



January 4, 2018

PND 172073.01

Gary Gillette
Port Engineer
City & Borough of Juneau
155 South Seward Street
Juneau, AK 99801

Subject: Little Rock Dump Boat Haulout and Service Yard
Technical Memorandum

Dear Gary:

PND has completed a reconnaissance level design study for developing a 150 ton mobile boat haulout and service yard at the Little Rock Dump, roughly one mile south of downtown Juneau. Enclosed please find conceptual design drawings, a rough order project budget, background information on the existing site and catalog data on possible yard equipment.

Existing Site Conditions

The existing uplands portion of the site is roughly four acres in size and is currently used for storage and staging of surplus construction materials by the CBJ Docks and Harbors Department. The site once operated as a CBJ wastewater sludge landfill facility. It was last used for sludge disposal in 1996 and has since been capped and graded to drain in accordance with an ADEC approved Landfill Closure Plan. During the closure process, sludge ponds were filled and the entire site was covered with two feet of pit run gravel and then seeded with grass and other natural vegetation to prevent surface and slope erosion. Available survey data indicates the higher elevations of the graded pad approach 55' MLLW while the gated driveway is around 34' MLLW.

Bathymetric conditions to the north of the Little Rock Dump appear favorable for the siting of necessary marine structures to service Juneau's commercial and recreational boating fleet. A natural harbor basin at this location provides water depths to -20' MLLW well into the existing basin without dredging. While the Little Rock Dump provides some protection from the strong southeast exposure, it appears that wind and wave conditions along Gastineau Channel could impact haulout operations during storm events without some degree of added protection. FEMA flood maps indicate the site is located in Zone VE with a 100 year flood elevation of 28' MLLW. While beyond the scope of this report, it is recommended that any future engineering tasks incorporate a metocean study to further assess the wind and wave conditions at the site.

Wind events could also impact yard operations without adequate screening or shelter protections. An existing buffer of trees along the shoreline provides limited protection and should be maintained to the extent possible.

Proposed Improvements

The site's topographic relief requires a two-tiered site development approach with an upper 3 acre boat yard located on the existing Little Rock Dump pad and a lower 1.5 acre boat yard constructed from rock fill materials along the waterfront. The initial 1.5 acre lower yard would be constructed to an approximate elevation of 28' MLLW and can be expanded towards the north as dictated by future demand. The attached concept drawings illustrate a 1 acre expansion of the lower yard area as a second phase of improvements.

The upper yard would be capped with additional rock and fine graded for boatyard operations. A concrete equipment access ramp sloped between 3-6% would be constructed between the upper and lower yards to allow vessels of various sizes to be moved, serviced and stored at either location. The design slope of the ramp is critical and depends on the final selection of boat hauling equipment and ramp surfacing material. A mobile boat hoist can accommodate 6% grades on a concrete ramp while a self-propelled yard transporter is typically limited to 3% grades. Highway access improvements are also anticipated under this project to accommodate the large grade differential between Thane Road and the upper boat yard.

The overall project involves filling the site with approximately 95,000 cubic yards of clean rock subbase, base course and armor stone. The armor stone materials will blanket the fill slopes of the lower yard to prevent coastal erosion caused by currents, waves and boat wakes in Gastineau Channel. A 120' long sheet pile bulkhead is planned for the shoreside abutment to the haulout pier. The bulkhead will be approximately 40 feet in height at the most extreme case and will include safety rails along its length. A pile supported haulout pier will be located seaward of the bulkhead to support a 150 ton Travel Lift for boat hoisting operations. Alongside and immediately north of the pier, a 120' long moorage float will be connected to shore by an 80' gangway. The float will serve to queue and moor vessels arriving or departing from the lift. The natural harbor basin also has the ability to accommodate additional moorage floats near the queuing float if desired. The attached concept drawings illustrate two each additional moorage floats proposed as an additive alternate to accommodate another 800 LF of moorage for vessels of all sizes. All marine piles will be equipped with sacrificial anodes to control marine corrosion.

A vessel wash down pad with an adjacent wash water treatment plant will be located onshore near the boat lift pier. Following removal of suspended solids and dissolved metals it is anticipated that the effluent will be discharged to the municipal sewer collection system for further treatment. Utilities required for the boat yard include water, sewer, storm drains, power and area lighting. Water and sewer utilities currently terminate On Thane Road near the CBJ Sewage Treatment Plant and each would need to be extended roughly 2,500 LF to provide service to the site. Onsite runoff will be collected and treated per ADEC requirements prior to discharge into Gastineau Channel.

Local, state and federal permits will be required for the proposed improvements.

Project Budget

Total project budget including construction, 15% contingency and indirect costs for site investigations, permitting, design, contract administration and construction inspection has been estimated at \$19.5 million for the primary Phase I improvements. An additional \$2.9 million has been estimated for expanding the lower boatyard another one acre under Phase II improvements. An additive alternate for 800 LF of additional moorage has been estimated at \$2.2 million.

Please feel free to contact us if you have any questions regarding this report. We have enjoyed the opportunity to work with you on this important maritime project.

Sincerely,
PND Engineers, Inc. | Juneau Office

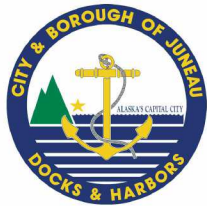


Dick Somerville, P.E.
Vice President

Enclosures



IMAGERY FROM NOAA OFFICE FOR COASTAL
MANAGEMENT DATA ACCESS VIEWER, 2016.



REVISIONS					
REV.	DATE	DESCRIPTION	DWN.	CKD.	APP.

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ENGINEERS, INC.

9360 Glacier Highway, Ste. 100
Juneau, Alaska 99801
Phone: 907-586-2093
Fax: 907-586-2099
www.pndengineers.com

DESIGN: CRS
DRAWN: PJD

CHECKED: CRS
APPROVED: CRS

SCALE: SCALE IN FEET
0 200 400 FT.

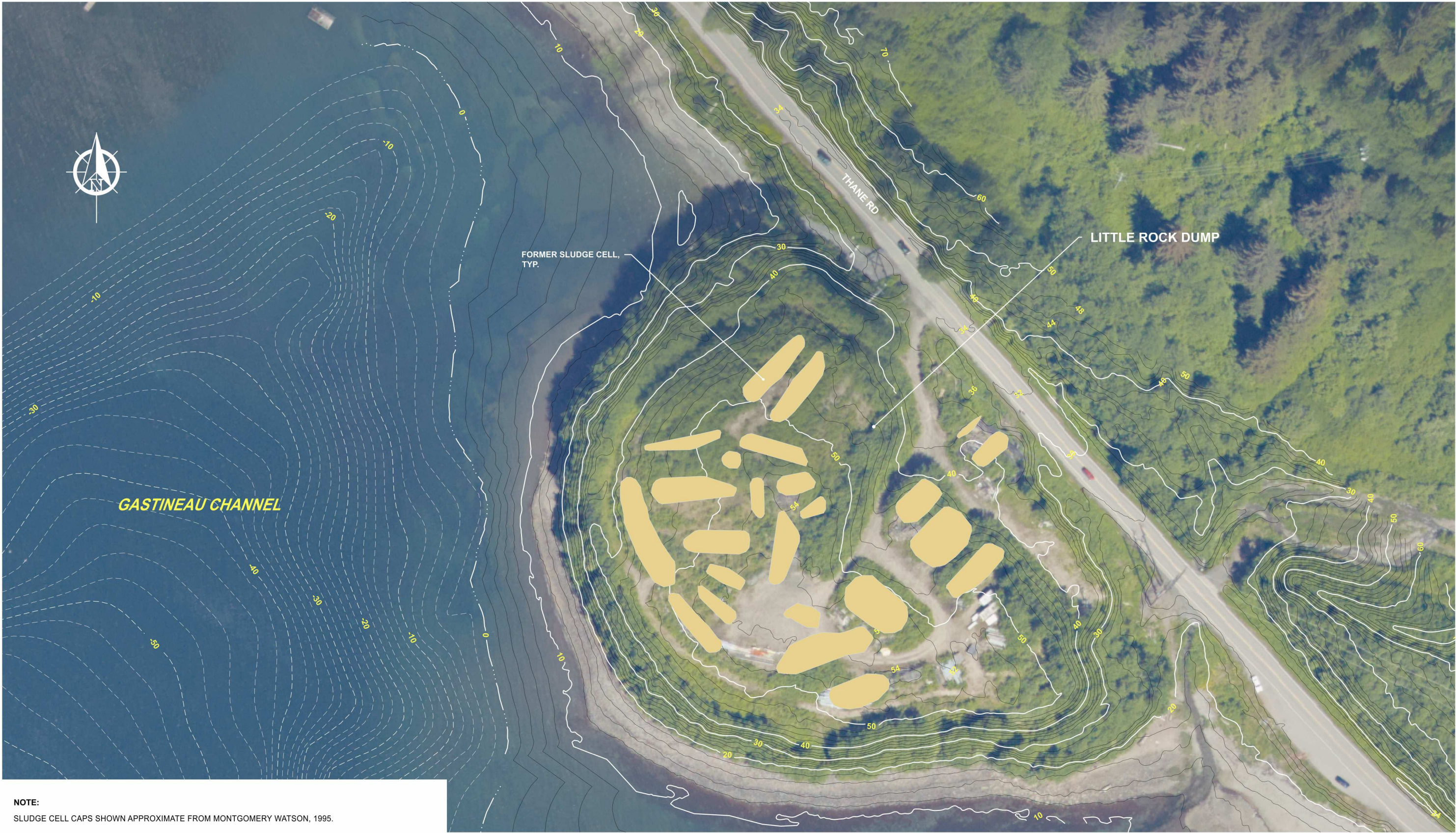
DATE: JAN. 2018

CBJ DOCKS AND HARBORS
LITTLE ROCK DUMP
MARINE SERVICE CENTER

SHEET TITLE:
VICINITY MAP

PN&D PROJECT NO.: 172073 DWG. FILE:

1
SHEET
OF 4



NOTE:
SLUDGE CELL CAPS SHOWN APPROXIMATE FROM MONTGOMERY WATSON, 1995.



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CBJ DOCKS AND HARBORS
LITTLE ROCK DUMP
MARINE SERVICE CENTER

SHEET TITLE:
EXISTING CONDITIONS

PN&D PROJECT NO.: 172073 DWG. FILE:

2
OF 4

SHEET
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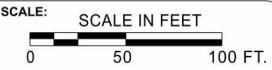


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DATE: JAN. 2018

CBJ DOCKS AND HARBORS
LITTLE ROCK DUMP
MARINE SERVICE CENTER

SHEET TITLE:
CONCEPTUAL SITE PLAN

PN&D PROJECT NO.: 172073

DWG. FILE:



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SCALE: SCALE IN FEET
0 50 100 FT.

DATE: JAN. 2018

CBJ DOCKS AND HARBORS
LITTLE ROCK DUMP
MARINE SERVICE CENTER

SHEET TITLE:
CONCEPTUAL SITE PLAN
w/ TRANSIENT MOORAGE

PN&D PROJECT NO.: 172073

DWG. FILE:

**CBJ DOCKS & HARBORS DEPARTMENT
LITTLE ROCK DUMP BOAT YARD AND 150 TON BOAT LIFT
PND PROJECT 172073.01**

PRELIMINARY BUDGET SUMMARY

PREPARED BY: PND ENGINEERS, INC.

Prepared on: January 3, 2018

Project Description	Budget
Boat Yard and 150T Boat Lift - Phase I	\$19,512,851
Boat Yard Expansion - Phase II	\$2,900,720
16 x 400 Transient Moorage - Add Alt	\$2,191,536
Total Estimated Budget	\$24,605,107



CBJ DOCKS & HARBORS DEPARTMENT

LITTLE ROCK DUMP BOAT YARD AND 150 TON BOAT LIFT - PHASE I



PND PROJECT 172073.01 PRELIMINARY BUDGET ESTIMATE



PREPARED BY: PND ENGINEERS, INC.

Prepared on: January 3, 2018

PHASE I

Item	Item Description	Units	Quantity	Unit Cost	Amount
1505.1	Mobilization	LS	All Req'd	10%	\$1,309,425
2060.1	Demolition and Disposal	LS	All Req'd	\$100,000	\$100,000
2201.1	Clearing & Grubbing	AC	5	\$20,000	\$100,000
2202.1	Useable Excavation	CY	6,500	\$10	\$65,000
2202.2	Class A Shot Rock Borrow	CY	10,000	\$40	\$400,000
2202.3	Class B Shot Rock Borrow	CY	73,000	\$30	\$2,190,000
2204.2	Base Course, Grading C-1	CY	5,500	\$60	\$330,000
2205.1	Armor Rock	CY	6,000	\$60	\$360,000
2501.1	Storm Drainage Improvements w/ BMP's	LS	All Req'd	\$150,000	\$150,000
2601.1	Water and Sewer Service Extensions	LF	5,000	\$100	\$500,000
2601.2	Sewer Lift Station	LS	All Req'd	\$150,000	\$150,000
2702.1	Construction Surveying	LS	All Req'd	\$100,000	\$100,000
2708.1	Guardrail	LF	750	\$75	\$56,250
2714.1	Geotextile Fabric	SY	10,000	\$5	\$50,000
2726.1	Haulout Pier	LS	All Req'd	\$2,750,000	\$2,750,000
2801.1	Highway Access Improvements	LS	All Req'd	\$200,000	\$200,000
2869.1	Sheet Pile Bulkhead	SF	7,000	\$200	\$1,400,000
2894.1	80' Gangway	LS	All Req'd	\$125,000	\$125,000
2895.1	Timber Gangway Landing Float, 20 x 20	SF	400	\$150	\$60,000
2895.2	Timber Moorage Float, 16 x 120	SF	1,920	\$150	\$288,000
2896.1	Furnish and Install Steel Pipe Pile	EA	6	\$10,000	\$60,000
2996.1	Pile Anodes	LS	All Req'd	\$150,000	\$150,000
3303.1	Access Ramp Concrete Paving	SY	3,000	\$250	\$750,000
3305.1	Concrete Gangway Abutment	LS	All Req'd	\$30,000	\$30,000
3305.2	Concrete Haulout Pier Abutment	LS	All Req'd	\$100,000	\$100,000
3306.1	Concrete Wash Down Pad w/ Hydronic Piping	CY	150	\$1,200	\$180,000
11000.1	Grit Chamber, O/W Separator, Filter Vault	LS	All Req'd	\$100,000	\$100,000
13000.1	Utility Building w/ Hydronic Boiler	SF	1000	\$400	\$400,000
13200.1	150 T Boat Lift	LS	All Req'd	\$1,000,000	\$1,000,000
13200.2	80 T Hydraulic Yard Transporter	LS	All Req'd	\$450,000	\$450,000
16000.1	Power Pedestals and Area Lighting	LS	All Req'd	\$500,000	\$500,000
ESTIMATED CONSTRUCTION BID PRICE					\$14,403,675
Contingency (15%)					\$2,160,551
Environmental Permitting & Compensatory Mitigation					\$250,000
Topographic Survey & Geotechnical Investigation					\$250,000
Final Design & Contract Documents					\$1,296,331
Contract Administration and Construction Inspection					\$1,152,294
TOTAL RECOMMENDED PROJECT BUDGET - PHASE I					\$19,512,851

CBJ DOCKS & HARBORS DEPARTMENT

LITTLE ROCK DUMP BOAT YARD AND 150 TON BOAT LIFT - PHASE II



**PND PROJECT 172073.01
PRELIMINARY BUDGET ESTIMATE**



PREPARED BY: PND ENGINEERS, INC.

Prepared on: January 3, 2018

PHASE II

Item	Item Description	Units	Quantity	Unit Cost	Amount
1505.1	Mobilization	LS	All Req'd	10%	\$186,000
2060.1	Demolition and Disposal	LS	All Req'd	\$10,000	\$10,000
2201.1	Clearing & Grubbing	AC	1	\$20,000	\$10,000
2202.1	Useable Excavation	CY	500	\$10	\$5,000
2202.2	Class A Shot Rock Borrow	CY	2,000	\$40	\$80,000
2202.3	Class B Shot Rock Borrow	CY	41,000	\$30	\$1,230,000
2204.2	Base Course, Grading C-1	CY	1,000	\$60	\$60,000
2205.1	Armor Rock	CY	1,500	\$60	\$90,000
2205.2	Salvage and Place Armor Rock	CY	4,000	\$30	\$120,000
2501.1	Storm Drainage Improvements w/ BMP's	LS	All Req'd	\$75,000	\$75,000
2702.1	Construction Surveying	LS	All Req'd	\$30,000	\$30,000
2708.2	Reset Guardrail	LF	500	\$50	\$25,000
2714.1	Geotextile Fabric	SY	5,000	\$5	\$25,000
16000.1	Power Pedestals and Area Lighting	LS	All Req'd	\$100,000	\$100,000
ESTIMATED CONSTRUCTION BID PRICE					\$2,046,000
Contingency (15%)					\$306,900
Environmental Permitting & Compensatory Mitigation					\$100,000
Topographic Survey & Geotechnical Investigation					\$100,000
Final Design & Contract Documents					\$184,140
Contract Administration and Construction Inspection					\$163,680
TOTAL RECOMMENDED PROJECT BUDGET - PHASE II					\$2,900,720

CBJ DOCKS & HARBORS DEPARTMENT

LITTLE ROCK DUMP BOAT YARD AND 150 TON BOAT LIFT - FLOATS



PND PROJECT 172073.01
PRELIMINARY BUDGET ESTIMATE



PREPARED BY: PND ENGINEERS, INC.

Prepared on: January 3, 2018

ADD. ALT. TRANSIENT MOORAGE FLOATS

Item	Item Description	Units	Quantity	Unit Cost	Amount
1505.1	Mobilization	LS	All Req'd	10%	\$146,800
2895.3	Transient Moorage Floats, 16x400	SF	6,400	\$150	\$960,000
2896.1	Furnish & Install Steel Pipe Pile	EA	14	\$12,000	\$168,000
2996.1	Pile Anodes	LS	All Req'd	\$40,000	\$40,000
16000.1	Power Pedestals and Lighting	LS	All Req'd	\$300,000	\$300,000
ESTIMATED CONSTRUCTION BID PRICE					\$1,614,800
Contingency (15%)					\$242,220
Environmental Permitting & Compensatory Mitigation					\$50,000
Topographic Survey & Geotechnical Investigation					\$10,000
Final Design & Contract Documents					\$145,332
Contract Administration and Construction Inspection					\$129,184
TOTAL RECOMMENDED PROJECT BUDGET - PHASE II					\$2,191,536



City and Borough of Juneau Little Rock Dump Sludge Landfill Post Closure Inspection Report

October 11, 2010

 Carson Dorn. Inc.

**CITY AND BOROUGH OF JUNEAU
LITTLE ROCK DUMP
SLUDGE LANDFILL
POST CLOSURE INSPECTION REPORT**



712 west 12th Street
Juneau, Alaska 99801

(907) 586-4447

October 11, 2010

CBJ Little Rock Dump Sludge Landfill Post Closure Inspection Report

INTRODUCTION

The City and Borough of Juneau (CBJ) operated a municipal wastewater sludge landfill facility at the former AJ Rock Dump on the Gastineau Channel side of Thane Road (the Little Rock Dump), approximately two miles south of Juneau, Alaska, within a portion of Tract A, ATS 556, T.41S, R.67E, Copper River Meridian. The sludge landfill was last used in early 1996 when CBJ officially closed the site to any future sludge landfill activities in order to begin the post-closure process in accordance with 18 AAC 60.470 and 18 AAC 60.490. The following aerial photo shows the location of the sludge landfill site relative to Juneau.



**City and Borough of Juneau Little Rock Dump
Sludge Landfill**

On June 25, 1999 CBJ submitted to the Alaska Department of Environmental Conservation (ADEC) its Sludge Landfill Closure Plan. This closure plan outlined CBJ's site closure process including its plans for:

1. Final Cover
2. Site Grading
3. Slope Improvements
4. Reseeding
5. Methane Gas Monitoring
6. Proposed Land Use During the Post-Closure Period
7. Public Access Restrictions
8. Monitoring and Inspection

The CBJ completed the necessary site improvements identified in the Sludge Landfill Closure Plan including final cover, site grading, slope improvements and reseeded and began the post-closure period on August 1, 2000. ADEC was notified by letter on June 22, 2001 that CBJ had begun the post-closure period on that date.

Site inspections of the landfill were made on February 5, 2010, April 28, 2010 and April 29 2010. The following sections report on each element of the CBJ Sludge Landfill Closure Plan as observed during these site visits.

FINAL COVER

The City and Borough of Juneau placed at least 24 inches of pit run gravel final cover material over the entire four-acre site in accordance with 18 AAC 60.470. Low areas resulting from subsidence present at the beginning of the post closure period were filled with pit run gravel and there is no longer any standing water in those areas.

Once the site had been covered, it was graded to promote surface water runoff and minimize the potential for erosion and standing water. The City and Borough of Juneau monitored the final cover for subsidence and erosion over the five year post-closure period. Additional fill was added to any areas impacted by subsidence or erosion to maintain optimal grading at the site.

The City and Borough of Juneau maintained the existing road access to the site as well as the cul-de-sac area at the head of the main driveway to provide for heavy equipment access. The topography for the initial landfill site including the ponds that were present at the beginning of the post closure period is shown on Figure 1. Current site grading is shown on Figure 2.

Photos 1 and 2 show the existing post closure condition of the former pond areas.

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LEGEND

FACILITY BOUNDARY

TRAVELLED WAY

No. 3

SAMPLE SITE

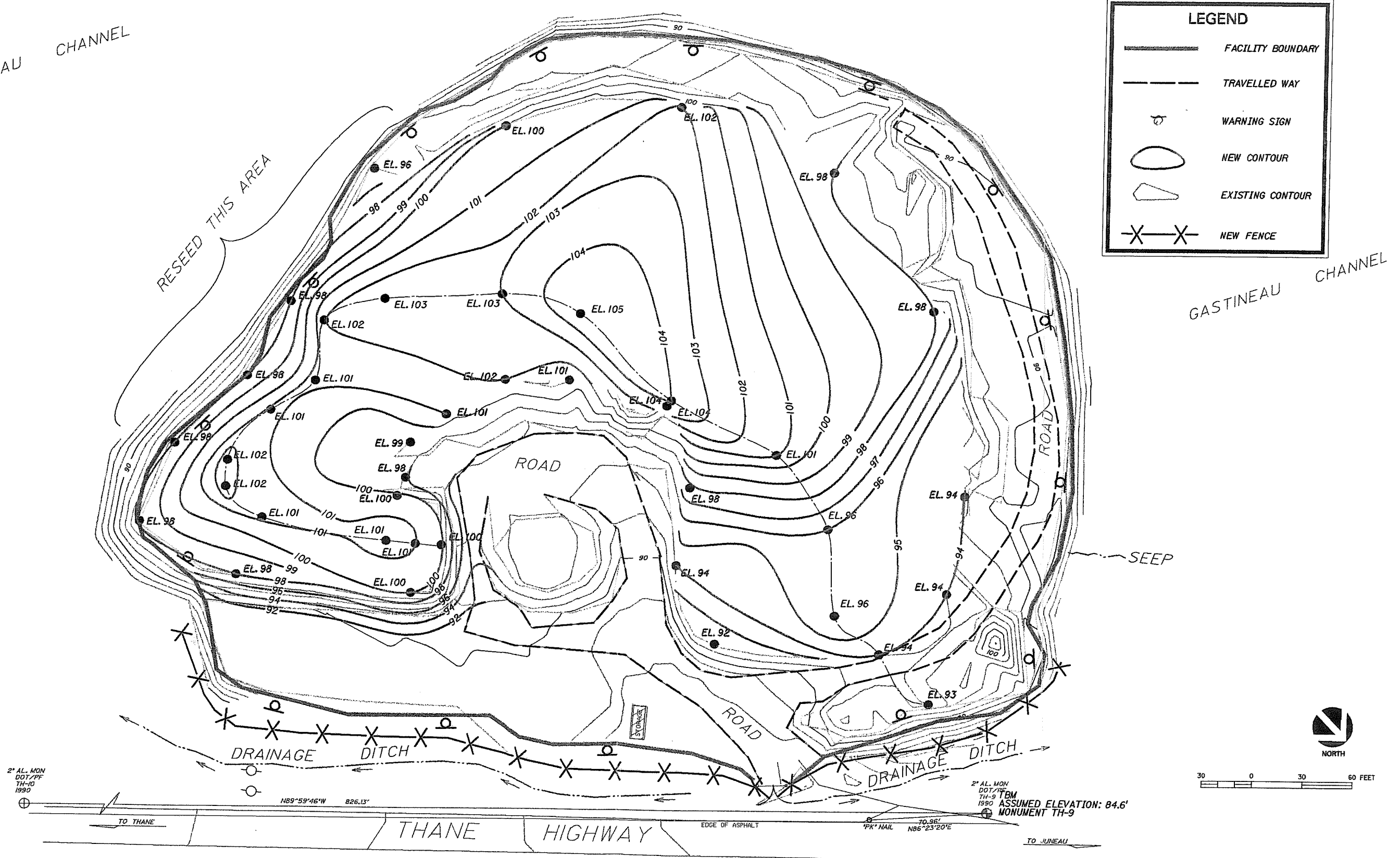
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		1						
		SHEET No.						
		1 of 2						

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GASTINEAU CHANNEL

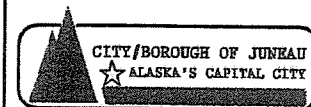
RESEED THIS AREA

GASTINEAU CHANNEL

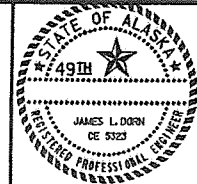


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DATE PRINTED:	CHECKED: JLD
	DATE: 4-14-99



CITY AND BOROUGH OF JUNEAU
WASTE SLUDGE LANDFILL
CONTRACT No. E96-012



Carson Dorn Inc.
712 WEST 12TH STREET
JUNEAU, ALASKA 99801
(907) 585-4447

SLUDGE LANDFILL SITE
GRADING PLAN

FIGURE
2
SHEET No.
2 of 2



PHOTO 1
POND 1 AND POND 6 COVERED
(2/5/2010)



PHOTO 2
POND 5 COVERED
(4/28/2010)

SITE GRADING

The entire four-acre site was graded to blend with the surrounding terrain and to drain without the accumulation of standing water. Drainage was routed off the site by contouring the fill placed at the site as part of the final cover. The grading plan minimized the potential for standing water and discouraged erosion.

The graded material was compacted to a density equal to similar material at the site. Compaction work was conducted at the same time that the final cover was placed at the site.

There has been some slight subsidence over the Post Closure period, but nothing that has required any additional fill to be brought in.

The following photos show the final grading that was done at the site.



PHOTO 3
SITE GRADING LOOKING SOUTH
(4/28/2010)



PHOTO 4
SITE GRADING LOOKING NORTH
(4/28/2010)



PHOTO 5
SITE GRADING LOOKING NORTH
(note low area with ice)
(2/5/2010)

SLOPE IMPROVEMENTS

The perimeter slopes of the facility are covered with vegetation and appear to be in good condition. It is evident the vegetation has minimized site erosion. One area of concern identified in the Post Closure Plan was area adjacent to Gastineau Channel on the southern edge of the facility. This area is now covered in vegetation and appears stable.

The following photos show the slope vegetation around the perimeter of the facility.



PHOTO 5
VEGETATION ON SOUTHERLY SLOPE OF THE SITE
(4/28/2010)



PHOTO 6
VEGETATION ON WESTERLY SLOPE OF THE SITE
(4/28/2010)



PHOTO 7
VEGETATION ON NORTHERLY SLOPE OF THE SITE
(4/28/2010)

RESEEDING

As part of the Post Closure Plan, areas without native vegetation were seeded with commercially available grasses. These grasses for the most part now cover the site in vegetation. There are a few areas where vehicle access has been maintained that do not now have vegetation growing on them.



PHOTO 7
SEEDED GRASSES GROWING ON THE SITE
(4/28/2010)



PHOTO 8
SPARSE AREAS OF SEEDED GRASSES GROWING ON THE SITE
(4/28/2010)

LEACHATE COLLECTION SYSTEM

The CBJ Sludge Landfill facility is not equipped with a liner or a leachate collection system; therefore, no operation or maintenance of such a system was applicable during the five-year post-closure period. The site was capped and graded in accordance with 18 AAC 60.470 (D) to minimize surface water runoff at the site.

METHANE GAS MONITORING

The CBJ Sludge Landfill is an undeveloped site located in an area of low population density. There are no structures on the site and public access to the site is restricted. Monitoring for methane gas at the site was conducted during the periodic site visits as required as part of the closure plan using a portable gas detector and methane was not detected (see Post Closure Site Checklists in Appendix A).

LAND USE DURING POST CLOSURE PERIOD

During the post-closure period, the facility remained undeveloped and access was restricted. The City and Borough of Juneau used the site for the storage and stockpiling of road material and ditch debris. In addition materials and equipment such as tanks, pilings, lumber, boats, concrete barriers and other moveable items were and continue to be stored on the site.

No activities took place during the post closure period that had the potential to disturb the existing sludge cells.

State Regulation 18 AAC 60.085 (b)(3) requires that the sludge landfill area not be used to grow crops for direct human consumption for a period of 18 months after the final disposal of sludge. The City and Borough of Juneau did not use the land to grow crops for human consumption.

PUBLIC ACCESS RESTRICTIONS

Public access to the site was restricted throughout the three-year post-closure period. The gate at the main entrance to the site remained in place and locked at all times. Warning signs were placed at 100-foot intervals around the entire perimeter of the site. The signs contained the following message:

**NO TRESPASSING
BIO-HAZARD
CITY AND BOROUGH OF JUNEAU
Call 789-9919 with questions or for emergencies**

Signs were checked regularly and replaced as necessary over the entire post-closure period.

POST CLOSURE MONITORING AND INSPECTIONS

The City and Borough of Juneau conducted periodic site inspections during the post-closure period in accordance with 18 AAC 60.490 (c). During the inspections, CBJ personnel walked the site to observe the integrity of the final cover and slopes and check for erosion. A Sludge Landfill Site Checklist was used during each inspection to ensure that all aspects of the site are addressed. Any unusual observations of the site were recorded and brought to the attention of a supervisor and corrective action will be taken as necessary. Site inspection checklists were kept on file for the remainder of the post closure period.

Site inspections took place on the following dates:

June 19, 2001
July 10, 2001
September 25, 2001
January 8, 2002
March 29, 2002
August 1, 2002

CBJ Little Rock Dump Sludge Landfill Post Closure Inspection Report

February 7, 2003
June 9, 2003
September 4, 2003
February 25, 2004
January 17, 2005
August 2, 2005
June 10, 2006
September 8, 2006

Generally the site inspections recorded minor settling with intermittent puddles of standing water forming at times. The minor settling did not create any ponds.

Water samples were collected periodically from seeps at Site 2 and Site 3 and from the stream at Site 4 (see Figure 1 for sample locations). These were tested for metals (Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Silver, and Selenium) and for fecal coliform bacteria.

Table 1 is a summary of the water sample results and the laboratory data is included in Appendix B. The laboratory that performed the analysis on the samples collected during the post closure period reported that the metals tests conducted on the water samples were for “total” metals instead of “dissolved” metals and so the lab results do not reflect the concentration of dissolved metals in the seeps. Additional samples were collected on July 27, 2010 and tested for dissolved metals.

TABLE 1
WATER SAMPLE RESULTS

Location	Date	Fecal Coliform	Arsenic	Barium	Cadmium	Chromium	Lead	Selenium	Silver	Mercury
Site 1										
	2/7/2003	110	ND	13	ND	0.723	ND	1.38	ND	ND
Site 2										
	7/10/2001	2	42	21	0.2	1.2	0.3	170	0.11	ND
	1/8/2002	2	69.3	19.4	ND	5.02	3.1	240	ND	ND
	8/1/2002	2	27.6	18.8	ND	1.29	0.388	95.1	1.4	ND
	2/7/2003	ND	65	20	ND	3.67	ND	298	ND	ND
	10/29/2003	ND	66.1	28.8	ND	6.82	6.07	236	4.65	ND
	6/10/2006	ND	ND	14	ND	ND	ND	ND	ND	ND
	7/27/2010		17.4	11.2	ND	2.37	1.06	ND	ND	ND
Site 3										
	7/10/2001	14	41	19	1.2	1.1	ND	160	ND	ND
	10/29/2003	ND	108	64.1	ND	10.8	24.7	275	ND	ND
	7/27/2010		19.3	11.3	ND	1.74	0.192	ND	0.387	ND
Site 4										
	7/10/2001	50	2.8	20	ND	0.31	ND	1.6	ND	ND
	1/8/2002	ND	2.79	21.1	ND	0.771	0.535	3.7	ND	ND
	8/1/2002	13	2.85	26.4	ND	2.11	ND	1.87	ND	ND
	2/7/2003	ND	2.83	23	ND	0.621	ND	4.25	ND	ND
	10/29/2003	ND	ND	23.5	ND	0.673	ND	ND	ND	ND
	6/10/2006	12	ND	25	ND	ND	ND	ND	ND	ND

Note: Units of measurement are µg/l.

The results of the sampling done prior to the post closure period are shown in the following Table 2.

TABLE 2
DISSOLVED METALS RESULTS
BEFORE POST CLOSURE PERIOD

Metal	Site 1 On-Site Pond	Site 2 Seep from north side of facility	Site 3 Beach Seep	Site 4 Background Sample
Arsenic	ND	ND	ND	0.062 mg/l
Barium	ND	0.016 mg/l	0.012 mg/l	0.017 mg/l
Cadmium	ND	ND	ND	ND
Chromium	ND	ND	ND	ND
Lead	ND	ND	ND	ND
Selenium	ND	ND	ND	ND
Silver	ND	ND	ND	ND
Mercury	ND	ND	ND	ND

CONCLUSIONS AND RECOMMENDATIONS

Based on the final inspections and the water sampling results collected prior to the post-closure period but after the site was no longer being used as a sludge landfill the closure conclusions and recommendations for the site are as follows:

- 1) The site was closed for use as a sludge landfill in 1996 and has not been used for that purpose since then.
- 2) Water quality data collected and analyzed for dissolved metals showed non-detect or very low concentrations of dissolved metals.
- 3) No erosion was evident during the 2010 inspection of the perimeter slopes at the disposal site. The perimeter slopes are stabilized by a heavy growth of alders, grass and bushes.
- 4) No surface ponding was present on the site, although it is reported that during rainy periods small, shallow puddles form in some locations. These are intermittent puddles and are not evident during non-rainy periods.
- 5) Most of the site is covered with young growth alder and grasses.

- 6) Visual monitoring for settlement indicates that minor settlement occurred in the first few years of the post-closure period. The minor settlement did not result in the formation of any new ponds on the site.
- 7) The CBJ has added a notation on the deed for the property filed at the Department of Natural Resources District Recording office that indicates the following:
 - The land has been used as a Sludge Landfill Facility
 - Sewage sludge was placed in the Landfill Facility
 - The geographic boundaries of the Landfill Facility
 - The details of the final cover installed as part of closure

The notation indicates that it may not be removed from the deed unless all of the wastes are removed from the property and any hazardous materials at the site are cleaned up to the satisfaction of the ADEC Contaminated Sites Program.

- 8) The CBJ has submitted a request for ADEC to officially close its permit file for the Little Rock Dump Sludge Landfill.

MARINE TRAVELIFT®

MOBILE BOAT HOIST

15 25 35 50 75 100 150 200 250 300 400 500 600 700 800 1000 Tons and greater





CHOOSE THE RIGHT PARTNER!

We **STARTED** the Mobile Boat Hoist Revolution, and We Continue to Lead After More Than 50 Years.

If you're planning to take your business to the next level, you need more than new machinery. You need the right partner, one that provides world-class lifting equipment that will allow you to streamline your operations, protect the local environment and offer the most flexible scheduling in your area while saving time, money and manpower. You need real value, and there's only one place to find it. Marine Travelift started the mobile boat hoist revolution and is the company that continues to lead the industry after more than half a century.

The world's first manufactured mobile boat hoist was conceptualized in Sturgeon Bay, Wisconsin, in 1945. Officially established in 1954, Marine Travelift has set the industry standard,

and over the years, its name has become synonymous with excellence on a global scale.

Our engineers will work closely with you to design and manufacture the machine that best meets your needs. And once it's operational, you will quickly realize that not only do we have the best-built mobile boat hoist in the business, we also offer the very best in service and support — from our comprehensive world-class parts and service to our unparalleled technical training and support. Marine Travelift boasts a highly experienced U.S. and international dealer network, and these hand-picked lifting professionals represent the respected Marine Travelift name with care and integrity around the world.



Marine Travelift. Trusted Name, Proven Value!

OUR HIGH-VALUE SOLUTIONS AND RENOWNED SERVICE ALLOW YOU TO INVEST AND LIFT WITH CONFIDENCE.



TRUSTED NAME. Marine Travelift currently has more than 3,500 units in service worldwide, six times the number from our nearest competition. That's because our machines, quite simply, are better. Not only do we offer the highest quality and the smartest design, we provide unique, innovative features based on the specific needs of businesses like yours. We also have a long-standing reputation for reliability, honest business practices and proactive customer support. This is our guarantee that you will receive the best machine possible for your investment dollars — a partner you can trust, one that always has the needs and best interests of your business in mind.



PROVEN VALUE. Marine Travelift doesn't believe in cutting corners. We use state-of-the-art technology and the very best materials to create the marine industry's highest-quality, most reliable mobile boat hoists, machines that will require fewer resources for training, upkeep, maintenance and downtime than our competitors. Plus, our intelligent design and functionality will mean your yard achieves maximum flexibility. Our versatile machines are customized to meet your needs and can lift a variety of different hull and vessel configurations. They allow you to utilize every square inch of yard space while avoiding drydock scheduling conflicts. And with their ease of operation and simple maintenance schedules, they save time and money at literally every turn.



EXCEEDING EXPECTATIONS. Not only do we offer the highest quality and the smartest design, we provide unique, innovative features based on the specific needs of businesses like yours. These features work seamlessly to boost your efficiency... and your profitability. You'll spend less over the machine's life cycle while ensuring optimum performance with Marine Travelift's quality parts. Our employees' dedication, expertise and solid work ethic make this innovative engineering possible, providing you with an industry-leading return on investment.



600C, City of Kodiak - Like you, we care about the environment and have taken a proactive approach with green features that can help protect the environment and your bottom line.

WE GIVE YOU MORE REASONS THAN EVER TO JUSTIFY YOUR INVESTMENT.



LONG-TERM COMPETITIVE ADVANTAGE

A Marine Travelift mobile boat hoist gives you an extra edge in the marketplace. That's because we provide more than just a machine. We provide industry-leading technology and expertise that will help your business continue to grow as the industry shifts to larger and more diverse vessels. And you'll have the added reassurance of working with a partner that's connected with professional marine organizations worldwide, from small marine associations to global association leaders alike, giving us additional insight to industry needs and concerns.



CUSTOMER-DRIVEN INNOVATION

We've engineered our features specifically with your goals in mind, from enhanced yard efficiency to quieter operations. Innovative, time-tested elements include the pivot trunnion, which means less stress on the machine's structure, special materials to extend the life of the hoses, steel and paint and specially designed slings for unparalleled support. Additional significant innovations include the wireless remote control, which offers increased safety and convenience, sling adjusts that allow you to customize each lift, sailboat top beam extensions allowing additional clearance for different vessel configurations and all wheel electronic steering offering precision steering control for handling vessels with limited yard space. Our features help to optimize yard space usage and can offer the ultimate in flexible scheduling.



A PARTNERSHIP FOR THE LONG HAUL

For marine operations, a Marine Travelift mobile boat hoist will send the right message to new and potential customers — that you employ the world's best lifting solution, one that ensures reliability, versatility and efficiency at every turn. For boatyard and shipyard operations, you know that many yards often rely on expensive, schedule-restricting, time-consuming lifting equipment. Our fast, efficient mobile boat hoists will maximize your operation's flexibility while retaining value. One thing is clear: When you partner with Marine Travelift, you get even more than the world's best in boat-handling technology. You gain the ability to grow your business.



YOUR CUSTOMER RELATIONSHIPS

Marine Travelift sets the gold standard when it comes to customer relationships. Your customers look for the most reliable boat-handling systems, and they know our name. It identifies you as a quality operation with honest business practices and a solid work ethic. As your partner, we'll help you attract and support your customers so your repeat business continues to grow.



300C & 100 BFMII, Lauderdale Marine Center



50 BFMII, KKMI



400C, Colle Towing



"GREEN" DESIGN AND OPERATION WITH MTI-ECO SOLUTIONS.

If you're planning to make your business more environmentally friendly, you need more than new machinery. You need the right partner that provides efficient, reliable lifting equipment engineered with green features that include recycled aircraft tires, premium sound suppression systems, biodegradable engine fuel and mineral-based, biodegradable oil for the hydraulics. Not only will you be protecting

the integrity of your working waterfront, you'll also be streamlining your operations while saving time, money and manpower. That's unsurpassed value, and there's only one place to find it. Marine Travelift.

www.marinetravelift.com



50 BFMII, Norway - No matter what the weather conditions, our mobile boat hoist are designed and built to perform for the long haul.

CUTTING CORNERS IS JUST NOT IN OUR VOCABULARY, AND WE KNOW YOUR CUSTOMERS WILL NOTICE.

Your customers know when you have a Marine Travelift mobile boat hoist you're giving them the best boat handling service available. Marine Travelift's BFMII Series mobile boat hoists have become the gold standard for marina operators, boat yards and other boat handling operations at home and abroad. No other brand offers a higher reputation for reliability, performance and factory support in the marine industry. That's because Marine Travelift is world renowned for the outstanding engineering that goes into every hoist it builds.

From its state-of-the-art facility in Sturgeon Bay, Wisconsin, Marine Travelift designers, engineers and craftsmen develop systems, processes and quality-assurance standards that are unparalleled. To top that, Marine Travelift has developed a comprehensive CustomerCare program to provide world-class parts, service, technical training and support.

50 BFMII & 75 BFMII, Americas Cup, Italy - You will feel confident knowing that your customer's prized possessions are in good hands with our BFMII mobile boat hoists.



50 BFMII, New York Fire Department



75 BFMII, Hatteras Yachts



100 BFMII, Cantiere del Puntone



A CONCEPT THAT STARTED A REVOLUTION IN BOAT HANDLING

Nearly 60 years ago, Marine Travelift had the idea that you could pick a boat out of the water with less stress on the hull, move it safely and quickly around a boat yard or marina with minimum labor and then just as easily put it back into the water. This idea launched a revolution in boat handling. From its first truck-drawn, straddle-type boat hoist in 1954 to the giant 1,000-ton units currently in service, Marine

Travelift now has more than 3,500 boat hoists in use around the world.

Lead by the industries most talented engineering teams, and a half century of experience, Marine Travelift has established a reputation for quality, performance and customer satisfaction that is second to none.



MARINE TRAVELIFT'S ARTICULATED PIVOT TRUNNION relieves any structural stress that may be caused during operation of the boat hoist on uneven ground surfaces.



CORDURA COVERS protect hoses from damaging UV rays and abrasions for longer service life.



LEBUS GROOVES on the hoisting drums reduce wear on the wire rope by eliminating wire crossing.



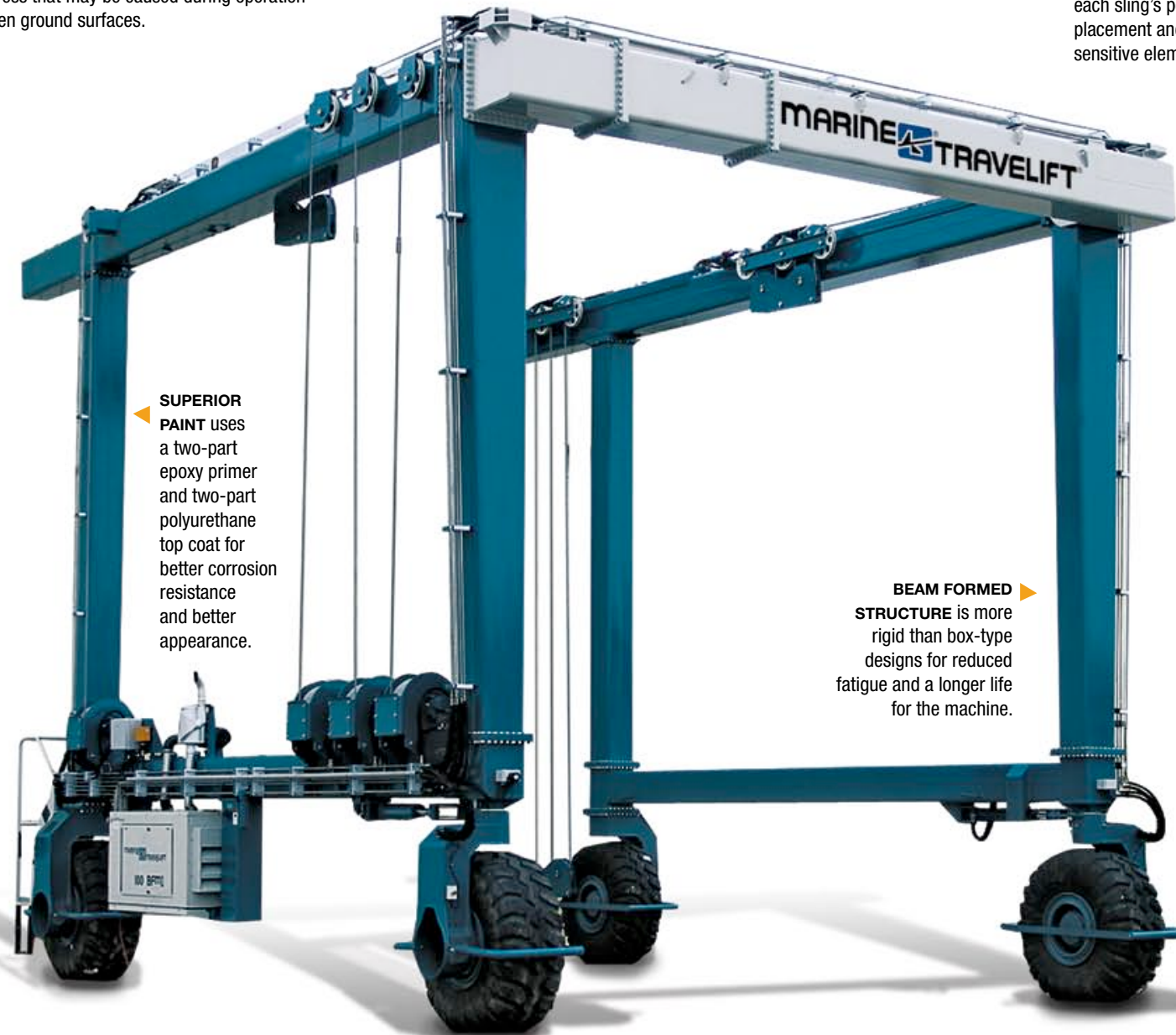
MORE STEEL in every Marine Travelift means more weight per unit for more heavy-duty work year after year.



EASY ACCESS ENGINE compartment is made of fiberglass to eliminate corrosion and reduce noise. All routine maintenance points are easy to access.



ERGONOMIC OPERATOR CONTROLS reduce operator fatigue, allowing easier and more efficient operation of the hoist.



SUPERIOR PAINT uses a two-part epoxy primer and two-part polyurethane top coat for better corrosion resistance and better appearance.

BEAM FORMED STRUCTURE is more rigid than box-type designs for reduced fatigue and a longer life for the machine.

SLING ADJUSTS provide the ability to adjust each sling's position to improve sling load placement and avoid stabilizers or other sensitive elements on the vessel's hull.



SEPARATE LIFTING PUMPS for each winch provide even lifting for both front and rear hoist sets.



HOIST 2-BLOCK SYSTEMS are designed so that 100% of the available travel height can be used. The operator can hoist up until the very top without any chance of damage.



BOLTING FLANGE provides easy reconfiguration of the dimensions of the boat hoist to meet various hull requirements.



FLAT FACED O-RING seals prevent leaks and blow-outs in the hydraulic system.



316 STAINLESS STEEL TUBING with plated bolts and Zinc covered pins mean our fasteners and tubing resist corrosion in a harsh marine environment.



OPTIONAL FEATURES DESIGNED TO INCREASE OPERATIONAL EFFICIENCY



OPTIONAL WIRELESS REMOTE CONTROL Wireless Remote Control This popular option has a range of approximately 300 feet (91 meters), increasing operator visibility of the boat, launching piers and surrounding area, improving both operational safety and ensuring maximum maneuverability.



SAILBOAT TOP BEAM EXTENSION places the top beam further forward, providing additional clearance for the backstay or forestay while the boat is suspended in the slings.



ALL WHEEL ELECTRONIC STEERING is an option that offers even more flexibility and precision handling of vessels in limited yard space.

BFMII CAPACITY

MODEL	CAPACITY	MODEL	CAPACITY
15 BFMII	33,000 lbs / 15,000 kg	50 BFMII	110,000 lbs / 50,000 kg
25 BFMII	55,000 lbs / 25,000 kg	75 BFMII	165,000 lbs / 75,000 kg
35 BFMII	77,000 lbs / 35,000 kg	100 BFMII	220,000 lbs / 100,000 kg



1000C Colonna Shipyard - This giant gets the job done. Uniquely engineered to customer requirements, the C-Series can handle any type of vessel from mega-yachts to work boats.



MID-RANGE: THE ULTIMATE IN DESIGN, VERSATILITY AND FUNCTIONALITY FROM 150-500 TONS.

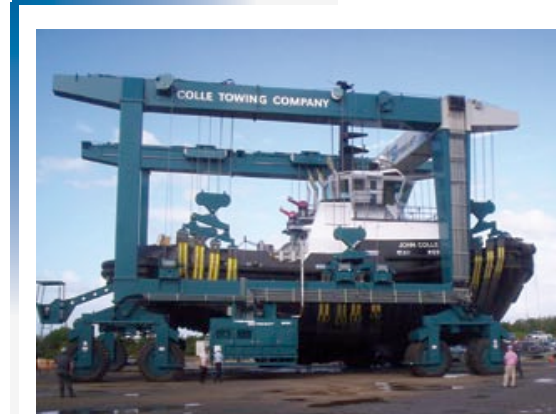
When the vessels you need to move approach 150 to 500 tons, you need a mobile boat hoist that's been engineered to handle the load. That's where Marine Travelift's C-Series Mid-Range takes charge. These heavy-duty haulers meet or exceed every standard that applies for the safest, most economical transportation for your customer's yachts or work boats. And, with the Marine Travelift name, you can be sure that no shortcuts have been taken in their design, manufacturing or assembly.



500C, Burger Boat Company

MAX-RANGE: PRECISELY LIFT AND MOVE THE BIGGEST VESSELS FROM 600-1,000 TONS AND GREATER.

This is a job where only the best and the biggest need apply. Moving vessels from 600 to 1,000 tons, economically and without damage, is standard for these precision lifts. That's why the most progressive marine operations employ the C-Series Max-Range mobile boat hoists from Marine Travelift. These models each uniquely engineered, handle everything from short and heavy fishing vessels and tugs to long yachts and barges. With multiple tires to evenly distribute the load, these heavy haulers are setting new productivity standards for the marine industry. **One machine does it all. Marine Travelift.**



600C, Colle Towing

C-SERIES MID-RANGE ▼

C-SERIES MAX-RANGE ▼



150CII, MCP Yachts



200CII, Nico International



400C, Steiner Shipyard



500C, Westport Shipyard



600C, City of Kodiak



600C, Mangistau Oblast Boat Yard



700C, Grade One Marine



1000C, Colonna's Shipyard



MARINE TRAVELIFT'S ARTICULATED PIVOT TRUNNION relieves any structural stress that may be caused during operation of the boat hoist on uneven ground surfaces.



MORE STEEL in every Marine Travelift means more weight per unit for more heavy-duty work year after year.



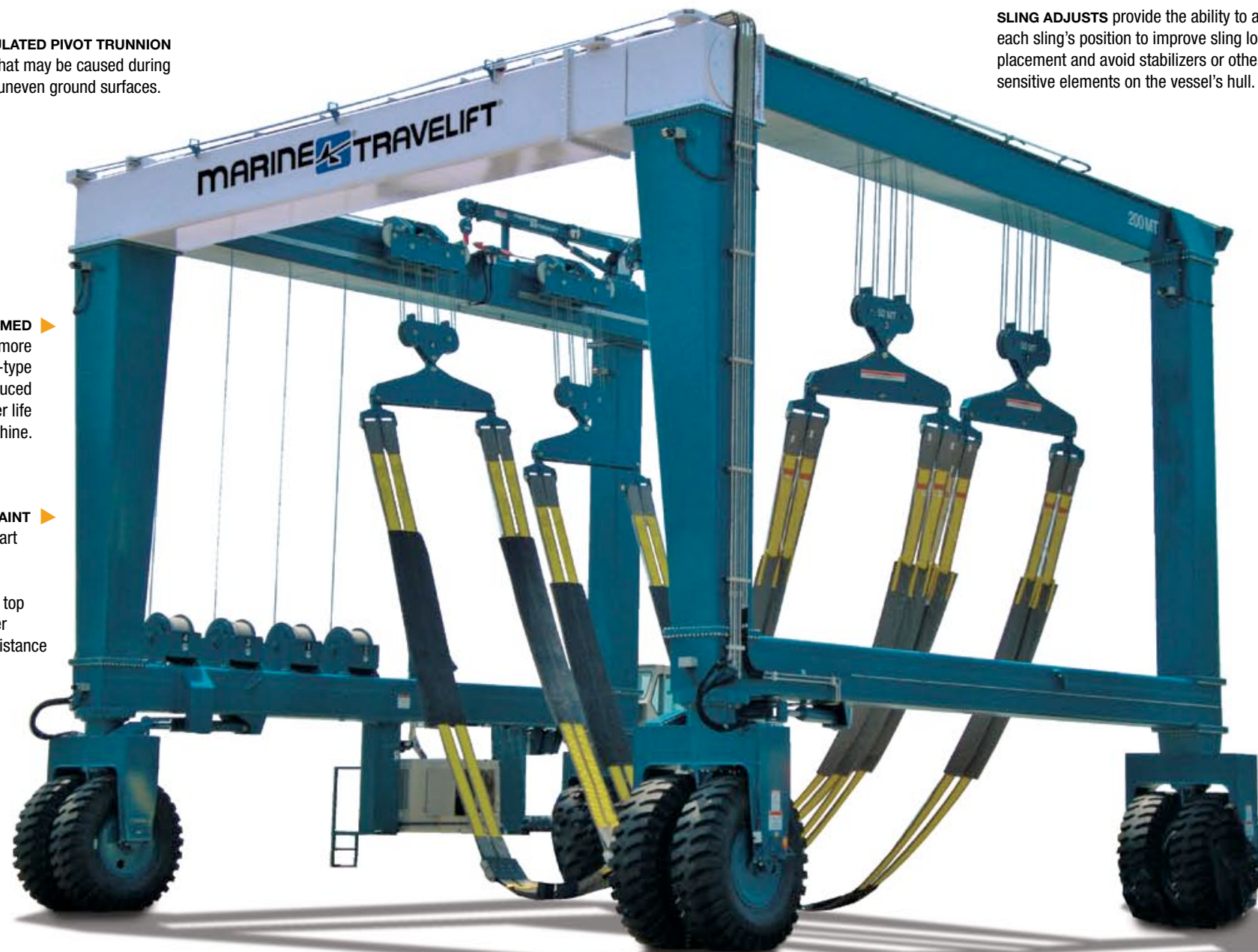
CORDURA COVERS protect hoses from damaging UV rays and abrasions for longer service life.



CONSTANT HOIST EQUALIZATION is achieved by using a continuous reeving system to prevent hull damage and balance loads equally.

BEAM FORMED STRUCTURE is more rigid than box-type designs for reduced fatigue and a longer life for the machine.

SUPERIOR PAINT uses a two-part epoxy primer and two-part polyurethane top coat for better corrosion resistance and better appearance.



SLING ADJUSTS provide the ability to adjust each sling's position to improve sling load placement and avoid stabilizers or other sensitive elements on the vessel's hull.



SEPARATE LIFTING PUMPS for each winch provide even lifting for all hoist sets.



HOIST 2-BLOCK SYSTEMS are designed so that 100% of the available travel height can be used. The operator can hoist up until the very top without any chance of damage.



BOLTING FLANGE provides easy reconfiguration of the dimensions of the boat hoist to meet various hull requirements.



316 STAINLESS STEEL TUBING with plated bolts and Zinc covered pins mean our fasteners and tubing resist corrosion in a harsh marine environment.



OPTIONAL FEATURES DESIGNED TO INCREASE OPERATIONAL EFFICIENCY



OPTIONAL WIRELESS REMOTE CONTROL This popular option has a range of approximately 300 feet (91 meters), increasing operator visibility of the boat, launching piers and surrounding area, improving both operational safety and ensuring maximum maneuverability.



JIB CRANE Hydraulic Jib Cranes are available for Marine Travelift's mobile boat hoists, allowing you to move loads on or off a vessel while it's in the slings. Each is a separately controlled, telescopic-powered crane mounted to the left of the mobile boat hoist. The jib crane rotates 350° to move masts or boat equipment from the inside to the outside of the boat hoist.



SLING & SPREADER CONFIGURATIONS maximizes the versatility and lifting potential by allowing the slings to be repositioned and adjusted to avoid stabilizers or other sensitive elements on a vessel's hull.

C-SERIES MID-RANGE CAPACITY

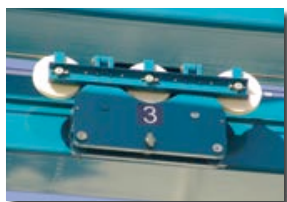
MODEL	CAPACITY	MODEL	CAPACITY
150CII	330,000 lbs / 150,000 kg	300CII	660,000 lbs / 300,000 kg
200CII	440,000 lbs / 200,000 kg	400C	880,000 lbs / 400,000 kg
250C	550,000 lbs / 250,000 kg	500C	1,100,000 lbs / 500,000 kg



MARINE TRAVELIFT'S ARTICULATED PIVOT TRUNNION relieves any structural stress that may be caused during operation of the boat hoist on uneven ground surfaces.



CORDURA COVERS protect hoses from damaging UV rays and abrasions for longer service life.



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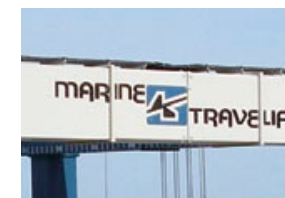
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CONSTANT HOIST EQUALIZATION is achieved by using a continuous reeving system to prevent hull damage and balance loads equally.



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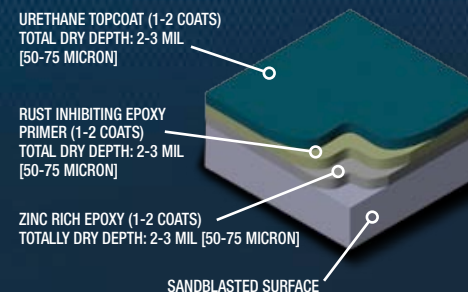
OPTIONAL FEATURES DESIGNED TO INCREASE OPERATIONAL EFFICIENCY



MARINE TRAVELIFT PROVIDES INCREASED GRADEABILITY through additional drive motors that allow its mobile boat hoists to travel over inclined, uneven or sloped surfaces. This increases the hoist's traveling efficiency, and it allows you to maximize your yard space by utilizing areas once deemed unusable.



ALL WHEEL ELECTRONIC STEERING offers precision steering control for handling vessels in limited yard space. Marine Travelift offers five steering modes; Front, Rear, Coordinate, Crab and Carousel steering.



ZINC-ENRICHED PRIMER The standard Marine Travelift paint consists of a corrosion-inhibiting epoxy primer together with a polyurethane top coat. Our primer increases paint life in the most challenging conditions.

C-SERIES MAX-RANGE CAPACITY

MODEL	CAPACITY	MODEL	CAPACITY
600C	1,320,000 lbs / 600,000 kg	800C	1,760,000 lbs / 800,000 kg
700C	1,540,000 lbs / 700,000 kg	1000C	2,200,000 lbs / 1,000,000 kg



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E-mail: sales@marinettravelift.com

www.marinetravelift.com



SERVICE & SUPPORT YOU CAN COUNT ON.

Premier technology, worldwide support.

Working with Marine Travelift's dealer network provides you with the benefits of having an easily accessible worldwide and multi-lingual customer service team dedicated to helping you find the parts you need, when you need them. Our substantial investment in information services and web technology means we can offer the very best in customer service, ensuring that our customers are always able to keep their equipment in prime operating condition. Marine Travelift will continue to invest in service and parts capabilities that add value for our customers, and we diligently staff our service department with qualified, experienced professionals who care deeply about our customers' ongoing success.

Our dealers make the difference.

Marine Travelift has an experienced worldwide network of dealers to help install your equipment and provide ongoing maintenance and repair service. Our dealers are highly qualified lifting professionals who have been carefully selected to be members of our team. We've chosen these dealers because they fully embrace our commitment to offering the best customer service in the industry. A Marine Travelift mobile boat hoist is a serious investment for your business, and we understand how important it is for your machine to be up and running. We keep this in mind each time we hand-pick new dealers, as they will represent our product and the respected Marine Travelift name with care and integrity around the world.



Marine Travelift cares about your business.

Even the best mobile boat hoist in the industry needs to have a support system, and that system has to work everywhere. That's why Marine Travelift has developed a comprehensive program to provide world-class parts, service, technical training and support. No matter where you are, there's a Marine Travelift dealer and service team ready to provide you with the parts and service you need to get your mobile boat hoist back into operation with minimal downtime. With Marine Travelift's CustomerCare program, you can rest assured that you've got the best-built and best-supported mobile boat hoist in the world.

Information contained within this brochure is believed to be correct at time of printing. Not all accessories shown in photos or described may be available as standard equipment or as an option. Options, features and specifications are subject to change without notice.

MARINE TRAVELIFT®
TRUSTED NAME PROVEN VALUE



SELF-PROPELLED

TRANSPORTER



Your move to more profitability has arrived.

PRODUCTIVITY STARTS HERE.

Changing Marina Managementand Maximizing Profitability

At Marine Travelift, our business objective is to further our understanding in the field of Marina Management. This understanding helps us design tools to better help you optimize the efficiency and effectiveness of your marina. In line with this goal we have added a new line of Self-Propelled Transporters. When used in tandem with a Marine Travelift boat hoist, these new transporters can increase the revenues of your yard operation by more than 50%!

Greater Land Utilization

Our transporters are significantly narrower than a boat hoist, which allows you to park boats closer together in your boatyard. This tighter packing can virtually double the storage capacity of your yard, which translates directly into higher boat storage revenues.

Improved Boat Handling Efficiency

Using a boat hoist alone requires you to lift a boat out of the water and drive the boat to a storage position (often a good distance from the pier), then go back to the pier empty to pick another boat. During this entire transport time the boat hoist is not available for lifting. Using a transporter in tandem with your boat hoist allows you to lift a boat and then set it directly onto the transporter. While the transporter efficiently maneuvers the boat into a storage location, the boat hoist is available to lift the next customer's boat. By the time the boat has been lifted out of the water, the transporter is back and ready to receive it...increasing your peak lifting capacity by up to 70%.

The benefits of adding a transporter don't stop with increased lifting and storage revenues. Contact your local dealer to explore why adding one to your operation makes great business sense!



► INCREASED LIFTING REVENUES	Boat hoist alone	Boat hoist in tandem with transporter
Lifting Charge (one way, per foot))	\$6.00	\$6.00
Average Boat Length (feet)	34	34
Marina Operating Hours (per week)	40	40
Peak Season Length (weeks)	12	12
Usage Efficiency	75%	75%
Boat Hoist Time Required Per Lift (minutes)	40	24
Maximum Lifts Per Week	60	100
Annual Lifting Revenue	\$110,160	\$183,600
Annual Lifting Revenue Increase	0	\$73,440
% Increase	0	67%

► INCREASED STORAGE REVENUES	Boat hoist alone	Boat hoist in tandem with transporter
Storage Fee (\$ per foot per day)	\$1.00	\$1.00
Average Boat Length (\$ per foot per day)	34	34
Average Occupancy	80%	80%
Boat Storage Capacity (# of boats)	8	12
Annual Storage Revenue	\$79,424	\$119,136
Annual Storage Revenue Increase	0	\$33,712
% Increase	0	50%

Working in tandem lifts productivity.



A Marine Travelift boat hoist and transporter are designed to work in tandem. With these two machines working together, a marina can dramatically improve efficiency by decreasing the average time it takes to lift a boat out of the water and into its appropriate storage space or service bay. By working in tandem, each machine, and the men required to run them, constantly operate at peak efficiency.



The open-end design permits the lifting of a boat directly from its storage position onto the transporter without a pre-lift. Design innovation like this ensures that our transporters will become a vital tool in the productive operation of your yard.



Flexibility for Large or Small Marinas. Our transporters are highly flexible in their lifting options and are perfect for multiple applications. They allow power boats to be lifted by hydraulic lifting supports or sailboats to be lifted on cradles or with out the cradles using the hydraulic lifting supports.

Easier operation, higher quality, less down time.



REMOTE CONTROL
The remote control gives the operator the flexibility to maneuver the transporter while observing the move from all angles. This standard feature allows personnel to be utilized more efficiently.



OPEN END DESIGN
The open-end design of our transporters allows precision positioning under a vessel without having to pre-lift the vessel into position. This saves both time and money by allowing the transporter to immediately begin transporting the vessel to a new location.

4-CORNER STEERING
In order to allow for maximum flexibility, our transporters can easily be steered into tight spaces making the most confined yard space more productive.



INDEPENDENT FRONT & REAR WHEEL STEERING
This feature allows you to maneuver the transporter into confined spaces, which in turn enables the vessels to be stored in closer proximity to each other. Having this feature enables the maximization of boat storage revenues.



CRAB STEERING
Crab steering is designed to provide the operator with the ability to maneuver a boat diagonally into position, a significant advantage versus conventional steering controls. This ability allows a marina to take full advantage of confined spaces and challenging storage configurations.

HYDRAULIC SELF-LEVELING SUSPENSION
By designing the front and rear wheels to be self leveling, the hydraulic self-leveling suspension has ensured stability and security when moving vessels across uneven surfaces.

HYDRAULIC LIFTING
With the hydraulic lifting supports, standard on our 80 ton units and above, the adjustments required for lifting and balancing the load on the transporter can be made quickly. You can trust our lifting pads to support your precious cargo.

► MODEL SPECIFICATIONS

Model	TM 15	TM 20	TM 30	TM 40	TM 50	TM 60	TM 80	TM 100
Capacity (Metric Tons)	15	20	30	40	50	60	80	100
Motor (HP)	23	27	36	47	50	60	80	100
Speed (ft/min)	164	164	164	164	164	164	164	164
Overall Length (ft/in)	25'4"	25'6"	35'6"	35'10"	41'2"	41'4"	51'2"	59'1"
Inside Clear Width (ft/in)	7'2"	6'11"	9'0"	8'11"	9'0"	8'11"	8'10"	8'2"
Overall Width (ft/in)	11'3"	11'6"	14'7"	14'8"	14'7"	14'8"	16'1"	16'9"
Collapsed Height (ft/in)	2'8"	2'10"	3'4"	3'6"	3'5"	3'7"	4'1"	4'1"
Lifting Height (in)	9.8"	9.8"	11.8"	11.8"	11.8"	11.8"	11.8"	11.8"

TM 120	TM 140	TM 160	TM 180	TM 200	TM 250	TM 300	TM 350	TM 400	TMS 180
120	140	160	180	200	250	300	350	400	180
120	130	140	150	170	230	C.F.	250	C.F.	C.F.
164	164	164	164	164	164	164	164	164	164
59'1"	59'1"	60'8"	65'7"	65'7"	68'11"	73'10"	77'5"	82'8"	39'4"
8'2"	8'2"	8'4"	8'2"	8'2"	8'7"	8'10"	8'10"	8'10"	4'7"
16'9"	16'9"	16'9"	16'9"	16'9"	17'1"	17'6"	17'6"	17'6"	8'4"
4'1"	4'11"	4'11"	5'2"	5'2"	5'7"	4'4"	6'0"	6'0"	4'0"
11.8"	11.8"	11.8"	11.8"	11.8"	17.7"	17.7"	17.7"	17.7"	17.7"

* Larger units are available up to 1,000 metric tons. Please consult factory for details.

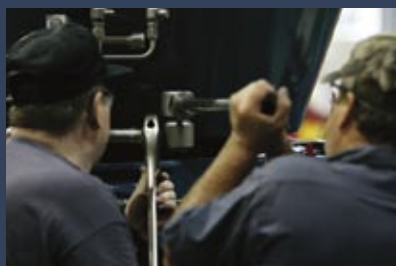


Our people make the difference.

For more than 50 years Marine Travelift has been recognized as the leader in mobile transport systems for the marine industry. What makes Marine Travelift different is the dedication and commitment of its people to provide each customer with a higher quality product and superior service. If this is your year for a new mobile transport system, strongly consider the difference the people of Marine Travelift can make.

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MARINE  TRAVELIFT[®] inc.

Information contained within this brochure is believed to be correct at time of printing.
Not all accessories shown in photos or described may be available as standard equipment or as an option.
Options, features and specifications are subject to change without notice.

150CII

MOBILE BOAT HOIST
150 Metric Ton Capacity

MARINE  **TRAVELIFT®**

STANDARD SPECIFICATIONS

	US Measure	Metric
General Information		
Rated lifting capacity	330,000 lbs	150,000 kg
Shipping weight	105,000 lbs	47,630 kg
*Machine shipped disassembled.		
Inside clear height	30'0"	9.14 m
Inside clear width	28'0"	8.53 m
Engine		
Engine make/model	John Deere Diesel 4045HF – Tier 3	
Horsepower	154 HP @ 2200 RPM / 115 kW	
Cooling	Liquid	
Service Capacities		
Oil tank capacity	57 Gal	216 L
Fuel tank capacity	50 Gal	189 L
Hoist System		
Hoist	(6) Independent Hydraulic Controls	
Hoisting speed (standard)	7 ft/min	2.13 m/min
Hoisting speed (low/high) (optional)	15 ft/min	4.57 m/min
Wire rope		
Number of parts of lines	24	
Wire rope	3/4" (19 mm), 6 x 19 Class, Galvanized XIPS IWRC	
Depth below grade (standard)	5'0"	1.52 m
Depth below grade (optional)	20'0"	6.10 m
Slings		
Maximum sling spacing	40'0"	12.19 m
Powered sling adjustment	One set standard, 2nd set optional	
Slings	(12) Nylon 2-ply, Quick disconnect pin	
Protection	Keel pads and Chine pads	
Sling dimension	12" x 44'	0.30 m x 13.41 m
Drive System		
Drive type	Hydrostatic, closed loop	
Travel speed (standard)	75 ft/min	22.86 m/min
Travel speed (low/high) (optional)	75/150 ft/min	22.86/45.72 m/min
Gradeability		
Gradeability (standard)	6%	
Increased Gradeability (optional)	10%	
*Increased gradeability reduces travel speeds.		
**Gradeability shown for concrete or asphalt surfaces. For other surfaces, deduct as follows:		
Hard packed ground or gravel...2%; Loose gravel...2 to 7%; Mud...2 to 13%; Soft sand...4 to 13%.		
Tires		
Tire type	(8) Recap Lug 50 x 20	
Tire pressure	150 PSI	10.3 Bars
Steering type	2-WS at 90°	
2-WS inside turning radius	0'0"	0.00 m
2-WS outside turning radius	52'0"	15.85 m
Exterior Paint		
Color	Blue & Grey	
Primer	2-part Epoxy	
Paint	2-part Urethane	

Model 150CII at MCP Yachts in Brazil



(Machine may be shown with options)

STANDARD EQUIPMENT

- Formed beam design (high strength, long life)
- Pivot trunnion
- Bolting flange in top beam
- O-ring face seal hydraulic fittings
- 316 Stainless steel hydraulic tubing
- Hydrostatic drive
- Inline hoist block sheaves (space efficient, no twisting)
- Powered sling adjustments
- Independent hoists (synchronized)
- Load equalizing system
- Load indicators

OPTIONS

- Changes in height and width
- Wireless remote control
- 2-Speed hoists
- Changes in block drop below pier level
- All wheel electronic steering
- Additional hydraulic sling adjustment
- Enclosed cab w/ heater, defroster fan, wiper
- Sound suppression kits
- AVT fuel saver (wireless remote control required)
- 2-Speed drive

width can be modified to fit customer specifications.

MARINE TRAVELIFT

33'-0" [10.06M]
OVERALL HEIGHT (LIGHT)

30'-0" [9.15M]
INSIDE CLEAR HEIGHT (LOADED)

3.5" [0.09M]
C.L. OF BLOCK TO I.C.W.

28'-0" [8.53M]
INSIDE CLEAR WIDTH

4'-3" [1.30M]

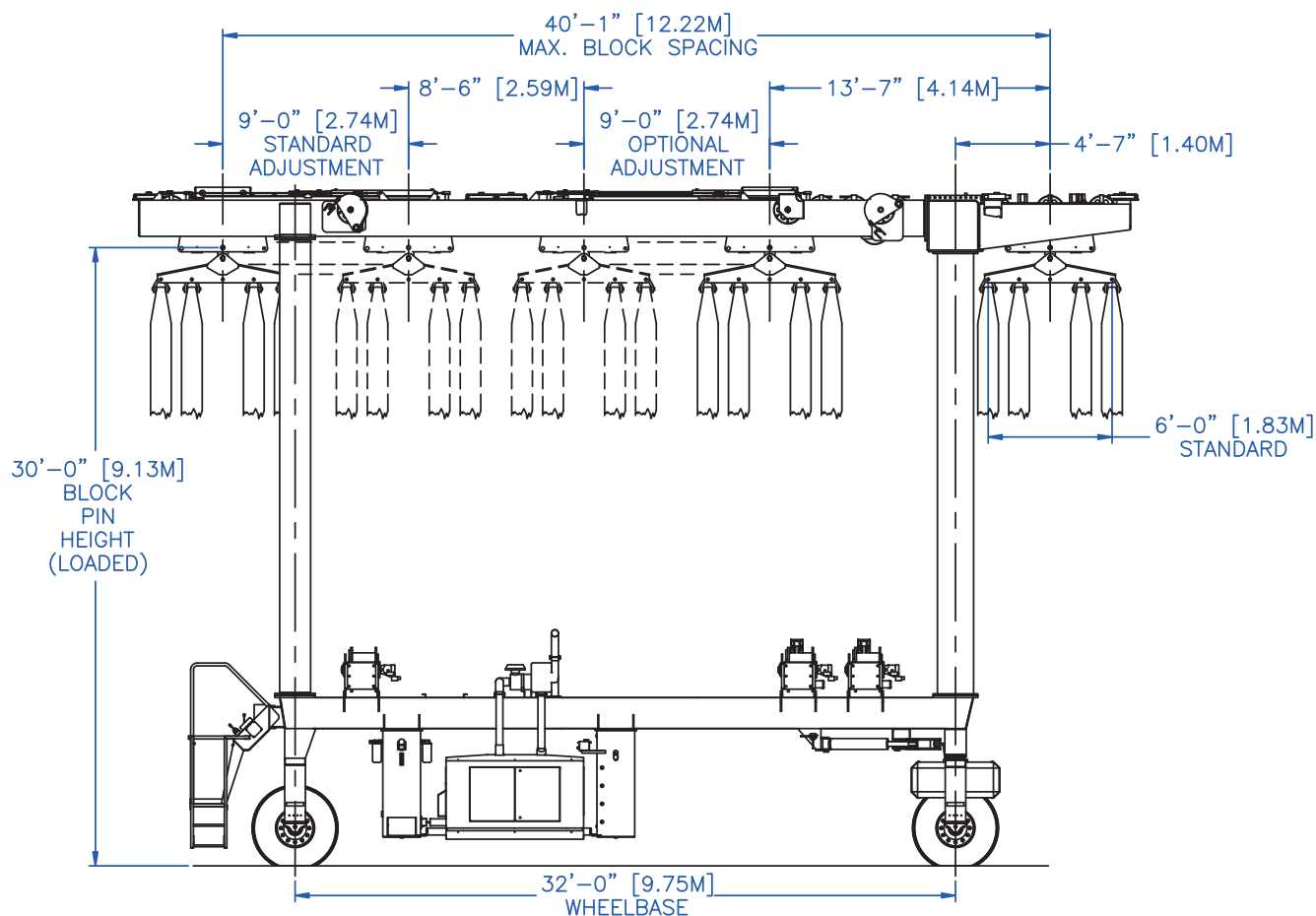
2'-7" [0.79M]

33'-0" [10.06M]

2'-5" [0.75M]

2'-7" [0.79M]

38'-2" [11.63M]
OVERALL WIDTH



STANDARD SPECIFICATIONS

	US Measure	Metric
General Information		
Rated lifting capacity	176,000 lbs	80,000 kg
Shipping weight	37,500 lbs	17,000 kg
Engine		
Engine make/model	Lombardini Diesel	
Horsepower	80 HP	60 kW
Cooling	Liquid	
Lifting System		
Lift cylinder controls	Right rear / Left rear / Front	
Lifting height distance	11.8"	300 mm
Number of wheels	16	
Steering System		
Steering system	All wheel steering	
Steering modes	2-WS / 4-WS / Crab steering	
Steering angle	35°	
Center line turning radius (std.)	27'6"	8.39 m
Drive System		
Drive type	Internal drive	
Number of driven wheels	4	
Number of hydrostatic brake wheels	4	
Number of park brake wheels	4	
Gradeability	3%	
Speed	164 ft/min	50 m/min
Tires		
Tire type	Solid	
Tire model	300 - 15	
Tire pressure	130 PSI	9.0 Bars
Tire maximum load	14,890 lbs	6,750 kg
(up to 164 ft/min or 50 m/min)		
Exterior Paint		
Color	Blue & Grey	
Primer	2-coat Rust Preventative	
Paint	2-coat Seascape Synthetic	

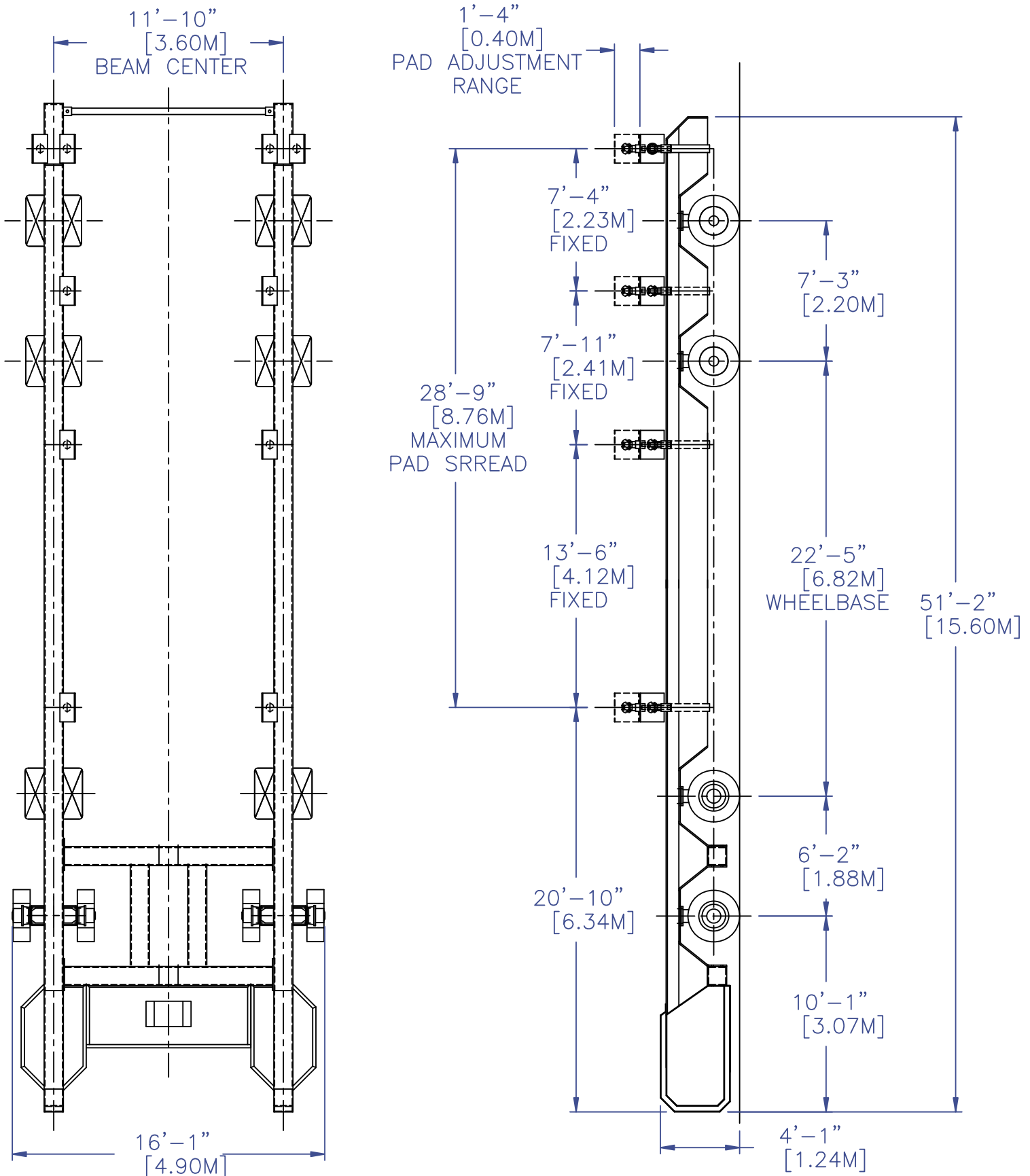


STANDARD EQUIPMENT

- Self powered with diesel engines
- Hydraulic lifting and suspension
- Radio remote control
- Roll and tilt control
- All wheel steer, crab mode and 2-wheel steering
- Open end design
- Solid tires
- Manual override controls
- Adjustable to most boats

OPTIONS

- Changes in length and width
- Higher wheel lift cylinders (all)
- Increasing gradeability (with internal drives)
- Operator sit down cab
- Cradle/keel beam pick-up leg (pair)
- Hydraulic boat pads (pair)
- Keel beam
- Load pressure gauges
- Electronic load indicator



SHOWN WITH OPTIONAL PADS AND PICK-UP LEGS