

FILE

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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

January 29, 2007
061-10.0617

Docketing Division
180 East Broad Street - 13th Floor
Columbus, Ohio 43215

Dear Ms. Johrendt:

**Re: The Modification Of Crossing Warning Devices At Tuscarawas Street
In Canton, Stark County, Ohio, DOT: 502 751E, Milepost PC-101.12**

Attached for your review and approval is a copy each 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.

Please date stamp a copy of this letter and forward to Mr. R. S. Noe, Assistant General Attorney, Norfolk Southern Corporation, Three Commercial Place, Norfolk, Virginia 23510.

If you have any questions, please call John A. Beauford at 404-582-6412.

Sincerely,

B. L. Sykes

B. L. Sykes

Enclosure

BLS/rhr/gbb/jab/rjs

E/cy: Mr. R. S. Noe, NS Corporation, Norfolk, VA
Ms. Susan Kirkland, ORDC (w/plans, estimate and material list)
Ms. Susan Arduini, ORDC (w/plans, estimate and material list)
Mr. G. Martin, PUCO (w/plans, estimate and material list)
Mr. M. Forte', ORDC (w/plans, estimate and material list)

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Technician And Date Processed 2/7/07



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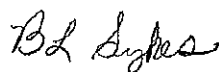
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26-Jan-07

Round Figure Estimate for Grade Crossing Warning Devices

City/State: CANTON, OH
MilePost: PC-101.12
State Proj. No.:
S&E Proj. No.: 10.0008
Man Days: 220

Road: TUSCARAWAS ST.
DOT/AAR: 502751E
County: STARK
AFE: F10079
File Number: 061-10.0617

Purchases - Others	
Meals and Lodging:	\$20,699.71
Rental of Equipment:	\$45,254.00
(2 Trucks, 1 Backhoe w/ Trailer and 1 Pipe-Pusher for 55 Days)	
Construction Supervision Vehicle:	\$3,620.32
Purchases - Other Total:	\$69,574.03
Material And Additives	
Material Cost:	\$234,897.00
Sales and Use Tax:	\$0.00
Material Handling Freight:	\$11,744.86
Material Total:	\$246,641.86
Labor And Additives	
Labor Cost:	\$53,240.00
(4 man crew at \$968.00 a day for: 55 days)	
Payroll Tax & Overheads:	\$52,521.26
Preliminary Engineering:	\$25,356.08
Construction Supervision:	\$15,029.65
Labor Total:	\$146,146.99
Project Cost:	\$462,362.88
Scrap / Salvage Credit:	\$0.00
Project Total:	\$462,362.88

Estimated on: 26-Jan-07

Estimated by: enjab

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:	CANTON
Road:	TUSCARAWAS ST
Mile Post:	PC-101.12
Drawing Number:	2402-1011
State Project Number:	
County:	STARK
A A R Number:	502751E
Project Number:	10.0008
File Number:	061-10.0617
New File Number:	
A F E Number:	F10079
Store Number:	
Supervisor:	C.A. EWING
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: CANTON
 Store No.:
 OH S&E Proj. No.: 10.0008 AFE No.: F10079 Drawing No.: 2402-1011
 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 Date Quan.	Quantity Installed Date Quan.	Quantity Date Returned (Credit)	Special Instructions
3	670-360693-4	EA	\$5.04	\$15.12	AARDOT NUMBER PLATE/DECAL, ORDER 3 PER PROJECT. 60 DAY LEAD TIME. SUPPLIED BY STRAN.					
2	165-006505-4	EA	\$1,051.54	\$2,103.08	AC SERVICE, COMPLETE LESS METER BASE, ASSEMBLED ON 30' POLE					
24	670-917618-4	EA	\$13.19	\$316.56	ARRESTER, HD SAFETRAN 022615-1X U/BASE FOR TRACK LEAD					
64	670-119241-4	EA	\$32.80	\$2,099.20	ARRESTOR, LIGHTNING HEAVY DUTY CLEAR VIEW SAFETRAN 022585-1X					
19	105-871901-4	EA	\$161.57	\$3,069.83	BATTERY, GNB 265AH MODEL 50A11 SINGLE CELL 2.25 VOLTS					
2	670-980689-4	EA	\$71.71	\$143.42	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 28' AND LESS					
1	670-016354-4	EA	\$32.19	\$32.19	BRACKET, RELAY FOR WALL MOUNTING ONE B-1 PLUG-IN RELAY SAFETRAN# 420000-51X					
1	670-015827-4	EA	\$37.07	\$37.07	BRACKET, RELAY FOR WALL MTG. FOUR ST1 OR B1 RELAYS SAFETRAN# 420000-53X					
2	670-356949-4	EA	\$97.00	\$194.00	CABLE, 10' GENERATOR HOOK UP, SERRM P/N 40524, FEMALE CONNECTOR					
300	465-193537-4	FT	\$1.64	\$492.00	CABLE, 7C#14AWG (CR 02-102808) SOLID COPPER					
2100	465-292862-4	LF	\$1.04	\$2,184.00	CABLE, U-2-6 TWISTED, S-23 OKONITE 113-12-3933 SOLID TINNED CONDUCTOR					
600	465-292929-4	LF	\$3.05	\$1,830.00	CABLE, U.G. 5 COND. NO. 6 AWG SOLID COPPER CABLE TO MEET NS CORP. SPEC. FOR SIGNAL					
3300	465-939422-4	LF	\$2.55	\$8,415.00	CABLE, UG 12 CONDUCTOR NO 14 AWG SOLID EACH CONDUCTOR WITH 5/64 IN INSULATION 10 MIL					
600	465-791835-4	FT	\$2.22	\$1,332.00	CABLE, UG AC ENTRANCE 3C#6-7X OKONITE FMPL-094-078 TR W/G 1 X 8 7X W010 BRZ TAPE 600V PRODUCT CODE 206-11-6070					
2	670-009120-4	EA	\$3,134.99	\$6,269.98	CANTILEVER, WTI/F ARM 20' W/WALKWAY KIT SAFETRAN #071274-20NS2					
3	670-007189-4	EA	\$180.02	\$540.06	CHOKE, BATTERY SAFETRAN NO. 62648					

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CAR NUMBER

SEAL NUMBER

Friday, January 26, 2007 1:29 PM

Location: CANTON OH S&E Proj. No.: 10.0008 AFE No.: F10079 Drawing No.: 2402-1011
 Store No.: 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 Date Quan.	Quantity Installed Date Quan.	Quantity Date Returned (Credit)	Special Instructions
220	165-544477-4	FT	\$2.55	\$561.00	CONDUIT, 4"x10" PVC, SCHEDULE 80 BELL CONNECTOR AT ONE END, 1/2 PT. GLUE IN KIT 670-123298-4					
14	670-090450-4	EA	\$50.38	\$705.32	CONNECTOR, WELDED FAR RAIL HARMON A1000-2W					
14	670-486646-4	EA	\$41.62	\$582.68	CONNECTOR, WELDED NEAR RAIL HARMON A1000-1W					
1	670-794453-4	EA	\$854.03	\$854.03	COUNTERWEIGHT PKAGE, 25-31 GATE STAN S- MECH ONLY, STAINLESS TO INCLUDE HUB, SUPPORT ARMS					
1	670-689122-4	EA	\$1,118.58	\$1,118.58	COUNTERWEIGHT PKAGE, 32-41 GATE STRAN S- MECH ONLY, STAINLESS TO INCLUDE HUB, SUPPORT ARMS					
9	670-760012-4	EA	\$40.02	\$360.18	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 KING EQUIPMENT CONTAINER					
12	670-228165-4	EA	\$10.73	\$128.76	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					
4	670-000003-4	EA	\$255.85	\$1,023.40	FILLSTONE #57, QUANTITY IS BASED ON TRUCK LOAD PLUS DELIVERY COST					
2	670-744631-4	EA	\$2,706.00	\$5,412.00	FOUNDATION, CPLS FOR SAFETRAN MODEL "WTF" ARMS 12' TO 30' SINGLE MAST, DIXIE# S-10-3WS-C, 5'10" CR 02-205902					
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 ALUM-LITE (HIGH WIND) 27'-33" ARM ASSEMBLY WITH "3" NEG 2018 LIGHTS. INCLUDES GATE GUARD FOR GATE LIGHT CABLE, NEG PIN 8006A-334NCG					
1	670-921451-4	EA	\$43.57	\$43.57	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-0200					
1	670-923649-4	EA	\$43.57	\$43.57	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-0800					
1	670-927262-4	EA	\$43.57	\$43.57	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-1200					
1	670-491904-4	EA	\$43.57	\$43.57	INDUCTOR, SIMULATED TRACK SAFETRAN 8V617-600					
2	670-477991-4	EA	\$317.90	\$635.80	KIT, GROUNDING ASSY FOR ALL IS INCLUDES 8 GRD RDS, 200#4 WIRE, 12 4 WIRE ONE-SHOTS, ERICO SBK206					

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Location: CANTON OH S&E Proj. No.: 10.0008 AFE No.: F10079 Drawing No.: 2402-1011
 Store No.: 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 Date Quan.	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
2	670-123298-4	EA	\$256.93	\$513.86	KIT, HARDWARE SUPPLIES REQUIRED XING PACKAGES, WEB CONNECTORS FOR SHUNT(EA) 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 W/T/F CANTILEVER ARM, SAFETRAN P/N 042003-488XNS					
1	670-745798-4	EA	\$533.19	\$533.19	LAMP ASSY, 4" GRD. MAST MTG, 1W IND. 20" BKGRD, FLX-12 W/BULB STRAN #042003-484XNS					
2	670-816589-4	EA	\$551.10	\$1,102.20	LAMP ASSY, 5" MAST MTG, 1W IND. 20" BKGRD, (BACK) LTS.FLX -12W/BULB STRAN # 042003-001493					
2	670-167654-4	EA	\$716.73	\$1,433.46	LAMP ASSY, FLX 12" LIGHT UNIT, USE WITH W & W/T/F MAST, 1W (FRONT) INDICATION FOR W/T/F CANTILEVER MAIN MAST, SAFETRAN P/N 042003-489XNS					
6	165-643547-4	EA	\$4.30	\$25.80	LAMP, 18 WATT 10 VOLT S-11 SC BAY 18S1/1MSC CLEAR R/WY SIGNAL U-71463 GE					
10	255-590880-4	EA	\$16.12	\$161.20	LOCK, AMERICAN LOCK MODEL H-10KA KEYS ALIKE TO PRIVATE KEYWAY D456 AND STAMPED "NS SIG"					
1	670-339854-4	EA	\$295.57	\$295.57	MAST, (W/T/F), SIDELIGHT BRACKET FOR W/T/F CANTILEVER, SAFETRAN 041442-1031X					
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	670-179911-4	EA	\$4,500.00	\$9,100.00	MAST, W/T/F ARMS, 12 W/LADDER KIT FOR 12'-20' W/T/F ARMS, PN 071271-20NS					
2	670-850933-4	EA	\$3,352.65	\$6,705.30	MECHANISM, GATE MODEL S-60, WITH DEFROSTER AND MINI TRACKSIDE SENSOR STRAN # 074007-X002B3					
1	000-000000-4	EA	\$5,000.00	\$5,000.00	MIS. UNDERGROUND BORING					
1	670-999990-4	EA	\$10,000.00	\$10,000.00	MISC. ENGINEERING / TEST SHEET EST. FOR ELECTROCODE PROJECTS					
20	670-000007-4	EA	\$307.02	\$6,140.40	MISC. EXPENSE FOR TRACK WORK (I.E. INS JTS, RODS, ETC.)					
10	670-014233-4	EA	\$981.85	\$9,818.50	MODULE, DAX FOR 3000 GCP SAFETRAN #80016					
2	670-700469-4	EA	\$1,240.83	\$2,481.66	MODULE, MULTI FREQUENCY ISLAND SAFETRAN #80211 FOR 3000GCP					

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Location: CANTON

OH

S&E Proj. No.: 10.0008

AFE No.: F10079

Drawing No.: 2402-1011

Store No.:

P.O. Number:

Date Required:

Date Shipped:

Vendor: Safetran Systems Corp.

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4	670-001355-4	EA	\$72.59	\$290.36	PACKAGE, HARDWARE SIGN 12 IN. (USE WITHWTFE MAST) MOUNTING, SERRMI A1250-8, HARMON @180004/0007.						
1	670-275865-4	EA	\$1,505.42	\$1,505.42	PANEL, SAFETRAN 80049 DC SHUNTING ENHANCER PANEL						
2	670-514605-4	EA	\$8.45	\$16.90	PINNACLE, W/C SECT 1-11, 4"X5" REF K1 110-8 OR SAFETRAN NO. @035045-503X						
24	670-555609-4	EA	\$45.12	\$1,082.88	PLUGBOARD, TYPE B-1 GRS A62-506 OR HARMON @7062-506 OR						
1	670-535383-4	EA	\$11,754.00	\$11,754.00	PREDICTOR, DUAL FREQ, GRADE CROSSING 3000D2 1 TRACK, SAFETRAN #80110-101-0 DUAL UNIT, NO ISLAND						
1	670-990178-4	EA	\$14,957.17	\$14,957.17	PREDICTOR, DUAL FREQ, 3000D2 2 TRACK, SAFETRAN #8102-80110-0 NO ISLAND, W/PROCESSOR 80214						
12	165-103293-4	EA	\$62.43	\$749.16	PROTECTOR, LIGHTNING & SURGE LPC 10560-51, 3 ELECTRODE WITH SPADE TERMINAL						
2	165-902002-4	EA	\$308.00	\$616.00	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						
6	670-742096-4	EA	\$41.80	\$250.80	RELAY INTERFACE PROBE, ULTRA TECH PN 16031-00						
6	670-456836-4	EA	\$150.00	\$900.00	RELAY RACK, SWING, FARADAY SHELTER FOR ONE RELAY, SAFETRAN P/N T15331						
24	670-707995-4	EA	\$313.67	\$7,528.08	RELAY, TYPE B1, NEW 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						
1	180-239123-4	EA	\$20.83	\$20.83	RESISTOR, ADJUSTABLE 5 OHM SAFETRAN NO. 029603-2X FOR TRACK CIRCUITS						
4	435-805560-4	EA	\$6.25	\$25.00	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-@BELL, 2-GTS, WITHOUT MTSS, 1-GFT, 1-VHFC, 2- RECORDER INTERFACE MODULE, 1-ECHOLON CONNECTOR						

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Location: CANTON OH S&E Proj. No.: 10.0008 AFE No.: F10079 Drawing No.: 2402-1011
 Store No.: 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 Date Quan. Date	Quantity Installed Date Quan.	Quantity Returned (Credit)	Special Instructions
1	670-306005-4	EA	\$1,094.78	\$1,094.78	SEARII I/O PANEL UNIT, SAFETRAN P/N A80258					
1	670-085558-4	EA	\$373.00	\$373.00	SEARII, (I/O) - INTELLIGENT LAMP OUT DETECTOR, SAFETRAN P/N A80271, 1/20 AMP SSCC, 2/40 AMP SSCC					
2	670-119882-4	EA	\$70.51	\$141.02	SEARII, ECHELON CONNECTOR, SAFETRAN P/N A80063, 1/ GCP UNIT					
4	670-118145-4	EA	\$139.53	\$558.12	SEARII, GCP DATA RECORDER MODULES, SAFETRAN P/N A80255, 1/ NON REDUNDANT GCP, 2/ REDUNDANT GCP					
2	670-281280-4	EA	\$7,006.00	\$14,012.00	SHELTER BARE 6X6, ALUMN, FARADAY, W/CABLE CHUTES BEHIND TERMINAL BOARD, W/GEN. CONN. W/ADJUSTABLE PIERS, SAFETRAN P/N 058400-66-78A					
2	670-471572-4	EA	\$3.00	\$6.00	SHIELD, GROUND SERMI P/N 61278 FOR GROUNDING A RH 4 POST					
2	670-472200-4	EA	\$3.00	\$6.00	SHIELD, GROUND SERMI PART NO. 61278 FOR GROUNDING A LH 4 POST					
13	670-586967-4	EA	\$37.68	\$489.84	SHUNT COVER W/LAG SCREWS, 19"X19", SERMI #40271, ORDER 1 PER SHUNT					
8	670-652773-4	EA	\$470.56	\$3,764.48	SHUNT, MULTI-FREQ. #62775-1543 SAFETRAN NARROW BAND					
2	670-792970-4	EA	\$301.74	\$603.48	SHUNT, NARROW BAND, NBS-1, 267 HZ (CH.3) WITH 10 FT. LEAD HARMON 0250250					
1	670-792996-4	EA	\$335.50	\$335.50	SHUNT, NARROW BAND, NBS-1, 392 HZ (CH.5) WITH 10 FT. LEAD HARMON 0250250					
1	670-793001-4	EA	\$335.50	\$335.50	SHUNT, NARROW BAND, NBS-1, 452 HZ (CH.6) WITH 10 FT. LEAD HARMON 0250250					
1	670-793019-4	EA	\$335.50	\$335.50	SHUNT, NARROW BAND, NBS-1, 522 HZ (CH.7) WITH 10 FT. LEAD HARMON 0250250					
2	670-393361-4	EA	\$37.43	\$74.86	SIGN CROSSING MALFUNCTION ASSEMBLY FOR 4" AND 5" MAST, SAFETRAN #T17215					
2	670-806648-4	EA	\$56.42	\$112.84	SIGN, X-BUCK, LESS HARDWARE, SAFETRAN 036200-X CR 02-490546					
2	670-803355-4	EA	\$32.01	\$64.02	SIGN, "3" TRACK, LESS HARDWARE POWER PARTS					

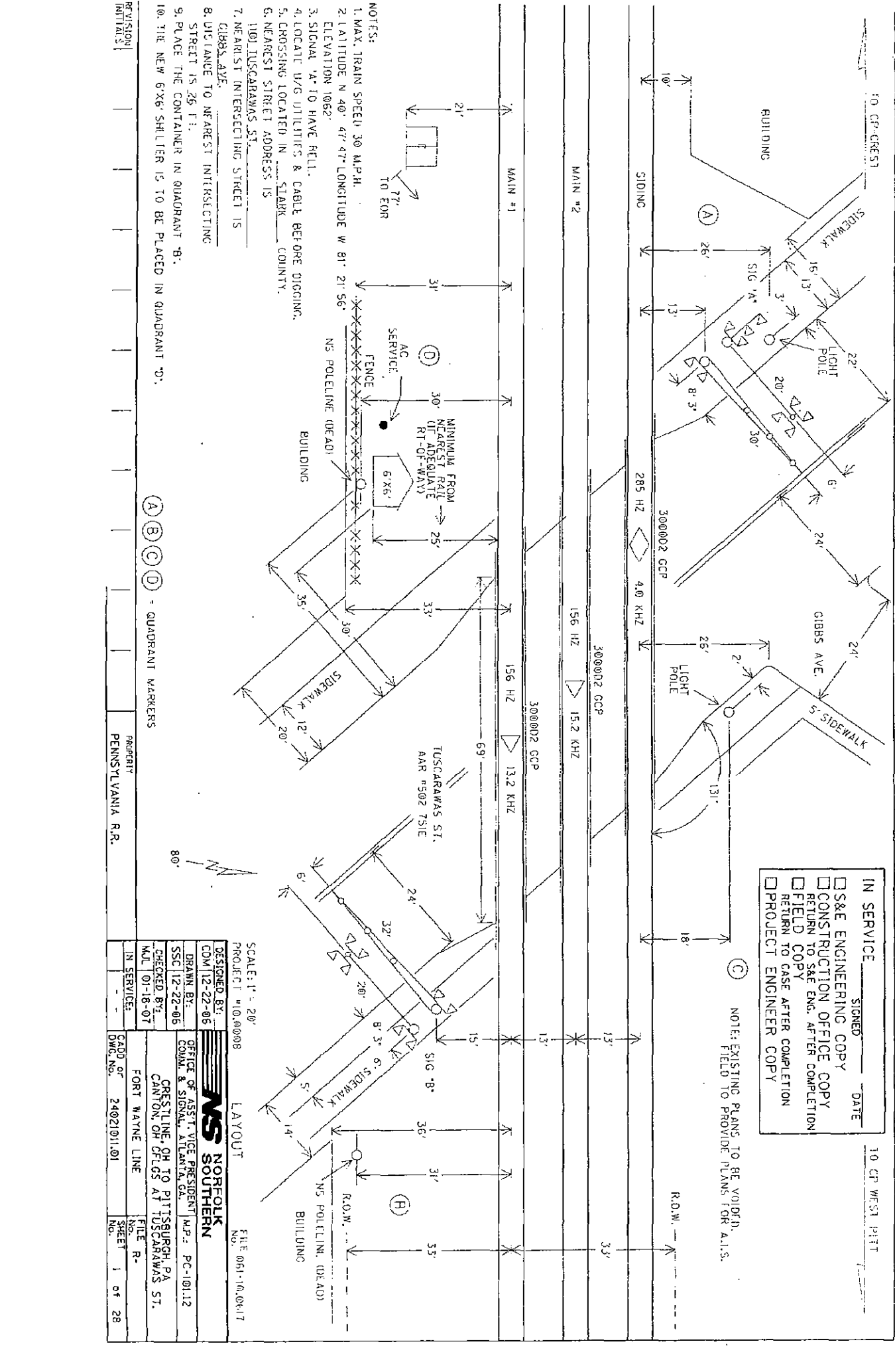
APPROVED BY STATE APPROVED BY RAILROAD CAR NUMBER SEAL NUMBER

Location: CANTON OH S&E Proj. No.: 10.0008 AEE No.: F10079 Drawing No.: 2402-1011
 Store No.: 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.	Quantity Returned Date Quan.	Quantity Returned (Credit)	Special Instructions
6	670-330382-4	RL	\$15.68	\$94.08	TAPE, THOR 3" DURATEC, ORANGE 1000' LENGTHS, "WARNING STOP DIGGING"					
52	670-478560-4	EA	\$19.47	\$1,012.44	TERMINAL BLOCK, ERICO 4 POST P/N B2700A2C1WH W/HARDWARE LESS LIGHTNING ARRESTOR					
6	165-917984-4	EA	\$4.84	\$29.04	TERMINAL, TEST, TYPE B GRS A62-515 OR HARMON @32118-001 OR					
24	610-065626-4	EA	\$17.55	\$421.20	ULTRA-TECH 15206-01 CONNECTIVITY BLOCK FOR GRS B1 RELAY					
60	670-007238-4	EA	\$129.46	\$7,767.60	UNIT, THE INSTALLATION AND WIRING OF A DEVICE WHICH REQUIRE A MINIMUM OF FOUR WIRE CONNECT.					
750	465-999161-4	LF	\$0.18	\$135.00	WIRE, NO.16, 1 CONDUCTOR, CASE, FLEXIBLE, 19 STRAND, 2/64 IN. INSULATION CR 02-620254					
1	670-284866-4	EA	\$22,018.66	\$22,018.66	WIRED RACK, 6X6 FARADAY, 20AMP DOUBLE TRK (NO CONTROLLER), GCP3000, 1CRAGG CHARGER, 2 RELAY RACKS, SAFTRAN P/N 20A UNI 2TRK, USE WITH I/S 670-281280-4 W/CABLE CHUTES BEHIND THE FARADAY SHIELD					
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, SAFTRAN P/N 40A 2TRK, USE WITH I/S 670-281280-4 W/CABLE CHUTES BEHIND THE FARADAY SHIELD					
6	450-986008-4	EA	\$24.84	\$149.04	WRENCH, TEST POST TYPE B DWG 55393-3, GR.1					

Total Material: \$234,897.26

APPROVED BY STATE APPROVED BY RAILROAD CAR NUMBER SEAL NUMBER

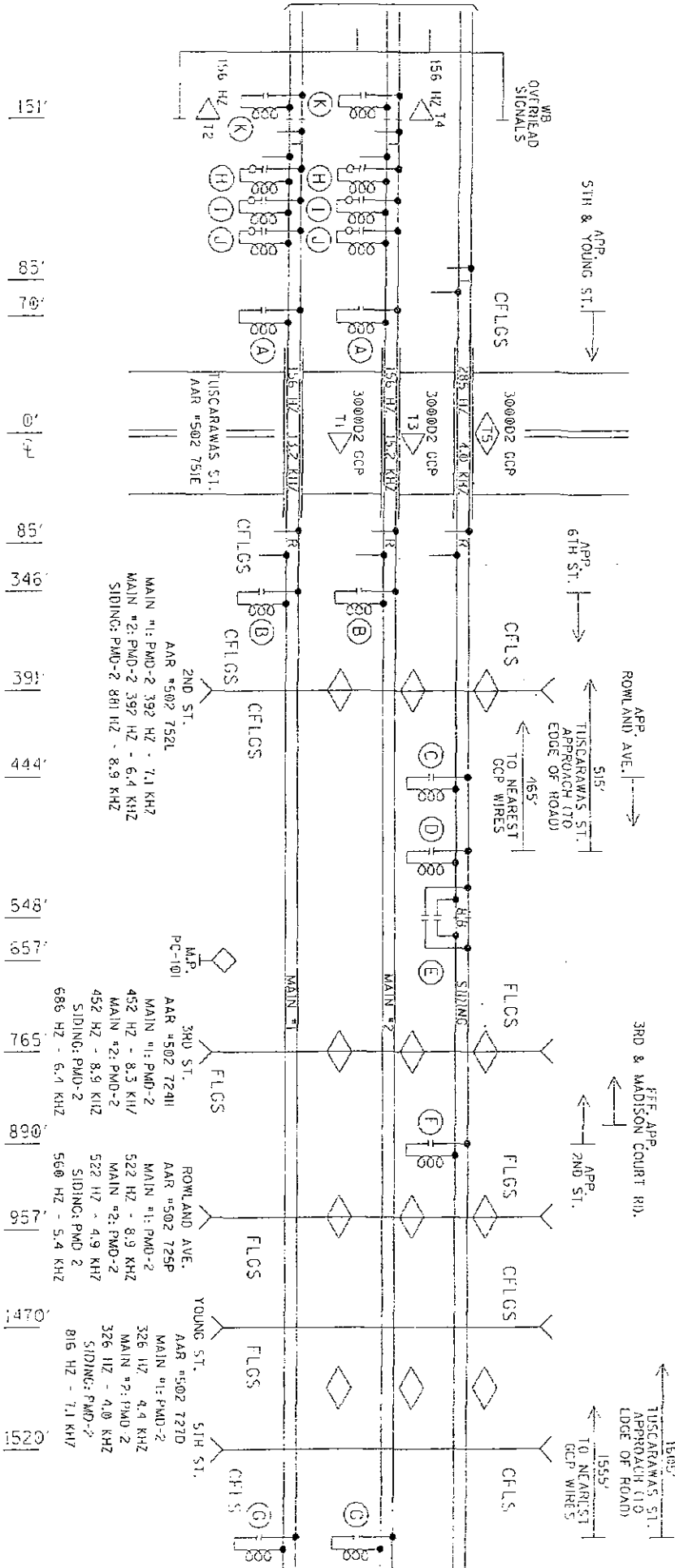


NS NORFOLK SOUTHERN OFFICE OF ASST. VICE PRESIDENT COMM. & SIG. DIV., ATLANTA, GA. CRESTLINE, OH TO PITTSBURGH, PA CANTON, OH CPLEGS AT TUSCARAWAS ST.	
M.P.: PC-101.12 FILE NO. R- SHEET 1 OF 28	CADW. NO. 2402101.01

TO CP-CRES1

TO CP-WEST PITT

CONTINUED ON
NEXT SHEET 03



(A) - NBS-1 (326 HZ)	(E) - WBS	(1) - NBS-1 (452 HZ) W/INDUCTOR 8V617-0800
(B) - NBS (151 HZ)	(F) - NBS (881 HZ)	(J) - NBS-1 (392 HZ) W/INDUCTOR 8V617-1200
(C) - NBS (560 HZ)	(G) - Mf-NBS 62775-1543 (156 HZ)	(K) - NBS-1 (267 HZ)
(D) - Mf-NBS 62775-3497 (285 HZ)	(H) - NBS-1 (527 HZ) W/INDUCTOR 8V617-0600	

DESIGNED BY: CDM 12-22-07	OFFICE OF ASSIST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	W.P. PC-100112
DRAWN BY: SSC 12-22-07	CHECKED BY: MUL 01-18-07	FILE R- NO. 2
IN SERVICE:		CADD OF DWG. NO. 24021011102
FORT WAYNE LINE		SHEET 2 of 28

10 CP-CIR.S1

10 CP-WEST PITT

EFF. APP. ST. 1543' TUSCARAWAS ST.

3RD & MADISON COURT RD. APPROACH (TO EDGE OF ROAD) 1192' TO NEAREST CCP WIRES

EFF. APP. ST. 3RD ST.

EFF. APP. ST. ROWLAND AVE.

515' TUSCARAWAS ST. APPROACH (TO EDGE OF ROAD) 465' TO NEAREST CCP WIRES

3RD & MADISON COURT RD.

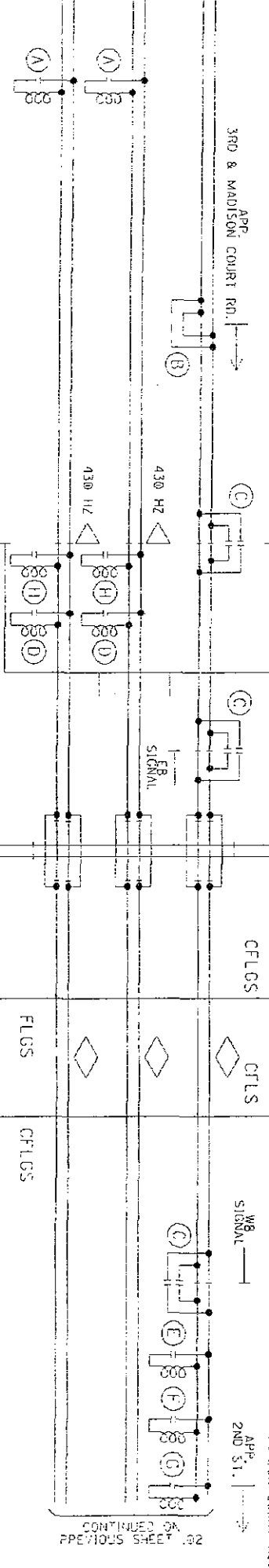
W & LL R.R.

CFLCS

CFLS

WB SIGNAL

2ND ST. 3RD & MADISON COURT RD.



OVERHEAD SIGNALS

3RD ST. MADISON COURT RD.
AAR #502 723B
MAIN #1: PMD-2 267 HZ - 5.9 KHZ
MAIN #2: PMD-2 267 HZ - 5.9 KHZ
SIDING: PMD-2 452 HZ - 7.7 KHZ

1330'

1201'

1147'

866'

840'

774'

752'

575'

230'

174'

PROFILE

- (A) - MF-NBS 62775 1543 (430 HZ)
- (B) - HWS
- (C) - WBS
- (D) - MF-NBS 62775-1543 (156 HZ)
- (E) - MF-NBS 62775-5497 (285 HZ)
- (F) - NBS (452 HZ)
- (G) - NBS (881 HZ)
- (H) - NBS-1 (267 HZ) W/INDUCTOR 8V617-0200

DESIGNED BY:	CDM 12-22-07	DESIGNED BY:	MS NORFOLK SOUTHERN
DRAWN BY:	SSC 12-22-07	OFFICE OF ASST. VICE PRESIDENT:	W.P. PC-101-12
CHECKED BY:	M.L. 01-18-07	COMM. & SIGNAL:	ATLANTA, GA
IN SERVICE:		CRESTLINE, OH TO PITTSBURGH, PA	
		CANTON, OH CFLS AT TUSCARAWAS ST.	
		PORT WAYNE LINE	
		FILE NO.:	
		SHEET	3 of 28
		CADD OF:	2402101.03
		OWC NO.:	

10 CP-CRECT

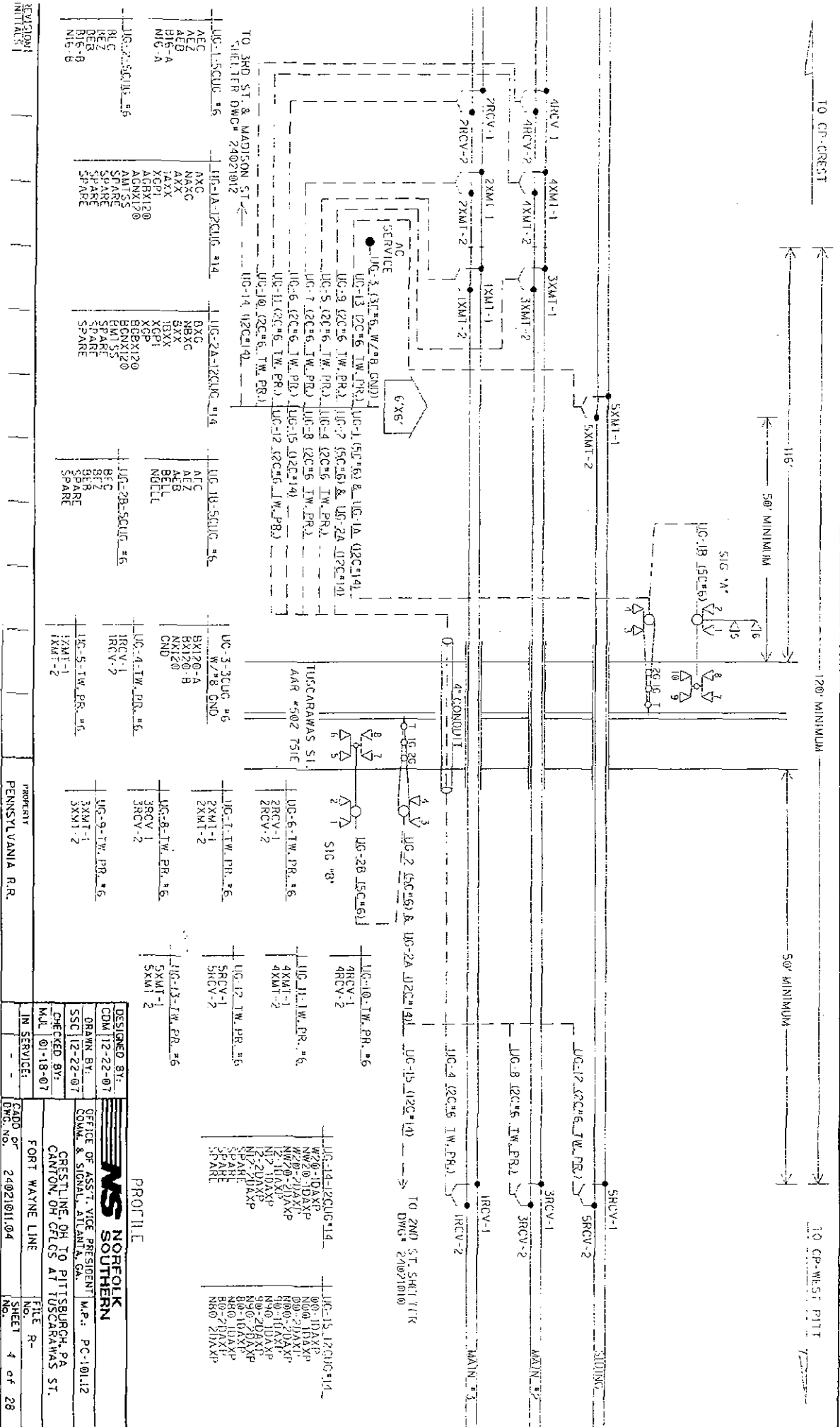
120' MINIMUM

10 CP-WEST PITT

116' 50' MINIMUM

50' MINIMUM

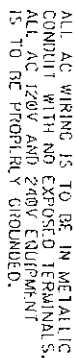
7



DESIGNED BY: CDM 12-22-07
DRAWN BY: SSC 12-22-07
CHECKED BY: MLE 01-18-07
IN SERVICE: -
CADD OF: 24021011.04
SHEET 4 of 28

OFFICE OF ASST. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA.
M.P.: PC-101.12
CRESTLINE, OH TO PITTSBURGH, PA
CANTON, OH CRLCS AT TUSCARAWAS ST.
FORT WAYNE LINE
NO. 1
SHEET 4 of 28

NS
NORFOLK
SOUTHERN



LOAD CENTER——4016L125C

10A IF CLK BKR --- 2010

30A 1P CIR EKR ----Q0136

60A 2P CIR BKR — 100264

METH INTERLOCK—PRAN

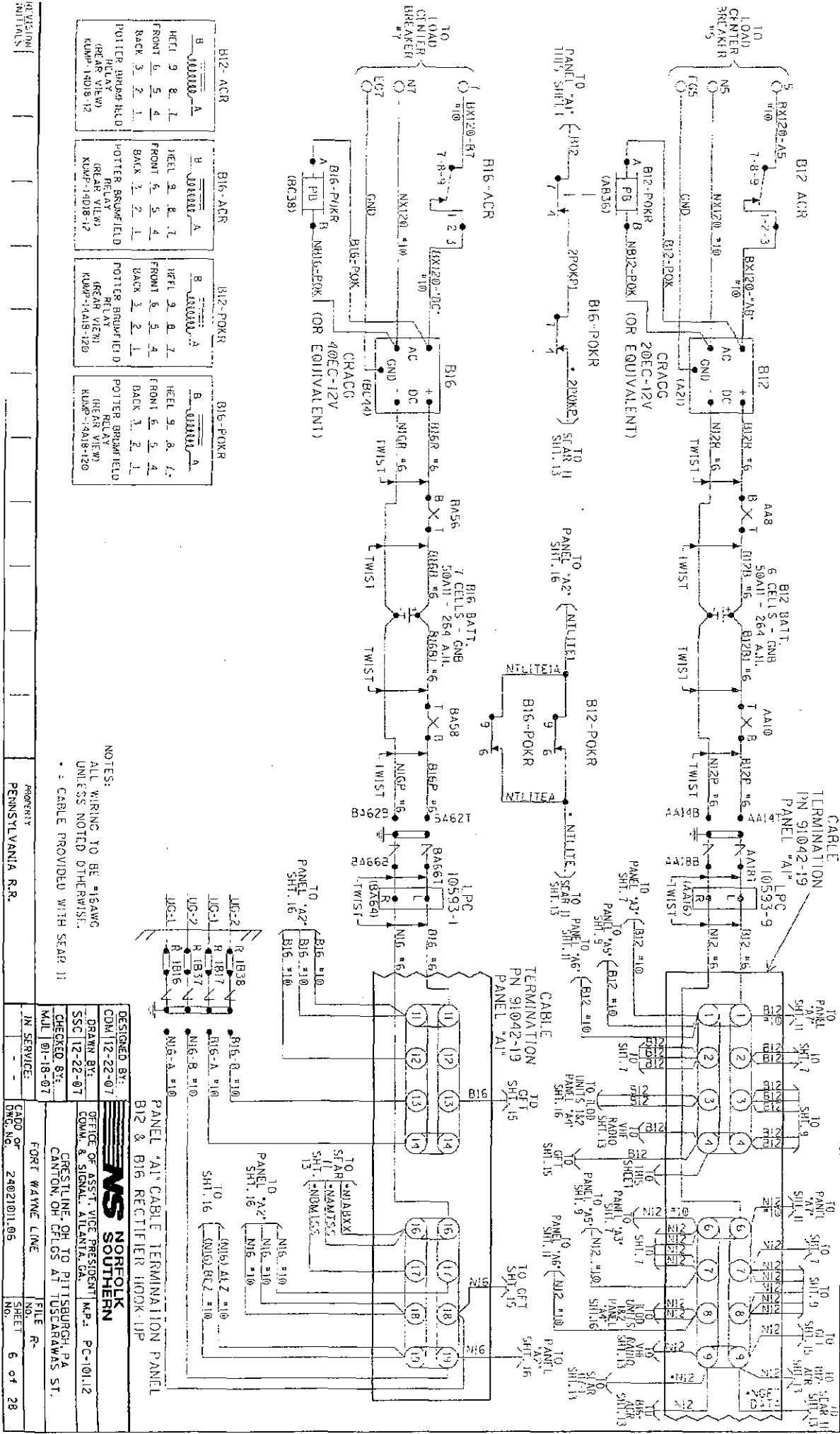
GENERATOR RECEIPT:

MALE CONNECTOR - NEMA 1.1430-F1



LOAD CENTER WIRING

PENNSYLVANIA R.R.



NOTES:

ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.

* - CABLE PROVIDED WITH SEAR II

PROPERTY PENNSYLVANIA R.R.

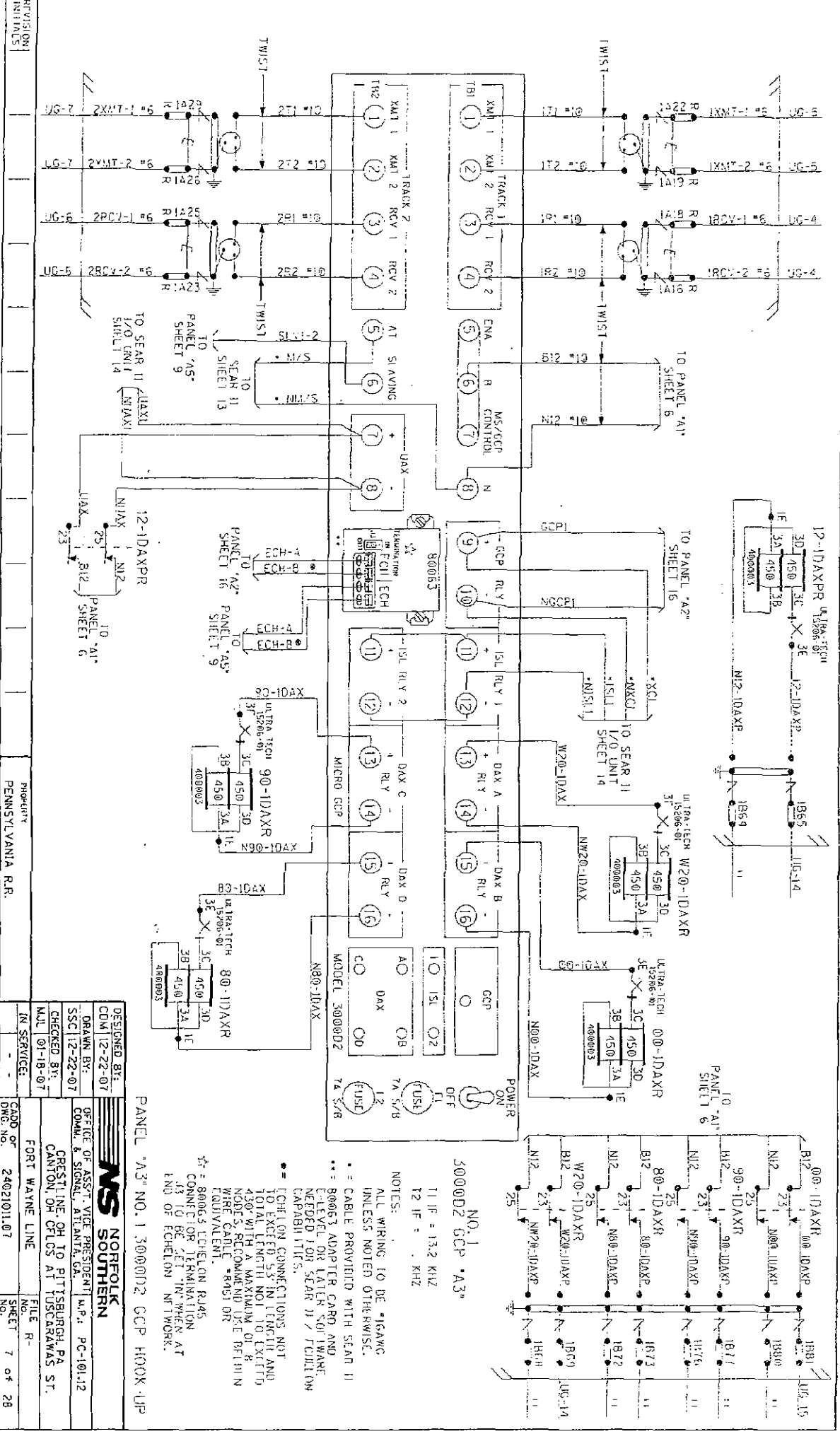
DESIGNED BY: CDM 12-22-07

DRAWN BY: SSC 12-22-07

CHECKED BY: MLL 01-18-07

FILE NO.: 2402101.05

SHEET: 6 of 28



DESIGNED BY: CDM 12-22-07
DRAWN BY: SSC 12-22-07
CHECKED BY: MLL 01-18-07
IN SERVICE: -
NO. OF SHEETS: 7 of 28
NO. 24021011.07

PROPERTY: PENNSYLVANIA R.R.
PROPERTY: PENNSYLVANIA R.R.

DESIGNED BY: CDM 12-22-07
DRAWN BY: SSC 12-22-07
CHECKED BY: MLL 01-18-07
IN SERVICE: -
NO. OF SHEETS: 7 of 28
NO. 24021011.07

PROPERTY: PENNSYLVANIA R.R.
PROPERTY: PENNSYLVANIA R.R.

PANEL A3 NO. 1 300002 GCP HOOK UP

NO. 1
300002 GCP A3

11 IF = 13.2 KHZ
12 IF = KHZ

NOTES:
ALL WIRING TO BE 16AWG
UNLESS NOTED OTHERWISE.
* CABLE PROVIDED WITH SEAR II
** 800653 ADAPTER CARD AND
E-LEVEL OR LATER SOFTWARE
CAPABILITY.
* ECHLON CONNECTIONS NOT
TO EXCEED 5.5' IN LENGTH AND
TOTAL LENGTH NOT TO EXCEED
430' WITH A MAXIMUM OF 8
NODES. RECOMMEND USE OF 11IN
WIRE CABLE (R45) OR
EQUIVALENT.
* 800653 ECHLON RJ45
CONNECTOR TERMINATION
IS TO BE SET "IN" WHEN AT
END OF ECHLON NETWORK.

300002 PROGRAMMING CHART		LEVEL: B
NUMBER OF TRACK TRANSCEIVERS	2	
11: FREQUENCY	156Hz	
12: FREQUENCY	156Hz	
11: UNIDIRECTIONAL/BIDIRECTIONAL	UNI	
12: UNIDIRECTIONAL/BIDIRECTIONAL	UNI	
11: XMIT LEVEL (MAX/MED)	MAX	
12: XMIT LEVEL (MAX/MED)	MAX	
11: PREDICTOR/MOTION SENSOR	PRED	
12: PREDICTOR/MOTION SENSOR	PRED	
11: WARNING TIME	30 Sec	
12: WARNING TIME	30 Sec	
11: APPROACH DISTANCE	30 Sec	
12: APPROACH DISTANCE	1555 ft	
11: PICKUP DELAY (MAX) (0 = ENF)	1050 ft	
12: PICKUP DELAY (MAX) (0 = ENF)	25 Sec	
11: ISLAND DISTANCE	0 Sec	
12: ISLAND DISTANCE	236 ft	
NUMBER OF DAXS	4 Ed	
DAX A TRACK ASSIGNMENT (11/1/2)	11	
DAX A DISTANCE (0 = PRELMP1)	523 ft	
DAX B TRACK ASSIGNMENT (11/1/2)	30 Sec	
DAX B DISTANCE (0 = PRELMP1)	72	
DAX C TRACK ASSIGNMENT (11/1/2)	470 ft	
DAX C DISTANCE (0 = PRELMP1)	30 Sec	
DAX D TRACK ASSIGNMENT (11/1/2)	12	
DAX D DISTANCE (0 = PRELMP1)	841 ft	
DAX E TRACK ASSIGNMENT (11/1/2)	30 Sec	
DAX E DISTANCE (0 = PRELMP1)	1037 ft	
DAX F TRACK ASSIGNMENT (11/1/2)	30 Sec	
DAX F DISTANCE (0 = PRELMP1)	1037 ft	
SLAVING (MASTER/SLAVE)	MASTER	
PARALLEL (MASTER/SLAVE)	NO	
11 CORDER INSTALLED	NO	

- 1) AVAILABLE WHEN "TRANSFER DELAY MS. TO GCP" AND "PRIME PRODUCTION 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 F2 DETECTION" IS ON
- 5) AVAILABLE WHEN "POSITIVE START" IS ON

PROPERTY
PENNSYLVANIA R.R.

MODULES USED		MODEL 3000D2 CCP MODULE ASSEMBLIES																																																																
		UPPER BAY					LOWER BAY																																																											
MODULE NUMBERS	W1	80211-F10 *	ISL	W2	80211-F12	ISL	W3	80012	T/R 1	W4	80012	T/R 2	W5	80013	PLY DRV	W6	80214	PROCS	W7	80255	PEC-INTF	W8	80016	1) DAX	W9	80016	2) DAX	W10	80020	-80017	W11	80211-F10 *	ISL	W12	80211-F12	ISL	W13	80012	T/R 1	W14	80012	T/R 2	W15	80013	PLY DRV	W16	80214	PROCS	W17	80255	PEC-INTF	W18	80016	1) DAX	W19	80016	2) DAX	W20	80020	-80017	W21	80023	EXP-INTF	W22	80023	EXP-INTF

* = 1ST SLOT AT LEFT END OF BAY

MODEL 3000D? GCP MODULE ASSEMBLIES

NOTES:

SEE JP1 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 /
ECHOLON CAPABILITIES.

PANEL "A3" NO. 1 300002 CCP SET-UP

EVANS NORFOLK
SOUTHERN

8. SIGNAL, ATLANTA, GA.	M.P.: PC-101.12
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CRESTLINE, OH TO PITTSBURGH, PA
CANTON, OH CFLGS AT TUSCARAWAS ST

FORT WAYNE LINE	FILE R- No.
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24021011.08	SHEET 8 of
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SHEET 8 of 28

300002 PROGRAMMING CHART		LEVEL 1
NUMBER OF TRACK TRANSCEIVERS	2	
11: FREQUENCY	156Hz	
12: FREQUENCY	156Hz	
11: UNIDIRECTIONAL/DIRECTIONAL	UNI	
12: UNIDIRECTIONAL/DIRECTIONAL	UNI	
11: XMIT LEVEL (MAX/MED)	MAX	
12: XMIT LEVEL (MAX/MED)	MAX	
11: PREDICTOR/MOTION SENSOR	PRED	
12: PREDICTOR/MOTION SENSOR	PRED	
11: WARNING TIME	30 Sec	
12: WARNING TIME	30 Sec	
11: APPROACH DISTANCE	1550 ft	
12: APPROACH DISTANCE	1050 ft	
11: PICKUP DELAY (DAX) (0 = OFF)	25 Sec	
12: PICKUP DELAY (DAX) (0 = OFF)	0 Sec	
11: ISLAND DISTANCE	236 ft	
12: ISLAND DISTANCE	10	
NUMBER OF DAX'S	11	
DAX A TRACK ASSIGNMENT (11/12)	523 ft	
DAX A DISTANCE (0 = PREEMP)	30 Sec	
DAX A WARNING TIME	12	
DAX B TRACK ASSIGNMENT (11/12)	470 ft	
DAX B DISTANCE (0 = PREEMP)	30 Sec	
DAX B WARNING TIME	12	
DAX C TRACK ASSIGNMENT (11/12)	841 ft	
DAX C DISTANCE (0 = PREEMP)	30 Sec	
DAX C WARNING TIME	12	
DAX D TRACK ASSIGNMENT (11/12)	1037 ft	
DAX D DISTANCE (0 = PREEMP)	30 Sec	
DAX D WARNING TIME	12	
SLAVING (MASTER/SLAVE)	SLAVE	
PASSWORD ENABLED	NO	
RECORPER INSTALLED	NO	

EXPANDED PROGRAMMING

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

* 1ST SLOT AT LEFT END OF BAY

MODULES POSITION		UPPER BAY												LOWER BAY											
MODULE NUMBERS	MODULES USED	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24
		TS1	TS2	T/R 1	T/R 2	PRV	PROCS	REC-INTF	REC-INTF	REC-INTF	REC-INTF	REC-INTF	REC-INTF	T/R 1	T/R 2	PRV	PROCS	REC-INTF	REC-INTF	REC-INTF	REC-INTF	REC-INTF	REC-INTF	REC-INTF	REC-INTF
		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

NOTES:

- SEE IP1 INSTRUCTION AND INSTALLATION MANUAL FOR B021 ISLAND CALIBRATION PROCEDURE.
- TOGGLE SWITCH ON MOTHER BOARD, UP - DUAL FREQ. DOWN - SINGLE FREQ.

** 80214 & 80255 (WITH JUMPER) CARDS AND F LEVEL OR LATER SOFTWARE NEEDED FOR SEARCH / ECHOLON CAPABILITIES.

PANEL "A5" NO. 2 3000017 GCP SET-UP

- 300002 PROGRAMMING NOTES:
- AVAILABLE WHEN TRANSFER DELAY MS TO GCP AND PRIME PREDICTION OFFSET IS ON
 - AVAILABLE WHEN TRANSFER DELAY MS TO GCP AND DAX DISTANCE IS GREATER THAN ZERO
 - AVAILABLE WHEN TRANSFER DETECTION IS ON
 - AVAILABLE WHEN LOW EZ DETECTION IS ON
 - AVAILABLE WHEN POSITIVE START IS ON

PENNSYLVANIA R.R.

DESIGNED BY: COM 12-22-07	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA	M.P.: PC-10112
DRAWN BY: SSC 12-22-07	CRESTLINE OH TO PITTSBURGH, PA	
CHECKED BY: MLL 01-18-07	CANTON, OH OFCS AT TOSCARAWAS ST.	
IN SERVICE: -	FORT WAYNE LINE	FILE R-
DATE OF: 2402101110		NO. 10 of 28

300002 PROGRAMMING CHART		LEVEL 1
NUMBER OF TRACK TRANSCEIVERS	1	
11: FREQUENCY	295HZ	
12: FREQUENCY	295HZ	
11: UNIDIRECTIONAL/BIDIRECTIONAL	B1	
12: UNIDIRECTIONAL/BIDIRECTIONAL	B1	
11: XMIT LEVEL (MAX/MID)	MED	
12: XMIT LEVEL (MAX/MID)	MED	
11: PREDICTOR/MOTION SENSOR	PRED	
12: PREDICTOR/MOTION SENSOR	PRED	
11: WARNING TIME	30 Sec	
12: WARNING TIME	30 Sec	
11: APPROACH DISTANCE	465 FT	
12: APPROACH DISTANCE	465 FT	
11: PICKUP DELAY (MAX) (0 = OFF)	5 Sec	
12: PICKUP DELAY (0 = ENH)	5 Sec	
11: ISLAND DISTANCE	170 FT	
12: ISLAND DISTANCE	170 FT	
NUMBER OF DAX'S	0 Ed	
DAX A TRACK ASSIGNMENT (11/12)	F1	
DAX A DISTANCE (0 = PRELIMP1)	Sec	
DAX B WARNING TIME	F1	
DAX B TRACK ASSIGNMENT (11/12)	Sec	
DAX B DISTANCE (0 = PRELIMP1)	F1	
DAX C WARNING TIME	Sec	
DAX C TRACK ASSIGNMENT (11/12)	F1	
DAX C DISTANCE (0 = PRELIMP1)	Sec	
DAX D TRACK ASSIGNMENT (11/12)	F1	
DAX D DISTANCE (0 = PRELIMP1)	Sec	
DAX E WARNING TIME	Sec	
DAX E TRACK ASSIGNMENT (11/12)	F1	
DAX E DISTANCE (0 = PRELIMP1)	Sec	
DAX F TRACK ASSIGNMENT (11/12)	F1	
DAX F DISTANCE (0 = PRELIMP1)	Sec	
DAX G TRACK ASSIGNMENT (11/12)	F1	
DAX G DISTANCE (0 = PRELIMP1)	Sec	
DAX H TRACK ASSIGNMENT (11/12)	F1	
DAX H DISTANCE (0 = PRELIMP1)	Sec	
DAX I TRACK ASSIGNMENT (11/12)	F1	
DAX I DISTANCE (0 = PRELIMP1)	Sec	
DAX J TRACK ASSIGNMENT (11/12)	F1	
DAX J DISTANCE (0 = PRELIMP1)	Sec	
DAX K TRACK ASSIGNMENT (11/12)	F1	
DAX K DISTANCE (0 = PRELIMP1)	Sec	
DAX L TRACK ASSIGNMENT (11/12)	F1	
DAX L DISTANCE (0 = PRELIMP1)	Sec	
DAX M TRACK ASSIGNMENT (11/12)	F1	
DAX M DISTANCE (0 = PRELIMP1)	Sec	
DAX N TRACK ASSIGNMENT (11/12)	F1	
DAX N DISTANCE (0 = PRELIMP1)	Sec	
DAX O TRACK ASSIGNMENT (11/12)	F1	
DAX O DISTANCE (0 = PRELIMP1)	Sec	
DAX P TRACK ASSIGNMENT (11/12)	F1	
DAX P DISTANCE (0 = PRELIMP1)	Sec	
DAX Q TRACK ASSIGNMENT (11/12)	F1	
DAX Q DISTANCE (0 = PRELIMP1)	Sec	
DAX R TRACK ASSIGNMENT (11/12)	F1	
DAX R DISTANCE (0 = PRELIMP1)	Sec	
DAX S TRACK ASSIGNMENT (11/12)	F1	
DAX S DISTANCE (0 = PRELIMP1)	Sec	
DAX T TRACK ASSIGNMENT (11/12)	F1	
DAX T DISTANCE (0 = PRELIMP1)	Sec	
DAX U TRACK ASSIGNMENT (11/12)	F1	
DAX U DISTANCE (0 = PRELIMP1)	Sec	
DAX V TRACK ASSIGNMENT (11/12)	F1	
DAX V DISTANCE (0 = PRELIMP1)	Sec	
DAX W TRACK ASSIGNMENT (11/12)	F1	
DAX W DISTANCE (0 = PRELIMP1)	Sec	
DAX X TRACK ASSIGNMENT (11/12)	F1	
DAX X DISTANCE (0 = PRELIMP1)	Sec	
DAX Y TRACK ASSIGNMENT (11/12)	F1	
DAX Y DISTANCE (0 = PRELIMP1)	Sec	
DAX Z TRACK ASSIGNMENT (11/12)	F1	
DAX Z DISTANCE (0 = PRELIMP1)	Sec	
DAX AA TRACK ASSIGNMENT (11/12)	F1	
DAX AA DISTANCE (0 = PRELIMP1)	Sec	
DAX AB TRACK ASSIGNMENT (11/12)	F1	
DAX AB DISTANCE (0 = PRELIMP1)	Sec	
DAX AC TRACK ASSIGNMENT (11/12)	F1	
DAX AC DISTANCE (0 = PRELIMP1)	Sec	
DAX AD TRACK ASSIGNMENT (11/12)	F1	
DAX AD DISTANCE (0 = PRELIMP1)	Sec	
DAX AE TRACK ASSIGNMENT (11/12)	F1	
DAX AE DISTANCE (0 = PRELIMP1)	Sec	
DAX AF TRACK ASSIGNMENT (11/12)	F1	
DAX AF DISTANCE (0 = PRELIMP1)	Sec	
DAX AG TRACK ASSIGNMENT (11/12)	F1	
DAX AG DISTANCE (0 = PRELIMP1)	Sec	
DAX AH TRACK ASSIGNMENT (11/12)	F1	
DAX AH DISTANCE (0 = PRELIMP1)	Sec	
DAX AI TRACK ASSIGNMENT (11/12)	F1	
DAX AI DISTANCE (0 = PRELIMP1)	Sec	
DAX AJ TRACK ASSIGNMENT (11/12)	F1	
DAX AJ DISTANCE (0 = PRELIMP1)	Sec	
DAX AK TRACK ASSIGNMENT (11/12)	F1	
DAX AK DISTANCE (0 = PRELIMP1)	Sec	
DAX AL TRACK ASSIGNMENT (11/12)	F1	
DAX AL DISTANCE (0 = PRELIMP1)	Sec	
DAX AM TRACK ASSIGNMENT (11/12)	F1	
DAX AM DISTANCE (0 = PRELIMP1)	Sec	
DAX AN TRACK ASSIGNMENT (11/12)	F1	
DAX AN DISTANCE (0 = PRELIMP1)	Sec	
DAX AO TRACK ASSIGNMENT (11/12)	F1	
DAX AO DISTANCE (0 = PRELIMP1)	Sec	
DAX AP TRACK ASSIGNMENT (11/12)	F1	
DAX AP DISTANCE (0 = PRELIMP1)	Sec	
DAX AQ TRACK ASSIGNMENT (11/12)	F1	
DAX AQ DISTANCE (0 = PRELIMP1)	Sec	
DAX AR TRACK ASSIGNMENT (11/12)	F1	
DAX AR DISTANCE (0 = PRELIMP1)	Sec	
DAX AS TRACK ASSIGNMENT (11/12)	F1	
DAX AS DISTANCE (0 = PRELIMP1)	Sec	
DAX AT TRACK ASSIGNMENT (11/12)	F1	
DAX AT DISTANCE (0 = PRELIMP1)	Sec	
DAX AU TRACK ASSIGNMENT (11/12)	F1	
DAX AU DISTANCE (0 = PRELIMP1)	Sec	
DAX AV TRACK ASSIGNMENT (11/12)	F1	
DAX AV DISTANCE (0 = PRELIMP1)	Sec	
DAX AW TRACK ASSIGNMENT (11/12)	F1	
DAX AW DISTANCE (0 = PRELIMP1)	Sec	
DAX AX TRACK ASSIGNMENT (11/12)	F1	
DAX AX DISTANCE (0 = PRELIMP1)	Sec	
DAX AY TRACK ASSIGNMENT (11/12)	F1	
DAX AY DISTANCE (0 = PRELIMP1)	Sec	
DAX AZ TRACK ASSIGNMENT (11/12)	F1	
DAX AZ DISTANCE (0 = PRELIMP1)	Sec	
DAX BA TRACK ASSIGNMENT (11/12)	F1	
DAX BA DISTANCE (0 = PRELIMP1)	Sec	
DAX BB TRACK ASSIGNMENT (11/12)	F1	
DAX BB DISTANCE (0 = PRELIMP1)	Sec	
DAX BC TRACK ASSIGNMENT (11/12)	F1	
DAX BC DISTANCE (0 = PRELIMP1)	Sec	
DAX BD TRACK ASSIGNMENT (11/12)	F1	
DAX BD DISTANCE (0 = PRELIMP1)	Sec	
DAX BE TRACK ASSIGNMENT (11/12)	F1	
DAX BE DISTANCE (0 = PRELIMP1)	Sec	
DAX BF TRACK ASSIGNMENT (11/12)	F1	
DAX BF DISTANCE (0 = PRELIMP1)	Sec	
DAX BG TRACK ASSIGNMENT (11/12)	F1	
DAX BG DISTANCE (0 = PRELIMP1)	Sec	
DAX BH TRACK ASSIGNMENT (11/12)	F1	
DAX BH DISTANCE (0 = PRELIMP1)	Sec	
DAX BI TRACK ASSIGNMENT (11/12)	F1	
DAX BI DISTANCE (0 = PRELIMP1)	Sec	
DAX BJ TRACK ASSIGNMENT (11/12)	F1	
DAX BJ DISTANCE (0 = PRELIMP1)	Sec	
DAX BK TRACK ASSIGNMENT (11/12)	F1	
DAX BK DISTANCE (0 = PRELIMP1)	Sec	
DAX BL TRACK ASSIGNMENT (11/12)	F1	
DAX BL DISTANCE (0 = PRELIMP1)	Sec	
DAX BM TRACK ASSIGNMENT (11/12)	F1	
DAX BM DISTANCE (0 = PRELIMP1)	Sec	
DAX BN TRACK ASSIGNMENT (11/12)	F1	
DAX BN DISTANCE (0 = PRELIMP1)	Sec	
DAX BO TRACK ASSIGNMENT (11/12)	F1	
DAX BO DISTANCE (0 = PRELIMP1)	Sec	
DAX BP TRACK ASSIGNMENT (11/12)	F1	
DAX BP DISTANCE (0 = PRELIMP1)	Sec	
DAX BQ TRACK ASSIGNMENT (11/12)	F1	
DAX BQ DISTANCE (0 = PRELIMP1)	Sec	
DAX BR TRACK ASSIGNMENT (11/12)	F1	
DAX BR DISTANCE (0 = PRELIMP1)	Sec	
DAX BS TRACK ASSIGNMENT (11/12)	F1	
DAX BS DISTANCE (0 = PRELIMP1)	Sec	
DAX BT TRACK ASSIGNMENT (11/12)	F1	
DAX BT DISTANCE (0 = PRELIMP1)	Sec	
DAX BU TRACK ASSIGNMENT (11/12)	F1	
DAX BU DISTANCE (0 = PRELIMP1)	Sec	
DAX BV TRACK ASSIGNMENT (11/12)	F1	
DAX BV DISTANCE (0 = PRELIMP1)	Sec	
DAX BW TRACK ASSIGNMENT (11/12)	F1	
DAX BW DISTANCE (0 = PRELIMP1)	Sec	
DAX BX TRACK ASSIGNMENT (11/12)	F1	
DAX BX DISTANCE (0 = PRELIMP1)	Sec	
DAX BY TRACK ASSIGNMENT (11/12)	F1	
DAX BY DISTANCE (0 = PRELIMP1)	Sec	
DAX BZ TRACK ASSIGNMENT (11/12)	F1	
DAX BZ DISTANCE (0 = PRELIMP1)	Sec	
DAX CA TRACK ASSIGNMENT (11/12)	F1	
DAX CA DISTANCE (0 = PRELIMP1)	Sec	
DAX CB TRACK ASSIGNMENT (11/12)	F1	
DAX CB DISTANCE (0 = PRELIMP1)	Sec	
DAX CC TRACK ASSIGNMENT (11/12)	F1	
DAX CC DISTANCE (0 = PRELIMP1)	Sec	
DAX CD TRACK ASSIGNMENT (11/12)	F1	
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DAX CE TRACK ASSIGNMENT (11/12)	F1	
DAX CE DISTANCE (0 = PRELIMP1)	Sec	
DAX CF TRACK ASSIGNMENT (11/12)	F1	
DAX CF DISTANCE (0 = PRELIMP1)	Sec	
DAX CG TRACK ASSIGNMENT (11/12)	F1	
DAX CG DISTANCE (0 = PRELIMP1)	Sec	
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DAX CY TRACK ASSIGNMENT (11/12)	F1	
DAX CY DISTANCE (0 = PRELIMP1)	Sec	
DAX CZ TRACK ASSIGNMENT (11/12)	F1	
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DAX DJ TRACK ASSIGNMENT (11/12)	F1	
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DAX DK TRACK ASSIGNMENT (11/12)	F1	
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DAX DP TRACK ASSIGNMENT (11/12)	F1	
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DAX DQ TRACK ASSIGNMENT (11/12)	F1	
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DAX GM TRACK ASSIGNMENT (11/12)	F1	
DAX GM DISTANCE (0 = PRELIMP1)	Sec	
DAX GN TRACK ASSIGNMENT (11/12)	F1	
DAX GN DISTANCE (0 = PRELIMP1)		

EXPANDED PROGRAMMING		
		10 %
11: SWITCH TO MS (ENTER EZ VALUE)	-- %	
11: TRANSFER DELAY MS TO GCP (0 = OFF)	0 Sec	
12: TRANSFER DELAY MS TO GCP (0 = OFF)	-- Sec	
11: TRANSFER MS TO GCP PRIME (ON/OFF)	--	
12: TRANSFER MS TO GCP PRIME (ON/OFF)	--	
11: TRANSFER MS TO GCP DAX A (ON/OFF)	--	
12: TRANSFER MS TO GCP DAX A (ON/OFF)	--	
11: TRANSFER MS TO GCP DAX B (ON/OFF)	--	
12: TRANSFER MS TO GCP DAX B (ON/OFF)	--	
11: TRANSFER MS TO GCP DAX C (ON/OFF)	--	
12: TRANSFER MS TO GCP DAX C (ON/OFF)	--	
11: PRIME PREDICTION OFFSET (0 = OFF)	0 Ft	
12: PRIME PREDICTION OFFSET (0 = OFF)	-- Ft	
PICKUP DELAY PRIME	15 Sec	
PICKUP DELAY DAX A	-- Sec	
PICKUP DELAY DAX B	-- Sec	
PICKUP DELAY DAX C	500	
PICKUP DELAY DAX D	-- Sec	
11: ENHANCED DETECTION (ON/OFF)	OFF	
12: ENHANCED DETECTION (ON/OFF)	---	
BACK-TO-BACK T1 AND T2 (NO/YES)	---	
T1: STATION STOP TIMER	10 Sec	
T2: STATION STOP TIMER	-- Sec	
11: NUMBER OF TRACK WIRES (1/6)	4	
12: NUMBER OF TRACK WIRES (1/6)	0	
T1: LOW EX ADJUSTMENT	---	
T2: LOW EX ADJUSTMENT	---	
T1: LOW EZ DETECTION	OFF	
T2: LOW EZ DETECTION	---	
T1: LOW EZ DETECTION TIMER (ON/OFF)	10 Min	
T2: LOW EZ DETECTION TIMER (ON/OFF)	-- Min	
T1: POSITIVE START (EZ LEVEL) (0 = OFF)	---	
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)	-- %	

[illegible]

* = 151 SLOT AT LEFT END OF BAY

MODEL 3000D2 CCP MODULE ASSEMBLY

UNTER BAY

LOWER BAY

NOTES:

- 1 - SEE IP INSTRUCTION AND INSTALLATION MANUAL FOR BOZHI ISLAND CALIBRATION PROCEDURE.
- 2 - TOGGLE SWITCH ON LOWER BOARD:
DOWN = SINE FREQ.
UP = NO OTHER BOARD.
- 3 - BOZHI & BOZHI25 WITH JUMPER CARDS AND E-LEVEL OR LATER SOFTWARE NEEDED FOR CLEAR II & ECHOTON CAPABILITY'S.

PANEL "A6" NO. 3 30000D2 GCP SET-UP

DESIGNED BY:	COM 112-22-07	NS		NORFOLK SOUTHERN	
DRAWN BY:		OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.:	PC-101.12
SEC 112-22-07		CRESTLINE, OH TO PITTSBURGH, PA CARLTON, OH CHRGs AT TOSCARAWAS ST.		FILE NO.	
CHECKED BY:		FORT WAYNE LINE		SHEET	12 of 28
MOD 01-10-07					
IN SERVICE:					
		CADD OF		OWG. NO.	24021011.12

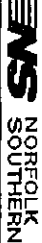
PROGRAM	
FLASHER RATE	40
1 GC DELAY	4 SEC.
2 GC DELAY	4 SEC.
BELL-ON GATE RISING	OFF
MIN ACTIVATION TIME	0 SEC.
ENABLE INPUTS	1 THRU 3
ENABLE OUTPUTS	A AND B
DATE	
DAYLIGHT SAVINGS	ON
PASSWORD	DISABLED
SET TO DEFAULT	SKIP

SETUP LAMP VOLTAGE	
SETUP OUTPUT 1L1 XXX VOLTS	
SETUP OUTPUT 1L2 XXX VOLTS	
SETUP OUTPUT 2L1 XXX VOLTS	
SETUP OUTPUT 2L2 XXX VOLTS	

CONFIGURE	
1: 0 SEC.	
2: 0 SEC.	
3: 0 SEC.	
4: 0 SEC.	
5: 0 SEC.	
6: 0 SEC.	
7: 0 SEC.	
ATCS ADDRESS	755048200807
LOW BATTERY	DISABLED
AUX I/O	NO OUTPUT

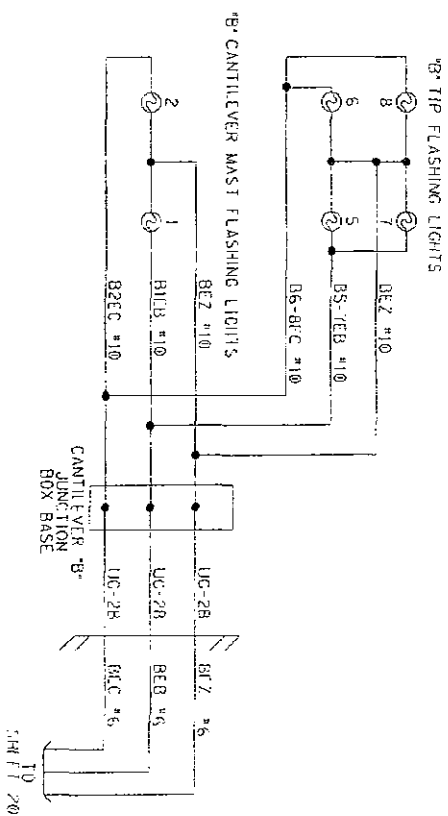
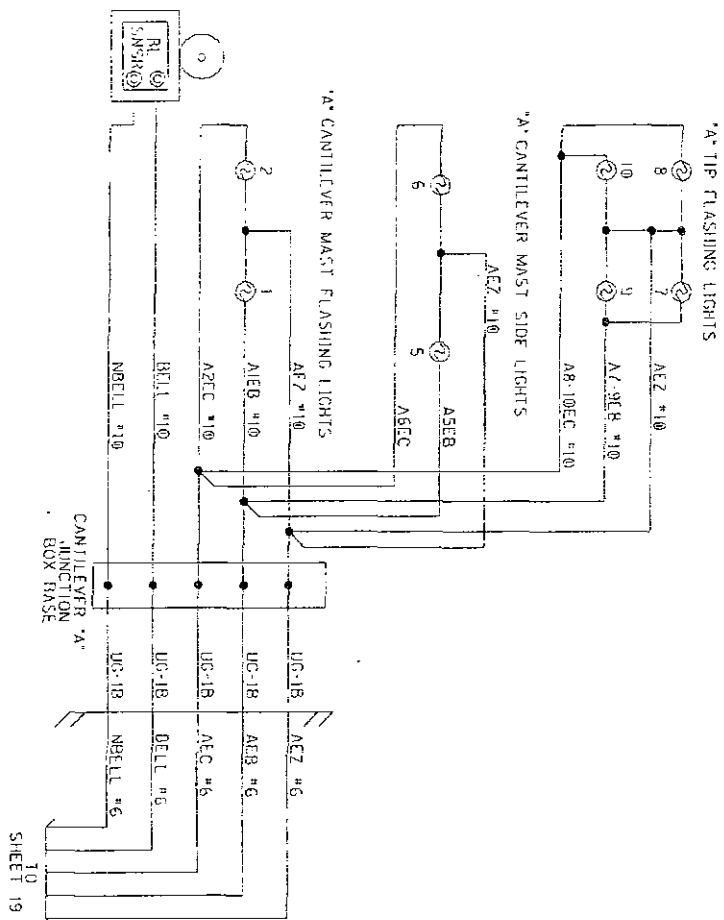
TEST CONFIGURE	
LAMP TEST CANCEL TIMER	5 MIN.
LAMP TEST DELAY TIMER	30 SEC.
LAMP TEST ON TIMER	15 SEC.

PANEL "A2" CROSSING CONTROLLER SET-UP CHART

DESIGNED BY: CDM 12-22-07		DRAWN BY: SSC 12-22-07		CHECKED BY: MJL 01-18-07		IN SERVICE: -	
				OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.			
FORT WAYNE LINE CANTON, OH CFLGS AT TUSCARAWAS ST.				FILE NO. R- SHEET 17 of 28			
CAD or DWG. NO. 240210117				PC-101.12 PC-101.12			

PROPERTY
PENNSYLVANIA R.R.

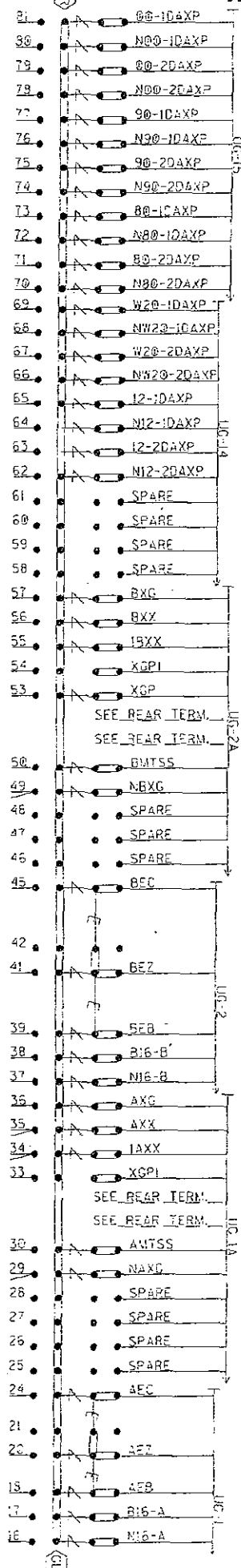
REVISION
NOTES



CANTILEVER FLASHER LIGHTS

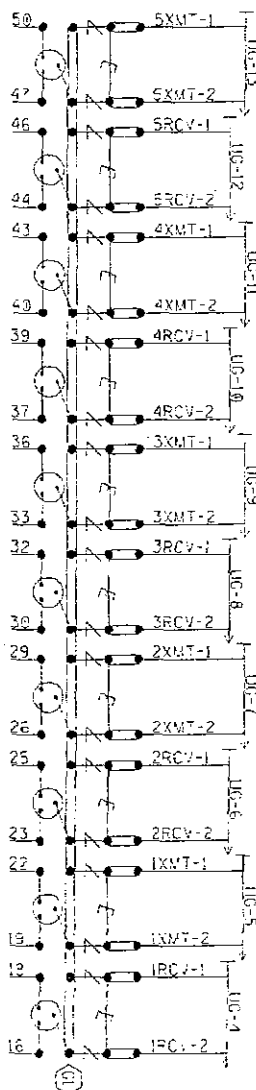
[illegible]

"13"



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.



$\bar{E}$ = Heavy Duty Qualifier
 (0227(00-1X))
 Clear view
 Z = Lighting Arrestor
 (0225(85-1X))
 (0225(85-1X))



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

BACKBOARD DETAIL. - 1A & 1B

PROPERTY
PENNSYLVANIA R.R.

		OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL ATLANTA, GA.	
DESIGNED BY: CDM 12-22-07		DRAWN BY: SSC 12-22-07	
CHECKED BY: MLL 01-18-07		FILE R-	
IN SERVICE:		SHEET 21 of 28	
CADW 00"		NO.	
DWG. NO. 24021011.21		NO.	

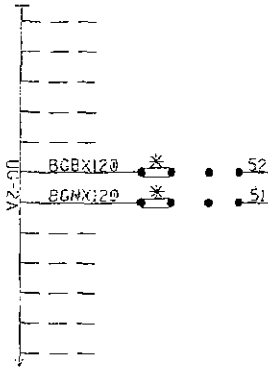
FORT WAYNE LINE	FILE R-
CADD OF DWG. NO. 24021011.21	SHEET NO. 21 of 28

REAR VIEW OF LEFT TWO ROWS TERMINAL BOARD 1

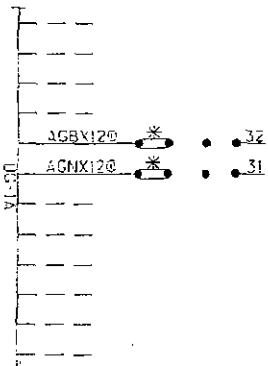
"1B"

"1A"

(SEE PREVIOUS SHEET FOR OTHER WIRES IN CABLE)



(SEE PREVIOUS SHEET FOR OTHER WIRES IN CABLE)



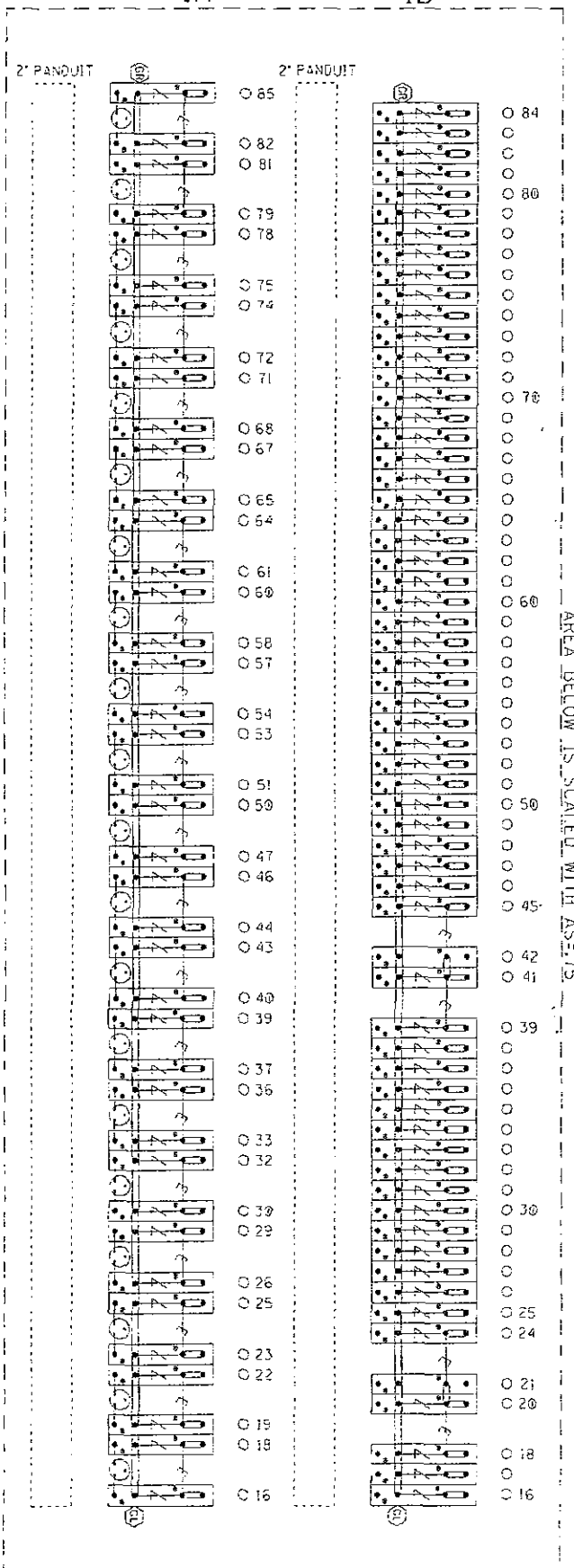
NOTE: ALL 120VAC AND ABOVE WILL BE WIRED TO THE REAR OF FARADAY BACKBOARD. INSULATED NUTS MUST BE USED ON ALL TERMINALS.

* = CLOSED DURING WINTER MONTHS

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

DESIGNED BY: CDM 12-22-07		OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.		M.P.: PC-101.12	
DRAWN BY: SSC 12-22-07		CRESTLINE OH TO PITTSBURGH, PA CANTON, OH CFILOS AT TUSCARAWAS ST.		FILE R-	
CHECKED BY: MUL 01-18-07		FORT WAYNE LINE		SHEET 22 of 28	
IN SERVICE:		CARD OF DWG. NO. 24021011.22		NO.	
PROPERTY PENNSYLVANIA R.R.		REVISION INITIALS			

"1B"



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/WIRFS.

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 NEED'D.

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



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

--E- Heavy Duty Equalizer
(#22700-1X)
Clear view
Lighting Arrester
(#22585-1X)
LPC-10560-51

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

RELATION

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY: CDM 12-22-07	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA	W.P.: PC-101.12
DRAWN BY: SSCI 12-22-07		
CHECKED BY: MALL 01-18-07	DRESSLINE ON TO PITTSBURGH PA CANTON, OH CLOS A TULSA/ARAWAS ST.	
IN SERVICE:	PORT WAYNE LINE	
CADD OR BMC NO.: 24021011.23		
	FILE R-	
	SHEET 23 of 28	

CADD OF DWG. NO.	24021011.23	SHEET NO.	23 of 28
---------------------	-------------	--------------	----------

"1C"

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.

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

-E = Heavy Duty Equalizer
(022700-1X)

Clear view
/ = Lightning Arrester
(022585-1X)

Q = 1. PC-10560-51

TERMINAL BOARD 1
RIGHT ROW
FARADAY SHIELD DETAIL - 100

EVANS
NORFOLK
SOUTHERN

OF ASS'T. VICE PRESIDENT SIGNAL, ATLANTA, GA.	M.P.: PC-101.12
--	-----------------

CRESTLINE, OH TO PITTSBURGH, PA
ANTON, OH CLEGS AT TUSCARAWAS ST.

PORT WAYNE LINE	FILE R- NO.
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24021011.24	SHEET No.	24 of 28
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REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

REVISION INITIALS

PROPERTY PENNSYLVANIA R.R.

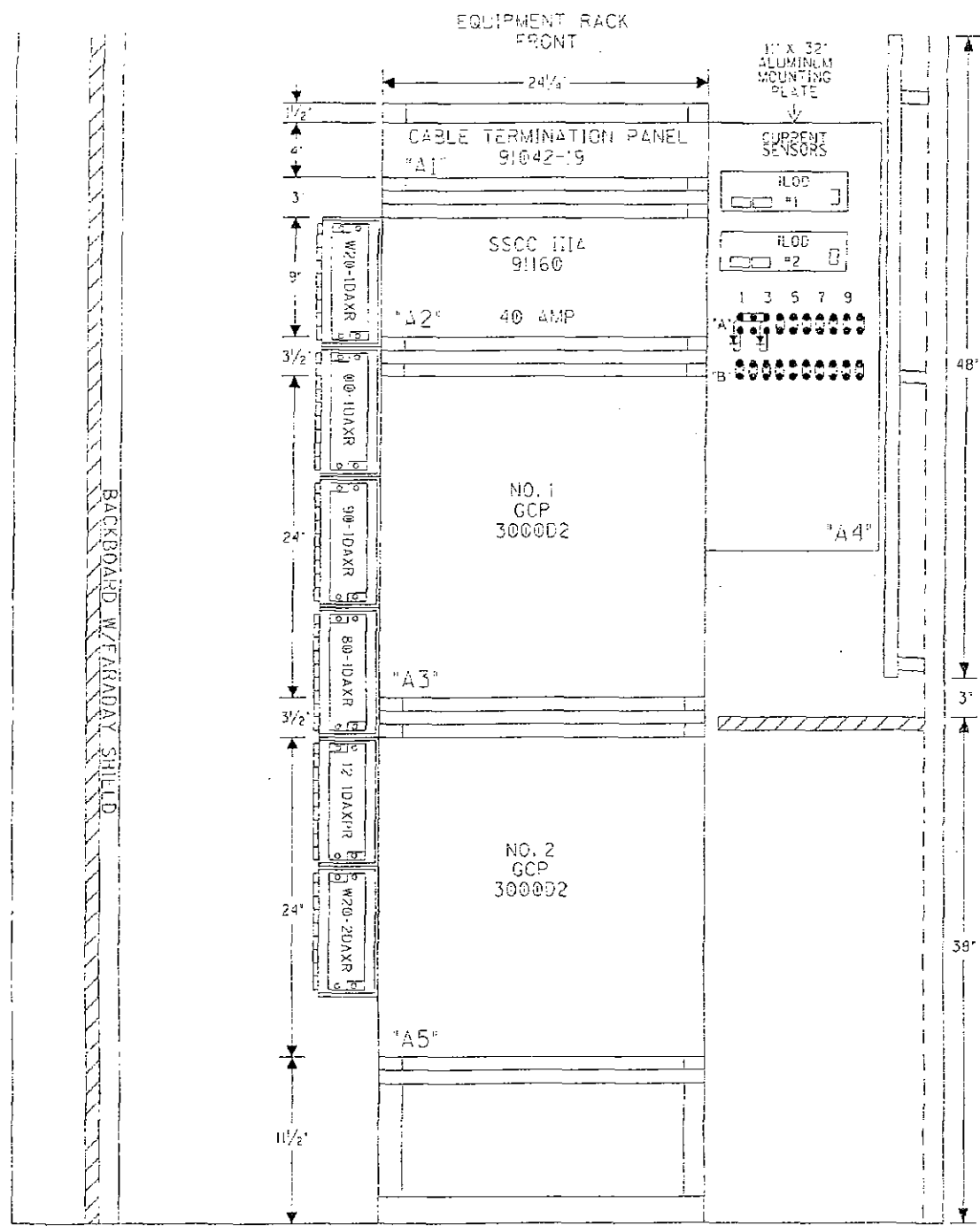
DESIGNED BY: CDM 12-22-07
 DRAWN BY: SSC 12-22-07
 CHECKED BY: MLL 01-18-07
 IN SERVICE: -

OFFICE OF ASST. VICE PRESIDENT
 COMM. & SIGNAL, ATLANTA, GA. MAP: PC-101.12

CRESTLINE, OH TO PITTSBURGH, PA
 CANTON, OH CFLGS AT TUSCARAWAS ST.

FORT WAYNE LINE
 FILE NO. R-
 SHEET 25 of 28

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

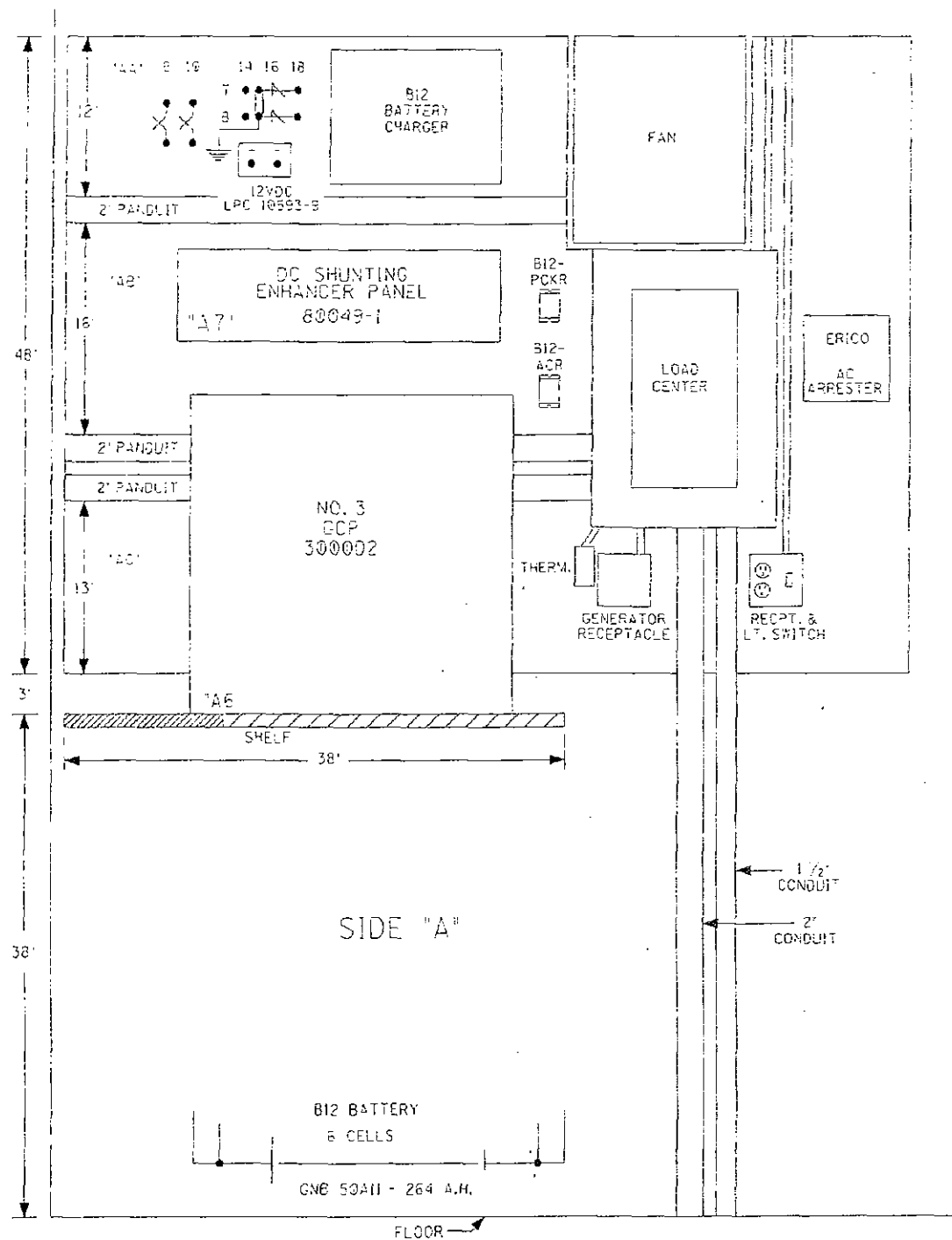


SIDE "C"

REVISION
INITIALS

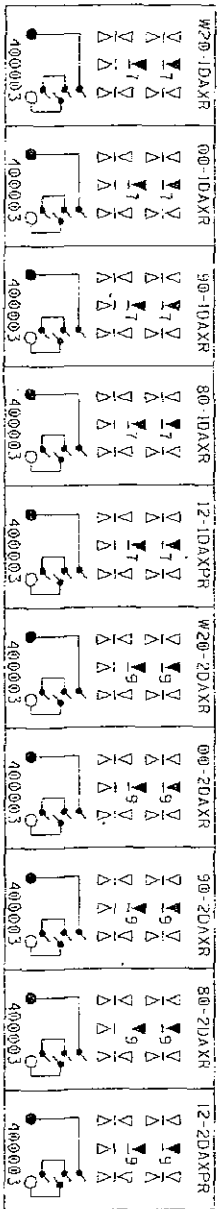
PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY: CDM 12-22-07	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	W.P.: PC-10/12
DRAWN BY: SSC 12-22-07	CRESTLINE, OH TO PITTSBURGH, PA CANTON, OH CPLES AT TUSCARAWAS ST.	
CHECKED BY: MLL 01-18-07	FILE NO. R-	
IN SERVICE:	FORT WAYNE LINE	SHEET 26 of 28
CADD OF DWG. NO. 24021011.26		



6' X 6' HOUSE - SIDE "A"





RELAY DETAILS

DESIGNED BY: CDM 12-22-07		NS NORFOLK SOUTHERN	
DRAWN BY: SSC 12-22-07		OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY: MLL 01-18-07		M.P.: PC-10112 CRESTLINE, OH TO PITTSBURGH, PA CANTON, OH CFLGS AT FUSCARAWAS ST.	
IN SERVICE:		FORT WAYNE LINE	
QA/QC OF DWC NO. 24021011.28		FILE R- SHEET 28 of 28	

REVISION
INITIALS

PROJECT
PENNSYLVANIA R.R.

TO CP-CREST

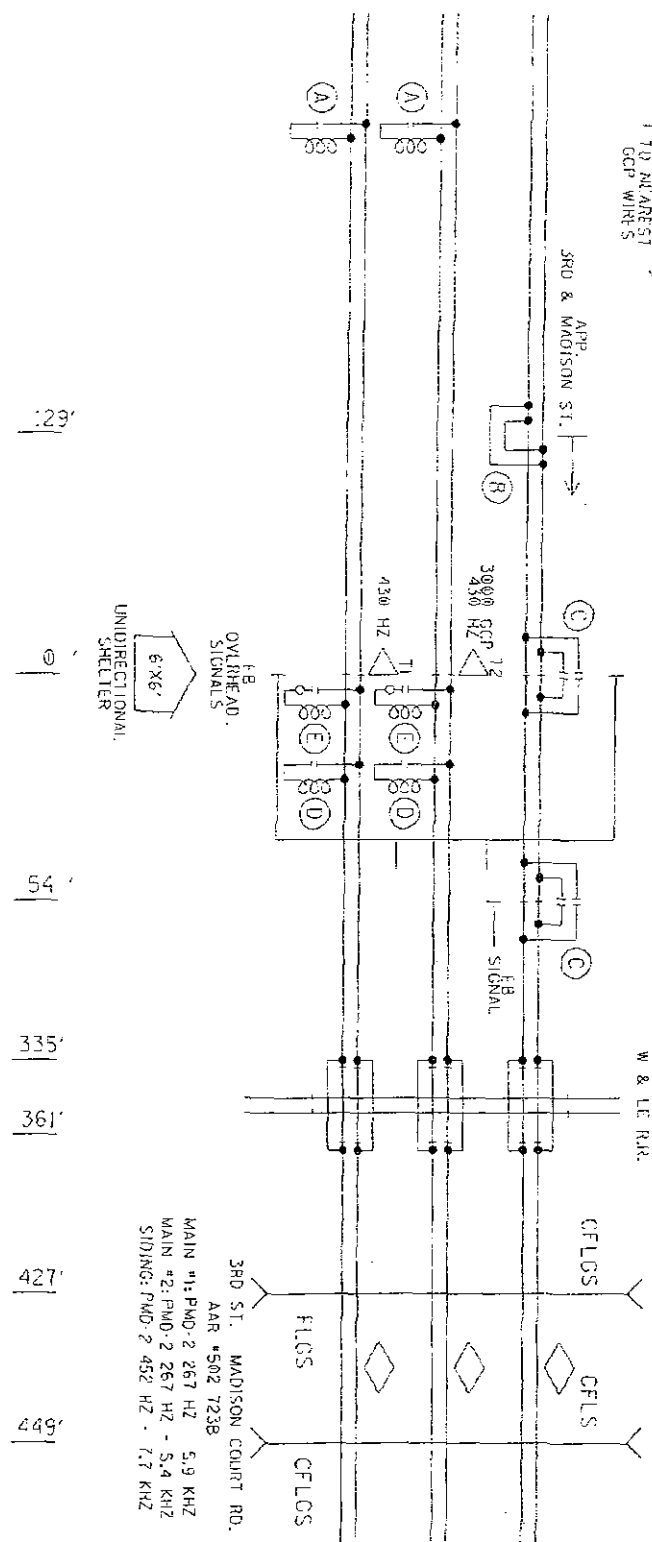
EFF. APP. TUSCARAWAS ST. →

1544' 3RD & MADISON COURT RD. APPROACH (TO EDGE OF ROAD)

1192' 100' ALARE ST GCP WIRE'S

TO CP WEST PITT

SIG



- (A) - MF-NBS 62775-1543 (430 HZ)
- (B) - HWS
- (C) - WBS
- (D) - MF-NBS 62775-1543 (156 HZ)
- (E) - NBS-1 (267 HZ) W/INDUCTOR 8V617 0200

DESIGNATION	INITIALS	PRIORITY	IN SERVICE	CADD	NO.	FILE	SHEET
		PENNSYLVANIA R.R.			24021013.01	1 of 12	

NOT TO SCALE UNIDIRECTIONAL SHELTER

PROJECT #10-0008

DESIGNED BY: CDM 12-22-06

DRAWN BY: SSC 12-22-06

CHECKED BY: MLL 01-18-07

IN SERVICE: FORT WAYNE LINE

FILE NO. 24021013.01

NO. 061-10-0617

OFFICE OF ASST. VICE PRESIDENT FOR RAIL & SIGNAL ATLANTA, GA.

CRESTLINE, OH TO PITTSBURGH, PA

CANTON, OH UNIDIRECTIONAL SHELTER

PC-101.35

MD: 101.35



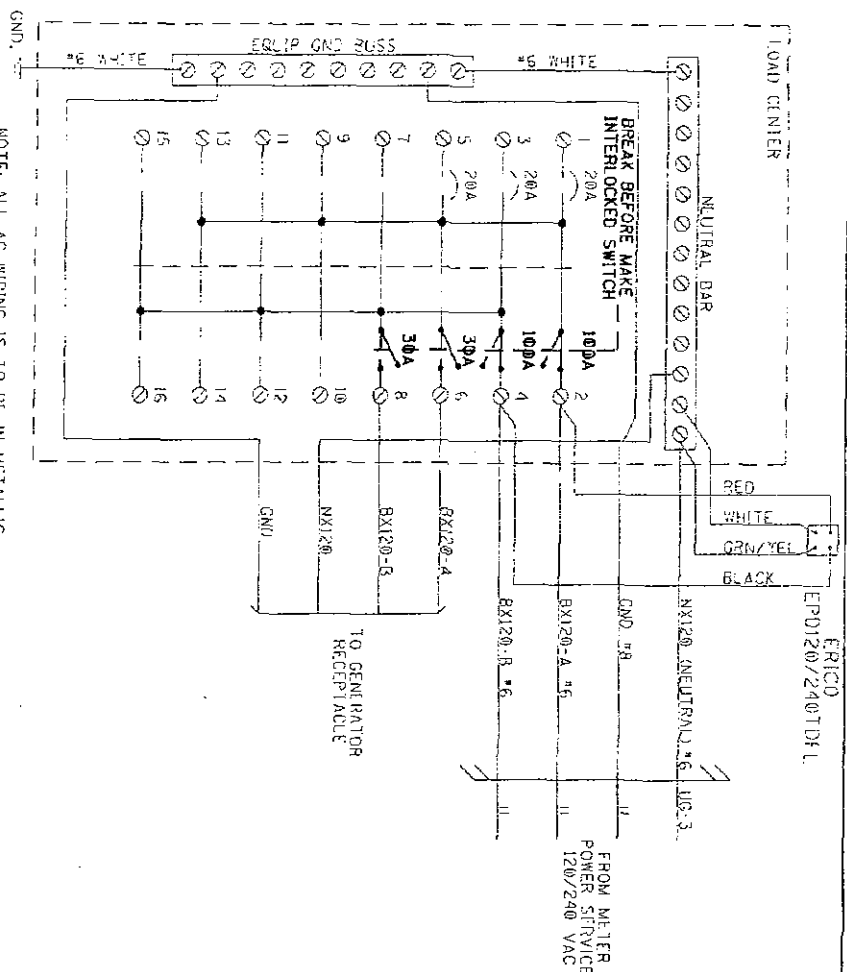
TO 3RD ST. & MADISON COURT RD.
SHELTER DWG#24071012

UC-6-12C1C *14
E20-1DAXP
NE20-1DAXP
E20-2DAXP
NE20-2DAXP
12-1DAXP

CABLE PLAN

WG-6-12CIG #14

DESIGNED BY	CDM 12-22-06	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	MAP#	PC-101.35
DRAIN BY:	SSC 12-22-06	CRESTLINE, ON TO PITTSBURGH PA		
CHECKED BY:		CANYON, ON UNIDIRECTIONAL SHELTER		
MAIL 01-18-07				
IN SERVICE:				
-				
FORT WAYNE LINE		FILE R-		
CAD OF		NO.		
DWG. NO.	24021013.02	SHEET 2 of 12		



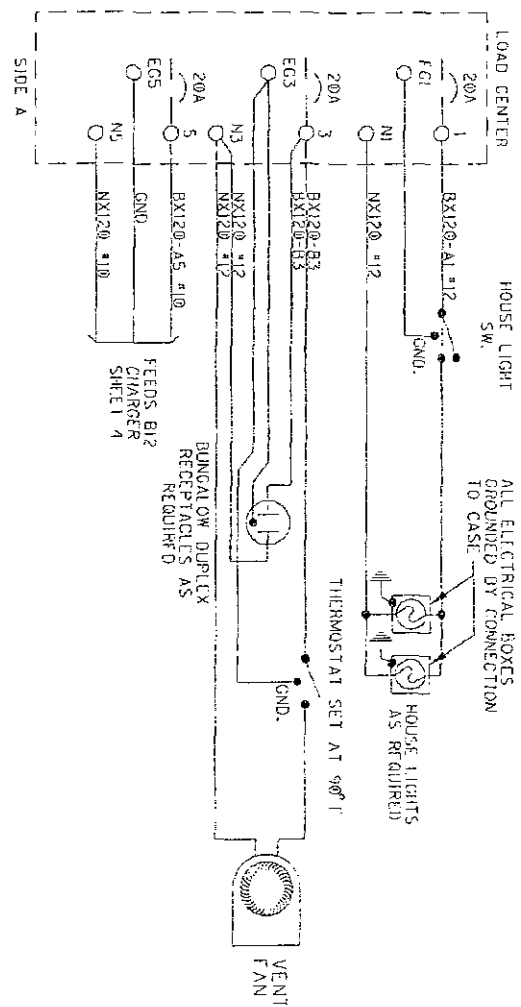
NOTE: ALL AC WIRING IS TO BE IN METALLIC CONDUIT WITH NO EXPOSED TERMINALS. ALL AC 120V AND 240V EQUIPMENT IS TO BE PROPERLY GROUNDED.

SQUARE D PART NUMBERS:

LOAD CENTER-----Q011175C

GENERATOR RECEPTACLE: MALE CONNECTOR - NFMA L1430-F1

20A 1P CIR BKR --- Q01110
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 --- PK401144LA



DESIGNED BY:	CDM 12-22-06	OFFICE OF ASST. VICE PRESIDENT	U.P.A. PC-101.35
DRAWN BY:	SSC 12-22-06	COMM. & SIGNAL, ATLANTA, GA.	
CHECKED BY:	MUL 01-18-07	CRESTLINE, OH TO PITTSBURGH, PA	
IN SERVICE:		CANTON, OH UNIDIRECTIONAL SHELTER	
FOR WAYNE LINE			
FILE R-			
DATE OF	24021013.03		
SHEET	3 of 12		

REVISION INITIALS

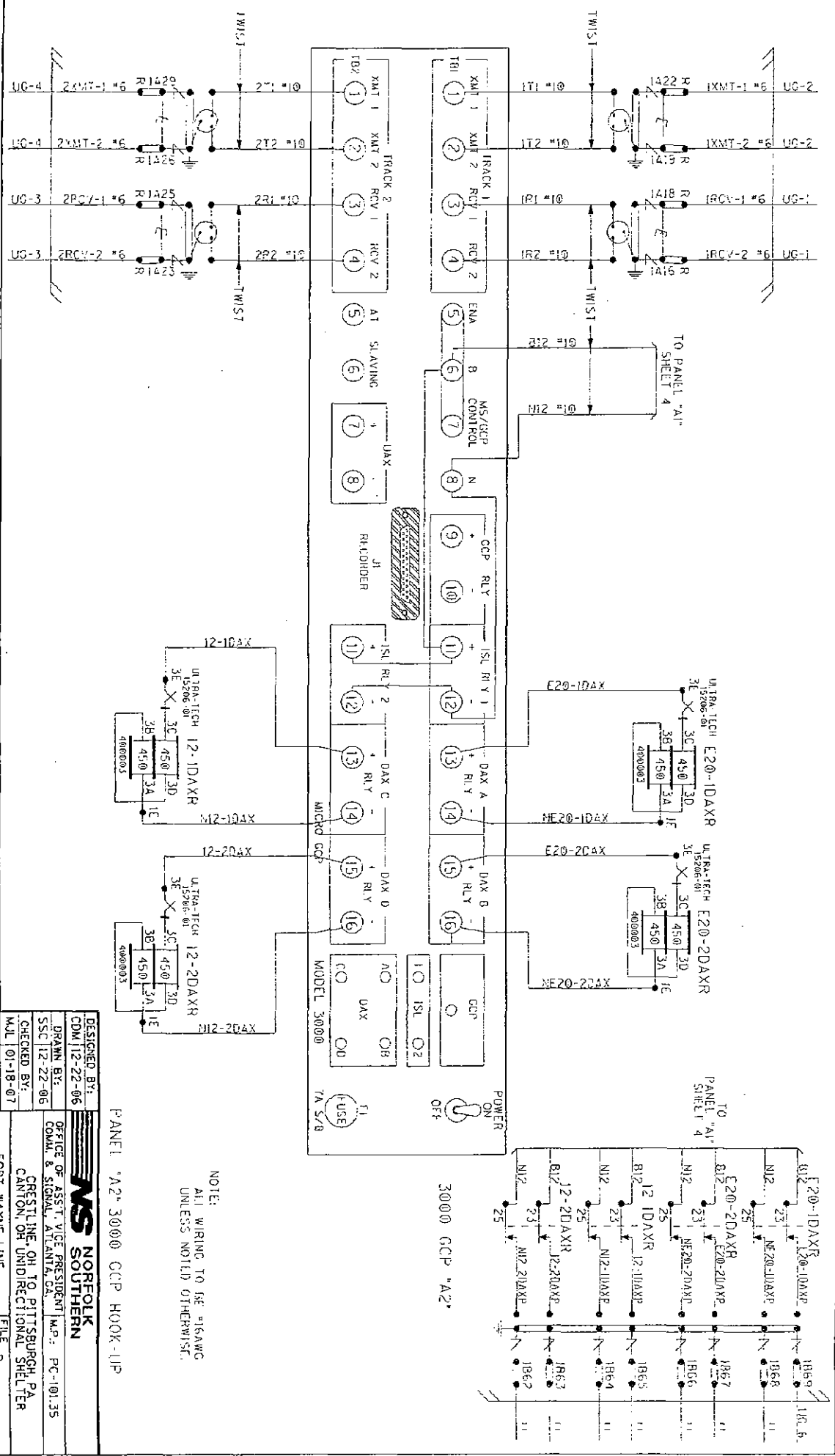
PENNSYLVANIA R.R.

LOAD CENTER WIRING

NORFOLK SOUTHERN



PANEL "A1" CABLE TERMINATION PANEL
E12 RECTIFIER HOOK-UP



3000 PROGRAMMING CHART		4 LEVEL D
NUMBER OF TRACK TRANSCIVERS	2	
11: FREQUENCY	4.50MHz	
12: FREQUENCY	4.50MHz	
11: UNIDIRECTIONAL / BIDIRECTIONAL	UNI	
12: UNIDIRECTIONAL / BIDIRECTIONAL	UNI	
11: XMIT LEVEL (MAX/MED)	MED	
12: XMIT LEVEL (MAX/MED)	MED	
11: PREDICTOR / MOTION SENSOR	PRED	
12: PREDICTOR / MOTION SENSOR	PRED	
11: WARNING TIME	30 Sec	
12: WARNING TIME	30 Sec	
11: APPROACH DISTANCE	1192 Ft	
12: APPROACH DISTANCE	1192 Ft	
UNX1 PICKUP DELAY (MAX) (0 = OFF)	0 Sec	
ENX1/DX2 DELAY (0 = ENX)	0 Sec	
11: 151 AND DISTANCE	11	
12: 151 AND DISTANCE	11	
NUMBER OF DAYS	4 Ed	
DAX A TRACK ASSIGNMENT (11/12)	11	
DAX A DISTANCE (0 = PREEMPT)	313 Ft	
DAX A WARNING TIME	30 Sec	
DAX B TRACK ASSIGNMENT (11/12)	12	
DAX B DISTANCE (0 = PREEMPT)	313 Ft	
DAX B WARNING TIME	30 Sec	
DAX C TRACK ASSIGNMENT (11/12)	11	
DAX C DISTANCE (0 = PREEMPT)	1050 Ft	
DAX C WARNING TIME	30 Sec	
DAX D TRACK ASSIGNMENT (11/12)	12	
DAX D DISTANCE (0 = PREEMPT)	1050 Ft	
DAX D WARNING TIME	30 Sec	
SIGNALING (MASTER/SLAVE)	MASTER	
PASSWORD ENABLED	NO	
RECONINTER INSTALLED	NO	

MODEL 3000 CCP MODULE ASSEMBLIES									
MODULES USED		MODULE POSITION		MODULE NUMBERS					
		M1	1S1	80211-f(1)* 1S1					
		M2	1S1	80211-f(2) 1S1					
X	X	M3	T/R 1	80012 T/R 1					
X	X	M4	T/R 2	80012 T/R 2					
X	X	M5	PLY DRV	80013 PLY DRV					
X	X	M6	PROCS	80214 PROCS					
X	X	M7	REC-INTF	80255 REC-INTF					
X	X	M8		80016 (1) OAX					
X	X	M9		80016 (2) OAX					
X	X	M10		80020 +80017					

NOTES:

- 1 - SEE IPI INSTRUCTION AND INSTALLATION MANUAL FOR 80211 ISL AND CALIBRATION PROCEDURE.
- 2 - TOGGLE SWITCH ON MOJIBER BOARD:
UP = DUAL FREQ.
DOWN = SINGLE FREQ.

300002 PROGRAMMING NOTES:

1) AVAILABLE WHEN "TRANSFER DELAY MS TO GCP" AND
"TRIBE 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

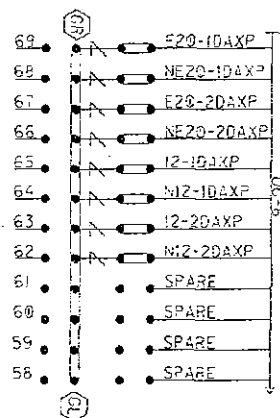
5) AVAILABLE WHEN "POSITIVE START" IS ON

REVISION INITIALS

DESIGNED BY:	CDM 112-22-06	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.S. NO. 2	PC-101.35
DRAWN BY:	SSC 112-22-06			
CHECKED BY:	MUL 01-18-07			
IN SERVICE:	-			
				
NORELCO SOUTHERN				
CREETLINE RD TO PITTSBURCH, PA CANTON, OH UNIDIRECTIONAL SPLITTER				
FORT WAYNE LINE				
MILE R-				
CADD OR DWG. NO.	24021013.06		SHEET NO.	6 of 12

"1A"

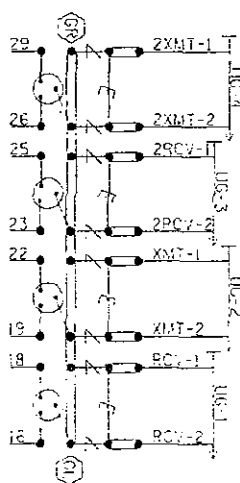
"1B"



NOTE: INSTALL TEST LINKS ON ALL TRACK WIRES AND ON ALL LOW VOLTAGE UNIDIRECTIONAL 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.

- ⊢ = Heavy Duty Equalizer (022700-1X)
- ⌒ = Lightning Arrestor (022585-1X)
- ⊕ = LFC-10560-51
- ⊕ = TERMINALS GROUNDED TO SHIELD.
- ⊕ = 4 POST BLOCKS USE EITHER - CR - SERIAL PART NO. 61278 - CL - SERIAL PART NO. 61278-1.



BACKBOARD DETAIL - 1A & 1B

DESIGNED BY:	CDW 12-22-06	OFFICE OF ASST. VICE PRESIDENT	PC-101.35
DRAWN BY:	SSC 12-22-06	COM. & SIGNAL, ATLANTA, GA	
CHECKED BY:	MAU 01-18-07	CRESTLINE, OH TO PITTSBURGH, PA	
IN SERVICE:		CANTON, OH UNIDIRECTIONAL SHELTER	
FORT WAYNE LINE		FILE R-	
CADD OF	24021013.07	SHEET	7 of 12

PENNSYLVANIA R.R.

REVISION/INITIALS

NO. 1

NO. 2

NO. 3

NO. 4

NO. 5

NO. 6

NO. 7

NO. 8

NO. 9

NO. 10

NO. 11

NO. 12

NO. 13

NO. 14

NO. 15

NO. 16

NO. 17

NO. 18

NO. 19

NO. 20

NO. 21

NO. 22

NO. 23

NO. 24

NO. 25

NO. 26

NO. 27

NO. 28

NO. 29

NO. 30

NO. 31

NO. 32

NO. 33

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NO. 92

NO. 93

NO. 94

NO. 95

NO. 96

NO. 97

NO. 98

NO. 99

NO. 100

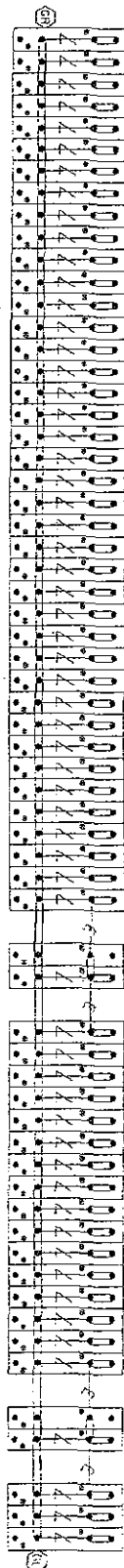
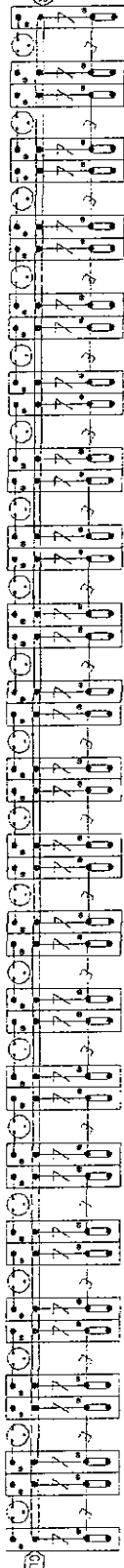
TERMINAL BOARD 1 LEFT HALF

"1A"

"1B"

2' PANDUIT

2' PANDUIT



AREA BELOW IS SCALED WITH AS: 75

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.

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.

② = TERMINALS GROUND TO SHIELD.
④ = POST BLOCKS USE FITTER -
CL - SERIAL PART NO. 61278
CL - SERIAL PART NO. 61278-1.

② = Heavy Duty Equalizer
(022700-1X)
④ = Lighting Arrestor
(022585-1X)
④ = LPC-10550-51

REVISION INITIALS

PROPERTY PENNSYLVANIA R.R.

DESIGNED BY:	COM 12-22-06	OFFICE OF ASST. VICE PRESIDENT W.P. PC-101.35
DRAWN BY:	SSC 12-22-06	COMM. & SIGNAL, ATLANTA, GA.
CHECKED BY:	MA 10-18-07	CRESTLINE, OH TO PITTSBURGH, PA
IN SERVICE:		CANTON, OH UNIDIRECTIONAL SHELTER
FILE NO.:		
SHEET	8 of 12	

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

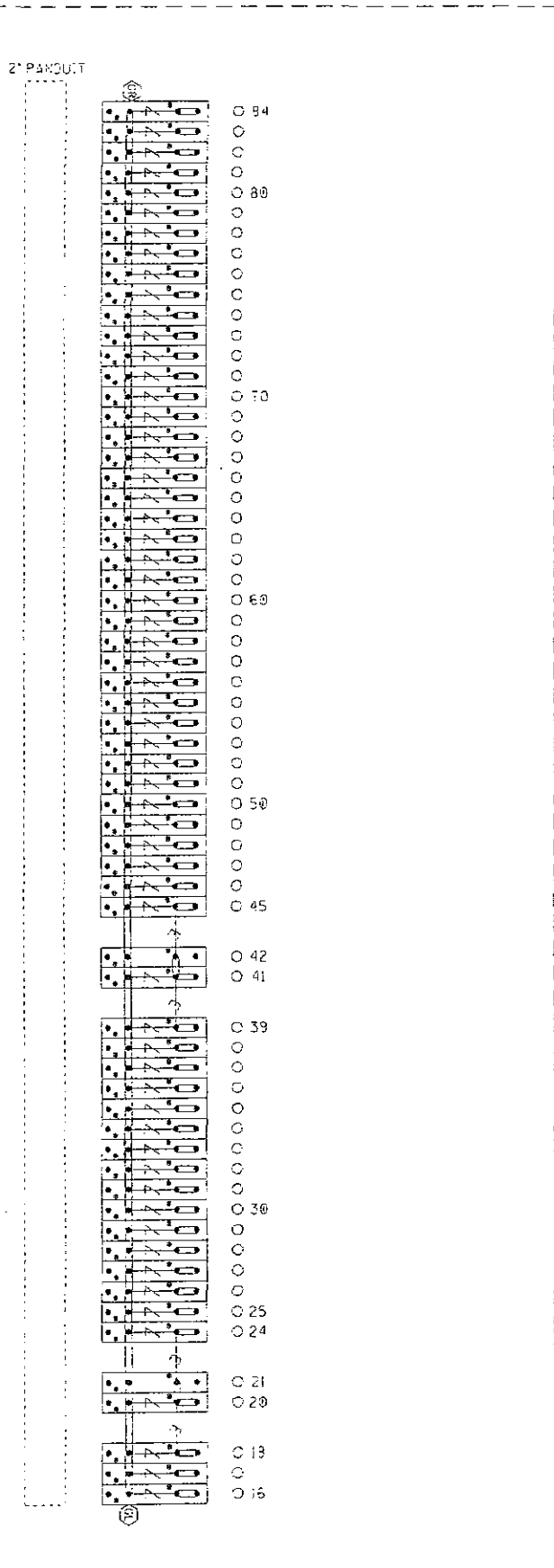
NS NORFOLK SOUTHERN

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 SEALED WITH ASE-75

TERMINAL BOARD 1
RIGHT HALF

"1C"



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 -
GR - SERAMI PART NO. 61278
CL - SERAMI PART NO. 61278-1.

Ⓢ = Heavy Duty Equalizer
(022700-1X)
Clear view
Ⓢ = Lightning Arrestor
(022585-1X)
Ⓢ = LPC-10560-51

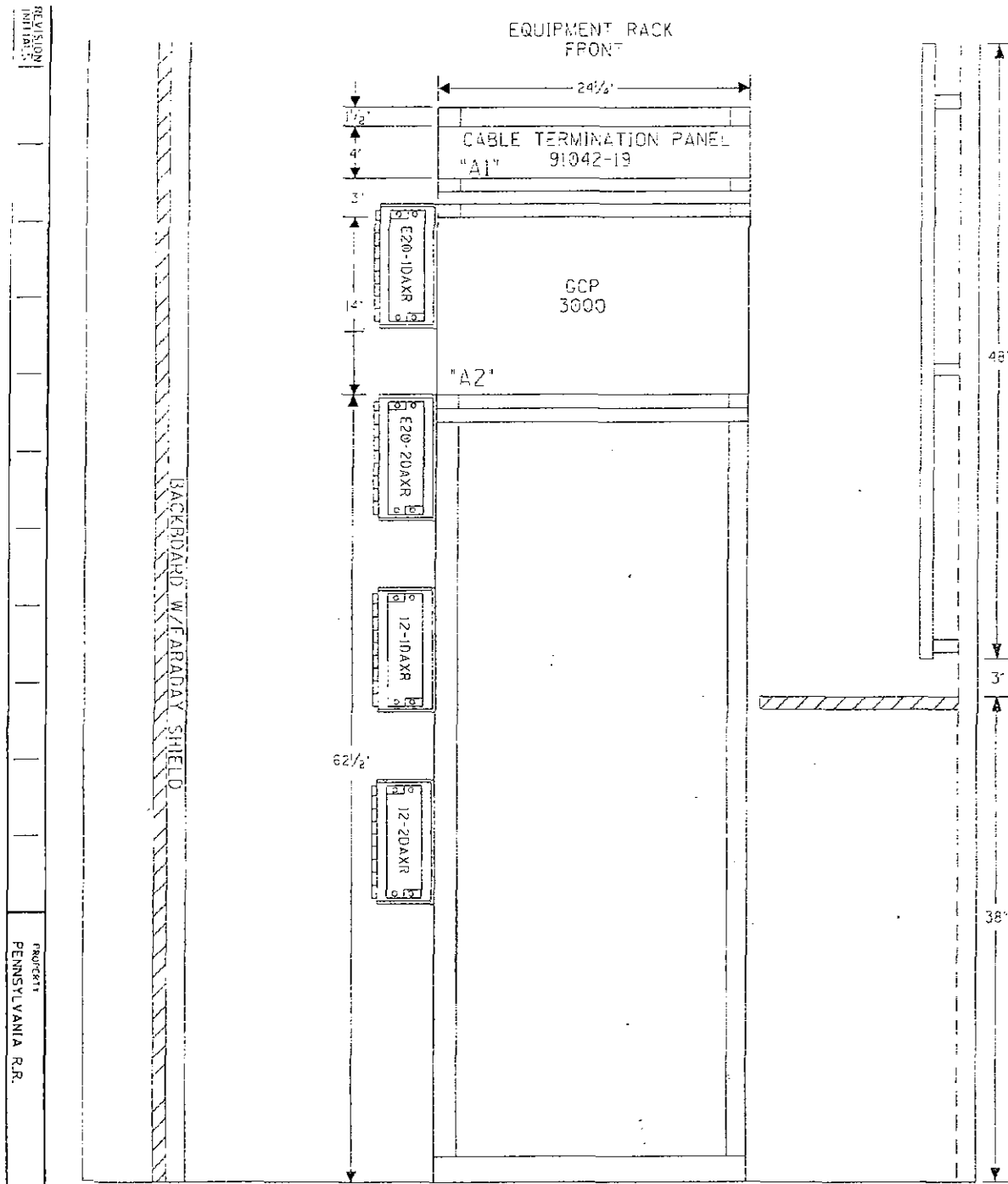
DESIGN
INITIALS

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY:	CDM 12-22-06
DRAWN BY:	SSC 12-22-06
CHECKED BY:	MLL 01-18-07
IN SERVICE:	-
ADD OR CHG. NO.	24021013.09
FILE NO.	9 of 12
FILE R-	
OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	PC-101.35
CRESTLINE OH TO PITTSBURGH, PA CANTON, OH UNIDIRECTIONAL SHELTER	
FORT WAYNE LINE	

NS NORFOLK
SOUTHERN

TERMINAL BOARD 1
RIGHT ROW
FARADAY SHIELD DETAIL - 1C



DESIGNED BY: CDM 12-22-06

DRAWN BY: SSC 12-22-06

CHECKED BY: M.J. 01-18-07

IN SERVICE: -

PROJECT: PENNSYLVANIA R.R.

DESIGNED BY: CDM 12-22-06

DRAWN BY: SSC 12-22-06

CHECKED BY: M.J. 01-18-07

IN SERVICE: -

PROJECT: PENNSYLVANIA R.R.

DESIGNED BY: CDM 12-22-06

DRAWN BY: SSC 12-22-06

CHECKED BY: M.J. 01-18-07

IN SERVICE: -

PROJECT: PENNSYLVANIA R.R.

DESIGNED BY: CDM 12-22-06

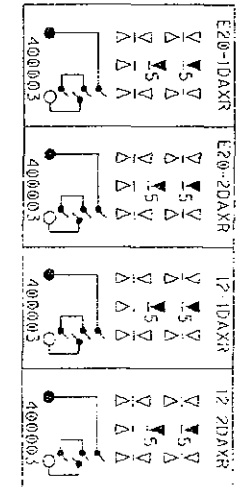
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CHECKED BY: M.J. 01-18-07

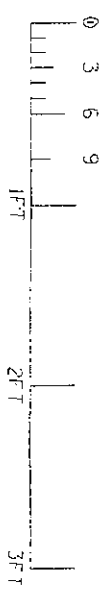
IN SERVICE: -

PROJECT: PENNSYLVANIA R.R.

SIDE "C"



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



OFFICE OF ASST. VICE PRESIDENT
COMM. & SIGNAL, ATLANTA, GA. M.P. PC-101.35

CRESTLINE OH TO PITTSBURGH, PA
CANTON, OH UNIDIRECTIONAL SHELTER

FORT WAYNE LINE

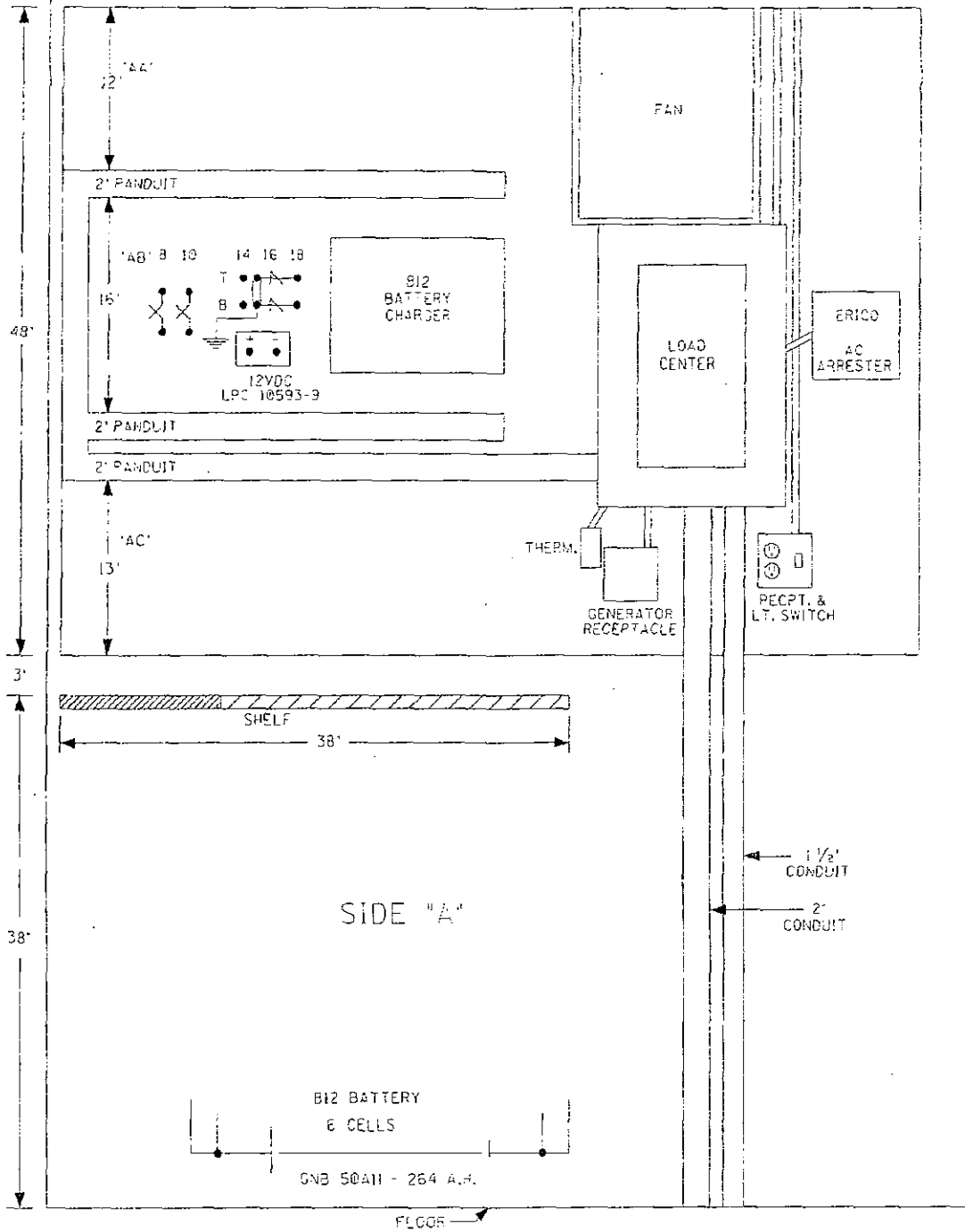
FILE NO. 24021013.10

SHEET 10 of 12

REVISION
INITIALS

PROPERTY
PENNSYLVANIA R.R.

DESIGNED BY: CDM 12-22-06	OFFICE OF ASST. VICE PRESIDENT COMM. & SIGNAL ATLANTA, GA.	W.P.: PC-101.35
DRAWN BY: SSC 12-22-06	CRESTLINE, OH TO PITTSBURGH, PA	
CHECKED BY: MUL 01-18-07	CANTON, OH UNIDIRECTIONAL SHELTER	
IN SERVICE:	FORT WAYNE LINE	FILE R-
CADD OF DWG. NO. 24021013.11		SHEET 11 of 12



6' X 6' HOUSE - SIDE "A"



