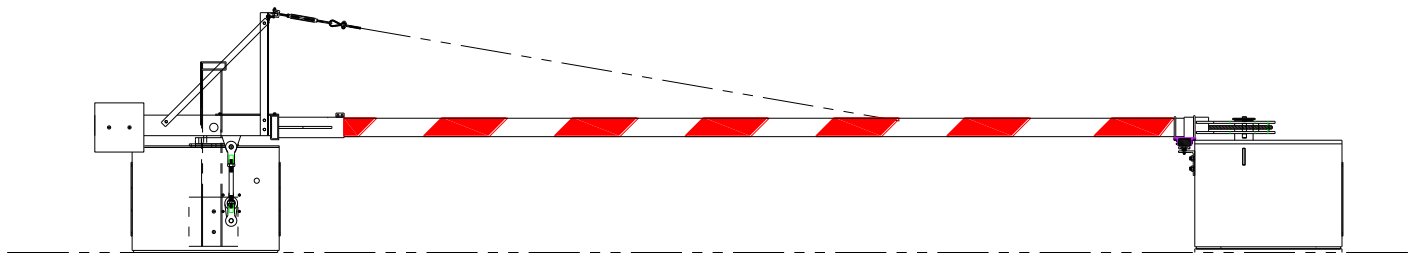




MODEL CR25P CABLE BEAM BARRIER

INSTALLATION MANUAL



B&B ARMOR

Corporate Office & Technical Support:

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MADE IN THE USA

INTRODUCTION

Welcome

Congratulations on your purchase of a B&B ARMR warning gate. We have years of experience in all aspects of perimeter security and related disciplines, and our products are used throughout the world to control access and to protect people, equipment, and facilities. Your warning gate is designed to give you years of smooth, trouble-free operation.

In addition to providing detailed operating instructions, this manual describes how to install, maintain, and troubleshoot your vehicle barrier. To make it easy to locate the information you need, we've included a detailed Table of Contents immediately following this Introduction. All of this is important information, so be sure to keep the manual available for reference.

If you need help with any aspect of your vehicle barrier's installation or operation, please contact us. We offer a broad range of vehicle barrier and related security services, so you can also call on us for:

- Turnkey installations
- Routine barrier preventative maintenance or emergency repairs (including work on non-B&B ARMR products)
- Spare or replacement parts
- Custom designs or special installations
- Equipment upgrades
- Ancillary security equipment
- Technical support available by phone or in person with advanced scheduled notice.

Safety



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of non insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instruction in the literature accompanying the product.

Your safety is important to us. If you have any questions or are in doubt about any aspect of the equipment, please contact us. While B&B ARMR does not assume responsibility for injury to persons or property during installation, operation, or maintenance, we can provide verbal guidance, additional written instructions, or the services of a factory engineer. We're here to help you operate your vehicle barrier safely and effectively.

As the user, you are responsible for correct and safe installation, operation, and maintenance of this equipment. Users must follow the specific instructions and safety precautions located in this manual.

In addition:

- Be aware of and follow the safety standards of the Occupational Safety and Health Administration (OSHA), as well as other applicable federal, state, and local safety regulations and industry standards and procedures. For installation outside the United States, users must also follow applicable international, regional, and local safety standards.
- Engage only properly trained experienced staff to install, operate, and maintain the equipment.
- Ensure that all repairs are performed correctly, using properly trained staff and the right tools and equipment.

How to Contact Us

If you have any questions or experience any problems with your vehicle barrier—or if we can help you with any other facility security issues—please contact us directly at:

Corporate/Tech Support:

B&B ARMR

5900 S. Lake Forest Drive, Suite 230

McKinney, TX 75070 USA

Telephone: (972) 385-7899

Toll Free: (800) 367-0387

Fax: (972) 385-9887

E-mail: info@bb-armr.com

techsupport@bb-armr.com

System Installation Record

To assist in documenting the products installed in your system, please take a minute to record the following reference information. This information can be located on the blue B&B ARMR model number plate.

Additional columns are added for your convenience in documenting other components in the system.

Site:			
Job #:			
Date:			
Serial Number:			
Model Number:			
Voltage:			
Phase:			

Table of Contents

INTRODUCTION..... iii

Welcome..... iii

Safety iii

How to Contact Us..... iv

1. ORIENTATION 7

1.1 CR25 Drive Stanchion Overview 7

1.2 CR25 Receiver Bollard Overview 11

1.3 CR25 Gate Arm Overview..... 11

2. INSTALLATION 12

2.1 Site Preparation 12

2.2 Foundation Installation..... 12

2.3 Stanchion Installation 13

2.4 Wire Terminations and Test 13

2.5 Gate Arm Installation..... 15

2.6 Counterweight Installation..... 15

2.7 Proximity Switch Adjustment 16

2.8 Final Pre-operation Checklist..... 16

3. WARRANTY..... 17

4. APPENDIX..... 18

4.1 Typical Installation 18

4.2 Foundation Requirements 19

4.3 Electrical- Typical 3 Phase 20

4.4 Electrical- Typical Single Phase 21

1. ORIENTATION

The CR25 Vehicle Barrier Gate is designed to contain a vehicle impact and prevent that vehicle from entering a restricted access control area. The CR25 is comprised of 3 major components: Drive Stanchion, Receiver Bollard and Gate Arm. This section of the user manual shows these assemblies and details of each.

1.1 CR25 Drive Stanchion Overview

Please reference Figure 1 and the following table for a listing of the product components.

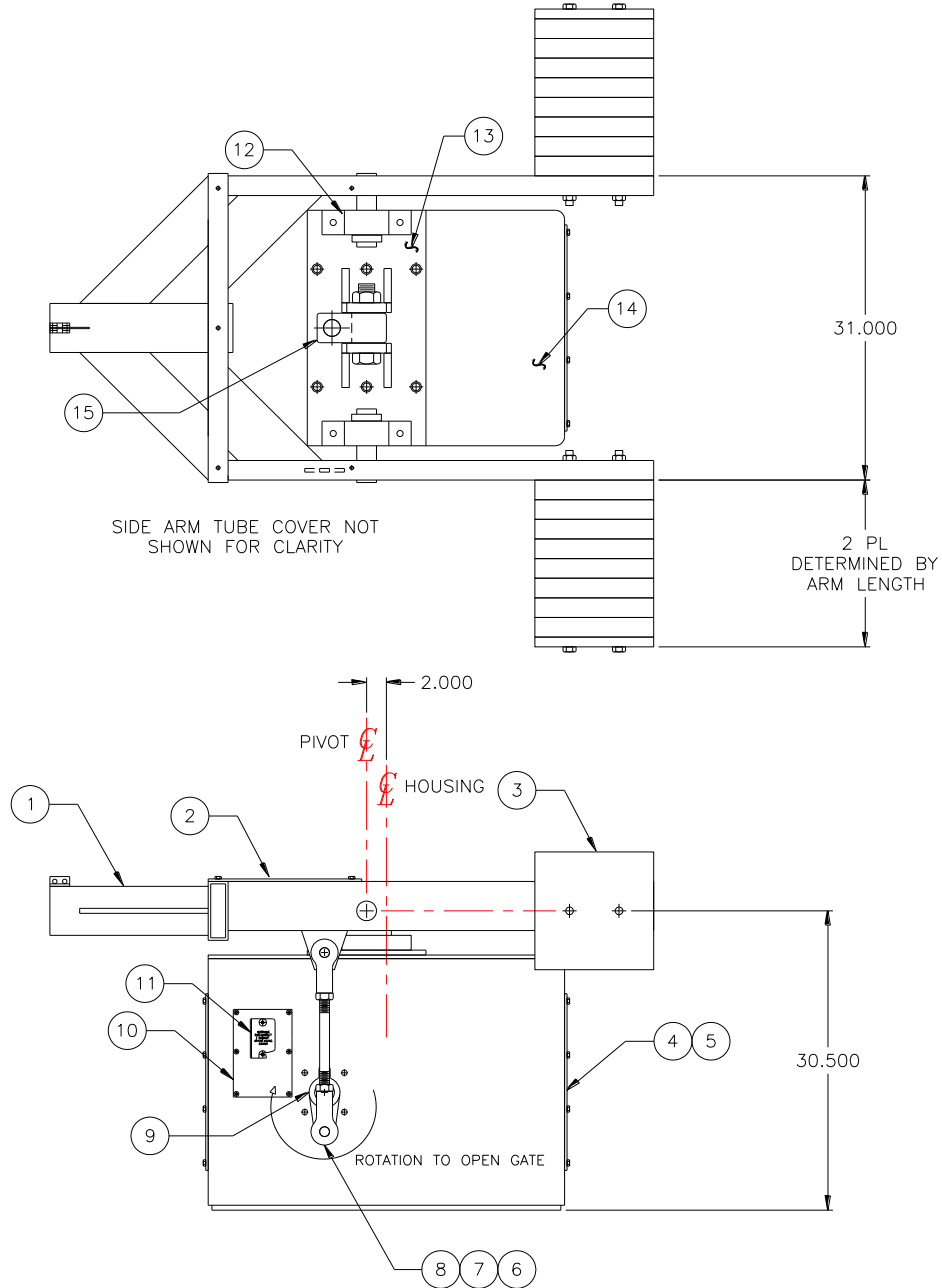


Figure 1 CR25 Drive Stanchion External Parts

10	1	0040-0532	BRKT, MAN. RELEASE	0040BM0532	-
9	1	0040-0518	STUD ASSY. BRAKE RELEASE	0040BM0518	-
8	1	2201-0310	KEY, FEATHER	EA. 3/16" X 1" RND. ENDS	-
7	1	0040-0521	BAR, PLUNGER	004BM0521	-
6	1	0040-0519	PLATE, BRAKE MOUNTING	0040CM0519	-
5	1	BK	BRAKE, RELEASE, SOLENOID	SEE ELECT. DWG.	-
4	1	X785-LE037DE04M	BRAKE SPRING	-	-
3	1	0040-0520	BRAKE, BEAM	0040BM0520	-
2	1	0066-8357/C	DRUM, BRAKE ALUM.	0066CM0521	-
1	1	0066-1660	BRAKE SHOE, MACHINING	0066CM0151	-
ITEM NO	QTY	PART OR IDENTIFYING NO	DESCRIPTION	DRAWING NUMBER - MATERIAL DESCRIPTION	MATL ALLOC
PARTS LIST					

*Note BK for #5 depends on the motor voltage; XOL-120V, XOL-240V, or XOL-460V

Table 2 Brake Assembly

NOTES:
1. ITEMS DENOTED WITH ** ARE NOT SHOWN, BUT ARE INCLUDED.

**	40	4	XNUT-11-120C	NUT	EA, DOOR SWITCH	4
**	39	1	XKEY-0697	XMISION KEY	EA, .375 x 9.75" LONG	1
**	38	1	0025-0555	BRAKE COVER	0025BM0555	-
**	37	1	0000-0594	HCSS MTG BRKT	0000-0594-A	-
**	36	1	XSWI-DTE62RN	HAND CRANK SAFETY SWITCH	EA, DPDT	1
**	35	1	113-2660C-C	1 5/8-5 1/2 X 6	SOCKET CAP SCREW PLATED	-
**	34	1	113-2670C-C	1 5/8-5 1/2 X 7	SOCKET CAP SCREW PLATED	-
**	33	2	1241-0026NC	1 5/8-5 1/2	ELASTIC STOP NUT PLATED	-
**	32	20	1201-0016NF	NUT, HEX	EA., GRADE 8 PLATED	-
**	31	20	110-1625C-F	BOLT, 1"-14 X 2 1/2	EA., GRADE 8	-
**	30	20	1351-16	LOCKWASHER, 1" SPLIT	EA., GRADE 8 PLATED	-
**	29	1	0066-8357	DRUM, BRAKE ALUMINUM	0066AM0521	-
**	28	1	XKEY-0697	KEY, FEATHER	EA., 3/8 X 9 3/4 ROUND ENDS	-
**	27	2	XSEAL-17285	OIL SEAL	EA., CHICAGO RAWHIDE #17285	-
	26	-	-	-	-	-
	25	1	XSWI-E19-00M	DOOR SAFETY SWITCH	EA, DPDT	1
	24	2	0000-0595	DOOR SWITCH MTG. BRKT.	0000-0595-A	-
	23	1	-	BRACKET, PROX, CR25	-	-
	22	1	1001-050-1/2-2	ELECTRIC MOTOR	EA, 1/2 HP, 115/230V, 1ø	1
	21	3	-	COLLAR, PROX	-	-
	20	1	0025-0571	DRIVE SHAFT	0025-0571-A	-
	19	2	1700-0112-2	BEARING, 4 BOLT FLANGE	EA, 1.750" MB FC4-35-1	-
	18	1	0066-3026	COVER, HAND CRANK	7010BM0559	-
	17	1	0022-1050	HAND CRANK	0022CA1050	-
	16	2	0025-0586	MAIN CRANK	0025-0586-A	-
	15	-	-	-	-	-
	14	2	0025-0574	SEAL PLATE, DRIVE SHAFT	0025-0574-A	-
	13	2	0066-7761	ROD END, 1" LH	EA, AURORA MG-16-Z-1	-
	12	2	0025-0510	CONNECTING ROD	0025BM0510	-
	11	2	0066-7760	ROD END, 1" RH	EA, AURORA MW-16-Z-1	-
	10	1	0040-0533	ELECTRIC SUB PANEL	0040DM0533	-
	9	3	XPROX-FCM2-1204	SWITCH, PROXIMITY	-	-
	8	3	XCABLE-R-FA4TZ	CABLE, PROXIMITY SWITCH	-	-
	7	4	XKEY-0625	FEATHER KEY	EA. .375 X 2.500 RND ENDS	-
	6	1	0040-0003	UNIVERSAL BRAKE ASSY.	0040BA0023	-
	5	1	0025-6-500-1	GEAR REDUCER	EA, 1.750" HOLLOW T.S.	-
	4	-	-	-	-	-
	2	2	0025-0514	CR25 HOUSING, DOOR	0025BM0514	-
	1	1	0025-0572	CR25 HOUSING, MACHINING	0025-0572-A	-
ITEM NO	QTY	PART OR IDENTIFYING NO	DESCRIPTION	DRAWING NUMBER - MATERIAL DESCRIPTION	MATL ALLOC	
PARTS LIST						

Table 3 CR25 Drive Stanchion Internal Parts List

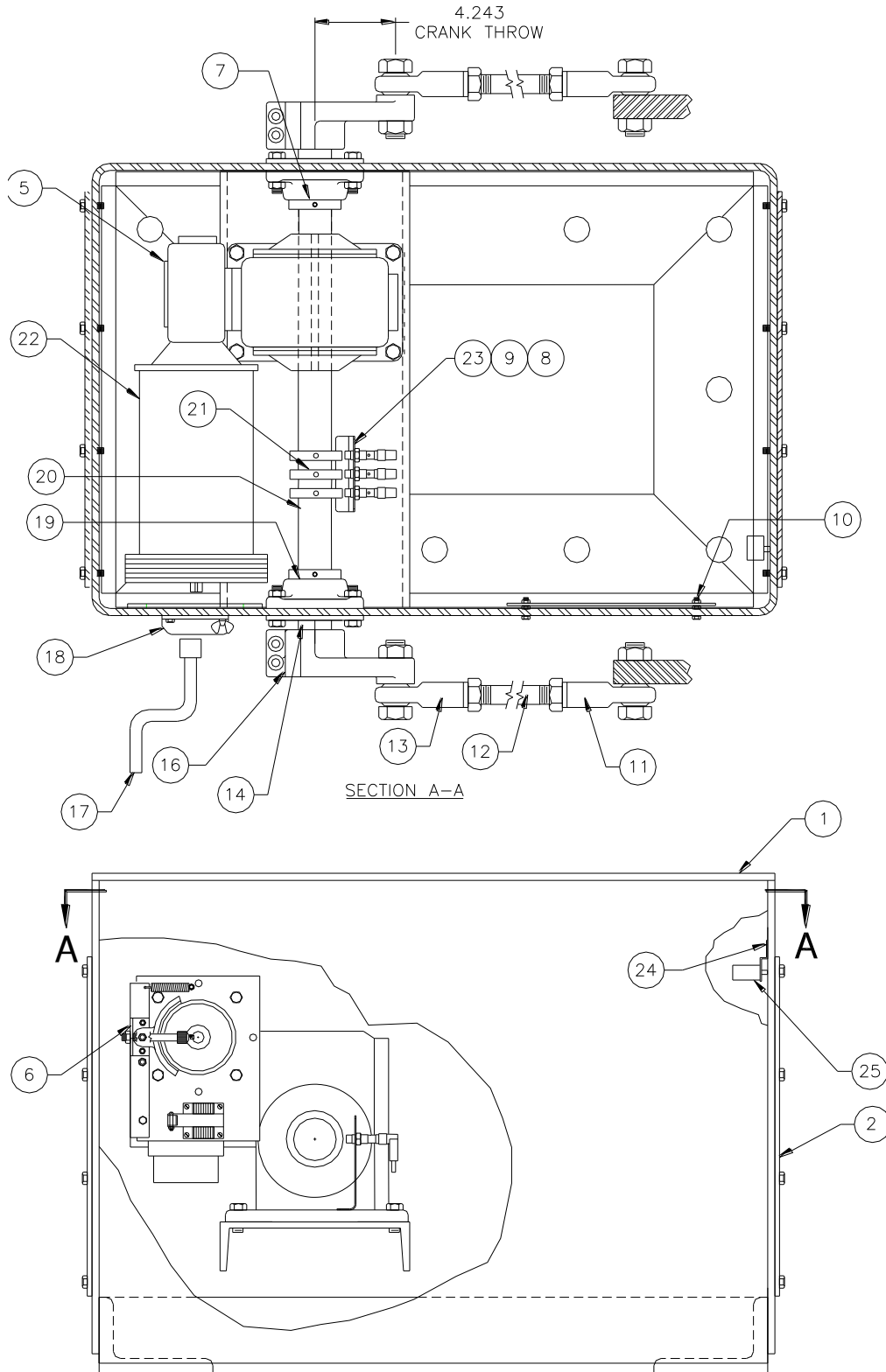


Figure 3 CR25 Drive Stanchion Internal Parts List

1.2 CR25 Receiver Bollard Overview

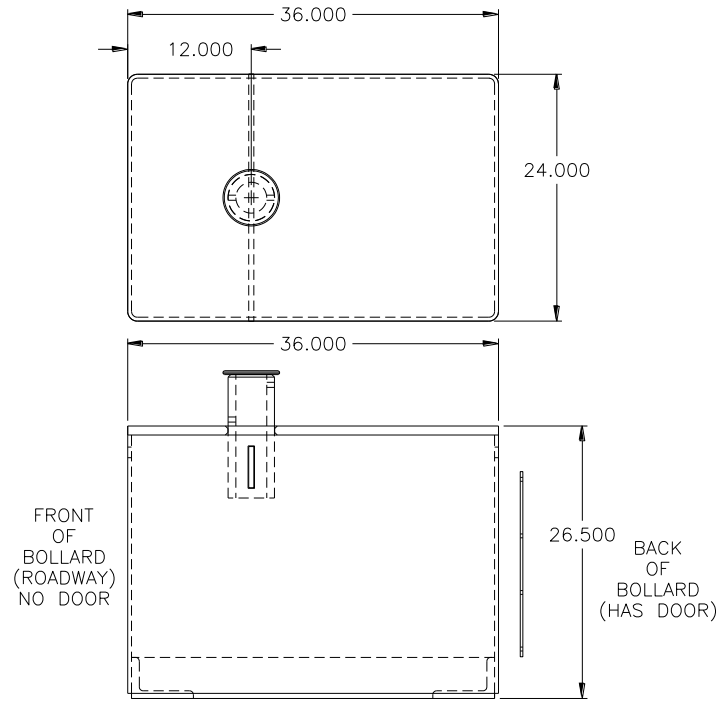


Table 4 Receiver Bollard

1.3 CR25 Gate Arm Overview

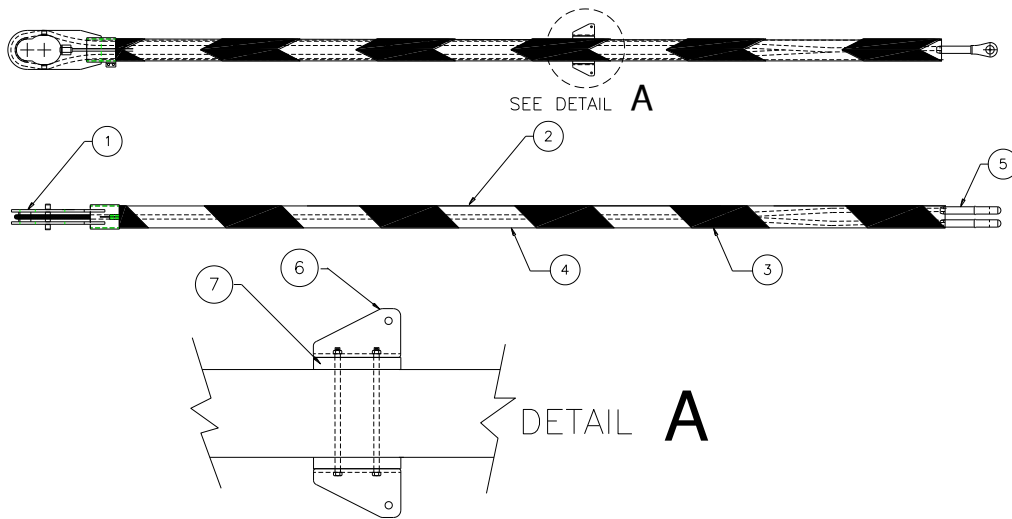


Figure 4 CR25 Gate Arm

7	2	0025-0583	ARM TRUSS SPACER	0025-0583-A	-
6	1	0100-0615	PR., TRUSS BRKT FOR TUBE	0100CM0615	-
5	1	0160-0006	7/8Ø ARM CABLE	0160AD0006	-
4	AR	0-1229-3290	16" x 45'	SQ FT, WHT REFLECTOR SHEET	-
3	AR	0-1229-3272	16" x 45'	SQ FT, RED REFLECTOR SHEET	-
2	1	AL05-0400X40	ARM	FT, 4"Ø NOM SCH 40 PIPE	25
1	1	0025-0540	ARM CABLE GUIDE	0025BC0540	-
ITEM NO	QTY	PART OR IDENTIFYING NO	DESCRIPTION	DRAWING NUMBER - MATERIAL DESCRIPTION	MATL ALLOC


PARTS LIST

Table 5 CR25 Gate Arm


2. INSTALLATION

This section of the manual describes the procedure to set-up and configure the generic Model CR25 vehicle barrier for first-time operation. There are many options available for the CR25. Please refer to the project submittal or contact B&B ARMR technical support if additional information is required. The generic product ships from the factory tested and ready for deployment following these steps.

Failure to install your barrier properly could cause damage to the operating mechanism.



DANGER: High voltage electrical components are located in the Drive Stanchion. Service by qualified technicians only.



CAUTION: Heavy components and pinch points are present in this product. Use extreme care when servicing this unit.

2.1 Site Preparation

The CR25’s performance can be influenced by the surrounding soil conditions and grade. Please consult with B&B ARMR Technical Support if there are questions in regards to the installation site conditions.

The following lists some recommendations related to site choice and preparation:

1. To achieve barrier performance, the soil compressive strength shall be a minimum of 1600 PSI. Compact and add gravel where necessary to ensure solid soil base. Consult B&B ARMR Technical Support if soil compressive strength does not meet this minimum requirement.
2. Excavate install site to accommodate the concrete foundation dimensions. If site excavation can not be completed per these minimum dimensions, please contact B&B ARMR Technical Support for a custom solution to meet the site requirements.

2.2 Foundation Installation

Refer to the CR25 foundation documentation in the Appendix for detailed information for on foundation construction requirements. Pad positioning should be within ½ inch

dimensional tolerance to assure proper alignment of the gate arm. An install kit is available from B&B ARMOR which includes the anchor studs and positioning template. The install template has the following dimensions which match the mounting holes on the product.

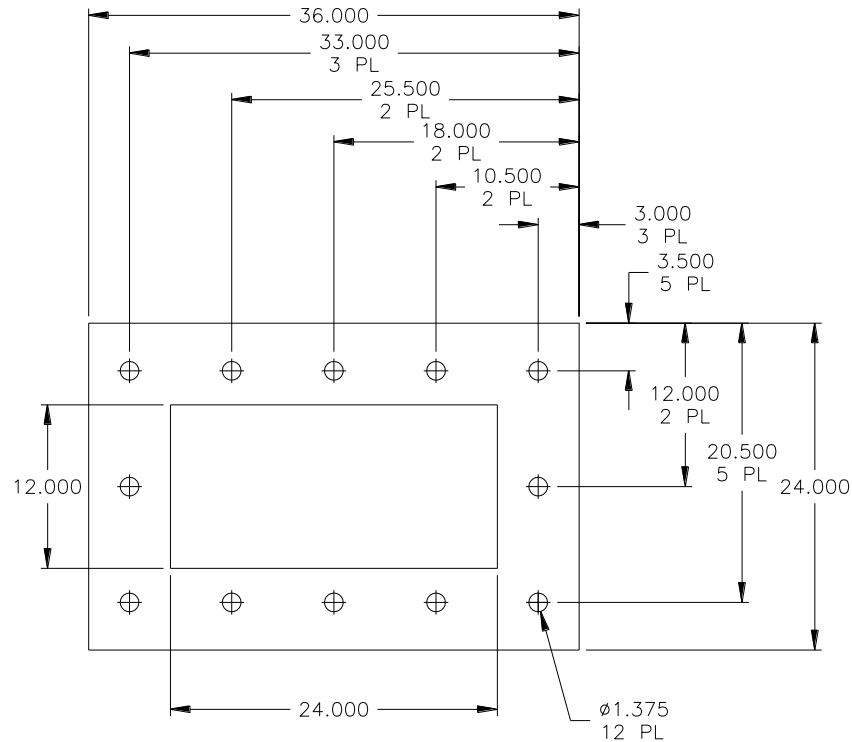
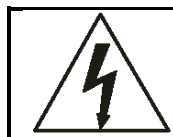


Figure 5 CR25 Mounting Template

2.3 Stanchion Installation

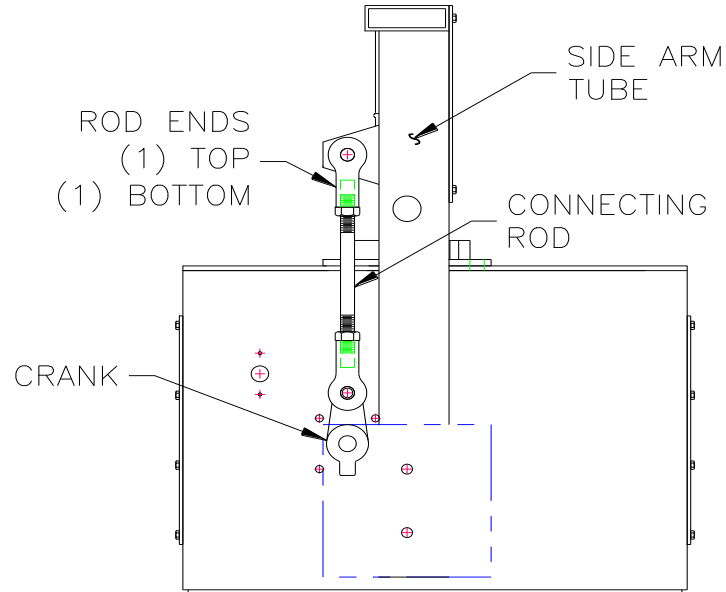
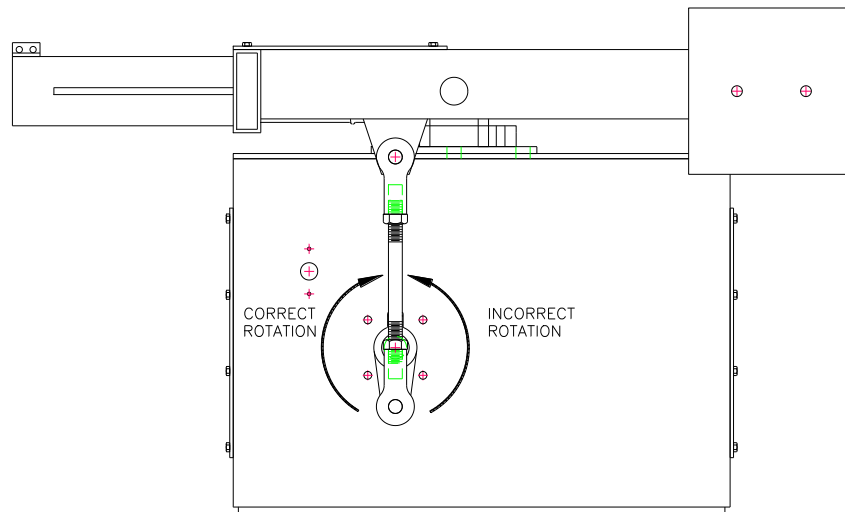
1. Position the drive stanchion and bollard assemblies on cured foundations only.
2. Apply sealant on bottom surface or use rubber install template to assist in sealing the bottom surface.
3. Install anchor bolts and tighten evenly to 450-600 ft-lbs.
4. DO NOT install the gate arm or counter weights at this time.

2.4 Wire Terminations and Test



DANGER: High voltage electrical components are located in the drive stanchion. Service by qualified technicians only.

1. Using the hand crank, turn the drive crank 45 degrees noting rotation of the drive crank should be clockwise as shown in the Drive Stanchion Overview drawing. This step is done to ensure that if incoming power supply phase is applied incorrectly the drive arm does not over rotate and damage the drive system.



2. Open main disconnect switch and connect the power. Connect the control circuit if separate. Generic wiring guides are included in the appendix.
3. Verify incoming power supply matches project requirements by measuring at the connection terminals.
4. Ensure stanchions have a good earth ground.
5. Close main disconnect and "Bump" test barrier operator for correct motor rotation by manually pushing the motor contactor manually.
6. **Verify The drive cranks rotate upwards toward roadway to raise barrier arm (viewing barrier operator from either drive crank side of the housing) as seen in the Drive Stanchion Overview drawing in the orientation section of the manual. If using 3 phase power and the motor rotates backwards, the power terminations may be incorrect.**

7. Run barrier operator (without arm or counterweights) through several complete cycles. Leave the barrier operator in the closed to traffic position and open the main disconnect switch. This barrier has been completely assembled and test run under full power at the factory. If satisfactory operation is not displayed, recheck all electrical connections carefully. **CONSULT FACTORY IF PROBLEM IS NOT FOUND.**

2.5 Gate Arm Installation

1. Remove side arm tube cover plate (Figure 1 Item #2). Locate pillow block bearings (Figure 1 Item #12). Do not tighten set screws. Center assembly with housing. When assembly is correctly centered, tighten bearing set screws.
2. Insert gate arm, with endlock intact, into the main arm tube base. Push tube far enough to make the cable, connections at the pivot.
3. Bolt the cable securely to the pivot mechanism.
4. Extend the gate arm so that the endlock saddles satisfactorily over the anchor assembly on the receiver bollard.
5. Slide the lock collar into place and tighten allen bolts.
6. With the barrier in the lowered position, check endlock mechanism for any type of hindrance with bollard post and adjust accordingly if required.

NOTE 6: If endlock fails to line up properly, loosen bearing bolts and rotate laterally. Re-tighten bolts. Tighten arm base bolts securely. Replace the side arm tube cover plate (tighten bolts securely).

2.6 Counterweight Installation



CAUTION: Heavy components and pinch points are present in this product. Use extreme care when servicing this unit.

1. With the gate arm in the down position, install the allotted amount of counterweights (Figure 1 Item #3) on the side arm tube assembly. The shape and quantity of the counterbalance weights may vary per project. Tighten counterweight bolts securely after installation.

A properly balanced barrier can be manually operated by one person pushing 20lbs on the end of the counterweight mounting channel **WITH THE CONNECTING ROD WHICH RUNS BETWEEN THE UPPER AND LOWER CRANKS DISCONNECTED.** Balance point should occur at a 45 degree angle. Disconnecting the rod will free the arm from the drive system. **Secure the tip end of the gate arm to prevent injury or accident before attempting to remove connecting rod.**

Counterbalancing adjustments are set at the manufacturing facility and should not need to be adjusted in the field unless the arms have been modified, causing the weight of the arm to change.

Calculating Counterweight Requirements

1. Disconnect arm drive by removing top connecting rod bolts located on each side of the operator.
2. Mark any place on the barrier arm and attach a weighing scale to the arm at that point.
3. Measure how much weight, in pounds, it takes to start raising the barrier arm. (arm lbs.)
4. Measure, in inches, the distance from the weight point to the center of the pivot point (arm distance).
5. Measure, in inches, the distance from center of pivot point to center of counterweight (counterweight distance).
6. Follow this formula to get the proper amount of counterweight to add to barrier. Standard counterbalance weights weigh 46lbs each.

$$\frac{\text{arm lbs.} \times \text{arm dist.}}{\text{cw dist.}}$$

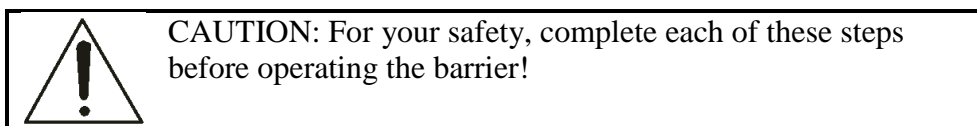
2.7 Proximity Switch Adjustment

The proximity switches are adjusted at the factory to the proper locations and no adjustments should be necessary. The proximity switch collars may be adjusted to compensate for any application installation requirements.

1. Manually position gate arm to the fully down position by hand rotating the motor. (See manual operation section)
2. Loosen collar and rotate set screw to line up with proximity switch. A red LED will light on the proximity switch when it sees the setscrew.
3. Tighten collar set screws.
4. Verify that link arm is vertical when arm in final position. If not, rotate motor until link arm is vertical, and tighten/loosen turnbuckle to get arm into position.
5. Repeat 1-3 with gate in fully up position.
6. If link arm is not vertical when gate is fully up and fully down, the arm may either slam into the stanchion, stop short of the stanchion, or cause damage to the arm assembly.

2.8 Final Pre-operation Checklist

Before operating the CR25 Gate Barrier, go through the checklist below and verify that each of these steps has been completed.



- Verify area is clear of personnel and other obstructions.
- Ensure supplied power matches product requirements.
- Verify electrical hookups are completed per electrical wiring diagram matching particular product.
- Verify all safety devices (traffic loops, photo eyes, etc.) are installed and working correctly.
- It is recommended the unit be cycled 10 complete cycles prior to any vehicle or pedestrian traffic.

3. WARRANTY

BBRSS warranties for a period of one (1) year FOB manufacturing facility, unless otherwise specified by BBRSS in writing, from defects due to faulty material or workmanship. Damage due to handling during shipment and installation are not covered under warranty. BBRSS assumes no responsibility for service at customer site. BBRSS is in no event responsible for any labor costs under the warranty. Subject to the above limitation, all service, parts, and replacements necessary to maintain the equipment as warranted shall be furnished by others. BBRSS shall not have any liability under these specifications, other than for repair or replacement as described above for faulty product material or workmanship. Equipment malfunction or equipment failure of any kind, caused for any reason, including, but not limited to unauthorized repairs, improper installation, installation not performed by BBRSS authorized personnel, incoming supply power is outside the tolerance for the product, failure to perform manufacturer's suggested preventative maintenance, modifications, misuse, accident, catastrophe, neglect, natural disaster, are not under warranty.

The exclusive remedy for breach of any warranty by BBRSS shall be the repair or replacement at BBRSS's option, of any defects in the equipment. **IN NO EVENT SHALL BBRSS BE LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES OR ANY KIND OF PERSONAL DAMAGES.** Except as provided herein, BBRSS makes no warranties or representations to consumer or to anyone else and consumer hereby waives all liability against BBRSS as well as any other person for the design, manufacture, sale, installation, and/or servicing of the Products.

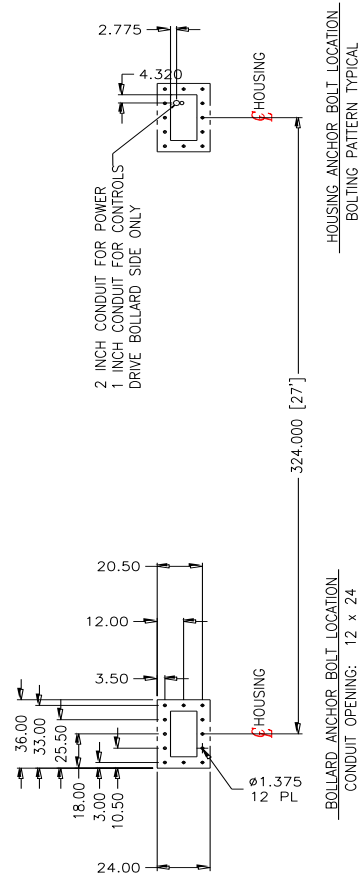
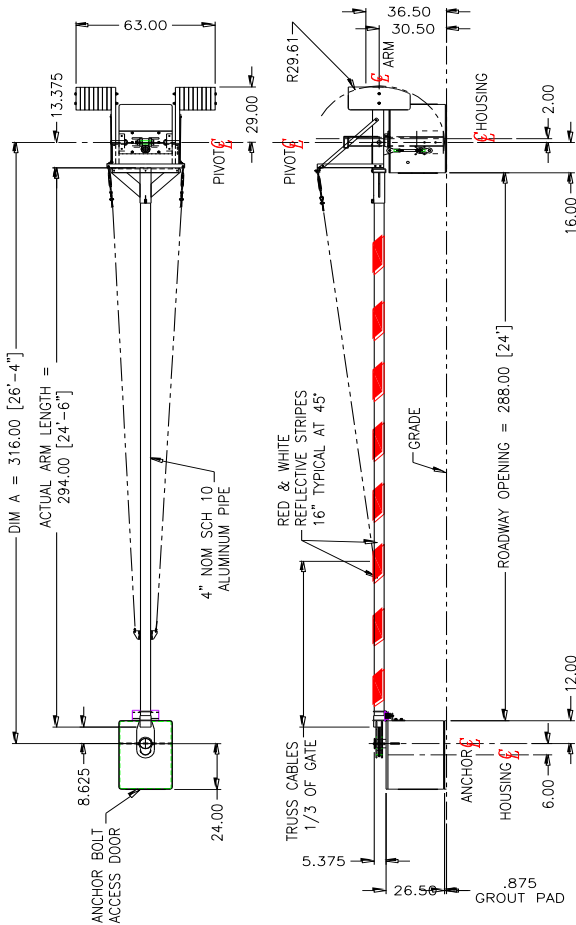
THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NO OTHER WARRANTIES EXIST.

Any modification or alteration by anyone other than BBRSS will render the warranty herein as null and void.

4. APPENDIX

4.1 Typical Installation

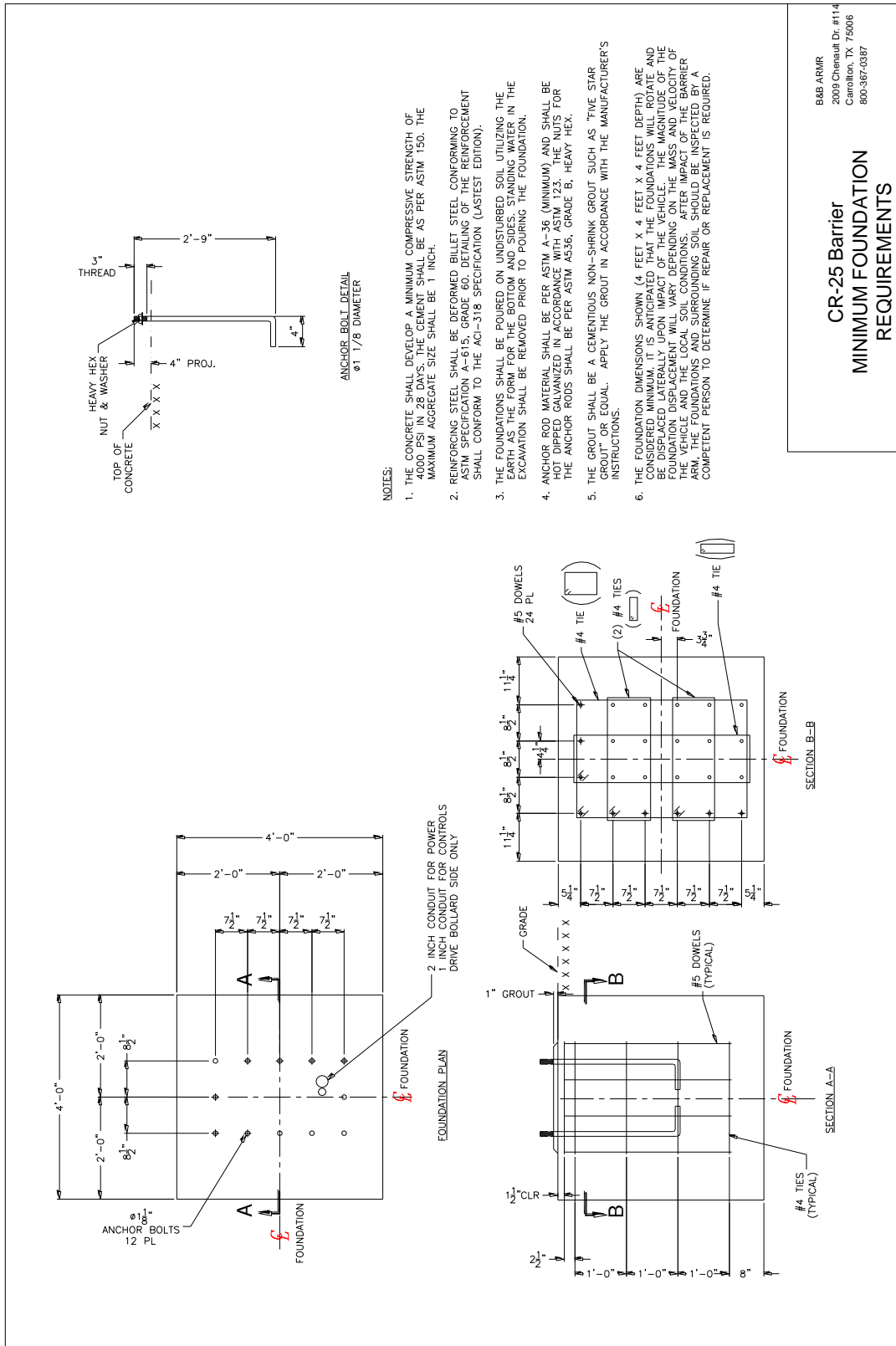
- NOTES:
1. CONTRACTOR TO VERIFY ALL DIMENSIONS. FACTORY CANNOT ASSUME ALTERATION COSTS AFTER FINAL SUBMITTAL DRAWINGS HAVE BEEN APPROVED.
 2. HOUSING, SIDE ARM TUBES, AND COUNTERWEIGHTS TO BE HOT DIP GALVANIZED.
 3. STEEL OPERATOR TO HAVE DOORS IN FRONT AND BACK (ROADWAY AND COUNTERWEIGHT END).
 4. STEEL BOLLARD TO HAVE DOOR IN BACK.
 5. GALVANIZED ANCHOR BOLTS & TEMPLATE. (Ø1.125-7 UNC X 2'-9" LONG).
 6. CASKET OR SILICON TO BE PLACED BETWEEN PIVOT PLATE ASSEMBLY & HOUSING TOP PLATE.
 7. BARRIER ARM MAY HAVE OPTIONAL MAGLOCK.
 8. CABLE TO LOOP THROUGH 4" NOM PIPE.
 9. .188" TRUSS CABLES WITH TURNBUCKLES, 2 PLACES.
 10. BARRIER ARM TO HAVE RED & WHITE REFLECTIVE STRIPES 16" WIDE AT 45°.
 11. PRODUCT SHOWN WITH OPTIONAL COMPONENTS INSTALLED.



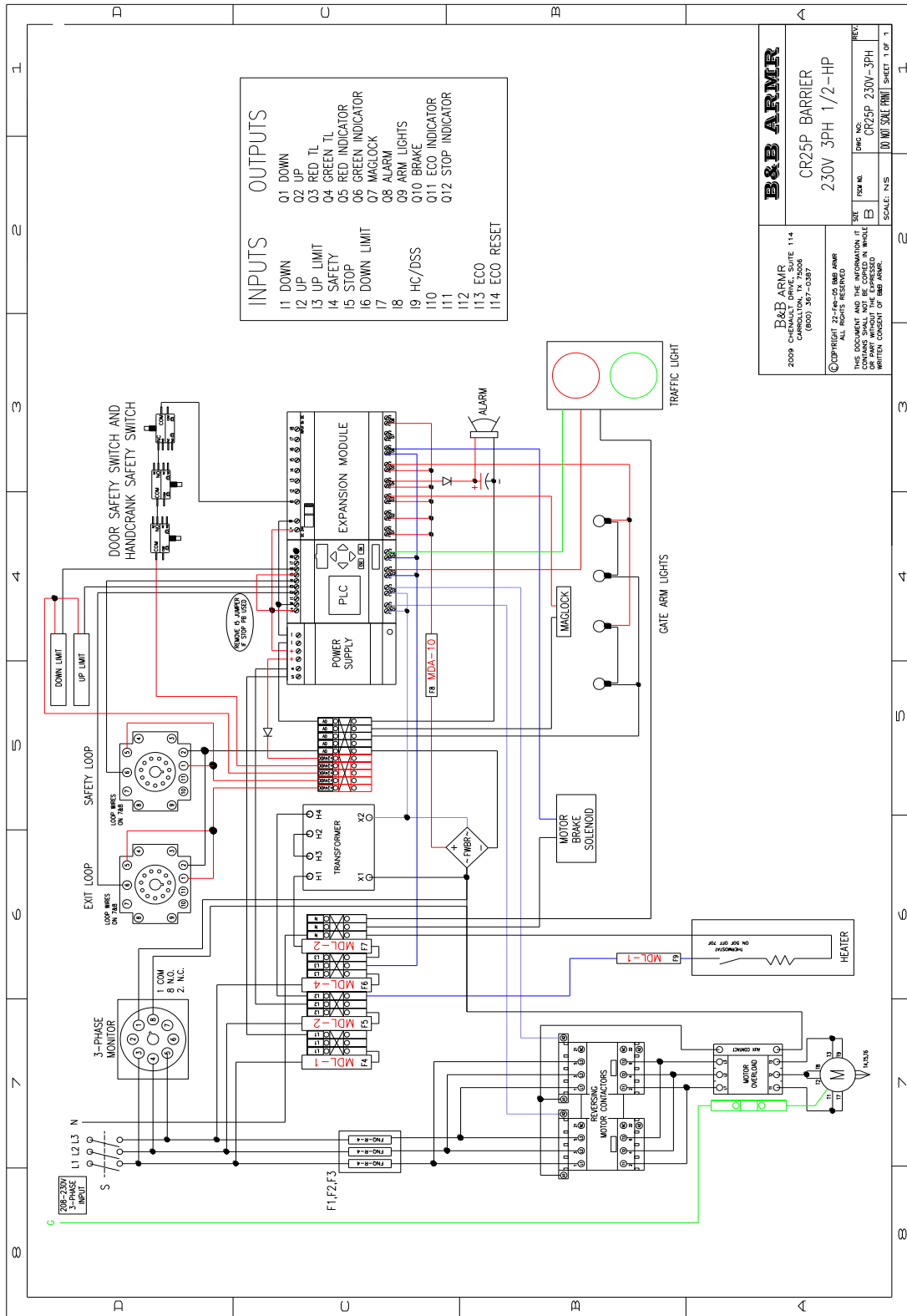
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 800-367-0387

CR-25P Barrier
CLEAR OPENING = 24'-0"

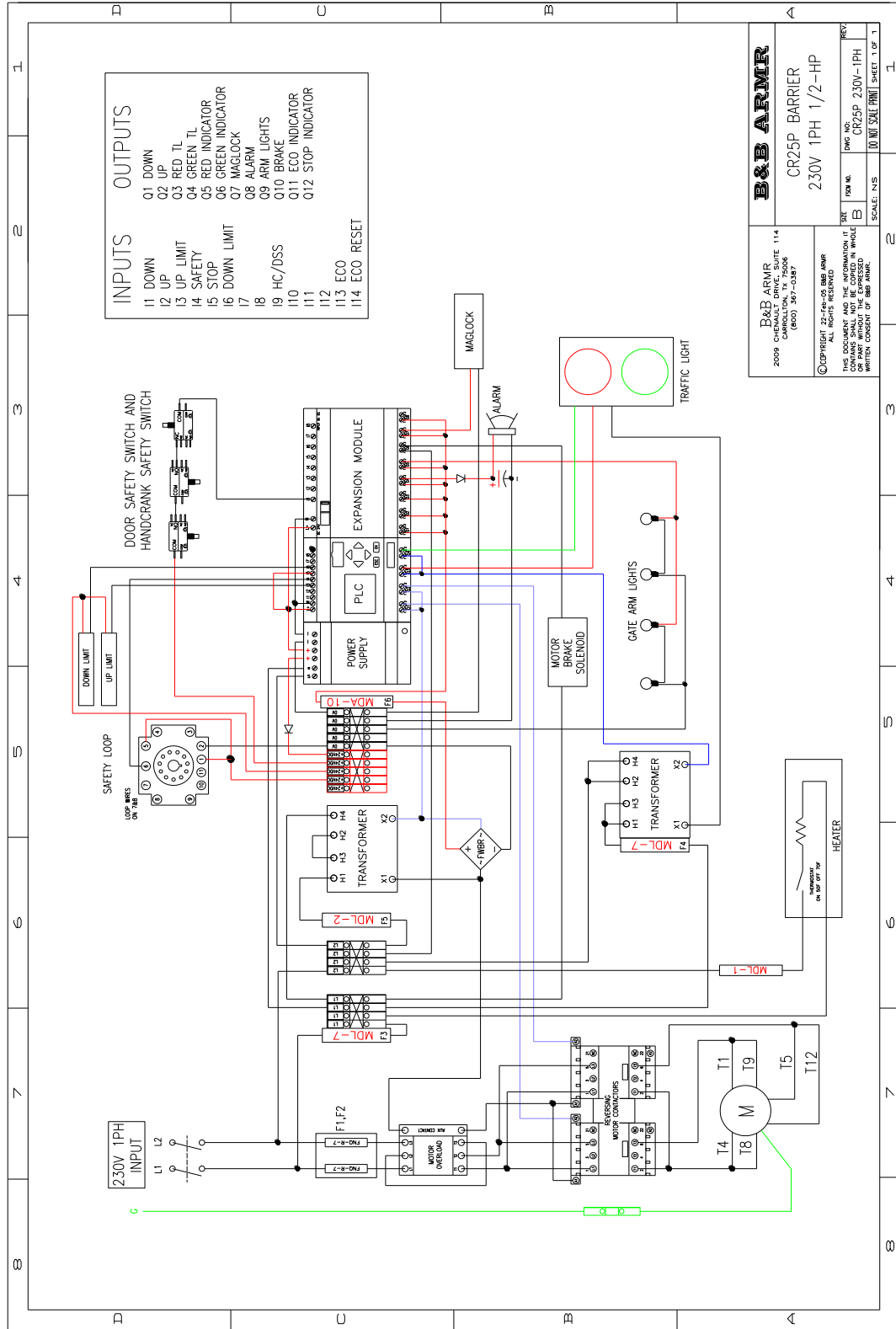
4.2 Foundation Requirements



4.3 Electrical- Typical 3 Phase



4.4 Electrical- Typical Single Phase



P&B ARMR 2009 CHEVALLI DRIVE, SUITE 114 CARROLLTON, TX 75006 (800) 367-0387	B&B ARMR CR25P BARRIER 230V 1PH 1/2-HP	DWG NO. CR25P-1PH	REV.
		SCALE: N/S	SHEET 1 OF 1

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