

TO ST. LOUIS

TO DECATUR

O.H. POWER LINE (V.O.H.C. 31',35')

140*

U.G. PHONE LINE

44'

SIG "A"

4000 GCP

285 HZ T1 4.9 KHZ

MOUND STREET
AAR# 479 984P

SIG "B"

6'X6'

MINIMUM FROM
NEAREST RAIL
(IF ADEQUATE
RT-OF-WAY)

RAIL
POST
GATE

METER
SERVICE

O.H. POWER LINE
(V.O.H.C. 31',35')

O.H. POWER LINE (V.O.H.C. 23')

U.G. PHONE
LINE

APPROACH LENGTHS ALLOW FOR:	
TIME IN SECONDS	CWT
	E.B. / W.B. APPROACH
STANDARD MUTCD MIN. TIME	20
DESIGNED WARNING TIME	30
EQUIPMENT RESPONSE TIME	5
TOTAL TIME	35
MAX. SPEED (M.P.H.)	60
APPROACH DISTANCE (FEET)	3087'
MIN. SIMULTANEOUS PRE-EMPT	NA

IN SERVICE _____ SIGNED _____ DATE _____

S&E ENGINEERING COPY

CONSTRUCTION OFFICE COPY
RETURN TO S&E ENG. AFTER COMPLETION

FIELD COPY
RETURN TO CASE AFTER COMPLETION

PROJECT ENGINEER COPY

MAINLINE 132*RE CWR

NOTES:

1. MAX. TRAIN SPEED 60 M.P.H.

2. LATITUDE N 39° 29' 24" LONGITUDE W 89° 22' 07"
ELEVATION 658'

3. SIGNAL "A" TO HAVE BELL.

4. LOCATE U/G UTILITIES & CABLE BEFORE DIGGING.

5. CROSSING LOCATED IN CHRISTIAN COUNTY.

6. NEAREST STREET ADDRESS IS
877 MOUND STREET 200' (WEST)

7. NEAREST INTERSECTING STREET IS
ILLINOIS SR 48 (WEST)

8. DISTANCE TO NEAREST INTERSECTING
STREET IS 92 FT.

9. 10 CU. YRDS. OF FILL IS REQUIRED IN QUADRANT "A" - FOR NEW SIGNAL
5 CU. YRDS. OF FILL IN QUADRANT "B" - FOR NEW SIGNAL
10 CU. YRDS. OF FILL IN QUADRANT "B" - FOR NEW CROSSING HOUSE

10. UTILITIES IN THE ARE - CONTACT:
POWER-AMERON IP (800) 735-5000
PHONE-ILL CONSOLIDATED (217) 235-4410

11. FIELD FORCES TO REPLACE EXISTING AC SERVICE.

12. RAISE/RELOCATE OVERHEAD LINES IN QUADRANT "A" - CONTACT:
POWER-AMERON IP (800) 735-5000

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

SCALE: 1" = 20'
PROJECT #04.0167

LAYOUT

FILE
No. CX0112102

DESIGNED BY:
TAH 09-01-08

DRAWN BY:
RSD 09-01-08

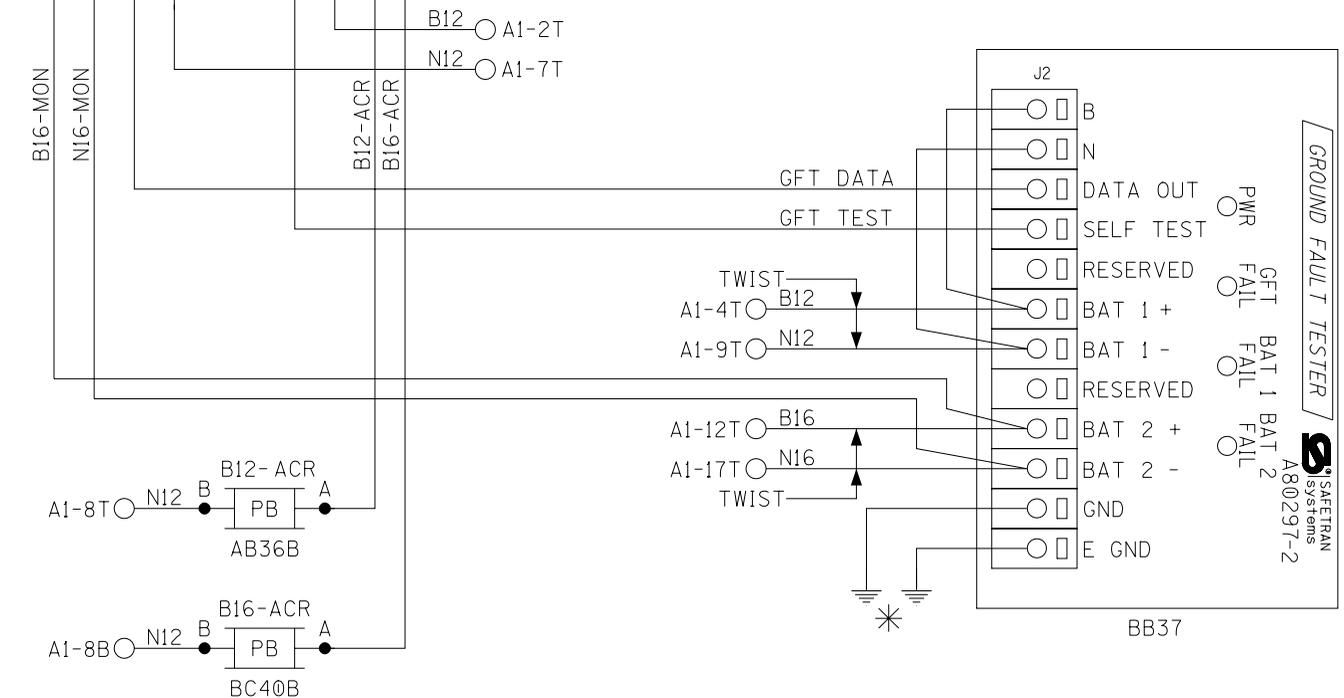
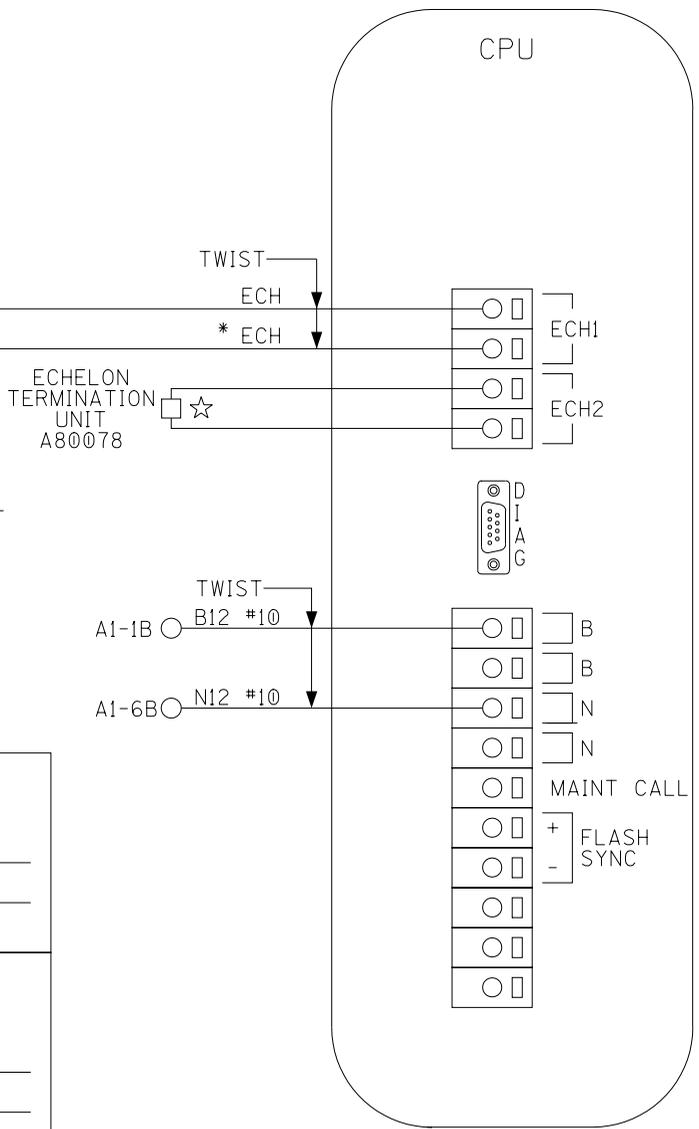
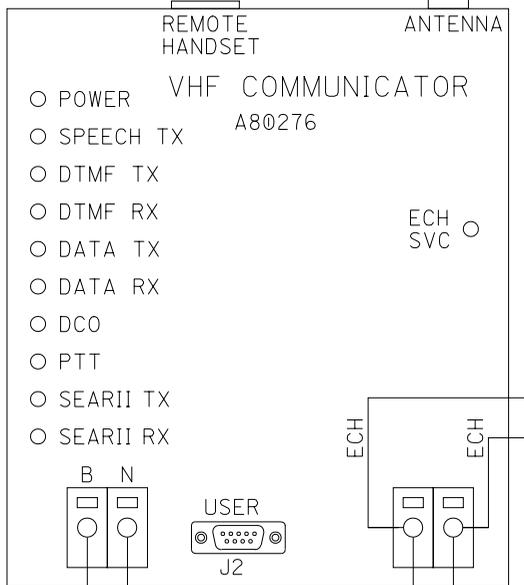
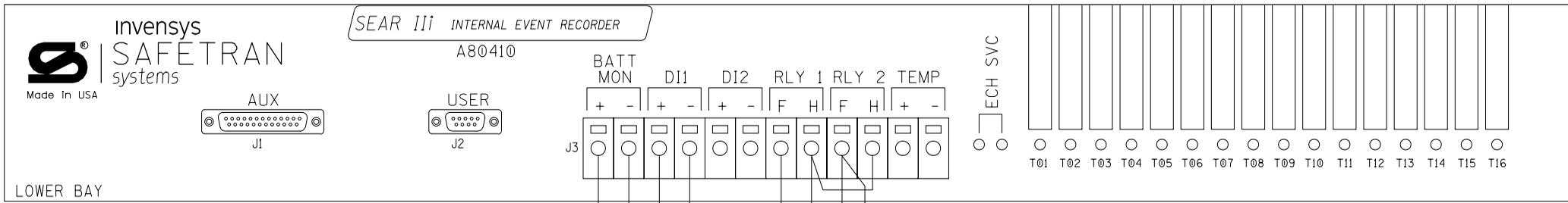
CHECKED BY:
SAH 09-01-08

IN SERVICE:
- -

NORFOLK SOUTHERN	
OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: D409.43
PALMER, IL GATES/FLS AT MOUND ST.	
BROOKLYN DISTRICT	FILE No. R-
CADD or DWG. No. BKDS40943.01	SHEET No. 1 of 21

PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

REVISION
INITIALS



NOTES:

ALL WIRING TO BE #16AWG UNLESS NOTED OTHERWISE.

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

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

☆ = A80078 ECHELON TERMINATION UNIT TO TERMINATE ECHELON NETWORK.

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

GCP PROGRAMMING FOR VHF RADIO

REMOTE DTMF CROSSING ACTIVATION (ACTIVATES ENTIRE CROSSING)

TO ACTIVATE PRESS: ???

TO DE-ACTIVATE PRESS: ???

(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

REMOTE DTMF LIGHTING ACTIVATION (ACTIVATES FLASHING LIGHTS ONLY)

TO ACTIVATE PRESS: ???

TO DE-ACTIVATE PRESS: ???

(ACTIVATION WILL TIME OUT AFTER 60 SEC.)

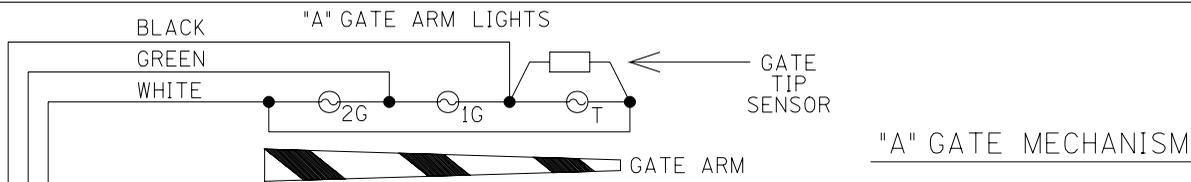
DESIGNED BY:	NORFOLK SOUTHERN	
TAH 09-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: D409.43
DRAWN BY:	PALMER, IL GATES/FLS AT MOUND ST.	
RSD 09-01-08	BROOKLYN DISTRICT	
CHECKED BY:	FILE No. R-	
SAH 09-01-08	CADD or SHEET No. BKDS40943.09	
IN SERVICE:	9 of 21	

REVISION INITIALS

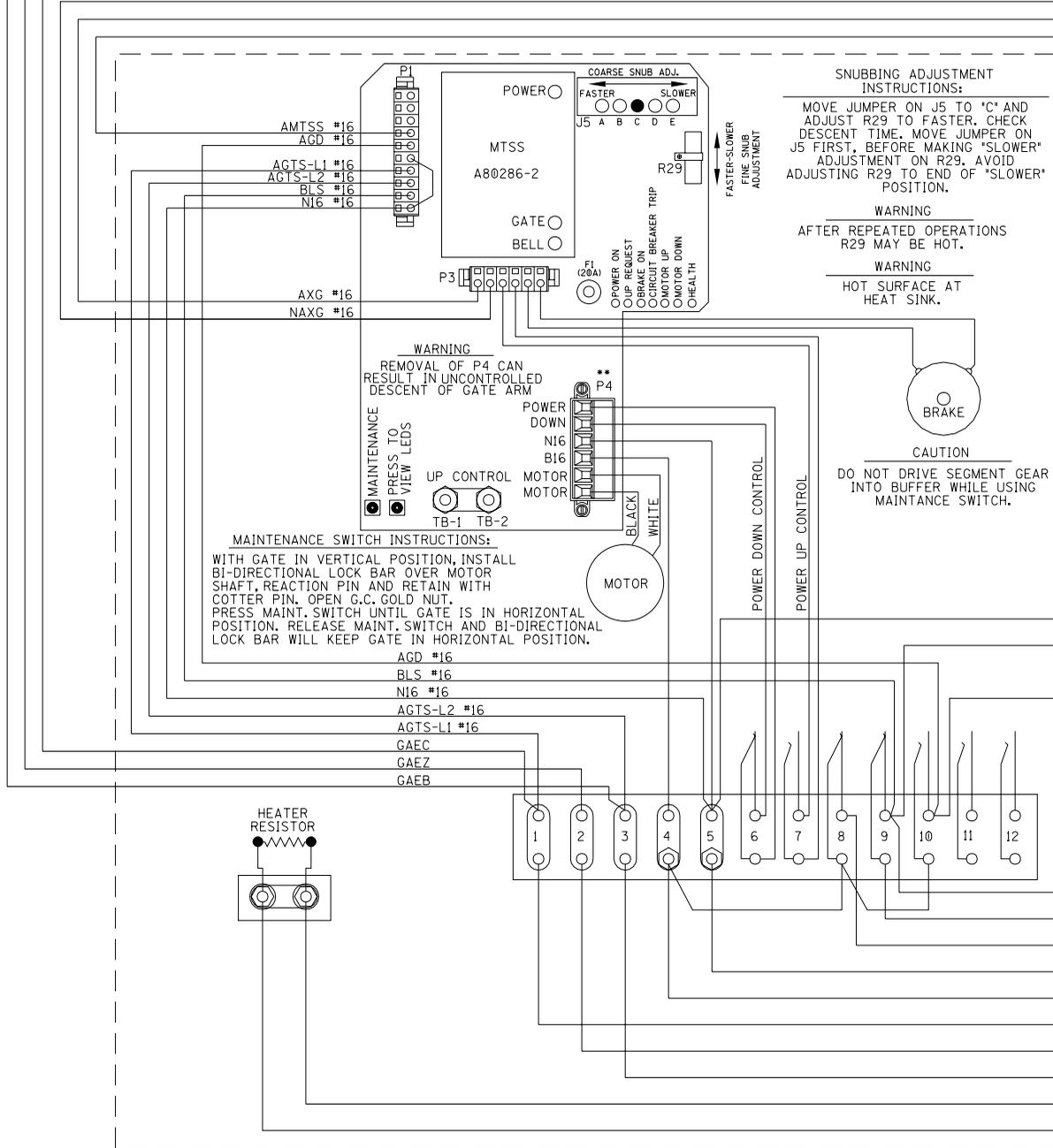
PROPERTY NORFOLK SOUTHERN RAILWAY CO.

SAFETRAN MODEL "S60" GATE

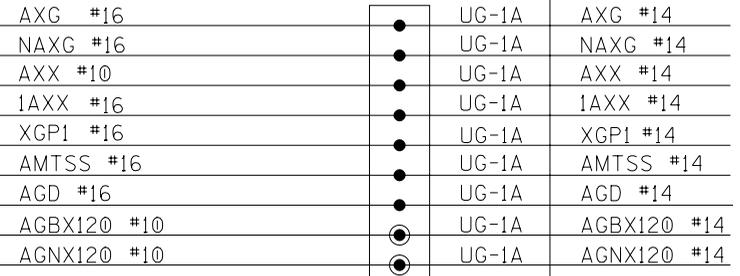
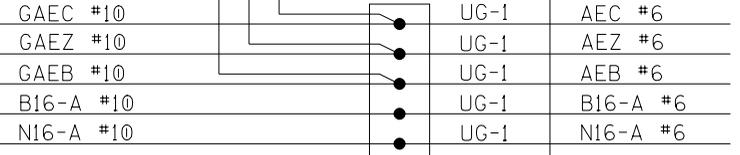
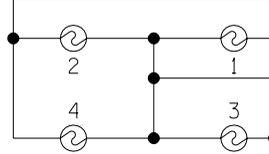
CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
6	70° - 90°	POWER DOWN CONTROL
7	0° - 89°	POWER UP CONTROL
8	83° - 90°	FLASHING LGT. CONTROL
9	5° - 90°	BELL CONTROL
10	0° - 5°	GATE DOWN INDICATION
11		SPARE
12		SPARE



"A" GATE MECHANISM



"A" FLASHING LIGHTS



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

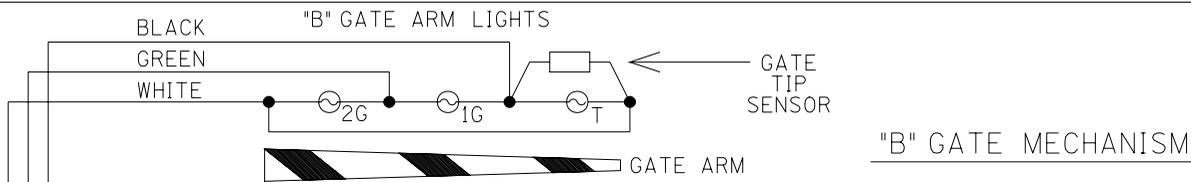
DESIGNED BY:		
TAH 09-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: D409.43
DRAWN BY:	PALMER, IL GATES/FLS AT MOUND ST.	
RSD 09-01-08	BROOKLYN DISTRICT	FILE No. R-
CHECKED BY:		SHEET 13 of 21
SAH 09-01-08		
IN SERVICE:		
	CADD or DWG. No. BKDS40943.13	

REVISION INITIALS

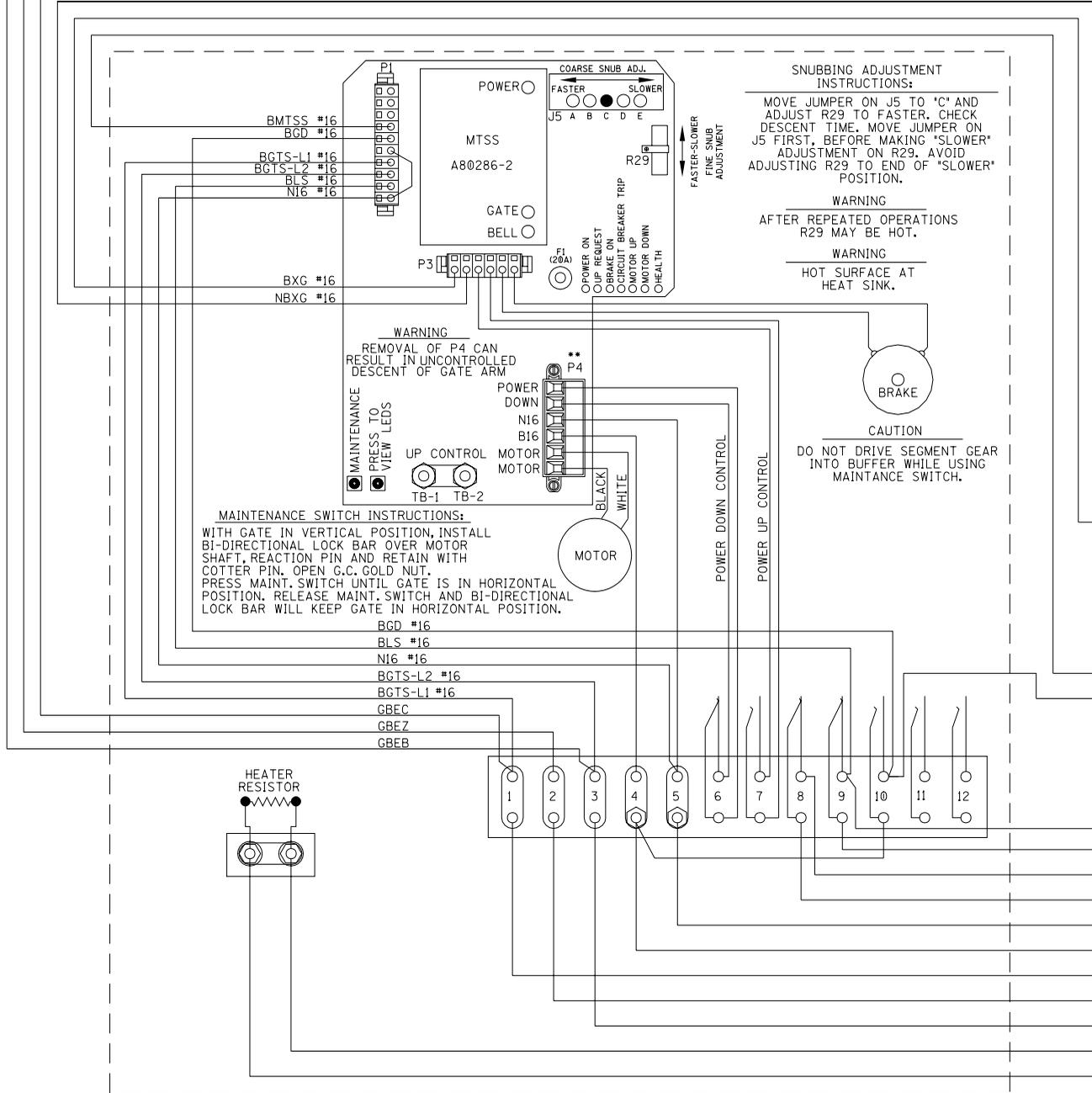
PROPERTY NORFOLK SOUTHERN RAILWAY CO.

SAFETRAN MODEL "S60" GATE

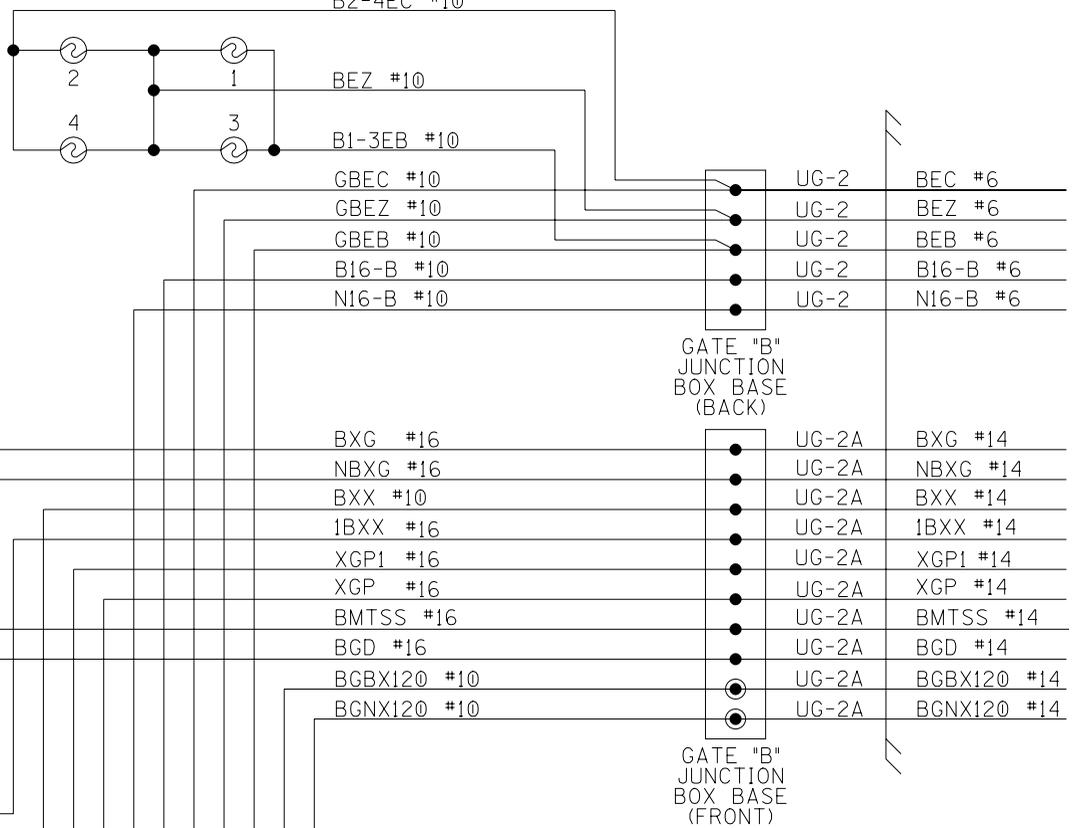
CONTACT SPACE	CONTACT CLOSED AT	FUNCTION OF CONTACT
6	70° - 90°	POWER DOWN CONTROL
7	0° - 89°	POWER UP CONTROL
8	83° - 90°	FLASHING LGT. CONTROL
9	5° - 90°	BELL CONTROL
10	0° - 5°	GATE DOWN INDICATION
11		SPARE
12		SPARE



"B" GATE MECHANISM



"B" FLASHING LIGHTS



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

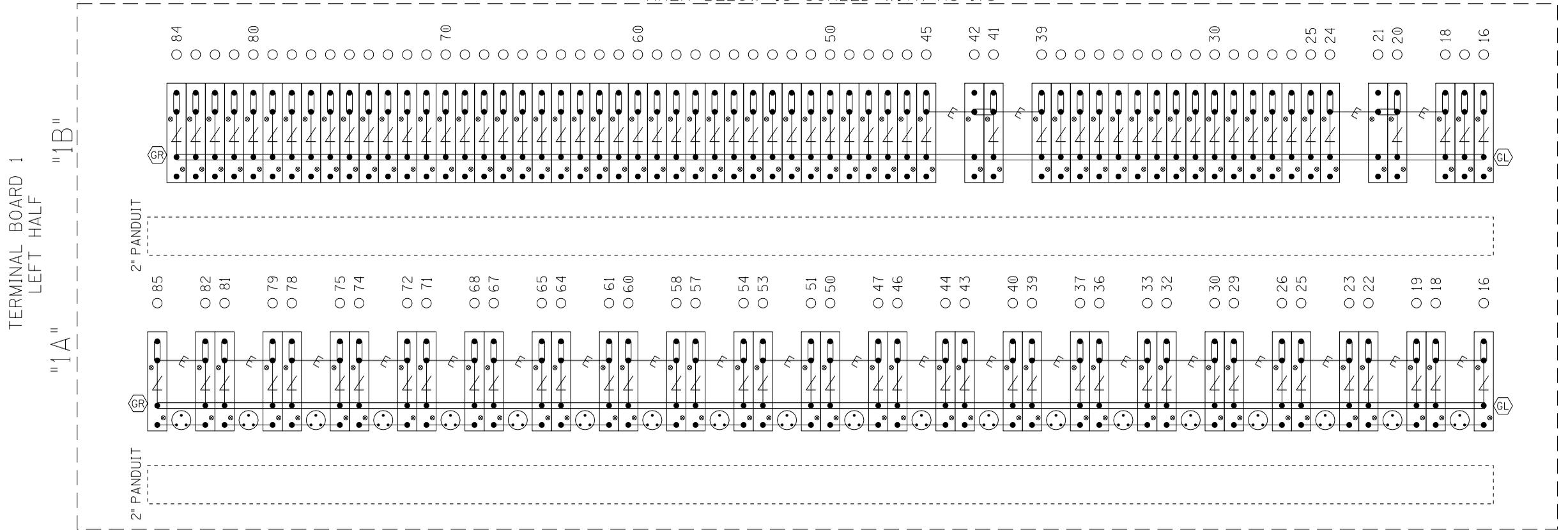
DESIGNED BY:		
TAH 09-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: D409.43
DRAWN BY:	PALMER, IL GATES/FLS AT MOUND ST.	
RSD 09-01-08	BROOKLYN DISTRICT	FILE No. R-
CHECKED BY:		SHEET No. 14 of 21
SAH 09-01-08		
IN SERVICE:		
	CADD or DWG. No. BKDS40943.14	

REVISION INITIALS

PROPERTY NORFOLK SOUTHERN RAILWAY CO.

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 Arrestor (022585-1X)

= LPC-10560-51

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

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

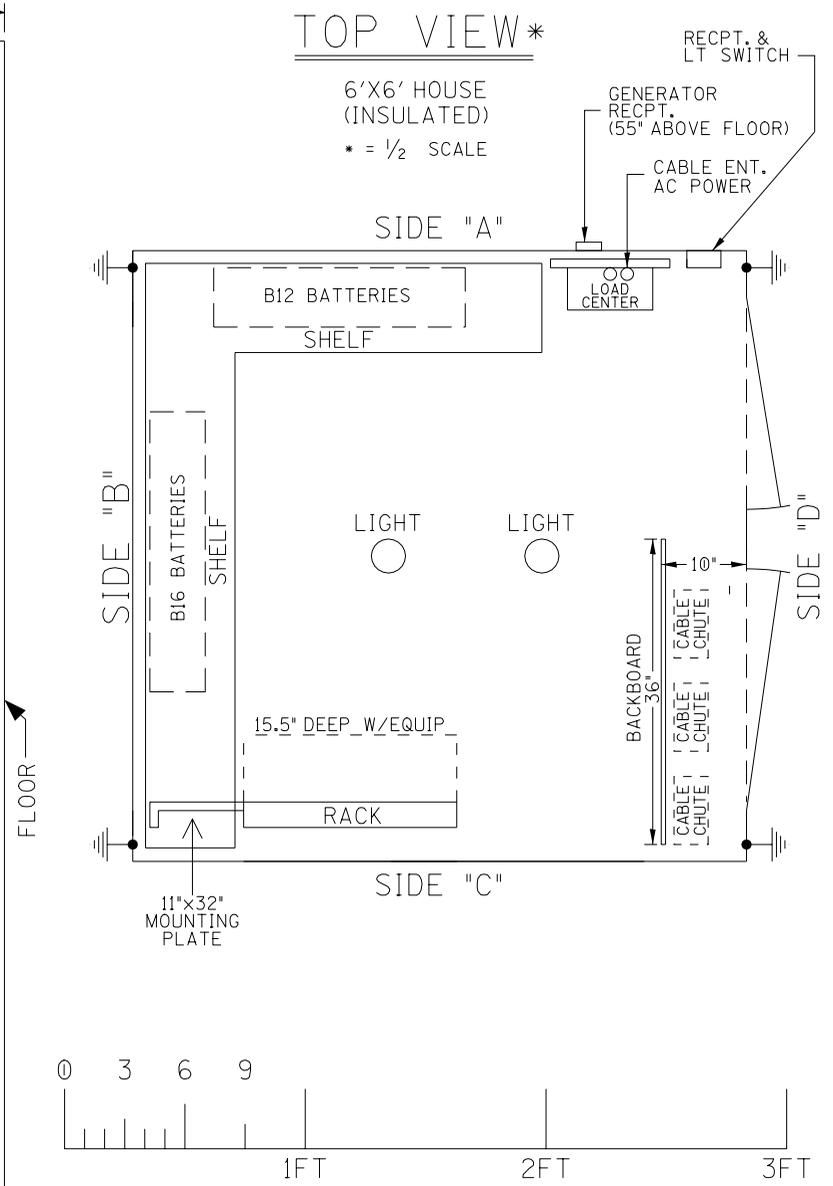
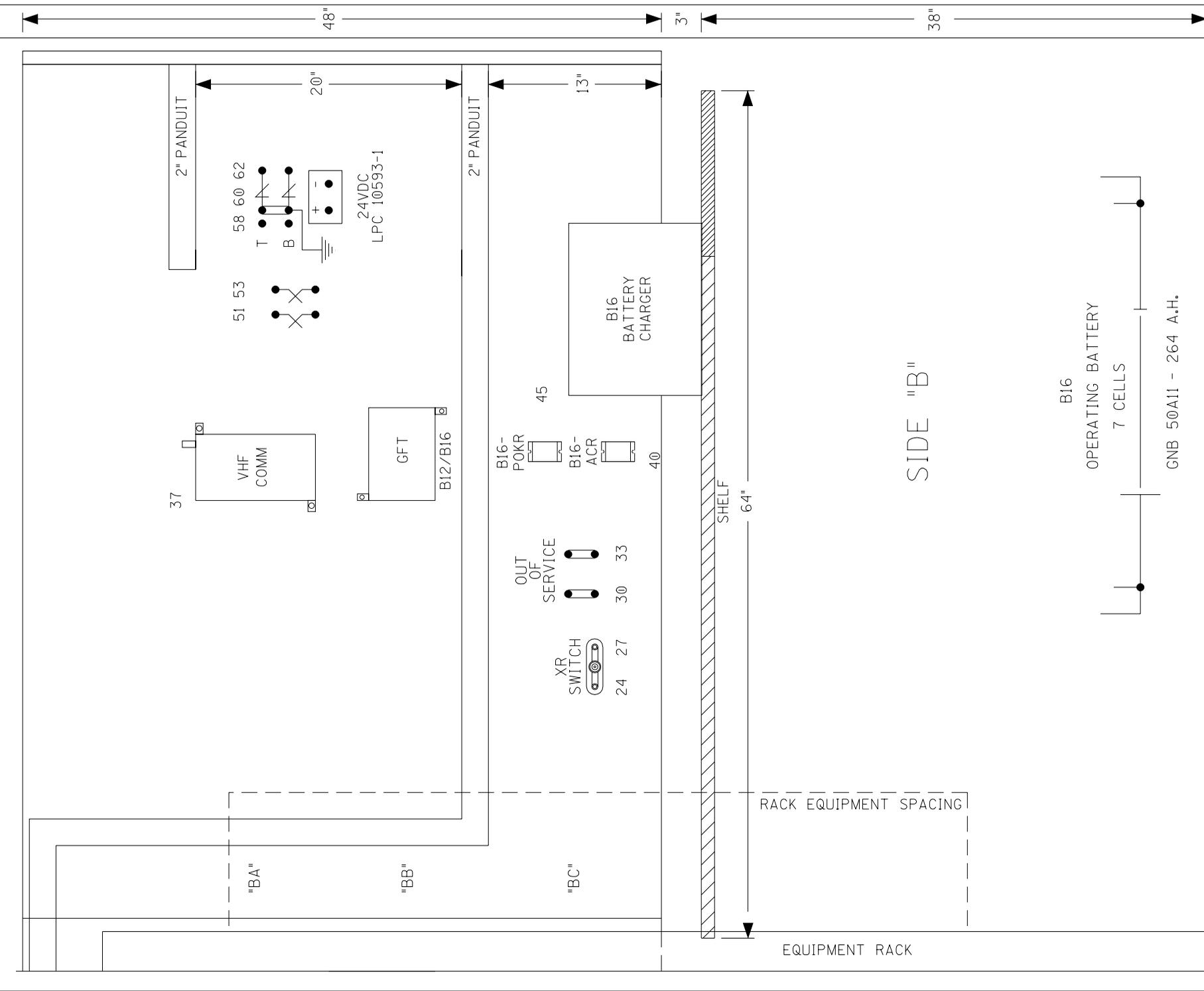
= INDICATES PLACEMENT OF PANDUIT

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

DESIGNED BY:	NORFOLK SOUTHERN	
TAH 09-01-08	OFFICE OF ASS'T. VICE PRESIDENT COMM. & SIGNAL, ATLANTA, GA.	M.P.: D409.43
DRAWN BY:	PALMER, IL GATES/FLS AT MOUND ST.	
RSD 09-01-08	BROOKLYN DISTRICT	FILE No. R-
CHECKED BY:	CADD or DWG. No. BKDS40943.17	
SAH 09-01-08	SHEET 17 of 21	
IN SERVICE:		

REVISION INITIALS

PROPERTY
 NORFOLK SOUTHERN RAILWAY CO.



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

DESIGNED BY:	NORFOLK SOUTHERN	
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DRAWN BY:	PALMER, IL GATES/FLS AT MOUND ST.	
RSD 09-01-08	BROOKLYN DISTRICT	FILE No. R-
CHECKED BY:	CADD or DWG. No. BKDS40943.21	
SAH 09-01-08	SHEET No. 21 of 21	
IN SERVICE:		

REVISION INITIALS																				
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PROPERTY
NORFOLK SOUTHERN RAILWAY CO.

- b. What must be done to the sight obstruction in order to provide acceptable sight distance for the signal(s) involved? N/A

- c. **Name, title, company, address and phone number** of the person to be contacted to have visual obstruction removed/relocated. N/A

- d. Show pertinent measurements of the obstruction(s) from edge of road and centerline of track on the required field sketch.

- 2. Fill required? YES

 - a. How much fill and where? (Cubic Yards) PROPOSED WARNING DEVICE IN QUAD "B" NEEDS 5 CYDS, PROPOSED WARNING DEVICE IN QUAD "A" NEEDS 10 CYDS, AND 10 CYDS FOR HOUSE IN QUAD "A".

- 3. Berm wall required? NO

 - a. How large a berm wall and where? (length & height) N/A

- 4. Will drainage be affected? NO

 - a. Will culverts have to be extended or relocated? NO
 - b. If yes to 4 or 4a above, give details as to what must be done in order to allow proper installation of signals. Include size and type of pipe. N/A

- 5. Are there **ANY PUBLIC UTILITIES** overhead or underground that will conflict with the installation of this project? YES

It is the responsibility of the surveying contractor to have all underground utilities marked prior to the survey, or have underground utilities located during the survey, in order to identify potential conflicts. If it is determined that there will be utility conflicts, **the surveying contractor is responsible for obtaining the name, title, company, address and current phone number of the individual responsible for the relocation of that utility.**

- a. Are there overhead lines/cables present that will conflict with the proposed signals? No. Reference NS drawing GS-1600-30 for required clearances. If Yes, describe. N/A

- b. **Name, title, company, address, and phone number** of the individuals to be contacted to have overhead utilities relocated. _____
 AMERON IP (ILLINOIS POWER) 800-735-5000

- c. Show pertinent measurements involving the overhead conflict on the required field sketch. Include height of line/cable from the ground and posted utility pole information.
6. Are there underground utilities present that will conflict with the proposed signals? YES. If Yes, describe. U.G. PHONE LINE IS WITHIN 18" OF PROPOSED WARNING DEVICE IN QUAD "A".

- a. **Name, title, company, address, and phone number** of the individual to be contacted to have underground utilities relocated. _____
 ILLINOIS CONSOLIDATED (PHONE) 217-235-4410

- b. Show pertinent measurements involving the underground conflict on the required field sketch.
7. Will the railroad pole line interfere with the installation of proposed signals? No. If Yes, what must be done to correct? N/A

- a. If railroad pole line is present, show arrangement of lines on crossarms on the required field sketch.
8. Are there railroad () or commercial () high-tension lines in the immediate area?
NO
9. Are there railroad () or commercial () substations in the immediate area?
NO
10. Mines or spurs in the area? NO
11. River locks? NO

12. Condition of existing crossing warning signals and instrument case/shelter, if applicable. (This is especially important if the state is requesting we reuse existing equipment or if we must wire new circuitry into existing shelters/cases) Take legible pictures of existing equipment including inside shelter if possible.

FLS ARE IN GOOD CONDITION.

4'X6' AL HOUSE IS IN GOOD CONDITION

- a. Diameter of existing masts? 4" Made of cast () or aluminum (X)?
Length of existing cantilever arm N/A and/or gate arm? N/A
- b. If existing cantilevers are to be reused, is the distance from the bottom of the walkway to the roadway crown at least 17'? N/A. Also, show arrangement and measurements of bolt hole spacing on required field sketch.
- c. Manufacturer and model of equipment if it is to be reused.
- d. Lamp size: 8-3/8" N/A 12" 8 QT.
- e. If there are existing signals are any of the foundations poured? NO. If yes, which quadrant? N/A
- f. If existing mechanism and gates are to be reused is the gate height in the horizontal (down) position between 3-1/2' and 4-1/2'? N/A. If No, what modifications will be required? N/A

13. Sidelights required (state requested, existing sidelights or meets *NS requirement)? NO

- a. Distance between track and side road that sidelights protect? 92 ft

Note*: If the distance from the nearest edge of a side road to the nearest centerline of tracks is 50' or less.

If parallel roadway exists, **MAKE CERTAIN** there is sufficient room to install signal in that quadrant per MUTCD clearances. Said clearances are required to the front as well the side of signals.

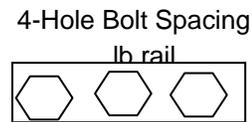
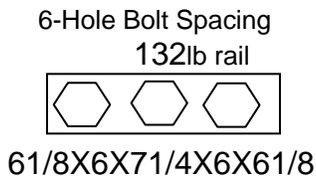
14. Does the project location have curbing () or sidewalks () present? NO If sidewalks are present, will they interfere with the installation of the proposed signals? N/A If so, explain. N/A

15. Width of road? 20' EAST/ 23' WEST
- Does present road width differ from proposed road width? No.
 - Type and width of road shoulder, if present. GRASS AND GRAVEL
 - Type of road surface? ASPHALT
 - Is DOT/AAR # posted on crossbuck/signal mast? Yes. If yes, does it match the DOT/AAR # given to you for this survey? Yes.

16. Are gauge rods present? NO. Insulated N/A Non-insulated N/A

17. Rail size if insulated joints are involved. (Specify bolt spacing below and show location on required field sketch.) _____

- Are rusty rail conditions present? No. If yes, contract design engineer to call NS engineering office to discuss type of circuitry to be used (be sure to take legible pictures to support your findings).
- Type of rail and bonds in service. 132#RE CWR
- Do involved switches require insulation? No. If yes, specify bolt hole spacing below, rail size and show on required field sketch.
M/L 132# 61/8X6X71/4X6X61/8
- Is there an end-of-siding control point in the approach? No. If Yes, show in detail on survey sketch the OS track circuit including track connections, fouling wires and insulated joints with measurements.
- Distance between tracks at crossing, if applicable. N/A _____ ft
- Any shunt-type switches within crossing approach? No.



18. Ballast conditions. GOOD

19. Quadrant in which instrument shelter should be set. QUAD "B"

- Quadrant/location where the equipment container can be set during construction. QUAD "D"

20. Is commercial power available at crossing? YES.
- a. If Yes and an existing service is in place, is it in good condition? NO.
- b. If No, from where and how far must it come to service this installation? 100' E OF XING
-
- c. If additional spans must be constructed to obtain power at this crossing, provide **name, title, company, address, and phone number** of the individual to be contacted for said construction. AMERON IP (ILLINOIS POWER) 800-755-5000/ 217-872-2371
2405 E. FEDERAL DR., DECATUR, IL
WILL PUT IN TOUCH W/ENGINEER.
-
21. Any joint RR facilities within 1 mile? No. If Yes, how are maintenance responsibilities divided? N/A
-
- a. Does the foreign RR cross or go parallel, etc. N/A
-
22. "U.S. Coast Guard and Geologic Survey" markers present? No. Do not remove. Show location and record information from the face of the marker on the required field sketch.
23. Any electrified roads or transits in area? NO
24. Any pipelines parallel to track? NO
25. Joint trackage arrangement with another railroad? No. If Yes, name of foreign railroad. N/A
26. Is traffic preemption/interconnection circuitry requested by the state or existing? No. If Yes, distance from track to intersection. 92 Ft
27. Is the crossing in city limits? NO
- a. Township (if applicable) BEAR CREEK TWP
28. What is the nearest street/house/business address number, if available (within a one mile radius)? 877 MOUND STREET 200' (WEST) (RESIDENCE)
-
29. What is the **name** and **distance** from subject grade crossing to the closest intersecting street. ILLINOIS SR 48 92' (WEST)
-

30. Give latitude/longitude/altitude coordinates of crossing:

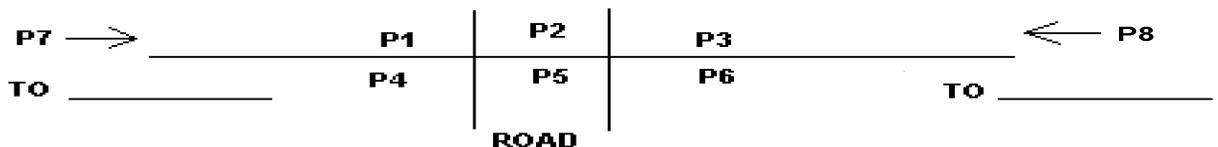
Latitude: N 39° 29' 24" Longitude: W 89° 22' 07" Altitude: ____658____ ft.

31. A minimum of two field sketches is required. One should show a 'closeup' view of the crossing to scale (1" = 20') and the second showing the approaches to the crossing. Pertinent structures beyond the approach limits of the crossing should be noted/shown if there is a possibility of these affecting project crossing installation/operation.

These sketches are to include, but are not limited to:

- a. Cut sections (relayed and non-relayed)
- b. Switches (elec. lock, bolt lock, H.T. derails, etc.) and overlay/PSO freq's
- c. Signal locations (automatic and controlled)
- d. Other road crossings (protected and unprotected, get DOT/AAR#'s and pictures inside shelter if possible)
- e. Existing unidirectional installations (pictures inside shelter if possible)
- f. Slide fences, DED/TSAs
- g. Non-interlocked RR crossings
- h. Mileposts
- i. Angle of crossing
- j. Show magnetic north arrow
- k. Bridges (if so, need to show what type, height, length along with **legible pictures** to confirm the type and dimensions noted)

32. Take a **minimum** of eight (8) legible pictures, as shown below, and number each picture according to the numbered arrows shown on your field sketch. If additional pictures are taken, show additional numbered arrows on the field sketch to which pictures correspond. (Instamatic pictures are not acceptable.) If the AAR/DOT number plate is posted include it in your pictures. Pictures should also include any obstacles (i.e. culverts, overhead lines, etc) that might affect the installation of the project



33. Additional comments which may assist designer, coordinator or installer of

project: U.G. PHONE LINE IN QUAD "A" WILL CONFLICT WITH PROPOSED
WARNING DEVICE.

SIGNALED TRK., ELETROCODE 4

34. Select location for equipment container
- a. Must not block view of motorist/pedestrians on any public crossing
 - b. Must be located at a site away from all public crossings
 - c. Locate on company property if possible and comply with a. & b. above
 - d. Locate rental (short term) space away from railroad, but as near to work as possible - furnish contact with address, phone number, cost and map (hand drawn) from crossing being installed to container site
 - e. Contractor to contact **Mr. Chuck DeVries at 404/529-1232** with questions relating to container location