

Memo

To: Docketing Division
From: Jill Henry, Rail Specialist, Rail Division
Cc: PUCO Legal Department
Date: 11/17/17

Re: PUCO Case No. 17-2372-RR-FED- In the Matter of a Request for the Installation of New Active Warning Devices at the Norfolk Southern Railway Crossing, Market Street/SR 226 DOT#503-082A, in Holmes County, Ohio.

On April 19 2017, the Ohio Rail Development Commission (ORDC) authorized funding for Norfolk Southern Railway to install lights and gates at the Market Street/SR 226 DOT#503-082A, in Holmes County, Ohio. The crossing was surveyed, on March 16, 2017, and found to warrant the upgrade. The electric utility provider for this crossing is AEP-Ohio Power.

The project will be paid for with federal funds and is actual cost. The plans and estimates for the project in the amount of \$320,014.00 have been approved. Construction may commence at once. **Staff requests a Finding & Order with completion of the project in nine 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
Stephen Klinger
Public Projects Engineer
1200 Peachtree Street NE
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, Ohio 43699-0032

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

Ohio Department of Transportation
District #11
Scott Warner
District Railroad Coordinator
2201 Reiser Avenue
New Philadelphia, Ohio 44663

AEP- Ohio Power

INTER-OFFICE COMMUNICATION

TO: Randall Schumacher, Supervisor, Rail Division, PUCO

FROM: Cathy Stout, Manager, Safety Section, ORDC

BY: Eric Neff, Safety Manager, Safety Section, ORDC

SUBJECT: Holmes County, SR226 / Market Street, DOT 503082A, PID# 105760, NS Project 10.3157

DATE: October 19, 2017

The Ohio Rail Development Commission (ORDC) established a diagnostic survey at the subject location on March 16, 2016. The Public Utilities Commission of Ohio (PUCO) 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 accepts 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: Jill Henry, Rail Division 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

October 19, 2017

Mr. Stephen Klinger
Norfolk Southern
Public Projects Engineer
1200 Peach Street NE, Box 123
Atlanta, Ga. 30309

RE: Holmes County, SR226 / Market Street, DOT 503082A, PID# 105760, NS Project 10.3157

Mr. Kinger,

The plan and estimate dated August 24, 2017, for the referenced project 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 \$320,014.00. 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 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 Eric Neff, ORDC, email: eric.neff@dot.ohio.gov and to Jill Henry the Public Utilities Commission of Ohio at email: jill.henry@puco.ohio.gov. NS'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. 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 Norfolk Southern.
3. NS's project foremen will notify Eric Neff at 614-745-6760 (telephone) or eric.neff@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

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5. Norfolk Southern will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference when billing.
6. 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.
7. 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,



Eric Neff
Project Manager

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



23-Aug-17

Detailed Estimate for Grade Crossing Warning Devices

City/State: SHREVE, OH
MilePost: PC-148.57
State Proj. No.: PID 105760
S&E Proj. No.: 10.3157
Man Days: 174

Road: SR 226
DOT/AAR: 503082A
County: WAYNE
File Number:

Purchases - Others	
Meals and Lodging:	\$23,800.69
Rental of Equipment:	\$32,535.46
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 29 Days)	
Construction Supervision Vehicle:	\$4,976.83
Purchases - Other Total:	\$61,312.98
Material And Additives	
Material Cost:	\$103,233.00
Sales and Use Tax:	\$8,259.00
Material Handling Freight:	\$10,323.33
Material Total:	\$121,815.33
Labor And Additives	
Labor Cost:	\$56,028.00
(6 man crew at \$1,932.00 a day for: 29 days)	
Payroll Tax & Overheads:	\$47,769.47
Preliminary Engineering:	\$16,722.44
Construction Supervision:	\$16,365.78
Labor Total:	\$136,885.69
Project Cost:	\$320,014.00
Scrap / Salvage Credit:	\$0.00
Project Total:	\$320,014.00

Estimated on: 23-Aug-17

Estimated by: ndr3j

Estimate valid for 1 year from date of estimate



Norfolk Southern Railway
Highway Crossing Signalization Program - Material List

Do not substitute items without permission from S & E Engineering

City:	SHREVE
Road:	SR 226
Mile Post:	PC-148.57
Drawing Number:	24021485
State ProjectNumber:	PID 105760
County:	WAYNE
A A R Number:	503082A
Project Number:	10.3157
File Number:	
New File Number:	CX1112706
WBS:	F-04323
Store Number:	S805
Supervisor:	Z. McCARTNEY
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	

Location: SHREVE			OH	S&E Proj. No.: 10.3157	A/E No.: F-04323	Drawing No.: 24021485	Vendor: Interrail Engineering, INC		
Core No.: S805			P.O.Number:		Date Required:	Date Shipped:			
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
3	670-360693-4	EA	\$5.55	\$16.65	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				
3	670-119241-4	EA	\$25.01	\$150.06	ARRESTOR, LIGHTNING HEAVY DUTY CLEAR VIEW SAFETRAN 022585-1X				
0	105-002620-4	EA	\$302.42	\$6,048.40	BATTERY, NICAD 340AH, MODEL SPL340				
1	670-503047-4	EA	\$181.50	\$181.50	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	\$1,197.90	\$2,395.80	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				
30	465-939422-4	LF	\$3.11	\$1,555.00	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL				
30	465-292862-4	LF	\$1.49	\$894.00	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR				
30	465-292929-4	LF	\$4.12	\$2,060.00	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL				
00	465-292945-4	LF	\$1.63	\$4,238.00	CABLE, UG 5-14, S-54 OKONITE 206-14-6885				
30	465-791835-4	FT	\$3.84	\$1,344.00	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	\$90.11	\$360.44	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				

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Location: SHREVE			OH	S&E Proj. No.: 10.3157	A/E No.: F-04323	Drawing No.: 24021485	Vendor: Interrail Engineering, INC		
Core No.: S805			P.O.Number:		Date Required:	Date Shipped:			
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
4	670-632520-4	EA	\$77.63	\$310.52	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				
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				
2	670-309461-4	EA	\$824.07	\$1,648.14	COUPLER, BIDIRECTIONAL SIMULATION S'TRAN #62664-156				
4	670-760012-4	EA	\$44.32	\$177.28	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. =====TO COVER 2 LAMPS=====				
1	670-986650-4	EA	\$354.27	\$354.27	DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING X'ING EQUIPMENT CONTAINER				
1	670-228165-4	EA	\$12.25	\$12.25	EQUALIZER, SAFETRAN 022700-1X LESS BASE, MODERN NO. 700-1 SHUNT ARRESTER TRACK CIRCUITS CR 02-197950				
1	670-000004-4	EA	\$700.00	\$700.00	FCC LICENSE FOR MONITOR/RADIO				
5	670-000003-4	EA	\$255.85	\$1,279.25	FILL/STONE #57, QUANTITY IS BASED ON TRUCK LOAD PLUS DELIVERY COST				
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	670-927262-4	EA	\$45.20	\$45.20	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-1200				
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	\$344.59	\$344.59	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, JNE CAN BLUE MARKING PAINT ETC...				

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cation: SHREVE									
ore No.: S805		OH	S&E Proj. No.: 10.3157	AFE No.: F-04323	Drawing No.: 24021485	Vendor: Interrail Engineering, INC			
		P.O.Number:			Date Required:	Date Shipped:			
ty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
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)				
3	670-440826-4	EA	\$2.22	\$13.32	LINK, SAFETRAN 024620-1X INSL TESTING COMP 1 IN CENTER SIGNAL CIRCUITS CR 02-286662				
4	255-590880-4	EA	\$16.72	\$66.88	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"				
2	670-637778-4	EA	\$1,384.63	\$2,769.26	MAST, 5" ALUMINUM 13'10" WITH DOUBLE JCT. BOX BASE. STRAN 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 STRAN # 074000-W00090				
2	670-000001-4	EA	\$726.23	\$1,452.46	MISC. EXPENSE, MATERAIL/FILL				
1	000-000000-4	EA	\$5,000.00	\$5,000.00	MISC. EXPENSE, UNDERGROUND BORING				
2	670-001347-4	EA	\$59.67	\$119.34	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI A1250-5, HARMON @200965-000, OR				
1	255-646807-4	EA	\$32.59	\$32.59	PADLOCK, SAFETRAN PART NO. 030399-29X SCREW TYPE FOR CIR CONTROLLER AND BTY. BOX				
1	670-514605-4	EA	\$12.84	\$12.84	PINNACLE, W-C SECT 1-11, 4"X 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X				
2	670-259211-4	EA	\$47.25	\$94.50	PLUG BOARD KIT, TYPE B-1 & VOLTAGE TEST TERMINAL, SAFETRAN 420000-75X				
1	165-103293-4	EA	\$75.42	\$75.42	PROTECTOR, LIGHTNING & SURGE LPC 10560-51, 3 ELECTRODE WITH SPADE TERMINAL				
1	165-902002-4	EA	\$303.43	\$303.43	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL				
3	465-002899-4	EA	\$40.24	\$241.44	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES				
2	670-456936-4	EA	\$145.69	\$291.38	RELAY RACK, SWING, FARADAY SHELTER FOR ONE RELAY, SSFETRAN P/N T15331				
2	670-707995-4	EA	\$510.12	\$1,020.24	RELAY, TYPE B1, NEV LINE, 900 OHMS,.008 AMPERES GRS A62- 308 OR SAFETRAN @400003				

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Location: SHREVE			OH	S&E Proj. No.: 10.3157	AFE No.: F-04323	Drawing No.: 24021485	Vendor: Interrail Engineering, INC		
Core No.: S805			P.O.Number:		Date Required:	Date Shipped:			
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
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	SEARIII, (VHFC 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	\$9,744.79	\$9,744.79	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				
3	670-586967-4	EA	\$44.91	\$134.73	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT				
1	670-645460-4	EA	\$575.56	\$575.56	SHUNT, MULTI-FREQ. #62775-8621 SAFETRAN NARROW BAND				
2	670-792954-4	EA	\$415.14	\$830.28	SHUNT, NARROW BAND, NBS-1, 151 HZ (CH.1) WITH 10 FT. LEAD HARMON 0250250				
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	\$53.74	\$107.48	SIGN, CROSSING ENS MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215				
3	670-330382-4	RL	\$18.06	\$54.18	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS. "WARNING STOP DIGGING"				
2	670-478560-4	EA	\$20.56	\$246.72	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR				
3	670-007238-4	EA	\$118.65	\$711.90	UNIT, THE INSTALLATION AND WIRING OF A DEVICE WHICH REQUIRE A MINIMUM OF FOUR WIRE CONNECT-				
20	465-458198-4	FT	\$0.20	\$40.00	WIRE, NO.16, 1 CONDUCTOR, CASE, FLEXIBLE, 19 STRAND, 2/64 IN. INSULATION				
2	450-986008-4	EA	\$30.45	\$60.90	WRENCH, TEST POST TYPE B DWG 55393-3, GR.1				
20	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: \$103,233.29

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Highway Crossing Signalization Program - Material List

Do not substitute items without permission from S & E Engineering

City:	SHREVE
Road:	SR 226
Mile Post:	PC-148.57
Drawing Number:	24021485
State ProjectNumber:	PID 105760
County:	WAYNE
A A R Number:	503082A
Project Number:	10.3157
File Number:	
New File Number:	CX1112706
WBS:	F-04323
Store Number:	S805
Supervisor:	Z. McCARTNEY
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	

Location: SHREVE					OH	S&E Proj. No.: 10.3157	AFE No.: F-04323	Drawing No.: 24021485				
Store No.: S805						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	
3	670-360693-4	EA	\$5.55	\$16.65	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							
6	670-119241-4	EA	\$25.01	\$150.06	ARRESTOR, LIGHTNING HEAVY DUTY CLEAR VIEW SAFETRAN 022585-1X							
20	105-002620-4	EA	\$302.42	\$6,048.40	BATTERY, NICAD 340AH, MODEL SPL340							
1	670-503047-4	EA	\$181.50	\$181.50	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	\$1,197.90	\$2,395.80	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	\$3.11	\$1,555.00	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL							
600	465-292862-4	LF	\$1.49	\$894.00	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR							
500	465-292929-4	LF	\$4.12	\$2,060.00	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL							
2600	465-292945-4	LF	\$1.63	\$4,238.00	CABLE, UG 5-14, S-54 OKONITE 206-14-6885							
350	465-791835-4	FT	\$3.84	\$1,344.00	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	\$90.11	\$360.44	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							

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.						
4	670-632520-4	EA	\$77.63	\$310.52	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						
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						
2	670-309461-4	EA	\$824.07	\$1,648.14	COUPLER, BIDIRECTIONAL SIMULATION S'TRAN #62664-156						
4	670-760012-4	EA	\$44.32	\$177.28	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. =====TO COVER 2 LAMPS=====						
1	670-986650-4	EA	\$354.27	\$354.27	DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING X'ING EQUIPMENT CONTAINER						
1	670-228165-4	EA	\$12.25	\$12.25	EQUALIZER, SAFETRAN 022700-1X LESS BASE, MODERN NO. 700-1 SHUNT ARRESTER TRACK CIRCUITS CR 02-197950						
1	670-000004-4	EA	\$700.00	\$700.00	FCC LICENSE FOR MONITOR/RADIO						
5	670-000003-4	EA	\$255.85	\$1,279.25	FILL/STONE #57, QUANTITY IS BASED ON TRUCK LOAD PLUS DELIVERY COST						
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	670-927262-4	EA	\$45.20	\$45.20	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-1200						
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	\$344.59	\$344.59	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...						

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
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		Date Quan.	Date Quan.	Date Quan.		
2	670-005058-4	EA	\$1,786.08	\$3,572.16	LAMP ASSY, LED, 5" MAST BACK TO BACK LIGHTS (IPN: 042003- L487XNS)						
6	670-440826-4	EA	\$2.22	\$13.32	LINK, SAFETRAN 024620-1X INSL TESTING COMP 1 IN CENTER SIGNAL CIRCUITS CR 02-286662						
4	255-590880-4	EA	\$16.72	\$66.88	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"						
2	670-637778-4	EA	\$1,384.63	\$2,769.26	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						
2	670-000001-4	EA	\$726.23	\$1,452.46	MISC. EXPENSE, MATERAIL/FILL						
1	000-000000-4	EA	\$5,000.00	\$5,000.00	MISC. EXPENSE, UNDERGROUND BORING						
2	670-001347-4	EA	\$59.67	\$119.34	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI A1250-5, HARMON @200965-000, OR						
1	255-646807-4	EA	\$32.59	\$32.59	PADLOCK, SAFETRAN PART NO. 030399-29X SCREW TYPE FOR CIR CONTROLLER AND BTY. BOX						
1	670-514605-4	EA	\$12.84	\$12.84	PINNACLE, W-C SECT 1-11, 4"& 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X						
2	670-259211-4	EA	\$47.25	\$94.50	PLUG BOARD KIT, TYPE B-1 & VOLTAGE TEST TERMINAL, SAFETRAN 420000-75X						
1	165-103293-4	EA	\$75.42	\$75.42	PROTECTOR, LIGHTNING & SURGE LPC 10560-51, 3 ELECTRODE WITH SPADE TERMINAL						
1	165-902002-4	EA	\$303.43	\$303.43	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL						
6	465-002899-4	EA	\$40.24	\$241.44	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES						
2	670-456936-4	EA	\$145.69	\$291.38	RELAY RACK, SWING, FARADAY SHELTER FOR ONE RELAY, SSFETRAN P/N T15331						
2	670-707995-4	EA	\$510.12	\$1,020.24	RELAY, TYPE B1, NEV LINE, 900 OHMS,.008 AMPERES GRS A62- 308 OR SAFETRAN @400003						

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
2	435-805560-4	EA	\$2.78	\$5.56	SAND, 25LB BAG FOR CABLE ENTRANCE INTO THE SHELTER		Date Quan.	Date Quan.	Date Quan.		
1	670-113448-4	EA	\$910.23	\$910.23	SEARIII, (VHFC 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	\$9,744.79	\$9,744.79	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						
3	670-586967-4	EA	\$44.91	\$134.73	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT						
1	670-645460-4	EA	\$575.56	\$575.56	SHUNT, MULTI-FREQ. #62775-8621 SAFETRAN NARROW BAND						
2	670-792954-4	EA	\$415.14	\$830.28	SHUNT, NARROW BAND, NBS-1, 151 HZ (CH.1) WITH 10 FT. LEAD HARMON 0250250						
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	\$53.74	\$107.48	SIGN, CROSSING ENS MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215						
3	670-330382-4	RL	\$18.06	\$54.18	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS. "WARNING STOP DIGGING"						
12	670-478560-4	EA	\$20.56	\$246.72	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR						
6	670-007238-4	EA	\$118.65	\$711.90	UNIT, THE INSTALLATION AND WIRING OF A DEVICE WHICH REQUIRE A MINIMUM OF FOUR WIRE CONNECT-						
200	465-458198-4	FT	\$0.20	\$40.00	WIRE, NO.16, 1 CONDUCTOR, CASE, FLEXIBLE, 19 STRAND, 2/64 IN. INSULATION						
2	450-986008-4	EA	\$30.45	\$60.90	WRENCH, TEST POST TYPE B DWG 55393-3, GR.1						
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: \$103,233.29

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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SH. NO.	CONTENTS
NX1	INDEX SHEET
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

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:	 NORFOLK SOUTHERN		
JWB 08-01-17	M.P.: PC-148.57		
DRAWN BY:	OFFICE OF ASS'T. VICE PRESIDENT		
IRE 08-01-17	COMM. & SIGNAL, ATLANTA, GA.		
CHECKED BY:	SHREVE, OH		
DBS 08-02-17	FLGS AT SR 226		
IN SERVICE:	FORT WAYNE LINE	FILE No.	R-
- -	CADD or DWG. No. 24021485.NX1	SHEET No.	1 of 1

TO CRESTLINE
(R.R. WEST)
M.P. INCREASING

TO PITTSBURGH
(R.R. EAST)
M.P. DECREASING

Ohio Utilities Protection Service

before you dig



8'X10'

(C)

8'X6'

MINIMUM FROM
NEAREST RAIL
(IF ADEQUATE
RT-OF-WAY)

AC SERVICE

SIG 'A'
(SEE NOTE 9)

4000 GCP

1485 1486

F/O

24'

19'

13'

15'

18'

103°

151 HZ

7.1 KHZ

4000 GCP
SEMI-BJ
151 HZ

100'

(D)

49'

SR 226
503 082A

17'

8'-3"

SIG 'B'

(B)

R.O.W.

34'

R.O.W.

26'

NOTES:

1. MAX. TRAIN SPEED 60 M.P.H.
2. LATITUDE N 40° 40' 05" LONGITUDE W 82° 05' 44" ELEVATION 908'
3. SIGNAL 'A' TO HAVE BELL.
4. LOCATE U/G UTILITIES & CABLE BEFORE DIGGING.
5. CROSSING LOCATED IN WAYNE COUNTY.
6. NEAREST STREET ADDRESS IS 13299 HWY 226
7. NEAREST INTERSECTING STREET IS SOUTH TO HWY 100
8. DISTANCE TO NEAREST INTERSECTING STREET IS 165 FT.
9. HAND DIGGING WILL BE REQUIRED IN QUAD 'A' TO AVOID U/G UTILITIES.

(A) (B) (C) (D) = QUADRANT MARKERS

O.H. POWER LINES/COMM. LINES
(V.O.H.C. POWER 36'/COMM. LINES 28')

O.H. POWER LINES/COMM. LINES
(V.O.H.C. POWER 36'/COMM. LINES 26')

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	

SCALE: 1" = 20'
PROJECT #10.3157

LAYOUT

FILE CX1112706

DESIGNED BY: JWB 08-01-17	NORFOLK SOUTHERN	
DRAWN BY: IRE 08-01-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: PC-148.57
CHECKED BY: DBS 08-02-17	SHREVE, OH FLGS AT SR 226	
IN SERVICE: - -	FORT WAYNE LINE	FILE R-
	CADD or DWG. No. 24021485.01	SHEET No. 1 of 22

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

TO CRESTLINE
(R.R. WEST)
M.P. INCREASING

TO PITTSBURGH
(R.R. EAST)
M.P. DECREASING

DAX APP.
NEWKIRK RD.

3087'
TO NEAREST
GCP WIRES

3087'
TO NEAREST
GCP WIRES

DC CIRCUITRY

4000 GCP
SEMI-BJ
151 HZ

4000 GCP

FLGS

FLGS

FLGS

FLGS

151 HZ
7.1 KHZ

SR 226
503 082A

NEWKIRK RD.
503 081T
4000 GCP
86 HZ
15.2 KHZ

M.P.
PC-148

1425' START

100' / 99' I.J. / SIGNAL

0' 6'

60'

2259'

3080'

(A) - NBS-1 W/10' LEAD 0250250-151HZ

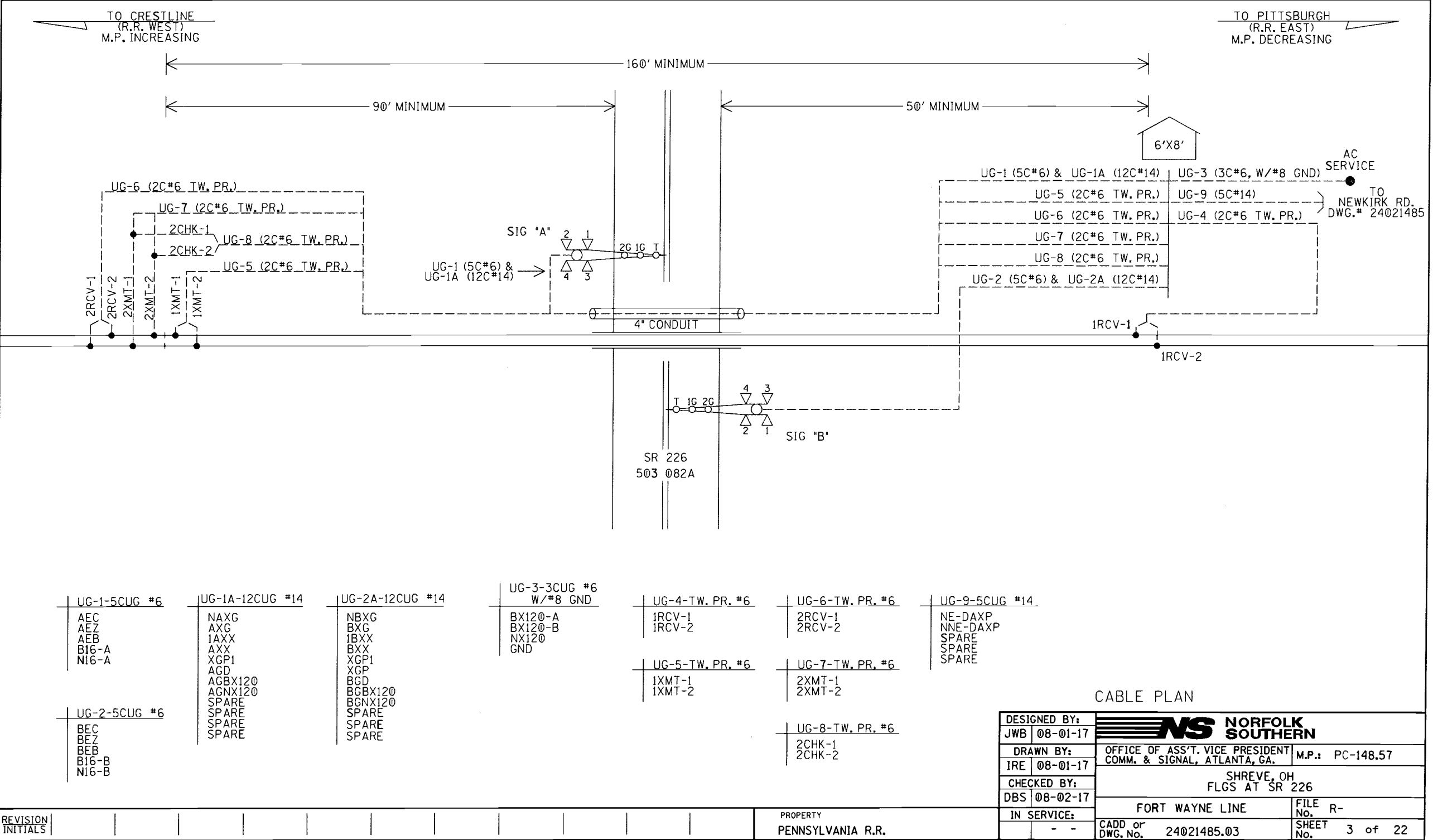
(B) - MF-NBS 62775-8621 (86HZ)
W/ INDUCTOR 8V617-1200

PROFILE

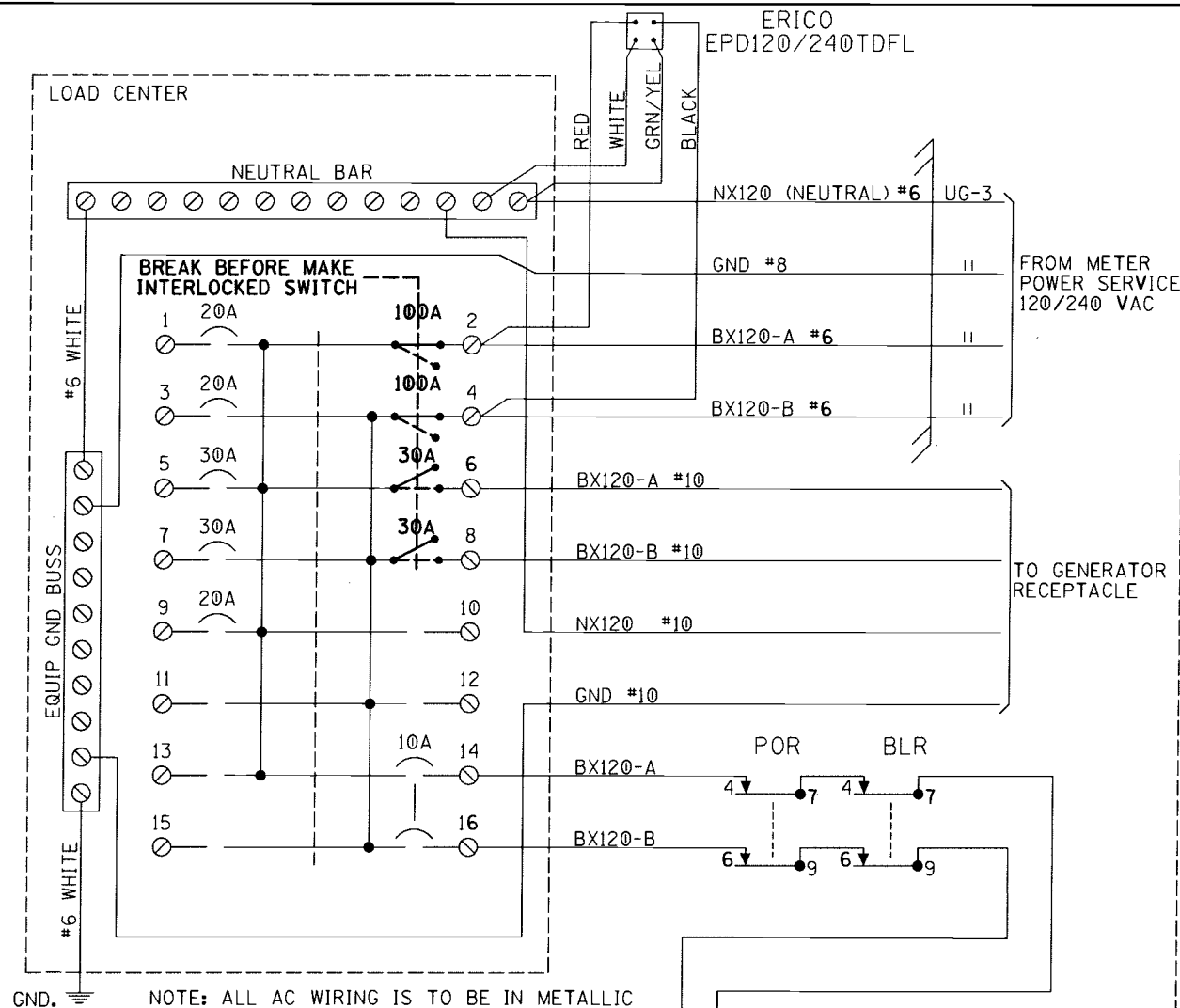
DESIGNED BY:	JWB 08-01-17	 NORFOLK SOUTHERN	
DRAWN BY:	IRE 08-01-17		
CHECKED BY:	DBS 08-02-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: PC-148.57	
IN SERVICE:	- -	SHREVE, OH FLGS AT SR 226	
		FORT WAYNE LINE	FILE R-
		CADD or DWG. No. 24021485.02	SHEET No. 2 of 22

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.



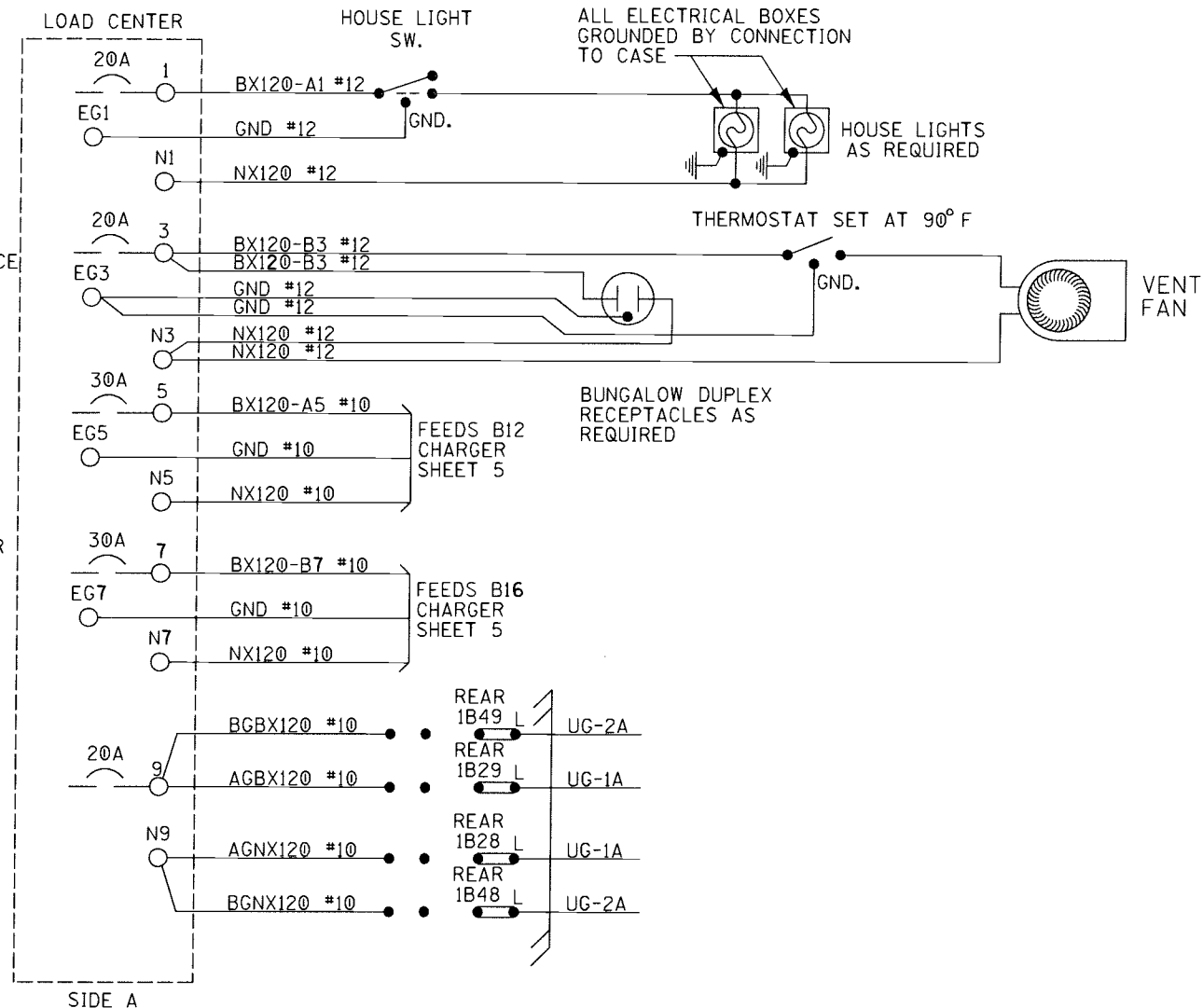
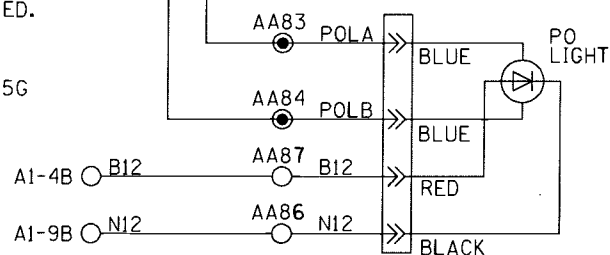
ERICO
EPD120/240TDFL



NOTE: ALL AC WIRING IS TO BE IN METALLIC CONDUIT WITH NO EXPOSED TERMINALS. ALL AC 120V AND 240V EQUIPMENT IS TO BE PROPERLY GROUNDED.

SQUARE "D" PART NUMBERS:

LOAD CENTER — Q0116L125G
10A 1P CIR BKR — Q0110
10A 2P CIR BKR — Q0210
20A 1P CIR BKR — Q0120
30A 1P CIR BKR — Q0130
30A 2P CIR BKR — Q0230
60A 2P CIR BKR — Q0260
100A 2P CIR BKR — Q02100
MECH INTERLOCK — PK4DTIM4LA



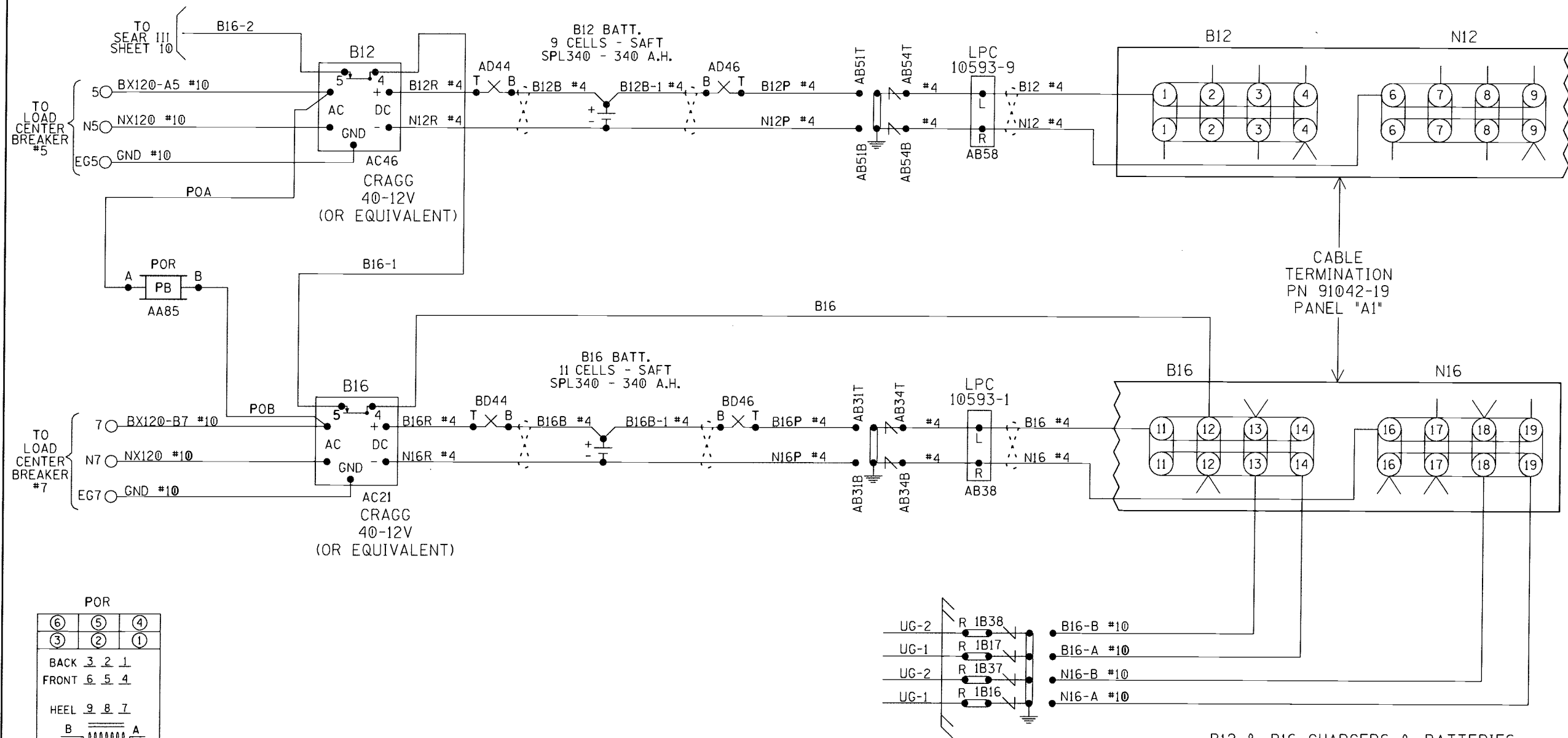
NOTE:
ALL WIRING TO BE #16AWG
UNLESS NOTED OTHERWISE.

GENERATOR RECEPTACLE:
MALE CONNECTOR - NEMA L1430-FI

LOAD CENTER

DESIGNED BY:	JWB 08-01-17	 NORFOLK SOUTHERN	
DRAWN BY:	IRE 08-01-17		
CHECKED BY:	DBS 08-02-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
IN SERVICE:	- -	SHREVE, OH FLGS AT SR 226	
PROPERTY PENNSYLVANIA R.R.		FORT WAYNE LINE FILE No. R-	
		CADD or DWG. No. 24021485.04	
		SHEET No. 4 of 22	

REVISION
INITIALS



POR

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		⑨
⑦		⑥

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

⋈ = TWIST

B12 & B16 CHARGERS & BATTERIES

DESIGNED BY: JWB 08-01-17		
DRAWN BY: IRE 08-01-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: PC-148.57
CHECKED BY: DBS 08-02-17	SHREVE, OH FLGS AT SR 226	
IN SERVICE: - -	FORT WAYNE LINE	FILE No. R-
	CADD or DWG. No. 24021485.05	SHEET No. 5 of 22

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:		NORFOLK SOUTHERN	
JWB	08-01-17		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT	M.P.: PC-148.57
IRE	08-01-17	SHREVE, OH FLGS AT SR 226	
CHECKED BY:		FORT WAYNE LINE	
DBS	08-02-17	FILE NO.	R-
IN SERVICE:		CADD or DWG. No.	SHEET
	- -	24021485.07	7 of 22

PROPERTY
PENNSYLVANIA R.R.

ADVANCED: out of service 2
T1 OOS Control= OOS Input 1
T2 OOS Control= OOS 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
Track 2: Dax A Override Used = No

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

ADVANCED: InternalI/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: InternalI/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: InternalI/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: InternalI/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 = T2 Dax A
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
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: 24021485.pac

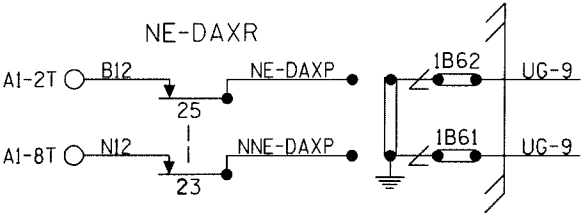
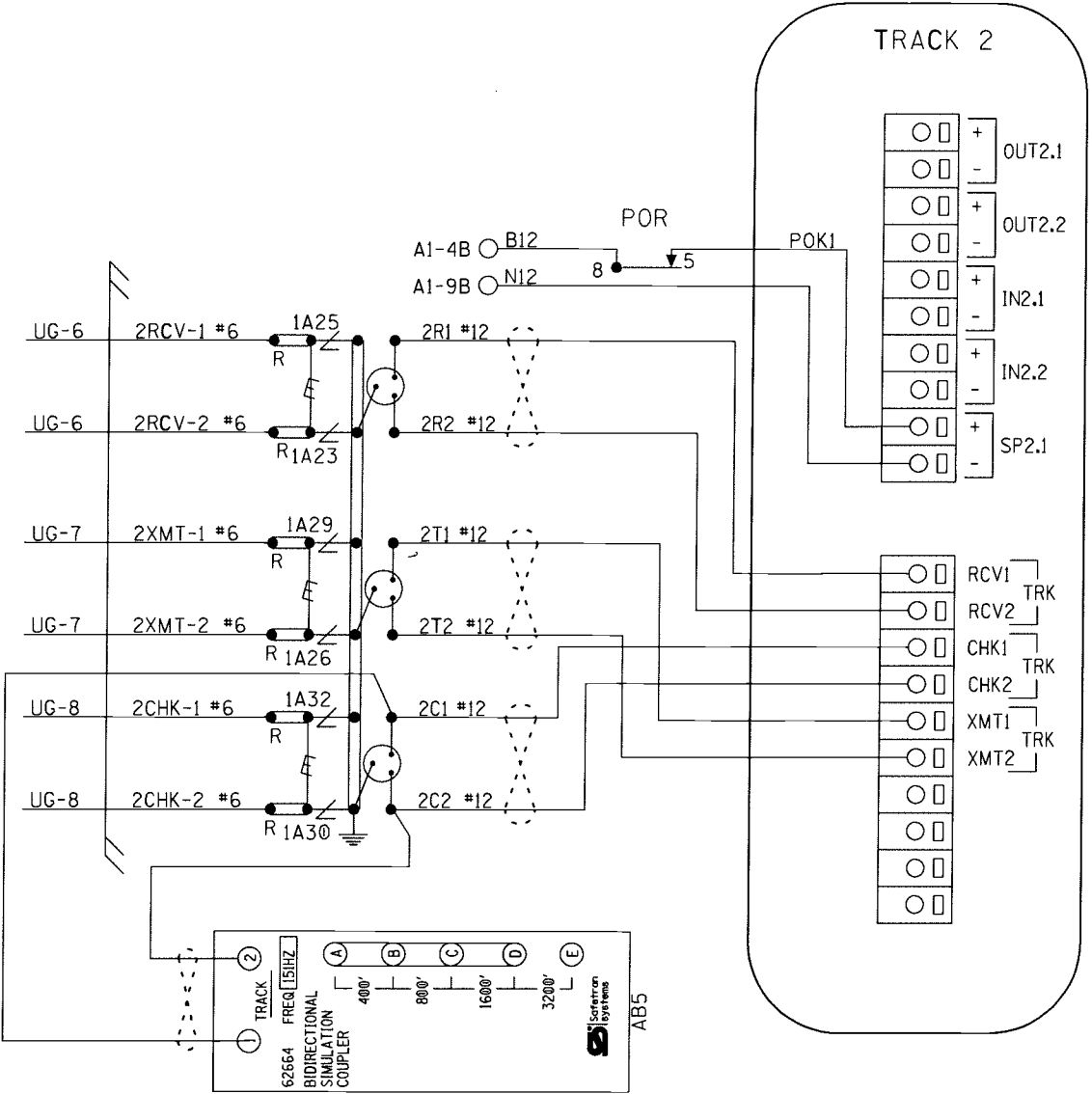
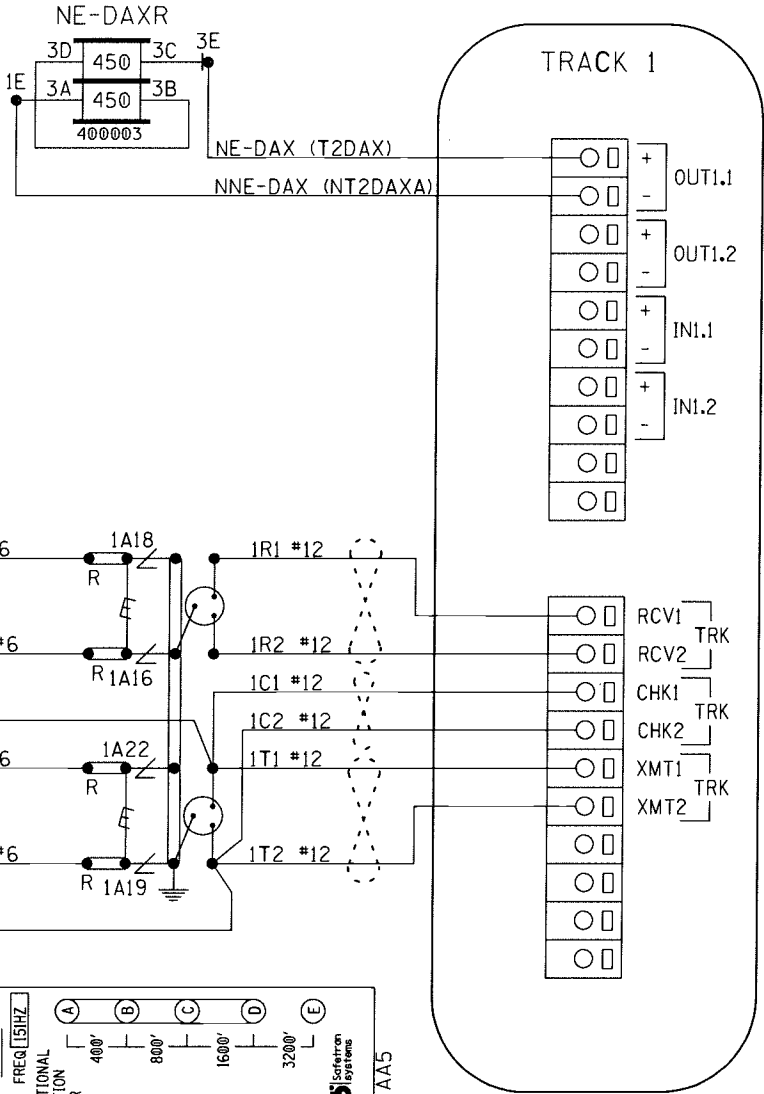
4000 GCP PROGRAMMING SETUP

DESIGNED BY:	 NORFOLK SOUTHERN		
JWB 08-01-17			
DRAWN BY:	OFFICE OF ASS'T. VICE PRESIDENT		
IRE 08-01-17	COMM. & SIGNAL, ATLANTA, GA.		M.P.: PC-148.57
CHECKED BY:	SHREVE, OH		
DBS 08-02-17	FLGS AT SR 226		
IN SERVICE:	FORT WAYNE LINE		FILE R-
	CADD or DWG. No. 24021485.08		SHEET No. 8 of 22

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

BIDIRECTIONAL SIMULATION COUPLER APPROACH DISTANCE SELECTION STRAPPING			
400	B-C,C-D,D-E	3,600	B-C,C-D
800	A-B,C-D,D-E	4,000	A-B,C-D
1,200	C-D,D-E	4,400	C-D
1,600	A-B,B-C,D-E	4,800	A-B,B-C
2,000	B-C,D-E	5,200	B-C
2,400	A-B,D-E	5,600	A-B
2,800	D-E	6,000	NO STRAPS
3,200	A-B,B-C,C-D		



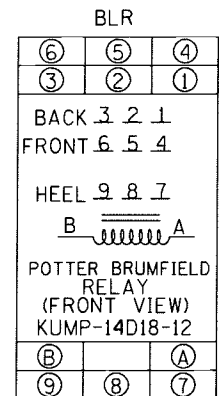
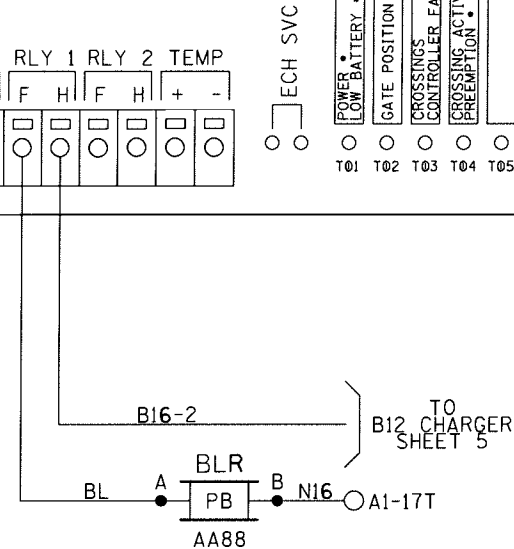
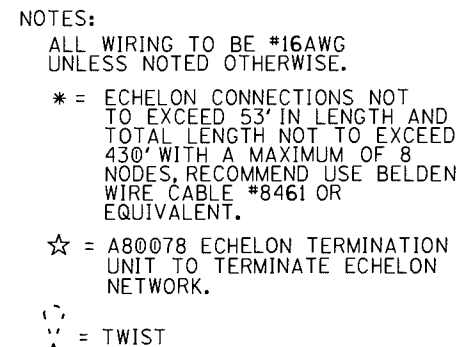
NOTES:
ALL WIRING TO BE #16AWG
UNLESS NOTED OTHERWISE.
= TWIST

CONNECTORS FOR TRACK MODULES

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:	JWB 08-01-17	 NORFOLK SOUTHERN	
DRAWN BY:	IRE 08-01-17		
CHECKED BY:	DBS 08-02-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: PC-148.57	
IN SERVICE:	- -	SHREVE, OH FLGS AT SR 226	
		FORT WAYNE LINE	FILE R-
		CADD or DWG. No. 24021485.09	SHEET No. 9 of 22



CPU MODULE, SEAR III & VHF HOOK-UPS

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	08-01-17		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: PC-148.57
IRE	08-01-17	SHREVE, OH FLGS AT SR 226	
CHECKED BY:			
DBS	08-02-17		
IN SERVICE:		FORT WAYNE LINE	FILE R-
	- -	CADD or DWG. No. 24021485.10	SHEET 10 of 22

SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
DATE/TIME	
AUTOMATIC DST ADJUSTMENT	YES
TIME ZONE	EST
SITE NAME	SR 226
MILEPOST	PC-148.57
DOT #	503082A
TESTER TYPE	CROSSING
DATE FORMAT	MM-DD-YYYY
TEMP FORMAT	FAHRENHEIT
INDICATE HOLD (SEC)	0
INDICATE REFRESH (SEC)	60
SITE ATCS	7.550.482.053.03.01
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	082
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
PENNSYLVANIA R.R.

DESIGNED BY:
JWB 08-01-17

DRAWN BY:
IRE 08-01-17

CHECKED BY:
DBS 08-02-17

IN SERVICE:
- -

NS NORFOLK SOUTHERN

OFFICE OF ASS'T. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA.

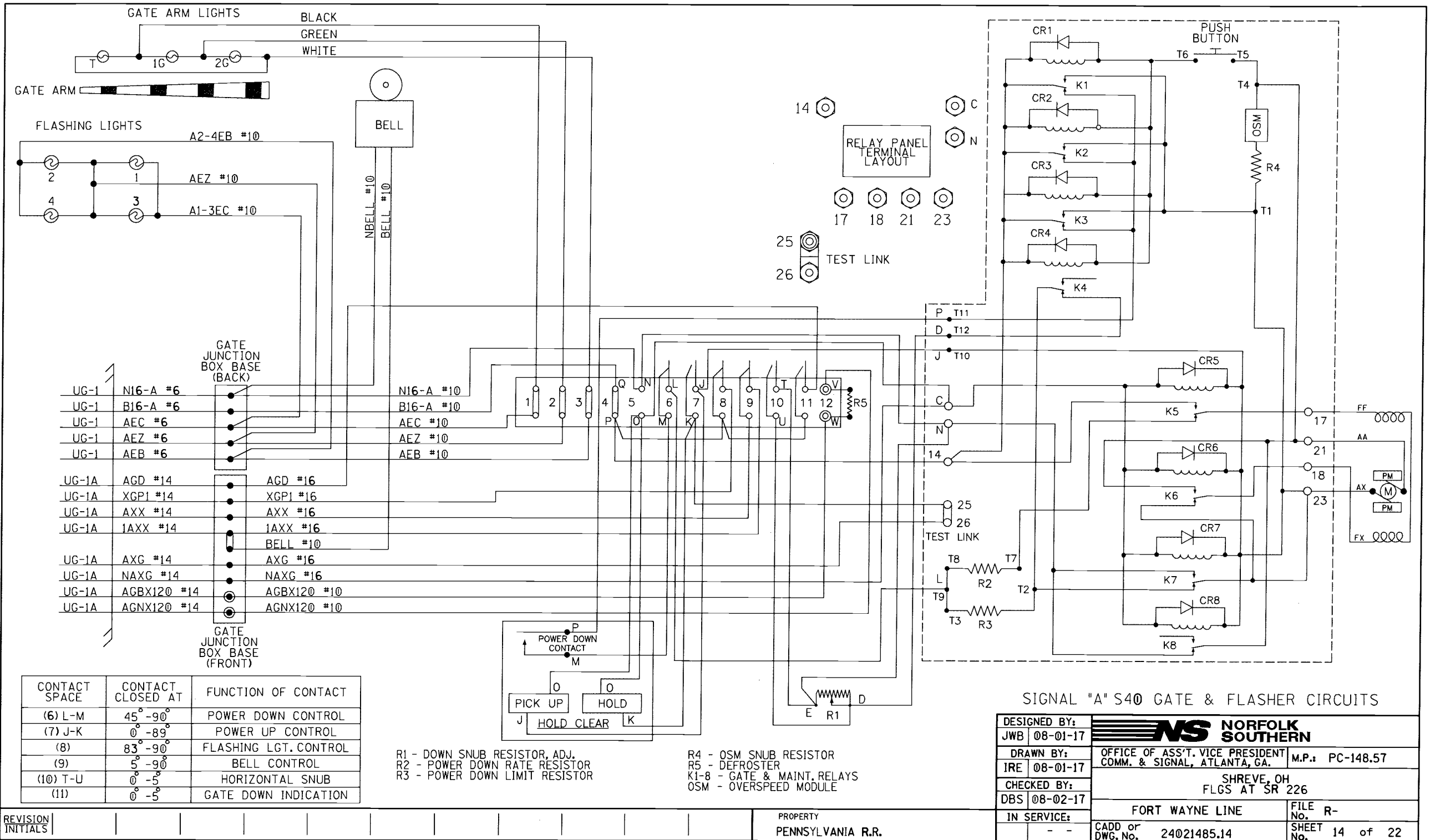
SHREVE, OH
FLGS AT SR 226

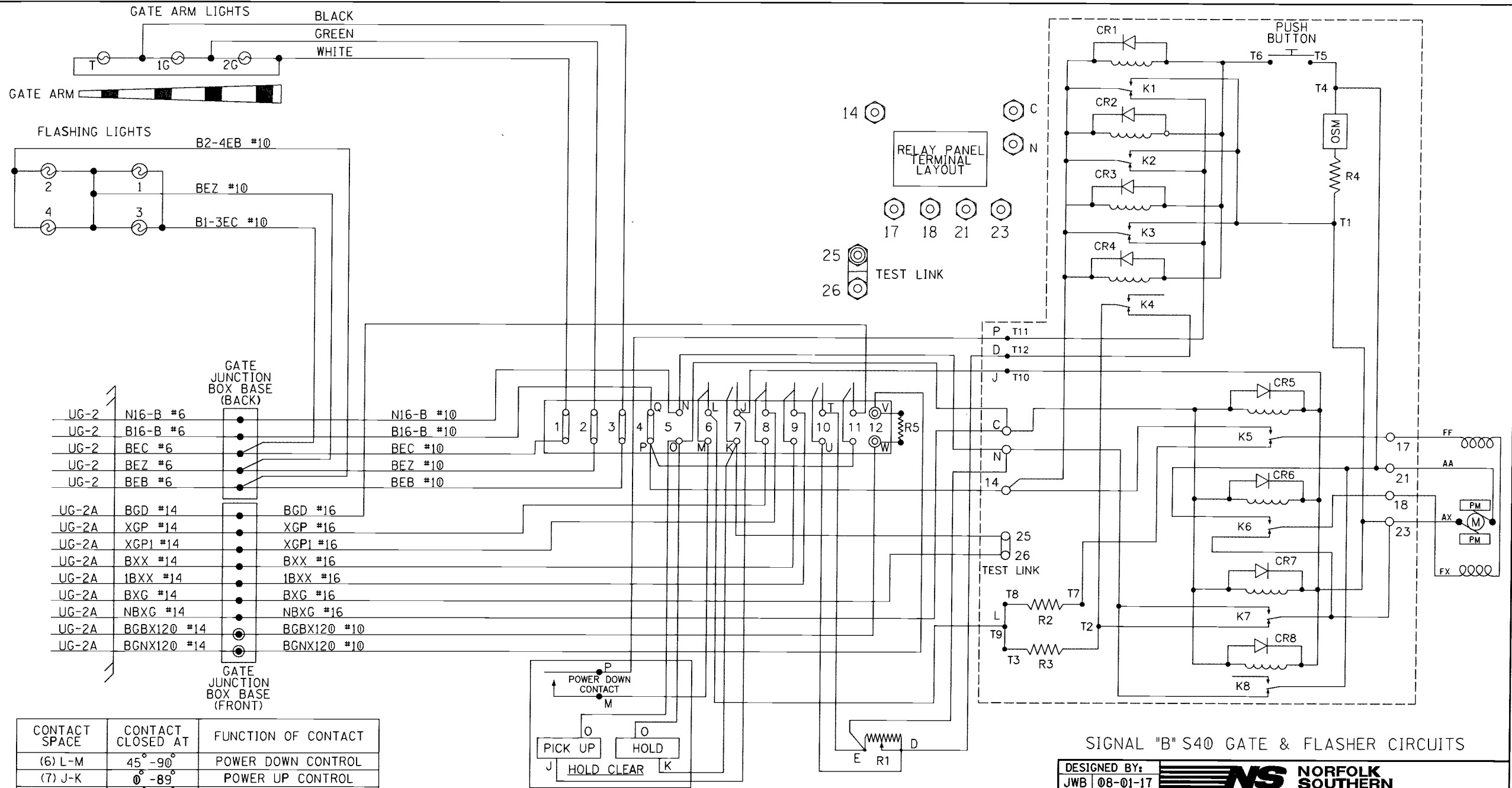
FORT WAYNE LINE

CADD or
DWG. No. 24021485.11

FILE No. R-
SHEET 11 of 22

REVISION
INITIALS





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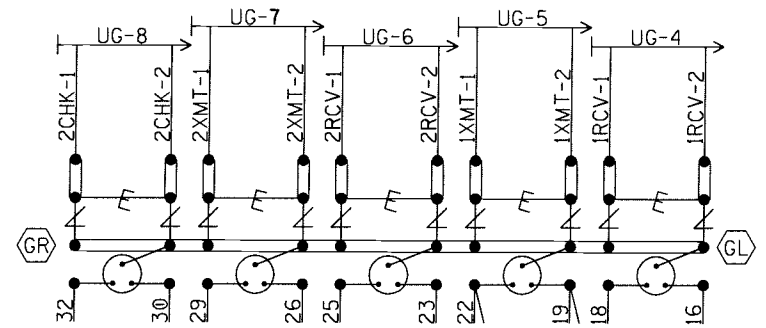
CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
(6) L-M	45°-90°	POWER DOWN CONTROL
(7) J-K	0°-89°	POWER UP CONTROL
(8)	83°-90°	FLASHING LGT. CONTROL
(9)	5°-90°	BELL CONTROL
(10) T-U	0°-5°	HORIZONTAL SNUB
(11)	0°-5°	GATE DOWN INDICATION

R1 - DOWN SNUB RESISTOR, ADJ.
 R2 - POWER DOWN RATE RESISTOR
 R3 - POWER DOWN LIMIT RESISTOR
 R4 - OSM SNUB RESISTOR
 R5 - DEFROSTER
 K1-8 - GATE & MAINT. RELAYS
 OSM - OVERSPEED MODULE

SIGNAL "B" S40 GATE & FLASHER CIRCUITS

DESIGNED BY: JWB 08-01-17	NORFOLK SOUTHERN	
DRAWN BY: IRE 08-01-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: PC-148.57	
CHECKED BY: DBS 08-02-17	SHREVE, OH FLGS AT SR 226	
IN SERVICE:	FORT WAYNE LINE	FILE No. R-
- -	CADD or DWG. No. 24021485.15	SHEET No. 15 of 22

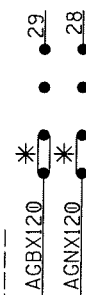
LEFT TWO ROWS TERMINAL BOARD 1



DESIGNED BY:		 NORFOLK SOUTHERN					
JWB	08-01-17						
DRAWN BY:		OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: PC-148.57				
IRE	08-01-17	SHREVE, OH FLGS AT SR 226					
CHECKED BY:							
DBS	08-02-17	FORT WAYNE LINE <table border="1" data-bbox="2381 1372 2580 1396"> <tr> <td>FILE No.</td> <td>R-</td> </tr> <tr> <td>SHEET No.</td> <td>16 of 22</td> </tr> </table>		FILE No.	R-	SHEET No.	16 of 22
FILE No.	R-						
SHEET No.	16 of 22						
IN SERVICE:							
	- -	CADD or DWG. No. 24021485.16					

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

[illegible]

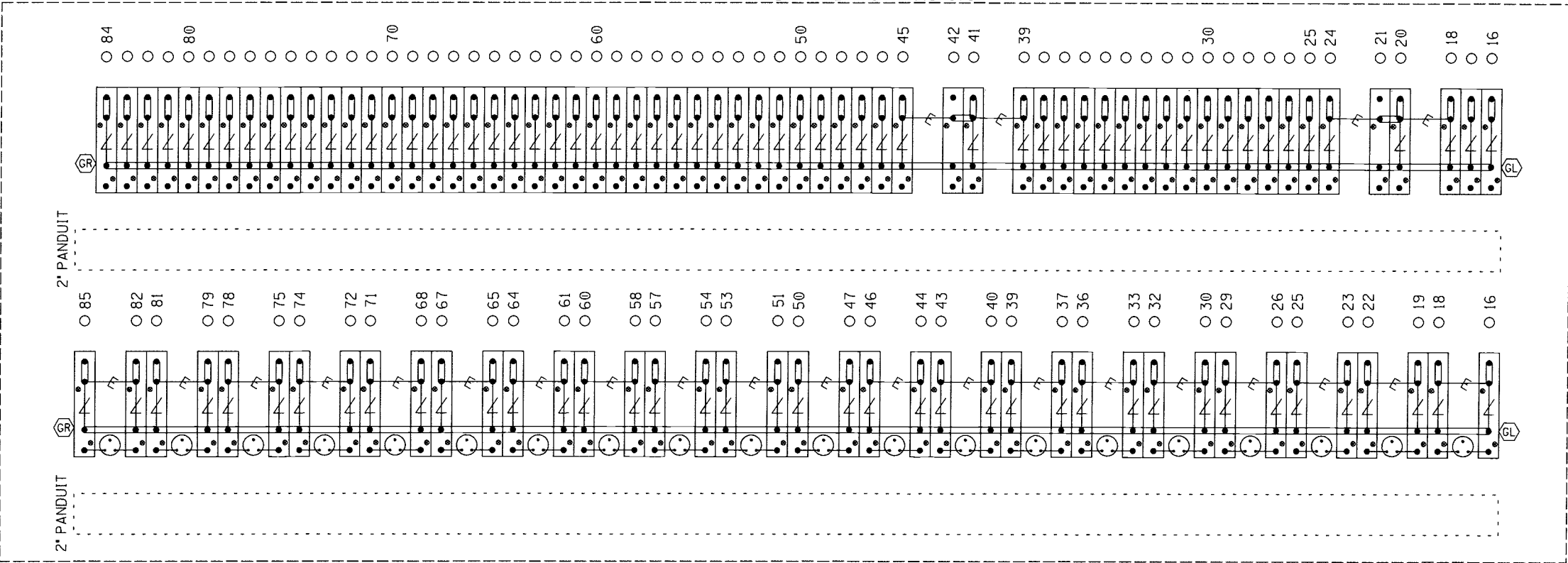
* = CLOSED DURING WINTER MONTHS

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	08-01-17		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: PC-148.57
IRE	08-01-17	SHREVE, OH FLGS AT SR 226	
CHECKED BY:			
DBS	08-02-17		
IN SERVICE:		FORT WAYNE LINE	FILE No. R-
	- -	CADD or DWG. No. 24021485.17	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



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

FARADAY SHIELD 1A & 1B

DESIGNED BY:	JWB 08-01-17	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 08-01-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: PC-148.57
CHECKED BY:	DBS 08-02-17	SHREVE, OH FLGS AT SR 226	
IN SERVICE:	- -	FORT WAYNE LINE	FILE No. R-
		CADD or DWG. No. 24021485.18	SHEET No. 18 of 22

= 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.

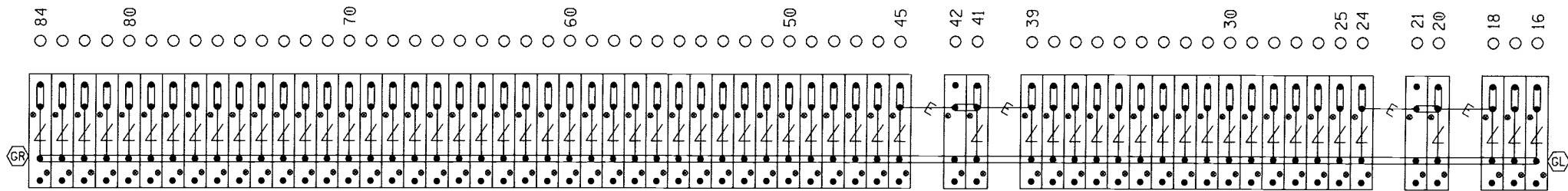
REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

AREA BELOW IS SCALED WITH AS=.75



2° PANDUIT



 = LPC-10560-51



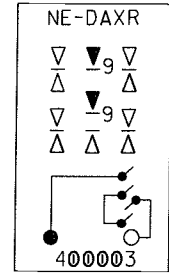
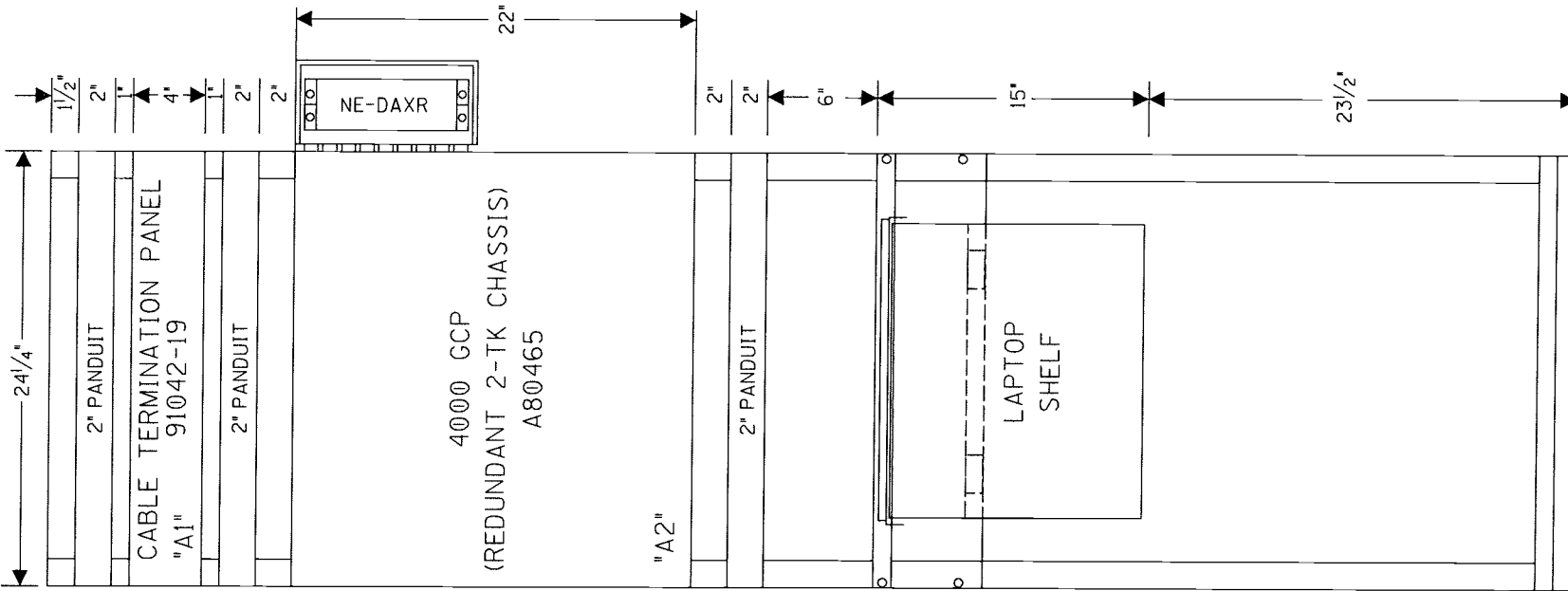
 = TERMINALS GROUNDED TO SHIELD.
 4 POST BLOCKS USE EITHER -
 GR - SERMMI PART NO. 61278
 GL - SERMMI PART NO. 61278-1.

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

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	08-01-17		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT	
IRE	08-01-17	COMM. & SIGNAL, ATLANTA, GA.	M.P.: PC-148.57
CHECKED BY:		SHREVE, OH	
DBS	08-02-17	FLGS AT SR 226	
IN SERVICE:		FORT WAYNE LINE	
	- -	CADD OF DWG. No. 24021485.19	FILE No. R-
			SHEET No. 19 of 22

REVISION
INITIALS

EQUIPMENT RACK
FRONT

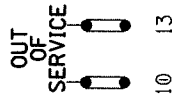


SIDE "C"

2" PANDUIT



GFI
RECP.



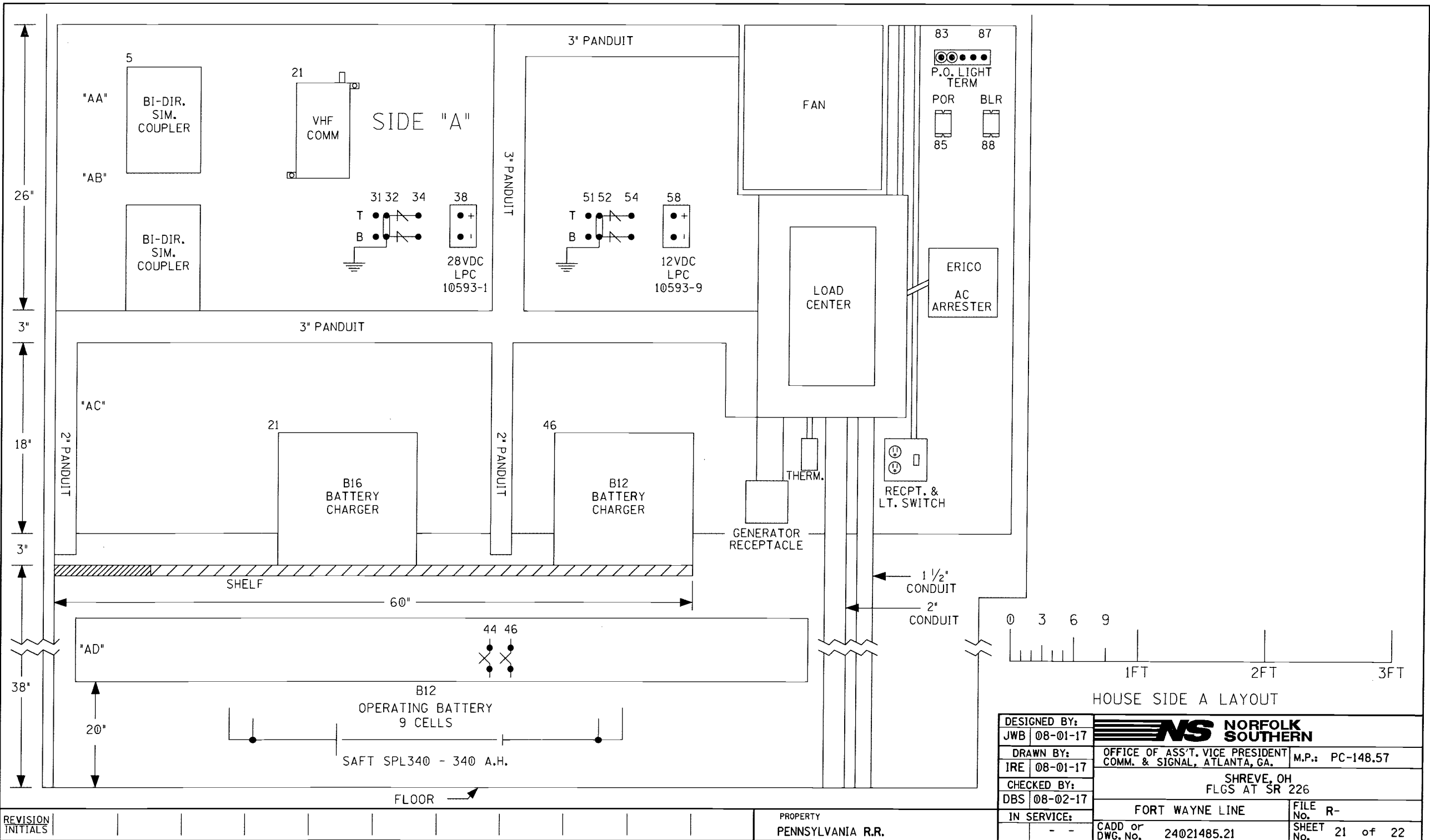
HOUSE SIDE C LAYOUT &
RACK PLACEMENT

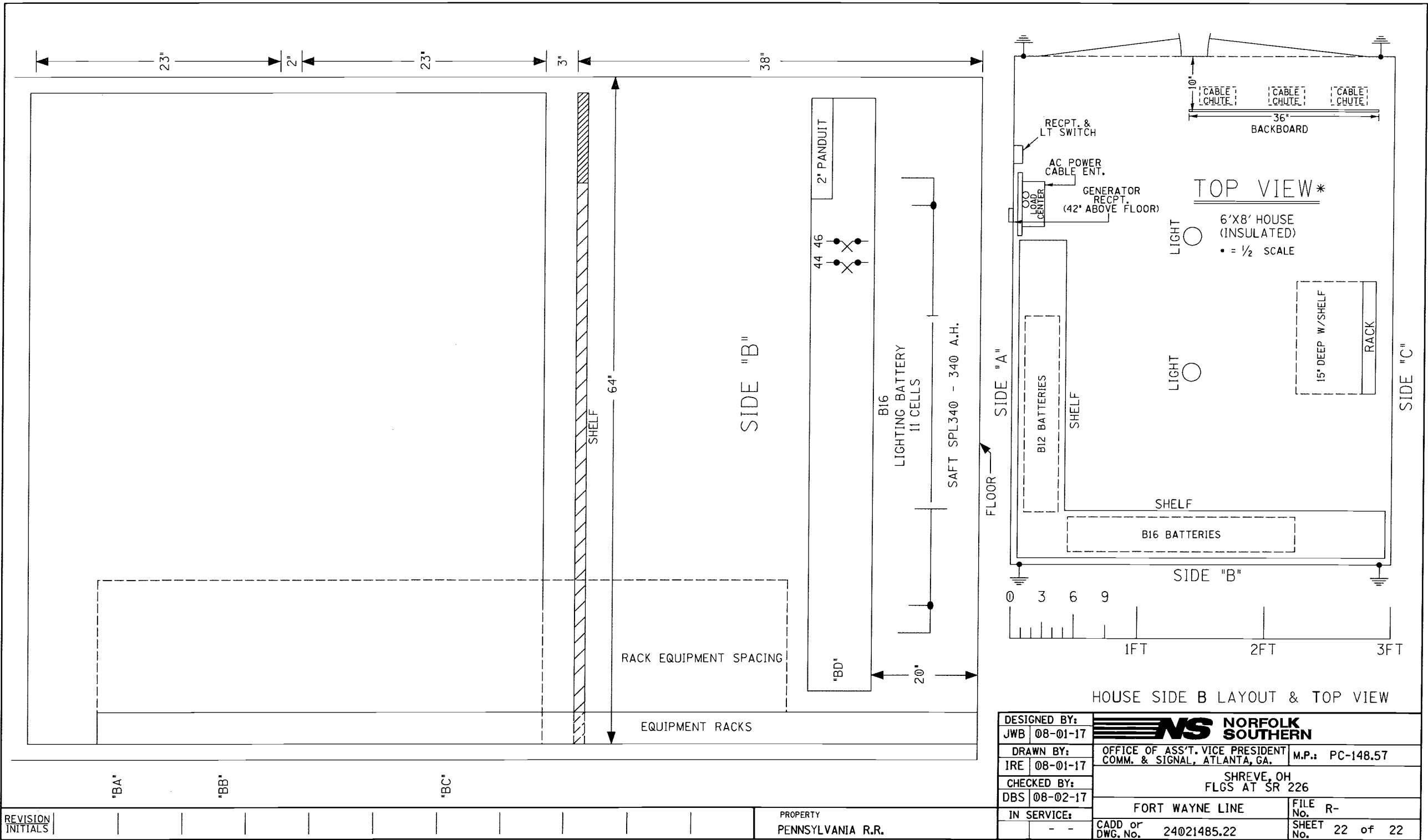
REVISION
INITIALS

"CA" "CB" "CC" "CD" "CE" "CF" "CG"

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY: JWB 08-01-17	 NORFOLK SOUTHERN	
DRAWN BY: IRE 08-01-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: PC-148.57
CHECKED BY: DBS 08-02-17	SHREVE, OH FLGS AT SR 226	
IN SERVICE:	FORT WAYNE LINE	FILE No. R-
- -	CADD or DWG. No. 24021485.20	SHEET No. 20 of 22





HOUSE SIDE B LAYOUT & TOP VIEW

DESIGNED BY:	NS NORFOLK SOUTHERN	
JWB 08-01-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
DRAWN BY:	M.P.: PC-148.57	
IRE 08-01-17	SHREVE, OH	
CHECKED BY:	FLGS AT SR 226	
DBS 08-02-17	FORT WAYNE LINE	
IN SERVICE:	FILE NO. R-	
- -	CADD or DWG. No. 24021485.22	
	SHEET No. 22 of 22	



OHIO RAIL DEVELOPMENT COMMISSION

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

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

May 24, 2017

Mr. Stephen Klinger
Public Project Engineer
1200 Peachtree Street, Box 123
Atlanta, Ga. 30309

RE: Holmes County, SR 226 Market Street
DOT 503082A PID 105760

Dear Mr. Klinger:

A diagnostic review was held at the above grade crossing on March 16, 2017. The crossing has been recommended for the installation of lights and gates.

NS 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

I am the Project Manager for this project. I can be reached at (614) 752.0399, or Eric.Neff@dot.ohio.gov, if you have any questions.

Sincerely,

Eric T. Neff

Eric Neff
Project Manager

Attachment: Diagnostic Review Form

C: Jill Henry, PUCO, Grade Crossing Planner
ORDC (file)



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY



OHIO RAIL DEVELOPMENT COMMISSION

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

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

April 19, 2017

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

Subject: Grade Crossing Warning Device Modifications
Holmes County, SR 226-0.87/Market Street, DOT # 503082A, PID 105760

Dear Mr. Klinger:

A diagnostic review was conducted at the subject grade crossing on 3/16/2017. As a result of the review, the devices will be upgraded to automatic flashing lights and roadway gates.

This project shall be completed in compliance with Agreement No. 17450, dated December 19, 2012, entered into by the State of Ohio and Norfolk Southern Railway Company (NS) and incorporated as if fully rewritten herein. This construction shall also meet the general terms and conditions under the Moving Ahead for Progress in the 21st Century Act (MAP-21) and subsequent amendments and the State of Ohio's Federally Funded Warning Device Program.

Preliminary engineering (PE) and construction costs shall be borne one hundred percent (100%) by ORDC. Reimbursable costs will be limited by the ORDC based on approved estimates and bid tabulations, if applicable. These limits will be quantified by the ORDC in its construction authorization to NS and may be amended by the ORDC based on revised estimates and bid tabulations.

This Letter Agreement and the approved plans constitute the scope of the project. NS shall notify ORDC in writing of any changes in the scope of work which are not in the approved plans and estimates and secure approval in writing of same before the work is performed.

PE will not be commenced by NS prior to ORDC issuing a PE authorization. PE will be submitted by NS to ORDC within ninety (90) days or other time specified by ORDC in the PE authorization. Construction will not be commenced by NS prior to ORDC issuing a construction authorization. Construction will be completed by NS within nine (9) months or other time specified in the time specified by ORDC in the construction authorization.

Please indicate your acceptance of the terms and conditions of this Letter Agreement by signing and returning one (1) copy to me at the address listed above and retain a copy for your files. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be a duplicate original, but all of which taken together shall be deemed to constitute a single Agreement.

Sincerely,

Matthew R. Dietrich
Executive Director



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

Norfolk Southern:

By: Gregory R. Comstock

Title: General Manager

Date: 5/16/17

X:\tr agreements\HOL SR 226 Market St NS PID 105760



Diagnostic Review Team Survey

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

Constituent - AOT

Date: 3/16/2017

Location Data

Street or Road Name: Market Street

Route/Road Number
(i.e. Twp., Co., SR or US) SR 226-0.87

US DOT No.: 503082A

County: HOL

Township:

City:
(In or Near)

Near Big Prairie

Railroad
Name: Norfolk SouthernRailroad
Division: PittsburghBranch/Line
Name: Fort Wayne LINearest RR
Timetable Station: Lakeville

RR Milepost: 148.57

On-Site Review Team

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

1. Eric T. Nelt ORDC 614-752-0399
2. Shawn Zupsky PULC 614-465-1150
3. JEREMY HINKLE NS CTS 419-563-5608
4. Jared Feller ODOT 419-207-7058
5. JASON SCHRAIBMAN ODOT 419-207-7028
6. Brian Horecky NS CTS 330 317 9501
7. _____
8. _____
9. _____

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments
Advance Warning Signs (condition?)	☒ Yes	☐ No	
'Stop' Signs	☐ Yes	☒ No	
'Stop Ahead' Signs	☐ Yes	☒ No	
Pavement Markings (condition?)	☒ Yes	☐ No	OK
Crossbucks	☒ Yes	☐ No	
Number of Tracks Signs	☐ Yes	☒ No	
Inventory Tags	☒ Yes	☐ No	
Interconnected Highway Traffic Signal	☐ Yes	☒ No	
Mast-Mounted Flashing Lights	☒ Yes	☐ No	2
Cantilever Flashing Lights	☐ Yes	☒ No	Number: Length:
Side Lights	☐ Yes	☒ No	
Automatic Gates	☐ Yes	☒ No	Number: Length:
Bells	☐ Yes	☒ No	Number:
Sidewalk Gate Arms	☐ Yes	☒ No	
'No Turn' Signs	☐ Yes	☒ No	
Illumination	☒ Yes	☐ No	
Is crossing flagged by train crew?	☐ Yes	☒ No	
Other	☐ Yes	☒ No	

Safety Data (Obtain crash reports, if possible, prior to review)

	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years	0 (12/20/78)	
Hazard Ranking	2109 Date Run: 11/23/2016	

Railroad Data

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	9	
< 1 per day		
Day thru trains	5	
Night thru trains	4	
Daytime switching movements	0	
Nighttime switching movements	0	
Total number of tracks	1	
Number of main tracks	1	
Number of other tracks	0	
Maximum train speed	60	
Typical train speed	60	
Amtrak		

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

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

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

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

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

If yes, Crossing DOT #(if different) _____

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

Roadway Data

Local Highway Authority: State of Ohio

Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	1386 (2008)	
Highway paved	X Yes ☐ No	☐ Yes ☐ No
Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: 20 ft.		
Number of highway lanes	2	
Urban or Rural	Rural	
Vehicle Speed: 25 MPH		
School Bus Operation: ☐ No ☐ Yes ____ Amount		
Hazardous Materials Trucks: ☐ No X Yes 03% Amount		
Shoulders: ☐ No ☐ Yes		
Is the shoulder surfaced? ☒ No ☐ Yes		
Is there existing guardrail along roadway in crossing vicinity? ☒ No ☐ Yes		
Is stopping site distance adequate? (See Table 2) ☒ Yes ☐ No If no, deficient approach(es) _____		

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

Potential Red Flags / Project Challenges

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

Crossing Consolidation or Closure:

Real Estate or ROW:

Culverts / Drainage / Ballast Conditions:

Roadway and/or Sidewalks:

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

Environmental:

Other:

Potential issue w/ overhead power clearance.

Diagnostic Team Recommendations

Quadrants Needed

- ☒ Install/upgrade active devices
- ☐ Automatic Flashing Lights (AFLS)
- ☐ AFLS / Cants
- ☒ AFLS / Gates
- ☐ AFLS / Gates / Cants
- ☐ Bells / number
- ☐ Upgrade circuitry / type
- ☐ Sidelights
- ☒ Guardrail Needed
- ☐ Install/Replace curb
- ☐ Bungalow placement & offset from rail & highway
- ☐ Other (define)

Possibly in S. Quad

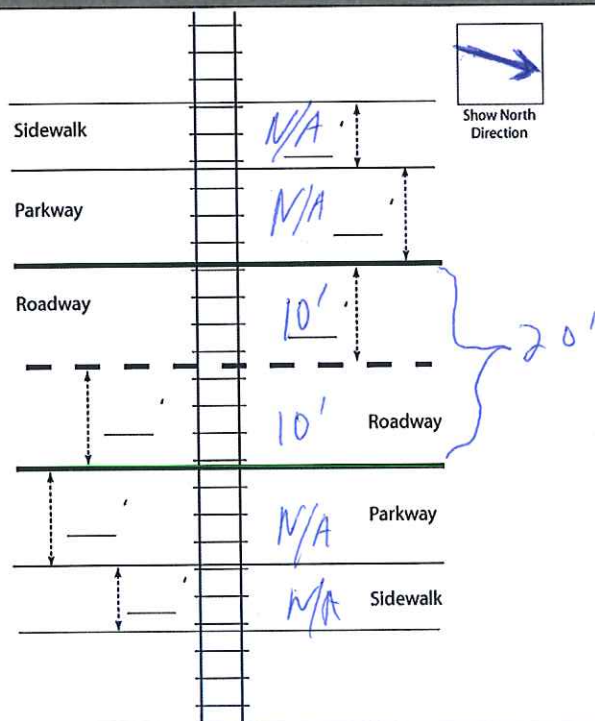
Comments:

- ☐ 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):

[Signatures]

Field Dimensions



HOL - SR 226 Market St.

DOT#: 503082A

3

Legend

Big Prairie

1038

1042

Trail 1042

Trail 1037

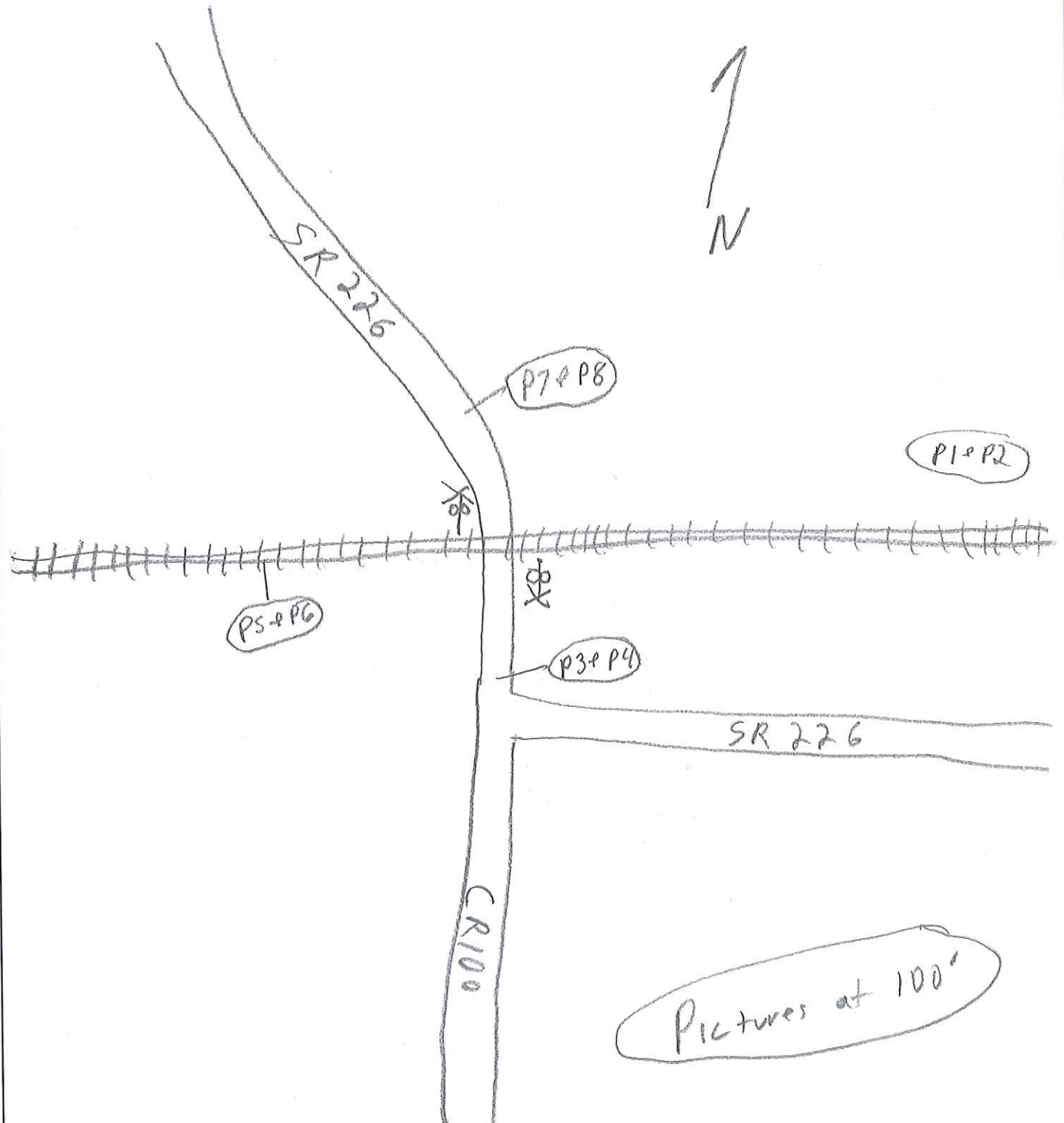
1040

1043

100

1000 ft

Field Sketch



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

Sketch by: [Signature]

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

11/17/2017 9:46:52 AM

in

Case No(s). 17-2372-RR-FED

Summary: Application In the Matter of a Request for the Installation of New Active Warning Devices at the Norfolk Southern Railway Crossing, Market Street/SR 226 DOT#503-082A, in Holmes County, Ohio. electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division