

NC

FILE

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RECEIVED-DOCKETING DIVISION

2016 MAR -1 PM 3:56

PUCO

**Public Utilities
Commission of Ohio**

Memo

To: Docketing Division

From: George Martin, Grade Crossing Planner, Rail Division

Re: In the matter of the authorization of the Ohio Central Railroad and Norfolk Southern Railway to install active grade crossing warning devices in Muskingum and Seneca Counties

Date: March 1, 2016

The Ohio Rail Development Commission (ORDC) has authorized funding for the Ohio Central Railroad (OHCR) and Norfolk Southern Railway (NS) to install mast-mounted flashing lights and roadway gates as follows:

OHCR, Muskingum County, City of Zanesville, Lee St, DOT# 474109A, approved cost \$178,017.00.

NS, Seneca County, near Attica, CR 8, DOT# 481599L, approved cost \$448,415.00.

These crossings were surveyed on November 4, 2014, and October 15, 2014, respectively, and were found to warrant the upgrades.

The projects will be paid for with federal funds, and are actual cost. As the plans and estimates have been approved in the amounts above, staff requests a Finding & Order with completion due in 9 months. Construction may commence at once. Staff requests that the following language be incorporated in the Entry:

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. 16- 503 -RR-FED In the matter of the authorization of the Ohio Central Railroad and Norfolk Southern Railway to install active grade crossing warning devices in Muskingum and Seneca Counties

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

GWRR-Ohio Valley Region Railroads

4349 Easton Way, Ste. 110

Columbus, Oh 43219

Mr Stephen Klinger

Norfolk Southern Railway

1200 Peachtree St, Box 123

Atlanta, Ga 30309

Mr Jay Bennett

Public Service Director

City Hall

2nd Floor, Room 230

Zanesville, Oh 43701

Mr Mark Zimmerman, PE, PS

AEP

Seneca County Engineer

3300 South TR 151

Tiffin, Oh 44883

**OHIO RAIL DEVELOPMENT COMMISSION
INTER-OFFICE COMMUNICATION**

TO: Randall Schumacher, Supervisor, Rail Division, PUCO
FROM: Cathy Stout, Manager, Safety Section, ORDC
BY: James Tucker, Project Manager, ORDC
SUBJECT: Muskingum County, Lee Street
DOT#474109A, PID#99464
DATE: February 22, 2016

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on November 6, 2014. 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.

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 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
Plan & Estimate

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

**OHIO RAIL DEVELOPMENT COMMISSION
INTER-OFFICE COMMUNICATION**

TO: Randall Schumacher, Supervisor, Rail Division, PUCO
FROM: Cathy Stout, Manager, Safety Section, ORDC
BY: Don Damron, Project Manager, ORDC
SUBJECT: Seneca County, CR 8 / Norfolk Southern
DOT# 481599L
PID# 99303
DATE: February 25, 2016

The Public Utilities Commission of Ohio (PUCO) established a Diagnostic Review Team Survey at the subject highway/railroad crossing location on 10/15/14. The Ohio Rail Development Commission (ORDC) attended the Diagnostic Survey. The Diagnostic Review Team recommended the improvement of warning devices to flashing lights and roadway gates. Copies of the Diagnostic Review Team Survey form and the railroad plan and estimate are attached.

The 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.

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 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.

Attachments:

Diagnostic Review Team Survey dated: 10/15/2014
Plan & Estimate dated: 4/6/2015

c: George Martin, PUCO
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

February 22, 2016

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

RE: Muskingum County, Lee Street, DOT# 474109A, PID# 99465.

Dear Mr. Hilborn:

The bid process for the referenced project has been reviewed and is acceptable. OHCR 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 \$178,017.00. 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 OHCR accepting the following instructions:

1. OHCR's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to James Tucker, ORDC, email james.tucker@dot.ohio.gov, and to the Public Utilities Commission of Ohio, email George.martin@puc.state.oh.us. OHCR'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. OHCR 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 OHCR.
3. OHCR's project foremen will notify James Tucker at 614-398-6897 (telephone) or james.tucker@dot.ohio.gov (email) 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. OHCR will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed Purchase Order to reference when billing.
6. OHCR 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,

A handwritten signature in black ink, appearing to read 'J. Tucker', with a stylized, wavy line extending from the end.

James Tucker
Project Manager

Attachment: ODOT P.O.

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

Martin, George

From: Tom Zeinz <tzeinz1@sbcglobal.net>
Sent: Monday, January 25, 2016 5:10 PM
To: Stout, Catherine; Tucker, Jim
Cc: Arduini, Susan
Subject: FW: PID 95368 - OHCR - Zanesville, OH (Muskingum County) Lee Street (DOT # 474109A / MP 144.155 RR# 15OHCR01R) - Vendor Bid Analysis & Construction Authorization Request
Attachments: LTR_160125_PE Package_Lee St_Patrick.pdf; FAE_160106_Lee_Patrick.pdf; DWG_150309_Lee Street PE.pdf; DWG_151124_Lee Street Plans_CE.pdf; EST_MaterialList_Lee St.pdf

Cathy & Jim,

No particular problems with this, but a few comments/observations.

The plan shows the signal masts being located 8'-3" from edge of road, however, there are notations that say "field verify". The Diagnostic Report says there are currently "non-functional" curbs (less than 4" in curb height), but also recommends curbs be installed/replaced. If, in fact, functional curbs are installed/replaced, these dimensions may be reduced to 4'-3" from face of curb as/where appropriate.

Part of what "muddies the water" at this location is the private driveway. Was any consideration given to contacting the landowner to see if this portion of the driveway could possibly be eliminated? There is another entrance for this same driveway along Lee Street approximately 200 (+/-) feet to the SE. Unless there is some compelling reason for keeping the driveway in this configuration, eliminating this leg of it would decidedly shorten the crossing and simplify the signal arrangement. Consider: Is it the Diagnostic Review Team's job to simply "tailor" some traffic control device arrangement to "fit" whatever situation they may find? Isn't it also to generate/promote ideas on how to uncomplicate the situation so that the resultant traffic control device installation is simpler, safer and possibly less costly?

Do as you will, and if you choose to run with the current proposal, I'll sign & seal it when I'm next in. I'm just saying I think we could make it better.

Tom Zeinz
Highway-Railroad Safety Consulting, LLC

From: Catherine.Stout@dot.ohio.gov [mailto:Catherine.Stout@dot.ohio.gov]
Sent: Monday, January 25, 2016 1:55 PM
To: Tom Zeinz <tzeinz1@sbcglobal.net> <tzeinz1@sbcglobal.net>
Cc: Susan.Arduini@dot.ohio.gov
Subject: FW: PID 95368 - OHCR - Zanesville, OH (Muskingum County) Lee Street (DOT # 474109A / MP 144.155 RR# 15OHCR01R) - Vendor Bid Analysis & Construction Authorization Request

Tom,

Please review the attached. I apologize if this is a duplicate. Jim got the plan in a separate email and might have already forwarded it to you.

Thanks,

Cathy Stout

Manager, Safety Programs, ORDC
1980 W. Broad St., Mail Stop 3140, Columbus, OH 43223
614-644-0313

From: Bolzenius, Joseph [<mailto:jbolzenius@patrickco.com>]
Sent: Monday, January 25, 2016 1:50 PM
To: Stout, Catherine <Catherine.Stout@dot.ohio.gov>
Cc: Tucker, Jim <James.Tucker@dot.ohio.gov>; John Hilborn <John.Hilborn@gwrr.com>; _p_GW_OHIO_VALLEY <GW-OH@patrickco.com>
Subject: RE: PID 95368 - OHCR - Zanesville, OH (Muskingum County) Lee Street (DOT # 474109A / MP 144.155 RR# 15OHCR01R) - Vendor Bid Analysis & Construction Authorization Request

Cathy,

Please see the attached P&E submittal for your review and approval. Please contact me if you have any questions.

Joseph S. Bolzenius, PE, PS, LEED AP
Ohio Director of Transportation
PATRICK ENGINEERING
3650 Olentangy River Rd, Suite 110
Columbus, Ohio 43214
Direct: 614.498.0339 | Mobile: 614.354.4933
jbolzenius@patrickco.com | www.patrickco.com

From: Catherine.Stout@dot.ohio.gov [<mailto:Catherine.Stout@dot.ohio.gov>]
Sent: Monday, January 25, 2016 11:30 AM
To: Bolzenius, Joseph
Cc: James.Tucker@dot.ohio.gov; John Hilborn; _p_GW_OHIO_VALLEY; Wodzinski, Marilyn
Subject: RE: PID 95368 - OHCR - Zanesville, OH (Muskingum County) Lee Street (DOT # 474109A / MP 144.155 RR# 15OHCR01R) - Vendor Bid Analysis & Construction Authorization Request

Joe,

We did not get the plan and estimate prior to your bidding out. I need the plan and estimate for review before we can authorize any further activity.

Thanks,

Cathy Stout
Manager, Safety Programs, ORDC
1980 W. Broad St., Mail Stop 3140, Columbus, OH 43223
614-644-0313

From: Wodzinski, Marilyn [<mailto:mwodzinski@patrickco.com>]
Sent: Wednesday, January 06, 2016 4:35 PM
To: Stout, Catherine <Catherine.Stout@dot.ohio.gov>
Cc: Tucker, Jim <James.Tucker@dot.ohio.gov>; John Hilborn <John.Hilborn@gwrr.com>; _p_GW_OHIO_VALLEY <GW-OH@patrickco.com>

Subject: PID 95368 - OHCR - Zanesville, OH (Muskingum County) Lee Street (DOT # 474109A / MP 144.155 RR# 15OHCR01R) - Vendor Bid Analysis & Construction Authorization Request

Hi Cathy,

We received bids from four different contractors for the Lee Street Project and it appears that **TCR Rail Systems** is the lowest responsive responsible bidder. The Railroad has approved the selection of TCR Rail Systems for the work, and attached is the updated Force Account Estimate.

Upon your review and approval, please provide construction authorization so that we may proceed with the work.

Feel free to contact me or Joe Bolzenius if you have any questions.

Thank you,

Marilyn Wodzinski
Patrick Engineering Inc.
(630) 795-7262

From: Wodzinski, Marilyn
Sent: Tuesday, December 22, 2015 10:44 AM
To: 'John Hilborn'; Daniel Birrell (dbirrell@gwrr.com); bkeys@gwrr.com
Cc: _p_GW_OHIO_VALLEY
Subject: OHCR - Zanesville, OH (Muskingum County) Lee Street (DOT # 474109A / MP 144.155 RR# 15OHCR01R) - Vendor Bid Analysis

Good Morning,

Attached are the bid results and analysis for Lee Street. We received a total of four bids. Progress Rail is expecting 3 more days of construction than TCR, which equates to another \$3,000 in flagging. With this in mind, TCR is the apparent low bidder, and satisfied bid requirements in their submitted proposal.

Please review and advise if you concur with awarding the project to TCR.

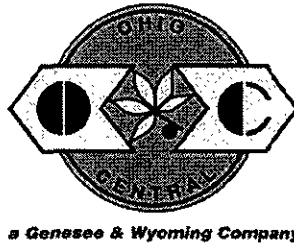
Thank you,

Marilyn Wodzinski, Program Coordinator
Patrick Engineering Inc.
4970 Varsity Dr., Lisle, Illinois 60532
P (630) 795-7262 | M (708) 466-7741 | F (630) 724-9279
mwodzinski@patrickco.com | www.patrickco.com

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January 25, 2016

Catherine M. Stout
Manager, Safety Programs
Ohio Rail Development Commission
1980 W. Broad St., Mail Stop 3140
Columbus, OH 43223

Subject: Plans and Estimate Package – Lee St, Zanesville, Muskingum County, Ohio
Upgrade to Lights and Gates

Reference: Agency ID: Lee St (PID# 95368)
AAR/DOT #: 474109A
RR Reimb.#: 15OHCR01R
CUOH #: Milepost: MP 144.15
Pittsburgh Subdivision (Zanesville District)

Dear Ms. Stout:

Ohio Central Railroad, Inc. (OHCR) is submitting this P&E Package for safety upgrades to the at-grade crossing in Zanesville, Ohio.

We are providing the attached Estimate, which includes the following items; Crossing Warning System estimate (including cost of labor, materials and equipment) , Costs for Engineering (includes Preliminary Engineering, Construction Engineering, and Construction Engineering Inspection), Flagging Services and Power service costs. We have also attached the PE Plans and Circuitry Plans.

Please contact me with any questions.

Sincerely,

John Hilborn, PE
Vice President-Engineering

Enclosures: Force Account Estimate, PE Plans and Circuitry Plans
cc: Joe Bolzenius (Patrick)
James Tucker & Susan Arduini (ORDC)



Force Account Estimate - Lee Street
OHIO CENTRAL RAILROAD, INC. (OHCR)
Zanesville, OH (Muskingum County)

DOT#: 474109A
Railroad #
RR MP: 144.15

Western Subdivision
SUMMARY

CROSSING WARNING SYSTEM	\$ 130,317.00
(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	\$ 13,200.00
(Includes CONTRACT Labor for all Engineering, Agency Coordination, and Project Management)	
CONSTRUCTION ENGINEERING	\$ 18,000.00
(Includes CONTRACT Labor for all Engineering, Agency Coordination, and Project Management)	
CONSTRUCTION ENGINEERING INSPECTION	\$ 7,500.00
(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	\$ 4,000.00
(Includes all Coordination and Power Service Charges not included in other costs)	
OTHER (Description Required)	\$ -
TOTAL ESTIMATE COST	\$ 178,017.00 (USD)

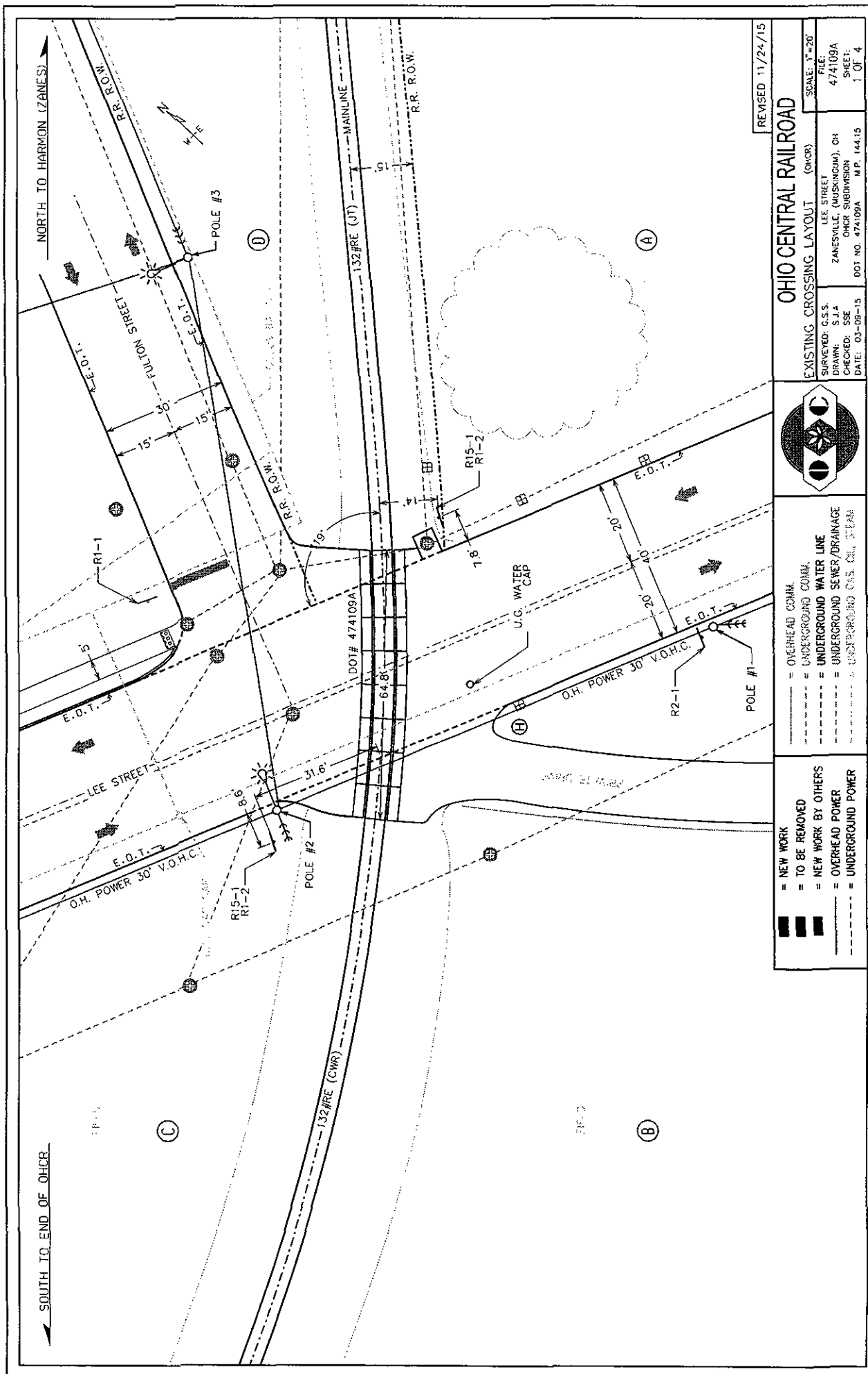
Estimate Prepared By: J. Bolzenius, PE
Date: 1/6/2016

Revised:

Approved By:
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 11/24/15

OHIO CENTRAL RAILROAD

EXISTING CROSSING LAYOUT (OHC)

SCALE: 1"=20'

FILE: 474109A

SHEET: 1 OF 4

SURVEYED: G.S.S.

DRAWN: S.J.A.

CHECKED: S.S.E.

DATE: 03-08-15

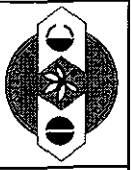
DOT NO. 474109A

MP. 144.15

LEE STREET

ZANESVILLE, (MUSKINGUM), OH

OHC SUBDIVISION



OVERHEAD COMM.

UNDERGROUND COMM.

UNDERGROUND WATER LINE

UNDERGROUND SEWER/DRAINAGE

UNDERGROUND GAS, OIL, STEAM

NEW WORK

TO BE REMOVED

NEW WORK BY OTHERS

OVERHEAD POWER

UNDERGROUND POWER

SOUTH TO END OF OHC

NORTH TO HARMON (ZANES)

OHIO CENTRAL RAILROAD
LEE STREET
ZANESVILLE, (MUSKINGUM), OH
DOT# 474 109A MILEPOST# 144.15

SHEET	DESCRIPTION
00	TITLE AND INDEX
01	CROSSING TRACK LAYOUT
02	TRACK AND CABLE LAYOUT
03	XP-4 CONTROL & TRACK CIRCUITRY
04	ELECTRONIC LAMP DRIVE CIRCUITRY
05	LIGHTING CIRCUITRY
06	GATE MECH CIRCUITRY
07	DATA RECORDER CIRCUITRY
08	POWER DISTRIBUTION
09	SIDE D DETAIL
10	XP-4 DETAIL AND PROGRAM INFORMATION
11	SIDE B DETAIL
12	SIDE A DETAIL
13	SIDE C DETAIL
14	
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THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN IS SUBJECT TO THE FOLLOWING CONDITIONS: 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.

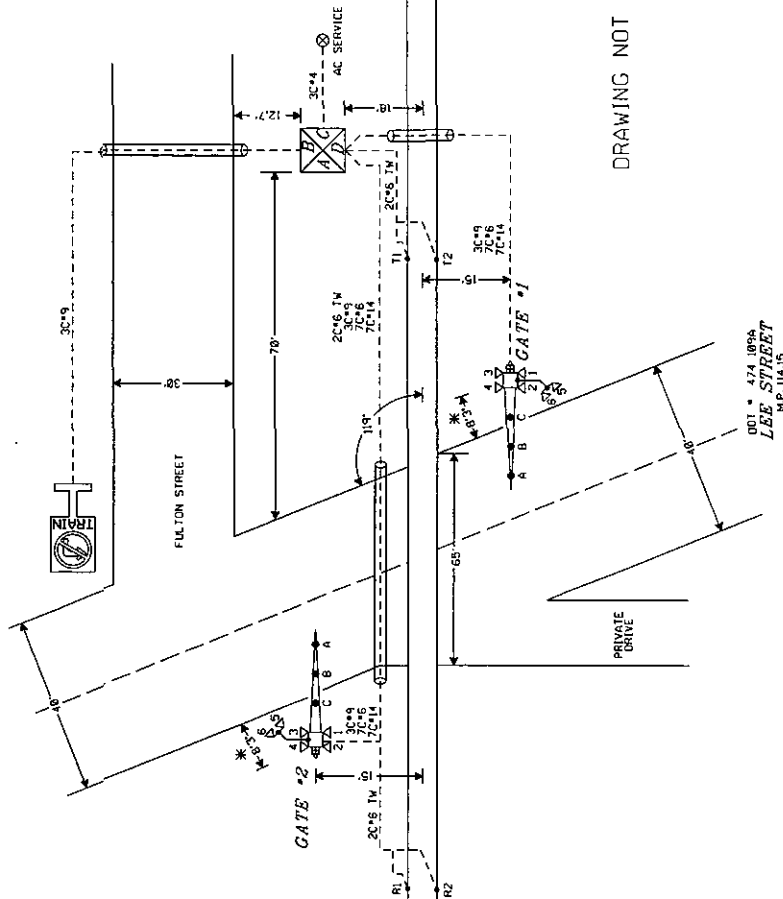
REVISIONS				

TITLE AND INDEX

OHIO CENTRAL RAILROAD	
DRAWN: BGS	LEE STREET
DESIGNED: TCC	ZANESVILLE, (MUSKINGUM), OH
CHECKED: RBC	DOT# 474 109A MILEPOST# 144.15
DATE: 11/24/75	SHEET 00 OF 13

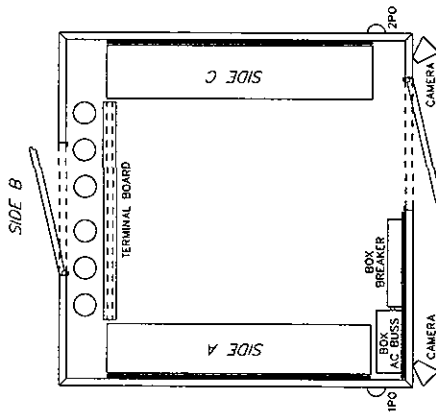
← SOUTH TO END OF OHCR

NORTH TO HARMON (ZANES) →

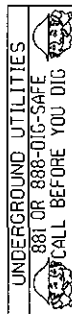


DRAWING NOT TO SCALE

6'x6'
SIGNAL
ENCLOSURE
ALL CABLES MUST
HAVE 2 COILS EACH
3'-0" IN DIAMETER
SIGNAL ENCLOSURE
SIGNAL ENCLOSURE
TO BE MOUNTED ON
RAISED PLATFORM,
CAMERAS MUST BE
PARALLEL



6'x6' SIGNAL ENCLOSURE LAYOUT



LEGEND:

- RIGID CONDUIT
- - - UNDERGROUND CABLE
- ⊗ LOCATION OF AC SERVICE
- * - FIELD VERIFY

NO.	CABLES DESCRIPTION	FROM - TO
1	1 EA. 2C*6 AWG TWISTED PAIR	HOUSE TO T1 & T2
2	1 EA. 2C*6 AWG TWISTED PAIR	HOUSE TO R1 & R2
3	1 EA. 3C*9 & 1 EA. 7C*6 AWG	HOUSE TO GATE 1
4	1 EA. 3C*9 & 1 EA. 7C*6 AWG	HOUSE TO GATE 2
5	1 EA. 3C*9 AWG	HOUSE TO M.L.T. SIGN
6	1 EA. 3C*4 AWG	HOUSE TO AC POWER SERVICE
7		
8		
9		
10		

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

REVISIONS



PATRICK
ENGINEERING

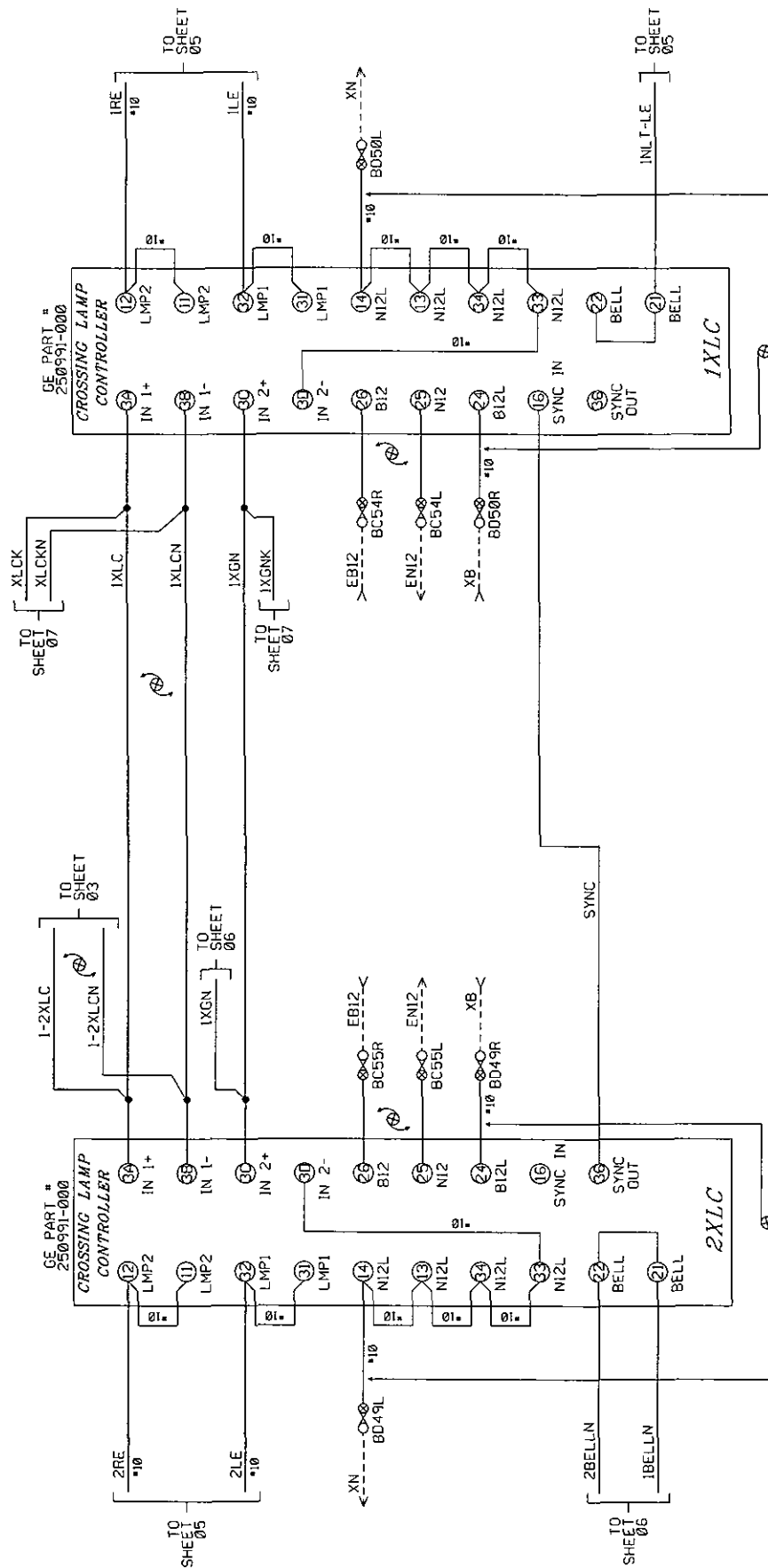
TRACK AND CABLE LAYOUT

OHIO CENTRAL RAILROAD

DRAWN: BOS
DESIGNED: TCC
CHECKED: ABC
DATE: 11/24/13

LEE STREET
ZANESVILLE, OH
DOT# 474 109A MILEPOST# 144.15

SHEET
02 OF 13



ELECTRONIC LAMP DRIVE CIRCUITRY

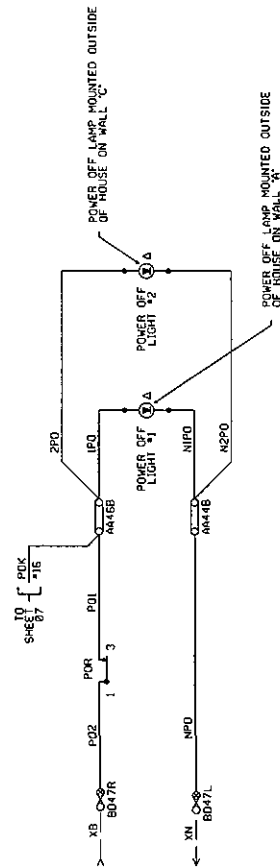
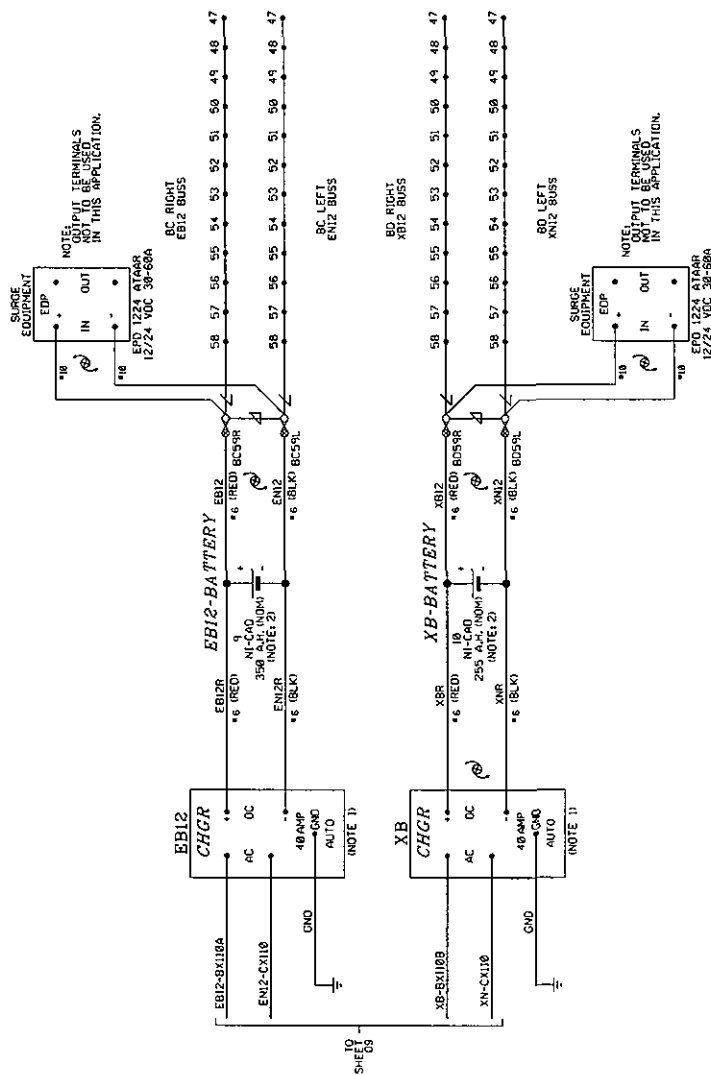
OHIO CENTRAL RAILROAD

LEE STREET
ZANESVILLE, (MUSKINGUM), OH
DOT# 474 109A MILEPOST# 144.15

DRAWN: BOS
DESIGNED: TGC
CHECKED: RBC
DATE: 11/24/15



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.



NOTES:

1. USE 120AC INPUT FOR CHARGERS.
2. USE 1/4" TERMINALS AT BATTERY CONNECTIONS.

REVISIONS



PATRICK ENGINEERING

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.

OHIO CENTRAL RAILROAD

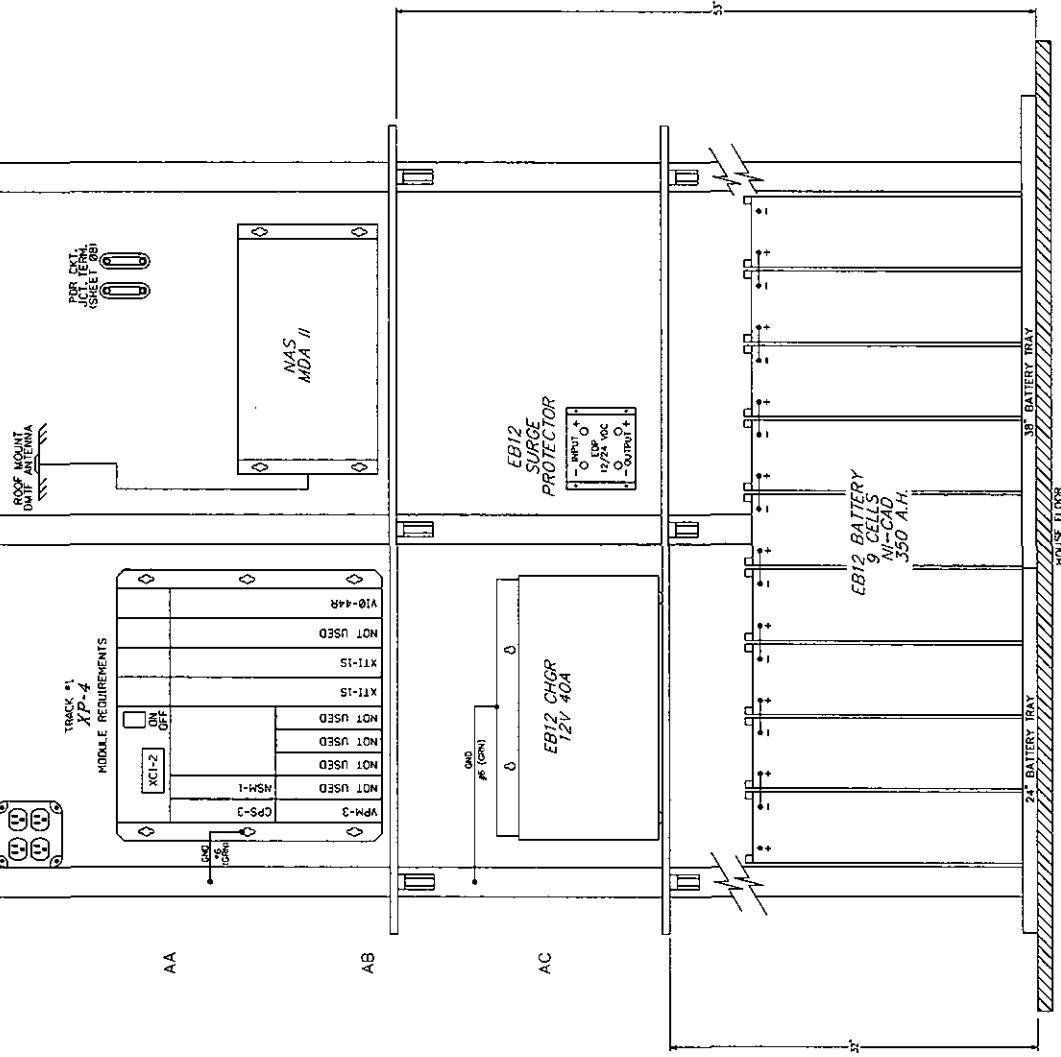
DRAWN: BGS
DESIGNED: TCC
CHECKED: RBC
DATE: 11/24/15

LEE STREET
ZANESVILLE, (MUSKINGUM), OH
DOT# 474 109A MILEPOST# 144.15

SHEET 133HS



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



REVISIONS

THE OPERATION OF THE CIRCUITS AND EQUIPMENT REPRESENTED HEREIN IS THE RESPONSIBILITY OF THE USER. ALL CIRCUITS AND DEVICES ARE CONNECTED TO FORM A COMPLETE SYSTEM. THE USER MUST BE GIVEN SUBSYSTEM MUST BE GIVEN OPERATIONAL TESTS BEFORE BEING PLACED IN REGULAR OPERATION.

OHIO CENTRAL RAILROAD

DRAWN: BOS
DESIGNED: TCC
CHECKED: RBC
DATE: 11/24/15

LEE STREET
ZANESVILLE, OHIO 44112
DOT # 474 105A MILEPOST # 144.15

SHEET
12 OF 13

SIDE A DETAIL

24 BATTERY TRAY
28 BATTERY TRAY
32 BATTERY TRAY
36 BATTERY TRAY
40 BATTERY TRAY
44 BATTERY TRAY
48 BATTERY TRAY
52 BATTERY TRAY
56 BATTERY TRAY
60 BATTERY TRAY
64 BATTERY TRAY
68 BATTERY TRAY
72 BATTERY TRAY
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Ohio Central Railroad, Inc.
DOT# 474109A, Lee Street

FIELD MATERIAL

HOUSE/CASE MATERIAL

DESCRIPTION	VENDOR P/N	UNIT	QTY
PLATFORM FOR 3"X5" SIGNAL CASE	0227081	EA	
FOUNDATION FOR STEEL RELAY CASE	0227080	EA	
ROD, GROUND 5/8IN BY 8FT	635880	EA	4
COUPLING, BRONZE FOR GROUND ROD	CR58	EA	4
CONNECTOR, ONE SHOT 2-WAY TYPE GT	SBGT1161G	EA	2
WIRE, GROUND #6 SOFT DRAWN BARE COPPER	6BCSOLX315	FT	50
BOX, GROUND ROD CONNECTION ENCLOSURE	PE-6HDK-BLA	EA	3

SIGNAL/HOUSE PLATFORMS & FOUNDATIONS

DESCRIPTION	VENDOR P/N	UNIT	QTY
FOUNDATION, HELICAL 7"X10" FOR 11-11/16" BOLT SPACING	TBD	EA	
EXTENSION, HELICAL FOUNDATION 10"X3' USE W/XING GATE & SIGNAL MAST	TBD	EA	
FOUNDATION, GROUND ACCESS FOR GATE MAST	TBD	EA	
FOUNDATION, GROUND ACCESS FOR CANTILEVER FOUNDATION	TBD	EA	
PLATFORM, HOUSE FOR ALL HOUSES UP TO 8X8	TBD	EA	
PLATFORM, 8' FLOOD FOR ALL HOUSES UP TO 8X8 COMPLETE WITH HELICAL FOUNDATION	TBD	EA	

CABLE

DESCRIPTION	VENDOR P/N	UNIT	QTY
CABLE, UG POWER 3 COND NO 6 AWG	112-10-3854	FT	
CABLE, UG POWER 3 COND NO 4 AWG	112-10-3864	FT	75
CABLE, UG POWER 3 COND NO 2 AWG	112-10-3874	FT	
CABLE, UG POWER 7 COND NO 6 AWG	206-11-6247	FT	350
CABLE, UG 3 COND NO 9 AWG	206-11-6923	FT	550
CABLE, UG 7 COND NO 9 AWG	206-11-6927	FT	
CABLE, UG 10 COND NO 9 AWG	206-11-6930	FT	
CABLE, UG 5 COND NO 14 AWG	206-11-6885	FT	
CABLE, UG 7 COND NO 14 AWG	206-11-6887	FT	350
CABLE, UG 12 COND NO 14 AWG	206-11-6892	FT	
CABLE, COMPOSITE 19 CONDUCTOR	206-11-6283	FT	
FIELD CABLE TAG KIT	TBD	EA	1

TRACK WIRE/CONNECTION MATERIAL

DESCRIPTION	VENDOR P/N	UNIT	QTY
WIRE UG TRACK TWISTED PAIR NO. 6 AWG	150-12-3933	FT	300
KIT BOND, CADWELD PLUS WEB OF RAIL BOND	SBTBBU4ACWPW2	EA	60
BOND STRAND 3/16" DIA 7 STRANDS OF 19	SBS8TINS664	FT	350
BOND, JOINT 3/16" X 6-1/2"	1072-01	EA	
KIT, BOOTLEG	BLTS-8-80B	EA	2
CONNECTOR, TRACK "CHICKEN HEAD" WITH 3/16" BOND STRAND	SBPAC3A	EA	10
RING 10 FOR SYLE "C" TRACK CIRCUIT	800-004080-000	EA	
SHUNT, NBS-1	250250-XXXX	EA	
SHUNT, WBS	XXXX	EA	2
ASSY, TIC-1A FINAL XXXHZ	250491-XXXX	EA	
SHUNT, MULTIFREQUENCY FSS-XX	250849-00X	EA	
DUMMY LOAD, TRACK LENGTH XXX	227032-0XX	EA	
PLATE, SHUNT FOR TIE-MOUNTING TIC'S	74-91004	EA	
SCREW, LAG 1/2" X 4-1/2" FOR MOUNTING SHUNT PLATES	508754-1/2	EA	
8' 6" HARDWOOD TIMBER TIE	TBD	EA	
ENCLOSURE, SHUNT	IRS-SEC8	EA	2

CROSSING MATERIAL - CANTILEVER ASSEMBLIES

DESCRIPTION	VENDOR P/N	UNIT	QTY
CANTILEVER 16' WITH 1-WAY MAIN MAST, 2-WAY TIP AND HARDWARE	AS QUOTED	EA	
CANTILEVER 35' WITH 2-WAY MAIN MAST, 1-WAY SIDE STREET, 2EA 1-WAY LANE, 2-WAY TIP AND HARDWARE	AS QUOTED	EA	
FOUNDATION, CONCRETE 5'-10" FOR CANT ARMS UP TO 30'	DP4-B	EA	
FOUNDATION, CONCRETE 5'-6" FOR CANT ARMS 31'-40'	DP8-B	EA	

CROSSING MATERIAL - LIGHTS AND SIGNS

DESCRIPTION	VENDOR P/N	UNIT	QTY
SIGN, MULTIPLE TRACKS "2 TRACKS" COMPLETE WITH HARDWARE AND 10-1/2" EXTENSION ARMS	3368-770-C-2-811-5	EA	
SIGN, MULTIPLE TRACKS "3 TRACKS" COMPLETE WITH HARDWARE AND 10-1/2" EXTENSION ARMS	3368-770-C	EA	
KIT, LED UPGRADE FOR GATE ARMS 16'-42'	9298-1120	EA	
FLX-12 Lamp 2-Way 5" Mast	042003-000896	EA	2
Jury Mast - Gate Arm & Conversion Bracket	TBD	EA	2
SIGNAL, 1-WAY CROSSARM WITH 12" LED SIGH ASSY	TBD	EA	0
SIGNAL, 2-WAY CROSSARM WITH 12" LED SIGH ASSY	975-804-5-1-MF	EA	2
NO RIGHT TURN SIGN & MOUNTING, LED	TBD	EA	
NO LEFT TURN SIGN & MOUNTING, LED, 42" H x 30" W x 5" D, 12-24VDC	TBD	EA	1
SIGN, NO TURN MAST MOUNT WITH HARDWARE	TBD	EA	1

Ohio Central Railroad, Inc.
DOT# 474109A, Lee Street

SHOP MATERIAL - (6x6)
HOUSES/CASES

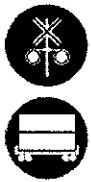
DESCRIPTION	VENDOR	VENDOR	UNIT	QTY
HOUSE 6X6 WITH PTC UPGRADE COMPLETE WITH FOUNDATIONS	PTMW	TBD W/VENDOR	EA	1
CASE, 3'X5" ALUM RELAY W/ FARADAY CLOSET	PTMW	TBD	EA	

POWER

DESCRIPTION	VENDOR	VENDOR	UNIT	QTY
PROTECTOR, SURGE 120/240V W/IND	GETS	010132-005	EA	1
PROTECTOR, SURGE #1224 ATAAR 12-24 vdc 30-60Amp	ERICO	tbd	EA	2
KIT, 240V EMERGENCY GENERATOR PLUG (MOUNTED ON OUTSIDE OF HOUSE)	TDH SOLUTIONS	830-0023	EA	1
PLUG, TURNLOK 30A L14-30P	NEWARK	50H2874	EA	1
PROTECTOR, PANEL EPD120/240	ERICO	EPD120240T	EA	1
LINK TEST INSULATED OFFSET 2-3/8"	TDH SOLUTIONS	800-0114	EA	176
REACTOR, TRACK BATTERY MODEL 5025A	GETS	250141-001	EA	
CHARGER, BATTERY 20AMP	NRS	22290-10	EA	
CHARGER, BATTERY 40AMP	NRS	22400-10	EA	2
CHARGER, BATTERY 30AMP	NRS	27920-10	EA	
BOX, HOFFMAN 10"X8"X4" NEMA 4X	HOFFMAN	A1008CHNFS	EA	1
HEATER, WALL 240/208V 60HZ 2000/1500W	CADET	C202	EA	1
TRANSFORMER, 750W	SIEMENS	010520-50X	EA	
ENHANCER, DC SHUNT t-Rx7100	GENESIS	8K-80049-0	EA	
CONVERTER, 2TC DC-DC TRACK USE W/ISLAND AND OS TRACK CIRCUITS	GETS	800-003510-000	EA	1

RELAYS

DESCRIPTION	VENDOR	VENDOR	UNIT	QTY
EXTRACTOR, RELAY TERMINAL	BILMAR	59688	EA	1
WRENCH, "E" TERMINAL POST	NEG	EDG-5951	EA	1
PLUGBOARD KIT, TYPE B1 RELAY	SIEMENS	420000-78	EA	1
RELAY, B1 470 OHM SR 4FB-2F-1B	ALSTOM	56001-778-	EA	
RELAY, B1 500 OHM NEUT 4FB-2F-1B	ALSTOM	56001-783-	EA	1
RELAY, B1 2 OHM 4FB-2F-1B	ALSTOM	56001-921-	EA	
RELAY, B1 6 OHM HD, 6FB	ALSTOM	TBD	EA	
TIMER, STICK RELEASE SLT-1 SPECIFY TIME	GETS	800-086000	EA	
LAMP CONTROLLER, CROSSING XLC	GETS	250991-000	EA	2
PLUGBOARD, XLC	GETS	251071-100	EA	2
VITAL LOGIC, GATE VLG RELAY DRIVE (SPECIFY INPUTS/OUTPUTS)	GETS	250948-XXX	EA	
SOCKET, RELAY POTTER BRUMFIELD FOR N68	NEWARK	46F3583	EA	1
RELAY, POTTER BRUMFIELD N68 POWER OFF	NEWARK	KHAU-17A1	EA	1



OHIO RAIL DEVELOPMENT COMMISSION

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

John R. Kasich, Governor • James G. Bradley, Chairman

February 25, 2016

Mr. Stephen Klinger
Norfolk Southern Corporation
Administrator Grade Crossing Program
1200 Peachtree St. NE, Box 123
Atlanta, GA 30309

RE: Automatic Grade Crossing Warning Devices – Construction Authorization
CR 8, Seneca County
DOT# 481559L
PID# 99303

Dear Mr. Klinger:

The plan and estimate dated 4/6/2015 for the referenced project has been reviewed and is acceptable. Norfolk Southern 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 \$448,415.00. 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 and will be confirmed by ORDC in writing within ten (10) business days of the verbal approval.

This authorization is contingent upon Norfolk Southern Corporation accepting the following instructions:

1. Norfolk Southern's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to Don Damron, ORDC, Mail Stop #3140, 1980 West Broad Street, 2nd Floor, Columbus Ohio 43223, or email don.damron@dot.state.oh.us, or Fax 614-728-4520, (cell: 614-917-8466; office phone: 614-466-2509), and to the Public Utilities Commission of Ohio at George.martin@puc.state.oh.us (phone 614-752-9107). The Norfolk Southern 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. Norfolk Southern 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 CSX.



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

3. Norfolk Southern's project foremen will notify Don Damron at 614-917-8466 (cell) or don.damron@dot.state.oh.us (email) 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. Norfolk Southern will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference when billing.
5. Norfolk Southern 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.

Thank you for your assistance with these matters.

Sincerely,

A handwritten signature in black ink, appearing to read "Donald J. Damron", written in a cursive style.

Donald J. Damron
Project Manager

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



Diagnostic Review Team Survey

Date: 10/15/2014

Location Data			
Street or Road Name:			
Route/Road Number (i.e. Twp., Co., SR or US)		US DOT No.:	
CR 8		481599L	
County:	Township:	City: (In or Near)	
SEN		Near Attica	
Railroad Name:	Railroad Division:	Branch/Line Name:	
Norfolk Southern	Lake	Sandusky	
Nearest RR Timetable Station:		RR Milepost:	
Carrothers		78.64	

On-Site Review Team			
(Include: Name - Organization - Phone Number - Email)			
1.	EVERETT CHISM	NS	574-849-8498
2.	Dave Kin	Seneca County Engineer	419-447-1011
3.	GEORGE MARTIN	PULCO	614-752-9107
4.	Nathan Mungo	NS	202-758-8694
5.	Don Dameron	ORDC	614 917 8466 don.dameron@ohdot.state.oh.us
6.			
7.			
8.			
9.			

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

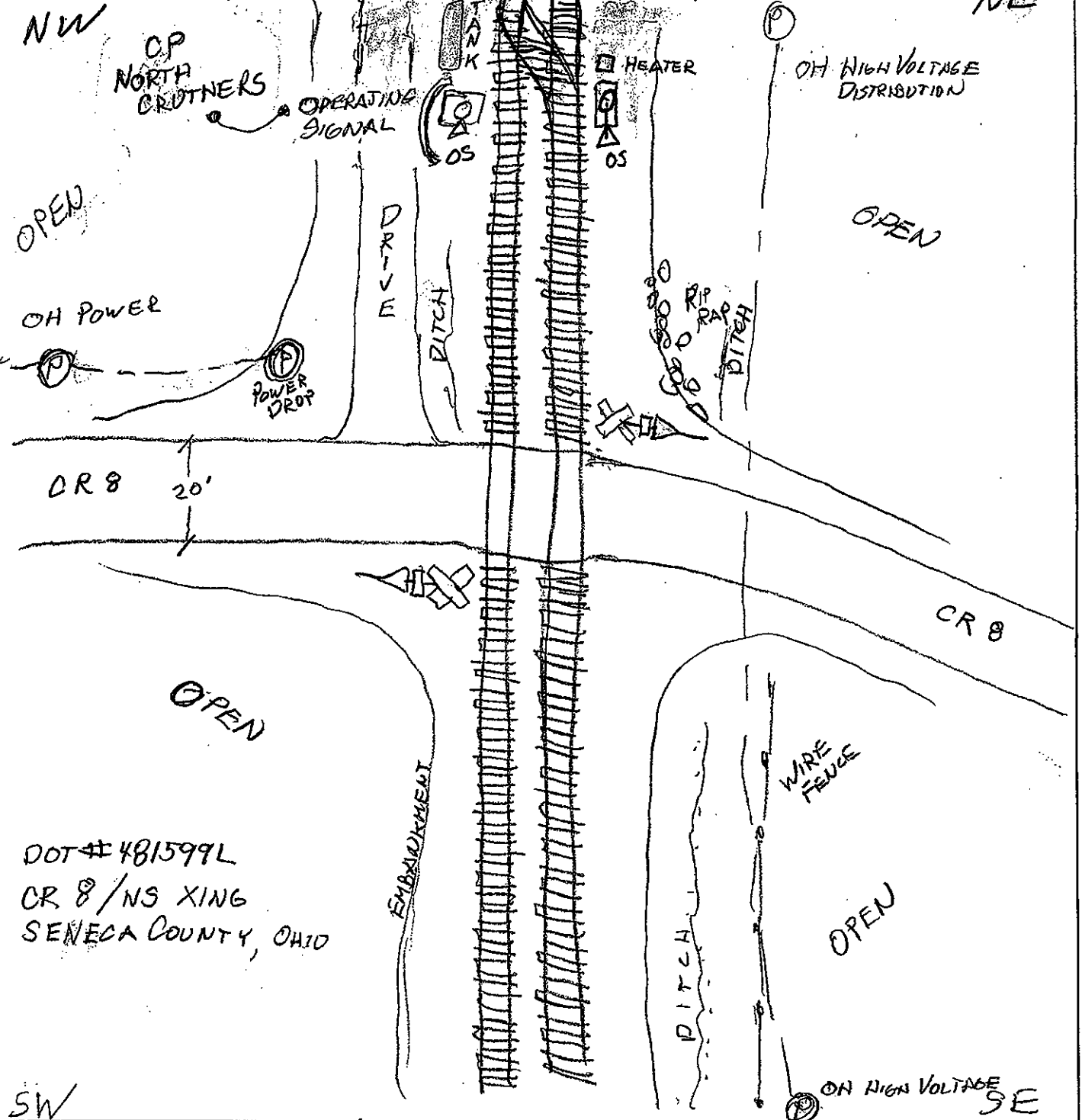
Quadrant <u>SW</u> Curb and Gutter: <input type="checkbox"/> Functional (Curb height = 4" or more) <input type="checkbox"/> Non-functional (Curb height = Less than 4") <input checked="" type="checkbox"/> None	Quadrant <u>NE</u> Curb and Gutter: <input type="checkbox"/> Functional (Curb height = 4" or more) <input type="checkbox"/> Non-functional (Curb height = Less than 4") <input checked="" type="checkbox"/> None
Pedestrians: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	
Is sidewalk present? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	
Is there a nearby intersection that could cause queuing over the crossing? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, Distance _____ Is this intersection signalized? <input type="checkbox"/> No <input type="checkbox"/> Yes Are the signals currently interconnected with the existing crossing warning devices? <input type="checkbox"/> No <input type="checkbox"/> Yes Is there a 'Do not Stop on Track' sign? <input type="checkbox"/> No <input type="checkbox"/> 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? <input checked="" type="checkbox"/> No <input type="checkbox"/> 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? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Explain reasons: _____	
Type of Development	
<input checked="" type="checkbox"/> Open Space <input type="checkbox"/> Institutional <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input type="checkbox"/> Residential	Location of nearby schools: <u>UNKNOWN</u>
Utility Information	
Is commercial power available? <input type="checkbox"/> No <input type="checkbox"/> Yes Utility Provider (Company Name) <u>AEP</u> Phone Number _____ Nearest Available Power Source _____ What other utilities are present? _____ (add locations to sketch)	
Is(are) there potential utility conflict(s) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Comments: <div style="font-size: 1.2em; margin-top: 10px;"> FIBER(UG) PARALLEL TO ROAD NORTH SIDE CULVERTS ON BOTH SIDES HUMPERD XING </div>	

Diagnostic Team Recommendations	
	Quadrants Needed
<input checked="" type="checkbox"/> Install/upgrade active devices	
<input type="checkbox"/> Automatic Flashing Lights (AFLS)	
<input checked="" type="checkbox"/> AFLS / Cants	
<input type="checkbox"/> AFLS / Gates	
<input type="checkbox"/> AFLS / Gates / Cants	
<input checked="" type="checkbox"/> Bells / number	2 BELLS
<input type="checkbox"/> Upgrade circuitry / type	
<input type="checkbox"/> Sidelights	
<input type="checkbox"/> Guardrail Needed	
<input type="checkbox"/> Install/Replace curb	
<input type="checkbox"/> Bungalow placement & offset from rail & highway	NW QUAD
<input type="checkbox"/> Other (define)	
Comments: PUCO: IMPROVE w L & G / NS = IMPROVE COUNTY: " " " / ORDC = IMPROVE	
<input type="checkbox"/> Install/upgrade traffic signal preemption	
<input type="checkbox"/> No improvements needed	
<input type="checkbox"/> Other (define)	
Acknowledgement of Recommendations (each entity represented at the diagnostic must have at least one signature acknowledgement): <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> EJP </div> <div style="text-align: center;"> DLK NLM </div> <div style="text-align: center;"> VJP </div> </div>	

CONSENSUS OF REVIEW TEAM:
UPGRADE TO L & G

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 SW Quadrant?

Sketch by: DJD

SEN CR 8, DOT # 481599L

