



# Quote

<b>DATE</b>	<b>QUOTE #</b>
3/1/2021	2021-041

<b>ISSUED TO</b>
SCOTT HOYNE
E-MAIL: HOYNES50@GMAIL.COM
TEL: 847-404-1316

<b>SHIP TO</b>

<b>REP</b>	<b>PROJECT NAME</b>
SFS	COVERED BRIDGE - LONG GROVE, IL

LINE	ITEM	DESCRIPTION	QTY	UNIT PRICE	TOTAL PRICE
<b><u>OVER-HEIGHT VEHICLE DETECTION SYSTEM (OHVDS)</u></b>					
1	SE-R/3310	SINGLE-EYE SINGLE DIRECTION DETECTION SYSTEM, SOURCE AND DETECTOR, VISIBLE RED, 120VAC	1	\$5,427.00	\$5,427.00
2	PMB-500	POLE MOUNT BRACKET	2	\$124.00	\$248.00
<b><u>AUDIBLE WARNING DEVICE</u></b>					
3	3601	VIBRATING HORN, 120VAC	1	\$332.00	\$332.00
<b><u>VISUAL WARNING DEVICE</u></b>					
4	CUSTOM WARNING SIGNS	CUSTOM WARNING SIGN CONSISTING OF THE FOLLOWING: (1) STATIC SIGN, "OVERHEIGHT WHEN FLASHING" (1) FLASHING SIGN, "LOW BRIDGE", 8 LED AMBER, STROBE/FLASH, 120VAC **NCNR (NON-CANCELABLE, NON-RETURNABLE)**	1	\$1,500.00	\$1,500.00

REFER TO STANDARD TERMS AND CONDITIONS. POWER/COMMUNICATION CABLES ARE THE RESPONSIBILITY OF THE CUSTOMER (AVAILABLE AT ADDITIONAL COST). **SHIPPING CHARGES ARE FOB NEWPORT NEWS, VA.** RISK OR LOSS OF GOODS IN TRANSIT SHALL BE WITH THE BUYER. SHIPPING EXCLUDED UNLESS OTHERWISE INDICATED. EXACT SHIPPING CHARGES WILL BE INVOICED AT TIME OF SHIPMENT. CELLULAR DATA SERVICE IS THE RESPONSIBILITY OF THE END-USER. ALL PRICES ARE IN US DOLLARS (USD) UNLESS STATED OTHERWISE.

Sub Total (USD)	\$7,507.00
Sales Tax (USD)	\$0.00
Est. Shipping (USD)	(EXCLUDED)
<b>Total (USD)</b>	<b>\$7,507.00</b>

TRIGG INDUSTRIES, LLC  
716 BLUECRAB ROAD, SUITE B  
NEWPORT NEWS, VA 23606-2678, USA

TEL: 757-223-7522  
FAX: 757-223-7317

SALES@TRIGGINDUSTRIES.COM  
WWW.TRIGGINDUSTRIES.COM

## STANDARD TERMS AND CONDITIONS

1. Definitions.
  - A. "Seller" refers to Trigg Industries, LLC.
  - B. "Buyer" refers to a purchaser of products or services from Trigg Industries, LLC.
  - C. "Domestic Purchase Orders" refers to an order from a Buyer located in the United States requesting products or Services from the Seller to be delivered to an address located in the United States.
2. Purchase Orders. All Domestic Purchase Orders require a signed and printed signature, customer title, and includes billing/shipping address.
3. Payment Terms.
  - A. All Domestic Purchase Orders require 25% prepayment prior to manufacturing start-up.
  - B. Non-Cancellable / Non-Returnable (NCNR) Products require 100% prepayment prior to manufacturing start-up.
  - C. Balance is NET 30 Days from date on invoice with approved credit for Domestic Purchase Orders only. Credit application sent upon request.
  - D. Seller may change these credit terms if customer's financial condition changes. If a customer does not have credit satisfactory to Trigg Industries, payment in full is required prior to equipment being shipped.
4. Payment Methods. Seller accepts the following payment methods:
  - A. Credit Card – VISA, MasterCard, and American Express accepted with a valid billing address located in the United States. Refer to Section 5A for applicable fees.
  - B. Check – Accepted with a billing address in the United States.
  - C. Wire Transfer – Refer to Section 5B for applicable fees.
5. Fees.
  - A. Credit Card Fee – 4% Credit Card Fee will be added to invoice for each credit card transaction
  - B. Wire Transfer Fee - \$50.00 Wire Transfer Fee will be added to the invoice for each wire transfer
  - C. Late Payment Fee – 1.5% of invoice per month (18% annually)
6. Quotations.
  - A. Unless otherwise stated, prices issued in quotations are in United States Dollars (USD).
  - B. Unless otherwise stated, quotes are valid for 6 months from date of issue.
7. Delivery and Risk of Loss.
  - A. Shipping charges are FOB Newport News, VA and added to invoice unless charges are included with quote.
  - B. Risk or loss of goods in transit shall be with the Buyer.
  - C. Exact shipping charges will be invoices at time of shipment.

Buyer's Initials

8. Returned Merchandise. Returned merchandise without prior RMA Number (Return Merchandise Authorization), or COD's will not be accepted. Contact Seller to obtain RMA Number.
9. Lead Time. Standard equipment lead time is 4-6 weeks from receipt of Purchase Order, 25% Prepayment, and credit approval (if applicable), for manufacturing process to begin. Actual lead times may vary based on status of existing in-house orders, customization of orders, or volume.
10. Submittals. At the request of the customer, Trigg Industries generates submittals. When Submittals are approved by the Customer, Trigg Industries invoices the Customer for the 25% Purchase Order prepayment.
11. Seller's Rights Reserved and Arbitration.
  - A. Seller reserves the right to set the terms of sale
  - B. Any controversy between the Buyer and Seller shall be controlled by the laws of the State of Virginia, and the exclusive forum for filing of suit shall be in the Circuit Court for the City of Newport News, Virginia.
  - C. Any Purchase Order submitted by Buyer to Seller shall be deemed an offer to purchase, which can be accepted by Seller only by means of a written Acknowledgment. Any term and conditions in Buyer's Purchase Order that are in conflict with, differ from, or additions to, this Quotation or Seller's Acknowledgment shall be of no force and effect, shall not become part of any contract between Buyer and Seller and shall be deemed objected to by Seller without need of further notice of objection. By submitting a Purchase Order to Seller, Buyer agrees that the terms and conditions in Seller's Acknowledgment and this Quotation shall prevail over the terms and conditions in Buyer's Purchase Order. In the event of any discrepancy between Seller's Acknowledgment and this Quotation, Seller's Acknowledgment shall prevail.
12. Non-Cancellable / Non-Returnable (NCNR) Products:
  - A. Buyer hereby acknowledges that all orders for special, custom, value-added and other non-standard products ("NCNR Products") placed with Trigg Industries, LLC ("Seller") are non-cancellable and non-returnable. No return of NCNR Product(s) will be accepted by Seller unless defective and only with a returned material authorization number ("RMA Number") which shall be issued at the Seller's sole discretion. Seller will identify NCNR Products using "NCNR - NON-CANCELLABLE, NON-RETURNABLE" on Quote and Order Acknowledgement forms provided to Buyer.
  - B. Seller shall not be liable for failure to fulfill the purchase orders listed below or for delays in delivery due to causes beyond its reasonable control, including but not limited to acts of God, acts or omissions of the other party, acts or omissions of civil or military authority, Government party, acts or omissions of civil or military authority, Government priorities, material shortages, fire, strikes, floods, riots, war, acts of terrorism, pandemics, and delays in delivery or transportation. The time for performance of any such obligation shall be extended for the time period lost by reason of the delay.
  - C. Seller makes no warranty, express or implied with respect to NCNR Product(s) IN PARTICULAR, SELLER MAKES NO WARRANTY RESPECTING THE MERCHANTABILITY OF THE NCNR PRODUCTS OR THEIR SUITABILITY OR FITNESS FOR ANY PARTICULAR USE OR PURPOSE OR RESPECTING INFRINGEMENT. However, Seller will transfer to Buyer whatever transferable warranties and indemnities Seller receives from the manufacturer of the NCNR Products.
  - D. BUYER SHALL NOT IN ANY EVENT BE ENTITLED TO, AND SELLER SHALL NOT BE LIABLE FOR DAMAGES, WHETHER INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL OF ANY NATURE INCLUDING, WITHOUT BEING LIMITED TO LOSS OF PROFIT, PROMOTIONAL OR MANUFACTURING EXPENSES, OVERHEAD, INJURY TO REPUTATION OR LOSS OF CUSTOMERS. BUYER'S RECOVERY FROM SELLER FOR ANY CLAIM SHALL NOT EXCEED BUYER'S PURCHASE PRICE FOR THE PRODUCTS IRRESPECTIVE OF THE NATURE OF THE CLAIM, WHETHER IN CONTRACT, TORT, WARRANTY OR OTHERWISE.
  - E. The parties agree that the conditions of sale of the NCNR Product(s) hereunder shall prevail, notwithstanding contrary or additional terms and conditions in any purchase order, acknowledgment, confirmation or any other form or document issued by either party effecting the purchase and/or sale of the NCNR Product(s).

---

Buyer's Initials



- 13. **Warranty and Support.** Seller reserves the right to suspend warranty coverage and technical support if all invoices are not paid in full. Warranty coverage and technical support will resume once all of Buyer's invoices are paid in full.
- 14. **Hold Backs.** Seller does not recognize any "hold backs", milestone payments, percentage payments, or retainage a Buyer is obligated to by other stakeholders. All invoices must be paid in full as defined in Section 3.

Initial each page and complete sections below to accept the Terms and Conditions as outlined above:

_____	_____	_____
Company Name	Authorized Signature	Date
_____	_____	
Print Name	Title	
_____	_____	_____
Trigg Industries Representative Signature	Title	Date

## SPECIFICATIONS

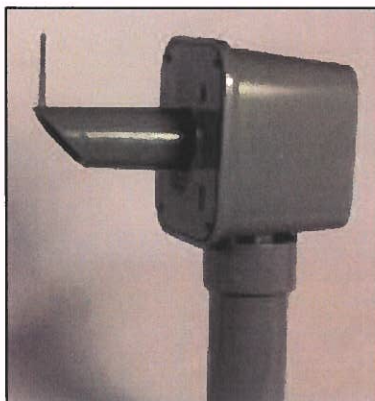
### MODEL # SE-R/3310

SINGLE EYE VISIBLE RED

OVER-HEIGHT VEHICLE DETECTION SYSTEM



**SOURCE**



**DETECTOR**

MODEL	SE-R/3310	SE-R/3310 -F	SE-R/3310 -230	SE-R/3310 -F-230	SE-R/3310 -24	SE-R/3310 -F-24
OPERATING VOLTAGE	120 VAC, 50/60HZ		240 VAC, 50/60HZ		+24 VDC	
CURRENT - SOURCE	0.120A	0.120A	0.060A	0.060A	0.290A	0.290A
CURRENT - DETECTOR	0.215A	0.246A	0.108A	0.123A	0.390A	0.545A
ALARM OUTPUT	Form C, dry relay contact closure, contacts rated 240 VAC 10A, protected by 8A circuit breaker.					
ALARM TIME	Adjustable by customer from 1 to 30 seconds. Custom alarm times available.					
FAULT OPTION	Fault reporting relay contact opening upon loss of power, source/detector failure or if beam is blocked for approximately 13 seconds.					
FAULT OUTPUT		X		X		X
ELECTRONICS	Sensors are NEMA 6P enclosure rated. Electronic printed circuits for years of reliable operation.					
EFFECTS OF AMBIENT LIGHT	Sunlight immunity of 10,000 foot-candles.					
MINIMUM RANGE	6 feet (2 m).					
MAXIMUM RANGE	800 feet (244 m). Suggested maximum range 200 feet (61 m) to allow for bad weather and lens contamination.					
ALIGNMENT	Two LEDs and meter (GO-NOGO functions) provided for alignment. No special tools required.					

SPECIFICATIONS (CONT'D):

MODEL	SE-R/3310	SE-R/3310 -F	SE-R/3310 -230	SE-R/3310 -F-230	SE-R/3310 -24	SE-R/3310 -F-24
<b>REACTION SPEED</b>	1 to 75 MPH (1 to 121 km/h) for a 2.5 inch (6.25 cm) diameter object 1 inch (2.5 cm) above the detection height. Custom speed/size available.					
<b>COUNTER</b>	Records the number of activations.					
<b>TEMPERATURE RANGE</b>	-40° to +135° F (-40° to +57° C).					
<b>ENVIRONMENTAL CONTROL</b>	Internal thermostat controls air flow which reduces moisture and maintains internal temperature during cold weather.					
<b>HOUSINGS</b>	External housing is heavy ALMAG casting and sheet aluminum (not less than 1/8 inch or .318 cm thickness) for rugged durability and extended life. Cabinet design minimizes effects of vandalism and provides rigid mounting. Meets NEMA 3R intent.					
<b>CONNECTORS</b>	Source Cabinet: One 3/4" NPT hole accepts cord grip or conduit fitting. Detector Cabinet: One 3/4" NPT hole accepts cord grip or conduit fitting.					
<b>MOUNTING</b>	Pole-mountable using Model # PMB-500 bracket (available separately). Wall-mountable using Model # FSB-500 bracket (available separately). Pole-top mountable when using pole cap on Model # 3701 or 3702 poles. Optional Three-Axis Mount (Model # TGZ-M017) recommended in applications with cross slope or complex road profiles.					
<b>DIMENSIONS</b>	Source Cabinet: 15½ x 10 x 8¾ inches (39 x 25 x 22 cm). Detector Cabinet: 15½ x 10 x 8¾ inches (39 x 25 x 22 cm).					
<b>SHIPPING WEIGHT</b>	40 lbs (18 kg).					
<b>WARRANTY</b>	Standard 1-Year Full Warranty. Extended Warranty options available.					

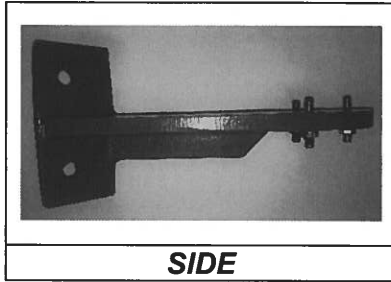
OPTIONAL ACCESSORIES:

MODEL #	DESCRIPTION
PMB-500	Pole Mount Bracket
TGZ-M017	Three-Axis Mount
FSB-500	Flat Surface Bracket
USC-1000	Universal System Controller - Provides Logging and Remote Notifications
TG-CAM-1010	Network Camera - Provides Snapshot Images and Video Recordings

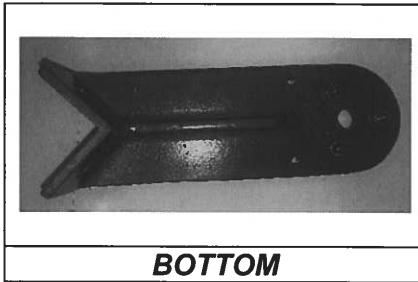
Additional accessories and warning devices are available from Trigg Industries LLC.  
Contact [sales@triggindustries.com](mailto:sales@triggindustries.com) for details.

**SPECIFICATIONS**

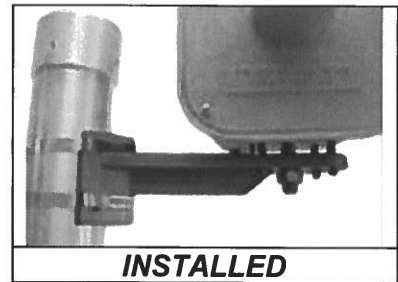
**MODEL # PMB-500**  
**POLE MOUNT BRACKET**



**SIDE**



**BOTTOM**



**INSTALLED**

<b>ADJUSTMENT</b>	Pan 270°, Pitch ± 15°, Roll ± 25°
<b>DIMENSIONS</b>	5 H X 3.5 W X 11 L inch (13 H X 9 W X 28 L cm)
<b>CONSTRUCTION</b>	Heavy ALMAG casting
<b>FINISH</b>	Light gray enamel
<b>ATTACHMENT</b>	Stainless steel bands or customer provided bolts. Adapts to any pole ≥ 3 inches diameter.
<b>SHIPPING WEIGHT</b>	2.5 lbs (1.2 kg) each. Two required per system.



Low clearance sign with height and arrows



Over height when flashing sign



# LED SignLITE Signs

## Sign LITE Warning System

*Easy to fit to existing sign, no AC required,  
\$ 0.00 cost to operate.*

### Description

Rigid aluminum structure with reinforced steel corners mounts to standard traffic sign with either 3M VHB tape or self tapping screws. LED warning system is embedded in weather tight epoxy. Hi visibility Luxeon Rebel LED's feature lens to greatly increase viewing distance. NEMA Enclosure to house Battery, Charge & Flash Control. Solar Panel and Pole Mount Hardware . Solar power allows installation where no power line is available.



### **Luxeon Rebel LED's**

8 x 110 Lumen Luxeon Rebel Amber LED's  
Total Luminous Flux = 880 lumen.  
Viewing Angle 30 degrees  
Luminous Intensity @ 4 feet = 110 Fc.  
Meets SAE Standard J595.  
*Increased visibility at greater distance.*

### **Most Common Sign Types :**

- W11-2, Pedestrian Crossing
- Reduce Speed Ahead
- W3-3, Signal Ahead
- W12-2, Overheight X'X''

### **ELECTRICAL**

Enclosure with Flanges for pole mounting.  
Includes Strobe2 Power Supply.  
7 Selectable Flash Patterns.  
(Flash Rate 55 fpm. Single Pulse DC standard, AC available).  
20 Watt Solar Panel .  
12 Amp Charge Controller.  
15 Ahr Rechargeable Battery.

### **PHYSICAL**

Sign - 3M Diamond Grade Reflective Sheet (FYG or YEL)  
on Aluminum 0.08 Type 5052.  
Light Channel - Extruded Aluminum 6105-T5.  
Steel Reinforced corners.  
3M VHB (Very High Bond) Tape.  
(8) 6-32 x 3/8" Self Tap S/S Mounting Screws.  
Light Channel Color – Black.  
LED's embedded in UV resistant Clear Epoxy.>200 deg.F.  
Weather tight to IP68.

30 in. Sign , Weight 8 lbs.  
Dimensions : 30" x 30" x 1/2"D.  
36 in. Sign , Weight 10 lbs.  
Frame Dimensions : 36" x 36" x 1/2"D.  
3 Year warranty (SignLITE), 1 Year (Battery).



# LED SignLITE Signs

## SOLAR 24 / 7 PACKAGE

Allows round the clock operation for 24 hrs / 7 day .

## SOLAR TIME CLOCK PACKAGE

Turns sign on based on Time Clock program hours.

## SOLAR PUSHBUTTON or SmartWALK SENSOR INPUT PACKAGE

Turns sign on for user selectable period when input is sensed from either Pedestrian pushbutton, detector or other input.

*(PB or Sensor not included)*

## SYNC OPTION

Allows two signs (usually on opposite sides of street) to turn on together upon one being activated.

## AC POWER OPTION

AC/DC power supply provided for AC line operation.

\* Post or Pole not included.



Solar Panel - Sunwize or equal OEM Series.

Solar Panel Side of pole Mount.

Control Housing / Cabinet.

Charge Controller - Morningstar

Battery - Universal Battery or Deka

Timer Relay - Fuji or Seco

Flasher / Strobe - M-SYSTEMS INC.

Power Supply - Meanwell.



Type S1-1



SENSOR1  
SENSOR1

Long Grove Covered Bridge

Schaeffer Rd

WARN1

WARN2

SENSOR2

SENSOR2



TRANSPORTATION SYSTEMS INC.

### "SAFETY PASS"

## OVERHEIGHT VEHICLE DETECTION SYSTEM



Illinois Department of Transportation

Division of Engineering and Construction  
201 West Lake Street, Springfield, Illinois 62761-1000

- APPROVED
- APPROVED AS NOTED
- DISAPPROVED
- INFORMATION ONLY

Review of this document has been made only for conformance with the design concept of the project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein nor for coordination and full compliance with contract requirements.

Bureau of Local Roads and Streets

By: hermandg

Date: 02/03/2016

**LCDOT - TRAFFIC**  
 APPROVED  
 APPROVED AS CORRECTED

JAN 22 2016

- NOT APPROVED
- PLEASE RESUBMIT

Reviewed By: *MJM*

DEERFIELD RD - ROBERT YORK TO US 41  
 IDOT CONTRACT #63882  
 HOME TOWNE JOB #152055  
 ITEM #XX009046  
 (LCDOT)

18 Blevins Drive • New Castle, DE • 19720  
 PH (302) 328-3220 • Fax (302) 328-4051  
 www.asti-trans.com

248

## TABLE OF CONTENTS

1. OVERVIEW	PAGE 1
2. PARTS DIAGRAM	PAGE 2
3. BASIC OPERATION	PAGE 3
4. SETUP PROCEDURES	PAGE 4
5. SENSOR MOUNTING DETAIL	PAGE 6
6. ALIGNMENT	PAGE 7
7. TROUBLESHOOTING	PAGE 8
8. MAINTENANCE	PAGE 9
9. TIMER AND ADJUSTMENT	PAGE 10
10. RECEIVER WIRING	PAGE 11
11. TRANSMITTER WIRING	PAGE 12
12. WARRANTY	PAGE 13

DEERFIELD RD - ROBERT YORK TO US 41  
IDOT CONTRACT #63882  
HOME TOWNE JOB #152055  
ITEM #XX009046  
(LCDOT)

249

## OVERVIEW

The **SAFETY PASS** is an easy to use, yet sophisticated, warning device that was designed to be used in both urban and rural applications as well as turnpikes and limited access highways. The purpose of the **SAFETY PASS** is to alert drivers if their vehicles are overheight for an upcoming bridge, overpass, overhead walkway, etc.

To accomplish this, the **SAFETY PASS** projects a narrow, single frequency, infrared beam from the transmitter to the receiver, placed directly across the lane or lanes of traffic to be monitored. This typically would be up to 200 feet.

In general use, once it is aligned and activated, the receiver will create a contact closure turning on the users device only when something (an over-height vehicle) interrupts the beam from the transmitter to the receiver. As a fail safe, the instrument has been designed so that the receiver will create a contact closure constantly, unless it receives the infrared signal from the trans-mitter. As a result, if the unit should get hit, vandalized, misaligned, etc. the users device, (sign, message board, flashing light, etc.) will remain active.

The **SAFETY PASS** has been built to withstand the harsh conditions of the roadside environment. The sensor's electronics are modular in design with each water tight, user replaceable module housed under ABS Plastic shields. All user replaceable parts can be removed and replaced, in the field in less than 15 minutes.

- APPROVED  
 APPROVED AS NOTED  
 DISAPPROVED  
 INFORMATION ONLY

Review of this document has been made only for conformance with the design concept of the project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein nor for coordination and full compliance with contract requirements.

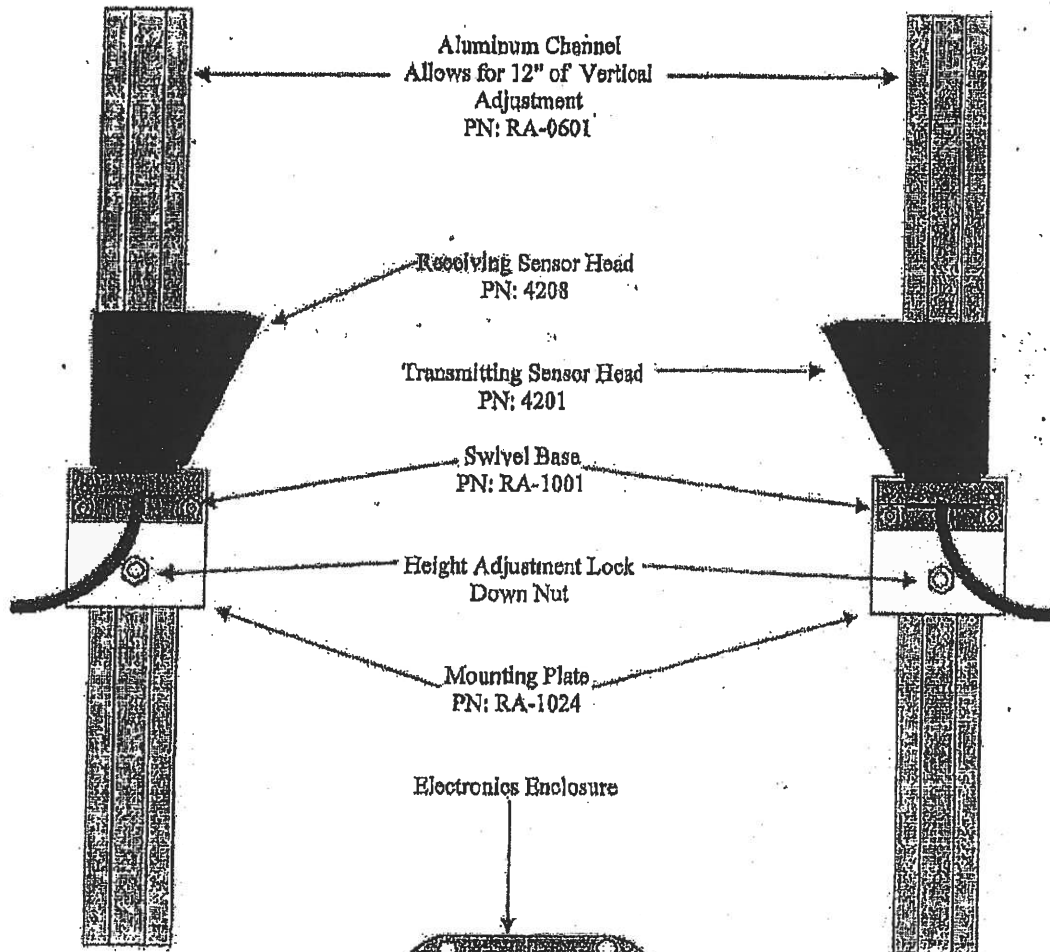
Bureau of Local Roads and Streets

By: hermandg

Date: 02/03/2016

DEERFIELD RD - ROBERT YORK TO US 41  
IDOT CONTRACT #63882  
HOME TOWNE JOB #152055  
ITEM #XX009046  
(LCDOT)

# PARTS DIAGRAM



Illinois Department of Transportation

Division of Maintenance and Construction Planning and Design  
101 North Dearborn Street, Springfield, Illinois 62760-1000

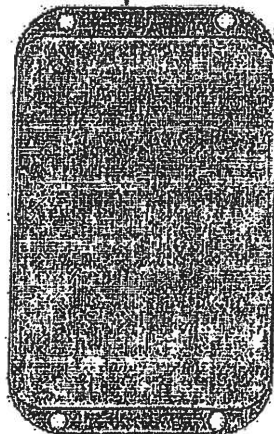
- APPROVED
- APPROVED AS NOTED
- DISAPPROVED
- INFORMATION ONLY

Review of this document has been made only for conformance with the design concept of the project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein nor for coordination and full compliance with contract requirements.

Bureau of Local Roads and Streets

By: hermandg

Date: 02/03/2016



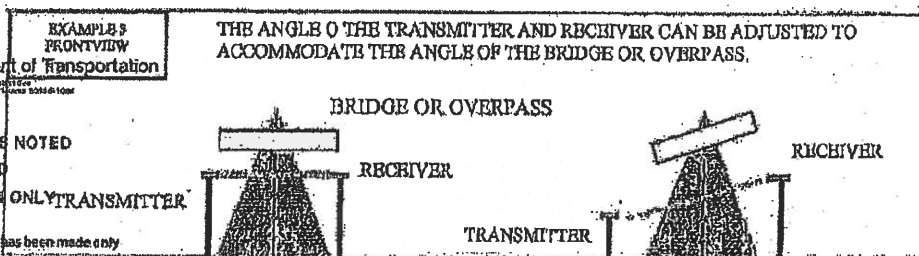
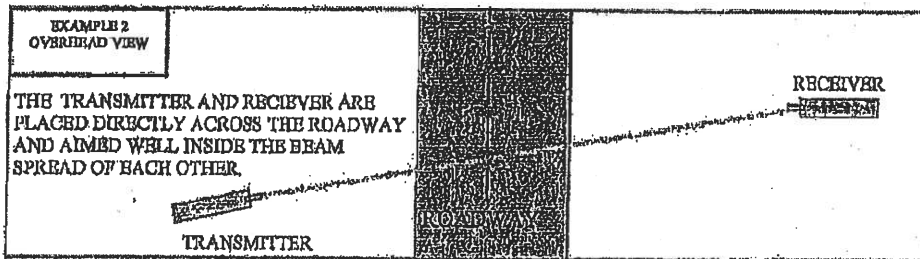
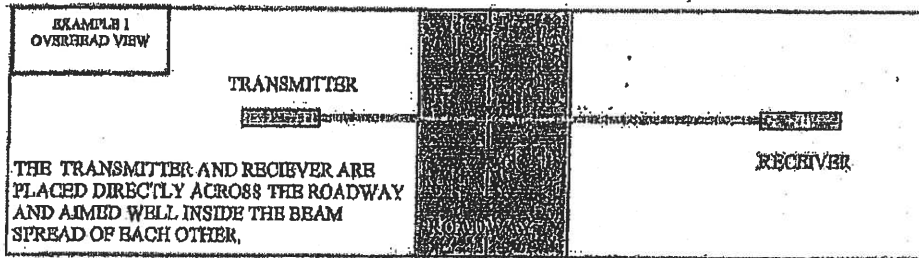
DEERFIELD RD - ROBERT YORK TO US 41  
IDOT CONTRACT #63882  
HOME TOWNE JOB #152055  
ITEM #XX009046  
(LCDOT)

251

## BASIC OPERATION

The transmitter projects a conical shaped beam that spreads as it travels. Therefore, at 100' you would have a beam spread approximately 4' wide. The receiver has a similar "viewing area". This means that at 100', it can receive an adequate signal from a transmitter placed anywhere within a 4' area, as long as the transmitter and receiver are aimed at each other.

The transmitter and receiver have 1" x 1 1/2" openings for the infrared light. This means that even with the flexibility in the placement of the units, the triggering object must be larger than 1" x 1 1/2". Therefore objects less than 1" x 1 1/2" (such as



Illinois Department of Transportation  
Division of Highway Safety and Construction  
201 East Center Street, Springfield, Illinois 62701-1001

- APPROVED
  - APPROVED AS NOTED
  - DISAPPROVED
  - INFORMATION ONLY
- TRANSMITTER

Review of this document has been made only for conformance with the specifications for the project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein nor for coordination and full compliance with contract requirements.

Bureau of Local Roads and Streets

By: hermandg.

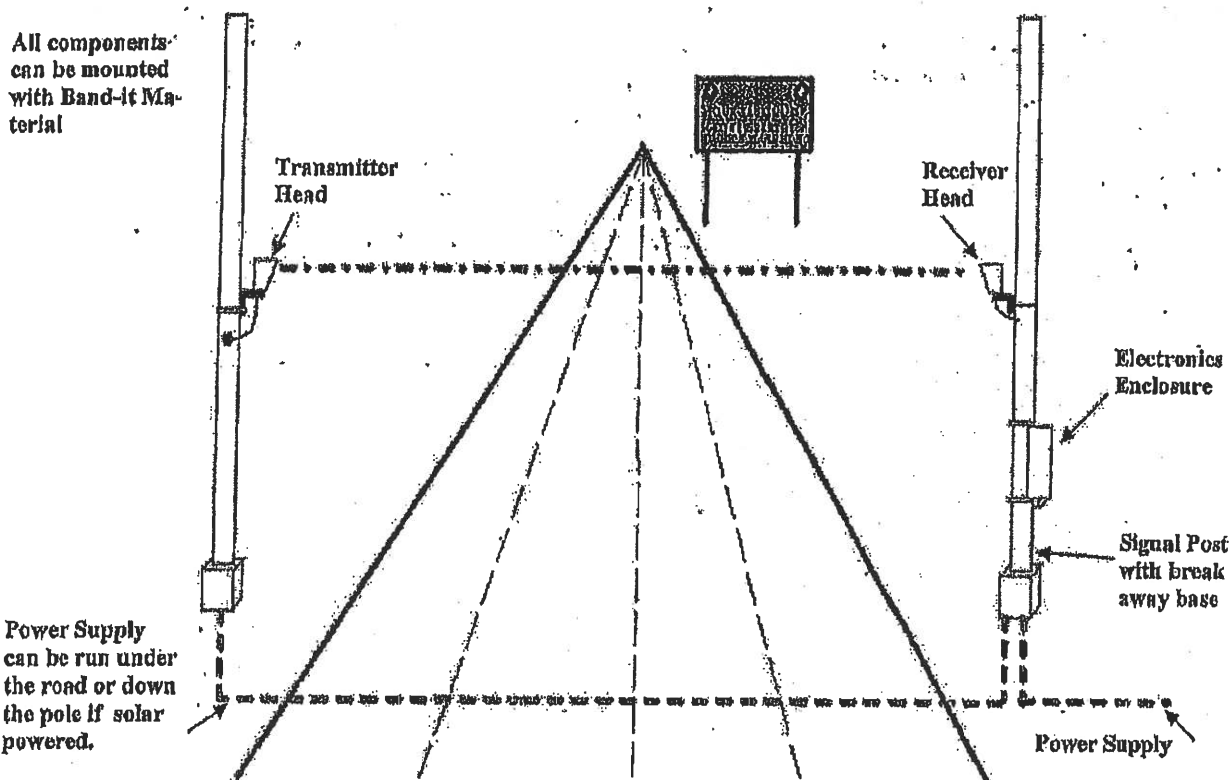
Date: 02/03/2016

DEERFIELD RD - ROBERT YORK TO US 41  
 IDOT CONTRACT #63882  
 HOME TOWNE JOB #152055  
 ITEM #XX009046  
 (LCDOT)

252



# SETUP PROCEDURES



THE SAFETY PASS IS INTENDED TO BE SET UP WITH THE RECEIVER CLOSEST TO THE SHOULDER SIDE OF THE ROAD WHERE THE WARNING DEVICE (SIGN, FLASHING LIGHT MESSAGE BOARD, ETC.) IS LOCATED.  
(SEE EXAMPLE ABOVE)

Illinois Department of Transportation  
 APPROVED AS NOTED  
 DISAPPROVED  
 INFORMATION ONLY

Review of this document has been made only for conformance with the design concept of the project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein nor for coordination and full compliance with contract requirements.

## TO MAXIMIZE EFFICIENCY, FOLLOW THESE STEPS:

### TRANSMITTER

1. Mount the transmitter in the median or on the shoulder, opposite the users device. (See example above)
2. Terminate transmitter leads, (brown = + positive) and (blue = Negative) to 12 VDC or 110 VAC.
3. When transmitter is powered, look through the window on the top of the hood to confirm that the yellow light is on. This indicates that the transmitter is active. See Alignment LED Diagram on page 7. Wiring diagram provided on page 12.

Bureau of Local Roads and Streets  
 By: hermandg  
 Date: 02/03/2016

DEERFIELD RD - ROBERT YORK TO US 41  
 IDOT CONTRACT #63882  
 HOME TOWNE JOB #152055  
 ITEM #XX009046  
 (LCDOT)

253

## RECEIVER

**NOTE:** There are three lights on the receiver;

Yellow = Power

Red = Sensors beam is obstructed or out of alignment

Green = 2x margin (Excellent Alignment)

*See Alignment LED Diagram Below*

1. Mount the receiver on the shoulder side of the road containing users device. NOTE: As a safeguard, the receiver should be mounted somewhat lower than the maximum allowable clearance.
2. Mount the electronics module on the same pole as the receiver.
3. Connect power to terminals TB1 in the electronics module. Wiring diagrams provided on page 11.
4. Connect receiving sensor to terminals TB2 in the electronics module. Wiring diagrams provided on page 11.
5. Connect AC powered warning device to terminals TB3 in the electronics module. Wiring diagrams provided on page 11.



Illinois Department of Transportation

Division of Highway Systems and Infrastructure  
101 West Capitol Street, Springfield, Illinois 62719-0014

- APPROVED
- APPROVED AS NOTED
- DISAPPROVED
- INFORMATION ONLY

Review of this document has been made only for conformance with the design concept of the project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein nor for coordination and full compliance with contract requirements.

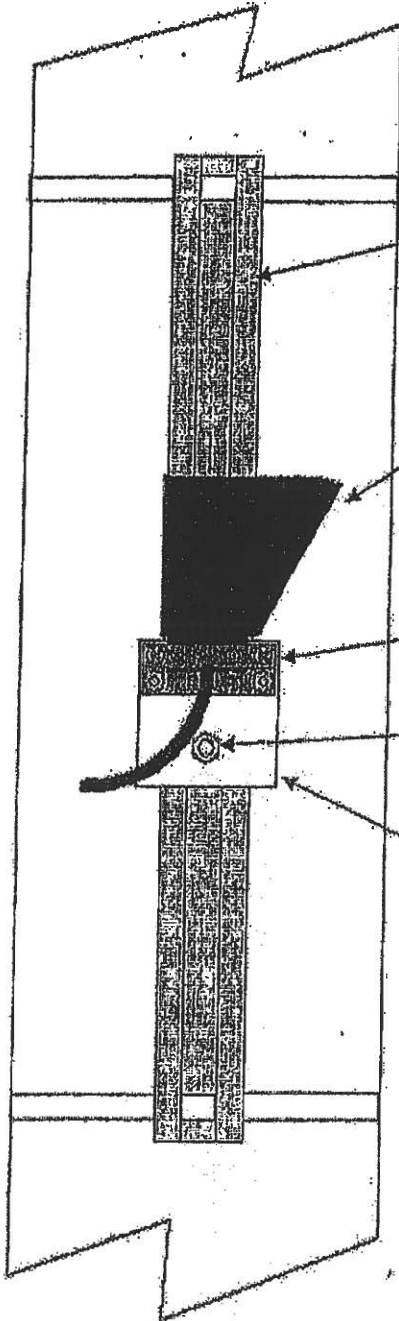
Bureau of Local Roads and Streets

By: hermandg

Date: 02/03/2018

DEERFIELD RD - ROBERT YORK TO US 41  
IDOT CONTRACT #63882  
HOME TOWNE JOB #152055  
ITEM #XX009046  
(LCDOT)

# SENSOR MOUNTING DETAIL



**Side View**

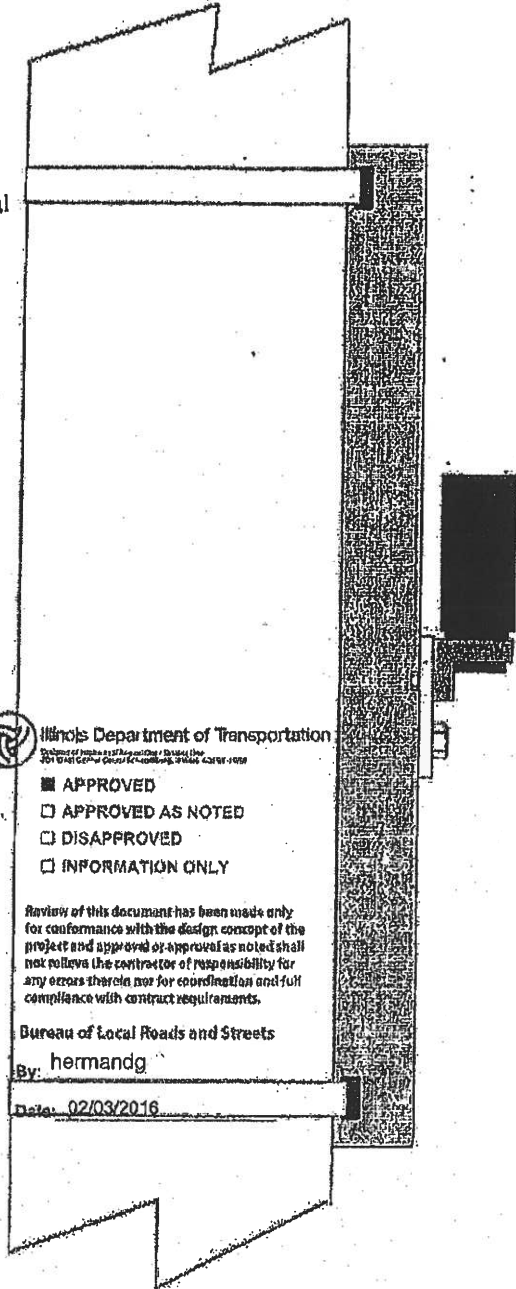
Aluminum Channel  
Allows for 12" of Vertical  
Adjustment  
PN: RA-0601

Receiving Sensor Head  
PN: 4208

Swivel Base  
PN: RA-1001

Height Adjustment Lock  
Down Nut

Mounting Plate  
PN: RA-1024



**Back View**

Illinois Department of Transportation  
Division of Materials and Construction

- APPROVED
- APPROVED AS NOTED
- DISAPPROVED
- INFORMATION ONLY

*Review of this document has been made only for conformance with the design concept of the project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein, nor for coordination and full compliance with contract requirements.*

Bureau of Local Roads and Streets

By: hermandg

Date: 02/03/2016

DEERFIELD RD - ROBERT YORK TO US 41  
IDOT CONTRACT #63882  
HOME TOWNE JOB #152055  
ITEM #XX009046  
(LCDOT)

255

DEERFIELD RD - ROBERT YORK TO US 41  
 IDOT CONTRACT #63882  
 HOME TOWNE JOB #152055  
 ITEM #XX009046  
 (LCDOT)

## ALIGNMENT

1. Before aligning the sensors, be sure that both the transmitter and receiver are powered. When they are both powered, each sensor's yellow EED will light.
2. To align the transmitter with the receiver, loosen the two lock down screws on the transmitter so that it will move with some resistance. Using a small laser level (Grainger stock #5ME90) place it on top of the transmitter and align the laser beam with the top of the receiver, then tighten the lock down screws. Now the receiver can be aligned by using the laser level in the same way and at the same time, using the LEDs in the top of the receiver hood. When the sensors are properly aligned, the red LED will go off and the green LED will light. Tighten the two lock screws on the receiver.
3. Determine the amount of time in which the users device should remain active after the sensors beam has been broken, then set the timer accordingly. See timer setting on page 10.
4. Test the unit by totally obstructing the beam. Passing your hand in front of the receiver may not trigger the unit, since light, including infrared, can pass through the gaps in your finger.

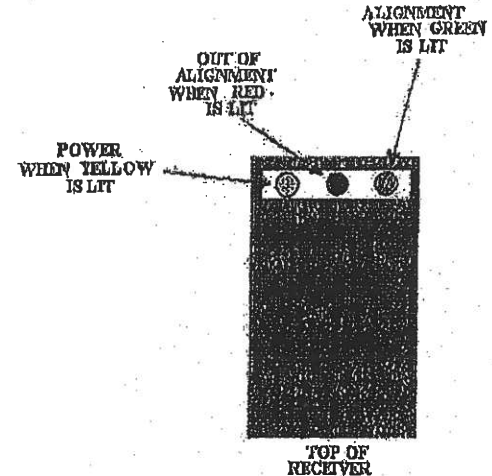
Illinois Department of Transportation  
Division of Construction

- APPROVED
- APPROVED AS NOTED
- DISAPPROVED
- INFORMATION ONLY

Review of this document has been made only for conformance with the design concept of the project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein nor for coordination and full compliance with contract requirements.

Bureau of Local Roads and Streets  
 By: hermandg  
 Date: 02/03/2016

## ALIGNMENT LED'S



256

## TROUBLESHOOTING

If the system fails to work, check to see that the transmitter and receiver are receiving adequate power. If everything is receiving power, see troubleshooting sensors, below.

If sensors & electronics are operational, check to see that the alert devices are receiving adequate power, if everything is receiving adequate power, check connections, (page 11 and 12)

If sensors, electronics and alert devices are operational, there may be a breakdown in communication between the electronics enclosure and the user supplied warning device, check to ensure that the warning is receiving adequate power when the sensors are obstructed, if not check the communications medium between the two devices. If you are receiving adequate power at the warning device, refer to your warning device trouble shooting procedures.

If the system still does not operate properly, call your local distributor or ASTI Transportation Systems at the number on the back cover.

- APPROVED
- APPROVED AS NOTED
  - INFORMATION ONLY

Review of this document has been made only for conformance with the design concept of the project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein nor for coordination and full compliance with contract requirements.

## TRANSMITTER

Bureau of Local Roads and Streets

By: hermandg

Date: 02/03/2016

Look through the window on the top of the hood to see if the yellow light is on, if not check the power supply. If it is on, the transmitter is working. Go to the receiver section on page 9. If it is off:

Check to make sure you are getting power to the sensors.

If so;

Check the wiring as per the diagram on pages 11 and 12, making sure that all of the connections are secure.

If the unit is still inoperative, call your local distributor or ASTI Transportation Systems at the number on the back cover.

DEERFIELD RD - ROBERT YORK TO US 41  
IDOT CONTRACT #63882  
HOME TOWNE JOB #152055  
ITEM #XX009046  
(LCDOT)

## RECEIVER

If the transmitter is operational, but the unit still fails to function:

- Look through the window on the top of the hood to see if the red light is on, indicating that the beam is blocked or misaligned.
- If it is on, check the alignment of the units, adjust or tighten as necessary.
- If it is off, follow the procedures outlined above, substituting receiver for transmitter.
- If the problem persists, call your local distributor of ASTI Transportation Systems at the number on the back cover

## MAINTENANCE

The only maintenance required for the SAFETY PASS is a periodic cleaning of the lens area on the transmitter and receiver. The time between cleaning should be determined by the users environment, but we suggest a routine cleaning schedule. Cleaning should be done with a non-abrasive cloth and clear water. A dirty or scratched lens will reduce the operating distance of the unit.



Illinois Department of Transportation  
Division of Safety and Security  
1100 West Capitol Grounds, Springfield, Illinois 62760-1000

- APPROVED
- APPROVED AS NOTED
- DISAPPROVED
- INFORMATION ONLY

Review of this document has been made only for conformance with the design concept of the project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein nor for coordination and full compliance with contract requirements.

Bureau of Local Roads and Streets

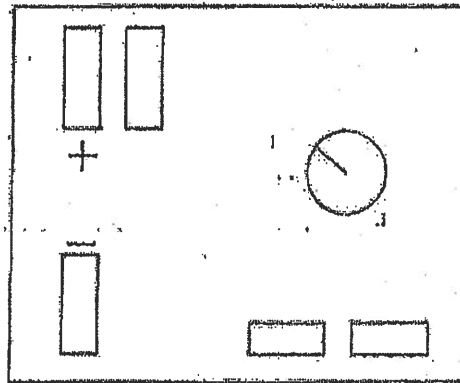
By: hermandg

Date: 02/03/2016

DEERFIELD RD - ROBERT YORK TO US 41  
IDOT CONTRACT #63882  
HOME TOWNE JOB #152055  
ITEM #XX009046  
(LCDOT)

## TIMER ADJUSTMENT

When the beam is broken, the users device will become energized, and stay energized for the amount of time indicated on the rotary timer (timer values are user definable, see timer adjustment).



**SIGN DELAY  
(SECONDS)**



Illinois Department of Transportation  
Division of Highway Operations and Maintenance  
201 West Capitol Street, Springfield, Illinois 62701-1000

- APPROVED
- APPROVED AS NOTED
- DISAPPROVED
- INFORMATION ONLY

Review of this document has been made only for conformance with the design concept of the project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein nor for coordination and full compliance with contract requirements.

Bureau of Local Roads and Streets

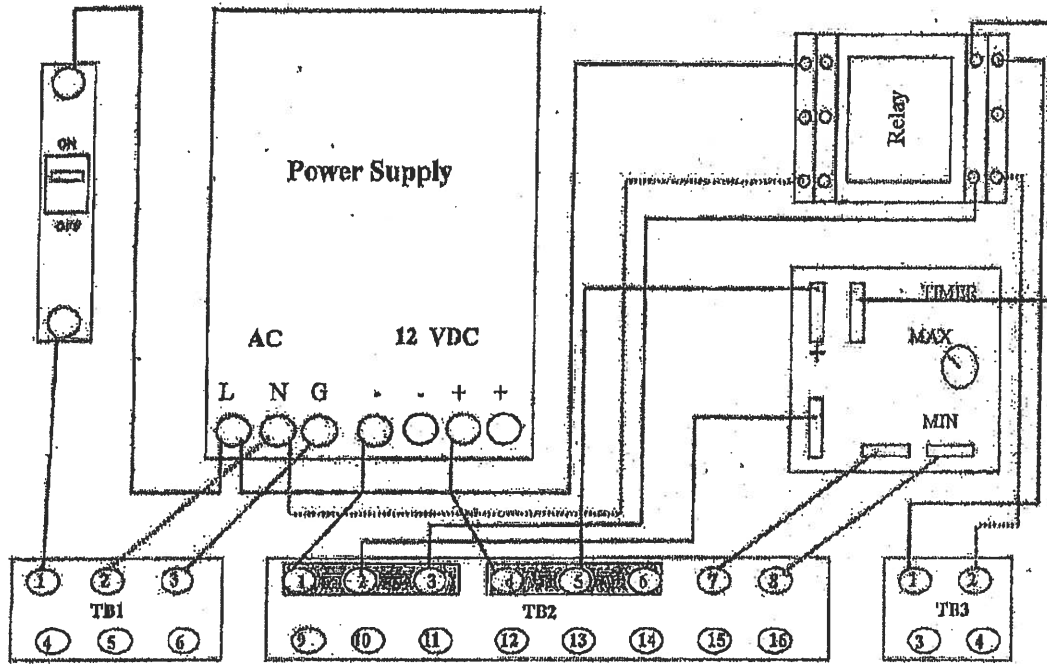
By: hermandg

Date: 02/03/2016

The numbers in above diagram are for general reference only. The rotary timer controls the amount of time in which the users device remains energized (.1 to 1 Hour). Rotate the timer dial clockwise to increase timer values, or counter clock-wise to decrease timer values.

DEERFIELD RD - ROBERT YORK TO US 41  
IDOT CONTRACT #63882  
HOME TOWNE JOB #152055  
ITEM #XX009046  
(LCDOT)

# RECEIVER WIRING DIAGRAM



 Illinois Department of Transportation  
Illinois Department of Transportation

- APPROVED
- APPROVED AS NOTED
- DISAPPROVED
- INFORMATION ONLY

Review of this document has been made only for conformance with the design concept of the project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein nor for coordination and full compliance with contract requirements.

Bureau of Local Roads and Streets

By: hermandg

Date: 02/03/2016

**TB1**

Apply 120 VAC Line to terminal 4.  
 Apply 120 VAC Neutral to terminal 5.  
 Apply 120 VAC Ground to terminal 6.

**TB2**

Attach Receiver negative (blue) to TB2 position 9.  
 Attach Receiver positive (brown) to TB2 position 12.  
 Attach Receiver Normally Open Output (black) to TB2 position 15.  
 Attach Receiver Normally Open Output (Orange) to TB2 position 16.

**TB3 Warning Device to be Activated**

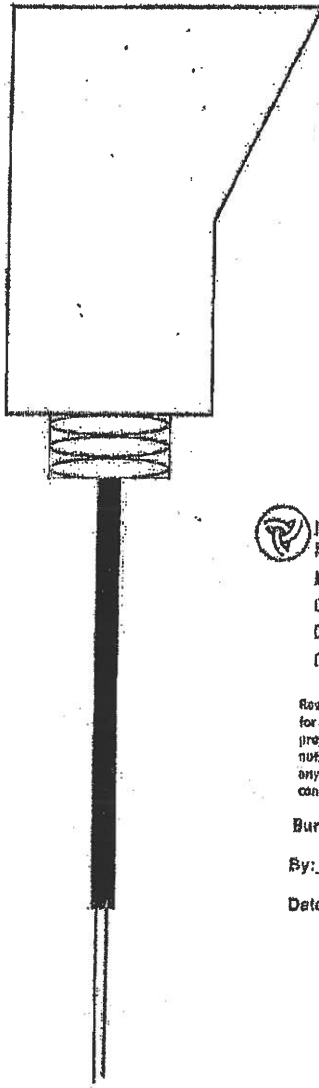
Apply 120 VAC Line to TB3 position 3.  
 Apply 120 VAC Neutral to TB3 position 4.

DEERFIELD RD - ROBERT YORK TO US 41  
 IDOT CONTRACT #63882  
 HOME TOWNE JOB #152055  
 ITEM #XX009046  
 (LCDOT)

*260*



# TRANSMITTER WIRING DIAGRAM



Illinois Department of Transportation

Division of Highway Construction and Maintenance  
111 West Washington Street, Springfield, Illinois 62702-1101

- APPROVED
- APPROVED AS NOTED
- DISAPPROVED
- INFORMATION ONLY

Review of this document has been made only for conformance with the design concept of this project and approval or approval as noted shall not relieve the contractor of responsibility for any errors therein nor for conformance and full compliance with contract requirements.

Bureau of Local Roads and Streets

By: hermandg

Date: 02/03/2016

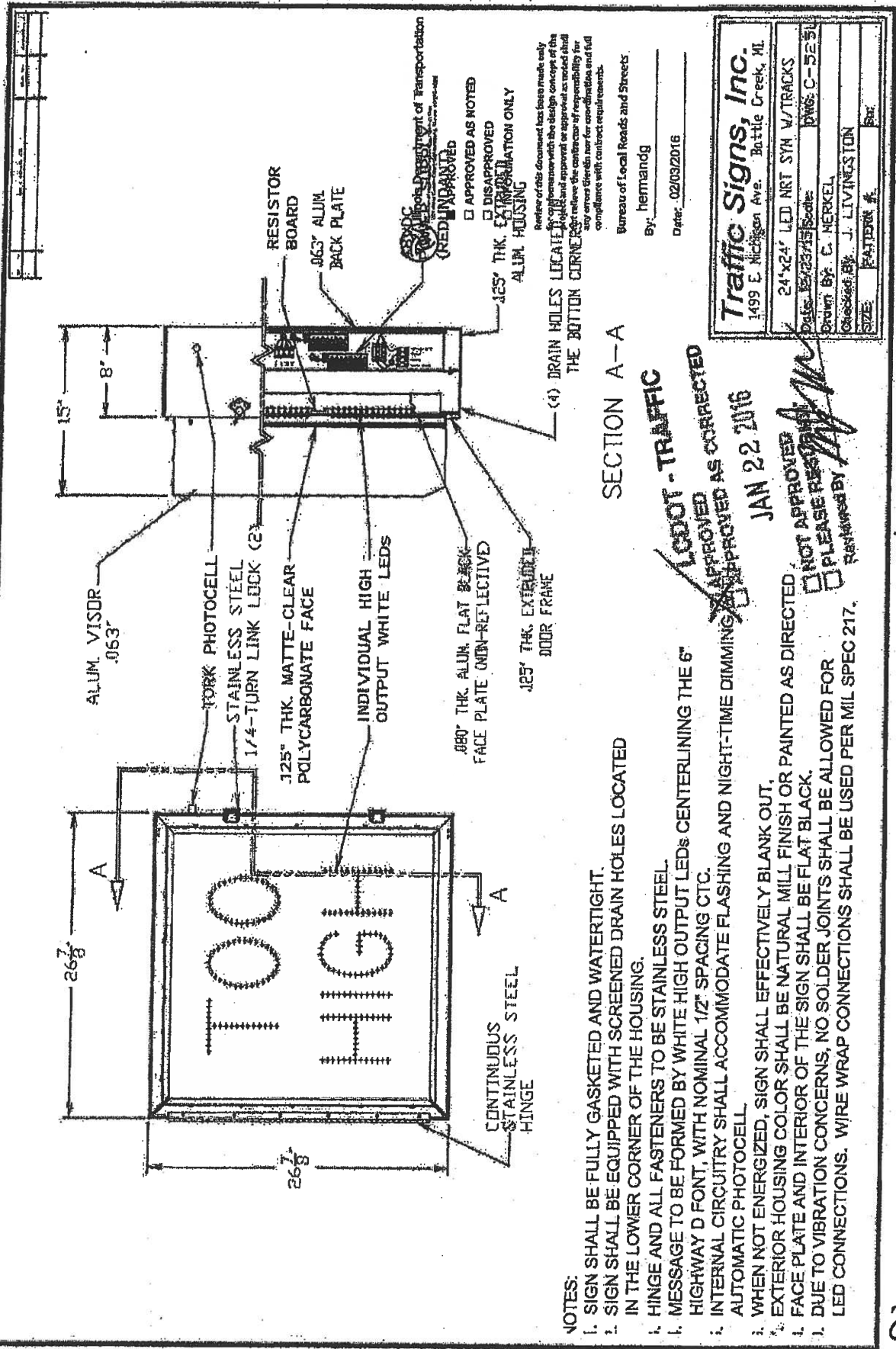
**BROWN—Positive 12 VDC or Positive 110 VAC**  
**BLUE—Negative 12 VDC or Neutral 110 VAC**

DEERFIELD RD - ROBERT YORK TO US 41  
IDOT CONTRACT #63882  
HOME TOWNE JOB #152055  
ITEM #XX009046  
(LCDOT)

261

DEERFIELD RD - ROBERT YORK TO US 41  
 IDOT CONTRACT #63882  
 HOME TOWN/W JOB #152055  
 ITEM #X8910050

**110DOT**



- NOTES:
- SIGN SHALL BE FULLY GASKETED AND WATERTIGHT.
  - SIGN SHALL BE EQUIPPED WITH SCREENED DRAIN HOLES LOCATED IN THE LOWER CORNER OF THE HOUSING.
  - HINGE AND ALL FASTENERS TO BE STAINLESS STEEL.
  - MESSAGE TO BE FORMED BY WHITE HIGH OUTPUT LEDS CENTERLINING THE 6" HIGHWAY D FONT, WITH NOMINAL 1/2" SPACING CTC.
  - INTERNAL CIRCUITRY SHALL ACCOMMODATE FLASHING AND NIGHT-TIME DIMMING AUTOMATIC PHOTOCELL.
  - WHEN NOT ENERGIZED, SIGN SHALL EFFECTIVELY BLANK OUT.
  - EXTERIOR HOUSING COLOR SHALL BE NATURAL MILL FINISH OR PAINTED AS DIRECTED.
  - FACE PLATE AND INTERIOR OF THE SIGN SHALL BE FLAT BLACK.
  - DUE TO VIBRATION CONCERNS, NO SOLDER JOINTS SHALL BE ALLOWED FOR LED CONNECTIONS. WIRE WRAP CONNECTIONS SHALL BE USED PER MIL SPEC 217.

602