
SPECIFICATION

**ALUMINUM OUTSIDE STAKE
BETHGON® II**
4,520 Cubic Foot Capacity

Specification 1462-063AB

June 7, 2006

Reference:
1462-063AR

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Specification 1462-063AB

Aluminum Outside Stake BethGon® II 4,520 Cubic Foot Capacity

GENERAL DIMENSIONS	
LENGTH	
Truck Centers	40' 6"
Inside Length	47' 9-1/8"
Over Strikers	50' 5-1/2"
Over Pulling Face of Free Couplers	53' 1"
WIDTH	
Inside Width	9' 10"
Over Top Chords (Extreme Width)	10' 7-13/32"
HEIGHT	
Rail to Top of Side Top Chord	12' 8-1/2"
Rail to Top of Corner Cap Fastener (Extreme Height)	12' 9-1/2"
CAPACITY / WEIGHTS	
Cubic Capacity - Level	4,520 Cubic Feet
Cubic Capacity - 10" Average Heap	4,911 Cubic Feet
Lightweight (Estimated)	41,700 Pounds
Gross Rail Load	286,000 Pounds
Load Limit	244,300 Pounds
Center of Gravity Above Rail - 10" Average Heap - 286,000# Gross Rail Load	87.3"

GENERAL DESCRIPTION

The completed car is to be an open top coal car designed with:

- All Steel Underframe
- Aluminum, Outside Stake, Riveted Side Assembly with One Piece Side Sheet
- Flat Intermediate Floor
- Two Interior K-Frame Braces with Three Additional Top Ties
- Through Center Sill
- Twin Aluminum Rounded Bottom Tubs

The car design is based on a 286,000 pound gross rail load, AAR Plate "B" clearance diagram, and unit train rotary 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 or H36, 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 Tread Guard
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	ASF Super Service Ridemaster (Motion Control)
SUPPLEMENTAL SNUBBING	Not Required
SPRING GROUP	Appropriate to Truck and Car
ADAPTERS	ASF/Pennsy Adapter Plus
PEDESTAL FRAME KEYS	Not Included
PEDESTAL ROOF LINERS	Included with Adapter Plus
CENTER BOWL LINER	ASF – Non-metallic Bowl Type

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 included.
SLACK ADJUSTER	Double-acting, mounted below the center sill.
HAND BRAKE	AAR 1993 approved, mounted low with a long 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 specification S-401, 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 "F" rotary and non-rotary couplers, with integral hardened center plates and a non-metallic coupler carrier.	AAR M-201, Gr. "B+"
2	Coupler & Yoke	Type "F" non-rotary on "B" end, Type "F" rotary on "A" end, both with anti-gravity locks and non-metallic knuckle pins.	AAR M-211, Gr. "E"
2	Uncoupling Device	Standard for Type "F" on "B" end, single bail type on "A" end.	Manufacturer's Standard
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	3/8" Plate	ASTM A-572, Gr. 50, Type 2, 0.20% Minimum Copper
2	Bolster Shear Plate	1/2" Plate	ASTM A-572, Gr. 50, Type 2
4	Bolster to Center Sill Gusset	5/16" Plate	ASTM A-572, Gr. 50
4	Bolster to Side Connection	3/8" Plate	ASTM A-36, 0.20% Minimum Copper
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
5	Center Sill Tie Plate	3/8" Plate	ASTM A-572, Gr. 50, Type 2

#/CAR	PART DESCRIPTION	MATERIAL SIZE	MATERIAL SPECIFICATION
<i>ALUMINUM SIDE ASSEMBLY</i>			
2	Center Side Sheet	0.150" Minimum Plate	5454-H34
4	End Side Sheet	0.150" Minimum Plate	5454-H34
2	Side Top Chord	Extrusion AE-028 with Integral Dumper Clamp Reinforcement	6061-T6
2	Side Sill	Extrusion AE-078	6061-T6
26	Side Stake	Extrusion AE-031	6061-T6
<i>ALUMINUM END ASSEMBLY</i>			
2	End Sheet	0.150" Minimum Plate	5454-H34
2	End Top Chord	Extrusion AE-155	6061-T6
2	End Post	Extrusion AE-154	6061-T6
4	Corner Post	3-1/2" x 3-1/2" x 1/4" Angle	6061-T6
<i>ALUMINUM FLOORS</i>			
2	Sloped End Floor	1/4" Plate	5454-H34
2	Flat Intermediate Floor	1/4" Plate	5454-H34
2	Bottom Floor Tub	3/16" Plate - Semi-Circular Shaped	5454-H34
4	End Tub Closure	0.150" Minimum Plate	5454-H34
2	Intermediate Crossbearer	Extrusion AE-059	6061-T6
6	Drain Hole & Covers	6 Sets of Two - 2" Diameter Drain Holes with Extruded Covers AE-022	6061-T6
<i>ALUMINUM INTERIOR BRACING</i>			
2	Center Sill Connection	3/4" Plate	ASTM A-36, 0.20% Minimum Copper
4 (2 Pair)	Diagonal Tie	Extrusion AE-125	6061-T6
5	Transverse Top Tie	Extrusion AE-124	6061-T6
10	Top Tie Isolator		Non-metallic
4 (2 Pair)	Transverse Tie	Extrusion AE-124	6061-T6
26	Pin	Hex Head Shoulder Bolt with Flanged Locknut	50,000 PSI Minimum Yield

#/CAR	PART DESCRIPTION	MATERIAL SIZE	MATERIAL SPECIFICATION
<i>MISCELLANEOUS PARTS</i>			
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
4	Side Bearing Wear Plate	5" x 5/8" Bar	AAR S-235-83
4	Center Sill/Tub Connection	1/4" Plate	Aluminum Extruded Bar 6061-T6
4	Sub Side Sill	5" x 3-1/2" x 5/16" Angle	ASTM A-572, Gr. 50
4	Side Sill Stiffener at Bolster	4" x 4" 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

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. With the exception of powder coated grab irons, 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. Aluminum car body unpainted unless noted. All grab irons, handholds and corner caps to be painted or powder coated.
ROTARY END	End and end side panels, from bolster stake to bolster stake, to have contrasting colored decals applied.
NON-ROTARY END	Aluminum surfaces to remain unpainted.
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 FRA 49CFR Part 224. The end of car will receive two additional reflective delineators applied to each end.
LETTERS	White lettering on dark or black surfaces, black lettering on lighter contrasting colors and 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 full 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.

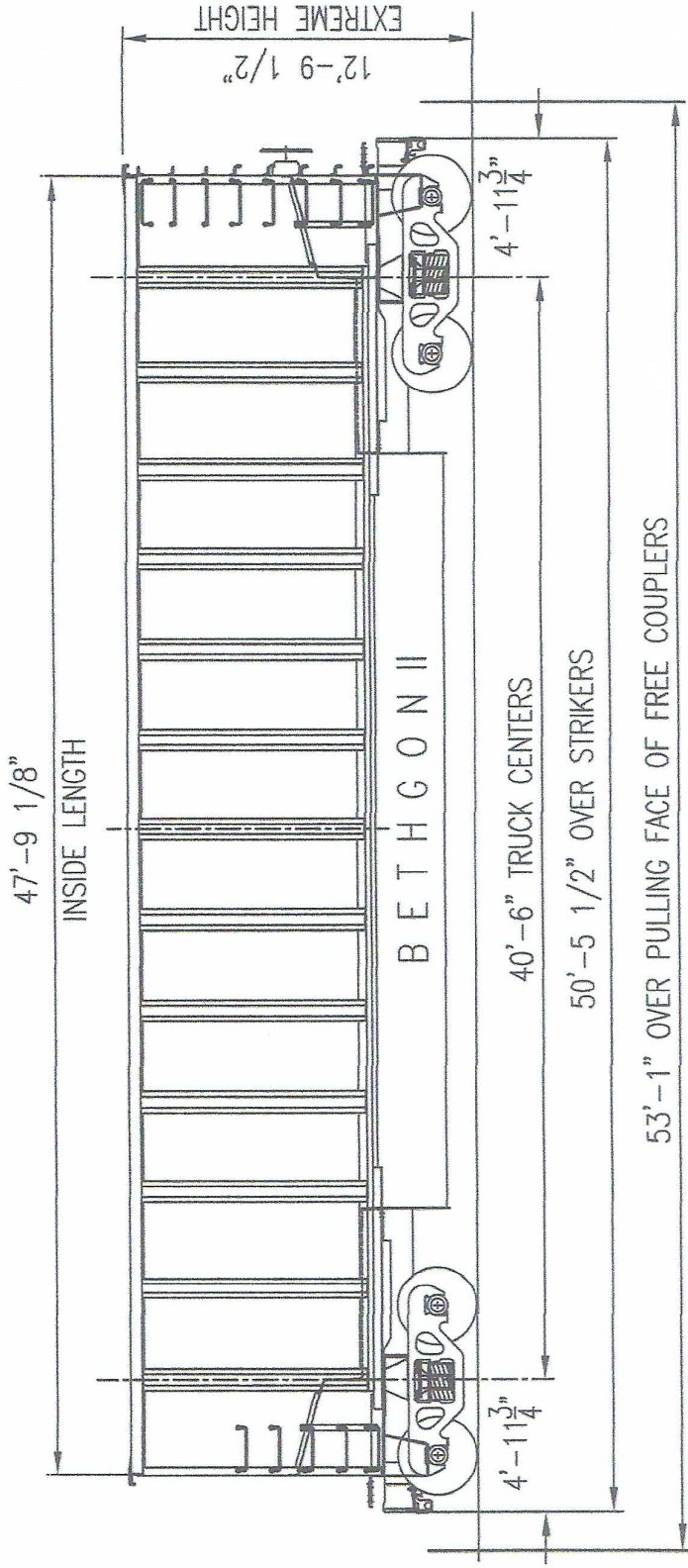
WELDING

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

ORDER COMPLETION DATA

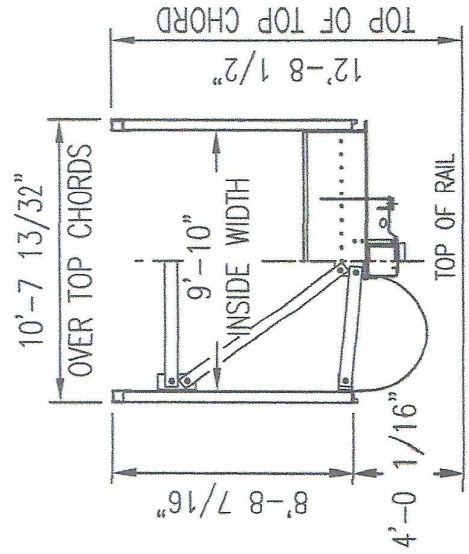
At completion of order, the following data will be furnished:

- 1 Set of Sample Car Photos in JPEG Format
- 1 "As Built" Specification in PDF Format



CUBIC CAPACITY
LEVEL = 4,520 CU. FT.
10" HEAP = 4,911 CU. FT.

CENTER OF GRAVITY
286,000 LB. - GROSS RAIL LOAD
LOADED CAR 10" HEAP = 87.3"



**FreightCar
America**

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BETHGON® II

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