

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 II HOOK-UPS	1
11	SEAR II 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	FLASHER CIRCUITS	1
18	BACKBOARD 1A	1
19	BACKBOARD 1B	1
20	SIDE A LAYOUT & RACK PLACEMENT	1
21	SIDE C LAYOUT	1
22	SIDE B LAYOUT & TOP VIEW	1

A-2020-3021094

CERTIFIED CORRECT PLANS

Arthur B. Raulo
Professional Engineer
Approved by Bureau of Technical Utility Services


PA PUBLIC UTILITY COMMISSION

ATTEST *Rosemary Chwitt*
Secretary

IN SERVICE _____ SIGNED _____ DATE _____

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

PROPERTY
PENNSYLVANIA R.R.

REVISIONS				
1	09-15-21	IRE	JWB	MMM
PLAN REVISED ACCOUNT OF INSTALLATION OF NEW XING SHELTER AT CENTERVILLE RD.				
PROJECT: *19.5638				
IN SERVICE: XX-XX-XX				
PER: XXX			XXX	XXX
DESIGNED BY:				
JWB	10-04-21			
DRAWN BY:		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: ZL-073.47		
IRE	10-04-21	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)		
CHECKED BY:		COLUMBIA SECONDARY REV. 1		
MMM	10-05-21	SHEET INDEX		
IN SERVICE:		CADD or DWG. No. 13270735.NX1		
	- -			

TO COLUMBIA
R.R. WEST
M.P. INCREASING

A-2020-3021094

TO LANCASTER
R.R. EAST
M.P. DECREASING

NS PHASE 1

ALL EXISTING RAILROAD EQUIPMENT
TO REMAIN INSERVICE UNTIL
CIVIL STAGE 4A

DURING CIVIL STAGE 3
ROAD TO BE WIDENED TO
GEOGRAPHICAL WEST. EXISTING
GATES AND TRAVELWAY TO
REMAIN IN PLACE. NEW PAVEMENT
TO BE BARRICADED AS SHOWN
NEW PAVEMENT TO REMAIN
BARRICADED UNTIL CIVIL STAGE 4A

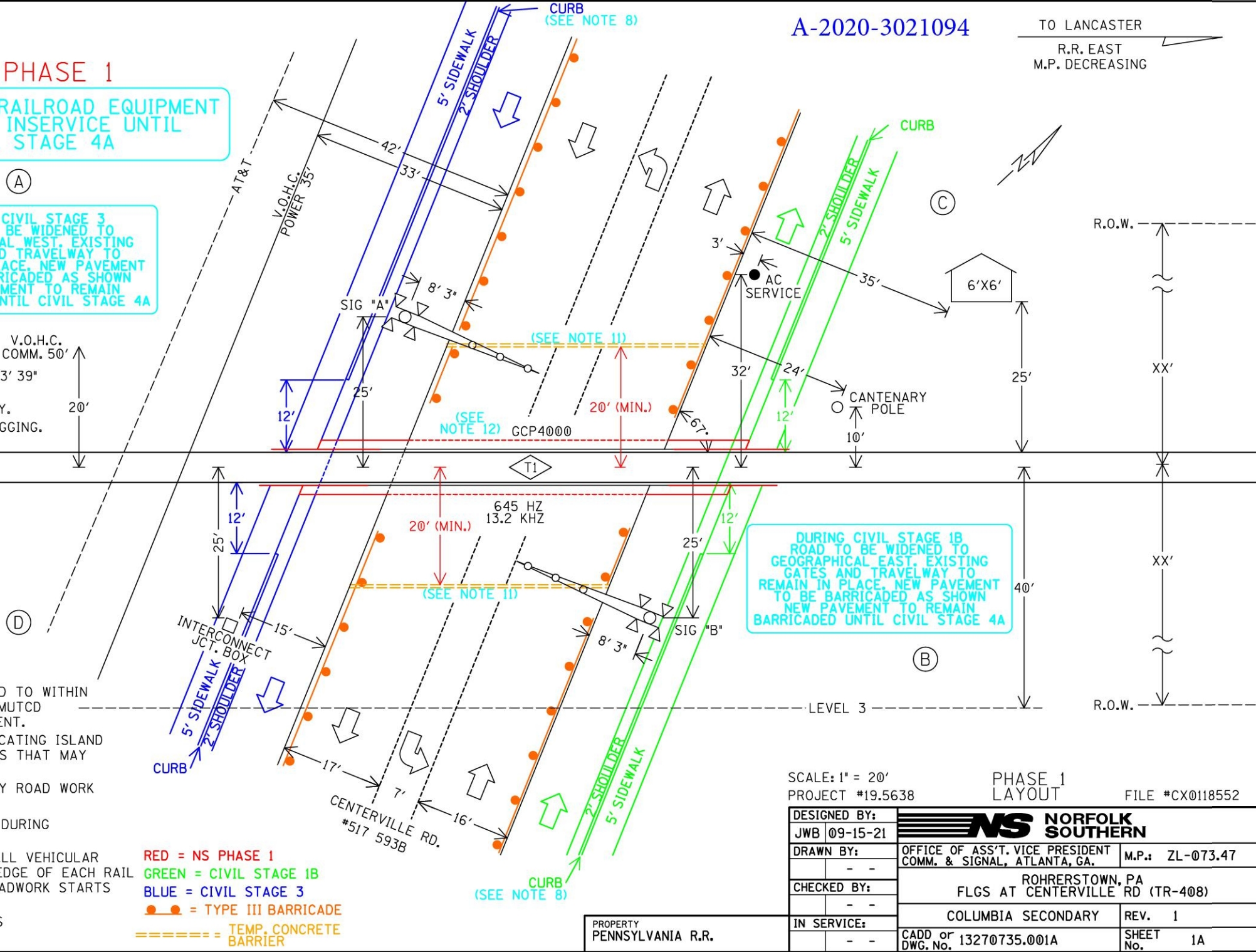
CERTIFIED CORRECT PLANS
Professional Engineer
Approved by Bureau of Technical Utility Services
PA PUBLIC UTILITY COMMISSION
ATTEST Secretary

- NOTES:
1. MAX. TRAIN SPEED 30 M.P.H.
 2. LATITUDE N 40° 02' 58" LONGITUDE W 76° 23' 39" ELEVATION 369'
 3. CROSSING LOCATED IN LANCASTER COUNTY.
 4. LOCATE U/G UTILITIES & CABLE BEFORE DIGGING.

- NOTES CONTINUED:
5. NEAREST STREET ADDRESS IS 300 CENTERVILLE RD
 6. NEAREST INTERSECTING STREET IS HEMPLAND RD.
 7. DISTANCE TO NEAREST INTERSECTING STREET IS 350 FT.
 8. CURBS IN QUADS "A" & "B" TO BE EXTENDED TO WITHIN 12' OF NEAREST RAIL IN ORDER TO MEET MUTCD REQUIREMENTS FOR PROPER GATE PLACEMENT.
 9. NS FORCES MAY WANT TO CONSIDER RELOCATING ISLAND WIRES TO NEW LOCATION TO AVOID ISSUES THAT MAY OCCUR DURING ROAD CONSTRUCTION.
 10. NS PHASE 1 TO BE COMPLETED BEFORE ANY ROAD WORK TO BE STARTED.
 11. TEMPORARY BARRICADES TO BE IN PLACE DURING NS PHASE 1 ONLY.
 12. DURING NS PHASE 1. NS FORCES TO INSTALL VEHICULAR CROSSING TO 2'-0" BEYOND THE OUTSIDE EDGE OF EACH RAIL TO BE COMPLETED BEFORE ANY OTHER ROADWORK STARTS

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

RED = NS PHASE 1
GREEN = CIVIL STAGE 1B
BLUE = CIVIL STAGE 3
●● = TYPE III BARRICADE
===== TEMP. CONCRETE BARRIER



SCALE: 1" = 20'
PROJECT #19.5638

PHASE 1 LAYOUT
FILE #CX0118552

DESIGNED BY: JWB 09-15-21	NS NORFOLK SOUTHERN	
DRAWN BY: -	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
CHECKED BY: -	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IN SERVICE: -	COLUMBIA SECONDARY	REV. 1
	CADD or DWG. No. 13270735.001A	SHEET No. 1A

PROPERTY PENNSYLVANIA R.R.

TO COLUMBIA
R.R. WEST
M.P. INCREASING

A-2020-3021094

TO LANCASTER
R.R. EAST
M.P. DECREASING

NS PHASE 2

ALL NEW RAILROAD EQUIPMENT
TO BE INSTALLED AND PLACED
IN SERVICE DURING
CIVIL STAGE 4A

(A)

(C)

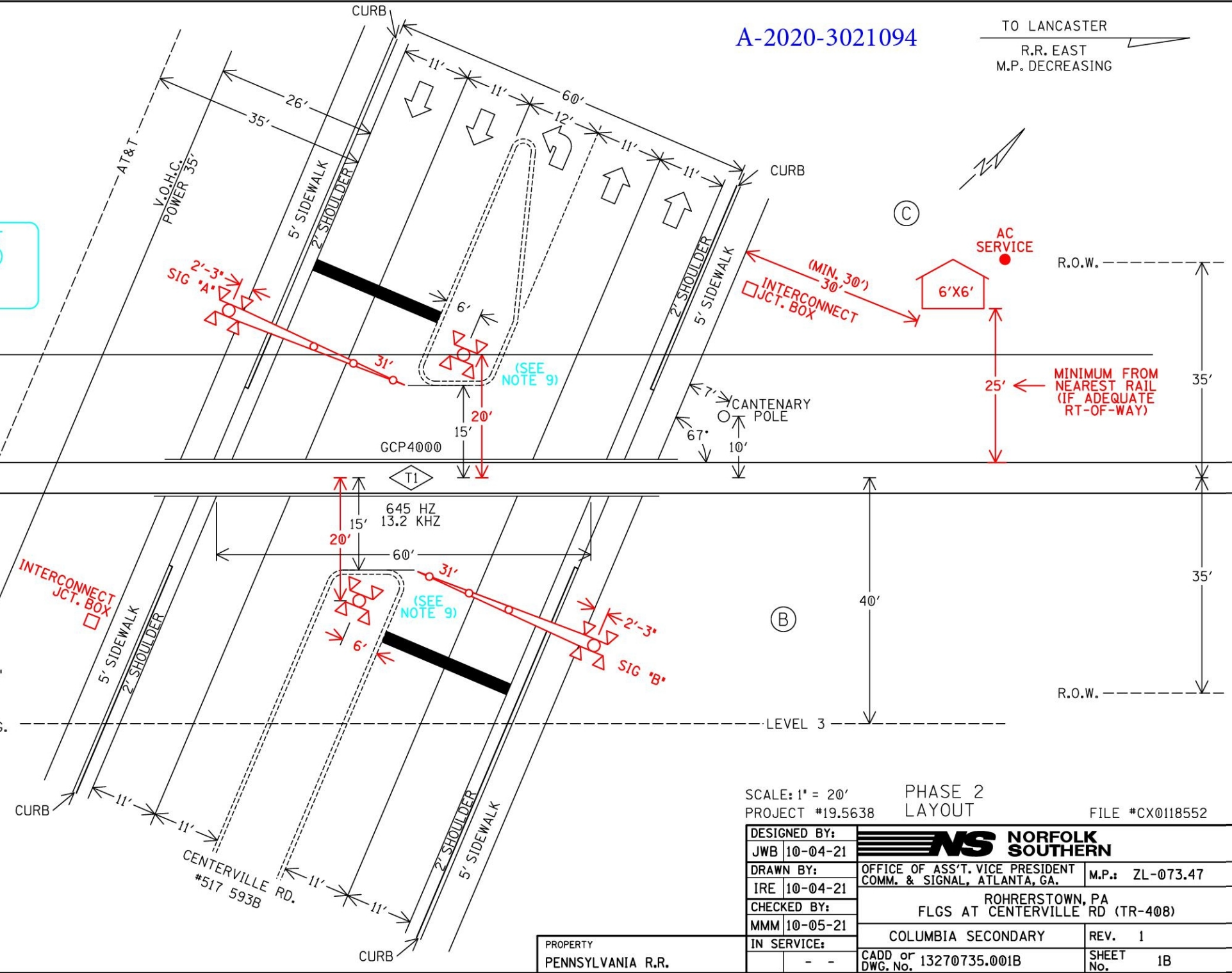
(D)

(B)

CERTIFIED CORRECT PLANS
Professional Engineer
Approved by Bureau of Technical Utility Services
PA PUBLIC UTILITY COMMISSION
ATTEST Secretary

- NOTES:
1. MAX. TRAIN SPEED 30 M.P.H.
 2. LATITUDE N 40° 02' 58" LONGITUDE W 76° 28' 39" ELEVATION 369'
 3. SIGNAL "A" AND "B" TO HAVE BELL.
 4. LOCATE U/G UTILITIES & CABLE BEFORE DIGGING.
 5. CROSSING LOCATED IN LANCASTER COUNTY.
 6. NEAREST STREET ADDRESS IS 300 CENTERVILLE RD
 7. NEAREST INTERSECTING STREET IS HEMPLAND RD.
 8. DISTANCE TO NEAREST INTERSECTING STREET IS 350 FT.
 9. CENTER MEDIANS TO BE INSTALLED AFTER MEDIAN SIGNALS INSTALLED.
 10. SIMULATED PREEMPTION IS REQUIRED AT THIS LOCATION.

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



SCALE: 1" = 20'
PROJECT #19.5638
PHASE 2 LAYOUT
FILE #CX0118552

DESIGNED BY: JWB 10-04-21	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
CHECKED BY: MMM 10-05-21	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IN SERVICE:	COLUMBIA SECONDARY	REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 13270735.001B	SHEET No. 1B

TO COLUMBIA
R.R. WEST
M.P. INCREASING

A-2020-3021094

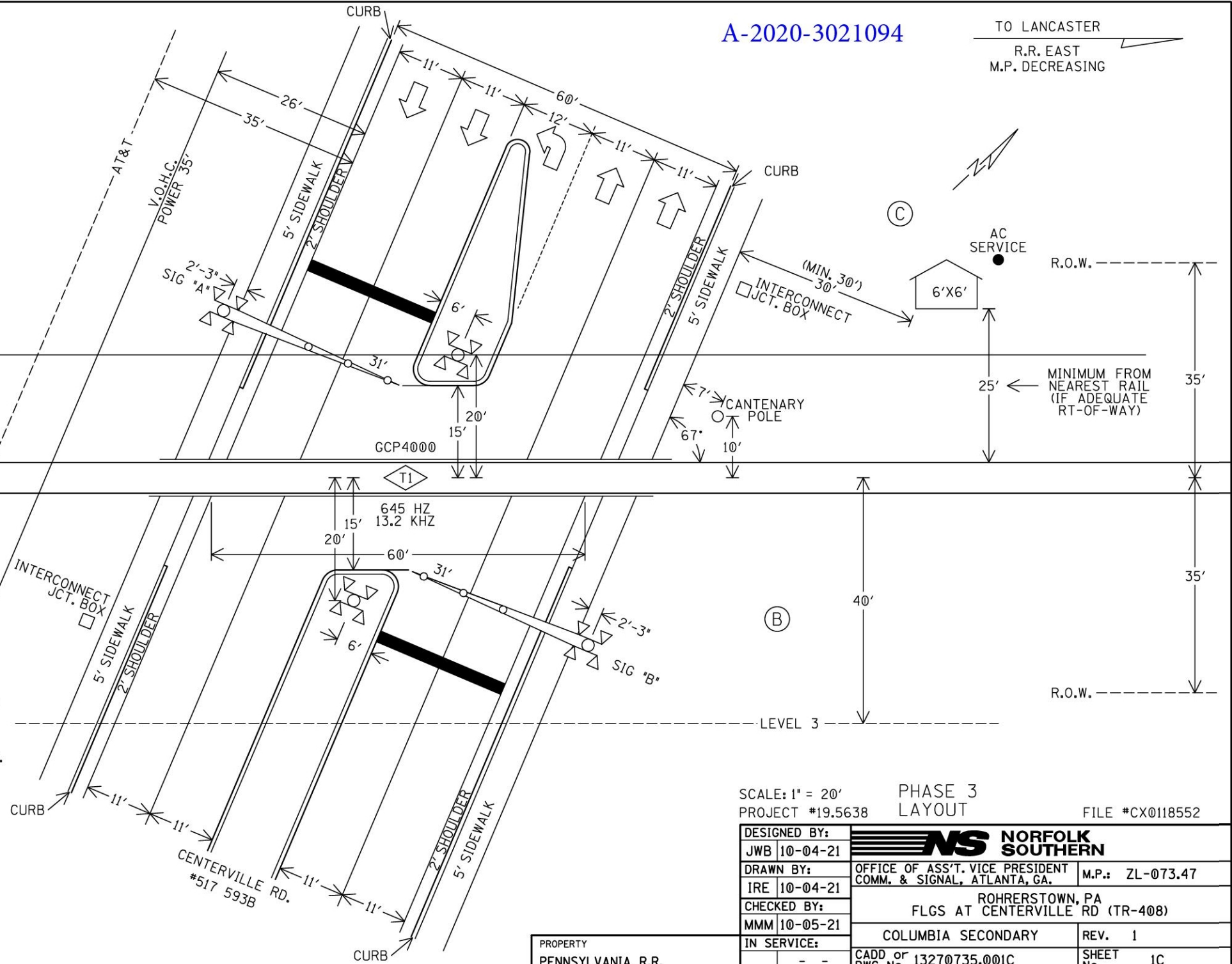
TO LANCASTER
R.R. EAST
M.P. DECREASING

PHASE 3

CERTIFIED CORRECT PLANS
Professional Engineer
Approved by Bureau of Technical Utility Services
PA PUBLIC UTILITY COMMISSION
ATTEST Secretary

- NOTES:
1. MAX. TRAIN SPEED 30 M.P.H.
 2. LATITUDE N 40° 02' 58" LONGITUDE W 76° 23' 39" ELEVATION 369'
 3. SIGNAL "A" AND "B" TO HAVE BELL.
 4. LOCATE U/G UTILITIES & CABLE BEFORE DIGGING.
 5. CROSSING LOCATED IN LANCASTER COUNTY.
 6. NEAREST STREET ADDRESS IS 300 CENTERVILLE RD
 7. NEAREST INTERSECTING STREET IS HEMPLAND RD.
 8. DISTANCE TO NEAREST INTERSECTING STREET IS 350 FT.
 9. SIMULATED PREEMPTION IS REQUIRED AT THIS LOCATION.

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



SCALE: 1" = 20'
PROJECT #19.5638
PHASE 3 LAYOUT
FILE #CX0118552

DESIGNED BY: JWB 10-04-21	NS NORFOLK SOUTHERN	
DRAWN BY: IRE 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
CHECKED BY: MMM 10-05-21	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IN SERVICE:	COLUMBIA SECONDARY	REV. 1
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 13270735.001C	SHEET No. 1C

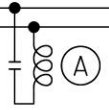
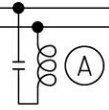
TO COLUMBIA
R.R. WEST
M.P. INCREASING

A-2020-3021094

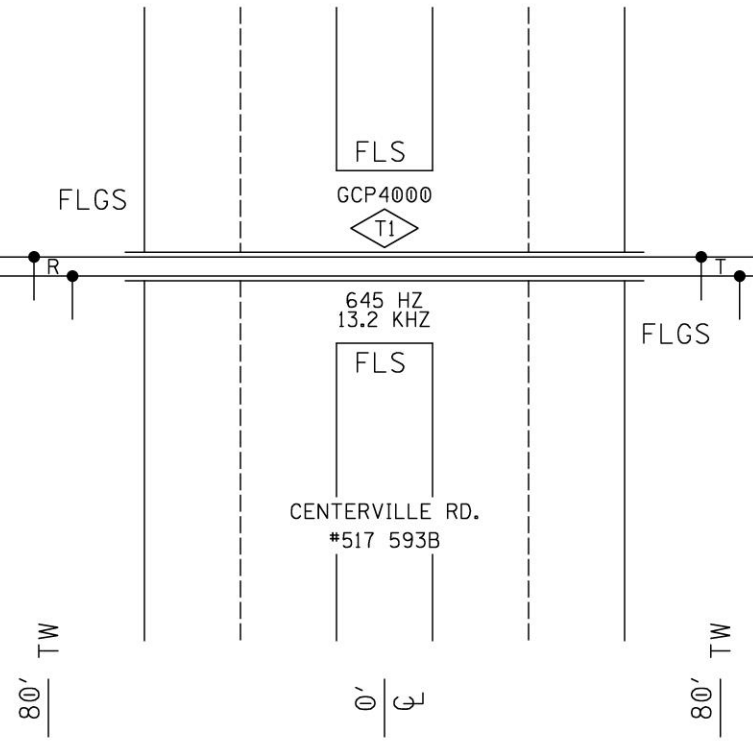
TO LANCASTER
R.R. EAST
M.P. DECREASING

1544'
TO NEAREST
GCP WIRES

1544'
TO NEAREST
GCP WIRES



CERTIFIED CORRECT PLANS
Arthur P. [Signature]
 Professional Engineer
 Approved by Bureau of Technical Utility Services
PA PUBLIC UTILITY COMMISSION
 ATTEST *Rosmary [Signature]*
 Secretary



(A) - MF-NBS FSS-1F 250849-005 (645HZ)

PROFILE

DESIGNED BY:	JWB 10-04-21		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	IRE 10-04-21			
CHECKED BY:	MMM 10-05-21	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)		
IN SERVICE:	- -			
PROPERTY	PENNSYLVANIA R.R.	COLUMBIA SECONDARY	REV. 1	SHEET 2
		CADD or DWG. No. 13270735.002		

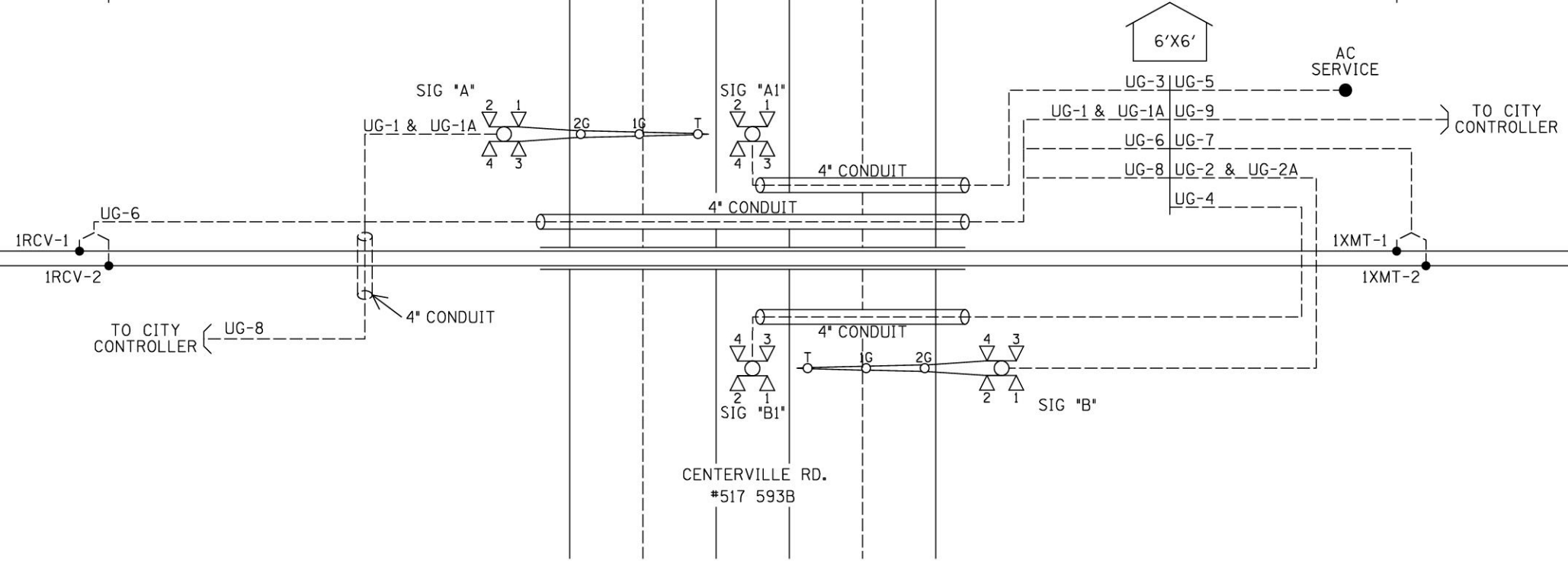
TO COLUMBIA
R.R. WEST
M.P. INCREASING

TO LANCASTER
R.R. EAST
M.P. DECREASING

160'

50' MINIMUM

50' MINIMUM



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
BXG
NBXG
BXX
IBXX
BGD
XGP1
XGP
BGBX120
BGNX120
SPARE
SPARE

UG-3-5CUG #6
AIEC
AIEZ
AIEB
SPARE
SPARE

UG-5-3CUG #6
W/#8 GND
BX120-A
BX120-B
NX120
GND

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

UG-8-5CUG #14
1INT1
1SUPV
1INT2
SPARE
SPARE

UG-9-5CUG #14
2INT1
2SUPV
2INT2
SPARE
SPARE

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

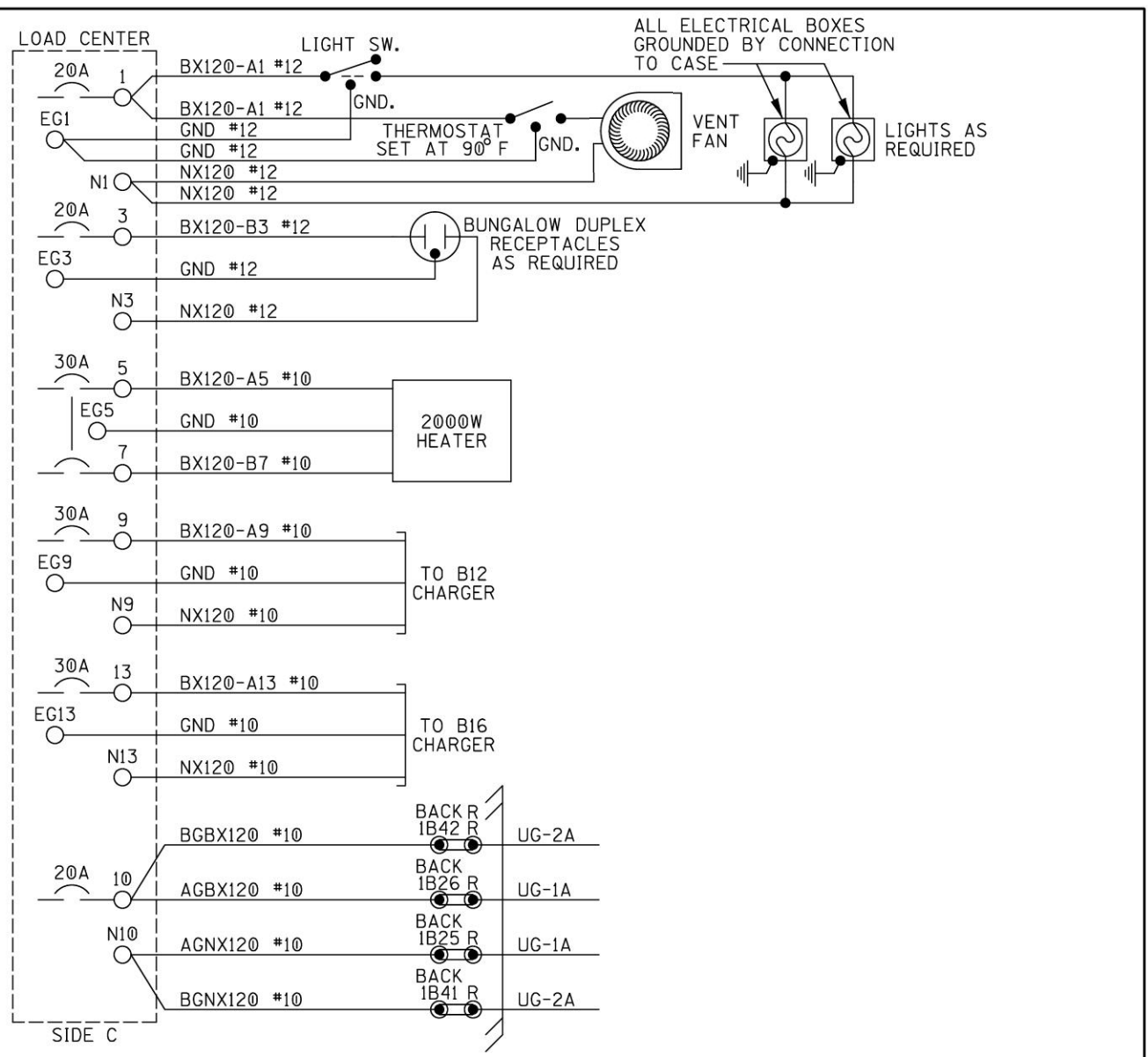
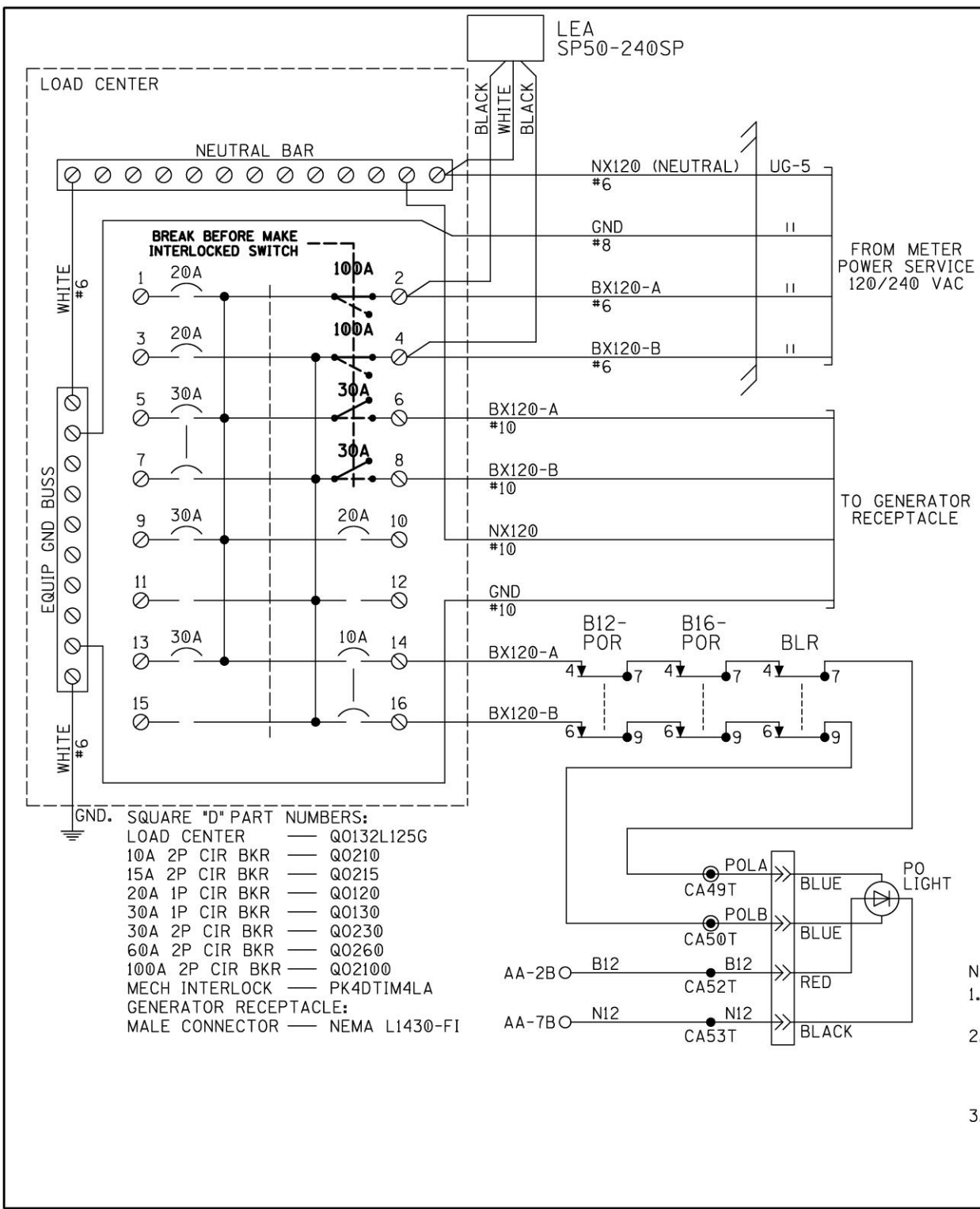
UG-4-5CUG #6
BIEC
BIEZ
BIEB
SPARE
SPARE

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

CABLE PLAN

DESIGNED BY:	NS NORFOLK SOUTHERN	
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21	COLUMBIA SECONDARY	REV. 1
CHECKED BY:	CADD or DWG. No. 13270735.003	SHEET 3
MMM 10-05-21		
IN SERVICE:		

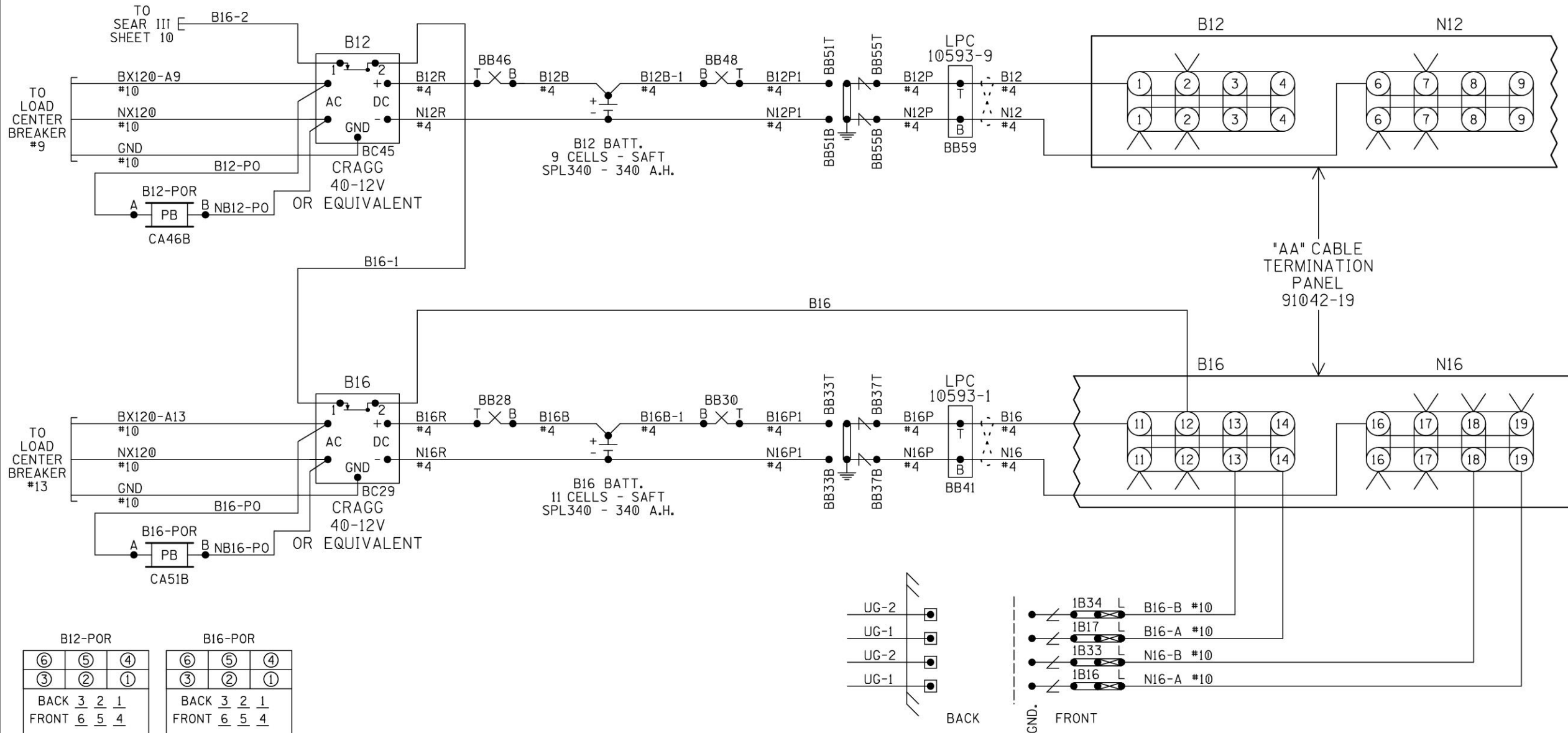
PROPERTY
PENNSYLVANIA R.R.



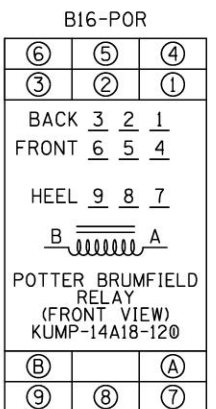
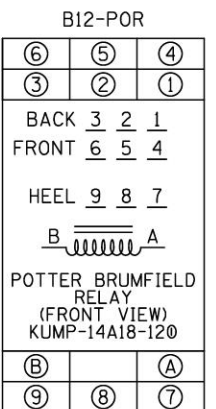
- NOTES:
1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
 2. ALL AC WIRING TO LOAD CENTER TO BE IN METALLIC CONDUIT WITH NO EXPOSED TERMINALS. ALL AC 120V AND 240V EQUIPMENT TO BE PROPERLY GROUNDED.
 3. ● = INSULATED NUTS TO BE USED ON ALL TERMINALS OF 120VAC AND ABOVE.

LOAD CENTER

DESIGNED BY:	JWB 10-04-21		M.P.: ZL-073.47
DRAWN BY:	IRE 10-04-21		
CHECKED BY:	MMM 10-05-21	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IN SERVICE:	- -	COLUMBIA SECONDARY	REV. 1
PROPERTY	PENNSYLVANIA R.R.	CADD or DWG. No. 13270735.004	SHEET No. 4



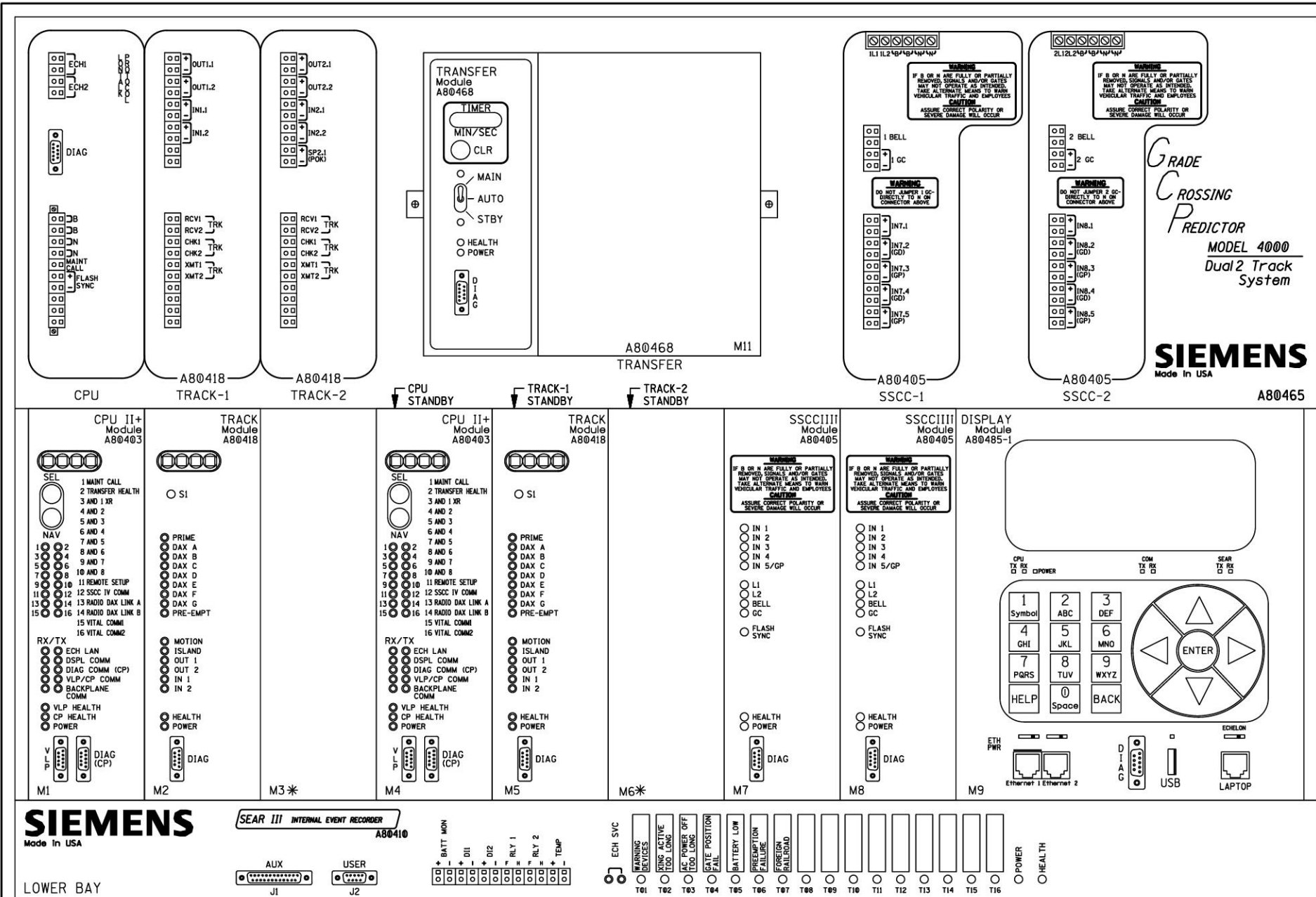
"AA" CABLE
TERMINATION
PANEL
91042-19



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

CHARGERS & BATTERIES

DESIGNED BY:	NORFOLK SOUTHERN	
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21	COLUMBIA SECONDARY	REV. 1
CHECKED BY:	CADD or DWG. No. 13270735.005	
MMM 10-05-21		SHEET No. 5
IN SERVICE:		
PROPERTY	PENNSYLVANIA R.R.	



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

GCP4000 CHASSIS & MODULE LAYOUT

DESIGNED BY:	NS NORFOLK SOUTHERN	
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21	COLUMBIA SECONDARY	REV. 1
CHECKED BY:	CADD of 13270735.006	
MMM 10-05-21	IN SERVICE:	SHEET No. 6
PROPERTY PENNSYLVANIA R.R.		

Program Report

Location and SIN

DOT Number: 517593B
Milepost Number: ZL-073.47
Site Name: CENTERVILLE RD (TR-408)
SIN: 755048600416

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): 0D4F7DC6
Office Check Number: 0D4F7DC6
Config. Check Number: 56137CFC
(Based on MCF Revision 021)

Comments

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 = Simult
Preempt Hlth IP Used = No

BASIC: radio Dax links

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

BASIC: Vital Comms links

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

PREDICTORS: track 1

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

GCP: track 1

Track 1: GCP Freq Category = Standard
Track 1: GCP Frequency = 645 Hz
Track 1: Approach Distance = 1544 ft
Track 1: Uni/BI/Sim-Bidirnl = Bidirnl
Track 1: GCP Transmit Level = Medium
Track 1: Island Connection = Isl1
Track 1: Island Distance = 160 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 Ctrl IP Used = No
Track 1: MS Sensitivity Level = 0
Track 1: Compensation Level = 1300
Track 1: Warn Time-Ballast Comp = High
Track 1: Low EX Adjustment = 39
Track 1: Bidirn Dax Passthru = No
Track 1: False Act on Train Stop = No
Track 1: EX Limiting Used = Yes
Track 1: EZ Correction Used = Yes

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
T1 OOS Control = OOS Input 1

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

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

ADVANCED: OR logic

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

ADVANCED: internal I/O 1

Pass Thrus = 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 Call Rpt IP Used = No
Emergency Activate IP = No
EZ/EX Logging = Change
EZ/EX Point Change = 3

GCP4000 PROGRAMMING

Table with design and drawing information including Designer (JWB), Drawn By (IRE), Checked By (MMM), and Property (PENNSYLVANIA R.R.). Includes Norfolk Southern logo and project details like 'COLUMBIA SECONDARY' and 'REV. 1'.

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 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 Neutral Test = Off
 Aux-2 Xng CtrlUsed = No

OUTPUT: assignment page 1
 OUT 1.1 = Sim Preempt
 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 = 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 8.4 = Not Used
 IN 8.5 = Not Used

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

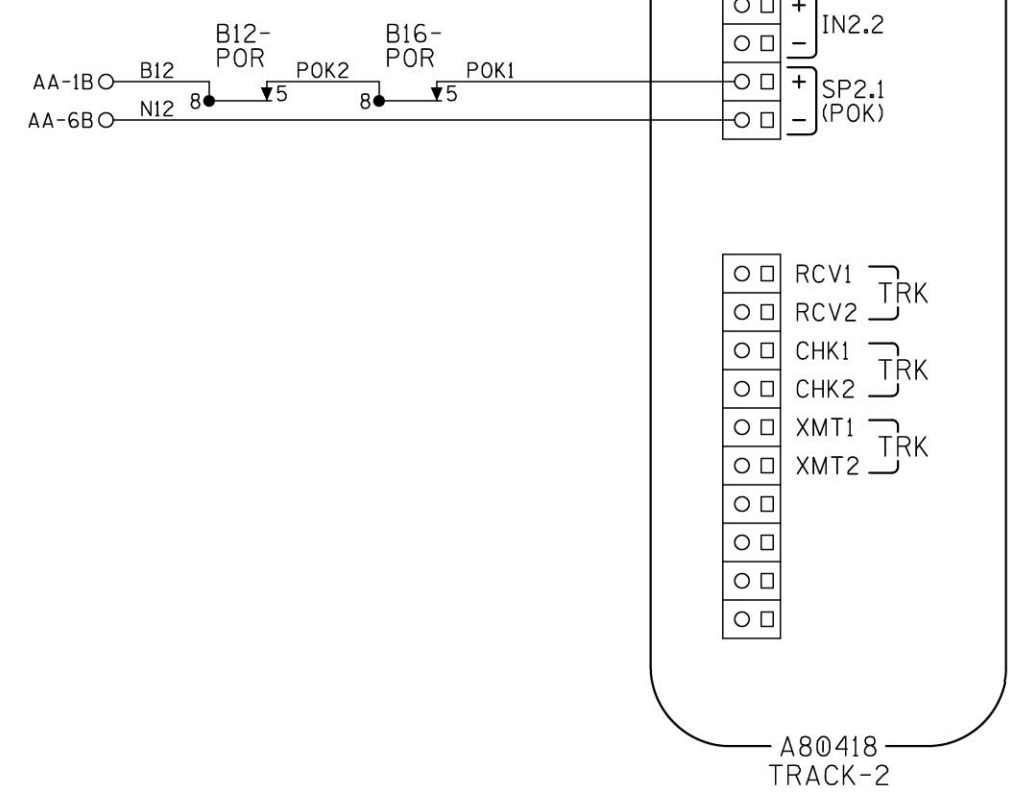
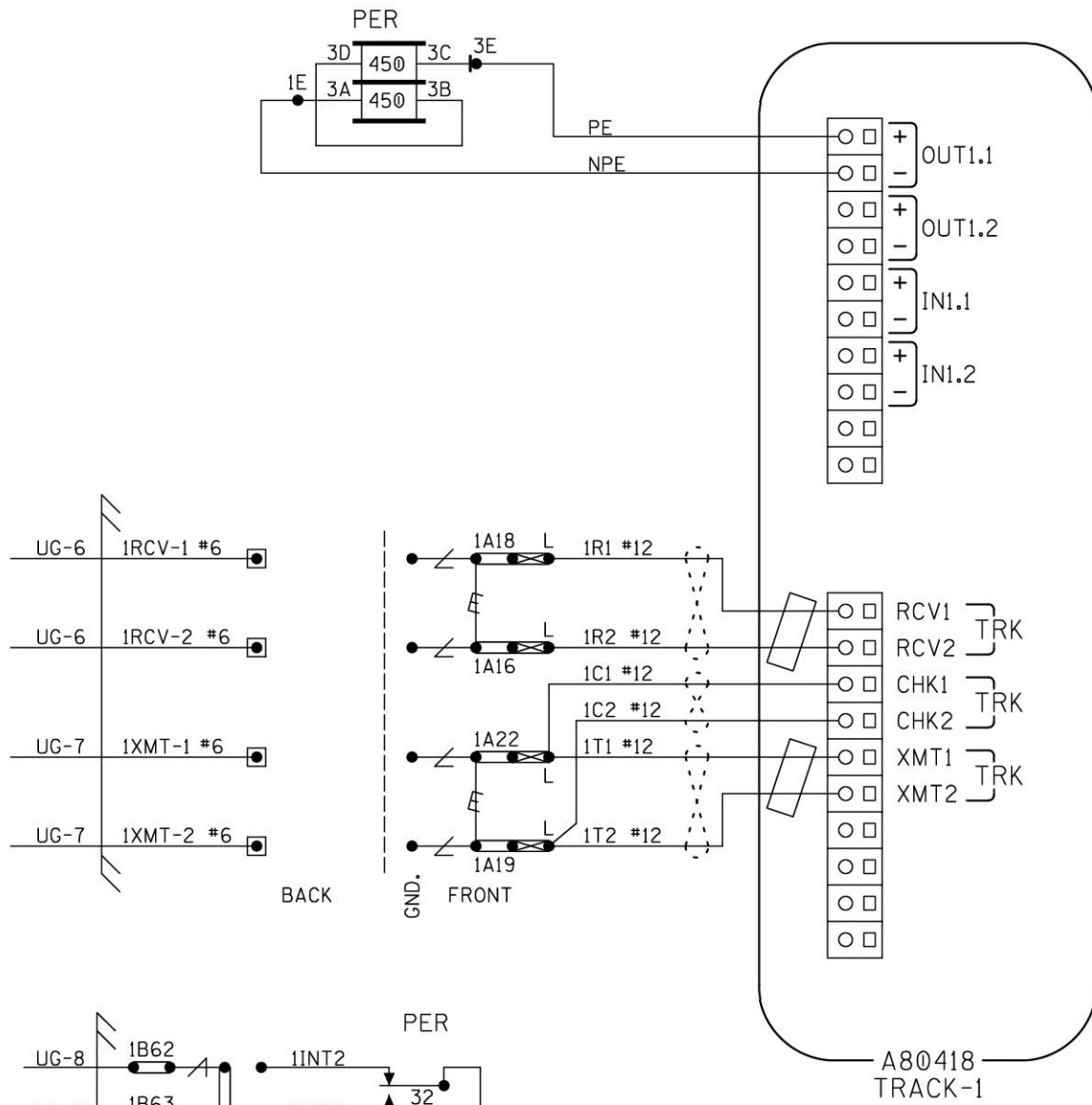
Configuration Package File

 Filename: 13270735.pac

GCP4000 PROGRAMMING

DESIGNED BY:		
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21		
CHECKED BY:		
MMM 10-05-21	COLUMBIA SECONDARY	REV. 1
IN SERVICE:	CADD or DWG. No. 13270735.008	SHEET No. 8

PROPERTY
 PENNSYLVANIA R.R.



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

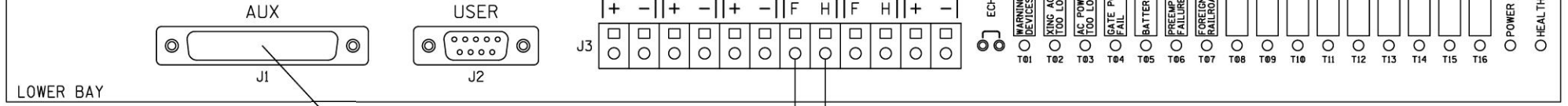
CONNECTORS FOR TRACK MODULES

DESIGNED BY:		
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21	COLUMBIA SECONDARY	REV. 1
CHECKED BY:	CADD or 13270735.009	
MMM 10-05-21		SHEET 9
IN SERVICE:		

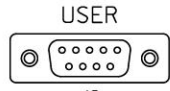
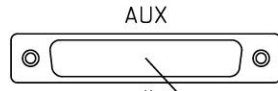
PROPERTY
PENNSYLVANIA R.R.

SIEMENS
Made In USA

SEAR III INTERNAL EVENT RECORDER
A80410

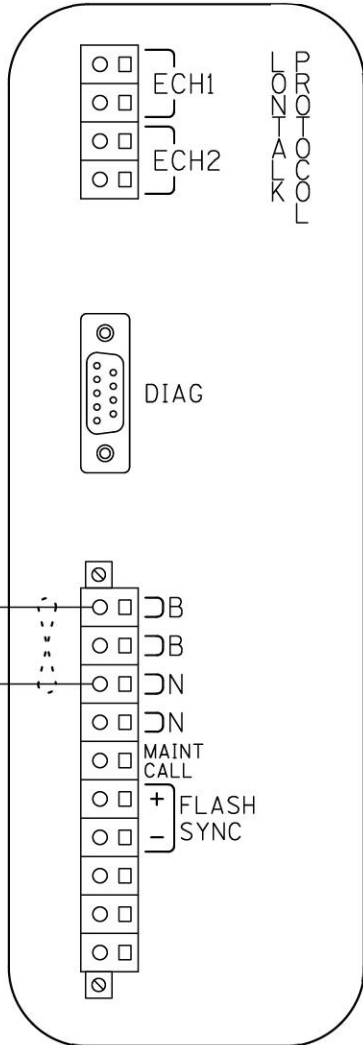
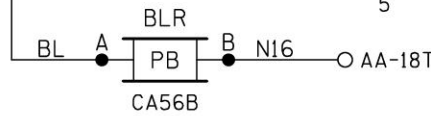


LOWER BAY



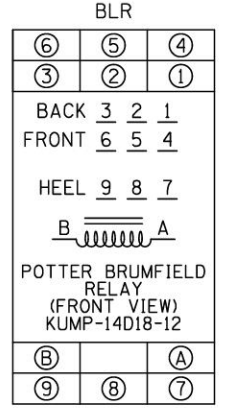
TO RADIO SHEET 12

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:	NS NORFOLK SOUTHERN	
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21	COLUMBIA SECONDARY	REV. 1
CHECKED BY:	CADD or DWG. No. 13270735.010	SHEET No. 10
MMM 10-05-21		
IN SERVICE:		

PROPERTY
PENNSYLVANIA R.R.

SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
DATE/TIME	
AUTOMATIC DST ADJUSTMENT	NO
TIMEZONE	OTHER (USER SET)
GMT OFFSET	+00:00
SITE NAME	CENTERVILLE RD.
MILEPOST	ZL-073.47
DOT#	517 593B
TESTER TYPE	CROSSING
DATE FORMAT	MM-DD-YYYY
TEMP. FORMAT	FARENHEIT
INDICATE HOLD (SEC)	0
INDICATE REFRESH (SEC)	60
GEO CTL PERIOD (SEC)	0
ALARMS RETRY WAIT	
SITE ATCS ADDRESS	7.550.486.004.03.01
SITE TYPE	COLLECTOR
# OFFICE ATCS ADDRESS	2.550.01.3876
# POLL ID	1
# MODE	GEN/ATCS
# WAMS XID	DISABLED
# OFFICE COMM DEVICE	RAILLOGIC
# RAILLOGIC PORT	AUX
# OUR RADIO ID	
# DEST RADIO ID	
# MAX RETRIES	3
# RETRY WAIT	5
# NXT PKT DELAY	3
# MUTE TIMER	10
★ AUTOMUTE MAX	30
★ USER PORT BAUD	57600
★ USER PORT DATA BITS	8
★ USER PORT PARITY	NONE
★ AUX PORT STOP BITS	1
★ USER PORT FLOW CONTROL	NONE
★ AUX PORT BAUD	19200
★ 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?	NORMAL
INTERNAL CROSSING CONTROLLERS?	2
EXTERNAL CROSSING CONTROLLERS?	0
VHF COMMUNICATOR?	NO
DTMF ACTIVATION?	NO
ILOD MODULES?	0
USE CELL MODEM NON-CRITICAL FEATURE?	NO


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

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

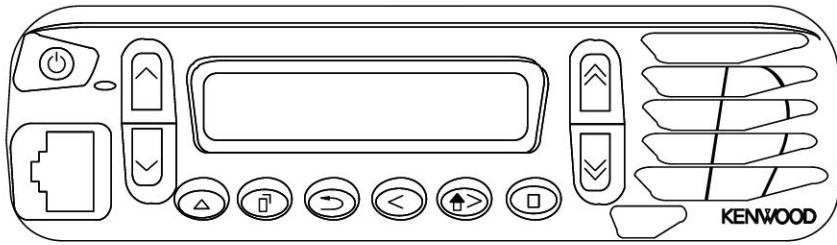
NOTES:

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

SEAR III PROGRAMMING

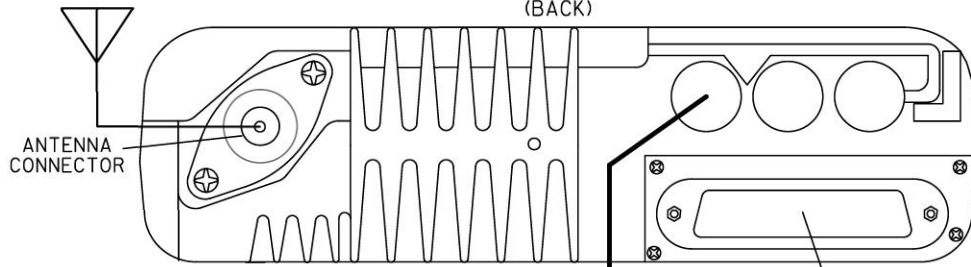
DESIGNED BY:	JWB 10-04-21		M.P.: ZL-073.47
DRAWN BY:	IRE 10-04-21		
CHECKED BY:	MMM 10-05-21	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IN SERVICE:	- -	COLUMBIA SECONDARY	REV. 1
PROPERTY	PENNSYLVANIA R.R.	CADD or DWG. No. 13270735.011	SHEET No. 11

(FRONT)



KENWOOD RADIO NX-700H
OR EQUIVALENT

(BACK)



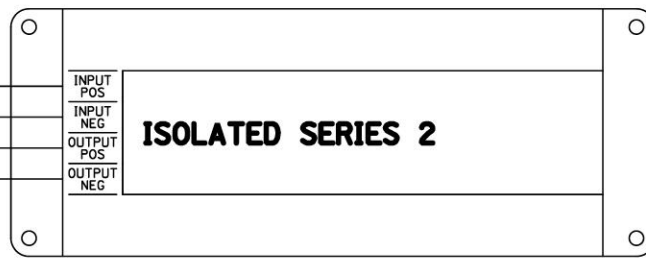
ANTENNA
CONNECTOR

BA5

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

CABLE - KENWOOD
P/N E30-7520-15

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



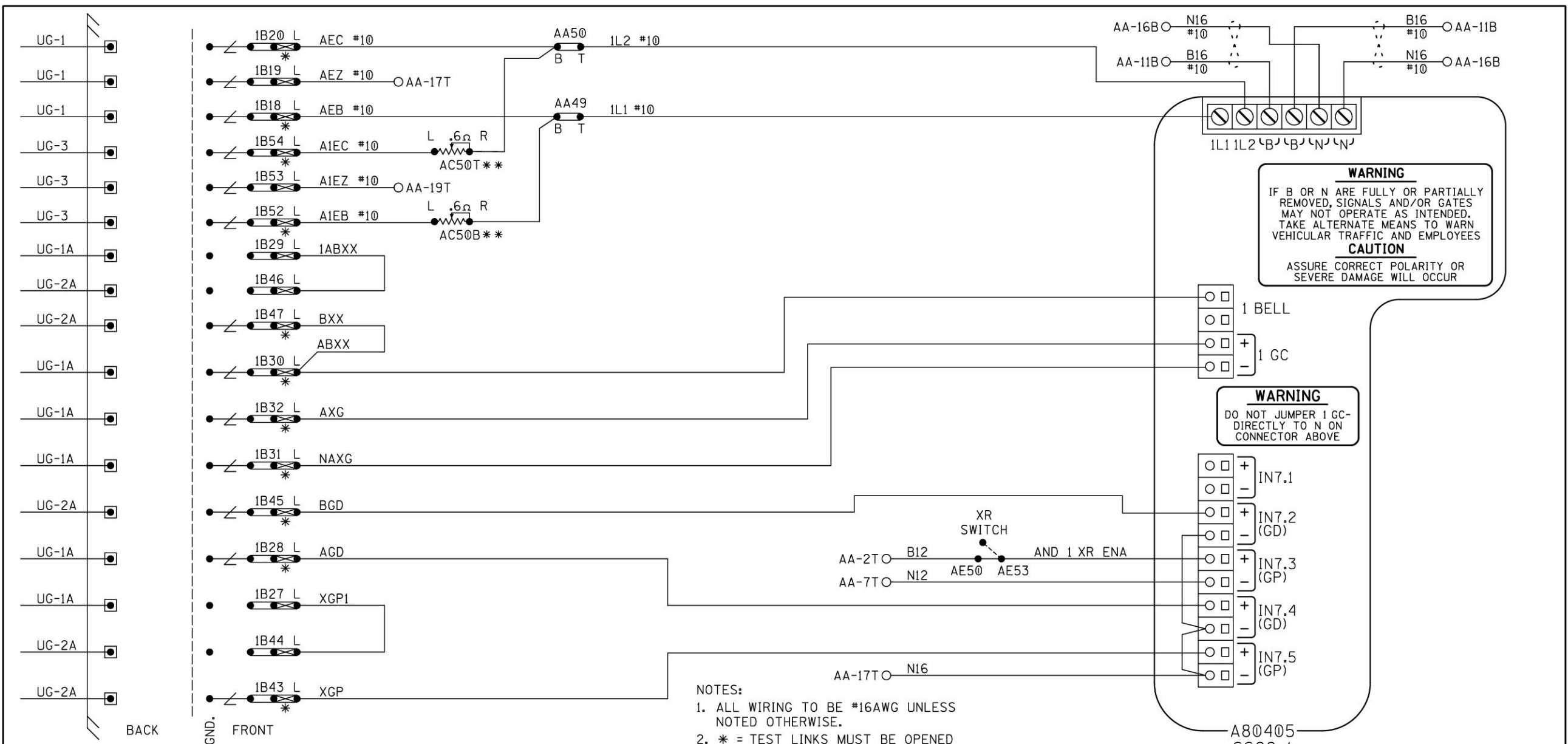
NOTE:
1. ALL WIRING TO BE #10AWG UNLESS
NOTED OTHERWISE.

BB5

BACKHAUL EQUIPMENT

DESIGNED BY:		
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21	COLUMBIA SECONDARY	REV. 1
CHECKED BY:	CADD or 13270735.012	
MMM 10-05-21	DWG. No.	SHEET No. 12
IN SERVICE:	- -	

PROPERTY
PENNSYLVANIA R.R.

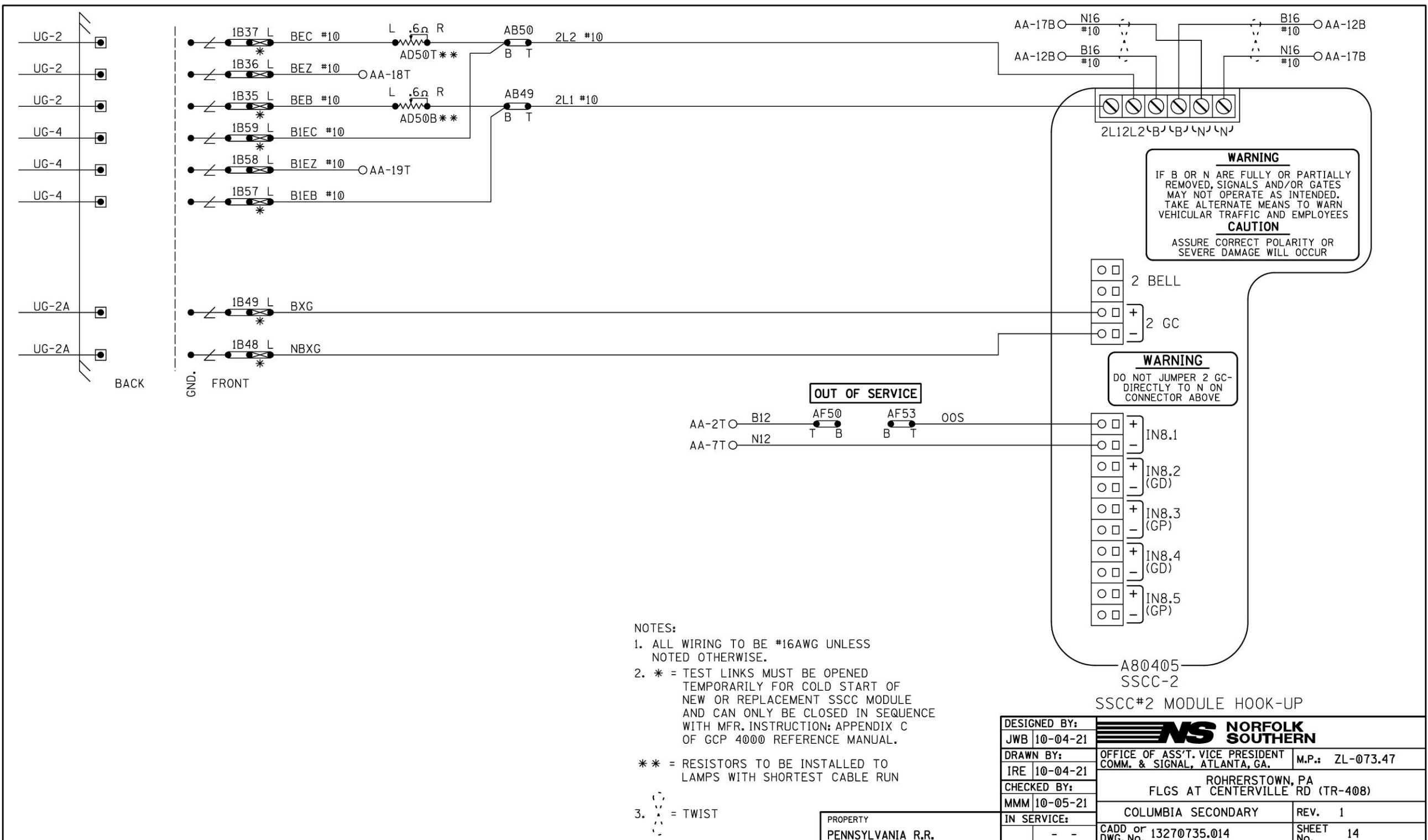


- NOTES:
1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
 2. * = TEST LINKS MUST BE OPENED TEMPORARILY FOR COLD START OF NEW OR REPLACEMENT SSCC MODULE AND CAN ONLY BE CLOSED IN SEQUENCE WITH MFR. INSTRUCTION; APPENDIX C OF GCP 4000 REFERENCE MANUAL.
 3. ** = RESISTORS TO BE INSTALLED TO LAMPS WITH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

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:		
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21		
CHECKED BY:	COLUMBIA SECONDARY	
MMM 10-05-21	REV. 1	
IN SERVICE:	CADD or DWG. No. 13270735.013	SHEET No. 13

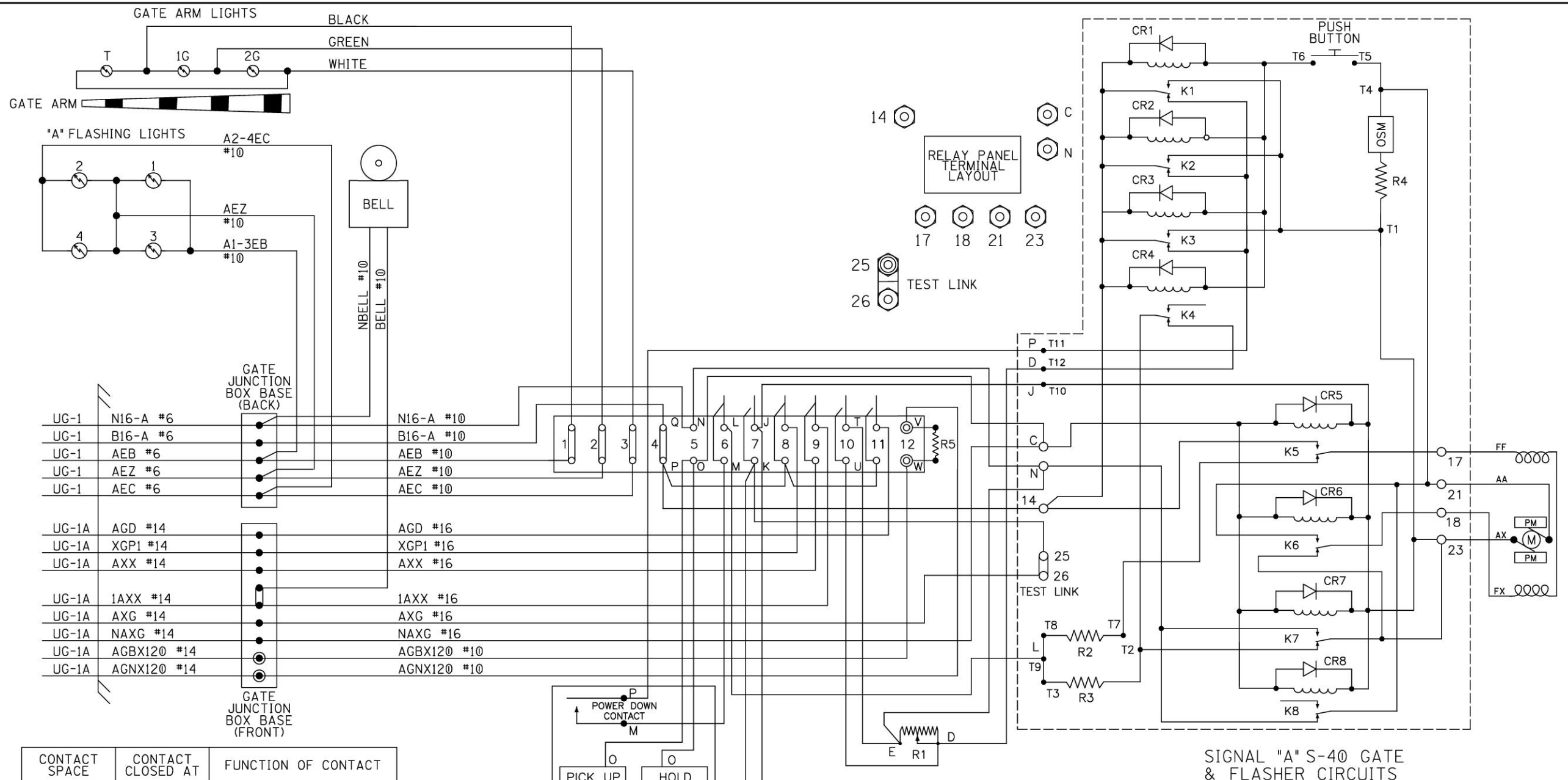
SSCC#1 MODULE HOOK-UP



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

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:		
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21	COLUMBIA SECONDARY	REV. 1
CHECKED BY:	CADD or DWG. No. 13270735.014	
MMM 10-05-21		SHEET No. 14
IN SERVICE:		



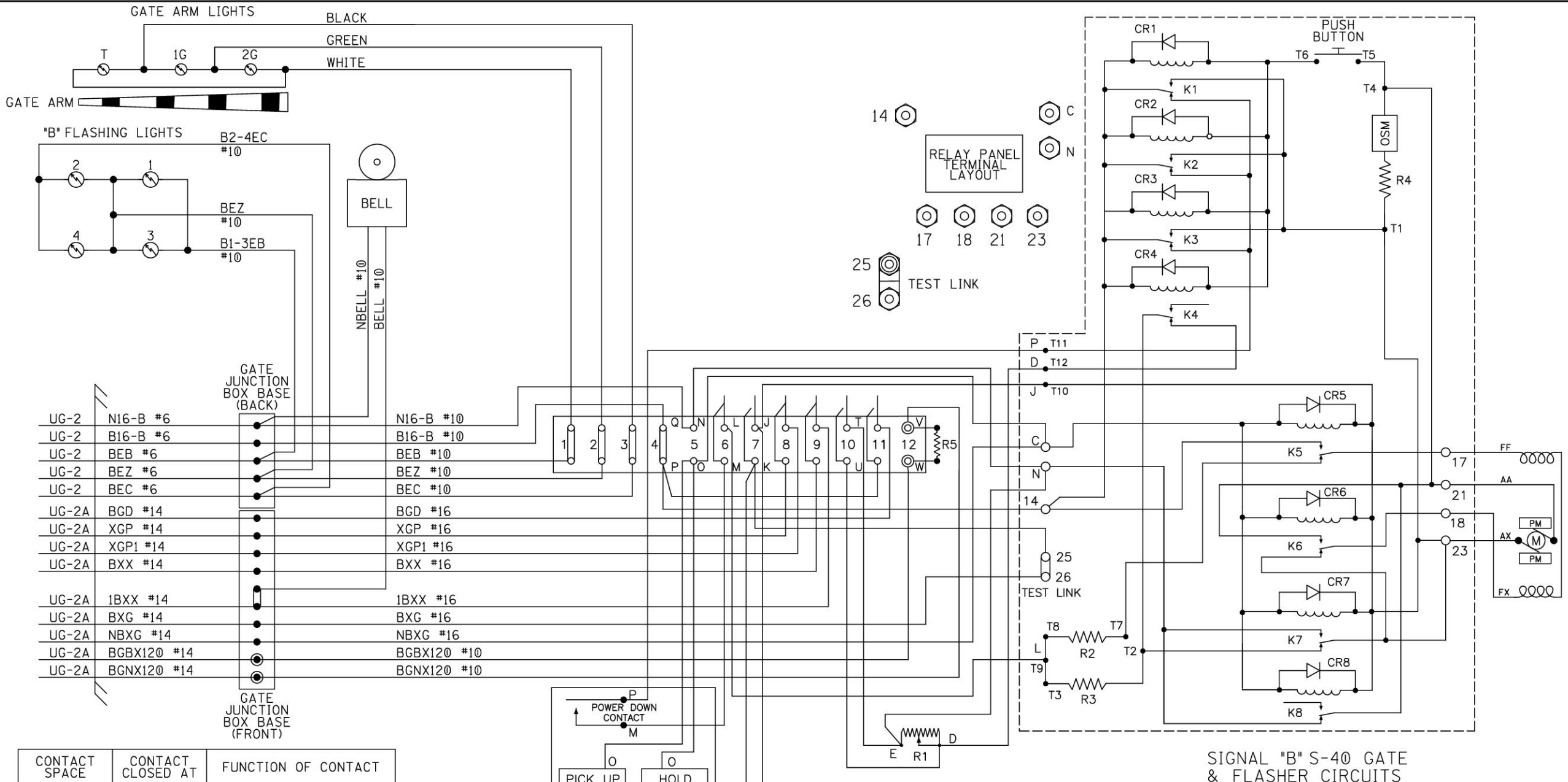
UG-1	N16-A #6	N16-A #10
UG-1	B16-A #6	B16-A #10
UG-1	AEB #6	AEB #10
UG-1	AEZ #6	AEZ #10
UG-1	AEC #6	AEC #10
UG-1A	AGD #14	AGD #16
UG-1A	XGP1 #14	XGP1 #16
UG-1A	AXX #14	AXX #16
UG-1A	1AXX #14	1AXX #16
UG-1A	AXG #14	AXG #16
UG-1A	NAXG #14	NAXG #16
UG-1A	AGBX120 #14	AGBX120 #10
UG-1A	AGNX120 #14	AGNX120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

PROPERTY
 PENNSYLVANIA R.R.

DESIGNED BY:		
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21	COLUMBIA SECONDARY	
CHECKED BY:	REV. 1	
MMM 10-05-21	SHEET 15	
IN SERVICE:	CADD or DWG. No. 13270735.015	



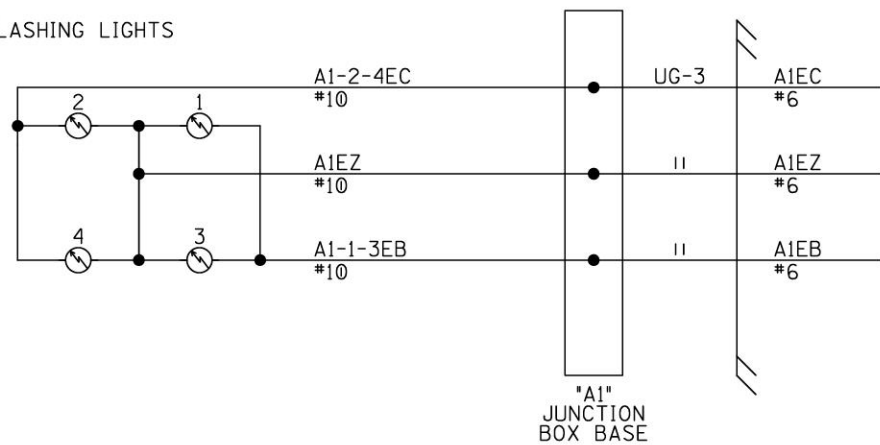
CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
(6) L-M	45° - 90°	POWER DOWN CONTROL
(7) J-K	0° - 89°	POWER UP CONTROL
(8)	83° - 90°	FLASHING LGT. CONTROL
(9)	5° - 90°	BELL CONTROL
(10) T-U	0° - 5°	HORIZONTAL SNUB
(11)	0° - 5°	GATE DOWN INDICATION

- 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

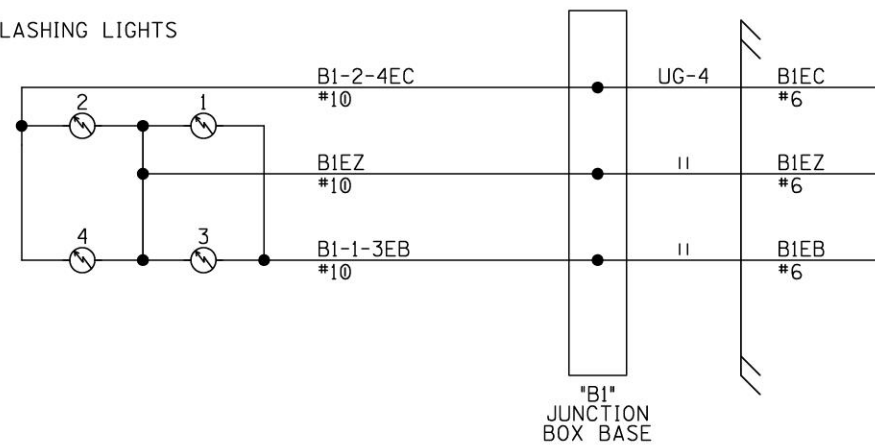
PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY: JWB 10-04-21		
DRAWN BY: IRE 10-04-21		
CHECKED BY: MMM 10-05-21	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IN SERVICE: - -	COLUMBIA SECONDARY	REV. 1
	CADD or DWG. No. 13270735.016	SHEET No. 16

"A1" FLASHING LIGHTS



"B1" FLASHING LIGHTS

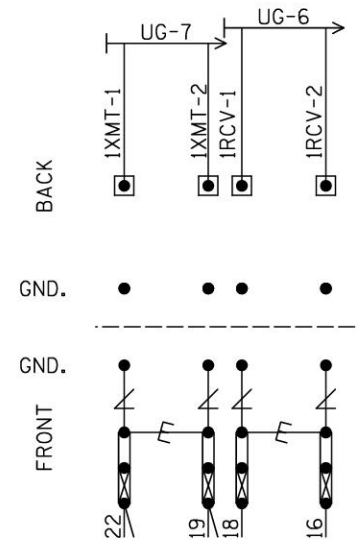


FLASHER CIRCUITS

DESIGNED BY:	NS NORFOLK SOUTHERN	
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA	
IRE 10-04-21	FLGS AT CENTERVILLE RD (TR-408)	
CHECKED BY:	COLUMBIA SECONDARY	REV. 1
MMM 10-05-21	CADD or DWG. No. 13270735.017	SHEET 17
IN SERVICE:	- -	

PROPERTY
PENNSYLVANIA R.R.

"1A"



NOTES:

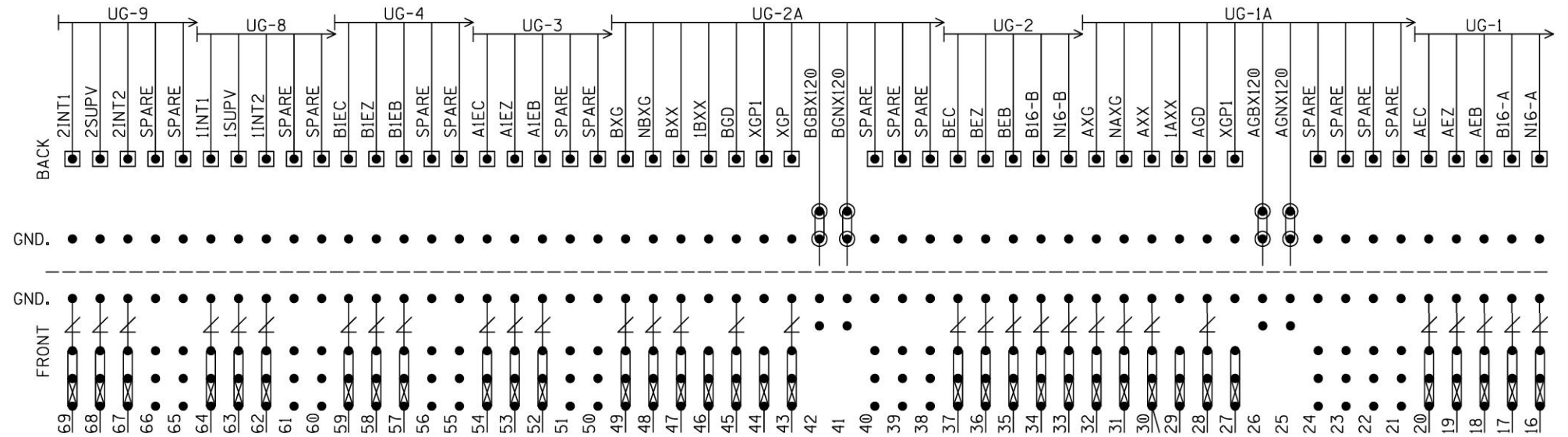
1. = HEAVY DUTY EQUALIZER (022700-1X)
2. = ERICO LIGHTNING ARRESTER (EPD2050F)
3. GND. ● = THROUGH GROUND POST ON EACH TERMINAL BLOCK TO FARADAY SHIELD
4. = TEST LINK
5. INSTALL TEST LINKS ON ALL TRACK WIRES AND ON ALL LOW VOLTAGE UNDERGROUND CABLE TERMINATIONS.

BACKBOARD 1A

DESIGNED BY:		
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21		
CHECKED BY:		
MMM 10-05-21		
IN SERVICE:	COLUMBIA SECONDARY	REV. 1
	CADD or DWG. No. 13270735.018	SHEET No. 18

PROPERTY
PENNSYLVANIA R.R.

"1B"

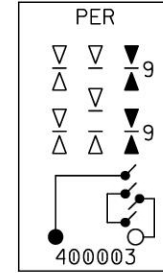
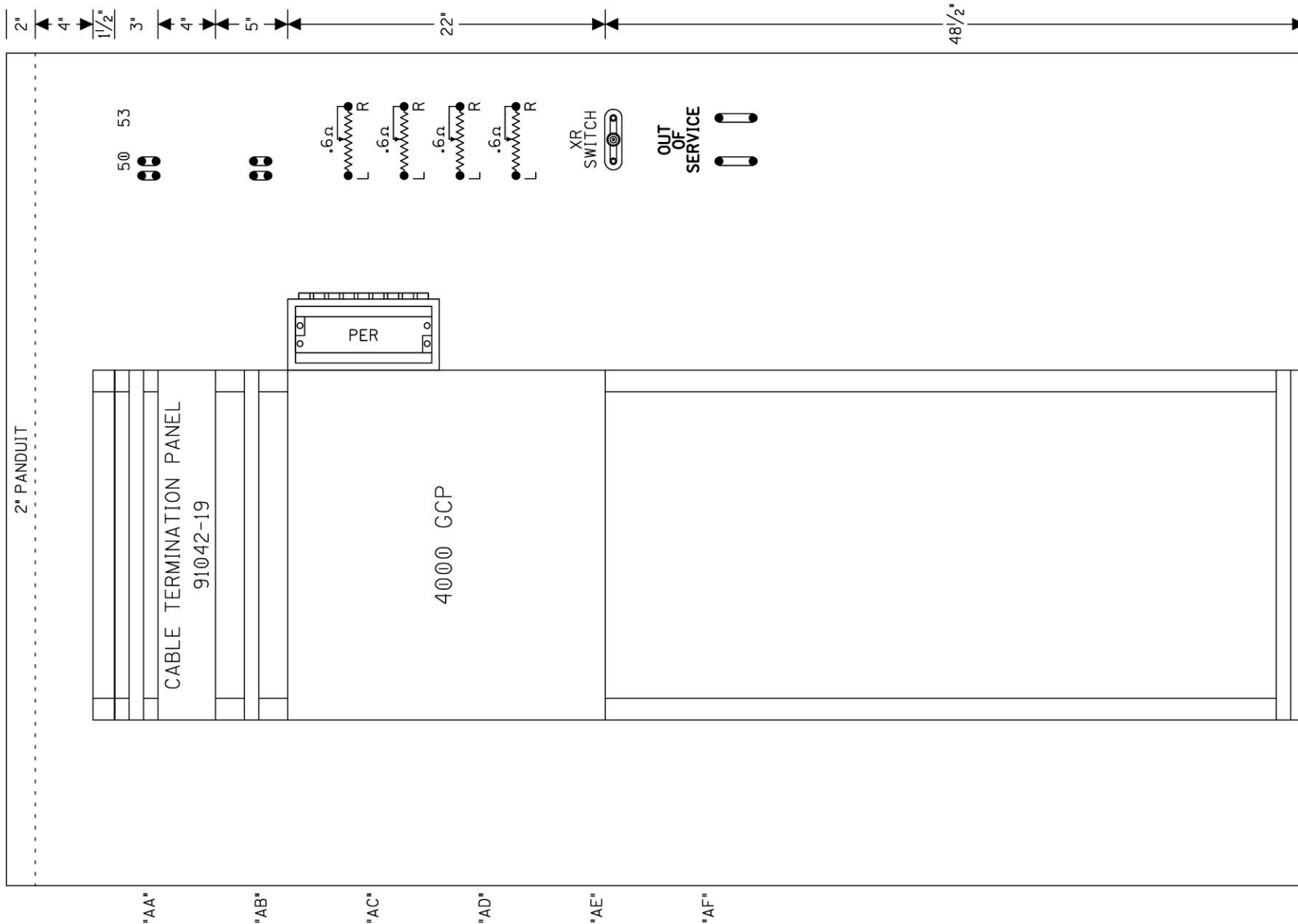


NOTES:

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:		
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21		
CHECKED BY:	COLUMBIA SECONDARY	REV. 1
MMM 10-05-21	CADD or DWG. No. 13270735.019	SHEET No. 19
PROPERTY	PENNSYLVANIA R.R.	
IN SERVICE:	- -	



SAFETRAN ALSTOM (GRS) RELAY
 CROSS REFERENCE LIST
 SAFETRAN ALSTOM (GRS)
 400003 - A62-308

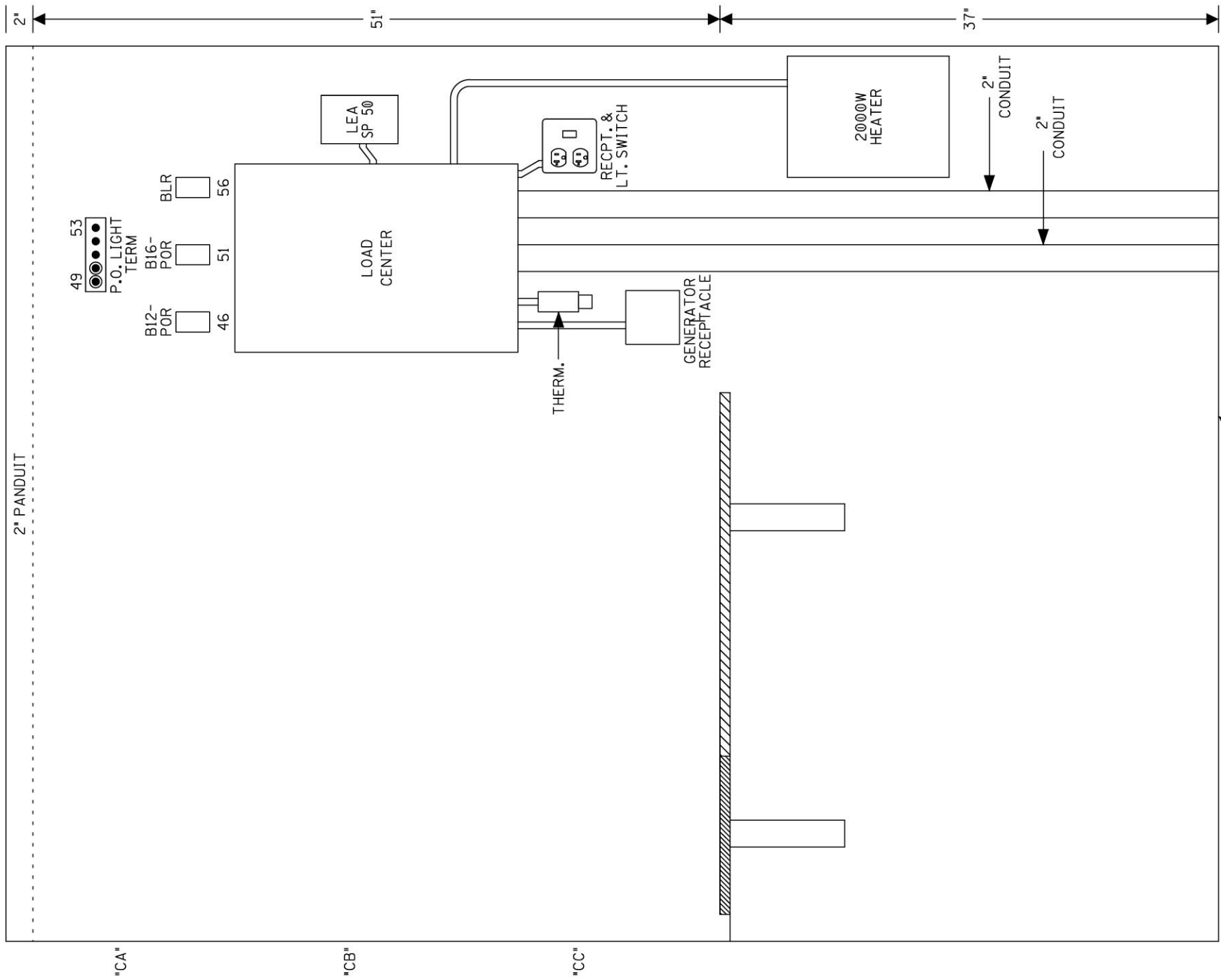
EQUIPMENT RACK #1
 FRONT



SIDE A LAYOUT & RACK PLACEMENT

DESIGNED BY:	NS NORFOLK SOUTHERN	
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21	COLUMBIA SECONDARY	REV. 1
CHECKED BY:	CADD or	SHEET
MMM 10-05-21	DWG. No. 13270735.020	No. 20
IN SERVICE:	- -	

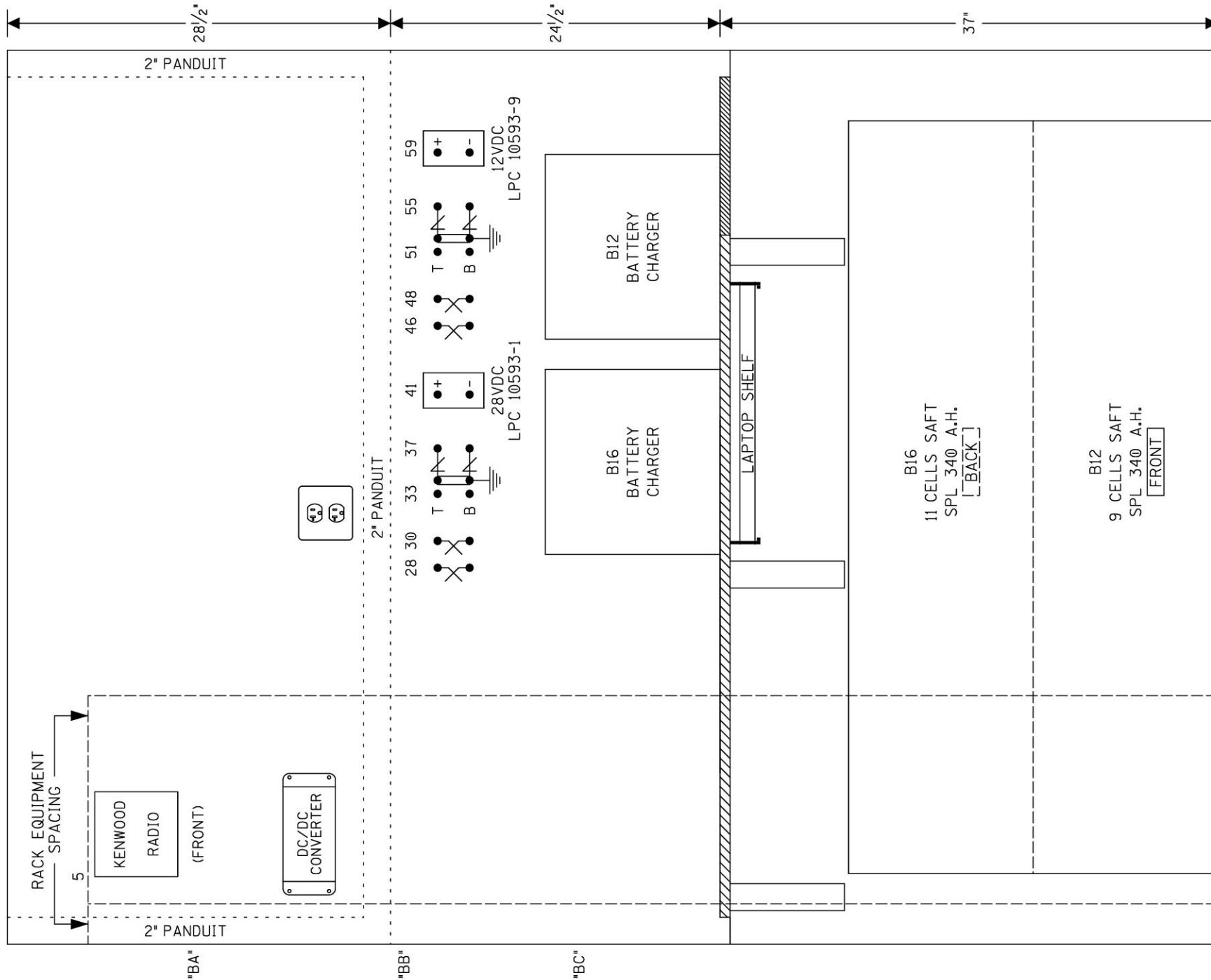
PROPERTY
 PENNSYLVANIA R.R.



SIDE C LAYOUT

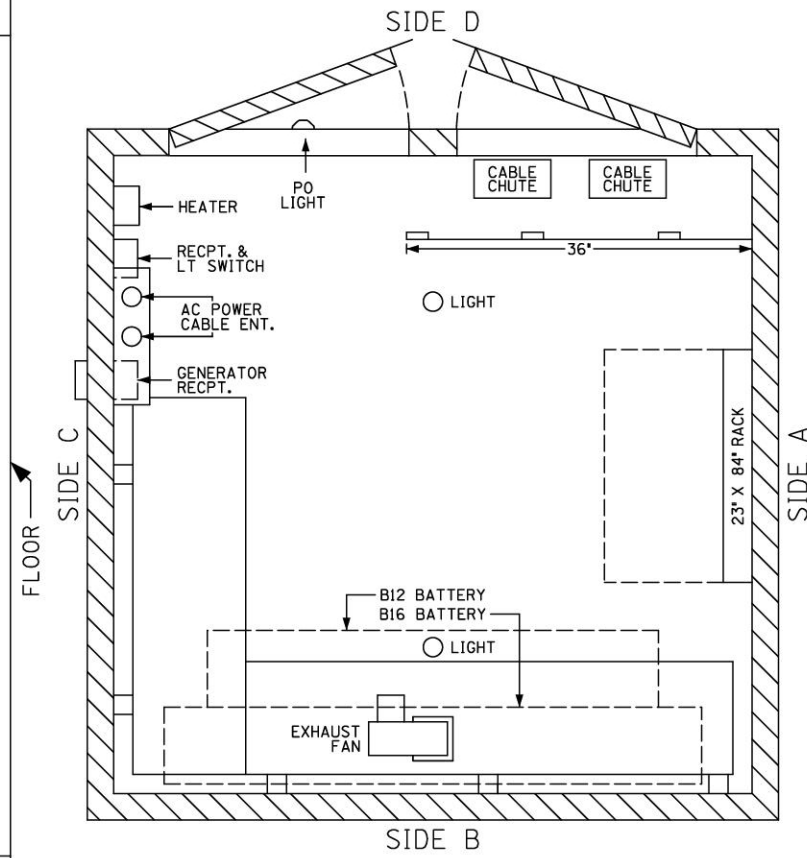
DESIGNED BY:	NS NORFOLK SOUTHERN	
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA	
IRE 10-04-21	FLGS AT CENTERVILLE RD (TR-408)	
CHECKED BY:	COLUMBIA SECONDARY	REV. 1
MMM 10-05-21	CADD or DWG. No. 13270735.021	SHEET No. 21
IN SERVICE:	- -	

PROPERTY
PENNSYLVANIA R.R.



***TOP VIEW**

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



SIDE B LAYOUT & TOP VIEW

DESIGNED BY:	NS NORFOLK SOUTHERN	
JWB 10-04-21	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: ZL-073.47
DRAWN BY:	ROHRERSTOWN, PA FLGS AT CENTERVILLE RD (TR-408)	
IRE 10-04-21	COLUMBIA SECONDARY	REV. 1
CHECKED BY:	CADD or	SHEET
MMM 10-05-21	DWG. No. 13270735.022	No. 22
IN SERVICE:	- -	

PROPERTY
PENNSYLVANIA R.R.