



**Norfolk Southern Corporation**  
**650 West Peachtree St, NW**  
**Atlanta, GA 30308**

November 3, 2022  
State No.: A-2020-3018936

To Whom It May Concern:

Please reference the state's project for modification of grade crossing warning devices at the locations referenced below.

\*\*\*\*\*  
Project #:19.5608  
Road: PITTSTON AVE/YATESVILLE RD.  
City: LUZERNE  
State: PA  
DOT: 249682D  
MilePost: HA 682.42  
\*\*\*\*\*

\*\*\*\*\*  
Project #:19.5606  
Road: MILL/MILLER ST.  
City: LUZERNE  
State: PA  
DOT: 859631C  
MilePost: HA 686.55  
\*\*\*\*\*

\*\*\*\*\*  
Project #:19.5607  
Road: MINER/FIRST ST.  
City: LUZERNE  
State: PA  
DOT: 249686F  
MilePost: HA 685.91  
\*\*\*\*\*

Sincerely,

*Kurt J. Young*

Kurt J. Young

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A-2020-3018936

REVISIONS

1	07-15-21	JLM	XRL	PEH
NEW PLAN DRAWN ACCOUNT OF UPGRADE TO PITTSTON AVE/ YATESVILLE RD.				
PROJECT: *19.5608				
IN SERVICE: XX-XX-XX				
PER: XXX			XXX	XXX

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

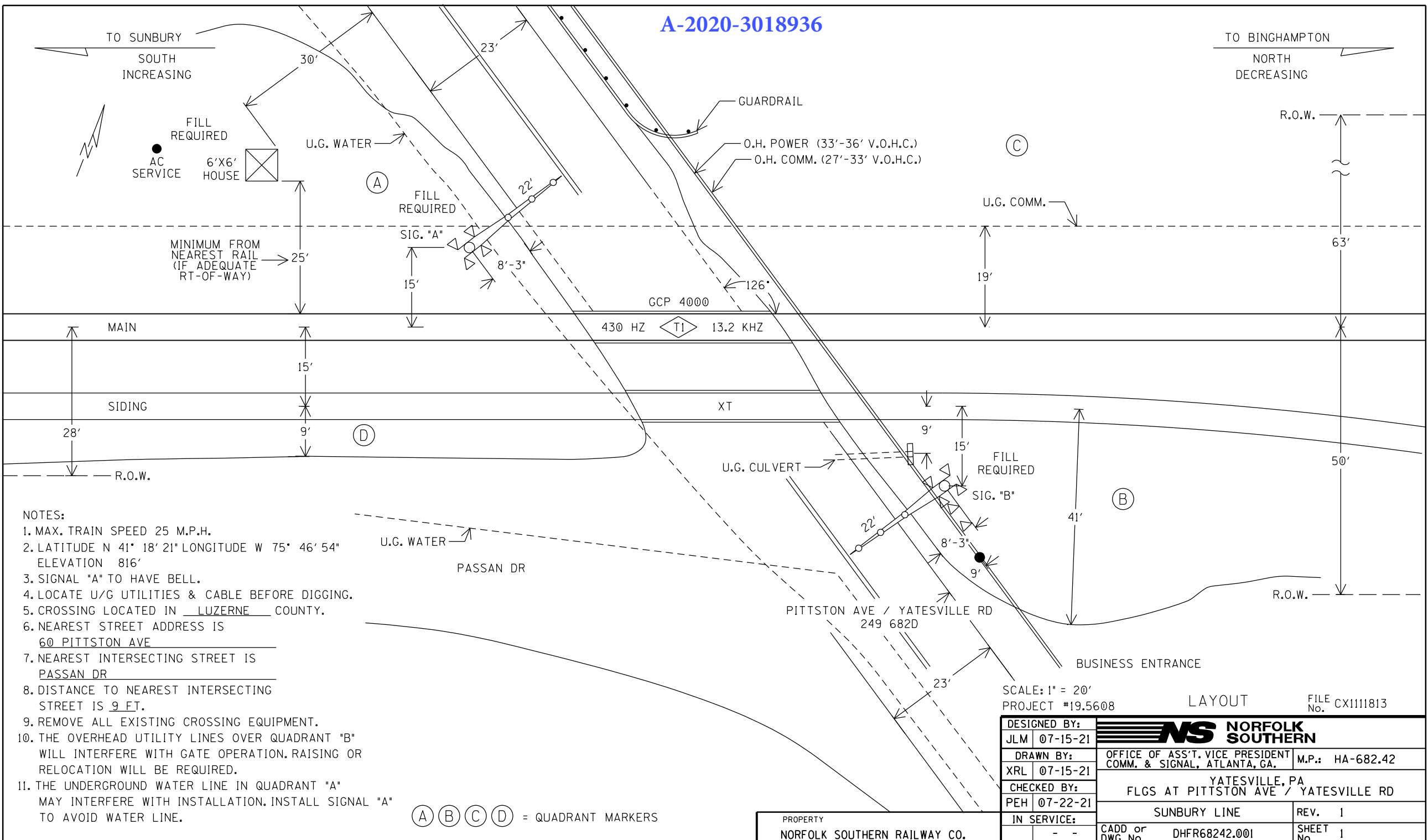
PROPERTY  
NORFOLK SOUTHERN R.WY. CO.

DESIGNED BY:	JLM 07-15-21	
DRAWN BY:	XRL 07-15-21	
CHECKED BY:	PEH 07-22-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: HA-682.42
IN SERVICE:	- -	YATESVILLE, PA FLGS AT PITTSTON AVE / YATESVILLE RD
		SUNBURY LINE REV. 1
		CADD or DWG. No. DHFR68242,NX1 SHEET No. NX1

A-2020-3018936

TO SUNBURY  
SOUTH  
INCREASING

TO BINGHAMPTON  
NORTH  
DECREASING



- NOTES:
1. MAX. TRAIN SPEED 25 M.P.H.
  2. LATITUDE N 41° 18' 21" LONGITUDE W 75° 46' 54" ELEVATION 816'
  3. SIGNAL "A" TO HAVE BELL.
  4. LOCATE U/G UTILITIES & CABLE BEFORE DIGGING.
  5. CROSSING LOCATED IN LUZERNE COUNTY.
  6. NEAREST STREET ADDRESS IS 60 PITSTON AVE
  7. NEAREST INTERSECTING STREET IS PASSAN DR
  8. DISTANCE TO NEAREST INTERSECTING STREET IS 9 FT.
  9. REMOVE ALL EXISTING CROSSING EQUIPMENT.
  10. THE OVERHEAD UTILITY LINES OVER QUADRANT "B" WILL INTERFERE WITH GATE OPERATION. RAISING OR RELOCATION WILL BE REQUIRED.
  11. THE UNDERGROUND WATER LINE IN QUADRANT "A" MAY INTERFERE WITH INSTALLATION. INSTALL SIGNAL "A" TO AVOID WATER LINE.

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

SCALE: 1" = 20'  
PROJECT #19.5608  
LAYOUT  
FILE NO. CX1111813

DESIGNED BY: JLM 07-15-21		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
DRAWN BY: XRL 07-15-21		YATESVILLE, PA FLGS AT PITSTON AVE / YATESVILLE RD	
CHECKED BY: PEH 07-22-21	SUNBURY LINE		REV. 1
IN SERVICE: - -	CADD or DWG. No. DHFR68242.001	SHEET 1	

PROPERTY  
NORFOLK SOUTHERN RAILWAY CO.

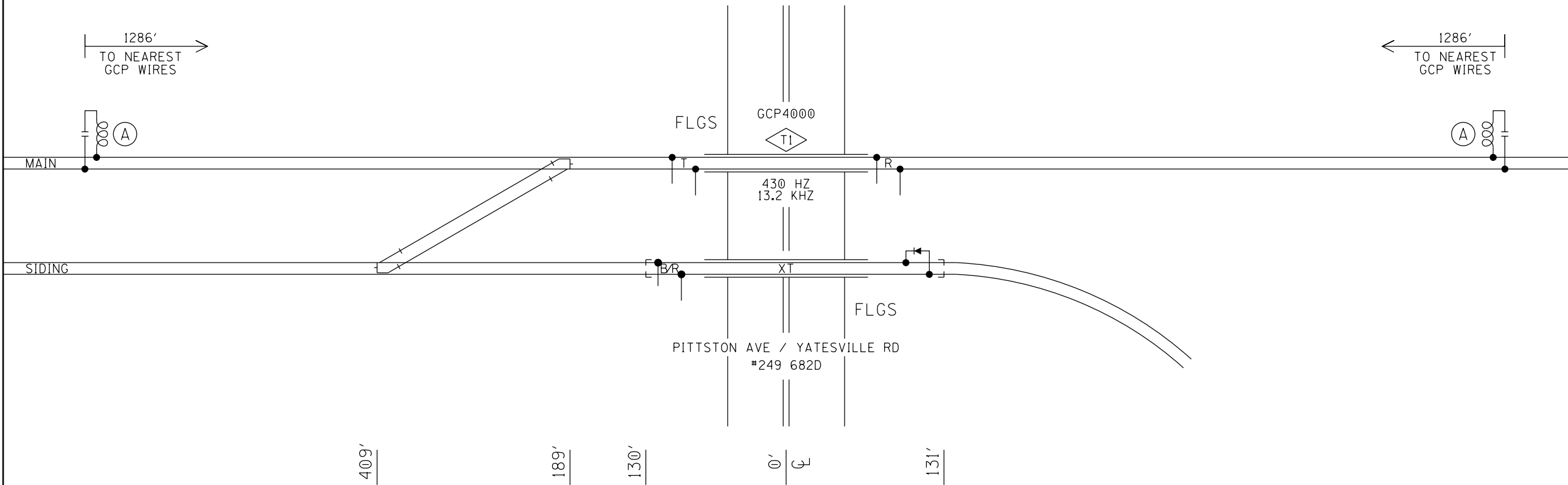
A-2020-3018936

TO SUNBURY  
SOUTH  
INCREASING

TO BINGHAMPTON  
NORTH  
DECREASING

1286'  
TO NEAREST  
GCP WIRES

1286'  
TO NEAREST  
GCP WIRES



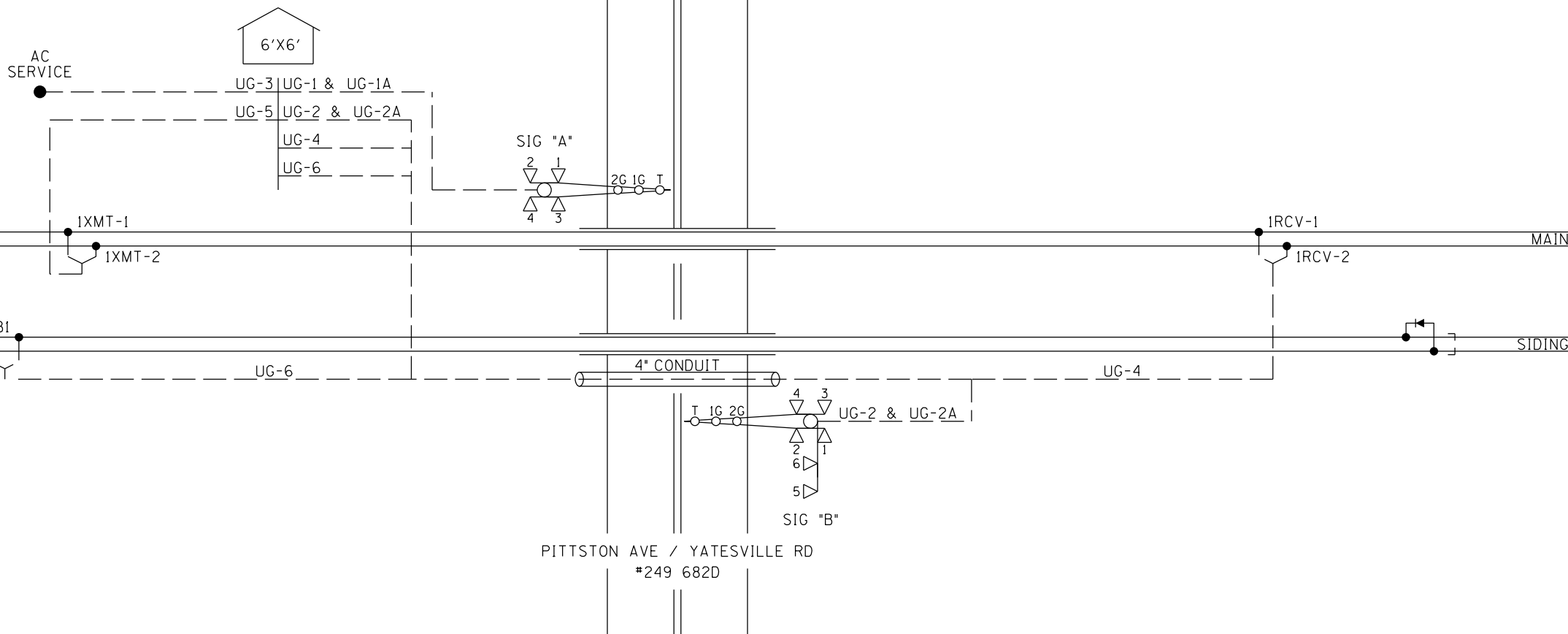
(A) - MF-NBS FSS-1E 250849-004 (430HZ)

PROFILE

DESIGNED BY: JLM 07-15-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-15-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
CHECKED BY: PEH 07-22-21	YATESVILLE, PA FLGS AT PITTSTON AVE / YATESVILLE RD	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RYW CO.	CADD or DWG. No. DHFR68242.002	SHEET No. 2

TO SUNBURY  
SOUTH  
INCREASING

TO BINGHAMPTON  
NORTH  
DECREASING



PITSTON AVE / YATESVILLE RD  
#249 682D

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
- IAXX
- ACD
- XGPI
- AGBX120
- AGNX120
- SPARE
- SPARE
- SPARE
- SPARE

UG-2A-12CUG #14

- BXG
- NBXG
- BXX
- IBXX
- BGD
- XGPI
- XGP
- BGBX120
- BGNX120
- SPARE
- SPARE
- SPARE

UG-3-3CUG #6  
W/#8 GND

- BX120-A
- BX120-B
- NX120
- GND

UG-4-TW. PR. #6

- IRCV-1
- IRCV-2

UG-5-TW. PR. #6

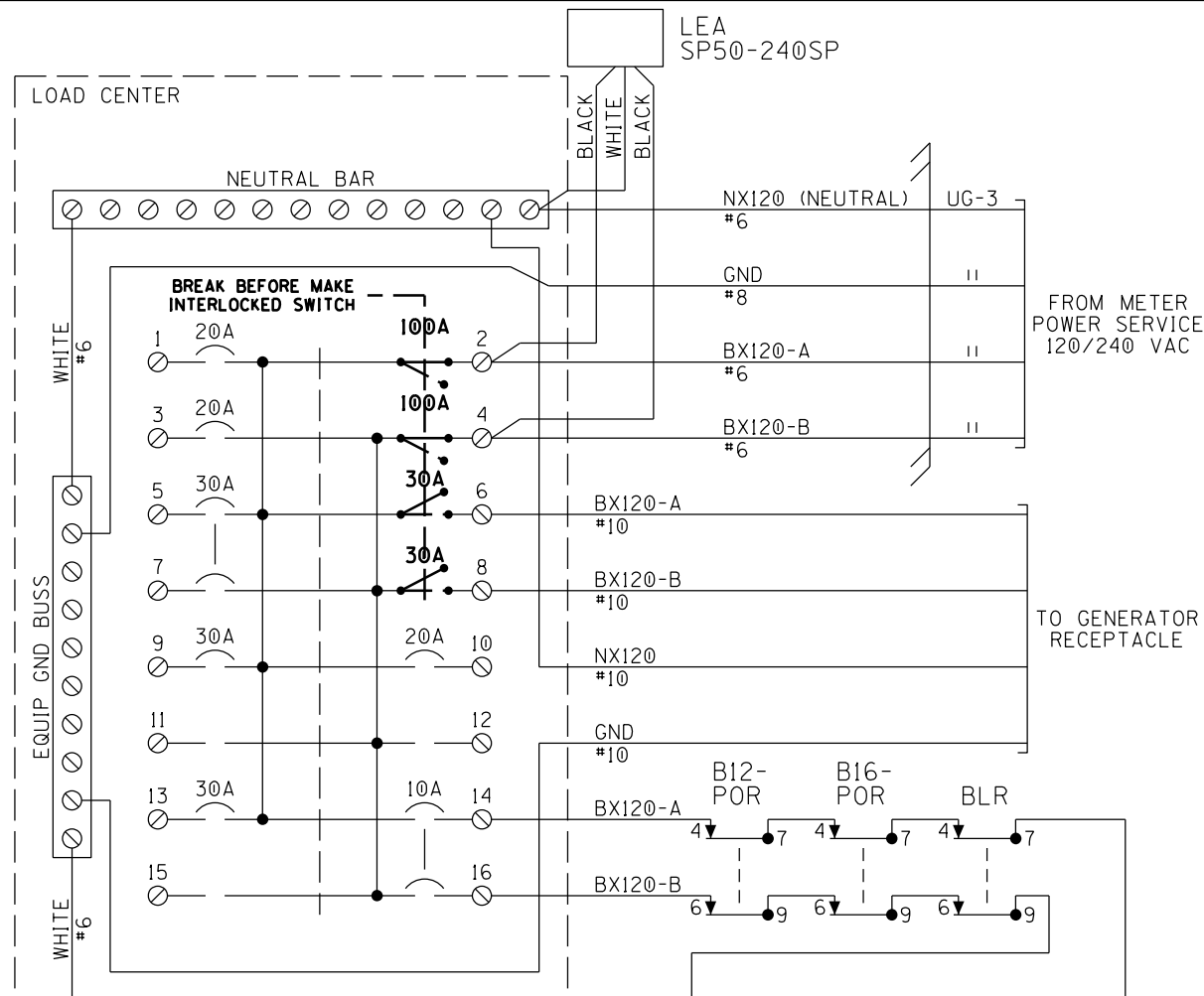
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- IXMT-2

UG-6-TW. PR. #6

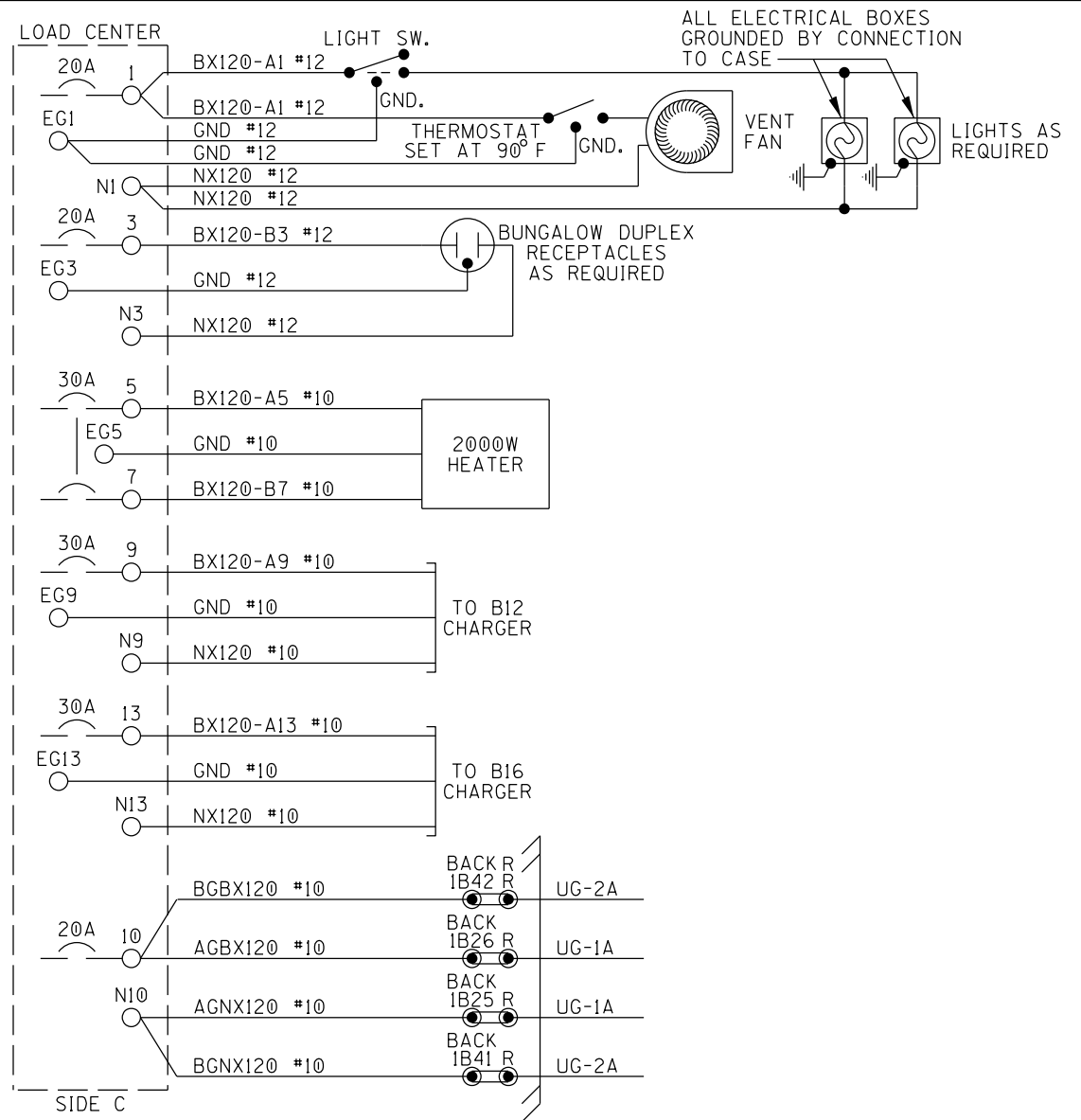
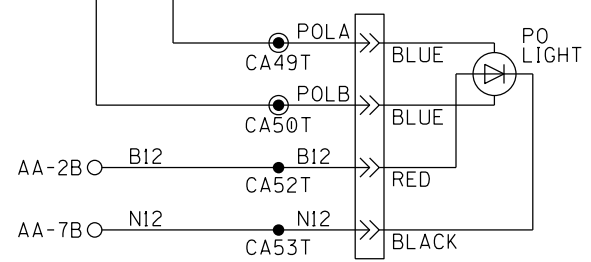
- XRB1
- XRN

CABLE PLAN

DESIGNED BY: JLM 07-15-21		M.P.: HA-682.42
DRAWN BY: XRL 07-15-21		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY: PEH 07-22-21	YATESVILLE, PA FLGS AT PITSTON AVE / YATESVILLE RD	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RYW CO.	CADD or DWG. No. DHFR68242.003	SHEET 3 No.



- 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 — PK4DT1M4LA
  - GENERATOR RECEPTACLE:
  - MALE CONNECTOR — NEMA L1430-F1

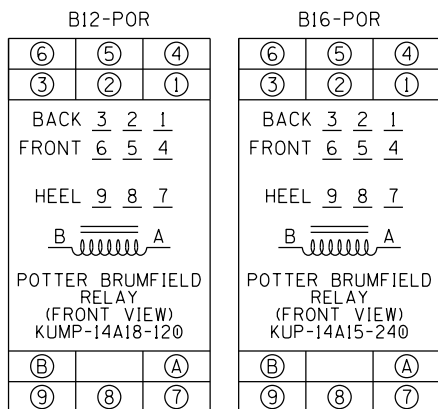
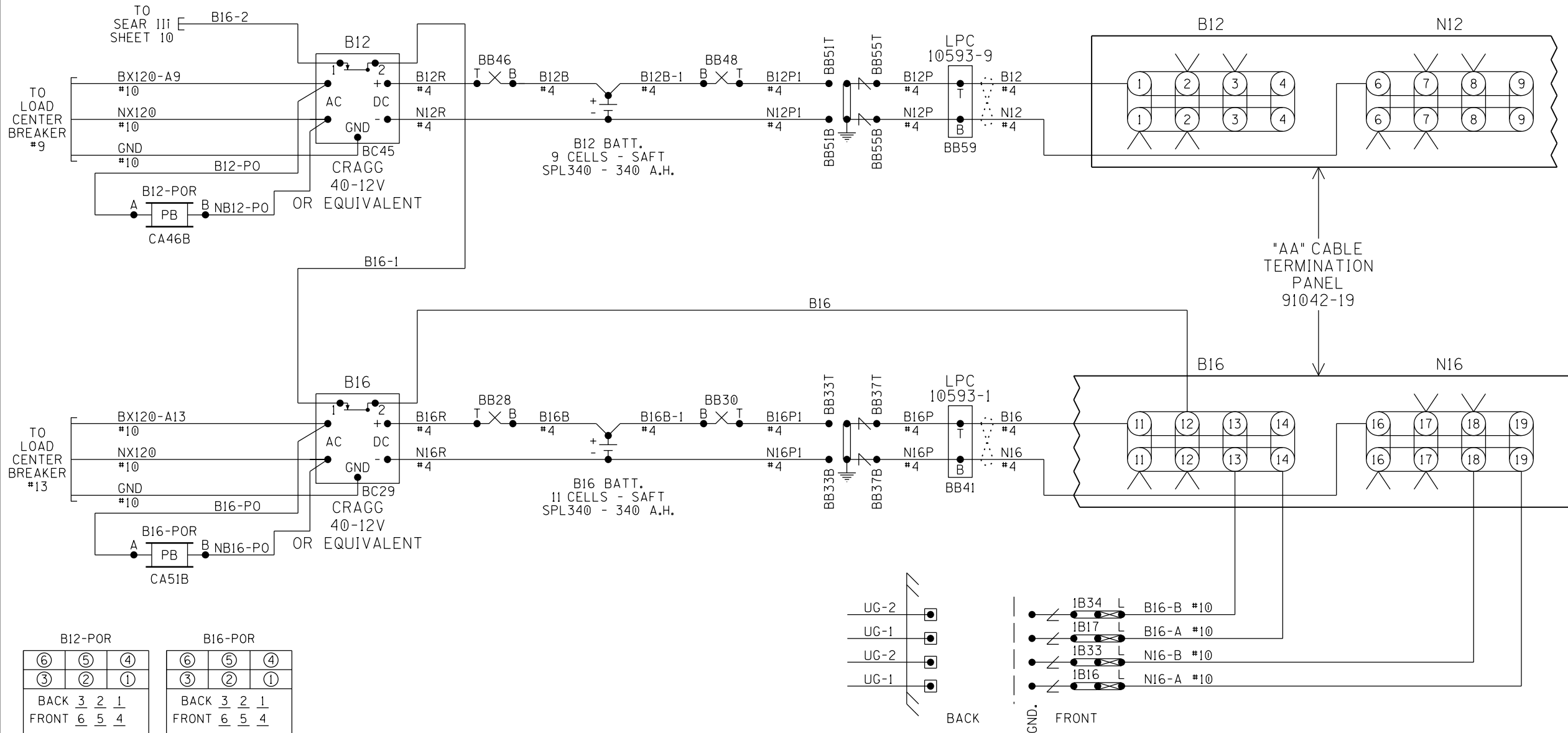


- NOTES:
1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
  2. ALL AC WIRING TO LOAD CENTER TO BE IN METALLIC CONDUIT WITH NO EXPOSED TERMINALS. ALL AC 120V AND 240V EQUIPMENT TO BE PROPERLY GROUNDED.
  3. ● = INSULATED NUTS TO BE USED ON ALL TERMINALS OF 120VAC AND ABOVE.

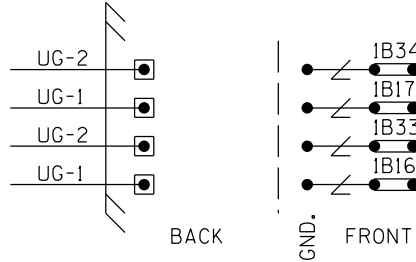
PROPERTY  
NORFOLK SOUTHERN RYW CO.

LOAD CENTER

DESIGNED BY: JLM 07-15-21		
DRAWN BY: XRL 07-15-21		
CHECKED BY: PEH 07-22-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
IN SERVICE: - -	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD	
	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68242.004	SHEET 4

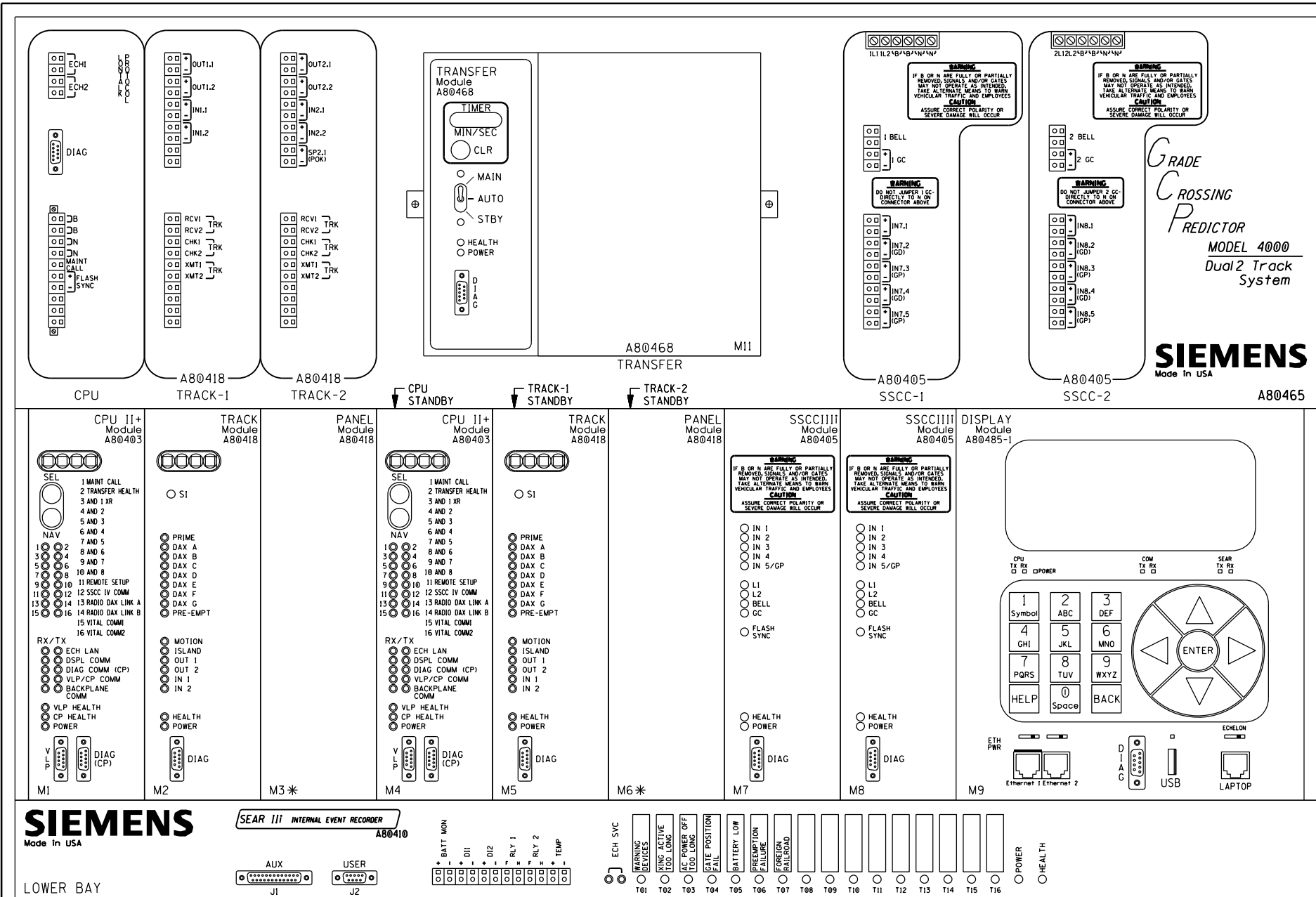


- NOTES:
- ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
  - = TWIST



CHARGERS & BATTERIES

DESIGNED BY: JLM 07-15-21		
DRAWN BY: XRL 07-15-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
CHECKED BY: PEH 07-22-21	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RY CO.	CADD or DWG. No. DHFR68242.005	SHEET 5



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

GCP4000 CHASSIS & MODULE LAYOUT

Program Report  
-----

Location and SIN  
-----

DOT Number: 249682A  
Milepost Number: HA-682.42  
Site Name: PITTSTON AVE

SIN: 755048623416

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): 667B7697  
Office Check Number: 667B7697  
Config. Check Number: 210E114C  
(Based on MCF Revision 021)

Program  
-----

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

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

BASIC: island operation  
Track 1: Island Used = Internal

BASIC: preemption  
Preempt Logic = No

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

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

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

GCP: track 1  
Track 1: GCP Freq Category = Standard  
Track 1: GCP Frequency = 430 Hz  
Track 1: Approach Distance = 1286 ft  
Track 1: Uni/Bi/Sim-Bidirnl = Bidirnl  
Track 1: GCP Transmit Level = Medium  
Track 1: Island Connection = Isl  
Track 1: Island Distance = 137 ft  
Track 1: Computed Distance = 9999 ft  
Track 1: Linearization Steps = 100

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

GCP: track 1 prime  
Track 1: Prime Warning Time = 30 sec  
Track 1: Prime Offset Distance = 0 ft  
Track 1: Switch MS EZ Level = 10  
Track 1: Prime MS/GCP Mode = Pred  
Track 1: Prime Pickup Delay = 15 sec  
Track 1: Prime UAX = Not Used

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

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

ISLAND: track 1  
Track 1: Isl Frequency = 13.2 kHz  
Track 1: Pickup Delay (2s +) = 0 sec  
Track 1: Isl Enable IP Used = No

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

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

ADVANCED: MS restart  
MS/GCP Restart Used = No

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

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

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

ADVANCED: trk 1 overrides  
Track 1: 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

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

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

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

GCP4000 PROGRAMMING

DESIGNED BY:	JLM 07-15-21		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
DRAWN BY:	XRL 07-15-21			
CHECKED BY:	PEH 07-22-21	YATESVILLE, PA FLGS AT PITTSTON AVE / YATESVILLE RD		
IN SERVICE:	- -	SUNBURY LINE	REV. 1	
PROPERTY	NORFOLK SOUTHERN RWY CO.	CADD or DWG. No.	DHFR68242.007	SHEET No. 7

SSCC  
 Gates Used = Yes  
 SSCC1+2 GPs Coupled = Yes  
 Min Activation = 0 sec  
 Rmt Activation Cancel= 2 min  
 BellOn Gate Rising = No  
 Mute BellOn Gate Down = No  
 SSCCIV 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 NeutralTest = Off  
 Aux-1 Xng CtrlUsed = No

SSCC: 2  
 SSCC-2 Activation = AND 1 XR  
 SSCC-2 Gate Delay = 6 sec  
 SSCC-2 Number of GPs = 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 NeutralTest = Off  
 Aux-2 Xng CtrlUsed = No

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

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

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

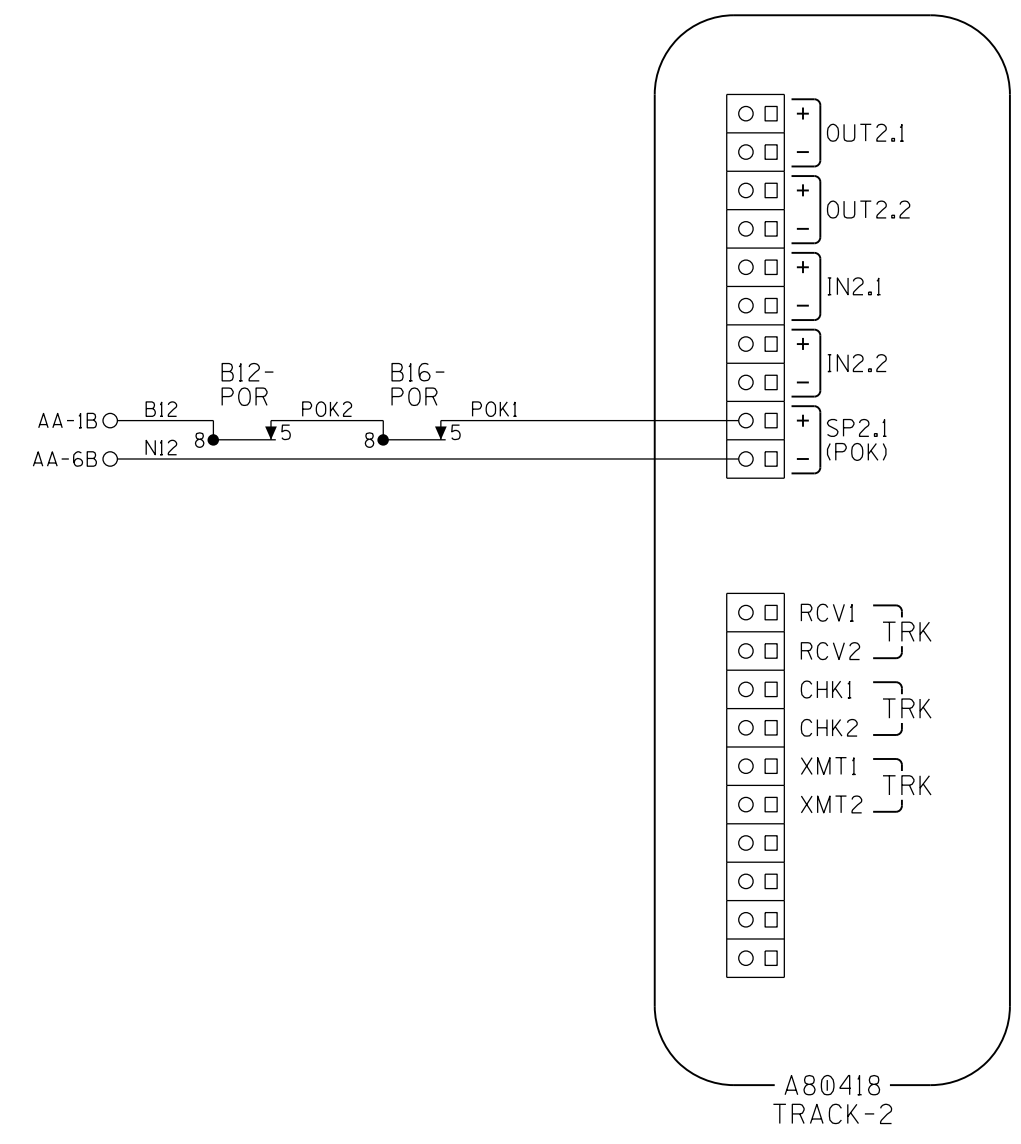
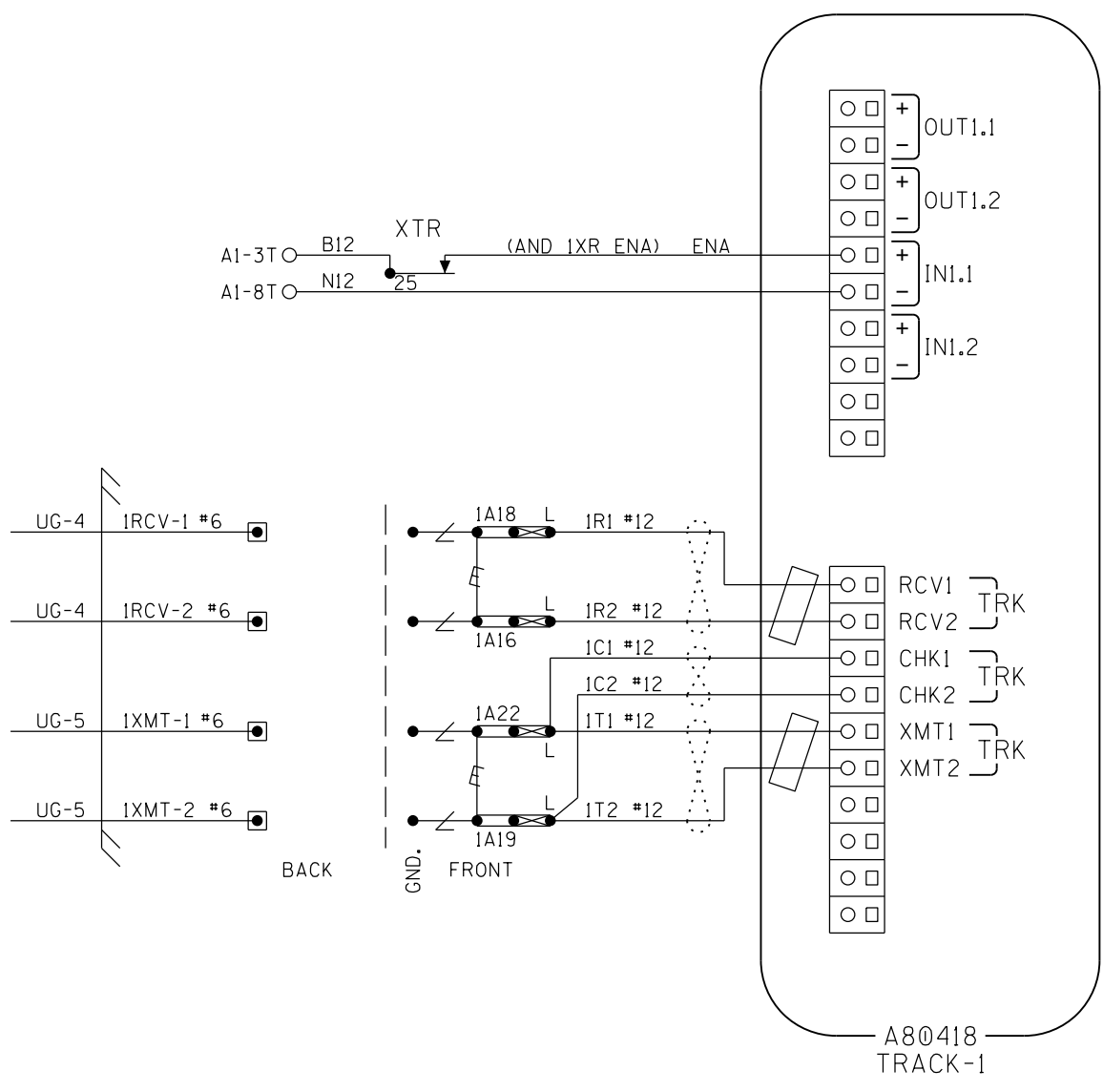
SITE: programming  
 Radio Subnode = 1  
 Field Password = Off  
 Low Battery Enabled = Off

Configuration Package File  
 -----  
 Filename: dhfr68242.pac

GCP4000 PROGRAMMING

DESIGNED BY:			
JLM 07-15-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.:	HA-682.42
DRAWN BY:	YATESVILLE, PA		
XRL 07-15-21	FLGS AT PITTSION AVE / YATESVILLE RD		
CHECKED BY:	SUNBURY LINE		REV. 1
PEH 07-22-21	CADD or DWG. No. DHFR68242.008		SHEET 8
IN SERVICE:	-		

PROPERTY  
 NORFOLK SOUTHERN RYW CO.



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

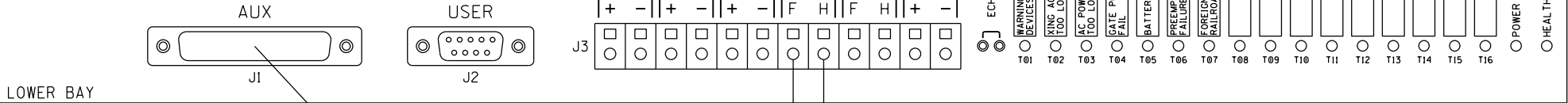
CONNECTORS FOR TRACK MODULES

DESIGNED BY: JLM 07-15-21			M.P.: HA-682.42
DRAWN BY: XRL 07-15-21			OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY: PEH 07-22-21	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD		
IN SERVICE: - -	SUNBURY LINE	REV. 1	
PROPERTY NORFOLK SOUTHERN RYW CO.	CADD or DWG. No. DHFR68242.009	SHEET 9	No.

**SIEMENS**  
Made in USA

**SEAR III INTERNAL EVENT RECORDER**

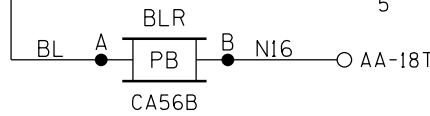
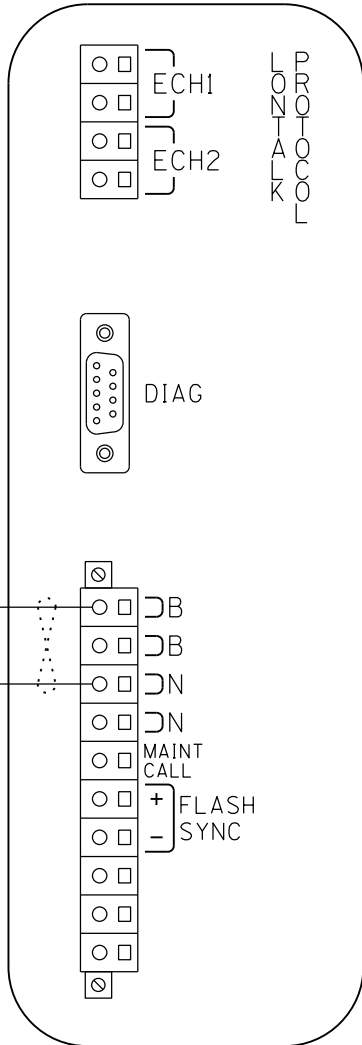
A80410



LOWER BAY

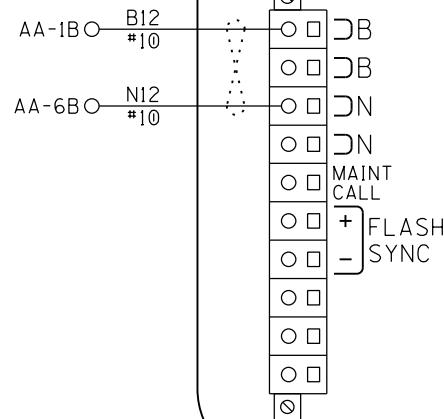
TO RADIO SHEET 12

TO SHEET 5



BLR

⑥	⑤	④
③	②	①
BACK 3	2	1
FRONT 6	5	4
HEEL 9	8	7
POTTER BRUMFIELD RELAY (FRONT VIEW) KUMP-14D18-12		
ⓑ		Ⓐ
⑨	⑧	⑦



- NOTES:
1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
  2. = TWIST

CPU MODULE & SEAR III HOOK-UP

DESIGNED BY: JLM 07-15-21		
DRAWN BY: XRL 07-15-21		
CHECKED BY: PEH 07-22-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
IN SERVICE: - -	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD	
PROPERTY NORFOLK SOUTHERN RY CO.	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68242.010	SHEET No. 10

SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
SITE NAME	PITTSTON AVE
MILEPOST	HA-682.42
DOT NUMBER	249-682D
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)	7.550.486.234.03.01
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 SEAR III PRESS SITE SETUP KEY.  
USE ARROW KEYS TO MAKE SELECTION,  
PRESS ENTER AFTER SELECTION HAS BEEN MADE.

NOTES:

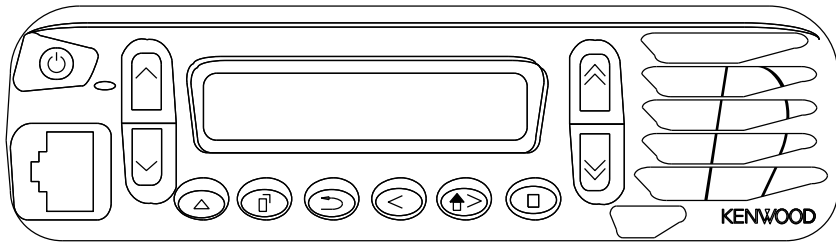
- # = NOT DISPLAYED IF SITE TYPE = NO COMMUNICATION
- ★ = USE DEFAULT SETTINGS
- \* = ONLY DISPLAYED IF CROSSING CONFIGURATION = SPLIT GATE

SEAR III PROGRAMMING

DESIGNED BY:	JLM 07-15-21		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
DRAWN BY:	XRL 07-15-21		YATESVILLE, PA FLGS AT PITTSTON AVE / YATESVILLE RD	
CHECKED BY:	PEH 07-22-21	SUNBURY LINE	REV. 1	
IN SERVICE:	- -	CADD or DWG. No. DHFR68242.011	SHEET No. 11	

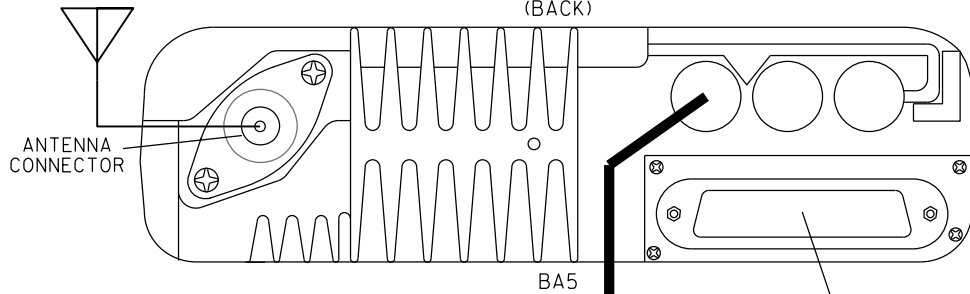
PROPERTY  
NORFOLK SOUTHERN RYW CO.

(FRONT)



KENWOOD RADIO NX-700H  
OR EQUIVALENT

(BACK)



ANTENNA  
CONNECTOR

BA5

DB25M - DB25M  
STRAIGHT THROUGH CABLE } TO  
SEAR III  
SHEET 10

CABLE - KENWOOD  
P/N E30-7520-15

AA-2B O B12  
AA-7B O N12  
B12  
N12

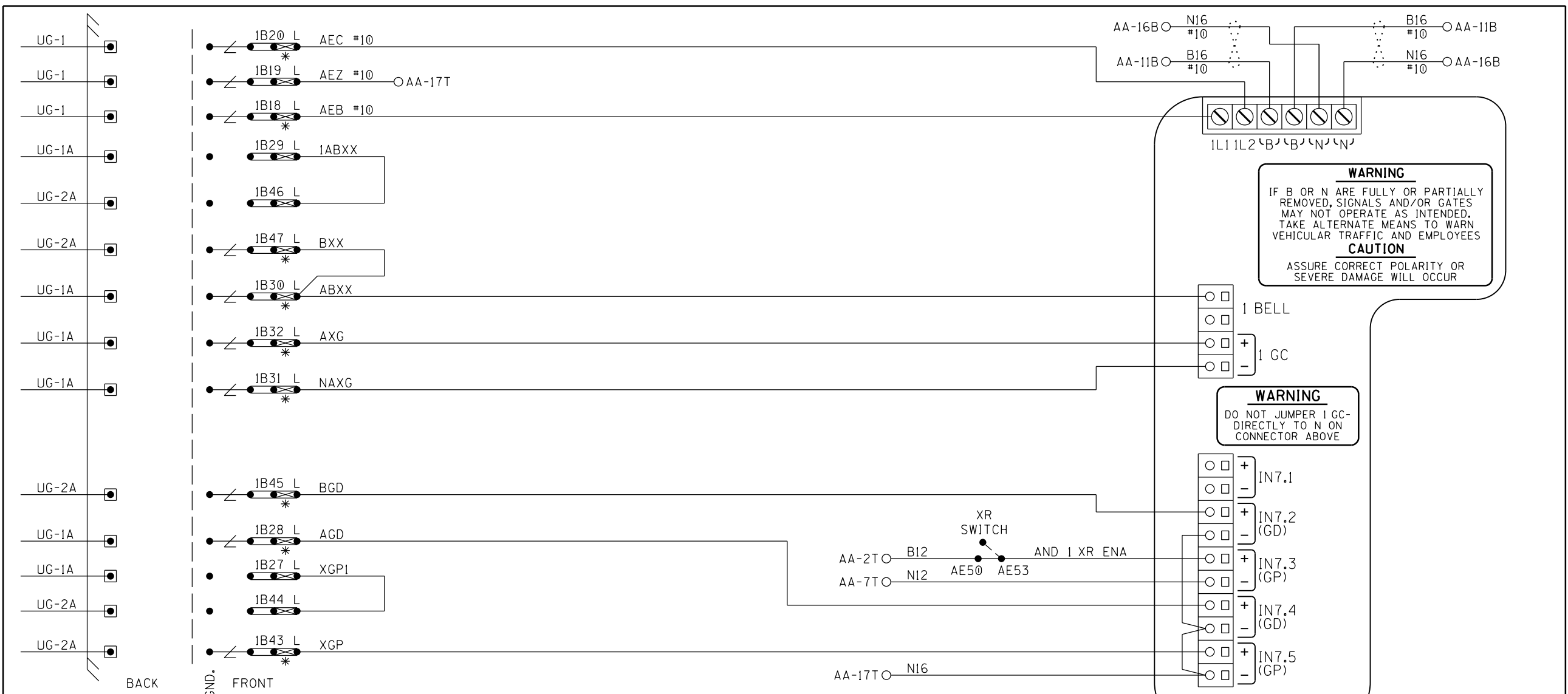


BB5

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

BACKHAUL EQUIPMENT

DESIGNED BY: JLM 07-15-21		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
DRAWN BY: XRL 07-15-21			
CHECKED BY: PEH 07-22-21	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD		
IN SERVICE: - -	SUNBURY LINE	REV. 1	
PROPERTY NORFOLK SOUTHERN RWY CO.	CADD or DWG. No. DHFR68242.012	SHEET No. 12	



BACK

GND. FRONT

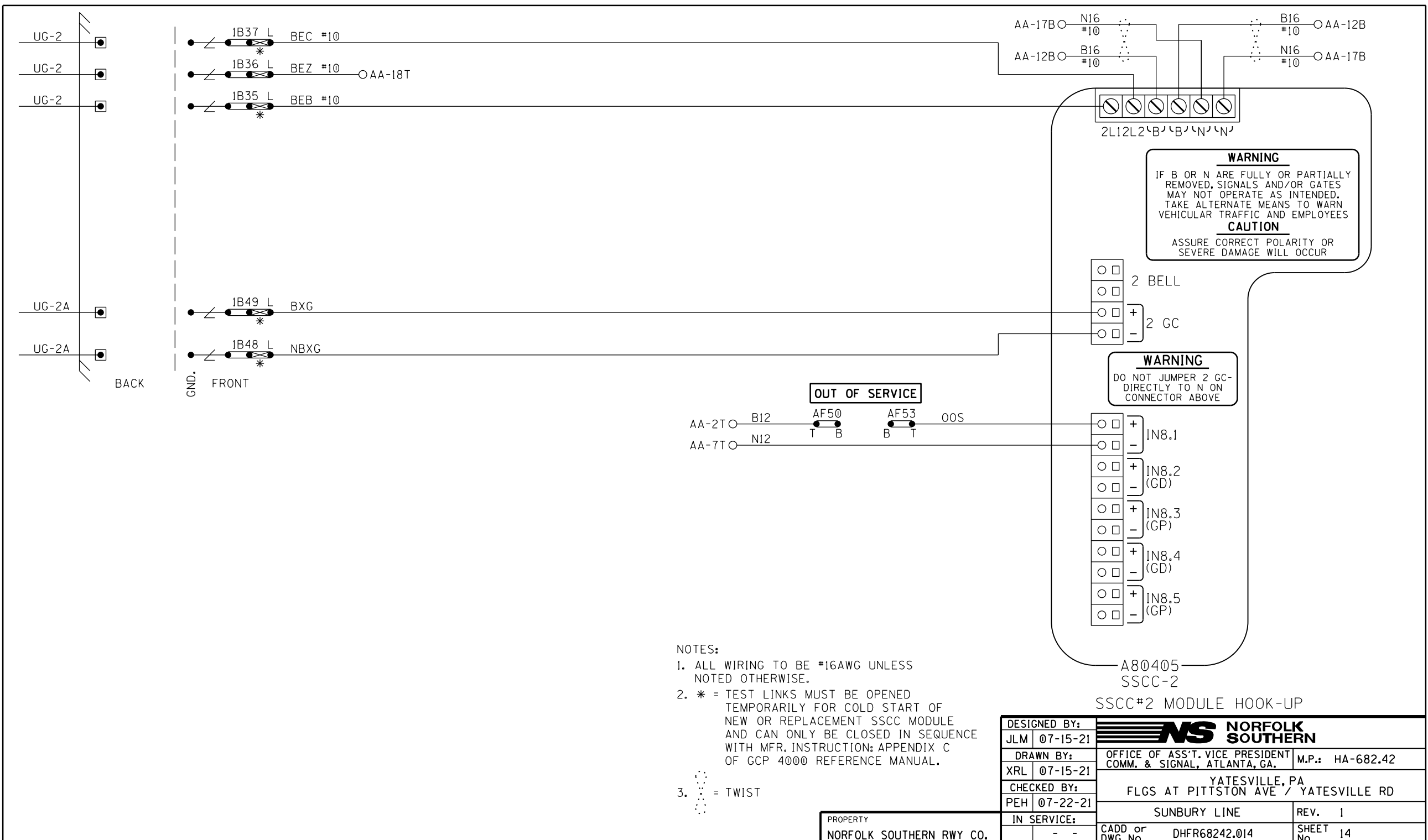
NOTES:

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

PROPERTY  
NORFOLK SOUTHERN RYW CO.

SSCC#1 MODULE HOOK-UP

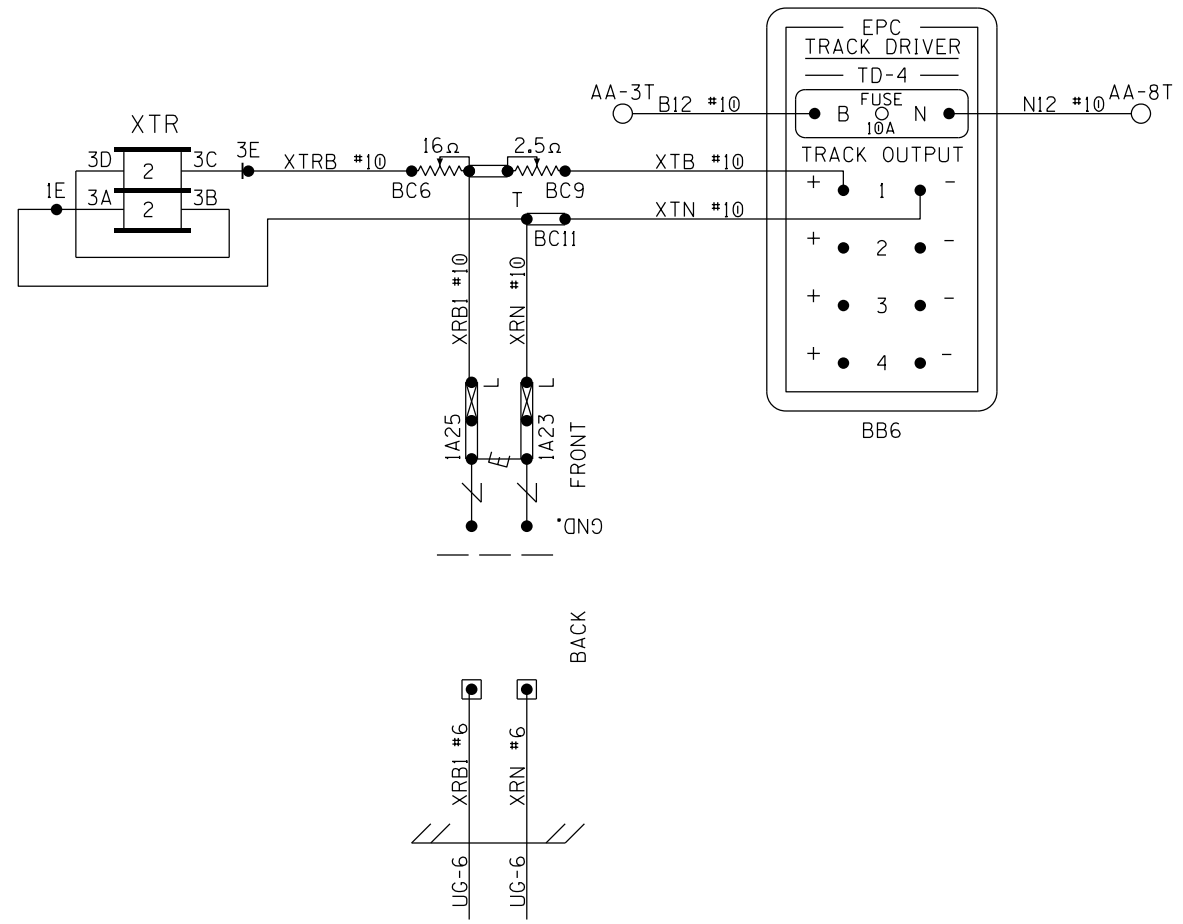
DESIGNED BY: JLM 07-15-21		
DRAWN BY: XRL 07-15-21		
CHECKED BY: PEH 07-22-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
IN SERVICE: - -	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD	
	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68242.013	SHEET 13



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

PROPERTY  
NORFOLK SOUTHERN RYW CO.

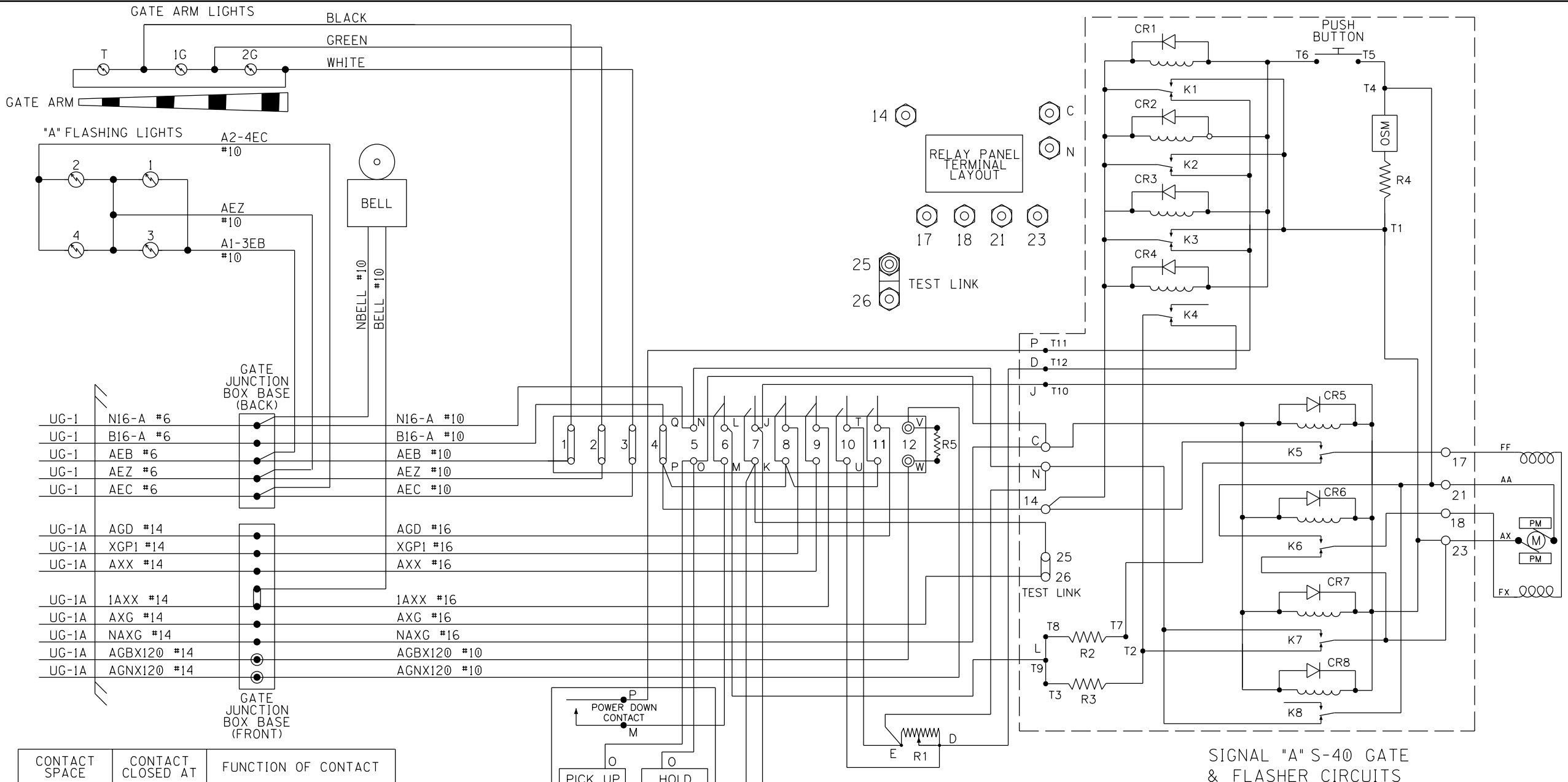
DESIGNED BY: JLM 07-15-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-15-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
CHECKED BY: PEH 07-22-21	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD	
IN SERVICE: - -	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68242.014	SHEET No. 14



TD-4, XTR

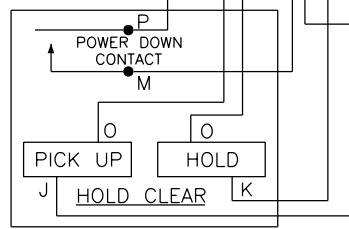
DESIGNED BY:			
JLM 07-15-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: HA-682.42
DRAWN BY:	YATESVILLE, PA		
XRL 07-15-21	FLGS AT PITTSSTON AVE / YATESVILLE RD		
CHECKED BY:	SUNBURY LINE		REV. 1
PEH 07-22-21	CADD or DWG. No. DHFR68242.015		SHEET 15
IN SERVICE:	-		

PROPERTY  
NORFOLK SOUTHERN RY CO.



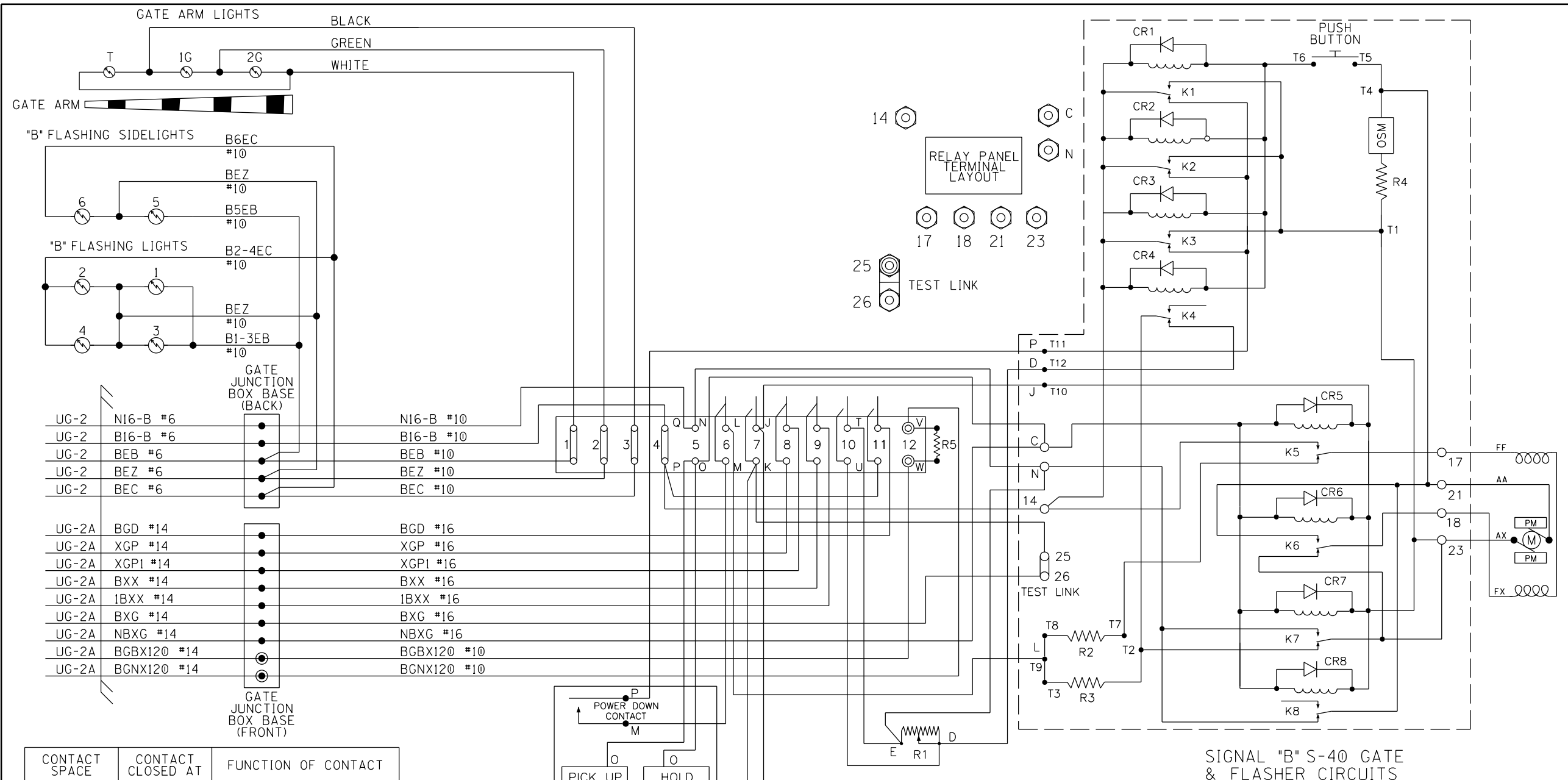
UG-1	N16-A #6	N16-A #10
UG-1	B16-A #6	B16-A #10
UG-1	AEB #6	AEB #10
UG-1	AEZ #6	AEZ #10
UG-1	AEC #6	AEC #10
UG-1A	AGD #14	AGD #16
UG-1A	XGP1 #14	XGP1 #16
UG-1A	AXX #14	AXX #16
UG-1A	1AXX #14	1AXX #16
UG-1A	AXG #14	AXG #16
UG-1A	NAXG #14	NAXG #16
UG-1A	AGBX120 #14	AGBX120 #10
UG-1A	AGNX120 #14	AGNX120 #10

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



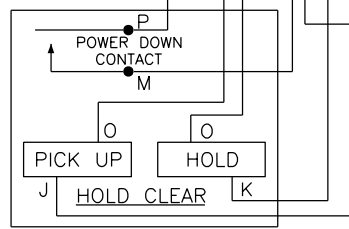
R1 - DOWN SNUB RESISTOR, ADJ.  
 R2 - POWER DOWN RATE RESISTOR  
 R3 - POWER DOWN LIMIT RESISTOR  
 R4 - OSM SNUB RESISTOR  
 R5 - DEFROSTER  
 K1-8 - GATE & MAINT. RELAYS  
 OSM - OVERSPEED MODULE

DESIGNED BY: JLM 07-15-21	
DRAWN BY: XRL 07-15-21	
CHECKED BY: PEH 07-22-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: HA-682.42
IN SERVICE: - -	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD
PROPERTY NORFOLK SOUTHERN RYW CO.	SUNBURY LINE REV. 1 CADD or DWG. No. DHFR68242.016 SHEET No. 16



UG-2	N16-B #6	N16-B #10
UG-2	B16-B #6	B16-B #10
UG-2	BEB #6	BEB #10
UG-2	BEZ #6	BEZ #10
UG-2	BEC #6	BEC #10
GATE JUNCTION BOX BASE (BACK)		
UG-2A	BGD #14	BGD #16
UG-2A	XGP #14	XGP #16
UG-2A	XGP1 #14	XGP1 #16
UG-2A	BXX #14	BXX #16
UG-2A	1BXX #14	1BXX #16
UG-2A	BXG #14	BXG #16
UG-2A	NBXG #14	NBXG #16
UG-2A	BGBX120 #14	BGBX120 #10
UG-2A	BGNX120 #14	BGNX120 #10
GATE JUNCTION BOX BASE (FRONT)		

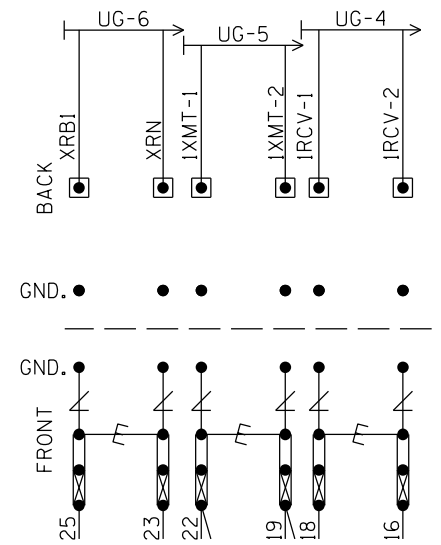
CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
(6) L-M	45° - 90°	POWER DOWN CONTROL
(7) J-K	0° - 89°	POWER UP CONTROL
(8)	83° - 90°	FLASHING LGT. CONTROL
(9)	5° - 90°	BELL CONTROL
(10) T-U	0° - 5°	HORIZONTAL SNUB
(11)	0° - 5°	GATE DOWN INDICATION



- 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

DESIGNED BY: JLM 07-15-21	
DRAWN BY: XRL 07-15-21	
CHECKED BY: PEH 07-22-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: HA-682.42
IN SERVICE: - -	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD
PROPERTY NORFOLK SOUTHERN RYW CO.	SUNBURY LINE REV. 1
	CADD or DWG. No. DHFR68242.017 SHEET No. 17

"1A"



NOTES:

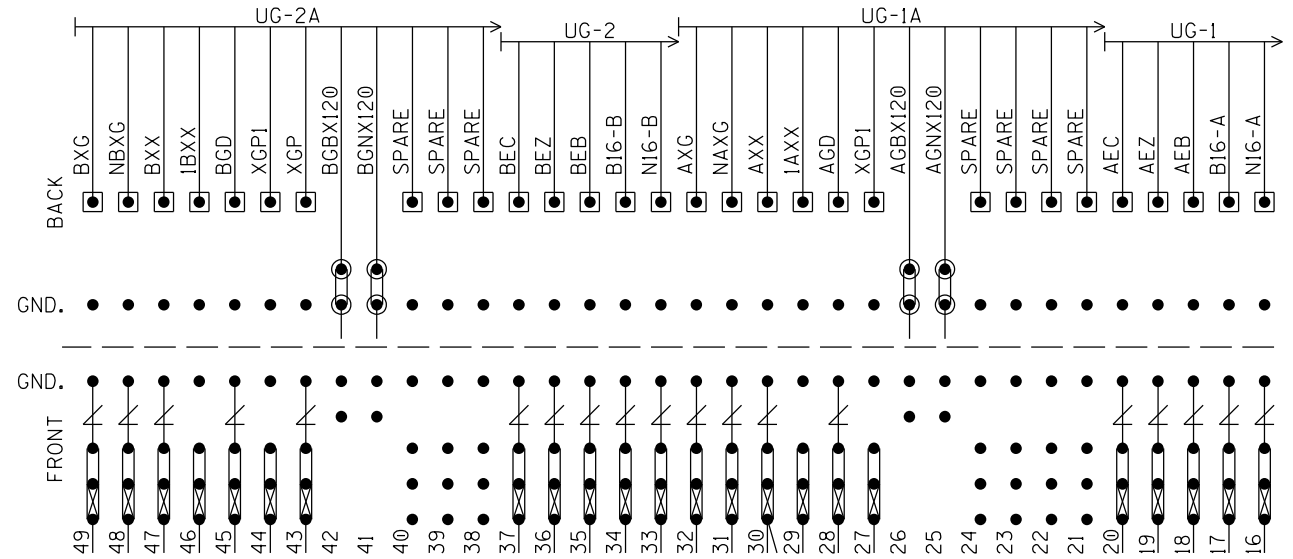
1. = HEAVY DUTY EQUALIZER (022700-1X)
2. = ERICO LIGHTNING ARRESTER (EPD2050F)
3. GND. ● = THROUGH GROUND POST ON EACH TERMINAL BLOCK TO FARADAY SHIELD
4. = TEST LINK
5. INSTALL TEST LINKS ON ALL TRACK WIRES AND ON ALL LOW VOLTAGE UNDERGROUND CABLE TERMINATIONS.

BACKBOARD 1A

DESIGNED BY:		
JLM 07-15-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
DRAWN BY:	YATESVILLE, PA	
XRL 07-15-21	FLGS AT PITTSSTON AVE / YATESVILLE RD	
CHECKED BY:	SUNBURY LINE	REV. 1
PEH 07-22-21	CADD or DWG. No. DHFR68242.018	SHEET 18
IN SERVICE:	- -	No.

PROPERTY  
NORFOLK SOUTHERN RY CO.

"1B"

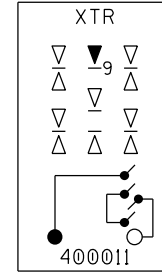
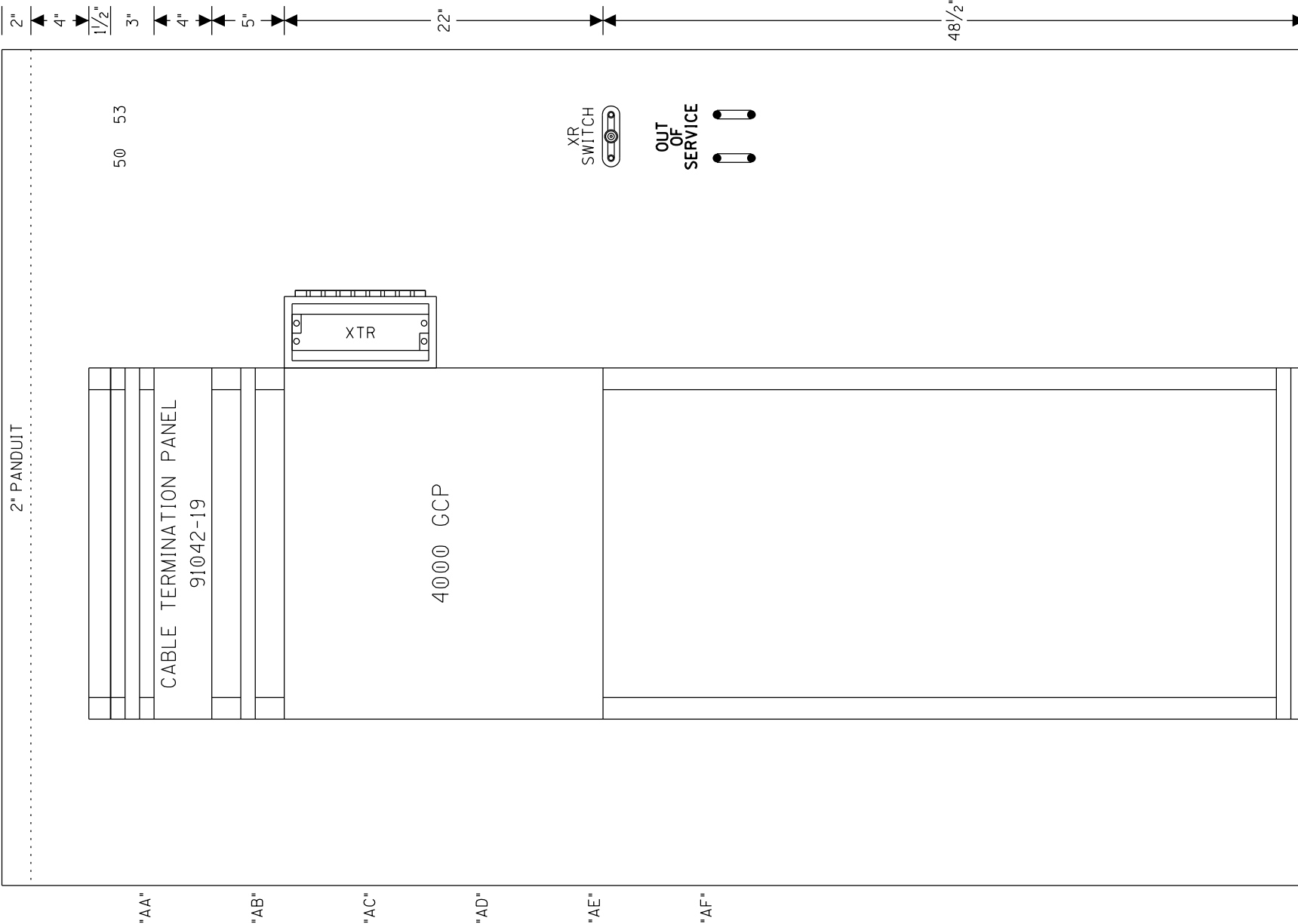


NOTES:

1. GND. ● = THROUGH GROUND POST ON EACH TERMINAL BLOCK TO FARADAY SHIELD
2. ◎ = INSULATED NUTS TO BE USED ON ALL 120VAC AND ABOVE TERMINALS

BACKBOARD 1B

DESIGNED BY: JLM 07-15-21		
DRAWN BY: XRL 07-15-21		
CHECKED BY: PEH 07-22-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
IN SERVICE: - -	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD	
PROPERTY NORFOLK SOUTHERN RYW CO.	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68242.019	SHEET No. 19



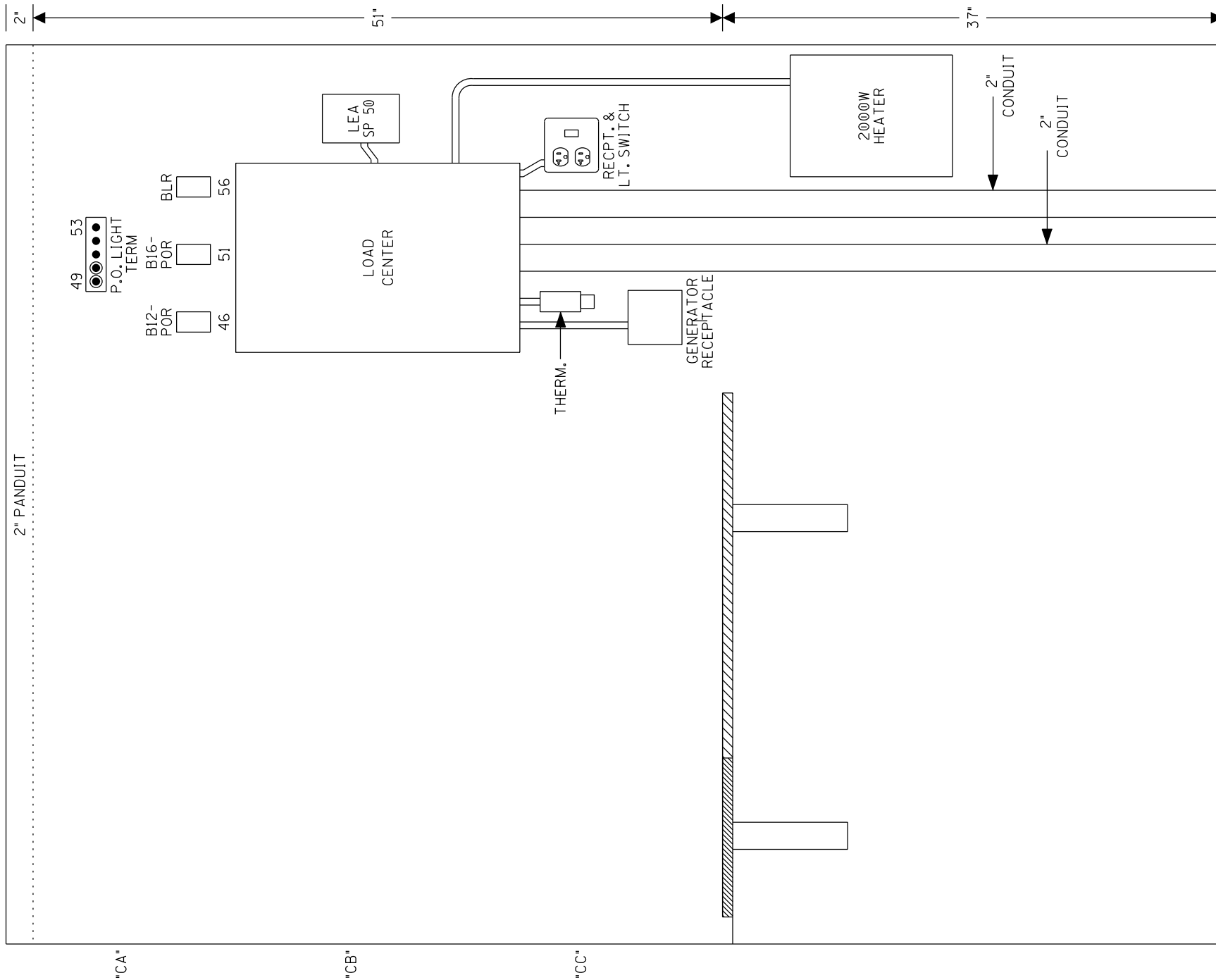
SAFETRAN ALSTOM (GRS) RELAY  
CROSS REFERENCE LIST  
SAFETRAN ALSTOM (GRS)  
400011 - A62-276

24 1/4"  
EQUIPMENT RACK #1  
FRONT



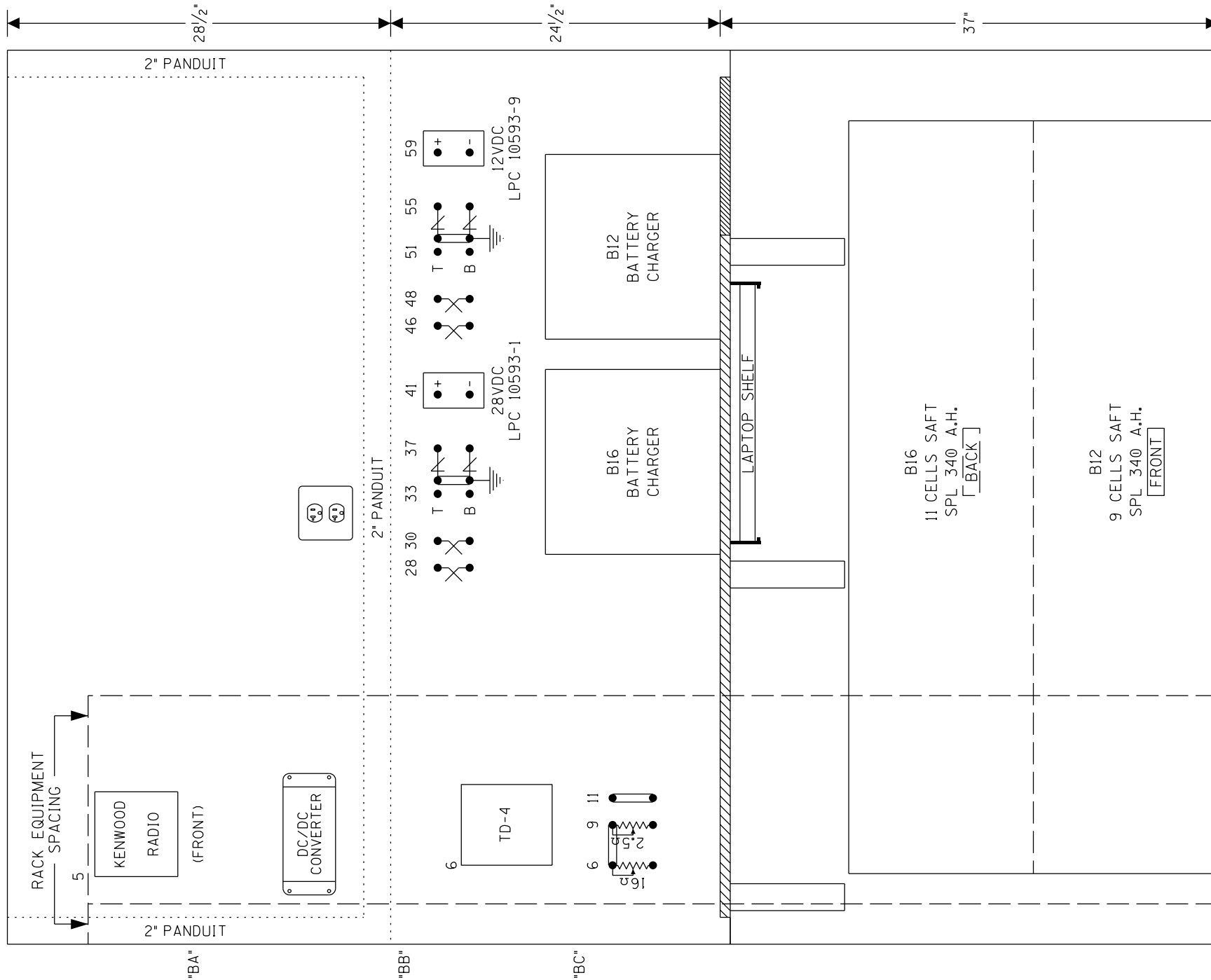
SIDE A LAYOUT & RACK PLACEMENT

DESIGNED BY: JLM 07-15-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-15-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
CHECKED BY: PEH 07-22-21	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RYW CO.	CADD or DWG. No. DHFR68242.020	SHEET No. 20



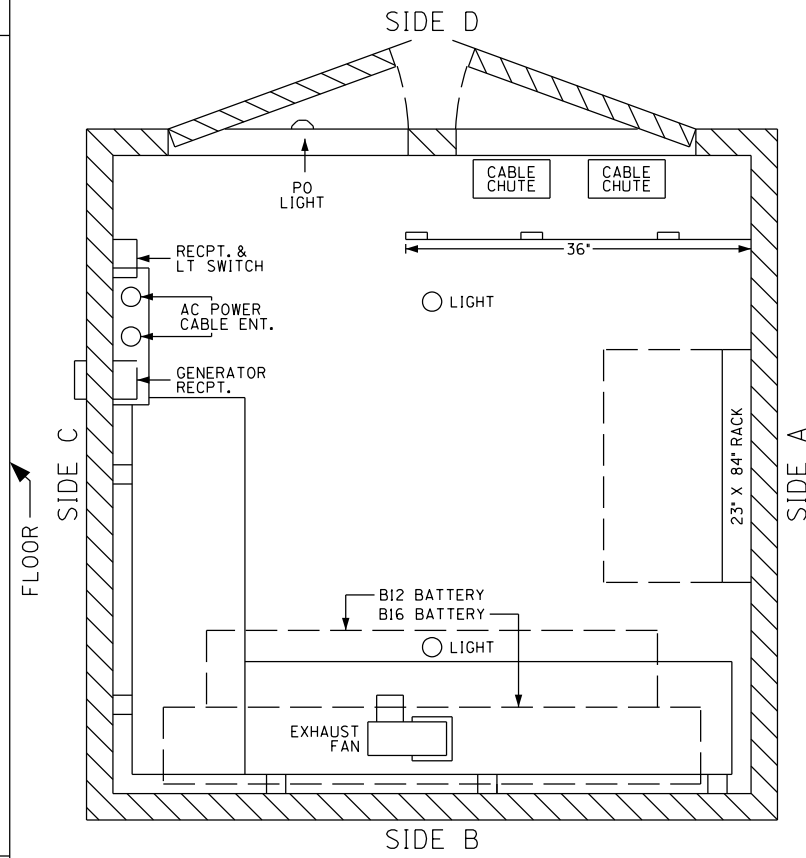
SIDE C LAYOUT

DESIGNED BY: JLM 07-15-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-15-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
CHECKED BY: PEH 07-22-21	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RYW CO.	CADD or DWG. No. DHFR68242.021	SHEET No. 21



**\*TOP VIEW**

6'X6' HOUSE  
(INSULATED)  
\* = 1/2" SCALE



SIDE B LAYOUT & TOP VIEW

DESIGNED BY: JLM 07-15-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-15-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-682.42
CHECKED BY: PEH 07-22-21	YATESVILLE, PA FLGS AT PITTSSTON AVE / YATESVILLE RD	
IN SERVICE: - -	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68242.022	SHEET No. 22

PROPERTY  
NORFOLK SOUTHERN RYW CO.

**A-2020-3018936**

SH. NO.	CONTENTS	REV. NO.
NX1	INDEX SHEET	1
1	LAYOUT	1
2	PROFILE	1
3	CABLE PLAN	1
4	LOAD CENTER	1
5	B12 CHARGER & BATTERIES	1
6	B16 & B16A CHARGERS & BATTERIES	1
7	GCP4000 CHASSIS & MODULE LAYOUT	1
8	GCP4000 PROGRAMMING	1
9	GCP4000 PROGRAMMING	1
10	CONNECTORS FOR TRACK MODULES	1
11	CPU MODULE & SEAR II HOOK-UPS	1
12	SEAR II PROGRAMMING	1
13	BACKHAUL EQUIPMENT	1
14	SSCC#1 MODULE HOOK-UP	1
15	SSCC#2 MODULE HOOK-UP	1
16	SIGNAL "A" S-40 GATE & FLASHER CIRCUITS	1
17	SIGNAL "B" S-40 GATE & FLASHER CIRCUITS	1
18	SIGNAL "C" S-40 PED GATE & FLASHER CIRCUITS	1
19	BACKBOARD 1A	1
20	BACKBOARD 1B	1
21	SIDE A LAYOUT & RACK PLACEMENT	1
22	SIDE C LAYOUT	1
23	SIDE B LAYOUT & TOP VIEW	1

REVISIONS

1	07-12-21	JLM	XRL	PEH
NEW PLAN DRAWN ACCOUNT OF UPGRADE TO MILL / MILLER ST.				
PROJECT: *19.5606				
IN SERVICE: XX-XX-XX				
PER: XXX			XXX	XXX

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

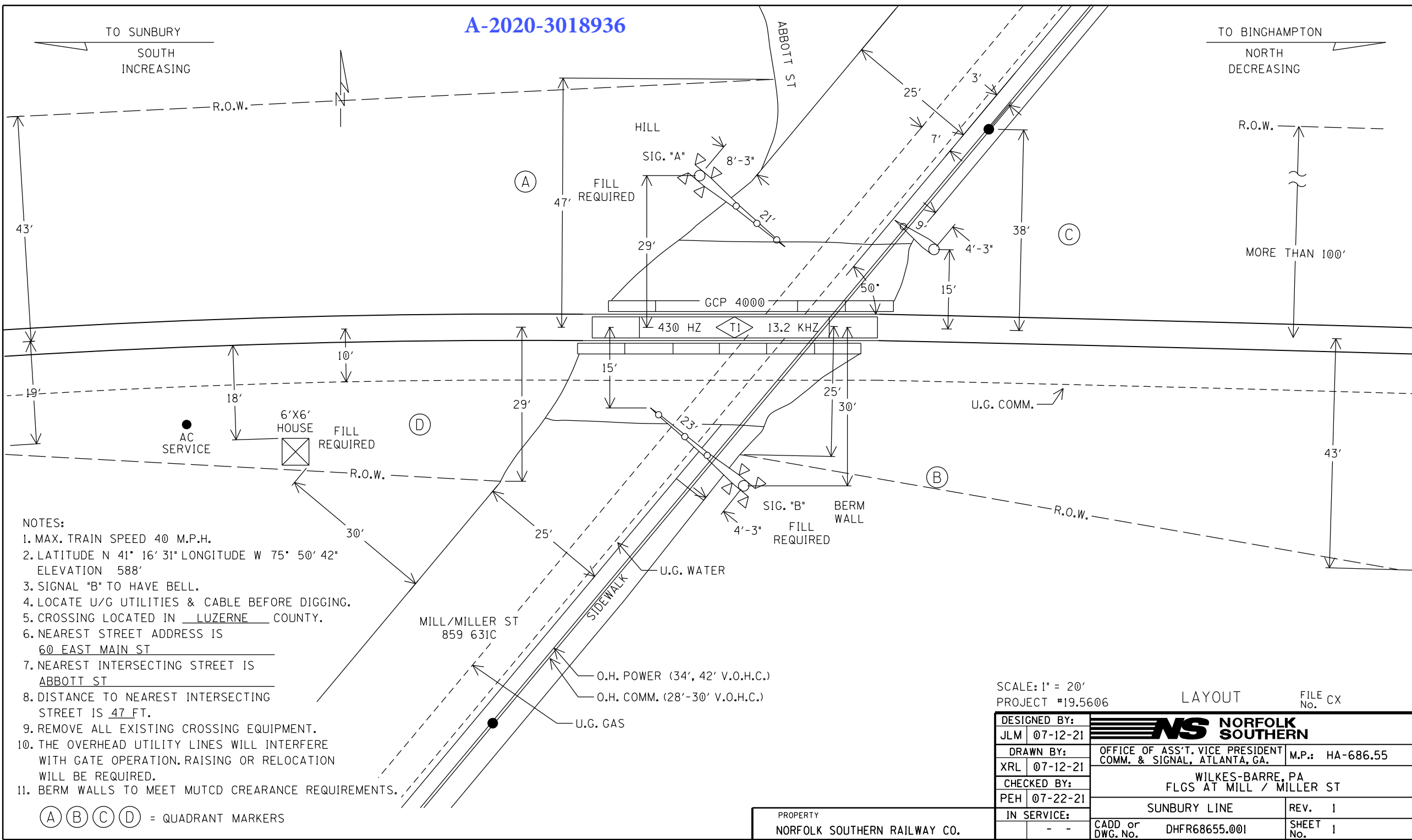
PROPERTY  
NORFOLK SOUTHERN R.WY. CO.

DESIGNED BY:	JLM 07-12-21		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
DRAWN BY:	XRL 07-12-21			
CHECKED BY:	PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST		
IN SERVICE:	- -	COLUMBIA DISTRICT	REV. 1	
		CADD or DWG. No. DHFR68655.NX1	SHEET No. NX1	

A-2020-3018936

TO SUNBURY  
SOUTH  
INCREASING

TO BINGHAMPTON  
NORTH  
DECREASING



- NOTES:
1. MAX. TRAIN SPEED 40 M.P.H.
  2. LATITUDE N 41° 16' 31" LONGITUDE W 75° 50' 42" ELEVATION 588'
  3. SIGNAL "B" TO HAVE BELL.
  4. LOCATE U/G UTILITIES & CABLE BEFORE DIGGING.
  5. CROSSING LOCATED IN LUZERNE COUNTY.
  6. NEAREST STREET ADDRESS IS 60 EAST MAIN ST
  7. NEAREST INTERSECTING STREET IS ABBOTT ST
  8. DISTANCE TO NEAREST INTERSECTING STREET IS 47 FT.
  9. REMOVE ALL EXISTING CROSSING EQUIPMENT.
  10. THE OVERHEAD UTILITY LINES WILL INTERFERE WITH GATE OPERATION. RAISING OR RELOCATION WILL BE REQUIRED.
  11. BERM WALLS TO MEET MUTCD CLEARANCE REQUIREMENTS.

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

SCALE: 1" = 20'  
PROJECT #19.5606 LAYOUT FILE CX NO.

DESIGNED BY: JLM 07-12-21			M.P.: HA-686.55
DRAWN BY: XRL 07-12-21			
CHECKED BY: PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST		
IN SERVICE: - -	SUNBURY LINE	REV. 1	SHEET 1
	CADD or DWG. No. DHFR68655.001		

PROPERTY  
NORFOLK SOUTHERN RAILWAY CO.

A-2020-3018936

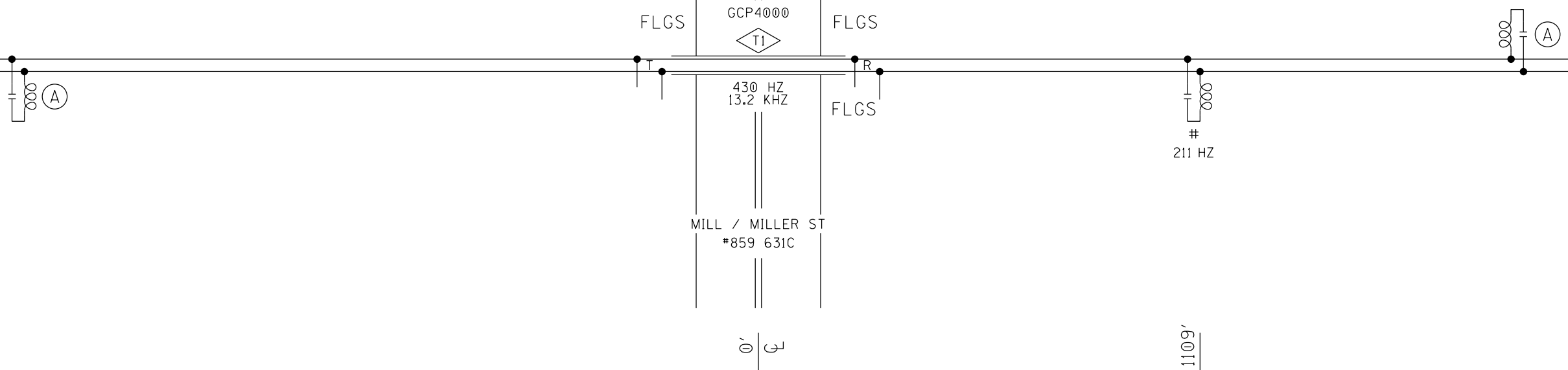
TO SUNBURY  
SOUTH  
INCREASING

TO BINGHAMPTON  
NORTH  
DECREASING

2058'  
TO NEAREST  
GCP WIRES

APP. SOUTH OAK ST

2058'  
TO NEAREST  
GCP WIRES



(A) - MF-NBS FSS-1E 250849-004 (430HZ)

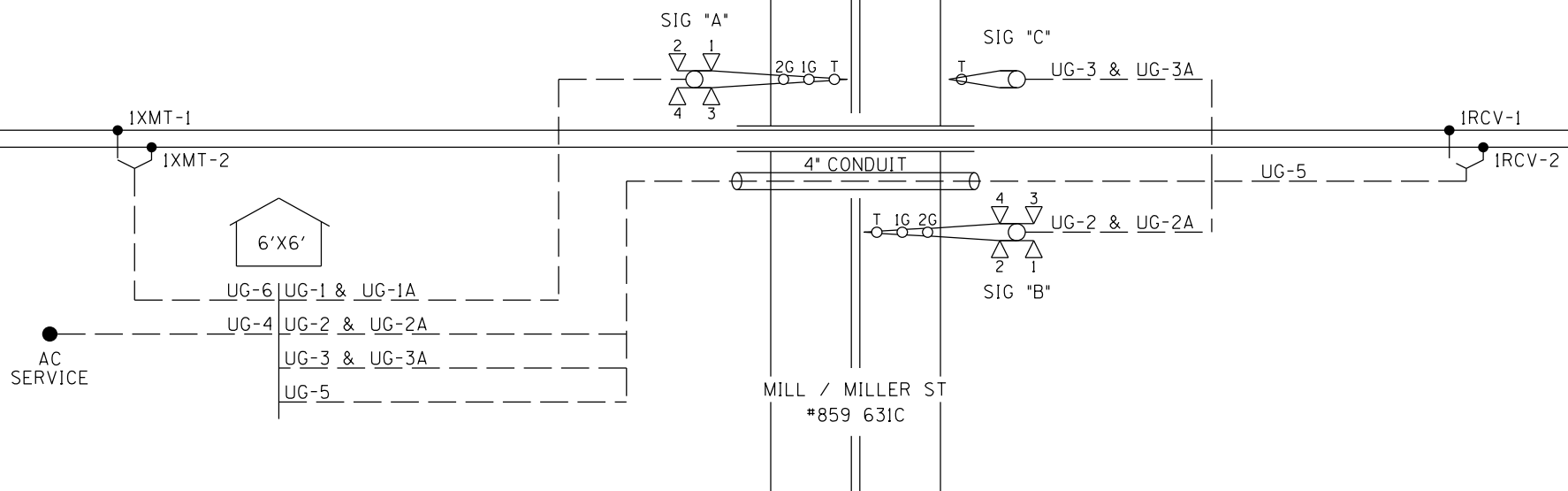
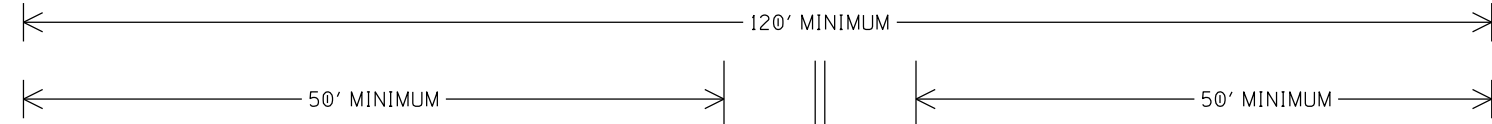
# = FREQUENCY INFORMATION NOT PROVIDED  
FOR SHUNTS OF ADJACENT CROSSINGS

PROFILE

DESIGNED BY: JLM 07-12-21		
DRAWN BY: XRL 07-12-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
CHECKED BY: PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RYW CO.	CADD or DWG. No. DHFR68655.002	SHEET No. 2

TO SUNBURY  
SOUTH  
INCREASING

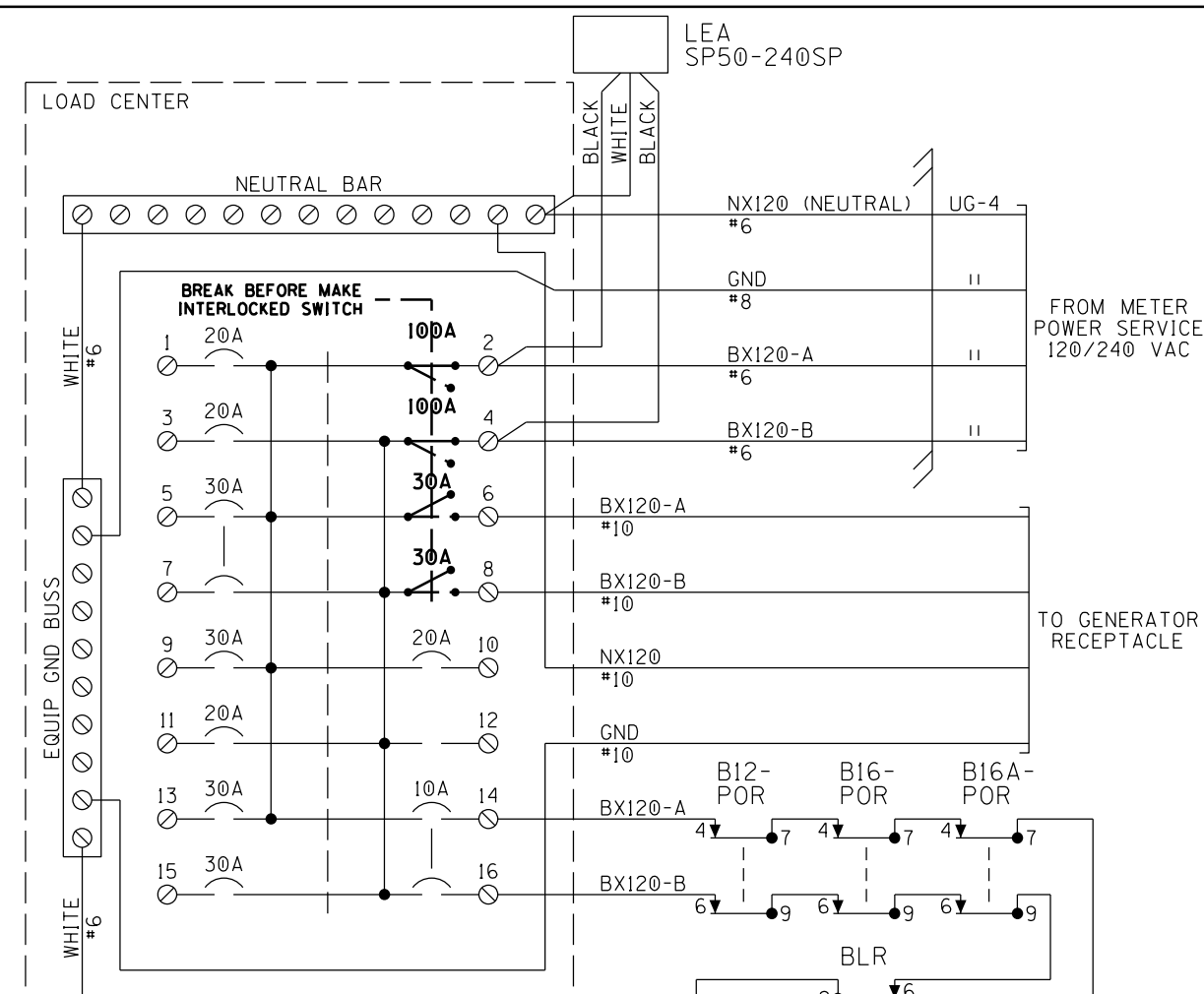
TO BINGHAMPTON  
NORTH  
DECREASING



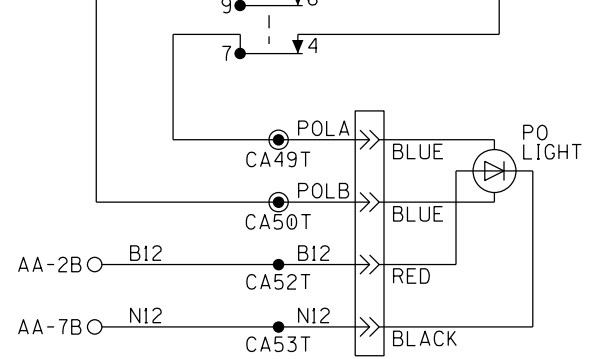
UG-1-5CUG #6 AEC AEZ AEB B16-A N16-A	UG-1A-12CUG #14 AXG NAXG AXX IAXX AGD XGP2 AGBX120 AGNX120 SPARE SPARE SPARE SPARE	UG-2A-12CUG #14 BXC NBXC BXX IBXX BGD XGP2 XGP1 BGBX120 BCNX120 SPARE SPARE SPARE SPARE	UG-3A-12CUG #14 CXG NCXG CXX ICXX CGD XGP1 XGP CGBX120 CGNX120 SPARE SPARE SPARE SPARE	UG-4-3CUG #6 W/#8 GND BX120-A BX120-B NX120 GND	UG-5-TW. PR. #6 IRCV-1 IRCV-2  UG-6-TW. PR. #6 IXMT-1 IXMT-2
UG-2-5CUG #6 BEC BEZ BEB B16A-B N16A-B					
UG-3-5CUG #6 CEC CEB B16-C N16-C SPARE					

CABLE PLAN

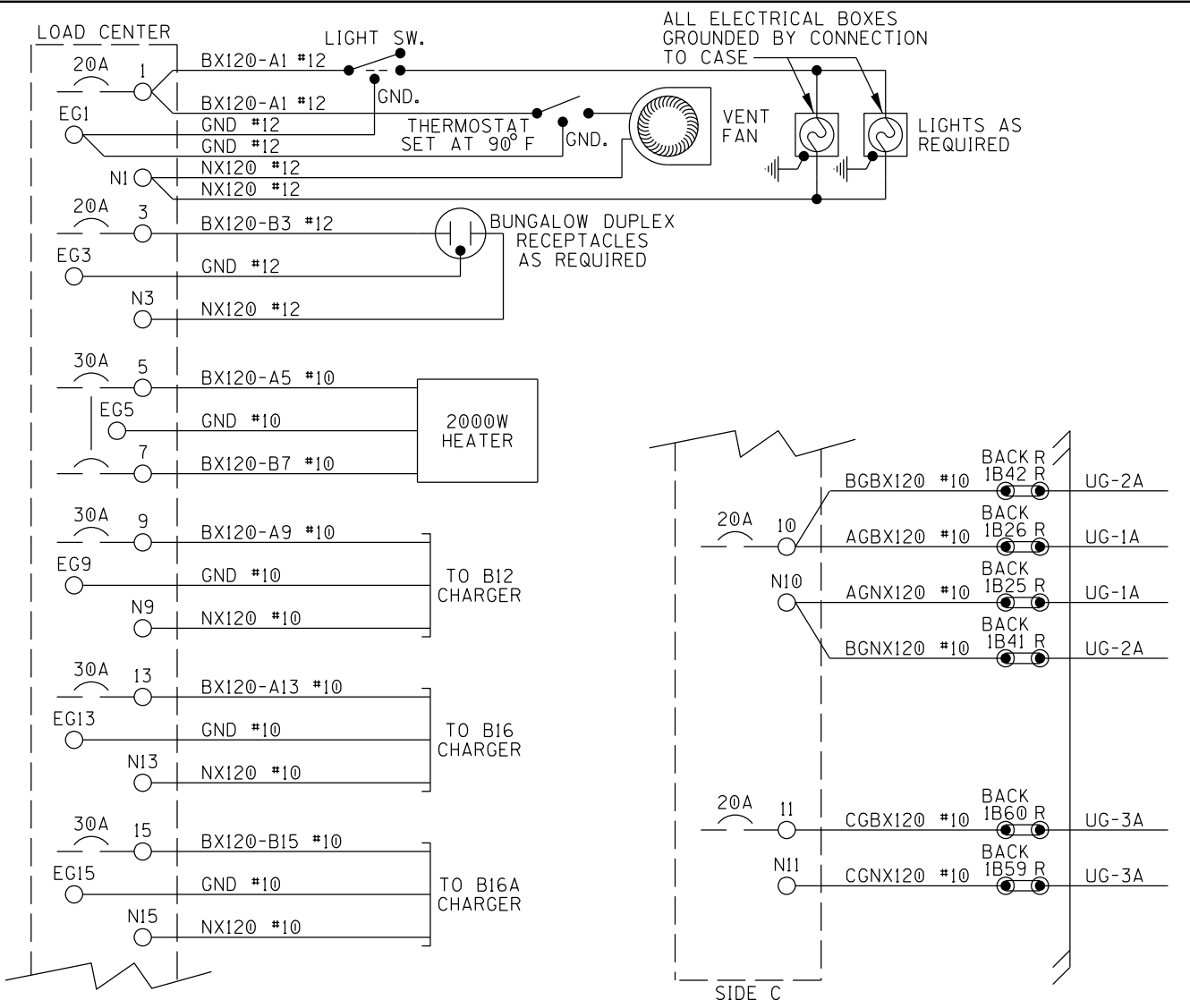
DESIGNED BY: JLM 07-12-21		
DRAWN BY: XRL 07-12-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
CHECKED BY: PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RY. CO.	CADD or DWG. No. DHFR68655.003	SHEET 3 No.



- 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 — PK4DT1M4LA
  - GENERATOR RECEPTACLE:
  - MALE CONNECTOR — NEMA L1430-FI

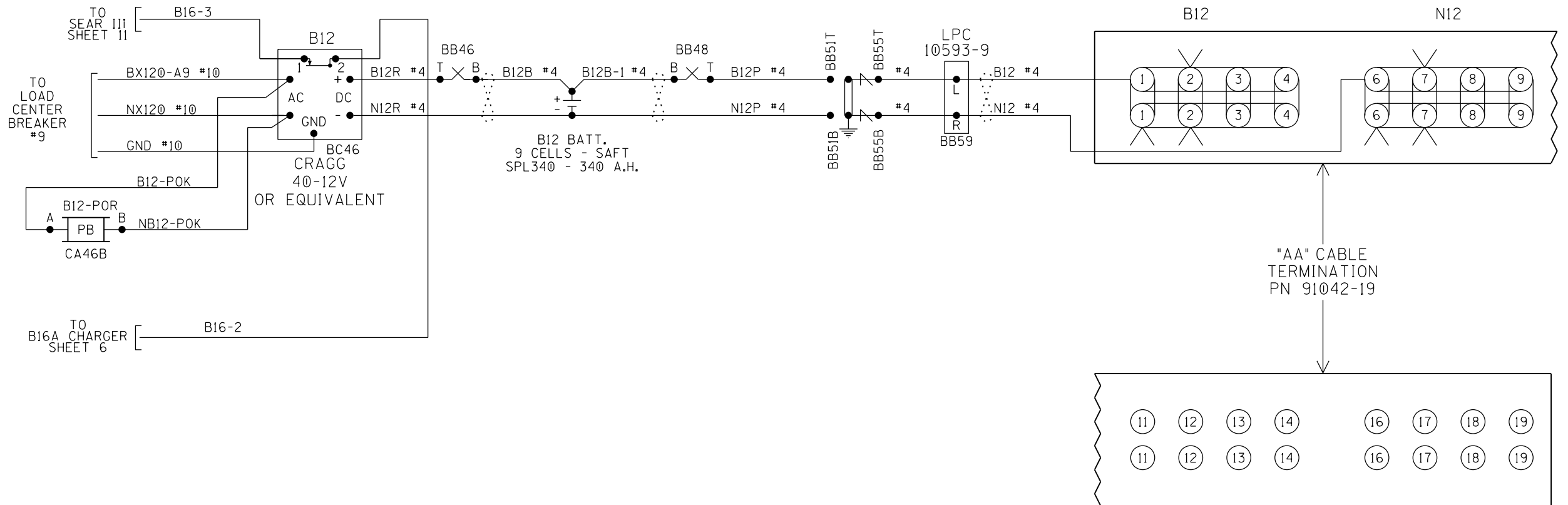


- NOTES:
1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
  2. ALL AC WIRING TO LOAD CENTER TO BE IN METALLIC CONDUIT WITH NO EXPOSED TERMINALS. ALL AC 120V AND 240V EQUIPMENT TO BE PROPERLY GROUNDED.
  3. ● = INSULATED NUTS TO BE USED ON ALL TERMINALS OF 120VAC AND ABOVE.

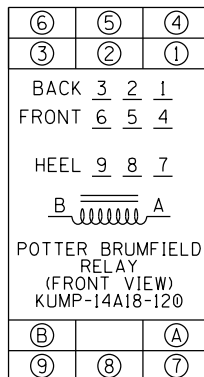


LOAD CENTER

DESIGNED BY:	JLM 07-12-21	
DRAWN BY:	XRL 07-12-21	PEH 07-22-21
CHECKED BY:	IN SERVICE: - -	
PROPERTY	NORFOLK SOUTHERN RYW CO.	
		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
WILKES-BARRE, PA FLGS AT MILL / MILLER ST		M.P.: HA-686.55
SUNBURY LINE		REV. 1
CADD or DWG. No. DHFR68655.004		SHEET 4



B12-POR



NOTES:

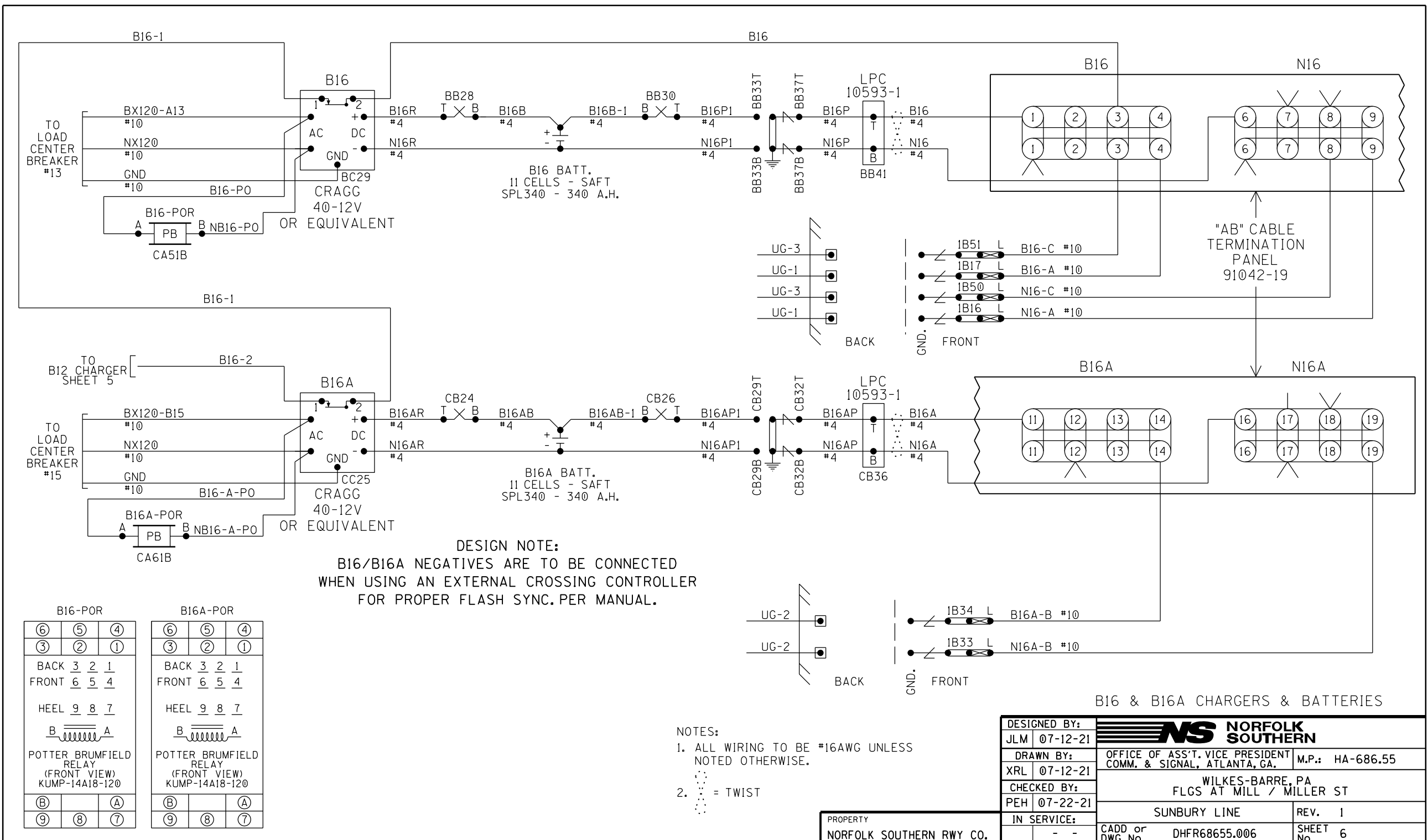
1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.

2. = TWIST

CHARGER & BATTERIES

DESIGNED BY:		
JLM 07-12-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
DRAWN BY:	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
XRL 07-12-21	SUNBURY LINE	
CHECKED BY:	REV. 1	
PEH 07-22-21	SHEET 5	
IN SERVICE:	CADD or DWG. No.	DHFR68655.005
- -		

PROPERTY  
NORFOLK SOUTHERN RY CO.



**DESIGN NOTE:**  
 B16/B16A NEGATIVES ARE TO BE CONNECTED  
 WHEN USING AN EXTERNAL CROSSING CONTROLLER  
 FOR PROPER FLASH SYNC. PER MANUAL.

B16-POR

6	5	4	
3	2	1	
BACK	3	2	1
FRONT	6	5	4
HEEL	9	8	7
B  A			
POTTER BRUMFIELD RELAY (FRONT VIEW) KUMP-14A18-120			
B		A	
9	8	7	

B16A-POR

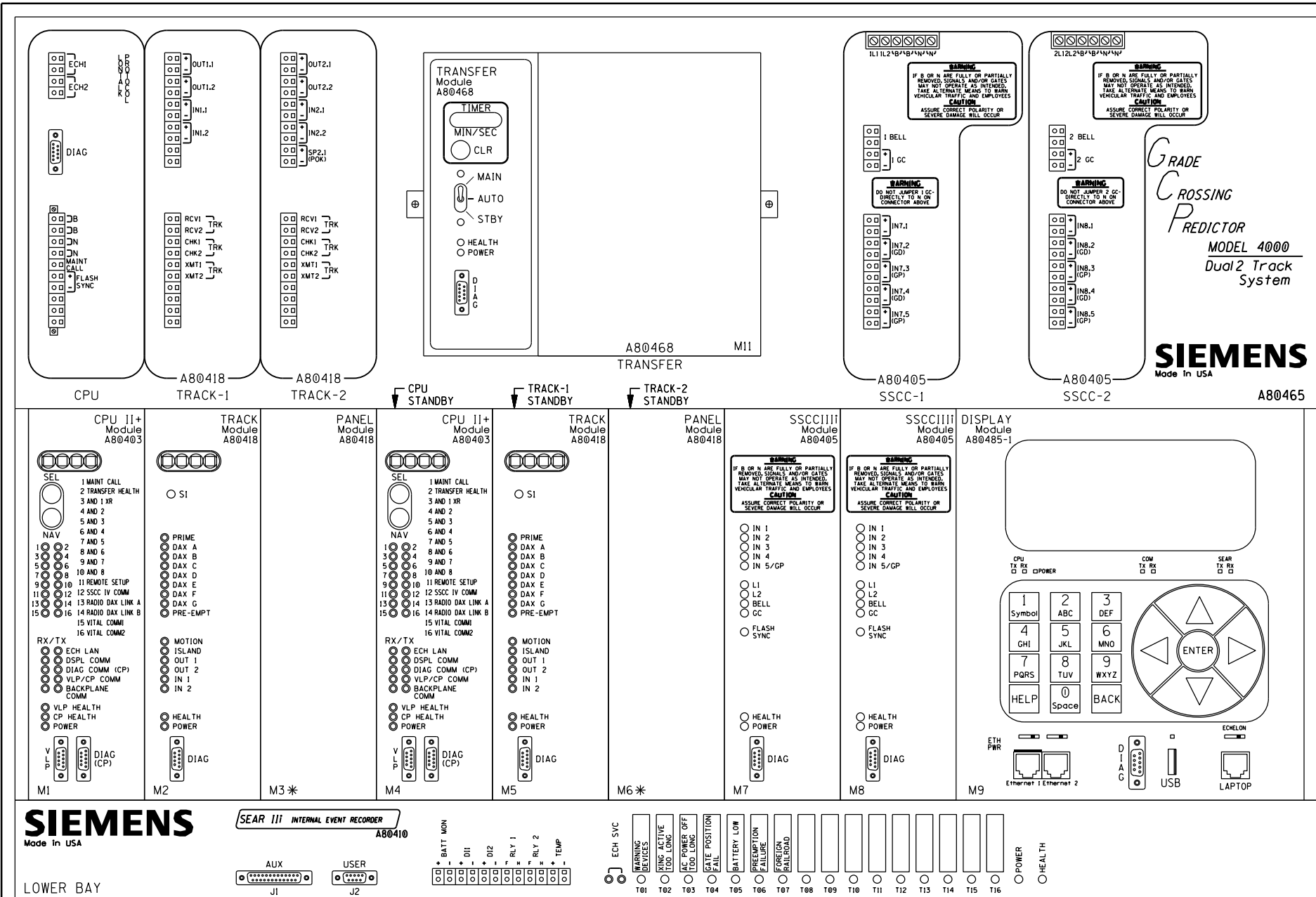
6	5	4	
3	2	1	
BACK	3	2	1
FRONT	6	5	4
HEEL	9	8	7
B  A			
POTTER BRUMFIELD RELAY (FRONT VIEW) KUMP-14A18-120			
B		A	
9	8	7	

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

PROPERTY  
 NORFOLK SOUTHERN RY CO.

B16 & B16A CHARGERS & BATTERIES

DESIGNED BY: JLM 07-12-21		
DRAWN BY: XRL 07-12-21		
CHECKED BY: PEH 07-22-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
IN SERVICE: - -	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68655.006	SHEET 6



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

GCP4000 CHASSIS & MODULE LAYOUT

Program Report  
-----

Location and SIN  
-----

DOT Number: 859631C  
Milepost Number: HA-686.55  
Site Name: MILL ST

SIN: 755048623816

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): 7AF852B4  
Office Check Number: 7AF852B4  
Config. Check Number: 3BAAEF33  
(Based on MCF Revision 021)

Program  
-----

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

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

BASIC: island operation  
Track 1: Island Used = Internal

BASIC: preemption  
Preempt Logic = No

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

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

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

GCP: track 1  
Track 1: GCP Freq Category = Standard  
Track 1: GCP Frequency = 430 Hz  
Track 1: Approach Distance = 2058 ft  
Track 1: Uni/Bi/Sim-Bidirnl = Bidirnl  
Track 1: GCP Transmit Level = Medium  
Track 1: Island Connection = Isl  
Track 1: Island Distance = 154 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: CancelPickup Delay = This Isl

GCP: track 1 prime  
Track 1: Prime Warning Time = 30 sec  
Track 1: Prime Offset Distance = 0 ft  
Track 1: Switch MS EZ Level = 10  
Track 1: Prime MS/GCP Mode = Pred  
Track 1: Prime Pickup Delay = 15 sec  
Track 1: Prime UAX = Not Used

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


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

ISLAND: track 1  
Track 1: IslFrequency = 13.2 kHz  
Track 1: Pickup Delay (2s +) = 0 sec  
Track 1: IslEnable IP Used = No

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

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

GCP4000 PROGRAMMING

DESIGNED BY:			
JLM 07-12-21			
DRAWN BY:	OFFICE OF ASS'T. VICE PRESIDENT		M.P.: HA-686.55
XRL 07-12-21	COMM. & SIGNAL, ATLANTA, GA.		
CHECKED BY:	WILKES-BARRE, PA		
PEH 07-22-21	FLGS AT MILL / MILLER ST		
IN SERVICE:	SUNBURY LINE	REV. 1	
PROPERTY	CADD or DWG. No.	DHFR68655.008	SHEET 8
NORFOLK SOUTHERN RYW CO.	- -		

ADVANCED: MS restart  
MS/GCP Restart Used = No

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

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

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

ADVANCED: trk 1 overrides  
Track 1: AllPredictors Override Used = No

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

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

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

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

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

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

SSCC  
Gates Used = Yes  
SSCC1+2 GPs Coupled = Yes  
Min Activation = 0 sec  
Rmt Activation Cancel= 2 min  
BellOn Gate Rising = No  
Mute BellOn Gate Down = No  
SSCCIV 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 NeutralTest = Off  
Aux-1 Xng CtrlUsed = No

SSCC: 2  
SSCC-2 Activation = AND 1 XR  
SSCC-2 Gate Delay = 6 sec  
SSCC-2 Number of GPs = 0  
SSCC-2 Number of GDs = 1  
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 NeutralTest = Off  
Aux-2 Xng CtrlUsed = No

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

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

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

SEAR  
SEAR Subnode = 3  
DI 1 = Not Used  
DI 2 = Not Used  
Rly 1 = General1  
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 8.5 = Not Used

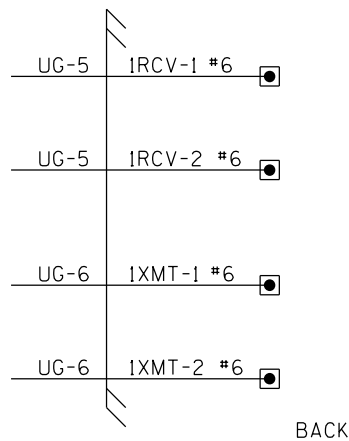
SITE: programming  
Radio Subnode = 1  
Field Password = Off  
Low Battery Enabled = Off

Configuration Package File  
-----  
Filename: DHFR68655.pac

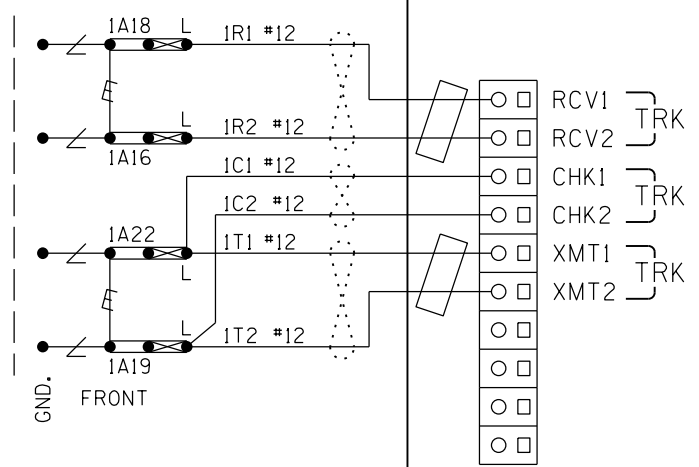
GCP4000 PROGRAMMING

DESIGNED BY:	JLM 07-12-21		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: HA-686.55
DRAWN BY:	XRL 07-12-21		WILKES-BARRE, PA FLGS AT MILL / MILLER ST		
CHECKED BY:	PEH 07-22-21	SUNBURY LINE		REV. 1	
IN SERVICE:	- -	CADD or DWG. No.	DHFR68655.009	SHEET 9	No.

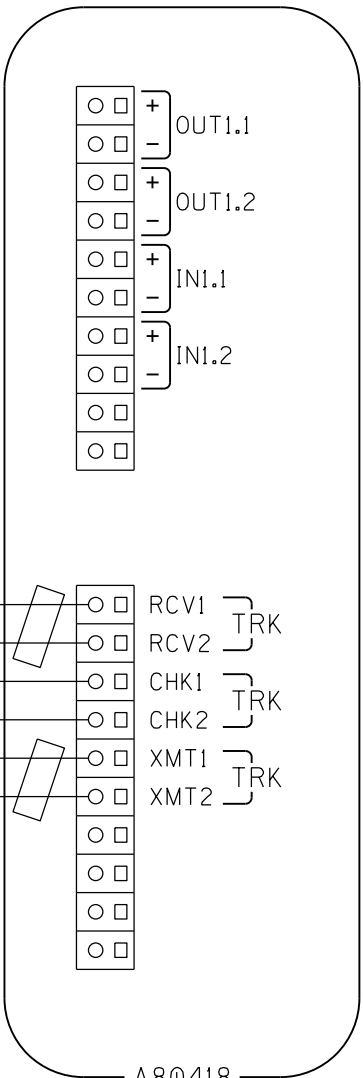
PROPERTY  
NORFOLK SOUTHERN RWY CO.



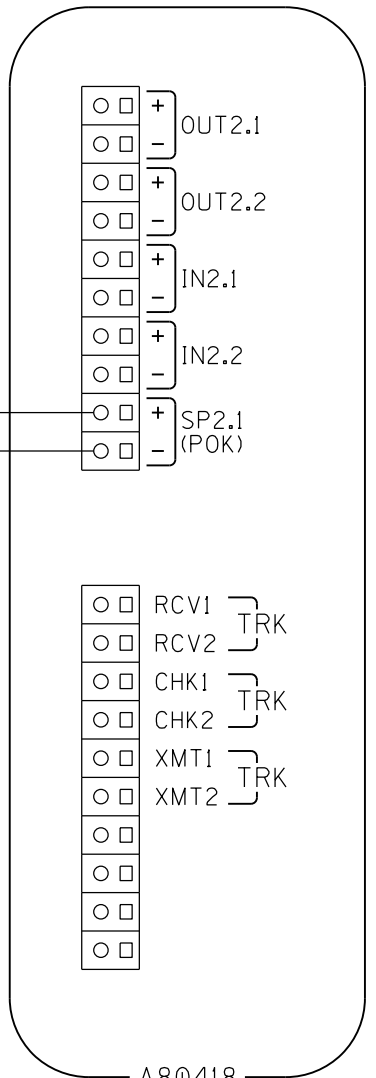
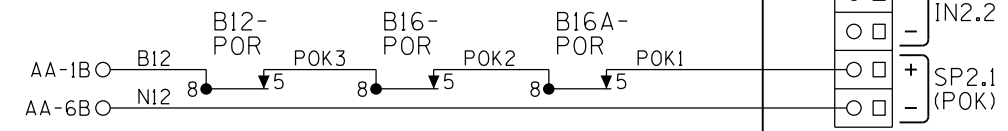
BACK



GND.  
FRONT



A80418  
TRACK-1



A80418  
TRACK-2

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

CONNECTORS FOR TRACK MODULES

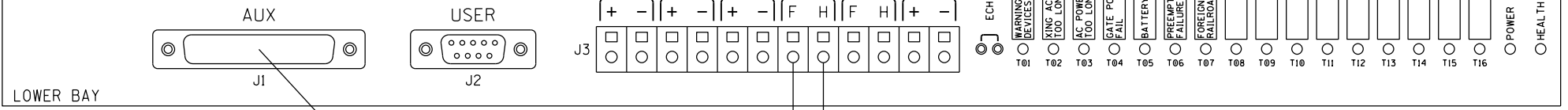
DESIGNED BY: JLM 07-12-21			M.P.: HA-686.55
DRAWN BY: XRL 07-12-21			OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY: PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST		REV. 1
IN SERVICE: - -	SUNBURY LINE	CADD or DWG. No. DHFR68655.010	SHEET No. 10

PROPERTY  
NORFOLK SOUTHERN RYW CO.

**SIEMENS**  
Made in USA

**SEAR III INTERNAL EVENT RECORDER**

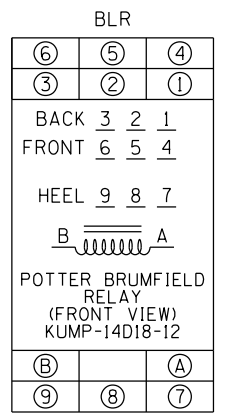
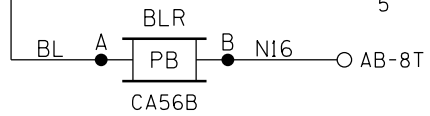
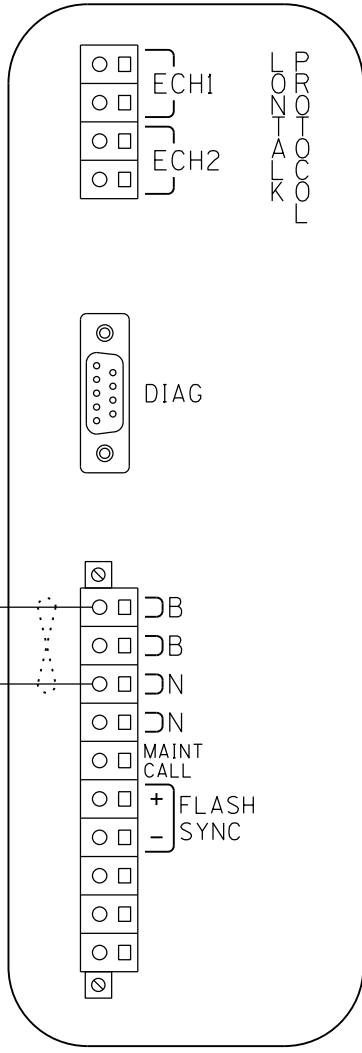
A80410



LOWER BAY

TO RADIO SHEET 13

TO SHEET 5



- NOTES:
1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
  2. = TWIST

CPU MODULE & SEAR III HOOK-UP

DESIGNED BY:		
JLM 07-12-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
DRAWN BY:	WILKES-BARRE, PA	
XRL 07-12-21	FLGS AT MILL / MILLER ST	
CHECKED BY:	SUNBURY LINE	
PEH 07-22-21	REV. 1	SHEET 11
IN SERVICE:	CADD or DWG. No. DHFR68655.011	
PROPERTY	NORFOLK SOUTHERN RY CO.	

SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
SITE NAME	MILL/MILLER ST
MILEPOST	HA-686.55
DOT NUMBER	859-631C
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)	7.550.486.238.03.01
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?	3
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 SEAR III PRESS SITE SETUP KEY.  
USE ARROW KEYS TO MAKE SELECTION,  
PRESS ENTER AFTER SELECTION HAS BEEN MADE.

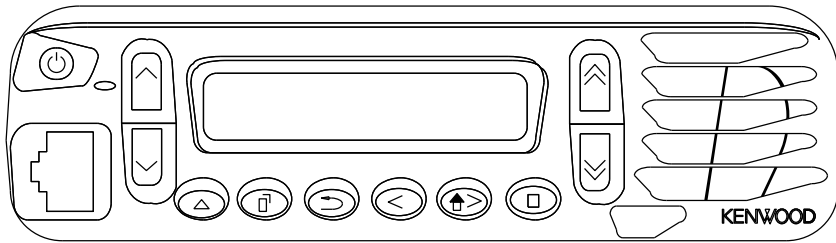
NOTES:

- # = NOT DISPLAYED IF SITE TYPE = NO COMMUNICATION
- ★ = USE DEFAULT SETTINGS
- \* = ONLY DISPLAYED IF CROSSING CONFIGURATION = SPLIT GATE

SEAR III PROGRAMMING

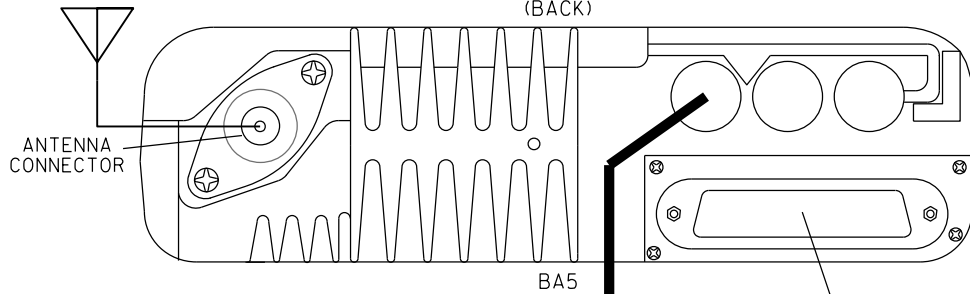
DESIGNED BY:	JLM 07-12-21		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
DRAWN BY:	XRL 07-12-21			
CHECKED BY:	PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST		
IN SERVICE:	- -	SUNBURY LINE	REV.	1
PROPERTY NORFOLK SOUTHERN RWY CO.		CADD or DWG. No. DHFR68655.012	SHEET No.	12

(FRONT)



KENWOOD RADIO NX-700H  
OR EQUIVALENT

(BACK)



ANTENNA  
CONNECTOR

BA5

DB25M - DB25M  
STRAIGHT THROUGH CABLE

TO  
SEAR III  
SHEET 11

CABLE - KENWOOD  
P/N E30-7520-15

AA-2B ○ B12  
AA-7B ○ N12  
B12  
N12



ISOLATED SERIES 2

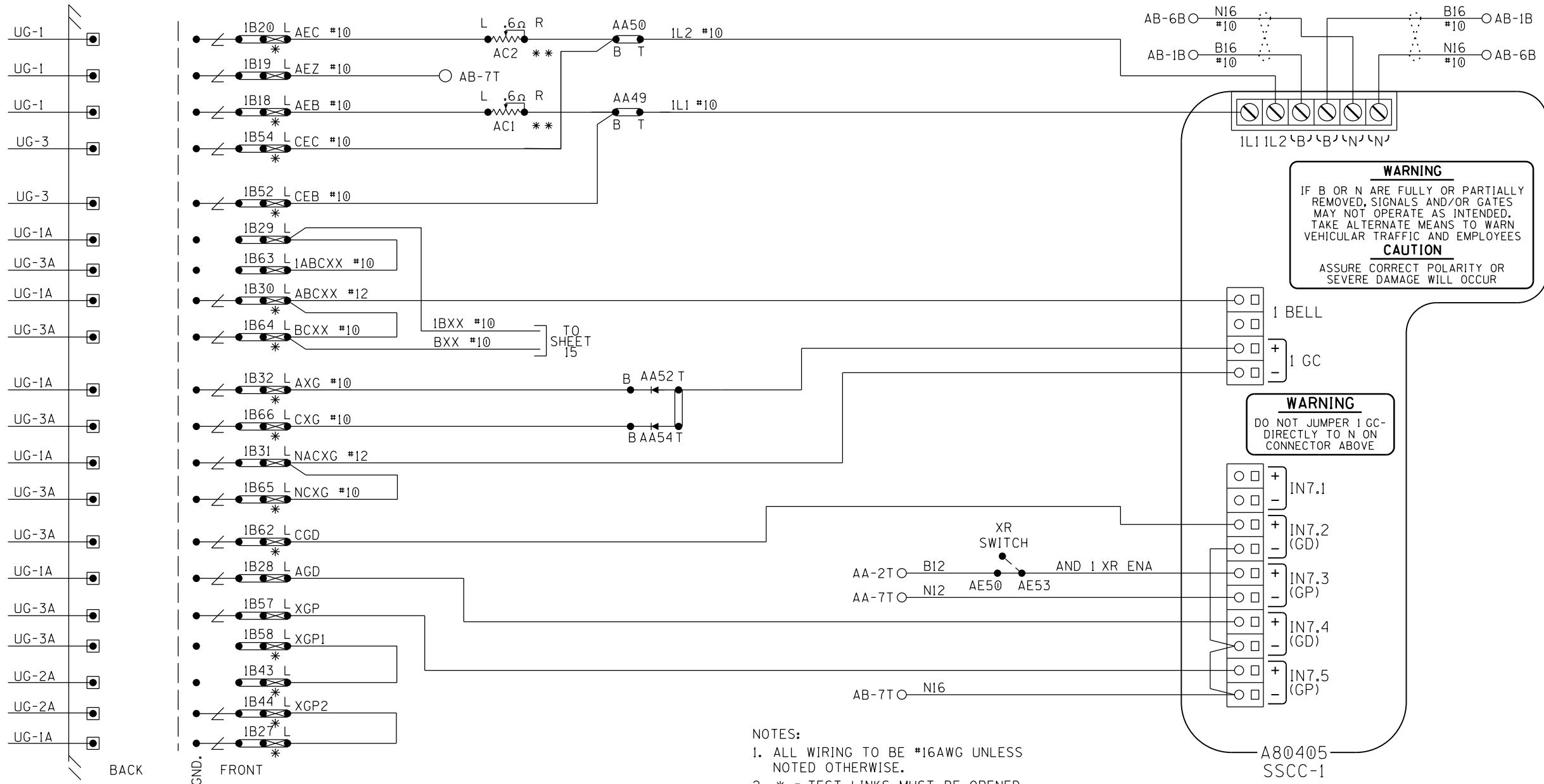
BB5

NOTE:

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

BACKHAUL EQUIPMENT

DESIGNED BY: JLM 07-12-21		
DRAWN BY: XRL 07-12-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
CHECKED BY: PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RWY CO.	CADD or DWG. No. DHFR68655.013	SHEET No. 13



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

SSCC#1 MODULE HOOK-UP

DESIGNED BY: JLM 07-12-21		
DRAWN BY: XRL 07-12-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
CHECKED BY: PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RYW CO.	CADD or DWG. No. DHFR68655.014	SHEET No. 14

BACK

GND. FRONT

TO SHEET 15

AA-2T B12  
AA-7T N12  
XR SWITCH  
AE50 AE53  
AND 1 XR ENA

AB-7T N16

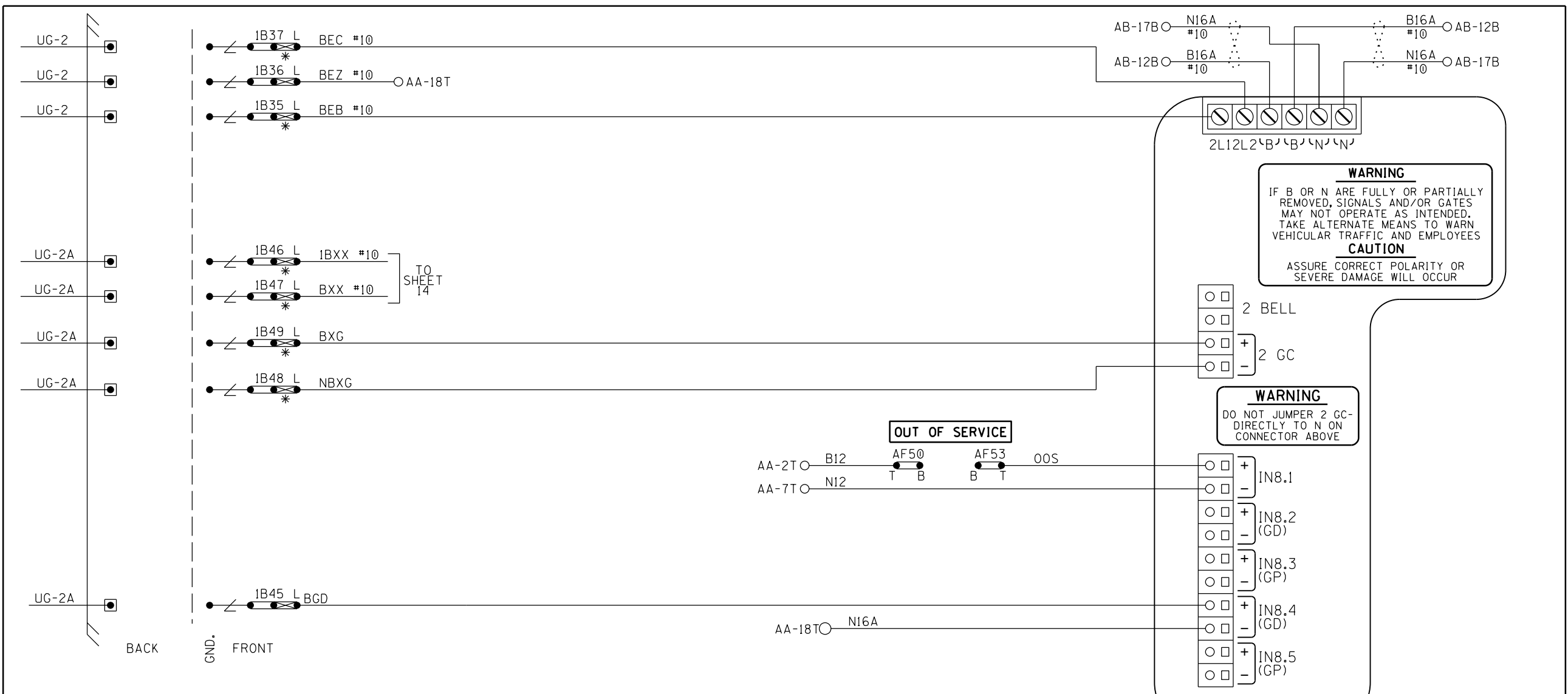
1 BELL  
1 GC

**WARNING**  
DO NOT JUMPER 1 GC-DIRECTLY TO N ON CONNECTOR ABOVE

IN7.1  
IN7.2 (GD)  
IN7.3 (GP)  
IN7.4 (GD)  
IN7.5 (GP)

A80405  
SSCC-1

**WARNING**  
IF B OR N ARE FULLY OR PARTIALLY REMOVED, SIGNALS AND/OR GATES MAY NOT OPERATE AS INTENDED. TAKE ALTERNATE MEANS TO WARN VEHICULAR TRAFFIC AND EMPLOYEES.  
**CAUTION**  
ASSURE CORRECT POLARITY OR SEVERE DAMAGE WILL OCCUR



TO SHEET 14

OUT OF SERVICE

**WARNING**  
DO NOT JUMPER 2 GC-DIRECTLY TO N ON CONNECTOR ABOVE

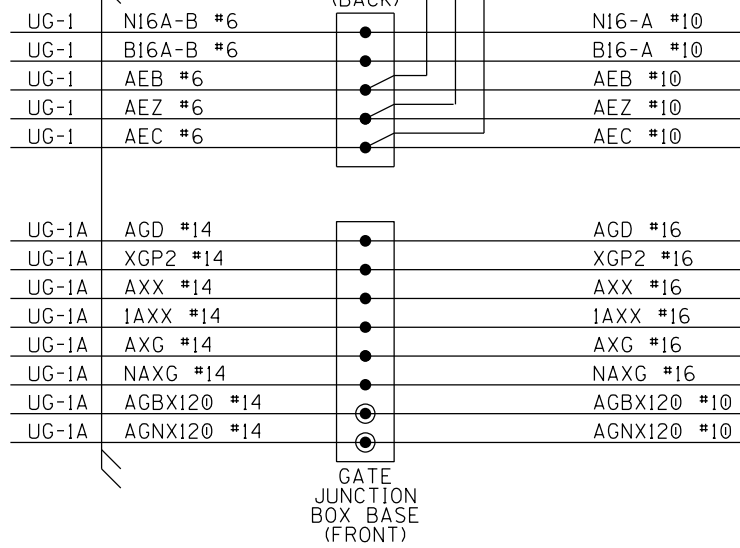
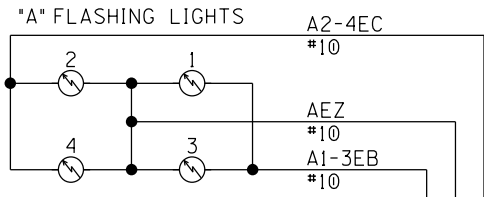
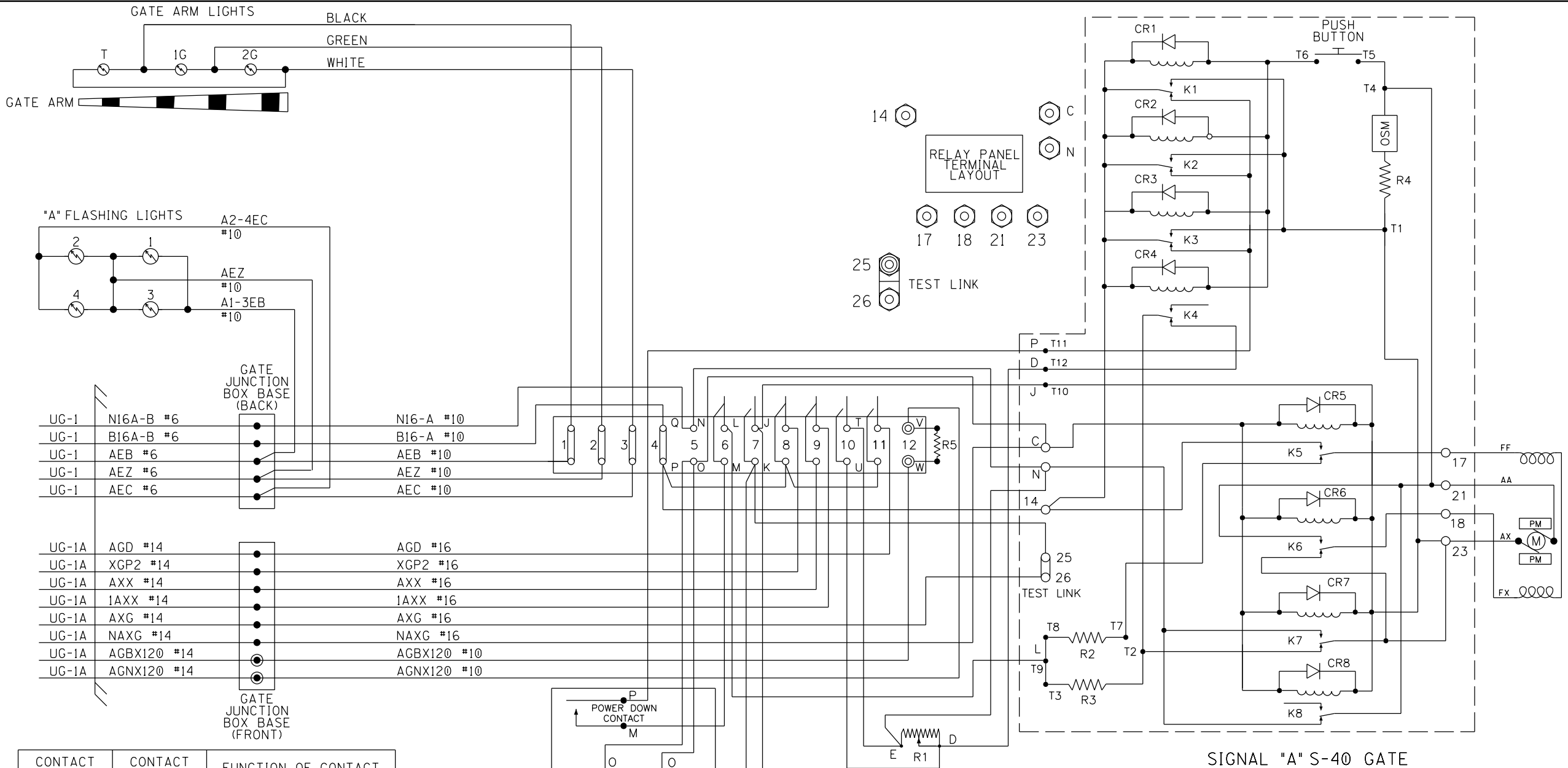
**WARNING**  
IF B OR N ARE FULLY OR PARTIALLY REMOVED, SIGNALS AND/OR GATES MAY NOT OPERATE AS INTENDED. TAKE ALTERNATE MEANS TO WARN VEHICULAR TRAFFIC AND EMPLOYEES.  
**CAUTION**  
ASSURE CORRECT POLARITY OR SEVERE DAMAGE WILL OCCUR

- 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.

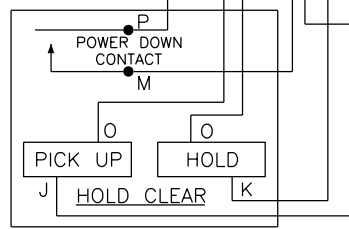
3. = TWIST

SSCC#2 MODULE HOOK-UP

DESIGNED BY: JLM 07-12-21		
DRAWN BY: XRL 07-12-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
CHECKED BY: PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RY CO.	CADD or DWG. No. DHR68655.015	SHEET No. 15



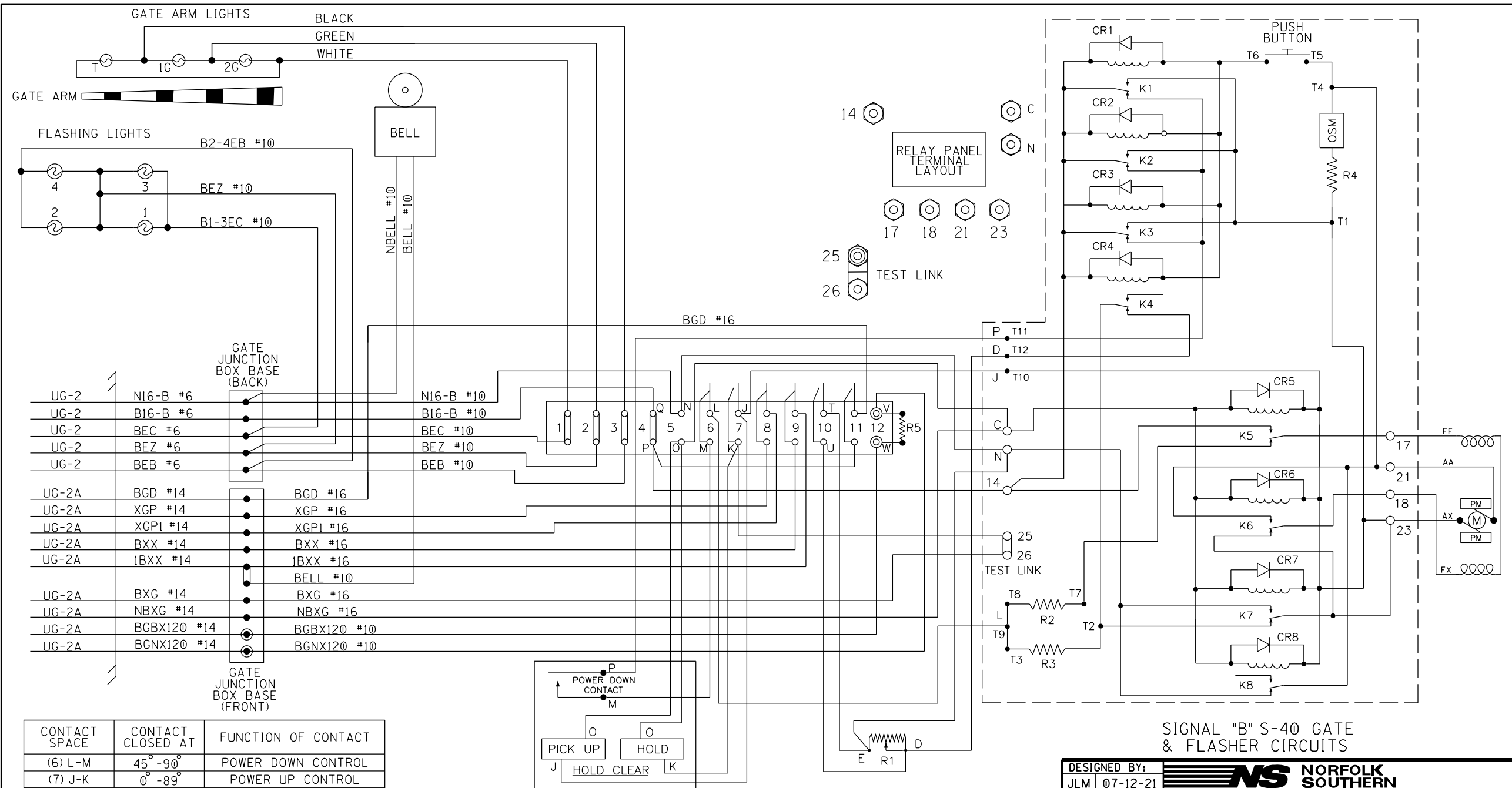
CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
(6) L-M	45° - 90°	POWER DOWN CONTROL
(7) J-K	0° - 89°	POWER UP CONTROL
(8)	83° - 90°	FLASHING LGT. CONTROL
(9)	5° - 90°	BELL CONTROL
(10) T-U	0° - 5°	HORIZONTAL SNUB
(11)	0° - 5°	GATE DOWN INDICATION



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

DESIGNED BY: JLM 07-12-21		
DRAWN BY: XRL 07-12-21		
CHECKED BY: PEH 07-22-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
IN SERVICE: - -	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
PROPERTY NORFOLK SOUTHERN RYW CO.	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68655.016	SHEET No. 16

SIGNAL "A" S-40 GATE & FLASHER CIRCUITS



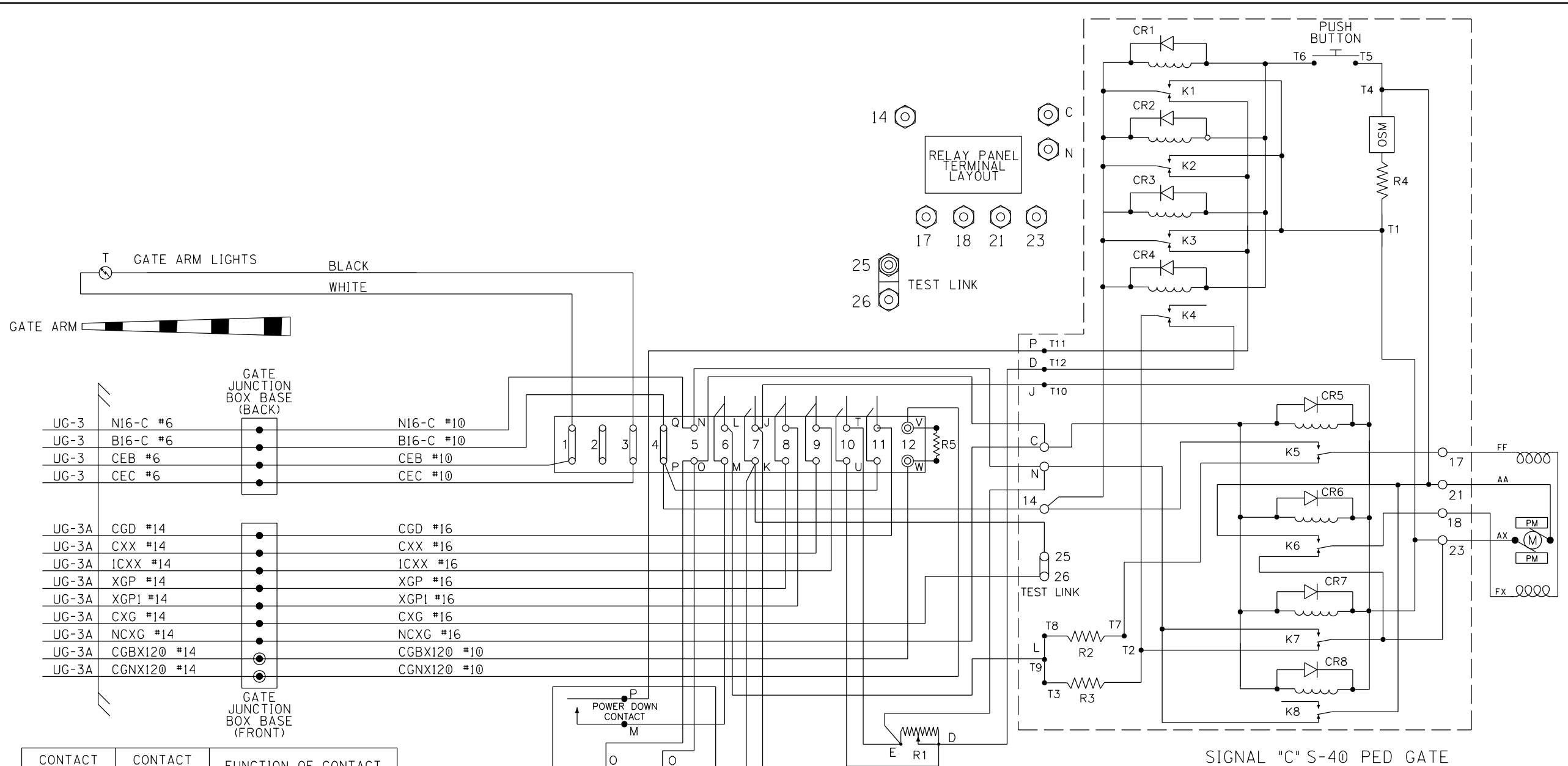
CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
(6) L-M	45° - 90°	POWER DOWN CONTROL
(7) J-K	0° - 89°	POWER UP CONTROL
(8)	83° - 90°	FLASHING LGT. CONTROL
(9)	5° - 90°	BELL CONTROL
(10) T-U	0° - 5°	HORIZONTAL SNUB
(11)	0° - 5°	GATE DOWN INDICATION

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

DESIGNED BY: JLM 07-12-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-12-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
CHECKED BY: PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68655.017	SHEET No. 17

PROPERTY  
NORFOLK SOUTHERN RY CO.



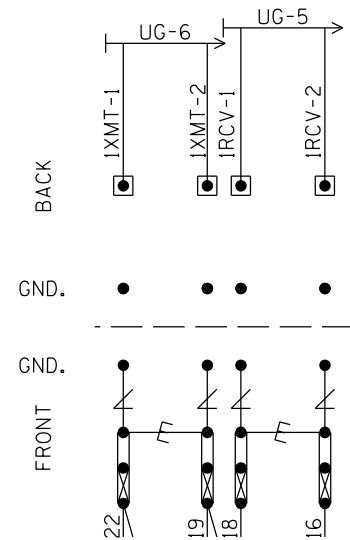
CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
(6) L-M	45° - 90°	POWER DOWN CONTROL
(7) J-K	0° - 89°	POWER UP CONTROL
(8)	83° - 90°	FLASHING LGT. CONTROL
(9)	5° - 90°	BELL CONTROL
(10) T-U	0° - 5°	HORIZONTAL SNUB
(11)	0° - 5°	GATE DOWN INDICATION

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 "C" S-40 PED GATE & FLASHER CIRCUITS

DESIGNED BY: JLM 07-12-21		
DRAWN BY: XRL 07-12-21		
CHECKED BY: PEH 07-22-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
IN SERVICE: - -	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
PROPERTY NORFOLK SOUTHERN RYW CO.	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68655.018	SHEET No. 18

"1A"



NOTES:

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

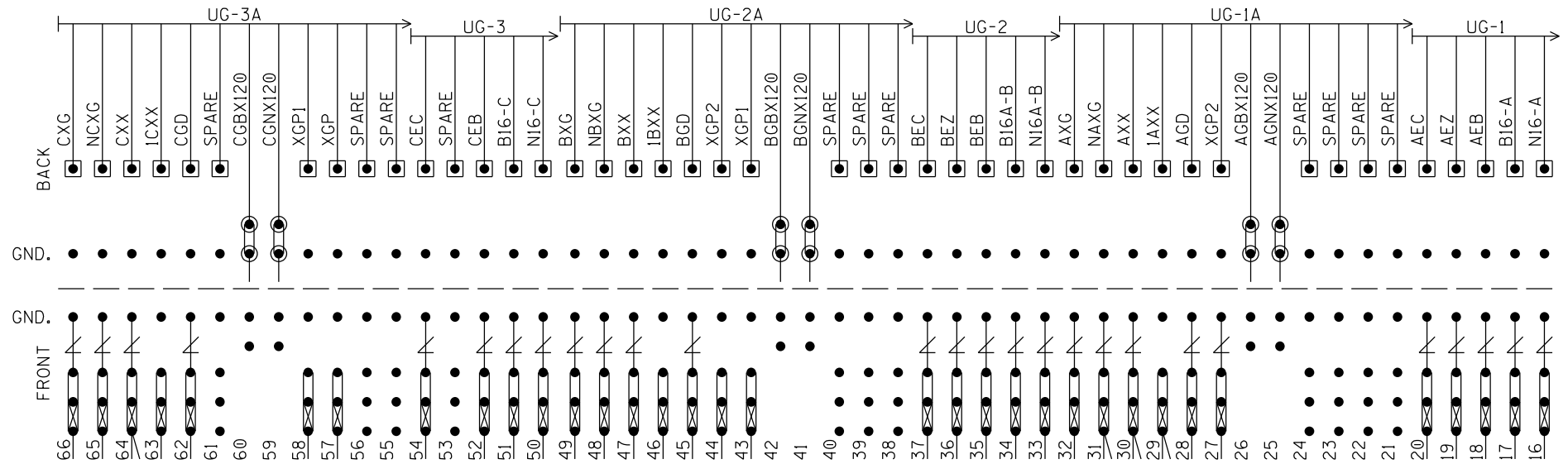
SEE FARADAY SHIELD SHOP DRAWING DETAIL FOR HOW THIS PORTION OF THE FARADAY SHIELD IS PREDRILLED. ONLY INSTALL AND USE THE TERMINALS NEEDED.

BACKBOARD 1A

DESIGNED BY:			
JLM 07-12-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: HA-686.55
DRAWN BY:	WILKES-BARRE, PA		
XRL 07-12-21	FLGS AT MILL / MILLER ST		
CHECKED BY:	SUNBURY LINE		REV. 1
PEH 07-22-21	CADD or DWG. No. DHFR68655.019		SHEET 19
IN SERVICE:			

PROPERTY  
NORFOLK SOUTHERN RY CO.

"1B"



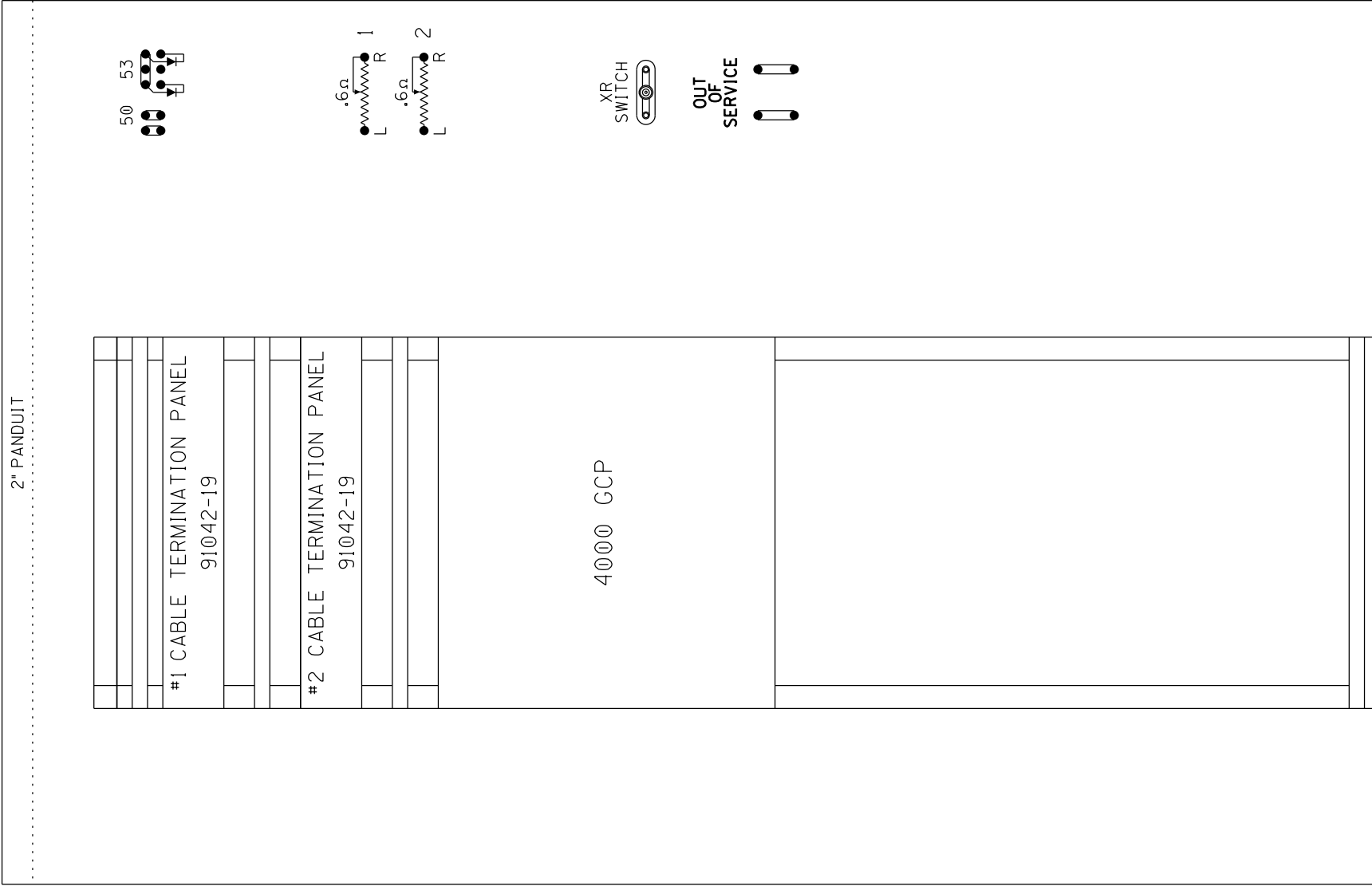
NOTES:

1. GND. ● = THROUGH GROUND POST ON EACH TERMINAL BLOCK TO FARADAY SHIELD
2. ○ = INSULATED NUTS TO BE USED ON ALL 120VAC AND ABOVE TERMINALS

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

BACKBOARD 1B

DESIGNED BY: JLM 07-12-21		
DRAWN BY: XRL 07-12-21		
CHECKED BY: PEH 07-22-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
IN SERVICE: - -	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
PROPERTY NORFOLK SOUTHERN RY. CO.	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68655.020	SHEET No. 20



24 1/4"  
EQUIPMENT RACK #1  
FRONT

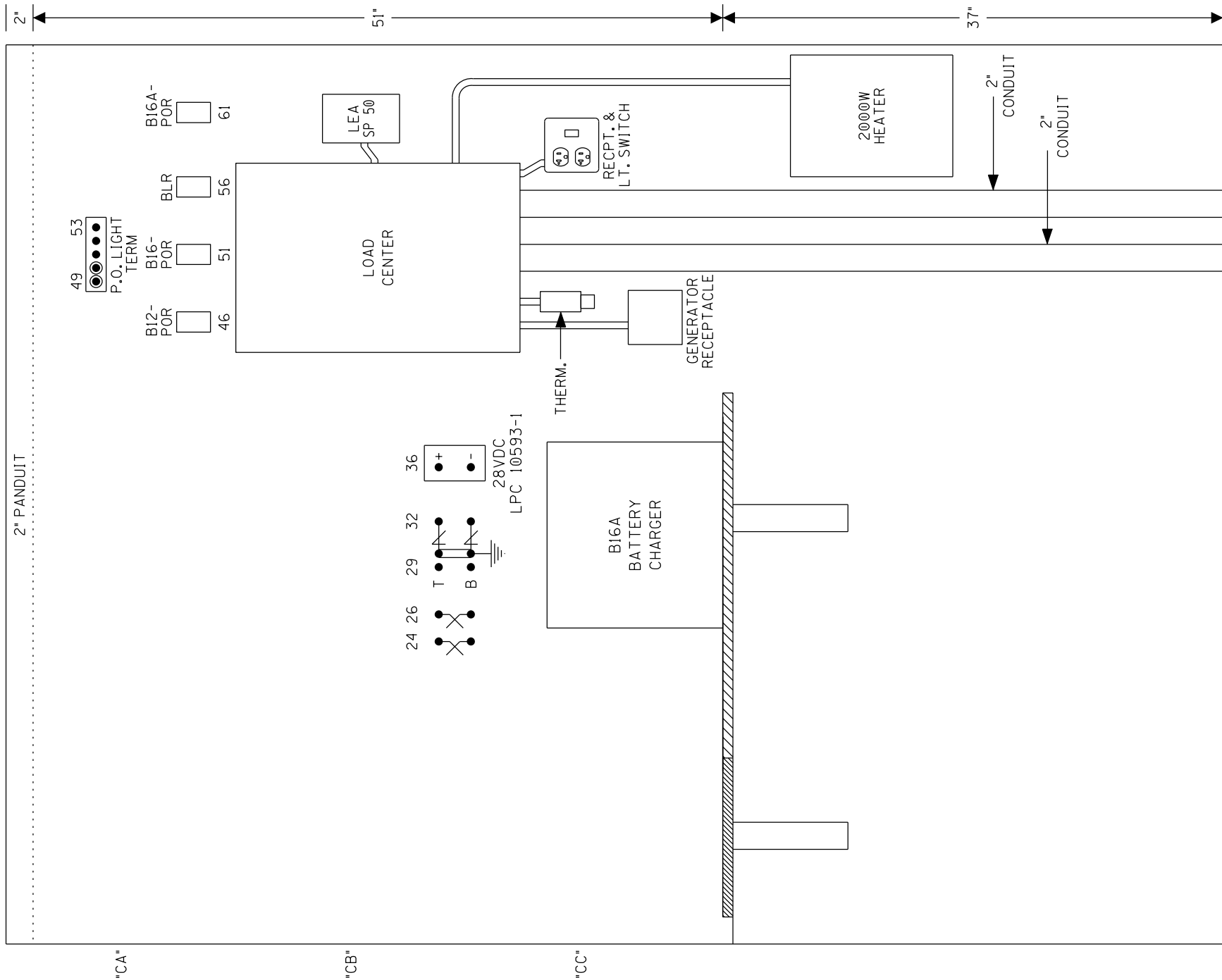


SIDE A LAYOUT & RACK PLACEMENT

"AA" "AB" "AC" "AD" "AE" "AF"

PROPERTY  
NORFOLK SOUTHERN RY CO.

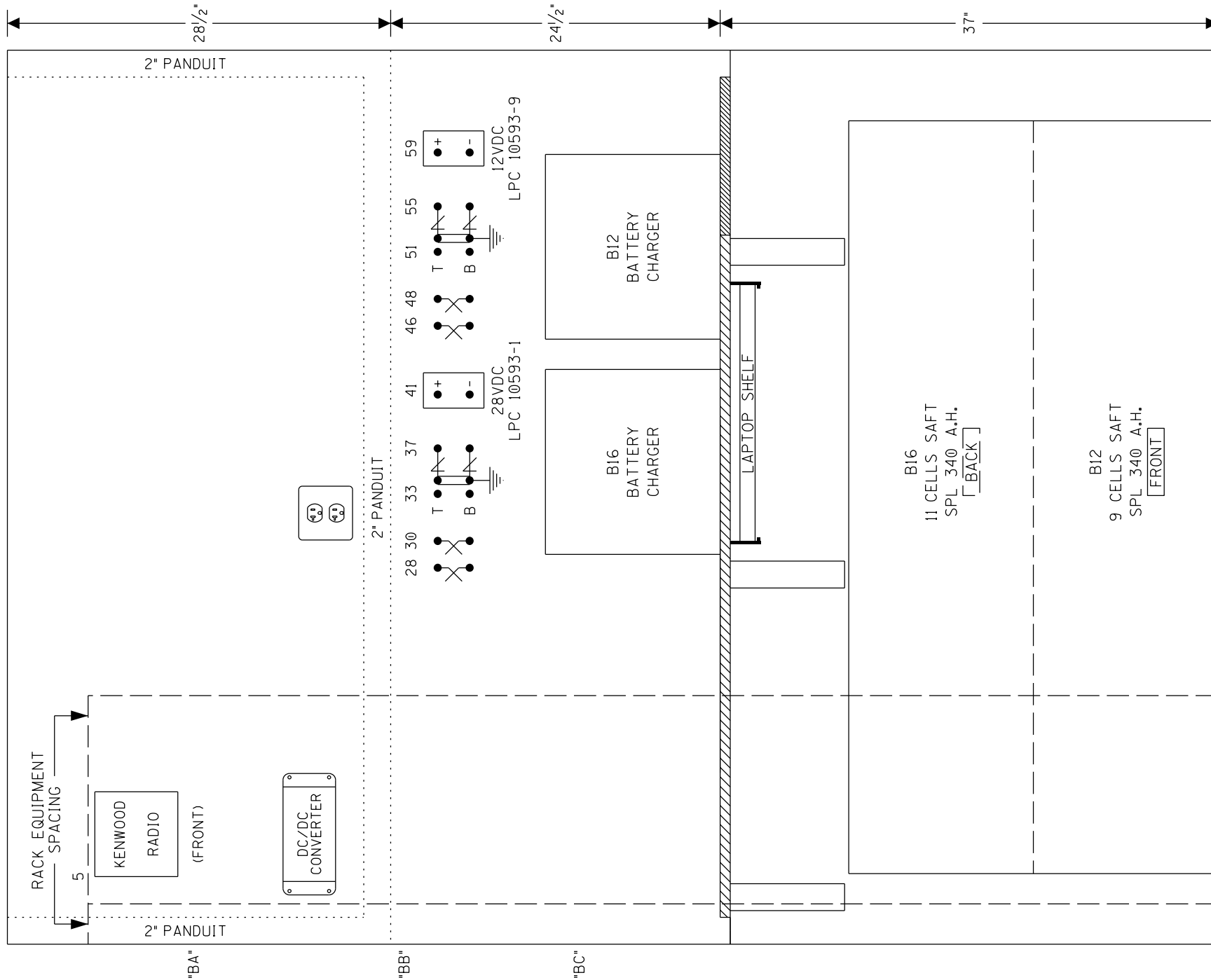
DESIGNED BY: JLM 07-12-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-12-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
CHECKED BY: PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68655.021	SHEET No. 21



SIDE C LAYOUT

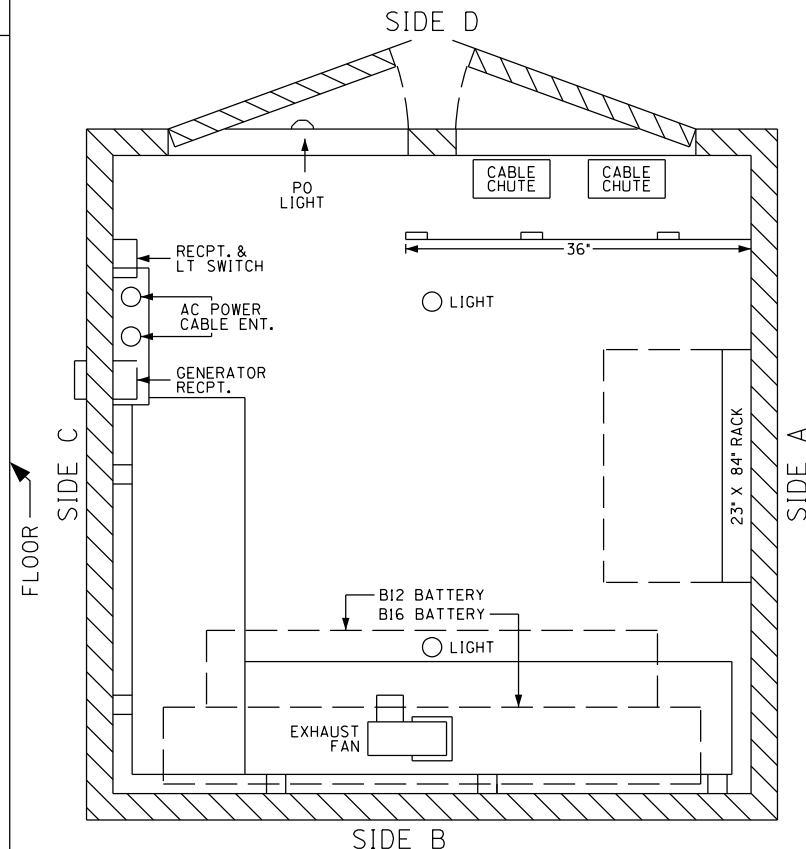
DESIGNED BY: JLM 07-12-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-12-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
CHECKED BY: PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68655.022	SHEET No. 22

PROPERTY  
NORFOLK SOUTHERN RYW CO.



**\*TOP VIEW**

6'X6' HOUSE  
(INSULATED)  
\* = 1/2" SCALE



SIDE B LAYOUT & TOP VIEW

DESIGNED BY: JLM 07-12-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-12-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-686.55
CHECKED BY: PEH 07-22-21	WILKES-BARRE, PA FLGS AT MILL / MILLER ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RYW CO.	CADD or DWG. No. DHFR68655.023	SHEET No. 23

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	1
18	BACKBOARD 1B	1
19	SIDE A LAYOUT & RACK PLACEMENT	1
20	SIDE C LAYOUT	1
21	SIDE B LAYOUT & TOP VIEW	1

A-2020-3018936

REVISIONS

1	07-14-21	JLM	XRL	PEH
NEW PLAN DRAWN ACCOUNT OF UPGRADE TO MINER / FIRST ST.				
PROJECT: *19.5607				
IN SERVICE: XX-XX-XX				
PER: XXX			XXX	XXX

IN SERVICE \_\_\_\_\_ SIGNED \_\_\_\_\_ DATE \_\_\_\_\_


S&E ENGINEERING COPY

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

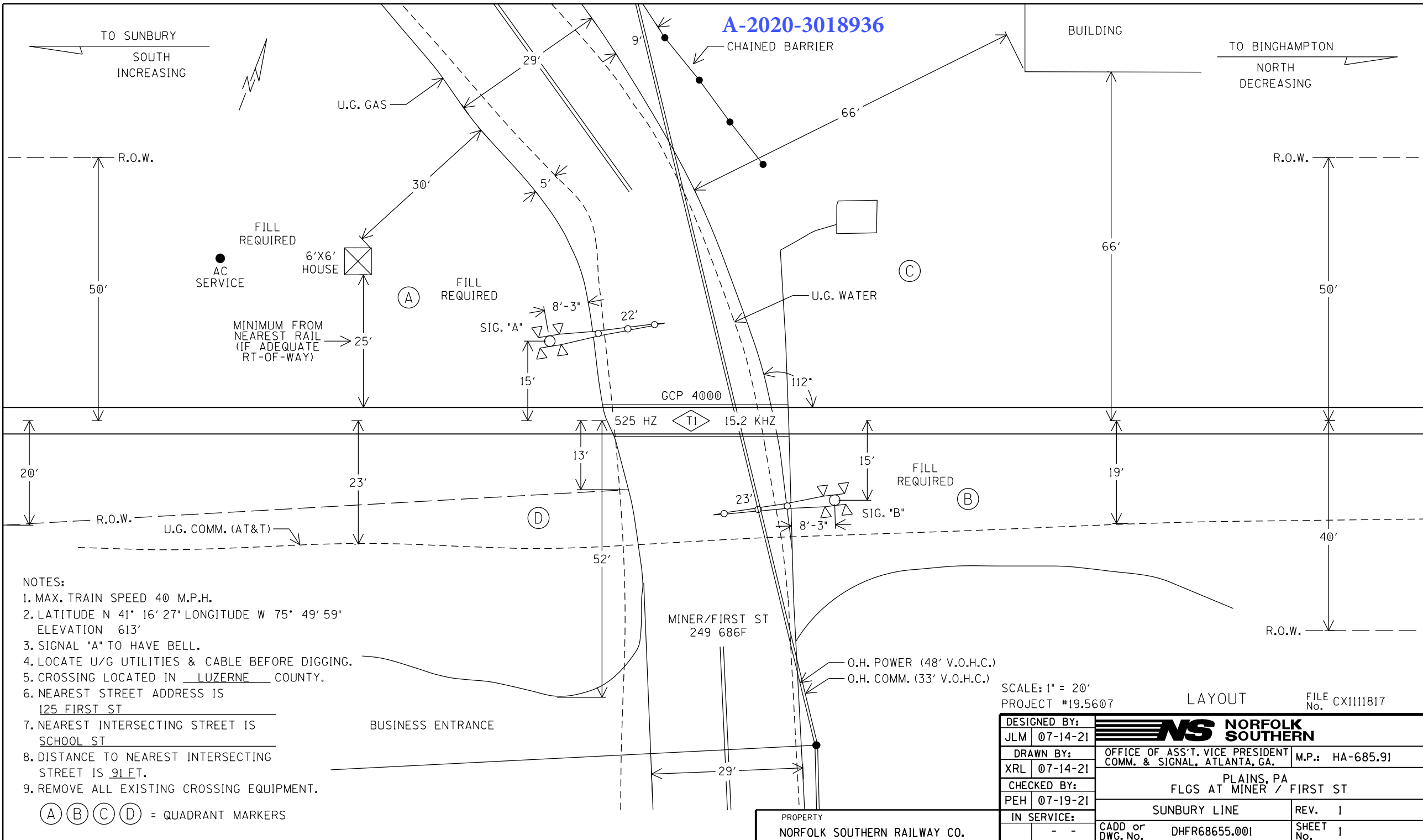
FIELD COPY  
RETURN TO CASE AFTER COMPLETION

PROJECT ENGINEER COPY

PROPERTY  
NORFOLK SOUTHERN R.WY. CO.

DESIGNED BY:	JLM 07-14-21	
DRAWN BY:	XRL 07-14-21	
CHECKED BY:	PEH 07- -21	
IN SERVICE:	- -	
OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: HA-685.91
PLAINS, PA FLGS AT MINER / FIRST ST		
SUNBURY LINE		REV. 1
CADD or DWG. No.	DHFR68591.NX1	SHEET No. NX1

**A-2020-3018936**



TO SUNBURY  
SOUTH  
INCREASING

TO BINGHAMPTON  
NORTH  
DECREASING

- NOTES:
1. MAX. TRAIN SPEED 40 M.P.H.
  2. LATITUDE N 41° 16' 27" LONGITUDE W 75° 49' 59" ELEVATION 613'
  3. SIGNAL "A" TO HAVE BELL.
  4. LOCATE U/G UTILITIES & CABLE BEFORE DIGGING.
  5. CROSSING LOCATED IN LUZERNE COUNTY.
  6. NEAREST STREET ADDRESS IS 125 FIRST ST
  7. NEAREST INTERSECTING STREET IS SCHOOL ST
  8. DISTANCE TO NEAREST INTERSECTING STREET IS 91 FT.
  9. REMOVE ALL EXISTING CROSSING EQUIPMENT.

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

SCALE: 1" = 20'  
PROJECT #19.5607

LAYOUT

FILE CX1111817

DESIGNED BY: JLM 07-14-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
CHECKED BY: PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68655.001	SHEET 1

PROPERTY  
NORFOLK SOUTHERN RAILWAY CO.

A-2020-3018936

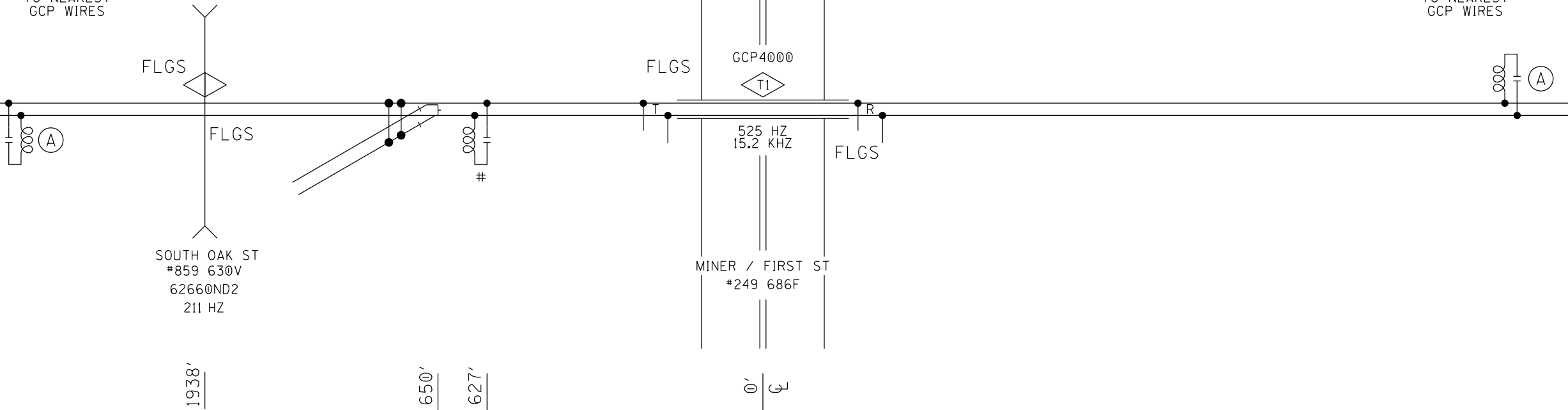
TO SUNBURY  
SOUTH  
INCREASING

TO BINGHAMPTON  
NORTH  
DECREASING

2058'  
TO NEAREST  
GCP WIRES

2058'  
TO NEAREST  
GCP WIRES

← APP.  
SOUTH OAK ST



(A) - MF-NBS FSS-1E 250849-004 (525HZ)

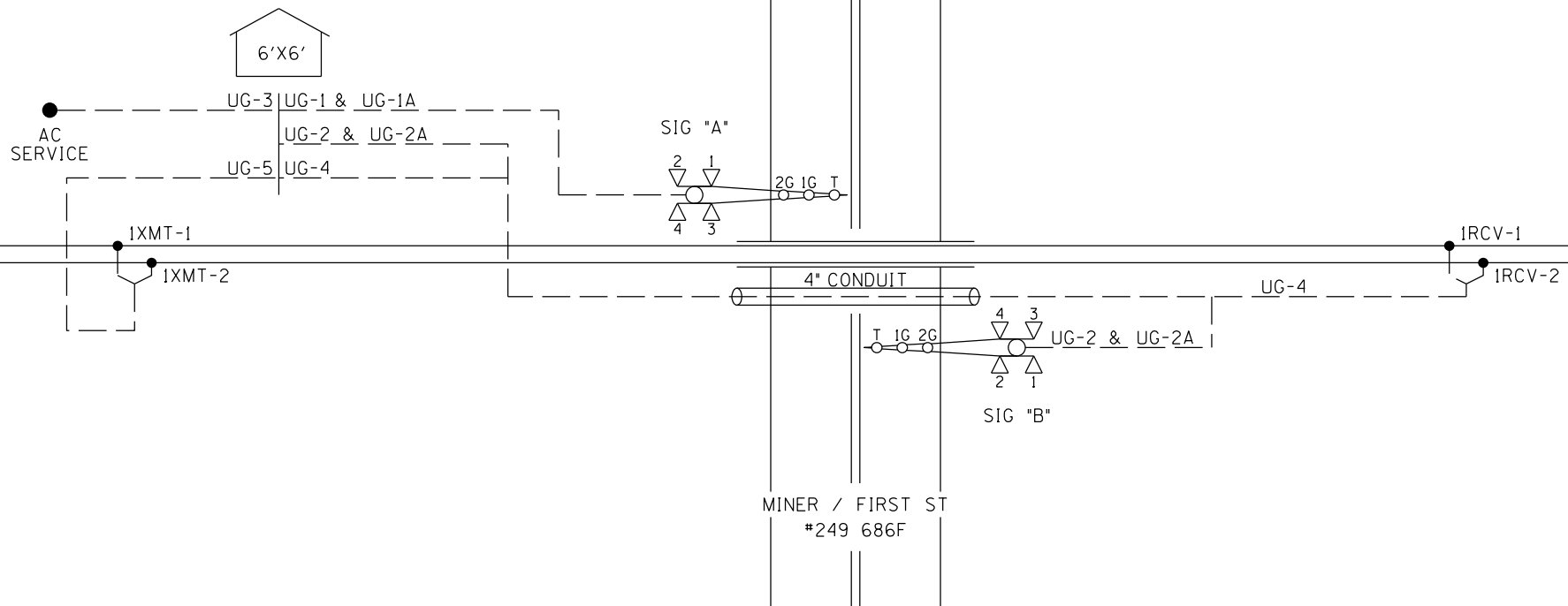
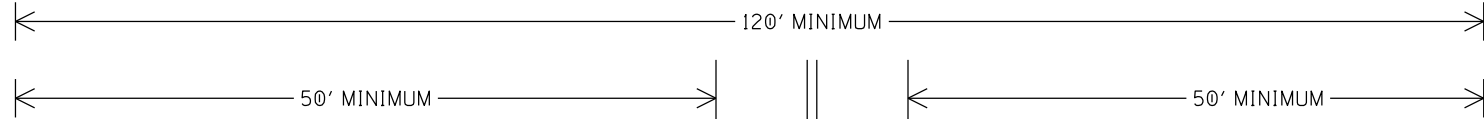
# = FREQUENCY INFORMATION NOT PROVIDED  
FOR SHUNTS OF ADJACENT CROSSINGS

PROFILE

DESIGNED BY: JLM 07-14-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
CHECKED BY: PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RY CO.	CADD or DWG. No. DHFR68655.002	SHEET No. 2

TO SUNBURY  
SOUTH  
INCREASING

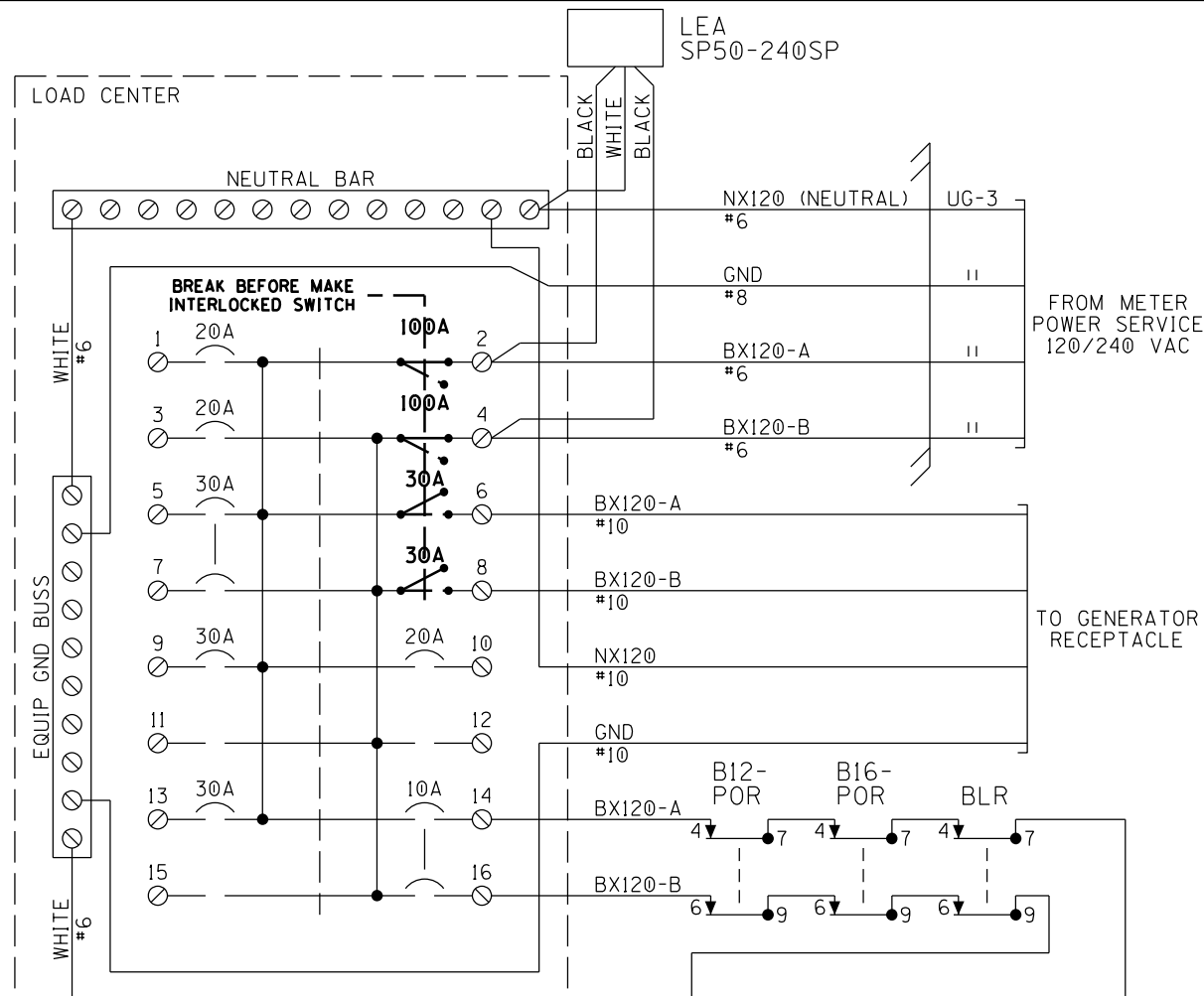
TO BINGHAMPTON  
NORTH  
DECREASING



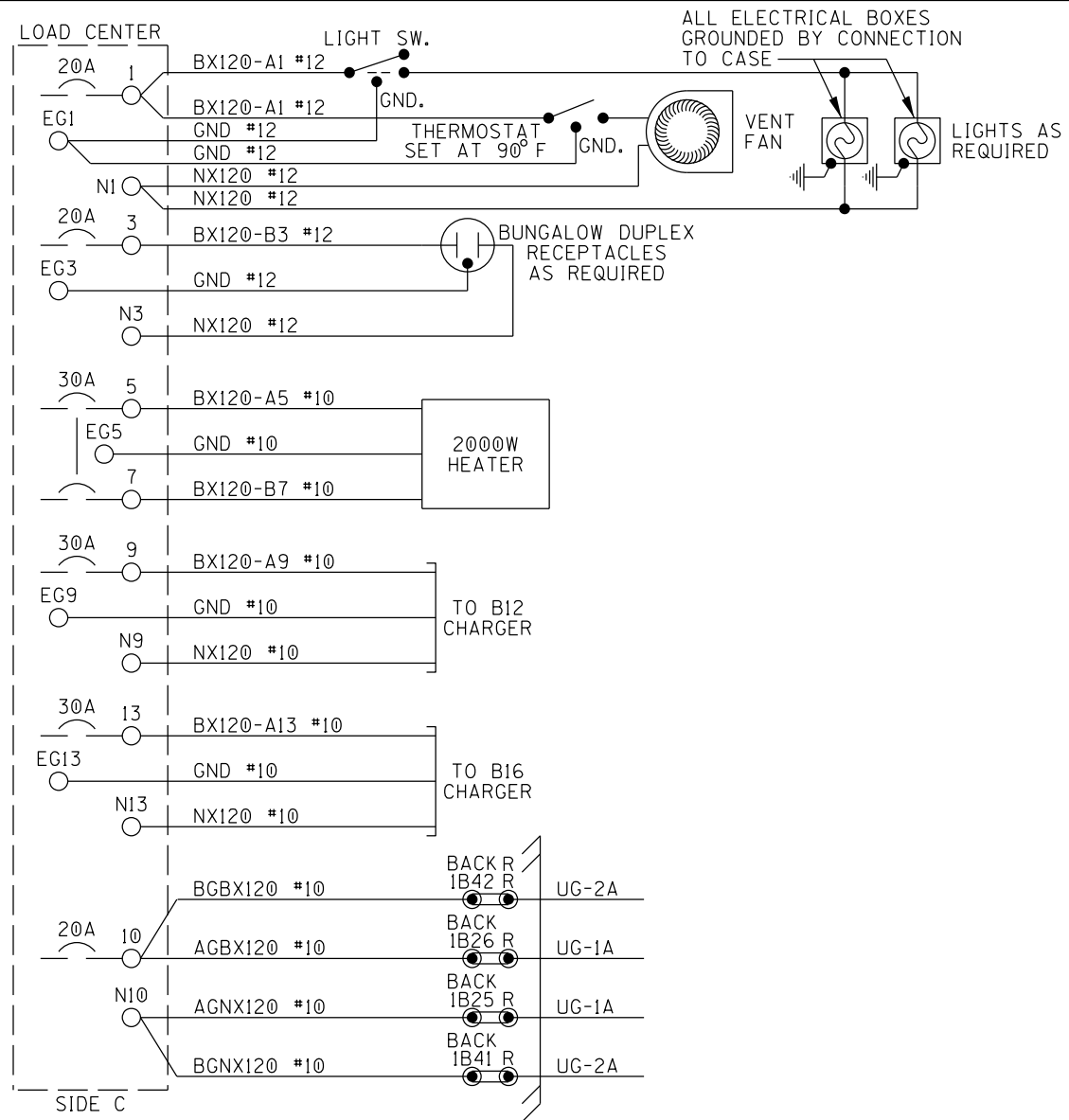
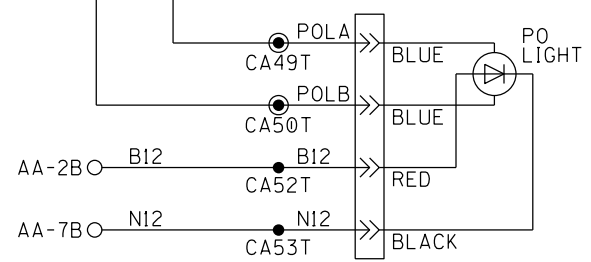
UG-1-5CUG #6 AEC AEZ AEB B16-A N16-A	UG-1A-12CUG #14 AXG NAXG AXX IAXX AGD XGP1 AGBX120 AGNX120 SPARE SPARE SPARE SPARE	UG-2A-12CUG #14 BXC NBXC BXX IBXX BGD XGP1 XGP BGBX120 BCNX120 SPARE SPARE SPARE	UG-3-3CUG #6 W/#8 GND BX120-A BX120-B NX120 GND	UG-4-TW. PR. #6 IRCV-1 IRCV-2
UG-2-5CUG #6 BEC BEZ BEB B16-B N16-B				UG-5-TW. PR. #6 IXMT-1 IXMT-2

CABLE PLAN

DESIGNED BY: JLM 07-14-21		
DRAWN BY: XRL 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
CHECKED BY: PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RYW CO.	CADD or DWG. No. DHFR68655.003	SHEET 3 No.



- 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 — PK4DT1M4LA
  - GENERATOR RECEPTACLE:
  - MALE CONNECTOR — NEMA L1430-FI

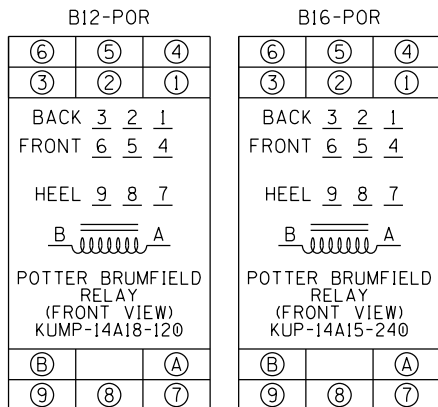
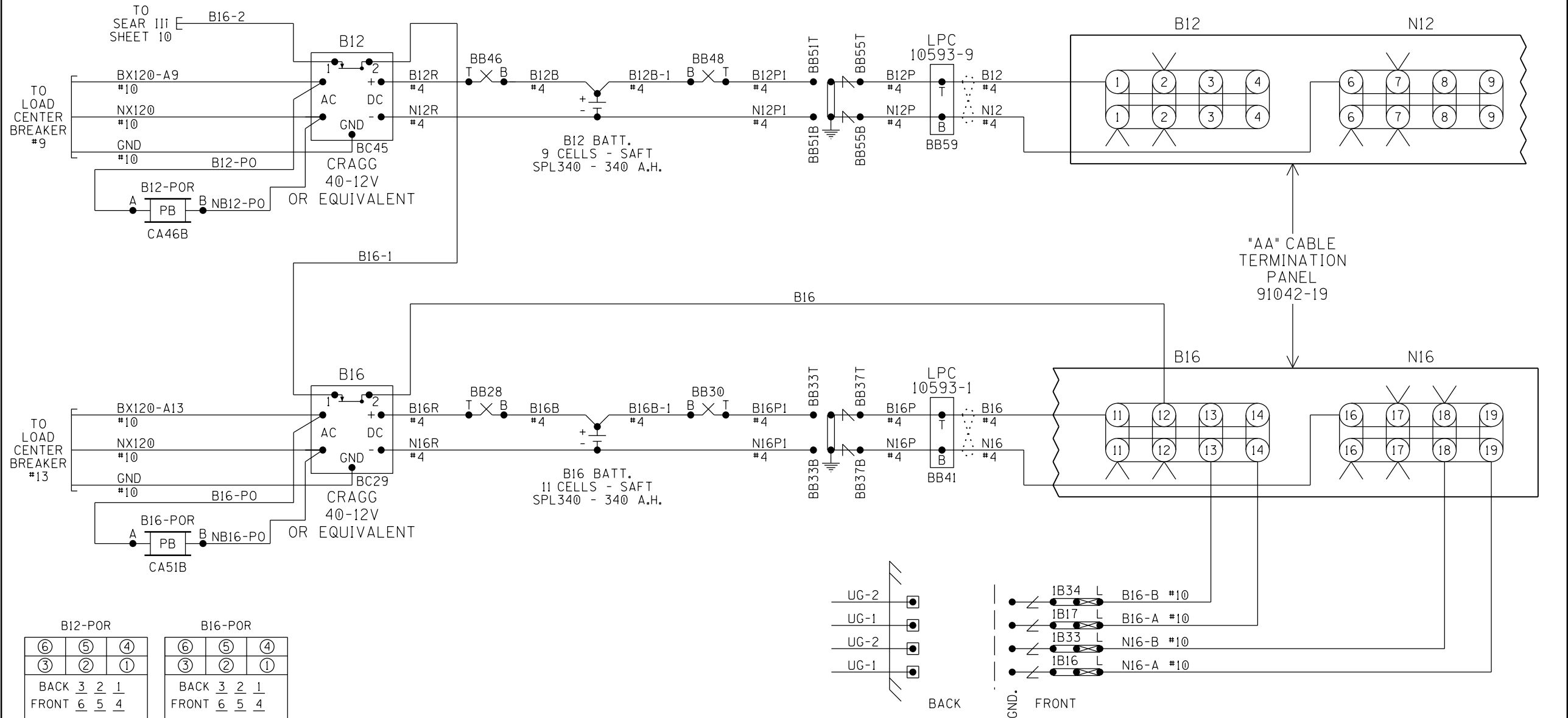


- NOTES:
1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
  2. ALL AC WIRING TO LOAD CENTER TO BE IN METALLIC CONDUIT WITH NO EXPOSED TERMINALS. ALL AC 120V AND 240V EQUIPMENT TO BE PROPERLY GROUNDED.
  3. ● = INSULATED NUTS TO BE USED ON ALL TERMINALS OF 120VAC AND ABOVE.

PROPERTY  
NORFOLK SOUTHERN RYW CO.

LOAD CENTER

DESIGNED BY: JLM 07-14-21		
DRAWN BY: XRL 07-14-21		
CHECKED BY: PEH 07-19-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
IN SERVICE: - -	PLAINS, PA FLGS AT MINER / FIRST ST	
	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68655.004	SHEET 4

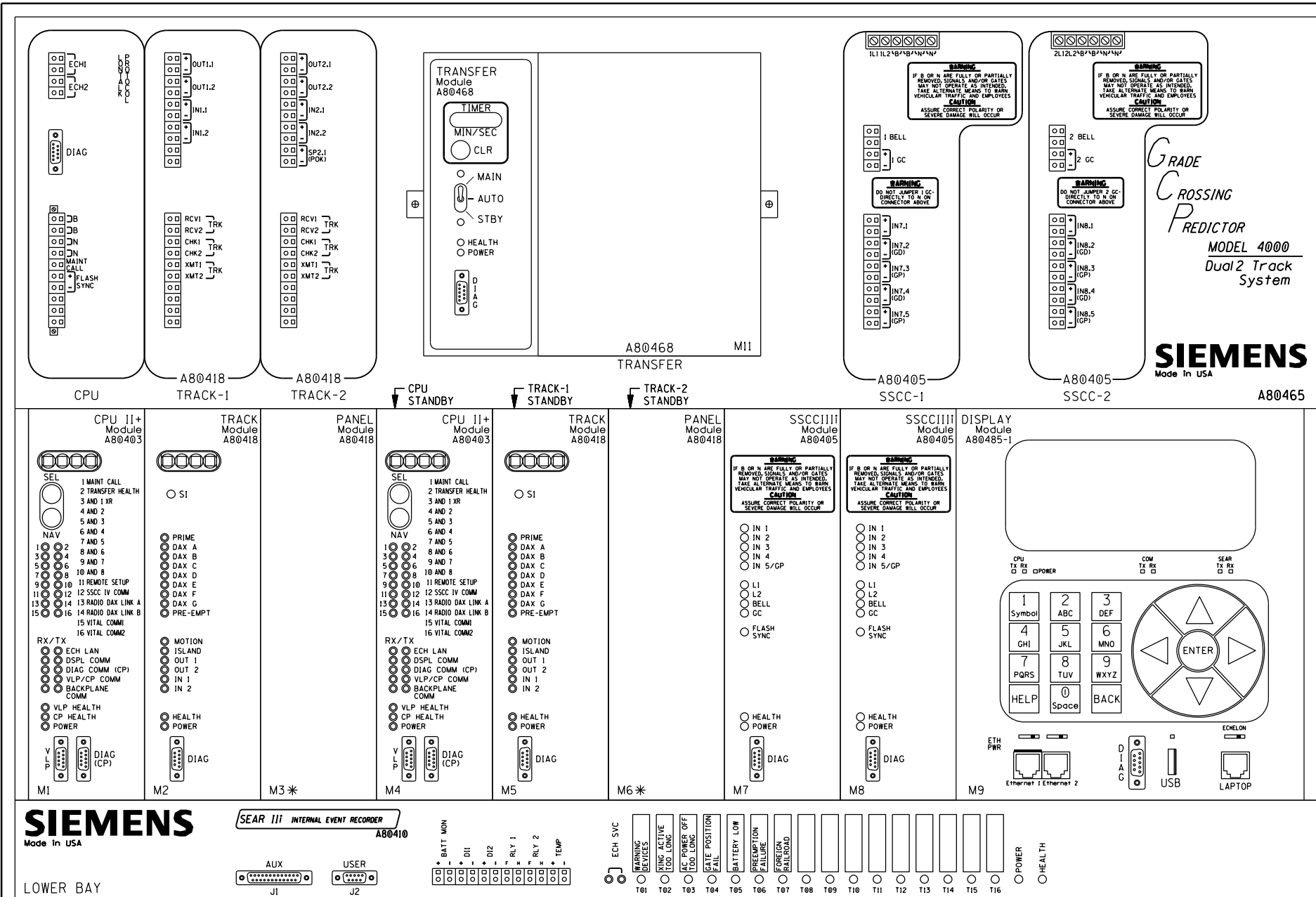


- NOTES:
- ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
  - = TWIST

CHARGERS & BATTERIES

DESIGNED BY: JLM 07-14-21		
DRAWN BY: XRL 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
CHECKED BY: PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RY CO.	CADD or DWG. No. DHFR68655.005	SHEET 5

PROPERTY  
NORFOLK SOUTHERN RY CO.



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

GCP4000 CHASSIS & MODULE LAYOUT

Program Report  
-----

Location and SIN  
-----

DOT Number: 249686F  
Milepost Number: HA-685.91  
Site Name: MINER ST

SIN: 755048623616

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): 1E3A138F  
Office Check Number: 1E3A138F  
Config. Check Number: 22A37232  
(Based on MCF Revision 021)

Program  
-----

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

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

BASIC: island operation  
Track 1: Island Used = Internal

BASIC: preemption  
Preempt Logic = No

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

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

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

GCP: track 1  
Track 1: GCP Freq Category = Standard  
Track 1: GCP Frequency = 525 Hz  
Track 1: Approach Distance = 2058 ft  
Track 1: Uni/Bi/Sim-Bidirnl = Bidirnl  
Track 1: GCP Transmit Level = Medium  
Track 1: Island Connection = Isl  
Track 1: Island Distance = 134 ft  
Track 1: Computed Distance = 9999 ft  
Track 1: Linearization Steps = 100

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

GCP: track 1 prime  
Track 1: Prime Warning Time = 30 sec  
Track 1: Prime Offset Distance = 0 ft  
Track 1: Switch MS EZ Level = 10  
Track 1: Prime MS/GCP Mode = Pred  
Track 1: Prime Pickup Delay = 15 sec  
Track 1: Prime UAX = Not Used

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

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

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

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

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

ADVANCED: MS restart  
MS/GCP Restart Used = No

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

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

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

ADVANCED: trk 1 overrides  
Track 1: 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

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

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


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

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

GCP4000 PROGRAMMING

DESIGNED BY:			
JLM 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.:	HA-685.91
DRAWN BY:	PLAINS, PA		
XRL 07-14-21	FLGS AT MINER / FIRST ST		
CHECKED BY:	SUNBURY LINE		
PEH 07-19-21	REV.	1	
PROPERTY	IN SERVICE:	CADD or DWG. No.	SHEET No.
NORFOLK SOUTHERN RWY CO.	- -	DHFR68655.007	7

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

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

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

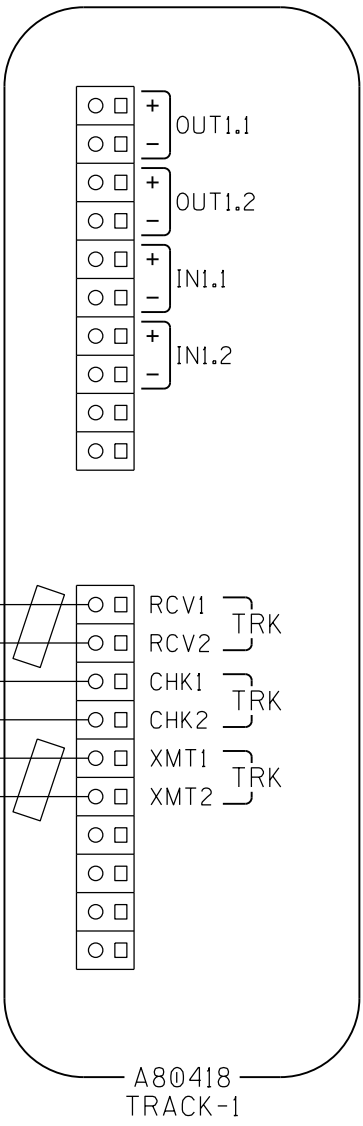
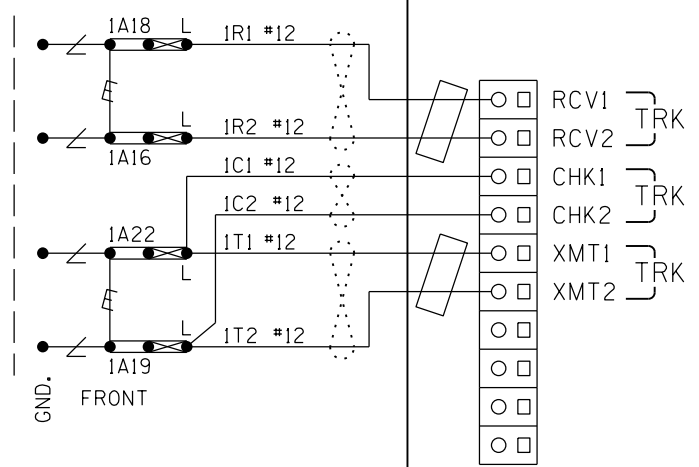
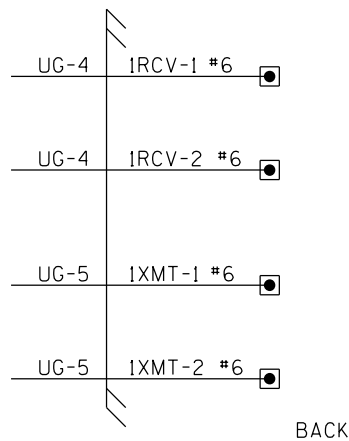
SEAR: slot 7-8 inputs  
IN 7.1 = Not Used  
IN 8.2 = Not Used  
IN 8.3 = Not Used  
IN 8.4 = Not Used  
IN 8.5 = Not Used

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

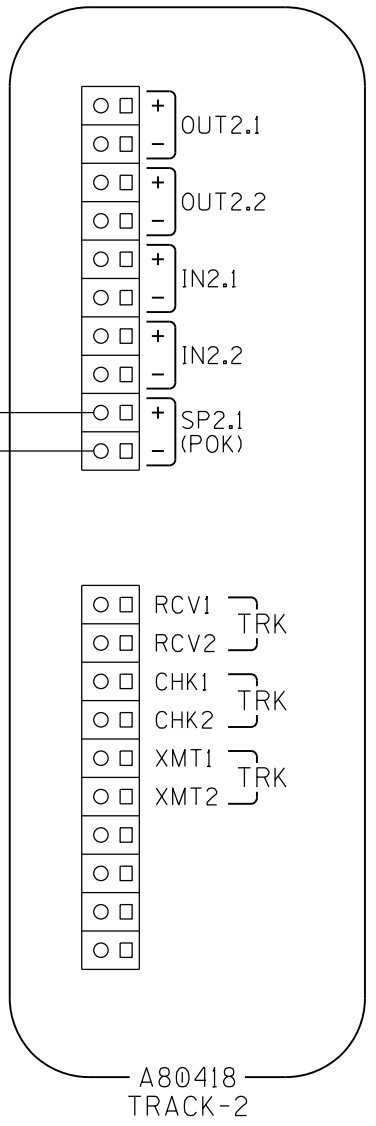
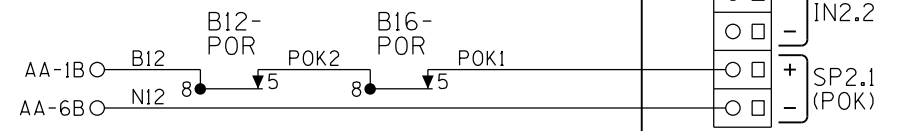
Configuration Package File  
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Filename: dhfr68591.pac

GCP4000 PROGRAMMING

DESIGNED BY:	JLM 07-14-21		
DRAWN BY:	XRL 07-14-21		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY:	PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST	
IN SERVICE:	- -	SUNBURY LINE	REV. 1
PROPERTY	NORFOLK SOUTHERN Rwy CO.	CADD or DWG. No. DHFR68655.008	SHEET No. 8



A80418  
TRACK-1



A80418  
TRACK-2

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

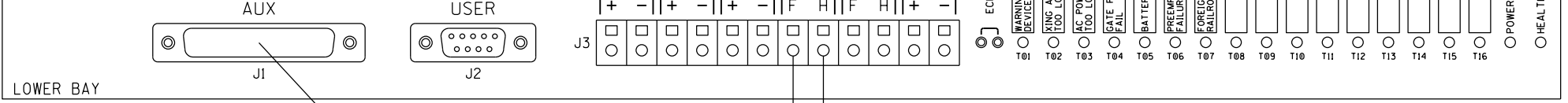
CONNECTORS FOR TRACK MODULES

DESIGNED BY: JLM 07-14-21		
DRAWN BY: XRL 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
CHECKED BY: PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RY CO.	CADD or DWG. No. DHFR68655.009	SHEET 9 No.

**SIEMENS**  
Made in USA

**SEAR III INTERNAL EVENT RECORDER**

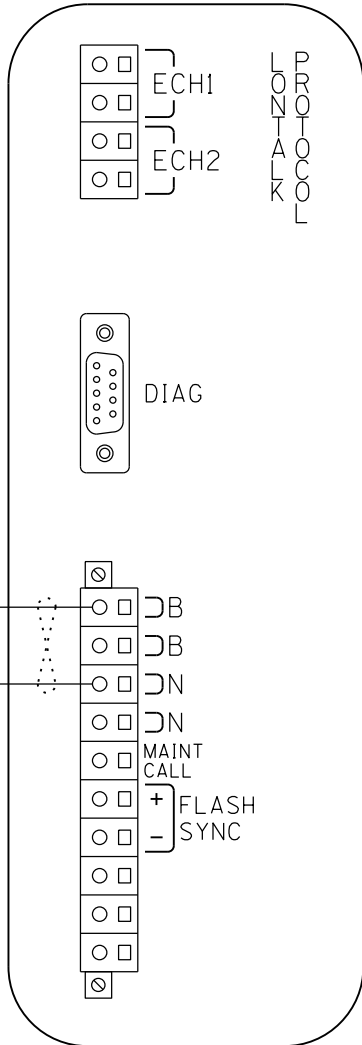
A80410



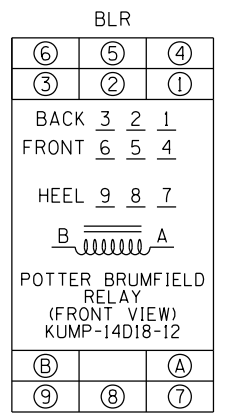
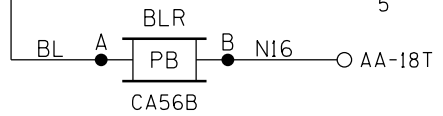
LOWER BAY

TO RADIO SHEET 12

TO SHEET 5



AA-1B ○ B12 #10  
AA-6B ○ N12 #10



- NOTES:
1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
  2. = TWIST

CPU MODULE & SEAR III HOOK-UP

DESIGNED BY: JLM 07-14-21		
DRAWN BY: XRL 07-14-21		
CHECKED BY: PEH 07-19-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
IN SERVICE: - -	PLAINS, PA FLGS AT MINER / FIRST ST	
	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RY CO.	CADD or DWG. No. DHFR68655.010	SHEET No. 10

SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
SITE NAME	MINER/FIRST ST
MILEPOST	HA-685.91
DOT NUMBER	249-686F
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)	7.550.486.236.03.01
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 SEAR III PRESS SITE SETUP KEY.  
USE ARROW KEYS TO MAKE SELECTION,  
PRESS ENTER AFTER SELECTION HAS BEEN MADE.

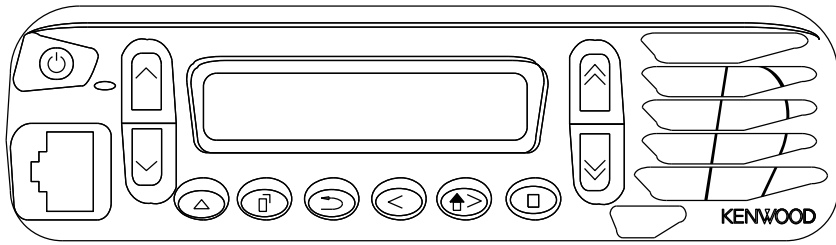
NOTES:

- # = NOT DISPLAYED IF SITE TYPE = NO COMMUNICATION
- ★ = USE DEFAULT SETTINGS
- \* = ONLY DISPLAYED IF CROSSING CONFIGURATION = SPLIT GATE

SEAR III PROGRAMMING

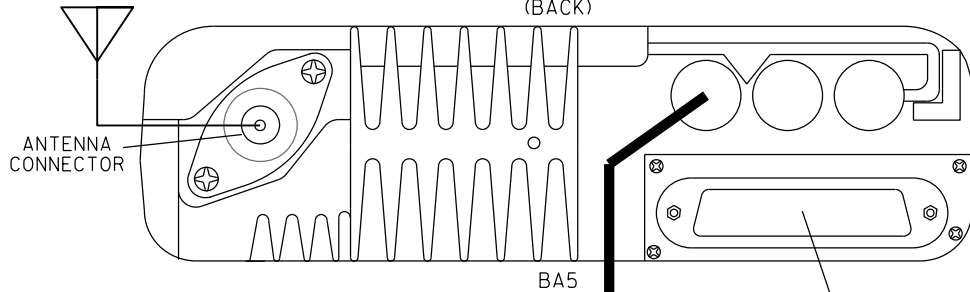
DESIGNED BY:	JLM 07-14-21		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
DRAWN BY:	XRL 07-14-21			
CHECKED BY:	PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST		
IN SERVICE:	- -	SUNBURY LINE	REV.	1
PROPERTY NORFOLK SOUTHERN RWY CO.		CADD or DWG. No.	DHFR68655.011	SHEET No. 11

(FRONT)



KENWOOD RADIO NX-700H  
OR EQUIVALENT

(BACK)



ANTENNA  
CONNECTOR

BA5

DB25M - DB25M  
STRAIGHT THROUGH CABLE } TO  
SEAR III  
SHEET 10

CABLE - KENWOOD  
P/N E30-7520-15

AA-2B ○ B12  
AA-7B ○ N12  
B12  
N12

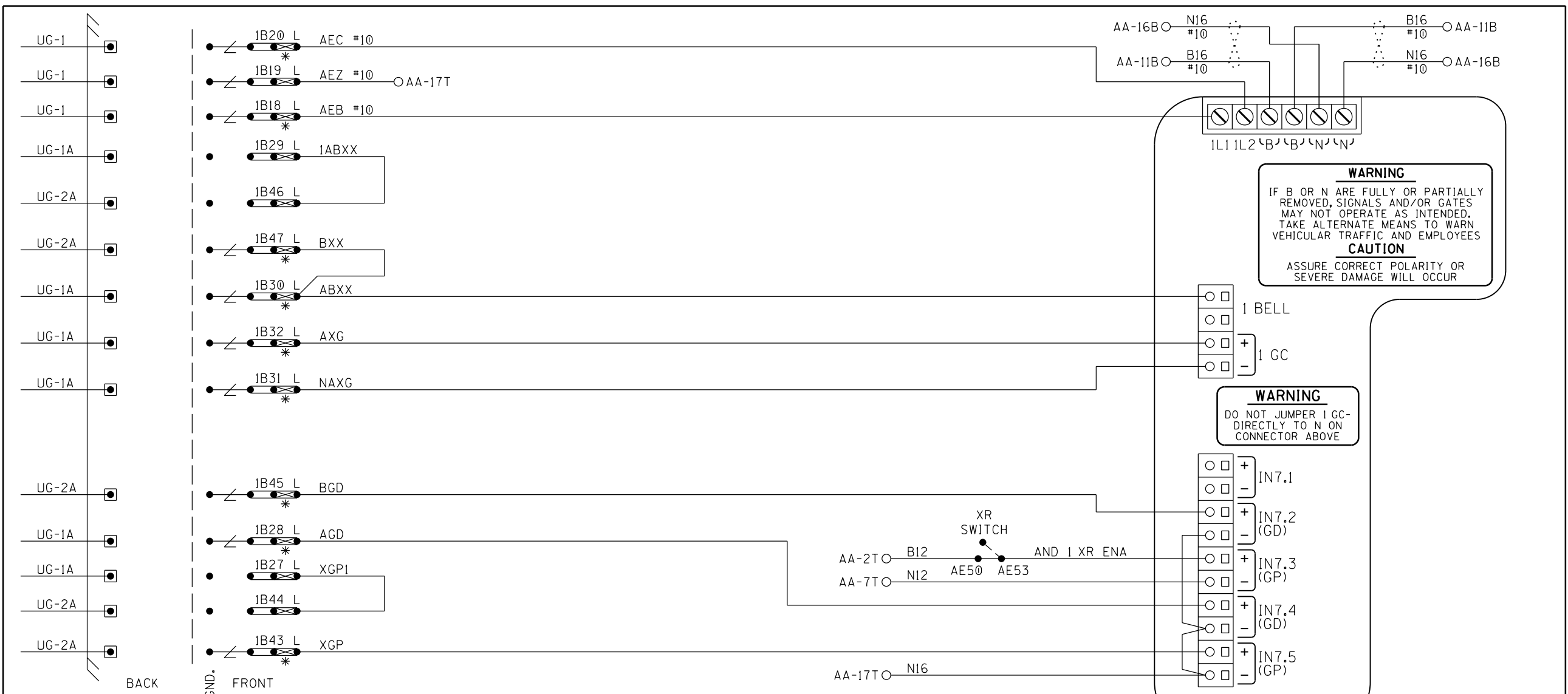


BB5

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

BACKHAUL EQUIPMENT

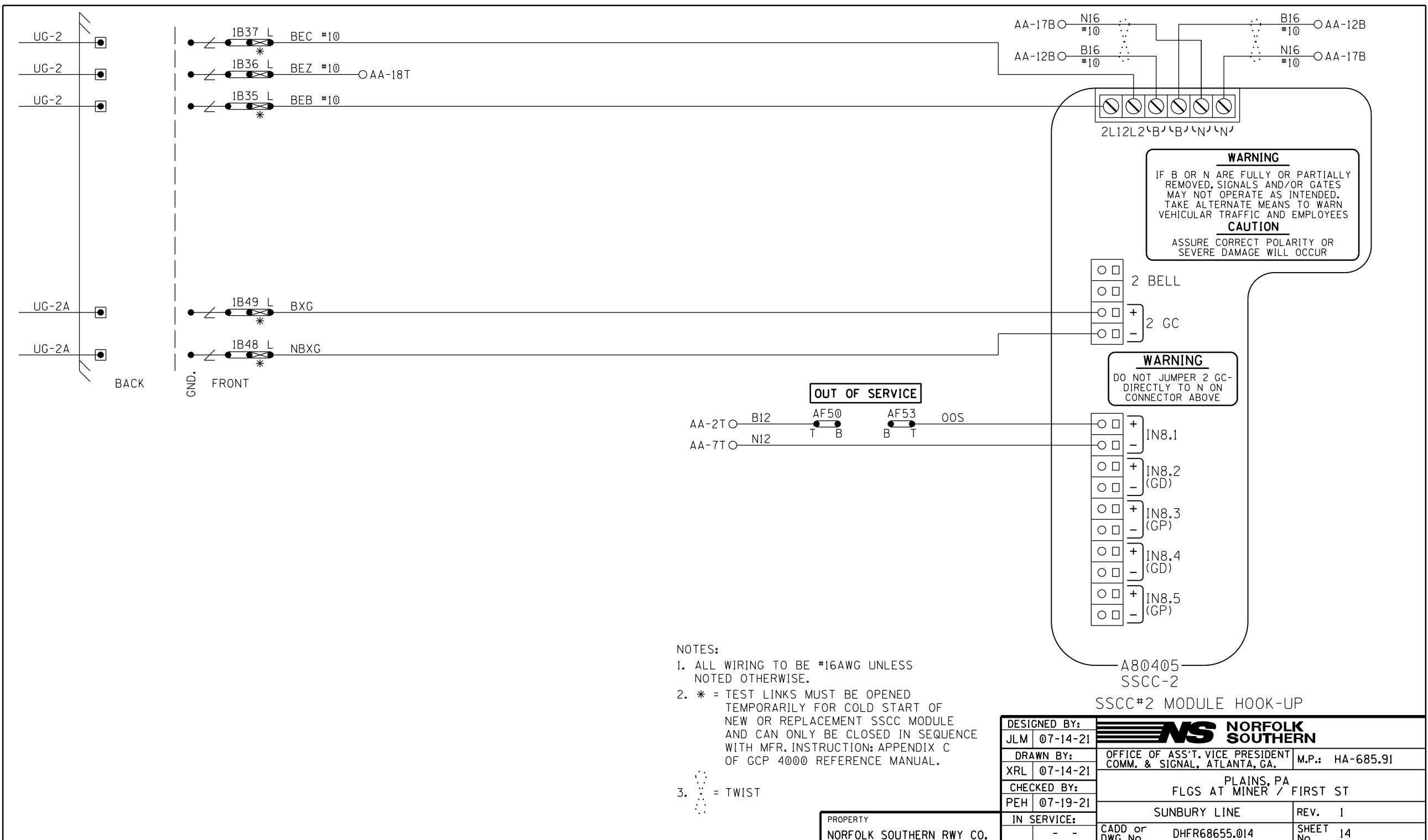
DESIGNED BY: JLM 07-14-21		
DRAWN BY: XRL 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
CHECKED BY: PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RWY CO.	CADD or DWG. No. DHFR68655.012	SHEET No. 12



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

SSCC#1 MODULE HOOK-UP

DESIGNED BY: JLM 07-14-21		
DRAWN BY: XRL 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
CHECKED BY: PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RYW CO.	CADD or DWG. No. DHR68655.013	SHEET No. 13



**WARNING**  
 IF B OR N ARE FULLY OR PARTIALLY REMOVED, SIGNALS AND/OR GATES MAY NOT OPERATE AS INTENDED. TAKE ALTERNATE MEANS TO WARN VEHICULAR TRAFFIC AND EMPLOYEES  
**CAUTION**  
 ASSURE CORRECT POLARITY OR SEVERE DAMAGE WILL OCCUR

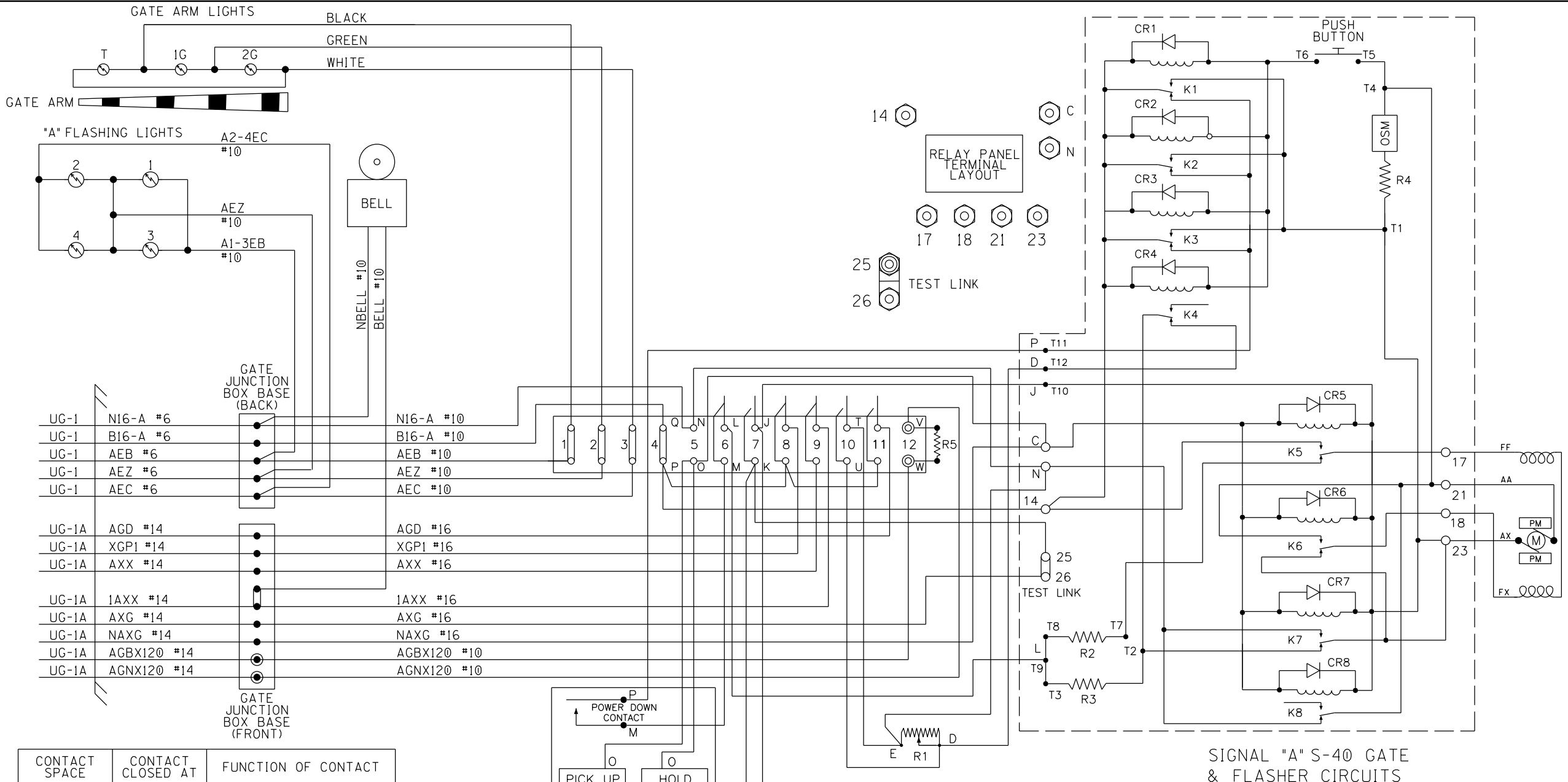
**WARNING**  
 DO NOT JUMPER 2 GC-DIRECTLY TO N ON CONNECTOR ABOVE

**OUT OF SERVICE**

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

SSCC#2 MODULE HOOK-UP

DESIGNED BY: JLM 07-14-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
CHECKED BY: PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RYW CO.	CADD or DWG. No. DHR68655.014	SHEET No. 14

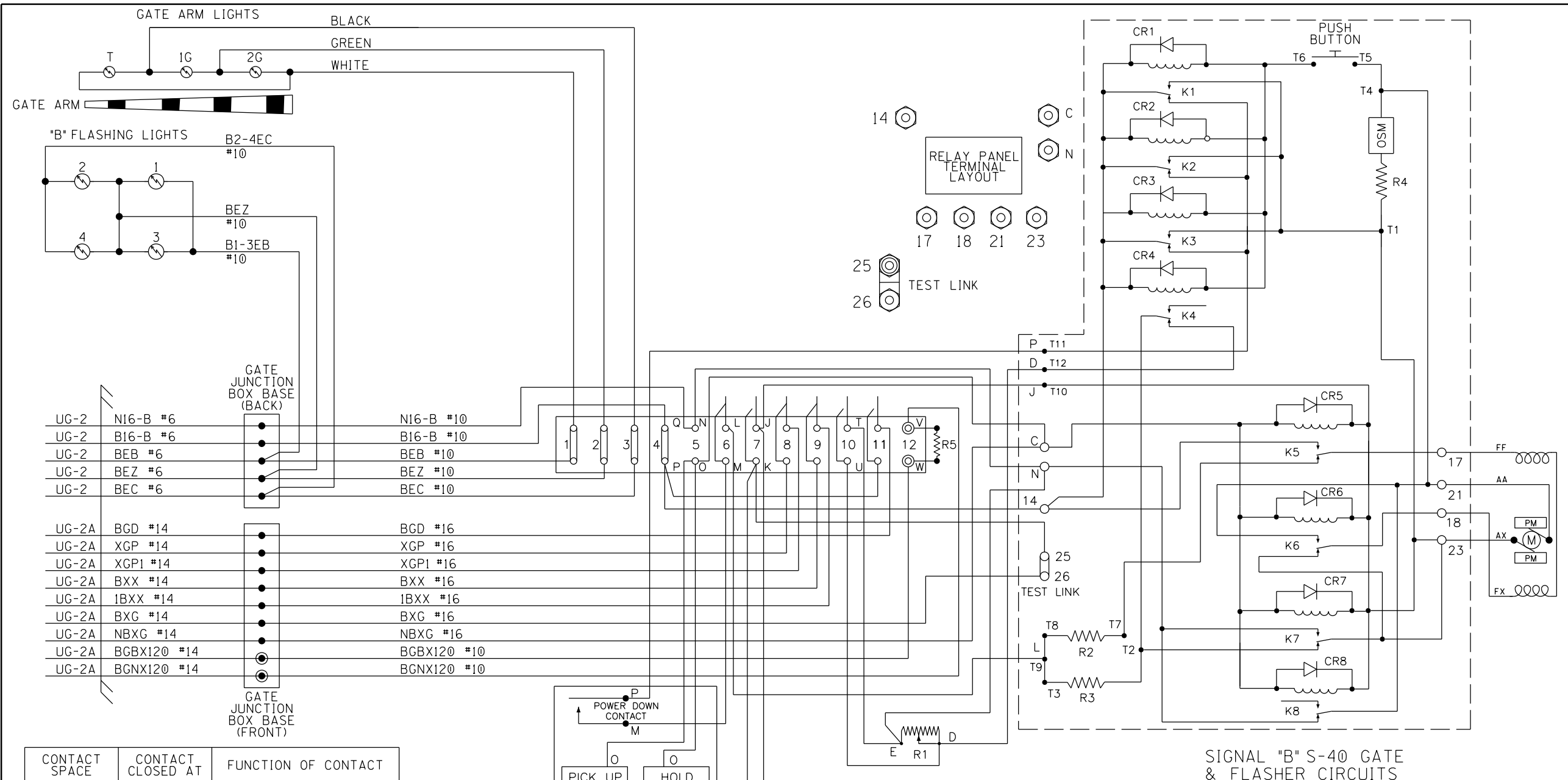


UG-1	N16-A #6	N16-A #10
UG-1	B16-A #6	B16-A #10
UG-1	AEB #6	AEB #10
UG-1	AEZ #6	AEZ #10
UG-1	AEC #6	AEC #10
UG-1A	AGD #14	AGD #16
UG-1A	XGP1 #14	XGP1 #16
UG-1A	AXX #14	AXX #16
UG-1A	1AXX #14	1AXX #16
UG-1A	AXG #14	AXG #16
UG-1A	NAXG #14	NAXG #16
UG-1A	AGBX120 #14	AGBX120 #10
UG-1A	AGNX120 #14	AGNX120 #10

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

DESIGNED BY: JLM 07-14-21	
DRAWN BY: XRL 07-14-21	
CHECKED BY: PEH 07-19-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: HA-685.91
IN SERVICE: - -	PLAINS, PA FLGS AT MINER / FIRST ST
PROPERTY NORFOLK SOUTHERN RYW CO.	SUNBURY LINE REV. 1 CADD or DWG. No. DHFR68655.015 SHEET No. 15



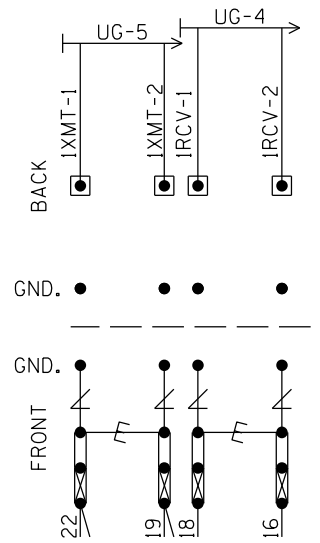
UG-2	N16-B #6	N16-B #10
UG-2	B16-B #6	B16-B #10
UG-2	BEB #6	BEB #10
UG-2	BEZ #6	BEZ #10
UG-2	BEC #6	BEC #10
GATE JUNCTION BOX BASE (FRONT)		
UG-2A	BGD #14	BGD #16
UG-2A	XGP #14	XGP #16
UG-2A	XGP1 #14	XGP1 #16
UG-2A	BXX #14	BXX #16
UG-2A	1BXX #14	1BXX #16
UG-2A	BXG #14	BXG #16
UG-2A	NBXG #14	NBXG #16
UG-2A	BGBX120 #14	BGBX120 #10
UG-2A	BGNX120 #14	BGNX120 #10

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

DESIGNED BY: JLM 07-14-21		
DRAWN BY: XRL 07-14-21		
CHECKED BY: PEH 07-19-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
IN SERVICE: - -	PLAINS, PA FLGS AT MINER / FIRST ST	
PROPERTY NORFOLK SOUTHERN RYW CO.	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68655.016	SHEET No. 16

"1A"



NOTES:

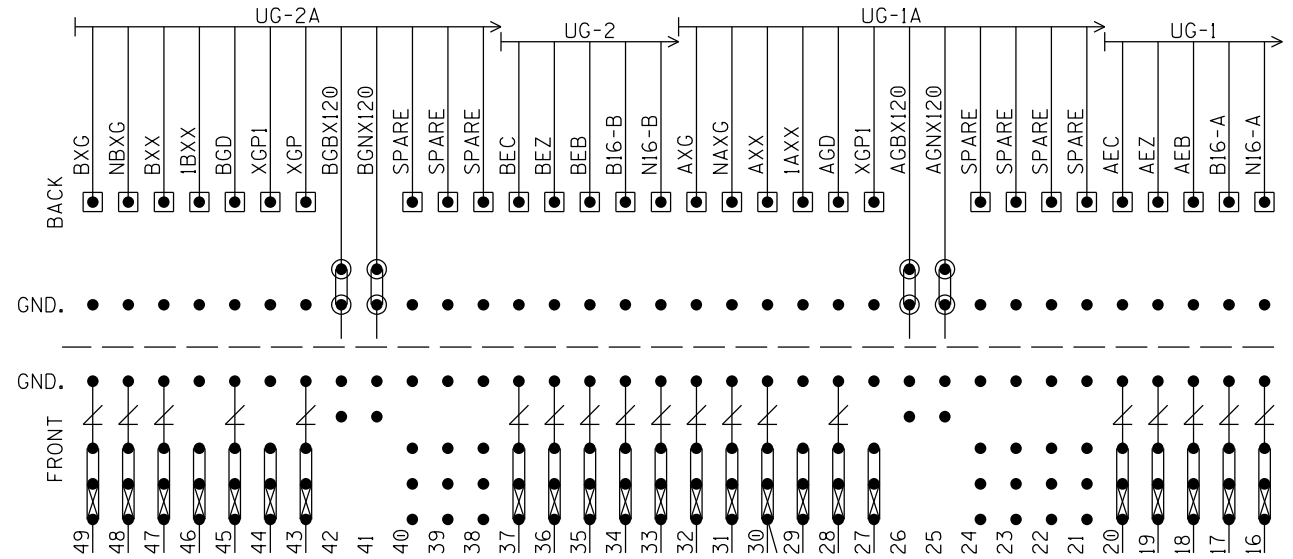
1. E = HEAVY DUTY EQUALIZER (022700-1X)
2. Z = ERICO LIGHTNING ARRESTER (EPD2050F)
3. GND. ● = THROUGH GROUND POST ON EACH TERMINAL BLOCK TO FARADAY SHIELD
4. X = TEST LINK
5. INSTALL TEST LINKS ON ALL TRACK WIRES AND ON ALL LOW VOLTAGE UNDERGROUND CABLE TERMINATIONS.

BACKBOARD 1A

DESIGNED BY:			
JLM 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: HA-685.91
DRAWN BY:	PLAINS, PA		
XRL 07-14-21	FLGS AT MINER / FIRST ST		
CHECKED BY:	SUNBURY LINE		REV. 1
PEH 07-19-21	CADD or DWG. No. DHFR68655.017		SHEET No. 17
IN SERVICE:	-		

PROPERTY  
NORFOLK SOUTHERN Rwy CO.

"1B"

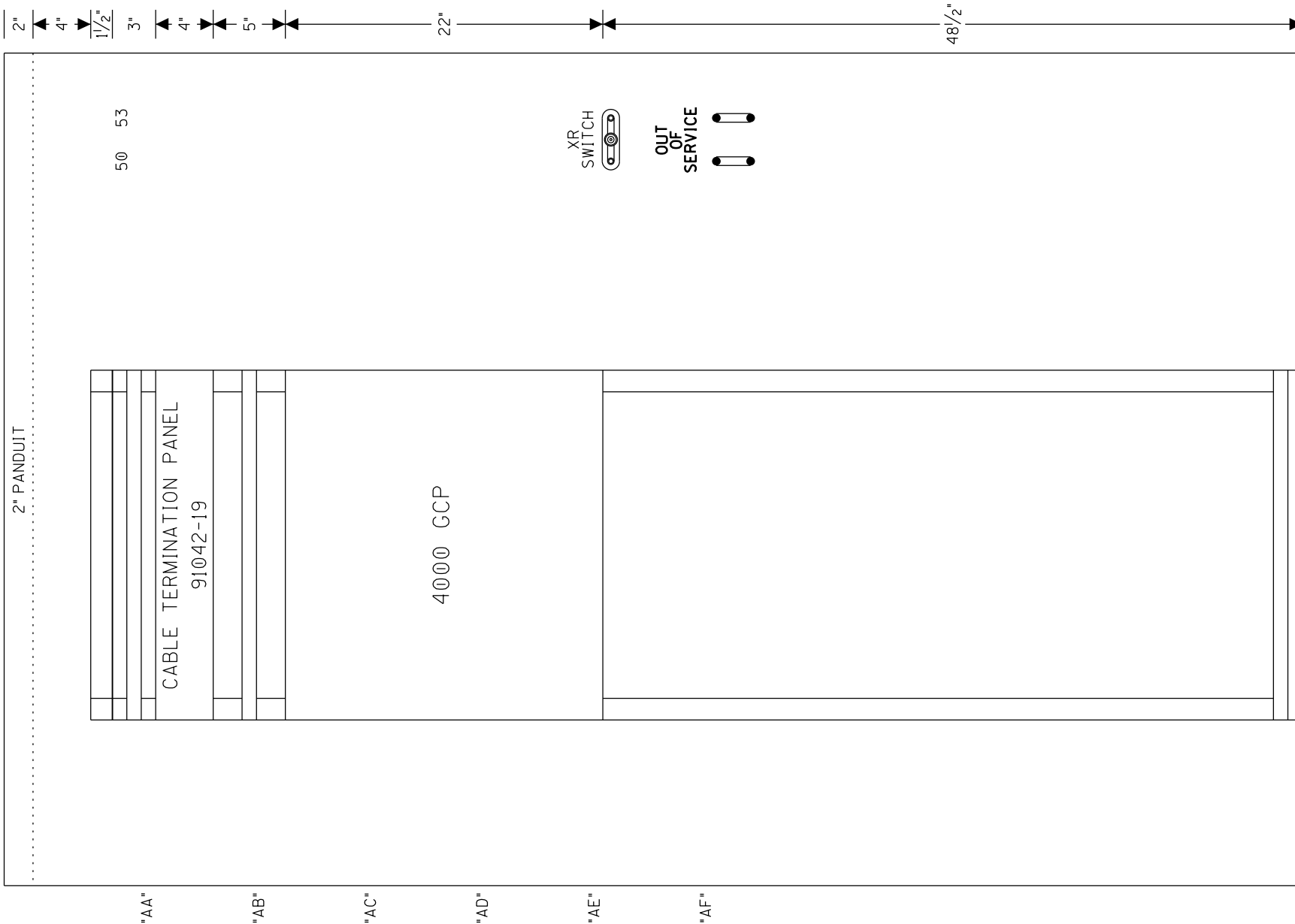


NOTES:

1. GND. ● = THROUGH GROUND POST ON EACH TERMINAL BLOCK TO FARADAY SHIELD
2. ● = INSULATED NUTS TO BE USED ON ALL 120VAC AND ABOVE TERMINALS

BACKBOARD 1B

DESIGNED BY:		
JLM 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
DRAWN BY:	M.P.: HA-685.91	
XRL 07-14-21	PLAINS, PA	
CHECKED BY:	FLGS AT MINER / FIRST ST	
PEH 07-19-21	SUNBURY LINE	
IN SERVICE:	REV. 1	
PROPERTY	CADD or DWG. No.	SHEET No.
NORFOLK SOUTHERN RYW CO.	- -	DHFR68655.018 18



2" PANDUIT

50 53

CABLE TERMINATION PANEL  
91042-19

4000 GCP

XR SWITCH

OUT OF SERVICE



24 1/4"  
EQUIPMENT RACK #1  
FRONT

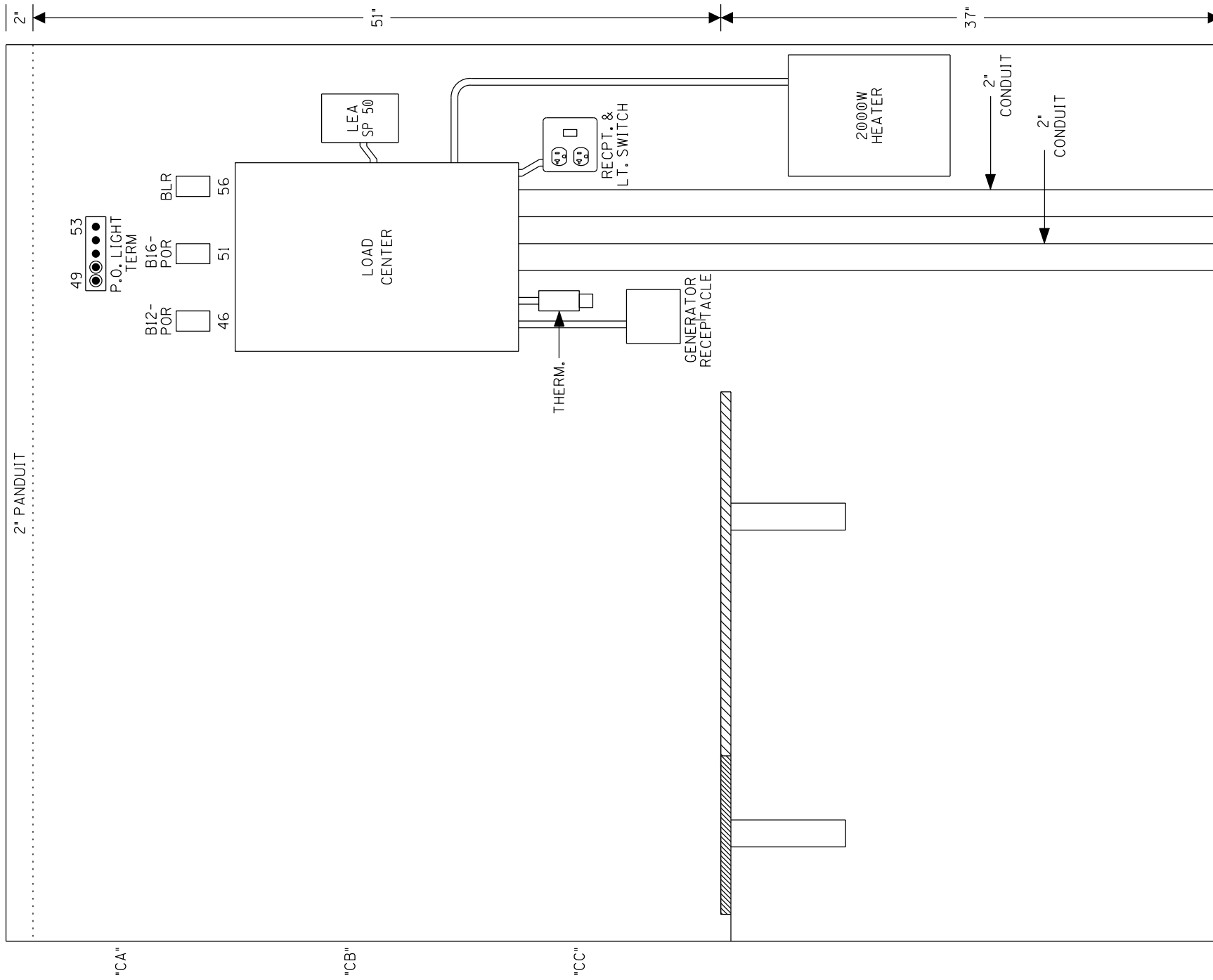


SIDE A LAYOUT & RACK PLACEMENT

"AA" "AB" "AC" "AD" "AE" "AF"

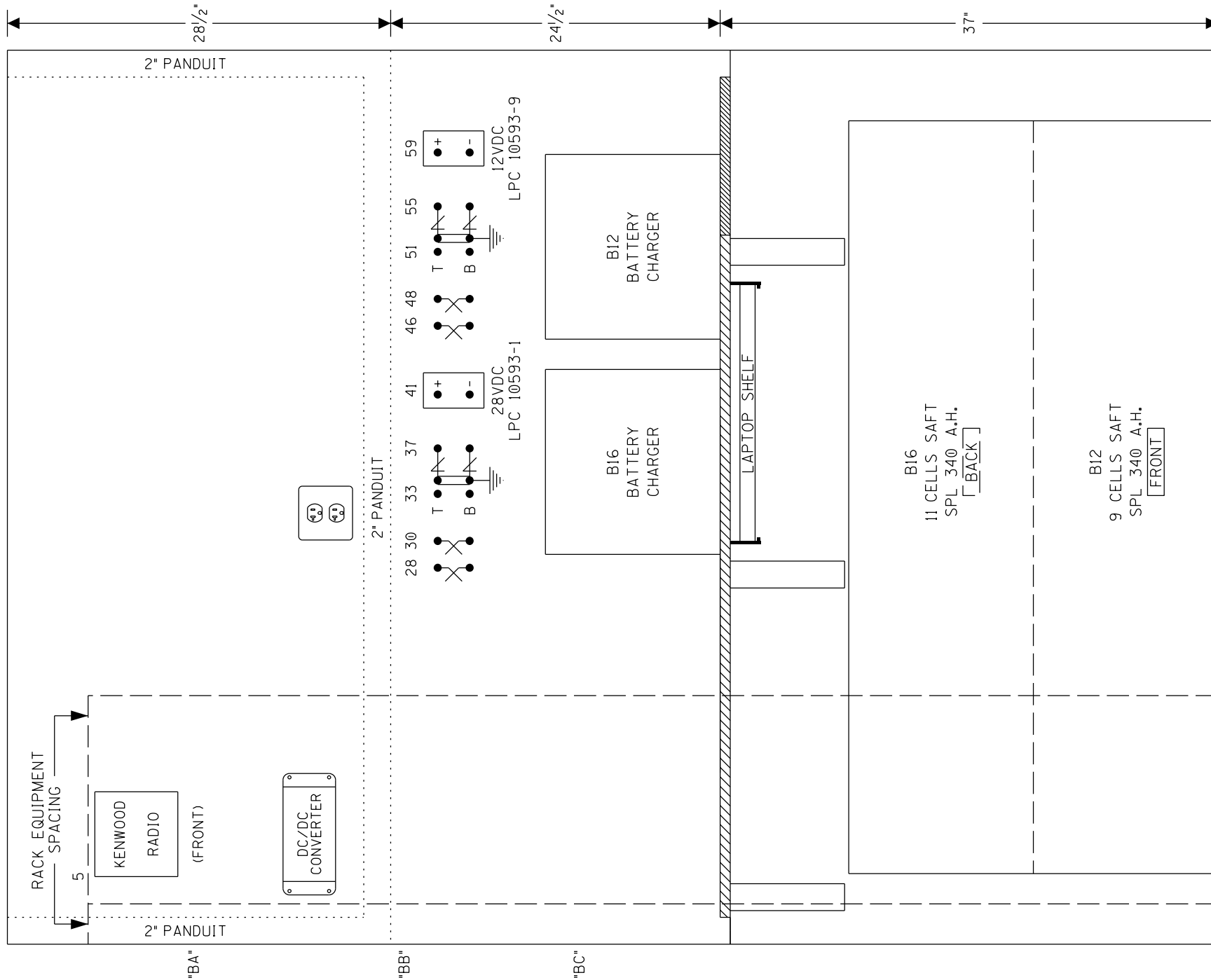
PROPERTY  
NORFOLK SOUTHERN RYW CO.

DESIGNED BY: JLM 07-14-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
CHECKED BY: PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68655.019	SHEET No. 19

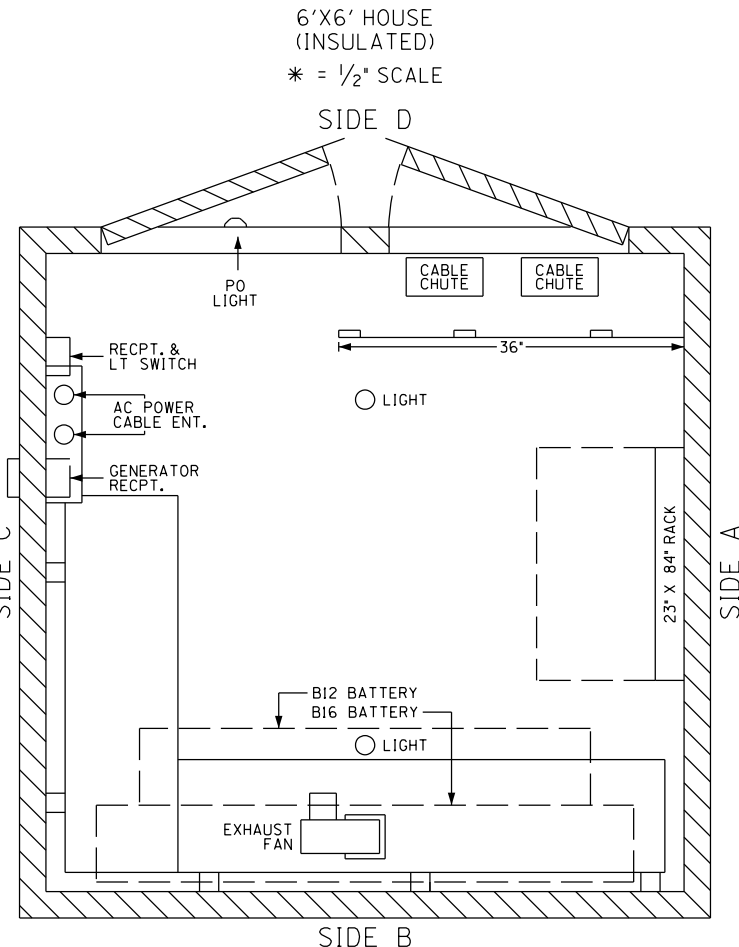


SIDE C LAYOUT

DESIGNED BY: JLM 07-14-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
CHECKED BY: PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
PROPERTY NORFOLK SOUTHERN RYW CO.	CADD or DWG. No. DHFR68655.020	SHEET No. 20



**\*TOP VIEW**



SIDE B LAYOUT & TOP VIEW

DESIGNED BY: JLM 07-14-21	<b>NS NORFOLK SOUTHERN</b>	
DRAWN BY: XRL 07-14-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: HA-685.91
CHECKED BY: PEH 07-19-21	PLAINS, PA FLGS AT MINER / FIRST ST	
IN SERVICE: - -	SUNBURY LINE	REV. 1
	CADD or DWG. No. DHFR68655.021	SHEET No. 21

PROPERTY  
NORFOLK SOUTHERN RY CO.