

NC

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2015 JUL 15 PM 1:09

**Public Utilities
Commission of Ohio**

PUCO

Memo

To: Docketing Division
From: George Martin, Grade Crossing Planner, Rail Division
Re: In the matter of the authorization of the Indiana & Ohio Railway to install active grade crossing warning devices Clinton County
Date: July 15, 2015



The Ohio Rail Development Commission (ORDC) has authorized funding for the Indiana & Ohio Railway (IORY) to install active grade crossing warning devices as follows:

Clinton County, Village of Sabina, N. College St., DOT# 151935H, mast-mounted flashing lights with roadway gates and one cantilever, approved cost \$185,260.54. This crossing was surveyed on November 8, 2013 due to its hazard ranking and was found to warrant the upgrade.

Clinton County, near Wilmington, Stone Rd/CR 23, DOT# 151944G, mast-mounted flashing lights and roadway gates, approved cost \$188,423.79. This crossing was surveyed on August 22, 2013 because of a constituent concern, and was found to warrant the upgrade.

The projects will be paid for with federal funds, and are actual cost. As the plans and estimates in the above referenced amounts have been submitted and approved, construction may commence at once. Staff requests that the following language be incorporated in the Finding & Order:

It is expected that all work necessary for FHWA acceptance of the warning devices will be completed by the in-service due date and that the railroad will be responsible for this work. This work includes, but is not limited to:

Any ancillary work to make the warning devices function as designed and visible to the roadway user, and

MUTCD compliance, including minor roadway work if necessary.

A suggested case coding and heading would be:

PUCO Case No. 15- 1314 -RR-FED In the matter of the authorization of the Indiana & Ohio Railway to install active grade crossing warning devices in Clinton County

C: Legal Department

Please serve the following parties of record.

Ms Cathy Stout

Ohio Rail Development Commission

1980 W Broad St, Mailstop # 3140

Columbus, Oh 43223

Mr John Hilborn

Vice President-Engineering, Ohio Valley Region Railroads

4349 Easton Way, Ste 110

Columbus, Oh 43219

Mr Joseph Bolzenious

Patrick Engineering

3650 Olentangy River Rd

Columbus, Oh 43214

Mr Adam Fricke, PE, PS

Deputy Engineer

Clinton County Engineer's Office

1326 Fife Avenue

Wilmington, OH 45177

Mr Rob Dean

Village Administrator

99 Howard St

Sabina, Oh 45169

DP&L

OHIO RAIL DEVELOPMENT COMMISSION INTER-OFFICE COMMUNICATION

TO: Randall Schumacher, Rail Division Chief, PUCO
FROM: Cathy Stout, Manager, Safety Section, ORDC
SUBJECT: Clinton County, N. College Street, IORY, 151935H
DATE: July 14, 2015

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on 11/8/2013. The Ohio Rail Development Commission (ORDC) attended the review. The Diagnostic Team recommended the improvement of warning devices to flashing lights and roadway gates. Copies of the diagnostic review form and the plan and estimate are attached.

PE has already been provided by the railroad. ORDC approves the site plans and estimates as provided. Please issue a construction-only order for the project outlined above. This authorization is made with the stipulation and understanding that an approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit.

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- any ancillary work to make warning devices function as designed and visible to the roadway user, and
- MUTCD compliance – including minor roadway work if necessary.

Thank you for your assistance with these matters.

Attachment: Diagnostic Review
Plans & Estimates

c: George Martin, PUCO
Susan Arduini, ORDC
ORDC Project Manager (file)



OHIO RAIL DEVELOPMENT COMMISSION

Mail Stop #3140, 1980 West Broad Street, Columbus OH 43223

John R. Kasich, Governor • Mark Policinski, ORDC Chairman

July 14, 2015

Mr. John Hilborn
Vice President-Engineering, Ohio Valley Region Railroads
Genesee & Wyoming/ORY
4349 Easton Way, Ste. 110
Columbus, OH 43219

RE: Clinton County, N. College Street, 151935H, PID 97247, 14IORY06R

Dear Mr. Hilborn:

The bid process for the referenced project has been reviewed and is acceptable. IORY may proceed with the construction of the proposed grade crossing warning system in accordance with the abbreviated plan. This authorization is made with the stipulation and understanding that the approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit. Reimbursement of eligible actual cost is limited to \$185,260.54. Additional costs must be approved in writing by the Ohio Rail Development Commission (ORDC) prior to being incurred. Emergency verbal authorizations by ORDC may be permitted but must be confirmed in writing within ten (10) business days of the verbal approval.

This authorization is contingent upon IORY accepting the following instructions:

1. IORY's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to Cathy Stout, ORDC, email Catherine.stout@dot.ohio.gov, and to the Public Utilities Commission of Ohio, email George.martin@puc.state.oh.us. IORY's project foreman will also notify the same of any stops and re-starts of the work activity and of the date work was completed for the project.
2. IORY will arrange for utilities to be located at the project site by the Ohio Utilities Protection Service (OUPS) prior to any construction activities at the site. Utilities that are not participating members of the service must be contacted directly by IORY.
3. IORY's project foremen will notify Cathy Stout at 614-644-0313 or Catherine.stout@dot.ohio.gov of any changes in the scope of work, cost overruns, material changes, etc. which are not included in the approved plan and estimate and secure approval of same before the work is performed.
4. Open cut of roadways is *not permitted* except in unusual circumstances and must be coordinated with the local highway authority and preapproved by ORDC.



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

5. IORY will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed Purchase Order to reference when billing.
6. IORY will furnish two (2) copies of the final all-inclusive bill to ORDC stating the exact dates of starting and completing work, the initial and final dates of construction and location where the accounts may be audited.
7. This installation will include any ancillary work to make the warning devices function as designed and meet MUTCD.

Thank you for your assistance with these matters.

Sincerely,

Catherine M. Stout.

Catherine M. Stout
Manager, Safety Programs

C: Randall Schumacher, Supervisor, Rail Division, PUCO
George Martin, Grade Crossing Planner, PUCO
ORDC (file)



Force Account Estimate - N. College Street
INDIANA & OHIO RAILWAY COMPANY (IORY)
Sabina, Clinton County, OH

DOT#: 151935H
Railroad # 14IORY06R
RR MP: 66.19

SUMMARY

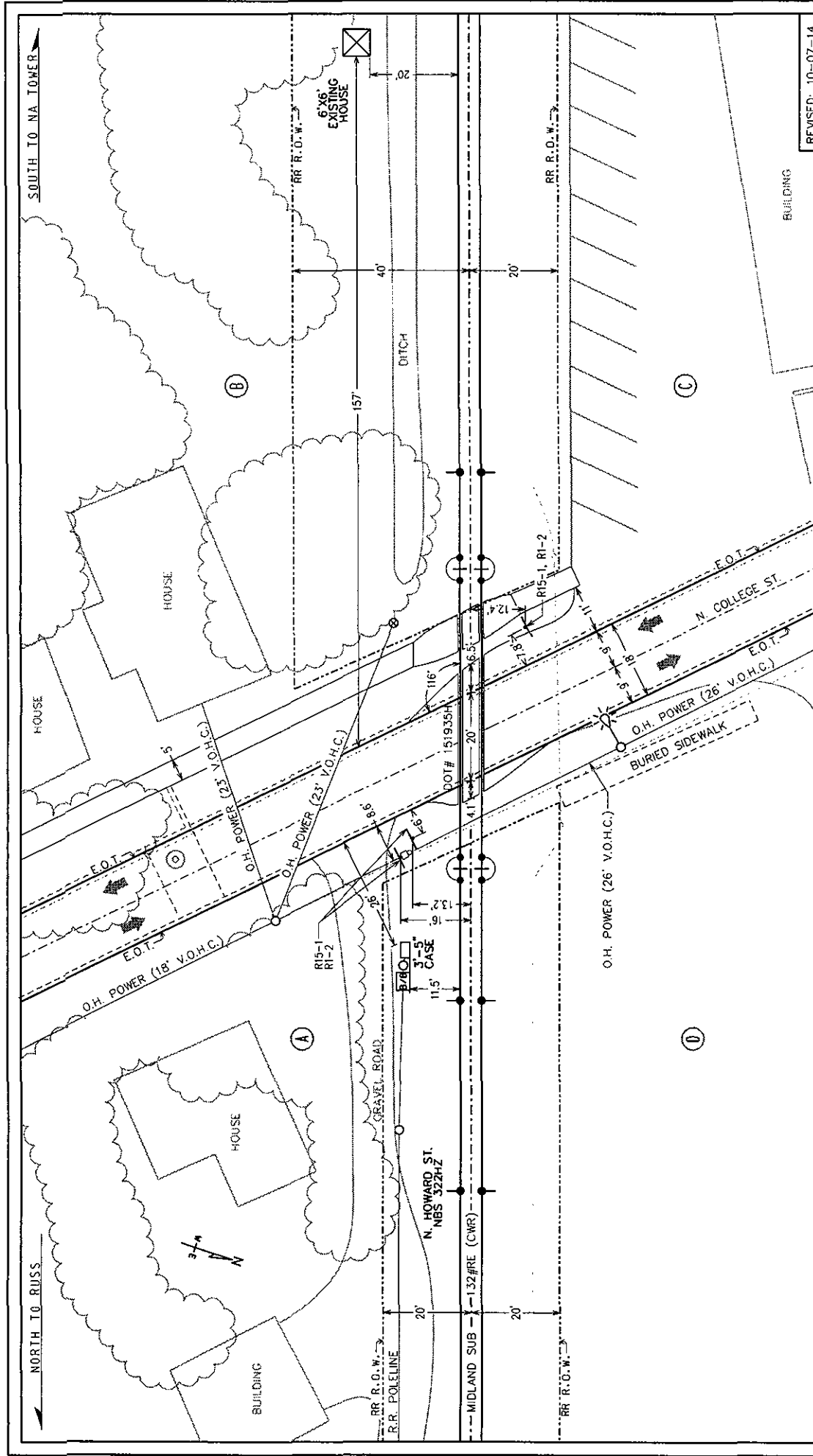
CROSSING WARNING SYSTEM	\$ 122,286.54
(Includes all labor, materials, shop wiring, and installation)	
CROSSING SURFACE/RESURFACE	\$ -
(Includes all labor, materials, shop wiring, and installation)	
TRACK GRADE AND REHABILITATION	\$ -
(Includes all labor, materials, and installation)	
RAILROAD ENGINEERING	\$ -
(Includes RAILROAD Labor for Reviewing Engineering Authorizations, Field Inspections and Administrative Labor)	
PRELIMINARY ENGINEERING	\$ 13,100.00
(Includes CONTRACT Labor for all Engineering, Agency Coordination, and Project Management)	
CONSTRUCTION ENGINEERING	\$ 33,500.00
(Includes CONTRACT Labor for all Engineering, Agency Coordination, and Project Management)	
CONSTRUCTION ENGINEERING INSPECTION	\$ 5,500.00
(Estimated Construction Engineering Inspection cost)	
UTILITY CROSSING	\$ -
(0 new utility crossings @ \$4000 per crossing, includes application, engineering review, and right of entry)	
FLAGGING SERVICES	\$ 5,000.00
(Estimated Flagging Services cost based on 5 days @ \$1000 per day)	
AC POWER SERVICE	\$ 3,500.00
(Includes all Power Service Charges not included in other costs)	
OTHER (Description Required)	\$ -
TOTAL ESTIMATE COST	\$ 182,886.54 (USD)

Estimate Prepared By: J. Bolzenius, PE
Date: 7/8/2015

Approved By: John Hilborn, PE
Date:

NOTE:

This Estimate has been prepared based on site conditions, anticipated work duration periods, material prices, labor rates, manpower, resource availability, and other factors known as of the date prepared. The actual cost for Railroad work may differ based upon the agency's requirements, their contractors work procedures, and/or other conditions that become apparent once construction commences or during the progress of the work. If any extended time elapses from the date of this Estimate, the Railroad will reserve the right to update the estimate to current price values, and require agency's approval before any work by Railroad will commence.



REVISED: 10-07-14

INDIANA & OHIO RAILWAY

EXISTING CROSSING LAYOUT (COPY)

SCALE: 1"=20'

FILE: 151935H

DRAWN: J.W.K. N. COLLEGE ST.

DESIGNED: S.J.A. SABINA (CLINTON), OH

CHECKED: S.S.E. MIDLAND SUBDIVISION

DATE: 05-02-14 DOT NO. 151935H M.P. 066.19

SHEET: 1 OF 4

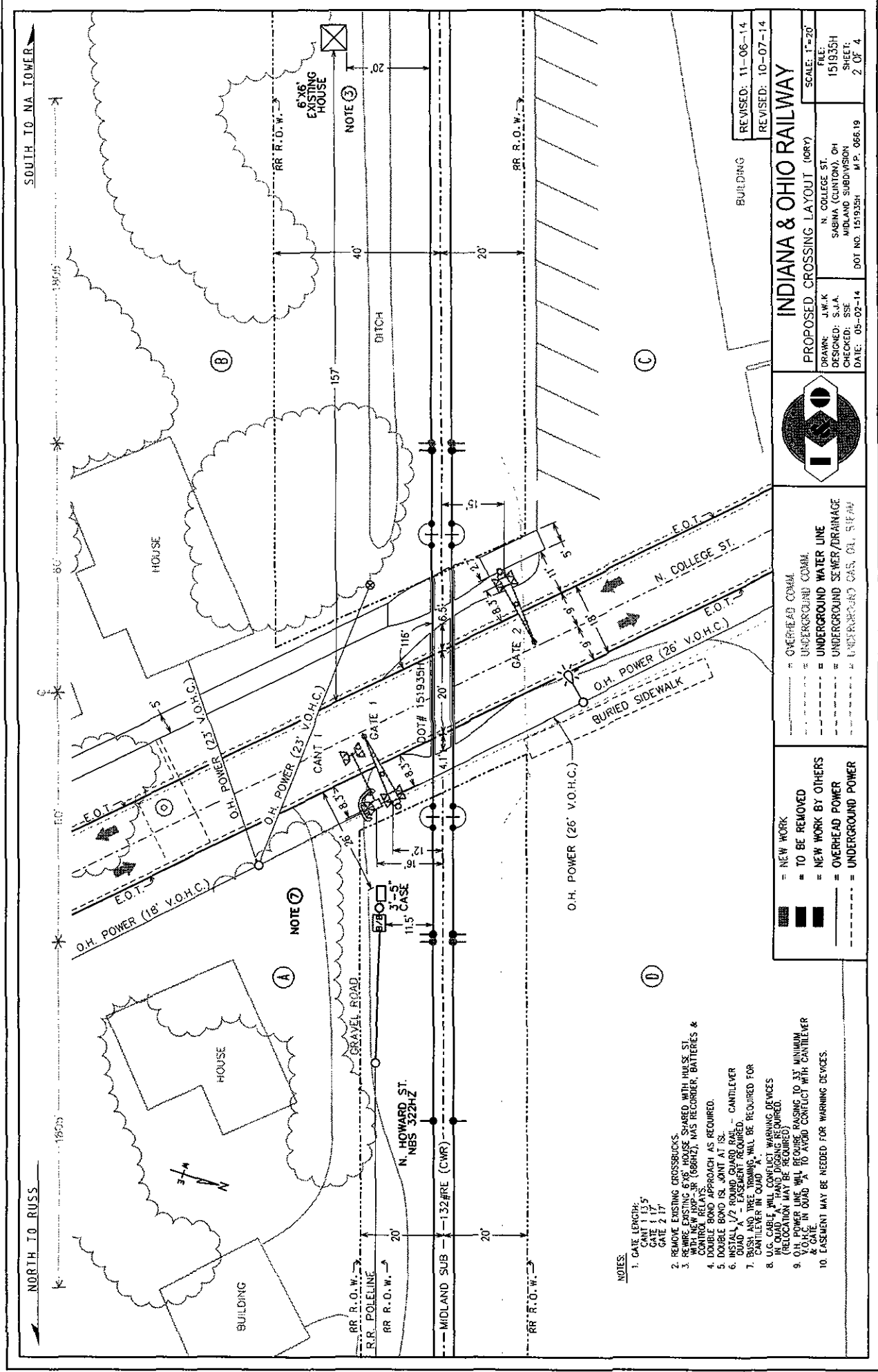
LEGEND

= NEW WORK
 = TO BE REMOVED
 = NEW WORK BY OTHERS
 = OVERHEAD POWER
 = UNDERGROUND POWER

= OVERHEAD COAM
 = UNDERGROUND COAM
 = UNDERGROUND WATER LINE
 = UNDERGROUND SEWER/DRAINAGE
 = UNDERGROUND GAS, OIL, STEAM

NOTES

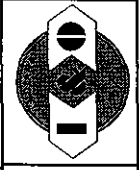
1. EXISTING CROSSING CONTROLS LOCATED IN 6'x6' HOUSE, SHARED WITH HOUSE ST.



NOTES

1. GATE LENGTH:
CANT 1 13'-5"
CANT 2 17'-0"
2. REMOVE EXISTING CROSSBUCKS.
3. REPAIR EXISTING 6'x8' HOUSE SHARED WITH HOUSE ST. WITH NEW HWP-JR (66842), WAS RECORDER, BATTERIES & CONTROL RELAYS.
4. DOUBLE BOND ISL. CANT AT ISL.
5. DOUBLE BOND ISL. CANT AT ISL.
6. BUSH AND TREE TRIMMING SHALL BE REQUIRED FOR QUAD 1, 1/2 EASEMENT REQUIRED.
7. CANTILEVER IN QUAD 1.
8. U.G. CABLE WILL CONFLICT WARNING DEVICES (QUAD 1) AND (QUAD 2).
9. V.O.H.C. IN QUAD 1A TO AVOID CONTACT WITH CANTILEVER & GATE.
10. EASEMENT MAY BE NEEDED FOR WARNING DEVICES.

	NEW WORK
	TO BE REMOVED
	NEW WORK BY OTHERS
	OVERHEAD POWER
	UNDERGROUND POWER
	OVERHEAD COMM.
	UNDERGROUND COMM.
	UNDERGROUND WATER LINE
	UNDERGROUND SEWER/DRAINAGE
	UNDERGROUND GAS, OIL, STEAM



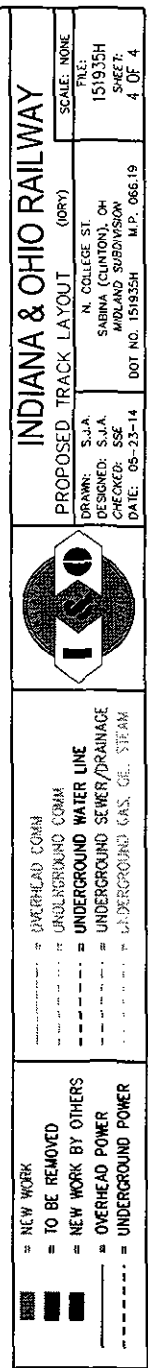
INDIANA & OHIO RAILWAY

PROPOSED CROSSING LAYOUT (DRY)	SCALE: 1"=20'
DRAWN: J.W.K.	FILE: 151935H
DESIGNED: S.J.A.	SABINA (CLINTON), OH
CHECKED: S.E.	MIDLAND SUBDIVISION
DATE: 05-02-14	DOT NO. 151935H M.P. 066.19
	SHEET: 2 OF 4

BUILDING
REVISED: 11-06-14
REVISED: 10-07-14

SOUTH TO NA TOWER

NORTH TO RUSS





Diagnostic Review Team Survey

Reason for Survey:

(e.g. formula, accident, constituent, etc.)

Formula Pick

Date:

11/8/13

Location Data

Street or Road Name:

N. College St.

Route/Road Number

(i.e. Twp., Co., SR or US)

US DOT No.:

151935H

County:

CLI

Township:

City:

(In or Near)

Vil. of Sabina

Railroad Name:

Indiana & Ohio Railway

Railroad Division:

Louisville

Branch/Line Name:

Nearest RR

Timetable Station:

Sabina

RR Milepost:

66.19

On-Site Review Team

(Include: Name - Organization - Phone Number - Email)

1. Jim Reston
2. Biff Konrad 513-805-2658 Biff.Konrad@GWRR.com
3. Josha Elzev 740 637 0988
4. Eric Plapper 614-728-5426
5. Don Clark 859-391-5530
6. Steve Garringer 937-302-7848 Sabina Street Dept.
7. George Martin PUCO 614-752-9107
8. David Michael Mayor Sabina 937-218-6689
9. Eric Plapper ORPC 614-752-0399

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments	
Advance Warning Signs (condition?)	☒ Yes	☐ No		
'Stop' Signs	☐ Yes	☒ No		
'Stop Ahead' Signs	☐ Yes	☒ No		
Pavement Markings (condition?)	☐ Yes	☒ No		
Crossbucks	☒ Yes	☐ No		
Number of Tracks Signs	☐ Yes	☒ No		
Inventory Tags	☐ Yes	☒ No		
Interconnected Highway Traffic Signal	☐ Yes	☒ No		
Mast-Mounted Flashing Lights	☐ Yes	☒ No		
Cantilever Flashing Lights	☐ Yes	☒ No	Number:	Length:
Side Lights	☐ Yes	☒ No		
Automatic Gates	☐ Yes	☒ No	Number:	Length:
Bells	☒ Yes	☐ No	Number:	
Sidewalk Gate Arms	☐ Yes	☒ No		
'No Turn' Signs	☐ Yes	☒ No		
Illumination	☐ Yes	☒ No		
Is crossing flagged by train crew?	☐ Yes	☒ No		
Other	☐ Yes	☐ No		

Safety Data (Obtain crash reports, if possible, prior to review)		
	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years	0	
Hazard Ranking	1228	Date Run: 10/9/2013
Railroad Data		
Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	4	
< 1 per day		
Day thru trains	2	
Night thru trains	2	
Daytime switching movements	0	
Nighttime switching movements	0	
Total number of tracks	1	
Number of main tracks	1	
Number of other tracks	0	
Maximum train speed	30	25
Typical train speed	30	
Amtrak		
If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table 1) ☐ Yes ☒ No		
If multiple tracks, can two trains occupy crossing at the same time? ☐ Yes ☐ No		
Can one train block the motorists' view of another train at crossing? ☐ Yes (Explain below) ☐ No		
Can one or more tracks be eliminated through the crossing? ☐ Yes ☐ No		
Are there other track(s) crossing this same roadway within 100 ft of this crossing? ☐ Yes ☐ No		
If yes, Crossing DOT # (if different) _____		
If yes, distance _____ (take measurement between track centerlines at closest point along roadway)		
Roadway Data		
Local Highway Authority:		Village of Sabina
Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	1313 (2012)	
Highway paved	☒ Yes ☐ No	☐ Yes ☐ No
Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: 18 ft.		
Number of highway lanes	2	
Urban or Rural	Rural URBAN	
Vehicle Speed: 25 MPH		
School Bus Operation: X No Yes Amount		
Hazardous Materials Trucks: ☐ No ☒ Yes Amount		
Shoulders: ☒ No ☐ Yes		
Is the shoulder surfaced? ☐ No ☐ Yes		
Is there existing guardrail along roadway in crossing vicinity? ☒ No ☐ Yes		
Is stopping site distance adequate? (See Table 2) ☐ Yes ☒ No If no, deficient approach(es) _____		

Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ None	Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ None
Pedestrians: ☐ No ☒ Yes	
Is sidewalk present? ☒ No ☐ Yes	
Is there a nearby intersection that could cause queuing over the crossing? ☐ No ☒ Yes If yes, Distance _____ Is this intersection signalized? ☐ No ☐ Yes Are the signals currently interconnected with the existing crossing warning devices? ☐ No ☐ Yes Is there a 'Do not Stop on Track' sign? ☐ No ☐ Yes	
Is a roadway improvement project (e.g. widening, turn lanes, nearby new or upgraded traffic signal, sidewalk) planned at or near this location in the foreseeable future? ☒ No ☐ Yes If yes, Improvement type _____ Lead Agency _____ Timeline/completion _____	
Is it the consensus of the Diagnostic Review Team that this is a potential closure project? ☒ No ☐ Yes Explain reasons: _____	
Type of Development	
☐ Open Space ☐ Industrial ☒ Residential	☐ Institutional ☐ Commercial Location of nearby schools: _____
Utility Information	
Is commercial power available? ☐ No ☒ Yes Utility Provider (Company Name) <u>DP&L</u> Phone Number _____ Nearest Available Power Source _____ What other utilities are present? (add locations to sketch) ☐ Gas ☐ Cable ☐ Telephone ☐ Fiber Optic Cable ☐ Petroleum ☐ Water ☐ Sanitary Sewer ☐ Other _____	
Is(are) there potential utility conflict(s) ☐ Yes ☐ No ☒ Unknown Comments: _____	

Potential Red Flags / Project Challenges

Traffic Signal Preemption (include traffic signal intersection name and LHA with jurisdiction over traffic signal, if known):

N/A

Crossing Consolidation or Closure:

N/A

Real Estate or ROW:

N/A

Culverts / Drainage / Ballast Conditions:

N/A

Roadway and/or Sidewalks:

N/A

Circuitry (e.g. reaches out to other crossings, specific needs, etc.):

N/A

Environmental:

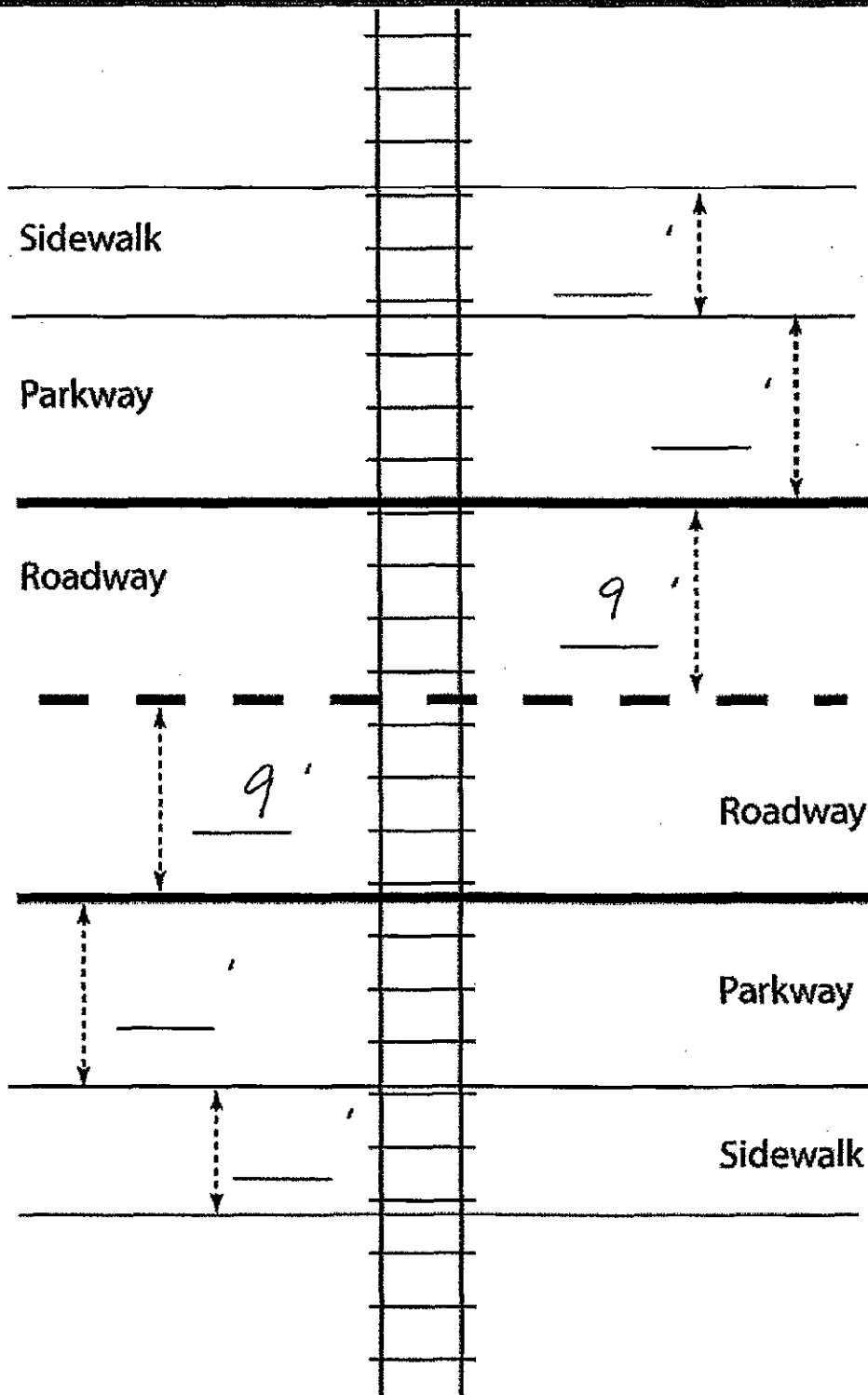
N/A

Other:

Diagnostic Team Recommendations

	Quadrants Needed
☐ Install/upgrade active devices	
☐ Automatic Flashing Lights (AFLS)	
☐ AFLS / Cants	
☐ AFLS / Gates	
☒ AFLS / Gates / Cants	<i>Cantilever east of track only</i>
☐ Bells / number	
☐ Upgrade circuitry / type	
☐ Sidelights	
☐ Guardrail Needed	
☐ Install/Replace curb	
☐ Bungalow placement & offset from rail & highway	
☐ Other (define)	
Comments: <i>one(1) small cantilever east of crossing because of residential parking.</i>	
☐ Install/upgrade traffic signal preemption	
☐ No improvements needed	
☐ Other (define)	
Acknowledgement of Recommendations (each entity represented at the diagnostic must have at least one signature acknowledgement):	
<i>Jim Perkins</i>	<i>Steve Garrison</i>
<i>Jim</i>	<i>David H. Michael</i>
<i>Bill Ruml</i>	<i>D. Chop</i>

Field Dimensions

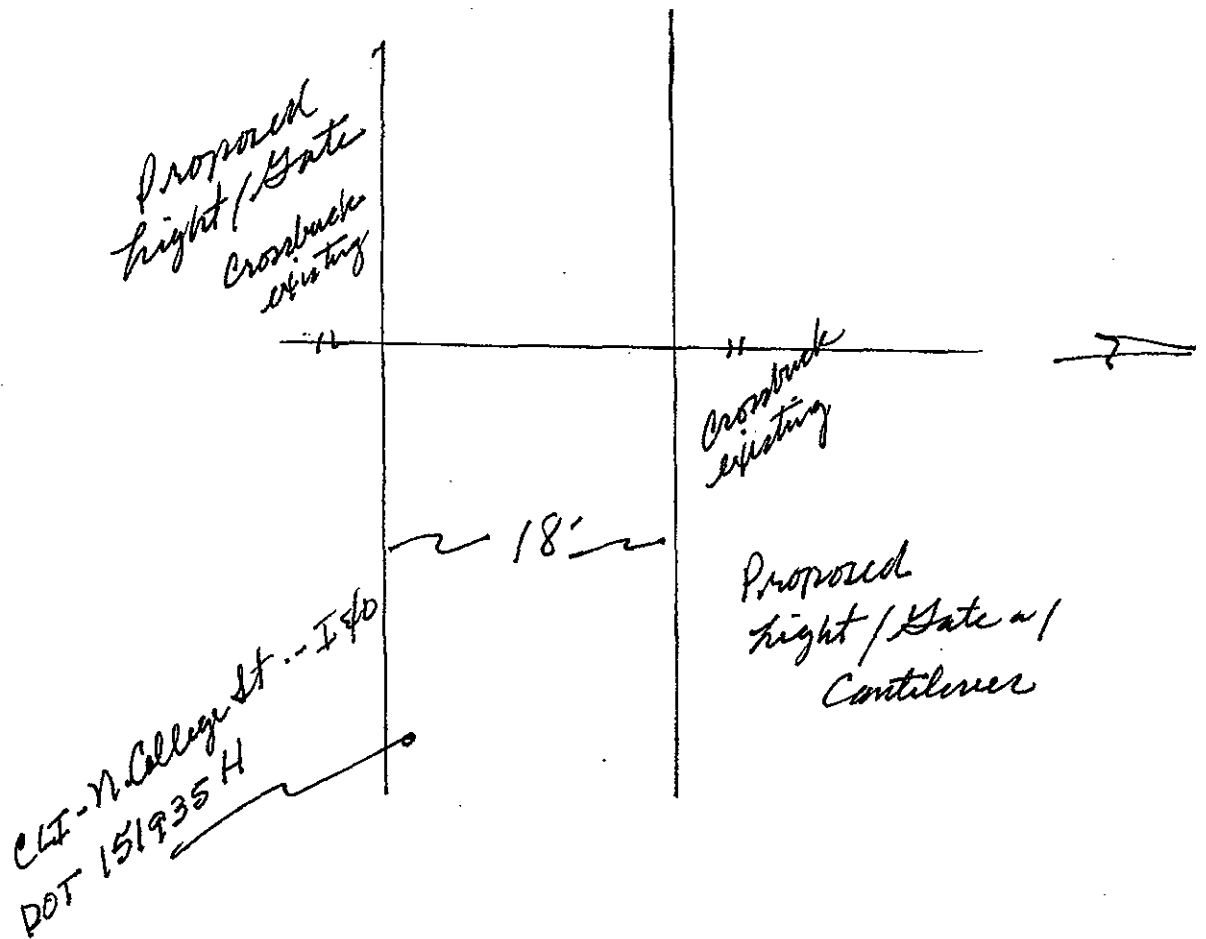


Crossing Angle ☐ 0-29° ☐ 30-59° ☐ 60-90° Measured in _____ Quadrant?

Measurements by: _____

Field Sketch

Include utilities as marked by OUPS and LHA; include ROW boundaries as indicated by railroad and LHA.



Track is listed as North/South in the data base.

Crossing Angle ☐ 0-29° ☐ 30-59° ☒ 60-90° Measured in _____ Quadrant?

Sketch by: JD

TABLE 1

Clearing Sight Distances

Maximum Authorized Train Speed	Distance (dT) Along Railroad from Crossing (ft)
1 - 10	240
15	360
20	480
25	600
30	720
35	840
40	960
45	1080
50	1200
55	1320
60	1440
65	1560
70	1680
75	1800
80	1920
85	2040
90	2160

Source: R-H Grade Crossing Handbook Table 36 (pp. 132-133)

Notes:

All calculated distances are rounded up to the next higher 5-foot increment.

Distances indicated are for 65-ft double bottom semi-tractor trailers and level single track 90 degree crossings; and may need to be adjusted for multiple tracks, skewed crossings or approaches on grades.

Clearing Sight Distance is to be measured in each vehicle travel direction at non-gated crossings as viewed from a point 25 feet from centerline of nearest track in the center of whichever travel lane is nearest the direction along track being measured.

Table 2

Stopping Sight Distances

Highway Vehicle Speed	Distance (dH) Along Roadway from Crossing (ft)
0	n/a
5	50
10	70
15	105
20	135
25	180
30	225
35	280
40	340
45	410
50	490
55	570
60	660
65	760
70	865

Source: R-H Grade Crossing Handbook Table 36 (pp. 132-133)

Notes:

All calculated distances are rounded up to the next higher 5-foot increment.

Distances indicated are for 65-ft double bottom semi-tractor trailers on dry level pavements.

Stopping Sight Distance is to be measured on each roadway approach to crossing from stop bar.

OHIO RAIL DEVELOPMENT COMMISSION INTER-OFFICE COMMUNICATION

TO: Randall Schumacher, Rail Division Chief, PUCO
FROM: Cathy Stout, Manager, Safety Section, ORDC
SUBJECT: Clinton County, Stone Road, IORY, 151944G, PID 96751
DATE: July 14, 2015

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on 8/22/2013. The Ohio Rail Development Commission (ORDC) attended the review. The Diagnostic Team recommended the improvement of warning devices to flashing lights and roadway gates. Copies of the diagnostic review form and the plan and estimate are attached.

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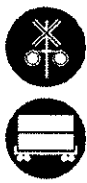
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Plans & Estimates

c: George Martin, PUCO
Susan Arduini, ORDC
ORDC Project Manager (file)



OHIO RAIL DEVELOPMENT COMMISSION

Mail Stop #3140, 1980 West Broad Street, Columbus OH 43223

John R. Kasich, Governor • Mark Policinski, ORDC Chairman

July 13, 2015

Mr. John Hilborn
Vice President-Engineering, Ohio Valley Region Railroads
Genesee & Wyoming/ORY
4349 Easton Way, Ste. 110
Columbus, OH 43219

RE: Clinton County,

Dear Mr. Hilborn:

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www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

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6. IORY will furnish two (2) copies of the final all-inclusive bill to ORDC stating the exact dates of starting and completing work, the initial and final dates of construction and location where the accounts may be audited.
7. This installation will include any ancillary work to make the warning devices function as designed and meet MUTCD.

Thank you for your assistance with these matters.

Sincerely,

Catherine M. Stout.

Catherine M. Stout
Manager, Safety Programs

C: Randall Schumacher, Supervisor, Rail Division, PUCO
George Martin, Grade Crossing Planner, PUCO
ORDC (file)



Diagnostic Review Team Survey

Reason for Survey:

(e.g. formula, accident, constituent, etc.)

Constituent Concern

Date: 8/22/2013

Location Data

Street or Road Name:		Stone Rd	
Route/Road Number (i.e. Twp., Co., SR or US)		CR 23	
US DOT No:		151944G	
County:	CLI	Township:	
City: (In or Near)	Wilmington		
Railroad Name:	Indiana and Ohio Railway	Railroad Division:	Louisville
Branch/Line Name:	Midland Sub.		
Nearest RR Timetable Station:	Melvin	RR Milepost:	60.06

On-Site Review Team

(Include: Name - Organization - Phone Number - Email)

1. Jim Perkins ORDC 614-644-0284
2. ADAM FRICKE CLINTON COUNTY ENGINEER 937-726-0599 AFRICKE@CLINTONCOUNTYENGINEER.ORG
3. Don Clark Genesee Wyoming 859-391-5530 Don.Clark@GWR.com
4. Biff Konrad FORTY 513-805-2658 BIFF.KONRAD@GWR.com
5. GEORGE MARTIN PUCCO 614-752-9107
- 6.
- 7.
- 8.
- 9.

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments	
Advance Warning Signs (condition?)	☒ Yes	☐ No		
'Stop' Signs	☐ Yes	☒ No		
'Stop Ahead' Signs	☐ Yes	☒ No		
Pavement Markings (condition?)	☒ Yes	☐ No		
Crossbucks	☒ Yes	☐ No		
Number of Tracks Signs	☐ Yes	☒ No		
Inventory Tags	☐ Yes	☒ No		
Interconnected Highway Traffic Signal	☐ Yes	☒ No		
Mast-Mounted Flashing Lights	☐ Yes	☒ No		
Cantilever Flashing Lights	☐ Yes	☒ No	Number:	Length:
Side Lights	☐ Yes	☒ No		
Automatic Gates	☐ Yes	☒ No	Number:	Length:
Bells	☐ Yes	☒ No	Number:	
Sidewalk Gate Arms	☐ Yes	☒ No		
'No Turn' Signs	☐ Yes	☒ No		
Illumination	☐ Yes	☒ No		
Is crossing flagged by train crew?	☒ Yes	☐ No		
Other	☐ Yes	☐ No		

Safety Data (Obtain crash reports, if possible, prior to review)		
	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years	None	
Hazard Ranking	2232	Date Run: 7/30/2013

Railroad Data		
Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	4	
< 1 per day		
Day thru trains	2	
Night thru trains	2	
Daytime switching movements	0	
Nighttime switching movements	0	
Total number of tracks	1	
Number of main tracks	1	
Number of other tracks		
Maximum train speed	25	
Typical train speed	25	
Amtrak		

If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table 1) ☒ Yes ☐ No

If multiple tracks, can two trains occupy crossing at the same time? ☐ Yes ☐ No

Can one train block the motorists' view of another train at crossing? ☐ Yes (Explain below) ☐ No

Can one or more tracks be eliminated through the crossing? ☐ Yes ☐ No

Are there other track(s) crossing this same roadway within 100 ft of this crossing? ☐ Yes ☐ No

If yes, Crossing DOT #(if different) _____

If yes, distance _____ (take measurement between track centerlines at closest point along roadway)

Roadway Data		
Local Highway Authority: Clinton County		
Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	520 (2011)	
Highway paved	☒ Yes ☐ No	☐ Yes ☐ No
Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: 19 ft. <i>Painted edge line to painted edge line</i>		
Number of highway lanes	2	
Urban or Rural	Rural	
Vehicle Speed: _____ MPH	<i>Unknown</i>	
School Bus Operation: X No ☒ Yes	Amount <i>4-6 per day</i>	
Hazardous Materials Trucks: ☐ No ☒ Yes	Amount <i>Garmland</i>	
Shoulders: ☒ No ☐ Yes		
Is the shoulder surfaced? ☐ No ☐ Yes		
Is there existing guardrail along roadway in crossing vicinity? ☐ No ☒ Yes	<i>East side of roadway</i>	
Is stopping site distance adequate? (See Table 2) ☒ Yes ☐ No	If no, deficient approach(es) _____	

Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ None	Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ None
Pedestrians: ☒ No ☐ Yes	
Is sidewalk present? ☒ No ☐ Yes	
Is there a nearby intersection that could cause queuing over the crossing? ☒ No ☐ Yes If yes, Distance _____ Is this intersection signalized? ☐ No ☐ Yes Are the signals currently interconnected with the existing crossing warning devices? ☐ No ☐ Yes Is there a 'Do not Stop on Track' sign? ☐ No ☐ Yes	
Is a roadway improvement project (e.g. widening, turn lanes, nearby new or upgraded traffic signal, sidewalk) planned at or near this location in the foreseeable future? ☒ No ☐ Yes If yes, Improvement type _____ Lead Agency _____ Timeline/completion _____	
Is it the consensus of the Diagnostic Review Team that this is a potential closure project? ☒ No ☐ Yes Explain reasons: _____	
Type of Development	
☒ Open Space ☐ Industrial ☐ Residential	☐ Institutional ☐ Commercial Location of nearby schools: _____
Utility Information	
Is commercial power available? ☒ No ☐ Yes Utility Provider (Company Name) <u>DP&L</u> Phone Number _____ Nearest Available Power Source <u>First house north of crossing</u>	
What other utilities are present? (add locations to sketch) ☐ Gas ☐ Cable ☐ Telephone ☒ Fiber Optic Cable ☐ Petroleum ☐ Water ☐ Sanitary Sewer ☐ Other _____	
Is(are) there potential utility conflict(s) ☐ Yes ☐ No ☒ Unknown Comments: <u>Unknown due to underground fiber.</u>	

Potential Red Flags / Project Challenges

Traffic Signal Preemption (include traffic signal intersection name and LHA with jurisdiction over traffic signal, if known):

N/A

Crossing Consolidation or Closure:

N/A

Real Estate or ROW:

N/A for lights and gates, but right-of-way will be shown on plan.

Culverts / Drainage / Ballast Conditions:

N/A

Roadway and/or Sidewalks:

N/A

Circultry (e.g. reaches out to other crossings, specific needs, etc.):

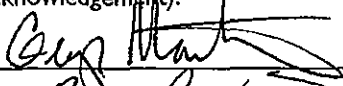
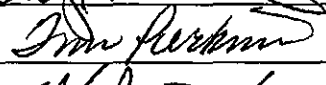
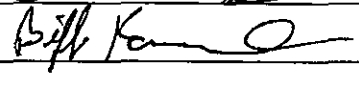
N/A

Environmental:

N/A

Other:

Diagnostic Team Recommendations

	Quadrants Needed
☐ Install/upgrade active devices	
☐ Automatic Flashing Lights (AFLS)	
☐ AFLS / Cants	
☒ AFLS / Gates	
☐ AFLS / Gates / Cants	
☐ Bells / number	
☐ Upgrade circuitry / type	
☐ Sidelights	
☐ Guardrail Needed	
☐ Install/Replace curb	
☐ Bungalow placement & offset from rail & highway	
☐ Other (define)	
Comments: <i>N.W. quad. for house with platform to avoid fill. Platform for each gate to avoid fill.</i>	
☐ Install/upgrade traffic signal preemption	
☐ No improvements needed	
☐ Other (define)	
Acknowledgement of Recommendations (each entity represented at the diagnostic must have at least one signature acknowledgement):     	

Field Dimensions

Sidewalk

Parkway

Roadway

Roadway

Parkway

Sidewalk

9'6"

9'6"

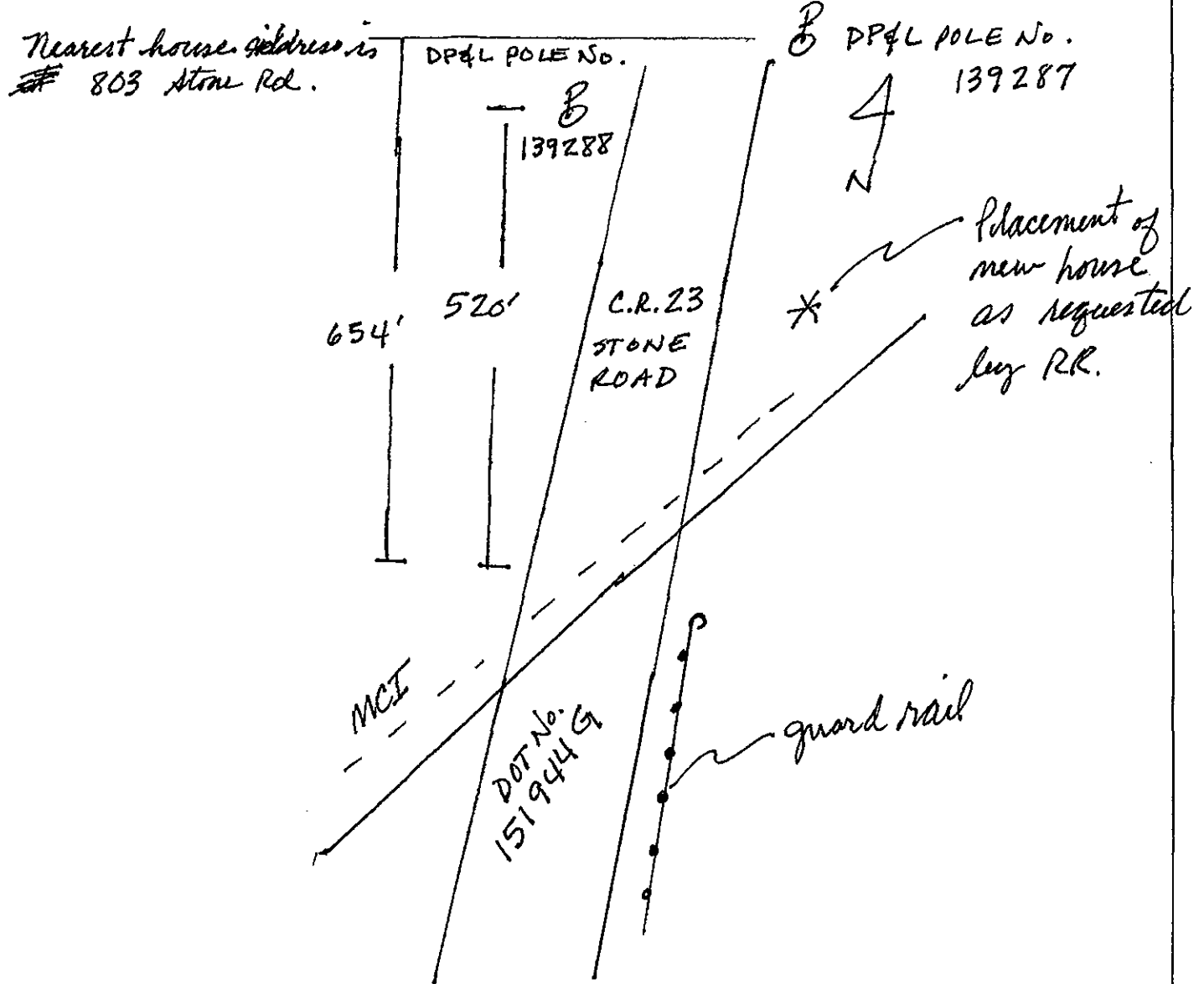
Show North Direction

Crossing Angle ☐ 0-29° ☐ 30-59° ☐ 60-90° Measured in _____ Quadrant?

Measurements by: _____

Field Sketch

Include utilities as marked by OUPS and LHA; include ROW boundaries as indicated by railroad and LHA.



Crossing Angle ☐ 0-29° ☒ 30-59° ☐ 60-90° Measured in _____ Quadrant?

Sketch by: TP

TABLE 1

Clearing Sight Distances

Maximum Authorized Train Speed	Distance (dT) Along Railroad from Crossing (ft)
1 - 10	240
15	360
20	480
25	600
30	720
35	840
40	960
45	1080
50	1200
55	1320
60	1440
65	1560
70	1680
75	1800
80	1920
85	2040
90	2160

Source: R-H Grade Crossing Handbook Table 36 (pp. 132-133)

Notes:

All calculated distances are rounded up to the next higher 5-foot increment.

Distances indicated are for 65-ft double bottom semi-tractor trailers and level single track 90 degree crossings; and may need to be adjusted for multiple tracks, skewed crossings or approaches on grades.

Clearing Sight Distance is to be measured in each vehicle travel direction at non-gated crossings as viewed from a point 25 feet from centerline of nearest track in the center of whichever travel lane is nearest the direction along track being measured.

Table 2

Stopping Sight Distances

Highway Vehicle Speed	Distance (dH) Along Roadway from Crossing (ft)
0	n/a
5	50
10	70
15	105
20	135
25	180
30	225
35	280
40	340
45	410
50	490
55	570
60	660
65	760
70	865

Source: R-H Grade Crossing Handbook Table 36 (pp. 132-133)

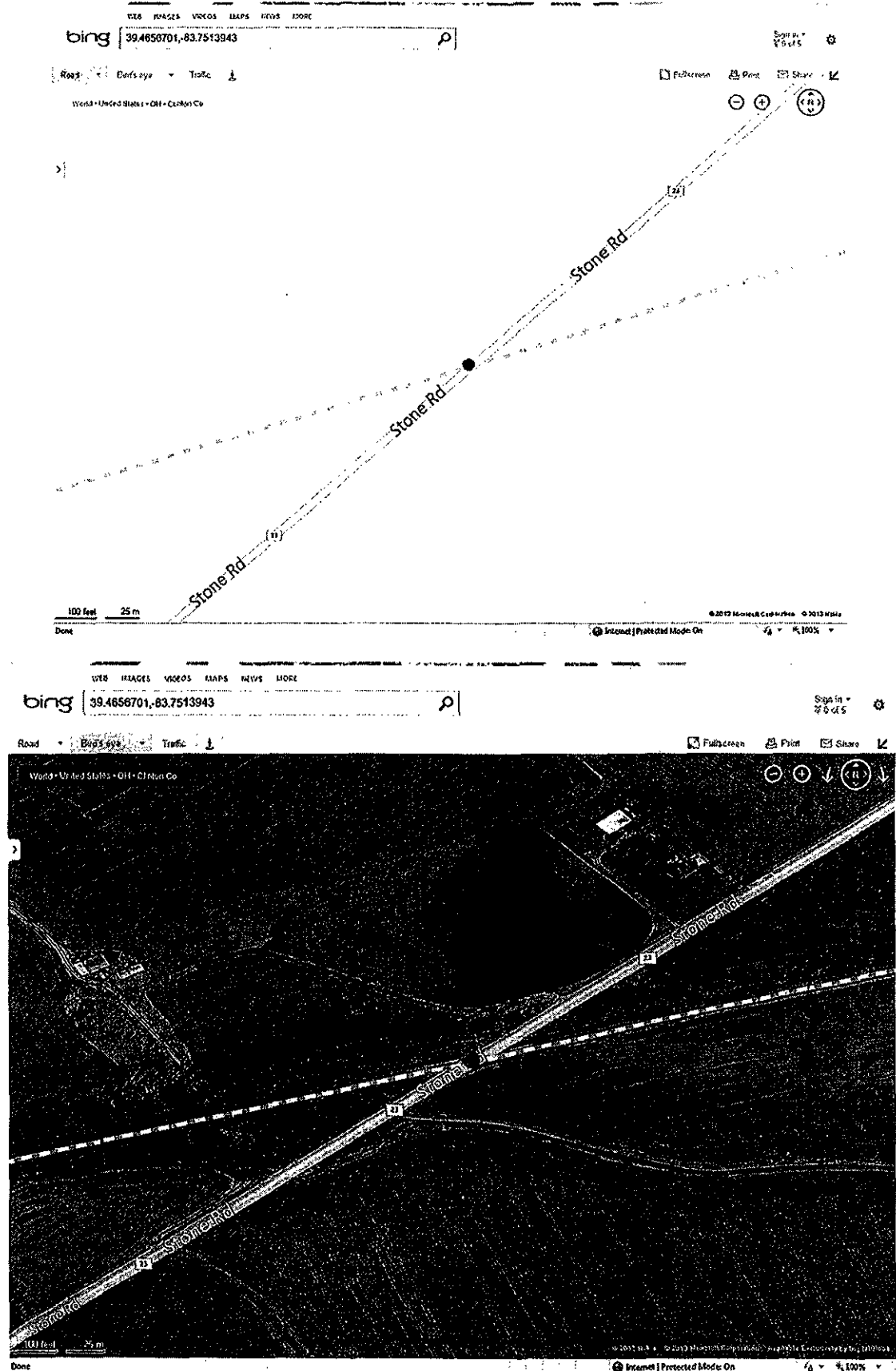
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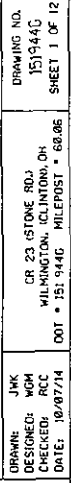
All calculated distances are rounded up to the next higher 5-foot increment.

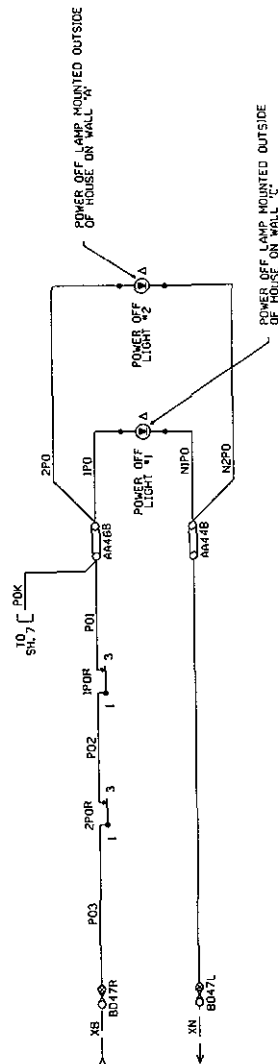
Distances indicated are for 65-ft double bottom semi-tractor trailers on dry level pavements.

Stopping Sight Distance is to be measured on each roadway approach to crossing from stop bar.

CLI Stone Rd CR 23 151944G







THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM, SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.

30RY44RR
4-532

SSE/WCM/RCC
10/07/14



Signal South

INDIANA & OHIO RAILWAY

DRAWN: JWK	CR 23 (STONE RD.)	DRAWING NO.
DESIGNED: WGM	WILMINGTON, CLINTON, OH	151944C
CHECKED: RCC	DOT = 151 944G	SHEET 2 OF 12
DATE: 10/07/14	MILEPOST = 60.05	

INFORMATION

PROGRAM VERSION 4.0 OR LATER
FIELD ADJUSTMENT TO BE MADE ACCORDING
TO THE HXP-3R INSTRUCTION MANUAL.

HXP-3R ADJUSTMENTS

NO.	ADJUSTMENT NAME	TRACK 1	TRACK 2
1	APP. LENGTH	1360"	NA
2	WARNING TIME	37 SEC.	NA
3	LJA	*	NA
4	TC	*	NA
5	HD RESTART	0	NA

OPTION ADJUSTMENTS

NO.	ABBREVIATION	TRACK 1	TRACK 2
1	TK-FNA	UP	NA
2	TK-YO	750 KHZ	NA
3	CM-MD	C	NA
4	UN-BU	b	BL
5	MS-TC	DL (08 SEC.)	NA
6	CM-T	DL (08 SEC.)	NA
7	CM-T	DL (08 SEC.)	NA
8	12-LOS	DL (5 SEC.)	NA
9	RE	149	NA
10	P-COMP	50"	NA
11	MOR-AX	DL (0)	NA
12	DF-TX 1 OR 2	DL (0)	NA
13	CJ-LOS	DL (0)	NA
14	PJ-DET	DL (0)	NA
15	PJ-RX	DL (0)	NA
16	MD-TMR	DL (0)	NA
17	MIN-WT	DL (0)	NA
18	FS-DET	DL (0)	NA
19	FS-RX	DL (0)	NA
20	FS-TM	DL (0)	NA
21	PDS-ST	DL (0)	NA
22	PDS-RX	DL (0)	NA
23	PDS-TM	DL (0)	NA
24	AR-TMR	DL (0)	NA
25	AR-TM	DL (0)	NA
26	ATO-RX	UP	NA
27	PF-ENA	UP	NA

CIRCUIT BOARD INFORMATION

SWITCH OR JUMPER	TRACK 1	TRACK 2
RSI FAULT JUMPER	0	NA
RSI LOS JUMPER	1	NA
RYD CM/MO	CM	NA

NOTE: DL = DEFAULT LEVEL
NA = NOT APPLICABLE

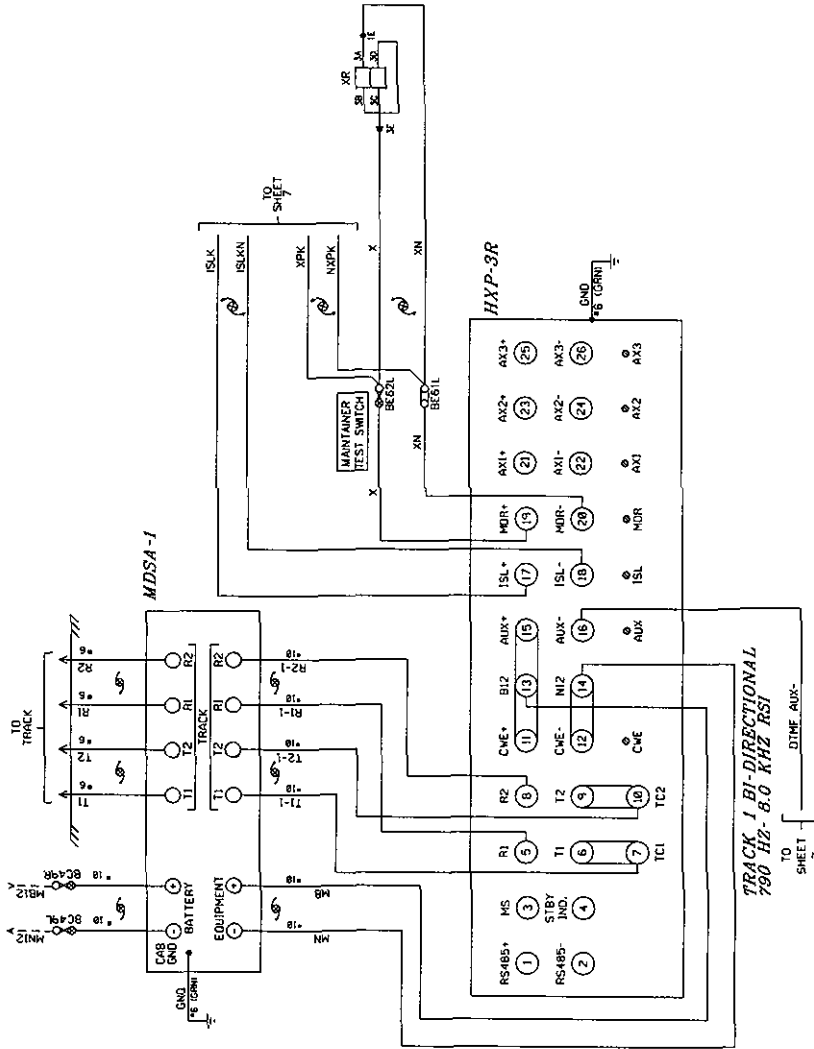
NEW WORK



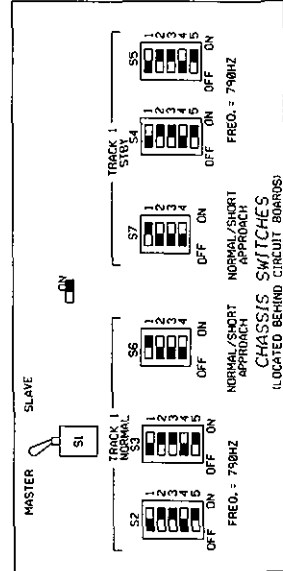
1300Y4ARR
14-532
SSE/NGA/RCC
10/07/14

INDIANA & OHIO RAILWAY

DRAWN: JMK	OR 23 STONE RDJ	DRAWING NO.
DESIGNED: RCE	WILMINGTON, CLINTON, OH	151944G
CHECKED: RCE	DOT = 151 144G MILEPOST = 88.86	SHEET 3 OF 12
DATE: 10/07/14		



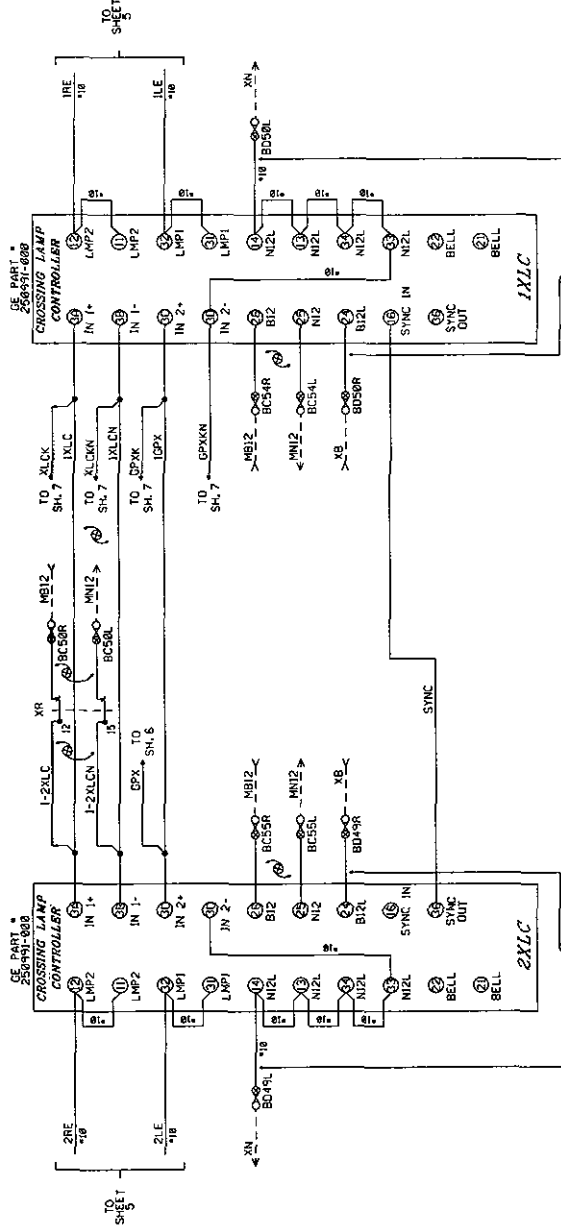
NOTES:
S1 MASTER/SWAVE - THIS SWITCH CONFIGURES THE HXP-3R TO WORK AS EITHER A MASTER OR SLAVE UNIT. THE SWITCH IS USED IN CONJUNCTION WITH THE MASTER/SLAVE TERMINAL ON TOP OF THE CABINET. WHEN THE HXP IS SLAVED TO ANOTHER HXP SET TO THE SAME FREQUENCY, THE SWITCH FOR THE APPROPRIATE TRACKS (1,2 OR BOTH) IS SET TO SLAVE. IF USED ALONE IT MUST BE SET TO MASTER.
S2 & S3 FREQUENCY SELECT NORMAL SYSTEM - EACH PAIR OF SWITCHES CAN BE SET TO THE CHANNEL NUMBER CORRESPONDING TO THE CROSSING FREQUENCY. THE DEFAULT SETTING IS ALL SWITCHES OFF. BOTH SWITCHES IN EACH PAIR MUST BE SET TO THE SAME NUMBER. MAKE SURE THAT S2 & S3 ARE SET THE SAME AS S4 & S5.
S4 & S5 FREQUENCY SELECT STANDBY SYSTEM - EACH PAIR OF SWITCHES CAN BE SET TO THE CHANNEL NUMBER CORRESPONDING TO THE CROSSING FREQUENCY. THE DEFAULT SETTING IS ALL SWITCHES OFF. BOTH SWITCHES IN EACH PAIR MUST BE SET TO THE SAME NUMBER. MAKE SURE THAT S4 & S5 ARE SET THE SAME AS S2 & S3.
S6 SYSTEM CONFIGURATION STANDBY SYSTEM - EACH OF SWITCH CONTAINS 4 ACTUATORS. WHEN ACTUATOR 1 IS IN THE ON POSITION AND ACTUATOR 2 IS OFF, NORMAL APPROACH IS SELECTED. WHEN ACTUATOR 1 AND 2 ARE BOTH OFF, SHORT APPROACH IS SELECTED. WHEN ACTUATOR 1 IS ON AND 2 IS ON, VERB SHORT APPROACH IS SELECTED. ACTUATOR 3 AND ACTUATOR 4 SHOULD BE IN THE OFF POSITION. MAKE SURE THAT S6 AND S7 ARE SET THE SAME.
S7 SYSTEM CONFIGURATION NORMAL SYSTEM - EACH OF SWITCH CONTAINS 4 ACTUATORS. WHEN ACTUATOR 1 IS IN THE ON POSITION AND ACTUATOR 2 IS OFF, NORMAL APPROACH IS SELECTED. WHEN ACTUATOR 1 AND 2 ARE BOTH OFF, SHORT APPROACH IS SELECTED. WHEN ACTUATOR 1 IS ON AND 2 IS ON, VERB SHORT APPROACH IS SELECTED. ACTUATOR 3 AND ACTUATOR 4 SHOULD BE IN THE OFF POSITION. MAKE SURE THAT S6 AND S7 ARE SET THE SAME.



THE OPERATION OF THE CIRCUITS AND SWITCHES CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SUBSYSTEM. SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.

REVISIONS





NEW WORK

130RY448R
14-532
SSE/MCM/RCC
10/07/14

Signal South

THE OPERATION OF THE CIRCUITS AND DEVICES SHOWN HEREIN CANNOT BE FULLY APPRECIATED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SUBSYSTEM. SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.

REVISIONS

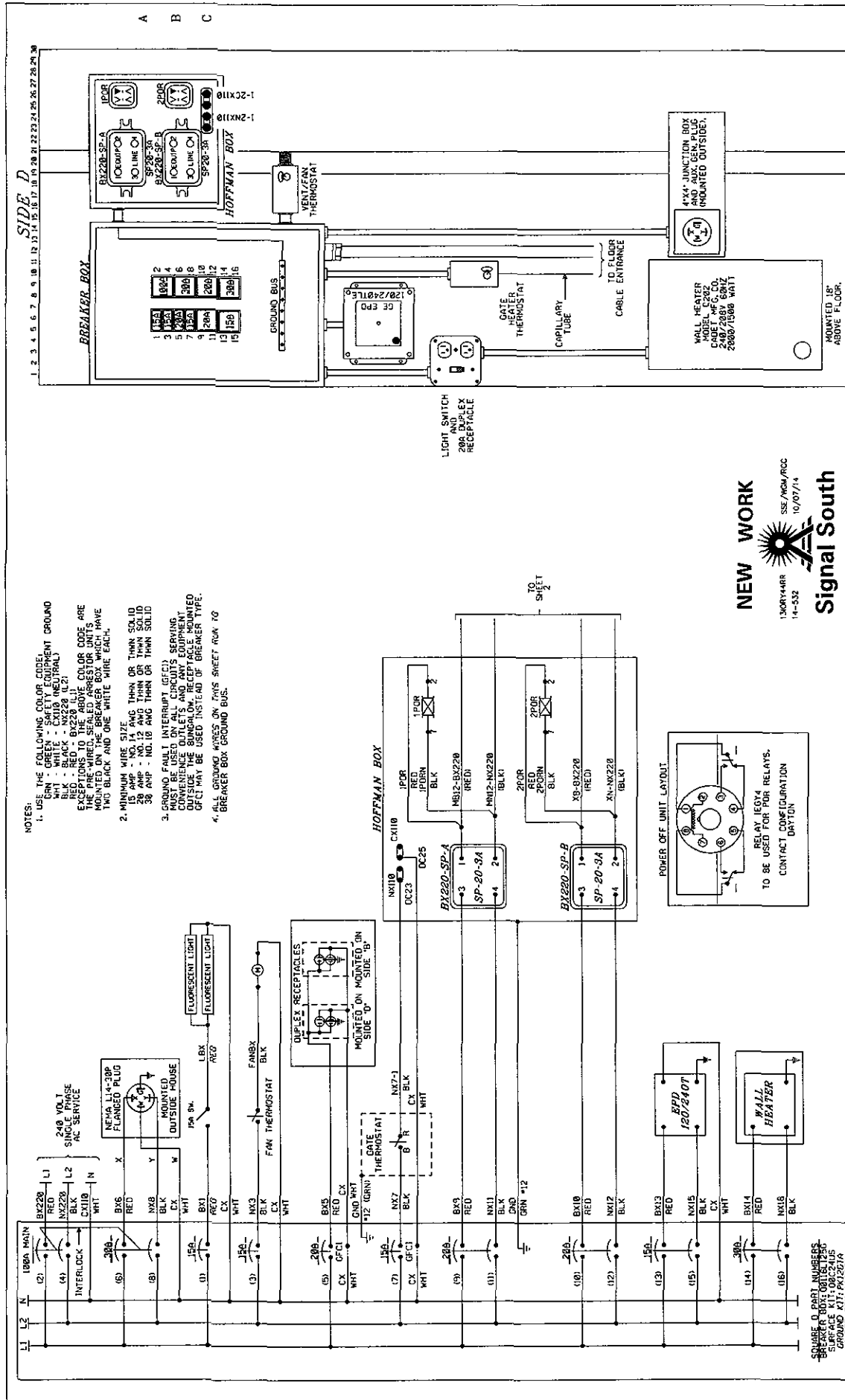


INDIANA & OHIO RAILWAY

DRAWN: JMK
DESIGNED: WCM
CHECKED: RCC
DATE: 10/07/14

CR 23 (STONE RD.)
WILMINGTON, CLINTON, OH
DOT - 151 944G MILEPOST - 68.05

DRAWING NO.
151944G
SHEET 4 OF 12

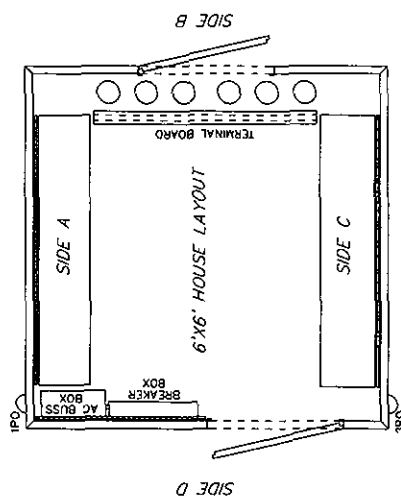
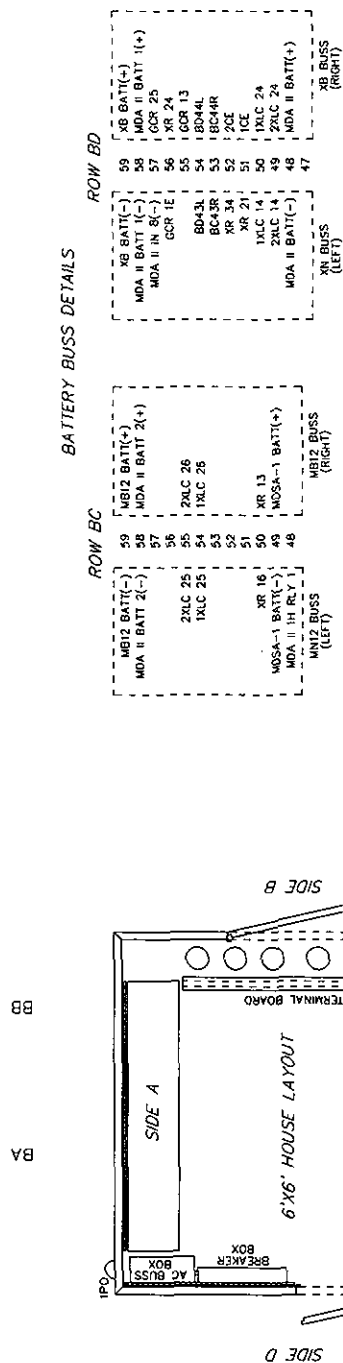
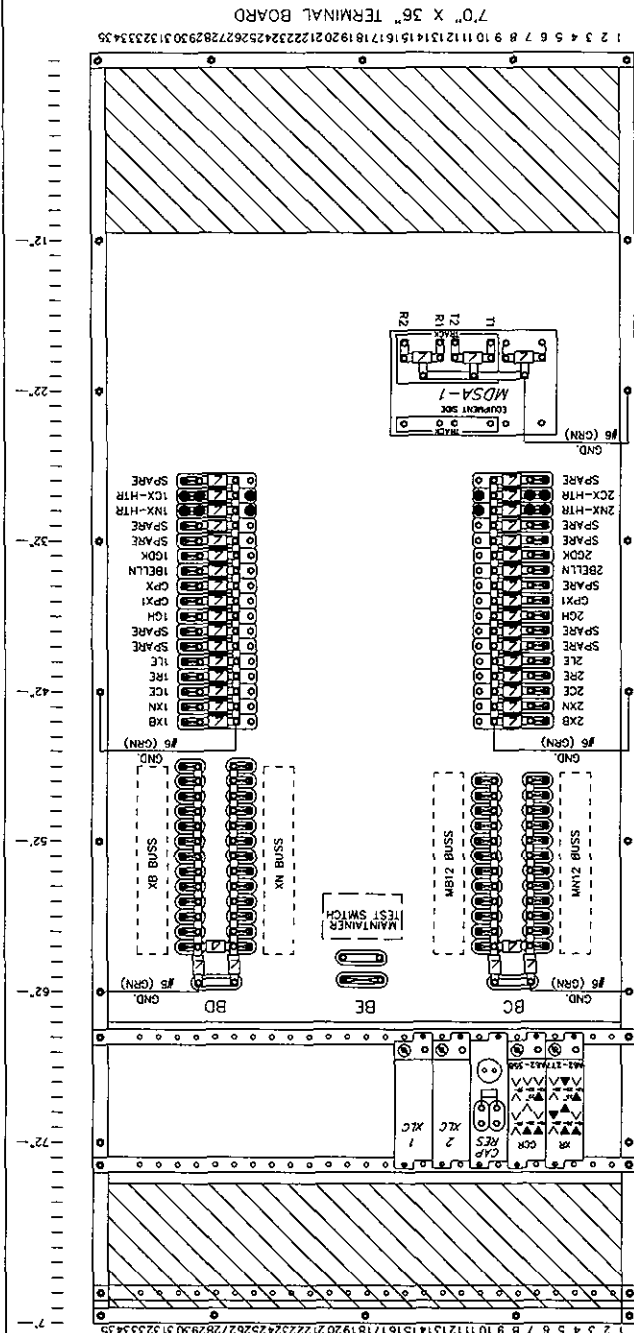


THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM, SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.



INDIANA & OHIO RAILWAY

DRAWN: JWK	CR 23 (STONE RD.)	DRAWING NO. 151944G
DESIGNED: WGM	WILMINGTON, (CLINTON), OH	SHEET 8 OF 12
CHECKED: RCC	DOT = 151 944G MILEPOST = 68.06	
DATE: 10/07/14		



NEW WORK



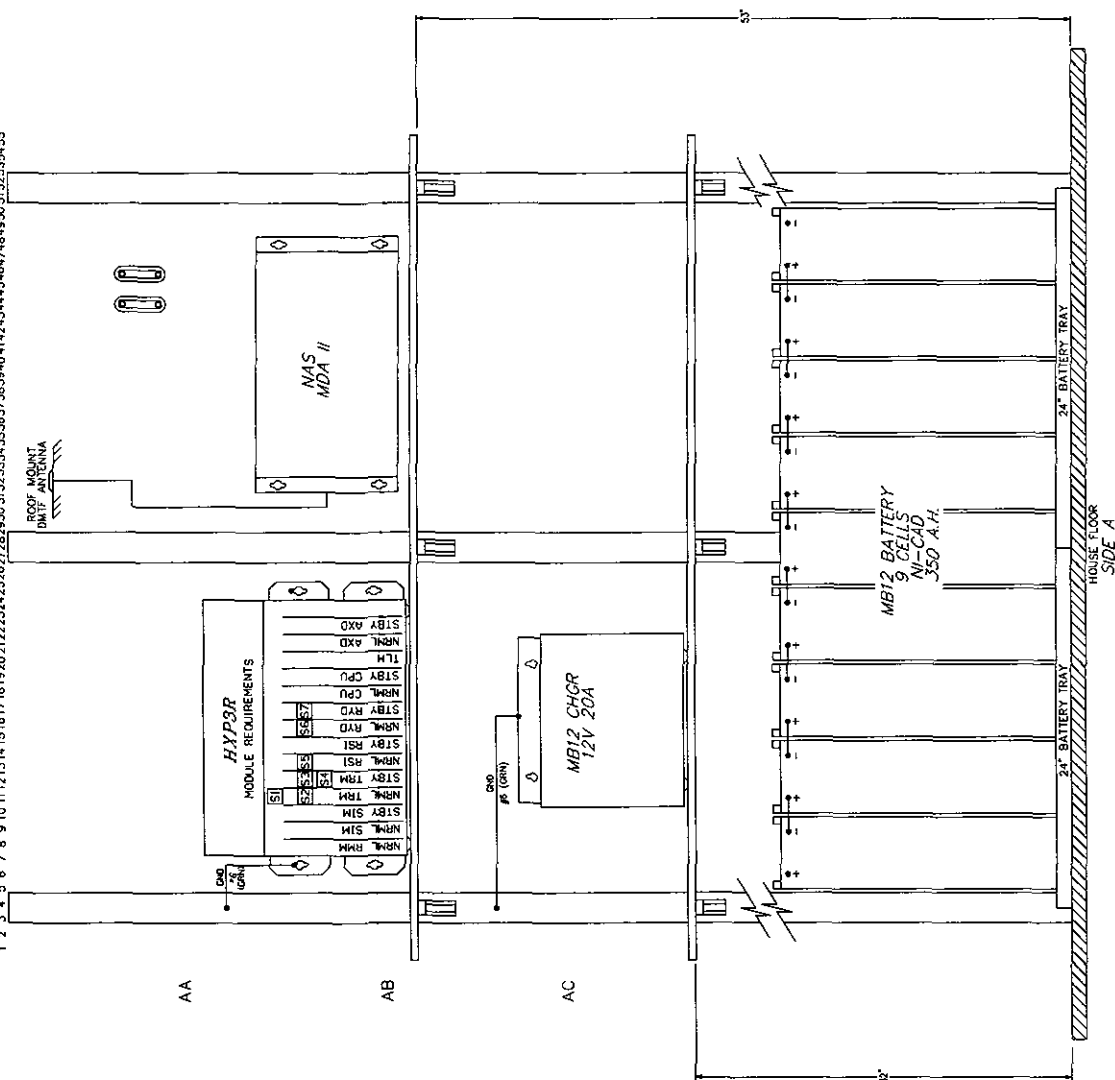
↑30RY44RR
14-532

**NOTE: NO EQUIPMENT ALLOWED
IN SHADED AREAS.**



THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM, SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.

DRAWN: JWK DESIGNED: WGM CHECKED: RCC DATE: 10/07/14	CR 23 (STONE RD.) WILMINGTON, (CLINTON), OH DOT = 151 944G MILEPOST = 60.06	DRAWING NO. 151944G SHEET 9 OF 12
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NEW WORK

13JORY44RR
14-532

Signal South



THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM, SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.

REVISIONS

DRAWN: JWK
DESIGNED: WGM
CHECKED: RCC
DATE: 10/07/14

CR 23 (STONE RD.)
WILMINGTON, (CLINTON), OH
151 944G MILEPOST = 68.06

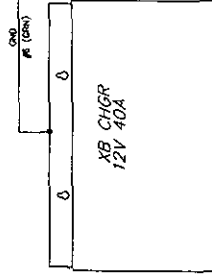
DRAWING NO.
151944G
SHEET 10 OF 12

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55

CA

CB

CC



XB BATTERY
10 CELLS
NI-CAD
255 A.H.

38" BATTERY TRAY

24" BATTERY TRAY

HOUSE FLOOR
SIDE C

NEW WORK



Signal South

130RY14RR
SSE/NGM/RCC
14-532
10/07/14



INDIANA & OHIO RAILWAY

DRAWN: JMK DESIGNED: RCC CHECKED: JMK DATE: 10/07/14	CR 23 (STONE RD.) WILMINGTON, ILL. 61801 DOT # 151 9446 MILEPOST # 68.06	DRAWING NO. 151944G SHEET 11 OF 12
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THE OPERATION OF THE CIRCUITS AND DEVICES SHOWN ON THIS DRAWING CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO THE POWER SUPPLY. THE SUBSYSTEM, SUCH AS THE COMPLETE SUBSYSTEM, MUST BE GIVEN ADDITIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.

REVISIONS



NEW WORK

130R144R
14-532

SSE/MGM/ACC
10/07/14

 **A**

Signal South

THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN CANNOT BE FULLY CHECKED UNTIL ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM, OR AN EFFECTIVE SUBSYSTEM, SUCH SYSTEM OR SUBSYSTEM MUST BE GIVEN COMPLETE CIRCUIT AND OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.



INDIANA & OHIO RAILWAY

DRAWN: JWK DESIGNED: MOM CHECKED: RCC DATE: 10/07/14	CR 23 (STONE RD.) WILMINGTON, (CLINTON), OH DOT = J51 944G MILEPOST = 60.06	DRAWING NO. 151944G SHEET 12 OF 12
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REVISIONS	DATE	BY	DESCRIPTION
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			



Force Account Estimate - Stone Road
INDIANA & OHIO RAILWAY COMPANY (IORY)
Wilmington, Clinton County, OH

DOT#: 151944G
Railroad # 13IORY44R
RR MP: 60.06

SUMMARY

CROSSING WARNING SYSTEM	\$ 134,823.79
(Includes all labor, materials, shop wiring, and installation)	
CROSSING SURFACE/RESURFACE	\$ -
(Includes all labor, materials, shop wiring, and installation)	
TRACK GRADE AND REHABILITATION	\$ -
(Includes all labor, materials, and installation)	
RAILROAD ENGINEERING	\$ -
(Includes RAILROAD Labor for Reviewing Engineering Authorizations, Field Inspections and Administrative Labor)	
PRELIMINARY ENGINEERING	\$ 12,300.00
(Includes CONTRACT Labor for all Engineering, Agency Coordination, and Project Management)	
CONSTRUCTION ENGINEERING	\$ 27,300.00
(Includes CONTRACT Labor for all Engineering, Agency Coordination, and Project Management)	
CONSTRUCTION ENGINEERING INSPECTION	\$ 5,500.00
(Estimated Construction Engineering Inspection cost)	
UTILITY CROSSING	\$ -
(0 new utility crossings @ \$4000 per crossing, includes application, engineering review, and right of entry)	
FLAGGING SERVICES	\$ 5,000.00
(Estimated Flagging Services cost based on 5 days @ \$1000 per day)	
AC POWER SERVICE	\$ 3,500.00
(Includes all Power Service Charges not included in other costs)	
OTHER (Description Required)	\$ -
TOTAL ESTIMATE COST	\$ 188,423.79 (USD)

Estimate Prepared By: J. Bolzenius, PE
Date: 7/8/2015

Approved By: John Hilborn, PE
Date:

NOTE:

This Estimate has been prepared based on site conditions, anticipated work duration periods, material prices, labor rates, manpower, resource availability, and other factors known as of the date prepared. The actual cost for Railroad work may differ based upon the agency's requirements, their contractors work procedures, and/or other conditions that become apparent once construction commences or during the progress of the work. If any extended time elapses from the date of this Estimate, the Railroad will reserve the right to update the estimate to current price values, and require agency's approval before any work by Railroad will commence.