

Vicinity Map – 1722 State Street

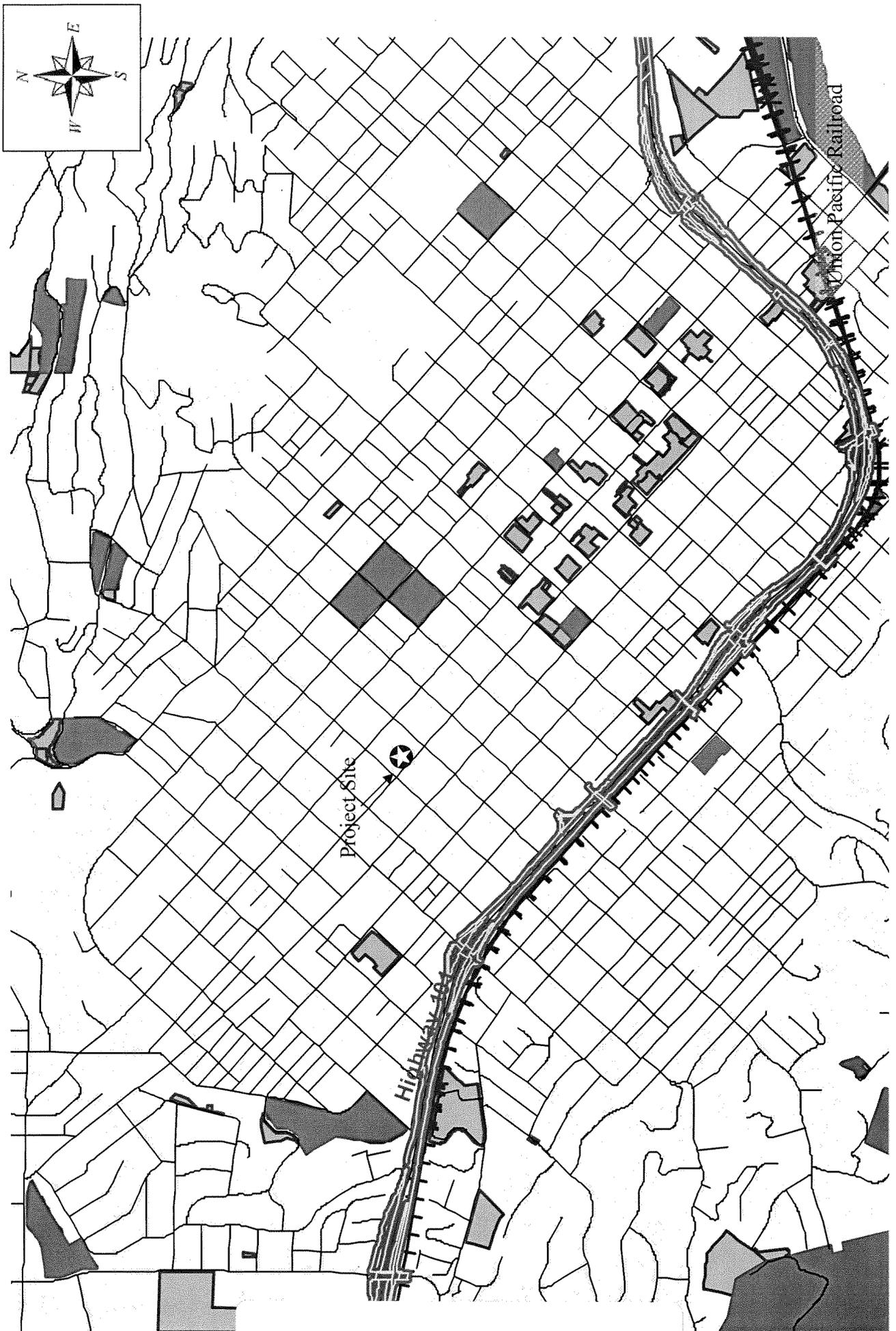


EXHIBIT A

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN IS DESCRIBED AS FOLLOWS:
 PARCEL ONE:
 THAT PART OF BLOCK 32 IN THE CITY OF SANTA BARBARA, COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL SURVEY THEREOF DESCRIBED AS FOLLOWS:
 COMMENCING AT A POINT ON THE NORTHEAST CORNER OF STATE STREET, BLOCK 32, ACCORDING TO THE OFFICIAL MAP AND SURVEY OF SAID CITY, SAID PARCEL OF LAND CONVEYED BY GEORGE A. ANDERSON AND ANGELA ANDERSON, HIS WIFE, TO FREDERICK E. LORR BY DEED DATED AUGUST 28, 1895, AND BY DEED DATED AUGUST 28, 1895, TO THE SOUTHWESTERLY ALONG SAID LINE OF STATE STREET 60 FEET, THENCE AT RIGHT ANGLES NORTHEASTERLY 150 FEET, THENCE AT SOUTHWESTERLY 150 FEET TO THE POINT OF BEGINNING.

PARCEL TWO:
 THAT PORTION OF BLOCK 32 IN THE CITY OF SANTA BARBARA, COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL SURVEY THEREOF DESCRIBED AS FOLLOWS:
 COMMENCING AT A POINT ON THE NORTHEAST CORNER OF STATE STREET, BLOCK 32, ACCORDING TO THE OFFICIAL MAP AND SURVEY OF SAID CITY, SAID PARCEL OF LAND CONVEYED BY GEORGE A. ANDERSON AND ANGELA ANDERSON, HIS WIFE, TO FREDERICK E. LORR BY DEED DATED AUGUST 28, 1895, AND BY DEED DATED AUGUST 28, 1895, TO THE SOUTHWESTERLY ALONG SAID LINE OF STATE STREET 60 FEET, THENCE AT RIGHT ANGLES NORTHEASTERLY 150 FEET, THENCE AT SOUTHWESTERLY 150 FEET TO THE POINT OF BEGINNING.

PARCEL THREE:
 THAT PORTION OF BLOCK 32 IN THE CITY OF SANTA BARBARA, COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL MAP AND SURVEY THEREOF DESCRIBED AS FOLLOWS:
 COMMENCING AT A POINT ON THE NORTHEAST CORNER OF STATE STREET, BLOCK 32, ACCORDING TO THE OFFICIAL MAP AND SURVEY OF SAID CITY, SAID PARCEL OF LAND CONVEYED BY GEORGE A. ANDERSON AND ANGELA ANDERSON, HIS WIFE, TO FREDERICK E. LORR BY DEED DATED AUGUST 28, 1895, AND BY DEED DATED AUGUST 28, 1895, TO THE SOUTHWESTERLY ALONG SAID LINE OF STATE STREET 60 FEET, THENCE AT RIGHT ANGLES NORTHEASTERLY 150 FEET, THENCE AT SOUTHWESTERLY 150 FEET TO THE POINT OF BEGINNING.

EASEMENT NOTES

SENDER'S AFFIDAVIT THIS PARCEL ACCORDING TO TITLE REPORT PREPARED BY CHICAGO TITLE CO. 1250986-AJ DATED MAY 17, 2005.

SITE INFORMATION

ASSessor'S PARCEL NO. 027-102-021
 SITE ADDRESS: 1722 STATE STREET

UTILITY PROVIDERS

WATER: CITY OF SANTA BARBARA
 SEWER DISPOSAL: CITY OF SANTA BARBARA
 ELECTRIC: SOUTHERN CALIFORNIA Edison
 TELEPHONE: VERIZON



SURVEYOR'S NOTES

1. RECORD PROPERTY OWNERS
 1722 STATE STREET INVESTORS, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

2. MAPPING
 TOPOGRAPHIC AND UTILITY MAPPING SHOWN HEREON IS TAKEN FROM THE RECORDS OF THE CITY OF SANTA BARBARA, COUNTY OF SANTA BARBARA, STATE OF CALIFORNIA, DATED JUNE 22, 2005 AND IS USED BY PERMISSION OF 1722 STATE STREET INVESTORS, LLC.

ELEVATIONS SHOWN HEREON ARE EXPRESSED IN U.S. SURVEY FEET AND ARE SHOWN NEAR THE SOUTHERLY CORNER OF SAID PARCEL, AS SHOWN ON SAID COOK SURVEY.

THE BEARING OF N 48°30'00" W FOR THE EAST RIGHT OF WAY OF STATE STREET, AS SHOWN ON SAID COOK SURVEY, WAS USED AS THE BASIS OF BEARINGS FOR THIS MAP.

THIS MAP DOES NOT WARRANT THE COMPLETENESS OR ACCURACY OF SAID COOK SURVEY.

BOUNDARY & EASEMENT INFORMATION

THE BOUNDARY INFORMATION SHOWN HEREON IS BASED ON THE TOPOGRAPHICAL SURVEY PREPARED BY L.P. COOK & COMPANY, INC. PENFIELD & SMITH DOES NOT WARRANT THE COMPLETENESS OR ACCURACY OF SAID COOK SURVEY.

THIS MAP WAS PREPARED IN CONNECTION WITH THE PRELIMINARY REPORT DATED MAY 17, 2005. SAID REPORT IS PRESUMED TO BE COMPLETE AND ACCURATE. PENFIELD & SMITH DOES NOT WARRANT THE COMPLETENESS OR ACCURACY OF SAID REPORT.

FLOOD HAZARD

THIS SUBJECT PROPERTY IS LOCATED WITHIN ZONE X, AS DERIVED ON THE FLOOD INSURANCE RATE MAP (FIRM) FOR THE CITY OF SANTA BARBARA, SANTA BARBARA COUNTY, COMMUNITY PANEL NO. 060802D138P, DATED MAY 17, 2005. SAID REPORT IS PRESUMED TO BE COMPLETE AND ACCURATE. PENFIELD & SMITH DOES NOT WARRANT THE COMPLETENESS OR ACCURACY OF SAID REPORT.

LAND AREA CALCULATIONS

EXISTING PARCEL ONE:	7,500 S.F. GROSS AND NET
PROPOSED PARCEL ONE:	8,500 S.F. GROSS AND NET
TOTAL:	28,875 S.F. GROSS AND NET
PROPOSED LOT ONE:	28,875 S.F. GROSS AND NET

OWNER'S CERTIFICATE

WE HEREBY APPLY FOR APPROVAL OF THE DIVISION OF REAL PROPERTY SHOWN ON THIS PLAN AND CERTIFY THAT WE ARE THE LEGAL OWNERS AND THAT WE HAVE THE NECESSARY AUTHORITY TO FILE AND CONVEY TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

1722 STATE STREET INVESTORS, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY
 NAME: _____ TITLE: _____
 SIGNATURE: _____

SURVEYOR'S STATEMENT

THIS MAP WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION.

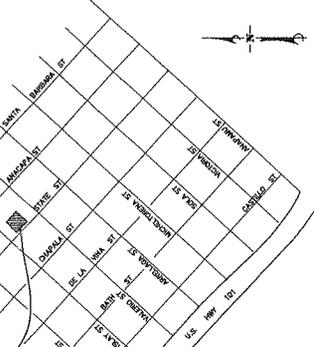


JUSTIN P. HECHT
 P.E. 0517
 LICENSE EXPIRES 3-31-2008

LAND USE DESIGNATIONS

EXISTING ZONING: C-2 (R-1) COMMERCIAL/RESIDENTIAL
 EXISTING GENERAL PLAN DESIGNATION: OFFICE AND RESIDENTIAL
 PROPOSED ZONING: C-2 (R-1) MIXED USE OVERLAY
 PROPOSED GENERAL PLAN DESIGNATION: NO CHANGE PROPOSED

SITE



VICINITY MAP

NOT TO SCALE

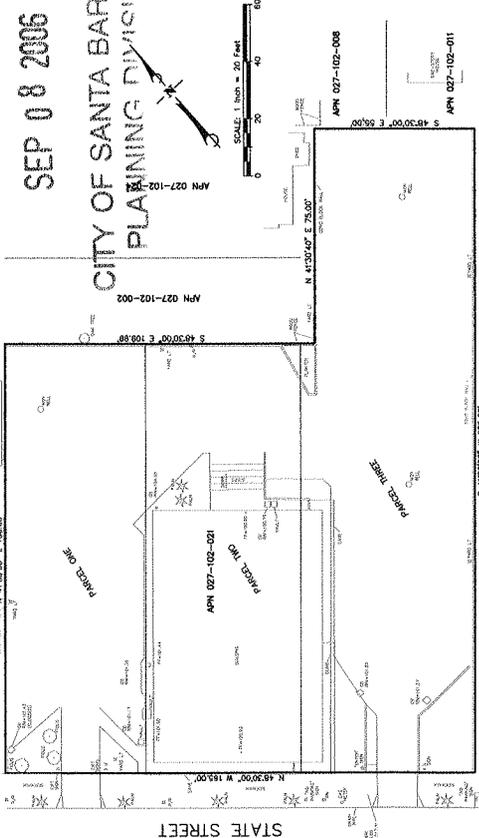
SHEET INDEX

- TM1 TITLE SHEET, NOTES, EXISTING PARCELS, EASEMENTS AND CONDITIONS
- TM2 PROPOSED LOTS, EASEMENTS, SITE PLAN AND UNIT COUNT
- TM3 GRADING AND DRAINAGE PLAN
- TM4 UTILITY PLAN
- TM5 EROSION CONTROL PLAN
- TM6 DETAILS

MODIFICATION REQUESTS

1. PARKING: ALLOW 50 SPACES INSTEAD OF THE 63 REQUIRED SPACES
2. LOT AREA: ALLOW 9 TWO-BEDROOM UNITS AND 3 THREE-BEDROOM UNITS ON 28,875 SQUARE FEET INSTEAD OF THE REQUIRED 29,280 SQUARE FEET.

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 SEP 08 2006
 CITY OF SANTA BARBARA
 PLANNING DIVISION



EXISTING PARCEL, EASEMENTS, AND SITE CONDITIONS

VESTING TENTATIVE MAP FOR CONDOMINIUM PURPOSES

A PROPOSED MERGER AND SUBDIVISION
OF

APN 027-102-021

CITY OF SANTA BARBARA
STATE OF CALIFORNIA
NOVEMBER 2006

SHEET TM2 OF 6 SHEETS

PROPOSED BUILDING NOTES

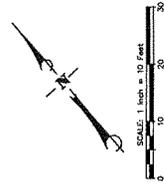
PROPOSED BUILDINGS WILL HAVE MULTIPLE STORES, THE OUTLINE AND THE LEVELS OF THE BUILDINGS WILL BE SHOWN ON THE ARCHITECTURAL PLANS FOR FULL DETAILS OF THE PROPOSED BUILDINGS.

PROPOSED BUILDING CALCULATIONS

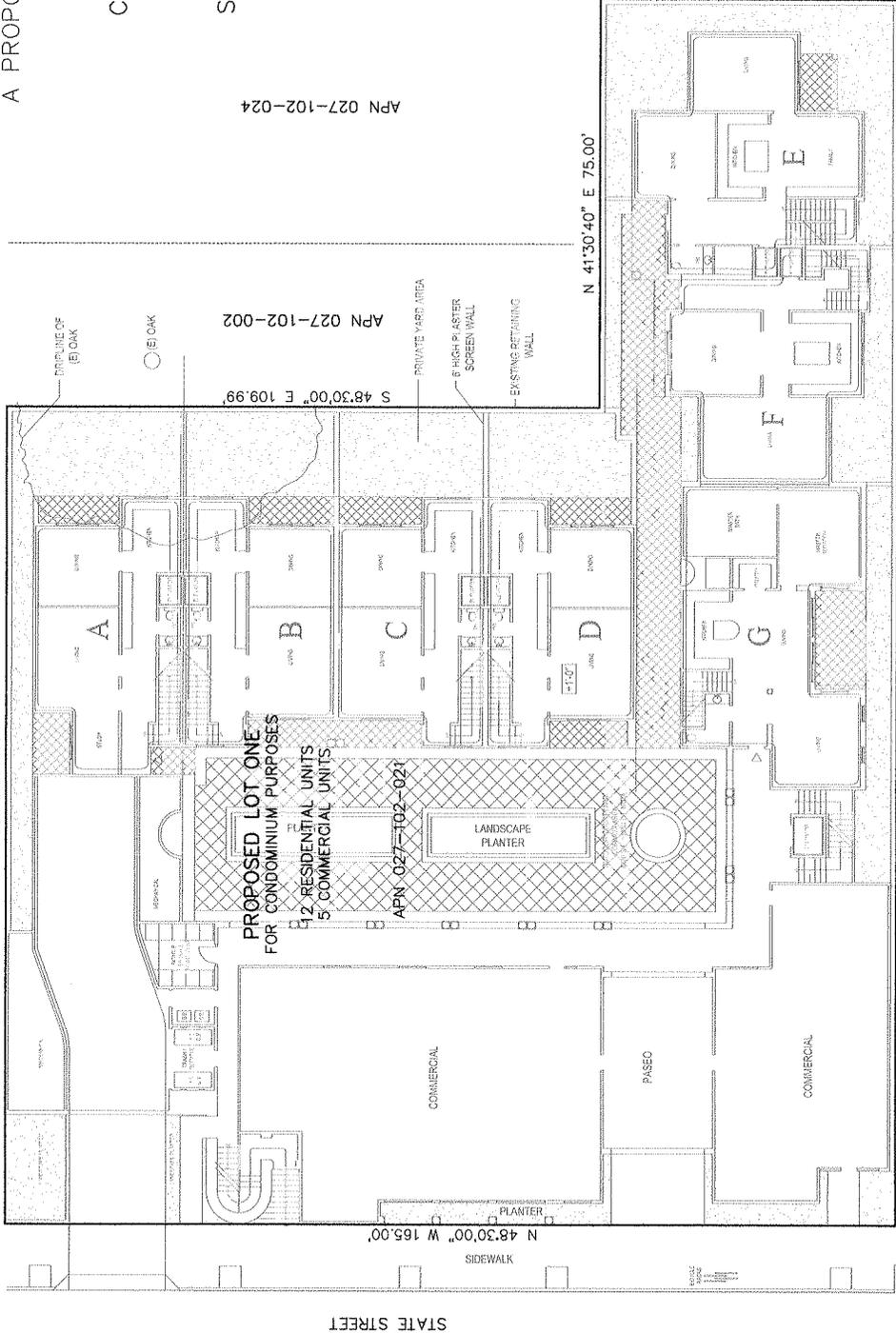
MIXED-USE DESCRIPTION	NO. UNITS	NET S.F.	GROSS S.F.
COMMERCIAL	5	9,016 S.F.	15,798 S.F.
RESIDENTIAL	12	23,549 S.F.	27,796 S.F.

PARKING SPACES

EXISTING	45 SPACES
PROPOSED	55 SPACES, BELOW GROUND



Penfield & Smith
ENGINEERS • SURVEYORS • PLANNERS
DANIEL J. SMITH, CIVIL ENGINEER
JAMES W. SMITH, CIVIL ENGINEER
MARCUS W. SMITH, CIVIL ENGINEER
Page: 0001 (02/10/06) File: 0001 (02/10/06)



APN 027-102-001
N 41°30'00" E 150.00'

APN 027-102-002
S 48°30'00" E 109.99'

N 41°30'40" E 75.00'

APN 027-102-008

S 48°30'00" E 55.00'

APN 027-102-011

S 41°30'00" W 225.00' APN 027-102-017

STATE STREET

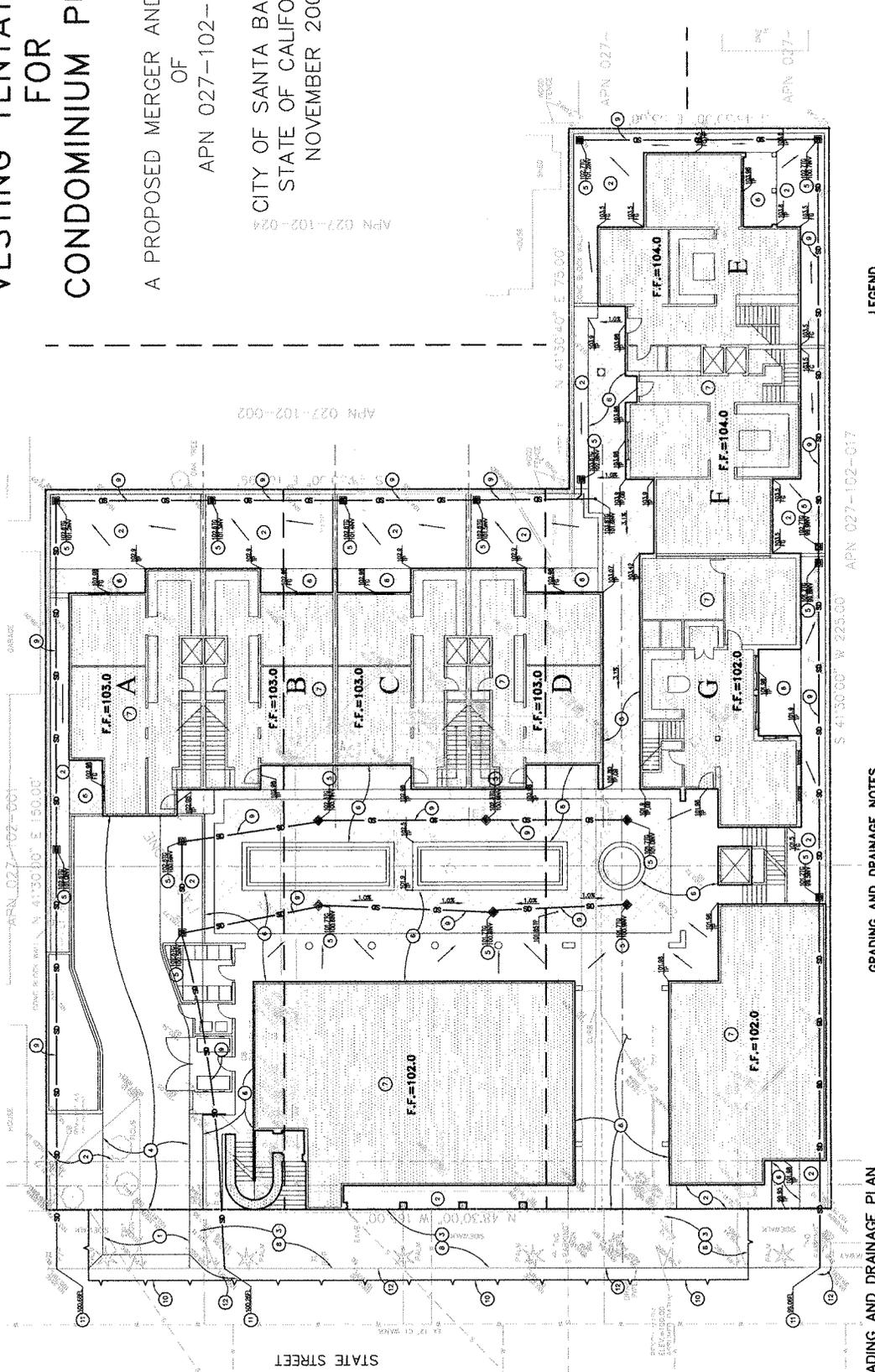
PROPOSED LOTS, EASEMENTS, AND SITE PLAN

VESTING TENTATIVE MAP FOR CONDOMINIUM PURPOSES

A PROPOSED MERGER AND SUBDIVISION
OF

APN 027-102-021

CITY OF SANTA BARBARA
STATE OF CALIFORNIA
NOVEMBER 2006



GRADING AND DRAINAGE PLAN

GRADING AND DRAINAGE NOTES

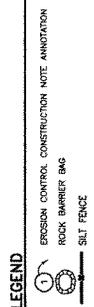
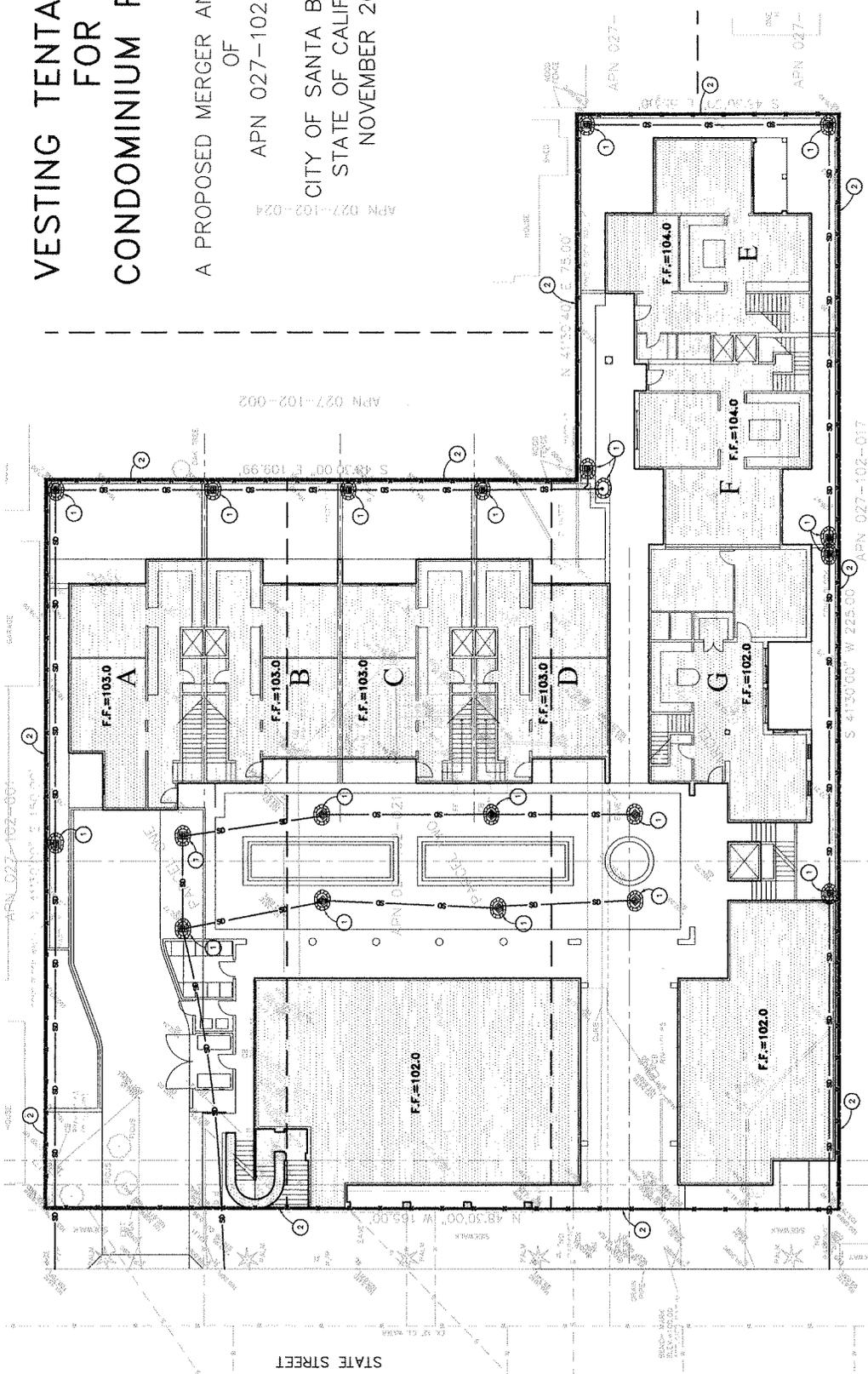
- 1) CONSTRUCT 18" WIDE COMMERCIAL DRIVEWAY PER CITY STD. DETAIL 1-003.2.
- 2) WAREHOUSE/PARTING AREA.
- 3) CONSTRUCT 8" THICK CONCRETE FLOOR PER CITY STD. DETAILS 1-006.0 AND 1-006.1.
- 4) CONSTRUCT 12" THICK CONCRETE FLOOR PER CITY STD. DETAILS 1-006.0 AND 1-006.1.
- 5) CONSTRUCT 4" THICK P.C. CONCRETE SEEDWALL PER ARCHITECTURAL PLANS.
- 6) CONSTRUCT BUILDING PER ARCHITECTURAL PLANS.
- 7) CONSTRUCT 12" THICK CONCRETE CATCH BASIN.
- 8) CONSTRUCT 12" THICK CONCRETE CURB AND 18" WIDE CONCRETE OUTLET PER CITY STD. DETAILS 1-001.0 AND 1-001.1.
- 9) CONSTRUCT TYPE B CURB OUTLET DOWN PER CITY STD. DETAIL 2-006.1.
- 10) CONSTRUCT EXISTING PAVEMENT AND DISPOSE OF LEGALLY OFF-SITE.
- 11) CONSTRUCT STORM DRAIN PIPE PER CITY STD. DETAILS 7-001.0 AND 7-001.1.
- 12) EXISTING SEWERLINE AT JOINT LOCATIONS AND REPLACE DRAINER PANEL.
- 13) SAWCUT EXISTING PAVEMENT AND DISPOSE OF LEGALLY OFF-SITE. SAWCUT EXISTING SEWERLINE AT JOINT LOCATIONS AND REPLACE DRAINER PANEL.

- LEGEND
- NEW BUILDING AREA
 - PROPOSED FLOW LINE
 - PROPOSED GAS LINE
 - PROPOSED FIRE WATER LINE
 - PROPOSED WATER LINE
 - PROPOSED SEWER LINE

Penfield & Smith
ENGINEERS - SURVEYORS - PLANNERS
CORPORATE OFFICE: 1000 W. STATE ST., SANTA BARBARA, CA 93101
PHONE: (805) 964-1100
FAX: (805) 964-1101
WWW.PENFIELDANDSMITH.COM

VESTING TENTATIVE MAP FOR CONDOMINIUM PURPOSES

A PROPOSED MERGER AND SUBDIVISION
OF
APN 027-102-021
CITY OF SANTA BARBARA
STATE OF CALIFORNIA
NOVEMBER 2006



GENERAL NOTES

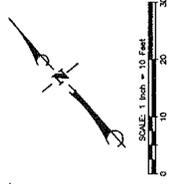
1. THE EXISTING IMPROVEMENTS DEMONSTRATED PER SHEETS C1 WERE NOT SHOWN ON THIS DRAWING.
2. THIS PLAN SHOWS THE MINIMUM REQUIREMENTS FOR EROSION CONTROL. CONTRACTOR SHALL VERIFY THE MINIMUM REQUIREMENTS AND/OR EXISTING EROSION CONTROL SYSTEMS FROM EXISTING THE CONSTRUCTION SITE AND/OR EXISTING EROSION CONTROL SYSTEMS IN WORKING CONDITIONS, AND SATISFACTORY TO THE GOVERNING AGENCIES' REQUIREMENTS.
3. CONTRACTOR SHALL ROUTINELY INSPECT AND MAINTAIN ALL EROSION CONTROL DEVICES BY DEEP PLACED AT MIN. 30' LENGTH BY MIN. 30' WIDTH AT LOCATION TO BE DETERMINED BY CONTRACTOR AND APPROVED BY OWNER'S SUPERVISOR. CONTRACTOR SHALL BE COVERED WITH LOG-CUT MATS, GEOTEXTILES, GEOROCK/GEOWOVEN, GEOTEXTILE SOIL STABILIZATION [985-925-7737] AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
4. CONTRACTOR SHALL CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE, MIN. 1'-3" STONES, 8" DEEP PLACED AT MIN. 30' LENGTH BY MIN. 30' WIDTH AT LOCATION TO BE DETERMINED BY CONTRACTOR AND APPROVED BY OWNER'S SUPERVISOR. CONTRACTOR SHALL BE COVERED WITH LOG-CUT MATS, GEOTEXTILES, GEOROCK/GEOWOVEN, GEOTEXTILE SOIL STABILIZATION [985-925-7737] AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
5. CONTRACTOR SHALL CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE, MIN. 1'-3" STONES, 8" DEEP PLACED AT MIN. 30' LENGTH BY MIN. 30' WIDTH AT LOCATION TO BE DETERMINED BY CONTRACTOR AND APPROVED BY OWNER'S SUPERVISOR. CONTRACTOR SHALL BE COVERED WITH LOG-CUT MATS, GEOTEXTILES, GEOROCK/GEOWOVEN, GEOTEXTILE SOIL STABILIZATION [985-925-7737] AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. CONSTRUCT ON-SITE TEMPORARY MACHINE/VEHICLE WASH-OUT AREA, AND LEGALLY DISPOSE OF SEDIMENT DAILY ON-SITE.

EROSION CONTROL NOTES

1. CONSTRUCT TEMPORARY ROCK BARRIER BAG SEDIMENT BARRIER PER DETAIL 'A' ON SHEET TMS DURING PROJECT CONSTRUCTION.
2. CONSTRUCT SALT FENCE PER DETAIL 'B' ON SHEET TMS DURING PROJECT CONSTRUCTION. SALT FENCE SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE ENTIRE DURATION OF THE SITE, LANDSCAPING AND PLANTING.

EROSION CONTROL PLAN

Penfield & Smith
ENGINEERS - SURVEYORS - PLANNERS
GENERAL ENGINEERING - PLANNING
LANDSCAPE ARCHITECTURE
CIVIL ENGINEERING
WATER RESOURCES ENGINEERING
ENVIRONMENTAL ENGINEERING
ARCHITECTURE
1000 STATE STREET, SUITE 200
SANTA BARBARA, CA 93101
PHONE: (805) 964-1111
FAX: (805) 964-1112
WWW.PENFIELDANDSMITH.COM



DATE	REVISIONS BY	ISSUE

THIS DRAWING IS PREPARED IN ACCORDANCE WITH THE PROFESSIONAL STANDARDS AND PRACTICES OF THE ARCHITECTURAL BOARD OF CALIFORNIA. THE ARCHITECT ASSUMES NO LIABILITY FOR THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT.

PROJECT NO. 0545

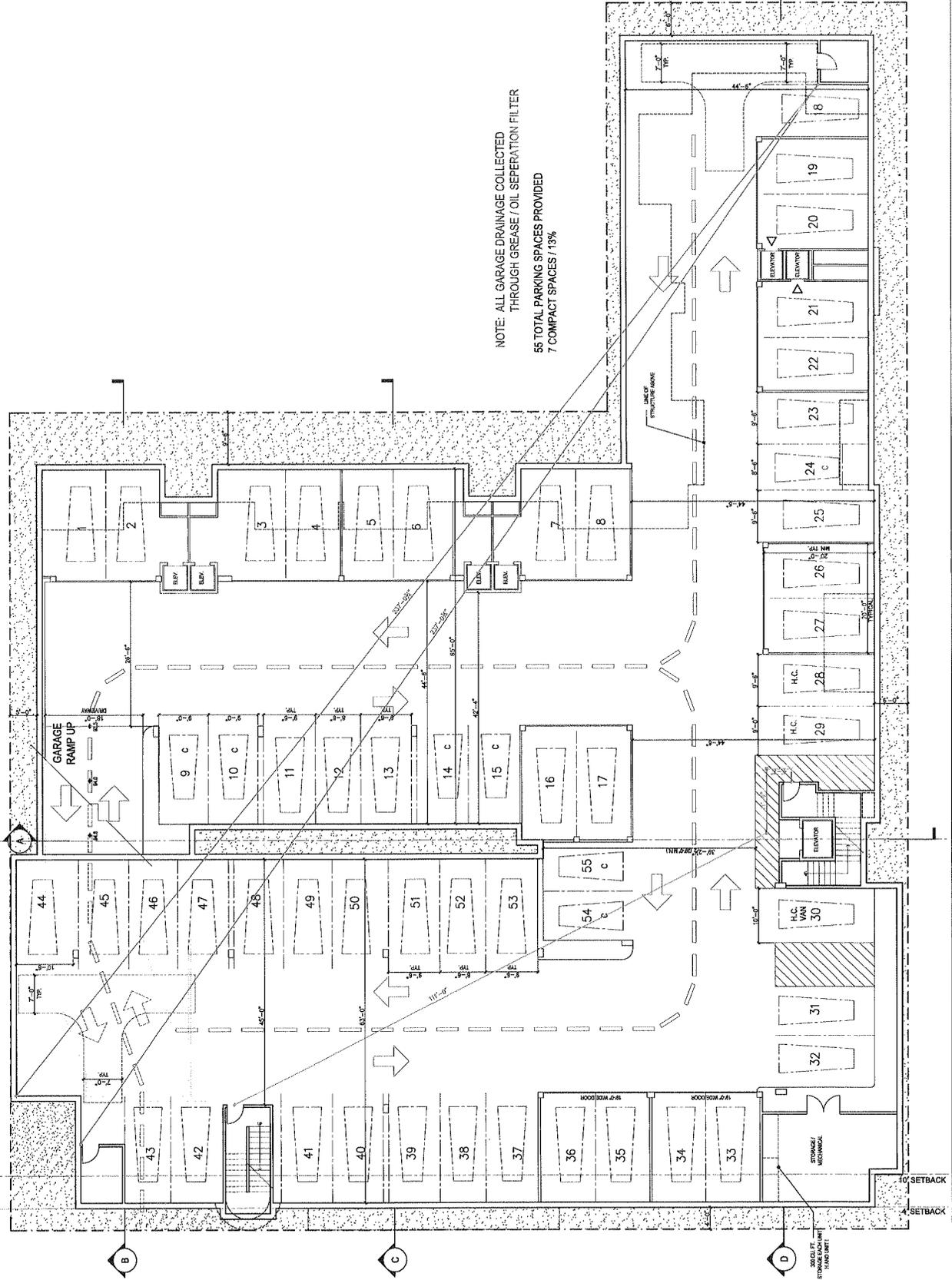
UNDERGROUND PARKING
PLAN VIEW

STREET

A-1
OF ALL SHEETS
LATEST REVISION

UNDERGROUND PARKING PLAN

1



NOTE: ALL GARAGE DRAINAGE COLLECTED
THROUGH GREASE / OIL SEPARATION FILTER
55 TOTAL PARKING SPACES PROVIDED
7 COMPACT SPACES / 13%

GARAGE
RAMP UP

LACK OF
STRUCTURE ABOVE

ELEVATOR

STORAGE /
RECEPTION

A

B

C

D

10' SETBACK

4' SETBACK

3'-0" W/ FLOOR

DATE	DESCRIPTION OF REVISION

THIS DRAWING IS PREPARED BY ARCHITECTS REGISTERED IN THE STATE OF CALIFORNIA. IT IS THE PROPERTY OF HOCHHAUSER-BLATTER ARCHITECTURE AND PLANNING. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON.

SHEET CONTAINS
SECOND FLOOR PLAN

PROJECT NO: 5645

SHEET

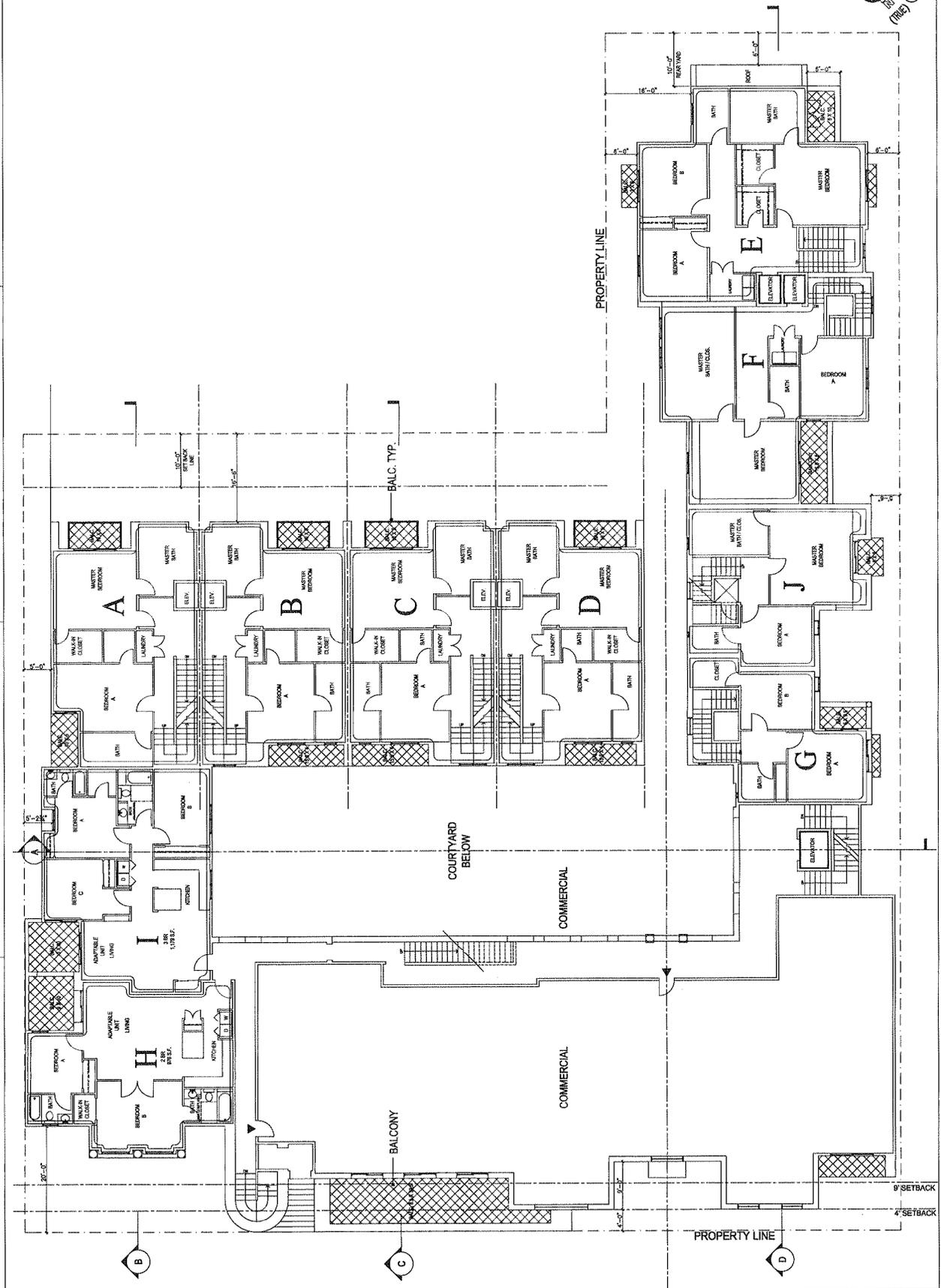
A-3

OF ALL SHEETS
LATVINY RESIDENT



2ND FLOOR PLAN

1



Materials
Laboratory
of Santa Barbara, Inc.

35-A South La Patera Lane
P.O. Box 96
Goleta, CA 93116
Ph: (805) 964-6901

Santa Ynez
Ph: (805) 688-7587

FAX No: (805) 964-6239
E-mail: pmlsb@aol.com

PRELIMINARY FOUNDATION INVESTIGATION

Proposed Commercial Buildings

1722 State Street

City of Santa Barbara

California

CLIENT

1722 State Street Investors, LLC
c/o Hochhauser & Blatter Architecture and Planning
Attn: Julie Guajardo McGeever
122 East Arrellaga Street
Santa Barbara, CA 93101

July 27, 2005
Lab No: 64464-2
File No: 05-12155-2

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MAR 02 2005

CITY OF SANTA BARBARA
PLANNING DIVISION

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PLATE 1 - Site Plan

APPENDIX A - Field Investigation

APPENDIX B - Laboratory Tests

INTRODUCTION

This report presents the results of a preliminary foundation investigation performed at 1722 State Street, in the City of Santa Barbara, California. Existing at the site is a commercial structure and a surrounding parking lot. It is proposed to remove the existing structure and to excavate a subterranean parking lot which will extend to the property lines. A three-story structure will be built over the subterranean parking garage. The site is approximately level.

SCOPE OF WORK

It is the purpose of this investigation to classify the soil disclosed by the exploratory borings and excavations by observation and tests on selected samples. In addition, this study includes laboratory tests to evaluate soil strength, the effect of moisture variation on the soil-bearing capacity, compressibility, liquefaction, and expansiveness. Based upon this information, we will provide preliminary grading and foundation recommendations for the proposed redevelopment.

The scope of this investigation does not include the analyses of the corrosive potential of the soil, previous site construction, or analyses of geologic structures and their associated features, such as faults, fractures, bedding planes, strike and dip angles, ancient landslides, potential for earth movement in undisturbed or natural soil formations sloped or level, or other sources of potential instability which relate to the geologic conditions, as these items should be addressed by a qualified Engineering Geologist.

This study is a soil engineering report. It is not a geology report as referenced in Section 3309.4 and 3309.6 of Chapter 33 of the Uniform Building Code (UBC). It is the intent of this report to comply with Section 3309.5 of Chapter 33 and Section 1804 of Chapter 18 of the UBC. This exploration was conducted in accordance with presently accepted geotechnical engineering procedures currently applied in the local community in order to provide the appropriate geotechnical design characteristics of the foundations soils and of the proposed fill soils in order to properly evaluate the proposed structure with respect to differential settlement based upon the anticipated soil characteristics at the time of construction.

LIMITATIONS

This Laboratory's basic assumption is that the soil borings presented herein are representative of the entire footprint of the proposed development, however, no warranty is implied. If, during the course of construction, soil conditions are encountered which vary from those presented herein, please contact this Laboratory immediately so appropriate field modifications may be expeditiously proposed.

It is your responsibility to contact our office, providing at least 48 hours of notice for grading or footing excavation observations and testing. The observation of excavations during the construction phase represents an opportunity by our firm to either confirm soil conditions

estimated by the exploratory borings or to discover soil conditions which have not been addressed. When such undisclosed conditions are encountered, opinions and recommendations addressing these conditions will be rendered at that time.

This report is considered preliminary and no person should consider the recommendations or soil conditions described herein as conclusive. The recommendations and conclusions of this report are considered preliminary until all excavations have been observed during the construction phase, after which a final report will be issued stating that the grading and foundation works accomplished and installed are appropriate for the soil conditions encountered.

FIELD INVESTIGATION

The subsurface soil conditions were explored by three truck-mounted auger borings which were drilled to depths of up to 8 feet, supplemented by one field density test. The locations of the borings were selected as appropriate and representative. Representative relatively "undisturbed" tube soil samples were obtained during the drilling operation by the thin-walled sampling tube method (ASTM D-1587). Laboratory tests and analyses of representative soil samples, obtained during the drilling operation, were performed to estimate the engineering properties and determine the soil classification of earth materials encountered in accordance with UBC Standard Chapter 18. The locations of the borings are shown on Plate 1. The boring log data is presented in Appendix A, "Field Investigation", while the results of the laboratory tests are provided in Appendix B, "Laboratory Tests".

SOIL CONDITIONS

1. No groundwater was encountered in the exploratory borings which were unable to penetrate below depths of 3 to 8 feet due to sandstone cobbles and boulders in the sub-surface soil layer. It should be recognized that water table elevations, even seasonal perched water tables, might fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use, and climatic conditions, as well as other factors. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report.
2. The surface soils were found to be loose and compressible to depths of 2 to 4 feet below the existing grade becoming very hard below this depth.
3. The supporting soil was found to have a very low potential for expansion.
4. The soils are estimated to be non-compressible below the depth of 4 feet.
5. The soil type per the Uniform Building Code Table 16-J is estimated to be S_D . The site is located in Seismic Zone 4 and is estimated to be within two kilometers of a Type B fault.

6. The potential for liquefaction is considered to be very low.

PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

It is the opinion of this Laboratory the proposed grading and construction are feasible from a soil-engineering perspective provided the recommendations contained in this soil engineering report are incorporated into the design and implemented during construction.

It is the understanding of this Laboratory the proposed redevelopment will be a three-story structure with a subterranean parking garage one-story below grade. Based upon this understanding, we present the following preliminary recommendations:

GRADING

1. All grading shall conform to the Santa Barbara City Grading Ordinance.
2. The area to be graded shall be cleared of surface vegetation, including roots, and root structures.
3. If, during the removal and scarification process, excessive root structures are encountered, these areas shall be deep ripped in two directions to the depth of the root structure after which the disturbed soils and the roots shall be completely removed and the resulting cavities shall be scarified and processed to receive fill in accordance with recommendations contained in this section.
4. If, during the grading operations, previously placed, undocumented fill material is encountered, this fill material shall be removed under the direction of this Laboratory prior to commencement of the filling operations.
5. The footings of the proposed structures shall either be supported completely by a uniform thickness of compacted soil or the foundations shall be designed to penetrate the fill and compressible topsoil such that the structure is supported either completely over fill or completely on firm original ground. **The structures shall not be supported over a cut/fill transition unless the foundation is engineered to account for the transition.**
6. If it is decided to place the structure over a compacted soil, or in any areas to receive compacted soil, the area to be graded shall be prepared. In the area to be prepared, the loose topsoil and compressible surface soils shall be removed and observed by a representative of our firm. Upon approval of excavation, the exposed ground surface shall be scarified an additional 6 to 8 inches, moistened or dried to near the optimum moisture content, and compacted to 90% of the relative compaction. We anticipate the depth of the surface soil removal to be from 24 to 48 inches below the existing grade.

7. The removed surface soils and/or imported approved fill may then be placed in loose lifts of approximately 6 inches, thoroughly mixed, moistened or dried to near optimum moisture content, and compacted to a minimum of 90% relative compaction.
8. Rocks greater than 6 inches in size shall be removed from the soil being spread for compaction.
9. All fill slopes which are created during the grading operation shall be properly shaped to a maximum slope angle of 2 horizontal to 1 vertical, and compacted by rolling the sheepsfoot roller or similar compaction equipment over the slope face at vertical lift intervals of 30 inches or less.
10. Import soils, if required for structural fill, shall be granular, non-expansive soils which are equal to or superior in quality to the on-site soils as determined by this Laboratory prior to importation of the fill material to the site.
11. The compaction standard shall be the latest adoption of the ASTM D-1557 method of compaction.
12. Positive surface drainage shall direct water away from all slopes and away from the foundation system of the proposed structure.

FOUNDATIONS

1. These recommendations assume a uniform thickness of compacted soil will support the proposed footings. If the final graded conditions do not provide a uniform compacted support layer, the footings shall penetrate the loose porous topsoil and support a raised wood floor or a structural concrete slab designed to span over the surface soil subgrade. In the proposed parking structure garage where 8 feet of soil is to be removed, the depth of the footing shall be at least 2 feet of penetration into hard undisturbed soil. An allowable soil bearing value of 3,000 psf may be assumed for the footing described above with a one-third increase for wind or seismic forces.
2. For portions of the structure which rest upon compacted fill soil, all continuous exterior footings for one- or two-story portions of the structure shall extend a minimum of 18 inches below compacted ground surface.
3. All footings shall contain a minimum of two No. 4 horizontal rebar placed one in the base and one in the stem of the footing. The Project Civil or Structural Engineer shall specify the foundation steel reinforcement.
4. Isolated piers may be utilized and shall extend a minimum of 24 inches below compacted ground surface or as specified in Item Nos. 1 and 5, whichever is deeper.

5. Concrete slab-on-grade floors shall be placed over a subgrade soil conforming to the GRADING recommendations of this report.
6. As a minimum, concrete slabs on grade in the basement parking area shall be a full 5.5 inches thick and shall contain No. 3 rebar spaced 24 inches on center each way. The steel reinforcement shall be placed near the center of the slab. The slab shall be underlain with a minimum 4-inch layer of Class 2 Base. These concrete slab-on-grade requirements shall be modified as needed by the designers for surcharge loads, wheel loads, concentrated loads, or for moisture control. The floor covering supplier or manufacturer should be contacted for their specifications for design features which will result in a successful bond between the concrete slab and floor covering. Floor flatness and shrinkage crack control must be addressed by a competent contractor experienced in the skill of concrete placement. The owners or their agents shall inform those designing, building, and installing the concrete slab on grade and flooring of the performance and aesthetics expected.
7. Concrete slabs on grade shall be doweled into all adjacent footings using No. 3 rebar spaced 24 inches on center.
8. If footings are to be located on, adjacent to, or within 10 feet of the top of a slope, these footings shall extend to such a depth so that the horizontal distance between the bottom outside edge of the footing and the face of the adjacent slope is a minimum distance of 10 feet.
9. This Laboratory shall be requested to inspect the footing excavation prior to placement of reinforcing steel and timber form boards.
10. Based upon compliance with the above recommendations, an allowable soil bearing value for compacted soil of 2,000 psf for 12-inch deep footings and 2,500 psf for 18-inch deep footings with a one-third increase when considering wind or seismic forces may be assumed.
11. Floor or crawl space elevations located lower than the surrounding exterior grades are recommended to be protected from moisture intrusion. Please consult the building designer for details, such as waterproofing and French drains.

RETAINING WALLS

Cantilevered - For cantilevered retaining walls, such as site walls and garden walls, which do not form part of the structure, we recommend the following:

1. The cantilevered retaining wall shall be designed assuming an active soil pressure equivalent to a fluid (E.F.P.) whose weight is 35 pcf for level backfill conditions and 52 pcf for backfill slopes, which are constructed at an angle of up to 27 degrees. These values are based on Coulomb's Equation and the following

assumed backfill soil values: internal angle of friction equal to 34 degrees, cohesion equal to 0, and a total unit weight of soil equal to 125 pcf. The E.F.P. value does not include surcharge loads and is based on a free-draining condition. The free-draining condition must be created by placing the backfill specified in this section of the report.

2. The bottom of the retaining wall footing shall extend a minimum distance of 24 inches below the undisturbed natural grade or 12 inches into firm undisturbed original ground (whichever is deeper) and shall be designed assuming an allowable soil bearing value of 3,000 psf. For footings placed on slopes, the base of the toe or keyway placed at the toe shall extend to such a depth that there exists 10 horizontal feet between the bottom of the footing and the daylight line of the adjacent slope. It should be noted the key may be placed adjacent to the downhill edge of the retaining wall footing in order to attain the recommended downhill grade footing embedment.
3. A passive soil pressure equivalent to a fluid whose weight is 350 pcf and a coefficient of friction against sliding of 0.35 may be assumed for the footing excavation described in the recommendation above.
4. The use of equipment to compact soil within the wedge of backfill defined by a 1:1 line projected up from behind the retaining wall to the surface shall be limited to handheld rammer plate compactors, such as a Wacker BS 45Y. A string line shall be placed along the top of the wall to monitor possible rotation of the wall due to the compaction surcharge. If the wall begins to bow or lean away from the backfilling operations, the compaction process shall stop and the Geotechnical Engineer shall be notified immediately such that modified compaction recommendations can be given at that time.
5. The finish covering on the face of the wall, such as stucco or paint, may be adversely affected by moisture intrusion from the backfill through the back of the wall. To prevent this, you should consider waterproofing the back of the wall and footing. All waterproofing and application of waterproofing shall be in accordance with the specifications of the product supplier.
6. Retaining wall backfill shall be a clean coarse sand or gravel wrapped in a filter fabric. The gravel shall be separated from adjacent native soil by a filter fabric, such as Mirafi 140N™. The retaining wall shall be serviced by appropriately placed weep holes or a perforated drain. This drainage feature must include at least 2 cubic feet of gravel wrapped in filter fabric. Lower quality native backfill material may be utilized outside the triangular wedge which extends upwards from the inside edge of the retaining wall and is a minimum width of 60% of the wall height at ground surface. The sand between the wall and native soil shall have a Sand Equivalent of 20 or greater and an Expansion Index equal to 0. To avoid excessive amounts of sand and gravel backfill, do not allow the excavation contractor to cut a vertical excavation 2 to 4 feet beyond the back of the retaining

wall footing or stem. Cut only to the point needed to install the drainpipe and slope the excavation back as specified.

7. It is assumed that the rough grade excavation behind the retaining wall is to be cut at a temporary slope angle of 1 horizontal to 1 vertical in order to comply with Cal-OSHA safety requirements.
8. All soil backfill shall be compacted to a minimum of 90% relative compaction. It should be noted retaining walls designed assuming active soil conditions are anticipated to deflect seasonally. In addition, surface features which obtain their support from retaining wall backfill materials are anticipated to express differential movement with respect to the retaining wall as the wall may be resting upon a thinner depth of fill or undisturbed original ground and the surface features may be resting upon a considerable thickness of compacted fill which has settlement characteristics differing from that of original ground. The differential movement between the wall and slab patio may be undesirable. In order to hide or prevent such differential movement, an alternate design may be required, such as but not limited to placing a planter between the wall and slab or connecting the slab to the wall, creating a retaining wall which is pinned at the top, not cantilevered.

Partially Restrained - For restrained or partially restrained retaining walls or cantilevered retaining walls which form a portion of the foundation system of the structure, we recommend the wall be designed as a braced wall utilizing at-rest pressures in accordance with the following recommendations:

1. The retaining wall shall be designed assuming an at-rest soil pressure equivalent to a fluid (E.F.P.) whose weight is 55 pcf for level backfill conditions and 73 pcf for backfill slopes, which are constructed at an angle of up to 27 degrees. These values are based on the same assumed conditions stated in Recommendation No. 1 under the Cantilevered section. The at-rest condition for a level backfill is based on the following equation: $E.F.P. = K_0 \gamma$ where $K_0 = 1 - \sin \phi$, γ is the total unit weight of soil, and ϕ is the internal angle of friction.
2. The retaining wall footing shall conform to the FOUNDATION recommendations and may be designed assuming an allowable soil bearing value of 3,000 psf. For footings placed on or adjacent to slopes, the base of the toe or keyway placed at the toe shall extend to such a depth that there exists 10 horizontal feet between the bottom of the footing and the daylight line of the adjacent slope.
3. A passive soil pressure equivalent to a fluid whose weight is 350 pcf and a coefficient of friction against sliding of 0.35 may be assumed for the footing excavation described in the recommendation above.
4. The retaining wall shall be serviced by a perforated drain which is located a minimum of 12 inches below top of the adjacent interior concrete slab-on-grade floor.

5. Walls, foundations, and connections between walls and foundations forming interior finished rooms of the structure shall be waterproofed by the proper application of a moisture barrier, such as Mirafi™ M-800, followed by Miradry™. A drainage composite, such as Miradrain™, shall be placed over the Miradry™. All waterproofing products should be applied in strict conformance with the manufacturer's recommendations. The selection of a waterproofing product and the observation of proper installation will not involve Pacific Materials Laboratory. We recognize the need for waterproofing; however, it is not in our realm to know the optimum product for application to the retaining wall or to confirm proper installation.
6. It is assumed that the rough grade excavation behind the retaining wall is to be cut at a temporary slope angle of 1 horizontal to 1 vertical in order to comply with Cal-OSHA safety requirements.
7. Footings located near the retaining wall stem shall extend through any retaining wall backfill and shall be supported on the firm underlying ground surface and behind a 1:1 line projected upward from the base of the wall. As an alternative, this footing can be designed to span across the backfill area and tie into the retaining wall for support.
8. Retaining wall backfill shall include 2 cubic feet per linear foot of wall of 3/8- to 1-inch gravel placed around a 4-inch perforated rigid PVC drainpipe. The perforations of the pipe shall be placed down at the positions of 5 and 7 o'clock. A filter fabric shall separate the gravel from the other backfill soils.
9. Retaining wall backfill above the drainpipe shall be a clean coarse sand or gravel, creating an inverted triangular wedge. Lower quality native backfill material may be utilized outside the triangular wedge which extends upwards from the outside edge of the pipe/gravel at the base of the retaining wall and is a minimum width of 60% of the wall height at ground surface. Coarse clean sand is acceptable when the Sand Equivalent is greater than 20 and the Expansion Index equals 0. To avoid excessive amounts of sand and gravel backfill, do not allow the excavation contractor to cut a vertical excavation 2 to 4 feet beyond the back of the retaining wall footing or stem. Cut only to the point needed to install the drainpipe and slope the excavation back as specified.
10. The use of equipment to compact soil within the wedge of backfill defined by a 1:1 line projected up from behind the retaining wall to the surface shall be limited to handheld rammer plate compactors, such as a Wacker BS 45Y. A string line shall be placed along the top of the wall to monitor possible rotation of the wall due to the compaction surcharge. If the wall begins to bow or lean away from the backfilling operations, the compaction process shall stop and the Geotechnical Engineer shall be notified immediately such that modified compaction recommendations can be given at that time.
11. The engineer designing the retaining wall shall address the following conditions:

- A. When a retaining wall is backfilled without a top restraint, such as a wood floor diaphragm, the stem of the retaining wall acts as a cantilever.
- B. Depending on the rigidity of the top restraint, the wall may act as a beam spanning between the top and bottom points, reversing the tension side of the stem to the front of the wall as opposed to the back as in the case of a cantilever condition.
- C. Structure members deflect when loaded. The users guide to the widely used computer program RetainPro recommends the deflection of the wall be checked because the program does not calculate deflection. Refer to Section 9 titled "Related Design Considerations" in the manual titled "Basics of Retaining Wall Design", Page 50. As an estimate, the Concrete Reinforcing Steel Institute (CRSI) manual estimates concrete reinforced stems of cantilevered retaining walls will deflect a horizontal distance at the top of the wall equal to the height of the wall divided by 240. We recommend the appropriate deflection equation and values corresponding to load, condition, and material be employed to determine the deflection corresponding to the lateral loads recommended herein such that appropriate connections, tiebacks, bracing, or construction joints can be placed within the structural design to properly account for the deflection. The total deflection may not occur during the backfilling operation, but rather sometime after the frame structure is built over and adjacent to the retaining wall.

PAVEMENT

1. Beneath paved driveway and parking areas, we recommend the top loose surface soils be removed and recompacted to 90% relative compaction, the top 9 inches being recompacted to 95% relative compaction. The subgrade area shall be check rolled in order to detect isolated soft spots. Any areas found to be yielding under the wheel loads of the equipment shall be stabilized by removal and recompaction.
2. The Class 2 aggregate base shall be recompacted to a minimum of 95% relative compaction in accordance with the California Test Method 216. Asphalt concrete shall be placed only after the Class 2 aggregate base has been demonstrated to be firm and unyielding.
3. If asphalt pavement is selected for the finished pavement surface, we recommend an R-Value of the subgrade soil be performed by this Laboratory in order to provide appropriate thickness of Class 2 aggregate base and asphalt concrete.
4. Maintenance to assist in reducing the potential for rapid deterioration of the asphalt paved areas shall include surface treatment approximately six months to one year after construction and approximately three years from the first

treatment. Pavement conditions should be reviewed at least once a year for cracks, puddling of surface water, and overall appearance. If possible, this review should be done in the fall such that cracks may be repaired which may otherwise allow moisture to pass through the pavement and weaken the subgrade.

UTILITY TRENCHES

Excavation of utility trenches can be accomplished with backhoe equipment. Trenches over 5 feet in depth should be braced or sloped in accordance with the requirements of Cal OSHA.

The compaction of utility trench backfill shall be provided according to the minimum compaction recommendations of this report. In general, backfill for utility trenches below pavement or within 5 feet of building areas shall be compacted to at least 90% relative compaction. The sand bedding backfill shall be used to 12 inches above the pipe and shall have a sand equivalent of 30 or better.

TEMPROARY SHORING

Temporary Lateral Earth Pressures

All shoring systems should be designed and constructed in accordance with applicable requirements and regulations of the City or State agencies.

Settlement of structures/utilities adjacent to the shoring will occur in proportion to both the distance between the shoring and the structure, and the amount of horizontal deflection of the shoring system. Settlement will be largest at the shoring, decreasing as the distance from the shoring increases. At a distance from the shoring equal to the height of the shoring, settlement is expected to be negligible. The maximum vertical settlement is expected to be about 75% of the horizontal deflection of the shoring system. It is recommended that shoring be designed and constructed to limit the maximum horizontal deflection to ½ inch where structure/utilities are to be supported.

Lateral earth pressures for design of temporary shoring recommended in this report are based on the following assumptions:

- The shored earth is level at the surface.
- The exposed height of shoring is no greater than 20 feet.
- There will be no hydrostatic pressures above the bottom of excavation.
- The shoring system is temporary in nature and will not be required to support the earth for longer than six months.

If deflections are acceptable for shoring heights of up to 15 feet, cantilevered shoring may be used. For cantilevered shoring, a triangular distribution of lateral earth pressure equivalent to a fluid pressure of 36 psf/ft. should be used.

Shoring may be supported laterally by tieback anchors or by bracing internally with rakers. The recommended lateral earth pressures (in psf) for design of braced shoring should be $24H$ where H is the full height of the braced shoring member in feet. A rectangular distribution should be used.

Temporary surcharge loads may be neglected for shoring design if the load is set back from top of temporary excavations a horizontal distance equal to at least the depth of the excavation. Otherwise, 40% of the surcharge load, including traffic loading, should be added to the lateral earth pressure as a horizontal uniform pressure.

Soldier Piles and Lagging

The shoring should consist of steel soldier piles placed in drilled holes backfilled with concrete. For the design of soldier piles spaced at least two diameters on center, the allowable lateral bearing value (passive value) of the soils below the lowest adjacent excavated level may be assumed to be 600 psf per foot of depth, up to a maximum of 6,000 psf per foot of depth. Passive resistance should be discounted to a depth of at least one pile diameter below the lowest adjacent excavation level.

The soldier piles should be concreted to assure firm contact between the soldier pile and the supporting soils. For portions of the soldier pile which fall below the planned excavation, structural concrete should be used. For portions above the planned excavation, lean mix concrete is sufficient.

Continuous lagging will be required between the soldier piles. The old fill soils have a propensity to slough/cave. As such, slurry may be required behind the lagging. The lagging should be designed for a maximum value of 350 psf.

Tiebacks

Tiebacks may be installed at angles ranging from 15 to 30 degrees (measured from horizontal). For design purposes, the resisting or anchor portion of the tieback should be in soils outside the active wedge behind the proposed shoring. The active wedge in this case is the zone of soil between the shoring and an imaginary plane tilted from the vertical 30 degrees, starting at the base of the excavation (see Plate 4).

For tiebacks concreted into the surrounding soil behind the active wedge, soil resistance may be calculated using the expression:

$$q-46H$$

Where

q is the friction capacity in psf and should not exceed 600 psf

H is average depth of anchor below ground surface in feet (defined on Plate 4)

The tiebacks should be spaced at least 3 diameters apart (center to center).

A factor of safety of at least 1.5 should be applied to calculated friction capacity

The tiebacks should be designed and installed as per the latest Post Tension Institute Guidelines. Caving and sloughing of tieback anchor holes (particularly through the old fill and saturated sand layers) should be anticipated. Measures should be taken to prevent caving during drilling. After completion of drilling and placement of steel, and structural concrete in the bonded length portion of the tieback, caving in the free length portion should be prevented until the anchors have been tested and "locked-off" at the design load. This may be performed by suitable means, such as use of pumped sand.

The contractor should submit for review by the Geotechnical Engineer installation procedures and equipment calibrations, etc. Prior to installation of production tiebacks, it is recommended that test tiebacks should be installed and tested to confirm preliminary design values. After installation, each row of anchors should be tested and approved before excavation proceeds. The Geotechnical Engineer's representative should observe and approve all tieback tests.

Internal Bracing

If tiebacks are not permitted (due to easement issues), internal raker bracing may be used for lateral support of the soldier piles. The rakers are supported by "dead-man" footings constructed below the bottom of the planned excavation level. In order to increase the mobilized bearing value, the bearing surface of these footings should be inclined at a minimum angle of 45 degrees (measured from horizontal). A bearing value of 2,000 psf may be used provided the shallowest point of the footing is at least 12 inches below the lowest adjacent grade. Water may be encountered in the footing excavations; in such an event, the water should be removed and the steel and concrete be placed on a firm surface.

The raker members should be preloaded between the soldier piles and the footings to reduce the shoring's deflections during the excavation.

ADJACENT LOADS

Where footings are placed at varying elevations, the effect of adjacent loads may be calculated using the widely published Formulas for Stresses in Semi-infinite Elastic Foundations or the Boussinesq figures and equations for both vertical and horizontal surcharge loads.

SETTLEMENT

It is the intent of the recommendations contained in this report to achieve angular distortions¹ of approximately 1/480. A total settlement of approximately 1 inch or less is anticipated for foundations supported on the undisturbed native soil and approximately 1% to 1.5% of the fill height is the anticipated total settlement at areas where compacted fill soil is

¹ Angular distortion is the ratio of the vertical differential settlement divided by the horizontal distance over which the vertical differential is measured.

placed in accordance with the GRADING recommendations provided in this soil engineering report. The soil bearing values and estimated settlements contained in this report are preliminary and may need to be modified after the foundation and grading plans are substantially complete.

CONSTRUCTION OBSERVATION

The owner or his agent shall request the project Geotechnical Engineer to observe all excavations prior to placement of compacted soil, gravel backfill, or rebar and concrete.

PLAN REVIEW

We request the grading and foundation plans be submitted to our office for a general review to verify substantial compliance to the recommendations contained in this report.

CLOSURE

The recommendations contained herein are for the sole use of our client and are based upon this Laboratory's understanding of the project which has been described herein. If the project scope, location, or conceptual design is subsequently altered, this Laboratory shall be requested to modify, as necessary, the recommendations contained herein as is appropriate for the new development concept. If the recommendations of this report are not implemented within one year, we recommend an update and review of the contents of this report be performed by this Laboratory.

The recommendations contained herein are based upon the assumption that Pacific Materials Laboratory shall be requested to perform the testing and observation services which will be required during the grading and foundation operations in order to verify that the actual soil conditions encountered and the construction procedures are consistent with the recommendations contained herein. If this service is performed by others, only the technical correctness of the actual analytical soil tests described here is attested to by this Laboratory.

Thank you for the opportunity of providing this service. If you have any questions regarding this matter, please do not hesitate to call.

Respectfully submitted,

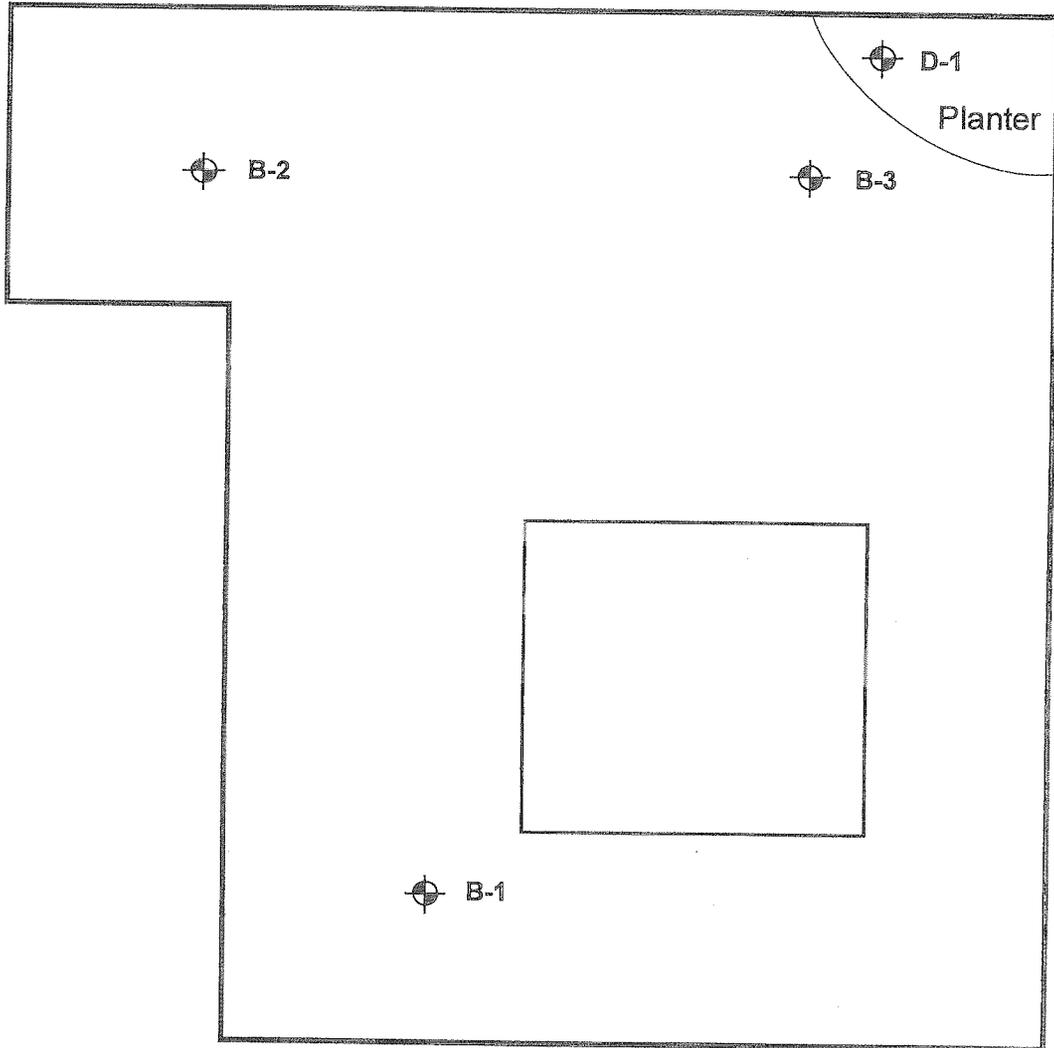
PACIFIC MATERIALS LABORATORY, INC.



Ronald J. Pike
Geotechnical Engineer, G. E. 2291

RJP:cm

cc: Addressee (3)



State Street

LEGEND

⊕ B-1 = BORING LOCATION

⊕ D-1 = FIELD DENSITY TEST LOCATION

SITE PLAN

1722 State Street
Santa Barbara, California

Scale: none	Plate 1 Lab No: 64464-2 File No: 05-12155-2 July 27, 2005
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APPENDIX A
FIELD INVESTIGATION

July 27, 2005

Lab No: 64464-2

File No: 05-12155-2

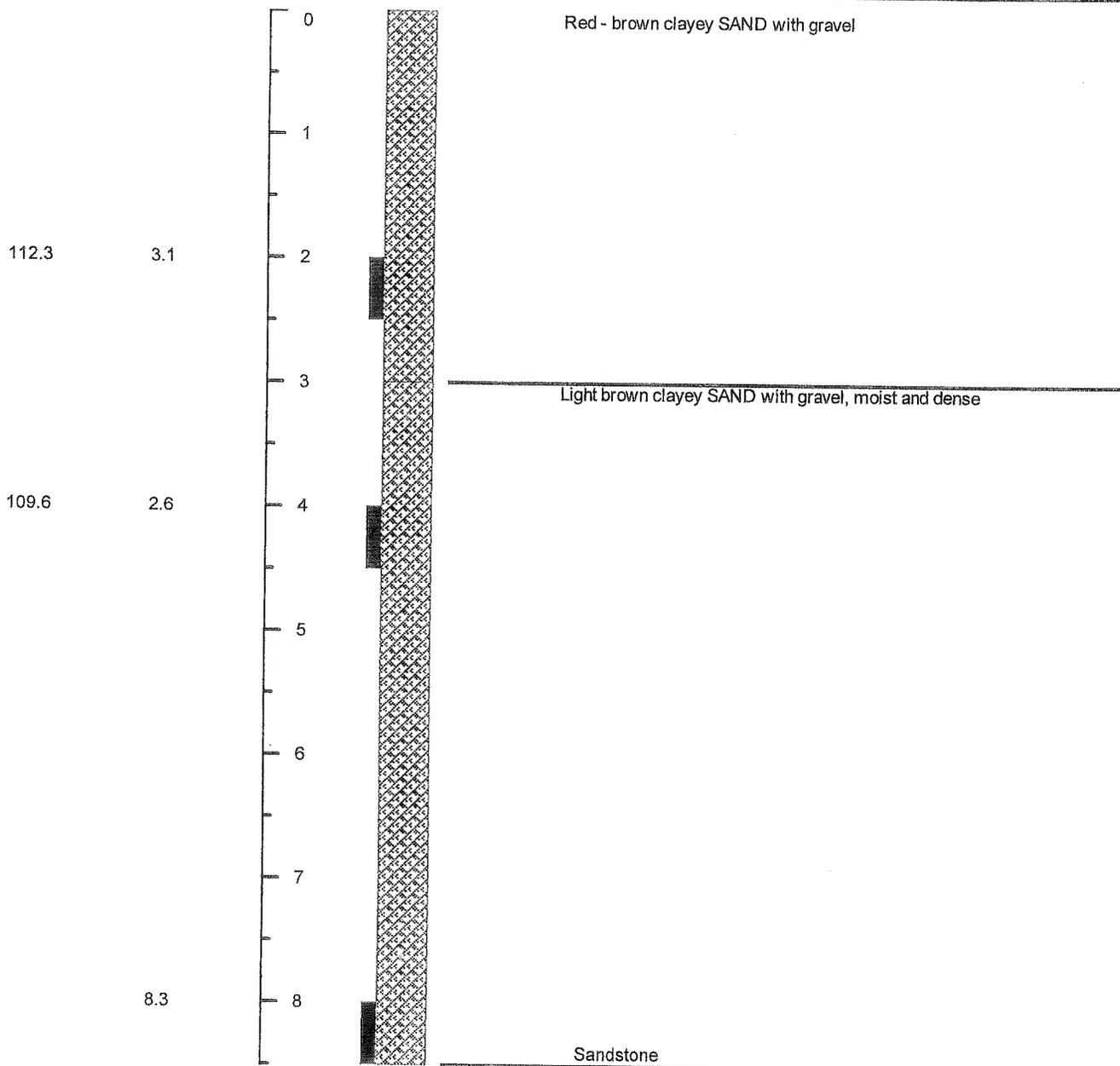
BORING LOG DATA

BORING NO. B-1

Drill Rig Operator: Kump/Puente

Date Drilled: 7/8/05

Dry Density (pcf)	Moisture Content (%)	Depth (ft)	Soil Log	Soil Description
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LEGEND
 - Thin-Walled Tube Sample
 ASTM D-1587

Note: Rejection at 8 feet on sandstone cobbles and boulders

BORING LOG DATA

BORING NO. B-2

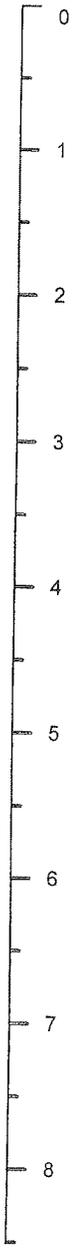
Drill Rig Operator: Kump/Puente

Date Drilled: 7/8/05

Dry Density (pcf)	Moisture Content (%)	Depth (ft)	Soil Log	Soil Description
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103.1

9.2



Yellow SAND, dry

Sandstone

LEGEND
 - Thin-Walled Tube Sample
 ASTM D-1587

Note: Rejection at 3 feet on sandstone cobbles and boulders

BORING LOG DATA

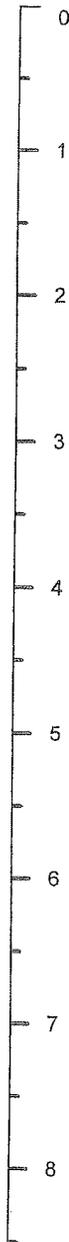
BORING NO. B-3

Drill Rig Operator: Kump/Puente

Date Drilled: 7/8/05

Dry Density (pcf)	Moisture Content (%)	Depth (ft)	Soil Log	Soil Description
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9.7



Light brown SAND, dry and dense

Sandstone

LEGEND
 - Thin-Walled Tube Sample
 ASTM D-1587

Note: Rejection at 3 feet on sandstone cobbles and boulders

APPENDIX B
LABORATORY TESTS

July 27, 2005

Lab No: 64464-2

File No: 05-12155-2

MOISTURE DENSITY DETERMINATIONS (ASTM D-1557)

Maximum Density-Optimum Moisture data were determined in the laboratory from soil samples using the ASTM D-1557 Method of Compaction. The results of the Maximum Density-Optimum Moisture tests are tabulated below:

<u>SOIL TYPE</u>	<u>SOIL DESCRIPTION</u>	<u>MAXIMUM DRY DENSITY (pcf)</u>	<u>OPTIMUM MOISTURE (%)</u>
I	Medium brown silty SAND	120.5	11.5
Curve Points: (111.9 @ 7.5) (116.1 @ 10.0) (118.4 @ 12.5)			

FIELD DENSITY SUMMARY (Sand Cone Method ASTM D-1556)

<u>SAMPLE LOCATION</u>	<u>DEPTH (in.)</u>	<u>SOIL TYPE</u>	<u>FIELD MOIST. CONTENT (%)</u>	<u>DRY DENSITY (pcf)</u>	<u>% OF MAX. DRY DENSITY</u>
D-1	18	I	24.0	85.3	71

MECHANICAL ANALYSES (Values in Percent Passing ASTM D-422)

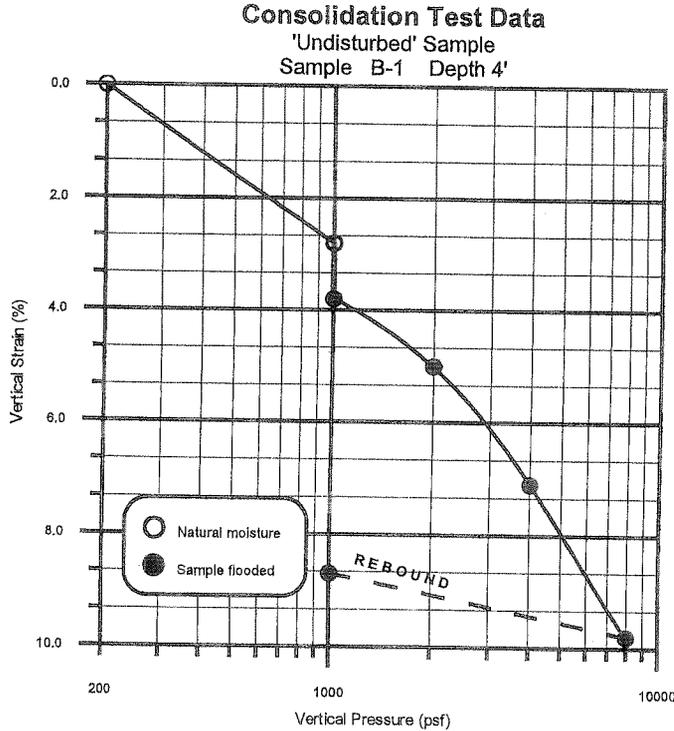
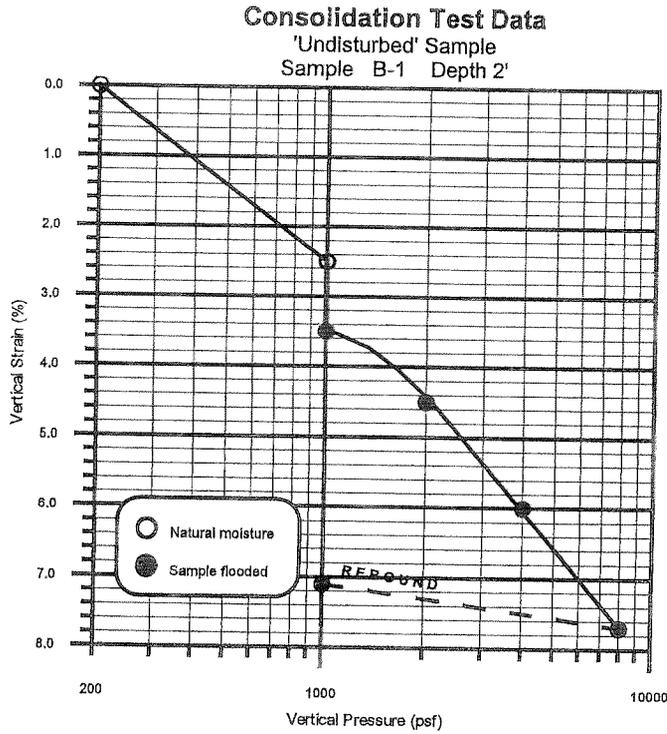
<u>SIEVE SIZE</u>	<u>B-1 @ 2'</u>	<u>B-1 @ 4'</u>
1/2 Inch	100.0	100.0
3/8 Inch	99.7	96.2
No. 4	96.6	88.4
No. 8	94.3	82.3
No. 16	91.4	78.0
No. 30	85.7	72.5
No. 50	71.7	60.9
No. 100	55.9	46.9
No. 200	44.6	33.0

SAND-SILT-CLAY (By Hydrometer ASTM D 422)

<u>SAMPLE LOCATION</u>	<u>DEPTH (ft.)</u>	<u>SAND %</u>	<u>SILT %</u>	<u>CLAY %</u>	<u>SOIL DESCRIPTION</u>
B-1	2	60	24	16	Silty SAND
B-1	4	52	22	26	Clayey SAND

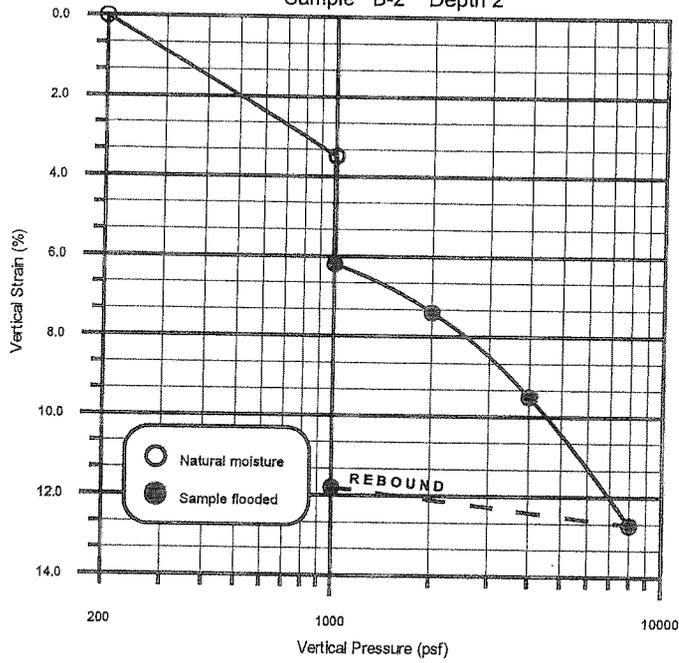
CONSOLIDATION TESTS (ASTM D-2435)

Four consolidation tests were performed on representative in-place tube soil samples in both the natural field and at increased moisture contents. The results of the consolidation tests are presented graphically below.



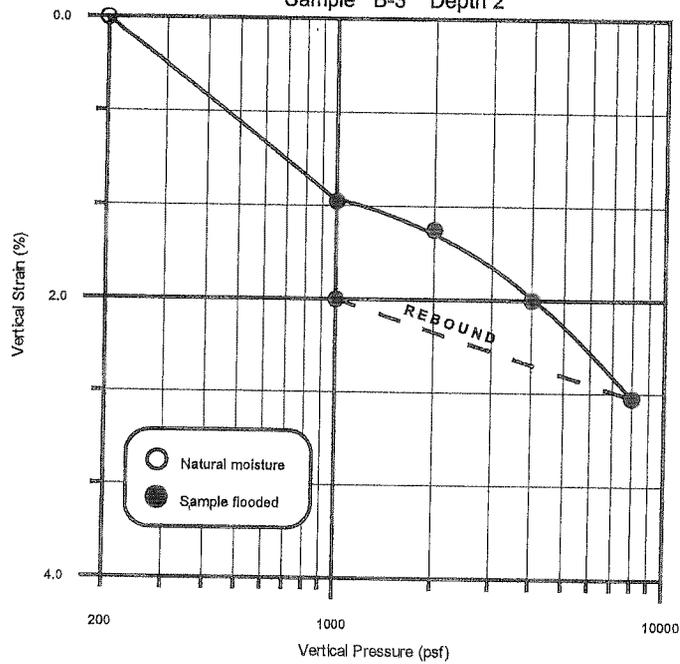
Consolidation Test Data

'Undisturbed' Sample
Sample B-2 Depth 2'



Consolidation Test Data

'Undisturbed' Sample
Sample B-3 Depth 2'



ATTERBERG LIMITS (ASTM D-4318)

<u>SAMPLE LOCATION</u>	<u>DEPTH (ft.)</u>	<u>SOIL TYPE</u>	<u>LIQUID LIMIT</u>	<u>PLASTIC LIMIT</u>	<u>PLASTICITY INDEX</u>	<u>DEGREE OF EXPANSION</u>
B-1	2	ML	20	18	2	Very low
B-1	4	NP	--	--	--	--

EXPANSION TESTS (UBC 18-2)

The Expansive Soil Index was determined by the present UBC 18-2 Expansion Determination Procedure. The results are tabulated below:

<u>BORING NO.</u>	<u>DEPTH (ft.)</u>	<u>DRY DENSITY (pcf)</u>	<u>MOISTURE CONTENT (%)</u>	<u>EXPANSION INDEX</u>	<u>POTENTIAL FOR EXPANSION</u>
D-1	1	122.0	9.5	0	Very low

DIRECT SHEAR TESTS (ASTM D-3080)

Two direct shear tests were performed on representative "undisturbed" soil samples which were 2.365 inches in diameter and 1 inch thick. The tests were performed under flooded conditions. The results are tabulated below:

<u>SAMPLE LOCATION</u>	<u>DEPTH (ft.)</u>	<u>INTERNAL ANGLE OF FRICTION (degrees)</u>	<u>COHESION (psf)</u>
B-1	4	35	0
B-1	2	18	820

DUDEK

621 CHAPALA STREET
SANTA BARBARA, CALIFORNIA 93101
T 805.963.0651 F 805.963.2074

August 8, 2006

5142-01

1722 State Street Investors, LLC
c/o Hochhauser Blatter Architects
122 East Arrellaga Street
Santa Barbara, CA 93101
Attention: Julie Guajardo McGeever

RECEIVED

AUG 13 2006

CITY OF SANTA BARBARA
PLANNING DIVISION

SUBJECT: Mixed Commercial and Residential Project
1722 State Street, Santa Barbara
Supplemental Environmental Noise Study
Project Construction Noise

Dear Ms. McGeever:

Our May 16, 2006 report for the above-referenced project contained assessment of the future traffic-related noise environment at the proposed new commercial and residential condominium structures to be located at 1722 State Street located in the City of Santa Barbara. Our original report did not address construction-related noise affects of the project. This supplement has been prepared in response to the City of Santa Barbara's request for an evaluation of short-term construction-related noise impacts.

Background (Construction Description)

This construction-related noise supplemental analysis has been prepared based upon Penfield and Smith's 1722 State Street Traffic Control Plan Phase 1 and upon Gerald Oswald Construction Preliminary Construction Plan, 1722 State Street, Santa Barbara (MST #2005-00455). The Preliminary Construction Plan indicates the construction activities would be phased, first with demolition of all existing improvements, followed by earthwork that affects the entire site, and then the erection of foundation and concrete elements of the new structures. During these three phases construction equipment including dozers, loaders, forklifts, and cranes would be anticipated to operate throughout the property. During the general construction phase, construction equipment noise sources would likely be fewer and more localized within portions of the site. The entire construction process is anticipated to have duration of approximately 18 months.

1722 State Street Investors, LLC
1722 State Street – Supplemental Construction Noise Analysis
August 8, 2006
Page 3

to the construction area. Intervening buildings would limit the noise level for residential properties not immediately adjacent to the subject property boundary.

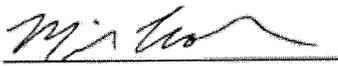
When construction equipment is operating, existing residences immediately east and north of the project site could be disturbed by the activities. Because of the relatively short-term to moderate duration of construction activities, the City's existing restrictions on periods when construction can occur, and the common incorporation of routine construction noise controls, potential noise impacts upon adjacent existing residences are considered adverse, but not significant. However, a strict construction schedule which adheres to the City's adopted standard schedule should be enforced for the project development. To avoid nuisance noise impacts, the following adopted City of Santa Barbara construction schedule limitation should be incorporated into all construction contracts for the project, and posted at the site:

Future project-related site preparation and construction activities shall be limited to the hours between 7:30 am and 5:30 pm, Monday through Friday, consistent with the City of Santa Barbara construction noise standards. No construction shall occur on Federal holidays (e.g., Thanksgiving, July 4th, Labor Day, etc.). Construction equipment maintenance shall be limited to the same hours. Non-noise-generating construction activities such as interior painting are not subject to these restrictions

Construction activities would also generate short-term traffic as workers, equipment and materials are brought to the site. The daily transportation is expected to cause short-term traffic-related noise increases along the project roadways. However, this traffic would not be a significant percentage of the daily volumes in the area and would not increase the noise levels by more than three dB CNEL. Therefore, the construction-related traffic noise impacts are considered to be less than significant.

Very truly yours,

DUDEK & ASSOCIATES, INC.



Mike J. Komula
Acoustician

DUDEK

621 CHAPALA STREET
SANTA BARBARA, CALIFORNIA 93101
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May 16, 2006

5142-01

1722 State Street Investors, LLC
c/o Hochhauser Blatter Architects
122 East Arrellaga Street
Santa Barbara, CA 93101
Attention: Julie Guajardo McGeever

SUBJECT: Mixed Commercial and Residential Project
1722 State Street, Santa Barbara
Environmental Noise Study

RECEIVED

SEP 08 2006

CITY OF SANTA BARBARA
PLANNING DEPARTMENT

Dear Ms. McGeever:

This report contains our assessment of the future traffic-related noise environment at the proposed new commercial and residential condominium structures to be located at 1722 State Street located in the City of Santa Barbara. The assessment has been conducted in conformance with the City of Santa Barbara's requirement that the Community Noise Equivalent Level (CNEL) not exceed 60 dB within any exterior living spaces of the project which are necessary to meet the minimum space requirements of the Santa Barbara Municipal Code. The report also contains a preliminary analysis of interior noise levels based upon the conceptual building designs, for comparison with the City's 45 dB CNEL residential interior noise criterion.

The project would provide outdoor living space primarily in the form of private ground-level yards or patios (Units A-G) or upper-level balconies or decks (Units H-L) pursuant to City of Santa Barbara Municipal Code Section 28.21.081. The future noise levels from Year 2030 traffic volumes on State Street and Islay Street are calculated to range up to 64 dB CNEL within the project's designated outdoor living area for Units K and L; this area would need to be protected with a minimum 5-foot high sound wall generally along the State Street frontage of the patios. Within the designated yard, patio, balcony, and deck areas for the remaining units, the future noise levels from Year 2030 traffic volumes on State Street and Islay Street are calculated to range up to 59 dB CNEL. These exterior noise levels would be within the acceptable range for new condominium residences, and therefore no mitigation would be required.

Environmental Noise Study

1722 State Street, Santa Barbara

To comply with the City's 45 dB CNEL residential interior noise standard, an interior noise analysis will be required for the dwelling units adjacent to State Street project prior to issuance of building permits. Based on a preliminary review, the dwelling units immediately adjacent to State Street would most likely require sound-rated windows; such windows would also need to be in the closed position in order to achieve compliance with the interior noise standard of 45 dB CNEL. Air conditioning or mechanical ventilation system would be required so that the occupants could keep the windows closed at their discretion.

1.0 BACKGROUND

1.1 Project Setting

The subject property is currently identified as 1722 State Street. There is an existing single-story commercial building on the property which would be demolished to accommodate the project. The proposed development would have a sub-grade parking structure with three principle buildings connecting around a central at-grade courtyard. One building would parallel State Street and would contain two floors of commercial space, topped by a single floor of residential condominiums. A second building containing two floors of residences would also parallel State Street, at the backside of the courtyard. Two-story building wings perpendicular to State Street would complete the enclosed courtyard. In general, the commercial and residential building along State Street would provide shielding of the remainder of the property from State Street traffic.

The project site is located on the easterly side of State Street, just southerly of the intersection of Islay Street and State Street in Santa Barbara. The regional location and project vicinity are depicted in *Figures 1 and 2*. The site plan for the proposed project is graphically depicted on *Figure 3*. The proposed floor plans are illustrated on *Figure 4 and 5*.

As part of the application review process by the City of Santa Barbara, an acoustical study is required. The analysis is based on the Site Plan, Floor Plan, and Elevations, March 23, 2006, by Hochhauser Blatter Architecture.

The City of Santa Barbara Zoning Ordinance (Section 28.21.081) stipulates the minimum mandatory outdoor living space to be provided per each residence in a multi-family residential project. The requirement can be met through the provision of a private outdoor space per condominium, or via common outdoor living spaces available for use by the residents. The

Environmental Noise Study 1722 State Street, Santa Barbara

project will provide primary outdoor living space in the form of private yard, patios, and balconies (decks). For Units A-G, exterior living space to meet Municipal Code Requirements will be provided on the ground level. For units H and I, a second-level balcony area on the northerly face of the building has been provided to meet exterior space requirements of the Municipal Code. Unit J has a proposed balcony on the third level, southerly side of the structure that would meet the Municipal Code requirements. Finally, Units K and L have a third-level balcony (deck) that faces State Street. Please refer to *Figures 3, 4 and 5* for the location of proposed exterior living areas.

Some of the proposed units would include exterior living area in excess of the minimum requirements. Any outdoor living space provided which exceeds that necessary to meet Santa Barbara Zoning Ordinance (Section 28.21.081) is considered optional for use by residents.

1.2 City Noise Criteria

The City of Santa Barbara requires that the noise level within required outdoor living spaces for new single family and multiple family residential development not exceed 60 dB CNEL and the interior noise levels not exceed 45 dB CNEL (City of Santa Barbara, 1979). All sound levels discussed in this report are A-weighted. The acoustical terminology used in this report is defined in *Attachment 1*.

2.0 EXISTING CONDITIONS

The project site is exposed primarily to traffic noise from State Street with traffic noise from Islay a secondary contributor to the noise environment at the site. There are several one story structures between the project site and Islay Street which provide partial shielding of the Islay Street traffic noise.

Islay Street carries a current volume of approximately 1,200 average daily trips (ADT), according to the project traffic engineer (ATE 2006); State Street carries a current volume of approximately 15,900 ADT (ATE 2006).

Environmental Noise Study 1722 State Street, Santa Barbara

Ambient Noise Monitoring

Noise measurements were conducted adjacent to Islay Street in the immediate vicinity of the subject property and adjacent to State Street along the subject property boundary, to determine the existing noise level resulting from traffic on Islay Street and State Street at the project site. The measurements were made using a calibrated Larson-Davis Laboratories Model 820 (S.N. 1534) integrating sound level meter equipped with a Type 2551 ½-inch pre-polarized condenser microphone with pre-amplifier. When equipped with this microphone, the sound level meter meets the current American National Standards Institute standard for a Type 1 precision sound level meter. The sound level meter was positioned at a height of approximately five feet above the ground.

The noise measurement locations are depicted as Site 1 and Site 2 on *Figure 6*. Site 1 is approximately 20 feet from the center line of Islay Street. Site 2 is approximately 40 feet from the center line of State Street. The measured average noise level was 56 dB at Site 1; the measured average noise level was 69 dB at Site 2. *Table 1* shows the measured noise levels and concurrent traffic volumes on the two roadway facilities.

**Table 1
Measured Average Sound Level**

Site	Description	Date/Time	L_{eq} ¹	Cars	MT ²	HT ³
1	Approximately 20 feet to center line of Islay Street	4/27/06 10:30 to 11:00 a.m.	56 dB	51	0	0
2	Approximately 40 feet to center line of State Street	4/27/06 11:10 to 11:30 a.m.	69 dB	299	6	0

- Notes:
- ¹ Equivalent Continuous Sound Level (Time-Average Sound Level)
 - ² Medium Trucks
 - ³ Heavy Trucks

General Notes: Temperature 63 degrees, partly cloudy, 2 mph northeasterly wind.

Environmental Noise Study 1722 State Street, Santa Barbara

Traffic Noise Modeling

The Caltrans' Sound 32 model was calibrated first, before using the model to evaluate existing and future noise levels from traffic. The same traffic volume and vehicle composition ratios counted during the noise measurements were used to calibrate the model and verify the input used in the noise model. The modeled existing traffic speed was 30 mph along Islay Street and 35 mph along State Street.

The modeled L_{eq} for both Site 1 and Site 2 are within one dB of the measured noise levels. This result generally confirms the assumptions used in the noise model.

Based upon information provided by the project traffic engineer (ATE 2006), a vehicle mix of 0.5 percent medium trucks and 0.01 percent heavy trucks was employed in the model for evaluation of existing and future anticipated noise levels from the adjacent segment of Islay Street. For State Street, a vehicle mix of 1.5 percent medium trucks and 0.5 percent heavy trucks was employed in the model for evaluation of existing and future anticipated noise levels, in accordance with information provided by the project traffic engineer (ATE 2006).

The modeled existing noise level is 59 dB CNEL at Site 1. The modeled existing noise level is 72 dB CNEL at Site 2. It should be noted that these noise levels are in terms of the CNEL and not the L_{eq} as shown in Table 1. It should also be noted Site 1 represents the existing noise exposure of a receiver on the Islay Street in the vicinity of the subject property; there are several structures between Islay Street and the subject property. Site 2 is immediately adjacent to State Street within the project frontage on State Street, and three feet from the curb. This location is approximately 7 feet closer to State Street than the subject property line, and approximately 15 feet closer than the proposed State Street building façade.

3.0 ANALYSIS

State Street is classified as a Major Arterial in the City's General Plan and will be one of the primary noise sources at the project site in the future. In the year 2030, State Street south of Islay Street will carry approximately 18,600 ADT (ATE 2006). Islay Street is classified as an arterial in the City's General Plan, and will be a secondary noise source at the project site. The year 2030 traffic volume for Islay Street east of State Street is projected to be 1,450 ADT (ATE 2005).

Environmental Noise Study 1722 State Street, Santa Barbara

Exterior Noise

Based upon the proposed project design, the future exterior noise level from Year 2030 traffic along State Street and Islay Street within the designated exterior living areas of the project residences would be as follows.

**TABLE 2
Calculated Future Sound Levels in Exterior Living Spaces**

Outdoor Space	Modeled Future Sound Level
Unit A – Ground-level Yard	49 dB CNEL
Unit B – Ground-level Yard	47 dB CNEL
Unit C – Ground-level Yard	46 dB CNEL
Unit D – Ground-level Yard	46 dB CNEL
Unit E – Ground-level Yard	52 dB CNEL
Unit F – Ground-level Yard	56 dB CNEL
Unit G – Ground-level Yard	57 dB CNEL
Unit H – Level 2 Balcony, Northerly Facade	50 dB CNEL
Unit I – Level 2 Balcony, Northerly Facade	48 dB CNEL
Unit J – Level 3 Balcony, Southerly Facade	56 dB CNEL
Unit K – Level 3 Balcony, State Street Facade	64 dB CNEL
Unit L – Level 3 Balcony, State Street Facade	64 dB CNEL

The proposed ground floor exterior living areas for Units A thru G would have future noise levels ranging up to 57 dB CNEL; future noise levels within these exterior living areas would be within the City's adopted exterior noise criteria of 60 dB CNEL maximum, without the need for any mitigation.

The designated exterior living areas (i.e., balconies) for Units H, I and J would have future noise levels ranging up to 56 dB CNEL; future noise levels within these exterior living areas

Environmental Noise Study 1722 State Street, Santa Barbara

would be within the City's adopted exterior noise criteria of 60 dB CNEL maximum, without the need for exterior noise mitigation.

The proposed third-level balconies for Unit K and L, which would have direct exposure to State Street traffic noise, would have a calculated future noise level of 64 dB CNEL from Year 2030 traffic along State Street and Islay Street. The proposed third-level balconies for Unit K and L would therefore exceed the City's adopted exterior noise criterion of 60 dB CNEL. Mitigation would be required in order to achieve the 60 dB CNEL criterion.

Interior Noise

A detailed interior noise analysis was not conducted at this preliminary project design phase. However, the following conceptual discussion is provided for interior noise concerns.

Standard construction materials and techniques for a multiple family development normally result in a minimum exterior to interior noise attenuation of 15 dB. Therefore, an exterior noise exposure not exceeding 60 dB CNEL would result in interior noise levels of 45 dB CNEL or less.

Exterior noise levels for the State Street façade of the proposed development are expected to range up to approximately 70 dB CNEL. With the windows open or closed, the interior noise level within the residences adjacent to State Street could exceed the City and State's interior residential noise standard of 45 dB CNEL, unless mitigation measures are provided.

4.0 MITIGATION

Exterior Noise

To achieve compliance with the 60 dB CNEL criterion for the proposed third-level balconies of Unit K and L would require a minimum 5-foot high sound wall extending upward from the balcony floor. See *Figure 7* for the location and extent of the required sound wall. The height requirement is relative to the patio floor elevation. With the proposed sound wall, the noise level is calculated to be 60 dB CNEL or less within the exterior space.

Environmental Noise Study
1722 State Street, Santa Barbara

Interior Noise

To comply with the City's 45 dB CNEL interior noise standard, an interior noise analysis will be required for the residential units fronting State Street, prior to issuance of building permits. The interior noise study will most likely require mechanical ventilation and/or air conditioning system and possibly sound-rated windows.

- - - -

This concludes our noise assessment, if you have any questions please call me.

Very truly yours,

DUDEK & ASSOCIATES, INC.



Mike J. Komula
Acoustician

MJK/tsf

att.: Figures 1-7

Environmental Noise Study 1722 State Street, Santa Barbara

REFERENCES

Associated Transportation Engineers (ATE), April 14, 2006, *email from Scott Schell, Principal Transportation Planner.*

California Department of Transportation (Caltrans), June 1983, *User's Instructions for SOUND32 (FHWA/CA-83/06).*

California Department of Transportation (Caltrans), 1987, *California Vehicle Noise Emission Levels, (FHWA/CA/TL-87/03).*

City of Santa Barbara, August 1979. *City of Santa Barbara General Plan Noise Element.*

Hochhauser Blatter Architects, March 2006, *Site Plans, Floor Plans, and Elevations for 1722 State Street Mixed Use Project.*

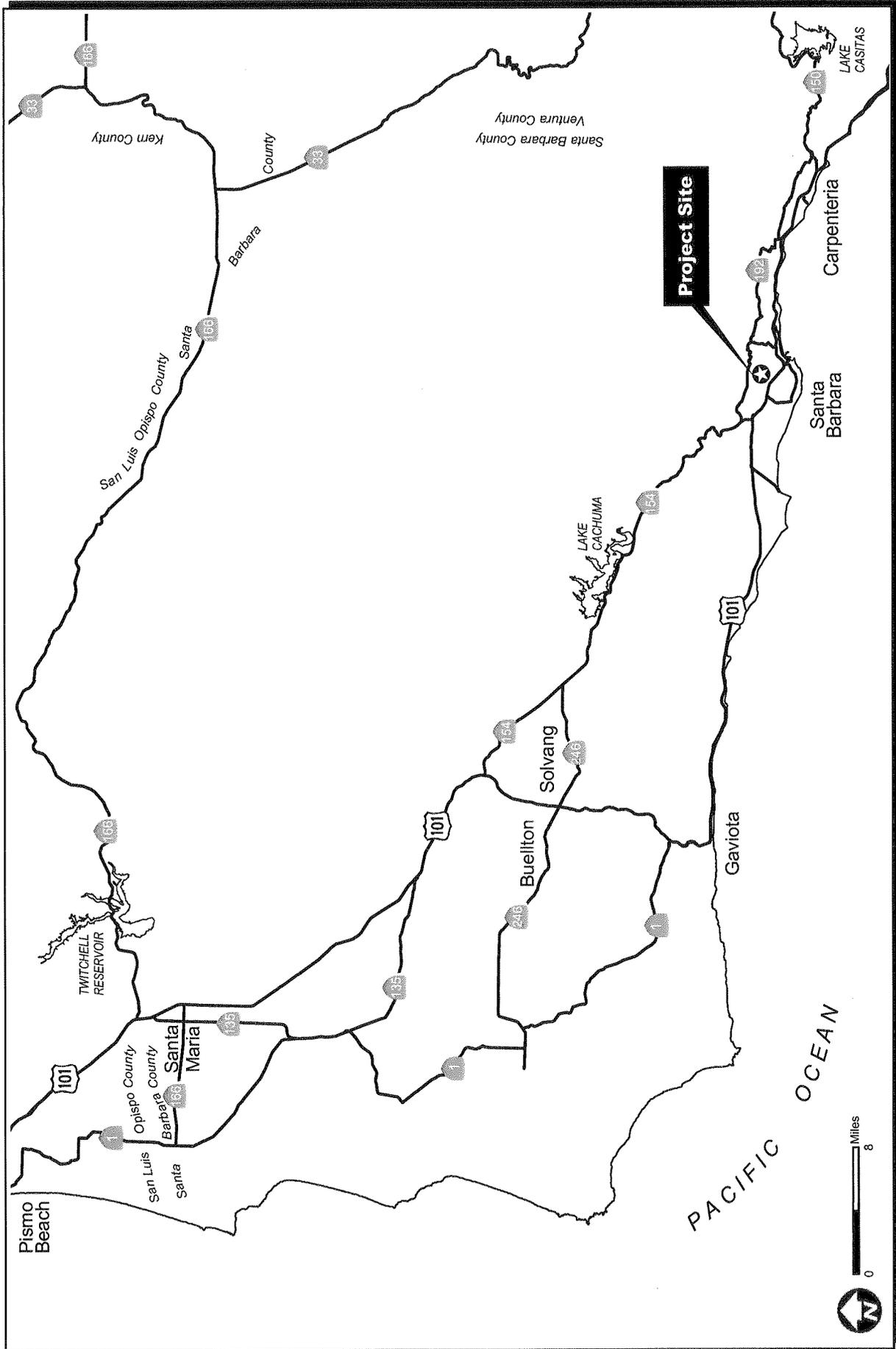
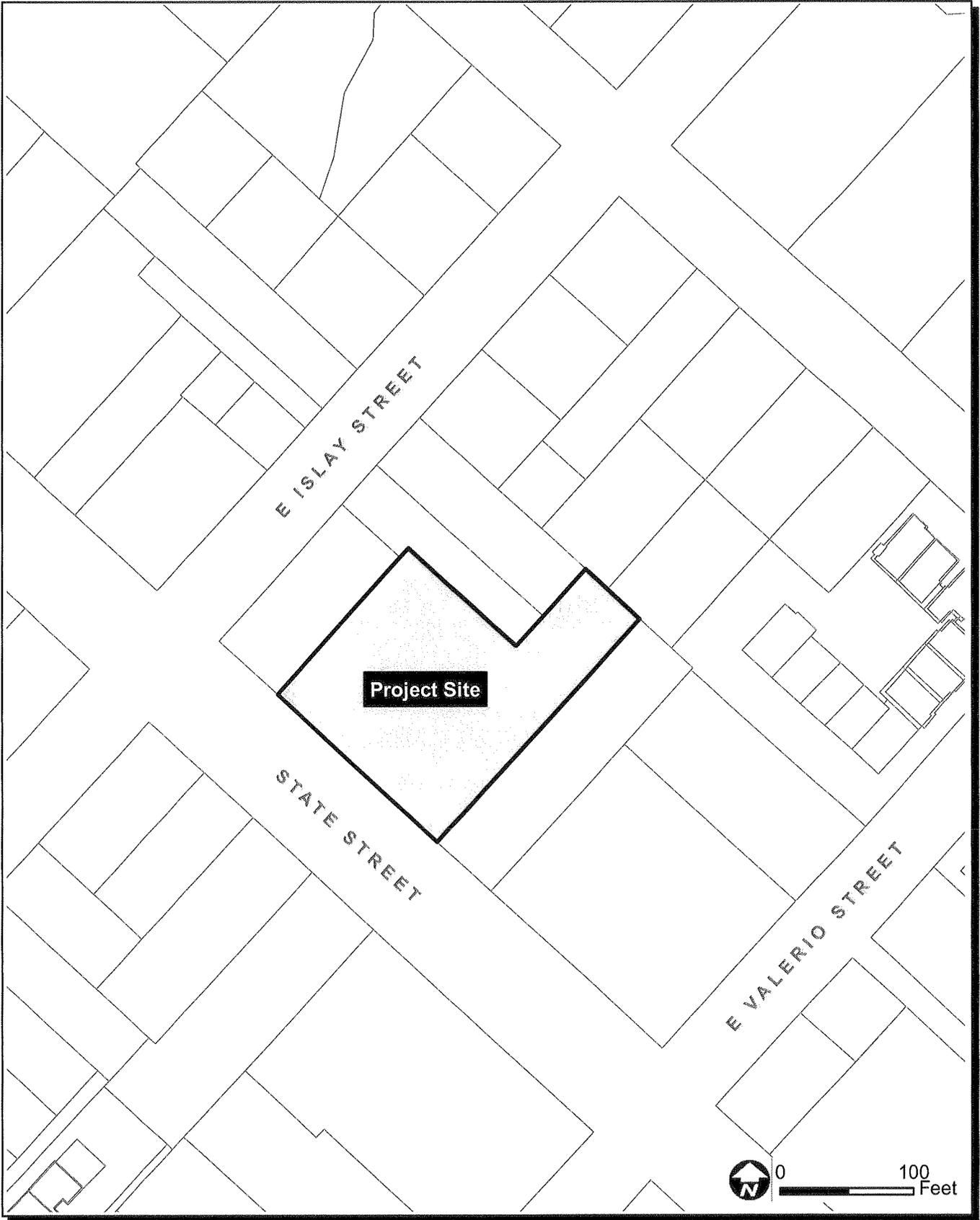


FIGURE 1

**1722 State Street Environmental Noise Study
Regional Location**

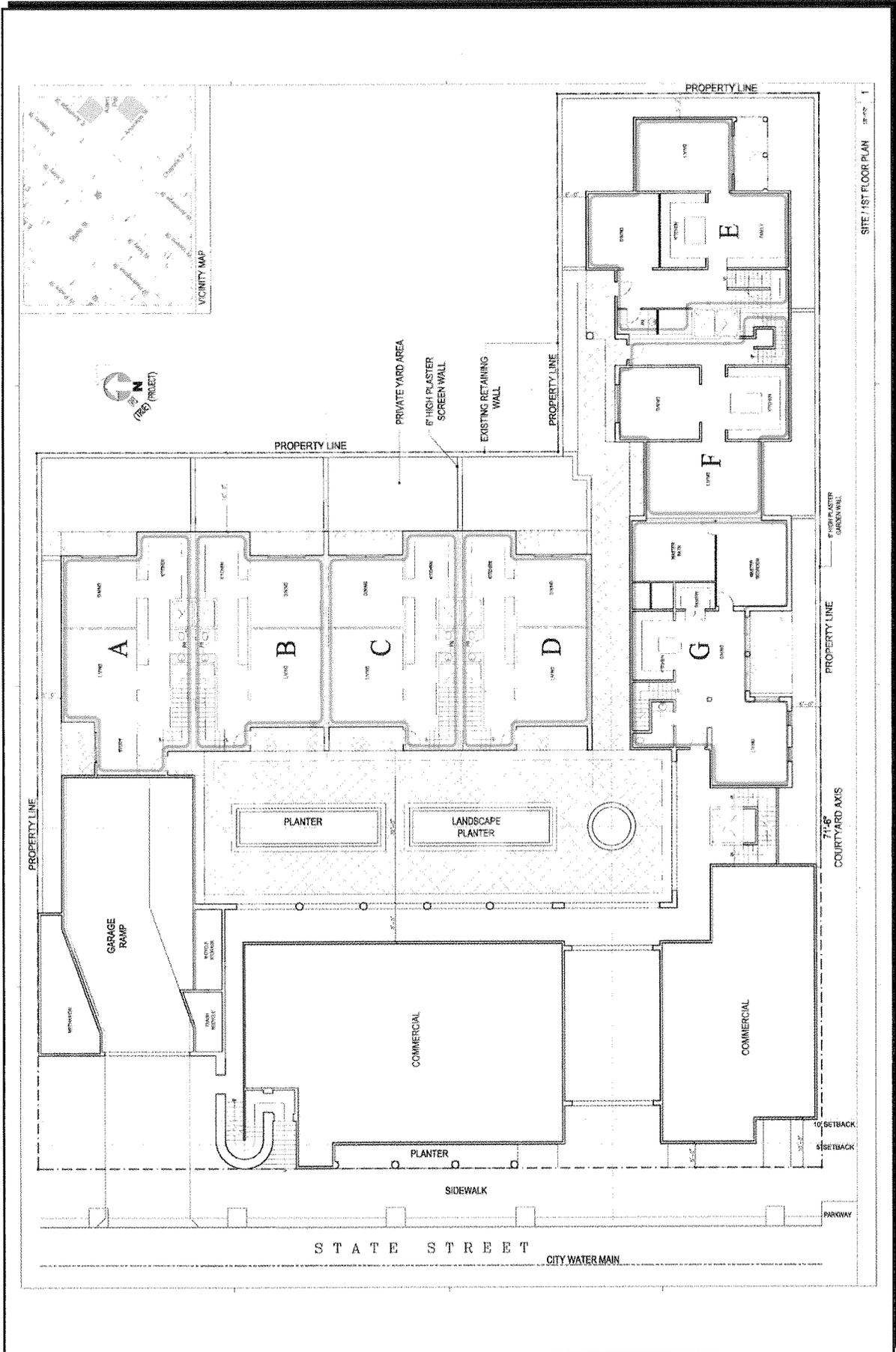


1722 State Street Environmental Noise Study
Project Vicinity

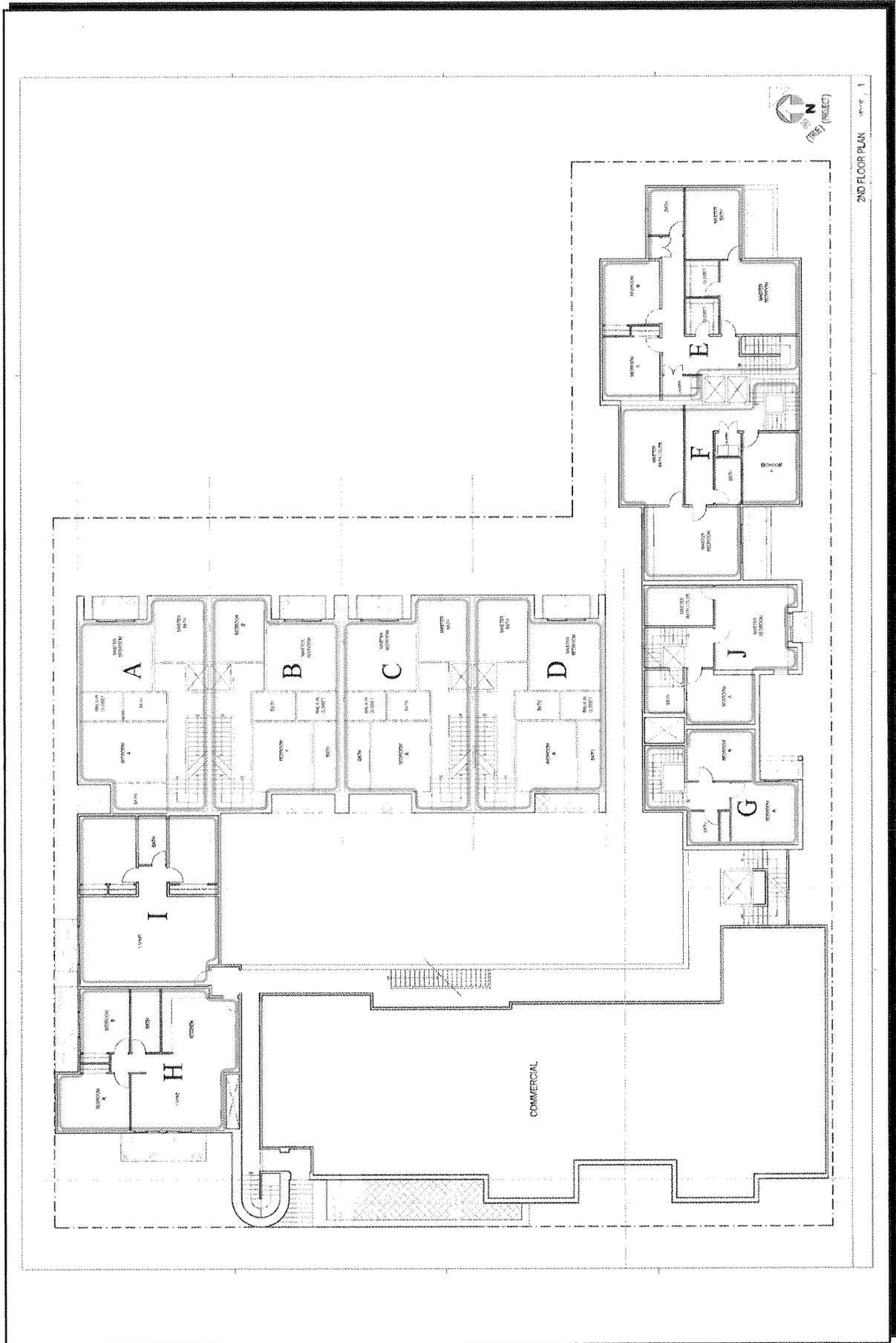
FIGURE
2

FIGURE 3

1722 State Street Environmental Noise Study Site Plan / First Floor Plan

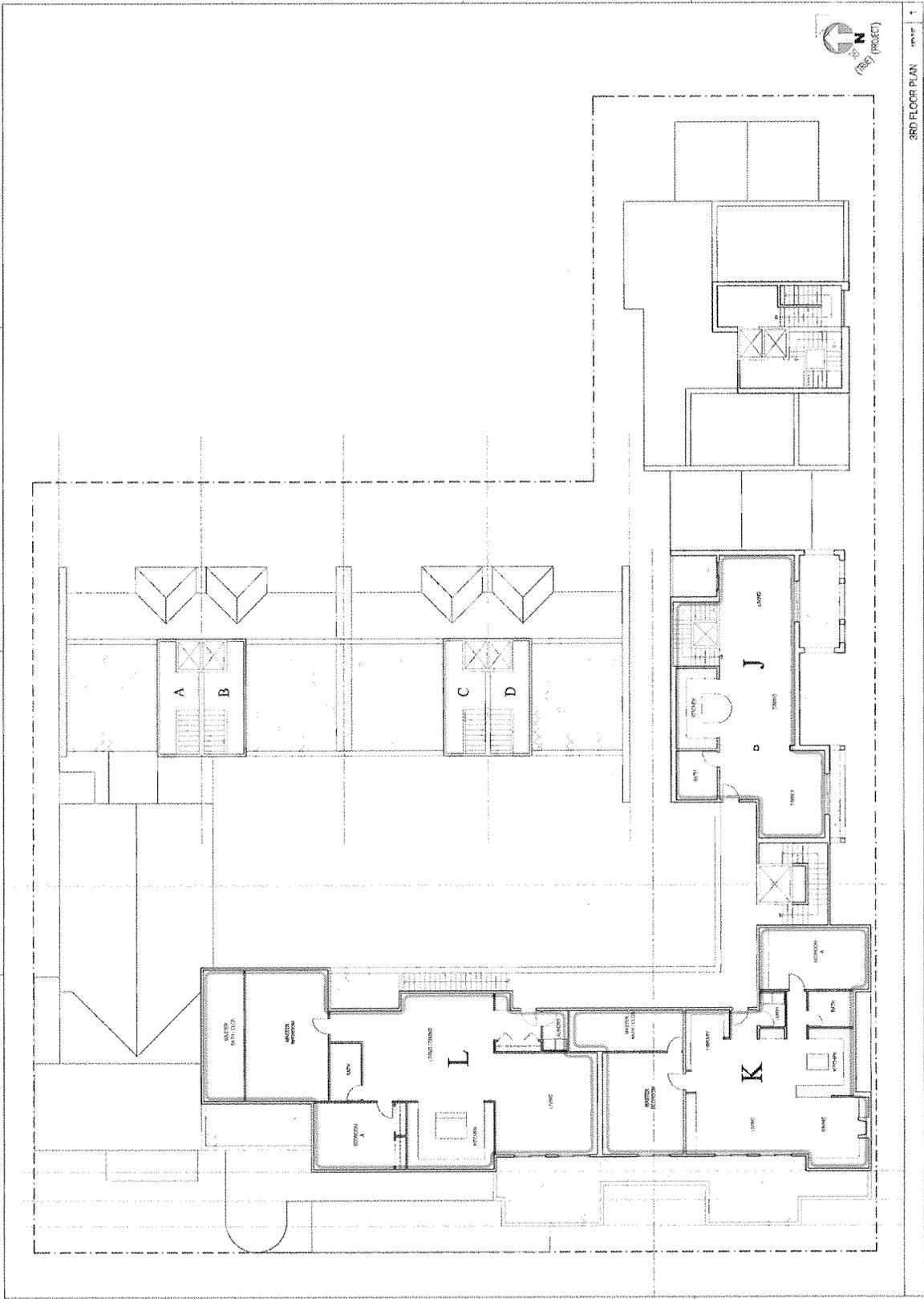


SOURCE: HOCHHAUSER BLATTER, MAY 2006



SOURCE: HOCHHAUSER BLATTER, MAY 2006

1722 State Street Environmental Noise Study
Second Floor Plan

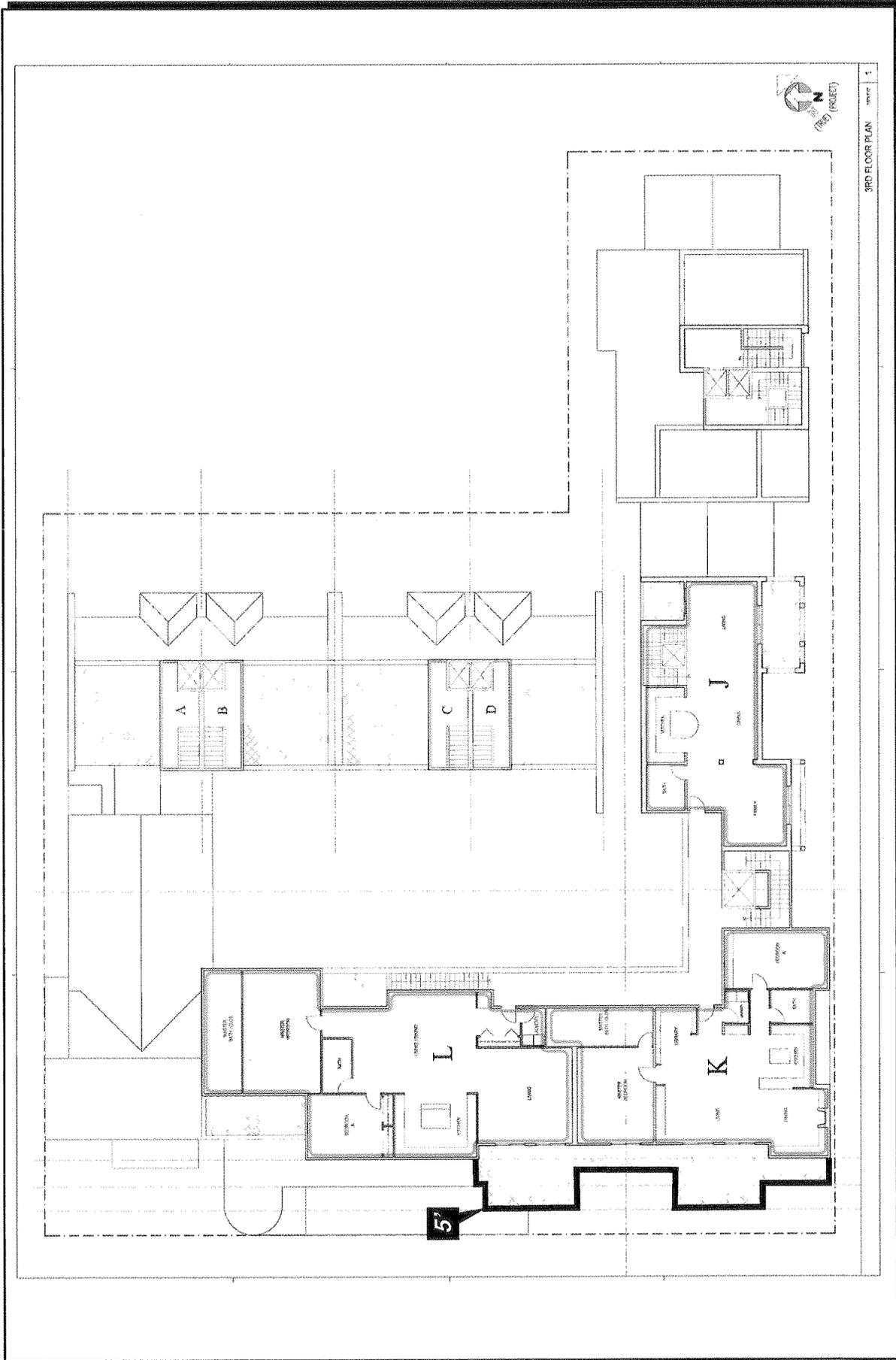


3RD FLOOR PLAN

SOURCE: HOCHHAUSER BLATTER, MAY 2006

FIGURE 5

1722 State Street Environmental Noise Study
Third Floor Plan



SOURCE: HOCHHAUSER BLATTER, MAY 2006

1722 State Street Environmental Noise Study
Noise Barrier Height & Location

FIGURE 7

ATTACHMENT 1 DEFINITIONS

<u>Term</u>	<u>Definition</u>
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
A-Weighted Sound Level, (dB[A])	The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Community Noise Equivalent Level, (CNEL)	CNEL is the A-weighted equivalent continuous sound exposure level for a 24-hour period with a ten dB adjustment added to sound levels occurring during nighttime hours (10 pm to 7 am) and a five dB adjustment added to the sound levels occurring during the evening hours (7 pm to 10 pm).
Decibel, (dB)	A unit for measuring sound pressure level, equal to 10 times the logarithm to the base 10 of the ratio of the measured sound pressure squared to a reference pressure, which is 20 micropascals.
Time-Average Sound Level, (TAV)	The sound level corresponding to a steady state sound level and containing the same total energy as a time varying signal over a given sample period. TAV is designed to average all of the loud and quiet sound levels occurring over a specific time period.
Sound Transmission Class, (STC)	A single number rating of the noise reduction of a building element.

ATTACHMENT 2

Noise Calculations

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**** Sound 2000 (Caltrans Version of Stamina2/Optima) ****

INPUT DATA FILE : P:\300.Environmental\Noise Studies\5142 - 1722 State Street\5142_fut.s32
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1722 STATE STREET - FUTURE (2030)

=====

TRAFFIC DATA

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1	911	35	14	35	5	35	SOUTHBOUND TRAVEL LANE
2	911	35	14	35	5	35	NORTHBOUND TRAVEL LANE
3	72	30	1	30	0	0	WESTBOUND TRAVEL LANE
4	72	30	1	30	0	0	EASTBOUNCE TRAVEL LANE

=====

LANE DATA

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	2	N	0.0	22.0	150.0		
	3	N	180.0	22.0	149.0		
	4	N	360.0	22.0	148.0		
2	1	N	-180.0	60.0	152.0	SOUTH END	STATE STREET NB
	2	N	0.0	60.0	150.0		
	3	N	180.0	60.0	149.0		
	4	N	360.0	60.0	148.0		
3	1	N	15.0	540.0	166.0	NORTH END	ISLAY STREET WB
	2	N	15.0	360.0	160.0		
	3	N	15.0	180.0	154.0		
	4	N	15.0	60.0	150.0		
4	1	N	45.0	540.0	166.0	SOUTH END	ISLAY STREET EB
	2	N	45.0	360.0	160.0		
	3	N	45.0	180.0	154.0		
	4	N	45.0	60.0	150.0		

=====

BARRIER DATA

Barrier No. 1 Barrier Description: COMMERCIAL COMPONENT - FLOORS 1 & 2
 Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	165.0	90.0	148.0	172.0	B1 P1 * 24
2	165.0	135.0	148.0	172.0	B1 P2 * 24
3	293.0	135.0	148.0	172.0	B1 P3 * 24
4	293.0	90.0	148.0	172.0	B1 P4 * 24
	165.0	90.0	148.0	172.0	B1 P5 * 24

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 Barrier No. 2 Barrier Description: COMMERCIAL COMPONENT - FLOOR 3
 Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	165.0	105.0	172.0	183.0	B2 P1 * 11
2	165.0	135.0	172.0	183.0	B2 P2 * 11
3	293.0	135.0	172.0	183.0	B2 P3 * 11
4	293.0	105.0	172.0	183.0	B2 P4 * 11
	165.0	105.0	172.0	183.0	B2 P5 * 11

 Barrier No. 3 Barrier Description: NORTH WING Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	165.0	105.0	148.0	172.0	B3 P1 * 24
2	127.0	105.0	148.0	172.0	B3 P2 * 24
3	127.0	120.0	148.0	172.0	B3 P3 * 24
4	135.0	120.0	148.0	172.0	B3 P4 * 24
5	135.0	218.0	148.0	172.0	B3 P5 * 24
6	263.0	218.0	148.0	172.0	B3 P6 * 24
7	263.0	180.0	148.0	172.0	B3 P7 * 24
8	165.0	180.0	148.0	172.0	B3 P8 * 24
	165.0	105.0	148.0	172.0	B3 P9 * 24

 Barrier No. 4 Barrier Description: STRAIGHT WING Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	263.0	135.0	148.0	172.0	B4 P1 * 24
	263.0	180.0	148.0	172.0	B4 P2 * 24

 Barrier No. 5 Barrier Description: VALERIO WING Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	293.0	222.0	148.0	172.0	B5 P1 * 24
2	293.0	207.0	148.0	172.0	B5 P2 * 24
3	287.0	207.0	148.0	172.0	B5 P3 * 24
4	287.0	192.0	148.0	172.0	B5 P4 * 24
5	293.0	192.0	148.0	172.0	B5 P5 * 24
	293.0	135.0	148.0	172.0	B5 P6 * 24

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Barrier No. 6 Barrier Description: MIDDLE SOUTH WING Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS			
1	263.0	218.0	148.0	172.0	B6	P1	*	24
2	263.0	307.0	148.0	172.0	B6	P2	*	24
3	293.0	307.0	148.0	172.0	B6	P3	*	24
4	293.0	292.0	148.0	172.0	B6	P4	*	24
5	287.0	292.0	148.0	172.0	B6	P5	*	24
6	287.0	284.0	148.0	172.0	B6	P6	*	24
7	293.0	284.0	148.0	172.0	B6	P7	*	24
8	293.0	260.0	148.0	172.0	B6	P8	*	24
9	287.0	260.0	148.0	172.0	B6	P9	*	24
10	287.0	222.0	148.0	172.0	B6	P10	*	24
	293.0	222.0	148.0	172.0	B6	P11	*	24

Barrier No. 7 Barrier Description: BUILDING 1 Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS			
1	67.0	75.0	150.0	168.0	B7	P1	*	18
2	120.0	75.0	150.0	168.0	B7	P2	*	18
3	120.0	127.0	150.0	168.0	B7	P3	*	18
4	67.0	127.0	150.0	168.0	B7	P4	*	18
	67.0	75.0	150.0	168.0	B7	P5	*	18

Barrier No. 8 Barrier Description: BUILDING 2 Type: Wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS			
1	75.0	135.0	150.0	170.0	B8	P1	*	20
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3	120.0	187.0	150.0	170.0	B8	P3	*	20
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14	278.0	97.0	177.0	RL

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2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

TITLE:
1722 STATE STREET - FUTURE (2030)

1

BARRIER DATA

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1	-	24.*						B1 P1	45.0	
2	-	24.*						B1 P2	128.0	
3	-	24.*						B1 P3	45.0	
4	-	24.*						B1 P4	128.0	
5	-	11.*						B2 P1	30.0	
6	-	11.*						B2 P2	128.0	
7	-	11.*						B2 P3	30.0	
8	-	11.*						B2 P4	128.0	
9	-	24.*						B3 P1	38.0	
10	-	24.*						B3 P2	15.0	
11	-	24.*						B3 P3	8.0	
12	-	24.*						B3 P4	98.0	
13	-	24.*						B3 P5	128.0	
14	-	24.*						B3 P6	38.0	
15	-	24.*						B3 P7	98.0	
16	-	24.*						B3 P8	75.0	
17	-	24.*						B4 P1	45.0	
18	-	24.*						B5 P1	15.0	
19	-	24.*						B5 P2	6.0	
20	-	24.*						B5 P3	15.0	
21	-	24.*						B5 P4	6.0	
22	-	24.*						B5 P5	57.0	
23	-	24.*						B6 P1	89.0	
24	-	24.*						B6 P2	30.0	
25	-	24.*						B6 P3	15.0	
26	-	24.*						B6 P4	6.0	
27	-	24.*						B6 P5	8.0	
28	-	24.*						B6 P6	6.0	
29	-	24.*						B6 P7	24.0	
30	-	24.*						B6 P8	6.0	
31	-	24.*						B6 P9	38.0	
32	-	24.*						B6 P10	6.0	
33	-	18.*						B7 P1	53.0	
34	-	18.*						B7 P2	52.0	
35	-	18.*						B7 P3	53.0	
36	-	18.*						B7 P4	52.0	
37	-	20.*						B8 P1	52.0	
38	-	20.*						B8 P2	45.0	
39	-	20.*						B8 P3	52.0	
40	-	20.*						B8 P4	45.0	

1

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 **** Sound 2000 (Caltrans Version of Stamina2/Optima) ****

INPUT DATA FILE : P:\300.Environmental\Noise Studies\5142 - 1722 State Street\5142_mit.s32
 DATE : 5/4/2006

1722 STATE STREET - MITIGATED

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TRAFFIC DATA

LANE NO.	AUTO		MEDIUM TRKS		HEAVY TRKS		DESCRIPTION
	VPH	MPH	VPH	MPH	VPH	MPH	
1	911	35	14	35	5	35	SOUTHBOUND TRAVEL LANE
2	911	35	14	35	5	35	NORTHBOUND TRAVEL LANE
3	72	30	1	30	0	0	WESTBOUND TRAVEL LANE
4	72	30	1	30	0	0	EASTBOUNCE TRAVEL LANE

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LANE DATA

LANE NO.	SEG. NO.	GRADE COR.	X	Y	Z	SEGMENT DESCRIPTION	LANE DESCRIPTION
1	1	N	-180.0	22.0	152.0	NORTH END	STATE STREET SB
	2	N	0.0	22.0	150.0		
	3	N	180.0	22.0	149.0		
	4	N	360.0	22.0	148.0		
2	1	N	-180.0	60.0	152.0	SOUTH END	STATE STREET NB
	2	N	0.0	60.0	150.0		
	3	N	180.0	60.0	149.0		
	4	N	360.0	60.0	148.0		
3	1	N	15.0	540.0	166.0	NORTH END	ISLAY STREET WB
	2	N	15.0	360.0	160.0		
	3	N	15.0	180.0	154.0		
	4	N	15.0	60.0	150.0		
4	1	N	45.0	540.0	166.0	SOUTH END	ISLAY STREET EB
	2	N	45.0	360.0	160.0		
	3	N	45.0	180.0	154.0		
	4	N	45.0	60.0	150.0		
						WEST END	

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BARRIER DATA

Barrier No. 1 Barrier Description: COMMERCIAL COMPONENT - FLOORS 1 & 2
 Type: wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (Z0)	TOP (Z)	BARRIER HEIGHTS AT ENDS		
1	165.0	90.0	148.0	172.0	B1 P1	*	24
2	165.0	135.0	148.0	172.0	B1 P2	*	24
3	293.0	135.0	148.0	172.0	B1 P3	*	24
4	293.0	90.0	148.0	172.0	B1 P4	*	24
	165.0	90.0	148.0	172.0	B1 P5	*	24

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 Barrier No. 2 Barrier Description: COMMERCIAL COMPONENT - FLOOR 3
 Type: wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	165.0	105.0	172.0	183.0	B2 P1 * 11
2	165.0	135.0	172.0	183.0	B2 P2 * 11
3	293.0	135.0	172.0	183.0	B2 P3 * 11
4	293.0	105.0	172.0	183.0	B2 P4 * 11
	165.0	105.0	172.0	183.0	B2 P5 * 11

 Barrier No. 3 Barrier Description: NORTH WING Type: wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	165.0	105.0	148.0	172.0	B3 P1 * 24
2	127.0	105.0	148.0	172.0	B3 P2 * 24
3	127.0	120.0	148.0	172.0	B3 P3 * 24
4	135.0	120.0	148.0	172.0	B3 P4 * 24
5	135.0	218.0	148.0	172.0	B3 P5 * 24
6	263.0	218.0	148.0	172.0	B3 P6 * 24
7	263.0	180.0	148.0	172.0	B3 P7 * 24
8	165.0	180.0	148.0	172.0	B3 P8 * 24
	165.0	105.0	148.0	172.0	B3 P9 * 24

 Barrier No. 4 Barrier Description: STRAIGHT WING Type: wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	263.0	135.0	148.0	172.0	B4 P1 * 24
	263.0	180.0	148.0	172.0	B4 P2 * 24

 Barrier No. 5 Barrier Description: VALERIO WING Type: wall Barrier

Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS
1	293.0	222.0	148.0	172.0	B5 P1 * 24
2	293.0	207.0	148.0	172.0	B5 P2 * 24
3	287.0	207.0	148.0	172.0	B5 P3 * 24
4	287.0	192.0	148.0	172.0	B5 P4 * 24
5	293.0	192.0	148.0	172.0	B5 P5 * 24
	293.0	135.0	148.0	172.0	B5 P6 * 24

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 Barrier No. 6 Barrier Description: MIDDLE SOUTH WING Type: wall Barrier
 Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS		
1	263.0	218.0	148.0	172.0	B6	P1	* 24
2	263.0	307.0	148.0	172.0	B6	P2	* 24
3	293.0	307.0	148.0	172.0	B6	P3	* 24
4	293.0	292.0	148.0	172.0	B6	P4	* 24
5	287.0	292.0	148.0	172.0	B6	P5	* 24
6	287.0	284.0	148.0	172.0	B6	P6	* 24
7	293.0	284.0	148.0	172.0	B6	P7	* 24
8	293.0	260.0	148.0	172.0	B6	P8	* 24
9	287.0	260.0	148.0	172.0	B6	P9	* 24
10	287.0	222.0	148.0	172.0	B6	P10	* 24
	293.0	222.0	148.0	172.0	B6	P11	* 24

 Barrier No. 7 Barrier Description: BUILDING 1 Type: wall Barrier
 Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS		
1	67.0	75.0	150.0	168.0	B7	P1	* 18
2	120.0	75.0	150.0	168.0	B7	P2	* 18
3	120.0	127.0	150.0	168.0	B7	P3	* 18
4	67.0	127.0	150.0	168.0	B7	P4	* 18
	67.0	75.0	150.0	168.0	B7	P5	* 18

 Barrier No. 8 Barrier Description: BUILDING 2 Type: wall Barrier
 Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS		
1	75.0	135.0	150.0	170.0	B8	P1	* 20
2	75.0	187.0	150.0	170.0	B8	P2	* 20
3	120.0	187.0	150.0	170.0	B8	P3	* 20
4	120.0	135.0	150.0	170.0	B8	P4	* 20
	75.0	135.0	150.0	170.0	B8	P5	* 20

 Barrier No. 9 Barrier Description: SOUNDWALL - UNITS J & K Type: wall Barrier
 Height Increment (DELZ) = 0 No. Height Changes (P)= 0

SEG	X	Y	GROUND (ZO)	TOP (Z)	BARRIER HEIGHTS AT ENDS		
1	218.0	105.0	172.0	177.0	B9	P1	* 5
2	218.0	90.0	172.0	177.0	B9	P2	* 5

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3	293.0	90.0	172.0	177.0	B9 P3	*	5	
	293.0	105.0	172.0	177.0	B9 P4	*	5	

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RECEIVER DATA

REC NO.	X	Y	Z	ID
1	62.0	390.0	167.0	M1
2	150.0	70.0	155.0	M2
3	150.0	225.0	161.0	RA
4	180.0	225.0	161.0	RB
5	210.0	225.0	161.0	RC
6	240.0	225.0	161.0	RD
7	290.0	290.0	153.0	RE
8	290.0	248.0	153.0	RF
9	290.0	202.0	153.0	RG
10	131.0	135.0	166.0	RH
11	131.0	150.0	166.0	RI
12	290.0	240.0	175.0	RJ
13	233.0	97.0	177.0	RK
14	278.0	97.0	177.0	RL
15	180.0	85.0	153.0	STATE LEVEL 3 FACADE

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DROP-OFF RATES

LANE No.	RECEIVER NO.													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
15														
1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

=====

TITLE:
 1722 STATE STREET - MITIGATED

1

BARRIER DATA

BAR ELE	BARRIER HEIGHTS							BAR ID	LENGTH	TYPE
	0	1	2	3	4	5	6			
1	-	24.*						B1 P1	45.0	
2	-	24.*						B1 P2	128.0	
3	-	24.*						B1 P3	45.0	
4	-	24.*						B1 P4	128.0	
5	-	11.*						B2 P1	30.0	
6	-	11.*						B2 P2	128.0	
7	-	11.*						B2 P3	30.0	
8	-	11.*						B2 P4	128.0	
9	-	24.*						B3 P1	38.0	
10	-	24.*						B3 P2	15.0	
11	-	24.*						B3 P3	8.0	
12	-	24.*						B3 P4	98.0	
13	-	24.*						B3 P5	128.0	
14	-	24.*						B3 P6	38.0	
15	-	24.*						B3 P7	98.0	
16	-	24.*						B3 P8	75.0	
17	-	24.*						B4 P1	45.0	
18	-	24.*						B5 P1	15.0	
19	-	24.*						B5 P2	6.0	
20	-	24.*						B5 P3	15.0	
21	-	24.*						B5 P4	6.0	
22	-	24.*						B5 P5	57.0	
23	-	24.*						B6 P1	89.0	
24	-	24.*						B6 P2	30.0	
25	-	24.*						B6 P3	15.0	
26	-	24.*						B6 P4	6.0	
27	-	24.*						B6 P5	8.0	
28	-	24.*						B6 P6	6.0	
29	-	24.*						B6 P7	24.0	
30	-	24.*						B6 P8	6.0	
31	-	24.*						B6 P9	38.0	
32	-	24.*						B6 P10	6.0	
33	-	18.*						B7 P1	53.0	
34	-	18.*						B7 P2	52.0	
35	-	18.*						B7 P3	53.0	
36	-	18.*						B7 P4	52.0	
37	-	20.*						B8 P1	52.0	
38	-	20.*						B8 P2	45.0	
39	-	20.*						B8 P3	52.0	
40	-	20.*						B8 P4	45.0	
41	-	5.*						B9 P1	15.0	
42	-	5.*						B9 P2	75.0	

					0	1	2	3	4	5	6	7
1	REC	REC ID	DNL	PEOPLE	LEQ(CAL)							
1	M1		67.	500.	58.5							
2	M2		67.	500.	72.4							
3	RA		67.	500.	49.0							
4	RB		67.	500.	47.3							
5	RC		67.	500.	46.4							
6	RD		67.	500.	45.7							
7	RE		67.	500.	51.5							
8	RF		67.	500.	56.0							
9	RG		67.	500.	56.8							
10	RH		67.	500.	49.7							
11	RI		67.	500.	48.1							
12	RJ		67.	500.	56.3							
13	RK		67.	500.	56.6							
14	RL		67.	500.	56.4							
15	STATE LE		67.	500.	69.3							
BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION												
1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1
CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION												
24.	24.	24.	24.	11.	11.	11.	11.	11.	24.	24.	24.	24.
24.	24.	24.	24.	24.	24.	24.	24.	24.	24.	24.	24.	24.
24.	24.	24.	24.	24.	24.	24.	24.	18.	18.	18.	18.	20.
24.	24.	24.	24.	24.	24.	24.	24.	20.	20.	20.	20.	5.
24.	24.	24.	24.	24.	24.	24.	24.	5.	5.	5.		