

INDEX OF SHEETS

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|-----------------------|---------------------------------|
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| 2                     | LAYOUT SHEET                    |
| 3                     | GENERAL NOTES                   |
| 4                     | SIGNS & PAVEMENT MARKING LAYOUT |
| 5                     | RAILROAD SIGNAL CIRCUIT LAYOUT  |
| STANDARD SHEETS BELOW |                                 |
| 6                     | RCS-09                          |
| 7                     | RCPM-09                         |

SHEET NO. 5, WIRING DIAGRAM, SHOWING RAILROAD SIGNAL CIRCUITS FOR THIS PROJECT WAS NOT DESIGNED BY THE UNDERSIGNED ENGINEER.

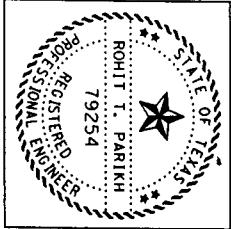
THE STANDARD SHEETS SPECIFICALLY IDENTIFIED AS SHEET NOS. 6-7 HAVE BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.

ROHIT T. PARIKH, P. E.  
SENIOR TRAFFIC ENGINEER

DATE

06-20-13

SEAL



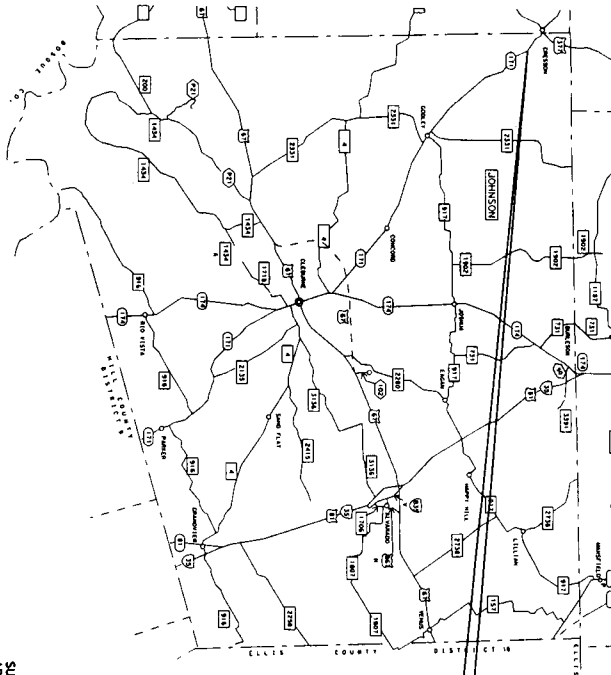
NOTE:  
THE RAILROAD COMPANY SHALL ERRECT AND MAINTAIN SUCH BARRICADES AND WARNING SIGNS OR USE SUCH PRECAUTIONS AS MIGHT BE NECESSARY, IN THE OPINION OF THE TxDOT ENGINEER, TO INSURE AND SAFEGUARD THE NORMAL USE OF THE HIGHWAY DURING THE INSTALLATION OF THIS PROJECT.

THE ASSOCIATION OF AMERICAN RAILROADS, SIGNAL SECTION, SPECIFICATIONS SHALL GOVERN FOR THIS PROJECT.

STATE OF TEXAS  
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED  
STATE HIGHWAY IMPROVEMENT

PROJECT NO. STP 2012(398)FRS  
CSJ NO. 0902-50-110  
FORT WORTH AND WESTERN RAILROAD  
INSTALL GRADE CROSSING ACTIVE WARNING DEVICES  
ON CR 917 IN CRESSON  
JOHNSON COUNTY - DOT NO. 021 585K



PROJECT LOCATION  
CR 917, DOT NO. 021 585K  
FORT WORTH AND WESTERN RAILROAD  
RR MILEPOST: 18.05

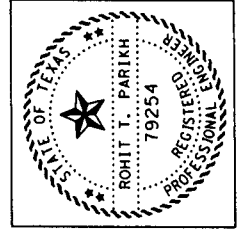
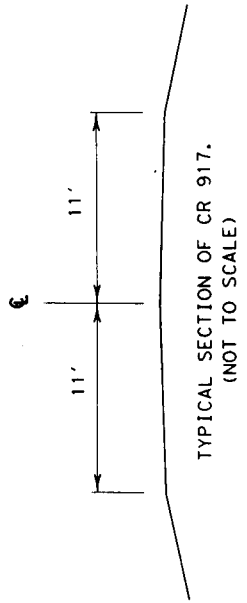
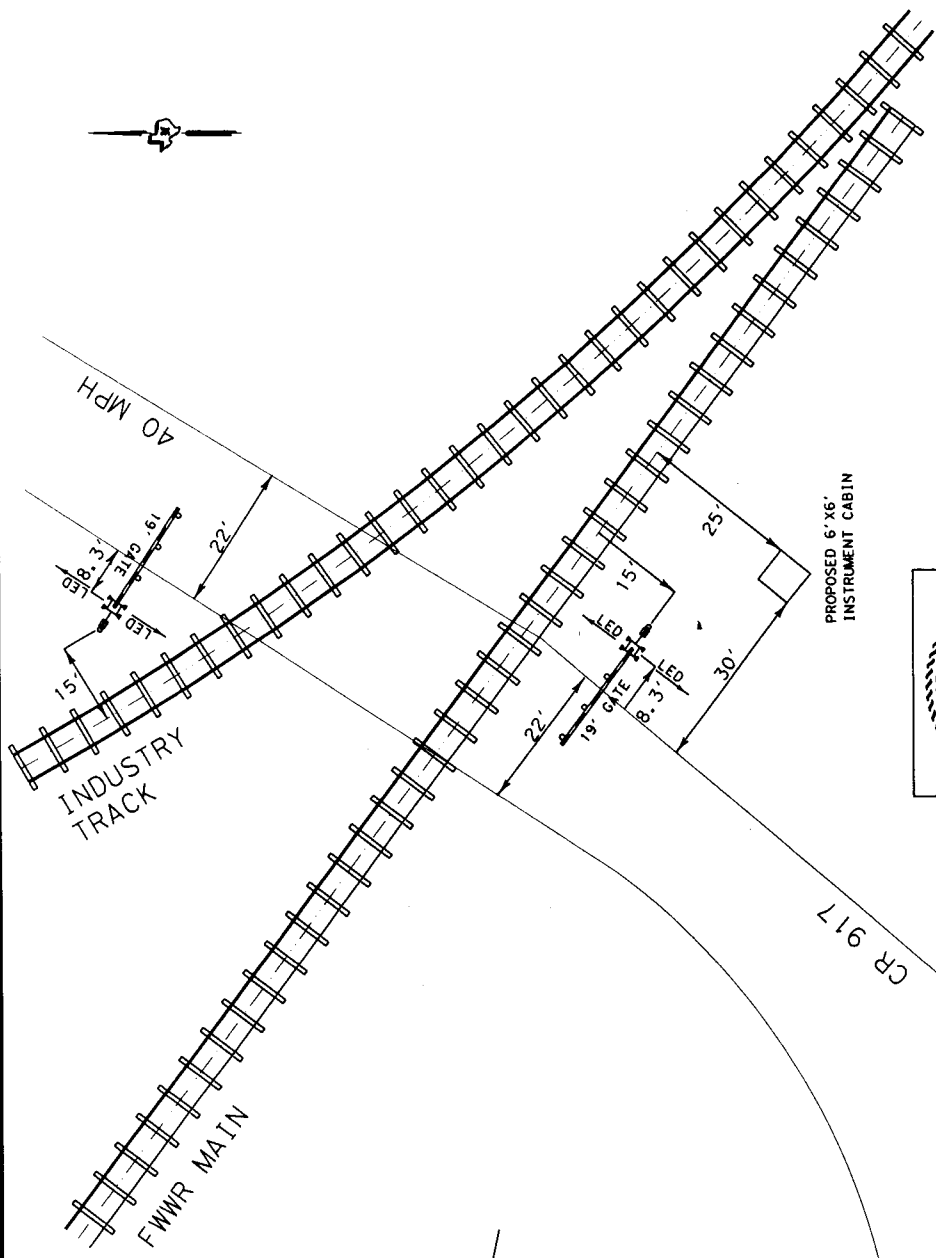
THESE PLANS WERE DEVELOPED BY MEMBERS OF THE DIAGNOSTIC TEAM IN ACCORDANCE WITH TERMS OF THE STATE-RAILROAD AGREEMENT AND ARE HEREBY AUTHORIZED FOR CONSTRUCTION.

TEXAS DEPARTMENT OF TRANSPORTATION

SUBMITTED FOR APPROVAL: *[Signature]* JUL 9 2013 APPROVED: *[Signature]* 7/22 2013  
DIRECTOR OF TRANSPORTATION OPERATIONS COUNTY JUDGE JOHNSON COUNTY

RECOMMENDED FOR APPROVAL: \_\_\_\_\_ 20 \_\_\_\_\_ APPROVED FOR CONSTRUCTION: \_\_\_\_\_ 20 \_\_\_\_\_  
DISTRICT ENGINEER DIRECTOR, RAIL DIVISION

| FED. ROAD DIST. NO. | STATE   | FEDERAL AID PROJECT NO. | SHEET NO. |
|---------------------|---------|-------------------------|-----------|
| 0                   | TEXAS   | STP 2012(398)FRS        | 1         |
| 2                   | JOHNSON | 0902-50-110             | CR 917    |



LAYOUT

FORT WORTH AND WESTERN RAILROAD  
INSTALL GRADE CROSSING WARNING DEVICES  
ON CR 917 IN CRESSON  
DOT NO. 021 585K RRMP 18.05

*Rohit T. Parikh* 06-20-13  
ROHIT T. PARIKH, P.E. DATE

|                     |                         |              |
|---------------------|-------------------------|--------------|
| FED. ROAD DIST. NO. | FEDERAL AID PROJECT NO. | SHEET NO.    |
| 6                   | TEXAS STP 2012(398)FRS  | 2            |
| DIST. NO.           | COUNTY                  | CONTRACT NO. |
| 2                   | JOHNSON                 | 0902-50-110  |
|                     |                         | CR 917       |

SCALE: 1" = 20'

## GENERAL NOTES

1. SIGNAL CIRCUITS ARE DESIGNED TO GIVE 20 SECONDS MINIMUM WARNING TIME, PLUS 2 SECONDS CLEARANCE TIME, PLUS 5 SECONDS BUFFER TIME, PLUS 5 SECONDS EQUIPMENT RESPONSE TIME FOR A TOTAL OF 32 SECONDS APPROACH TIME, PRIOR TO THE ARRIVAL OF THE FASTEST TRAIN AT THIS CROSSING.
2. CONSTANT WARNING CIRCUITS ARE TO BE USED AT THIS LOCATION. UPGRADES REQUIRED: ISLAND CIRCUIT ON SWITCH TRACK FOR CIRCUIT COMPATIBILITY.
3. CONDUIT, FILL DIRT AND CRUSHED COVER ROCK TO BE FURNISHED IN PLACE BY THE RAILROAD COMPANY OR ITS CONTRACTOR AT STATE'S EXPENSE.
4. THE RAILROAD COMPANY OR ITS CONTRACTOR WILL REMOVE THE EXISTING CROSS BUCKS AND DISPOSE OF THE FOUNDATIONS.
5. THE STATE OR ITS CONTRACTOR WILL FURNISH AND INSTALL OR REPLACE THE APPROPRIATE PAVEMENT MARKINGS AS OUTLINED ON THE ATTACHED LAYOUT AND STANDARD SHEET AND IN ACCORDANCE WITH THE GUIDELINES IN THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
6. THE STATE OR ITS CONTRACTOR WILL FURNISH AND INSTALL OR REPLACE THE FOLLOWING SIGNS IN ACCORDANCE WITH THE GUIDELINES IN THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND THE STANDARD HIGHWAY SIGN DESIGNS MANUAL FOR TEXAS (SHSD): 2 EA. (W10-1), 2 EA. (R15-4).
7. THE COUNTY AGREES TO MAINTAIN THE PAVEMENT MARKINGS AND ADVANCE WARNING SIGNS PLACED ALONG THE ROADWAYS UNDER THEIR JURISDICTION IN ACCORDANCE WITH THE GUIDELINES IN THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND AS SHOWN ON THE LAYOUT AND STANDARD SHEETS AS ACKNOWLEDGED ON THE TITLE SHEET.
8. THE RAILROAD COMPANY OR ITS CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN SIGN MOUNTING BRACKETS FOR THE REPORT PROBLEM SIGN (R15-4) AT THE STATE'S EXPENSE.
9. THE RAILROAD COMPANY OR ITS CONTRACTOR SHALL STENCIL THE DOT-AAR NUMBERS ON THE SIGNAL MASTS FACING THE ADJACENT ROADWAY IN 2" BLACK LETTERING.
10. THE COUNTY AGREES TO TRIM AND MAINTAIN TREES AND VEGETATION FOR ADEQUATE VISIBILITY OF THE CROSSING SIGNALS AND ADVANCE WARNING SIGNS AS ACKNOWLEDGED ON THE TITLE SHEET.
11. THE RAILROAD COMPANY OR ITS CONTRACTOR WILL PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE GUIDELINES IN THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

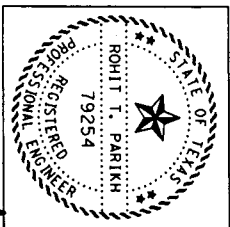
## DESCRIPTION OF PROJECT

TWO COMPLETE FLASHING LIGHTS WITH TWO 19' FEET GATE ASSEMBLIES AND TWO BELLS.  
 TWO R15-2, ( 2 TRACKS ) SIGNS.  
 12" LAMP HOUSING SHALL BE USED AND EQUIPPED WITH LIGHT EMITTING DIODES (LED'S),  
 OPERATED AT NOT LESS THAN 8.5 VOLTS UNDER NORMAL OPERATING CONDITIONS.

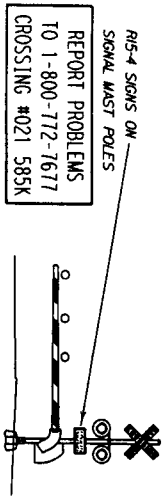
## GENERAL NOTES

FORT WORTH AND WESTERN RAILROAD  
 INSTALL GRADE CROSSING WARNING DEVICES  
 ON CR 917 IN CRESSON  
 DOT NO. 021 585K RRMF 18.05

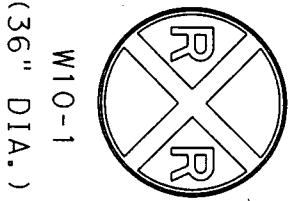
*Rohit T. Parikh*  
 ROHIT T. PARIKH, P.E.      DATE *06-20-13*



|                         |                   |
|-------------------------|-------------------|
| FED. AID PROJECT NO.    | SHEET NO.         |
| STATE                   | 6                 |
| FEDERAL AID PROJECT NO. | TEXAS             |
| STATE                   | STP 2012(1398)FR5 |
| COUNTY                  | COMMITTEE         |
| CONTRACT NO.            | JOHNSON           |
| STATE PROJECT NO.       | 0902-50-110       |
| SECTION NO.             | CR 917            |



LANCASTER ST

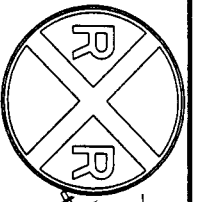


DRIVEWAY

CR 917

STOP BAR LOCATED  
8 FEET IN FRONT OF GATE

FWMR MAIN  
(36" DIA.)



STOP BAR LOCATED  
8 FEET IN FRONT OF GATE

40 MPH



*Rohit T. Parikh*  
ROHIT T. PARIKH, P.E. DATE 06-20-13

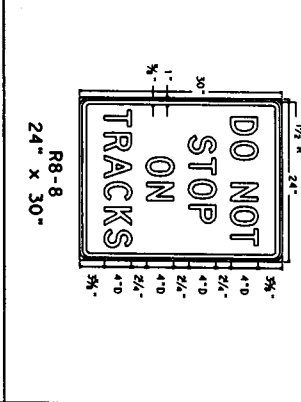
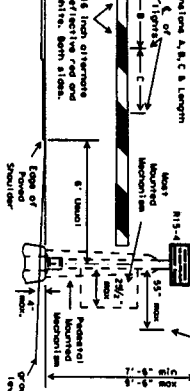
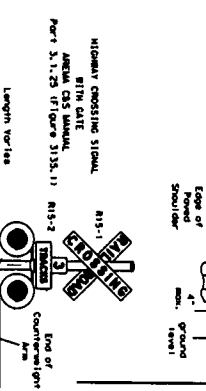
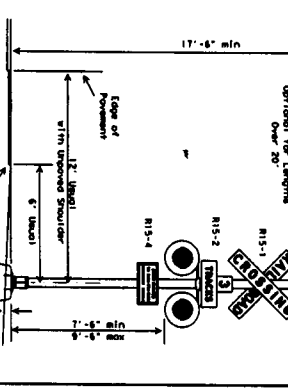
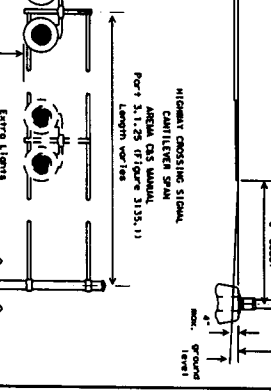
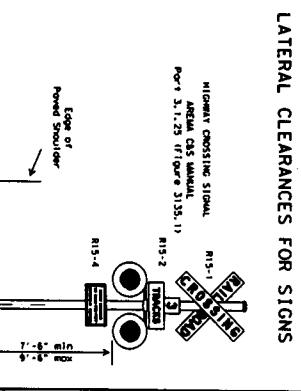
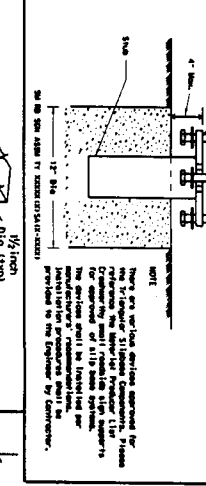
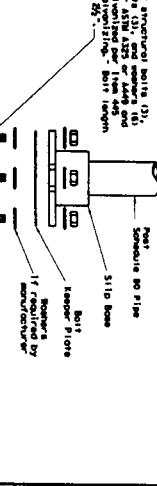
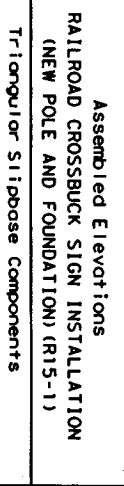
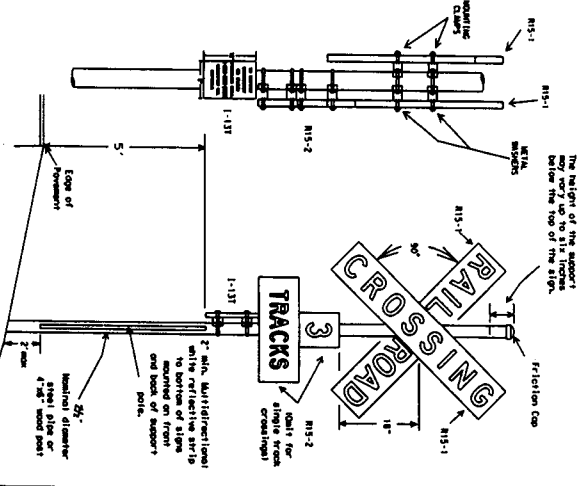
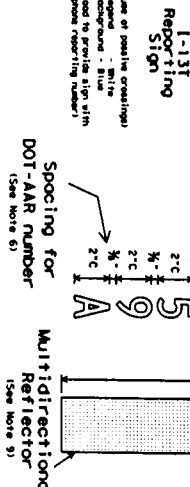
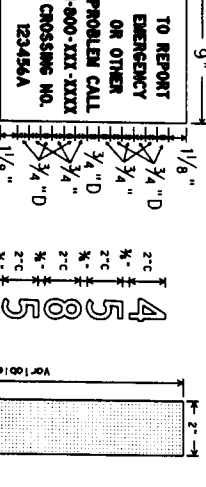
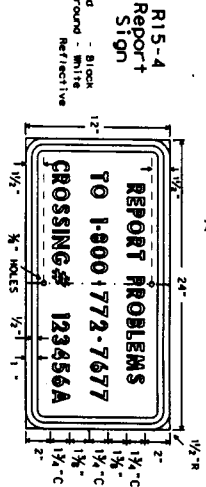
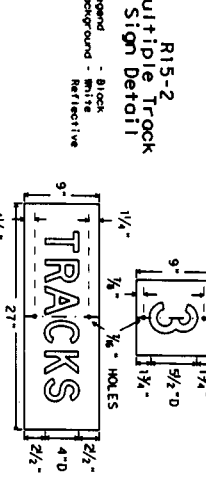
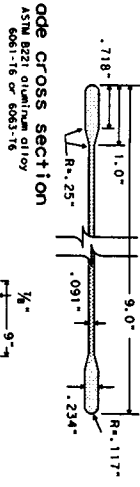
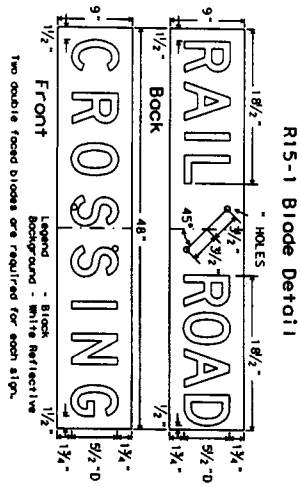
PROPOSED 6'x6'  
INSTRUMENT CABIN

**SIGNS & PAVEMENT MARKINGS**

FORT WORTH AND WESTERN RAILROAD  
INSTALL GRADE CROSSING WARNING DEVICES  
ON CR 917 IN CRESSON  
DOT NO. 021 585K RAMP 18.05

SCALE: 1" = 20'

|                     |         |                         |             |
|---------------------|---------|-------------------------|-------------|
| FED. ROAD DIST. NO. | STATE   | FEDERAL AID PROJECT NO. | SHEET NO.   |
| 6                   | TEXAS   | SIP 2012(398)FRS        | 4           |
| DIST. NO.           | COUNTY  | CONTRACT NO.            | HIGHWAY NO. |
| 2                   | JOHNSON | 0902-50-110             | CR 917      |



| DEPARTMENTAL MATERIAL SPECIFICATIONS |                              |
|--------------------------------------|------------------------------|
| ALUMINUM SIGN BLANKS                 | DMS-1110                     |
| SIGN FACE MATERIALS                  | DMS-1300                     |
| USE: SIGN FACE MATERIAL              |                              |
| BACKGROUND                           | WHITE                        |
| TEXT & BORDERS                       | WHITE                        |
| LEGEND & BORDERS                     | WHITE                        |
| LEGEND & BORDERS                     | ADHESIVE NON-REFLECTIVE FILM |

**GENERAL NOTES:**

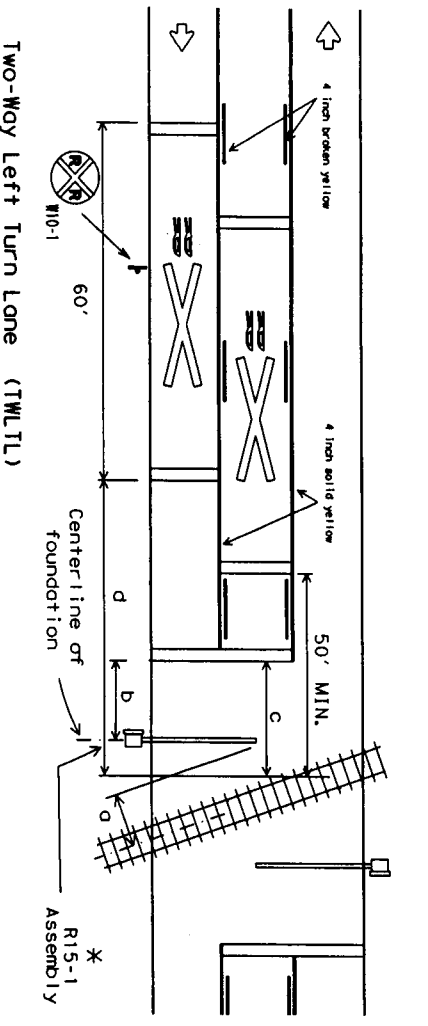
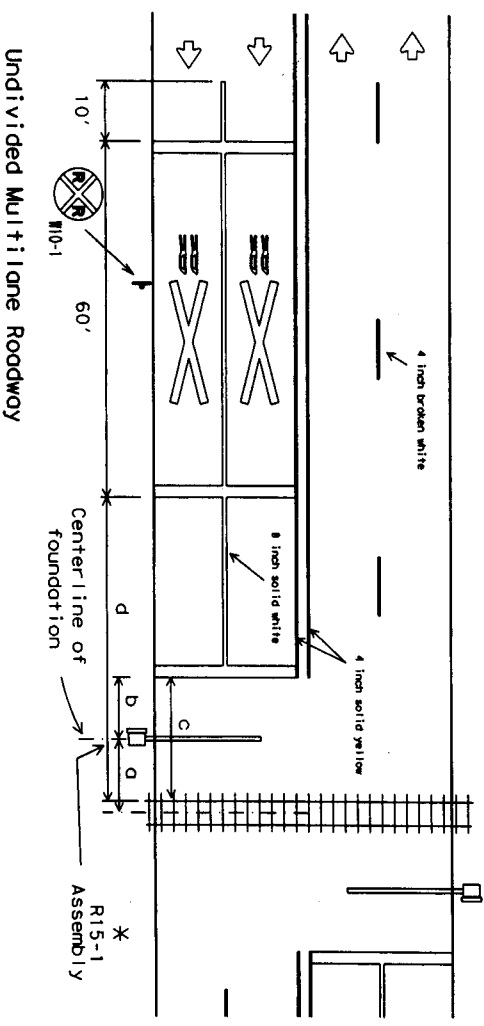
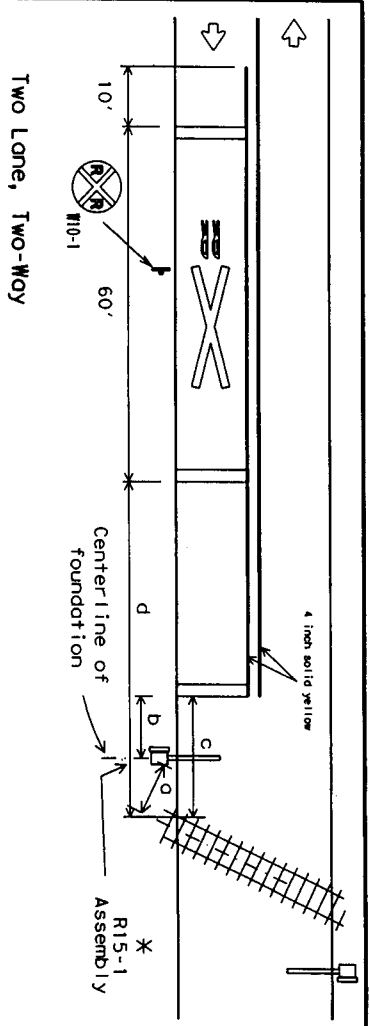
- All signs and installations shall conform to the American Railway Engineering and Maintenance of Way Association (AREMA) Manual for the Signaling of Railroads, 1998 Edition, Section 1, Part 1, Subpart 1, Section 1.1.1, and Section 1.1.2, and the American Railway Engineering and Maintenance of Way Association (AREMA) Manual for the Signaling of Railroads, 1998 Edition, Section 1, Part 1, Subpart 1, Section 1.1.1, and Section 1.1.2, and the American Railway Engineering and Maintenance of Way Association (AREMA) Manual for the Signaling of Railroads, 1998 Edition, Section 1, Part 1, Subpart 1, Section 1.1.1, and Section 1.1.2.
- The sign shall be installed on a post of sufficient height to clear the top of the tracks and the top of the overhead power lines.
- The sign shall be installed on a post of sufficient height to clear the top of the tracks and the top of the overhead power lines.
- The sign shall be installed on a post of sufficient height to clear the top of the tracks and the top of the overhead power lines.
- The sign shall be installed on a post of sufficient height to clear the top of the tracks and the top of the overhead power lines.

**Texas Department of Transportation**  
Traffic Operations Division

**RAILROAD CROSSING SIGNS AND SIGNALS**

**RCSS (1) -09**

| DATE | BY      | CHKD | APP'D | REVISIONS |
|------|---------|------|-------|-----------|
| 4-28 | JOHNSON |      |       | 1         |
| 8-25 | JOHNSON |      |       | 2         |
| 4-28 | JOHNSON |      |       | 3         |



D = 12 feet minimum, 15 feet usual, if active warning devices are present. Distance "d" should be measured from the centerline of R15-1 assembly to the centerline of nearest track.

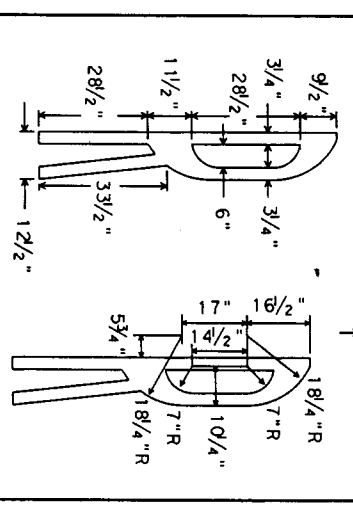
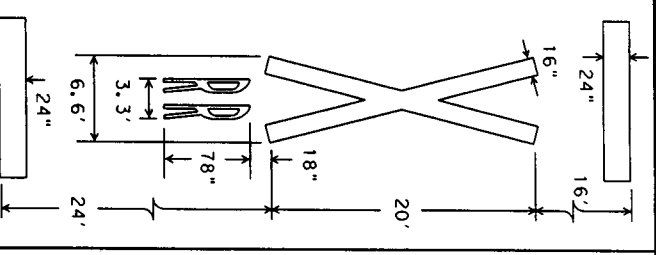
E = Stop lines should be approximately 5 feet in advance of the active warning devices. Stop line should be approximately 15 feet from new rail; if only existing devices (R15-1, plus positive or negative) are present.

C = 15 feet desirable minimum, 10 feet minimum between stop line and rolls with adequate distance provided for "c".

D = 15 feet desirable minimum, 10 feet minimum between stop line and rolls with adequate distance provided for "d".

\*\* = Local conditions may require alternate placement locations.

| Approach Speed (mph) | Desirable Placement (feet) |
|----------------------|----------------------------|
| 20                   | 190                        |
| 25                   | 230                        |
| 30                   | 280                        |
| 35                   | 330                        |
| 40                   | 380                        |
| 45                   | 430                        |
| 50                   | 480                        |
| 55                   | 530                        |
| 60                   | 580                        |
| 65                   | 630                        |
| 70                   | 680                        |



To be placed as shown in typical details when pavement markings are installed.



Where Pavement markings are not installed, Placement of the Highway-Roll Grade Crossing Advance Warning sign shall be in accordance with Chapter 2A and Table 2C-4 Condition (B) of the TMRCD. (See notes 2)

**ESTIMATED QUANTITIES**

(For Contractor Information ONLY)

**24 INCH WHITE TRANSVERSE MARKINGS AND STOP LINES**

| No. of Approach Lanes (Include TWLTL) | LANE WIDTH (FT) |     |     |     |
|---------------------------------------|-----------------|-----|-----|-----|
|                                       | 11-12           | 13  | 14  | 15  |
| 1                                     | 33              | 36  | 39  | 42  |
| 2                                     | 66              | 72  | 78  | 84  |
| 3                                     | 99              | 108 | 117 | 126 |
| 4                                     | 132             | 144 | 156 | 168 |

**4 INCH SOLID YELLOW AND PASSING LINE - "X" - "D" - "C" - "O"**

For: Two Lane, Two-Way, Single Lane Approach per Direction

**8 INCH SOLID WHITE LANE LINE - "C" - "O" - "D"**

For: Two-Way or One-Way Traffic, 2 or More Approach Lanes in Same Direction (do NOT include TWLTL)

**GENERAL NOTES**

- The pavement markings on an approach to a railroad grade crossing shall consist of:
  - The stop sign.
  - The "X" symbol.
  - Two lines a solid no-passing line for two-way traffic approaches, or solid lane lines for all-lane approaches.
- Identical markings shall be placed in each approach lane on all grade approaches to highway-roll grade crossings and on all highway-roll grade crossings where the posted or statutory highway speed is 40 mph or greater. Pavement markings shall not be reduced or eliminated if the posted or statutory speed is less than 40 mph, or in urban areas, if an engineering study indicates that other installed devices provide suitable warning and control.
- For bidding purposes, the "X" symbol will be measured and paid for as for each lane in blocks. The transverse markings and lane lines will be measured and paid for by the "lineal foot".
- Centerlines shall be yellow, other markings shall be white.
- Approach lanes less than 8 feet wide shall not have markings.
- Markings shall be placed approximately 10 feet of the centerline.
- Stop signs should be placed approximately in the center of the approach lane.
- All transverse markings, including stop lines, shall be placed at right angles to the centerline and across all approach lanes.
- Existing non-standard markings shall be removed to the fullest extent possible so as not to be confused with the markings approved by the engineer. OVERTHEFTING WILL NOT BE ALLOWED.
- Additional markings and placement details may be found in the TMRCD, Appendix "H".
- The engineer may require additional longitudinal markings if the distance between the stop sign and the "X" symbol is less than the distance between the rolls unless specified elsewhere in the plans.

**R15-1 Assembly**

May consist of one or more of the following:

- R15-1 Crosswalk Sign
- R15-2 Multiple Truck Sign
- R15-4 Report Sign
- Best Practices
- Cones

**RAILROAD CROSSING PAVEMENT MARKING TYPICAL DETAILS**

**RCPM-09**



| DATE | BY  | CHKD | APP'D | REV | DATE | BY  | CHKD | APP'D | REV |
|------|-----|------|-------|-----|------|-----|------|-------|-----|
| 4-82 | WJL | WJL  | WJL   | 1   | 1-10 | WJL | WJL  | WJL   | 1   |
| 4-82 | WJL | WJL  | WJL   | 2   | 1-10 | WJL | WJL  | WJL   | 1   |
| 4-82 | WJL | WJL  | WJL   | 3   | 1-10 | WJL | WJL  | WJL   | 1   |
| 4-82 | WJL | WJL  | WJL   | 4   | 1-10 | WJL | WJL  | WJL   | 1   |
| 4-82 | WJL | WJL  | WJL   | 5   | 1-10 | WJL | WJL  | WJL   | 1   |
| 4-82 | WJL | WJL  | WJL   | 6   | 1-10 | WJL | WJL  | WJL   | 1   |
| 4-82 | WJL | WJL  | WJL   | 7   | 1-10 | WJL | WJL  | WJL   | 1   |