

Memo

To: Docketing Division
From: Jill Henry, Rail Specialist, Rail Division
Cc: PUCO Legal Department
Date: 6/26/17

Re: PUCO Case No. 17-1508-RR-FED- In the Matter of a Request for the Installation of New Active Warning Devices at Norfolk Southern Railway Grade Crossings, Stewart Street (DOT# 524-628S), Irwin Street (DOT#527-818F), Miami Chapel Road (DOT#524-629Y), & Findlay Street (DOT#527-819M), in Montgomery County, Ohio.

On October 5, 2015, the Ohio Rail Development Commission (ORDC) authorized funding for Norfolk Southern Railway to install new warning devices at Stewart Street (DOT# 524-628S), Irwin Street (DOT#527-818F), Miami Chapel Road (DOT#524-629Y), & Findlay Street (DOT#527-819M), in Montgomery County, Ohio. The crossings were surveyed on May 3, 2011 and were found to warrant the upgrades. The electric utility provider for these crossings is Dayton Power and Light.

The projects will be paid for with federal funds and are actual cost. The plans and estimates for the projects in the amount of \$302,313.00 for Stewart Street, \$356,724.00 for Irwin Street, \$312,864.00 for Miami Chapel Road, and \$392,179.00 for Findlay Street have been approved. Construction may commence at once. **Staff requests a Finding & Order with completion of the projects 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
Stephen Klinger
Public Projects Engineer
1200 Peachtree Street NE
Atlanta, GA 30309-3597

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

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

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

City of Dayton
Engineering Department
101 W. 3rd Street
Dayton, OH 45401

Dayton Power and Light

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

TO: Randall Schumacher, Supervisor, Rail Division, PUCO

FROM: Cathy Stout, Manager, Safety Section, ORDC

BY: Greg Gronbach, Project Manager, Safety Section, ORDC

SUBJECT: Montgomery County – C.J. Corridor; PID # 101711
Stewart St, DOT # 524628S

DATE: June 12, 2017

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on May 3, 2011. 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, PUCO
Cathy Stout, ORDC
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

June 12, 2017

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

RE: Grade Crossing Warning Device Improvements
Montgomery County – C.J. Corridor; PID # 101711
Stewart St, DOT # 524628S

Dear Mr. Klinger:

The plan and estimate dated November 8, 2016, for the referenced project has been reviewed and is acceptable. Norfolk Southern Railway Company 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 \$302,313.00. Additional costs must be approved in writing by the Ohio Rail Development Commission (ORDC) prior to being incurred. Emergency verbal authorizations by ORDC may be permitted and will be confirmed by ORDC in writing within ten (10) business days of the verbal approval.

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

1. Norfolk Southern Railway Company's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to Greg Gronbach, ORDC, email Greg.Gronbach@dot.ohio.gov, and to the Public Utilities Commission of Ohio at Jill.Henry@puc.state.oh.us. Norfolk Southern Railway Company's project foreman will also notify the same of any stops and re-starts of the work activity and of the date work was completed for the project.
2. Norfolk Southern Railway Company will arrange for utilities to be located at the project site by the Ohio Utilities Protection Service (OUPS) prior to any construction activities at the site. Utilities that are not participating members of the service must be contacted directly by Norfolk Southern Railway Company.
3. Norfolk Southern Railway Company's project foremen will notify Greg Gronbach at 614-395-1824 (telephone) or Greg.Gronbach@dot.ohio.gov (email) of any changes in the



www.rail.ohio.gov

phone: 614.644.0306

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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.
5. Norfolk Southern Railway Company will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference when billing.
6. Norfolk Southern Railway Company 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.
8. Option # 1 was the approved plan of the two plans considered for this crossing, with a new established curb on the north side of Stewart St that lines up with the edge of road 30-40' east of the crossing and west of Carr St (including a new curb radius in the NE quadrant of the Stewart St/Carr St intersection), and repaving the sidewalk (again, from a point 30-40' east of the crossing to the Stewart St/Carr St intersection). Sidewalk to be placed between curb and warning device. See attached plans.
9. Norfolk Southern Railway Company to send an approved plan with PE stamp prior to final billing of completed project.

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

Thank you for your assistance with these matters.

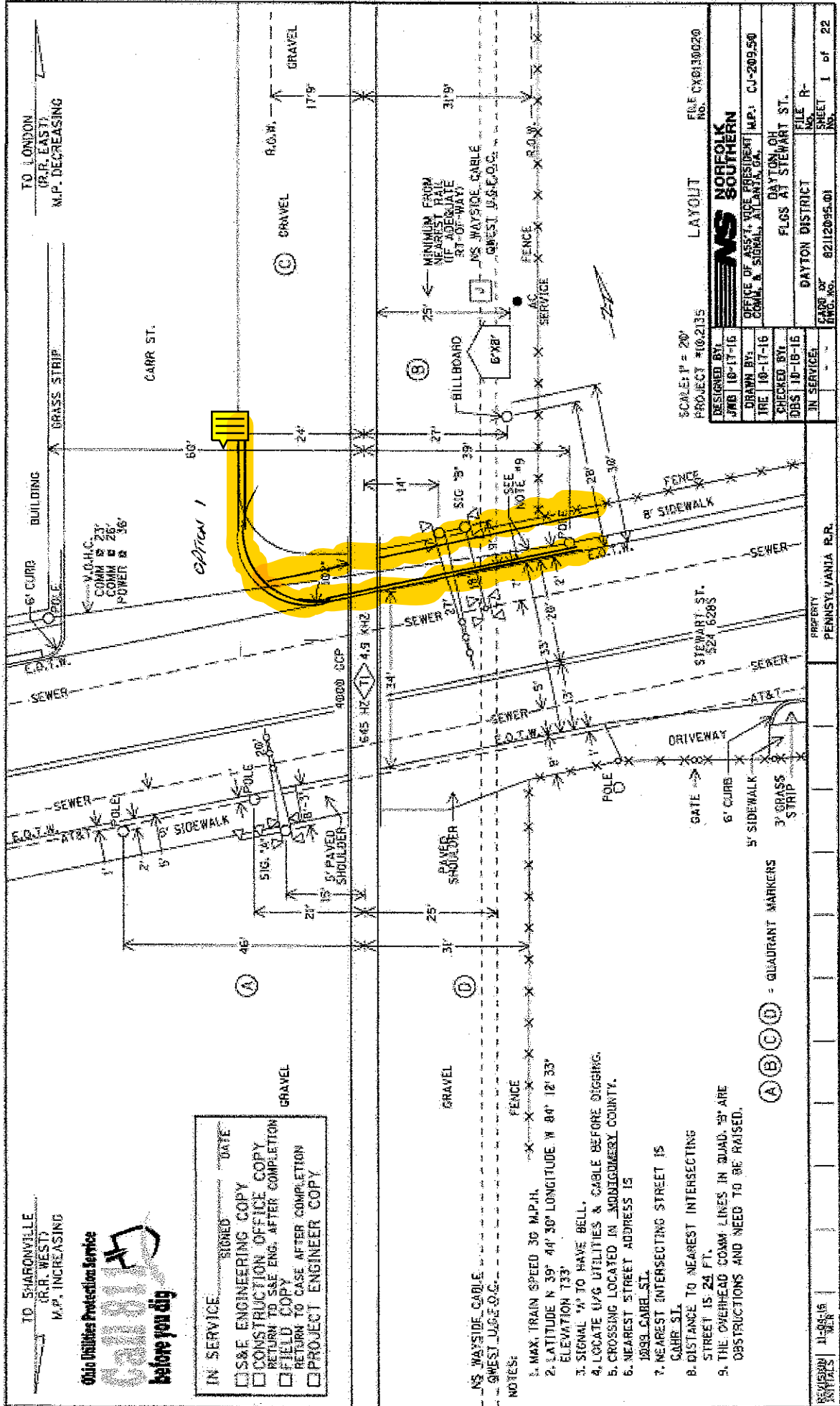
Sincerely,



Greg Gronbach
Project Manager

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

* 5/1/17 ORDC TO CHOOSE
option 1.





File No.:

S&E Proj.: 10.2135

Date: Nov 08, 2016

Ref: STEWART ST
DAYTON, OH

A.D. BELL

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

Detailed Estimate for Grade Crossing Warning Devices

City/State: DAYTON, OH

MilePost: CJ-209.5

State Proj. No.: PID: 101711

S&E Proj. No.: 10.2135

Man Days: 156

Road: STEWART ST

DOT/AAR: 524628S

County: MONTGOMERY

File Number:

Purchases - Others		
Meals and Lodging:	\$21,338.55	
Rental of Equipment:	\$29,169.72	
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 26 Days)		
Construction Supervision Vehicle:	\$4,461.99	
Purchases - Other Total:		\$54,970.26
Material And Additives		
Material Cost:	\$104,542.00	
Sales and Use Tax:	\$8,363.00	
Material Handling Freight:	\$10,454.20	
Material Total:		\$123,359.20
Labor And Additives		
Labor Cost:	\$50,232.00	
(6 man crew at \$1,932.00 a day for: 26 days)		
Payroll Tax & Overheads:	\$42,827.80	
Preliminary Engineering:	\$16,251.27	
Construction Supervision:	\$14,672.77	
Labor Total:		\$123,983.84
	Project Cost:	\$302,313.30
	Scrap / Salvage Credit:	\$0.00
	Project Total:	\$302,313.00

Estimated on: 08-Nov-16

Estimated by: n5s2v

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:	DAYTON
Road:	STEWART ST
Mile Post:	CJ-209.5
Drawing Number:	82112095
State ProjectNumber:	PID: 101711
County:	MONTGOMERY
A A R Number:	524628S
Project Number:	10.2135
File Number:	
New File Number:	CX0130020
WBS:	F-01733-27-1
Store Number:	
Supervisor:	A.D. BELL
Tax Code:	
Vendor to supply the following copies after pricing: 1 Set - Material Management with original Invoice 2 Sets - with plans shipped in car with material 1 Set - S&E Gen. Supt. Construction w/copy of invoice	

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed			Quantity Returned (Credit)	Special Instructions
3	670-360693-4	EA	\$5.55	\$16.65	AAR/DOT NUMBER PLATE/DECAL, ORDER 3 PER PROJECT. 60 DAY LEAD TIME. SUPPLIED BY S'TRAN.						
1	165-006505-4	EA	\$1,075.23	\$1,075.23	AC SERVICE, COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE						
20	105-002620-4	EA	\$302.42	\$6,048.40	BATTERY, NICAD 340AH, MODEL SPL340						
1	670-503047-4	EA	\$181.50	\$181.50	BELL, CROSSING ELECTRONIC GENERL SIGNAL, EB-3-360-5 CR 02-044350						
2	670-980689-4	EA	\$75.48	\$150.96	BRACKET HIGH WIND, (RIGID 3'), WIG- 191036, WALRUS TUSK TYPE						
2	670-561375-4	EA	\$1,197.90	\$2,395.80	BRACKET, GATE SAVER, NEG385102GS, SPRING LOADED SWING AWAY ADAPTER FOR FIBERGLASS/ALUMINUM GATES, USE WITH GATE 38' AND LESS						
350	465-939422-4	LF	\$2.93	\$1,025.50	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL						
350	465-292862-4	LF	\$1.36	\$476.00	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR						
350	465-292929-4	LF	\$4.55	\$1,592.50	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL						
350	465-791835-4	FT	\$3.84	\$1,344.00	CABLE, UG AC ENTRANCE 3C#6-7X OKONITE FMPF-L 094-078 TR W/G 1 X 8 7X W010 BRZ TAPE 600V PRODUCT CODE 206-11-6070						
1	670-995189-4	EA	\$3,089.90	\$3,089.90	CANTILEVER, WT/F ARM 18' W/WALKWAY KIT SAFTRAN #071294-18NS1						
2	670-010671-4	EA	\$738.15	\$1,476.30	CHARGER, BATTERY CRAGG MODEL 40 DTC-12V, 40 AMP, P/N 520940						
80	165-544477-4	FT	\$3.22	\$257.60	CONDUIT, 4"x10' PVC, SCHEDULE 80 BELL CONNECTOR AT ONE END, 1/2 PT. GLUE IN KIT 670-123298-4						
2	670-664917-4	EA	\$90.11	\$180.22	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						

Location: DAYTON				OH	S&E Proj. No.: 10.2135	AFE No.: F-01733-27-1	Drawing No.: 82112095				
Store No.:				P.O.Number:		Date Required:	Date Shipped:	Vendor: Interrail Engineering, INC			
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed			Quantity Returned (Credit)	Special Instructions
							Date Quan.	Date Quan.	Date Quan.		
2	670-632520-4	EA	\$77.63	\$155.26	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, SAFETRAIN 111359-1X						
1	670-793404-4	EA	\$1,205.32	\$1,205.32	COUNTERWEIGHT PKAGE, 17-24'GATE S'TRAIN S- MECH ONLY, STAINLESS, TO INCLUDE HUB, SUPPORT ARMS						
1	670-794453-4	EA	\$1,253.03	\$1,253.03	COUNTERWEIGHT PKAGE, 25-31'GATE S'TRAIN S- MECH ONLY, STAINLESS TO INCLUDE HUB, SUPPORT ARMS						
7	670-760012-4	EA	\$9.95	\$69.65	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. =====TO COVER 2 LAMPS=====						
1	670-986650-4	EA	\$354.27	\$354.27	DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING X'ING EQUIPMENT CONTAINER						
1	670-000004-4	EA	\$700.00	\$700.00	FCC LICENSE FOR MONITOR/RADIO						
1	670-744631-4	EA	\$3,172.00	\$3,172.00	FOUNDATION, CFLS FOR SAFETRAIN 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	670-005377-4	EA	\$338.00	\$338.00	GATE ARM, ALUMINUM, 17-24 FT, ARM ASSEMBLY, INCLUDES GATE GUARD FOR GATE LIGHT CABLE. HIGH INTENSITY VERTICAL STRIPES.						
1	670-675667-4	EA	\$30,238.53	\$30,238.53	GCP4000 - 1 TRK (2TC) - REDUNDANT - 40/40 AMP WIRED RACK EQUIP. FOR 6X8 XING SHELTER, (INCL. 2 TRK CHASSIS A80465, 2 TRK MODS. A80418, 2-SSCC A80405, 2 CPU A80403, 1 SEAR A80410, 1 DISPLAY A80407, , 2-40 AMP CHARGERS) IPN: 003131-1X						
1	670-477991-4	EA	\$410.00	\$410.00	KIT, GROUNDING ASSY FOR AL I/S INCLUDES 8 GRD RDS,200'#4WIRE,12 4 WIRE ONE-SHOTS. ERICO SBK206						
1	670-123298-4	EA	\$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...						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Location: DAYTON					OH	S&E Proj. No.: 10.2135	AFE No.: F-01733-27-1	Drawing No.: 82112095			
Store No.:					P.O.Number:		Date Required:	Date Shipped:	Vendor: Interrail Engineering, INC		
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan. Date Quan. Date Quan.			Quantity Returned (Credit)	Special Instructions
2	670-092155-4	EA	\$160.00	\$320.00	LAMP ASSY, LED GATE ARM KIT (INCLUDES 3 LAMPS COMPLETE WITH CABLES AND MTG. HARDWARE) REC #: 9298-1120						
1	670-005055-4	EA	\$955.23	\$955.23	LAMP ASSY, LED, 12" MAST 1 WAY BACK LIGHTS (FRONT ON COMBO CANT.) (IPN: 042003-L481XNS)						
2	670-005057-4	EA	\$952.05	\$1,904.10	LAMP ASSY, LED, 4" CANT JURY ARM MAST (FRONT OR BACK) (IPN: 042003-L001534)						
1	670-005063-4	EA	\$952.05	\$952.05	LAMP ASSY, LED, 4" MAST 1 WAY LIGHTS (IPN: 042003-L484XNS)						
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)						
4	255-590880-4	EA	\$17.52	\$70.08	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"						
1	670-483458-4	EA	\$6,487.56	\$6,487.56	MAST, 12" CANTILEVER/GATE COMBO, FOR 12'-20' WT/F ARMS, GATE OFFSET TOWARD TRACK, INCL. LADDER KIT (IPN: 071292-20NS)						
1	610-156588-4	EA	\$1,699.17	\$1,699.17	MAST, 5" ALUMIMUM (0&0) FOR LIGHT UNIT AND BRACKET WITH DBL. JCT. BOX BASE #070519-203X-2						
1	670-000985-4	EA	\$312.09	\$312.09	MAST, SIDELIGHT BRACKET F/5"MT. HARMON @225834-XXX, SAFETRAN 041442-26X,						
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						
4	670-000001-4	EA	\$726.23	\$2,904.92	MISC. EXPENSE, MATERAIL/FILL						
2	000-000000-4	EA	\$5,000.00	\$10,000.00	MISC. EXPENSE, UNDERGROUND BORING						
1	670-001355-4	EA	\$74.00	\$74.00	PACKAGE, HARDWARE SIGN 12 IN. (USE WITHWT/F MAST) MOUNTING, SERRMI A1250-8, HARMON @180004/0007,						
1	670-001347-4	EA	\$59.67	\$59.67	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						
APPROVED BY STATE				APPROVED BY RAILROAD			CAR NUMBER			SEAL NUMBER	

Location: DAYTON				OH	S&E Proj. No.: 10.2135	AFE No.: F-01733-27-1	Drawing No.: 82112095				
Store No.:				P.O.Number:		Date Required:	Date Shipped:	Vendor: Interrail Engineering, INC			
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed			Quantity Returned (Credit)	Special Instructions
							Date Quan.	Date Quan.	Date Quan.		
1	670-514605-4	EA	\$11.11	\$11.11	PINNACLE, W-C SECT 1-11, 4" & 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X						
1	165-902002-4	EA	\$297.48	\$297.48	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL						
5	465-002899-4	EA	\$40.24	\$201.20	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES						
2	435-805560-4	EA	\$2.78	\$5.56	SAND, 25LB BAG FOR CABLE ENTRANCE INTO THE SHELTER						
1	670-113448-4	EA	\$910.23	\$910.23	SEARIII, (VHF w/ANTENNA) - VHF COMMUNICATOR, SAFETRAN P/N A80276, 1/ PER CROSSING						
1	670-749325-4	EA	\$226.97	\$226.97	SHELF, FOLDING, FOR LAPTOP USE IN FARADAY 6X8 SHELTER, SAFETRAN 052852-128X						
1	670-755523-4	EA	\$9,325.16	\$9,325.16	SHELTER, 6'X8' ALUMN FARADAY W/1EA EQUIPMENT RACK, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN RECEPTICAL, BREAKER BOX GFI OUTLET FOR LAPTOP SHELF SAFETRAN 058400-68-85						
2	670-586967-4	EA	\$44.91	\$89.82	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT						
2	670-688850-4	EA	\$369.89	\$739.78	SHUNT, MULTI-FREQ. #62775-3497 SAFETRAN NARROW BAND						
1	670-397239-4	EA	\$40.23	\$40.23	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 12" MAST, SAFETRAN #T17216						
1	670-393331-4	EA	\$53.74	\$53.74	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"						

Total Material: \$104,542.03

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Ohio Utilities Protection Service
Call 811
before you dig

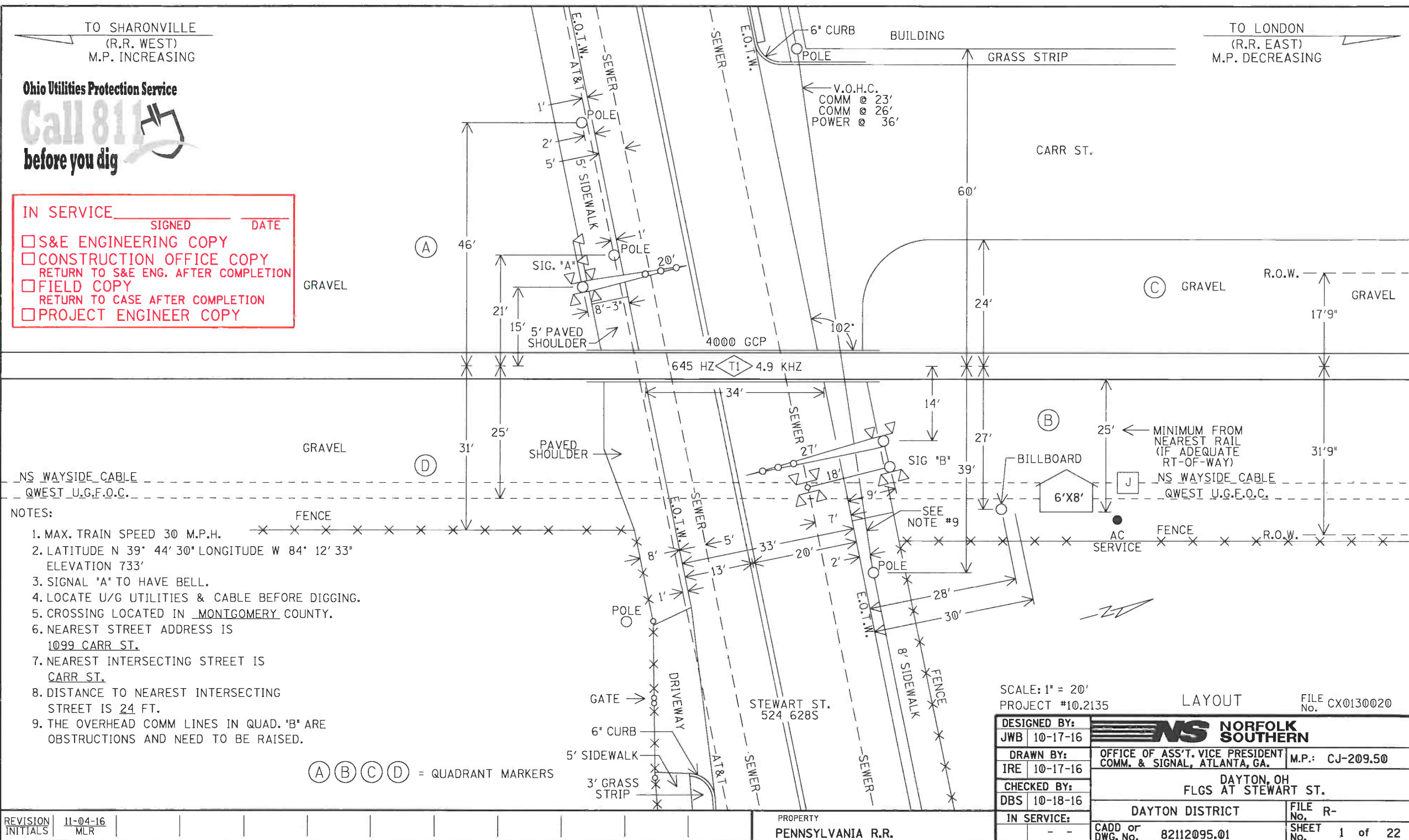
IN SERVICE _____ SIGNED _____ DATE _____

☐ S&E ENGINEERING COPY

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

☐ FIELD COPY
RETURN TO CASE AFTER COMPLETION

☐ PROJECT ENGINEER COPY



REVISION	11-04-16
INITIALS	MLR

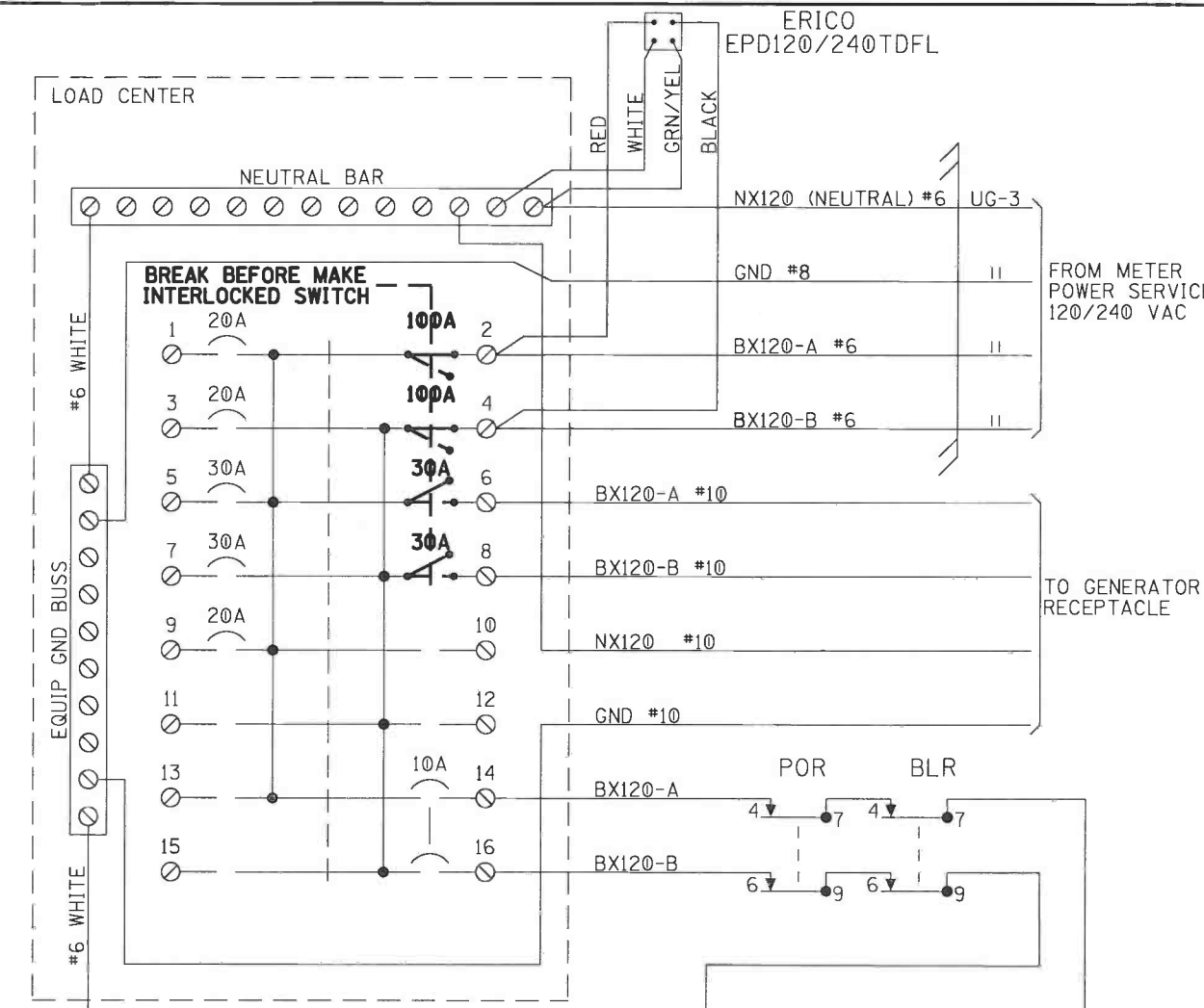
PROPERTY
PENNSYLVANIA R.R.

SCALE: 1" = 20'
PROJECT #10.2135

LAYOUT

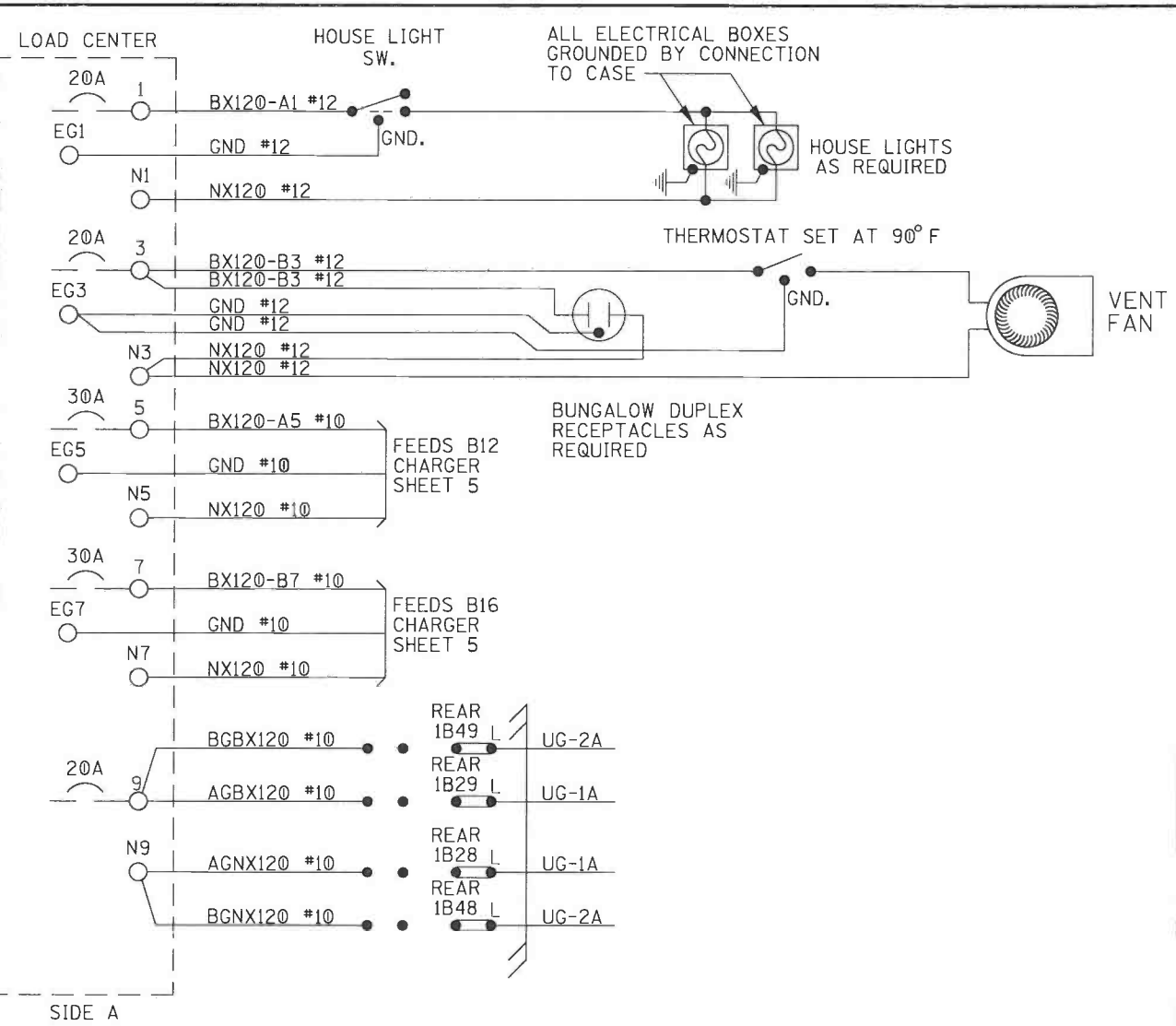
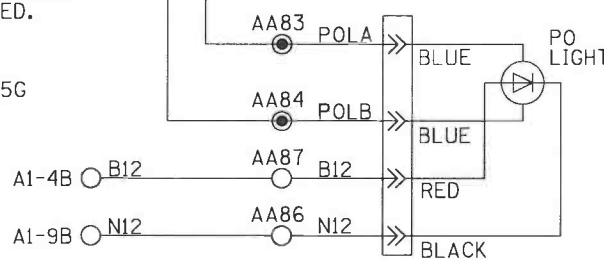
FILE CX0130020
No.

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	10-17-16		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.50
IRE	10-17-16	DAYTON, OH FLGS AT STEWART ST.	
CHECKED BY:		DAYTON DISTRICT	
DBS	10-18-16	FILE No.	R-
IN SERVICE:		CADD or DWG. No.	SHEET No.
	- -	82112095.01	1 of 22



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

- SQUARE "D" PART NUMBERS:
- LOAD CENTER — Q0116L125G
 - 10A 1P CIR BKR — Q0110
 - 10A 2P CIR BKR — Q0210
 - 20A 1P CIR BKR — Q0120
 - 30A 1P CIR BKR — Q0130
 - 30A 2P CIR BKR — Q0230
 - 60A 2P CIR BKR — Q0260
 - 100A 2P CIR BKR — Q02100
 - MECH INTERLOCK — PK4DTIM4LA



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

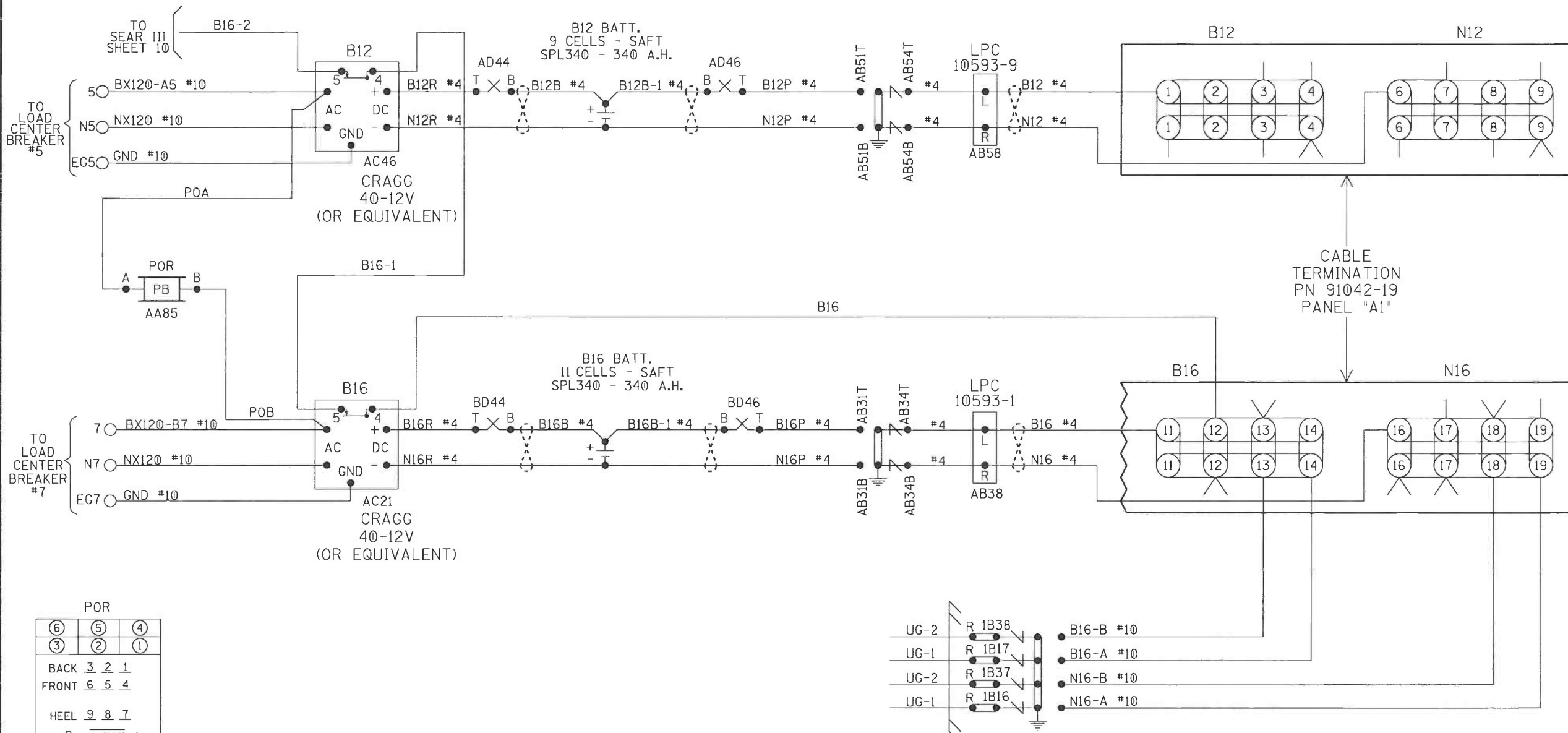
GENERATOR RECEPTACLE: MALE CONNECTOR - NEMA L1430-FI

LOAD CENTER

DESIGNED BY:	JWB 10-17-16		
DRAWN BY:	IRE 10-17-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.50
CHECKED BY:	DBS 10-18-16	DAYTON, OH FLGS AT STEWART ST.	
IN SERVICE:	- -	DAYTON DISTRICT	FILE No. R-
		CADD or DWG. No. 82112095.04	SHEET No. 4 of 22

REVISION INITIALS

PROPERTY PENNSYLVANIA R.R.



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

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

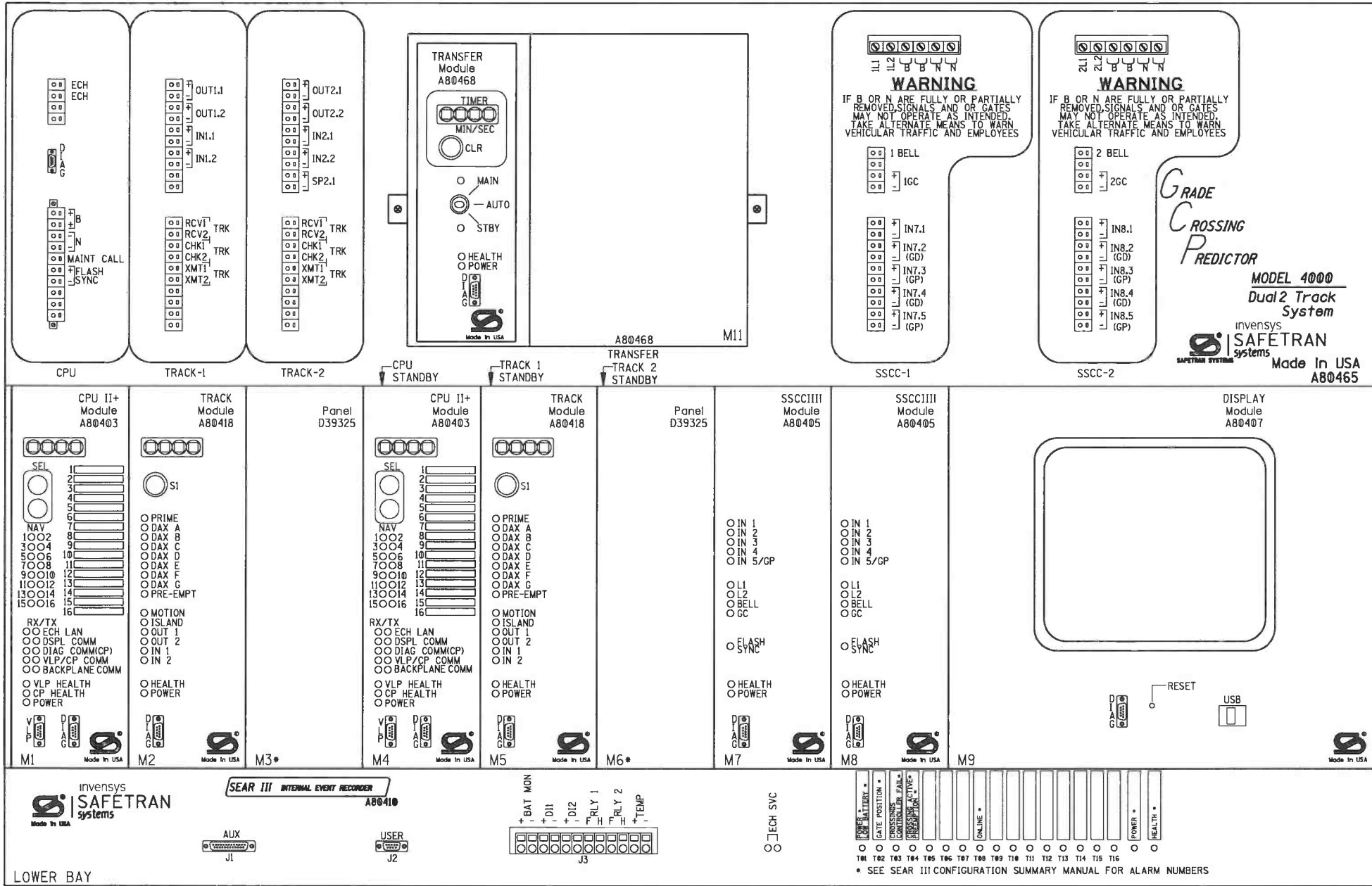
⊗ = TWIST

B12 & B16 CHARGERS & BATTERIES

DESIGNED BY:	JWB 10-17-16	NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-17-16		
CHECKED BY:	DBS 10-18-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
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		DAYTON DISTRICT	FILE No. R-
		CADD or DWG. No. 82112095.05	SHEET No. 5 of 22

REVISION
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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

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:	JWB 10-17-16	NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-17-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.50
CHECKED BY:	DBS 10-18-16	DAYTON, OH FLGS AT STEWART ST.	
IN SERVICE:	- -	DAYTON DISTRICT	FILE No. R-
		CADD or DWG. No. 82112095.06	SHEET No. 6 of 22

Program Report

Location and SIN

DOT Number: 5246285
Milepost Number: CJ-209.50
Site Name: STEWART ST

SIN: 755023410216

MCF and Template Selection

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

Template = 1A:6 Trk B1

Check Numbers

Office Check No. (DT 4.6.0): 434F2A14
Office Check Number: 434F2A14
Config. Check Number: 5DA2DEB3
(Based on MCF Revision 021)

Program

BASIC: module configuration

Track 1 Slot = Track
Track 2/RIO 1 Slot = Not Used
Track 3 Slot = Not Used
Track 4 Slot = Not Used
Track 5/RIO 2 Slot = Not Used
Track 6/RIO 3 Slot = Not Used
SSCC-1 Slot = SSCC31
SSCC-2 Slot = SSCC31
SEAR Used = Yes

BASIC: MS/GCP operation

Track 1: MS/GCP Operation = Yes

BASIC: island operation

Track 1: Island Used = Internal

BASIC: preemption

Preempt Logic = No

BASIC: radio Dax links

Radio DAX link A Used = No
Radio DAX link B Used = No

BASIC: VitalComms links

VitalComms link 1 Used = No
VitalComms 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

GCP: track 1

Track 1: GCP Freq Category = Standard
Track 1: GCP Frequency = 645 Hz
Track 1: Approach Distance = 1544 ft
Track 1: Unl/BI/Sim-Bidirnl = Bidirnl
Track 1: GCP Transmit Level = Medium
Track 1: Island Connection = Isl1
Track 1: Island Distance = 134 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 pos start

Track 1: Positive Start = Off
Track 1: Sudden Shnt Det Used = No
Track 1: Low EZ Detection Used = No

GCP: track 1 MS Control

Track 1: MS/GCP CtrlIP Used = No
Track 1: MS Sensitivity Level = 0
Track 1: Compensation Level = 1300
Track 1: Warn Time-Ballast Comp = High
Track 1: Low EX Adjustment = 39
Track 1: Bidirnl Dax Passthru = No
Track 1: False Act on Train Stop = No
Track 1: EX Limiting Used = Yes
Track 1: EZ Correction Used = Yes

ISLAND: track 1

Track 1: IslFrequency = 4.9 kHz
Track 1: Pickup Delay (2s +) = 0 sec
Track 1: IslEnable IP Used = No

AND: track Anding

AND 1 XR Used = Yes
AND 2 Used = No
AND 3 Used = No
AND 4 Used = No
AND 5 Used = No
AND 6 Used = No
AND 7 Used = No
AND 8 Used = No

AND: AND 1 XR

AND 1 XR Track 1 = Prime
AND 1 Enable Used = Yes
AND 1 Enable Pickup = 5 sec
AND 1 Enable Drop = 0 sec
AND 1 Wrap Used = No

ADVANCED: MS restart

MS/GCP Restart Used = No

ADVANCED: out of service

OOS Control = Display+OOS IPs
OOS Timeout = Yes
OOS Timeout = 1 hrs

ADVANCED: out of service 2

T1 OOS Control = OOS Input 1

ADVANCED: track wrap circuits

Wrap LOS Timer = 5 sec
Track 1 Wrap Used = No

ADVANCED: trk 1 overrides

Track 1: 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 I/O 1

Pass Thrus = No
Int.1 Sets = Not Used
Int.1 Set by = Not Used
Int.2 Sets = Not Used
Int.2 Set by = Not Used
Int.3 Sets = Not Used
Int.3 Set by = Not Used
Int.4 Sets = Not Used
Int.4 Set by = Not Used

ADVANCED: internal I/O 2

Int.5 Sets = Not Used
Int.5 Set by = Not Used
Int.6 Sets = Not Used
Int.6 Set by = Not Used
Int.7 Sets = Not Used
Int.7 Set by = Not Used
Int.8 Sets = Not Used
Int.8 Set by = Not Used

ADVANCED: internal I/O 3

Int.9 Sets = Not Used
Int.9 Set by = Not Used
Int.10 Sets = Not Used
Int.10 Set by = Not Used
Int.11 Sets = Not Used
Int.11 Set by = Not Used
Int.12 Sets = Not Used
Int.12 Set by = Not Used

ADVANCED: internal I/O 4

Int.13 Sets = Not Used
Int.13 Set by = Not Used
Int.14 Sets = Not Used
Int.14 Set by = Not Used
Int.15 Sets = Not Used
Int.15 Set by = Not Used
Int.16 Sets = Not Used
Int.16 Set by = Not Used

ADVANCED: site options

Daylight Savings = On
Units = Standard
Maint CallRpt IP Used = No
Emergency Activate IP = No
EZ/EX Logging = Change
EZ/EX Point Change = 3

4000 GCP PROGRAMMING SETUP

DESIGNED BY:	JWB 10-17-16		
DRAWN BY:	IRE 10-17-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.50
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		CADD or DWG. No. 82112095.07	SHEET 7 of 22

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

```

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

```

```

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

```

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

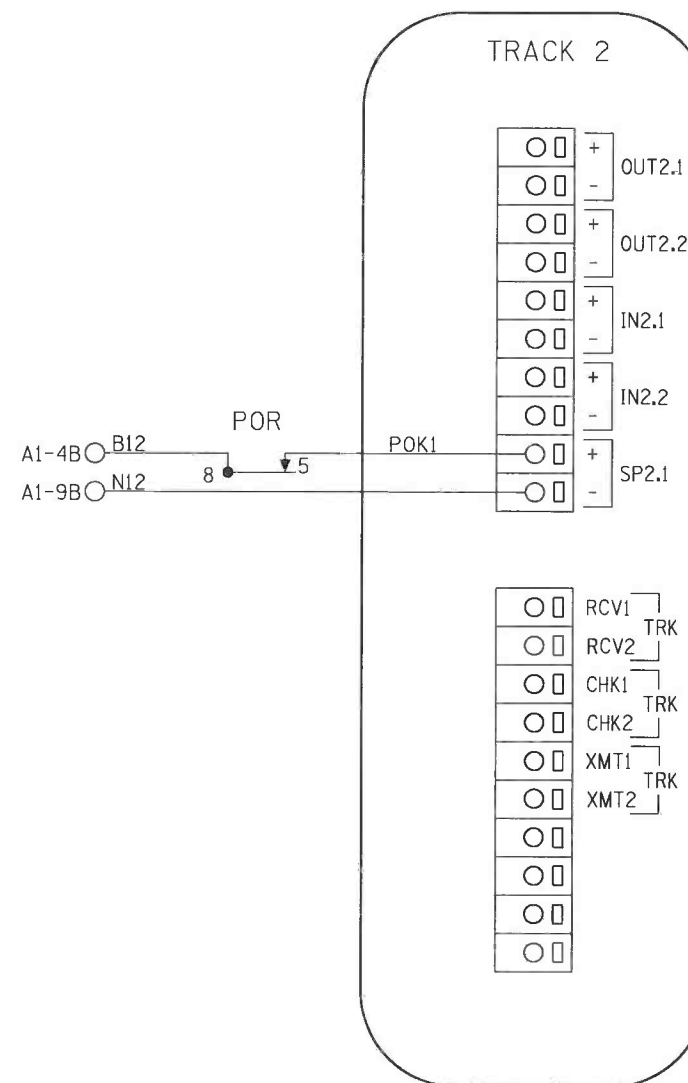
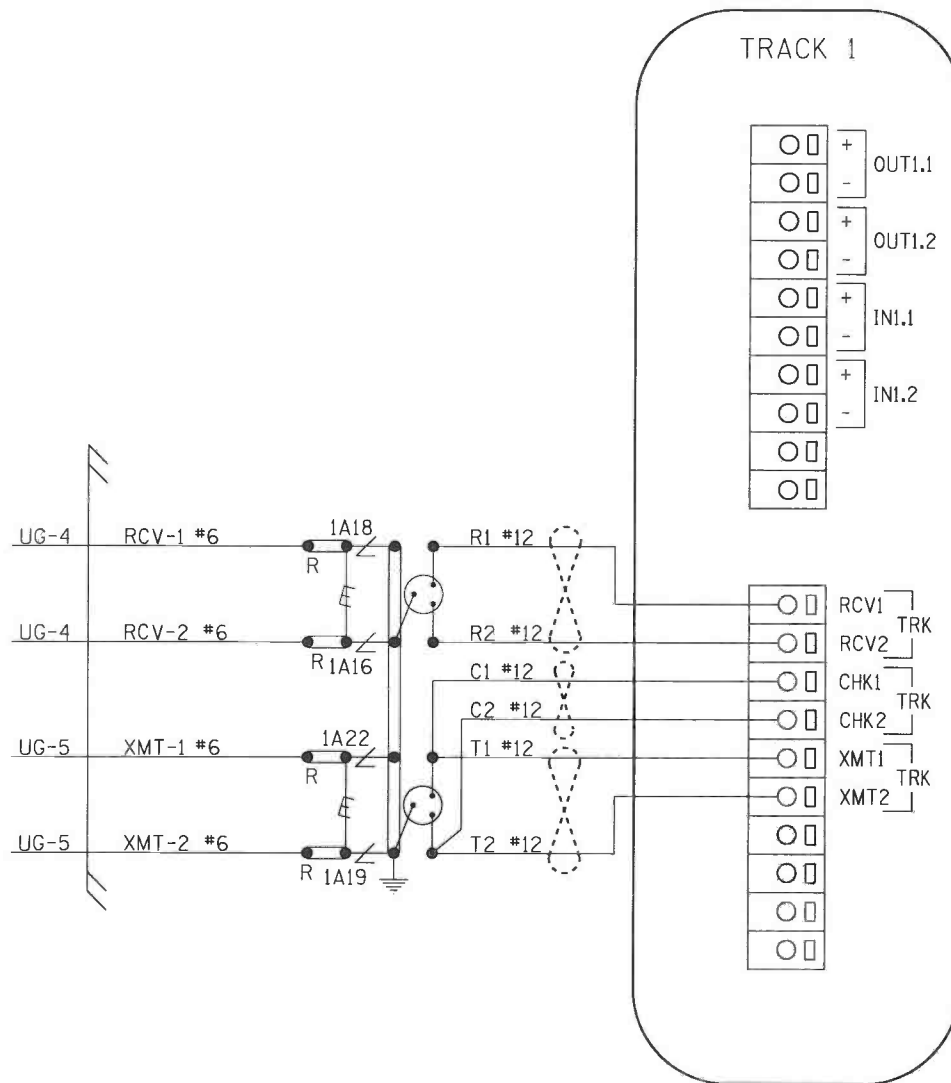
```
SEAR: inputs slot 5
IN 5.1 = Not Used
IN 5.2 = Not Used
```

```
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
```

Configuration Package File

Filename: 82112095.pac

DESIGNED BY:	JWB 10-17-16		 NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-17-16		OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.50
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IN SERVICE:	-- --		DAYTON DISTRICT	FILE No. R-
	CADD or DWG. No. 82112095.08		SHEET No.	8 of 22



CONNECTORS FOR TRACK MODULES

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

 = TWIST

DESIGNED BY: JWB 10-17-16	NORFOLK SOUTHERN	
DRAWN BY: IRE 10-17-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.50
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IN SERVICE:	DAYTON DISTRICT	FILE No. R-
	CADD or DWG. No. 82112095.09	SHEET No. 9 of 22

REVISION
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PENNSYLVANIA R.R.

SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
DATE/TIME	
AUTOMATIC DST ADJUSTMENT	YES
TIME ZONE	EST
SITE NAME	STEWART ST.
MILEPOST	CJ-209.50
DOT #	5246285
TESTER TYPE	CROSSING
DATE FORMAT	MM-DD-YYYY
TEMP FORMAT	FAHRENHEIT
INDICATE HOLD (SEC)	0
INDICATE REFRESH (SEC)	60
SITE ATCS	7.550.234.102.03.01
SITE TYPE	NO COMMUNICATION
** OFFICE ATCS ADDRESS	2.550.00.0000
** PRIMARY HOP ADDR	7.RRR.LLL.GGG.XX.XX
** BACKUP HOP ADDR 1	7.RRR.LLL.GGG.XX.XX
** BACKUP HOP ADDR 2	7.RRR.LLL.GGG.XX.XX
** POLL ID	1
** MODE	GEN/ATCS
** WAMS XID	DISABLED
** OFFICE COMM DEVICE	MCM (ECHELON)
** RADIO ATCS ADDR	7.RRR.LLL.GGG.01.01
** PHONE #	(OFFICE NUMBER)
** INIT STRING	
** FIELD COMM DEVICE	NONE
*** USER PORT BAUD	57600
*** USER PORT DATA BITS	8
*** USER PORT PARITY	NONE
*** USER PORT STOP BITS	1
*** USER PORT FLOW CONTROL	NONE
*** AUX PORT BAUD	9600
*** AUX PORT DATA BITS	8
*** AUX PORT PARITY	NONE
*** AUX PORT STOP BITS	1
*** AUX PORT FLOW CONTROL	NONE

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
THE QUESTION	SELECT FROM MENU OPTION
RESET NAMES AND MODULES?	YES
RAILROAD NUMBER	550
CROSSING CONFIGURATION	NORMAL
AND 1 USED AS XR?	YES
AND 2 USED AS XR?	NO
AND 3 USED AS XR?	NO
AND 4 USED AS XR?	NO
AND 5 USED AS XR?	NO
AND 6 USED AS XR?	NO
AND 7 USED AS XR?	NO
AND 8 USED AS XR?	NO
* XR CONTROLLED BY FOREIGN RR	
ENTRANCE GATES	2
85% VOLTAGE RELAY OUT	YES
* GATES CONTROLLED BY FOREIGN RR	
BATTERY BANKS	2
BATTERY MON USED	NO
PREEMPTION	NO
INTERNAL CROSSING CONTROLLERS	2
EXTERNAL CROSSING CONTROLLERS	0
VHF COMMUNICATOR	YES
DTMF ACTIVATION	YES
**** ACTIVATION CODE	628
ACTIVATION TIMEOUT (SECONDS)	60
ILOD MODULES	0
***** ANY LED BULBS USED	
VHF VOICE CHANNEL	2
VHF DATA CHANNEL	2
USE CELL MODEM NON-CRITICAL FEATURE	NO

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

NOTES:
* = DISPLAYED IF CROSSING CONFIGURATION IS SPLIT GATE.
** = IF SITE TYPE = NO COMMUNICATION, THEN THESE OPTIONS ARE NOT DISPLAYED.
*** = THESE SETTINGS SHOULD BE LEFT AT THE DEFAULT SETTING.
**** = USE LAST 3 NUMBERS FROM DOT NUMBER.
***** = IF ILOD MODULE >0.

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

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:
JWB 10-17-16
DRAWN BY:
IRE 10-17-16
CHECKED BY:
DBS 10-18-16
IN SERVICE:
- -

**NORFOLK SOUTHERN**

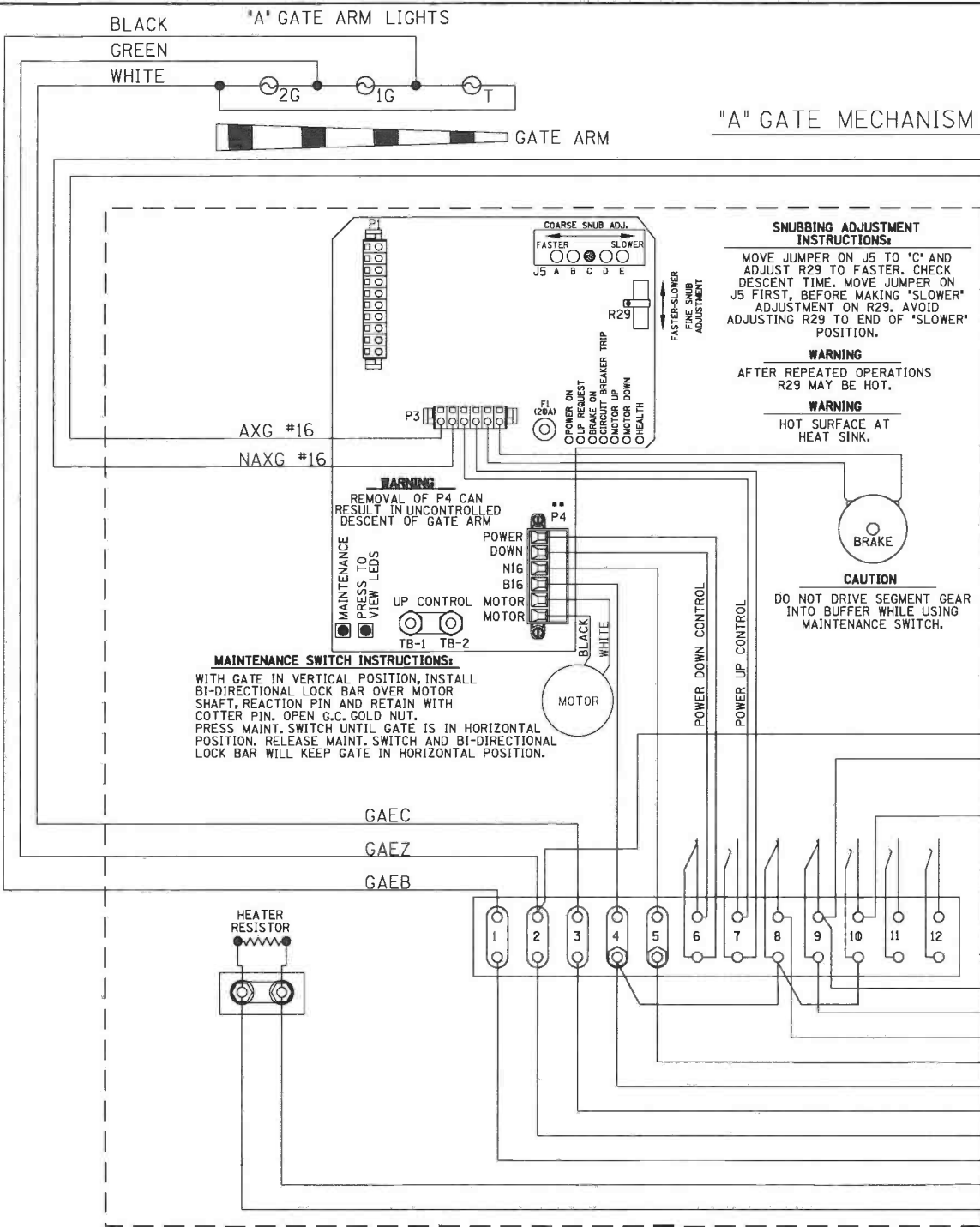
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DAYTON, OH
FLGS AT STEWART ST.

DAYTON DISTRICT

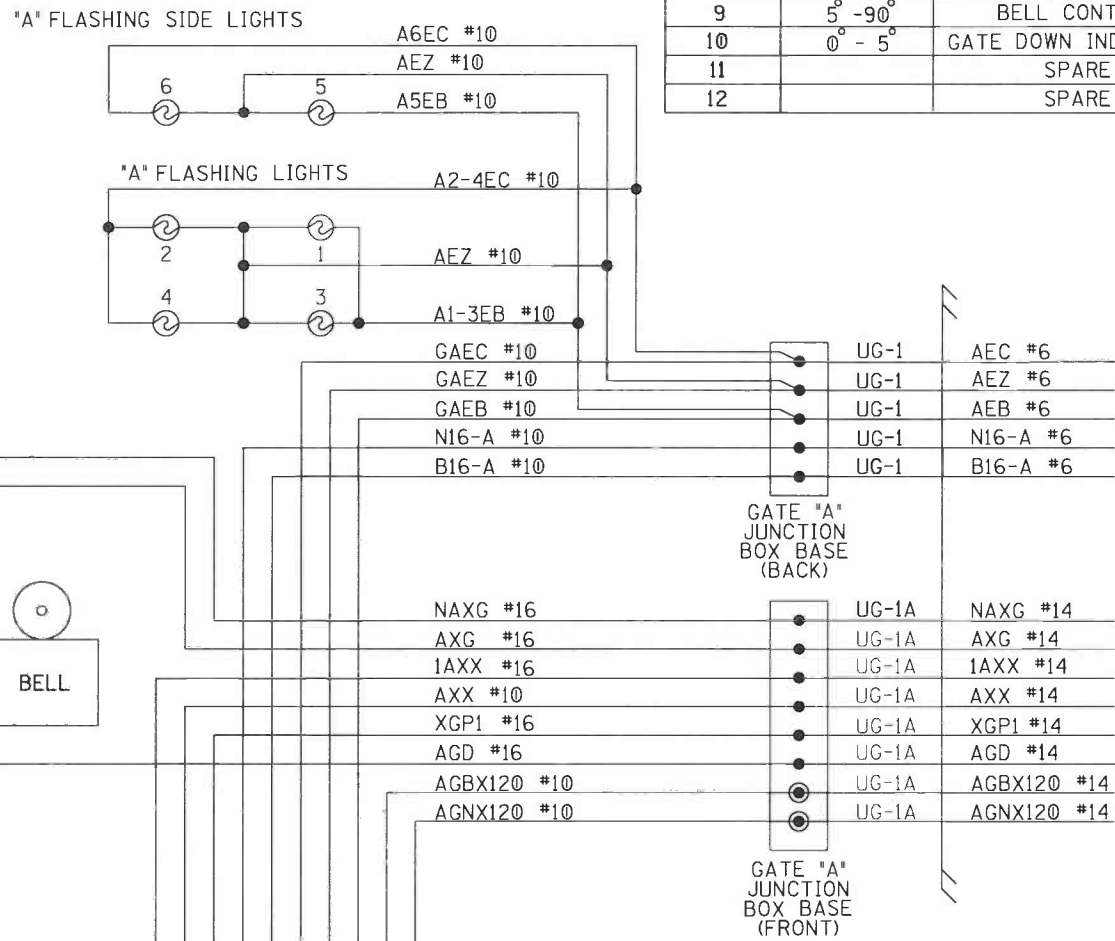
CADD or
DWG. No. 82112095.11

FILE
No. R-
SHEET 11 of 22



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



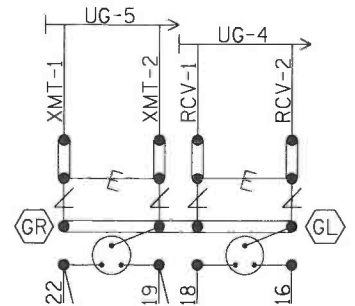
SIGNAL "A" S60 GATE & FLASHER CIRCUITS

DESIGNED BY: JWB 10-17-16	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 10-17-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.50
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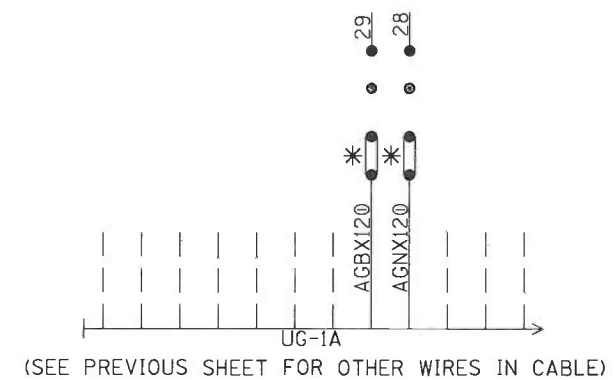
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LEFT TWO ROWS TERMINAL BOARD 1



DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	10-17-16		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.50
IRE	10-17-16	DAYTON, OH FLGS AT STEWART ST.	
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IN SERVICE:			
	- -	CADD or DWG. No. 82112095.16	FILE No. R- SHEET 16 of 22

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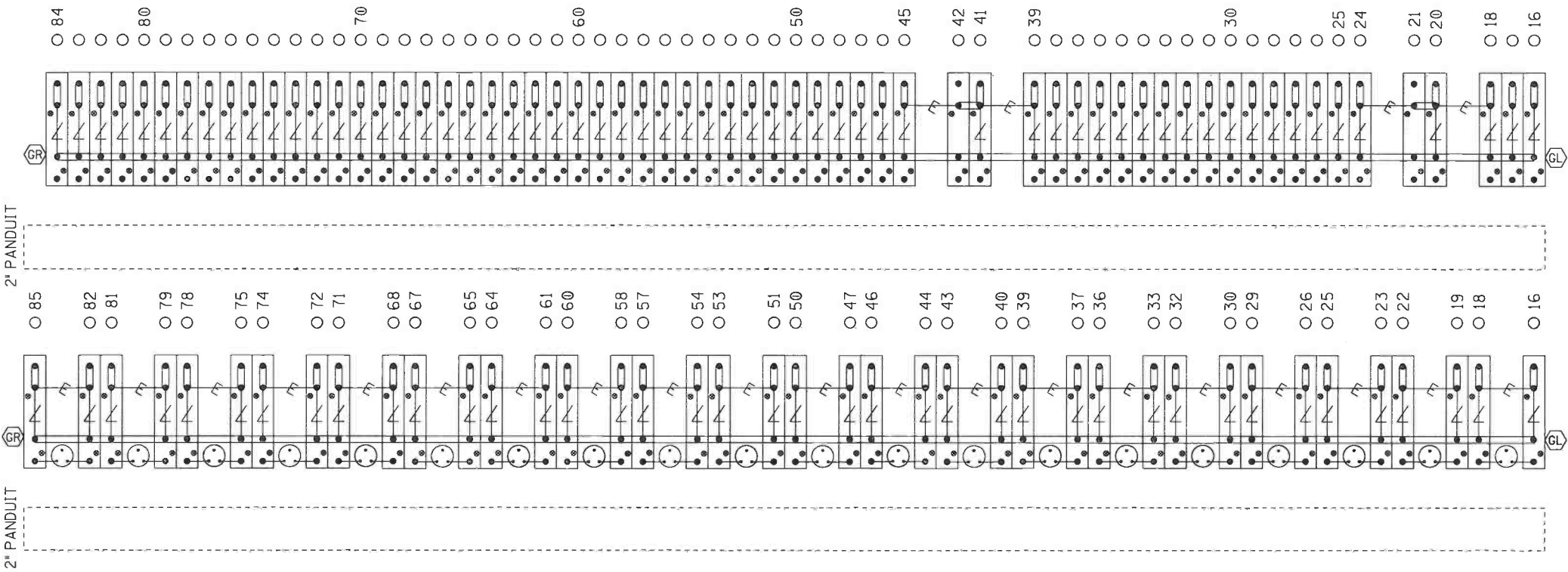
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DRAWN BY:		OFFICE OF ASST. VICE PRESIDENT	M.P.: CJ-209.50
IRE	10-17-16	COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY:		DAYTON, OH	
DBS	10-18-16	FLGS AT STEWART ST.	
IN SERVICE:		DAYTON DISTRICT	FILE No. R-
	- -	CADD or DWG. No. 82112095.17	SHEET 17 of 22

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

AREA BELOW IS SCALED WITH AS=.75

TERMINAL BOARD 1
LEFT HALF

"1B"
"1A"



⚡ = Heavy Duty Equalizer
(022700-1X)

⚡ = Clearview
Lightning Arrestor
(022585-1X)

⚡ = LPC-10560-51

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

FARADAY SHIELD 1A & 1B

= INDICATES PLACEMENT
OF PANDUIT

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

DESIGNED BY:	JWB 10-17-16	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-17-16		
CHECKED BY:	DBS 10-18-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
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REVISION
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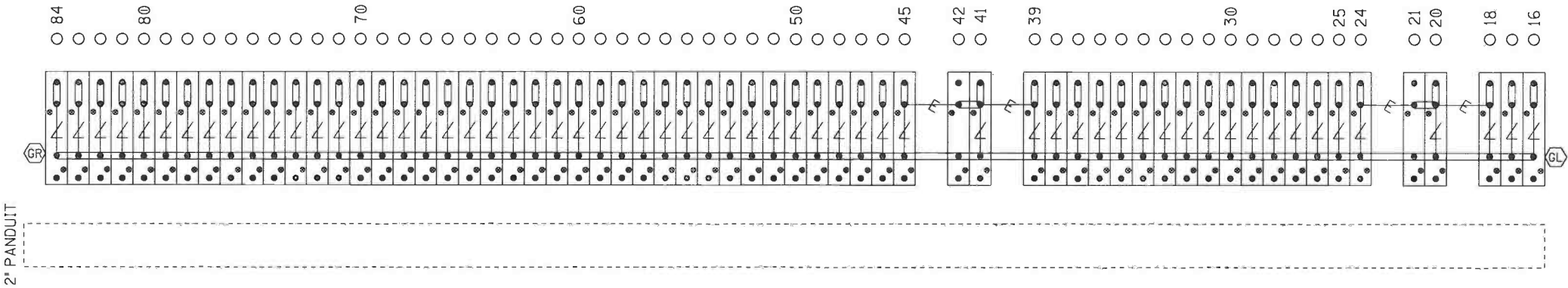
PROPERTY
PENNSYLVANIA R.R.

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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

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

FARADAY SHIELD 1C



= INDICATES PLACEMENT
OF PANDUIT

THIS SHEET IS FOR REFERENCE ONLY,
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THE TERMINALS NEEDED.

DESIGNED BY:	JWB 10-17-16	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-17-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.50
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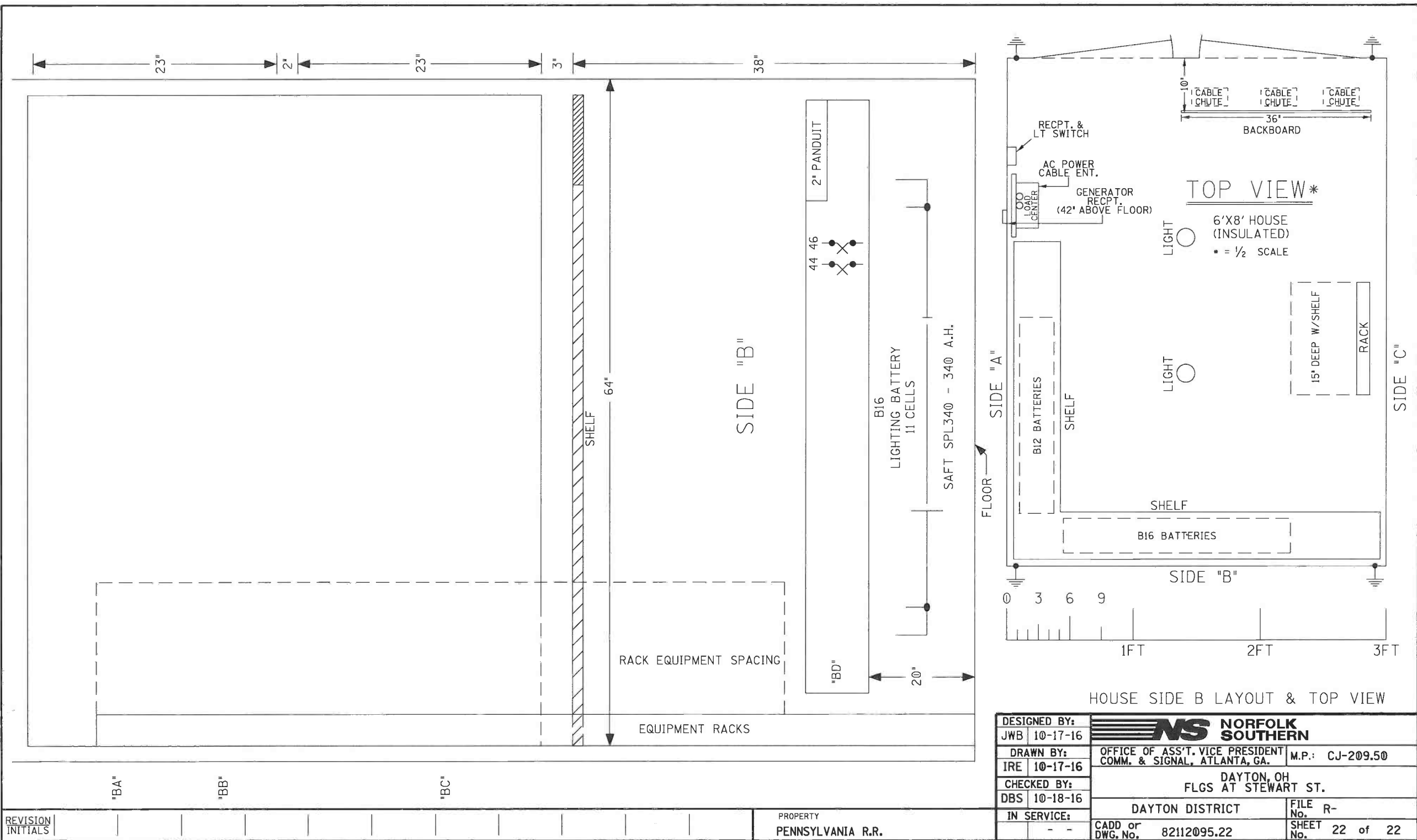
GFI
RECEPT.

SIDE C



DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	10-17-16		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT	M.P.: CJ-209.50
IRE	10-17-16	COMM. & SIGNAL, ATLANTA, GA.	
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DBS		FLGS AT STEWART ST.	
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- -		CADD or DWG. No. 82112095.20	SHEET No. 20 of 22

PROPERTY
PENNSYLVANIA R.R.



SH. NO.	CONTENTS
NX1	INDEX SHEET
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2	PROFILE
3	CABLE PLAN
4	LOAD CENTER
5	B12 & B16 CHARGERS & BATTERIES
6	4000 GCP 2-TK CHASSIS & MODULE LAYOUT
7	4000 GCP PROGRAMMING SETUP
8	4000 GCP PROGRAMMING SETUP
9	CONNECTORS FOR TRACK MODULES
10	CPU MODULE, SEAR III & VHF HOOK-UPS
11	SEAR III PROGRAMMING SETUP
12	SSCC#1 MODULE HOOK-UP
13	SSCC#2 MODULE HOOK-UP
14	SIGNAL "A" S60 GATE & FLASHER CIRCUITS
15	SIGNAL "B" S60 GATE & FLASHER CIRCUITS
16	BACKBOARD 1A & 1B
17	REAR BACKBOARD 1A & 1B
18	FARADAY SHIELD 1A & 1B
19	FARADAY SHIELD 1C
20	HOUSE SIDE C LAYOUT & RACK PLACEMENT
21	HOUSE SIDE A LAYOUT
22	HOUSE SIDE B LAYOUT & TOP VIEW

INDEX SHEET

DESIGNED BY:	JWB 10-17-16	 NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-17-16		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY:	DBS 10-18-16	DAYTON, OH FLGS AT STEWART ST.	
IN SERVICE:	- -	DAYTON DISTRICT	FILE No. R-
		CADD or DWG. No. 82112095.NX1	SHEET No. 1 of 1

REVISION
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PENNSYLVANIA R.R.

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

TO: Randall Schumacher, Supervisor, Rail Division, PUCO

FROM: Cathy Stout, Manager, Safety Section, ORDC

BY: Greg Gronbach, Project Manager, Safety Section, ORDC

SUBJECT: Montgomery County – C.J. Corridor; PID # 101711
Miami Chapel Rd, DOT # 524629Y

DATE: June 12, 2017

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on April 25, 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.

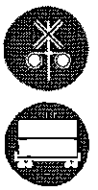
It is expected that all work necessary for FHWA acceptance of the warning devices will be completed by the in-service due date and that the railroad will be responsible for this work. This work includes, but is not limited to:

- 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, PUCO
Cathy Stout, ORDC
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

June 12, 2016

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

RE: Grade Crossing Warning Device Improvements
Montgomery County – C.J. Corridor; PID # 101711
Miami Chapel Rd, DOT # 524629Y

Dear Mr. Klinger:

The plan and estimate dated November 8, 2016, for the referenced project has been reviewed and is acceptable. Norfolk Southern Railway Company 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 \$1,035,000.00. Additional costs must be approved in writing by the Ohio Rail Development Commission (ORDC) prior to being incurred. Emergency verbal authorizations by ORDC may be permitted and will be confirmed by ORDC in writing within ten (10) business days of the verbal approval.

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

1. Norfolk Southern Railway Company's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to Greg Gronbach, ORDC, email Greg.Gronbach@dot.ohio.gov, and to the Public Utilities Commission of Ohio at Jill.Henry@puc.state.oh.us. Norfolk Southern Railway Company's project foreman will also notify the same of any stops and re-starts of the work activity and of the date work was completed for the project.
2. Norfolk Southern Railway Company will arrange for utilities to be located at the project site by the Ohio Utilities Protection Service (OUPS) prior to any construction activities at the site. Utilities that are not participating members of the service must be contacted directly by Norfolk Southern Railway Company.
3. Norfolk Southern Railway Company's project foremen will notify Greg Gronbach at 614-395-1824 (telephone) or Greg.Gronbach@dot.ohio.gov (email) of any changes in the



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

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.
5. Norfolk Southern Railway Company will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference when billing.
6. Norfolk Southern Railway Company will furnish two (2) copies of the final all-inclusive bill to ORDC stating the exact dates of starting and completing work, the initial and final dates of construction and location where the accounts may be audited.
7. This installation will include any ancillary work to make the warning devices function as designed and meet MUTCD.

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

Thank you for your assistance with these matters.

Sincerely,



Greg Gronbach
Project Manager

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

Detailed Estimate for Grade Crossing Warning Devices

City/State: DAYTON, OH

Road: MIAMI CHAPEL

MilePost: CJ-209.8

DOT/AAR: 524629Y

State Proj. No.: PID: 101711

County: MONTGOMERY

S&E Proj. No.: 10.2136

File Number:

Man Days: 168

Purchases - Others		
Meals and Lodging:	\$22,979.98	
Rental of Equipment:	\$31,413.55	
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 28 Days)		
Construction Supervision Vehicle:	\$4,805.22	
Purchases - Other Total:		\$59,198.75
Material And Additives		
Material Cost:	\$102,697.00	
Sales and Use Tax:	\$8,216.00	
Material Handling Freight:	\$10,269.68	
Material Total:		\$121,182.68
Labor And Additives		
Labor Cost:	\$54,096.00	
(6 man crew at \$1,932.00 a day for: 28 days)		
Payroll Tax & Overheads:	\$46,122.25	
Preliminary Engineering:	\$16,463.24	
Construction Supervision:	\$15,801.44	
Labor Total:		\$132,482.93
Project Cost:		\$312,864.36
Scrap / Salvage Credit:		\$0.00
Project Total:		\$312,864.00

Estimated on: 08-Nov-16

Estimated by: n5s2v

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:	DAYTON
Road:	MIAMI CHAPEL
Mile Post:	CJ-209.8
Drawing Number:	82112098
State ProjectNumber:	PID: 101711
County:	MONTGOMERY
A A R Number:	524629Y
Project Number:	10.2136
File Number:	
New File Number:	CX0130021
WBS:	F-01734-27-1
Store Number:	
Supervisor:	A.D. BELL
Tax Code:	
Vendor to supply the following copies after pricing: 1 Set - Material Management with original Invoice 2 Sets - with plans shipped in car with material 1 Set - S&E Gen. Supt. Construction w/copy of invoice	

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed			Quantity Returned (Credit)	Special Instructions
3	670-360693-4	EA	\$5.55	\$16.65	AAR/DOT NUMBER PLATE/DECAL, ORDER 3 PER PROJECT. 60 DAY LEAD TIME. SUPPLIED BY S'TRAN.						
1	165-006505-4	EA	\$1,075.23	\$1,075.23	AC SERVICE, COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE						
20	105-002620-4	EA	\$302.42	\$6,048.40	BATTERY, NICAD 340AH, MODEL SPL340						
1	670-503047-4	EA	\$181.50	\$181.50	BELL, CROSSING ELECTRONIC GENERL SIGNAL, EB-3-360-5 CR 02-044350						
2	670-980689-4	EA	\$75.48	\$150.96	BRACKET HIGH WIND, (RIGID 3'), WIG- 191036, WALRUS TUSK TYPE						
2	670-561375-4	EA	\$1,197.90	\$2,395.80	BRACKET, GATE SAVER, NEG385102GS, SPRING LOADED SWING AWAY ADAPTER FOR FIBERGLASS/ALUMINUM GATES, USE WITH GATE 38' AND LESS						
1	670-356949-4	EA	\$94.05	\$94.05	CABLE, 10' GENERATOR HOOK UP, SERRMI P/N 40524. FEMALE CONNECTOR						
350	465-939422-4	LF	\$2.93	\$1,025.50	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL						
350	465-292862-4	LF	\$1.36	\$476.00	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR						
350	465-292929-4	LF	\$4.55	\$1,592.50	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL						
350	465-791835-4	FT	\$3.84	\$1,344.00	CABLE, UG AC ENTRANCE 3C#6-7X OKONITE FMPF-L 094-078 TR W/G 1 X 8 7X W010 BRZ TAPE 600V PRODUCT CODE 206-11-6070						
2	670-010671-4	EA	\$738.15	\$1,476.30	CHARGER, BATTERY CRAGG MODEL 40 DTC-12V, 40 AMP, P/N 520940						
80	165-544477-4	FT	\$3.22	\$257.60	CONDUIT, 4"x10' PVC, SCHEDULE 80 BELL CONNECTOR AT ONE END, 1/2 PT. GLUE IN KIT 670-123298-4						
2	670-664917-4	EA	\$90.11	\$180.22	CONNECTOR KIT, WELDED FAR RAIL, CONSISTING OF RUBBER HOSE PROPERLY DRILLED, BONDSTRAND, 1 SPLICING SLEEVE, 1 REDUCING SLEEVE, 3 CLAMPS, 1 TRACK CLIP, 1 WEB WELDED TRACK CONNECTOR, 1 WELD METAL, SAFETRAN 111359-2X						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Location: DAYTON				OH	S&E Proj. No.: 10.2136	AFE No.: F-01734-27-1	Drawing No.: 82112098				
Store No.:				P.O.Number:		Date Required:	Date Shipped:	Vendor: Interrail Engineering, INC			
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed			Quantity Returned (Credit)	Special Instructions
							Date Quan.	Date Quan.	Date Quan.		
2	670-632520-4	EA	\$77.63	\$155.26	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						
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	670-315874-4	EA	\$1,275.39	\$1,275.39	COUNTERWEIGHT, KIT 25'- 32' STAINLESS FOR S-MECH ON GATE/CANT COMBOS W/ARMS AND HUBS SAFETRAN 070755-2532AX						
6	670-760012-4	EA	\$9.95	\$59.70	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. =====TO COVER 2 LAMPS=====						
1	670-986650-4	EA	\$354.27	\$354.27	DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING X'ING EQUIPMENT CONTAINER						
1	670-000004-4	EA	\$700.00	\$700.00	FCC LICENSE FOR MONITOR/RADIO						
1	670-744631-4	EA	\$3,172.00	\$3,172.00	FOUNDATION, CFLS FOR SAFETRAN 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						
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	670-675667-4	EA	\$30,238.53	\$30,238.53	GCP4000 - 1 TRK (2TC) - REDUNDANT - 40/40 AMP WIRED RACK EQUIP. FOR 6X8 XING SHELTER, (INCL. 2 TRK CHASSIS A80465, 2 TRK MODS. A80418, 2-SSCC A80405, 2 CPU A80403, 1 SEAR A80410, 1 DISPLAY A80407, , 2-40 AMP CHARGERS) IPN: 003131-1X						
1	670-991303-4	EA	\$45.20	\$45.20	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-2400						
1	670-477991-4	EA	\$410.00	\$410.00	KIT, GROUNDING ASSY FOR AL I/S INCLUDES 8 GRD RDS,200'#4WIRE,12 4 WIRE ONE-SHOTS. ERICO SBK206						
1	670-123298-4	EA	\$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...						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed			Quantity Returned (Credit)	Special Instructions
2	670-092155-4	EA	\$160.00	\$320.00	LAMP ASSY, LED GATE ARM KIT (INCLUDES 3 LAMPS COMPLETE WITH CABLES AND MTG. HARDWARE) REC #: 9298- 1120						
1	670-005055-4	EA	\$955.23	\$955.23	LAMP ASSY, LED, 12" MAST 1 WAY BACK LIGHTS (FRONT ON COMBO CANT.) (IPN: 042003-L481XNS)						
2	670-005057-4	EA	\$952.05	\$1,904.10	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)						
6	670-440826-4	EA	\$1.90	\$11.40	LINK, SAFETRAN 024620-1X INSL TESTING COMP 1 IN CENTER SIGNAL CIRCUITS CR 02-286662						
4	255-590880-4	EA	\$17.52	\$70.08	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"						
1	670-483458-4	EA	\$6,487.56	\$6,487.56	MAST, 12" CANTILEVER/GATE COMBO, FOR 12'-20' WT/F ARMS, GATE OFFSET TOWARD TRACK, INCL. LADDER KIT (IPN: 071292 -20NS)						
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	670-875060-4	EA	\$2,596.32	\$5,192.64	MECHANISM, GATE MODEL S-60, WITH DEFROSTER , WITHOUT MINI TRACKSIDE SENSOR S'TRAN # 0740007-X002A3						
4	670-000001-4	EA	\$726.23	\$2,904.92	MISC. EXPENSE, MATERAIL/FILL						
2	000-000000-4	EA	\$5,000.00	\$10,000.00	MISC. EXPENSE, UNDERGROUND BORING						
1	670-001355-4	EA	\$74.00	\$74.00	PACKAGE, HARDWARE SIGN 12 IN. (USE WITHWT/F MAST) MOUNTING, SERRMI A1250-8, HARMON @180004/0007,						
1	670-001347-4	EA	\$59.67	\$59.67	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	610-719870-4	EA	\$152.36	\$152.36	PEDESTAL ASSEMBLY, ARMORCAST P/N P6001205-NS, YELLOW 10"X11"X29" POLYETHYLENE INCL 45" WITH TERMINAL BLOCK						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Location: DAYTON					OH	S&E Proj. No.: 10.2136	AFE No.: F-01734-27-1	Drawing No.: 82112098			
Store No.:					P.O.Number:		Date Required:	Date Shipped:	Vendor: Interrail Engineering, INC		
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Date Quan.	Date Quan.	Quantity Returned (Credit)	Special Instructions
1	670-514605-4	EA	\$11.11	\$11.11	PINNACLE, W-C SECT 1-11, 4"& 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X						
3	670-259211-4	EA	\$47.25	\$141.75	PLUG BOARD KIT, TYPE B-1 & VOLTAGE TEST TERMINAL, SAFETRAN 420000-75X						
1	165-902002-4	EA	\$297.48	\$297.48	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL						
5	465-002899-4	EA	\$40.24	\$201.20	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES						
1	670-024861-4	EA	\$424.00	\$424.00	RELAY RACK, SWING, FARADAY SHELTER FOR EIGHT B1 RELAYS, SAFETRAN P/N 057883-1X						
3	670-707995-4	EA	\$510.12	\$1,530.36	RELAY, TYPE B1, NEV LINE, 900 OHMS,.008 AMPERES GRS A62-308 OR SAFETRAN @400003						
2	435-805560-4	EA	\$2.78	\$5.56	SAND, 25LB BAG FOR CABLE ENTRANCE INTO THE SHELTER						
1	670-113448-4	EA	\$910.23	\$910.23	SEARII, (VHF w/ANTENNA) - VHF COMMUNICATOR, SAFETRAN P/N A80276, 1/ PER CROSSING						
1	670-749325-4	EA	\$226.97	\$226.97	SHELF, FOLDING, FOR LAPTOP USE IN FARADAY 6X8 SHELTER, SAFETRAN 052852-128X						
1	670-755523-4	EA	\$9,325.16	\$9,325.16	SHELTER, 6'X8' ALUMN FARADAY W/1EA EQUIPMENT RACK, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN RECEPTICAL, BREAKER BOX GFI OUTLET FOR LAPTOP SHELF SAFETRAN 058400-68-85						
2	670-586967-4	EA	\$44.91	\$89.82	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT						
2	670-652773-4	EA	\$481.72	\$963.44	SHUNT, MULTI-FREQ. #62775-1543 SAFETRAN NARROW BAND						
1	670-397239-4	EA	\$40.23	\$40.23	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 12" MAST, SAFETRAN #T17216						
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						
2	670-330382-4	RL	\$18.06	\$36.12	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS. "WARNING STOP DIGGING"						
7	670-478560-4	EA	\$20.56	\$143.92	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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APPROVED BY STATE

APPROVED BY RAILROAD

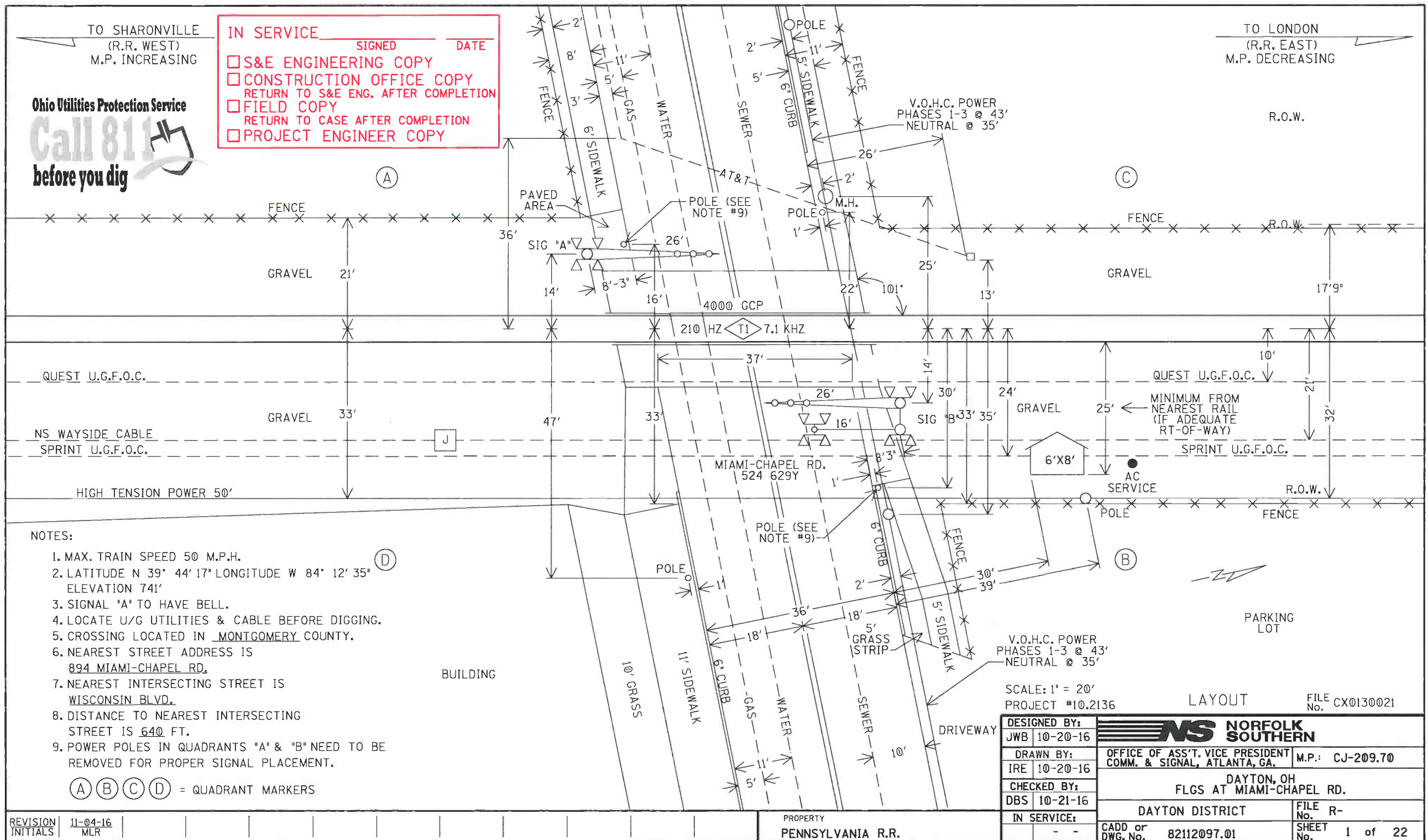
CAR NUMBER

SEAL NUMBER

Ohio Utilities Protection Service
Call 811
before you dig

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

R.O.W.

REVISION
INITIALS

11-04-16
MLR

PROPERTY
PENNSYLVANIA R.R.

SCALE: 1" = 20'
PROJECT #10.2136

LAYOUT

FILE CX0130021

DESIGNED BY:	
JWB	10-20-16

DRAWN BY:	
IRE	10-20-16

CHECKED BY:	
DBS	10-21-16

IN SERVICE:	
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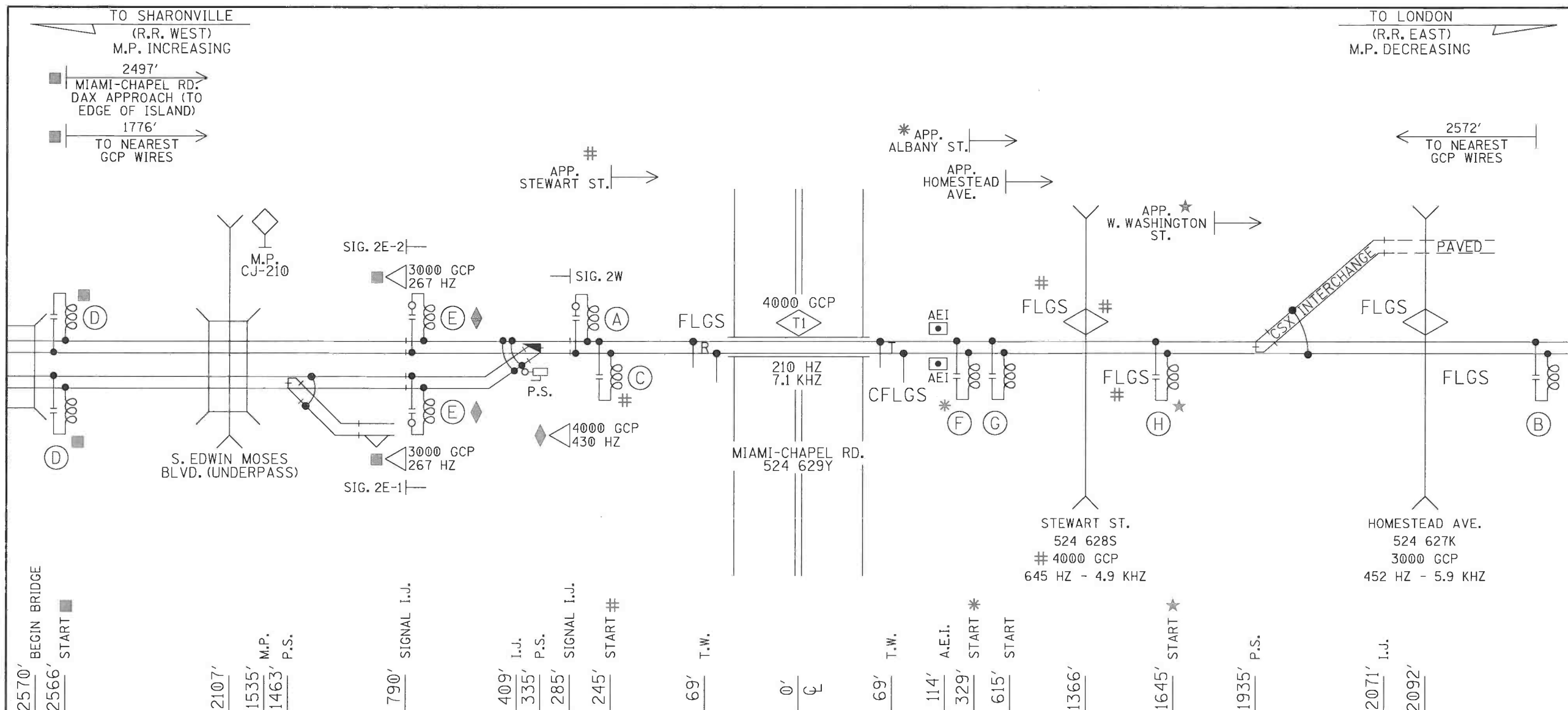
NORFOLK SOUTHERN

OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
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DAYTON, OH
FLGS AT MIAMI-CHAPEL RD.

DAYTON DISTRICT	FILE No. R-
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CADD or DWG. No.	82112097.01	SHEET No.	1	of	22
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- (A) - MF-NBS 62775-1543 (210HZ) W/INDUCTOR 8V617-2400
- (B) - MF-NBS 62775-1543 (210HZ)
- #(C) - MF-NBS 62775-3497 (645HZ)
- (D) - MF-NBS 62775-2132 (267HZ)
- ◆(E) - MF-NBS 62775-3497 (430HZ) W/INDUCTOR 8V617-600
- *(F) - MF-NBS 62775-8621 (86HZ)
- (G) - NBS-1 (452HZ)
- ★(H) - MF-NBS 62775-2132 (267HZ)

- ★ = ALL EQUIPMENT TO BE INSTALLED ON PRJ.* 10.2132
- * = ALL EQUIPMENT TO BE INSTALLED ON PRJ.* 10.2133
- # = ALL EQUIPMENT TO BE INSTALLED ON PRJ.* 10.2135
- ◆ = ALL EQUIPMENT TO BE INSTALLED ON PRJ.* R-3540
- = PER FIELD SURVEY

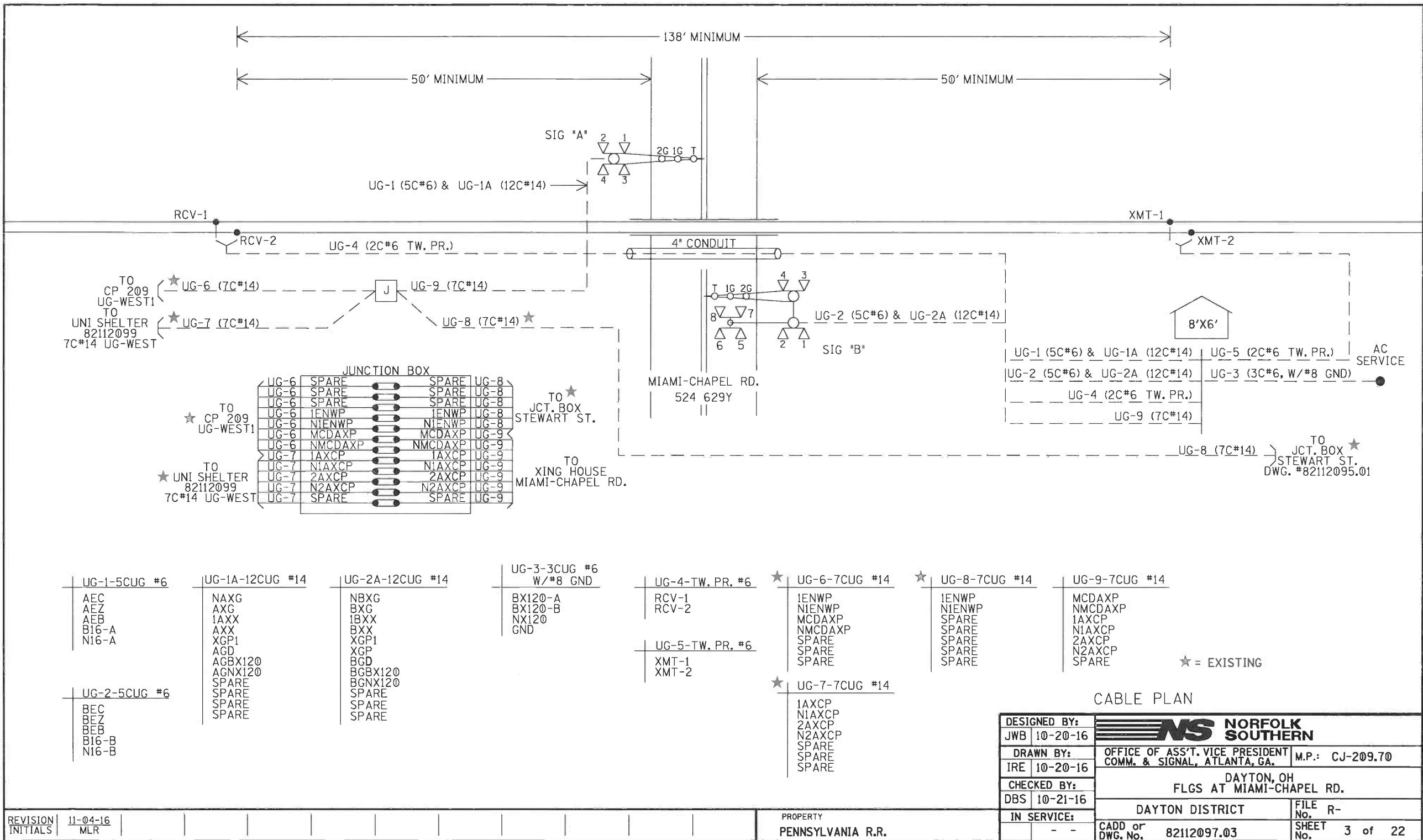
PROFILE

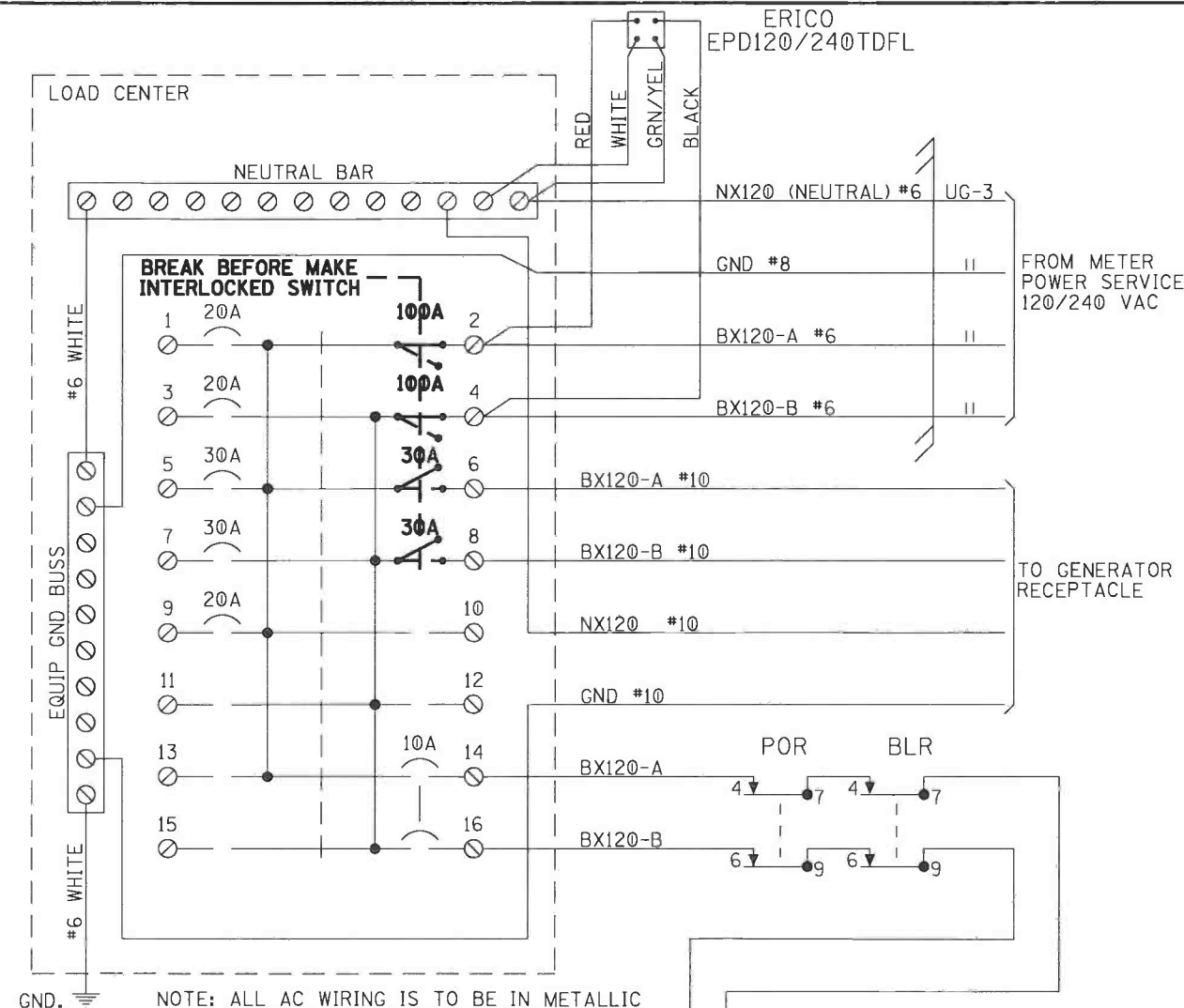
DESIGNED BY:	JWB 10-20-16	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-20-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
CHECKED BY:	DBS 10-21-16	DAYTON, OH FLGS AT MIAMI-CHAPEL RD.	
IN SERVICE:	- -	DAYTON DISTRICT	FILE R-
		CADD or DWG. No. 82112097.02	SHEET 2 of 22

REVISION
INITIALS

11-04-16
MLR

PROPERTY
PENNSYLVANIA R.R.

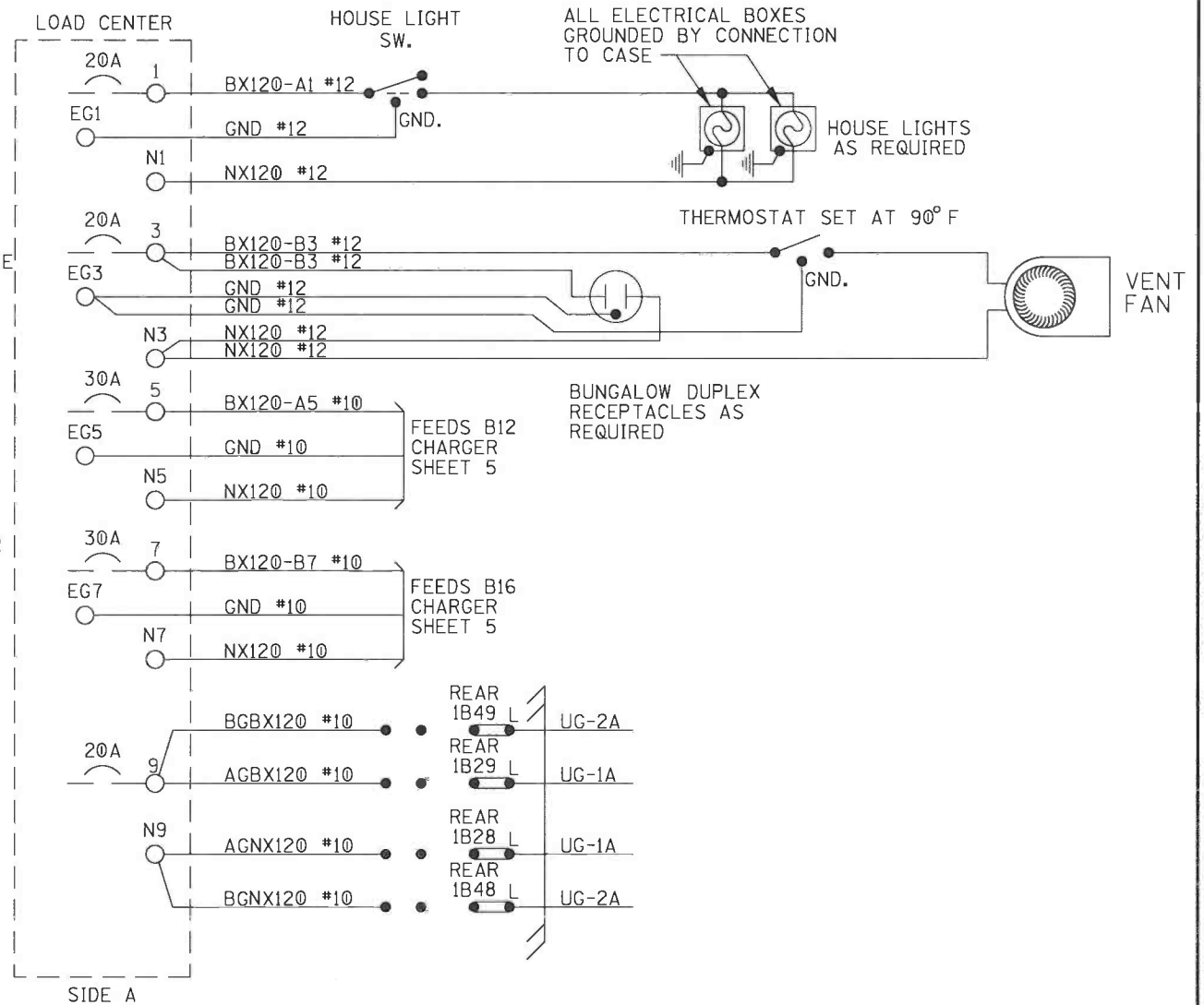
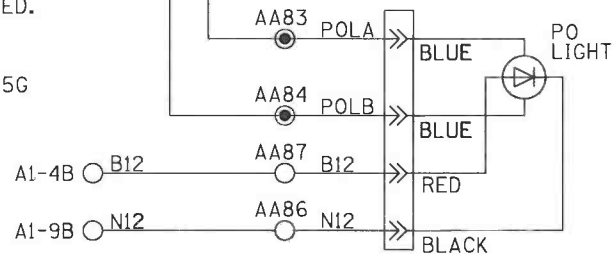




NOTE: ALL AC WIRING IS TO BE IN METALLIC CONDUIT WITH NO EXPOSED TERMINALS. ALL AC 120V AND 240V EQUIPMENT IS TO BE PROPERLY GROUNDING.

SQUARE "D" PART NUMBERS:

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



NOTE:

ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.

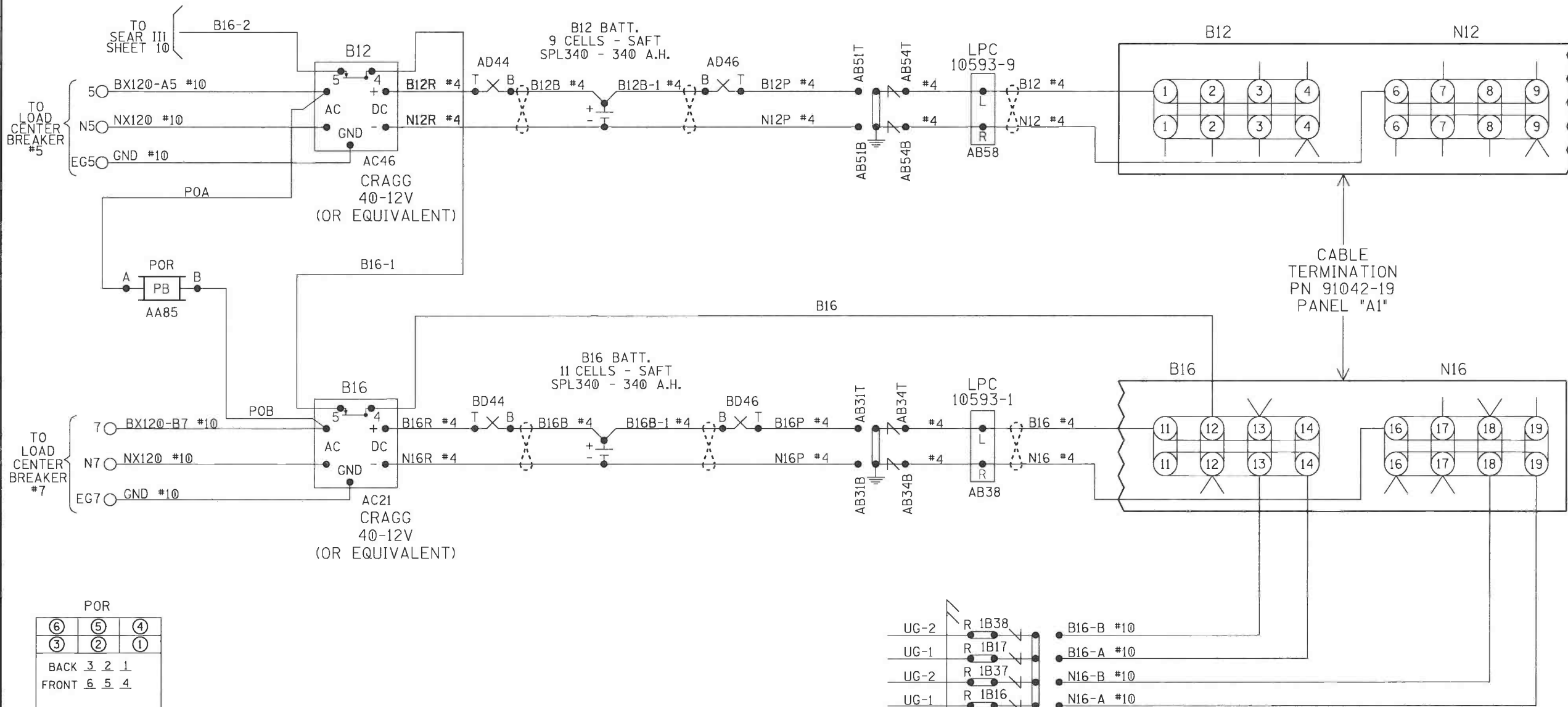
GENERATOR RECEPTACLE:
 MALE CONNECTOR - NEMA L1430-F1

LOAD CENTER

DESIGNED BY:	JWB 10-20-16	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-20-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
CHECKED BY:	DBS 10-21-16	DAYTON, OH FLGS AT MIAMI-CHAPEL RD.	
IN SERVICE:	- -	DAYTON DISTRICT	FILE No. R-
		CADD or DWG. No. 82112097.04	SHEET No. 4 of 22

REVISION
 INITIALS

PROPERTY
 PENNSYLVANIA R.R.



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

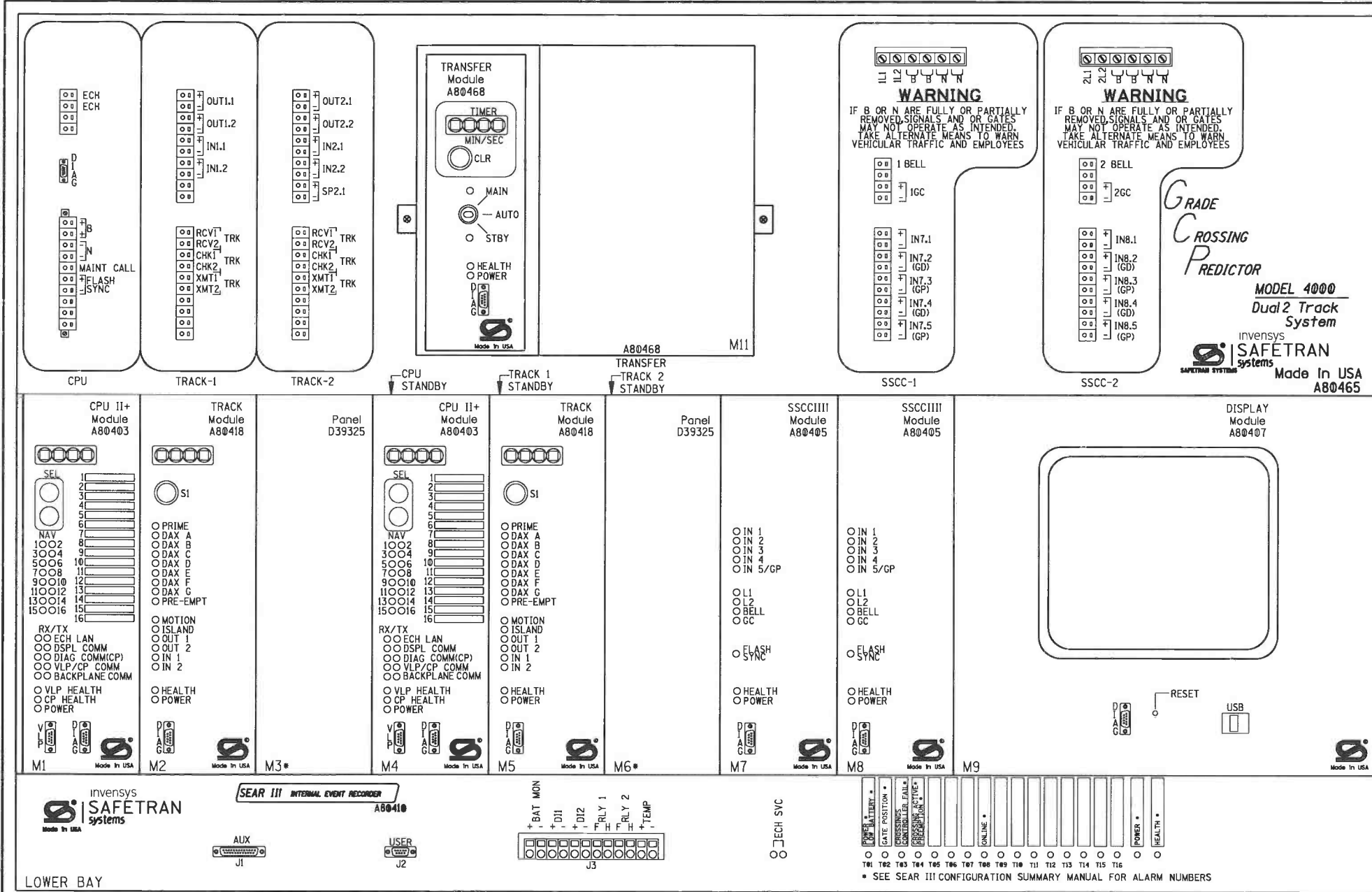
⊗ = TWIST

B12 & B16 CHARGERS & BATTERIES

DESIGNED BY:	JWB 10-20-16	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-20-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
CHECKED BY:	DBS 10-21-16	DAYTON, OH FLGS AT MIAMI-CHAPEL RD.	
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		CADD or DWG. No. 82112097.05	SHEET No. 5 of 22

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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

REVISION
INITIALS

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PENNSYLVANIA R.R.

DESIGNED BY:	JWB 10-20-16	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-20-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
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IN SERVICE:	- -	DAYTON DISTRICT	FILE R- No.
		CADD or DWG. No. 82112097.06	SHEET 6 of 22 No.

Program Report

Location and SIN

DOT Number: 524629Y
Milepost Number: CJ-209.70
Site Name: MIAMI-CHAPEL RD

SIN: 755023410316

MCF and Template Selection

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

Template = 1A:6 Trk Bf

Check Numbers

Office Check No. (DT 4.6.0): 3DB461AB
Office Check Number: 3DB461AB
Config. Check Number: 43A7C798
(Based on MCF Revision 021)

Program

BASIC: module configuration
Track 1 Slot = Track
Track 2/RIO 1 Slot = Not Used
Track 3 Slot = Not Used
Track 4 Slot = Not Used
Track 5/RIO 2 Slot = Not Used
Track 6/RIO 3 Slot = Not Used
SSCC-1 Slot = SSCC31
SSCC-2 Slot = SSCC31
SEAR Used = Yes

BASIC: MS/GCP operation
Track 1: MS/GCP Operation = Yes

BASIC: Island operation
Track 1: Island Used = Internal

BASIC: preemption
Preempt Logic = No

BASIC: radio Dax links
Radio DAX link A Used = No
Radio DAX link B Used = No

BASIC: Vital Comms links
Vital Comms link 1 Used = No
Vital Comms link 2 Used = No

PREDICTORS: track 1
Track 1: Prime Used = Yes
Track 1: Dax A Used = No
Track 1: Dax B Used = No
Track 1: Dax C Used = No
Track 1: Dax D Used = No
Track 1: Dax E Used = No
Track 1: Dax F Used = No
Track 1: Dax G Used = No

GCP: track 1
Track 1: GCP Freq Category = Offset
Track 1: GCP Frequency = 210 Hz
Track 1: Approach Distance = 2595 ft
Track 1: Unl/Bl/Sim-Bldirnl= Bldirnl
Track 1: GCP Transmit Level= High
Track 1: Island Connection = Isl1
Track 1: Island Distance = 138 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 = IP
Track 1: Prime UAX 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: Bldirn Dax Passthru = No
Track 1: False Act on Train Stop = No
Track 1: EX Limiting Used = Yes
Track 1: EZ Correction Used = Yes

ISLAND: track 1
Track 1: IslFrequency = 7.1 kHz
Track 1: Pickup Delay (2s +)= 0 sec
Track 1: IslEnable IP Used = No

AND: track Anding
AND 1 XR Used = Yes
AND 2 Used = No
AND 3 Used = No
AND 4 Used = No
AND 5 Used = No
AND 6 Used = No
AND 7 Used = No
AND 8 Used = No

AND: AND 1 XR
AND 1 XR Track 1 = Prime
AND 1 Enable Used = Yes
AND 1 Enable Pickup = 5 sec
AND 1 Enable Drop = 0 sec
AND 1 Wrap Used = No

ADVANCED: MS restart
MS/GCP Restart Used = No

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

ADVANCED: out of service 2
TI OOS Control= OOS Input 1

ADVANCED: track wrap circuits
Wrap LOS Timer = 5 sec
Track 1 Wrap Used = No

ADVANCED: trk 1 overrides
Track 1: 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 = No
Int.1 Sets = Not Used
Int.1 Set by = Not Used
Int.2 Sets = Not Used
Int.2 Set by = Not Used
Int.3 Sets = Not Used
Int.3 Set by = Not Used
Int.4 Sets = Not Used
Int.4 Set by = Not Used

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

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

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

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

4000 GCP PROGRAMMING SETUP

DESIGNED BY:	JWB 10-20-16		
DRAWN BY:	IRE 10-20-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
CHECKED BY:	DBS 10-21-16	DAYTON, OH FLGS AT MIAMI-CHAPEL RD.	
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		CADD or DWG. No. 82112097.07	SHEET No. 7 of 22

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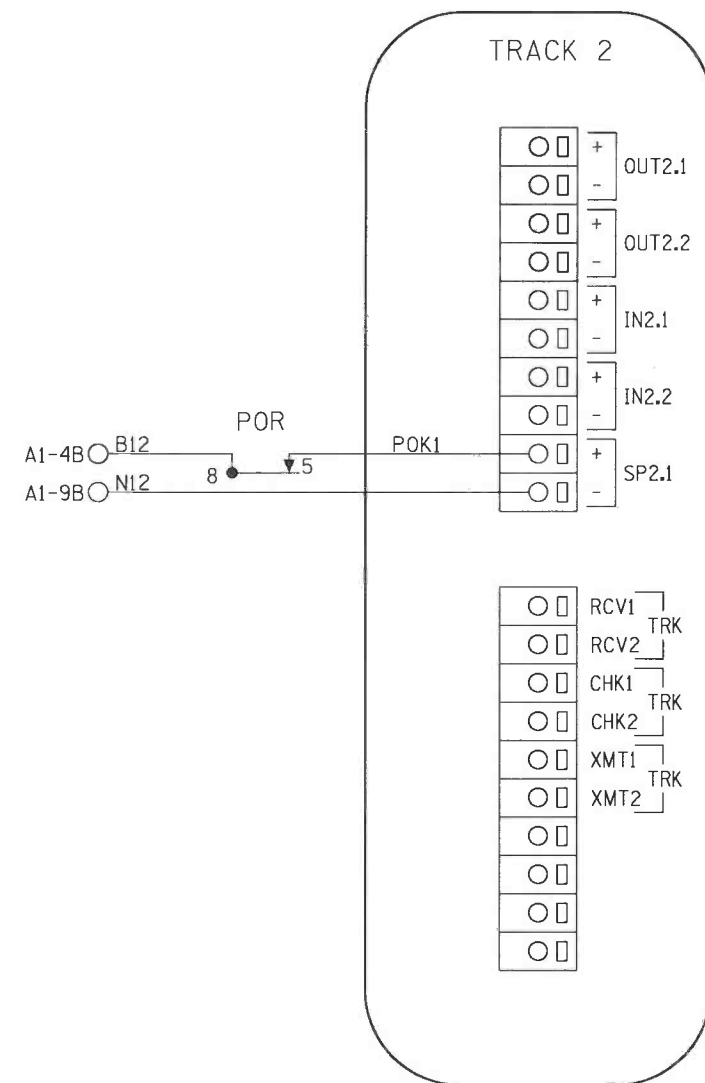
PROPERTY
PENNSYLVANIA R.R.

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

Configuration Package File

Filename: 82112097.pac

DESIGNED BY: JWB 10-20-16	 NORFOLK SOUTHERN	
DRAWN BY: IRE 10-20-16	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
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IN SERVICE:	DAYTON DISTRICT	FILE NO. R-
- -	CADD or DWG. No. 82112097.08	SHEET 8 of 22



DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	10-20-16		
DRAWN BY:		OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
IRE	10-20-16	DAYTON, OH FLGS AT MIAMI-CHAPEL RD.	
CHECKED BY:		DAYTON DISTRICT	
DBS	10-21-16		
IN SERVICE:		FILE No.	R-
- -		CADD or DWG. No.	SHEET No.
		82112097.09	9 of 22

SITE SET UP PROCEDURE									
FUNCTION					LED DISPLAY				
DATE/TIME									
AUTOMATIC DST ADJUSTMENT					YES				
TIME ZONE					EST				
SITE NAME					MIAMI-CHAPEL RD.				
MILEPOST					CJ-209.70				
DOT #					524629Y				
TESTER TYPE					CROSSING				
DATE FORMAT					MM-DD-YYYY				
TEMP FORMAT					FAHRENHEIT				
INDICATE HOLD (SEC)					0				
INDICATE REFRESH (SEC)					60				
SITE ATCS					7.550.234.103.03.01				
SITE TYPE					NO COMMUNICATION				
**	OFFICE ATCS ADDRESS				2.550.00.0000				
**	PRIMARY HOP ADDR				7.RRR.LLL.GGG.XX.XX				
**	BACKUP HOP ADDR 1				7.RRR.LLL.GGG.XX.XX				
**	BACKUP HOP ADDR 2				7.RRR.LLL.GGG.XX.XX				
**	POLL ID				1				
**	MODE				GEN/ATCS				
**	WAMS XID				DISABLED				
**	OFFICE COMM DEVICE				MCM (ECHELON)				
**	RADIO ATCS ADDR				7.RRR.LLL.GGG.01.01				
**	PHONE #				(OFFICE NUMBER)				
**	INIT STRING								
**	FIELD COMM DEVICE				NONE				
***	USER PORT BAUD				57600				
***	USER PORT DATA BITS				8				
***	USER PORT PARITY				NONE				
***	USER PORT STOP BITS				1				
***	USER PORT FLOW CONTROL				NONE				
***	AUX PORT BAUD				9600				
***	AUX PORT DATA BITS				8				
***	AUX PORT PARITY				NONE				
***	AUX PORT STOP BITS				1				
***	AUX PORT FLOW CONTROL				NONE				

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
THE QUESTION	SELECT FROM MENU OPTION
RESET NAMES AND MODULES?	YES
RAILROAD NUMBER	550
CROSSING CONFIGURATION	NORMAL
AND 1 USED AS XR?	YES
AND 2 USED AS XR?	NO
AND 3 USED AS XR?	NO
AND 4 USED AS XR?	NO
AND 5 USED AS XR?	NO
AND 6 USED AS XR?	NO
AND 7 USED AS XR?	NO
AND 8 USED AS XR?	NO
* XR CONTROLLED BY FOREIGN RR	
ENTRANCE GATES	2
85% VOLTAGE RELAY OUT	YES
* GATES CONTROLLED BY FOREIGN RR	
BATTERY BANKS	2
BATTERY MON USED	NO
PREEMPTION	NO
INTERNAL CROSSING CONTROLLERS	2
EXTERNAL CROSSING CONTROLLERS	0
VHF COMMUNICATOR	YES
DTMF ACTIVATION	YES
**** ACTIVATION CODE	629
ACTIVATION TIMEOUT (SECONDS)	60
ILOD MODULES	0
***** ANY LED BULBS USED	
VHF VOICE CHANNEL	2
VHF DATA CHANNEL	2
USE CELL MODEM NON-CRITICAL FEATURE	NO

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

NOTES:

* = DISPLAYED IF CROSSING CONFIGURATION IS SPLIT GATE.

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

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

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

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

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

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:
JWB 10-20-16

DRAWN BY:
IRE 10-20-16

CHECKED BY:
DBS 10-21-16

IN SERVICE:
- -

NS NORFOLK SOUTHERN

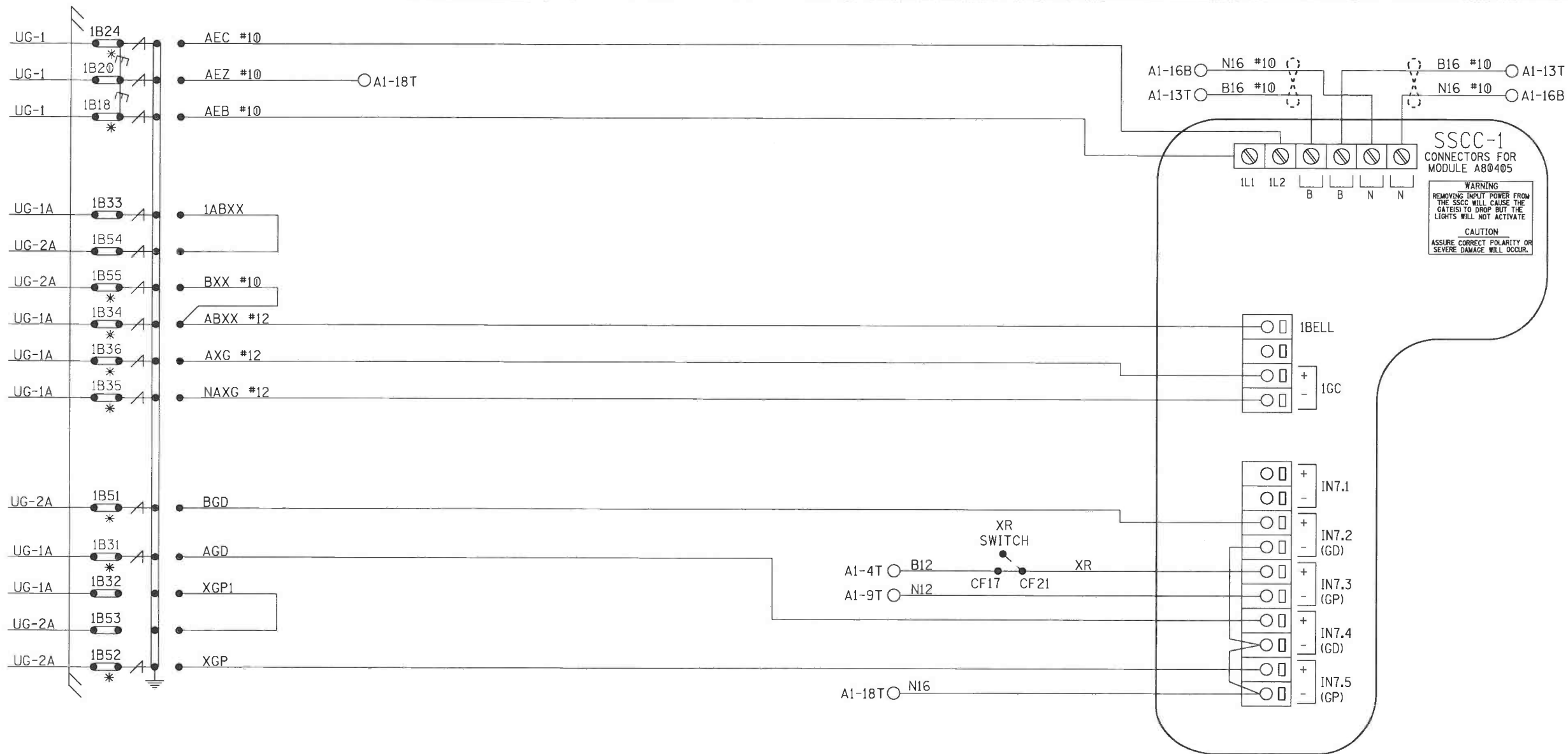
OFFICE OF ASS'T. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA.

DAYTON, OH
FLGS AT MIAMI-CHAPEL RD.

DAYTON DISTRICT

CADD or
DWG. No. 82112097.11

FILE No. R-
SHEET 11 of 22



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.

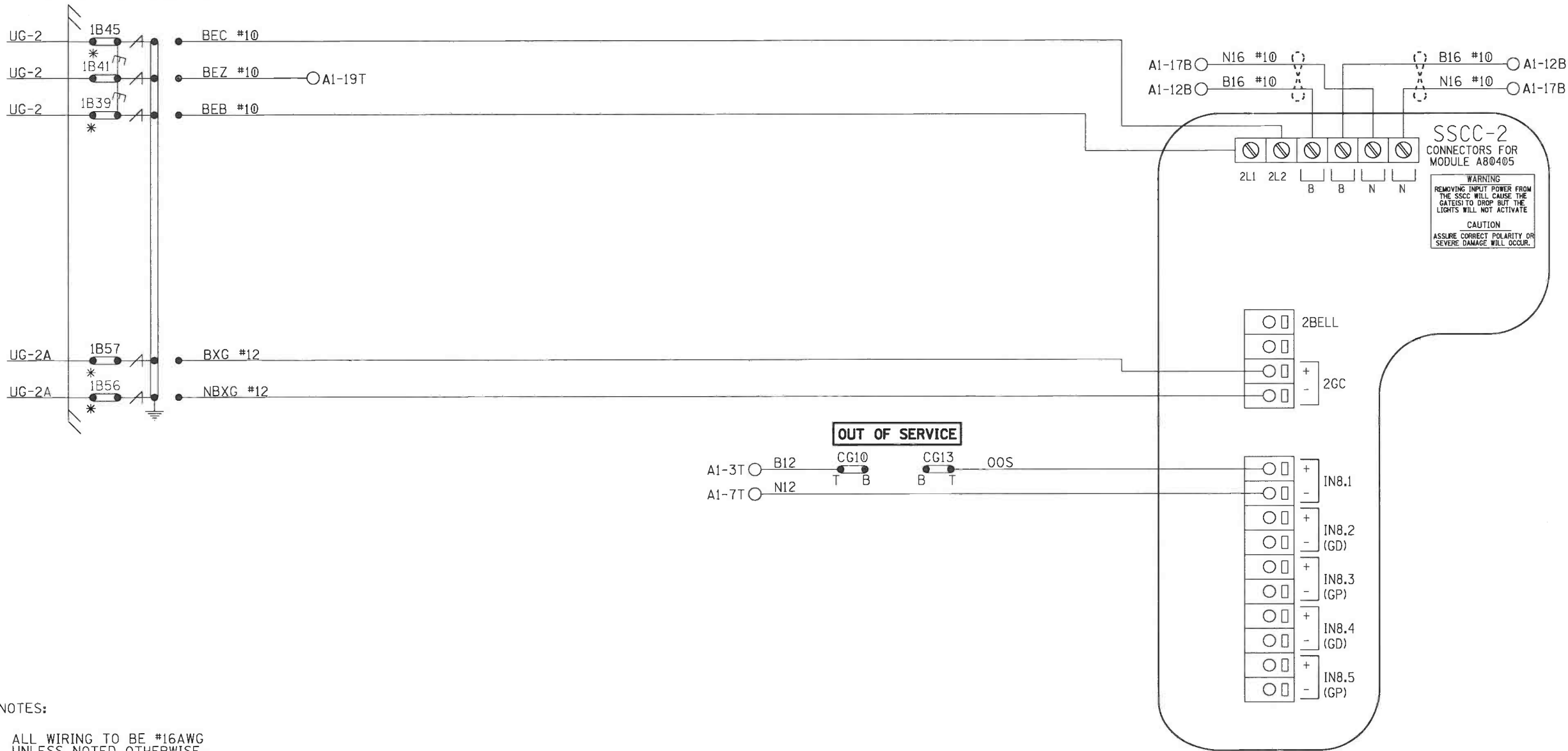
⋈ = TWIST

SSCC#1 MODULE HOOK-UP

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INITIALS

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DESIGNED BY:	JWB 10-20-16	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-20-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
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IN SERVICE:	- -	DAYTON DISTRICT	FILE R-
		CADD or DWG. No. 82112097.12	SHEET 12 of 22



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:	JWB 10-20-16	NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-20-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
CHECKED BY:	DBS 10-21-16	DAYTON, OH FLGS AT MIAMI-CHAPEL RD.	
IN SERVICE:	- -	DAYTON DISTRICT	FILE No. R-
		CADD or DWG. No. 82112097.13	SHEET 13 of 22

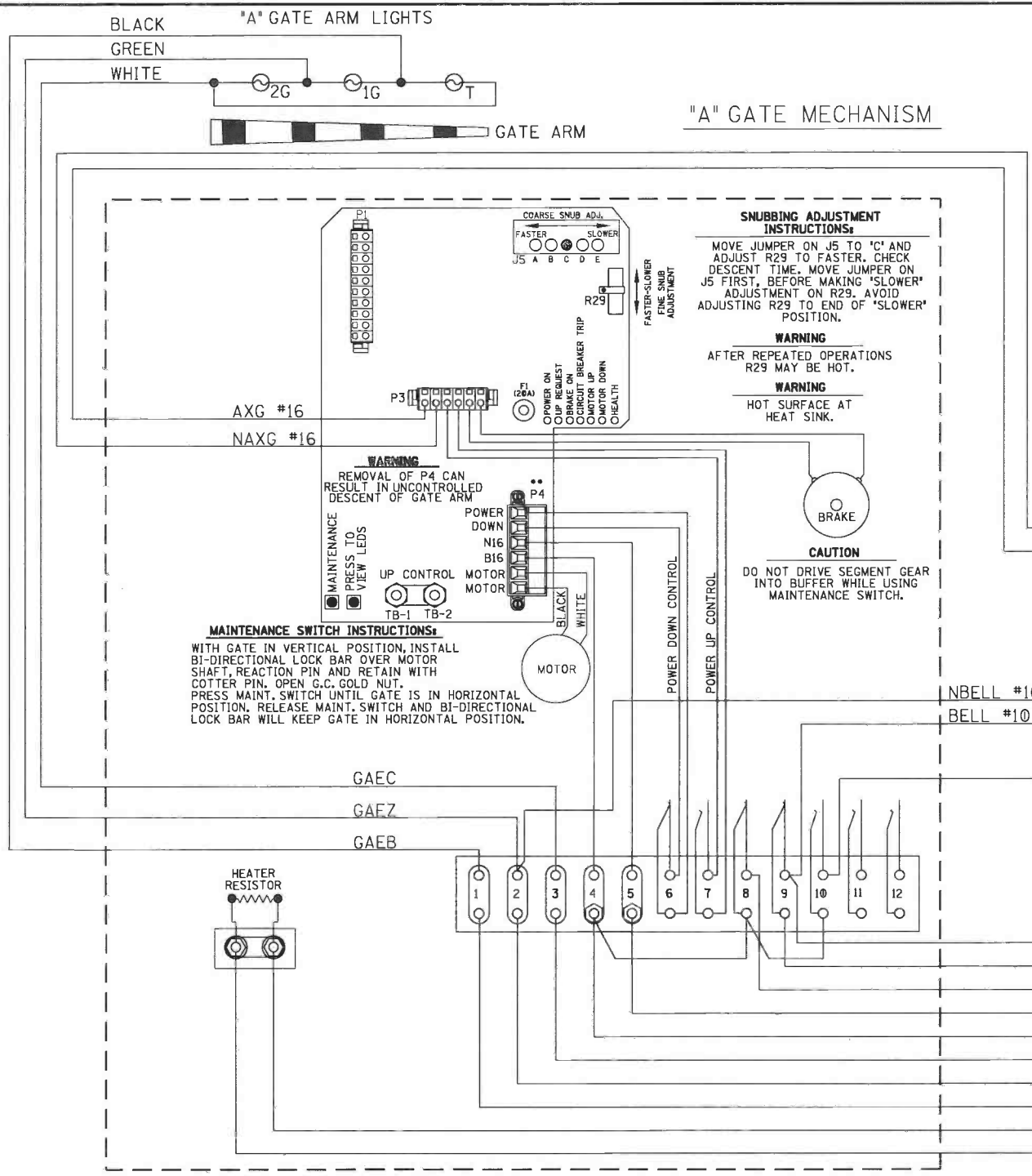
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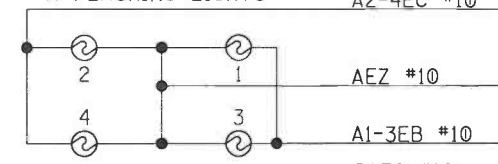
SAFETRAN MODEL "S60" GATE

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

"A" GATE MECHANISM



"A" FLASHING LIGHTS



GATE "A"
JUNCTION
BOX BASE
(BACK)

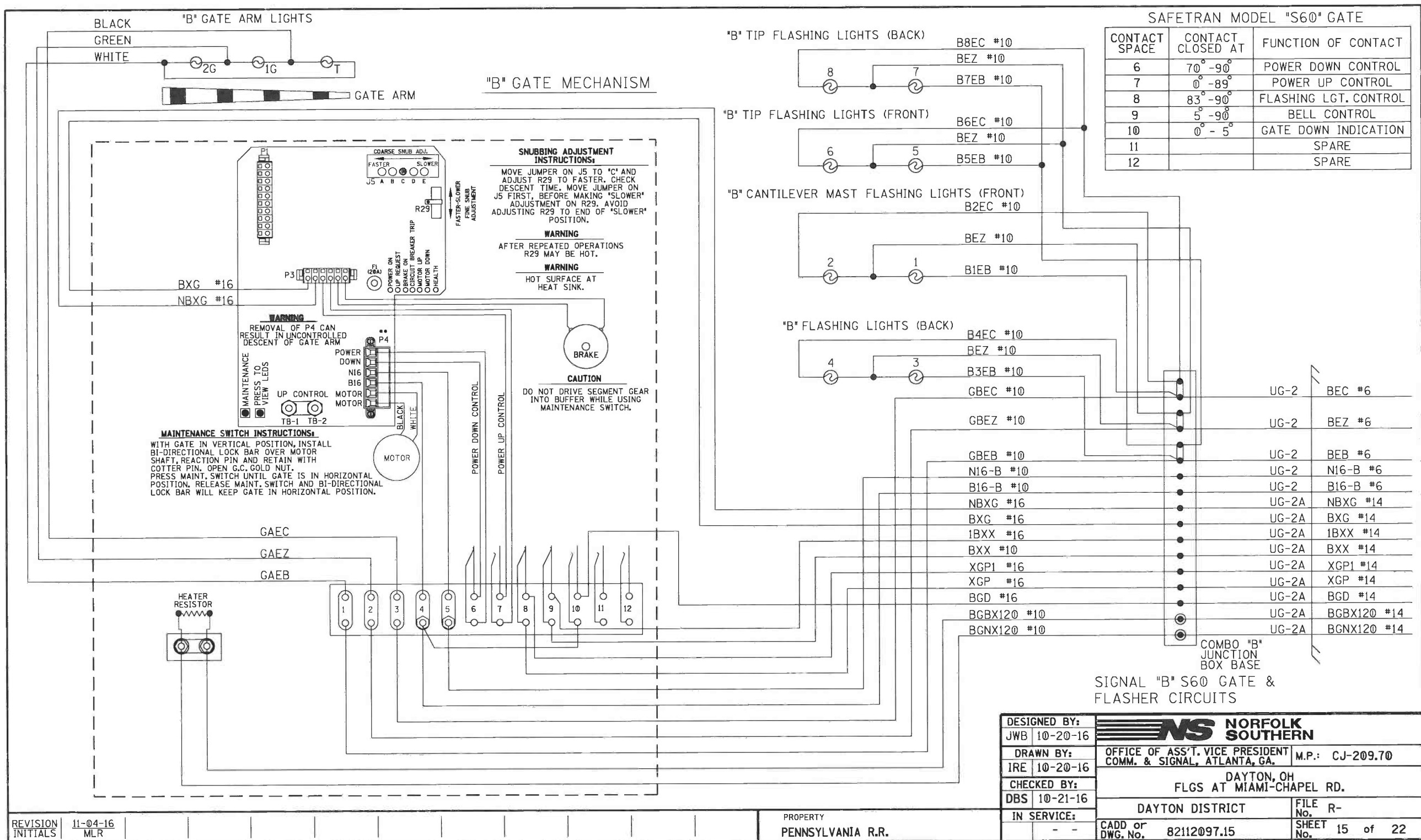
GATE "A"
JUNCTION
BOX BASE
(FRONT)

SIGNAL "A" S60 GATE &
FLASHER CIRCUITS

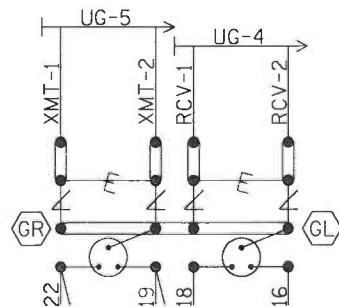
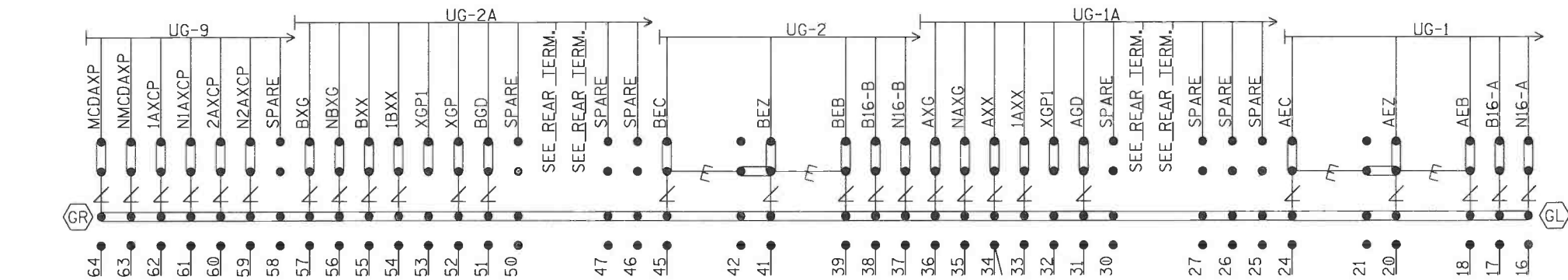
DESIGNED BY: JWB 10-20-16	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 10-20-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
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	CADD or DWG. No. 82112097.14	SHEET 14 of 22

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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 Arrestor (022585-1X)

⊙ = LPC-10560-51

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

BACKBOARD 1A & 1B

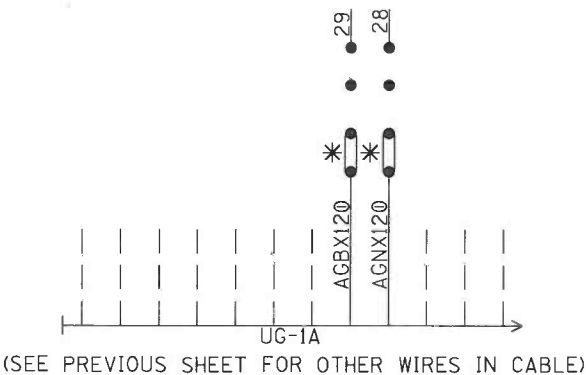
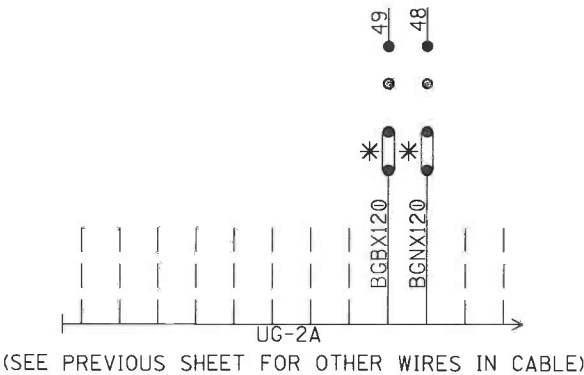
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DRAWN BY:	IRE 10-20-16		
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IN SERVICE:	- -	DAYTON DISTRICT	FILE R-
		CADD or DWG. No. 82112097.16	SHEET 16 of 22

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

"1B"



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

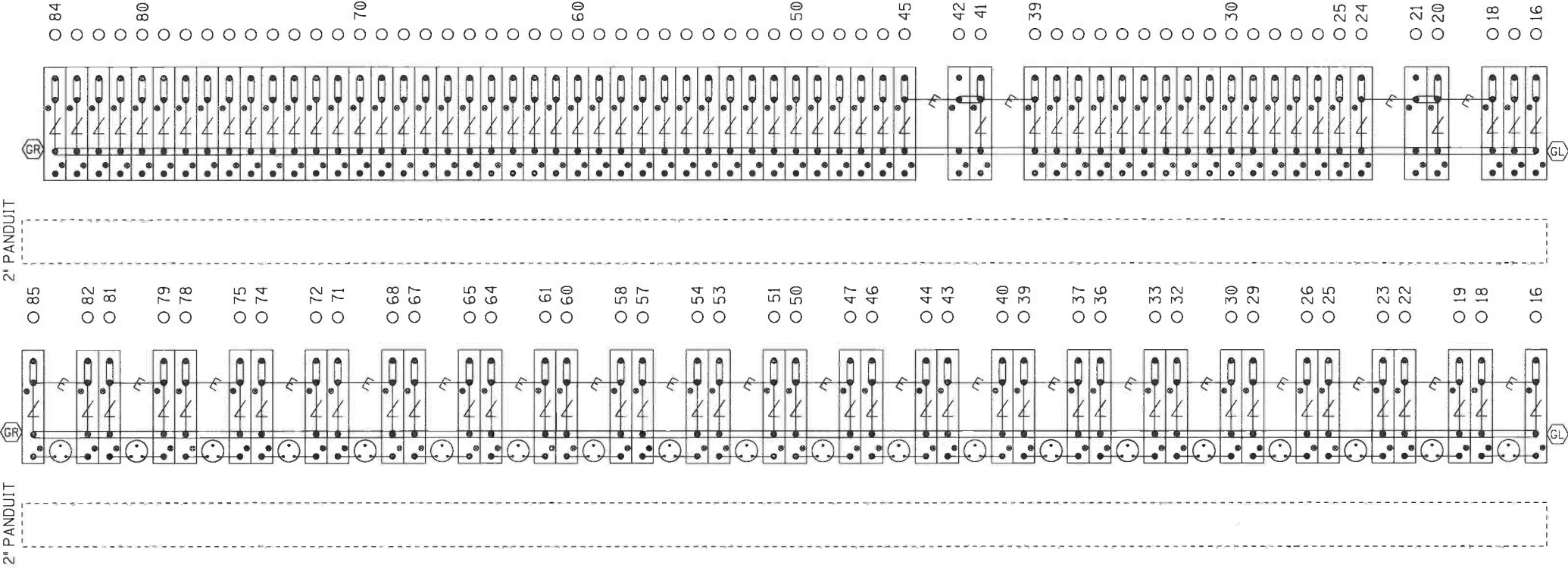
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PENNSYLVANIA R.R.

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DRAWN BY:	IRE 10-20-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
CHECKED BY:	DBS 10-21-16	DAYTON, OH FLGS AT MIAMI-CHAPEL RD.	
IN SERVICE:	- -	DAYTON DISTRICT	FILE No. R-
		CADD or DWG. No. 82112097.17	SHEET No. 17 of 22

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

AREA BELOW IS SCALED WITH AS=.75

TERMINAL BOARD 1
LEFT HALF
"1A"
"1B"



E = Heavy Duty Equalizer
(022700-1X)

Clearview
Z = Lightning Arrester
(022585-1X)

⊙ = LPC-10560-51

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

FARADAY SHIELD 1A & 1B

INDICATES PLACEMENT
OF PANDUIT

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

DESIGNED BY:	JWB 10-20-16	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-20-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
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IN SERVICE:	- -	DAYTON DISTRICT	FILE R- No. 18 of 22
		CADD or DWG. No. 82112097.18	SHEET No. 18 of 22

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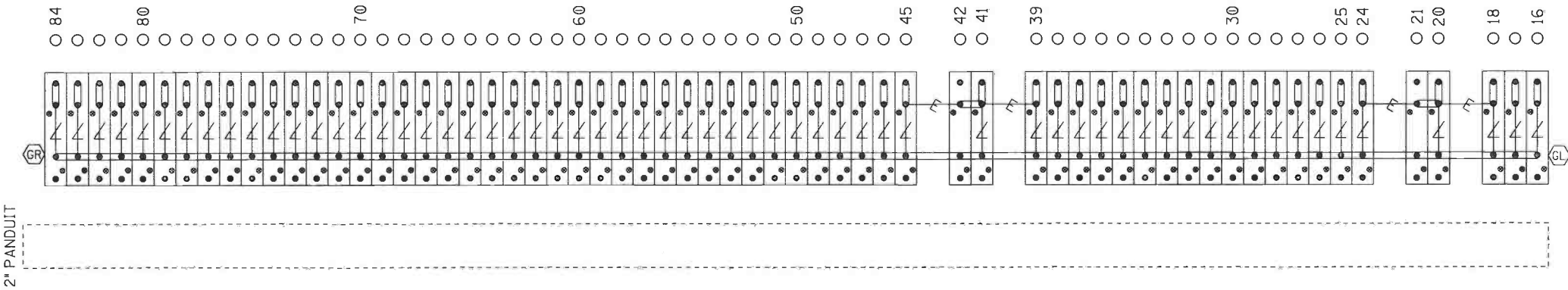
PROPERTY
PENNSYLVANIA R.R.

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

TERMINAL BOARD 1
RIGHT HALF

"1C"



—E— = Heavy Duty Equalizer
(022700-1X)

Clearview
∠ = Lightning Arrestor
(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

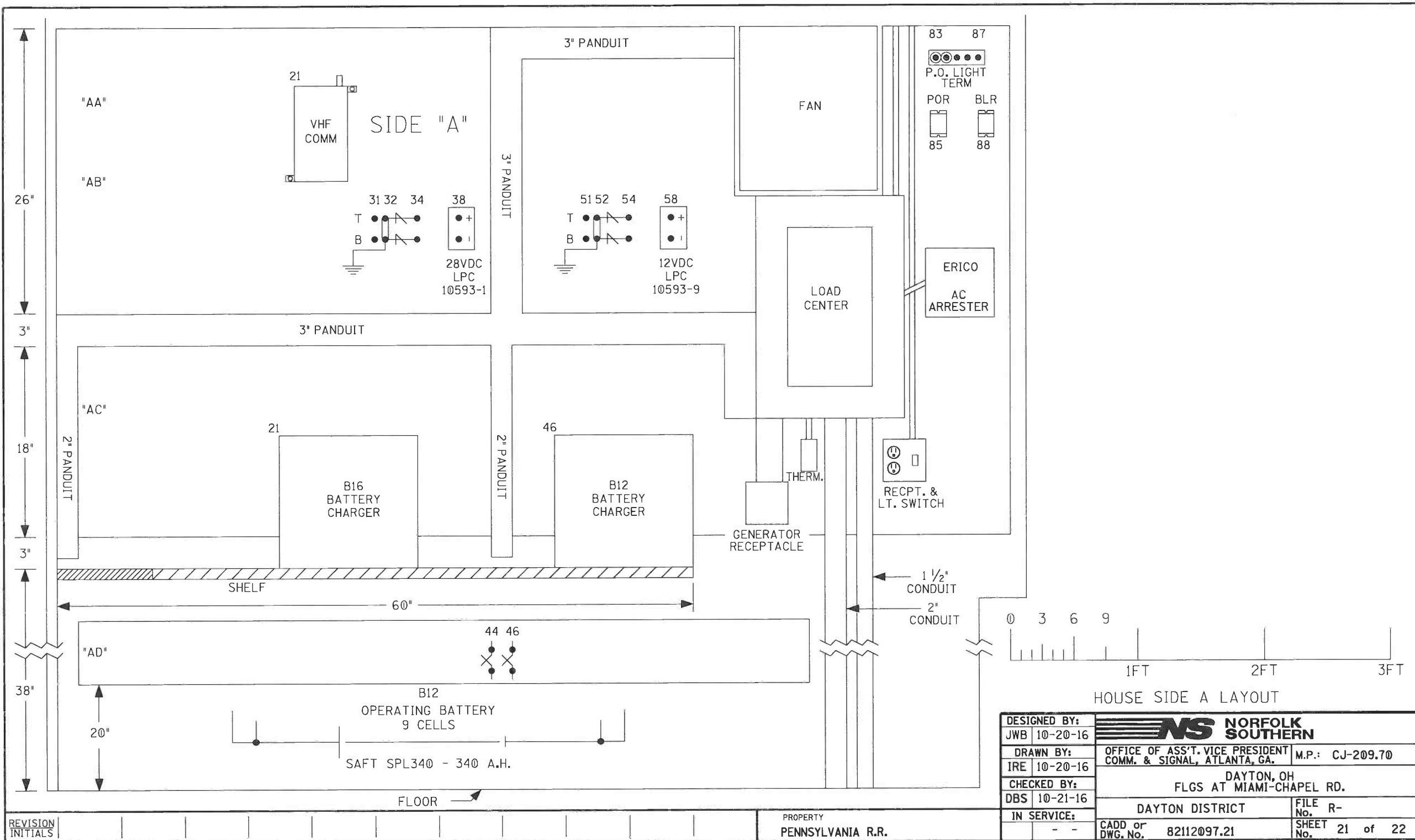
= INDICATES PLACEMENT
OF PANDUIT

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

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:	JWB 10-20-16	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-20-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
CHECKED BY:	DBS 10-21-16	DAYTON, OH FLGS AT MIAMI-CHAPEL RD.	
IN SERVICE:	- -	DAYTON DISTRICT	FILE No. R-
		CADD or DWG. No. 82112097.19	SHEET 19 of 22

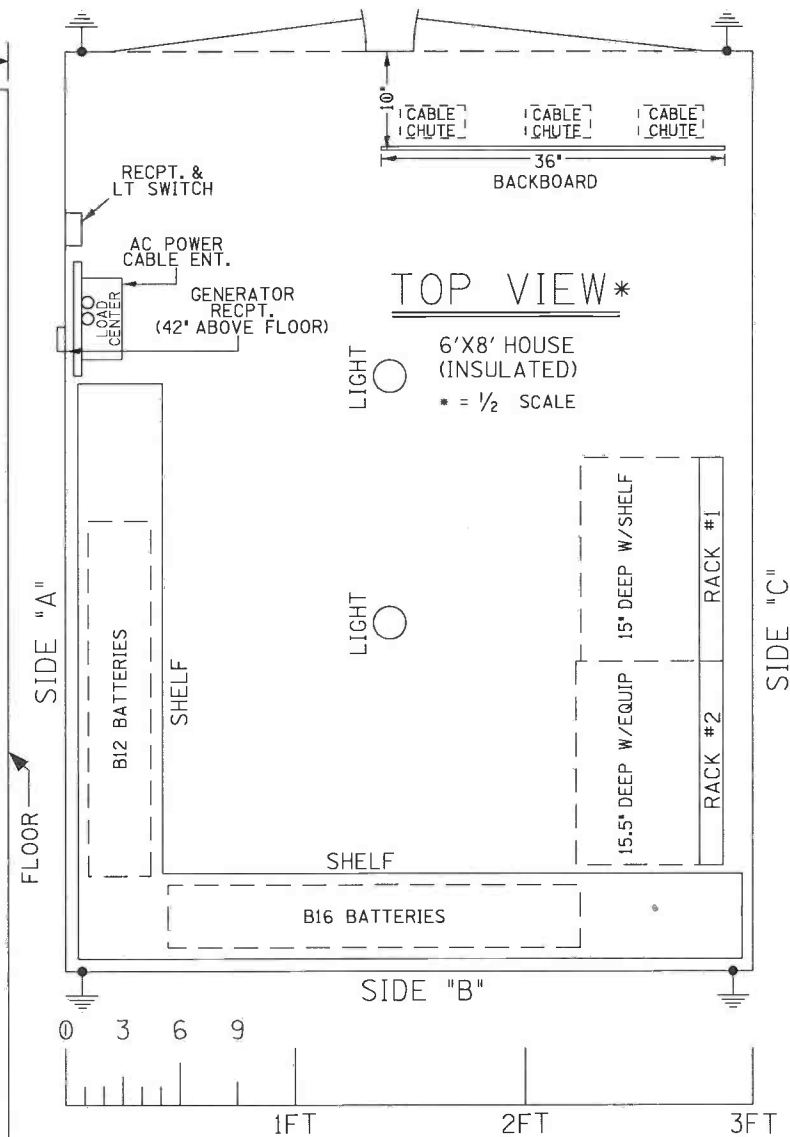


HOUSE SIDE A LAYOUT

DESIGNED BY:	NS NORFOLK SOUTHERN	
JWB 10-20-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
DRAWN BY:	DAYTON, OH	
IRE 10-20-16	FLGS AT MIAMI-CHAPEL RD.	
CHECKED BY:	DAYTON DISTRICT	
DBS 10-21-16	FILE No.	R-
IN SERVICE:	CADD or DWG. No.	82112097.21
	SHEET No.	21 of 22

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.



DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	10-20-16		
DRAWN BY:		OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-209.70
IRE	10-20-16	DAYTON, OH FLGS AT MIAMI-CHAPEL RD.	
CHECKED BY:		DAYTON DISTRICT	
DBS	10-21-16		
IN SERVICE:		FILE No. R-	
	- -	CADD or DWG. No. 82112097.22	SHEET 22 of 22

[illegible]

SH. NO.	CONTENTS
NX1	INDEX SHEET
1	LAYOUT
2	PROFILE
3	CABLE PLAN
4	LOAD CENTER
5	B12 & B16 CHARGERS & BATTERIES
6	4000 GCP 2-TK CHASSIS & MODULE LAYOUT
7	4000 GCP PROGRAMMING SETUP
8	4000 GCP PROGRAMMING SETUP
9	CONNECTORS FOR TRACK MODULES
10	CPU MODULE, SEAR III & VHF HOOK-UPS
11	SEAR III PROGRAMMING SETUP
12	SSCC#1 MODULE HOOK-UP
13	SSCC#2 MODULE HOOK-UP
14	SIGNAL "A" S60 GATE & FLASHER CIRCUITS
15	SIGNAL "B" S60 GATE & FLASHER CIRCUITS
16	BACKBOARD 1A & 1B
17	REAR BACKBOARD 1A & 1B
18	FARADAY SHIELD 1A & 1B
19	FARADAY SHIELD 1C
20	HOUSE SIDE C LAYOUT & RACK PLACEMENT
21	HOUSE SIDE A LAYOUT
22	HOUSE SIDE B LAYOUT & TOP VIEW

INDEX SHEET

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	10-20-16		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT	M.P.: CJ-209.70
IRE	10-20-16	COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY:		DAYTON, OH	
		FLGS AT MIAMI-CHAPEL RD.	
DBS	10-21-16		
IN SERVICE:		DAYTON DISTRICT	FILE No. R-
	- -	CADD or DWG. No. 82112097.NX1	SHEET No. 1 of 1

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

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

TO: Randall Schumacher, Supervisor, Rail Division, PUCO
FROM: Cathy Stout, Manager, Safety Section, ORDC
BY: Greg Gronbach, Project Manager, Safety Section, ORDC
SUBJECT: Montgomery County – C.J. Corridor; PID # 101711
Irwin St, DOT # 527818F

DATE: June 12, 2017

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on May 3, 2011. 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.

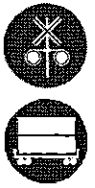
It is expected that all work necessary for FHWA acceptance of the warning devices will be completed by the in-service due date and that the railroad will be responsible for this work. This work includes, but is not limited to:

- 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, PUCO
Cathy Stout, ORDC
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

June 12, 2017

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

RE: Grade Crossing Warning Device Improvements
Montgomery County – C.J. Corridor; PID # 101711
Irwin St, DOT # 527818F

Dear Mr. Klinger:

The plan and estimate dated November 23, 2016, for the referenced project has been reviewed and is acceptable. Norfolk Southern Railway Company 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 \$356,724.00. Additional costs must be approved in writing by the Ohio Rail Development Commission (ORDC) prior to being incurred. Emergency verbal authorizations by ORDC may be permitted and will be confirmed by ORDC in writing within ten (10) business days of the verbal approval.

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

1. Norfolk Southern Railway Company's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to Greg Gronbach, ORDC, email Greg.Gronbach@dot.ohio.gov, and to the Public Utilities Commission of Ohio at Jill.Henry@puc.state.oh.us. Norfolk Southern Railway Company's project foreman will also notify the same of any stops and re-starts of the work activity and of the date work was completed for the project.
2. Norfolk Southern Railway Company will arrange for utilities to be located at the project site by the Ohio Utilities Protection Service (OUPS) prior to any construction activities at the site. Utilities that are not participating members of the service must be contacted directly by Norfolk Southern Railway Company.
3. Norfolk Southern Railway Company's project foremen will notify Greg Gronbach at 614-395-1824 (telephone) or Greg.Gronbach@dot.ohio.gov (email) of any changes in the



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY

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.
5. Norfolk Southern Railway Company will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference when billing.
6. Norfolk Southern Railway Company will furnish two (2) copies of the final all-inclusive bill to ORDC stating the exact dates of starting and completing work, the initial and final dates of construction and location where the accounts may be audited.
7. This installation will include any ancillary work to make the warning devices function as designed and meet MUTCD.

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

Thank you for your assistance with these matters.

Sincerely,



Greg Gronbach
Project Manager

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



23-Nov-16

Detailed Estimate for Grade Crossing Warning Devices

City/State: DAYTON, OH
MilePost: CJ-205.57
State Proj. No.: PID: 101711
S&E Proj. No.: 10.2130
Man Days: 174

Road: IRWIN ST
DOT/AAR: 527818F
County: MONTGOMERY
File Number:

Purchases - Others	
Meals and Lodging:	\$23,800.69
Rental of Equipment:	\$32,535.46
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 29 Days)	
Construction Supervision Vehicle:	\$4,976.83
Purchases - Other Total:	\$61,312.98
Material And Additives	
Material Cost:	\$131,802.00
Sales and Use Tax:	\$10,544.00
Material Handling Freight:	\$13,180.16
Material Total:	\$155,526.16
Labor And Additives	
Labor Cost:	\$56,028.00
(6 man crew at \$1,932.00 a day for: 29 days)	
Payroll Tax & Overheads:	\$47,769.47
Preliminary Engineering:	\$19,722.10
Construction Supervision:	\$16,365.78
Labor Total:	\$139,885.35
Project Cost:	\$356,724.49
Scrap / Salvage Credit:	\$0.00
Project Total:	\$356,724.00

Estimated on: 23-Nov-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:	DAYTON
Road:	IRWIN ST
Mile Post:	CJ-205.57
Drawing Number:	82112056
State ProjectNumber:	PID: 101711
County:	MONTGOMERY
A A R Number:	527818F
Project Number:	10.2130
File Number:	
New File Number:	CX0130010
WBS:	F-03647
Store Number:	S805
Supervisor:	A.D. BELL
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: DAYTON						OH	S&E Proj. No.: 10.2130	A/E No.: F-03647	Drawing No.: 82112056	
Store No.: S805							P.O.Number:	Date Required:	Date Shipped:	Vendor: Interrail Engineering, INC
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions	
3	670-360693-4	EA	\$5.80	\$17.40	AAR/DOT NUMBER PLATE/DECAL, ORDER 3 PER PROJECT. 60 DAY LEAD TIME. SUPPLIED BY S'TRAN.					
2	165-006505-4	EA	\$1,075.23	\$2,150.46	AC SERVICE; COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE					
29	105-002620-4	EA	\$302.42	\$8,770.18	BATTERY, NICAD 340AH, MODEL SPL340					
1	670-503047-4	EA	\$183.15	\$183.15	BELL, CROSSING ELECTRONIC GENERL SIGNAL, EB-3-360-5 CR 02-044350					
2	670-980689-4	EA	\$75.48	\$150.96	BRACKET HIGH WIND, (RIGID 3'), WIG- 191036, WALRUS TUSK TYPE					
2	670-561375-4	EA	\$1,208.79	\$2,417.58	BRACKET, GATE SAVER, NEG385102GS, SPRING LOADED SWING AWAY ADAPTER FOR FIBERGLASS/ALUMINUM GATES, USE WITH GATE 38' AND LESS					
2	670-356949-4	EA	\$94.05	\$188.10	CABLE, 10' GENERATOR HOOK UP, SERRMI P/N 40524. FEMALE CONNECTOR					
500	465-939422-4	LF	\$2.92	\$1,460.00	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL					
750	465-292862-4	LF	\$1.49	\$1,117.50	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR					
500	465-292929-4	LF	\$4.13	\$2,065.00	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL					
3000	465-954727-4	LF	\$1.96	\$5,880.00	CABLE, UG 7 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL FLAT					
700	465-791835-4	FT	\$3.55	\$2,485.00	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					
120	165-544477-4	FT	\$2.61	\$313.20	CONDUIT, 4"x10' PVC, SCHEDULE 80 BELL CONNECTOR AT ONE END, 1/2 PT. GLUE IN KIT 670-123298-4					
4	670-664917-4	EA	\$90.11	\$360.44	CONNECTOR KIT, WELDED FAR RAIL, CONSISTING OF RUBBER HOSE PROPERLY DRILLED, BONDSTRAND, 1 SPLICING SLEEVE, 1 REDUCING SLEEVE, 3 CLAMPS, 1 TRACK CLIP, 1 WEB WELDED TRACK CONNECTOR, 1 WELD METAL, SAFETRAN 111359-2X					

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Location: DAYTON			OH	S&E Proj. No.: 10.2130	A/E No.: F-03647	Drawing No.: 82112056			
Store No.: S805			P.O.Number:		Date Required:	Date Shipped:			
			Vendor: Interrail Engineering, INC						
Qty.	Class-Item-CD.	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
4	670-632520-4	EA	\$79.69	\$318.76	CONNECTOR KIT, WELDED NEAR RAIL, CONSISTING OF, RUBBER HOSE PROPERLY DRILLED, BONDSTRAND, SPLICING SLEEVE, 1 REDUCING SLEEVE, 5 CLAMPS, 1 TRACK CLIP, 1 WEB WELDED TRACK CONNECTOR, 1 WELD METAL, SAFETRAN 111359-1X				
2	670-794453-4	EA	\$1,253.03	\$2,506.06	COUNTERWEIGHT PKAGE, 25-31'GATE STAN S- MECH ONLY, STAINLESS TO INCLUDE HUB, SUPPORT ARMS				
4	670-760012-4	EA	\$44.32	\$177.28	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. ====TO COVER 2 LAMPS=====				
1	670-986650-4	EA	\$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	670-005378-4	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	670-661122-4	EA	\$15,118.21	\$15,118.21	GCP4000 - 1 TRK (5TC) - NON-REDUNDANT - 40 AMP WIRED RACK EQUIP. FOR 6X8 REMOTE SHELTER, (INCL. 5 TRK CHASSIS A80440, 1 TRK MOD. A80418, 0 SSCC, 1 CPU A80403, NO SEAR, 1 DISPLAY A80407, 1-40 AMP CHARGER) IPN: 003131-X				
1	670-696894-4	EA	\$34,574.48	\$34,574.48	GCP4000 - 2 TRK (2TC) - REDUNDANT - 40/40 AMP WIRED RACK EQUIP. FOR 6X8 X'ING 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				
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...				

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Location: DAYTON									
Store No.: S805									
OH		S&E Proj. No.: 10.2130		AFE No.: F-03647		Drawing No.: 82112056		Vendor: Interrail Engineering, INC	
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	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)				
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	\$1,384.63	\$2,769.26	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				
2	670-000001-4	EA	\$726.23	\$1,452.46	MISC. EXPENSE, MATERAIL/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				
2	670-001347-4	EA	\$57.10	\$114.20	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI A1250-5, HARMON @200965-000, OR				
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"				
1	670-514605-4	EA	\$111.11	\$111.11	POLYETHYLENE INCL 45" WITH TERMINAL BLOCK				
					PINNACLE, W-C SECT 1-11, 4" & 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X				
2	165-902002-4	EA	\$303.43	\$606.86	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL				
8	465-002899-4	EA	\$22.24	\$177.92	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES				
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	\$226.97	\$453.94	SHELF, FOLDING, FOR LAPTOP USE IN FARADAY 6X8 SHELTER, SAFETRAN 052852-128X				

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Location: DAYTON		OH	S&E Proj. No.: 10.2130	A/E No.: F-03647	Drawing No.: 82112056				
Store No.: S805		P.O.Number:		Date Required:	Date Shipped:	Vendor: Interrail Engineering, INC			
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
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				
5	670-586967-4	EA	\$42.98	\$214.90	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT				
2	670-652773-4	EA	\$481.72	\$963.44	SHUNT, MULTI-FREQ. #62775-1543 SAFETRAN NARROW BAND				
3	670-645460-4	EA	\$575.56	\$1,726.68	SHUNT, MULTI-FREQ. #62775-8621 SAFETRAN NARROW BAND				
2	670-393331-4	EA	\$37.43	\$74.86	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215				
2	670-016346-4	EA	\$143.23	\$286.46	SIGN, X-BUCK, HI-INTENSIVE REFLECTIVE FRT. & BACK FOR ALL STATES, SAFETRAN# 035200-91X				
4	670-330382-4	RL	\$18.06	\$72.24	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS. "WARNING STOP DIGGING"				

Total Material: \$131,801.57

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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TO SHARONVILLE
(R.R. WEST)
M.P. INCREASING

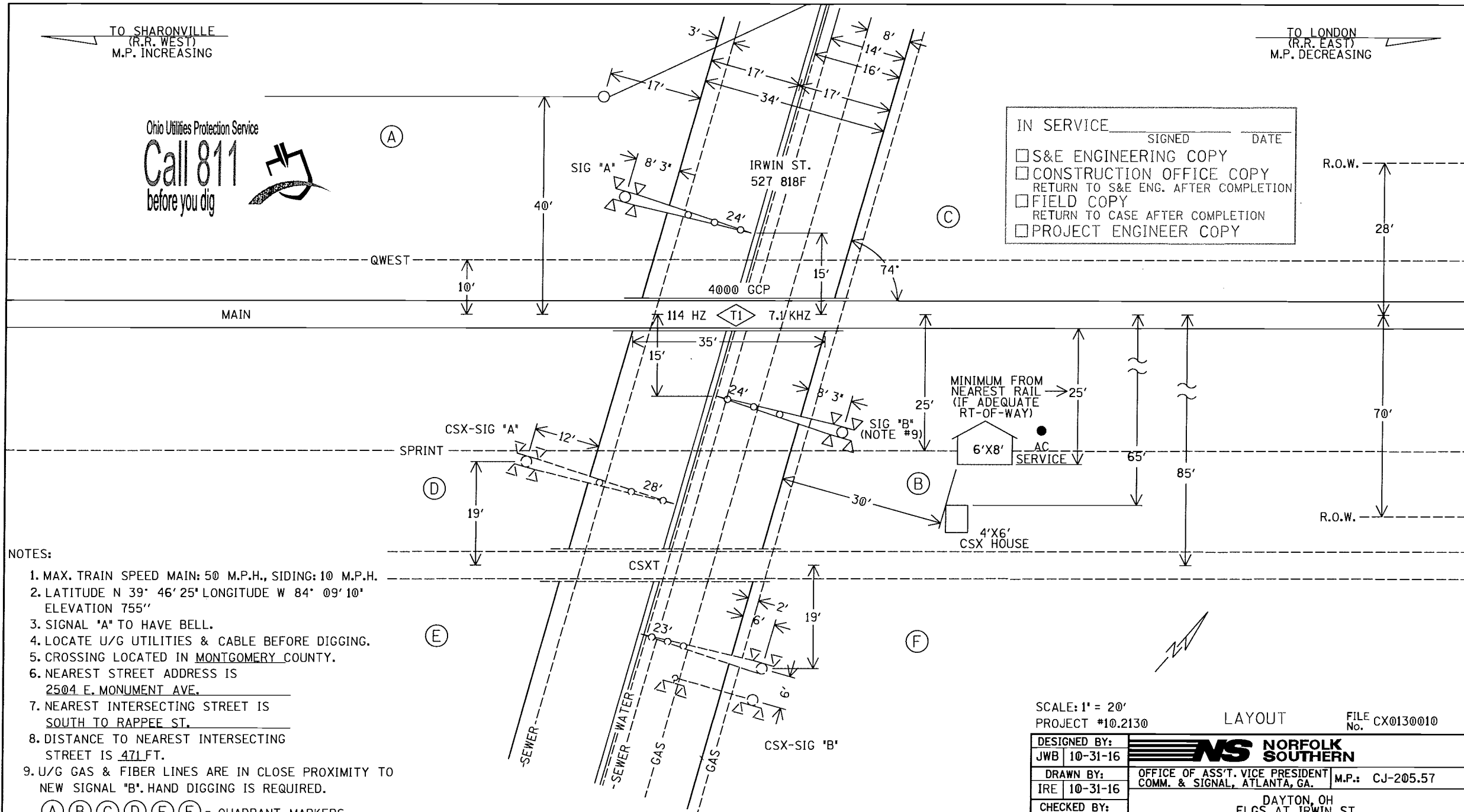
TO LONDON
(R.R. EAST)
M.P. DECREASING

Ohio Utilities Protection Service

Call 811
before you dig



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 MAIN: 50 M.P.H., SIDING: 10 M.P.H.
2. LATITUDE N 39° 46' 25" LONGITUDE W 84° 09' 10" ELEVATION 755'
3. SIGNAL "A" TO HAVE BELL.
4. LOCATE U/G UTILITIES & CABLE BEFORE DIGGING.
5. CROSSING LOCATED IN MONTGOMERY COUNTY.
6. NEAREST STREET ADDRESS IS
2504 E. MONUMENT AVE.
7. NEAREST INTERSECTING STREET IS
SOUTH TO RAPPEE ST.
8. DISTANCE TO NEAREST INTERSECTING STREET IS 471 FT.
9. U/G GAS & FIBER LINES ARE IN CLOSE PROXIMITY TO NEW SIGNAL "B". HAND DIGGING IS REQUIRED.

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

SCALE: 1" = 20'
PROJECT #10.2130

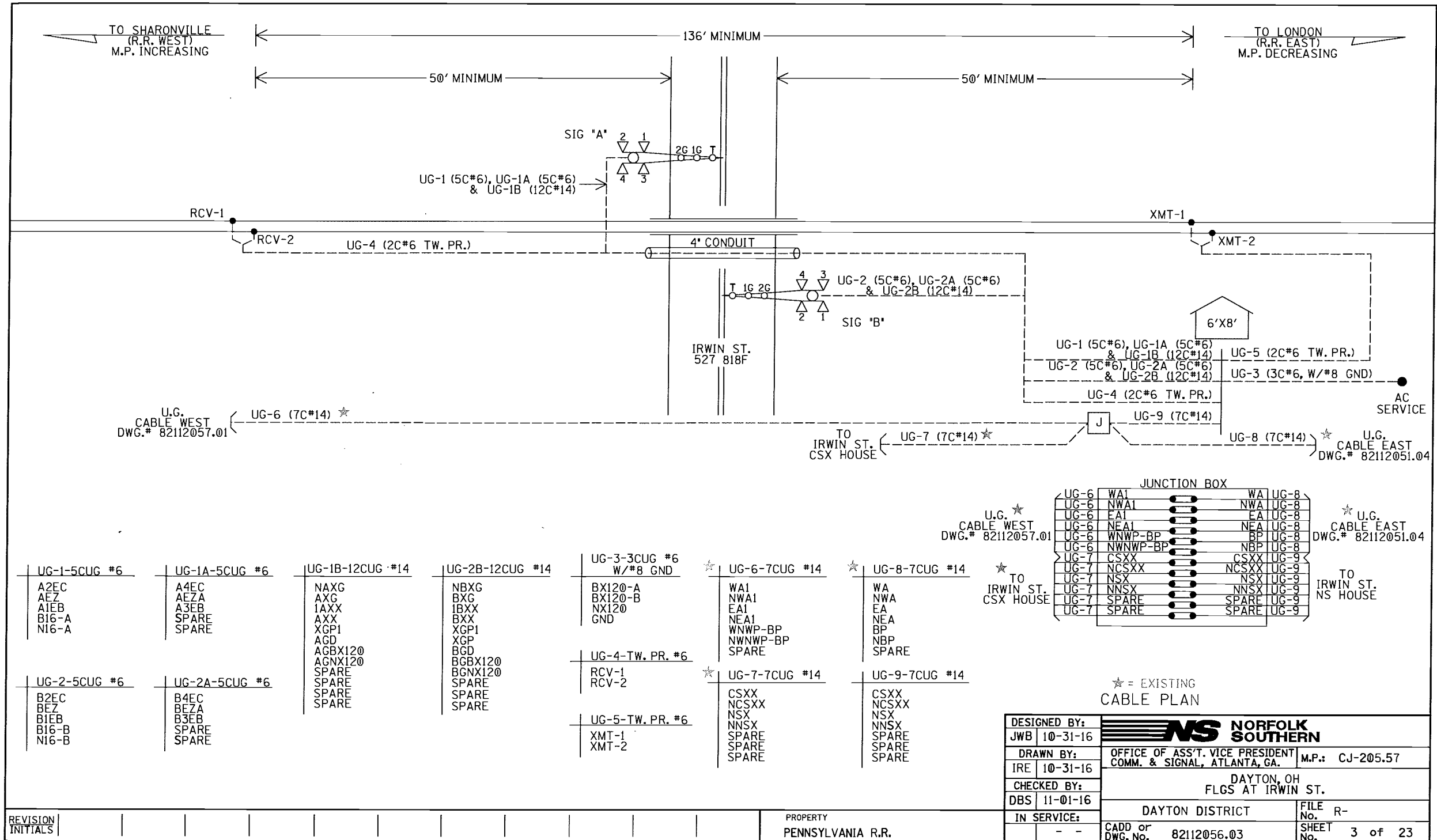
LAYOUT

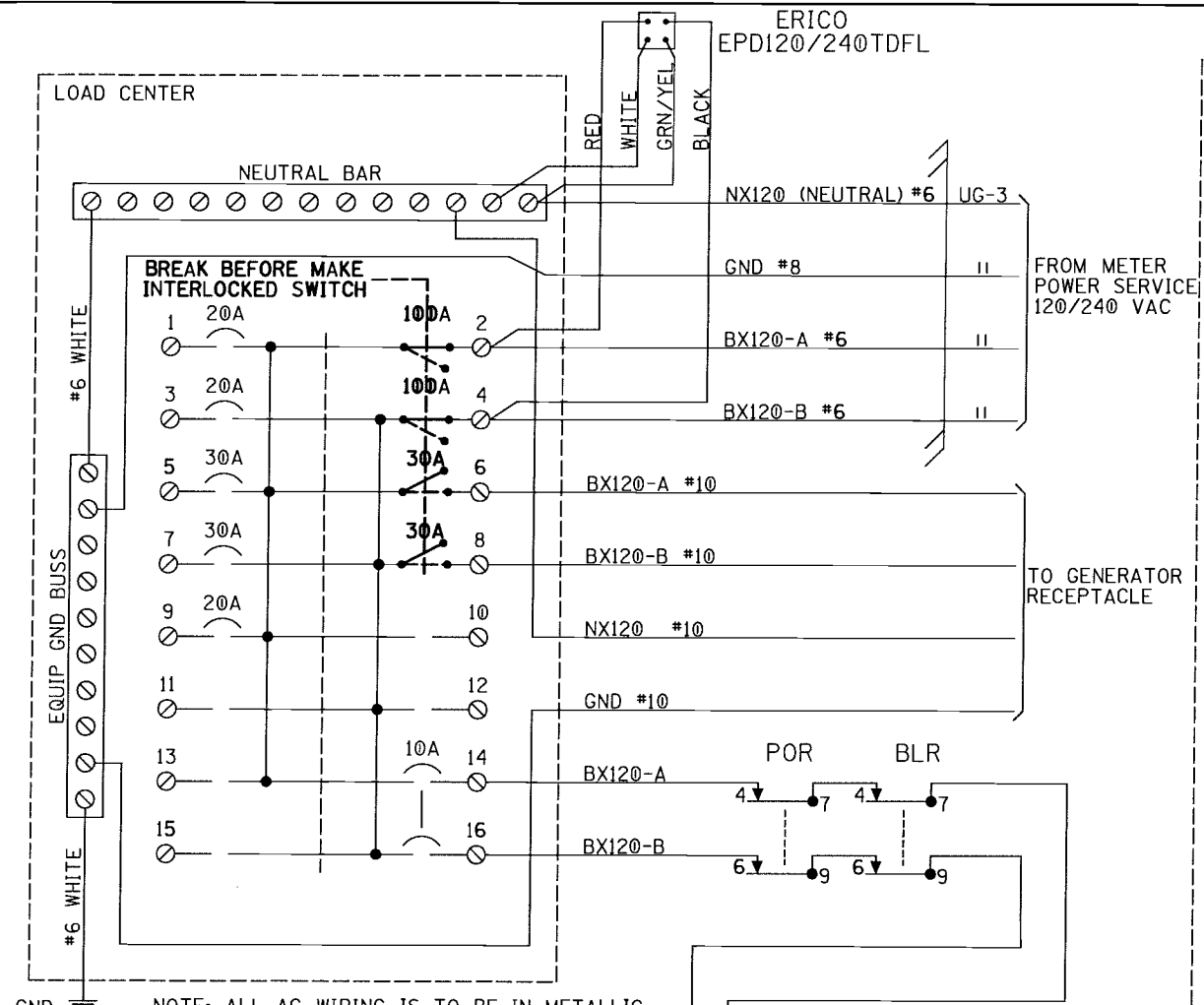
FILE No. CX0130010

DESIGNED BY: JWB 10-31-16	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 10-31-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-205.57
CHECKED BY: DBS 11-01-16	DAYTON, OH FLGS AT IRWIN ST.	
IN SERVICE:	DAYTON DISTRICT	FILE No. R-
	CADD or DWG. No. 82112056.01	SHEET No. 1 of 23

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

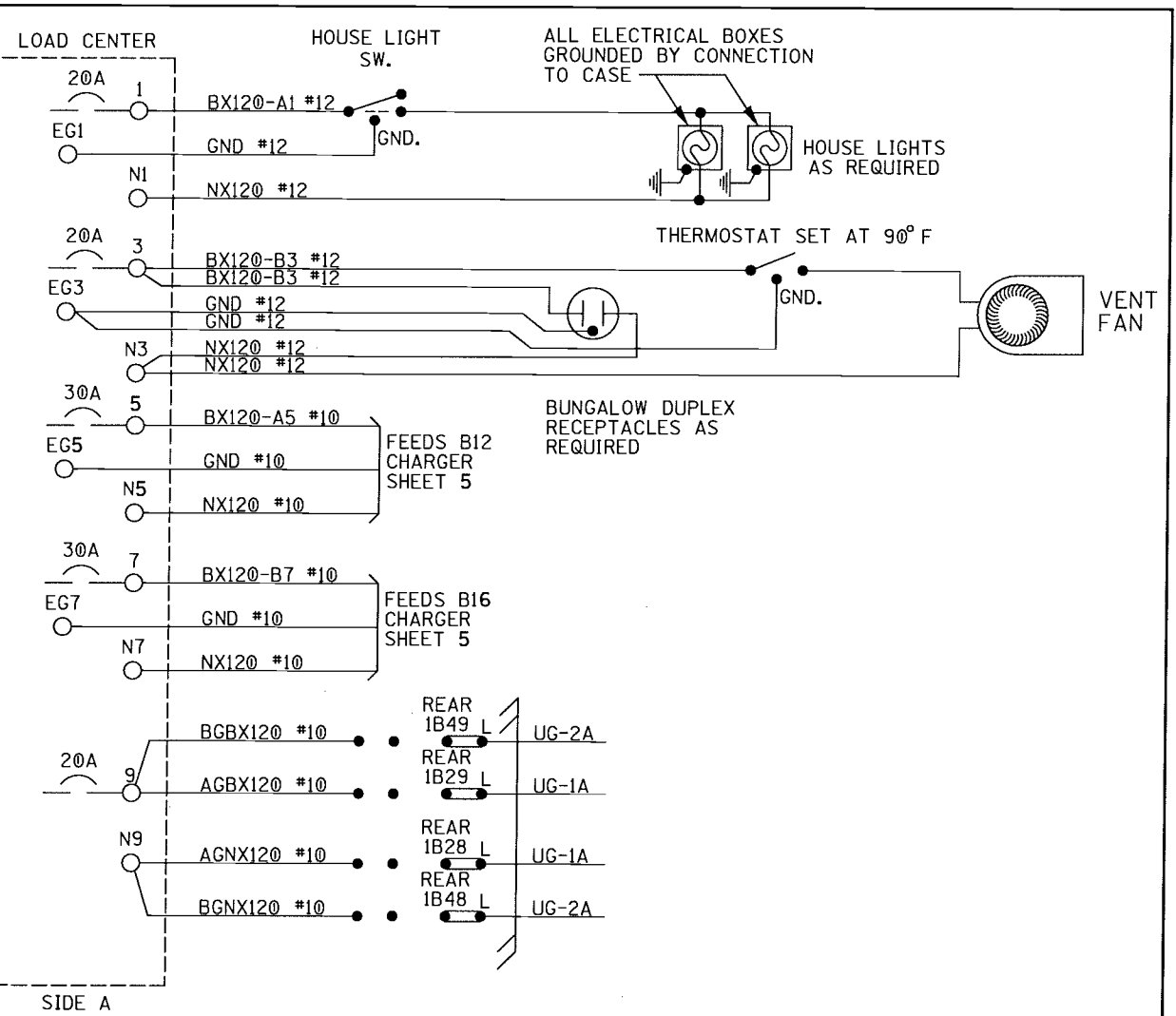
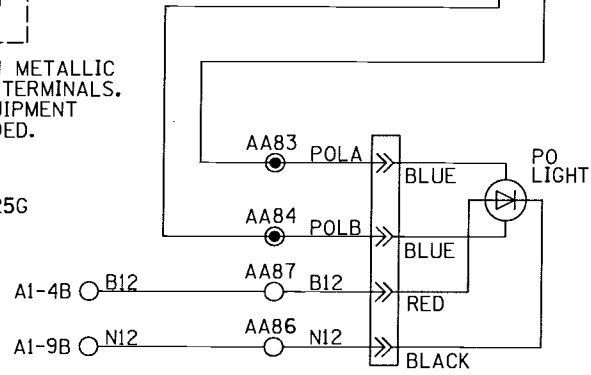




GND.

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

- SQUARE "D" PART NUMBERS:
- LOAD CENTER — Q0116L125G
 - 10A 1P CIR BKR — Q0110
 - 10A 2P CIR BKR — Q0210
 - 20A 1P CIR BKR — Q0120
 - 30A 1P CIR BKR — Q0130
 - 30A 2P CIR BKR — Q0230
 - 60A 2P CIR BKR — Q0260
 - 100A 2P CIR BKR — Q02100
 - MECH INTERLOCK — PK4DTIM4LA



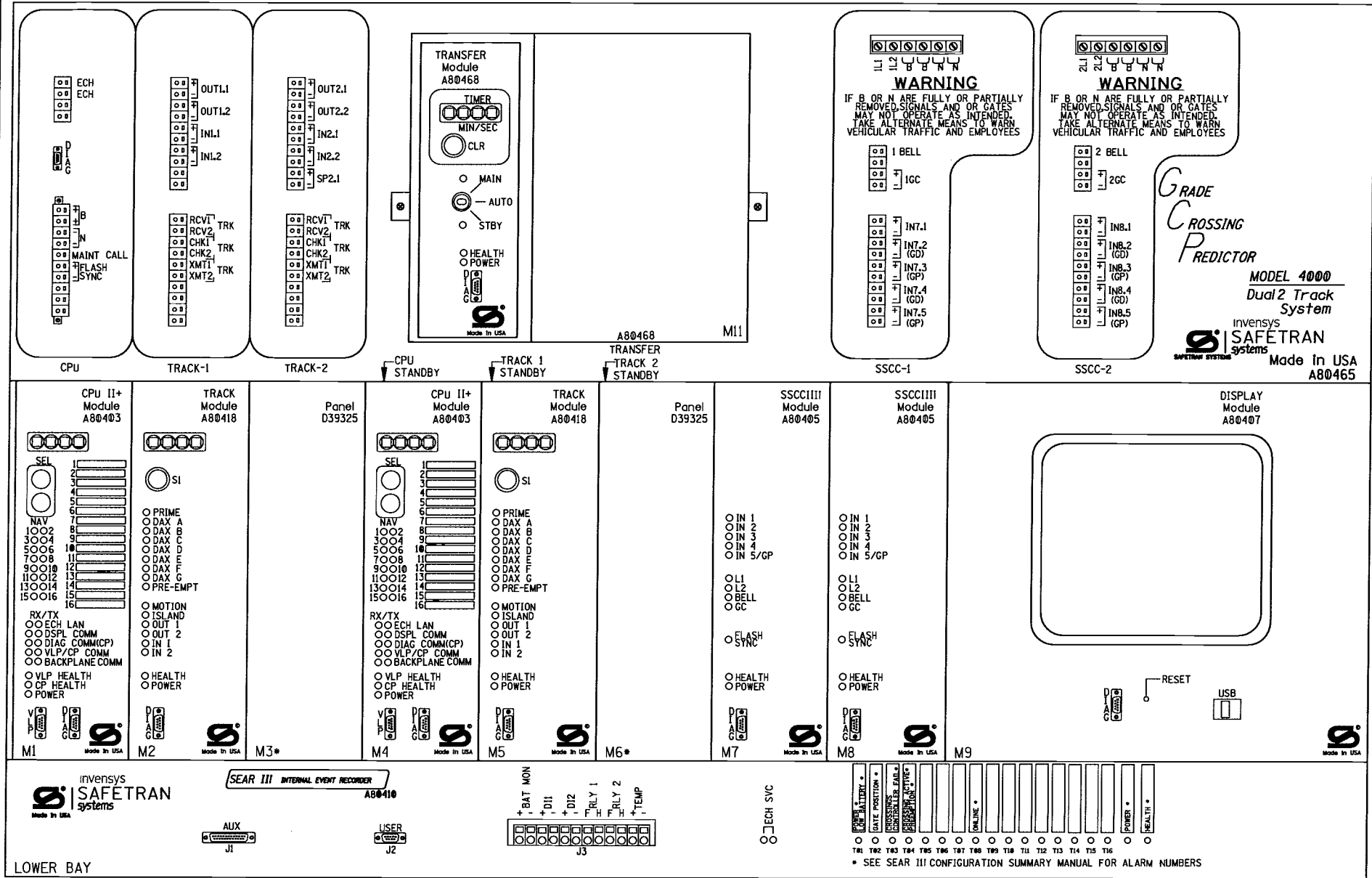
NOTE:
ALL WIRING TO BE #16AWG
UNLESS NOTED OTHERWISE.

GENERATOR RECEPTACLE:
MALE CONNECTOR - NEMA L1430-F1

LOAD CENTER

REVISION INITIALS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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[illegible]



DESIGNED BY: JWB 10-31-16		NS NORFOLK SOUTHERN	
DRAWN BY: IRE 10-31-16		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-205.57
CHECKED BY: DBS 11-01-16		DAYTON, OH FLGS AT IRWIN ST.	
IN SERVICE: - -		DAYTON DISTRICT	FILE No. R-
		CADD or DWG. No. 82112056.06	SHEET No. 6 of 23

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

Program Report

Location and SIN

DOT Number: 527818F
Milepost Number: CJ-205.57
Site Name: IRWIN ST

SIN: 755023409416

MCF and Template Selection

MCF Name: GCP-T6X-02-1.mcf
MCF Revision: 021
MCF CRC: 6076E435
Geo Unit UCN: FFFFFFFF

Template = 1A:6 Trk B1

Check Numbers

Office Check No. (DT 4.6.0): 26D33FA6
Office Check Number: 26D33FA6
Config. Check Number: 398B1500
(Based on MCF Revision 021)

Program

BASIC: module configuration

Track 1 Slot = Track
Track 2/RIO 1 Slot = Not Used
Track 3 Slot = Not Used
Track 4 Slot = Not Used
Track 5/RIO 2 Slot = Not Used
Track 6/RIO 3 Slot = Not Used
SSCC-1 Slot = SSCC31
SSCC-2 Slot = SSCC31
SEAR Used = Yes

BASIC: MS/GCP operation

Track 1: MS/GCP Operation = Yes

BASIC: Island operation

Track 1: Island Used = Internal

BASIC: preemption

Preempt Logic = No

BASIC: radio Dax links

Radio DAX link A Used = No
Radio DAX link B Used = No

BASIC: Vital Comms links

Vital Comms link 1 Used = No
Vital Comms link 2 Used = No

PREDICTORS: track 1

Track 1: Prime Used = Yes
Track 1: Dax A Used = No
Track 1: Dax B Used = No
Track 1: Dax C Used = No
Track 1: Dax D Used = No
Track 1: Dax E Used = No
Track 1: Dax F Used = No
Track 1: Dax G Used = No

GCP: track 1

Track 1: GCP Freq Category = Standard
Track 1: GCP Frequency = 114 Hz
Track 1: Approach Distance = 2541 ft
Track 1: Uni/Bi/Sim-Bidirnl = Bidirnl
Track 1: GCP Transmit Level = High
Track 1: Island Connection = Isl1
Track 1: Island Distance = 136 ft
Track 1: Computed Distance = 2561 ft
Track 1: Linearization Steps = 91

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 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: Bidlrn Dax Passthru = No
Track 1: False Act on Train Stop = No
Track 1: EX Limiting Used = Yes
Track 1: EZ Correction Used = Yes

ISLAND: track 1

Track 1: Isl Frequency = 7.1 kHz
Track 1: Pickup Delay (2s +) = 0 sec
Track 1: Isl Enable IP Used = No

AND: track Anding

AND 1 XR Used = Yes
AND 2 Used = Yes
AND 3 Used = No
AND 4 Used = No
AND 5 Used = No
AND 6 Used = No
AND 7 Used = No
AND 8 Used = No

AND: AND 1 XR

AND 1 XR Track 1 = Prime
AND 1 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 = Not Used
AND 2 Enable Used = Yes
AND 2 Enable Pickup = 2 sec
AND 2 Enable Drop = 0 sec
AND 2 Wrap Used = No

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

ADVANCED: track wrap circuits

Wrap LOS Timer = 5 sec
Track 1 Wrap Used = No

ADVANCED: trk 1 overrides

Track 1: All Predictors Override Used = No

ADVANCED: OR logic

OR 1 Used = No
OR 2 Used = No
OR 3 Used = No
OR 4 Used = No

ADVANCED: Internal I/O 1

Pass Thrus = Yes
Int.1 Sets = AND 2 Enable
Int.1 Set by = AND 1 XR
Int.2 Sets = GP 1.1
Int.2 Set by = Passthru State 1
Int.3 Sets = GP 2.1
Int.3 Set by = Passthru State 1
Int.4 Sets = Not Used
Int.4 Set by = Not Used

ADVANCED: Internal I/O 2

Int.5 Sets = Not Used
Int.5 Set by = Not Used
Int.6 Sets = Not Used
Int.6 Set by = Not Used
Int.7 Sets = Not Used
Int.7 Set by = Not Used
Int.8 Sets = Not Used
Int.8 Set by = Not Used

ADVANCED: Internal I/O 3

Int.9 Sets = Not Used
Int.9 Set by = Not Used
Int.10 Sets = Not Used
Int.10 Set by = Not Used
Int.11 Sets = Not Used
Int.11 Set by = Not Used
Int.12 Sets = Not Used
Int.12 Set by = Not Used

ADVANCED: Internal I/O 4

Int.13 Sets = Not Used
Int.13 Set by = Not Used
Int.14 Sets = Not Used
Int.14 Set by = Not Used
Int.15 Sets = Not Used
Int.15 Set by = Not Used
Int.16 Sets = Not Used
Int.16 Set by = Not Used

ADVANCED: site options

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

4000 GCP PROGRAMMING SETUP

DESIGNED BY:	JWB 10-31-16	 NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-31-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-205.57
CHECKED BY:	DBS 11-01-16	DAYTON, OH FLGS AT IRWIN ST.	
IN SERVICE:	- -	DAYTON DISTRICT	FILE No. R-
		CADD or DWG. No. 82112056.07	SHEET No. 7 of 23

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

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

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

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

OUTPUT: assignment page 1
OUT 1.1 = AND 1 XR
OUT 1.2 = Not Used

INPUT: assignment page 1
IN 1.1 = AND 2 Enable
IN 1.2 = Not Used

IO: assignment SSCC
OUT GC 1 = Gate Output 1
OUT GC 2 = Gate Output 2
IN 7.1 = Not Used
IN 7.2 = GD 1.2
IN 7.3 = AND 1 XR Enable
IN 7.4 = GD 1.1
IN 7.5 = Passthru State 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
RIy 1 = General1
RIy 2 = Not Used

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

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

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

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

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

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

Configuration Package File

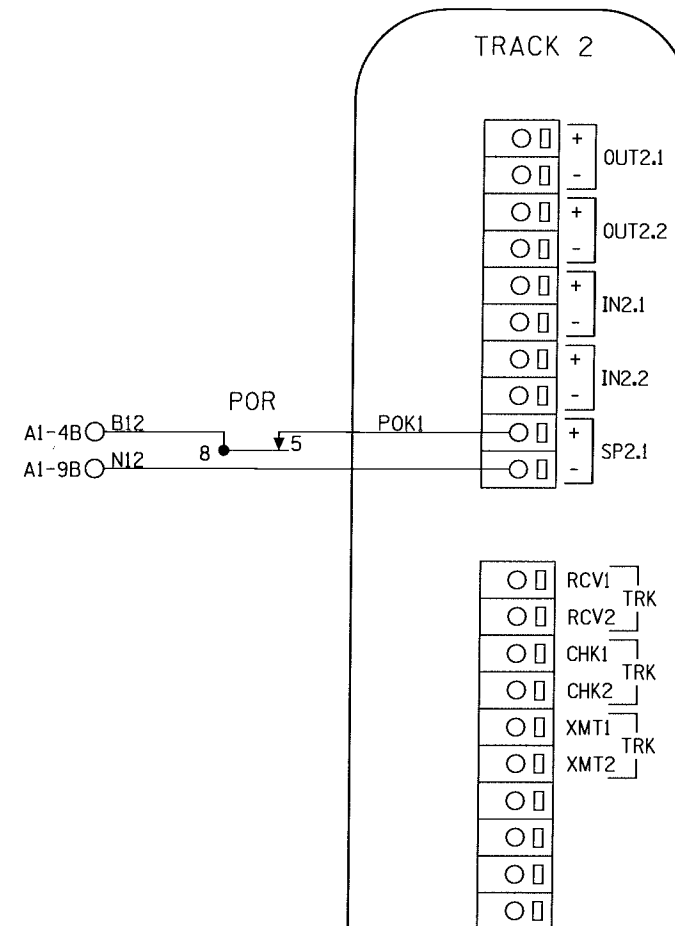
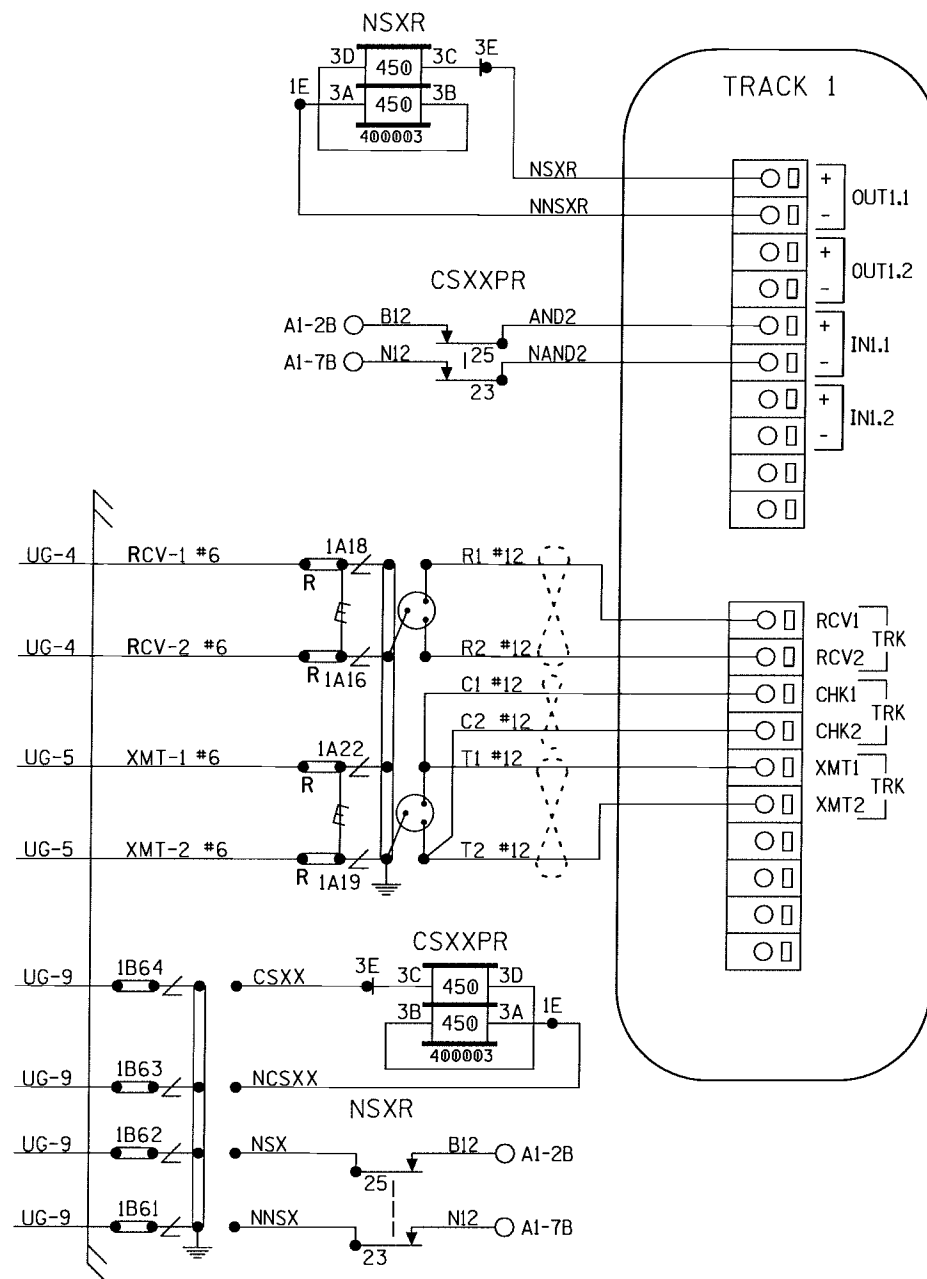
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4000 GCP PROGRAMMING SETUP

DESIGNED BY:	JWB 10-31-16	 NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-31-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-205.57
CHECKED BY:	DBS 11-01-16	DAYTON, OH FLGS AT IRWIN ST.	
IN SERVICE:	- -	DAYTON DISTRICT	FILE No. R-
		CADD or DWG. No. 82112056.08	SHEET No. 8 of 23

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.



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

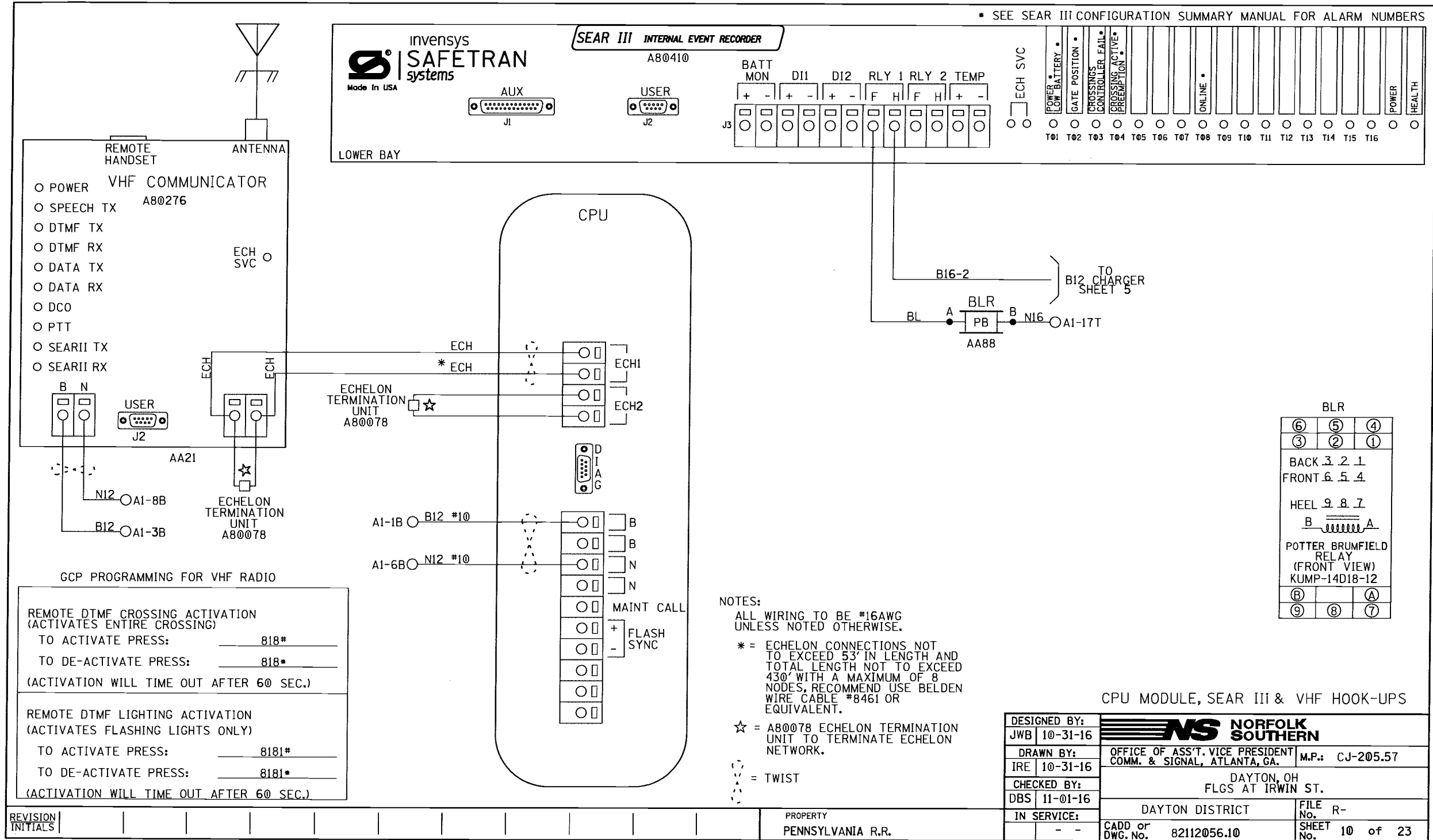
⋈ = TWIST

PROPERTY
PENNSYLVANIA R.R.

CONNECTORS FOR TRACK MODULES

DESIGNED BY:		 NORFOLK SOUTHERN	
JWB	10-31-16		
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT	
IRE	10-31-16	COMM. & SIGNAL, ATLANTA, GA. M.P.: CJ-205.57	
CHECKED BY:		DAYTON, OH	
DBS	11-01-16	FLGS AT IRWIN ST.	
IN SERVICE:		DAYTON DISTRICT	
	- -	CADD or DWG. No. 82112056.09	FILE No. R-
			SHEET No. 9 of 23

REVISION
INITIALS



SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
DATE/TIME	
AUTOMATIC DST ADJUSTMENT	YES
TIME ZONE	EST
SITE NAME	IRWIN ST.
MILEPOST	CJ-205.57
DOT #	527818F
TESTER TYPE	CROSSING
DATE FORMAT	MM-DD-YYYY
TEMP FORMAT	FAHRENHEIT
INDICATE HOLD (SEC)	0
INDICATE REFRESH (SEC)	60
SITE ATCS	7.550.234.094.03.01
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	SPLIT
AND 1 USED AS XR?	YES
AND 2 USED AS XR?	YES
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	AND2
ENTRANCE GATES	2
85% VOLTAGE RELAY OUT	YES
* GATES CONTROLLED BY FOREIGN RR	NO
BATTERY BANKS	2
BATTERY MON USED	NO
PREEMPTION	NO
INTERNAL CROSSING CONTROLLERS	2
EXTERNAL CROSSING CONTROLLERS	0
VHF COMMUNICATOR	YES
DTMF ACTIVATION	YES
**** ACTIVATION CODE	818
ACTIVATION TIMEOUT (SECONDS)	60
ILOD MODULES	0
***** ANY LED BULBS USED	
VHF VOICE CHANNEL	2
VHF DATA CHANNEL	2
USE CELL MODEM NON-CRITICAL FEATURE	NO

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

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:

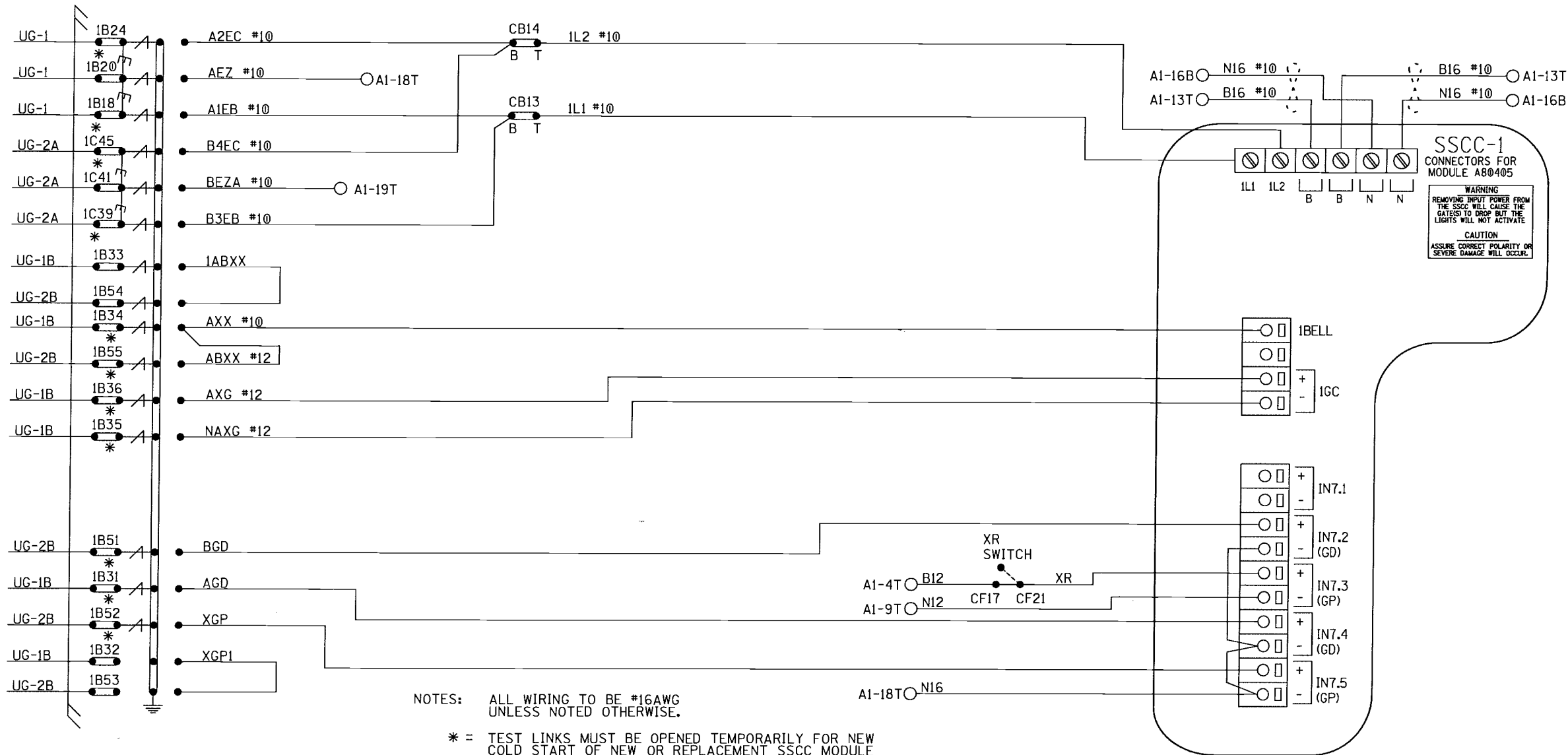
- * = DISPLAYED IF CROSSING CONFIGURATION IS SPLIT GATE.
- ** = IF SITE TYPE = NO COMMUNICATION, THEN THESE OPTIONS ARE NOT DISPLAYED.
- *** = THESE SETTINGS SHOULD BE LEFT AT THE DEFAULT SETTING.
- **** = USE LAST 3 NUMBERS FROM DOT NUMBER.
- ***** = IF ILOD MODULE >0.

SEAR III PROGRAMMING SETUP

DESIGNED BY:	JWB 10-31-16	 NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-31-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-205.57
CHECKED BY:	DBS 11-01-16	DAYTON, OH FLGS AT IRWIN ST.	
IN SERVICE:	- -	DAYTON DISTRICT	FILE R-
		CADD or DWG. NO. 82112056.11	SHEET 11 of 23

REVISION
INITIALS

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 SSSC MODULE
AND CAN ONLY BE CLOSED IN SEQUENCE WITH MFR.
INSTRUCTIONS: SECTION 8 OF THE GCP 4000 REFERENCE MANUAL.

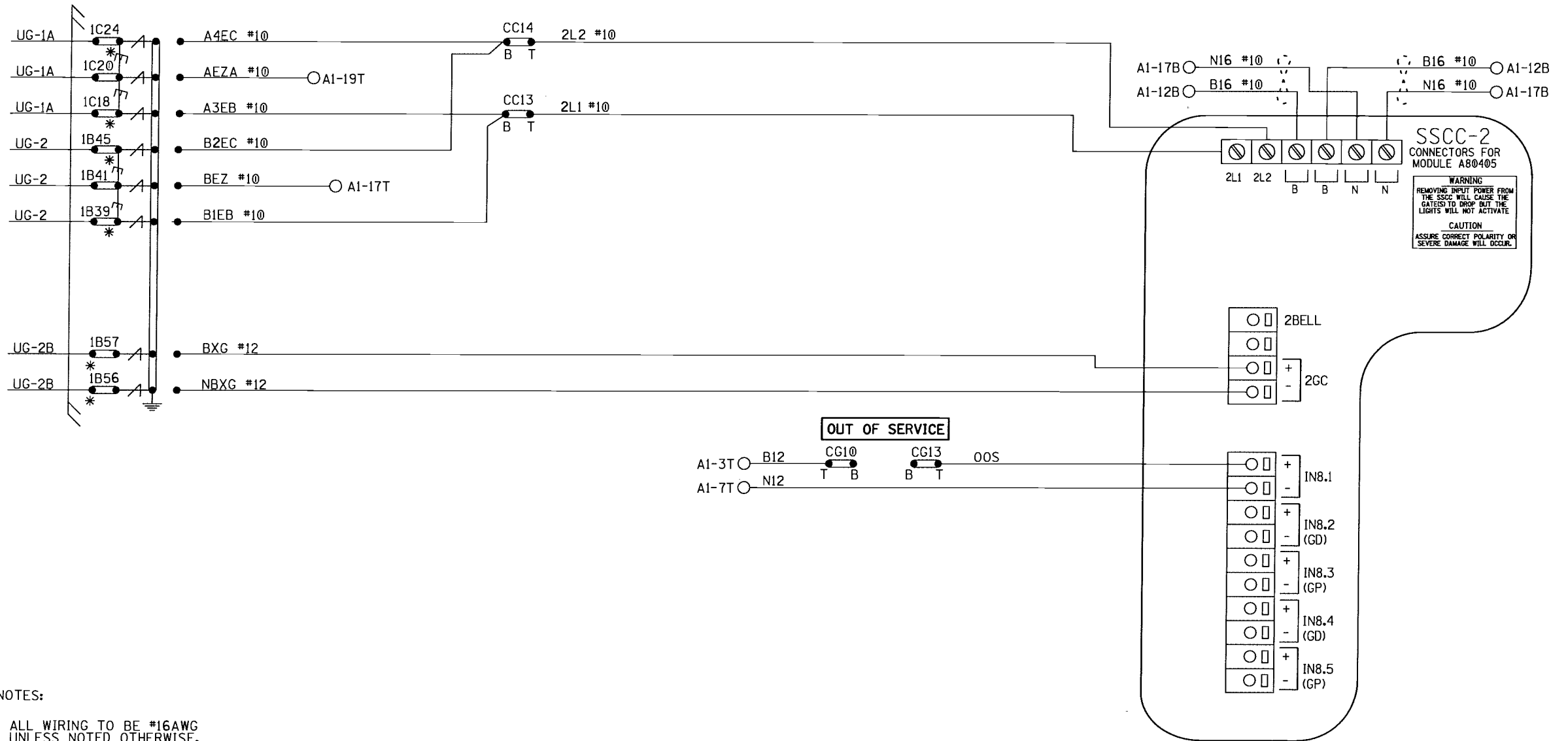
⋈ = TWIST

SSCC#1 MODULE HOOK-UP

DESIGNED BY:	JWB 10-31-16	 NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-31-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-205.57
CHECKED BY:	DBS 11-01-16	DAYTON, OH FLGS AT IRWIN ST.	
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		CADD or DWG. No. 82112056.12	SHEET 12 of 23

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.



SSCC-2
CONNECTORS FOR
MODULE A80405

WARNING
REMOVING INPUT POWER FROM
THE SSCC WILL CAUSE THE
GATES TO DROP BUT THE
LIGHTS WILL NOT ACTIVATE
CAUTION
ASSURE CORRECT POLARITY OR
SEVERE DAMAGE WILL OCCUR.

OUT OF SERVICE

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.

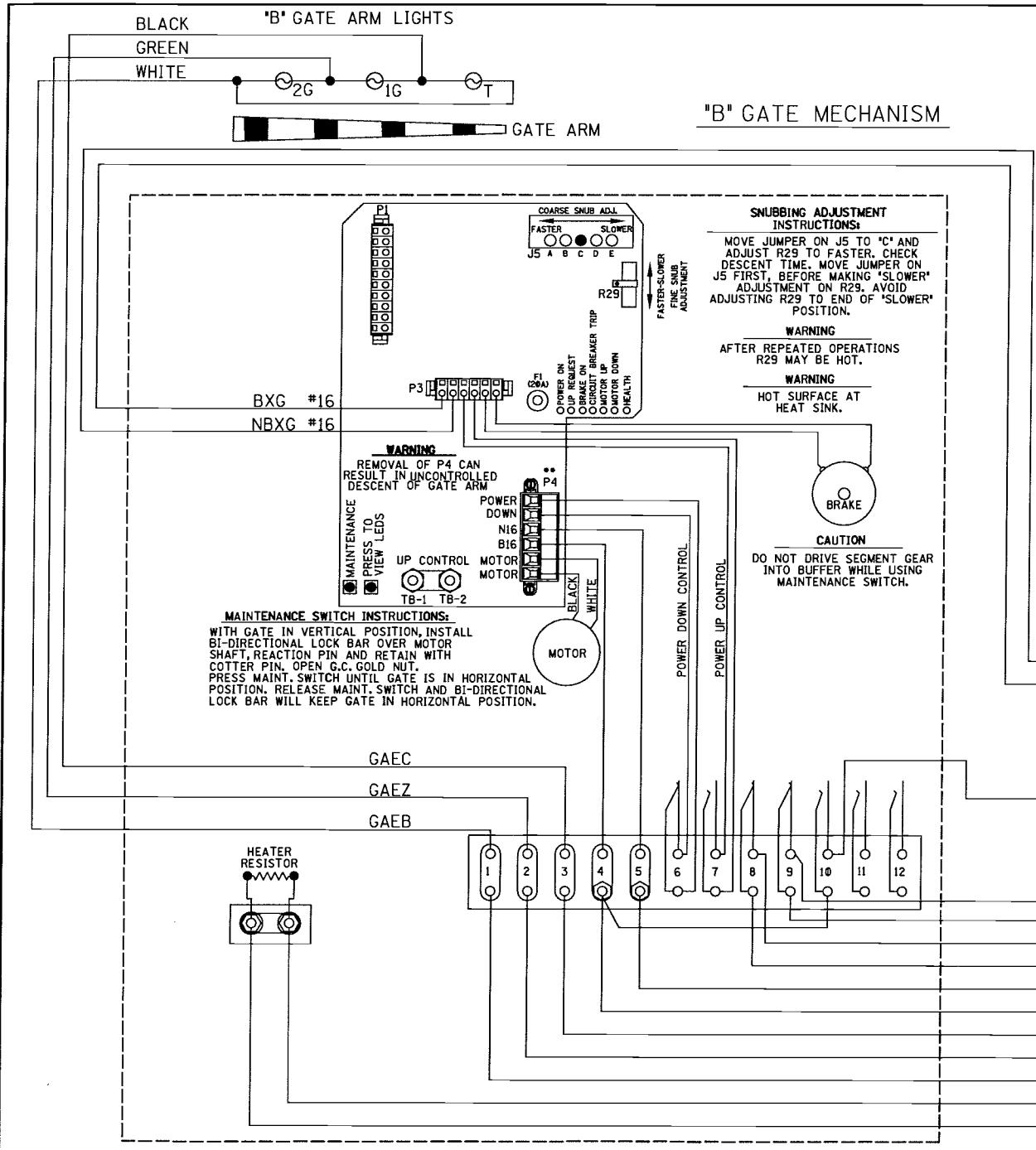
⋈ = TWIST

SSCC#2 MODULE HOOK-UP

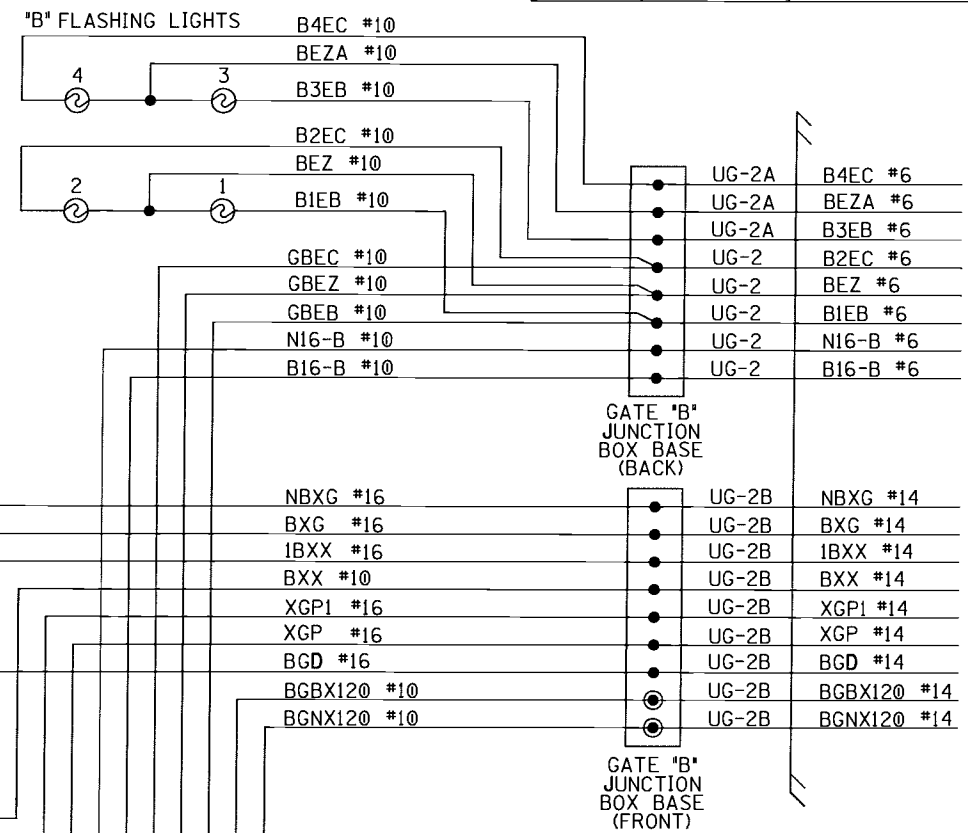
DESIGNED BY:	JWB 10-31-16	 NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-31-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-205.57
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REVISION
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PENNSYLVANIA R.R.



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



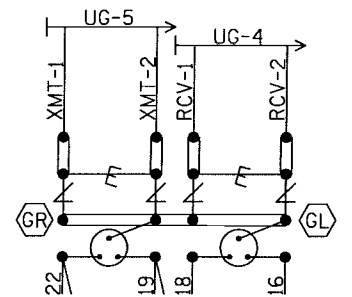
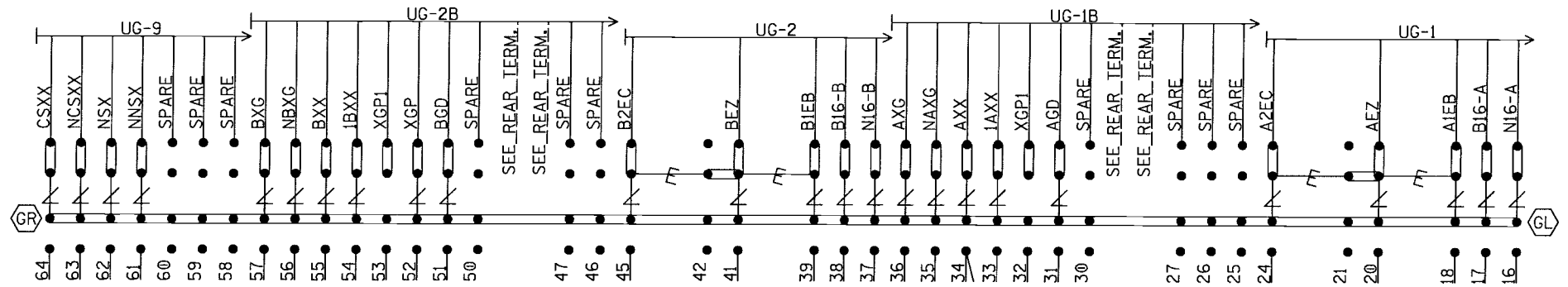
SIGNAL "B" S60 GATE & FLASHER CIRCUITS

DESIGNED BY:	JWB 10-31-16		
DRAWN BY:	IRE 10-31-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-205.57
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		CADD or DWG. No. 82112056.15	SHEET 15 of 23

REVISION
INITIALS

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 Arrestor
(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:	JWB 10-31-16	NS NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-31-16	OFFICE OF ASS'T VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-205.57
CHECKED BY:	DBS 11-01-16	DAYTON, OH FLGS AT IRWIN ST.	
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REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

"1C"

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.

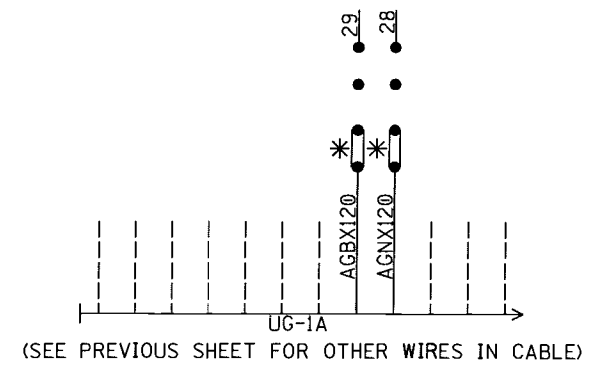
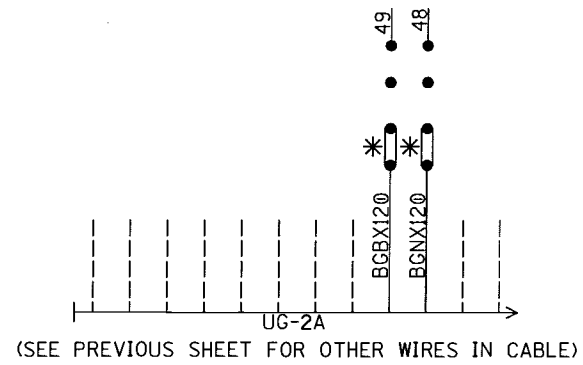
BACKBOARD 1C

DESIGNED BY:	JWB 10-31-16	NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-31-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-205.57
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REVISION
INITIALS

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

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

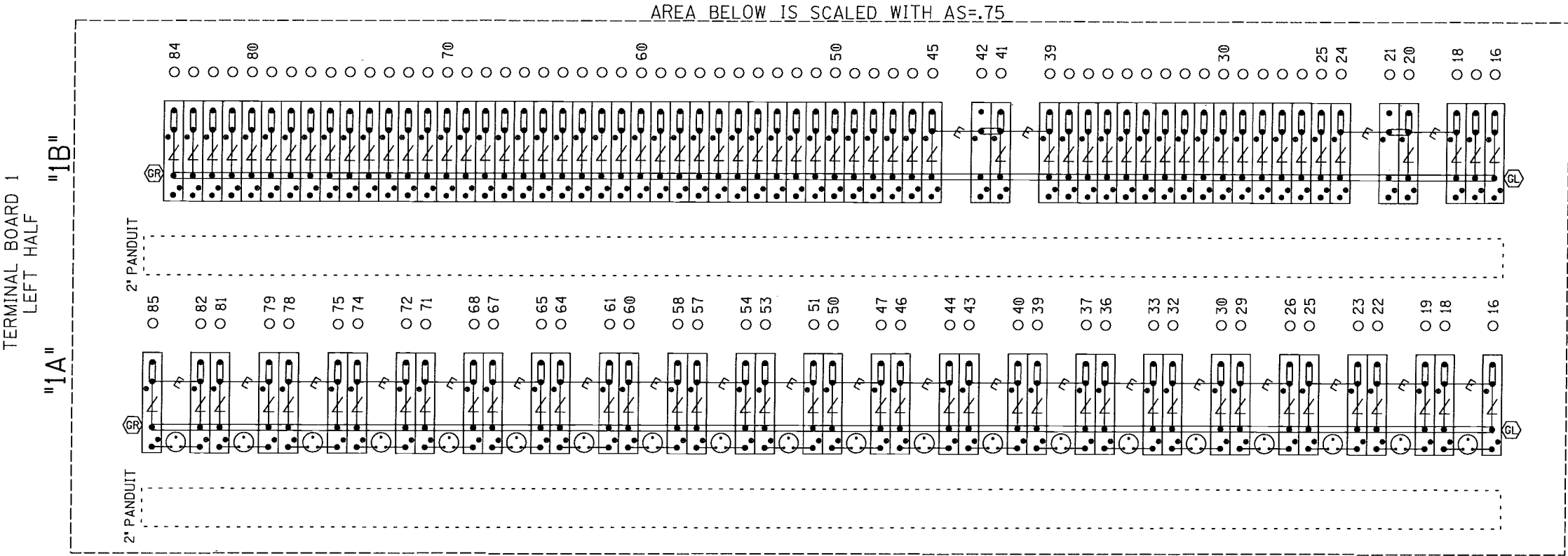
REAR BACKBOARD 1A & 1B

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PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:	 NORFOLK SOUTHERN		
JWB 10-31-16			
DRAWN BY:	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: CJ-205.57
IRE 10-31-16			
CHECKED BY:	DAYTON, OH FLGS AT IRWIN ST.		
DBS 11-01-16			
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- -	CADD or DWG. No. 82112056.18		SHEET 18 of 23

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.



= Heavy Duty Equalizer
(022700-1X)

= Clearview
Lightning Arrestor
(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:	JWB 10-31-16	NORFOLK SOUTHERN	
DRAWN BY:	IRE 10-31-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-205.57
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		CADD or DWG. No. 82112056.19	SHEET No. 19 of 23

REVISION
INITIALS

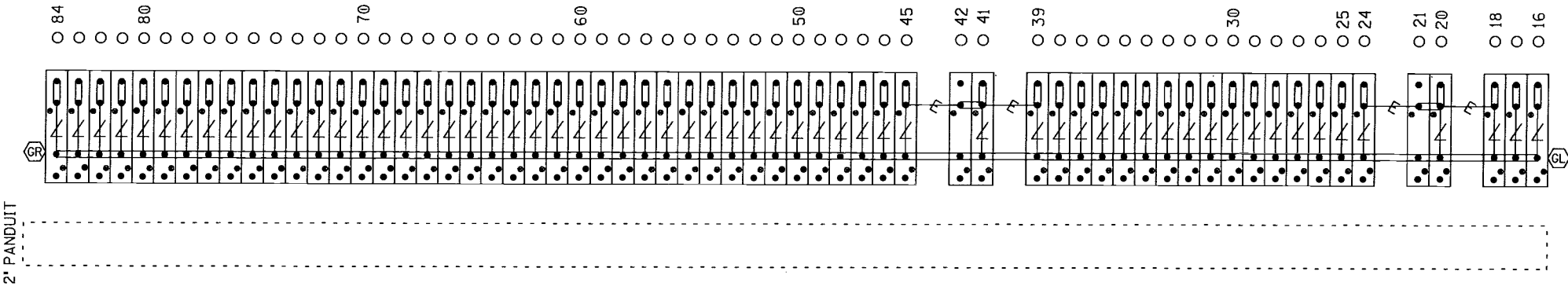
PROPERTY
PENNSYLVANIA R.R.

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

TERMINAL BOARD 1
RIGHT HALF

"1C"



—E— = Heavy Duty Equalizer
(022700-1X)

∠ = Clearview
Lightning Arrestor
(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

= INDICATES PLACEMENT
OF PANDUIT

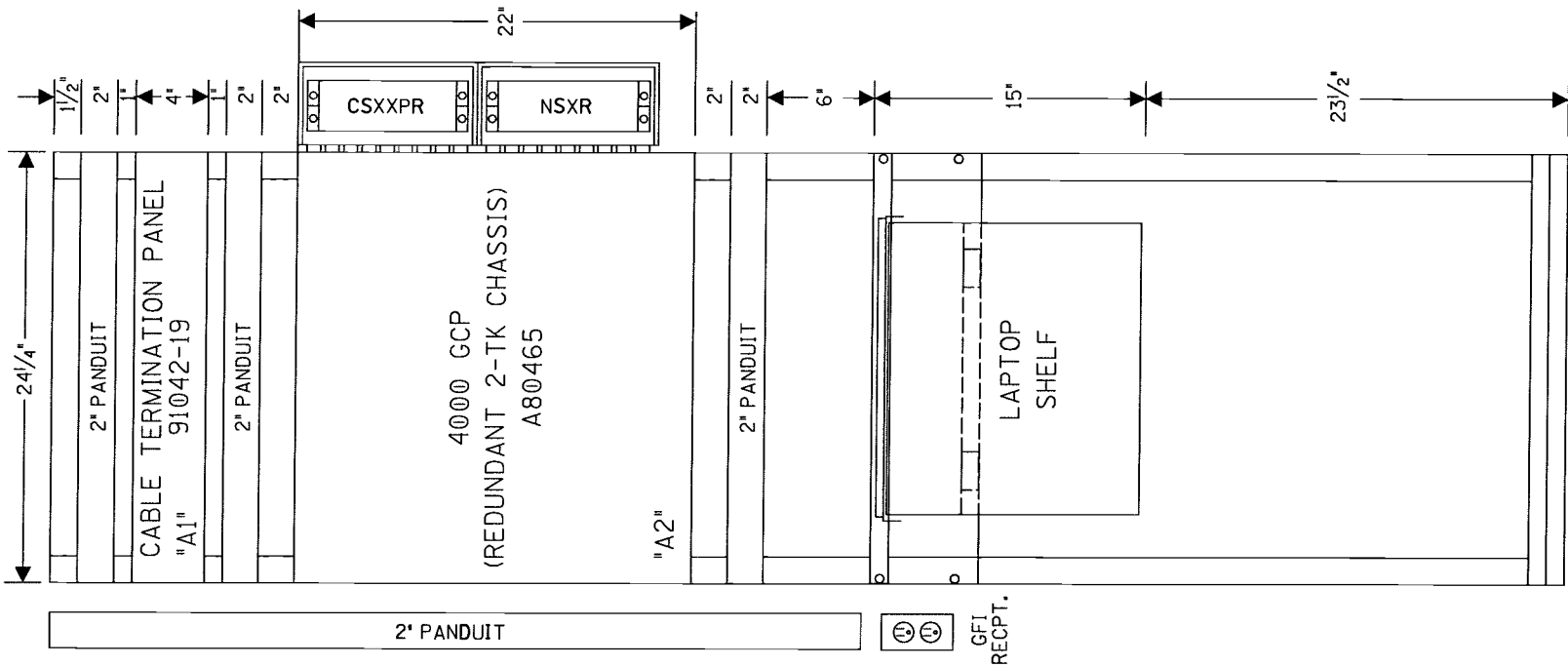
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REVISION
INITIALS

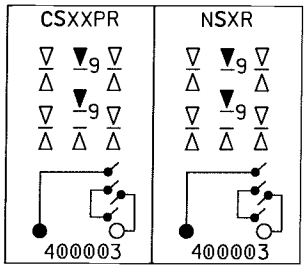
PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:	JWB 10-31-16		
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EQUIPMENT RACK
FRONT



SIDE "C"



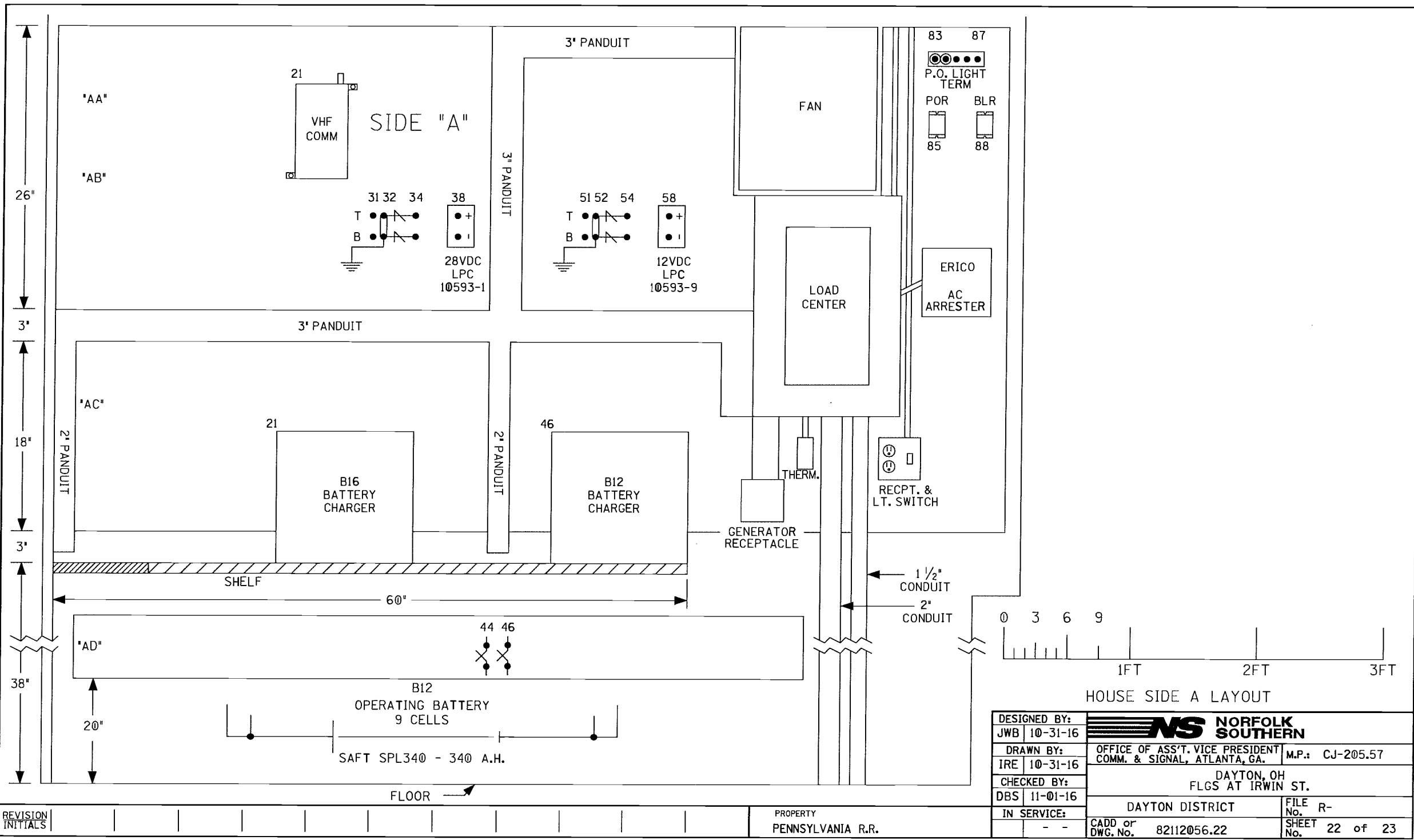
HOUSE SIDE C LAYOUT
& RACK PLACEMENT

DESIGNED BY:	JWB	10-31-16	NORFOLK SOUTHERN	
DRAWN BY:	IRE	10-31-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-205.57
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REVISION
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PROPERTY
PENNSYLVANIA R.R.



DESIGNED BY:		NS NORFOLK SOUTHERN	
JWB	10-31-16	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
DRAWN BY:		M.P.: CJ-205.57	
IRE	10-31-16	DAYTON, OH	
CHECKED BY:		FLGS AT IRWIN ST.	
DBS	11-01-16	DAYTON DISTRICT	
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		SHEET No. 22 of 23	

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6/26/2017 2:10:44 PM

in

Case No(s). 17-1508-RR-FED

Summary: Application In the Matter of a Request for the Installation of New Active Warning Devices at Norfolk Southern Railway Grade Crossings, Stewart Street (DOT# 524-628S), Irwin Street (DOT#527-818F), Miami Chapel Road (DOT#524-629Y), & Findlay Street (DOT#527-819M), in Montgomery County, Ohio.(Part 1 of 2) electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division