

51

FILE

NC

**Public Utilities
Commission of Ohio**

12-1284-RR-FED

Memo

To: Docketing Division
From: George Martin, Grade Crossing Planner, Rail Division *gmd*
Re: In the matter of the authorization of Norfolk Southern Railway to install an active grade crossing warning device in Montgomery County
Date: April 18, 2012

The Ohio Rail Development Commission (ORDC) has authorized funding for Norfolk Southern Railway (NS) to install new mast mounted flashing lights and roadway gates at Montgomery County, near Miamisburg, Farmington Rd/CR 66, DOT# 524662Y. This crossing is part of the overall upgrade of the NS CJ Corridor between Cincinnati and Columbus.

The project will be paid for with federal funds, with eligible actual cost limited to \$214,498.50. Additional costs must be approved in writing by ORDC before being incurred. As the plans and estimates have already been submitted and approved, staff requests an Entry with completion of the projects in nine months. Construction may commence at once. Staff requests that the following language be incorporated in the Entry:

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.

A suggested case coding and heading would be:

PUCO Case No. 12- *1284* -RR-FED In the matter of the authorization of Norfolk Southern Railway to install an active grade crossing warning device in Montgomery County

C: Legal Department

Please serve the following parties of record

RECEIVED - DOCKETING DIV
2012 APR 18 PM 1:30
PUCO

Ms Susan Kirkland

Ohio Rail Development Commission

1980 West Broad St, 2nd Floor

Columbus, Oh 43223

Ms Cayela Wimberly

Norfolk Southern Railway

1200 Peachtree St NE, Box 123

Atlanta, Ga 30309

Mr Paul Gruner

Montgomery County Engineer

451 W 3rd St

PO Box 972

Dayton, Oh 45422-1260

Dayton Power & Light

George Martin - PUCO

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

TO: Leah Thomas-Dalton, Rail Division Chief, PUCO
FROM: Susan Kirkland, Manager, Safety Section, ORDC
BY: Tim Perkins, Grade Crossing Specialist *Jim Perkins*
SUBJECT: Grade Crossing Warning Project, Montgomery County, C.R. 66, Farmington Road, DOT No. 524 662 Y, PID No. 92468, Mile Post: CJ-222.8
DATE: April 16, 2012

ORDC ESTABLISHED

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on October 5, 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 construction authorization is made with the stipulation and understanding that any field work needs prior approval before the work begins. This authorization is made with the stipulation and understanding that an approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit.

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

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

Thank you for your assistance with these matters.

Attachment: Diagnostic Review
Plan & Estimate

c: George Martin, PUCO ✓
ORDC Project Manager (file)

George Martin - PUCO Rail



OHIO RAIL DEVELOPMENT COMMISSION

1980 WEST BROAD STREET • COLUMBUS, OH 43223

JOHN R. KASICH, GOVERNOR • JAMES G. BRADLEY, ORDC CHAIRMAN

April 16, 2012

Cayela J. Wimberly
Administrator, Highway Grade Crossings
Norfolk Southern Corporation
1200 Peachtree Street, N.E., Box 123
Atlanta, Georgia 30309

RE: Montgomery County, C.R. 66, Farmington Road, DOT No. 524 662 Y,
PID No. 92468, Mile Post: CJ-220.8

Dear Ms. Wimberly:

The Norfolk Southern (NS) plan and estimate dated March 22, 2012, in the amount of \$285,998.00 for the referenced project has been reviewed and is acceptable. NS may proceed with the construction of the proposed grade crossing warning system in accordance with the abbreviated plan. This authorization is made with the stipulation and understanding that the approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit. Reimbursement of eligible actual cost is limited to \$214,498.50. Additional costs must be approved in writing by the ORDC prior to being incurred. Emergency verbal authorizations by ORDC may be permitted and will be confirmed by ORDC in writing within ten (10) business days of the verbal approval.

This authorization is contingent upon NS accepting the following instructions:

1. NS will furnish prior written notification of their scheduled date to start construction to George Martin, PUCO, Railroad Division.
2. NS's project foreman will furnish FAX or written notification five (5) working days prior to the date work will start at the project site to Tim Perkins, Ohio Rail Development Commission (ORDC), 1980 West Broad Street, Columbus, Ohio 43223, email Tim.Perkins@dot.state.oh.us or FAX (614) 728-4520, (telephone number 614-644-0284), and to the Public Utilities Commission of Ohio at 180 East Broad Street, Columbus, Ohio 43215, email George.martin@puc.state.oh.us, (telephone number 614-752-9107). NS's project foreman will also notify the same of any stops and re-starts of the work activity and of the date work was completed for the project.
3. NS will arrange for utilities to be located at the project site by the Ohio Utilities Protection Service (OUPS) prior to any construction activities at the site. Utilities that are not participating members of the service must be contacted directly by NS.

4. NS's project foremen will notify Tim Perkins of any changes in the scope of work, cost overruns, material changes, etc. which are not included in the approved plan and estimate and secure approval of same before the work is performed.
5. NS will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed Encumbrance Estimate to reference when billing.
6. NS will furnish two (2) copies of the final all-inclusive bill to ORDC stating the exact dates of starting and completing work, the initial and final dates of construction and location where the accounts may be audited.

Thank you for your assistance with these matters.

Sincerely,



Tim Perkins
Project Manager

C: Leah Thomas-Dalton, Rail Division Chief, PUCO
George Martin, PUCO, Grade Crossing Planner ✓
ORDC (file)



Diagnostic Review Team Survey

Date: 10-5-11

Location Data			
Street or Road Name: Farmington Rd.			
Route/Road Number (i.e. Twp., Co., SR or US) CR 66		AAR-DOT No.: 524662Y	
County: Montgomery	Township:	City: (In or Near)	Miamisburg
Railroad Name: Norfolk Southern (NS)	Railroad Division: Dearborn Lake	Branch/Line Name: Cincinnati LI	
Nearest RR Timetable Station: Dayton		RR Milepost: 220.8	

On-Site Review Team

(Include: Name - Organization - Phone Number)

1. Bob Darius ORDC 614-374-9298
2. Derrick Drake NS 344-712-0220
3. George Martin PUCO 614-252-9107
4. Jeff Smith CSX 937-694-2389
5. Mike Gunn MONT CO. RAILWORKS 937-225-6040
6. _____
7. _____
8. _____
9. _____

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments	
Advance Warning Signs	☒ Yes	☐ No	2	
'Stop' Signs	☐ Yes	☒ No		
'Stop Ahead' Signs	☐ Yes	☒ No		
Pavement Markings	☒ Yes	☐ No	2	
Crossbucks	☒ Yes	☐ No	2	
Number of Tracks Signs	☒ Yes	☐ No	2	
Inventory Tags	☒ Yes	☐ No	2	
Interconnected Highway Traffic Signal	☐ Yes	☒ No		
Mast-Mounted Flashing Lights	☒ Yes	☐ No	2	
Cantilever Flashing Lights	☐ Yes	☒ No	Number:	Length:
Side Lights	☐ Yes	☒ No		
Automatic Gates	☒ Yes	☐ No	Number: 2	Length: 16
Bells	☒ Yes	☐ No	1	
Sidewalk Gate Arms	☐ Yes	☒ No		
'No Turn' Signs	☐ Yes	☒ No		
Illumination	☒ Yes	☐ No		
Is crossing flagged by train crew?	☐ Yes	☒ No		
Other	☐ Yes	☒ No		

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

	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years	0	0
Hazard Ranking	1852	Date Run: 8/19/2011

Railroad Data

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	18	18
< 1 per day		
Day thru trains	6	9
Night thru trains	10	9
Daytime switching movements	2	0
Nighttime switching movements	0	0
Total number of tracks	3	2
Number of main tracks	3	2
Number of other tracks	0	0
Maximum train speed	50	50
Typical train speed		
Amtrak		NO

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

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

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

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

If yes, Crossing DOT # (if different) **153 443 F CSX**

If yes, distance **811** (take measurement between track centerlines at closest point along roadway)

Roadway Data

Local Highway Authority: Montgomery County	
Roadway Characteristics	Initial Information (from database)
Average daily traffic	1382
Highway paved	☒ Yes ☐ No
Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____	☒ Yes ☐ No
Roadway width: 20 ft.	
Number of highway lanes	2
Urban or Rural	Rural
Vehicle Speed: 35 MPH	
School Bus Operation: ☐ No ☒ Yes ? Amount	
Hazardous Materials Trucks: ☐ No ☒ Yes ? Amount	
Shoulders: ☐ No ☒ Yes	
Is the shoulder surfaced? ☒ No ☐ Yes	
Is there existing guardrail along roadway in crossing vicinity? ☒ No ☐ Yes	
Is stopping site distance adequate? (See Table 2) ☒ Yes ☐ No	If no, deficient approach(es) _____

Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ None	Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ None
Pedestrians: ☒ No ☐ Yes	
Is sidewalk present? ☒ No ☐ Yes	
Is there a nearby intersection that could cause queuing over the crossing? ☒ No ☐ Yes If yes, Distance _____	
Is this intersection signalized? ☒ No ☐ Yes	
Are the signals currently interconnected with the existing crossing warning devices? ☒ No ☐ Yes	
Is it the consensus of the Diagnostic Review Team that this is a potential closure project? ☒ No ☐ Yes Explain reasons: _____	
Type of Development	
☒ Open Space ☐ Industrial ☒ Residential	☐ Institutional ☐ Commercial Location of nearby schools: <u>5 mile</u>
Utility Information	
Is commercial power available? ☐ No ☒ Yes	
Utility Provider (Company Name) <u>DPL</u>	Phone Number _____
Nearest Available Power Source <u>@ Crossing</u>	
What other utilities are present? <u>AH MCH Sprint</u>	
Is there potential utility conflict(s) ☐ Yes ☐ No ☒ Unknown	

Diagnostic Team Recommendations

	Quadrants Needed
☒ Install/upgrade active devices	
☒ Automatic Flashing Lights (AFLS)	
☐ AFLS / Cants	
☒ AFLS / Gates	
☐ AFLS / Gates / Cants	
☒ Upgrade circuitry	
☐ Sidelights	
☐ Guardrail Needed	
☐ Install/Replace curb	
☐ Other (define)	
Comments: Harmon PMD 3 on CSX coordinate with CSX @ Old 3000 NS interconnect with CSX cutover	
☐ Install/upgrade traffic signal preemption	
☐ No improvements needed	
☐ Other (define)	
Acknowledgement of Recommendations (each entity represented at the diagnostic must have at least one signature acknowledgement): 	

Field Dimensions

The diagram shows a cross-section of a street with a central vertical axis. On the left side, from top to bottom, are the labels: Sidewalk, Parkway, Roadway, Roadway, Parkway, and Sidewalk. On the right side, from top to bottom, are the labels: Roadway, Parkway, and Sidewalk. Dashed vertical lines with arrows indicate measurement points for each section. A box in the top right corner is labeled "Show North Direction".

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

Measurements by: _____

Field Sketch

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

Sketch by: _____

TABLE 1**Clearing Sight Distances**

Maximum Authorized Train Speed	Distance (dT) Along Railroad from Crossing (ft)
1 - 10	240
15	360
20	480
25	600
30	720
35	840
40	960
45	1080
50	1200
55	1320
60	1440
65	1560
70	1680
75	1800
80	1920
85	2040
90	2160

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

Notes:

All calculated distances are rounded up to the next higher 5-foot increment.

Distances indicated are for 65-ft double bottom semi-tractor trailers and level single track 90 degree crossings; and may need to be adjusted for multiple tracks, skewed crossings or approaches on grades.

Clearing Sight Distance is to be measured in each vehicle travel direction at non-gated crossings as viewed from a point 25 feet from centerline of nearest track in the center of whichever travel lane is nearest the direction along track being measured.

Table 2**Stopping Sight Distances**

Highway Vehicle Speed	Distance (dH) Along Roadway from Crossing (ft)
0	n/a
5	50
10	70
15	105
20	135
25	180
30	225
35	280
40	340
45	410
50	490
55	570
60	660
65	760
70	865

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

Notes:

All calculated distances are rounded up to the next higher 5-foot increment.

Distances indicated are for 65-ft double bottom semi-tractor trailers on dry level pavements.

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



22-Mar-12

Detailed Estimate for Grade Crossing Warning Devices

City/State: MIAMISBURG, OH
MilePost: CJ-220.8
State Proj. No.:
S&E Proj. No.: 10.1352
Man Days: 128

Road: FARMINGTON RD
DOT/AAR: 524662Y
County: MONTGOMERY
File Number:

Purchases - Others	
Meals and Lodging:	\$17,203.20
Rental of Equipment:	\$17,920.00
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 32 Days)	
Construction Supervision Vehicle:	\$3,202.23
Purchases - Other Total:	\$38,325.43
Material And Additives	
Material Cost:	\$132,646.00
Sales and Use Tax:	\$0.00
Material Handling Freight:	\$6,632.29
Material Total:	\$139,278.29
Labor And Additives	
Labor Cost:	\$35,840.00
(4 man crew at \$1,120.00 a day for: 32 days)	
Payroll Tax & Overheads:	\$47,609.86
Preliminary Engineering:	\$14,826.75
Construction Supervision:	\$10,117.63
Labor Total:	\$108,394.24
Project Cost:	\$285,997.96
Scrap / Salvage Credit:	\$0.00
Project Total:	\$285,998.00

Estimated on: 22-Mar-12

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:	MIAMISBURG
Road:	FARMINGTON RD
Mile Post:	CJ-220.8
Drawing Number:	82112208
State Project Number:	
County:	MONTGOMERY
A A R Number:	524662Y
Project Number:	10.1352
File Number:	
New File Number:	CX0128705
A F E Number:	F-33481-27-1
Store Number:	
Supervisor:	D.R. DRAKE
Tax Code:	
Vendor to supply the following copies after pricing: 1 Set - Material Management with original Invoice 2 Sets - with plans shipped in car with material 1 Set - S&E Gen. Supt. Construction w/copy of invoice	

Location: MIAMISBURG

OH S&E Proj. No.: 10.1352

AFE No.: F-33481-27- Drawing No.: 82112208

Store No.:

P.O.Number:

Date Required:

Date Shipped:

Vendor: Safetran Systems Corp.

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
3	670-360693-4	EA	\$5.55	\$16.65	AAR/DOT NUMBER PLATE/DECAL, ORDER 3 PER PROJECT. 60 DAY LEAD TIME. SUPPLIED BY STRAN.				
1	165-006505-4	EA	\$1,075.23	\$1,075.23	AC SERVICE, COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE				
14	670-119241-4	EA	\$25.01	\$350.14	ARRESTOR, LIGHTNING HEAVY DUTY CLEAR VIEW SAFETRAN 022585-1X				
13	105-288384-4	EA	\$277.10	\$3,602.30	BATTERY, GNB 368AH MODEL 50G15 SINGLE CELL 2.25 VOLTS, FOR USE WITH CROSSINGS DESIGNED AFTER 09/09				
2	670-980689-4	EA	\$75.48	\$150.96	BRACKET HIGH WIND, (RIGID 3), WIG- 191036, WALRUS TUSK TYPE				
2	670-541594-4	EA	\$141.03	\$282.06	BRACKET RELAY, SWING TYPE FOR MOUNTING ONE B1 RELAY ON WOODEN BLACKBOARD SAFETRAN PART # 057883-X16				
2	670-561375-4	EA	\$1,208.79	\$2,417.58	BRACKET, GATE SAVER, NEG385102GS, SPRING LOADED SWING AWAY ADAPTER FOR FIBERGLASS/ALUMINUM GATES, USE WITH GATE 38' AND LESS				
1	670-356949-4	EA	\$90.00	\$90.00	CABLE, 10' GENERATOR HOOK UP, SERRMI P/N 40524, FEMALE CONNECTOR				
350	465-939422-4	LF	\$3.11	\$1,088.50	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL				
1000	465-282862-4	LF	\$1.49	\$1,490.00	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR				
700	465-292929-4	LF	\$4.55	\$3,185.00	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL				
200	465-954727-4	LF	\$1.96	\$392.00	CABLE, UG 7 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL FLAT				
350	465-791835-4	FT	\$3.84	\$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 208-11-6070				
100	165-544477-4	FT	\$2.61	\$261.00	CONDUIT, 4"x10' PVC, SCHEDULE 80 BELL CONNECTOR AT ONE END, 1/2 PT. GLUE IN KIT 670-123298-4				
8	670-664917-4	EA	\$87.64	\$701.12	CONNECTOR KIT, WELDED FAR RAIL, CONSISTING OF RUBBER HOSE PROPERLY DRILLED, BONDSTRAND, 1 SPLICING SLEEVE, 1 REDUCING SLEEVE, 3 CLAMPS, 1 TRACK CLIP, 1 WEB WELDED TRACK CONNECTOR, 1 WELD METAL, SAFETRAN 111359-2X				

APPROVED BY STATE

APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
8	670-632520-4	EA	\$77.63	\$621.04	CONNECTOR KIT, WELDED NEAR RAIL, CONSISTING OF, RUBBER HOSE PROPERLY DRILLED, BONDSTRAND, SPLICING SLEEVE, 1 REDUCING SLEEVE, 5 CLAMPS, 1 TRACK CLIP, 1 WEB WELDED TRACK CONNECTOR, 1 WELD METAL, SAFETRAN 111359-1X				
2	670-793404-4	EA	\$1,159.00	\$2,318.00	COUNTERWEIGHT PKAGE, 17-24" GATE S'TRAN S- MECH ONLY, STAINLESS, TO INCLUDE HUB, SUPPORT ARMS				
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	\$352.82	\$352.82	DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING X'ING EQUIPMENT CONTAINER				
6	670-228166-4	EA	\$12.25	\$73.50	EQUALIZER, SAFETRAN 022700-1X LESS BASE, MODERN NO. 700-1 SHUNT ARRESTER TRACK CIRCUITS CR 02-197950				
1	670-000004-4	EA	\$700.00	\$700.00	FCC LICENSE FOR MONITOR/RADIO				
4	670-000003-4	EA	\$255.85	\$1,023.40	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	670-257031-4	EA	\$422.36	\$844.72	GATE ARM, FIBERGLASS-ALUMINUM, 17-24 FT, INCLUDES GATE GUARD FOR GATE LIGHT CABLE. HIGH INTENSITY VERTICAL STRIPES. NEG P/N 8003-244NFS/CG, SSC T18115				
1	670-700057-4	EA	\$62,411.64	\$62,411.64	GCP4000 - 3 TRK (6TC) - REDUNDANT - 40/40 AMP WIRED RACK EQUIP. FOR 6X8 X'ING SHELTER, (INCL. 6 TRK CHASSIS A80460, 6 TRK MODS. A80418, 2-SSCC A80405, 2 CPU A80403, 1 SEAR A80410, 1 DISPLAY A80407, 1 TRANS MOD. A80468, 2-40 AMP CHARGERS) IPN: 003131-6X				
2	670-396564-4	EA	\$3,430.68	\$6,861.36	GCP4000 - MODULE - TRACK MODULE - IPN: A80418				
1	670-477991-4	EA	\$410.00	\$410.00	KIT, GROUNDING ASSY FOR AL I/S INCLUDES 8 GRD RDS, 200#4 WIRE, 12 4 WIRE ONE-SHOTS. ERICO SBK206				
1	670-123298-4	EA	\$344.59	\$344.59	KIT, HARDWARE SUPPLIES REQUIRED X'ING PKGAGES. WEB CONNECTORS FOR SHUNT(8EA) TAPE, AMPS, P'GUM PAINT-SLEEVES, TAGS, GLUE, 100 EA WHITE TAGS,)NE CAN BLUE MARKING PAINT ETC...				
2	670-764166-4	EA	\$1,240.19	\$2,480.38	LAMP ASSY, 5" MAST MTG. 2W IND. 20" BKGRD, FLX-12 W/BULB S'TRAN #042003-487XNS				

Store No.: P.O.Number: Date Required: Date Shipped: Vendor: Safetran Systems Corp.

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
6	165-643547-4	EA	\$5.92	\$35.52	LAMP, 18 WATT 10 VOLT S-11 SC BAY 18S11/1SC CLEAR RWY - SIGNAL UJ-71463 GE				
4	255-590880-4	EA	\$17.52	\$70.08	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D466 AND STAMPED "NS SIG"				
2	670-637778-4	EA	\$1,317.65	\$2,635.30	MAST, 5" ALUMINUM 13'10" WITH DOUBLE JCT. BOX BASE. S'TRAN P# 070519-11AX				
2	670-850933-4	EA	\$3,925.01	\$7,850.02	MECHANISM, GATE MODEL S-60, WITH DEFROSTER AND MINI TRACKSIDE SENSOR S'TRAN # 0740007-X002B3				
2	670-000001-4	EA	\$726.23	\$1,452.46	MISC. EXPENSE, MATERAIL/FILL				
1	000-000000-4	EA	\$5,000.00	\$5,000.00	MISC. EXPENSE, UNDERGROUND BORING				
4	670-001347-4	EA	\$57.10	\$228.40	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI A1250-5, HARMON @200965-000, OR				
1	255-646807-4	EA	\$31.19	\$31.19	PADLOCK, SAFETRAN PART NO. 030399-29X SCREW TYPE FOR CIR CONTROLLER AND BTY. BOX				
1	610-719870-4	EA	\$152.36	\$152.36	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				
2	670-259211-4	EA	\$47.25	\$94.50	PINNACLE, W-C SECT 1-11, 4" & 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X				
2	165-103293-4	EA	\$75.42	\$150.84	PLUG BOARD KIT, TYPE B-1 & VOLTAGE TEST TERMINAL, SAFETRAN 420000-75X				
1	165-902002-4	EA	\$303.27	\$303.27	PROTECTOR, LIGHTNING & SURGE LPC 10560-51, 3 ELECTRODE WITH SPADE TERMINAL				
5	465-002899-4	EA	\$40.24	\$201.20	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL				
1	670-742096-4	EA	\$43.68	\$43.68	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES				
1	670-024861-4	EA	\$437.35	\$437.35	RELAY INTERFACE PROBE, ULTRATECH PN 16031-00				
2	670-707995-4	EA	\$510.12	\$1,020.24	RELAY RACK, SWING, FARADAY SHELTER FOR EIGHT B1 RELAYS, SAFETRAN P/N 057883-1X				
4	670-790627-4	EA	\$30.16	\$120.64	RELAY, TYPE B1, NEV LINE, 900 OHMS, 008 AMPERES GRS A62-308 OR SAFETRAN @400003				
					RESISTOR ADJUSTABLE 0.63 OHM MINIMUM RESIST 0.068-OHM, ITEM 248 S-500 SAFETRAN P/N 029602-1X				

APPROVED BY STATE

APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER

Location: MIAMI/SEBORG

OH

S&E Proj. No.: 10.1352

AFE No.: F-33481-27- Drawing No.: 82112208

Store No.:

P.O.Number:

Date Required:

Date Shipped:

Vendor: Safetran Systems Corp.

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
2	435-805560-4	EA	\$2.78	\$5.56	SAND, 25LB BAG FOR CABLE ENTRANCE INTO THE SHELTER				
1	670-027556-4	EA	\$2,629.77	\$2,629.77	SEARIII, ACCESSORY PACKAGE, W/2-ILOD, 1-E-BELL, 2-GTS, 1-GFT, 1-VHFC, WITHOUT MTSS/SEAR UNIT				
1	670-749325-4	EA	\$226.97	\$226.97	SHELF, FOLDING, FOR LAPTOP USE IN FARADAY 6X8 SHELTER, SAFETRAN 052852-128X				
1	670-756057-4	EA	\$9,808.80	\$9,808.80	SHELTER, 6'X8' ALUMIN FARADAY W/CABLE CHUTES BEHIND TERMINAL BOARD, W/2EA EQUIPMENT RACKS, W/GEN RECEPTICAL, BREAKER BOX, GFI OUTLET FOR LAPTOP SHELF SAFETRAN 058400-68-86				
4	670-586967-4	EA	\$42.98	\$171.92	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT				
4	670-652773-4	EA	\$460.98	\$1,843.92	SHUNT, MULTI-FREQ. #82775-1543 SAFETRAN NARROW BAND				
2	670-393331-4	EA	\$37.43	\$74.86	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 4' AND 5" MAST, SAFETRAN #T17215				
2	670-554843-4	EA	\$77.05	\$154.10	SIGN, 2 TRACK SIGN, HIGH INTENSITY, SAFETRAN #035207-2HX				
2	670-016346-4	EA	\$143.38	\$286.76	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*				
23	670-478560-4	EA	\$20.56	\$472.88	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR				
2	610-065626-4	EA	\$18.18	\$36.36	ULTRA-TECH 15206-01 CONNECTIVITY BLOCK FOR GRS B1 RELAY				
4	670-007238-4	EA	\$117.04	\$468.16	UNIT, THE INSTALLATION AND WIRING OF A DEVICE WHICH REQUIRE A MINIMUM OF FOUR WIRE CONNECT-				
300	465-999111-4	LF	\$0.38	\$114.00	WIRE, NO.10, 1 CONDUCTOR, CASE, FLEXIBLE 37 STRAND, 3/64 IN. INSULATION-ORDER EXT.AMT. NEEDED OR 02-620502				
300	465-293633-4	EA	\$0.47	\$141.00	WIRE, NO.12, 1 CONDUCTOR, CASE, FLEXIBLE, INSULATED, ORDER MINIMUM 20000 LF, SAFETRAN P/N T18929				
300	465-458198-4	FT	\$0.20	\$60.00	WIRE, NO.16, 1 CONDUCTOR, CASE, FLEXIBLE, 19 STRAND, 2/64 IN. INSULATION				
1	450-986008-4	EA	\$30.45	\$30.45	WRENCH, TEST POST TYPE B DWG 55393-3, GR. 1				

APPROVED BY STATE

APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER

Total Material: \$132,645.80

SEAL NUMBER

CAR NUMBER

APPROVED BY RAILROAD

APPROVED BY STATE

SH. NO.	CONTENTS
NXI	INDEX SHEET
1	LAYOUT
2	PROFILE
3	CABLE PLAN
4	LOAD CENTER
5	RECTIFIER & BATTERY
6	4000 GCP 6-TK CHASSIS & I/O LAYOUT
7	4000 GCP 6-TK CHASSIS & MODULE LAYOUT
8	4000 GCP PROGRAMMING SETUP
9	4000 GCP PROGRAMMING SETUP
10	CONNECTORS FOR TRACK MODULES
11	CONNECTORS FOR TRACK MODULES
12	CPU MODULE, SEAR III, GFT & VHF HOOK-UPS
13	SEAR III PROGRAMMING SETUP
14	SSCC*1 MODULE, ILOD*1 HOOK-UP
15	SSCC*2 MODULE, ILOD*2 HOOK-UP
16	INTERCONNECT CIRCUITS
17	FLASHER AND GATE LIGHTS - A
18	FLASHER AND GATE LIGHTS - B
19	BACKBOARD 1A & 1B
20	REAR BACKBOARD 1A & 1B
21	BACKBOARD 1C
22	FARADAY SHIELD 1A & 1B
23	FARADAY SHIELD 1C
24	HOUSE SIDE C LAYOUT
25	HOUSE SIDE A LAYOUT
26	HOUSE SIDE B & TOP VIEW LAYOUT

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		

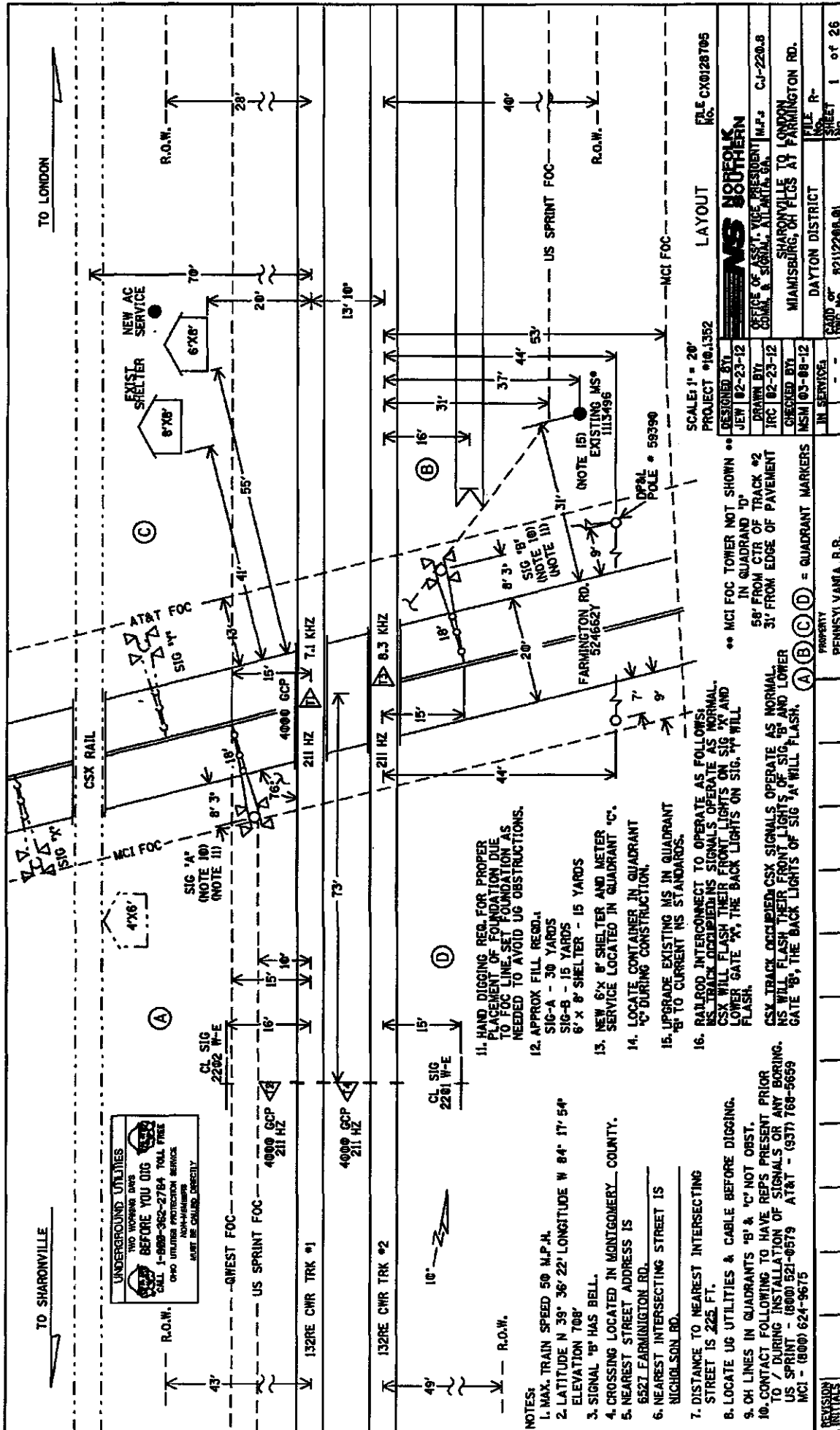
ALL NEW
10.1352
02-23-12
IRC

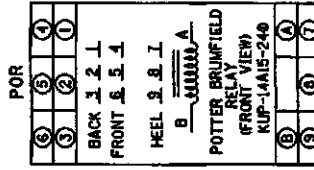
INDEX SHEET 1

DESIGNED BY:	JEW 02-23-12	 NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: CJ-220.8
DRAWN BY:	IRC 02-23-12	
CHECKED BY:	MSM 03-08-12	
IN SERVICE:		
SMARONVILLE TO LONDON MIAMI/SEBORG, OH PLCS AT FARMINGTON RD.		FILE R-
DAYTON DISTRICT		SHEET 1 of 1
DWC No. 8212208.NXI		No.

PROPERTY
PENNSYLVANIA R.R.

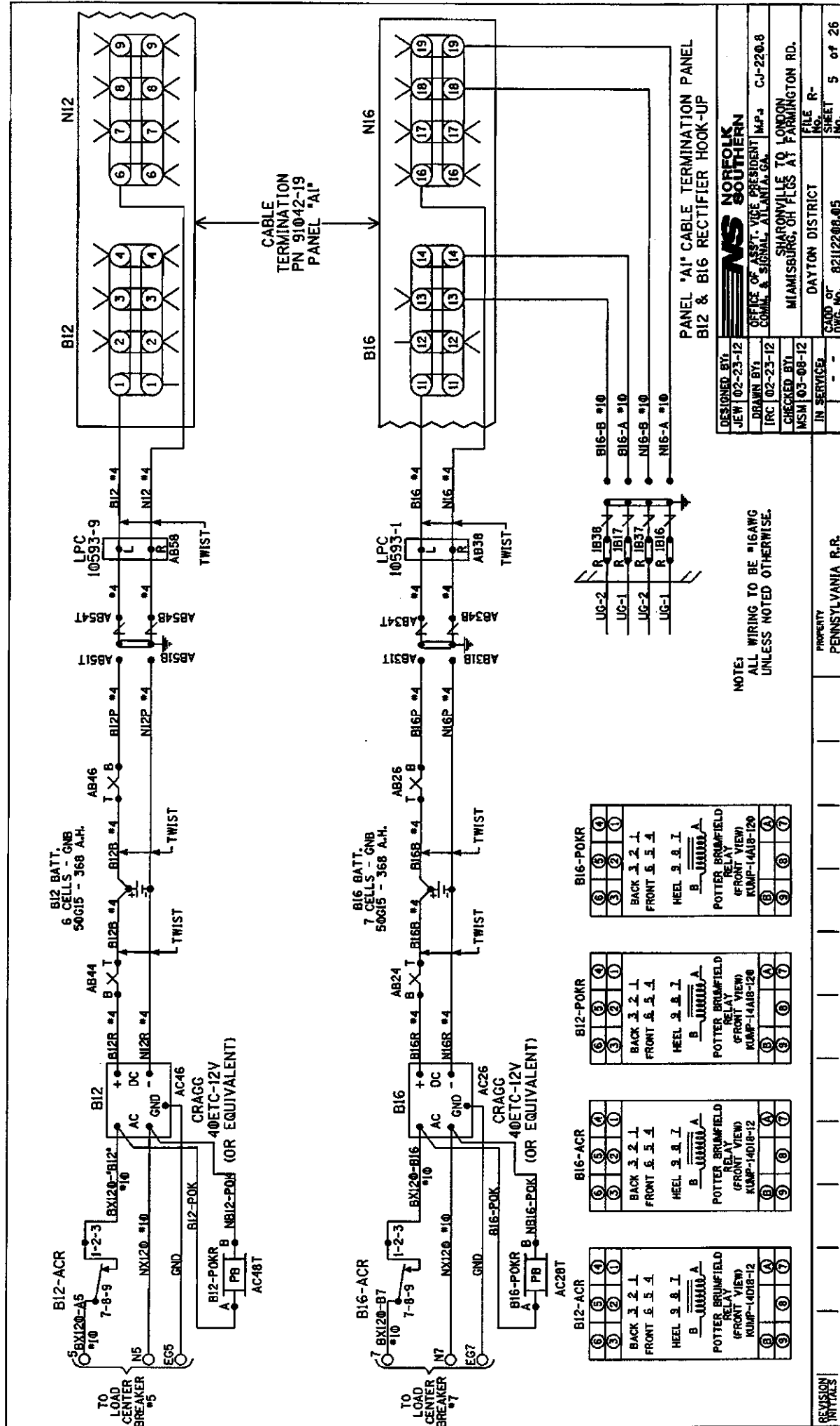
REVISION
INITIALS





30A 1P CIR BKR — Q0130
30A 2P CIR BKR — Q0230
60A 2P CIR BKR — Q0260
100A 2P CIR BKR — Q02100
MECH INTERLOCK — PK4DTIM4LA

REVISION
INITIALS



WARNING
REMOVAL OF THE SSCCIII MODULE
WILL CAUSE THE GATES 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.

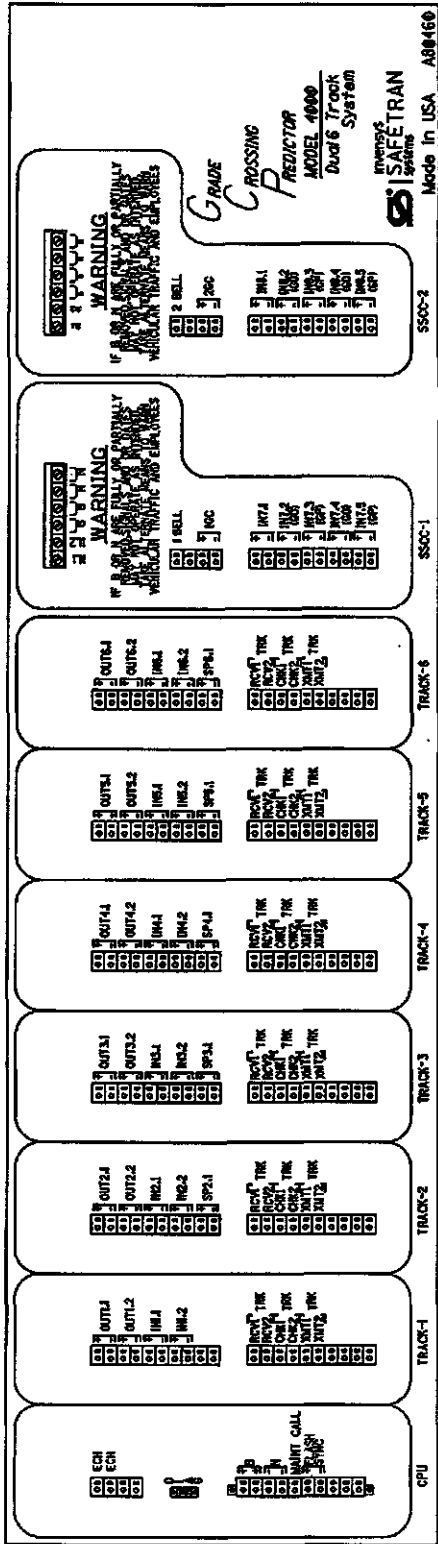
HEATER FUNCTION IS JUMPER SELECTABLE ON
THE DISPLAY MODULE BOARD.
THREE OPTIONS ARE AVAILABLE:
NORMAL LCD MTR (DEFAULT)
HI CURRENT
NO JUMPER (HEATER DISABLED)

== MAIN AND STANDBY MAY USE R10 IN
TRACKS 2, 5, AND 6 SLOTS
(M3, M6, AND M7)

PANEL 'A2' 4000 GCP REDUNDANT
6-TK CHASSIS AND I/O LAYOUT

DESIGNED BY:	JEW 02-23-12
DRAWN BY:	IRC 02-23-12
CHECKED BY:	NSM 03-08-12
IN SERVICES:	- -
FILE R-:	DAYTON DISTRICT
NO. OF SHEET	6 of 26
DWG. NO.	82112208.06

NORFOLK SOUTHERN
OFFICE OF ASST. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA.
SHARONVILLE TO LONDON
MIAMI/SEBORG, OH FLGS AT FARMINGTON RD.



SSCC-2	AB0406	AB0403
SSCC-1	AB0405	AB0404
TRACK 6	VACANT	VACANT
TRACK 5	VACANT	VACANT
TRACK 4	AB0418	AB0418
TRACK 3	AB0418	AB0418
TRACK 2	AB0418	AB0418
TRACK 1	AB0418	AB0418
CPU II+	AB0403	AB0406

MODULAR BAYS
SHOWN ON NEXT SHEET

PROPERTY
PENNSYLVANIA R.R.

CAUTION
ASSURE CORRECT POLARITY
OF THE SSC3III 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 TRACKS 2, 5 AND 6 SLOTS (M3, M6, AND M7)

PANEL "A2" 4000 GCP REDUNDANT
6-TK CHASSIS AND MODULE LAYOUT

**NORFOLK
SOUTHERN**

OFFICE OF ASST. VICE PRESIDENT CONV. & SCHED. AFFAIRS	M.P.: CJ-220.B
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SHARONVILLE TO LONDON
MIAMISBURG. OH FLGS AT FARMINGTON RD.

DAYTON DISTRICT	FILE R- No.
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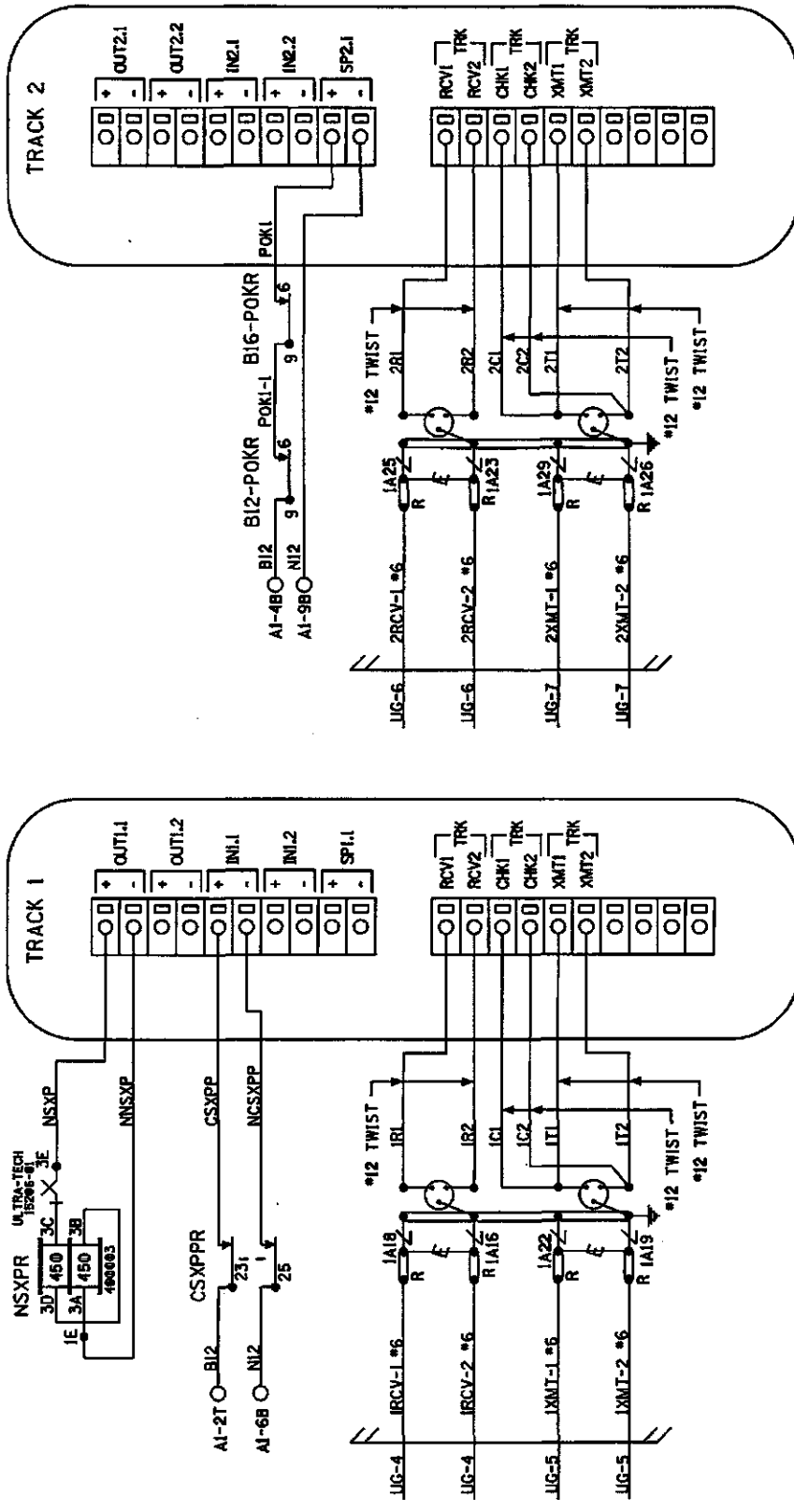
CADD OF DWG. NO.	8212208.07	SHEET NO.	7 OF 26
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PROPERTY
PENNSYLVANIA R.R.

REVISION/INITIALS

REVISION/INITIALS

REVISION
INITIALS

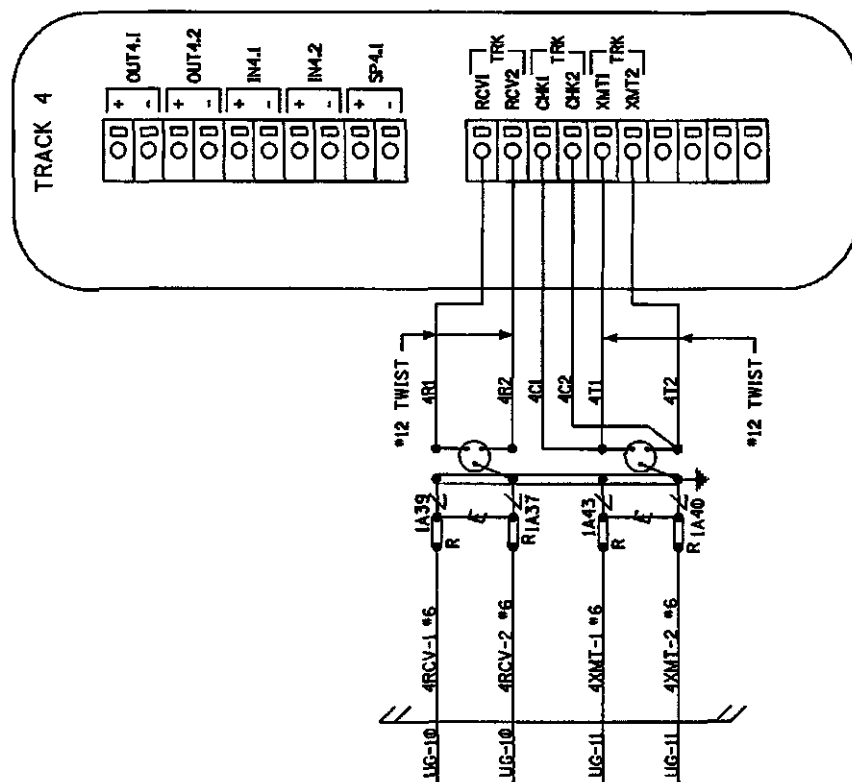
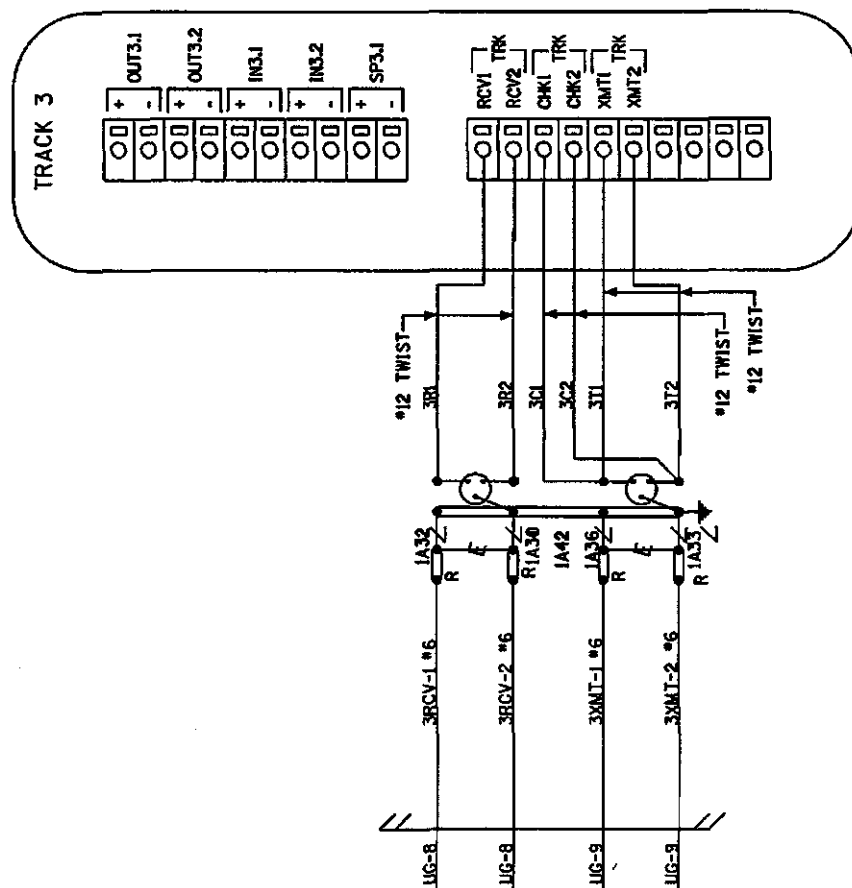


PANEL "A2" CONNECTORS FOR MODULES (A80418)

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

DESIGNED BY:	JEW 02-23-12		OFFICE OF ASST. VICE PRESIDENT	CJ-220.8
DRAWN BY:	IRC 02-23-12		COMM. & SIGNALS, ATLANTA, GA.	
CHECKED BY:	MSM 03-08-12		SHARONVILLE TO LONDON	
IN SERVICE:			MIAMISBURG, OH FLGS AT FARMINGTON RD.	
FILE NO.	DAYTON DISTRICT			
NO.	8212203.10			

PROPERTY
PENNSYLVANIA R.R.



PANEL "A2" CONNECTORS FOR MODULES (A80418)

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

DESIGNED BY:	
JEW 02-23-12	
DRAWN BY:	
IRC 02-23-12	
CHECKED BY:	
MSM 03-08-12	

VS NORFOLK SOUTHERN

MSM	03-08-12
IN SERVICE	
	- "

PROPERTY
PENNSYLVANIA R.R.

REVISION
INITIALS

TO CONFIGURE SENSORS PRESS SITE SETUP KEY.
DO NOT PRESS TO MAKE SENSORS FUNCTION.
PRESS ENTER AFTER SELECTION HAS BEEN MADE.

SITE SET UP PROCEDURE		
FUNCTION	LED DISPLAY	
DATE/TIME	YES	
AUTOMATIC DST ADJUSTMENT	YES	
TIME ZONE	EST	
SITE NAME	FARMINGTON RD	
MILEPOST	CJ-220.8	
DOT #	524662Y	
TESTER TYPE	CROSSING	
DATE FORMAT	MM-DD-YYYY	
TEMP FORMAT	FAHRENHEIT	
INDICATE HOLD (SEC)	0	
INDICATE REFRESH (SEC)	60	
SITE ATCS	7.550.234.070.03.01	
SITE TYPE	NO COMMUNICATION	
OFFICE ATCS ADDRESS	2.550.00.0000	
PRIMARY HOP ADDR	7.RRR.LLLL.GGG.XX.XX	
BACKUP HOP ADDR 1	7.RRR.LLLL.GGG.XX.XX	
BACKUP HOP ADDR 2	7.RRR.LLLL.GGG.XX.XX	
POLL ID	1	
MODE	GEN/ATCS	
WAMS XID	DISABLED	
OFFICE COMM DEVICE	MCM (EHELON)	
RADIO ATCS ADDR	7.RRR.LLLL.GGG.01.01	
PHONE #	(OFFICE NUMBER)	
INIT STRING		
FIELD COMM	NONE	
USER PORT	BAUD 57600, N, 8, 1, NONE	
AUX PORT	BAUD 9600, N, 8, 1, NONE	

VERIFY NUMBER OF BULBS: SENSOR #1	
CURR 1: LAMP SET UP	4 BULBS
CURR 2: LAMP SET UP	4 BULBS

VERIFY NUMBER OF BULBS: SENSOR #2	
CURR 1: LAMP SET UP	4 BULBS
CURR 2: LAMP SET UP	4 BULBS

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	YES	
ENTRANCE GATES	2	
GATES CONTROLLED BY FOREIGN RR	YES	
GATE POSITION FAIL TIME (SECONDS)	20	
BATTERY BANKS	2	
BATTERY MON USED	YES	
INTERNAL CROSSING CONTROLLERS	2	
EXTERNAL CROSSING CONTROLLERS	0	
VHF COMMUNICATOR	YES	
DTMF ACTIVATION	YES	
ACTIVATION CODE	662	
ACTIVATION TIMEOUT (SECONDS)	60	
ILOD MODULES	2	
ANY LED BULBS USED	NO	
AUTO INSPECTIONS	NO	
BELL SENSORS	1	
BELL SENSOR TSS1	NO	
BELL SENSOR TSS2	YES	
BELL SENSOR TSS3	NO	
BELL SENSOR TSS4	NO	
BELL SENSOR TSS5	NO	
BELL SENSOR TSS6	NO	
BELL SENSOR TSS7	NO	
BELL SENSOR TSS8	NO	

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS (CONT.)		
BELL ON		GATES LOWERING
GFT'S	YES	
BATTERIES ON GFT1	2	
GATE TIP SENSORS	YES	
RTU	NO	
VHF VOICE CHANNEL	2	
VHF DATA CHANNEL	2	
USE CELL MODEM		
NON-CRITICAL FEATURE	NO	
FULL APPROACH MOVES ALARM		ACTIVATE

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
OC-4K ATCS SUBMODE		16

NOTES:

* = DISPLAYED IF CROSSING CONFIGURATION IS SPLIT GATE

** = OPTIONS IF BELL SENSOR = 0
THEN BELL FIELDS ARE NOT USED.

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

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

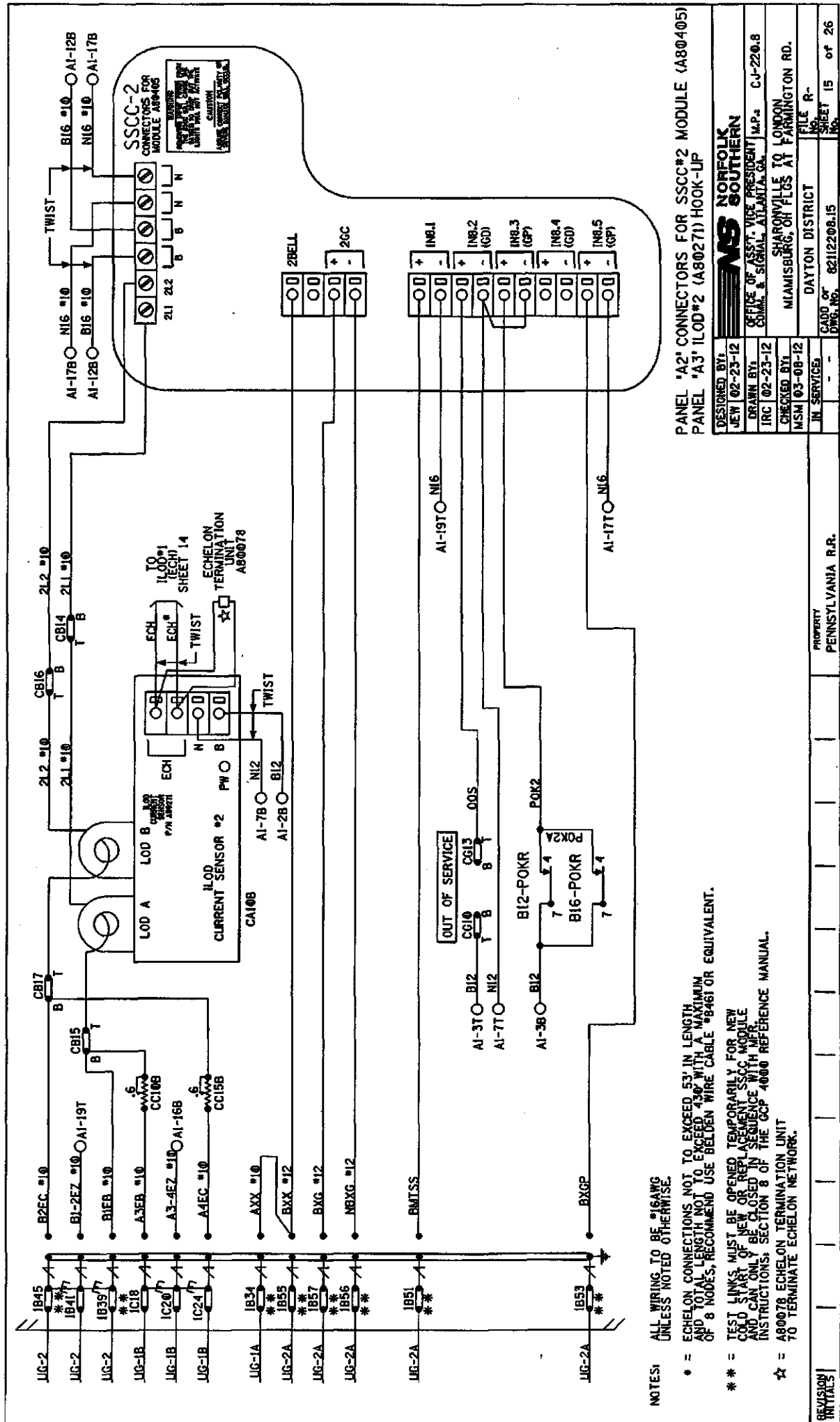
***** = USE LAST 3 NUMBERS FROM DOT NUMBER

SEAR III PROGRAMMING SETUP

DESIGNED BY: JEW 02-23-12	NORFOLK SOUTHERN
DRAWN BY: IRC 02-23-12	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY: MSM 03-08-12	SHARONVILLE TO LONDON MIAMISBURG, OH FLS AT FARMINGTON RD.
IN SERVICE: - - -	DAYTON DISTRICT FILE R- CARD OF NO. 82122008.13
	SHEET 13 of 26

PROPERTY
PENNSYLVANIA R.R.





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

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

** = 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.

☆ = A80078 ECHOLON TERMINATION UNIT TO TERMINATE ECHOLON NETWORK.

PANEL 'A2' CONNECTORS FOR SSCC#2 MODULE (A80405)
PANEL 'A3' ILOD#2 (A80271) HOOK-UP

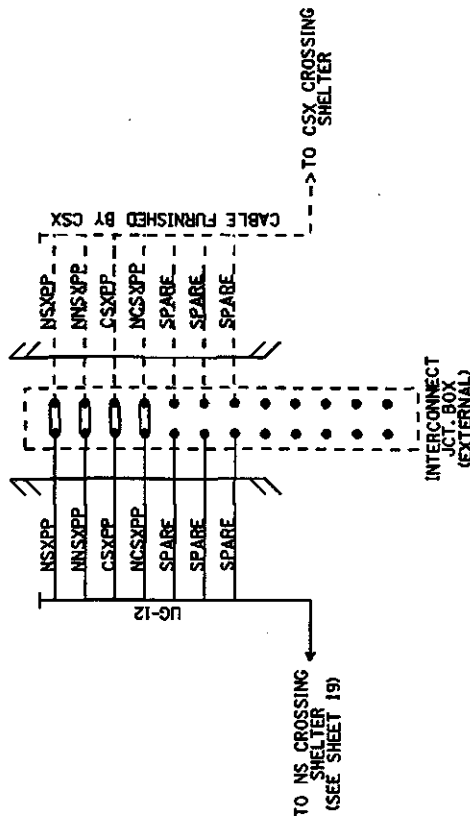
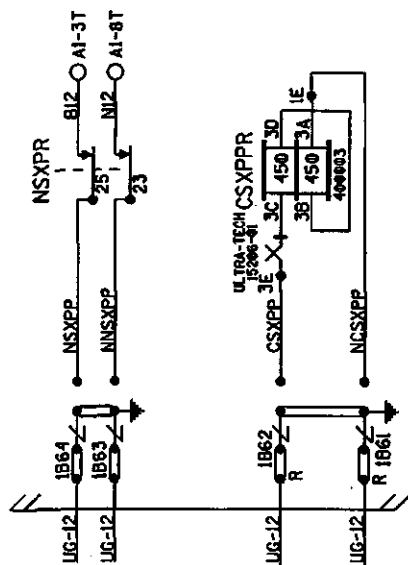
DESIGNED BY:	NEW 02-23-12
DRAWN BY:	IRC 02-23-12
CHECKED BY:	MSM 03-08-12
IN SERVICE:	- - -
FILE NO.:	DAYTON DISTRICT
FILE R-:	DAYTON DISTRICT
DATE:	82112208.15
SHEET NO.:	15
OF 26	

NORFOLK SOUTHERN

OFFICE OF ASST. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA.

SHARONVILLE TO LONDON
MIAMISBURG, OH FLOS AT FARMINGTON RD.

PROPERTY
PENNSYLVANIA R.R.



—E— = Heavy Duty Equalizer
(@22700-1X)

NOTES:

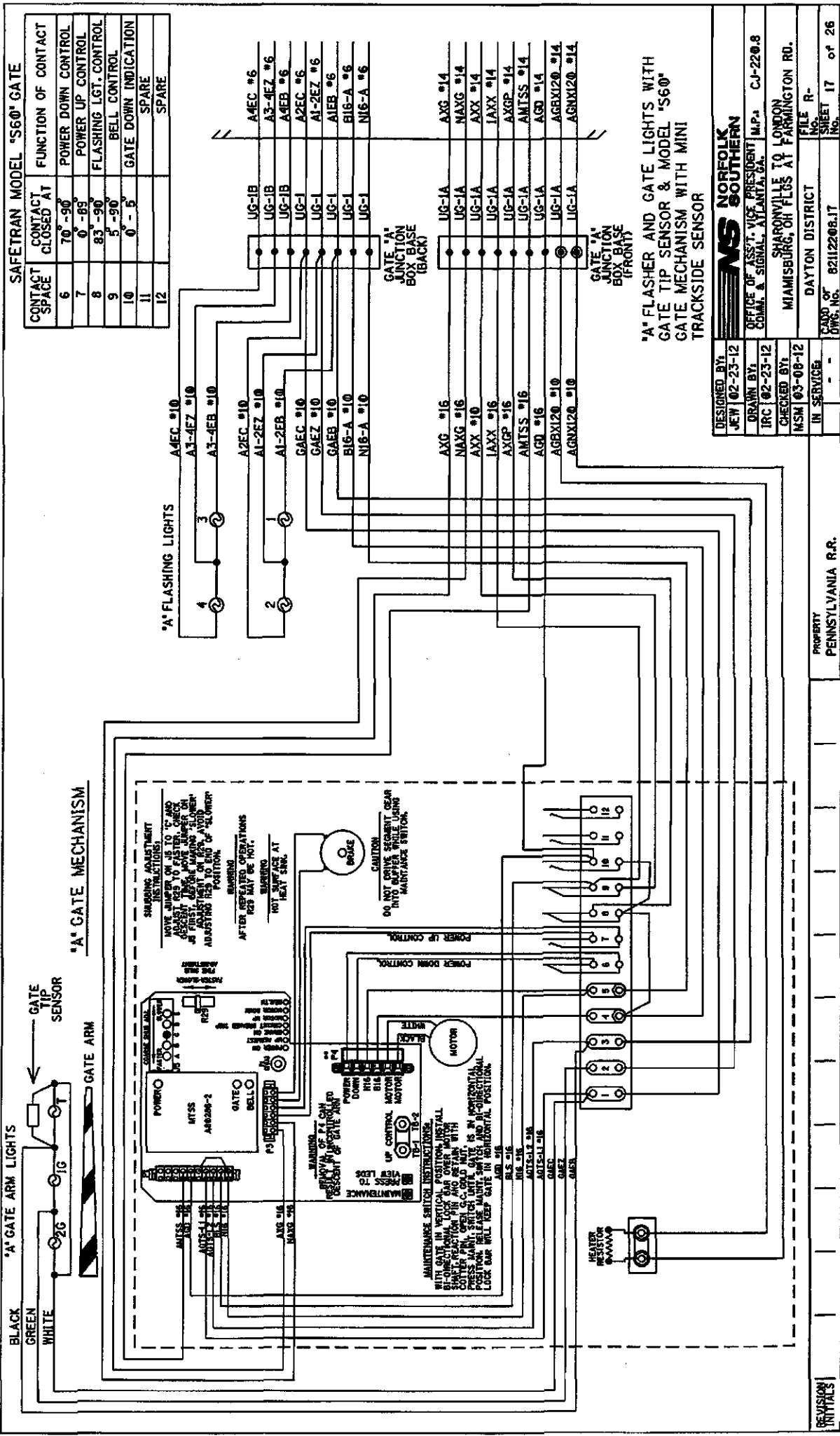
- ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
- INSTALL TEST LINKS ON ALL TRACK WIRES AND ON ALL LOW VOLTAGE UNDERGROUND CABLE TERMINATIONS.

INTERCONNECT CIRCUITS

DESIGNED BY:	JEW 02-23-12	NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. MAP-1 CJ-220.8 SHARONVILLE TO LONDON MIAMI, OH FLEET AT FARMINGTON RD. DAYTON DISTRICT FILE R- SHEET 16 of 26 CAD No. 82112208.16
DRAWN BY:	IRC 02-23-12	
CHECKED BY:	MSM 03-08-12	
IN SERVICE:	- -	

PROPERTY
PENNSYLVANIA R.R.

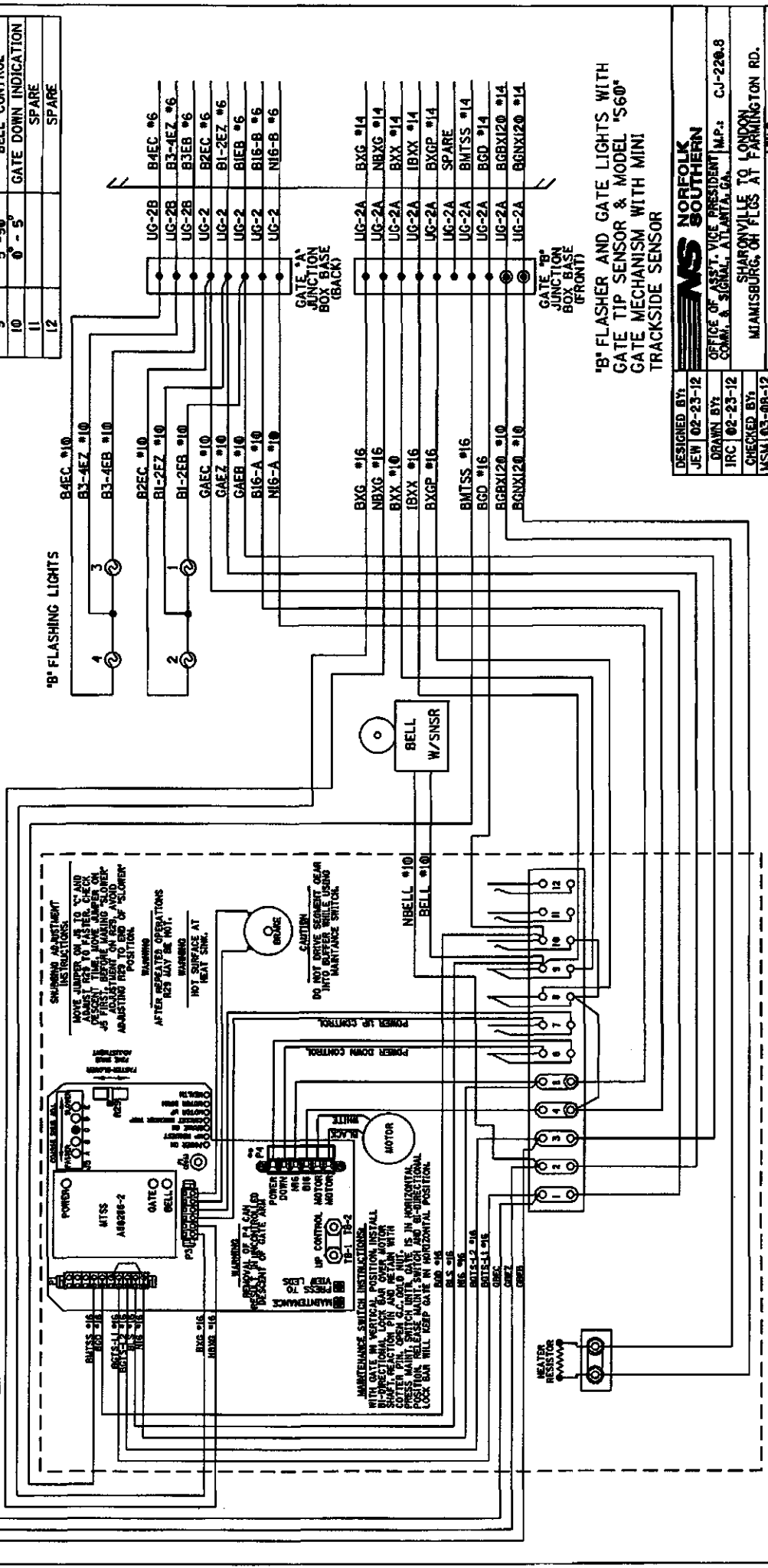
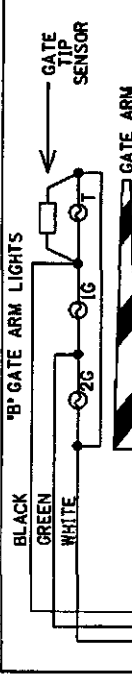
REVISION
INITIALS



CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
6	70° - 90°	POWER DOWN CONTROL
7	0° - 85°	POWER UP CONTROL
8	85° - 90°	FLASHING LGT. CONTROL
9	5° - 96°	BELL CONTROL
10	0° - 5°	GATE DOWN INDICATION
11		
12		SPARE

SAFETRAN MODEL "S60" GATE

"B" GATE MECHANISM



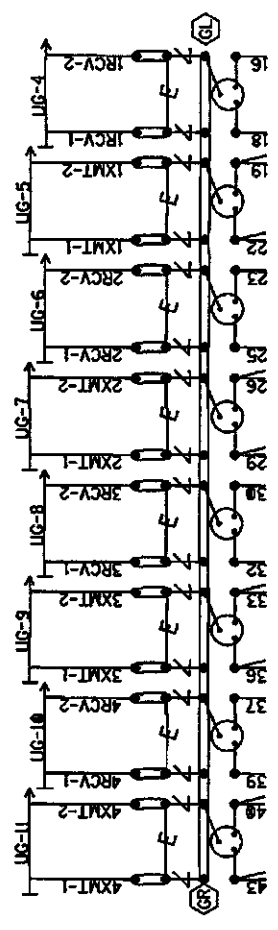
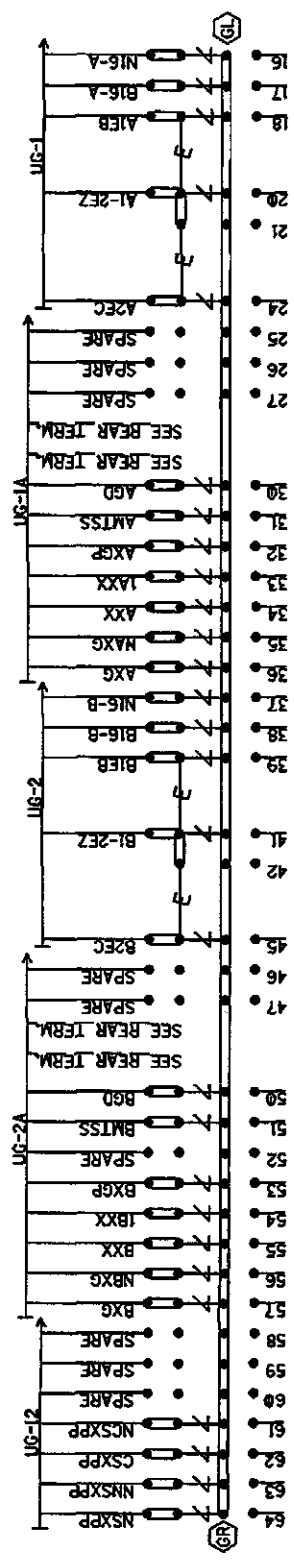
"B" FLASHER AND GATE LIGHTS WITH GATE TIP SENSOR & MODEL "S60" GATE MECHANISM WITH MINI TRACKSIDE SENSOR

DESIGNED BY:	JEW 02-23-12	NORFOLK SOUTHERN
DRAWN BY:	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY:	IRC 02-23-12	
IN SERVICE:	MSM 03-08-12	
FILE NO.	MIAMISBURG, OH PLGS AT FARMINGTON RD.	
SHEET 18	DAYTON DISTRICT	
OF 26	CADD OF 82112208.18	

PROPERTY PENNSYLVANIA R.R.

REVISION INITIALS

LEFT TWO ROWS TERMINAL BOARD 1



-F= Heavy Duty Equalizer
 (022700-1X)
 Clearview
 Lightning Arrestor
 (022585-1X)
 GL = LPC-10560-51

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

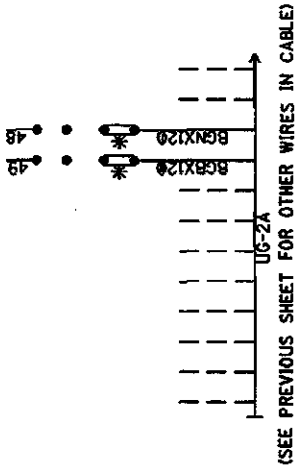
SEE FARADAY SHIELD DETAILS - 1A & 1B
 FOR HOW THIS PORTION OF THE FARADAY
 SHIELD IS PREDRILLED. ONLY INSTALL AND
 USE THE TERMINALS NEEDED.

BACKBOARD DETAIL - 1A & 1B

DESIGNED BY:	JEW 02-23-12	NS NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. SHARONVILLE TO OGDON MIAMI, OH FLGS AT FARMINGTON RD.	
DRAWN BY:	IRC 02-23-12		
CHECKED BY:	NSM 03-08-12		
IN SERVICE:	- - -		
FILE NO.	DAYTON DISTRICT	FILE NO.	82112208.19
SHEET NO.	19	SHEET NO.	19 of 26

PROPERTY
 PENNSYLVANIA R.R.

REVISION
 1



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

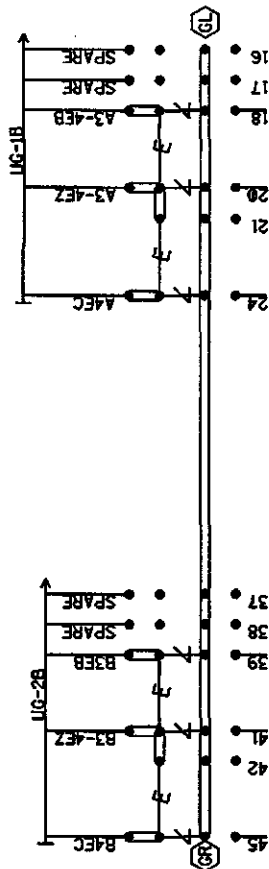
* = CLOSED DURING WINTER MONTHS

REAR OF FARADAY BACKBOARD
REAR BACKBOARD DETAIL - 1A & 1B

DESIGNED BY: JEW 02-23-12	NORFOLK SOUTHERN		FILE R-
DRAWN BY: TRC 02-23-12	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	MP-11	CJ-220.8
CHECKED BY: MSM 03-08-12	SHARONVILLE TO LONDON MIAMISBURG, OH FILES AT FARMINGTON RD.		
IN SERVICE:	DAYTON DISTRICT	FILE R-	
PROPERTY PENNSYLVANIA R.R.	CADD OF DWG. NO. 82112200.20	SHEET 20	OF 26

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.



GL = Heavy Duty Equalizer
(022100-1X)
L = Lightning Arrestor
(022565-1X)
GL = 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 DETAIL - 1C

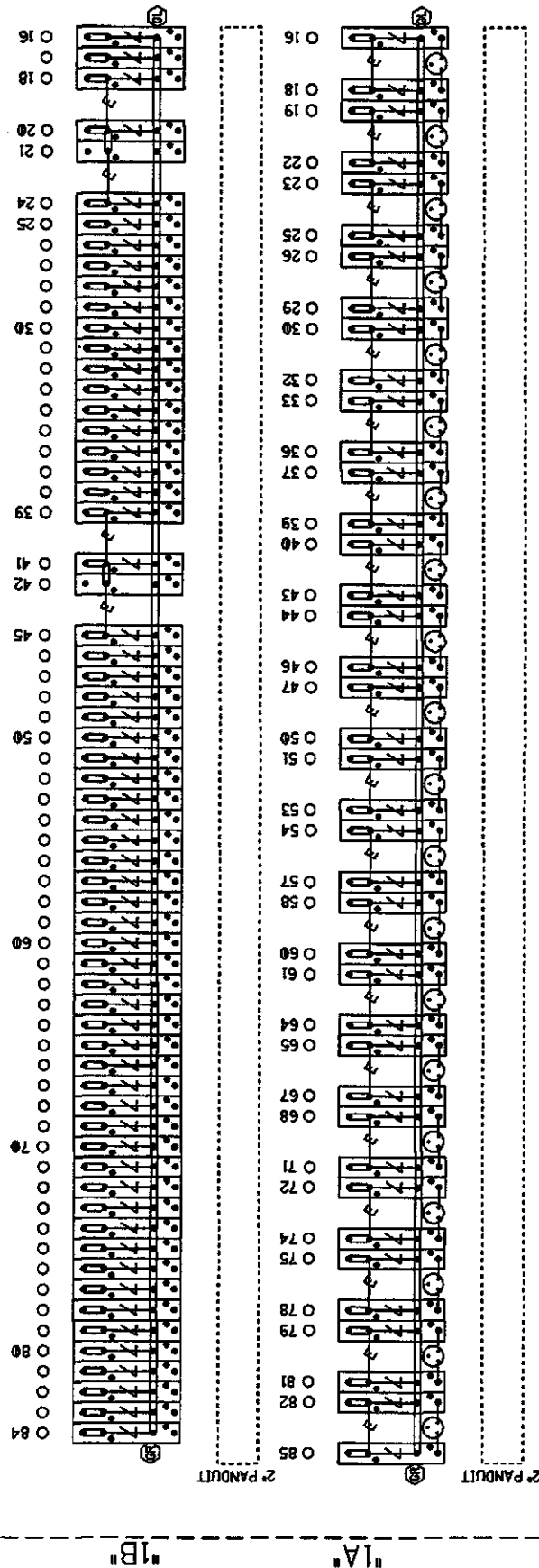
DESIGNED BY	JEW 02-23-12
DRAWN BY	IRC 02-23-12
CHECKED BY	MSM 03-08-12
IN SERVICE	- -
FILE NO.	DAYTON DISTRICT
FILE R-	8212208.21
NO. OF SHEETS	21
OF	26

NORFOLK SOUTHERN
OFFICE OF ASST. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA.
M.P. 3 CJ-220.8
SHARONVILLE TO LONDON
MIAMISBURG, OH FLOS AT FARMINGTON RD.

PROPERTY
PENNSYLVANIA R.R.

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

AREA BELOW IS SCALED WITH AS=75



⌊ = Heavy Duty Equalizer
(022700-IX)

⌋ = Clearview
Lighting Arrestor
(022565-IX)

⌋ = LPC-10560-51

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

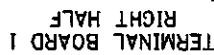
⌋ = INDICATES PLACEMENT
OF PANDUIT

TERMINAL BOARD 1
LEFT TWO ROWS

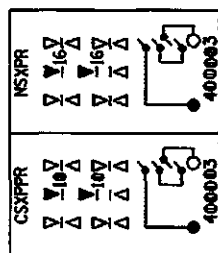
FARADAY SHIELD DETAIL - 1A & 1B

DESIGNED BY: JEW 02-23-12	NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNALS SHARONVILLE TO LONDON MIAMISBURG, OH FLEES AT FARMINGTON RD.	FILE NO. R- DAYTON DISTRICT
DRAWN BY: IRC 02-23-12		PROJECT NO. 82112208.22
CHECKED BY: MSM 03-08-12		SHEET NO. 22 of 26
IN SERVICE:		

AREA_BELOW_IS_SCALED_WITH_AS=.75



FILE R-
No. SHEET 23 of 26
No.



SIDE "C"



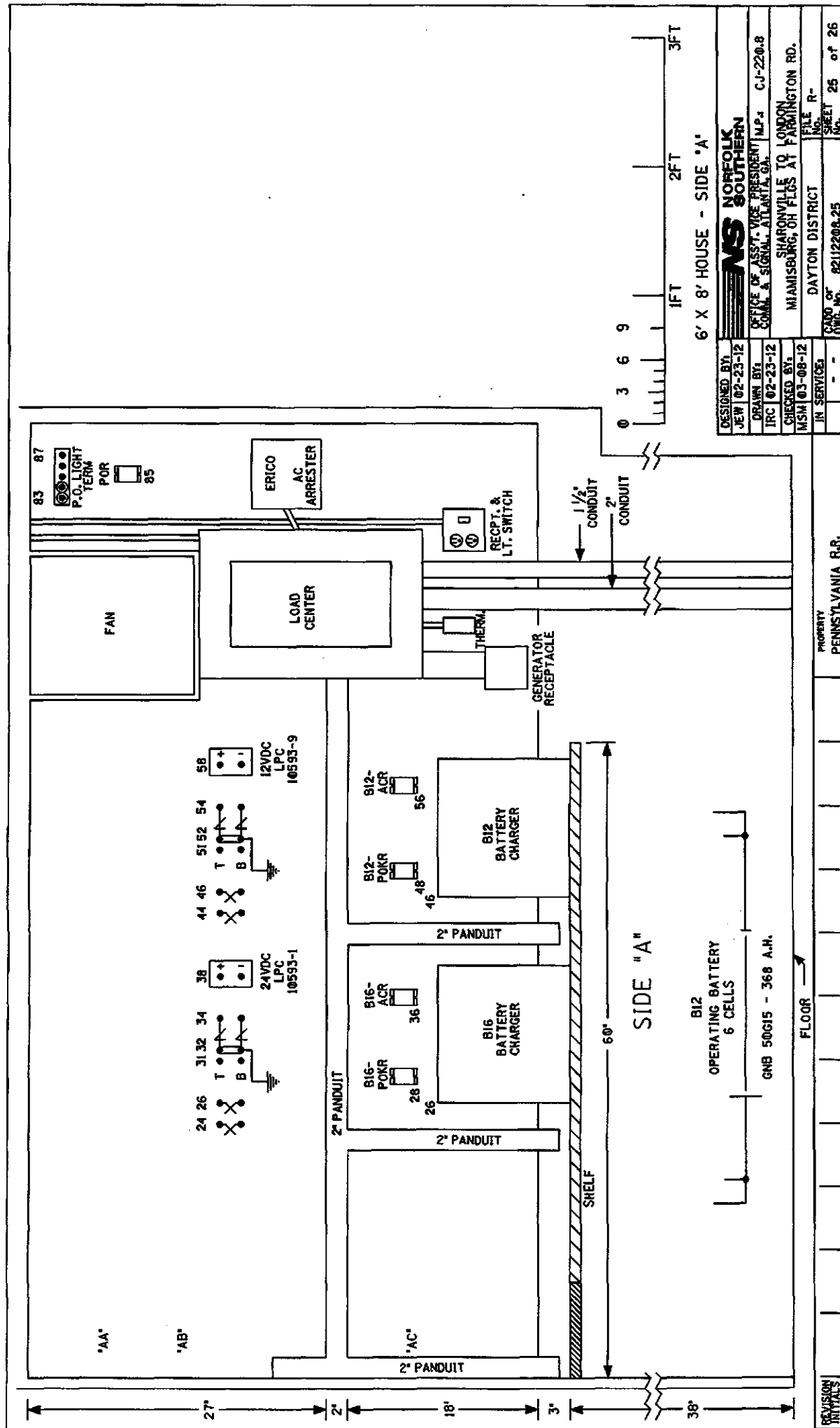
RACK PLACEMENT
6' X 8' HOUSE - SIDE "C"

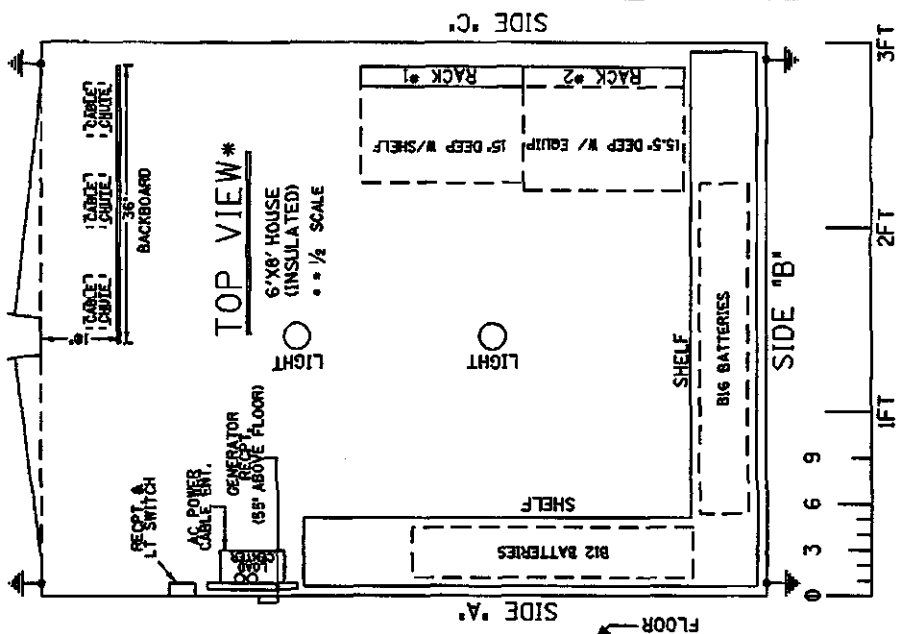
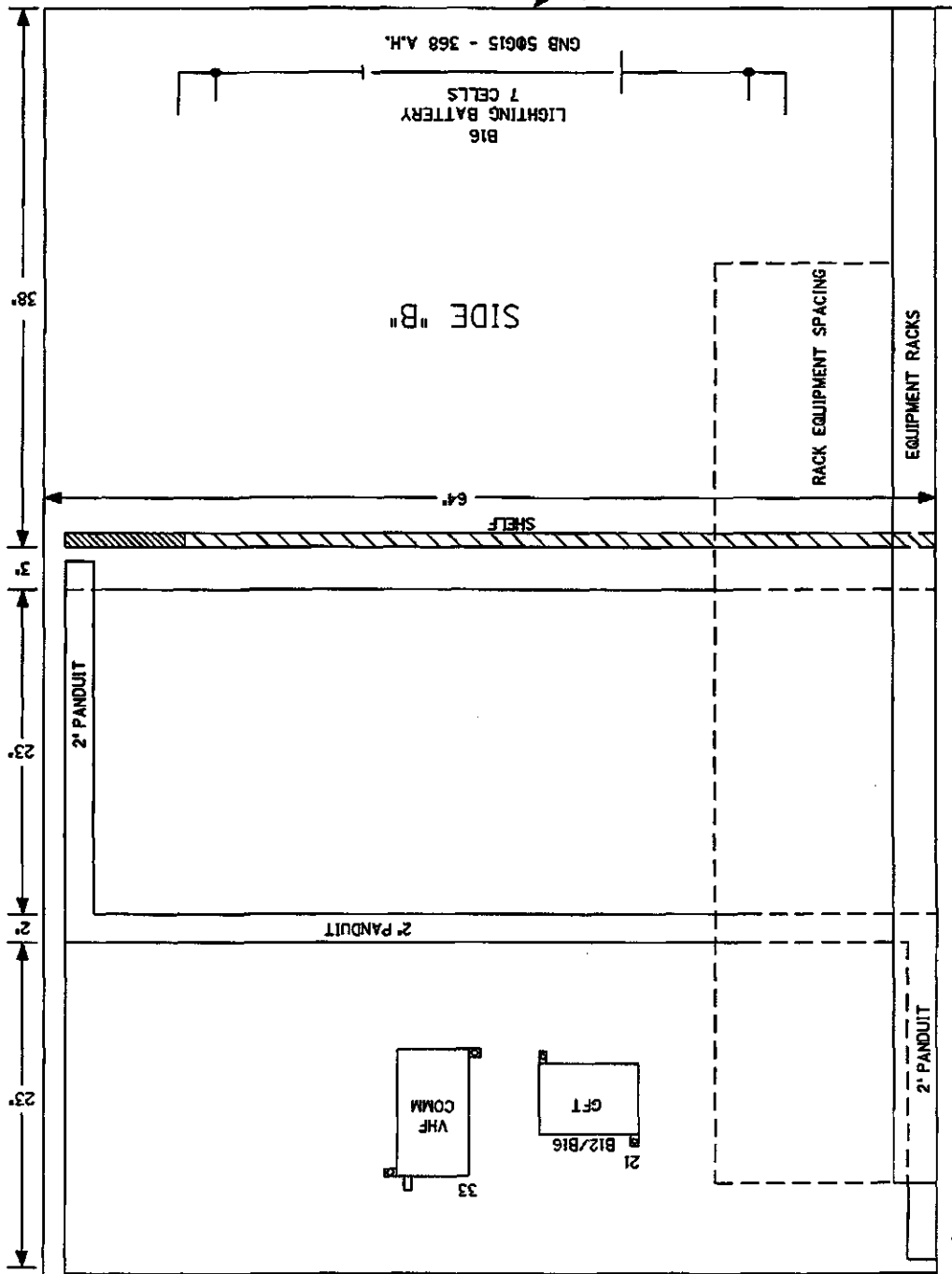


DESIGNED BY:	
JEW 02-23-12	
DRAWN BY:	
IRC 02-23-12	
CHECKED BY:	
MSM 03-08-12	
IN SERVICE:	

PROPERTY
PENNSYLVANIA R.R.

FILE R-
No.
SHEET 24 of 26
No.





6' X 8' HOUSE (SIDE 'B' & TOP VIEW)

DESIGNED BY:	JEW 02-23-12	NORFOLK SOUTHERN OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL - ATLANTA, GA. M.P. C-1-220-8
DRAWN BY:	IRC 02-23-12	
CHECKED BY:	MSM 03-08-12	
IN SERVICE:	- - -	
PROPERTY		MIAMISBURG, OH PLGS AT FARMINGTON RD. DAYTON DISTRICT FILE NO. R- SHEET 26 of 26 Dwg. No. 82112208.26

PROPERTY
PENNSYLVANIA R.R.

REVISION
INITIALS



Diagnostic Review Team Survey

Date: 10-5-11

Location Data

Street or Road Name: Farmington Rd.			
Route/Road Number (i.e. Twp., Co., SR or US) CR 66		AAR-DOT No.: 524662Y	
County: Montgomery	Township:	City: (In or Near)	Miamisburg
Railroad Name: Norfolk Southern (NS)	Railroad Division: Dearborn Lake	Branch/Line Name: Cincinnati LI	
Nearest RR Timetable Station: Dayton		RR Milepost: 220.8	

On-Site Review Team

(Include: Name - Organization - Phone Number)

1.	Bob Darfus	ORDC	614-374-9298
2.	Derrick Drake	NS	361-712-0220
3.	George Martin	PUCO	614-252-9107
4.	Paul Suter	CSX	937-694-2389
5.	Theresa Lynn	MONT CO. DEPT. OF TRANSPORTATION	937-225-6040
6.			
7.			
8.			
9.			

Existing Traffic Control Devices

Type of Warning Devices	Installed?		Quantity/Comments
Advance Warning Signs	☒ Yes	☐ No	2
'Stop' Signs	☐ Yes	☒ No	
'Stop Ahead' Signs	☐ Yes	☒ No	
Pavement Markings	☒ Yes	☐ No	2
Crossbucks	☒ Yes	☐ No	2
Number of Tracks Signs	☒ Yes	☐ No	2
Inventory Tags	☒ Yes	☐ No	2
Interconnected Highway Traffic Signal	☐ Yes	☒ No	
Mast-Mounted Flashing Lights	☒ Yes	☐ No	2
Cantilever Flashing Lights	☐ Yes	☒ No	Number: Length:
Side Lights	☐ Yes	☒ No	
Automatic Gates	☒ Yes	☐ No	Number: 2 Length: 16
Bells	☒ Yes	☐ No	1
Sidewalk Gate Arms	☐ Yes	☒ No	
'No Turn' Signs	☐ Yes	☒ No	
Illumination	☒ Yes	☐ No	
Is crossing flagged by train crew?	☐ Yes	☒ No	
Other	☐ Yes	☒ No	

Safety Data (Obtain crash reports, if possible, prior to review)		
	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years	0	0
Hazard Ranking	1852	Date Run: 8/19/2011

Railroad Data		
Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	18	18
< 1 per day		
Day thru trains	6	9
Night thru trains	10	9
Daytime switching movements	2	0
Nighttime switching movements	0	0
Total number of tracks	3	2
Number of main tracks	3	2
Number of other tracks	0	0
Maximum train speed	50	50
Typical train speed		
Amtrak		NO

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

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

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

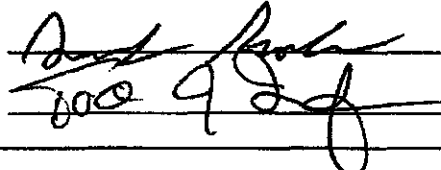
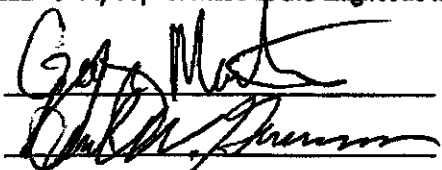
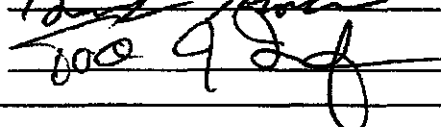
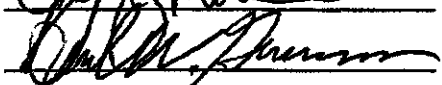
Are there other track(s) crossing this same roadway within 100 ft of this crossing? ☒ Yes ☐ No

If yes, Crossing DOT # (if different) **152 443 F CSX**

If yes, distance **81'** (take measurement between track centerlines at closest point along roadway)

Roadway Data		
Local Highway Authority: Montgomery County		
Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	1382	1295 (2009)
Highway paved	☒ Yes ☐ No	☒ Yes ☐ No
Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete ☐ Other _____		
Roadway width: 20 ft.		
Number of highway lanes	2	2
Urban or Rural	Rural	Rural
Vehicle Speed: 35 MPH		
School Bus Operation: ☐ No ☒ Yes ? Amount		
Hazardous Materials Trucks: ☐ No ☒ Yes ? Amount		
Shoulders: ☐ No ☒ Yes		
Is the shoulder surfaced? ☒ No ☐ Yes		
Is there existing guardrail along roadway in crossing vicinity? ☒ No ☐ Yes		
Is stopping sight distance adequate? (See Table 2) ☒ Yes ☐ No If no, deficient approach(es) _____		

Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ None	Quadrant _____ Curb and Gutter: ☐ Functional (Curb height = 4" or more) ☐ Non-functional (Curb height = Less than 4") ☒ None
Pedestrians: ☒ No ☐ Yes	
Is sidewalk present? ☒ No ☐ Yes	
Is there a nearby intersection that could cause queuing over the crossing? ☒ No ☐ Yes If yes, Distance _____	
Is this intersection signalized? ☒ No ☐ Yes	
Are the signals currently interconnected with the existing crossing warning devices? ☒ No ☐ Yes	
Is it the consensus of the Diagnostic Review Team that this is a potential closure project? ☒ No ☐ Yes Explain reasons: _____	
Type of Development	
☒ Open Space ☐ Industrial ☒ Residential	☐ Institutional ☐ Commercial Location of nearby schools: 5 mile
Utility Information	
Is commercial power available? ☐ No ☒ Yes	
Utility Provider (Company Name) <u>DPL</u>	Phone Number _____
Nearest Available Power Source <u>@ Crossing</u>	
What other utilities are present? <u>AH MCI Sprint</u>	
Is there potential utility conflict(s) ☐ Yes ☐ No ☒ Unknown	

Diagnostic Team Recommendations	
	Quadrants Needed
☒ Install/upgrade active devices	
☒ Automatic Flashing Lights (AFLS)	
☐ AFLS / Cants	
☒ AFLS / Gates	
☐ AFLS / Gates / Cants	
☒ Upgrade circuitry	
☐ Sidelights	
☐ Guardrail Needed	
☐ Install/Replace curb	
☐ Other (define)	
Comments: Harmon PMD-3 on CSX coordinated with CSX @ Old 3000 NS interconnect with CSX cutover	
☐ Install/upgrade traffic signal preemption	
☐ No improvements needed	
☐ Other (define)	
Acknowledgement of Recommendations (each entity represented at the diagnostic must have at least one signature acknowledgement):  David Foster  Gary Mark  [illegible]  [illegible]	