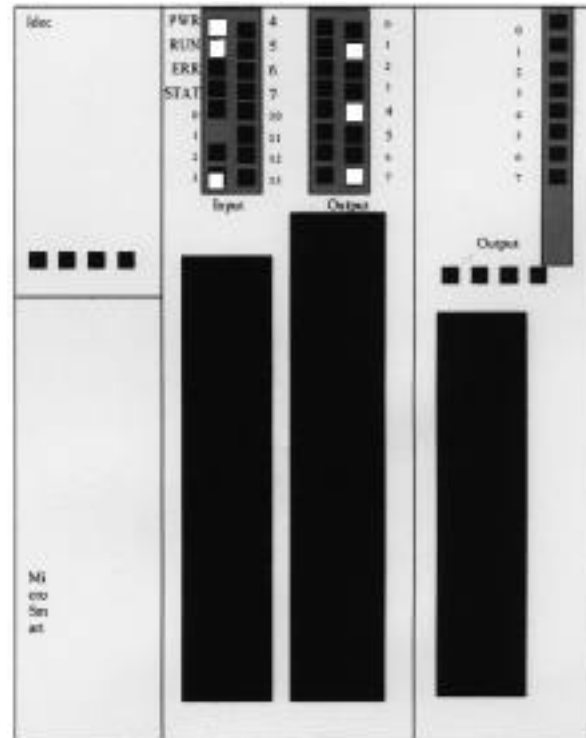
Output 0	Inside Red light
Output 1	Inside Green Light
Output 2	Motor Up
Output 3	Motor Down
Output 4	Interlock Relay
Output 5	Alarm
Output 6	Clean Debris Light
Output 7	On Outside Red Off Outside Green

Expansion Card

Output 0	Solenoid Energized
----------	--------------------

INPUTS

Input 0	Over Current Sensor
Input 1	Store Push Button
Input 2	Raise Push Button
Input 3	Bumper Resent Prox
Input 4	Ann Down Prox
Input 5	Top Tube Prox
Input 6	Interlock Switch
Input 7	Reset Push Button



ETR-T

Normal inputs and outputs when down and ready for manual operation

OUTPUTS

PLC

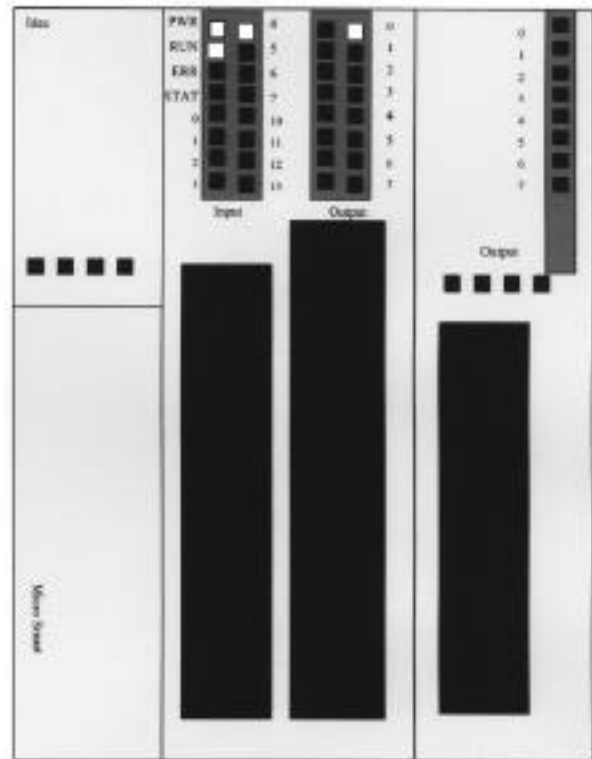
- Output 0 Inside Red Light
- Output 1 Inside Green Light
- Output 2 Motor Up
- Output 3 Motor Down
- Output 4 Interlock Relay
- Output 5 Alarm
- Output 6 Clean Debris Light
- Output 7 On Outside Red Off Outside Green

Expansion Card

- Output 1 Solenoid Energized

INPUTS

- Input 0 Over Current Sensor
- Input 1 Store Push Button
- Input 2 Raise Push Button
- Input 3 Bumper Present Prox
- Input 4 Arm Down Prox
- Input 5 Top Tube Prox
- Input 6 Interlock Switch
- Input 7 Reset Push Button



Normal inputs and outputs in a fault mode

OUTPUTS

PLC

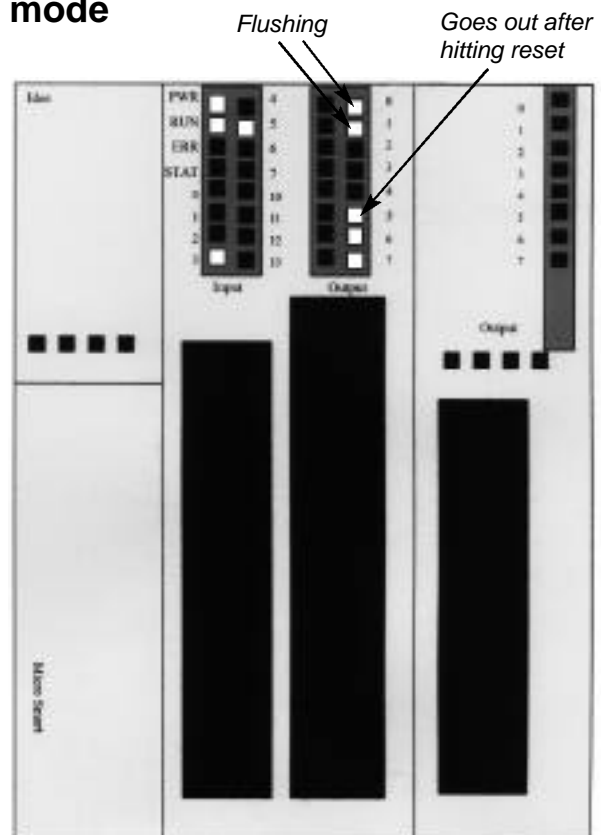
- Output 0 Inside Red Light
- Output 1 Inside Green Light
- Output 2 Motor Up
- Output 3 Motor Down
- Output 4 Interlock Relay
- Output 5 Alarm
- Output 6 Clean Debris Light
- Output 7 On Outside Red Off Outside Green

Expansion Card

- Output 1 Solenoid Energized

INPUTS

- Input 0 Over Current Sensor
- Input 1 Store Push Button
- Input 2 Raise Push Button
- Input 3 Bumper Present Prox
- Input 4 Arm Down Prox
- Input 5 Top Tube Prox
- Input 6 Interlock Switch
- Input 7 Reset Push Button



NOTES

NOTES

NOTES

W.B. McGUIRE COMPANY

ETR-T Electric Vehicle Restraint Warranty

The W. B. McGuire Company warrants that its electric vehicle restraint device (model ETR-T) will be free from defects in materials and workmanship under normal use and service for a period of two (2) years from the date of installation.

The W. B. McGuire Company's sole obligation under this warranty is limited to repairing or replacing any part which shall be determined by the W. B. McGuire Company to be defective, and is conditioned upon the buyer giving written notice of any such defect within the warranty period. If the W. B. McGuire Company concludes that repair or replacement is necessary, work will commence within a reasonable time period after the decision to repair or replace has been made.

This warranty will not apply to any product that has been altered, modified, damaged or which has deteriorated due to abuse, neglect, misuse or by accident. Warranty will be VOID if any repairs are made or attempted to be made by any person not designated by the W. B. McGuire Company. Proper application, installation, maintenance and operation are required to keep warranty in force.

Programmable logic controllers are factory preset. No adjustments are required during installation or maintenance. Any reprogramming by an unauthorized W. B. McGuire representative that results in improper operation of the unit will VOID this warranty. The W. B. McGuire Company assumes no liability in the event of the PLC being reprogrammed.

This warranty is the W. B. McGuire Company's exclusive expressed warranty. Warranty is limited to value of components only. The W. B. McGuire Company assumes no liability for loss of the use of any equipment and expressly disclaims any liability for incidental or consequential damages. Warranties implied by law are limited in duration to the two year period described above.



**One Hudson Avenue
Hudson, New York 12534
1-800-929-2553 • Fax 1-800-929-1274**

www.wbmcguire.com



The specifications described herein were in effect at the time of printing. However, W.B. McGuire Company reserves the right to change specifications and designs or to discontinue models at any time without incurring obligation.

Represented By: