Crane Safety Committee and Lift plan procedure

Objectives

- ☑ Organize and formalize the crane safety committee
- ☑ Ensures project team performs due diligence project safety planning before crane lifts
- ☑ Create a lift plan data bank
- ☑ Establish the company lift plan procedure
- ☑ Identifies the competent person(s) on site who will be accountable for planning and ensuring proper equipment use and lift safety is maintained

Crane Committee members

- Crane committee members will be described as a company “Competent Persons” .

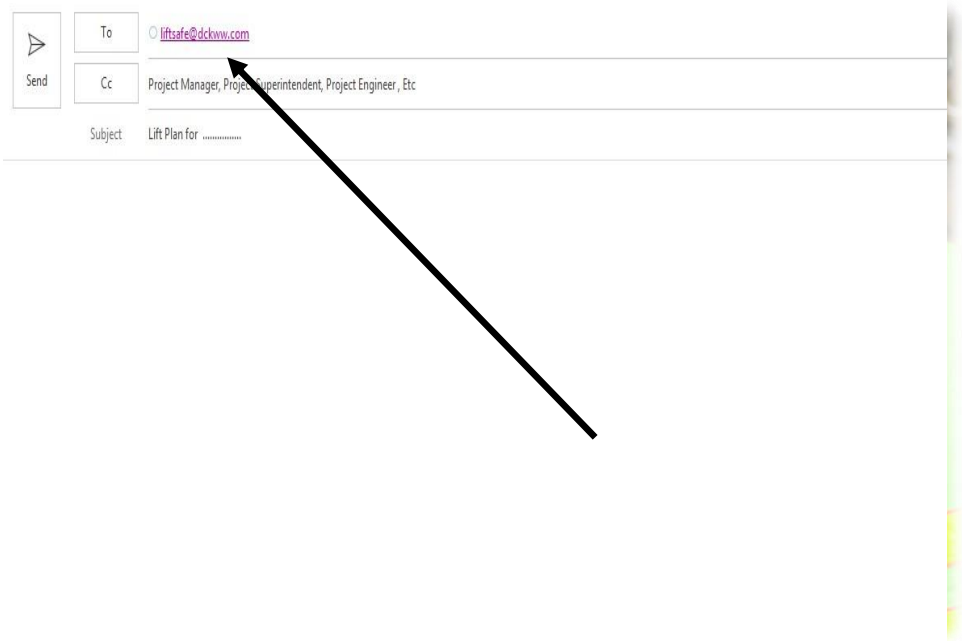
Competent person' is defined as 'one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are hazardous, or dangerous to employees, and who has company authorization to take prompt corrective measures to eliminate them"

Crane Committee members

- Project Safety Rep.
- Project Superintendent
- Project Manager

Submit Documents

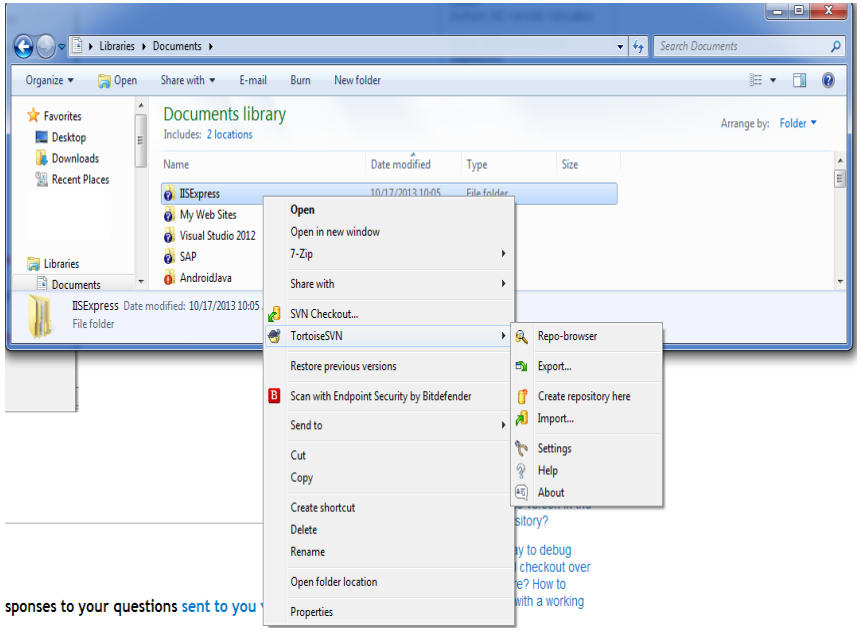
- Person in charge of lift work will submit lift plan and the appropriate documents.



Required documents

Non - Critical Lift

- Activity Hazard Analysis
- Lift Plan Form
- Crane Spec Sheet
- Crane certification of inspection
- Operator certification
- Riggers information
- Summary of the lift including description of the load



Required documents

Repetitive Non-Critical Lifts (General Hoisting)

- Standard general daily crane work for hoisting formwork, cmu, rebar, general material handling, etc.
- A specific plan would not be submitted for each pick, but rather a general lift plan based on radius, weight, standard rigging configurations, etc.
- Weights and radius to be checked and confirmed with each lift as standard practice.
- Note: Only competent riggers and signalmen shall direct the operator.
- Rigging Inspected Daily

Required documents

For Critical Lift

- Activity Hazard Analysis
- Lift Plan Form
- Crane Spec Sheet
- Crane certification of inspection
- Operator Certification of Inspection
- Riggers information
- Critical Lift Form
- Pre Lift-Meeting toolbox
- Summary of the lift including description of the load
- If man basket will be used a Load Test form should be included

Critical lift

- A critical lift is one that exceeds 75% of the rated capacity of the crane or derrick, or b) requires the use of more than one crane or derrick. ... Any lift that requires more than one crane. Loads exceeding 75% of a crane's rated capacity, Lifting of personnel, lift which required the load to be lifted, swung or placed out of the operators view, lift within 20’ of power lines and involve a non-routine or technically difficult rigging arrangements

When to submit documents ?

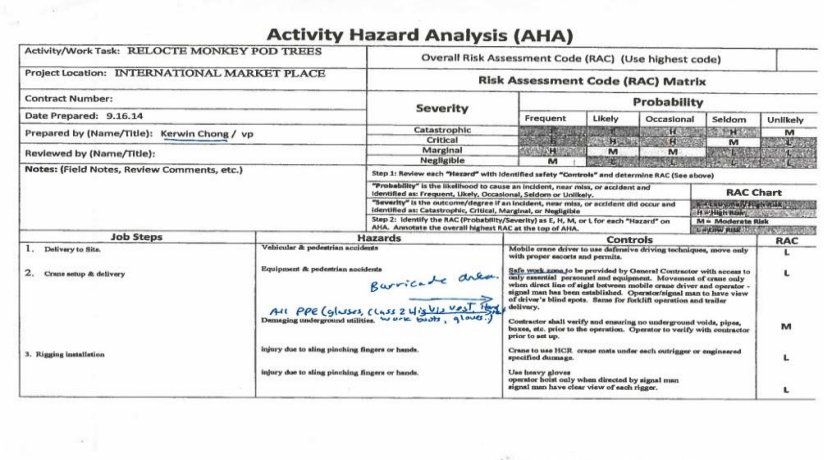
Non critical lift

in advance

Critical lift

in advance

Required documents



Activity Hazard Analysis (AHA)

Activity/Work Task: RELOCTE MONKEY POD TREES	Overall Risk Assessment Code (RAC) (Use highest code)
Project Location: INTERNATIONAL MARKET PLACE	Risk Assessment Code (RAC) Matrix
Contract Number:	
Date Prepared: 9.16.14	
Prepared by (Name/Title): Kerwin Chong / vp	
Reviewed by (Name/Title):	
Notes: (Field Notes, Review Comments, etc.)	

Severity	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	H	H	H	M	M
Critical	H	H	H	M	L
Marginal	H	M	M		L
Negligible	M				

Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)

"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.

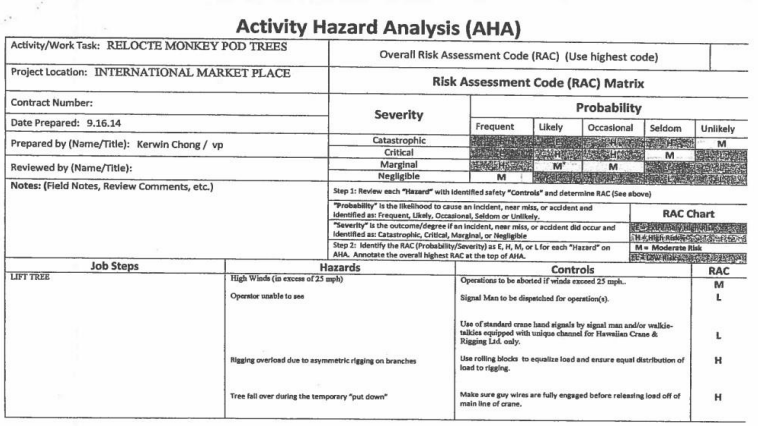
"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible

Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.

RAC Chart

E = Extremely High Risk
H = High Risk
M = Moderate Risk
L = Low Risk

Job Steps	Hazards	Controls	RAC
1. Delivery to Site.	Vehicular & pedestrian accidents	Mobile crane driver to use defensive driving techniques, move only with proper escorts and permits.	L
2. Crane setup & delivery	Equipment & pedestrian accidents Barricade area.	Safe work zone to be provided by General Contractor with access to only essential personnel and equipment. Movement of crane only when direct line of sight between mobile crane driver and operator - signal man has been established. Operator/signal man to have view of drive's blind spots. Same for forklift operation and trailer delivery.	L
	All PPE (gloves, class 2 high vis vest, hard hat, work boots, gloves.) Damaging underground utilities.	Contractor shall verify and ensuring no underground voids, pipes, boxes, etc. prior to the operation. Operator to verify with contractor prior to set up.	M
3. Rigging installation	injury due to sling pinching fingers or hands.	Crane to use HCR crane mats under each outrigger or engineered specified dunnage.	L
	injury due to sling pinching fingers or hands.	Use heavy gloves operator hoist only when directed by signal man signal man have clear view of each rigger.	L



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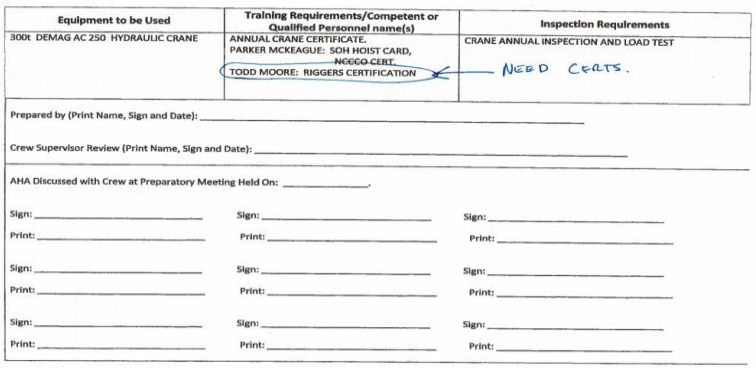
RAC Chart

E = Extremely High Risk
H = High Risk
M = Moderate Risk
L = Low Risk

Job Steps	Hazards	Controls	RAC
LIFT TREE	High Winds (in excess of 25 mph)	Operations to be aborted if winds exceed 25 mph.	M
	Operator unable to see	Signal Man to be dispatched for operation(s).	L
		Use of standard crane hand signals by signal man and/or walkie-talkies equipped with unique channel for Hawaiian Crane & Rigging Ltd. only.	L
	Rigging overload due to asymmetric rigging on branches	Use rolling blocks to equalize load and ensure equal distribution of load to rigging.	H
	Tree fall over during the temporary "put down"	Make sure guy wires are fully engaged before releasing load off of main line of crane.	H



Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
300t DEMAG AC 250 HYDRAULIC CRANE	ANNUAL CRANE CERTIFICATE. PARKER MCKEAGUE: SOH HOIST CARD, NCCCO CERT. TODD MOORE: RIGGERS CERTIFICATION	CRANE ANNUAL INSPECTION AND LOAD TEST NEED CERTS.

Prepared by (Print Name, Sign and Date): _____

Crew Supervisor Review (Print Name, Sign and Date): _____

AHA Discussed with Crew at Preparatory Meeting Held On: _____.

Sign: _____	Sign: _____	Sign: _____
Print: _____	Print: _____	Print: _____
Sign: _____	Sign: _____	Sign: _____
Print: _____	Print: _____	Print: _____
Sign: _____	Sign: _____	Sign: _____
Print: _____	Print: _____	Print: _____

AHA
(Activity Hazard Analysis)

Required documents

All Ship & Cargo Surveys, Ltd.

This is to certify that the undersigned representative did at the request of

Hawaiian Crane & Rigging
NAME OF CLIENT

Attend the

Terex-Demag	AC 250-1	85014	3002
MANUFACTURER	MODEL	SERIAL NUMBER	EQUIPMENT NUMBER

Located at:

Mapunapuna Yard
WORK SITE AT TIME OF EXAMINATION AND/OR TEST

In connection with the Annual certification requirements of the U.S. Department of Labor Regulations (29CFR Part 1910, 1919 or 1926). ASME B30 Standards, B30.1 - B30.29, as appropriate for the crane or hoisting equipment, and PCSA #2, as applicable. In the case of 29 CFR 1919 requirements, an appropriate report is being forwarded to the U.S. Department of Labor (OSHA).

REPRESENTATIVE, ALL SHIP & CARGO SURVEYS, LTD.

2014-02-27
DATE

ASCS 043-14
CERTIFICATE NUMBER

All Ship & Cargo Surveys, Ltd. CRANE INSPECTION & LOAD TEST

OPERATOR/OWNER	CONTACT	PO NO.	INSPECTION LOCATION	SURVEY TYPE
Hawaiian Crane & Rigging	Kenji Saito	39026	Mapunapuna Yard	Annual

INSPECTION DATE	MAKE	MODEL	SERIAL NO.	EQUIPMENT NO.
2013-02-27	Terex-Demag	AC 250-1	85014	3002

UNIT AS EQUIPPED

MINOR DEFICIENCIES

1. Only partial load charts available. (Maintenance Manual on hand.)

MAJOR DEFICIENCIES

None

MACHINE FIT	RATED AT	OWNER'S REPRESENTATIVE	INSPECTOR	DATE
Yes	As Indicated by LMI	Tom Rankin/Operator	J.P. Mihlbauer, Sr.	2014-02-27

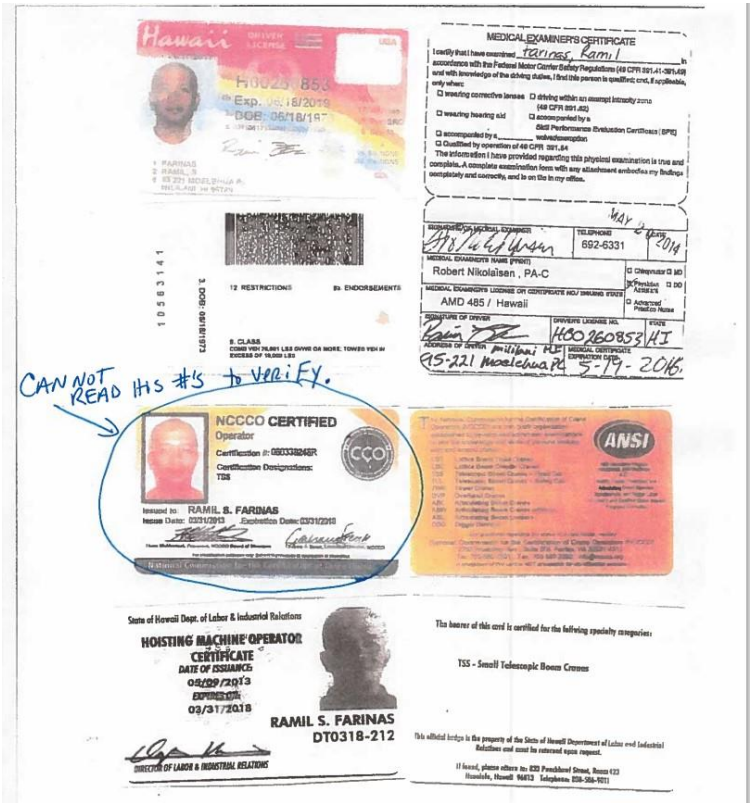
Deficiency/Recommendation Report

Inspector: Paulino G Aresta Jr 2/13/2014 Company Representative:

DATE Not SAME AS the 1st Pg.

Crane certificate of inspection

Required documents



LIFTING PLAN

NOTE: A LIFT PLAN SHOULD BE COMPLETED PRIOR TO MOBILIZATION OF EQUIPMENT AND RIGGING

	Location:	Anguilla Project					
	Load Description:	Electrical Man Hole Cover Installation					
	Lift Description:	Lift Electrical Man Hole concrete cover from Ghround and set in top of the man hole					
	Date of Lift:						
A.	**WEIGHT**			E.	**Sizing of Slings**		
	1 Equipment Conditions:	New [ ] Used [x]			1 Sling Selection		
	2. Weight Empty:	0	LBS.		a. Type of Arrangement		wire rope 1/2
	3. Weight of Headache Ball:	600	LBS.		b. Number of Slings and Weight		4 x 5 # each
	4. Weight of Block:	0	LBS.		c. Sling Size		1/2"
	5. Weight of Lifting Bar:	0	LBS.		d. Sling Length		10'
	6. Weight of Slings and Shackles:	36	LBS.		e. Rated Capacity of Sling		6200# each
	7. Weight of Jib:	0	LBS.		Shackle Selection Weight and Number		4 : 3 # each
	[x] Erect [ ] Stored				a. Pin Diameter (inches)		1/2"
	8. Weight of Headache Ball on Jib:	0	LBS.		b. Capacity (tons)		2 ton each
	9. Load of Cable:	344	LBS.		Shackle Attached To load		
	10. Allowance for Unaccounted				a. Number and Weight		3# each
	Material or Equipment	0	LBS.		b. Lifting Lugs Load		
	Concrete cover	10000	LBS.		c. Weight of the rigging		780#
				F.	**CRANE**		
	Total Weight:	10780	LBS.		1 Type of Crane		Terex RT 160
					2. Crane Capacity		60 ton
	Source of Load Weight:	Specs / Drawings			3. Lifting Arrangement		
	Weights Verified By:	Engineering			a. Max Distance, Center of Load		
					to Center Pin of Crane		30'
B.	**JIB**				b. Length of Boom		75'
	Erected [ ] Stored [x]				c. Angle of Boom At Pick-up		62°
	1 Is Jib to be used:	Yes [ ] No [X]			d. Angle of Boom At Set		62°
	2. Length of Jib:	0	FT.		e. Rated Capacity of Crane Under Severest		
	3. Angle of Jib:	0	DEG.		Lifting Conditions (From Chart)		
	4. Rated Capacity of Jib:				1 Over Rear		35,300
	(From Chart)	0	LBS.		2. Over Front		35,300
					3. Overside		35,300
C.	**Crane Placement**				4. From Chart--Rated Capacity of Crane		
	1 Any Deviation From Smooth				For This Lift		35,300
	Solid Foundation in the Area?				5. Max. Load On Crane		10780
	No				6. Lift is		0.31
					7. max lift weight for 75%		26475
					of Crane's Capacity		
	2. Electrical Hazards in the Area?			G.	**PRE-LIFT CHECK LIST**		YES / NO
	N/A				1 Matting Acceptable?		N/A
					2. Outriggers Fully Extended?		yes
					3. Crane in Good Condition?		yes
	3. Obstacles or Obstructions to Lift and Swing?				4. Swing Room?		Y
	N/A				5. Head Room Checked?		Y
					6. Max Counterweights Used?		Y
					7. Tag Line Used?		Y
	4. Swing Direction and Degree (Boom Swing)				8. Experienced Operator?		Y
	south west to sout east				9. Experienced Flagman Assigned?		Y
					10. Experienced Rigger?		Y
D.	Cable				11. Load Chart in Crane?		Y
	1 Number of Parts Cable:	4			12. Wind Conditions: ~ XX MPH		
	2. Size of Cable:	5/8"			13. Tele Handler Inspected By:		
					14. Functional Test of Crane By:		

Special Instructions or Restrictions for Crane, Rigging, Lift, Etc.:

Tag Lines and Rigger; Gusting winds up to 20 mph - use anemometer and stand-down if winds > 25 mph

Diagram Crane and Load Placement	Diagram Rigging Configuration

* Multiple Crane Lifts Require a Separate Lift Plan For Each Crane.
* Any Changes In The Configuration Of The Crane, Placement, Rigging, Lifting Scheme.
Etc., Or Changes in Any Calculations Require That A New Lift Plan Be Developed.

x		Date:		Date:
	Signature of Job Supervisor		Signature - Plan Checked By:	

Operator certification and Lift plan form

Required documents

Lift Plan Summary

Cap Juluca

Concrete Piles

Lift Plan

Work to be done

Lift Concrete piles and set it on a flat bed .

Crane Model and Capacity

Terex RT 160 -60 Ton Capacity

Load Description

Pre-cast concrete piles 5,000 #

Work Radius

75'

Boom Length and angle

115'- (46°)

Total Weight calculation	Transformer unit	5000 #
	Crane cable	60 #
	Wire Rope Slings	6#
	Ball	476#
	Shackles	4#

Total _____

5546 # /

Crane Cap by Chart 8200# = 0.67% crane cap.

Transformer Lift Plan Summary

Based on crane calculations, additional 604# can be add to the load to reach the 75%

if necessary.

Tag line will be necessary to control the load. Lift plan to be cancelled if wind speed is 25 MPH or more sustain.

9/16/ Wire rope Sling to be connected on vertical one leg via 5/8 shackle .

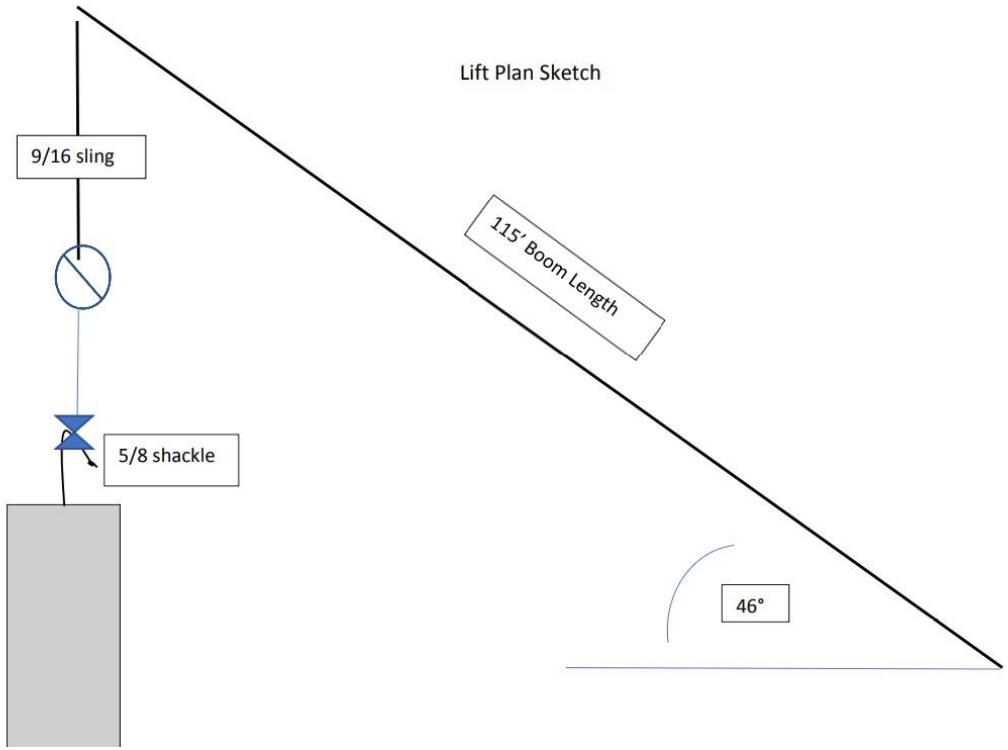
Calculation of the slings.

Sling to be used vertical . Load = 5000 . 9/16 wire rope sling =6400 #cap or Synthetic Web sling 6"=6000 # cap.

Concrete pile will be lifted from the form and set in a flat bed to be transported to the installation area at the beach . Once the truck arrived to the beach , piles will be lifted with an excavator and set it in the correct place.

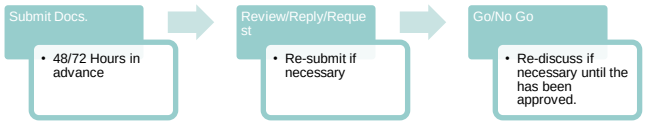
Required documents

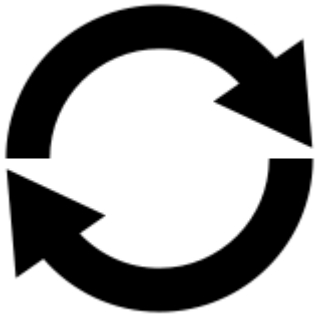
Lift Plan Sketch



Approval process

- Once documents are submitted, the committee will reply to approved or request more information if necessary. Once the reviewers have the proper documentation then an approval will be given to go or no go.





Approval

Submit Docs.

- 48/72 Hours in advance

Review/Reply/Request

- Re-submit if necessary

Go/No Go

- Re-discuss if necessary until the lift plan has been approved.

Approved lift plan and data bank

COMPANY	: PT. SILO
PROJECT	: SEBUKU SINTERING PROJECT
MAT'L NAME	: COAL BIN TANK
LOCATION	: WEST OF RAW COAL
DATE OF ERECTION	:

LIFTING DATA

NO	DESCRIPTION	CRANE
I.	**CRANE TYPE AND MODEL**	TADANO TR-350M
		35 TON
II.	ERECTION LOAD	
	1. Erection Weight	5,2 Ton
	2. Weight of Shackle / Sling	0,5 Ton
	3. Weight of Hook Block	0,5 Ton
	4. Weight of Spreader Beam / Chain Block	- Ton
	TOTAL LOAD	**6,2 Ton**
III.	**CRANE DATAS**	
	1. Crane Capacity	35 Ton
	2. Crane Condition	90%
	3. Main Boom	21,5 Meter
	4. Load line reeving	4 Meter
	5. Working Radius	10 Meter
	6. Lifting Capacity	**8 Ton**
IV.	**SAFETY FACTOR** (Lift. Cap X Crane Condition) / Total Load	**1,2**
V.	**LIFTING DEVICE**	
	1. Sling Wire Size (dia x length)	3/4" x 6 Meter
	2. Sling Quantity to be use	4 Pcs
	3. Sling Wire (Safe Working Load)	4 x 4,5 Ton
	4. Shackle (Safe Working Load)	4 x 6 Ton
	5. Spreader / Lifting Beam (SWL)	- Ton
VI.	**METHODE OF COMMUNICATION TO BE USED**	Radio
VII.	**GROUND CONDITON**	Level

PREPARED BY; CHECKED BY; APPROVED BY;

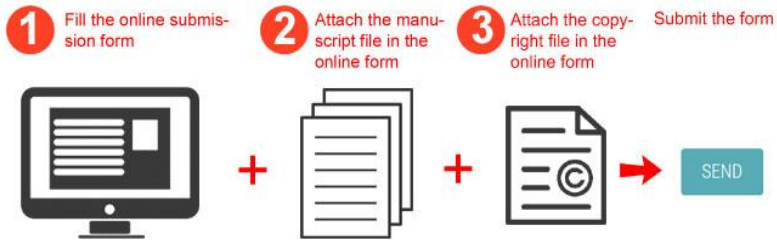
(M. SYAIFUR ROKHIM) (_____) (_____)

Summary

Plan with your local team.

Determine if is a non-critical or critical lift.

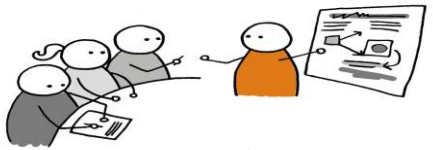
Submit the appropriate documentation to the crane committee on a timely manner 48 hrs. for NCL 72 for CL



Summary

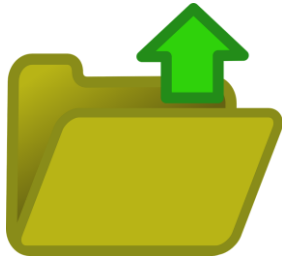
Crane Committee will approve or request more documentation .

Discuss with the crane committee the requirements.



Once approved , proceed to do the work following all the requirements as established in the lift plan.

Crane Committee will upload the documents to the lift plans link for future reference .



Questions