

UNION PACIFIC RAILROAD COMPANY

ENGINEERING DEPARTMENT
COMMUTER OPERATIONS



500 WEST MADISON STREET
SUITE 3610
CHICAGO, ILLINOIS 60661
(312) 496-4750

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JAN 31 2008

Illinois Commerce Commission
RAIL SAFETY SECTION

January 28, 2008

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

X-12834

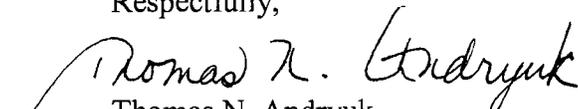
Re: IL-120 / Elm St., DOT # 178 812A
Main St., DOT # 178 811T

TO 9-0008

Dear Sir:

Reference attached Form 3 requesting changes at (2) crossings in McHenry, IL.

Respectfully,


Thomas N. Andryuk
Mgr.-Field Engineering

Cc: Mack Shumate
Operating File

(File original and two duplicates)

RECEIVED
JAN 31 2008

STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Illinois Commerce Commission
RAIL SAFETY SECTION

Petition for permission to make a major change in crossing protection, or to install new protection under 92 Illinois Administrative Code 1535.400 (d)

X-12834

TO 9-0008

Date: JAN. 28, 2008

178812A

To the Illinois Commerce Commission:

The petitioner UNION PACIFIC RAILROAD shows
(name of railroad company)

- (1) That it is a railroad company operating a line of railroad in the State of Illinois.
- (2) That petitioner proposes and hereby makes application for authority to make a major change in crossing protection, or to install new protection, under 92 Illinois Administrative Code 1535.400 (d) adopted by this Commission.
- (3) That the location of the crossing, the nature of protection now established and proposed to be established, and other pertinent facts in connection therewith, are set forth in the statement attached to and forming part of this petition.
- (4) That petitioner's reasons and purpose, with reference to its said proposal are PER IDOT

INSTALL CWT & GATES @ IL 120/ELM ST. AND CWT
AT MAIN ST. IN MCHENRY, IL

(State reasons and purpose)

- (5) That the facts set forth in this petition and in the statement and plans or plats attached thereto, are, all of them, true and correct to the best of petitioner's knowledge and belief.

WHEREFORE, the petitioner prays that the Commission will, if deemed desirable by the Commission, set the aforesaid matter for hearing, and that the Commission enter an order or adopt a resolution consenting to and granting authority for the making of the said proposed changes in or additions to crossing protection.

UNION PACIFIC RAILROAD
(Railroad Company)

By Thomas A. Godryuk

(Attorney for Petitioner)

(Attorney's Address)

Statement, attached to and part of an application for permission to make a major change in crossing protection or to install new protection, under 92 Ill. Adm. Code 1535.400 (d).

1. Name of Railroad Company UNION PACIFIC

2. Crossing Number (IL 120) 178 812 A (MAIN ST) 178 811 T
(Separate statement should be filed for each crossing)

3. Village or City McHENRY
(in or near)

4. Name of Street or Highway IL 120/ELM ST & MAIN ST.

5. Public Agency Maintaining Highway IDOT
(D.O.T., County, Township, City)

6. Protection now established: (Give full description. Indicate the hours of any manual protection.)
IL 120 - FLASHING LIGHTS & CANTILEVERS
MAIN ST. - FLASHING LIGHTS

7. Protection desired: (Give details)
IL 120/ELM ST. - FL LIGHTS W/ GATES & CONSTANT WARNING
MAIN ST. - CONSTANT WARNING CIRCUITS

8. Number of main tracks 1 Other tracks _____

9. Number of passenger train movements: 6 a.m. to 6 p.m. 4 6 p.m. to 6 a.m. 2

10. Number of freight train movements: 6 a.m. to 6 p.m. 1 6 p.m. to 6 a.m. 1

11. Approximate number of switch movements: 6 a.m. to 6 p.m. _____ 6 p.m. to 6 a.m. 1

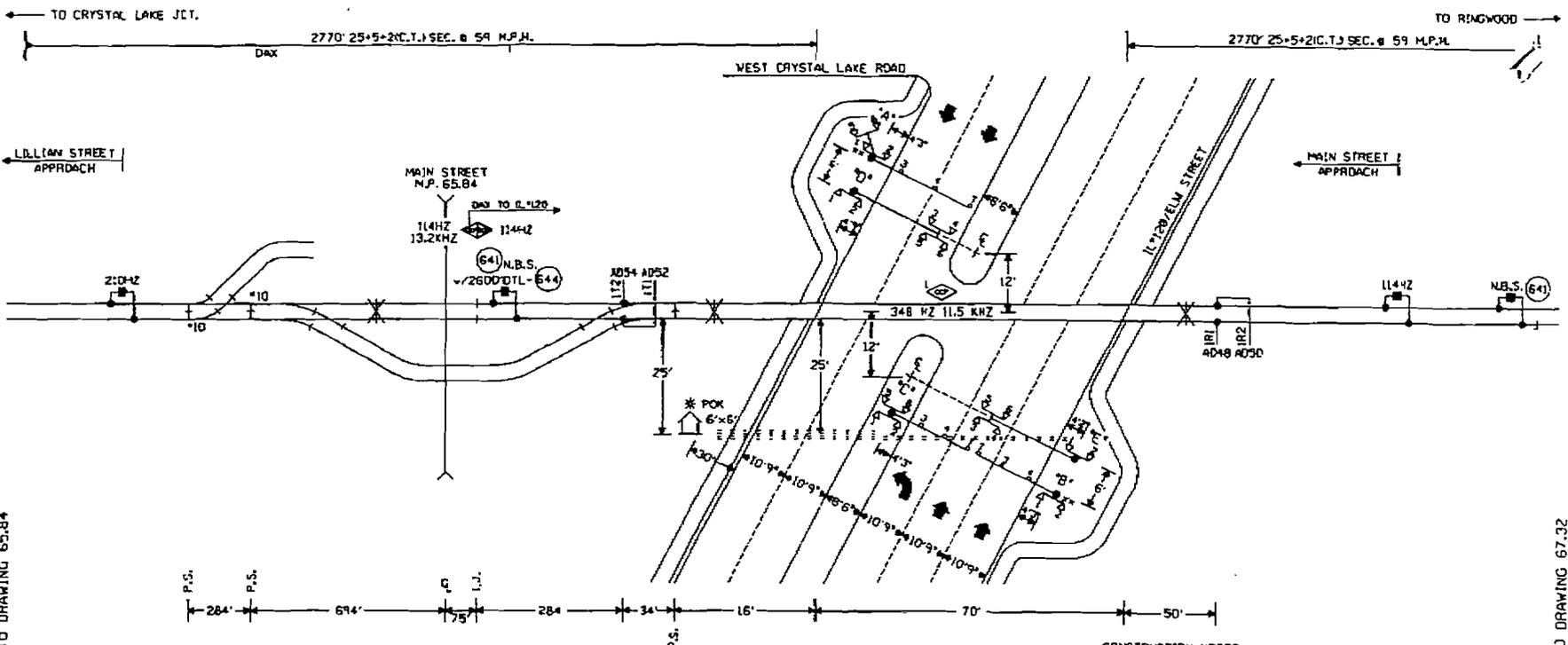
12. Maximum speed of trains at crossing on each track in each direction 20 MPH

13. Passenger platforms served by tracks within the limits of track circuits, if any McHENRY STATION

14. Where automatic signals or gates are proposed, approximate number of train or engine movements daily which would cause false indications or operation _____

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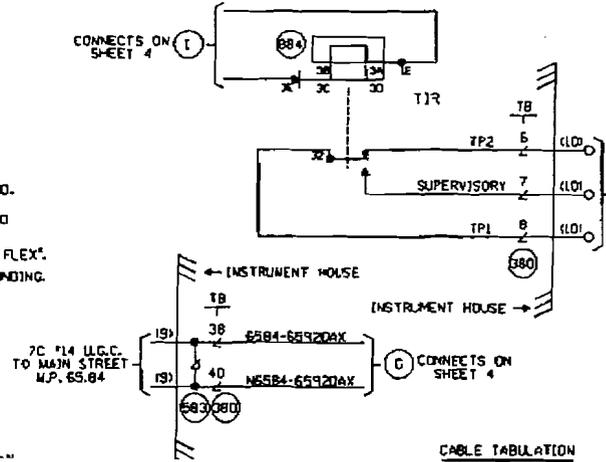


CONNECTS TO DRAWING 65.84

CONNECTS TO DRAWING 67.32

NOTES:

- ⊗ TWISTED WIRES INSULATED 1 TWIST PER FT. ALL TRACK WIRES 2C, #6
- TRANSMITTER AND RECEIVER LEADS TO BE SEPARATED BY AT LEAST 12" IN TRENCH. LENGTHS SHOULD NOT EXCEED MANUFACTURERS RECOMMENDATION.
- TOP OF FOUNDATION TO BE AT SAME ELEVATION AS THE SURFACE OF THE TRAVELED WAY & NO MORE THAN 4" ABOVE THE SURFACE OF THE GROUND.
- ALL BUNGALOW WIRING TO BE #16 AWG FLEX UNLESS OTHERWISE SPECIFIED EXCEPT ALL GROUND WIRE TO BE #6 AWG FLEX OR LARGER.
- ALL WIRING IN GATE MECHANISM TO BE #10 AWG FLEX. REFER TO UP STANDARD DWG FOR BUNGALOW GROUNDING.
- ALL LIGHTS TO BE 12" ROUNDCELS.
- ==== 4" x 12" CONDUIT
- LIGHTS: LED LIGHTS
- GATE A: 25'
- GATE B: 20'
- CANT O.E: 20'
- ** = BELL



CABLE TABULATION

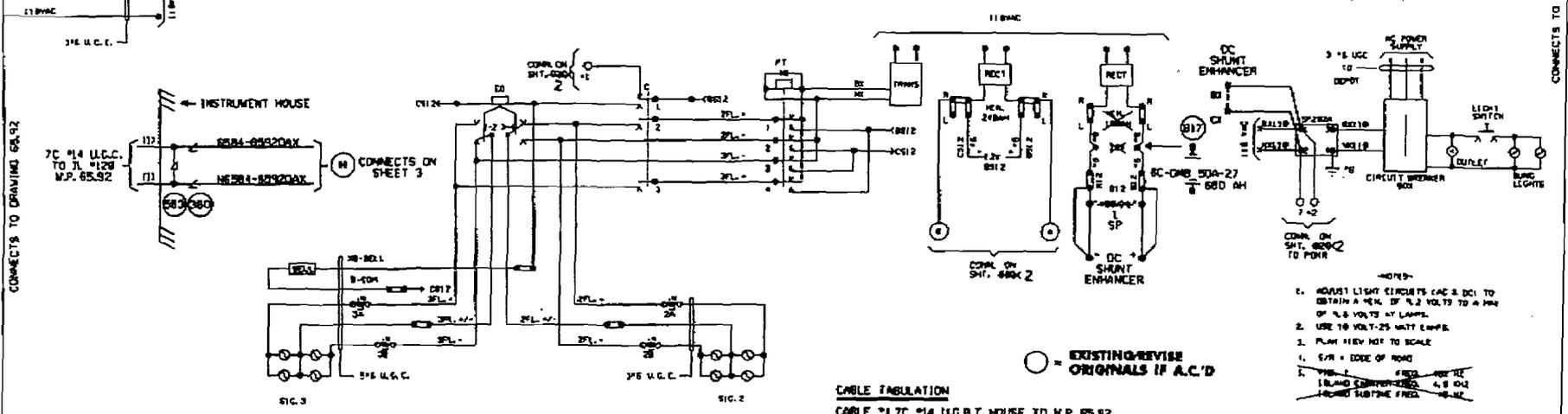
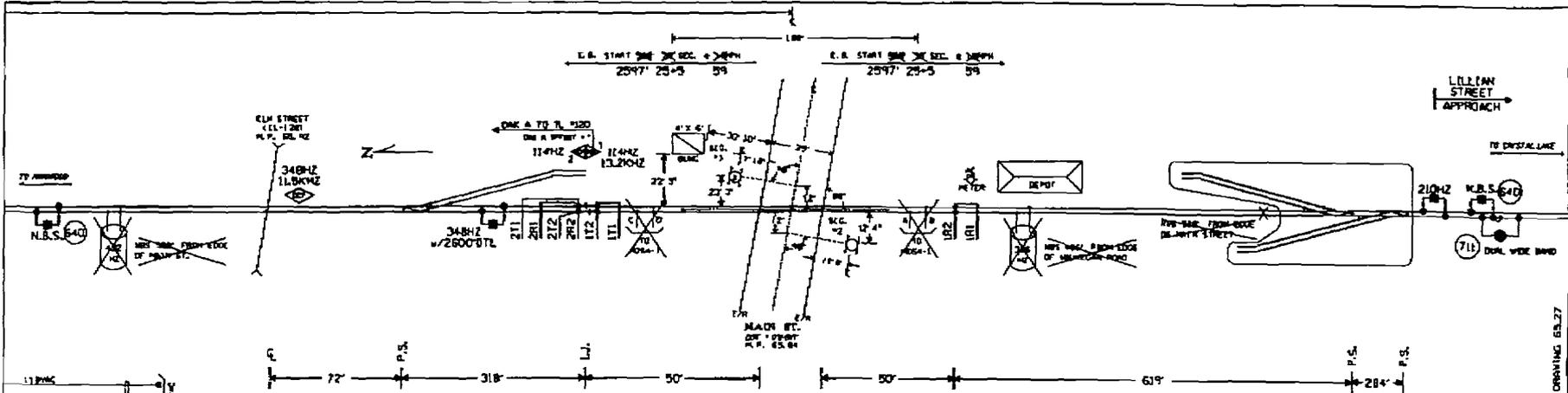
CONSTRUCTION NOTES:

- 1.) CANTILEVERS ARE EXISTING REMOVE FRONT AND SIDE LIGHTS AND UPGRADE ALL THE REMAINING LIGHTS TO LED'S, REMOVE BELLS, AND INSTALL NEW CABLE.
- 2.) INSTALL A SHUNT ENHANCER PANEL (TAB 6530 FOR POOR TRACK CONDITIONS.
- 3.) INSTALL NEW INSULATED JOINTS (115'± 50' NORTH OF MAIN STREET AND A NEW GCP 4000 (TAB 697), BATTERY (TAB B17), SHUNT ENHANCER PANELS (1-TAB 6531-TAB 6534), AND SURGE PROTECTORS (1-TAB 618, 1-TAB 619) IN THE EXISTING CASE AT MAIN STREET (M.P. 65.84).
- 4.) REPLACE BOTH HARDWARE SHUNT'S FOR LILLIAN STREET (M.P. 65.27) WITH 210 HZ N.B.S.'S (2-TAB 6404).
- 5.) INSTALL A LIMIT JOINT (115'± @ THE NORTH APPROACH SHUNT FOR IL420 AND THE SOUTH APPROACH SHUNT FOR MAIN STREET. INSTALL A C.W.B.S. (TAB 721) AROUND THE SOUTH LIMIT JOINT.
- 6.) INSTALL A THIRD INSULATED JOINT TO EACH TURNOUT WITHIN THE APPROACHES (13-115'±).
- 7.) WIRE FOR BUT DO NOT INCLUDE THE CTRL. THE UNIT WILL BE RELOCATED IN THE FIELD.

x = REMOVE

NEW SHEET

MCHENRY, ILLINOIS
2L #120/ELM STREET
M.P. 65.92



- NOTES:
1. ADJUST LIGHT CIRCUITS CAC & DC1 TO OBTAIN A VOLT. OF 9.2 VOLTS TO A MIN. OF 9.0 VOLTS AT LAMP.
 2. USE 10 VOLT-25 WATT LAMP.
 3. PLAN VIEW NOT TO SCALE.
 4. E.P. = EDGE OF ROAD.
 5. P.S. = FIELD - SEE THE ISLAND CONSTRUCTION. 4.8 OLS. (SEE SUBTIME P. 10)

○ = EXISTING/REVISE
 ○ = ORIGINALS IF A.C'D

CABLE TABULATION
 CABLE #17C #14 U.G.B.T. HOUSE TO M.P. 65.92

— = IN NEW
 * * * = OUT

REVISIONS	BY	DATE	DESCRIPTION
1	CHAS. B. JAC	10-18-54	FIELD CHECKS
2	CHAS. B. JAC	11-17-54	FIELD CHECKS
3	CHAS. B. JAC	11-17-54	FIELD CHECKS
4	CHAS. B. JAC	11-17-54	FIELD CHECKS
5	CHAS. B. JAC	11-17-54	FIELD CHECKS
6	CHAS. B. JAC	11-17-54	FIELD CHECKS
7	CHAS. B. JAC	11-17-54	FIELD CHECKS
8	CHAS. B. JAC	11-17-54	FIELD CHECKS
9	CHAS. B. JAC	11-17-54	FIELD CHECKS
10	CHAS. B. JAC	11-17-54	FIELD CHECKS
11	CHAS. B. JAC	11-17-54	FIELD CHECKS
12	CHAS. B. JAC	11-17-54	FIELD CHECKS
13	CHAS. B. JAC	11-17-54	FIELD CHECKS
14	CHAS. B. JAC	11-17-54	FIELD CHECKS
15	CHAS. B. JAC	11-17-54	FIELD CHECKS
16	CHAS. B. JAC	11-17-54	FIELD CHECKS
17	CHAS. B. JAC	11-17-54	FIELD CHECKS
18	CHAS. B. JAC	11-17-54	FIELD CHECKS
19	CHAS. B. JAC	11-17-54	FIELD CHECKS
20	CHAS. B. JAC	11-17-54	FIELD CHECKS
21	CHAS. B. JAC	11-17-54	FIELD CHECKS
22	CHAS. B. JAC	11-17-54	FIELD CHECKS
23	CHAS. B. JAC	11-17-54	FIELD CHECKS
24	CHAS. B. JAC	11-17-54	FIELD CHECKS
25	CHAS. B. JAC	11-17-54	FIELD CHECKS
26	CHAS. B. JAC	11-17-54	FIELD CHECKS
27	CHAS. B. JAC	11-17-54	FIELD CHECKS
28	CHAS. B. JAC	11-17-54	FIELD CHECKS
29	CHAS. B. JAC	11-17-54	FIELD CHECKS
30	CHAS. B. JAC	11-17-54	FIELD CHECKS
31	CHAS. B. JAC	11-17-54	FIELD CHECKS
32	CHAS. B. JAC	11-17-54	FIELD CHECKS
33	CHAS. B. JAC	11-17-54	FIELD CHECKS
34	CHAS. B. JAC	11-17-54	FIELD CHECKS
35	CHAS. B. JAC	11-17-54	FIELD CHECKS
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49	CHAS. B. JAC	11-17-54	FIELD CHECKS
50	CHAS. B. JAC	11-17-54	FIELD CHECKS

UNION PACIFIC MCHENRY, ILL.
 M.P. 65.84
 MCHENRY SUB.
 MAIN ST.
 SIGNAL DESIGN DOT #178 8117

ITEM: MCH6584-001
 ID: MCH6584.1X

IL 120 (ELM ST.) AT CRYSTAL LAKE ROAD TRAFFIC/RAILROAD SIGNAL REPORT

Location: McHenry
Intersection: IL 120 (Elm St.) at Crystal Lake Road
TS Number: 11915
Railroad: Union Pacific
DOT Number: 178-812A

Prepared for:
Illinois Department of Transportation
October 21, 2008

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1.3	Recommendations
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2.4	Remarks
Part 3	TABLE AND FIGURES

PART 1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

The purpose of this report is to document relevant data with respect to operation of the highway traffic signal subsystem and the railroad crossing signal subsystem at IL 120 at Crystal Lake Road in McHenry, Illinois. A "total system" perspective has been followed in the review and analysis of the operation of existing equipment in order to seek practical solutions for the enhancement of public safety. The scope of this report centralizes on the electrical interface between the two subsystems, with primary focus on critical timing characteristics, which affect the synchronization of the "total system".

1.2 EXISTING CONDITIONS

1.2.1 Physical Characteristics

One low speed spur track crosses IL 120 (Elm St.) 89 feet east of the intersection. **Figure 1** illustrates the existing conditions of the intersection.

1.2.2 Highway Traffic Signal Subsystem

- The westbound IL 120 storage area as measured along the double yellow centerline from the proposed stop bar location to a point spanning the track is 110 feet. The westbound storage area as measured along the northerly curblin from the proposed stop bar location to a point spanning the track is 95 feet. A pre-signal does not exist at this location.
- Pedestrian crossings across the east and south legs of the intersection.
- A median exists on both sides of the track.
- Existing Placement of "CAUTION WALK TIME SHORTENED WHEN TRAIN APPROACHES" and "DO NOT STOP ON TRACKS" are illustrated by **Figure 1**. RIGHT TURN" (symbol) pre-emption blank out signs face northbound Crystal Lake Road traffic. Two fiber-optic "NO LEFT TURN" (symbol) pre-emption blank out signs face traffic on the north leg of the intersection
- Supplemental pavement markings (12" white diagonals) exist at the railroad crossing to emphasize that motorists should not stop in the area bounded by the railroad crossing stop bar and a point where a stop bar would normally exist at the intersection.

1.2.2 Railroad Signal Subsystem

- Railroad gates exist at this crossing.
- Stop and Proceed/Flag operation at this crossing

1.3 RECOMMENDATIONS

1.3.1 Highway Traffic Signal Subsystem

- Based upon the data included with this report, no additional modifications to the highway traffic signal subsystem are recommended.

1.3.2 Railroad Signal Subsystem

- Recommended Stop and Proceed/Flag operation be replaced by a minimum railroad warning time is 27 seconds. Field observations were used to determine an appropriate "track clearance" time in order to clear vehicles off the track. Table 3.1 shows the minimum railroad warning time required.

PART 2 EXISTING CONDITIONS

2.1 PHYSICAL CHARACTERISTICS

- Type: Existing signalized four-legged intersection
- Location: McHenry
- Pedestrian Crossings: Phases 2 & 8
- School Crossing: No
- Pre-emption blank-out signs: Fiber-Optic
- Signing Present: Yes
- Roadway Lighting: Yes
- Rail Proximity: Nearest track located 89 feet east of the intersection.
- RR Crossing: One spur track
- RR Gates: Existing

2.2 TRAFFIC SIGNALS

- Controller: EAGLE EPAC
- Railroad Pre-empt: Normally closed circuit
- Closed-loop system: Yes
- Emergency Vehicle Pre-emption System (EVPS): Yes

2.3 RAILROAD SIGNALS

- Maximum Train speed: 10 MPH
- Traffic Interface: Stop and Proceed/Flag operation

2.4 REMARKS

- Depot: No
- Passenger Platforms: No

PART 3 TABLE AND FIGURES

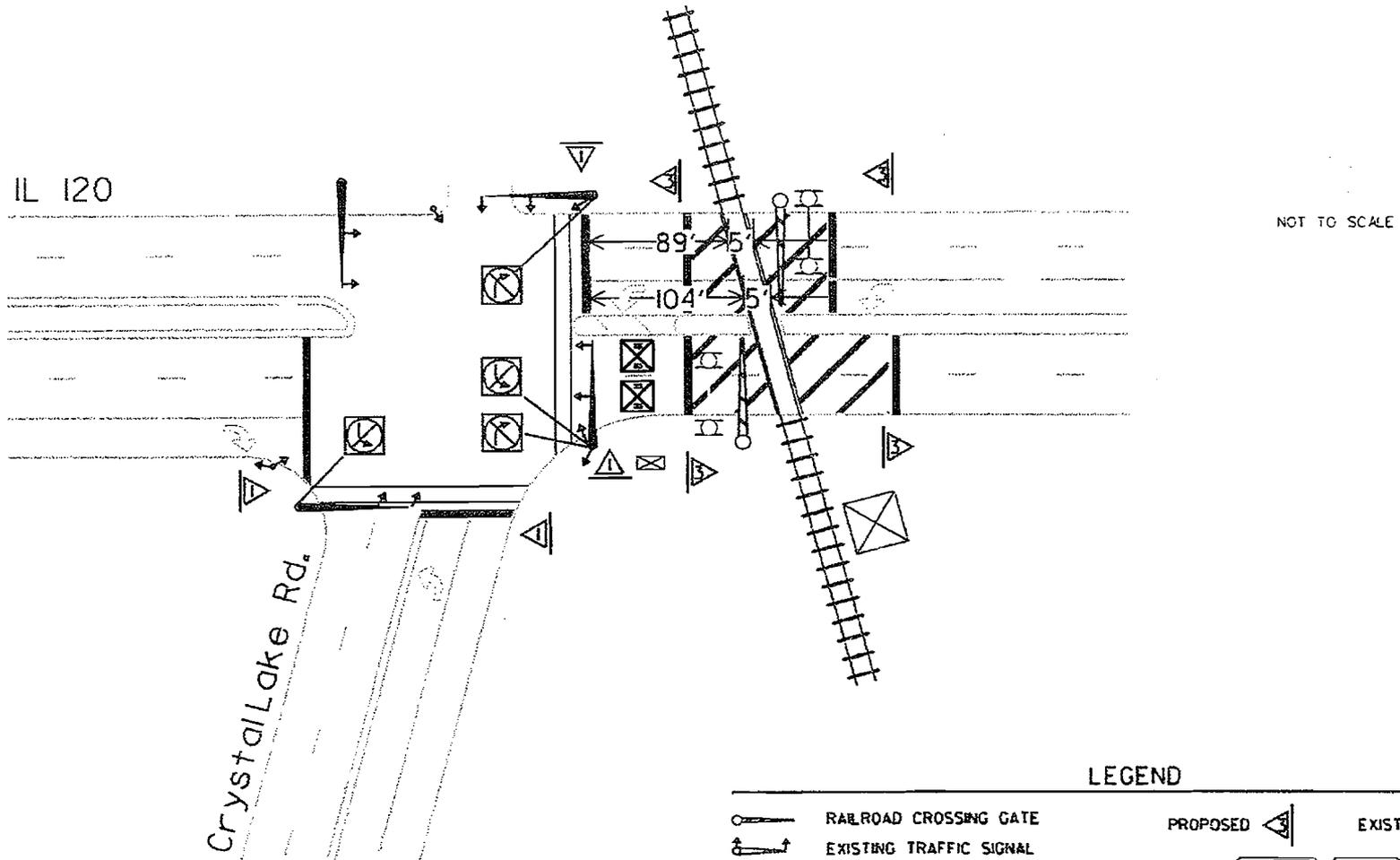
**Table 3.1
Recommended Timing**

	Time Needed
Delay ¹	1
Minimum Green (sec)	1
Yellow Interval ² (sec)	4.5
All Red Interval (sec)	1.5
Time Before IL 120 Receives the Green Interval (sec) (subtotal)	8
Track Clearance ³ (sec)	19
Min. RR Warning Time Required (sec)	27

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

² Includes four (4) seconds of flashing don't walk.

³ Time to clear the track based on field observations



LEGEND

	RAILROAD CROSSING GATE	PROPOSED	EXISTING
	EXISTING TRAFFIC SIGNAL		
	PROPOSED TRAFFIC SIGNAL		
	TRAFFIC SIGNAL CONTROLLER		
	PRE-EMPTION BLANK-OUT SIGN		
	RAILROAD BUNGALOW		
	RAILROAD PEDESTRIAN CROSSING GATE		
	PEDESTRIAN PLATFORM		
	RAILROAD CROSSING LIGHT CANTILEVER		
	DEPOT		

FIGURE 1
EXISTING CONDITIONS