

FILE

06-1326-RR-FED

32

RECEIVED-DOCKETING DIV

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

2007 SEP 27 PM 2:42

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

PUCO

September 24, 2007
CX0118231

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, 2006, regarding the above case for the upgrade of automatic grade crossing warning devices at Main Street in Springfield, Clark County, Ohio, DOT: 523 507R, Milepost CJ-185.05.

Attached for your review are the revised plans and estimate for the above crossing project. Please provide further authorization.

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 fax to 404-527-2901.

Sincerely,

B. L. Sykes
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)

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 *[Signature]* Date Processed 9.27.07



18-Sep-07

Detailed Estimate for Grade Crossing Warning Devices

City/State: SPRINGFIELD, OH
MilePost: CJ-185.05
State Proj. No.:
S&E Proj. No.: 10.1005
Man Days: 152

Road: MAIN ST.
DOT/AAR: 523507R
County: CLARK
AFE: F10118
File Number: 061-10.1048

Purchases - Others	
Meals and Lodging:	\$14,301.62
Rental of Equipment:	\$31,266.40
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 38 Days)	
Construction Supervision Vehicle:	\$2,501.31
Purchases - Other Total:	\$48,069.33
Material And Additives	
Material Cost:	\$110,267.00
Sales and Use Tax:	\$0.00
Material Handling Freight:	\$5,513.36
Material Total:	\$115,780.36
Labor And Additives	
Labor Cost:	\$36,784.00
(4 man crew at \$968.00 a day for: 38 days)	
Payroll Tax & Overheads:	\$36,287.42
Preliminary Engineering:	\$12,940.51
Construction Supervision:	\$10,384.12
Labor Total:	\$96,396.05
Project Cost:	\$260,245.74
Scrap / Salvage Credit:	\$0.00
Project Total:	\$260,245.74

Estimated on: 18-Sep-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:	MAIN ST.
Mile Post:	CJ-185.05
Drawing Number:	82111851
State ProjectNumber:	
County:	CLARK
A A R Number:	523507R
Project Number:	10.1005
File Number:	061-10.1048
New File Number:	CX0118231
A F E Number:	F10118
Store Number:	07864
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.: 10.1005 AFE No.: F10118 Drawing No.: 82111851
Store No.: 07864 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 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 S'TRAN.				
1	670-520496-4	EA	\$26.50	\$26.50	ARC SUPPRESSOR WITH DIODE, SAFETRAN PART# 8A299, BAKELITE BASE 023612-X. USE WITH SSC03II				
19	670-119241-4	EA	\$32.80	\$623.20	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				
3	670-980689-4	EA	\$71.71	\$215.13	BRACKET HIGH WIND, (RIGID 3'), WIG- 191036, WALRUS TUSK TYPE				
3	670-561375-4	EA	\$1,197.90	\$3,593.70	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	CABLE, 10' GENERATOR HOOK UP, SERRIMI 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				
500	465-292929-4	LF	\$3.05	\$1,525.00	CABLE, U.G. 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL				
800	465-939422-4	LF	\$2.55	\$2,040.00	CABLE, UG 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 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				
240	165-544477-4	FT	\$2.55	\$612.00	CONDUIT, 4"x10' PVC, SCHEDULE 80 BELL CONNECTOR AT ONE END, 1/2 PT. GLUE IN KIT 670-123298-4				
30	670-100000-4	EA	\$2.00	\$60.00	CONDUIT, PRE-EMPTION - STATE OF ILLINOIS, 4" x 10' PVC				
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				
1	670-793404-4	EA	\$838.37	\$838.37	COUNTERWEIGHT PKAGE, 17-24' GATE STRAN S- MECH ONLY, STAINLESS, TO INCLUDE HUB, SUPPORT ARMS				
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				

APPROVED BY STATE APPROVED BY RAILROAD CAR NUMBER SEAL NUMBER

Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
10	670-760012-4	EA	\$40.02	\$400.20	COVER, FOR 1 WAY FLASHING LIGHT ASSY. 18 OZ. BLACK VINYL COATED NYLON. ===== TO COVER 2 LAMPS=====				
10	670-760012-4	EA	\$40.02	\$400.20	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				
2	670-228165-4	EA	\$10.73	\$21.46	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, QUANTITY IS BASED ON TRUCK LOAD PLUS DELIVERY COST				
2	670-012724-4	EA	\$289.30	\$578.60	FILTER, ELECTRO CODE 156HZ REJECTION PART # TF-156				
1	670-011669-4	EA	\$279.36	\$279.36	FILTER, ELECTRO CODE 86HZ REJECTION PART # TF-86				
2	670-744631-4	EA	\$2,706.00	\$5,412.00	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	\$423.50	\$1,270.50	FOUNDATION, DIXIE, S-2 GATE 56" ASSEMBLED				
1	670-267031-4	EA	\$297.88	\$297.88	GATE, ARM FIBERGLASS-ALUMINUM 17-24 FT., INCLUDES GATE GUARD FOR GATE LIGHT CABLE, NEG P/N 8002-244NFS/CG				
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	670-001853-4	EA	\$43.57	\$43.57	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' #4 WIRE, 12 4 WIRE ONE-SHOTS, ERICO SBK206				
2	670-123298-4	EA	\$256.93	\$513.86	KIT, HARDWARE SUPPLIES REQUIRED X'ING PICKAGES. WEB CONNECTORS FOR SHUNT(8EA) TAPE, AMPS P'GUM PAINT, SLEEVES, TAGS, GLUE, 100 EA WHITE TAGS, JNE CAN BLUE MARKING PAINT ETC...				
2	670-142763-4	EA	\$849.42	\$1,698.84	LAMP ASSY, 12" LIGHT, 2 WAY IND. FOR MTG ON THE TIP OF WT/F CANTILEVER ARM, SAFETRAN P/N 042003-488XNS				

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Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
2	670-816589-4	EA	\$551.10	\$1,102.20	LAMP ASSY, 5" MAST MTG. 1W IND. 20" BKGRD. (BACK) LTS.FLX -12W/BULB STRAN # 042003-001493				
1	670-784166-4	EA	\$907.65	\$907.65	LAMP ASSY, 5" MAST MTG. 2W IND. 20" BKGRD. FLX-12 W/BULB STRAN #042003-487XNS				
2	670-167654-4	EA	\$716.73	\$1,433.46	LAMP ASSY, FLX 12" LIGHT UNIT, USE WITH W & WT/F MAST, 1W (FRONT) INDICATION FOR WT/F CANTILEVER MAIN MAST, SAFETRAN P/N 042003-489XNS				
9	165-643547-4	EA	\$4.30	\$38.70	LAMP, 18 WATT 10 VOLT S-11 SC BAY 18S11/1SC CLEAR RWY SIGNAL UJ-71463 GE				
22	670-440826-4	EA	\$1.01	\$22.22	LINK, SAFETRAN 024620-1X INSL TESTING COMP 1 IN CENTER SIGNAL CIRCUITS CR 02-286662				
6	255-590880-4	EA	\$16.12	\$96.72	LOCK, AMERICAN LOCK MODEL H-10KA KEYED ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"				
3	670-637778-4	EA	\$1,031.41	\$3,094.23	MAST, 5" ALUMINUM 13'10" WITH DOUBLE JCT. BOX BASE. STRAN P# 070519-11AX.				
3	670-850933-4	EA	\$3,352.65	\$10,067.95	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				
3	670-000001-4	EA	\$316.23	\$948.69	MISC. MATERIAL				
2	670-014233-4	EA	\$981.85	\$1,963.70	MODULE, DAX FOR 3000 GCP SAFETRAN #80016				
2	670-001355-4	EA	\$72.59	\$145.18	PACKAGE, HARDWARE SIGN 12 IN. (USE WITH WT/F MAST) MOUNTING, SERRMI A1250-8, HARMON @180004/0007.				
1	670-001347-4	EA	\$63.27	\$63.27	PACKAGE, HARDWARE SIGN 5 IN. MOUNTING, SERRMI 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				
3	670-514605-4	EA	\$6.45	\$25.35	PINNACLE, W-C SECT 1-11, 4" & 5" REF K1 110-8 OR SAFETRAN NO. @035045-503X				

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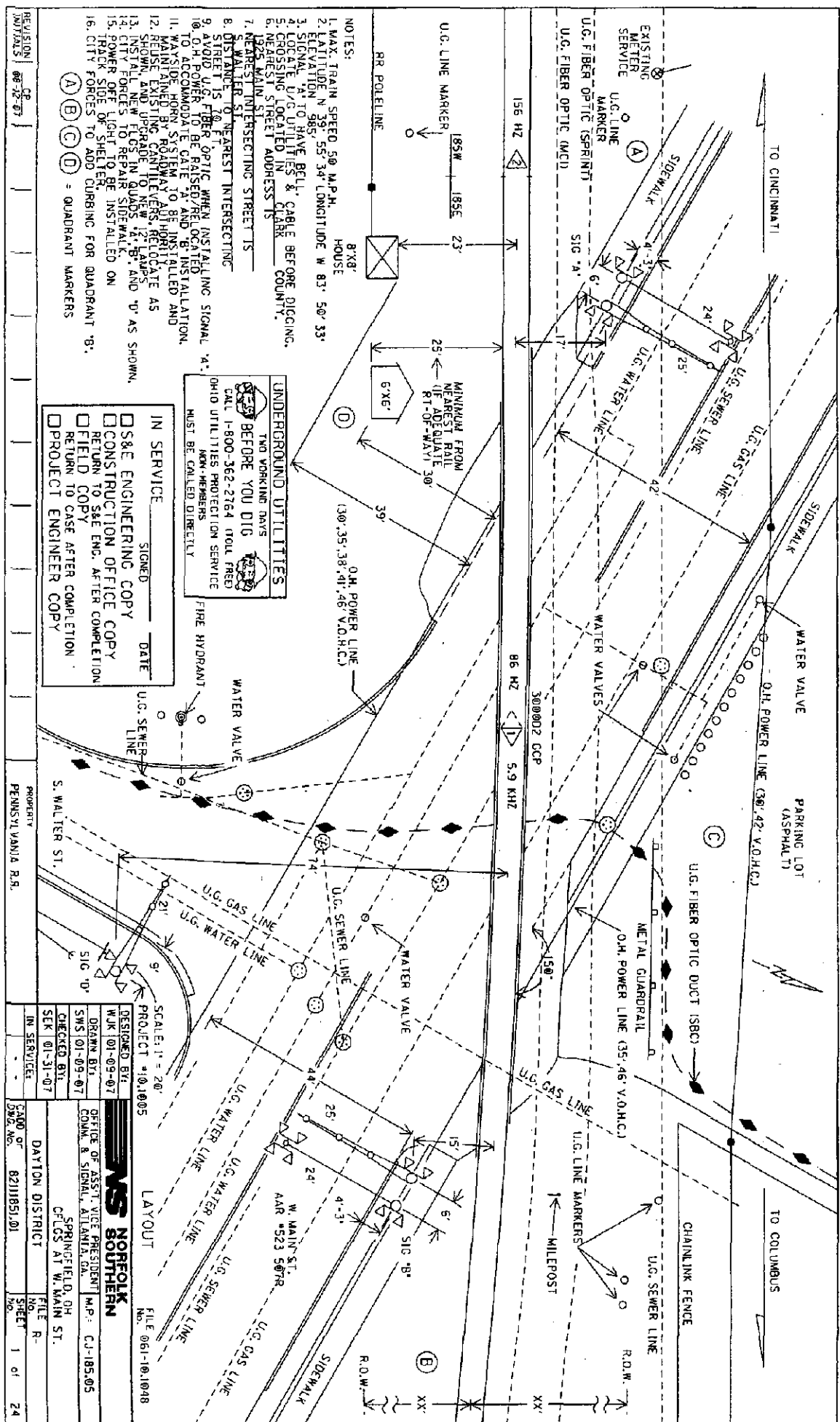
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
2	670-555609-4	EA	\$45.12	\$90.24	PLUGBOARD, TYPE B-1 GRS A62-506 OR HARMON @ 7062-506 OR				
1	670-427136-4	EA	\$93.49	\$93.49	POWER OFF LAMP INDICATOR FOR SHELTER, SAFETRAN P/N 051958-5				
1	165-902002-4	EA	\$308.00	\$308.00	PROTECTOR, SURGE 120/240VAC, ERICO P/N EPD120/240TDPL				
4	465-002899-4	EA	\$22.06	\$88.24	REEL, CABLE DISPOSABLE FOR CROSSING SIGNAL PACKAGES				
1	670-742096-4	EA	\$41.80	\$41.80	RELAY INTERFACE PROBE, ULTRATECH PN 16031-00				
2	670-707895-4	EA	\$313.67	\$627.34	RELAY, TYPE B1, NEV LINE, 900 OHMS..008 AMPERES GRS A62-308 OR SAFETRAN @400003				
2	670-215166-4	EA	\$21.98	\$43.96	RELAY,(AC INTERRUPT FOR SEARII)POTTER & BRUMFIELD 120V AC KUMP-14A18-120 SAFETRAN P/N T18354				
2	670-218934-4	EA	\$20.62	\$41.24	RELAY,(AC INTERRUPT FOR SEARII)POTTER & BRUMFIELD 12V DC KUMP-14D18-12 SAFETRAN P/N T18353				
2	435-805560-4	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, 1-6BELL, 2-GTS, WITHOUT MTSS, 1-GFT, 1-VHFC, 2- RECORDER INTERFACE MODULE, 1-ECHOLON CONNECTOR				
1	670-108211-4	EA	\$50.50	\$50.50	SEARII, (GTS) - GATE TIP SENSOR, SAFETRAN P/N A80281, 1 / GATE TIP				
1	670-085658-4	EA	\$373.00	\$373.00	SEARII, (ILOD) - INTELLIGENT LAMP OUT DETECTOR, SAFETRAN P/N A80271, 1 / 20 AMP SSCC, 2 / 40 AMP SSCC				
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, SAFTETRAN P/N 058400-66-78A				
1	670-471572-4	EA	\$3.00	\$3.00	SHIELD, GROUND SERRMI P/N 61278 FOR GROUNDING A RH 4 POST				
1	670-472200-4	EA	\$3.00	\$3.00	SHIELD, GROUND SERRMI PART NO. 61278 FOR GROUNDING A LH 4 POST				
					TERMINAL BLOCK DIRECTLY TO FARADAY SHIELD				

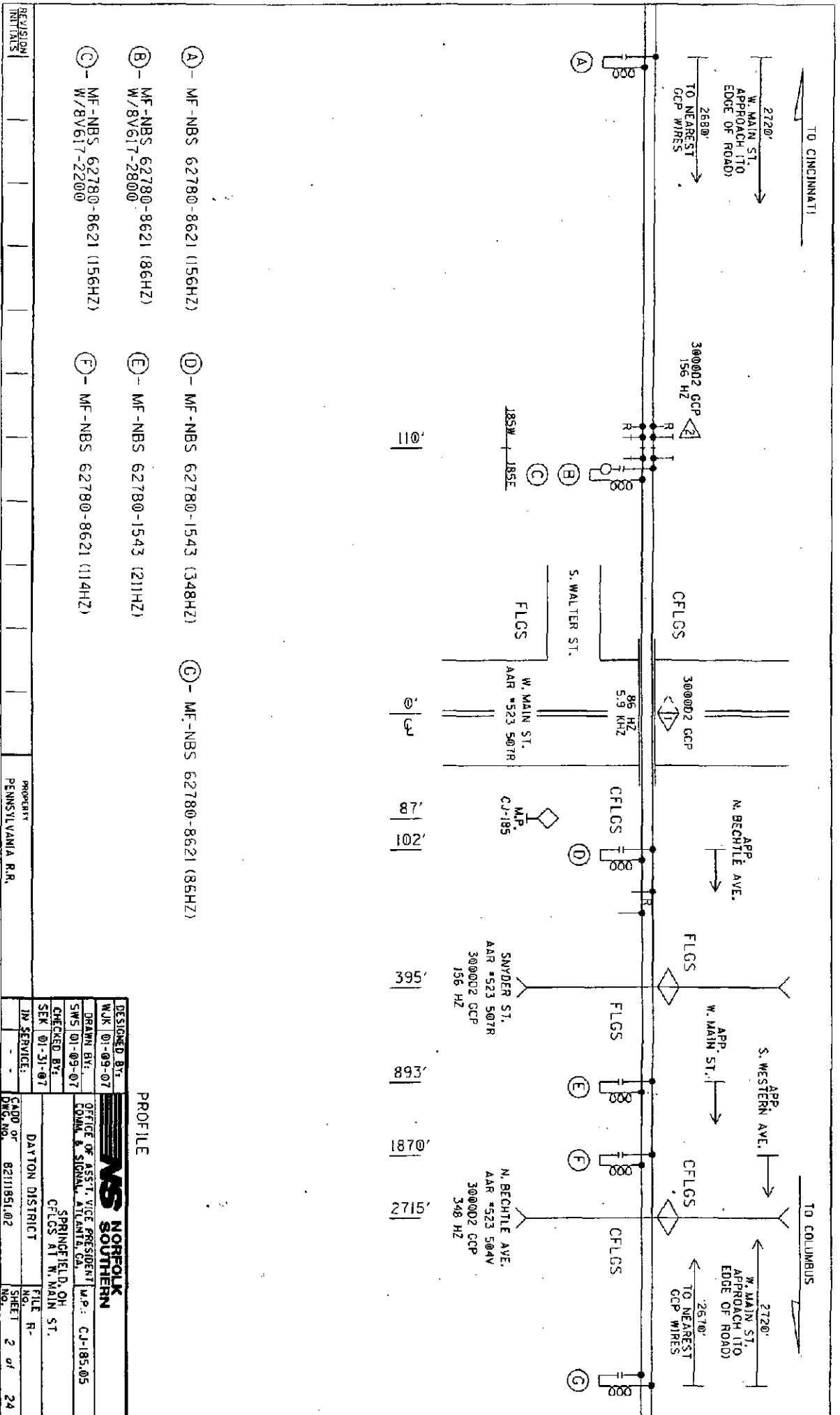
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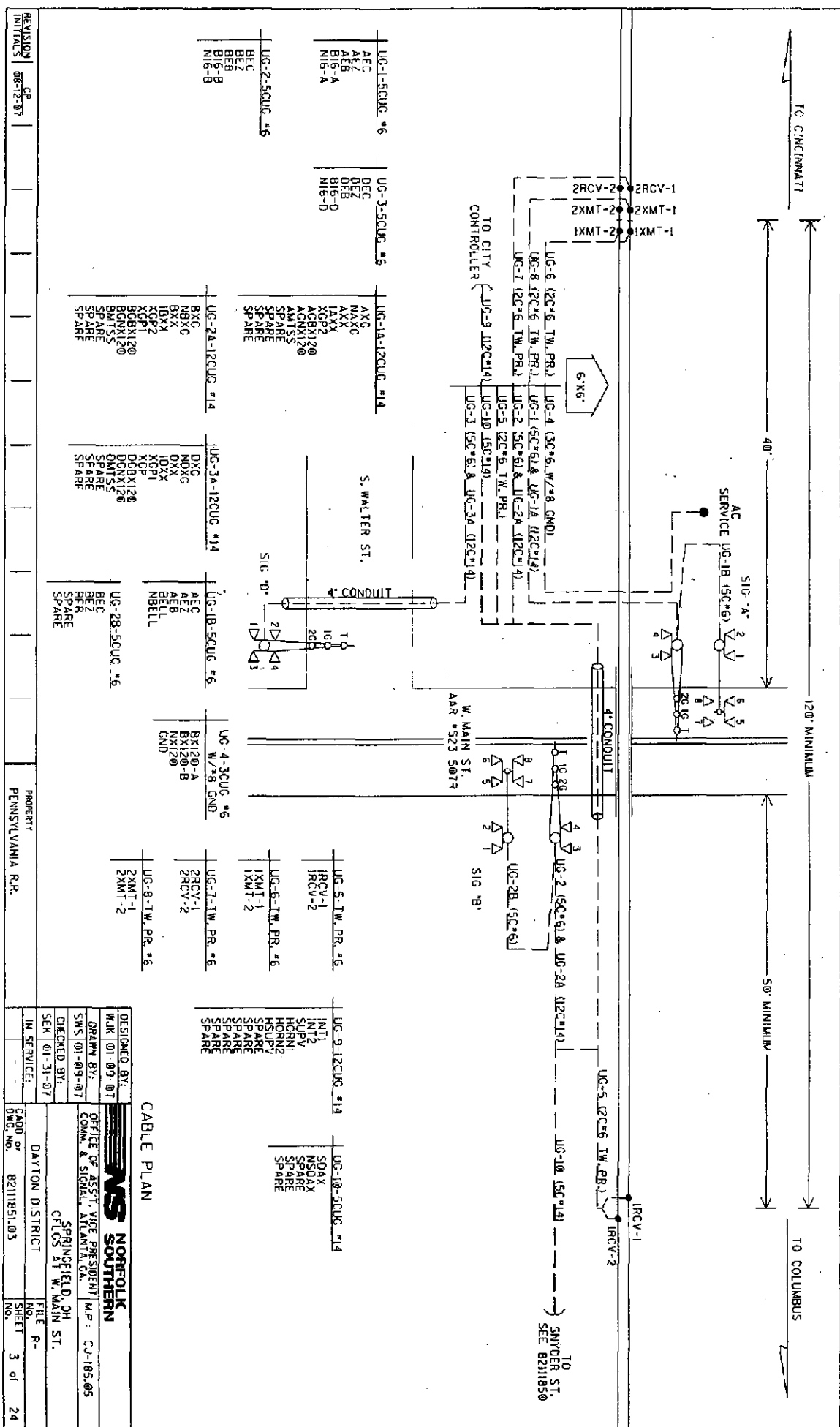
Qty.	Class-Item-CD	UI	Price per Item	Total Price	Item Description	Quantity Shipped	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
3	670-586967-4	EA	\$37.68	\$113.04	SHUNT COVER W/LAG SCREWS, 19"X19", SERRMI #40271, ORDER 1 PER SHUNT				
3	670-645460-4	EA	\$596.03	\$1,788.09	SHUNT, MULTI-FREQ. #62775-8621 SAFETRAN NARROW BAND				
2	670-397239-4	EA	\$40.23	\$80.46	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 12" MAST, SAFETRAN #T17216				
1	670-393331-4	EA	\$37.43	\$37.43	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215				
3	670-806648-4	EA	\$56.42	\$169.26	SIGN, X-BUCK, LESS HARDWARE, SAFETRAN 035200-X CR 02-490546				
1	670-506709-4	EA	\$32.77	\$32.77	STRIP BUSS, 48" COPPER, ERICO P/N B2700HC48				
1	670-330382-4	RL	\$15.68	\$15.68	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS. "WARNING STOP DIGGING"				
35	670-478560-4	EA	\$19.47	\$681.45	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR				
2	165-917984-4	EA	\$4.84	\$9.68	TERMINAL, TEST, TYPE B GRS A62-515 OR HARMON @32118-001 OR				
2	610-065626-4	EA	\$17.55	\$35.10	ULTRA-TECH 15206-01 CONNECTIVITY BLOCK FOR GRS B1 RELAY				
7	670-007238-4	EA	\$129.46	\$906.22	UNIT, THE INSTALLATION AND WIRING OF A DEVICE WHICH REQUIRE A MINIMUM OF FOUR WIRE CONNECT.				
1	670-255598-4	EA	\$33,124.18	\$33,124.18	WIRED RACK, 6X6 FARADAY, 40AMP DOUBLE TRK SSCCIIIA, GCP 3000D2, 2 CRAGG CHARGER, 2 RELAY RACKS, SAFETRAN P/N 40A 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				

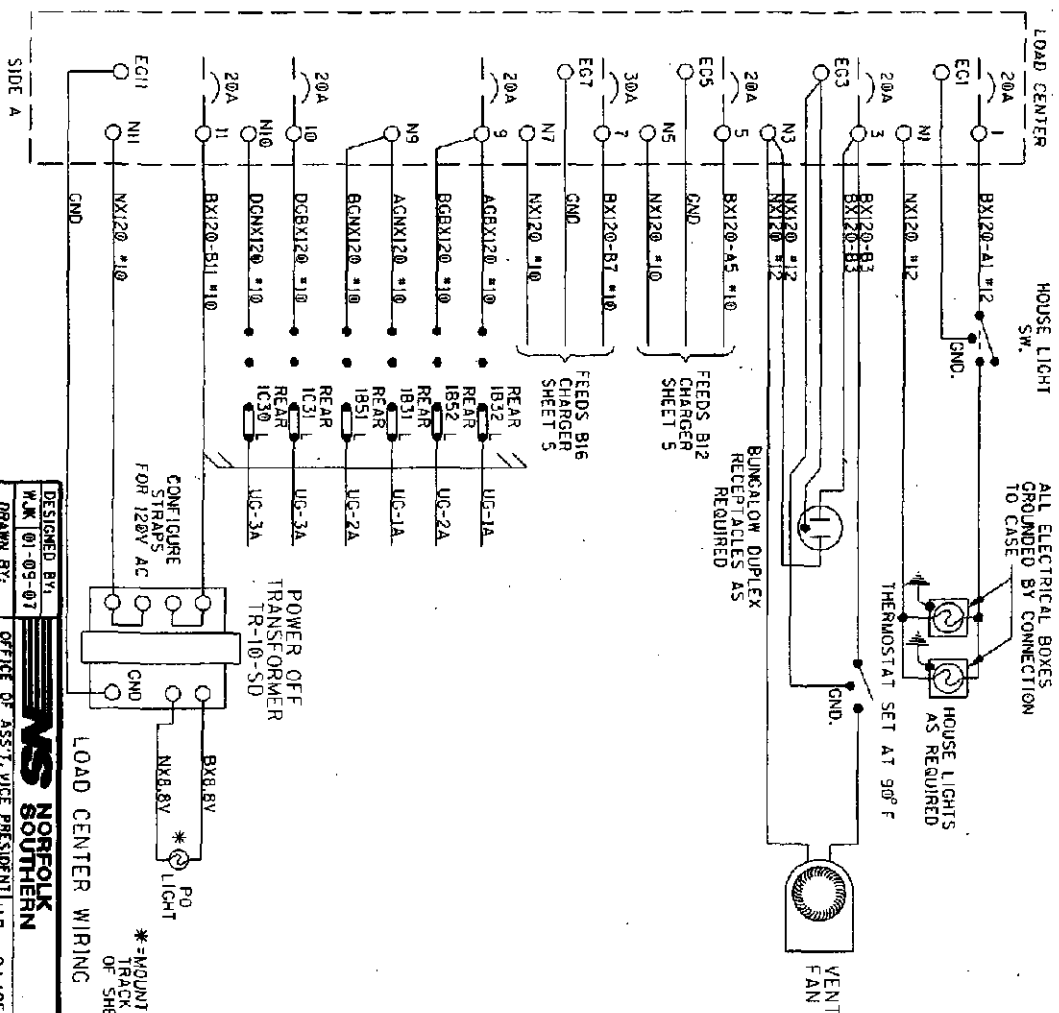
Total Material: \$110,267.25

APPROVED BY STATE	APPROVED BY RAILROAD	CAR NUMBER	SEAL NUMBER
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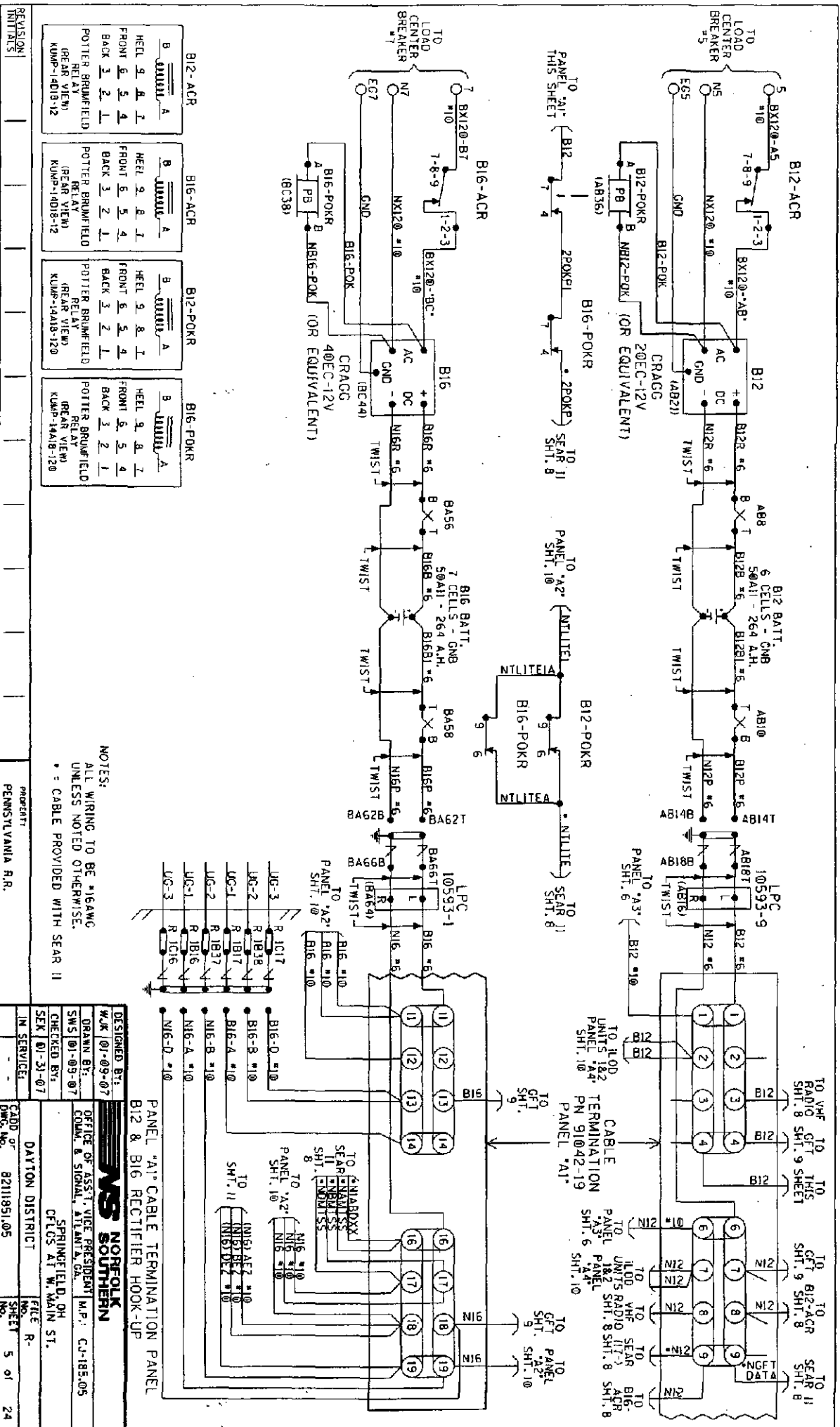






TO GENERATOR
RECEPTACLE

DATE OF DISCHARGE	NO.	H-
ADD OF DMC NO.	82111851.04	SHEET 4 of 24



EXPANDED PROGRAMMING

300002 PROGRAMMING CHART	(LEVEL: J)
NUMBER OF TRACK TRANSCEIVERS	2
T1: FREQUENCY	86HZ
T2: FREQUENCY	156HZ
T1: UNIDIRECTIONAL/BIDIRECTIONAL	BI
T2: UNIDIRECTIONAL/BIDIRECTIONAL	UNI
T1: XMIT LEVEL (MAX/MED)	MAX
T2: XMIT LEVEL (MAX/MED)	MAX
T1: PREDICTOR/MOTION SENSOR	PRED
T2: PREDICTOR/MOTION SENSOR	PRED
T1: WARNING TIME	31 SEC
T2: WARNING TIME	31 SEC
T1: APPROACH DISTANCE	2600 FT
T2: APPROACH DISTANCE	2600 FT
DAX1 PICKUP DELAY (DAX10 = OFF)	0 SEC
ENAL/DAX2 DELAY (0 = ENA)	0 SEC
T1: ISLAND DISTANCE	230 FT
T2: ISLAND DISTANCE	230 FT
NUMBER OF DAX'S	1 EQ
DAX A TRACK ASSIGNMENT (11/12)	12
DAX A DISTANCE (0 = PREEMPT)	431 FT
DAX B TRACK ASSIGNMENT (11/12)	30 SEC
DAX B DISTANCE (0 = PREEMPT)	FT
DAX C TRACK ASSIGNMENT (11/12)	SEC
DAX C DISTANCE (0 = PREEMPT)	FT
DAX D TRACK ASSIGNMENT (11/12)	SEC
DAX D DISTANCE (0 = PREEMPT)	FT
DAX O WARNING TIME	SEC
SLAVING (MASTER/SLAVE)	MASTER
PASSWORD ENABLED	NO
REORDER INSTALLED	NO

T1: SWITCH TO MS (ENTER E2 VALUE)	10 %
T2: SWITCH TO MS (ENTER E2 VALUE)	10 %
T1: TRANSFER DELAY MS TO GCP (0 = OFF)	0 SEC
T2: TRANSFER DELAY MS TO GCP (0 = OFF)	0 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 FT
T2: PRIME PREDICTION OFFSET (0 = OFF)	0 FT
PICKUP DELAY DAX A	15 SEC
PICKUP DELAY DAX B	15 SEC
PICKUP DELAY DAX C	15 SEC
PICKUP DELAY DAX D	15 SEC
T1: ENHANCED DETECTION (ON/OFF)	OFF
T2: ENHANCED DETECTION (ON/OFF)	OFF
BACK-TO-BACK T1 AND T2 (NO/YES)	---
T1: STATION STOP TIMER	---
T2: STATION STOP TIMER	---
T1: NUMBER OF TRACK WIRES (4/5)	4
T2: NUMBER OF TRACK WIRES (4/5)	4
T1: LOW EX ADJUSTMENT	0
T2: LOW EX ADJUSTMENT	0
T1: LOW E2 DETECTION	OFF
T2: LOW E2 DETECTION	OFF
T1: LOW E2 DETECTION TIMER (ON/OFF)	---
T2: LOW E2 DETECTION TIMER (ON/OFF)	---
T1: POSITIVE START (E2 LEVEL) (0 = OFF)	0
T2: POSITIVE START (E2 LEVEL) (0 = OFF)	0
T1: POSITIVE START TIMEOUT (0 = NONE)	---
T2: POSITIVE START TIMEOUT (0 = NONE)	---
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 %

* = 1ST SLOT AT LEFT END OF BAY

MODULES POSITION	UPPER BAY	LOWER BAY
MODULE NUMBER	80211-1(1) * ISL	80012 T/R 1
	80211-1(2) ISL	80012 T/R 2
	80012 T/R 1	80013 RLY DRV
	80012 T/R 2	80214 PROCS
	80013 RLY DRV	80255 REC-INTF
	80214 PROCS	80016 (1) DAX
	80255 REC-INTF	80016 (2) DAX
	80016 (1) DAX	80020 + 80017
	80016 (2) DAX	80211-1(1) * ISL
	80020 + 80017	80211-1(2) ISL
	80211-1(1) * ISL	80012 T/R 1
	80211-1(2) ISL	80012 T/R 2
	80012 T/R 1	80013 RLY DRV
	80012 T/R 2	80214 PROCS
	80013 RLY DRV	80255 REC-INTF
	80214 PROCS	80016 (1) DAX
	80255 REC-INTF	80016 (2) DAX
	80016 (1) DAX	80020 + 80017
	80016 (2) DAX	80028 XFRTMR

NOTES:

1 - SEE IP1 INSTRUCTION AND INSTALLATION MANUAL FOR 8021 ISLAND CALIBRATION PROCEDURE.

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

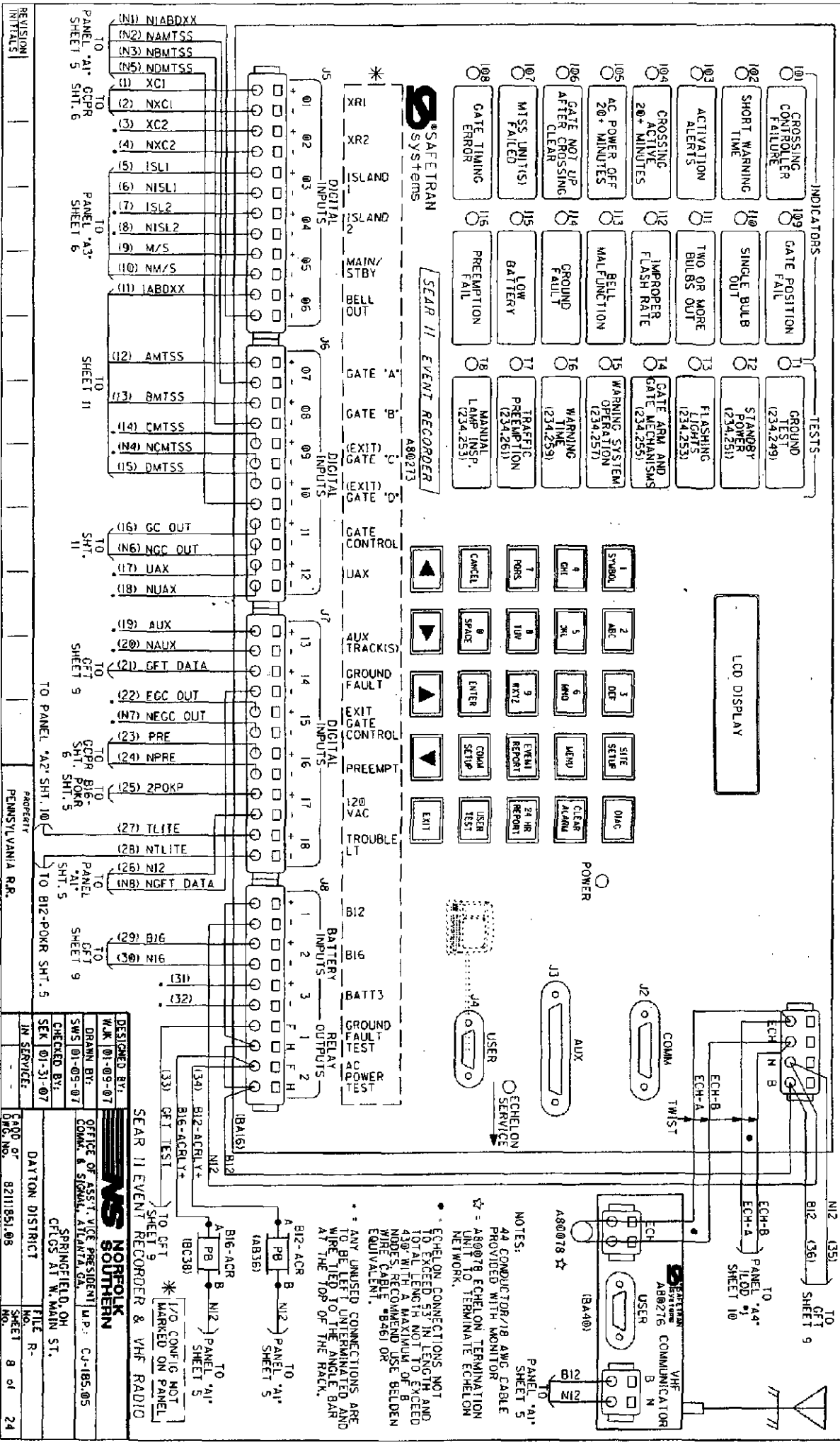
** = 80214 & 80255 (WITH JUMPER) CARDS AND E-LEVEL OR LATER SOFTWARE NEEDED FOR SEAR II / ECHOLON CAPABILITIES.

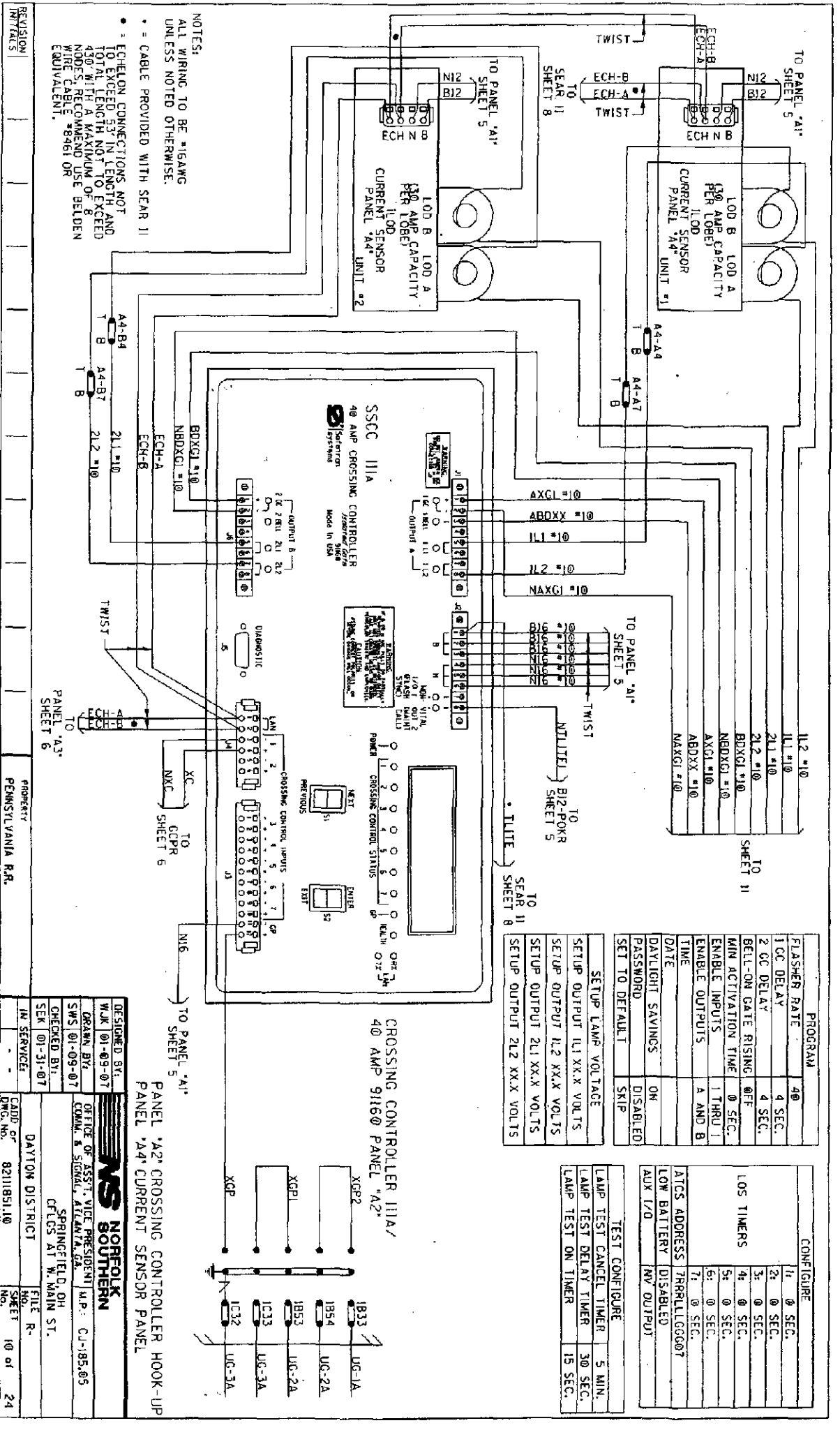
PANEL "A3" 300002 GCP SET-UP

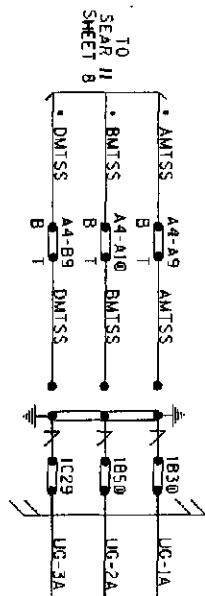
- 300002 PROGRAMMING NOTES:
- 1) AVAILABLE WHEN "TRANSFER DELAY MS TO GCP" AND "PRIME PREDICTION OFFSET" IS ON
 - 2) AVAILABLE WHEN "TRANSFER DELAY MS TO GCP" AND DAX DISTANCE IS GREATER THAN ZERO
 - 3) AVAILABLE WHEN "ENHANCED DETECTION" IS ON
 - 4) AVAILABLE WHEN "LOW E2 DETECTION" IS ON
 - 5) AVAILABLE WHEN "POSITIVE START" IS ON

PROPERTY
PENNSYLVANIA R.R.

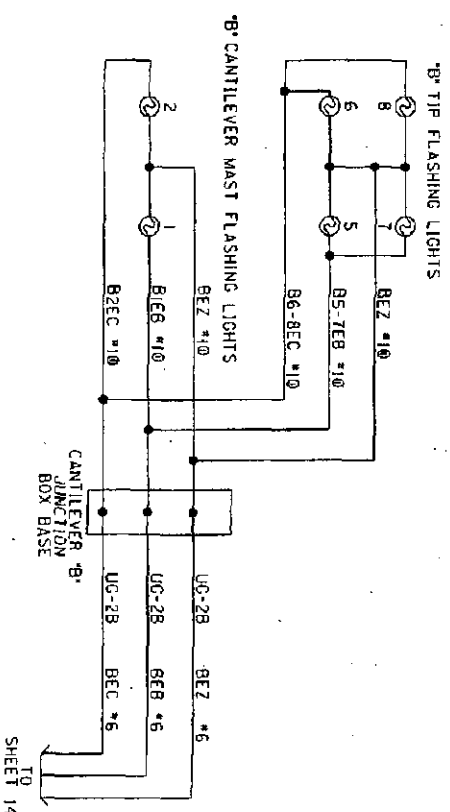
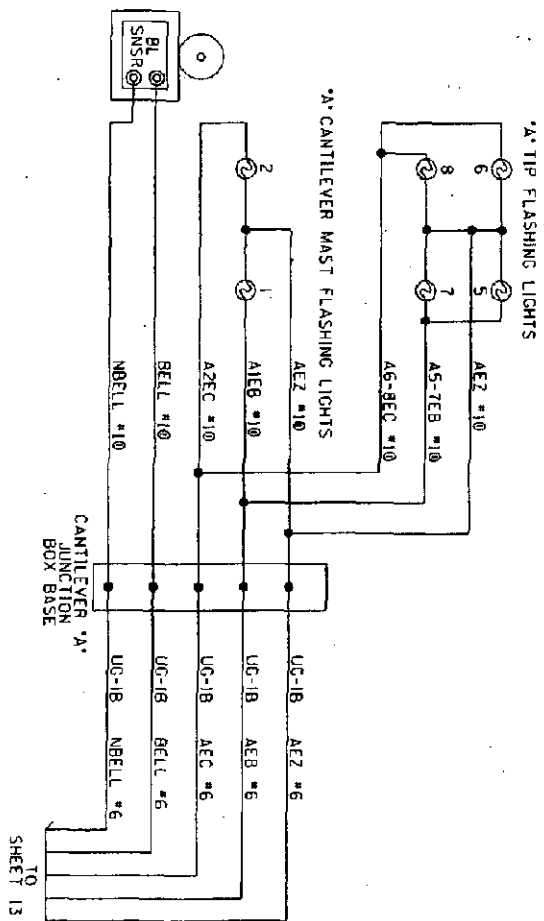
DESIGNED BY:	W.R. 01-09-07	DRAWN BY:	S.W.S. 01-09-07	CHECKED BY:	SEK 01-31-07	IN SERVICE:	
DAYTON DISTRICT				FILE R-			
OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA				SPRINGFIELD, OH CFLS AT W. MAIN ST.			
CARD NO. 8211851.07				SHEET 1 of 24			





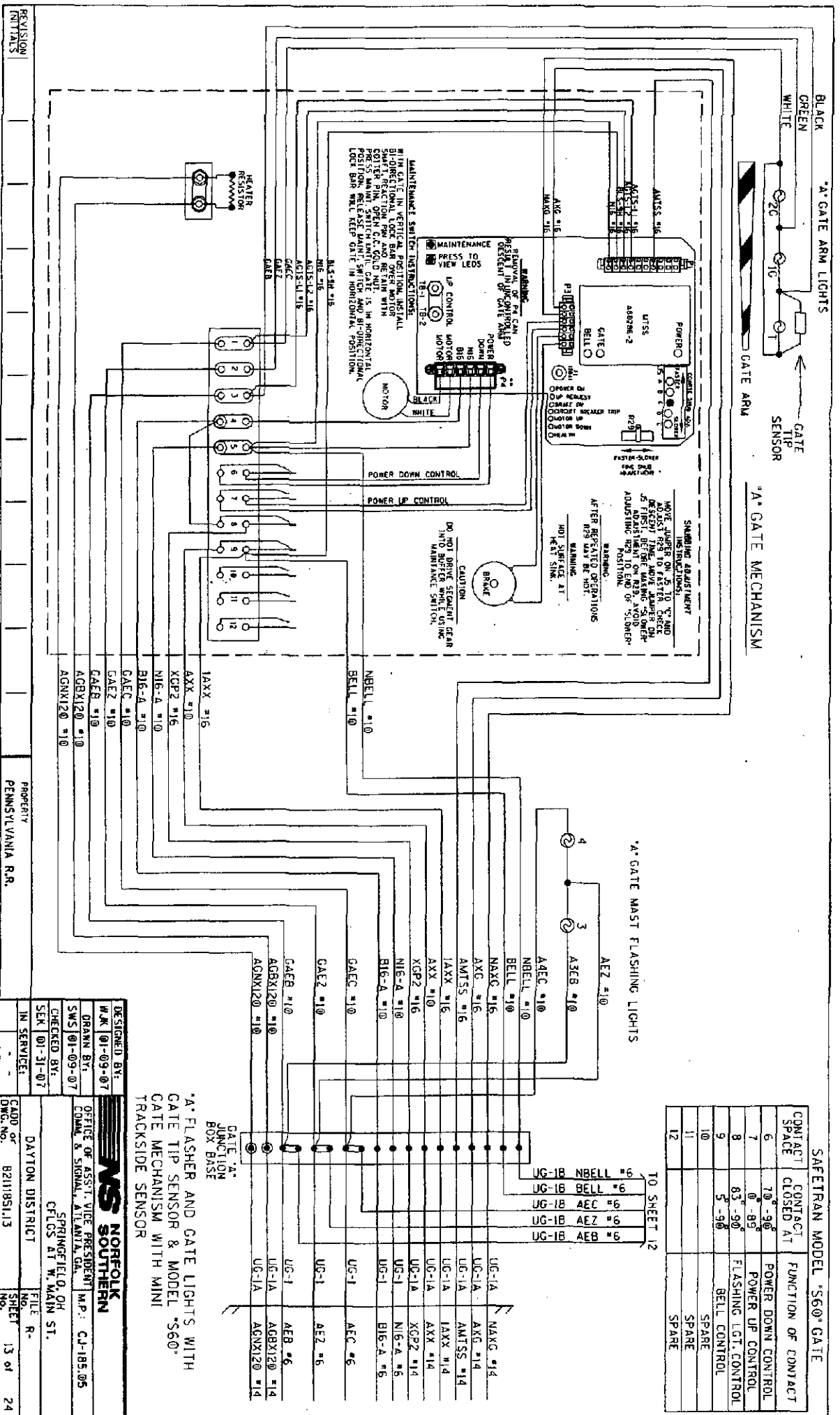


DESIGNED BY:	W.K. 01-09-07
DRAWN BY:	SMS 01-09-07
CHECKED BY:	SEC 01-31-07
IN SERVICE:	- -
NSS NORFOLK SOUTHERN	
OFFICE OF ASST. VICE PRESIDENT COMM & SIGNAL, ATLANTA, GA.	
M.P.: CU-185.05	
SPRINGFIELD, OH	
FLCS AT W. MAIN ST.	
DAYTON DISTRICT	FILE R-
CADD OR DWG. NO.	02111B5.11
SHEET NO.	II of 24



CANTILEVER FLASHER LIGHTS

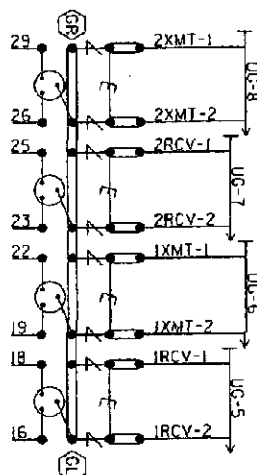
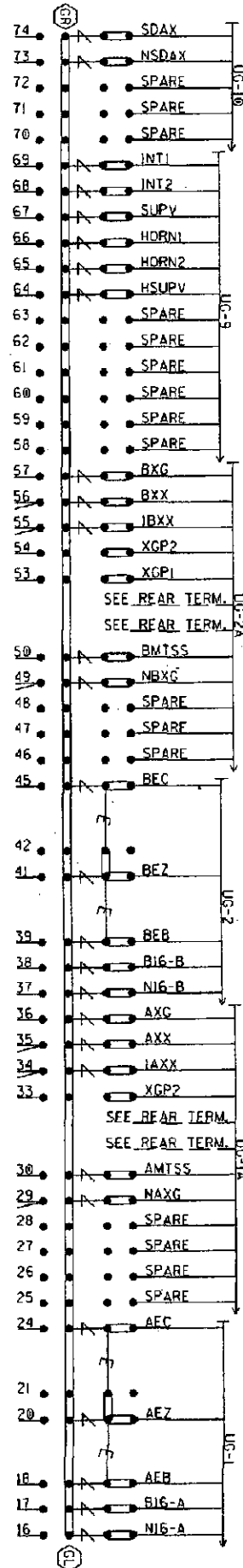
[illegible]



LEFT TWO ROWS TERMINAL BOARD 1

"1A"

"1B"



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.

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

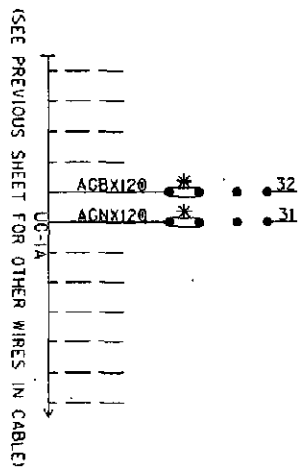
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DESIGNED BY:	WJK 01-09-07
DRAWN BY:	OFFICE OF ASST. VICE PRESIDENT
CHECKED BY:	COMM. & SIGNAL, ATLANTA, GA.
IN SERVICE:	SPRINGFIELD, OH
	CFLGS AT W. MAIN ST.
	DAYTON DISTRICT
	FILE R-
CARD OF	NO. 821185.16
SHEET	16 of 24

BACKBOARD DETAIL - 1A & 1B

NORFOLK SOUTHERN

¹¹1A¹²

* = CLOSED DURING WINTER MONTHS

ENVS
NORFOLK
SOUTHERN

						DESIGNED BY:		WJK	01-09-07
						DRAWN BY:			
						CHECKED BY:		SWS	01-09-07
						SEC.		01-31-07	
						IN SERVICE:		-	-
PROPERTY						PENNSYLVANIA R.R.			
REVISION INITIALS									

		NORFOLK SOUTHERN	
OFFICE OF ASST. VICE PRESIDENT		M.P.: CJ-185.05	
COMM. & SIGNAL, ATLANTA, GA.			
SPRINGFIELD, OH			
CRGS AT W. MAIN ST.			
DAYTON DISTRICT		FILE R-	
CADD OR SHEET NO.	8211185.117	SHEET	17 of 24

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

Clear view
Lightning Arrester
(022585-1X)

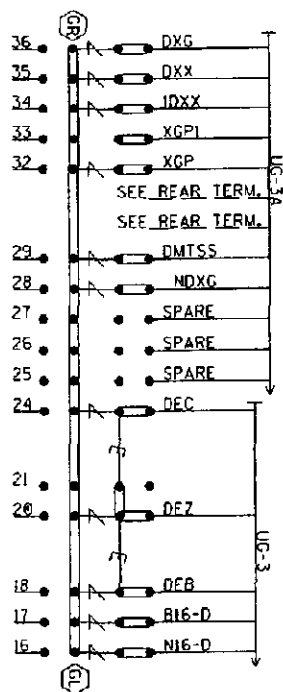
Q = LPC-10560-51

GR = TERMINALS GROUNDED TO SHIELD.
CL 4 POST BLOCKS USE EITHER -

GR - SERMMI PART NO. 61278
GL - SERMMI PART NO. 61278-1.

PENNSYLVANIA R.R.

BACKBOARD DETAIL - IC

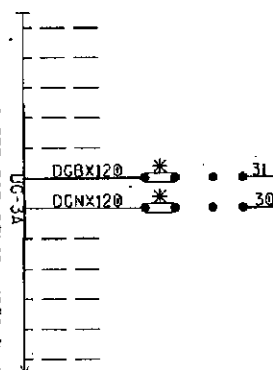


REAR OF RIGHT ROW TERMINAL BOARD 1 "1C"

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

SEE PREVIOUS SHEET FOR OTHER WIRES IN CABLE



REAR OF FARADAY BACKBOARD
REAR BACKBOARD DETAIL - 1C

DESIGNED BY: W.K. 01-09-07	NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA. SPRINGFIELD, OH CTRG AT W. MAIN ST. DAYTON DISTRICT	FILE NO. R-19 of 24
DRAWN BY: SWS 01-09-07		FILE NO. R-19 of 24
CHECKED BY: SEK 01-31-07		FILE NO. R-19 of 24
IN SERVICE: -		FILE NO. R-19 of 24
CAD'D BY: 821185119 DWG. NO. 821185119		FILE NO. R-19 of 24

REVISION INITIALS

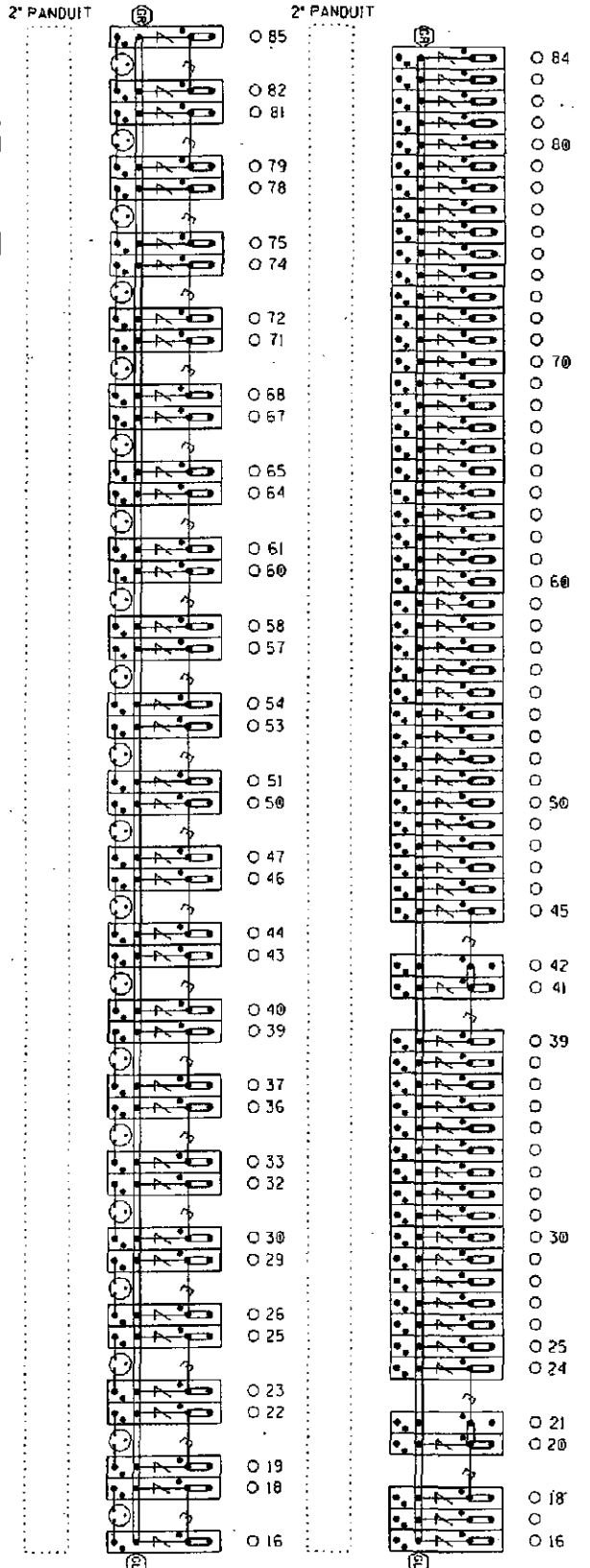
TERMINAL BOARD I LEFT HALF

"1A"

"1B"

2" PANDUIT

2" PANDUIT



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

= 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.

CR = TERMINALS GROUNDED TO SHIELD.
4 POST BLOCKS USE EITHER -
CR - SERMM PART NO. 61278
CL - SERMM PART NO. 61278-1.

CR = Heavy Duty Equalizer
(022700-1X)
L = Lightning Arrestor
(022585-1X)
CL = LPC-10550-51

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:	W.K. 01-09-07
DRAWN BY:	SW5 01-09-07
CHECKED BY:	SEK 01-31-07
IN SERVICE:	
CARD OF	DAYTON DISTRICT
NO.	8211851-20
SHEET	20 of 24

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

NORFOLK
SOUTHERN

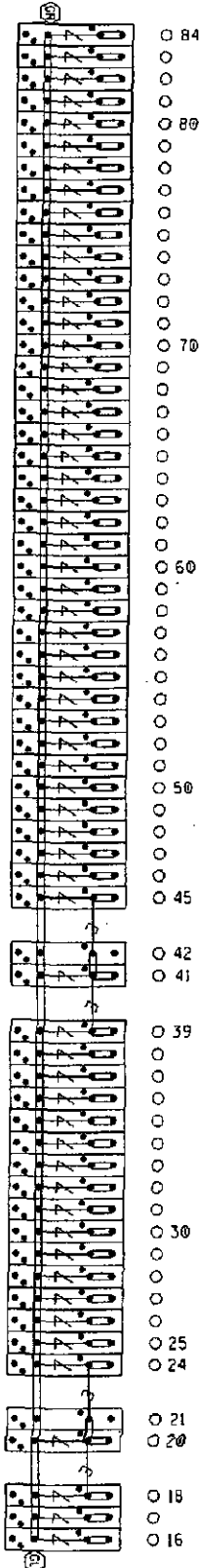
OFFICE OF ASST. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA.
SPRINGFIELD, OH
CFLGS AT W. MAIN ST.

FILE R-
NO.

TERMINAL BOARD 1 RIGHT HALF

"1C"

2" PANDUIT



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

= 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.



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



= LPC-10560-51



= Lighting Arrestor (022585-1X)



= Heavy Duty Equalizer (022780-1X)



= Clear view

REVISION INITIALS

PROPERTY PENNSYLVANIA R.R.

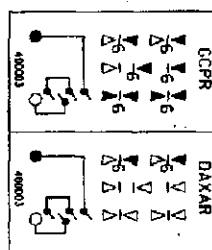
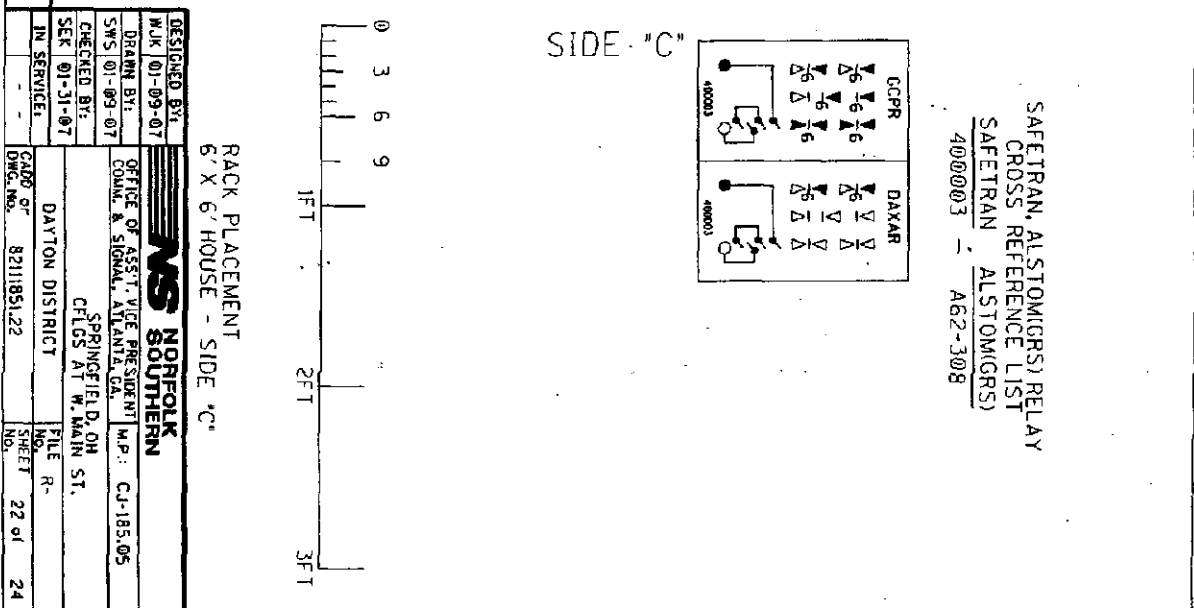
DESIGNED BY:	WAK (01-09-07)
DRAWN BY:	SWS (01-09-07)
CHECKED BY:	SEK (01-31-07)
IN SERVICE:	
DATE OF	DAYTON DISTRICT
FILE NO.	8211851.21
SHEET	21 of 24

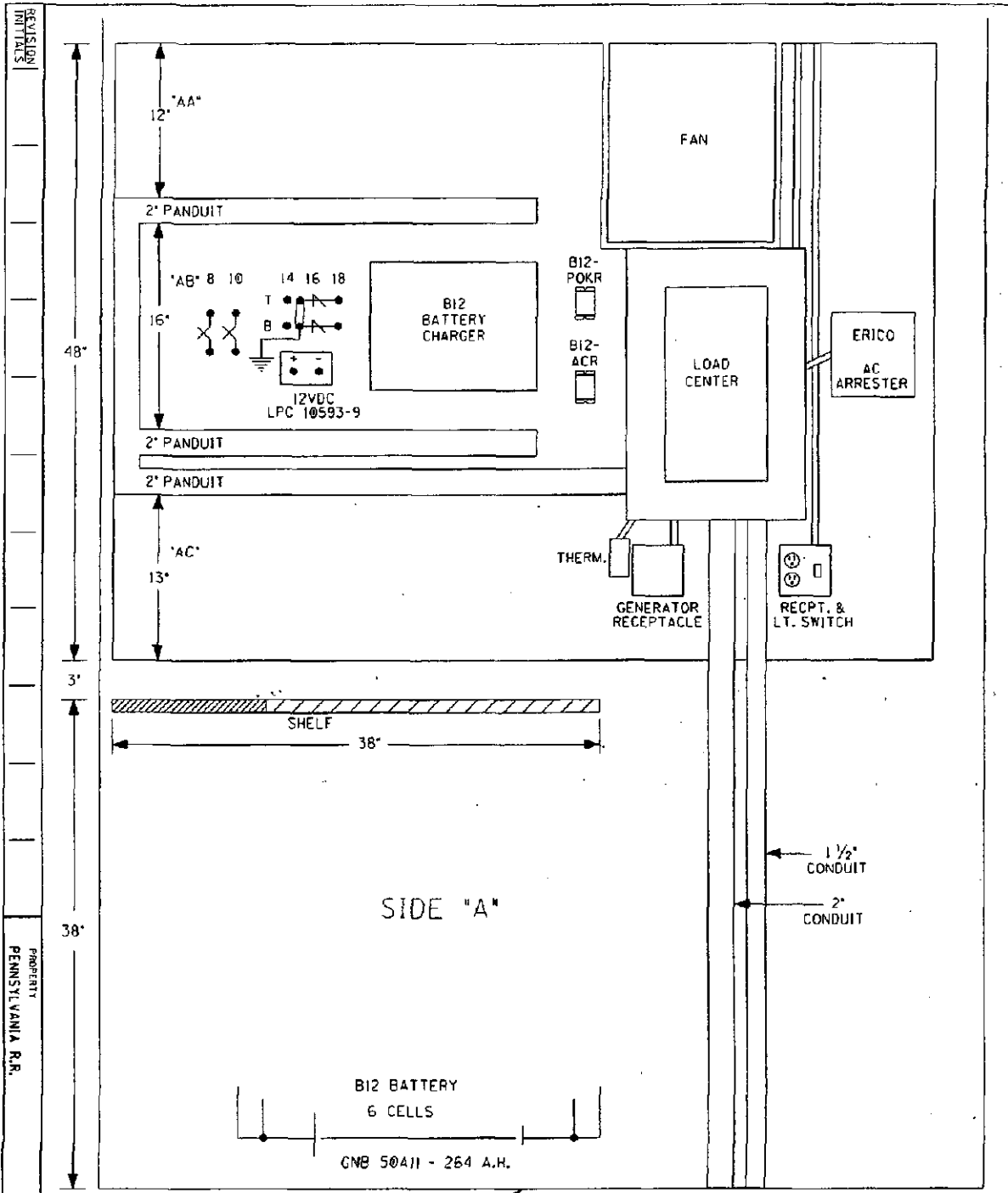
TERMINAL BOARD 1
RIGHT ROW
FARADAY SHIELD DETAIL - 1C

NORFOLK SOUTHERN

OFFICE OF ASST. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA.
SPRINGFIELD, OH
CFLGS AT W. MAIN ST.

W.P. CD-185.05





DESIGNED BY:	WJK 01-09-07	OFFICE OF ASST. VICE PRESIDENT	M.P.: CJ-185.05
DRAWN BY:	SWS 01-09-07	COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY:	SEK 01-31-07	SPRINGFIELD, OH	
IN SERVICE:		CFLGS AT W. MAIN ST.	
DAYTON DISTRICT			
CADD OF	8211851.23	FILE R-	
DWG. NO.		SHEET	23 of 24

6' X 6' HOUSE - SIDE 'A'

