

HARMON INDUSTRIES, INC.
GRAIN VALLEY SIGNAL ENGINEERING

Argo & Dillingham Road
 Grain Valley, MO 64029

(816) 650-3112 / FAX (816) 650-3456

Sheet 1 of 2

TO: <u>LYN RANDOL</u>	CUSTOMER: <u>CSX</u>
<u>WB Wiring</u>	CUSTOMER PROJECT NO.: _____
<u>one line tag</u>	HARMON PROJECT NO.: <u>73-328</u>
	SUBDIVISION/LINE: _____
	MILEPOST: _____
	LOCATION: _____
	TRANSMITTED BY: <u>S. HAMMILL</u>
	DATE: <u>9-15-98</u>

THE TRANSMITTED ITEMS ARE: Here Within Under Separate Cover

<input type="checkbox"/> 1. For Your Approval	<input type="checkbox"/> 5. Preliminary
<input type="checkbox"/> 2. Resubmitted For Final Approval	<input type="checkbox"/> 6. Revised Per AIS (Drawing(s))
<input type="checkbox"/> 3. Approved As Noted	<input checked="" type="checkbox"/> 7. For Factory Use - HPN <u>373328-</u>
<input type="checkbox"/> 4. For Field Use	<input type="checkbox"/> 8. Other <u>236</u>

WE ARE SENDING YOU:

<input type="checkbox"/> Drawings	Quantity		Quantity
<input type="checkbox"/> a. Customer Supplied Originals	_____	<input type="checkbox"/> e. Sepias	_____
<input type="checkbox"/> b. Blueprints	_____	<input type="checkbox"/> f. Diskette(s)	_____
<input type="checkbox"/> c. Vellums / Mylars	_____	<input type="checkbox"/> g. Tape(s)	_____
<input type="checkbox"/> d. Xerox	_____	<input type="checkbox"/> h. Other	_____
<input type="checkbox"/> Software Program			
<input type="checkbox"/> a. EPROMs	_____	<input type="checkbox"/> c. Electronic Transfer	_____
<input type="checkbox"/> b. Diskette(s)	_____	<input type="checkbox"/> d. Other	_____

Hardware Type			
Media Type			
File Name			
Date Compiled			
Author			
Compiler Version			
CRC No.			
CSUM No.			
Chassis ID			
Rack Identification No.			

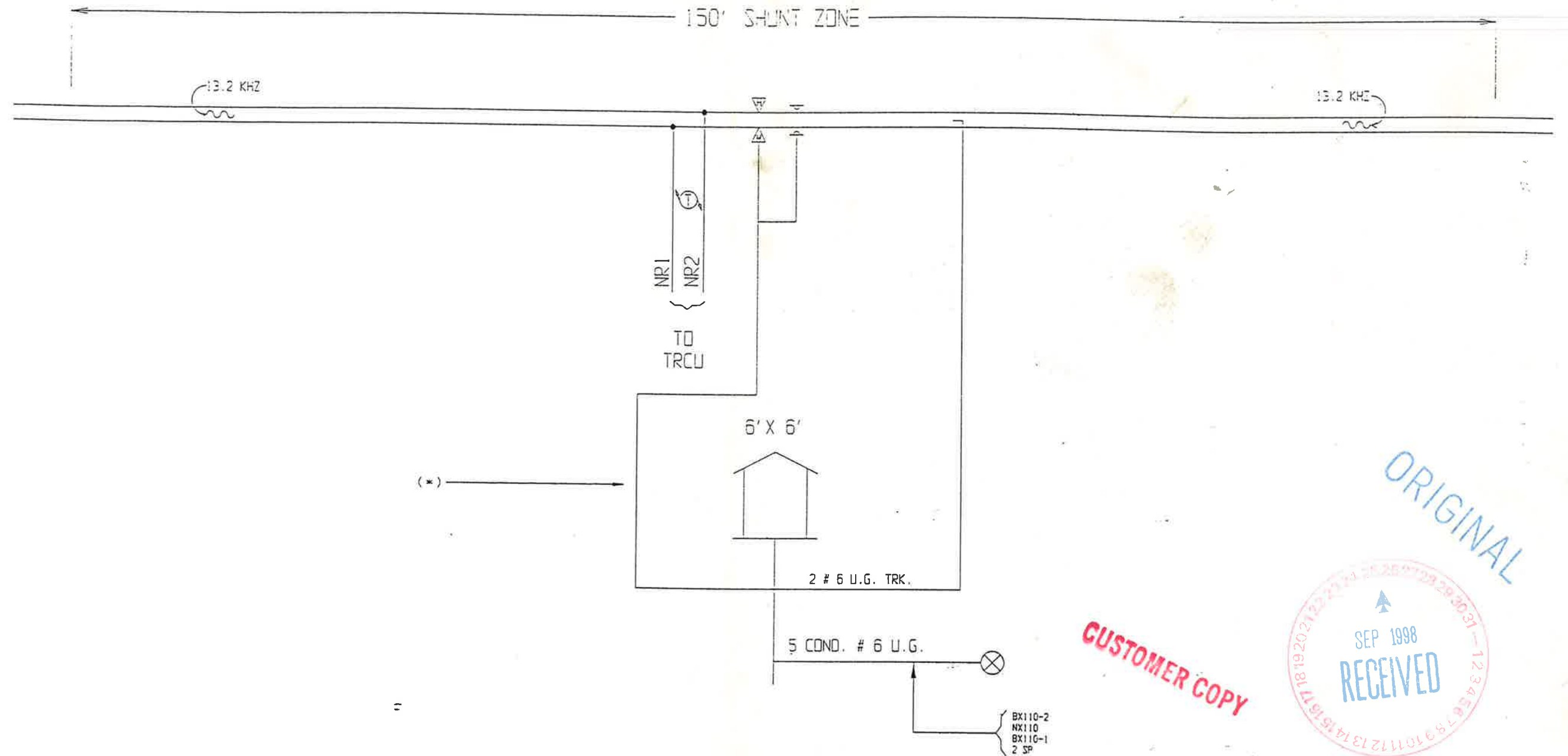
CUSTOMER COPY

SEP 1998
 RECEIVED

ORIGINAL

Drawing No.	Sheet No.	CAD File Name	Rev	Issue Date	Comment
<u>373328-210</u>					
<u>-211</u>					
<u>-212</u>					
<u>-213</u>					
<u>-214</u>					
<u>-215</u>					
<u>-216</u>					

Drawing No.	Sheet No.	CAD File Name	Rev	Issue Date	Comment
373328-217					
-218					
-219					
-220					
-221					
-222					
-223					
-224					
-225					
-226					
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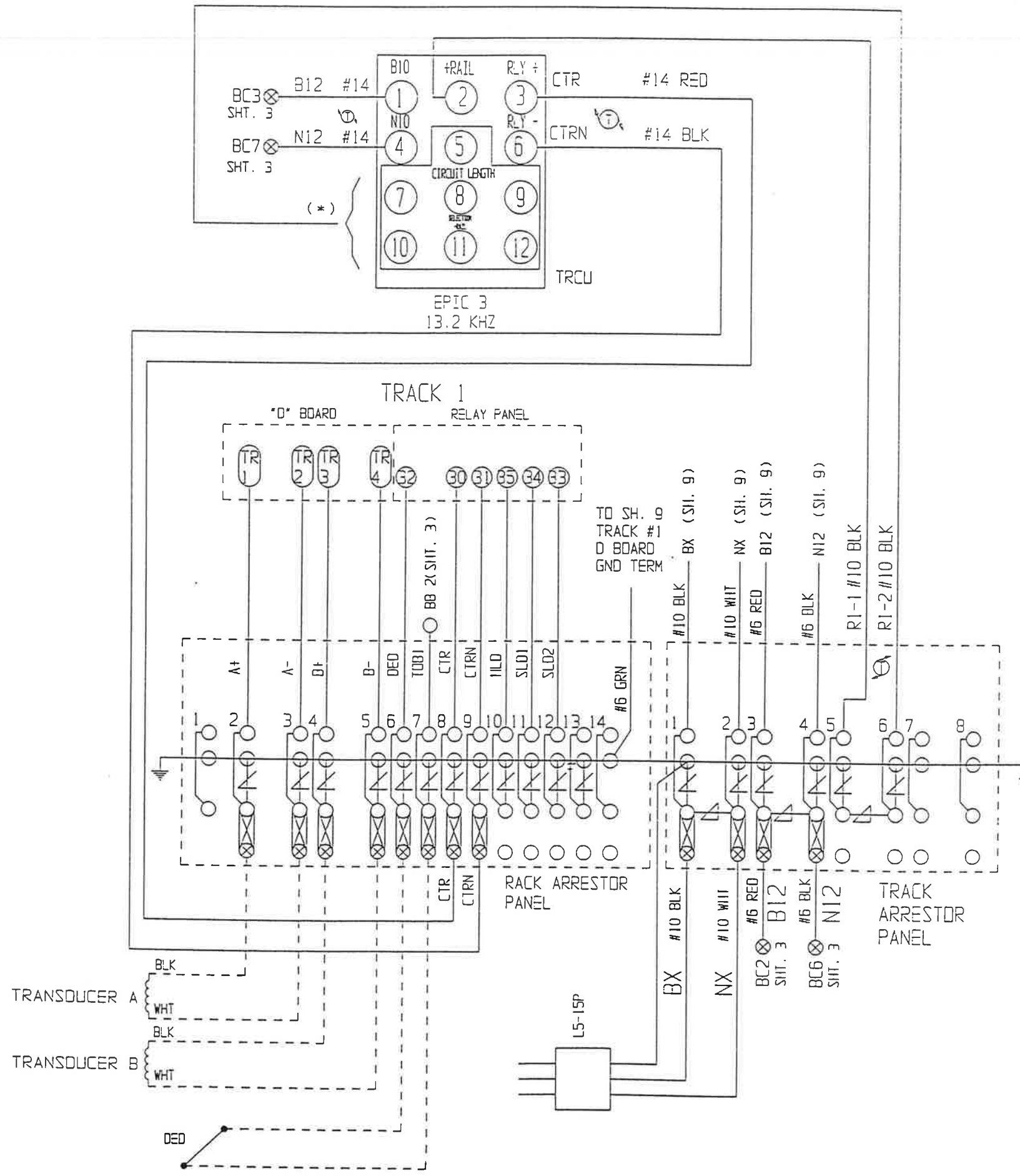
NOTES: (*) SEE TRACKSIDE EQUIPMENT LAYOUT SHEET FOR CABLE TYPE & SIZE AND TRACK LAYOUT.

Harmon Industries
 Grain Valley, MO 64029

TITLE:
 CSX HBD WIRING DIA.

REVISION AAO	DRAWING NO. 373328-236	SHEET 1 OF 13	SIZE B
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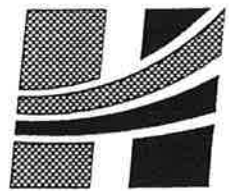
SURGE ARRESTOR WIRING



ALUM/COPPER
TRANSITION
WELDED TO
FLOOR
(2 PLCS)

- NOTES:
1. TWIST ALL PAIRED WIRES, INDICATES PAIRED WIRES.
 2. PROTECT BX AND NX WITH INSULATED NUTS.
 3. CIRCUITS SHOWN IN DASHED LINES ARE INSTALLED AT THE SITE.

- INDICATES A CONNECTION ON THE D BOARD ASSY.
- INDICATES A CONNECTION ON THE RELAY PANEL ASSY.

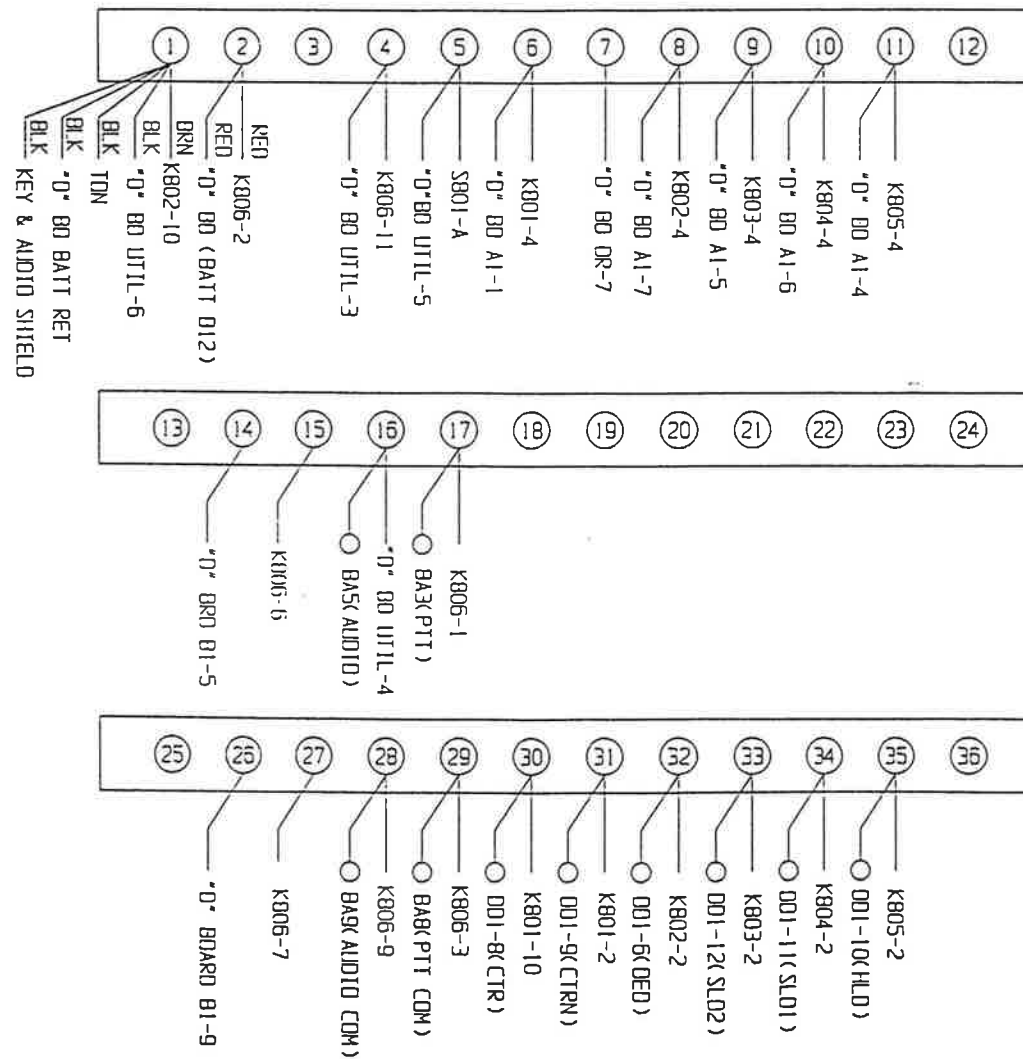
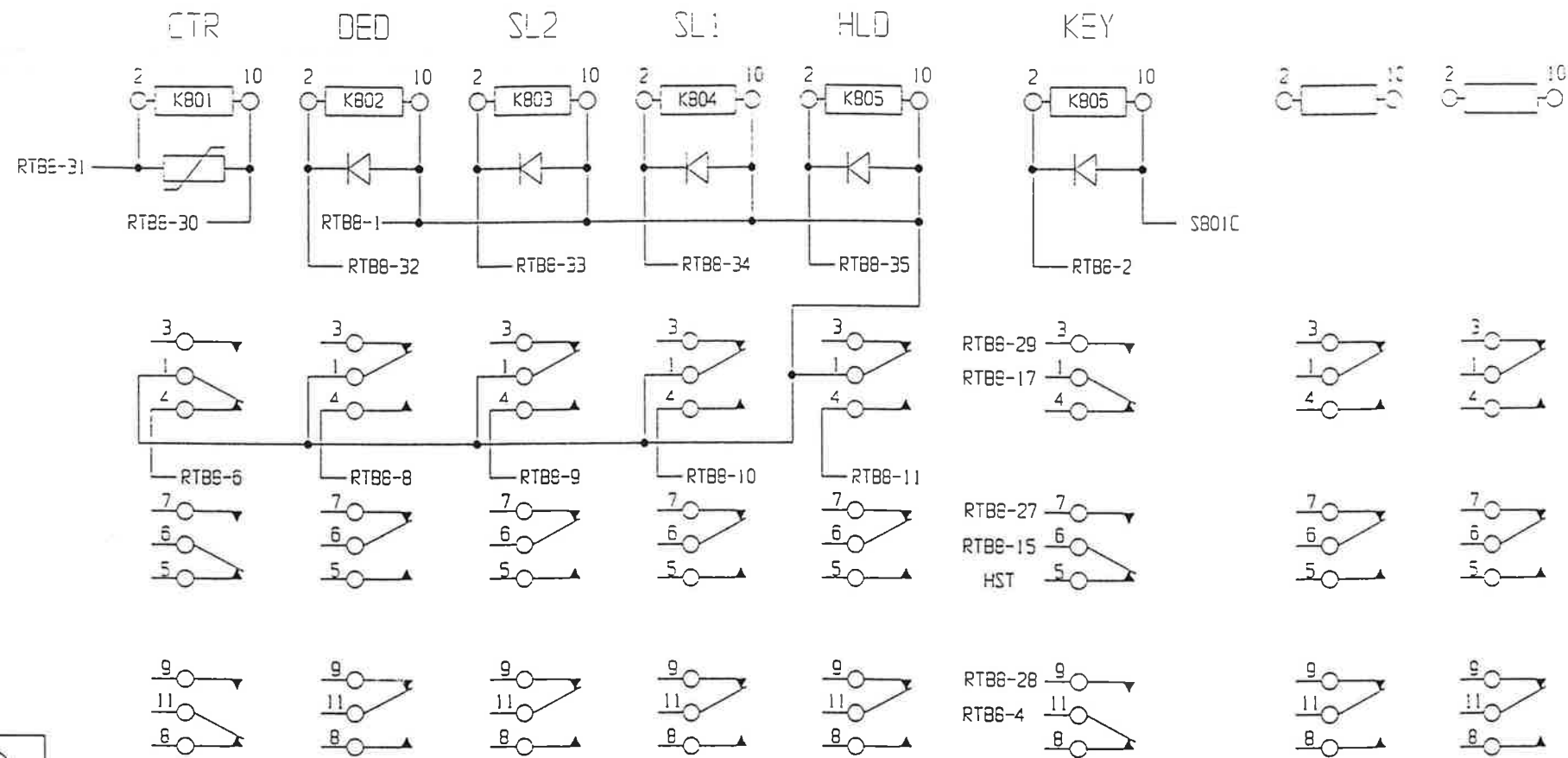


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TITLE:
CSX HBD WIRING DIA.

REVISION	DRAWING NO.	SHEET	SIZE
AAO	373328-236	2 OF 13	B

RELAY PANEL



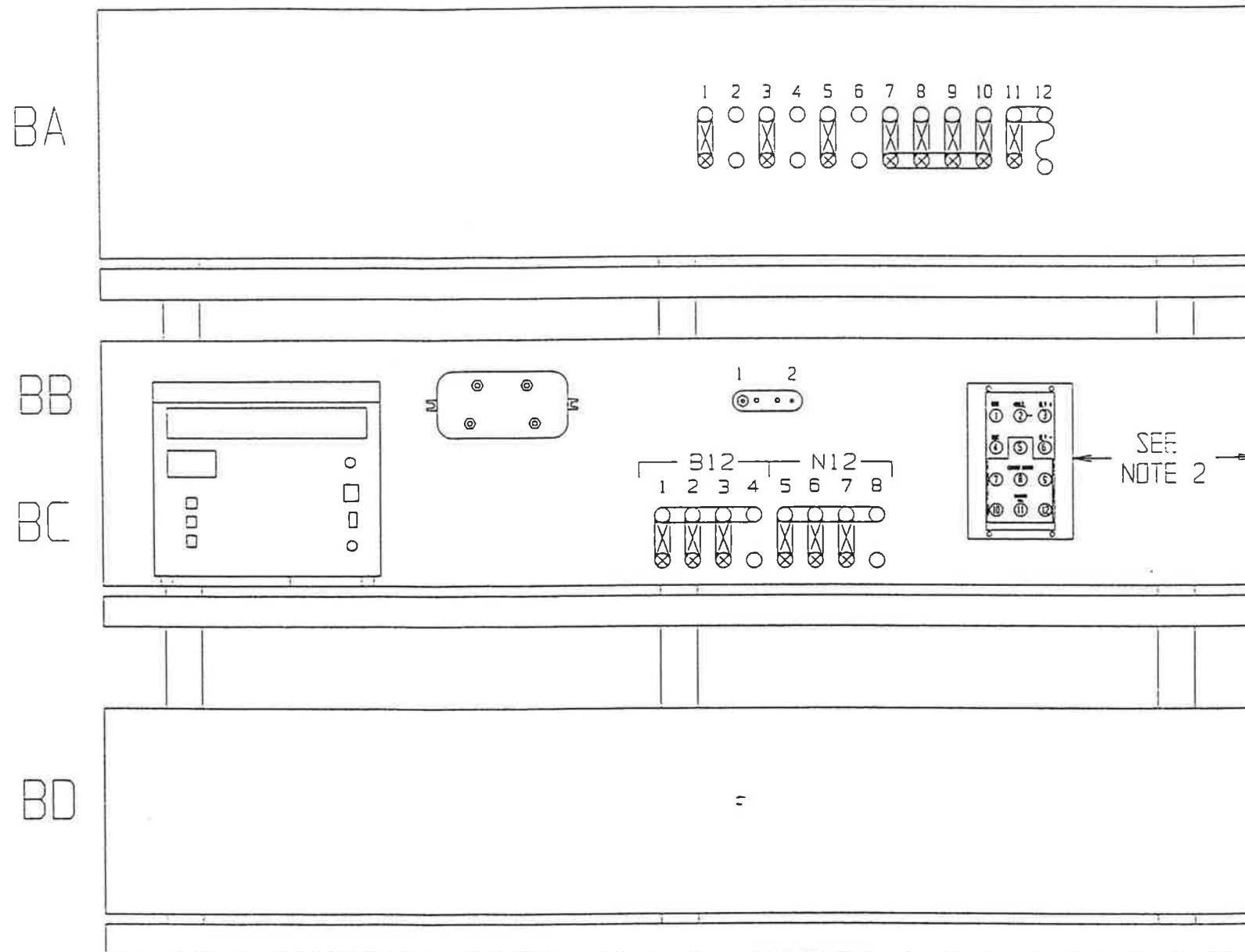
NOTES: 1. ALL RELAYS KRP140G
2. CR802-806 ARE F4, CR801 IS V222A3
3. RELAYS SHOWN IN THE ENERGIZED STATE EXCEPT K801 AND K806.

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TITLE:
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REVISION AAO	DRAWING NO. 373328-236	SHEET 8 OF 13	SIZE B
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EQUIPMENT LAYOUT



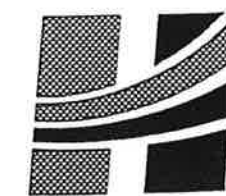
SIDE B
(INSIDE OF HOUSE)

NOTES:

1. HOLES FOR RADIO CONNECTION TO BE 1/2", ALL OTHERS 5/8".

2. LEAVE ENOUGH SPACE TO MOUNT 2nd EPIC.

1	017122-000	CHARGER ERBC 12/20 W/10' TEMP LEAD
2	010079-005	PROTECTOR BATT 18VDC SP24-2A
3	032147-004	TERM STRIP DBL POST 8
4	002230-000	RES VIT ENAM FIX 2 OHM 5 WATT
5	250183-001	ASSY 2WAY TERM BLOCK W.HDW
6	032147-000	TERM STRIP DBL POST 12
7	032147-005	TERM STRIP DBL POST 10
8	262913-001	ASSY EPIC III
9	009009-000	SWITCH SINGLE FUSE DISCONNECT
10	010002-012	FUSE 9/16X2 250V 2A ONE TIME
11	032368-1012	LUG RNG 1/4" #22-16 INS RED
12	032114-006	LUG RNG 1/4" 12-10 INS
13	032881-000	LUG SPADE #6 BLUE
14	032991-000	LUG SPADE #6 RED
15	012744-002	WIRE #6 RED TEFEZEL
16	012744-000	WIRE #6 BLK TEFEZEL
17	012742-002	WIRE #10 RED TEFEZEL
18	012742-000	WIRE #10 BLK TEFEZEL
19	012742-009	WIRE # 10 WHT TEFEZEL
20	012742-005	WIRE #10 GRN TEFEZEL
21	012744-005	WIRE #6 RED TEFEZEL
22	012743-000	WIRE #6 RED TEFEZEL
23	012743-002	WIRE #6 RED TEFEZEL



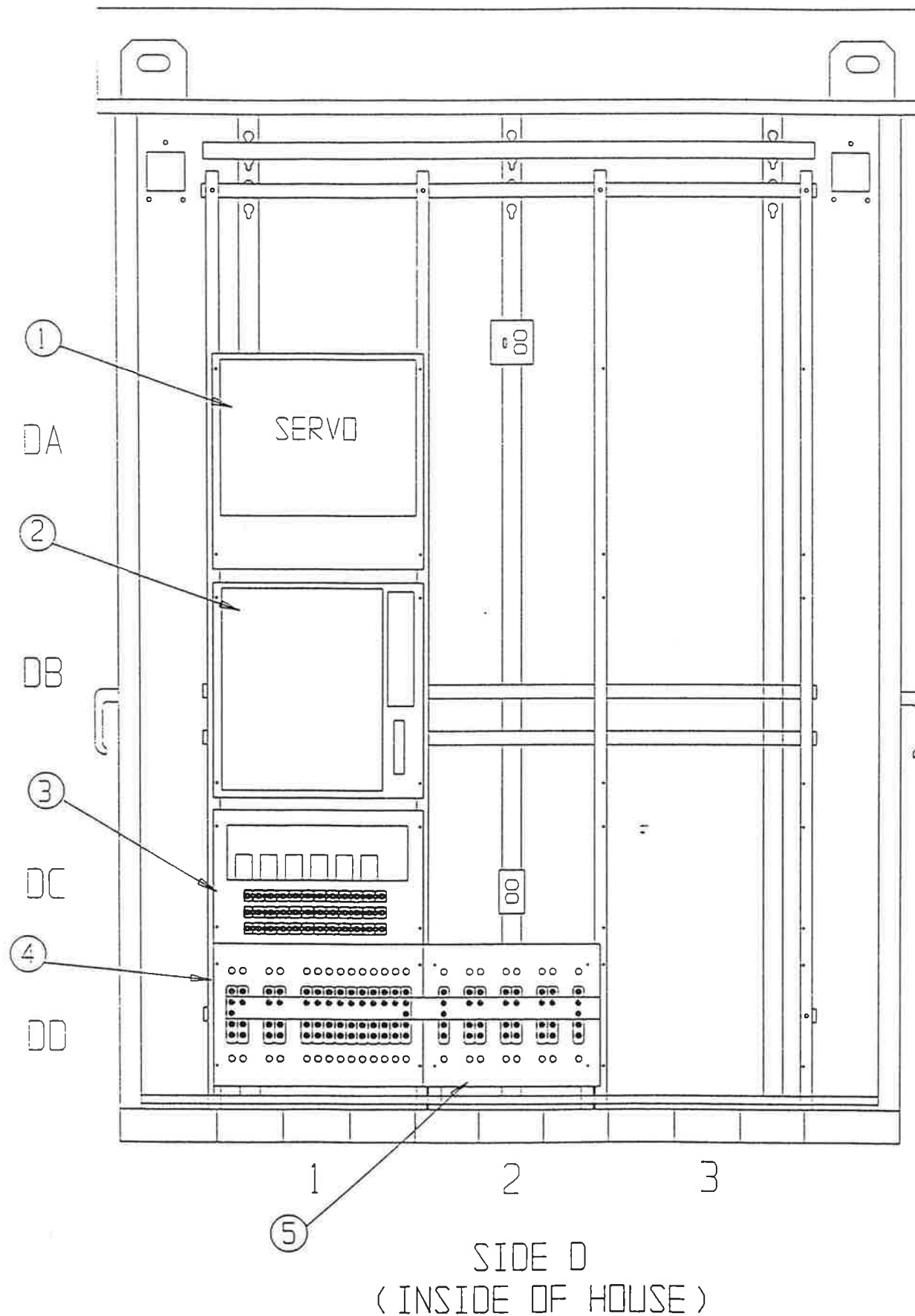
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TITLE:

CSX HBD WIRING DIA.

REVISION AAO	DRAWING NO. 373328-236	SHEET 4 OF 13	SIZE B
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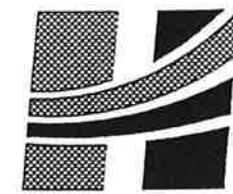
RACK LAYOUT



DIN	HPN	DESCRIPTION
1	202309-750	CYBERCAN DPU
2		"D" BOARD ASSY (PART OF 202309-710)
3		RELAY PANEL ASSY(PART OF 202309-710)
4	202395-000	ASSY SURGE PANEL HBD RACK
5	202395-001	ASSY SURGE PANEL HBD TRACK

NOTES:

1. LOCTITE ALL RACK MOUNTING HARDWARE.
2. ATTACH RS-232 CABLE PART NUMBER 014077022 TO REMOTE MODEM CONNECTION ON CYBERCAN DPU ON LEFT HAND RACK. RUN DOWN RACK TO HOLE IN RELAY PANEL, UP THE RACK CHANNEL OVER TO TOP SHELF.
3. MOUNT PRINTER SHELF BETWEEN THE TWO RACKS. USING THE LOWER SET OF HOLES.



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Grain Valley, MO 64029

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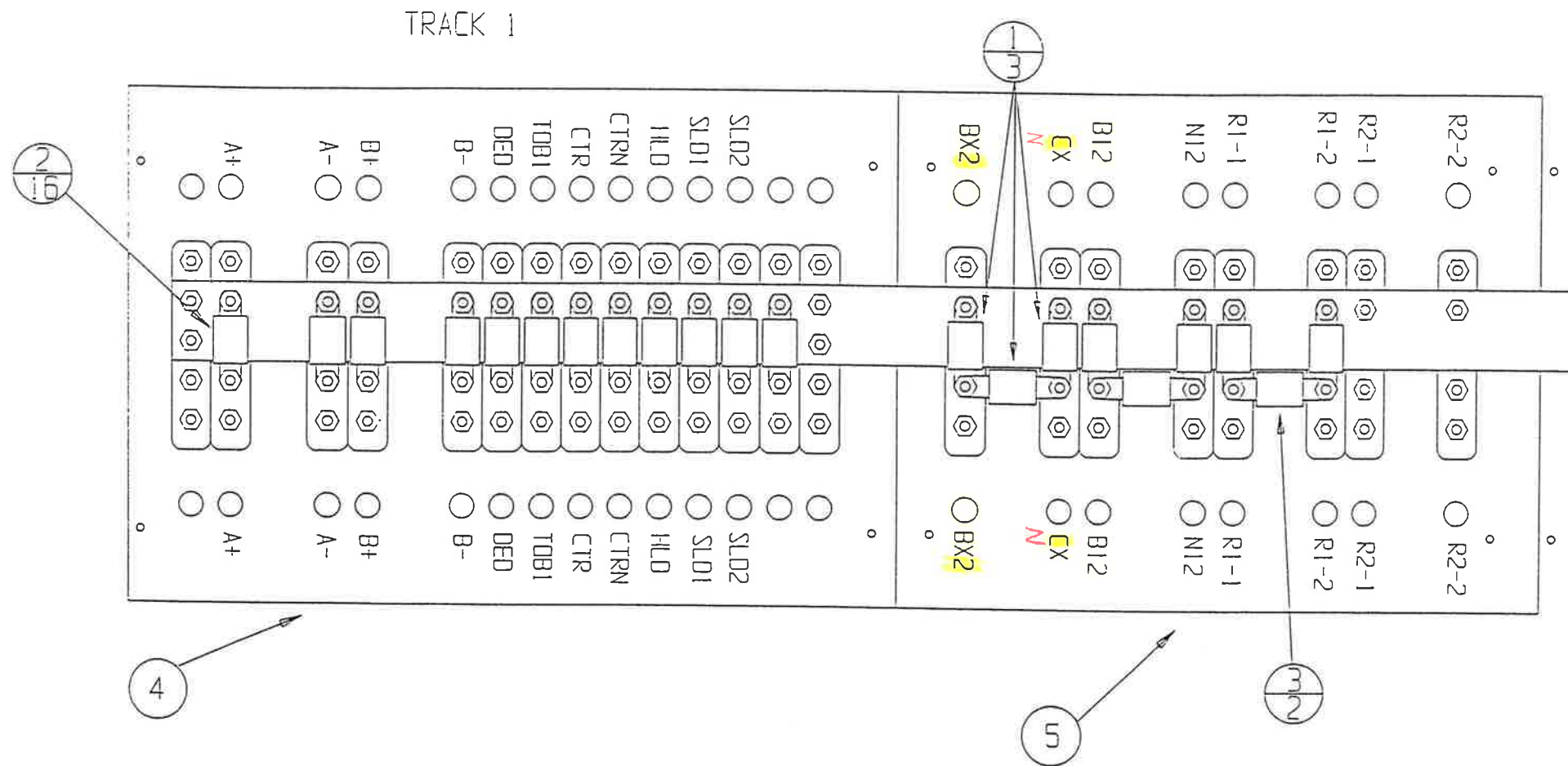
REVISION
AAO

DRAWING NO.
373328- 236

SHEET
5 OF 13

SIZE
B

ARRESTOR PANEL ASSEMBLY



NOTES;

1. NORTH TRACK IS CONFIGURED THE SAME AS SOUTH TRACK.
2. MAKE HOLE TAGS FOR TOP AND BOTTOM HOLES ON SURGE ARRESTOR PANELS.

1	010006-002	ARRESTOR CLEARVIEW
2	202216-001	ASSY AGA-1
3	202217-000	ASSY AGE-1
4	202395-000	ASSY ARREST PANEL RACK
5	202395-001	ASSY ARREST PANEL TRACK

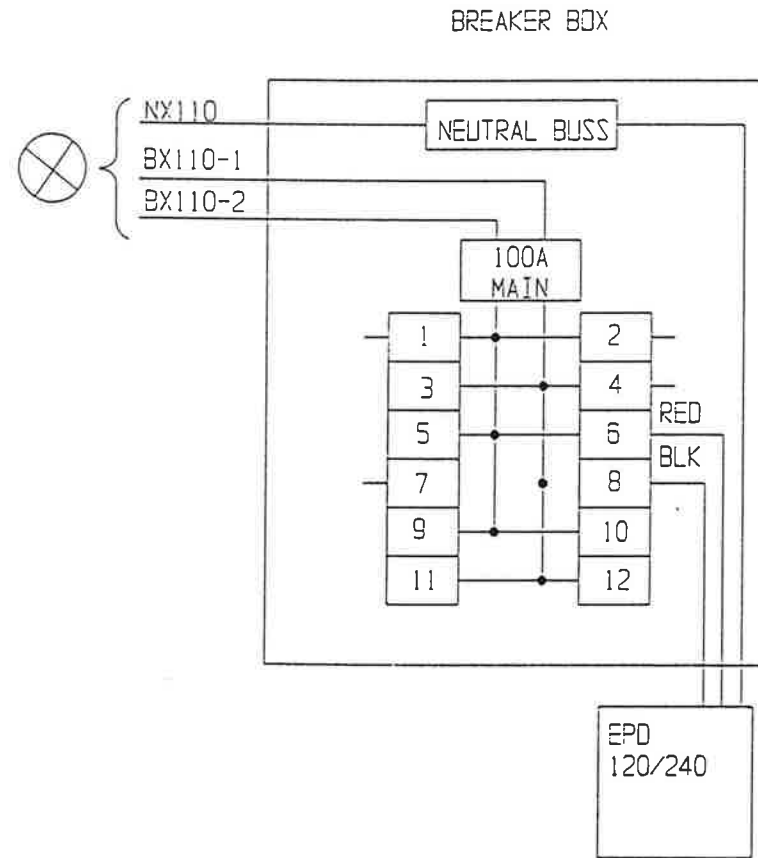
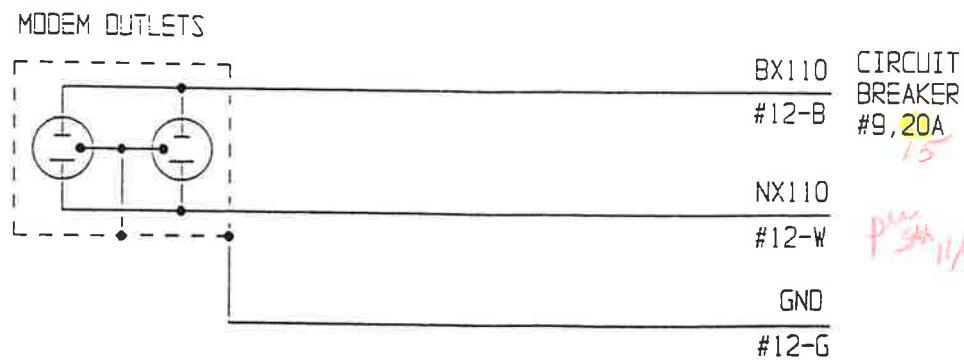
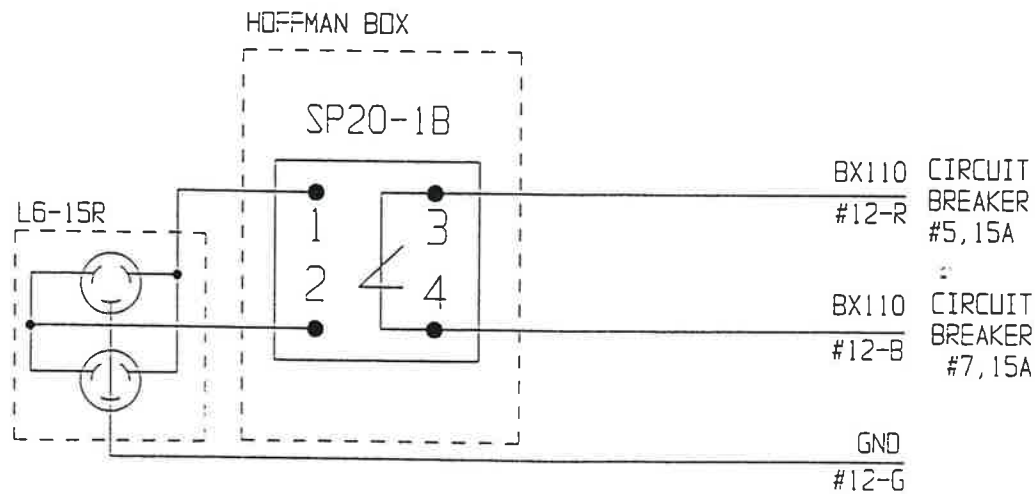
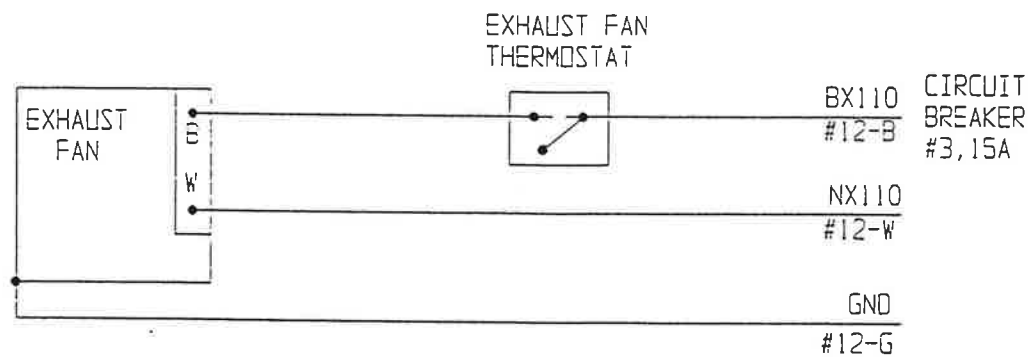
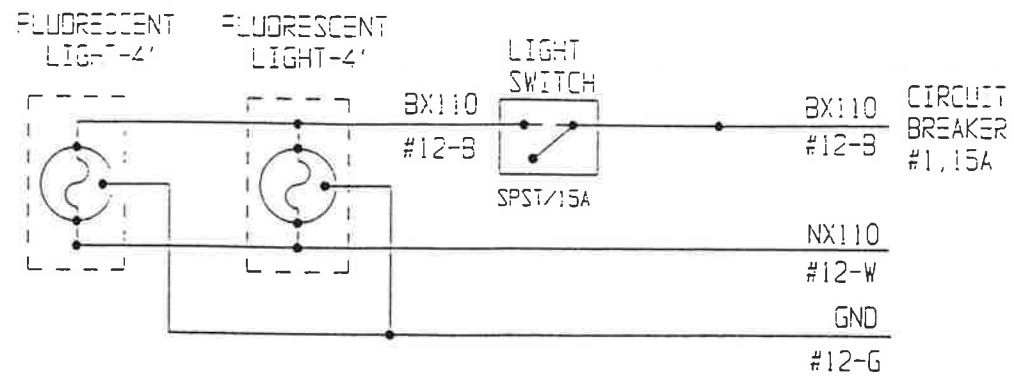


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TITLE:
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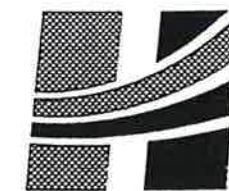
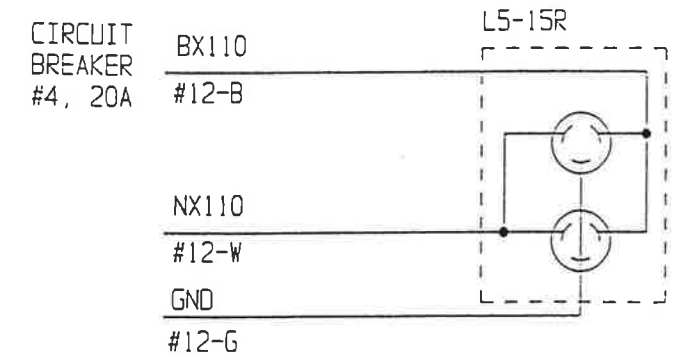
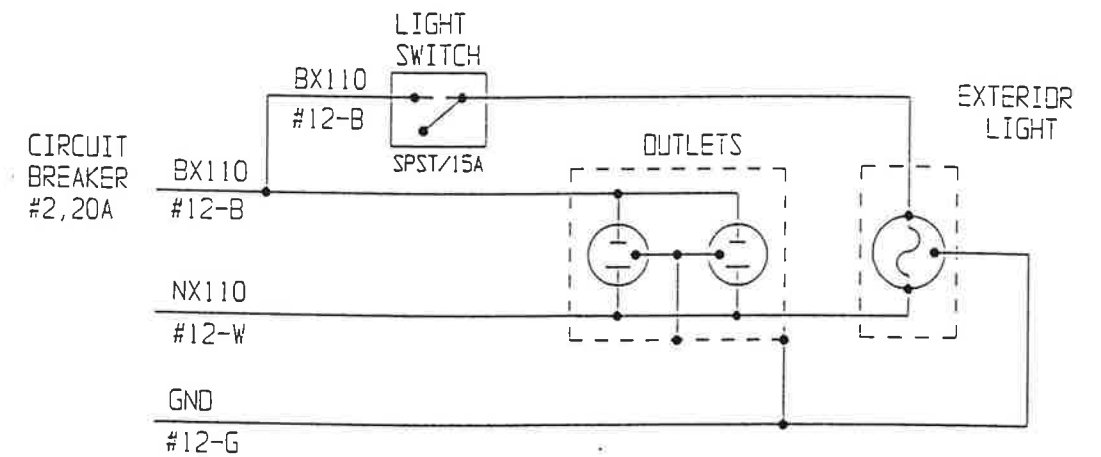
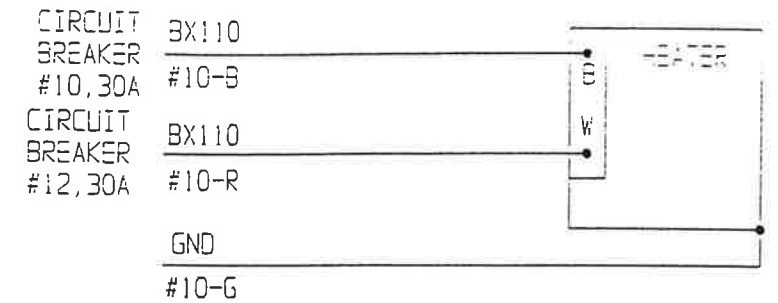
REVISION AAO	DRAWING NO. 373328- 236	SHEET 6 OF 13	SIZE B
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AC ELECTRICAL CIRCUITS



ARRANGEMENT OF BREAKERS

100 AMP DOUBLE POLE MAIN BREAKER		
1	15A LIGHTS	20A 120V RECEPT (GFCI)
3	15A FAN/THERMOSTAT	20A 120V RECEPT (HBD)
5	15A 240V RECEPTACLE (RECT)	15A SURGE SUPPRESSOR
7	15A 240V RECEPTACLE (RECT)	15A SURGE SUPPRESSOR
9	20A 120V RECEPT (MODEM)	30A 240V HEATER
11	SPARE	30A 240V HEATER



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AAO

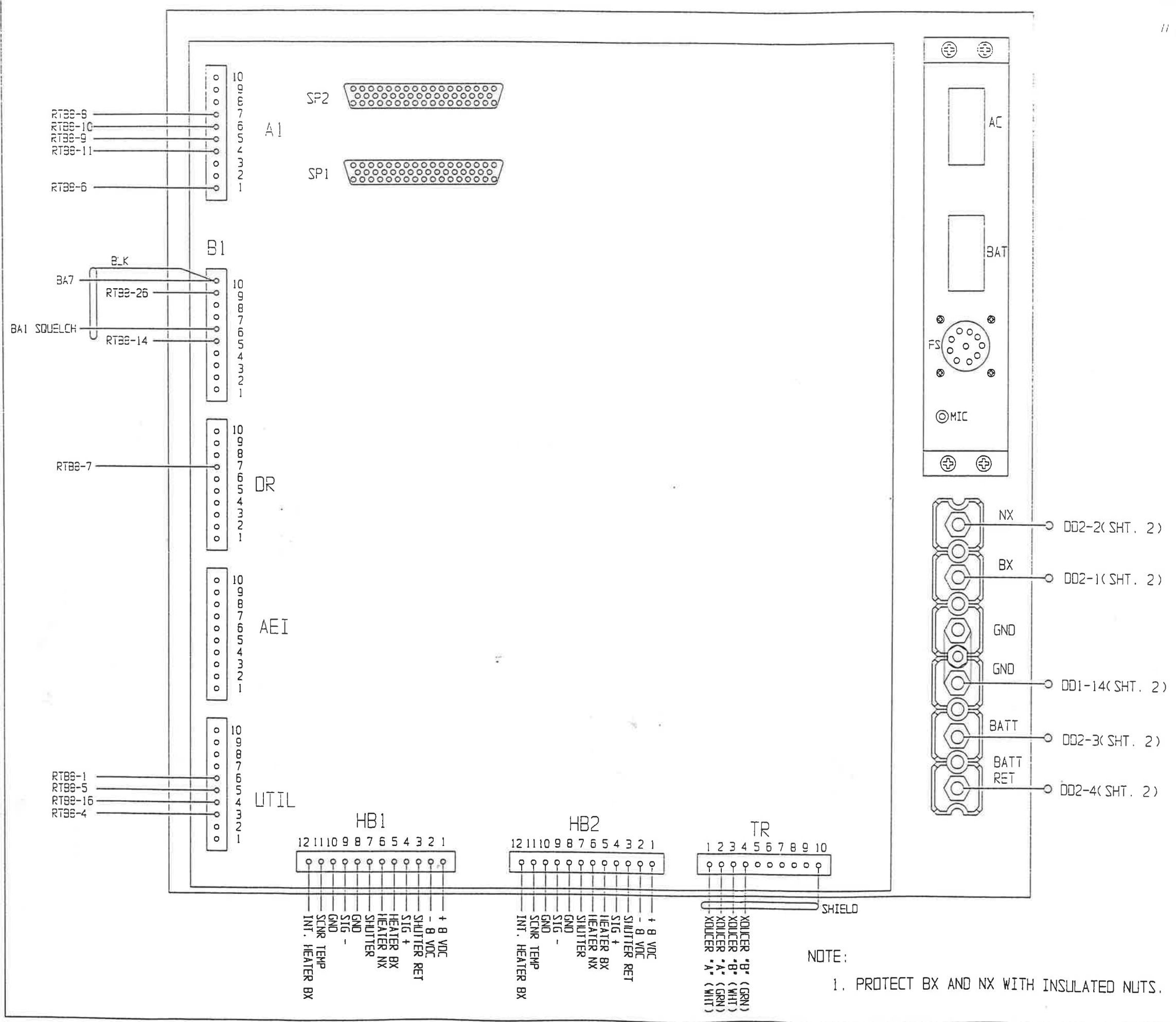
DRAWING NO.
373328-236

SHEET
7 OF 13
SIZE
B

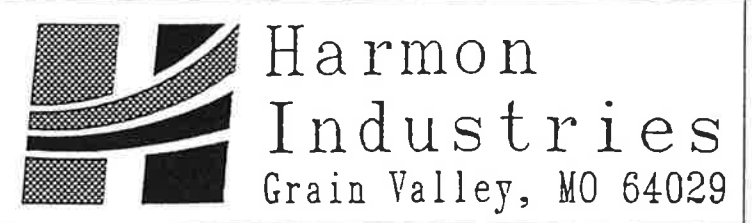
"D" BOARD CONN. TRK 1)

"D" BOARD JUMPERS AND THERE POSITIONS

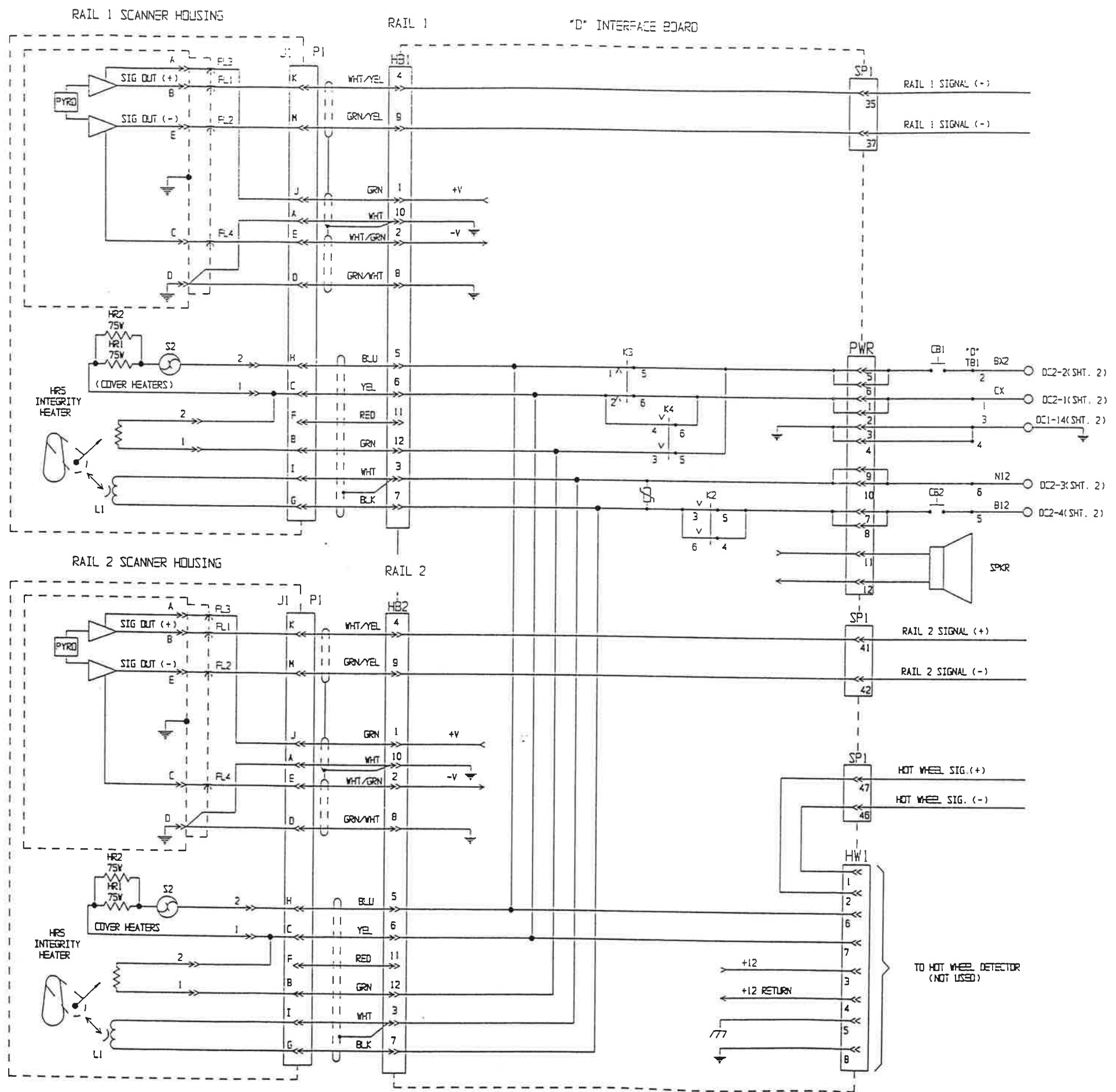
JP25	ENABLED
JP24	DISABLED
JP23	DISABLED
JP22	DISABLED
JP21	DISABLED
JP20	DISABLED
JP19	DISABLED
JP18	ENABLED
JP17	ENABLED
JP16	ENABLED
JP15	ENABLED
JP14	ENABLED
JP13	1-2
JP12	1-2
JP11	1-2
JP10	1-2
JP09	2-3
JP08	2-3
JP07	2-3
JP06	2-3
JP05	DISABLED
JP04	DISABLED
JP03	ENABLED
JP02	ENABLED
JP01	ENABLED
JPC	2-3
JPD	1-2



NOTE:
1. PROTECT BX AND NX WITH INSULATED NUTS.



TITLE: CSX HBD WIRING DIA.			
REVISION AA0	DRAWING NO. 373328- 236	SHEET 9 OF 13	SIZE B



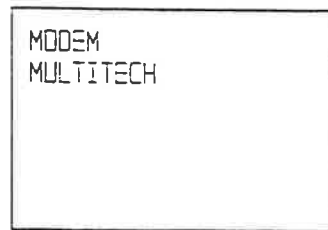
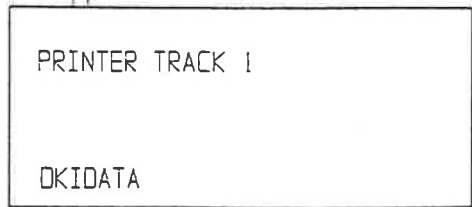
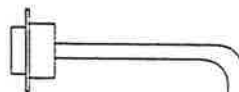
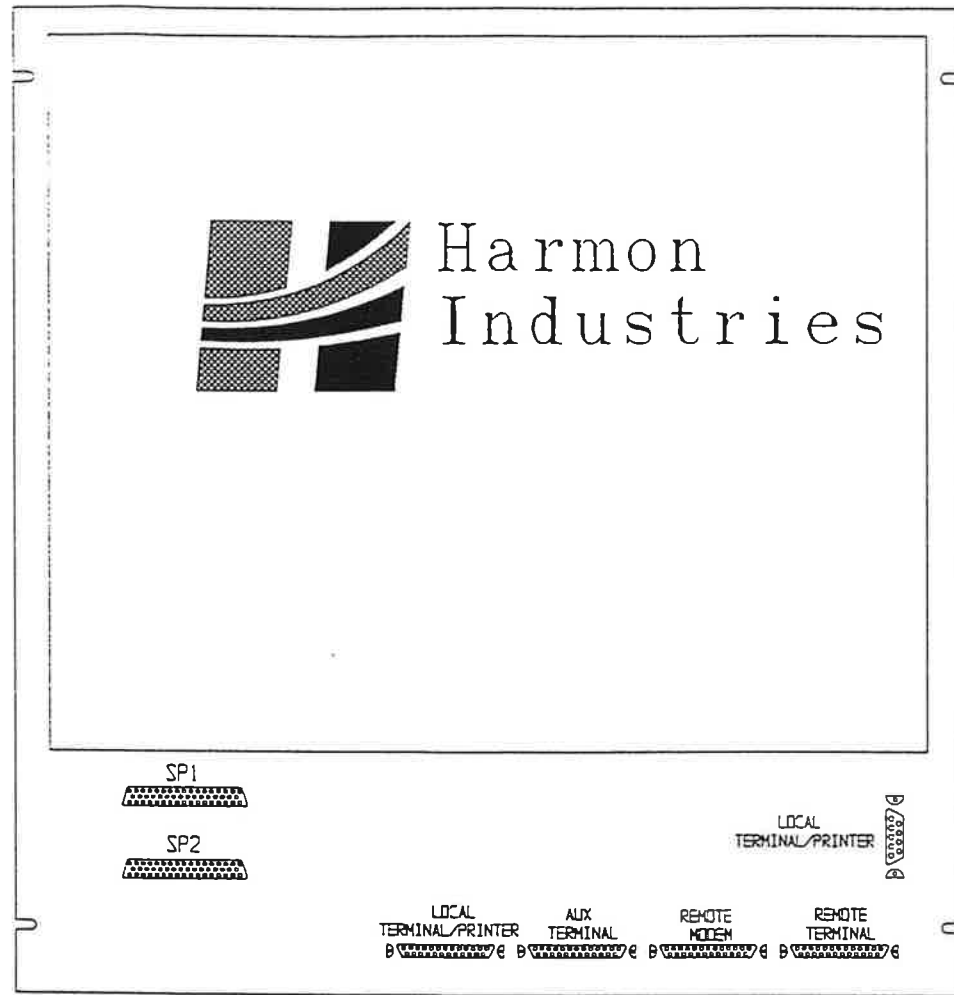
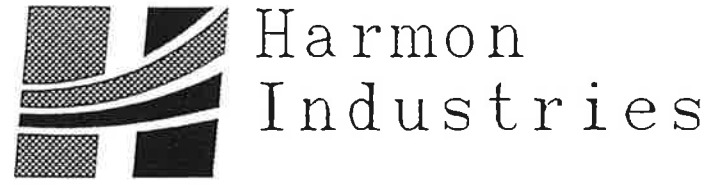
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TITLE:
CSX HBD WIRING DIA.

REVISION AAO	DRAWING NO. 373328- 236	SHEET OF 13	SIZE B
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TRACK 1 DPU

PRINTER/MODEM CONNECTION

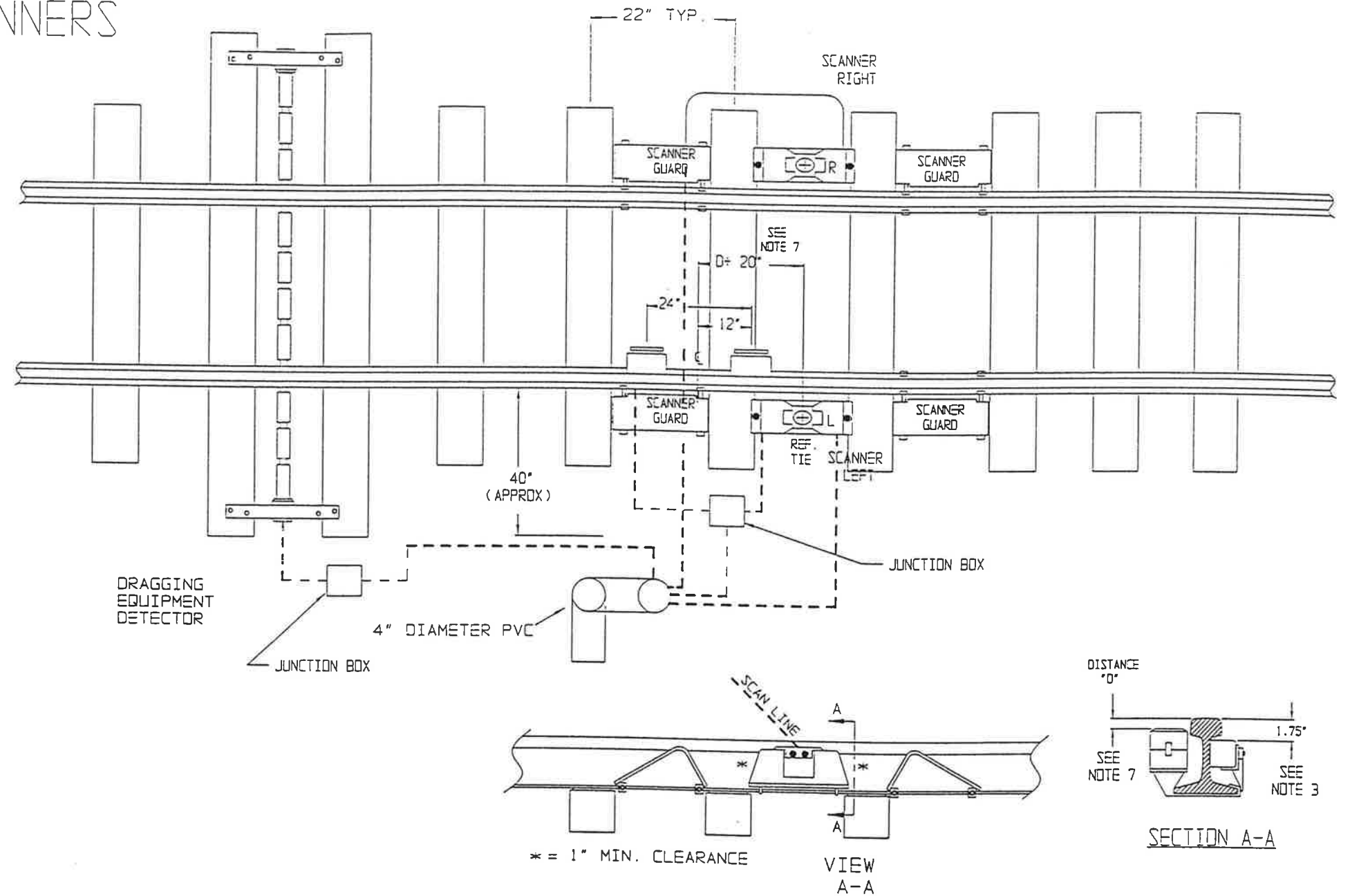


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TITLE:
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REVISION AAO	DRAWING NO. 373328- 236	SHEET OF 11 OF 13	SIZE B
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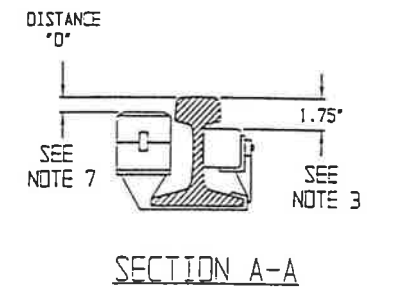
TRACK LAYOUT LOW PROFILE SCANNERS

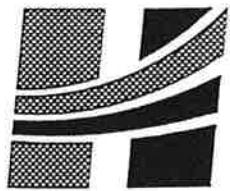


RAIL MOUNTING SCANNERS & TRANSDUCERS

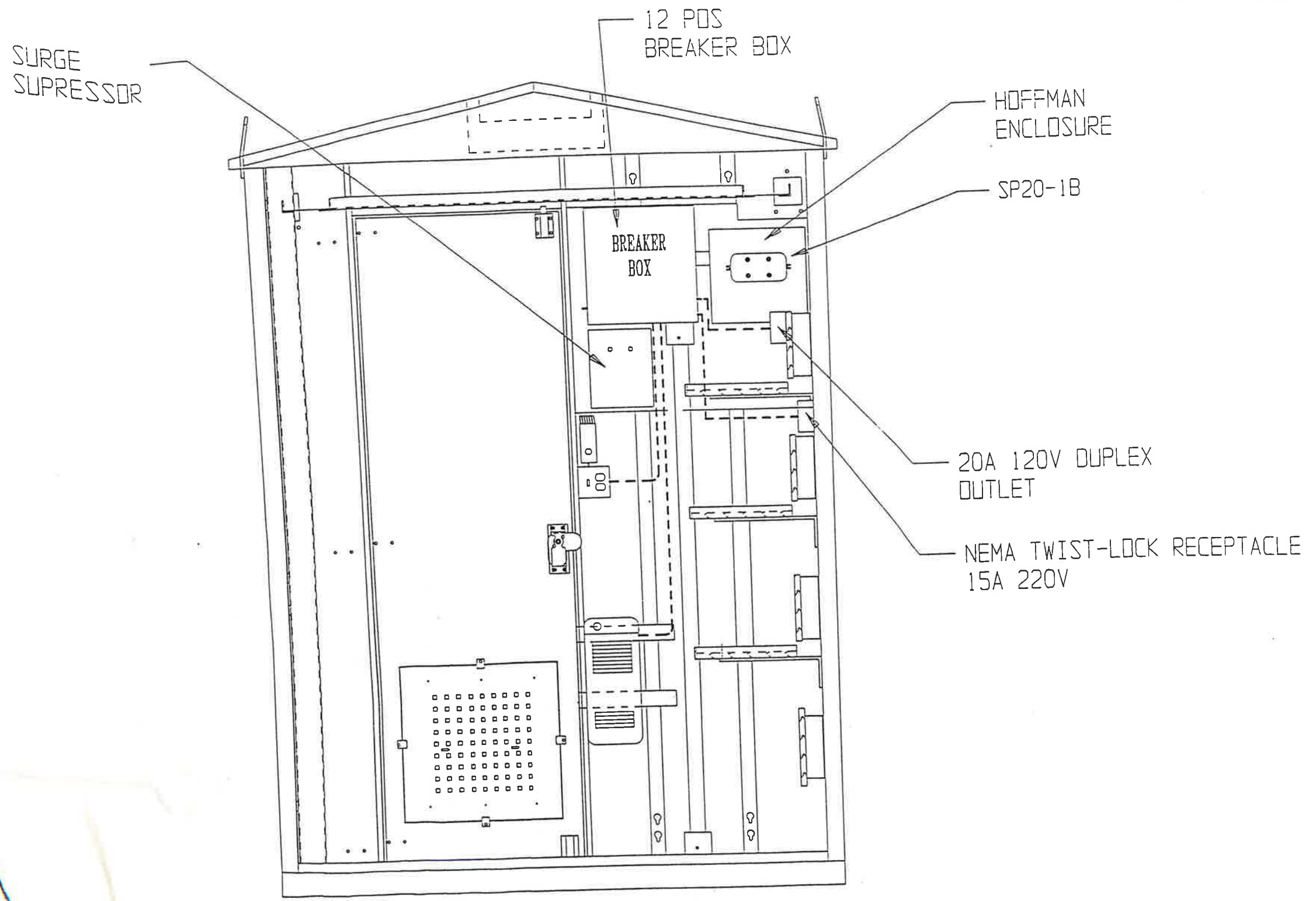
NOTES:

1. ALL CROSS TIES MUST BE PERPENDICULAR TO RAIL. IT IS IMPORTANT TO ACCURATELY LOCATE SCANNERS DIRECTLY OPPOSITE EACH OTHER WITH CENTER LINES COINCIDING AND SQUARE WITH TRACK. USE TRIANGULATION METHOD FOR INCREASED SCANNER LOCATION ACCURACY. NO SPIKES OR RAIL ANCHORS ARE TO BE UNDER THE SCANNERS. REMOVE THEM BEFORE INSTALLING SCANNERS.
2. THE RAIL AT THE SCANNER LOCATION MUST BE ANCHORED AT EACH TIE SHOWN ON TRACK LAYOUT DRAWING, TO PREVENT RAIL RUN THAT WOULD DISPLACE TRANSDUCER. TRACK GAGE MUST BE TIGHT TO MINIMIZE LATERAL MOVEMENT OF TRACKS.
3. TRANSDUCER TO BE MOUNTED AS CLOSE AS POSSIBLE TO 1.75" DIMENSION. FOR RAIL WHICH DOES NOT PERMIT MEETING OF MAXIMUM 2.0" CONSULT MANAGER OF DETECTOR SYSTEMS.
4. REMOVE ANTI-CREEP DEVICES WHICH INTERFERE WITH THE SCANNER OR TRANSDUCER INSTALLATION.
5. WHEN USING UNIVERSAL ALIGNMENT FIXTURE THIS DISTANCE IS DETERMINED BY PARA. 2.1 IN TMB3-02-08R86-05. WHEN ALIGNMENT FIXTURE IS NOT AVAILABLE MEASURE DISTANCE "D" FROM TOP HEAD OF RAIL TO TOP SURFACE OF SCANNER (SECTION A-A) AND ADD 20" TO OBTAIN MIDPOINT BETWEEN THE MAGNETIC CENTERLINES OF TRANSDUCERS A AND B. THIS MEASUREMENT SHOULD BE VERIFIED USING A UNIVERSAL ALIGNMENT FIXTURE AS SOON AS POSSIBLE.
6. IT IS IMPORTANT TO MINIMIZE THE LATERAL DISPLACEMENT OF THE JOURNAL TARGET, MAINTAIN TRACK GAGE AT 56.5" FOR A MINIMUM OF 100' FROM THE SCANNER IN EACH DIRECTION.
7. IF ADVANCE TRANSDUCERS ARE USED THEY SHOULD BE PLACED APPROXIMATELY 100' FROM SCANNER CENTERLINE.



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TITLE:			
CSX HBD WIRING DIA.			
REVISION	DRAWING NO.	SHEET	SIZE
AAO	373328- 236	12 OF 13	B

POWER DISTRIBUTION LAYOUT



SURGE SUPPRESSOR

12 POS BREAKER BOX

HOFFMAN ENCLOSURE

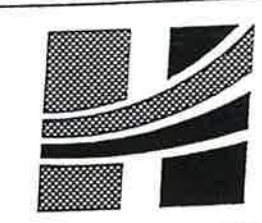
SP20-1B

BREAKER BOX

20A 120V DUPLEX OUTLET

NEMA TWIST-LOCK RECEPTACLE 15A 220V

SIDE A
(INSIDE OF HOUSE)

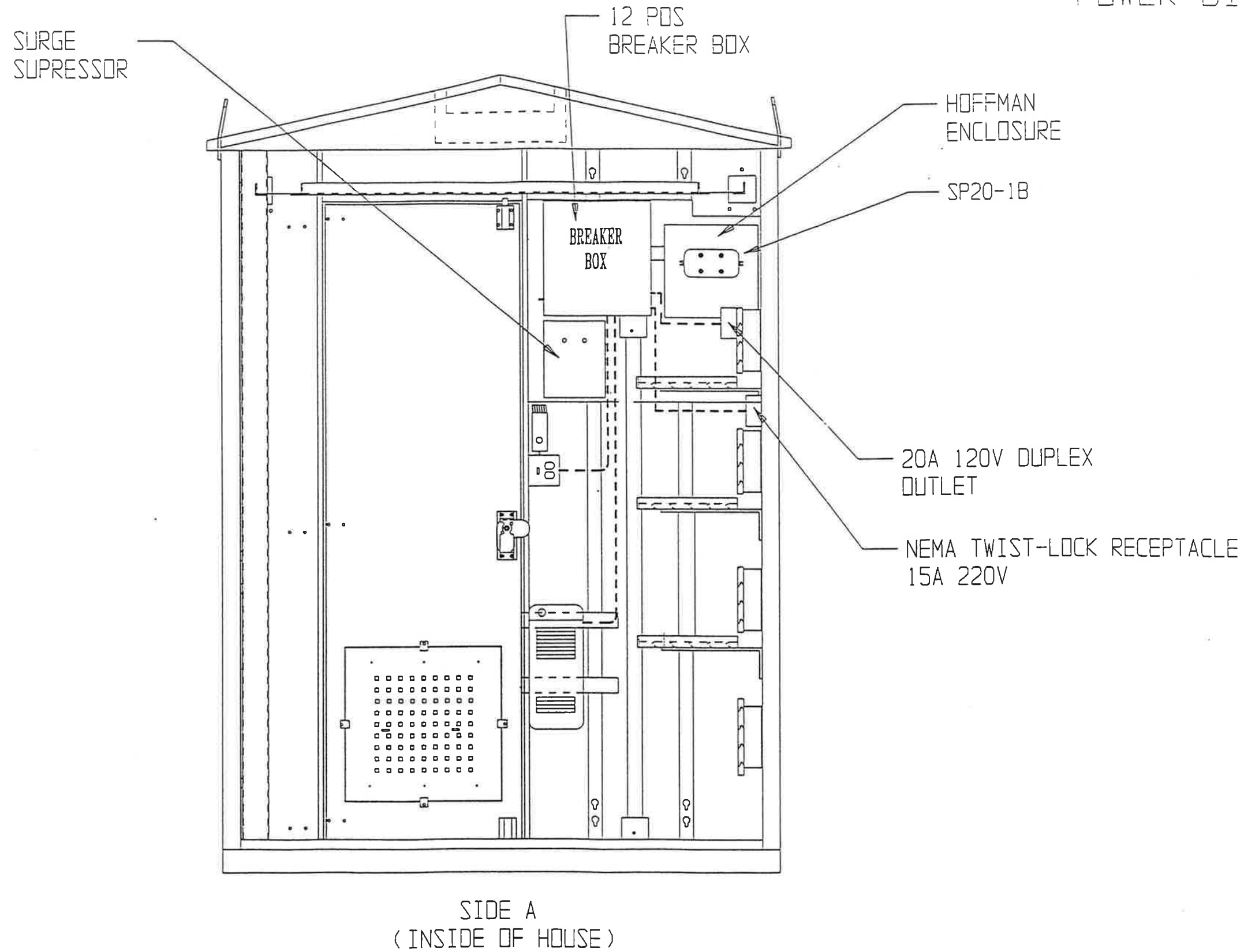


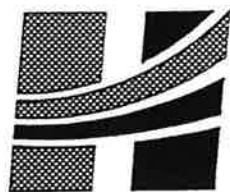
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Grain Valley, MO 640

TITLE:
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REVISION AAO	DRAWING NO. 373328- 236	SHEET OF 13 OF 13
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POWER DISTRIBUTION LAYOUT



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TITLE: CSX HBD WIRING DIA.			
REVISION AAO	DRAWING NO. 373328- 236	SHEET 13 OF 13	SIZE B