



# Twining Laboratories of Southern California, Inc.

3310 Airport Way  
Long Beach, CA 90806  
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## REPORT ON FIELD TESTING

March 26, 1992

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**PROJECT NO:** 92-5108

**CLIENT:** SULLIVAN CONCRETE TEXTURES  
Attn: Francis Sullivan  
Post Office Box 1890  
Costa Mesa, California 92628

**PROJECT ADDRESS:** SULLIVAN CONCRETE TEXTURES  
1111 Baker Street  
Costa Mesa, California

**SUBJECT:** Push Tests on Grasscrete

**DATE OF TEST:** Field Testing: March 12, 1992

**PERFORMED BY:** Andy Quan Cao, Staff Engineer  
George Mejia, Lab Technician

### OBJECTIVE:

In response to the request of Mr. Francis Sullivan of Sullivan Concrete Textures, perform field tests to determine maximum lateral load on selected Grasscrete posts.

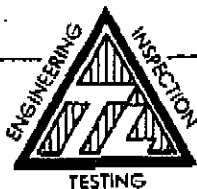
### FIELD TESTING:

Three (3) push tests were performed on a test section of Grasscrete that was installed by SCT in front of Sullivan Concrete Textures office.

The test section was constructed of 47% concrete and 53% grass plus soil (as reported by Sullivan Concrete Textures).

#### 1. APPARATUS:

- Hand operated hydraulic pump with calibrated pressure gauge.
- 10-ton hydraulic solid core ram with a 2x4x1/2" steel plate attached.
- 2x5x1/4" steel shims.



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PUSH TESTS ON GRASSCRETE POSTS

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## 2. TEST SET-UP AND PROCEDURE:

1. The post located between two test posts was removed and adjacent posts trimmed by SCT using non-impact tool.
2. Insert ram and shims between the test posts.
3. Apply 200 lbs. pre-load.
4. Increase load with steady, slow pumping motion to failure.
5. Release pressure, remove ram and shims.

## TEST RESULTS:

<u>TEST #</u>	<u>MAX. LOAD (LBS.)</u>	<u>TYPE OF FAILURE</u>
1	9000	Post broken @ 1/2" below top of base
2	5000	Post broken @ the base line
3	1200	Post broken @ top of reinforcing bar (The bar was placed @ 1/2" below the base line)

## NOTES:

Test #1: Transverse loading  
Test #2: Longitudinal axis loading  
Test #3: Longitudinal axis loading

See attached sketched and photos.



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SUBMITTED BY: TWINING LABORATORIES OF SOUTHERN CALIFORNIA, INC.

Prepared by:

*Andy Q. Cao*

Andy Quan Cao  
Staff Engineer

AC/pc/5108.pus

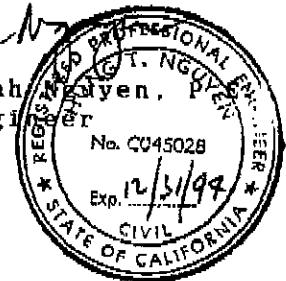
Attachments.

Distribution:

1 copy with wet signature to Client  
2 additional copies to Client  
Original to Project file

Reviewed by:

*Hung Thanh Nguyen*  
Hung Thanh Nguyen, P.E.  
Civil Engineer

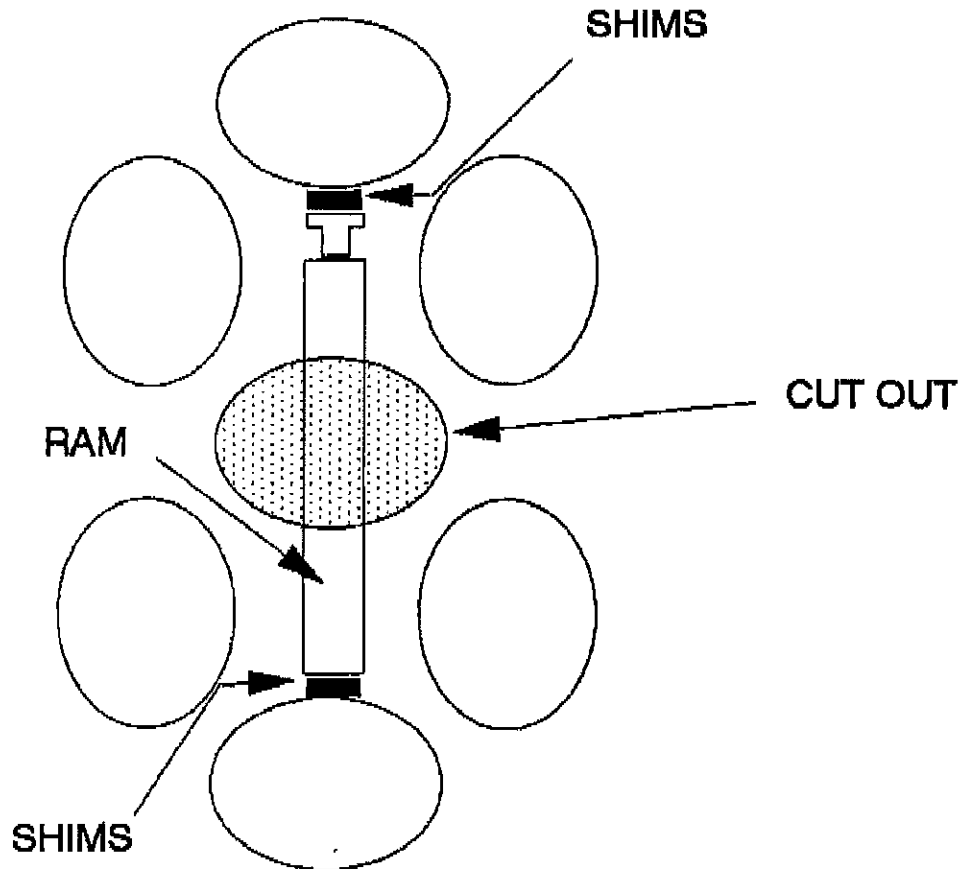




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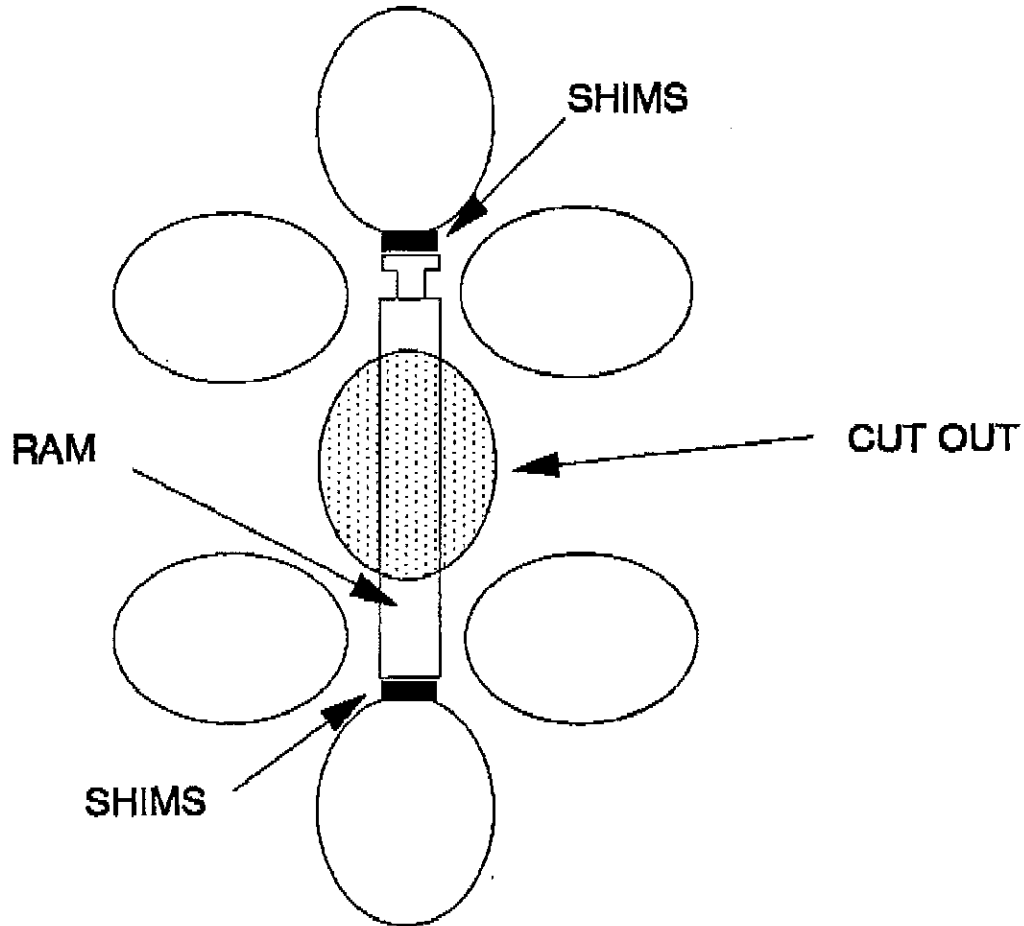
## TRANSVERSE LOADING



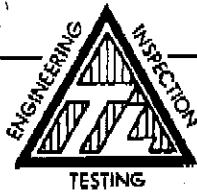
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## LONGITUDINAL AXIS LOADING



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## CALIBRATION CHART

FOR 10-TON RAM #1 AND GAUGE #1

DATE: 12/20/91 BY: KENT GRAY

PRESSURE (psi)	LOAD (lbs)	PRESSURE (psi)	LOAD (lbs)
200	100	3600	6600
300	200	3700	6800
400	300	3800	7000
500	400	3900	7100
600	600	4000	7300
700	800	4100	7500
800	1000	4200	7700
900	1200	4300	7800
1000	1400	4400	8000
1100	1600	4500	8200
1200	1800	4600	8400
1300	2100	4700	8600
1400	2300	4800	8800
1500	2500	4900	9000
1600	2700	5000	9200
1700	2900	5100	9400
1800	3100	5200	9600
1900	3300	5300	9800
2000	3500	5400	9900
2100	3700	5500	10000
2200	3900	5600	10200
2300	4100	5700	10400
2400	4300	5800	10600
2500	4500	5900	10800
2600	4600	6000	11000
2700	4800	6100	11200
2800	5000	6200	11400
2900	5200	6300	11700
3000	5400	6400	11900
3100	5600	6500	12100
3200	5800	6600	12200
3300	6000	6700	12400
3400	6200	6800	12600
3500	6400	6900	13000