Public Utilities
Commission of Ohio

Memo

To: Docketing Division

From: Jill Henry, Rail Specialist, Rail Division

Cc: PUCO Legal Department

Date: 6/18/20

Re: PUCO Case No. 20-1177-RR-FED- In the Matter of a Request for the Installation of Active Warning Devices at the Norfolk Southern Railway Crossing, TR 1037, DOT#503-097P, in Ashland County, Ohio.

On February 11, 2020, the Ohio Rail Development Commission (ORDC) authorized funding for Norfolk Southern Railway to install lights and gates at TR 1037, DOT#503-097P, in Ashland County, Ohio. The crossing was surveyed, on July 24, 2019, and found to warrant the upgrade. The electric utility provider for this crossing is Ohio Edison-First Energy Corp.

The project will be paid for with federal funds and is actual cost. The plans and estimates in the amount of $400,677.44 have been approved. Construction may commence at once. **Staff requests a Finding & Order with completion of the project in nine months.** Staff requests that the following language be incorporated in the Finding & Order:

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

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

Please serve the following parties of record:

Norfolk Southern Railway Company
Kurt Young
Public Projects Engineer
1200 Peachtree Street NE
Box 123
Atlanta, GA 30309-3597

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

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

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

Ashland County Engineer
Edward Meixner
1511 Cleveland Avenue
Ashland, Ohio 44805

Green Township, Ashland County
Trustees
137 East Pleasant Street
Perrysville, OH 44842

Ohio Edison-First Energy Corp.

OHIO RAIL DEVELOPMENT COMMISSION
INTER-OFFICE COMMUNICATION

TO: **John Williams, Rail Division, PUCO**

FROM: **Cathy Stout, Manager, Safety Section, ORDC**

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

SUBJECT: **Ashland County, Township Road 1037. DOT #503097P**
Norfolk Southern, PID 111135

DATE: **June 1, 2020**

The Public Utilities Commission of Ohio (PUCO) established a diagnostic survey at the subject location on July 24, 2019. 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. 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
PE Authorization
Plan & Estimate

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

Ohio | Rail Development Commission

Mike DeWine, Governor
Jon Husted, Lt. Governor

Mark Policinski, Chair

June 1, 2020

Mr. Kurt Young
Public Projects Engineer
1200 Peach Street NE, Box 123
Atlanta, Ga. 30309

RE: Ashland County, Township Road 1037, DOT#503097P
PID#111135, RR ref #10.3266

Dear Mr. Young:

The plan dated April 27, 2020 and estimate dated May 7, 2020 for the referenced project has been reviewed and is acceptable. Norfolk Southern (NS) may proceed with the construction of the proposed light and gates in accordance with the abbreviated plan. This authorization is made with the stipulation and understanding that the approved estimate may contain entries for items or activities that may be cited and found to be ineligible for federal participation during the project audit. Reimbursement of eligible actual cost from ORDC is limited to $400,677.44 Additional costs must be approved in writing by the Ohio Rail Development Commission (ORDC) prior to being incurred. Emergency verbal authorizations by ORDC may be permitted and will be confirmed by ORDC in writing within ten (10) business days of the verbal approval.

This authorization is contingent upon NS accepting the following instructions:

1. NS's project foreman will furnish written notification five (5) working days prior to the date work will start at the project site to James Tucker, ORDC, email james.tucker@dot.ohio.gov and to the Public Utilities Commission of Ohio at jill.henry@puco.ohio.gov. NS's project foreman will also notify the same of any stops and re-starts of the work activity and of the date work was completed for the project.

2. NS will arrange for utilities to be located at the project site by the Ohio Utilities Protection Service (OUPS) prior to any construction activities at the site. Utilities that are not participating members of the service must be contacted directly by NS.

3. NS's project foremen will notify James Tucker at 614-398-6897 (telephone) or james.tucker@dot.ohio.gov (email) of any changes in the scope of work, cost overruns, material changes, etc. which are not included in the approved plan and estimate and secure approval of same before the work is performed.

4. Open cut of roadways is not permitted except in unusual circumstances and must be coordinated with the local highway authority and preapproved by ORDC.

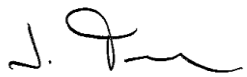
5. NS shall send copies of each partial bill to ORDC.Invoice@dot.ohio.gov. Please find the enclosed ODOT Purchase Order to reference when billing.

6. NS will furnish two (2) copies of the final all-inclusive bill to ORDC stating the exact dates of starting and completing work, the initial and final dates of construction and location where the accounts may be audited.

7. This installation will include any ancillary work to make the warning devices function as designed and meet MUTCD.

Thank you for your assistance with these matters.

Sincerely,



James Tucker
Project Manager

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

File No.:
S&E Proj.: 10.3266
Date: May 07, 2020

Ref: TR 1037
PERRYSVILLE, OH

Micayla Olds

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

If you have any questions, please contact me.

Chris Peters
529-1168

Comments: _____
_____
_____

_____
S & E Supervisor

07-May-20

Detailed Estimate for Grade Crossing Warning Devices

City/State:	PERRYSVILLE, OH	Road:	TR 1037
MilePost:	PC-162.82	DOT/AAR:	503097P
State Proj. No.:	PID# 111135	County:	ASHLAND
S&E Proj. No.:	10.3266	File Number:	
Man Days:	204		

*****Purchases - Others*****		
Meals and Lodging:	$29,377.47	
Rental of Equipment:	$40,158.89	
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 34 Days)		
Construction Supervision Vehicle:	$6,142.96	
Purchases - Other Total:		$75,679.32
*****Material And Additives*****		
Material Cost:	$131,843.00	
Sales and Use Tax:	$10,547.00	
Material Handling Freight:	$13,184.32	
Material Total:		$155,574.32
*****Labor And Additives*****		
Labor Cost:	$69,156.00	
(6 man crew at $2,034.00 a day for: 34 days)		
Payroll Tax & Overheads:	$58,962.41	
Preliminary Engineering:	$21,104.92	
Construction Supervision:	$20,200.47	
Labor Total:		$169,423.80
Project Cost:		$400,677.44
Scrap / Salvage Credit:		$0.00
Project Total:		**$400,677.00**

Estimated on: 07-May-20

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:	PERRYSVILLE
Road:	TR 1037
Mile Post:	PC-162.82
Drawing Number:	24021628
State ProjectNumber:	PID# 111135
County:	ASHLAND
A A R Number:	503097P
Project Number:	10.3266
File Number:	
New File Number:	CX1113789
WBS:	F-06681
Store Number:	S805
Supervisor:	Micayla Olds
Tax Code:	

Vendor to supply the following copies after pricing:

1 Set - Material Management with original Invoice
2 Sets - with plans shipped in car with material
1 Set - S&EGen. Supt. Construction w/copy of invoice

Location: PERRYSVILLE OH S&E Proj. No.: 10.3266 AFE No.: F-06681 Drawing No.: 24021628

Store No.: S805 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.	Date Quan.	Date Quan.	Quantity Returned (Credit)	Special Instructions
3	670-360693-4	EA	$6.05	$18.15	AAR/DOT NUMBER PLATE/DECAL, ORDER 3 PER PROJECT. 60 DAY LEAD TIME. SUPPLIED BY S'TRAN.						
1	165-006505-4	EA	$1,410.25	$1,410.25	AC SERVICE, COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE						
33	670-001196-4	EA	$47.30	$1,560.90	ARRESTER, LIGHTNING SOLID STATE ERICO P/N EPD2050F						
2	670-204127-4	EA	$33.38	$66.76	BASE, LIGHTNING ARRESTOR SAFETRAN 022485-23X 3 POST PORCELAIN						
29	105-002620-4	EA	$248.79	$7,214.91	BATTERY, NICAD 340AH, MODEL SPL340						
1	670-503047-4	EA	$214.50	$214.50	BELL, CROSSING ELECTRONIC GENERL SIGNAL, EB-3-360-5 CR 02-044350						
4	670-065806-4	EA	$5.20	$20.80	BOND, WIRE 7-1/2 IN. X 3/16 IN., IGNITER, MOLDS, POWDER, CADWELD						
2	670-980689-4	EA	$74.80	$149.60	BRACKET HIGH WIND, (RIGID 3'), WIG- 191036, WALRUS TUSK TYPE						
2	670-561375-4	EA	$1,197.90	$2,395.80	BRACKET, GATE SAVER, NEG385102GS, SPRING LOADED SWING AWAY ADAPTER FOR FIBERGLASS/ALUMINUM GATES, USE WITH GATE 38' AND LESS						
500	465-939422-4	LF	$3.01	$1,505.00	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL						
700	465-292862-4	LF	$1.36	$952.00	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR						
500	465-292929-4	LF	$4.12	$2,060.00	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL						
350	465-791835-4	FT	$3.97	$1,389.50	CABLE, UG AC ENTRANCE 3C#6-7X OKONITE FMPF-L 094-078 TR W/G 1 X 8 7X W010 BRZ TAPE 600V PRODUCT CODE 206-11-6070						
3	670-010671-4	EA	$731.50	$2,194.50	CHARGER, BATTERY CRAGG MODEL 40 DTC-12V, 40 AMP, P/N 520940						
4	670-128745-4	EA	$218.11	$872.44	CHOKE, BATTERY SAFETRAN NO 8A065A FOR GRADE CROSSING PREDICTOR						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER

Location: PERRYSVILLE OH S&E Proj. No.: 10.3266 AFE No.: F-06681 Drawing No.: 24021628

Store No.: S805 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.	Date Quan.	Date Quan.	Quantity Returned (Credit)	Special Instructions
6	670-664917-4	EA	$71.49	$428.94	CONNECTOR KIT, WELDED FAR RAIL, CONSISTING OF RUBBER HOSE PROPERLY DRILLED, BONDSTRAND, 1 SPLICING SLEEVE, 1 REDUCING SLEEVE, 3 CLAMPS, 1 TRACK CLIP, 1 WEB WELDED TRACK CONNECTOR, 1 WELD METAL, SAFETRAN 111359-2X						
6	670-632520-4	EA	$57.38	$344.28	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	670-012071-4	EA	$711.70	$1,423.40	CONVERTER, SINGLE UNIT DC EPC @3TC, 1 OUTPUT FOR ANY REASONABLE LENGTH TRACK CIRCUIT						
2	670-793404-4	EA	$1,245.20	$2,490.40	COUNTERWEIGHT PKAGE, 17-24'GATE S'TRAN S- MECH ONLY, STAINLESS, TO INCLUDE HUB, SUPPORT ARMS						
4	670-760012-4	EA	$41.80	$167.20	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. ====TO COVER 2 LAMPS====						
1	670-986650-4	EA	$355.00	$355.00	DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING X'ING EQUIPMENT CONTAINER						
6	670-228165-4	EA	$13.71	$82.26	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						
8	670-000003-4	EA	$255.85	$2,046.80	FILL/STONE #57, QUANITY IS BASED ON TRUCK LOAD PLUS DELIVERY COST						
2	670-250837-4	EA	$137.50	$275.00	FOUNDATION, CONCRETE DOG BONE USED FOR SIG. INST. CASES 4'HIGH, DIXIE PRECAST AP-392						
2	670-015231-4	EA	$613.80	$1,227.60	FOUNDATION, DIXIE,S-2 GATE 2'6"X2'6"X5'6" ASSEMBLED						
2	670-005377-4	EA	$328.35	$656.70	GATE ARM, ALUMINUM, 17-24 FT, ARM ASSEMBLY, INCLUDES GATE GUARD FOR GATE LIGHT CABLE. HIGH INTENSITY VERTICAL STRIPES.						
1	670-687087-4	EA	$27,559.32	$27,559.32	GCP4000 - 2 TRK (5TC) - NON-REDUNDANT - 40 AMP WIRED RACK EQUIP. FOR 6X8 REMOTE SHELTER, (INCL. 5 TRK CHASSIS A80440, 2 TRK MODS. A80418, 0 SSCC, 1 CPU A80403, NO SEAR, 1 DISPLAY A80407, 1-40 AMP CHARGER) IPN: 003131-3X						

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Location: PERRYSVILLE OH S&E Proj. No.: 10.3266 AFE No.: F-06681 Drawing No.: 24021628

Store No.: S805 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.	Date Quan.	Date Quan.	Quantity Returned (Credit)	Special Instructions
1	670-018333-4	KT	$1,107.52	$1,107.52	KIT, FOREMAN CROSSING SIGNAL (INCLUDES 10-757356, 10-841068, 2-899801, 2-904890, 50-917900, 32-840003, 1-003360, 1-809007, 2-754202, 55-938285, 2-204244, 2-656656 , 50-917869, 1-005458, 2-810339, 1-447991, 2-805560, 1-330382, 1-986008, 100 WHITE TAGS AND						
2	670-092155-4	EA	$176.00	$352.00	LAMP ASSY, LED GATE ARM KIT (INCLUDES 3 LAMPS COMPLETE WITH CABLES AND MTG. HARDWARE) REC #: 9298-1120						
2	670-005058-4	EA	$1,892.88	$3,785.76	LAMP ASSY, LED, 5" MAST BACK TO BACK LIGHTS (IPN: 042003-L487XNS)						
2	670-442062-4	EA	$3.10	$6.20	LINK, TEST SAFETRAN 024620-4X COMP FOR MTG ON AAR TERM 2-3/8" CENTER W/SPECIAL NUT & CLAMP NUT						
2	670-637778-4	EA	$1,424.91	$2,849.82	MAST, 5" ALUMINUM 13'10" WITH DOUBLE JCT. BOX BASE. S'TRAN P# 070519-11AX.						
2	670-521147-4	EA	$3,850.87	$7,701.74	MECHANISM, GATE MODEL S-40, WITH CONTACT HEATER, COMPLETE W/RELAY S'TRAN # 074000-W00090						
4	670-000001-4	EA	$726.23	$2,904.92	MISC. EXPENSE, MATERAIL/FILL						
3	670-000007-4	EA	$307.02	$921.06	MISC. EXPENSE, TRACK WORK (I.E. INS JTS, RODS, ETC.)						
1	000-000000-4	EA	$7,000.00	$7,000.00	MISC. EXPENSE, UNDERGROUND BORING						
4	670-001347-4	EA	$72.38	$289.52	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI A1250-5, HARMON @200965-000, OR						
1	670-004472-4	EA	$1,719.18	$1,719.18	PACKAGE, KIT FOR ADDITIONAL RECTIFIER KIT 40AMP FOR CROSSING LOCATION. INCLUDES ALL CHARGERS, WIRING AND PEREFERALS FROM BREAKER BOX TO PANEL. IPN: 051000-NSX-0004						
5	670-018542-4	EA	$47.30	$236.50	PADLOCK, ABLOY 5/16" X 1" SHACKLE CLEARANCE KEYED FOR C&S DEPT USE; INCLUDES ETCHING;						
1	255-646807-4	EA	$32.92	$32.92	PADLOCK, SAFETRAN PART NO. 030399-29X SCREW TYPE FOR CIR CONTROLLER AND BTY. BOX						
1	670-514605-4	EA	$13.56	$13.56	PINNACLE, W-C SECT 1-11, 4"& 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X						
1	165-018451-4	EA	$267.11	$267.11	PROTECTOR, 12VDC, AAR MOUNT LPC 10593-9 LIGHTNING PROTECTION CORP.						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER

Location: PERRYSVILLE OH S&E Proj. No.: 10.3266 AFE No.: F-06681 Drawing No.: 24021628

Store No.: S805 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.	Date Quan.	Date Quan.	Quantity Returned (Credit)	Special Instructions
4	165-103293-4	EA	$81.57	$326.28	PROTECTOR, LIGHTNING & SURGE LPC 10560-51, 3 ELECTRODE WITH SPADE TERMINAL						
4	465-002899-4	EA	$46.37	$185.48	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES						
4	180-000029-4	EA	$27.17	$108.68	RESISTOR UNIT, 2 OHM ADJUSTABLE SAFETRAN NO. 029602-6X FOR TRACK CIRCUITS CR 02-425807						
1	670-630881-4	EA	$7,211.11	$7,211.11	SHELTER, CASE BARE, 81" HIGH DOUBLE, ALUMINUM W/FARADAY SHIELD ON TERMINAL BOARD, BARS FOR THREE ROWS OF PLUG-IN RELAYS, PER SAFETRAN DRAWING NUMBER 545110-81X16						
1	670-019623-4	EA	$27,903.68	$27,903.68	SHELTER, WIRED XING 6X6 PTMW 91000778, 10,000 BTU AC AND 1000W HEATER, WITH HEAVY DUTY HASP AND 36 IN TERMINAL BOARD						
4	670-586967-4	EA	$29.68	$118.72	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT						
4	670-868658-4	EA	$796.95	$3,187.80	SHUNT, MULTI-FREQ. #250849-000 FSS-1A ALSTOM NARROW BAND (86, 114, 151, 210, 267)						
2	670-554843-4	EA	$82.69	$165.38	SIGN, 2 TRACK SIGN, HIGH INTENSITY, SAFETRAN #035207-2HX						
2	670-016346-4	EA	$154.53	$309.06	SIGN, X-BUCK, HI-INTENSIVE REFLECTIVE FRT. & BACK FOR ALL STATES, SAFETRAN# 035200-91X						
2	670-393331-4	EA	$30.58	$61.16	SIGN, CROSSING ENS MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215						
46	670-018188-4	EA	$42.35	$1,948.10	TERMINAL BLOCK, THRU POST WITH HARDWARE LESS LIGHTNING ARRESTER. SIEMENS P/N NYK: 023275-17X.						
6	670-007238-4	EA	$175.99	$1,055.94	UNIT, THE INSTALLATION AND WIRING OF A DEVICE WHICH REQUIRE A MINIMUM OF FOUR WIRE CONNECT-						
200	465-897633-4	LF	$1.09	$218.00	WIRE, #4 INSULATED, STRANDED FOR BATTERY TERMINALS (IPN: 022304-2)						
200	465-999111-4	LF	$0.37	$74.00	WIRE, NO.10, 1 CONDUCTOR, CASE, FLEXIBLE 37 STRAND, 3/64 IN. INSULATION-ORDER EXT.AMT. NEEDED CR 02-620502						

Total Material: $131,843.21

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER

SH. NO.	CONTENTS	REV. NO.
NX1	INDEX SHEET	1
1	LAYOUT	1
2	PROFILE	1
3	CABLE PLAN	1
4	LOAD CENTER	1
5	CHARGERS & BATTERIES	1
6	GCP4000 CHASSIS & MODULE LAYOUT	1
7	GCP4000 PROGRAMMING	1
8	GCP4000 PROGRAMMING	1
9	CONNECTORS FOR TRACK MODULES	1
10	CPU MODULE & SEAR IIi HOOK-UPS	1
11	SEAR IIi PROGRAMMING	1
12	BACKHAUL EQUIPMENT	1
13	SSCC#1 MODULE HOOK-UP	1
14	SSCC#2 MODULE HOOK-UP	1
15	SIGNAL "A" S-40 GATE & FLASHER CIRCUITS	1
16	SIGNAL "B" S-40 GATE & FLASHER CIRCUITS	1
17	BACKBOARD 1A & 1B	1
18	REAR BACKBOARD 1A & 1B	1
19	SIDE A LAYOUT & RACK PLACEMENT	1
20	SIDE C LAYOUT	1
21	SIDE B LAYOUT & TOP VIEW	1

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

PROPERTY
PENNSYLVANIA R.R.

REVISIONS

1	03-03-20	WJK	XRL	PEH

NEW PLAN DRAWN ACCOUNT OF NEW SHELTER INSTALLED.

FILE: 10.3266
IN SERVICE: XX-XX-XX
PER: XXX XXX XXX

DESIGNED BY:	
WJK	03-03-20
DRAWN BY:	
XRL	03-03-20
CHECKED BY:	
PEH	04-27-20
IN SERVICE:	
	- -

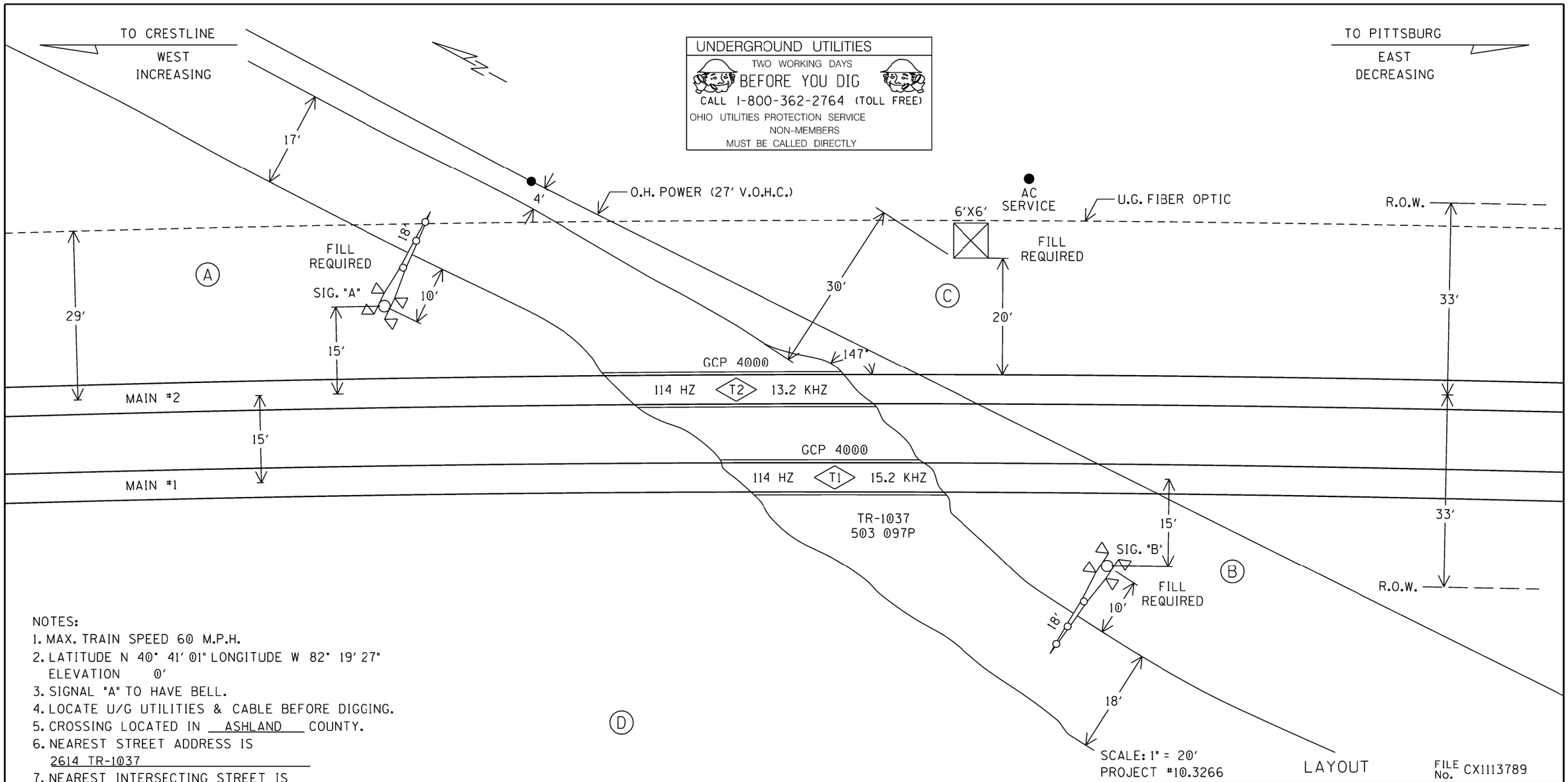
NORFOLK SOUTHERN

OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: PC-162.82

PERRYSVILLE, OH
FLGS AT TR 1037

FORT WAYNE LINE REV. 1

CADD or DWG. No. 24021628.NX1 SHEET No. 1



NOTES:

1. MAX. TRAIN SPEED 60 M.P.H.
2. LATITUDE N 40° 41' 01" LONGITUDE W 82° 19' 27"
   ELEVATION 0'
3. SIGNAL "A" TO HAVE BELL.
4. LOCATE U/G UTILITIES & CABLE BEFORE DIGGING.
5. CROSSING LOCATED IN ASHLAND COUNTY.
6. NEAREST STREET ADDRESS IS
   2614 TR-1037
7. NEAREST INTERSECTING STREET IS
   TR-1075
8. DISTANCE TO NEAREST INTERSECTING
   STREET IS 1800 FT.

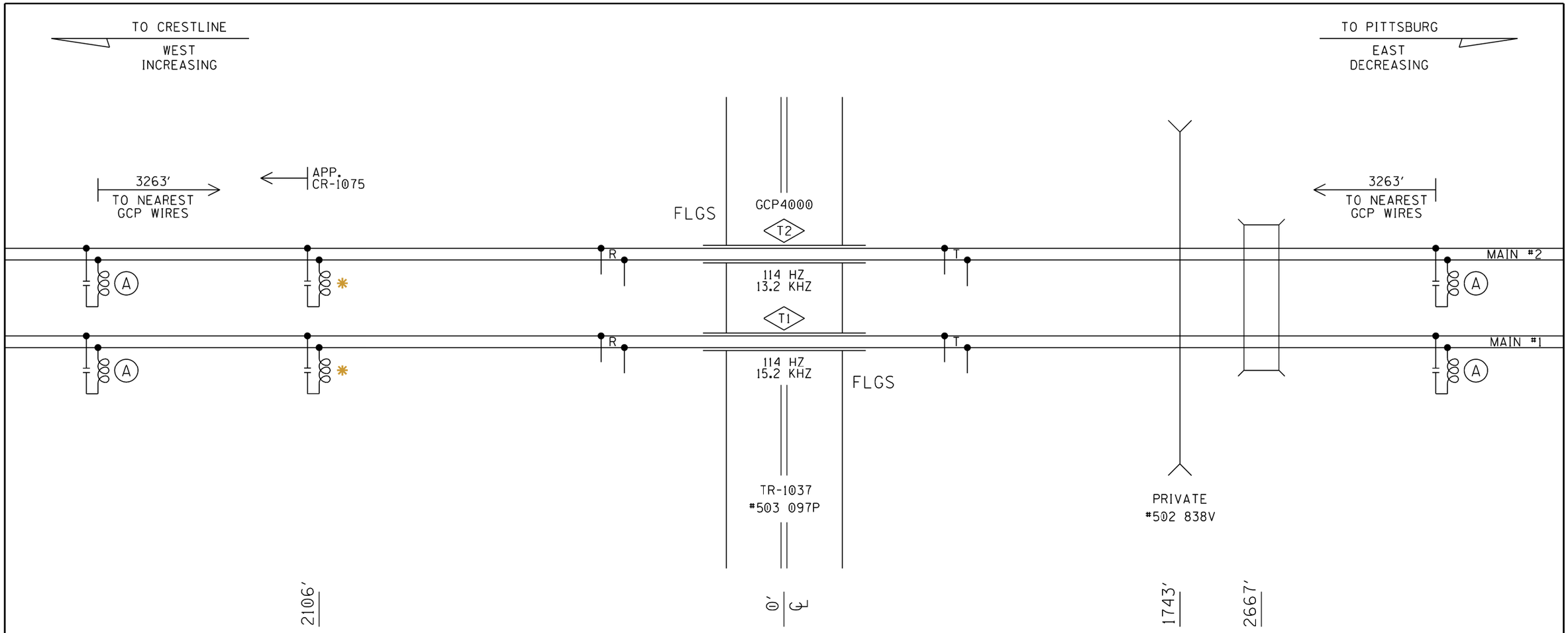
(A)(B)(C)(D) = QUADRANT MARKERS

SCALE: 1" = 20'
PROJECT #10.3266

LAYOUT

FILE No. CX1113789

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY: PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.001 — SHEET No. 1

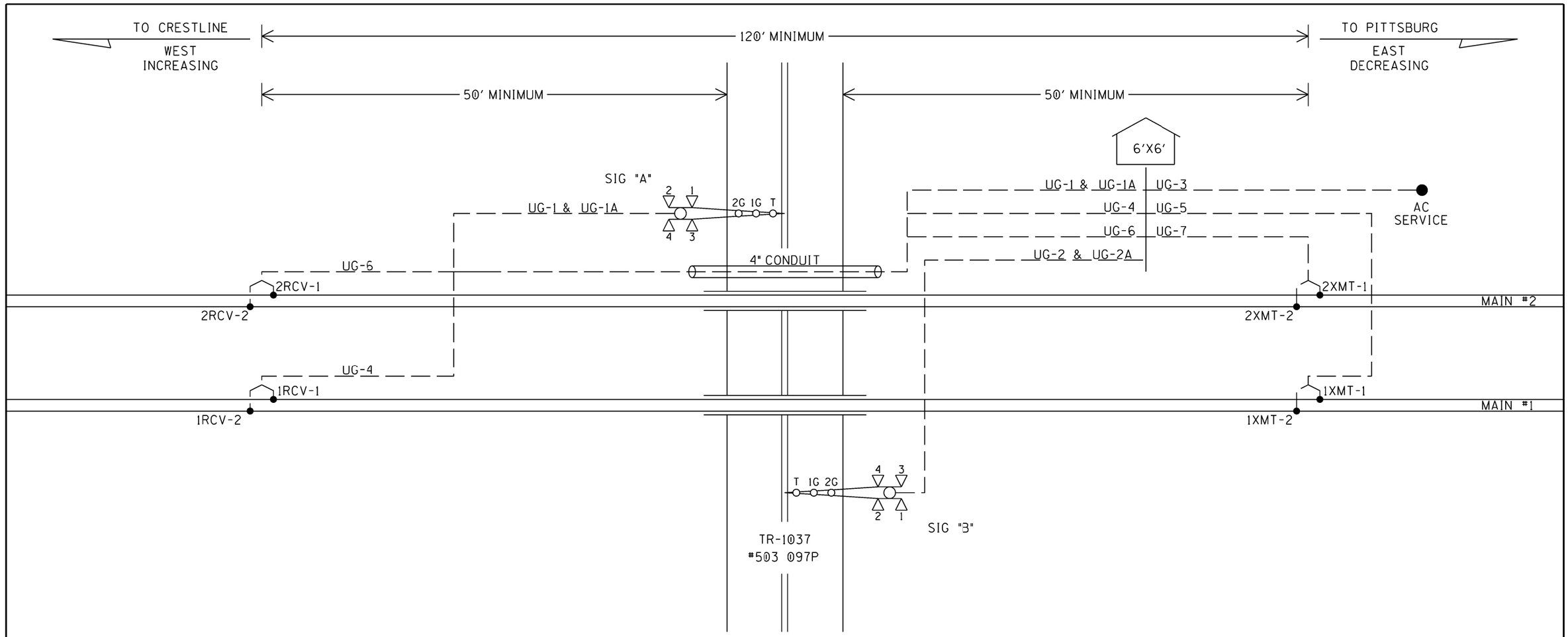


Ⓐ– MF-NBS FSS-1A 250849-000 (114HZ)

* = EXISTING

PROFILE

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.002 — SHEET No. 2



UG-1-5CUG #6
AEC
AEZ
AEB
B16-A
N16-A

UG-2-5CUG #6
BEC
BEZ
BEB
B16-B
N16-B

UG-1A-12CUG #14
AXG
NAXG
AXX
1AXX
AGD
XGP1
AGBX120
AGNX120
SPARE
SPARE
SPARE
SPARE

UG-2A-12CUG #14
BXG
NBXG
BXX
1BXX
BGD
XGP1
XGP
BGBX120
BGNX120
SPARE
SPARE
SPARE

UG-3-3CUG #6 W/#8 GND
BX120-A
BX120-B
NX120
GND

UG-4-TW. PR. #6
1RCV-1
1RCV-2

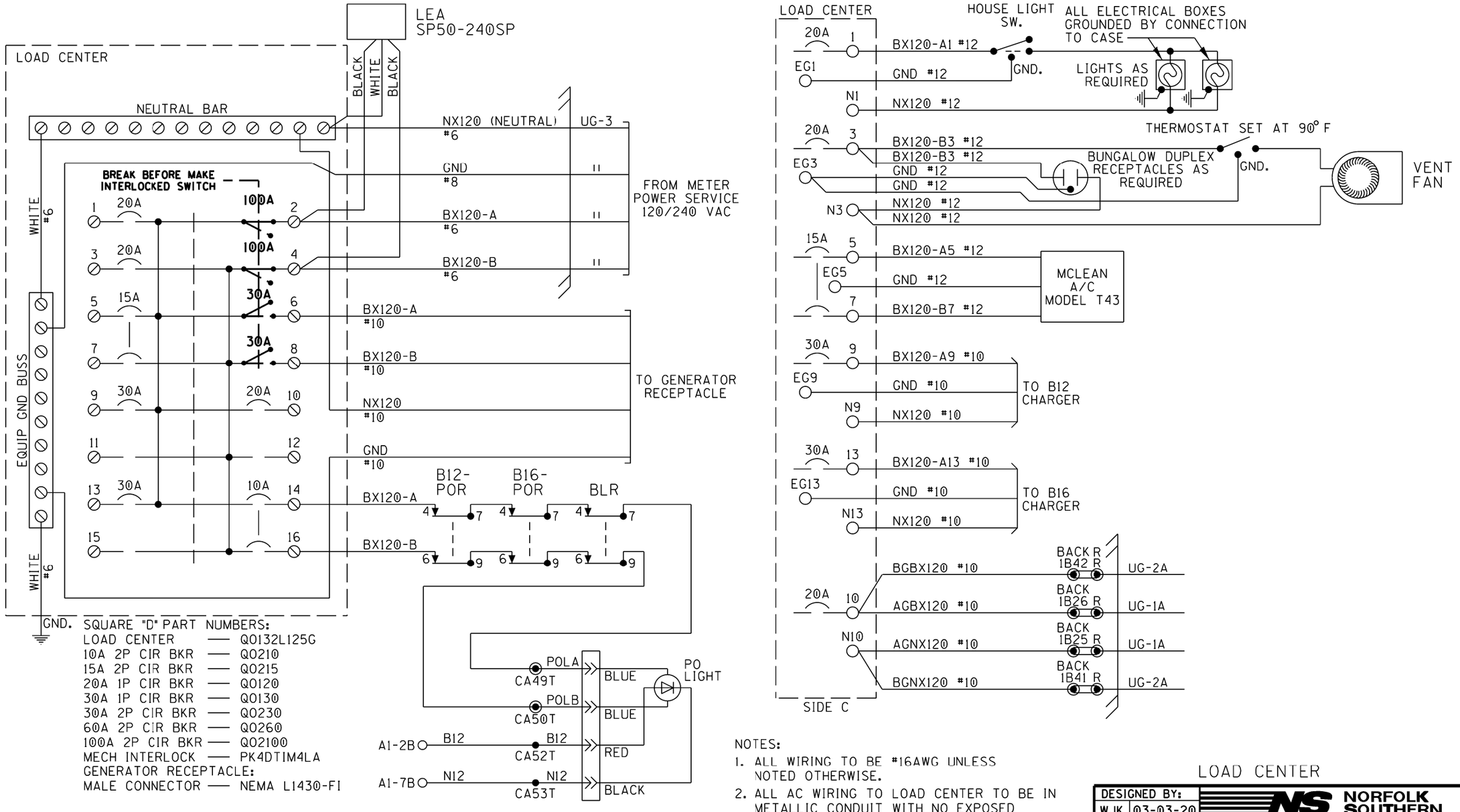
UG-5-TW. PR. #6
1XMT-1
1XMT-2

UG-6-TW. PR. #6
2RCV-1
2RCV-2

UG-7-TW. PR. #6
2XMT-1
2XMT-2

CABLE PLAN

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.003 — SHEET No. 3



GND.

SQUARE "D" PART NUMBERS:

LOAD CENTER	— Q0132L125G
10A 2P CIR BKR	— Q0210
15A 2P CIR BKR	— Q0215
20A 1P CIR BKR	— Q0120
30A 1P CIR BKR	— Q0130
30A 2P CIR BKR	— Q0230
60A 2P CIR BKR	— Q0260
100A 2P CIR BKR	— Q02100
MECH INTERLOCK	— PK4DTIM4LA

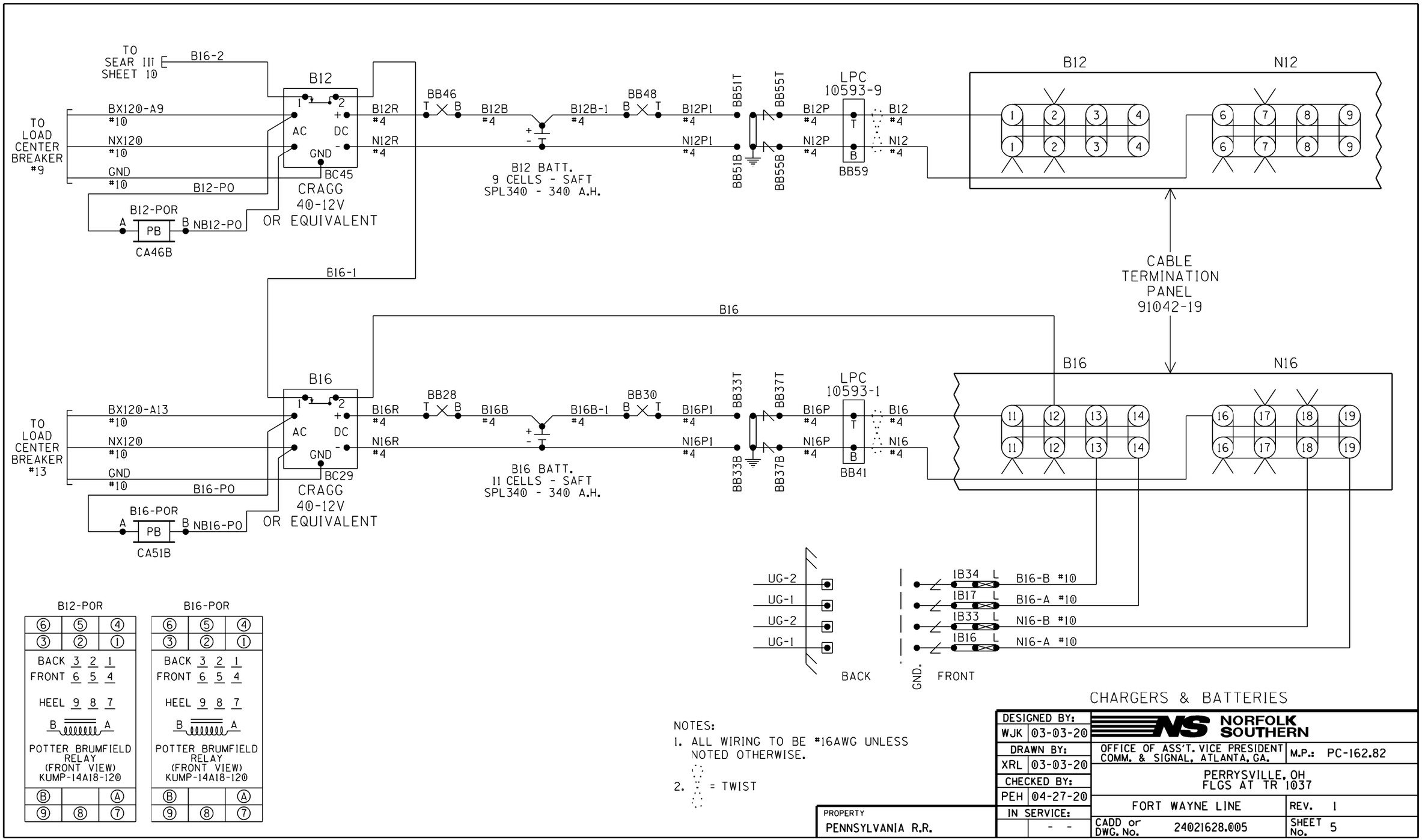
GENERATOR RECEPTACLE:
MALE CONNECTOR — NEMA L1430-FI

NOTES:

1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
2. ALL AC WIRING TO LOAD CENTER TO BE IN METALLIC CONDUIT WITH NO EXPOSED TERMINALS. ALL AC 120V AND 240V EQUIPMENT TO BE PROPERLY GROUNDED.
3. ◉ = INSULATED NUTS TO BE USED ON ALL TERMINALS OF 120VAC AND ABOVE.

LOAD CENTER

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY: PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.004 — SHEET No. 4

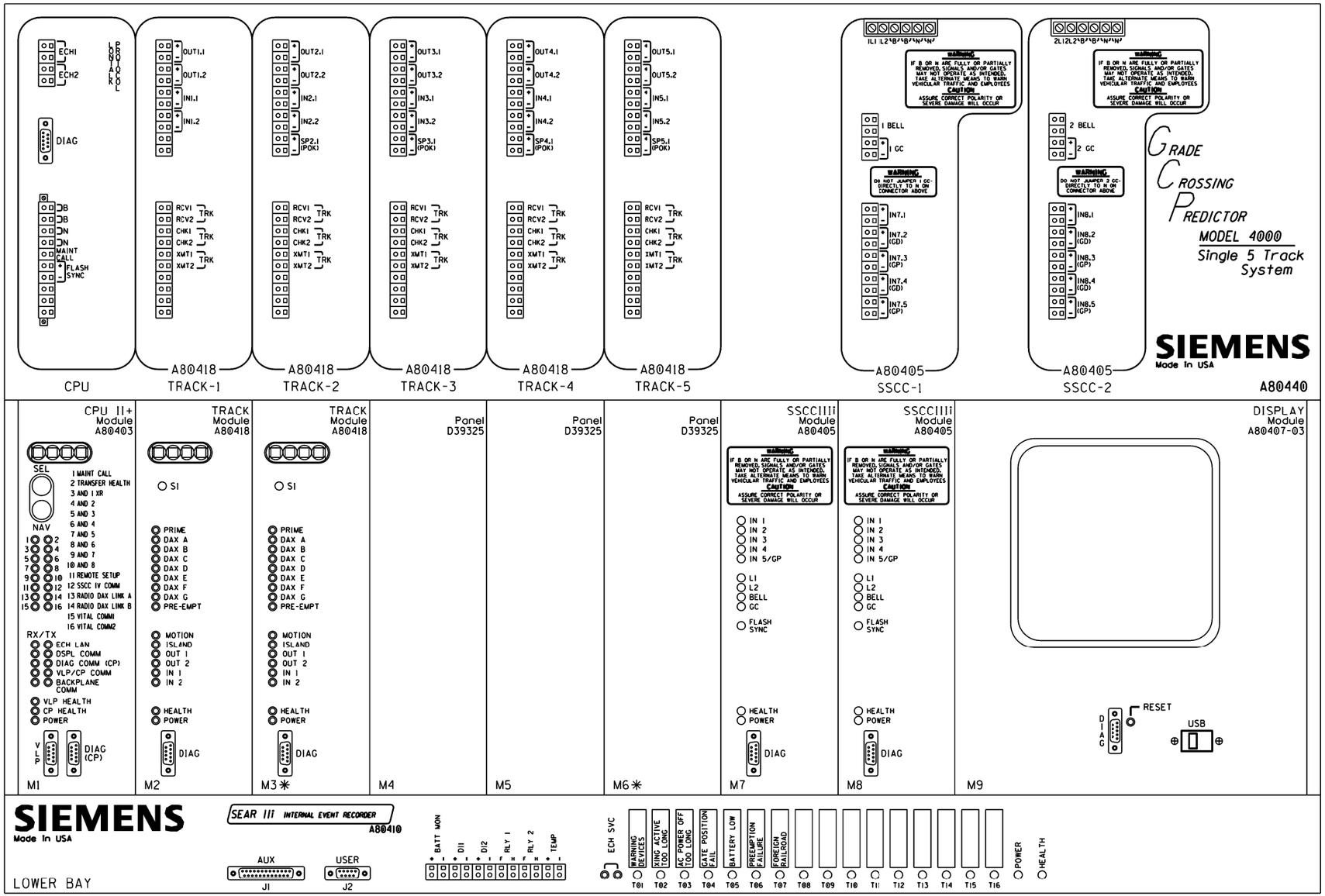


NOTES:

1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
2. ⋮ = TWIST

CHARGERS & BATTERIES

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY: PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.005 — SHEET No. 5



WARNING

REMOVAL OF THE SSCCIIIi MODULE WILL CAUSE THE GATE(S) TO DROP WITHOUT GATE DELAY AND FLASHING LIGHTS WILL NOT ACTIVATE.

CAUTION

ENSURE CORRECT POLARITY OF B AND N FOR SSCCIIIi MODULE OR SEVERE DAMAGE WILL OCCUR.

REFER TO DETAILED INSTRUCTIONS ON THE SSCCIIIi BEFORE APPLYING POWER TO THE POWER CONNECTOR(S).

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
OFF (NO JUMPER)

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

GCP4000 CHASSIS & MODULE LAYOUT

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN		
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.:	PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037		
PROPERTY: PENNSYLVANIA R.R.	IN SERVICE: - -	FORT WAYNE LINE	REV. 1
		CADD or DWG. No. 24021628.006	SHEET No. 6

Program Report

Location and SIN

DOT Number: 503097P
Milepost Number: PC-162.82
Site Name: TR-1037

SIN: 755003614516

MCF and Template Selection

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

Template = 1A:6 Trk Bi

Check Numbers

Office Check No. (DT 4.6.0): 7A7556DA
Office Check Number: 7A7556DA
Config. Check Number: 71A2AD6B
(Based on MCF Revision 021)

Program

BASIC: module configuration
Track 1 Slot = Track
Track 2/RIO 1 Slot = Track
Track 3 Slot = Not Used
Track 4 Slot = Not Used
Track 5/RIO 2 Slot = Not Used
Track 6/RIO 3 Slot = Not Used
SSCC-1 Slot = SSCC3i
SSCC-2 Slot = SSCC3i
SEAR Used = Yes

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

BASIC: island operation
Track 1 : Island Used = Internal
Track 2 : Island Used = Internal

BASIC: preemption
Preempt Logic = No

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

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

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

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 Freq Category = Standard
Track 1 : GCP Frequency = 114 Hz
Track 1 : Approach Distance = 3263 ft
Track 1 : Uni/Bi/Sim-Bidirnl = Bidirnl
Track 1 : GCP Transmit Level = Medium
Track 1 : Island Connection = Isl1
Track 1 : Island Distance = 135 ft
Track 1 : Computed Distance = 9999 ft
Track 1 : Linearization Steps = 100

GCP: track 1 enhanced det
Track 1 : Inbound PS Sensitivity = Off
Track 1 : Speed Limiting Used = Yes
Track 1 : Outbound False Act Lvl = Normal
Track 1 : Outbound PS Timer = 20 sec
Track 1 : Trailing Switch Logic = On
Track 1 : Post Joint Detn Time = 15 sec
Track 1 : Adv Appr Predn = No
Track 1 : Cancel Pickup Delay = This Isl

GCP: track 1 prime
Track 1 : Prime Warning Time = 32 sec
Track 1 : Prime Offset Distance = 0 ft
Track 1 : Switch MS EZ Level = 10
Track 1 : Prime MS/GCP Mode = Pred
Track 1 : Prime Pickup Delay = 15 sec
Track 1 : Prime UAX = Not Used

GCP: track 1 pos start
Track 1 : Positive Start = Off
Track 1 : Sudden Shnt Det Used = No
Track 1 : Low EZ Detection Used = No

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

GCP: track 2
Track 2 : GCP Freq Category = Standard
Track 2 : GCP Frequency = 114 Hz
Track 2 : Approach Distance = 3263 ft
Track 2 : Uni/Bi/Sim-Bidirnl = Bidirnl
Track 2 : GCP Transmit Level = Medium
Track 2 : Island Connection = Isl2
Track 2 : Island Distance = 141 ft
Track 2 : Computed Distance = 9999 ft
Track 2 : Linearization Steps = 100

GCP: track 2 enhanced det
Track 2 : Inbound PS Sensitivity = Off
Track 2 : Speed Limiting Used = Yes
Track 2 : Outbound False Act Lvl = Normal
Track 2 : Outbound PS Timer = 20 sec
Track 2 : Trailing Switch Logic = On
Track 2 : Post Joint Detn Time = 15 sec
Track 2 : Adv Appr Predn = No
Track 2 : Cancel Pickup Delay = This Isl

GCP: track 2 prime
Track 2 : Prime Warning Time = 32 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 Shnt Det Used = No
Track 2 : Low EZ Detection Used = No

GCP: track 2 MS Control
Track 2 : MS/GCP Ctrl IP Used = No
Track 2 : MS Sensitivity Level = 0
Track 2 : Compensation Level = 1300
Track 2 : Warn Time-Ballast Comp = High
Track 2 : Low EX Adjustment = 39
Track 2 : Bidirn Dax Passthru = No
Track 2 : False Act on Train Stop = No
Track 2 : EX Limiting Used = Yes
Track 2 : EZ Correction Used = Yes

ISLAND: track 1
Track 1 : Isl Frequency = 15.2 kHz
Track 1 : Pickup Delay (2s +) = 0 sec
Track 1 : Isl Enable IP Used = No

ISLAND: track 2
Track 2 : Isl Frequency = 13.2 kHz
Track 2 : Pickup Delay (2s +) = 0 sec
Track 2 : Isl Enable IP Used = No

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

AND: AND 1 XR
AND 1 XR Track 1 = Prime
AND 1 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

ADVANCED: MS restart
MS/GCP Restart Used = No

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

ADVANCED: out of service 2
T1 OOS Control = OOS Input 1
T2 OOS Control = OOS Input 1

ADVANCED: track wrap circuits
Wrap LOS Timer = 5 sec
Track 1 Wrap Used = No
Track 2 Wrap Used = No

ADVANCED: trk 1 overrides
Track 1 : All Predictors Override Used = No

ADVANCED: trk 2 overrides
Track 2 : All Predictors Override Used = No

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

ADVANCED: internal I/O 1
Pass Thrus = No
Int.1 Sets = Not Used
Int.1 Set by = Not Used
Int.2 Sets = Not Used
Int.2 Set by = Not Used
Int.3 Sets = Not Used
Int.3 Set by = Not Used
Int.4 Sets = Not Used
Int.4 Set by = Not Used

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

GCP4000 PROGRAMMING

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN		
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: PC-162.82	
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037		
IN SERVICE: - -	FORT WAYNE LINE	REV. 1	
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.007	SHEET No. 7	

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

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

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

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

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

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

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

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

SEAR
SEAR Subnode = 3
DI 1 = Not Used
DI 2 = Not Used
Rly 1 = General
Rly 2 = Not Used

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

SEAR: slot 1-4 inputs
IN 1.1 = Not Used
IN 1.2 = Not Used
IN 2.1 = Not Used
IN 2.2 = Not Used
IN 3.1 = Not Used
IN 3.2 = Not Used
IN 4.1 = Not Used
IN 4.2 = Not Used

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

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

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

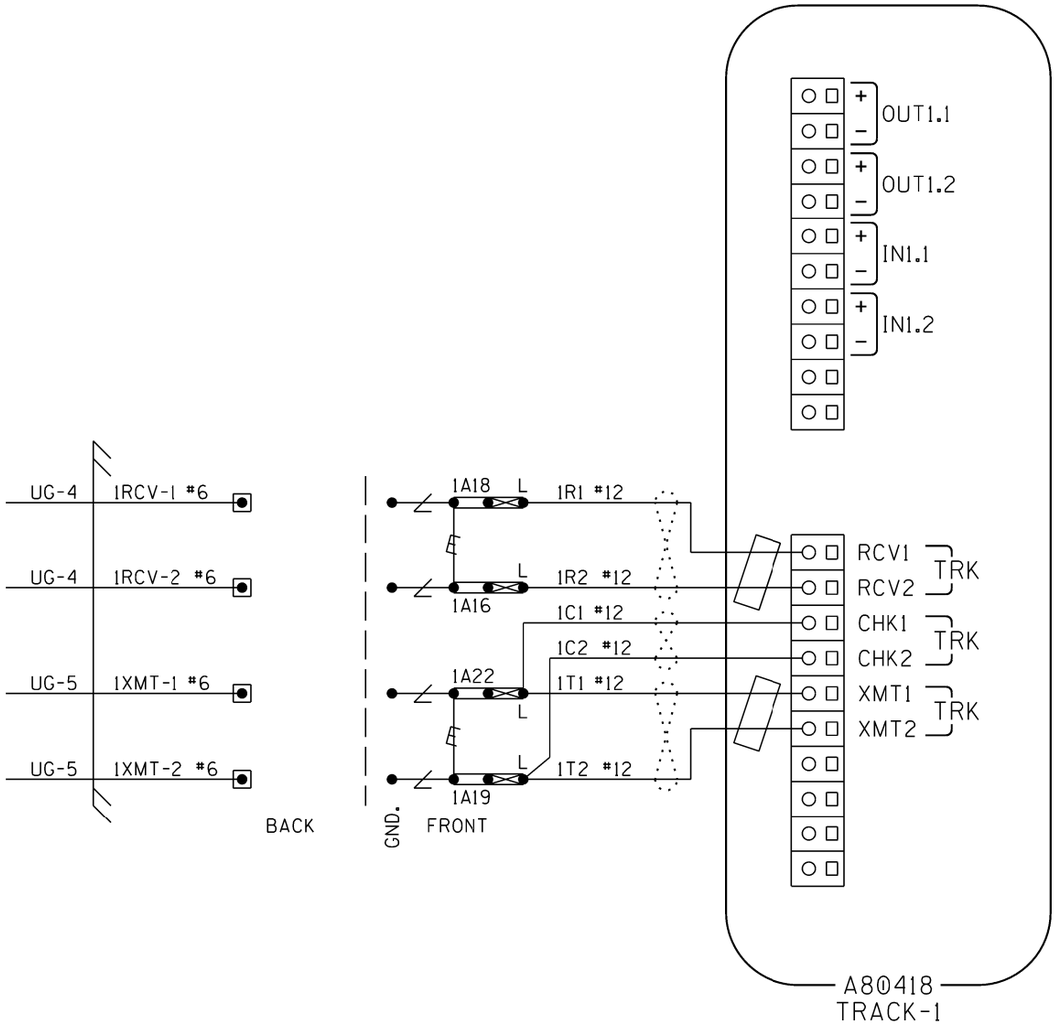
SITE: programming
Radio Subnode = 1
Field Password = Off
Low Battery Enabled = Off

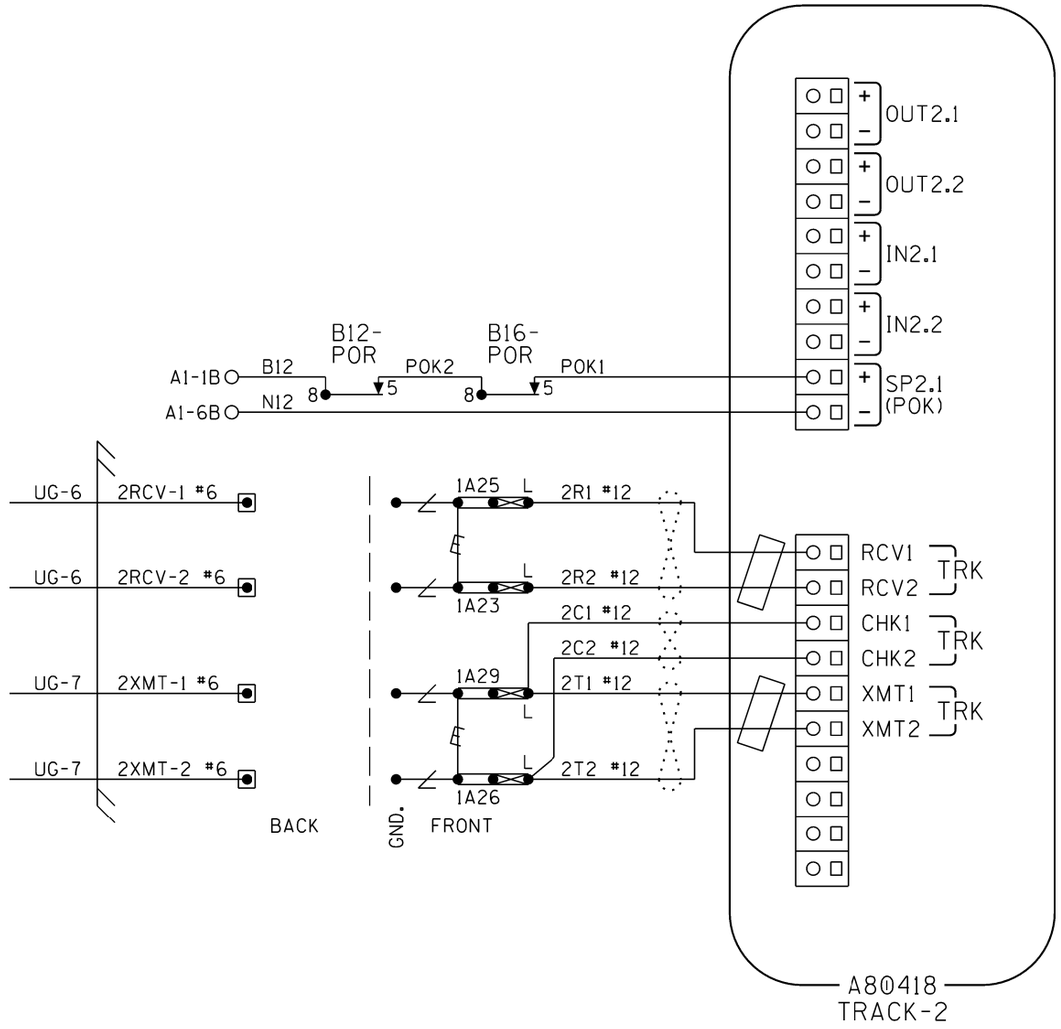
Configuration Package File

Filename: 24021628.pac

GCP4000 PROGRAMMING

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY: PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.008 — SHEET No. 8



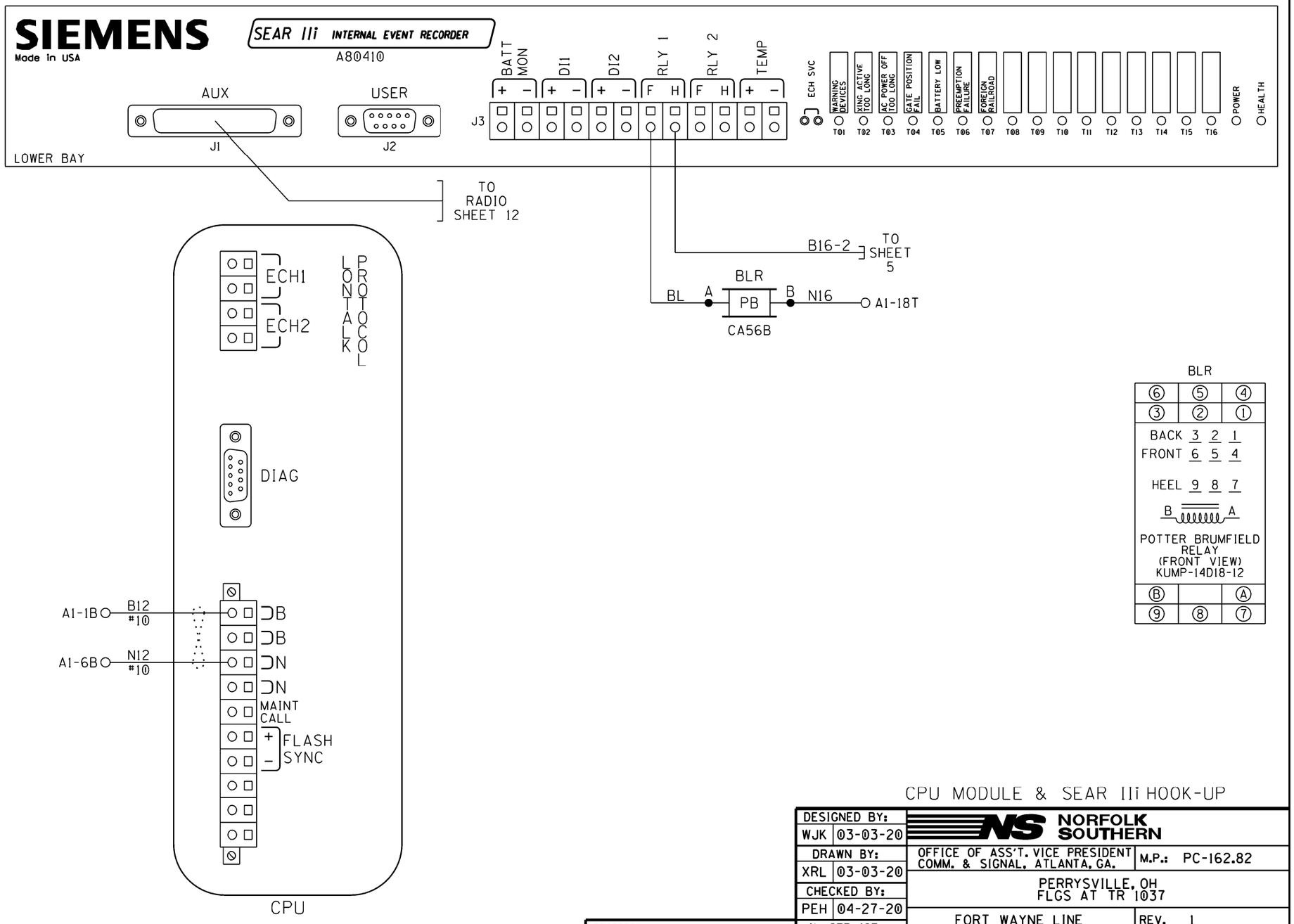


NOTES:

1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
2. = TWIST
3. = FERRITE BEAD

CONNECTORS FOR TRACK MODULES

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.009 — SHEET No. 9



CPU MODULE & SEAR IIi HOOK-UP

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.010 — SHEET No. 10

	SITE SET UP PROCEDURE	
	FUNCTION	LED DISPLAY
	SITE NAME	TR 1037
	MILEPOST	PC-162.82
	DOT NUMBER	503-097P
	TESTER TYPE	CROSSING
	AUTO DST ADJUST	NO
	TIMEZONE	OTHER
	GMT OFFSET	-00:00
	DATE FORMAT	MM-DD-YYYY
	TEMP. FORMAT	FAHRENHEIT
	INDICATE HOLDOFF (SEC)	0
	INDICATE REFRESH (SEC)	60
	GEO CTL REFRESH (SEC)	0
	SITE ADDRESS (ATCS)	7.550.036.145.03.01
	SITE TYPE	NO COMMUNICATION
#	OFFICE ADDRESS (ATCS)	2.550.00.0000
#	PRIMARY HOP ADDR	7.RRR.LLL.GGG.XX.XX
#	BACKUP HOP ADDR 1	7.RRR.LLL.GGG.XX.XX
#	BACKUP HOP ADDR 2	7.RRR.LLL.GGG.XX.XX
#	POLL ID	1
#	MODE	GEN/ATCS
#	WAMS XID	DISABLED
#	OFFICE COMM DEVICE	MCM (ECHELON)
#	RADIO ATCS ADDR	7.RRR.LLL.GGG.01.01
#	PHONE #	(OFFICE NUMBER)
#	INIT STRING	
#	FIELD COMM DEVICE	NONE
★	USER PORT BAUD	57600
★	USER PORT DATA BITS	8
★	USER PORT PARITY	NONE
★	USER PORT STOP BITS	1
★	USER PORT FLOW CONTROL	NONE
★	AUX PORT BAUD	9600
★	AUX PORT DATA BITS	8
★	AUX PORT PARITY	NONE
★	AUX PORT STOP BITS	1
★	AUX PORT FLOW CONTROL	NONE

	CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
	THE QUESTION	SELECT FROM MENU OPTION
	RESET NAMES AND MODULES?	YES
	RAILROAD NUMBER?	550
	CROSSING CONFIGURATION?	NORMAL
	AND1 USED AS XR?	YES
	AND2 USED AS XR?	NO
	AND3 USED AS XR?	NO
	AND4 USED AS XR?	NO
	AND5 USED AS XR?	NO
	AND6 USED AS XR?	NO
	AND7 USED AS XR?	NO
	AND8 USED AS XR?	NO
*	XR CONTROLLED BY FOREIGN RR?	NO
	ENTRANCE GATES?	2
	85% VOLTAGE RELAY OUT?	YES
	BATTERY BANKS?	2
	BATT MON USED?	NO
	PREEMPTION?	NO
	INTERNAL CROSSING CONTROLLERS?	2
	EXTERNAL CROSSING CONTROLLERS?	0
	VHF COMMUNICATOR?	NO
	DTMF ACTIVATION?	NO
	ILOD MODULES?	0
	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
GCP4K ATCS SUBNODE	16

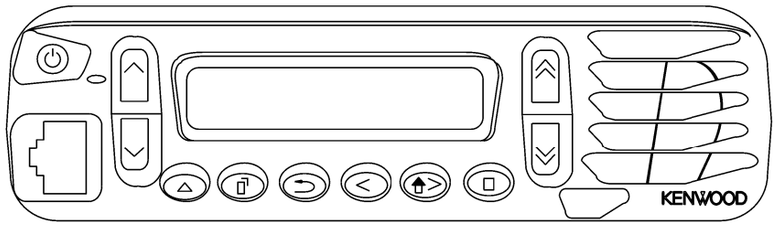
TO CONFIGURE SEARIII PRESS SITE SETUP KEY.
USE ARROW KEYS TO MAKE SELECTION,
PRESS ENTER AFTER SELECTION HAS BEEN MADE.

NOTES:
1. # = NOT DISPLAYED IF SITE TYPE = NO COMMUNICATION
2. ★ = USE DEFAULT SETTINGS
3. * = ONLY DISPLAYED IF CROSSING CONFIGURATION = SPLIT GATE

SEAR III PROGRAMMING

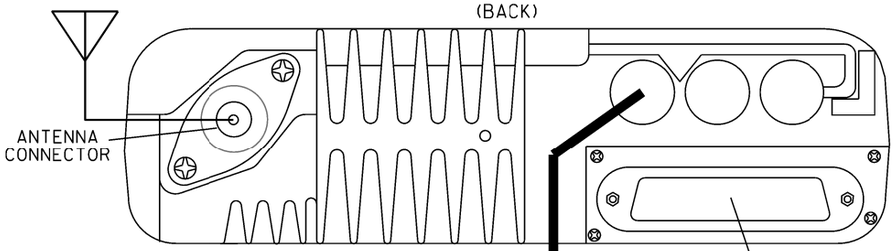
DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.011 — SHEET No. 11

(FRONT)



KENWOOD RADIO NX-700H
OR EQUIVALENT

(BACK)



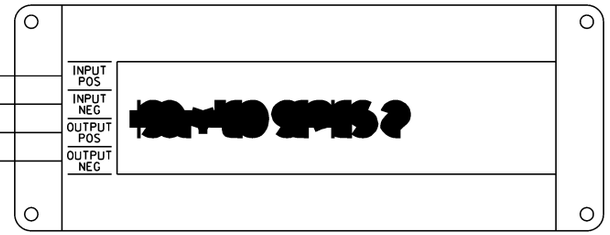
BA5

DB25M - DB25M
STRAIGHT THROUGH CABLE

TO
SEAR III
SHEET 10

CABLE - KENWOOD
P/N E30-7520-15

A1-2B — B12
A1-7B — N12
B12
N12

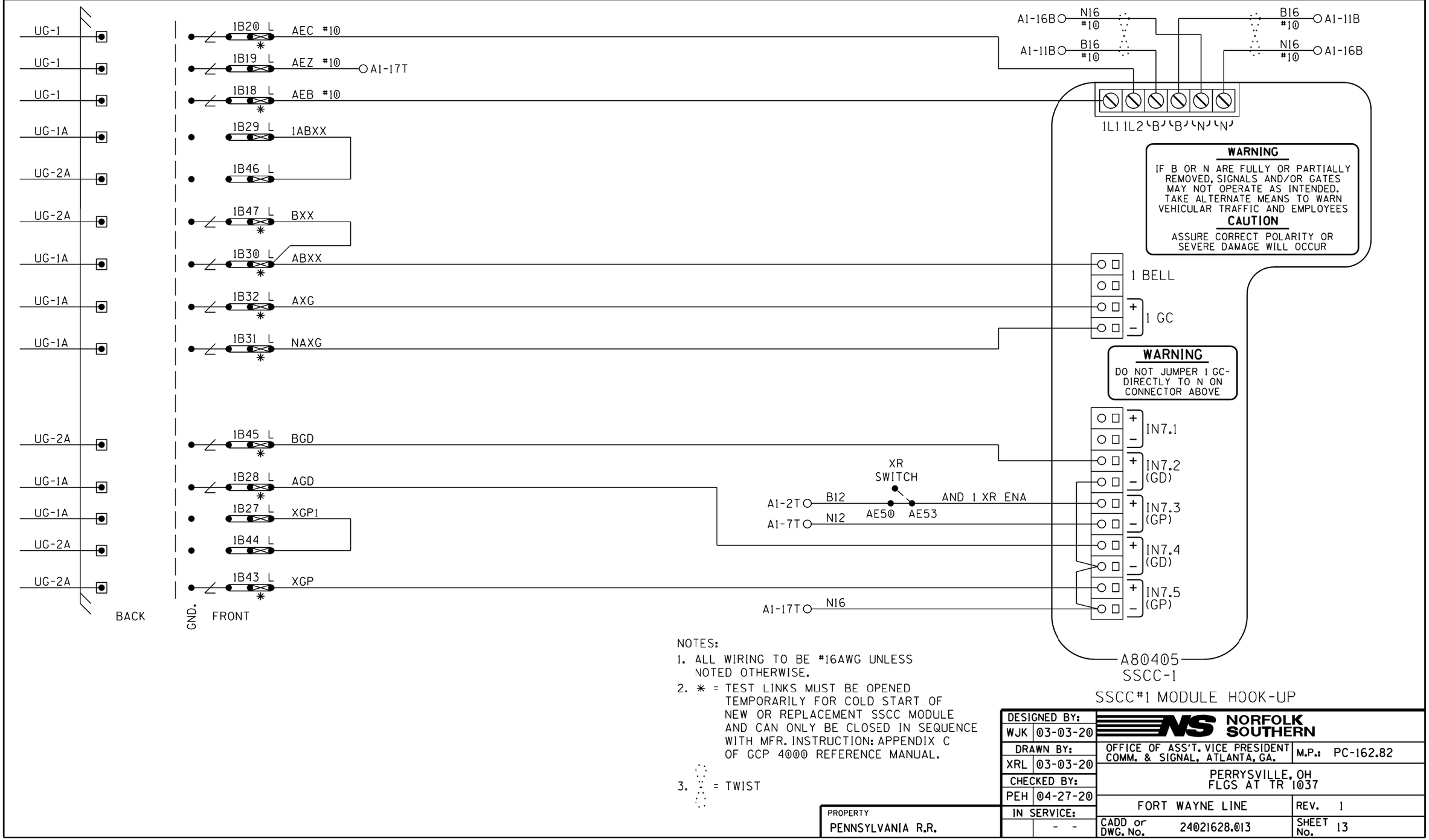


BB5

NOTE:
1. ALL WIRING TO BE #10AWG UNLESS NOTED OTHERWISE.

BACKHAUL EQUIPMENT

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.012 — SHEET No. 12

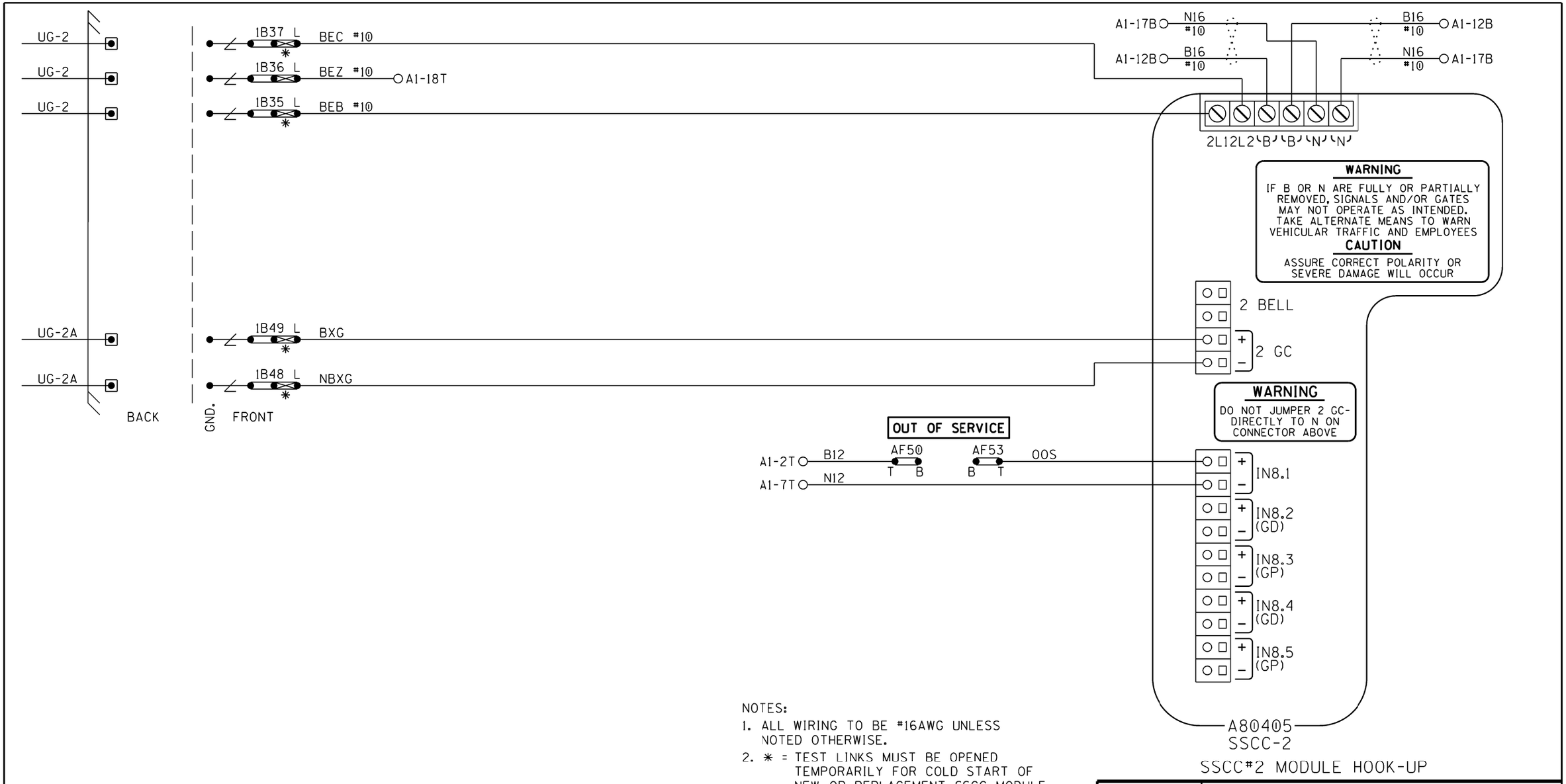


SSCC#1 MODULE HOOK-UP

NOTES:

1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
2. * = TEST LINKS MUST BE OPENED TEMPORARILY FOR COLD START OF NEW OR REPLACEMENT SSCC MODULE AND CAN ONLY BE CLOSED IN SEQUENCE WITH MFR. INSTRUCTION: APPENDIX C OF GCP 4000 REFERENCE MANUAL.
3. ⋮ = TWIST

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY: PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.013 — SHEET No. 13

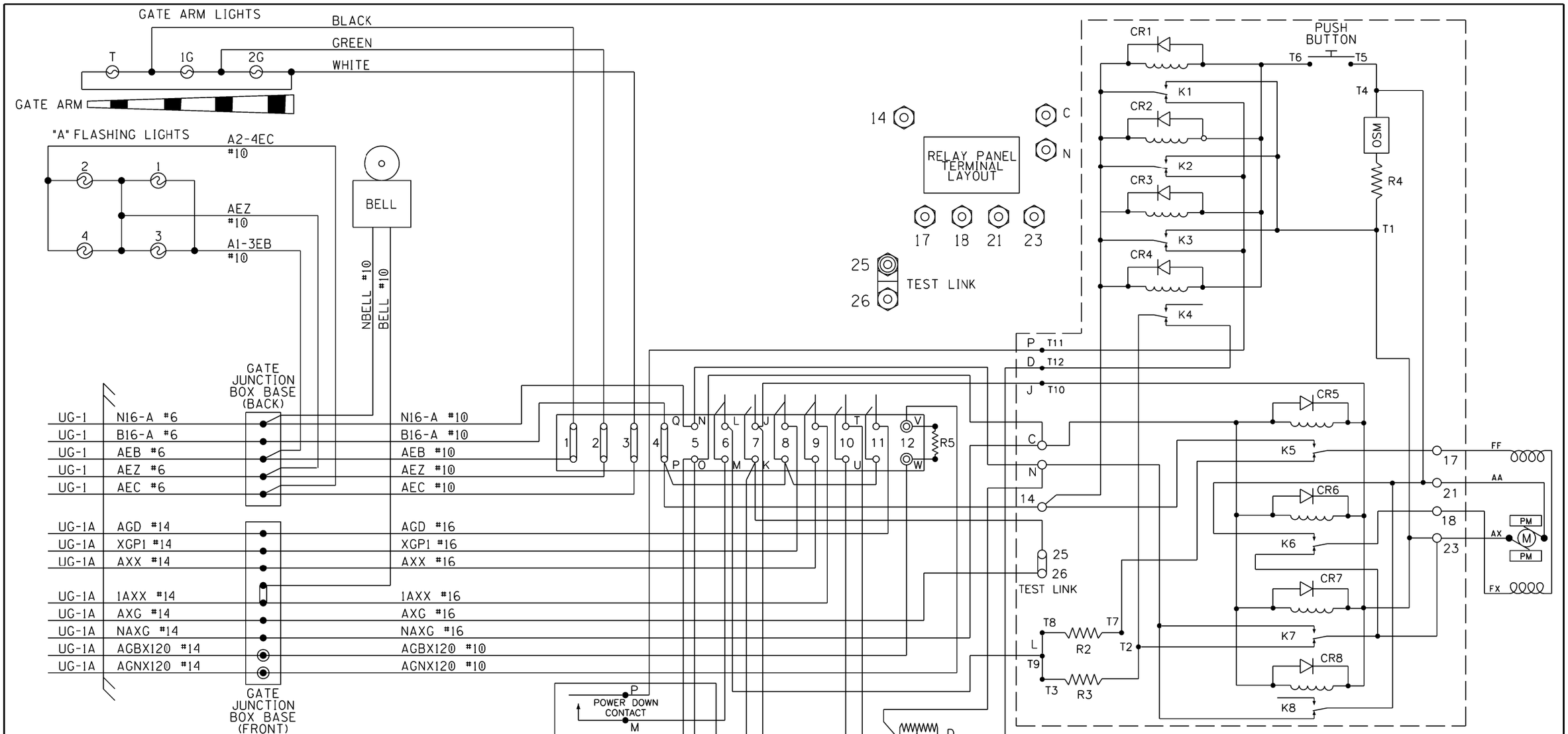


SSCC#2 MODULE HOOK-UP

NOTES:

1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
2. ✱ = TEST LINKS MUST BE OPENED TEMPORARILY FOR COLD START OF NEW OR REPLACEMENT SSCC MODULE AND CAN ONLY BE CLOSED IN SEQUENCE WITH MFR. INSTRUCTION: APPENDIX C OF GCP 4000 REFERENCE MANUAL.
3. ⋮ = TWIST

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY: PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.014 — SHEET No. 14

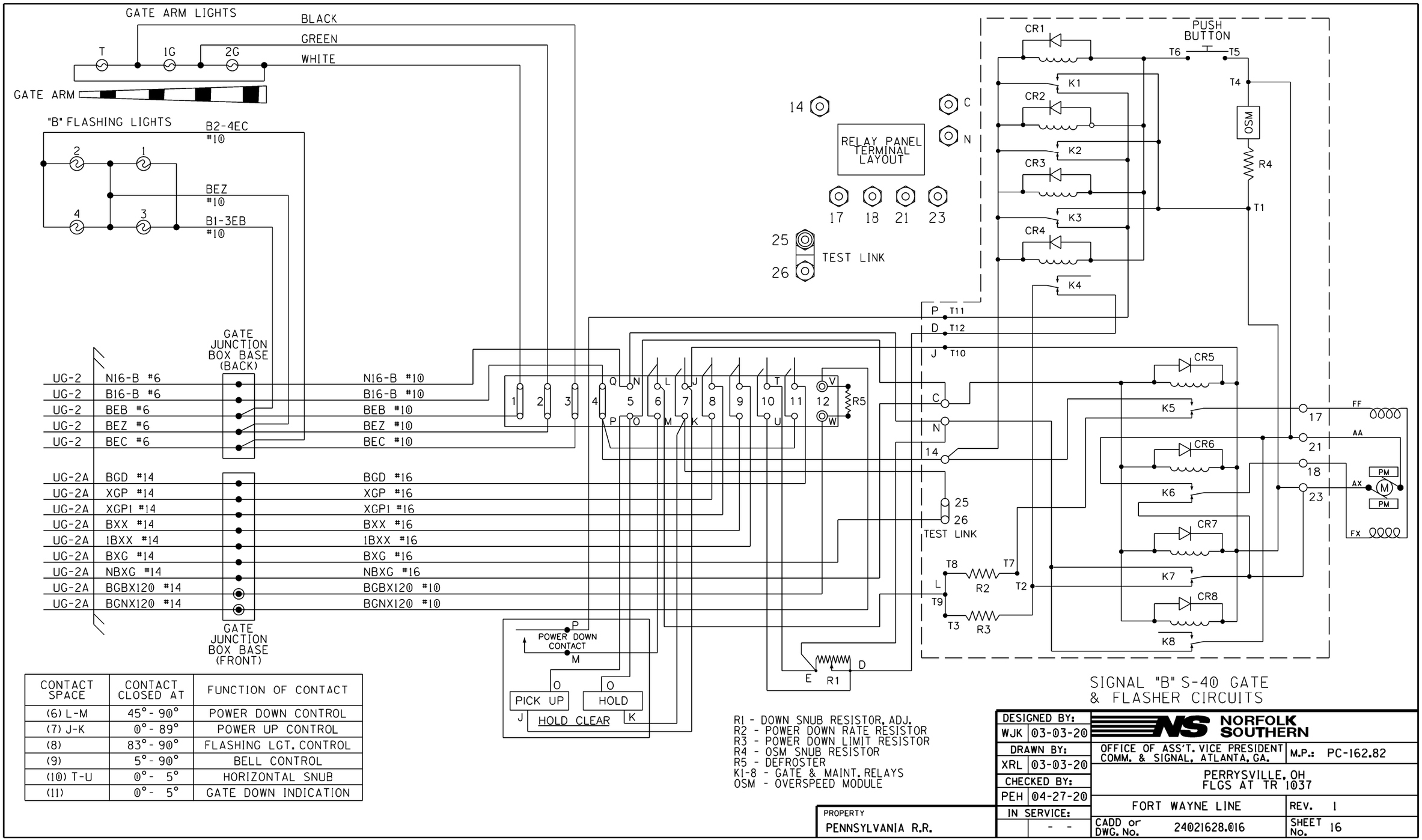


CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
(6) L-M	45° - 90°	POWER DOWN CONTROL
(7) J-K	0° - 89°	POWER UP CONTROL
(8)	83° - 90°	FLASHING LGT. CONTROL
(9)	5° - 90°	BELL CONTROL
(10) T-U	0° - 5°	HORIZONTAL SNUB
(11)	0° - 5°	GATE DOWN INDICATION

R1 - DOWN SNUB RESISTOR, ADJ.
R2 - POWER DOWN RATE RESISTOR
R3 - POWER DOWN LIMIT RESISTOR
R4 - OSM SNUB RESISTOR
R5 - DEFROSTER
K1-8 - GATE & MAINT. RELAYS
OSM - OVERSPEED MODULE

SIGNAL "A" S-40 GATE & FLASHER CIRCUITS

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.015 — SHEET No. 15



CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
(6) L-M	45° - 90°	POWER DOWN CONTROL
(7) J-K	0° - 89°	POWER UP CONTROL
(8)	83° - 90°	FLASHING LGT. CONTROL
(9)	5° - 90°	BELL CONTROL
(10) T-U	0° - 5°	HORIZONTAL SNUB
(11)	0° - 5°	GATE DOWN INDICATION

R1 - DOWN SNUB RESISTOR, ADJ.
R2 - POWER DOWN RATE RESISTOR
R3 - POWER DOWN LIMIT RESISTOR
R4 - OSM SNUB RESISTOR
R5 - DEFROSTER
K1-8 - GATE & MAINT. RELAYS
OSM - OVERSPEED MODULE

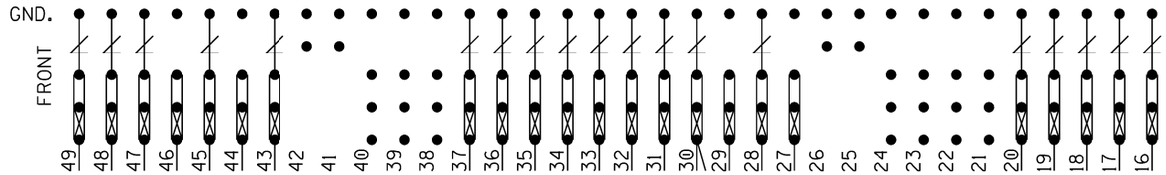
SIGNAL "B" S-40 GATE & FLASHER CIRCUITS

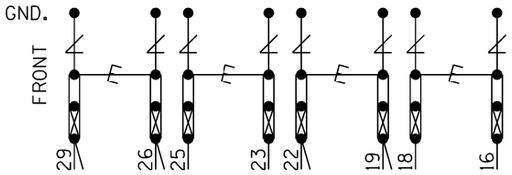
DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.016 — SHEET No. 16

LEFT TWO FRONT ROWS TERMINAL BOARD 1

"1B"

"1A"





NOTES:

1. = HEAVY DUTY EQUALIZER (022700-1X)
2. = ERICO LIGHTNING ARRESTER (EPD2050F)
3. GND. ● = THROUGH GROUND POST ON EACH TERMINAL BLOCK TO FARADAY SHIELD
4. = TEST LINK
5. INSTALL TEST LINKS ON ALL TRACK WIRES AND ON ALL LOW VOLTAGE UNDERGROUND CABLE TERMINATIONS.

SEE FARADAY SHIELD SHOP DRAWING DETAIL FOR HOW THIS PORTION OF THE FARADAY SHIELD IS PREDRILLED. ONLY INSTALL AND USE THE TERMINALS NEEDED.

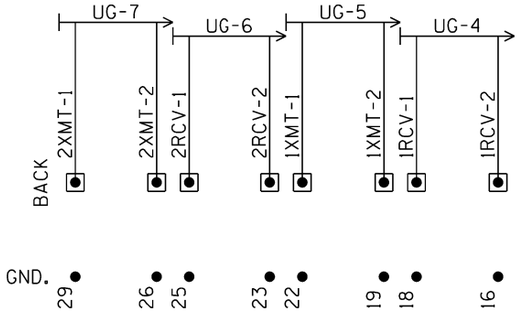
BACKBOARD 1A & 1B

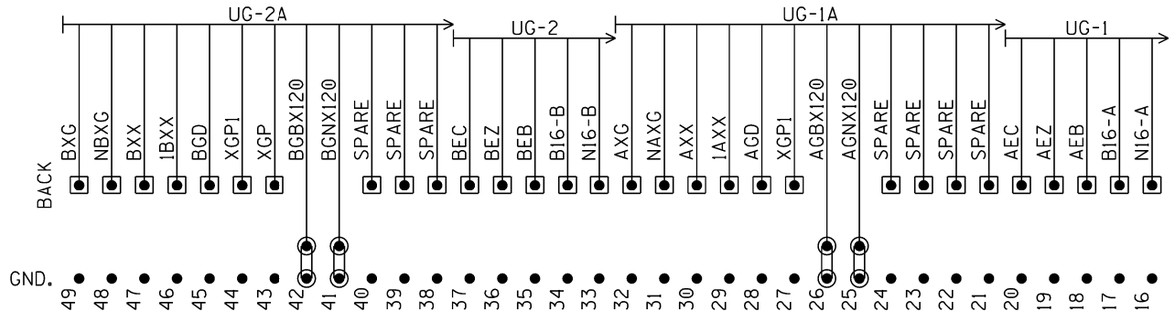
DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.017 — SHEET No. 17

REAR VIEW OF LEFT TWO ROWS TERMINAL BOARD 1

"1A"

"1B"





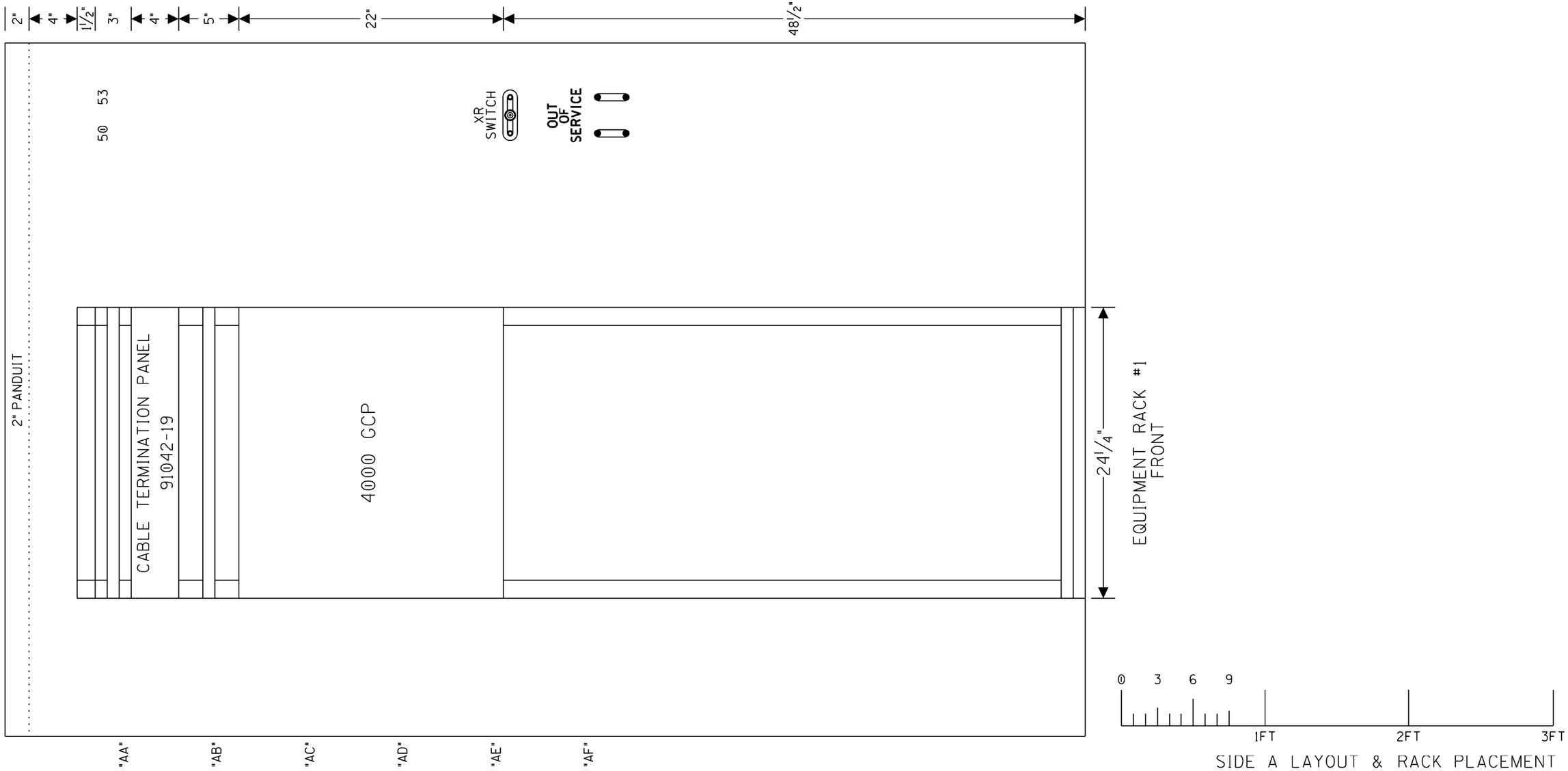
SEE FARADAY SHIELD SHOP DRAWING DETAIL FOR HOW THIS PORTION OF THE FARADAY SHIELD IS PREDRILLED. ONLY INSTALL AND USE THE TERMINALS NEEDED.

NOTES:

1. GND.● = THROUGH GROUND POST ON EACH TERMINAL BLOCK TO FARADAY SHIELD
2. ✳ = TEST LINKS MUST BE OPENED
3. ◉ = INSULATED NUTS TO BE USED ON ALL 120VAC AND ABOVE TERMINALS

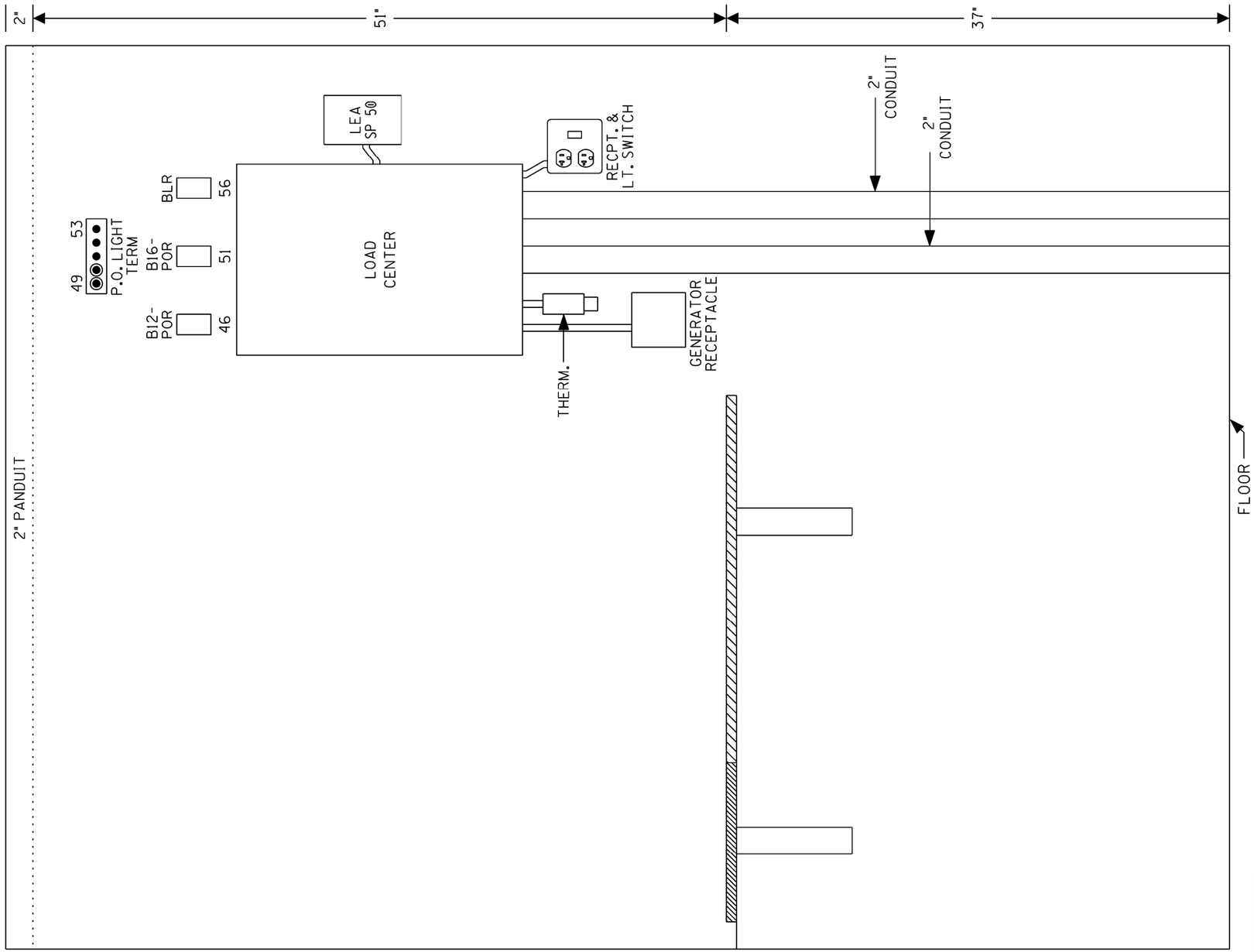
REAR BACKBOARD 1A & 1B

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.018 — SHEET No. 18



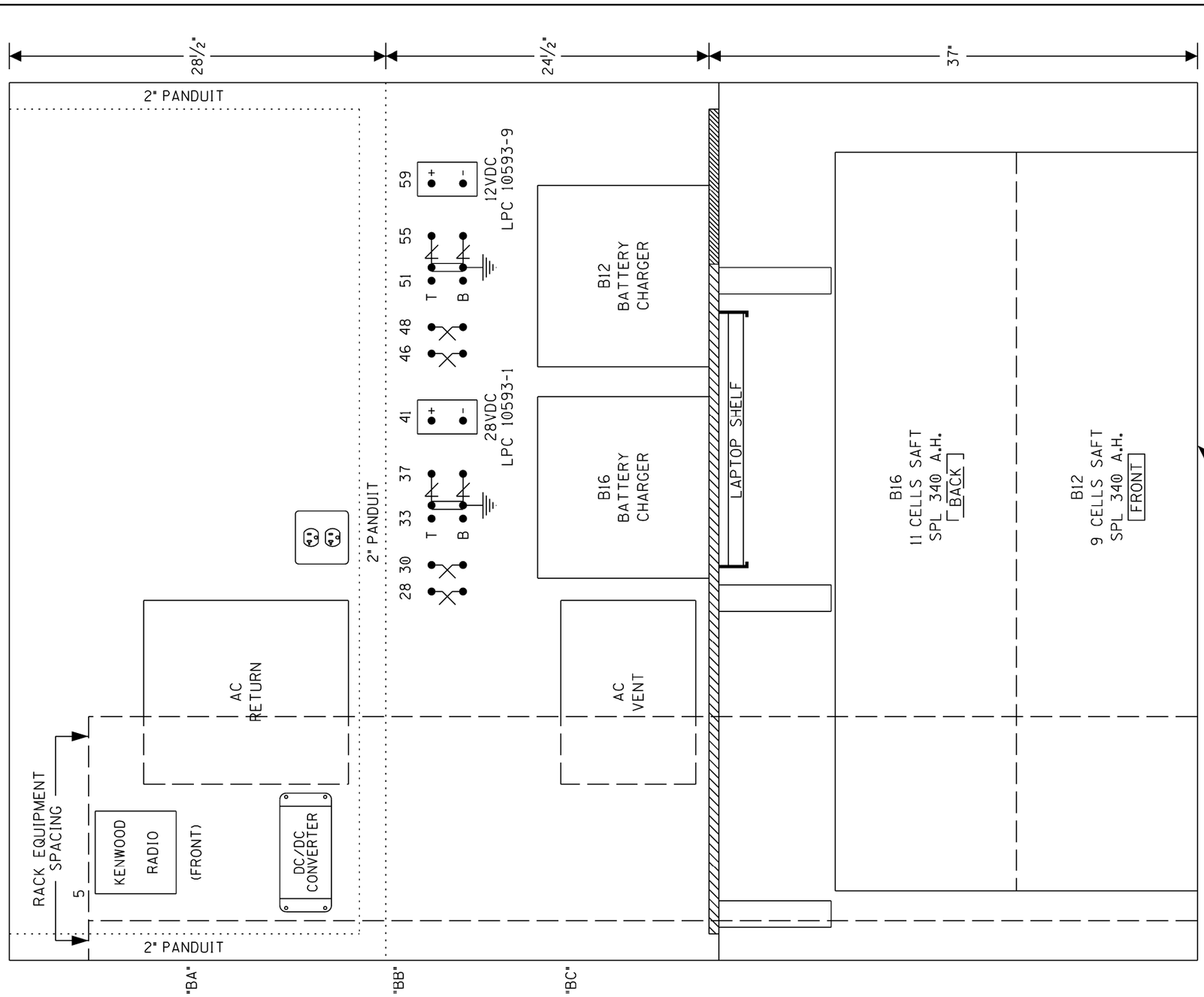
SIDE A LAYOUT & RACK PLACEMENT

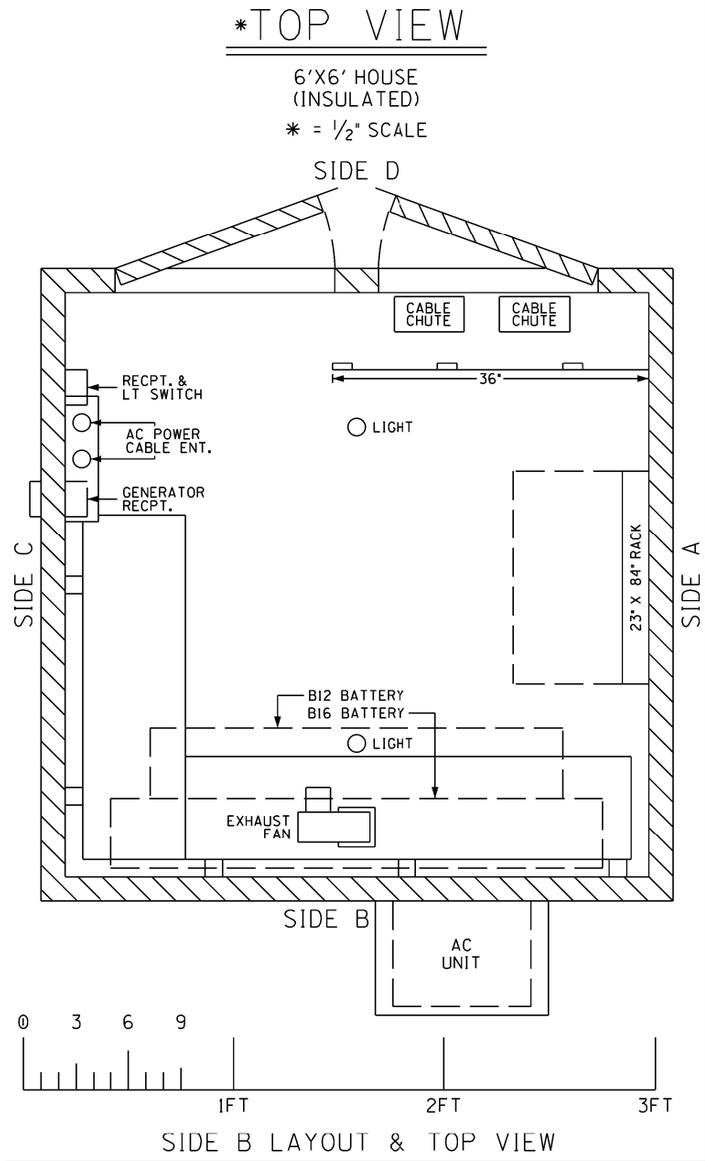
DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.019 — SHEET No. 19



SIDE C LAYOUT

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY: PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.020 — SHEET No. 20





SIDE B LAYOUT & TOP VIEW

DESIGNED BY: WJK 03-03-20	NORFOLK SOUTHERN
DRAWN BY: XRL 03-03-20	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: PC-162.82
CHECKED BY: PEH 04-27-20	PERRYSVILLE, OH FLGS AT TR 1037
IN SERVICE: - -	FORT WAYNE LINE — REV. 1
PROPERTY: PENNSYLVANIA R.R.	CADD or DWG. No. 24021628.021 — SHEET No. 21

Ohio | Rail Development Commission

Mike DeWine, Governor
Jon Husted, Lt. Governor

Mark Policinski, Chair

February 11, 2020

Mr. Kurt Young
Norfolk Southern
Administrator Grade Crossing Program
1200 Peachtree Street NE, Box 123
Atlanta, Ga. 30324

RE: Grade Crossing Warning Device Improvements
Ashland County, Township Road 1037, DOT# 503097P, PID# 111135.

Dear Mr. Young:

A diagnostic review was held at the above grade crossing on July 24, 2019. As a result of the review, the crossing will be upgraded to flashing lights and roadway gates.

Norfolk Southern (NS) 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 7), if any, made by the team regarding requirements for this location. Any minor roadway work necessary for MUTCD compliance should be incorporated into the PE and such costs will flow through the railroad reimbursement process.

The Project Manager for this project is James Tucker. James can be reached at (614) 398-6897, or james.tucker@dot.ohio.gov, if you have any questions.

Sincerely,

Project Manager

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

Attachment: 1 (diagnostic review form)

Ohio | Public Utilities Commission
Mike DeWine, Governor
Sam Randazzo, Chairman

December 10, 2019

Norfolk Southern Railway
Mr. Kurt Young
Administrator Highway Grade Crossing Improvements
1200 Peachtree Street
Atlanta, GA 30309-3597

RE: TR 1037 DOT#503-097P
Ashland County
Hereinafter referred to as the
"Projects"

Dear Mr. Young:

The Public Utilities Commission of Ohio (PUCO) has identified and the Ohio Rail Development Commission (ORDC) surveyed, on July 24, 2019, the above mentioned grade crossing for warning device upgrades. The location has been approved for flashing lights and gates.

The Projects shall comply with Agreement No. 17450, dated December 19, 2012, entered into by the State of Ohio and Norfolk Southern Railway Company (RAILROAD). Furthermore, the RAILROAD shall comply with all applicable state and federal laws governing grade crossing safety programs.

Preliminary engineering (PE) and construction costs shall be borne one hundred percent (100%) by ORDC. Reimbursable costs will be limited by ORDC based upon approved estimates and bid tabulations, if applicable. These limits will be quantified by the ORDC in its construction authorization to the RAILROAD and may be amended by the ORDC based upon revised estimates and bid tabulations. Additional costs must be approved in writing by the ORDC prior to being incurred. Emergency verbal authorizations by ORDC may be permitted but must be confirmed in writing within ten (10) business days of the verbal approval.

The RAILROAD shall complete plans and estimates for the Projects within ninety (90) days after the RAILROAD is notified of authorization to proceed unless otherwise agreed by ORDC/PUCO and the RAILROAD.

The RAILROAD shall not commence construction prior to PUCO's Order and ORDC's construction authorization. The RAILROAD shall provide written notification of the construction start date to PUCO and ORDC no later than five (5) business days prior to such date.

Please indicate your acceptance of the terms and conditions of this Letter of Agreement by signing and returning one (1) copy to Ms. Jill Henry, Rail Specialist, Rail Division, Public Utilities Commission of Ohio, 180 E. Broad Street, Columbus, Ohio 43215-3793.

Sincerely,

John Williams
Director of Transportation
Public Utilities Commission of Ohio

Norfolk Southern Railway Company

By _____

Title VP ATC

Date 1/15/2020

Matthew Dietrich
Executive Director
Ohio Rail Development Commission

Date _____

Please indicate your acceptance of the terms and conditions of this Letter of Agreement by signing and returning one (1) copy to Ms. Jill Henry, Rail Specialist, Rail Division, Public Utilities Commission of Ohio, 180 E. Broad Street, Columbus, Ohio 43215-3793.

Sincerely,

John Williams
Director of Transportation
Public Utilities Commission of Ohio

Norfolk Southern Railway Company

By _____

Title _____

Date _____

Matthew Dietrich
Executive Director
Ohio Rail Development Commission

Date 10-25-19

OHIO RAIL DEVELOPMENT COMMISSION

Ohio Rail Development Commission
Mail Stop 3140, 1980 W. Broad Street
Columbus, OH 43223

DIAGNOSTIC REVIEW

DOT# 503097P | Date: 7-24-19

On-Site Review Team

Include: Name - Title - Organization - Phone Number - Email

1. James Tucker ORDC 614-398-6897 James.tucker@dot.ohio.gov
2. Jerry E. Gibson PUCO 419 234-8416 jerry.gibson@puc.ohio.gov
3. Scott Wojnicki Green Twp
4. Jon Bowman Green Twp
5. Randy Jolt PUCO 330-495-3810
6. Ed Meixner County Engineer 419-282-4281
7. Marianne Cowell Green Twp Trustee 419.606.3198
8. E. M. Wa[illegible] Norfolk Southern
9.

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

Date: 7/24/2019

Location Data					
Street or Road Name:	Township Road 1037				
County:	Ashland	Township:	Green	US DOT No.:	503097P
City (in or near):	near Perrysville	Railroad Name:	NS	RR Milepost:	162.820

Safety Data (Obtain crash reports, if possible)		
	Initial Information (from database)	**Revised**
Number & dates of vehicle crashes in previous 5 years:		
Number & dates of pedestrian/bicycle crashes in previous 5 years:		
Hazard Ranking: 1549	Date Run: 03/18/2019	

Existing Traffic Control Devices			
Type of Warning Devices	**Installed?**		**Quantity/Comments**
HIGHWAY			
Advance Warning Signs (condition?)	☒ Yes	☐ No	2 WITH NO SIGNAL SIGN
'Stop' Signs	☒ Yes	☐ No	
'Stop Ahead' Signs	☐ Yes	☒ No	
Pavement Markings (condition?)	☐ Yes	☒ No	
Dynamic Envelope Markings (condition?)	☐ Yes	☒ No	
Illumination	☐ Yes	☒ No	
'No Turn' Signs (highway/passive)	☐ Yes	☒ No	
Barriers/fencing (pedestrian/bicycle)	☐ Yes	☒ No	
LOOK Sign	☐ Yes	☒ No	
Do Not Stop On Track Sign	☐ Yes	☒ No	
RAILROAD			
Crossbucks	☒ Yes	☐ No	2
Crossbucks – assembly with Stop	☒ Yes	☐ No	2
Crossbucks – assembly with Yield	☐ Yes	☒ No	
Mast-Mounted Flashing Lights	☐ Yes	☒ No	
Cantilever Flashing Lights	☐ Yes	☒ No	Number: Length:
Side Lights	☐ Yes	☒ No	
LED or Incandescent Lights? Size?	☐ Yes	☒ No	
Automatic Gates	☐ Yes	☒ No	Number: Length:
Bells	☐ Yes	☒ No	Number:
Sidewalk/Pedestrian Gate Arms	☐ Yes	☒ No	Number: Length:
'No Turn' Signs (railroad/active)	☐ Yes	☒ No	
Is crossing flagged by train crew?	☐ Yes	☒ No	
OTHER	☐ Yes	☒ No	

Railroad Data

Type of Train: ☑ Freight ☐ Intercity Passenger ☐ Transit ☐ Shared Use Transit ☐ Commuter ☐ Tourist/Other

Railroad Characteristics	Initial Information (from database)	Revised
Total trains per day	~~15~~	10
<1 per day? Trains per week	-	
Day thru trains	~~8~~	5
Night thru trains	~~2~~	5
Switching	~~5~~	0
Total number of tracks	2	
Number of main tracks	2	
Number of other tracks	0	
Maximum train speed	60	
Typical train speed	50-60	
Amtrak	-	

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

If yes, Crossing DOT# (if different) _____

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

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 the crossing? ☒ Yes (explain below) ☐ No

Can one or more tracks be eliminated through the crossings? ☐ Yes ☒ No

Comments:

Circuitry: ☐ Constant Warning Time ☐ Motion Detection ☐ AFO ☐ PTC ☐ DC ☐ Other _____

Roadway Data

Local Highway Authority: Green Township

Roadway Characteristics	Initial Information (from database)	Revised
Average Daily Traffic	80	
Highway Paved	☒ Yes ☐ No	☐ Yes ☐ No
Roadway Surface: ☒ Blacktop ☐ Gravel ☐ Concrete Other_____		
Roadway width (paved/travelled way): 28 ft		
Number of Highway Lanes	2	
Urban or Rural	Rural - Local	
Vehicle Speed: n/a MPH		55
School Bus Operation: ☐ Yes ☑ No Amount * Buses won't cross due to skew *		
Location of nearby schools: Loudonville School 5+ miles		
Hazardous Materials Trucks: ☒ Yes ☐ No Amount (from FRA) 5% LHA verified/changed?		
Shoulders: ☐ Yes ☒ No		
Is the Shoulder Surfaced? ☐ Yes ☒ No If yes, shoulder width: _____ft.		
Is there existing guardrail along the roadway in crossing vicinity? ☐ Yes ☒ No		
Crossing Angle ☐ 0-29° ☑ 30-59° ☐ 60-90° Measured in _____ Quadrant?		

Quadrant NW Curb & Gutter:	Quadrant SE Curb & Gutter:
☐ Functional (Curb height = 4" or more)	☐ Functional (Curb height = 4" or more)
☐ Non-functional (Curb height = less than 4")	☐ Non-functional (Curb height = less than 4")
☒ None	☒ None

Is there a nearby intersection that could cause queuing over the crossing? ☐ Yes ☒ No

If yes, distance _____

Is this intersection signalized? ☐ Yes ☒ No

Are there signals currently interconnected with the existing crossing warning devices? ☐ Yes ☒ No

Is there a 'Do Not Stop on Track' sign? ☐ Yes ☒ No

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? ☐ Yes ☒ No

If yes:

Improvement type_____ Lead Agency_____ Timeline/completion_____

Pedestrian & Bicycle Data

Regular pedestrian usage: ☒ Yes ☐ No Volumes: ☒ Occasional ☐ <20 ☐ 20-60 ☐ >60

Is sidewalk present in the approach? ☐ Yes ☒ No Quadrants:

Does crossing surface accommodate pedestrians? ☐ Yes ☒ No

Both sides of roadway? ☐ Yes ☒ No If no, which side is paved?

Pedestrian generators in close proximity (e.g. schools, sports/entertainment venues)? ☐ Yes ☒ No

Comments:

Regular bicycle usage: ☒ Yes ☐ No

☒ Roadway ☐ Dedicated Lane (on street) ☐ Dedicated Path (off street) ☐ Shared Use (pedestrian/bicycle) Path
☐ Bikes must use sidewalk

Future plans for pedestrian or bicycle routes? ☐ Yes ☒ No

Comments:

Utility Information

Is commercial power available? ☒ Yes ☐ No

Utility Provider (Company Name) unknown

Nearest Available Power Source ___ @ crossing

What other utilities are present? ☐ Gas ☐ Cable ☐ Telephone ☒ Fiber Optic Cable (add locations to sketch)
☐ Petroleum ☐ Water ☐ Sanitary Sewer ☐ Other

Comments:

Surface

Surface review form completed? ☒ Yes ☐ No

Sight Preview (REFER TO TABLES)

If non-gated crossing, is clearing sight distance adequate in all quadrants? (See Table 1) ☐ Yes ☒ No 1440'

Is stopping sight distance adequate? (See Table 2) ☐ Yes ☒ No If no, which quadrant? SE 570'

When considering recommendations for bicycle treatments:

Bicycle sight distance adequate? ☐ Yes ☐ No If no, which quadrant? SW 580'

When considering recommendations for pedestrian treatments:

Pedestrian sight distance adequate? ☐ Yes ☒ No If no, which quadrant? SW 440'

Potential Red Flags / Project Challenges
Traffic Signal Preemption (include traffic signal intersection name and LHA with jurisdiction over traffic signal, if known): N/A
Crossing Consolidation or Closure: N/A
Real Estate or ROW: N/A
Culvert / Drainage / Ballast Conditions: N/A
Roadway and/or Sidewalks: N/A
Circuitry (e.g. reaches out to other crossings, specific needs, etc.): N/A
Environmental: N/A
Utilities: N/A
Other:

Potential Closure

Is it the consensus of the Diagnostic Review Team that this is a potential closure project?	NO
Explain reasons:	

Diagnostic Team Recommendations

☐ **No improvements needed**	Quadrants Needed
☒ **Install/upgrade active devices**	
☐ Automatic Flashing Lights (AFLS)	
☐ AFLS /Cants	
☒ AFLS / Gates	NW + SE
☐ AFLS / Gates / Cants	
☒ Bells / number	1
☐ Upgrade circuitry / type	GCP- 4000
☐ Sidelights	
☒ LED Upgrades	12"
☐ Guardrail Needed	
☐ Install/Replace curb	
☐ Bungalow placement & offset from rail & highway	
☐ Other (define)	

Comments: Even if reranking increased the HAZARD, The team feels this is a good candidate because of the layout and that local school boses wont cross due to them feeling it is unsafe.

☐ Install/upgrade traffic signal preemption

Other (define):

Diagnostic Team Recommendations (cont.)

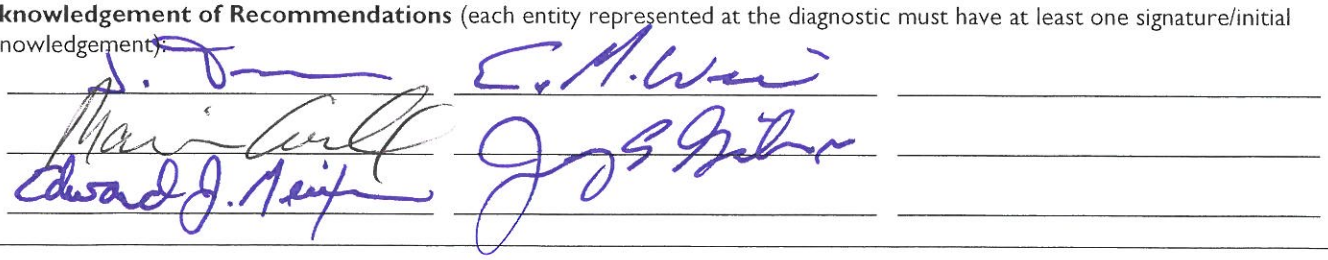
PEDESTRIAN/BICYCLE Treatments (additional, not included above)

☐Crossing Surface (specify)	☐Sidewalk (specify)
☐Detectable warning surfaces	☐LOOK Sign (R15-8)
☐Stop lines	☐Illumination
☐Dynamic envelop markings	☐Channelization
☐Path delineation	☐Fencing/barriers

☐Other

Comments:

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



Field Sketch (optional)

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

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.

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.

Bicycle & Pedestrian Clearing Sight Distances

Clearing Sight Distance from Stop Position*											
Crossing of one track								Crossing 2 Tracks		Crossing 3 Tracks	
Train Speed	Car	Single-unit Truck	Bus	WB-50 Semitruck	65-foot Double Truck	Pedestrian[1]	Bicyclist[2]	Pedestrian[1]	Bicyclist[2]	Pedestrian[1]	Bicyclist[2]
10	105	185	200	225	240	120	100	180	120	240	140
20	205	365	400	450	485	240	200	360	240	480	270
25	255	455	500	560	605	300	250	450	290	590	340
30	310	550	600	675	725	360	290	530	350	710	410
40	410	730	795	895	965	480	390	710	470	950	540
50	515	910	995	1,120	1,205	590	490	890	580	1180	670
60	615	1,095	1,195	1,345	1,445	710	580	1060	700	1420	810
70	715	1,275	1,395	1,570	1,680	830	680	1240	810	1650	940
80	820	1,460	1,590	1,790	1,925	950	780	1420	930	1890	1080
90	920	1,640	1,790	2,015	2,165	1060	870	1590	1040	2120	1210

*A single track, 90-degree, level crossing

[1] Walking 3.5 feet per second across tracks 15 feet apart, with a 2-second reaction time to reach a decision point 10 feet before the center of the first track, and clearing 10 feet beyond the centerline of the second track.

[2] Bicycling 8 miles per hour across tracks 15 feet apart, from a stopped position 10 feet before the center of the first track with an acceleration of 2.5 feet per second, and clearing 10 feet beyond the centerline of the second track on a bike of 6 feet length.

Summary: Application In the Matter of a Request for the Installation of Active Warning Devices at the Norfolk Southern Railway Crossing, TR 1037, DOT#503-097P, in Ashland County, Ohio. electronically filed by Mrs. Jill A Henry on behalf of PUCO/Rail Division