31

FILE

09-469-LR-FED

B. L. Sykes
Chief Engineer C&S Engineering
Norfolk Southern Corporation
1200 Peachtree Street, NE
Atlanta, GA 30309

September 3, 2009
CX0116825

RECEIVED
PUBLIC UTILITIES
COMMISSION
2009 SEP 11 PM
RAIL SECTION

Ms. Susan Kirkland
Ohio DOT
1980 W. Broad Street
Columbus, OH 43223

Dear Ms. Kirkland:

Per the ORDC letter dated June 3, 2009, regarding the above case for the upgrade of automatic grade crossing warning devices at McCracken Road in Cleveland, Cuyahoga County, Ohio, DOT: 524232N, Milepost: RD-112.98.

Although we cannot give you an exact date of installation at this time we can provide our average installation time, which is 9.1 months after authorization from the state. After this project is authorized, we will order material and schedule for installation once we have received approvals from ODOT's district office.

An extra copy of this letter is included with the enclosures. Please date stamp this extra copy and forward to Mr. R. S. Noe, Assistant General Attorney, Norfolk Southern Corporation. Three Commercial Place, Norfolk, Virginia 23510.

Upon receipt of this revised material, please initial, date and confirm via fax to 404-527-2901.

Sincerely,

B. L. Sykes

B. L. Sykes

Enclosures(s)

BLS/rhr/cp/csb

CC: R. S. Noe, NS Corporation, Norfolk, VA
George Martin, PUCO (w/plans, estimate & material list)
Mike Forte, (w/plans, estimate & material list)
Docketing Division (w/plans, estimate & material list)
P. A. Gray, NS Corporation, Roanoke, VA (w/estimate)

RECEIVED-DOCKETING DIV
2009 SEP 15 AM 8:29
PUCO

This is to certify that the images appearing are an accurate and complete reproduction of a case file document delivered in the regular course of business.
Technician SM Date Processed SEP 15 2009

Detailed Estimate for Grade Crossing Warning Devices

City/State: CLEVELAND, OH
MilePost: RD-112.98
State Proj. No.:
S&E Proj. No.: 10.1103
Man Days: 180

Road: MCCRACKEN RO
DOT/AAR: 524232N
County: CUYAHOGA
AFE: F11113
File Number: 061-10.899

Purchases - Others		
Meals and Lodging:	$24,192.00	
Rental of Equipment:	$42,840.00	
(2 Trucks, 1 Backhoe w/ Trailer		
Construction Supervision Vehicle:	$14,953.68	
Purchases - Other Total:		$81,985.68
Material And Additives		
Material Cost:	$138,432.00	
Sales and Use Tax:	$0.00	
Material Handling Freight:	$6,921.62	
Material Total:		$145,353.62
Labor And Additives		
Labor Cost:	$50,400.00	
(4 man crew at $1,120.00 a day for: 45 days)		
Payroll Tax & Overheads:	$66,951.36	
Preliminary Engineering:	$25,000.00	
Construction Supervision:	$28,234.08	
Labor Total:		$170,585.44
	Project Cost:	$397,924.74
	Scrap / Salvage Credit:	$0.00
	Project Total:	**$397,924.74**

Estimated on: 02-Sep-09

Estimated by: ndr3j

Estimate valid for 1 year from date of estimate

Norfolk Southern Railway

Highway Crossing Signalization Program - Material List

Do not substitute items without permission from S & E Engineering

City:	CLEVELAND
Road:	MCCRACKEN ROAD
Mile Post:	RD-112.98
Drawing Number:	35121129
State ProjectNumber:	
County:	CUYAHOGA
A A R Number:	524232N
Project Number:	10.1103
File Number:	061-10.899
New File Number:	CX0116825
A F E Number:	F11113
Store Number:	08388
Supervisor:	D.P. MCINTYRE
Tax Code:	3500

Vendor to supply the following copies after pricing:

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

Location: CLEVELAND OH S&E Proj. No.: 10.1103 AFE No.: F11113 Drawing No.: 35121129

Store No.: 08388 P.O.Number: Date Required: Date Shipped: Vendor: Safetran Systems Corp.

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Date Quan.	Date Quan.	Quantity Returned (Credit)	Special Instructions
3	670-360693-4	EA	$5.50	$16.50	AAR/DOT NUMBER PLATE/DECAL, ORDER 3 PER PROJECT. 60 DAY LEAD TIME. SUPPLIED BY S'TRAN.						
1	165-006505-4	EA	$1,051.54	$1,051.54	AC SERVICE, COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE						
23	670-119241-4	EA	$33.59	$772.57	ARRESTOR, LIGHTNING HEAVY DUTY CLEAR VIEW SAFETRAN 022585-1X						
13	105-871901-4	EA	$170.17	$2,212.21	BATTERY,GNB 265AH MODEL 50A11 SINGLE CELL 2.25 VOLTS						
2	670-980689-4	EA	$76.10	$152.20	BRACKET HIGH WIND, (RIGID 3'), WIG- 191036, WALRUS TUSK TYPE						
2	670-561375-4	EA	$1,197.90	$2,395.80	BRACKET, GATE SAVER, NEG385102GS, SPRING LOADED SWING AWAY ADAPTER FOR FIBERGLASS/ALUMINUM GATES, USE WITH GATE 38' AND LESS						
1	670-356949-4	EA	$61.67	$61.67	CABLE, 10' GENERATOR HOOK UP, SERRMI P/N 40524. FEMALE CONNECTOR						
1700	465-939422-4	LF	$2.28	$3,876.00	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL						
1100	465-292862-4	LF	$0.98	$1,078.00	CABLE, UG 2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR						
1000	465-292929-4	LF	$2.94	$2,940.00	CABLE, UG 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL						
1000	465-292945-4	LF	$1.22	$1,220.00	CABLE, UG 5-14, S-54 OKONITE 206-14-6885						
300	465-791835-4	FT	$2.63	$789.00	CABLE, UG AC ENTRANCE 3C#6-7X OKONITE FMPF-L 094-078 TR W/G 1 X 8 7X W010 BRZ TAPE 600V PRODUCT CODE 206-11-6070						
1	670-563176-4	EA	$2,364.32	$2,364.32	CANTILEVER, WT/F ARM 12' W/WALKWAY KIT SAFTRAN #071294-12NS1						
1	670-007189-4	EA	$157.53	$157.53	CHOKE, BATTERY SAFETRAN NO. 62648						
140	165-544477-4	FT	$3.41	$477.40	CONDUIT, 4"x10' PVC, SCHEDULE 80 BELL CONNECTOR AT ONE END, 1/2 PT. GLUE IN KIT 670-123298-4						
4	670-090450-4	EA	$86.46	$345.84	CONNECTOR, WELDED FAR RAIL HARMON A1000-2W						
4	670-486646-4	EA	$73.92	$295.68	CONNECTOR, WELDED NEAR RAIL HARMON A1000-1W						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER

Location: CLEVELAND OH S&E Proj. No.: 10.1103 AFE No.: F11113 Drawing No.: 35121129

Store No.: 08388 P.O.Number: Date Required: Date Shipped: Vendor: Safetran Systems Corp.

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Date Quan.	Date Quan.	Quantity Returned (Credit)	Special Instructions
1	670-005026-4	EA	$510.40	$510.40	CONVERTER/DRIVER, SINGLE UNIT DC EPC MODEL 2TC DC, 2 OUTPUTS FOR TRACK CIRCUITS UP TO 1000 FT.						
2	670-793404-4	EA	$1,189.32	$2,378.64	COUNTERWEIGHT PKAGE, 17-24'GATE S'TRAN S- MECH ONLY, STAINLESS, TO INCLUDE HUB, SUPPORT ARMS						
8	670-760012-4	EA	$40.02	$320.16	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. ====TO COVER 2 LAMPS====						
1	670-986650-4	EA	$348.44	$348.44	DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING X'ING EQUIPMENT CONTAINER						
6	670-228165-4	EA	$12.69	$76.14	EQUALIZER, SAFETRAN 022700-1X LESS BASE, MODERN NO. 700-1 SHUNT ARRESTER TRACK CIRCUITS CR 02-197950						
1	670-000004-4	EA	$700.00	$700.00	FCC LICENSE FOR MONITOR/RADIO						
6	670-000003-4	EA	$255.85	$1,535.10	FILL/STONE #57, QUANITY IS BASED ON TRUCK LOAD PLUS DELIVERY COST						
1	670-744631-4	EA	$3,134.67	$3,134.67	FOUNDATION, CFLS FOR SAFETRAN MODEL "WT/F" ARMS 12' TO 30' SINGLE MAST, DIXIE# S-10-3WS-C, 5'10" CR 02-205902						
3	670-015231-4	EA	$577.50	$1,732.50	FOUNDATION, DIXIE,S-2 GATE 2'6"X2'6"X5'6" ASSEMBLED						
2	670-257031-4	EA	$339.19	$678.38	GATE, ARM FIBERGLASS-ALUMINUM 17-24 FT., INCLUDES GATE GUARD FOR GATE LIGHT CABLE, NEG P/N 8002-244NFS/CG						
1	670-973409-4	EA	$36,649.65	$36,649.65	GCP 4000 2 TRK, REDUNDANT, (2TRK CHASSIS), WIRED RACK FOR 6X6 FARADAY, 2 EA SSCCIIII, 1 EA 20 AMP & 1 EA 40 AMP CRAIG CHARGER, WITH SEAR IIi, 2 RELAY RACKS, SAFETRAN T18811						
1	670-718743-4	EA	$45.52	$45.52	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-1000						
1	670-001853-4	EA	$44.23	$44.23	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-2800						
1	670-477991-4	EA	$317.90	$317.90	KIT, GROUNDING ASSY FOR AL I/S INCLUDES 8 GRD RDS,200'#4WIRE,12 4 WIRE ONE-SHOTS. ERICO SBK206						
2	670-123298-4	EA	$287.93	$575.86	KIT, HARDWARE SUPPLIES REQUIRED X'ING P'CKAGES. WEB CONNECTORS FOR SHUNT(8EA) TAPE, AMPS,P'GUM PAINT,SLEEVES,TAGS,GLUE, 100 EA WHITE TAGS,)NE CAN BLUE MARKING PAINT ETC...						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER

Location: CLEVELAND OH S&E Proj. No.: 10.1103 AFE No.: F11113 Drawing No.: 35121129

Store No.: 08388 P.O.Number: Date Required: Date Shipped: Vendor: Safetran Systems Corp.

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Date Quan.	Date Quan.	Quantity Returned (Credit)	Special Instructions
2	670-441677-4	EA	$682.49	$1,364.98	LAMP ASSY, 4" JURY ARM TIP & LANE LIGHT, USE WITH WT/F CANT ARM,1W (BACK) OR 1W (FRONT) IND. 20" BKGRD, FLX-12" W/BULB. ORDER 2 FOR 2W APPLICATION. SAFETRAN P/N 042003-001534						
1	670-816589-4	EA	$655.61	$655.61	LAMP ASSY, 5" MAST MTG. 1W IND. 20" BKGRD, (BACK) LTS.FLX -12W/BULB S'TRAN # 042003-001493						
2	670-764166-4	EA	$1,224.75	$2,449.50	LAMP ASSY, 5" MAST MTG. 2W IND. 20" BKGRD, FLX-12 W/BULB S'TRAN #042003-487XNS						
1	670-167654-4	EA	$655.26	$655.26	LAMP ASSY, FLX 12" LIGHT UNIT, USE WITH W &WT/F MAST,1W (FRONT)INDICATION FOR WT/F CANTILEVER MAIN MAST,SAFTRAN P/N 042003-489XNS						
6	165-643547-4	EA	$5.69	$34.14	LAMP, 18 WATT 10 VOLT S-11 SC BAY 18S11/1SC CLEAR RWY SIGNAL UJ-71463 GE						
7	255-590880-4	EA	$17.08	$119.56	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"						
1	670-179911-4	EA	$4,205.08	$4,205.08	MAST, WT/F ARMS, 12 W/LADDER KIT FOR 12'-20' WT/F ARMS, PN 071271-20NS						
2	670-850933-4	EA	$3,540.11	$7,080.22	MECHANISM, GATE MODEL S-60, WITH DEFROSTER AND MINI TRACKSIDE SENSOR S'TRAN # 0740007-X002B3						
5	670-000001-4	EA	$726.23	$3,631.15	MISC. MATERAIL/FILL						
1	000-000000-4	EA	$5,000.00	$5,000.00	MISC. UNDERGROUND BORING						
3	670-014233-4	EA	$815.26	$2,445.78	MODULE, DAX FOR 3000 GCP SAFETRAN #80016						
3	670-748403-4	EA	$429.82	$1,289.46	MODULE, INTERFACE ASSEMBLY FOR 3000GCP SAFETRAN# 80020						
3	670-014225-4	EA	$1,513.75	$4,541.25	MODULE, PROCESSOR FOR 3000 GCP SAFETRAN #80214						
3	670-014217-4	EA	$1,174.57	$3,523.71	MODULE, RELAY DRIVE FOR 3000 GCP SAFETRAN #80013						
6	670-014209-4	EA	$1,658.98	$9,953.88	MODULE, TRANSCEIVER FOR 3000 GCP SAFETRAN #80012						
1	670-317208-4	EA	$394.73	$394.73	MODULE, TRANSFER FOR 3000GCP SAFETRAN# 80028						
2	670-001355-4	EA	$64.77	$129.54	PACKAGE, HARDWARE SIGN 12 IN. (USE WITHWT/F MAST) MOUNTING, SERRMI A1250-8, HARMON @180004/0007,						

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4	670-001347-4	EA	$47.93	$191.72	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI A1250-5, HARMON @200965-000, OR						
1	255-646807-4	EA	$17.09	$17.09	PADLOCK, SAFETRAN PART NO. 030399-29X SCREW TYPE FOR CIR CONTROLLER AND BTY. BOX						
2	670-514605-4	EA	$10.30	$20.60	PINNACLE, W-C SECT 1-11, 4"& 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X						
5	670-259211-4	EA	$49.49	$247.45	PLUG BOARD KIT, TYPE B-1 & VOLTAGE TEST TERMINAL, SAFETRAN 420000-75X						
2	165-103293-4	EA	$75.41	$150.82	PROTECTOR, LIGHTNING & SURGE LPC 10560-51, 3 ELECTRODE WITH SPADE TERMINAL						
1	165-902002-4	EA	$308.00	$308.00	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL						
6	465-002899-4	EA	$36.06	$216.36	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES						
5	670-742096-4	EA	$43.30	$216.50	RELAY INTERFACE PROBE, ULTRATECH PN 16031-00						
4	670-707945-4	EA	$440.10	$1,760.40	RELAY, 02-411583 PLUG IN TYPE, NEUTRAL, ORD. B-1 500 OHMS						
1	670-148385-4	EA	$684.08	$684.08	RELAY, B-1, 0.5 OHM SAFETRAN 400515-11X BIASSED NEUTRAL HIGH RELEASE OR GRS A62-633						
6	670-790627-4	EA	$24.87	$149.22	RESISTOR ADJUSTABLE 0.63 OHM MINIMUM RESIST 0.068-OHM, ITEM 248 S-500 SAFETRAN P/N 029602-1X						
1	180-000029-4	EA	$26.29	$26.29	RESISTOR UNIT, 2W ADJUSTABLE SAFETRAN NO. 029602-6X FOR TRACK CIRCUITS CR 02-425807						
2	435-805560-4	EA	$6.25	$12.50	SAND, 25LB BAG FOR CABLE ENTRANCE INTO THE SHELTER						
1	670-027556-4	EA	$2,659.94	$2,659.94	SEARIII, ACCESSORY PACKAGE, W/2-ILOD, 1-E-BELL, 2-GTS, 1-GFT, 1-VHFC, WITHOUT MTSS/SEAR UNIT						
1	000-000068-4	EA	$9,905.00	$9,905.00	SHELTER BARE 6X8, ***NONSTANDARD***, ALUMN, FARADAY, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN. CONN. W/ADJUSTABLE PIERS,SAFTETRAN P/N 058400-68-8						
2	670-586967-4	EA	$42.98	$85.96	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT						
2	670-652773-4	EA	$466.63	$933.26	SHUNT, MULTI-FREQ. #62775-1543 SAFETRAN NARROW BAND						

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER

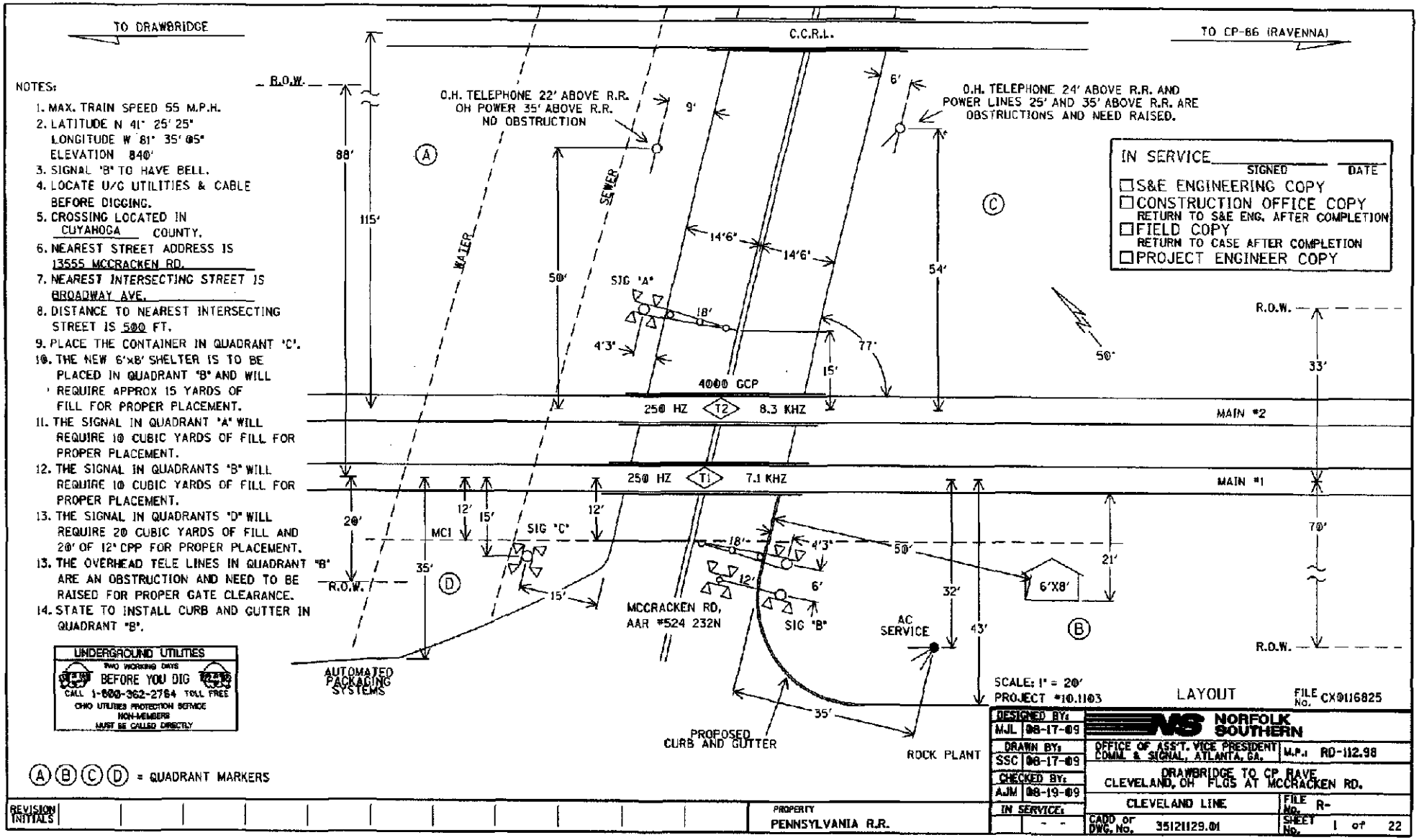
Location: CLEVELAND OH S&E Proj. No.: 10.1103 AFE No.: F11113 Drawing No.: 35121129

Store No.: 08388 P.O.Number: Date Required: Date Shipped: Vendor: Safetran Systems Corp.

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Date Quan.	Date Quan.	Quantity Returned (Credit)	Special Instructions
4	670-363348-4	EA	$375.00	$1,500.00	SHUNT,NARROW BAND - SAFETRAN 62770-211 (FOR CAB SIGNAL TERRITORY)						
1	670-397239-4	EA	$40.23	$40.23	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 12" MAST, SAFETRAN #T17216						
2	670-393331-4	EA	$37.43	$74.86	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215						
3	670-806648-4	EA	$68.73	$206.19	SIGN, X-BUCK, LESS HARDWARE, SAFETRAN 035200-X CR 02-490546						
3	670-353390-4	EA	$38.50	$115.50	SIGN, "2 TRACKS" LESS HARDWARE SAFETRAN 035207-2X						
2	670-330382-4	RL	$15.68	$31.36	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS. "WARNING STOP DIGGING"						
42	670-478560-4	EA	$21.52	$903.84	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR						
5	610-065626-4	EA	$18.18	$90.90	ULTRA-TECH 15206-01 CONNECTIVITY BLOCK FOR GRS B1 RELAY						
8	670-007238-4	EA	$119.07	$952.56	UNIT, THE INSTALLATION AND WIRING OF A DEVICE WHICH REQUIRE A MINIMUM OF FOUR WIRE CONNECT-						
60	165-298417-4	LF	$3.40	$204.00	Z-DNO-CONDUIT, STD RIGID STEEL ASA SPEC C 80.1 LATEST REV 1-1/4 IN 10 FT LENGTHS, ORDER IN LINIAR FEET BUT IN 10 FT LENGTHS ONLY.						

Total Material: $138,432.33

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER



NOTES:

1. MAX. TRAIN SPEED 55 M.P.H.
2. LATITUDE N 41° 25' 25"
   LONGITUDE W 81° 35' 05"
   ELEVATION 840'
3. SIGNAL "B" TO HAVE BELL.
4. LOCATE U/G UTILITIES & CABLE BEFORE DIGGING.
5. CROSSING LOCATED IN CUYAHOGA COUNTY.
6. NEAREST STREET ADDRESS IS 13555 MCCRACKEN RD.
7. NEAREST INTERSECTING STREET IS BROADWAY AVE.
8. DISTANCE TO NEAREST INTERSECTING STREET IS 500 FT.
9. PLACE THE CONTAINER IN QUADRANT "C".
10. THE NEW 6'x8' SHELTER IS TO BE PLACED IN QUADRANT "B" AND WILL REQUIRE APPROX 15 YARDS OF FILL FOR PROPER PLACEMENT.
11. THE SIGNAL IN QUADRANT "A" WILL REQUIRE 10 CUBIC YARDS OF FILL FOR PROPER PLACEMENT.
12. THE SIGNAL IN QUADRANTS "B" WILL REQUIRE 10 CUBIC YARDS OF FILL FOR PROPER PLACEMENT.
13. THE SIGNAL IN QUADRANTS "D" WILL REQUIRE 20 CUBIC YARDS OF FILL AND 20' OF 12" CPP FOR PROPER PLACEMENT.
13. THE OVERHEAD TELE LINES IN QUADRANT "B" ARE AN OBSTRUCTION AND NEED TO BE RAISED FOR PROPER GATE CLEARANCE.
14. STATE TO INSTALL CURB AND GUTTER IN QUADRANT "B".

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 TOLL FREE
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

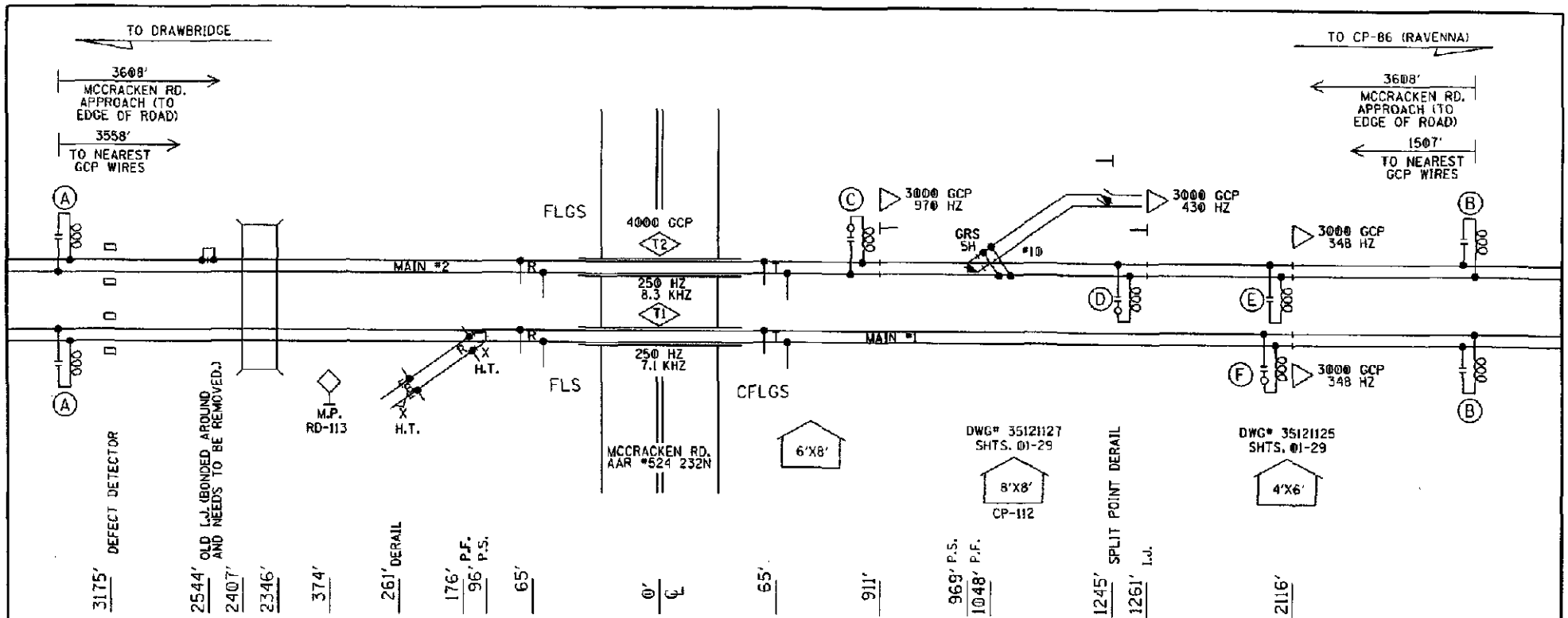
Ⓐ Ⓑ Ⓒ Ⓓ = QUADRANT MARKERS

SCALE: 1" = 20'
PROJECT #10.1103
LAYOUT
FILE No. CX9116825

DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: RD-112.98
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.
IN SERVICE: - -	CLEVELAND LINE — FILE No. R-
	CADD or DWG. No. 35121129.01 — SHEET No. 1 of 22

REVISION INITIALS

PROPERTY
PENNSYLVANIA R.R.



(A)- NBS 62770-250 (250HZ)

(B)- NBS 62780-1543 (348HZ)

(C)- NBS 62770-250 (250HZ) W/ 2800' DTL

(D)- NBS (970HZ) W/ 1000' DTL (EXISTING)

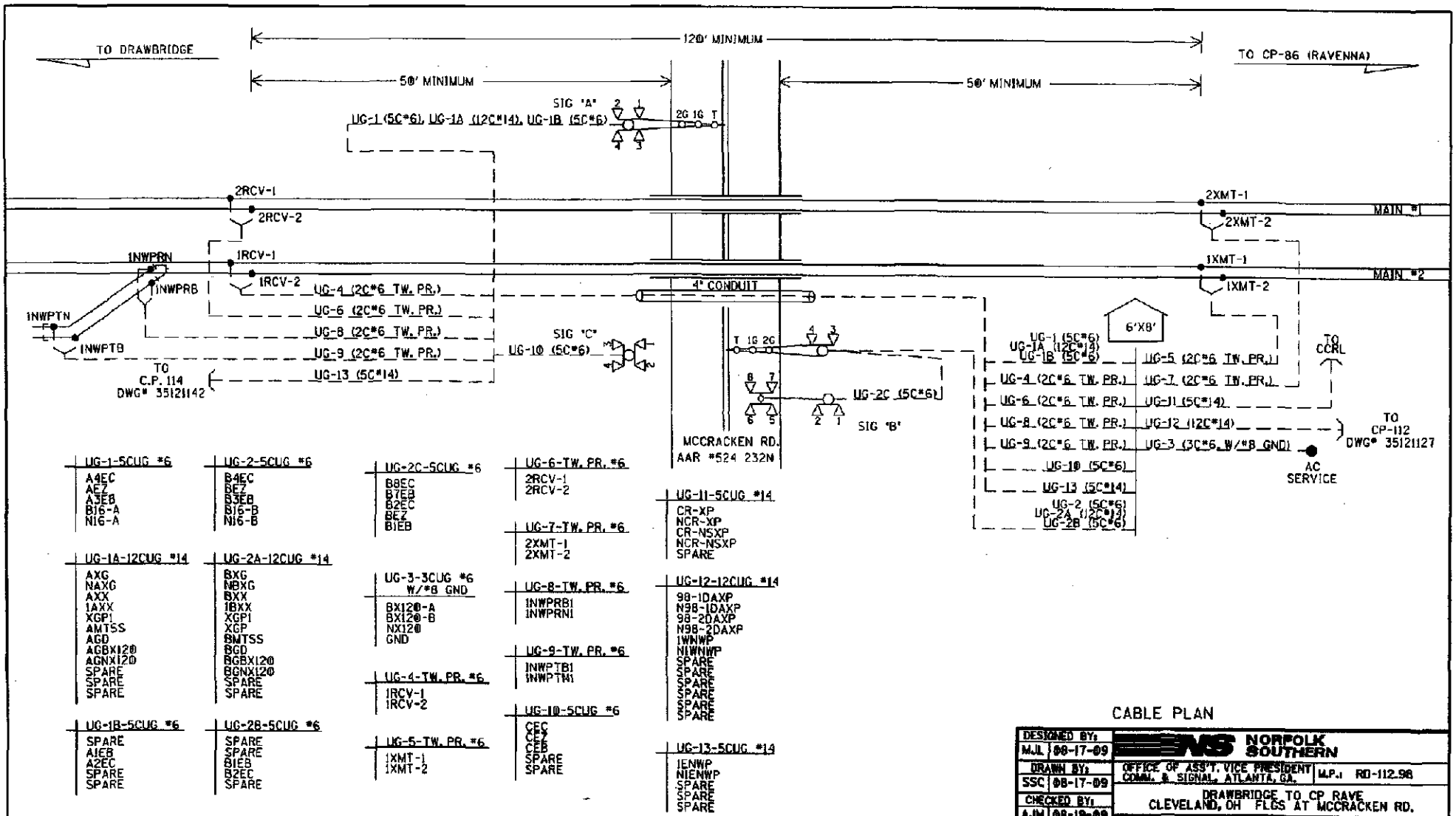
(E)- NBS (430HZ) (IN SHELTER) (EXISTING)

(F)- NBS 62770-250 (250HZ) W/ 1000' DTL (IN SHELTER)

PROFILE

DESIGNED BY: M.J.L 08-17-09	NORFOLK SOUTHERN
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: RD-112.98
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.
IN SERVICE: - -	CLEVELAND LINE — FILE No. R-
PROPERTY PENNSYLVANIA R.R.	CADD or DWG. No. 35121129.02 — SHEET No. 2 of 22

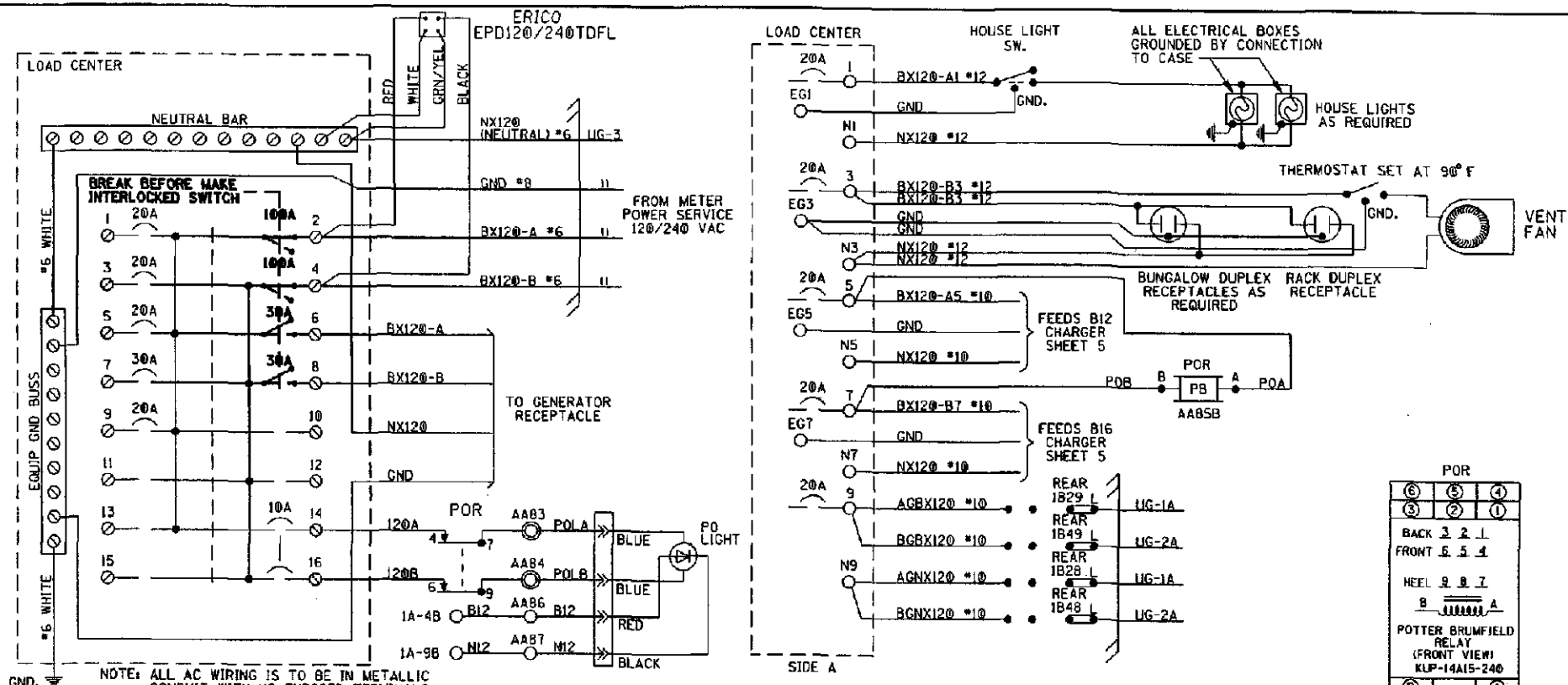
REVISION INITIALS



CABLE PLAN

DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN		
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.:	RD-112.98
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No.	R-
	CADD or DWG. No. 35121129.03	SHEET No.	3 of 22

REVISION INITIALS												PROPERTY
												PENNSYLVANIA R.R.

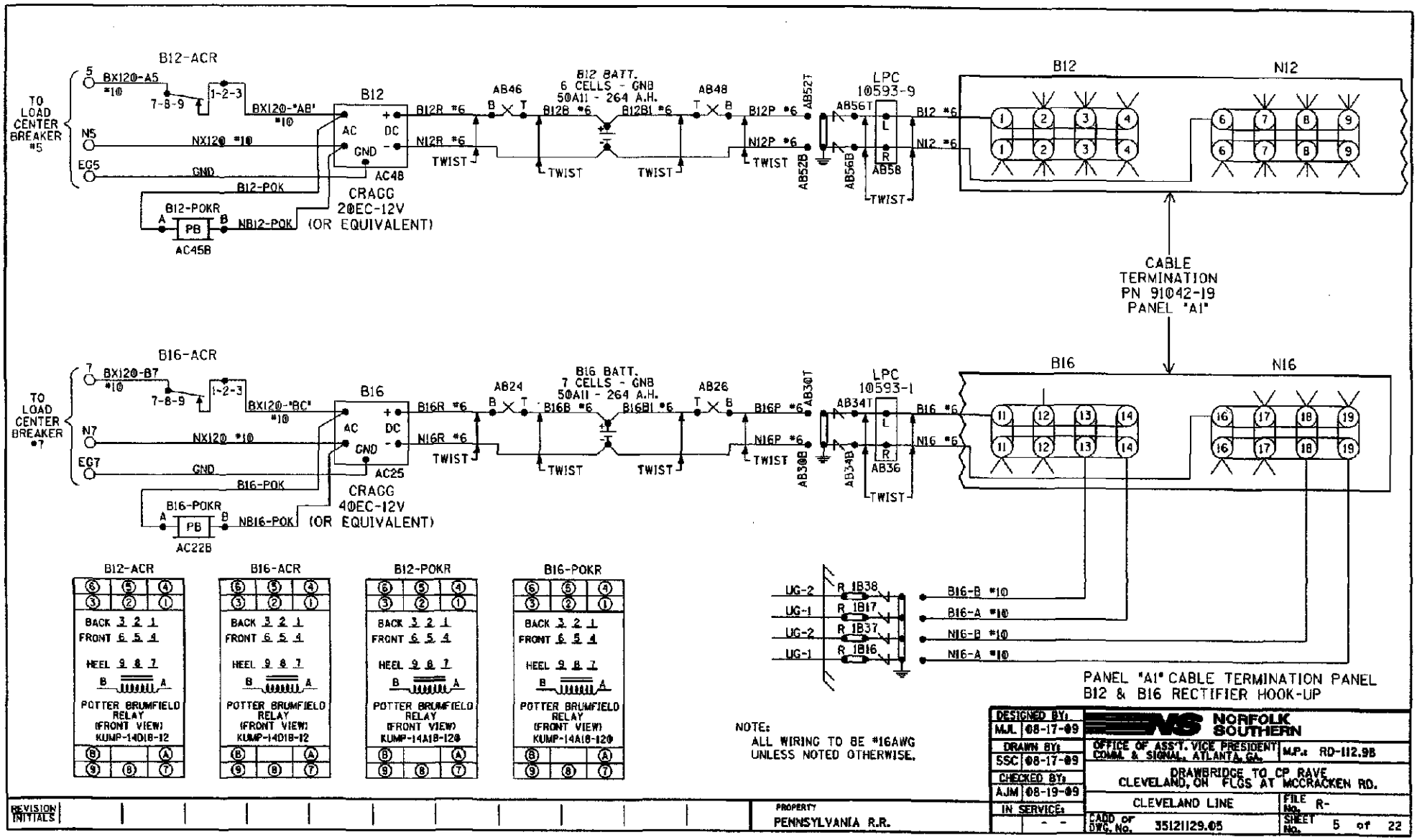


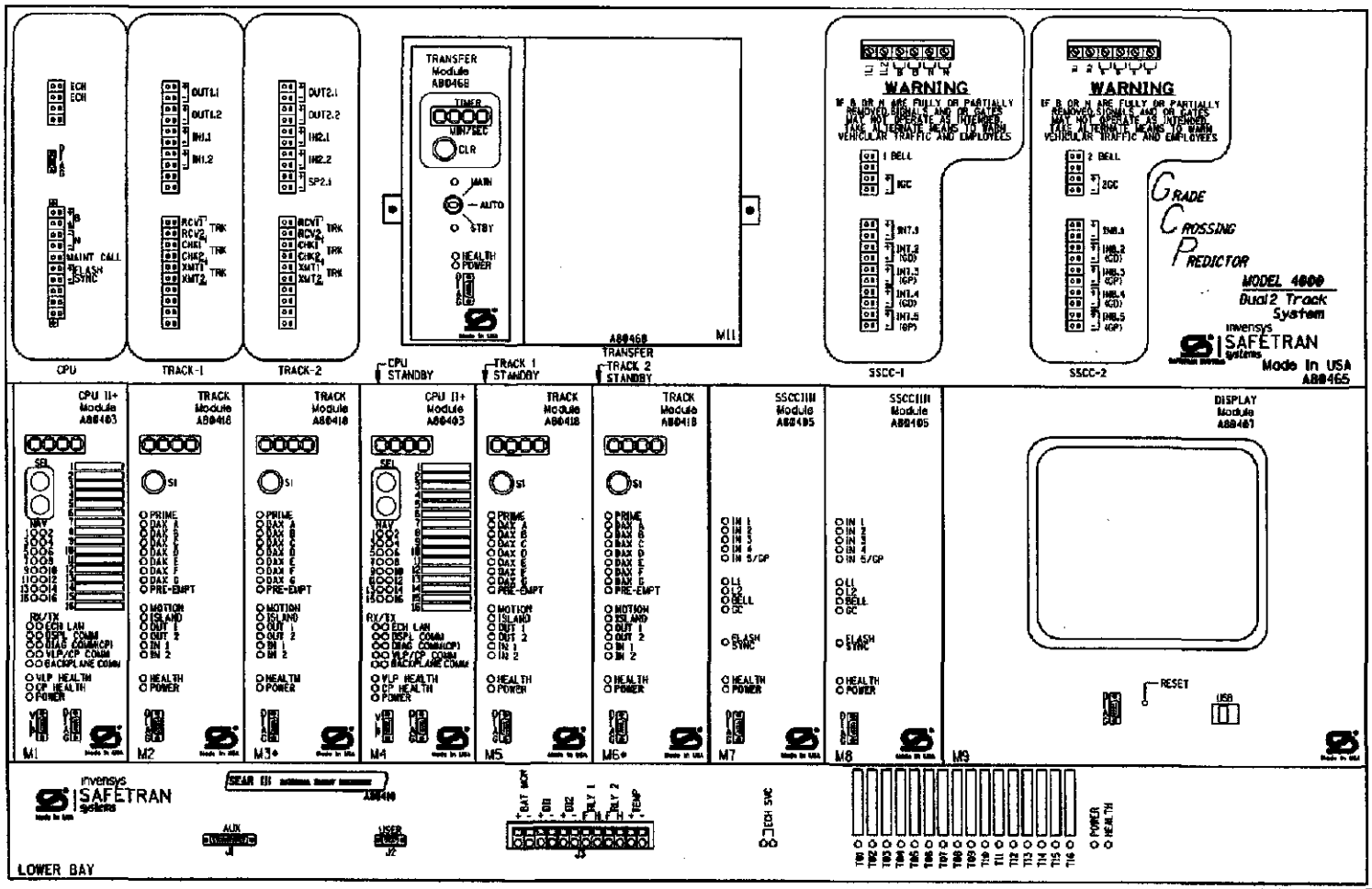
LOAD CENTER WIRING

DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN		
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: RD-112.98	
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No. R-	
	CADD or DWG. No. 35121129.04	SHEET No. 4 of 22	

REVISION INITIALS

PROPERTY PENNSYLVANIA R.R.


B12-ACR
TO LOAD CENTER BREAKER #5
5
BX120-A5 #10
7-8-9
1-2-3
BX120-"AB" #10
N5
NX120 #10
EG5
GND
B12-POK
B12-POKR
A
PB
B
NB12-POK
AC45B
B12
AC
DC
GND
AC48
CRAGG 20EC-12V (OR EQUIVALENT)
B12R #6
N12R #6
AB46
B12B #6
B12 BATT. 6 CELLS - GNB 50A11 - 264 A.H.
B12B1 #6
AB48
B12P #6
N12P #6
AB52T
AB52B
AB56T
AB56B
AB58
LPC 10593-9
B12 #6
N12 #6
TWIST
B12
N12
CABLE TERMINATION PN 91042-19 PANEL "A1"
B16-ACR
TO LOAD CENTER BREAKER #7
7
BX120-B7 #10
BX120-"BC" #10
N7
EG7
B16-POK
B16-POKR
NB16-POK
AC22B
B16
AC25
CRAGG 40EC-12V (OR EQUIVALENT)
B16R #6
N16R #6
AB24
B16B #6
B16 BATT. 7 CELLS - GNB 50A11 - 264 A.H.
B16B1 #6
AB26
B16P #6
N16P #6
AB30T
AB30B
AB34T
AB34B
AB36
LPC 10593-1
B16 #6
N16 #6
B16
N16
B12-ACR
B16-ACR
B12-POKR
B16-POKR
BACK 3 2 1
FRONT 6 5 4
HEEL 9 8 7
POTTER BRUMFIELD RELAY (FRONT VIEW) KUMP-14D18-12
KUMP-14A18-120
UG-2
UG-1
R 1B38
R 1B17
R 1B37
R 1B16
B16-B #10
B16-A #10
N16-B #10
N16-A #10
PANEL "A1" CABLE TERMINATION PANEL
B12 & B16 RECTIFIER HOOK-UP
NOTE:
ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
DESIGNED BY: M.J.L. 08-17-09
DRAWN BY: SSC 08-17-09
CHECKED BY: AJM 08-19-09
IN SERVICE: - -
NORFOLK SOUTHERN
OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
M.P.: RD-112.9B
DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.
CLEVELAND LINE
FILE No. R-
CADD DWG. No. 35121129.05
SHEET No. 5 of 22
REVISION INITIALS
PROPERTY PENNSYLVANIA R.R.



WARNING

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

CAUTION

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

ATTENTION!

ENSURE THE DISPLAY MODULE HEATER IS DISABLED. LEAVING THE DISPLAY HEATER ENABLED WILL REDUCE THE AMOUNT OF BATTERY STANDBY TIME IN THE EVENT OF AN AC POWER FAILURE.

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

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

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

DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: RD-112.98
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.
IN SERVICE: - -	CLEVELAND LINE — FILE No. R-
CADD or DWG. No. 35121129.06	SHEET No. 6 of 22

REVISION INITIALS

PROPERTY PENNSYLVANIA R.R.

Minimum Program Steps Report

Location and SIN

DOT Number: 524232N
Milepost Number: RD-112.98
Site Name: MCCRACKEN RD

SIN: 755018602816 *

* Parameter is part of office check number calculation.

MCF and Template Selection

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

Template = 1A:6 Trk BI *

* Parameter is part of office check number calculation.

Minimum Program Steps

TEMPLATE: module configuration
Track 2/RIO 1 Slot = Track *

TEMPLATE: track 1-BI, Island
Track 1 : GCP Frequency = 250 Hz
Track 1 : Approach Distance = 3558 ft
Track 1 : Prime Warning Time = 39 sec
Track 1 : Prime UAX = IP *
Track 1 : GCP Transmit Level = High
Track 1 : IslFrequency = 7.1 kHz

TEMPLATE: track 2-BI, Island
Track 2 : GCP Frequency = 250 Hz
Track 2 : Approach Distance = 3558 ft
Track 2 : Prime Warning Time = 39 sec
Track 2 : Prime UAX = IP *
Track 2 : GCP Transmit Level = High
Track 2 : IslFrequency = 8.3 kHz

TEMPLATE: AND 1 XR
AND 1 Enable Used = Yes *

TEMPLATE: SSCC
SSCC 1 : Lamp NeutralTest = On
SSCC 2 : Lamp NeutralTest = On

TEMPLATE: OOS
OOS Control = Display+OOS IPs *
T2 OOS Control = OOS Input 1 *

EMPLATE: OP assignment 1
OUT 1.1 = AND 2 *

TEMPLATE: IP assignment 1
IN 1.1 = AND 1 XR Enable *
IN 1.2 = T1 Prime UAX *
IN 2.1 = T2 Prime UAX *

TEMPLATE: IP assignment SSCC
IN 7.3 = T1 Prime UAX *
IN 8.2 = Out Of Service IP 1 *

GCP: track 1
Track 1 : GCP Freq Category = Other *
Track 1 : Island Distance = 130 ft *

GCP: track 1 enhanced det
Track 1 : Inbound PS Sensitivity = Off *

GCP: track 2
Track 2 : GCP Freq Category = Other *
Track 2 : Island Distance = 130 ft *

GCP: track 2 enhanced det
Track 2 : Inbound PS Sensitivity = Off *

AND: track Anding
AND 2 Used = Yes *

AND: AND 2
AND 2 Track 1 = Prime *
AND 2 Track 2 = Prime *

ADVANCED: site options
Daylight Savings = On *

SSCC: 1
SSCC 1 : Flash Rate = 40 *

SSCC: 2
SSCC-2 Activation = AND 2 *
SSCC-2 Gate Delay = 13 sec *
SSCC 2 : Flash Rate = 40 *

SEAR
SEAR Subnode = 3 *
DI 1 = Gnd Flt Tester 1 *
Rly 1 = Ground Fault Test *
Rly 2 = AC Control *

SEAR: slot 7-8 Inputs
IN 7.1 = TSS 1 *
IN 8.1 = TSS 2 *
IN 8.3 = POK 2 *

* Parameter is part of office check number calculation.

Check Numbers

Office Check No. (DT 4.6.0): 1874E1A3
Office Check Number: 1874E1A3
Config. Check Number: 5AB259F9
(Based on MCF Revision 021)

Parameters not part of office check number calculation:

Track 1 : GCP Frequency = 250 Hz
Track 1 : Approach Distance = 3558 ft
Track 1 : Prime Warning Time = 39 sec
Track 1 : GCP Transmit Level = High
Track 1 : IslFrequency = 7.1 kHz
Track 2 : GCP Frequency = 250 Hz
Track 2 : Approach Distance = 3558 ft
Track 2 : Prime Warning Time = 39 sec
Track 2 : GCP Transmit Level = High
Track 2 : IslFrequency = 8.3 kHz
SSCC 1 : Lamp NeutralTest = On
SSCC 2 : Lamp NeutralTest = On

Comments

(none)

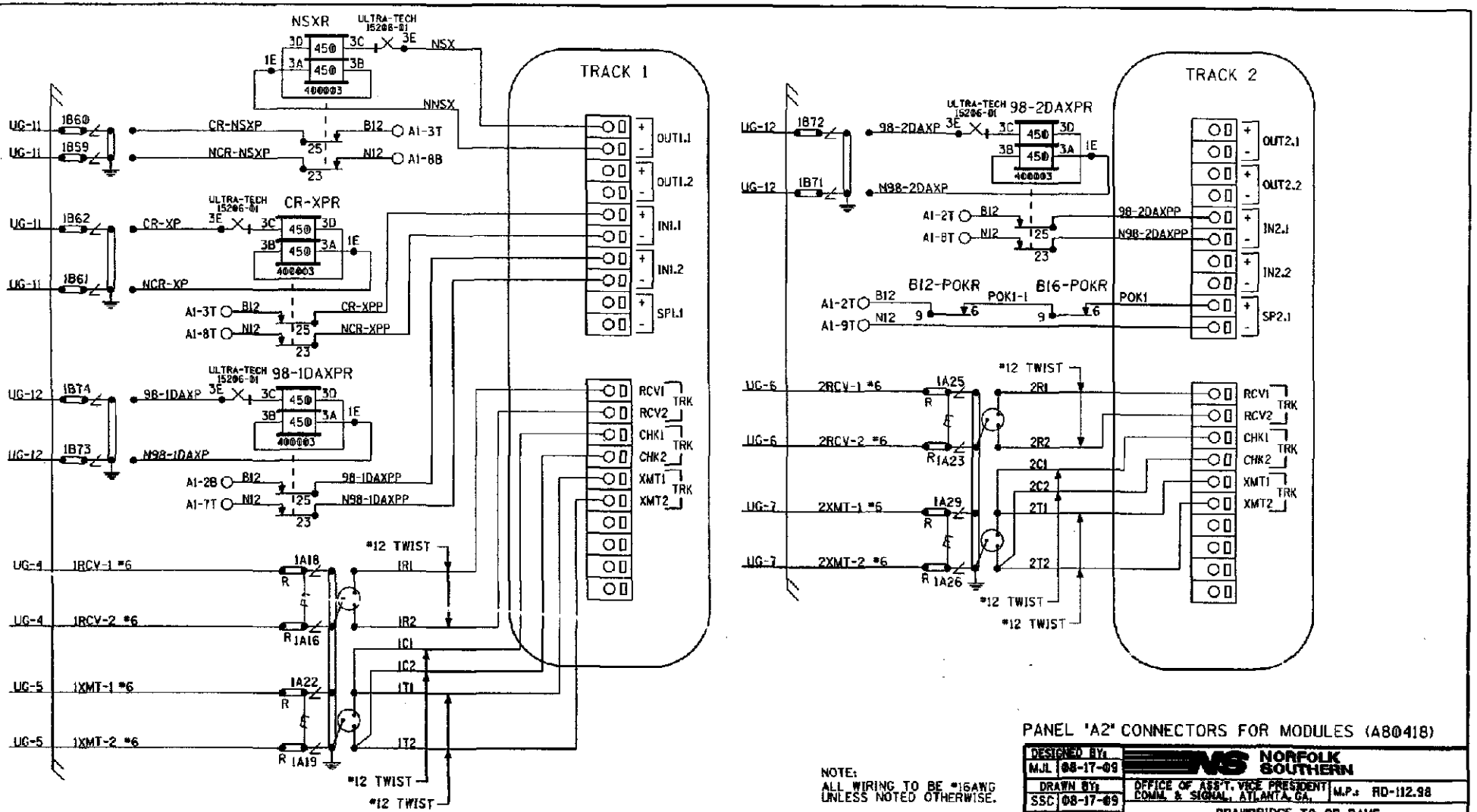
Configuration Package File

Filename: 35121129.pac

4000 GCP PROGRAMMING SETUP

DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN		
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: RD-112.98	
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No. R-	
	CADD or DWG. No. 35121129.07	SHEET No. 7 of 22	

REVISION INITIALS													PROPERTY
													PENNSYLVANIA R.R.

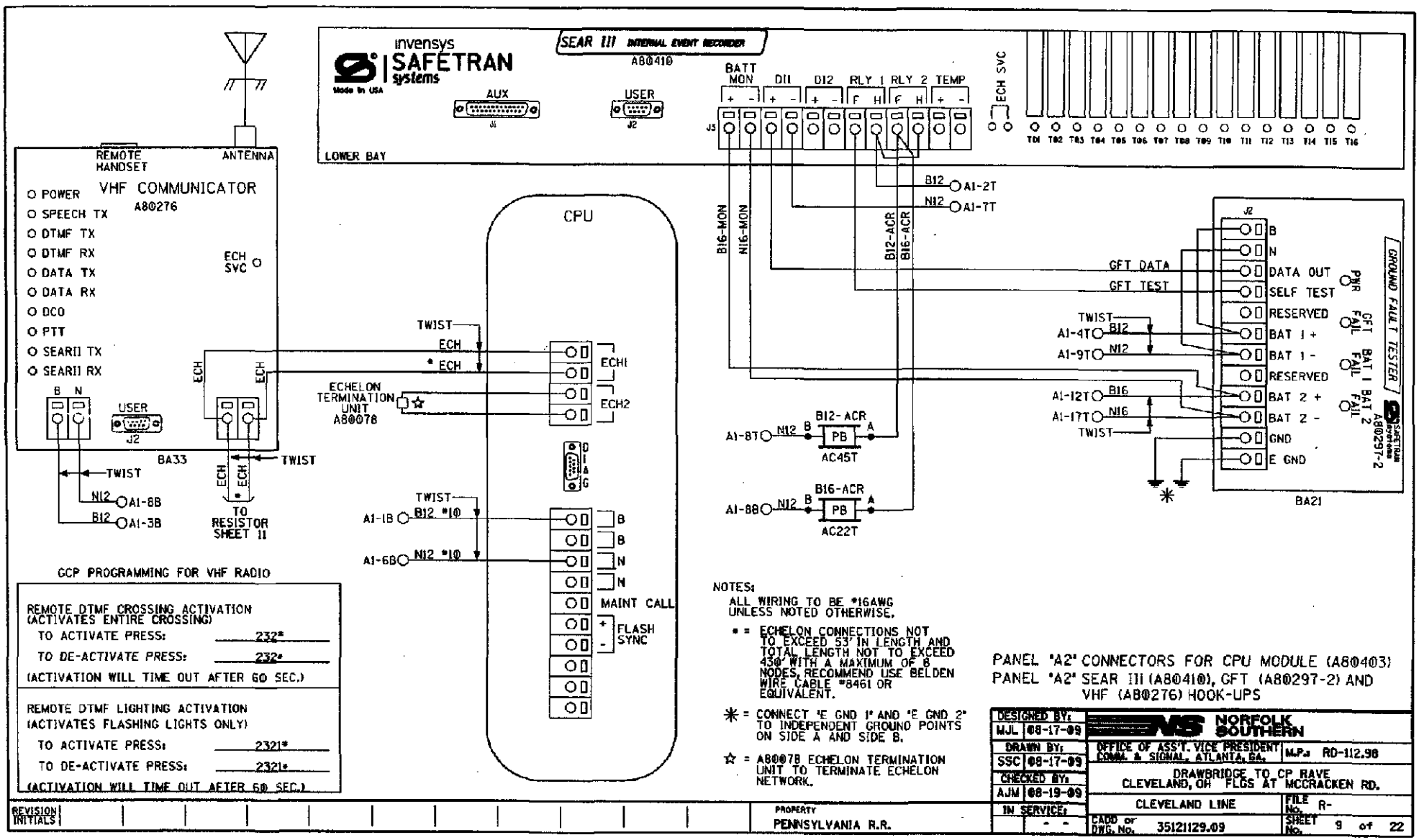


PANEL "A2" CONNECTORS FOR MODULES (A80418)

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

DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN		
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: RD-112.98	
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No. R-	
	CADD or DWG. No. 35121129.08	SHEET No. 8 of 22	

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GCP PROGRAMMING FOR VHF RADIO

REMOTE DTMF CROSSING ACTIVATION (ACTIVATES ENTIRE CROSSING)	
TO ACTIVATE PRESS:	232*
TO DE-ACTIVATE PRESS:	232*
(ACTIVATION WILL TIME OUT AFTER 60 SEC.)	
REMOTE DTMF LIGHTING ACTIVATION (ACTIVATES FLASHING LIGHTS ONLY)	
TO ACTIVATE PRESS:	2321*
TO DE-ACTIVATE PRESS:	2321*
(ACTIVATION WILL TIME OUT AFTER 60 SEC.)	

NOTES:

ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.

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

✳ = CONNECT 'E GND 1' AND 'E GND 2' TO INDEPENDENT GROUND POINTS ON SIDE A AND SIDE B.

☆ = A80078 ECHELON TERMINATION UNIT TO TERMINATE ECHELON NETWORK.

PANEL "A2" CONNECTORS FOR CPU MODULE (A80403)
PANEL "A2" SEAR III (A80410), GFT (A80297-2) AND VHF (A80276) HOOK-UPS

DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN		
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: RD-112.98	
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No. R-	
	CADD or DWG. No. 35121129.09	SHEET No. 9 of 22	

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											PENNSYLVANIA R.R.

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

	SITE SET UP PROCEDURE	
	FUNCTION	LED DISPLAY
	DATE/TIME	
	AUTOMATIC DST ADJUSTMENT	YES
	TIME ZONE	EST
	SITE NAME	MCCRACKEN RD.
	MILEPOST	*RD-112.98*
	DOT *	524232N
	TESTER TYPE	CROSSING
	DATE FORMAT	MM-DD-YYYY
	TEMP FORMAT	FAHRENHEIT
	INDICATE HOLD (SEC)	0
	INDICATE REFRESH (SEC)	60
	SITE ATCS	7.550.186.028.03.01
	SITE TYPE	NO COMMUNICATION
***	OFFICE ATCS ADDRESS	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	NONE
****	USER PORT	BAUD 57600, N, 8, 1, NONE
****	AUX PORT	BAUD 9600, N, 8, 1, NONE

VERIFY NUMBER OF BULBS: SENSOR #1	
CURR 1: LAMP SET UP	7 BULBS
CURR 2: LAMP SET UP	7 BULBS

VERIFY NUMBER OF BULBS: SENSOR #2	
CURR 1: LAMP SET UP	5 BULBS
CURR 2: LAMP SET UP	5 BULBS

	CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
	THE QUESTION	SELECT FROM MENU OPTION
	RESET NAMES AND MODULES?	YES
	RAILROAD NUMBER	550
	CROSSING CONFIGURATION	NORMAL
	AND 1 USED AS XR?	YES
	AND 2 USED AS XR?	NO
	AND 3 USED AS XR?	NO
	AND 4 USED AS XR?	NO
	AND 5 USED AS XR?	NO
	AND 6 USED AS XR?	NO
	AND 7 USED AS XR?	NO
	AND 8 USED AS XR?	NO
*	XR CONTROLLED BY FOREIGN RR	YES
	ENTRANCE GATES	2
*	GATES CONTROLLED BY FOREIGN RR	
	GATE POSITION FAIL TIME (SECONDS)	20
	BATTERY BANKS	2
	BATTERY MON USED	YES
	INTERNAL CROSSING CONTROLLERS	2
	EXTERNAL CROSSING CONTROLLERS	0
	VHF COMMUNICATOR	YES
	DTMF ACTIVATION	YES
*****	ACTIVATION CODE	232
	ACTIVATION TIMEOUT (SECONDS)	60
	ILOD MODULES	2
	ANY LED BULBS USED	NO
	AUTO INSPECTIONS	NO
	BELL SENSORS	1
**	BELL SENSOR TSS1	NO
**	BELL SENSOR TSS2	YES
**	BELL SENSOR TSS3	NO
**	BELL SENSOR TSS4	NO
**	BELL SENSOR TSS5	NO
**	BELL SENSOR TSS6	NO
**	BELL SENSOR TSS7	NO
**	BELL SENSOR TSS8	NO

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

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

NOTES:

* = DISPLAYED IF CROSSING CONFIGURATION IS SPLIT GATE

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

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

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

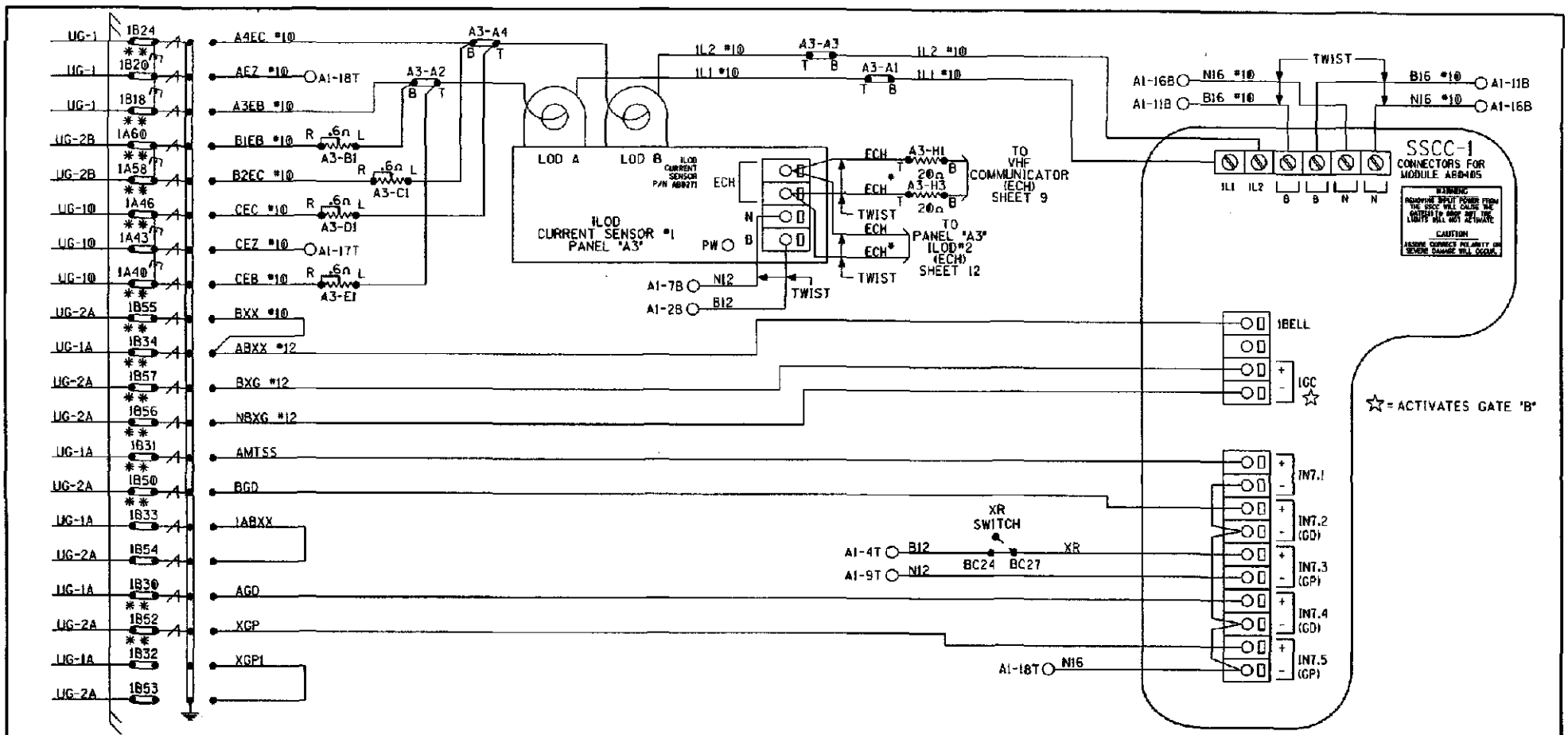
***** = USE LAST 3 NUMBERS FROM DOT NUMBER

SEAR III PROGRAMMING SETUP

DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN		
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.:	RD-112.98
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLOS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No.	R-
	CADD or DWG. No. 35121129.10	SHEET No.	10 of 22

REVISION INITIALS

PROPERTY PENNSYLVANIA R.R.



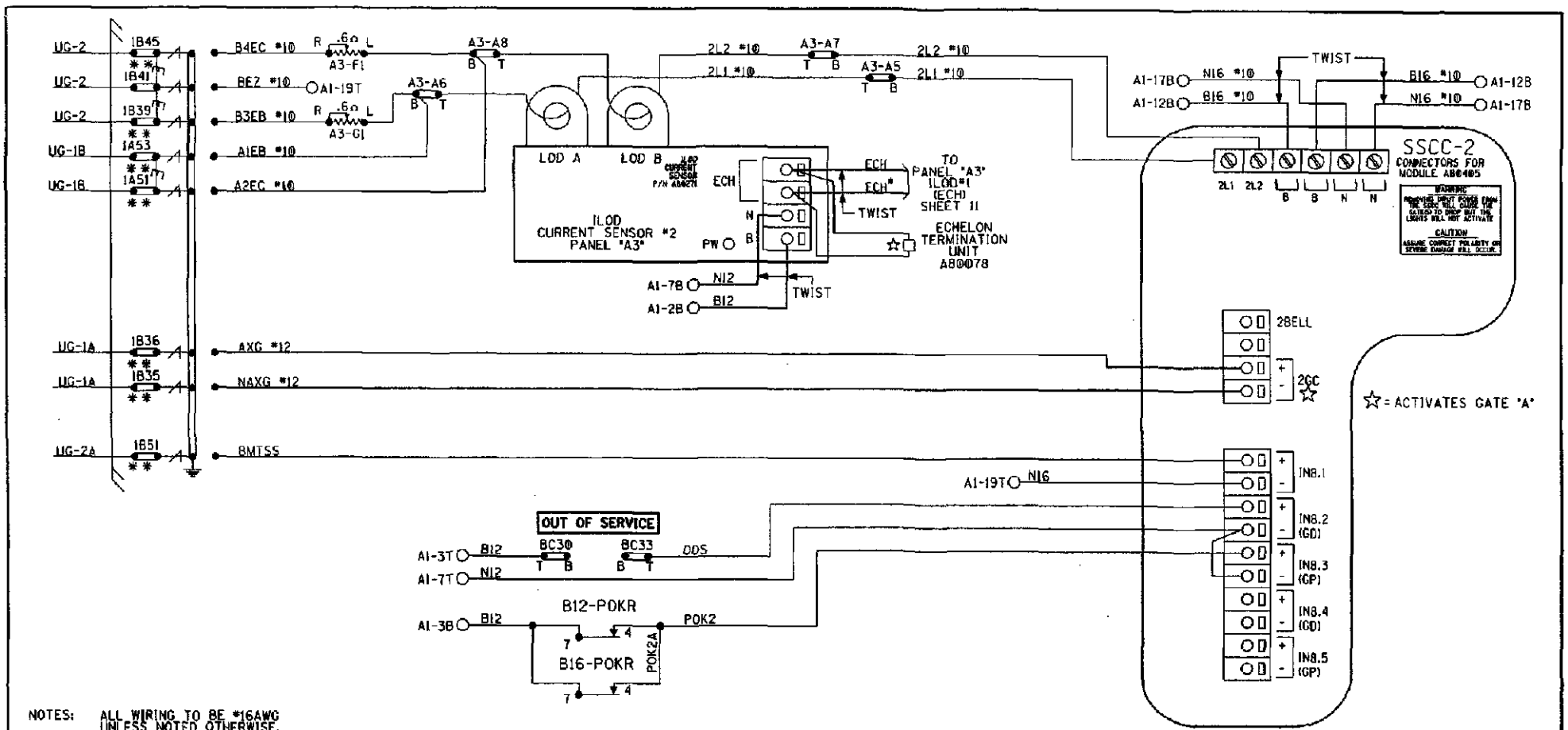
PANEL 'A2' CONNECTORS FOR SSCC*1 MODULE (A80405)
PANEL 'A3' ILOD*1 (A80271) HOOK-UP

NOTES:
1. ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
2. * = ECHELON CONNECTIONS NOT TO EXCEED 53' IN LENGTH AND TOTAL LENGTH NOT TO EXCEED 430' WITH A MAXIMUM OF 8 NODES. RECOMMEND USE BELDEN WIRE CABLE #8461 OR EQUIVALENT.
3. ** = TEST LINKS MUST BE OPENED TEMPORARILY FOR NEW COLD START OF NEW OR REPLACEMENT SSCC MODULE AND CAN ONLY BE CLOSED IN SEQUENCE WITH MFR. INSTRUCTIONS: SECTION 8.8 OF THE GCP 4000 REFERENCE MANUAL.

DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN
DRAWN BY: SSC 08-17-09	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: RD-112.98
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.
IN SERVICE: - -	CLEVELAND LINE FILE No. R-
	CADD or DWG. No. 35121129.11 SHEET No. 11 of 22

REVISION INITIALS

PROPERTY PENNSYLVANIA R.R.



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

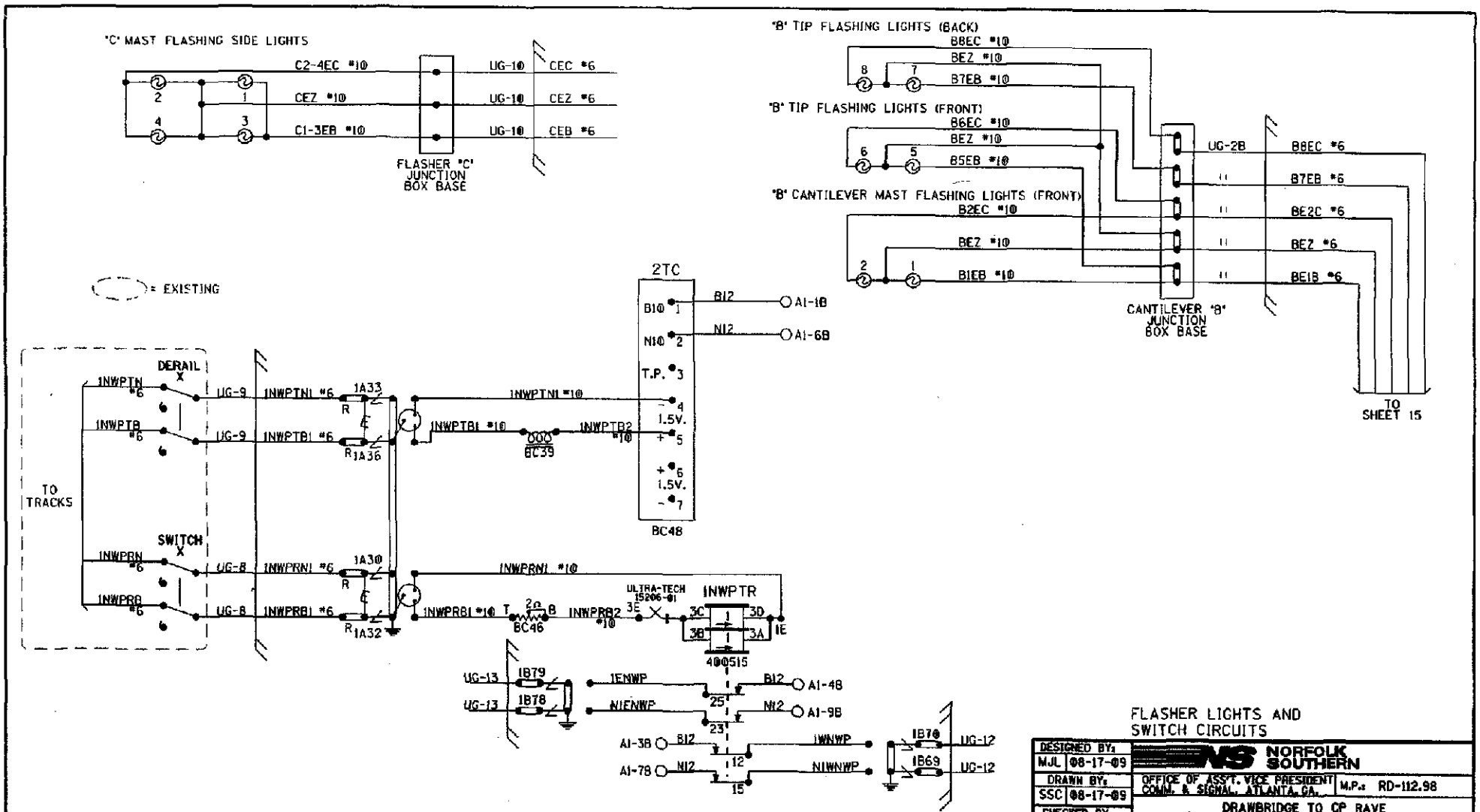
* = ECHELON CONNECTIONS NOT TO EXCEED 53' IN LENGTH AND TOTAL LENGTH NOT TO EXCEED 430' WITH A MAXIMUM OF 8 NODES, RECOMMEND USE BELDEN WIRE CABLE #8461 OR EQUIVALENT.

** = TEST LINKS MUST BE OPENED TEMPORARILY FOR NEW COLD START OF NEW OR REPLACEMENT SSCC MODULE AND CAN ONLY BE CLOSED IN SEQUENCE WITH MFR. INSTRUCTIONS: SECTION 8.8 OF THE GCP 4000 REFERENCE MANUAL.

☆ = A80078 ECHELON TERMINATION UNIT TO TERMINATE ECHELON NETWORK.

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

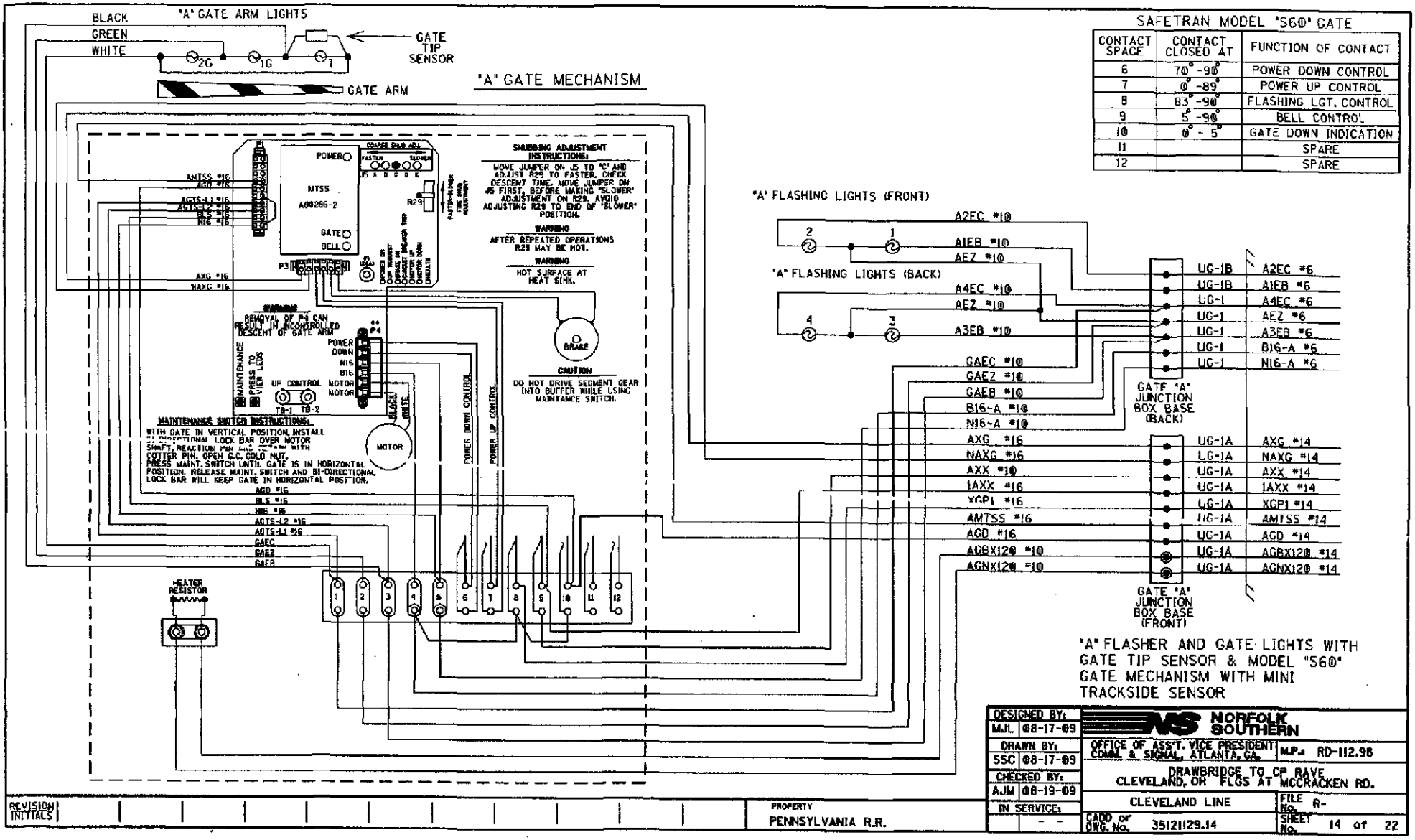
REVISION INITIALS		PROPERTY: PENNSYLVANIA R.R.	
DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN		
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: RD-112.98	
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No. R-	
	CADD or DWG. No. 35121129.12	SHEET No. 12 of 22	



FLASHER LIGHTS AND SWITCH CIRCUITS

DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN		
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: RD-112.98	
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No. R-	
	CADD or DWG. No. 35121129.13	SHEET No. 13 of 22	

| REVISION INITIALS | | |



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

REVISION INITIALS		PROPERTY: PENNSYLVANIA R.R.	DESIGNED BY: MJL 08-17-09
			DRAWN BY: SSC 08-17-09
			CHECKED BY: AJM 08-19-09
			IN SERVICE: - -

NORFOLK SOUTHERN

OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: RD-112.98

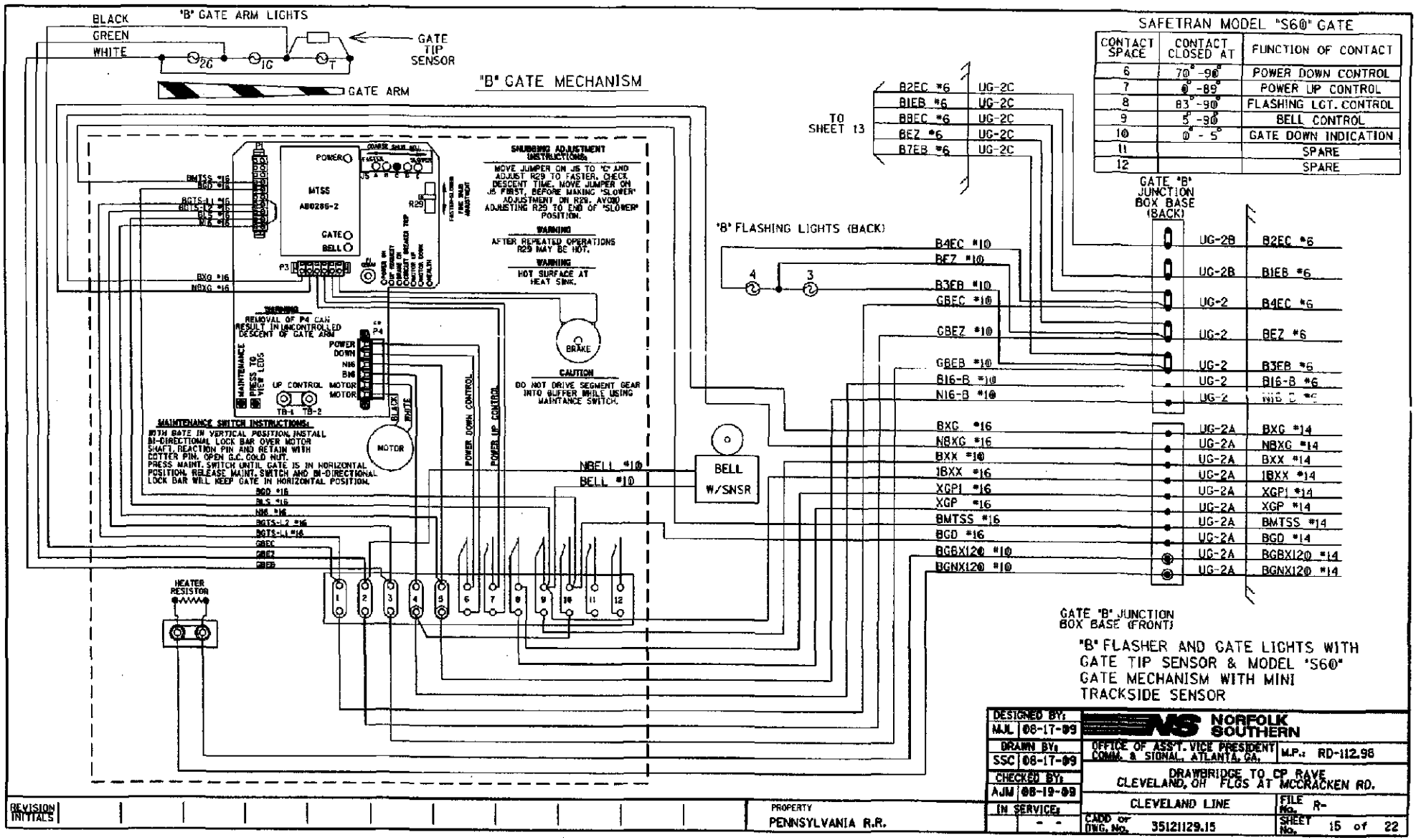
DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLOS AT MCCRACKEN RD.

CLEVELAND LINE

FILE No. R-

CADD or DWG. No. 35121129.14

SHEET No. 14 of 22



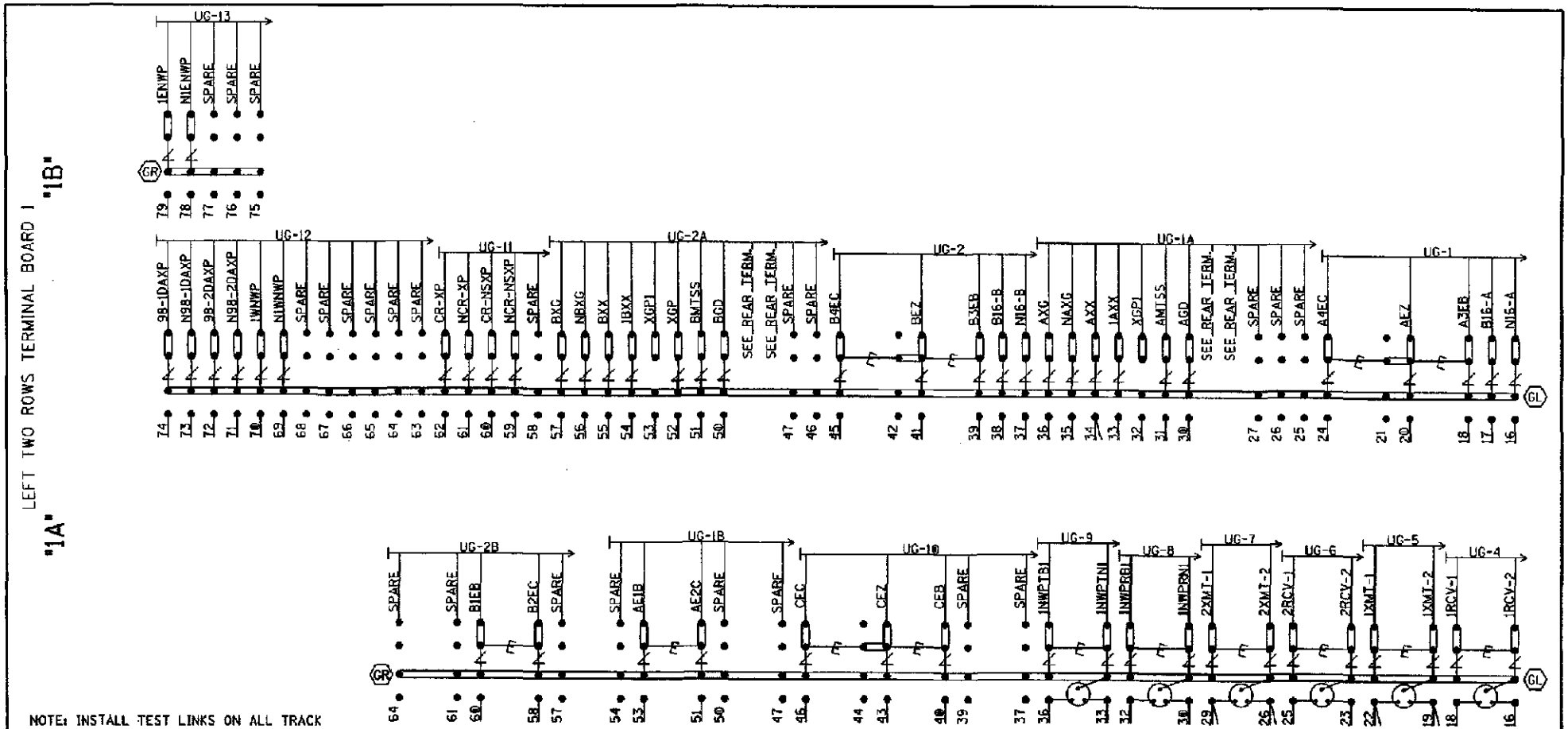
GATE 'B' JUNCTION BOX BASE (FRONT)

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

DESIGNED BY: MJL 08-17-99	NORFOLK SOUTHERN
DRAWN BY: SSC 08-17-99	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. — M.P.: RD-112.98
CHECKED BY: AJM 08-19-99	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.
IN SERVICE: - -	CLEVELAND LINE — FILE No. R-
	CADD or DWG. No. 35121129.15 — SHEET No. 15 of 22

REVISION INITIALS

PROPERTY PENNSYLVANIA R.R.



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

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

= Heavy Duty Equalizer (@22700-1X)

= Clearview Lightning Arrester (@22585-1X)

= LPC-10560-51

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

BACKBOARD DETAIL - 1A & 1B

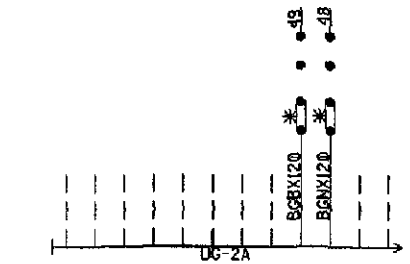
DESIGNED BY: M.J.L. 08-17-09	NORFOLK SOUTHERN		
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: RD-112.98	
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No. R-	
	CADD or DWG. No. 35121129.16	SHEET No. 16 of 22	

REVISION INITIALS											PROPERTY
											PENNSYLVANIA R.R.

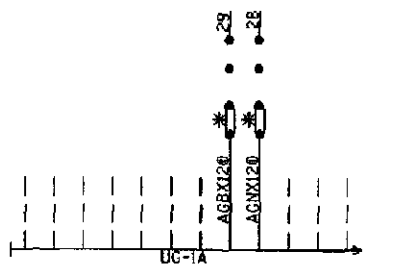
REAR VIEW OF LEFT TWO ROWS TERMINAL BOARD 1

"1A"

"1B"



(SEE PREVIOUS SHEET FOR OTHER WIRES IN CABLE)



(SEE PREVIOUS SHEET FOR OTHER WIRES IN CABLE)

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

* = CLOSED DURING WINTER MONTHS

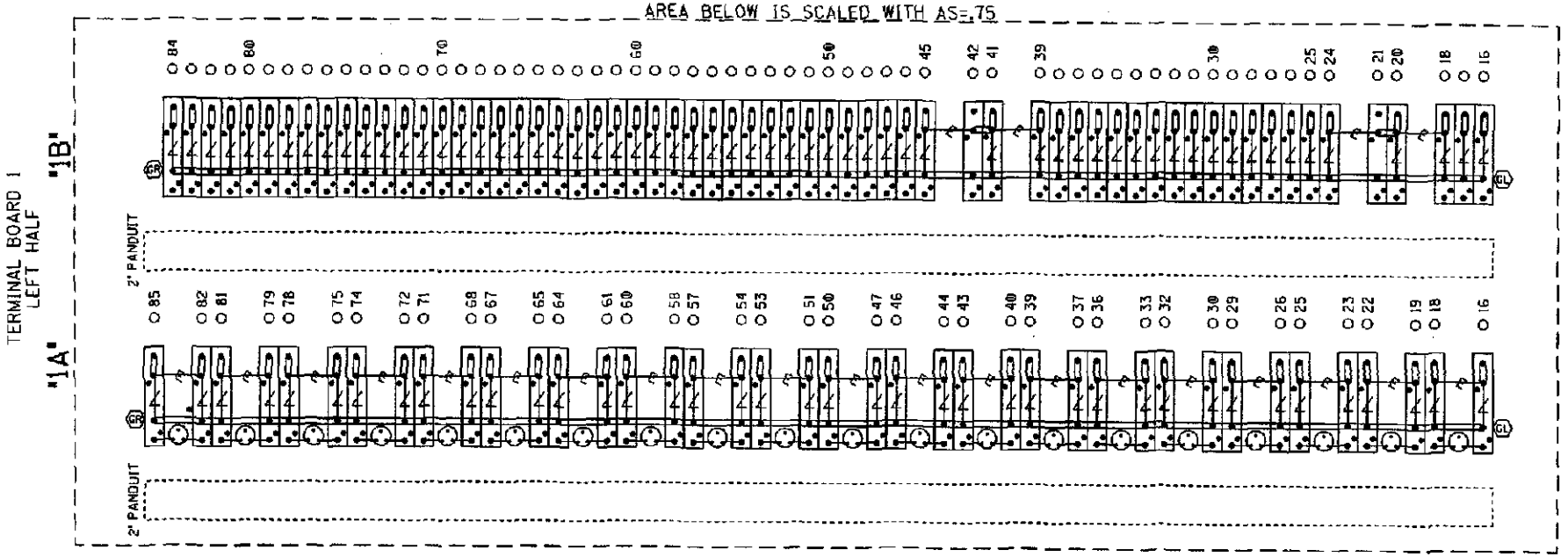
REAR OF FARADAY BACKBOARD
REAR BACKBOARD DETAIL - 1A & 1B

DESIGNED BY: M.J.L 08-17-09	NORFOLK SOUTHERN		
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: RD-112.98	
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No. R-	
	CADD or DWG. No. 35121129.17	SHEET No. 17 of 22	

REVISION INITIALS												PROPERTY
												PENNSYLVANIA R.R.

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

AREA BELOW IS SCALED WITH AS=.75



= Heavy Duty Equalizer (022700-IX)

Clearview = Lightning Arrester (022585-IX)

= LPC-10560-51

= INDICATES PLACEMENT OF PANDUIT

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

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

TERMINAL BOARD 1
LEFT TWO ROWS

FARADAY SHIELD DETAIL - 1A & 1B

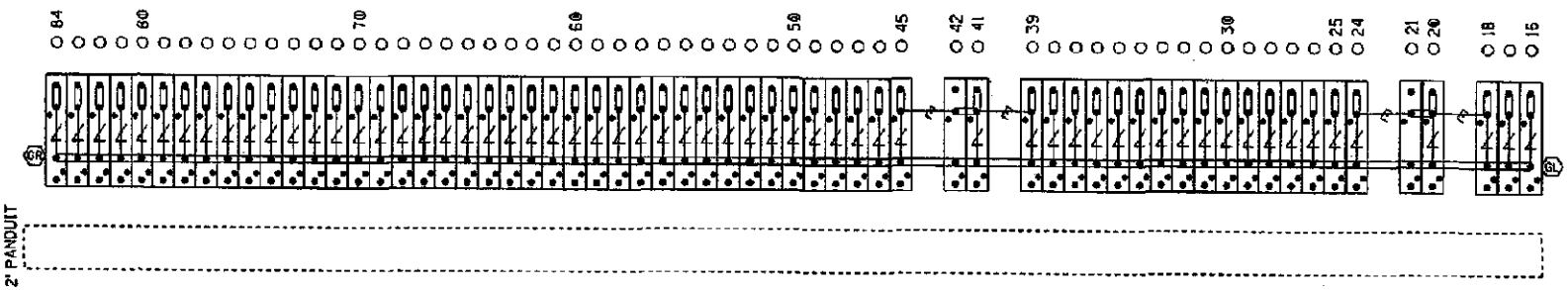
DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN		
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: RD-112.98	
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No. R-	
	CADD or DWG. No. 35121129.18	SHEET No. 18 of 22	

REVISION INITIALS										PROPERTY
										PENNSYLVANIA R.R.

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

AREA BELOW IS SCALED WITH AS=.75

TERMINAL BOARD 1
RIGHT HALF
"1C"



= Heavy Duty Equalizer (022700-1X)

= Clearview Lightning Arrester (022585-1X)

= LPC-10560-51

TERMINAL BOARD 1
RIGHT ROW
FARADAY SHIELD DETAIL - 1C

= INDICATES PLACEMENT OF PANDUIT

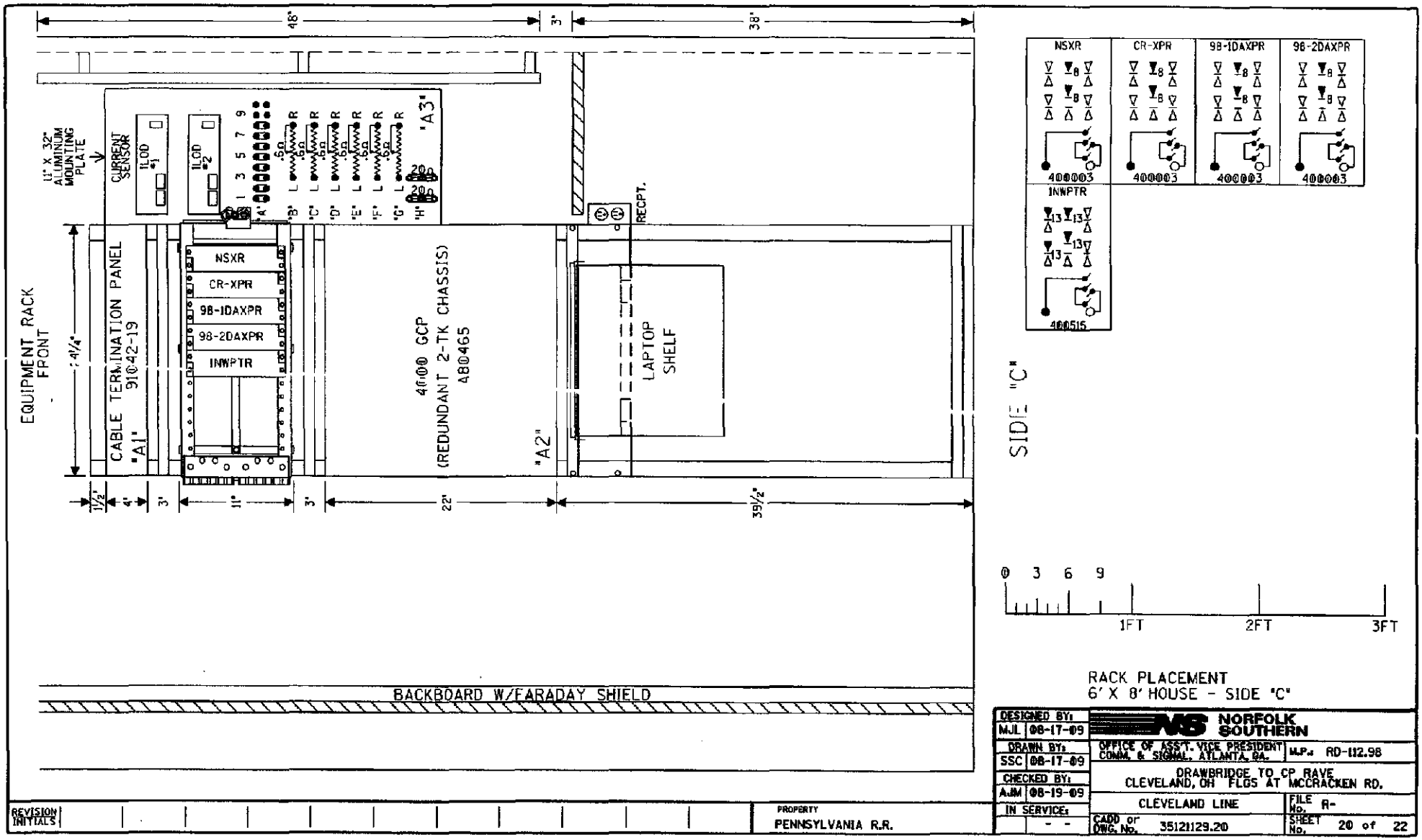
THIS SHEET IS FOR REFERENCE ONLY, TO REFLECT HOW THE FARADAY SHIELD IS PREDRILLED. ONLY INSTALL AND USE THE TERMINALS NEEDED.

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

DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN
DRAWN BY: SSC 08-17-09	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: RO-112.98
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.
IN SERVICE: - -	CLEVELAND LINE FILE No. R-
	CADD or DWG. No. 35121129.19 SHEET No. 19 of 22

REVISION INITIALS

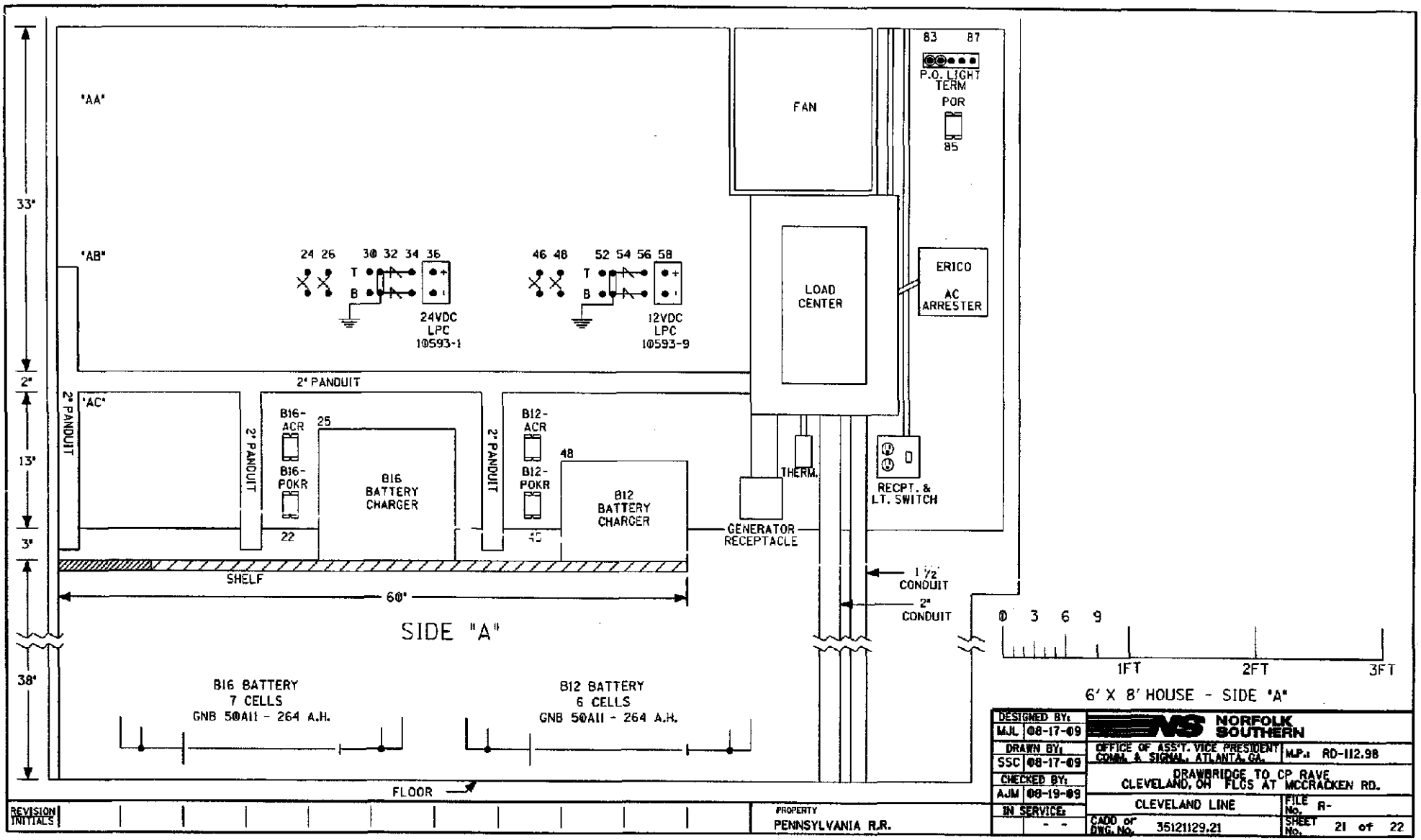
PROPERTY PENNSYLVANIA R.R.



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

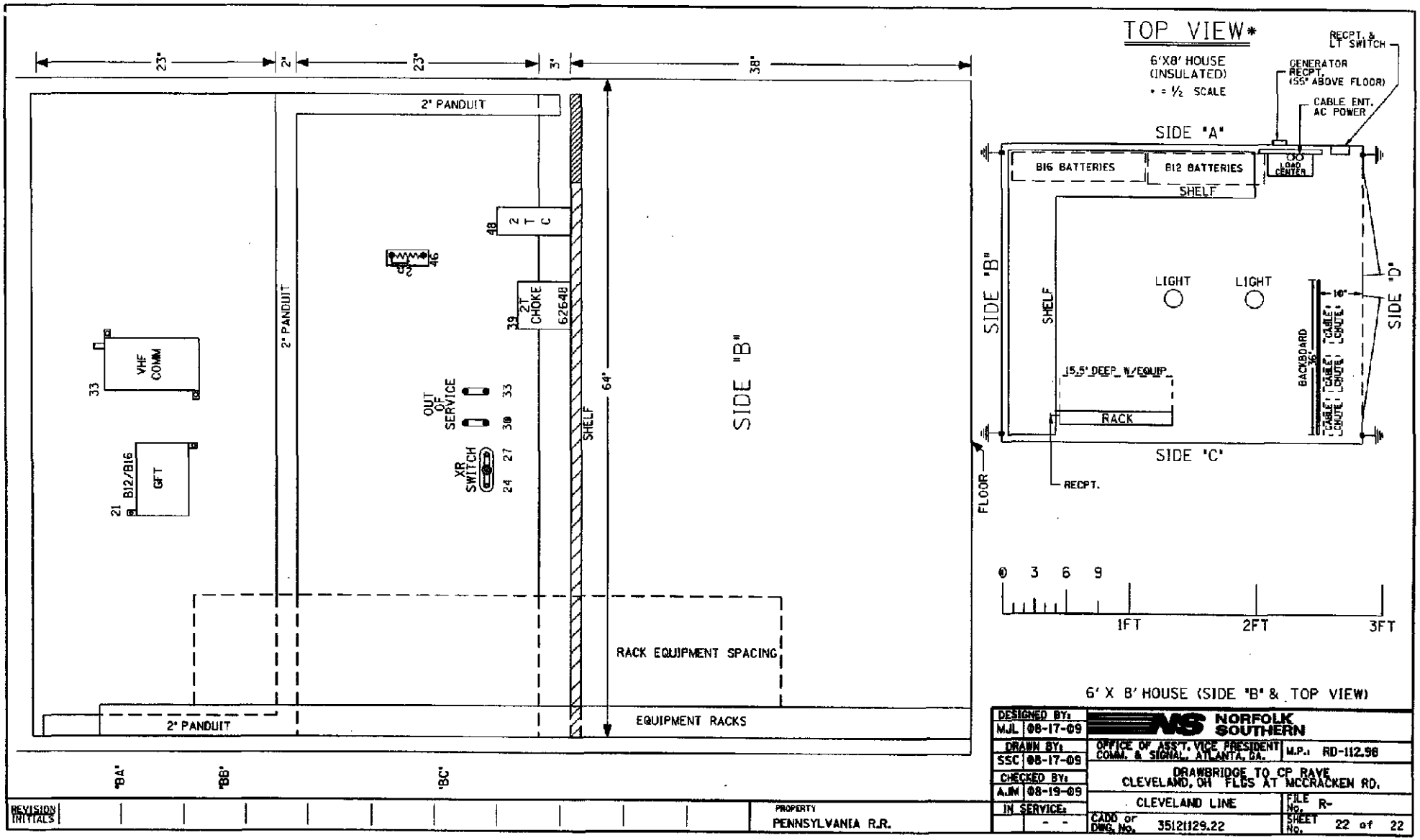
DESIGNED BY: MJL 08-17-09	NORFOLK SOUTHERN		
DRAWN BY: SSC 08-17-09	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: RD-112.98	
CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLOS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No. R-	
	CADD or DWG. No. 35121129.20	SHEET No. 20 of 22	

REVISION INITIALS												PROPERTY
												PENNSYLVANIA R.R.



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CHECKED BY: AJM 08-19-09	DRAWBRIDGE TO CP RAVE CLEVELAND, OH FLGS AT MCCRACKEN RD.		
IN SERVICE: - -	CLEVELAND LINE	FILE No. R-	
	CADD or DWG. No. 35121129.21	SHEET No. 21 of 22	

| REVISION INITIALS | | |


23"
2"
23"
3"
38"
2" PANDUIT
2" PANDUIT
2" PANDUIT
48
2 T C
46
39
2T CHOKE 62648
VHF COMM
33
B12/B16
GFT
21
OUT OF SERVICE
XR SWITCH
33
30
27
24
SHELF
64"
SIDE "B"
RACK EQUIPMENT SPACING
EQUIPMENT RACKS
"BA"
"BB"
"BC"
TOP VIEW*
6'X8' HOUSE (INSULATED)
* = ½ SCALE
RECPT. & LT SWITCH
GENERATOR RECPT. (55" ABOVE FLOOR)
CABLE ENT. AC POWER
SIDE "A"
BIG BATTERIES
B12 BATTERIES
SHELF
LOAD CENTER
SIDE "B"
SHELF
LIGHT
LIGHT
SIDE "D"
15.5" DEEP W/EQUIP
RACK
BACKBOARD
36"
10"
CABLE CHUTE
SIDE "C"
FLOOR
RECPT.
0 3 6 9
1FT
2FT
3FT
6' X 8' HOUSE (SIDE "B" & TOP VIEW)
REVISION INITIALS
PROPERTY
PENNSYLVANIA R.R.
DESIGNED BY: MJL 08-17-09
DRAWN BY: SSC 08-17-09
CHECKED BY: AJM 08-19-09
IN SERVICE: - -
NORFOLK SOUTHERN
OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
M.P.: RD-112.98
DRAWBRIDGE TO CP RAVE
CLEVELAND, OH FLGS AT MCCRACKEN RD.
CLEVELAND LINE
FILE No. R-
CADD or DWG. No. 35121129.22
SHEET No. 22 of 22