
SPECIFICATION

**NON-ROTARY
ALUMINUM AUTOFLOOD III™ CAR
OUTSIDE STAKE DOUBLE DOOR DESIGN
4,200 Cubic Foot Capacity**

Specification 1462-002AB

for

 **PROJECT**



April 29, 2005

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Specification 1462-002AB

Non-Rotary Aluminum AutoFlood III™ Car Outside Stake Double Door Design 4,200 Cubic Foot Capacity

GENERAL DIMENSIONS	
LENGTH	
Truck Centers	40' 6"
Inside Length	47' 9-1/8"
Over Strikers	50' 5"
Over Pulling Face of Free Couplers	53' 0-1/2"
WIDTH	
Inside Width	10' 1-3/8"
Over Top Chords (Extreme Width with the Pick-up Shoes Gagged)	10' 8"
HEIGHT	
Rail to Top of Side Top Chord	13' 3"
Rail to Top of Corner Cap Fastener (Extreme Height)	13' 4"
FLOOR SLOPE	
End – Upper Intermediate – Crossridge	45 Degrees
Lower Intermediate Floor	50 Degrees
Longitudinal Hoods	60 Degrees
CAPACITY / WEIGHTS	
Cubic Capacity - Level	4,200 Cubic Feet
Cubic Capacity - 10" Average Heap	4,603 Cubic Feet
Lightweight (Estimated)	49,100 Pounds
Gross Rail Load	286,000 Pounds
Load Limit	236,900 Pounds
Center of Gravity Above Rail - 10" Average Heap - 286,000# Gross Rail Load	94.7"

GENERAL DESCRIPTION

Completed car is to be an open top coal car designed with:

- All Steel Underframe
- Aluminum, Outside Stake, Riveted Side Assembly
- Two Interior K-Frame Braces with Two Additional Horizontal Top Ties Through Center Sill
- Five Hopper Pockets and Sixteen Air Operated Aluminum Doors

The car design is based on a 286,000 pound gross rail load, AAR Plate "B" clearance diagram with the pick-up shoes gagged, and unit train bottom dump service operating on track meeting the requirements of the U. S. Department of Transportation Federal Railroad Administration 49CFR, Part 213.

With the following exception, this car was designed to meet or exceed all applicable requirements of the Association of American Railroads and the U. S. Department of Transportation Federal Railroad Administration on the date the specification was written. The 286,000 pound gross rail load exceeds the maximum allowable track load as stated in paragraph 2.1.2.2 of the Association of American Railroads (AAR), Mechanical Division, Manual of Standards and Recommended Practices, Section C, Part II. The AAR manual allows a track load of 263,000 pounds for a car with a 4 wheel truck and a 36" wheel size.

Shaded items denote parts or designs that are patented or patent pending.

TRUCKS

CAPACITY	Designed for 286,000# Gross Rail Load, AAR M-976 Compliant
WHEELS	CH36, Class "C", One Wear
WHEEL BASE	5' 10"
AXLES	AAR Standard for 6-1/2" x 9" NFL Roller Bearings, Grade "F"
ROLLER BEARINGS	NFL 6-1/2" x 9"
BRAKE SHOES	2" Thick Composition
BRAKE BEAMS	#24 Unit Type
BRAKE BEAM WEAR LINERS	Non-metallic
LEVERS	Drop Forged
BOTTOM ROD	Through Bolster
SIDE BEARINGS	Constant Contact – Long Travel
BOLSTERS	Light Weight Design Center Plate Bowl 16" Diameter x 1-3/4" Deep Above Horizontal Bowl Liner
SIDE FRAMES	Light Weight Design Column Wear Plate Applied by Grade 8 Bolts, No Welding
SNUBBING	S-2-HD with Split Wedge
SUPPLEMENTAL SNUBBING	Not Required
SPRING GROUP	7 AAR D-5 OC 7 AAR D-5 IC
ADAPTERS	ASF/Pennsy Adapter Plus
PEDESTAL FRAME KEYS	Not Included
PEDESTAL ROOF LINERS	Included with Adapter Plus
CENTER BOWL LINER	Welded-in Stainless Steel Vertical Wear Ring with a Drop-in Manganese Horizontal Wear Liner

BRAKE EQUIPMENT

TYPE	Foundation brake rigging, utilizing a conventional pipe bracket, a fabricated reservoir, a 10" x 12" brake cylinder, and AAR approved brake hoses. A cylinder pressure port is included.
SLACK ADJUSTER	Double-acting, mounted above the center sill.
HAND BRAKE	AAR 1993 approved, mounted low with long release handle.
SAFETY APPLIANCES	Crossover platform on both ends of car.
EMPTY / LOAD DEVICE	Floor mounted with 40% proportioning valve.
AIR & HAND BRAKE RATIO	Per AAR S-401 specification, latest revision.

MATERIAL SPECIFICATION

Material used in the construction of the car and not specifically mentioned
will meet the following minimum specifications:

Steel Bars	ASTM A-36	*All steel material 1/4" or less in thickness, or in contact with lading, shall contain a minimum of 0.20% Copper.
Steel Plates	ASTM A-36	
Steel Shapes	ASTM A-36	
Steel Strips	ASTM A-570, Gr. 33	
Steel Sheets	ASTM A-570, Gr. 33	
Aluminum Plates	5454-H34	
Aluminum Extrusions	6061-T6	
Brake Pipe & Fittings	ASTM A-53	
Safety Appliances	ASTM A-576, Gr. C-1015, C-1020	

#/CAR	PART DESCRIPTION	MATERIAL SIZE	MATERIAL SPECIFICATION
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DRAFT AREA

2	Draft Sill Casting	Light weight design, arranged for Type "E" couplers, with integral hardened center plates.	AAR M-201, Gr. "B+"
2	Coupler & Yoke	Type "E"	AAR M-211, Gr. "E"
2	Uncoupling Device	Standard for Type "E"	Manufacturer's Standard
2	Coupler Carrier Wear Plates		Manganese Steel
2	Draft Gear	For 24-5/8" Pocket	AAR M-901-E

UNDERFRAME

1	Center Sill	0.40" One Piece, Roll Formed Section	ASTM A-935, Gr. 70, Class 2, Type 1, 0.20% Minimum Copper
2	Bolster Web	5/16" Plate	ASTM A-572, Gr. 50
2	Bolster Shear Plate	1/2" Plate	ASTM A-572, Gr. 50, Type 2
4	Bolster to Center Sill Gusset	1/4" Plate	ASTM A-572, Gr. 50, 0.20% Minimum Copper
4	Bolster to Side Connection	3/8" Plate	ASTM A-36
8	Side Bearing Web	5/16" Plate	ASTM A-572, Gr. 50
4	Side Bearing Tie Plate	3/8" Plate	ASTM A-572, Gr. 50, Type 2
4	Side Bearing Face Plate	3/8" Plate	ASTM A-572, Gr. 50, Type 2
2	Center Sill to Draft Sill Tie Plate	3/8" Plate	ASTM A-935, Gr. 70, Class 2, Type 1

#/CAR	PART DESCRIPTION	MATERIAL SIZE	MATERIAL SPECIFICATION
ALUMINUM SIDE ASSEMBLY			
2	Center Side Sheet-Upper	0.150" Minimum Plate	5454-H34
2	Center Side Sheet-Lower	0.150" Minimum Plate	5454-H34
4	End Side Sheet	0.150" Minimum Plate	5454-H34
2	Side Top Chord	Extrusion AE-201	6061-T6
2	Side Sill	Extrusion AE-203	6061-T6
4	Side Stake - Bolster	Extrusion AE-202	6061-T6
8	Side Stake - Crossridge	Extrusion AE-202	6061-T6
14	Side Stake - Intermediate	Extrusion AE-202	6061-T6
END ASSEMBLY			
2	End Top Chord	Extrusion AE-155	6061-T6
2	End Sheet	0.150" Minimum Plate	5454-H34
1	Hand Brake Post - Left	3" x 2-1/2" x 5/16" Extrusion Angle	6061-T6
1	Hand Brake Post - Right	3" x 3" x 5/16" Extrusion Angle	6061-T6
3	End Post	3" x 3" x 5/16" Extrusion Angle	6061-T6
4	Corner Post	3-1/2" x 3-1/2" x 1/4" Extrusion Angle	6061-T6
ALUMINUM FLOORS			
2	End Floor	0.20" Plate	5454-H34
2	Intermediate Sloped Floor	0.22" Plate	5454-H34
4	Lower Sloped Floor	0.22" Plate	5454-H34
4	Crossridge Floor	0.22" Plate	5454-H34
5	Longitudinal Hood	0.18" Plate	5454-H34
10	Inside Hopper Sheet	0.18" Plate	5454-H34
10	Outside Hopper Sheet	0.18" Plate	5454-H34
16	Hopper Door	0.22" Plate	5454-H34
ALUMINUM INTERIOR BRACING			
4	Diagonal Tie	Extrusion AE-125	6061-T6
4	Connection K-Frame to Side	Extrusion AE-176	6061-T6
	Connection Top Tie to Side	Extrusion AE-176	6061-T6
2	Connection Diagonal Tie at Bottom	Extrusion AE-175	6061-T6
4	Transverse Tie	Extrusion AE-124	6061-T6
8	Top Tie Isolator		Non-metallic
16	Pin	Hex Head Shoulder Bolt with Flanged Locknut	50,000 PSI Minimum Yield

#/CAR	PART DESCRIPTION	MATERIAL SIZE	MATERIAL SPECIFICATION
MISCELLANEOUS PARTS			
2	AEI Tag	Applied with a Fabricated Bracket	AAR Approved
2	Route Card Holder	Fabricated Bracket	AAR Approved
1	Brake Badge Plate	Etched in Black Enamel	0.032" Stainless Steel
1	Defect Card Holder	Fabricated Bracket	AAR Approved
All	Grab Irons / Ladders / Handholds	Under 36" Long - 3/4" Diameter Over 36" Long - 1" Diameter	ASTM A-576, Gr. C-1015, C-1020
4	Corner Cap	Drop Forged	AISI C-1040/1045
4	Sill Step	2" x 1/2" Bar	ASTM A-576, Gr. C-1015, C-1020
2	Kingpin	1-3/4" Diameter	ASTM A-36
1	Handbrake Mounting Plate	5/16" Plate	ASTM A-36
8	Door Spreader	0.30" Roll Formed Section	ASTM A-935, Gr. 70, Class 2, Type 1, 0.20% Minimum Copper
4	Lower Floor Support	Extrusion AE-205	6061-T6
2	End Floor Support	Extrusion AE-205	6061-T6
8	Intermediate Floor Support	Extrusion AE-205	6061-T6
32	Door Hinge	Cast Steel	Grade "B"
32	Door Spreader Reinforcement	1/4" Plate	ASTM A-572, Gr. 50
4	Sub Side Sill	5" x 3-1/2" x 5/16" Angle	ASTM A-572, Gr. 50
2	End Sill	5" x 3-1/2" x 5/16" Angle	ASTM A-572, Gr. 50
3	Corner Diagonal Brace	3-1/2" x 3-1/2" x 5/16" Angle	ASTM A-572, Gr. 50
3	Bottom Corner Connection	3/8" Plate	ASTM A-36
1	Bottom Corner Connection and Valve Support	1/2" Plate	ASTM A-36
DOOR OPERATING MECHANISM			
TYPE	FreightCar America MegaFlo™ System		
ACTUATION	Electric by Pick-up Shoe from Wayside Rail.		
RESERVOIR CAPACITY	40 Gallon		
PICK-UP SHOE	FreightCar America Design or Equivalent		
PNEUMATIC SYSTEM	To Include: Air Cylinder with Locking Safety Latch Check Valve Cut-off Valve Spool Valve Designed for Nominal 24 Volt DC Power Air Filter Manual Drain Valve		
CONDUIT	Coated, 400 Degree Rated Electrical Wiring, Enclosed in Flexible Conduit.		
DOOR LINE	1" Diameter Mounted Low, Below the End Sill.		

CLEANING & PAINTING

CLEANING	Exterior surface of steel underframe to be prepared for painting per specification SSPC-SP7, Brush-off Blast Cleaning.
LAPS & JOINTS	One coat of water based primer to be applied to all fastened steel-to-steel surfaces prior to assembly. One coat of mastic sealer or closed cell polyethylene tape to be applied to all fastened steel-to-aluminum surfaces prior to assembly.
INACCESSIBLE SURFACES	All steel surfaces, including draft gear pocket, which will be inaccessible after assembly to be given one coat of water based primer unless it interferes with welding.
CAR BODY & UNDERFRAME	Steel surfaces to receive one coat of black direct-to-metal water based finish paint, 3 mils minimum dry film thickness. Entire underframe to be painted black. The door system to be painted black; the outside aprons and door pans may remain unpainted. Aluminum car body unpainted unless noted. All grab irons, handholds and corner caps to be painted or powder coated.
ENDS	Aluminum ends and end side components to remain unpainted. The exterior surface of the end floor to be painted black.
TRUCKS	To receive one, light bodied, coat of black paint at the foundry, touch-up if necessary.
DELINEATORS	The sides to consist of yellow retroreflective sheeting to meet the requirements of the FRA 49CFR Part 224. The end of car will receive two additional reflective delineators applied to each end.
LETTERING	White lettering on black surfaces, black lettering on unpainted aluminum. All lettering except those placed on castings to be decals. Lettering placed on castings will be stenciled.
MISCELLANEOUS	Ends of release rod, retainer valve handle, end cock handles, cutout cock pull rod handle, ends of cut lever handles, and top three links of hand brake chain to be painted white. Hand brake to be painted with black finish paint from hand brake manufacturer.

FASTENERS

Location and type of fasteners to be FreightCar America's option.

WELDING

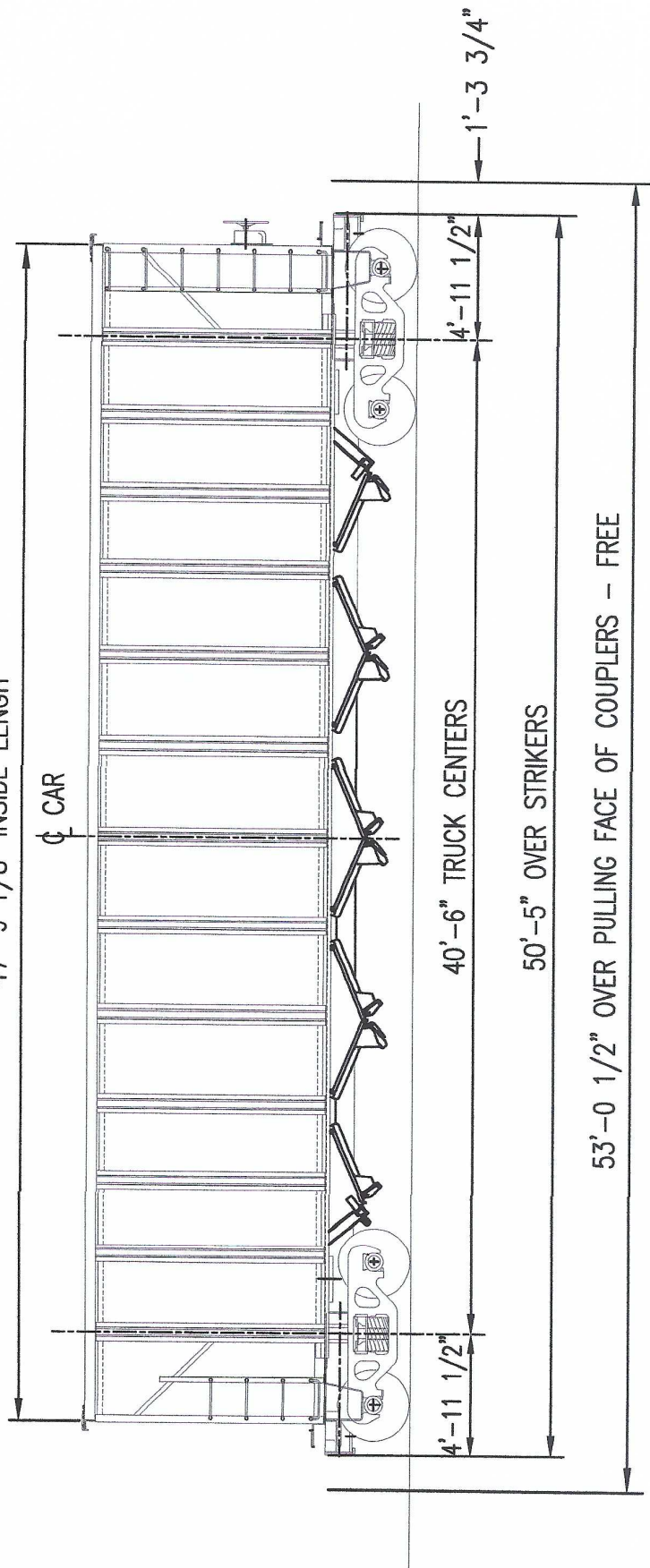
All welds to be in compliance with AWS D15.1, Class 2, unless otherwise specified.

ORDER COMPLETION DATA

At completion of order, the following data will be furnished:

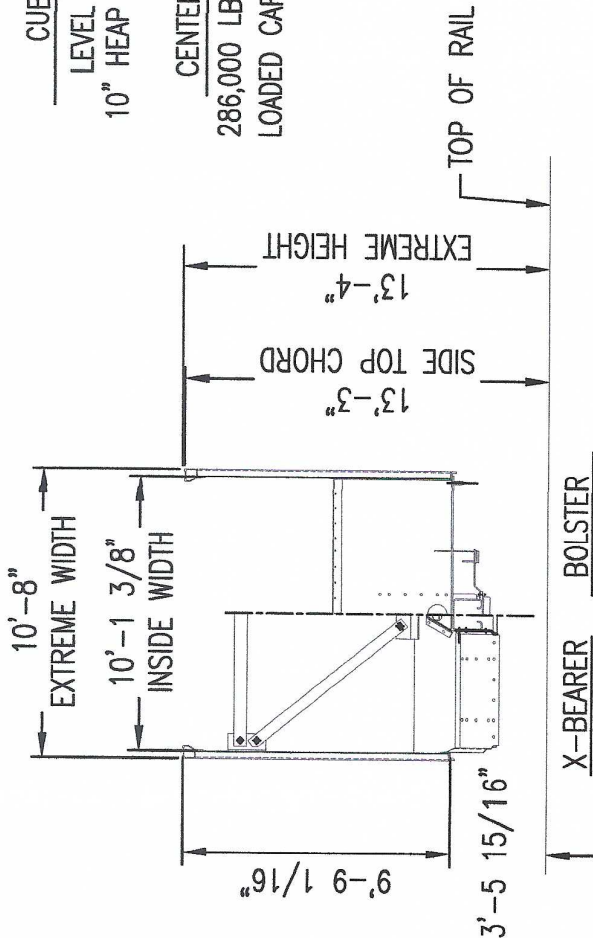
- 1 Set of Sample Car Photos
- 1 "As Built" Specification

47'-9 1/8" INSIDE LENGTH



CUBIC CAPACITY
 LEVEL = 4,200 CU.FT.
 10" HEAP = 4,603 CU.FT.

CENTER OF GRAVITY
 286,000 LB. - GROSS RAIL LOAD
 LOADED CAR 10" HEAP = 94.7"



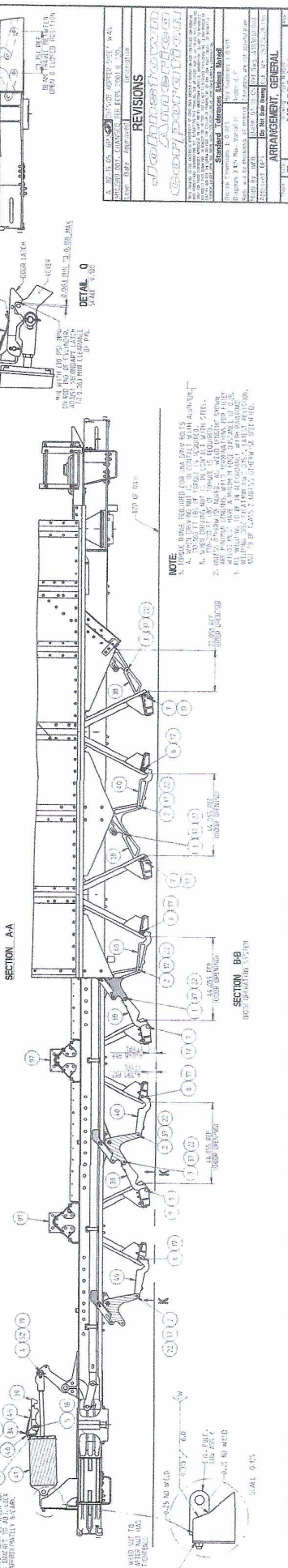
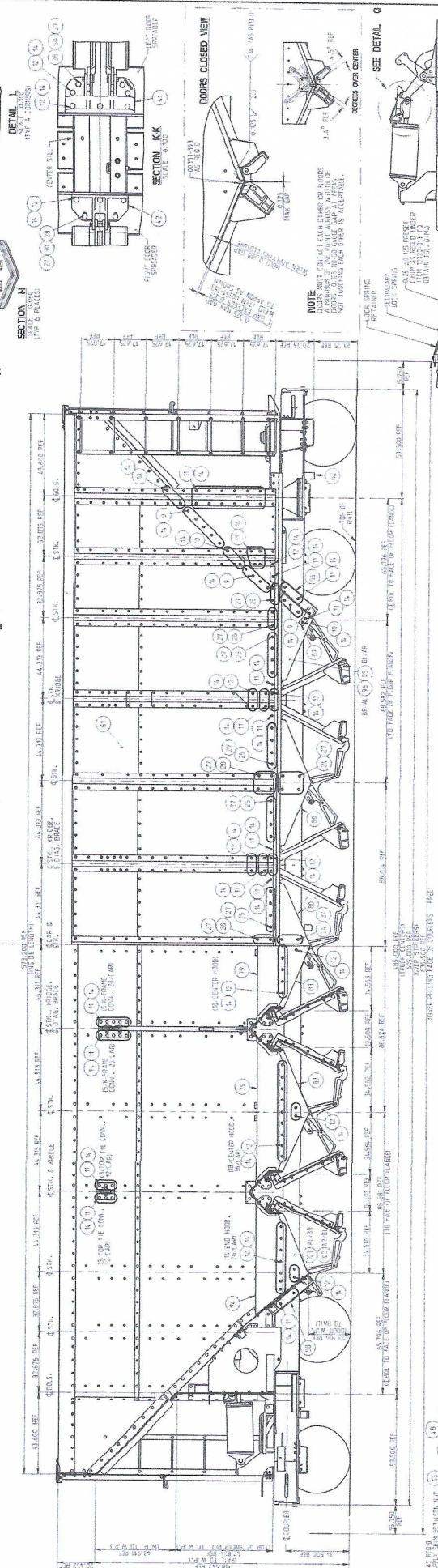
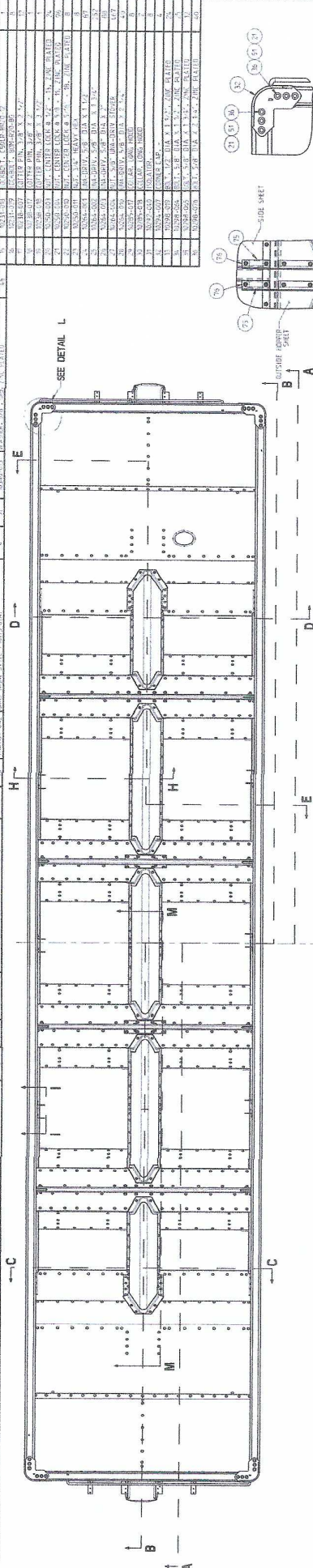
**FreightCar
America**

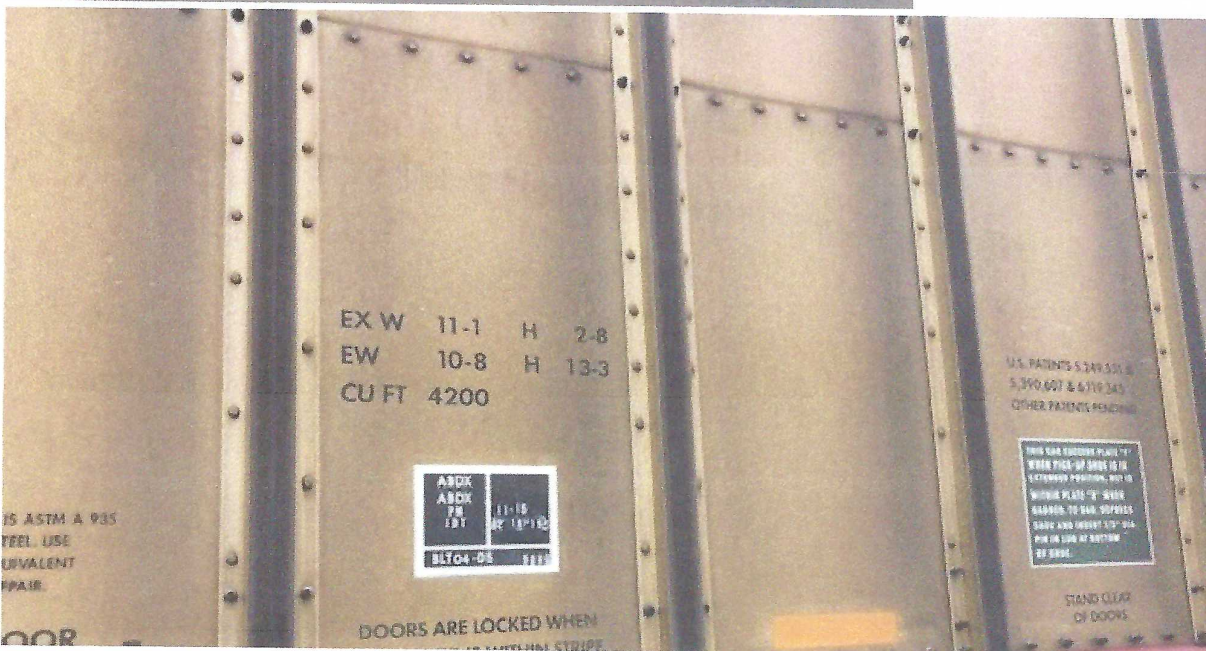
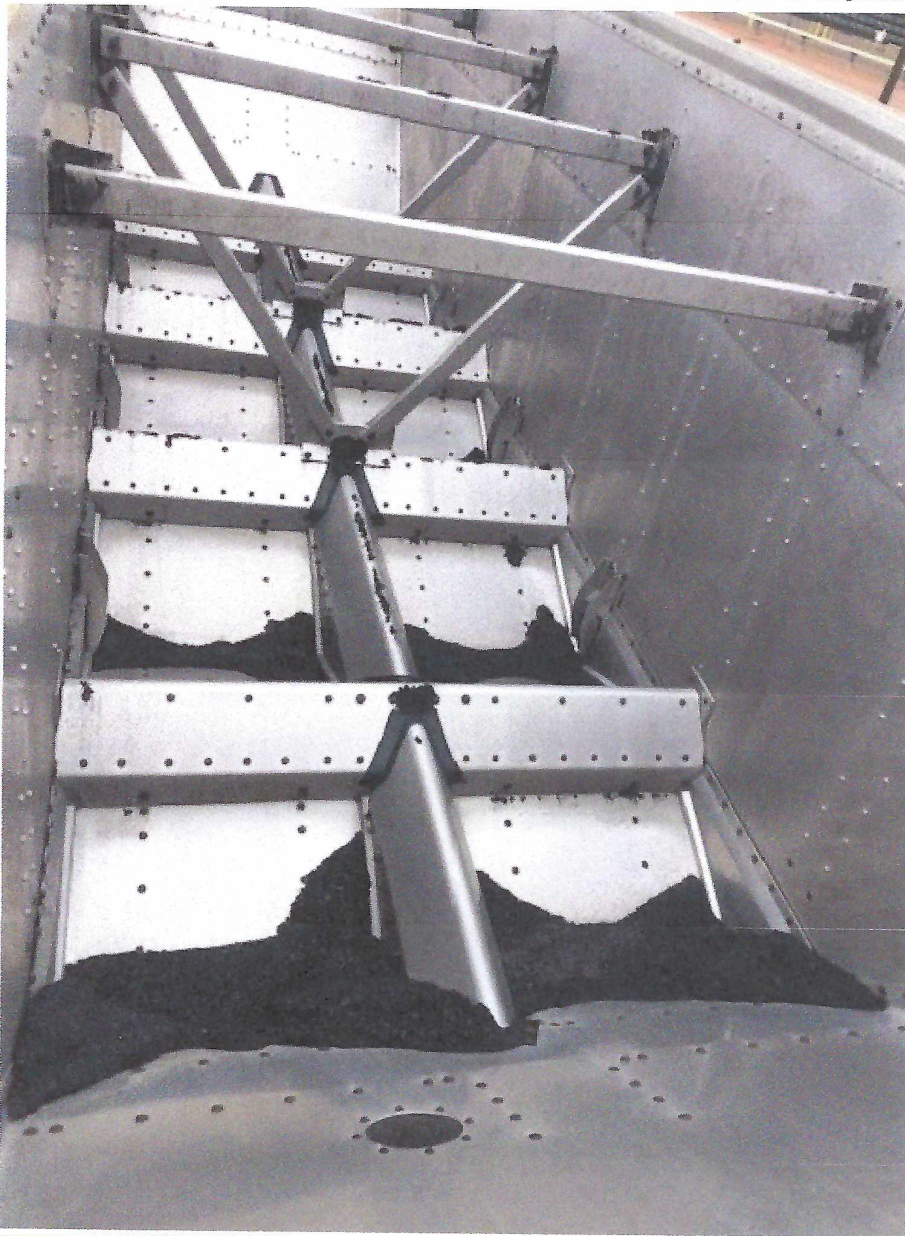
AUTOFLOOD III TM

5 POCKET DOUBLE DOOR

OCTOBER 14, 2004

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