

Memo

To: Docketing Division
From: Jill Henry, Rail Specialist, Rail Division
Cc: PUCO Legal Department
Date: 8/22/18

Re: PUCO Case No. 18-1314-RR-FED- In the Matter of a Request for Upgrades to the Active Warning Devices at the Norfolk Southern Railway Crossing, Lockbourne Road DOT# 513-362E and Fairwood Avenue DOT#513-364T, in Franklin County, Ohio.

On June 12, 2017, the Ohio Rail Development Commission (ORDC) authorized funding for Norfolk Southern Railway to upgrade the circuitry and add advanced traffic preemption to the active warning devices at Lockbourne Road DOT# 513-362E and Fairwood Avenue DOT#513-364T, in Franklin County, Ohio. The crossings were surveyed, on July 25, 2016, and found to warrant the upgrades. The electric utility provider for these crossings is AEP-Ohio.

The project will be paid for with federal funds and is actual cost. The plans and estimates for the project in the amount of \$515,063.00 for Lockbourne Road and \$585,369.00 for Fairwood Avenue 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, Ohio 43699-0032

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

City of Columbus
Department of Public Service
111 N. Front Street
Columbus, Ohio 43215

AEP- Ohio

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

TO: Randall Schumacher, Supervisor, Rail Division, PUCO

FROM: Cathy Stout, Manager, Safety Section, ORDC

BY: James Tucker, Project Manager, ORDC J.T. -

SUBJECT: Franklin County, Norfolk Southern
Lockbourne Rd. DOT#513362E
Fairwood Ave. DOT#513364T
PID#105415

DATE: July 12, 2018

The Ohio Rail Development Commission (ORDC) established a diagnostic survey at the subject location on July 25, 2016. The Diagnostic Team recommended that the devices receive warning device upgrades and 16 seconds of advance preemption time. Copies of the diagnostic review form and the plan and estimate are attached.

PE has already been provided by the railroad. ORDC approves the site plans and estimates as provided. Please issue a construction-only order for the project outlined above for twelve months. This construction 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.

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, PUCO
Susan Arduni, ORDC
ORDC Project Manager (file)



OHIO RAIL DEVELOPMENT COMMISSION

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

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

July 9, 2018

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

RE: Franklin County, Lockbourne Road, DOT #513362E
Franklin County, Fairwood Avenue, DOT#513364T
PID#105415

Dear Mr. Klinger:

The plan and estimates dated March 19, 2018, for Lockbourne Rd and March 27, 2018 for the referenced projects have been reviewed and is acceptable. NS may proceed with the construction of the proposed lights and gates with circuitry upgrades to include 16 seconds of advance preemption time 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 from ORDC is limited to \$515,063.00 for Lockbourne Rd and \$585,369.00 for Fairwood Ave. 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 NS accepting the following instructions:

1. NS's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to James Tucker, ORDC, email james.tucker@dot.ohio.gov and to the Public Utilities Commission of Ohio at jill.henry@puco.oh.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. 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 NS.
3. NS's project foremen will notify James Tucker at 614-398-6897 (telephone) or james.tucker@dot.ohio.gov (email) of any changes in the scope of work, cost overruns, material changes, etc. which are not included in the approved plan and estimate and secure approval of same before the work is performed.
4. Open cut of roadways is not permitted except in unusual circumstances and must be coordinated with the local highway authority and preapproved by ORDC.



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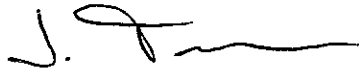
phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

5. NS will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference when billing.
6. 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.
7. This installation will include any ancillary work to make the warning devices function as designed and meet MUTCD.

Thank you for your assistance with these matters.

Sincerely,

A handwritten signature in black ink, appearing to be 'J. Tucker', with a long horizontal flourish extending to the right.

James Tucker
Project Manager

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



File No.:

S&E Proj.: 10.0081

Date: Mar 19, 2018

Ref: LOCKBOURNE RD.
COLUMBUS, OH

J.S. REED

Attached are copies of material list and plans for the above referenced project. Please review the plans and material list and return this letter with your comments, as soon as possible.

If you have any questions, please contact me.

Mike Rappatta

Comments: _____

S & E Supervisor



19-Mar-18

Detailed Estimate for Grade Crossing Warning Devices

City/State: COLUMBUS, OH

Road: LOCKBOURNE RD.

MilePost: AM-137.19

DOT/AAR: 513364T

State Proj. No.: PID 105415

County: FRANKLIN

S&E Proj. No.: 10.0081

File Number:

Man Days: 294

Purchases - Others	
Meals and Lodging:	\$40,214.97
Rental of Equipment:	\$54,973.71
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 49 Days)	
Construction Supervision Vehicle:	\$8,409.13
Purchases - Other Total:	\$103,597.81
Material And Additives	
Material Cost:	\$154,468.00
Sales and Use Tax:	\$12,357.00
Material Handling Freight:	\$15,446.78
Material Total:	\$182,271.78
Labor And Additives	
Labor Cost:	\$94,668.00
(6 man crew at \$1,932.00 a day for: 49 days)	
Payroll Tax & Overheads:	\$80,713.94
Preliminary Engineering:	\$26,159.26
Construction Supervision:	\$27,652.52
Labor Total:	\$229,193.72
Project Cost:	\$515,063.31
Scrap / Salvage Credit:	\$0.00
Project Total:	\$515,063.00

Estimated on: 19-Mar-18

Estimated by: q2suj

Estimate valid for 1 year from date of estimate



27-Mar-18

Detailed Estimate for Grade Crossing Warning Devices

City/State: COLUMBUS, OH
MilePost: AM-137.19
State Proj. No.: PID 105415
S&E Proj. No.: 10.0611
Man Days: 294

Road: FAIRWOOD AVE.
DOT/AAR: 513364T
County: FRANKLIN
File Number:

Purchases - Others		
Meals and Lodging:	\$40,214.97	
Rental of Equipment:	\$54,973.71	
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 49 Days)		
Construction Supervision Vehicle:	\$8,409.13	
Purchases - Other Total:		\$103,597.81
Material And Additives		
Material Cost:	\$209,181.00	
Sales and Use Tax:	\$16,734.00	
Material Handling Freight:	\$20,918.07	
Material Total:		\$246,833.07
Labor And Additives		
Labor Cost:	\$94,668.00	
(6 man crew at \$1,932.00 a day for: 49 days)		
Payroll Tax & Overheads:	\$80,713.94	
Preliminary Engineering:	\$31,904.12	
Construction Supervision:	\$27,652.52	
Labor Total:		\$234,938.58
Project Cost:		\$585,369.46
Scrap / Salvage Credit:		\$0.00
Project Total:		\$585,369.00

Estimated on: 27-Mar-18

Estimated by: ndr3j

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:	COLUMBUS
Road:	LOCKBOURNE RD.
Mile Post:	AM-136.53
Drawing Number:	81221365
State ProjectNumber:	PID 105415
County:	FRANKLIN
A A R Number:	513362E
Project Number:	10.0081
File Number:	
New File Number:	CX0120026
WBS:	F-04259
Store Number:	
Supervisor:	J.S. REED
Tax Code:	3500
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
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.		Date Quan.	Date Quan.	Date Quan.		
1	165-006505-4	EA	\$1,075.23	\$1,075.23	AC SERVICE, COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE						
15	670-119241-4	EA	\$25.01	\$375.15	ARRESTOR, LIGHTNING HEAVY DUTY CLEAR VIEW SAFETRAN 022585-1X						
29	105-002620-4	EA	\$302.42	\$8,770.18	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	\$1,208.79	\$2,417.58	BRACKET, GATE SAVER, NEG385102GS, SPRING LOADED SWING AWAY ADAPTER FOR FIBERGLASS/ALUMINUM GATES, USE WITH GATE 38' AND LESS						
1	670-491449-4	EA	\$9.95	\$9.95	BUSS STRIP 36" COPPER, ERCO P/N B2700HC36						
1	670-356949-4	EA	\$94.05	\$94.05	CABLE, 10' GENERATOR HOOK UP, SERRMI P/N 40524. FEMALE CONNECTOR						
500	465-939422-4	LF	\$2.93	\$1,465.00	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL						
600	465-292862-4	LF	\$2.14	\$1,284.00	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR						
500	465-292929-4	LF	\$4.55	\$2,275.00	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL						
150	465-954727-4	LF	\$1.96	\$294.00	CABLE, UG 7 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL FLAT						
350	465-791835-4	FT	\$3.54	\$1,239.00	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						
1	670-070249-4	EA	\$3,625.00	\$3,625.00	CANTILEVER, WT/F ARM 24' W/WALKWAY KIT SAFTRAN #071294-24NS2						
2	670-010671-4	EA	\$738.15	\$1,476.30	CHARGER, BATTERY CRAGG MODEL 40 DTC-12V, 40 AMP, P/N 520940						
1	670-010672-4	EA	\$960.15	\$960.15	CHARGER, BATTERY CRAGG MODEL 60 DTC-12V, 60 AMP, P/N 520960						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Location: COLUMBUS				OH	S&E Proj. No.: 10.0081	AFE No.: F-04259	Drawing No.: 81221365				
Store No.:					P.O.Number:	Date Required:	Date Shipped:		Vendor: Xorail		
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	330-809007-4	EA	\$24.24	\$72.72	COATING, 3M SCOTCHKOTE ELECTRICAL COATING - DO NOT SUBSTITUTE						
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	\$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	670-794453-4	EA	\$1,253.03	\$2,506.06	COUNTERWEIGHT PKAGE, 25-31'GATE S'TAN S- MECH ONLY, STAINLESS TO INCLUDE HUB, SUPPORT ARMS						
8	670-760012-4	EA	\$44.32	\$354.56	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						
2	670-228165-4	EA	\$12.25	\$24.50	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						
1	670-744631-4	EA	\$3,154.39	\$3,154.39	FOUNDATION, CFLS FOR SAFETRAN MODEL "WT/F" ARMS 12' TO 30' SINGLE MAST, DIXIE# DP4B-SM12-26-4, 5'10" CR 02-205902						
2	670-015231-4	EA	\$599.40	\$1,198.80	FOUNDATION, DIXIE,S-2 GATE 2'6"X2'6"X5'6" ASSEMBLED						
2	670-005378-4	EA	\$387.95	\$775.90	GATE ARM, ALUMINUM, 25-31 FT, ARM ASSEMBLY, INCLUDES GATE GUARD FOR GATE LIGHT CABLE. HIGH INTENSITY VERTICAL STRIPES.						
1	670-698491-4	EA	\$35,113.24	\$35,113.24	GCP4000 - 2 TRK (2TC) - REDUNDANT - 40/60 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, 1 TRANS MOD. A80468, 1-40 & 1-60 AMP CHARGER) IPN: 003131-						
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						

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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	670-123298-4	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...						
3	670-000034-4	EA	\$10.36	\$31.08	KIT, PREP KIT SCOTCHAST NO.A2 ORDER ONE PER SPLICE KIT						
1	670-835845-4	EA	\$24.22	\$24.22	KIT, SPLICING SCOTCHAST #72-N1 FOR SPLICING 1C #9, 2C #6 UG OR AERIAL						
1	670-835853-4	EA	\$28.18	\$28.18	KIT, SPLICING SCOTCHAST #72-N2 FOR SPLICING 2C #9, 2C #14, 7C #14 UG OR AERIAL						
1	670-835861-4	EA	\$62.88	\$62.88	KIT, SPLICING SCOTCHAST #72-N3 FOR SPLICING 2C #6, 5C #9, 12C #14, 19C #14 UG OR AERIAL						
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						
1	670-005054-4	EA	\$921.25	\$921.25	LAMP ASSY, LED, 12" MAST 1 WAY FRONT LIGHTS (IPN: 042003-L489XNS)						
3	670-005057-4	EA	\$952.05	\$2,856.15	LAMP ASSY, LED, 4" CANT JURY ARM MAST (FRONT OR BACK) (IPN: 042003-L001534)						
1	670-005066-4	EA	\$959.37	\$959.37	LAMP ASSY, LED, 5" MAST 1 WAY BACK LIGHTS (IPN: 042003-L001493)						
1	670-005061-4	EA	\$952.05	\$952.05	LAMP ASSY, LED, 5" MAST 1 WAY SIDELIGHT (FIELD SIDE) (IPN: 042003-L001547)						
1	670-005058-4	EA	\$1,786.08	\$1,786.08	LAMP ASSY, LED, 5" MAST BACK TO BACK LIGHTS (IPN: 042003-L487XNS)						
11	670-440826-4	EA	\$1.90	\$20.90	LINK, SAFETRAN 024620-1X INSL TESTING COMP 1 IN CENTER SIGNAL CIRCUITS CR 02-286662						
7	255-590880-4	EA	\$16.72	\$117.04	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"						
1	670-201210-4	EA	\$5,686.00	\$5,686.00	MAST, 12" CANTILEVER, FOR 21'-30' WT/F ARMS, INCL. LADDER KIT (IPN: 071271-30NS)						
1	610-156588-4	EA	\$1,626.00	\$1,626.00	MAST, 5" ALUMIMUM (0&0) FOR LIGHT UNIT AND BRACKET WITH DBL. JCT. BOX BASE #070519-203X-2						
1	670-637778-4	EA	\$1,317.65	\$1,317.65	MAST, 5" ALUMINUM 13'10" WITH DOUBLE JCT. BOX BASE. S'TRAN P# 070519-11AX.						

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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	670-521147-4	EA	\$3,715.27	\$7,430.54	MECHANISM, GATE MODEL S-40, WITH CONTACT HEATER, COMPLETE W/RELAY S'TRAN # 074000-W00090		Date Quan.	Date Quan.	Date Quan.		
4	670-000001-4	EA	\$726.23	\$2,904.92	MISC. EXPENSE, MATERAIL/FILL						
1	000-000000-4	EA	\$5,000.00	\$5,000.00	MISC. EXPENSE, UNDERGROUND BORING						
2	670-001355-4	EA	\$74.00	\$148.00	PACKAGE, HARDWARE SIGN 12 IN. (USE WITHWT/F MAST) MOUNTING, SERRMI A1250-8, HARMON @180004/0007,						
2	670-001347-4	EA	\$57.10	\$114.20	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI A1250-5, HARMON @200965-000, OR						
1	670-004472-4	EA	\$1,452.22	\$1,452.22	PACKAGE, KIT FOR ADDITIONAL RECTIFIER KIT 40AMP FOR CROSSING LOCATION. INCLUDES ALL CHARGERS, WIRING AND PEREFERALS FROM BREAKER BOX TO PANEL. IPN: 051000-NSX-0004						
2	255-646807-4	EA	\$32.59	\$65.18	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						
5	670-259211-4	EA	\$47.25	\$236.25	PLUG BOARD KIT, TYPE B-1 & VOLTAGE TEST TERMINAL, SAFETRAN 420000-75X						
1	165-902002-4	EA	\$303.43	\$303.43	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL						
2	670-782071-4	EA	\$1,747.42	\$3,494.84	PSO+, TRANSMITTER ASSY, PSO+ TX CODE "A", FREQUENCY SELECTABLE, SAFETRAN 7A481-0001						
5	465-002899-4	EA	\$40.24	\$201.20	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES						
1	670-024861-4	EA	\$437.35	\$437.35	RELAY RACK, SWING, FARADAY SHELTER FOR EIGHT B1 RELAYS, SAFETRAN P/N 057883-1X						
5	670-707995-4	EA	\$510.12	\$2,550.60	RELAY, TYPE B1, NEV LINE, 900 OHMS,.008 AMPERES GRS A62-308 OR SAFETRAN @400003						
1	670-215166-4	EA	\$19.07	\$19.07	RELAY,(AC INTERRUPT FOR SEARII)POTTER & BRUMFIELD 120V AC KUMP-14A18-120 SAFETRAN P/N T18354						
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						

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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
1	670-749325-4	EA	\$237.18	\$237.18	SHELF, FOLDING, FOR LAPTOP USE IN FARADAY 6X8 SHELTER, SAFETRAN 052852-128X		Date Quan.	Date Quan.	Date Quan.		
1	670-756057-4	EA	\$9,808.80	\$9,808.80	SHELTER, 6'X8' ALUMN FARADAY W/2EA EQUIPMENT RACKS, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN RECEPTICAL, BREAKER BOX, GFI OUTLET FOR LAPTOP SHELF SAFETRAN 058400-68-86						
4	670-586967-4	EA	\$42.98	\$171.92	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT						
4	670-868658-4	EA	\$899.80	\$3,599.20	SHUNT, MULTI-FREQ. #250849-000 FSS-1A ALSTOM NARROW BAND (86, 114, 151, 210, 267)						
2	670-554843-4	EA	\$77.05	\$154.10	SIGN, 2 TRACK SIGN, HIGH INTENSITY, SAFETRAN #035207-2HX						
3	670-016346-4	EA	\$149.68	\$449.04	SIGN, X-BUCK, HI-INTENSIVE REFLECTIVE FRT. & BACK FOR ALL STATES, SAFETRAN# 035200-91X						
1	670-397239-4	EA	\$40.23	\$40.23	SIGN, CROSSING ENS MALFUNCTION ASSEMBLY FOR 12" MAST, SAFETRAN #T17216						
1	670-393331-4	EA	\$37.43	\$37.43	SIGN, CROSSING ENS MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215						
1	670-330382-4	RL	\$18.06	\$18.06	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS. "WARNING STOP DIGGING"						
19	670-478560-4	EA	\$20.56	\$390.64	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR						
5	670-007238-4	EA	\$117.04	\$585.20	UNIT, THE INSTALLATION AND WIRING OF A DEVICE WHICH REQUIRE A MINIMUM OF FOUR WIRE CONNECT-						
1	450-986008-4	EA	\$30.45	\$30.45	WRENCH, TEST POST TYPE B DWG 55393-3, GR.1						
160	165-544477-4	FT	\$2.61	\$417.60	Z-DNO-CONDUIT, 4"x10' PVC, SCHEDULE 80 BELL CONNECTOR AT ONE END, 1/2 PT. GLUE IN KIT 670-123298-4						

Total Material: \$129,316.32

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Norfolk Southern Railway
Highway Crossing Signalization Program - Material List



Do not substitute items without permission from S & E Engineering

City:	COLUMBUS
Road:	FAIRWOOD AVE.
Mile Post:	AM-137.19
Drawing Number:	81221372
State ProjectNumber:	PID 105415
County:	FRANKLIN
A A R Number:	513364T
Project Number:	10.0611
File Number:	
New File Number:	CX1112783
WBS:	F-04258
Store Number:	S803
Supervisor:	J.S. REED
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: COLUMBUS

OH

S&E Proj. No.: 10.0611

AFE No.: F-04258

Drawing No.: 81221372

Store No.: S803

P.O.Number:

Date Required:

Date Shipped:

Vendor: Xorail

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
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.						
41	670-119241-4	EA	\$25.01	\$1,025.41	ARRESTOR, LIGHTNING HEAVY DUTY CLEAR VIEW SAFETRAN 022585-1X						
38	105-002620-4	EA	\$302.42	\$11,491.96	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	\$1,208.79	\$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	\$94.05	\$94.05	CABLE, 10' GENERATOR HOOK UP, SERRMI P/N 40524. FEMALE CONNECTOR						
1800	465-939422-4	LF	\$2.93	\$5,274.00	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL						
1000	465-292862-4	LF	\$2.14	\$2,140.00	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR						
550	465-292929-4	LF	\$4.55	\$2,502.50	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL						
700	465-292945-4	LF	\$1.63	\$1,141.00	CABLE, UG 5-14, S-54 OKONITE 206-14-6885						
1600	465-791835-4	FT	\$3.54	\$5,664.00	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						
1	670-070249-4	EA	\$3,625.00	\$3,625.00	CANTILEVER, WT/F ARM 24' W/WALKWAY KIT SAFTRAN #071294-24NS2						
3	670-010671-4	EA	\$738.15	\$2,214.45	CHARGER, BATTERY CRAGG MODEL 40 DTC-12V, 40 AMP, P/N 520940						
1	670-010672-4	EA	\$960.15	\$960.15	CHARGER, BATTERY CRAGG MODEL 60 DTC-12V, 60 AMP, P/N 520960						
1	670-128745-4	EA	\$162.75	\$162.75	CHOKE, BATTERY SAFETRAN NO 8A065A FOR GRADE CROSSING PREDICTOR						

APPROVED BY STATE

APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER

Location: COLUMBUS

OH

S&E Proj. No.: 10.0611

AFE No.: F-04258

Drawing No.: 81221372

Store No.: S803

P.O.Number:

Date Required:

Date Shipped:

Vendor: Xorail

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
8	670-664917-4	EA	\$87.64	\$701.12	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, SAFETAN 111359-2X						
8	670-632520-4	EA	\$77.63	\$621.04	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, SAFETAN 111359-1X						
1	670-794453-4	EA	\$1,253.03	\$1,253.03	COUNTERWEIGHT PKAGE, 25-31'GATE S'TAN S- MECH ONLY, STAINLESS TO INCLUDE HUB, SUPPORT ARMS						
1	670-689122-4	EA	\$1,565.70	\$1,565.70	COUNTERWEIGHT PKAGE, 32-41'GATE S'TAN S- MECH ONLY, STAINLESS, TO INCLUDE HUB, SUPPORT ARMS						
1	670-009078-4	EA	\$210.92	\$210.92	COUPLER, PSO TUNED RECEIVER SAFETAN NO. 7A355A-645HZ						
9	670-760012-4	EA	\$44.32	\$398.88	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. ====TO COVER 2 LAMPS====						
3	670-228165-4	EA	\$12.25	\$36.75	EQUALIZER, SAFETAN 022700-1X LESS BASE, MODERN NO. 700-1 SHUNT ARRESTER TRACK CIRCUITS CR 02-197950						
1	670-744631-4	EA	\$3,154.39	\$3,154.39	FOUNDATION, CFLS FOR SAFETAN MODEL "WT/F" ARMS 12' TO 30' SINGLE MAST, DIXIE# DP4B-SM12-26-4, 5'10" CR 02-205902						
1	670-015231-4	EA	\$599.40	\$599.40	FOUNDATION, DIXIE,S-2 GATE 2'6"X2'6"X5'6" ASSEMBLED						
1	670-005374-4	EA	\$446.22	\$446.22	GATE ARM, ALUMI-LITE (HIGH WIND), 27-33 FT, ARM ASSEMBLY, INCLUDES GATE GUARD FOR GATE LIGHT CABLE. HIGH INTENSITY VERTICAL STRIPES.						
1	670-005378-4	EA	\$387.95	\$387.95	GATE ARM, ALUMINUM, 25-31 FT, ARM ASSEMBLY, INCLUDES GATE GUARD FOR GATE LIGHT CABLE. HIGH INTENSITY VERTICAL STRIPES.						
1	670-687087-4	EA	\$21,483.70	\$21,483.70	GCP4000 - 2 TRK (5TC) - NON-REDUNDANT - 40 AMP WIRED RACK EQUIP. FOR 6X8 REMOTE SHELTER, (INCL. 5 TRK CHASSIS A80440, 2 TRK MODS. A80418, 0 SSCC, 1 CPU A80403, NO SEAR, 1 DISPLAY A80407, 1-40 AMP CHARGER) IPN: 003131-3X						

APPROVED BY STATE

APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER

Location: COLUMBUS

OH

S&E Proj. No.: 10.0611

AFE No.: F-04258

Drawing No.: 81221372

Store No.: S803

P.O.Number:

Date Required:

Date Shipped:

Vendor: Xorail

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed			Quantity Returned (Credit)	Special Instructions
1	670-710454-4	EA	\$62,786.36	\$62,786.36	GCP4000 - 3 TRK (6TC) - REDUNDANT - 40/60 AMP WIRED RACK EQUIP. FOR 6X8 XING SHELTER, (INCL. 6 TRK CHASSIS A80460, 6 TRK MODS. A80418, 2-SSCC A80405, 2 CPU A80403, 1 SEAR A80410, 1 DISPLAY A80407, 1 TRANS MOD. A80406, 1-40 & 1-60 AMP CHARGER) IPN: 003131-		Date Quan.	Date Quan.	Date Quan.		
2	670-075133-4	EA	\$1,084.80	\$2,169.60	GCP4000/GEO - MODULE - RIO MODULE - IPN: A80413						
2	670-016296-4	EA	\$68.53	\$137.06	INDUCTOR, SIMULATED TRACK HARMON 227032-002 (750')						
1	670-016298-4	EA	\$68.53	\$68.53	INDUCTOR, SIMULATED TRACK HARMON 227032-003 (1000')						
2	670-477991-4	EA	\$410.00	\$820.00	KIT, GROUNDING ASSY FOR AL I/S INCLUDES 8 GRD RDS,200'4WIRE,12 4 WIRE ONE-SHOTS. ERICO SBK206						
2	670-123298-4	EA	\$345.97	\$691.94	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...						
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						
1	670-005054-4	EA	\$921.25	\$921.25	LAMP ASSY, LED, 12" MAST 1 WAY FRONT LIGHTS (IPN: 042003-L489XNS)						
3	670-005057-4	EA	\$952.05	\$2,856.15	LAMP ASSY, LED, 4" CANT JURY ARM MAST (FRONT OR BACK) (IPN: 042003-L001534)						
1	670-005066-4	EA	\$959.37	\$959.37	LAMP ASSY, LED, 5" MAST 1 WAY BACK LIGHTS (IPN: 042003-L001493)						
1	670-005058-4	EA	\$1,786.08	\$1,786.08	LAMP ASSY, LED, 5" MAST BACK TO BACK LIGHTS (IPN: 042003-L487XNS)						
1	670-005062-4	EA	\$1,773.52	\$1,773.52	LAMP ASSY, LED, 5" MAST BACK TO BACK SIDELIGHTS (IPN: 042003-L000631)						
41	670-440826-4	EA	\$1.90	\$77.90	LINK, SAFETRAN 024620-1X INSL TESTING COMP 1 IN CENTER SIGNAL CIRCUITS CR 02-286662						
8	255-590880-4	EA	\$16.72	\$133.76	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"						
1	670-201210-4	EA	\$5,686.00	\$5,686.00	MAST, 12" CANTILEVER, FOR 21'-30' WT/F ARMS, INCL. LADDER KIT (IPN: 071271-30NS)						

APPROVED BY STATE

APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER

Location: COLUMBUS

OH

S&E Proj. No.: 10.0611

AFE No.: F-04258

Drawing No.: 81221372

Store No.: S803

P.O.Number:

Date Required:

Date Shipped:

Vendor: Xorail

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
1	610-156588-4	EA	\$1,626.00	\$1,626.00	MAST, 5" ALUMINUM (0&0) FOR LIGHT UNIT AND BRACKET WITH DBL. JCT. BOX BASE #070519-203X-2						
1	670-637778-4	EA	\$1,317.65	\$1,317.65	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	670-001355-4	EA	\$74.00	\$148.00	PACKAGE, HARDWARE SIGN 12 IN. (USE WITHWT/F MAST) MOUNTING, SERRMI A1250-8, HARMON @180004/0007,						
2	670-001347-4	EA	\$57.10	\$114.20	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI A1250-5, HARMON @200965-000, OR						
1	670-207365-4	EA	\$80.48	\$80.48	PACKAGE, HARDWARE SUPPORT FOR MOUNTING CROSSING SIGN ON WT/F CANTILEVER ARM 21'-40', SAFETRAN P/N 071279-X11						
1	670-004472-4	EA	\$1,452.22	\$1,452.22	PACKAGE, KIT FOR ADDITIONAL RECTIFIER KIT 40AMP FOR CROSSING LOCATION. INCLUDES ALL CHARGERS, WIRING AND PEREFERALS FROM BREAKER BOX TO PANEL. IPN: 051000-NSX-0004						
2	255-646807-4	EA	\$32.59	\$65.18	PADLOCK, SAFETRAN PART NO. 030399-29X SCREW TYPE FOR CIR CONTROLLER AND BTY. BOX						
2	610-719870-4	EA	\$152.36	\$304.72	PEDESTAL ASSEMBLY, ARMORCAST P/N P6001205-NS, YELLOW 10"X11"X29" POLYETHYLENE INCL 45" WITH TERMINAL BLOCK						
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						
16	670-259211-4	EA	\$47.25	\$756.00	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						
2	165-902002-4	EA	\$303.43	\$606.86	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL						
1	670-782807-4	EA	\$2,244.64	\$2,244.64	PSO+, RECEIVER ASSY, PSO+ RX CODE "A", FREQUENCY SELECTABLE, SAFETRAN 7A483-0001						
1	670-782071-4	EA	\$1,747.42	\$1,747.42	PSO+, TRANSMITTER ASSY, PSO+ TX CODE "A", FREQUENCY SELECTABLE, SAFETRAN 7A481-0001						
7	465-002899-4	EA	\$40.24	\$281.68	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES						

APPROVED BY STATE

APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER

Location: COLUMBUS

OH

S&E Proj. No.: 10.0611

AFE No.: F-04258

Drawing No.: 81221372

Store No.: S803

P.O.Number:

Date Required:

Date Shipped:

Vendor: Xorail

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed			Quantity Returned (Credit)	Special Instructions
3	670-024861-4	EA	\$437.35	\$1,312.05	RELAY RACK, SWING, FARADAY SHELTER FOR EIGHT B1 RELAYS, SAFETRAN P/N 057883-1X		Date Quan.	Date Quan.	Date Quan.		
16	670-707995-4	EA	\$510.12	\$8,161.92	RELAY, TYPE B1, NEV LINE, 900 OHMS,.008 AMPERES GRS A62-308 OR SAFETRAN @400003						
1	670-215166-4	EA	\$19.07	\$19.07	RELAY,(AC INTERRUPT FOR SEARII)POTTER & BRUMFIELD 120V AC KUMP-14A18-120 SAFETRAN P/N T18354						
4	435-805560-4	EA	\$2.78	\$11.12	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						
2	670-749325-4	EA	\$237.18	\$474.36	SHELF, FOLDING, FOR LAPTOP USE IN FARADAY 6X8 SHELTER, SAFETRAN 052852-128X						
2	670-756057-4	EA	\$9,808.80	\$19,617.60	SHELTER, 6'X8' ALUMN FARADAY W/2EA EQUIPMENT RACKS, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN RECEPTICAL, BREAKER BOX, GFI OUTLET FOR LAPTOP SHELF SAFETRAN 058400-68-86						
1	670-471572-4	EA	\$3.48	\$3.48	SHIELD, GROUND SERRMI P/N 61278 FOR GROUNDING A RH 4 POST TERMINAL BLOCK DIRECTLY TO FARADAY SHIELD						
1	670-472200-4	EA	\$3.48	\$3.48	SHIELD, GROUND SERRMI PART NO. 61278 FOR GROUNDING A LH 4 POST TERMINAL BLOCK DIRECTLY TO FARADAY SHIELD						
6	670-586967-4	EA	\$42.98	\$257.88	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT						
4	670-868658-4	EA	\$899.80	\$3,599.20	SHUNT, MULTI-FREQ. #250849-000 FSS-1A ALSTOM NARROW BAND (86, 114, 151, 210, 267)						
2	670-016315-4	EA	\$700.70	\$1,401.40	SHUNT, MULTI-FREQ. #250849-005 FSS-1F ALSTOM NARROW BAND (430, 525, 645, 790, 970)						
2	670-554843-4	EA	\$77.05	\$154.10	SIGN, 2 TRACK SIGN, HIGH INTENSITY, SAFETRAN #035207-2HX						
3	670-016346-4	EA	\$149.68	\$449.04	SIGN, X-BUCK, HI-INTENSIVE REFLECTIVE FRT. & BACK FOR ALL STATES, SAFETRAN# 035200-91X						
1	670-397239-4	EA	\$40.23	\$40.23	SIGN, CROSSING ENS MALFUNCTION ASSEMBLY FOR 12" MAST, SAFETRAN #T17216						

APPROVED BY STATE

APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER

Location: COLUMBUS

OH

S&E Proj. No.: 10.0611

AFE No.: F-04258

Drawing No.: 81221372

Store No.: S803

P.O.Number:

Date Required:

Date Shipped:

Vendor: Xorail

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed			Quantity Returned (Credit)	Special Instructions
1	670-393331-4	EA	\$37.43	\$37.43	SIGN, CROSSING ENS MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215		Date Quan.	Date Quan.	Date Quan.		
1	670-506709-4	EA	\$33.80	\$33.80	STRIP BUSS, 48" COPPER, ERICO P/N B2700HC48						
2	670-330382-4	RL	\$18.06	\$36.12	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS. "WARNING STOP DIGGING"						
43	670-478560-4	EA	\$20.56	\$884.08	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR						
20	670-007238-4	EA	\$117.04	\$2,340.80	UNIT, THE INSTALLATION AND WIRING OF A DEVICE WHICH REQUIRE A MINIMUM OF FOUR WIRE CONNECT-						
2	450-986008-4	EA	\$30.45	\$60.90	WRENCH, TEST POST TYPE B DWG 55393-3, GR.1						

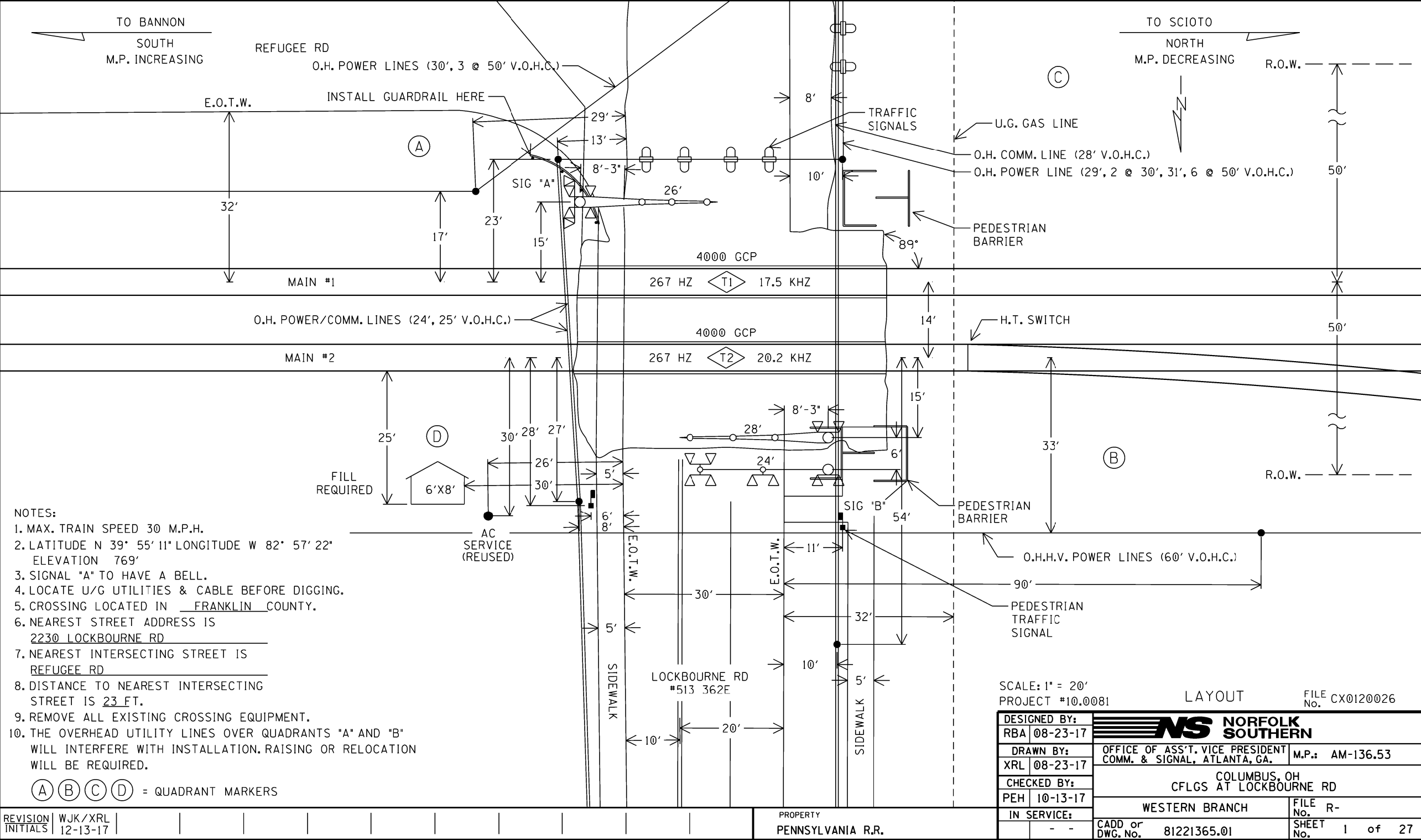
Total Material: \$209,180.72

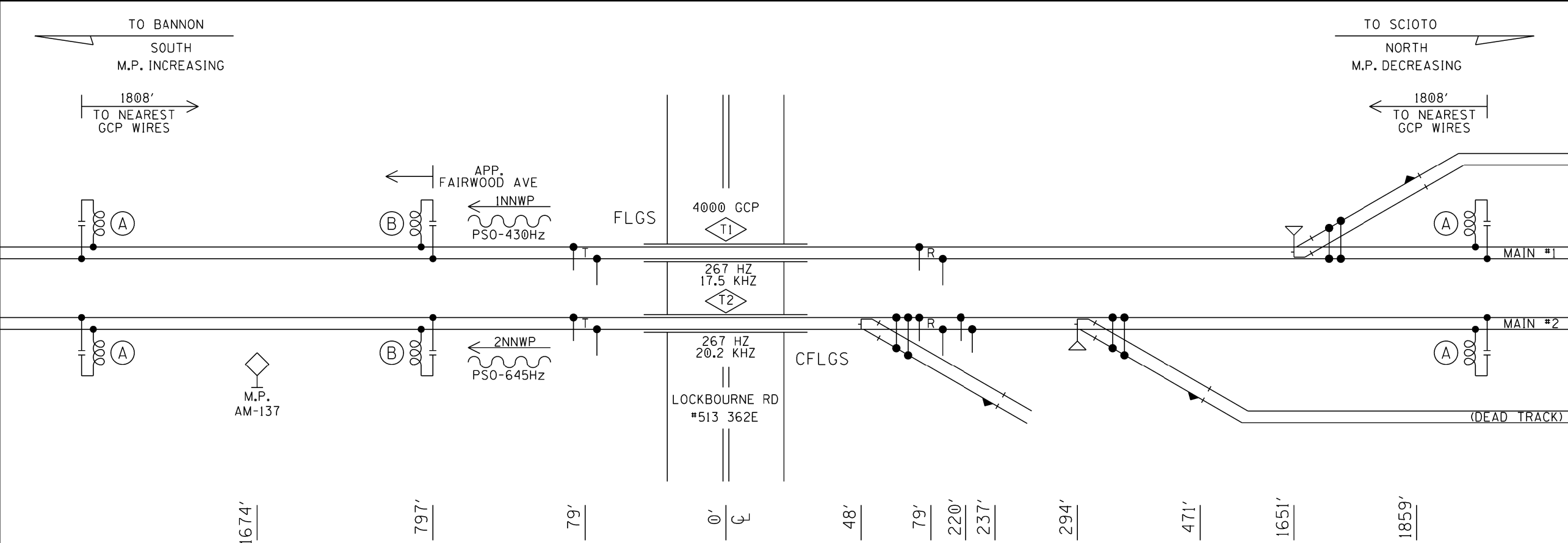
APPROVED BY STATE

APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER

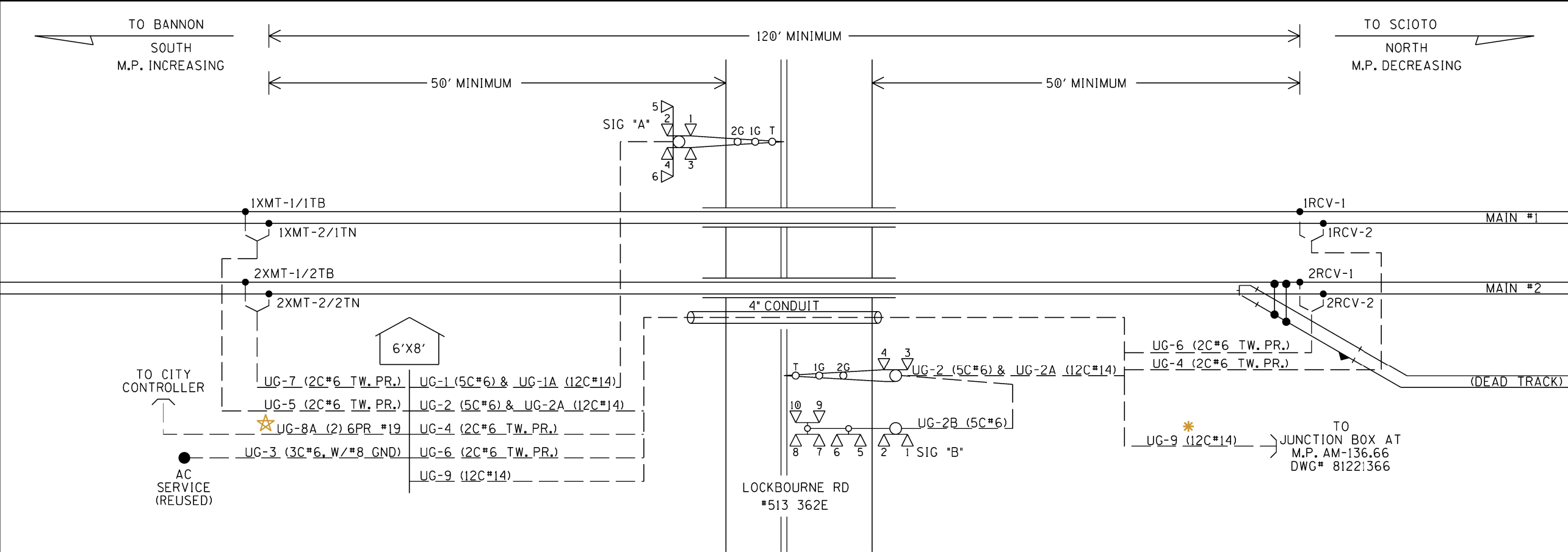




- (A) - MF-NBS FSS-1A 250849-000 (267HZ)
- (B) - MF-NBS FSS-1A 250849-000 (151HZ)

PROFILE

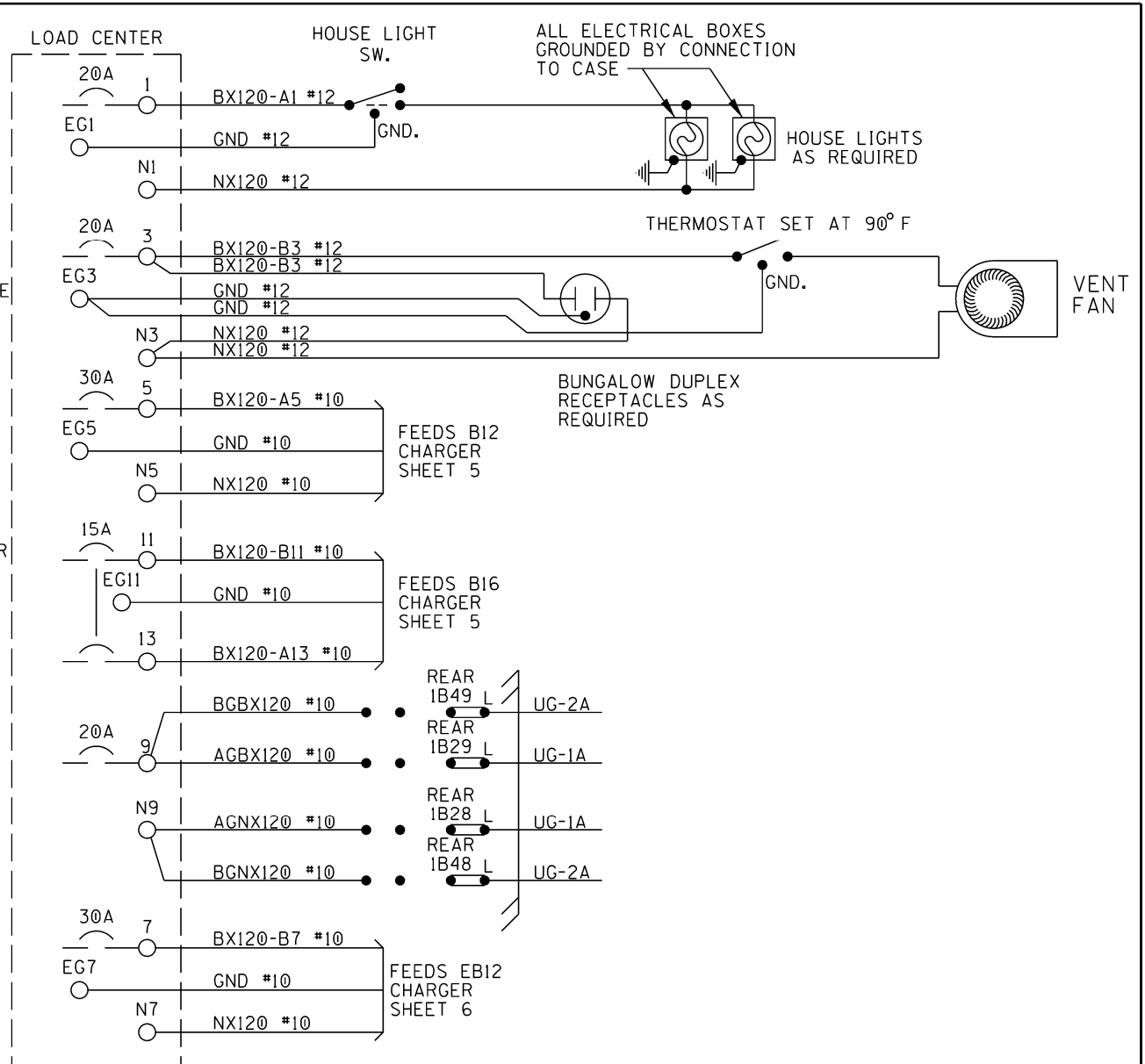
REVISION INITIALS	WJK/XRL 12-13-17											PROPERTY PENNSYLVANIA R.R.	IN SERVICE:		WESTERN BRANCH		No. R-	
														- -	CADD or DWG. No.	81221365.02	SHEET No.	2 of 27



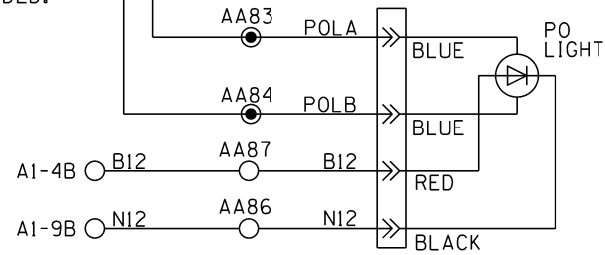
UG-1-5CUG #6	UG-1A-12CUG #14	UG-2A-12CUG #14	UG-2B-5CUG #6	UG-4-TW. PR. #6	UG-6-TW. PR. #6	★UG-8-6PR UG #19	★UG-8A-6PR #19	★UG-9-12CUG #14
AEC AEZ AEB B16-A N16-A	NAXG AXG IAXX AXX XGP1 AGD ACBX120 ACNX120 SPARE SPARE SPARE SPARE	NBXG BXC IBXX BXX XGP1 XGP BCD BGBX120 BGNX120 SPARE SPARE SPARE SPARE	BEC BEZ BEB SPARE SPARE UG-3-3CUG #6 W/#8 GND BX120-A BX120-B NX120 GND	IRCV-1 IRCV-2 UG-5-TW. PR. #6 1XMT-1/1TB 1XMT-2/1TN	2RCV-1 2RCV-2 UG-7-TW. PR. #6 2XMT-1/2TB 2XMT-2/2TN	INT2 SUPV SIMPE SIMPEI ISLP ISLP1 GDP GDP1 GPP GPP1 TSH NTSH	SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE	N1NWP NN1NWP N2NWP NN2NWP NXNWP NNXNWP SPARE SPARE SPARE SPARE SPARE SPARE

CABLE PLAN

★ = EXISTING CABLE
★ = FURNISHED BY STATE.



SQUARE "D" PART NUMBERS:
 LOAD CENTER———Q0116L125G
 10A 1P CIR BKR ——Q0110
 10A 2P CIR BKR ——Q0210
 15A 2P CIR BKR ——Q0215
 20A 1P CIR BKR ——Q0120
 30A 1P CIR BKR ——Q0130
 30A 2P CIR BKR ——Q0230
 40A 2P CIR BKR ——Q0240
 100A 2P CIR BKR ——Q02100
 MECH INTERLOCK PK4BTM4LA



SIDE A

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

GENERATOR RECEPTACLE:
MALE CONNECTOR - NEMA L1430-FI

DESIGNED BY:		 NORFOLK SOUTHERN	
RBA	08-23-17		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-136.53
XRL	08-23-17		
CHECKED BY:		COLUMBUS, OH CFLGS AT LOCKBOURNE RD	
PEH	10-13-17		
IN SERVICE:		WESTERN BRANCH	FILE No. R-
	- -	CADD or DWG. No. 81221365.04	SHEET No. 4 of 27

REVISION	WJK/XRL											PROPERTY PENNSYLVANIA R.R.	TITLE IN SERVICE:	CADD or DWG. No.	SHEET No.	R- of	WESTERN BRANCH	No. R-
INITIALS	12-13-17											PENNSYLVANIA R.R.	- -	81221365.04	4	of	27	

REMOVAL OF THE SSCCIII MODULE
WILL CAUSE THE GATE(S) TO
DROP BUT THE LIGHTS WILL
NOT ACTIVATE

ASSURE CORRECT POLARITY
OF THE SSCIII MODULE OR
SEVERE DAMAGE WILL OCCUR.



ENSURE THE DISPLAY MODULE HEATER IS
DISABLED. LEAVING THE DISPLAY HEATER ENABLED
WILL REDUCE THE AMOUNT OF BATTERY STANDBY
TIME IN THE EVENT OF AN AC POWER FAILURE.

MODUL BAYS
SHOWN ON NEXT SHEET

* = MAIN AND STANDBY MAY USE RIO IN
TRACKS 2, 5, AND 6 SLOTS
(M3, M6, AND M7)

DESIGNED BY:	 NORFOLK SOUTHERN	
RBA 08-23-17		
DRAWN BY:	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-136.53
XRL 08-23-17		
CHECKED BY:	COLUMBUS, OH CFLGS AT LOCKBOURNE RD	
PEH 10-13-17		
IN SERVICE:	WESTERN BRANCH	FILE No. R-
- -	CADD or DWG. No. 81221365.07	SHEET 7 of 27

[illegible]

Program Report

Location and SIN

DOT Number: 513362E
Milepost Number: AM-136.53
Site Name: LOCKBOURNE RD

SIN: 755023704816

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): 1077BBEE
Office Check Number: 1077BBEE
Config. Check Number: 69E7ED4D
(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 = R10
Track 6/R10 3 Slot = Not Used
SSCC-1 Slot = SSCC3i
SSCC-2 Slot = SSCC3i
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 = Advnce
Adv Preempt Delay = 6 sec
Preempt Hlth IP Used = Yes
Adv Preempt IP Used = No
Traffic Sys Hlth IP Used = Yes
Gate Down Logic Used = Yes
Second Trn Logic Used = Yes

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
Track 1: Prmpt Used = Yes

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
Track 2: Prmpt Used = Yes

GCP: track 1
Track 1: GCP Freq Category = Other
Track 1: GCP Frequency = 267 Hz
Track 1: Approach Distance = 1808 ft
Track 1: Uni/Bi/Sim-Bidirnl = Bidirnl
Track 1: GCP Transmit Level = High
Track 1: Island Connection = Isl1
Track 1: Island Distance = 158 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: Cancel Pickup 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 preempt
Track 1: Prmpt Warning Time = 36 sec
Track 1: Prmpt Offset Distance = 0 ft
Track 1: Switch MS EZ Level = 10
Track 1: Prmpt MS/GCP Mode = Pred
Track 1: Prmpt Pickup Delay = 15 sec
Track 1: Prmpt Enable = 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 Ctrl IP 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: Bidirn 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 = Other
Track 2: GCP Frequency = 267 Hz
Track 2: Approach Distance = 1808 ft
Track 2: Uni/Bi/Sim-Bidirnl = Bidirnl
Track 2: GCP Transmit Level = High
Track 2: Island Connection = Isl2
Track 2: Island Distance = 158 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: Cancel Pickup 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 preempt
Track 2: Prmpt Warning Time = 36 sec
Track 2: Prmpt Offset Distance = 0 ft
Track 2: Switch MS EZ Level = 10
Track 2: Prmpt MS/GCP Mode = Pred
Track 2: Prmpt Pickup Delay = 15 sec
Track 2: Prmpt Enable = 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 Ctrl IP 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: Bidirn 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: Isl Frequency = 17.5 kHz
Track 1: Pickup Delay (2s +) = 0 sec
Track 1: Isl Enable IP Used = No

ISLAND: track 2
Track 2: Isl Frequency = 20.2 kHz
Track 2: Pickup Delay (2s +) = 0 sec
Track 2: Isl Enable IP Used = No

4000 GCP PROGRAMMING SETUP

REVISION										WJK/XRL																PROPERTY		IN SERVICE:		WESTERN BRANCH		No. R-			
INITIALS										12-13-17																PENNSYLVANIA R.R.						CADD or DWG. No. 81221365.09		SHEET 9 of 27	

AND: track Anding
AND 1 XR Used = Yes
AND 2 Used = Yes
AND 3 Used = Yes
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

AND: AND 2
AND 2 Track 1 = IslOnly
AND 2 Track 2 = IslOnly
AND 2 Enable Used = No
AND 2 Wrap Used = No

AND: AND 3
AND 3 Track 1 = Not Used
AND 3 Track 2 = Not Used
AND 3 Enable Used = Yes
AND 3 Enable Pickup = 0 sec
AND 3 Enable Drop = 0 sec
AND 3 Wrap Used = Yes

ADVANCED: MS restart
MS/GCP Restart Used = No

ADVANCED: out of service
OOS Control= Display+OOS IPs
OOS Timeout = Yes
OOS Timeout = 1 hrs

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

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 = Yes
Int.1 Sets = GD 1.1
Int.1 Set by = Passthru State 1
Int.2 Sets = GD 1.2
Int.2 Set by = Passthru State 2
Int.3 Sets = AND 3 Wrap
Int.3 Set by = Gate Dwn Indication
Int.4 Sets = AND 3 Enable
Int.4 Set by = Passthru State 1

ADVANCED: internalI/O 2
Int.5 Sets = AND 3 Enable
Int.5 Set by = Passthru State 2
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 CallRpt 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
BellOn Gate Rising = No
Mute BellOn 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 NeutralTest = Off
Aux-1 Xng CtrlUsed = 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 NeutralTest = Off
Aux-2 Xng CtrlUsed = 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

OUTPUT: assignment page 2
OUT 5.1 = Adv Preempt
OUT 5.2 = AND 1 XR
OUT 5.3 = AND 2
OUT 5.4 = AND 3

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

INPUT: assignment page 2
IN 5.1 = Trf Sys Hlth
IN 5.2 = Preempt Health
IN 5.3 = Not Used
IN 5.4 = 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 = Passthru State 2
IN 7.3 = AND 1 XR Enable
IN 7.4 = Passthru State 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 = General1
Rly 2 = Not Used

SEAR: inputs
SP 2.1 = POK 1
SP 3.1 = Not Used
SP 4.1 = 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
IN 5.3 = Not Used
IN 5.4 = 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

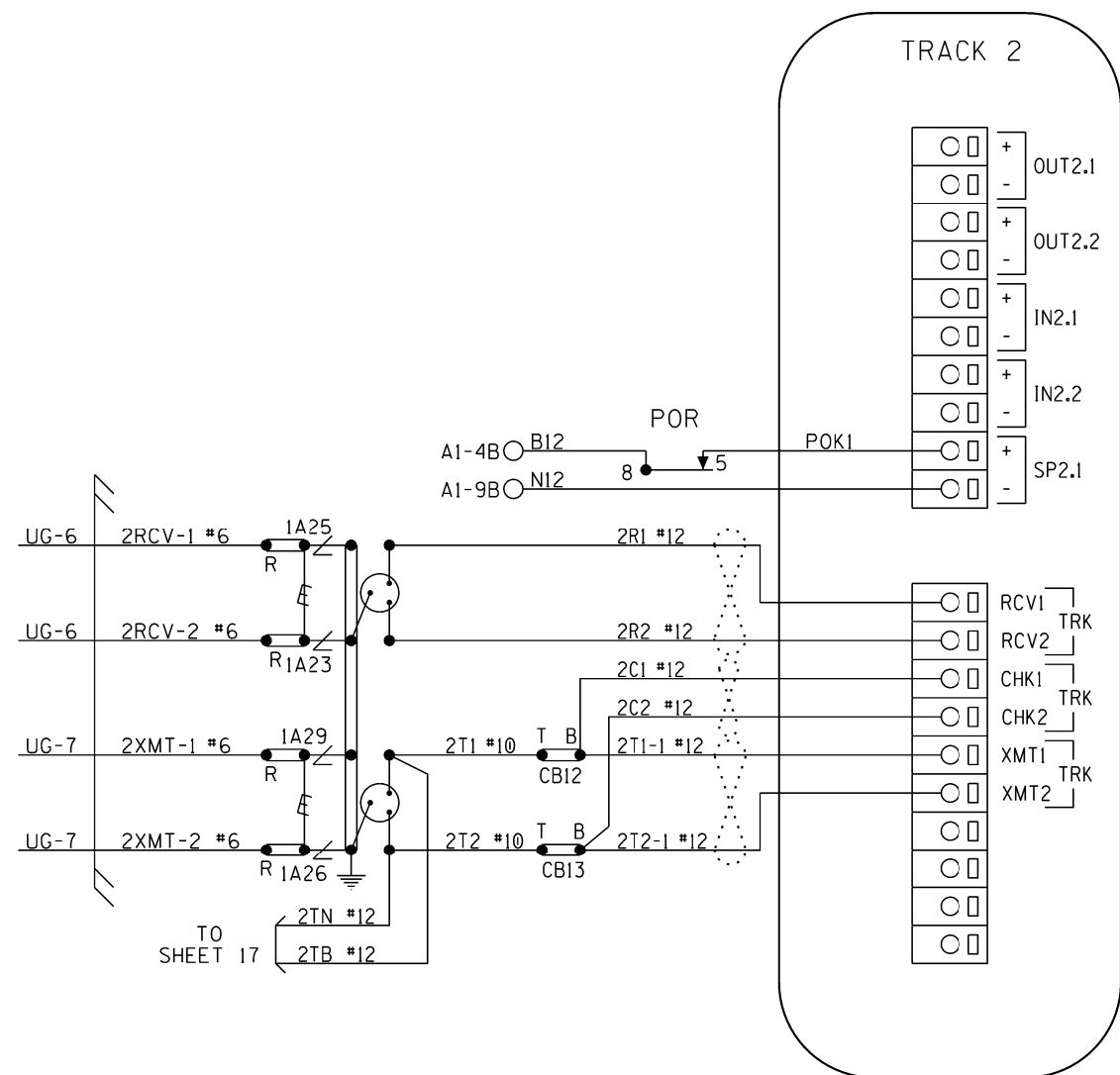
SITE: programming
Radio Subnode = 1
Field Password = Off
Low Battery Enabled = Off

Configuration Package File

Filename: 81221365.pac

4000 GCP PROGRAMMING SETUP

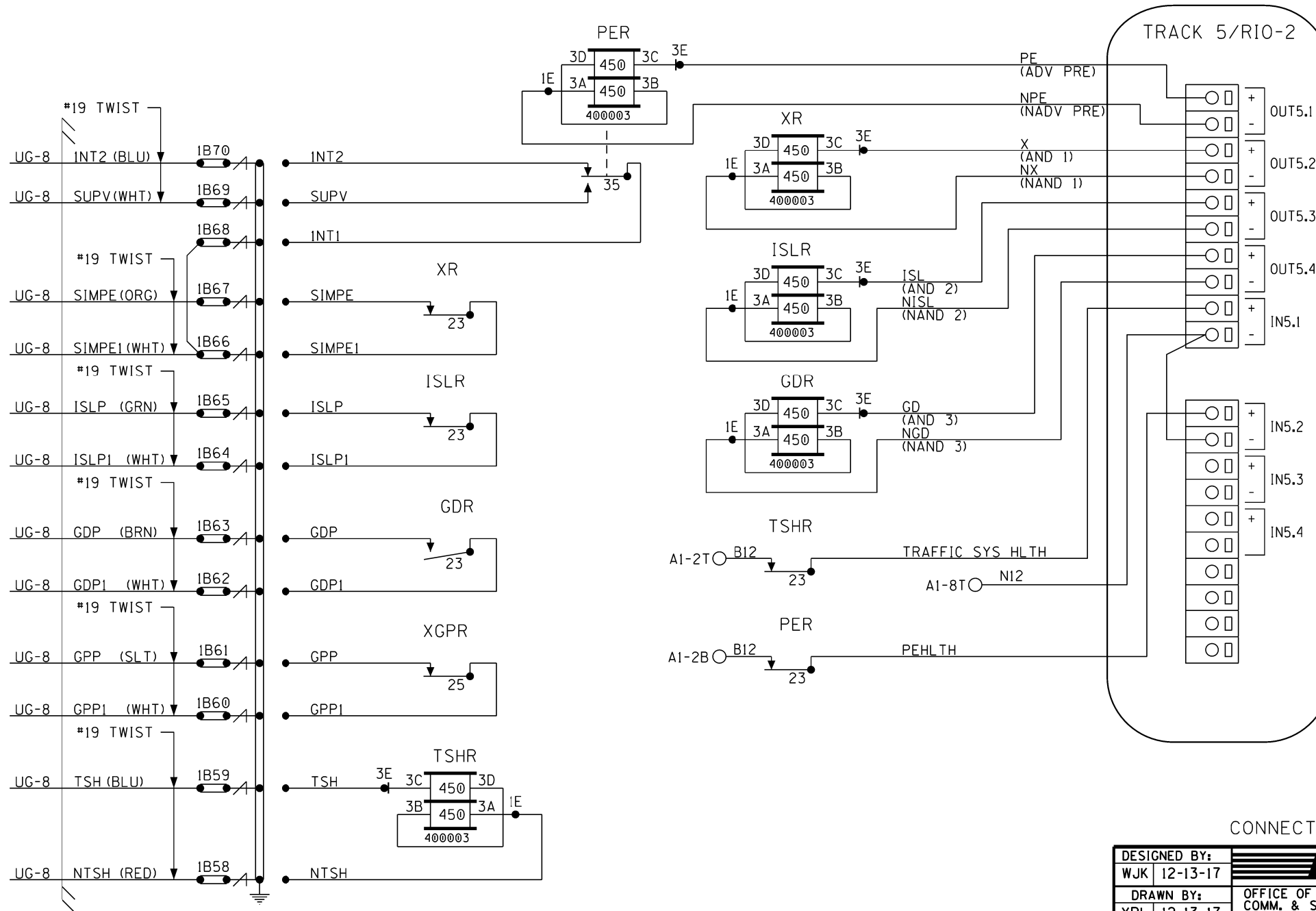
REVISION WJK/XRL										PROPERTY PENNSYLVANIA R.R.		DESIGNED BY: RBA 08-23-17			
INITIALS 12-13-17												DRAWN BY: XRL 08-23-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: AM-136.53
												CHECKED BY: PEH 10-13-17	COLUMBUS, OH CFLGS AT LOCKBOURNE RD		
												IN SERVICE:	WESTERN BRANCH		FILE R-
												- -	CADD or DWG. No.	81221365.10	SHEET 10 of 27



 = TWIST

DESIGNED BY:	RBA 08-23-17		 NORFOLK SOUTHERN	
DRAWN BY:	XRL 08-23-17		OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-136.53
CHECKED BY:	PEH 10-13-17		COLUMBUS, OH CFLGS AT LOCKBOURNE RD	
IN SERVICE:			WESTERN BRANCH	FILE No. R-
	- -	CADD or DWG. No.	81221365.11	SHEET 11 of 27

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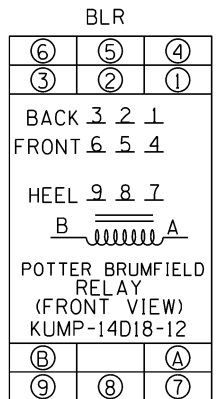
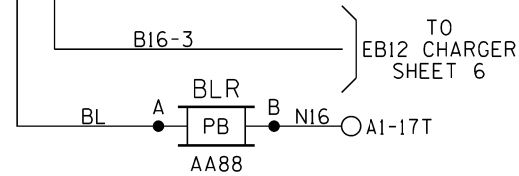
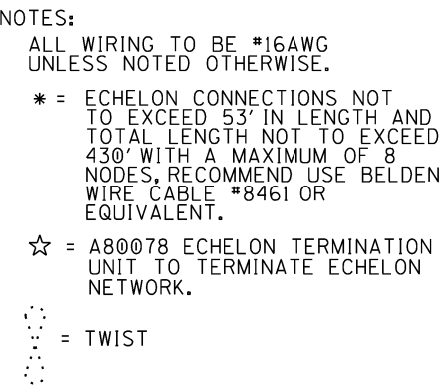
CONNECTORS FOR MODULES (A80413)

DESIGNED BY:	WJK 12-13-17		
DRAWN BY:	XRL 12-13-17		
CHECKED BY:	PEH 01-05-18	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
IN SERVICE:	- -	COLUMBUS, OH CFLGS AT LOCKBOURNE RD	
		WESTERN BRANCH	FILE R-
		CADD or DWG. No. 81221365.12	SHEET 12 of 27

ALL WIRING TO BE #16AWG
UNLESS NOTED OTHERWISE.

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.



CPU MODULE, SEAR III & VHF HOOK-UPS

DESIGNED BY:		 NORFOLK SOUTHERN	
RBA	08-23-17		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT	M.P.: AM-136.53
XRL	08-23-17	COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY:		COLUMBUS, OH	
PEH	10-13-17	CFLGS AT LOCKBOURNE RD	
IN SERVICE:		WESTERN BRANCH	FILE NO. R-
	- -	CADD or DWG. No. 81221365.13	SHEET 13 of 27

SITE SET UP PROCEDURE									
FUNCTION			LED DISPLAY						
DATE/TIME									
AUTOMATIC DST ADJUSTMENT			YES						
TIME ZONE			EST						
SITE NAME			LOCKBOURNE RD						
MILEPOST			AM-136.53						
DOT #			513362E						
TESTER TYPE			CROSSING						
DATE FORMAT			MM-DD-YYYY						
TEMP FORMAT			FAHRENHEIT						
INDICATE HOLD (SEC)			0						
INDICATE REFRESH (SEC)			60						
SITE ATCS			7.550.237.048.03.01						
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	3
BATTERY MON USED	NO
PREEMPTION	YES
INTERNAL CROSSING CONTROLLERS	2
EXTERNAL CROSSING CONTROLLERS	0
VHF COMMUNICATOR	YES
DTMF ACTIVATION	YES
**** ACTIVATION CODE	362
ACTIVATION TIMEOUT (SECONDS)	60
ILOD MODULES	0
***** ANY LED BULBS USED	NO
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:
RBA | 08-23-17

DRAWN BY:
XRL | 08-23-17

CHECKED BY:
PEH | 10-13-17

IN SERVICE:
- -

NS NORFOLK SOUTHERN

OFFICE OF ASS'T. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA. M.P.: AM-136.53

COLUMBUS, OH
CFLGS AT LOCKBOURNE RD

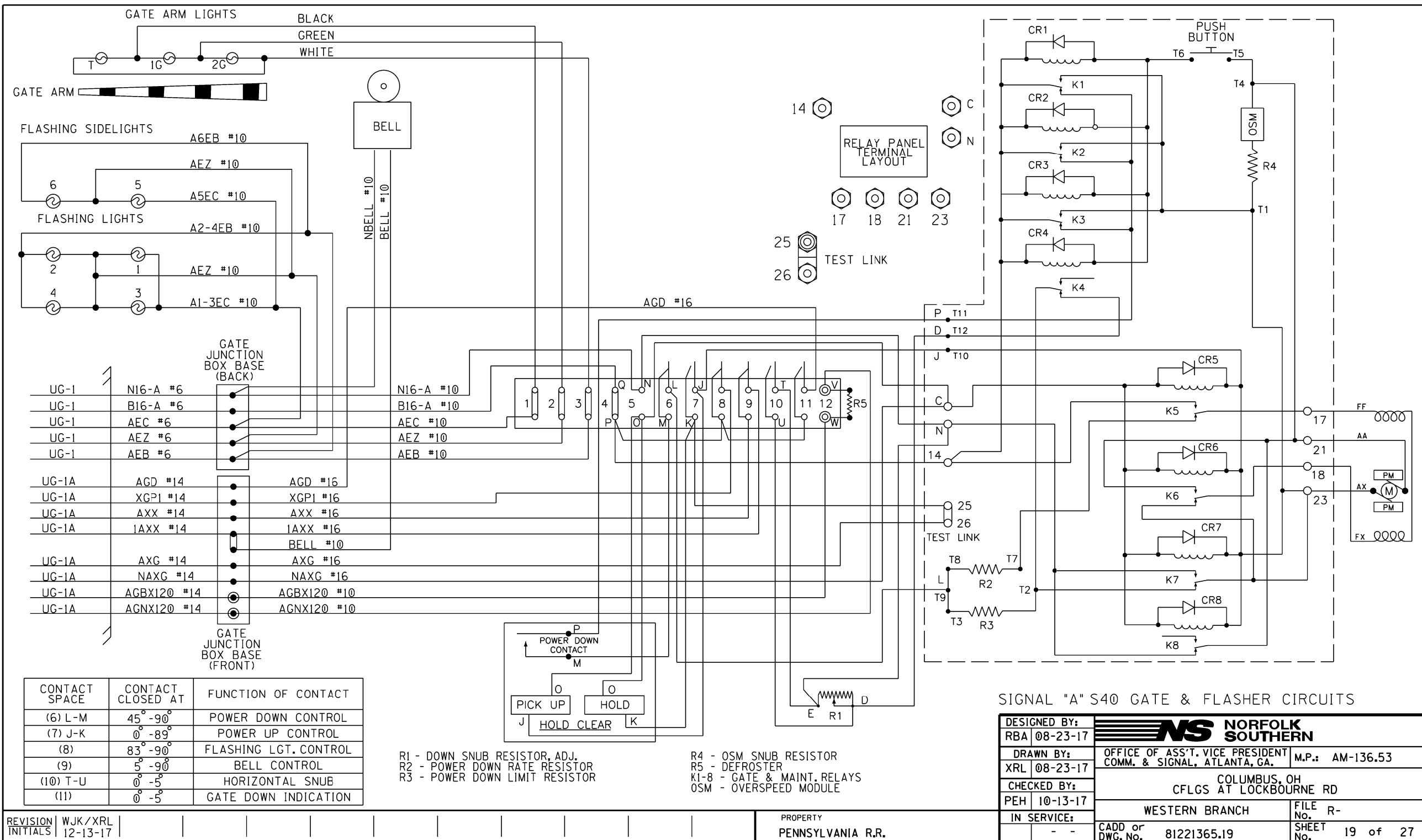
WESTERN BRANCH FILE R-

CADD or DWG. No. 81221365.14 SHEET No. 14 of 27

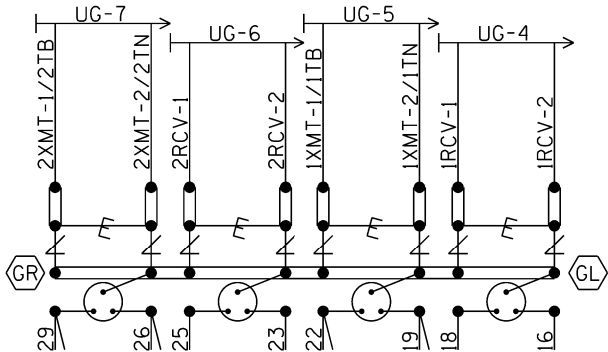


DESIGNED BY:	RBA 08-23-17		 NORFOLK SOUTHERN	
DRAWN BY:	XRL 08-23-17		OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: AM-136.53	
CHECKED BY:	PEH 10-13-17		COLUMBUS, OH CFLGS AT LOCKBOURNE RD	
IN SERVICE:			WESTERN BRANCH	FILE No. R-
	- -	CADD or DWG. No.	81221365.18	SHEET 18 of 27

[illegible]



LEFT TWO ROWS TERMINAL BOARD 1



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



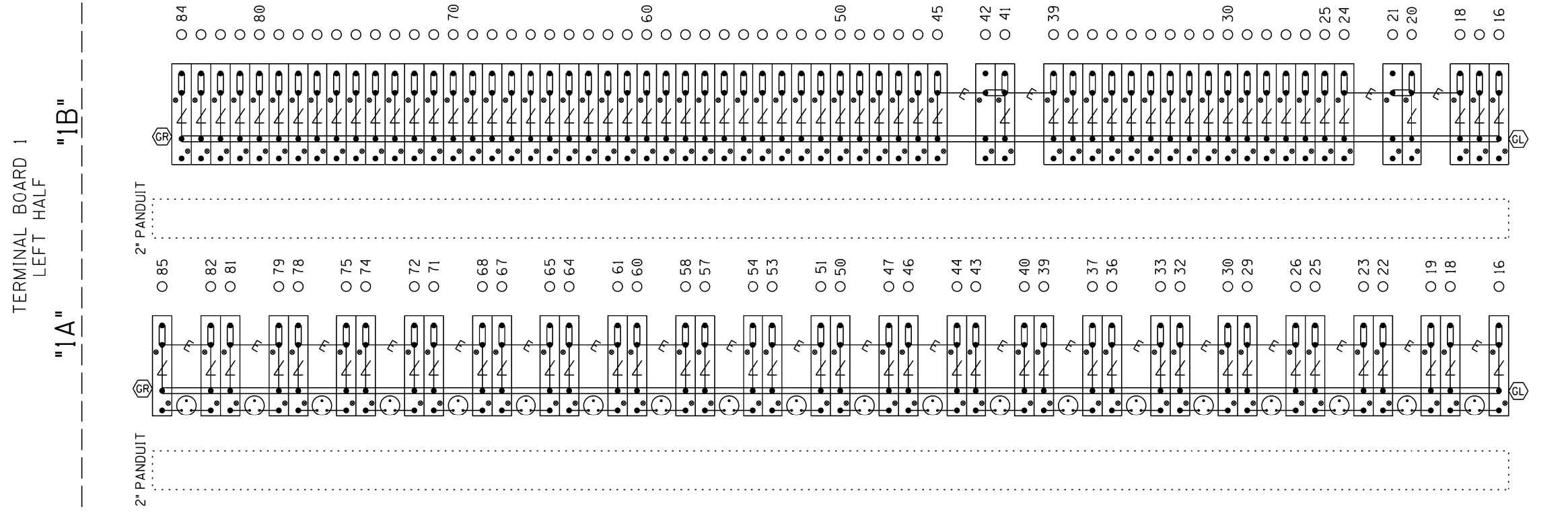
 = TERMINALS GROUNDED TO SHIELD.
 4 POST BLOCKS USE EITHER -
 GR - SERMMI PART NO. 61278
 GL - SERMMI PART NO. 61278-1.

BACKBOARD 1A & 1B

DESIGNED BY:	RBA 08-23-17	 NORFOLK SOUTHERN	
DRAWN BY:	XRL 08-23-17	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-136.53
CHECKED BY:	PEH 10-13-17	COLUMBUS, OH CFLGS AT LOCKBOURNE RD	
IN SERVICE:	- -	WESTERN BRANCH	FILE R- No. 21 of 27
		CADD or DWG. No. 81221365.21	SHEET No. 21 of 27

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



~~E~~ = 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

DESIGNED BY:	 NORFOLK SOUTHERN		
RBA 08-23-17			
DRAWN BY:	OFFICE OF ASST. VICE PRESIDENT		M.P.: AM-136.53
XRL 08-23-17	COMM. & SIGNAL, ATLANTA, GA.		
CHECKED BY:	COLUMBUS, OH		
PEH 10-13-17	CFLGS AT LOCKBOURNE RD		
IN SERVICE:	WESTERN BRANCH		FILE No. R-
	CADD or DWG. No.	81221365.23	SHEET No. 23 of 27

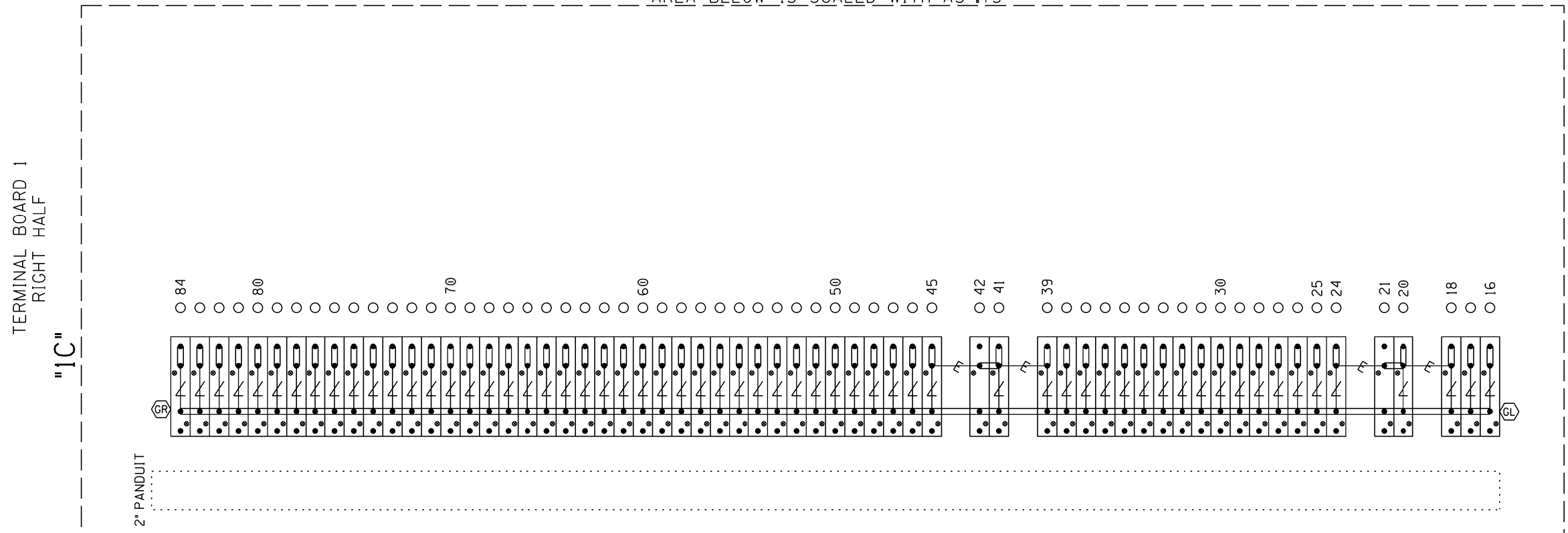
= INDICATES PLACEMENT
OF PANDUIT

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

[illegible]

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



~~E~~ = 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.

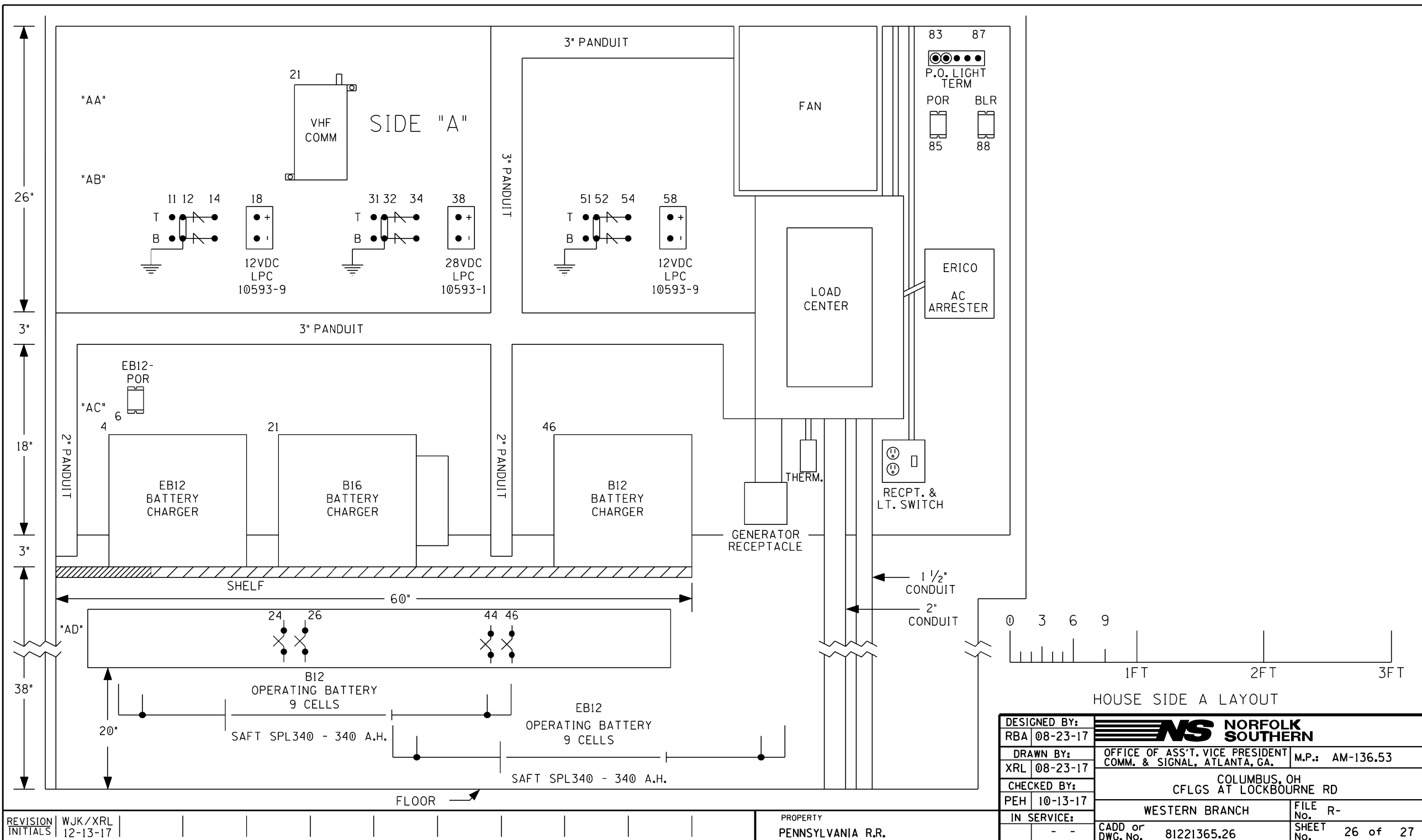
FARADAY SHIELD 1C

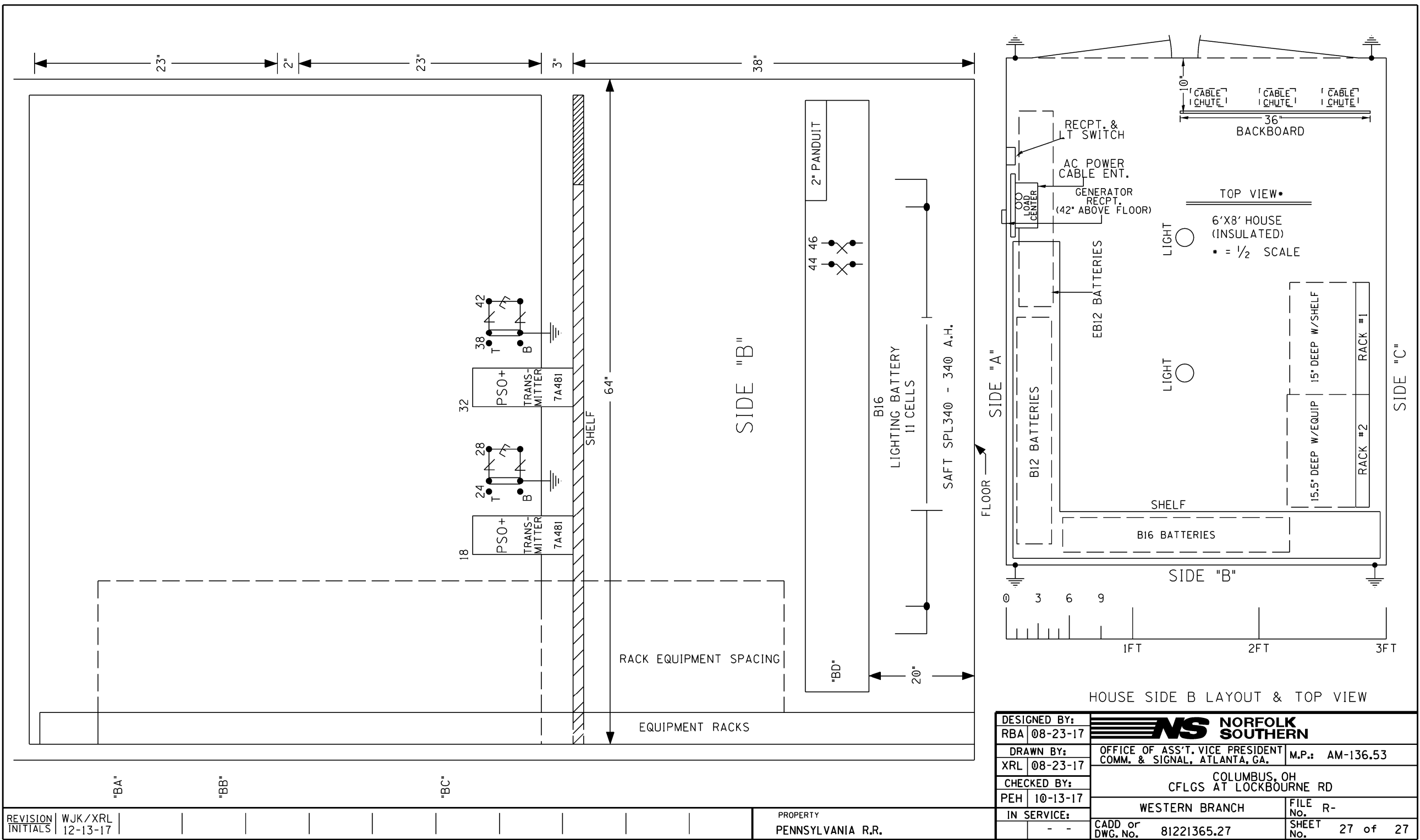
DESIGNED BY:	RBA 08-23-17		 NORFOLK SOUTHERN	
DRAWN BY:	XRL 08-23-17		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-136.53
CHECKED BY:	PEH 10-13-17		COLUMBUS, OH CFLGS AT LOCKBOURNE RD	
IN SERVICE:			WESTERN BRANCH	FILE NO. R-
	- -	CADD or DWG. No.	81221365.24	SHEET NO. 24 of 27

= 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.

[illegible]







NORFOLK
SOUTHERN

PROJECT NO.: 10.0081

DATE: 12/13/17

NORFOLK SOUTHERN MATERIAL LIST SIGNAL & ELECTRICAL DEPARTMENT

LOCATION: COLUMBUS, OH

ROAD: LOCKBOURNE RD

MILEPOST: AM-136.53

DWG. NO.: 81221365

STATE PROJECT NO.: PID 105415

COUNTY: FRANKLIN

DOT NO.: 513362E

PROJECT NO.: 10.0081

FILE NO.: CX0120026

AFE NO.: N/A

TYPE SIGNALS: CFLGS

4000 CFLGS 6X8

Qty.	Class-Item-CD	UI	Item Description
3	670-360693-4	EA	AAR/DOT NUMBER PLATE/DECAL, ORDER 3 PER PROJECT. 60 DAY LEAD TIME. SUPPLIED BY S'TRAN.
23	670-119241-4	EA	ARRESTOR, LIGHTNING HEAVY DUTY CLEAR VIEW SAFETRAN 022585-1X
29	105-002620-4	EA	BATTERY, NICAD 340AH, MODEL SPL340
1	670-503047-4	EA	BELL, CROSSING ELECTRONIC GENERL SIGNAL, EB-3-360-5 CR 02-044350
2	670-980689-4	EA	BRACKET HIGH WIND, (RIGID 3'), WIG- 191036, WALRUS TUSK TYPE
2	670-561375-4	EA	BRACKET, GATE SAVER, NEG385102GS, SPRING LOADED SWING AWAY ADAPTER FOR FIBERGLASS/ALUMINUM GATES, USE WITH ALL GATES
1	670-491449-4	EA	BUSS STRIP 36" COPPER, ERCO P/N B2700HC36
1	670-356949-4	EA	CABLE, 10' GENERATOR HOOK UP, SERRMI P/N 40524. FEMALE CONNECTOR
500	465-939422-4	LF	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL
600	465-292862-4	LF	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR
500	465-292929-4	LF	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL
350	465-791835-4	FT	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
1	670-070249-4	EA	CANTILEVER, WT/F ARM 24' W/WALKWAY KIT SAFTRAN #071294-24NS2
4	670-664917-4	EA	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
4	670-632520-4	EA	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
2	670-794453-4	EA	COUNTERWEIGHT PKAGE, 25-31'GATE S'TAN S- MECH ONLY, STAINLESS TO INCLUDE HUB, SUPPORT ARMS
8	670-760012-4	EA	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. =====TO COVER 2 LAMPS=====
1	670-986650-4	EA	DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING X'ING EQUIPMENT CONTAINER
2	670-228165-4	EA	EQUALIZER, SAFETRAN 022700-1X LESS BASE, MODERN NO. 700-1 SHUNT ARRESTER TRACK CIRCUITS CR 02-197950
1	670-000004-4	EA	FCC LICENSE FOR MONITOR/RADIO
2	670-000003-4	EA	FILL/STONE #57, QUANITY IS BASED ON TRUCK LOAD PLUS DELIVERY COST
1	670-744631-4	EA	FOUNDATION, CFLS FOR SAFETRAN MODEL "WT/F" ARMS 12' TO 30' SINGLE MAST, DIXIE# DP4B-SM12- 26-4, 5'10" CR 02-205902
2	670-015231-4	EA	FOUNDATION, DIXIE,S-2 GATE 2'6"X2'6"X5'6" ASSEMBLED
4	868658	EA	FSS-1A: (HARMION) MULTI-FREQ 86, 114, 151, 210, 267 Hz (250849-000)
2	670-005378-4	EA	GATE ARM, (FOR LEDS) ALUMINUM, 25-31 FT, ARM ASSEMBLY, INCLUDES GATE GUARD FOR GATE LIGHT CABLE. HIGH INTENSITY VERTICAL STRIPES.
1	670-710454-4	EA	GCP4000 - 3 TRK (6TC) - REDUNDANT - 40/60 AMP WIRED RACK EQUIP. FOR 6X8 XING SHELTER, (INCL. 6 TRK CHASSIS A80460, 6 TRK MODS. A80418, 2-SSCC A80405, 2 CPU A80403, 1 SEAR A80410, 1
1	670-477991-4	EA	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	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

4000 CFLGS 6X8

Qty.	Class-Item-CD	UI	Item Description
2	670-092155-4	EA	LAMP ASSY, LED GATE ARM KIT (INCLUDES 3 LAMPS COMPLETE WITH CABLES AND MTG. HARDWARE) REC #: 9298-1120
1	670-005054-4	EA	LAMP ASSY, LED, 12" MAST 1 WAY FRONT LIGHTS (IPN: 042003-L489XNS)
3	670-005057-4	EA	LAMP ASSY, LED, 4" CANT JURY ARM MAST (FRONT OR BACK) (IPN: 042003-L001534)
1	670-005066-4	EA	LAMP ASSY, LED, 5" MAST 1 WAY BACK LIGHTS (IPN: 042003-L001493)
1	670-005061-4	EA	LAMP ASSY, LED, 5" MAST 1 WAY SIDELIGHT (FIELD SIDE) (IPN: 042003-L001547)
1	670-005058-4	EA	LAMP ASSY, LED, 5" MAST BACK TO BACK LIGHTS (IPN: 042003-L487XNS)
23	670-440826-4	EA	LINK, SAFETAN 024620-1X INSL TESTING COMP 1 IN CENTER SIGNAL CIRCUITS CR 02-286662
7	255-590880-4	EA	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"
1	670-201210-4	EA	MAST, 12" CANTILEVER, FOR 21'-30' WT/F ARMS, INCL. LADDER KIT (IPN: 071271-30NS)
1	610-156588-4	EA	MAST, 5" ALUMIMUM (0&0) FOR LIGHT UNIT AND BRACKET WITH DBL. JCT. BOX BASE #070519-203X-2
1	670-637778-4	EA	MAST, 5" ALUMINUM 13'10" WITH DOUBLE JCT. BOX BASE. S'TRAN P# 070519-11AX.
2	670-521147-4	EA	MECHANISM, GATE MODEL S-40, WITH CONTACT HEATER, COMPLETE W/RELAY S'TRAN # 074000-W00090
1	670-000001-4	EA	MISC. EXPENSE, MATERAIL/FILL
1	000-000000-4	EA	MISC. EXPENSE, UNDERGROUND BORING
2	670-001355-4	EA	PACKAGE, HARDWARE SIGN 12 IN. (USE WITHWT/F MAST) MOUNTING, SERRMI A1250-8, HARMON @180004/0007,
2	670-001347-4	EA	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI A1250-5, HARMON @200965-000, OR
1	670-207365-4	EA	PACKAGE, HARDWARE SUPPORT FOR MOUNTING CROSSING SIGN ON WT/F CANTILEVER ARM 21'-40', SAFETAN P/N 071279-X11
1	670-004472-4	EA	PACKAGE, KIT FOR ADDITIONAL RECTIFIER KIT 40AMP FOR CROSSING LOCATION. INCLUDES ALL CHARGERS, WIRING AND PEREFERALS FROM BREAKER BOX TO PANEL. IPN: 003131-22X
2	255-646807-4	EA	PADLOCK, SAFETAN PART NO. 030399-29X SCREW TYPE FOR CIR CONTROLLER AND BTY. BOX
1	610-719870-4	EA	PEDESTAL ASSEMBLY, ARMORCAST P/N P6001205-NS, YELLOW 10"X11"X29" POLYETHYLENE INCL 45" WITH TERMINAL BLOCK
1	670-514605-4	EA	PINNACLE, W-C SECT 1-11, 4"& 5" REF K1 110-8 OR SAFETAN NO. @035045-503X
9	670-259211-4	EA	PLUG BOARD KIT, TYPE B-1 & VOLTAGE TEST TERMINAL, SAFETAN 420000-75X
1	165-902002-4	EA	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL
2	670-782071-4	EA	PSO+, TRANSMITTER ASSY, PSO+ TX CODE "A", FREQUENCY SELECTABLE, SAFETAN 7A481-0001
4	465-002899-4	EA	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES
1	670-742096-4	EA	RELAY INTERFACE PROBE, ULTRATECH PN 16031-00
2	670-024861-4	EA	RELAY RACK, SWING, FARADAY SHELTER FOR EIGHT B1 RELAYS, SAFETAN P/N 057883-1X
9	670-707995-4	EA	RELAY, TYPE B1, NEV LINE, 900 OHMS,.008 AMPERES GRS A62-308 OR SAFETAN @400003
1	670-215166-4	EA	RELAY,(AC INTERRUPT FOR SEARII)POTTER & BRUMFIELD 120V AC KUMP-14A18-120 SAFETAN P/N T18354

4000 CFLGS 6X8

Qty.	Class-Item-CD	UI	Item Description
2	435-805560-4	EA	SAND, 25LB BAG FOR CABLE ENTRANCE INTO THE SHELTER
1	670-113448-4	EA	SEARIII, (VHFC w/ANTENNA) - VHF COMMUNICATOR, SAFETRAN P/N A80276, 1/ PER CROSSING
1	670-749325-4	EA	SHELF, FOLDING, FOR LAPTOP USE IN FARADAY 6X8 SHELTER, SAFETRAN 052852-128X
1	670-756057-4	EA	SHELTER, 6'X8' ALUMN FARADAY W/2EA EQUIPMENT RACKS, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN RECEPTICAL, BREAKER BOX, GFI OUTLET FOR LAPTOP SHELF SAFETRAN 058400-68-
4	670-586967-4	EA	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT
1	670-397239-4	EA	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 12" MAST, SAFETRAN #T17216
1	670-393331-4	EA	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215
2	670-554843-4	EA	SIGN, 2 TRACK SIGN, HIGH INTENSITY, SAFETRAN #035207-2HX
3	670-016346-4	EA	SIGN, X-BUCK, HI-INTENSIVE REFLECTIVE FRT. & BACK FOR ALL STATES, SAFETRAN# 035200-91X
1	670-330382-4	RL	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS. "WARNING STOP DIGGING"
29	670-478560-4	EA	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR
11	670-007238-4	EA	UNIT, THE INSTALLATION AND WIRING OF A DEVICE WHICH REQUIRE A MINIMUM OF FOUR WIRE CONNECT-
1	450-986008-4	EA	WRENCH, TEST POST TYPE B DWG 55393-3, GR.1

SH. NO.	CONTENTS
NXI	INDEX SHEET
1	LAYOUT
2	PROFILE
3	CABLE PLAN
4	LOAD CENTER
5	BI2 & BI6 CHARGERS & BATTERIES
6	EBI2 CHARGER & BATTERY
7	4000 GCP 6-TK CHASSIS & I/O LAYOUT
8	4000 GCP 6-TK CHASSIS & MODULE LAYOUT
9	4000 GCP PROGRAMMING SETUP
10	4000 GCP PROGRAMMING SETUP
11	CONNECTORS FOR TRACK MODULES
12	CONNECTORS FOR TRACK MODULES
13	CPU MODULE, SEAR III & VHF HOOK-UPS
14	SEAR III PROGRAMMING SETUP
15	SSCC#1 MODULE HOOK-UP
16	SSCC#2 MODULE HOOK-UP
17	B-30 H.T. SWITCH CIRCUIT & PSO+ TRANSMITTER
18	PSO+ RECEIVER - 2PSOR
19	CANTILEVER FLASHER LIGHTS
20	SIGNAL "A" S40 GATE & FLASHER CIRCUITS
21	SIGNAL "B" S40 GATE & FLASHER CIRCUITS
22	BACKBOARD 1A & 1B
23	REAR BACKBOARD 1A & 1B
24	BACKBOARD DETAIL 1C
25	FARADAY SHIELD 1A & 1B
26	FARADAY SHIELD 1C
27	HOUSE SIDE C LAYOUT & RACK PLACEMENT
28	HOUSE SIDE A LAYOUT
29	HOUSE SIDE B LAYOUT & TOP VIEW

IN SERVICE _____ SIGNED _____ DATE _____

☐ S&E ENGINEERING COPY

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

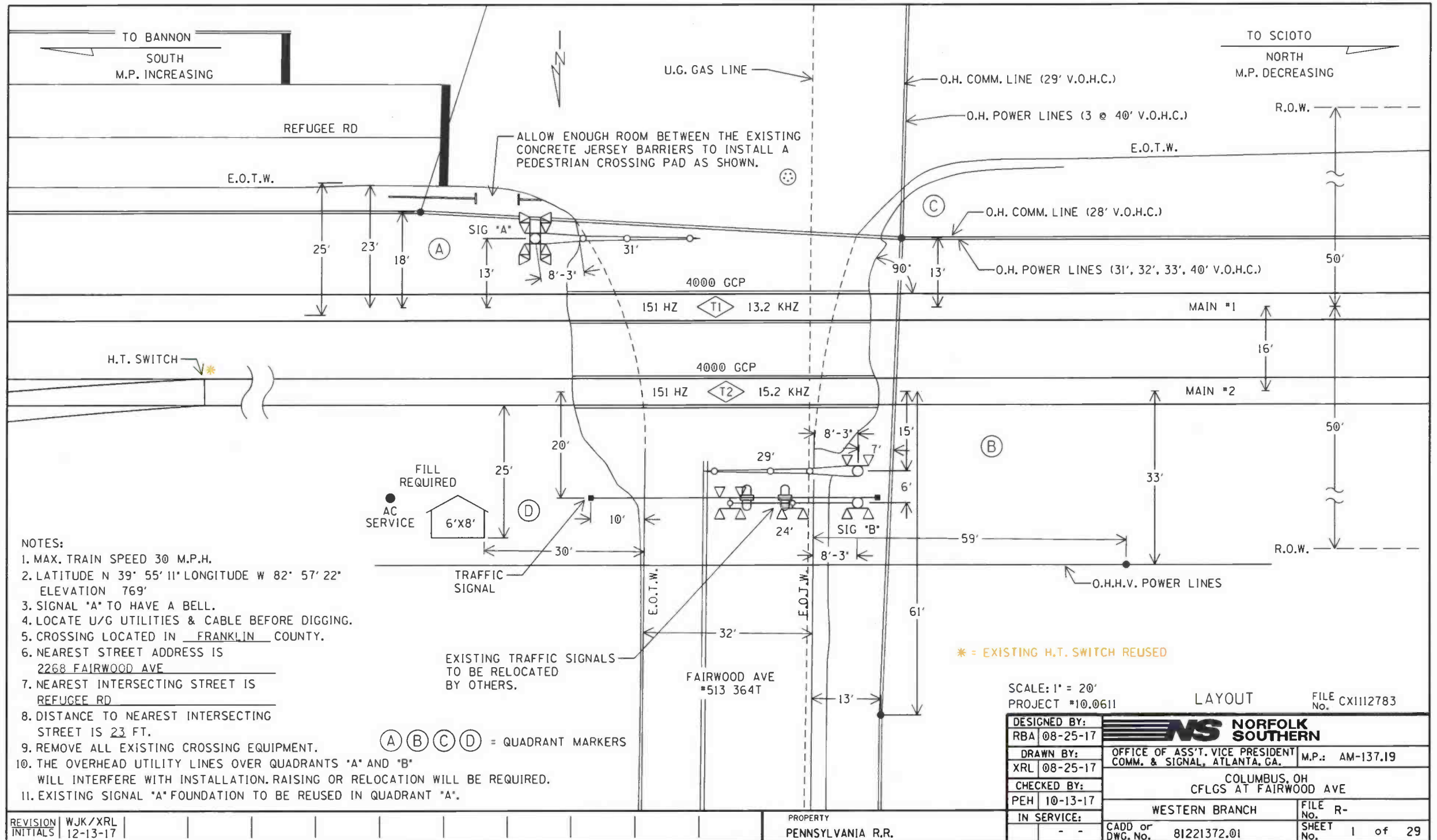
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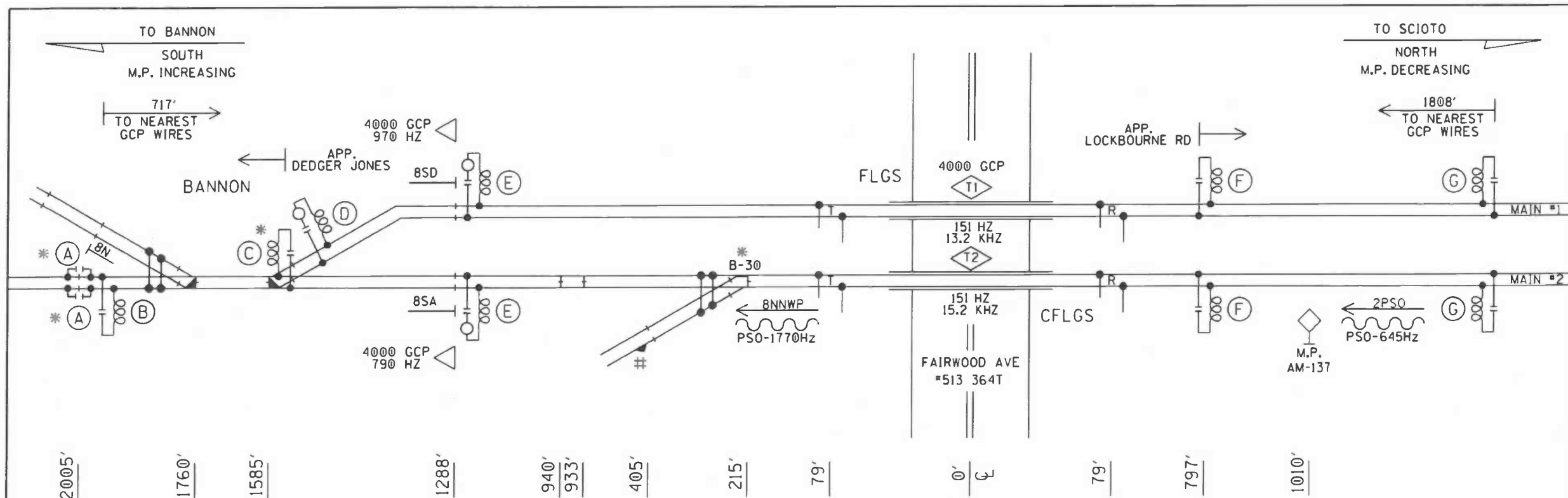
☐ PROJECT ENGINEER COPY

PROJECT *10.0611		INDEX SHEET		FILE No. CX1112783
DESIGNED BY:	RBA 08-25-17	 NORFOLK SOUTHERN		
DRAWN BY:	XRL 08-25-17			
CHECKED BY:	PEH 10-13-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: AM-137.19		
IN SERVICE:		COLUMBUS, OH		
		CFLGS AT FAIRWOOD AVE		
		WESTERN BRANCH		FILE R-
		CADD or DWG. No. 81221372.NXI		SHEET No. 1 of 1

REVISION INITIALS WJK/XRL 12-13-17

PROPERTY
PENNSYLVANIA R.R.





- (A) - DWBS *
- (B) - MF-NBS FSS-IF 250849-005 (790HZ)
- (C) - MF-NBS 62775-1543 (348HZ) *
- (D) - MF-NBS FSS-IF 250849-005 (970HZ)
W/227032-003-1000
- (E) - MF-NBS FSS-1A 250849-000 (151HZ)
W/227032-002-0750
- (F) - MF-NBS FSS-1A 250849-000 (267HZ)
- (G) - MF-NBS FSS-1A 250849-000 (151HZ)

* = EXISTING
= FIELD VERIFY H.T. DERAIL

PROFILE

DESIGNED BY: RBA 08-25-17	NS NORFOLK SOUTHERN	
DRAWN BY: XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY: PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	WESTERN BRANCH	FILE R- No. 2 of 29
	CADD or DWG. No. 81221372.02	

REVISION
INITIALS

WJK/XRL
12-13-17

PROPERTY
PENNSYLVANIA R.R.

TO BANNON
SOUTH
M.P. INCREASING

TO SCIOTO
NORTH
M.P. DECREASING

50' MINIMUM 120' MINIMUM 50' MINIMUM

SIG "A"

2G IG T

1XMT-1

1XMT-2

B-30

UG-9A
(5C*14)

2XMT-1/TB

2XMT-2/TN

6'X8'

UG-7 (2C*6 TW, PR.)

UG-1 (5C*6) & UG-1A (12C*14)

UG-5 (2C*6 TW, PR.)

UG-2 (5C*6) & UG-2A (12C*14)

UG-9 (5C*14)

UG-4 (2C*6 TW, PR.)

UG-8A (2) 6PR *19

UG-6 (2C*6 TW, PR.)

UG-3 (3C*6, W/*8 GND)

UG-10 (12C*14)

UG-11 (3C*6, W/*8 GND)

MAIN #1

IRCV-1

IRCV-2

2RCV-1/2PSOP1

2RCV-2/
N2PSOP1

MAIN #2

4" CONDUIT

UG-6 (2C*6 TW, PR.)

UG-4 (2C*6 TW, PR.)

UG-2 (5C*6) & UG-2A (12C*14)

UG-2B (5C*6)

FAIRWOOD AVE
*513 364T

SIG "B"

UG-10-12CUG *14

FAI-1SDAXP
NFAI-1SDAXP
FAI-2SDAXP
NFAI-2SDAXP
FAI-1SSEP
NFAI-1SSEP
FAI-2SSEP
NFAI-2SSEP
SPARE
SPARE
SPARE
SPARE

UG-8A-6PR *19

SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE
SPARE

UG-9-5CUG *14

NWP
NNWP
EB12
EN12
SPARE

UG-11-3CUG *6
W/*8 GND

BX120-A
BX120-B
NX120
GND

TO UNI SHELTER
DWG. 81221375

AC
SERVICE

TO CITY
CONTROLLER

UG-1-5CUG *6

AEC
AEZ
AEB
B16-A
N16-A

UG-1A-12CUG *14

NAXG
AXG
IAXX
AXX
XGPI
AGD
AGBX120
AGNX120
SPARE
SPARE
SPARE
SPARE

UG-2A-12CUG *14

NBXG
BXG
IBXX
BXX
XGP1
XGP
BGD
BGBX120
BGNX120
SPARE
SPARE
SPARE
SPARE

UG-2B-5CUG *6

BEC
BEZ
BEB
SPARE
SPARE

UG-3-3CUG *6
W/*8 GND

BX120-A
BX120-B
NX120
GND

UG-4-TW, PR. *6

IRCV-1
IRCV-2

UG-5-TW, PR. *6

1XMT-1
1XMT-2

UG-6-TW, PR. *6

2RCV-1/2PSOP1
2RCV-2/N2PSOP1

UG-7-TW, PR. *6

2XMT-1/TB
2XMT-2/TN

UG-8-6PR UG *19

INT2
SUPV
SIMPE
SIMPE1
ISLP
ISLP1
GDP
GDP1
GPP
GPP1
TSH
NTSH

CABLE PLAN

DESIGNED BY:	RBA 08-25-17	NS NORFOLK SOUTHERN	
DRAWN BY:	XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY:	PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	- -	WESTERN BRANCH	FILE No. R-
		CADD or DWG. No. 81221372.03	SHEET No. 3 of 29

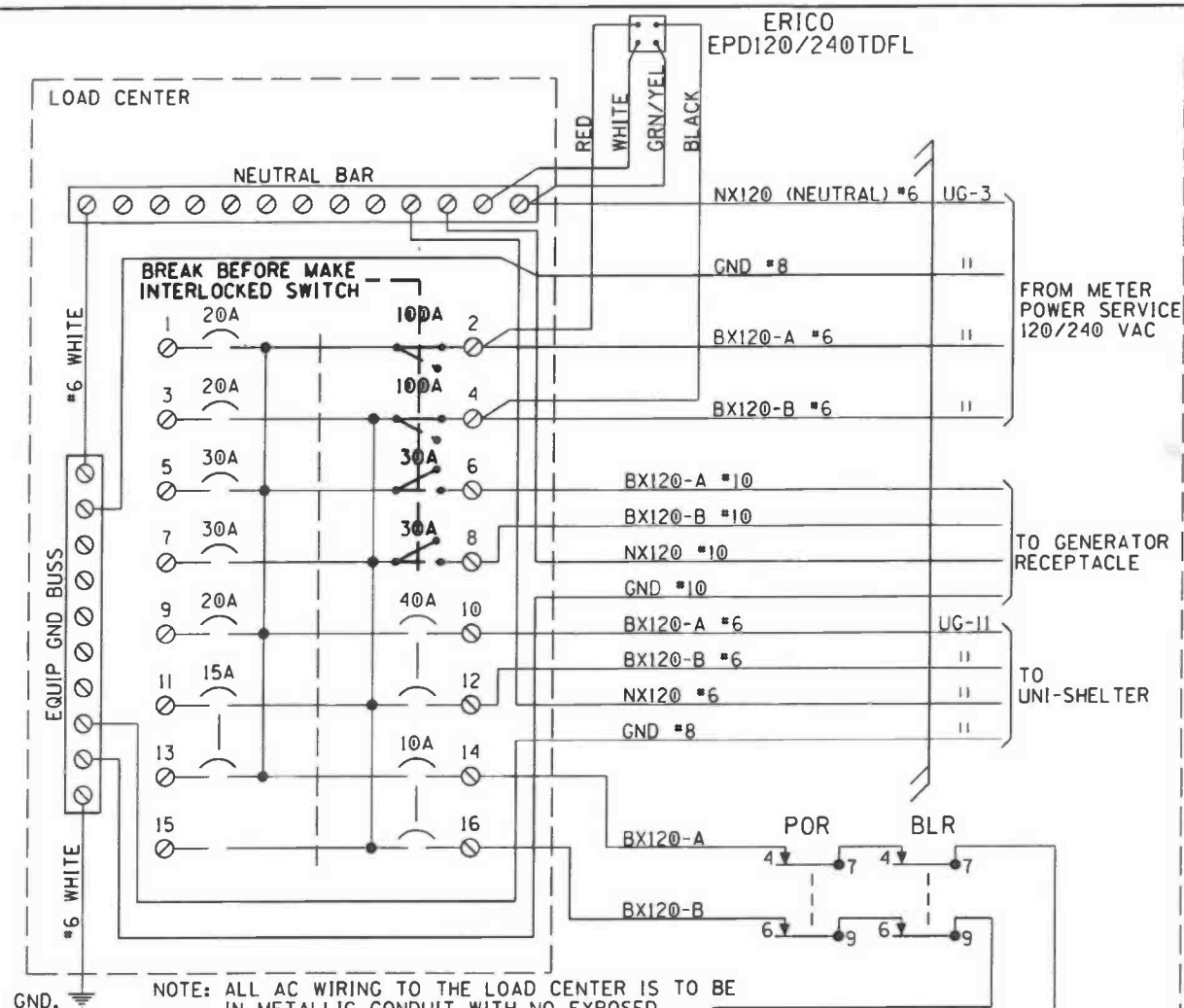
* = FIELD VERIFY H.T. DERAIL

☆ = FURNISHED BY STATE.

REVISION
INITIALS

WJK/XRL
12-13-17

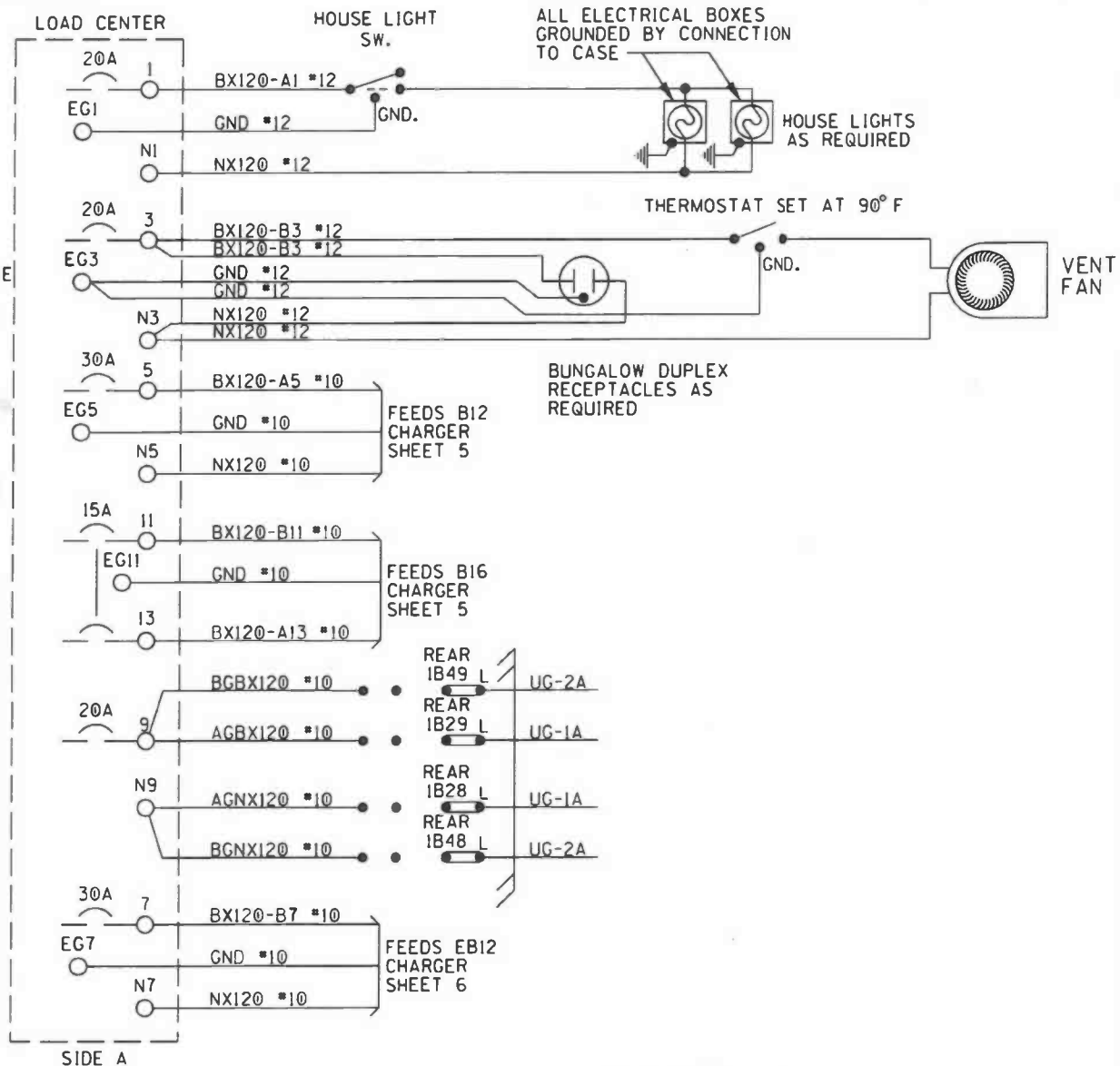
PROPERTY
PENNSYLVANIA R.R.



NOTE: ALL AC WIRING TO THE LOAD CENTER 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
15A 2P CIR BKR — Q0215
20A 1P CIR BKR — Q0120
30A 1P CIR BKR — Q0130
30A 2P CIR BKR — Q0230
40A 2P CIR BKR — Q0240
100A 2P CIR BKR — Q02100
MECH INTERLOCK — PK4DTIM4LA



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

GENERATOR RECEPTACLE:
MALE CONNECTOR - NEMA L1430-F1

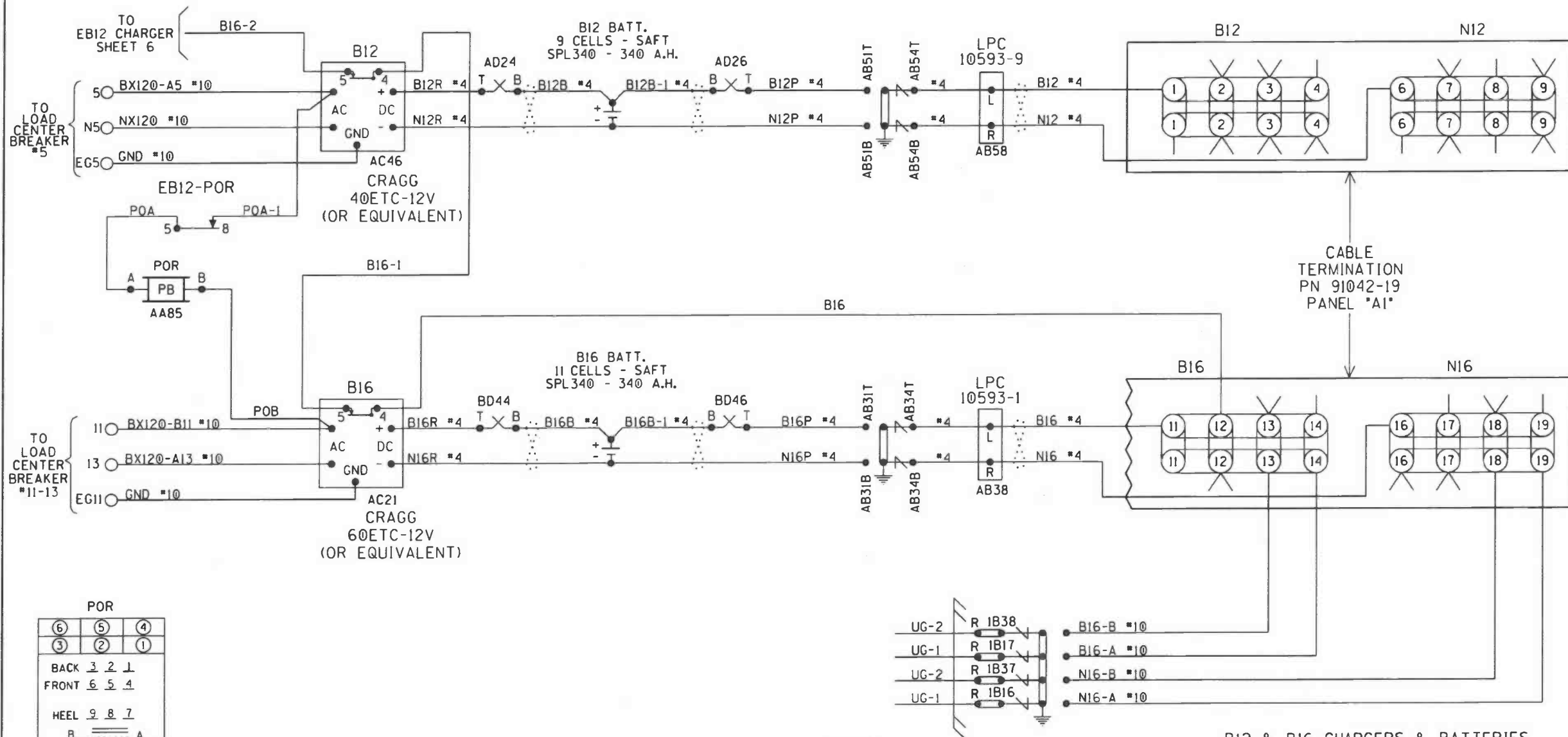
LOAD CENTER

DESIGNED BY: RBA 08-25-17		
DRAWN BY: XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY: PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	WESTERN BRANCH	FILE R-
	CADD or DWG. No. 81221372.04	SHEET No. 4 of 29

REVISION
INITIALS

WJK/XRL
12-13-17

PROPERTY
PENNSYLVANIA R.R.



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

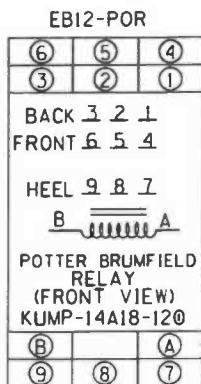
= TWIST

B12 & B16 CHARGERS & BATTERIES

DESIGNED BY: RBA 08-25-17	NORFOLK SOUTHERN	
DRAWN BY: XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY: PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	WESTERN BRANCH	FILE R-
	CADD or DWG. No. 81221372.05	SHEET No. 5 of 29

REVISION WJK/XRL
INITIALS 12-13-17

PROPERTY
PENNSYLVANIA R.R.



 = TWIST

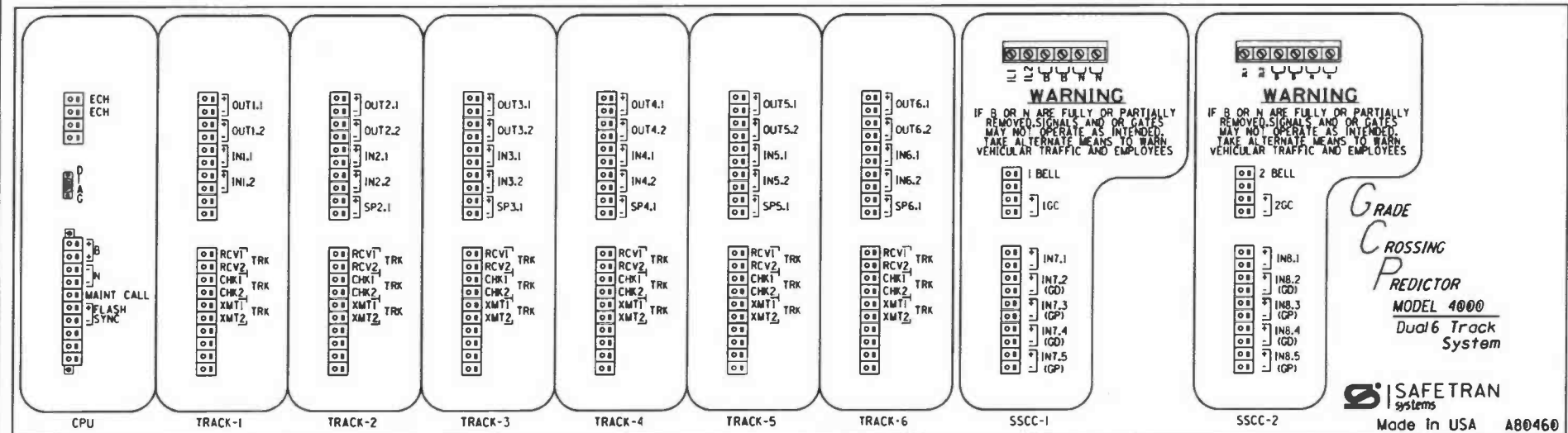
DESIGNED BY:	RBA 08-25-17		NORFOLK SOUTHERN	
DRAWN BY:	XRL 08-25-17		OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY:	PEH 10-13-17		M.P.: AM-137.19 COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	-		WESTERN BRANCH CADD or DWG. No. 81221372.06	FILE No. R- SHEET No. 6 of 29

REVISION INITIALS	WJK/XRL 12-13-17
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PROPERTY
PENNSYLVANIA R.R.

WARNING
REMOVAL OF THE SSCCIII MODULE
WILL CAUSE THE GATE(S) TO
DROP BUT THE LIGHTS WILL
NOT ACTIVATE

CAUTION
ASSURE CORRECT POLARITY
OF THE SSCCIII MODULE OR
SEVERE DAMAGE WILL OCCUR.



ENSURE THE DISPLAY MODULE HEATER IS
DISABLED. LEAVING THE DISPLAY HEATER ENABLED
WILL REDUCE THE AMOUNT OF BATTERY STANDBY
TIME IN THE EVENT OF AN AC POWER FAILURE.

CPU 11+	TRACK 1	TRACK 2	TRACK 3	TRACK 4	TRACK 5	TRACK 6	SSCC-1	SSCC-2
A80403	A80418	A80418•	A80418	A80418	A80418•	A80418•	A80405	A80407
A80403	A80418	A80418•	A80418	A80418	A80418•	A80418•	A80405	A80406

MODULAR BAYS
SHOWN ON NEXT SHEET

HEATER FUNCTION IS JUMPER SELECTABLE ON
THE DISPLAY MODULE BOARD.
THREE OPTIONS ARE AVAILABLE:
NORMAL LCD HTR (DEFAULT)
HI CURRENT
NO JUMPER (HEATER DISABLED)

• = MAIN AND STANDBY MAY USE RIO IN
TRACKS 2, 5, AND 6 SLOTS
(M3, M6, AND M7)

4000 GCP REDUNDANT
6-TK CHASSIS AND I/O LAYOUT

REVISION | WJK/XRL |
INITIALS | 12-13-17 |

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY: RBA 08-25-17	NS NORFOLK SOUTHERN	
DRAWN BY: XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY: PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	WESTERN BRANCH	FILE R- No.
- -	CADD or DWG. No. 81221372.07	SHEET 7 of 29 No.

100 200 300 400 500 600 700 800 900 1000

Location and SIN

DOT Number: 513364T
Milepost Number: AM-137.19
Site Name: FAIRWOOD AVE

SIN: 755023410816

MCF and Template Selection

MCF Name: GCP-T6X-02-1.mcf
MCF Revision: 021
MCF CRC: 6076E435

Template = 1A:6 Trk Bi

Check Numbers

Office Check No. (DT 4.6.0): 64EA3DBA
Office Check Number: 64EA3DBA
Config. Check Number: 5535EDBB
(Based on MCF Revision 021)

Program

```

BASIC: module configuration
Track 1 Slot = Track
Track 2/RIO 1 Slot = Track
Track 3 Slot = Not Used
Track 4 Slot = Not Used
Track 5/RIO 2 Slot = RIO
Track 6/RIO 3 Slot = Not Used
SSCC-1 Slot = SSCC3i
SSCC-2 Slot = SSCC3i
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 = Advance
Adv Preempt Delay = 6 sec
Preempt Hlth IP Used = Yes
Adv Preempt IP Used = No
Traffic Sys Hlth IP Used = Yes
Gate Down Logic Used = Yes
Second Trn Logic Used = Yes

```

```
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
Track 1: Prmp† Used = Yes
```

```
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
Track 2 : Prmpt Used = Yes
```

```
GCP: track 1
Track 1: GCP Freq Category = Other
Track 1: GCP Frequency = 151 Hz
Track 1: Approach Distance = 1808 ft
Track 1: Uni/Bi/Sim-Bidirnl = Bidirnl
Track 1: GCP Transmit Level= High
Track 1: Island Connection = Isl
Track 1: Island Distance = 158 ft
Track 1: Computed Distance = 9999 ft
Track 1: Linearization Steps = 100
```

```
GCP: track | 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 = IP
Track 1: Prime UAX Pickup = 5 sec
```

```
GCP: track 1 preempt
Track 1: Prmpt Warning Time = 36 sec
Track 1: Prmpt Offset Distance = 0 ft
Track 1: Switch MS EZ Level= 10
Track 1: Prmpt MS/GCP Mode = Pred
Track 1: Prmpt Pickup Delay = 15 sec
Track 1: Prmpt Enable = IP
Track 1: Prmpt Enable Pickup = 5 sec
```

```
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: Bidirn 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 = Other
Track 2 : GCP Frequency = 151 Hz
Track 2 : Approach Distance = 1808 ft
Track 2 : Uni/Bi/Sim-Bidir1 = Bidir1
Track 2 : GCP Transmit Level = High
Track 2 : Island Connection = Isl2
Track 2 : Island Distance = 158 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 = IP
Track 2 : Prime UAX Pickup = 5 sec
```

```
GCP: track 2 preempt
Track 2 : Prmpt Warning Time = 36 sec
Track 2 : Prmpt Offset Distance = 0 ft
Track 2 : Switch MS EZ Level= 10
Track 2 : Prmpt MS/GCP Mode = Pred
Track 2 : Prmpt Pickup Delay = 15 sec
Track 2 : Prmpt Enable = IP
Track 2 : Prmpt Enable Pickup = 5 sec
```

```
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 : Bidirn 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 = 13.2 kHz
Track 1: Pickup Delay (2s +) = 0 sec
Track 1: IslEnable IP Used = No
```

```
ISLAND: track 2
Track 2 : IslFrequency = 15.2 kHz
Track 2 : Pickup Delay (2s +) = 0 sec
Track 2 : IslEnable IP Used = No
```

[illegible]

AND: track Anding
AND 1 XR Used = Yes
AND 2 Used = Yes
AND 3 Used = Yes
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

AND: AND 2
AND 2 Track 1 = IslOnly
AND 2 Track 2 = IslOnly
AND 2 Enable Used = No
AND 2 Wrap Used = No

AND: AND 3
AND 3 Track 1 = Not Used
AND 3 Track 2 = Not Used
AND 3 Enable Used = Yes
AND 3 Enable Pickup = 0 sec
AND 3 Enable Drop = 0 sec
AND 3 Wrap Used = Yes

ADVANCED: MS restart
MS/GCP Restart Used = No

ADVANCED: out of service
OOS Control= Display+OOS IPs
OOS Timeout = Yes
OOS Timeout = 1 hrs

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

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

ADVANCED: internal/0 1
Pass Thrus = Yes
Int.1 Sets = GD 1.1
Int.1 Set by = Passthru State 1
Int.2 Sets = GD 1.2
Int.2 Set by = Passthru State 2
Int.3 Sets = AND 3 Wrap
Int.3 Set by = Gate Dwn Indication
Int.4 Sets = AND 3 Enable
Int.4 Set by = Passthru State 1

ADVANCED: internal/0 2
Int.5 Sets = AND 3 Enable
Int.5 Set by = Passthru State 2
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/0 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/0 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 CallRpt IP Used = No
Emergency Activate IP = No
EZ/EX Logging = Change
EZ/EX Point Change = 3

SSCC
Gates Used = Yes
SSCCI+2 GPs Coupled = Yes
Min Activation = 0 sec
Rmt Activation Cancel= 2 min
BellOn Gate Rising = No
Mute BellOn 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 NeutralTest = Off
Aux-1 Xng CtrlUsed = 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 NeutralTest = Off
Aux-2 Xng CtrlUsed = 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

OUTPUT: assignment page 2
OUT 5.1 = Adv Preempt
OUT 5.2 = AND 1 XR
OUT 5.3 = AND 2
OUT 5.4 = AND 3

INPUT: assignment page 1
IN 1.1 = T1 Prime UAX
IN 1.2 = T1 Preempt Enable
IN 2.1 = T2 Prime UAX
IN 2.2 = T2 Preempt Enable

INPUT: assignment page 2
IN 5.1 = Trf Sys Hlth
IN 5.2 = Preempt Health
IN 5.3 = Not Used
IN 5.4 = 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 = Passthru State 2
IN 7.3 = AND 1 XR Enable
IN 7.4 = Passthru State 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 6.1 = Not Used

SEAR: slot 1-4 inputs
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
IN 5.3 = Not Used
IN 5.4 = Not Used

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

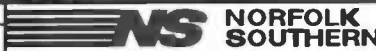
SEAR: slot 7-8 inputs
IN 7.1 = Not Used
IN 8.2 = Not Used
IN 8.3 = Not Used
IN 8.4 = Not Used
IN 8.5 = Not Used

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

Configuration Package File

Filename: 81221372.pac

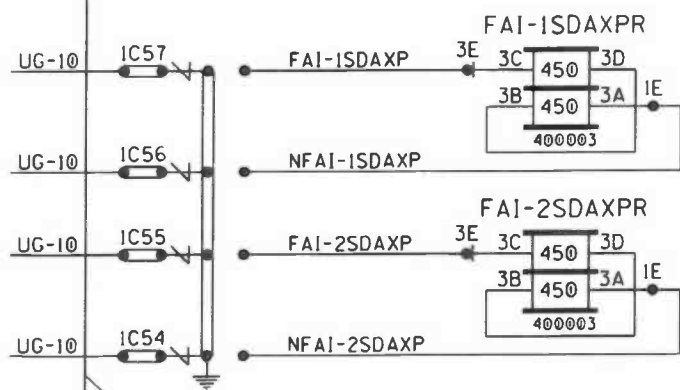
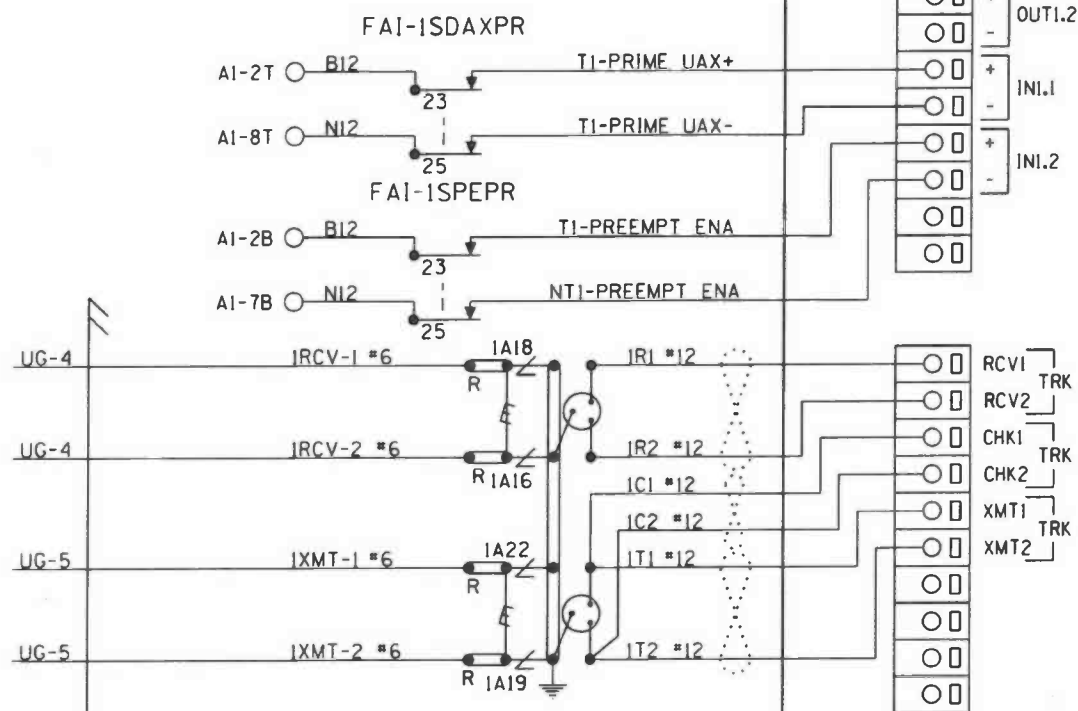
4000 GCP PROGRAMMING SETUP

DESIGNED BY:	RBA 08-25-17		
DRAWN BY:	XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY:	PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	- -	WESTERN BRANCH	FILE R- No. 10 of 29
		CADD or DWG. No. 81221372.10	

REVISION WJK/XRL
INITIALS 12-13-17

PROPERTY
PENNSYLVANIA R.R.

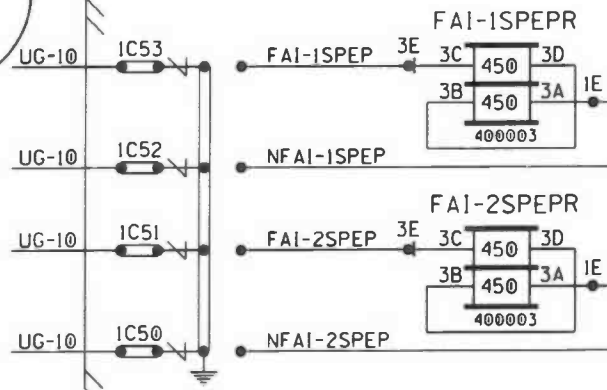
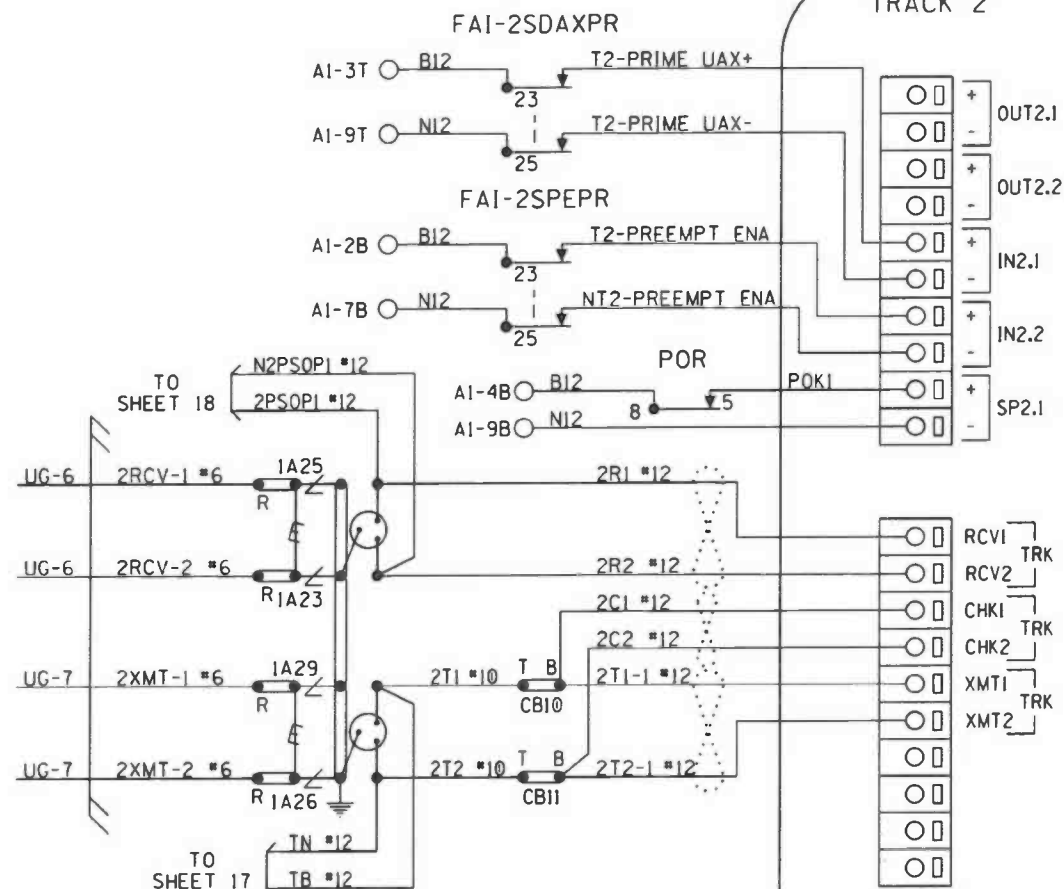
TRACK 1



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

⊗ = TWIST

TRACK 2

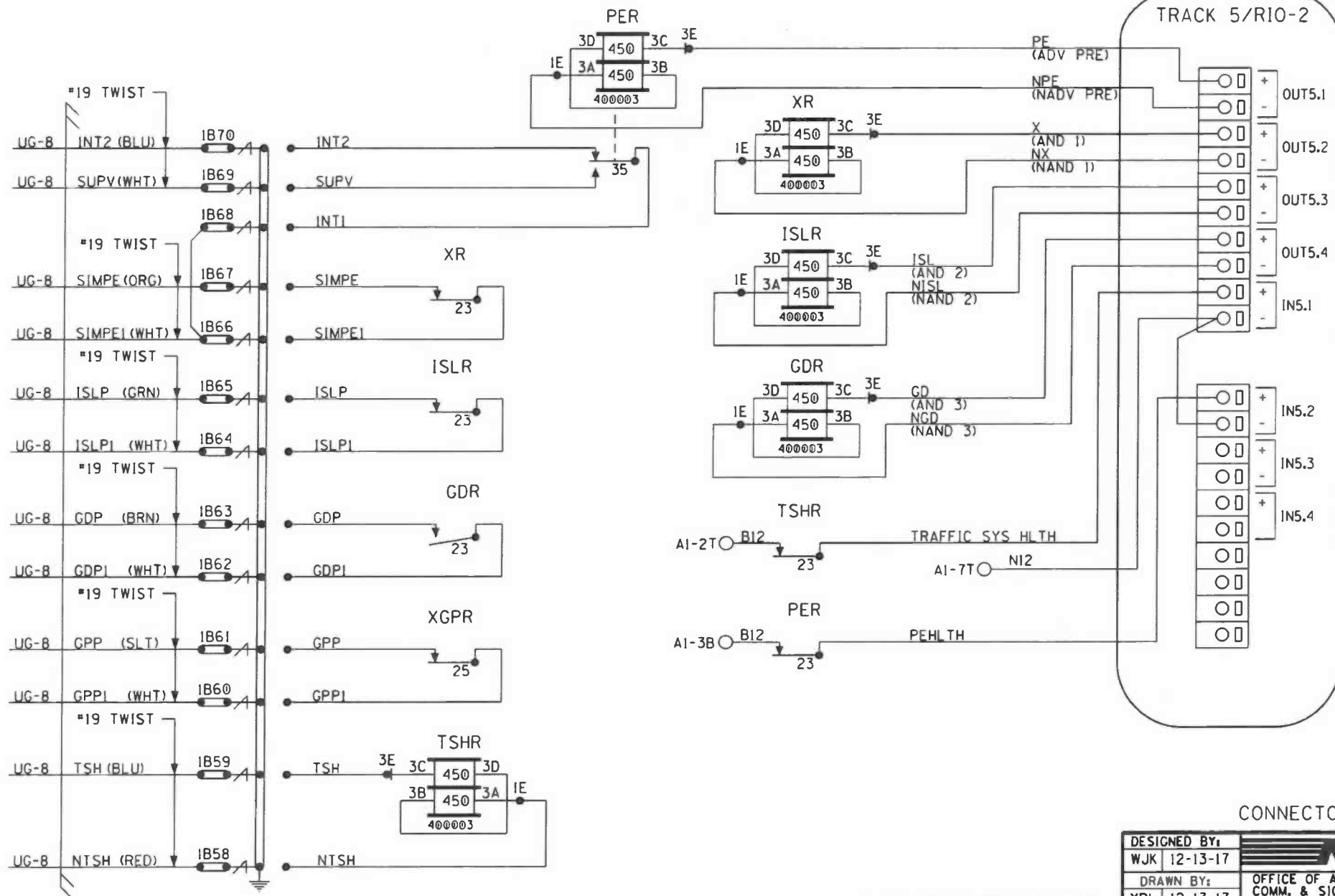


CONNECTORS FOR TRACK MODULES

DESIGNED BY:	RBA 08-25-17	 NORFOLK SOUTHERN	
DRAWN BY:	XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.# AM-137.19
CHECKED BY:	PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	- -	WESTERN BRANCH	FILE NO. R-
		CADD or DWG. No. 81221372.11	SHEET 11 of 29

REVISION WJK/XRL
INITIALS 12-13-17

PROPERTY
PENNSYLVANIA R.R.



ALL WIRING TO BE #16AWG
UNLESS NOTED OTHERWISE.

CONNECTORS FOR MODULES (A80413)

DESIGNED BY:	WJK 12-13-17	NORFOLK SOUTHERN OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: AM-137.19	
DRAWN BY:	XRL 12-13-17		
CHECKED BY:	PEH 01-05-18	COLUMBUS, OH	
IN SERVICE:	- -	CFLGS AT FAIRWOOD AVE	
		WESTERN BRANCH	FILE R-
		CADD or DWG. No. 81221372.12	SHEET No. 12 of 29

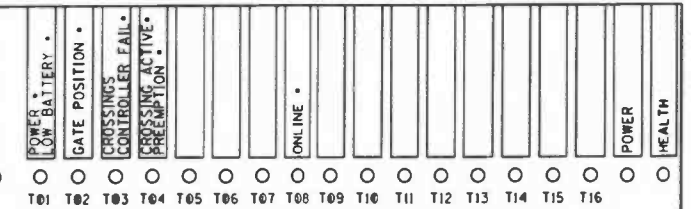
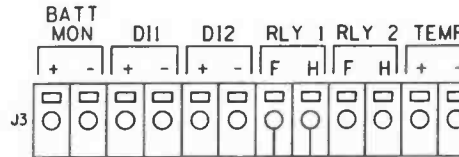
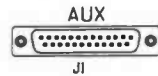
REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

SEAR III INTERNAL EVENT RECORDER

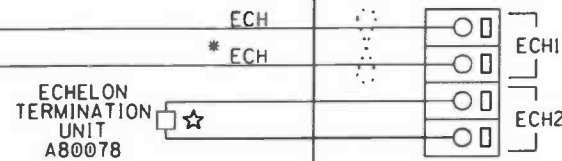
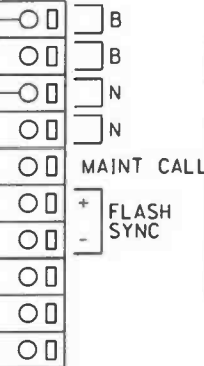
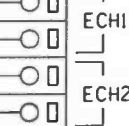


A80410



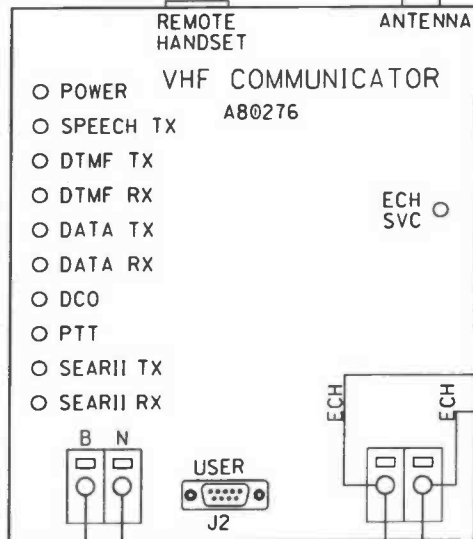
LOWER BAY

CPU



A1-1B B12 *10

A1-6B N12 *10



AA21



GCP PROGRAMMING FOR VHF RADIO

REMOTE DTMF CROSSING ACTIVATION
(ACTIVATES ENTIRE CROSSING)

TO ACTIVATE PRESS: 364*

TO DE-ACTIVATE PRESS: 364*

(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

REMOTE DTMF LIGHTING ACTIVATION
(ACTIVATES FLASHING LIGHTS ONLY)

TO ACTIVATE PRESS: 3641*

TO DE-ACTIVATE PRESS: 3641*

(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

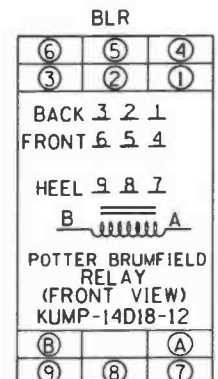
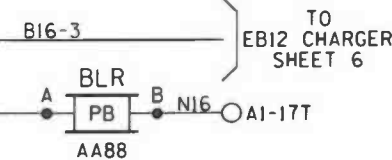
NOTES:

ALL WIRING TO BE #16AWG
UNLESS NOTED OTHERWISE.

* = ECHELON CONNECTIONS NOT
TO EXCEED 53' IN LENGTH AND
TOTAL LENGTH NOT TO EXCEED
430' WITH A MAXIMUM OF 8
NODES, RECOMMEND USE BELDEN
WIRE CABLE #8461 OR
EQUIVALENT.

☆ = A80078 ECHELON TERMINATION
UNIT TO TERMINATE ECHELON
NETWORK.

• = TWIST



CPU MODULE, SEAR III & VHF HOOK-UPS

DESIGNED BY: RBA 08-25-17	NORFOLK SOUTHERN	
DRAWN BY: XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY: PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	WESTERN BRANCH	FILE R-
	CADD or DWG. No. 81221372.13	SHEET No. 13 of 29

REVISION WJK/XRL
INITIALS 12-13-17

PROPERTY
PENNSYLVANIA R.R.

SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
DATE/TIME	
AUTOMATIC DST ADJUSTMENT	YES
TIME ZONE	EST
SITE NAME	FAIRWOOD AVE
MILEPOST	AM-137.19
DOT *	513364T
TESTER TYPE	CROSSING
DATE FORMAT	MM-DD-YYYY
TEMP FORMAT	FAHRENHEIT
INDICATE HOLD (SEC)	0
INDICATE REFRESH (SEC)	60
SITE ATCS	7.550.234.108.03.01
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	3
BATTERY MON USED	NO
PREEMPTION	YES
INTERNAL CROSSING CONTROLLERS	2
EXTERNAL CROSSING CONTROLLERS	0
VHF COMMUNICATOR	YES
DTMF ACTIVATION	YES
.... ACTIVATION CODE	364
ACTIVATION TIMEOUT (SECONDS)	60
ILOD MODULES	0
..... ANY LED BULBS USED	NO
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:
RBA 08-25-17

DRAWN BY:
XRL 08-25-17

CHECKED BY:
PEH 10-13-17

IN SERVICE:
- -

NS NORFOLK SOUTHERN

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

COLUMBUS, OH
CFLGS AT FAIRWOOD AVE

WESTERN BRANCH

FILE No. R-

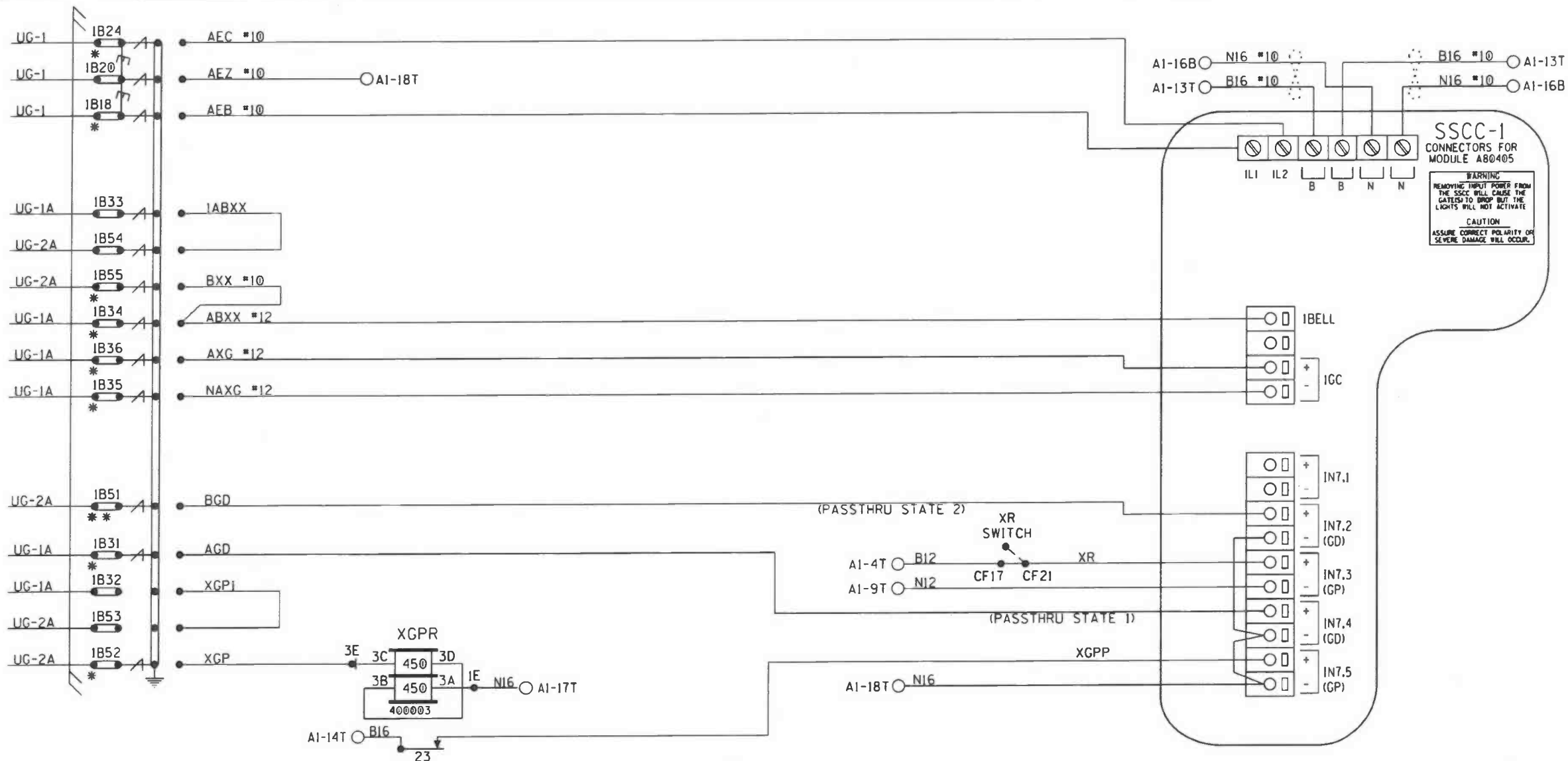
CADD or DWG. No. 81221372.14

SHEET No. 14 of 29

REVISION INITIALS

WJK/XRL

12-13-17



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

* = TEST LINKS MUST BE OPENED TEMPORARILY FOR NEW
 COLD START OF NEW OR REPLACEMENT SSCC MODULE
 AND CAN ONLY BE CLOSED IN SEQUENCE WITH MFR.
 INSTRUCTIONS: SECTION 8 OF THE GCP 4000 REFERENCE MANUAL.

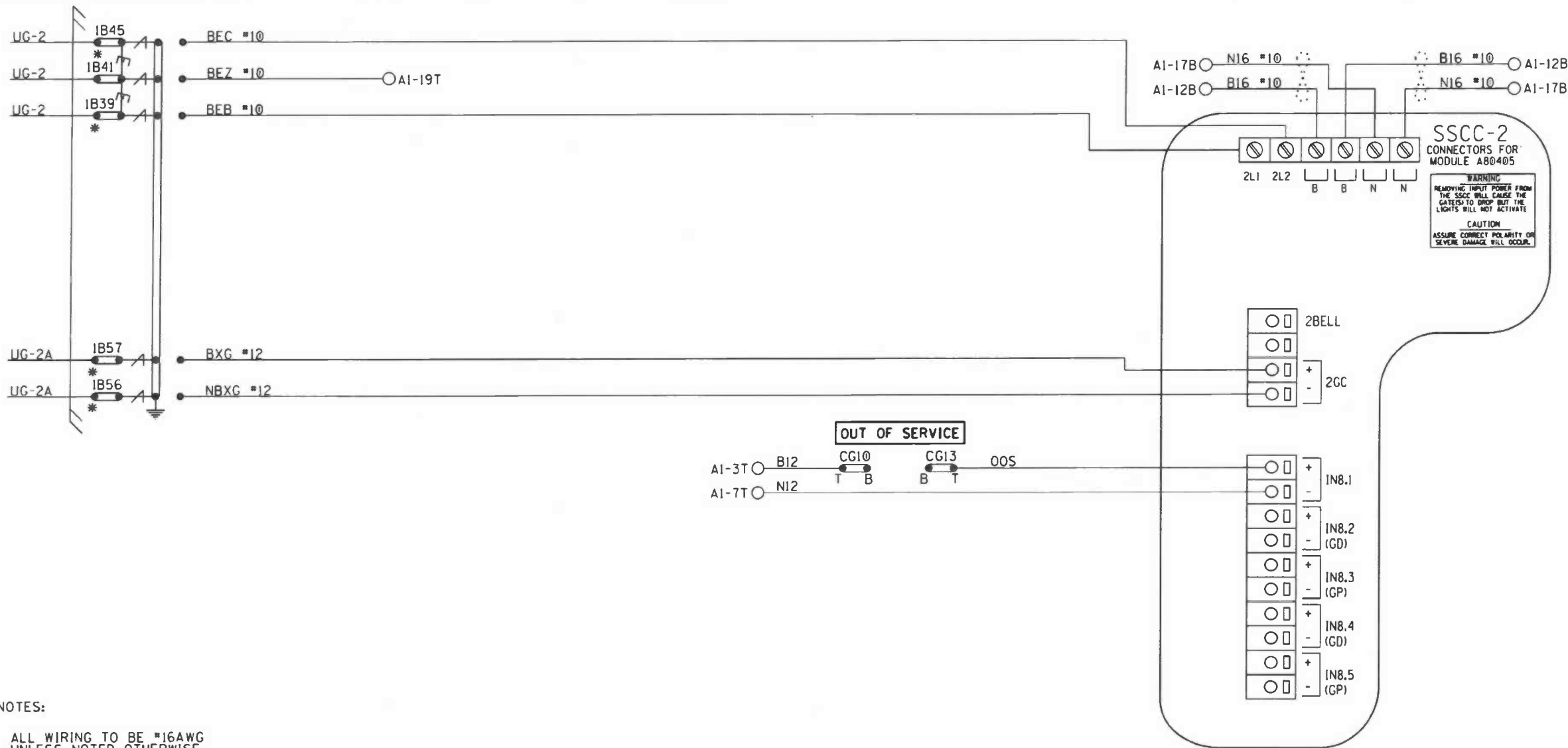
= TWIST

SSCC#1 MODULE HOOK-UP

DESIGNED BY: RBA 08-25-17	NORFOLK SOUTHERN	
DRAWN BY: XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY: PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	WESTERN BRANCH	FILE R- No. 15 of 29
	CADD or DWG. No. 81221372.15	

REVISION WJK/XRL
 INITIALS 12-13-17

PROPERTY
 PENNSYLVANIA R.R.



NOTES:

ALL WIRING TO BE *16AWG
UNLESS NOTED OTHERWISE.

* = TEST LINKS MUST BE OPENED TEMPORARILY FOR NEW
COLD START OF NEW OR REPLACEMENT SSCC MODULE
AND CAN ONLY BE CLOSED IN SEQUENCE WITH MFR.
INSTRUCTIONS: SECTION 8 OF THE GCP 4000 REFERENCE MANUAL.

⋈ = TWIST

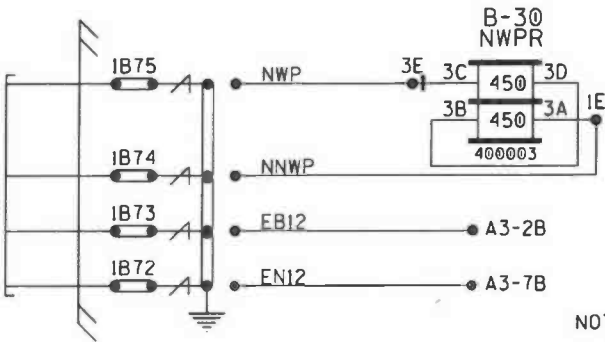
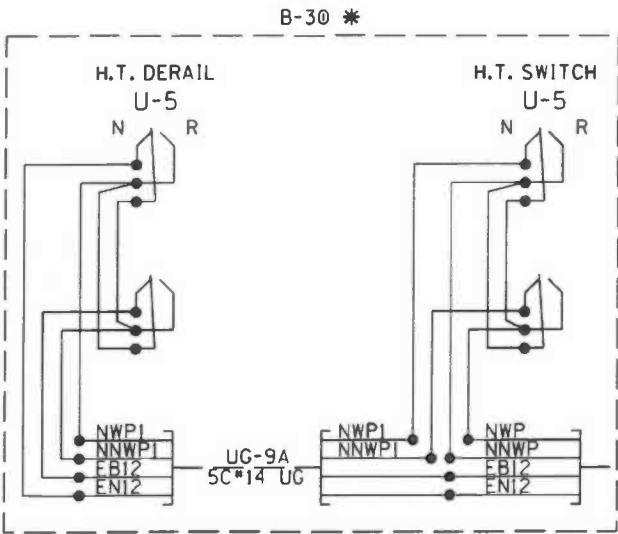
SSCC*2 MODULE HOOK-UP

DESIGNED BY:	RBA 08-25-17	NORFOLK SOUTHERN	
DRAWN BY:	XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY:	PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	- -	WESTERN BRANCH	FILE R-
		CADD or DWG. No. 81221372.16	SHEET No. 16 of 29

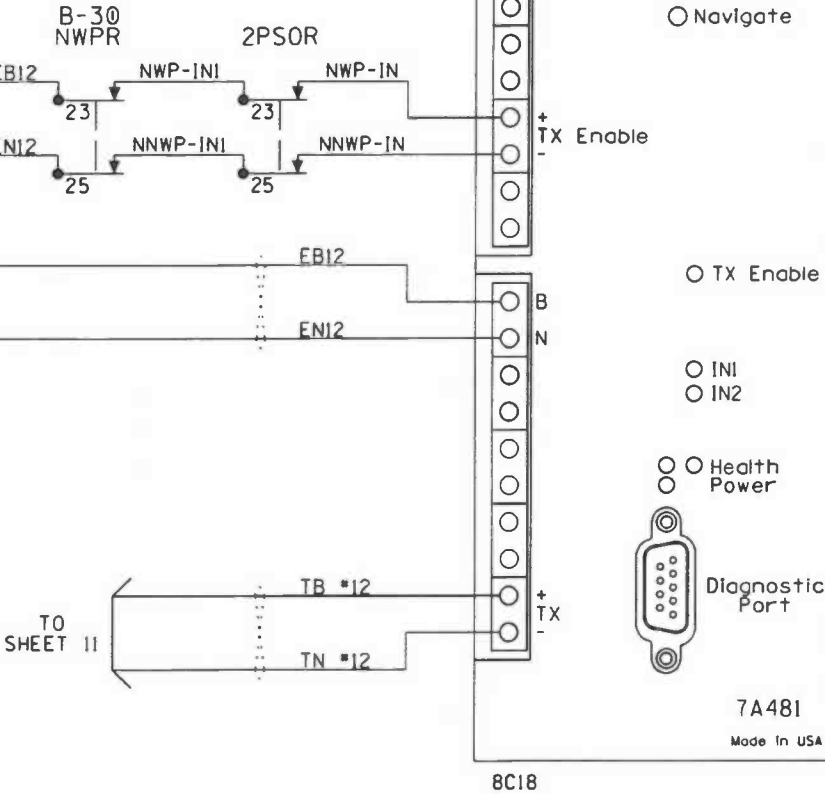
REVISION WJK/XRL
INITIALS 12-13-17

PROPERTY
PENNSYLVANIA R.R.

PSO+ TRANSMITTER SETUP MENU SETTINGS	
PARAMETER	VALUE SELECTED
Transmit Frequency(TFRQ=)	Standard 1770 Hz
Transmit Level(TX LVL=)	High (Low, High)



- NOTES:
1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
 2. = TWIST LEADS



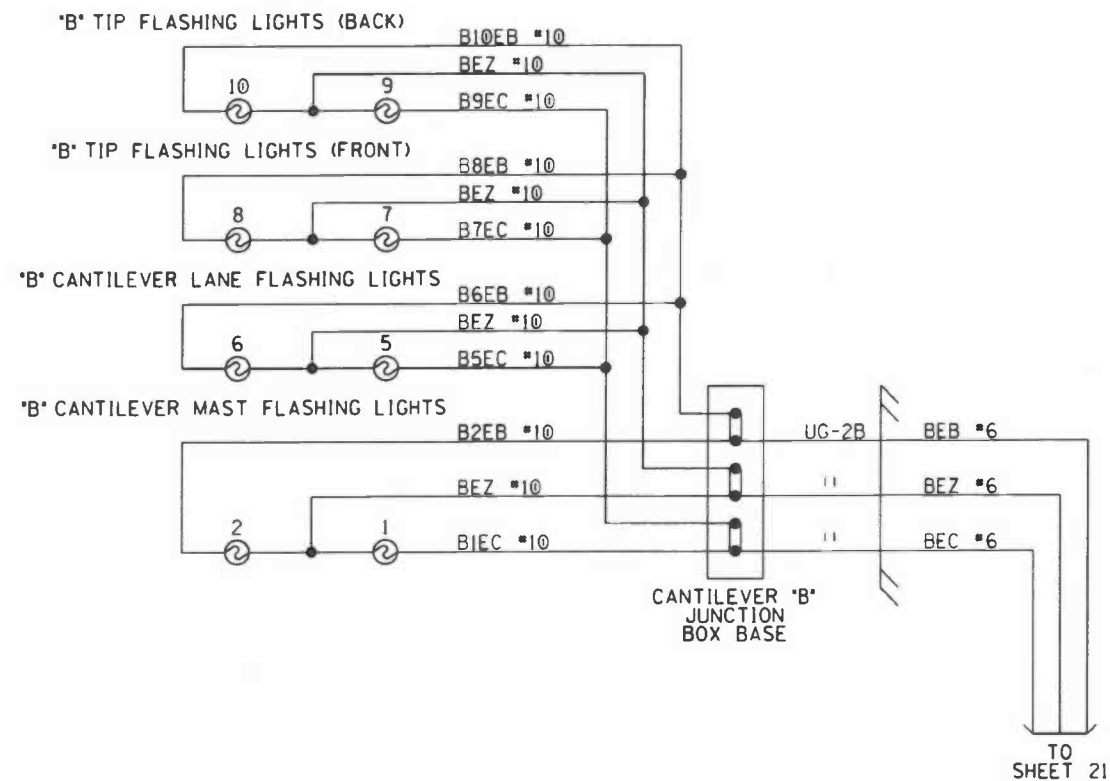
* = FIELD TO VERIFY H.T. SWITCH & ITS WIRING

REVISION INITIALS WJK/XRL 12-13-17

PROPERTY PENNSYLVANIA R.R.

B-30 H.T. SWITCH CIRCUIT & PSO+ TRANSMITTER

DESIGNED BY: RBA 08-25-17	NS NORFOLK SOUTHERN	
DRAWN BY: XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY: PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE: -	WESTERN BRANCH	FILE NO. R-
	CADD or DWG. No. 81221372.17	SHEET No. 17 of 29

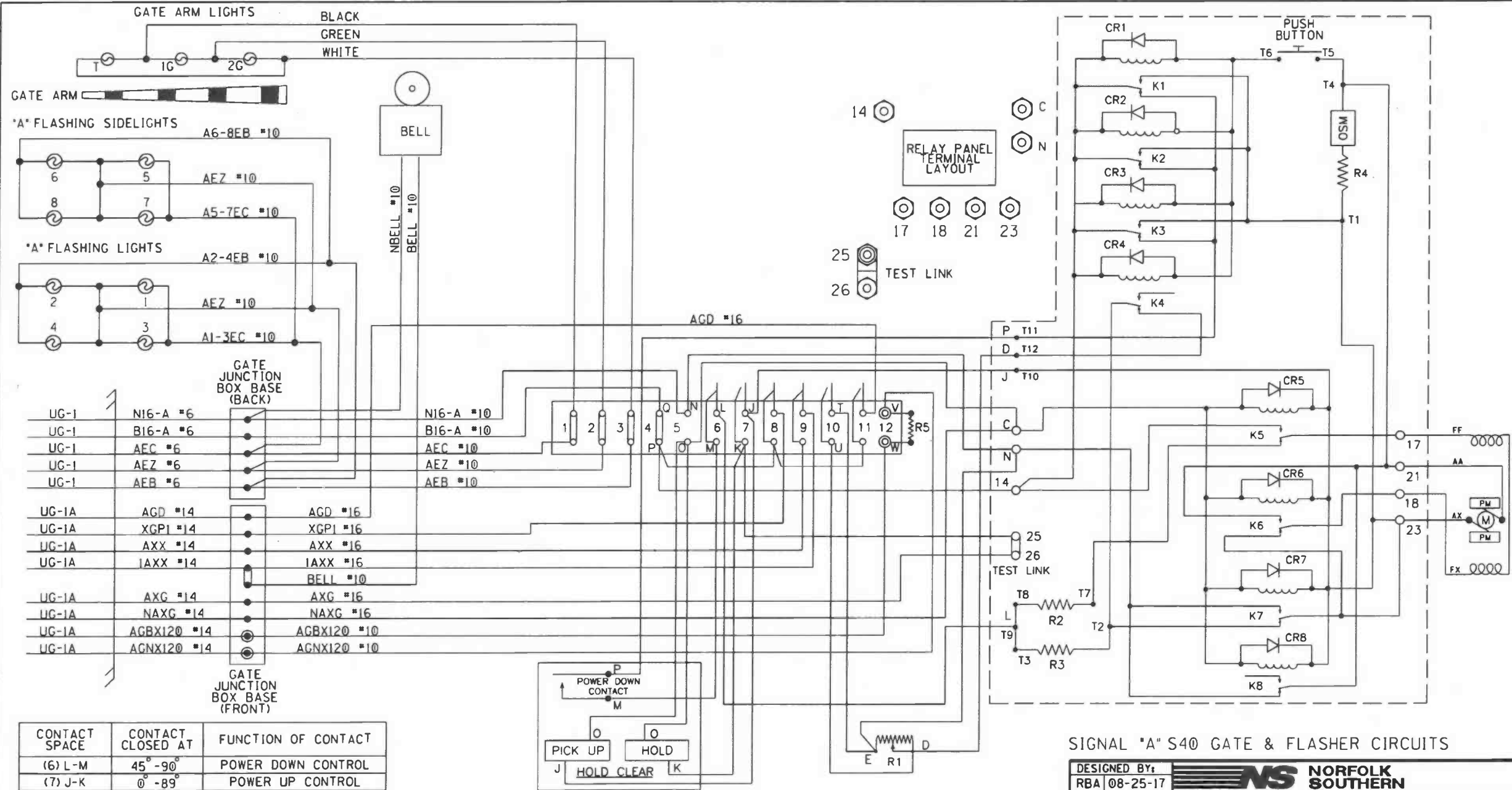


CANTILEVER FLASHER LIGHTS

DESIGNED BY:	RBA 08-25-17	 NORFOLK SOUTHERN	
DRAWN BY:	XRL 08-25-17		
CHECKED BY:	PEH 10-13-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
IN SERVICE:	- -	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
		WESTERN BRANCH	FILE R-
		CADD or DWG. No. 81221372.19	SHEET No. 19 of 29

REVISION INITIALS WJK/XRL 12-13-17

PROPERTY
PENNSYLVANIA R.R.



SIGNAL "A" S40 GATE & FLASHER CIRCUITS

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

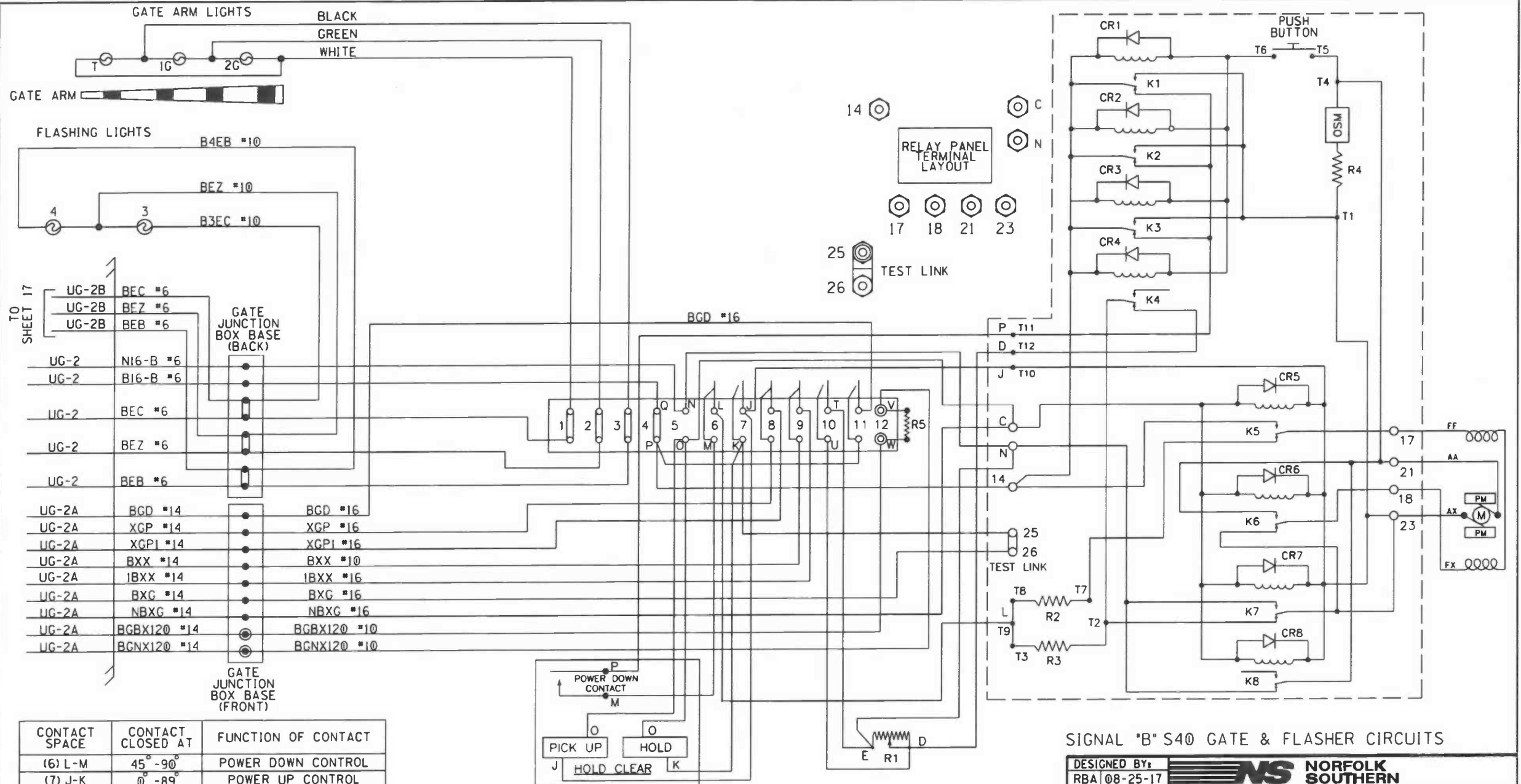
R1 - DOWN SNUB RESISTOR, ADJ.
R2 - POWER DOWN RATE RESISTOR
R3 - POWER DOWN LIMIT RESISTOR

R4 - OSM SNUB RESISTOR
R5 - DEFROSTER
K1-8 - GATE & MAINT. RELAYS
OSM - OVERSPEED MODULE

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INITIALS 12-13-17

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY: RBA 08-25-17	NORFOLK SOUTHERN	
DRAWN BY: XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: AM-137.19	
CHECKED BY: PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	WESTERN BRANCH	FILE R-
	CADD or DWG. No. 81221372.20	SHEET No. 20 of 29



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

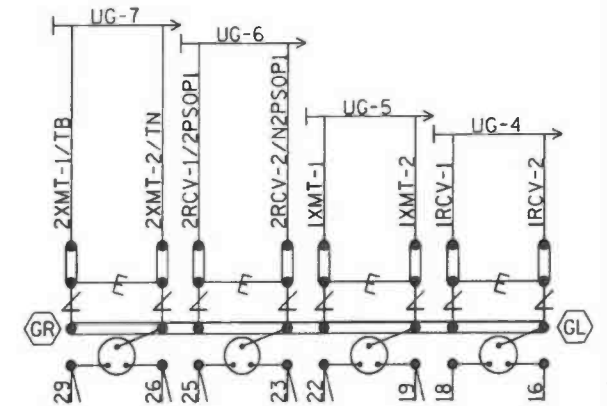
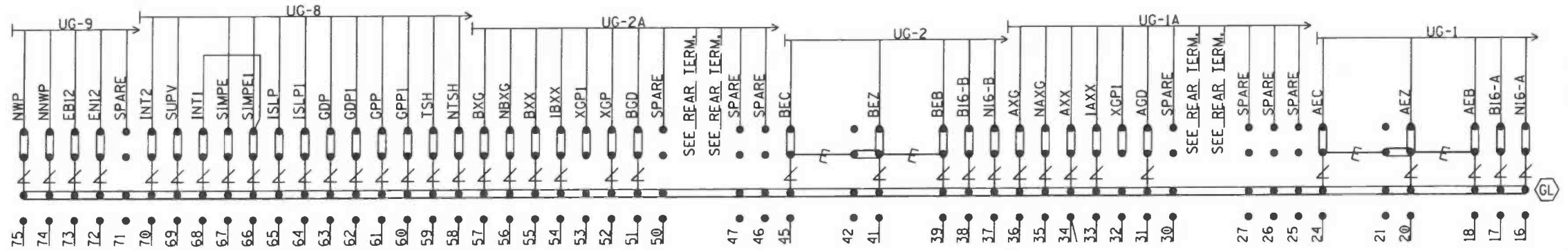
SIGNAL "B" S40 GATE & FLASHER CIRCUITS

DESIGNED BY: RBA 08-25-17	NORFOLK SOUTHERN	
DRAWN BY: XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY: PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	WESTERN BRANCH	FILE No. R-
	CADD or DWG. No. 81221372.21	SHEET No. 21 of 29

REVISION | WJK/XRL
INITIALS | 12-13-17

PROPERTY
PENNSYLVANIA R.R.

LEFT TWO ROWS TERMINAL BOARD 1
"1A"
"1B"



NOTE: INSTALL TEST LINKS ON ALL TRACK
WIRES AND ON ALL LOW VOLTAGE
UNDERGROUND CABLE TERMINATIONS.

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

⚡ = 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.

BACKBOARD 1A & 1B

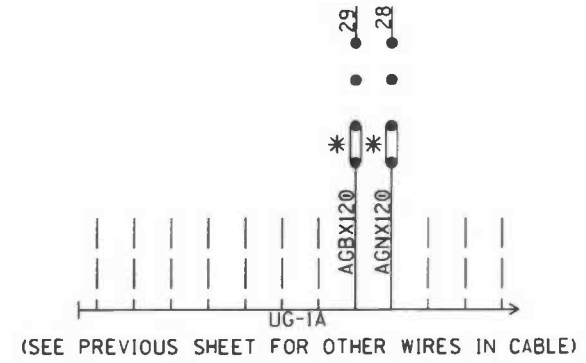
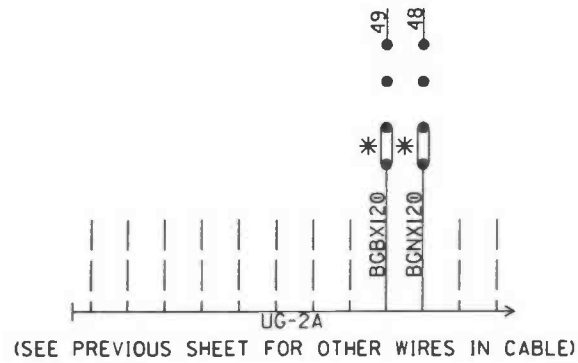
DESIGNED BY:	NS NORFOLK SOUTHERN		
RBA 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		
DRAWN BY:	M.P.: AM-137.19		
XRL 08-25-17	COLUMBUS, OH		
CHECKED BY:	CFLGS AT FAIRWOOD AVE		
PEH 10-13-17	WESTERN BRANCH		
IN SERVICE:	FILE R-		
- -	CADD or DWG. No. 81221372.22		SHEET No. 22 of 29

REVISION
INITIALS

WJK/XRL
12-13-17

PROPERTY
PENNSYLVANIA R.R.

REAR VIEW OF LEFT TWO ROWS TERMINAL BOARD 1
"1B" "1A"



NOTE: ALL 120VAC AND ABOVE WILL BE WIRED
TO THE REAR OF FARADAY BACKBOARD.
INSULATED NUTS MUST BE USED ON ALL
TERMINALS.

* = CLOSED DURING WINTER MONTHS

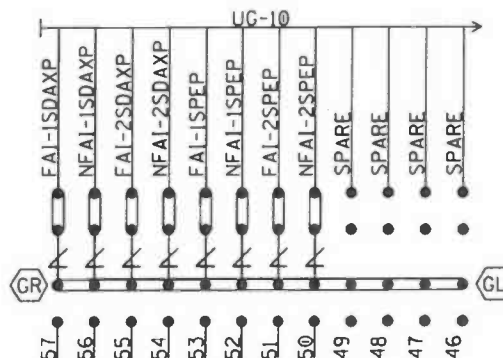
REAR BACKBOARD 1A & 1B

REVISION INITIALS WJK/XRL 12-13-17

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:	RBA 08-25-17	 NORFOLK SOUTHERN	
DRAWN BY:	XRL 08-25-17		
CHECKED BY:	PEH 10-13-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
IN SERVICE:	- -	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
		WESTERN BRANCH	FILE R-
		CADD or DWG. No. 81221372.23	SHEET No. 23 of 29

"1C"



NOTE: INSTALL TEST LINKS ON ALL TRACK WIRES AND ON ALL LOW VOLTAGE UNDERGROUND CABLE TERMINATIONS.

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

⚡ = 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.

BACKBOARD DETAIL - 1C

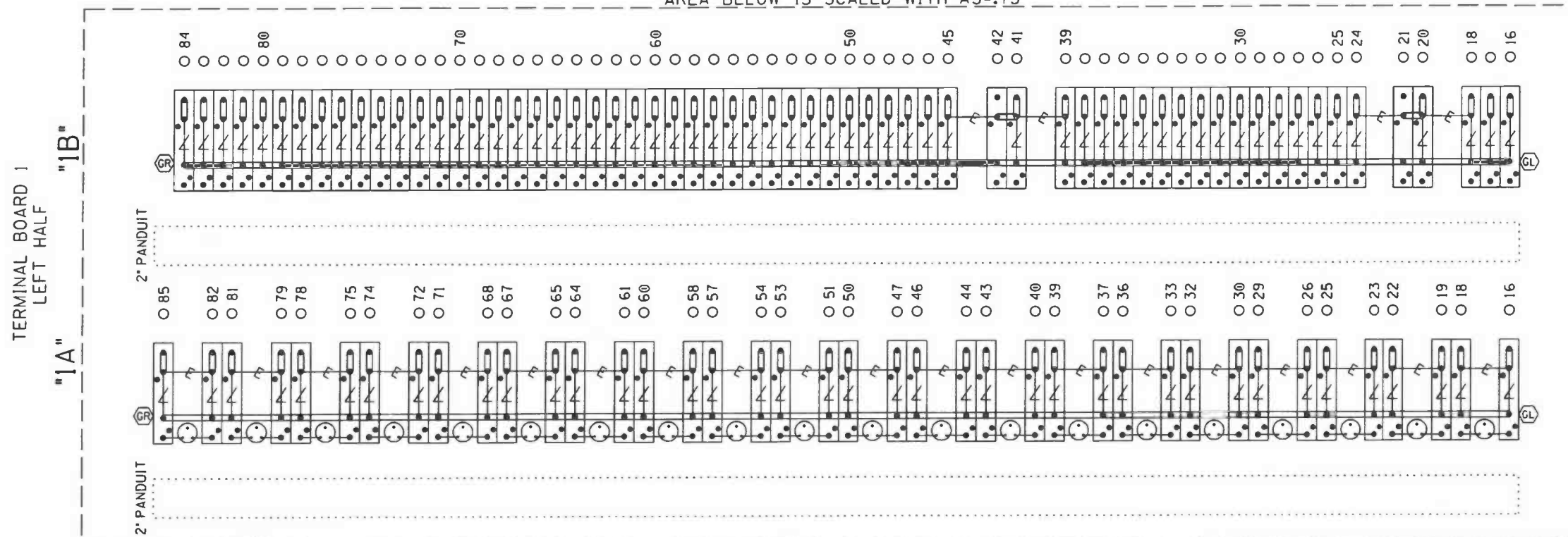
DESIGNED BY:	NS NORFOLK SOUTHERN		
WJK 12-13-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: AM-137.19
DRAWN BY:	COLUMBUS, OH		
XRL 12-13-17	CFLGS AT FAIRWOOD AVE		
CHECKED BY:	WESTERN BRANCH		
PEH 01-05-18	FILE NO. R-		SHEET 24 of 29
IN SERVICE:	CADD or DWG. No. 81221372.24		

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

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



⚡ = 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.

⚡ = 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.

FARADAY SHIELD 1A & 1B

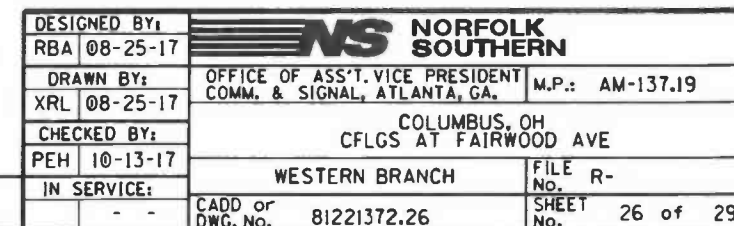
DESIGNED BY: RBA 08-25-17	NORFOLK SOUTHERN	
DRAWN BY: XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY: PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	WESTERN BRANCH	FILE R- No. 25 of 29
	CADD or DWG. No. 81221372.25	

REVISION
INITIALS

WJK/XRL
12-13-17

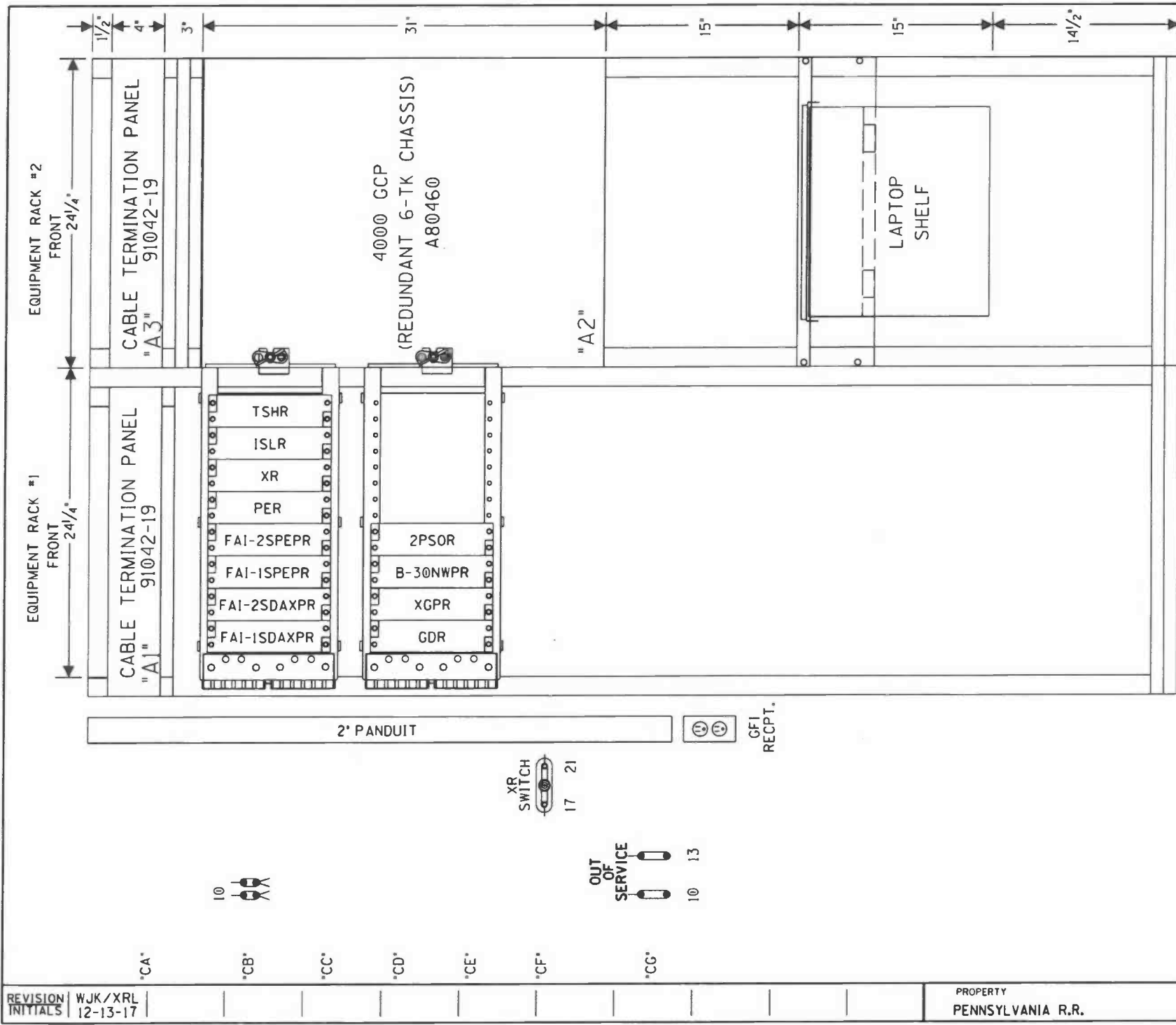
PROPERTY
PENNSYLVANIA R.R.

AREA BELOW IS SCALED WITH AS=.75

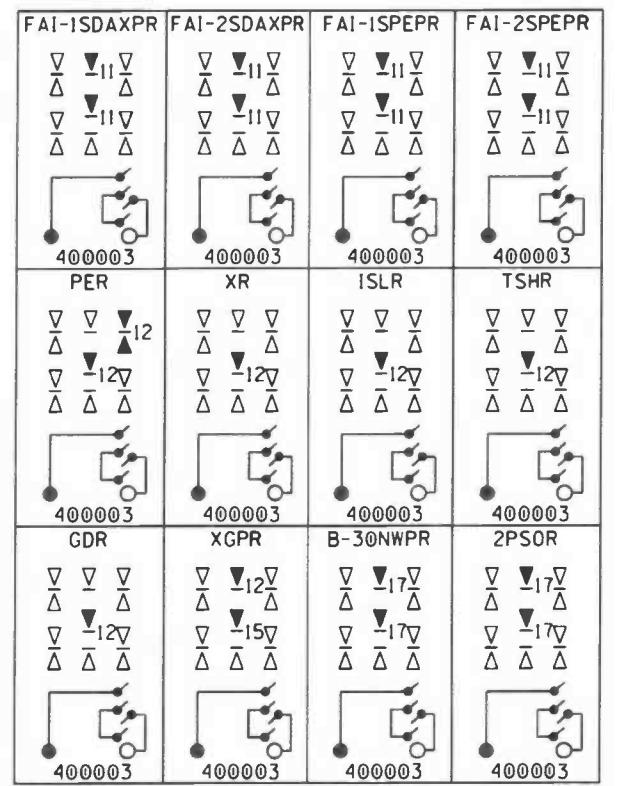


THIS SHEET IS FOR REFERENCE ONLY,
TO REFLECT HOW THE FARADAY SHIELD
IS PREDRILLED. ONLY INSTALL AND USE
THE TERMINALS NEEDED.

[illegible]

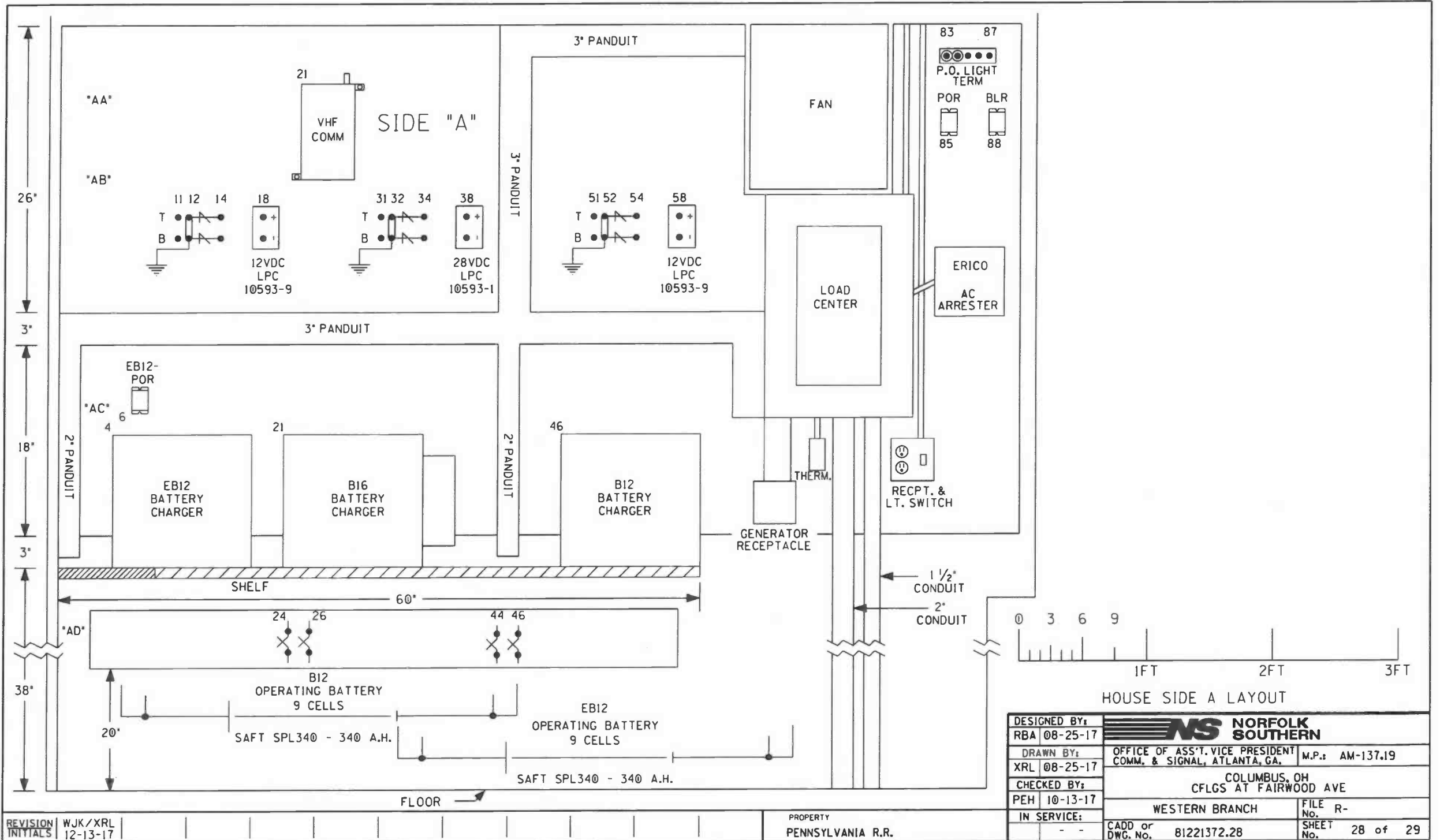


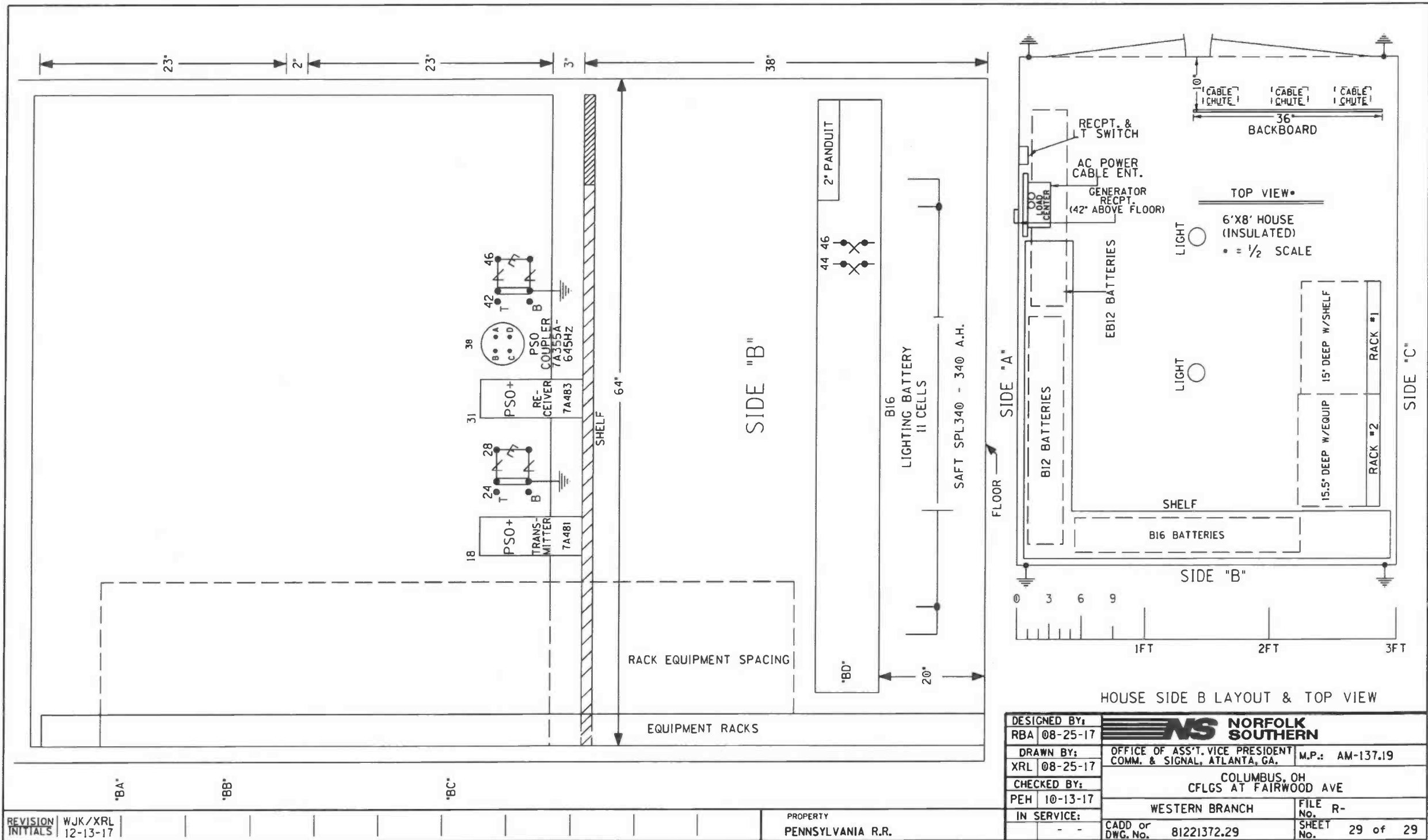
SIDE "C"



HOUSE SIDE C LAYOUT
& RACK PLACEMENT

DESIGNED BY: RBA 08-25-17		
DRAWN BY: XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY: PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	WESTERN BRANCH	FILE No. R-
- -	CADD or DWG. No. 81221372.27	SHEET No. 27 of 29





HOUSE SIDE B LAYOUT & TOP VIEW

DESIGNED BY:	RBA 08-25-17	NS NORFOLK SOUTHERN	
DRAWN BY:	XRL 08-25-17	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: AM-137.19
CHECKED BY:	PEH 10-13-17	COLUMBUS, OH CFLGS AT FAIRWOOD AVE	
IN SERVICE:	- -	WESTERN BRANCH	FILE R-
		CADD or DWG. No. 81221372.29	SHEET No. 29 of 29



**OHIO DEPARTMENT OF TRANSPORTATION
OHIO RAIL DEVELOPMENT COMMISSION
HIGHWAY-RAIL GRADE CROSSING WARNING SYSTEM INTERCONNECTION
RAILROAD CONFIGURATION AND TIMING REQUIREMENTS**

Railroad: Norfolk Southern

Date: June 12, 2017

DOT: 513362E

Crossing Name: Lockbourne Rd.

Issued By: Cathy Stout, ORDC

This crossing warning system is proposed to be interconnected with an adjacent highway traffic control signal. In some cases, the warning system may be interconnected with two highway traffic control signals, usually one on each side of the grade crossing. The #2 interconnection circuits are only required if indicated below.

The purpose of this document is to advise the railroad of the number of interconnection circuits required and the type and timing requirements of each circuit. The railroad should refer to the OHIO DOT HIGHWAY-RAIL GRADE CROSSING WARNING SYSTEM INTERCONNECTION STANDARD Part 5 for details concerning the requirements of the interface to be provided by the railroad.

TYPE OF INTERCONNECTION	INTERCONNECTION #1
ADVANCED	X
SIMULTANEOUS	
NOT REQUIRED	
ADVANCED PREEMPTION TIME PER AREMA 3.3.10	16
Interface Functions (804-4.2):	
Advanced Preemption Circuit with Supervision	Required
Simultaneous Preemption Circuit	Required
Island Occupied	Optional
Gate Down Circuit	Required
Gate Up Circuit	Optional
Traffic Signal Health (Agency will make this circuit available to railroad)	Optional



**OHIO DEPARTMENT OF TRANSPORTATION
OHIO RAIL DEVELOPMENT COMMISSION
HIGHWAY-RAIL GRADE CROSSING WARNING SYSTEM INTERCONNECTION
RAILROAD CONFIGURATION AND TIMING REQUIREMENTS**

Railroad: Norfolk Southern

Date: June 12, 2017

DOT: 613364T

Crossing Name: Fairwood Ave.

Issued By: Cathy Stout, ORDC

This crossing warning system is proposed to be interconnected with an adjacent highway traffic control signal. In some cases, the warning system may be interconnected with two highway traffic control signals, usually one on each side of the grade crossing. The #2 interconnection circuits are only required if indicated below.

The purpose of this document is to advise the railroad of the number of interconnection circuits required and the type and timing requirements of each circuit. The railroad should refer to the OHIO DOT HIGHWAY-RAIL GRADE CROSSING WARNING SYSTEM INTERCONNECTION STANDARD Part 5 for details concerning the requirements of the interface to be provided by the railroad.

TYPE OF INTERCONNECTION	INTERCONNECTION #1
ADVANCED	X
SIMULTANEOUS	
NOT REQUIRED	
ADVANCED PREEMPTION TIME PER AREMA 3.3.10	16
Interface Functions (804-4.2):	
Advanced Preemption Circuit with Supervision	Required
Simultaneous Preemption Circuit	Required
Island Occupied	Optional
Gate Down Circuit	Required
Gate Up Circuit	Optional
Traffic Signal Health (Agency will make this circuit available to railroad)	Optional



OHIO RAIL DEVELOPMENT COMMISSION

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

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

June 12, 2017

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

RE: ORDC PID 105415 / Lockbourne 513362E and Fairwood 613364T
NS PE authorization

Dear Mr. Klinger:

A diagnostic review were held at the above grade crossings on July 25, 2016. The crossings have been recommended for constant warning time, 16 seconds of advance preemption time and other improvements recommended by the diagnostic team.

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

May 2, 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 Improvements, PID 105415
Franklin County, Lockbourne Road, DOT# 513362E
Franklin County, Fairwood Avenue, DOT# 613364T

Dear Mr. Klinger:

A diagnostic review was conducted at the subject grade crossings on 7/25/2016. As a result of the review, the devices will receive constant warning time, 16 seconds of advance preemption time and other improvements recommended by the diagnostic survey team.

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 Fixing America's Surface Transportation Act 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

FRA Lockbourne Road, DOT# 513362E, Fairwood Avenue, DOT# 613364T, PID 105415

Diagnostic Review Team Survey

Reason for Survey:

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

Date:

7/25/2016

Location Data

Street or Road Name: Lockbourne Rd.			
Route/Road Number (i.e. Twp., Co., SR or US)		US DOT No.: 513362E	
County: FRA	Township:	City: (In or Near)	City of Columbus
Railroad Name: Norfolk Southern	Railroad Division: Dearborn	Branch/Line Name:	Western Br.
Nearest RR Timetable Station: Bannon		RR Milepost: 136.53	

On-Site Review Team

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

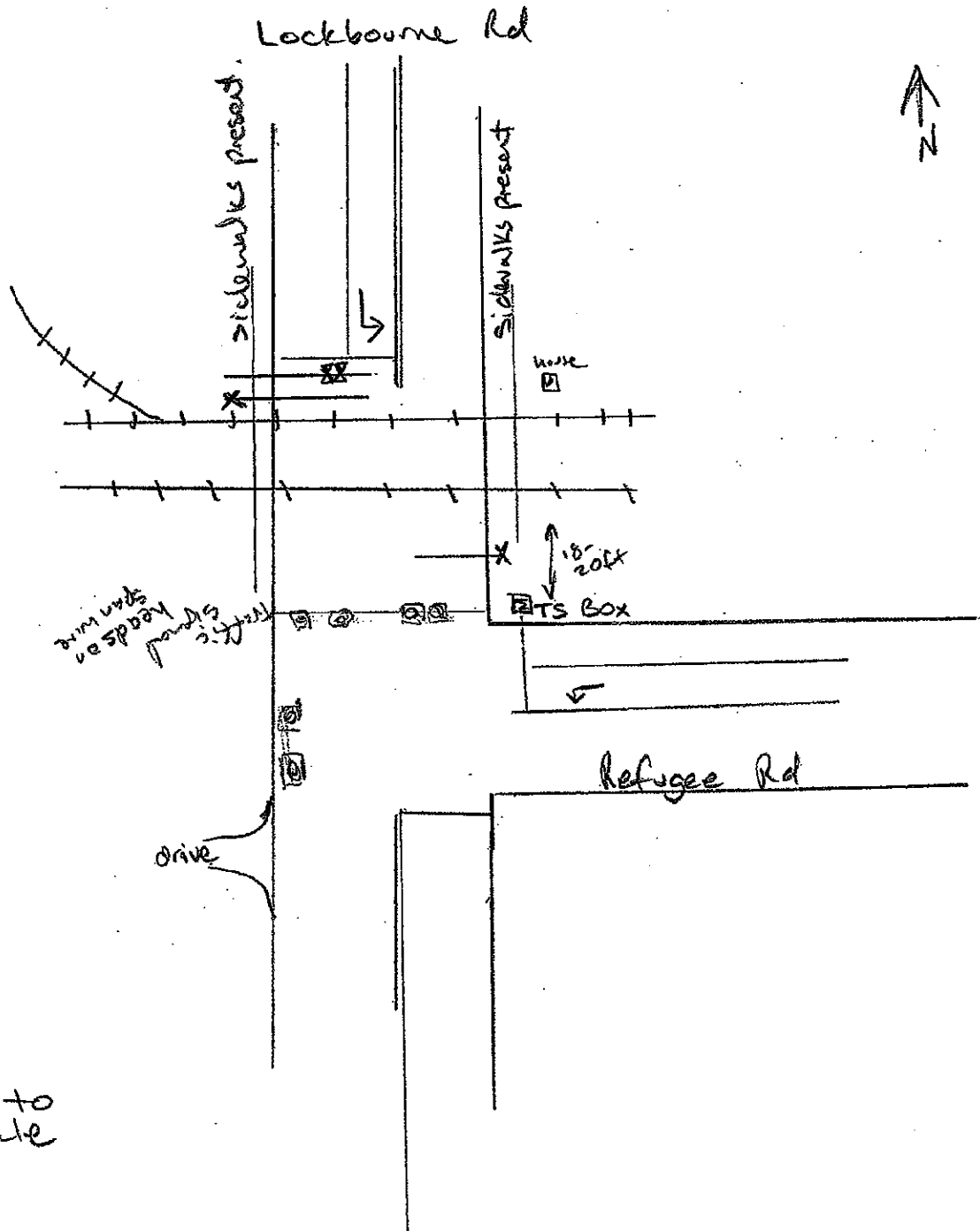
- | | | | | |
|----|-------------------|------------------|---|---|
| 1. | Cathy Stout | ORDC | | |
| 2. | Allen Bell | NS | | |
| 3. | Matt McGaughey | City of Columbus | | |
| 4. | Jodi Stephanik | | ✓ | ✓ |
| 5. | Emilie | | ✓ | ✓ |
| 6. | Tony | | ✓ | ✓ |
| 7. | Nate | | ✓ | ✓ |
| 8. | Rich Campbell | ETC | | |
| 9. | Tim Oster | ETC | | |
| | Isabella Culliton | ORDC | | |

Existing Traffic Control Devices

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

Safety Data (Obtain crash reports, if possible, prior to review)		
	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years	0	
Hazard Ranking	654	Date Run: 8/2/2016
Railroad Data		
	Initial Information (from database)	Revised
Total trains per day	8	
< 1 per day		OK
Day thru trains	2	
Night thru trains	2	
Daytime switching movements	2	
Nighttime switching movements	2	
Total number of tracks	2	
Number of main tracks	2	
Number of other tracks		
Maximum train speed	30	
Typical train speed	30	
Amtrak		
If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table 1) ☐ Yes ☐ No		
If multiple tracks, can two trains occupy crossing at the same time? ☐ Yes ☐ No		
Can one train block the motorists' view of another train at crossing? ☐ Yes (Explain below) ☐ No		
Can one or more tracks be eliminated through the crossing? ☐ Yes ☐ No		
Are there other track(s) crossing this same roadway within 100 ft of this crossing? ☐ Yes ☐ No		
If yes, Crossing DOT # (if different) _____		
If yes, distance _____ (take measurement between track centerlines at closest point along roadway)		
Roadway Data		
Local Highway Authority: City of Columbus		
	Initial Information (from database)	Revised
Average daily traffic	18195 (2004) OK	
Highway paved	X Yes ☐ No	☐ Yes ☐ No
Roadway Surface: ☐ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: _____ ft.		
Number of highway lanes	3	
Urban or Rural	Urban	
Vehicle Speed: _____ MPH		
School Bus Operation: ☐ No ☐ Yes _____ Amount		
Hazardous Materials Trucks: ☐ No X Yes .04 Amount		
Shoulders: ☐ No ☐ Yes		
Is the shoulder surfaced? ☐ No ☐ Yes		
Is there existing guardrail along roadway in crossing vicinity? ☐ No ☐ Yes		
Is stopping site distance adequate? (See Table 2) ☐ Yes ☐ No If no, deficient approach(es) _____		
Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☐ None		Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☐ None

Field Sketch



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

Sketch by: Cam

Potential Red Flags / Project Challenges

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

Yes

Refugee + Lockbourne.

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.):

preemption

Environmental:

Other:

Diagnostic Team Recommendations

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

Comments:

Use existing house and junction box in NE quad.

☒ Install/upgrade traffic signal preemption

Advance preemption

☐ No improvements needed

☐ Other (define)

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

Field Dimensions

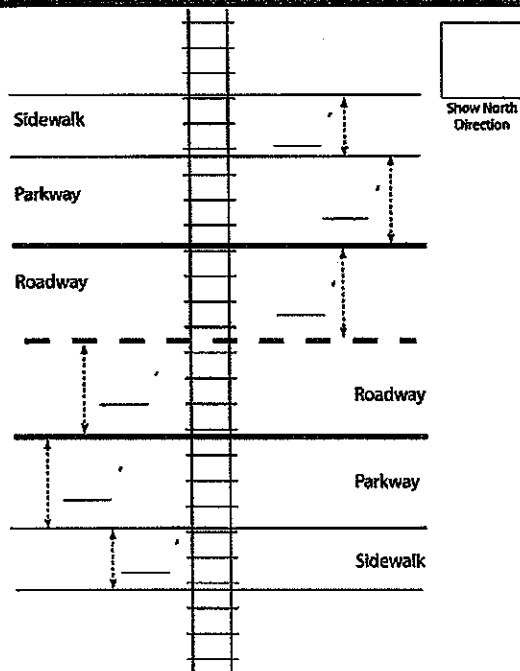


TABLE 1**Clearing Sight Distances**

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.

Stout, Catherine

From: Klinger, Stephen J. <Stephen.Klinger@nscorp.com>
Sent: Wednesday, October 19, 2016 3:11 PM
To: Stout, Catherine
Subject: RE: FRA Fairwood Avenue 513364T, Lockbourne Road 513362E - Preemption locations

Cathy – I see no issues with the diagnostic noting that preemption concerns may need to be discussed.

Thank you,

Stephen Klinger | Administrator Grade Crossing Program | Norfolk Southern Corp.
1200 Peachtree St. NE, Box 123 | Office 7014 | Atlanta, GA 30309
T: 404.529.1234 | M: 404.617.5450 | F: 404.527.2901 | stephen.klinger@nscorp.com

From: Catherine.Stout@dot.ohio.gov [mailto:Catherine.Stout@dot.ohio.gov]
Sent: Tuesday, September 13, 2016 10:56 AM
To: Klinger, Stephen J.
Cc: Bell, Allen D.
Subject: [EXTERNAL] RE: FRA Fairwood Avenue 513364T, Lockbourne Road 513362E - Preemption locations
Importance: High

Stephen,

I have some additional information. The time has been recalculated and the time estimated is 16 seconds of APT time for both crossings. This is time in advance of the FRA minimum of 20 seconds and 1 second of wide crossing clearance time. The old calculations I was working from included additional clearance time for the railroad which has been deleted from the revised calculation. The timing form is still in draft. Times provided above are draft only and subject to revision and discussion. They are provided so you can let us know of any obstacles as we move forward. I am not asking you to agree to provide a specific amount of APT. Actual APT time would be included in the letter agreement.

I need a response to the following:

Do you have any objections to the recommendations relative only to what is on the diagnostic review forms I provided.

FAIRWOOD – 513364T

Install/upgrade active devices

- AFLS/Cants. Additional set of lights for SB traffic.
- RR circuitry upgrade to CWT and advance preemption.
- Additional set of lights on cantilever/flashing lights for both SB lanes.
- Add sidelights for WB vehicle traffic.
- LED upgrade.

LOCKBOURNE – 513362E

Install/upgrade active devices

- Circuitry upgrade for CWT and advance preemption.
- Use existing house and junction box in NE quadrant.

Would you or Alan please acknowledge the recommendations by initialing page 5 or by sending an email that I can attach to the form. Otherwise another review will be convened.

Thank you,

Cathy Stout
Manager, Safety Programs
MS 3140, 1980 W. Broad Street
Columbus, OH 43223
614-466-0313

Stout, Catherine

From: McGaughey, Matthew B. <MBMcGaughey@columbus.gov>
Sent: Tuesday, February 28, 2017 8:40 AM
To: Stout, Catherine
Cc: Kirkland, Susan; Culliton, Isabella
Subject: RE: FRA Fairwood Avenue 513364T, Lockbourne Road 513362E - Preemption locations

Cathy-

I concur with the findings of the diagnostic team.

Thanks,

Matt

From: Catherine.Stout@dot.ohio.gov [mailto:Catherine.Stout@dot.ohio.gov]
Sent: Monday, February 27, 2017 12:31 PM
To: McGaughey, Matthew B.
Cc: Susan.Kirkland@dot.ohio.gov; Isabella.Culliton@dot.ohio.gov
Subject: FW: FRA Fairwood Avenue 513364T, Lockbourne Road 513362E - Preemption locations
Importance: High

Matthew,

Can you please confirm that you accept the findings of the diagnostic review team? You can respond to this email or initial and return the recommendations page (page 5).

Thanks,

Cathy Stout
Manager, Safety Programs
MS 3140, 1980 W. Broad Street
Columbus, OH 43223
614-644-0313

Diagnostic Review Team Survey

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

Date: 7/25/2016

Location Data

Street or Road Name: Fairwood Ave.			
Route/Road Number (i.e. Twp., Co., SR or US)		US DOT No.: 513364T	
County: FRA	Township:	City: (In or Near)	City of Columbus
Railroad Name: Norfolk Southern	Railroad Division: Dearborn	Branch/Line Name: Western Br.	
Nearest RR Timetable Station: Bannon		RR Milepost: 137.19	

On-Site Review Team

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

1. Cathy Stout ORDC
2. Allen bell NS
3. Matt McGaughey City of Columbus
4. Jodi Stephanik ✓ ✓
5. Emilie ✓ ✓
6. Tony ✓ ✓
7. Nate ✓ ✓
8. Rick Campbell CTC
9. Tim Oster CTC
- Isabella Cullington ORDC

Existing Traffic Control Devices

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

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

	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years	0 (3/9/08)	
Hazard Ranking	893 Date Run: 8/2/2016	

Railroad Data

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	8	
< 1 per day		OK
Day thru trains	2	
Night thru trains	2	
Daytime switching movements	2	
Nighttime switching movements	2	
Total number of tracks	2	
Number of main tracks	2	
Number of other tracks		
Maximum train speed	30	
Typical train speed	30	
Amtrak		

If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table I) ☐ 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: City of Columbus

Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	8971 (2004) OK	
Highway paved	X Yes ☐ No	☐ Yes ☐ No
Roadway Surface: ☐ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: _____ ft.		
Number of highway lanes	3	
Urban or Rural	Urban	
Vehicle Speed: _____ MPH		

School Bus Operation: ☐ No ☐ Yes _____ Amount

Hazardous Materials Trucks: ☐ No X Yes .04 Amount

Shoulders: ☐ No ☐ Yes

Is the shoulder surfaced? ☐ No ☐ Yes

Is there existing guardrail along roadway in crossing vicinity? ☐ No ☐ Yes

Is stopping site distance adequate? (See Table 2) ☐ Yes ☐ No If no, deficient approach(es) _____

Quadrant _____ Curb and Gutter:

- ☐ Functional (Curb height = 4" or more)
☐ Non-functional (Curb height = Less than 4")
☐ None

Quadrant _____ Curb and Gutter:

- ☐ Functional (Curb height = 4" or more)
☐ Non-functional (Curb height = Less than 4")
☐ None

Pedestrians: ☒ No ☐ Yes	
Is sidewalk present? ☒ No ☐ Yes	
Is there a nearby intersection that could cause queuing over the crossing? ☐ No ☒ Yes	
If yes, Distance <u>20 ft</u>	
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 <u>traffic signal improvement</u> Lead Agency <u>City of Columbus</u> Timeline/completion -	
Is it the consensus of the Diagnostic Review Team that this is a potential closure project? ☒ No ☐ Yes	
Explain reasons: <u>Heavy traffic, urban area</u>	
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 ☐ Cable ☐ Telephone ☐ Fiber Optic Cable ☐ Petroleum ☐ Water ☐ Sanitary Sewer ☐ Other _____	
Is(are) there potential utility conflict(s) ☐ Yes ☐ No ☐ Unknown	
Comments:	

Potential Red Flags / Project Challenges

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

Yes - Fairwood Road / Refugee Rd

Crossing Consolidation or Closure:

—

Real Estate or ROW:

—

Culverts / Drainage / Ballast Conditions:

—

Roadway and/or Sidewalks:

Truck traffic turning (R) from Refugee Rd
to NB Fairwood hitting RR gates

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

Environmental:

Other:

Diagnostic Team Recommendations

	Quadrants Needed
☒ Install/upgrade active devices	
☐ Automatic Flashing Lights (AFLS)	
☒ AFLS / Cants	Add'l set of lights for SB traffic
☐ AFLS / Gates	
☐ AFLS / Gates / Cants	
☐ Bells / number	
☒ Upgrade circuitry / type	CWT + Advance preemption
☒ Sidelights	WB traffic.
☐ Guardrail Needed	
☐ Install/Replace curb	
☐ Bungalow placement & offset from rail & highway	
☐ Other (define)	

Comments:

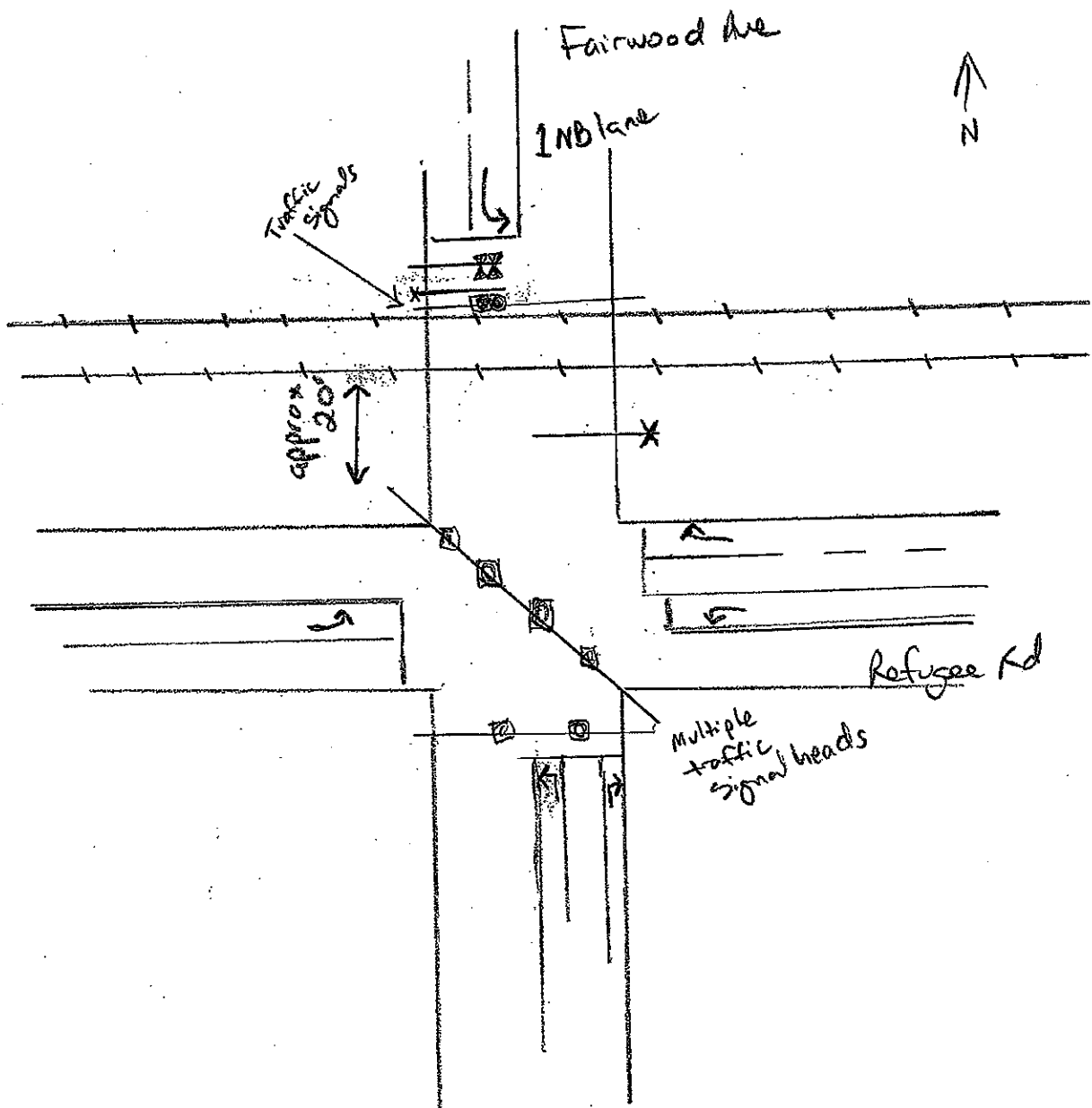
☒ Install/upgrade traffic signal preemption	Advance.
☐ No improvements needed	
☒ Other (define)	LEDs

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

Field Dimensions

The diagram shows a cross-section of a road with the following layers from top to bottom: Sidewalk, Parkway, Roadway, Roadway, Parkway, and Sidewalk. A legend box indicates 'Show North Direction'.	
---	--

Field Sketch



Not to scale

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

Sketch by: CM3

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)
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5	50
10	70
15	105
20	135
25	180
30	225
35	280
40	340
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60	660
65	760
70	865

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

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

Stout, Catherine

From: Klinger, Stephen J. <Stephen.Klinger@nscorp.com>
Sent: Wednesday, October 19, 2016 3:11 PM
To: Stout, Catherine
Subject: RE: FRA Fairwood Avenue 513364T, Lockbourne Road 513362E - Preemption locations

Cathy – I see no issues with the diagnostic noting that preemption concerns may need to be discussed.

Thank you,

Stephen Klinger | Administrator Grade Crossing Program | Norfolk Southern Corp.
1200 Peachtree St. NE, Box 123 | Office 7014 | Atlanta, GA 30309
T: 404.529.1234 | M: 404.617.5450 | F: 404.527.2901 | stephen.klinger@nscorp.com

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Sent: Tuesday, September 13, 2016 10:56 AM
To: Klinger, Stephen J.
Cc: Bell, Allen D.
Subject: [EXTERNAL] RE: FRA Fairwood Avenue 513364T, Lockbourne Road 513362E - Preemption locations
Importance: High

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Do you have any objections to the recommendations relative only to what is on the diagnostic review forms I provided.

FAIRWOOD – 513364T

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LOCKBOURNE – 513362E

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MS 3140, 1980 W. Broad Street
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614-466-0313

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Cathy Stout
Manager, Safety Programs
MS 3140, 1980 W. Broad Street
Columbus, OH 43223
614-644-0313

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

8/23/2018 4:19:28 PM

in

Case No(s). 18-1314-RR-FED

Summary: Application In the Matter of a Request for Upgrades to the Active Warning Devices at the Norfolk Southern Railway Crossing, Lockbourne Road DOT# 513-362E and Fairwood Avenue DOT#513-364T, in Franklin County, Ohio. electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division