

# Critical Pick Lift Work Sheet

( Insert Crane Type Here )

Description of Load:

Durrigger Length: \_\_\_\_\_  
 Durrigger Width: \_\_\_\_\_  
 Machine Float Area: \_\_\_\_\_  
 Added Durrigger Pad Area: \_\_\_\_\_  
(Mandatory)

Boom Length: \_\_\_\_\_

Project: \_\_\_\_\_  
Date: \_\_\_\_\_

Reviewers Statement:

I have reviewed the information on this sheet and found it to be complete and accurate.

Date: \_\_\_\_\_  
Signature: \_\_\_\_\_

Tandem Picks: Reduce Chart capacity by 25% and create a critical pick sheet for each crane. Call DSHA Article 98.4994(a)

## Wind Load Checks

(Good for winds of 20mph or less)

Check 1: (Boom structure)

$$\frac{50v^2}{400} A \leq \text{Rated Load at Radius R}$$

Check 1 Solution: \_\_\_\_\_ D.K. No Good

Check 2: (Overturning Due to wind on load and boom)

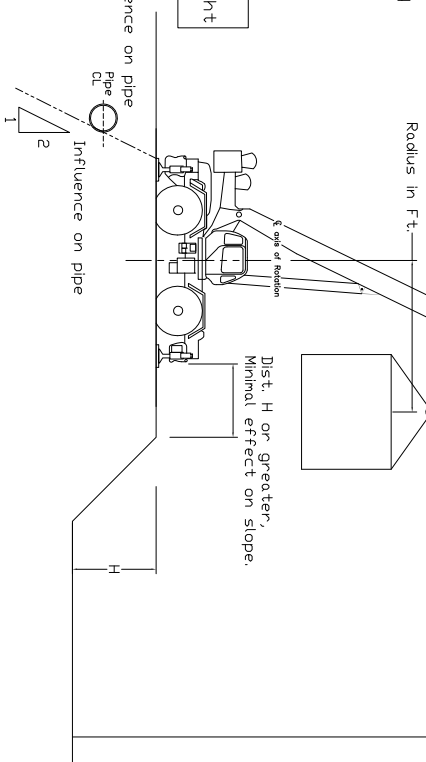
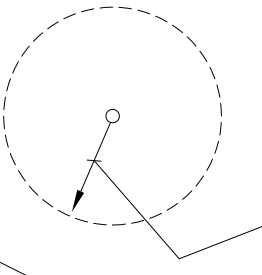
$$\frac{v^2}{300} A \sqrt{\frac{L^2}{R^2} - 1} + \frac{3v^2}{800} \left( \frac{L^2 - R^2}{R} \right) = \text{Load to be added to pick weight}$$

Check 2 Solution: \_\_\_\_\_

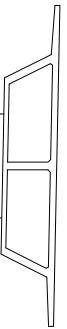
v = wind velocity in mph  
 L = Length of boom in ft.  
 R = Pick radius in ft.  
 A = Area of load in s.f.

(Method taken from Shapiro, "Cranes and Derricks", Section 85)

Power Lines	
DSHA 1926550(a)(15)(ii)	
1 to 50 Kva	= 10 ft.
51 to 200 Kva	= 15 ft.
201 to 350 Kva	= 20 ft.
351 to 500 Kva	= 25 ft.
501 to 750 Kva	= 35 ft.
751 to 1000 Kva	= 45 ft.



Above Ground Obstructions



Total Pick Weight:

Pick Configuration:

Max. Radius to be used: \_\_\_\_\_  
 Chart Capacity at Radius: \_\_\_\_\_  
 Minimum Boom Angle: \_\_\_\_\_  
 Percent of chart capacity: \_\_\_\_\_

Set-Up Requirements:

Max. ground slope: \_\_\_\_\_  
 Max. Wind speed: \_\_\_\_\_  
 Durrigger Load: \_\_\_\_\_  
 Durrigger Pad Area: \_\_\_\_\_  
 Actual Ground Bearing Pressure: \_\_\_\_\_  
 Allowable Ground Bearing Pressure: \_\_\_\_\_

Underground Utilities

Depth to top of pipe: \_\_\_\_\_

Pipe Diameter: \_\_\_\_\_

Pipe Wall Thickness: \_\_\_\_\_

Pipe Material: \_\_\_\_\_

Horizontal Dist. from tracks to pipe CL: \_\_\_\_\_

Slopes

Hi: \_\_\_\_\_

Slope: \_\_\_\_\_

Dist. from Float to Nose: \_\_\_\_\_

Estimated Ground Capacities (psf)

- Asphalt: 12,000 psf
- Hard Silt (NX35): 8,000-10,000 psf
- Firm Ground (10XN35): 5,000 psf
- Soft Ground (44N10): 3,000 psf
- Very soft (NK4): 2,000 psf