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Company:	Haala Industries	Report Number:	ESP010867P.5
Address:	2101 Hwy. 4 South	Date:	August 21, 2012
	Sleepy Eye, Minnesota 56085	Page:	1 of 6
Attn:	Mr. Steve Haala		

Tension Testing of Lifting Insert/Anchor

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Engineer under the laws of the State of Minnesota.

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Prepared By:

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INTRODUCTION:

This report presents the results of testing performed by Element Materials Technology; on Haala Industries precast concrete insert/anchor. The scope of our work was limited to the following:

1. Conduct pull out testing of the insert/anchor.
2. Prepare a report in regards to the results.

Our work was authorized by Mr. Steve Haala of Haala, Industries on July 24, 2012, and approved verbally.

CONCLUSION:

The precast concrete insert/anchor was tested on August 16, 2012. One sample was loaded to failure in accordance with the Test Procedures found below. The failure mode for sample consisted of concrete split. **The ultimate load of the sample was 31,209 pounds**.

TEST SAMPLE:

The insert/anchor samples were submitted by the client to Element Materials Technology, St. Paul, Minnesota, where they were received on August 16, 2012. A single concrete block with one embedded lifting insert/anchor was submitted. Haala Industries Insert/Anchors are used with precast concrete. The top of the insert/anchor was installed approximately 3” above the surface of the concrete. Sample drawing as received is shown below.

TEST PROCEDURES:

The tests were conducted as tension tests in accordance with the test provisions listed in ASTM E 488 - 96 “standard Test Method for Strength of Anchors in Concrete and Masonry Element”. The International Accreditation Service, Inc. (IAS) issued a Certificate of Accreditation TL-217, January 12, 2012, listing Element Materials Technology as an accredited laboratory for a scope of services that includes testing to ASTM E 488.

CONCRETE:

The concrete structural member was designed and cast by others. No description of the mix design was received for this concrete. No concrete strength was determined at time of testing.

ANCHOR INSTALLATION:

The concrete insert/anchor tested in this project was pre-installed by the client. Element has no information as to the installation of the anchor in general.

EQUIPMENT:

The test load was measured with load cells, CME-SPC-406 calibration due on 05/11/13.

TEST RESULTS:

Element Materials Technology - St. Paul Project No. ESP010867P	Sample Information Cast In Place Anchors	Tests Performed 90-Degree Tension

Setup and Installation		Test Equipment		Calibration Due Date
Technicians	S. Palodichuk, N. Holderbaum	System Number	CME-SPC-910	5/26/2013
		Load Cell	CME-SPC-406	5/11/2013
Concrete Cast By	Contractor	Caliper	CME-SPC-300	5/22/2013
Anchors Installed By	Contractor			

Test #2 Information	
Anchor System	CP118 2 (GREY)
Anchor Material	Steel
Anchor Location	Back of Block - Trowel Finish
Anchor Size Before(in.)	3/4" Diameter
Anchor Size After(in.)	3/4" Diameter
Block Number	24H
Cast Date	8/13/2012
Install Depth (in.)	Unknown
Confined Test	No

Test Number / Test Data	2									
Test Date	08/16/12									
Test Time	1:30 PM									
Install Date	08/13/12									
Ultimate Load (lbf)	31209									
Failure Mode	CS									
Test Duration (sec)	92									
Test Fixture Type	Clevis									
Test Fixture Diameter	1.060									

Failure Mode Index			
PO - Anchor Pull Out	CC - Concrete Cone	SB - Steel, Body	BB - Borehole Bond
PT - Anchor Pull Through	CE - Concrete Edge	ST - Steel, Threads	BE - Bond Element
	CP - Concrete Pryout	SN - Steel, Neck	BA - Bond Anchor
	CS - Concrete Split	TN - Mating Element	TI - Internal Thread

REMARKS:

The remains of the concrete sample and insert/anchor test specimens are subject to disposal thirty days from the date of this report.

PHOTOGRAPHS:

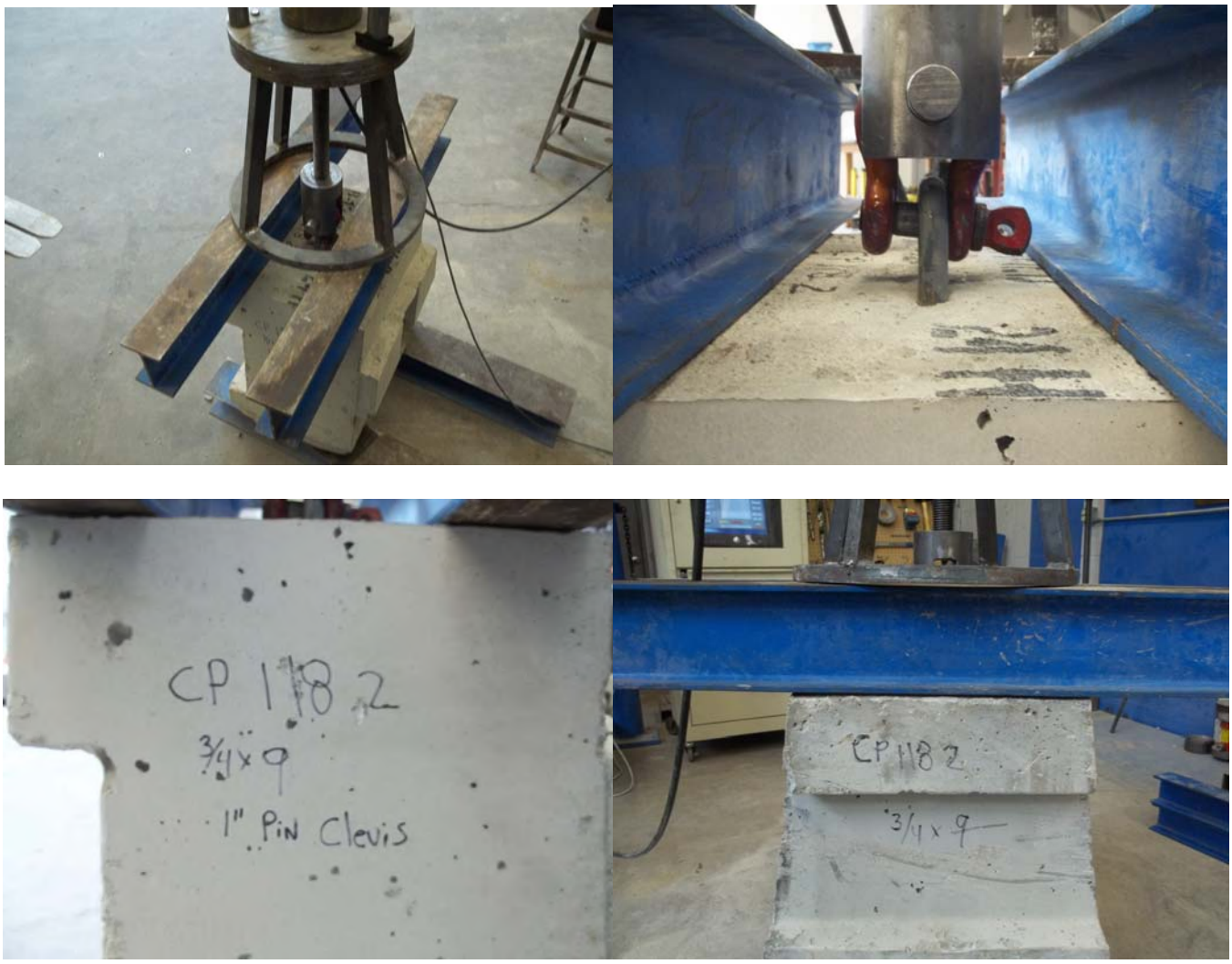

Figure 1 – 90-degree Tension Test Set-up

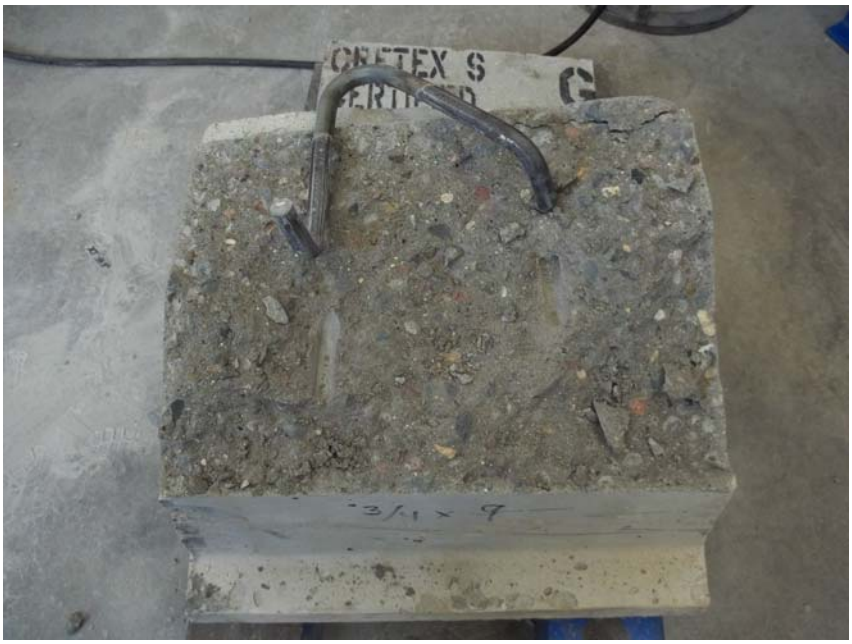

Figure 2 – Tension Failure Mode

PRODUCT DRAWING: