

Memo

To: Docketing Division
From: Jill Henry, Rail Specialist, Rail Division
Cc: PUCO Legal Department
Date: 9/8/17

Re: PUCO Case No. 17-1965-RR-FED- In the Matter of a Request for the Installation of New Active Warning Devices at the Norfolk Southern Railway Crossing, 66th Street DOT#524-734A, in Hamilton County, Ohio.

On August 7, 2017, the Ohio Rail Development Commission (ORDC) authorized funding for Norfolk Southern Railway to install lights and gates at 66th Street DOT#524-734A, in Hamilton County, Ohio. The crossing was surveyed on 9/27/13 and found to warrant the upgrades. The electric utility provider for this crossing is Duke Energy.

The project will be paid for with federal funds and is actual cost. The plans and estimates for the project in the amount of \$359,863.00 have been approved. Construction may commence at once. **Staff requests a Finding & Order with completion of the project in 15 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 Cincinnati
Mayor John Cranley
801 Plum Street
Cincinnati, Ohio 45202

Duke Energy

**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: Revised Hamilton County – 66th Street, DOT # 524734A, PID # 100180
DATE: August 7, 2017

The Ohio Rail Development Commission (ORDC) established a diagnostic survey at the subject location on 09/27/2013. The Public Utilities Commission of Ohio (PUCO) attended the review. The Diagnostic Team recommended the improvement of warning devices to flashing lights and roadway gates. Copies of the diagnostic review form and the plan and estimate are attached.

PE has already been provided by the railroad. ORDC 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.


Greg Gronbach
Project Manager

Attachment: Diagnostic Review
Plan & Estimate

c: Jill Henry, PUCO
Susan Arduni, ORDC
ORDC Project Manager (file)



OHIO RAIL DEVELOPMENT COMMISSION

Mail Stop #3140, 1980 West Broad Street, Columbus OH 43223
John R. Kasich, Governor • Mark Policinski, ORDC Chairman

August 7, 2017

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

RE: Addendum Construction Authorization Hamilton County, 66th Street Elmwood Place,
DOT# 524734A, PID# 100180


Dear Mr. Klinger:

With reference to construction authorization issued March 6, 2017 reimbursement of eligible actual cost is limited to \$359,863.00. 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 letter is here as an addendum the original construction authorization submitted on March 6, 2017.

Thank you for your assistance with these matters.

Sincerely,


Greg Gronbach
Project Manager
Project Manager

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





OHIO RAIL DEVELOPMENT COMMISSION

Mail Stop #3140, 1980 West Broad Street, Columbus OH 43223
John R. Kasich, Governor • Mark Policinski, ORDC Chairman

March 6, 2017

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

RE: Hamilton County – 66th Street, DOT #524734A, PID# 100180

Dear Stephen:

The plan and estimate dated October 29, 2015, 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 \$265,000.00. 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@puco.oh.gov. 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 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.



www.rail.ohio.gov

phone: 614.644.0306

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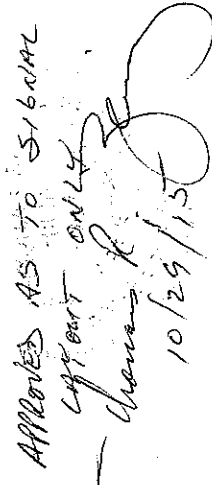
4. Open cut of roadways is *not permitted* except in unusual circumstances and must be coordinated with the local highway authority and preapproved by ORDC.
5. Norfolk Southern Railway Company will furnish two (2) copies of each partial bill to ORDC. Please find the enclosed ODOT Purchase Order to reference 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.

Thank you for your assistance with these matters.

Sincerely,


Greg Gronbach
Project Manager

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



APPROVED AS TO S160AL
COPYRIGHT ONLY
— Thomas R.
10/29/15



29-Oct-15

Round Figure Estimate for Grade Crossing Warning Devices

City/State: ELMWOOD PLACE, OH
MilePost: CJ-253.4
State Proj. No.: PID# 100180
S&E Proj. No.: 10.2188
Man Days: 192

Road: 66TH ST
DOT/AAR: 524734A
County: HAMILTON
File Number:

Purchases - Others	
Meals and Lodging:	\$25,804.80
Rental of Equipment:	\$26,880.00
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 32 Days)	
Construction Supervision Vehicle:	\$4,803.35
Purchases - Other Total:	\$57,488.15
Material And Additives	
Material Cost:	\$138,219.00
Sales and Use Tax:	\$0.00
Material Handling Freight:	\$6,910.94
Material Total:	\$145,129.94
Labor And Additives	
Labor Cost:	\$53,760.00
(6 man crew at \$1,680.00 a day for: 32 days)	
Payroll Tax & Overheads:	\$71,414.78
Preliminary Engineering:	\$16,894.14
Construction Supervision:	\$15,176.45
Labor Total:	\$157,245.37
Project Cost:	\$359,863.46
Scrap / Salvage Credit:	\$0.00
Project Total:	\$359,863.00

Estimated on: 29-Oct-15

Estimated by: ndney

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:	ELMWOOD PLACE
Road:	66TH ST
Mile Post:	CJ-253.4
Drawing Number:	82112531
State Project Number:	PID# 100180
County:	HAMILTON
A A R Number:	524734A
Project Number:	10.2188
File Number:	
New File Number:	CX1111387
WBS:	F-02521
Store Number:	S803
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 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				
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	\$183.15	\$183.15	BELL, CROSSING ELECTRONIC GENERAL SIGNAL, EB-3-360-5 CR 02-044350				
3	670-980689-4	EA	\$75.48	\$226.44	BRACKET HIGH WIND, (RIGID 3') WIG- 191036, WALRUS TUSK TYPE				
2	670-561375-4	EA	\$1,208.79	\$2,417.58	BRACKET, GATE SAVER, NEG385102GS, SPRING LOADED SWING AWAY ADAPTER FOR FIBERGLASS/ALUMINUM GATES, USE WITH GATE 38' AND LESS				
1	670-356949-4	EA	\$90.00	\$90.00	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				
500	465-292862-4	LF	\$1.36	\$680.00	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				
300	465-791835-4	FT	\$3.54	\$1,062.00	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' WWALKWAY KIT SAFTRAN #071294-18NS1				
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	\$87.64	\$350.56	CONNECTOR KIT, WELDED FAR RAIL, CONSISTING OF RUBBER HOSE PROPERLY DRILLED, BONDSTRAND, 1 SPLICING SLEEVE, 1 REDUCING SLEEVE, 3 CLAMPS, 1 TRACK CLIP, 1 WEB WELDED TRACK CONNECTOR, 1 WELD METAL, SAFETRAN 111359-2X				

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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Location ELMWOOD PLACE		OH	S&E Proj No. 10 2188	AFE No. F-02521	Drawing No. 82112531	Vendor Xorail			
Store No. S803		P O.Number		Date Required	Date Shipped				
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
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				
1	670-794453-4	EA	\$1,253.03	\$1,253.03	COUNTERWEIGHT PKAGE, 25-31' GATE STAN S- MECH ONLY, STAINLESS TO INCLUDE HUB, SUPPORT ARMS				
1	670-302909-4	EA	\$934.18	\$934.18	COUNTERWEIGHT, KIT 16'- 20' STAINLESS FOR S-MECH ON GATE/CANT COMBOS W/ARMS AND HUBS SAFETRAN 070755-212AX				
9	670-760012-4	EA	\$9.95	\$89.55	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				
12	670-000003-4	EA	\$255.85	\$3,070.20	FILL/STONE #57, QUANTITY IS BASED ON TRUCK LOAD PLUS DELIVERY COST				
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 26"X2'6"X5'6" ASSEMBLED				
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	670-005378-4	EA	\$387.95	\$387.95	GATE ARM, ALUMINUM, 25-31 FT, ARM ASSEMBLY, INCLUDES GATE GUARD FOR GATE LIGHT CABLE, HIGH INTENSITY VERTICAL STRIPES				
1	670-698491-4	EA	\$35,113.24	\$35,113.24	GCP4000 - 2 TRK (2TC) - REDUNDANT - 40/60 AMP WIRED RACK EQUIP FOR 6X8 XING SHELTER, (INCL. 2 TRK CHASSIS A80465, 4 TRK MODS, A80418, 2-SSCC A80405, 2 CPU A80403, 1 SEAR A80410, 1 DISPLAY A80407, 1 TRANS MOD A80468, 1-40 & 1-60 AMP CHARGER) IPN: 003131-				
1	670-477991-4	EA	\$410.00	\$410.00	KIT, GROUNDING ASSY FOR AL I/S INCLUDES 8 GRD RDS, 200#4WIRE, 12 4 WIRE ONE-SHOTS, ERICO SBK206				

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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
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, JNE CAN BLUE MARKING PAINT ETC				
2	670-092155-4	EA	\$160.00	\$320.00	LAMP ASSY, LED GATE ARM KIT (INCLUDES 3 LAMPS COMPLETE WITH CABLES AND MTG HARDWARE) REC # 9298-1120				
2	670-005055-4	EA	\$955.23	\$1,910.46	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)				
1	670-005062-4	EA	\$1,773.52	\$1,773.52	LAMP ASSY, LED, 5" MAST BACK TO BACK SIDELIGHTS (IPN: 042003-L000631)				
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"				
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	670-182404-4	EA	\$1,916.41	\$1,916.41	MAST, 5" ALUMINUM 22', (0&0) RIGHT. FOR SIDELIGHT HOLE 90. W/ DBL JCT BOX BASE, SAFETRAN #070519-X503				
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				
1	670-000023-4	EA	\$30,000.00	\$30,000.00	MISC EXPENSE, DOT PROVIDED EST FOR ROADWORK TO BE COORDINATED AND INSTALLED BY ROADWAY AUTH AND/OR ITS CONTRACTOR(S). CONTRACTOR INVOICE PAYABLE BY NS, REIMBURSABLE BY DOT UNDER AWD PROJ. NO NS COORDINATION OR PERFORMANCE OF WORK TO BE DONE BY NS				
1	000-000000-4	EA	\$5,000.00	\$5,000.00	MISC EXPENSE, UNDERGROUND BORING				
2	670-001355-4	EA	\$74.00	\$148.00	PACKAGE, HARDWARE SIGN 12 IN. (USE WITHWTF MAST) MOUNTING, SERRMI A1250-8, HARMON @180004/0007,				

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Location ELMWOOD PLACE		OH	S&E Proj No. 10 2188	AFE No. F-02521	Drawing No. 82112531				
Store No. S803		P.O. Number		Date Required	Date Shipped	Vendor Xorail			
Qty	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
2	670-001347-4	EA	\$57.10	\$114.20	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	670-514605-4	EA	\$11.11	\$11.11	PINNACLE, W-C SECT 1-11, 4"X 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X				
1	165-902002-4	EA	\$303.43	\$303.43	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL				
4	465-002899-4	EA	\$40.24	\$160.96	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	\$9,744.79	\$9,744.79	SHELTER, 6'X8' ALUMN FARADAY W/1EA EQUIPMENT RACK, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN RECEPTICAL, BREAKER BOX GFI OUTLET FOR LAPTOP SHELF SAFETRAN 058400-68-85				
4	670-586967-4	EA	\$42.98	\$171.92	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT				
4	670-645460-4	EA	\$575.56	\$2,302.24	SHUNT, MULTI-FREQ. #62775-8621 SAFETRAN NARROW BAND				
2	670-397239-4	EA	\$40.23	\$80.46	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 12" MAST, SAFETRAN #T17216				
2	670-554843-4	EA	\$77.05	\$154.10	SIGN, 2 TRACK SIGN, HIGH INTENSITY, SAFETRAN #035207-2HX				
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: \$138,218.82

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SH. NO.	CONTENTS
NXI	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	CANTILEVER FLASHER LIGHTS
15	SIGNAL "A" S60 GATE & FLASHER CIRCUITS
16	SIGNAL "B" S60 GATE & FLASHER CIRCUITS
17	BACKBOARD 1A & 1B
18	REAR BACKBOARD 1A & 1B
19	FARADAY SHIELD 1A & 1B
20	FARADAY SHIELD 1C
21	HOUSE SIDE C LAYOUT & RACK PLACEMENT
22	HOUSE SIDE A LAYOUT
23	HOUSE SIDE B & TOP VIEW LAYOUT

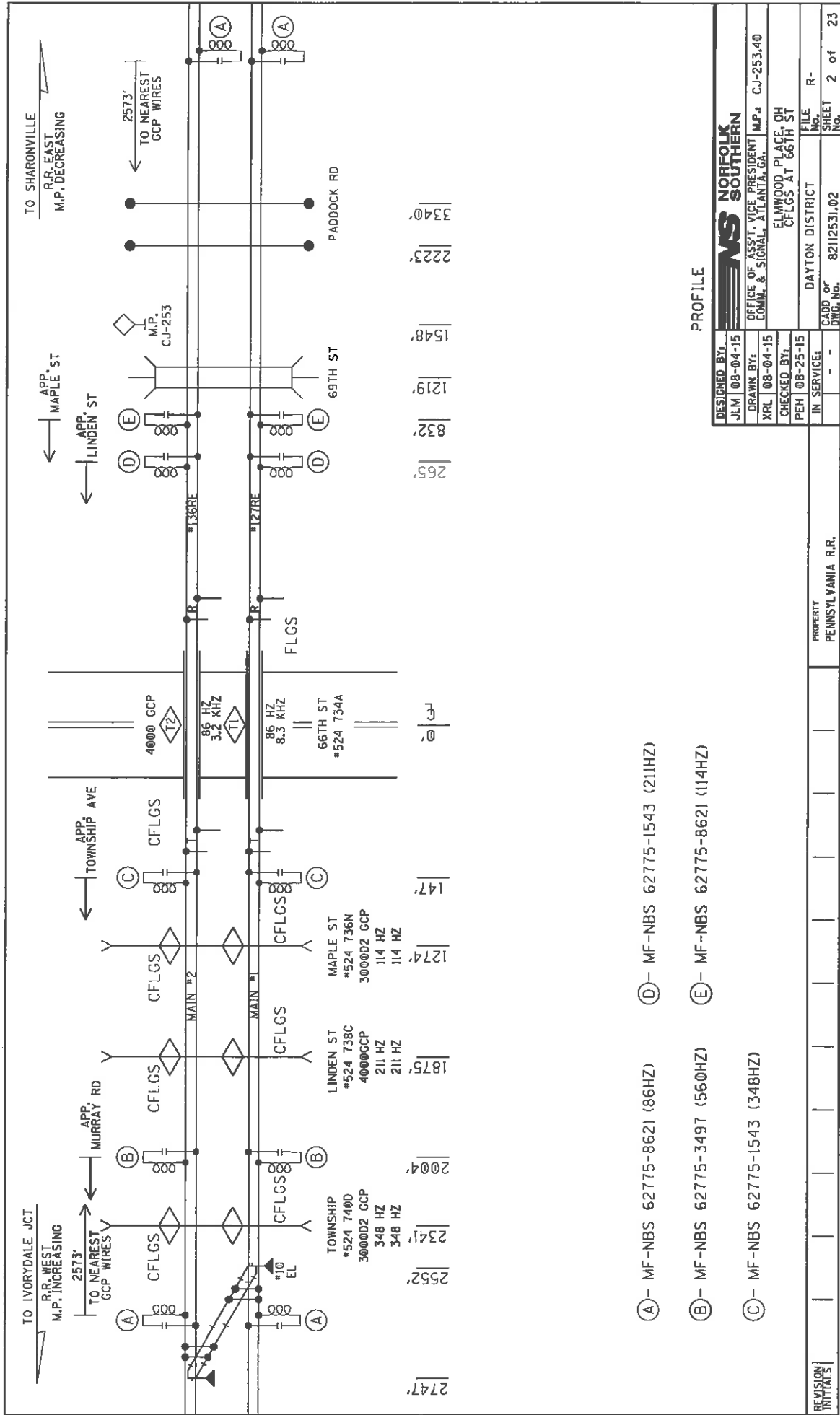
IN SERVICE	SIGNED	DATE
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<input type="checkbox"/>	CONSTRUCTION OFFICE COPY	
<input type="checkbox"/>	RETURN TO S&E ENG. AFTER COMPLETION	
<input type="checkbox"/>	FIELD COPY	
<input type="checkbox"/>	RETURN TO CASE AFTER COMPLETION	
<input type="checkbox"/>	PROJECT ENGINEER COPY	

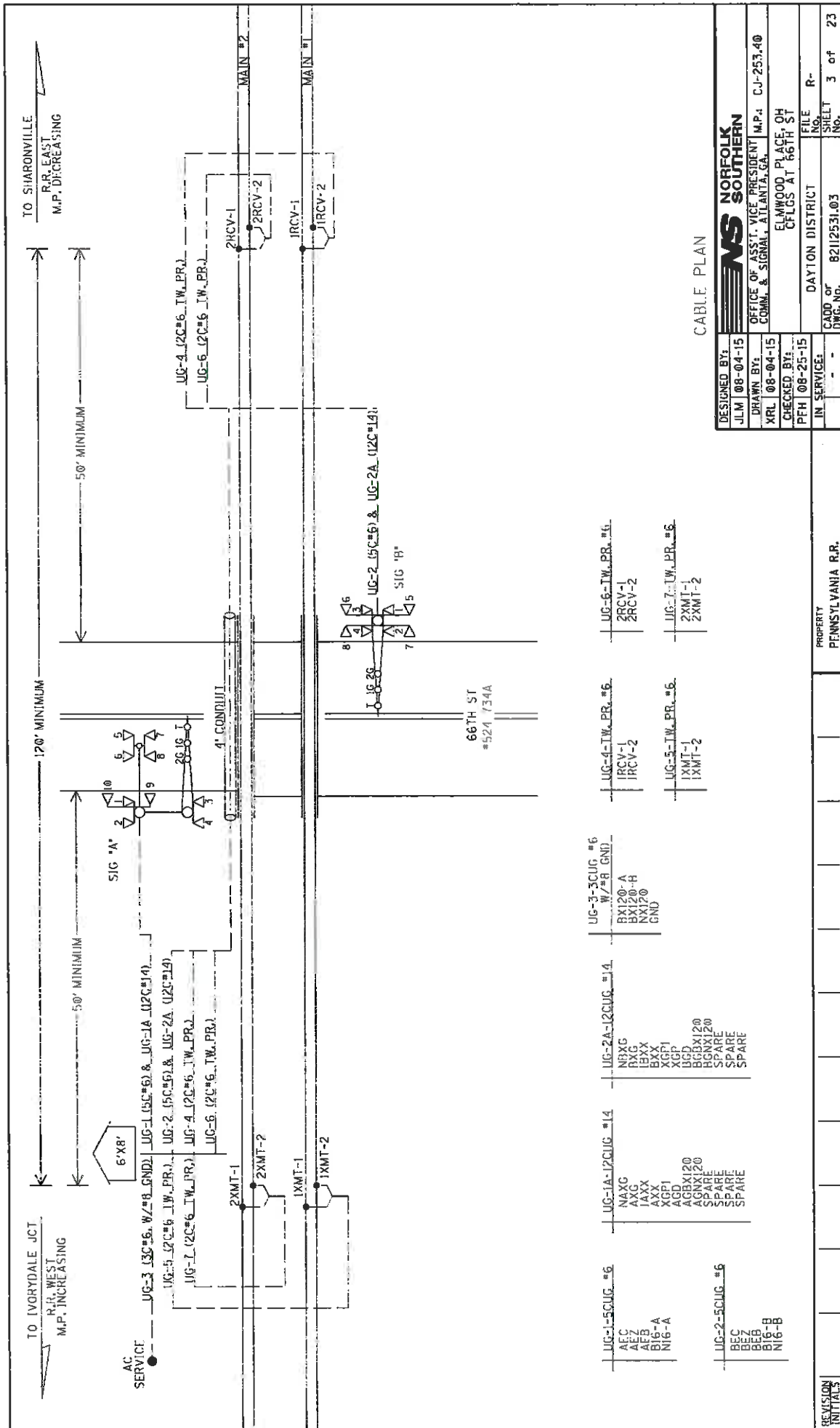
INDEX SHEET

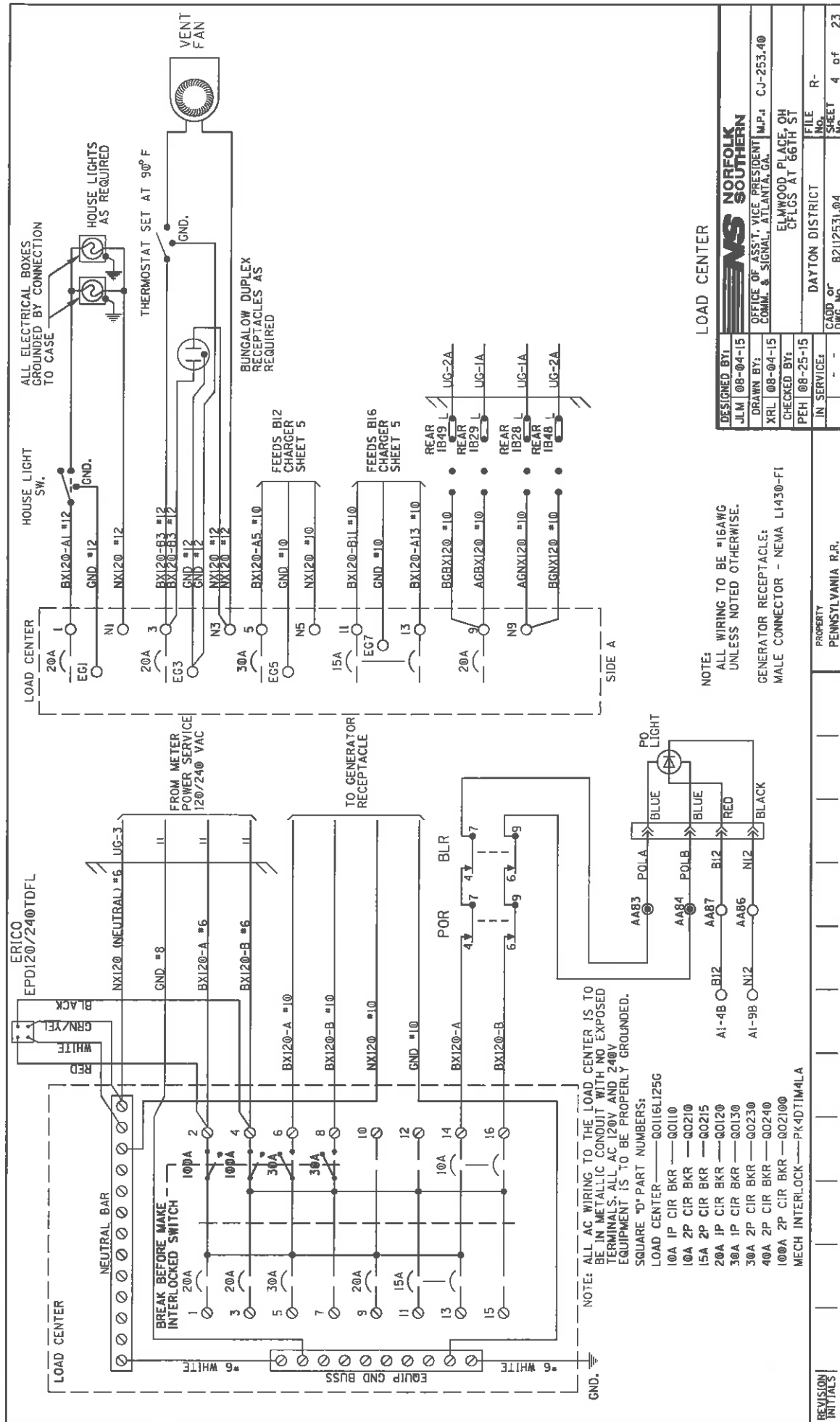
DESIGNED BY: JLM 08-04-15	 NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. ELMWOOD PLACE, OH CFLGS AT 66TH ST	FILE No. CJ-253.40
DRAWN BY: XRL 08-04-15		
CHECKED BY: PEH 08-25-15		
IN SERVICE:		
DAYTON DISTRICT		R-
CADD OF DNG. No. 82112531.NXI		SHEET No. 1 of 1

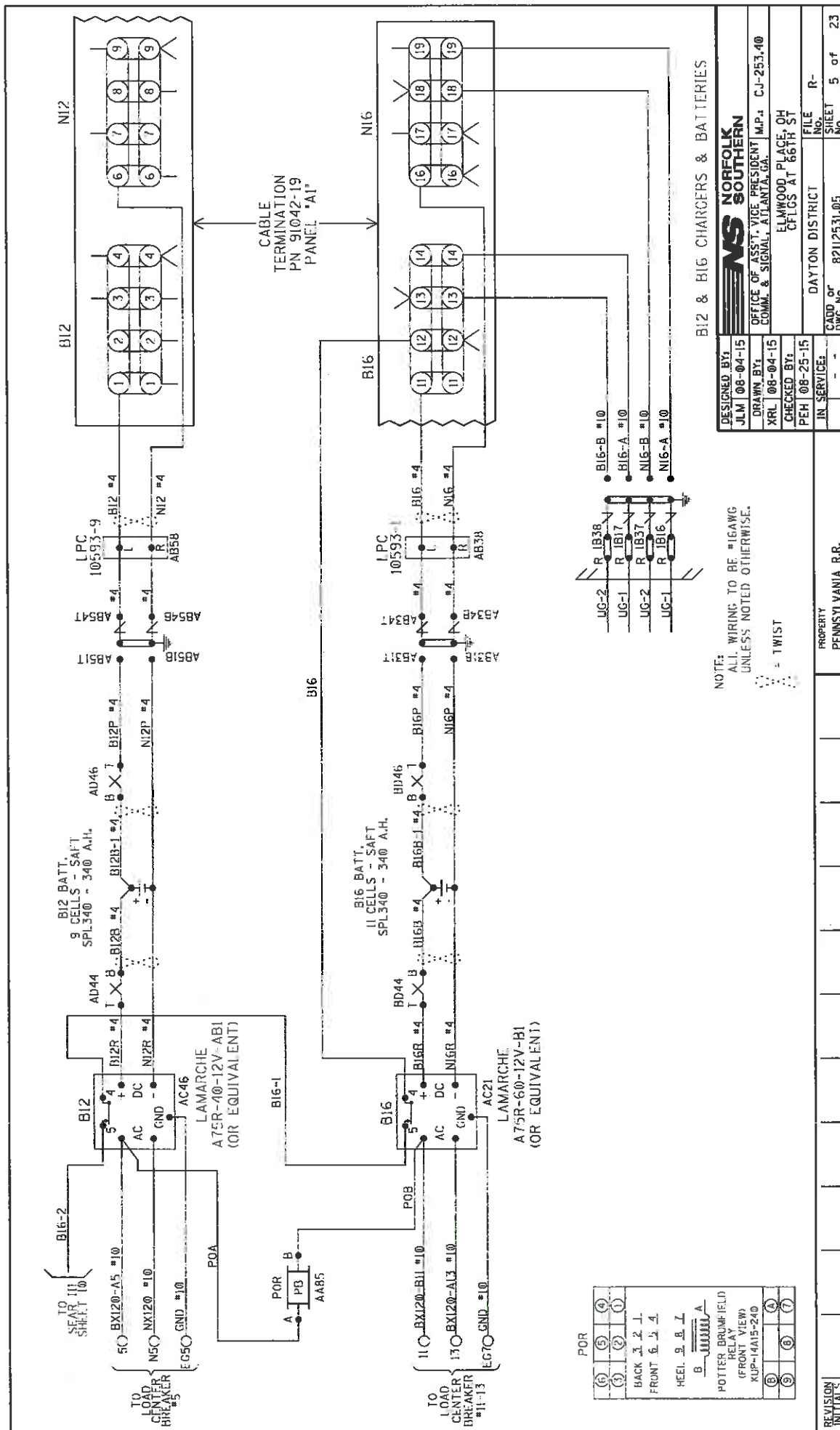
PROPERTY
PENNSYLVANIA R.R.

REVISION
INITIALS









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

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

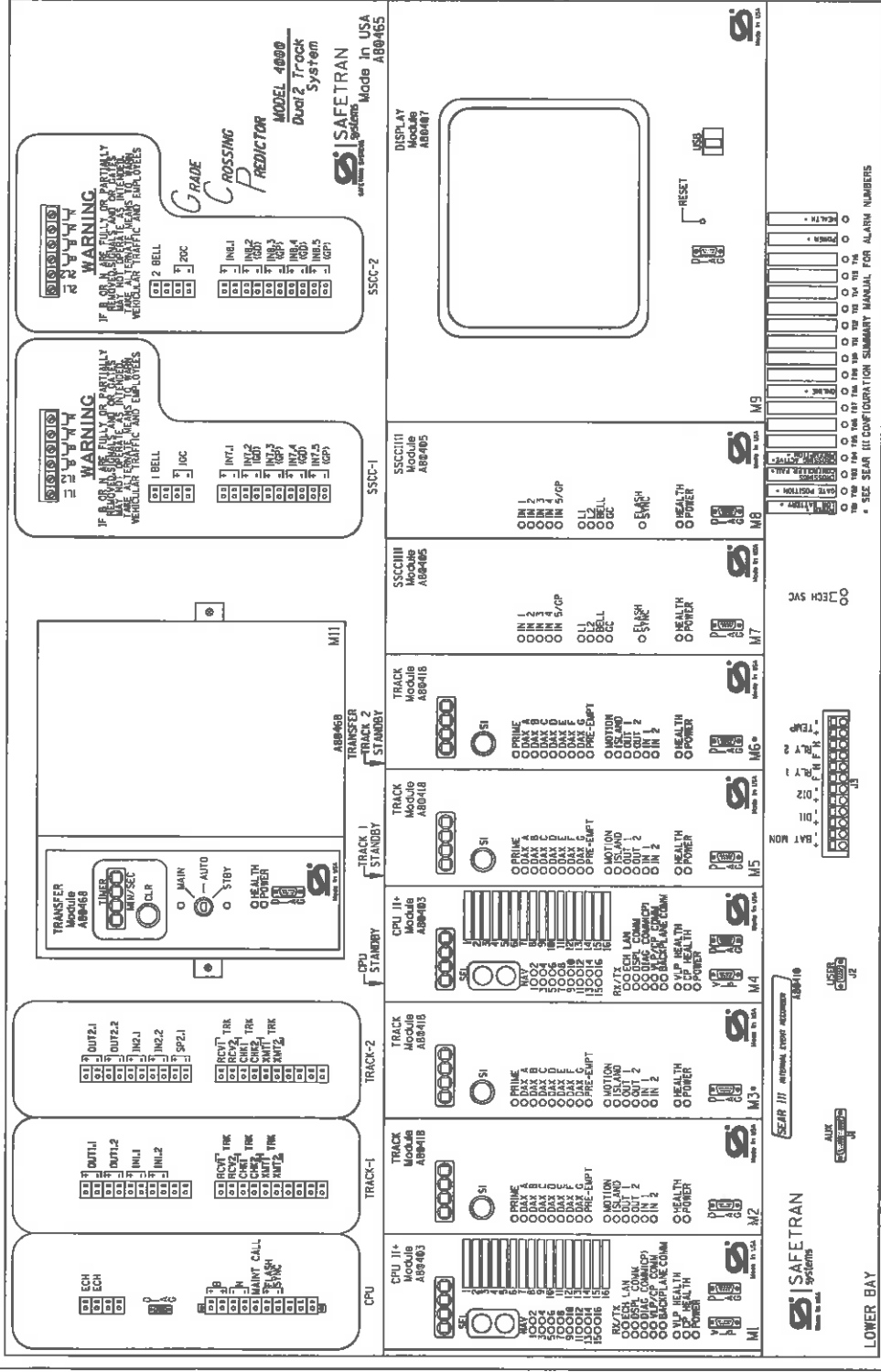
ATTENTION!

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)
NO JUMPER HEATER DISABLED

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

**4000 GCP 2-TK CHASSIS
& MODULE LAYOUT**



DESIGNED BY: JLM 08-04-15	NORFOLK SOUTHERN
DRAWN BY: XRL 08-04-15	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY: PEH 08-25-15	ELMWOOD PLACE, OH CFLGS AT 66TH ST
IN SERVICE:	DAYTON DISTRICT
FILE NO.:	8212531.06
SHEET No.:	6 of 23

REVISION/INITIALS	PROPERTY	PENNSYLVANIA R.R.
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Program Report

Location and SIN

DOT Number: 524734A

Wirepost Number: CJ-253.40

Site Name: 66TH ST

SIN: 755023409616

MCF and Template Selection

MCF Name: GCP-TEX-02-1.mcf

MCF Revision: 021

MCF CRC: 5076E455

Template: 146 Trk B1

Check Number: 5

Office Check No. (DT 4.5.0): 1A8BFFC1

Office Check Number: 1A8BFFC1

Config. Check Number: 194F952

(Based on MCF Revision 021)

Program

BASIC: module configuration

Track 1 Slot = Track

Track 2 Slot = Not Used

Track 3 Slot = Not Used

Track 4 Slot = Not Used

Track 5 Slot = Not Used

Track 6 Slot = Not Used

SSCC-1 Slot = 55CC31

SSCC-2 Slot = 55CC31

SEAR Used = Yes

BASIC: MS/GCP operation

Track 1: MS/GCP operation = Yes

Track 2: MS/GCP operation = Yes

BASIC: Island operation

Track 1: Island Used = Internal

Track 2: Island Used = Internal

BASIC: preemption

Preempt Logic = No

BASIC: radio Dax links

Radio UAX 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

PREDICTORS: track 2

Track 2: Prime Used = Yes

Track 2: Dax A Used = No

Track 2: Dax B Used = No

Track 2: Dax C Used = No

Track 2: Dax D Used = No

Track 2: Dax E Used = No

Track 2: Dax F Used = No

Track 2: Dax G Used = No

GCP: track 1

Track 1: GCP Frequency = 86 Hz

Track 1: Approach Distance = 25/3 ft

Track 1: Uni/Bi/Sim-Bidir = Bidir

Track 1: GCP Transm Level = High

Track 1: Island Connection = Isl

Track 1: Island Distance = 140 ft

Track 1: Computed Distance = 9999 ft

Track 1: Linearization Steps = 100

GCP: track 2

Track 2: Enhanced det

Track 2: Inbound PS Sensitivity = Off

Track 2: Speed Limiting Used = Yes

Track 2: Outbound PS Act Lvl = Normal

Track 2: Outbound PS Timer = 20 sec

Track 2: Trailing Switch Logic = On

Track 2: Post Joint Detn Time = 15 sec

Track 2: Adv Appr Predn = No

Track 2: Cancel Pickup Delay = This Isl

GCP: track 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 2 pos start

Track 2: Positive Start = Off

Track 2: Sudden Shrt Det Used = No

Track 2: Low EZ Detection Used = No

GCP: track 1 MS Control

Track 1: MS/GCP CtrlLP Used = No

Track 1: MS Sensitivity Level = 0

Track 1: Compensation Level = 1300

Track 1: Warn Time-Balast Comp = High

Track 1: Warn Time-Balast Comp = 30

Track 1: Low EX Adjustment = No

Track 1: Bidir Dax Passthru = No

Track 1: False Act on Train Stop = No

Track 1: EX Limiting Used = Yes

Track 1: EZ Correction Used = Yes

GCP: track 2

Track 2: GCP Frequency = Standard

Track 2: Approach Distance = 86 Hz

Track 2: Uni/Bi/Sim-Bidir = Bidir

Track 2: GCP Transm Level = High

Track 2: Island Connection = Isl

Track 2: Island Distance = 140 ft

Track 2: Computed Distance = 9999 ft

Track 2: Linearization Steps = 100

GCP: track 2 enhanced det

Track 2: Inbound PS Sensitivity = Off

Track 2: Speed Limiting Used = Yes

Track 2: Outbound PS Act Lvl = Normal

Track 2: Outbound PS Timer = 20 sec

Track 2: Trailing Switch Logic = On

Track 2: Post Joint Detn Time = 15 sec

Track 2: Adv Appr Predn = No

Track 2: Cancel Pickup Delay = This Isl

GCP: track 2 prime

Track 2: Prime Warning Time = 30 sec

Track 2: Prime Offset Distance = 0 ft

Track 2: Switch MS EZ Level = 10

Track 2: Prime MS/GCP Mode = Pred

Track 2: Prime Pickup Delay = 15 sec

Track 2: Prime UAX = Not Used

GCP: track 2 pos start

Track 2: Positive Start = Off

Track 2: Sudden Shrt Det Used = No

Track 2: Low EZ Detection Used = No

GCP: track 2 MS Control

Track 2: MS/GCP CtrlLP Used = No

Track 2: MS Sensitivity Level = 0

Track 2: Compensation Level = 1300

Track 2: Warn Time-Balast Comp = High

Track 2: Warn Time-Balast Comp = 30

Track 2: Low EX Adjustment = No

Track 2: Bidir Dax Passthru = No

Track 2: False Act on Train Stop = No

Track 2: EX Limiting Used = Yes

Track 2: EZ Correction Used = Yes

ISLAND: track 1

Track 1: Isl Frequency = 8.3 kHz

Track 1: Pickup Delay (2s+) = 0 sec

Track 1: IslEnable JP Used = No

ISLAND: track 2

Track 2: Isl Frequency = 3.24 kHz

Track 2: Pickup Delay (2s+) = 0 sec

Track 2: IslEnable JP 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 XR Track 2 = Prime


AND 1 Enable Used = Yes

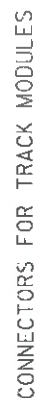
AND 1 Enable Pickup = 5 sec

AND 1 Enable Drop = 0 sec

AND 1 Wrap Used = No

4000 GCP PROGRAMMING SETUP

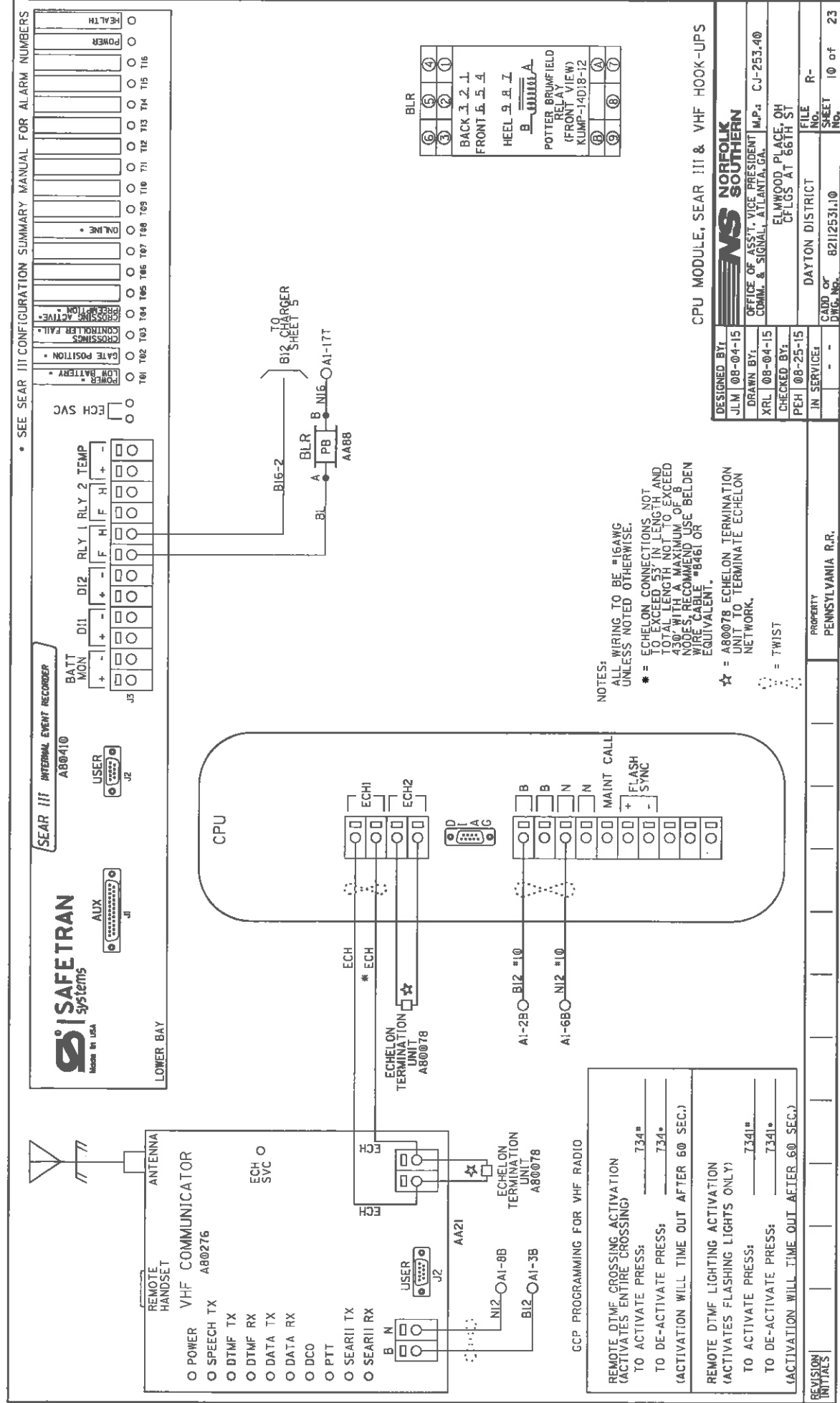
DESIGNED BY:	JLM 08-04-15	 NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: CJ-253.40	
DRAWN BY:	XRL 08-04-15		
CHECKED BY:	PEH 08-25-15		
IN SERVICE:	- -		
PROPERTY	PENNSYLVANIA R.R.	FILE NO.	DAYTON DISTRICT
INITIALS		SHEET	7 of 23
		No.	82112531.07



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

TWIST

DESIGNED BY: JLM 08-04-15	NS NORFOLK SOUTHERN OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. ELWOOD PLACE, OH CFLCS AT 66TH ST DAYTON DISTRICT FILE R-
DRAWN BY: XRL 08-04-15	
CHECKED BY: PEH 08-25-15	
IN SERVICE	
CADW OF DWG. NO. 82112531.09 SHEET No. 9 of 23	



SITE SET UP PROCEDURE		
FUNCTION	LED DISPLAY	
DATE/TIME		
AUTOMATIC DST ADJUSTMENT	YES	
TIME ZONE	EST	
SITE NAME	66TH ST	
MILEPOST	CJ-253.40	
DOT #	524 734A	
TESTER TYPE	CROSSING	
DATE FORMAT	MM-DD-YYYY	
TEMP FORMAT	FAHRENHEIT	
INDICATE HOLD (SEC)	0	
INDICATE REFRESH (SEC)	60	
SITE ATCS	7.550.234.096.03.01	
SITE TYPE	NO COMMUNICATION	
OFFICE ATCS ADDRESS	2.550.00.0000	
PRIMARY HOP ADDR	7.RRRJ.L.L.GGG.XX.XX	
BACKUP HOP ADDR 1	7.RRRJ.L.L.GGG.XX.XX	
BACKUP HOP ADDR 2	7.RRRJ.L.L.GGG.XX.XX	
POLL ID	1	
MODE	GEN/ATCS	
WAMS XID	DISABLED	
OFFICE COMM DEVICE	MCM (ECHO)	
RADIO ATCS ADDR	7.RRRJ.L.L.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 NAME'S 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	
R5% 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	734	
ACTIVATION TIMEOUT (SECONDS)	60	
ILOD MODULES	0	
ANY LED BULBS USED	NO	
VHF VOICE CHANNEL	2	
VHF DATA CHANNEL	2	
USE CELL MODEM		
NON-CRITICAL FEATURE	NO	

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

NOTES:

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

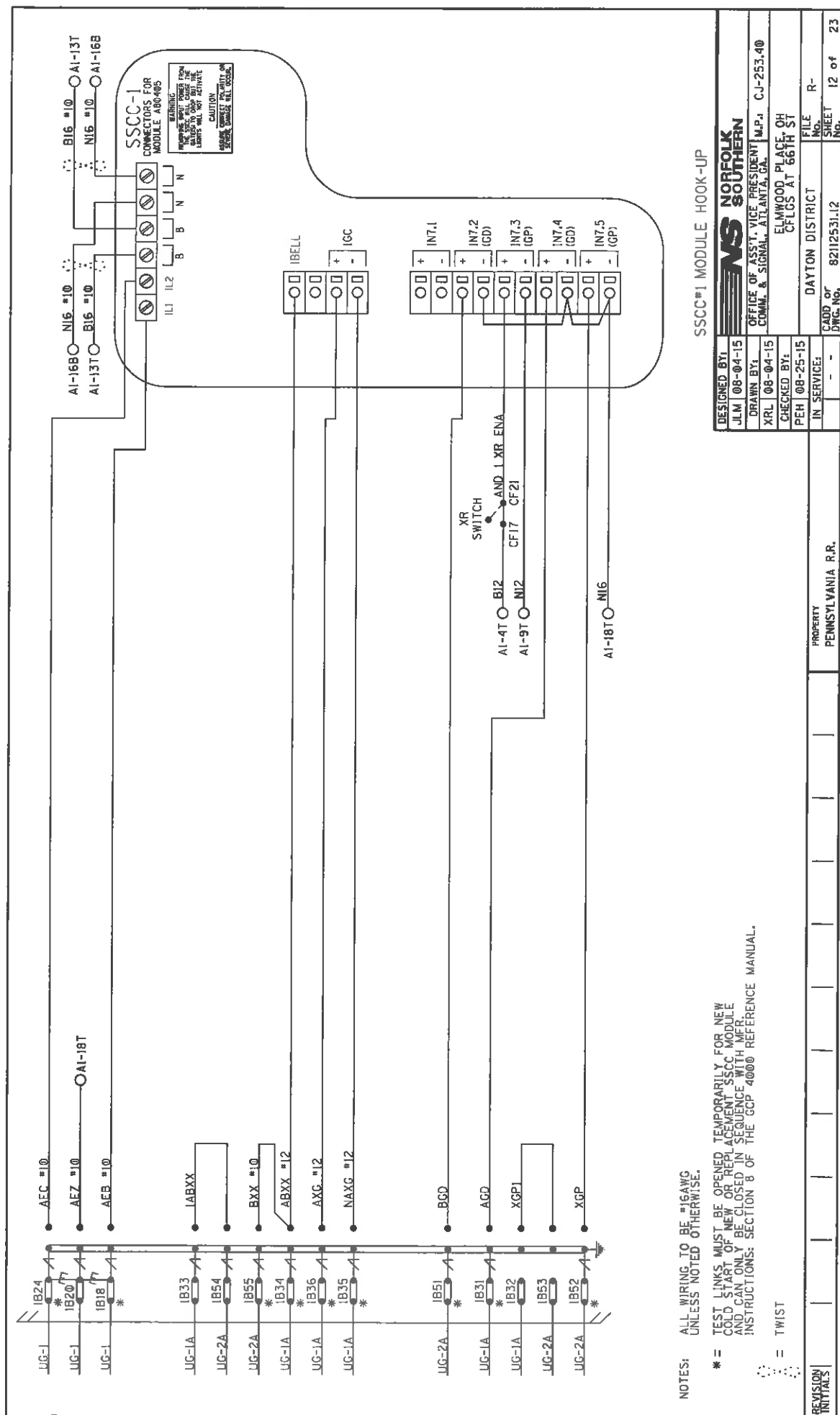
SEAR III PROGRAMMING SETUP

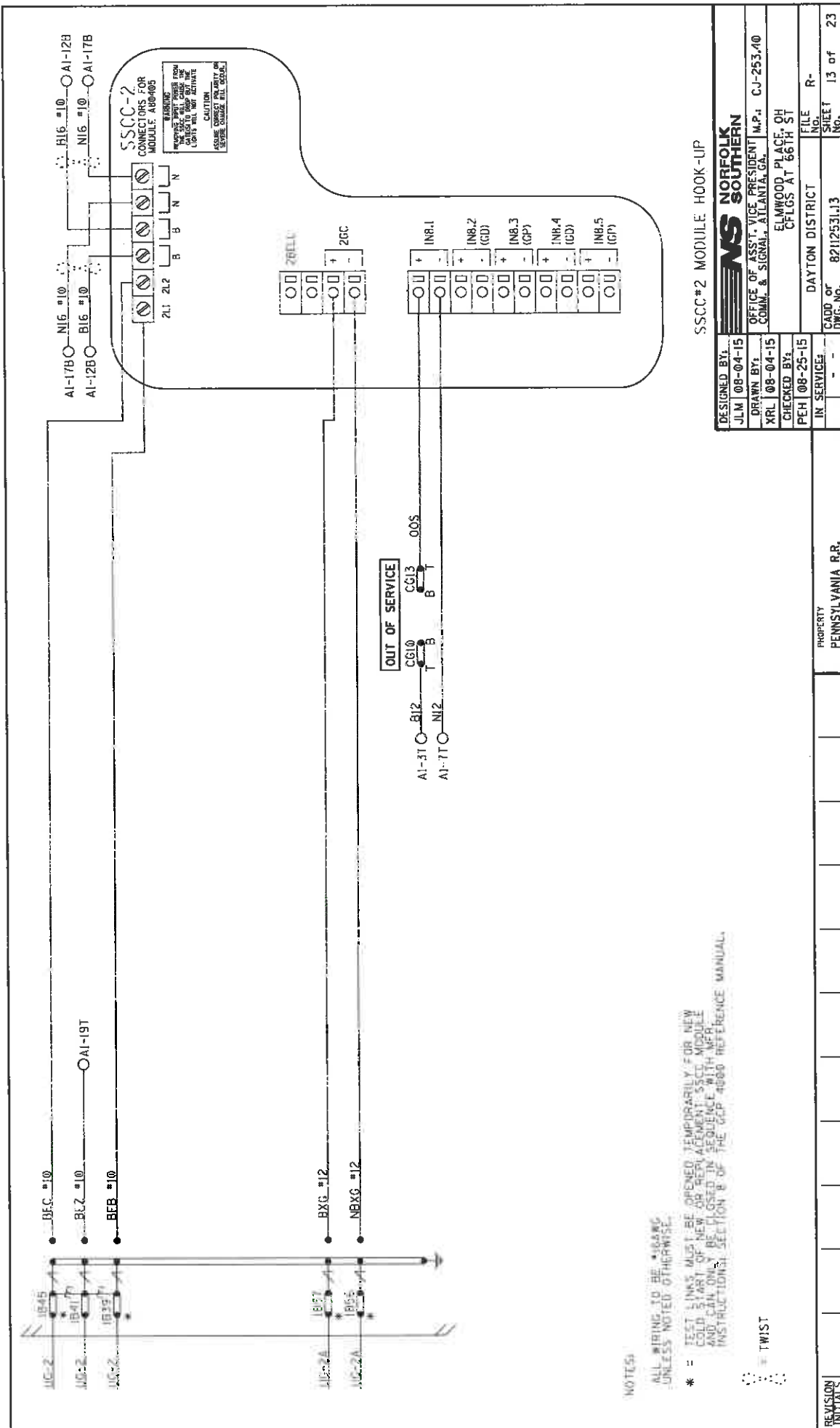
DESIGNED BY: JLM 08-04-15	NORFOLK SOUTHERN
DRAWN BY: XRL 08-04-15	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY: PEH 08-25-15	ELMWOOD PLACE, OH CFLGS AT 66TH ST
IN SERVICE	DAYTON DISTRICT
FILE NO.	82112531.JI
SHEET NO.	23

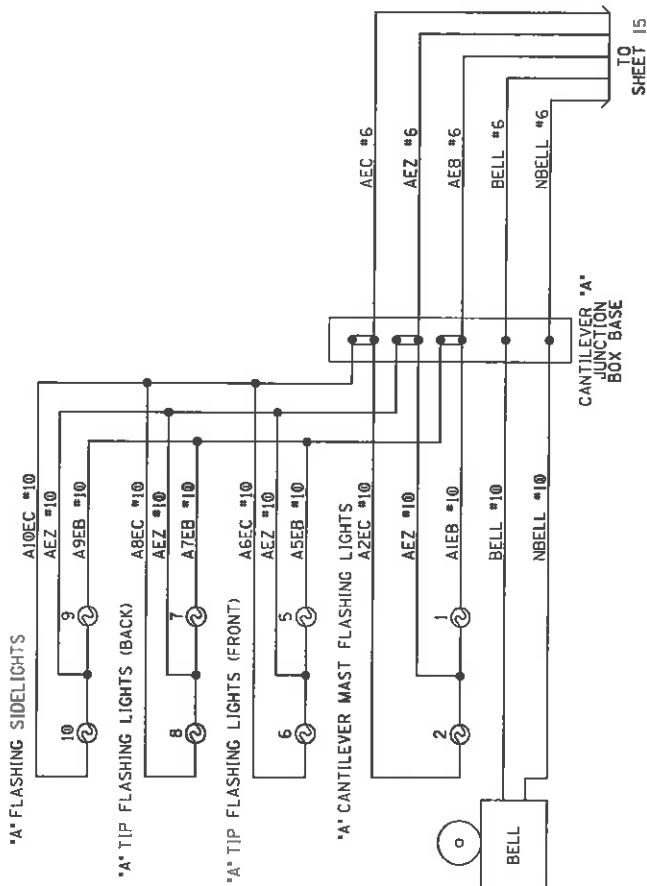
TO CONFIGURE SEAR III PRESS SITE SETUP KEY.
USE ARROW KEYS TO MAKE SELECTION.
PRESS ENTER AFTER SELECTION HAS BEEN MADE.

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INITIALS







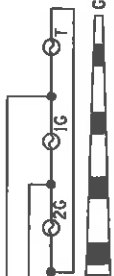
CANTILEVER FLASHER LIGHTS

DESIGNED BY: JLM 08-04-15	NORFOLK SOUTHERN
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	FILE NO. R-
	CADD OF DWG. No. 8212531.14
	SHEET 14 of 23

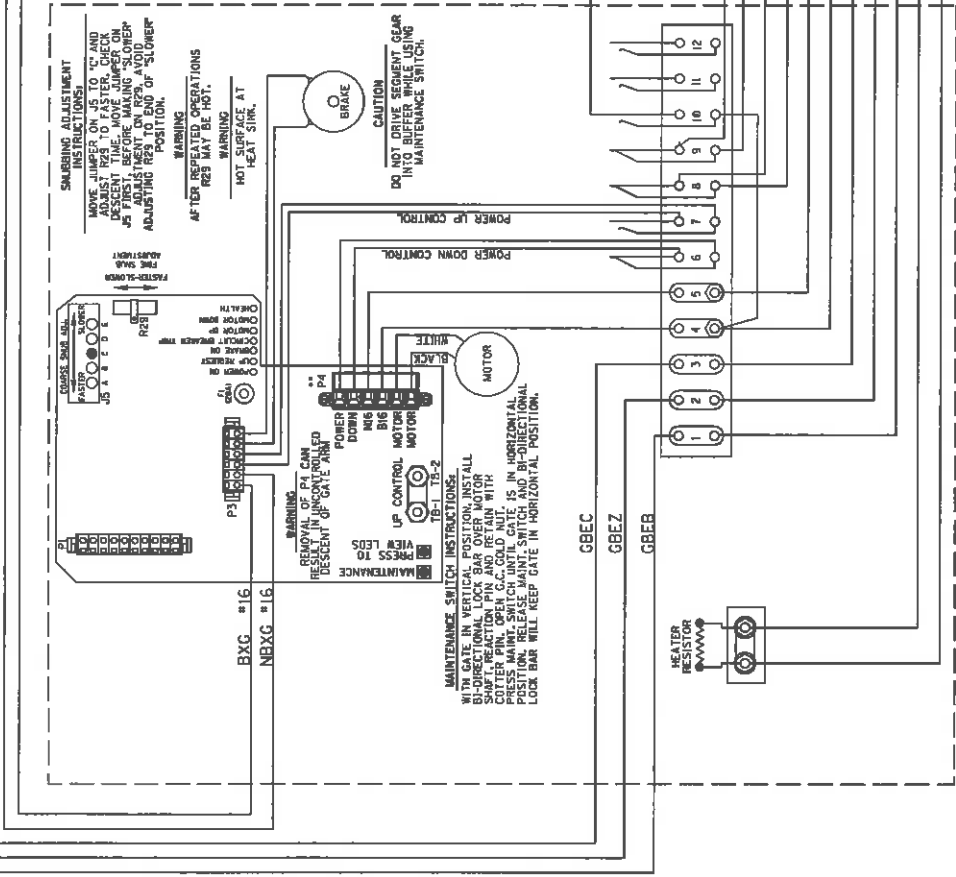
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BLACK
GREEN
WHITE



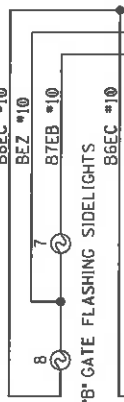
'B' GATE MECHANISM



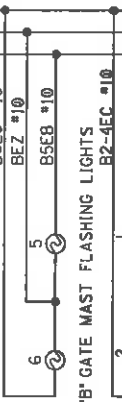
SAFETRAN MODEL 'S60' GATE

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

'B' GATE FLASHING SIDELIGHTS



'B' GATE MAST FLASHING LIGHTS



GATE 'B' JUNCTION BOX BASE (BACK)

GATE 'B' JUNCTION BOX BASE (FRONT)

SIGNAL 'B' S60 GATE & FLASHER CIRCUITS

DESIGNED BY:	JLM 08-04-15
DRAWN BY:	XRL 08-04-15
CHECKED BY:	PER 08-25-15
IN SERVICE:	

NORFOLK SOUTHERN
OFFICE OF ASST. VICE PRESIDENT M.P.4 CJ-253.40
COMM. & SIGNAL, ATLANTA, GA.

ELMWOOD PLACE, OH
CPLGS AT 66TH ST

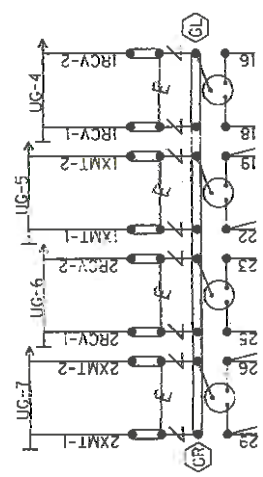
DAYTON DISTRICT	FILE NO.	R-
CAID or DWG. No.	82112531.16	SHEET 16 of 23


PROPERTY
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Pinout diagram for the 68000 microprocessor, showing pins 16 through 57. The diagram is organized into four vertical sections: UC-1 (pins 16-27), UC-1A (pins 28-39), UC-2 (pins 40-47), and UC-2A (pins 48-57). Each section contains a list of pins with their corresponding functions and electrical characteristics.

Pin	Function	Electrical Characteristics
16	N16-A	
17	B16-A	
18	AEB	
19	AEB	
20	AEB	
21	AEB	
22	AEB	
23	AEB	
24	AEB	
25	SPARE	
26	SPARE	
27	SPARE	
28	SEE REAR TERM.	
29	SEE REAR TERM.	
30	SPARE	
31	ACD	
32	XGP1	
33	IAXX	
34	AXX	
35	NAXS	
36	AXG	
37	N16-B	
38	B16-B	
39	BEB	
40	BEZ	
41	BEZ	
42	BEZ	
43	BEZ	
44	BEZ	
45	BEZ	
46	SPARE	
47	SPARE	
48	SEE REAR TERM.	
49	SEE REAR TERM.	
50	SPARE	
51	BGD	
52	XGP1	
53	IAXX	
54	BXX	
55	BXX	
56	NBXG	
57	BXG	



~~E~~ = Heavy Duty Equalizer
(0227100-1X)
Clearview
L = Lightning Arrestor
(022585-1X)
 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.



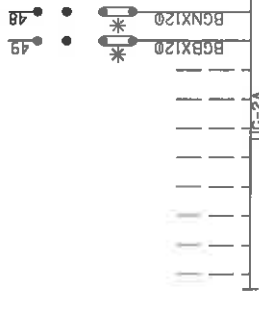
 TERMINALS GROUNDED TO SHIELD.
 4 POST BLOCKS USE EITHER -
 CR - SERMMI PART NO. 61278
 GL - SERMMI PART NO. 61278-1.

BACKBOARD 1A & 1B

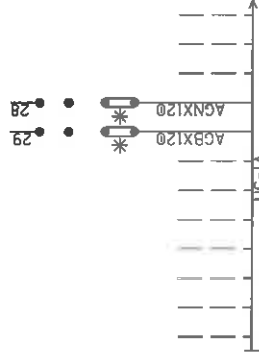
[illegible]

"1A"

"1B"



(SEE PREVIOUS SHEET FOR OTHER WIRES IN CABLE)




(SEE PREVIOUS SHEET FOR OTHER WIRES IN CABLE)

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

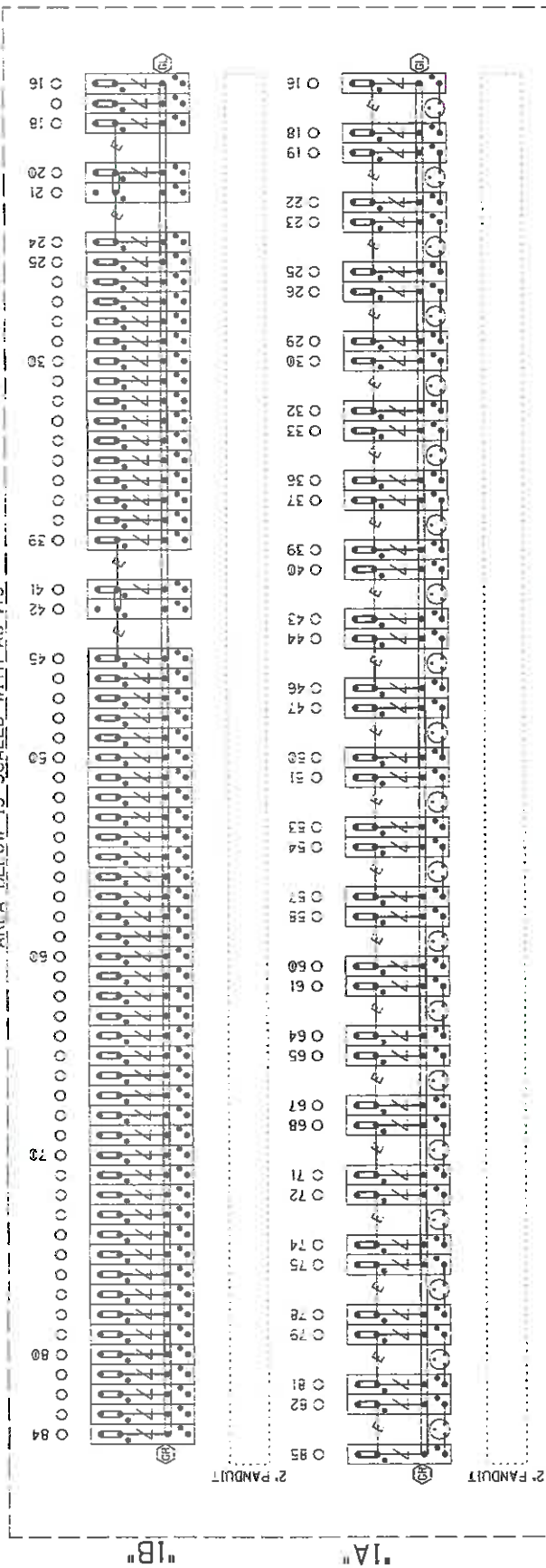
* = CLOSED DURING WINTER MONTHS

REAR BACKBOARD 1A & 1B

DESIGNED BY: JLM 08-04-15	 NORFOLK SOUTHERN	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	W.P.# CJ-253.40
DRAWN BY: XRL 08-04-15		ELMWOOD PLACE, OH CFLUS AT 66TH ST	
CHECKED BY: PEH 08-25-15		DAYTON DISTRICT	FILE NO. R-
IN SERVICE: -		CADD or DWG. NO. 821253118	SHEET 18 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



-E- = Heavy Duty Equalizer (022700-IX)

Clear View Lightning Arrestor (022585-IX)

⊗ = LFC-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

FARADAY SHIELD 1A & 1B

DESIGNED BY: JLM 08-04-15	NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: CJ-253.40 ELWOOD PLACE, OH CFLGS AT 66TH ST
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IN SERVICE:	
DAYTON DISTRICT	
FILE NO. 82112531.19	SHEET NO. 19 of 23

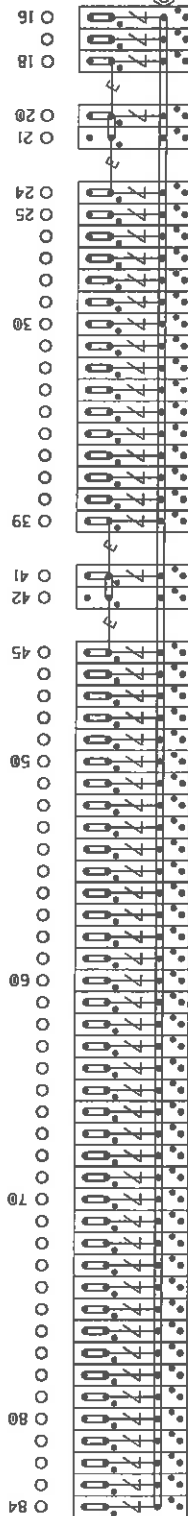
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NOTE: IF THE FARADAY SHIELD WOULD EVER NEED TO BE DRILLED IN THE FIELD, PROPER PRECAUTIONS MUST BE TAKEN TO INSURE METAL SHAVINGS DO NOT GET INTO EXISTING TERMINALS/WIRES.

AREA BELOW IS SCALED WITH AS-75

TERMINAL BOARD 1
RIGHT HALF



⌋ = Heavy Duty Equalizer
(022700-IX)

⌋ = Clearview
Lightning Arrester
(022585-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.

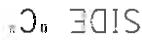
INDICATES PLACEMENT
OF PANDUIT

FARADAY SHIELD 1C

DESIGNED BY:	JLM 08-04-15	NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: CJ-253,40 ELWOOD PLACE, OH CPGS AT 66TH ST
DRAWN BY:	XRL 08-04-15	
CHECKED BY:	PEH 08-25-15	
IN SERVICE:	-	FILE NO. R- DAYTON DISTRICT
CADD or DWG. No.	8212531.20	SHEET No. 20 of 23

PROPERTY
PENNSYLVANIA R.R.

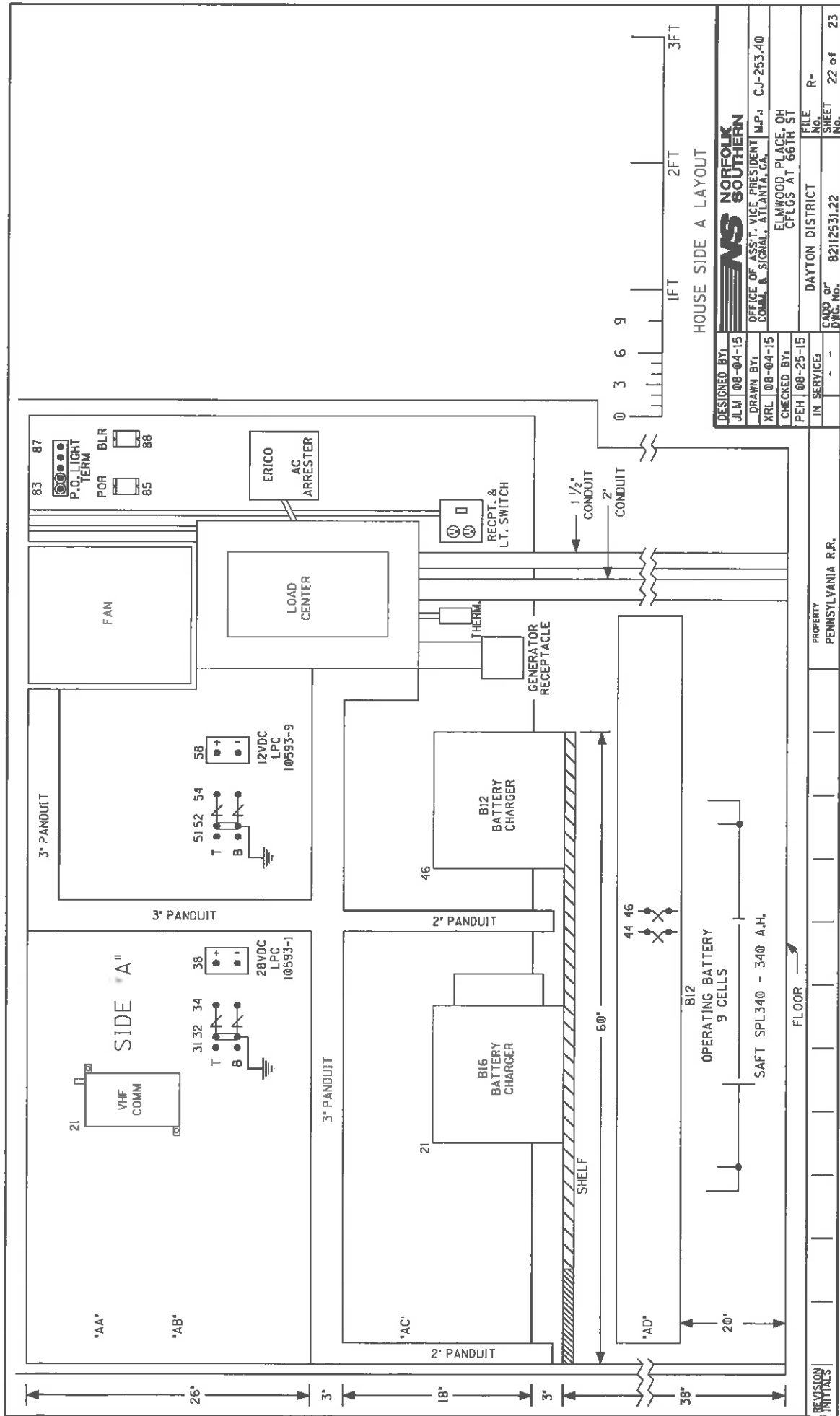
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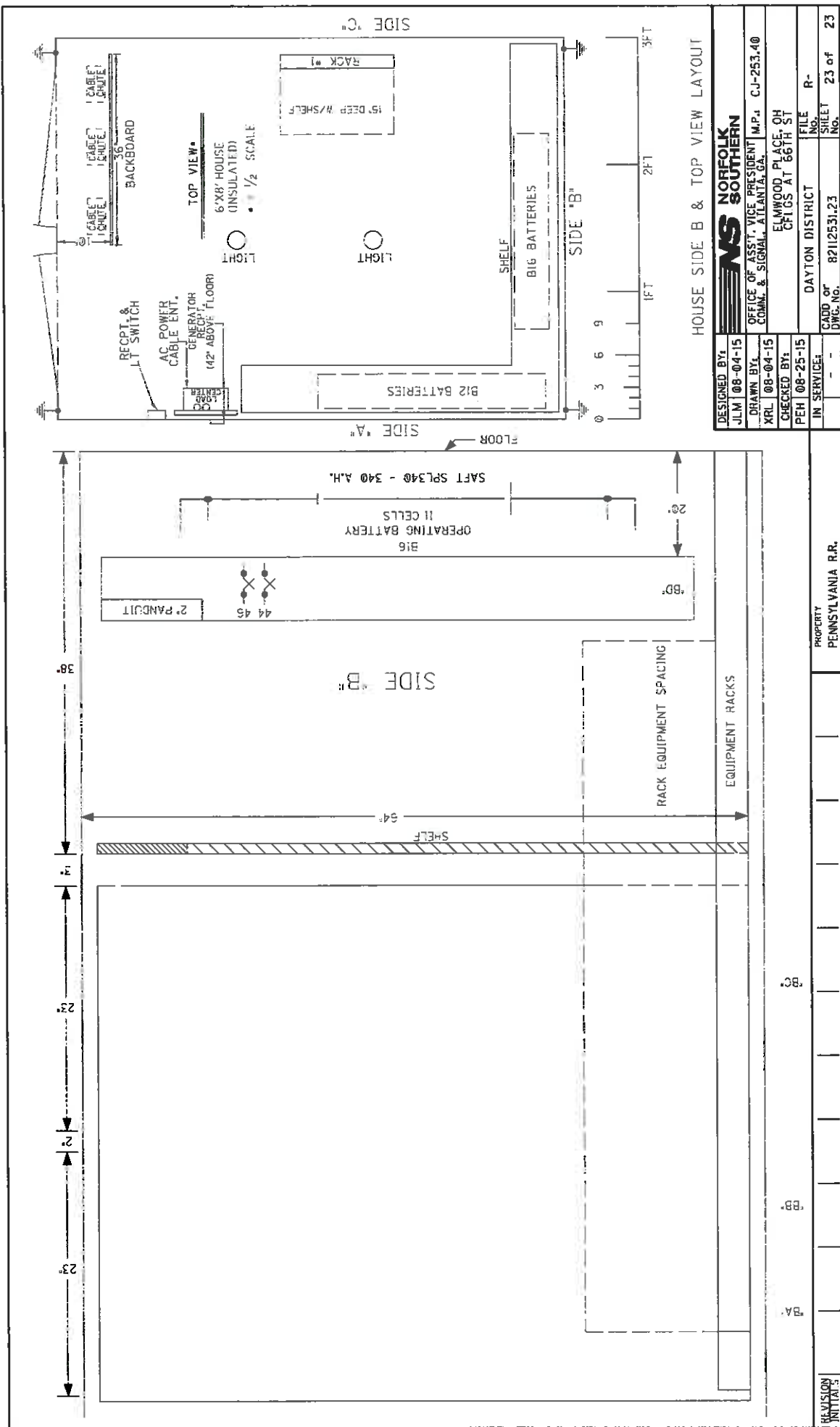
OUT OF SERVICE

HOUSE SIDE C LAYOUT & RACK PLACEMENT

PROPERTY
PENNSYLVANIA R.R.[illegible]



DESIGNED BY	JLM 08-04-15	NORFOLK SOUTHERN
DRAWN BY	XRL 08-04-15	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY	PEH 08-25-15	ELMWOOD PLACE, OH
IN SERVICE		CFCGS AT 66TH ST
FILE NO.	DAYTON DISTRICT	R-
CADD or DWG. No.	8212531.22	SHEET No.
		22 of 23



HOUSE SIDE B & TOP VIEW LAYOUT

DESIGNED BY: JLM 08-04-15	NORFOLK SOUTHERN	FILE NO. R-
DRAWN BY: XRL 08-04-15	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	SHEET No. 23 of 23
CHECKED BY: PEH 08-25-15	ELMWOOD PLACE, OH CHLGS AT 66TH ST	
IN SERVICE:	DAYTON DISTRICT	
	CADD or DWG. No. 82112531-23	


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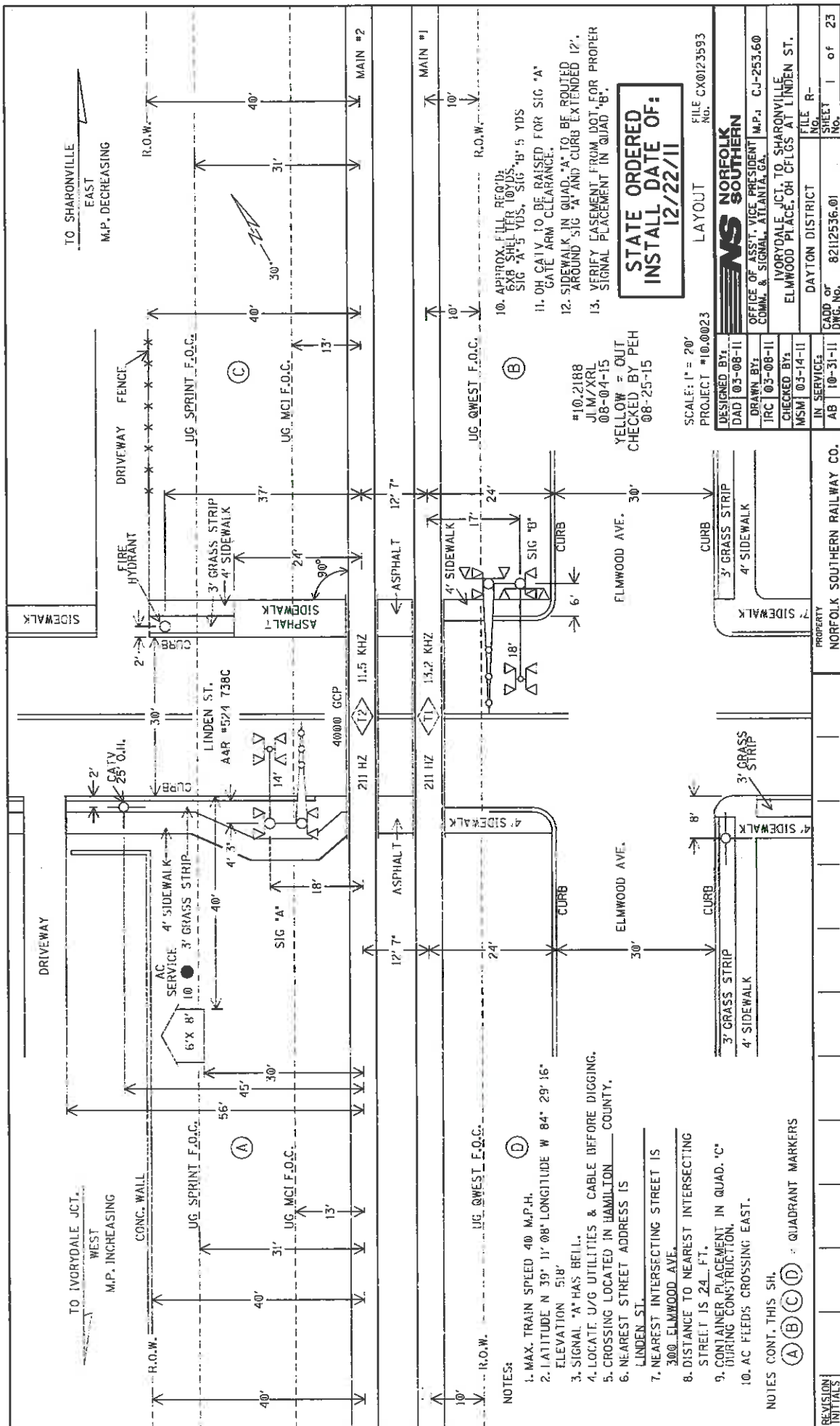
SH. NO.	CONTENTS
NXI	INDEX SHEET
1	LAYOUT
2	PROFILE
3	CABLE PLAN
4	LOAD CENTER
5	RECTIFIER & BATTERY
6	4000 GCP 2-TK CHASSIS & MODULE LAYOUT
7	4000 GCP PROGRAMMING SETUP
8	4000 GCP PROGRAMMING SETUP
9	CONNECTORS FOR TRACK MODULES
10	CPU MODULE, SEAR III, GFT & VHF HOOK-UPS
11	SEAR III PROGRAMMING SETUP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

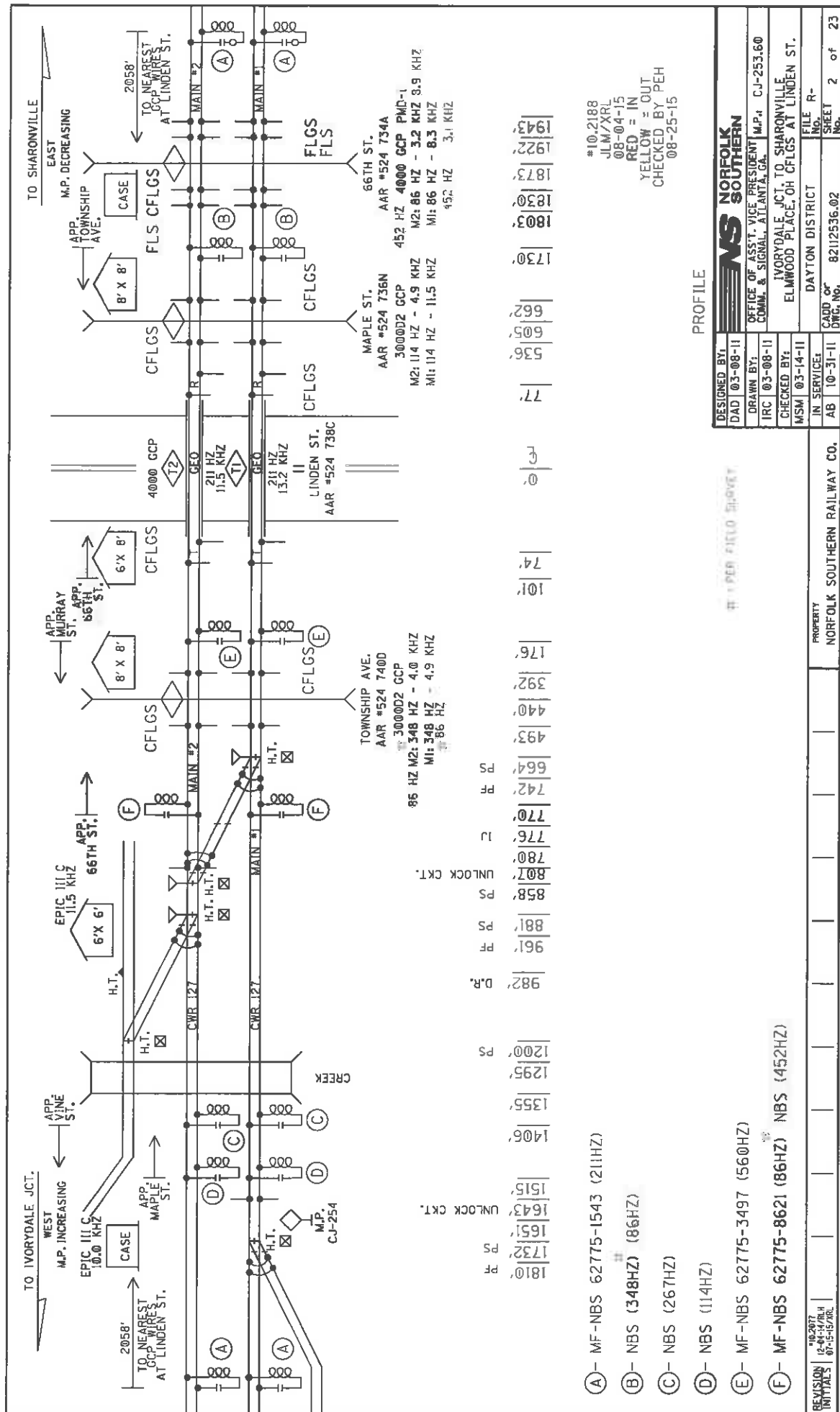
*10-2188
JLM/XRL
08-04-15
RED = IN
YELLOW = OUT
CHECKED BY: PEH
08-25-15

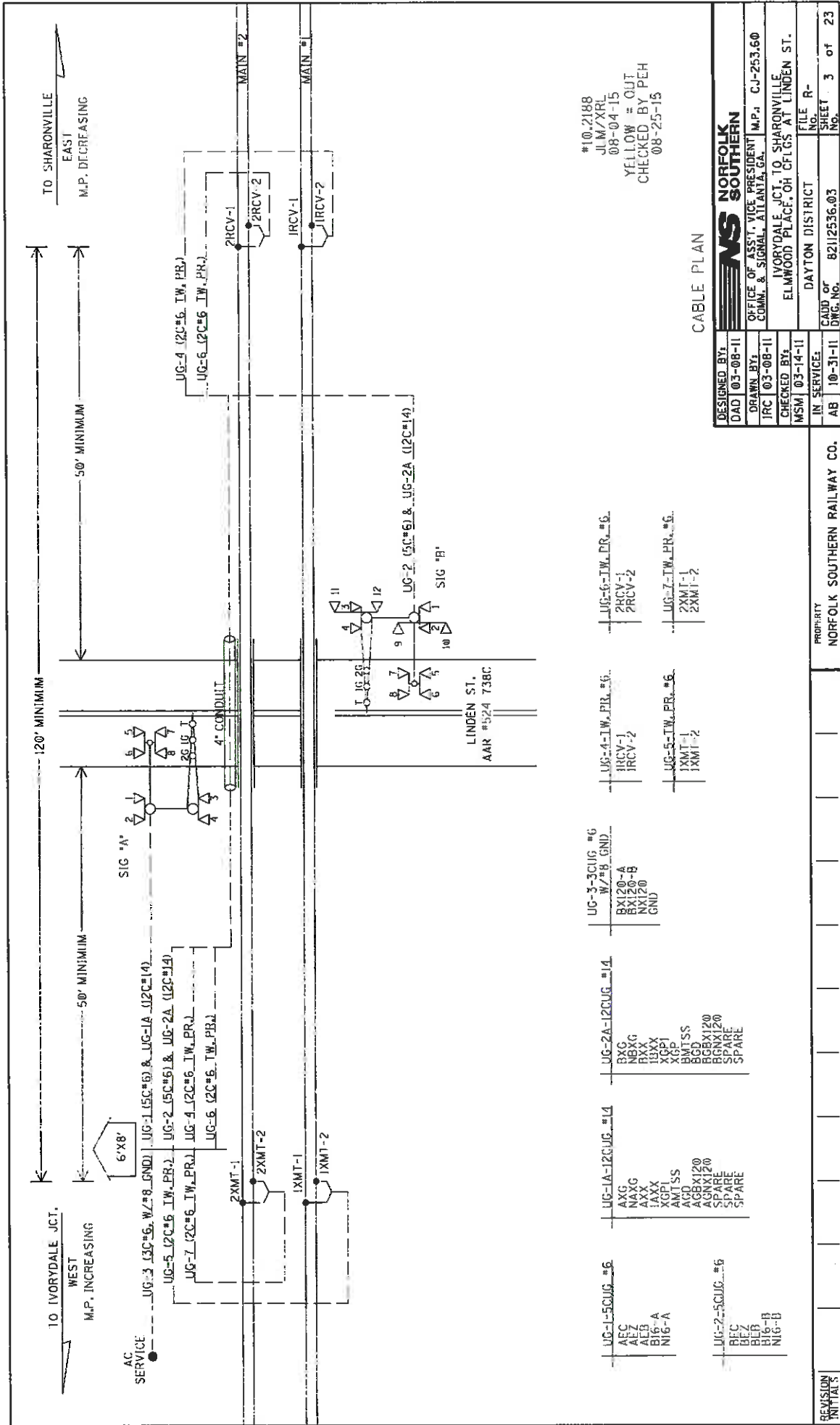
INDEX SHEET

DESIGNED BY: DAD 03-08-11	 NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. IVORYDALE JCT. TO SHARONVILLE ELMWOOD PLACE, OH CFLGS AT LINDEN ST. DAYTON DISTRICT CADD OF DWG. No. 82112536-NXI	FILE No. R-
DRAWN BY: IRC 03-08-11		SHEET No. 1 of 1
CHECKED BY: MSM 03-14-11		
IN SERVICE: AB 10-31-11		
PROPERTY NORFOLK SOUTHERN RAILWAY CO.		

REVISION
INITIALS
DATE
BY







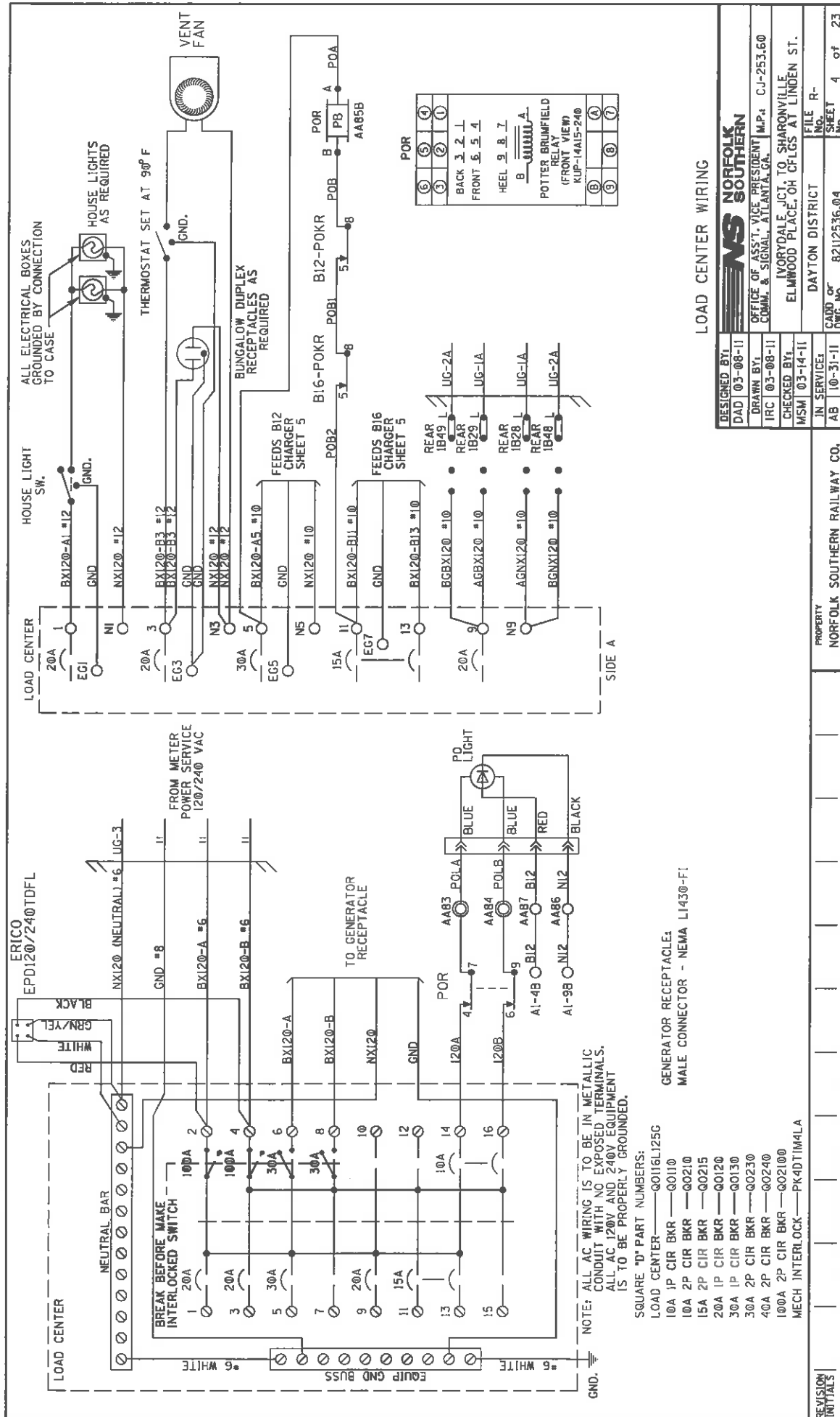
*10-2188
JLM/XRL
08-04-15
YELLOW = OUT
CHECKED BY PEH
08-25-15

CABLE PLAN

DESIGNED BY:	DAD 03-08-11
DRAWN BY:	JRC 03-08-11
CHECKED BY:	MSM 03-14-11
IN SERVICE:	AB 10-31-11
FILE No.	DAYTON DISTRICT
SHEET No.	82112536.03
of	3
23	

NORFOLK SOUTHERN	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
M.P. C-253.60	IVORYDALE JCT. TO SHARONVILLE ELMWOOD PLACE, OH C.F.L.G. AT LINDEN ST.

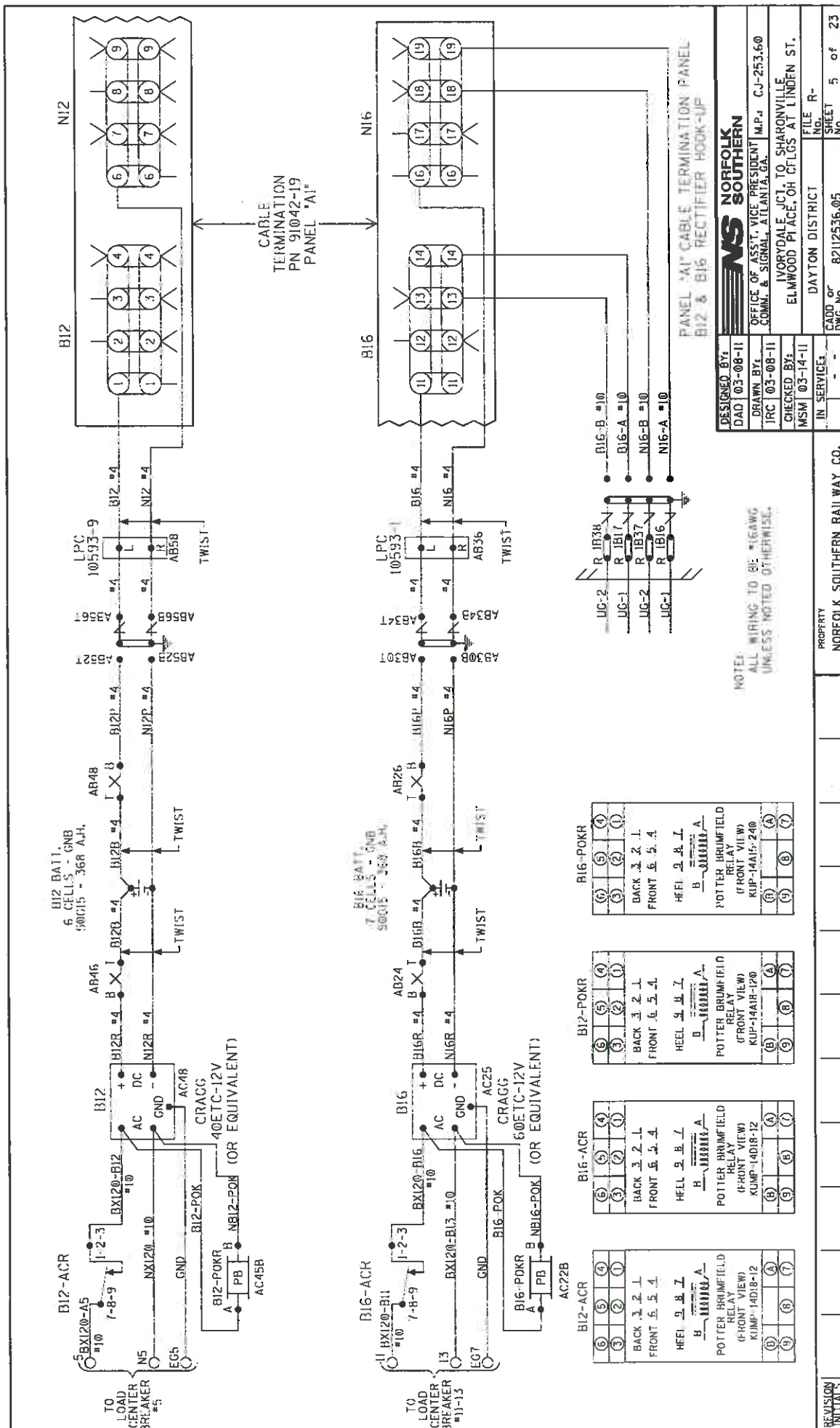
PROPERTY
NORFOLK SOUTHERN RAILWAY CO.



LOAD CENTER WIRING

DESIGNED BY:	DAD 03-08-11
DRAWN BY:	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY:	MSM 03-14-11
IN SERVICE:	AB 10-31-11
FILE NO.:	DAYTON DISTRICT
SHEET NO.:	8212536.04
OF 23	4

PROPERTY	NORFOLK SOUTHERN RAILWAY CO.
REVISION	INITIALS
NO.	1
DATE	03-08-11
BY	DAD
DESCRIPTION	HOUSE LIGHT SW.
NO.	2
DATE	03-08-11
BY	DAD
DESCRIPTION	HOUSE LIGHTS AS REQUIRED
NO.	3
DATE	03-08-11
BY	DAD
DESCRIPTION	TERMOSTAT SET AT 90° F
NO.	4
DATE	03-08-11
BY	DAD
DESCRIPTION	BUNGALOW DUPLEX RECEPTACLES AS REQUIRED
NO.	5
DATE	03-08-11
BY	DAD
DESCRIPTION	FEEDS B12 CHARGER SHEET 5
NO.	6
DATE	03-08-11
BY	DAD
DESCRIPTION	FEEDS B16 CHARGER SHEET 5
NO.	7
DATE	03-08-11
BY	DAD
DESCRIPTION	REAR 1B49 L
NO.	8
DATE	03-08-11
BY	DAD
DESCRIPTION	REAR 1B29 L
NO.	9
DATE	03-08-11
BY	DAD
DESCRIPTION	REAR 1B28 L
NO.	10
DATE	03-08-11
BY	DAD
DESCRIPTION	REAR 1B48 L
NO.	11
DATE	03-08-11
BY	DAD
DESCRIPTION	REAR 1B49 L
NO.	12
DATE	03-08-11
BY	DAD
DESCRIPTION	REAR 1B29 L
NO.	13
DATE	03-08-11
BY	DAD
DESCRIPTION	REAR 1B28 L
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BY	DAD
DESCRIPTION	REAR 1B48 L
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DATE	03-08-11
BY	DAD
DESCRIPTION	REAR 1B49 L
NO.	84
DATE	03-08-11
BY	DAD
DESCRIPTION	REAR 1B29 L
NO.	85
DATE	03-08-11
BY	DAD
DESCRIPTION	REAR 1B28 L
NO.	86
DATE	03-08-11



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 STANDBY
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 HTS (DEFAULT)
NORMAL HT CURRENT (DEFAULT)
NO JUMPER (HEATER DISABLED)

== MAIN AND STANDBY MAY USE R10 IN
TRACK 2 SLOTS (M3 AND M6)

PANEL 'A2' 4000 GCP REDUNDANT
2-TK CHASSIS AND MODULE LAYOUT

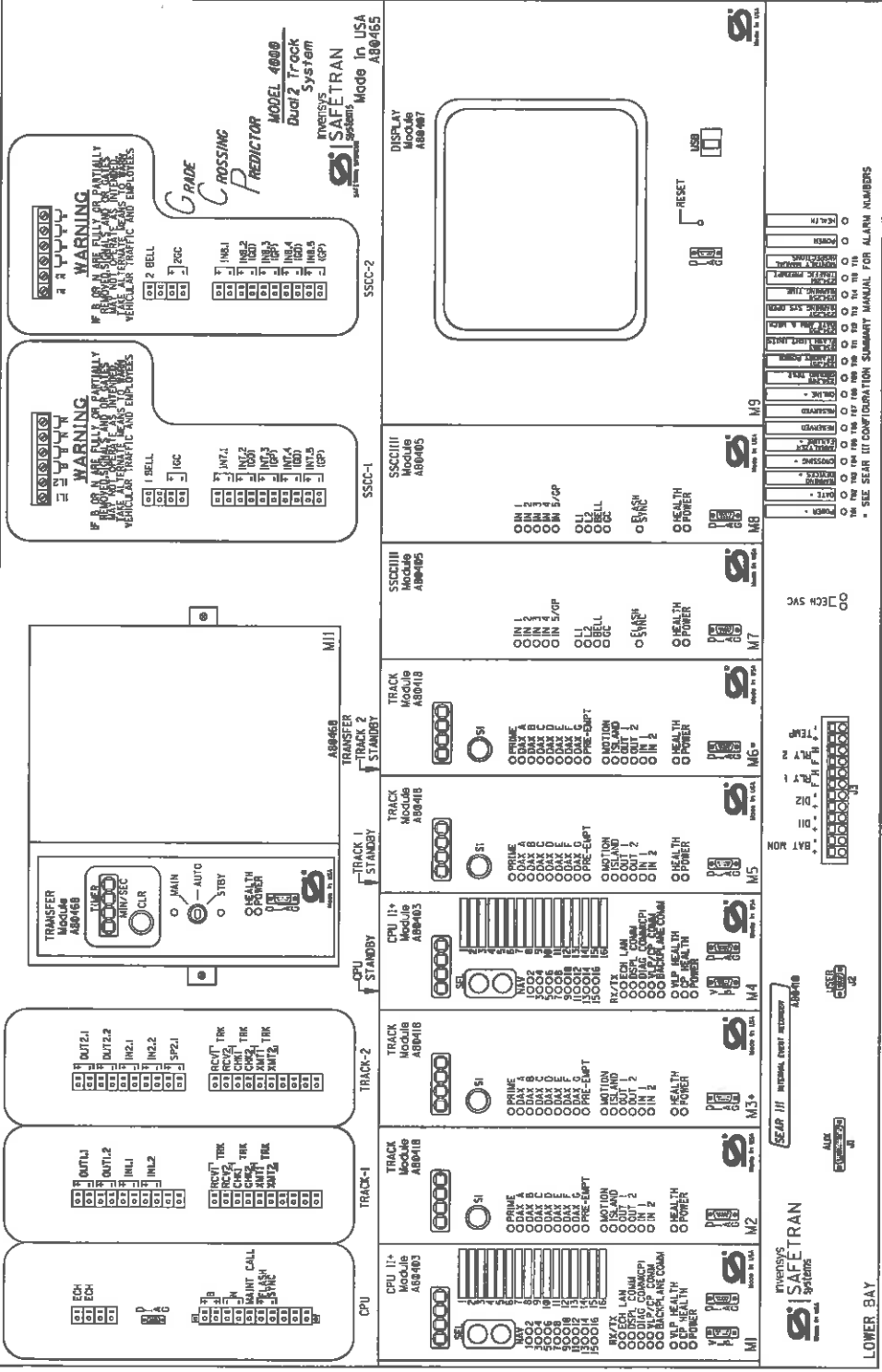
NORFOLK SOUTHERN

OFFICE OF ASST. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA. MAP CJ-253.60

IVORYDALE, GA. TO SHARONVILLE
ELMWOOD PLACE, OH CPGS AT LINDEN ST.

DAYTON DISTRICT
FILE R-

CADD OR
DWS. No. 8212536.06
SHEET 6 of 23



DESIGNED BY:	DAD 03-08-11
DRAWN BY:	JRC 03-08-11
CHECKED BY:	MSM 03-14-11
IN SERVICE:	AB 10-31-11
PROPERTY:	NORFOLK SOUTHERN RAILWAY CO.
REVISION INITIALS:	

Program Report

Location and SIN

DOT Number: 524738C
 Mileage Number: 253.60
 Site Name: LINDEN STREET
 SIN: 755003102316

MCF and Template Selection

MCF Name: GCP-TX-02-1mcf
 MCF Revision: 021
 Template: 1A5 Trk R1

Check Numbers

Office Check No. (DI 4500) 253.60
 Office Check Number: 253.60
 Control Check Number: IF 021
 (based on MCF Revision 021)

Program

BASIC module configuration
 Track 1 Slot 1: Track
 Track 2 Slot 1: Not Used
 Track 3 Slot 1: Not Used
 Track 4 Slot 1: Not Used
 SSOC-1 Slot 1: SSOC-1
 SSOC-2 Slot 1: SSOC-2
 SSOC-3 Slot 1: SSOC-3
 SSOC-4 Slot 1: SSOC-4
 SSOC-5 Slot 1: SSOC-5
 SSOC-6 Slot 1: SSOC-6
 SSOC-7 Slot 1: SSOC-7
 SSOC-8 Slot 1: SSOC-8
 SSOC-9 Slot 1: SSOC-9
 SSOC-10 Slot 1: SSOC-10
 SSOC-11 Slot 1: SSOC-11
 SSOC-12 Slot 1: SSOC-12
 SSOC-13 Slot 1: SSOC-13
 SSOC-14 Slot 1: SSOC-14
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 SSOC-97 Slot 1: SSOC-97
 SSOC-98 Slot 1: SSOC-98
 SSOC-99 Slot 1: SSOC-99
 SSOC-100 Slot 1: SSOC-100

BASIC: MS/GCP operation = Yes
 Track 1: MS/GCP operation = Yes
 Track 2: MS/GCP operation = Yes

BASIC: island operation internal
 Track 1: island used = Internal
 Track 2: island used = Internal

BASIC: Preempt Logic

BASIC: radio Dax links = No
 Radio Dax link A used = No
 Radio Dax link B used = No
 Radio Dax link C used = No
 Radio Dax link D used = No
 Radio Dax link E used = No
 Radio Dax link F used = No
 Radio Dax link G used = No
 Radio Dax link H used = No
 Radio Dax link I used = No
 Radio Dax link J used = No
 Radio Dax link K used = No
 Radio Dax link L used = No
 Radio Dax link M used = No
 Radio Dax link N used = No
 Radio Dax link O used = No
 Radio Dax link P used = No
 Radio Dax link Q used = No
 Radio Dax link R used = No
 Radio Dax link S used = No
 Radio Dax link T used = No
 Radio Dax link U used = No
 Radio Dax link V used = No
 Radio Dax link W used = No
 Radio Dax link X used = No
 Radio Dax link Y used = No
 Radio Dax link Z used = No

BASIC: VitalComms links
 VitalComms link 1 used = No
 VitalComms link 2 used = No

PREDICTORS: track 1
 Track 1: time used = Yes
 Track 1: Dax A used = No
 Track 1: Dax B used = No
 Track 1: Dax C used = No
 Track 1: Dax D used = No
 Track 1: Dax E used = No
 Track 1: Dax F used = No
 Track 1: Dax G used = No
 Track 1: Dax H used = No
 Track 1: Dax I used = No
 Track 1: Dax J used = No
 Track 1: Dax K used = No
 Track 1: Dax L used = No
 Track 1: Dax M used = No
 Track 1: Dax N used = No
 Track 1: Dax O used = No
 Track 1: Dax P used = No
 Track 1: Dax Q used = No
 Track 1: Dax R used = No
 Track 1: Dax S used = No
 Track 1: Dax T used = No
 Track 1: Dax U used = No
 Track 1: Dax V used = No
 Track 1: Dax W used = No
 Track 1: Dax X used = No
 Track 1: Dax Y used = No
 Track 1: Dax Z used = No

PREDICTORS: track 2
 Track 2: time used = Yes
 Track 2: Dax A used = No
 Track 2: Dax B used = No
 Track 2: Dax C used = No
 Track 2: Dax D used = No
 Track 2: Dax E used = No
 Track 2: Dax F used = No
 Track 2: Dax G used = No
 Track 2: Dax H used = No
 Track 2: Dax I used = No
 Track 2: Dax J used = No
 Track 2: Dax K used = No
 Track 2: Dax L used = No
 Track 2: Dax M used = No
 Track 2: Dax N used = No
 Track 2: Dax O used = No
 Track 2: Dax P used = No
 Track 2: Dax Q used = No
 Track 2: Dax R used = No
 Track 2: Dax S used = No
 Track 2: Dax T used = No
 Track 2: Dax U used = No
 Track 2: Dax V used = No
 Track 2: Dax W used = No
 Track 2: Dax X used = No
 Track 2: Dax Y used = No
 Track 2: Dax Z used = No

GCPs: track 1
 Track 1: GCP Frequency = 211.458 MHz
 Track 1: Approx. Distance = 1.5 mi
 Track 1: GCP Transmitter Level = Medium
 Track 1: Island Connection = Isolated
 Track 1: Island Distance = 15.7 ft
 Track 1: Computed Distance = 25.2 ft
 Track 1: Linearization Steps = 33

GCPs: track 2
 Track 2: Inbound PS Sensitivity = Off
 Track 2: Speed Limiting Used = Normal
 Track 2: Outbound PS Sensitivity = 20 sec
 Track 2: Trailing Switch Logic = 0 sec
 Track 2: Post Joint Delay Time = 15 sec
 Track 2: Adv. Approach Delay = 15 sec
 Track 2: Cancel Pickup Delay = 15 sec

GCPs: track 3
 Track 3: Inbound PS Sensitivity = Off
 Track 3: Speed Limiting Used = Normal
 Track 3: Outbound PS Sensitivity = 20 sec
 Track 3: Trailing Switch Logic = 0 sec
 Track 3: Post Joint Delay Time = 15 sec
 Track 3: Adv. Approach Delay = 15 sec
 Track 3: Cancel Pickup Delay = 15 sec

GCPs: track 4
 Track 4: Inbound PS Sensitivity = Off
 Track 4: Speed Limiting Used = Normal
 Track 4: Outbound PS Sensitivity = 20 sec
 Track 4: Trailing Switch Logic = 0 sec
 Track 4: Post Joint Delay Time = 15 sec
 Track 4: Adv. Approach Delay = 15 sec
 Track 4: Cancel Pickup Delay = 15 sec

GCPs: track 5
 Track 5: Inbound PS Sensitivity = Off
 Track 5: Speed Limiting Used = Normal
 Track 5: Outbound PS Sensitivity = 20 sec
 Track 5: Trailing Switch Logic = 0 sec
 Track 5: Post Joint Delay Time = 15 sec
 Track 5: Adv. Approach Delay = 15 sec
 Track 5: Cancel Pickup Delay = 15 sec

GCPs: track 6
 Track 6: Inbound PS Sensitivity = Off
 Track 6: Speed Limiting Used = Normal
 Track 6: Outbound PS Sensitivity = 20 sec
 Track 6: Trailing Switch Logic = 0 sec
 Track 6: Post Joint Delay Time = 15 sec
 Track 6: Adv. Approach Delay = 15 sec
 Track 6: Cancel Pickup Delay = 15 sec

GCPs: track 7
 Track 7: Inbound PS Sensitivity = Off
 Track 7: Speed Limiting Used = Normal
 Track 7: Outbound PS Sensitivity = 20 sec
 Track 7: Trailing Switch Logic = 0 sec
 Track 7: Post Joint Delay Time = 15 sec
 Track 7: Adv. Approach Delay = 15 sec
 Track 7: Cancel Pickup Delay = 15 sec

GCPs: track 8
 Track 8: Inbound PS Sensitivity = Off
 Track 8: Speed Limiting Used = Normal
 Track 8: Outbound PS Sensitivity = 20 sec
 Track 8: Trailing Switch Logic = 0 sec
 Track 8: Post Joint Delay Time = 15 sec
 Track 8: Adv. Approach Delay = 15 sec
 Track 8: Cancel Pickup Delay = 15 sec

GCPs: track 9
 Track 9: Inbound PS Sensitivity = Off
 Track 9: Speed Limiting Used = Normal
 Track 9: Outbound PS Sensitivity = 20 sec
 Track 9: Trailing Switch Logic = 0 sec
 Track 9: Post Joint Delay Time = 15 sec
 Track 9: Adv. Approach Delay = 15 sec
 Track 9: Cancel Pickup Delay = 15 sec

GCPs: track 10
 Track 10: Inbound PS Sensitivity = Off
 Track 10: Speed Limiting Used = Normal
 Track 10: Outbound PS Sensitivity = 20 sec
 Track 10: Trailing Switch Logic = 0 sec
 Track 10: Post Joint Delay Time = 15 sec
 Track 10: Adv. Approach Delay = 15 sec
 Track 10: Cancel Pickup Delay = 15 sec

GCPs: track 1
 Track 1: MS/GCP Control = No
 Track 1: MS Sensitivity Level = 300
 Track 1: Warmup Time-Balast Comp = High
 Track 1: LOW EX Adjustment = 39
 Track 1: Bidirectional Pass thru U = No
 Track 1: Discrete Aft. of Train Stop = No
 Track 1: E2 Correction Used = Yes

ISLAND: track 1
 Track 1: Island Frequency = 13.2 kHz
 Track 1: Island Pickup Delay = 15 sec
 Track 1: Island Cancel Delay = 15 sec

ISLAND: track 2
 Track 2: Island Frequency = 11.5 kHz
 Track 2: Island Pickup Delay = 15 sec
 Track 2: Island Cancel Delay = 15 sec

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

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

ADVANCED: track 1
 Track 1: ADVANCED: MS Restart Used = No
 Track 1: ADVANCED: out of service
 Track 1: ADVANCED: display 005 IP's
 Track 1: ADVANCED: timeout = 15 sec


ADVANCED: track 2
 Track 2: ADVANCED: MS Restart Used = No
 Track 2: ADVANCED: out of service
 Track 2: ADVANCED: display 005 IP's
 Track 2: ADVANCED: timeout = 15 sec

ADVANCED: track 3
 Track 3: ADVANCED: MS Restart Used = No
 Track 3: ADVANCED: out of service
 Track 3: ADVANCED: display 005 IP's
 Track 3: ADVANCED: timeout = 15 sec

ADVANCED: track 4
 Track 4: ADVANCED: MS Restart Used = No
 Track 4: ADVANCED: out of service
 Track 4: ADVANCED: display 005 IP's
 Track 4: ADVANCED: timeout = 15 sec

ADVANCED: track 5
 Track 5: ADVANCED: MS Restart Used = No
 Track 5: ADVANCED: out of service
 Track 5: ADVANCED: display 005 IP's
 Track 5: ADVANCED: timeout = 15 sec

4000 GCP PROGRAMMING SETUP

DESIGNED BY:	DAD 03-08-11	 NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: CJ-253.60 IVORYDALE JCT. TO SHARONVILLE ELWOOD PLACE, OH CFLGS AT LINDEN ST. DAYTON DISTRICT FILE R- SHEET 7 of 23
DRAWN BY:	IRC 03-08-11	
CHECKED BY:	WSM 03-14-11	
IN SERVICE:	AB 10-31-11	

ADVANCED	Internal I/O 1
0	Not Used
1	Not Used
2	Not Used
3	Not Used
4	Not Used
5	Not Used
6	Not Used
7	Not Used
8	Not Used
9	Not Used
10	Not Used
11	Not Used
12	Not Used
13	Not Used
14	Not Used
15	Not Used
16	Not Used
17	Not Used
18	Not Used
19	Not Used
20	Not Used
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22	Not Used
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33	Not Used
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37	Not Used
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191	Not Used
192	Not Used
193	Not Used
194	Not Used
195	Not Used
196	Not Used
197	Not Used
198	Not Used
199	Not Used
200	Not Used
201	Not Used
202	Not Used
203	Not Used
204	Not Used
205	Not Used
206	Not Used
207	Not Used

[illegible]

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

```

SSCC      = Yes
SSCC1+2  = Yes Coupled = Yes
Min Activation = 0 sec
Min Activation Cancel = 2 min
Bell on Gate Rising = No
Write Bell on Gate Down = No
SSCC1V Control = Used

```

[illegible]

```

C1 = 0
activation = AND 1 XR
gateDelay = 1 sec
number of cps = 8
number of Cps = 8
Cash Rate = 40
Low Battery Detection = No
Flash Sync slave = No
Invert Gate Output = No
Lamp Neutral test = On

```

```
AUX-2 and CtrUsed = No
OUTPUT: assignment page 1
OUT 1.1 = Not Used
OUT 1.2 = Not Used
OUT 2.1 = Not Used
OUT 2.2 = Not Used
```

```

// PUT = Not Used
// 1.2 = Not Used
// 2.2 = Not Used
assignment done
end

```

[illegible]

```

SEAR Subnode = 3
SEAR 1 = Gnd Fit Tester 1
SEAR 2 = Not Used
SEAR 3 = Ground Fault Test
SEAR 4 = AC Control

```

[illegible]

```
SEARCH: 1-1 Not Used slot 1-4 inputs  
        2-2 =Not Used  
        3-3 =Not Used  
        4-4 =Not Used  
        5-5 =Not Used  
        6-6 =Not Used  
        7-7 =Not Used
```

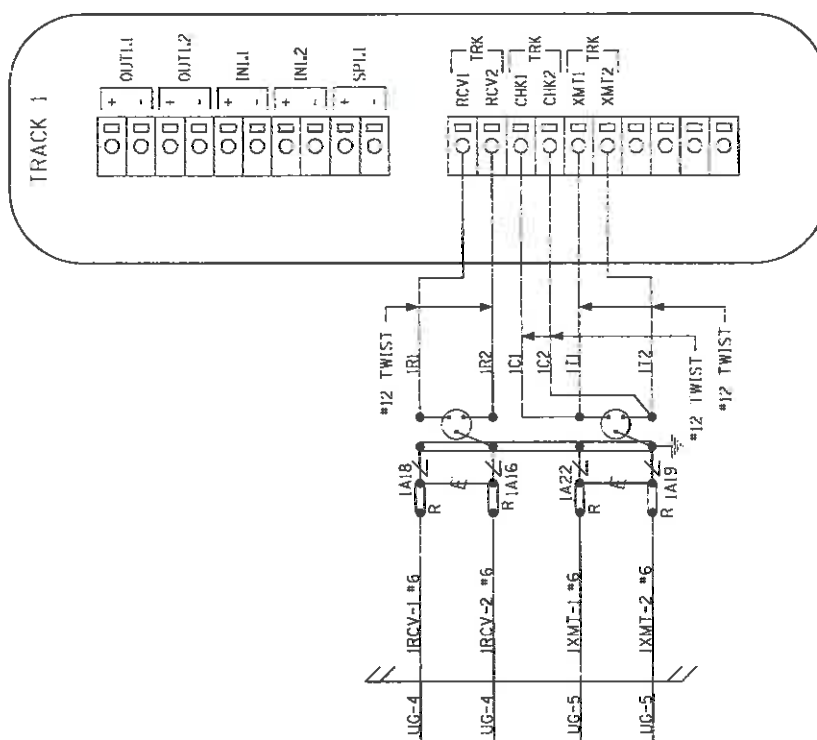
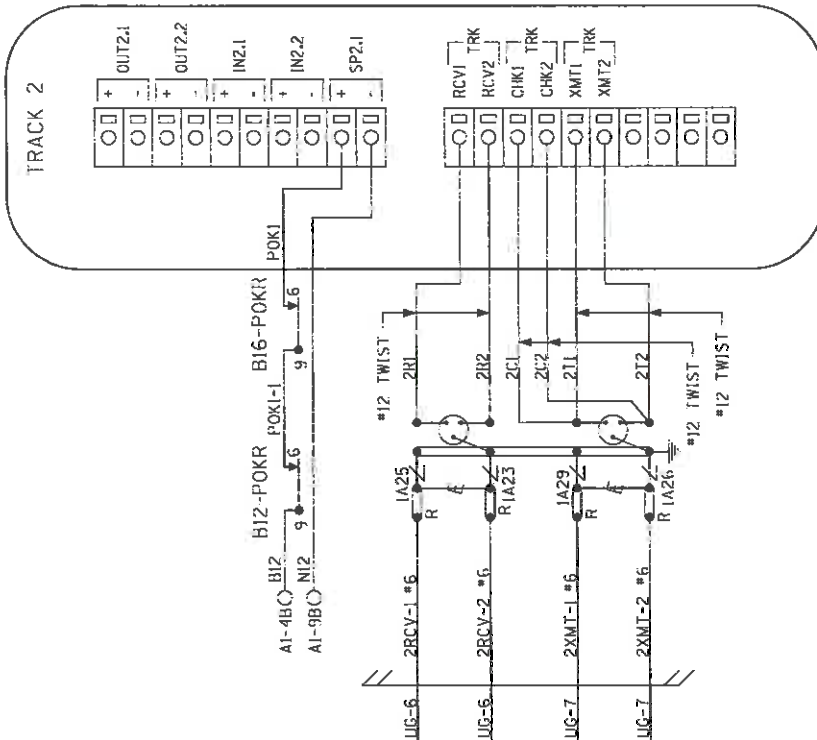
```
SEAR: Inputs slot 5  
      5/2 = Not Used  
  
SEAR: Inputs slot 6  
      6/2 = Not Used  
  
SEAR: slot 7-8 Inputs  
      7/2 = Not Used  
      8/2 = Not Used  
      9/2 = Not Used  
      0/2 = Not Used  
      1/2 = Not Used  
      2/2 = Not Used  
      3/2 = Not Used  
      4/2 = Not Used  
      5/2 = Not Used  
      6/2 = Not Used  
      7/2 = Not Used  
      8/2 = Not Used  
      9/2 = Not Used  
  
SITE: programming  
radio Subnode = 0xFF  
Low Password = 0xFF  
Battery Enabled = 0xFF
```

Configuration Package File

Filename: 82112536.pac

4000 GCP PROGRAMMING SETUP

[illegible]



PANEL "A2" CONNECTORS FOR MODULES (A80418)

DESIGNED BY:	DAD 03-08-11		FILE R-
DRAWN BY:	JRC 03-08-11		SHEET 9 of 23
CHECKED BY:	MSM 03-14-11		
IN SERVICE:	AB 10-31-11		
NOTE:		DAYTON DISTRICT	
ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.		CADD or 82112536.09	
		DWG. No.	
		PROPERTY	
		NORFOLK SOUTHERN RAILWAY CO.	
		REVISION INITIALS	

OFFICE OF ASS'T. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA.
M.P.1 C.J-253.60
IVORYDALE JCT. TO SHARONVILLE
ELMWOOD PLACE, OH CFLGS AT LINDEN ST.

TO CONFIGURE SEARCH/PRESS SITE SETUP KEY.
PRESS ENTER AFTER SELECTION HAS BEEN MADE.

SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
DATE/TIME	
AUTOMATIC DST ADJUSTMENT	YES
TIME ZONE	EST
SITE NAME	LINDEN ST.
MILEPOST	CJ 253.60
DOT #	524738C
TESTER TYPE	CROSSING
DATE FORMAT	MM-DD-YYYY
TEMP FORMAT	FAHRENHEIT
INDICATE HOLD (SEC)	0
INDICATE REFRESH (SEC)	60
SITE ATCS	7.550.031.023.03.01
SITE TYPE	NO COMMUNICATION
OFFICE ATCS ADDRESS	2.550.00.00000
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 (EQUIP ON)
RADIO ATCS ADDR	7.RRR.LLL.GGG.01.01
PHONE #	(OFFICE NUMBER)
INIT STRING	
FIELD COMM	NONE
USER PORT	BAUD 57600, N, B, 1, NONE
AUX PORT	BAUD 9600, N, B, 1, NONE

VERIFY NUMBER OF BULBS: SENSOR #1	
CURR 1: LAMP SET UP	6 BULBS
CURR 2: LAMP SET UP	6 BULBS

VERIFY NUMBER OF BULBS: SENSOR #2	
CURR 1: LAMP SET UP	8 BULBS
CURR 2: LAMP SET UP	8 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	
ENTRANCE GATES	2
GATES CONTROLLED BY FOREIGN RR	
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	738
ACTIVATION TIMEOUT (SECONDS)	60
ILOD MODULES	2
ANY LED BULBS USED	NO
AUTO INSPECTIONS	NO
BELL SENSORS	1
BELL SENSOR TSS1	YES
BELL SENSOR TSS2	NO
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 GFTI	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
FULL TEST LEDS	NO
EDIT ILOD SENSORS	NO
EDIT VHF SETTINGS	NO
GDPMK ATCS SUBNOID	16

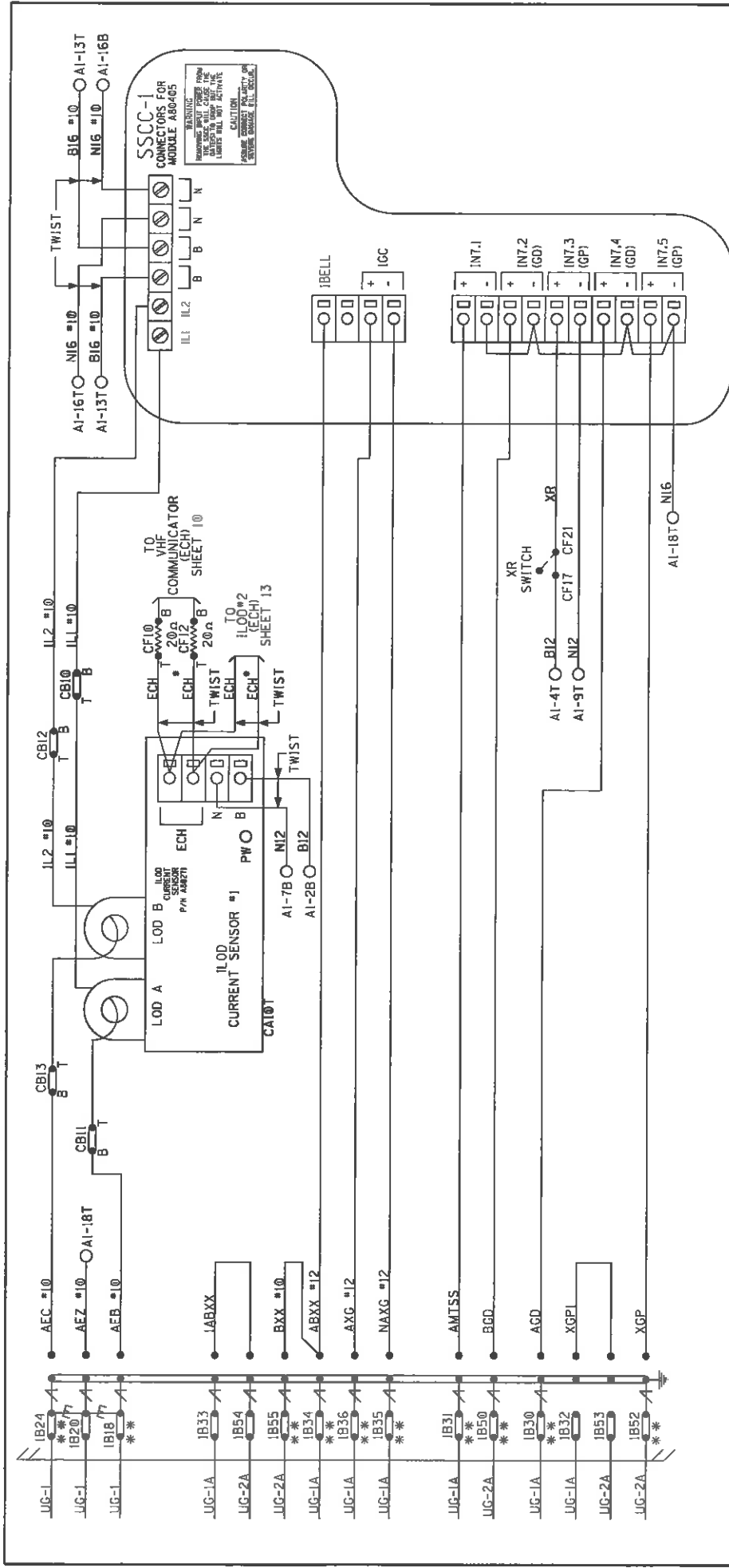
NOTES:

- = 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:	DAD 03-08-11
DRAWN BY:	IRC 03-08-11
CHECKED BY:	MSM 03-14-11
IN SERVICE:	AB 10-31-11

NORFOLK SOUTHERN	
OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: CJ-253.60	
IVORYDALE, JCT. TO SHARONVILLE ELMWOOD PLACE, OH CFLCS AT LINDEN ST.	
FILE R-	DAYTON DISTRICT
CADD or DWG. No.	82112536.11
SHEET No.	11 of 23



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

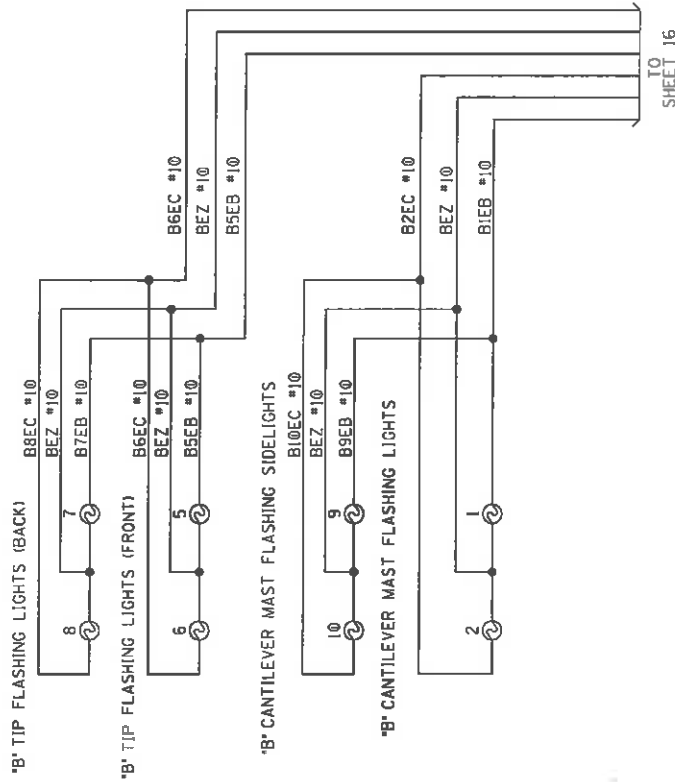
* = ECHELON CONNECTIONS NOT TO EXCEED 53' IN LENGTH AND TOTAL LENGTH NOT TO EXCEED 430' WITH A MAXIMUM OF 8 NODES. RECOMMEND USE BELDEN WIRE CABLE #8461 OR EQUIVALENT.

** = 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.

PANEL 'A2' CONNECTORS FOR SSCC-1 MODULE (A80405)
ILOD #1 (A80271) HOOK-UP

DESIGNED BY:		NORFOLK SOUTHERN	
DAD	03-08-11	OFFICE OF ASST. VICE PRESIDENT	MLP
DRAWN BY:	03-08-11	COMM. & SIGNAL, ATLANTA, GA.	CJ-253.60
CHECKED BY:	03-08-11	IVORYDALE JCT. TO SHARONVILLE	
MSM	03-14-11	ELMWOOD PLACE, OH CFLGS AT LINDEN ST.	
IN SERVICE:	AB	DAYTON DISTRICT	FILE R-
NO.	10-31-11	CADD or DWG. No.	8212536.12
SHEET	12	of	23

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

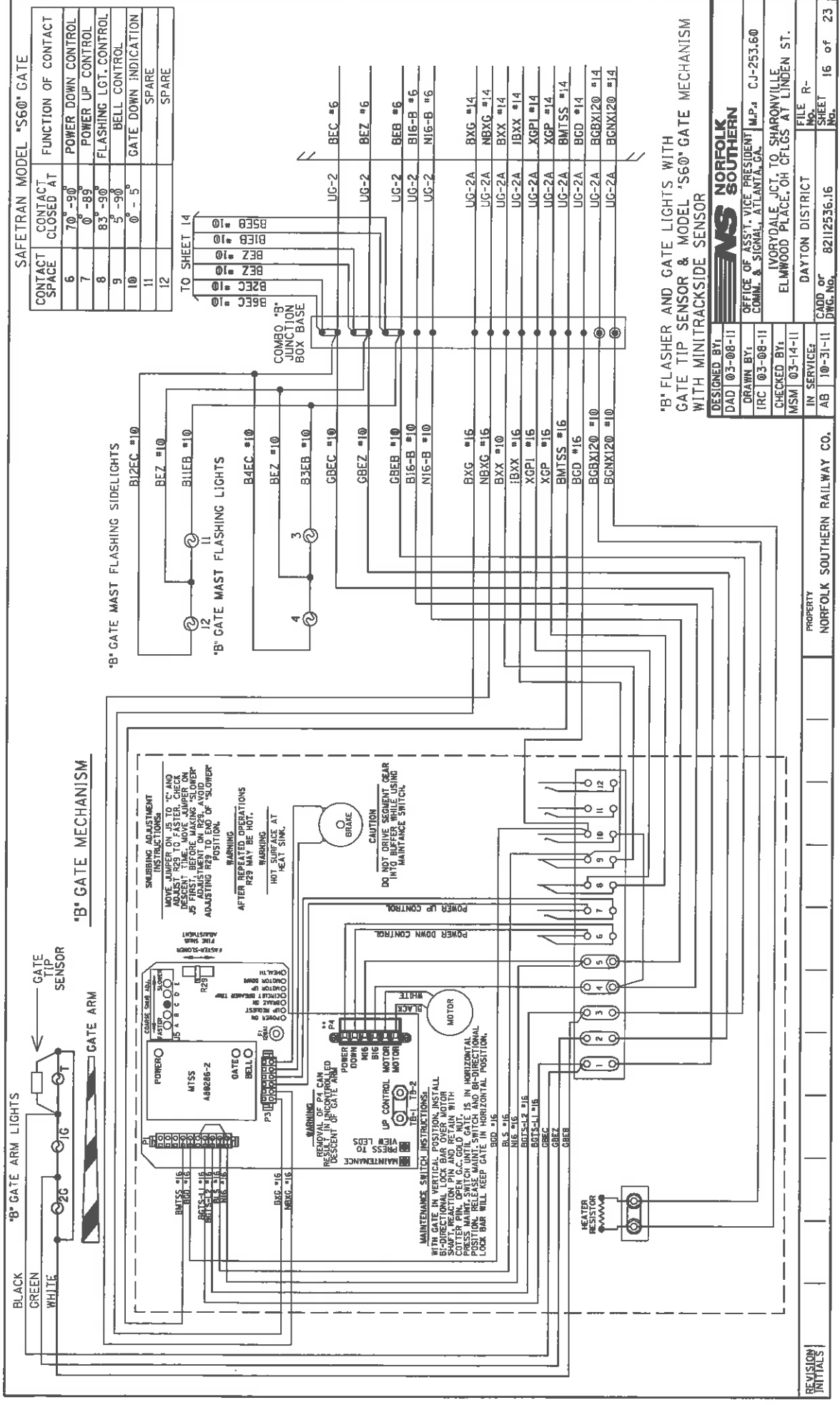


CANTILEVER FLASHER LIGHTS

DESIGNED BY:	DAD 03-08-11	NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. IVORYDALE, CT. TO SHARONVILLE ELMWOOD PLACE, OH CFLGS AT LINDEN ST. DAYTON DISTRICT FILE NO. 8212536.14 SHEET 14 of 23
DRAWN BY:	JRC 03-08-11	
CHECKED BY:	MSM 03-14-11	
IN SERVICE:	AB 10-31-11	

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

REVISION
INITIALS



'B' FLASHER AND GATE LIGHTS WITH
GATE TIP SENSOR & MODEL 'S60' GATE MECHANISM
WITH MINITRACKSIDE SENSOR

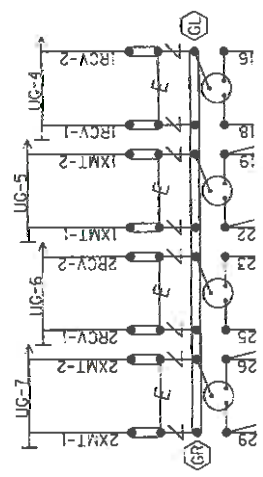
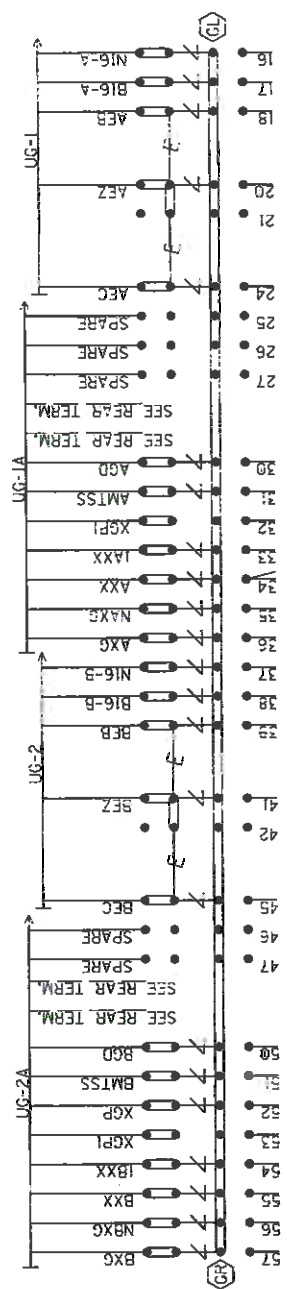
DESIGNED BY:	DAD 03-08-11
DRAWN BY:	OFFICE OF ASST. VICE PRESIDENT
CHECKED BY:	CMAL & SIGNAL, ATLANTA, GA
IN SERVICE:	MSM 03-14-11
FILE NO.:	DAYTON DISTRICT
SHEET NO.:	82112536.16
NO. OF SHEETS:	16 of 23



IVORYDALE JCT. TO SHARONVILLE
ELMWOOD PLACE, OH CFLGS AT LINDEN ST.

REVISION	INITIALS	PROPERTY	NORFOLK SOUTHERN RAILWAY CO.	FILE NO.	SHEET NO.	NO. OF SHEETS
					16	23

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



= Heavy Duty Equalizer (022700-1X)
 = Clearview (022585-1X)
 = Lighting (022585-1X)
 = 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: DAD 03-08-11	NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.1 CJ-253.60 IVORYDALE, JCT. TO SHARONVILLE ELMWOOD PLACE, OH CFIGS AT LINDEN ST. FILE R- DAYTON DISTRICT CADD OF DWG. No. 82112536.17 SHEET 17 of 23
DRAWN BY: JRC 03-08-11	
CHECKED BY: MSM 03-14-11	
IN SERVICE: AB 10-31-11	
PROPERTY NORFOLK SOUTHERN RAILWAY CO.	


“VI”

"1B"



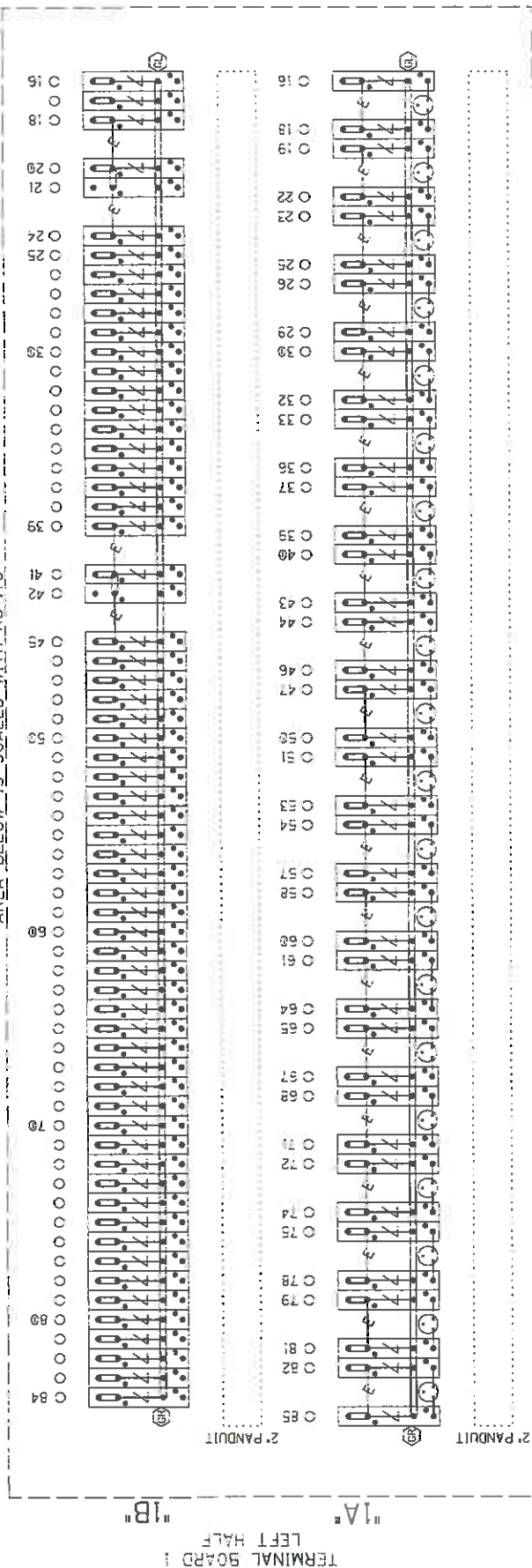
**** = CLOSED DURING WINTER MONTHS**

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

DESIGNED BY:	DAD 03-08-11	 NORFOLK SOUTHERN OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. MJP CJ-253.60 IVORYDALE, JCT. TO SHARONVILLE ELMWOOD PLACE, OH CPLGS AT LINDEN ST. DAYTON DISTRICT FILE R-	
	DRAWN BY:		
	IRC 03-08-11		
	CHECKED BY:		
	MSM 03-14-11		
	IN SERVICE:		
	PROPERTY		
AB 10-31-11	82112536.18	18 of 23	
REVISION	NORFOLK SOUTHERN RAILWAY CO.		
INITIALS			

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)


Clear view
Lightning Arrestor
(022585-IX)

LPG-10550-51

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:	DAD 03-08-11	 NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: CJ-253.60 IVORYDALE JCT. 10 SHARONVILLE ELWOOD PLACE, OH CFLGS AT LINDEN ST.	
DRAWN BY:	JRC 03-08-11		
CHECKED BY:	MSM 03-14-11		
IN SERVICE:	AB 10-31-11		
FILE NO.	DAYTON DISTRICT		
SHEET No.	82112536.19	SHEET No.	19 of 23

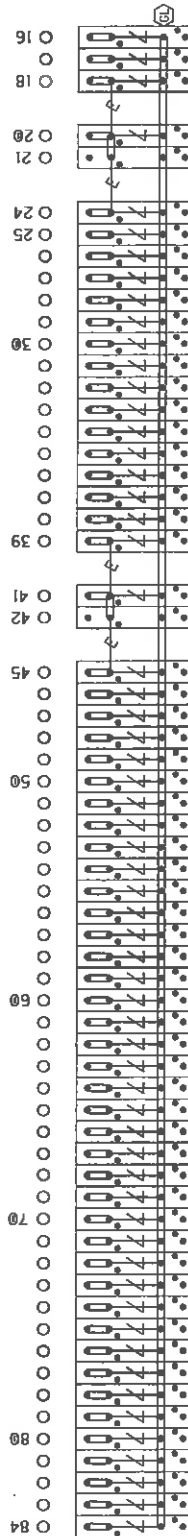
PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

REVISION
INITIALS

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




2' PANDUIT

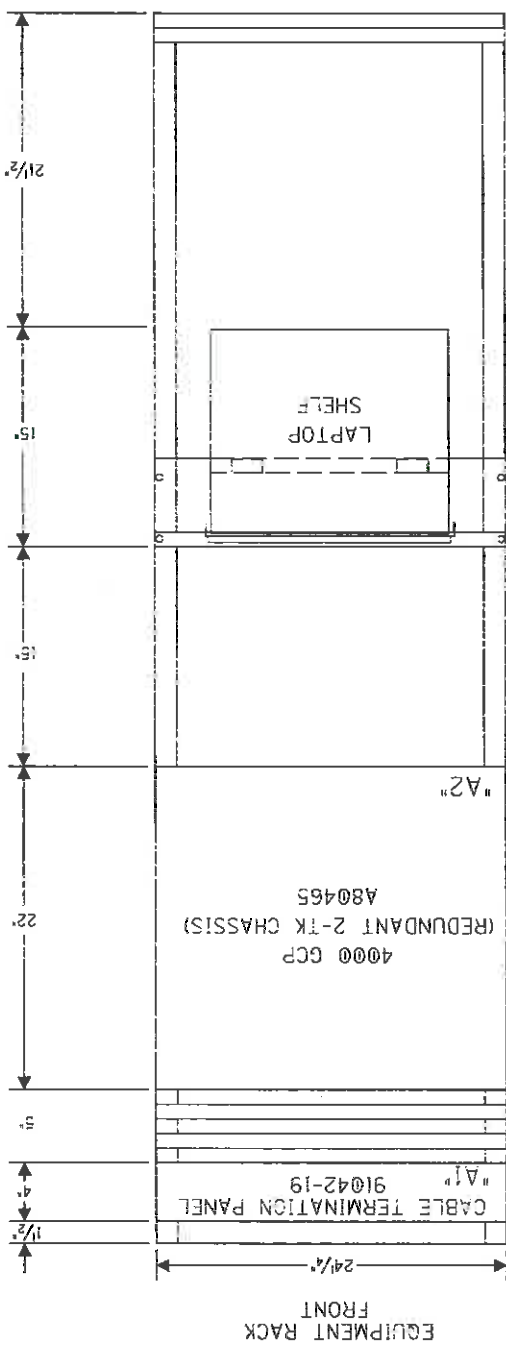
⊥ = Heavy Duty Equalizer
(022700-IX)
Clearview
Z = Lightning Arrestor
(022585-IX)
⊙ = LPC-10560-51

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

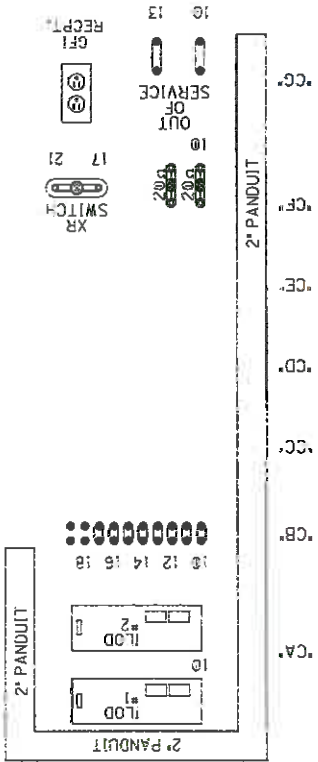
= INDICATES PLACEMENT
OF PANDUIT

TERMINAL BOARD 1
RIGHT ROW
FARADAY SHIELD DETAIL - 1C

DESIGNED BY: DAD 03-08-11	 NORFOLK SOUTHERN	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P. CJ-253.60
DRAWN BY: IRC 03-08-11		IVORYDALE JCT. TO SHARONVILLE ELMWOOD PLACE, OH CFLGS AT LINDEN ST.
CHECKED BY: MSM 03-14-11		DAYTON DISTRICT
IN SERVICE: AB 10-31-11		FILE R- CADD OF DWG. NO. 82112536.20
PROPERTY NORFOLK SOUTHERN RAILWAY CO.		SHEET No. 20 of 23



SIDE "C"

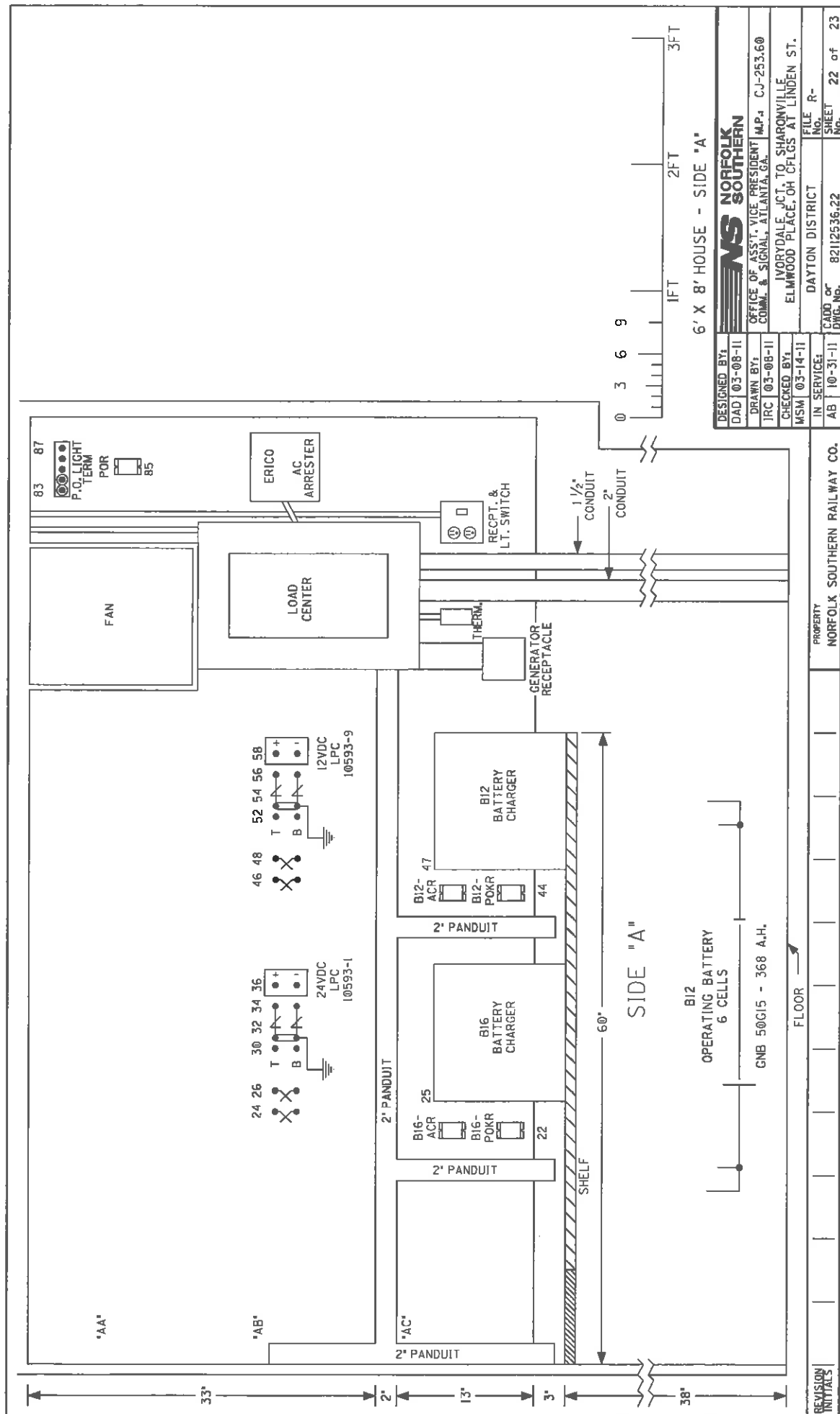


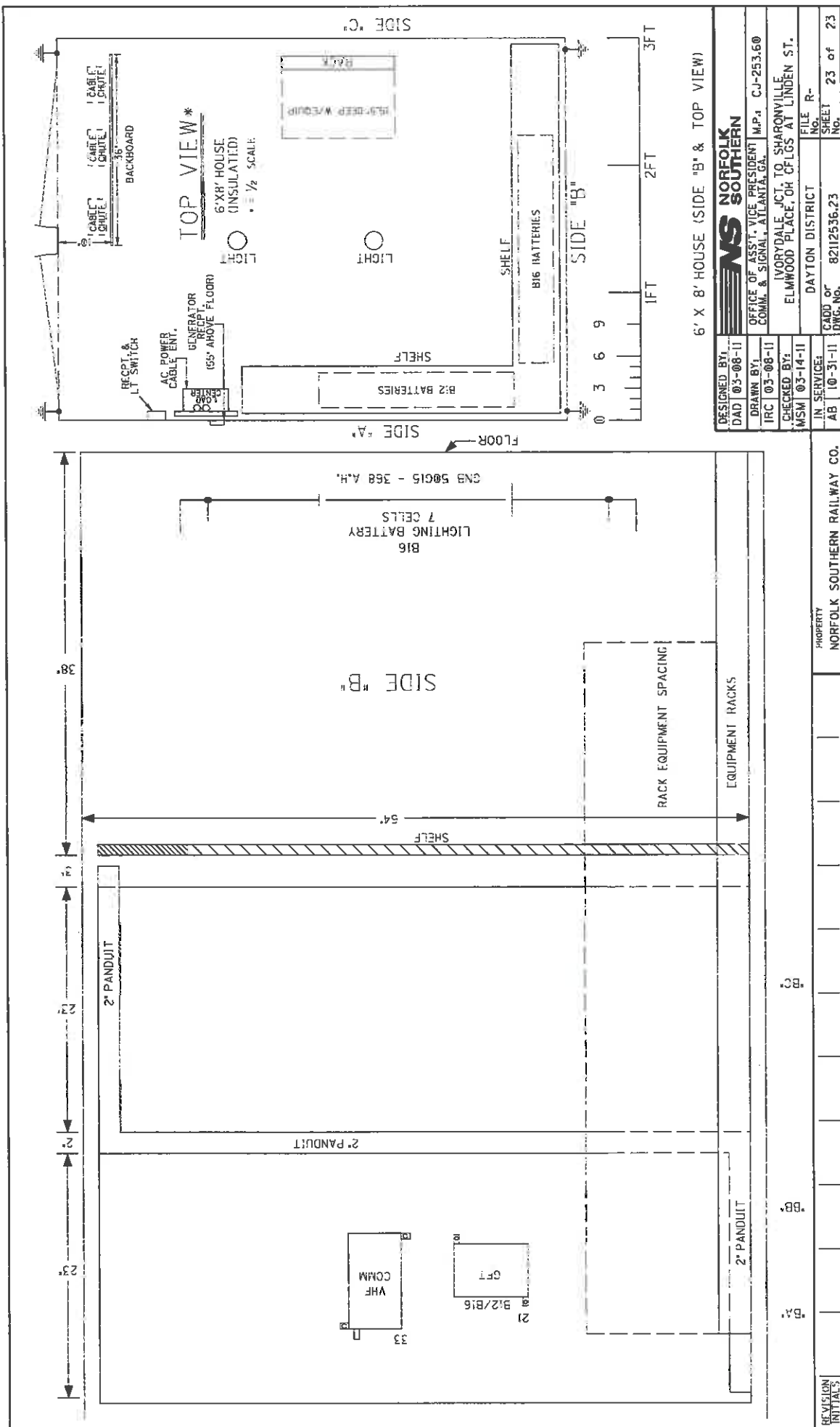
RACK PLACEMENT
6' X 8' HOUSE - SIDE "C"

DESIGNED BY:	DAD 03-08-11	NORFOLK SOUTHERN	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-253.60
DRAWN BY:	JRC 03-08-11		IVORYDALE JCT. TO SHARONVILLE ELMWOOD PLACE, OH CFLGS AT LINDEN ST.	
CHECKED BY:	MSM 03-14-11		DAYTON DISTRICT	FILE NO. R-
IN SERVICE:	AB 10-31-11		CADD OF 82112536.21	SHEET No. 21 of 23

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

REVISION
INITIALS







OHIO RAIL DEVELOPMENT COMMISSION

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

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

June 22, 2015

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

RE: Hamilton County – 66th Street, DOT # 524734A, PID# 100180

Dear Mr. Klinger:

Stephen

A diagnostic review was held at the above grade crossing on September 27, 2013. The crossing has been recommended for the installation of lights and gates.

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

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

A Project Manager will be assigned for this project prior to construction authorization. If you have any questions you may contact me at (614) 644-0313 or catherine.stout@dot.ohio.gov.

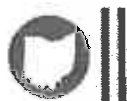
Sincerely,

Cathy Stout

Project Manager

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

Attachment: 1 (diagnostic review form)



www.rail.ohio.gov

phone: 614.644.0306

IMPROVING RAIL TODAY FOR TOMORROW'S ECONOMY



Diagnostic Review Team Survey

Reason for Survey:

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

CJ Corridor

Date: 9/27/13

Location Data

Street or Road Name: 66th Street		
Route/Road Number (i.e. Twp., Co., SR or US)	US DOT No.: 524734A	
County: HAM	Township:	City: (In or Near) City of Cincinnati
Railroad Name: Norfolk Southern	Railroad Division: Dearborn	Branch/Line Name: Cincinnati Li.
Nearest RR Timetable Station: Evendale	RR Milepost: 253.4	

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

1. Joe Berhardt, ORDC, 614-644-0291
2. Nick Cwell, NS, 740-475-9929
3. Brian Beadel, PULCO, 513-260-6105
4. Reginald Victor City of Cincinnati, 513-352-0260
5. JON CHILDRESS CITY OF CINCINNATI, 513-352-3729
- 6.
- 7.
- 8.
- 9.

Existing Traffic Control Devices

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

Safety Data (Obtain crash reports, if possible, prior to review)		
	Initial Information (from database)	Revised
Number & dates of crashes in previous 5 years	0	
Hazard Ranking	4447	Date Run: 9/11/13
Railroad Data		
Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	18	
< 1 per day		
Day thru trains	6	
Night thru trains	10	
Daytime switching movements	2	
Nighttime switching movements	0	
Total number of tracks	2	
Number of main tracks	2	
Number of other tracks	0	
Maximum train speed	40	
Typical train speed		
Amtrak		
If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table 1) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
If multiple tracks, can two trains occupy crossing at the same time? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Can one train block the motorists' view of another train at crossing? <input checked="" type="checkbox"/> Yes (Explain below) <input type="checkbox"/> No		
Can one or more tracks be eliminated through the crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Are there other track(s) crossing this same roadway within 100 ft of this crossing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
If yes, Crossing DOT #(if different) _____		
If yes, distance _____ (take measurement between track centerlines at closest point along roadway)		
Roadway Data		
Local Highway Authority: Village of Elmwood Place Cincinnati		
Roadway Characteristics	Initial Information (from database)	Revised
Average daily traffic	31 (2006)	1200
Highway paved	X Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Roadway Surface: Blacktop <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Concrete <input type="checkbox"/> Other _____		
Roadway width: 30 ft.		
Number of highway lanes	2	
Urban or Rural	Urban	
Vehicle Speed: 25 MPH		
School Bus Operation: <input type="checkbox"/> No Yes _____ Amount		
Hazardous Materials Trucks: <input type="checkbox"/> No <input type="checkbox"/> Yes _____ Amount		
Shoulders: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		
Is the shoulder surfaced? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		
Is there existing guardrail along roadway in crossing vicinity? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes		
Is stopping site distance adequate? (See Table 2) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If no, deficient approach(es) _____		

Quadrant <u>SW</u> Curb and Gutter: <input type="checkbox"/> Functional (Curb height = 4" or more) <input type="checkbox"/> Non-functional (Curb height = Less than 4") <input checked="" type="checkbox"/> None	Quadrant <u>NE</u> Curb and Gutter: <input type="checkbox"/> Functional (Curb height = 4" or more) <input type="checkbox"/> Non-functional (Curb height = Less than 4") <input checked="" type="checkbox"/> None
Pedestrians: <input type="checkbox"/> No <input type="checkbox"/> Yes	
Is sidewalk present? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	
Is there a nearby intersection that could cause queuing over the crossing? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, Distance _____ Is this intersection signalized? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Are the signals currently interconnected with the existing crossing warning devices? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Is there a 'Do not Stop on Track' sign? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	
Is a roadway improvement project (e.g. widening, turn lanes, nearby new or upgraded traffic signal, sidewalk) planned at or near this location in the foreseeable future? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes If yes, Improvement type _____ Lead Agency _____ Timeline/completion _____	
Is it the consensus of the Diagnostic Review Team that this is a potential closure project? <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> Yes Explain reasons: <div style="font-size: 1.2em; margin-top: 10px;">City will address Closure to Officials & get back to ORDC.</div>	
Type of Development	
<input type="checkbox"/> Open Space <input type="checkbox"/> Industrial <input checked="" type="checkbox"/> Residential	<input type="checkbox"/> Institutional <input checked="" type="checkbox"/> Commercial Location of nearby schools: _____
Utility Information	
Is commercial power available? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes Utility Provider (Company Name) _____ Phone Number _____ Nearest Available Power Source _____	
What other utilities are present? (add locations to sketch) <input checked="" type="checkbox"/> Gas <input type="checkbox"/> Cable <input type="checkbox"/> Telephone <input checked="" type="checkbox"/> Fiber Optic Cable <input type="checkbox"/> Petroleum <input checked="" type="checkbox"/> Water <input type="checkbox"/> Sanitary Sewer <input type="checkbox"/> Other _____	
Is(are) there potential utility conflict(s) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Comments: <div style="font-size: 1.2em; margin-top: 10px;">N.E. Quad, <u>overhead obstruction!</u></div>	

Potential Red Flags / Project Challenges

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

Crossing Consolidation or Closure:

Real Estate or ROW:

Culverts / Drainage / Ballast Conditions:

Roadway and/or Sidewalks:

NE Quad, Overhead Utilities !

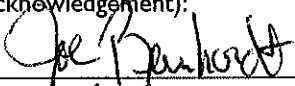
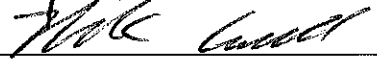

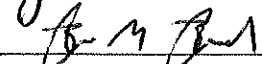
Circuitry (e.g. reaches out to other crossings, specific needs, etc.):

Environmental:

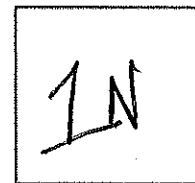
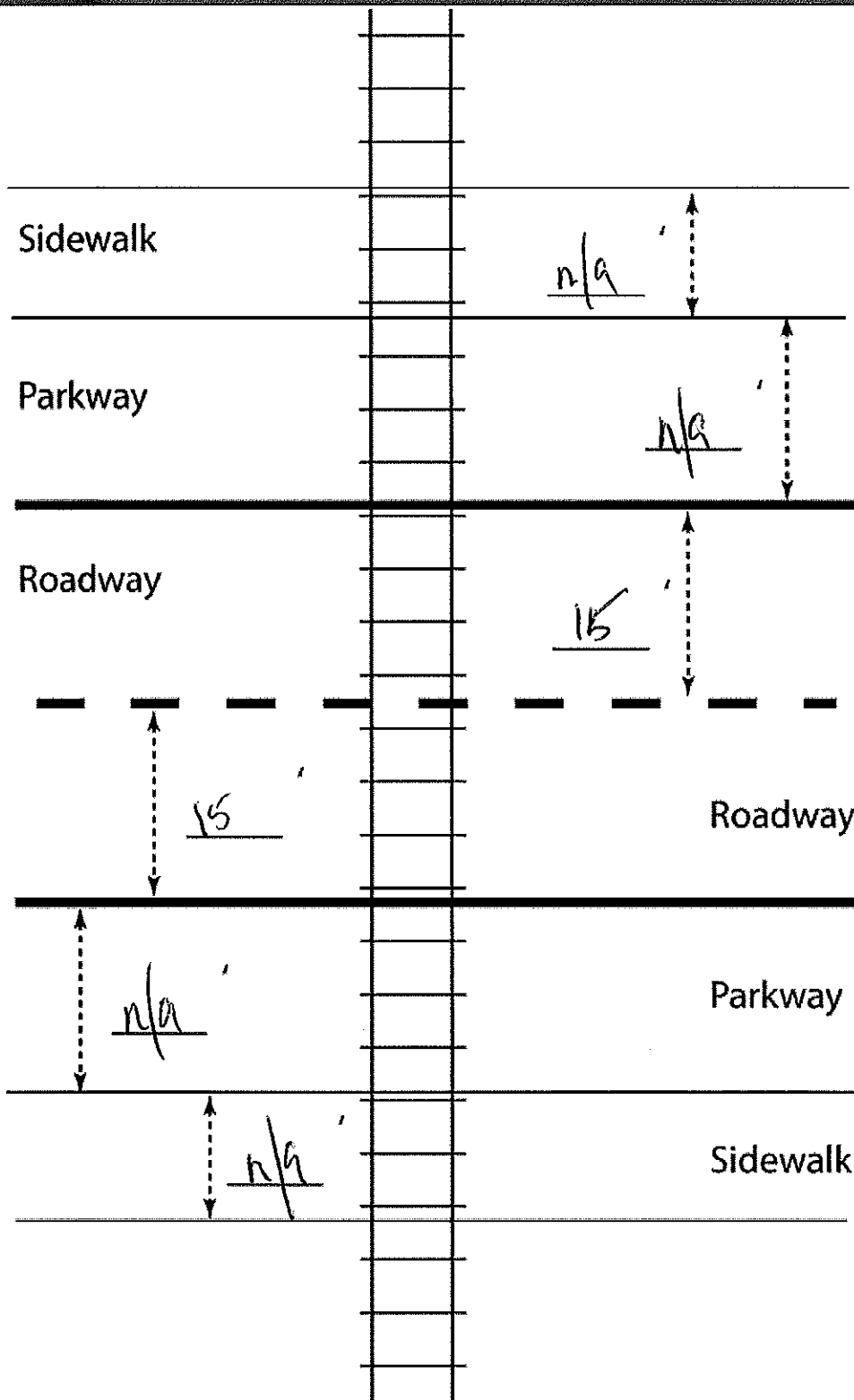
Other:

9/27/12
JMK

Diagnostic Team Recommendations

	Quadrants Needed
<input checked="" type="checkbox"/> Install/upgrade active devices	
<input type="checkbox"/> Automatic Flashing Lights (AFLS)	
<input type="checkbox"/> AFLS / Cants	
<input checked="" type="checkbox"/> AFLS / Gates	
<input checked="" type="checkbox"/> AFLS / Gates / Cants	
<input type="checkbox"/> Bells / number	
<input type="checkbox"/> Upgrade circuitry / type	
<input checked="" type="checkbox"/> Sidelights	BOTH Quadrants
<input type="checkbox"/> Guardrail Needed	
<input type="checkbox"/> Install/Replace curb	
<input type="checkbox"/> Bungalow placement & offset from rail & highway	
<input type="checkbox"/> Other (define)	
Comments: SW Quad install curbs to place foundation at 4'3". NE Quad install guardrail into roadway matching to curb on 66th street measurement	
<input type="checkbox"/> Install/upgrade traffic signal preemption	
<input type="checkbox"/> No improvements needed	
<input type="checkbox"/> Other (define)	
Acknowledgement of Recommendations (each entity represented at the diagnostic must have at least one signature acknowledgement): <div style="display: flex; justify-content: space-between;"> <div>   </div> <div>   </div> <div> CITY OF CINCINNATI </div> </div>	

Field Dimensions



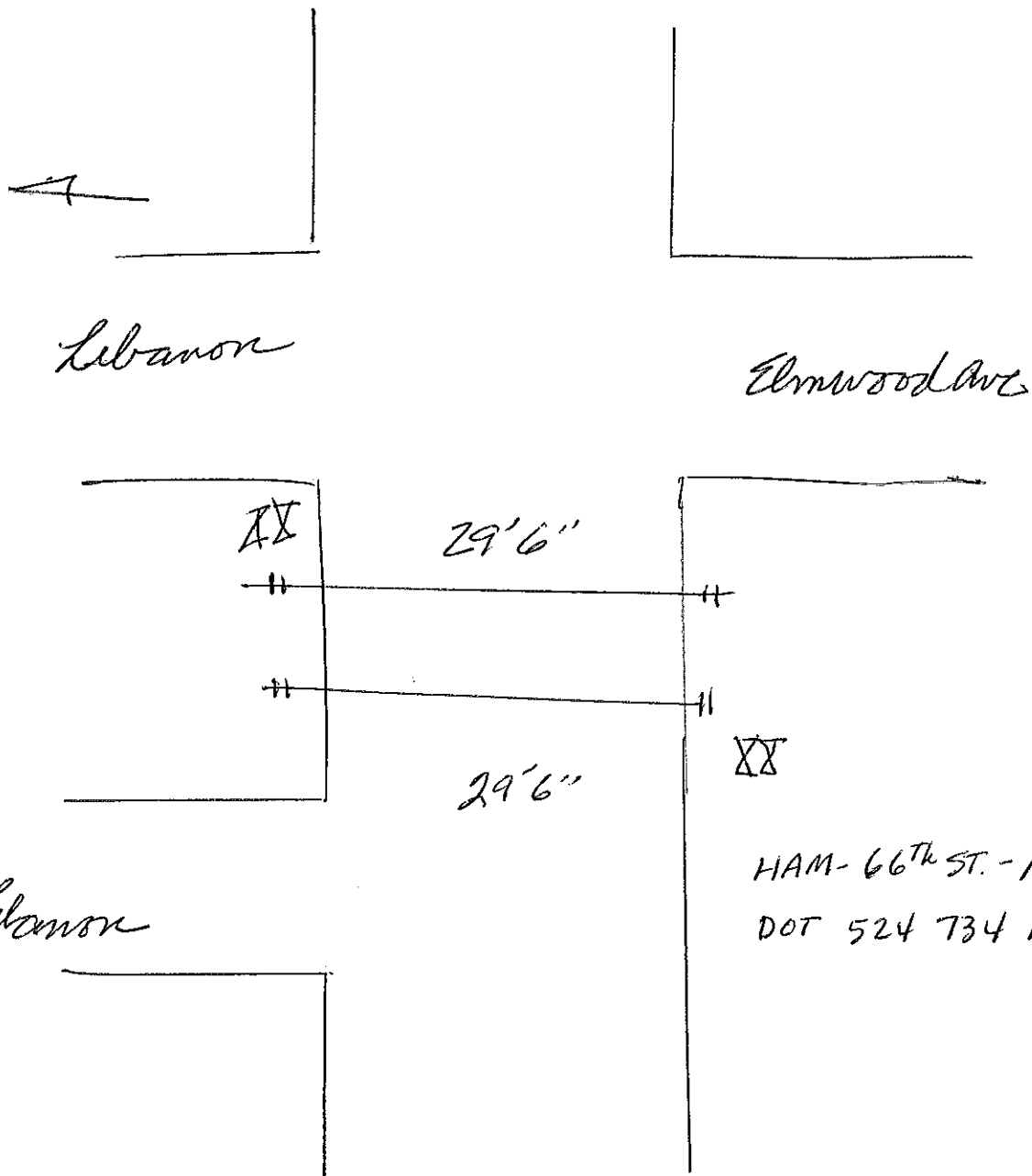
Show North Direction

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

Measurements by:

Field Sketch

Include utilities as marked by OUPS and LHA; include ROW boundaries as indicated by railroad and LHA.



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

Sketch by: _____

TABLE I

Clearing Sight Distances

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

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

Notes:

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

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

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

Table 2

Stopping Sight Distances

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

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

Notes:

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

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

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

Handwritten signature and date:
9/27/13



This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

9/8/2017 5:58:37 PM

in

Case No(s). 17-1965-RR-FED

Summary: Application In the Matter of a Request for the Installation of New Active Warning Devices at the Norfolk Southern Railway Crossing, 66th Street DOT#524-734A, in Hamilton County, Ohio. electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division