



INFORMATION SHEET

NO. S-01

DATE : February 19, 2014

CATEGORY : **Structural**

SUBJECT : **Structural Submittal Requirements for (A) Tower Crane Foundation and Attachment Permit and (B) Foundation**

PURPOSE : The purpose of this Information Sheet is to establish submittal requirements for (a) tower crane foundation and attachment permit and (b) foundation.

REFERENCE : 2013 San Francisco Building Code
Section 1705.19 Bolts Installed in Existing Masonry or Concrete
Section 1705.21 Crane Safety
Section J104 Permit Application and Submittals
AB-023 Crane Site Safety Plan – For the Operation of Tower Cranes on High-Rise Building Structures
AB-046 Special Inspection and Structural Observation Documentation
ASCE 7-10 Minimum Design Loads for Buildings and Other Structures

DISCUSSION :

(A) Submittal Requirements for Tower Crane Foundation and Attachment Permit (Ref: AB-023)

Submittal requirements to DBI: Two (2) copies of the following:

- (1) Crane Site Safety Plan Submittal Form and Crane Safety Compliance Agreement (see AB-023 Attachment A)
- (2) Plans showing street locations, crane location, path of boom swing, designated loading areas and designated staging areas. Note: A site plan showing which streets will be impacted by the moving, erection, and operation of the tower crane is required by DPW in order to obtain a street use permit for crane erection. That site plan can be used as the Crane Site Safety Plan by adding the additional information noted above; including height of tower crane. Drawings can be signed by contractor.
- (3) Completed building permit application form (Form 3/8) for tower crane foundation and tower crane attachments or other permit.

For free standing tower crane supported directly on foundation and/or ballast base on ground level, submit permit application on 5th floor for over-the-counter plan review.

For all other tower cranes, including cranes supported on podium slab or by any other building structures, submit permit application on 1st floor at CPB.

- (4) Structural plans detailing the tower crane foundation and tower crane attachment details, clarifying whether the foundation is new or existing. Two sets of plans will be required. Drawing minimum size shall be 11" x 17".
- (5) Structural calculations supporting the design shown on the plans:
 - a. Cover Sheet: (stamp and sign by civil or structural engineer)
 - i. Design criteria including overturning moment, shear, torsional moment, diagonal bending, vertical load and bearing. Need to indicate "Comply with CBC 2013 and ASCE 7-10).
In general, design for seismic condition is not required for tower crane foundation and attachment permit.
 - ii. Table of Contents
 - b. If the crane is not bolted to the foundation, calculation shall include evaluation of the stability due to sliding and stability due to overturning, with the proper specification of allowable bearing pressure and coefficient of friction.

Notes on Signature requirements:

- (1) No signature required for crane manufacturer's information
- (2) Site Plan – anyone can sign; i.e. does not require engineer's signature
- (3) Foundation plans with attachment details shall bear the signature and seal with registration number of the engineer
- (4) Applicable cut sheets for crane equipment with the applicable loading information should be included for reference and DO NOT require engineer's signature.

Other Notes:

- (1) Soil report - See Section (B)
- (2) CalOSHA permit submittal application (see AB-023)
- (3) If crane permit is related to the foundation addendum for hi-rise, applicant needs to provide to the OTC plan checker with a complete reference set of the plans of the foundation addendum

(B) Submittal Requirements for Foundations:

GEOTECHNICAL: (if applicable)

- (1) Provide original letter wet signed by geotechnical consultant stating that they have reviewed and approved final structural plans
- (2) Provide two (2) sets of original geotechnical reports and one (1) CD-ROM:
SOILS REPORTS: Effective November 1, 2011, DBI will no longer accept soil reports solely in "hard" copy format. Two (2) 'hard' copies and one (1) copy on a CD-ROM in Adobe 'PDF' format are required. After DBI review, one 'hard' copy will be returned to the applicant with a 'Received' stamp. DBI will retain its copy, and the CD-ROM will be sent to the State Department of Conservation, as required by state law."

- (3) Provide DETAILS OF PILE FOUNDATION (if applicable) including soil reports; loads requirement, and load cases; pile type, concrete strength and type of reinforcements; and installation procedures of piles.
- (4) COMPLETE SPECIAL INSPECTION FORM: Items checked on form shall match with special inspection items shown on drawing. Provide special inspection items:
 - a. Crane Safety
 - b. Bolts installed in existing masonry or concrete (if applicable)
 - c. Structural observation per Section 1704.5 for the following - Foundations

Tom C. Hui

2/19/2014

Tom C. Hui, S.E., C.B.O.
Director
Department of Building Inspection

Date

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