



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

March 12, 2010

RECEIVED

MAR 16 2010

ILLINOIS COMMERCE COMMISSION
RAIL SAFETY SECTION

Mr. Michael E. Stead
Railroad Safety Program Administrator
Illinois Commerce Commission
527 East Capitol Avenue
Springfield, IL 62701

Dear Mr. Stead:

Enclosed for your review and approval is the Minimum Preemption Time (MPT) study for the railroad interconnected traffic signal at IL 57 at Radio Road south of Quincy, Adams County (DOT No. 072741J). This study has been necessary because of the addition of a rail at the crossing, which is the subject of the ICC Docket T09-0123. Presently 31 seconds of MPT is being provided at the crossing.

We would appreciate your assistance in reviewing and approving the study. If you have any questions concerning this matter, please contact me at 782-2076 or Yogesh Gautam at 782-3452.

Very truly yours,

A handwritten signature in black ink, appearing to read 'L. Gregg'.

Lawrence W. Gregg
Acting Traffic Operations Engineer

Enc.

JS | CLM

November 05, 2009

DISTRICT 6
NOV 9 - 2009
OPERATIONS

Mr. Roger Driskel
District 6 / Region 4
Illinois Department of Transportation
126 East Ash Street
Springfield, IL 62704

Attn: Mr. Kyle Armstrong

RE: Rail Crossing Timing Study
Radio Road
Adams County

Dear Mr. Driskel:

Find enclosed a revised timing study for the above reference railroad crossing. The Illinois Commerce Commission (ICC) is being petitioned to modify the crossing to add a third industrial rail. The addition of the rail will necessitate increasing the clearance time of the traffic signal preemption at the intersection of Radio Road and IL Route 57.

Your review, concurrence and coordination with the ICC is requested. If you have questions or need additional information do not hesitate to contact Richard Klusmeyer, PE, County Engineer at 217-223-0614 or me.

Very truly yours,

KLINGNER & ASSOCIATES, P.C.



Stephen R. Wavering, P.E.

SRW/mem/P:\06files\060376\ACHD RAIL SPUR\07 Design\Preemption\Ltr 2009-11-05 Armstrong.docx

C: Richard Klusmeyer, P.E., County Engineer

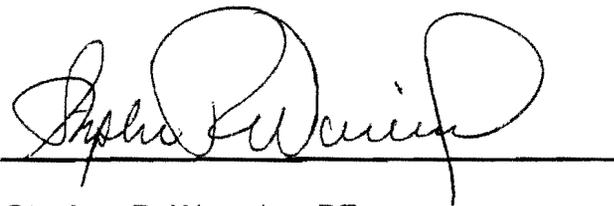
Enclosure: Minimum Warning Time Study

ILLINOIS ROUTE 57 AND RADIO ROAD QUINCY, IL

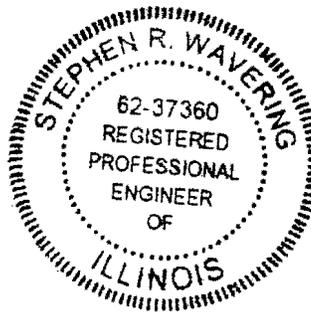
REVISED

MINIMUM WARNING TIME STUDY
RAILROAD CROSSING AAR# 072741J, BNSF

November 5, 2009



Stephen R. Wavering, PE
62-037360 Exp. 11-30-09
Design Firm 1842738



KLINGNER
& ASSOCIATES, P.C.

Engineers / Architects

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□ 3318 Market Street, Hannibal, MO
□ 810 N. 4th Street, Suite 100, Burlington, IA
□ 48 North Prairie Street, Galesburg, IL
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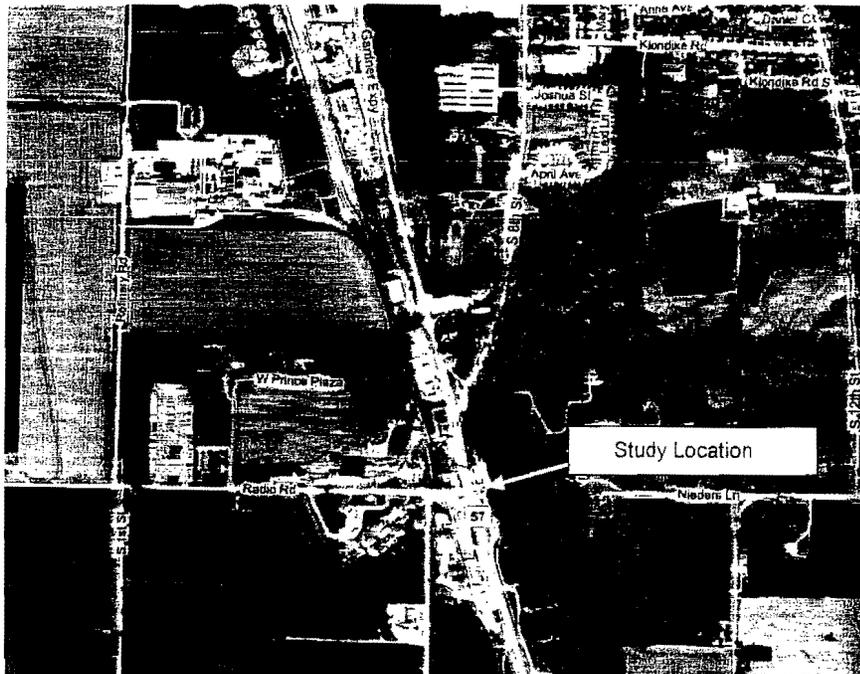
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IL ROUTE 57 & RADIO ROAD REVISED MINIMUM WARNING TIME STUDY

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IL ROUTE 57 & RADIO ROAD REVISED MINIMUM WARNING TIME STUDY

1.0 PROJECT SUMMARY

1.1 INTRODUCTION

The purpose of this report is to revise the necessary warning times and specifications for the traffic signal-railroad crossing interconnect due to the addition of a third rail at the intersection of IL 57 and Radio Rd. south of Quincy, IL.

1.2 EXISTING AND PROPOSED CONDITIONS

The intersection of IL 57 and Radio Road is currently a 4 leg signalized intersection. An additional industrial rail crossing west of the existing two (2) crossings on Radio Road is proposed. The proposed crossing will consist of three (3) tracks, one (1) main line and two (2) industrial spurs. Radio Road will remain open to traffic requiring the proposed rail crossing to be stage constructed.

The Burlington Northern Santa Fe Railroad (072741J M.P. 265.55) runs, which is operated by Burlington Junction Railway is parallel to IL 57 and crosses the existing Radio Rd. approach. The existing railroad warning devices are active and consist of flashing warning lights and gates. The vehicle storage distance on Radio Rd. will remain at 150 feet. The track clearance length will increase from 58 feet to 115 feet. The painted median will be extended between the existing and proposed railroad crossing stop bars. The existing west lights and gate will be relocated approximately 60 feet to the west.

The intersection is located in a heavily industrialized area south of Quincy. The railroad line feeds multiple industries and is used primarily for switching operations. Various industrial spur tracks branch off of the main line to allow railroad cars to be parked for loading and unloading purposes.

1.3 RECOMMENDATIONS

Based upon the data included with this report, the proposed highway traffic signal system should incorporate the following recommendations:

The existing highway traffic signal system should remain interconnected to the railroad signal system through all construction stages. Based on the MUTCD, when highway intersection control signals are within 200 ft. of a grade crossing, the normal sequence of highway intersection signal indications should be preempted upon approach of trains to avoid entrapment of vehicles on the crossing by conflicting aspects of the highway traffic signals and the grade

crossing signals. Track clearance will be revised to accommodate vehicles queued just past the far side of the track through the intersection. During preemption, the traffic signal controller shall terminate, utilizing normal clearance intervals, all phases that conflict with the track clear green phase.

The following signs should be relocated:

- "Do Not Stop on Tracks"
- "Stop Here on Red"

Supplemental pavement markings should be extended to the new railroad crossing to emphasize the area between the railroad crossing stop bars. The pavement markings should consist of 6" white diagonals with a 4" border.

2.0 DESCRIPTION OF EXISTING/PROPOSED CONDITIONS

2.1 PHYSICAL CHARACTERISTICS

| | |
|------------------------------|---|
| Type: | 60 degree skew, traffic signal control |
| Location: | South of Quincy, IL |
| Pedestrian Crossing: | None |
| School Crossing: | None |
| Bike Path Crossing: | None |
| Pavement Markings: | Stop bars on all approaches White diagonals on islands and median noses White land lines and centerline double yellows White diagonals through proposed crossing |
| Pre-emption Blank Out Signs: | N/A |
| Signing Present: | N/A |
| Roadway Lighting: | Luminaires on proposed signal mast arms |
| Sight Distance: | Acceptable |
| Rail Proximity: | 165' from nearest rail to nearest edge of pavement. 150' storage distance |
| RR Crossing: | One mainline track, two industrial spur tracks |
| RR Lights: | Yes |
| RR Gates: | Yes |
| RR Pedestrian Gate: | None |

2.2 RAILROAD SIGNALS

Average Track Speed: 10 mph
Cross buck warning signs, automatic flashing light signals and gates will be installed.

3.0 TABLES AND FIGURES

3.1 TRAFFIC SIGNAL RECOMMENDED TIMINGS

| | <u>Time Needed</u> |
|--|-----------------------|
| Delay* (sec) | 1.0 |
| Minimum Green **(sec) | 1.0 |
| Yellow Interval ** (sec) | 3.5 |
| All Red Interval ** (sec) | <u>3.0</u> |
| Maximum Time Prior to Track Clear Phase | 8.5 |
| Track Clear Green *** (sec) | <u>25.0</u> |
| Minimum Traffic Signal Warning Time Required (Total Seconds) | 33.5 |
| | Use 34 seconds |

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

**Recommended minimum green, yellow and red intervals for existing traffic signal.

***Existing track clear green prior to the additional third track was 13 seconds. Track clear length will be increased from 58' to 115'. Including a 78' truck length to clear the track and using Fig 1X-33 from AASHTO's "Geometric Design of Highway and Streets". The increased clear time should be 16 sec. This will insure that vehicles have adequate opportunities to clear the tracks and the intersection. Onsite observations of proposed track clear times taken at peak hour traffic movements were less than the proposed 16 seconds. The separation time, which is a component of the track clear green, is 9 seconds.

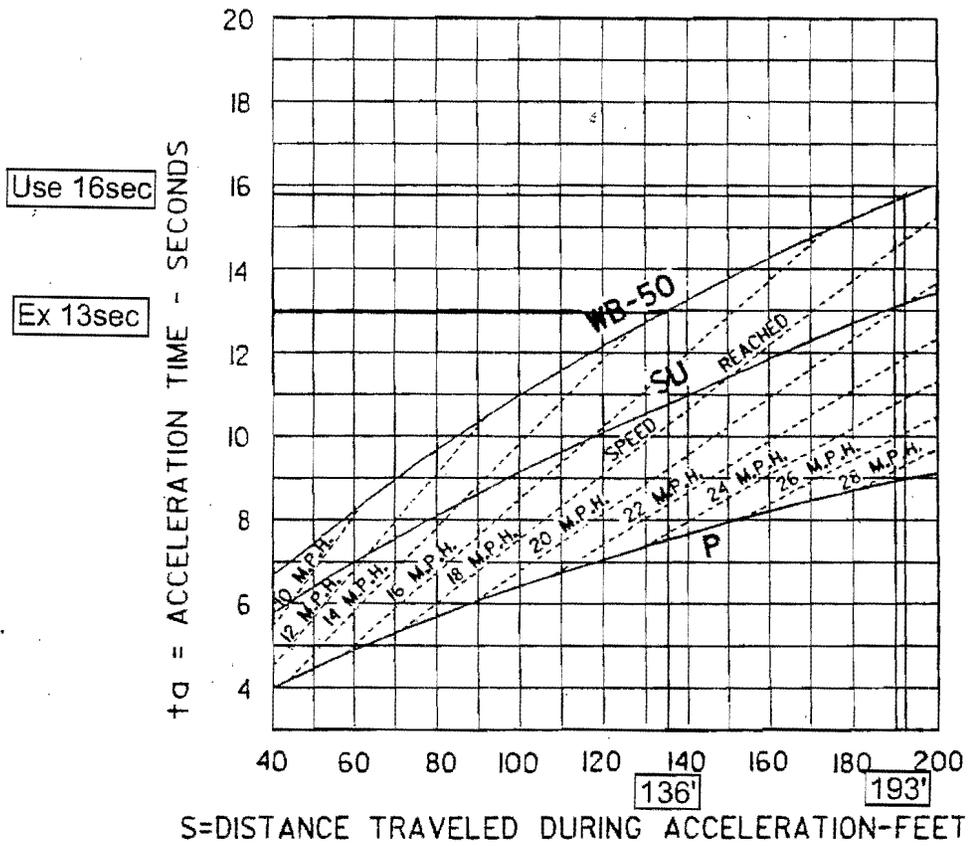
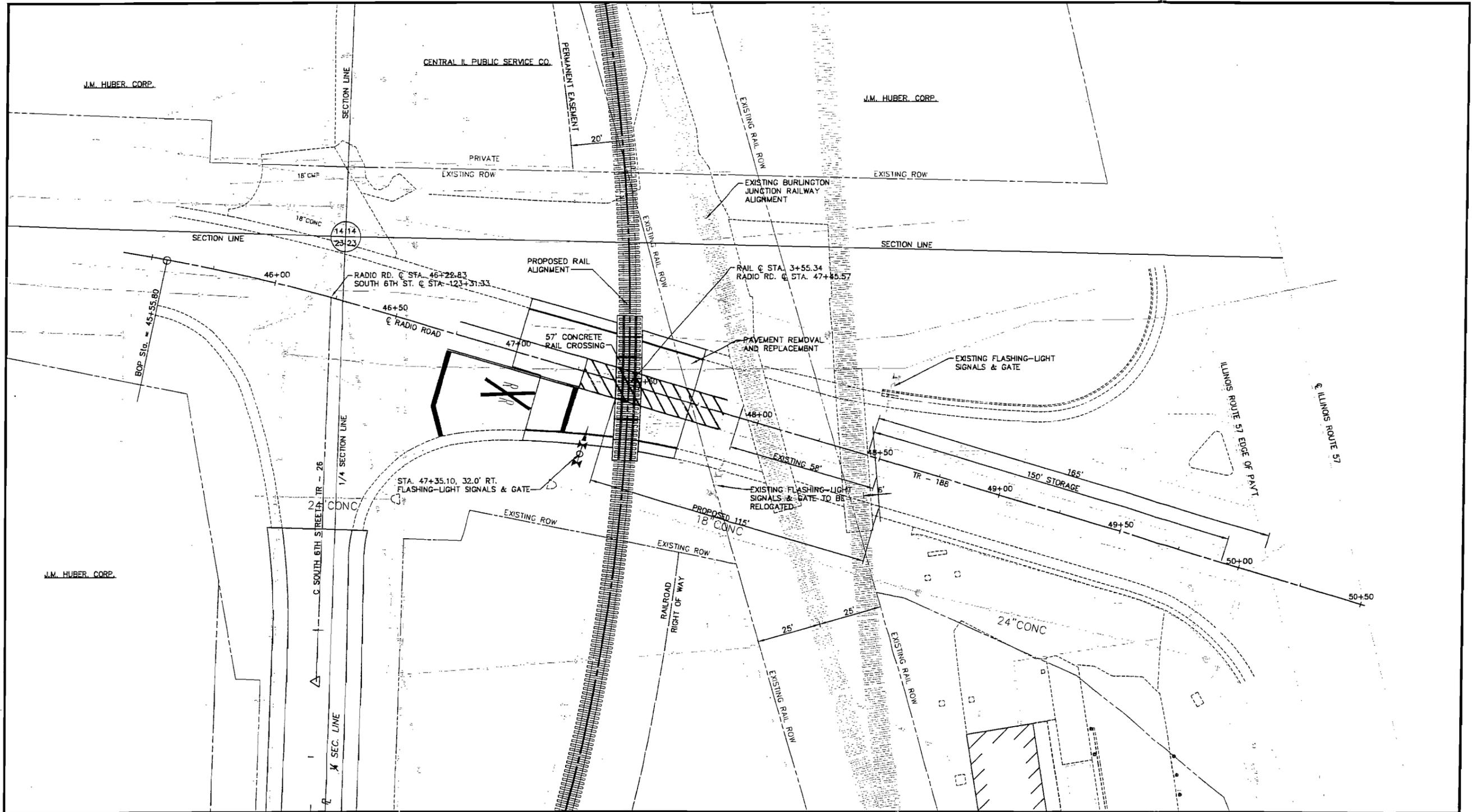
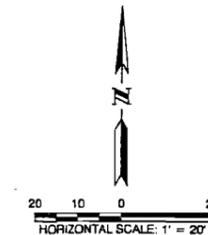


Figure IX-33. Sight distance at intersections (Case III, acceleration from stop).



**INTERSECTION LAYOUT DETAIL
ADAMS COUNTY RAIL EXTENSION
TO THE SOUTH QUINCY INDUSTRIAL AREA**



**KLINGNER
& ASSOCIATES, P.C.**
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