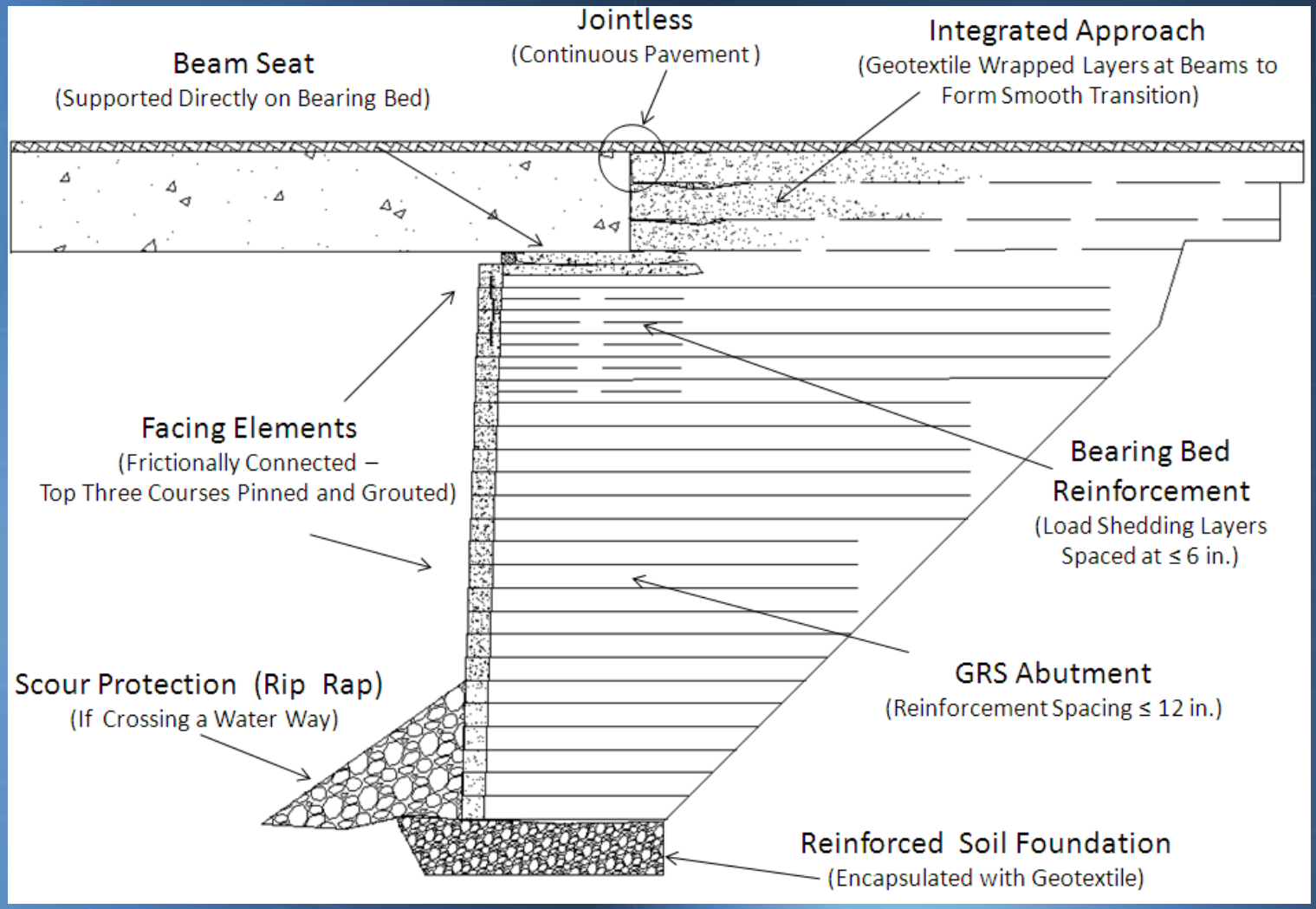
U.S. Department of Transportation

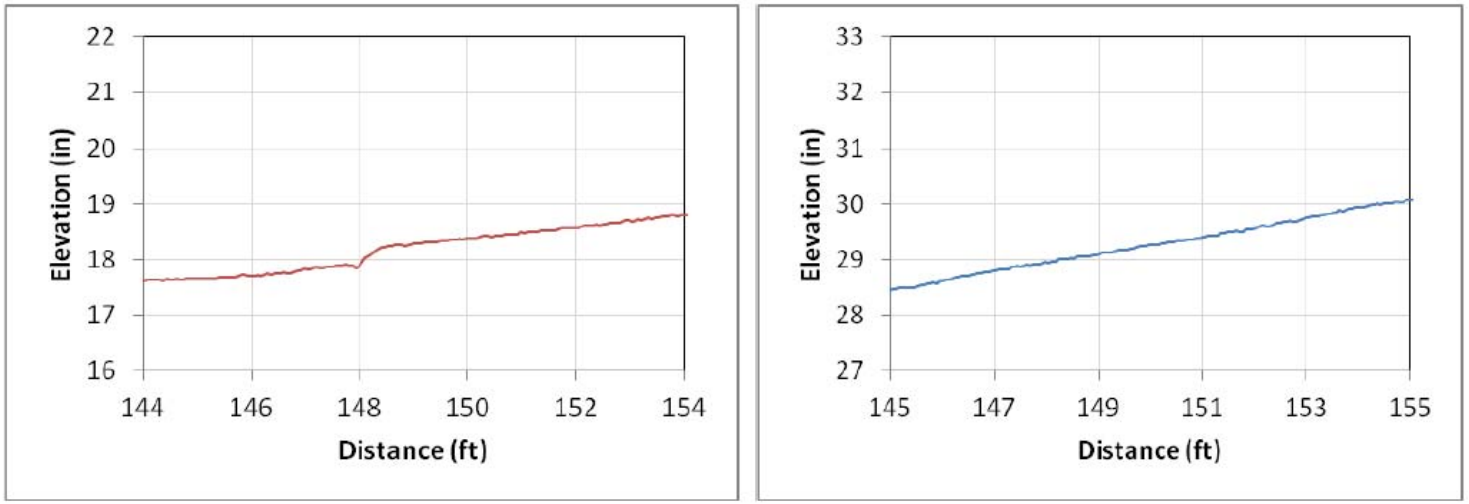
Federal Highway Administration

GEOSYNTHETIC REINFORCED SOIL INTEGRATED BRIDGE SYSTEM

Cross-Section of GRS-IBS



Road profile data



A) B)

Figure 18. Surface profile for bridge joints a) on a bridge without GRS-Abutments (CR 27 Bridge Nr. 3340760) as compared to b) the GRS-Abutment at CR 27 Bridge Nr. 3340730

Performance Tests

Before

After

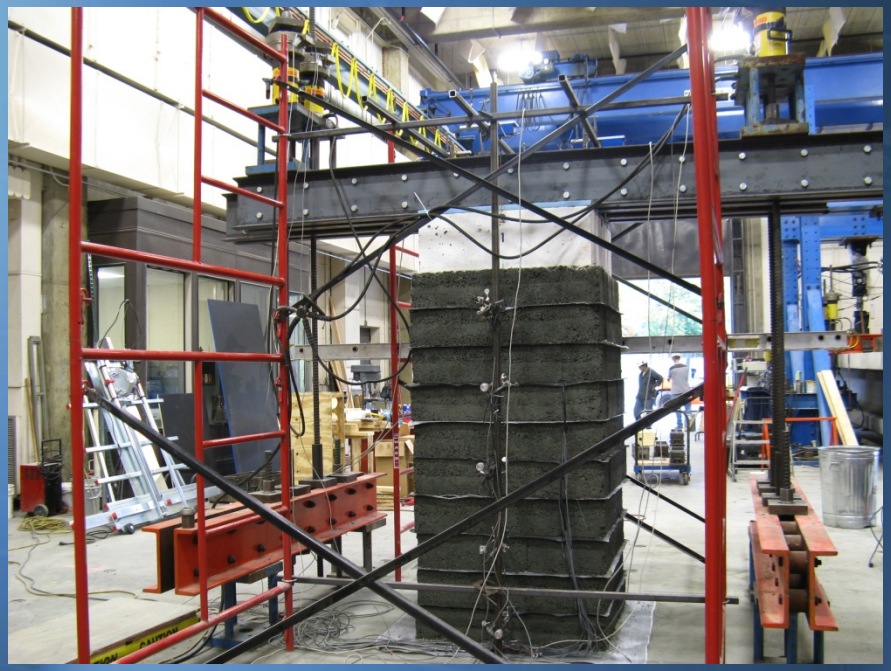
Performance Test

2400 lb/ft @ 8” Spacing

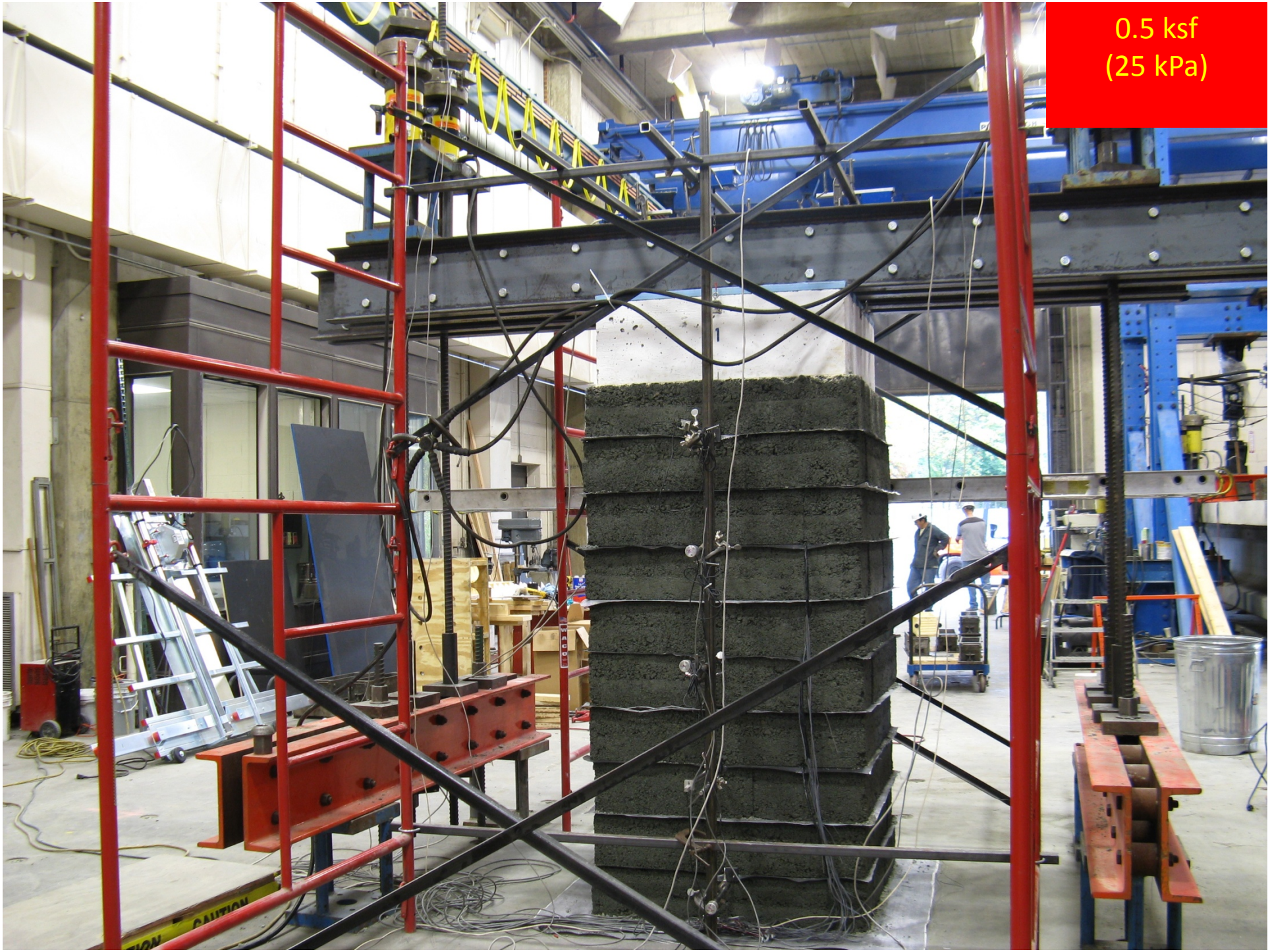
No CMU Facing

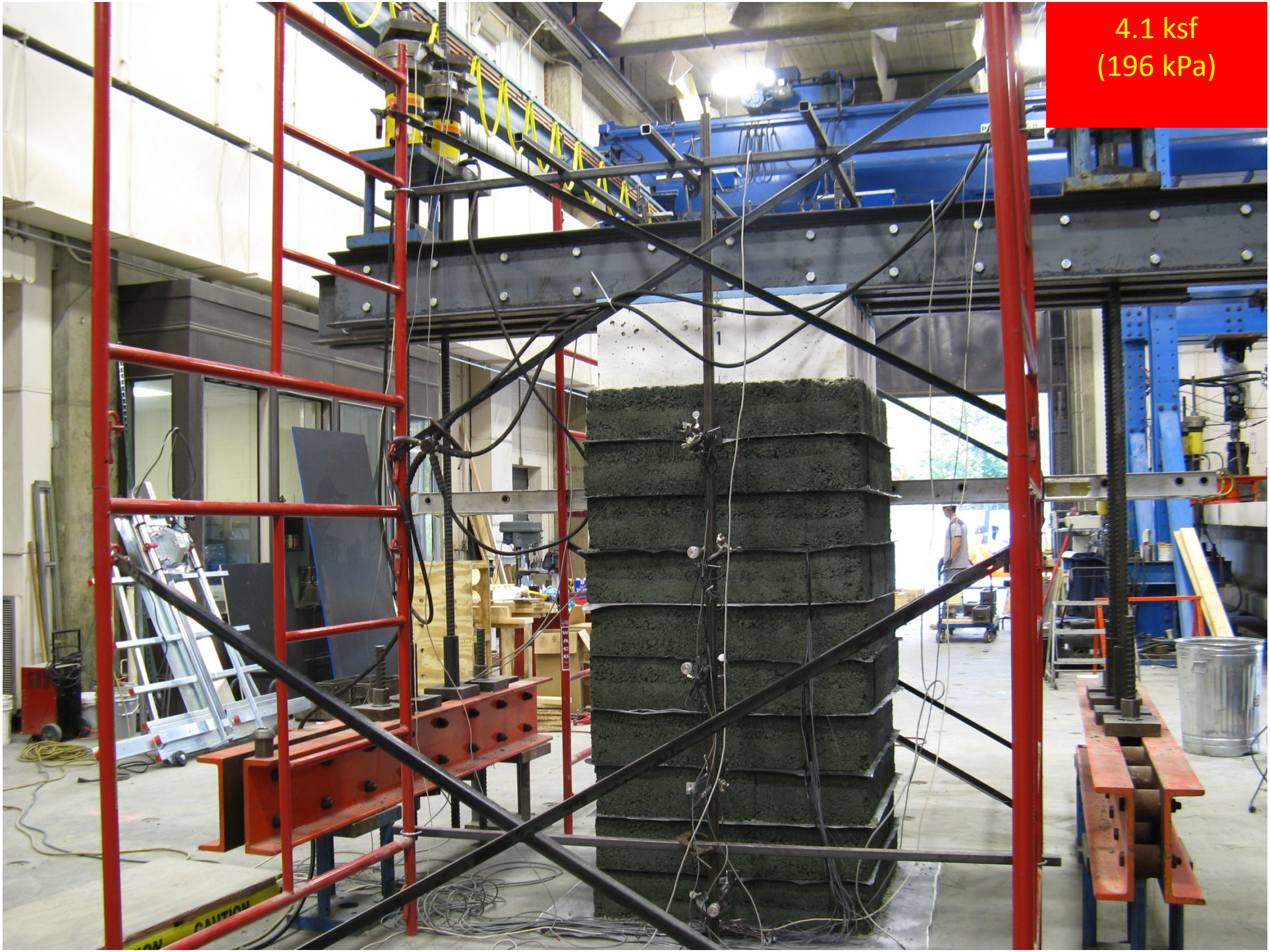
A-1-a Material

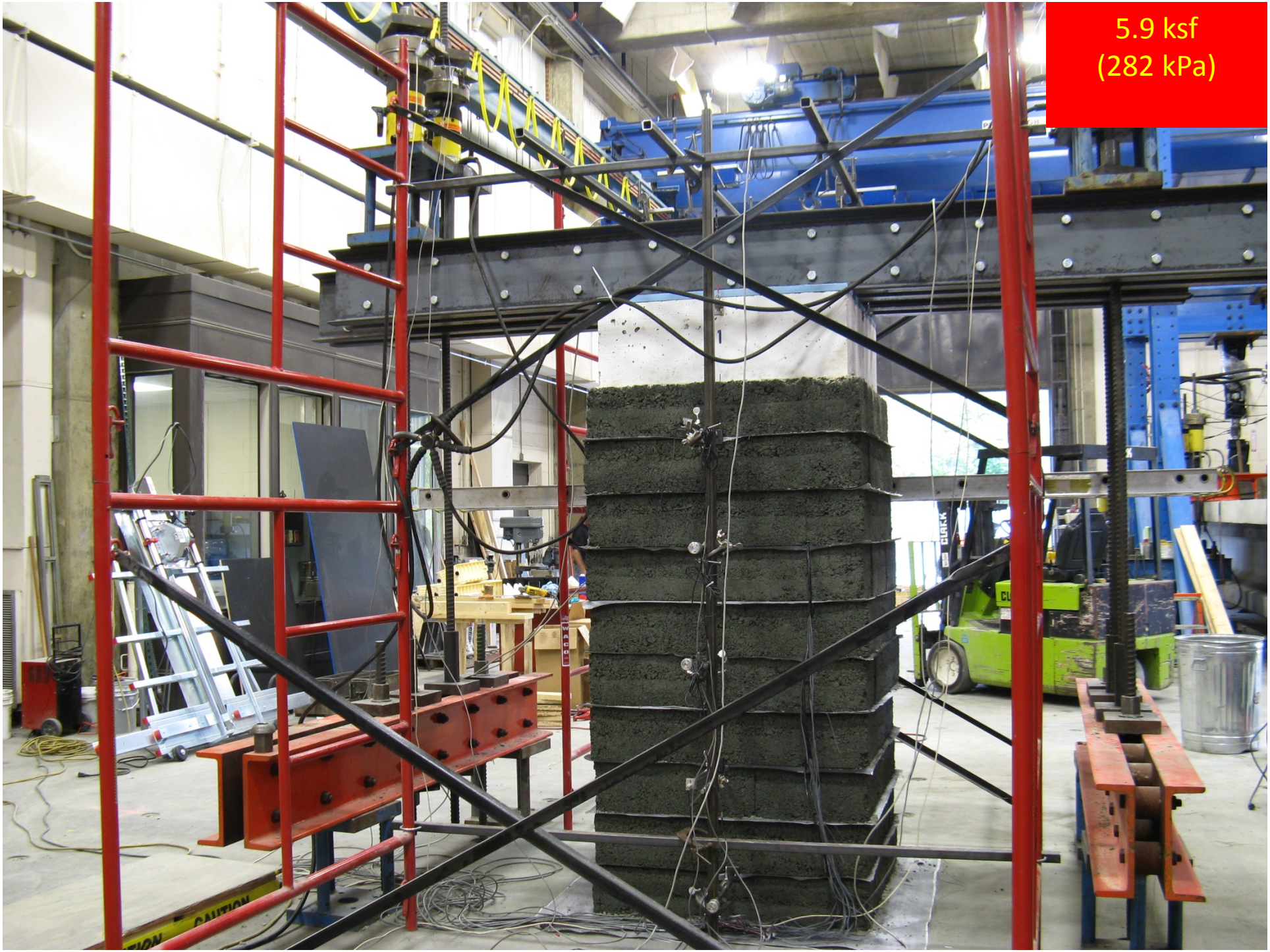
Pre-

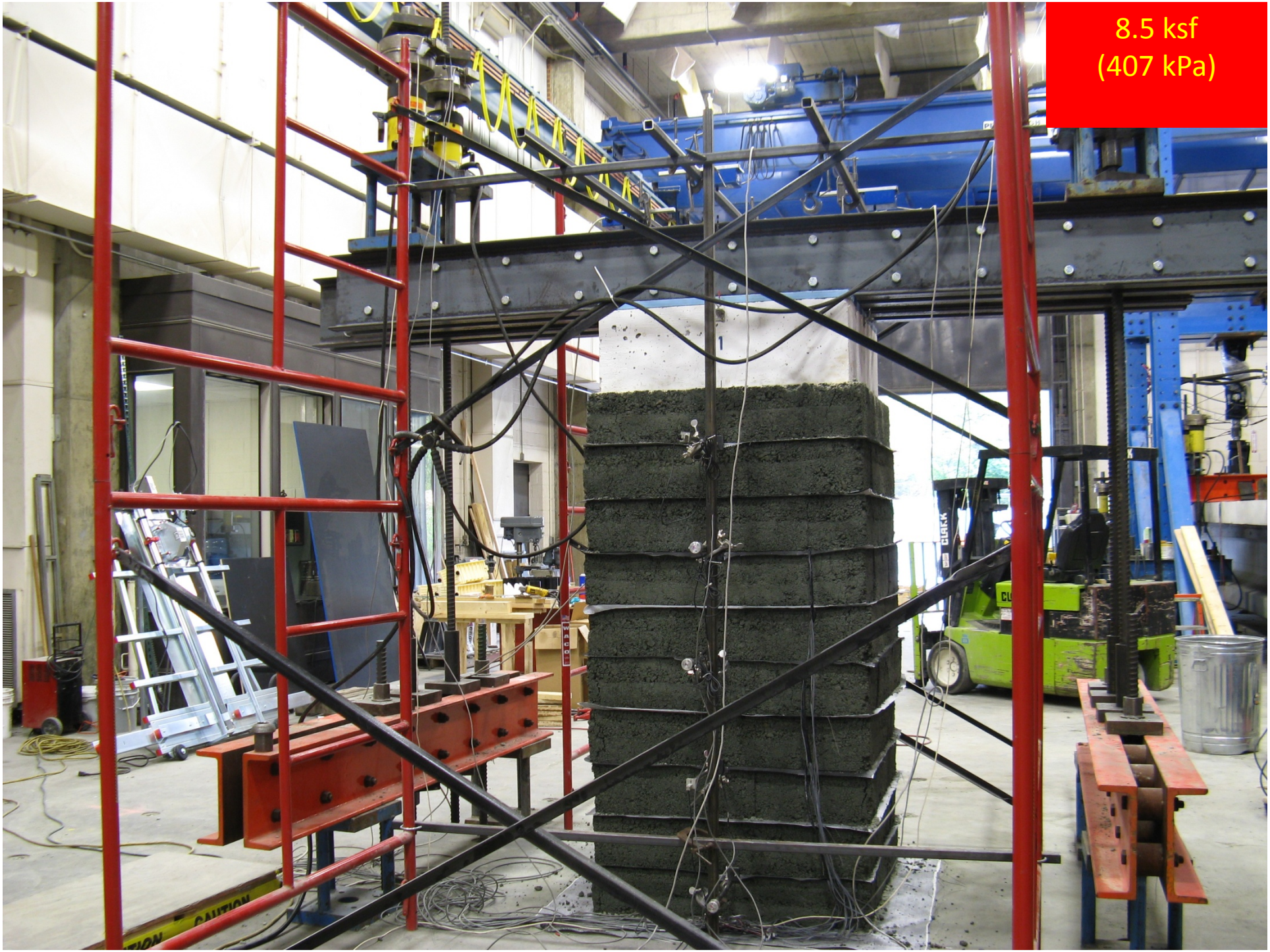


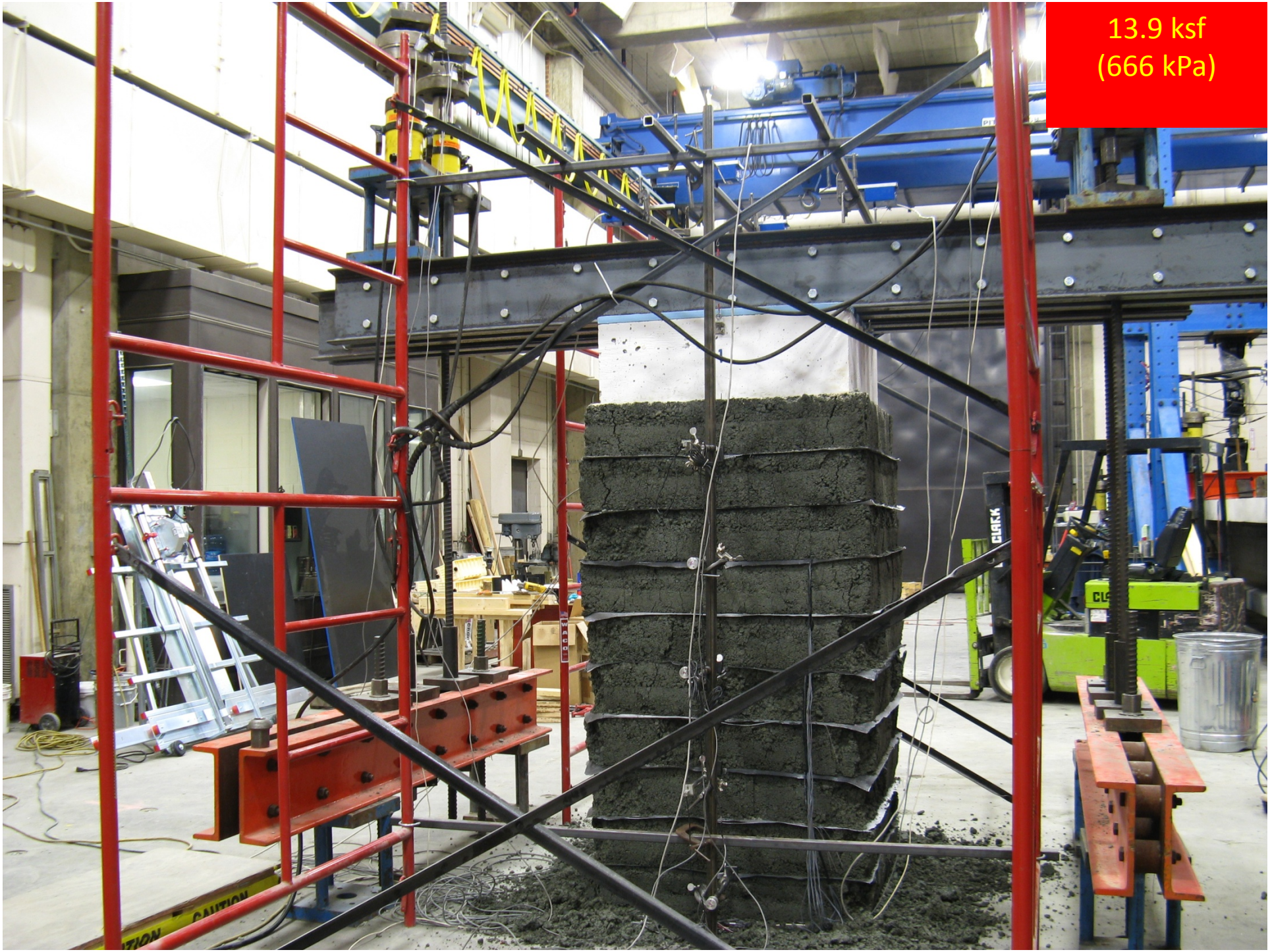
Post-


0.5 ksf
(25 kPa)


4.1 ksf
(196 kPa)

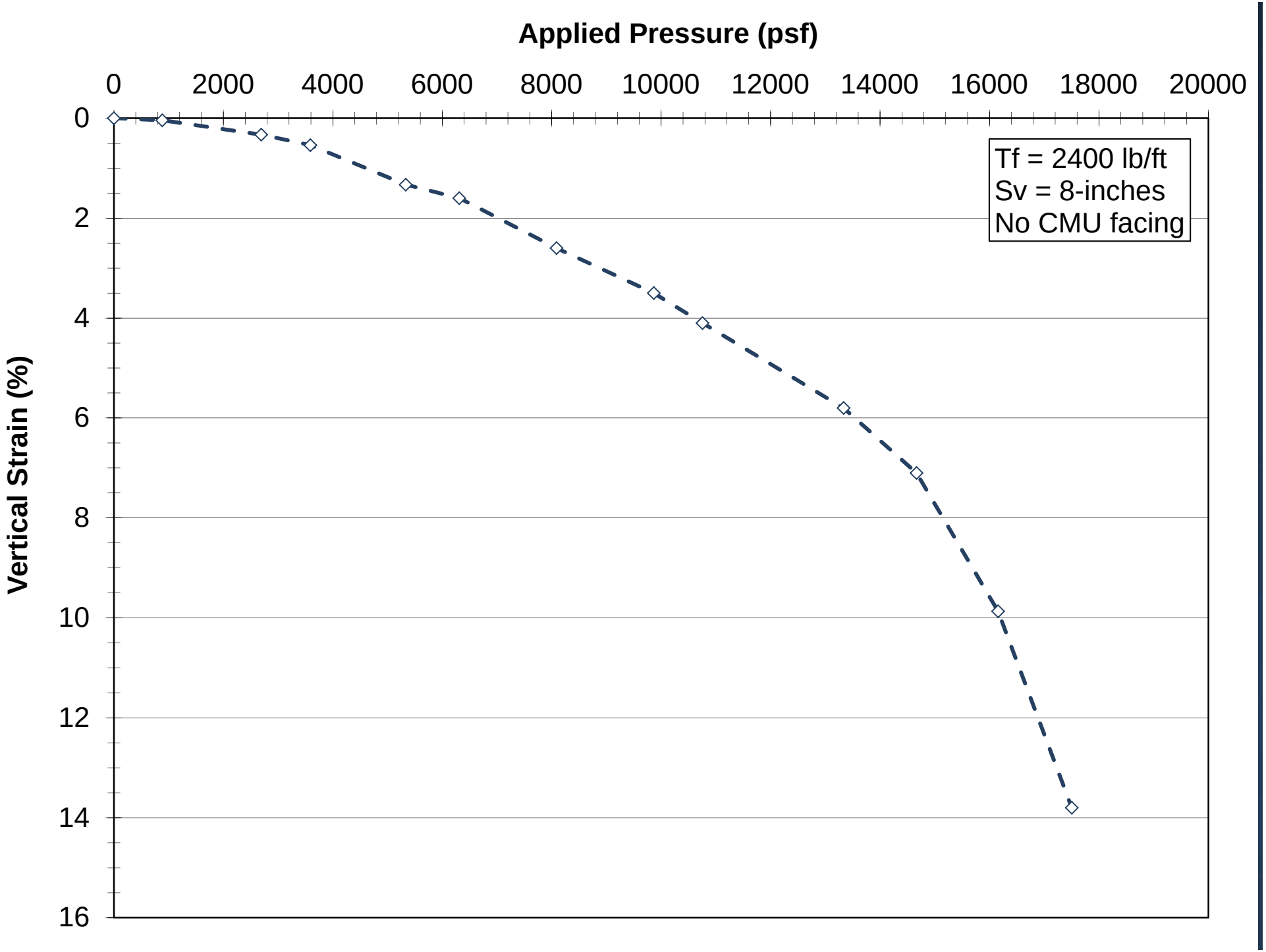

5.9 ksf
(282 kPa)


8.5 ksf
(407 kPa)
CLARK


13.9 ksf
(666 kPa)
CLARK

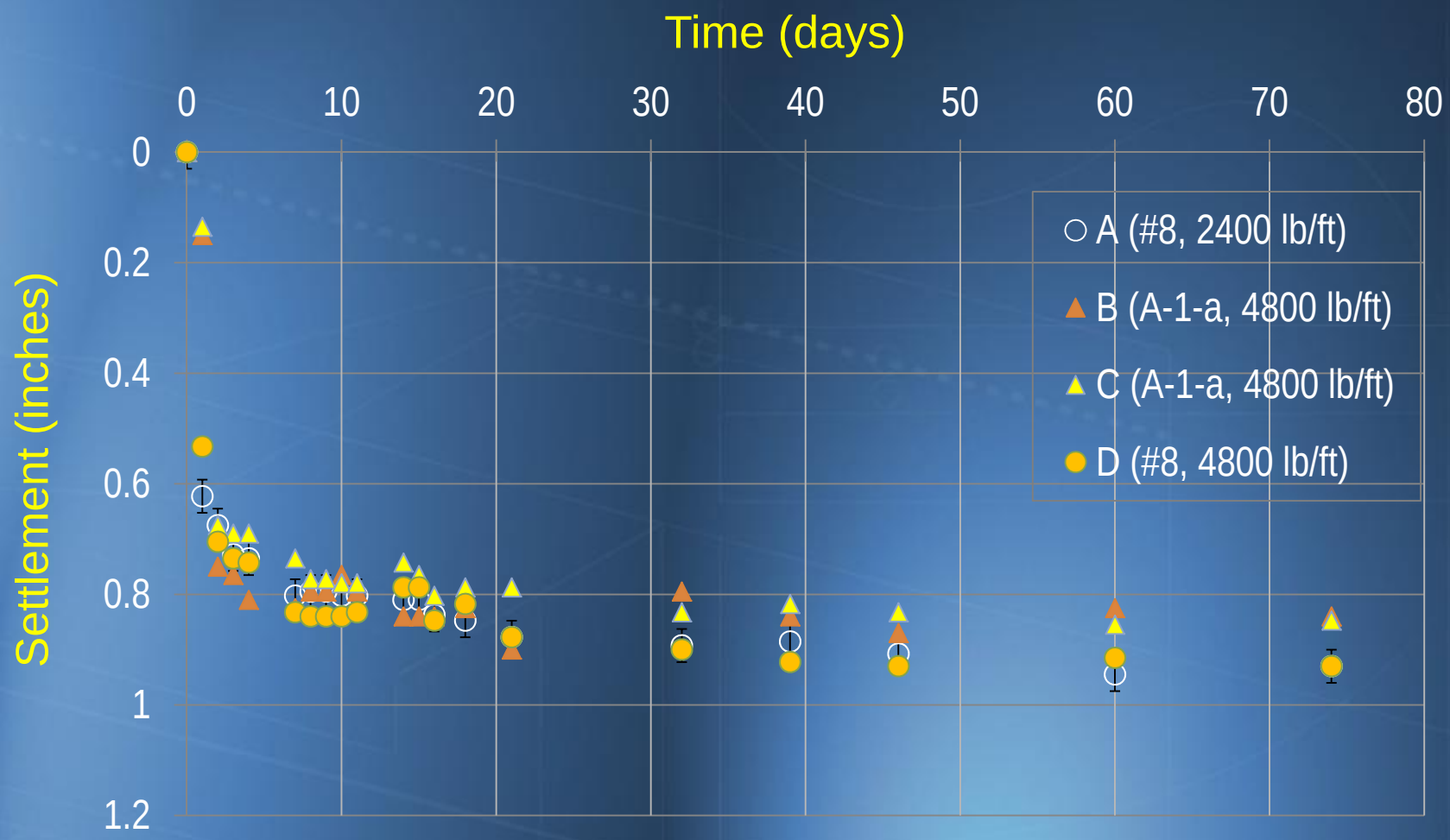
16.7 ksf
(800 kPa)

18.1 ksf
(867 kPa)


Applied Pressure (psf)
0
2000
4000
6000
8000
10000
12000
14000
16000
18000
20000
Vertical Strain (%)
0
2
4
6
8
10
12
14
16
Tf = 2400 lb/ft
Sv = 8-inches
No CMU facing

Set 1

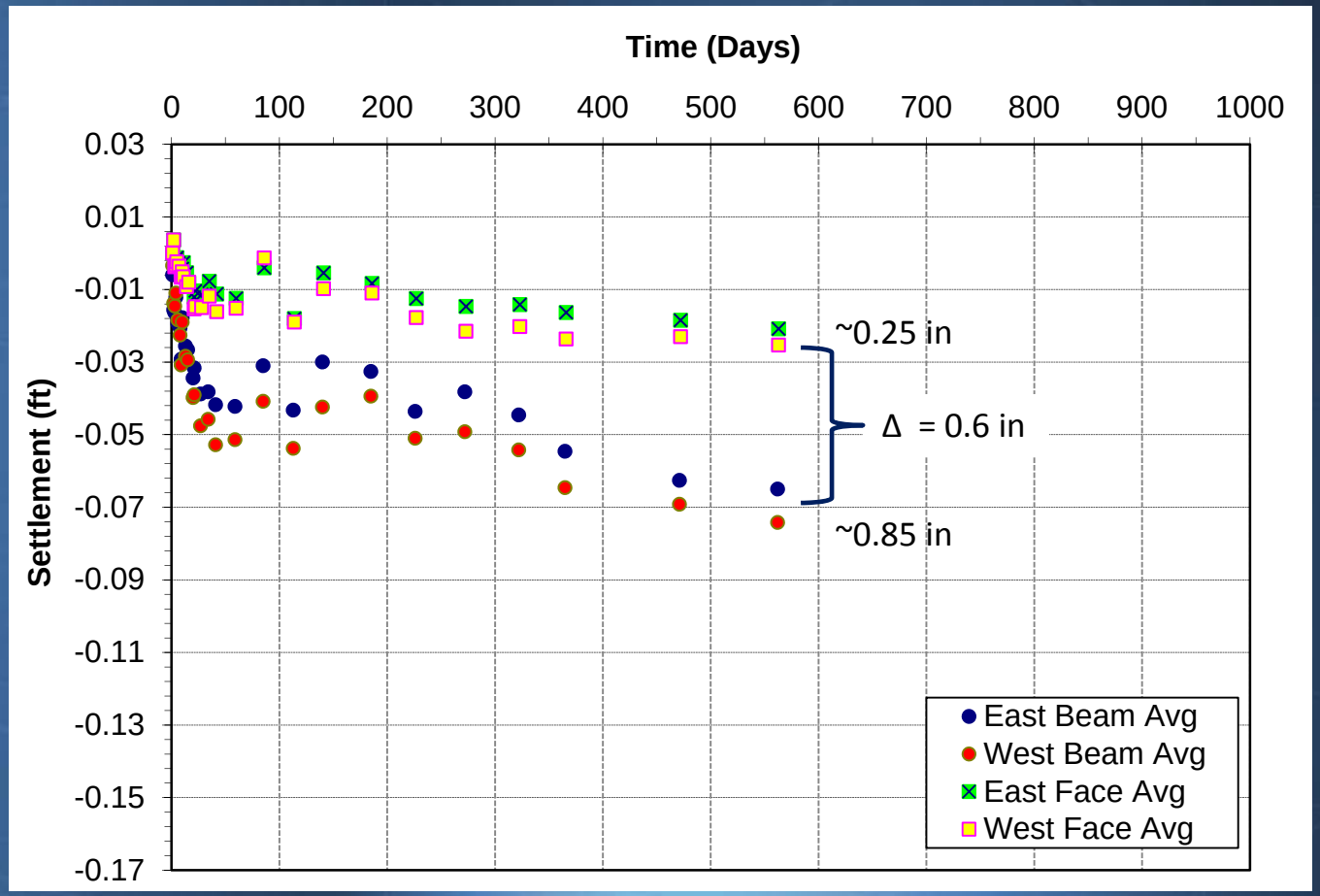
Pier Settlement



Settlement Monitoring *Continued*

Settlement Monitoring *Continued*

- EDM survey
  - Bowman Road



GRS IBS Reports

Geosynthetic Reinforced Soil
Integrated Bridge System
Interim Implementation Guide

PUBLICATION NO. FHWA-HRT-11-026 JANUARY 2011

U.S. Department of Transportation
Federal Highway Administration

Research, Development, and Technology
Turner-Fairbank Highway Research Center
6300 Georgetown Pike
McLean, VA 22101-2296

Geosynthetic Reinforced Soil
Integrated Bridge System
Synthesis Report

PUBLICATION NO. FHWA-HRT-11-027 JANUARY 2011

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McLean, VA 22101-2296

Example Projects

OH – Bowman Rd Bridge

NY – CR 38 St. Lawrence County

PA – Sandy Creek Bridge

IL – Great Western Trail over Grace ST

WI – STH 40 Bloomer, WI

DE – Chesapeake City Road over Guthrie Run

SD – 8th Street Bridge, Custer

HI – Saddle Rd

ME - Knox County Beach Bridge

MT, US-89 over the S. Fork Dry Fork Marias River

MN – CR 55 over MN Southern Railway

UT, I-84 Echo Project

UT, I-84 Echo Project