

53-



RECEIVED-DOCKETING DIV

Norfolk Southern Corporation
Communications and Signal Department
1200 Peachtree Street, N.E., Box 123
Atlanta, Georgia 30309

2007 MAR 13 AM 9:24

B. L. Sykes
Chief Engineer
C&S Engineering
404/529-2105

PUCO

March 8, 2007
CX0118217

06-1326-RR-FED

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

RE: Norfolk Southern's Cincinnati Line Regarding the Modification of Automatic Grade Crossing Warning Devices at York Street in Clark County, Ohio, DOT: 527 971W, Milepost CJ-182.60

Dear Ms. Kirkland:

Attached for your review and approval are copies of the detailed cost estimate, material list and engineering plans for this crossing.

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.

If you have any questions, please call Mike Rappatta at 404-582-6377.

Sincerely,

B. L. Sykes

Enclosure(s)

BLS/rhr/gbb/mlr/rjs

e/cy: Mr. R. S. Noe, NS Corporation
Ms. Susan Arduini, ORDC
Mr. Tim Perkins, ORDC
Ms. Bonnie Johrendt, PUCO
Mr. George Martin, PUCO
Ms. P. A. Gray, NS Corporation

Cy: ☒ Docketing Division (w/plans, estimate and material list)

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COMMUNICATIONS
DIVISION
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Technician 3 Date Processed 3.13.07



08-Mar-07

Detailed Estimate for Grade Crossing Warning Devices

City/State: SPRINGFIELD, OH
MilePost: CJ-182.6
State Proj. No.:
S&E Proj. No.: 10.0994
Man Days: 120

Road: YORK ST.
DOT/AAR: 527971W
County: CLARK
AFE: F10096
File Number: 061-10.1035

Purchases - Others		
Meals and Lodging:	\$11,290.75	
Rental of Equipment:	\$24,684.00	
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 30 Days)		
Construction Supervision Vehicle:	\$1,974.72	
Purchases - Other Total:		\$37,949.47
Material And Additives		
Material Cost:	\$86,883.00	
Sales and Use Tax:	\$0.00	
Material Handling Freight:	\$4,344.15	
Material Total:		\$91,227.15
Labor And Additives		
Labor Cost:	\$29,040.00	
(4 man crew at \$968.00 a day for: 30 days)		
Payroll Tax & Overheads:	\$28,647.96	
Preliminary Engineering:	\$10,201.22	
Construction Supervision:	\$8,197.99	
Labor Total:		\$76,087.17
Project Cost:		\$205,263.79
Scrap / Salvage Credit:		\$0.00
Project Total:		\$205,263.79

Estimated on: 08-Mar-07

Estimated by: n5s2v

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:	SPRINGFIELD
Road:	YORK ST.
Mile Post:	CJ-182.6
Drawing Number:	82111826
State Project Number:	
County:	CLARK
A A R Number:	527971W
Project Number:	10.0994
File Number:	061-10.1035
New File Number:	CX0118217
A F E Number:	F10096
Store Number:	
Supervisor:	D.M. FRANCIS
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&E Gen. Supt. Construction w/copy of Invoice	

Location: SPRINGFIELD

OH

S&E Proj. No.: 10.0994

AFE No.: F10096

Drawing No.: 82111826

Store No.:

P.O. Number:

Date Required:

Date Shipped:

Vendor: InterRail Engineering, INC

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Date Quen.	Quantity Date Installed	Quantity Date Returned	Quantity Returned (Credit)	Special Instructions
3	670-360693-4	EA	\$5.04	\$15.12	AARDOT NUMBER PLATE/DECAL, ORDER 3 PER PROJEKT. 60 DAY LEAD TIME. SUPPLIED BY STRAN.						
1	165-006505-4	EA	\$1,051.54	\$1,051.54	AC SERVICE, COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE						
69	670-119241-4	EA	\$32.80	\$2,263.20	ARRESTOR, LIGHTNING HEAVY DUTY CLEAR VIEW SAFETFRAN 022585-1X						
13	105-871901-4	EA	\$161.57	\$2,100.41	BATTERY, GNB 265AH MODEL 50A11 SINGLE CELL 2.25 VOLTS						
2	670-980689-4	EA	\$71.71	\$143.42	BRACKET HIGH WIND, (RIGID 3), W/G- 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 28' AND LESS						
1	670-016354-4	EA	\$32.19	\$32.19	BRACKET, RELAY FOR WALL MOUNTING ONE B-1 PLUG-IN RELAY SAFETFRAN# 42000-51X						
1	670-366949-4	EA	\$97.00	\$97.00	CABLE, 10' GENERATOR HOOK UP, SERRAMI P/N 40524, FEMALE CONNECTOR						
500	465-292862-4	LF	\$1.04	\$520.00	CABLE, U-2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR						
300	465-292929-4	LF	\$3.05	\$915.00	CABLE, U.G. 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL						
400	465-939422-4	LF	\$2.55	\$1,020.00	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL						
2000	465-942483-4	LF	\$2.36	\$4,720.00	CABLE, UG 19 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL						
100	465-791835-4	FT	\$2.22	\$222.00	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	670-128745-4	EA	\$180.02	\$180.02	CHOKE, BATTERY SAFETFRAN NO 8A065A FOR GRADE CROSSING PREDICTOR						
190	165-544477-4	FT	\$2.55	\$484.50	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	\$50.38	\$201.52	CONNECTOR, WELDED FAR RAIL HARMON A1000-2W						
4	670-486646-4	EA	\$41.62	\$166.48	CONNECTOR, WELDED NEAR RAIL HARMON A1000-1W						

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Thursday, March 08, 2007 9:27 AM

Page: 2 of 5

Location: SPRINGFIELD

OH

S&E Proj. No.: 10.0994

AFE No.: F10096

Drawing No.: 82111826

Store No.:

P.O. Number:

Date Required:

Date Shipped:

Vendor: Intertrail Engineering, INC

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Date Quan.	Quantity Date Quan.	Quantity Date Quan.	Quantity Returned (Credit)	Special Instructions
1	670-006026-4	EA	\$477.40	\$477.40	CONVERTER/DRIVER, SINGLE UNIT DC EPC MODEL 2TC DC, 2 OUTPUTS FOR TRACK CIRCUITS UP TO 1000 FT.						
2	670-794453-4	EA	\$854.03	\$1,708.06	COUNTERWEIGHT PKAGE, 25-31 GATE STAN S- MECH ONLY, STAINLESS TO INCLUDE HUB, SUPPORT ARMS						
5	670-760012-4	EA	\$40.02	\$200.10	COVER, FOR 1 WAY FLASHING LIGHT ASSY, 18 OZ. BLACK VINYL COATED NYLON, ===== TO COVER 2 LAMPS=====						
1	670-986650-4	EA	\$375.69	\$375.69	DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING XING EQUIPMENT CONTAINER						
1	670-000004-4	EA	\$700.00	\$700.00	FCC LICENSE FOR MONITOR/RADIO						
2	670-000003-4	EA	\$255.85	\$511.70	FILLSTONE #57, QUANTITY IS BASED ON TRUCK LOAD PLUS DELIVERY COST						
2	670-015231-4	EA	\$423.50	\$847.00	FOUNDATION, DIXIE, S-2 GATE 56" ASSEMBLED						
2	670-270444-4	EA	\$500.17	\$1,000.34	GATE, ARM NEG ALUMI-LITE (HIGH WIND) 27-33" ARM ASSEMBLY WITH "3" NEG 2018 LIGHTS, INCLUDES GATE GUARD FOR GATE LIGHT CABLE, NEG P/N 8006A-334/CG						
2	670-718743-4	EA	\$43.57	\$87.14	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-1000						
1	670-477991-4	EA	\$317.90	\$317.90	KIT, GROUNDING ASSY FOR AL I/S INCLUDES 8 GRD RDS, 200#4 WIRE, 12 4 WIRE ONE-SHOTS, ERICO SBK206						
1	670-123298-4	EA	\$256.93	\$256.93	KIT, HARDWARE SUPPLIES REQUIRED XING PKGAGES: WEB CONNECTORS FOR SHUNT(8EA) TAPE, AMPS, PGUM PAINT SLEEVES, TAGS, GLUE, 100 EA WHITE TAGS,)NE CAN BLUE MARKING PAINT ETC...						
1	670-746798-4	EA	\$533.19	\$533.19	LAMP ASSY, 4" GRD, MAST MTG, 1W IND, 20" BKGRD, FLX-12 W/BULB STRAN #042003-484XNS						
2	670-764166-4	EA	\$907.65	\$1,815.30	LAMP ASSY, 5" MAST MTG, 2W IND, 20" BKGRD, FLX-12 W/BULB STRAN #042003-487XNS						
6	165-643547-4	EA	\$4.30	\$25.80	LAMP, 18 WATT 10 VOLT S-11 SC BAY 18S11/1SC CLEAR RWY SIGNAL UU-71463 GE						
69	670-440826-4	EA	\$1.01	\$69.69	LINK, SAFETRAN 024620-1X INSL TESTING COMP 1 IN CENTER SIGNAL CIRCUITS CR 02-286662						
4	255-590880-4	EA	\$16.12	\$64.48	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"						

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Thursday, March 08, 2007 9:27 AM

Page: 3 of 5

Location: SPRINGFIELD OH S&E Proj. No.: 10.0994 AFE No.: F10096 Drawing No.: 8211826
Store No.: P.O. Number: Date Required: Date Shipped: Vendor: Interroll Engineering, INC

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Date Quan.	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
1	670-637778-4	EA	\$1,031.41	\$1,031.41	MAST, 5" ALUMINUM 13'10" WITH DOUBLE JCT. BOX BASE. STRAN P# 070519-11AX.					
1	610-567533-4	EA	\$1,059.34	\$1,059.34	MAST, 5"x16" ALUM (0&180) SAFETRAN 070519-X537 FOR LIGHT UNIT & BRACKET W/DOUBLE JCT. BOX BASE, LESS PINNACLE					
1	670-000985-4	EA	\$198.44	\$198.44	MAST, SIDE LIGHT BRACKET F/5" MT. HARMON @225834-XXX, SAFETRAN 041442-26X.					
2	670-850933-4	EA	\$3,352.65	\$6,705.30	MECHANISM, GATE MODEL S-60, WITH DEFROSTER AND MINI TRACKSIDE SENSOR STRAN # 0740007-X002B3					
2	670-001347-4	EA	\$63.27	\$126.54	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SEERMI A1250-5, HARMON @200965-000, OR					
1	670-514805-4	EA	\$8.45	\$8.45	PINNACLE, W-C SECT 1-11, 4" & 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X					
8	670-555609-4	EA	\$45.12	\$360.96	PLUGBOARD, TYPE B-1 GRS A62-506 OR HARMON @7062-506 OR					
1	670-427136-4	EA	\$93.49	\$93.49	POWER OFF LAMP INDICATOR FOR SHELTER, SAFETRAN P/N 051958-5					
1	165-902002-4	EA	\$308.00	\$308.00	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL					
6	465-002899-4	EA	\$22.06	\$132.36	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES					
1	670-742096-4	EA	\$41.80	\$41.80	RELAY INTERFACE PROBE, ULTRATECH PN 16031-00					
5	670-456936-4	EA	\$150.00	\$750.00	RELAY RACK, SWING, FARADAY SHELTER FOR ONE RELAY, SSFETRAN P/N T15331					
1	670-707755-4	EA	\$582.32	\$582.32	RELAY, TYPE B1, BLASED NEUTRAL, 2 OHMS, .15 AMPERES, FOR OS TK. per RTM. GRS A62-120					
7	670-707995-4	EA	\$313.67	\$2,195.69	RELAY, TYPE B1, NEV LINE, 900 OHMS, .008 AMPERES GRS A62-308 OR SAFETRAN @400003					
1	180-000029-4	EA	\$20.83	\$20.83	RESISTOR UNIT, 2W ADJUSTABLE SAFETRAN NO. 029602-6X FOR TRACK CIRCUITS CR 02-425907					
1	180-239123-4	EA	\$20.83	\$20.83	RESISTOR, ADJUSTABLE 5 OHM SAFETRAN NO. 029603-2X FOR TRACK CIRCUITS					
2	435-805560-4	EA	\$6.25	\$12.50	SAND, 25LB BAG FOR CABLE ENTRANCE INTO THE SHELTER					

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Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Date	Quantity Installed Date	Quantity Returned (Credit)	Special Instructions
1	670-816502-4	EA	\$4,903.75	\$4,903.75	SEARII AUTOMATED INSPECTOR SYSTEM KIT, w/ 1-LOD, 1-øBELL, 2-GTS, WITHOUT MTS, 1-GFT, 1-VHFC, 2- RECORDER INTERFACE MODULE, 1-ECHOLON CONNECTOR					
1	670-281280-4	EA	\$7,006.00	\$7,006.00	SHELTER BARE 6X6, ALUMN, FARADAY, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN. CONN. W/ADJUSTABLE PIERS, SAFETETRA P/N 058400-66-78A					
3	670-586967-4	EA	\$37.68	\$113.04	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT					
2	670-652773-4	EA	\$470.56	\$941.12	SHUNT, MULTI-FREQ. #62775-1543 SAFETETRA NARROW BAND					
1	670-645460-4	EA	\$596.03	\$596.03	SHUNT, MULTI-FREQ. #62775-8621 SAFETETRA NARROW BAND					
2	670-393331-4	EA	\$37.43	\$74.86	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETETRA #T17215					
2	670-806648-4	EA	\$56.42	\$112.84	SIGN, X-BUCK, LESS HARDWARE, SAFETETRA 035200-X CR 02-490546					
1	670-330382-4	RL	\$15.68	\$15.68	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS, "WARNING STOP DIGGING"					
69	670-478560-4	EA	\$19.47	\$1,343.43	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR					
8	610-065626-4	EA	\$17.55	\$140.40	ULTRA-TECH 15206-01 CONNECTIVITY BLOCK FOR GRS B1 RELAY					
8	670-007238-4	EA	\$129.46	\$1,035.68	UNIT, THE INSTALLATION AND WIRING OF A DEVICE WHICH REQUIRE A MINIMUM OF FOUR WIRE CONNECT-					
1	670-262739-4	EA	\$31,408.11	\$31,408.11	WIRED RACK, 6X6 FARADAY, 20AMP DOUBLE TRK SSCCIIIA, GCP3000D2, 2 CRAGG CHARGER, 2 RELAY RACKS, SAFETRA P/N 20A 2TRK, USE WITH I/S 670-281280-4 W/CABLE CHUTES BEHIND THE FARADAY SHIELD					
1	450-986008-4	EA	\$24.84	\$24.84	WRENCH, TEST POST TYPE B DWG 55393-3, GR. 1					

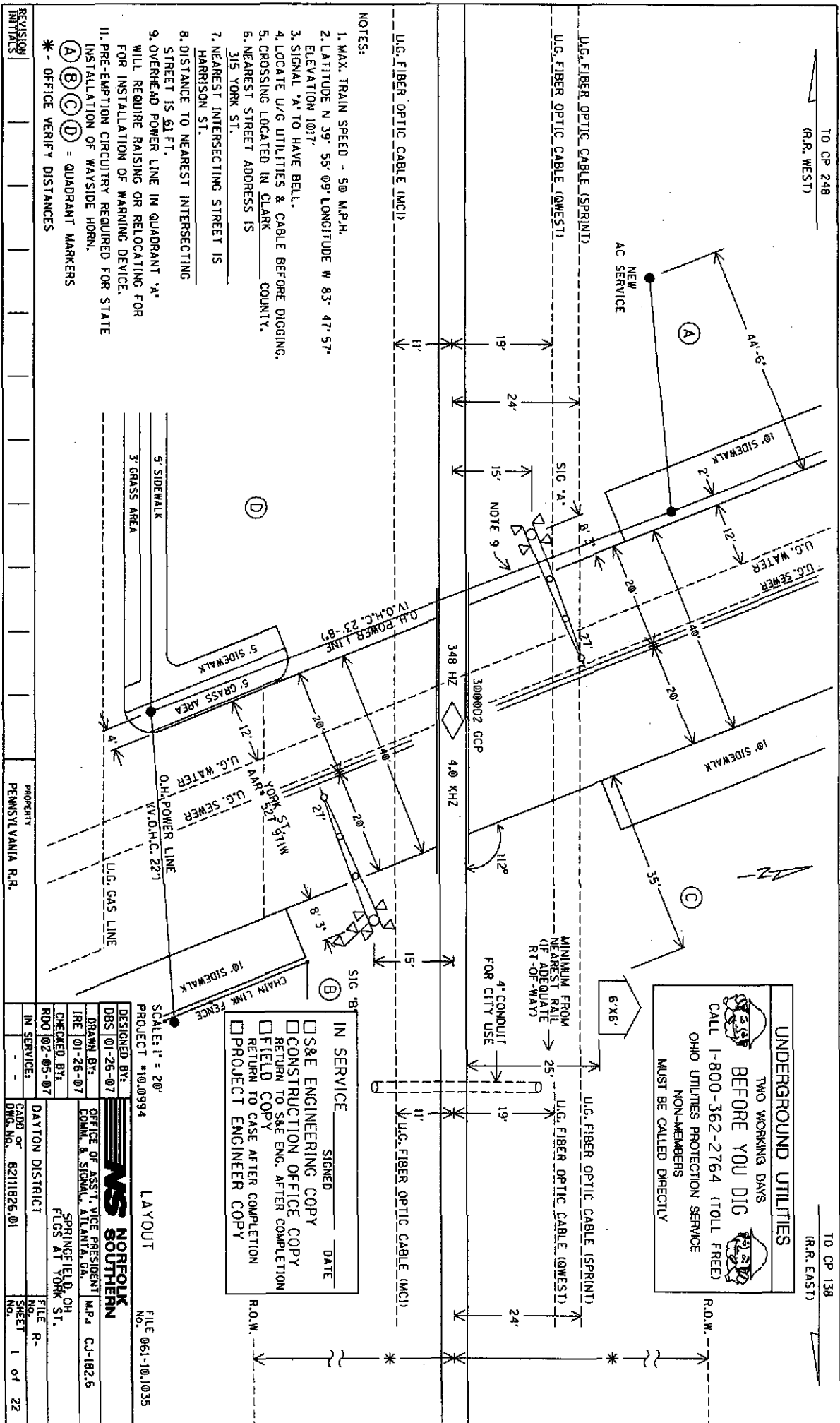
Total Material: \$86,882.96

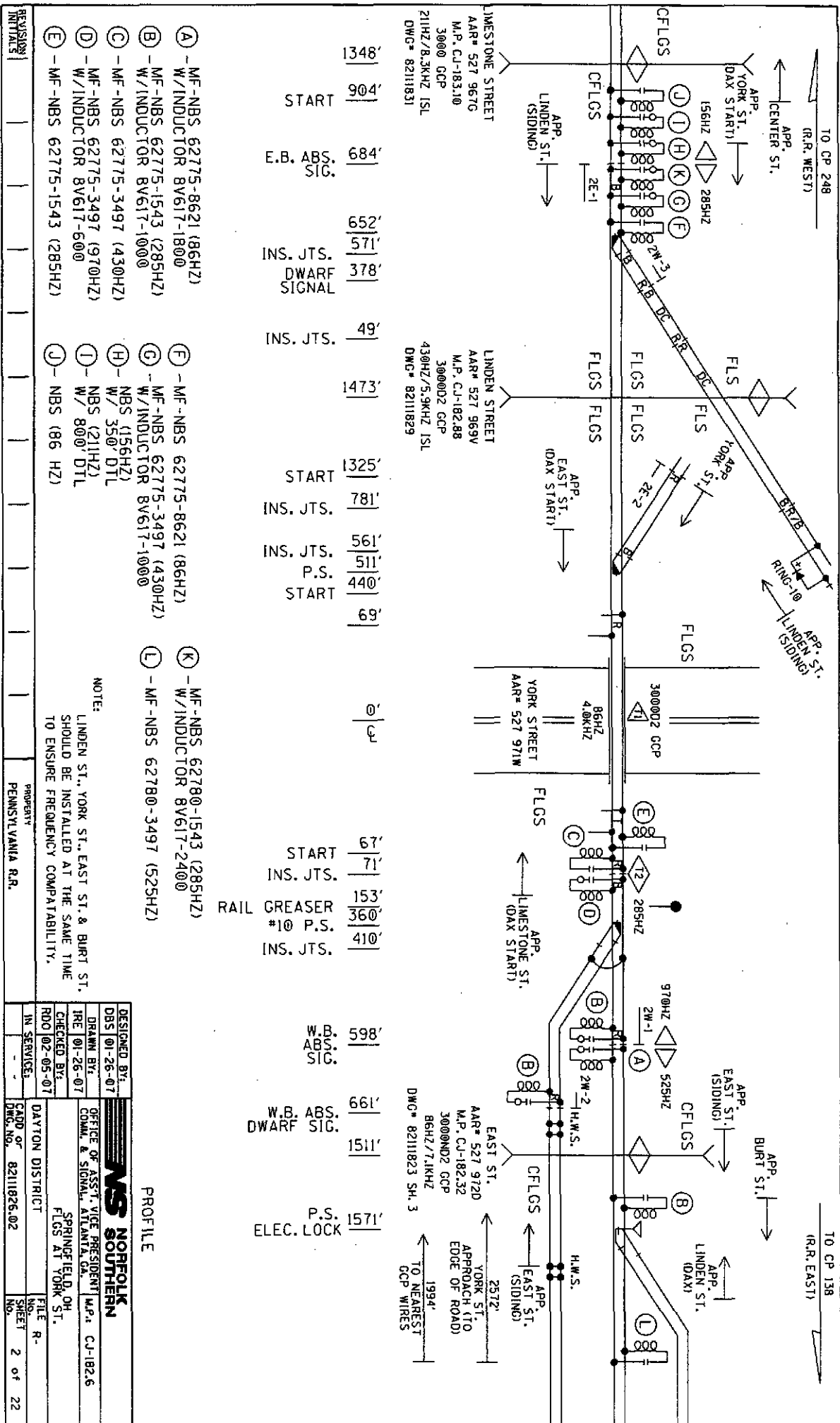
APPROVED BY STATE

APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER





REVISION	PROPERTY				
INITIALS	PENNSYLVANIA R.R.				
		IN	CADD OF	SHEET	
		REVISED	82111826.02	2 OF	22
			DWG. NO.	NO.	

- (A) - MF-NBS 62775-8621 (86MHz)
W/INDUCTOR 8V617-1B00
- (B) - MF-NBS 62775-1543 (285Hz)
W/INDUCTOR 8V617-1000
- (C) - MF-NBS 62775-3497 (430Hz)
MF-NBS 62775-3497 (970Hz)
W/INDUCTOR 8V617-6000
- (E) - MF-NBS 62775-1543 (285Hz)

- (F) - MF-NBS 62775-8621 (86HZ)
- (G) - MF-NBS 62775-3497 (430HZ)
- W/INDUCTOR 8V611-1000
- (H) - NBS (156HZ)
- W/ 350' DTL
- (I) - NBS (211HZ)
- W/ 800' DTL
- (J) - NBS (86 HZ)

NOTE:
LINDEN ST., YORK ST., EAST ST. &
SHOULD BE INSTALLED AT THE S
TO ENSURE FREQUENCY COMPATABILITY

NOTE:
LINDEN ST., YORK ST., EAST ST. & BURT ST.
SHOULD BE INSTALLED AT THE SAME TIME
TO ENSURE FREQUENCY COMPATIBILITY.

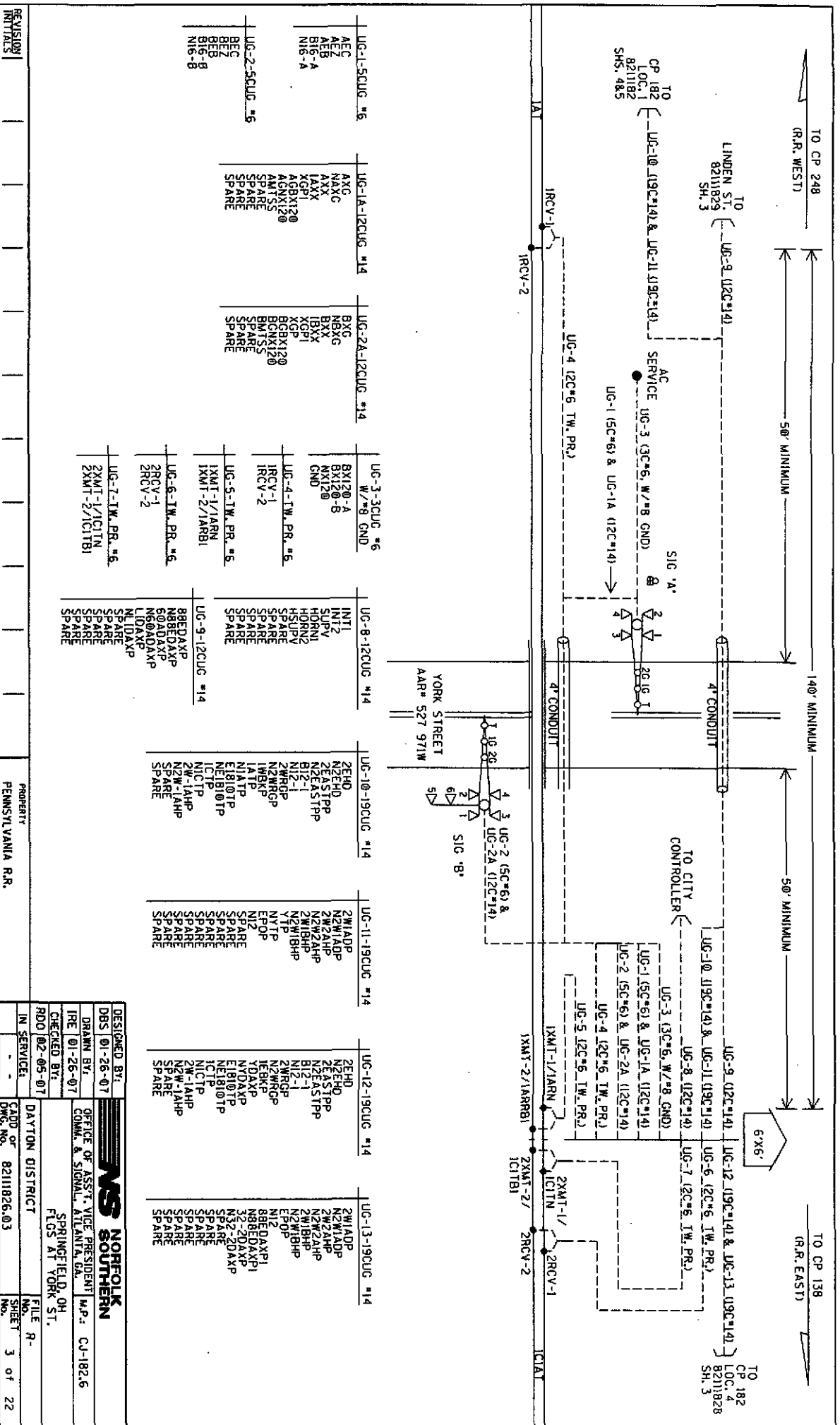
DESIGNED BY: DBS 01-26-07	NBS SOUTHERN	
DRAWN BY: IRE 01-26-07	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY: RDO 02-05-07	SPRINGFIELD, OH FLCS AT YORK ST.	W.P. C-1B2.6
INSTALL INSTRUCTIONS		LEAF -

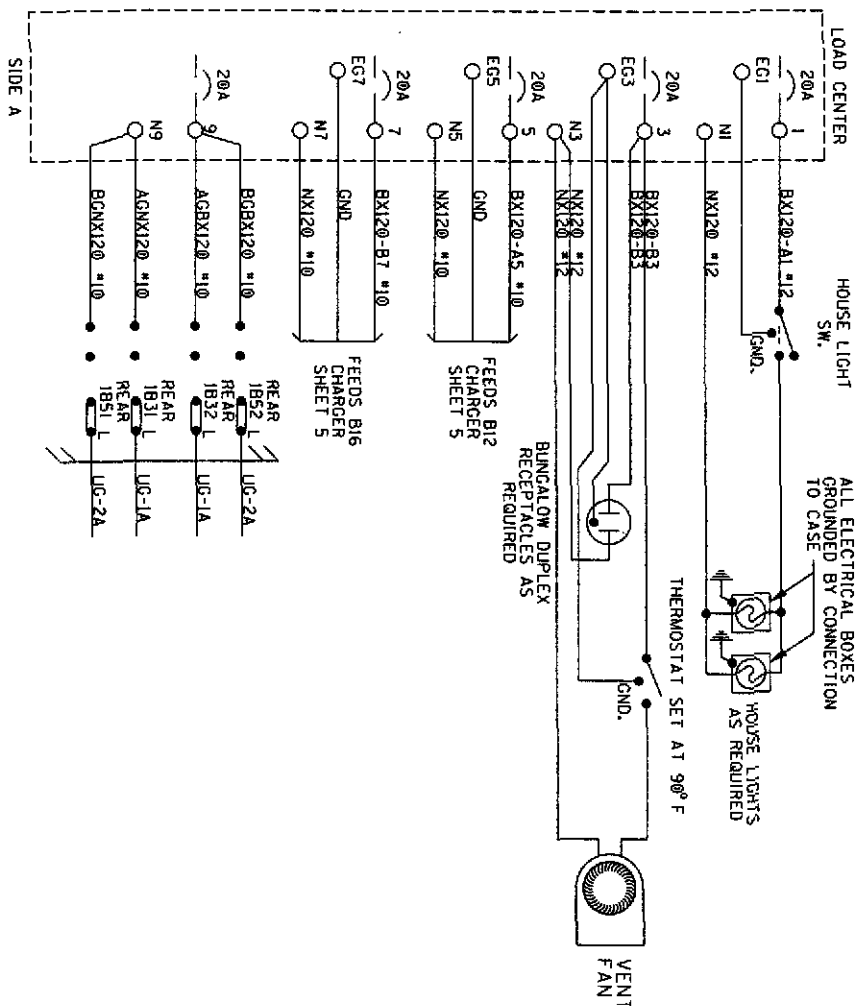
PROFILE

	1348'
START	<u>904'</u>
E.B. ABS.	<u>684'</u>
SIG.	
	<u>652'</u>
INS. JTS.	<u>571'</u>
DWARF	<u>378'</u>
SIGNAL	
INS. JTS.	<u>49'</u>
	<u>1473'</u>
START	<u>1325'</u>
INS. JTS.	<u>781'</u>
INS. JTS.	<u>561'</u>
P.S.	<u>511'</u>
START	<u>440'</u>
	<u>69'</u>
	<u>0'</u>
	<u>6</u>
START	<u>67'</u>
INS. JTS.	<u>71'</u>
RAIL GREASER	<u>153'</u>
#10 P.S.	<u>360'</u>
INS. JTS.	<u>410'</u>
W.B.	<u>598'</u>
ABS.	
SIG.	
W.B. ABS.	<u>661'</u>
DWARF SIG.	<u>1511'</u>
P.S.	<u>1571'</u>
ELEC. LOCK	

LIMESTONE STREET AAR* 527 967G M.P. C.I-183.10 30000 GCP 211HZ/8.3KHZ ISL DMG* 82111831	LINDEN STREET AAR* 527 969V M.P. C.I-182.88 30000D2 GCP 430HZ/5.9KHZ ISL DMG* 82111829	EAST ST. AAR* 527 972D M.P. C.I-182.32 30000D2 GCP 86HZ/7.1KHZ DMG* 82111823 SH.3	2572' YORK ST. APPROACH (TO EDGE OF ROAD) 1994' TO NEAREST GCP WIRES
--	---	--	--

EAST ST. 2512' →
AAR = 521 912D
M.P. CJ-182.32
300#N02 GCP
BBH2.71KHZ
1994' →
TO NEAREST
GCP WIRES
DWG = 82111823 SH. 3





NOTE: ALL AC WIRING IS TO BE IN METALLIC CONDUIT WITH NO EXPOSED TERMINALS. ALL AC 120V AND 240V EQUIPMENT IS TO BE PROPERLY GROUNDED.

SQUARE "D" PART NUMBERS:

LOAD CENTER——Q0116L125G

10A 1P CIR BKR — Q0110

ZDA IP CIR BKR — 00120
ZDA IP CIR BKR 00130

30A 2P CIR BKR — Q0230

60A 2P CIR BKR —Q0260

100A 2P CIR BKR—Q02100

MELCH INERLOCK—PK4U11M4LA

GENERATOR RECEPTACLE:
MALE CONNECTOR - NEMA L1430-F1

— — — — —

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:		OFFICE OF ASST. VICE PRESIDENT		M.P.:	
DBS 01-26-07		CONA. & SIGMA, ATLANTA, GA.		CJ-182.6	
DRAWN BY:		SPRINGFIELD, OH			
PFE 01-26-07		FLCS AT YORK 31.			
CHECKED BY:					
RDO 02-05-07					
IN SERVICE:					
-					
-					
CAD OR		FILE		SHEET	
DWG. NO. 8211826.04		R-		4 OF 22	

LOAD CENTER WIRING

ENVS
NORFOLK
SOUTHERN

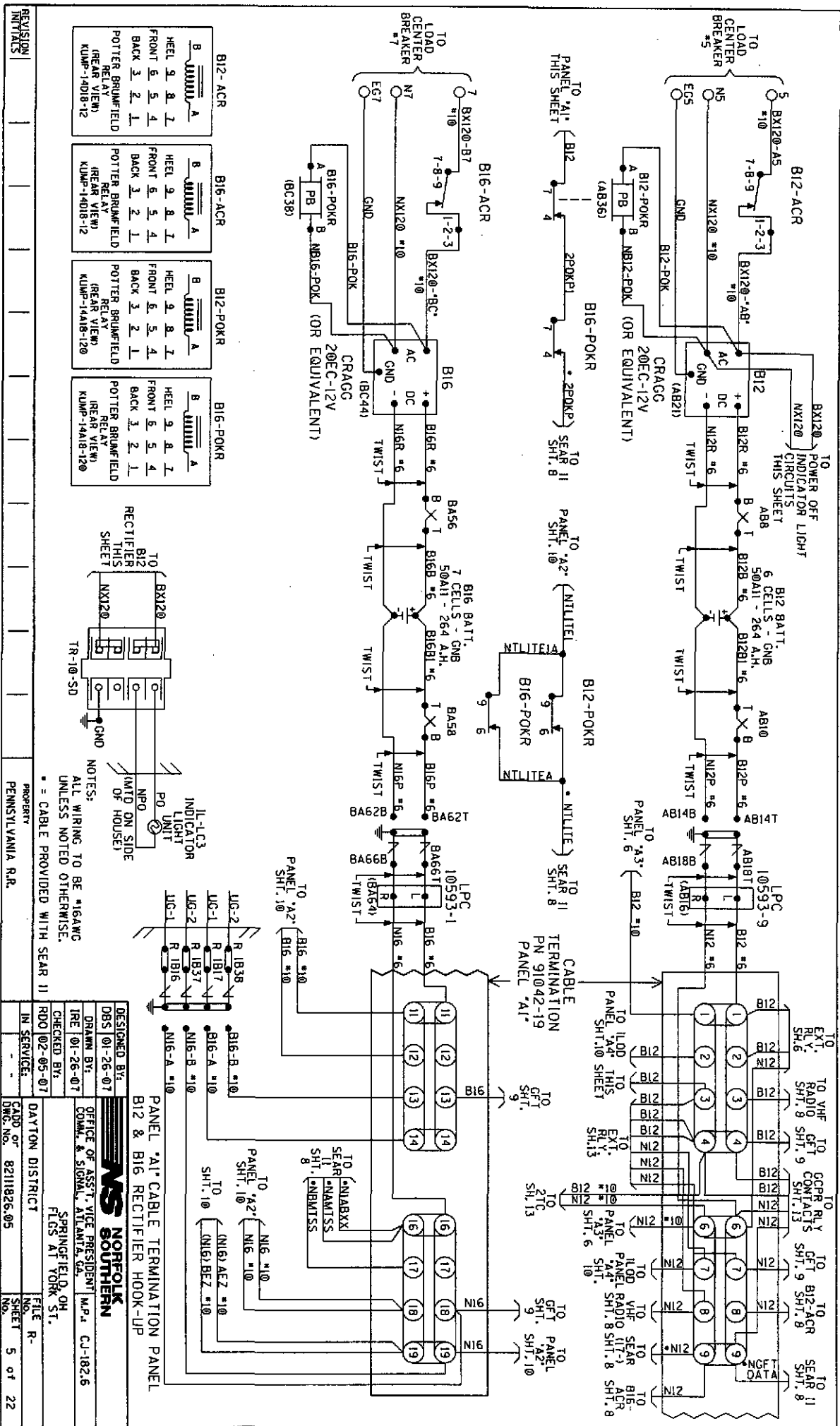
SIGNAL, ATLANTA, GA. M.P.: CJ-1625

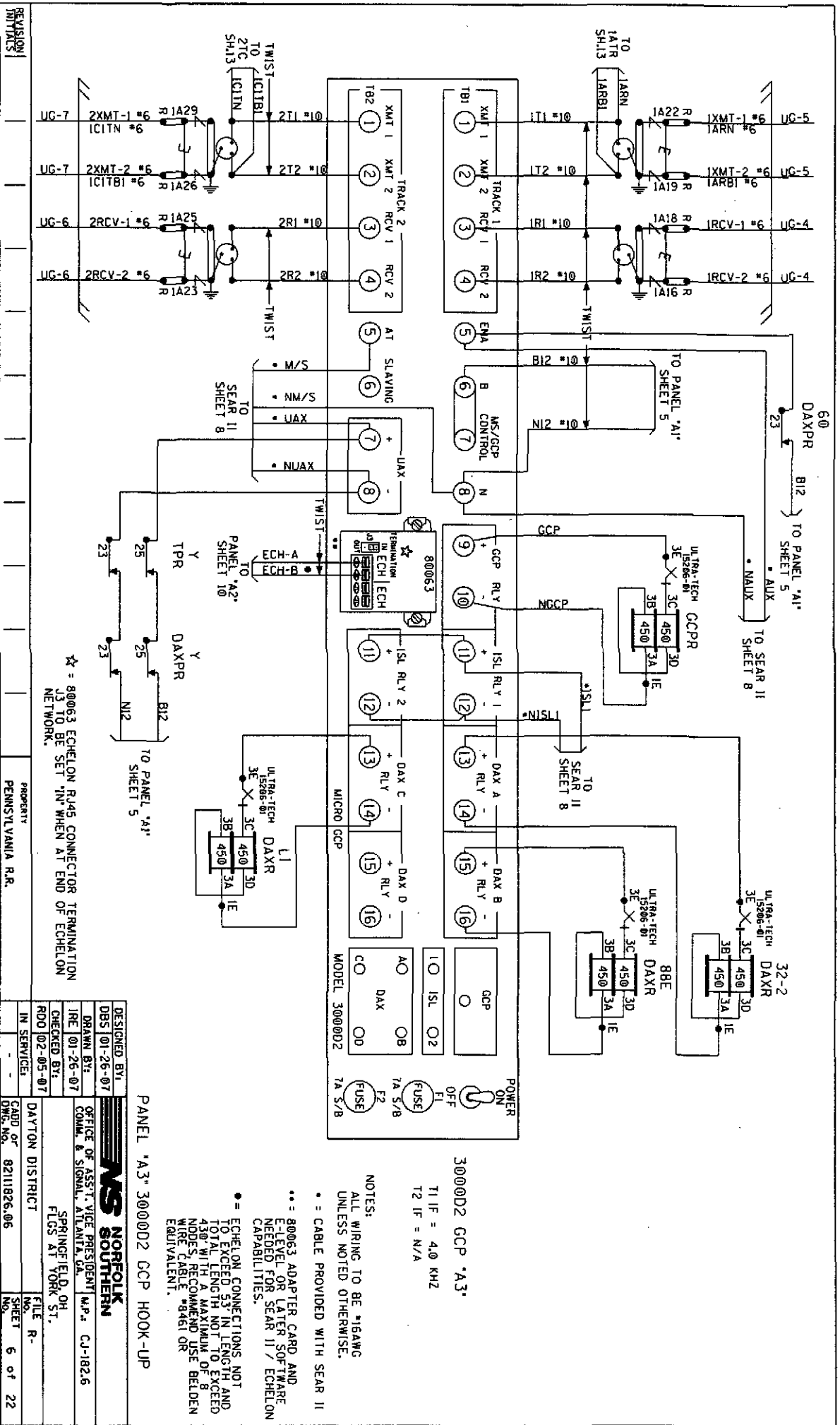
SPRINGFIELD, OH
ELCS AT YORK ST

DIRECT

1011-1012

92011120





300002. PROGRAMMING CHART		LEVEL: 2
NUMBER OF TRACK TRANSCEIVERS	2	
T1: FREQUENCY	86Hz	
T2: FREQUENCY	86Hz	
T1: UNIDIRECTIONAL/BIDIRECTIONAL	UNI	
T2: UNIDIRECTIONAL/BIDIRECTIONAL	BI	
T1: XMIT LEVEL (MAX/MEQ)	MEQ	
T2: XMIT LEVEL (MAX/MEQ)	MEQ	
T1: PREDICTOR/MOTION SENSOR	PRED	
T2: PREDICTOR/MOTION SENSOR	PRED	
T1: WARNING TIME	30 Sec	
T2: WARNING TIME	30 Sec	
T1: APPROACH DISTANCE	2016 Ft	
T2: APPROACH DISTANCE	1590 Ft	
UAX1 PICKUP DELAY (UAX) (0 = OFF)	25 Sec	
ENX/UAX2 DELAY (0 = ENX)	25 Sec	
T1: ISLAND DISTANCE	140 Ft	
T2: ISLAND DISTANCE	140 Ft	
NUMBER OF DAX'S	0 EO	
DAX A TRACK ASSIGNMENT (11/1/2)	T1	
DAX A DISTANCE (0 = PREEMPT)	1491 Ft	
DAX A WARNING TIME	30 Sec	
DAX B TRACK ASSIGNMENT (11/1/2)	T2	
DAX B DISTANCE (0 = PREEMPT)	1531 Ft	
DAX B WARNING TIME	36 Sec	
DAX C TRACK ASSIGNMENT (11/1/2)	T2	
DAX C DISTANCE (0 = PREEMPT)	2821 Ft	
DAX C WARNING TIME	36 Sec	
DAX D TRACK ASSIGNMENT (11/1/2)	---	
DAX D DISTANCE (0 = PREEMPT)	Ft	
DAX D WARNING TIME	Sec	
SLAVING MASTER/SLAVE	MASTER	
PASSWORD ENABLED	NO	
RECORDER INSTALLED	NO	

- 1) AVAILABLE WHEN "TRANSFER DELAY MS TO GCP" AND
- "PRIME PREDICTION OFFSET" IS ON
- 2) AVAILABLE WHEN "TRANSFER DELAY MS TO GCP" AND
OAX DISTANCE IS GREATER THAN ZERO
- 3) AVAILABLE WHEN "ENHANCED DETECTION" IS ON
- 4) AVAILABLE WHEN "LOW EZ DETECTION" IS ON
- 5) AVAILABLE WHEN "POSITIVE START" IS ON

DESIGNED BY	DBS 01-26-07	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	DATE	10-2-07
DRAWN BY	RAE 01-26-07	SPRINGFIELD, OH FLGS AT YORK ST.	FILE NO.	10-2-07
CHECKED BY	ROO 02-05-07		SHEET	7 of 22
IN SERVICE	-		DATE R- DWG. NO.	82111826-07

T1: SWITCH TO MS (ENTER EZ VALUE)	10 %	
T2: SWITCH TO MS (ENTER EZ VALUE)	10 %	
T1: TRANSFER DELAY MS TO GCP (0 = OFF)	0 Sec	(13)
T2: TRANSFER DELAY MS TO GCP (0 = OFF)	0 Sec	(13)
T1: TRANSFER MS TO GCP PRIME (ON/OFF)	---	(11)
T2: TRANSFER MS TO GCP PRIME (ON/OFF)	---	(11)
T1: TRANSFER MS TO GCP DAX A (ON/OFF)	---	(12)
T2: TRANSFER MS TO GCP DAX A (ON/OFF)	---	(12)
T1: TRANSFER MS TO GCP DAX B (ON/OFF)	---	(21)
T2: TRANSFER MS TO GCP DAX B (ON/OFF)	---	(21)
T1: TRANSFER MS TO GCP DAX C (ON/OFF)	---	(12)
T2: TRANSFER MS TO GCP DAX C (ON/OFF)	---	(12)
T1: TRANSFER MS TO GCP DAX D (ON/OFF)	---	(22)
T2: TRANSFER MS TO GCP DAX D (ON/OFF)	---	(22)
T1: PRIME PREDICTION OFFSET (0 = OFF)	0 Ft	12
T2: PRIME PREDICTION OFFSET (0 = OFF)	51 Ft	
PICKUP DELAY PRIME	15 Sec	
PICKUP DELAY DAX A	-- Sec	
PICKUP DELAY DAX B	-- Sec	
PICKUP DELAY DAX C	-- Sec	
PICKUP DELAY DAX D	-- Sec	
T1: ENHANCED DETECTION (ON/OFF)	OFF	
T2: ENHANCED DETECTION (ON/OFF)	OFF	
BACK-TO-BACK T1 AND T2 (NO/YES)	---	(13)
T1: STATION STOP TIMER	10 Sec	(13)
T2: STATION STOP TIMER	10 Sec	(13)
T1: NUMBER OF TRACK WIRES (4/6)	4	
T2: NUMBER OF TRACK WIRES (4/6)	4	
T1: LOW EX ADJUSTMENT	0	
T2: LOW EX ADJUSTMENT	0	
T1: LOW EZ DETECTION	OFF	
T2: LOW EZ DETECTION	OFF	
T1: LOW EZ DETECTION TIMER (ON/OFF)	10 Min	(14)
T2: LOW EZ DETECTION TIMER (ON/OFF)	10 Min	(14)
T1: POSITIVE START (EZ LEVEL) (0 = OFF)	0	
T2: POSITIVE START (EZ LEVEL) (0 = OFF)	0	
T1: POSITIVE START TIMEOUT (0 = NONE)	-- Min	(15)
T2: POSITIVE START TIMEOUT (0 = NONE)	-- Min	(15)
SET AT OPERATION (NORMAL/DIAGNOSTIC)	NORMAL	
DIAGNOSTIC MESSAGES (ON/OFF)	ON	
DAX MESSAGES (ON/OFF)	ON	
ADVANCE PREEMPT TIMER (0 = OFF)	0	
T1: MOTION SENSING LEVEL (0 = NORMAL)	0 %	
T2: MOTION SENSING LEVEL (0 = NORMAL)	0 %	

[illegible]

■ ■

SEE IPI INSTRUCTION AND
INSTALLATION MANUAL FOR
80211 ISLAND CALIBRATION
PROCEDURE.

2 - TOGGLE SWITCH ON

UP = DUAL FREQ.
DOWN = SINGLE FREQ.

== 80214 & 80255 (WITH JUMPER)
CARDS AND E-LEVEL OR LATER
SOFTWARE NEEDED FOR SEAR II /
ECHELON CAPABILITIES.

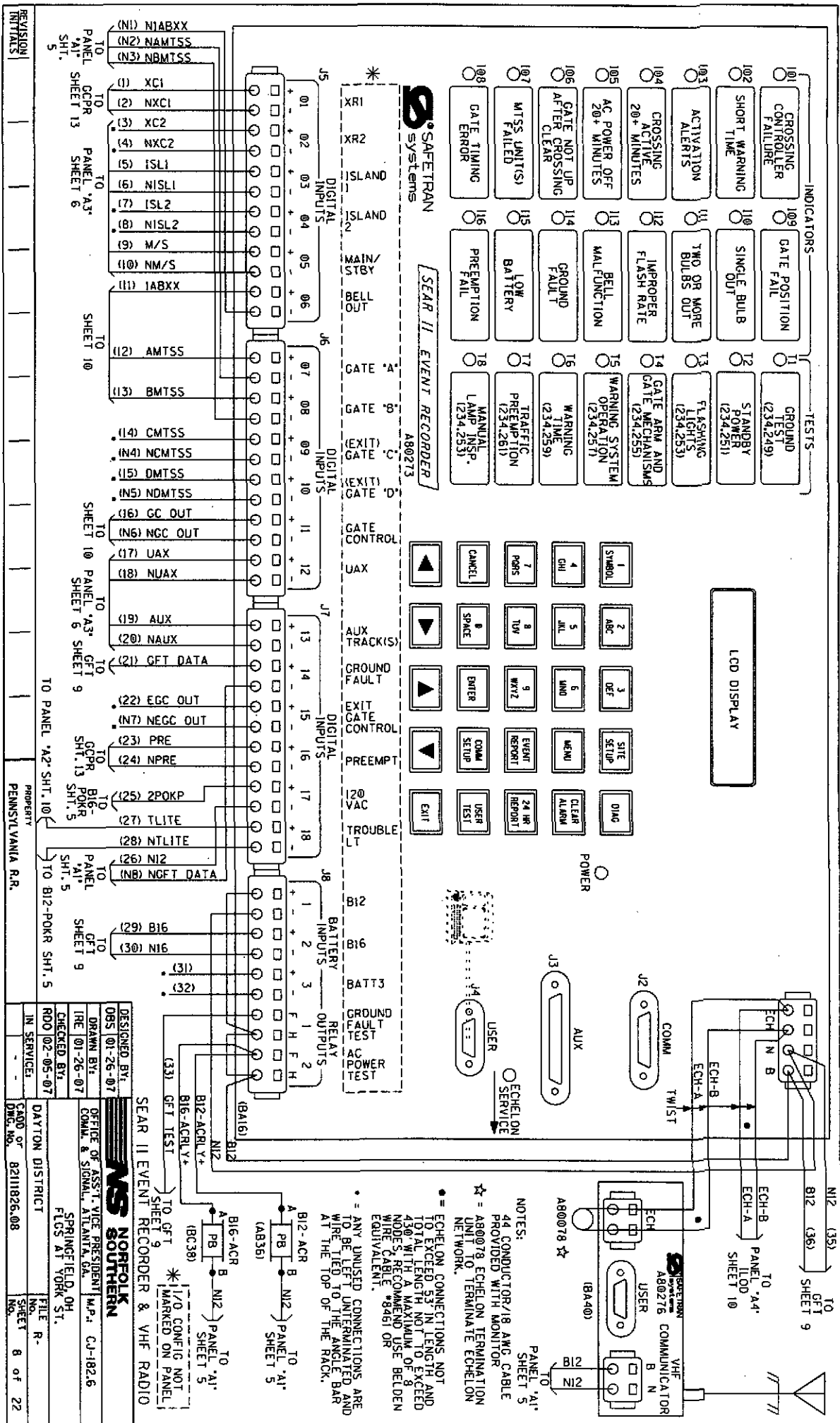
EVMS
NORFOLK
SOUTHERN

F ASS'T. VICE PRESIDENT SIGNAL, ATLANTA, GA.	M.P.: CJ-182.6
---	----------------

SPRINGFIELD, OH
ELKS AT YORK ST.

DISTRICT	FILE NO	R-
----------	---------	----

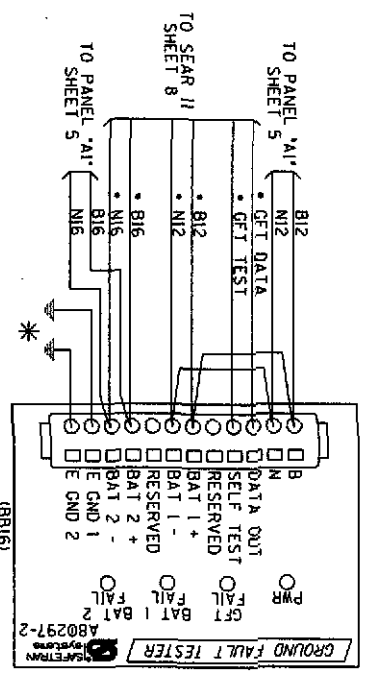
82111826.07	NO.	SHEET 7 of 22
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SITE SET UP PROCEDURE	
FUNCTION	LED DISPLAY
DATE	- -
TIME	:
DAYLIGHT SAVING TIME	YES
TIME ZONE	EST
SITE NAME	YORK ST.
DOT NUMBER	527 971W
MILEPOST	CJ-1B2.6
TESTER TYPE	CROSSING
DATE FORMAT	MM-DD-YYYY
TEMP FORMAT	FAHRENHEIT
SITE TYPE	NO COMMUNICATION
SITE ATCS	7.RRR.LLL.CCG.03.01
OFFICE ATCS ADDRESS	2.000.00.00000
POLL ID	1
OFFICE FB/F9	YES
OFFICE COMM DEVICE	SPREAD SPECTRUM RADIO
DIAL MODEM PORT	AUX/COMM
PHONE NUMBER	(OFFICE NUMBER)
INIT STRING	(LEAVE BLANK)
BACKUP SITE ADDRESS 1	
BACKUP SITE ADDRESS 2	
FIELD COMM	
USER PORT	BAUD 57600, N, 8, 1, NONE
AUX PORT	BAUD 9600, N, 8, 1, NONE
COMM PORT	BAUD 9600, N, 8, 1, NONE

VERIFY NUMBER OF BULBS	
CURR 1: LAMP SET UP	9 BULBS
CURR 2: LAMP SET UP	9 BULBS

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS	
THE QUESTION	SELECT FROM MENU OPTION
RESET NAMES AND MODULES?	YES
NUMBER OF TRACKS?	1
NUMBER OF XR INPUTS?	1
CONSTANT WARNING DEVICE	GCP
CROSSING CONTROLLER?	SSCC III (A, PLUS)
MAIN / STANDBY	YES
AUXILIARY TRACKS?	YES
AUX TRACK	SET TO AUX
GATES?	2
EXIT GATES?	0
UAX?	DROPS MD/GCP
BATTERY BANKS?	2
PREEMPTION?	NO
ILOD MODULES?	1
LAMP TYPE?	NORMAL
AUTO INSPECTIONS?	YES
BELL SENSOR?	** 1
BELL SENSOR INPUT 7	** YES
BELL SENSOR INPUT 8	** NO
BELL SENSOR INPUT 9	** NO
BELL SENSOR INPUT 10	** NO
BELL ON?	GATES LOWERING
GATE TIP SENSORS?	YES
GROUND FAULT DETECTORS?	YES
CHANNEL 1	161.475 MHZ
CHANNEL 2	NONE
FULL APPROACH MOVE ALARMS	ACTIVATE
SSCC ATCS ADDRESS	7.RRR.LLL.CCG.07.01

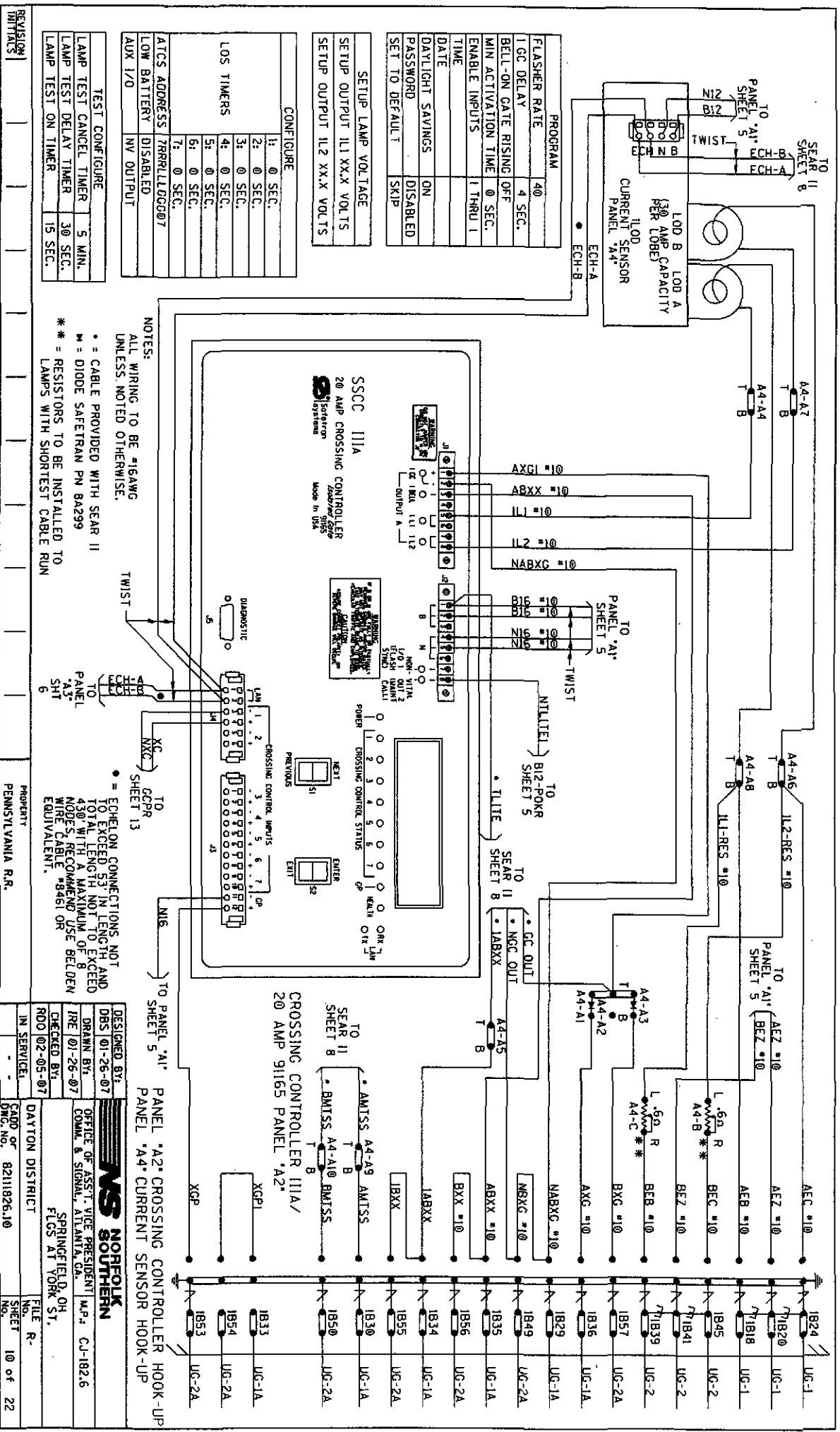


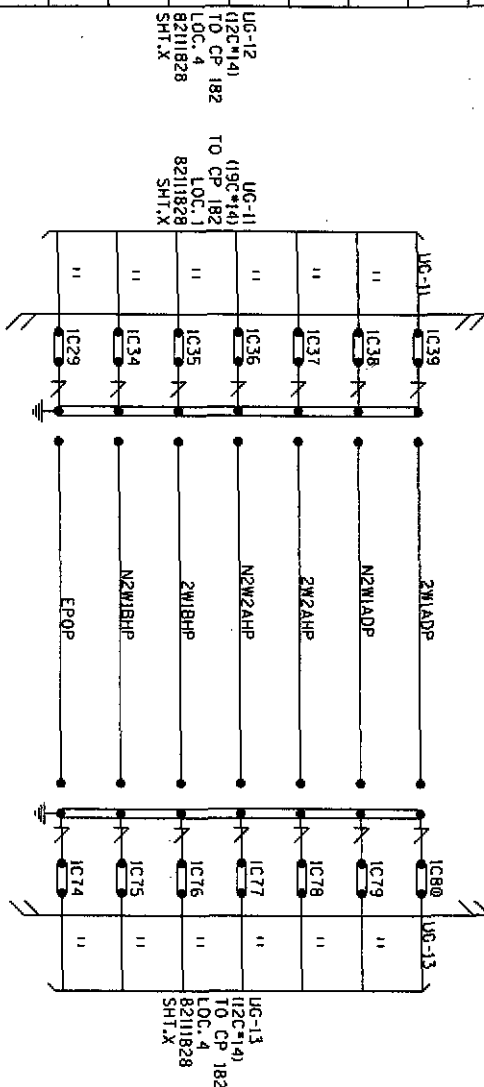
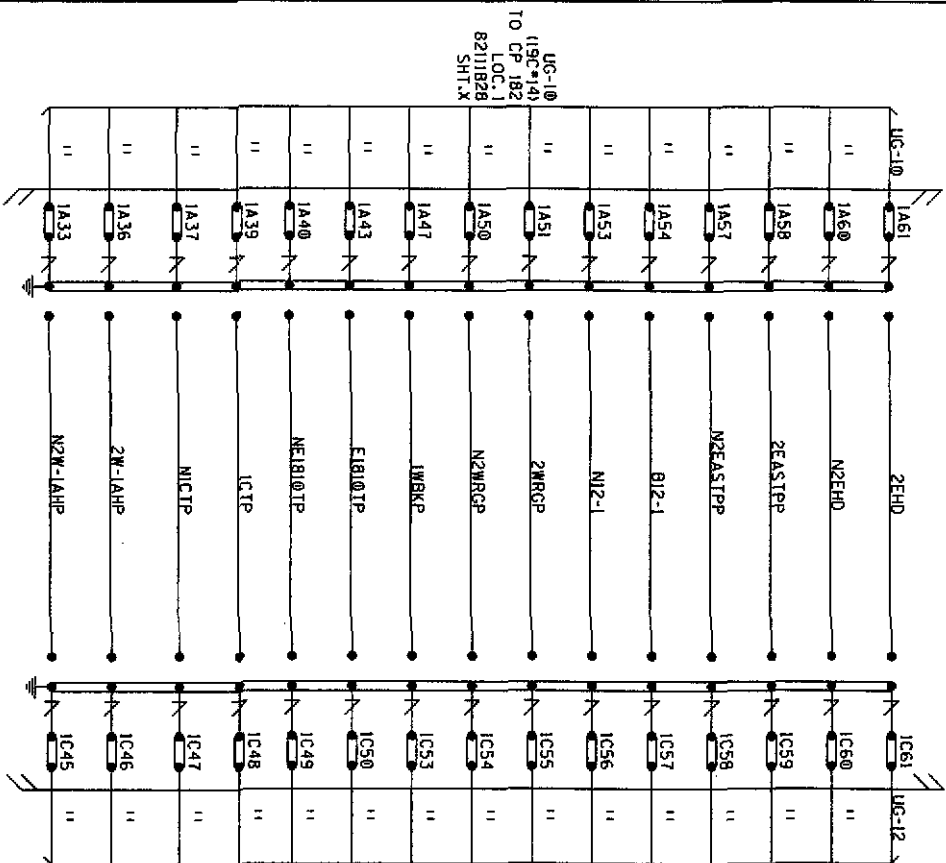
VERIFY THE BATTERY SUPPLY VOLTAGES	
B12 BATTERY VOLTAGE AT INPUT DC1	VOLT 1:
B16 BATTERY VOLTAGE AT INPUT DC2	VOLT 2:

NOTES:
 ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE
 * = CABLE PROVIDED WITH SEAR II
 ** = 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.
 * = CONNECT "E" GND 1' AND "E" GND 2' TO INDEPENDENT GROUND POINTS ON SIDE A AND SIDE B.

SEAR II SET UP CHART
 & GROUND FAULT TESTER

DESIGNED BY:	DBS 01-26-07	OFFICE OF ASST. VICE PRESIDENT	W.P. CJ-1B2.6
DRAWN BY:	IRE 01-26-07	COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY:	RDO 02-05-07	SPRINGFIELD, OH	
IN SERVICE:		FLCS AT YORK ST.	
DAYTON DISTRICT	FILE R-		
CADD OR	DWG. NO. 8211826.09	SHEET	9 of 22





SIGNAL CIRCUITS

DESIGNED BY:	DBS 01-26-07	NO. 1	FILE R-
DRAWN BY:	IRE 01-26-07	NO. 2	SHEET 14 of 22
CHECKED BY:	RDO 02-05-07	NO. 3	
IN SERVICE:		NO. 4	
DAYTON DISTRICT		FILE R-	
CARD OF DMC No. 82111826.14		SHEET 14 of 22	
NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. SPRINGFIELD, OH FLCS AT YORK ST.			
PROPERTY	PENNSYLVANIA R.R.		
REVISION	INITIALS		

LEFT TWO ROWS TERMINAL BOARD 1

"1B"

"1A"

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

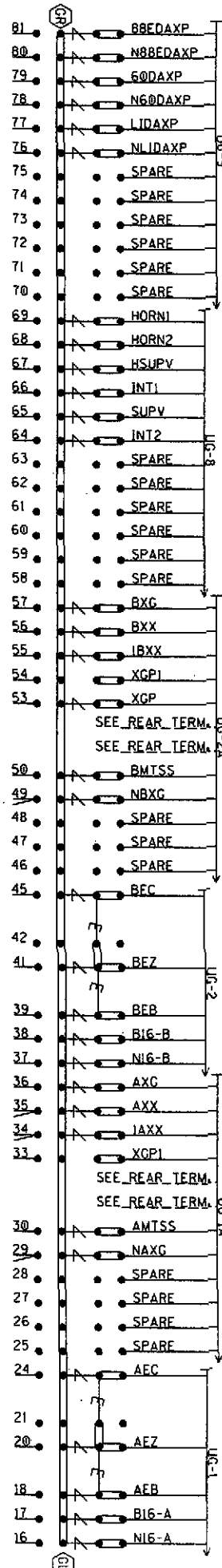
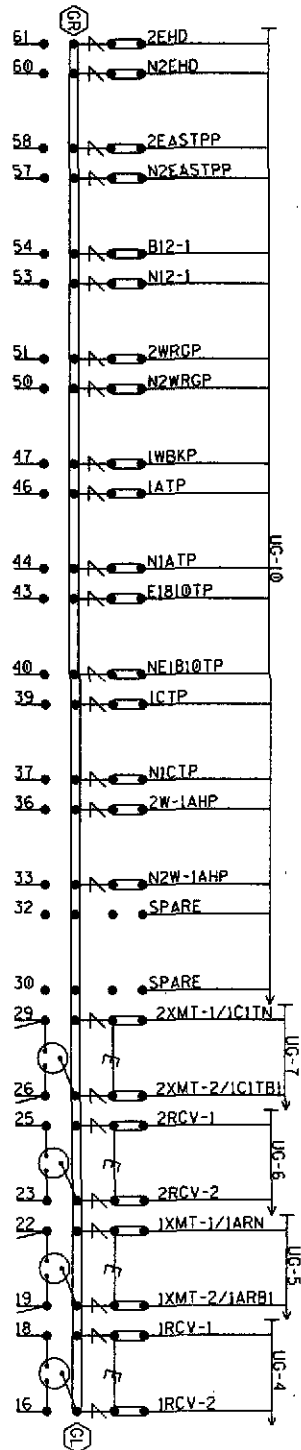
SEE FARADAY SHIELD DETAILS - 1A & 1B
FOR HOW THIS PORTION OF THE FARADAY
SHIELD IS PREDRILLED. ONLY INSTALL AND
USE THE TERMINALS NEEDED.

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:	DBS 01-26-07
DRAWN BY:	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
IRE 01-26-07	MP: CJ-1826
CHECKED BY:	SPRINGFIELD, OH
ROD 02-05-07	FLGS AT YORK ST.
IN SERVICE:	DAYTON DISTRICT
CADD OF	FILE R-
DATE NO.	8211826.15
NO.	15 of 22

BACKBOARD DETAIL - 1A & 1B

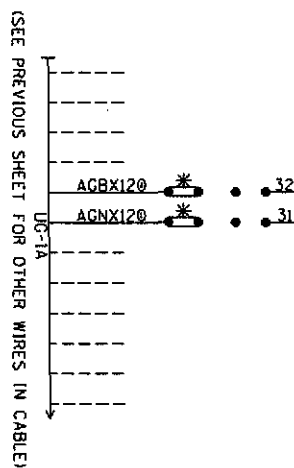
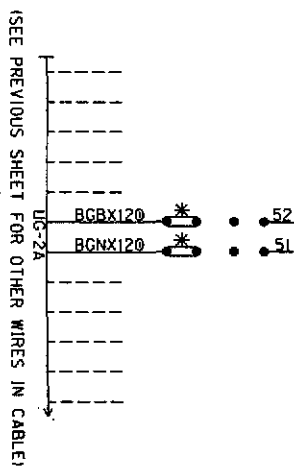


⊥ = Heavy Duty Equalizer
(022100-1X)
Clearview
⊥ = Lightning Arrestor
(022585-1X)
⊥ = LPC-10560-51

⊥ = TERMINALS GROUNDED TO SHIELD.
4 POST BLOCKS USE EITHER -
GR - SERMI PART NO. 61278
CL - SERMI PART NO. 61278-1.

NORFOLK
SOUTHERN

REAR VIEW OF LEFT TWO ROWS TERMINAL BOARD 1
 "1B" "1A"



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

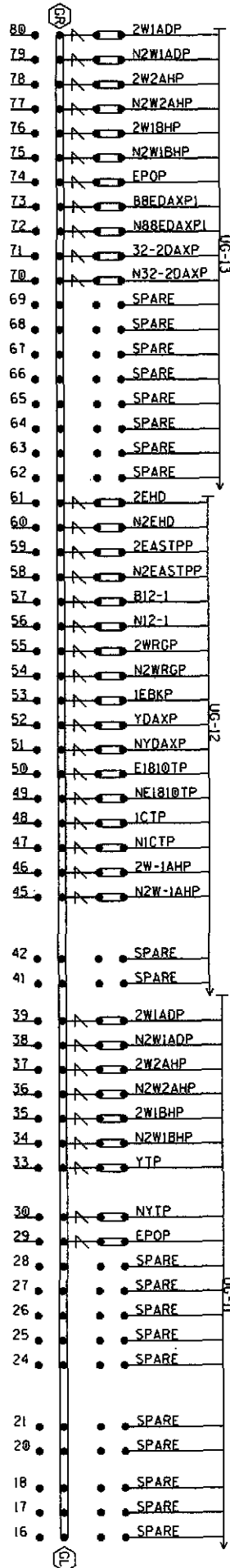
REAR OF FARADAY BACKBOARD
 REAR BACKBOARD DETAIL - 1A & 1B

DESIGNED BY: DBS 01-26-07	NO. OF SHEETS 16 of 22
DRAWN BY: IRE 01-26-07	FILE NO. R-1
CHECKED BY: RDO 02-05-07	DATE 02-05-07
IN SERVICE	DAYTON DISTRICT
OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. SPRINGFIELD, OH FLGS AT YORK ST.	
CARD OF NO. 82111826.16	

REVISION INITIALS

RIGHT ROW TERMINAL BOARD 1

"1C"



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

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

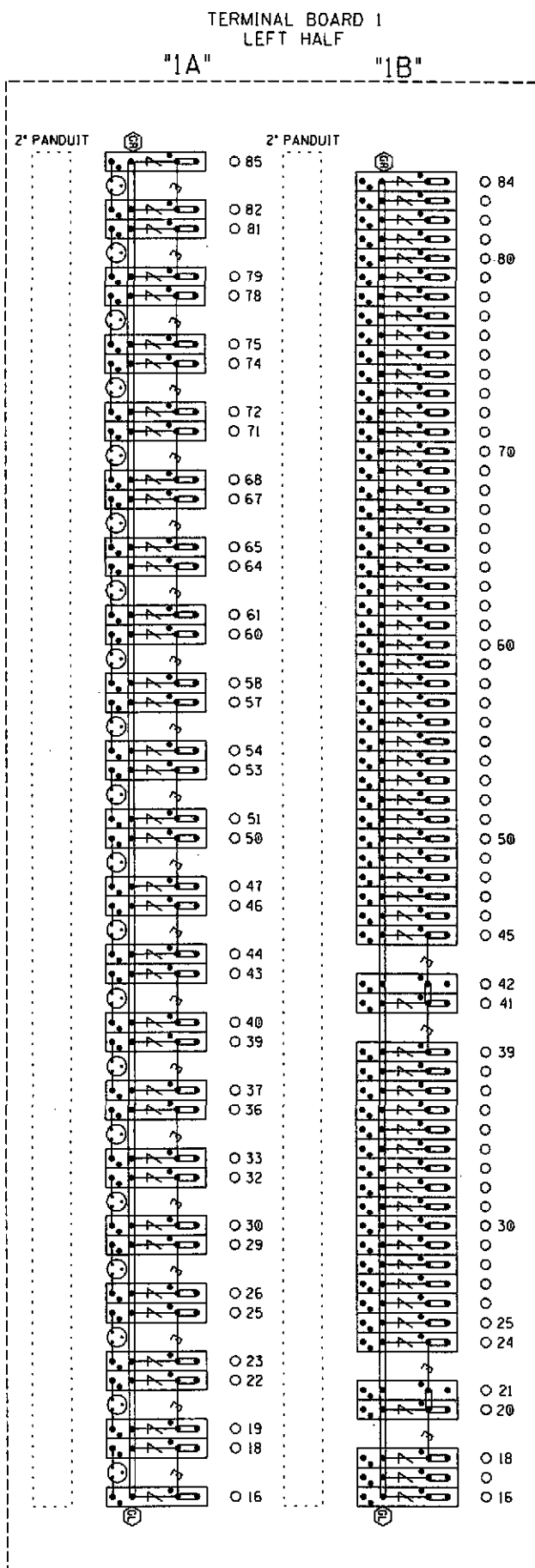
-E- = Heavy Duty Equalizer (022700-1X)
 -L- = Lightning Arrestor (022585-1X)
 -CL- = LPC-10560-51
 -CR- = TERMINALS GROUNDED TO SHIELD.
 4 POST BLOCKS USE EITHER - CR - SERMM PART NO. 61278 OR - SERMM PART NO. 61278-1.

BACKBOARD DETAIL - 1C

REVISION	INITIALS	PROPERTY	DESIGNED BY	DATE
		PENNSYLVANIA R.R.	DBS 01-26-07	01-26-07
			DRAWN BY	
			IRE 01-26-07	
			CHECKED BY	
			RDO 02-05-07	
			DAYTON DISTRICT	
			SPRINGFIELD, OH	
			FLCS AT YORK ST.	
			FILE NO.	
			SHEET	
			17 of 22	

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=1.75



TERMINAL BOARD 1
LEFT HALF

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 = Heavy Duty Equalizer (022700-1X)
- Clearview
- L = Lightning Arrestor (022565-1X)
- CL = LPC-10560-51
- GR = TERMINALS GROUNDED TO SHIELD.
- 4 POST BLOCKS USE EITHER -
- GR - SERAMI PART NO. 61278
- CL - SERAMI PART NO. 61278-1.

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:	DBS 01-26-07
DRAWN BY:	COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY:	FILE R-
IN SERVICE:	DAYTON DISTRICT
DATE OF	NO. 18 of 22
DRG. NO.	8211826.18
SHEET	18 of 22

TERMINAL BOARD 1
LEFT TWO ROWS
FARADAY SHIELD DETAIL - 1A & 1B

NORFOLK SOUTHERN

SPRINGFIELD, OH
FLGS AT YORK ST.

W.P. C-18226

"IC"

AREA BELOW IS SCALED WITH AS=.75

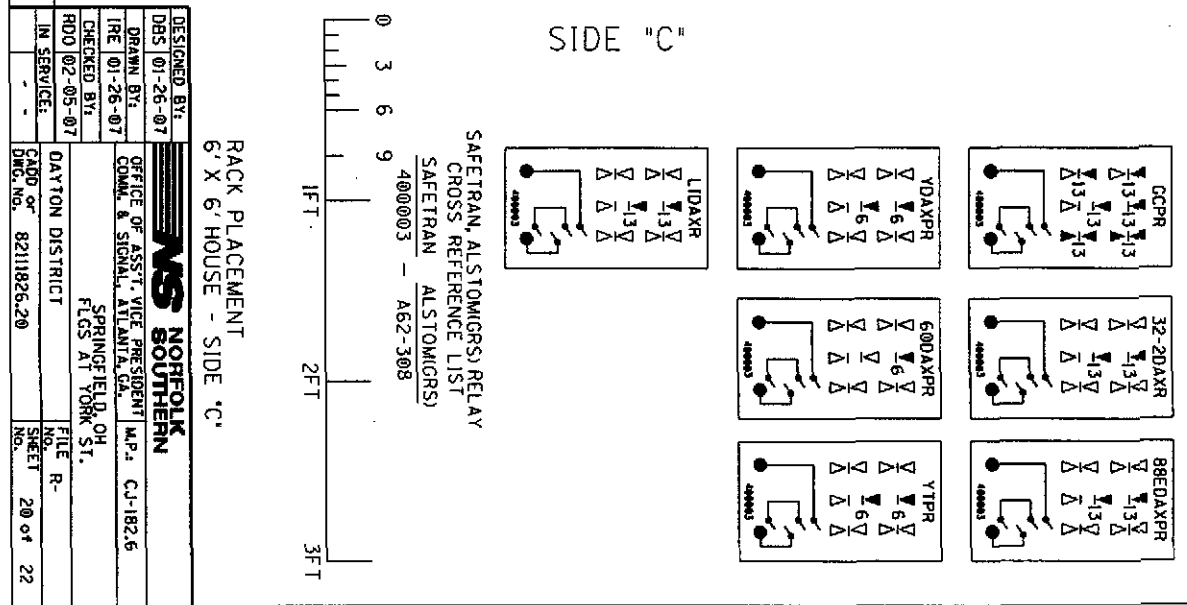
THIS SHEET IS FOR REFERENCE ONLY, TO REFLECT HOW THE FARADAY SHIELD IS PREDRILLED. ONLY INSTALL AND USE THE TERMINALS NEEDED.

~~E~~ = Heavy Duty Equalizer
 (022700-1X)
 Clearview
 L = Lightning Arrester
 (022585-1X)
 ⚡ = LPC-10560-51
  = TERMINALS GROUNDED TO SHIELD.
 4 POST BLOCKS USE EITHER -
 GR - SERIAL PART NO. 61278 -
 GL - SERIAL PART NO. 61278-1.

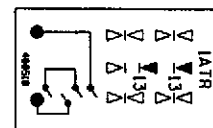
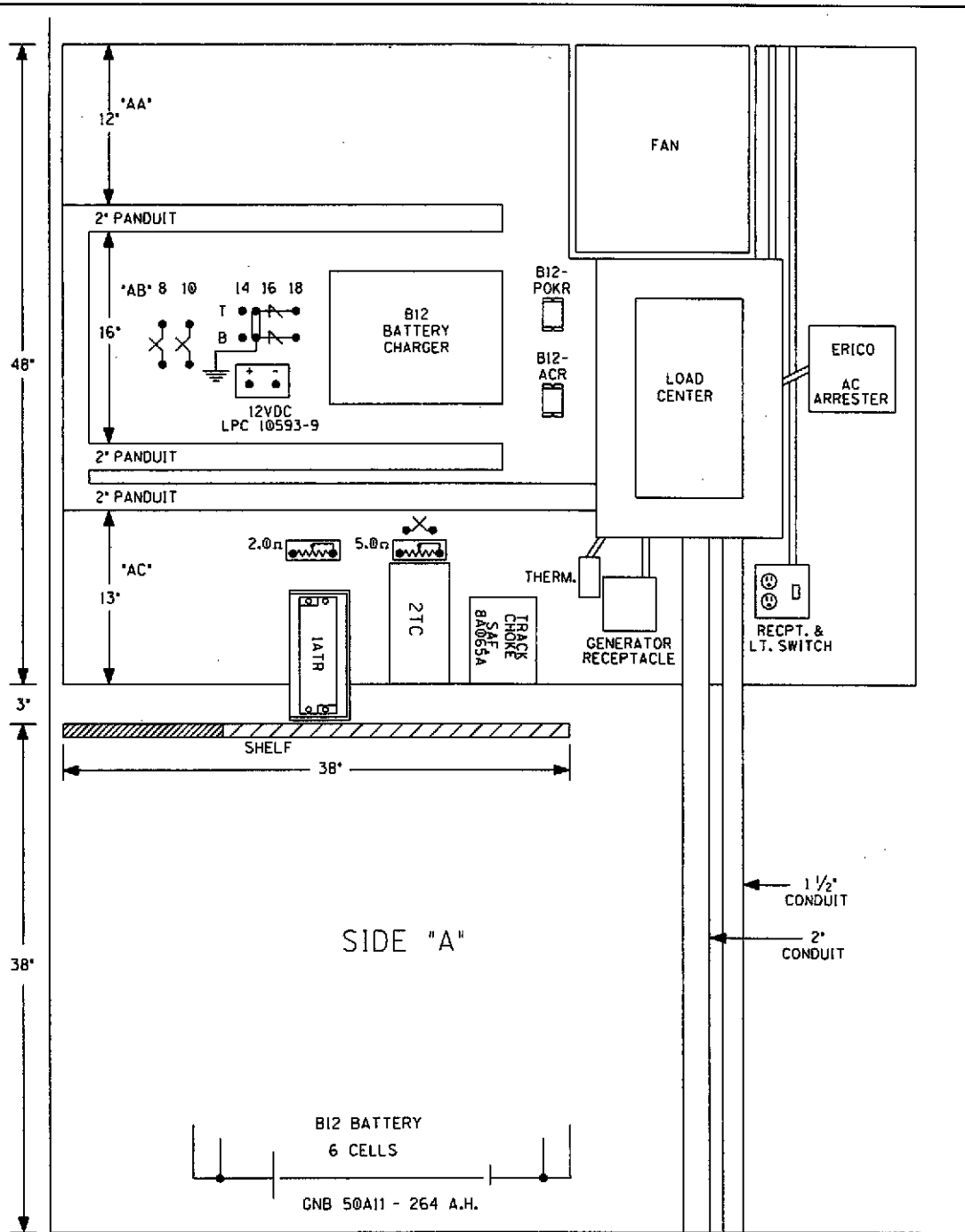
TERMINAL BOARD 1
RIGHT ROW
FARADAY SHIELD DETAIL - 1C

REVISION INITIALS									PROPERTY	IN SERVICE:	CADON DISTRICT	No. N°
									PENNSYLVANIA R.R.	- -	CADON OF DUG. NO. 8211026-19	SHEET 19 OF 22

DESIGNED BY:	D85 01-26-07	 NYS NORFOLK SOUTHERN	OFFICE OF ASST. VICE PRESIDENT	M.P. C-182.6
DRAWN BY:			COMM. & SIGNALS, WEST AVENUE 65	
IRE 01-26-07			SPRINGFIELD, OH	
CHECKED BY:			FICS AT YORK ST.	
RDO 02-05-07				
IN SERVICE:		DAYTON DISTRICT	FILE R-	
GAND OF				
DWG. NO.	8211826.19			
SHEET	19 of 22			



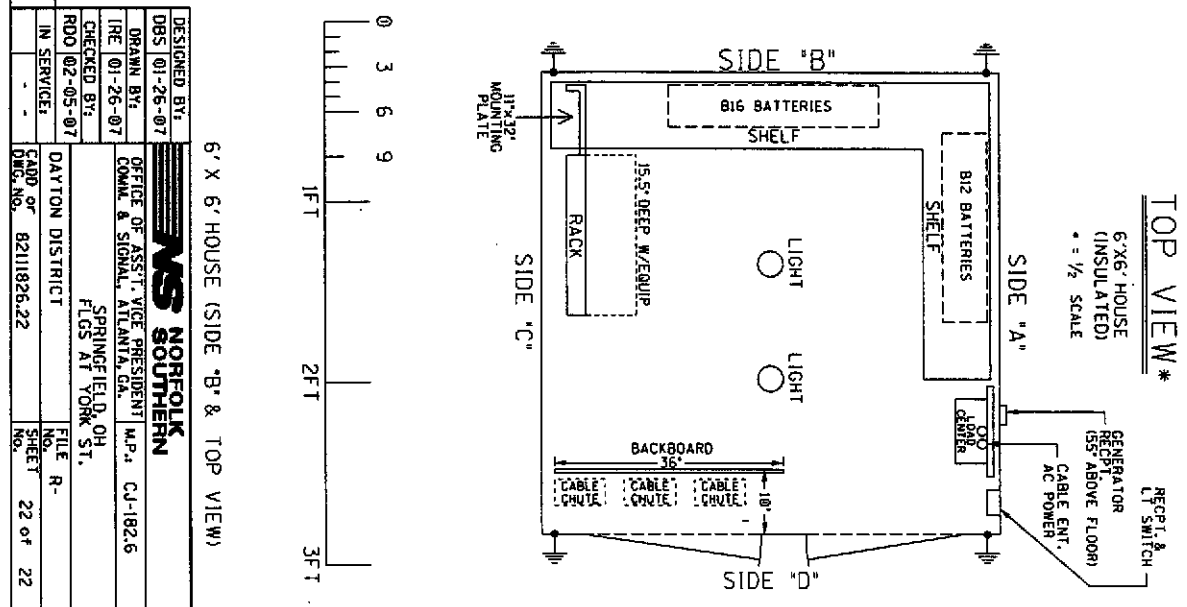
REVISION	INITIALS	PROPERTY
		PENNSYLVANIA R.R.



SAFETRAN, ALSTOM(GRS) RELAY
CROSS REFERENCE LIST
SAFETRAN ALSTOM(GRS)
400510 - AG2-120

DESIGNED BY:	DBS 01-26-07	OFFICE OF ASST. VICE PRESIDENT
DRAWN BY:	IRE 01-26-07	COMM. & SIGNAL, ATLANTA, GA
CHECKED BY:	ROD 02-05-07	SPRINGFIELD, OH
IN SERVICE:		FLGS AT YORK ST.
DAYTON DISTRICT		
CAAD OF	8211826,21	FILE R-
NO.		SHEET 21 of 22

6' X 6' HOUSE - SIDE 'A'



RECEIPT &
17 SWITCH
GENERATOR
RECEIPT
(55' ABOVE FLOOR)
CABLE ENT.

SIDE "D"

6' X 6' HOUSE (SIDE "B" & TOP VIEW)

EVMS
NORFOLK
SOUTHERN

OF ASS'T. VICE PRESIDENT SIGNAL, ATLANTA, GA.	M.P.: CJ-182.
--	---------------

SPRINGFIELD, OH
FLGS AT YORK ST

DISTRICT	FILE NO
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82111826.22	SHEET No.	22 of 22
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NO. 22 of 22



Norfolk Southern Corporation
Communications and Signal Department
1200 Peachtree Street, N.E., Box 123
Atlanta, Georgia 30309

B. L. Sykes
Chief Engineer
C&S Engineering
404/529-2105

March 6, 2007
061-10.1043

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

RE: In the Matter of the Implementation of the Norfolk Southern Corridor Safety Project
"CJ" Line from Columbus, OH to Cincinnati, OH

Dear Ms. Kirkland:

Per the ORDC letter dated November 1, 2007, regarding the above case for the upgrade of automatic grade crossing warning devices at W. High Street in Springfield, Clark County, Ohio, DOT: 523 496F, Milepost CJ-183.90.

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

Enclosure(s)

BLS/rhr/cp/rjs

Cc: Mr. R. S. Noe, NS Corporation, Norfolk, VA
Ms. Bonnie Johrendt, PUCO (w/plans, estimate and material list)
Mr. Tim Perkins (w/plans, estimate and material list)
✓ Docketing Division (w/plans, estimate and material list)
Ms. P. A. Gray, NS Corporation, Roanoke, VA (w/estimate)



06-Mar-07

Detailed Estimate for Grade Crossing Warning Devices

City/State: SPRINGFIELD, OH
MilePost: CJ-183.9
State Proj. No.:
S&E Proj. No.: 10.0997
Man Days: 140

Road: W. HIGH ST.
DOT/AAR: 523496F
County: CLARK
AFE: F10094
File Number: 061-10.1043

Purchases - Others	
Meals and Lodging:	\$13,172.54
Rental of Equipment:	\$28,798.00
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 35 Days)	
Construction Supervision Vehicle:	\$2,303.84
Purchases - Other Total:	\$44,274.38
Material And Additives	
Material Cost:	\$86,203.00
Sales and Use Tax:	\$0.00
Material Handling Freight:	\$4,310.17
Material Total:	\$90,513.17
Labor And Additives	
Labor Cost:	\$33,880.00
(4 man crew at \$968.00 a day for: 35 days)	
Payroll Tax & Overheads:	\$33,422.62
Preliminary Engineering:	\$10,567.34
Construction Supervision:	\$9,564.32
Labor Total:	\$87,434.28
Project Cost:	\$222,221.83
Scrap / Salvage Credit:	\$0.00
Project Total:	\$222,221.83

Estimated on: 06-Mar-07

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:	SPRINGFIELD
Road:	W. HIGH ST.
Mile Post:	CJ-183.9
Drawing Number:	8211-1839
State Project Number:	
County:	CLARK
A A R Number:	523496F
Project Number:	10.0997
File Number:	061-10.1043
New File Number:	
A F E Number:	F10094
Store Number:	
Supervisor:	D.M. FRANCIS
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&E Gen. Supt. Construction w/copy of invoice	

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Date Quan.	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
3	670-360693-4	EA	\$5.04	\$15.12	AAR/DOT NUMBER PLATE/DECAL, ORDER 3 PER PROJECT. 60 DAY LEAD TIME. SUPPLIED BY STRAN.					
1	165-006505-4	EA	\$1,051.54	\$1,051.54	AC SERVICE, COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE					
10	670-119241-4	EA	\$32.80	\$328.00	ARRESTOR, LIGHTNING HEAVY DUTY CLEAR VIEW SAFETRAN 022585-1X					
13	105-871901-4	EA	\$161.57	\$2,100.41	BATTERY, GNB 265AH MODEL 50A11 SINGLE CELL 2.25 VOLTS					
2	670-005125-4	EA	\$2.54	\$5.08	BLOCK, TERMINAL BAKELITE FOR MOUNTING LIGHTING					
2	670-980689-4	EA	\$71.71	\$143.42	ARRESTOR EQUALIZER OR RESISTANCE UNIT					
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 28' AND LESS					
1	670-356949-4	EA	\$97.00	\$97.00	BRACKET HIGH WIND, (RIGID 3'), WIG- 191036, WALRUS TUSK TYPE					
600	465-292862-4	LF	\$1.04	\$624.00	CABLE, 10 GENERATOR HOOK UP, SERRMI P/N 40524, FEMALE CONNECTOR					
600	465-292829-4	LF	\$3.05	\$1,830.00	CABLE, U-2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR					
900	465-939422-4	LF	\$2.55	\$2,295.00	CABLE, U.G. 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL					
2000	465-954727-4	LF	\$1.62	\$3,240.00	CABLE, U.G. 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL					
300	465-791835-4	FT	\$2.22	\$666.00	CABLE, UG 7 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL FLAT					
240	165-544477-4	FT	\$2.55	\$612.00	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					
2	670-090450-4	EA	\$50.38	\$100.76	CONDUIT, 4"x10" PVC, SCHEDULE 80 BELL CONNECTOR AT ONE END, 1/2 PT. GLUE IN KIT 670-123298-4					
2	670-486646-4	EA	\$41.62	\$83.24	CONNECTOR, WELDED FAR RAIL HARMON A1000-2W					
2	670-794453-4	EA	\$854.03	\$1,708.06	CONNECTOR, WELDED NEAR RAIL HARMON A1000-1W					
					COUNTERWEIGHT PKAGE, 25-31 GATE STAN S- MECH ONLY, STAINLESS TO INCLUDE HUB, SUPPORT ARMS					

APPROVED BY STATE

APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER

Location: SPRINGFIELD

OH

S&E Proj. No.: 10.0997

AFE No.: F10094

Drawing No.: 8211-1839

Store No.:

P.O. Number:

Date Required:

Date Shipped:

Vendor: SW Signal Engineering Company

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Date Quan.	Quantity Installed Date Quan.	Quantity Date Returned (Credit)	Special Instructions
4	670-760012-4	EA	\$40.02	\$160.08	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. ===TO COVER 2 LAMPS===					
1	670-986650-4	EA	\$375.69	\$375.69	DISPOSAL, CONSTRUCTION DEBRIS AND CLEANING X'ING EQUIPMENT CONTAINER					
1	670-000004-4	EA	\$700.00	\$700.00	FCC LICENSE FOR MONITOR/RADIO					
5	670-000003-4	EA	\$255.85	\$1,279.25	FILL/STONE #67, QUANTITY IS BASED ON TRUCK LOAD PLUS DELIVERY COST					
2	670-015231-4	EA	\$423.50	\$847.00	FOUNDATION, DIXIE, S-2 GATE 56" ASSEMBLED					
2	670-263738-4	EA	\$331.87	\$663.74	GATE, ARM FIBERGLASS-ALUMINUM 25-31 FT. INCLUDES GATE GUARD FOR GATE LIGHT CABLE, 076600-320017, NEG P/N 8002-4NFS/CG					
1	670-468243-4	EA	\$43.57	\$43.57	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-400					
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					
1	670-123298-4	EA	\$256.93	\$256.93	KIT, HARDWARE SUPPLIES REQUIRED X'ING PKGAGES. WEB CONNECTORS FOR SHUNT(8EA) TAPE, AMPS, P/GUM PAINT, SLEEVES, TAGS, GLUE, 100 EA WHITE TAGS, JNE CAN BLUE MARKING PAINT ETC...					
2	670-764166-4	EA	\$907.65	\$1,815.30	LAMP ASSY, 5" MAST MTG. 2W IND. 20" BKGRD, FLX-12 W/BULB STRAN #042003-487XNS					
6	165-643547-4	EA	\$4.30	\$25.80	LAMP, 18 WATT 10 VOLT S-11 SC BAY 18S11/1SC CLEAR R/WY SIGNAL UJ-71463 GE					
12	670-440826-4	EA	\$1.01	\$12.12	LINK, SAFETRAN 024620-1X INSL TESTING COMP 1 IN CENTER SIGNAL CIRCUITS CR 02-286662					
4	255-590880-4	EA	\$16.12	\$64.48	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"					
2	670-637778-4	EA	\$1,031.41	\$2,062.82	MAST, 5" ALUMINUM 13'10" WITH DOUBLE JCT. BOX BASE. STRAN P# 070519-11AX.					
2	670-850933-4	EA	\$3,352.65	\$6,705.30	MECHANISM, GATE MODEL S-60, WITH DEFROSTER AND MINI TRACKSIDE SENSOR STRAN # 0740007-X002B3					
2	000-000000-4	EA	\$5,000.00	\$10,000.00	MIS. UNDERGROUND BORING					

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CAR NUMBER

SEAL NUMBER

Tuesday, March 06, 2007 10:43 AM

Page: 3 of 5

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Date Quan.	Installed Date Quan.	Returned Date (Credit)	Special Instructions
4	670-000001-4	EA	\$316.23	\$1,264.92	MISC. MATERIAL					
2	670-001347-4	EA	\$63.27	\$126.54	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERMMI A1250-5, HARMON @200965-000, OR					
1	255-646807-4	EA	\$10.38	\$10.38	PADLOCK, SAFETRAN PART NO. 030399-29X SCREW TYPE FOR CIR CONTROLLER AND BTY. BOX					
1	610-719870-4	EA	\$135.90	\$135.90	PEDESTAL ASSEMBLY, ARMORCAST P/N P6001205-NS, YELLOW 10"X11"X29" POLYETHYLENE INCL 45" WITH TERMINAL BLOCK					
1	670-514605-4	EA	\$8.45	\$8.45	PINNACLE, W-C SECT 1-11, 4'x 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X					
3	670-555609-4	EA	\$45.12	\$135.36	PLUGBOARD, TYPE B-1 GRS A62-506 OR HARMON @7062-506 OR					
1	670-427136-4	EA	\$93.49	\$93.49	POWER OFF LAMP INDICATOR FOR SHELTER, SAFETRAN P/N 051958-5					
1	165-902002-4	EA	\$308.00	\$308.00	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDFL					
6	465-002899-4	EA	\$22.06	\$132.36	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES					
1	670-742096-4	EA	\$41.80	\$41.80	RELAY INTERFACE PROBE, ULTRATECH PN 16031-00					
1	670-456936-4	EA	\$150.00	\$150.00	RELAY RACK, SWING, FARADAY SHELTER FOR ONE RELAY, SSFETRAN P/N T15331					
3	670-707995-4	EA	\$313.67	\$941.01	RELAY, TYPE B1, NEW LINE, 900 OHMS, .008 AMPERES GRS A62-308 OR SAFETRAN @400003					
2	435-806660-4	EA	\$6.25	\$12.50	SAND, 25LB BAG FOR CABLE ENTRANCE INTO THE SHELTER					
1	670-816502-4	EA	\$4,903.75	\$4,903.75	SEARII AUTOMATED INSPECTOR SYSTEM KIT, W/ 1-ILOD, 1-eBELL, 2-GTS, WITHOUT MITS, 1-GFT, 1-VHFC, 2- RECORDER INTERFACE MODULE, 1-ECHOLON CONNECTOR					
1	670-281280-4	EA	\$7,006.00	\$7,006.00	SHELTER BARE 6X6, ALUMN, FARADAY, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN. CONN. W/ADJUSTABLE PIERS, SAFETRAN P/N 058400-66-78A					
2	670-586967-4	EA	\$37.68	\$75.36	SHUNT COVER W/LAG SCREWS, 19"X19", SERMMI #40271, ORDER 1 PER SHUNT					
2	670-775391-4	EA	\$438.32	\$876.64	SHUNT, MULTI-FREQ. #62780-1543 SAFETRAN NARROW BAND-LOW LOADING					

APPROVED BY STATE

APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER

Location: SPRINGFIELD

OH SAE Proj. No.: 10.0997

AFE No.: F10094

Drawing No.: 8211-1839

Store No.:

P.O. Number:

Date Required:

Date Shipped:

Vendor: SW Signal Engineering Company

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Date	Quantity Date	Quantity Date	Quantity Returned (Credit)	Special Instructions
2	670-393331-4	EA	\$37.43	\$74.86	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #117215						
2	670-806648-4	EA	\$56.42	\$112.84	SIGN, X-BUCK, LESS HARDWARE, SAFETRAN 036200-X CR 02-490546						
2	670-330382-4	RL	\$15.68	\$31.36	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS, "WARNING STOP DIGGING"						
22	670-478560-4	EA	\$19.47	\$428.34	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR						
3	165-917984-4	EA	\$4.84	\$14.52	TERMINAL, TEST, TYPE B GRS A62-515 OR HARMON @32118-001 OR						
3	610-065626-4	EA	\$17.55	\$52.65	ULTRA-TECH 15206-01 CONNECTIVITY BLOCK FOR GRS B1 RELAY						
8	670-007238-4	EA	\$129.46	\$1,035.68	UNIT, THE INSTALLATION AND WIRING OF A DEVICE WHICH REQUIRE A MINIMUM OF FOUR WIRE CONNECT-						
1	670-258957-4	EA	\$25,580.50	\$25,580.50	WIRED RACK, 6X6 FARADAY, 20AMP SINGLE TRK SSCIIIA, GCP3000D2, 2 CRAGG CHARGER, 2 RELAY RACKS, SAFETRAN P/N 20A 1TRK, USE WITH I/S 670-281280-4 W/CABLE CHUTES BEHIND THE FARADAY SHIELD						
1	450-986008-4	EA	\$24.84	\$24.84	WRENCH, TEST POST TYPE B DWG. 55393-3, GR.1						

Total Material: \$86,203.46

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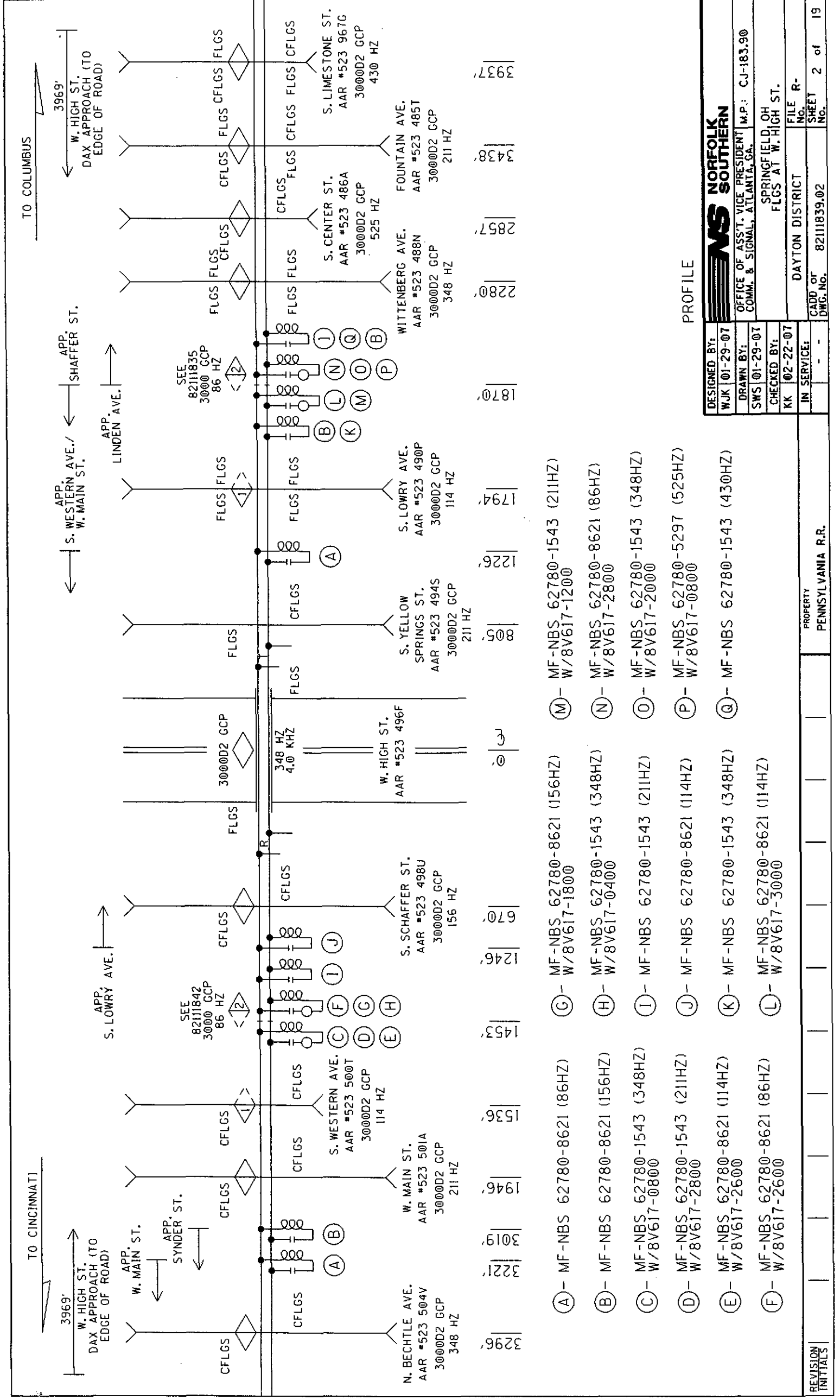
APPROVED BY RAILROAD

CAR NUMBER

SEAL NUMBER

Tuesday, March 06, 2007 10:43 AM

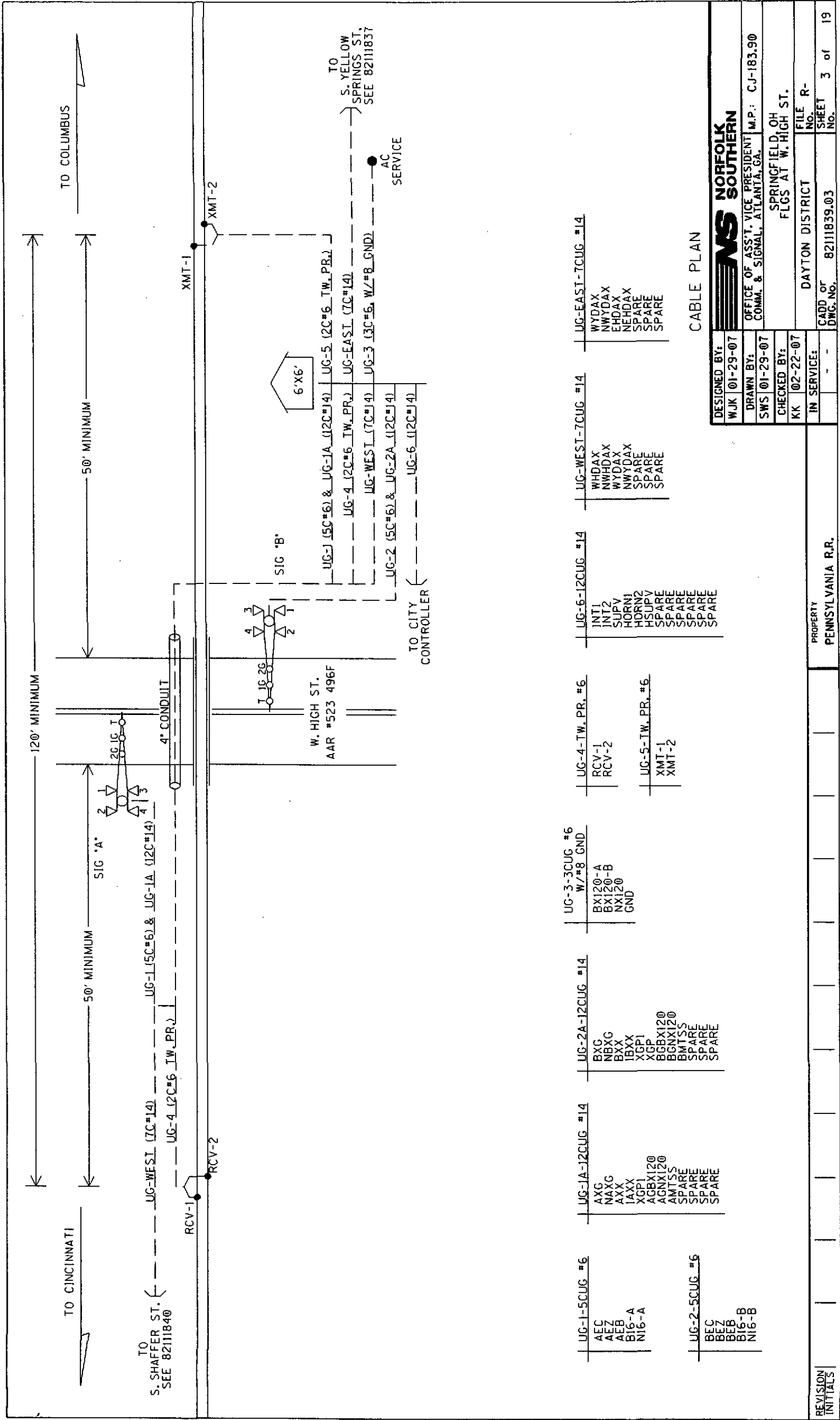
Page: 5 of 5



DESIGNED BY:		NORFOLK SOUTHERN	
WJK	01-29-07	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
DRAWN BY:		M.P.: CJ-183.90	
SWS	01-29-07	SPRINGFIELD, OH	
CHECKED BY:		FLGS AT W. HIGH ST.	
KK	02-22-07	DAYTON DISTRICT	
IN SERVICE:		FILE R-	
		CADD or DWG. No. 82111839.02	
		SHEET 2 of 19	

PROFILE

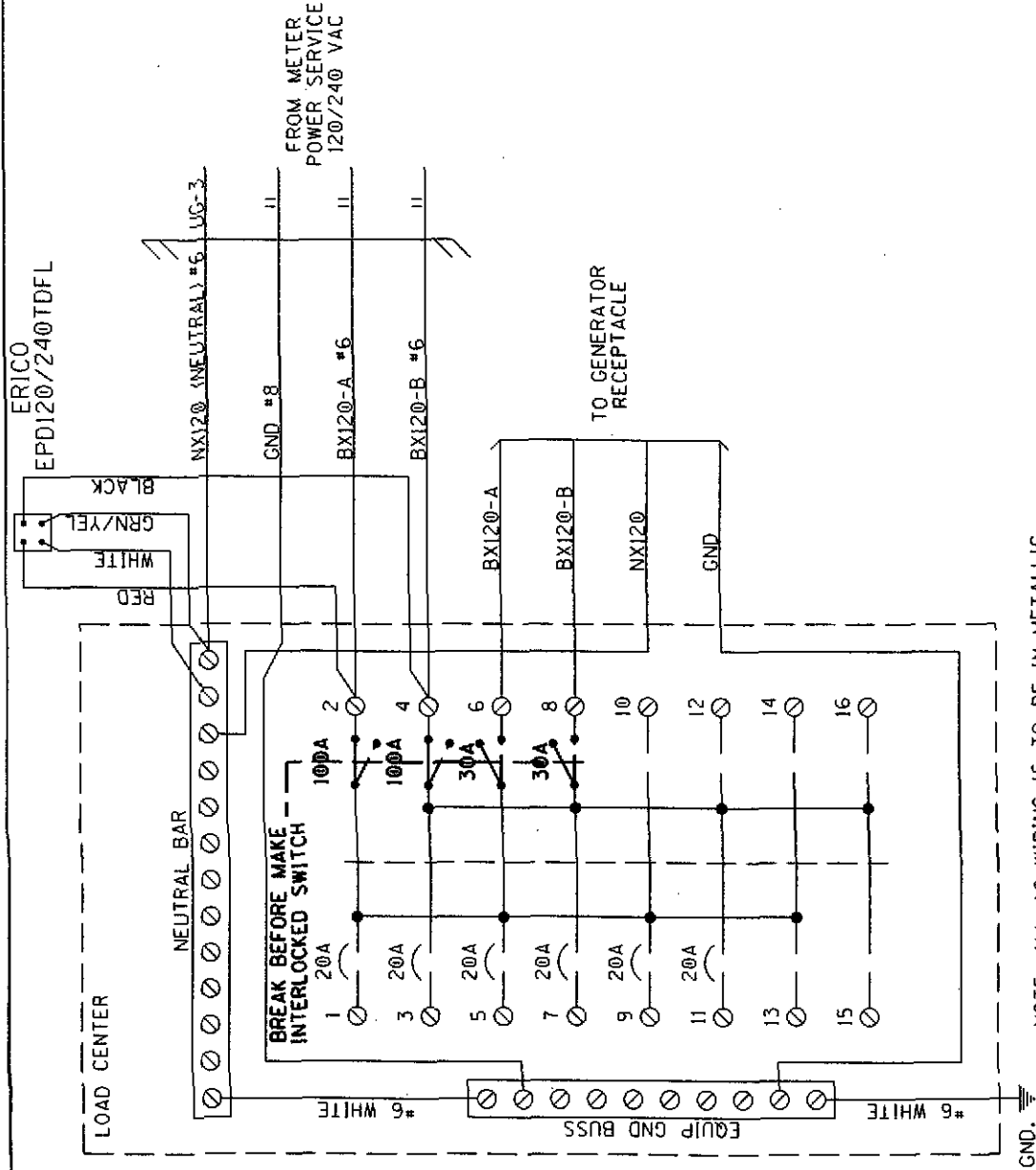
- A - MF-NBS 62780-8621 (86HZ)
- B - MF-NBS 62780-8621 (156HZ)
- C - MF-NBS 62780-1543 (348HZ)
- D - MF-NBS 62780-1543 (211HZ)
- E - MF-NBS 62780-8621 (114HZ)
- F - MF-NBS 62780-8621 (86HZ)
- G - MF-NBS 62780-8621 (156HZ)
- H - MF-NBS 62780-1543 (348HZ)
- I - MF-NBS 62780-1543 (211HZ)
- J - MF-NBS 62780-8621 (114HZ)
- K - MF-NBS 62780-1543 (348HZ)
- L - MF-NBS 62780-8621 (114HZ)
- M - MF-NBS 62780-1543 (211HZ)
- N - MF-NBS 62780-8621 (86HZ)
- O - MF-NBS 62780-1543 (348HZ)
- P - MF-NBS 62780-5297 (525HZ)
- Q - MF-NBS 62780-1543 (430HZ)



CABLE PLAN

DESIGNED BY:	WJK 01-29-07
DRAWN BY:	SWS 01-29-07
CHECKED BY:	KK 02-22-07
IN SERVICE:	- -
NORFOLK SOUTHERN	
OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
M.P.: CJ-183.90	
SPRINGFIELD, OH FLGS AT W. HIGH ST.	
DAYTON DISTRICT	FILE R-
CADD OF DWG. No.	82111839.03
SHEET	3 of 19

PROPERTY
PENNSYLVANIA R.R.

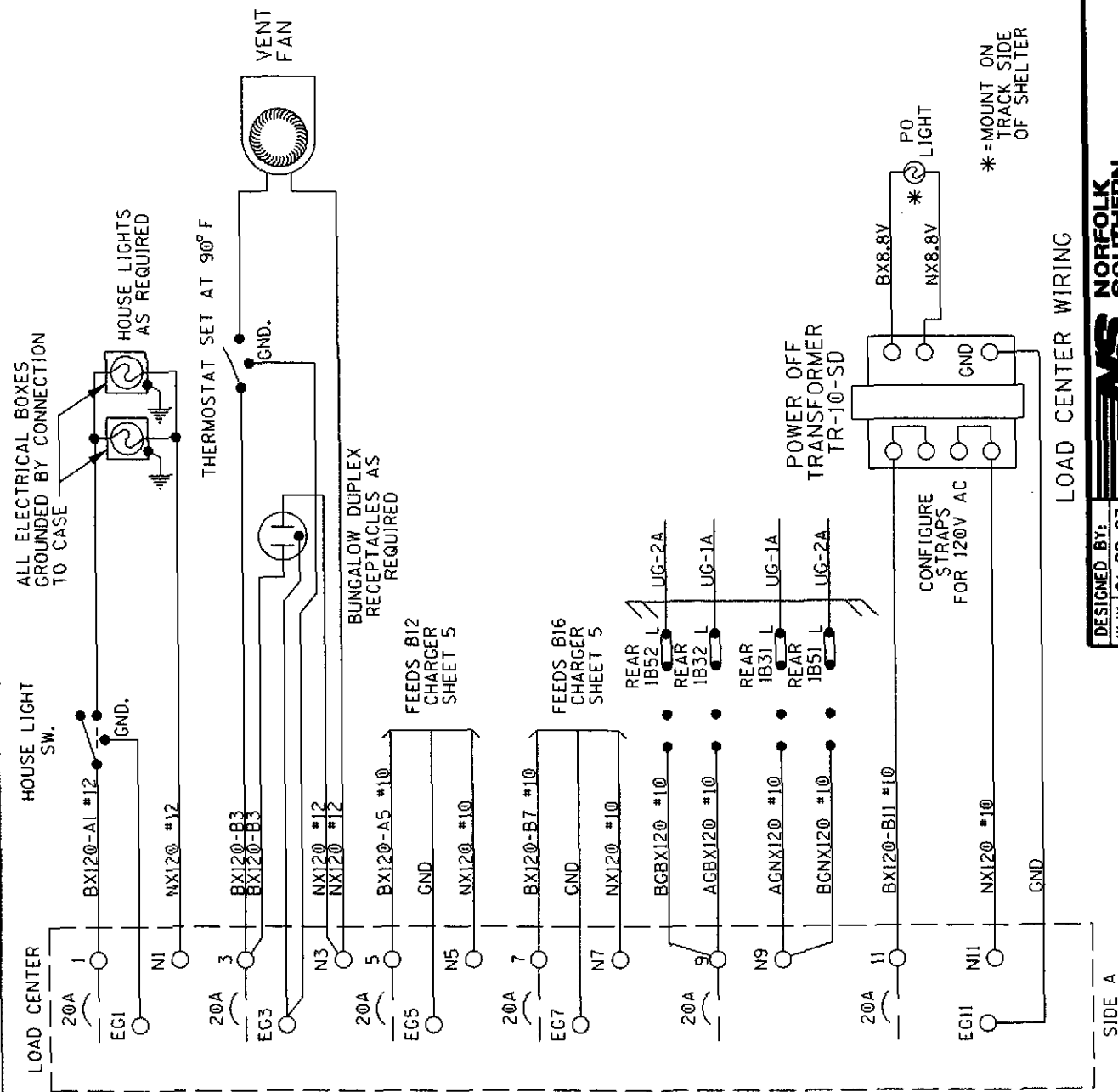


NOTE: ALL AC WIRING IS TO BE IN METALLIC CONDUIT WITH NO EXPOSED TERMINALS. ALL AC 120V AND 240V EQUIPMENT IS TO BE PROPERLY GROUNDED.

SQUARE "O" PART NUMBERS:

- LOAD CENTER—Q0116L125C
- 10A 1P CIR BKR—Q0110
- 20A 1P CIR BKR—Q0120
- 30A 1P CIR BKR—Q0130
- 30A 2P CIR BKR—Q0230
- 60A 2P CIR BKR—Q0260
- 100A 2P CIR BKR—Q02100
- MECH INTERLOCK—PK4DTIM4LA

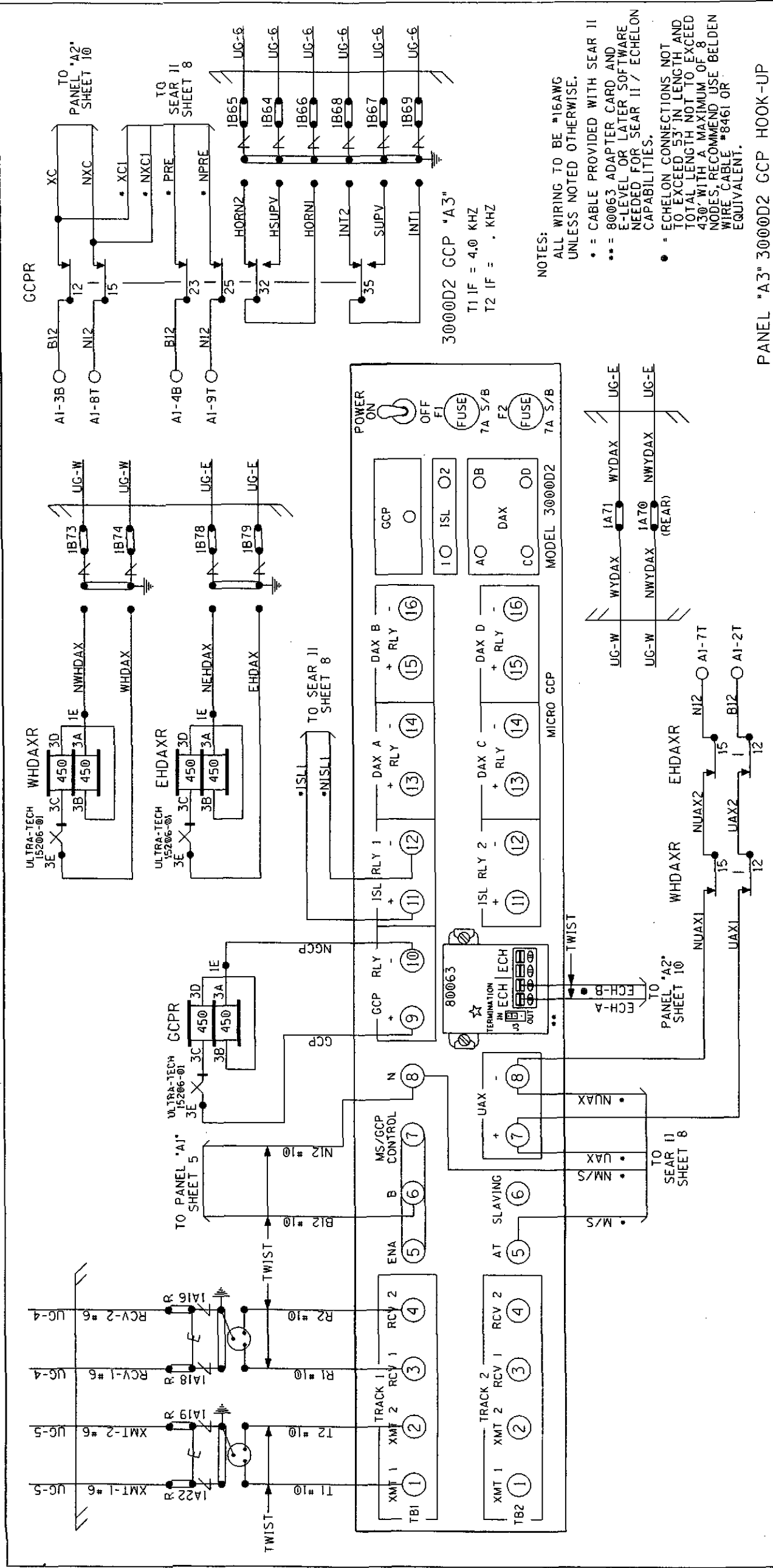
GENERATOR RECEPTACLE:
MALE CONNECTOR - NEMA L1430-F1



DESIGNED BY:	WJK 01-29-07
DRAWN BY:	SWS 01-29-07
CHECKED BY:	KK 02-22-07
IN SERVICE:	- -
PROPERTY	PENNSYLVANIA R.R.
REVISION INITIALS	

FILE NO.	82111839.04
SHEET NO.	4 of 19

DAYTON DISTRICT	FILE R-
SPRINGFIELD, OH	FLGS AT W. HIGH ST.
COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-183.90
OFFICE OF ASS'T. VICE PRESIDENT	
NORFOLK SOUTHERN	



3000D2 GCP "A3"
T1 IF = 4.0 KHZ
T2 IF = . KHZ

NOTES:

- ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.
- * = CABLE PROVIDED WITH SEAR II
- ** = 80063 ADAPTER CARD AND E-LEVEL OR LATER SOFTWARE NEEDED FOR SEAR II / ECHELON CAPABILITIES.
- * = 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.

PANEL "A3" 3000D2 GCP HOOK-UP

DESIGNED BY:	WJK 01-29-07
DRAWN BY:	SWS 01-29-07
CHECKED BY:	KK 02-22-07
IN SERVICE:	-
PROPERTY	PENNSYLVANIA R.R.
REVISION INITIALS	
FILE NO.	DAYTON DISTRICT
SPRINGFIELD, OH	FLGS AT W. HIGH ST.
COMM. & SIGNAL, ATLANTA, GA.	M.P.: CJ-183.90
OFFICE OF ASS'T. VICE PRESIDENT	
NORFOLK SOUTHERN	

☆ = 80063 ECHELON RJ45 CONNECTOR TERMINATION J3 TO BE SET "IN" WHEN AT END OF ECHELON NETWORK.

EXPANDED PROGRAMMING

3000D2 PROGRAMMING CHART (LEVEL: J)	
NUMBER OF TRACK TRANSCIEVERS	I
T1: FREQUENCY	348HZ
T2: FREQUENCY	---HZ
T1: UNIDIRECTIONAL/BIDIRECTIONAL	B1
T2: UNIDIRECTIONAL/BIDIRECTIONAL	---
T1: XMIT LEVEL (MAX/MED)	MAX
T2: XMIT LEVEL (MAX/MED)	---
T1: PREDICTOR/MOTION SENSOR	PRED
T2: PREDICTOR/MOTION SENSOR	----
T1: WARNING TIME	49 Sec
T2: WARNING TIME	-- Sec
T1: APPROACH DISTANCE	1668 Ft
T2: APPROACH DISTANCE	---- Ft
UAX1 PICKUP DELAY (UAX) (0 = OFF)	25 Sec
ENA/UAX2 DELAY (0 = ENA)	-- Sec
T1: ISLAND DISTANCE	404 Ft
T2: ISLAND DISTANCE	--- Ft
NUMBER OF DAX'S	0 EQ
DAX A TRACK ASSIGNMENT (T1/T2)	---
DAX A DISTANCE (0 = PREEMPT)	F+
DAX B TRACK ASSIGNMENT (T1/T2)	---
DAX B DISTANCE (0 = PREEMPT)	F+
DAX C TRACK ASSIGNMENT (T1/T2)	---
DAX C DISTANCE (0 = PREEMPT)	F+
DAX D TRACK ASSIGNMENT (T1/T2)	---
DAX D DISTANCE (0 = PREEMPT)	F+
DAX D WARNING TIME	Sec
SLAVING (MASTER/SLAVE)	MASTER
PASSWORD ENABLED	NO
RECORDER INSTALLED	NO

3000D2 PROGRAMMING NOTES:

- 1) AVAILABLE WHEN "TRANSFER DELAY MS TO GCP" AND "PRIME PREDICTION OFFSET" IS ON
- 2) AVAILABLE WHEN "TRANSFER DELAY MS TO GCP" AND DAX DISTANCE IS GREATER THAN ZERO
- 3) AVAILABLE WHEN "ENHANCED DETECTION" IS ON
- 4) AVAILABLE WHEN "LOW EZ DETECTION" IS ON
- 5) AVAILABLE WHEN "POSITIVE START" IS ON

T1: SWITCH TO MS (ENTER EZ VALUE)	10 %
T2: SWITCH TO MS (ENTER EZ VALUE)	-- %
T1: TRANSFER DELAY MS TO GCP (0 = OFF)	0 Sec
T2: TRANSFER DELAY MS TO GCP (0 = OFF)	-- Sec
T1: TRANSFER MS TO GCP PRIME (ON/OFF)	---
T2: TRANSFER MS TO GCP PRIME (ON/OFF)	---
T1: TRANSFER MS TO GCP DAX A (ON/OFF)	---
T2: TRANSFER MS TO GCP DAX A (ON/OFF)	---
T1: TRANSFER MS TO GCP DAX B (ON/OFF)	---
T2: TRANSFER MS TO GCP DAX B (ON/OFF)	---
T1: TRANSFER MS TO GCP DAX C (ON/OFF)	---
T2: TRANSFER MS TO GCP DAX C (ON/OFF)	---
T1: TRANSFER MS TO GCP DAX D (ON/OFF)	---
T2: TRANSFER MS TO GCP DAX D (ON/OFF)	---
T1: PRIME PREDICTION OFFSET (0 = OFF)	0 F+
T2: PRIME PREDICTION OFFSET (0 = OFF)	-- F+
PICKUP DELAY PRIME	15 Sec
PICKUP DELAY DAX A	-- Sec
PICKUP DELAY DAX B	-- Sec
PICKUP DELAY DAX C	-- Sec
PICKUP DELAY DAX D	-- Sec
T1: ENHANCED DETECTION (ON/OFF)	OFF
T2: ENHANCED DETECTION (ON/OFF)	---
BACK-TO-BACK T1 AND T2 (NO/YES)	---
T1: STATION STOP TIMER	-- Sec
T2: STATION STOP TIMER	-- Sec
T1: NUMBER OF TRACK WIRES (4/6)	4
T2: NUMBER OF TRACK WIRES (4/6)	-
T1: LOW EX ADJUSTMENT	0
T2: LOW EX ADJUSTMENT	--
T1: LOW EZ DETECTION	OFF
T2: LOW EZ DETECTION	---
T1: LOW EZ DETECTION TIMER (ON/OFF)	-- Min
T2: LOW EZ DETECTION TIMER (ON/OFF)	-- Min
T1: POSITIVE START (EZ LEVEL) (0 = OFF)	0
T2: POSITIVE START (EZ LEVEL) (0 = OFF)	--
T1: POSITIVE START TIMEOUT (0 = NONE)	-- Min
T2: POSITIVE START TIMEOUT (0 = NONE)	-- Min
SET AT OPERATION (NORMAL/DIAGNOSTIC)	NORMAL
DIAGNOSTIC MESSAGES (ON/OFF)	ON
DAX MESSAGES (ON/OFF)	ON
ADVANCE PREEMPT TIMER (0 = OFF)	0
T1: MOTION SENSING LEVEL (0 = NORMAL)	0 %
T2: MOTION SENSING LEVEL (0 = NORMAL)	-- %

(1) (1) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)

(3) (3) (3)

(4) (4)

(5) (5)

* = 1ST SLOT AT LEFT END OF BAY

MODEL 3000D2 GCP MODULE ASSEMBLIES																			
UPPER BAY										LOWER BAY									
MODULES POSITION	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19 M20 M21
MODULE NUMBERS	80211-(1) * ISL	80211-(2) ISL	80012 T/R 1	80012 T/R 2	80013 RLY DRV	80214 PROCS	80255 REC-INTF	80016 (1) DAX	80016 (2) DAX	80020 + 80017	80211-(1) * ISL	80211-(2) ISL	80012 T/R 1	80012 T/R 2	80013 RLY DRV	80214 PROCS	80255 REC-INTF	80016 (1) DAX	80016 (2) DAX
	80028 XFRTRMR																		
MODULES USED	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

NOTES:

1 - SEE IPI INSTRUCTION AND INSTALLATION MANUAL FOR 80211 ISLAND CALIBRATION PROCEDURE.

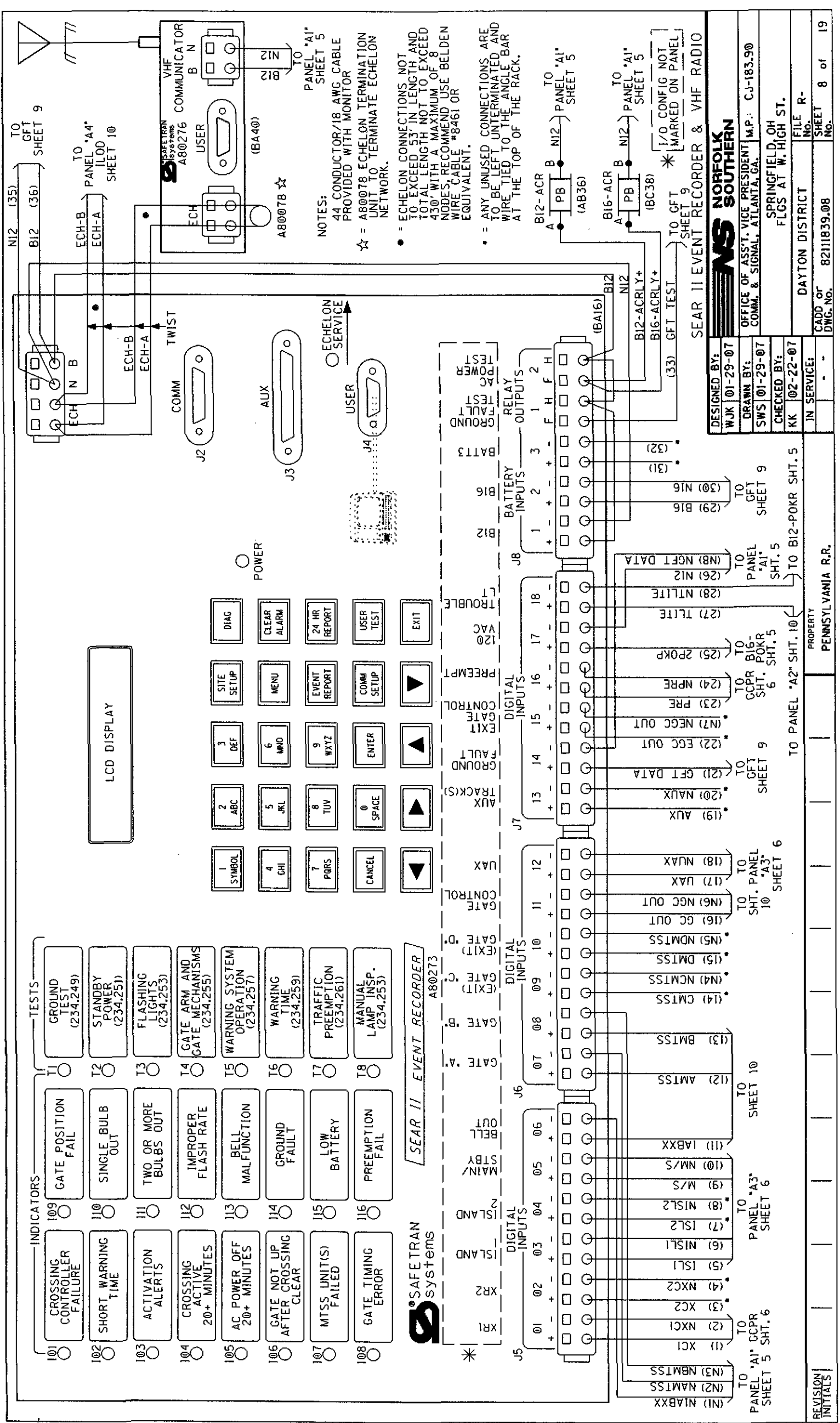
2 - TOGGLE SWITCH ON MOTHER BOARD:
UP = DUAL FREQ.
DOWN = SINGLE FREQ.

** = 80214 & 80255 (WITH JUMPER) CARDS AND E-LEVEL OR LATER SOFTWARE NEEDED FOR SEAR II / ECHELON CAPABILITIES.

PANEL "A3" 3000D2 GCP SET-UP

DESIGNED BY:	WJK 01-29-07	 NORFOLK SOUTHERN
DRAWN BY:	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY:	SPRINGFIELD, OH	
FILE NO.	FLCS AT W. HIGH ST.	
IN SERVICE:	DAYTON DISTRICT	FILE R-
CADD or DWG. No.	8211839.07	SHEET 7 of 19

PROPERTY
PENNSYLVANIA R.R.



NOTES:

- 44 CONDUCTOR/18 AWG CABLE PROVIDED WITH MONITOR
- ☆ = A80078 ECHOLON TERMINATION UNIT TO TERMINATE ECHOLON NETWORK.
- = ECHOLON 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.
- = ANY UNUSED CONNECTIONS ARE TO BE LEFT UNTERMINATED AND WIRE TIED TO THE ANGLE BAR AT THE TOP OF THE RACK.

DESIGNED BY: WJK 01-29-07

DRAWN BY: SWS 01-29-07

CHECKED BY: KK 02-22-07

IN SERVICE: -

CADD OF DWG. No. 82111839.08

FILE No. 8 of 19

SEAR II EVENT RECORDER & VHF RADIO

PROPERTY OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: CJ-183.90

SPRINGFIELD, OH

FLCS AT W. HIGH ST.

DAYTON DISTRICT

REVISION INITIALS

TO GFT 9

TO GFT 10

TO GFT 11

TO GFT 12

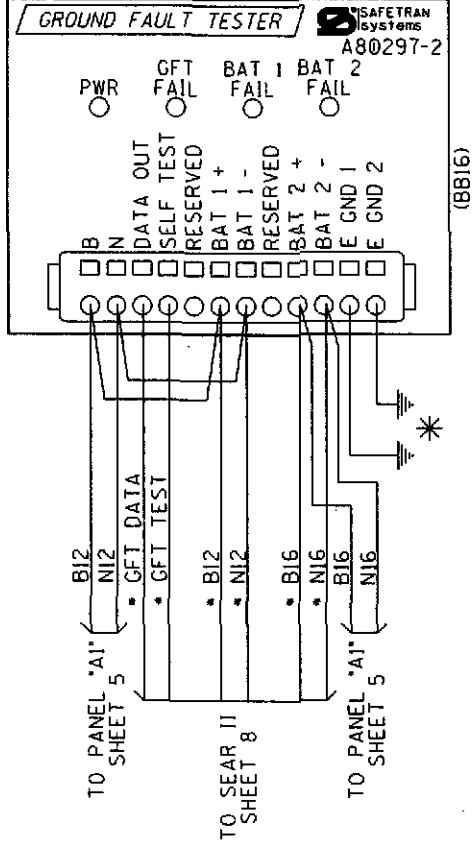
TO GFT 13

TO GFT 14

SITE SET UP PROCEDURE		
FUNCTION	LED DISPLAY	
DATE	- -	
TIME	:	
DAYLIGHT SAVINGS TIME	YES	
TIME ZONE	EST	
SITE NAME	W. HIGH ST.	
DOT NUMBER	523 496F	
MILEPOST	CJ-183.90	
TESTER TYPE	CROSSING	
DATE FORMAT	MM-DD-YYYY	
TEMP FORMAT	FAHRENHEIT	
SITE TYPE	NO COMMUNICATION	
SITE ATCS	7.RRR.LLL.CGG.03.01	
OFFICE ATCS ADDRESS	2.550.01.9100	
POLL ID	1	
OFFICE F8/F9	YES	
OFFICE COMM DEVICE	SPREAD SPECTRUM RADIO	
DIAL MODEM PORT	AUX/COMM	
PHONE NUMBER	(OFFICE NUMBER)	
INIT STRING	(LEAVE BLANK)	
BACKUP SITE ADDRESS 1		
BACKUP SITE ADDRESS 2		
FIELD COMM		
USER PORT	BAUD 57600, N, 8, 1, NONE	
AUX PORT	BAUD 9600, N, 8, 1, NONE	
COMM PORT	BAUD 9600, N, 8, 1, NONE	

VERIFY NUMBER OF BULBS	
CURR 1: LAMP SET UP	8 BULBS
CURR 2: LAMP SET UP	8 BULBS

CONTROL SYSTEM CONFIGURATION MENU QUESTIONS		
THE QUESTION	SELECT FROM MENU OPTION	
RESET NAMES AND MODULES?	YES	
NUMBER OF TRACKS?	1	
NUMBER OF XR INPUTS?	1	
CONSTANT WARNING DEVICE	GCP	
CROSSING CONTROLLER?	SSCC III (A, PLUS)	
MAIN / STANDBY	YES	
AUXILIARY TRACKS?	NO	
AUX TRACK	(SET IF AUX TRACKS = YES)	
GATES?	2	
EXIT GATES?	0	
UAX?	DROPS MD/GCP	
BATTERY BANKS?	2	
PREEMPTION?	YES	
ILOD MODULES?	1	
LAMP TYPE?	NORMAL	
AUTO INSPECTIONS?	YES	
BELL SENSOR?	** 1	
BELL SENSOR INPUT 7	** YES	
BELL SENSOR INPUT 8	** NO	
BELL SENSOR INPUT 9	** NO	
BELL SENSOR INPUT 10	** NO	
BELL ON?	GATES LOWERING	
GATE TIP SENSORS?	YES	
GROUND FAULT DETECTORS?	YES	
CHANNEL 1	161.475 MHZ	
CHANNEL 2	NONE	
FULL APPROACH MOVE ALARMS	ACTIVATE	
SSCC ATCS ADDRESS	7.RRR.LLL.CGG.07.01	



VERIFY THE BATTERY SUPPLY VOLTAGES	
B12 BATTERY VOLTAGE AT INPUT DC1	VOLT 1: .
B16 BATTERY VOLTAGE AT INPUT DC2	VOLT 2: .

NOTES:

- ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE
- * = CABLE PROVIDED WITH SEAR II
- ** = 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.
- * = CONNECT "E GND 1" AND "E GND 2" TO INDEPENDENT GROUND POINTS ON SIDE A AND SIDE B.

SEAR II SET UP CHART
& GROUND FAULT TESTER

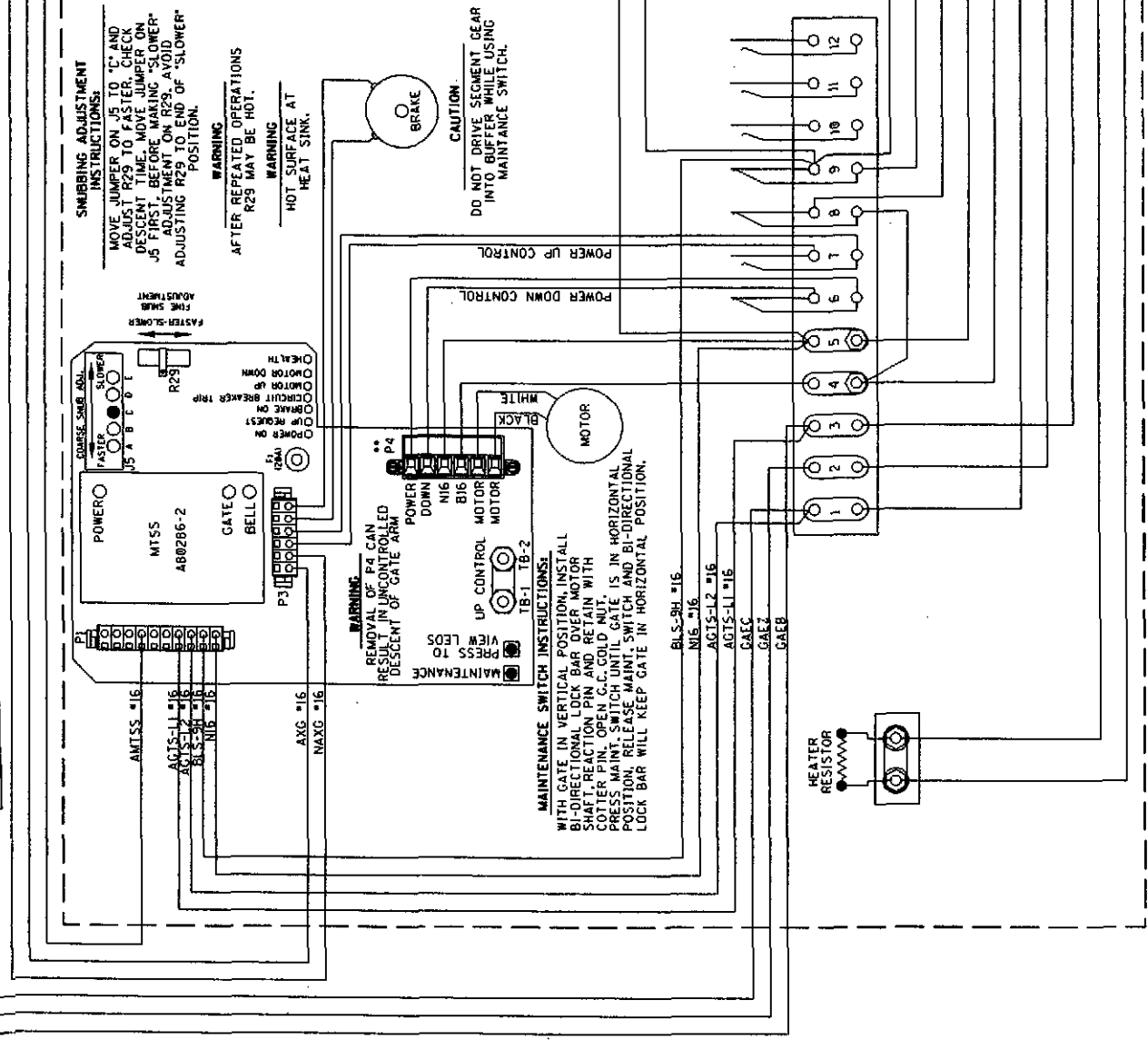
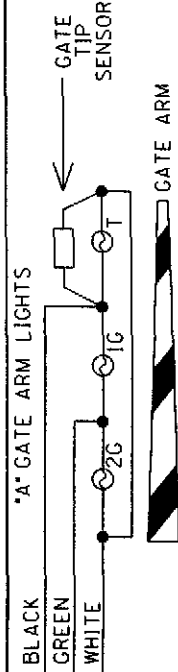
DESIGNED BY:	WJK 01-29-07	NS NORFOLK SOUTHERN
DRAWN BY:	SWS 01-29-07	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY:	KK 02-22-07	MP: CJ-183.90
IN SERVICE:	- -	SPRINGFIELD, OH FLGS AT W. HIGH ST.
		DAYTON DISTRICT
		FILE NO. R-
		CADD or DWG. No. 8211839.09
		SHEET 9 of 19

PROPERTY
PENNSYLVANIA R.R.

SAFETRAN MODEL "S60" GATE

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

"A" GATE MECHANISM



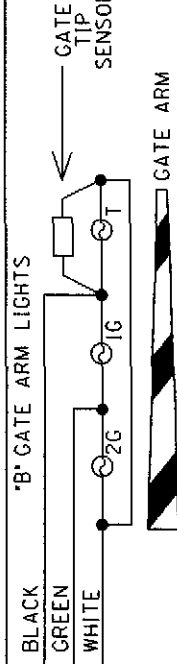
"A" FLASHER AND GATE LIGHTS WITH
GATE TIP SENSOR & MODEL "S60"
GATE MECHANISM WITH MINI
TRACKSIDE SENSOR

DESIGNED BY:	WJK 01-29-07
DRAWN BY:	SWS 01-29-07
CHECKED BY:	KK 02-22-07
IN SERVICE:	- -
NORFOLK SOUTHERN	
OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. M.P.: CJ-183.90	
SPRINGFIELD, OH FLGS AT W. HIGH ST.	
DAYTON DISTRICT	FILE R-
CADD OR DWG. NO.	82111839.11
SHEET	11 of 19

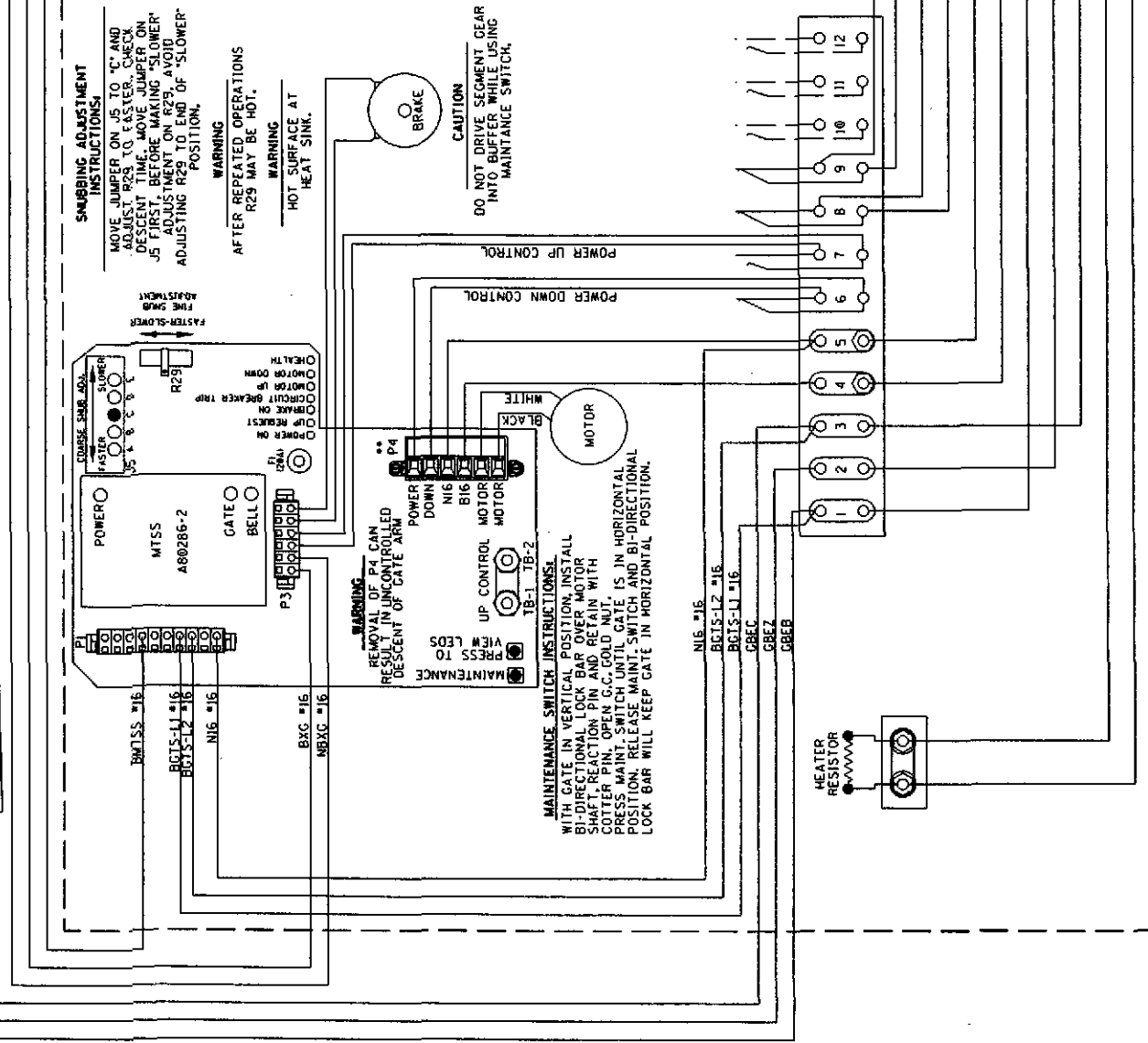
PROPERTY
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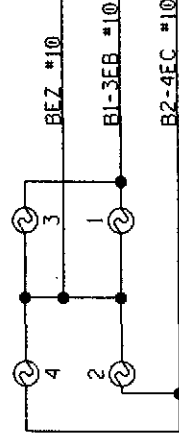
'B' GATE ARM LIGHTS



"B" GATE MECHANISM



'B' FLASHING LIGHTS



SAFETRAN MODEL "S60" GATE

CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
6	70° - 90°	POWER DOWN CONTROL
7	0° - 85°	POWER UP CONTROL
8	83° - 90°	FLASHING LGT. CONTROL
9	5° - 90°	BELL CONTROL
10		SPARE
11		SPARE
12		SPARE

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

NORFOLK SOUTHERN

DESIGNED BY: WJK 01-29-07
DRAWN BY: SWS 01-29-07
CHECKED BY: KK 02-22-07
IN SERVICE: - -

OFFICE OF ASST. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA. M.P.: CJ-183.90

SPRINGFIELD, OH
FLGS AT W. HIGH ST.

DAYTON DISTRICT

PROPERTY
PENNSYLVANIA R.R.

REVISION
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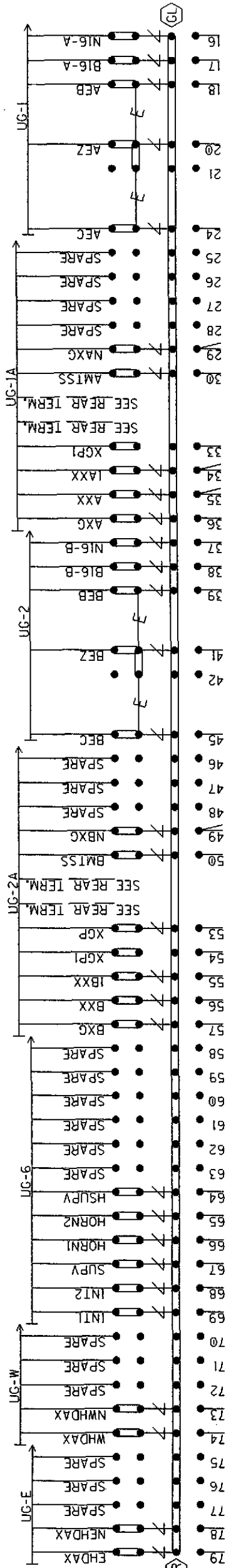
CADD or
DWG. No.

82111839.12

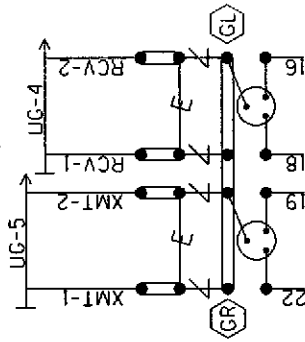
FILE R-

SHEET 12 of 19

(SEE NEXT SHEET FOR
OTHER WIRES IN CABLES)



LEFT TWO ROWS TERMINAL BOARD 1 "1B"



"1A"

- ⎓ = Heavy Duty Equalizer
(022700-1X)
- Clearview
Lightning Arrestor
(022585-1X)
- ⎓ = LPC-10560-51

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

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

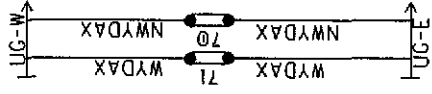
- ⎓ = TERMINALS GROUNDED TO SHIELD.
4 POST BLOCKS USE EITHER -
GR - SERMMI PART NO. 61278
GL - SERMMI PART NO. 61278-1.

BACKBOARD DETAIL - 1A & 1B

DESIGNED BY:	WJK 01-29-07
DRAWN BY:	SWS 01-29-07
CHECKED BY:	KK 02-22-07
IN SERVICE:	- - -
FILE NO.	DAYTON DISTRICT
SHEET No.	13 of 19
CADD or DWG. No.	82111839.13
DATE	82111839.13
PROJECT	SPRINGFIELD, OH FLGS AT W. HIGH ST.
COMPANY	COMM. & SIGNAL, ATLANTA, GA.
OFFICE OF ASS'T. VICE PRESIDENT	M.P.: CJ-183.90
NORFOLK SOUTHERN	

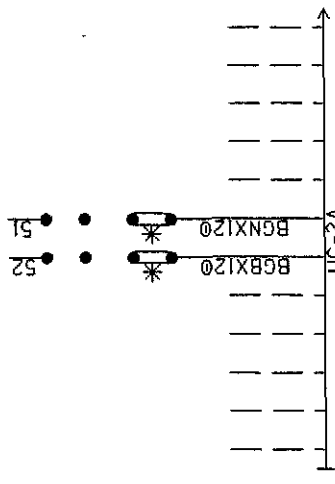
PROPERTY
PENNSYLVANIA R.R.

(SEE PREVIOUS SHEET FOR
OTHER WIRES IN CABLE)

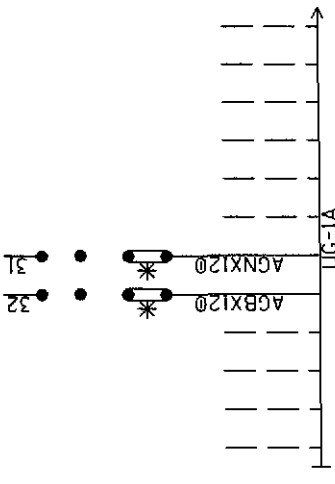


REAR VIEW OF LEFT TWO ROWS TERMINAL BOARD
"1A"
"1B"

(SEE PREVIOUS SHEET FOR
OTHER WIRES IN CABLE)



(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

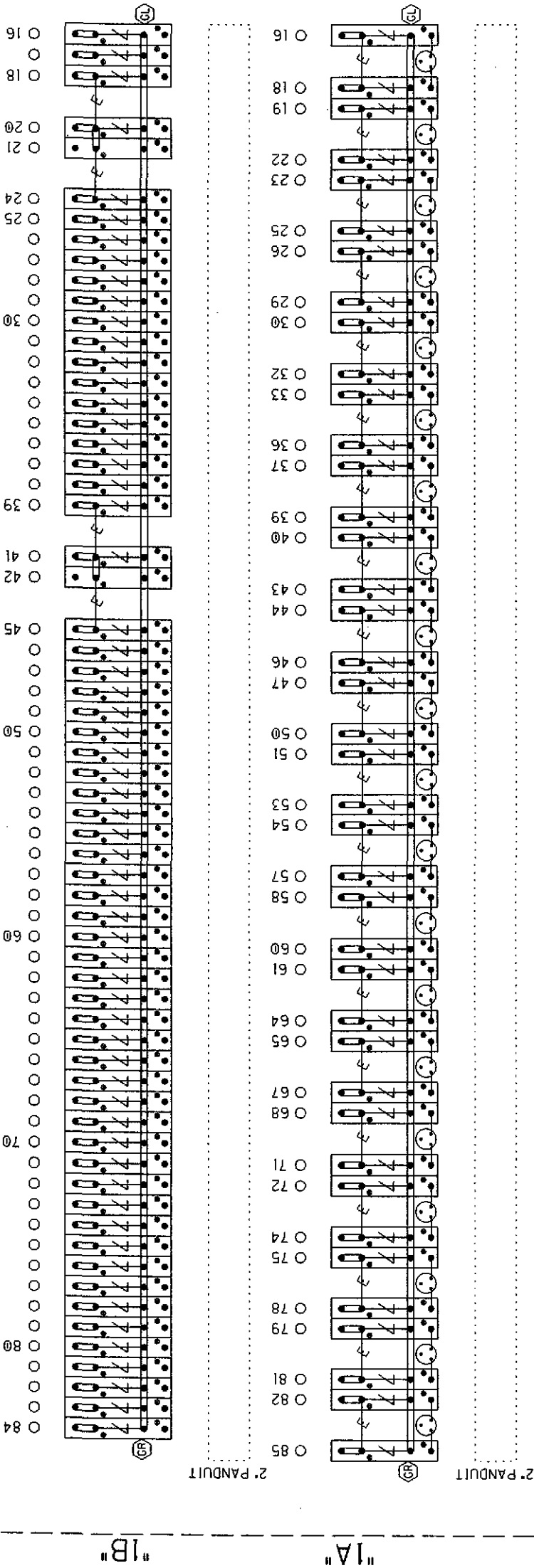
DESIGNED BY:		NORFOLK SOUTHERN	
WJK	01-29-07	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
DRAWN BY:		M.P.: CJ-183.90	
SWS	01-29-07	SPRINGFIELD, OH	
CHECKED BY:		FLCS AT W. HIGH ST.	
KK	02-22-07	DAYTON DISTRICT	
IN SERVICE:		FILE R-	
-		-	
CADD OF DWG. NO.		82111839.14	
SHEET NO.		14 of 19	

PROPERTY
PENNSYLVANIA R.R.

REVISION
INITIALS

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

AREA BELOW IS SCALED WITH AS-75



⌋ = Heavy Duty Equalizer (022700-1X)

⌋ = Clearview Lightning Arrester (022585-1X)

⌋ = LPC-10560-51

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

= INDICATES PLACEMENT OF PANDUIT

TERMINAL BOARD 1
LEFT TWO ROWS
FARADAY SHIELD DETAIL - 1A & 1B

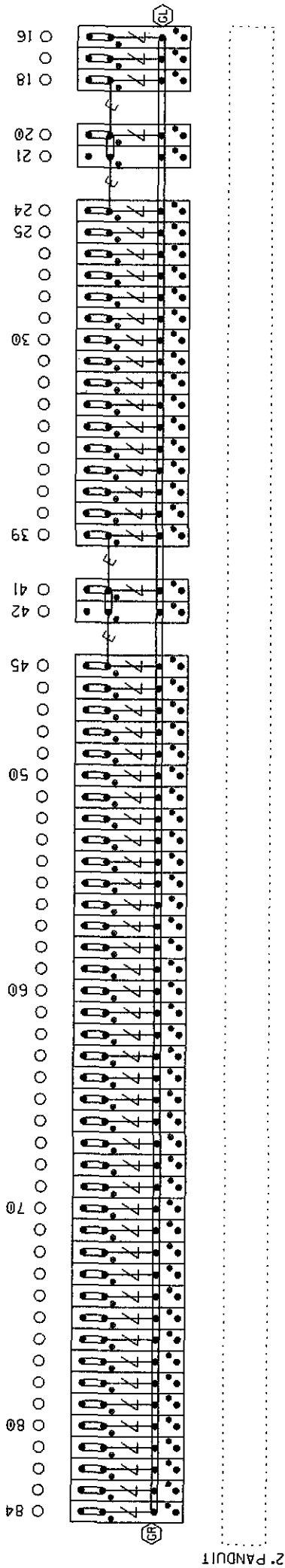
DESIGNED BY:	WJK 01-29-07	NORFOLK SOUTHERN
DRAWN BY:	SWS 01-29-07	
CHECKED BY:	KK 02-22-07	
IN SERVICE:	- -	
FILE NO.	DAYTON DISTRICT	FILE R-
SHEET NO.	CADD OF 82111839.15	SHEET 15 of 19
OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: CJ-183.90
SPRINGFIELD, OH		FLGS AT W. HIGH ST.

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



⊥ = Heavy Duty Equalizer
(#22700-1X)

⌄ = Clearview
Lightning Arrestor
(#22585-1X)

⊙ = LPC-10560-51

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

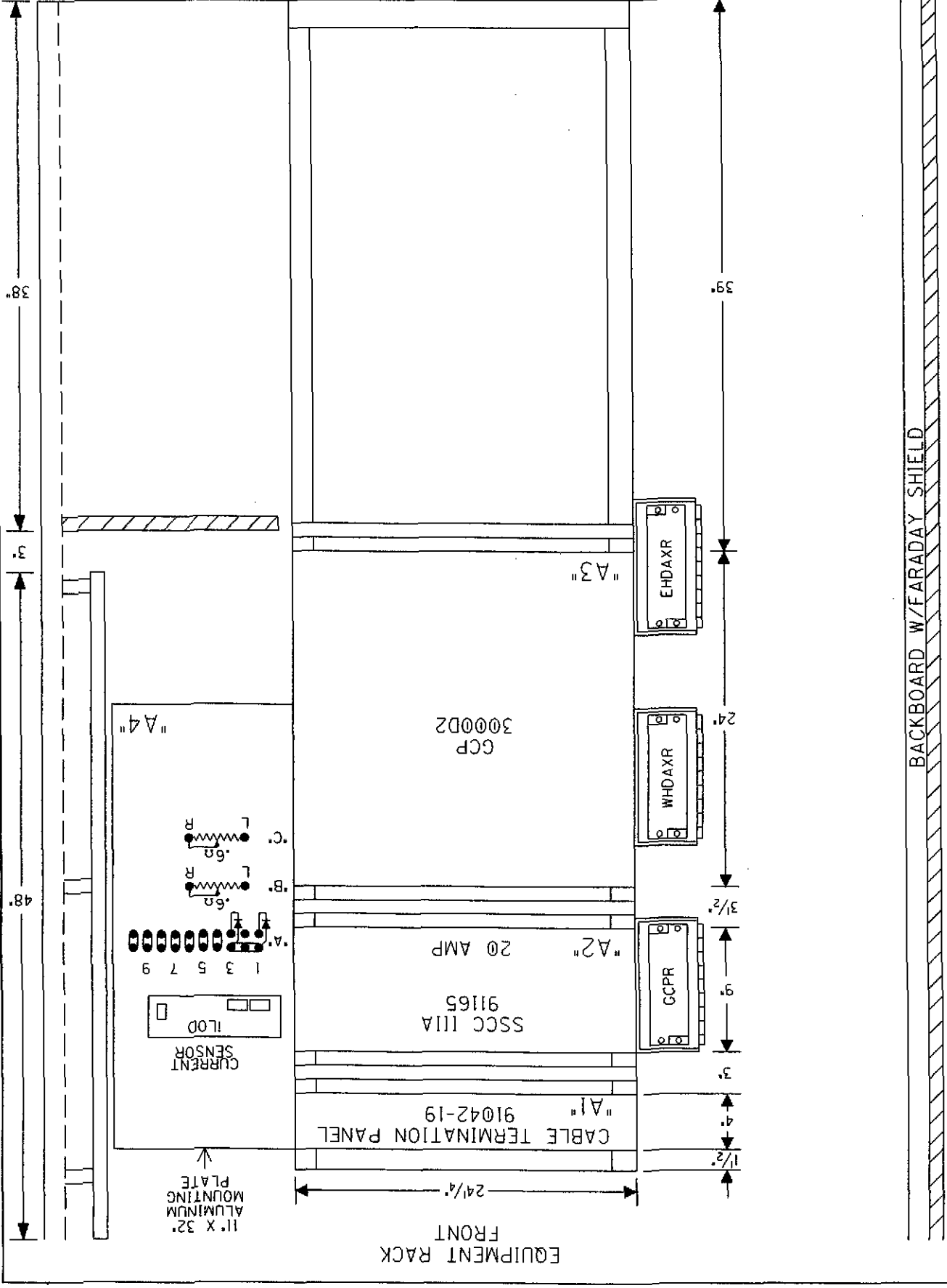
= INDICATES PLACEMENT
OF PANDUIT

TERMINAL BOARD 1
RIGHT ROW

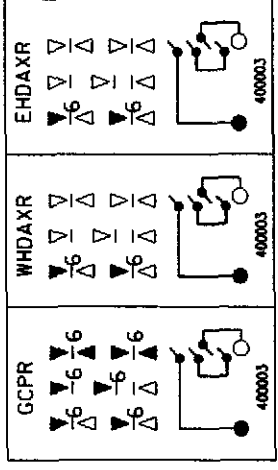
FARADAY SHIELD DETAIL - 1C

DESIGNED BY:	WJK 01-29-07	NS NORFOLK SOUTHERN
DRAWN BY:	SWS 01-29-07	
CHECKED BY:	KK 02-22-07	
IN SERVICE:	- -	
OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: CJ-183.90
SPRINGFIELD, OH FLGS AT W. HIGH ST.		
DAYTON DISTRICT		FILE NO. R-
CADD or DWG. No. 8211839.16		SHEET 16 of 19

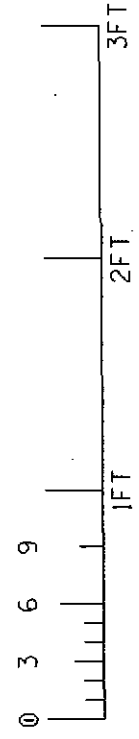
PROPERTY
PENNSYLVANIA R.R.



SAFETRAN, ALSTOM(GRS) RELAY
CROSS REFERENCE LIST
SAFETRAN ALSTOM(GRS)
4000003 - A62-308



SIDE "C"

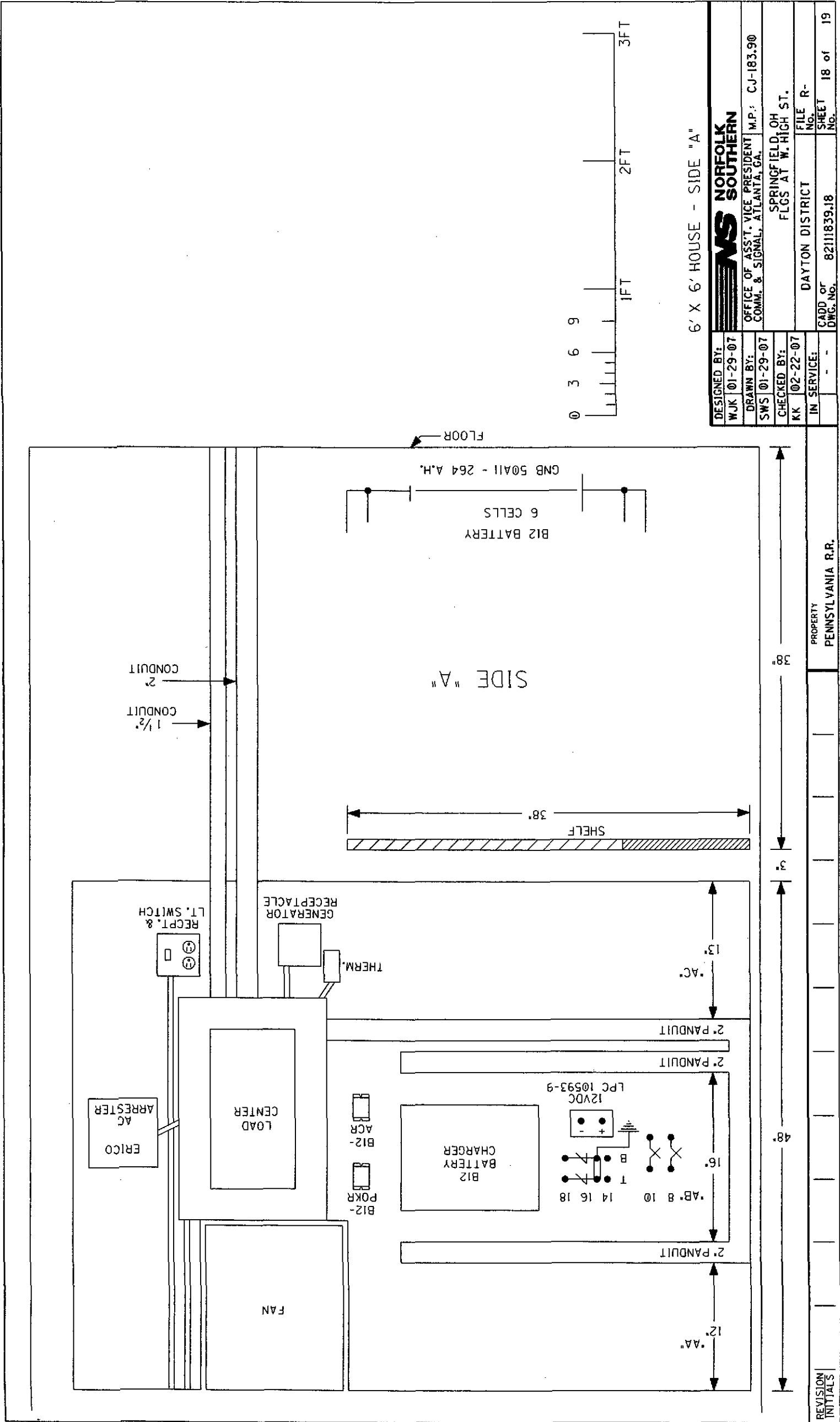


RACK PLACEMENT
6' X 6' HOUSE - SIDE "C"

NS NORFOLK SOUTHERN		OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: C-J-183.90	
DESIGNED BY:		WJK 01-29-07		SPRINGFIELD OH FLCS AT W. HIGH ST.	
DRAWN BY:		SWS 01-29-07			
CHECKED BY:		KK 02-22-07			
IN SERVICE:		- -		DAYTON DISTRICT	
		CADD or DWG. No.		82111839.J7	
		SHEET		17 of 19	
		FILE R- No.			

PROPERTY
PENNSYLVANIA R.R.

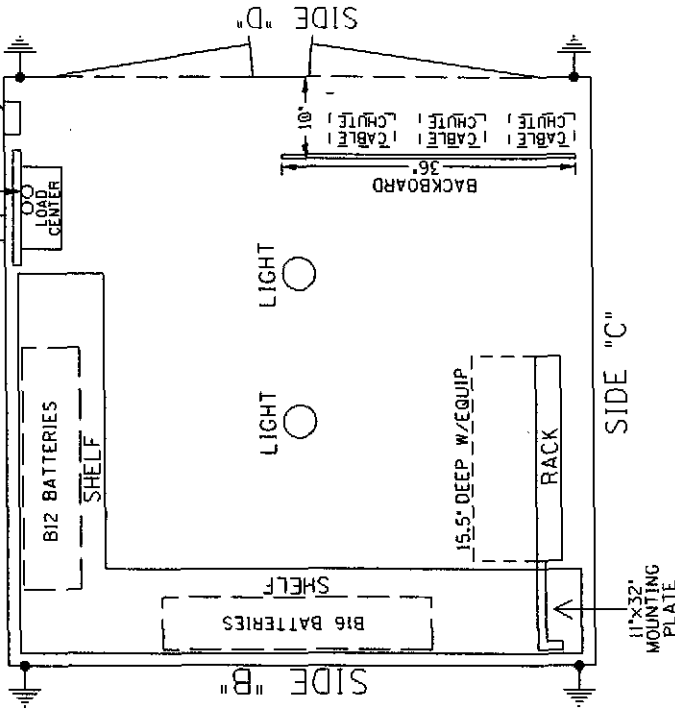
REVISION
INITIALS



TOP VIEW *

6' X 6' HOUSE
(INSULATED)
• = 1/2" SCALE

SIDE "A"



6' X 6' HOUSE (SIDE "B" & TOP VIEW)

DESIGNED BY:	WJK 01-29-07	NORFOLK SOUTHERN
DRAWN BY:	SWS 01-29-07	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY:	KK 02-22-07	SPRINGFIELD, OH
IN SERVICE:	- -	FLGS AT W. HIGH ST.
CADD or DWG. No.	8211839.19	DAYTON DISTRICT
SHEET	19 of 19	FILE R-

