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# Installation & Operation Manual

Vertical Pivot (VP) Gate System

VPL-24

This product is to be installed and serviced by a trained Gate Systems Technician only. Contact AutoGate for a local professional in your area.

Before attempting to install, operate or maintain the operator you **MUST** read and fully understand this manual and follow all safety instructions.

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## WARNING!

**TO REDUCE THE RISK OF INJURY OR DEATH, READ  
AND FOLLOW ALL INSTRUCTIONS!**

### REDUCE RISK

1. Never let children operate or play with gate controls. Keep the remote control away from children.
2. At NO time should the gate panel be modified in any way.
3. Any mounted signs should weigh less than 4 lbs. Contact AutoGate prior to mounting on gate panel for guidance.
4. Always keep people and objects away from the gate. NO PERSON NOR OBJECT SHOULD CROSS THE PATH OF THE MOVING GATE.
5. Test the gate operator monthly. The gate MUST reverse on contact with a rigid object or stop when an object activates the non-contact sensors or contact sensor. After adjusting the force or the limit of travel, reset the gate operator. Failure to adjust and reset the gate operator properly can increase the risk of injury or death. Use the belt tension lever release only when the gate is not moving and powered down.
6. KEEP GATES PROPERLY MAINTAINED. Read the owner's manual. Have a qualified service person make repairs to gate hardware.
7. This gate system is for vehicles only. PEDESTRIANS MUST USE A SEPARATE ENTRANCE!

### SAVE THESE INSTRUCTIONS

AUTOMATIC GATE OPERATORS CAN PRODUCE HIGH LEVELS OF FORCE, THEREFORE IT IS VERY IMPORTANT THAT ALL GATE OPERATOR SYSTEM INSTALLERS AND DESIGNERS ARE FULLY AWARE OF POTENTIAL HAZARDS THAT EXIST WITH AN INCORRECTLY INSTALLED OR DESIGNED SYSTEM. THE INTERNAL SAFETY CAPABILITIES OF A GATE OPERATOR SYSTEM ARE NOT ENOUGH TO REDUCE THE RISK OF INJURY. THE OPERATOR IS ONLY ONE PART OF A PROPERLY INSTALLED SYSTEM WHICH WHEN COMBINED WITH CORRECTLY INSTALLED REVERSING DEVICES WILL YIELD A COMPLETE UL-325/CSA 22.2 NO. 247 LISTED SYSTEM THAT WILL NOT ONLY PROVIDE CONVENIENCE AND SECURITY, BUT WILL BE SAFER WITH A MINIMAL RISK OF INJURY. THE FOLLOWING INFORMATION CONTAINED IN THIS MANUAL ALONG WITH THE INSTALLATION CHECKLIST PROVIDED TO MAKE YOU AWARE OF POTENTIAL AREAS THAT ARE OF A SAFETY CONCERN. DISREGARDING ANY OF THE FOLLOWING MAY RESULT IN **SERIOUS INJURY OR DEATH!**

## WARNING!

TO REDUCE THE RISK OF INJURY OR DEATH, READ AND FOLLOW ALL INSTRUCTIONS!

### ADDITIONAL SAFETY INSTRUCTIONS FOR INSTALLER AND OWNER

Proper design is important in your system layout and installation. Reversing devices must be used at all available points where injury or property damage may occur. For protection from injury to persons, use Photo Electric Eye(s) or optional Pressure Sensing Edge on the leading edge of the gate. Reversing Loops (Vehicle Detectors) should be installed in front of and behind the gate to provide a reverse signal or stop signal to the gate operator. All Reversing devices should be tested and inspected weekly. If a Reversing device appears to not operate correctly, the unit should be disabled until repair can be made by a properly trained/experienced service company.

As the system installer, you must advise your customer/end user on the correct usage of the gate operator and the system. In providing the service of design/installation of the operator and system, you are responsible for proper training of the customer as well as for the proper SAFE OPERATION. All precautions to eliminate ALL hazards MUST be taken before the unit can be put into operation. You MUST advise and warn your customer of any hazards that remain or if they choose not to use any of the recommended Reversing devices in the installation and not to put the system into operation until safety and risk concerns have been resolved.

- Check the National, State & local building/fire codes **BEFORE** installation
- If you did not order a **Reversing Edge** (for along the bottom rail of your gate), or an **Infra-Red Modulated Photocell** (Reversing Beam), you will not be in compliance with March 2000 UL 325 Code, rev VI. Consult your dealer for additional information.
- Pedestrians **must use** a separate entrance/exit **and never** the vehicular entrance/exit gate.
- **NEVER** activate the gate from long distances where visibility of the gate cannot be seen. Anyone operating the gate should always operate it in a safe manner.
- **NEVER** allow children or anyone to play on or around the gate at any time.
- **DO NOT** affix any adhesive material within 30 days of receipt.
- **DO NOT** attach anything to gate over 4 pounds total weight or 4 square feet without consulting the factory re-balancing instructions. **The gate must remain balanced to ensure safe and reliable operation.**
- The gate and operator are designed to work together. **Do not** attempt to install an unauthorized gate without factory authorization.
- **DO NOT ALLOW** any Access Control Devices to be mounted within 6 feet of the moving gate or in such a way that someone could reach their hand or arm through to gate to activate it.

## WARNING!

THE GATE OPERATOR IS DESIGNED AND FACTORY BALANCED FOR THE SPECIFIC GATE IT WAS SUPPLIED WITH.

DO NOT MODIFY THE GATE IN ANY WAY OR ADD SIGNS WEIGHING MORE THAN 4 LBS TOTAL OR 4 SQUARE FT.

FAILURE TO COMPLY WITH THIS REQUIREMENT WILL VOID THE WARRANTY AND MAY RESULT IN SERIOUS INJURY OR DEATH.

# INSTALLATION CHECK OFF LIST

**IT IS RECOMMENDED THAT EACH ITEM ON THIS INSTALLATION CHECKOFF LIST BE DISCUSSED WITH THE CUSTOMER.**

- FOUR WARNING SIGNS SECURELY INSTALLED, TWO ON EACH SIDE OF GATE VISABLE IN BOTH OPEN AND CLOSED POSTION..(REQUIRED)
- 1 OR 2 REVERSING PHOTO BEAMS INSTALLED ACCORDING TO THEIR INSTRUCTIONS, ONE ACROSS EACH SIDE OF GATE OPENING IN AREAS THAT POSE ENTRAPMENT RISK. IF USING HARD WIRED CONTACT SENSORS, THE SENSOR(S)/WIRING MUST BE LOCATED /WIRED TO AVOID ANY MECHANICAL DAMAGE.
- INSTALL TWO GROUP 24, 12 VDC BATTERIES (REQUIRED) - DEEP CYCLE MARINE RECOMMENDED.
- CUSTOMER ADVISED THAT GATE IS FOR VEHICULAR TRAFFIC ONLY. (REQUIRED)
- A SEPARATE PEDESTRIAN ENTRY AND/OR EXIT IS PROVIDED. (REQUIRED)
- GATE GUARD / FENCED OFF AREA INSTALLED ON BACK SIDE OF OPERATOR. (REQUIRED)
- KICK PLATE INSTALLED ON DOOR SIDE OF OPERATOR. (REQUIRED)
- ALL ACTUATING CONTROLS LOCATED FAR OUT OF REACH OF OPERATOR & GATE (MINIMAL 6 feet). (REQUIRED)
- ENSURE THE CLASS OF OPERATOR IS APPROVED FOR THE APPLICATION OF THE OPERATOR (CLASS 1,2,3,4) (REQUIRED)
- CONTROLS INTENDED TO RESET GATE AFTER OBSTRUCTED INSTALLED IN LINE OF SIGHT (REQUIRED)
- FIELD WIRING SECURED TO AVOID PINCHING DAMAGE.
- CUSTOMER INSTRUCTED AND IS CLEAR ON PROPER USE OF GATE OPERATOR. (REQUIRED)
- CUSTOMER INSTRUCTED ON PROPER USE OF ALL CONTROL DEVICES USED WITH OPERATOR.
- SAFETY INSTRUCTIONS WERE REVIEWED AND LEFT WITH CUSTOMER. (REQUIRED)
- DISCUSS THE POTENTIAL FOR A PREVENTATIVE SERVICE AND MAINTENANCE CONTRACT.
- A PHOTO OF COMPLETED INSTALLATION TAKEN FROM FRONT AND BACK OF GATE & DATED.
- CUSTOMER TRAINED ON MANUAL OPERATION OF THE GATE. ADVISE CUSTOMER THAT FOR MANUAL OPERATION, THEY MUST DISCONNECT BATTERIES AND AC POWER.
- CUSTOMER ADVISED NOT TO DISCONNECT THE UL 325 entrapment ALARM IN ANY WAY—SWITCH S1#6 AND S1#8 MUST STAY ON AT ALL TIMES.
- ARE UL 325 PEDESTRIAN WARNING SIGNS VISABLE FROM BOTH SIDES OF GATE IN BOTH OPEN & CLOSED POSTIONS?

**(TAMPERING WITH THE ALARM SWITCH SETTINGS MAY POSE THE RISK OF SERIOUS INJURY OR DEATH)**

***THIS GATE OPERATOR IS INSTALLED FOR USE AS A CLASS \_\_\_\_\_ INSTALLATION.***

## Operator Class Designation

**CLASS I** - RESIDENTIAL VEHICULAR GATE OPERATOR – A vehicular gate operator (or system) intended for use in garages or parking areas associated with a residence of one to four single families.

**CLASS II** – COMMERCIAL / GENERAL ACCESS VEHICULAR GATE OPERATOR – A vehicular gate operator (or system) intended for use in a commercial location or building such as a multi-family housing unit (five or more single family units), hotel, garages, retail store or other buildings accessible by or servicing the general public.

**CLASS III** – INDUSTRIAL / LIMITED ACCESS VEHICULAR GATE OPERATOR – A vehicular gate operator (or system) intended for use in an industrial location or building such as a factory or loading dock area or other locations not accessible by or intended to service the general public.

**CLASS IV** - RESTRICTED ACCESS VEHICULAR GATE OPERATOR – A vehicular gate operator (or system) intended for use in a guarded industrial location or building such as an airport security area or other restricted access locations not servicing the general public, in which unauthorized access is prevented via supervision by security personnel.

**IT IS RECOMMENDED THAT CUSTOMER & INSTALLER MUST RETAIN A COPY OF THIS CHECK OFF LIST FOR THEIR RECORDS**

## **SAFETY INSTRUCTIONS REGARDING PRIMARY & SECONDARY ENTRAPMENT PROTECTION**

THIS UNIT IS EQUIPED WITH ONE PRIMARY MEANS OF ENTRAPMENT PROTECTION (SEE UL-325 SECTION 30 - A GATE OPERATOR SHALL PROVIDE 1 **PRIMARY** (INHERENT) AND 1 **SECONDARY** ENTRAPMENT FEATURE.

**PRIMARY:** TYPE A – INHERENT ENTRAPMENT SENSING SYSTEMS - THE VPL-24 WILL REVERSE DIRECTION WHEN THE INHERENT TYPE A DEVICE SENSES AN OBSTRUCTION.

**SECONDARY:** TYPE B1 – PROVISION FOR CONNECTION OF A NON-CONTACT SENSOR (PHOTOELECTRIC OR THE EQUIVALENT). TYPE B2— PROVISION FOR CONNECTION OF A CONTACT SENSOR (EDGE DEVICE OR EQUIVALENT).

**NOTE:** UNIT SHIPS WITH S1-6 ON & S1-8 OFF. DO NOT CHANGE THESE SETTINGS (SEE PAGE 12 FOR ILLUSTRATION)

**PRIMARY PROTECTION** DESIGNATED TYPE A INHERENT PROTECTION. THE UNIT WILL REVERSE DIRECTION WHEN AN OBSTRUCTION IS SENSED WHILE MOVING IN EITHER DIRECTION. SENSITIVITY IS ADJUSTED AT IRD1 ON THE CONTROL BOARD. WHILE CLOSING, IF AN OBSTRUCTION IS SENSED BY THE PRIMARY INHERENT SENSOR, THE GATE WILL REVERSE AND OPEN TO THE FULL OPEN POSITION. THE GATE WILL REMAIN THERE UNTIL A CLOSE COMMAND IS RECEIVED OR WILL CLOSE BY TIMER AFTER NEW INPUT IS RECEIVED. IN ORDER FOR THE GATE TO CLOSE BY TIMER (IF ACTIVATED) A NEW INPUT ON TERMINALS J5 1-8 MUST BE GIVEN. IF AN INPUT IS STILL PRESENT WHEN THE GATE REACHED THE FULL OPEN POSITION, THIS INPUT WILL NEED TO BE RENEWED OR REMOVED AND ANOTHER INPUT GIVEN BEFORE THE CLOSE TIMER WILL CLOSE THE GATE.

**ENTRAPMENT ALARM** WILL ACTIVATE UPON THE PRIMARY INHERENT SENSOR SENSING A SECOND OBSTRUCTION BEFORE REACHING A LIMIT SWITCH. ONCE ACTIVATED, GATE WILL REMAIN AT REST, ALARM WILL SOUND. THIS CONDITION CAN ONLY BE CLEARED BY AN INPUT APPLIED TO J5#4. THE WIRING USED TO RESET THE OPERATOR MUST BE IN THE LINE OF SIGHT AND MUST BE AN “INTENDED” RESET. ACCESS CONTROL DEVICES OF ANY KIND THAT REQUIRE AN INTENDED (ON PURPOSE) ACTIVATION MAY BE USED FOR THIS RESET. DEVICES THAT WILL CAUSE AN INCIDENTAL RESET (VEHICLE DETECTORS, PROBES, TIMERS, MOTION SENSORS, PHOTO BEAMS, ECT...) MUST **NOT** BE USED. TURNING OFF DC BATTERY POWER **AND** TURNING OFF AC POWER AT THE GFCI SERVICE OUTLET WILL ALSO RESET THE CONTROL BOARD.

**FAILURE TO COMPLY WITH THIS REQUIREMENT MAY RESULT IN SERIOUS INJURY OR DEATH.**

### **IMPORTANT!**

**The secondary entrapment device must comply with UL 325, 6<sup>th</sup> edition effective criteria of Oct 14, 2013.**

#### **RECOMMENDED SECONDARY ENTRAPMENT DEVICES**

##### **PHOTO BEAMS**

1)EMX INDUSTRIES  
2)ALLEN BRADLEY  
3)OMRON / MMTC

MODEL#: IRB-325  
MODEL#: 60-2728  
MODEL#: E3K-R10K4-NR

TRANSMITTER / RECEIVER TYPE  
RETRO-REFLECTIVE TYPE  
RETRO-REFLECTIVE TYPE

##### **REVERSING EDGES (CONTACT EDGES)**

MILLER EDGE MODEL— ME-120

## WARNING!

**DO NOT REMOVE THE TRANSPORT/MAINTENANCE SAFETY PIN UNTIL THE GATE IS SECURELY ATTACHED AND OPERATOR IS FASTENED TO THE CONCRETE PAD. THE OPERATOR ARM IS UNDER A GREAT DEAL OF TENSION & CAN CAUSE EXTREME DAMAGE AND INJURY IF RELEASED PREMATURELY!**

## Preparations Prior to Installation

### SITE PREPARATION

#### Concrete Pads:

Concrete pads are required to install your VP Operator, & Yoke (See Dwg. #101), Along with securing the operator to the entry/exit point the pad provides a fixed and adequate foundation to resist many years of wind resistance and stability for many years of operation. Prior to pouring the concrete for the operator pad ensure the soil is undisturbed or compacted to local or governing standards.

#### 4' X 7' Operator Pad Options:

1. Full Pad, Minimum depth of 36" or below *local* frost line (See Dwg. #102P).
2. 10"-12" thick pad with five (5) 12" dia. x 36" deep holes or below *local* frost line (See Dwg. #101).

**NOTE: Operator pad MUST be poured level. Any exceptions MUST be communicated to AutoGate Engineering to ensure proper installation and operation. Yoke pad elevation details are special to your site conditions. Refer to your site drawings for specific information.**

**NOTE: All pads need to be level and smooth for ease of installation. Refer to (Dwg. #101) for all applicable conduit locations.**

**NOTE: Allow concrete to cure a min. of (3) three days before setting Operator & Gate Assembly.**

### INSTALLING GATE SYSTEM & ACCESSORIES

Recommended Installation Tools and Equipment for installing Gate, Operator, & Accessories

Lifting Strap	Multi-Meter (DCV & AMPS)
Hammer & Level	Hammer Drill, 1/2 & 5/8 Bits
Grease Gun, Lithium Grease	Tape Measure
Screwdriver Sets (Flat & Phillips)	½" Drive Socket Set: 9/16", 3/4", 15/16", 1-1/8"
Open End Wrenches: 9/16", 3/4", 15/16", 1-5/16"	Electrical Tape
Wire Cutters/Strippers	Misc. 18 GA Strand
Misc. Electrical Connectors	Batteries
Chalk Line	

**NOTE: Refer to manufacturer's instructions of Accessory Equipment for correct wire size and type.**

**NOTE: (2) 12 VDC batteries are required and are not provided. Group 24 Deep cycle marine batteries are recommended.**

### RECEIVING YOUR VP GATE AND OPERATOR

**Unloading & Unpacking** - Gate weight per foot varies with gate style & height.

<u>Product</u>	<u>Approx. Weight</u>
Operator	1150 #
Steel Gate	24# / Ft.
Aluminum Gate	19# / Ft.

1. Have adequate equipment ready to unload your Gate & Operator safely (Forklift, Crane, Front End Loader or Wrecker with Telescoping Boom, see below Lifting Gate & Operator). (Utilize a Liftgate when available)
2. Before removing your Gate and Operator from the truck, inspect it for any visible damage and make sure the Gate Box was shipped upright. (**DO NOT DROP EITHER GATE OR OPERATOR BOX**) Photograph and retain if damaged in shipping. Note all damages on delivery receipt before unpacking, look for hidden damage as well.
3. After uncrating your operator, locate and remove the door lock keys attached to the Transport /Maintenance (T/M) Safety Pin (See Dwg. #103). **DO NOT REMOVE T/M PIN, ONLY REMOVE HAIR PIN RETAINER.**
4. The Transmitters, Antenna, ordered accessories, and Shipping Packet will be enclosed inside your operator.
5. Unpack Gate Panel crate in the same careful manner. Note and photograph any damages.

## WARNING!

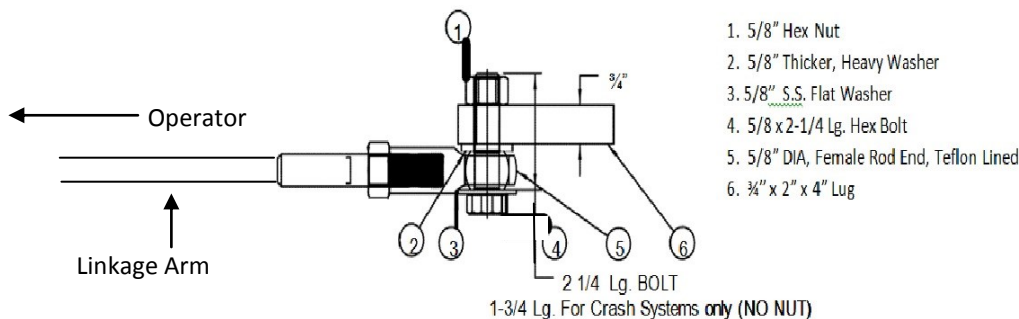
**DO NOT REMOVE THE T/M SAFETY PIN UNTIL THE GATE IS SECURELY ATTACHED & OPERATOR IS FASTENED TO THE CONCRETE PAD. THE OPERATOR ARM IS UNDER A GREAT DEAL OF TENSION & CAN CAUSE EXTREME DAMAGE & INJURY IF RELEASED PREMATURELY!**

## INSTALLATION

### INSTALLING VP GATE AND OPERATOR

#### Attaching the Gate to the Operator:

1. Position Gate on Operator Arm.
2. Use (1) 3/4"-10 x 4 1/2" (STEEL) or (1) 3/4"-10 x 5" (ALUMINUM) Bolt for the top connection. Use (4) 1/2 x 1-1/2" Bolts for the bottom connection.
3. Insert the top bolt first and then the bottom (4) bolts finger tight. Be certain gate is properly aligned before tightening. Tighten bottom bolts first, then tighten top bolt.
4. Locate washers and Linkage Pivot Bolt (5/8" x 2-1/4") and insert through rod end fitting and tighten bolt into the gate lug hole as shown below. You may have to push down on the gate to insert Linkage Bolt.



#### Lifting Gate & Operator:

To lift Gate & Operator, (Crane, Front End Loader, Forklift or Wrecker with Telescoping Boom) use a lifting strap. The strap should be secured around Operator Arm and T/M Safety Pin or the top rail of the gate near the operator arm. (See Dwg. #103).



**NOTE:** It is recommended to attach Gate to Operator Arm **before** lifting (for better balance), but it is not mandatory. If using a Forklift to position Operator only, lift from *sides* only! **Do not try to lift gate and operator together from the side** (See Dwg. #103).

#### Positioning Operator & Gate:

Refer to the site drawing for your specific order as there may be details unique to the installation.

1. Place Gate & Operator Assembly on pad so the end of the Gate is centered over the Yoke pad or intended yoke position for the site (for yoke styles mounted to posts, buildings, etc.). Allow a minimum 3" from edge of pad to bolt holes to prevent concrete damage (See Dwg. #101 & #102).
2. Position and align Pad Yoke and center under gate. (See Dwg. #101).
3. Secure **Operator** with (1) 5/8" dia. Wedge Bolt in rear; check alignment on pad as well as gate panel alignment.
4. Install remaining 3 or 4 5 1/2" x 5/8" dia. Concrete Anchor Bolts provided, (**level Gate & Operator on pad**, if necessary).
5. Secure Yoke with 1/2" dia. Anchor bolts (provided).

**NOTE:** If installing a Ground Yoke, allow a minimum space of 2" between bottom of Gate and Yoke.

# WARNING!

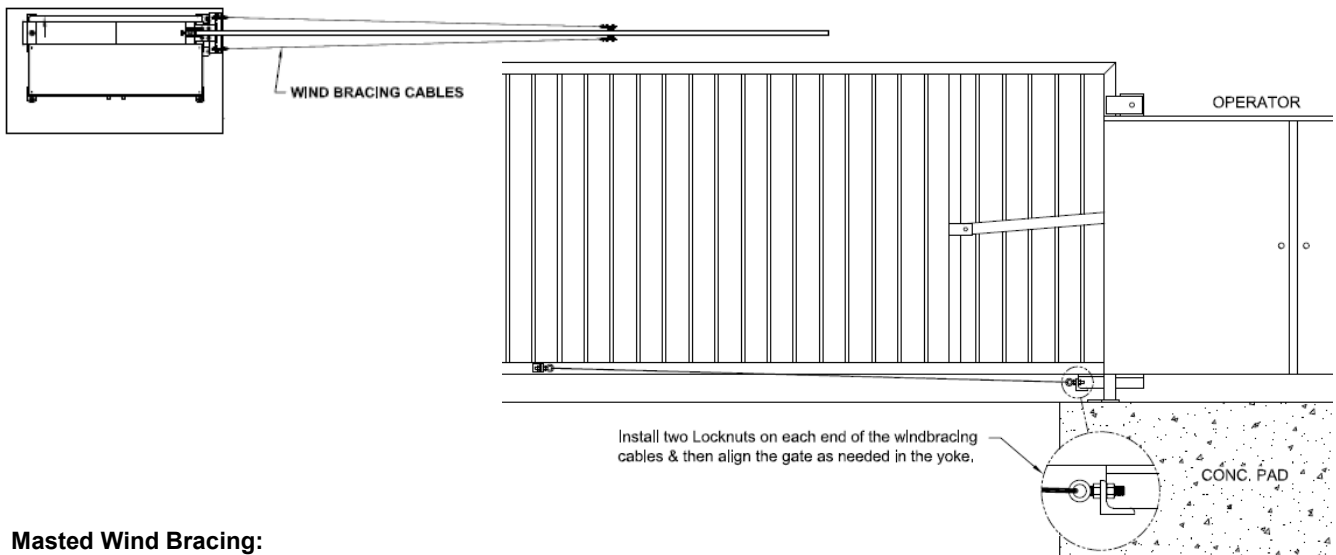
**DO NOT REMOVE THE T/M SAFETY PIN UNTIL THE GATE IS SECURELY ATTACHED & OPERATOR IS FASTENED TO THE CONCRETE PAD. THE OPERATOR ARM IS UNDER A GREAT DEAL OF TENSION & CAN CAUSE EXTREME DAMAGE & INJURY IF RELEASED PREMATURELY!**

## INSTALLATION—cont'd

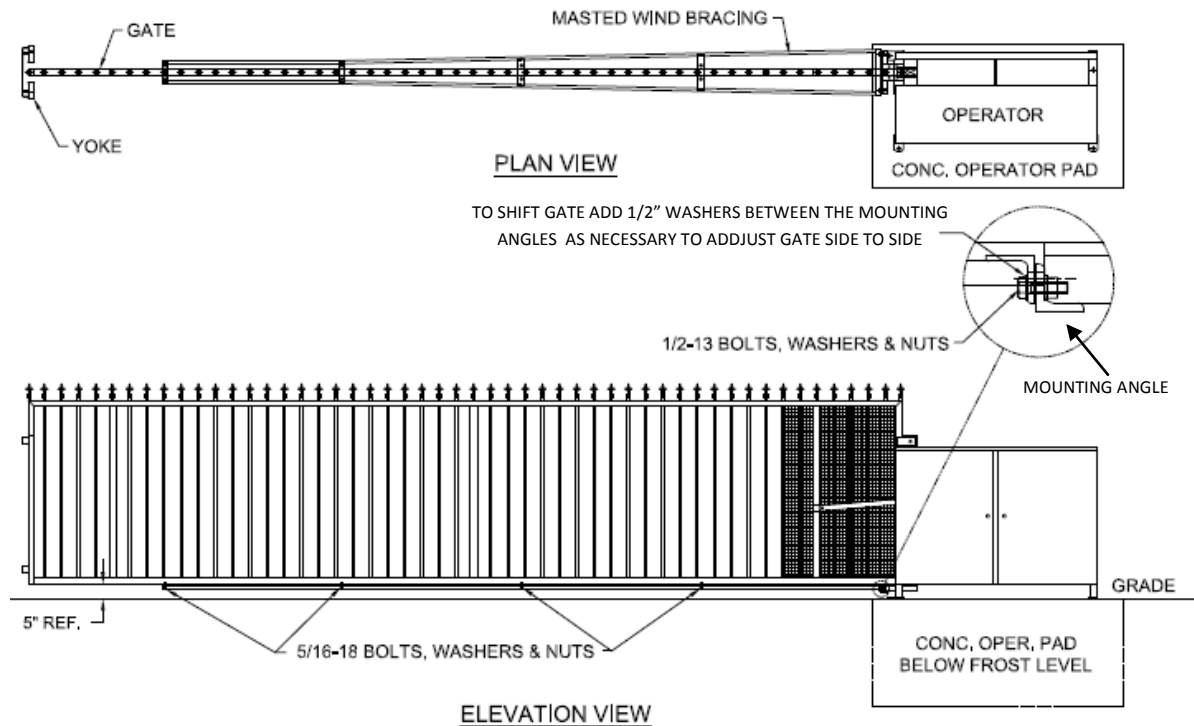
### Installing Other Components:

#### Cable Wind bracing:

**If ordered**, attach cable wind bracing to gate with Galvanized Nuts provided on the rods or cables; one nut attached near operator and one attached at gate bracket (See Dwg. #I-105-1 & 2.). Tighten each side equally.



#### Masted Wind Bracing:



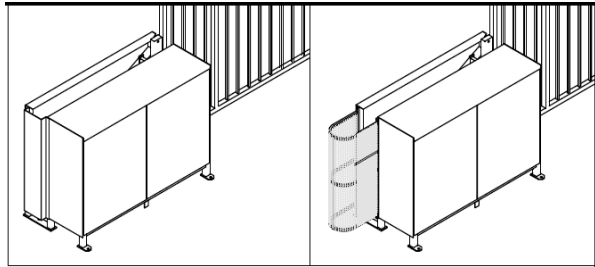


**WARNING!**

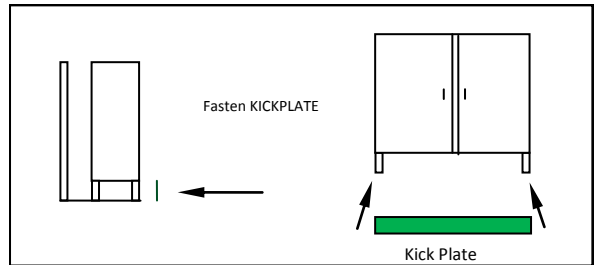
**DO NOT REMOVE THE T/M SAFETY PIN UNTIL THE GATE IS SECURELY ATTACHED & OPERATOR IS FASTENED TO THE CONCRETE PAD. THE OPERATOR ARM IS UNDER A GREAT DEAL OF TENSION & CAN CAUSE EXTREME DAMAGE & INJURY IF RELEASED PREMATURELY!**

## INSTALLATION—cont'd

### Gate Guard & Rear of Operator Entrapment Area:



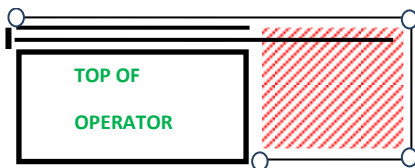
**Kick Plate:** Attach the kick plate to the door side of the operator using the 3 # 12 x 3/4 tek screws. See **green** example kick Plate below.



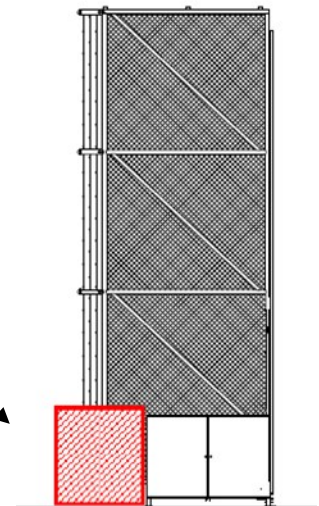
**NOTE:** The area behind the operator is an entrapment zone. The installer must prevent or protect pedestrian access to this area by at least one or more of the following:

- Install factory supplied Gate Guard
- Site installed fencing
- Utilize Recommended Entrapment Protection Devices

Open installation (No Fence)



Gate in "OPEN" position above (shaded area) requires installer consideration such as: Fencing off or installation of entrapment protection devices.



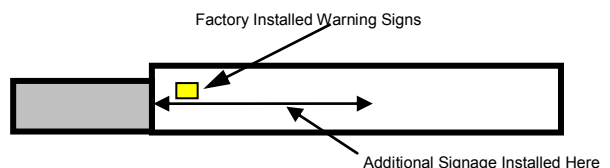
Gate in closed position



### Additional Signage Installation:

We recommend any additional signage be installed between the operator and the center of the gate. The total weight of all signs cannot exceed 4 pounds or 4 SQ. FT. Contact AutoGate if you require clarification.

**Note:** AutoGate provided UL 325 pedestrian safety signs that must be visible from both sides of the gate in the closed AND open position.



## WARNING!

TO REDUCE THE RISK OF ELECTRICAL SHOCK, THIS EQUIPMENT HAS A GFCI TYPE PLUG THAT HAS A THIRD (GROUNDING) PIN. THIS PLUG WILL ONLY FIT INTO A GROUNDING TYPE OUTLET. IF THE PLUG DOES NOT FIT IN THE OUTLET, CONTACT A QUALIFIED ELECTRICIAN TO INSTALL THE PROPER OUTLET. DO NOT CHANGE THE PLUG IN ANY WAY.

## OPERATOR WIRING & TESTING

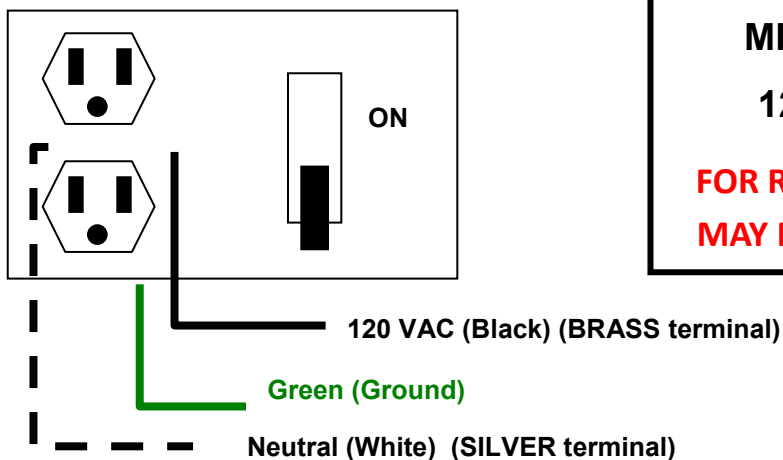
### Connecting AC Power (See Dwg. # 103)

1. Turn Off DC power.
2. Wire incoming AC power to the 4 x 4 Box provided and turn on the breaker from your AC Source.
3. Turn AC Power Switch on at the 4 x 4 Box.

**NOTE:** The A/C Power must be connected by a qualified, licensed Electrician, according to the [National Electric Code](#), and all State and local codes. Refer to electrical block diagram for additional information.

### Pre-Mounted 120vac Electrical Outlet & AC Power Switch Electrical Connection

#### Operator Main AC Power Switch (pre-wired to outlet)



**A/C ELECTRICAL SUPPLY  
MINIMAL REQUIREMENTS:  
120 VAC, 15AMP CIRCUIT**

**FOR RESIDENTIAL APPLICATIONS YOU  
MAY NOT EXCEED A 15 AMP CIRCUIT!**

## WARNING!

**ADDITIONAL 120 VAC SURGE PROTECTION IS RECOMMENDED BUT NOT REQUIRED. SURGE UNIT *MUST* BE GROUNDED TO A TRUE EARTH GROUND.**

**AC OUTLETS ARE HOT AT ALL TIMES. OUTLETS ARE FOR SERVICE USE ONLY.**

**OPERATOR MUST BE GROUNDED TO TRUE EARTH GROUND LUG LOCATED ON FRAME  
(See Dwg. # 103)**

## WARNING!

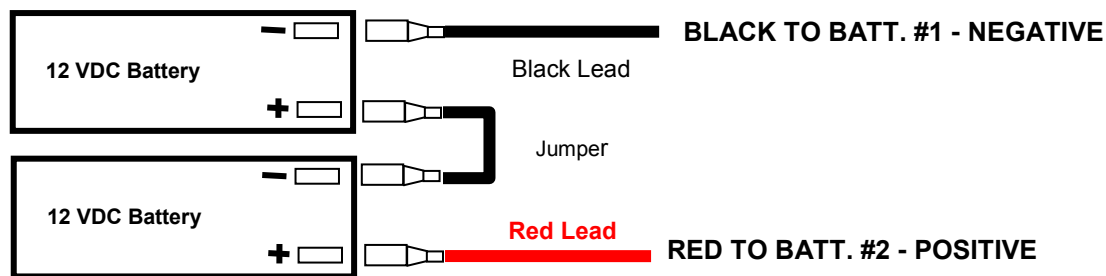
**DO NOT ATTEMPT TO CONNECT BATTERIES OR POWER-UP GATE & OPERATOR UNTIL ALL ACCESSORIES HAVE BEEN COMPLETELY CONNECTED & CHECKED.**

## OPERATOR WIRING & TESTING (con't)

### Connecting Batteries - Required

1. Install (2) 12 VDC Batteries (**not provided by AutoGate**) on the battery shelf. AutoGate recommends Group 24, 100 Amp hour deep cycle marine batteries for extended battery back up. At a minimum use 7 AH batteries for battery back up. See drawing below for proper battery and jumper hook up.
2. Install Jumper Wire (provided) from **Batt. #1 - POSITIVE** to **Batt. #2 - NEGATIVE** (See Below).
3. Locate **RED** and **BLACK** Power Wires and connect:

**NOTE:** Battery back up duration will depend on the size of batteries, number of accessories and open/close cycles while being powered by the batteries.



### Testing System Wiring

1. Remove T/M Safety Pin from front of Operator and hang it on the hook provided inside access door.

**NOTE:** It may be necessary to push down on end of gate in order to take pressure off T/M Safety Pin.

2. Temporarily remove any wires in the main circuit board Terminal #5 (rev. / safety) to disable any Reversing devices not installed from preventing the gate from closing. (See Board Dwg. #113)
3. Turn Main DC Power Switch "on". (Located under the Control Box) Use the S3 manual open/close switch on the control board, (See Dwg. #103-R) to test your gate system (refer to Dwg #113 for wiring schematic).
4. After testing the DC, turn off the DC toggle switch, turn on AC back to "on" and repeat the testing.

**NOTE:** Your gate should activate and open in approximately 10-12 seconds. If your gate does not lift properly, refer to "Troubleshooting Tips" on page 12.

### Testing Accessory Wiring (Ref. Electrical block diagram for additional information)

1. Turn off AC & DC power switches while connecting accessory wiring.
2. Reattach ALL wires removed from main circuit board Terminal #5 (reversing).
3. Complete the **wiring & testing** of each accessory component one at a time.

**Note:** See optional accessories installation instructions included with each product purchased. For example, to test the Reversing Beam, interrupt the beam when the gate is on the way down. The gate should stop and reverse when the beam has been broken or interrupted. Do the same for the Loops, Keypads, etc.

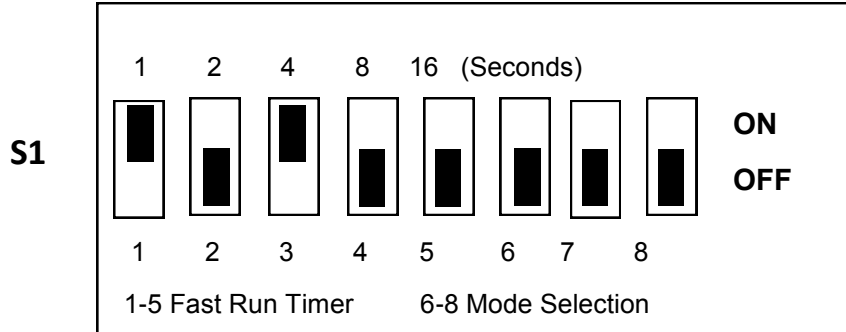
# OPERATOR WIRING & TESTING (con't)

## CONTROL BOARD

Your VP gate has many features and options. Most are controlled by an electronic circuit board inside the Control Box. Your circuit board is factory-set and should not be altered in any way or the Warranty may be voided. If an adjustment has to be made, consult your "Gate Board Instructions" for details. If you need any further assistance, please contact your local AutoGate Dealer or call AutoGate at 1-800-944-4283.

### Timers and Mode Selections (S1) SEE DIAGRAM BELOW

Full Speed Run Timer – Switch Pack S1 (1-5) Switches 1 through 5 are FACTORY PRESET. **DO NOT CHANGE!**

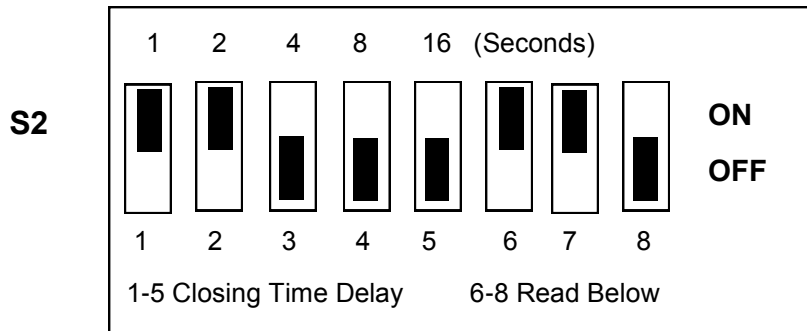


### Mode Selections – Switch Pack S1 (6-8). SEE DIAGRAM ABOVE

SWITCH 6 – “On”. This is set for the UL 325 Alarm. **(DO NOT CHANGE!)**

SWITCH 7 - FACTORY PRESET. **(DO NOT CHANGE!)**

SWITCH 8 – “Off” Not used on this system



### Timers & Mode Selections – Switch Pack S2 (1-8). SEE DIAGRAM ABOVE

Switches 1-5 on S2 are for the closing timer delay. Default is S2-4 “ON” to provide a 8 second delay if activated. If S2-7 is on, the gate will auto close by timer.

SWITCH 6 – Sets aux. Open input terminal #4 at J5 to be pulse open-pulse close (Default is On).

SWITCH 7 – AUTO CLOSE TIMER – Default is ON. When on, use S2 1-5 to set close time delay. When close timer is selected, you MUST install vehicle and pedestrian detection devices.

SWITCH 8 – AUTO OPEN ON POWER FAILURE – When switch 8 is in the ON position, the operator will automatically open the gate approximately 15 seconds after the loss of power. Once power is restored, the operator will resume normal operation. Factory setting is “OFF” allowing the operator to function normally until the battery power has diminished. Once A/C has been restored, the operator will function normally.

**Note:** If batteries were completely discharged, remove from operator and recharge with a commercial grade battery charger.

## WARNING!

**INHERENT REVERSE DEVICE (IRD) SHOULD BE TESTED PERIODICALLY TO INSURE PROPER OPERATION.**

# WARNING!

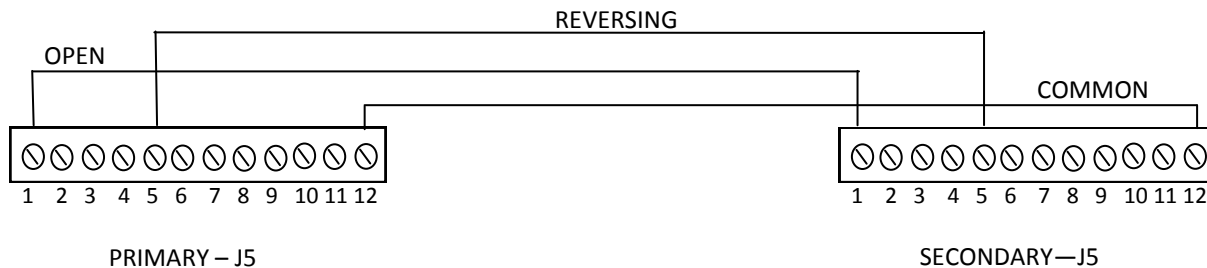
**INHERENT REVERSE DEVICE (IRD) SHOULD BE TESTED PERIODICALLY TO INSURE PROPER OPERATION.**

## Inherent Reverse Device (IRD)

The *Instant Reverse Device* is an internal circuit that continuously monitors the motors current for increase draw. This is factory preset for your specific gate size. To test for proper operation, position yourself approximately 2/3 of the way across the driveway. With the gate descending, carefully catch the gate to simulate an obstruction and it should stop and reverse within two (2) seconds. If the gate does not reverse, call the factory for technical assistance. If obstructed while closing, the gate will stop and reverse to the open position, time out (using the time delay set at S2 switches 1-5) and then close. If gate is opening when obstructed, the gate will stop its open travel. If inputs are present, gate will remain stopped. If no inputs are present or existing are cleared, the gate will time out and

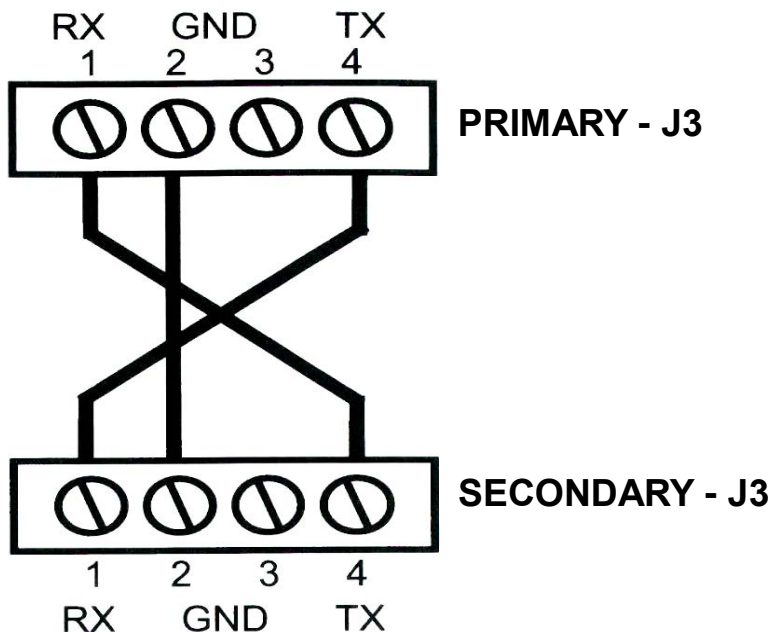
## Primary—Secondary Wiring (two systems designed to work together and an entry or exit point)

In a primary/secondary configuration, either unit can be the primary. Choose one unit to be the master and then direct all control wiring to it (also install vehicle detector and receivers in it). At the PRIMARY **any input (at J5) with control (detectors, receivers, key-pads, timers, etc...)** wires to it must also be run to the same terminals of the secondary system. Along with these control wires, both operators MUST share a common ground connection from chassis to chassis (or from common to common , i.e. master gate J5 terminal #12 to secondary unit J5 terminal #12).



**EXAMPLE:** If only open and reversing are used at master then three wires will run between gates.

If it is required that if one gate senses an obstruction, the other reverses also, then 3 additional wires must be run between the primary J3 and secondary J3 as shown below. These connections are for transmitting IRD (obstruction signals) between both units. This will allow the primary or secondary to inform the other that a closing obstruction has occurred and for it to also reverse and open. **SET** switches on **S2, 1-8** the same on both gates.



## IRD - OBSTRUCTION SIGNAL CONNECTIONS

THE CONNECTIONS TO THE LEFT MUST BE DONE IN ORDER FOR GATE IRD'S TO WORK CORRECTLY. TERMINAL 1 OF PRIMARY MUST GO TO TERMINAL 4 OF SECONDARY AND TERMINAL 4 OF SECONDARY MUST GO TO TERMINAL 1 OF PRIMARY. TERMINAL 2 OF PRIMARY WILL GO TO TERMINAL 2 OF SECONDARY.

## WARNING!

**WARNING: DISCONNECT BATTERIES AND AC POWER BEFORE SERVICING ANY MECHANICAL OR MOVING COMPONENTS! WARNING: FOR CONTINUED PROTECTION AGAINST FIRE, ONLY REPLACE WITH THE SAME TYPE AND RATING OF FUSE.**

## TROUBLE SHOOTING & CHECKING CONTROL BOARD

**BATTERY CHECKOUT** – When the batteries become weak the gate can begin to run noticeably slower. (NOTE: Batteries should only be checked when you are sure they have had adequate time to fully charge.) Turn off the AC power and run gate for 5 to 10 cycles while observing low battery indicator LED D12. If LED 12 comes ON, batteries are too weak to function properly. If LED 12 does not light, then voltage should be checked as they still may be near failure. Correct voltage is a minimum of 25VDC. (NOTE: If LED D12 does light, gate will open to conserve batteries in this test or in a real power loss, even if mode switch 8 is on S2 is off.) Return of AC power will clear the low battery indicator. If the batteries are not completely drained, you may have to charge the batteries as they may be too weak. Correct charge voltage is 27.5 VDC with batteries not connected (adjustment is at R63).

**GATE WILL NOT CLOSE** - Check for any active inputs on terminal inputs D15-D24 , AC power loss, AC power switch is off or weak batteries. Check that batteries are connected properly. Is switch S3 in "ON" position (this is manual open switch). Check if S2 switch number 8 is in "ON" position and if AC power is lost, See LED D14. Check LED D12, if lit and AC power is off, then batteries need to be charged or replaced.

**GATE WILL NOT OPEN** - Check for AC power loss at D14 (check AC power switch) and that batteries are fully charged. Check fuses and if inputs are wired correctly, test S3 manual open switch.

### GATE DEAD – NO OPERATION

1. Make sure both DC Power Toggle Switch and A/C Power switch are on. If no LED lights are "lit" on the board proceed to #2. If LED lights are "lit" verify HBEAT (D11) is flashing? If flashing proceed and D12 BAT LOW LED is off proceed to #2. If HBEAT (D11) is not flashing and other LED's are "lit" the control board is bad (contact AutoGate for replacement).
2. Check A/C indicator light on cabinet, is it on? Yes, go to step #3, no, Check 3 amp fuse on battery tray, if good, go to step #3, if bad replace and check again, if no A/C, source external power problem back to fuse box.
3. Check F3 & F4 fuses on control board. If bad, replace. If they continue to blow the control board is bad.
4. If D14 (AC) & D5 (BRAKE) are on, then gate has repeatedly sensed obstructions. Clear obstruction, turn off AC and DC power. Now turn AC and DC power back on and test system.
5. If steps above do not restore operation contact AutoGate Tech Support

**IRD (D2) LED IS FLASHING**, MRT (Maximum Run Timer) has expired. Gate was unable to reach the closed limit switch. Check that fast run timer is set to run as long as possible.

**FUSE(S) ARE BLOWN** - F3 (15 AMP AC) AND/OR F4 (15 AMP DC) Check for shorts in wiring. If F3 AC fuse is blown, then batteries may also be dead. If you continue to blow fuses and no apparent shortages are visible, you most likely have a blown circuit board and it will need to be replaced.

**GATE CLOSSES THEN REVERSES** - See IRD adjustments, also check for obstacles in gate travel, such as trees, sticks, etc. Charge voltage to batteries too low, adjust at R63. If gate closes an motor continues to run the limit switch may need adjustment or replacement. With batteries disconnected, set to 27.5.

**IRD OBSTRUCTION SIGNAL TO OTHER GATE NOT WORKING CORRECTLY** - Remove connector at J3, obstruct gate, LED D13 should go off for a few seconds. This indicates signal was transmitted. Be sure gates have a common ground.

### MANUAL OPERATION

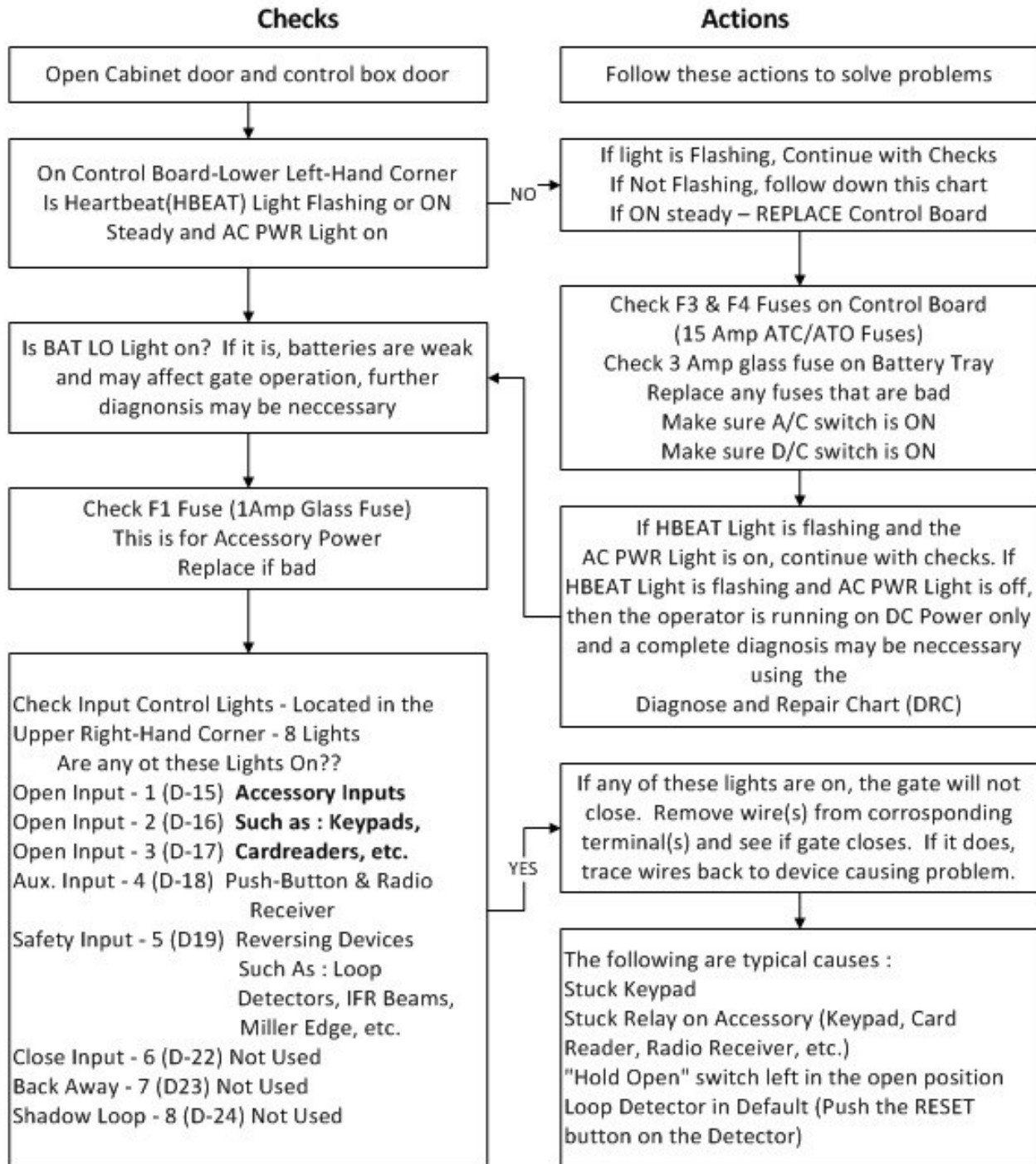
Your VP gate is easily operated manually in the event of total power or component failure.

1. Turn main power switches off (both A/C & D/C).
2. Release the belt tension lever located under the gear motor to remove the belt tension.
3. Position yourself in front of operator and lift up on Linkage Arm at the pivot point 1"-2". (See dwg. #103).
4. Walk out to end of gate and lift gate to the open position.
5. Place the T/M pin through the bracket holes to prevent the gate from lowering.
6. Secure the belt tension lever in the locked position to re-apply tension to the belts.

**NOTE:** It only takes 16 - 30 lb. of force to open gate. If more is required, contact your dealer or factory.

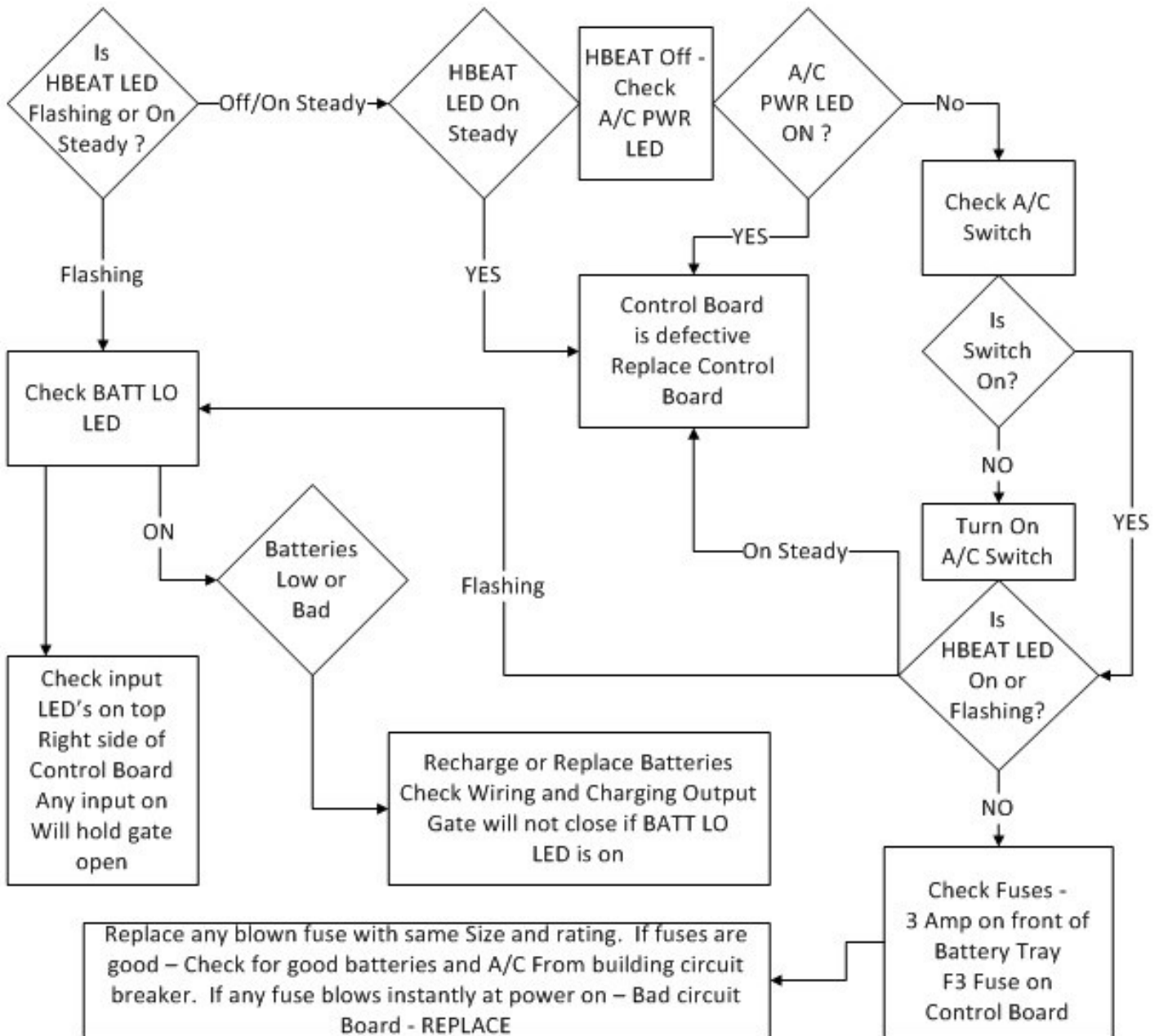
## VPL 24 ELECTRICAL QUICK CHECK

Please follow this Check List to see if you can restore gate operation.



# VPL 24 Electrical Quick Check

Follow the steps in this chart to see if you can restore service of your gate.  
 This is a visual check without the use of a voltmeter.  
 Start by opening the cabinet door to the operator.  
 Then open the electrical control box and look on the control board for the  
 HBEAT LED, located at the lower left corner of the control board.





## MAINTENANCE

The Basic electric and mechanical systems require only minimum routine maintenance. The following items should be checked and serviced periodically depending on amount of use. (See Dwg. #103 for lube locations).

ITEM	RECOMMENDED MAINTENANCE
Grease pivot points on Linkage Assembly (“LUBRIPLATE ‘R’ LOW TEMP” Grease)	10,000 cycles or 6 months
Grease all bearings: (2) Operator Arm, (4) Bullwheel Shafts	Every 6 months
Grease Chain Tension Bolt and Lube Chain & lightly coat springs	Every 6 months
Check belts for wear and tightness. (Belt flex between motor and Intermediate sheaves is 1/4” deflection & between intermediate and final drive sheaves should be tightened to minimum deflection). Belt(s) loose or worn require replacement.	Every 6 months
Charge voltage for batteries should be 27.5 VDC with batteries disconnected check at battery terminals on control board (set at R63).	Every 6 months
Check battery water level, use distilled water only (Not required on maintenance-free)	Every 6 months
Clean snow/ice off of gate (Balance Correctly, gate will temporarily tolerate an add'l 10 lb. of wt.)	As needed
Clean lenses on Photocells or Reflectors	As needed
Lubricate (Graphite Oil) all lock cylinders and mechanisms	Every 6 months
Check and verify proper operation of all <b>secondary</b> entrapment devices.	Every month
Check and verify proper operation of all <b>primary</b> reversing feature. (see Section V, Item #2-A)	Every month

**Touch-Up Paint** - For scratches and following minor repairs use Rustoleum® Painters Touch 2x Ultra Cover (Gloss) to match the AutoGate Standard Colors: Black, Dark Gray, Kona Brown, Hunter Green, & White.

### Balancing a Gate

Recommended four months after installation, then annually. It is recommended to check the balance of your VP Operator. It is mandatory to re-check the balance if you change spring(s). You can monitor it on the amp meter installed on the control box door. It is recommended to follow the instructions below for accurate balancing numbers using a commercial grade AMP meter. Remove the wire nut on the **RED** motor lead and hook up one Amp Meter lead to the **RED** wire and the other Amp Meter lead to the **ORANGE** wire. Cycle the gate up and down and record the highest amp reading in both directions (reading should be in the 2.0 to 6.0 range). The highest reading for both the up and down cycles should be very close to the same. If not, you will have to adjust the SLIDE ASSY. (see Dwg. # 107 ).

Loosen the 1 1/8” nuts on either side of the Slide Assy. Angle on the Threaded Rod. *If the gate Amps are too high in the OPEN mode, move the Slide Assy. UP to help it OPEN.* (This is the most common adj. Made). *If the gate is flying open and struggling to close, move the Slide Assy. DOWN.* Only adjust the Slide Assy. 1/4” (3 to 4 turns) at a time when adjusting. After each adjustment, check your amp readings.

When you have the gate back in balance (within a half amp (.5) is minimal), tighten both nuts on Slide Assembly threaded rod.

### Board Replacement

Turn ALL power off (**AC & DC**) to the board.  
Remove (slide off) J2 “Open & Close” Limit Switch Terminal strip.  
Remove (slide off) Accessories 1 through 12 Terminal strip.  
Carefully remove the wires for the 24vdc Acc. Power, Battery Power, AC Power & Motor wires.  
Take the board off the Standoffs and remove the (2) mounting bolts and replace with your NEW circuit board and put all wires and connections back in the same place.

**Double check the D.I.P. switch settings to be sure they are the same as your original board.**

## VIII. OPTIONAL ACCESSORIES INSTALLATION INSTRUCTIONS

(Your gate order may not have included any or all of these accessories)

**CAUTION!** Failure to completely install any Reversing Devices may cause your gate to default Open. (Ex.: Hooking up your Loop Wires to the Socket Base while not having the Detector plugged in, or having your IFR Receiver hooked up and not the IFR Transmitter.)

**NOTE:** Refer to electrical block diagram for additional information on all accessory wiring.

### A. Reversing/Free Exit Loops and Detectors:

1. Locate your "Homerun" lead-in Loop wires and connect the Free Exit Loop to Socket Base connections #7 & #8 (Free Exit Device).
2. Locate your "Homerun" lead-in Loop wires and connect the Reversing Loop(s) to Socket Base connections #7 & #8. You can wire (2) two Reversing Loops to (1) one Socket Base (Reversing Device). Check the loop instructions for proper phasing.
3. Plug in your Loop Detector in the pre-wired socket base(s).

### B. Photoelectric Sensors:

Refer to page 7 of this guide for the list of UL 325 approved components and to the manufacturer's instructions for their proper installation.

1. Verify voltage compatibility, 24 VDC is required.
2. Connect signal wire N.O. (normally open) to terminal #5 on your control board.
3. Connect the ground wire to terminal 9, 10, 11 or 12 (commons).
4. Connect the power wires to the terminal strip located inside the control box.

### C. Contact Sensor Edge:

Refer to page 10 of this guide for the list of UL 325 approved components and to the manufacturer's instructions for their proper installation.

1. Connect signal wire N.O. (normally open) to terminal #5 on your control board.
2. Connect the ground wire to terminal 9, 10, 11 or 12 (commons).
3. Be certain all wires are secured to prevent damage to the gate during operation.

### D. Vehicle Sensor Probe (Car-Sense 101):

1. Locate the Car-Sense 101 Vehicle Sensing Probe either along the edge of the Exit Drive or install in the pavement as shown on Dwg. # 108.
2. Once installed, run the 2-conductor cable to Socket Base connections #6, 7 & 8 (Free Exit Device). Refer to manufacturer's instructions for proper wiring.
3. Connect the power wires to the terminal strip located inside the control box.
4. Connect signal wire to an open terminal – 1, 2, 3.
5. Connect the ground wire to terminal 9, 10, 11 or 12 (commons).
6. Plug in you Car Sense Detector in the pre-wired socket base. Refer to Manufacturer's Instructions.

### E. Gate Auto Timer:

Install your timer in the electrical box.

Run a power wire from the timer terminal "A" to the "Positive" on the control board, run a power wire from the timer terminal "B" to the "Negative" on the control board.

Run a power wire from the timer terminal "1" to "1", "2", or "3" on the control board, run a power wire from the timer terminal "2" to "9", "10", "11" or "12" on the control board.

### F. Keypads:

1. Refer to your Keypad Manufacturers Instructions for complete wiring.
2. Run the power wires to Terminal Strip main power (+ and -).
3. The **N.O. & Common** signal wires to open the gate need to be attached to the Circuit Board #'s 1, 2 or 3 (Open) & 9, 10, 11 or 12 (Common) (Refer to Manufacturer's Instructions).

### G. Card Readers:

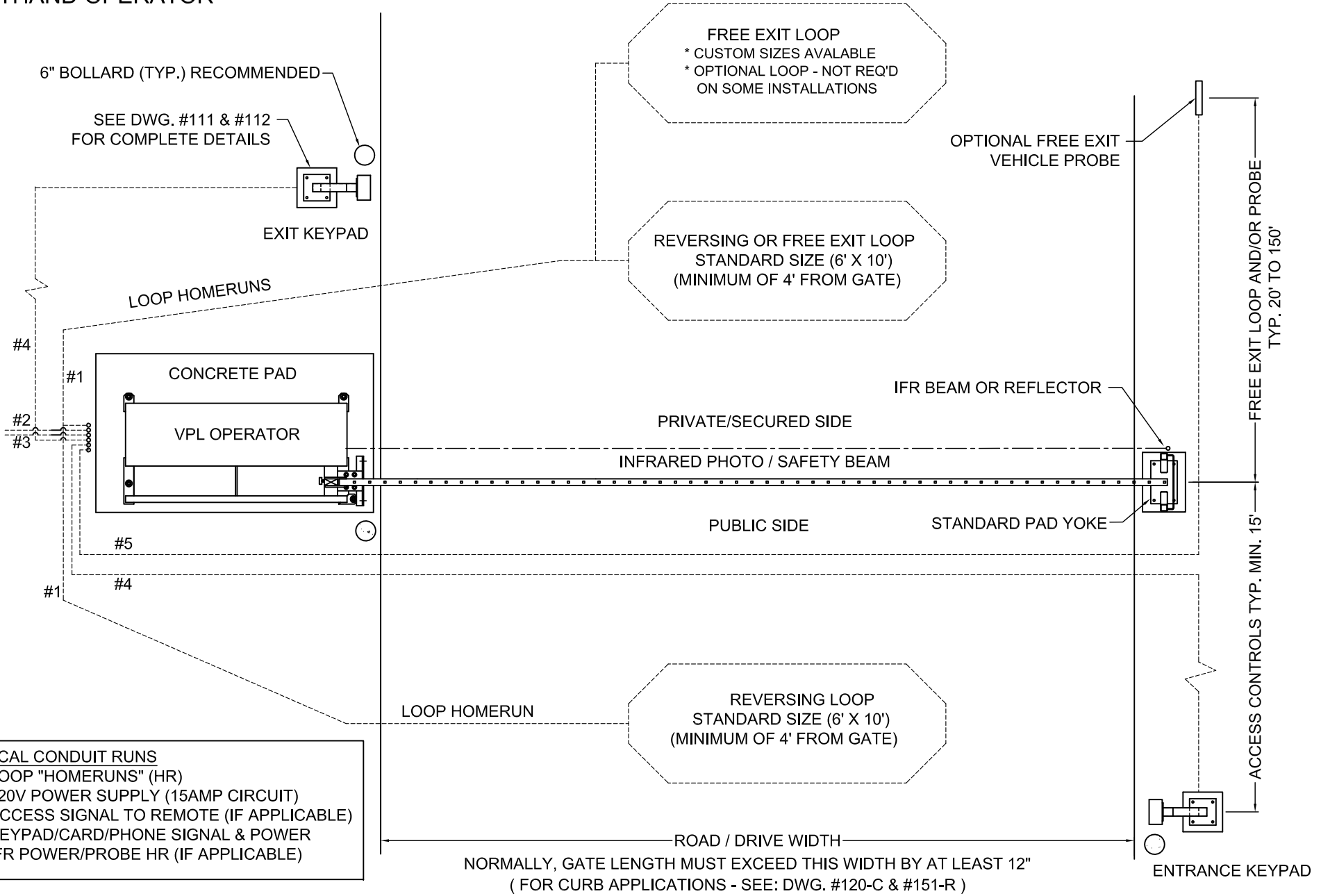
1. Refer to your Card Reader Manufacturer's Instructions for complete wiring.
2. Run the power wires to Terminal Strip main power (+ and -).
3. The **N.O. & Common** signal wires to open the gate need to be attached to the Circuit Board #'s 1, 2 or 3 (Open) & 9, 10, 11 or 12 (Common) (Refer to Manufacturer's Instructions).
4. We recommend using a grounding rod to minimize lightning damage.

### H. Phone Systems:

1. Refer to your Phone System Manufacturers Instructions for complete wiring
2. Most phone systems require a dedicated power supply and therefore they may not function during a power outage.
3. The **N.O. & Common** signal wires to open the gate need to be attached to the Circuit Board #'s 1, 2 or 3 (Open) & 9, 10, 11 or 12 (Common) (Refer to Manufacturer's Instructions).
4. We recommend using a grounding rod to minimize lightning damage.

**NOTE:** Refer to bottom of page 5 for approved UL 325 Compliant components.

# RIGHTHAND OPERATOR



**TYPICAL CONDUIT RUNS**  
 #1. LOOP "HOMERUNS" (HR)  
 #2. 120V POWER SUPPLY (15AMP CIRCUIT)  
 #3. ACCESS SIGNAL TO REMOTE (IF APPLICABLE)  
 #4. KEYPAD/CARD/PHONE SIGNAL & POWER  
 #5. IFR POWER/PROBE HR (IF APPLICABLE)

DO NOT SCALE				
Rev.:	Description:	Date:	Drn. By:	Ckd. By:
A	UPDATED DRAWING	01/22/13	SLD	KLL

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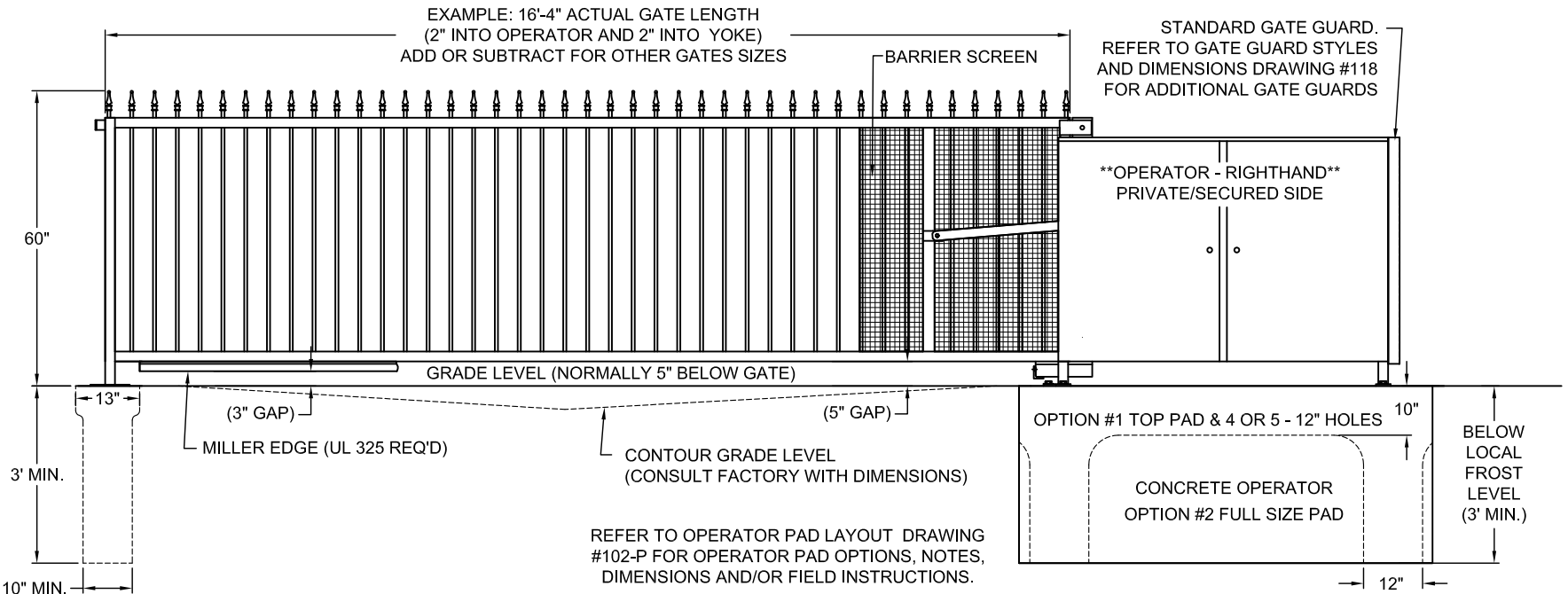
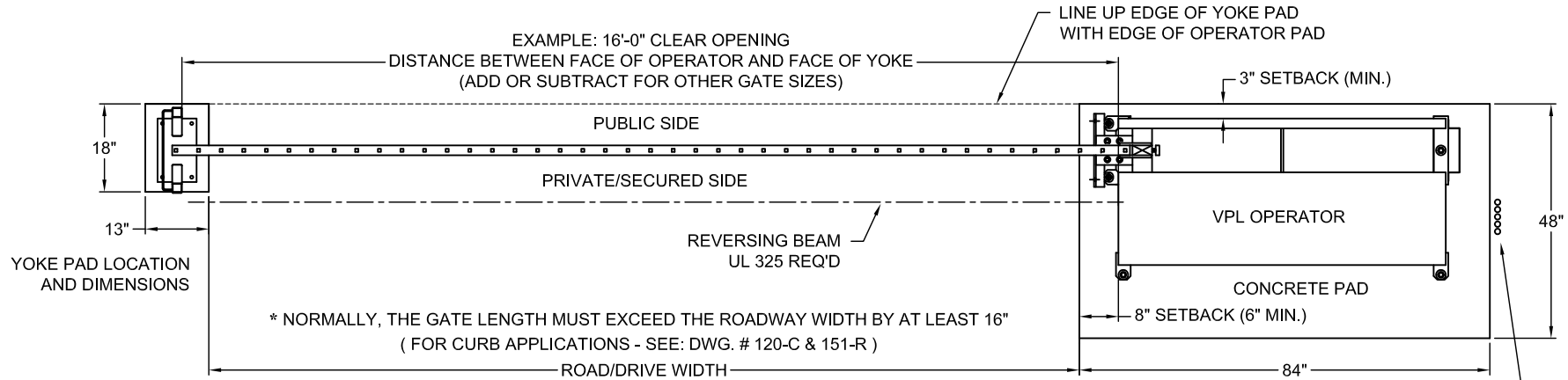
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES  
 ANGLES ± 1°  
 X/X ± 1/32, .XX ± .01, .XXX ± .005

Date: 12/20/05  
 Drn. By: MKS  
 Ckd. By: DMR  
 Dwg.: 100-R  
 Title: Operator & Accessory Site Layout (R/H)



# RIGHTHAND OPERATOR

EXAMPLE SHOWN: 16' X 5' BUCKEYE STYLE 500 GATE  
(GATE SIZE AND STYLE MAY VARY)



PAD FOR YOKE STYLES "E" & "F" ONLY.  
REFER TO YOKE STYLES DRAWING #105  
FOR ADDITIONAL MOUNTING METHODS,  
DIMENSIONS AND/OR INSTRUCTIONS.

Rev.:	Description:	Date:	Drn. By:	Ckd. By:
A	UPDATED DRAWING	01/22/13	SLD	KLL

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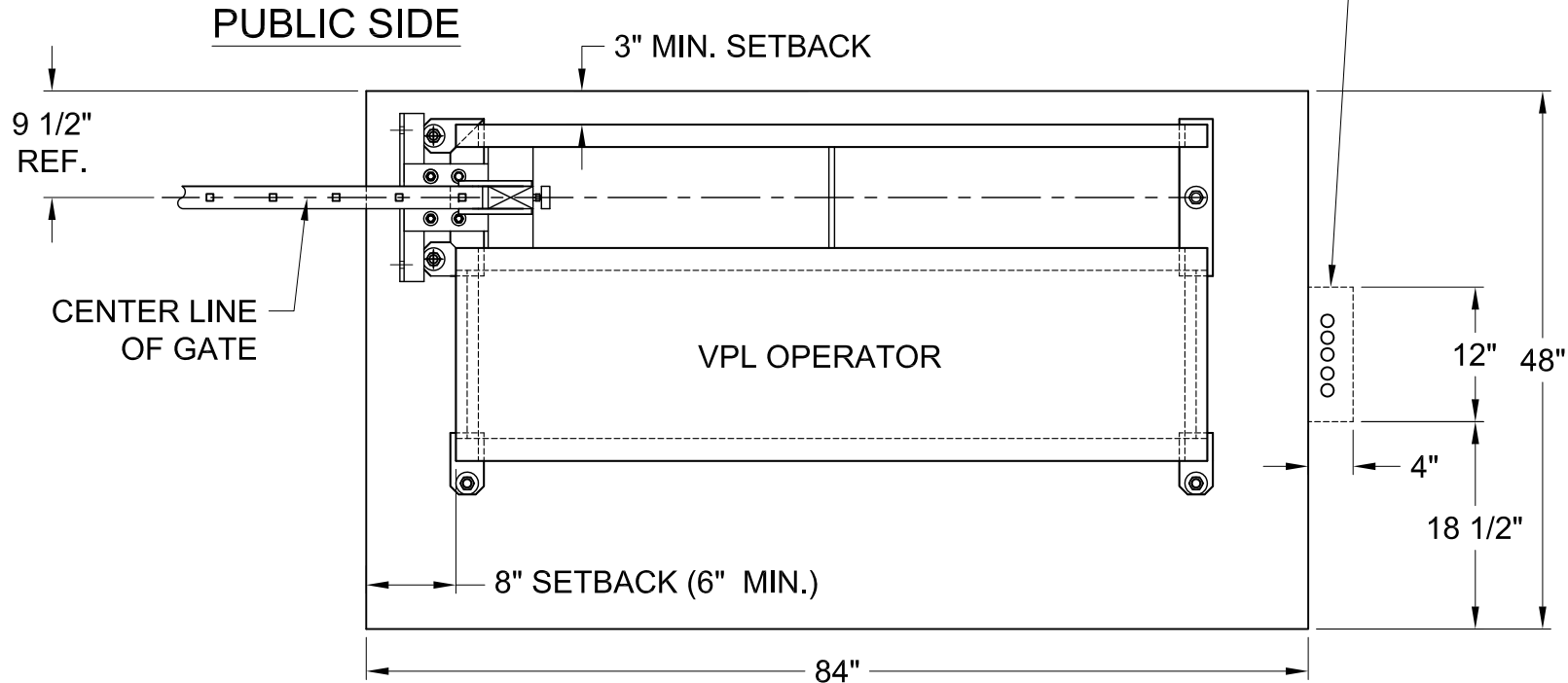
UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
ANGLES ± 1°  
XX ± 1/32, .XX ± .01, .XXX ± .005

Date: 12/21/05  
Drn. By: MKS  
Ckd. By: DMR  
Dwg.: 101-R  
Title: Standard Layout Dimensions - Righthand



# RIGHTHAND OPERATOR

CONDUIT LOCATION / STUB-UP ON OUTSIDE OF OPERATOR PAD.  
(STUB OUT CONDUITS 12")



PRIVATE/SECURED SIDE

\* NOTE: USE 3/4" CONDUIT ONLY

## POSSIBLE CONDUITS

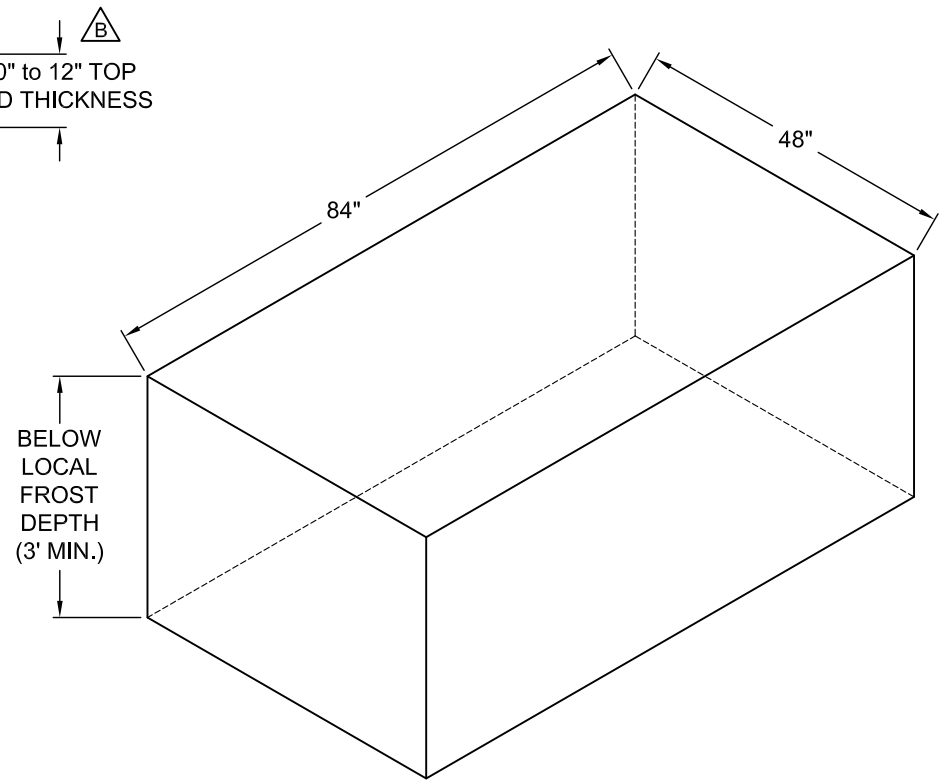
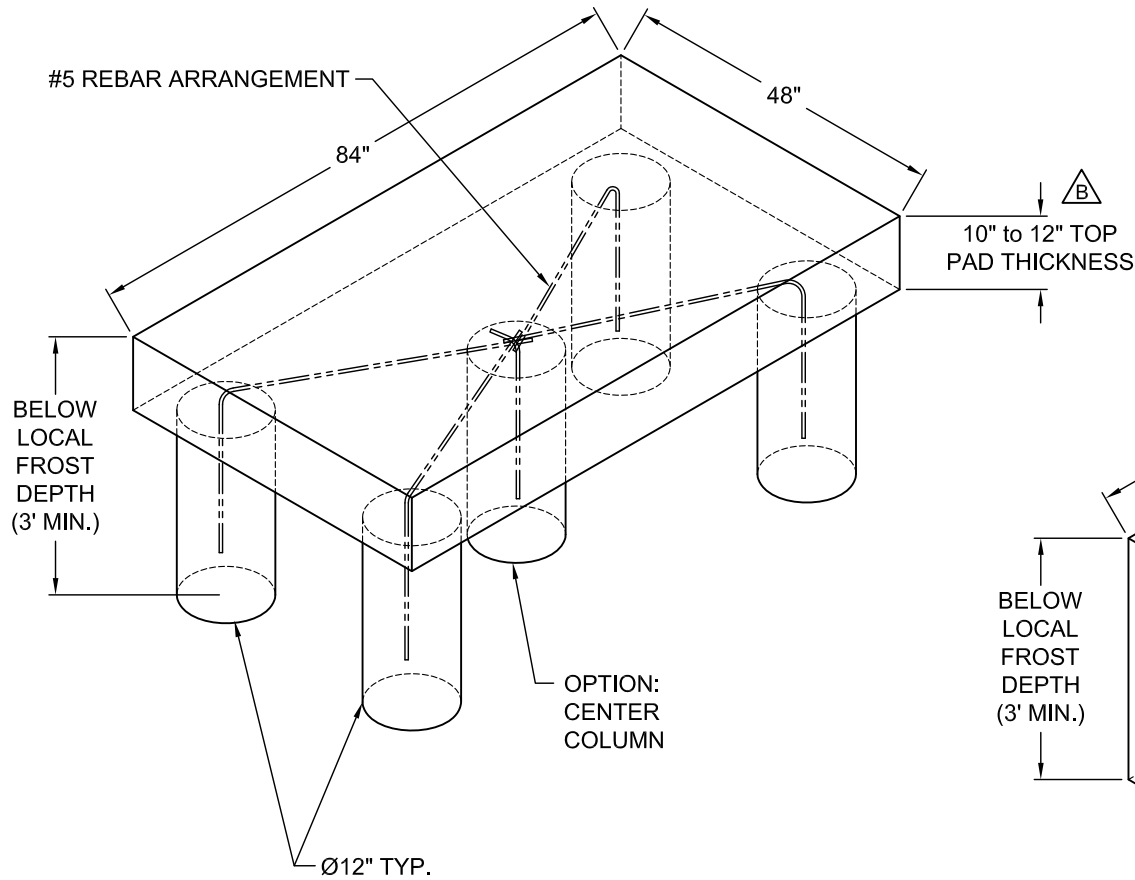
- \* 120 VAC, MIN. 15 AMP CIRCUIT
- \* "ENTRANCE" KEYPAD
- \* "EXIT" KEYPAD
- \* REVERSING/SAFETY LOOPS
- \* FREE EXIT LOOP
- \* OFFICE COMMUNICATION
- \* IFR BEAM POWER
- \* OPTIONAL SPARES

DO NOT SCALE					NOTICE	
Rev.:	Description:	Date:	Drn. By:	Ckd. By:	THE INFORMATION CONTAINED ON THIS DOCUMENT IS CONFIDENTIAL. ANY DISSEMINATION, UNAPPROVED DISCLOSURE OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.	Date: 12/07/05
						Drn. By: MKS
						Ckd. By: DMR
B	Updated drawing	1/24/13	SLD			Dwg.: 102C-R
A	Conduit locations were moved outside the pad	07/18/08	MKS			Title: Conduit Pad Location (Righthand)

Berlin Heights, Ohio  
FAX (419) 588-3514

# OPTION #1:

(4) or (5) MIN. 12" AUGURED HOLES, RE-BAR, AND A 10" TO 12" TOP PAD THICKNESS



# OPTION #2:

FULL CONCRETE PAD WITH RE-BAR WHERE APPLICABLE PER GOVERNING CODE OR STANDARD.

## NOTES:

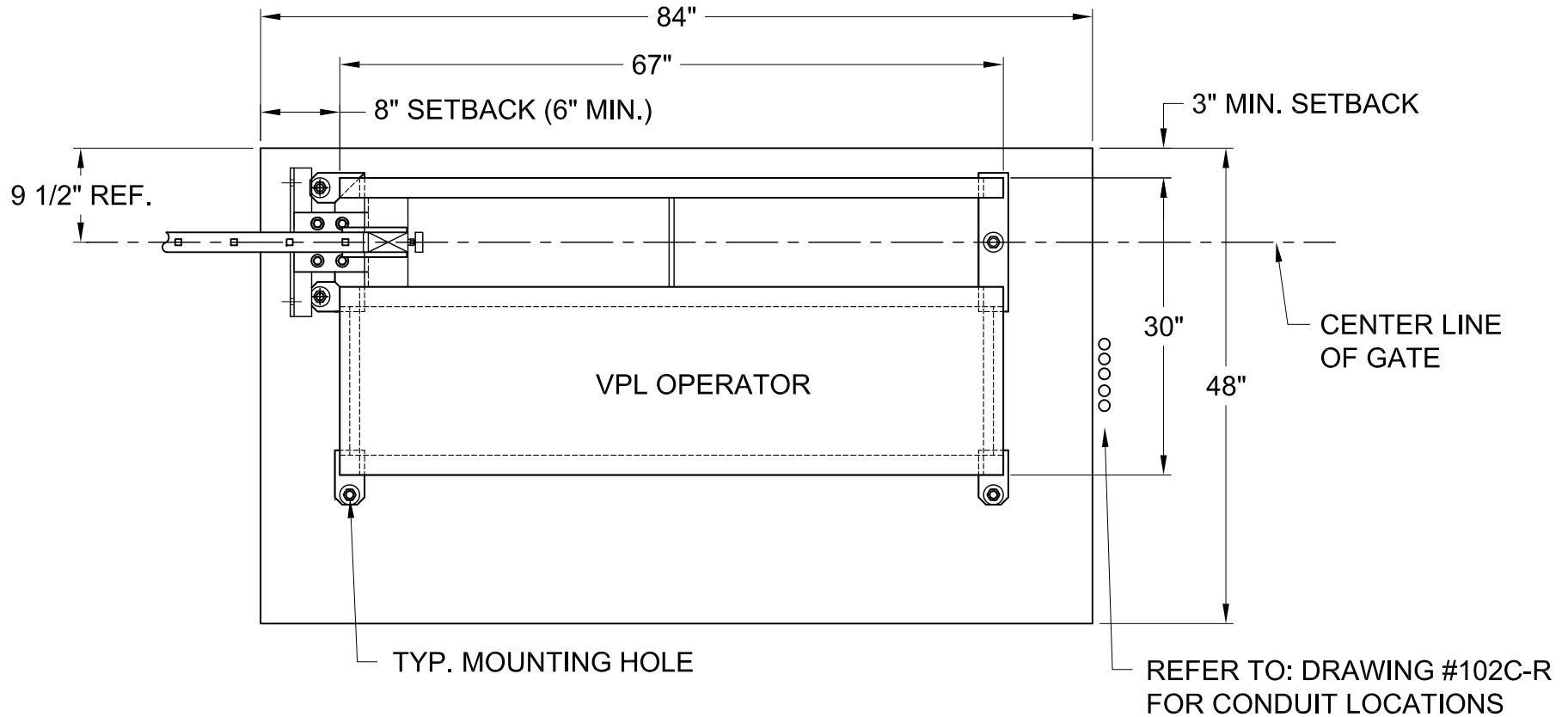
- 1) ALL PAD DEPTHS SHOULD BE BELOW LOCAL FROST DEPTH
- 2) TOP OF PAD MUST BE FLAT AND LEVEL
- 3) USE REBAR THAT CONFORMS WITH LOCAL CODES OR JOB SPECS.

DO NOT SCALE				
Rev.:	Description:	Date:	Drn. By:	Ckd. By:
.	.	.	.	.
B	10" TO 12" PAD THICKNESS WAS 8" TO 10"	01/24/13	SLD	KLL
A	CONDUIT LOCATIONS WERE MOVED OUTSIDE THE PAD	07/18/08	MKS	DMR

NOTICE		Date:	<b>AG</b> AutoGate Gate Entry Systems
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		Drn. By: MKS	
		Ckd. By: DMR	
		Dwg.: 102-P	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES ANGLES ± 1° X/X ± 1/32, .XX ± .01, .XXX ± .005		Title: Operator PAD Layout / Options	

# RIGHTHAND OPERATOR

## PUBLIC SIDE



## PRIVATE/SECURED SIDE

### NOTES:

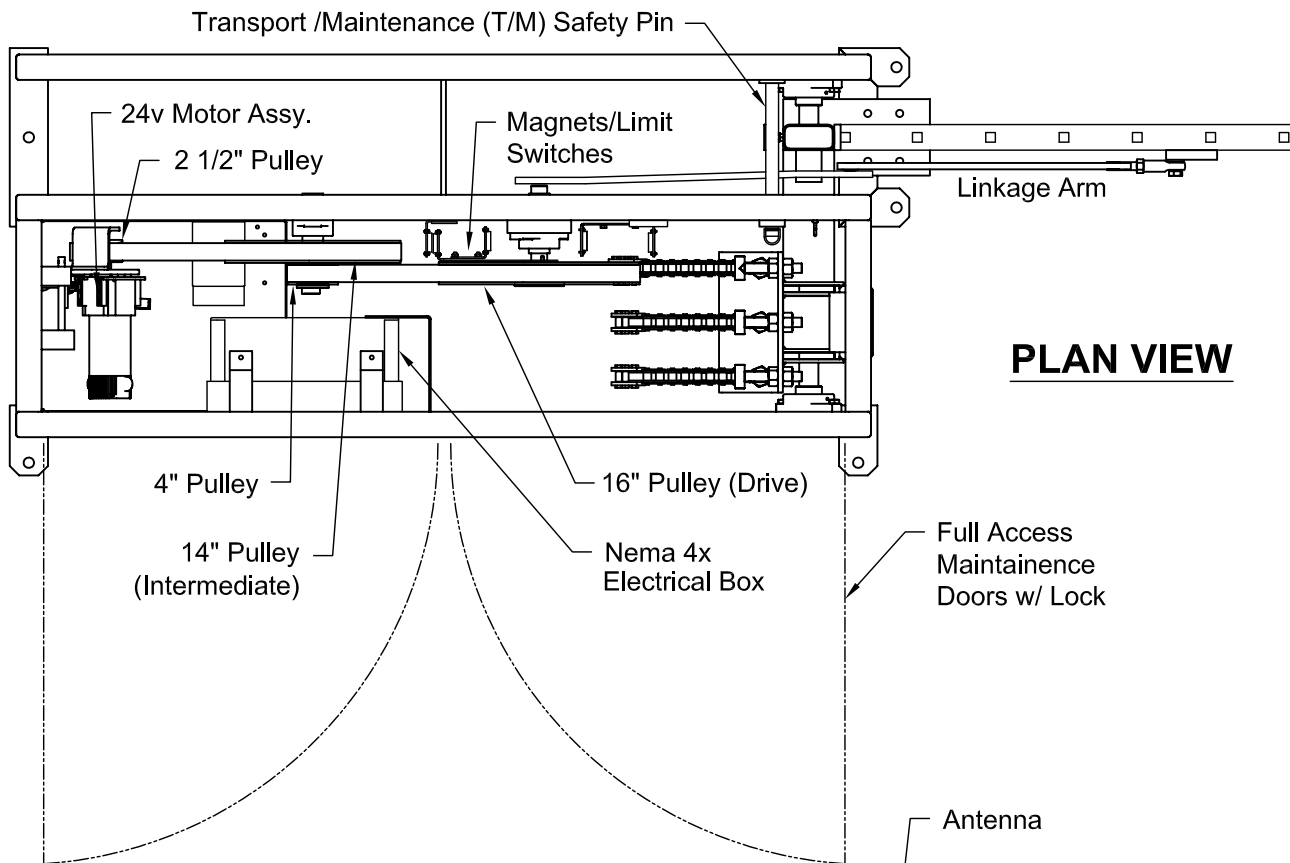
- 1) PAD DIMENSIONS CAN VARY PER SITE
- 2) LEAVE AT LEAST 3" BETWEEN ANCHOR AND EDGE OF PAD
- 3) ALL PADS MUST BE POURED LEVEL AND BELOW LOCAL FROST LINE DEPTH

Rev.:	Description:	Date:	Drn. By:	Ckd. By:
C	Updated drawing	1/24/13	SLD	
B	Removed "Stub conduits under operator when possible" note	02/04/10	MKS	
A	Conduit locations were moved outside the pad	07/18/08	MKS	

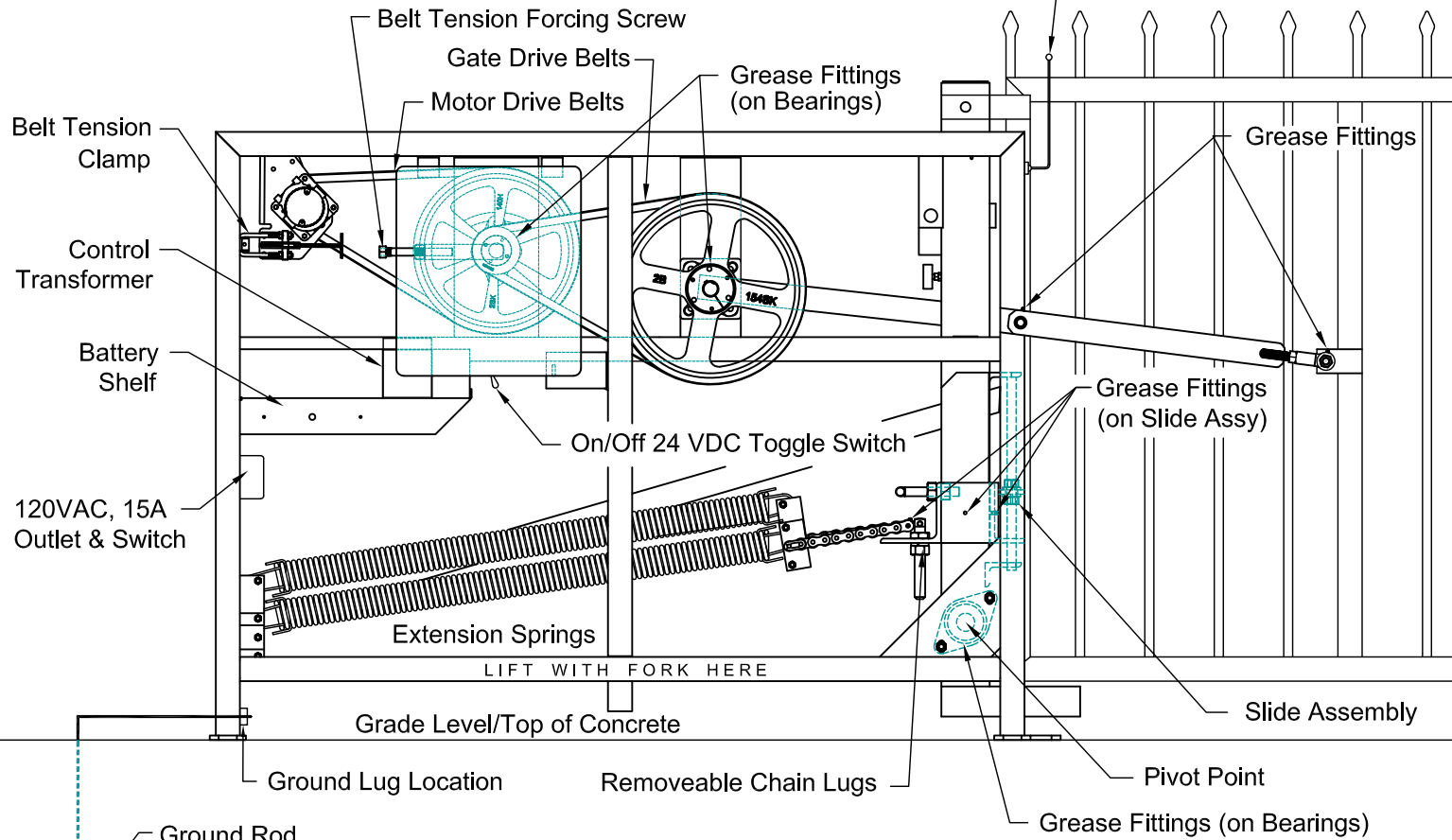
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ANGLES ± 1°	
XX ± 1/32, .XX ± .01, .XXX ± .005	

Date:	12/07/05
Drn. By:	MKS
Ckd. By:	DMR
Dwg.:	102-R
Title:	Standard Pad Layout (Righthand)





**PLAN VIEW**



**ELEVATION VIEW**

Rev.:	Description:	Date:	Drn. By:	Ckd. By:
C	ADDED GROUND LUG, TRANSFORMER & REVISED NOTES	12/29/10	MKS	DMR
B	REVISED SHOWING NEW ARM AND SPRING LOCATIONS	07/09/09	MKS	DMR
A	REVISED TO SHOW NEW REAR MAGNET PLATE DESIGN	10/17/08	MKS	DMR

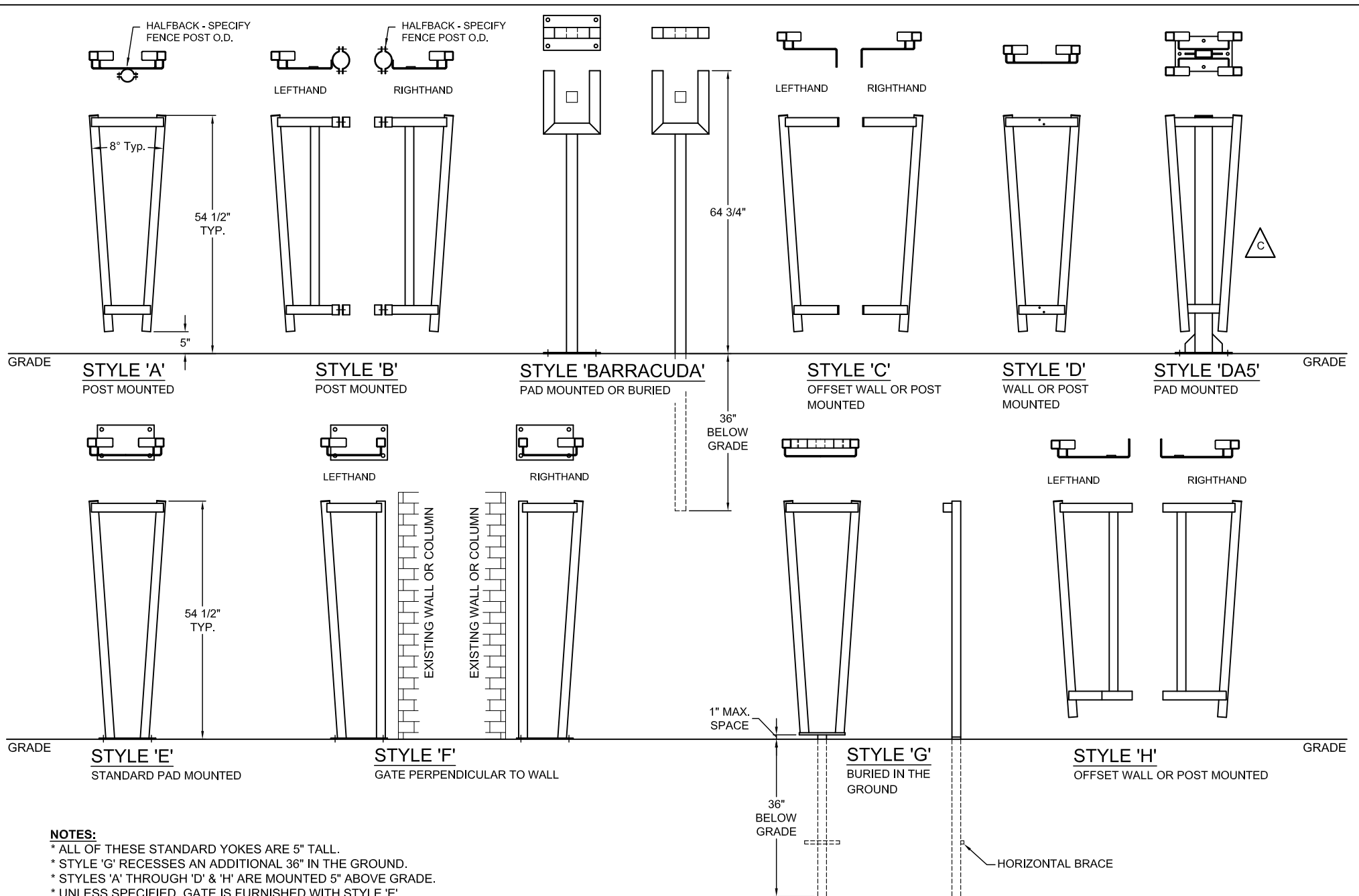
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 ANGLES ± 1°  
 X/X ± 1/32, .XX ± .01, .XXX ± .005

Date: 11/23/05  
 Drn. By: MKS  
 Chk. By: DMR  
 Dwg.: 103-DR




Title: 24V Gate Operator Details (Double Reduction)



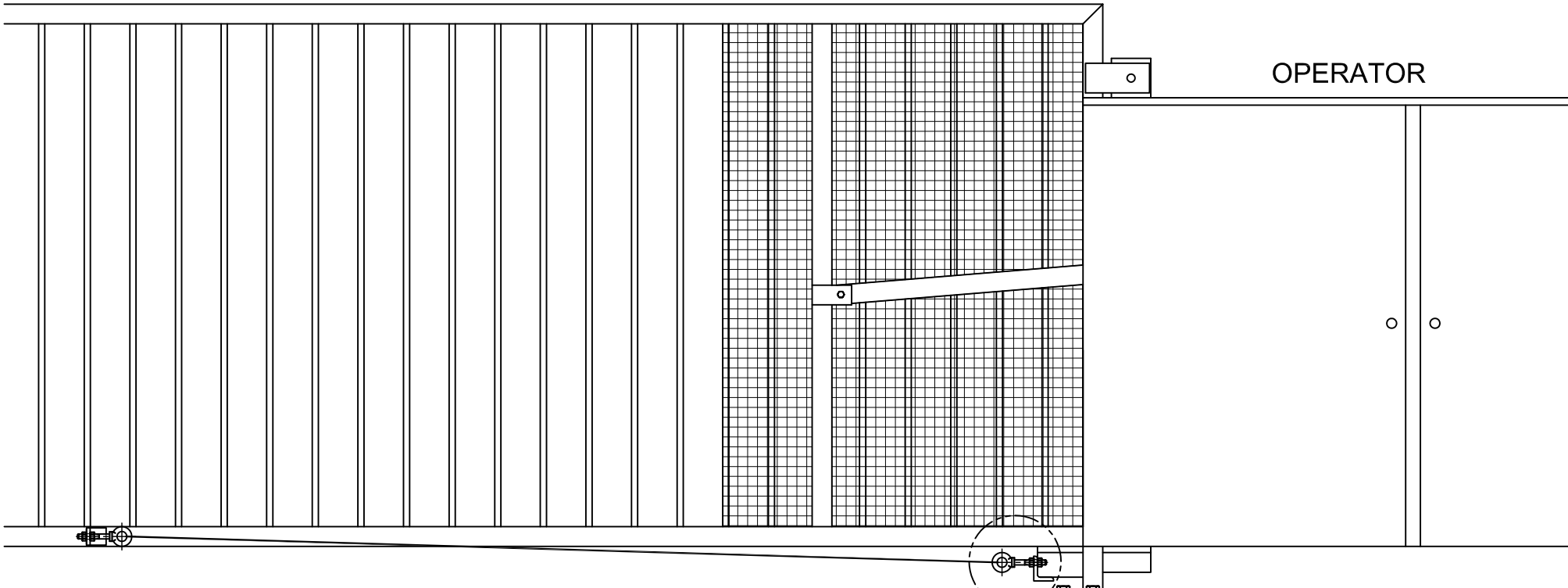


- NOTES:**
- \* ALL OF THESE STANDARD YOKE ARE 5" TALL.
  - \* STYLE 'G' RECESSES AN ADDITIONAL 36" IN THE GROUND.
  - \* STYLES 'A' THROUGH 'D' & 'H' ARE MOUNTED 5" ABOVE GRADE.
  - \* UNLESS SPECIFIED, GATE IS FURNISHED WITH STYLE 'E'.

<b>DO NOT SCALE</b>					<b>NOTICE</b>		Date: 12/21/05	
					THE INFORMATION CONTAINED ON THIS DOCUMENT IS CONFIDENTIAL. ANY DISSEMINATION, UNAPPROVED DISCLOSURE OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.		Drn. By: MKS	
Rev.:	Description:	Date:	Drn. By:	Ckd. By:	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES ANGLES ± 1° X/X ± 1/32, .XX ± .01, .XXX ± .005		Ckd. By: DMR	Berlin Heights, Ohio FAX (419) 588-3514
C	ADDED "DA5" STYLE YOKE (DOUBLE PAD MOUNTED)	07/01/14	MKS	EGS			Dwg.: 105	
B2	ADDED "H" STYLE YOKE	01/17/13	SLD	KLL			Title: YOKE STYLES (5' STANDARD)	
B1	ADDED BARRACUDA STYLE YOKE	01/17/13	SLD	SLD				
A	ADDED FLATBAR TO STYLE "B" YOKE	08/27/10	MKS	DMR				

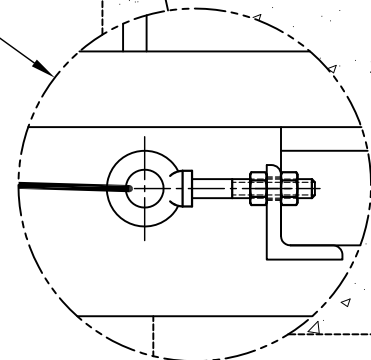
VPL GATE

OPERATOR



INSTALL TWO LOCKNUTS ON EACH END OF THE WINDBRACING CABLES & THEN ALIGN THE GATE AS NEEDED IN THE YOKE.

**NOTE:**  
SOME OLDER MODEL GATES HAVE PIPE BRACING, THE NEWER OPERATORS HAVE CABLE INSTALLED IN THE SAME MANNER



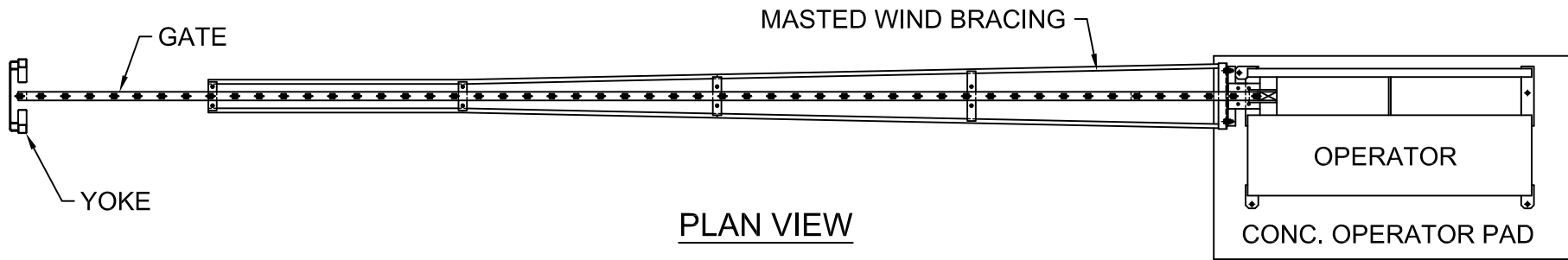
CONC. PAD

Rev.:	Description:	Date:	Drn. By:	Ckd. By:
B	Updated drawing	01/24/13	SLD	KLL
A	Revised by adding more detail on fasteners, gate and operator	01/01/11	MKS	MKS

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X/X ± 1/32, .XX ± .01, .XXX ± .005

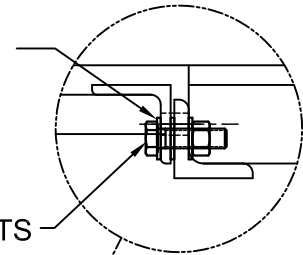
Date: 04/03/07  
Drn. By: MKS  
Ckd. By: DMR  
Dwg.: 105-1  
Title: Wind Bracing Assembly - Cables



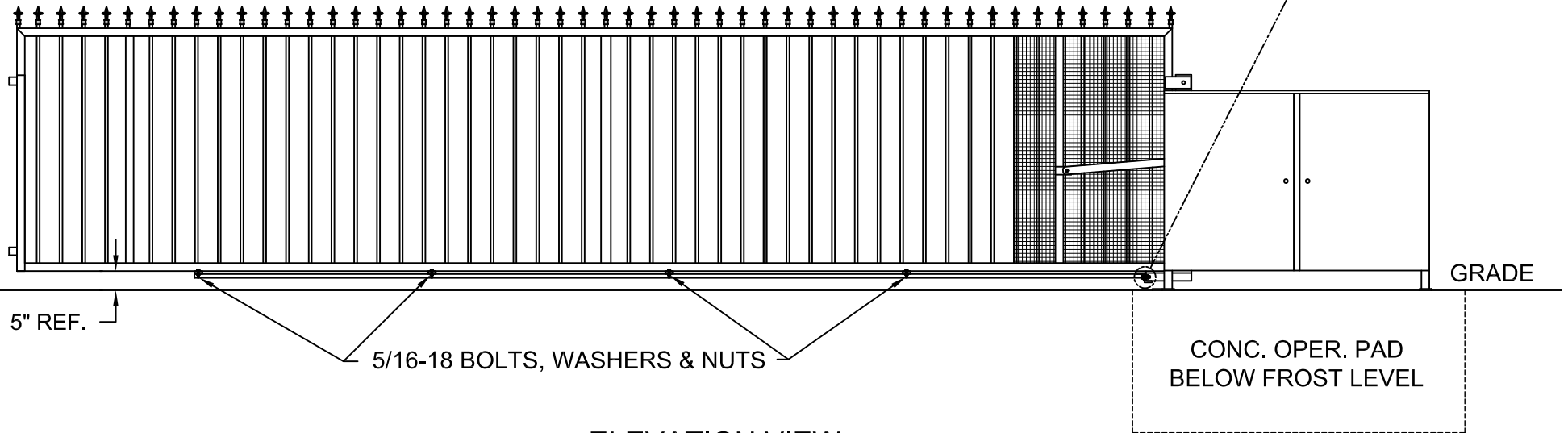


PLAN VIEW

WHEN DOING REPLACEMENTS: ADD 1/2" WASHERS (AS NECESSARY), TO ADJUST FROM SIDE TO SIDE.



1/2-13 BOLTS, WASHERS & NUTS



ELEVATION VIEW

Rev.:	Description:	Date:	Drn. By:	Ckd. By:
B	Updated drawing	01/24/13	SLD	KLL
A	Added detail of Windbracing connection	12/29/10	MKS	DMR

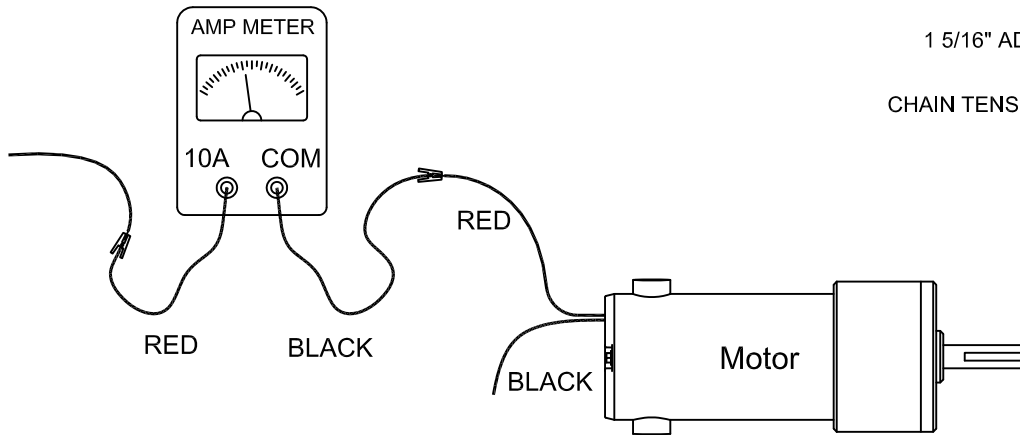
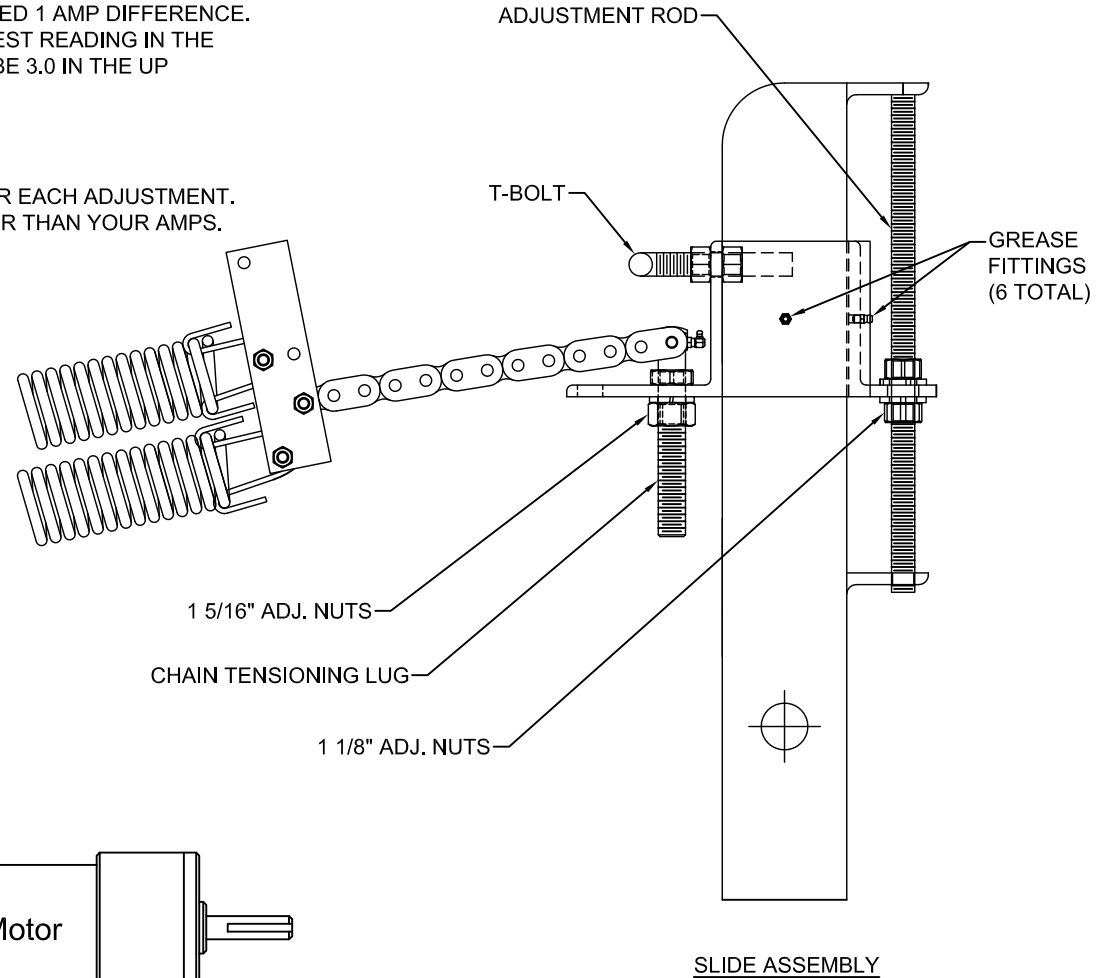
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 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES  
 ANGLES ± 1°  
 X/X ± 1/32, .XX ± .01, .XXX ± .005

Date: 12/03/08  
 Drn. By: MKS  
 Ckd By: DMR  
 Dwg.: 105-2  
 Title: Wind Bracing Assembly - Masted




**TESTING AMPERAGE:**

1. CONNECT AMP METER IN SERIES BY REMOVING THE WIRE NUT FROM THE RED MOTOR LEAD.
2. CYCLE GATE UP AND DOWN RECORDING THE HIGHEST AMPERAGE IN THE SPACE PROVIDED, AND ADJUST IF NECESSARY. HIGHEST UP & DOWN READING SHOULD NOT EXCEED 1 AMP DIFFERENCE. FOR EXAMPLE: IF YOUR HIGHEST READING IS 6.5 IN THE UP, AND THE HIGHEST READING IN THE DOWN WAS 6.0... THAT WOULD BE ACCEPTABLE. UN-ACCEPTABLE WOULD BE 3.0 IN THE UP AND 8.1 IN THE DOWN.
3. LOOSEN ADJ. 1 1/8" NUTS ON BOTH SIDES OF THE SLIDE ASSEMBLY ANGLE.
4. ONLY ADJUST 3 TO 4 TURNS (1/4") AT A TIME AND CHECK YOUR AMPS. AFTER EACH ADJUSTMENT. NOTE: YOUR AMPS. UP, OPENING, SHOULD BE AT LEAST 1/2 (.5) AMPS LOWER THAN YOUR AMPS. DOWN, CLOSING.
5. IF GATE OPENS SLOW, RAISE THE SLIDE ASSEMBLY. IF GATE WILL NOT CLOSE, LOWER THE SLIDE ASSEMBLY. IF GATE STALLS IN EITHER DIRECTION, YOU OVER-ADJUSTED. BACK OFF YOUR LAST ADJUSTMENT AND CHECK AMPS.
6. IF GATE IS SLOW TO CLOSE FROM THE OPEN POSITION, INCREASE LENGTH OF T-BOLT.



UP: \_\_\_\_\_ 10° \_\_\_\_\_ 55° \_\_\_\_\_ 85°

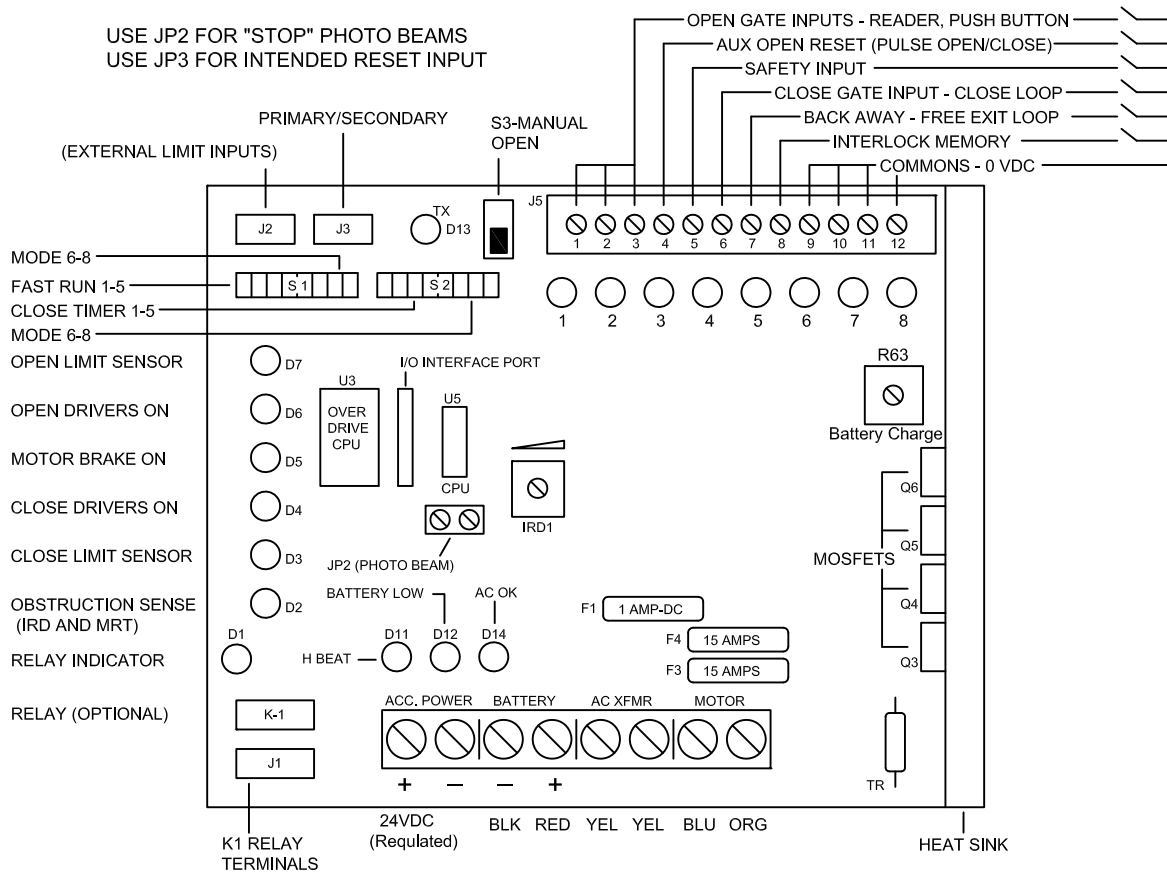
DOWN: \_\_\_\_\_ 10° \_\_\_\_\_ 55° \_\_\_\_\_ 85°

NOTICE					Date:	
THE INFORMATION CONTAINED ON THIS DOCUMENT IS CONFIDENTIAL. ANY DISSEMINATION, UNAPPROVED DISCLOSURE OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.					04/03/07	
					Drn. By:	MKS
					Ckd. By:	DMR
					Dwg.:	107
					Title:	Balancing Slide Assembly

DO NOT SCALE					
Rev.:	Description:	Date:	Drn. By:	Ckd. By:	
C	Black motor wire was blue and added thread details	06/18/14	MKS	DMR	
B	Revised motor and slide assembly to current style	04/07/09	MKS	DMR	
A	General Revision , new Title Block	04/07/09	MKS	DMR	

# CONTROL BOARD LAYOUT

READ SAFETY INSTRUCTIONS BEFORE WIRING



1-C, 2-NC, 3-NO, 4-24VDC+ (REGULATED)

ACCESSORY POWER IS 24VDC REGULATED RATED AT 500 ma. [ 1/2 AMP ]  
 { POWER AT ACCESSORY+ AND AT REALY PIN-4+ IS FUSED AT F1 WITH A 1 AMP FAST-BLO FUSE }

J5 #4 FOR USE WITH HARD WIRED LINE OF SIGHT DEVICES TO OPEN GATE AND RESET UNIT

D11 - HEART BEAT - SHOWS THAT PROCESSOR AND PROGRAM ROUTINE ARE RUNNING PROPERLY

D12 - BATTERY STATUS - SEE DIAGNOSTIC PROCEDURES

D14 - AC POWER INDICATOR - SHOWS THAT AC POWER IS PRESENT

S3 - MANUAL OPEN - TO ALLOW GATE TO BE OPENED OR CLOSED DURING SERVICE OF UNIT

F1 - 1 AMP FAST BLO FUSE (5mm x 20 mm). MAXIMUM CONTINUOUS DRAW IS 1/2 AMP (U.L. LISTED FUSE ONLY)

F3 - 15 AMP ATO TYPE FUSE FOR 24VAC INPUT POWER (U.L. LISTED FUSE ONLY)

F4 - 15 AMP ATO TYPE FUSE FOR 24VDC BATTERY INPUT POWER (U.L. LISTED FUSE ONLY)

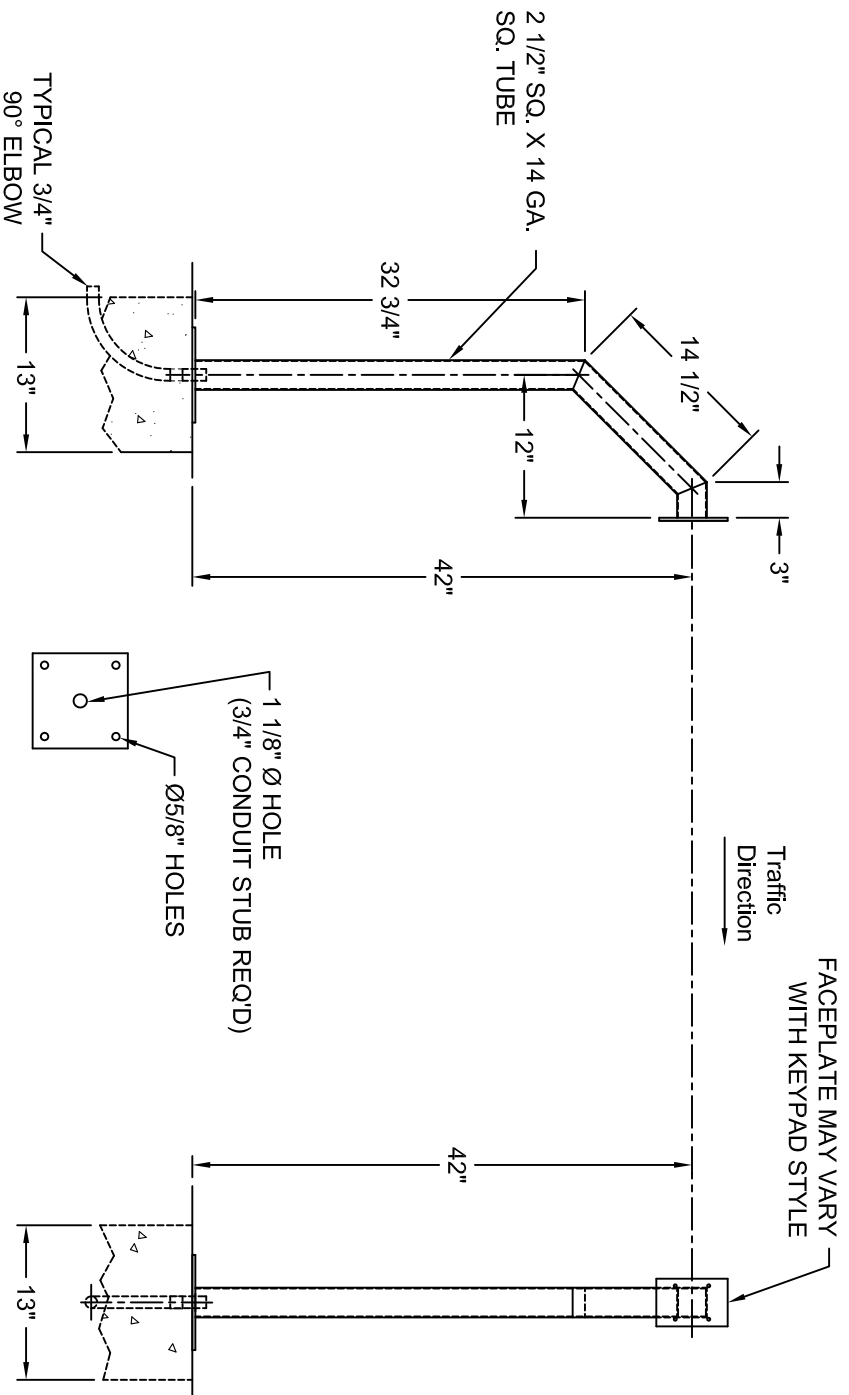
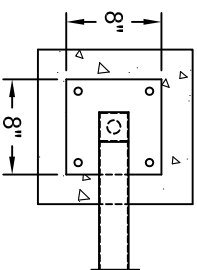
JP2 - INPUT FOR PHOT BEAM AS A SECONDARY ENTRAPMENT PROTECTION

**7306 Driver Rd, PO Box 50**  
**Berlin Heights, Ohio 44814**  
**Phone: 1 (800) 944-GATE**  
**(419) 588-2796**  
**Fax: (419) 588-3514**

Rev.:	Description:	Date:	Drn. By:	Ckd. By:	NOTICE	Date:
					THE INFORMATION CONTAINED ON THIS DOCUMENT IS CONFIDENTIAL. ANY DISSEMINATION, UNAPPROVED DISCLOSURE OR COPYING OF THIS INFORMATION IS STRICTLY PROHIBITED.	11/15/05
B	Primary/Secondary "J3" was labeled as Master/Slave	06/06/14	MKS	DMR	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES ANGLES ± 1° X/X ± 1/32, XX ± .01, XXX ± .005	8/23/04
A	General revisions, new Title Block	04/07/09	MKS	DMR		109
						<b>AG AutoGate</b> Gate Entry Systems Berlin Heights, Ohio FAX (419) 588-3514
						Title: DC Control Board Layout

### Bill Of Material

Item No.	Qty.	Description	Material
	50	1/2" SQ. X 14GA TUBING	A-0131
	1	STD. BASE PLATE	X-0101



**NOTE:**  
TYPICAL LAYOUT. CHECK THE MANUFACTURERS SPECIFICATIONS FOR THE ACTUAL DIMENSIONS.

**STD. 8" BASE PL. (X-0101)**

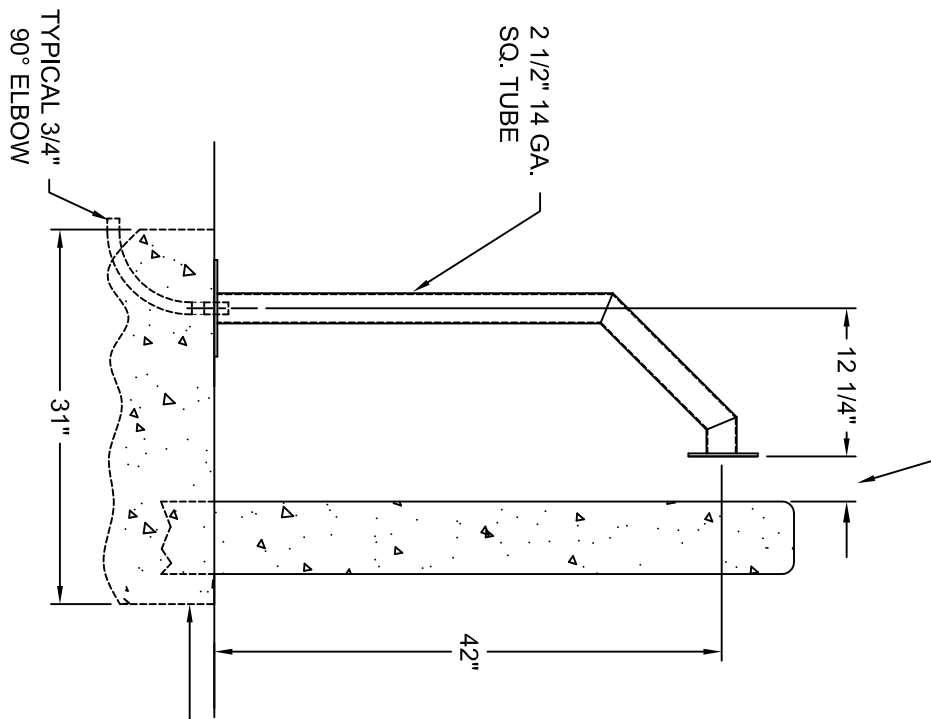
- NOTES:**
- \* 1/2" CONCRETE ANCHORS PROVIDED
  - \* POUR PADS BELOW LOCAL FROST LINE
  - \* POSITION BOLLARDS TO PROTECT KEYPAD

Rev.:	Description:	Date:	Drn. By:	Ckd. By:
B	ADDED "TYPICAL NOTE"	08/15/14	MKS	DMR
A	Added the foundation to the top view	01/03/11	MKS	DMR

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Date:	08/10/05	Drn. By:	MKS
Supersedes:	7/9/04	Dwg.:	111
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES XX # 1/32, XX # .01, .XXX # .005		Title: Gooseneck	



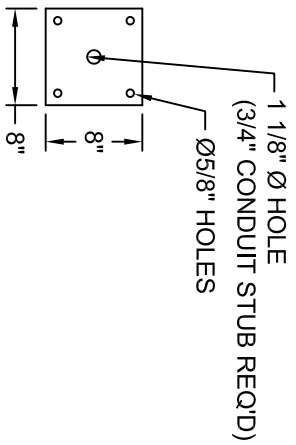
SPACING WILL VARY WITH KEYPAD DEPTH



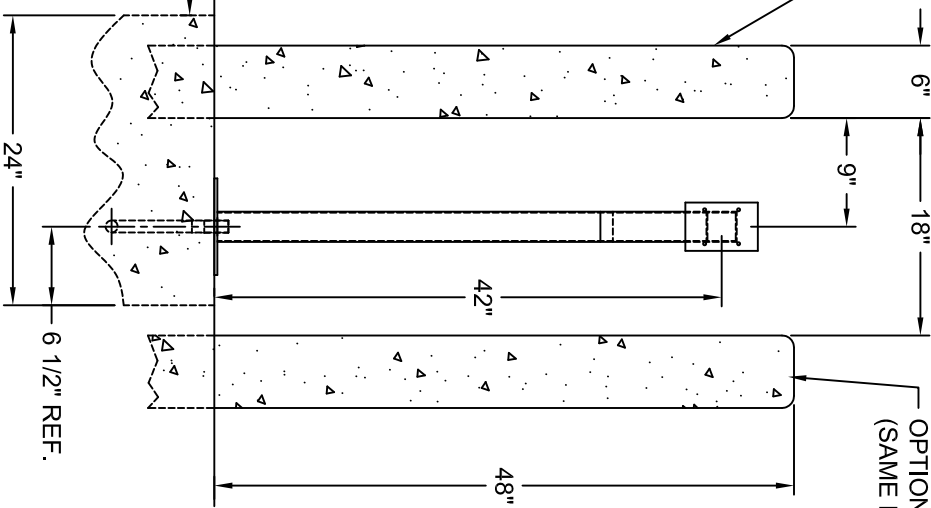
TYPICAL BOLLARD FILLED W/CONCRETE

TRAFFIC DIRECTION

PAD SIZE WILL VARY PER SITE



STD. 8" BASE PL. (4020-B)



OPTIONAL BOLLARD (SAME DIMENSIONS)

- NOTES:
- 1) 1/2" CONCRETE ANCHORS PROVIDED
  - 2) POUR PADS BELOW LOCAL FROST LINE
  - 3) POSITION BOLLARDS TO PROTECT KEYPAD
  - 4) TYP. LAYOUT - CHECK MANUFACTURER SPECIFICATIONS FOR ACTUAL DIMENSIONS.

Rev.:	Description:	Date:	Drn. By:	Ckd. By:
B	ADDED TYPICAL NOTE	09/15/14	KAY	MKS
A	Updated drawing	1/24/13	SLD	

DO NOT SCALE

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 XX ± 1/32, XX ± .01, XXX ± .005

Date:	12/07/05
Drn. By:	MKS
Supercdes:	8/10/05
Dwg.:	112
Title:	Gooseneck with Bollards

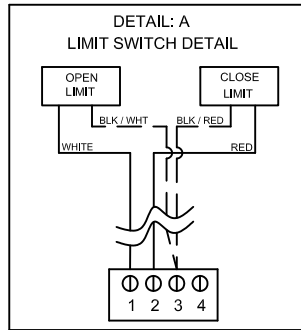


NOTE: ALL ACC. ARE  
OPTIONAL EQUIPMENT

TABLE "A"

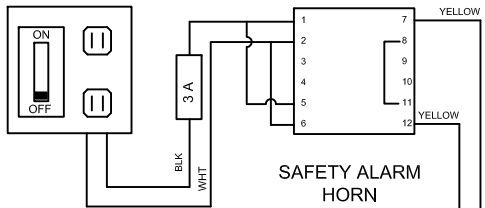
- 1, 2 & 3 - OPEN INPUTS
- 4 - AUXILIARY OPEN INPUT
- 5 - REVERSING/SAFETY INPUT

- 6 - CLOSE GATE INPUT (CLOSE LOOP)
- 7 - BACK AWAY - FREE EXIT LOOP
- 8 - SHADOW LOOP
- 9, 10, 11, & 12 - COMMON (0vdc)

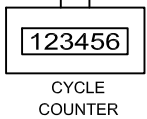


120V AC/15A  
SERVICE USE ONLY!

TRANSFORMER



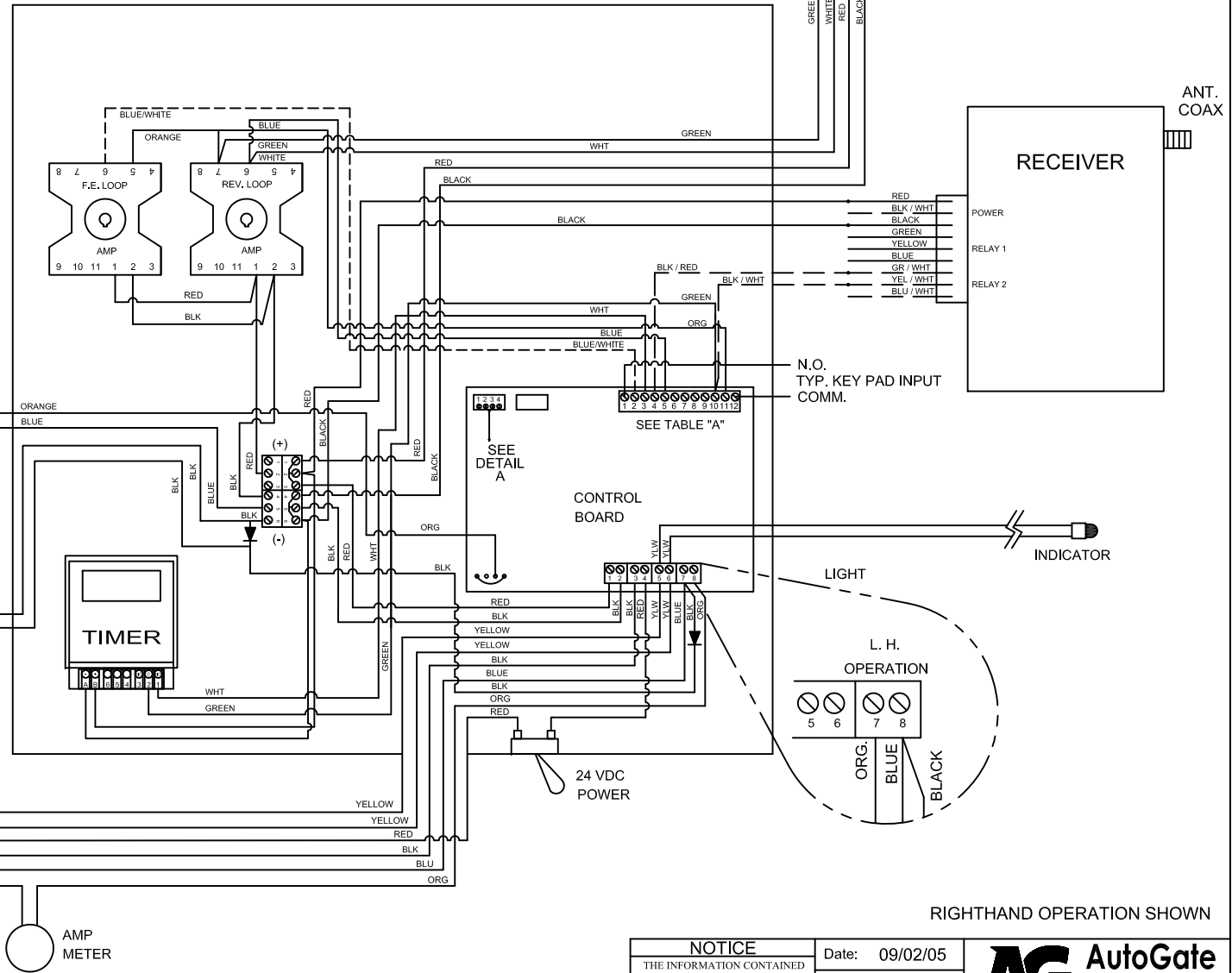
SAFETY ALARM  
HORN



TO  
BATTERIES



GEAR  
MOTOR



RIGHTHAND OPERATION SHOWN

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Date: 09/02/05

Drn. By: MKS

Ckd. By: DMR

Dwg.: 113

Title: 24V DC Control Board Wiring Diagram



Rev.:	Description:	Date:	Drn. By:	Ckd. By:
A	REVISED TO MATCH CURRENT ASSEMBLY	06/02/14	EGS	MKS

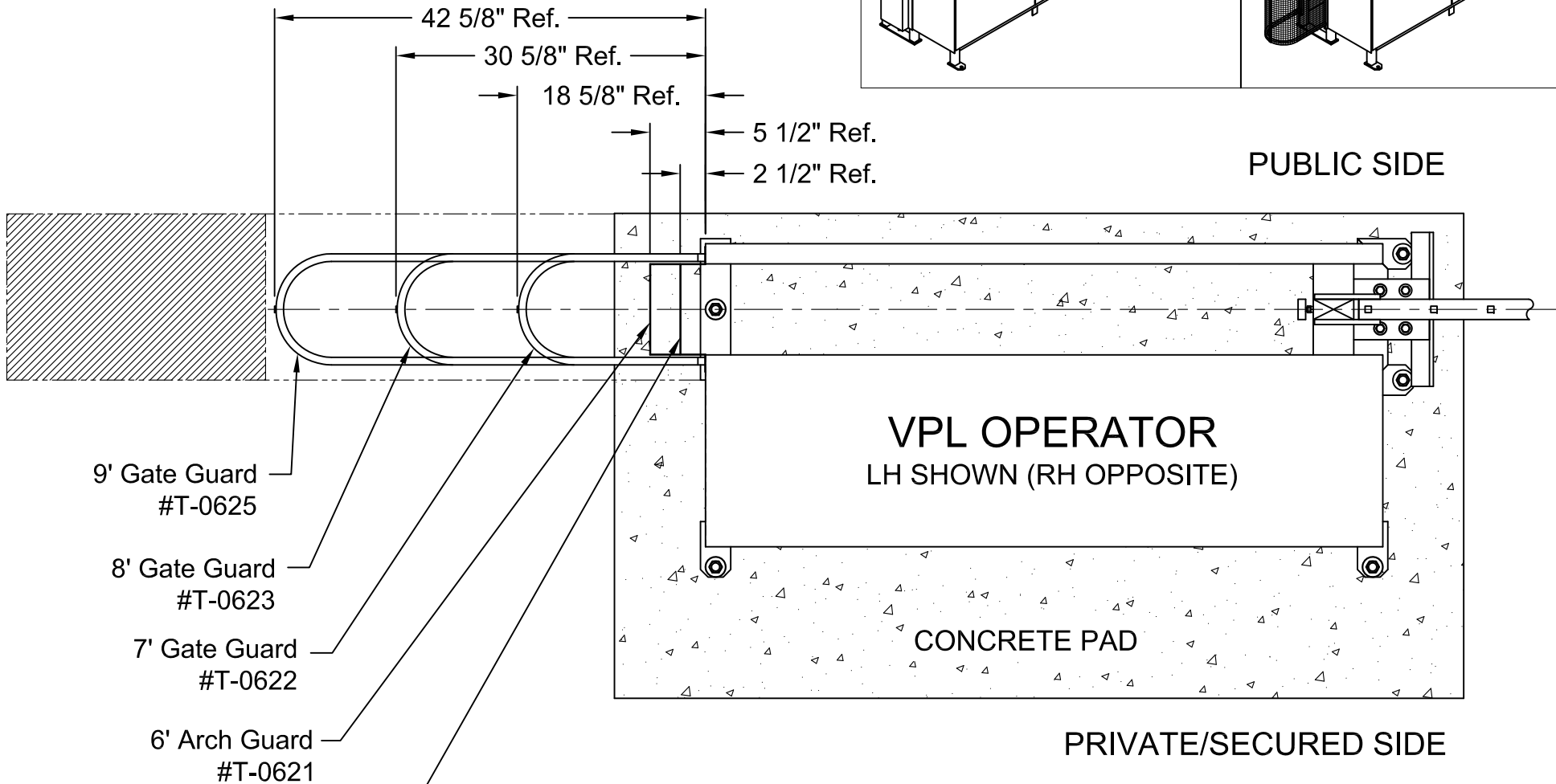
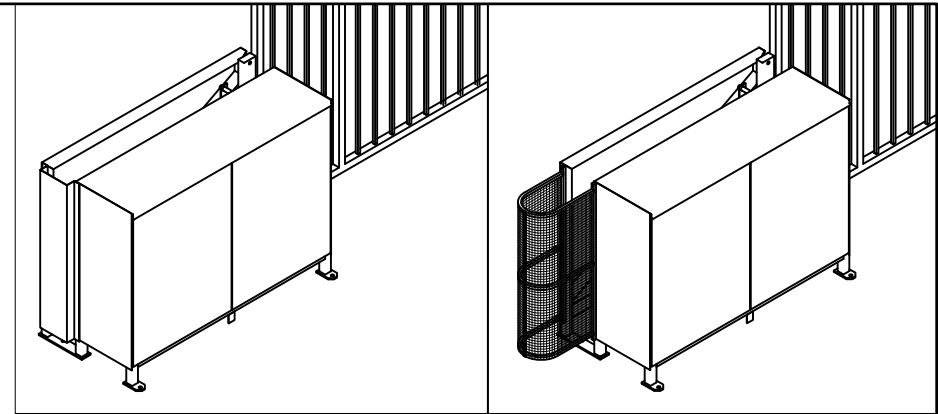
DO NOT SCALE

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES  
ANGLES ± 1°  
X/X ± 1/32, .XX ± .01, .XXX ± .005




**NOTES:**

- 1) Gates over 9' tall will require local fencing (See shaded area).
- 2) Scale is in inches
- 3) Reference dwg. #'s 100, 101, 102, 103



- 9' Gate Guard #T-0625
- 8' Gate Guard #T-0623
- 7' Gate Guard #T-0622
- 6' Arch Guard #T-0621
- Std. Gate Guard (5' & 6') #T-0620

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	Dwn. By: MKS	
	Ckd. By: DMR	Dwg.: 118
	Title: Standard Gate Guards and Dimensions	

DO NOT SCALE					
Rev.:	Description:	Date:	Dwn. By:	Ckd. By:	
A	ADDED 9' GATE GUARD AND ADDITIONAL NOTES	08/21/13	MKS	B.F.	