



HIGHWAY-RAIL GRADE CROSSING – STATE OF ILLINOIS TRAFFIC SIGNAL PREEMPTION GUIDELINES & WORKSHEET

Any highway agency in Illinois seeking to install or modify a traffic signal in proximity of a highway-rail grade crossing shall receive the approval of the Illinois Commerce Commission. This follows Public Act 91-0725 and 625 ILCS 5/18c-7401 of the Illinois Vehicle Code.

For new traffic signals proposed to be interconnected with railroad warning devices, a Traffic Signal/Railroad Report, Intersection Design Study (if applicable), Traffic Signal Plans, formal Petition, and Commission Order are required. For significant reconstruction/modifications, these deliverables may also be requested. Example cases are available at:

<http://www.icc.illinois.gov/>

Look for “e-Docket” at right/top of page

Next to “Case Search,” Type “T05-0005” and click the “Go” button

Click the “Documents” tab along the top right section to provide the petition, order, supplemental info, etc.

Other case examples: T07-0121, T16-0018, T17-0007

Design

- The attached worksheet must be completed (or updated for existing locations), and sent to the ICC, the highway agency with jurisdiction over the traffic signals, and the RAILROAD Signal Engineering Office.

The traffic controller circuitry requires railroad preemption contacts to interconnect with the railroad active warning system. Per RAILROAD standard, a normally closed “dry” preemption relay will be provided to interconnect the railroad active warning system to the Road Authority’s traffic signal controller assembly. These contacts are rated at 4 amps. With no trains in the area, these contacts remain closed.

Simultaneous preemption shall be utilized and the preemption relay will be designed so that the crossing warning devices activate any time the traffic signals are preempted (3-wire connected to the XR, or the Preempt Relay before the XR).

- The MUTCD, 2009 or latest edition shall be utilized for necessary definitions, requirements, and guidance: <http://mutcd.fhwa.dot.gov/index.htm> .
- The Illinois Department of Transportation’s, “Standard Specifications for Road and Bridge Construction, Adopted April 1, 2016” or latest edition shall be adhered to for design, testing, and installation. [Construction/Standard-Specifications2016.pdf](#) (Section 800, Section 1074 et al). Also see Highway Standard “857006-01, Supervised Railroad Interconnect Circuit.” http://www.idot.illinois.gov/Assets/uploads/files/Doing-Business/Standards/Highway-Standards/PDF/219-857006-01_SupervisedRRInterconnectCircuit.pdf



TRAFFIC SIGNAL PREEMPTION GUIDELINES & WORKSHEET

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Installation

- Prior to installation, the highway agency shall shop test its traffic controller and cabinet at the equipment vendor's facility with Staff of the ICC present.
 - The highway agency will be responsible for installing the interconnect cable to the crossing warning signal control housing. The RAILROAD Signal Department will be responsible for terminating the cable at the railroad equipment. Any future modification or relocation by the highway agency or RAILROAD requires coordination amongst the parties. The interconnect cable shall be enclosed in conduit as a single continuous run from the railroad signal control house to the traffic signal control cabinet. Splicing, and/or intermediate termination points are not allowed.
 - The RAILROAD, when modifying the warning system shall file a Form 1 or Form 3 as necessary for approval by the Commission. When the work is complete, the RAILROAD shall provide a Form 2, Completion Notice.
 - The highway agency will be responsible for coordinating the required testing and installation of the interconnect cable to the crossing warning signal control housing. Representatives from the highway agency, its contractor, the traffic controller manufacturer, ICC, and RAILROAD Signal Department must be in attendance for the turn-on inspection.
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Inspections

- Routine inspections will be coordinated by the highway agency with the RAILROAD Area Signal Manager and ICC Staff.
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Contacts

RAILROAD 24-Hour Phone Number (____) _____

RAILROAD Area Signal Managers

_____ (____) _____

_____ (____) _____

Highway Agency 24-Hour Number (____) _____

Illinois Commerce Commission

Stan Milewski (815) 463-8387

Brian Vercruyse (312) 636-7760



Traffic Signal Preemption Worksheet - Illinois

Date:

Inventory Number: **RR MP:**

Highway Crossing:

Intersection:

City or Village:

County: **IDOT District:**

Status/Notes:

Traffic Signal Information

TS Jurisdiction:

TS Maintenance:

TS Contact: **TS Phone No.:**

ICC Docket No.: **Railroad Report Date (Attach with Worksheet):**

Minimum Track Clearance Distance:

Outside Rail to Outside Rail:

Clear Storage Distance:

Intersection Stop Bar to Edge of Pavement:

Required Traffic Signal Warning Time:

Amber: **All Red:** **Tk Cl Gr:**

Simultaneous Preemption:
 Minimum Warning Time - As
 Defined in MUTCD Section
 1A.13 - Standard 117.
**REQUIRED FROM RR
 WARNING DEVICES**

Railroad Information

Passenger Trains: **Main Tracks:** **Other Tracks:** **Maximum Speed:**

Freight Trains:

Train Detection Type:

WT Settings: **Circuit Approach Distance:**

RR Field Contact: **Phone No.:**

Inspections

Date	Railroad	Attendees Highway Agency	ICC Staff
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Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

June 2, 2014

CIRCULAR LETTER 2014-06

SIGNING AND PAVEMENT MARKING AT RAILROAD CROSSINGS

COUNTY ENGINEERS/SUPERINTENDENT OF HIGHWAYS
MUNICIPAL ENGINEERS/DIRECTORS OF PUBLIC WORKS/MAYORS
CONSULTING ENGINEERS

Signing and pavement marking guidance has been developed in consultation with the Illinois Commerce Commission and the U.S. Department of Transportation's Grade Crossing Safety Task Force. This Circular Letter provides information on updates to the pavement marking and signing details from this guidance in order to incorporate changes adopted in the 2009 National Manual on Uniform Traffic Control Devices (MUTCD). These new details have been studied and tested by the Department and accepted by the Illinois Commerce Commission.

This guidance applies to projects which include railroad interconnected traffic signals, with or without pre-signals. This guidance also applies to non-signalized intersections that are within 81 feet of a railroad grade crossing. The Illinois Supplement to the MUTCD should be consulted for additional information on sign requirements at non-signalized intersections near railroad grade crossings.

These details will be included in a future update to the Bureau of Operations Traffic Policies and Procedures Manual.

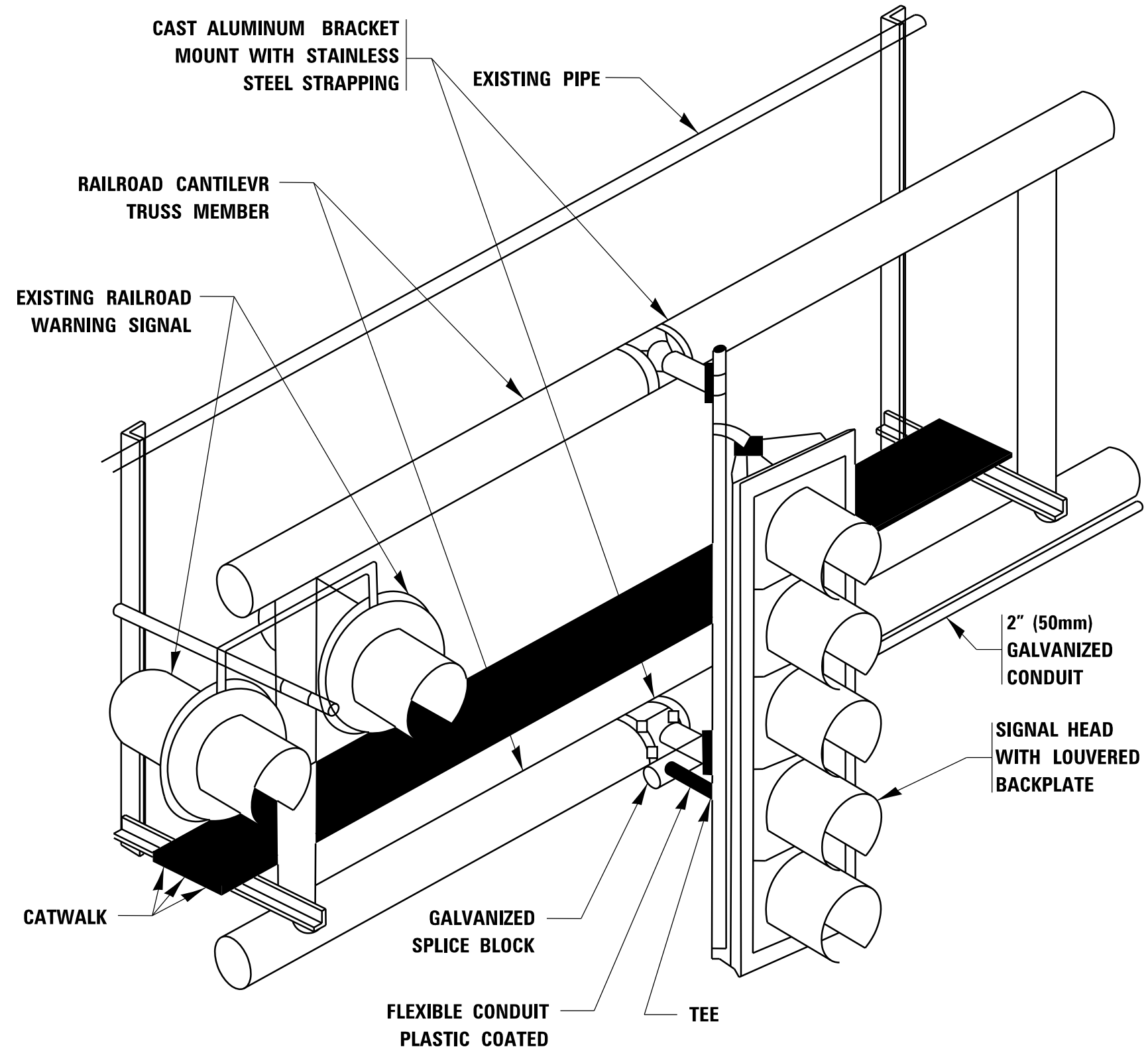
Please contact the BLRS Local Policy unit at DOT.LocalPolicy@illinois.gov with any questions.

Sincerely,

A handwritten signature in black ink that reads "James K. Klein".

James K. Klein, P.E., S.E.
Acting Engineer of Local Roads and Streets

PW/tw



RAILROAD CANTILEVER SIGNAL HEAD MOUNTING

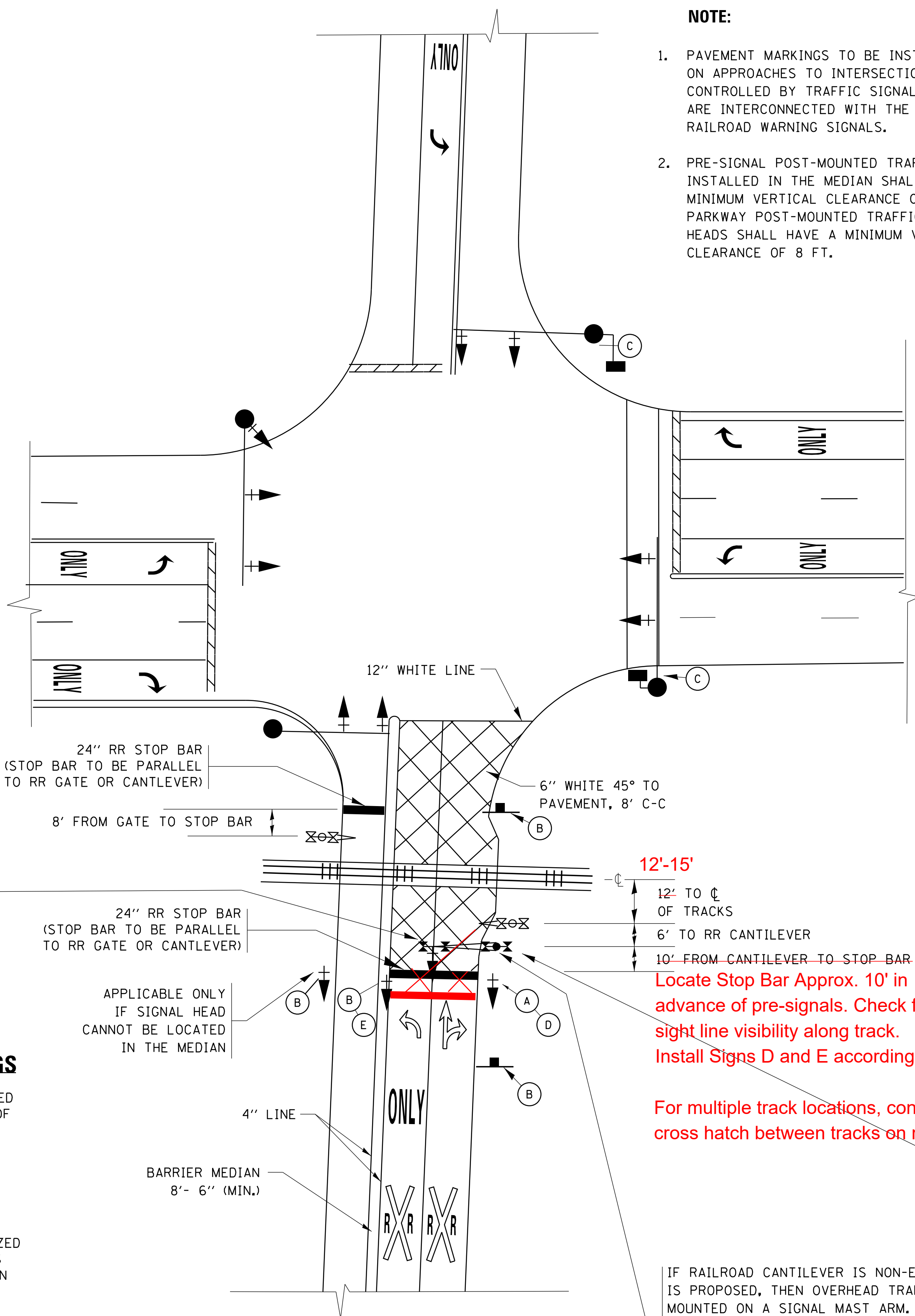
USE NON-CONDUCTIVE SPACERS BETWEEN THE TRAFFIC SIGNAL EQUIPMENT AND THE RAILROAD CANTILEVER TO PREVENT DISSIMILAR METAL CORROSION
N.T.S.

SIGNING AND PAVEMENT MARKING AT RAILROAD CROSSINGS

SIGNING AND PAVEMENT MARKING TRAFFIC CONTROL STANDARD (TC-23) HAS BEEN DEVELOPED IN CONSULTATION WITH THE ILLINOIS COMMERCE COMMISSION AND THE U.S. DEPARTMENT OF TRANSPORTATION'S GRADE CROSSING SAFETY TASK FORCE. THIS STANDARD PROVIDES INFORMATION ON UPDATES TO THE PAVEMENT MARKING AND SIGNING DETAILS IN ORDER TO INCORPORATE CHANGES ADOPTED IN THE 2009 NATIONAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICE (MUTCD). THESE NEW DETAILS HAVE BEEN STUDIED AND TESTED BY THE DEPARTMENT AND ACCEPTED BY THE ILLINOIS COMMERCE COMMISSION.

THIS APPLIES TO PROJECTS WHICH INCLUDE RAILROAD INTERCONNECTED TRAFFIC SIGNALS, WITH OR WITHOUT PRE-SIGNALS. THIS STANDARD ALSO APPLIES TO NON-SIGNALIZED INTERSECTIONS THAT ARE WITHIN 81 FEET OF A RAILROAD GRADE CROSSING. THE ILLINOIS SUPPLEMENT TO THE MUTCD SHOULD BE CONSULTED FOR ADDITIONAL INFORMATION ON SIGN REQUIREMENTS AT NON-SIGNALIZED INTERSECTIONS NEAR RAILROAD GRADE CROSSINGS.

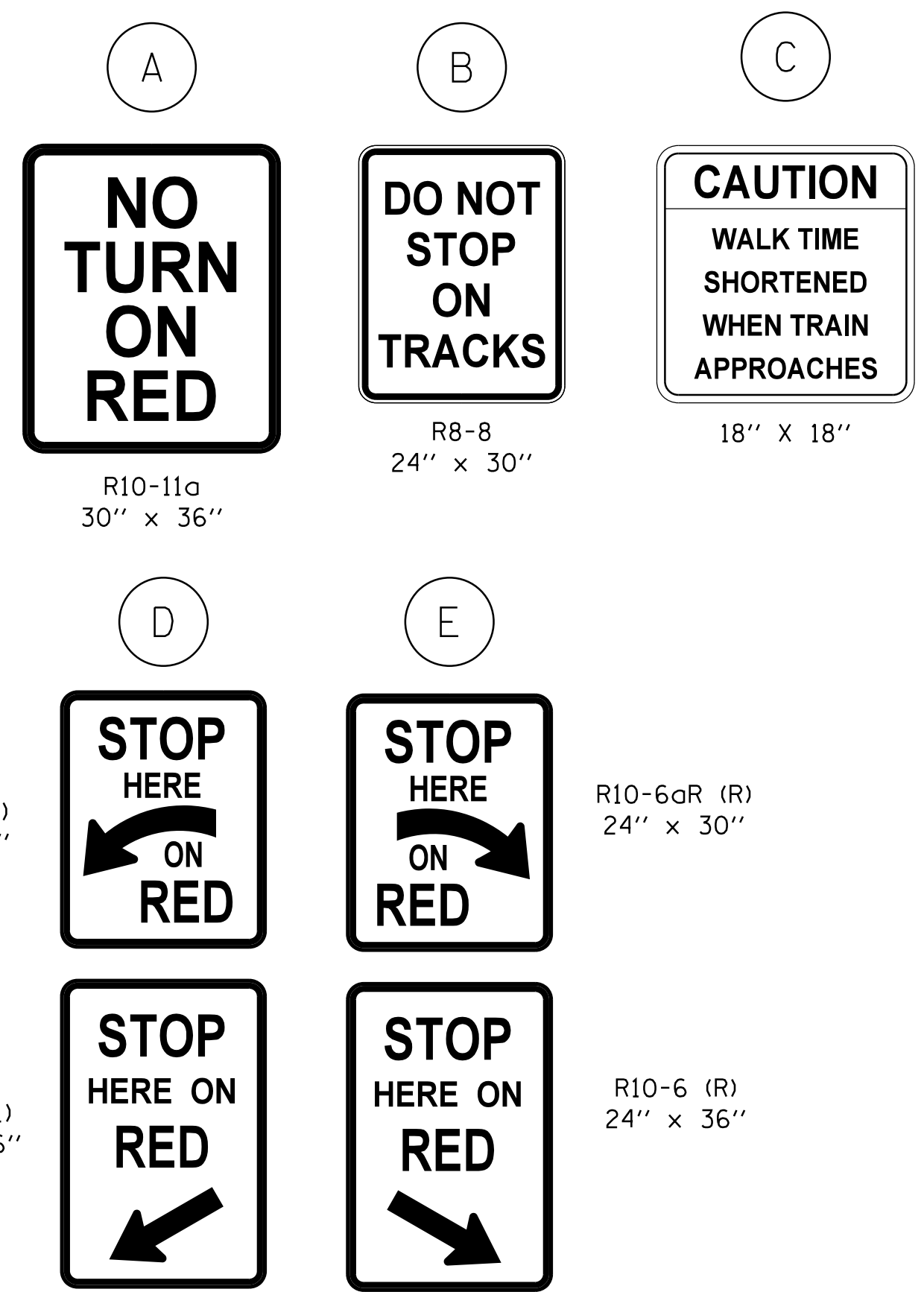
THESE DETAILS WILL BE INCLUDED IN A FUTURE UPDATE TO THE BUREAU OF OPERATIONS TRAFFIC POLICIES AND PROCEDURES MANUAL.



SIGNALIZED INTERSECTION WITH NEAR-SIDE TRAFFIC SIGNAL

NOTE:

- PAVEMENT MARKINGS TO BE INSTALLED ONLY ON APPROACHES TO INTERSECTIONS CONTROLLED BY TRAFFIC SIGNALS WHICH ARE INTERCONNECTED WITH THE RAILROAD WARNING SIGNALS.
- PRE-SIGNAL POST-MOUNTED TRAFFIC SIGNAL HEADS INSTALLED IN THE MEDIAN SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 4.5 FT. PARKWAY POST-MOUNTED TRAFFIC SIGNAL HEADS SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 8 FT.



R10-6a (L)
24" x 30"

R10-6 (L)
24" x 36"

R8-8
24" x 30"

18" x 18"

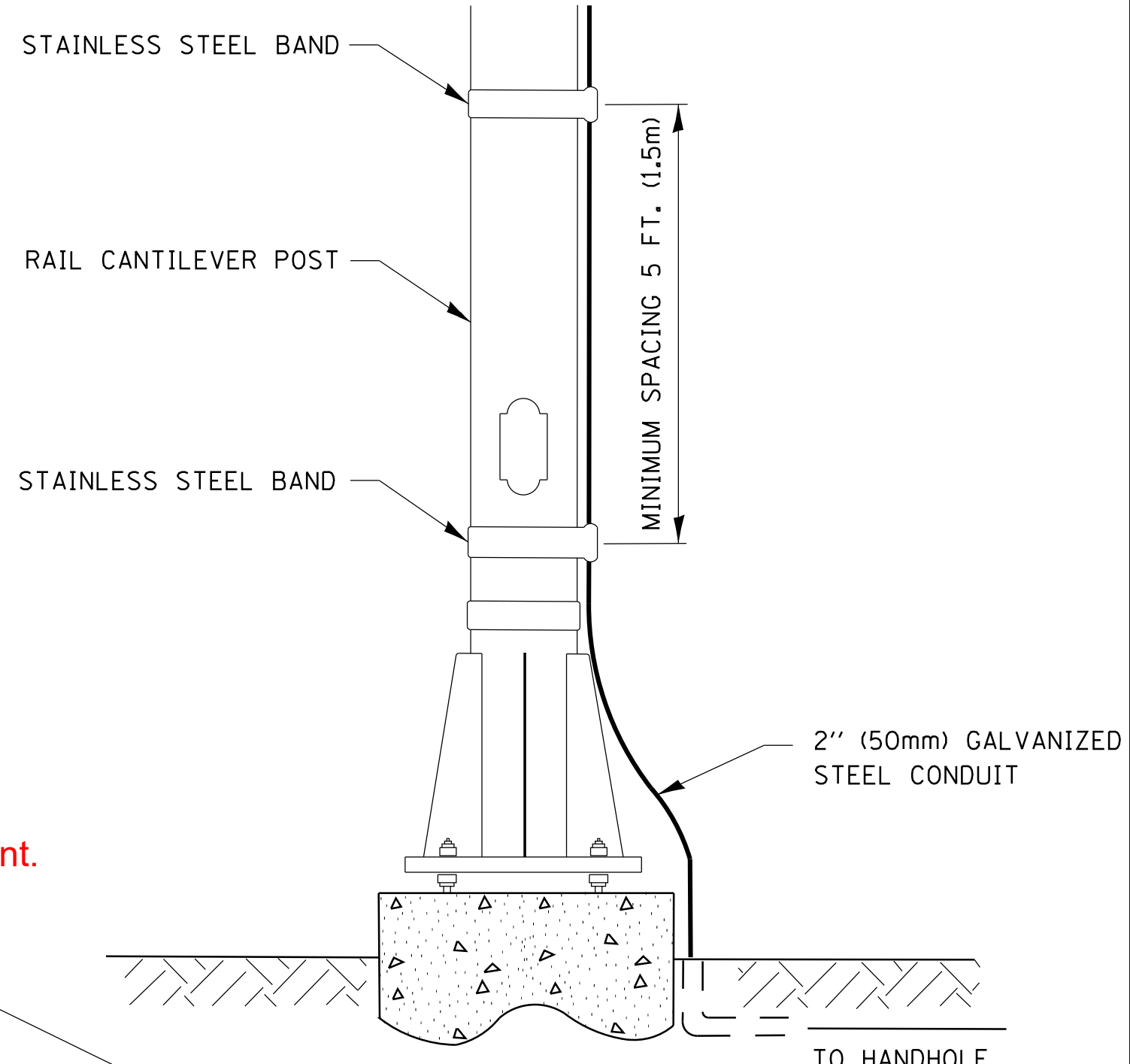
R10-6aR (R)
24" x 30"

R10-6 (R)
24" x 36"

12'-15'
12' TO CL OF TRACKS
6' TO RR CANTILEVER
10' FROM CANTILEVER TO STOP BAR
Locate Stop Bar Approx. 10' in advance of pre-signals. Check for sight line visibility along track. Install Signs D and E accordingly.

For multiple track locations, continue cross hatch between tracks on roadway pavement.

IF RAILROAD CANTILEVER IS NON-EXISTANT AND NONE IS PROPOSED, THEN OVERHEAD TRAFFIC SIGNAL TO BE MOUNTED ON A SIGNAL MAST ARM. SIGNAL MAST ARM AND SIGNAL HEADS SHALL BE INSTALLED AS CLOSE AS PRACTICABLE TO THE RAILROAD TRACKS WITHOUT OBSTRUCTING ANY RAILROAD WARNING DEVICES. SIGNAL MAST ARM SHALL BE AT LEAST 12 FT. FROM NEAREST RAIL.



SIGNAL CONDUIT CONNECTION TO RAIL CANTILEVER DETAIL

USE NON-CONDUCTIVE SPACERS BETWEEN THE TRAFFIC SIGNAL EQUIPMENT AND THE RAILROAD CANTILEVER TO PREVENT DISSIMILAR METAL CORROSION.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME =	USER NAME = footemj	DESIGNED -	REVISED - 02-25-11
pw:\IL084EBID\INTEG\illinois.gov\PWIDOT\Documents\IDOT Offices\District 1\Projects\Dist 1\CADD\CADData\CADsheets\tc23.dgn		DRAWN -	REVISED - 04-26-12
		CHECKED -	REVISED - A.R. 07-11-16
Default	PLOT DATE = 1/3/2017	DATE -	REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

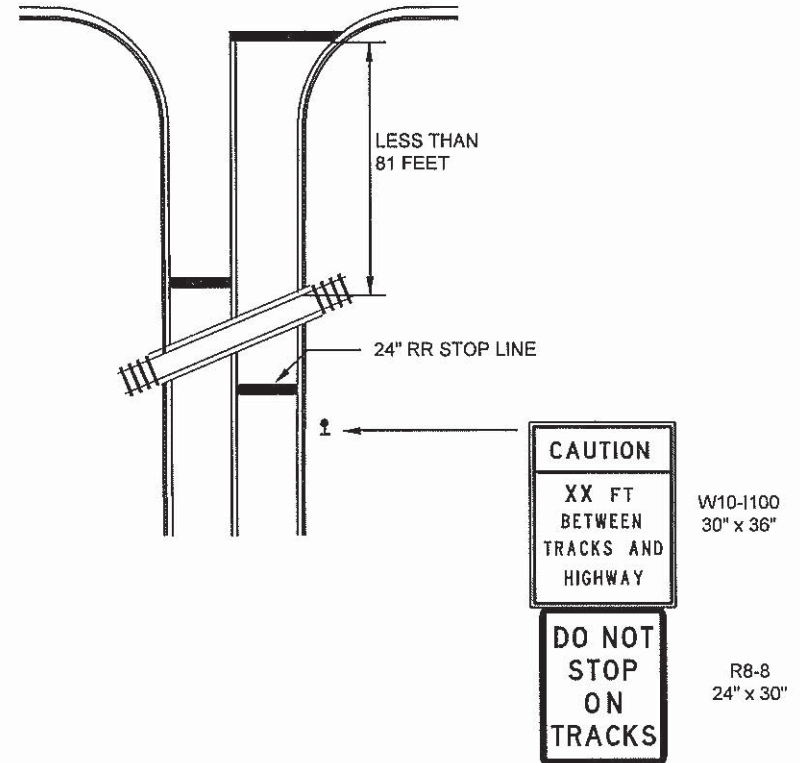
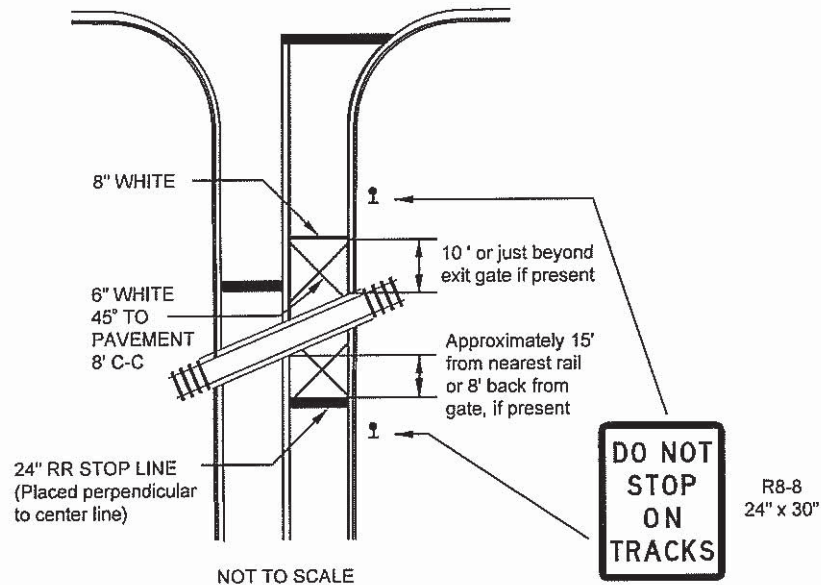
TYPICAL SUPPLEMENTAL SIGNING AND PAVEMENT MARKING TREATMENT FOR RAILROAD CROSSINGS			
SCALE: NONE	SHEET 1	OF 2 SHEETS	STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	TC-23			
		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				

TYPICAL SUPPLEMENTAL SIGNING AND PAVEMENT MARKING TREATMENT FOR RAILROAD CROSSINGS

WITH SIGNALIZED INTERSECTION

WITH NON-SIGNALIZED INTERSECTION
81' or less to closest rail



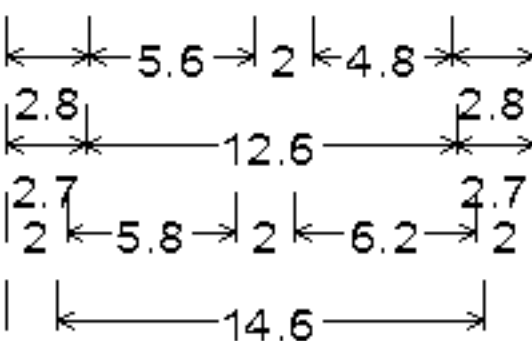
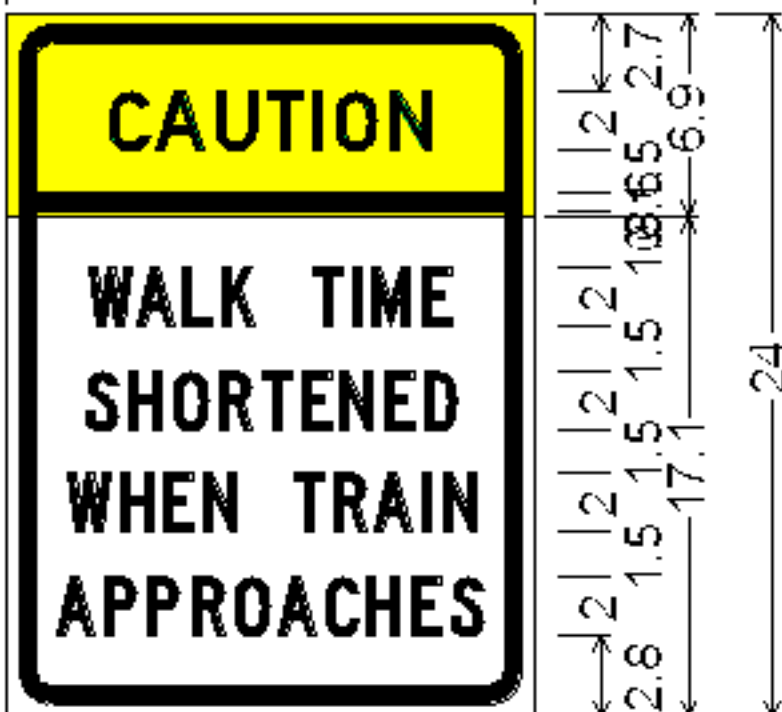
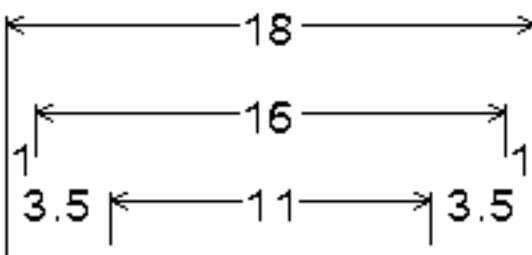
Note:

1. Pavement markings to be installed only on approaches to intersections controlled by traffic signals which are interconnected with the railroad warning signals.
2. Where near-side traffic signals are used the pavement markings extend to the intersection. (See Detail for Pre-Signals)

For multiple track locations,
continue cross hatch between
tracks on roadway pavement.

Note:

1. Distance to be shown on sign measured from a point 6 feet from the rail closest to the intersection or from the closest point along the exit gate if present over the roadway when in the lowered position to the stop bar or crosswalk, whichever is closest, rounded down to nearest 5 feet. Where there is no stop line, measure to point where driver has a view of approaching traffic.
2. The clearance sign is also to be used as an interim measure at locations with interconnected intersection traffic signals where it is planned to change them to near-side signals at a future time. In this case, the distance to be shown on the sign is measured from the edge of the striped-out area instead of 6 feet from the rail. The sign is to be removed when the near-side signals are installed and the pavement markings extended to the intersection.



1.5" Radius, 0.6" Border, 0.4" Indent, Black on Yellow;

"CAUTION" D;

1.5" Radius, 0.6" Border, 0.4" Indent, Black on White;

"WALK TIME" C;

"SHORTENED" C;

"WHEN TRAIN" C;

"APPROACHES" C;