

Memo

To: Docketing Division
From: Jill Henry, Rail Specialist, Rail Division
Cc: PUCO Legal Department
Date: 4/12/17

Re: PUCO Case No. 17-977-RR-FED- In the Matter of a Request for the Installation of Lights and Gates at the Norfolk Southern Railway Crossing, Radnor Road/CR 198 DOT#481-506P, in Delaware County, Ohio.

On August 1, 2016, the Ohio Rail Development Commission (ORDC) authorized funding for Norfolk Southern Railway to install lights and gates at Radnor Road/CR 198 DOT#481-506P, in Delaware County, Ohio. The crossing was surveyed on April 28, 2016 and found to warrant the upgrades. The electric utility provider for this crossing is American Electric Power- AEP.

The project will be paid for with federal funds and is actual cost. The plans and estimates for the project in the amount of \$381,696.00 have been approved. Construction may commence at once. **Staff requests a Finding & Order with completion of the project in nine months.** Staff requests that the following language be incorporated in the Finding & Order:

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

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

Please serve the following parties of record:

Norfolk Southern Railway Company
Stephen Klinger
Public Projects Engineer
1200 Peachtree Street NE
Atlanta, GA 30309-3597

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

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

Delaware County Engineer
Doug Riedel
Senior Project Engineer
50 Channing Street
Delaware, Ohio 43015

Troy Township, Delaware County
Doug Price
Trustee
4923 US 23 North
PO Box 751
Delaware, Ohio 43015

American Electric Power- AEP

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

TO: Randall Schumacher, Supervisor, Rail Division, PUCO

FROM: Cathy Stout, Manager, Safety Section, ORDC

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

SUBJECT: Delaware County, CR198 Radnor Road, DOT 481506P, PID# 103320, NS Project 10.1224

DATE: March 7, 2017

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on April 28, 2016. The Ohio Rail Development Commission (ORDC) attended the review. The Diagnostic Team recommended the improvement of warning devices to flashing lights and roadway gates. Copies of the diagnostic review form and the plan and estimate are attached.

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

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

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

Thank you for your assistance with these matters.

Attachment: Diagnostic Review
Plan & Estimate

c: Jill Henry, Rail Division Specialist, PUCO
ORDC Project Manager (file)



OHIO RAIL DEVELOPMENT COMMISSION

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

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

March 7, 2017

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

RE: *Delaware County, CR198 Radnor Road, DOT 481506P, PID# 103320, NS Project 10.1224*

Dear Mr. Klinger:

The plan and estimate dated **December 5, 2016**, for the referenced project has been reviewed and is acceptable. The project is authorized for construction under the master agreement between Ohio Rail Development Commission, Public Utilities Commission of Ohio and Norfolk Southern (NS) executed on December 19, 2012. NS may proceed with the construction of the proposed grade crossing warning system in accordance with the abbreviated plan. This authorization is made with the stipulation and understanding that the approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit. Reimbursement of eligible actual cost is limited to **\$381,696.00**. Additional costs must be approved in writing by the Ohio Rail Development Commission (ORDC) prior to being incurred. Emergency verbal authorizations by ORDC may be permitted and will be confirmed by ORDC in writing within ten (10) business days of the verbal approval.

This authorization is contingent upon 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 Eric Neff, ORDC, email: eric.neff@dot.ohio.gov and to Jill Henry the Public Utilities Commission of Ohio at email: jill.henry@puco.ohio.gov. NS's project foreman will also notify the same of any stops and re-starts of the work activity and of the date work was completed for the project.
2. 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 Eric Neff at 614-752-0399 (telephone) or eric.neff@dot.ohio.gov (email) of any changes in the scope of work, cost overruns, material changes, etc. which are not included in the approved plan and estimate and secure approval of same before the work is performed.
4. Open cut of roadways is not permitted except in unusual circumstances and must be coordinated with the local highway authority and preapproved by ORDC.



www.rail.ohio.gov

phone: 614.644.0306

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,



Eric T. Neff
Project Manager, Safety Programs

Attachments: Letter Agreement
State of Ohio Purchase Order

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

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

Ohio Utilities Protection Service

Call 811
before you dig



O.H. POWER LINES
(V.O.H.C. POWER 30')

O.H. POWER LINES
(V.O.H.C. POWER 28')
(SEE NOTE 10)

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

IN SERVICE _____ SIGNED _____ DATE _____

☐ S&E ENGINEERING COPY
☐ CONSTRUCTION OFFICE COPY
RETURN TO S&E ENG. AFTER COMPLETION
☐ FIELD COPY
RETURN TO CASE AFTER COMPLETION
☐ PROJECT ENGINEER COPY

NOTES:

1. MAX. TRAIN SPEED 60 M.P.H.
2. LATITUDE N 40° 23' 40" LONGITUDE W 83° 04' 50"
ELEVATION 957'
3. SIGNAL "A" TO HAVE BELL.
4. LOCATE U/G UTILITIES & CABLE BEFORE DIGGING.
5. CROSSING LOCATED IN DELAWARE COUNTY.
6. NEAREST STREET ADDRESS IS
293 RADNOR RD.
7. NEAREST INTERSECTING STREET IS
EAST TO FRONTAGE RD.
8. DISTANCE TO NEAREST INTERSECTING
STREET IS 1750 FT.
9. EXISTING AC SERVICE IS SHARED WITH ADJACENT
SIGNAL LOCATION AND SHOULD BE RE-USED.
10. OVERHEAD POWER CABLES IN QUAD "B" ARE AN OBSTRUCTION
AND WILL NEED TO BE RAISED OR RELOCATED.

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

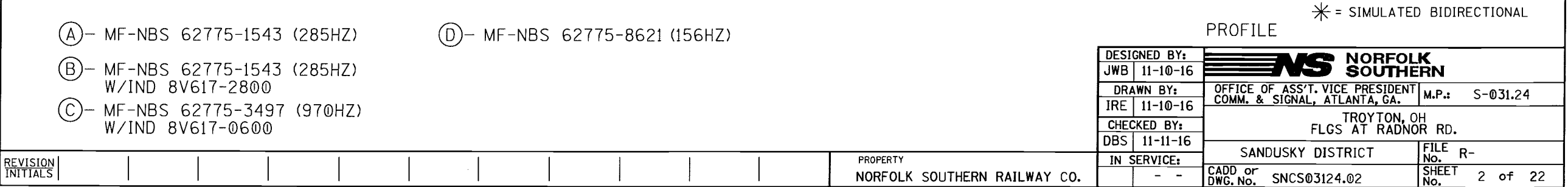
SCALE: 1" = 20'
PROJECT #10.1224

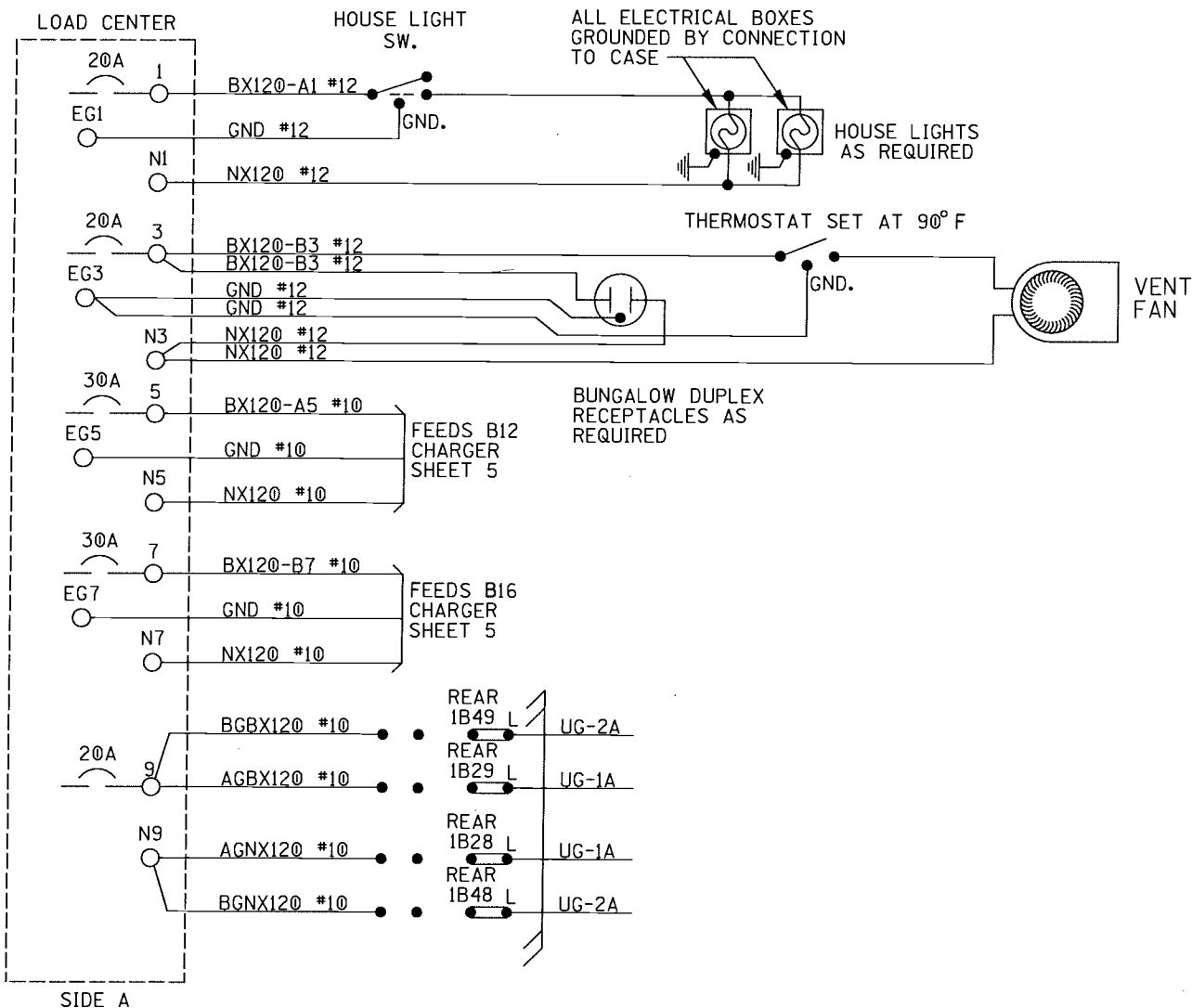
LAYOUT

FILE
No. TBA

DESIGNED BY: JWB 11-10-16	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 11-10-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: S-031.24
CHECKED BY: DBS 11-11-16	TROYTON, OH FLGS AT RADNOR RD.	
IN SERVICE: - -	SANDUSKY DISTRICT	FILE No. R-
	CADD or DWG. No. SNCS03124.01	SHEET No. 1 of 22

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



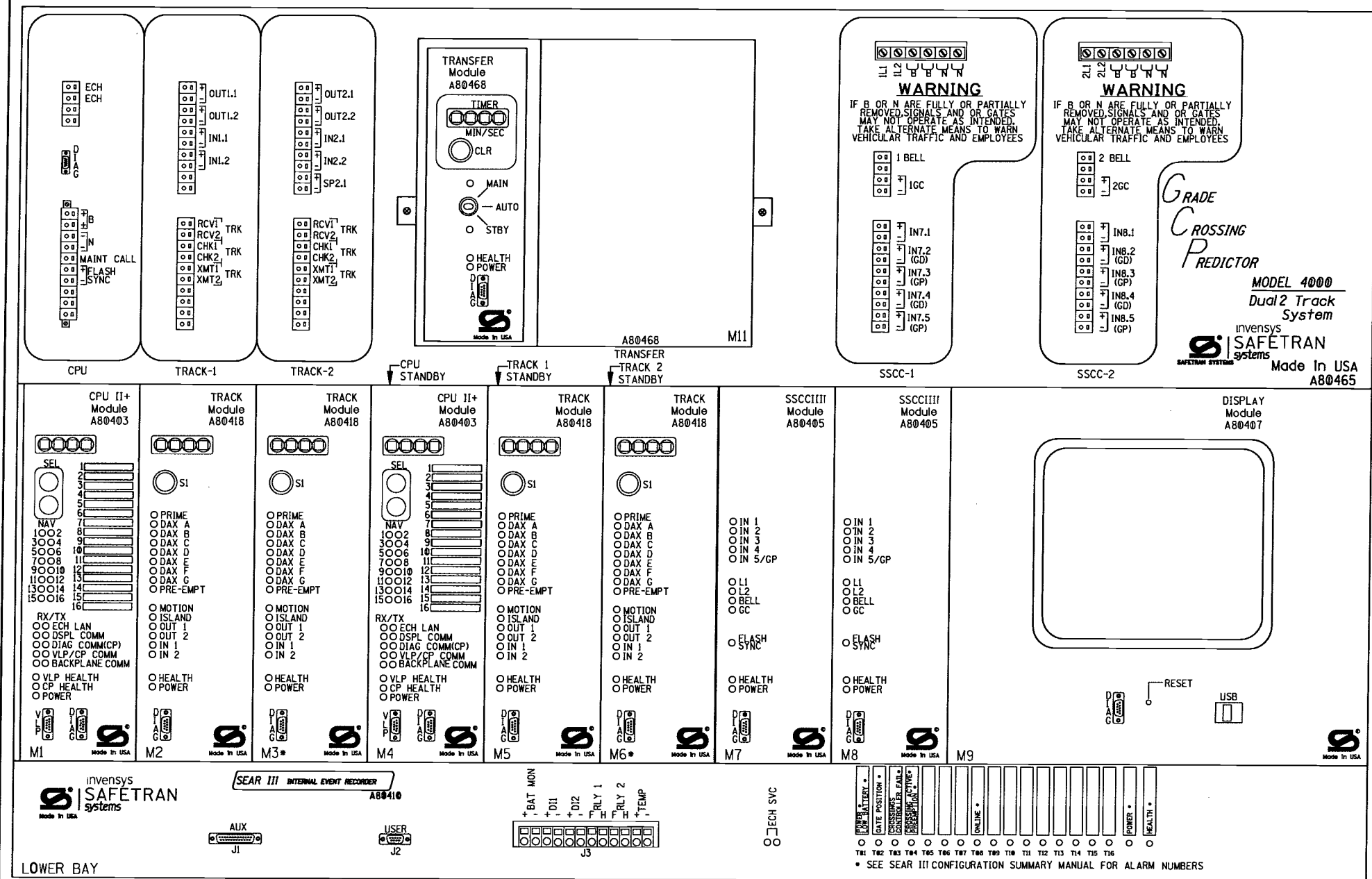


LOAD CENTER

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	11-10-16		
DRAWN BY:		OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: S-031.24
IRE	11-10-16	TROYTON, OH FLGS AT RADNOR RD.	
CHECKED BY:			
DBS	11-11-16	SANDUSKY DISTRICT	
IN SERVICE:			
	- -	CADD or DWG. NO. SNCS03124.04	FILE NO. R- SHEET NO. 4 of 22

[illegible]

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



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.

ATTENTION!
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.

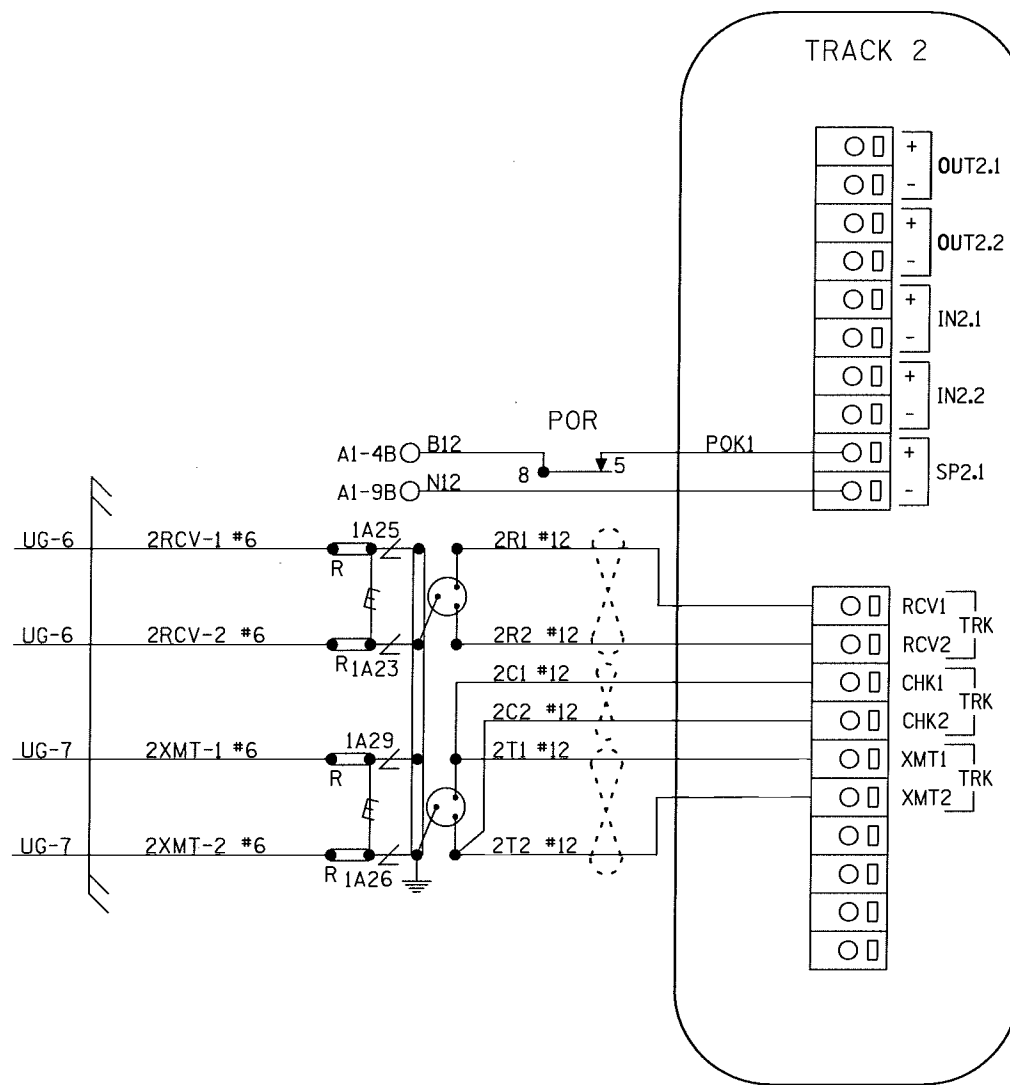
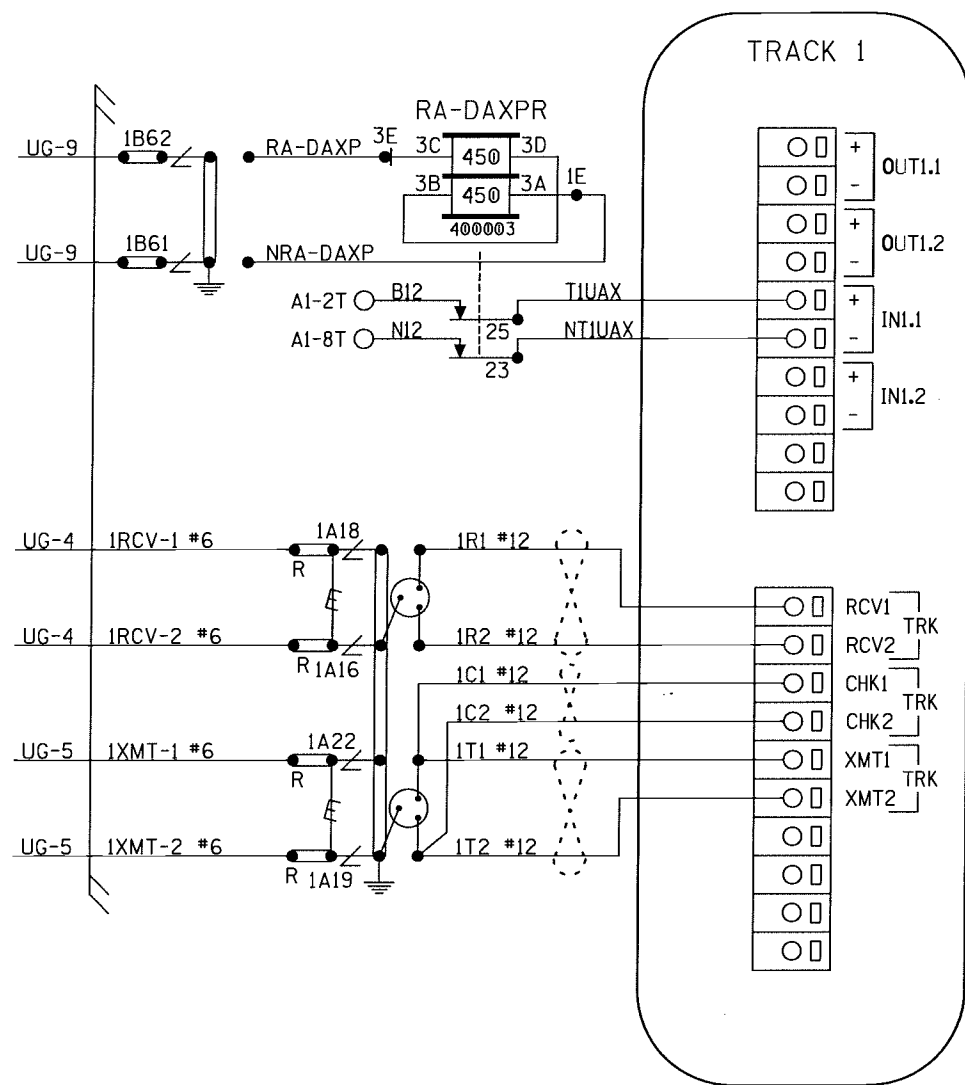
HEATER FUNCTION IS JUMPER SELECTABLE ON
THE DISPLAY MODULE BOARD.
THREE OPTIONS ARE AVAILABLE:
NORMAL LCD HTR (DEFAULT)
HI CURRENT
NO JUMPER (HEATER DISABLED)

* = MAIN AND STANDBY MAY USE RIO IN
TRACK 2 SLOTS (M3 AND M6)

4000 GCP 2-TK CHASSIS
& MODULE LAYOUT

DESIGNED BY: JWB 11-10-16		
DRAWN BY: IRE 11-10-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
	M.P.: S-031.24	
CHECKED BY: DBS 11-11-16	TROYTON, OH FLGS AT RADNOR RD.	
IN SERVICE: - -	SANDUSKY DISTRICT	
	FILE No. R-	
REVISION INITIALS	CADD or DWG. No. SNCS03124.06	
	SHEET 6 of 22	

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



CONNECTORS FOR TRACK MODULES

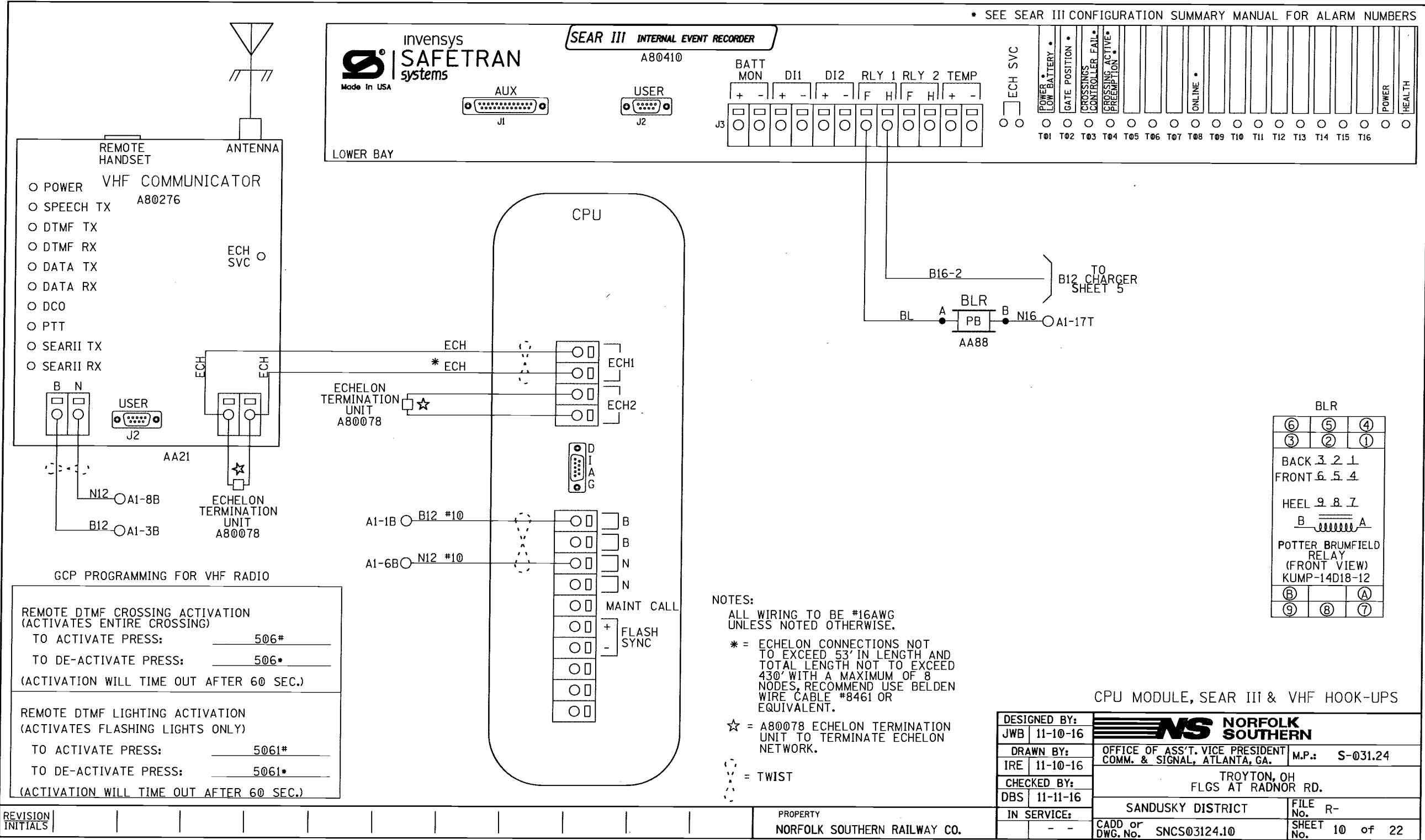
NOTES:
ALL WIRING TO BE #16AWG
UNLESS NOTED OTHERWISE.

⋯ = TWIST

DESIGNED BY:	 NORFOLK SOUTHERN		
JWB 11-10-16			
DRAWN BY:	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		
IRE 11-10-16			
CHECKED BY:	TROYTON, OH FLGS AT RADNOR RD.		
DBS 11-11-16			
IN SERVICE:	SANDUSKY DISTRICT		FILE NO. R-
- -			SHEET No. 9 of 22
	CADD or DWG. No. SNCS03124.09		

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

REVISION
INITIALS



GCP PROGRAMMING FOR VHF RADIO

REMOTE DTMF CROSSING ACTIVATION
(ACTIVATES ENTIRE CROSSING)

TO ACTIVATE PRESS: 506*

TO DE-ACTIVATE PRESS: 506*

(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

REMOTE DTMF LIGHTING ACTIVATION
(ACTIVATES FLASHING LIGHTS ONLY)

TO ACTIVATE PRESS: 5061*

TO DE-ACTIVATE PRESS: 5061*

(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

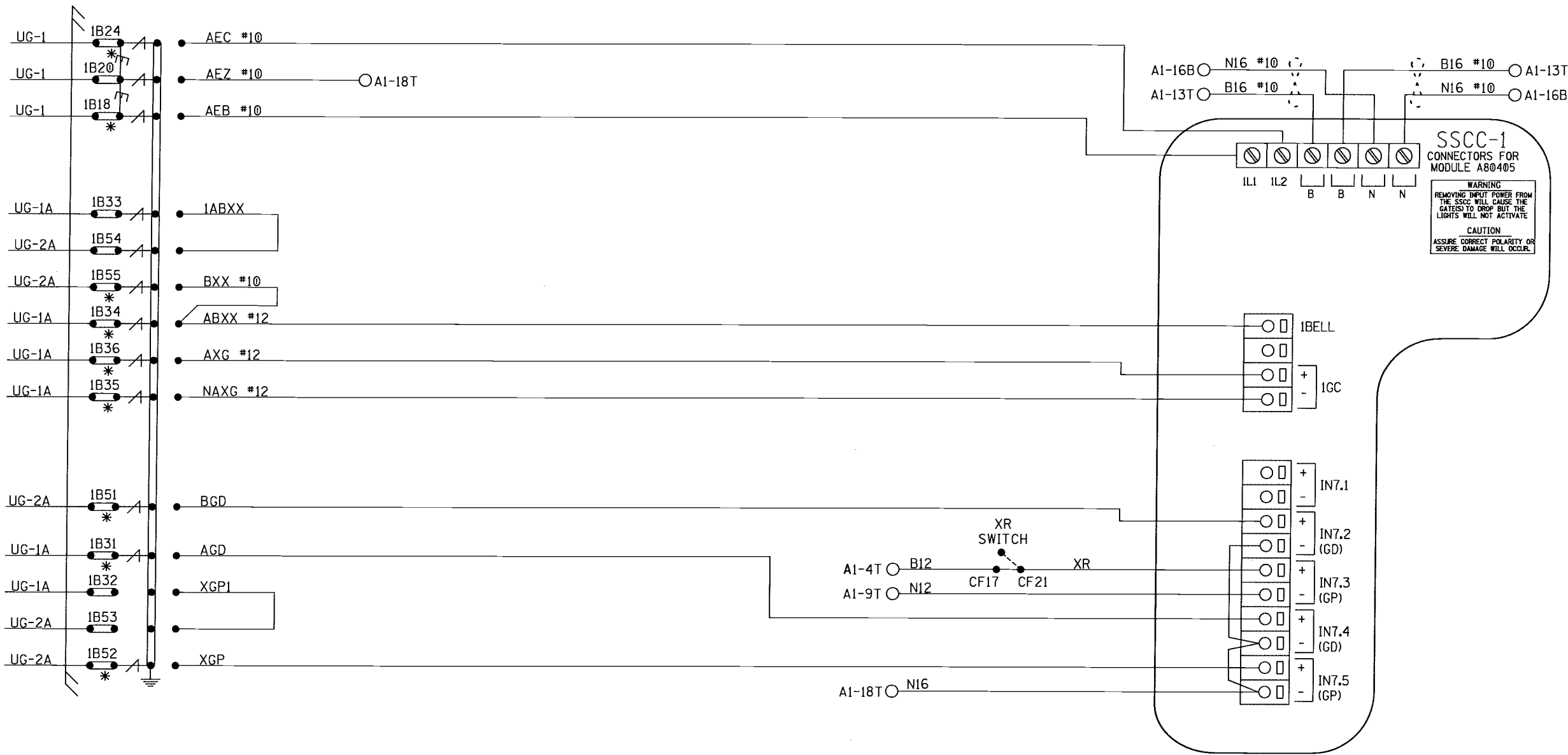
NOTES:

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



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

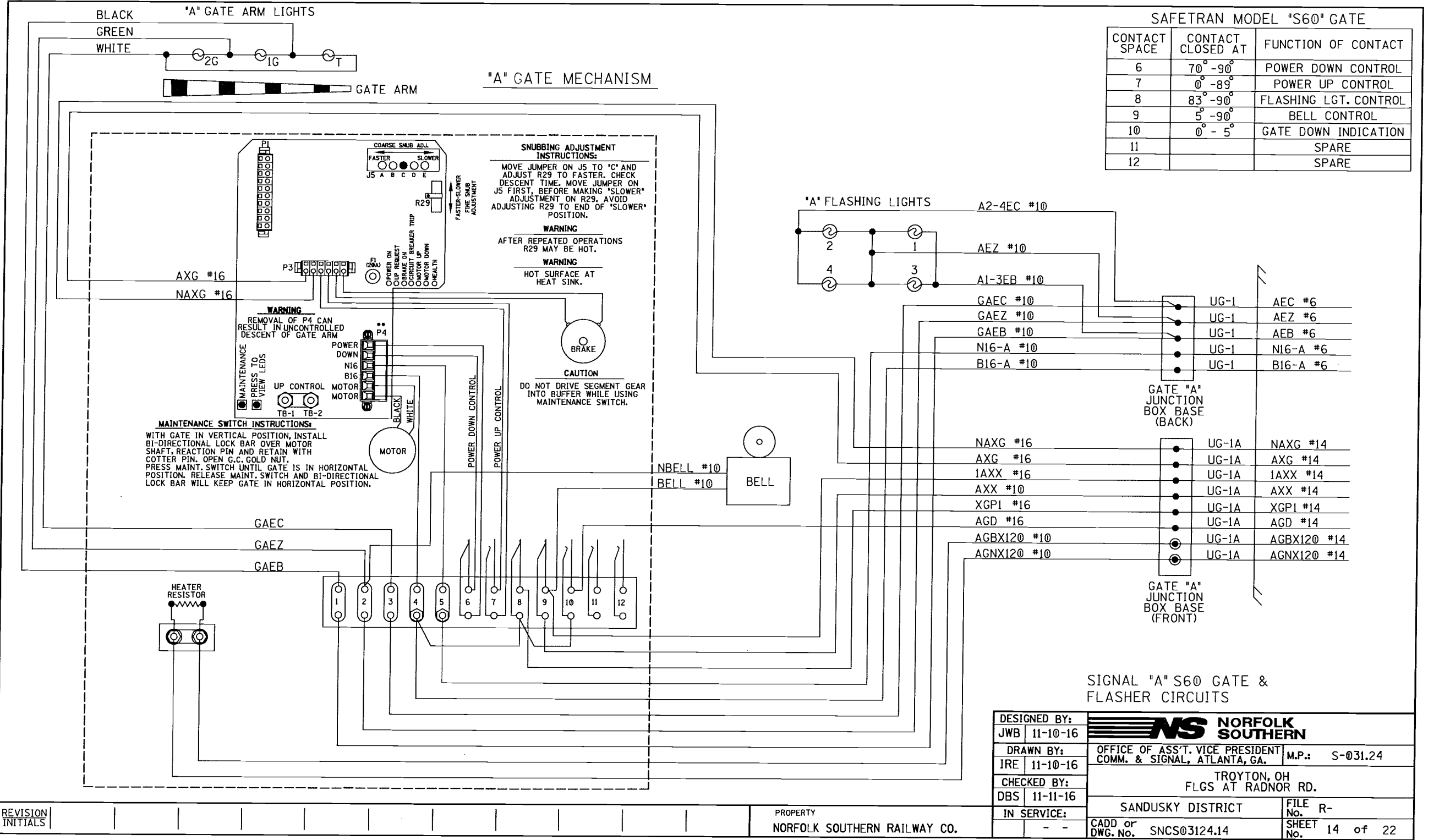
SSCC#1 MODULE HOOK-UP

DESIGNED BY:	JWB 11-10-16	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 11-10-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: S-031.24
CHECKED BY:	DBS 11-11-16	TROYTON, OH FLGS AT RADNOR RD.	
IN SERVICE:	- -	SANDUSKY DISTRICT	FILE NO. R-
		CADD or DWG. No. SNCS03124.12	SHEET 12 of 22

REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

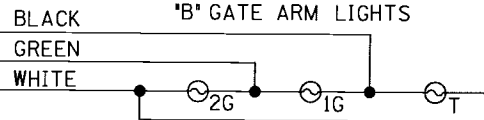
SAFETRAN MODEL "S60" GATE		
CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
6	70°-90°	POWER DOWN CONTROL
7	0°-89°	POWER UP CONTROL
8	83°-90°	FLASHING LGT. CONTROL
9	5°-90°	BELL CONTROL
10	0°-5°	GATE DOWN INDICATION
11		SPARE
12		SPARE



SIGNAL "A" S60 GATE & FLASHER CIRCUITS

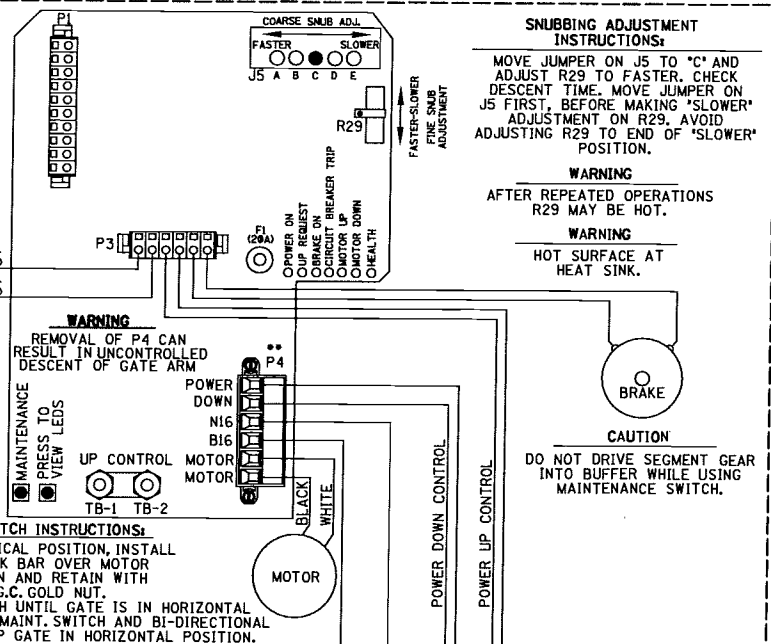
DESIGNED BY:	 NORFOLK SOUTHERN	
JWB 11-10-16		
DRAWN BY:	OFFICE OF ASS'T. VICE PRESIDENT	
IRE 11-10-16	COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY:	TROYTON, OH	
DBS 11-11-16	FLGS AT RADNOR RD.	
IN SERVICE:	SANDUSKY DISTRICT	
- -	CADD or DWG. No. SNCS03124.14	
	FILE No. R-	SHEET 14 of 22

"B" GATE ARM LIGHTS



GATE ARM

"B" GATE MECHANISM

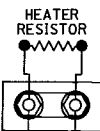


MAINTENANCE SWITCH INSTRUCTIONS:
WITH GATE IN VERTICAL POSITION, INSTALL BI-DIRECTIONAL LOCK BAR OVER MOTOR SHAFT, REACTION PIN AND RETAIN WITH COTTER PIN. OPEN G.C. GOLD NUT. PRESS MAINT. SWITCH UNTIL GATE IS IN HORIZONTAL POSITION. RELEASE MAINT. SWITCH AND BI-DIRECTIONAL LOCK BAR WILL KEEP GATE IN HORIZONTAL POSITION.

GAEC

GAEZ

GAEB

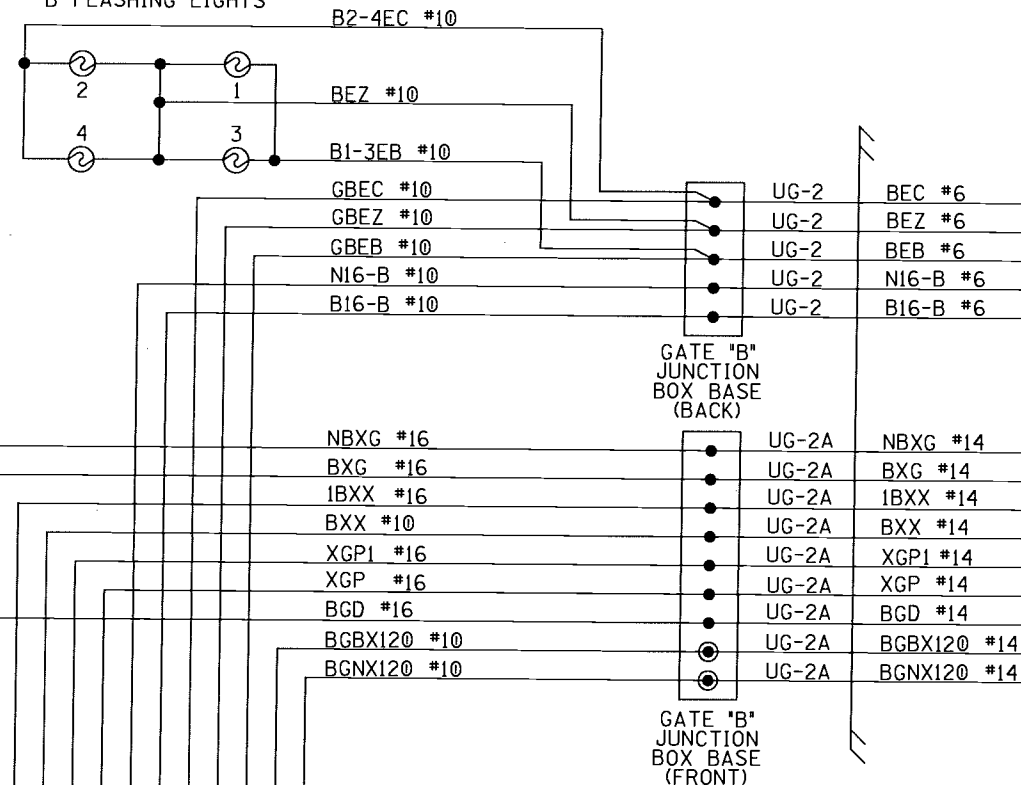


HEATER RESISTOR

SAFETRAN MODEL "S60" GATE

CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
6	70°-90°	POWER DOWN CONTROL
7	0°-89°	POWER UP CONTROL
8	83°-90°	FLASHING LGT. CONTROL
9	5°-90°	BELL CONTROL
10	0°-5°	GATE DOWN INDICATION
11		SPARE
12		SPARE

"B" FLASHING LIGHTS



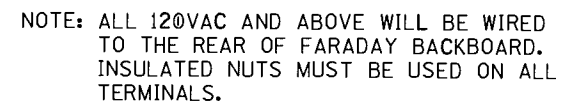
SIGNAL "B" S60 GATE & FLASHER CIRCUITS

DESIGNED BY:	JWB 11-10-16	 NORFOLK SOUTHERN	
DRAWN BY:	IRE 11-10-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: S-031.24
CHECKED BY:	DBS 11-11-16	TROYTON, OH FLGS AT RADNOR RD.	
IN SERVICE:	- -	SANDUSKY DISTRICT	FILE No. R-
		CADD or DWG. No. SNCS03124.15	SHEET 15 of 22

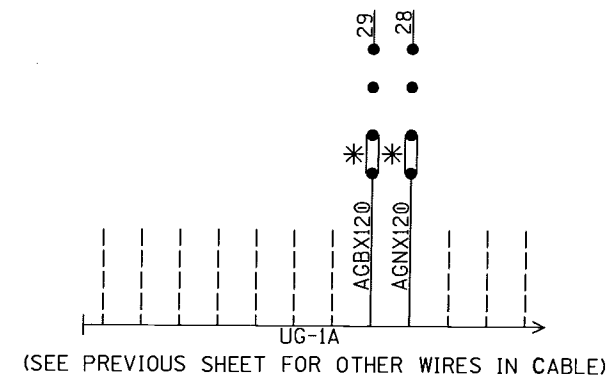
PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

1A"

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	11-10-16		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT	
IRE	11-10-16	COMM. & SIGNAL, ATLANTA, GA.	M.P.: S-031.24
CHECKED BY:		TROYTON, OH	
DBS	11-11-16	FLGS AT RADNOR RD.	
IN SERVICE:		SANDUSKY DISTRICT	FILE NO. R-
	- -	CADD or DWG. No. SNCS03124.16	SHEET 16 of 22

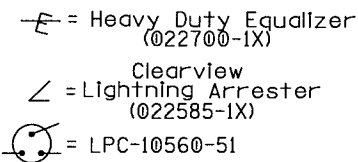
REVISION
INITIALS

REAR BACKBOARD 1A & 1B



DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	11-10-16		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: S-031.24
IRE	11-10-16	TROYTON, OH FLGS AT RADNOR RD.	
CHECKED BY:			
DBS	11-11-16	SANDUSKY DISTRICT	
IN SERVICE:			
	- -	CADD or DWG. NO. SNCS03124.17	FILE No. R- SHEET No. 17 of 22

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.



 = 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	
JWB	11-10-16		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT	
IRE	11-10-16	COMM. & SIGNAL, ATLANTA, GA.	M.P.: S-031.24
CHECKED BY:		TROYTON, OH	
DBS	11-11-16	FLGS AT RADNOR RD.	
IN SERVICE:		SANDUSKY DISTRICT	FILE No. R-
	- - -	CADD or DWG. No. SNCS03124.18	SHEET No. 18 of 22

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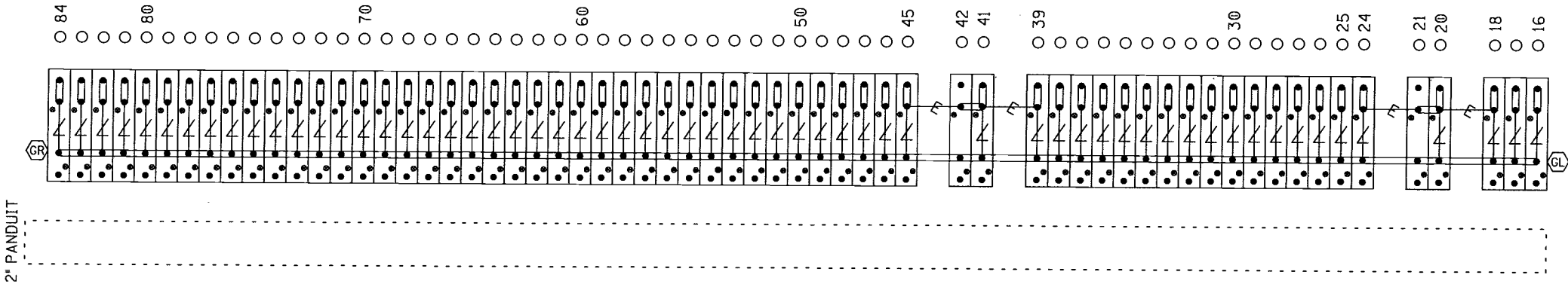
PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

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

AREA BELOW IS SCALED WITH AS=.75

TERMINAL BOARD 1
RIGHT HALF

"1C"



⚡ = Heavy Duty Equalizer
(022700-1X)

⚡ = Clearview
Lightning Arrester
(022585-1X)

⚡ = LPC-10560-51

GR
GL

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

= INDICATES PLACEMENT
OF PANDUIT

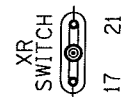
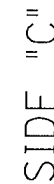
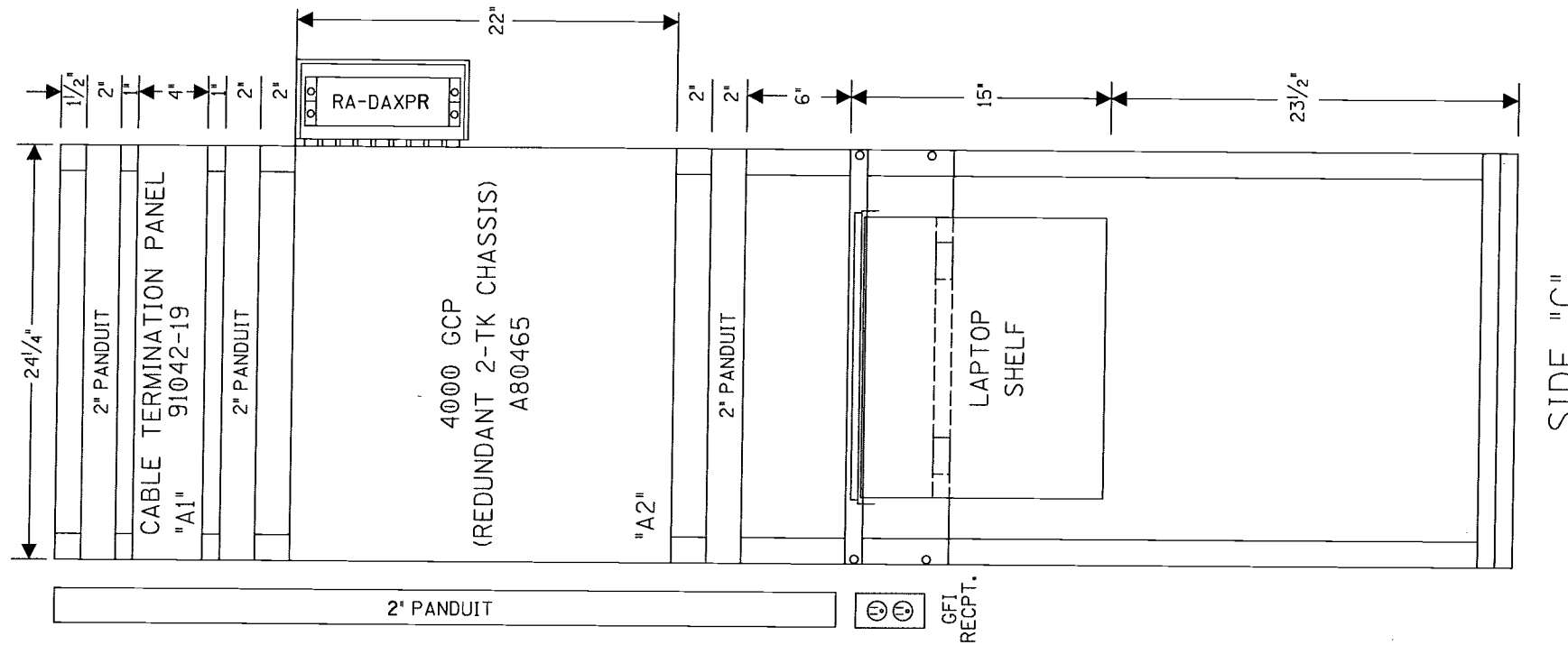
THIS SHEET IS FOR REFERENCE ONLY,
TO REFLECT HOW THE FARADAY SHIELD
IS PREDRILLED. ONLY INSTALL AND USE
THE TERMINALS NEEDED.

FARADAY SHIELD 1C

DESIGNED BY:	JWB 11-10-16	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 11-10-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: S-031.24
CHECKED BY:	DBS 11-11-16	TROYTON, OH FLGS AT RADNOR RD.	
IN SERVICE:	- -	SANDUSKY DISTRICT	FILE No. R-
		CADD or DWG. No. SNCS03124.19	SHEET No. 19 of 22

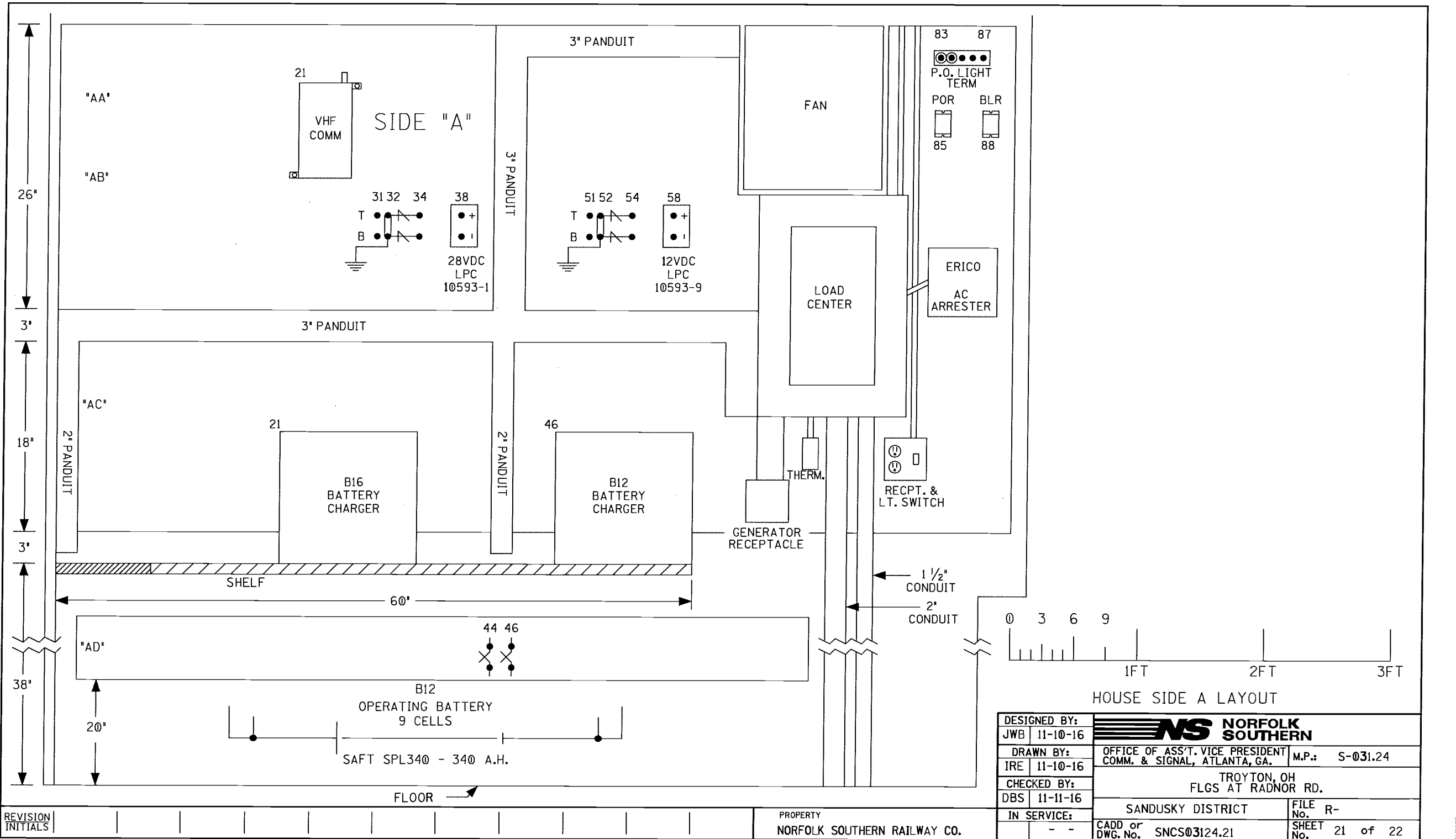
REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	11-10-16		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT	
IRE	11-10-16	COMM. & SIGNAL, ATLANTA, GA.	M.P.: S-031.24
CHECKED BY:		TROYTON, OH	
DBS	11-11-16	FLGS AT RADNOR RD.	
IN SERVICE:		SANDUSKY DISTRICT	FILE No. R-
	- -	CADD or DWG. No. SNCS03124.20	SHEET No. 20 of 22

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	11-10-16		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT	
IRE	11-10-16	COMM. & SIGNAL, ATLANTA, GA.	M.P.: S-031.24
CHECKED BY:		TROYTON, OH	
DBS	11-11-16	FLGS AT RADNOR RD.	
IN SERVICE:		SANDUSKY DISTRICT	FILE No. R-
	- -	CADD or DWG. No. SNCS03124.20	SHEET No. 20 of 22





05-Dec-16

Detailed Estimate for Grade Crossing Warning Devices

City/State: DELAWARE, OH
MilePost: S-31.23
State Proj. No.: PID: 103320
S&E Proj. No.: 10.1224
Man Days: 180

Road: RADNOR RD/CR198
DOT/AAR: 481506P
County: DELAWARE
File Number:

Purchases - Others	
Meals and Lodging:	\$24,621.41
Rental of Equipment:	\$33,657.37
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 30 Days)	
Construction Supervision Vehicle:	\$5,148.45
Purchases - Other Total:	\$63,427.23
Material And Additives	
Material Cost:	\$146,207.00
Sales and Use Tax:	\$11,697.00
Material Handling Freight:	\$14,620.75
Material Total:	\$172,524.75
Labor And Additives	
Labor Cost:	\$57,960.00
(6 man crew at \$1,932.00 a day for: 30 days)	
Payroll Tax & Overheads:	\$49,416.70
Preliminary Engineering:	\$21,437.58
Construction Supervision:	\$16,930.12
Labor Total:	\$145,744.40
Project Cost:	\$381,696.38
Scrap / Salvage Credit:	\$0.00
Project Total:	\$381,696.00

Estimated on: 05-Dec-16

Estimated by: ndr3j

Estimate valid for 1 year from date of estimate



Norfolk Southern Railway
Highway Crossing Signalization Program - Material List



Do not substitute items without permission from S & E Engineering

City:	DELAWARE
Road:	RADNOR RD/CR198
Mile Post:	S-31.23
Drawing Number:	SNCS03124
State ProjectNumber:	PID: 103320
County:	DELAWARE
A A R Number:	481506P
Project Number:	10.1224
File Number:	
New File Number:	CX1112372
WBS:	F-03646
Store Number:	S803
Supervisor:	A.R. ETHERTON
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&EGen. Supt. Construction w/copy of invoice	

Location: DELAWARE			OH	S&E Proj. No.: 10.1224	AFE No.: F-03646	Drawing No.: SNCS03124			
Store No.: S803			P.O.Number:		Date Required:	Date Shipped:	Vendor: Interrail Engineering, INC		
Qty.	Class-Item-GD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
3	670-360693-4	EA	\$5.55	\$16.65	AAR/DOT NUMBER PLATE/DECAL, ORDER 3 PER PROJECT. 60 DAY LEAD TIME. SUPPLIED BY STRAN.				
1	165-006505-4	EA	\$1,075.23	\$1,075.23	AC SERVICE, COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE				
4	670-119241-4	EA	\$25.01	\$100.04	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	\$1,197.90	\$2,395.80	BRACKET, GATE SAVER, NEG385102GS, SPRING LOADED SWING AWAY ADAPTER FOR FIBERGLASS/ALUMINUM GATES, USE WITH GATE 38' AND LESS				
1	670-356949-4	EA	\$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				
900	465-292862-4	LF	\$1.36	\$1,224.00	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR				
500	465-292929-4	LF	\$4.12	\$2,060.00	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL				
800	465-292945-4	LF	\$1.59	\$1,272.00	CABLE, UG 5-14, S-54 OKONITE 206-14-6885				
800	465-791835-4	FT	\$3.54	\$2,832.00	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				
3	670-010674-4	EA	\$738.15	\$2,214.45	CHARGER, BATTERY CRAGG MODEL 40 DTC-12V, 40 AMP, P/N 520940				
120	165-544477-4	FT	\$3.22	\$386.40	CONDUIT, 4"x10' PVC, SCHEDULE 80 BELL CONNECTOR AT ONE END, 1/2 PT. GLUE IN KIT 670-123298-4				

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Location: DELAWARE			OH	S&E Proj. No.: 10.1224	AFE No.: F-03646	Drawing No.: SNCS03124			
Store No.: S803			P.O.Number:		Date Required:	Date Shipped:	Vendor: Interrail Engineering, INC		
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
6	670-664917-4	EA	\$87.64	\$525.84	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				
6	670-632520-4	EA	\$79.69	\$478.14	CONNECTOR KIT, WELDED NEAR RAIL, CONSISTING OF RUBBER HOSE PROPERLY DRILLED, BONDSTRAND, SPLICING SLEEVE, 1 REDUCING SLEEVE, 5 CLAMPS, 1 TRACK CLIP, 1 WEB WELDED TRACK CONNECTOR, 1 WELD METAL, SAFETRAN 111359-1X				
2	670-793404-4	EA	\$1,159.00	\$2,318.00	COUNTERWEIGHT PKAGE, 17-24"GATE S'TRAN S- MECH ONLY, STAINLESS, TO INCLUDE HUB, SUPPORT ARMS				
2	670-343489-4	EA	\$1,003.45	\$2,006.90	COUPLER, BIDIRECTIONAL SIMULATION S'TRAN# 62664-285				
4	670-760012-4	EA	\$9.95	\$39.80	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. =====TO COVER 2 LAMPS=====				
1	670-986650-4	EA	\$370.21	\$370.21	DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING X'ING EQUIPMENT CONTAINER				
1	670-000004-4	EA	\$700.00	\$700.00	FCC LICENSE FOR MONITOR/RADIO				
8	670-000003-4	EA	\$255.85	\$2,046.80	FILL/STONE #57, QUANTITY IS BASED ON TRUCK LOAD PLUS DELIVERY COST				
2	670-015231-4	EA	\$599.40	\$1,198.80	FOUNDATION, DIXIE,S-2 GATE 2'6"X2'6"X5'6" ASSEMBLED				
2	670-005377-4	EA	\$338.00	\$676.00	GATE ARM, ALUMINUM, 17-24 FT. ARM ASSEMBLY, INCLUDES GATE GUARD FOR GATE LIGHT CABLE. HIGH INTENSITY VERTICAL STRIPES.				
1	670-696894-4	EA	\$34,574.48	\$34,574.48	GCP4000 - 2 TRK (2TC) - REDUNDANT - 40/40 AMP WIRED RACK EQUIP. FOR 6X8 XING SHELTER, (INCL. 2 TRK CHASSIS A80465, 4 TRK MODS. A80418, 2-SSCC A80405, 2 CPU A80403, 1 SEAR A80410, 1 DISPLAY A80407, , 2-40 AMP CHARGERS) IPN: 003131-4X				
1	670-687087-4	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				
2	670-491904-4	EA	\$45.20	\$90.40	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-0600				

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Location: DELAWARE			OH	S&E Proj. No.: 10.1224	A/E No.: F-03646	Drawing No.: SNCS03124			
Store No.: S803			P.O. Number:		Date Required:	Date Shipped:	Vendor: Interrail Engineering, INC		
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
1	670-001853-4	EA	\$45.20	\$45.20	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-2800				
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				
1	670-123298-4	EA	\$361.54	\$361.54	KIT, HARDWARE SUPPLIES REQUIRED X'ING P'CKAGES. WEB CONNECTORS FOR SHUNT(8EA) TAPE, AMPS,P'GUM PAINT,SLEEVES,TAGS,GLUE, 100 EA WHITE TAGS,)NE CAN BLUE MARKING PAINT ETC....				
2	670-092155-4	EA	\$160.00	\$320.00	LAMP ASSY, LED GATE ARM KIT (INCLUDES 3 LAMPS COMPLETE WITH CABLES AND MTG. HARDWARE) REC #: 9298-1120				
2	670-005058-4	EA	\$1,786.08	\$3,572.16	LAMP ASSY, LED, 5" MAST BACK TO BACK LIGHTS (IPN: 042003-L487XNS)				
4	670-440826-4	EA	\$2.22	\$8.88	LINK, SAFETRAN 024620-1X INSL TESTING COMP 1 IN CENTER SIGNAL CIRCUITS CR 02-286662				
6	255-590880-4	EA	\$17.52	\$105.12	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"				
2	670-637778-4	EA	\$1,325.00	\$2,650.00	MAST, 5" ALUMINUM 13'10" WITH DOUBLE JCT. BOX BASE. S'TRAN P# 070519-11AX.				
2	670-875060-4	EA	\$2,596.32	\$5,192.64	MECHANISM, GATE MODEL S-60, WITH DEFROSTER, WITHOUT MINI TRACKSIDE SENSOR S'TRAN # 0740007-X002A3				
3	670-000001-4	EA	\$726.23	\$2,178.69	MISC. EXPENSE, MATERIAL/FILL				
3	670-000007-4	EA	\$307.02	\$921.06	MISC. EXPENSE, TRACK WORK (I.E. INS JTS, RODS, ETC.)				
1	000-000000-4	EA	\$5,000.00	\$5,000.00	MISC. EXPENSE, UNDERGROUND BORING				
5	670-000016-4	EA	\$1,500.00	\$7,500.00	MISC. EXPENSE, UTILITY RELOCATION				
2	670-001347-4	EA	\$59.67	\$119.34	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI A1250-5, HARMON @200965-000, OR				
1	255-646807-4	EA	\$32.59	\$32.59	PADLOCK, SAFETRAN PART NO. 030399-29X SCREW TYPE FOR CIR CONTROLLER AND BTY. BOX				
1	670-514605-4	EA	\$12.84	\$12.84	PINNACLE, W-C SECT 1-11, 4"x8 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X				
2	670-259211-4	EA	\$47.25	\$94.50	PLUG BOARD KIT, TYPE B-1 & VOLTAGE TEST TERMINAL, SAFETRAN 420000-75X				
APPROVED BY STATE			APPROVED BY RAILROAD			CAR NUMBER		SEAL NUMBER	

Location: DELAWARE			OH	S&E Proj. No.: 10.1224	AFE No.: F-03646	Drawing No.: SNCS03124	Vendor: Interrail Engineering, INC		
Store No.: S803			P.O. Number:		Date Required:		Date Shipped:		
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
2	165-902002-4	EA	\$297.48	\$594.96	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL				
5	465-002899-4	EA	\$22.24	\$111.20	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES				
2	670-456936-4	EA	\$145.69	\$291.38	RELAY RACK, SWING, FARADAY SHELTER FOR ONE RELAY, SSFETRAN P/N T15331				
2	670-707995-4	EA	\$510.12	\$1,020.24	RELAY, TYPE B1, NEV LINE, 900 OHMS., 008 AMPERES GRS A62-308 OR SAFETRAN @400003				
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	SEARLI, (VHFC w/ANTENNA) - VHF COMMUNICATOR, SAFETRAN P/N A80276, 1/ PER CROSSING				
2	670-749325-4	EA	\$226.97	\$453.94	SHELF, FOLDING, FOR LAPTOP USE IN FARADAY 6X8 SHELTER, SAFETRAN 052852-128X				
2	670-755523-4	EA	\$9,325.16	\$18,650.32	SHELTER, 6'X8' ALUMN FARADAY W/1EA EQUIPMENT RACK, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN RECEPTICAL, BREAKER BOX GFI OUTLET FOR LAPTOP SHELF SAFETRAN 058400-68-85				
6	670-586967-4	EA	\$42.98	\$257.88	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT				
4	670-652773-4	EA	\$460.98	\$1,843.92	SHUNT, MULTI-FREQ. #62775-1543 SAFETRAN NARROW BAND				
2	670-688850-4	EA	\$369.89	\$739.78	SHUNT, MULTI-FREQ. #62775-3497 SAFETRAN NARROW BAND				
2	670-393331-4	EA	\$53.74	\$107.48	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215				
2	670-016346-4	EA	\$149.68	\$299.36	SIGN, X-BUCK, HI-INTENSIVE REFLECTIVE FRT. & BACK FOR ALL STATES, SAFETRAN# 035200-91X				
1	670-330382-4	RL	\$18.06	\$18.06	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS. "WARNING STOP DIGGING"				
10	670-478560-4	EA	\$20.56	\$205.60	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR				
8	670-007238-4	EA	\$118.65	\$949.20	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: \$146,207.46

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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OHIO RAIL DEVELOPMENT COMMISSION

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

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

August 1, 2016

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

RE: Delaware County, Radnor Road
DOT 481506P, PID 103320

Dear Mr. Klinger:

A diagnostic review was held at the above grade crossing on April 28, 2016. The crossing has been recommended for the installation of lights and gates.

CSX is authorized to proceed with the site plans and cost estimates (PE) for this project. This authorization is made with the stipulation and understanding that any field work needs prior approval before work begins. This authorization is made with the stipulation and understanding that an approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit.

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

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

The Project Manager for this project is Joe Reinhardt. He can be reached at (614) 644.0291, or Joe.Reinhardt@dot.state.oh.us, if you have any questions.

Sincerely,

Joseph N. Reinhardt
Project Manager

C: George Martin, 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

June 3, 2016

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
Delaware County – CR 198/Radnor Rd., DOT # 481506P, PID 103320

Dear Mr. Klinger:

A diagnostic review was conducted at the subject grade crossing on 4/28/2016. As a result of the review, the devices will be upgraded to automatic flashing lights and roadway gates.

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

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

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

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

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

Sincerely,

Matthew R. Dietrich
Executive Director



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

Norfolk Southern:

By: Hugon A. Connel

Title: General Manager

Date: 6/16/2016

DEL CR 198 Radnor Rd PID 103320 NS



Diagnostic Review Team Survey

Reason for Survey:

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

PUCO Formula Spring Pick

Date: 4/28/2016

Location Data

Street or Road Name: Radnor Road			
Route/Road Number (i.e. Twp., Co., SR or US) CR 198		US DOT No.: 481506P	
County: DEL	Township:	City: (In or Near) Near Waldo	
Railroad Name: Norfolk Southern	Railroad Division: Lake	Branch/Line Name: Sandusky	
Nearest RR Timetable Station: Troyton		RR Milepost: 31.23	

On-Site Review Team

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

1. Joe Reinhardt ORDC 614-644-0291
2. Stanley Haas RR Task Force 740-363-9105
3. Frank Donslewich " " 614-890-2171
4. John Latta Norfolk Southern -412-294-5756 john.latta@nscorp.com
5. George Martin PUCO 614-752-9107
6. Doug Riedel DELAWARE COUNTY ENGR 740-272-0071
7. Mike Love " " " 740-833-2428
8. Doug Price Troy Township 740/272-7768
9. _____

Existing Traffic Control Devices

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

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

	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years	0 (10/15/04)	
Hazard Ranking	1681 Date Run: 3/30/2016	

Railroad Data

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	28	
< 1 per day		
Day thru trains	14	
Night thru trains	14	
Daytime switching movements		
Nighttime switching movements		
Total number of tracks	1	
Number of main tracks	1	
Number of other tracks		
Maximum train speed	60	
Typical train speed	60	
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 SIDING

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: Delaware County

Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	527 (2013)	
Highway paved	X Yes ☐ No	☐ Yes ☐ No
Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: 20 ft.		
Number of highway lanes	2	
Urban or Rural	Rural	
Vehicle Speed: 55 MPH		
School Bus Operation: ☐ No ☒ Yes Amount _____		
Hazardous Materials Trucks: ☐ No X Yes 07 Amount _____		
Shoulders: ☒ No ☐ Yes		
Is the shoulder surfaced? ☒ No ☐ Yes		
Is there existing guardrail along roadway in crossing vicinity? ☒ No ☐ Yes		
Is stopping site distance adequate? (See Table 2) ☒ Yes ☐ No If no, deficient approach(es) _____		

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

Potential Red Flags / Project Challenges

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

Crossing Consolidation or Closure:

Real Estate or ROW:

Culverts / Drainage / Ballast Conditions:

Roadway and/or Sidewalks:

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

Environmental:

Other:

Train Signal South of Xing.

OK
4/29/16
OK

Diagnostic Team Recommendations

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

Comments:

Train Signal South of King

☐ Install/upgrade traffic signal preemption

☐ No improvements needed

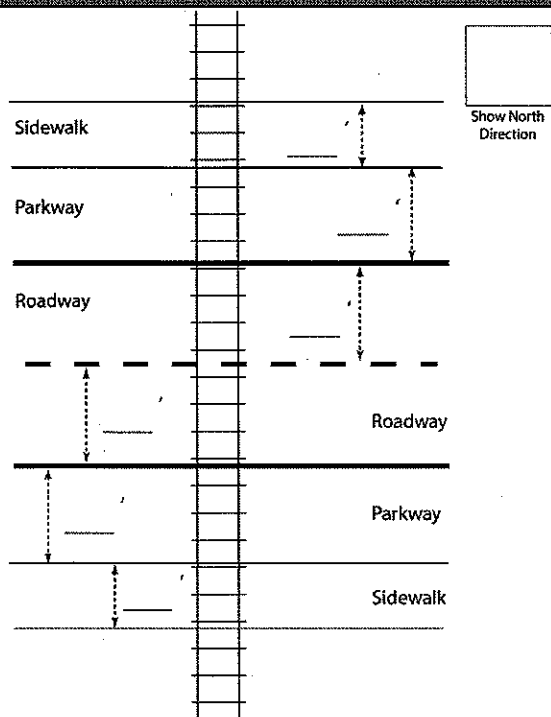
☐ Other (define)

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

JMR
SP

DWR
Gm

Field Dimensions



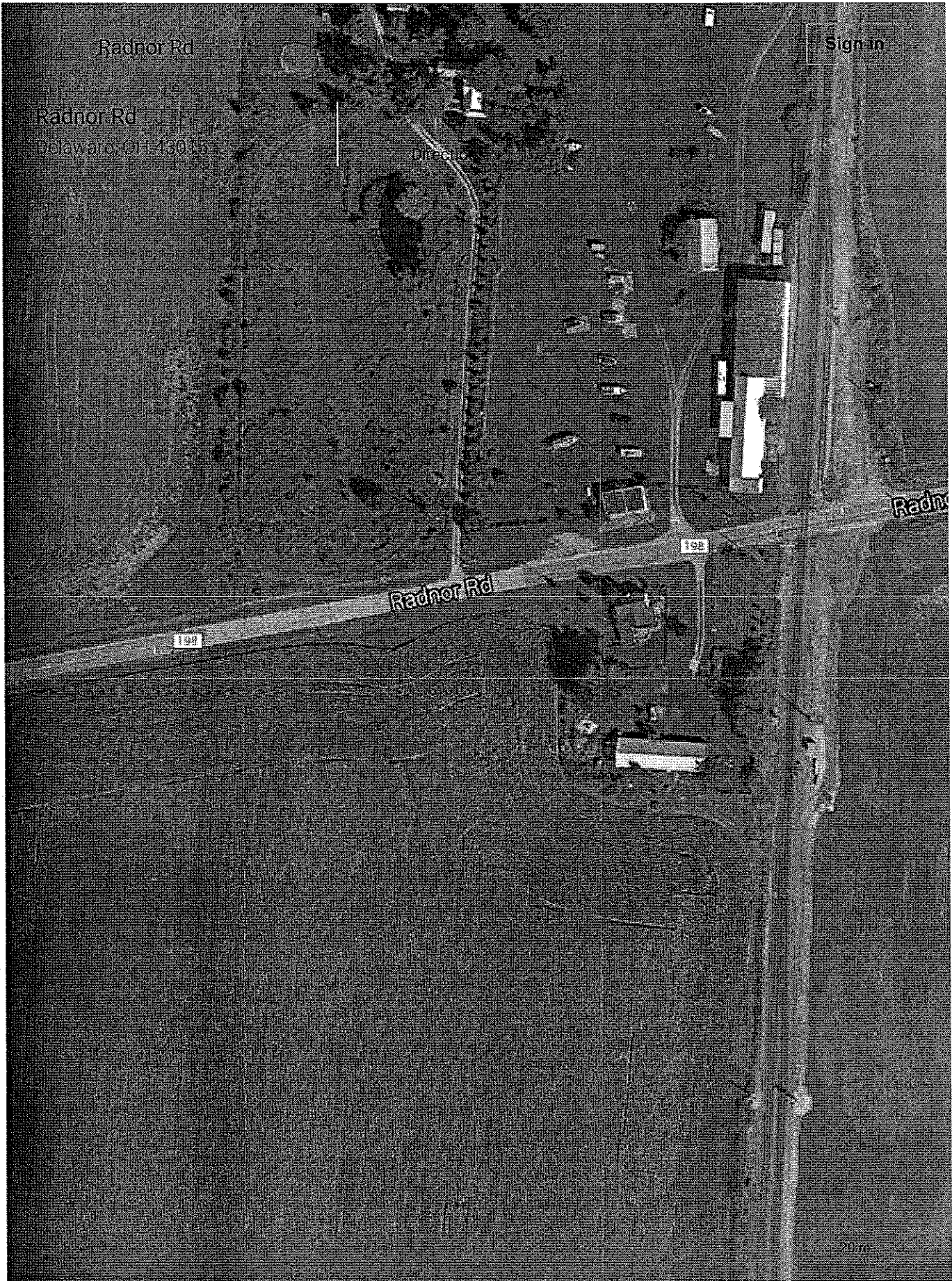


TABLE I

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.

JWR
4/29/16
OIC

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Case No(s). 17-0977-RR-FED

Summary: Application In the Matter of a Request for the Installation of Lights and Gates at the Norfolk Southern Railway Crossing, Radnor Road/CR 198 DOT#481-506P, in Delaware County, Ohio. electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division