OVERHEAD CRANE, HOIST AND TUGGER LIFT & RIGGING PLAN

Work Order No: ___________________________________________  Site/Location: ___________________________________________
Task Description: ___________________________________________  Date Prepared: ___________________________________________
Item(s) to be Lifted: ___________________________________________  Date/Time of Lift: _______________________________________
Qualified employee Preparing Form: _______________________________

1. This form is for daily, task specific use of overhead cranes and hoists for loads weighing less than the crane’s max rating, and with a known center of gravity.

2. The following cribbage will be utilized for the planned lift: _________________________________________________________

3. Location of crane or hoist to be utilized: _____________________________________________________________

4. List any hazardous services/utilities identified in area of travel path: _______________________________________________________

5. Are there any services/utilities in load travel path to be removed from service prior to making lift? ❑ Yes ❑ No
5.1 If services/utilities are left in service, are there the potential hazards/risk? ❑ Yes ❑ No
5.2 List hazards and mitigations:

A) CRANE
Size/Type/Configuration ___________________________  Last Crane Annual Inspection ___________________________
Manufacturer ___________________________  Load Line: Diameter ___________________________
Serial Number ___________________________  No. of Parts ___________________________
Vendor ___________________________  Capacity ___________________________

B) SLINGS
A. Type (Material) ___________________________  E. d/D Ratio ___________________________
B. Size ___________________________ in.  F. Number of Slings ___________________________
C. Length ___________________________ ft., in.  G. Other ___________________________
D. Rated Capacity per Sling ___________________________ lbs.

C) SHACKLES
A. Pin Diameter ___________________________ in.  D. Number of Shackles ___________________________
B. Capacity ___________________________ lbs.  E. Other (chain falls, etc.) ___________________________
C. Shackles attached to Lobby or Collector Ring ❑ Yes ❑ No
D) RIGGING DIAGRAM & BLOCKING DIMENSIONS-Draw out rigging plan in space below.

Include rigging point to hook, pad eyes, structural members, load line(s), load line angles, sling angles, shackles, calculated sling tension, rigging connection points to the load, tugger line pull(s) with angle factor and calculated total load on tugger load lines.

*Multi-leg lifts must be calculated with consideration for 2 legs to support the entire load as a safety factor.

<table>
<thead>
<tr>
<th>Calculation Step</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>Weight =</td>
</tr>
<tr>
<td>No. of Legs</td>
<td>No. of Legs =</td>
</tr>
<tr>
<td>Sling Angle</td>
<td>Sling Angle =</td>
</tr>
<tr>
<td>Load Factor</td>
<td>Load Factor =</td>
</tr>
<tr>
<td>Calculated Sling Tension</td>
<td>Weight ÷ Legs x Load Factor =</td>
</tr>
</tbody>
</table>

E) COMPONENT WEIGHTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Load Block</td>
<td>_________ lbs.</td>
</tr>
<tr>
<td>B. Spreader Bar</td>
<td>_________ lbs.</td>
</tr>
<tr>
<td>C. Slings</td>
<td>_________ lbs.</td>
</tr>
<tr>
<td>D. Shackles</td>
<td>_________ lbs.</td>
</tr>
<tr>
<td>E. Jib</td>
<td>_________ lbs.</td>
</tr>
<tr>
<td>F. Headache Ball &amp; Hook</td>
<td>_________ lbs.</td>
</tr>
<tr>
<td>G. Cable (Load Line)</td>
<td>_________ lbs.</td>
</tr>
<tr>
<td>H. Other (Chain Falls, etc.)</td>
<td>_________ lbs.</td>
</tr>
<tr>
<td>I. Weight of Load to be lifted</td>
<td>_________ lbs.</td>
</tr>
<tr>
<td>J. Total Load to be lifted (sum A-I)</td>
<td>_________ lbs.</td>
</tr>
</tbody>
</table>

K. Source of Load weight (Mfg., Engineer, Truck Ticket, DWGS, Dynameter, etc.)

L. Maximum Radius: Crane Center pin to Center of Load _________ ft.

M. Length of Boom _________ ft.

N. Angle of Boom at Load Pick-up _________ degrees

O. Angle of Boom at Load Placement _________ degrees

P. Crane capacity at max radius from load chart _________ lbs.

Q. Lift is _______% of rated capacity _________% (J / P) x 100
If rated capacity (Q) is less than the crane’s rated capacity, proceed with lift. If rated capacity (Q) is greater than the crane’s rated capacity, contact a third party for crane and structure inspection, conduct load test on crane, and develop an engineered lift plan.

F) LOAD DROP ZONE:
A. The Load Drop Zone (LDZ), according to OSHA, is the “area (including but not limited to the area directly beneath the load) in which it is reasonably foreseeable that partially or completely suspended materials could fall in the event of an accident.” OSHA 1926.1401
B. For suspended loads, the LDZ shall be defined as the area underneath the load and radius from that area equal to the sum of the vertical length of the load and half of the height the load is to be lifted. Refer to the figure below for an illustration on determining the LDZ area.
C. Additionally, the lift team shall consider the fall path if a load were to strike an object, ricochet, or bounce off an existing structure or equipment below the lift and adjust the LDZ accordingly.

![Diagram of Load Drop Zone]

Height of object: ____________ feet  Height object raised: ____________ feet  Load Drop Zone: ____________ feet

G) COMMENTS/OTHER:
☐ Job Risk Briefing Form completed and attached
☐ Overhead Crane/Hoist and Tugger Pre-Shift Inspection Form completed and attached
☐ Load Attachment Points have been inspected and are in good condition
☐ Quarterly rigging inspection has been completed and rigging condition is acceptable for this lift
☐ All rigging hardware visually inspected prior to use
☐ Chain buckets utilized for storing excess chain if using chain falls
☐ Tag line(s) being utilized
☐ Fall protection required (yes/no) for the task on hand
☐ Evaluation for need of softeners conducted
☐ Climate conditions verified acceptable for the duration of the lift—heat, cold, wind, rain, lightning, etc.
☐ No load to be suspended over personnel or occupied building(s), and load path is clear of any hazards.
☐ Ground bearing pressure is less than 2,000 PSF, (If greater, TECO civil engineer to be notified and initial sign here______________.)
☐ Working near power lines? Yes/No If yes, review TECO’s Crane operating near power lines Procedure
☐ Proper PPE in place. Hard Hats, High Visibility apparel, Safety glasses, hearing protections etc.
☐ TECO safe work practices have been reviewed
☐ Lift is being made per the lift plan
☐ Load drop zone been calculated, perimeter secured

H) HAZARDOUS SYSTEMS/Critical ASSETS
A. Moving and/or lifting loads around identified specific hazardous systems or over critical assets such as turbines, generators, excitors, heaters, natural gas lines, cable trays, etc. require station management notification prior to the lift being made. Check box below that is relevant if making a lift around specific hazards systems or critical assets.

☐ Notification has been communicated to station management that lifts are to be made over critical assets such as turbines, generators, excitors, etc.
☐ Notification has been communicated to station management that lifts are to be made near or over specific hazardous systems such as over high voltage cable trays, MCC’s, transformers, ammonia, hydrogen, natural gas systems and/or other identified specific hazards prior to making the lift.
☐ N/A
Signing below indicates a pre-lift meeting with all parties has been conducted and all concerns for the lift have been addressed.

I) SIGNATURES | PRINT NAME | SIGNATURE | DATE
--- | --- | --- | ---
*Qualified Crane Operator | | | 
*Qualified Rigger | | | 
*Qualified Signal Person | | | 
*Contractor Qualified Lift Dir. | | | 
**TECO Supervisor | | | 
TECO Engineer | | | 
Primary Contractor Site Mgr. | | | 
Sub-Contractor Site Mgr. | | | 
Other | | | 
Other | | | 
Other | | | 

*Minimum required parties to attend pre lift meeting and sign

**TECO Supervisor required to review and verify lift plan prior to lifts being conducted by a contractor

☐ Document Submitted to Tampa Electric when lift(s) complete Date/Time/Representative __________________________