

**FRUITVALE DEVELOPMENT  
CORPORATION**

ENVIRONMENTAL  
PROTECTION  
00 MAY 17 PM 3:25

5/12/2000

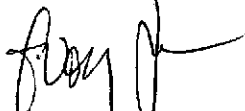
Alameda Health Care Services Agency  
Environmental Health Services  
Attn: Mr. Barney Chan  
1131 Harbor Bay Parkway, Ste. 250  
Alameda, CA 94502

Re: Union Pacific Right of Way Remediation Work Plan

Dear Mr. Chan:

Enclosed is the geotechnical report that was prepared by Parikh Consultants for the proposed work plan area per your request to Applied Remedial Services.

Sincerely,

  
Evelyn Johnson

Requested bring log cores not geotechnical testings.  
Still need.

**PAVEMENT DESIGN RECOMMENDATIONS**  
FOR FIVE PARKING LOTS ON UPRR PROPERTY  
FRUITVALE TRANSIT VILLAGE SITE  
OAKLAND, CA

For

**Fruitvale Development Corporation**  
1900 Fruitvale Avenue, Suite 2A  
Oakland, CA 94601



**PARIKH CONSULTANTS, INC.**  
481 Valley Way, Bldg. 1, Milpitas, CA 95035  
(408) 945-1011



# PARIKH CONSULTANTS, INC.

Offices: Milpitas • Fremont • Sacramento • Walnut Creek  
481 Valley Way, Bldg. 1, Milpitas, CA 95035-4016  
(408) 945-1011 • Fax: (408) 945-1012

- *Geotechnical*
- *Environmental*
- *Materials Testing*
- *Construction Inspection*

**Fruitvale Development Corporation**  
1900 Fruitvale Avenue, Suite 2A  
Oakland, CA 94601

May 12, 1999  
Job No: 99124.99

Attn: Mr. Carlos Castellanos

Subject: Pavement Design recommendations for five parking lots on UPRR property for Fruitvale Transit Village Site, Oakland, CA

Gentlemen:

As per our discussion and your authorization, we are pleased to provide you our geotechnical engineering recommendations for the proposed parking lots for the Fruitvale Transit Village Site. Our services are provided in accordance with our scope and proposal dated March 22, 1999.

## PROPOSED CONSTRUCTION

The proposed project consists of approximately one block long segments of parking lots that are spread out between Derby Avenue to Fruitvale Avenue along East 12th Street, and four lots between 33rd to 37th Avenue. With the exception of lots between 35th and 37th Avenues the proposed lots will be used as temporary parking lots. As per the Civil Designer, the design Traffic Index for the permanent parking is 5. At the present time the lots are vacant parcels with some reminiscence of old rail ballast. The site is protected by K-rail and fencing.

## SCOPE OF WORK

The scope of our services in general was to conduct field exploration, visually classify subsoil conditions, conduct R-value tests, engineering analysis and recommendations for the proposed construction.

### Exploration Data:

The field exploration program consisted of drilling/sampling at ten locations for all the parking lots. The approximate sample locations are shown on Plates 1A-1E. Relatively large area of the existing lots have railroad ballast and gravelly fill soil at or near surface. Following table summarizes the thickness of the ballast and fill material above the soil subgrade.

**TABLE 1**

Sample Location	Description & Thickness of Overburden Material	Subgrade Material
B-1	1' ballast and 1' gravel/sand	Brown Clayey Sand
B-2	1' ballast and 6" gravel/sand	Brown Clayey Sand
B-3	1' ballast and 6" gravel/sand	Brown Fat Clay
B-4	6-12" ballast and 6" gravel/sand	Brown Fat Clay
B-5	1' ballast and 6" gravel/sand	Brown Fat Clay
B-6	18" ballast and 6" gravel/sand	Brown Fat Clay
B-7	2' mixture of ballast and gravel	Brown Fat Clay
B-8	2' mixture of ballast and gravel	Brown Clay with gravel
B-9	6" ballast	Brown Fat Clay
B-10	2' mixture of ballast and gravel	Brown Fat Clay

The thickness and depth of materials noted above are at the specific locations sampled. These materials and thicknesses may vary at other locations.

**Laboratory Test Results:**

Bulk soil samples were collected from the soil subgrade below the ballast material. Based on a visual evaluation of the subgrade material, we selected five samples to conduct R-value tests on the subgrade soil.

The R-value test results indicate a range of values from less than 5 to 14. The soils are classified as expansive fat clays and are relatively weak. R-value test results are attached to this report. A design R-value of 5 is recommended for the pavement design.

**Pavement Design:**

- A. Based on the design Traffic Index of 5 provided by the Civil Designer the pavement section for the "permanent parking lot" is as follows:

2.75"	Dense graded asphalt concrete (DGAC AC)
<u>10.25"</u>	Class 2 Aggregate Base Rock
13.00"	Total thickness



**Fruitvale Development Corporation**

Job No: 99124.10

May 12, 1999

Page 3

The existing ballast surface should be cleaned off and sealed with base rock prior to placement of the asphalt concrete. The above design does not account for the existing thickness of the ballast material since it varies from location to location. In the event a minimum 6" of ballast can be verified the above design can be reduced to 2.75" of AC over 6" of Class 2 aggregate base rock. However, in order to use this alternate design we recommend that the ballast be covered with a layer of Mirafi 600X geofabric to bridge over the existing irregularities and voids created by the coarse ballast material.

- B. For the temporary parking lot (maximum service life of 2 years) we recommend a minimum section of 2" of AC over a 3" of aggregate base rock. As discussed above the existing lot has railroad ballast and it would be prudent to place the base rock as a seal course before placing the asphalt concrete so that the voids created by the coarse ballast are filled in with the rock and a uniform surface is available for the paving job.

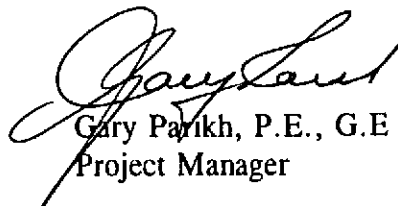
All pavement materials including asphalt concrete and aggregate base and construction specifications should be in accordance with Caltrans Standards or BART standards which ever is applicable for the project.

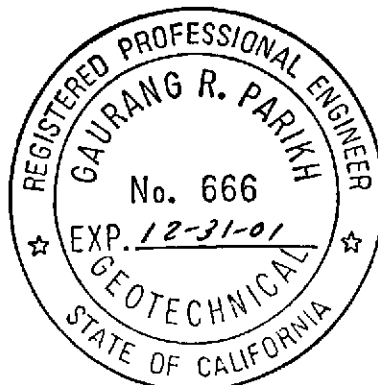
All pavement surface should be protected by proper drainage surface. Where appropriate, curb and gutter are normally provided to help collect and dissipate the surface runoff. This deters moisture penetration in the subgrade.

Limitation: Please be advised that we are performing a professional service and that our conclusions are professional opinions only. All work done and all recommendations made are in accordance with generally accepted geotechnical engineering principles and practices. No other warranty, expressed or implied, of merchantability or fitness, is made or intended in connection with our work.

We appreciate the opportunity to provide this service. If there are any questions please feel free to call us.

Very Truly Yours,  
**PARIKH CONSULTANTS, INC.**

  
Gary Parikh, P.E., G.E 666  
Project Manager



Attachment: R-Value Test Results



ASSESSOR'S MAP 25

Code Area No. 17-001

RANCHO SAN ANTONIO (A. M. PERALTA, ET AL). ( PAT. B.C.A. P. 668 )

Scale: 1" = 30'

692

693  
DERBY AVENUE

PARCEL TWO

694

691

688

688

San Antonio Street

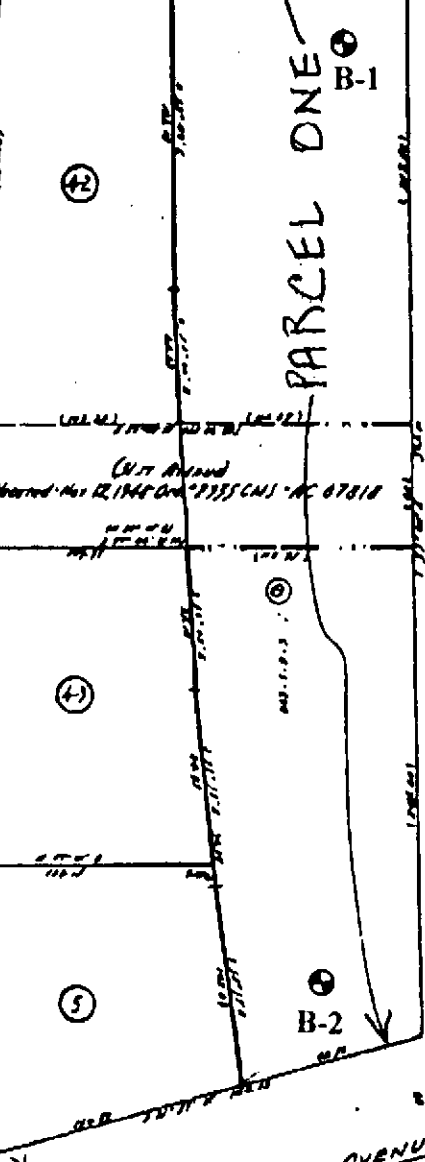
S. P. N. R.

680  
EAST 10TH STREET

2070

200

315'



EAST 12TH STREET

S. 1ST AVE.

FRUITVALE AVENUE  
BOOK 33  
2193

LEGEND:

⊙ Approx. Boring Location

NOTICE

THIS MAP MAY OR MAY NOT BE A SURVEY OF THE LAND DEPICTED HEREON IT IS NOT TO BE RELIED UPON FOR ANY PURPOSE OTHER THAN ORIENTATING ONE'S SELF AS TO THE GENERAL LOCATION OF THE PARCEL OR PARCELS OF INTEREST FIRST AMERICAN TITLE COMPANY ASSUMES NO LIABILITY FOR LOSS OF DAMAGE RESULTING FROM RELIANCE THEREON

BOOK 33  
2186

SAN LAMARDO ST.

Order 157225 TOF: JD AL Bk-Pa 25 - 692 Sht 1 of 1

Temporary Parking



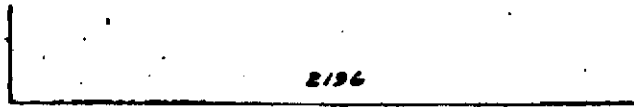
# ASSESSOR'S MAP 33

Code Area No. 17-001

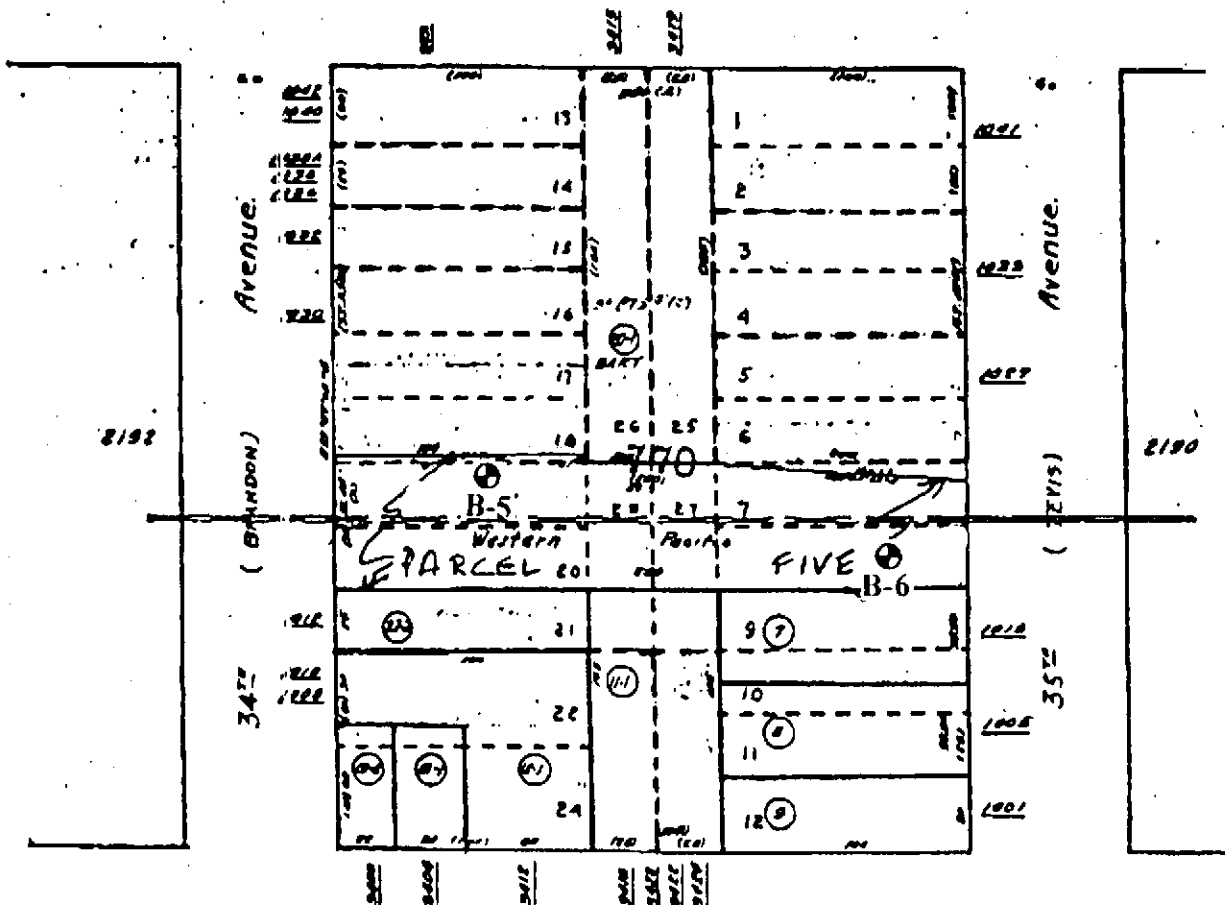
2191

Map of Syndicate Investment Company  
Subdivision of Blocks N-751-752-753-754  
769-770 of the Levy and Lane Tracts. (B.M. P. 19)

Scale 1 in = 40 ft.



East 12<sup>th</sup> (WASHINGTON) Street



• (East 10<sup>th</sup>) San Leandro - Street

### LEGEND:

⊙ Approx. Boring Location

2198

### NOTICE

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PICTED HEREON. IT IS NOT TO BE RELIED UPON FOR ANY  
PURPOSE OTHER THAN ORIENTATING ONE'S SELF AS TO THE  
GENERAL LOCATION OF THE PARCELS OR PARCELS OF INTEREST  
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LOSS OR DAMAGE RESULTING FROM RELIANCE THEREON

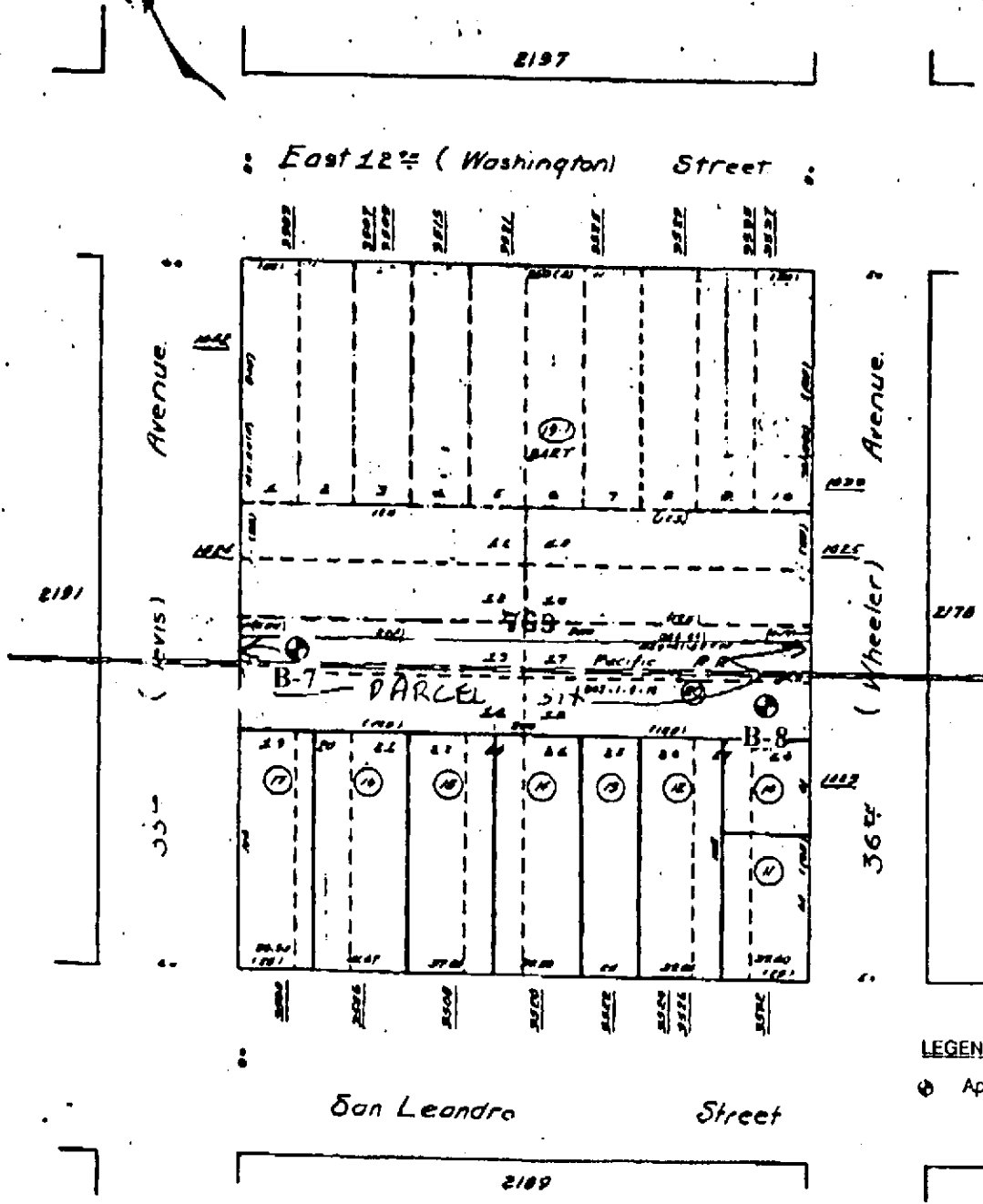
(Order: 157725 TOF: JD AL Bk-Pa 33-2191 Sh1 1 of 1



2190

# ASSISSOR'S MAP 33

Map of Syndicate Investment Company  
Subdivision of Blocks N: 751, 752, 753, 754, 761  
& 770 of the Levy and Lane Tracts (B.K. 14 P. 13)  
Scale 1/4" = 40ft.



### NOTICE

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 GENERAL LOCATION OF THE PARCEL OR PARCELS OF INTEREST.  
 FIRST AMERICAN TITLE COMPANY ASSUMES NO LIABILITY FOR  
 LOSS OR DAMAGE RESULTING FROM RELIANCE THEREON.

### LEGEND:

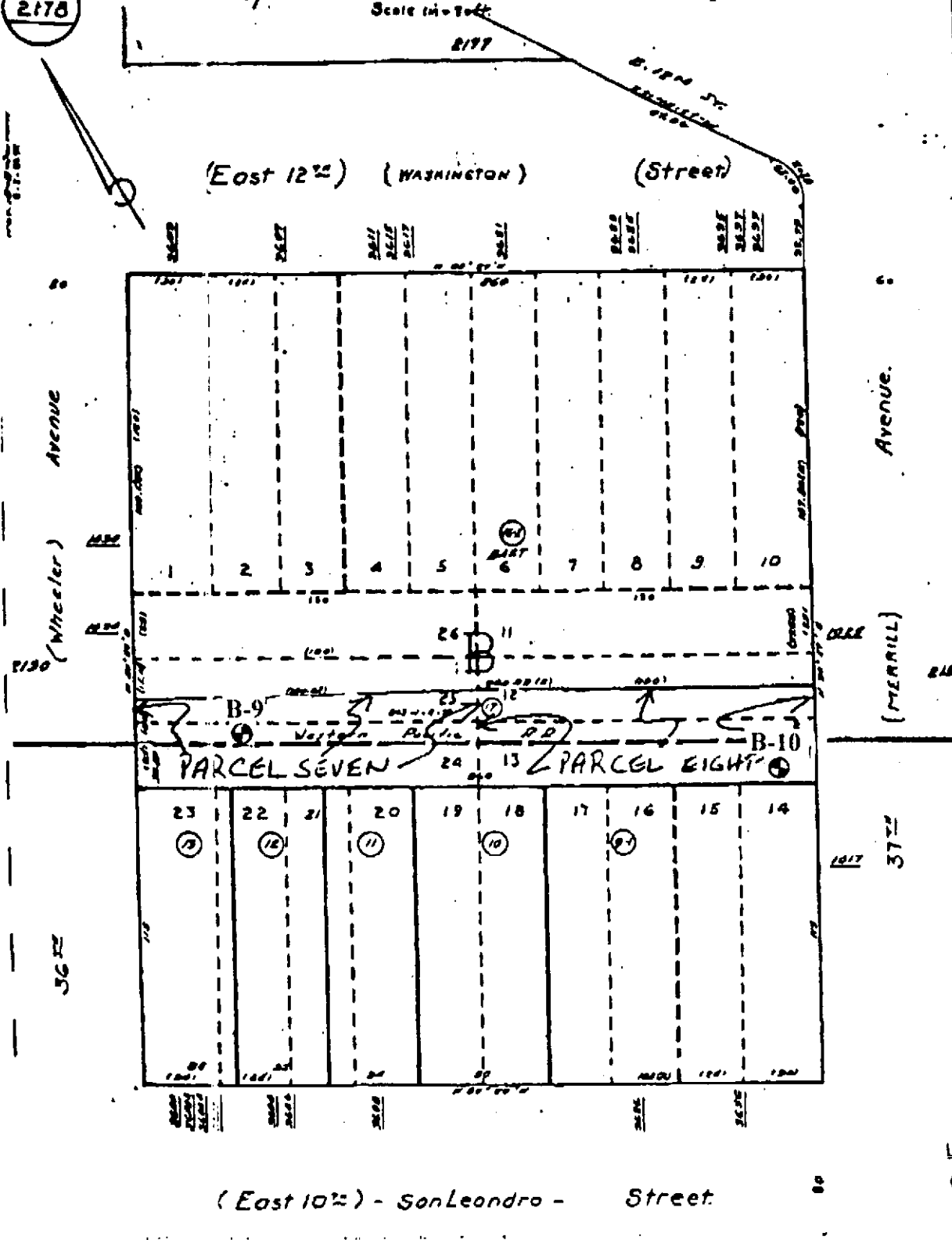
⊙ Approx. Boring Location

# ASSESSOR'S MAP 33

## Map of the Fruitvale Terminal Tract. (Bk. 16 Pg. 41)

Scale 1/4" = 100'

2178



**NOTICE**

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**LEGEND:**

⊕ Approx. Boring Location

(East 10 1/2) - San Leandro - Street

Order: 157225 TOF: JD AL Bk-Pg 33-2178 Sht 1 of 1

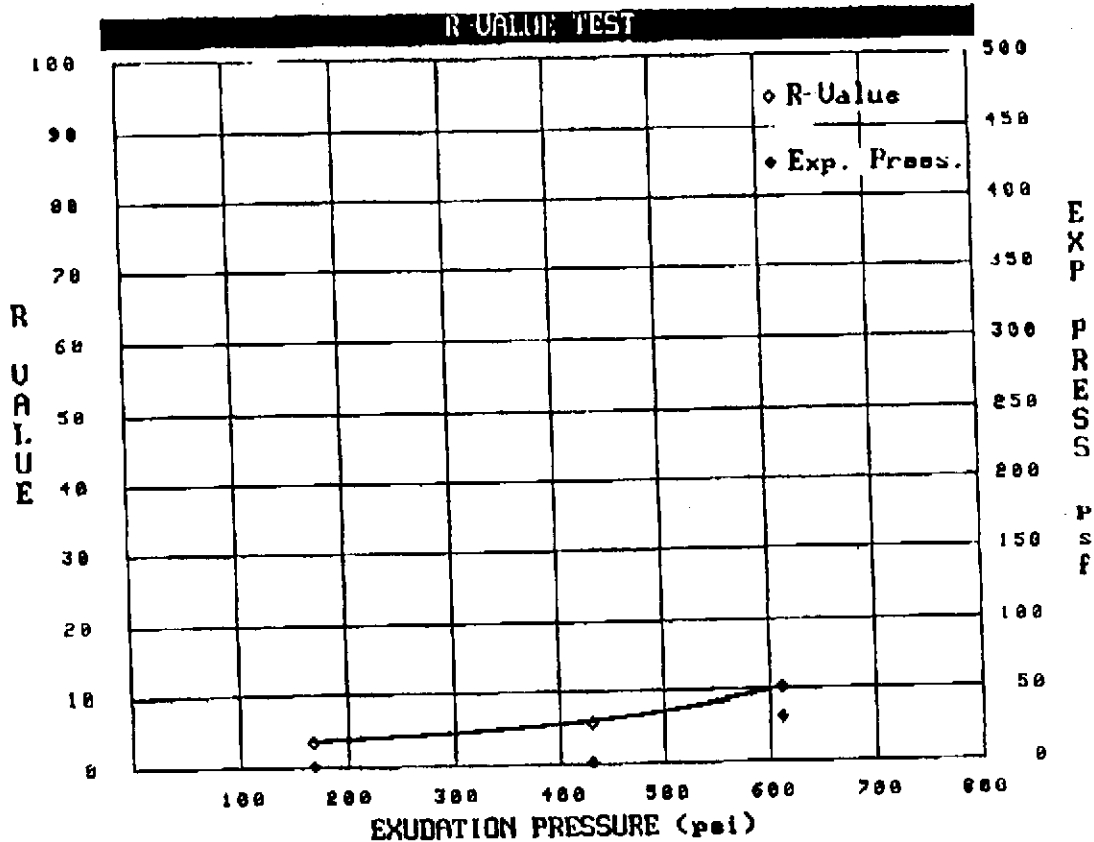
COOPER TESTING LABORATORIES

R-VALUE TEST

JOB #: 157-163d  
 DATE: 5/10/1999  
 CLIENT: Parikh  
 SAMPLE #: 99124.10, Bulk 4  
 SOIL TYPE: brown CLAY w/sand

DISH WEIGHT: 43.6  
 WET: 188.4  
 DRY: 168.7  
 INITIAL MOISTURE: 0.1575

SPECIMEN	A	B	C	D	VALUES AT 300 EXUDATION
					R-VALUE: 5 EXP. PRESSURE: 0
EXUDATION PRESSURE (psi)	614	432	170	0	REMARKS
PREPARED WEIGHT (gm)	1200	1200	1200	1200	
FINAL WATER ADDED (gm)	80	125	170	0	
WEIGHT, SOIL & MOLD (gm)	3099	3181	3052	0	
WEIGHT, MOLD (gm)	2082	2109	2117	0	
HEIGHT (in)	2.55	2.74	2.50	0.00	
MOISTURE CONTENT (%)	23.5	27.8	32.1	0.0	
DRY DENSITY (pcf)	97.8	92.7	85.7	0.0	
EXPANSION DIAL	7	0	0	0	
EXPANSION PRESSURE (psf)	30	0	0	0	
STABILOMETER @ 2000 lb	138	148	151	0	
TURNS DISPLACEMENT	3.27	3.51	4.17	0.00	
R-VALUE	11	5	3	0	
R-VALUE (corrected)	10	6	3	0	



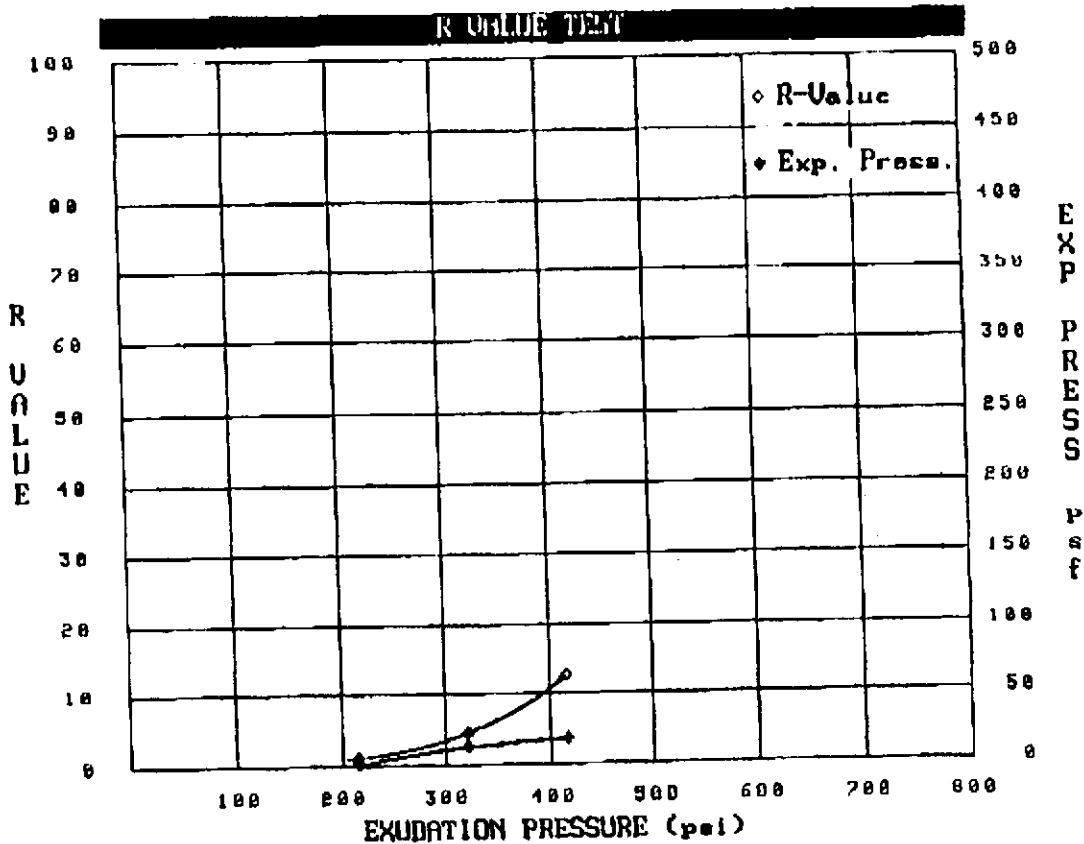
COOPER TESTING LABORATORIES

R-VALUE TEST

JOB #: 157-163c  
 DATE: 5/10/1999  
 CLIENT: Parikh  
 SAMPLE #: 99124.10, Bulk 6  
 SOIL TYPE: brown CLAY

DISH WEIGHT: 44.2  
 WET: 194.1  
 DRY: 173.6  
 INITIAL MOISTURE: 0.1584

SPECIMEN	A	B	C	D	VALUES AT 300 EXUDATION
					R-VALUE: 4 EXP. PRESSURE: 10
EXUDATION PRESSURE (psi)	419	325	218	0	REMARKS
PREPARED WEIGHT (gm)	1200	1200	1200	1200	
FINAL WATER ADDED (gm)	100	140	190	0	
WEIGHT, SOIL & MOLD (gm)	3188	3156	2974	0	
WEIGHT, MOLD (gm)	2089	2102	297	0	
HEIGHT (in)	2.73	2.70	2.37	0.00	
MOISTURE CONTENT (%)	25.5	29.4	34.2	0.0	
DRY DENSITY (pcf)	97.1	91.4	254.9	0.0	
EXPANSION DIAL	4	3	0	0	
EXPANSION PRESSURE (psf)	17	13	0	0	
STABILOMETER @ 2000 lb	136	148	156	0	
TURNS DISPLACEMENT	3.41	3.86	4.16	0.00	
R-VALUE	11	5	2	0	
R-VALUE (corrected)	12	4	0	0	



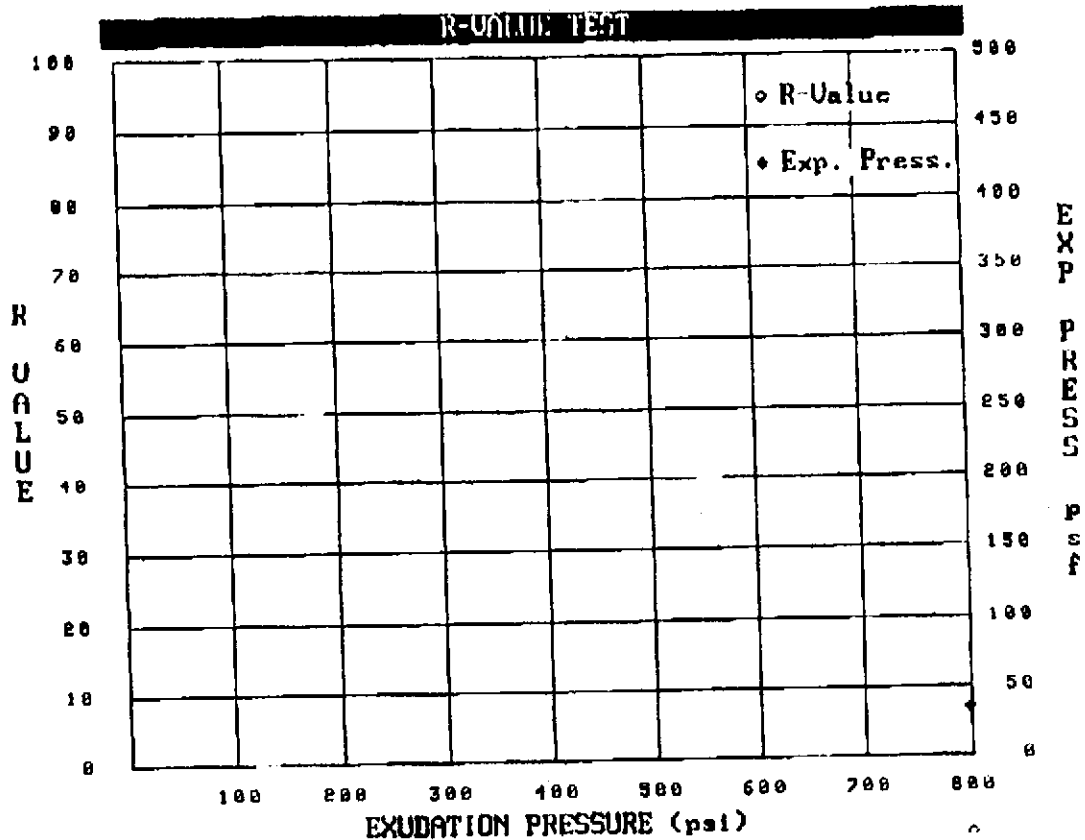
**COOPER TESTING LABORATORIES**

**R-VALUE TEST**

JOB #: 157-163b  
 DATE: 5/07/1999  
 CLIENT: Parikh  
 SAMPLE #: 99124.10, Bulk 8  
 SOIL TYPE: dark brown CLAY w/sand

DISH WEIGHT: 57.5  
 WET: 193.4  
 DRY: 177.1  
 INITIAL MOISTURE: 0.1363

SPECIMEN	A	B	C	D	VALUES AT 300 EXUDATION
					R-VALUE: < 5 EXP. PRESSURE: 0
EXUDATION PRESSURE (psi)	> 800	0	0	0	REMARKS Soil extruded from under mold during exudation giving a false pressure. Test was discontinued and reported as less than 5 R-value. . . .
PREPARED WEIGHT (gm)	1200	1200	1200	1200	
FINAL WATER ADDED (gm)	90	0	0	0	
WEIGHT, SOIL & MOLD (gm)	3140	0	0	0	
WEIGHT, MOLD (gm)	2110	0	0	0	
HEIGHT (in)	2.56	0.00	0.00	0.00	
MOISTURE CONTENT (%)	22.2	0.0	0.0	0.0	
DRY DENSITY (pcf)	99.7	0.0	0.0	0.0	
EXPANSION DIAL	8	0	0	0	
EXPANSION PRESSURE (pcf)	34	0	0	0	
STABILOMETER @ 2000 lb	1216	0	0	0	
TURNS DISPLACEMENT	2.97	0.00	0.00	0.00	
R-VALUE	272	0	0	0	
R-VALUE (corrected)	276	0	0	0	



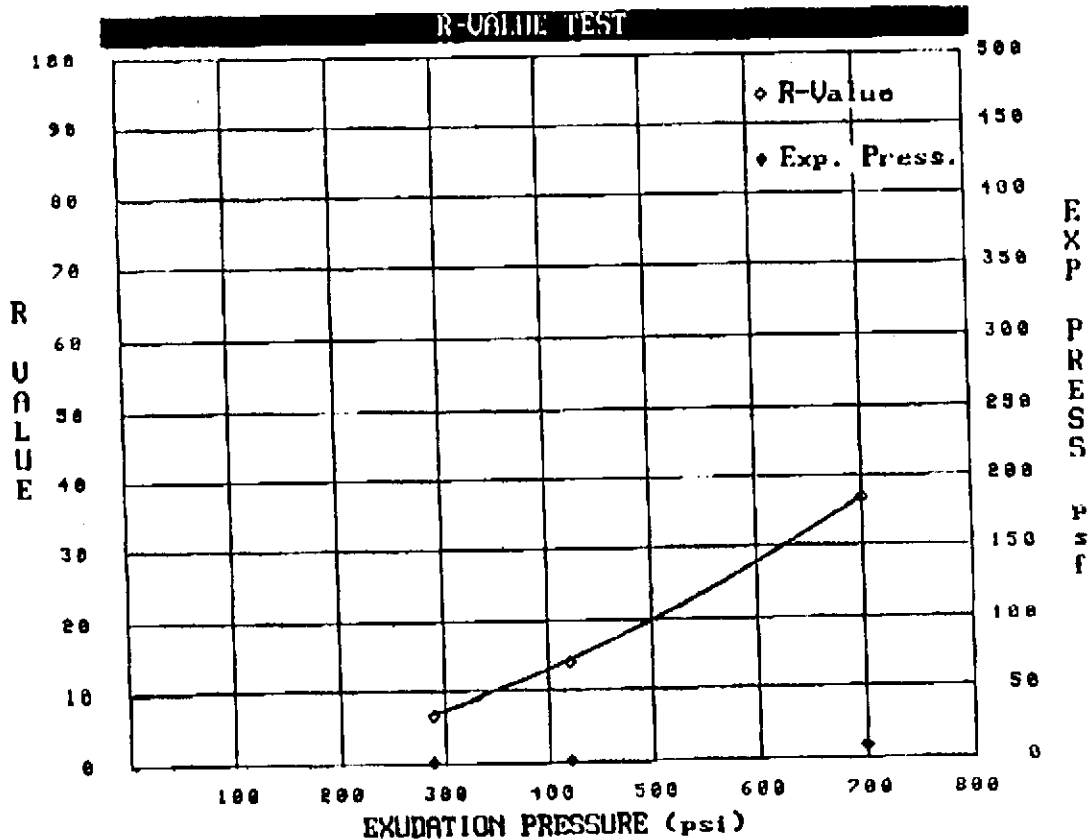
COOPER TESTING LABORATORIES

R-VALUE TEST

JOB #: 157-163a  
 DATE: 5/07/1999  
 CLIENT: Parikh  
 SAMPLE #: 99124.1, Bulk 10  
 SOIL TYPE: brown sandy CLAY w/gravel

DISH WEIGHT: 58.2  
 WET: 250.7  
 DRY: 234.4  
 INITIAL MOISTURE: 0.0925

SPECIMEN	A	B	C	D	VALUES AT 300 EXUDATION
					R-VALUE: 8 EXP. PRESSURE: 0
EXUDATION PRESSURE (psi)	702	423	291	0	REMARKS
PREPARED WEIGHT (gm)	1200	1200	1200	1200	
FINAL WATER ADDED (gm)	30	50	75	0	
WEIGHT, SOIL & MOLD (gm)	3255	3326	3205	0	
WEIGHT, MOLD (gm)	2102	2099	2072	0	
HEIGHT (in)	2.54	2.70	2.76	0.00	
MOISTURE CONTENT (%)	12.0	13.8	16.1	0.0	
DRY DENSITY (pcf)	122.7	117.4	39.0	0.0	
EXPANSION DIAL	2	0	0	0	
EXPANSION PRESSURE (psf)	9	0	0	0	
STABILOMETER @ 2000 lb	101	133	143	0	
TURNS DISPLACEMENT	2.57	3.51	4.07	0.00	
R-VALUE	36	13	7	0	
R-VALUE (corrected)	37	14	7	0	



COOPER TESTING LABORATORIES

R-VALUE TEST

JOB #: 157-163  
 DATE: 5/07/1999  
 CLIENT: Parikh  
 SAMPLE #: 99124.10 Bulk 1 & 2 composite  
 SOIL TYPE: light brown clayey SAND,  
 trace gravel

DISH WEIGHT: 42.7  
 WET: 155.7  
 DRY: 144.4  
 INITIAL MOISTURE: 0.1111

SPECIMEN	A	B	C	D	VALUES AT 300 EXUDATION
					R-VALUE: 14 EXP. PRESSURE: 5
EXUDATION PRESSURE (psi)	515	296	197	0	REMARKS
PREPARED WEIGHT (gm)	1200	1200	1200	1200	
FINAL WATER ADDED (gm)	30	50	90	0	
WEIGHT, SOIL & MOLD (gm)	3218	3236	3177	0	
WEIGHT, MOLD (gm)	2108	2111	2108	0	
HEIGHT (in)	2.45	2.60	2.64	0.00	
MOISTURE CONTENT (%)	13.9	15.7	19.4	0.0	
DRY DENSITY (pcf)	120.5	113.2	102.7	0.0	
EXPANSION DIAL	29	0	0	0	
EXPANSION PRESSURE (psf)	125	0	0	0	
STABILOMETER @ 2000 lb	101	133	150	0	
TURNS DISPLACEMENT	2.49	3.15	4.33	0.00	
R-VALUE	37	14	4	4	
R-VALUE (corrected)	35	14	3	0	

