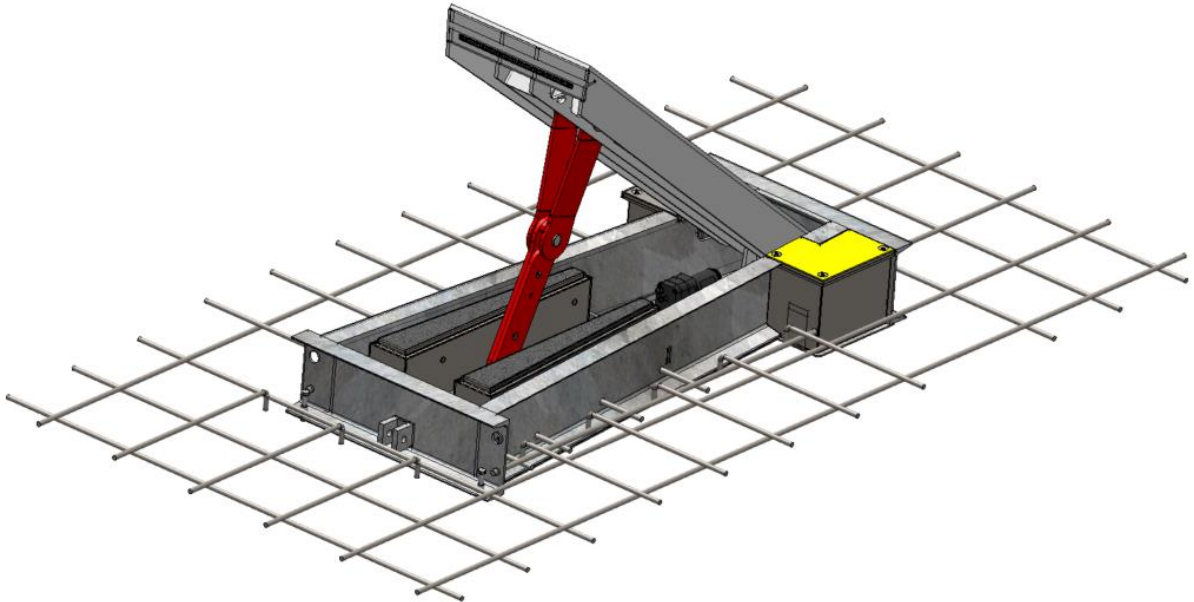


MODEL 833 Ultra-Shallow Mount Vehicle Barrier



5900 South Lake Forest Drive
Ste. 230

McKinney, TX 75070

Phone: (800) 367-0387 | Fax: (972) 385-9887

Web: www.bb-armr.com | E-mail: info@bb-armr.com

TECH SUPPORT

Phone: 800.367.0387 | E-mail: techsupport@bb-armr.com



MADE IN THE USA

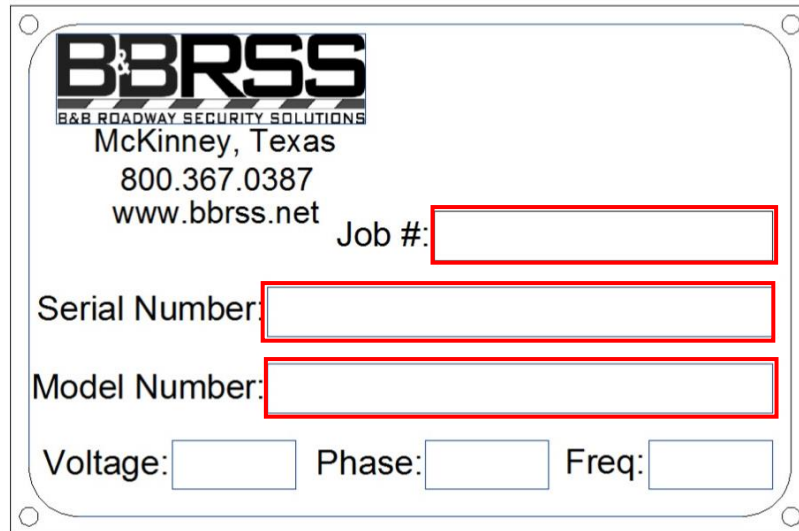
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System Installation Record

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

	Model 833 Shallow Mount Barrier		
Site:			
Job #:			
Date:			
Installer:			
Serial Number:			
Model Number:			
Voltage:			
Phase:			



Label 1 - B&B ARMR Product Label with important product data

DO NOT DISCARD THIS MANUAL!

1 INTRODUCTION

1.1 Preface

Welcome!

Congratulations on your purchase of a B&B ARMR vehicle barrier. In addition to providing detailed operating instructions, this manual describes how to install, start-up and troubleshoot your vehicle barrier. This manual should be fully reviewed in advance of any actual work being done on the equipment.

If you require additional assistance with any aspect of your vehicle barrier's installation or operation, please contact B&B before proceeding.

With years of experience in all aspects of perimeter security and related disciplines, our products are used throughout the world to control access and to protect people, equipment, and facilities. We offer a broad range of vehicle barrier and related perimeter security services:

- Turnkey installations.
- Routine barrier preventative maintenance or emergency repairs (including work on non-B&B products).
- Spare or replacement parts.
- Custom designs or special installations.
- Equipment upgrades or modernization.
- Ancillary security equipment such as security guard enclosures, access control points, security lighting, and many other security related products.
- Technical support via telephone and possible on-site support with advanced scheduling.

Consult the unit labels, approved submittal package, order acknowledgment and other manuals for details on the options, accessories and related specifications provided with the equipment on each project. B&B is always available to provide technical support.

The instructions pertaining to the Model 833 Barrier are intended as a guide and do not supersede local or national codes. Consult local codes before installation.

1.2 Safety Considerations

- B&B does not assume responsibility for injury to persons or property during installation, operation, or maintenance. As the installer, you are responsible for correct, safe installation and first operation of this equipment. You must follow the specific instructions and safety precautions located in this manual. In addition, you shall:
- 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, installers must also follow applicable international, regional and local safety standards.
- Engage only trained and experienced staff to install and operate the equipment.

- Ensure that any modifications or repairs are performed correctly, using the correct tools and equipment, by properly trained technicians.

1.3 How to Contact Us

Please contact B&B if we can assist:

Tech Support:

B&B ARMR

5900 South Lake Forest Drive, Suite 230

McKinney, TX 75070 USA

Telephone: 800.367.0387

Fax: 972.385.9887

E-mail: info@bb-armr.com

E-mail2: techsupport@bb-armr.com

2 ORIENTATION

2.1 Overview

The B&B ARMR Model 833 Ultra-Shallow Mount Vehicle Barrier is a wedge type barrier which recesses into the road surface and is raised and lowered to restrict and control vehicle access.

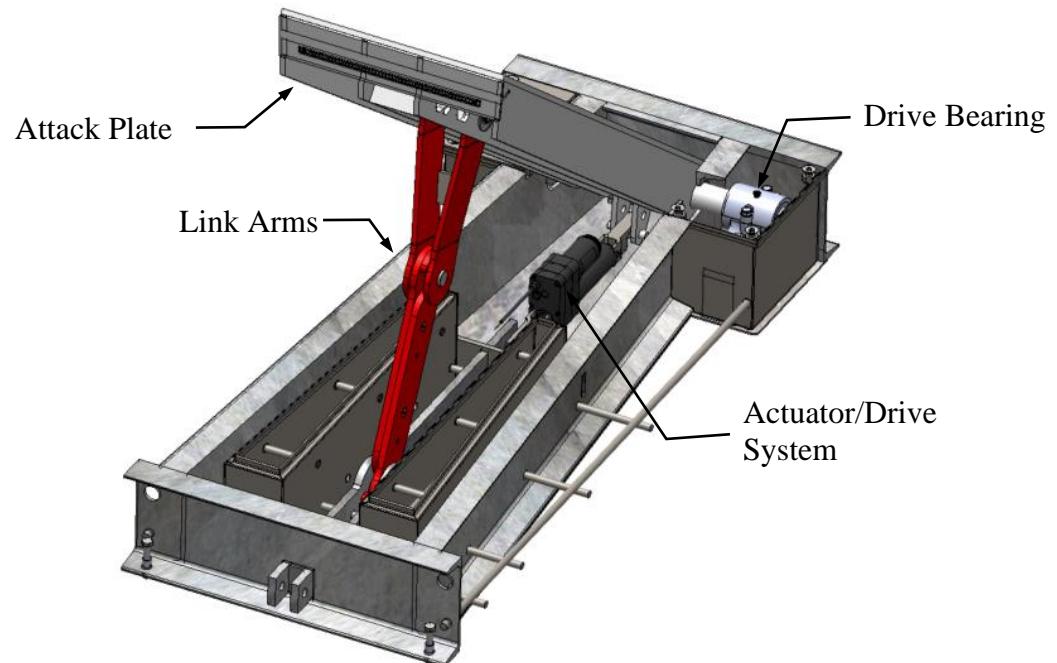


Figure 1 – Barrier System Components

2.2 Operation

The barrier is designed to embed level in a concrete foundation. When deployed, the product rotates up in position and provides a formidable barrier to approaching vehicles.

2.3 Drive System

The barrier is capable of accepting multiple drive systems dependent on application. Optional drive systems are available to accommodate different applications. Examples of drive systems include electric actuators, hydraulic cylinders, and manual assist mechanisms.

Please consult the unit labels, approved submittal package or order acknowledgment on the options and accessories related to each project.

3 INSTALLATION

3.1 Introduction

The section describes the procedure to set-up and configure the generic vehicle barrier for first-time operation. These instructions are based on an installation for a barrier but can be extended for a barrier array as required.

Please refer to the unit label, approved project submittal package, order acknowledgment, or other manuals for details on the options and accessories provided on the barrier system.

If you need help, or are unclear about any of these instructions, please contact B&B prior to installation for assistance.

3.2 Pre-Installation Considerations

Before beginning barrier installation, please review the following:

- Copy of project submittal documentation if available.
- Hydraulically driven barriers require a separate hydraulic control system capable of pressurizing the barrier cylinder to deploy. To stow the barrier, pressure is released and the weight of the barrier forces the hydraulic fluid back into the HPU (gravity down).
- Inspect the site and verify there are no underground utilities or obstructions in the area.
- If possible, locate the installation away from routine foot traffic to reduce the chance for pedestrian injury from the barrier's operation.
- Soil compression strength around the barrier shall be a minimum of 1600 PSF (76.6 kN/m²) or per submittal guidelines. Compact and add gravel where necessary to ensure solid soil base. Consult B&B Technical Support if soil compressive strength does not meet this minimum requirement.
- The barrier operates best when installed on a level surface.
- Install site to accommodate a minimum concrete foundation dimensions shown.
- Have lifting equipment capable of moving and setting barrier components.

3.3 Installation Instructions

The barrier is installed using a monolithic concrete foundation to encapsulate a lost casing supplied with the product. Please reference drawings in the project submittal and the appendix of this document for specific notes and dimensional information.

A summary of the installation includes:

- Excavating the appropriate foundation dimensions as defined in the project submittal or generic foundation drawing.
- Installing drainage system and drain conduits below barrier assembly.
- Lowering into the excavation the barrier assembly and leveling to grade as desired.
- Installing hydraulic and electrical conduits as required.
- Adding the surrounding rebar matrix.
- Encasing barrier in concrete and finishing. A minimum of 10 days is recommended for concrete cure prior to use.
- Installation of HPU or suitable drive system if required.
- Configuration and test.

3.3.1 Excavation

Verify excavation area is clear of underground utilities. Excavate area where the barrier system is planned to be installed per the dimensions shown in the project submittal or drawings included in this documentation. Foundation concrete forms are not required but may be added if desired. Oversized foundations are acceptable. Please contact B&B technical support should a foundation require to be modified to something smaller than specified per project submittal or this documentation.

3.3.2 Drainage

The barrier requires a positive drain system to remove any water or debris flowing into the lost casing. Conduit should attach to the back of the barrier frame to allow accumulated water to drain out of barrier.

3.3.3 Leveling Barrier

Lower barrier into excavation and block in place to locate top surface attack plate flush with finished road grade. The barrier is equipped with a jack screw system to assist in the leveling process.

3.3.4 Conduits

Conduits for hydraulics and electrical signals should be sized and configured per local requirements. Additional conduit pass through holes may be added in the back or front of the frame assembly to accommodate additional features and options if required.

3.3.5 Rebar Installation

Rebar is installed per submittal documents or foundation layout drawings included in this document.

3.3.6 Concrete Pour

Concrete shall match requirements defined in submittal or drawings included in this document. Surrounding soil may be used as a form if desired and meets soil compaction requirements. A top form is recommended to achieve a uniform road surface area surrounding barrier.

3.3.7 Installation

- Connect electrical systems and/or hydraulic hoses on barrier assembly.
- Connect limit switch and adjust to sense when barrier is deployed and/or stowed.
- After barrier assembly installation, install any top cover plates which may have been removed during assembly using the supplied hardware.

3.3.8 Configuration and Test

Configuration is done at the drive control system level. No configuration is required at the barrier. It is recommended the system be cycled multiple times after installation to ensure correct installation.

Some items to verify include:

- Verify hydraulic hoses (if using a hydraulic drive system) are not leaking and barrier stays in the deployed position without lowering without command.
- Verify barrier does not scrape on access covers or front edge of attack plate. Contact B&B technical support for troubleshooting techniques to adjust this if required.
- Verify all top plate fasteners are installed and torqued adequately.
- Verify limit switch signals are correct at the control system level.

If any additional support or service is needed during the commissioning, please contact B&B.

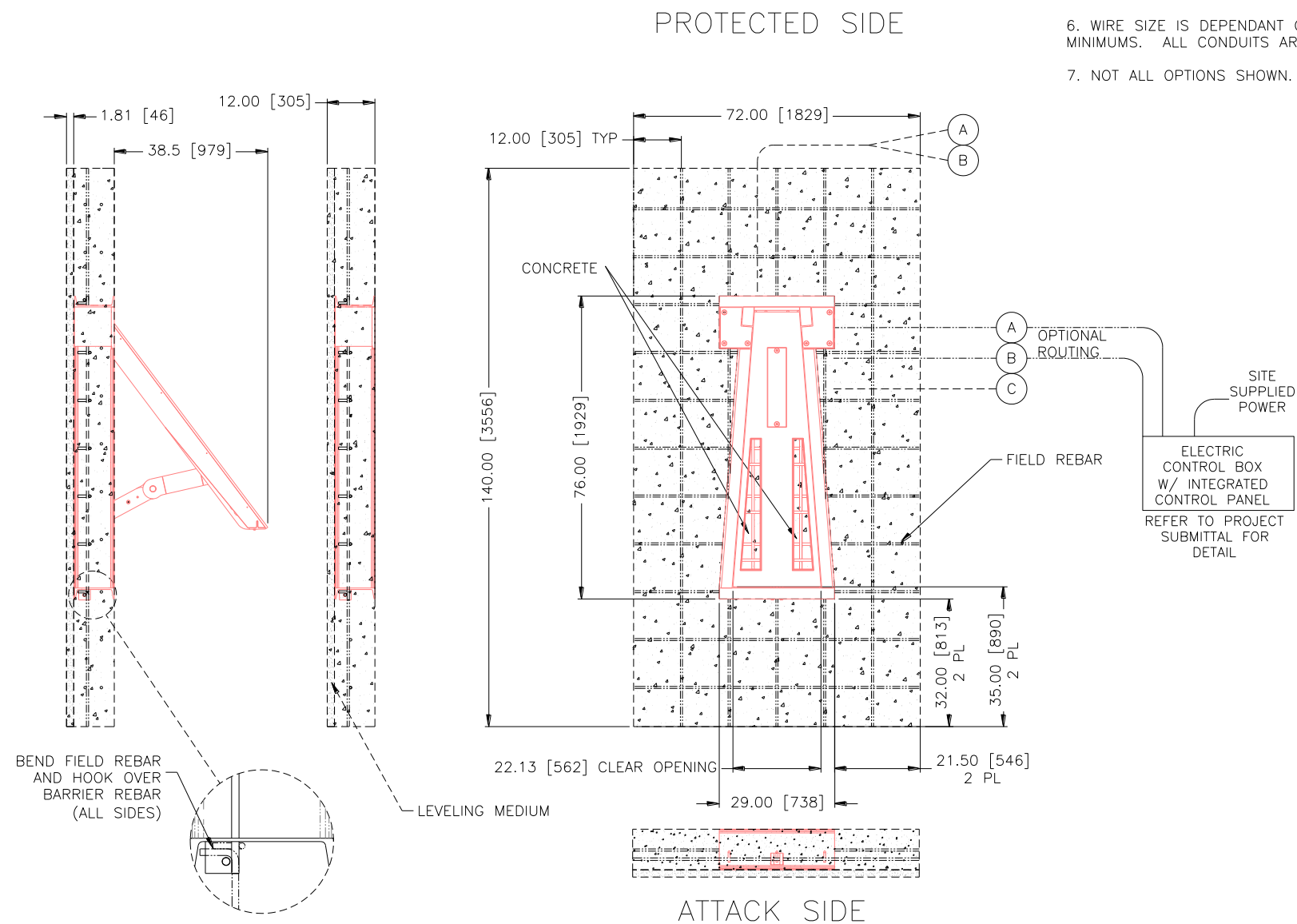
4. APPENDIX

4.1. Model 833 Barrier- Single Install

REF	CONDUIT FOR	CONDUIT SIZE	RUN	VOLTAGE
A	SENSORS AND CONTROLS	1.25"	CUSTOM	24VDC
B	POWER FOR ELECTRIC DRIVE	1.25"	CUSTOM CABLE	
C	GRAVITY DRAIN	4"	-	-

NOTES:

1. THE CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS. THE CEMENT SHALL BE AS PER ASTM C150. THE MAXIMUM AGGREGATE SIZE SHALL BE 1 INCH. CONCRETE UNDER THE BARRIER TO BE FULLY VIBRATED TO FILL VOIDS.
2. REINFORCING STEEL SHALL BE #4 (1/2") MINIMUM AND SHALL CONFORM TO ASTM SPECIFICATION A-615, GRADE 60 OR BETTER.
3. THE FOUNDATIONS SHALL BE POURED ON SOIL CAPABLE OF SUPPORTING A MINIMUM COMPACTION OF 1600 PSF.
4. CONCRETE LEVEL INSIDE BARRIER TO BE FLUSH WITH TOP OF STEEL BOX FRAME.
5. FOUNDATION DIMENSIONS AND STRUCTURE ARE CONSIDERED AS A MINIMUM REQUIREMENT. ADDITIONAL STRUCTURE MAY BE ADDED TO CONFORM TO LOCAL APPLICATION REQUIREMENTS.
6. WIRE SIZE IS DEPENDANT ON ELECTRICAL RUN. ALL CONDUITS SUGGESTED IN TABLE ARE MINIMUMS. ALL CONDUITS ARE FIELD INSTALLED BY OTHERS.
7. NOT ALL OPTIONS SHOWN.



**MODEL 833
SINGLE BARRIER
LAYOUT/FOUNDATION**

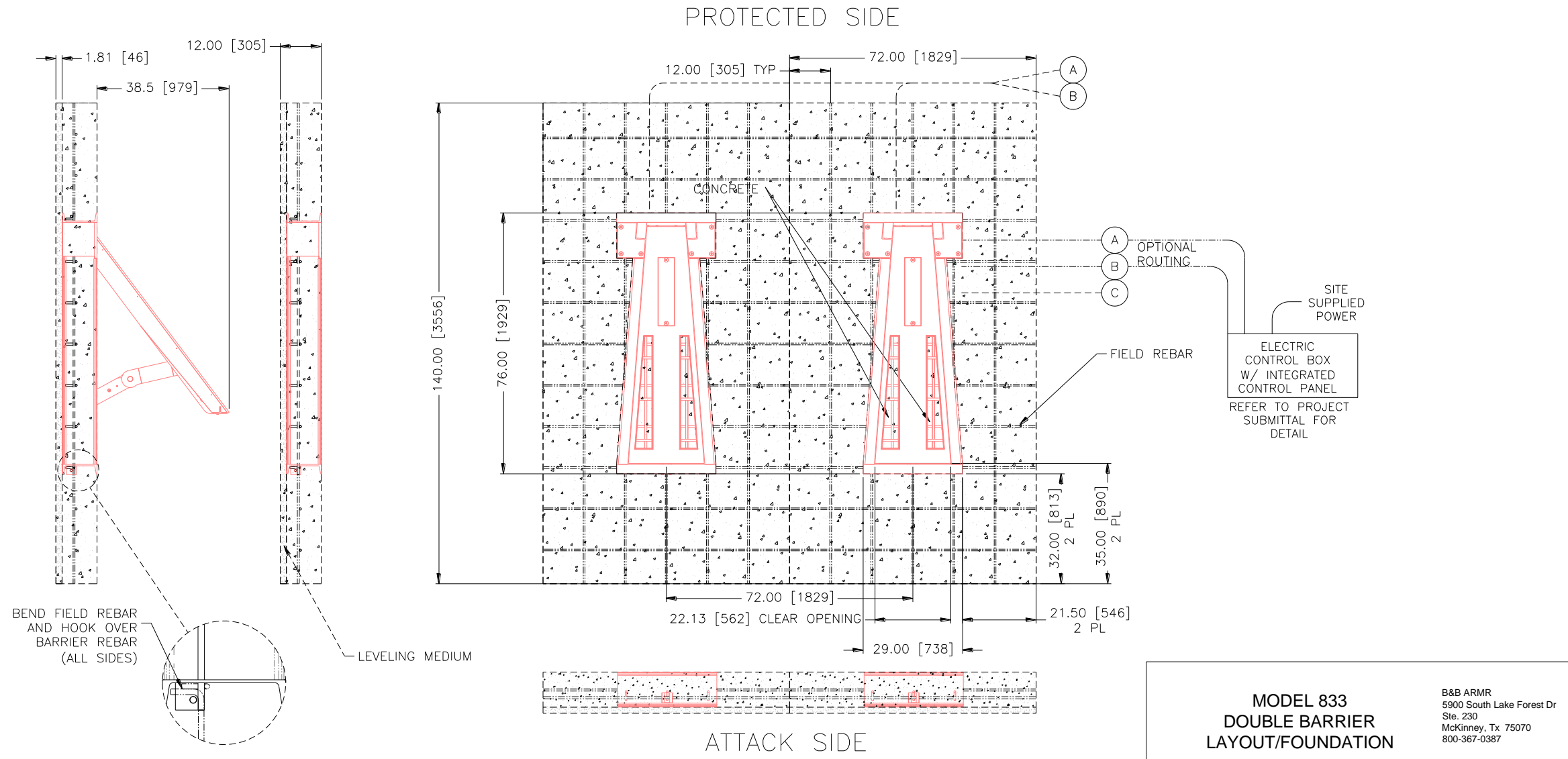
B&B ARMR
5900 South Lake Forest Dr
Ste. 230
McKinney, Tx 75070
800-367-0387

Rev 04/25/18

4.2. Model 833 Barrier- Double Install

REF	CONDUIT FOR	CONDUIT SIZE	RUN	VOLTAGE
A	SENSORS AND CONTROLS	1.25"	CUSTOM	24VDC
B	POWER FOR ELECTRIC DRIVE	1.25"	CUSTOM CABLE	
C	GRAVITY DRAIN	4"	-	-

- NOTES:
1. THE CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS. THE CEMENT SHALL BE AS PER ASTM C150. THE MAXIMUM AGGREGATE SIZE SHALL BE 1 INCH. CONCRETE UNDER THE BARRIER TO BE FULLY VIBRATED TO FILL VOIDS.
 2. REINFORCING STEEL SHALL BE #4 (1/2") MINIMUM AND SHALL CONFORM TO ASTM SPECIFICATION A-615, GRADE 60 OR BETTER.
 3. THE FOUNDATIONS SHALL BE POURED ON SOIL CAPABLE OF SUPPORTING A MINIMUM COMPACTION OF 1600 PSF.
 4. CONCRETE LEVEL INSIDE BARRIER TO BE FLUSH WITH TOP OF STEEL BOX FRAME.
 5. FOUNDATION DIMENSIONS AND STRUCTURE ARE CONSIDERED AS A MINIMUM REQUIREMENT. ADDITIONAL STRUCTURE MAY BE ADDED TO CONFORM TO LOCAL APPLICATION REQUIREMENTS.
 6. WIRE SIZE IS DEPENDANT ON ELECTRICAL RUN. ALL CONDUITS SUGGESTED IN TABLE ARE MINIMUMS. ALL CONDUITS ARE FIELD INSTALLED BY OTHERS.
 7. NOT ALL OPTIONS SHOWN.

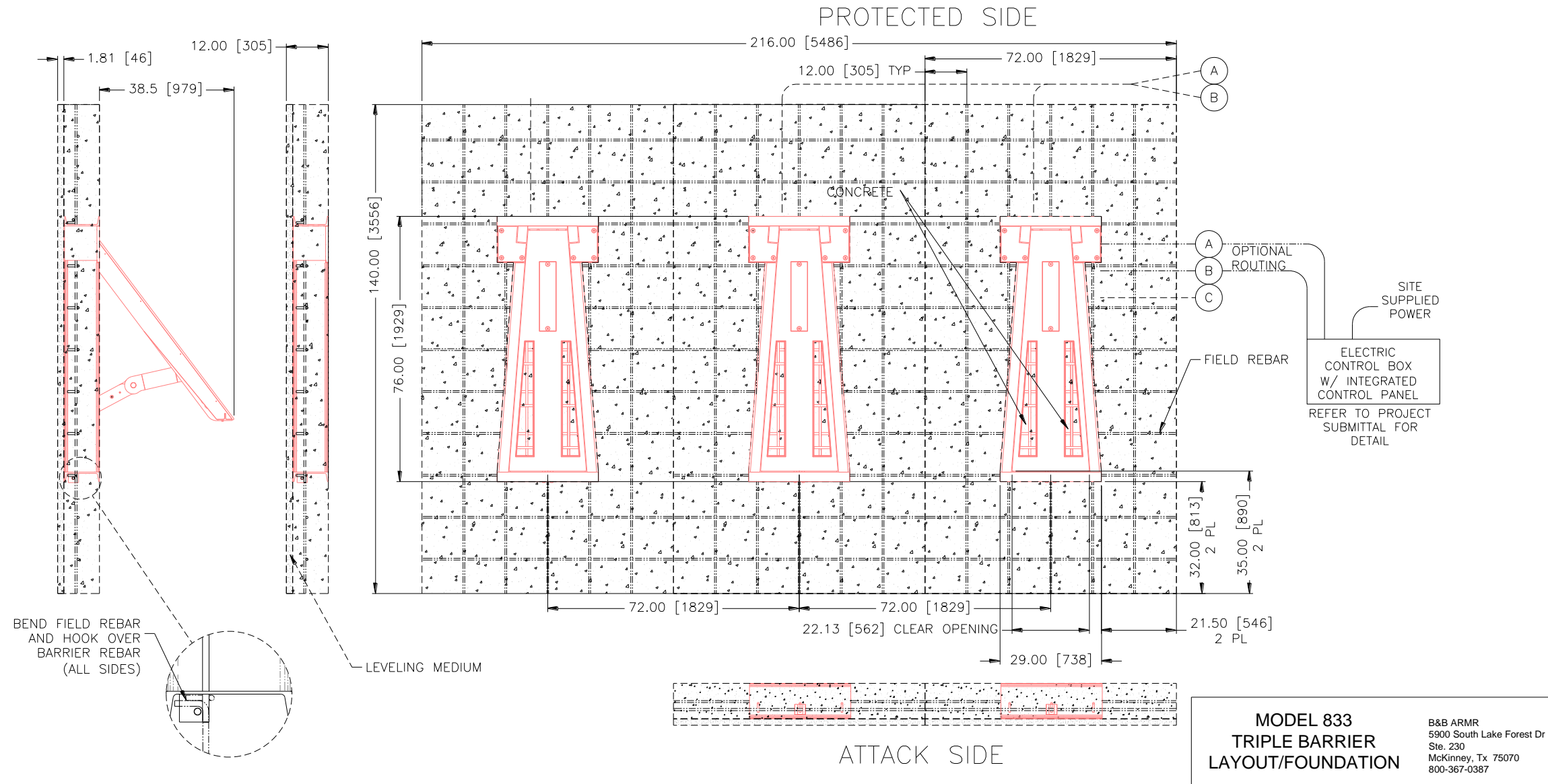


4.3. Model 833 Barrier- Triple Install

REF	CONDUIT FOR	CONDUIT SIZE	RUN	VOLTAGE
A	SENSORS AND CONTROLS	1.25"	CUSTOM	24VDC
B	POWER FOR ELECTRIC DRIVE	1.25"	CUSTOM CABLE	
C	GRAVITY DRAIN	4"	-	-

NOTES:

1. THE CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS. THE CEMENT SHALL BE AS PER ASTM C150. THE MAXIMUM AGGREGATE SIZE SHALL BE 1 INCH. CONCRETE UNDER THE BARRIER TO BE FULLY VIBRATED TO FILL VOIDS.
2. REINFORCING STEEL SHALL BE #4 (1/2") MINIMUM AND SHALL CONFORM TO ASTM SPECIFICATION A-615, GRADE 60 OR BETTER.
3. THE FOUNDATIONS SHALL BE POURED ON SOIL CAPABLE OF SUPPORTING A MINIMUM COMPACTION OF 1600 PSF.
4. CONCRETE LEVEL INSIDE BARRIER TO BE FLUSH WITH TOP OF STEEL BOX FRAME.
5. FOUNDATION DIMENSIONS AND STRUCTURE ARE CONSIDERED AS A MINIMUM REQUIREMENT. ADDITIONAL STRUCTURE MAY BE ADDED TO CONFORM TO LOCAL APPLICATION REQUIREMENTS.
6. WIRE SIZE IS DEPENDANT ON ELECTRICAL RUN. ALL CONDUITS SUGGESTED IN TABLE ARE MINIMUMS. ALL CONDUITS ARE FIELD INSTALLED BY OTHERS.
7. NOT ALL OPTIONS SHOWN.



**MODEL 833
TRIPLE BARRIER
LAYOUT/FOUNDATION**

B&B ARMR
5900 South Lake Forest Dr
Ste. 230
McKinney, Tx 75070
800-367-0387

Limited 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.

Warranties on BBRSS products require the Owner/End User to activate their Warranty within 30 days of shipment from the factory. Warranty registration can be completed online at www.bbrss.com under the "Support" tab or can be activated by calling BBRSS at 1-800-367-0387. Failure to register your Warranty will not void your Warranty but may subject the equipment to reduced product coverage periods.