

Memo

To: Docketing Division
From: Jill Henry, Rail Specialist, Rail Division
Cc: PUCO Legal Department
Date: 10/29/18

Re: PUCO Case No. 18-1615-RR-FED- In the Matter of a Request for the Installation of Active Warning Devices at the Norfolk Southern Railway Crossing, Norwood Avenue DOT#508-925U, in Lucas County, Ohio.

On February 12, 2018, the Ohio Rail Development Commission (ORDC) authorized funding for Norfolk Southern Railway to install active warning devices at Norwood Avenue DOT#508-925U, in Lucas County, Ohio. The crossing was surveyed, on October 17, 2017, and found to warrant the upgrade. The electric utility provider for this crossing is First Energy Corp.-Toledo Edison.

The project will be paid for with federal funds and is actual cost. The plans and estimates in the amount of \$343,496.00 for lights and gates and \$24,500.00 for new concrete curbs have been approved. Construction may commence at once. **Staff requests a Finding & Order with completion of the project in twelve months.** 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.

Please serve the following parties of record:

Norfolk Southern Railway Company
Kurt Young
Public Projects Engineer
1200 Peachtree Street NE
Box 123
Atlanta, GA 30309-3597

Norfolk Southern Railway Company
Cayela Wimberly
Director Grade Crossing Safety
1200 Peachtree Street NE
Atlanta, GA 30309-3597

Eastman & Smith LTD.
Mr. Casey Talbott
Attorney for Norfolk Southern
One SeaGate 24th Floor
P.O. Box 10032
Toledo, OH 43699-0032

Ohio Rail Development Commission
Cathy Stout
Safety Manager
1980 West Broad Street
Mail Stop #3140
Columbus, OH 43223

City of Toledo
Edward Moore
Director of Public Utilities
420 Madison Avenue, Suite 100
Toledo, Ohio 43604

First Energy Corp.-Toledo Edison

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

TO: Randall Schumacher, Chief, Rail Division, PUCO

FROM: Cathy Stout, Manager, Safety Section, ORDC

BY: Don Damron

SUBJECT: Lucas County, Norwood Ave
DOT # 508925U
PID # 107037
NS Project # 10.31.96

DATE: August 21, 2018

The Public Utilities Commission of Ohio (PUCO) established a Diagnostic Review Team Survey at the subject location on October 17, 2017. The Ohio Rail Development Commission (ORDC) attended the Review. The Diagnostic Team recommended the upgrade of the existing active warning device system 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 accepts the site plans and estimates as provided. **Please issue a 12-month 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 Team Survey dated 10/17/2017
NS Plan & Estimate dated 4/5/2018

c: Jill Henry, Rail Specialist, 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

August 21, 2018

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

RE: Lucas County, Norwood Ave., DOT# 508925U
PID # 107037; NS Project # 10.3196

Dear Mr. Young:

The plan and estimate dated April 5, 2018, for the referenced project is acceptable. **Please note that the railroad must provide the Ohio Rail Development Commission (ORDC) with a plan stamped by a professional engineer licensed in the State of Ohio prior to acceptance and close out of the project.**

Norfolk Southern may proceed with the construction of the upgrade to the crossing warning devices in accordance with the abbreviated plan for the referenced project. ORDC will request that the Public Utilities Commission of Ohio (PUCO) issue a 12-month construction order for this project.

This construction 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 \$343,496.00. An additional \$24,500.00 has been encumbered for the estimated cost for constructing the new concrete curb as identified on the crossing site layout plan. Any cost in addition to these 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 accepting the following instructions:

1. The NS 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, email don.damron@dot.ohio.gov, and to the Public Utilities Commission of Ohio at Jill.henry@puc.ohio.gov. The NS 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. NS 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 Norfolk Southern.



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

3. NS will arrange for the construction of the curb as identified as Note 10: "6" curb to be installed in quad B for proper signal placement".
4. The NS project foremen will notify Don Damron at 614-917-8466 (telephone) or don.damron@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.
5. Open cut of roadways is *not permitted* except in unusual circumstances and must be coordinated with the local highway authority and preapproved by ORDC.
6. NS will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference when billing.
7. NS 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.
8. This installation will include any ancillary work to make the warning devices function as designed and meet MUTCD.

This project is authorized for construction under the master agreement between Ohio Rail Development Commission, Public Utilities Commission of Ohio and Norfolk Southern executed on December 19, 2012.

Thank you for your assistance with these matters.

Sincerely,



Donald J. Damron
Project Manager

C: Randall Schumacher, Chief, Rail Division, PUCO
Jill Henry, Rail Specialist, PUCO
Susan Arduini, ORDC
ORDC (file)



05-Apr-18

Round Figure Estimate for Grade Crossing Warning Devices

City/State: TOLEDO, OH

Road: NORWOOD AVE

MilePost: DR-55.62

DOT/AAR: 508925U

State Proj. No.: PID 107037

County: LUCAS

S&E Proj. No.: 10.3196

File Number:

Man Days: 180

Purchases - Others		
Meals and Lodging:	\$24,621.41	
Rental of Equipment:	\$33,657.37	
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 30 Days)		
Construction Supervision Vehicle:	\$5,148.45	
Purchases - Other Total:		\$63,427.23
Material And Additives		
Material Cost:	\$116,480.00	
Sales and Use Tax:	\$9,318.00	
Material Handling Freight:	\$11,647.98	
Material Total:		\$137,445.98
Labor And Additives		
Labor Cost:	\$57,960.00	
(6 man crew at \$1,932.00 a day for: 30 days)		
Payroll Tax & Overheads:	\$49,416.70	
Preliminary Engineering:	\$18,316.18	
Construction Supervision:	\$16,930.12	
Labor Total:		\$142,623.00
	Project Cost:	\$343,496.21
	Scrap / Salvage Credit:	\$0.00
	Project Total:	\$343,496.00

Estimated on: 05-Apr-18

Estimated by: jufd3

Estimate valid for 1 year from date of estimate



Highway Crossing Signalization Program - Material List

Do not substitute items without permission from S & E Engineering

City:	TOLEDO
Road:	NORWOOD AVE
Mile Post:	DR-55.62
Drawing Number:	36210557
State ProjectNumber:	PID 107037
County:	LUCAS
A A R Number:	508925U
Project Number:	10.3196
File Number:	
New File Number:	CX1113071
WBS:	F-04952
Store Number:	
Supervisor:	T.A. SLOCUM
Tax Code:	
Vendor to supply the following copies after pricing: 1 Set - Material Management with original Invoice 2 Sets - with plans shipped in car with material 1 Set - S&E Gen. Supt. Construction w/copy of invoice	

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed			Quantity Returned (Credit)	Special Instructions
							Date Quan.	Date Quan.	Date Quan.		
3	670-360693-4	EA	\$5.80	\$17.40	AAR/DOT NUMBER PLATE/DECAL, ORDER 3 PER PROJECT. 60 DAY LEAD TIME. SUPPLIED BY S'TRAN.						
1	165-006505-4	EA	\$1,075.23	\$1,075.23	AC SERVICE, COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE						
20	105-002620-4	EA	\$248.79	\$4,975.80	BATTERY, NICAD 340AH, MODEL SPL340						
1	670-503047-4	EA	\$183.15	\$183.15	BELL, CROSSING ELECTRONIC GENERL SIGNAL, EB-3-360-5 CR 02-044350						
2	670-980689-4	EA	\$75.48	\$150.96	BRACKET HIGH WIND, (RIGID 3'), WIG- 191036, WALRUS TUSK TYPE						
2	670-561375-4	EA	\$1,208.79	\$2,417.58	BRACKET, GATE SAVER, NEG385102GS, SPRING LOADED SWING AWAY ADAPTER FOR FIBERGLASS/ALUMINUM GATES, USE WITH GATE 38' AND LESS						
1	670-356949-4	EA	\$90.00	\$90.00	CABLE, 10' GENERATOR HOOK UP, SERRMI P/N 40524. FEMALE CONNECTOR						
500	465-939422-4	LF	\$2.92	\$1,460.00	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL						
600	465-292862-4	LF	\$1.36	\$816.00	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR						
500	465-292929-4	LF	\$4.13	\$2,065.00	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL						
350	465-791835-4	FT	\$3.55	\$1,242.50	CABLE, UG AC ENTRANCE 3C#6-7X OKONITE FMPF-L 094-078 TR W/G 1 X 8 7X W010 BRZ TAPE 600V PRODUCT CODE 206-11-6070						
2	670-010671-4	EA	\$738.15	\$1,476.30	CHARGER, BATTERY CRAGG MODEL 40 DTC-12V, 40 AMP, P/N 520940						
4	670-664917-4	EA	\$87.64	\$350.56	CONNECTOR KIT, WELDED FAR RAIL, CONSISTING OF RUBBER HOSE PROPERLY DRILLED, BONDSTRAND, 1 SPLICING SLEEVE, 1 REDUCING SLEEVE, 3 CLAMPS, 1 TRACK CLIP, 1 WEB WELDED TRACK CONNECTOR, 1 WELD METAL, SAFETRAN 111359-2X						
4	670-632520-4	EA	\$79.69	\$318.76	CONNECTOR KIT, WELDED NEAR RAIL, CONSISTING OF, RUBBER HOSE PROPERLY DRILLED, BONDSTRAND, SPLICING SLEEVE, 1 REDUCING SLEEVE, 5 CLAMPS, 1 TRACK CLIP, 1 WEB WELDED TRACK CONNECTOR, 1 WELD METAL, SAFETRAN 111359-1X						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Location: TOLEDO					OH	S&E Proj. No.: 10.3196	AFE No.: F-04952	Drawing No.: 36210557			
Store No.:					P.O.Number:		Date Required:	Date Shipped:	Vendor: Interrail Engineering, INC		
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan. Date Quan. Date Quan.			Quantity Returned (Credit)	Special Instructions
2	670-793404-4	EA	\$1,159.00	\$2,318.00	COUNTERWEIGHT PKAGE, 17-24'GATE S'TRAN S- MECH ONLY, STAINLESS, TO INCLUDE HUB, SUPPORT ARMS						
4	670-760012-4	EA	\$9.95	\$39.80	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. =====TO COVER 2 LAMPS=====						
1	670-986650-4	EA	\$370.21	\$370.21	DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING X'ING EQUIPMENT CONTAINER						
1	670-000004-4	EA	\$700.00	\$700.00	FCC LICENSE FOR MONITOR/RADIO						
2	670-015231-4	EA	\$599.40	\$1,198.80	FOUNDATION, DIXIE,S-2 GATE 2'6"X2'6"X5'6" ASSEMBLED						
2	670-005377-4	EA	\$338.00	\$676.00	GATE ARM, ALUMINUM, 17-24 FT, ARM ASSEMBLY, INCLUDES GATE GUARD FOR GATE LIGHT CABLE. HIGH INTENSITY VERTICAL STRIPES.						
1	670-696894-4	EA	\$34,574.48	\$34,574.48	GCP4000 - 2 TRK (2TC) - REDUNDANT - 40/40 AMP WIRED RACK EQUIP. FOR 6X8 XING SHELTER, (INCL. 2 TRK CHASSIS A80465, 4 TRK MODS. A80418, 2-SSCC A80405, 2 CPU A80403, 1 SEAR A80410, 1 DISPLAY A80407, , 2-40 AMP CHARGERS) IPN: 003131-4X						
1	670-016299-4	EA	\$88.55	\$88.55	INDUCTOR, SIMULATED TRACK HARMON 227032-004 (1250')						
1	670-477991-4	EA	\$410.00	\$410.00	KIT, GROUNDING ASSY FOR AL I/S INCLUDES 8 GRD RDS,200'#4WIRE,12 4 WIRE ONE-SHOTS. ERICO SBK206						
1	670-123298-4	EA	\$345.97	\$345.97	KIT, HARDWARE SUPPLIES REQUIRED X'ING P'CKAGES. WEB CONNECTORS FOR SHUNT(8EA) TAPE, AMPS,P'GUM PAINT,SLEEVES,TAGS,GLUE, 100 EA WHITE TAGS,)NE CAN BLUE MARKING PAINT ETC...						
2	670-092155-4	EA	\$160.00	\$320.00	LAMP ASSY, LED GATE ARM KIT (INCLUDES 3 LAMPS COMPLETE WITH CABLES AND MTG. HARDWARE) REC #: 9298-1120						
2	670-005058-4	EA	\$1,786.08	\$3,572.16	LAMP ASSY, LED, 5" MAST BACK TO BACK LIGHTS (IPN: 042003-L487XNS)						
5	255-590880-4	EA	\$17.52	\$87.60	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"						
2	670-637778-4	EA	\$1,325.00	\$2,650.00	MAST, 5" ALUMINUM 13'10" WITH DOUBLE JCT. BOX BASE. S'TRAN P# 070519-11AX.						
2	670-521147-4	EA	\$3,715.27	\$7,430.54	MECHANISM, GATE MODEL S-40, WITH CONTACT HEATER, COMPLETE W/RELAY S'TRAN # 074000-W00090						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Date Date Quan. Quan. Quan.			Quantity Returned (Credit)	Special Instructions
10	670-000014-4	EA	\$1,500.08	\$15,000.80	MISC. EXPENSE, CURB WORK (BY ROAD AUTHORITY)						
13	670-000001-4	EA	\$726.23	\$9,440.99	MISC. EXPENSE, MATERAIL/FILL						
1	670-000019-4	EA	\$2,000.00	\$2,000.00	MISC. EXPENSE, RELOCATION OF RAIL LUBRICATOR WITHIN APPROACH						
1	000-000000-4	EA	\$5,000.00	\$5,000.00	MISC. EXPENSE, UNDERGROUND BORING						
4	670-001347-4	EA	\$57.10	\$228.40	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI A1250-5, HARMON @200965-000, OR						
1	255-646807-4	EA	\$31.19	\$31.19	PADLOCK, SAFETRAN PART NO. 030399-29X SCREW TYPE FOR CIR CONTROLLER AND BTY. BOX						
1	670-514605-4	EA	\$11.11	\$11.11	PINNACLE, W-C SECT 1-11, 4" & 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X						
1	165-902002-4	EA	\$297.48	\$297.48	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL						
4	465-002899-4	EA	\$40.24	\$160.96	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES						
2	435-805560-4	EA	\$2.78	\$5.56	SAND, 25LB BAG FOR CABLE ENTRANCE INTO THE SHELTER						
1	670-113448-4	EA	\$910.23	\$910.23	SEARII, (VHF w/ANTENNA) - VHF COMMUNICATOR, SAFETRAN P/N A80276, 1/ PER CROSSING						
1	670-749325-4	EA	\$237.18	\$237.18	SHELF, FOLDING, FOR LAPTOP USE IN FARADAY 6X8 SHELTER, SAFETRAN 052852-128X						
1	670-755523-4	EA	\$9,333.50	\$9,333.50	SHELTER, 6'X8' ALUMN FARADAY W/1EA EQUIPMENT RACK, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN RECEPTICAL, BREAKER BOX GFI OUTLET FOR LAPTOP SHELF SAFETRAN 058400-68-85						
2	670-586967-4	EA	\$42.98	\$85.96	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT						
2	670-016312-4	EA	\$697.62	\$1,395.24	SHUNT, MULTI-FREQ. #250849-004 FSS-1E ALSTOM NARROW BAND (211, 285, 348, 430, 525)						
2	670-554843-4	EA	\$77.05	\$154.10	SIGN, 2 TRACK SIGN, HIGH INTENSITY, SAFETRAN #035207-2HX						
2	670-016346-4	EA	\$143.23	\$286.46	SIGN, X-BUCK, HI-INTENSIVE REFLECTIVE FRT. & BACK FOR ALL STATES, SAFETRAN# 035200-91X						
2	670-393331-4	EA	\$37.43	\$74.86	SIGN, CROSSING ENS MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed			Quantity Returned (Credit)	Special Instructions
							Date Quan.	Date Quan.	Date Quan.		
1	670-330382-4	RL	\$18.06	\$18.06	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS. "WARNING STOP DIGGING"						
120	165-544477-4	FT	\$3.22	\$386.40	Z-DNO-CONDUIT, 4"x10' PVC, SCHEDULE 80 BELL CONNECTOR AT ONE END, 1/2 PT. GLUE IN KIT 670-123298-4						

Total Material: \$116,479.83

SH. NO.	CONTENTS
NX1	INDEX SHEET
NX2	OUT OF SERVICE (OOS) INSTRUCTIONS
1	LAYOUT
2	PROFILE
3	CABLE PLAN
4	LOAD CENTER
5	B12 & B16 CHARGERS & BATTERIES
6	4000 GCP 2-TK CHASSIS & MODULE LAYOUT
7	4000 GCP PROGRAMMING SETUP
8	4000 GCP PROGRAMMING SETUP
9	CONNECTORS FOR TRACK MODULES
10	CPU MODULE, SEAR IIi & VHF HOOK-UPS
11	SEAR IIi PROGRAMMING SETUP
12	SSCC#1 MODULE HOOK-UP
13	SSCC#2 MODULE HOOK-UP
14	SIGNAL "A" S40 GATE & FLASHER CIRCUITS
15	SIGNAL "B" S40 GATE & FLASHER CIRCUITS
16	BACKBOARD 1A & 1B
17	REAR BACKBOARD 1A & 1B
18	FARADAY SHIELD 1A & 1B
19	FARADAY SHIELD 1C
20	HOUSE SIDE C LAYOUT & RACK PLACEMENT
21	HOUSE SIDE A LAYOUT
22	HOUSE SIDE B LAYOUT & TOP VIEW

IN SERVICE_____SIGNED_____DATE_____

☐ S&E ENGINEERING COPY

☐ CONSTRUCTION OFFICE COPY
RETURN TO S&E ENG. AFTER COMPLETION

☐ FIELD COPY
RETURN TO CASE AFTER COMPLETION

☐ PROJECT ENGINEER COPY

INDEX SHEET

TAKING TRACK(S) OUT OF SERVICE (OOS):

SP-1001 MUST BE COMPLIED WITH

THE OUT OF SERVICE MENU IS ACCESSED ON THE DISPLAY BY TOUCHING THE DESIRED TRACK IN THE TRACK STATUS WINDOW ON THE DISPLAY. SELECT OUT OF SERVICE FROM THE DROP DOWN MENU.

PLACE A JUMPER ACROSS THE OOS TERMINALS SHOWN IN THE PLANS.

SP-1001 MUST BE COMPLIED WITH

SELECT "TAKE GCP OUT OF SERVICE."

ONCE THE GCP APPROACH IS TAKEN OUT OF SERVICE, IF AN ISLAND EXISTS, THE OPTION TO "TAKE ISL OUT OF SERVICE" IS PRESENTED. IF THE ISLAND IS LEFT IN SERVICE, THE CROSSING WILL ACTIVATE IF THE ISLAND IS OCCUPIED.

IF DESIRED, SELECT "TAKE ISL OUT OF SERVICE."

THE TRACK IS NOW OUT OF SERVICE. WHEN THE OUT OF SERVICE SCREEN IS CLOSED, THE DISPLAY RETURNS TO THE TRACK STATUS SCREEN. NOTE THAT THE OUT OF SERVICE TRACK IS ALTERNATELY FLASHING DARK GRAY AND LIGHT BLUE.

REPEAT FOR ADDITIONAL TRACKS IF NEEDED.

PUTTING TRACK(S) BACK IN SERVICE:

SP-1001 MUST BE COMPLIED WITH


REMOVE THE JUMPER ACROSS THE OOS TERMINALS SHOWN IN THE PLANS.

SP-1001 MUST BE COMPLIED WITH

OUT OF SERVICE (OOS) INSTRUCTIONS

REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

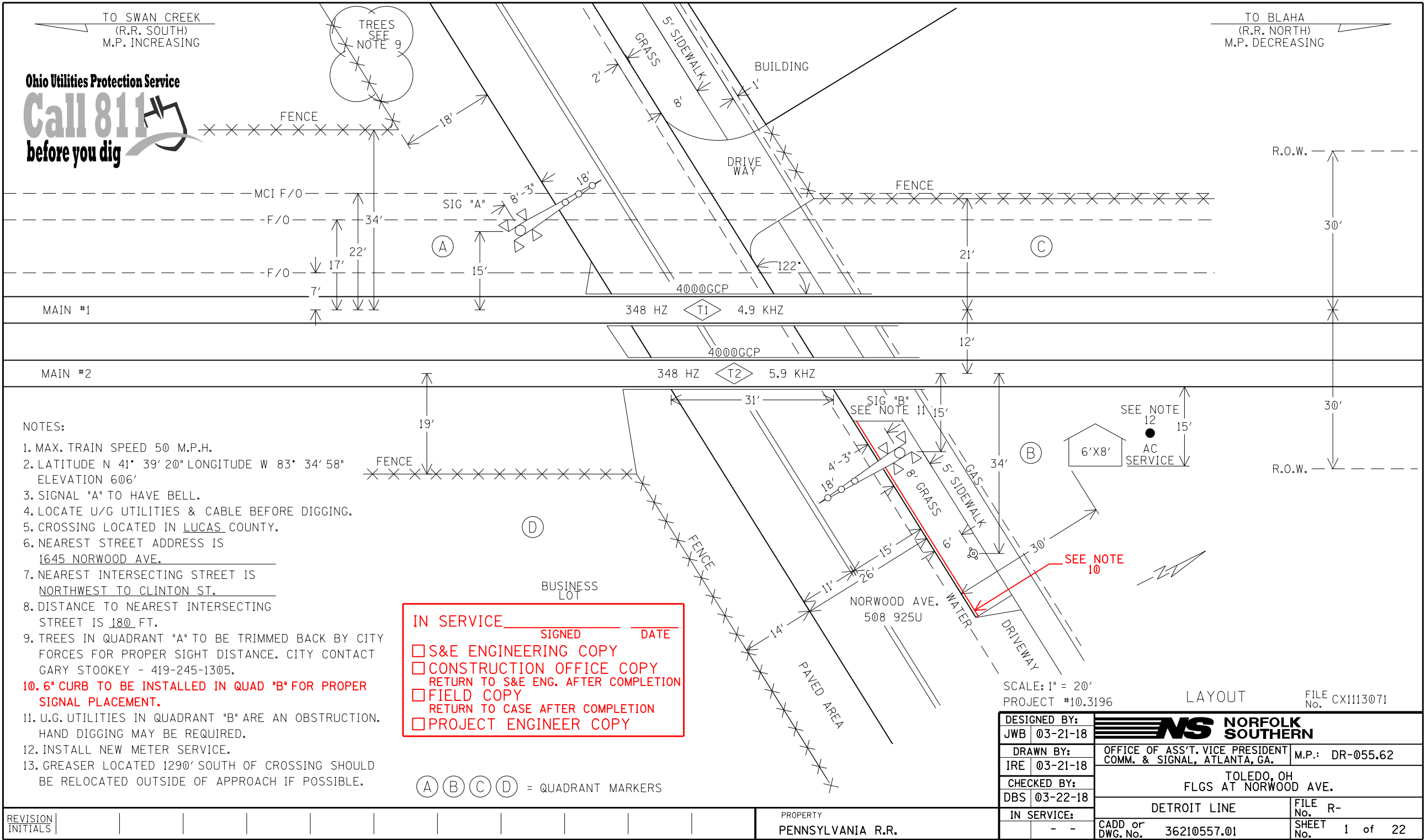
DESIGNED BY:	 NORFOLK SOUTHERN		
JWB 03-21-18			
DRAWN BY:	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: DR-055.62
IRE 03-21-18			
CHECKED BY:	TOLEDO, OH FLGS AT NORWOOD AVE.		
DBS 03-22-18			
IN SERVICE:	DETROIT LINE		FILE No. R-
- -	CADD or DWG. No. 36210557.NX2		SHEET No. 2 of 2

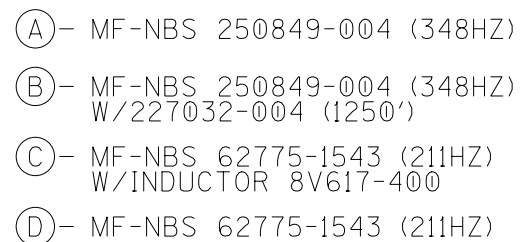
TO SWAN CREEK
(R.R. SOUTH)
M.P. INCREASING


Ohio Utilities Protection Service

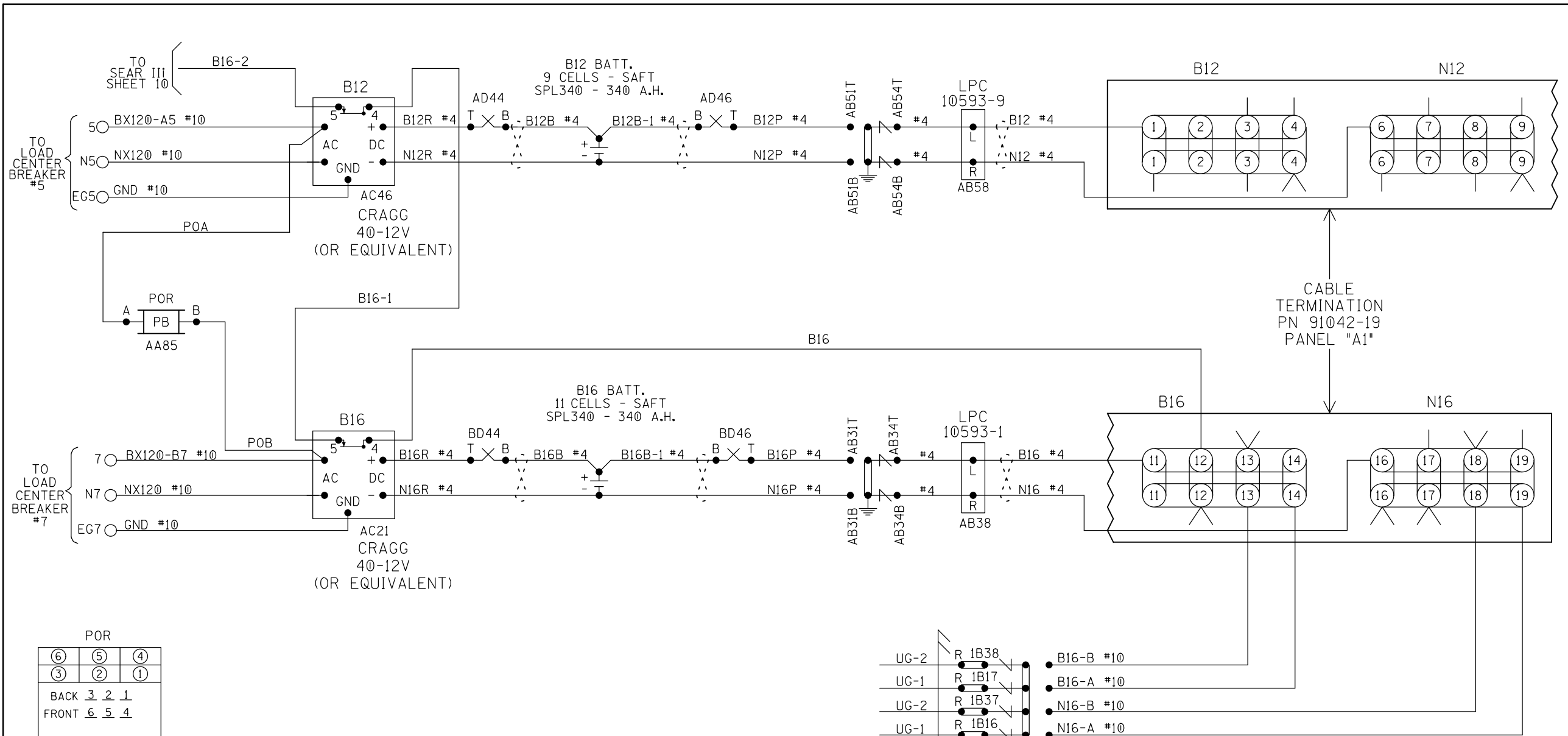
Call 811
before you dig

TO BLAHA
(R.R. NORTH)
M.P. DECREASING






DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	03-21-18		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT	M.P.: DR-055.62
IRE	03-21-18	COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY:		TOLEDO, OH	
DBS	03-22-18	FLGS AT NORWOOD AVE.	
IN SERVICE:		DETROIT LINE	FILE R-
	- -	CADD or DWG. No. 36210557.02	SHEET No. 2 of 22



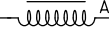
CABLE
TERMINATION
PN 91042-19
PANEL "A1"

B12 & B16 CHARGERS & BATTERIES

DESIGNED BY:	JWB 03-21-18	 NORFOLK SOUTHERN	
DRAWN BY:	IRE 03-21-18	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: DR-055.62
CHECKED BY:	DBS 03-22-18	TOLEDO, OH FLGS AT NORWOOD AVE.	
IN SERVICE:	- -	DETROIT LINE	FILE NO. R-
		CADD or DWG. No. 36210557.05	SHEET No. 5 of 22

NOTE:
ALL WIRING TO BE #16AWG
UNLESS NOTED OTHERWISE.

⋈ = TWIST

⑥	⑤	④
③	②	①
BACK 3 2 1		
FRONT 6 5 4		
HEEL 9 8 7		
B  A		
POTTER BRUMFIELD RELAY (FRONT VIEW) KUP-14A15-240		
⑧		⑦
⑨	⑧	⑦

REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

Program Report

Location and SIN

DOT Number: 508925U

Milepost Number: DR-055.62

Site Name: NORWOOD AVE

SIN: 755003609216

MCF and Template Selection

MCF Name: GCP-T6X-02-1.mcf

MCF Revision: 021

MCFCRC: 6076E435

Template = 1A:6 Trk BI

Check Numbers

Office Check No. (DT 4,6,0): 14C4C27E

Office Check Number: 14C4C27E

Config. Check Number: 7F0FA808

(Based on MCF Revision 021)

Program

BASIC: module configuration

Track 1 Slot = Track

Track 2/R10 1 Slot = Track

Track 3 Slot = Not Used

Track 4 Slot = Not Used

Track 5/R10 2 Slot = Not Used

Track 6/R10 3 Slot = Not Used

SSCC-1 Slot = SSCC31

SSCC-2 Slot = SSCC31

SEAR Used = Yes

BASIC: MS/GCP operation

Track 1: MS/GCP Operation = Yes

Track 2: MS/GCP Operation = Yes

BASIC: island operation

Track 1: Island Used = Internal

Track 2: Island Used = Internal

BASIC: preemption

Preempt Logic = No

BASIC: radio Dax links

Radio DAX link A Used = No

Radio DAX link B Used = No

BASIC: Vital Comms links

Vital Comms link 1 Used = No

Vital Comms link 2 Used = No

PREDICTORS: track 1

Track 1: Prime Used = Yes

Track 1: Dax A Used = No

Track 1: Dax B Used = No

Track 1: Dax C Used = No

Track 1: Dax D Used = No

Track 1: Dax E Used = No

Track 1: Dax F Used = No

Track 1: Dax G Used = No

PREDICTORS: track 2

Track 2: Prime Used = Yes

Track 2: Dax A Used = No

Track 2: Dax B Used = No

Track 2: Dax C Used = No

Track 2: Dax D Used = No

Track 2: Dax E Used = No

Track 2: Dax F Used = No

Track 2: Dax G Used = No

GCP: track 1

Track 1: GCP Freq Category = Standard

Track 1: GCP Frequency = 348 Hz

Track 1: Approach Distance = 2572 ft

Track 1: Uni/Bi/Sim-Bidirnl= Bidirnl

Track 1: GCP Transmit Level= Medium

Track 1: Island Connection = Isl1

Track 1: Island Distance = 132 ft

Track 1: Computed Distance = 9999 ft

Track 1: Linearization Steps = 100

GCP: track 1 enhanced det

Track 1: Inbound PS Sensitivity = Off

Track 1: Speed Limiting Used = Yes

Track 1: Outbound False Act Lvl= Normal

Track 1: Outbound PS Timer = 20 sec

Track 1: Trailing Switch Logic = On

Track 1: Post Joint Detn Time = 15 sec

Track 1: Adv Appr Predn = No

Track 1: CancelPickup Delay = This Isl

GCP: track 1 prime

Track 1: Prime Warning Time = 30 sec

Track 1: Prime Offset Distance = 0 ft

Track 1: Switch MS EZ Level= 10

Track 1: Prime MS/GCP Mode = Pred

Track 1: Prime Pickup Delay = 15 sec

Track 1: Prime UAX = Not Used

GCP: track 1 pos start

Track 1: Positive Start = Off

Track 1: Sudden Shnt Det Used = No

Track 1: Low EZ Detection Used = No

GCP: track 1 MS Control

Track 1: MS/GCP CtrlIP Used = No

Track 1: MS Sensitivity Level= 0

Track 1: Compensation Level= 1300

Track 1: Warn Time-Ballast Comp = High

Track 1: Low EX Adjustment = 39

Track 1: Bidirnl Dax Passthru = No

Track 1: False Act on Train Stop = No

Track 1: EX Limiting Used = Yes

Track 1: EZ Correction Used = Yes

GCP: track 2

Track 2: GCP Freq Category = Standard

Track 2: GCP Frequency = 348 Hz

Track 2: Approach Distance = 2572 ft

Track 2: Uni/Bi/Sim-Bidirnl= Bidirnl

Track 2: GCP Transmit Level= Medium

Track 2: Island Connection = Isl2

Track 2: Island Distance = 132 ft

Track 2: Computed Distance = 9999 ft

Track 2: Linearization Steps = 100

GCP: track 2 enhanced det

Track 2: Inbound PS Sensitivity = Off

Track 2: Speed Limiting Used = Yes

Track 2: Outbound False Act Lvl= Normal

Track 2: Outbound PS Timer = 20 sec

Track 2: Trailing Switch Logic = On

Track 2: Post Joint Detn Time = 15 sec

Track 2: Adv Appr Predn = No

Track 2: CancelPickup Delay = This Isl

GCP: track 2 prime

Track 2: Prime Warning Time = 30 sec

Track 2: Prime Offset Distance = 0 ft

Track 2: Switch MS EZ Level= 10

Track 2: Prime MS/GCP Mode = Pred

Track 2: Prime Pickup Delay = 15 sec

Track 2: Prime UAX = Not Used

GCP: track 2 pos start

Track 2: Positive Start = Off

Track 2: Sudden Shnt Det Used = No

Track 2: Low EZ Detection Used = No

GCP: track 2 MS Control

Track 2: MS/GCP CtrlIP Used = No

Track 2: MS Sensitivity Level= 0

Track 2: Compensation Level= 1300

Track 2: Warn Time-Ballast Comp = High

Track 2: Low EX Adjustment = 39

Track 2: Bidirnl Dax Passthru = No

Track 2: False Act on Train Stop = No

Track 2: EX Limiting Used = Yes

Track 2: EZ Correction Used = Yes

ISLAND: track 1

Track 1: IslFrequency = 4.9 kHz

Track 1: Pickup Delay (2s +) = 0 sec

Track 1: IslEnable IP Used = No

ISLAND: track 2

Track 2: IslFrequency = 5.9 kHz

Track 2: Pickup Delay (2s +) = 0 sec

Track 2: IslEnable IP Used = No

AND: track Anding

AND 1 XR Used = Yes

AND 2 Used = No

AND 3 Used = No

AND 4 Used = No

AND 5 Used = No

AND 6 Used = No

AND 7 Used = No

AND 8 Used = No

AND: AND 1 XR

AND 1 XR Track 1 = Prime

AND 1 XR Track 2 = Prime

AND 1 Enable Used = Yes

And 1 Enable Pickup = 5 sec

AND 1 Enable Drop = 0 sec

AND 1 Wrap Used = No

ADVANCED: MS restart

MS/GCP Restart Used = No

ADVANCED: out of service

00S Control= Display+00S IPs

00S Timeout = Yes

00S Timeout = 1 hrs

ADVANCED: out of service 2

T1 00S Control= 00S Input 1

T2 00S Control= 00S Input 1

ADVANCED: track wrap circuits

Wrap LOS Timer = 5 sec

Track 1 Wrap Used = No

Track 2 Wrap Used = No


ADVANCED: trk 1 overrides

Track 1: AllPredictors Override Used = No

ADVANCED: trk 2 overrides

Track 2: AllPredictors Override Used = No

4000 GCP PROGRAMMING SETUP

DESIGNED BY:	 NORFOLK SOUTHERN		
JWB 03-21-18			
DRAWN BY:	OFFICE OF ASS'T. VICE PRESIDENT	FILE NO. R-	
IRE 03-21-18	COMM. & SIGNAL, ATLANTA, GA.	M.P.: DR-055.62	
CHECKED BY:	TOLEDO, OH		
DBS 03-22-18	FLGS AT NORWOOD AVE.		
IN SERVICE:	DETROIT LINE		FILE NO. R-
- -	CADD or DWG. No.	36210557.07	SHEET 7 of 22

ADVANCED: OR logic
OR 1 Used = No
OR 2 Used = No
OR 3 Used = No
OR 4 Used = No

ADVANCED: internal I/O 1
Pass Thrus = No
Int.1 Sets = Not Used
Int.1 Set by = Not Used
Int.2 Sets = Not Used
Int.2 Set by = Not Used
Int.3 Sets = Not Used
Int.3 Set by = Not Used
Int.4 Sets = Not Used
Int.4 Set by = Not Used

ADVANCED: internal I/O 2
Int.5 Sets = Not Used
Int.5 Set by = Not Used
Int.6 Sets = Not Used
Int.6 Set by = Not Used
Int.7 Sets = Not Used
Int.7 Set by = Not Used
Int.8 Sets = Not Used
Int.8 Set by = Not Used

ADVANCED: internal I/O 3
Int.9 Sets = Not Used
Int.9 Set by = Not Used
Int.10 Sets = Not Used
Int.10 Set by = Not Used
Int.11 Sets = Not Used
Int.11 Set by = Not Used
Int.12 Sets = Not Used
Int.12 Set by = Not Used

ADVANCED: internal I/O 4
Int.13 Sets = Not Used
Int.13 Set by = Not Used
Int.14 Sets = Not Used
Int.14 Set by = Not Used
Int.15 Sets = Not Used
Int.15 Set by = Not Used
Int.16 Sets = Not Used
Int.16 Set by = Not Used

ADVANCED: site options
Daylight Savings = On
Units = Standard
Maint Call Rpt IP Used = No
Emergency Activate IP = No
EZ/EX Logging = Change
EZ/EX Point Change = 3

SSCC
Gates Used = Yes
SSCC1+2 GPs Coupled = Yes
Min Activation = 0 sec
Rmt Activation Cancel = 2 min
Bell On Gate Rising = No
Mute Bell On Gate Down = No
SSCCIV Controller Used = No

SSCC: 1
SSCC-1 Activation = AND 1 XR
SSCC-1 Gate Delay = 6 sec
SSCC-1 Number of GPs = 1
SSCC-1 Number of GDs = 2
SSCC 1: Flash Rate = 40
SSCC 1: Low Battery Detection = No
SSCC 1: Flash Sync = master
SSCC 1: Invert Gate Output = No
SSCC 1: Lamp Neutral Test = Off
Aux-1 Xng Ctrl Used = No

SSCC: 2
SSCC-2 Activation = AND 1 XR
SSCC-2 Gate Delay = 6 sec
SSCC-2 Number of GPs = 0
SSCC-2 Number of GDs = 0
SSCC 2: Flash Rate = 40
SSCC 2: Low Battery Detection = No
SSCC 2: Flash Sync = slave
SSCC 2: Invert Gate Output = No
SSCC 2: Lamp Neutral Test = Off
Aux-2 Xng Ctrl Used = No

OUTPUT: assignment page 1
OUT 1.1 = Not Used
OUT 1.2 = Not Used
OUT 2.1 = Not Used
OUT 2.2 = Not Used

INPUT: assignment page 1
IN 1.1 = Not Used
IN 1.2 = Not Used
IN 2.1 = Not Used
IN 2.2 = Not Used

IO: assignment SSCC
OUT GC 1 = Gate Output 1
OUT GC 2 = Gate Output 2
IN 7.1 = Not Used
IN 7.2 = GD 1.2
IN 7.3 = AND 1 XR Enable
IN 7.4 = GD 1.1
IN 7.5 = GP 1.1
IN 8.1 = Out Of Service IP 1
IN 8.2 = Not Used
IN 8.3 = Not Used
IN 8.4 = Not Used
IN 8.5 = Not Used

SEAR
SEAR Subnode = 3
DI 1 = Not Used
DI 2 = Not Used
Rly 1 = General 1
Rly 2 = Not Used

SEAR: inputs
SP 2.1 = POK 1
SP 3.1 = Not Used
SP 4.1 = Not Used
SP 5.1 = Not Used
SP 6.1 = Not Used

SEAR: slot 1-4 inputs
IN 1.1 = Not Used
IN 1.2 = Not Used
IN 2.1 = Not Used
IN 2.2 = Not Used
IN 3.1 = Not Used
IN 3.2 = Not Used
IN 4.1 = Not Used
IN 4.2 = Not Used

SEAR: inputs slot 5
IN 5.1 = Not Used
IN 5.2 = Not Used

SEAR: inputs slot 6
IN 6.1 = Not Used
IN 6.2 = Not Used

SEAR: slot 7-8 inputs
IN 7.1 = Not Used
IN 8.2 = Not Used
IN 8.3 = Not Used
IN 8.4 = Not Used
IN 8.5 = Not Used

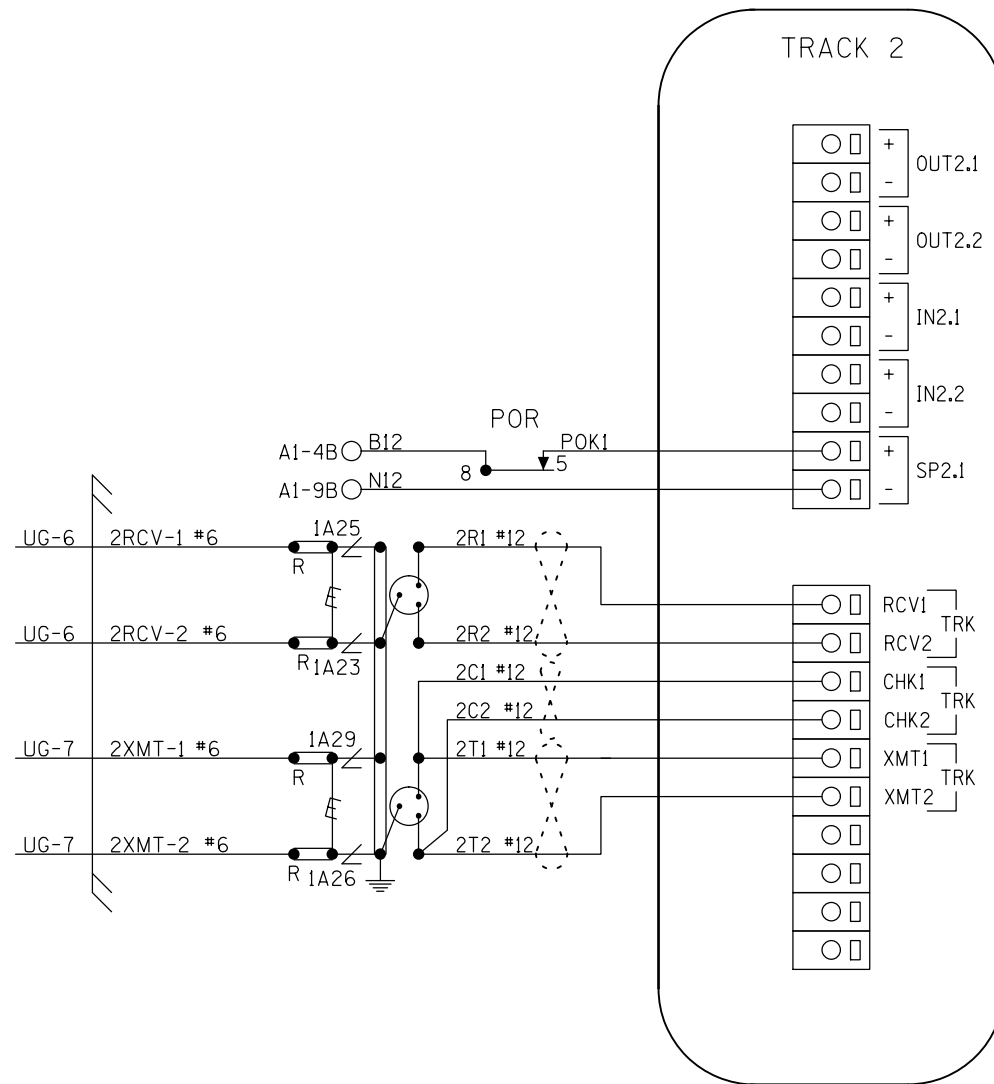
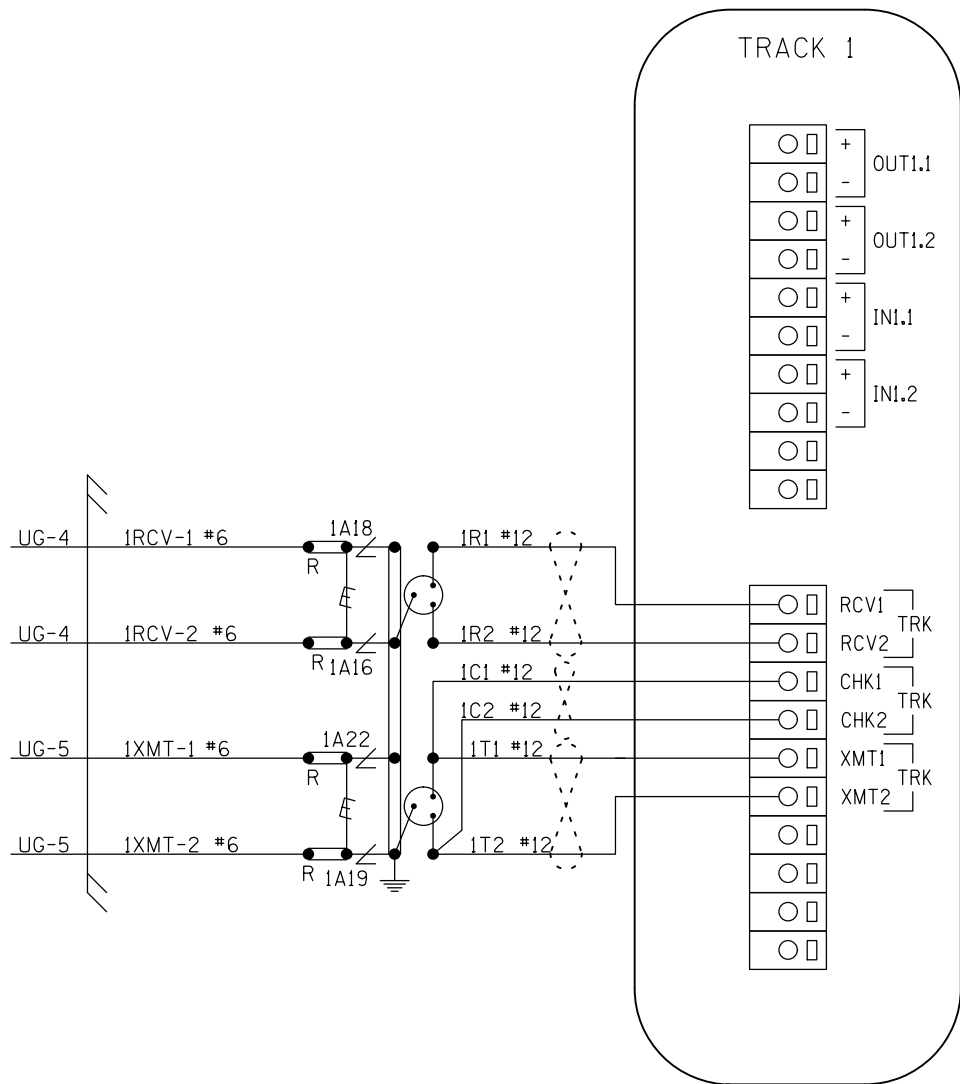
SITE: programming
Radio Subnode = 1
Field Password = Off
Low Battery Enabled = Off

Configuration Package File

Filename: 36210557.pac

4000 GCP PROGRAMMING SETUP


REVISION INITIALS											PROPERTY NORFOLK SOUTHERN RAILWAY CO.	IN SERVICE:		DETROIT LINE		No. R-	
													- -	CADD or DWG. No.	36210557.08	SHEET No.	8 of 22



CONNECTORS FOR TRACK MODULES

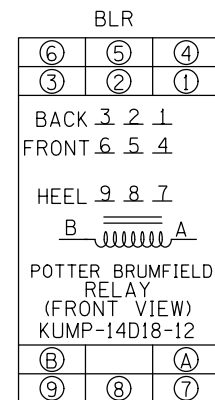
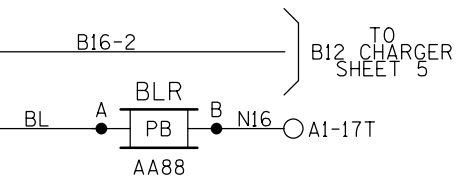
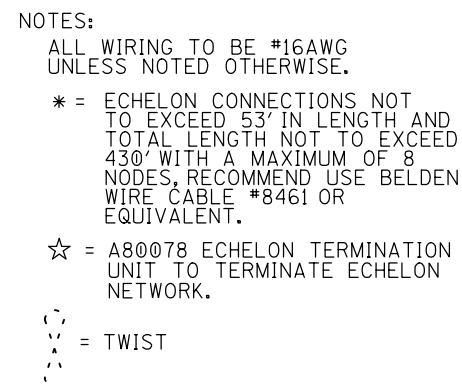
NOTES:
ALL WIRING TO BE #16AWG
UNLESS NOTED OTHERWISE.

⋈ = TWIST


DESIGNED BY:	JWB 03-21-18	 NORFOLK SOUTHERN	
DRAWN BY:	IRE 03-21-18	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: DR-055.62
CHECKED BY:	DBS 03-22-18	TOLEDO, OH FLGS AT NORWOOD AVE.	
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		CADD or DWG. No. 36210557.09	SHEET No. 9 of 22

REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



CPU MODULE, SEAR III & VHF HOOK-UPS

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	03-21-18		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT	M.P.: DR-055.62
IRE	03-21-18	TOLEDO, OH	
CHECKED BY:		FLGS AT NORWOOD AVE.	
DBS	03-22-18		
IN SERVICE:		DETROIT LINE	FILE R-
	- -	CADD or DWG. No. 36210557.10	SHEET 10 of 22

SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
DATE/TIME	
AUTOMATIC DST ADJUSTMENT	YES
TIME ZONE	EST
SITE NAME	NORWOOD AVE.
MILEPOST	DR-055.62
DOT #	508925U
TESTER TYPE	CROSSING
DATE FORMAT	MM-DD-YYYY
TEMP FORMAT	FAHRENHEIT
INDICATE HOLD (SEC)	0
INDICATE REFRESH (SEC)	60
SITE ATCS	7.550.036.092.03.01
SITE TYPE	NO COMMUNICATION
** OFFICE ATCS ADDRESS	2.550.00.0000
** PRIMARY HOP ADDR	7.RRR.LLL.GGG.XX.XX
** BACKUP HOP ADDR 1	7.RRR.LLL.GGG.XX.XX
** BACKUP HOP ADDR 2	7.RRR.LLL.GGG.XX.XX
** POLL ID	1
** MODE	GEN/ATCS
** WAMS XID	DISABLED
** OFFICE COMM DEVICE	MCM (ECHELON)
** RADIO ATCS ADDR	7.RRR.LLL.GGG.01.01
** PHONE #	(OFFICE NUMBER)
** INIT STRING	
** FIELD COMM DEVICE	NONE
*** USER PORT BAUD	57600
*** USER PORT DATA BITS	8
*** USER PORT PARITY	NONE
*** USER PORT STOP BITS	1
*** USER PORT FLOW CONTROL	NONE
*** AUX PORT BAUD	9600
*** AUX PORT DATA BITS	8
*** AUX PORT PARITY	NONE
*** AUX PORT STOP BITS	1
*** AUX PORT FLOW CONTROL	NONE

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
THE QUESTION	SELECT FROM MENU OPTION
RESET NAMES AND MODULES?	YES
RAILROAD NUMBER	550
CROSSING CONFIGURATION	NORMAL
AND 1 USED AS XR?	YES
AND 2 USED AS XR?	NO
AND 3 USED AS XR?	NO
AND 4 USED AS XR?	NO
AND 5 USED AS XR?	NO
AND 6 USED AS XR?	NO
AND 7 USED AS XR?	NO
AND 8 USED AS XR?	NO
* XR CONTROLLED BY FOREIGN RR	
ENTRANCE GATES	2
85% VOLTAGE RELAY OUT	YES
* GATES CONTROLLED BY FOREIGN RR	
BATTERY BANKS	2
BATTERY MON USED	NO
PREEMPTION	NO
INTERNAL CROSSING CONTROLLERS	2
EXTERNAL CROSSING CONTROLLERS	0
VHF COMMUNICATOR	YES
DTMF ACTIVATION	YES
**** ACTIVATION CODE	925
ACTIVATION TIMEOUT (SECONDS)	60
ILOD MODULES	0
***** ANY LED BULBS USED	
VHF VOICE CHANNEL	2
VHF DATA CHANNEL	2
USE CELL MODEM NON-CRITICAL FEATURE	NO

PROGRAM MENU QUESTIONS	PROGRAM
EDIT DIGITAL INPUTS	NO
EDIT BATTERIES	NO
EDIT RELAYS	NO
EDIT INDICATOR LEDS	NO
EDIT TEST LEDS	NO
EDIT ILOD SENSORS	NO
EDIT VHF SETTINGS	NO
GCP4K ATCS SUBNODE	16

NOTES:

* = DISPLAYED IF CROSSING CONFIGURATION IS SPLIT GATE.

** = IF SITE TYPE = NO COMMUNICATION, THEN THESE OPTIONS ARE NOT DISPLAYED.

*** = THESE SETTINGS SHOULD BE LEFT AT THE DEFAULT SETTING.

**** = USE LAST 3 NUMBERS FROM DOT NUMBER.

***** = IF ILOD MODULE >0.

TO CONFIGURE SEARIII PRESS SITE SETUP KEY.
USE ARROW KEYS TO MAKE SELECTION.
PRESS ENTER AFTER SELECTION HAS BEEN MADE.


PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

DESIGNED BY:
JWB ***-**-18

DRAWN BY:
IRE ***-**-18

CHECKED BY:
DBS ***-**-18

IN SERVICE:
- -

 **NORFOLK SOUTHERN**

OFFICE OF ASS'T. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA. M.P.: DR-055.62

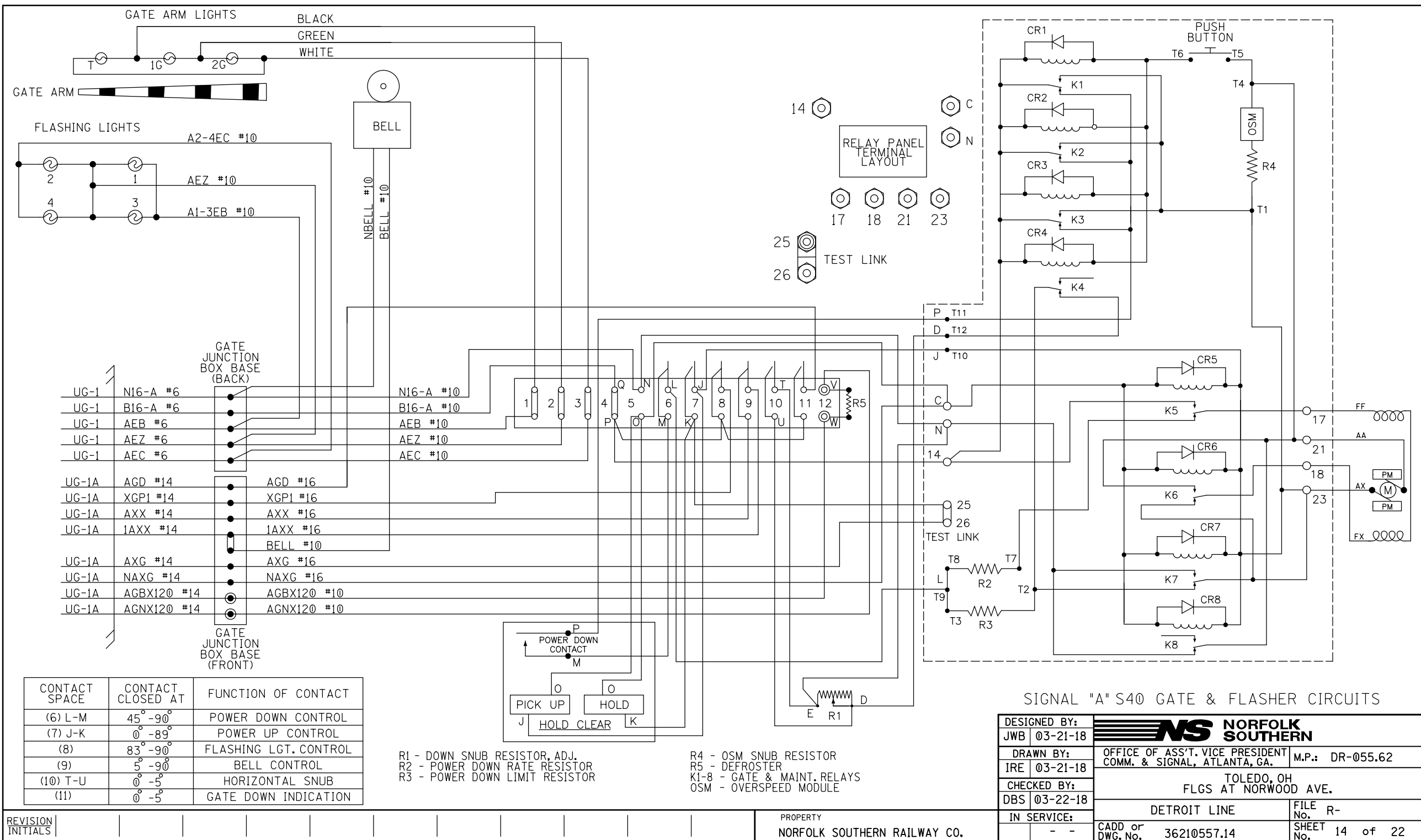
TOLEDO, OH
FLGS AT NORWOOD AVE.

DETROIT LINE

CADD or
DWG. No. 36210557.11

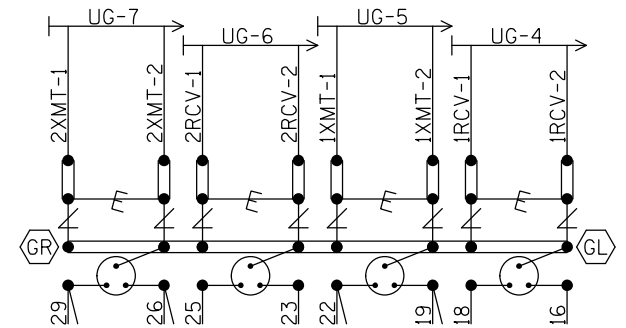
FILE
No. R-



SHEET
No. 11 of 22




LEFT TWO ROWS TERMINAL BOARD 11

SEE FARADAY SHIELD DETAILS - 1A & 1B
FOR HOW THIS PORTION OF THE FARADAY
SHIELD IS PREDRILLED. ONLY INSTALL AND
USE THE TERMINALS NEEDED.






 = TERMINALS GROUNDED TO SHIELD.
 4 POST BLOCKS USE EITHER -
 GR - SERMMI PART NO. 61278
 GL - SERMMI PART NO. 61278-1.

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	03-21-18		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: DR-055.62
IRE	03-21-18	TOLEDO, OH FLGS AT NORWOOD AVE.	
CHECKED BY:			
DBS	03-22-18		
IN SERVICE:		DETROIT LINE	FILE No. R-
	- -	CADD or DWG. No. 36210557.16	SHEET 16 of 22

[illegible]

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INITIALS



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IRE	03-21-18	TOLEDO, OH FLGS AT NORWOOD AVE.	
CHECKED BY:			
DBS	03-22-18		
IN SERVICE:		DETROIT LINE	FILE No. R-
	- -	CADD or DWG. No. 36210557.17	SHEET 17 of 22

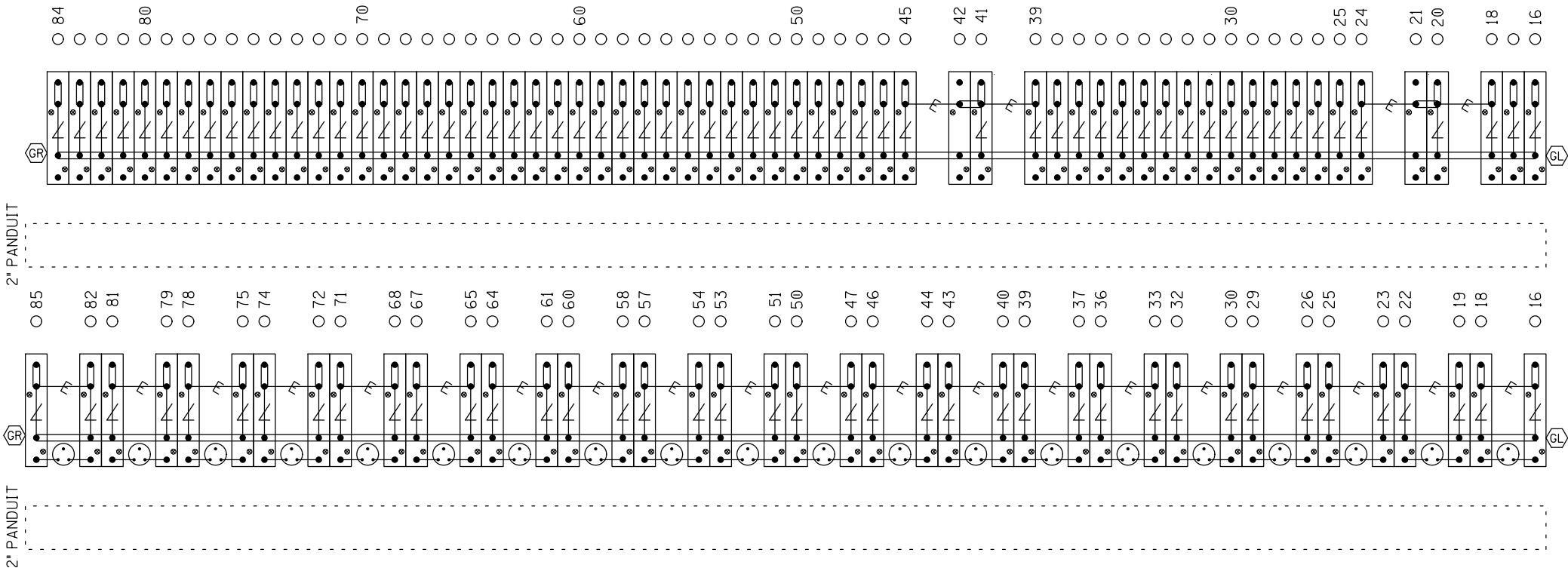
NOTE: IF THE FARADAY SHIELD WOULD EVER NEED TO BE DRILLED IN THE FIELD, PROPER PRECAUTIONS MUST BE TAKEN TO INSURE METAL SHAVINGS DO NOT GET INTO EXISTING TERMINALS/WIRES.

AREA BELOW IS SCALED WITH AS=.75

TERMINAL BOARD 1
LEFT HALF

"1A"

"1B"



⚡ = Heavy Duty Equalizer
(022700-1X)

Clearview
⚡ = Lightning Arrester
(022585-1X)

⊙ = LPC-10560-51

⊙ = TERMINALS GROUNDED TO SHIELD.
4 POST BLOCKS USE EITHER -
GR - SERMMI PART NO. 61278
GL - SERMMI PART NO. 61278-1.


FARADAY SHIELD 1A & 1B

= INDICATES PLACEMENT
OF PANDUIT

THIS SHEET IS FOR REFERENCE ONLY,
TO REFLECT HOW THE FARADAY SHIELD
IS PREDRILLED. ONLY INSTALL AND USE
THE TERMINALS NEEDED.

REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

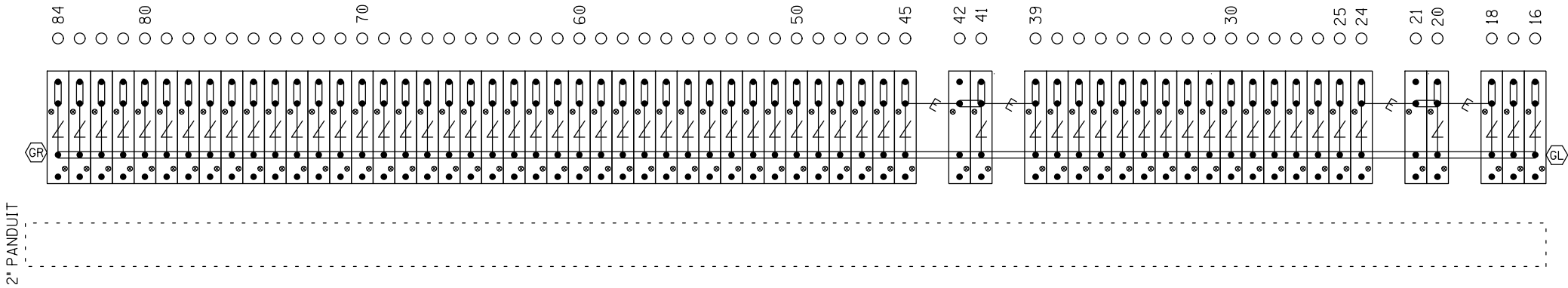
DESIGNED BY: JWB 03-21-18	 NORFOLK SOUTHERN	
DRAWN BY: IRE 03-21-18	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: DR-055.62
CHECKED BY: DBS 03-22-18	TOLEDO, OH FLGS AT NORWOOD AVE.	
IN SERVICE: - -	DETROIT LINE	FILE R- SHEET 18 of 22
	CADD or DWG. No. 36210557.18	

NOTE: IF THE FARADAY SHIELD WOULD EVER NEED TO BE DRILLED IN THE FIELD, PROPER PRECAUTIONS MUST BE TAKEN TO INSURE METAL SHAVINGS DO NOT GET INTO EXISTING TERMINALS/WIRES.

AREA BELOW IS SCALED WITH AS=.75

TERMINAL BOARD 1
RIGHT HALF

"1C"



- ⚡ = Heavy Duty Equalizer
(022700-1X)
- Clearview
Z = Lightning Arrestor
(022585-1X)
- ⦿ = LPC-10560-51

FARADAY SHIELD 1C


= INDICATES PLACEMENT
OF PANDUIT

THIS SHEET IS FOR REFERENCE ONLY,
TO REFLECT HOW THE FARADAY SHIELD
IS PREDRILLED. ONLY INSTALL AND USE
THE TERMINALS NEEDED.

- GR = TERMINALS GROUNDED TO SHIELD.
4 POST BLOCKS USE EITHER -
GR - SERMMI PART NO. 61278
GL - SERMMI PART NO. 61278-1.

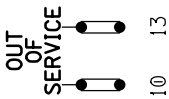
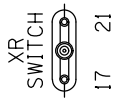
REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.


DESIGNED BY: JWB 03-21-18	 NORFOLK SOUTHERN	
DRAWN BY: IRE 03-21-18	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: DR-055.62
CHECKED BY: DBS 03-22-18	TOLEDO, OH FLGS AT NORWOOD AVE.	
IN SERVICE: - -	DETROIT LINE	FILE No. R-
	CADD or DWG. No. 36210557.19	SHEET 19 of 22



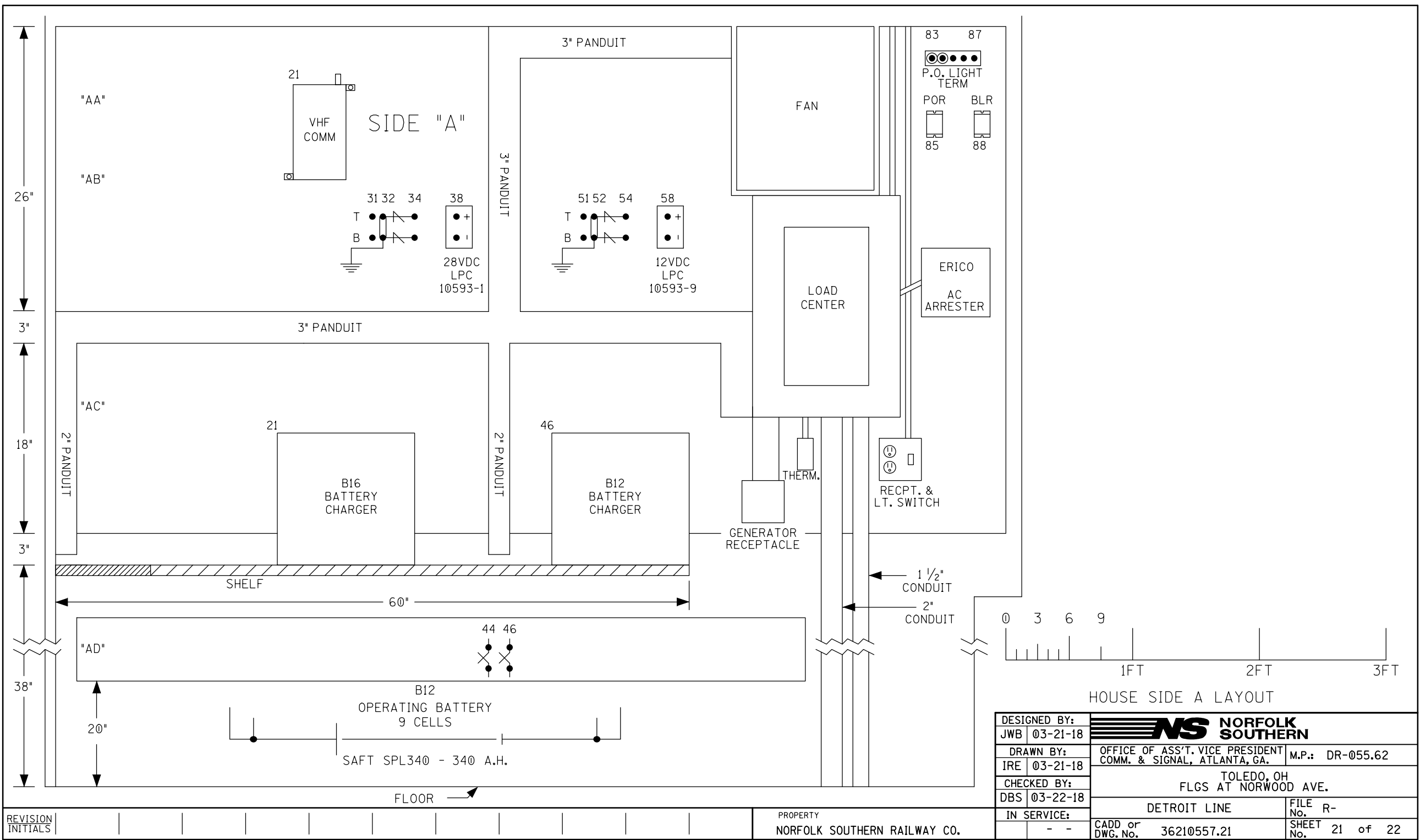
GFI
REPT.



HOUSE SIDE C LAYOUT &
RACK PLACEMENT

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	03-21-18		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: DR-055.62
IRE	03-21-18	TOLEDO, OH FLGS AT NORWOOD AVE.	
CHECKED BY:			
DBS	03-22-18		
IN SERVICE:		DETROIT LINE	FILE NO. R-
	- -	CADD or DWG. No. 36210557.20	SHEET 20 of 22

REVISION INITIALS												PROPERTY NORFOLK SOUTHERN RAILWAY CO.
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April 30, 2018

Mr. Don Damron
Ohio Rail Development Commission
Mail Stop #3140
1980 W. Broad Street
Columbus, Ohio 43223

RE: Norfolk Southern
Norwood Ave., Toledo Ohio

Dear Mr. Damron

Sunesis Construction is pleased to present price of **\$24,680** to construct the above referenced project as outlined on the attached pages.

Included in this price is the following:

- Mobilization/Demobilization of all required equipment, materials, etc
- Crew Travel Expenses
- Removal and disposal (to an approved dump site) of all existing pavements, sidewalks etc.
- Railroad Insurance to cover work within the Right-of Way of NS Tracks
 - Insurance assumed NS max limits of Liability for this work are \$2mil single and \$6mil aggregate. Any additional insurance requirements will be in addition to the cost above.

Excluded from the price is the following:

- Local/Municipal Permits
- Right of Entry Agreement (if required)
- Utility Relocations
- Unforeseen Conditions (i.e. unknown utility interferences, etc.)

Sunesis will contact OUPS for existing utility marking and will rely on NS to mark their private utilities.


Pricing for this work is good through July, 2018.

Please do not hesitate to contact me with any questions regarding this pricing

Respectfully Submitted,
Sunesis Construction Company

Joseph M. Salzano

Joseph M. Salzano, Secretary/Treasurer

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	03-21-18		
DRAWN BY:		OFFICE OF ASST. VICE PRESIDENT	M.P.: DR-055.62
IRE	03-21-18	COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY:		TOLEDO, OH	
DBS	03-22-18	FLGS AT NORWOOD AVE.	
IN SERVICE:		DETROIT LINE	FILE R-
	- -	CADD or DWG. No. 36210557.01	SHEET No. 1 of 22



OHIO RAIL DEVELOPMENT COMMISSION

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

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

February 12, 2018

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

RE: Grade Crossing Warning Device Improvements
Lucas County, Norwood Ave.
DOT# 508925U
PID# 107037

Dear Mr. Klinger:

A diagnostic review was held at the above grade crossing on 10/17/2017. The crossing has been recommended for upgrade from the existing flashing lights to a new installation including a bell and flashing lights and gates.

Norfolk Southern Corporation is authorized to proceed with the site plans and cost estimates (PE) for this project. This authorization is made with the stipulation and understanding that any field work needs prior approval before work begins. 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.

The ORDC is not requesting that the PUCO issue an Order at this time. When the ORDC receives the PE it will be evaluated and a construction-only Order will be requested from PUCO. Please submit the PE to ORDC within 90 days of receipt of this letter.

The diagnostic review form is attached. Please note any recommendations (page 5), if any, made by the team with regard to requirements for this location. Any minor roadway work necessary for MUTCD compliance should be incorporated into the PE and such costs will flow through the railroad reimbursement process

The ORDC Project Manager for this project is Don Damron. Don can be reached at 614-466-2509 (office), or 614-917-8466 (cell), or don.damron@dot.state.oh.us, if you have any questions.

Sincerely,

Donald J. Damron
Project Manager

C: Randall Schumacher, Rail Division Chief, PUCO
Jill Henry, Rail Specialist, PUCO
ORDC (file)

Attachments: Diagnostic Review Team Survey dated 10/17/2017
PUCO/ORDC/NS Letter Agreement dated 12/27/2017



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY



**Public Utilities
Commission**

Asim Z. Haque, Chairman

Commissioners

M. Beth Trombold
Thomas W. Johnson
Lawrence K. Friedeman
Daniel R. Conway

December 27, 2017

Norfolk Southern Railroad
Mr. Stephen Klinger
Administrator Highway Grade Crossing Improvements
1200 Peachtree Street
Atlanta, GA 30309-3597

RE: Norwood Avenue DOT#508-925U
Lucas County
Hereinafter referred to as the "Project"

Dear Mr. Klinger:

The Public Utilities Commission of Ohio (PUCO) has identified and the Ohio Rail Development Commission (ORDC) surveyed, on October 17, 2017, the above mentioned grade crossing for warning device upgrades. The location has been approved for flashing lights and roadway gates.

The Projects shall comply with Agreement No. 17450, dated December 19, 2012, entered into by the State of Ohio and Norfolk Southern Railway Company (NS). Furthermore, the RAILROAD shall comply with all applicable state and federal laws governing grade crossing safety programs.

Reimbursable costs will be limited by ORDC based upon approved estimates and bid tabulations, if applicable. These limits will be quantified by the ORDC in its construction authorization to the RAILROAD and may be amended by the ORDC based upon revised estimates and bid tabulations. Additional costs must be approved in writing by the 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.

The RAILROAD shall complete plans and estimates for the Projects within ninety (90) days after the RAILROAD is notified of authorization to proceed unless otherwise agreed by ORDC/PUCO and the RAILROAD.

The RAILROAD shall not commence construction prior to PUCO's Order or ORDC's construction authorization. The RAILROAD shall provide written notification of the construction start date to PUCO and ORDC no later than five (5) business days prior to such date.

NS LA
Norwood Avenue DOT#508-925U
Lucas County

Please indicate your acceptance of the terms and conditions of this Letter of Agreement by signing and returning one (1) copy to Ms. Jill Henry, Rail Specialist, Rail Division, Public Utilities Commission of Ohio, 180 E. Broad Street, Columbus, Ohio 43215-3793.

Sincerely,



Milan Orbovich
Director of Transportation
Public Utilities Commission of Ohio

Date 12/27/17

Norfolk Southern Railway Company

By _____

Title _____

Date _____



Matthew Dietrich
Executive Director
Ohio Rail Development Commission

Date 12/28/17

NS LA
Norwood Avenue DOT#508-925U
Lucas County

Please indicate your acceptance of the terms and conditions of this Letter of Agreement by signing and returning one (1) copy to Ms. Jill Henry, Rail Specialist, Rail Division, Public Utilities Commission of Ohio, 180 E. Broad Street, Columbus, Ohio 43215-3793.

Sincerely,



Milan Orbovich
Director of Transportation
Public Utilities Commission of Ohio

Date 12/27/17

Norfolk Southern Railway Company

By Gregory P. Ernst
Title General Manager

Date 1/11/18

Matthew Dietrich
Executive Director
Ohio Rail Development Commission

Date _____



Diagnostic Review Team Survey

Reason for Survey:
(e.g. formula, accident, constituent, etc.)

Formula Pick

Date: 10/17/2017

Location Data

Street or Road Name: Norwood Avenue

Route/Road Number
(i.e. Twp., Co., SR or US)

US DOT No.: 508925U

County: LUC

Township:

City:
(In or Near)

City of Toledo

Railroad
Name: Norfolk Southern

Railroad
Division: Dearborn

Branch/Line
Name: Detroit Line

Nearest RR
Timetable Station:

RR Milepost: 55.62

On-Site Review Team

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

1. DON DAMRON, ORDC, 614.917-8466, don.damron@dot.state.gov
2. GARY STOOKER, City of Toledo 419-2451306 gary.stoker@toledo.oh.gov
3. Nathan Niner - PUCO - 419 380-1011 Nathan.Niner@PUCO.ohio.gov
4. A.J. Pease 440-429-1960 aaron.pease@nscorp.com
5. _____
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	CITY TO ADD AWS ON EB
'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 type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	NO 2 TRACK SIGN
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 checked="" type="checkbox"/> Yes	<input 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	EACH SIDE
Is crossing flagged by train crew?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Other	<input type="checkbox"/> Yes	<input type="checkbox"/> 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 (10/93)	
Hazard Ranking	1513 Date Run: 8/21/2017	
Railroad Data		
Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	28	OK
< 1 per day		
Day thru trains	10	OK
Night thru trains	9	
Daytime switching movements	5	
Nighttime switching movements	4	
Total number of tracks	2	
Number of main tracks	2	
Number of other tracks		
Maximum train speed	30	50 MPH N TO MICHIGAN
Typical train speed	30	30 SOUTH OF CROSSING
Amtrak		
If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table 1) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
If multiple tracks, can two trains occupy crossing at the same time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Can one train block the motorists' view of another train at crossing? <input checked="" type="checkbox"/> Yes (Explain below) <input type="checkbox"/> No		
Can one or more tracks be eliminated through the crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Are there other track(s) crossing this same roadway within 100 ft of this crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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:		City of Toledo
Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	401 (2008)	OK
Highway paved	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Roadway Surface: <input checked="" type="checkbox"/> Blacktop <input type="checkbox"/> Gravel <input type="checkbox"/> Concrete <input type="checkbox"/> Other _____		
Roadway width: 26 ft.		
Number of highway lanes	2	
Urban or Rural	Urban	
Vehicle Speed: 25 MPH		
School Bus Operation: <input type="checkbox"/> No <input type="checkbox"/> Yes 2 Amount 1-AM; 1-PM		
Hazardous Materials Trucks: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes .03 Amount		
Shoulders: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		
Is the shoulder surfaced? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		
Is there existing guardrail along roadway in crossing vicinity? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		
Is stopping site distance adequate? (See Table 2) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, deficient approach(es) _____		

Quadrant _____ 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 _____ 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 type="checkbox"/> No <input checked="" type="checkbox"/> Yes	
Is sidewalk present? <input type="checkbox"/> No <input checked="" 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 checked="" type="checkbox"/> No <input type="checkbox"/> Yes Are the signals currently interconnected with the existing crossing warning devices? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Is there a 'Do not Stop on Track' sign? <input checked="" 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 type="checkbox"/> Open Space <input checked="" type="checkbox"/> Industrial <input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Institutional <input checked="" type="checkbox"/> Commercial Location of nearby schools: <u>EAST OF CROSSING, 1/2 MILE OR MORE.</u>
Utility Information	
Is commercial power available? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes Utility Provider (Company Name) <u>TOLEDO EDISON</u> Phone Number _____ Nearest Available Power Source <u>AT CROSSING: EXISTING POWER FOR FLASHING LIGHTS</u>	
What other utilities are present? (add locations to sketch) <input checked="" type="checkbox"/> Gas <input type="checkbox"/> Cable <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Fiber Optic Cable <input type="checkbox"/> Petroleum <input checked="" type="checkbox"/> Water <input type="checkbox"/> Sanitary Sewer <input type="checkbox"/> Other _____	
Is(are) there potential utility conflict(s) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Comments: <ul style="list-style-type: none"> • UG FIBER, MULTIPLE LINES WEST OF TRACKS (PARALLEL TO NS) • UG GAS ON NORTH SIDE OF ROADWAY (PARALLEL TO ROAD) • UG WATER ON EAST SIDE OF TRACKS 	

Potential Red Flags / Project Challenges

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

NA

Crossing Consolidation or Closure:

NA

Real Estate or ROW:

NA

Culverts / Drainage / Ballast Conditions:

NA

Roadway and/or Sidewalks:

SIDEWALK EXISTS MAY CONFLICT WITH INSTALATION OF
NEW GATE MECH AND FOUNDATION.

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

- 3000 SOLID STATE CONTROL, NOT REDUNDANT
- RECORDER
- NO REMOTE MONITORING

Environmental:

NA

Other:

Diagnostic Team Recommendations

	Quadrants Needed
<input checked="" type="checkbox"/> Install/upgrade active devices	
<input type="checkbox"/> Automatic Flashing Lights (AFLS)	
<input type="checkbox"/> AFLS / Cants	
<input checked="" type="checkbox"/> AFLS / Gates	
<input type="checkbox"/> AFLS / Gates / Cants	
<input checked="" type="checkbox"/> Bells / number	1 BELL / SIDEWALK SIDE
<input checked="" type="checkbox"/> Upgrade circuitry / type	NEW SYSTEM
<input type="checkbox"/> Sidelights	
<input type="checkbox"/> Guardrail Needed	
<input checked="" type="checkbox"/> Install/Replace curb	CURB MAY BE NEEDED IN NE Q ₄ D
<input type="checkbox"/> Bungalow placement & offset from rail & highway	
<input type="checkbox"/> Other (define)	

Comments:

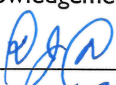
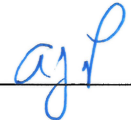

CITY WILL ADD AWS - EAST BOUND ON NARWOOD

☐ Install/upgrade traffic signal preemption

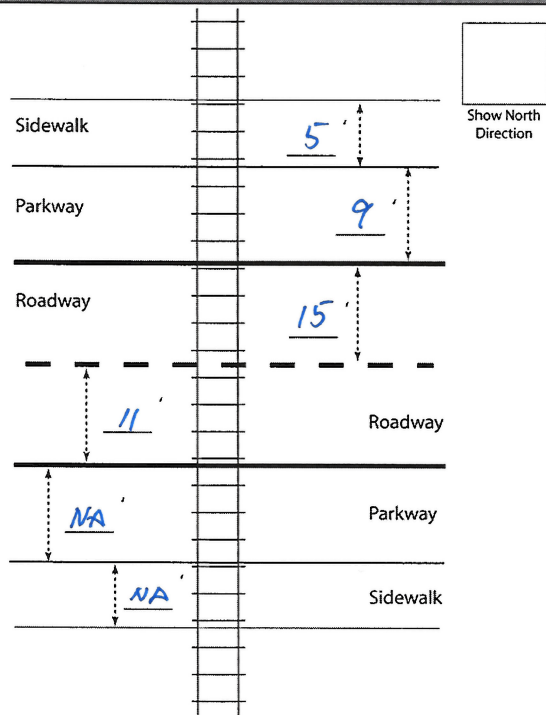
☐ No improvements needed

☐ Other (define)

Acknowledgement of Recommendations (each entity represented at the diagnostic must have at least one signature acknowledgement):

Field Dimensions



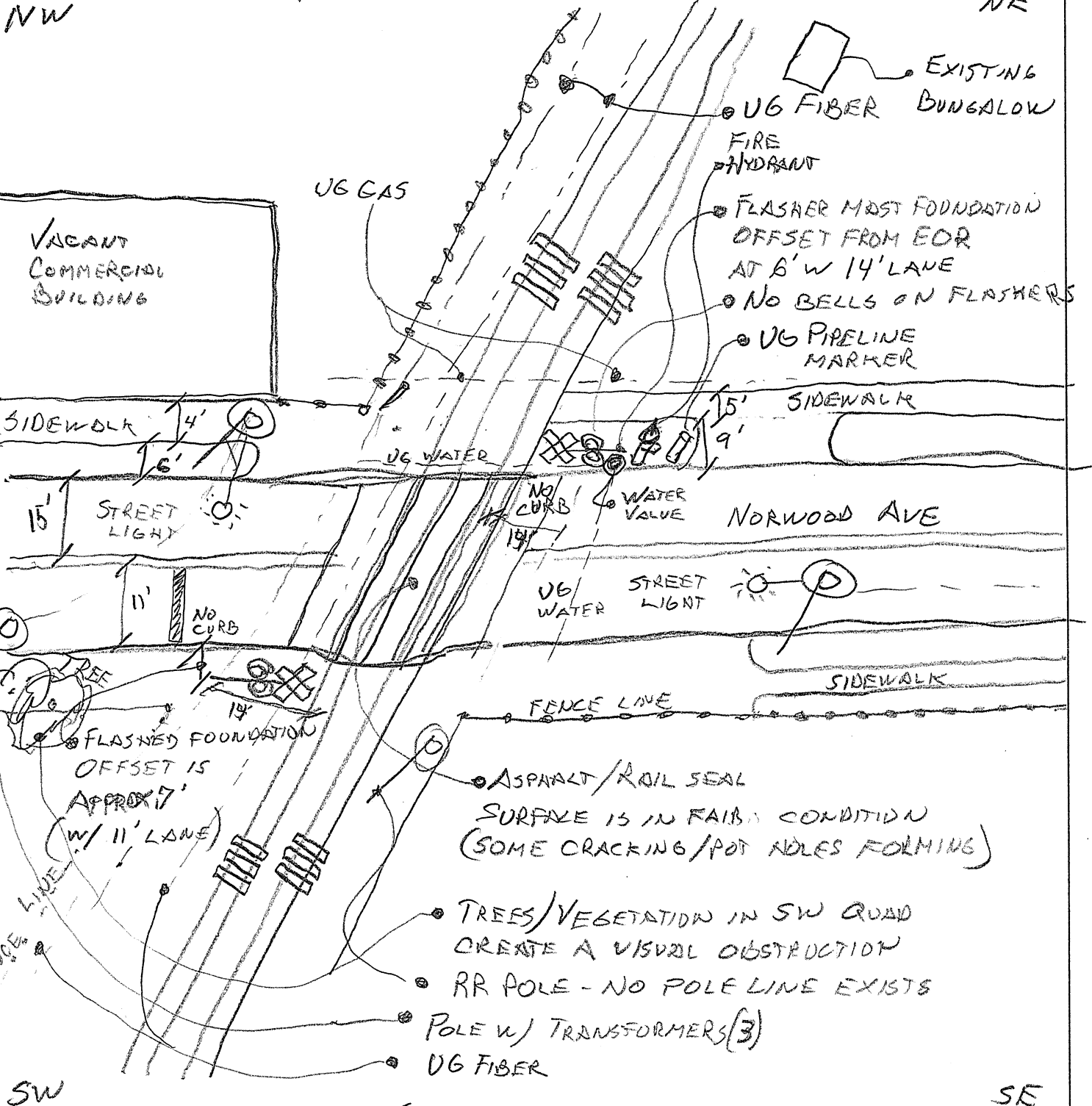
LUC NORWOOD AVE. DOT#508925

Field Sketch

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

NW

NE



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

Sketch by: DJD 9-27-17

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.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

10/29/2018 3:35:15 PM

in

Case No(s). 18-1615-RR-FED

Summary: Application In the Matter of a Request for the Installation of Active Warning Devices at the Norfolk Southern Railway Crossing, Norwood Avenue DOT#508-925U, in Lucas County, Ohio. electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division