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LaVIELLE GEOTECHNICAL P.C.

2313 NE Alameda  
Portland, Oregon 97212  
(503) 287-0511, Fax 282-7671

October 19, 2000

GT\_002569

Our ref: 00-1445.034

John Eddins  
3227 NW Luray Terrace  
Portland, Oregon 97210

2925  
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RE: REVISED GEOTECHNICAL ENGINEERING INVESTIGATION  
3227 NW LURAY TERRACE  
PORTLAND, OREGON

We present at your request a revised geotechnical engineering investigation for the remediation of the settlement at the rear of your house. The project is located at 3227 NW Luray Terrace, in Portland, Oregon.

**Project Description**

A portion of the rear left corner of your house has settled approximately 1 to 2 inches. The settlement has caused a significant sloping in the main floor. Large concrete foundation walls that are oriented perpendicular to the front of the house and the street support the main portion of the house. The rear wall of the house and the timber deck are supported by timber columns and deeply embedded, isolated concrete spread footings and piers. The second large concrete foundation wall in from the left, northern side of the house appears to have settled and tipped toward the rear of the house. At some time in the past attempts were made to relevel the house by placing shims between the concrete foundation wall and the house framing. In addition the concrete grade beams spanning between the large foundation walls, are badly cracked. The isolated concrete footings supporting the rear wall and deck appear to have settled differentially. Several of the isolated footing located in the left rear corner appear to have also moved laterally at some time in the past.

**Subsurface Conditions**

The soil in the area of the settled house foundations is soft to medium stiff, mottled brown Clayey Silt over the dense, sand and gravel conglomerate locally called the Troutdale Formation. Our boring drilled at the rear of the house encountered the Troutdale Formation at a depth 4 feet. Groundwater is expected to be at a depth of 25 feet or more.

01-148701-REV-01-RS

INIE 32 BA

October 19, 2001

2

00-1445.034

## Geotechnical Engineering Conclusions and Recommendations

Deeply embedded isolated footings and piers support the settled areas of the rear of the house. These isolated footings and piers are embedded 6 to 8 feet and they can not easily be underpinned and resupported as recommended in our report dated 9/11/00. The large concrete foundation walls that have settled appear to be stable now and no further movement is expected from them. The isolated foundations are embedded much deeper than previously expected and therefore they are not expected to creep laterally. We recommend they not be underpinned. We recommend a structural engineer be retained to review the previous shimming and framing work and the house be releveled by additional shimming instead of underpinning.

The front deck / yard area may be landscaped if drainage controlled and no fill is placed against the house walls.

### New Front Yard Area

We understand there are plans for removing the timber decking in front of the house and replacing it with landscaping. The removal of the deck is expected to expose a bare soil slope. Filling will be required to level the area. Exact fill depths are unknown but they may be in the range of 1 to 6 feet. Water draining from the street and elsewhere up hill appears to seep across the existing slope and appear beneath the house on the backside.

We recommend that in preparation for filling that slope be benched to create a connection between the existing soils and the newly placed fill. In addition we recommend any existing drainage sources be identified and the seepage collected in perforated pipes and then carried in solid piping to a discharge point well down the slope. We recommend fill NOT be placed against the house front wall. If the fill in front of the house must be retained we recommend independent retaining walls be constructed. Independent walls such as timber bin walls or geogrid reinforced wrapped face walls will prevent additional load from being placed against the house walls.

### Closure

This report has been prepared exclusively for the use of the John Eddins for specific application to this project. This exploration was performed in general accordance with locally accepted geotechnical engineering practice to provide information for the area explored. We are available to discuss any questions you may have concerning this report.

Sincerely,

LaVIELLE GEOTECHNICAL, P.C  
Craig C. LaVielle, P.E., Principal



October 19, 2001

3

00-1445.034

**SUMMARY TEST BORING LOGS****Depth (ft.)****Soil Classification****00-1445.034**Test Boring No. 1

0.0 - 4.0

-Very Soft, Grey-Brown, Clay, ML-CL (&lt;100 in-lbs.) (FILL??)

4.0 - 6.5

Dense, Brown, slightly cemented Sand and gravel with some cobbles,  
Troutdale Formation

Test boring met refusal and was terminated at a depth of 6.5 feet. Seepage was not encountered.

Test Boring No. 2

0.0 - 4.0

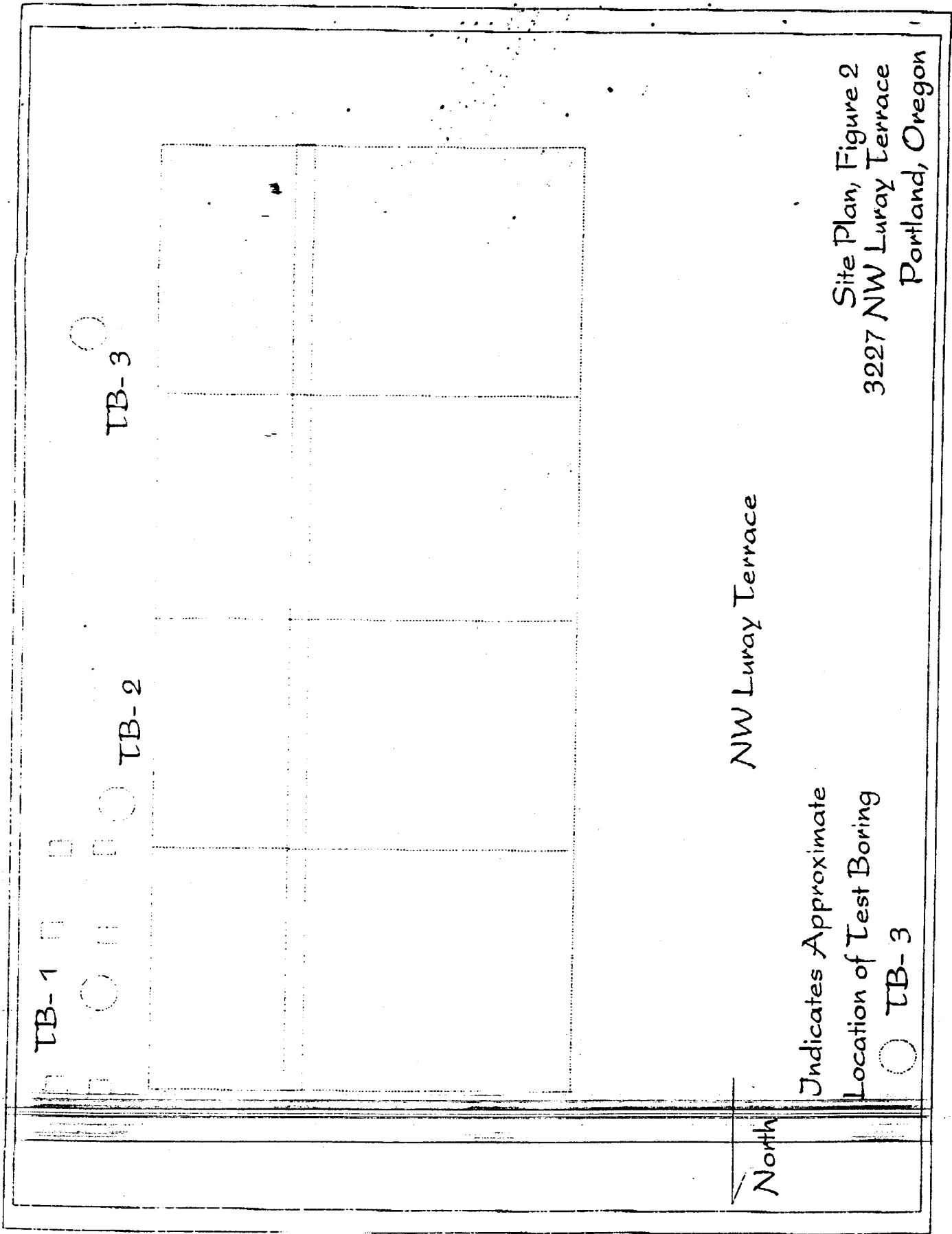
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Site Plan, Figure 2  
 3227 NW Luray Terrace  
 Portland, Oregon

LaVielle Geotechnical P.C.



CITY OF  
**PORTLAND, OREGON**  
OFFICE OF PLANNING AND DEVELOPMENT REVIEW  
PO Box 8120  
Portland, OR 97207-8120



## STRUCTURAL CHECKSHEET

Application # : 01-148701-REV-01-RS

Residential 1 & 2 Family Permit

Review Date : October 12, 2001

|     |                    |   |       |              |
|-----|--------------------|---|-------|--------------|
| To: | CONTRACTOR/BUILDER | SLATER CONSTRUCTION INC<br>2722 SE 25TH AVE<br>PORTLAND OR 972021219<br>MULTNOMAH | Work: | 503 231-7740 |
|     |                    |   | Fax:  | 503 236-3444 |

|       |                     |                 |                |              |
|-------|---------------------|-----------------|----------------|--------------|
| From: | Structural Engineer | Mike Walkiewicz | Phone:         | 503-823-7649 |
|       |                     |                 | Fax:<br>e-Mail |              |

|     |       |  |  |  |
|-----|-------|--|--|--|
| cc: | OWNER | JOHN B EDDINS & HOLLY H EDDINS<br>3227 NW LURAY TER<br>PORTLAND, OR 97210-2722 |  |  |
|-----|-------|--|--|--|

### PROJECT INFORMATION

Street Address: 3227 NW LURAY TER

Description of Work: REVISION 10/10/01 - DELETING ANCHOR SYSTEM.

Based on the plans and specifications submitted, the following items appear to be missing or not in conformance with the Oregon Structural Specialty Code and / or other city, state, or federal requirements.

| Item # | Location on plans | Code Section | Clarification / Correction Required  |
|--------|-------------------|--------------|--|
| 1.     |                   |              | <p>In the soils report dated September 11, 2000 by LaVielle Geotechnical for this residence several problems were identified. The report identified settlements in the rear left corner of the house that have caused significant sloping of the main floor. In addition a large concrete wall had settled and several of the isolated footings have move laterally. The soils report goes on to recommend that the footing be under pinned and supported by a deep foundation.</p> <p>Now the proposed work is being revised to eliminate the under pinning shown on the original permit. Why? Is the soil report in error? Was the under pinning never required?</p> <p>Please provide a copy of the revised soils report that the new proposed work is based on. Also provide a letter from the structural engineer justifying the change to the proposed design.</p> |

# STRUCTURAL CHECKSHEET

Application # 01-148701-REV-01-RS

Review Date: October 12, 2001

## INSTRUCTIONS

To respond to this checksheet, come to Document Services (1900 SW Fourth Ave., 2nd floor) and update all four sets of the originally submitted drawings. To update the drawings, you may either replace the original sheets with new sheets, or edit the originally submitted sheets when corrections are of a minor nature and when approved by the Office of Planning and Development Review. (Specific instructions for updating plans are posted in Document Services.)

Please complete the attached Checksheet Response Form and include it with your re-submittal. Notify Document Services Staff that you are submitting corrections for **Structural review**. To ensure that the plan reviewer receives notification, verify that the computer has been updated to show that the corrections were received.

If you have specific questions concerning this Checksheet, please call me at 503-823-7649. To check the status of your project, please call (503) 823-7000 and select option 4. Your Plan Review Status will be faxed to you, so please be ready to provide a fax number. If you don't have a fax number, you may dial (503) 823-7357 to request a Plan Review Status or visit Document Services.

You may receive separate Checksheets from other City agencies that will require separate responses.





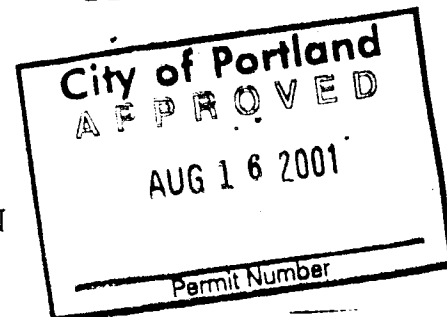
**LaVIELLE GEOTECHNICAL P.C.**

2313 NE Alameda  
Portland, Oregon 97212  
(503) 287-0511. Fax 282-7671

September 11, 2000

Our ref: 00-1445.034

John Eddins  
3227 NW Luray Terrace  
Portland, Oregon 97210



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3227 NW LURAY TERRACE  
PORTLAND, OREGON

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### Subsurface Conditions

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September 18, 2000

2

00-1445.034

## Geotechnical Engineering Conclusions and Recommendations

We recommend the settled areas of the rear of the house that are supported by isolated footings be underpinned and supported by deep foundations. The large concrete foundation walls that have settled appear to be stable now and no further movement is expected from them. The isolated foundations however are expected to continue to creep laterally and therefore we recommend they be underpinned. We recommend a structural engineer be retained to review the previous shimming and framing work. The front deck / yard area may be landscaped if drainage controlled and no fill is placed against the house walls. These and other related points are discussed in the following paragraphs.

### Underpinning Design

We recommend the 6 existing isolated foundations supporting the timber columns at the rear, north side of the house be supported by A. B. Chance helical soil anchors or an equivalent method. The anchors shall be capable of achieving the embedment depths and capacity limitations presented below.

|  |  |
|--|--|
| Bearing Material:  | Dense, Brown, Sand and Gravel<br>Conglomerate, Troutdale Formation           |
| Minimum Tip Embedment:                                     | 10 feet below ground surface.  |
| Maximum Tip Embedment:                                     | 15 feet below ground surface or as<br>approved by the geotechnical engineer. |
| Estimated Anchor Ultimate<br>Capacity at depth of 15 feet: | 40 kips for Anchors  |
| Anchor Proof Testing:                                      | 100 Percent of Design Load   |

Note: Foundation anchors shall be installed according to manufacturers published recommendations.

### New Front Yard Area

We understand there are plans for removing the timber decking in front of the house and replacing it with landscaping. The removal of the deck is expected to expose a bare soil slope. Filling will be required to level the area. Exact fill depths are unknown but they may be in the range of 1 to 6 feet. Water draining from the street and elsewhere appears to seep across the existing slope and appear beneath the house on the backside.

City of Portland  
APPROVED

AUG 18 2001

September 18, 2000

3

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We recommend that in preparation for filling that slope be benched to create a connection between the existing soils and the newly placed fill. In addition we recommend any existing drainage sources be identified and the seepage collected in perforated pipes and then carried in solid piping to a discharge point well down the slope. We recommend fill NOT be placed against the house front wall. If the fill in front of the house must be retained we recommend independent retaining walls be constructed. Independent walls such as timber bin walls or geogrid reinforced wrapped face walls will prevent additional load from being placed against the house walls.

**Anchor Proof Testing Procedure**

All of the anchors and should be proof tested. The proof testing shall consist of loading the each anchor in 5 equal increments to 100% of the design load. The 100% load should be held for 10 minutes. If the anchor movement between 1 and 10 minutes is less than 0.1 inches the anchor is acceptable. If anchor movement exceeds 0.1 inches during the 10-minute test, the anchor should deepened and retested or abandoned and a new, redesigned, replacement anchor installed.

**Closure**

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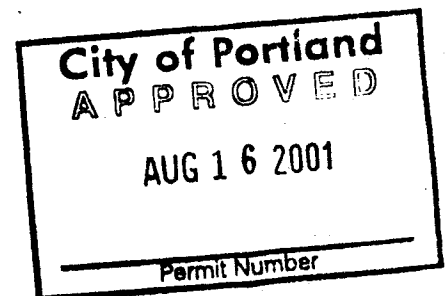
Sincerely,

*LaVIELLE GEOTECHNICAL, P.C*



*Exp 12-31-02*

Craig C. LaVielle, P.E., Principal



September 18, 2000

5

00-1445.034

**SUMMARY TEST BORING LOGS**

**Depth (ft.)**

**Soil Classification**

**00-1445.034**

Test Boring No. 1

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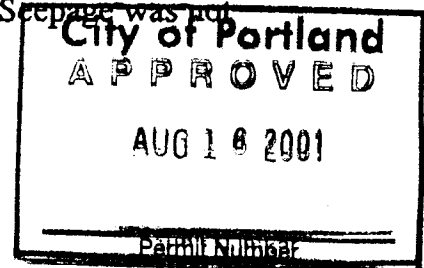
Test boring met refusal and was terminated at a depth of 6.5 feet. Seepage was not encountered.

Test Boring No. 2

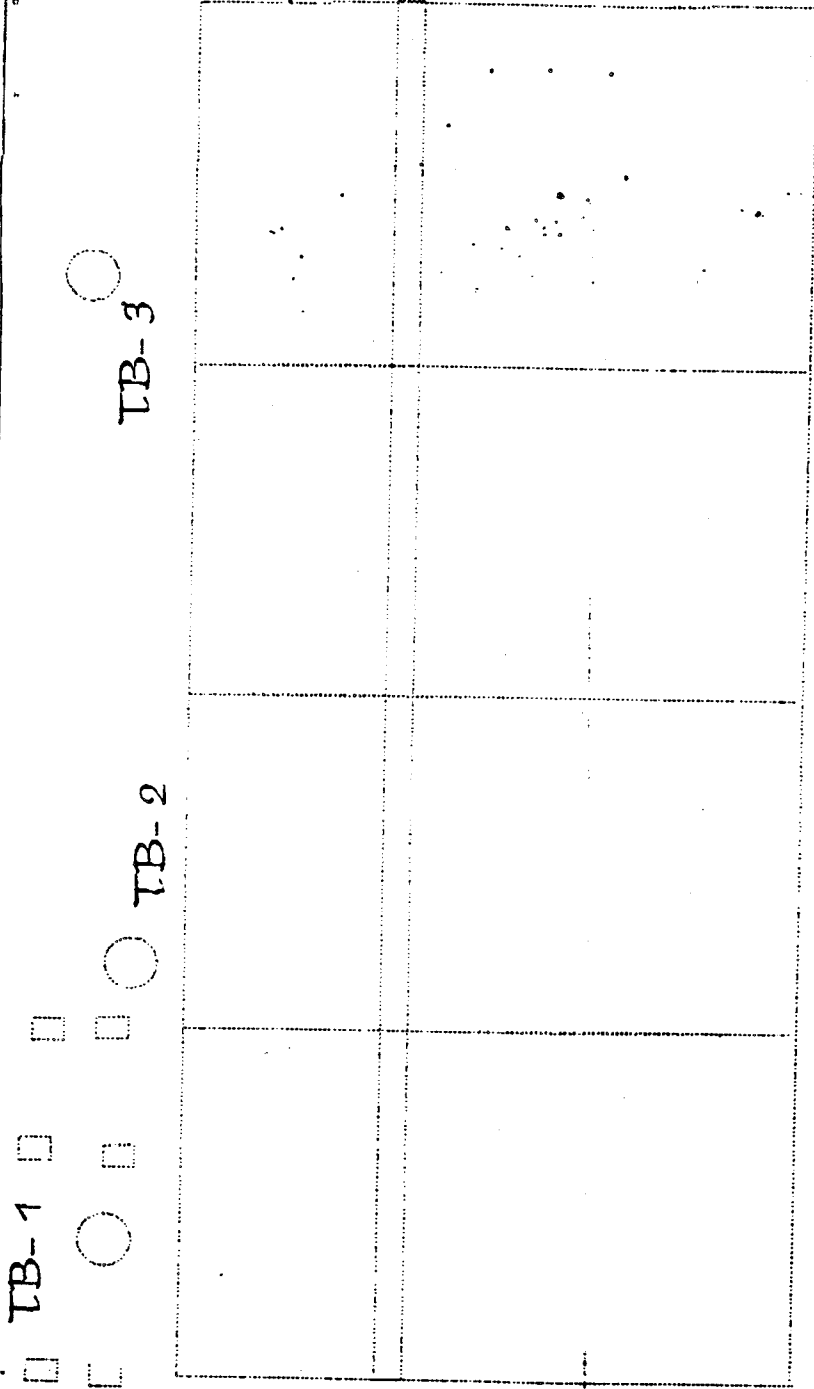
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NW Luray Terrace

**City of Portland**  
APPROVED  
AUG 16 2001  
Permit Number \_\_\_\_\_

Indicates Approximate  
Location of Test Boring  
○ TB-3

North

Site Plan, Figure 2  
3247 NW Luray Terrace  
Portland, Oregon

LaVielle Geotechnical P.C.