City of Oakley
ADDENDUM NO. 2 to contract documents for
LAUREL ROAD WIDENING PROJECT, CIP # 196

BID OPENING DATE: November 27th, 2018 2:00 PM
(NOTE BID OPENING CHANGE)

Notice is hereby given that the following clarifications and revisions are made to the above referenced contract documents:

Updates to the Plans and Specifications pages:

Specifications Part I:
Updated Notice to Contractors
Changed Bid Opening Date to 11/27/18
Added Last Day for Contractor Questions 11/16/18

Specifications Part III:
Modified Section 10-1.10, Rubberized Hot Mix Asphalt to change to ½" aggregate gradation.

References:
Project Geotechnical Report

All bidders shall acknowledge receipt and acceptance of Addendum No. 2 by signing in the space provided at the end of this Addendum and submitting the signed addendum with their proposal.

Associate City Engineer

11-13-18
Date

_____

Contractor Signature

_____

Date

_____

Company Name

NOTICE TO CONTRACTORS

Sealed proposals will be received at the office of the City Clerk of the City of Oakley, 3231 Main Street, Oakley, CA 94561, until

2:00PM **Tuesday** **November 27, 2018**

for the following project:

CIP 196 – LAUREL ROAD WIDENING PROJECT

at which time they will be publicly opened and read aloud. Sealed proposals must be clearly marked on the outside with the Project number, date, and time of bid.

Contractor questions must be received by November 16th, 2018 at 5:00pm.

This following information is presented to indicate the size of the project and no warrant is made or intended as to final quantities:

Project Description

The work to be performed under this contract generally consists of, but is not limited to the following:

Mobilization and demobilization; traffic control and construction signage; removal and replacement of traffic striping, marking, and markers; removal of curbs and gutters, removal of sidewalks and curb ramps, clearing and grubbing, tree removal, roadway excavation, removal of pavement and base material, removal of subbases, native material fill, construction of new concrete curb and gutter, sidewalk, median islands, curb ramps, retaining curb, redwood header, bus pad; rubberized hot mix asphalt (RHMA), hot-mix asphalt (HMA) pavement and base; storm drain improvements; driveways, bioretention areas with deepened curbs, installation of new potable water services, street lighting; planting and irrigation, signing and striping and other work as shown on the Contract Plans, as specified in the Contract Documents, and as directed by the City Engineer.

Each bid must be accompanied by a cashier's check, certified check, or Bidder's Bond executed by a responsible corporate surety authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California, payable to the City of Oakley, in an amount not less than ten percent (10%) of the amount of the Base Bid. The successful bidder will be required to furnish a Performance Bond in an amount equal to one-hundred percent (100%) of the contract price, and a Labor and Material Bond in an amount equal to one-hundred percent (100%) of the contract price. Said bonds shall also be executed by a corporate surety authorized to engage in such business in the State of California and be made payable to the City of Oakley.

If the successful bidder fails, neglects, or refuses for TEN (10) calendar days after the award of the contract to enter into the contract to perform the work, the cashier's check, certified check, or Bidder's Bond accompanying the bid and the amount therein named, shall be declared forfeited to the City and shall be collected by it and paid into its general fund. No bidder may withdraw his/her bid for a period of NINETY (90) calendar days after the date set for the opening thereof, and the same shall be subject to acceptance by the City during this period.

The City Council reserves the right to reject any or all bids, waive any irregularities in any bids and its determination as to which bid is the lowest responsible bid and is for the best interest of the City shall be final. The City Council shall have NINETY (90) calendar days from and after the opening of the bids within which to make its determination.

The Contractor receiving the award of the contract shall begin work within **TEN (10)** Working days after receipt of the Notice to Proceed and shall diligently prosecute the same to completion within the time restrictions as listed in the technical specifications and all work shall be completed by the time allotted in the technical specifications.

The Contractor shall have **NINETY (90) Working Days** to complete this project. Working days will be counted starting from the date of the Notice-to-Proceed as day one. The amount of the liquidated damages to be paid by the Contractor to the City for failure to complete the work by the Completion Date (as extended, if applicable) is **ONE THOUSAND FIVE HUNDREWD DOLLARS ($1,500.00)** for each calendar day any work remains incomplete beyond the time fixed above for completion. Such amount is the actual cash value agreed upon as the loss to City resulting from Contractor's default.

At the time the Contractor's bid proposal is submitted, the Contractor shall possess a valid Class A California General Contractor's License. The Contractor shall also possess a valid City of Oakley Business License at the time the contract is awarded.

The City of Oakley, hereby notifies all bidders that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the grounds of race, color, national origin, sex, religion, age or disability. **The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR, Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may results in the termination of this contract, or such other remedy as recipient deems appropriate.**

Prevailing Rate of Wages: The State general prevailing wage rates determined by the Director of Industrial Relations are considered a part of this contract. Pursuant to Section 1773 of the Labor Code, the general prevailing wage rates in the county in which the work is to be done have been determined by the Director of the California Department of Industrial Relations. These wages are set forth in the General Prevailing Wage Rates for this project, available at City of Oakley address and available from the California Department of Industrial Relations' Internet web site at: http://www.dir.ca.gov. In payment of labor, the Contractor shall comply with the provisions of Labor Code Sections 1770 to 1781.

For any moneys earned by the Contractor and withheld by the City to ensure the performance of the contract, the Contractor may, at the Contractor's request and expense, substitute securities equivalent to the amount withheld in the form and manner and subject to the conditions provided in Article 8, (commencing with Section 10263), Chapter 1, Part 2, Division 2 of the Public Contract Code of the State of California.

Plans and Contract Documents for bidding this project may be obtained from the **Public Works & Engineering Department located at 3231 Main Street, Oakley, CA 94561**, weekdays, excluding holidays, between the hours of 8:00 a.m. and 6:00 p.m. A Non-refundable fee for full size plans and contract documents are **$50.00 per set.** Please include Federal Express number with mail-in requests for plans and specifications. If mailing is desired, without a Federal Express number, an additional non-refundable cost of **$50.00 per set** will be required. For further information, contact the Public Works and Engineering Department at (925) 625-

7037.

ATTEST:

Libby Vreonis, City Clerk

10-1.10 RUBBERIZED HOT MIX ASPHALT (RHMA)

GENERAL

Summary
This work includes producing and placing rubberized hot mix asphalt (gap graded) (RHMA-G) using the Standard process.

Comply with Section 39-2, "Standard Construction Process" for Hot Mix Asphalt, of the 2010 Caltrans Standard Specifications prior to July 2016, except as modified herein.

Submittals
Submit JMF information on Form CEM-3511 and Form CEM-3512. Submit Form CEM-3513 or CEM-3514 for mixes that have been verified within last 12 months. For unverified mixes, coordinate mix verification with City Soils Engineer. Submit Quality Control Plan that confirms to the Caltrans Quality Control Plan Review Checklist for Hot Mix Asphalt. Allow 20 calendar days for review. Contractor shall supply a certificate of compliance at time of each asphalt placement.

MATERIALS

All hot mix asphalt materials shall be as specified in Section 39-1 of the 2010 Caltrans Standard Specifications prior to July 2016; these Technical Provisions; and the plans and typical sections. The aggregate shall be **1/2-inch** RHMA-G and shall conform to the following gradation and production tolerances:

1/2-inch RHMA-G		
Sieve sizes	**Target value limits**	**Allowable tolerance**
¾"	100	---
½"	90-100	TV ± 6
3/8"	83-87	TV ± 6
No. 4	28-42	TV ± 7
No. 8	14-22	TV ± 5
No. 200	0-6.0	TV ± 2

In addition to complying with all aggregate quality requirements for RHMA-G in Section 39-2 , "Standard Construction Process" for Hot Mix Asphalt, of the 2010 Caltrans Standard Specifications prior to July 2016, the following aggregate quality requirements shall apply:

Quality characteristic	**Test method**	**Requirement**
Coarse durability	California Test 229	65 minimum
Fine durability	California Test 229	50 minimum
Percent flat and elongated particles (3:1 ratio)	California Test 235	25 maximum

Asphalt Binder
The asphalt binder mixed with asphalt modifier and crumb rubber modifier shall be PG 64-16 and shall conform to Section 92-1.02(B), "Grades," of the 2010 Caltrans Standard Specifications, prior to July 2016.

Mix Properties
The RHMA-G mix design shall target 3.5% air voids and shall comply with all RHMA-G requirements in Section 39-2, “Hot Mix Asphalt,” of the Standard Specifications.

Delivery Tickets
Each delivery ticket shall include information on the material type, binder type, oil content, and the mix design number. Material delivered to the project without such annotations shall be subject to rejection.

Construction
The paving shall be performed in such a way as to not leave any transverse paving joints at the end of each day’s operation.

Surface Preparation
The work shall consist of preparing the existing street surfaces prior to the commencement of paving. Such work shall include removing raised pavement markers, removing thermoplastic traffic markings and legends, controlling nuisance water, sweeping, watering, and removing loose and broken hot mix asphalt pavement and foreign material as specified in the Caltrans Standard Specifications and these Construction Specifications, and as directed by the Engineer.

Cold Joints
All cold joints, both longitudinal and transverse, shall be heated with a torch immediately prior to paving. Cold joints include previous passes placed more than three hours prior. All cold joints shall be tack coated.

Layout
The contractor shall layout and mark the location of the edges of the paving passes of the surface course to match the new layout of the lane lines. The layout shall be made at least 24 hours prior to paving. The layout shall be approved by the Engineer prior to paving.

If the striping is to remain unchanged, the edges of the paving passes shall conform to existing lane edges.

In all cases where practical, each lane shall be paved in a single pass. In tapered transition areas, the shoulder areas shall be paved first, then the through lane shall be hotlapped immediately after the shoulder paving.

For paving which incorporates new quarterpoints or gradebreaks due to keycuts or other conditions, the contractor shall provide equipment capable of adjusting to the new surface profile at the appropriate locations. The profile adjustments shall be within twelve inches of the actual quarterpoint or gradebreak.

The contractor shall take sufficient measurements during laydown to assure that the full design rubberized hot mix asphalt layer depth is provided at each quarterpoint, gradebreak, and transition. Failure to provide the design depth at these areas will result in rejection of the work. Correction of this rejected work will include milling out the new hot mix asphalt from the road edge to the centerline or nearest inside lane line and repaving. The minimum length of the milled and corrected area shall be fifty feet.

Tolerances
The finished rubberized hot mix asphalt surface shall be flush with, to ¼ inch (0.20 feet or 6 mm) above, the gutter lips. The finished pavement surface shall not be lower than the gutter lips.

The average pavement thickness shall be equal to the specified thickness for the project. For total pavement thicknesses of less than four inches, the minimum allowable thickness will be ¼ inch less than that specified. For total pavement thicknesses of four inches or more, the minimum allowable thickness will be ½ inch less than that specified.

Engineer's Acceptance

Modify 39-2.03A Testing as follows:

Change footnote e(1) to read as follows: 1. Use one location per trench if the trench area is less than 200 square feet. Use three locations for areas between 200 and 1200 sf. Use three tests per 1200 sf thereafter.

Compaction shall be between 92.0% and 97.0%.

Add the following footnotes:

k. Engineer shall perform testing in accordance with CT 375 for acceptance, except maximum specific gravity (CT 309) shall replace TMD testing. Contractor shall perform independent quality control testing continuously during paving using nuclear or non-nuclear methods.

l. Failing tests shall be verified by coring if requested by the Contractor. The Contractor will take cores at locations randomly determined by the Engineer and give them to the engineer for testing. A minimum of 1 core per 250 tons or 3 cores per street, whichever is greater, shall be taken. For streets where 3 cores are obtained representing less than 750 tons, each core shall represent 1/3 of the total tonnage placed on the individual street.

Passing cores shall be paid for by the owner. Failing cores shall be paid for by the Contractor. If the core density testing produces both passing and failing cores, the cost will be prorated between the owner and Contractor.

The table for deductions indicated in the referenced revised Caltrans Section 39 shall apply to individual cores. The following table provides the reduced pay factor for each failing core representing 250 tons of RHMA:

Reduced Payment Factors for Percent of Maximum Theoretical Density

RHMA-G Percent of Maximum Theoretical Density	Reduced Payment Factor	RHMA-G Percent of Maximum Theoretical Density	Reduced Payment Factor
92.0	0.0000	97.0	0.0000
91.9	0.0125	97.1	0.0125
91.8	0.0250	97.2	0.0250
91.7	0.0375	97.3	0.0375
91.6	0.0500	97.4	0.0500
91.5	0.0625	97.5	0.0625
91.4	0.0750	97.6	0.0750
91.3	0.0875	97.7	0.0875
91.2	0.1000	97.8	0.1000
91.1	0.1125	97.9	0.1125
91.0	0.1250	98.0	0.1250
90.9	0.1375	98.1	0.1375
90.8	0.1500	98.2	0.1500
90.7	0.1625	98.3	0.1625
90.6	0.1750	98.4	0.1750
90.5	0.1875	98.5	0.1875
90.4	0.2000	98.6	0.2000
90.3	0.2125	98.7	0.2125
90.2	0.2250	98.8	0.2250
90.1	0.2375	98.9	0.2375
90.0	0.2500	99.0	0.2500
< 90.0	Remove and Replace	> 99.0	Remove and Replace

The Contractor shall have hand-compaction equipment immediately available for compacting all areas inaccessible to rollers. Hand-compaction shall be performed concurrently with breakdown rolling. If for any reason hand-compaction falls behind breakdown rolling, further placement of hot mix asphalt shall be suspended until hand-compaction is caught up. Hand-compaction includes vibraplates and hand tampers. Hand torches shall be available for rework of areas which have cooled.

After compaction, the surface texture of all hand work areas shall match the surface texture of the machine placed mat. Any coarse or segregated areas shall be corrected immediately upon discovery. Failure to immediately address these areas shall cause suspension of hot mix asphalt placement until the areas are satisfactorily addressed, unless otherwise allowed by the Engineer.

Temporary Transitions

The Contractor shall construct temporary pavement transitions at all paving joints greater than 1 inch prior to allowing traffic onto the paved surface. This includes both longitudinal and transverse paving joints for both leveling and surface courses. Temporary pavement transitions shall have a maximum slope of 20:1 or as approved by the engineer and be constructed on Kraft paper or other suitable bond breaker such that upon removal of the temporary pavement transition, a clean vertical face remains. The temporary transitions may be constructed of either cold mix or hot mix. A tack coat is required on the transition area prior to final paving.

The Contractor shall continuously maintain the temporary pavement until final paving. Each temporary transition shall be inspected by the Contractor and repaired as necessary to comply with these provisions at the end of each day including weekends and holidays.

Failure to comply with these provisions will result in a liquidated damage of $250 per day per transition and/or the cost of City crews making the repairs if necessary to correct for public safety.

MEASUREMENT AND PAYMENT

Measurement and Payment for “RHMA-G” shall be at the unit cost indicated in the Bid Schedule. The contract prices paid per ton for RHMA-G shall include, but is not limited to, full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in constructing RHMA-G, complete in place, as shown on the plans, as specified in these specifications and the special provisions, and as directed by the Engineer. Additionally, no payment will be made for work, equipment, or materials not covered in these plans and specifications, but necessary to insure a completed project as specified.

Contract shall include in the unit price all costs relating to submitting the JMF including all testing costs for JMF verification and quality control testing. The unit price includes the cost of providing the Contractor’s Quality Control Plan. The Contractor shall pay all the cost of coring if requested to verify density by cores. Engineer will pay cost of testing cores.

GEOTECHNICAL ENGINEERING REPORT
LAUREL ROAD WIDENING (CIP 196)
LAUREL ROAD & ROSE AVENUE INTERSECTION (CIP 191)
OAKLEY, CALIFORNIA

For

BKF ENGINEERS
1730 N. First Street, Suite 600
San Jose, CA 95112

PARIKH CONSULTANTS, INC.
2360 Qume Drive, Suite A
San Jose, CA 95131
(408) 452-9000

October 5, 2017 Job No. 2017-136, 138-PAV

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GEOTECHNICAL ENGINEERING REPORT
LAUREL ROAD WIDENING (CIP 196)
LAUREL ROAD & ROSE AVENUE INTERSECTION (CIP 191)
OAKLEY, CALIFORNIA

1.0 INTRODUCTION

This report presents the results of our geotechnical engineering investigation for the proposed "Laurel Road Widening (CIP 196)" and "Laurel Road and Rose Avenue Intersection (CIP 191)" projects to be constructed in the City of Oakley, California. The portion of Laurel Road to be widened is between Rose Avenue and Mellowood Drive, and the intersection to be improved is on the west end of the projects. The approximate project location is shown on the Project Location Map, Plate No. 1.

The geotechnical recommendations presented in this report are intended for design input and are not intended to be used directly as specifications. These recommendations should not be used directly for bidding purposes or for construction cost estimates.

2.0 SCOPE OF WORK

The purpose of this investigation was to evaluate the general subgrade soil conditions at the project site, and to provide structural pavement recommendations for the proposed improvements. The scope of work performed for this investigation included collecting subgrade bulk soil samples, laboratory tests, engineering analysis, and preparation of this report. Our scope of work did not include evaluation of the existing pavement sections and therefore no pavement coring or deflection tests were conducted.

3.0 PROJECT DESCRIPTION

The proposed projects include widening both sides of the existing Laurel Road travel ways between Rose Avenue and Mellowood Drive, approximately 1,300 feet in length, to accommodate the necessary turn pockets and transitions. In addition, the intersection of Rose Avenue and Laurel Road will be widened to accommodate the proposed roadway widening. Our recommendations presented in this report are based on the above information. Any major deviation should be reported to this office for further consideration. Repair or resurfacing of the existing pavement is

part of roadway maintenance and does not require geotechnical engineering services.

4.0 FIELD EXPLORATION AND LABORATORY TESTING

The field investigation consisted of collecting six (R-1 through R-6) bulk soil samples at depths of approximately 2 to 3 feet of subgrade using a hand auger in the roadway shoulder areas on September 14, 2017. Samples R-1 through R-4 are for the Laurel Road widening. Samples R-5 and R-6 are for the Rose Avenue and Laurel Road intersection. The soil samples obtained from the site were sealed and transported to the laboratory for further evaluation and testing. The approximate sampling locations are shown on the Site Plan, Plate No. 2.

In the laboratory, the soil samples were re-examined to verify the field classifications and three selected soil samples (screened) were tested for R-value (California Test Method 301). Additional laboratory tests performed included one Sieve (ASTM D422) and one Compaction (ASTM D1557). The R-value test was conducted by Cooper Testing Laboratory in Palo Alto, California. The laboratory test results are attached on Plates No. 3, 4, 5A, 5B, and 5C.

5.0 STRUCTURAL PAVEMENT SECTIONS

Our scope of work did not include evaluation of the existing pavement sections. Therefore any repair and overlay of the existing pavement is also excluded. The scope primarily includes pavement widening and new construction. Design for flexible pavement sections using hot mix asphalt (HMA) is based on the Caltrans Highway Design Manual (HDM, 2015). The laboratory tests produced R-values of 66 (R-2), 66 (R-4), and 68 (R-5). The soils appear to be mostly brown silty sand in nature. An R-value of 40 is adopted for pavement design in consideration of soil variation and uncertainty. Generally, this is the highest R-value used in the design as per Caltrans guidelines. A traffic index (TI) of 12.5 for a service life of 20 years is recommended for this arterial road due to the high truck traffic observed by the City. Table 5.1 presents design recommendations for new structural pavement sections.

TABLE 5.1 – STRUCTURAL PAVEMENT SECTIONS

TI	Location	R-value	Structural Pavement Section (ft.)					
			Option 1	Option 2		Option 3		
			Full-Depth HMA	HMA	AB	HMA	AB	AS
12.5	Laurel Road between Rose Ave. and Mellowood Dr.	40	1.20	0.65	1.20	0.65	0.85	0.45
12.5	Intersection of Rose Ave. and Laurel Road	40	1.20	0.65	1.20	0.65	0.85	0.45

HMA: Hot Mix Asphalt (Type A)
AB: Aggregate Base (Class 2) with R-value equal to 78
AS: Aggregate Sub-base (Class 2) with R-value equal to 50

6.0 GRADING

All grading and compaction operations should be performed in accordance with the project specifications and Section 19 "Earthwork" of the Caltrans Standard Specifications (2015). A representative from this office or the City authorized representative should observe all excavated areas during grading and perform moisture and density tests on prepared subgrade and compacted fill material.

Areas to receive fill should be clean of vegetation, shrubs, trees, and their roots. Zones of soft, organic or saturated soils could be encountered during site grading. Loose materials will be left after the removal of large trees. Where such conditions are encountered, deeper excavation may be required to expose firm soils. Deeper excavation may also be required in areas of demolition of existing structures.

In our opinion, conventional equipment can be used to excavate the on-site sandy soils. Subgrade pumping may be encountered during earthwork construction depending on the weather, moisture condition of the subsurface soils, and surface drainage conditions. Equipment mobility may also be difficult if the subgrade is wet. In which case, the subgrade soils may require reworking, aeration, or over-excavation and replacing with fabric and granular fill to facilitate earthwork construction.

Soft, wet subgrade was not encountered during our field investigation. In case soft and poor subgrade is encountered during earthwork and subgrade preparation, it may result in subgrade pumping and yielding. This may pose a constructability challenge. To provide a working platform and stable support for structural pavement sections, the subgrade should be treated as follows: 1) over excavating a minimum of one foot below the planned subgrade; 2) placing a layer of Caltrans stabilizing SEG Class B2 on the native soils; 3) backfilling with compacted AS. The treatment should extend to a minimum of one foot beyond the edge of the pavement. The design structural pavement sections provided in Table 5.1 should then be constructed on top of the properly treated subgrade. The over-excavation and replacement with fabric and AS is in addition to the design structural sections. It is intended to facilitate construction activities on poor and weak subgrade during construction.

Any fill materials (if required) imported to the project site should be non-expansive, relatively granular material having a Plasticity Index (PI) of less than 15 and a minimum Sand Equivalent (SE) of 10. The maximum particle size of fill material should not be greater than 4 inches in largest dimension. It should also be non-corrosive, free of deleterious material and should be reviewed by the Geotechnical Engineer. In addition, import fill within 3 feet of pavement subgrade should have a minimum R-value of 40.

It is possible that unknown old buried utilities or abandoned structures, concrete rubble etc. are located along the project alignment. It might require special equipment and additional efforts to remove these buried objects.

Prospective contractors for the project should be advised to evaluate construction-related issues on the basis of their own knowledge and experience in local areas, on the basis of similar projects in other localities, or on the basis of their own field investigation on the site, taking into account their proposed construction methods and procedures. In addition, construction activities related to excavation and lateral earth support must conform to safety requirements of OSHA and other applicable municipal and State regulatory agencies.

7.0 INVESTIGATION LIMITATIONS

Our services consist of professional opinions and recommendations made in accordance with generally accepted geotechnical engineering principles and practices and are based on our site reconnaissance and the assumption that the subsurface conditions do not deviate from observed conditions. All work done is in accordance with generally accepted geotechnical engineering principles and practices. No warranty, expressed or implied, of merchantability or fitness, is made or intended in connection with our work or by the furnishing of oral or written reports or findings.

The scope of our services did not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in structures, soil, surface water, groundwater or air, below or around this site.

Unanticipated soil conditions are commonly encountered and cannot be fully determined by taking soil samples and excavating test borings; different soil conditions may require that additional expenditures be made during construction to attain a properly constructed project. Some contingency fund is thus recommended to accommodate these possible extra costs.

This report has been prepared for the proposed project as described earlier, to assist the engineer in the design of this Project. In the event any changes in the design or location of the facilities are planned, or if any variations or undesirable conditions are encountered during construction, our conclusions and recommendations shall not be considered valid unless the changes or variations are reviewed and our recommendations modified or approved by us in writing.

This report is issued with the understanding that it is the designer's responsibility to ensure that the information and recommendations contained herein are incorporated into the project and that necessary steps are also taken to see that the recommendations are carried out in the field.

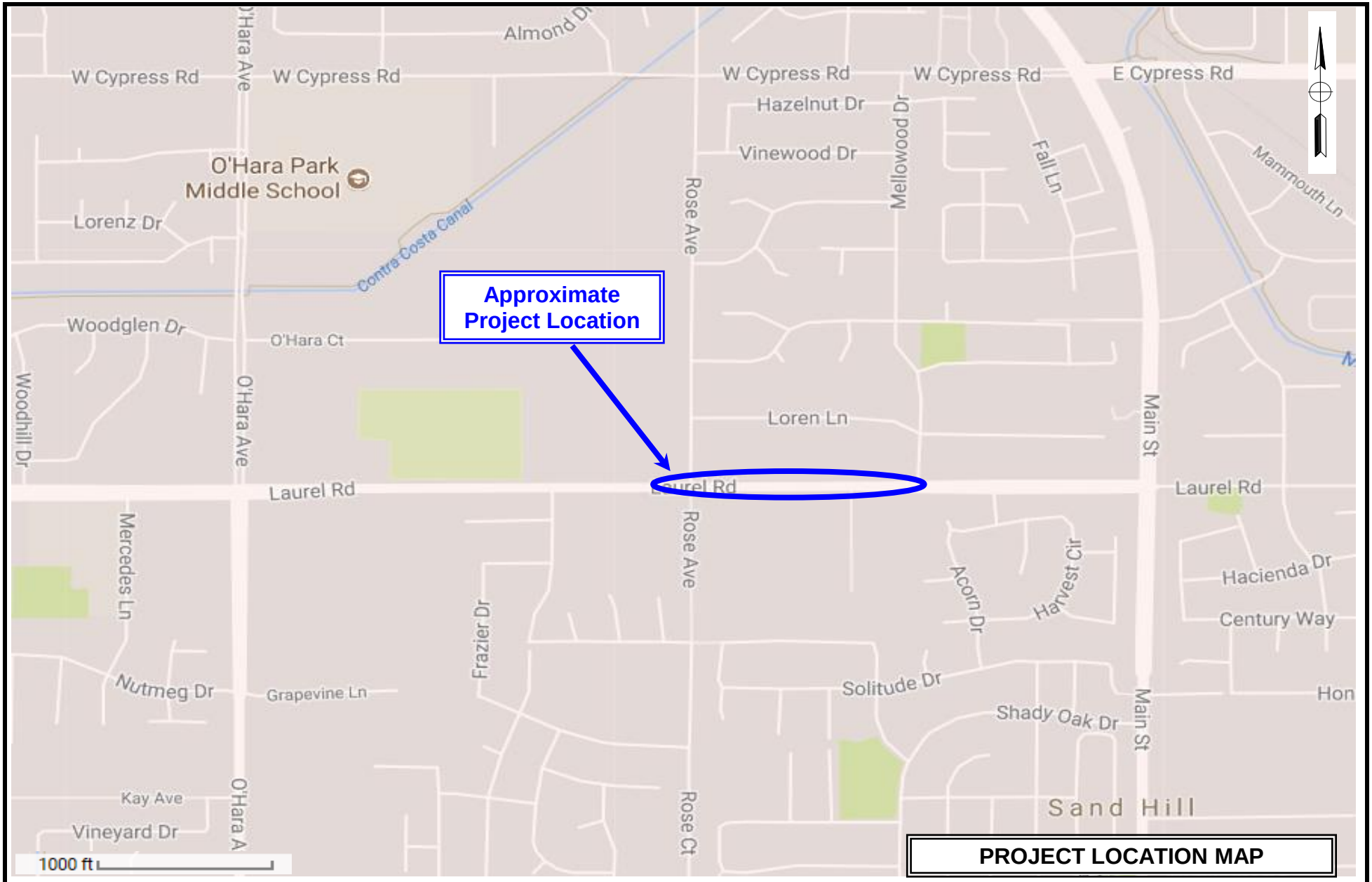
The findings in this report are valid as of the present date. However, changes in the subsurface conditions can occur with the passage of time, whether they are due to natural processes or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur, whether they result from legislation or from the broadening of knowledge.

Accordingly, the findings in this report might be invalidated, wholly or partially, by changes outside of our control.

Respectfully submitted,
PARIKH CONSULTANTS, INC.

Peter Wei, PE, GE 2922
Sr. Project Engineer

Gary Parikh, PE, GE 666
Project Manager



PROJECT LOCATION MAP

PARIKH
Practicing in the Geosciences

LAUREL ROAD WIDENING, and LAUREL ROAD & ROSE AVENUE INTERSECTION
OAKLEY, CALIFORNIA

JOB NO.: 2017-136,138-PAV	PLATE NO.: 1

PARIKH
Practicing in the Geosciences

LAUREL ROAD WIDENING, and LAUREL ROAD & ROSE AVENUE INTERSECTION
OAKLEY, CALIFORNIA

JOB NO.: 2017-136,138-PAV	PLATE NO.: 2

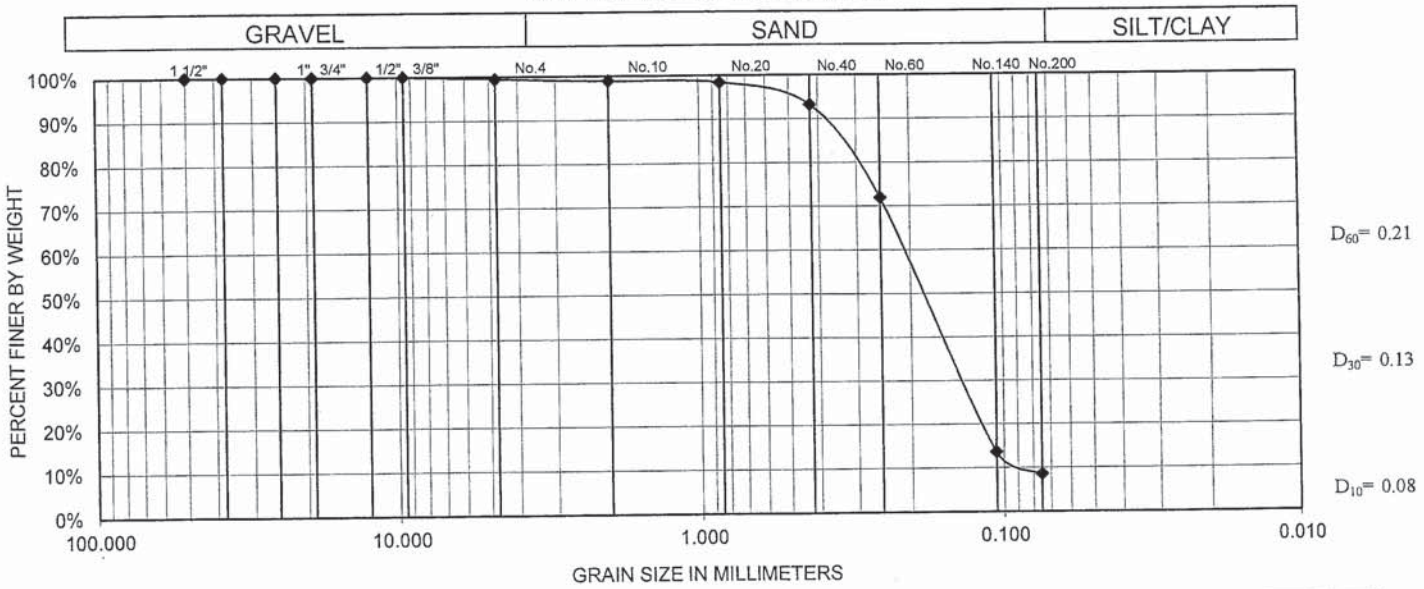
SIEVE ANALYSIS

ASTM C117 & C136, D422 or CAL 202

Project Name:	Laurel Road			Lab #	M922	Project #:	2017-136-PAV
Sample #:	R-3 #1	Depth:	2-3 ft	Reported By:	AG	Date Tested:	9/20/2017

U.S. Standard Seive	Weight Retained Cumulative/ Individual	Tare:	Percent RETAINED Cumulative	Percent PASSING Cumulative	Percent PASSING Cumulative		
2-in. (50-mm)			0.0%	100.0%			
1 1/2-in. (37.5-mm)			0.0%	100.0%		Dry Wt + Tare	616.4
1-in. (25.0-mm)			0.0%	100.0%		Tare Wt	109.8
3/4-in. (19.0-mm)			0.0%	100.0%		Dry Wt of Soil	506.7
1/2-in. (12.5-mm)			0.0%	100.0%			
3/8-in. (9.5-mm)			0.0%	100.0%			
No. 4 (4.75-mm)	2.9		0.6%	99.4%		**Gravel**	**0.6%**
No. 10 (2.00mm)	5.8		1.2%	98.8%			
No.20 (850 - µm)	8.3		1.6%	98.4%		**Sand**	**90.9%**
No.40 (425 - µm)	34.4		6.8%	93.2%			
No.60 (250 - µm)	142.2		28.1%	71.9%		**Fines**	**8.6%**
No.140 (106 - µm)	437.4		86.3%	13.7%			
No.200 (75 - µm)	463.3		91.4%	8.6%			
Wash - #200 + Pan			0.0%	100.0%			
TOTAL	506.7						

GRAIN SIZE CLASSIFICATION



SAMPLE NO.	DEPTH	U.S.C.	CLASSIFICATION	Cu	Cc
R-3 #1	2-3 ft	SP-SM	POORLY-GRADED SAND WITH SILT	2.54	1.05

PARIKH CONSULTANTS, INC.

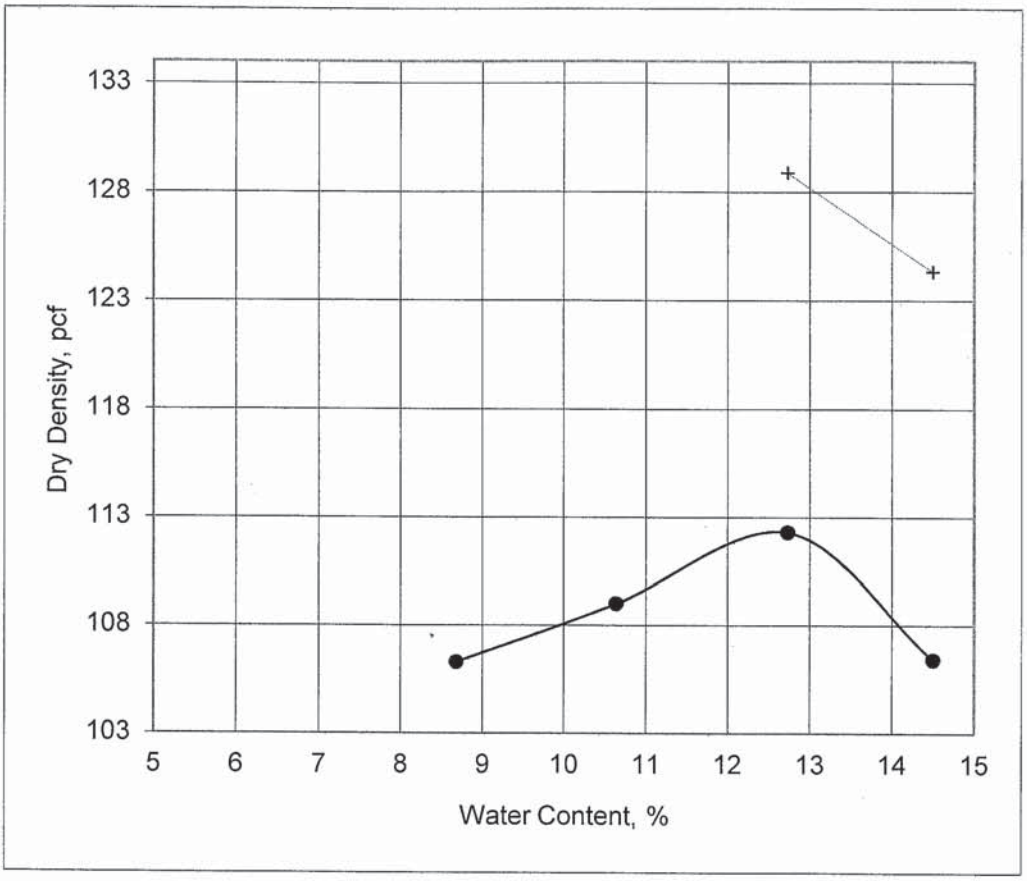
Gsieves 09/25/07 (FYW)

PLATE NO. 3

LABORATORY COMPACTION REPORT

(408)-452-9000
Parikh Consultants Inc.

Project:	Laurel Road	Date:	9/20/17
Client:	BKF	Project #:	2017-136-PAV
Sample #:	R-3	Lab #:	
Location/Source:	Oakley	Sample Date:	
Material:	Silty Sand	Sampled By:	



ASTM Test Designation: [ ] D 698 [X] D 1557 Method: [ ] A [ ] B [X] C

100 % Saturation Curve-Estimated Specific Gravity: 2.80

Rammer Type Manual [ ] or Mechanical [X]

Sample Preparation Moist [X] Dry [ ]

Laboratory Test Results

Trial #	1	2	3	4
Water Content,%	8.7	10.6	12.7	14.5
Dry Density, pcf	106.3	109.0	112.3	106.4

MAXIMUM DRY DENSITY, pcf:	**112.3**	OPTIMUM MOISTURE, %:	**12.7**

Comments:

Report By: N Ahmad

PLATE NO. 4

R-value Test Report (Caltrans 301)

Job No.:	157-348	**Date:**	09/21/17	**Initial Moisture,**	7.0
Client:	Parikh Consultants	**Tested**	PJ	**R-value**	**66**
Project:	Laurel Drive - 2017-136-PAV	**Reduced**	RU		
Sample	R-2 @ 2-3'	**Checked**	DC	**Expansion Pressure**	**0** psf
Soil Type:	Yellowish Brown Silty SAND				

Specimen Number	A	B	C	D
Exudation Pressure, psi	800	150	309	
Prepaired Weight, grams	1200	1200	1200	
Final Water Added, grams/cc	48	58	52	
Weight of Soil & Mold, grams	3046	3031	3077	
Weight of Mold, grams	2098	2098	2106	
Height After Compaction, in.	2.34	2.37	2.44	
Moisture Content, %	11.2	12.1	11.6	
Dry Density, pcf	110.4	106.4	108.1	
Expansion Pressure, psf	0	0	0	
Stabilometer @ 1000				
Stabilometer @ 2000	32	38	37	
Turns Displacement	3.78	4.15	4.10	
R-value	70	63	66	

Remarks:

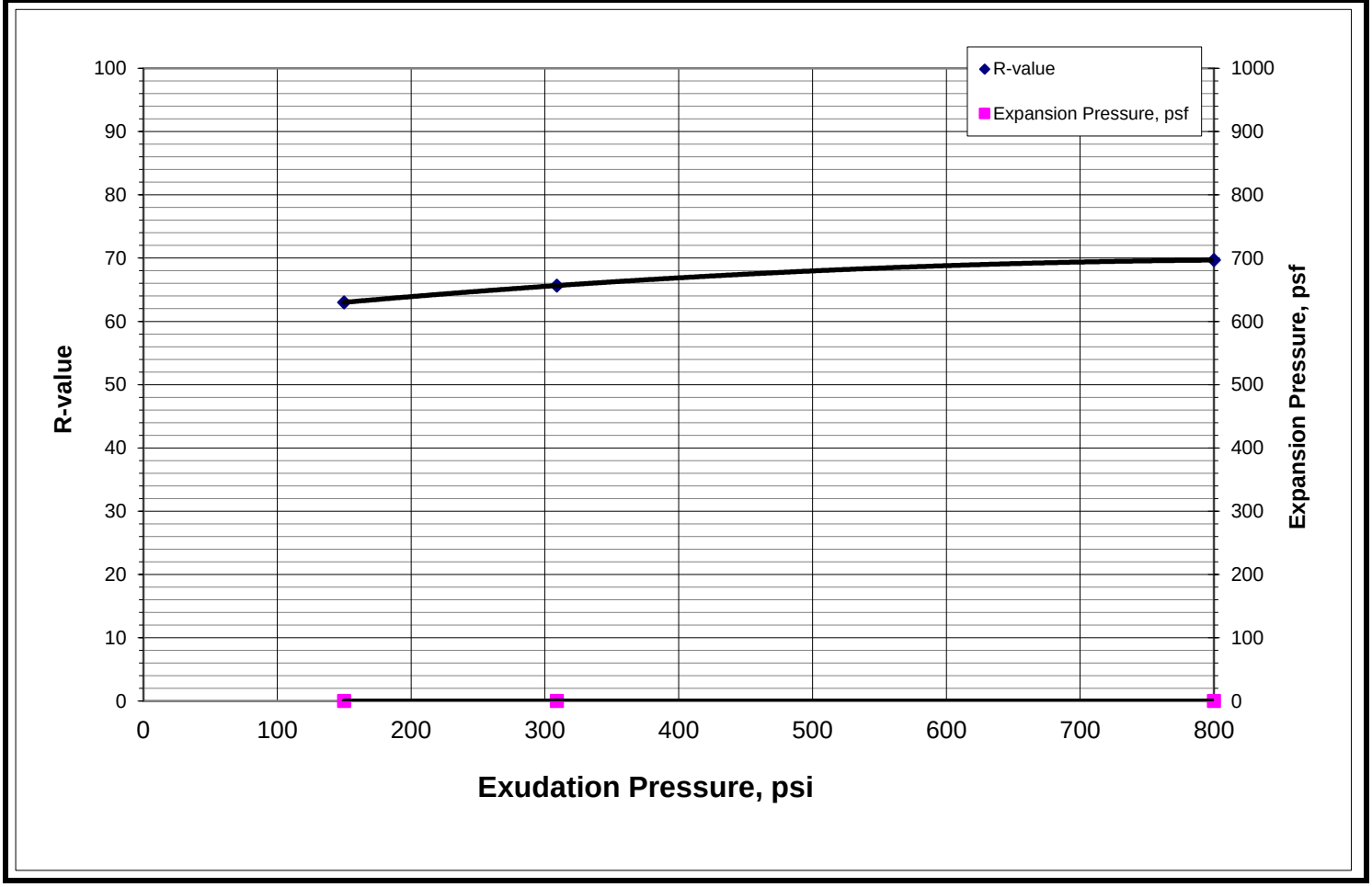


PLATE NO. 5A

R-value Test Report (Caltrans 301)

Job No.:	157-348	**Date:**	09/21/17	**Initial Moisture,**	7.6
Client:	Parikh Consultants	**Tested**	PJ	**R-value**	**66**
Project:	Laurel Drive - 2017-136-PAV	**Reduced**	RU		
Sample	R-4 @ 2-3'	**Checked**	DC	**Expansion Pressure**	**0** **psf**
Soil Type:	Yellowish Brown Silty SAND				

Specimen Number	A	B	C	D
Exudation Pressure, psi	791	380	104	
Prepaired Weight, grams	1200	1200	1200	
Final Water Added, grams/cc	41	51	67	
Weight of Soil & Mold, grams	3053	3074	3132	
Weight of Mold, grams	2105	2106	2116	
Height After Compaction, in.	2.36	2.39	2.51	
Moisture Content, %	11.2	12.1	13.6	
Dry Density, pcf	109.5	109.5	108.1	
Expansion Pressure, psf	0	0	0	
Stabilometer @ 1000				
Stabilometer @ 2000	27	33	45	
Turns Displacement	4.08	4.20	4.35	
R-value	73	67	60	

Remarks:

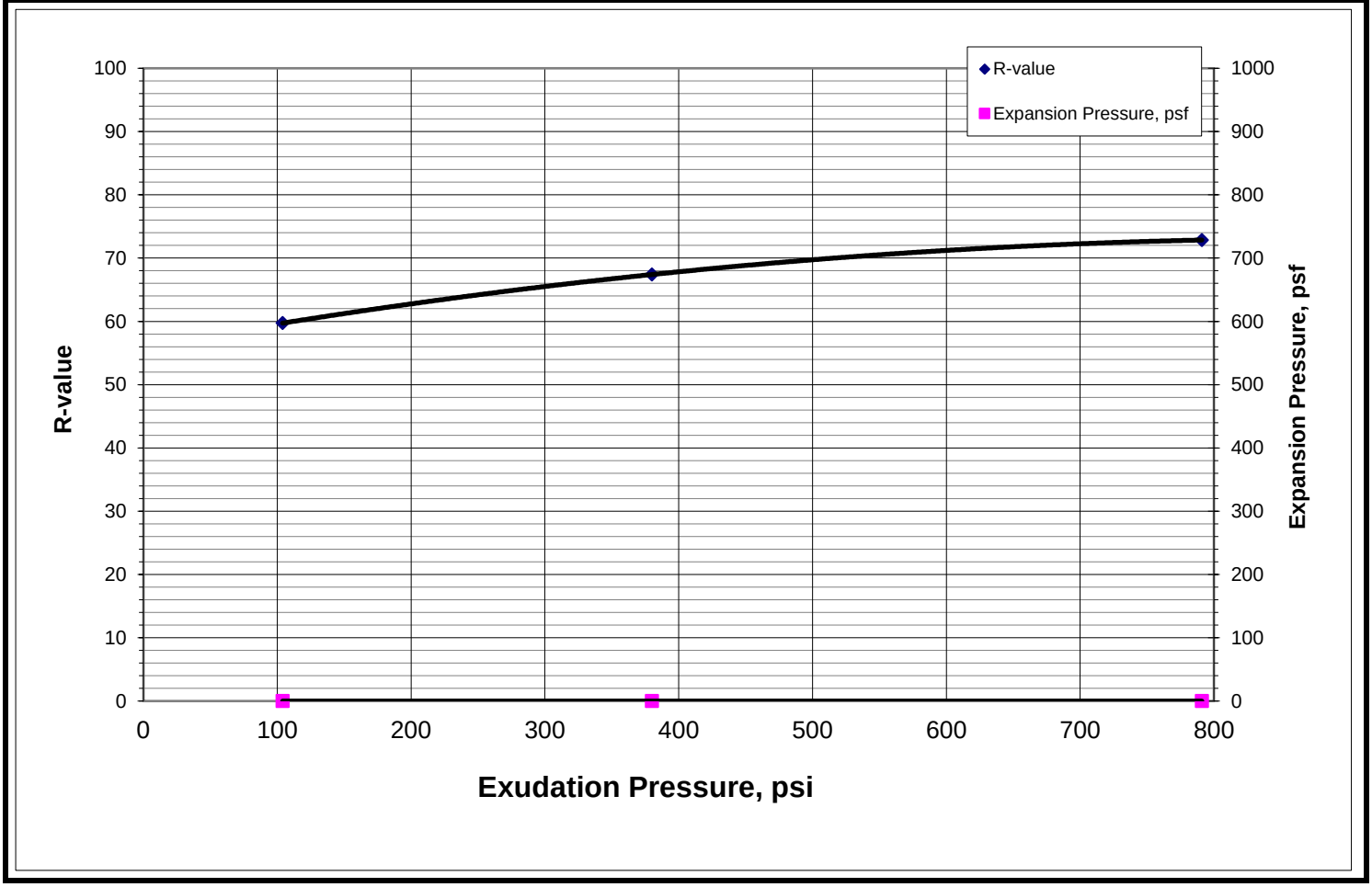


PLATE NO. 5B

R-value Test Report (Caltrans 301)

Job No.:	157-349	**Date:**	09/22/17	**Initial Moisture,**	6.0
Client:	Parikh Consultants	**Tested**	PJ	**R-value**	68
Project:	Laurel Drive - 2017-138-PAV	**Reduced**	RU		
Sample	R-5 @ 2-3'	**Checked**	DC	**Expansion Pressure**	0 psf
Soil Type:	Yellowish Brown Silty SAND				

Specimen Number	A	B	C	D
Exudation Pressure, psi	800	224	700	
Prepaired Weight, grams	1200	1200	1200	
Final Water Added, grams/cc	43	65	52	
Weight of Soil & Mold, grams	3054	3018	3049	
Weight of Mold, grams	2098	2064	2113	
Height After Compaction, in.	2.38	2.39	2.36	
Moisture Content, %	9.8	11.7	10.6	
Dry Density, pcf	110.9	108.3	108.7	
Expansion Pressure, psf	0	0	0	
Stabilometer @ 1000				
Stabilometer @ 2000	26	34	27	
Turns Displacement	4.20	4.05	4.20	
R-value	74	67	72	

Remarks:

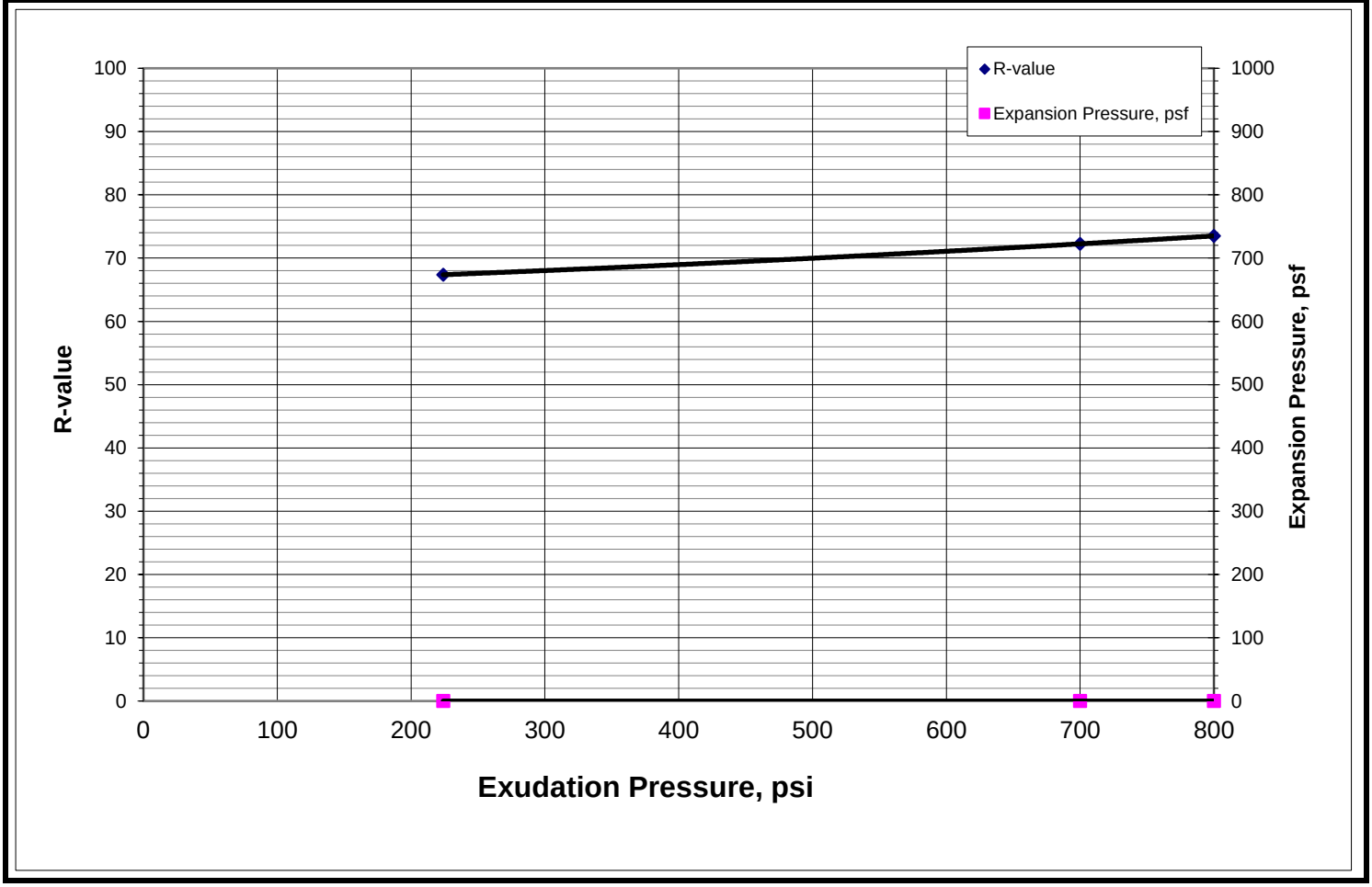


PLATE NO. 5C