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November 26, 2007

Mr. Dave Lazarides
Director of Processing
Illinois Commerce Commission
527 East Capitol Ave.
Springfield, IL 62701

RE: Annawan Railroad Crossing

T07-0041

Dear Mr. Lazarides:

I transmit an original and two copies of the Amended Exhibit B for the above case.

Sincerely,

GAB:ts
Enclosures

DOCKETED

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OP / 300
{S0562238.1 11/26/2007 GAB TMS}

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Illinois Commerce Commission
RAIL SAFETY SECTION

**U S ROUTE 6 AT PATRIOT WAY
TRAFFIC/RAILROAD SIGNAL REPORT**

Prepared for:
Village of Annawan &
Illinois Department of Transportation

May 15, 2007

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PART 1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The purpose of this report is to document relevant data with respect to the proposed operation of the highway traffic signal subsystem and the railroad crossing signal subsystem at the proposed grade crossing of U S Route 6 with Patriot Way in Annawan, Illinois. The scope of this report centralizes on the electrical interface between the two systems, with primary focus on critical timing characteristics, which affect the synchronization of the "total system."

The Village of Annawan is in the process of preparing engineering plans to construct Patriot Way from 2900 E to U S Route 6 with a new intersection with traffic signals at U S Route 6. As part of the improvement a new at-grade crossing of the IAIS tracks will be created with railroad preemption for the proposed traffic signal at U S Route 6. Construction of the new roadway is anticipated to start in 2007 and be completed by 2008. The IAIS will construct the physical crossing surface and the related grade crossing signals at the time of construction.

1.2 EXISTING CONDITIONS

1.2.1 Physical Characteristics

U S Route 6 is a rural two-lane highway that is part of the Federal Highway System. This highway has a low traffic volume and is not expected to dramatically increase due to this improvement. Township Road 2900 E is the closest existing roadway that intersects both the IAIS Railroad and U S Route 6. This road is to be closed immediately following construction.

1.3 RECOMMENDATIONS

1.3.1 Proposed Roadway Improvement

Patriot Renewable Fuels, LLC is in the process of constructing an ethanol plant in the Village of Annawan, Illinois. As part of this construction project Patriot proposes to construct a roadway (Patriot Way) that will connect the Lathrop Street extension (a federally funded project through the Village of Annawan) to U S Route 6. Constructing this new roadway will require a new railroad crossing to be installed. The railroad crossing will be approximately 75 feet north of the intersection of U S Route 6 and Patriot Way. Due to the proximity of the rail crossing and the intersection, signalization will be installed. The signalization for the intersection will be interconnected to the railroad signalization (see Appendix for Phasing). Left and right turn lanes will be added to US Route 6 for the purpose of storing traffic on U S Route 6 during a train. The traffic volumes do not warrant signalization on US Route 6, but signals will be installed as a safety measure.

1.3.2 Highway Traffic Subsystem

Since this is a proposed new roadway, field measurements of the Track Clear Green time could not be made. Estimation of this time was developed assuming a vehicle queue length of 115 feet which represents the distance from the north rail of the tracks to the extension of the north edge of eastbound through lane on U S Route 6.

From this scenario, the following recommendations are made regarding the proposed highway traffic signal subsystems:

- The highway traffic signal subsystem should be interconnected to the railroad crossing. Based on *Recommended Practice of the Institute of Transportation Engineers* Preemption of Traffic Signals at or Near Active Warning Railroad Grade Crossings, when the potential exists of traffic queues from highway traffic extending across a nearby rail crossing, the traffic subsystem should be interconnected to the rail crossing subsystem. The normal sequence of highway intersection signal indications should be preempted upon approach of trains to avoid entrapment vehicles on the crossing by conflicting aspects of the highway traffic signals and the grade crossing signals.
- Pre-signals should be installed on Patriot Way because of the distance between the tracks and the edge of the traveled lanes on U S Route 6. The pre-signals should be installed on the railroad signal cantilever.
- Traffic signal controller timings shall be provided to clear the track clearance preemption interval in the shortest possible time.
- Install the following signs concurrent with the installation of the proposed signals. The proposed placement of the signs is shown on **Figure 2**.
 - STOP HERE ON RED
 - NO TURN ON RED
 - DO NOT STOP ON TRACKS
- Supplemental pavement markings consisting of 12-inch white diagonals, should be installed at the railroad crossing. The diagonals should be installed in the area bounded by the extension of the nearest edge of pavement of U S route 6 and the railroad tracks.
- Internally illuminated NO RIGHT TURN signs should be activated for the westbound U S Route 6 right-turn movement during the preemption sequence.

1.3.3 Railroad Signal Subsystem

The proposed traffic signal installation should be interconnected to the railroad signal subsystem.

Vehicular crossing gates should be provided. The vehicle gates should be installed on both sides of the railroad tracks for both directions of traffic.

The recommended minimum railroad warning time is 30 seconds as shown in Appendix.

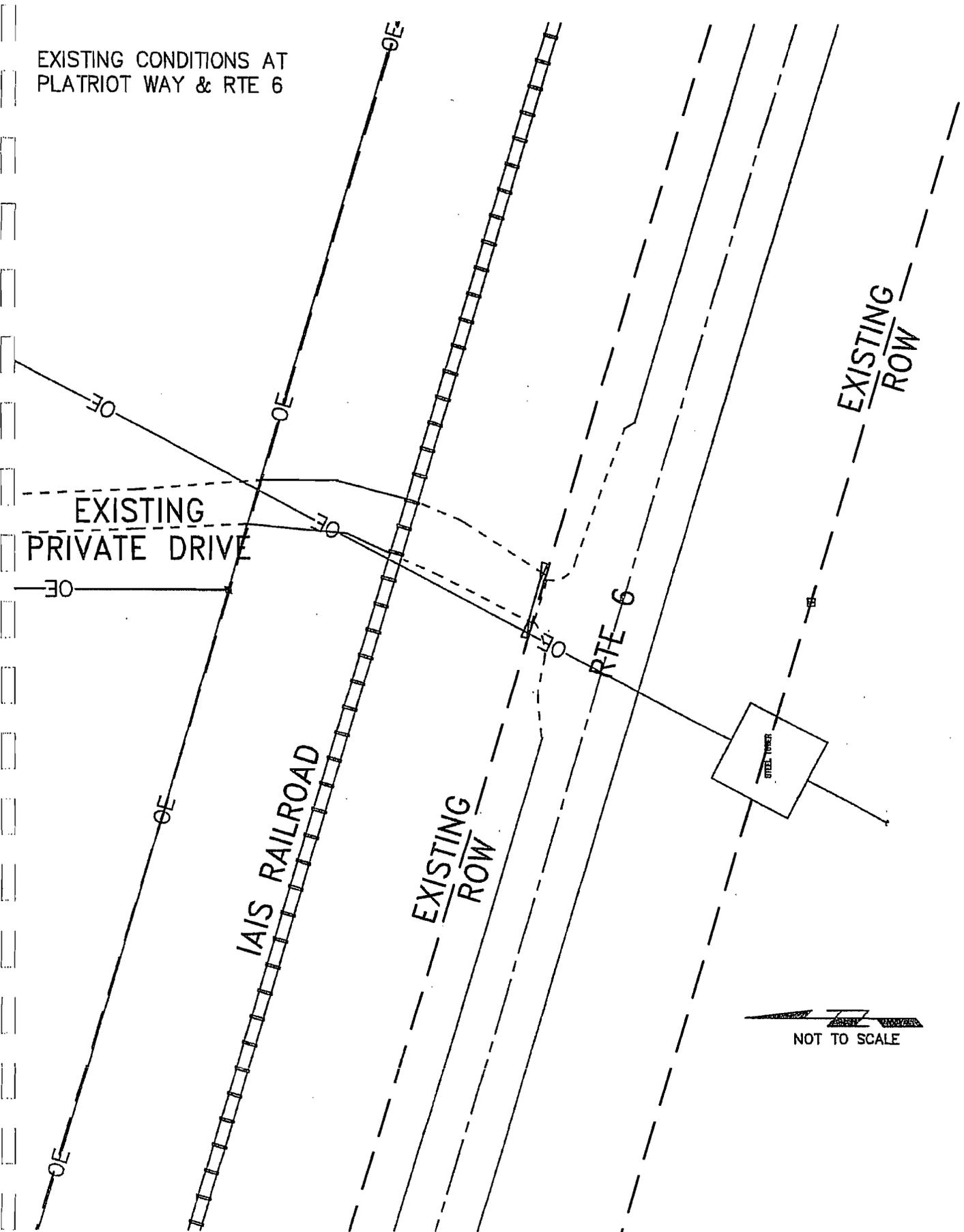
PART 3: TABLES AND FIGURES

3.1 RECOMMENDED TIMING

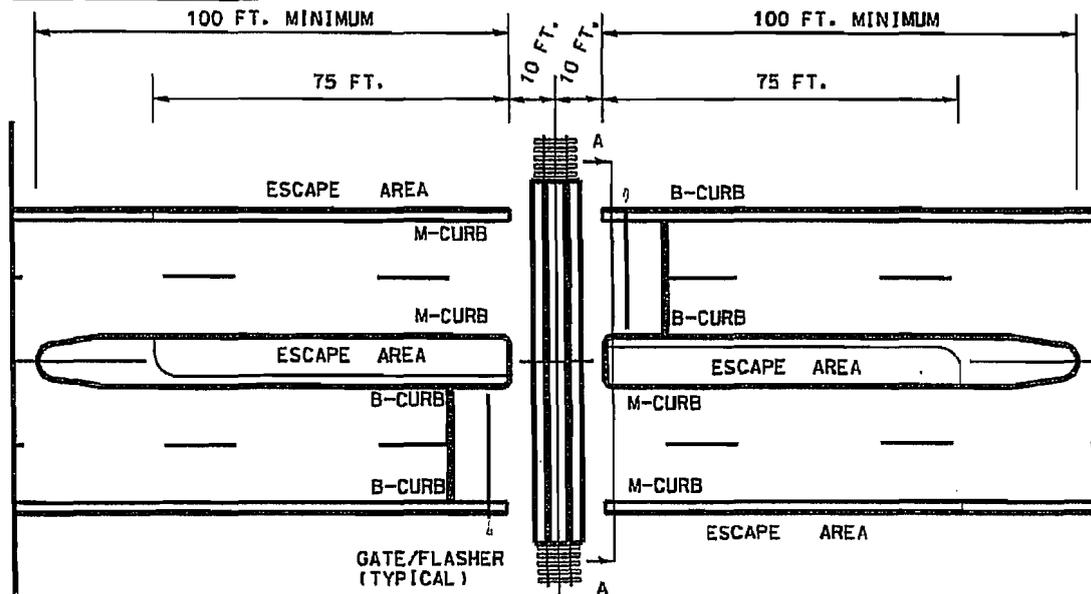
	Time Needed (sec.)
Delay ¹	1
Minimum Green	1
Yellow Interval	5.5
All Red Interval	1.5
Time Before Southbound Patriot Way Receives the Green Interval (sub-total)	9
Track Clearance (Min. Southbound Patriot Way Phase)	20.5
Minimum Railroad Warning Time Required (sec.)	29.5

¹ One (1) second will be programmed into all railroad pre-emptors to limit false calls.

EXISTING CONDITIONS AT
PLPATRIOT WAY & RTE 6



PLAN VIEW



CROSS SECTION A-A

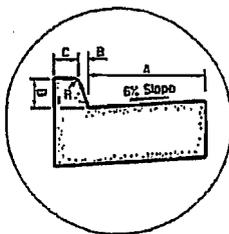
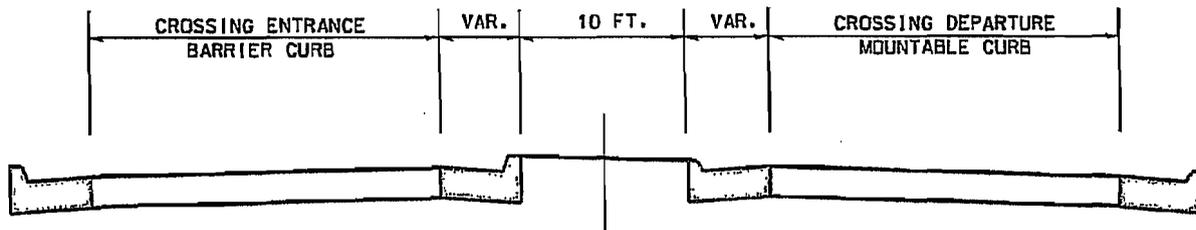


TABLE OF DIMENSIONS BARRIER CURB

TYPE	A	B	C	D	R ₁
B-6.30 (B-6.12)	300 (12)	25 (1)	150 (6)	150 (6)	25 (1)
B-6.45 (B-6.18)	450 (18)	25 (1)	150 (6)	150 (6)	25 (1)
B-6.60 (B-6.24)	600 (24)	25 (1)	150 (6)	150 (6)	25 (1)
B-9.30 (B-9.12)	300 (12)	50 (2)	125 (5)	225 (9)	25 (1)
B-9.45 (B-9.18)	450 (18)	50 (2)	125 (5)	225 (9)	25 (1)
B-9.60 (B-9.24)	600 (24)	50 (2)	125 (5)	225 (9)	25 (1)

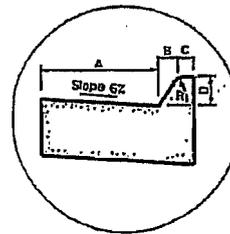


TABLE OF DIMENSIONS MOUNTABLE CURB

TYPE	A	B	C	D	R ₁	R ₂
M-5.15 (M-2.06)	150 (6)	50 (2)	100 (4)	50 (2)	75 (3)	50 (2)
M-5.30 (M-2.12)	300 (12)	50 (2)	100 (4)	50 (2)	75 (3)	50 (2)
M-10.15 (M-4.06)	150 (6)	100 (4)	75 (3)	100 (4)	75 (3)	NA
M-10.30 (M-4.12)	300 (12)	100 (4)	75 (3)	100 (4)	75 (3)	NA
M-10.45 (M-4.18)	450 (18)	100 (4)	75 (3)	100 (4)	75 (3)	NA

NOTES:

- FOR WIDER CROSS SECTIONS/ADDITIONAL LANES, A MEDIAN GATE MAY BE NECESSARY. COORDINATE WITH THE RAILROAD.
- USE M-2 WHERE THE SPEED LIMIT IS GREATER THAN 45 MPH AND M-4 WHERE THE SPEED LIMIT IS LESS THAN 45 MPH.
- MINIMUM MEDIAN WIDTH IS 8FT-6IN. BACK OF CURB TO BACK OF CURB.
- ADDITIONAL MARKING OR SIGNING FOR ESCAPE AREA MAY BE UTILIZED (I.E. PAINTED CURBING; YELLOW FOR MEDIAN, WHITE FOR OUTSIDE).
- IF DRIVEWAYS ARE OPPOSITE THE ESCAPE AREA, M-4 CURB SHOULD BE UTILIZED.

RECOMMENDED GUIDELINES

MEDIAN AND CURB TREATMENTS
AT
HIGHWAY-RAIL INTERSECTIONS

ILLINOIS COMMERCE COMMISSION
ILLINOIS DEPARTMENT OF TRANSPORTATION



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

BDE PROCEDURE MEMORANDUM

NUMBER: 45-05

SUBJECT: Design Guidance for Pre-Signals at Railroad Grade Crossings
Near Signalized Highway Intersections

DATE: June 1, 2005

This memorandum augments information in Section 36-B of the BDE Manual. The additions discussed will be incorporated in the BDE manual in a future update of the BDE Manual.

Background

In response to the Fox River Grove, Illinois train-bus crash in October 1995, the attached guidance was developed in consultation with the Illinois Commerce Commission and the U.S. Department of Transportation's Grade Crossing Safety Task Force. This treatment has been studied, accepted and recommended in various publications from the Federal Highway Administration, the Institute of Transportation Engineers, and the Transportation Research Board.

Applicability

The procedures in this memorandum are applicable to projects which include the proposed installation of pre-signal traffic signals at railroad grade crossings near signalized highway intersections.

Procedures

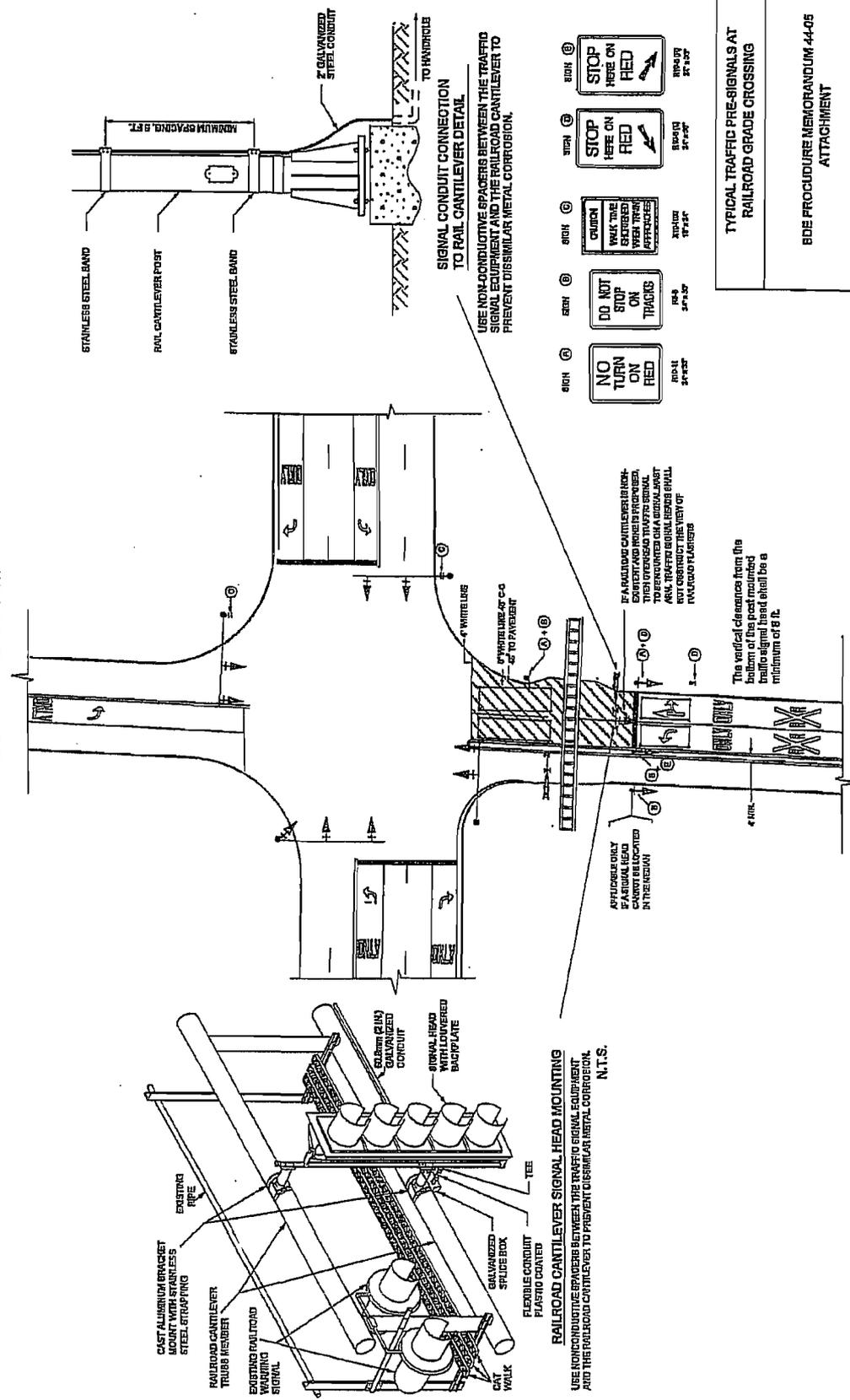
Pre-signals should be installed at a grade crossing when the distance between the stop bar and the nearest rail is 56 feet (17.1 meters) or less. If the crossing is on a State highway, or if a high percentage of multi-unit vehicles cross the tracks, then pre-signals should be installed when the distance between the stop bar and the nearest rail is 81 feet (24.7 meters) or less.

Engineer of Design and Environment

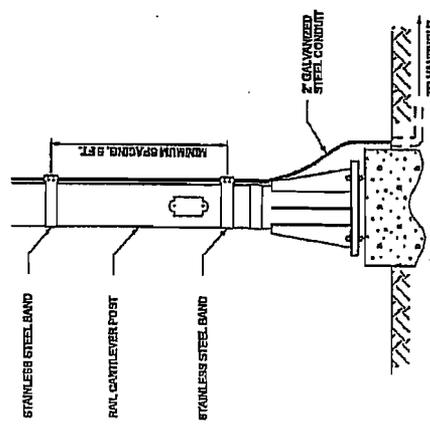
A handwritten signature in cursive script, reading "Michael L. Horne".

Attachment

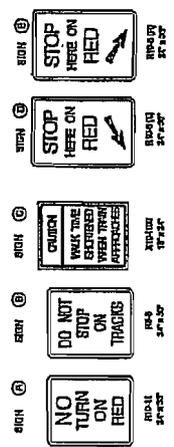
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



RAILROAD CANTILEVER SIGNAL HEAD MOUNTING
USE NONCONDUCTIVE SPACERS BETWEEN THE TRAFFIC SIGNAL EQUIPMENT AND THE RAILROAD CANTILEVER TO PREVENT DISSIMILAR METAL CORROSION.
N.T.S.



SIGNAL CONDUIT CONNECTION TO RAIL CANTILEVER DETAIL
USE NONCONDUCTIVE SPACERS BETWEEN THE TRAFFIC SIGNAL EQUIPMENT AND THE RAILROAD CANTILEVER TO PREVENT DISSIMILAR METAL CORROSION.



TYPICAL TRAFFIC PRE-SIGNALS AT RAILROAD GRADE CROSSING

BDE PROCEDURE MEMORANDUM 44-05
ATTACHMENT

06/01/05

IF A RAILROAD CANTILEVER IS HIGH-CENTRATED AND NON-TRAFFIC, THE SIGNAL HEADS SHALL BE MOUNTED ON A SIGNAL MOUNT ASK. TRAFFIC SIGNAL HEADS SHALL NOT OBSTRUCT THE VIEW OF RAILROAD FLAGMEN.

The vertical clearance from the bottom of the post mounting head of a signal head shall be a minimum of 8 ft.

ADJUSTABLE ONLY
IF SIGNAL HEAD CANNOT BE LOCATED IN THE REGION