
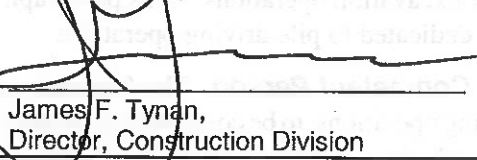


To: SUPERSEDED ^{EI} 03-006 EFFECTIVE 5/8/03		New York State Department of Transportation ENGINEERING INSTRUCTION	EI 02-033
Title: Revisions to Standard Specifications Section 100 - Phase 3A - Lifting			
Distribution: <input checked="" type="checkbox"/> Manufacturers (18) <input checked="" type="checkbox"/> Main Office (30) <input checked="" type="checkbox"/> Local Govt. (31) <input checked="" type="checkbox"/> Regions/Agencies (32)	Approved: <input checked="" type="checkbox"/> Surveyors (33) <input checked="" type="checkbox"/> Consultants (34) <input checked="" type="checkbox"/> Contractors (39) <input type="checkbox"/> _____ ()  James F. Tynan, Director, Construction Division	10-16-02 Date	

ADMINISTRATIVE INFORMATION:

- This Engineering Instruction (EI) is effective with projects submitted for the letting of 05/08/03.
- This EI does not supersede any previous issuances.
- The Standard Specification revision issued with this EI will be incorporated into the next update of the Standard Specifications of January 2, 2002.

PURPOSE: This EI issues revisions to §107-05(P) of the Standard Specifications of January 2, 2002. The revisions are primarily clarifications to the existing requirements. No new requirements are added.

IMPLEMENTATION:

- Main Office DQAB will insert the revisions as a shelf note beginning with projects submitted for the letting of 05/08/03.
- For existing contracts, these revisions will be implemented immediately in accordance with the Contract Administration Manual (CAM) §104-03.

TRANSMITTED MATERIALS:

- Standard Specifications §107-05(P), *Lifting*.

CONTACT: Direct questions regarding this issuance to Brian DeWald of the Construction Division at 518-457-6472 or via e-mail at BDeWald@gw.dot.state.ny.us.

Make the following changes to the Standard Specifications of January 2, 2002.

Volume 1 of 3, Page 1-89, line 35 to Page 1-91, line 47, **Delete** §107-05(P) and **Replace** it with the following:

P. Lifting. The following shall apply for all lifting operations when utilizing lift equipment. Lift equipment for this lifting paragraph shall be defined as equipment capable of lifting an item more than five meters high, has the ability to swing or rotate a boom, and has a maximum rated lifting capacity exceeding one metric ton. All lift provisions of the Steel Construction Manual and the Prestressed Concrete Construction Manual remain in effect. This paragraph does not pertain to lifting operations covered under Section 585, *Structural Lifting Operations*, nor ordinary excavation operations. This paragraph does apply however to cranes with either fixed or swinging leads that are dedicated to pile driving operations.

1. Competent Person. The Contractor shall designate, to the Engineer, one person, who is competent in lifting operations, to be completely in charge of each lifting operation. In general, Competent Person shall mean one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them. The Competent Person shall have the authority to take an unsafe piece of equipment out of service until the hazard is eliminated. The Competent Person shall be knowledgeable about lifting equipment and equipment operations, Manufacturer's specifications and recommendations, and have a thorough knowledge of the requirements, regulations and standards governing his/her duties. The Competent Person shall, as a minimum, have the ability to interpret load charts, calculate lift loads, recognize overhead wire hazards and know all aspects of the rigging.

The Competent Person shall inspect all lift equipment prior to and during usage to make sure the equipment is in a safe operating condition.

2. Lifting Equipment. Lift equipment shall have durable, legible load charts which shall have been prepared by either the equipment manufacturer or a Professional Engineer. If manufacturer's load charts are unavailable, charts may be prepared by a Professional Engineer. The Professional Engineer shall utilize the same factors of safety against overturning as the equipment manufacturer. The charts shall be attached to the equipment at a location accessible to the operator while at the controls. The charts shall contain a full range of load ratings at all stated operating radii. The charts shall also note conditions such as outriggers, counter weights, and work area, i.e., over side, over front, or over rear of equipment.

Equipment may lift loads up to those indicated on the manufacturer's or Professional Engineer's load chart if the equipment has the following safety devices and the safety devices are operating:

- a. Load and radius measuring device pre-programmed to continuously relate the measured data to the load radius chart as a direct reading of load or percentage of the rated load, and connected to a warning light and an acoustical signal located at the operator's position or in the cab to indicate overload.
- b. A device that continuously indicates the levelness of the machine and is visible from the operator's controls.

Lift equipment with non-operational safety devices or no safety devices shall be operated at levels not to exceed 78 percent of the Manufacturer's or Professional Engineer's load charts. This equipment shall have a separate load chart labeled "78% Load Chart" and it shall be attached to the equipment.

Lift Equipment with operational safety devices that is operating from a barge shall utilize a manufacturer's or Professional Engineer's load chart that is established specifically for operating from a barge. Lift Equipment on barges with non-operational safety devices or no safety devices shall operate at 78 percent of the Manufacturer's or Professional Engineer's load chart for working on barges. This equipment shall have a separate load chart labeled "78% Load Chart for Equipment on Barges."

Equipment used for lifting over a railroad shall be restricted such that the operational capacity shall be limited to 66 2/3% of its tipping load as specified in §105-09, *Work Affecting Railroads* or be limited to the load limits indicated in the previous three paragraphs, whichever is lower.

3. Lift Plan. A Lift Plan is necessary only when required by a contract pay item specification, the Steel Construction Manual, or Prestressed Concrete Construction Manual. The Contractor shall submit erection drawings, demolition plans or other information as required, which detail the lifting procedure or lift plan. This information shall be submitted to the Engineer 30 days prior to the commencement of erection or demolition work, for review and approval by the Department and, when applicable, any railroad affected by the proposed procedure.

Structural elements shown on shop drawings and erection drawings may have units expressed in both metric and english units, however metric measurements or dimensions shall control.

As a minimum, the information in the submittal for a lift plan shall include the following:

- a. Plan of the work area showing support structures, roads, railroad tracks, canals, streams and utilities.
- b. Lift radii and pin locations.
- c. Length of boom.
- d. Counterweight size and location.
- e. Lift configuration(s).
- f. Location of trucks for delivery or removal of materials.
- g. Restrictions on swing radii.
- h. Sectional views of all lifts where electrical facilities are within a 5 meter radius of any part of the lifting equipment or object being lifted.
- i. Wind restrictions if they are a requirement of the Manufacturer's lifting notes.
- j. Catalog cuts for all lifting devices shown on the drawing.
- k. All pertinent rigging with dimensions.
- l. Equipment such as rigging, beam clamps, jibs, swing-away, super-lifts, additional blocks, cheek plates, headache balls, and additional cables at the time of the lift shall be included as part of the load and shall be indicated as such.
- m. Position of outriggers and outrigger supports.
- n. Outside dimension of tracks for track mounted lifting equipment.
- o. Parts of line for hook block.
- p. A comparison of total lift weight vs lifting equipment capacity for the pick radius.
- q. Maintenance and protection of traffic provisions specifically required for the lift.

When the lifting operation imparts loads on a structure, false work or utility, when there is a two machine lift, or when a slider beam is used, the Contractor shall submit calculations which show that the proposed operation is safe and/or that the operation will not cause an overstress condition. The calculations and any supporting drawings or other information shall be stamped and signed by a Professional Engineer. Any and all alterations or modifications to a lift plan shall be signed and stamped by a Professional Engineer if the originally approved lift plan was prepared and signed by a Professional Engineer. The Engineer shall be notified of any alterations or modifications.

4. Pre-Lift Meeting. A pre-lift meeting will be required for projects that require a lift plan. The Competent Person, and other appropriate contractor staff, shall attend the pre-lift meeting with the Engineer, as well as representatives from the utilities and railroads if deemed applicable, five work days before lifting operations are to be performed. The meeting shall include but not be limited to: the review of site conditions, erection or demolition plans, lift loads vs lift equipment capacity, obstructions, utilities, traffic concerns, and the roles of Department and Contractor personnel.

5. Lift Operations. The Competent Person shall be present for all lifting operations.

If a crane is utilized in a lifting operation, or a crane with either fixed or swinging leads is utilized in a pile driving operation, the operator shall present to the Engineer a valid New York State Certificate of Competence to operate a crane, except an individual operating a crane within a city having a population of one million or more. Individuals operating a crane within a city having a population of one million or more shall present the Engineer with a valid license or certification to operate a crane issued by such city. If there are any other local crane license requirements, they too shall be presented to the Engineer. In addition, a copy of the annual inspection report of the crane shall be readily available and provided upon the Engineer's request.

Any discrepancies between the Lift Plan and the actual lift conditions shall be reported immediately to the Competent Person in charge of the lift operations and to the Engineer. The operation shall not proceed until all issues are resolved to the satisfaction of the Engineer.