



## SOILS REPORT APPROVAL LETTER

June 25, 2020

LOG # 113394  
SOILS/GEOLOGY FILE - 2

Yorkwood, LLC  
11755 Wilshire Blvd.  
Los Angeles, CA 90025

TRACT: HOLLYWOOD BONNIE BRIER TRACT(M P 5-90)  
LOT(S): 7, 9  
LOCATION: 6817-6831 1/2 W. Hawthorn Ave.

<u>CURRENT REFERENCE</u> <u>REPORT/LETTER(S)</u>	<u>REPORT</u> <u>No.</u>	<u>DATE OF</u> <u>DOCUMENT</u>	<u>PREPARED BY</u>
Soils Report	2324-94	04/07/2020	Feffer Geological Consulting
Oversize Docs	"	"	
Laboratory Test Report	SL19.3116	07/22/2019	Soil Labworks LLC

The Grading Division of the Department of Building and Safety has reviewed the referenced report that provide recommendations for the proposed 8 story mixed use building over 2 levels of basements. The earth materials at the subsurface exploration locations consist of up to 4 feet of uncertified fill underlain by native soils. The consultants recommend to support the proposed structure(s) on mat-type and/or drilled-pile foundations bearing on native undisturbed soils.

As of January 1, 2020, the City of Los Angeles has adopted the new 2020 Los Angeles Building Code (LABC). The 2020 LABC requirements will apply to all projects where the permit application submittal date is after January 1, 2020.

The referenced report is acceptable, provided the following conditions are complied with during site development:

(Note: Numbers in parenthesis ( ) refer to applicable sections of the 2020 City of LA Building Code. P/BC numbers refer the applicable Information Bulletin. Information Bulletins can be accessed on the internet at LADBS.ORG.)

1. The soils engineer shall review and approve the detailed plans prior to issuance of any permit. This approval shall be by signature on the plans that clearly indicates the soils engineer has reviewed the plans prepared by the design engineer; and, that the plans included the recommendations contained in their reports (7006.1).

2. All recommendations of the report that are in addition to or more restrictive than the conditions contained herein shall be incorporated into the plans.
3. A copy of the subject and appropriate referenced reports and this approval letter shall be attached to the District Office and field set of plans (7006.1). Submit one copy of the above reports to the Building Department Plan Checker prior to issuance of the permit.
4. A grading permit shall be obtained for all structural fill and retaining wall backfill (106.1.2).
5. All man-made fill shall be compacted to a minimum 90 percent of the maximum dry density of the fill material per the latest version of ASTM D 1557. Where cohesionless soil having less than 15 percent finer than 0.005 millimeters is used for fill, it shall be compacted to a minimum of 95 percent relative compaction based on maximum dry density. Placement of gravel in lieu of compacted fill is only allowed if complying with LAMC Section 91.7011.3.
6. Existing uncertified fill shall not be used for support of footings, concrete slabs or new fill (1809.2, 7011.3).
7. Drainage in conformance with the provisions of the Code shall be maintained during and subsequent to construction (7013.12).
8. The applicant is advised that the approval of this report does not waive the requirements for excavations contained in the General Safety Orders of the California Department of Industrial Relations (3301.1).
9. Temporary excavations that remove lateral support to the public way, adjacent property, or adjacent structures shall be supported by shoring. Note: Lateral support shall be considered to be removed when the excavation extends below a plane projected downward at an angle of 45 degrees from the bottom of a footing of an existing structure, from the edge of the public way or an adjacent property. (3307.3.1)
10. Where any excavation, not addressed in the approved reports, would remove lateral support (as defined in 3307.3.1) from a public way, adjacent property or structures, a supplemental report shall be submitted to the Grading Division of the Department containing recommendations for shoring, underpinning, and sequence of construction. Shoring recommendations shall include the maximum allowable lateral deflection of shoring system to prevent damage to adjacent structures, properties and/or public ways. Report shall include a plot plan and cross-section(s) showing the construction type, number of stories, and location of adjacent structures, and analysis incorporating all surcharge loads that demonstrate an acceptable factor of safety against failure. (7006.2 & 3307.3.2)
11. Prior to the issuance of any permit that authorizes an excavation where the excavation is to be of a greater depth than are the walls or foundation of any adjoining building or structure and located closer to the property line than the depth of the excavation, the owner of the subject site shall provide the Department with evidence that the adjacent property owner has been given a 30-day written notice of such intent to make an excavation (3307.1).
12. The soils engineer shall review and approve the shoring and/or underpinning plans prior to issuance of the permit (3307.3.2).

13. Prior to the issuance of the permits, the soils engineer and/or the structural designer shall evaluate the surcharge loads used in the report calculations for the design of the retaining walls and shoring. If the surcharge loads used in the calculations do not conform to the actual surcharge loads, the soil engineer shall submit a supplementary report with revised recommendations to the Department for approval.
14. Unsurcharged temporary excavations over 5 feet exposing soil shall be trimmed back at a gradient not exceeding 1:1, as recommended.
15. Shoring shall be designed for the lateral earth pressures specified on page 21 of the report; all surcharge loads shall be included into the design.
16. Shoring shall be designed for a maximum lateral deflection of ½ inch where a structure is within a 1:1 plane projected up from the base of the excavation, and for a maximum lateral deflection of 1 inch provided there are no structures within a 1:1 plane projected up from the base of the excavation, as recommended.
17. A shoring monitoring program shall be implemented to the satisfaction of the soils engineer.
18. All foundations shall derive entire support from native undisturbed soils, as recommended.
19. Pile caisson and/or isolated foundation ties are required by LAMC Sections 91.1809.13 and/or 91.1810.3.13. Exceptions and modification to this requirement are provided in Information Bulletin P/BC 2020-030.
20. When water is present in drilled pile holes, the concrete shall be tremied from the bottom up to ensure minimum segregation of the mix and negligible turbulence of the water (1808.8.3).
21. Existing uncertified fill shall not be used for lateral support of deep foundations (1810.2.1).
22. The seismic design shall be based on a Site Class D, as recommended. All other seismic design parameters shall be reviewed by LADBS building plan check.
23. Basement walls and other walls in which horizontal movement is restricted at the top shall be designed for at-rest pressure as specified on page 20 of the report (1610.1). All surcharge loads shall be included into the design.
24. All roof, pad and deck drainage shall be conducted to the street in an acceptable manner in non-erosive devices or other approved location in a manner that is acceptable to the LADBS and the Department of Public Works (7013.10).
25. All concentrated drainage shall be conducted in an approved device and disposed of in a manner approved by the LADBS (7013.10).
26. The soils engineer shall inspect all excavations to determine that conditions anticipated in the report have been encountered and to provide recommendations for the correction of hazards found during grading (7008, 1705.6 & 1705.8).
27. All friction pile or caisson drilling and excavations shall be performed under the inspection and approval of the geologist and soils engineer. The geologist shall indicate the distance

that friction piles or caissons penetrate into competent material in a written field memorandum. (1803.5.5, 1705.1.2)

28. Prior to pouring concrete, a representative of the consulting soils engineer shall inspect and approve the footing excavations. The representative shall post a notice on the job site for the LADBS Inspector and the Contractor stating that the work inspected meets the conditions of the report. No concrete shall be poured until the LADBS Inspector has also inspected and approved the footing excavations. A written certification to this effect shall be filed with the Grading Division of the Department upon completion of the work. (108.9 & 7008.2)
29. Prior to excavation an initial inspection shall be called with the LADBS Inspector. During the initial inspection, the sequence of construction; shoring; pile installation; protection fences; and, dust and traffic control will be scheduled (108.9.1).
30. Installation of shoring, underpinning, slot cutting and/or pile excavations shall be performed under the inspection and approval of the soils engineer and deputy grading inspector (1705.6, 1705.8).
31. The installation and testing of tie-back anchors shall comply with the recommendations included in the report or the standard sheets titled "Requirement for Tie-back Earth Anchors", whichever is more restrictive. [Research Report #23835]
32. Prior to the placing of compacted fill, a representative of the soils engineer shall inspect and approve the bottom excavations. The representative shall post a notice on the job site for the LADBS Inspector and the Contractor stating that the soil inspected meets the conditions of the report. No fill shall be placed until the LADBS Inspector has also inspected and approved the bottom excavations. A written certification to this effect shall be included in the final compaction report filed with the Grading Division of the Department. All fill shall be placed under the inspection and approval of the soils engineer. A compaction report together with the approved soil report and Department approval letter shall be submitted to the Grading Division of the Department upon completion of the compaction. In addition, an Engineer's Certificate of Compliance with the legal description as indicated in the grading permit and the permit number shall be included (7011.3).

  
ALAN DANG  
Structural Engineering Associate II

AD/ad  
Log No. 113394  
213-482-0480

cc: Feffer Geological Consulting, Project Consultant  
LA District Office



# FEFFER

GEOLOGICAL CONSULTING

April 7, 2020

File No. 2324-94

Yorkwood, LLC  
Michael Nazzal  
11755 Wilshire Blvd. Suite #1840  
Los Angeles, CA 90025

Subject: **PRELIMINARY GEOTECHNICAL INVESTIGATION**  
Proposed Eight Story Structure Over Two Subterranean Levels  
6817-6831-1/2 W. Hawthorn Avenue, Los Angeles, CA 90028  
TRACT: HOLLYWOOD BONNIE BRIER LOT (S): 7, 9

Dear Mr. Nazzal,

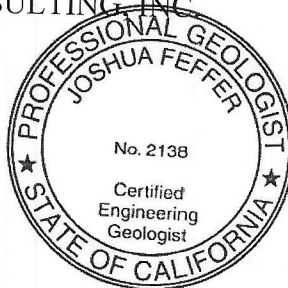
Feffer Geological Consulting is pleased to submit the following preliminary Geotechnical Investigation Report for the proposed development located in the City of Los Angeles, California. This report is prepared to supplement the environmental clearance for the proposed development pursuant to the California Environmental Quality Act (CEQA).

We appreciate the opportunity to be of service. Should you have any questions regarding the information contained in this report, please do not hesitate to contact us.

Sincerely,

FEFFER GEOLOGICAL CONSULTING, INC.

  
Joshua R. Feffer  
Principal Engineering Geologist  
C.E.G. 2138



  
Dan Daneshfar  
Principal Engineer  
P.E. 68377



Distribution: Addressee— (1)

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## 1.1 PURPOSE

Based on our investigation, it is our opinion that the proposed construction is feasible from a geotechnical standpoint. When final plans for the proposed construction become available, they should be reviewed by the project soils engineer and engineering geologist of record. A separate geotechnical report will be prepared to provide design level values for development once plans have been finalized.

## 1.2 SCOPE OF SERVICES

- Research and review of available pertinent geotechnical literature and previous reports for the project site;
- Field Exploration & Testing
  - Subsurface exploration consisting of the drilling of four borings (B1, B2, B3, B4);
  - Installation of two groundwater monitoring wells (B2 and B4);
  - Sampling and logging of the subsurface soils;
  - Laboratory testing of selected soil samples collected from the subsurface exploration to determine the engineering properties of the underlying earth materials;
  - Engineering and geologic analysis of the field and laboratory data;
- Compliance with *CEQA Guidelines Appendix G* and an assessment of:
  - Rupture of a known earthquake
  - Strong seismic ground shaking
  - Seismic-related ground failure
  - Landslides
  - Soil erosion or loss of topsoil
  - Unstable geologic unit or soils
  - Expansive soils
  - Support of septic tanks or alternative waste systems
- Preparation of this report presenting our findings, conclusions, and preliminary recommendations for the proposed construction.

### **1.3 SITE DESCRIPTION**

The project site is located on the north side of Hawthorn Avenue, west of Highland Avenue, in the Hollywood area of the City of Los Angeles, CA. The site is currently developed with asphalt covered parking lots. An alley bounds the north side of the lots.

The site is relatively flat and has less than about 4 feet of overall elevation change that gently descends to the southeast with an approximate gradient of 25:1 (horizontal to vertical). Figure 1 is an aerial photo of the property and surrounding area with a topographic overlay. Figure 2 is an oblique aerial photograph of the site and vicinity.

### **1.4 PROPOSED CONSTRUCTION**

It is our understanding that the proposed project will consist of the demolition of an existing surface parking lot and construction of a new eight-story, 86-ft. mixed-use building, with 140 dwelling units, 1,207 sf. of restaurant space, common and private open space, automobile parking spaces located at grade and in two subterranean levels, and bicycle parking spaces.

The extent of development is illustrated on conceptual development plans included in Appendix C.

Final plans including structure heights, specific building footprints, and subterranean depths are still within the development phase and will be updated upon final project design. However, preliminary recommendations are based on the proposed maximum tower heights, subterranean depths, and loading factors. The findings and recommendations within this report are adequate to support the analysis of the project's potential geotechnical impacts.

### **1.5 DOCUMENT REVIEW**

City files were researched and previous work on the project site and surrounding area was evaluated for use by this firm. The following reports were used to supplement the findings of this investigation:

**6800-6822 W. Hollywood Boulevard, 1669-1675 N. Highland Avenue and 6817-6831 W. Hawthorn Avenue**

*Land Use Due Diligence Report, Proposed Development Project, 6800-6822 W. Hollywood Blvd, 1669-1675 N. Highland Ave and 6817-6831 W. Hawthorn Ave, Los Angeles, CA, 90028, Dated January 19, 2019, By Alchemy Planning*

**6800 Hollywood Boulevard**

*Soils Engineering Investigation, Proposed Commercial Development, Lots 1-3, 7-9 & 77, Hollywood Bonnie Brier Tract, per map Book 5, Page 90, SWC Hollywood Boulevard & Highland Avenue, Los Angeles California 6800 Hollywood Boulevard, Los Angeles, CA, 90028, Dated December 16, 1985, By SWN SoilTech Consultants, Inc.*

*City of Los Angeles Approval Letter, Log #8267, Dated, February 8, 1986*

SWN SoilTech Consultants, Inc conducted a subsurface investigation and associated report for proposed commercial buildings on each of the parcels with subterranean levels. The subsurface investigation consisted of drilling five borings to a total depth of 30' bgs and encountered up to five feet of fill overlying alluvium; no ground water was observed in the borings. Recommendations were provided for standard foundations embedded in the underlying natural soil. The report was approved by the City of Los Angeles as referenced above.

### **6776 Hollywood Boulevard**

*Final Compaction Report, McDonalds Restaurant Tract: GF Stevenson Tract 2, 6776 Hollywood Blvd, Los Angeles, CA, 90028, Dated April 5, 1987, By Giles Engineering Associates, Inc.-Referenced but not found in research*

*City of Los Angeles Correction Letter, Log #\*, Dated, April 22, 1987-Referenced but not found in research*

*Final Compaction Report-Addendum, McDonalds Restaurant Tract: GF Stevenson Tract 2, 6776 Hollywood Blvd, Los Angeles, CA, 90028, Dated May 4, 1987, By Giles Engineering Associates, Inc.*

### **6834 Hollywood Boulevard**

*Appendix II Seismic Hazard Evaluation Response Spectra, El Capitan Office Building, 6834 Hollywood Boulevard, Hollywood, CA, Dated August 20, 1995, By Ryland Associates*

*Geotechnical Engineering Exploration, Proposed Seismic Upgrade of El Capitan Building, Portion of Lots 10 & 12, Hollywood Bonnie Brier Tract, 6834 Hollywood Boulevard, Hollywood, CA, 90028, Dated September 20, 1995, By The J. Byer Group, Inc.*

*City of Los Angeles Soils and Geology Report Approval Letter, Log #15996, Dated September 26, 1995*

*Statement of Responsibility, Proposed Seismic Upgrade of El Capitan Building, Portion of Lots 10 & 12, Hollywood Bonnie Brier Tract, 6834 Hollywood Boulevard, Hollywood, CA, Dated September 27, 1995, By The J. Byer Group, Inc.*

*Phase II Geotechnical Engineering Exploration, Proposed Seismic Upgrade of El Capitan Theatre, Portion of Lots 10 & 12, Hollywood Bonnie Brier Tract, 6834 Hollywood Boulevard, Hollywood, CA, Dated November 1, 1995, By The J. Byer Group, Inc.*

*City of Los Angeles Approval Letter, Log #16423, Dated December 2, 1995*

*City of Los Angeles Correction Letter, Log #18104, Dated May 6, 1996*

*Additional Recommendations Soilcrete Underpinning Piles, Proposed Underpinning of a Portion of The El Capitan Building, Portion of Lots 10 & 12, Hollywood Bonnie Brier Tract, 6834 Hollywood Boulevard, Hollywood, CA, Dated April 30, 1996, By The J. Byer Group, Inc.*



*Additional Comments and Calculations Soilcrete Underpinning Piles, Proposed Underpinning of a Portion of The El Capitan Building, Portion of Lots 10 & 12, Hollywood Bonnie Brier Tract, 6834 Hollywood Boulevard, Hollywood, CA, Dated June 27, 1996, By The J. Byer Group, Inc.*

*City of Los Angeles Conditional Approval Letter, Log #19009, Dated August 15, 1996*

The J. Byer Group, Inc. conducted a subsurface investigation and associated report for a Proposed Seismic Upgrade of the El Capitan Building-Theatre. The subsurface investigation consisted of drilling one boring to a total depth of 100' bgs and encountered up to five feet of fill overlying younger alluvium to a depth of about 20 feet and over older alluvium below; ground water was observed at 77' bgs. The Byer Group stated that the younger alluvium was not suitable for support of new foundations and that foundations into the older alluvium were required. The reports were approved by the City of Los Angeles as referenced above.

### **1639 N. Highland Avenue**

*Summary of Geotechnical Testing, Proposed Parking Lot, 1639 N. Highland Avenue, Los Angeles, CA, 90028, Dated January 17, 2002, By The J. Byer Group, Inc.*

*City of Los Angeles Soils Report Approval List, Log #35764, Dated January 29, 2002*

*Compaction Report, Proposed Parking Lot, Lot 4, and Portions of Lots 5, 6 and 76, Hollywood Bonnie Brier Tract, 1639 N. Highland Avenue, Hollywood, CA, Dated February 22, 2002, By J. Byer Group, Inc.*

*City of Los Angeles Compaction Report Approval, Log# 36053, Dated February 28, 2002*

The J. Byer Group, Inc. conducted a subsurface investigation and associated report for a proposed parking lot. The subsurface investigation consisted of excavating one hand auger boring to a depth of 5' bgs. It was proposed to place up to 2' of controlled fill for the parking lot. During grading operations for the parking lot two basements were discovered in the northern portion of the site. In the area of the backfilled basements up to 11' of controlled fill was placed, in the parking lot where the basements were not encountered up to 2' of controlled fill was placed. The reports were approved by the City of Los Angeles as referenced above.

### **6837 W. Hawthorn Avenue**

*Geotechnical Engineering Investigation, Proposed Parking Structure, 6837 W. Hawthorn Avenue, Los Angeles, CA, 90028, Dated June 14, 2012, By Geotechnologies, Inc.*

*City of Los Angeles Soils Report Approval Letter, Log #77631, Dated July 24, 2012*

*Stormwater Management, Proposed Parking Structure, 6837 W. Hawthorn Avenue, Los Angeles, CA 90028, Dated December 20, 2012, By Geotechnologies, Inc.*

*City of Los Angeles Soils Report Approval Letter, Log #79290, Dated February 13, 2013*

*Shoring Parameters and Temporary Excavations Report, Proposed Parking Structure, 6837 W. Hawthorn Avenue, Los Angeles, CA 90028, Dated January 25, 2013, By Geotechnologies, Inc.*

*City of Los Angeles Soils Report Approval Letter, Log #79583, Dated March 21, 2013*

Geotechnologies, Inc. conducted a subsurface investigation and associated report for a proposed Parking Structure. The subsurface investigation consisted of drilling three borings to depths of 30' to 50' bgs and encountered two to five feet of fill overlying alluvium; ground water was not encountered. The reports stated that the alluvium was dense and stable and new foundations should be placed on a new compacted fill cap that extended a minimum of five feet below grade. The reports were approved by the City of Los Angeles as referenced above.

## **2.0 INVESTIGATION**

### **2.1 GENERAL**

Our field investigation was performed from June 25 through June 26, 2019 and consisted of a review of site conditions and subsurface exploration involving the drilling of four geotechnical borings, soil sampling, and the installation of two groundwater monitoring wells. The investigation also includes laboratory testing of selected soil samples. A brief summary of these various tasks is provided below.

### **2.2 FIELD EXPLORATION**

The subsurface investigation performed at the site consisted of drilling four borings by use of a truck-mounted hollow-stem auger drill rig to a maximum depth of 86.5 feet below the existing ground surface.

The purpose of the exploratory borings was to determine the existing subsurface conditions and to collect subsurface samples in the areas of the proposed construction and throughout the site. Earth materials encountered in the borings consisted of artificial fill and alluvium.

The earth materials encountered in the borings consisted of up to four feet of fill over alluvium. Areas of deeper fill up to 11' bgs are present at the site but was not encountered in the recent exploration. The exploration was done in conjunction with the adjacent sites located at 6800-6822 W Hollywood Boulevard and 1669-1675 N. Highland Avenue.

A review of geological maps indicates that the material underlying the subject site is comprised of Alluvium (Qae) of Quaternary age (Figure 3).

The borings were logged by our field geologist using both visual and tactile means. Both bulk and relatively undisturbed soil samples were obtained for testing. The approximate locations of the borings are shown on the attached site map (Appendix C). Detailed boring logs are presented in Appendix A.

### **2.3 LABORATORY TESTING**

Laboratory testing was performed on representative samples obtained during our field exploration. Samples were tested for the purpose of estimating material properties for use in subsequent engineering evaluations. Testing included in-place moisture and density, hydro-response-swell/collapse, consolidation, maximum density, and shear strength testing. A summary of the laboratory test results is included in Appendix B. The undersigned geologist and engineer have reviewed the data, concur, and accept responsibility for the data therein.

### **3.0 SITE GEOLOGY, SEISMICITY, POTENTIAL HAZARDS**

#### **3.1 SITE GEOLOGY**

Regionally, the project site is located just within the northern portion of the Los Angeles Basin near the boundary between the Transverse and the Peninsular Ranges Geomorphic Provinces. This area of Hollywood is bound by the Santa Monica Mountains to the north, the Elysian Hills to the east, Beverly Hills to the west, and the Central plain and Baldwin Hills to the south.

Locally, the site is underlain by dissected and eroded Holocene to Pleistocene age alluvium and terrestrial fan deposits overlying Miocene age sedimentary bedrock of marine origins (Hoots and Kew, 1931, Dibblee and Ehrenspeck, 1991, Campbell et. al., 2014).

Regional Geologic Maps<sup>1</sup>, and the subsurface exploration indicated that the subject site is underlain by Quaternary Age Alluvium (Qae) overlain by a veneer fill.

Descriptions of the materials encountered in the exploratory borings are described below.

##### **3.1.1 Artificial Fill (Af)**

Fill is material that has been placed or disturbed by construction activity. The fill consists of medium to coarse grained silty sand with gravel. The color varies from brown, and red brown to dark brown and is moist and stiff to dense. The fill encountered varies in thickness between three to four feet below the ground surface but is locally as deep as 11 feet where previous basements were backfilled.

##### **3.1.2 Alluvium (Qae)**

The alluvium is a Holocene to youngest Pleistocene alluvial unit which consists of fine to coarse grained silty sand with clay and fine to coarse gravel, and varies in color from brown to yellow brown, red brown, and dark brown. The alluvium is typically moist and moderately dense to loose. The alluvium is generally weakly stratified, moderately-well to poorly sorted and oxidized with no significant structural planes. The alluvium is typically found to contain multiple fining upward sequences from coarse grained basal deposits.

##### **3.1.3 Groundwater**

Water was not encountered to a depth of 86.5' below the existing ground surface. Historically, highest groundwater in this area of Los Angeles is shown as being between 80 and 100 feet below the ground surface (Plate 1.2, *Historically Highest Groundwater Contours and Borehole Log Data Locations, Hollywood 7½ Minute Quadrangle in Seismic Hazard Zone Report for the Hollywood Quadrangle*, SHZR-026).

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<sup>1</sup> Dibblee, T.W., 1991, Geologic Map of the Hollywood and Burbank (south ½) quadrangles, Los Angeles County, California, Dibblee Foundation Map, DF #30, scale 1:24,000

A groundwater monitoring well was installed in Borings 2 and 4 for the purpose of continued observation of groundwater levels. Groundwater has not been observed to a depth of 86.5 feet at the subject site.

## **3.2 SEISMICITY**

A risk common to all areas of Southern California that should not be overlooked is the potential for damage resulting from seismic events (earthquakes). The project site is located within a seismically active area, as is all of Southern California.

### **3.2.1 Seismic Hazards**

The State of California enacted the Alquist-Priolo Special Studies Act of 1972 immediately following the destructive 1971 San Fernando earthquake (Department of Conservation, 2019a). The Alquist-Priolo Act is intended to prohibit the location of most structures for human occupancy across a known active fault that intersects the ground surface, thereby mitigating fault-rupture hazard. The Alquist-Priolo Act requires that the State Geologist delineate "Earthquake Fault Zones" along active surficial faults. Development within these Earthquake Fault Zones must include geologic investigation demonstrating the absence of Holocene-active faults.

The California State Legislature passed the Seismic Hazards Mapping Act of 1990 and was signed into law and became effective in 1991 (Department of Conservation, 2019b). The Seismic Hazards Mapping Act was prompted following the 1989 Loma Prieta earthquake, and is intended to reduce the threat to protect public safety and minimize the loss of life and property from the effects of strong ground shaking, liquefaction, landslides, and other earthquake-related hazards (Department of Conservation, 2019b).

The Seismic Hazards Mapping Act and Alquist Priolo Act require the State Geologist to delineate "Earthquake Zones of Required Investigation (EZRI)." The EZRI maps are released by the California Geological Survey (CGS). Zone delineations are based on a combination of factors, including but not limited to: surface distribution of soil deposits and bedrock, slope steepness, depth to groundwater, bedding orientation with respect to slopes, and distance to local earthquake faults (seismic source). Following a rigorous review process the EZRI Map delineates areas that have been subject to or are potentially subject to earthquake induced fault surface rupture, liquefaction, and landsliding. A discussion of the potential for these earthquake hazards is presented below.

### **3.2.2 Earthquake Faults**

The site is located within a tectonically active area, as is all Southern California. The closest known faults capable of producing strong earthquakes and ground shaking are the Hollywood, Santa Monica, and Newport Inglewood Faults. The site is not mapped within an area identified as being within an Alquist Priolo Fault Zone and no Holocene-active faults cross the project site (Parrish, 2014; ZIMAS). While the potential for surface rupture is low to non-existent, the site could be impacted by strong ground shaking should an earthquake occur along a nearby fault. A discussion of each fault is provided below.

### **Hollywood Fault**

The Hollywood Fault is a left-lateral reverse fault which is a part of the Transverse Ranges Southern Boundary Fault System (Dolan et al. 1997) that extends approximately 65 miles from Anacapa Island to the eastern end of the Santa Monica Mountains. Although most geomorphic features throughout this area have been obliterated or modified by urban development, the Hollywood Fault is interpreted to be along the base of the Santa Monica Mountains creating scarp-like features and a steep alluvial front. Dolan et al. (1997) map the Hollywood Fault as extending 8½ miles west from the eastern end of the Santa Monica Mountains to a northwest-trending feature referred to as the west Beverly Hills Lineament which is located west of the Benedict Canyon Fan (Dolan, 2000). This lineament may represent an east-dipping normal fault at a left step between the Hollywood and Santa Monica Faults or a strike-slip extension of the Newport-Inglewood Fault (Dolan et al. 2000). Dibblee (1991) maps the Hollywood Fault as extending farther to the west, to the 405 Freeway yielding a fault length of 11 miles.

### **Santa Monica Fault**

The Santa Monica Fault Zone (SMFZ) trends east-west from the Santa Monica coastline on the west to the Hollywood area on the east. It is an oblique-reverse, left-lateral fault that is thought to be a surface expression of tectonic deformation related to Pliocene-Quaternary structural development of the Santa Monica Mountains. Integration of subsurface oil and gas exploration seismic data and well logs with surficial mapping indicate the mountains are underlain by a large southward-vergent asymmetric anticline formed over a regional north-dipping thrust ramp at a depth of 6 to 9 miles. Geophysical studies conducted at the Veteran's Administration (VA) property in West Los Angeles indicate the SMFZ is a gently dipping thrust fault with secondary near-vertical faults extending from the primary basal fault toward the ground surface (Pratt et al., 1998; Dolan et al., 2000).

### **Newport-Inglewood Fault**

The Newport-Inglewood Fault Zone (NIFZ) is a northwest-trending strike-slip fault zone that consists of several discontinuous fault strands. The fault zone is characterized by left-stepping en-echelon right-lateral faults and associated anticlinal folds and uplifted areas. The series of uplifted hills along the Newport-Inglewood fault zone include the Cheviot Hills, Baldwin Hills, Rosecrans Hills, Dominguez Hills, Signal Hill, and Reservoir Hill (Barrows, 1974). The onshore portion of the Newport-Inglewood fault zone strikes predominantly N30°W to N40°W and extends approximately 65 km from Beverly Hills southeast to Newport Beach. Individual fault strands within the fault zone range in strike from N12°W to N62°W (Barrows, 1974). From Newport Beach, the fault zone extends offshore paralleling the California coast to the southeast where it eventually comes back onshore again in San Diego as the Rose Canyon fault zone. A Holocene slip rate of 1.5 mm/yr was established for the Rose Canyon fault zone (Lindvall, Rockwell, and Hudnut, 1995). The slip rate of the Newport-Inglewood fault in the Los Angeles basin is not as well-constrained but is estimated to be about 0.5 – 1.5 mm/yr (Petersen et. al., 1996).



## **Historical Earthquakes**

Local historical earthquakes recorded from 1933 to present within a 100-kilometer radius of the Project Site include 41 recorded events with magnitudes greater than Mw 5.0. Of the 41 events, four were Mw 6.0 and greater. Significant historical earthquake epicenters nearest the Project Site include ruptures along the Elsinore, Newport-Inglewood, Raymond, and Northridge faults. Two historical earthquakes are estimated to have had epicenters located along the Elsinore Fault Zone; one in 1910 estimated to a Mw 6.0 located near Temescal Valley and the second in 1987 estimated to be Mw 5.9 located just south of Pasadena. In 1933, an estimated Mw 6.4 earthquake ruptured along the Newport-Inglewood Fault Zone near Newport Beach. In 1988, an estimated Mw 5.0 earthquake ruptured along the Raymond Fault Zone near Pasadena. In 1994, an estimated Mw 6.7 earthquake ruptured along the Northridge Blind Thrust Fault (Pico Thrust) near Northridge and reportedly triggered lesser ruptures on nearby faults.

### **3.2.3 Secondary Ground Effects**

The site is not located within an area mapped by the CGS as being potentially affected by seismic-induced liquefaction or landsliding (Parrish, 2014). Although the Safety Element of the City's General Plan identifies the site within a liquefiable area (City of Los Angeles, 1996), this information is outdated and has been superseded by more recent seismic mapping efforts by CGS. A discussion of secondary ground effects is included below.

## **Liquefaction**

Liquefaction is a process which occurs when saturated sediments are subjected to repeated strain reversals during a seismic event. The strain reversals cause an increase in pore water pressure such that the internal pore pressure approaches the overburden pressure and the shear strength approaches a low residual value. Liquefied soils are subject to flow, consolidation, or excessive strain. Liquefaction typically occurs in loose to medium dense sand and silty sandy soils with low plasticity below the groundwater table.

As noted above, historically highest groundwater levels are estimated between 80 and 100 feet below the existing ground surface. No groundwater was encountered within the exploratory borings to a maximum depth of 86.5 feet below the existing ground surface. Moreover, predominately fine-grained soils such as silt and clay, similar to those identified at the site, are less susceptible to liquefaction. Due to the consolidated nature of the underlying geology at the planned depth of construction and the estimated depth to groundwater, liquefaction is not considered a significant hazard at the site.

## **Lateral Spreading Hazard**

Saturated soils that have experienced liquefaction may be subject to lateral spreading where located adjacent to free faces, such as slopes, channels, and rivers. The site is remote to free-faces and the lateral spreading hazard at the site is insignificant.

### **Landsliding**

According to mapping by the City and CGS, the project site is not located within an area subject to potential seismic-induced slope instability. Since the site is not located within a mapped landslide zone, and no slopes exist on or within the immediate site vicinity, seismic induced landsliding is not a significant hazard to the future development.

### **Tsunamis/Seiches**

The project site is located approximately 10 miles east of the Pacific Ocean and 1 mile south of the Hollywood Reservoir. Due to the sites distance from the coastline and other large bodies of water, the potential for tsunamis is considered low.

A seiche is a surface wave created when a body of water is shaken, which can occur at reservoirs during seismic events. The site is in a City of Los Angeles inundation zone for the Hollywood Reservoir according to City's General Plan Safety Element (City of Los Angeles, 1996). Dam safety regulations are the primary means of reducing damage or injury due to inundation occurring from dam failure. The California Division of Safety of Dams regulates the siting, design, construction, and periodic review of all dams in the State. Mitigation of potential seiche hazards has also been implemented by the Los Angeles Department of Water and Power (LADWP) through regulation of the level of water in its storage facilities and the provision of walls of extra height to contain seiches and prevent overflow or inundation (City of Los Angeles, 2011). According to the City of Los Angeles General Plan, dams and reservoirs are monitored during storms, and measures are instituted in the event of potential overflow. These measures apply to facilities within the City's borders and facilities owned and operated by the City within other jurisdictions. Considering these risk reduction projects, the site distance from this inundation source and the surrounding development and street drainages, the potential for inundation at the site is considered low.

### **3.3 2019 CALIFORNIA BUILDING CODE CONSIDERATIONS**

The proposed development may be designed in accordance with seismic considerations contained in the 2019 California Building Code, Section 1613. The following parameters may be considered for design of foundations within the alluvium (ATC, 2019):

#### **Mapped Spectral Response Acceleration Parameters:**

	$S_S$	:	2.119g
	$S_1$	:	0.761g
Site Class:	D	:	Stiff Soil
Site Coefficients:	$F_a$	:	1.0
	$F_v$	:	1.7

#### **Maximum Considered Earthquake Spectral Response Acceleration Parameters:**

$S_{MS}$	:	2.119g
$S_{M1}$	:	1.294g

#### **Design Spectral Response Acceleration Parameters:**

$S_{DS}$	:	1.413g
$S_{D1}$	:	0.862g
$PGA_M$	:	0.999
PGA	:	0.908

## **4.0 GEOTECHNICAL CONSIDERATIONS**

### **4.1 SUBSURFACE SOIL CONDITIONS**

Subsurface materials at the project site consist of thin layer of fill over alluvium. Based on laboratory testing the alluvium at the project site is competent and capable of supporting engineered structures and appurtenances. The following sections provide a general discussion about settlement and expansive soil activity.

### **4.2 SETTLEMENT**

Settlement, or consolidation, occurs over time as a response to changes in pressure and soils stress. Our investigation indicates that the consolidation and hydrocollapse potential of the alluvium and bedrock is low. The in-situ dry densities are high for the samples taken at the foundation level and it is our experience that these soils have a very low potential for consolidation.

### **4.3 EXPANSIVE SOIL**

Typically, soils that contain a high clay content are susceptible to expansion/contraction. Clay minerals are capable of absorbing water, which causes an increase in volume and leads to expansion. The opposite effect occurs when clay rich soils dry out, thus decreasing in volume and contracting. The on-site soil was found to possess low to medium expansive characteristics based upon field soil classifications. Based on the recommended foundation systems and the underlying soil properties, expansion/contraction is unlikely to affect the proposed development.

### **4.4 SOIL EROSION & LOSS OF TOPSOIL**

Existing structures and flatwork (i.e. pavement, concrete, brickwork) currently cover the majority of the project sites surfaces. No naturally occurring developed topsoil is exposed, and therefore is not at risk of substantially eroding due to proposed future development. During excavation, soil will be exposed and engineered best management practices, including those required by City regulations, will be implemented to mitigate soil erosion and the loss of topsoil where applicable.

### **4.5 SLOPE STABILITY**

The project site is not located within an area subject to potential seismic-induced slope instability. The property has less than twenty-five feet of overall elevation change at a gradient that is gentler than 10:1 (horizontal to vertical). A slope stability analysis is not required for the property per City of Los Angeles Department of Building and Safety Information Bulletin P/BC 2017-49 due to the lack of slopes on the project site.

## **5.0 CONCLUSIONS AND PRELIMINARY DESIGN RECOMMENDATIONS**

Conclusions and preliminary recommendations contained herein are based upon information provided, information gathered, laboratory testing, engineering, geologic evaluations, experience, and judgment.

Preliminary design values are provided within to assess the feasibility of development using conventional construction methods and best practices. The following preliminary values are for the assessment of construction feasibility and should not be used for final design. A separate geotechnical report will be prepared to provide design level values for development once plans have been finalized.

### **5.1 SITE SUITABILITY**

Geotechnical exploration, analyses, experience, and judgment result in the conclusion that the proposed development is suitable from a geotechnical standpoint.

It is our opinion that the project site can be developed as proposed without hazard of landslide, slippage, or settlement, and improvement can occur without similar adverse impact on adjoining properties. Safe project development will require strict adherence to good construction practices, agency and code requirements, and the recommendations in this report.

It should be realized that the purpose of the seismic design utilizing the above parameters is to safeguard against major structural failures and loss of life, but not to prevent damage altogether. Even if the structural engineer provides designs in accordance with the applicable codes for seismic design, the possibility of damage cannot be ruled out if moderate to strong shaking occurs as a result of a large earthquake. This is the case for essentially all structures in Southern California.

## **5.2 EARTHWORK**

### **5.2.1 General**

Grading should be done in accordance with good construction practice, minimum code requirements, and recommendations to follow. Grading criteria are included within Appendix D.

### **5.2.2 Site Preparation and Grading**

Based on our understanding of the proposed development, laboratory testing, and experience, we recommend that foundations for the proposed development be founded in the underlying alluvium.

Prior to the start of grading operations, utility lines within the project area, if any, should be located and marked in the field so they can be rerouted or protected during site development. All debris and perishable material should be removed from the project site. Although currently not anticipated, all permanent cut and fill slopes should not be constructed steeper than 2:1.

If fill is to be placed, the upper six to eight inches of surface exposed by the excavation should be scarified; moisture conditioned to two to four percent over optimum moisture content and compacted to 90 percent relative compaction<sup>2</sup>. If localized areas of relatively loose soils prevent proper compaction, over-excavation and re-compaction will be necessary.

### **5.2.3 Excavation Characteristics**

Due to the proposed depth of construction, and based on the recommendations herein, deep excavation will be required to complete the development. The borings encountered competent earth material at the depth of construction and below. No caving or hard earth materials are anticipated during excavations. Based on the underlying geology, excavation can be completed using standard methods and best practices.

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<sup>2</sup> Relative compaction refers to the ratio of the in-place dry density of soil to the maximum dry density of the same material as obtained by the "modified proctor" (ASTM D1557-14) test procedure.



### **5.3**

## **FOUNDATION SUPPORT**

### **5.3.1 Mat Foundation**

A mat foundation will be appropriate for the project. Although structural capacities for the proposed structure are not yet available, the existing alluvium is capable of supporting the proposed structures. For preliminary design, vertical capacity, the mat may be assumed to have an allowable uniform bearing capacity of 4,000 to 6,000 psf. The bearing value shown above is for the total of dead and frequently applied live loads and may be increased by one third for short duration loading, which includes the effects of wind or seismic forces.

For computing deflection, a subgrade modulus of 125 to 300 kips/ft<sup>3</sup> may be assumed. Since the potential for consolidation and hydro-collapse is low, the mat foundation is not expected to experience and differential settlement, and a rise in the groundwater table will not reduce the bearing capacity of the soils supporting the mat.

### **5.3.2 Pile Foundation**

Support of the mat foundation may be assisted by piles. Piles that range from 24 to 36 inches in diameter are typical. Piles can be preliminarily designed for a skin friction of 400 to 800 psf.

### **5.3.3 Infiltration/SUSMP/LID**

The proposed buildings will extend into the underlying alluvium. Future testing to determine the rates of permeability should be performed for design of an infiltration system. An alternative to infiltration may be designed for the project site in order to comply with SUSMP/LID requirements.

### **5.3.4 Wastewater Disposal**

The proposed development will not require the use of septic tanks or alternative wastewater disposal systems. Since sewers will be used for the disposal of wastewater, there will be no impact to the underlying supporting materials from the disposal of wastewater.

### **5.3.5 Groundwater and Associated Design**

According to records (Plate 1.2, *Historically Highest Groundwater Contours and Borehole Log Data Locations, Hollywood 7½ Minute Quadrangle in Seismic Hazard Zone Report for the Hollywood Quadrangle, SHZR-026*), the highest historic groundwater level is located below the proposed base of the foundations (80 – 100'). Wet conditions and actual groundwater will not be encountered due to seasonal fluctuations.

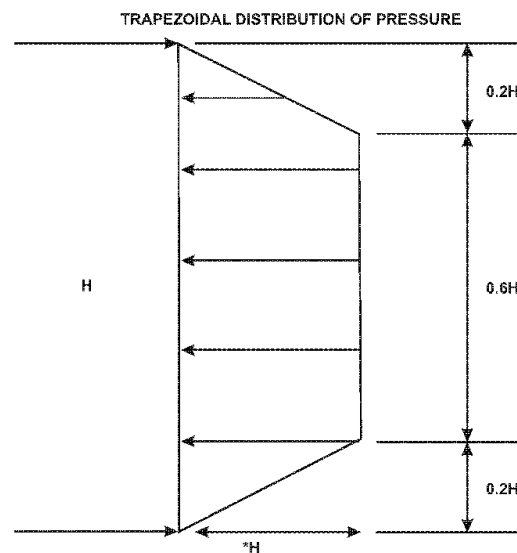
## 5.4

## RETAINING WALLS

### 5.4.1 Retaining Wall

Permanent retaining walls up to 25 feet that support fill, alluvium, and approved retaining wall backfill, will be designed as a restrained braced system. Cantilevered walls to a height of 25 feet should be designed for an effective fluid pressure equal to 45 pcf.

For preliminary design, the at-rest earth pressure on walls is 70 pcf for walls in alluvium. Restrained/braced retaining walls that are pinned at the top by a non-yielding floor should be for the trapezoidal pressure distribution shown on the adjacent figure of 42 H. The uniform trapezoidal pressure may be assumed over the central six tenths of the wall height. The pressure may be decreased to zero at the top and bottom of the wall.



Retaining walls should be provided with a subdrain or weepholes covered with a minimum of 12 inches of ¾ inch crushed gravel.

It is recommended that retaining walls be waterproofed. Waterproofing design and inspection of its installation is not the responsibility of the geotechnical engineer. A qualified waterproofing consultant should be retained in order to recommend a product or method, which would provide protection to below grade walls.

According to the City of Los Angeles retaining walls higher than six feet need to consider a seismic surcharge from the Design Earthquake. The seismic surcharge should be calculated using a factor of safety of 1.0 with the PGA corresponding to ½ of 2/3rds of the  $PGA_M$ . The  $PGA_M$  is 0.999g and therefore the corresponding seismic design value is 0.333g.

A seismic surcharge for retaining walls in alluvium designed for active conditions is considered. For a 25-foot-high retaining wall, the static design force is equal to 14.2 kips ( $25\text{ft}^2 * 45 \text{ pcf} / 2$ ). For a ground motion of 0.333g and a FS of 1.0, the enclosed calculations indicate an unbalanced

force under seismic conditions from the Maximum Considered Earthquake is 17.73 kips for a 25-foot-high wall.

Since the static design force is lower than the seismic force an additional seismic surcharge of  $e_{fp}=12$  pcf should be added to the design of cantilevered walls.

#### **5.4.2 Waterproofing**

Moisture affecting retaining walls is one of the most common post-construction complaints. Poorly applied or omitted waterproofing can lead to efflorescence or standing water inside the building. Efflorescence is a process in which a powdery substance is produced on the surface of the concrete by the evaporation of water. The white powder usually consists of soluble salts such as gypsum, calcite, and/or halite (common salt). Efflorescence is common to retaining walls and generally does not affect their strength or integrity.

It is recommended that retaining walls be waterproofed. Waterproofing design and inspection of its installation is not the responsibility of the geotechnical engineer. A qualified waterproofing consultant should be retained in order to recommend a product or method, which would provide protection to below grade walls.

#### **5.5 TEMPORARY EXCAVATIONS**

All vertical cuts shall be inspected to verify geologic continuity. Un-shored vertical cuts to a height of five (5') may be made in earth materials at the site. Un-shored cuts in excess of five feet (5') shall be sloped at a gradient of no steeper than 1:1 (horizontal to vertical) for the portion of the excavation above the vertical cut.

A representative of the geotechnical engineer or geologist should be present during grading to see temporary slopes. All excavations, including caissons, footings, and utility trenches, shall be properly and adequately fenced, and/or covered to ensure the safety of all those working on the project. All temporary excavations shall be stabilized as soon as possible after the initial excavation.

Shoring for the project should be preliminarily designed to retain an equivalent fluid pressure of 35 PCF for excavations up to 25 feet in height. For braced restrained conditions, shoring can be designed for a trapezoidal pressure distribution of 20 H as shown on the figure in section 5.5.1. The uniform trapezoidal pressure may be assumed over the central six tenths of the wall height. The pressure may be decreased to zero at the top and bottom of the wall.

Excavation and shoring plans for temporary shored walls shall be developed during final Project design by the project shoring engineer/designer. The locations of tiebacks for, and amount of deflection permitted by excavation shoring elements should be carefully designed such that acceptable deflection at the top of the shoring adjacent to streets, property lines, and historic building foundations is maintained. If less deflection at the top of shoring is necessary, the values for lateral earth pressures on shoring may be increased. All permanent surcharge loading conditions will be evaluated by the Geotechnical Engineer during final Project design. Lateral

earth pressure, tied-back or braced shoring, soldier piles, and tie-back anchors among other practices should be used to resist lateral loads and to ensure no lateral issues with nearby structures. The shoring design should be provided by a California Registered Civil Engineer experienced in the design and construction of shoring under similar conditions. Once final excavation and shoring plans are complete, the plans and the design should be reviewed by the project soils engineer for conformance with the design intent and recommendations and submitted to the City of Los Angeles for review and approval.

### **5.5.1 Shoring**

Shoring may consist of cast-in-place concrete piles with wood-lagging. Shoring piles should be a minimum of 18 inches in diameter and a minimum of 8 feet into alluvium below the base of the excavation. Piles may be assumed fixed 3 feet below the base of the excavation. For the vertical forces, piles may be designed for a skin friction of 400 to 600 pounds per square foot for that portion of pile in contact with the alluvium. Shoring piles should be spaced a maximum of 10 feet on center.

The friction value is for the total of dead and frequently applied live loads and may be increased by one third for short duration loading, which includes the effects of wind or seismic forces. Resistance to lateral loading may be provided by passive earth pressure within the alluvium below the base of the excavation.

Passive earth pressure may be computed as an equivalent fluid having a density of 400 pounds per cubic foot. The maximum allowable earth pressure is 4,000 to 6,000 pounds per square foot. For design of isolated piles, the allowable passive and maximum earth pressures may be increased by 100 percent. Piles spaced more than 2½ pile diameters on center may be considered isolated.

Rakers or other forms of internal bracing designed by the structural engineer may be used to support the shoring system where tieback anchors cannot be used.

### **5.5.2 Earth Anchors**

Where applicable tie-back anchors may be used to resist lateral loads. Pressure grouted friction anchors are recommended. For design purposes, it is assumed that the active wedge adjacent to the shoring is defined by a plane drawn at 30 degrees with the vertical through the bottom of the excavation. Friction anchors should extend at least 15 feet beyond the potential active wedge or to a greater length if necessary, to develop the desired capacities.

The capacities of the anchors should be determined by testing of the initial anchors as outlined in a following section. For preliminary design purposes, it is estimated that cast-in-place gravity anchors will develop an average value of 300 pounds per square foot. Pressure grouted and post grouted anchors will develop much higher capacities. For preliminary design purposes, it is estimated that pressure grouted anchors will develop an average value of 2,500 pounds per square foot. Only the frictional resistance developed beyond the active wedge would be effective

in resisting lateral loads. If the anchors are spaced at least six feet on center, no reduction in the capacity of the anchors need be considered due to group action.

The anchors may be installed at angles of 20 to 40 degrees below the horizontal. Caving and sloughing of the anchor hole should be anticipated and provisions made to minimize such caving and sloughing. To minimize chances of caving and sloughing that portion of the anchor shaft within the active wedge should be backfilled with sand before testing the anchor. This portion of the shaft should be filled tightly and flush with the face of the excavation. The sand backfill should be placed by pumping; the sand may contain a small amount of cement to facilitate pumping.

At least 10 percent of the initial anchors for a 24-hour 200 percent test and 10 percent additional anchors for quick 200 percent tests. The specific anchors selected for the 200 percent test should be representative and acceptable to the geotechnical engineer. The purpose of the 200 percent tests is to verify the friction value assumed in design. The anchors should be tested to develop twice the assumed friction value. Anchor rods of sufficient strength should be installed in these anchors to support the 200 percent test loading. Where satisfactory tests are not achieved on the initial anchors, the anchor diameter, and/or length should be increased until satisfactory test results are obtained. The total deflection during the 24-hour 200 percent test should not exceed 12 inches. During the 24-hour test, the anchor deflection should not exceed 0.75 inch measured after the 200 percent test load is applied. If the anchor movement after the 200 percent load has been applied for 12 hours is less than 0.5 inch, and the movement over the previous four hours has been less than 0.1 inch, the 24-hour test may be terminated.

For the quick 200 percent tests, the 200 percent test load should be maintained for 30 minutes. The total deflection of the anchor during the 200 percent quick tests should not exceed 12 inches; the deflection after the 200 percent test load has been applied should not exceed 0.25 inch during the 30-minute period.

All of the anchors should be pretested to at least 150 percent of the design load; the total deflection during the test should not exceed 12 inches. The rate of creep under the 150 percent test should not exceed 0.1 inch over a 15-minute period for the anchor to be approved for the design loading.

After a satisfactory test, each anchor should be locked-off at the design load. The locked-off load should be verified by rechecking the load in the anchor. If the locked-off load varies by more than 10 percent from the design load, the load should be reset until the anchor is locked-off within 10 percent of the design load.

The installation of the anchors and the testing of the completed anchors should be observed by a deputy grading inspector under the direction of the geotechnical engineer.

### **5.5.3 Lagging**

Lagging will be required between piles. Due to arching in the soils, the pressure on the lagging will be less than on the shoring piles. It is recommended that the lagging be designed for the full design pressure but be limited to a maximum of 400 pounds per square foot. The void between

the lagging and the back-cut should be slurry-filled and observed by a representative of the geotechnical engineer.

A representative of the geotechnical engineer or geologist should be present during grading to see temporary slopes. All excavations, including caissons, footings, and utility trenches, shall be properly and adequately fenced, and/or covered to ensure the safety of all those working on the project.

All temporary excavations shall be stabilized as soon as possible after the initial excavation.

#### **5.5.4 Deflection**

It is difficult to accurately predict the amount of deflection of a shored embankment. It should be realized that some deflection will occur. The project structural engineer should design the shoring systems such that deflection is restricted to acceptable limits the top of the shored embankment.

#### **5.5.5 Monitoring**

Because of the depth of the excavation, some means of monitoring the performance of the shoring system is suggested.

LAMC Section 91.3307 requires the protection of adjoining property during construction activities. Consistent with this requirement, it is recommended that a California Registered Professional Engineer or California Professional Land Surveyor prepare an Adjacent Structures Construction Monitoring Plan, subject to review and approval by the City of Los Angeles Building and Safety Department prior to the initiation of any excavation, grading, or shoring activities. The Adjacent Structures Construction Monitoring Plan shall establish survey monuments and document and record the positions of adjacent structures, sidewalks, buildings, utilities, facades, surfaces feature, etc. to form a baseline for determining settlement or deformation. Upon installation of soldier piles, survey monuments shall be affixed to the tops of representative piles so that deflection can be measured. The shored excavation and adjacent structures, sidewalks, buildings, utilities, facades, cracks, etc. should be visually inspected at a minimum of one time per month. Survey Monuments should be measured at critical stages of excavation, shoring, dewatering, and construction but should not occur less frequently than once every thirty days.

Monitoring reports shall be prepared by the California Professional Land Surveyor documenting the movement monitoring results and distributed to all appropriate parties, including the shoring engineer. Appropriate parties shall be notified if movement exceeds predetermined thresholds and calculated amounts.



## **5.6 EXTERIOR FLATWORK AND AUXILIARY STRUCTURES**

Whenever planned, exterior flatwork should be placed directly on alluvium or over a two-foot blanket of approved compacted fill. Five-inch net sections with #4 bars at 18 inches o.c.e.w. are also advised. Control joints should be planned at not more than twelve foot spacing for larger concrete areas. Narrower areas of flatwork such as walkways should have control joints planned at not greater than 1.5 times the width of the walkway. Recommendations provided above for interior slabs can also be used for exterior flatwork, but without a sand layer or Visqueen moisture barrier. Additionally, it is also recommended that at least 12-inch deepened footings be constructed along the edges of larger concrete areas.

Movement of slabs adjacent to structures can be mitigated by doweling slabs to perimeter footings. Doweling should consist of No. 4 bars bent around exterior footing reinforcement. Dowels should be extended at least two feet into planned exterior slabs. Doweling should be spaced consistent with the reinforcement schedule for the slab. With doweling, 3/8-inch minimum thickness expansion joint material should be provided. Where expansion joint material is provided, it should be held down about 3/8 inch below the surface. The expansion joints should be finished with a color matched, flowing, flexible sealer (e.g., pool deck compound) sanded to add mortar-like texture. As an option to doweling, an architectural separation could be provided between the main structures and abutting appurtenant improvements.

Auxiliary structures such as trash enclosures and garden walls can be placed directly on alluvium or on a two-foot blanket of compacted fill.

## **5.7 DRAINAGE**

Drainage should be directed away from structures via non-erodible conduits to suitable disposal areas. Two percent drainage is recommended directly away from structures. Building Code and Civil Engineer requirements and recommendations take precedence. All enclosed planters should be provided with a suitably located drain or drains and/or flooding protection in the form of weep holes or similar. Preferably, structures should have roof gutters and downspouts tied directly to the area drainage system.

## **5.8 PLAN REVIEW**

When detailed grading and structural plans are developed, they should be reviewed by the project geotechnical consultant.

## **5.9 AGENCY REVIEW**

All soil, geologic, and structural aspects of the proposed development are subject to the review and approval of the governing agency(s).

## **5.10 SUPPLEMENTAL CONSULTING**

During construction, a number of reviews by the project geotechnical consultant are recommended to verify site geotechnical conditions and conformance with the intentions of the recommendations for construction. The following site reviews are advised, some of which are required by the governing agencies.

Preconstruction/pregrading meeting .....	Advised
Cut and/or shoring observation.....	Required
Periodic geotechnical observations and testing during grading.....	Required
Reinforcement for all foundations .....	Advised
Slab subgrade moisture barrier membrane .....	Advised
Slab subgrade rock placement .....	Advised
Presaturation checks for all slabs in primary structure areas .....	Required
Presaturation checks for all slabs for appurtenant structures.....	Advised
Slab steel placement, primary and appurtenant structures.....	Advised
Compaction of utility trench backfill.....	Advised

## **5.11 PROJECT SAFETY**

The contractor is the party responsible for providing a safe site. This consultant will not direct the contractor's operations and cannot be responsible for the safety of personnel other than his own representatives on site. The contractor should notify the owner if he is aware of and/or anticipates unsafe conditions. If the geotechnical consultant at the time of construction considers conditions unsafe, the contractor, as well as the owner's representative, will be notified. Within this report the terminology safe or safely may have been utilized. The intent of such use is to imply low risk. Some risk will remain, however, as is always the case.

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- Hernandez, J. L., 2014b, California Geological Survey Fault Evaluation Report FER 253 Supplement No. 1, The Hollywood Fault in the Hollywood 7.5" Quadrangle, Los Angeles County, California, California Geological Survey, p. 1-35
- Hoots H. W. and Kew, W. S. W., 1931, Geologic Map of the Santa Monica Mountains and Adjacent Areas, Los Angeles County, California: U.S. Geological Survey, scale 1:24,000
- LADBS, 2017a, Slope Stability Evaluation and Acceptance Standards, P/BC 2017-049, City of Los Angeles Department of Building and Safety. P. 1-5
- LADBS, 2017c, Structural / Seismic Peer Review Protocol, P/BC 2017-147, City of Los Angeles Department of Building and Safety. P. 1-3
- Parrish, J., G., 2014, Earthquake Fault Zones and Seismic Hazard Zones Hollywood 7.5 Minute Quadrangle: California Geological Survey, scale 1: 24,000
- United States Geological Survey (USGS), 1994, Hollywood Quadrangle, California-Los Angeles Co. 7.5 Minute Series (Topographic): United States Department of the Interior Geological Survey, scale 1:24,000

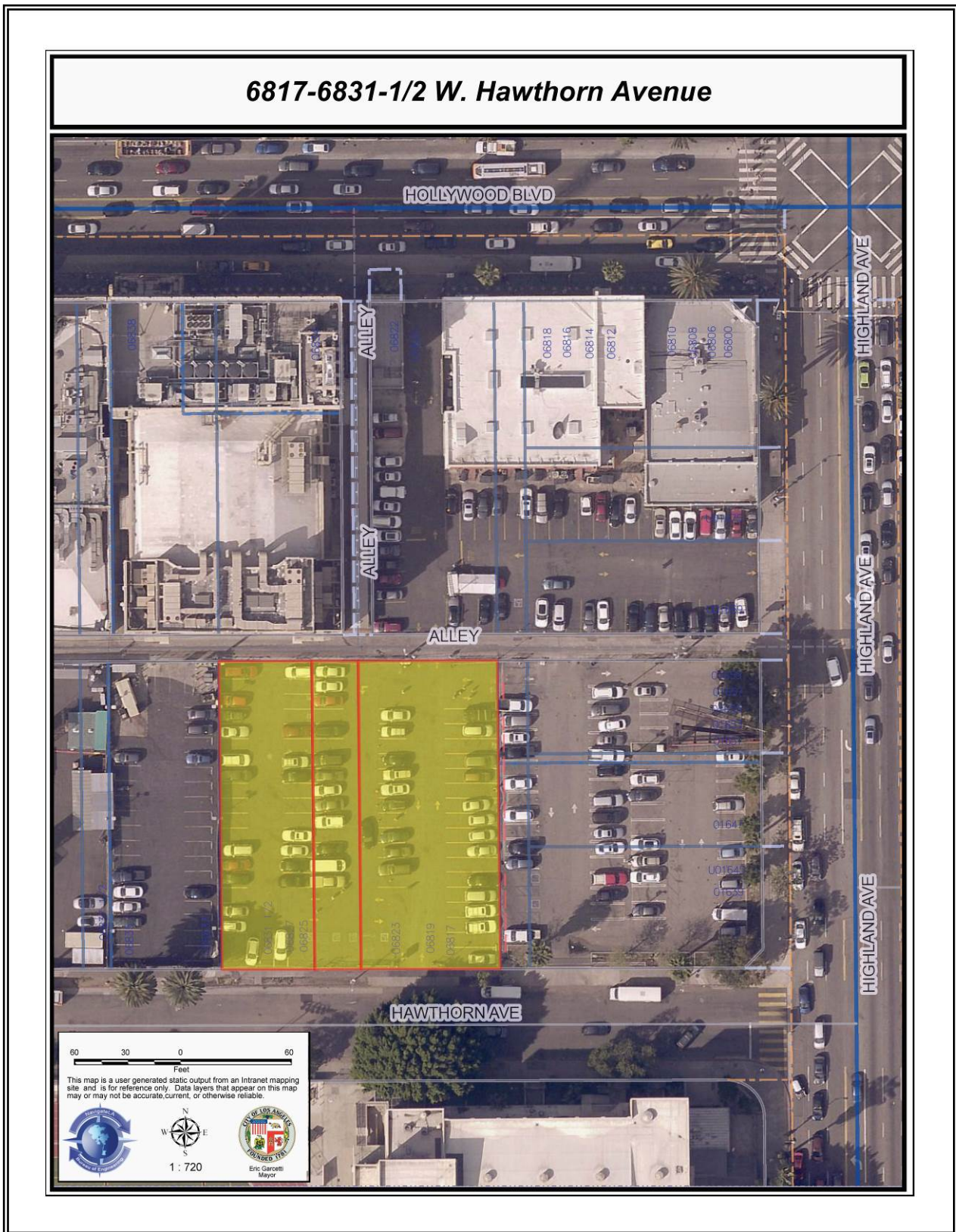


Figure 1. Aerial photograph with topographic overlay from Navigate LA. Subject site is highlighted.



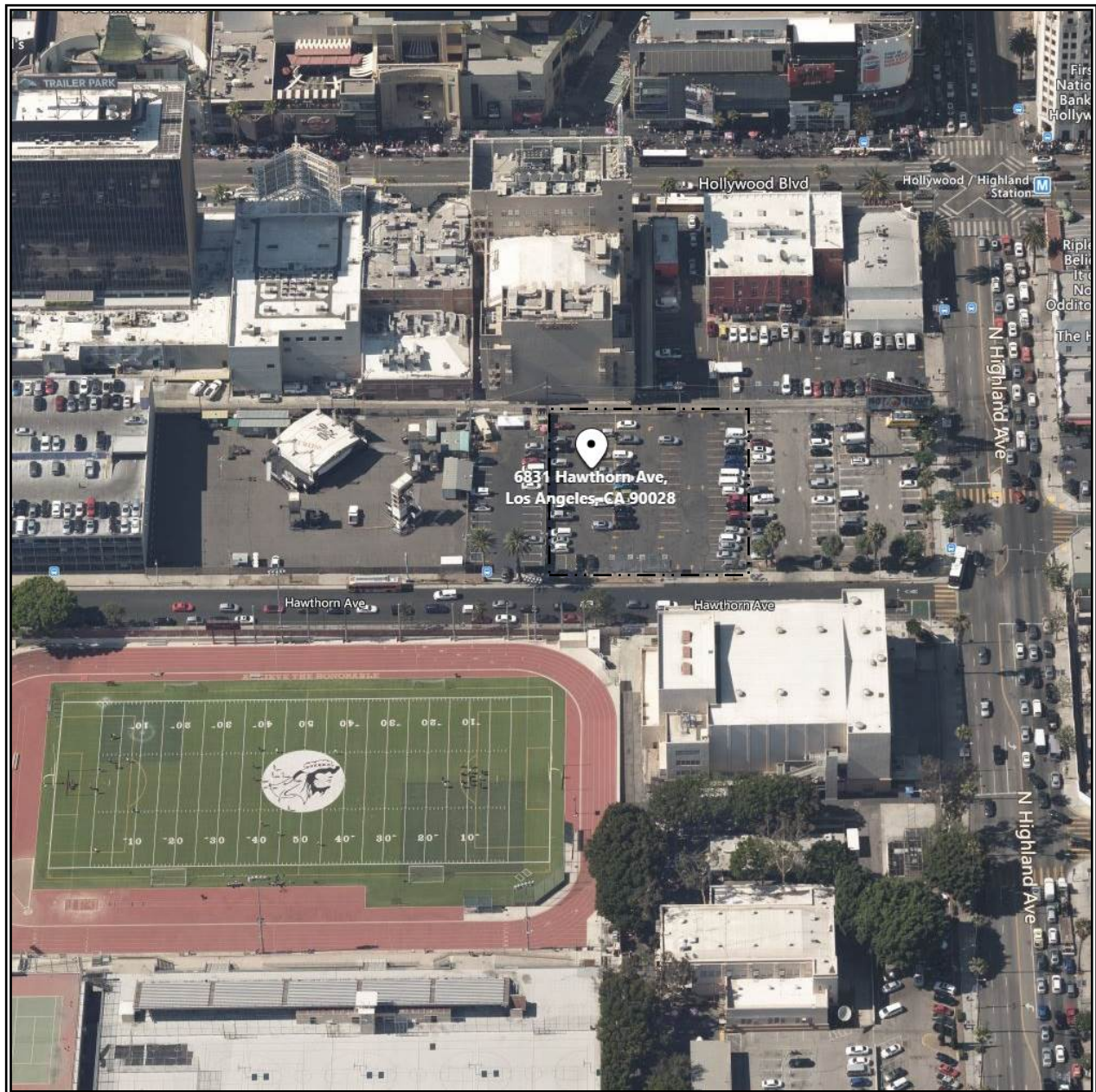


Figure 2. Oblique Aerial Photograph of subject lot and surrounding area.



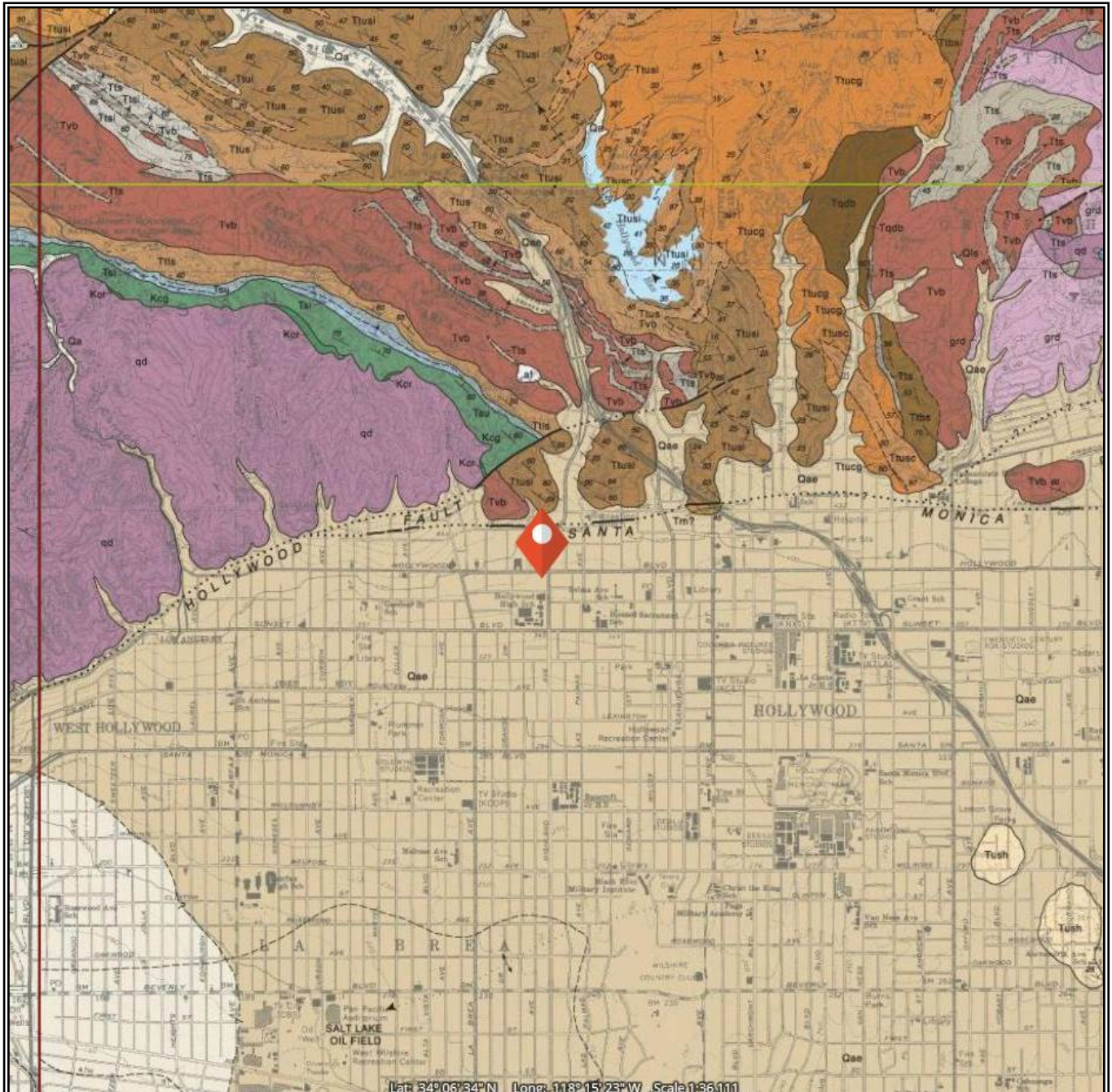


Figure 3. Portion of Dibblee, T.W., 1991, Geologic Map of the Hollywood and Burbank (south ½) quadrangles, Los Angeles County, California, Dibblee Foundation Map, DF #30. The subject site is designated with a diamond.

## **APPENDIX ‘A’**

### **Subsurface Investigation Logs**

## Sheet 1 of 3

Boring No: B-1  
Boring Location: 6800-6822 W. Hollywood Blvd  
Los Angeles, CA 90028  
Drill Type: 8" Hollow Stem Drill Rig

Drill Type: 8" Hollow Stem Drill Rig

Depth in Feet	Blows per 6"	Sample Type		Bedrock/ Soil Description	Color	Density	Moisture
		Undisturbed	Bulk				
				All Samples are CSS 5" Asphalt 3" Base course			
5	8/12/15	R		Sand with some silt, SM sands very fine-medium	Moderate brown	Medium dense	Moist
10	14/20/28	R		Sand with little silt and clay SC-SM	Moderate brown	Dense	Moist
15	10/13/20	R		Sand with some silt and clay SC-SM	Moderate brown	Medium dense	Moist
20	8/11/15	R		Sand with little silt SM	Yellowish brown	Medium dense	Slightly Moist
25	10/16/25	R		Sand with few silt SM	Moderate brown	Dense	Slightly moist
30	12/16/20	R		Sand with some silt SM	Yellowish brown	Medium dense	Moist
35	13/20/30	R		Sand with little silt SM	Yellowish brown	Dense	Moist
40	15/19/13	R		Sand with some silt SM	Yellowish brown	Medium dense	Moist
Feffer Geological Consulting							Figure



## Sheet 2 of 3

Boring No: B-1  
Boring Location: 6800-6822 W. Hollywood Blvd  
Los Angeles, CA 90028  
Drill Type: 8" Hollow Stem Drill Rig

Drill Type: 8" Hollow Stem Drill Rig

Depth in Feet	Blows per 6"	Sample Type		Bedrock/ Soil Description	Color	Density	Moisture
		Undisturbed	Bulk				
Continued from B-1							
45	30/50/6	R		Sand with little silt SM	Dark brown	Very dense	Moist
50	20/32/45	R		Sand with little silt SM	Dark brown	Very dense	Moist
55	18/28/34	R		Sand with little silt SM	Dark brown	Very dense	Moist
60	32/50/60	R		Poorly graded sand - silty sand, sands very fine to fine SP-SM	Yellowish brown	Very dense	Moist
65	28/50/61	R		Sand with few silt SM	Moderate brown	Very dense	Moist
70	20/28/45	R		Sand with few silt SM	Moderate brown	Very dense	Moist
75	26/38/45	R		Sand with little silt, trace clay SM	Dark brown	Very dense	Moist
80	20/28/45	R		Sand with little silt, trace clay SM	Dark brown	Very dense	Moist
Feffer Geological Consulting							Figure

## Sheet 3 of 3

Boring No: B - 1  
Boring Location: 6800-6822 W. Hollywood Blvd  
Los Angeles, CA 90028  
Drill Type: 8" Hollow Stem Drill Rig

Date Performed: 6/25/19

Drill Type: 8" Hollow Stem Drill Rig

Depth in Feet	Blows per 6"	Sample Type		Bedrock/ Soil Description	Color	Density	Moisture
		Undisturbed	Bulk				
				Continued from B-1			Moist
85	13/30/47	R		Sand with little silt, very moist @ tip SM	Yellow brown	Very dense	Moist to very moist
90				End at 86.5', No groundwater observed but moist-very moist @tip backfilled with soil cuttings and ac cap			
95							
100							
105							
110							
115							
40							

Feffer Geological Consulting

Figure

## Sheet 1 of 2

Boring No: B-2  
Boring Location: 6800-6822 W. Hollywood Blvd  
Los Angeles, CA 90028  
Drill Type: 8" Hollow Stem Drill Rig

Drill Type: 8" Hollow Stem Drill Rig

Depth in Feet	Blows per 6"	Sample Type		Bedrock/ Soil Description	Color	Density	Moisture
		Undisturbed	Bulk				
				2" Base course 3.5" AC All samples are CSS			
5	7/9/12	R		Silt with few clay and sand, non plastic: sands very fine ML	Dark brown	Very stiff	Moist
10	10/13/16	R		Silt with little sand, trace clay; non plastic ML	Yellowish brown	Very stiff	Moist
15	10/10/12	R		Silty sand - silt SM-ML	Yellowish brown	Very stiff - medium dense	Moist
20	15/18/26	R		Sand with few silt, sands fine to medium with little course sand SM	Moderate brown	Dense	Slightly moist
25	19/30/47	R		Clay with few sand and silt; low plasticity CL	Dark brown	Hard	Moist
30	20/29/35	R		Sand with little clay and silt, sands very fine-fine SM-SC	Yellowish brown	Dense	Moist
35	28/50/6"	R		Well graded sand with few gravels; gravels fine to 3/4", sand fine - course SW	Moderate brown	Very dense	Dry
40	32/50/6"	R		Sand with some silt SM	Yellowish brown	Very dense	Moist
Feffer Geological Consulting							Figure

## Sheet 2 of 2

Boring No: B - 2  
Boring Location: 6800-6822 W. Hollywood Blvd  
Los Angeles, CA 90028  
Drill Type: 8" Hollow Stem Drill Rig

Drill Type: 8" Hollow Stem Drill Rig

Depth in Feet	Blows per 6"	Sample Type		Bedrock/ Soil Description	Color	Density	Moisture
		Undisturbed	Bulk				
45	19/30/44	R		Continuation of B-2 Sand with some silt SM	Yellowish brown	Very dense	Moist
50	18/30/32	R		Sand with few silt SM	Yellowish brown	Dense	Moist
55				End At 51.5', No Groundwater Observed Boring Converted into a Monitoring Well MW-1			
60							
65							
70							
75							
80							

Feffer Geological Consulting

Figure

## Sheet 1 of 3

Boring No: B-3  
Boring Location: 6800-6822 W. Hollywood Blvd  
Los Angeles, CA 90028  
Drill Type: 8" Hollow Stem Drill Rig

Drill Type: 8" Hollow Stem Drill Rig

Depth in Feet	Blows per 6"	Sample Type		Bedrock/ Soil Description	Color	Density	Moisture
		Undisturbed	Bulk				
				6" Asphalt 2" Base cover All Samples CSS from 5-90', then alternate SPT to 120'			
5	6/9/10	R		Silt-clay with few sand, low plasticity ML-CL	Dark grayish brown	Very stiff	Moist
10	8/9/12	R		Silt with some sand, sands very fine-fine SM-ML	Moderate brown	Medium dense - very stiff	Moist
15	8/10/12	R		Silt with some sand and trace clay sands very fine-fine SM-ML	Moderate brown	Medium dense - very stiff	Moist
20	12/20/28	R		Sand with some clay, sands very fine-medium with few coarse sand, trace fine gravel to 1/2" SC	Dark brown	Dense	Moist
25	15/18/26	R		Sand with some clay, sands very fine-medium, trace fine gravels to 1/8" SC	Moderate brown	Dense	Moist
30	17/25/38	R		Sand with some clay, few silt, sands very fine-medium; sparse fine gravels to 1/8" SC	Moderate brown	Dense	Moist
35	30/50/6"	R		Well graded sand with little gravels, sands fine to course, gravels fine to 1/2"(angular) SW	Pale brown	Very dense	Dry
40	40/50/4"	R		Sand with few silt; sands very fine-medium SM	Moderate brown	Very dense	Slightly moist

Feffer Geological Consulting

Figure

## Sheet 2 of 3

Boring No: B - 3  
Boring Location: 6800-6822 W. Hollywood Blvd  
Los Angeles, CA 90028  
Drill Type: 8" Hollow Stem Drill Rig

Drill Type: 8" Hollow Stem Drill Rig

Depth in Feet	Blows per 6"	Sample Type		Bedrock/ Soil Description	Color	Density	Moisture
		Undisturbed	Bulk				
				Continuation of B - 3			
45	38/50/4"	R		Sand with few silt; sands very fine-medium SM	Moderate brown	Very dense	Slightly moist
50	20/27/48	R		Sand with little silt; sands very fine-medium SM	Moderate brown dark brown	Very dense	Slightly moist
55	40/50/6"	R		Sand with few silt; sands very fine-fine SP-SM	Moderate brown	Very dense	Slightly moist
60	22/38/45	R		Sand with few silt SM	Yellowish brown	Very dense	Slightly moist
65	38/50/6"	R		Sand with few silt SM	Yellowish brown	Very dense	Slightly moist
70	36/50/5"	R		Sand with little silt and few clay; sands fine to medium SM	Dark brown	Very dense	Moist
75	42/50/4"	R		Well graded sand (primarily); sands fine-medium with some course sands SW	Moderate browns	Very dense	Moist
80	45/50/4"	R		Sand with little silt; sands fine to medium SM	Reddish brown	Very dense	Moist - very moist

## Sheet 3 of 3

Boring No: B - 3  
Boring Location: 6800-6822 W. Hollywood Blvd  
Los Angeles, CA 90028  
Drill Type: 8" Hollow Stem Drill Rig

Drill Type: 8" Hollow Stem Drill Rig

Depth in Feet	Blows per 6"	Sample Type		Bedrock/ Soil Description	Color	Density	Moisture
		Undisturbed	Bulk				
				Continued from B-3 @81.5': Tip wet in sampler			
85	16/20/32	R		Sand with little to some silt; sands fine to medium SM	Reddish brown	Dense	Very moist to wet
90	27/40/48	R		Sand with little to some silt; sands fine to medium SM  @93' Gravels during drilling	Reddish brown	Very dense	Very moist to wet
95	13/20/35		SPT	Sand with little clay and few silt, sands fine-medium SC	Moderate brown	Very dense	Moist
100	22/30/32	R		Sand with little clay and few silt; sands fine-medium SC	Moderate brown	Dense	Very moist - Slightly wet
105	10/13/16		SPT	Sand with few silt and clay; sands fine-medium SM	Yellowish brown	Medium dense	Very moist - Slightly wet
110	38/50/5"	R		Well graded sand and gravels; few silt, sands fine-course, gravels fine to 1/2" subangular SW-GW	Dark brown	Very dense	Wet
115	14/19/30		SPT	Sand with little silt, trace clay and fine gravel to 1/2" SM	Yellowish brown	Dense	Moist Slightly wet
				Sand with little silt; trace clay and fine gravel to 1/2" SM	Yellowish brown	Very dense	Moist Slightly wet
120	40/50/6"	R		Boring terminated @ 121.5', groundwater observed @81.5', backfilled with soil cuttings & ac patch			
Feffer Geological Consulting							Figure

## Sheet 1 of 2

Boring No: B - 4  
Boring Location: 6800-6822 W. Hollywood Blvd  
Los Angeles, CA 90028  
Drill Type: 8" Hollow Stem Drill Rig

Date Performed: 6/26/19

Drill Type: 8" Hollow Stem Drill Rig

Depth in Feet	Blows per 6"	Sample Type		Bedrock/ Soil Description	Color	Density	Moisture
		Undisturbed	Bulk				
				6" AC 2" Base Course All samples CSS			
5	7/9/10	R		Silt with some sand; sands very fine - fine SM-ML	Dark brown	Medium dense - very stiff	Moist
10	8/11/16	R		Silt with some increased fine sand; sands very fine -fine SM-ML	Brown	Medium dense - very stiff	Moist
15	10/15/16	R		Silt with some increased fine sand; sands very fine -fine SM-ML	Dark brown	Medium dense - very stiff	Moist
20	16/21/38	R		Sand with some clay; sands very fine-medium SC	Dark brown	Dense	Moist
25	19/26/35	R		Sand with some clay; sands fine-medium with little course sand SC	Dark brown	Dense	Moist
30	20/32/40	R		Sand with little silt; sands very fine-fine SM	Yellowish brown	Very dense	Moist
35	19/33/45	R		Sand with few silt; sands very fine-fine SM	Yellowish brown	Very dense	Slightly moist
40	32/50/6"	R		Sand with few silt; sands very fine-fine, moderate consolidation SM	Yellowish brown	Very dense	Slightly moist
Feffer Geological Consulting							Figure



## Sheet 2 of 2

Boring No: B - 4  
Boring Location: 6800-6822 W. Hollywood Blvd  
Los Angeles, CA 90028  
Drill Type: 8" Hollow Stem Drill Rig

Date Performed: 6/26/19

Drill Type: 8" Hollow Stem Drill Rig

Depth in Feet	Blows per 6"	Sample Type		Bedrock/ Soil Description	Color	Density	Moisture
		Undisturbed	Bulk				
				Continued from B-4			
45	38/50/6"	R		Well graded sand with few silt; sands fine-course, sparse fine gravels & trace coarse gravel in sampler to 1.5" SM-SW	Moderate brown	Very dense	Slightly moist
50	25/32/46	R		Sand with little silt, sands very fine, fine SM	Moderate brown	Very dense	Moist
55				Boring terminated @ 51.5'; No Groundwater observed, Well Constructed as MW-1			
60							
65							
70							
75							
80							

Feffer Geological Consulting

Figure

## **APPENDIX 'B'**

### **Laboratory Testing**



## TRANSMITTAL LETTER

**DATE:** July 19, 2019

**ATTENTION:** Josh Feffer

**TO:** Feffer Geological Consulting  
1990 S. Bundy Drive, 4th Floor  
Los Angeles, CA 90025

**SUBJECT:** Laboratory Test Data  
Yorkwood, LLC  
Your #3116, HDR Lab #19-0458LAB

**COMMENTS:** Enclosed are the results for the subject project.

A handwritten signature in black ink, appearing to read 'J. Keegan', written over a horizontal line.

James T. Keegan, MD  
Corrosion and Lab Services Section Manager



## Table 1 - Laboratory Tests on Soil Samples

*Feffer Geological Consulting  
Yorkwood, LLC  
Your #3116, HDR Lab #19-0458LAB  
19-Jul-19*

### Sample ID

B1 @ 0-10'

Resistivity	Units	
as-received	ohm-cm	6,000
minimum	ohm-cm	640

pH 8.1

### Electrical

Conductivity mS/cm 0.48

### Chemical Analyses

#### Cations

calcium	Ca <sup>2+</sup>	mg/kg	246
magnesium	Mg <sup>2+</sup>	mg/kg	88
sodium	Na <sup>1+</sup>	mg/kg	143
potassium	K <sup>1+</sup>	mg/kg	24

#### Anions

carbonate	CO <sub>3</sub> <sup>2-</sup>	mg/kg	ND
bicarbonate	HCO <sub>3</sub> <sup>1-</sup>	mg/kg	250
fluoride	F <sup>1-</sup>	mg/kg	10
chloride	Cl <sup>1-</sup>	mg/kg	89
sulfate	SO <sub>4</sub> <sup>2-</sup>	mg/kg	370
phosphate	PO <sub>4</sub> <sup>3-</sup>	mg/kg	ND

### Other Tests

ammonium	NH <sub>4</sub> <sup>1+</sup>	mg/kg	ND
nitrate	NO <sub>3</sub> <sup>1-</sup>	mg/kg	734
sulfide	S <sup>2-</sup>	qual	na
Redox	mV		na

Minimum resistivity per CTM 643, Chlorides per CTM 422, Sulfates per CTM 417

Electrical conductivity in millisiemens/cm and chemical analyses were made on a 1:5 soil-to-water extract.

mg/kg = milligrams per kilogram (parts per million) of dry soil.

Redox = oxidation-reduction potential in millivolts

ND = not detected

na = not analyzed



## TRANSMITTAL LETTER

**DATE:** July 19, 2019

**ATTENTION:** Josh Feffer

**TO:** Feffer Geological Consulting  
1990 S. Bundy Drive, 4th Floor  
Los Angeles, CA 90025

**SUBJECT:** Laboratory Test Data  
Yorkwood, LLC  
Your #3116, HDR Lab #19-0459LAB

**COMMENTS:** Enclosed are the results for the subject project.

A handwritten signature in black ink, appearing to read 'J. Keegan', written over a horizontal line.

James T. Keegan, MD  
Corrosion and Lab Services Section Manager



## Table 1 - Laboratory Tests on Soil Samples

*Feffer Geological Consulting  
Yorkwood, LLC  
Your #3116, HDR Lab #19-0459LAB  
19-Jul-19*

### Sample ID

B2 @ 0-10'

Resistivity	Units	
as-received	ohm-cm	9,200
minimum	ohm-cm	1,160

pH 8.1

### Electrical

Conductivity mS/cm 0.17

### Chemical Analyses

#### Cations

calcium	Ca <sup>2+</sup>	mg/kg	88
magnesium	Mg <sup>2+</sup>	mg/kg	27
sodium	Na <sup>1+</sup>	mg/kg	86
potassium	K <sup>1+</sup>	mg/kg	19

#### Anions

carbonate	CO <sub>3</sub> <sup>2-</sup>	mg/kg	ND
bicarbonate	HCO <sub>3</sub> <sup>1-</sup>	mg/kg	259
fluoride	F <sup>1-</sup>	mg/kg	9.6
chloride	Cl <sup>1-</sup>	mg/kg	13
sulfate	SO <sub>4</sub> <sup>2-</sup>	mg/kg	98
phosphate	PO <sub>4</sub> <sup>3-</sup>	mg/kg	ND

### Other Tests

ammonium	NH <sub>4</sub> <sup>1+</sup>	mg/kg	ND
nitrate	NO <sub>3</sub> <sup>1-</sup>	mg/kg	126
sulfide	S <sup>2-</sup>	qual	na
Redox	mV		na

Minimum resistivity per CTM 643, Chlorides per CTM 422, Sulfates per CTM 417

Electrical conductivity in millisiemens/cm and chemical analyses were made on a 1:5 soil-to-water extract.

mg/kg = milligrams per kilogram (parts per million) of dry soil.

Redox = oxidation-reduction potential in millivolts

ND = not detected

na = not analyzed



SL19.3116  
July 22, 2019

Feffer Geological Consulting  
1990 S. Bundy Drive  
4<sup>th</sup> Floor  
Los Angeles, California 90025

Attn: Joshua R. Feffer

**Subject:** Laboratory Testing

**Site:** 6800-6822 W Hollywood Boulevard  
AKA 1669-1675 N Highland Avenue and 6817-6831 ½ W Hawthorn Avenue  
Los Angeles, California

**Job:** FEFFER/YORKWOOD, LLC – 2324-94

Laboratory testing for the subject property was performed by Soil Labworks, LLC., under the supervision of the undersigned Engineer. Samples of the earth materials were obtained from the subject property by personnel of Feffer Geological and transported to the laboratory of Soil Labworks for testing and analysis. The laboratory tests performed are described and results are attached.

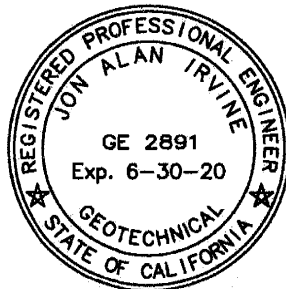
Services performed by this facility for the subject property were conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions.

Respectfully Submitted:

SOIL LABWORKS, LLC

A handwritten signature in black ink, appearing to read 'Jon A. Irvine', is written over the printed name and title.

JON A. IRVINE  
G.E. 2891



Enc: Appendix



SL19.3116  
July 22, 2019

## APPENDIX

### Laboratory Testing

#### Sample Retrieval - Drill Rig

Samples of earth materials were obtained at frequent intervals by driving a thick-walled steel sampler conforming to the most recent version of ASTM D 3550/D 3550M-17 with successive drops of the Kelly bar (a 140 pound hammer falling 30"). The earth material was retained in brass rings of 2.416 inches inside diameter and 1.00 inch height. The central portion of the sample was stored in close-fitting, water-tight containers for transportation to the laboratory.

#### Moisture Density

The field moisture content and dry density were determined for each of the soil samples. The dry density was determined in pounds per cubic foot following ASTM 2937-17e2. The moisture content was determined as a percentage of the dry soil weight conforming to ASTM 2216-19. The results are presented below in the following table. The percent saturation was calculated on the basis of an estimated specific gravity. Description of earth materials used in this report and shown on the attached Plates were provided by the client.

Test Pit/Boring No.	Sample Depth (Feet)	Soil Type	Dry Density (pcf)	Moisture Content (percent)	Percent Saturation ( $G_s=2.65$ )
B1	5	Fill	107.9	15.2	76
B1	101	Alluvium	100.9	21.7	90
B1	5	Alluvium	105.8	18.7	88
B1	20	Alluvium	106.2	15.7	75
B1	25	Alluvium	124.6	10.3	83
B1	30	Alluvium	111.1	4.0	22
B1	35	Alluvium	114.5	13.0	78
B1	40	Alluvium	107.7	17.3	86
B1	45	Alluvium	114.7	15.1	91
B1	50	Alluvium	112.9	18.0	100
B1	55	Alluvium	110.6	15.3	82
B1	60	Alluvium	111.0	11.3	61
B1	65	Alluvium	108.1	13.9	69
B1	70	Alluvium	110.9	9.4	51
B1	75	Alluvium	115.7	13.0	81



## Moisture Density (continued)

Test Pit/Boring No.	Sample Depth (Feet)	Soil Type	Dry Density (pcf)	Moisture Content (percent)	Percent Saturation ( $G_s=2.65$ )
B1	80	Alluvium	110.8	18.7	100
B1	85	Alluvium	103.9	23.6	100
B2	5	Fill	101.0	17.6	73
B2	10	Alluvium	99.3	21.4	85
B2	15	Alluvium	100.1	18.6	76
B2	20	Alluvium	122.1	7.3	55
B2	25	Alluvium	106.6	21.3	100
B2	30	Alluvium	114.6	15.6	93
B2	35	Alluvium	123.6	6.2	49
B2	40	Alluvium	118.6	14.2	95
B2	45	Alluvium	120.6	10.1	72
B2	50	Alluvium	113.1	11.8	68
B3	5	Fill	96.5	19.9	74
B3	10	Alluvium	103.1	16.1	71
B3	15	Alluvium	98.2	16.1	62
B3	20	Alluvium	112.9	16.5	94
B3	25	Alluvium	108.1	20.3	100
B3	30	Alluvium	112.0	19.2	100
B3	35	Alluvium	116.6	9.3	59
B3	40	Alluvium	109.6	15.6	81
B3	45	Alluvium	108.4	14.9	75
B3	50	Alluvium	117.0	14.6	94
B3	55	Alluvium	120.4	7.3	52
B3	60	Alluvium	118.0	8.6	57
B3	65	Alluvium	109.7	16.4	86
B3	70	Alluvium	113.0	16.8	96
B3	75	Alluvium	116.6	5.4	34
B3	80	Alluvium	122.1	12.2	91
B3	85	Alluvium	114.5	17.5	100
B3	90	Alluvium	121.0	13.3	96
B3	100	Alluvium	97.0	27.7	100
B3	110	Alluvium	119.0	13.5	92
B3	120	Alluvium	113.5	16.9	98
B4	5	Fill	95.6	20.0	73

### Moisture Density (continued)

Test Pit/Boring No.	Sample Depth (Feet)	Soil Type	Dry Density (pcf)	Moisture Content (percent)	Percent Saturation ( $G_s=2.65$ )
B4	10	Alluvium	105.5	17.6	82
B4	15	Alluvium	106.9	16.3	79
B4	20	Alluvium	110.8	19.5	100
B4	25	Alluvium	110.2	20.0	100
B4	30	Alluvium	106.1	21.2	100
B4	35	Alluvium	101.2	25.0	100
B4	40	Alluvium	107.5	18.2	90
B4	45	Alluvium	114.8	5.0	30
B4	50	Alluvium	112.0	16.6	93

### Compaction Character

Compaction tests were performed on bulk samples of the earth materials in accordance with ASTM D1557-12ei. The results of the tests are provided on the table below and on the "Moisture-Density Relationship", A-Plates. The specific gravity of the fill/alluvium was estimated from the compaction curves.

Test Pit/Boring No.	Sample Depth (Feet)	Soil Type	Maximum Dry Density (pcf)	Optimum Moisture Content (Percent)
B1	0-10	Fill/Alluvium	116.7	12.5
B2	0-10	Fill/Alluvium	116.0	12.6

### Shear Strength

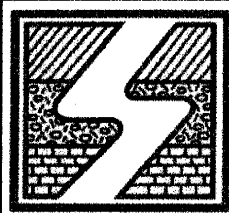
The peak and ultimate shear strengths of the alluvium were determined by performing consolidated and drained direct shear tests in conformance with ASTM D3080/D3080M-11. The tests were performed in a strain-controlled machine manufactured by GeoMatic. The rate of deformation was 0.01 inches per minute. Samples were sheared under varying confining pressures, as shown on the "Shear Test Diagrams," B-Plates. The moisture conditions during testing are shown on the following table and on the B-Plates. The samples indicated as saturated were artificially saturated in the laboratory. All saturated samples were sheared under submerged conditions.

**Shear Strength (continued)**

<b>Test Pit/ Boring No.</b>	<b>Sample Depth (Feet)</b>	<b>Dry Density (pcf)</b>	<b>As-Tested Moisture Content (percent)</b>
B1	10	100.9	25.8
B3	20	112.9	21.9
B1	25	124.6	16.9
B2	35	116.6	19.2
B3	35	116.6	18.2
B4	45	114.8	18.9
B3	80	122.1	18.9

**Consolidation**

One-dimensional consolidation tests were performed on samples of the alluvium in a consolidometer manufactured by GeoMatic in conformance with ASTM D2435/D2435M-11. The tests were performed on 1-inch high samples retained in brass rings. The samples were initially loaded to approximately ½ of the field over-burden pressure and then unloaded to compensate for the effects of possible disturbance during sampling. Loads were then applied in a geometric progression and resulting deformation recorded. Water was added at a specific load to determine the effect of saturation. The results are plotted on the "Consolidation Test," C-Plates.



**SOIL  
LABWORKS LLC**

**MOISTURE-DENSITY RELATIONSHIP A-1**

JN: **SL19.3116**  
CLIENT: **Feffer/Yorkwood, LLC**

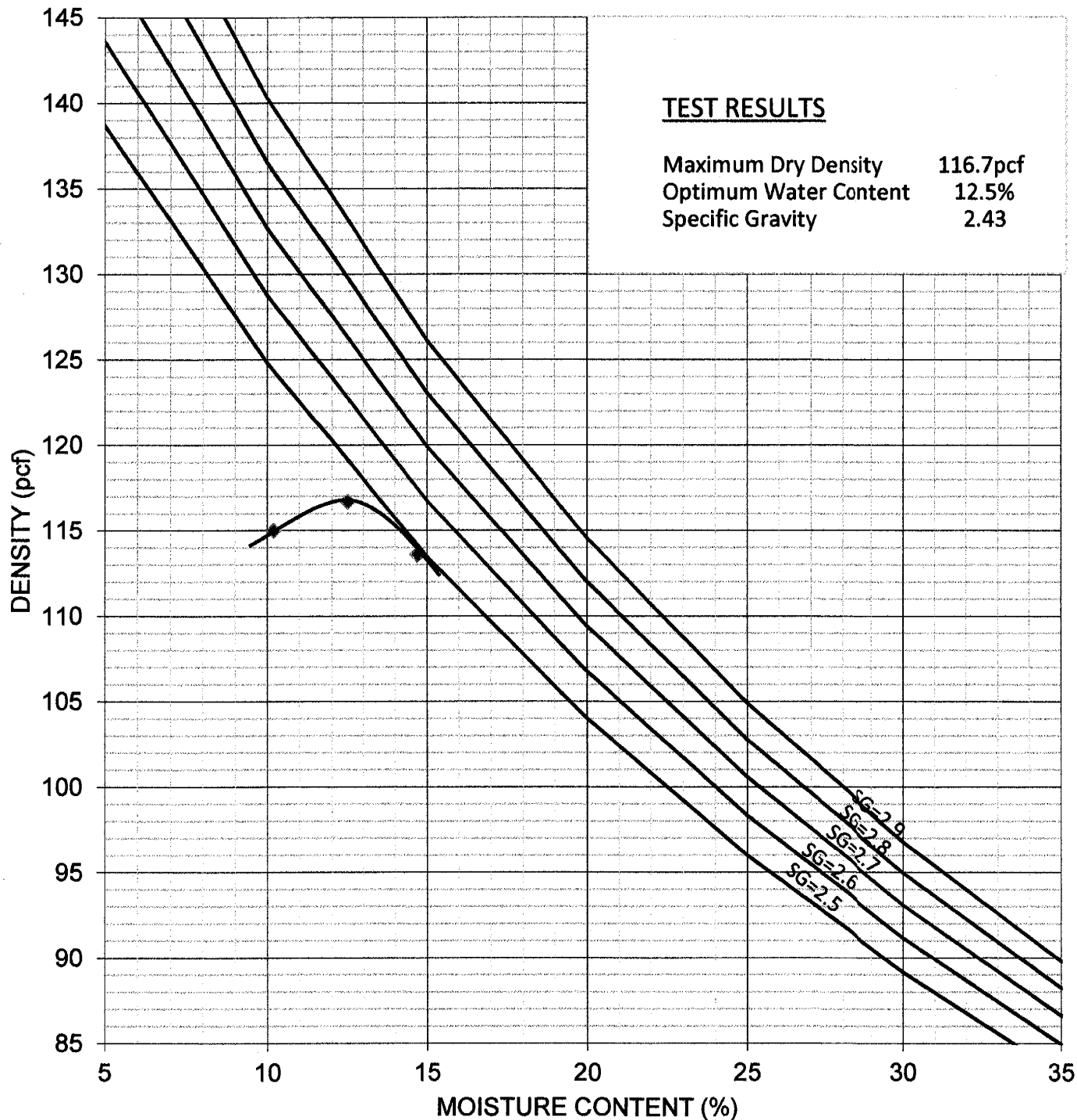
CONSULTANT: **JAI**

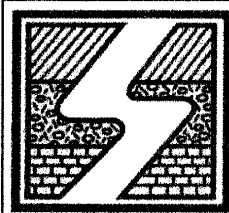
**B1 @ 0-10'**

EARTH MATERIAL:

**FILL/ALLUVIUM**

NOTE: ASTM Test Method D-1557-12





**SOIL  
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**MOISTURE-DENSITY RELATIONSHIP A-2**

JN: **SL19.3116**  
CLIENT: **Feffer/Yorkwood, LLC**

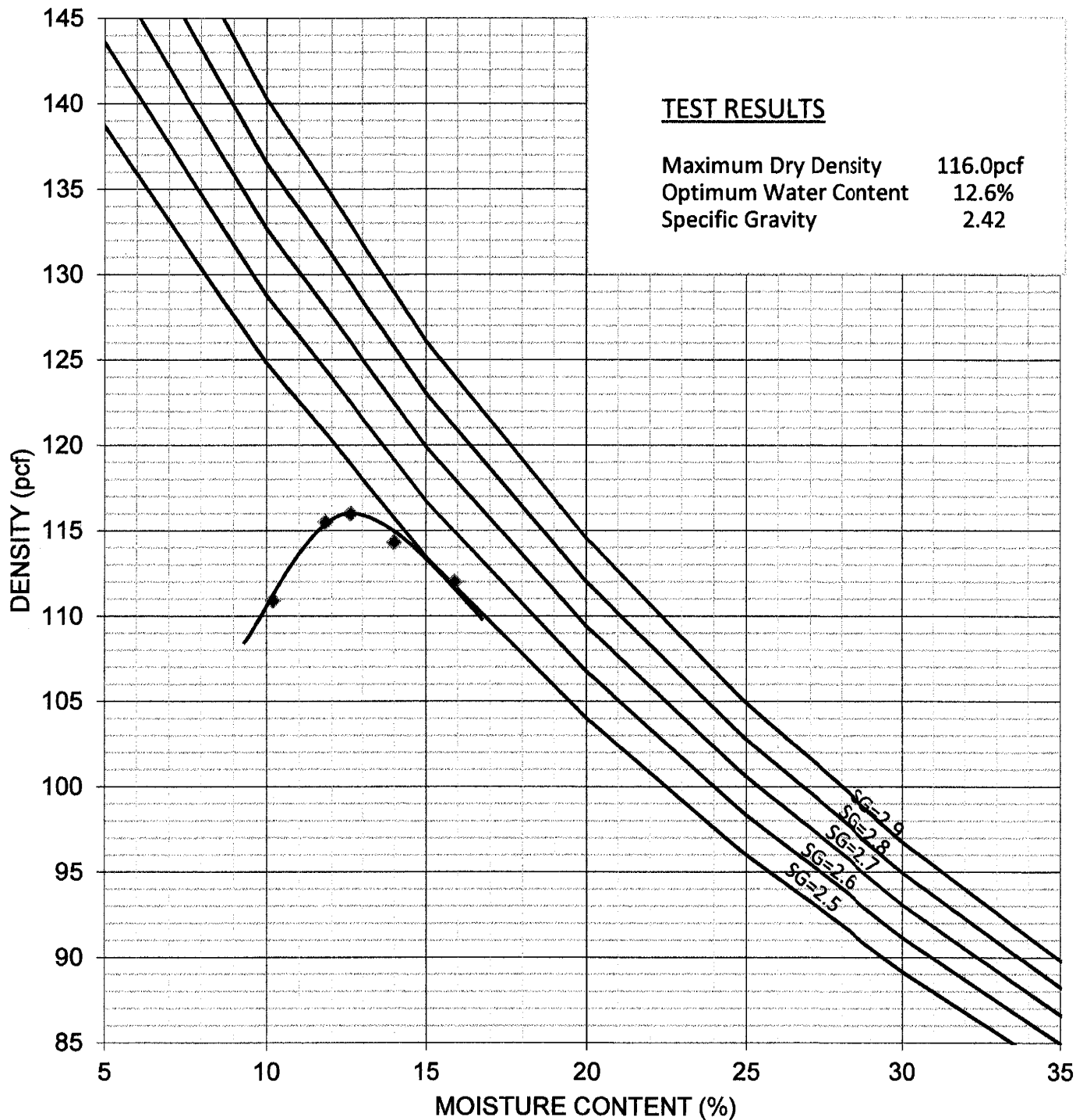
CONSULTANT: **JAI**

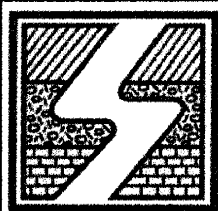
**B2 @ 0-10'**

EARTH MATERIAL:

**FILL/ALLUVIUM**

NOTE: ASTM Test Method D-1557-12





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LABWORKS LLC**

## SHEAR DIAGRAM B-1

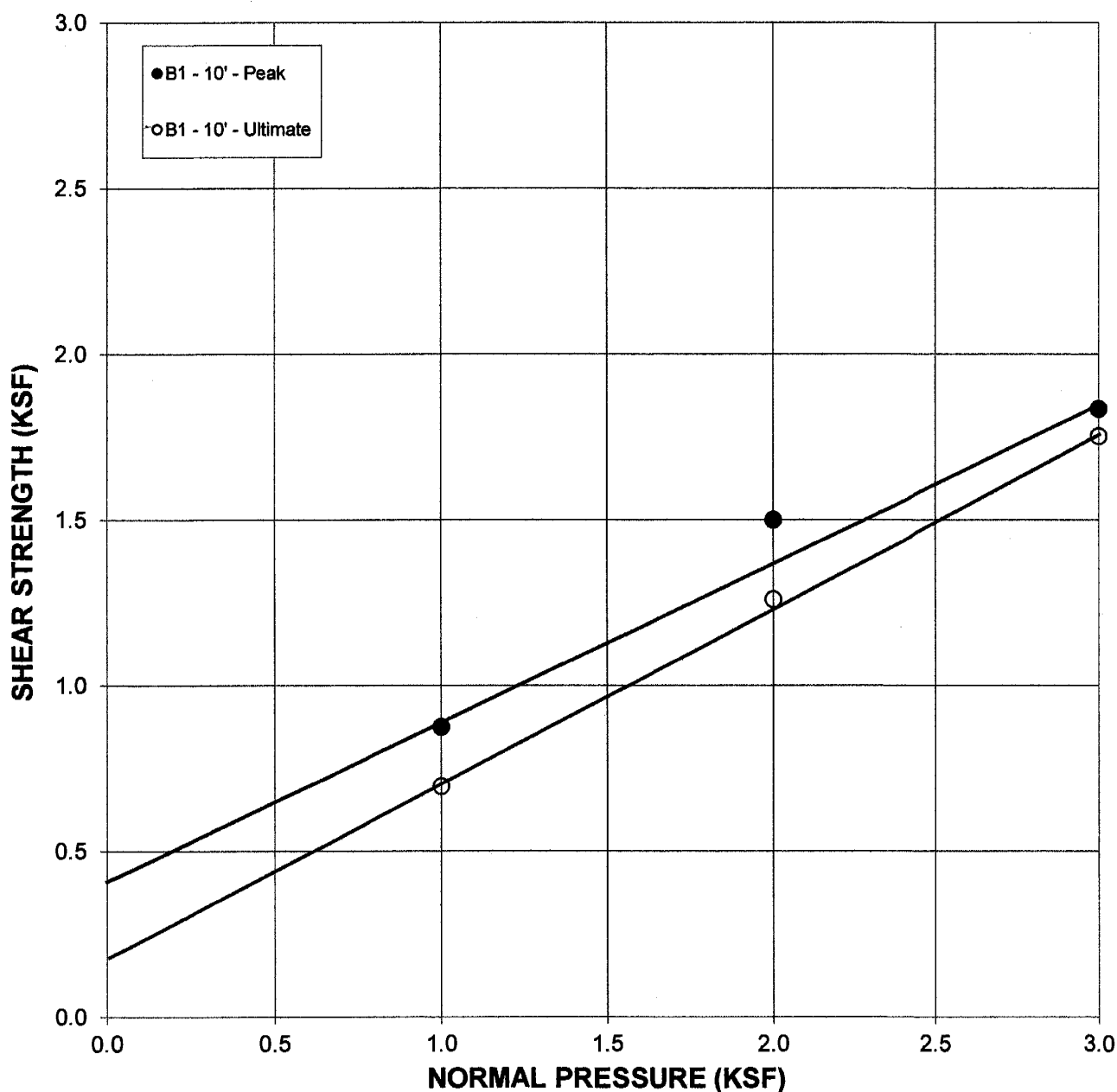
JN: SL19.3116 CONSULTANT JAI  
CLIENT: Feffer/Yorkwood LLC-6800-6822 W Hollywood

EARTH MATERIAL: ALLUVIUM

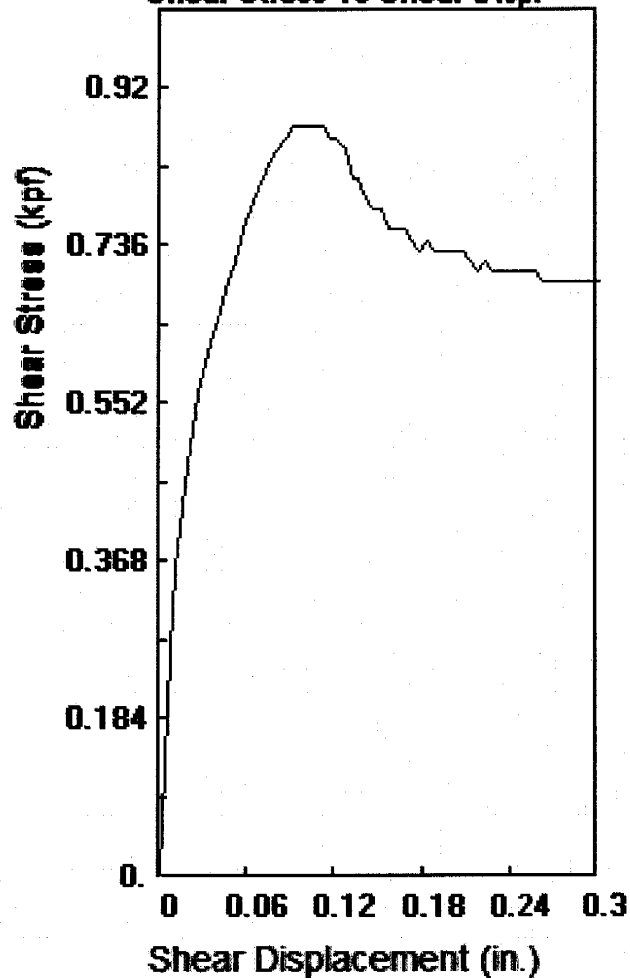
	PEAK	ULTIMATE	
Phi Angle	25	27	degrees
Cohesion	410	175	psf

Average Moisture Content	25.8%
Average Dry Density (pcf)	100.9
Percent Saturation	100.0%

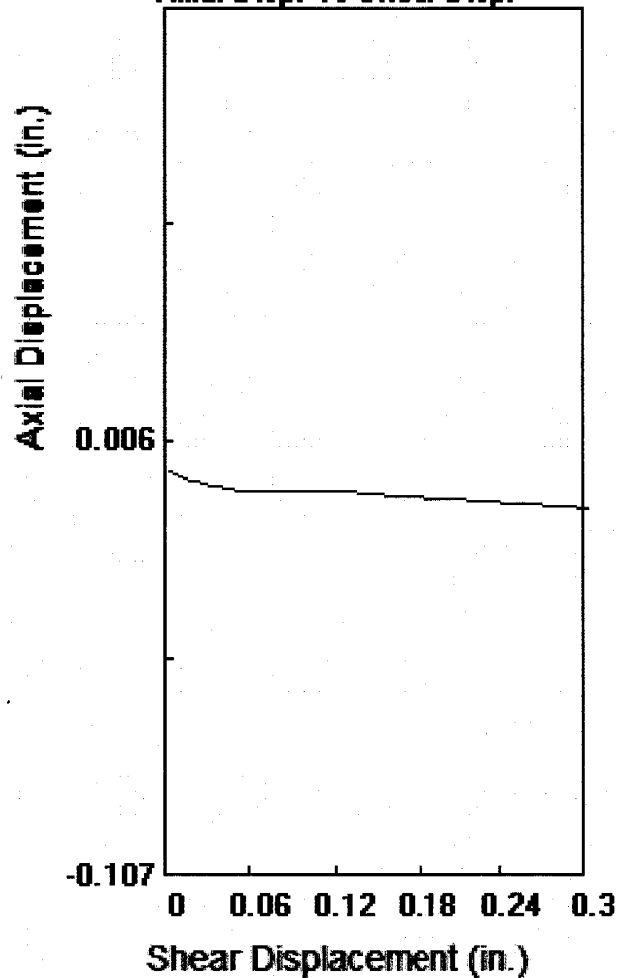
### DIRECT SHEAR TEST - ASTM D-3080



**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 1

**Boring:** B1

**Depth:** 10 ft.

**File:** 3116B1101.dat

**Stress at Max Def**  
876      0.091

**Soil Type:**

**Technician:** BF

**Axial Load:** 1000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      696

**Maximum Load**

876 psf

**Shear Displacement at maximum Load**

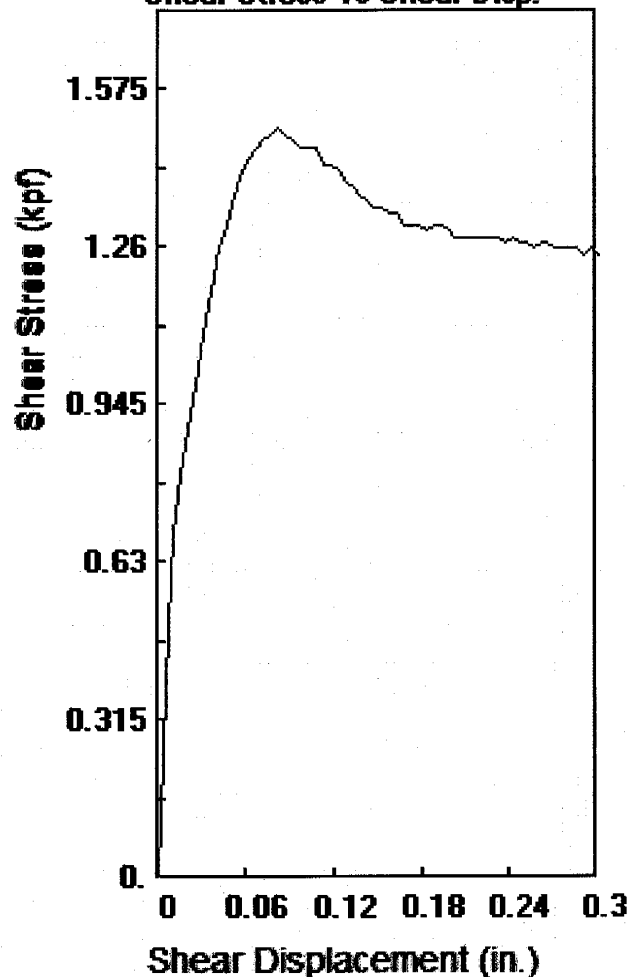
0.0907 in.

**Date**

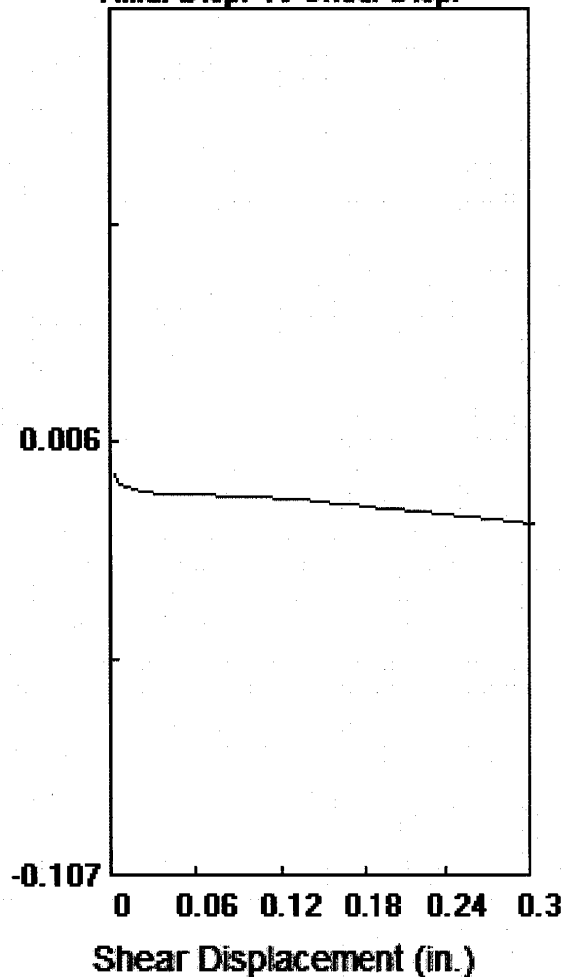
7/17/2019

**Soil Labworks**

**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 2

**Boring:** B1

**Depth:** 10 ft.

**File:** 3116B1102.dat

**Stress at Max Def**  
1500      0.081

**Soil Type:**

**Technician:** BF

**Axial Load:** 2000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      1260

**Maximum Load**

1500 psf

**Shear  
Displacement  
at maximum  
Load**

0.0808 in.

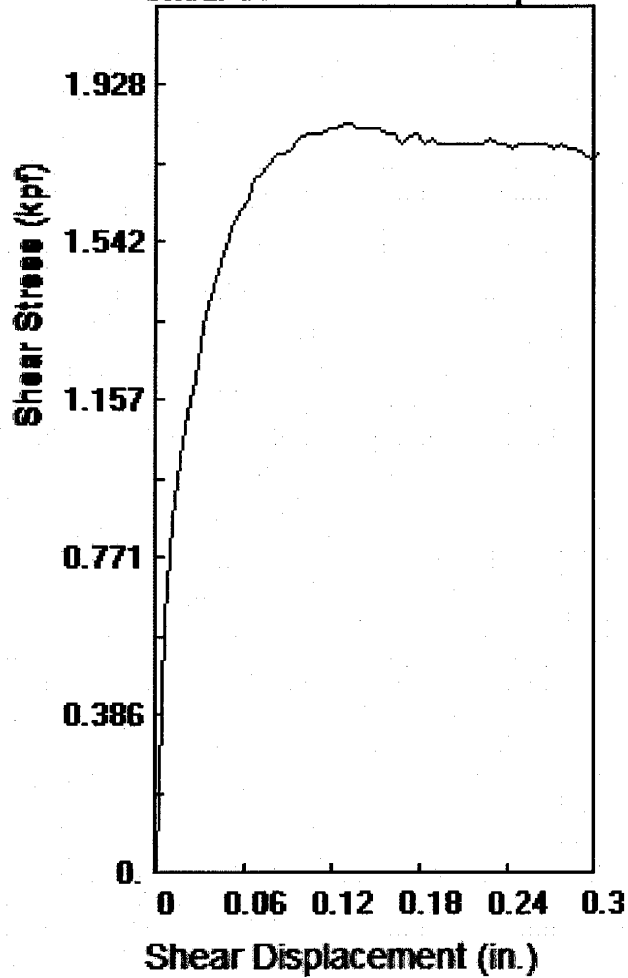
**Date**

7/17/2019

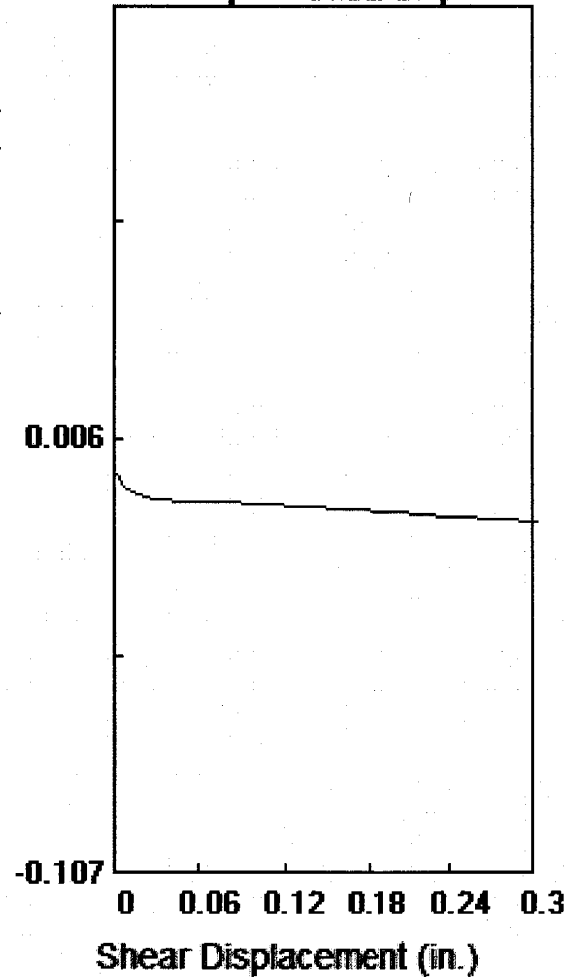
**Soil Labworks**



**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 3

**Boring:** B1

**Depth:** 10 ft.

**File:** 3116B1103.dat

**Stress at Max Def**  
1836      0.126

**Soil Type:**

**Technician:** BF

**Axial Load:** 3000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      1752

**Maximum Load**

1836 psf

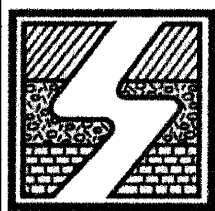
**Shear  
Displacement  
at maximum  
Load**

0.1255 in.

**Date**

7/17/2019

**Soil Labworks**



**SOIL  
LABWORKS** LLC

## SHEAR DIAGRAM B-2

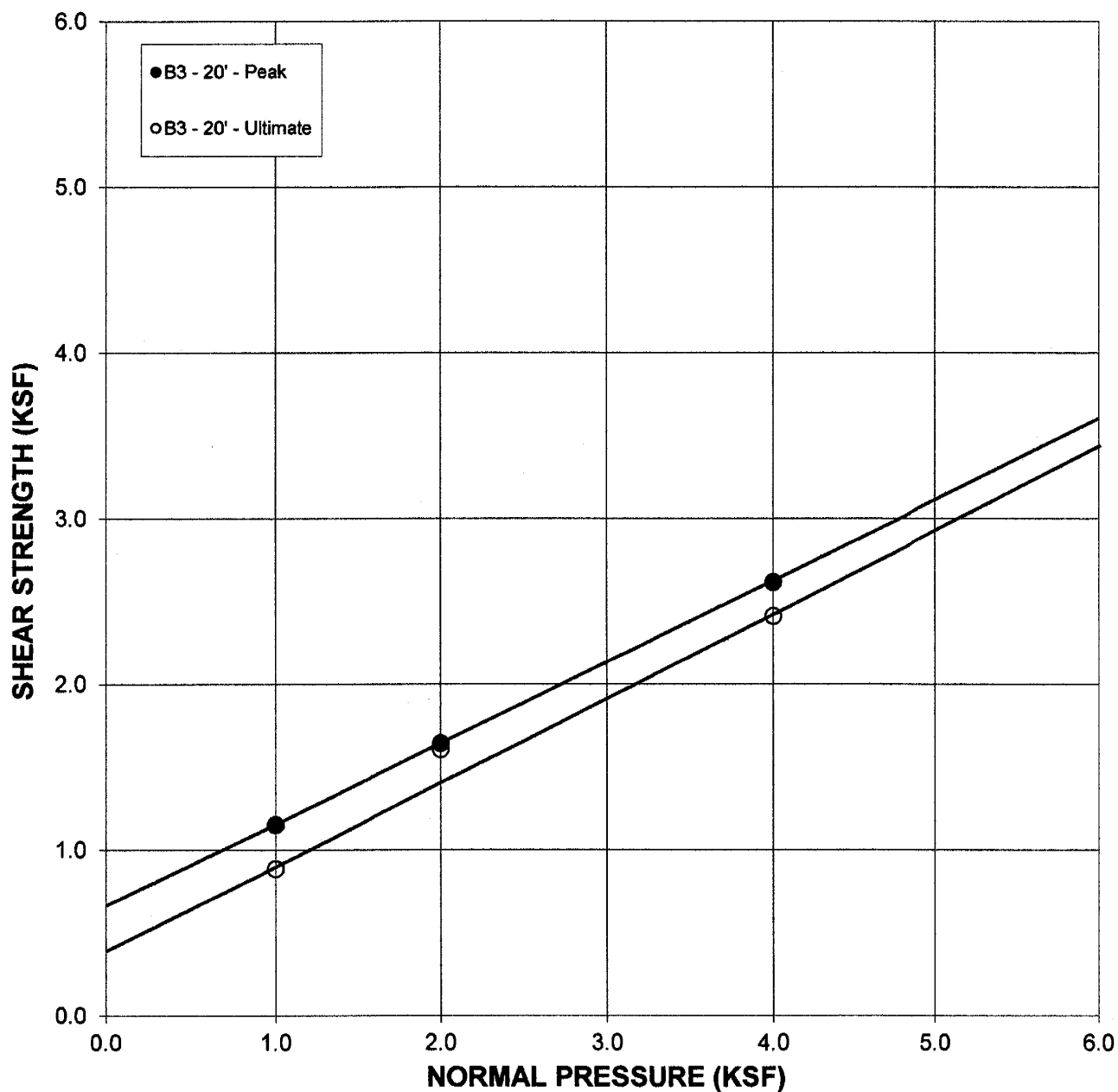
JN: SL19.3116 CONSULTANT JAI  
CLIENT: Feffer/Yorkwood LLC-6800-6822 W Hollywood

EARTH MATERIAL: ALLUVIUM

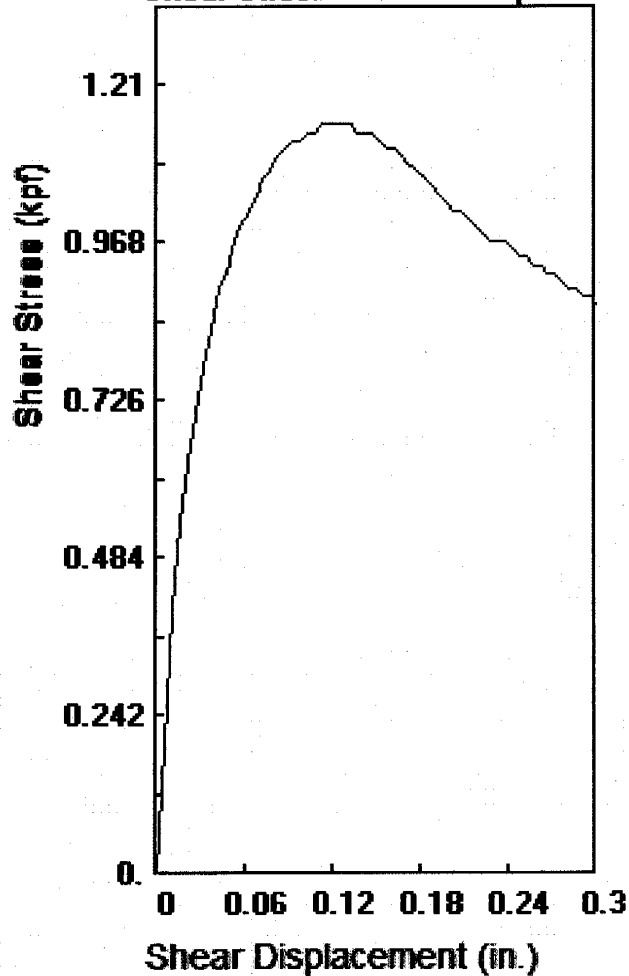
	PEAK	ULTIMATE	
Phi Angle	25.5	26.5	degrees
Cohesion	660	390	psf

Average Moisture Content	21.9%
Average Dry Density (pcf)	112.9
Percent Saturation	100.0%

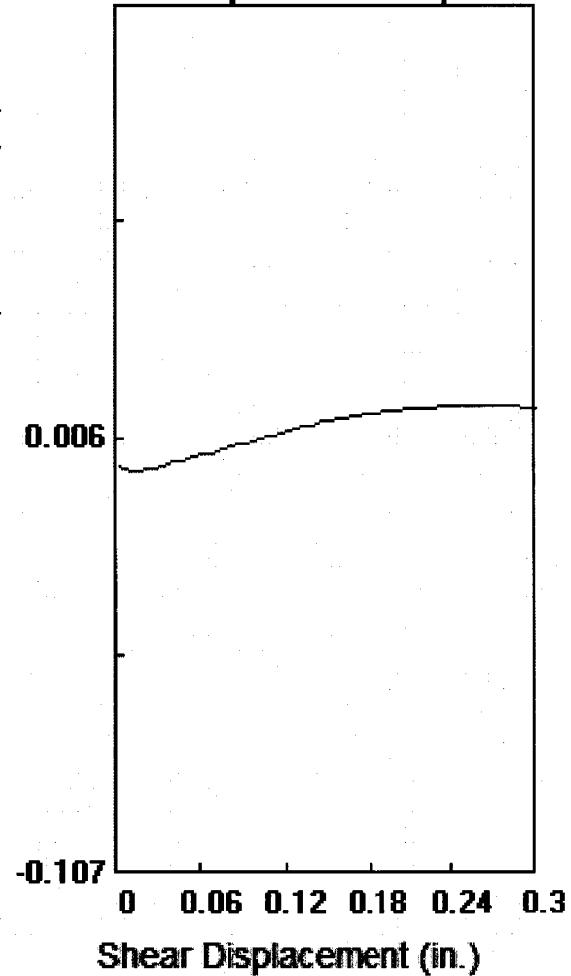
### DIRECT SHEAR TEST - ASTM D-3080



**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 1

**Boring:** B3

**Depth:** 20 ft.

**File:** 3116B3201.dat

**Stress at Max Def**  
1152      0.111

**Soil Type:**

**Technician:** BF

**Axial Load:** 1000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      888

**Maximum Load**

1152 psf

**Shear  
Displacement  
at maximum  
Load**

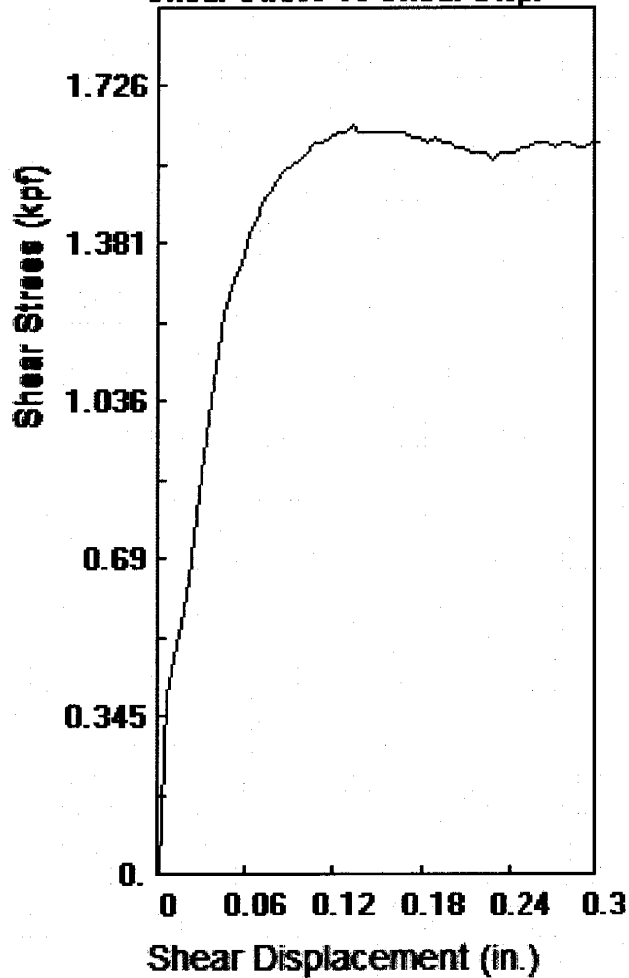
0.1105 in.

**Date**

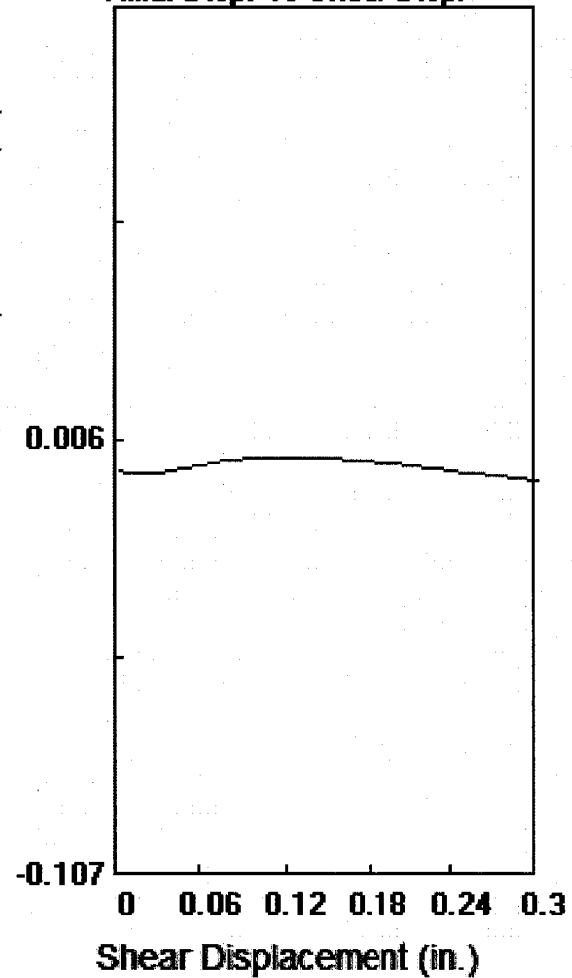
7/17/2019

**Soil Labworks**

**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 2

**Boring:** B3

**Depth:** 20 ft.

**File:** 3116B3202.dat

**Stress at Max Def**  
1644      0.131

**Soil Type:**

**Technician:** BF

**Axial Load:** 2000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      1608

**Maximum Load**

1644 psf

**Shear Displacement at maximum Load**

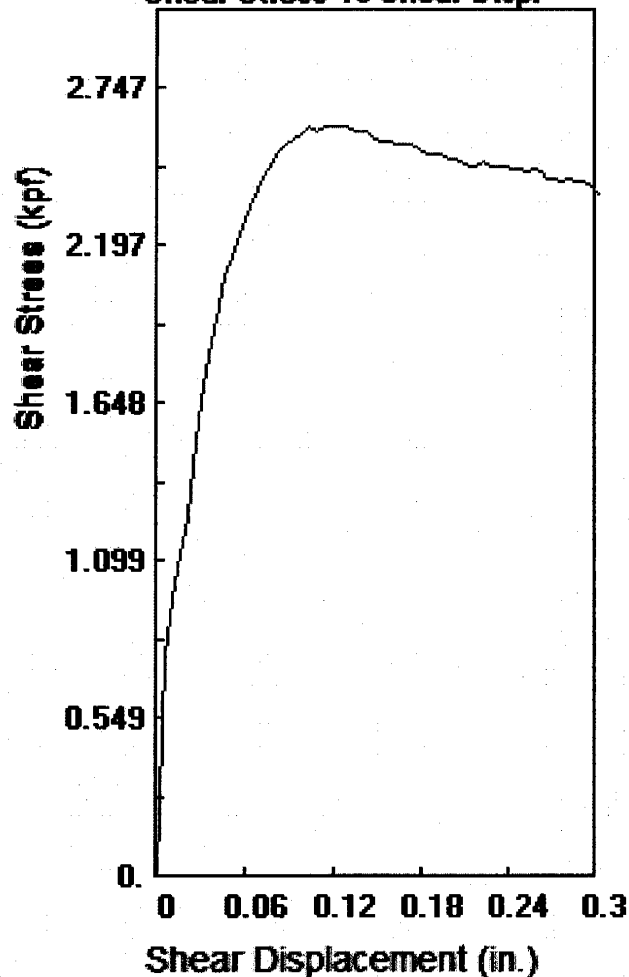
0.1306 in.

**Date**

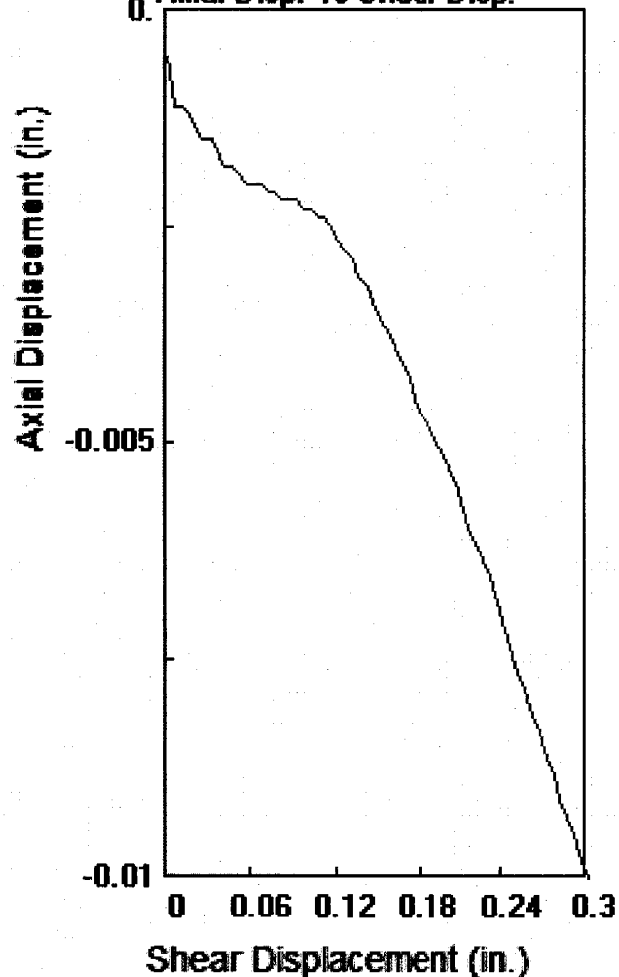
7/17/2019

**Soil Labworks**

**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 3

**Boring:** B3

**Depth:** 20 ft.

**File:** 3116B3204.dat

**Stress at Max Def**  
2616      0.101

**Soil Type:**

**Technician:** BF

**Axial Load:** 4000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      2412

**Maximum Load**

2616 psf

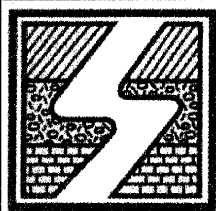
**Shear Displacement at maximum Load**

0.1006 in.

**Date**

7/17/2019

**Soil Labworks**



**SOIL  
LABWORKS** LLC

## SHEAR DIAGRAM B-3

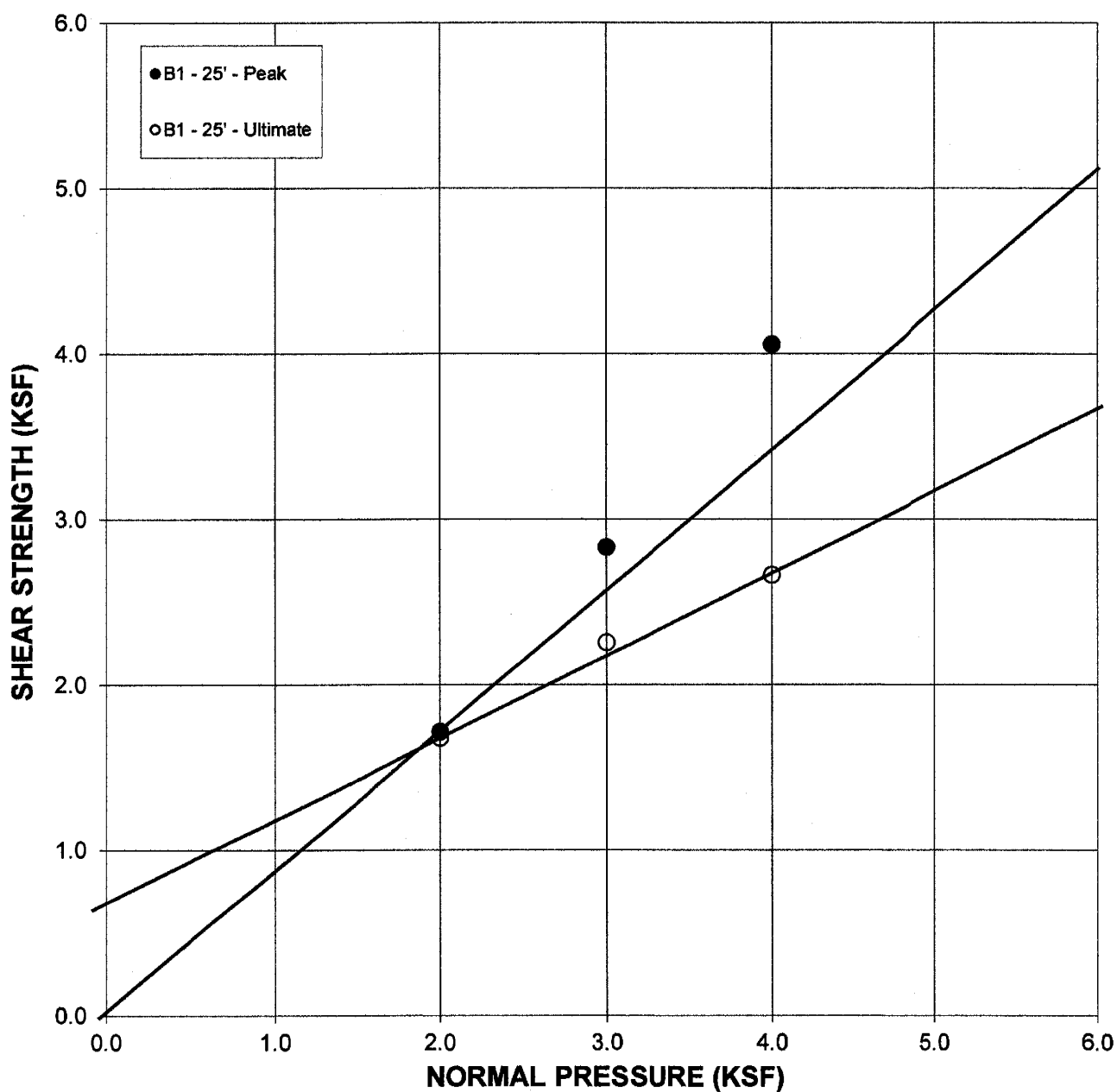
JN: SL19.3116 CONSULTANT JAI  
CLIENT: Feffer/Yorkwood LLC-6800-6822 W Hollywood

EARTH MATERIAL: ALLUVIUM

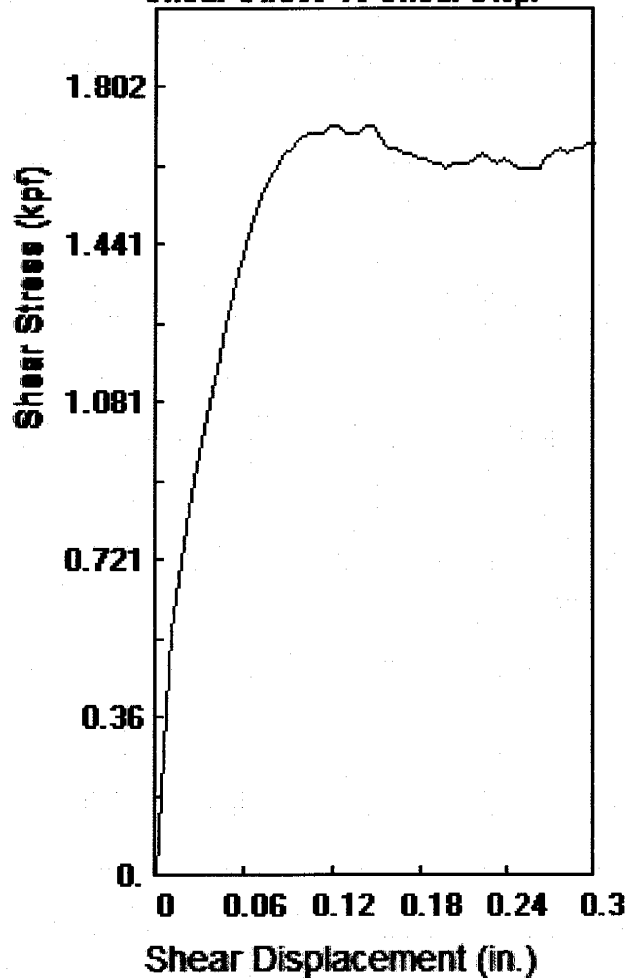
	PEAK	ULTIMATE	
Phi Angle	40	26	degrees
Cohesion	0	680	psf

Average Moisture Content	16.9%
Average Dry Density (pcf)	124.6
Percent Saturation	100.0%

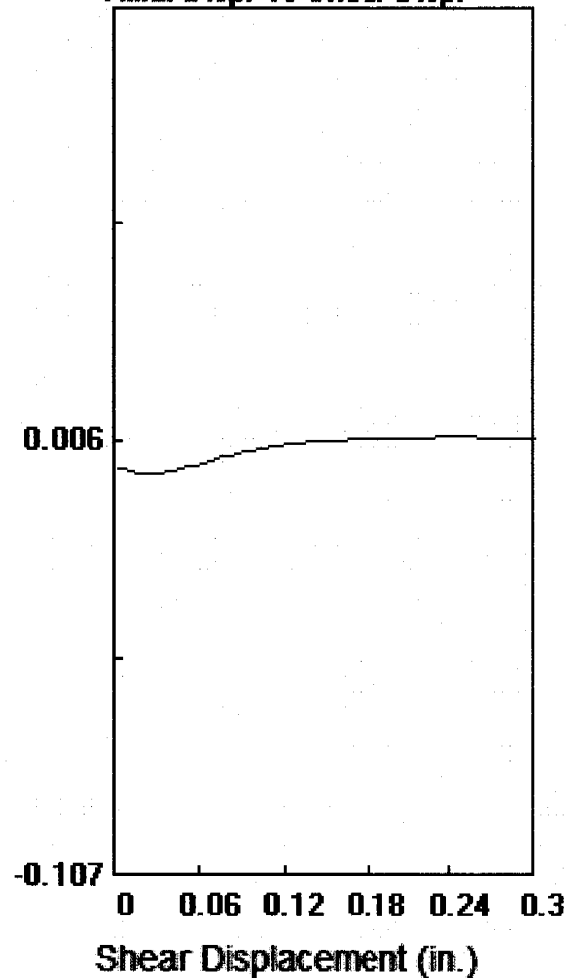
### DIRECT SHEAR TEST - ASTM D-3080



**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 1

**Boring:** B1

**Depth:** 25 ft.

**File:** 3116B1252.dat

**Stress at Max Def**  
1716      0.116

**Soil Type:**

**Technician:** BF

**Axial Load:** 2000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.295      1680

**Maximum Load**

1716 psf

**Shear Displacement at maximum Load**

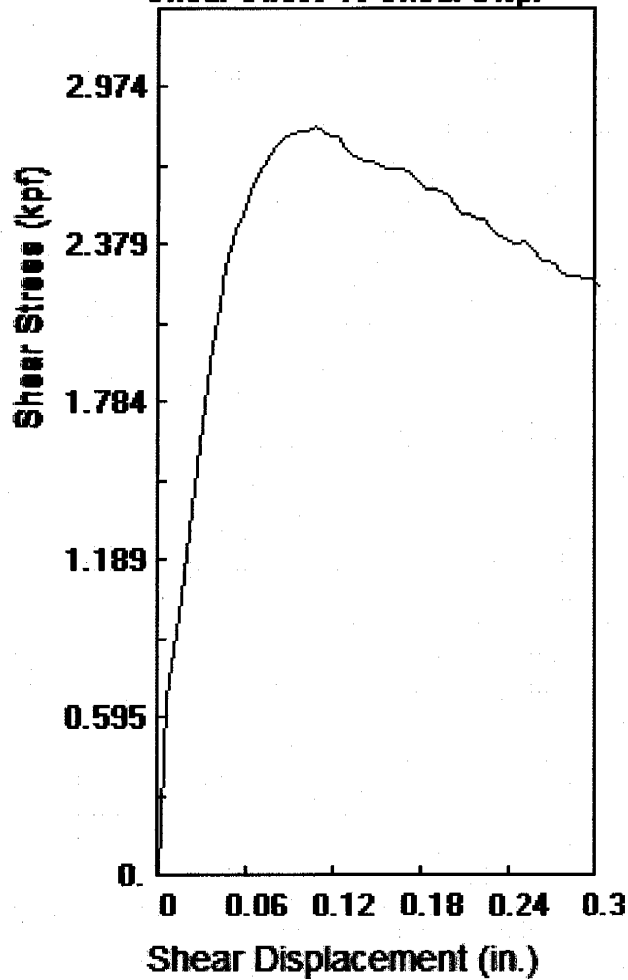
0.1155 in.

**Date**

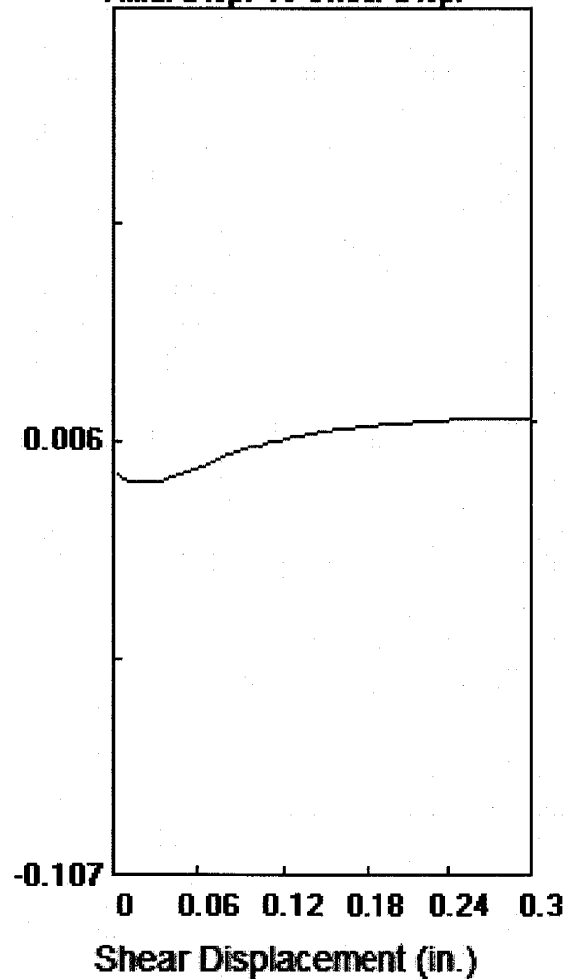
7/16/2019

**Soil Labworks**

**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 2

**Boring:** B1

**Depth:** 25 ft.

**File:** 3116B1253.dat

**Stress at Max Def**  
2832      0.106

**Soil Type:**

**Technician:** BF

**Axial Load:** 3000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      2256

**Maximum Load**

2832 psf

**Shear Displacement at maximum Load**

0.1055 in.

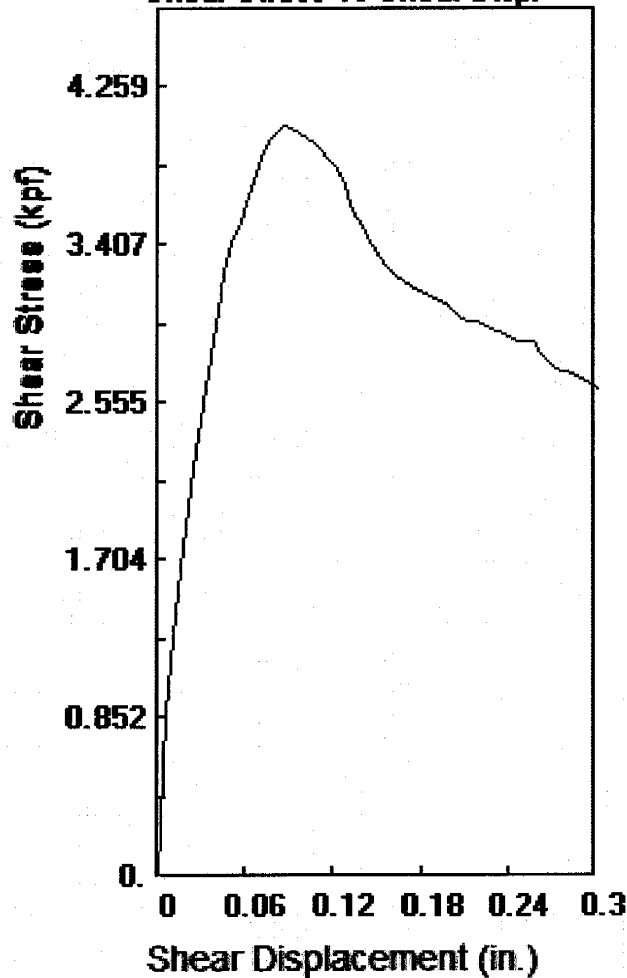
**Date**

7/16/2019

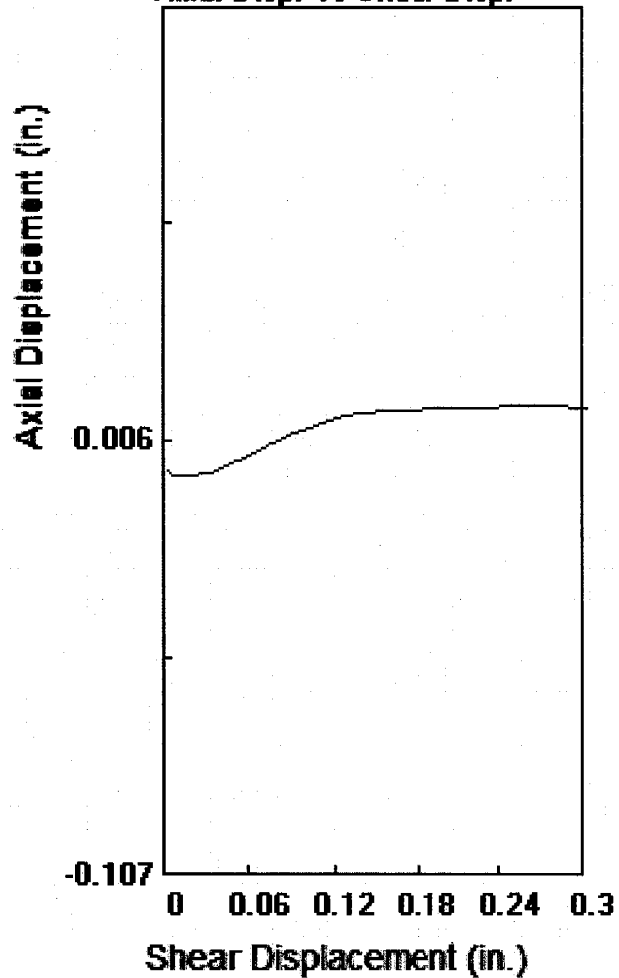
**Soil Labworks**



**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 3

**Boring:** B1

**Depth:** 25 ft.

**File:** 311681254.dat

**Stress at Max Def**  
4056      0.086

**Soil Type:**

**Technician:** BF

**Axial Load:** 4000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      2664

**Maximum Load**

**4056 psf**

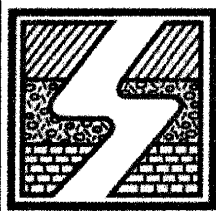
**Shear  
Displacement  
at maximum  
Load**

**0.0855 in.**

**Date**

**7/16/2019**

**Soil Labworks**



**SOIL  
LABWORKS LLC**

## SHEAR DIAGRAM B-4

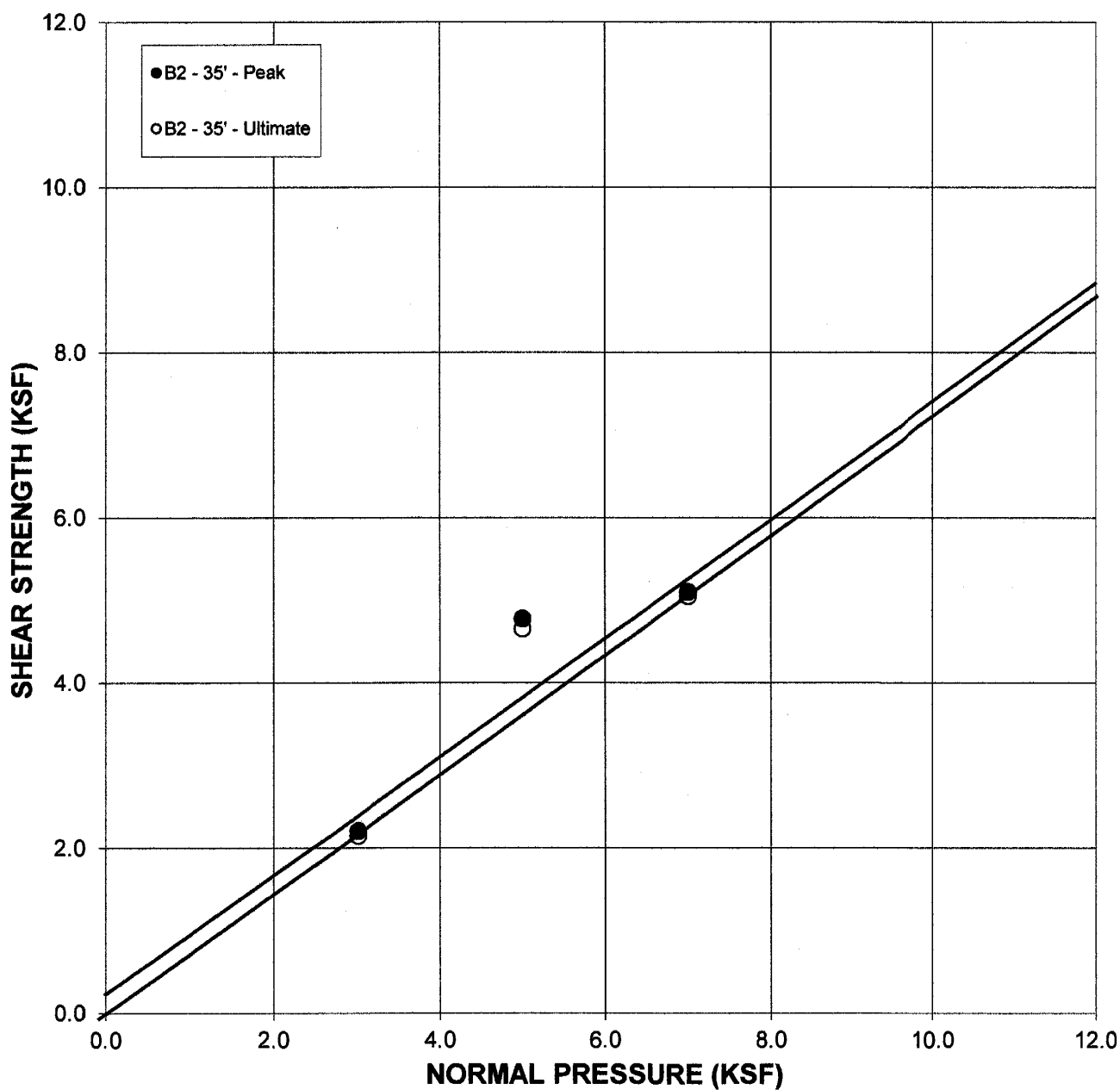
JN: SL19.3116 CONSULTANT JAI  
CLIENT: Feffer/Yorkwood LLC-6800-6822 W Hollywood

EARTH MATERIAL: ALLUVIUM

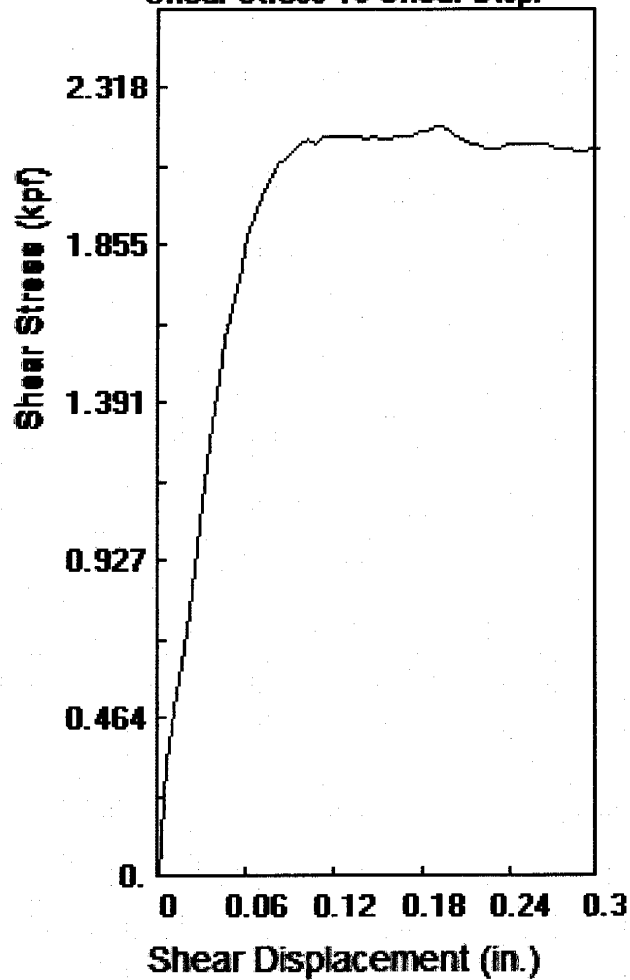
	PEAK	ULTIMATE	
Phi Angle	35.5	35	degrees
Cohesion	200	0	psf

Average Moisture Content	19.2%
Average Dry Density (pcf)	123.6
Percent Saturation	100.0%

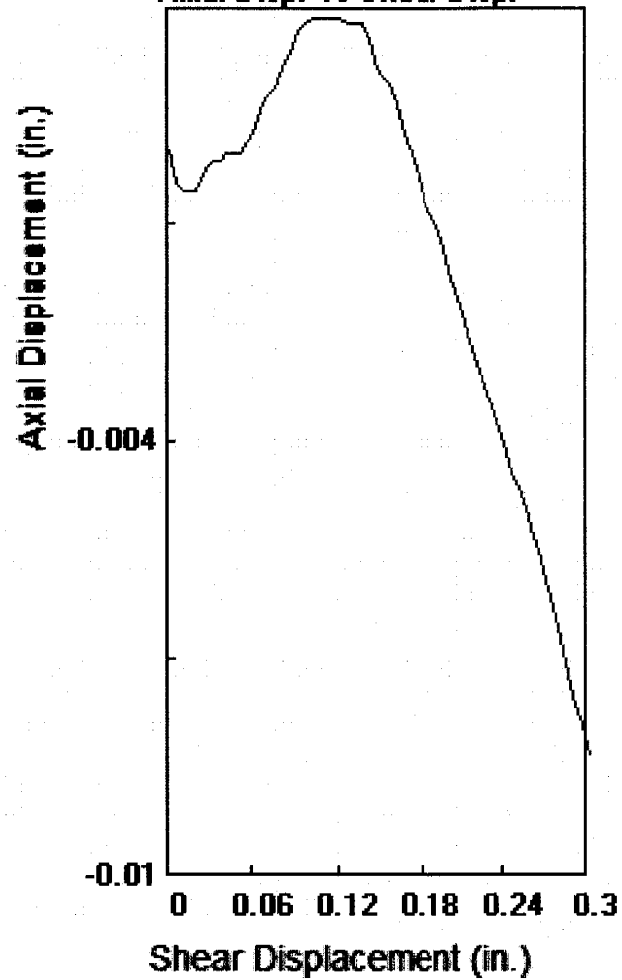
### DIRECT SHEAR TEST - ASTM D-3080



**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 1

**Boring:** B2

**Depth:** 35 ft.

**File:** 3116B2353.dat

**Stress at Max Def**  
2208      0.186

**Soil Type:**

**Technician:** BF

**Axial Load:** 3000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      2148

**Maximum Load**

2208 psf

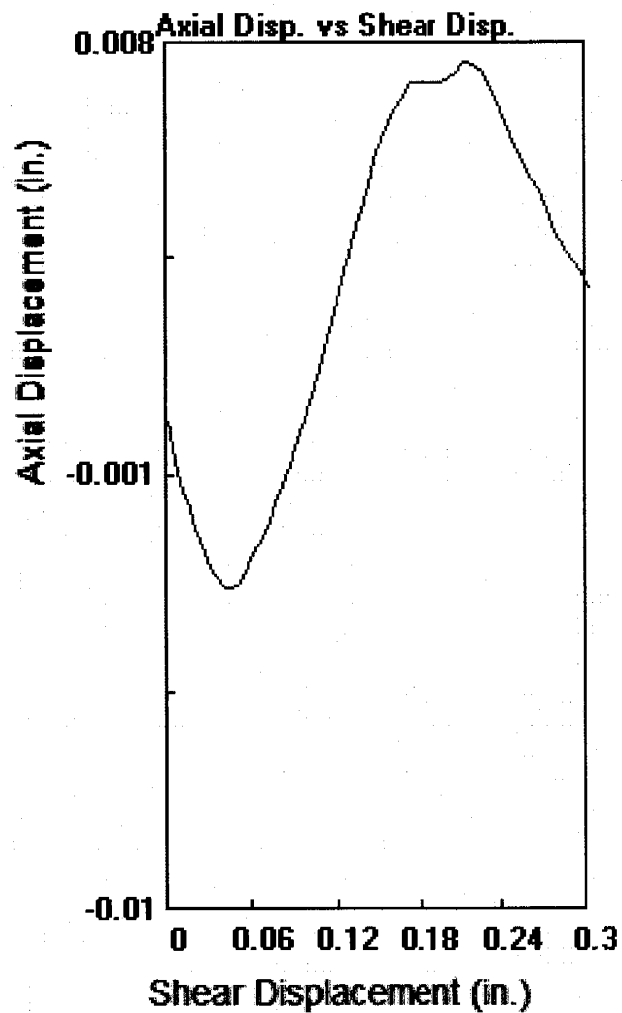
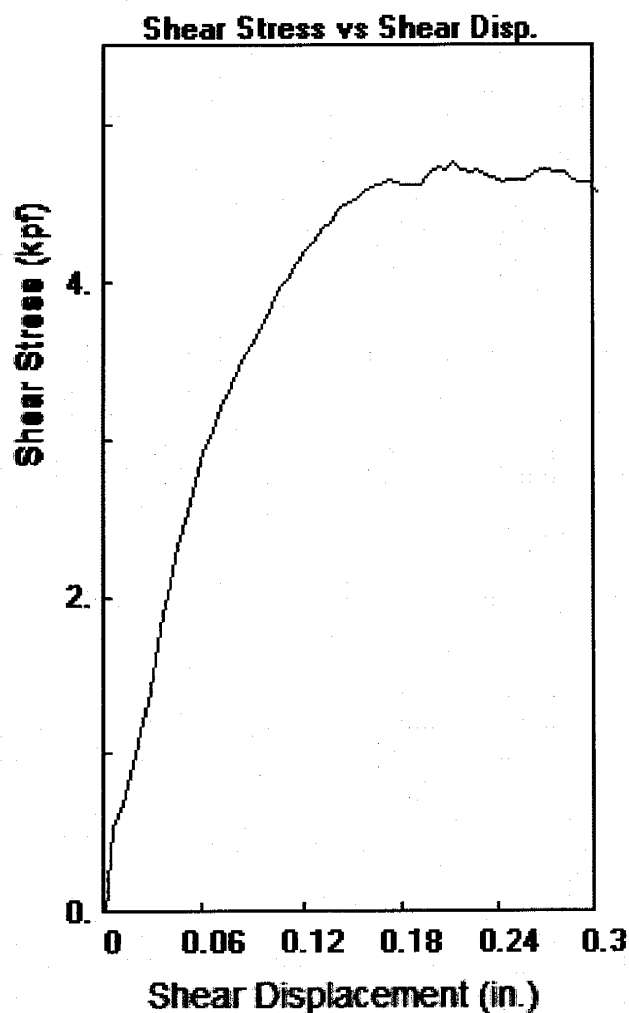
**Shear Displacement at maximum Load**

0.1857 in.

**Date**

7/17/2019

**Soil Labworks**



**Parameters**

**Client:** FEFFER/YORKWOOD

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 2

**Boring:** B2

**Depth:** 35 ft.

**File:** 3116B2355.dat

**Stress at Max Def**  
4776      0.211

**Soil Type:**

**Technician:** BF

**Axial Load:** 5000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      4656

**Maximum Load**

**4776 psf**

**Shear  
Displacement  
at maximum  
Load**

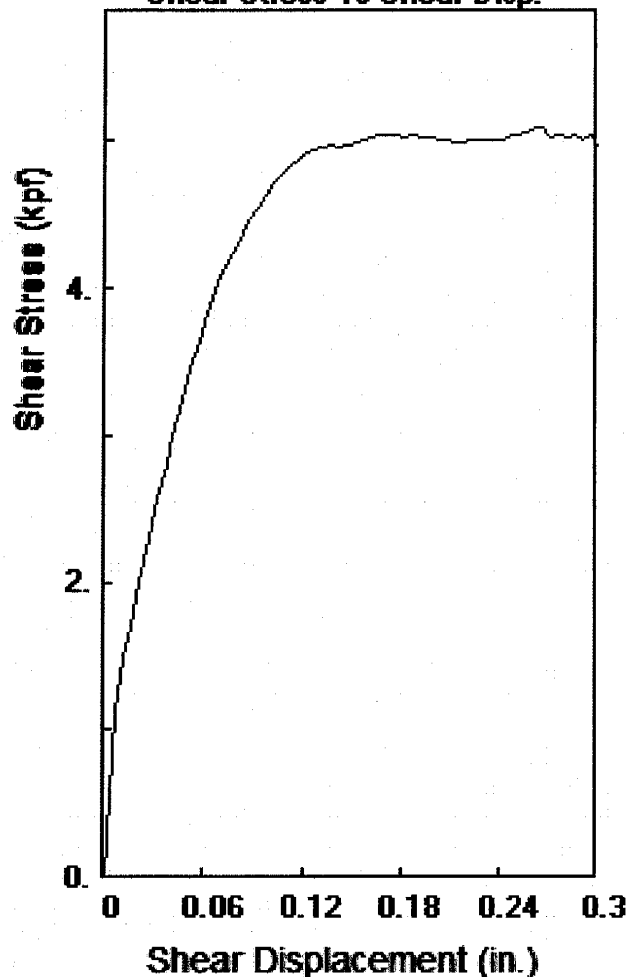
**0.2106 in.**

**Date**

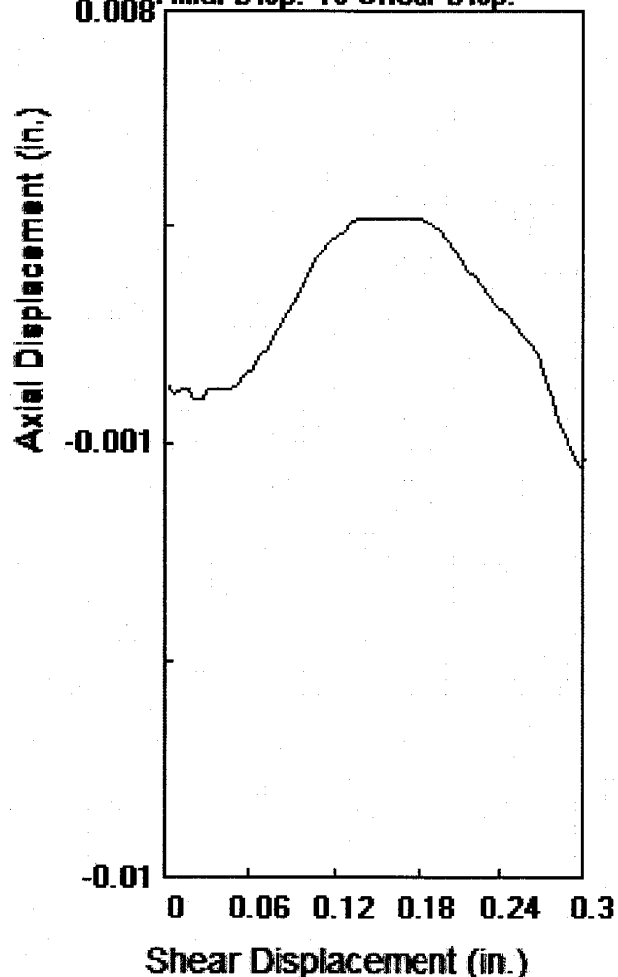
**7/17/2019**

**Soil Labworks**

**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 3

**Boring:** B2

**Depth:** 35 ft.

**File:** 3116B2357.dat

**Stress at Max Def**  
5100      0.261

**Soil Type:**

**Technician:** BF

**Axial Load:** 7000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      5052

**Maximum Load**

5100 psf

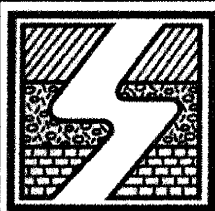
**Shear  
Displacement  
at maximum  
Load**

0.2605 in.

**Date**

7/17/2019

**Soil Labworks**



**SOIL  
LABWORKS** LLC

## SHEAR DIAGRAM B-5

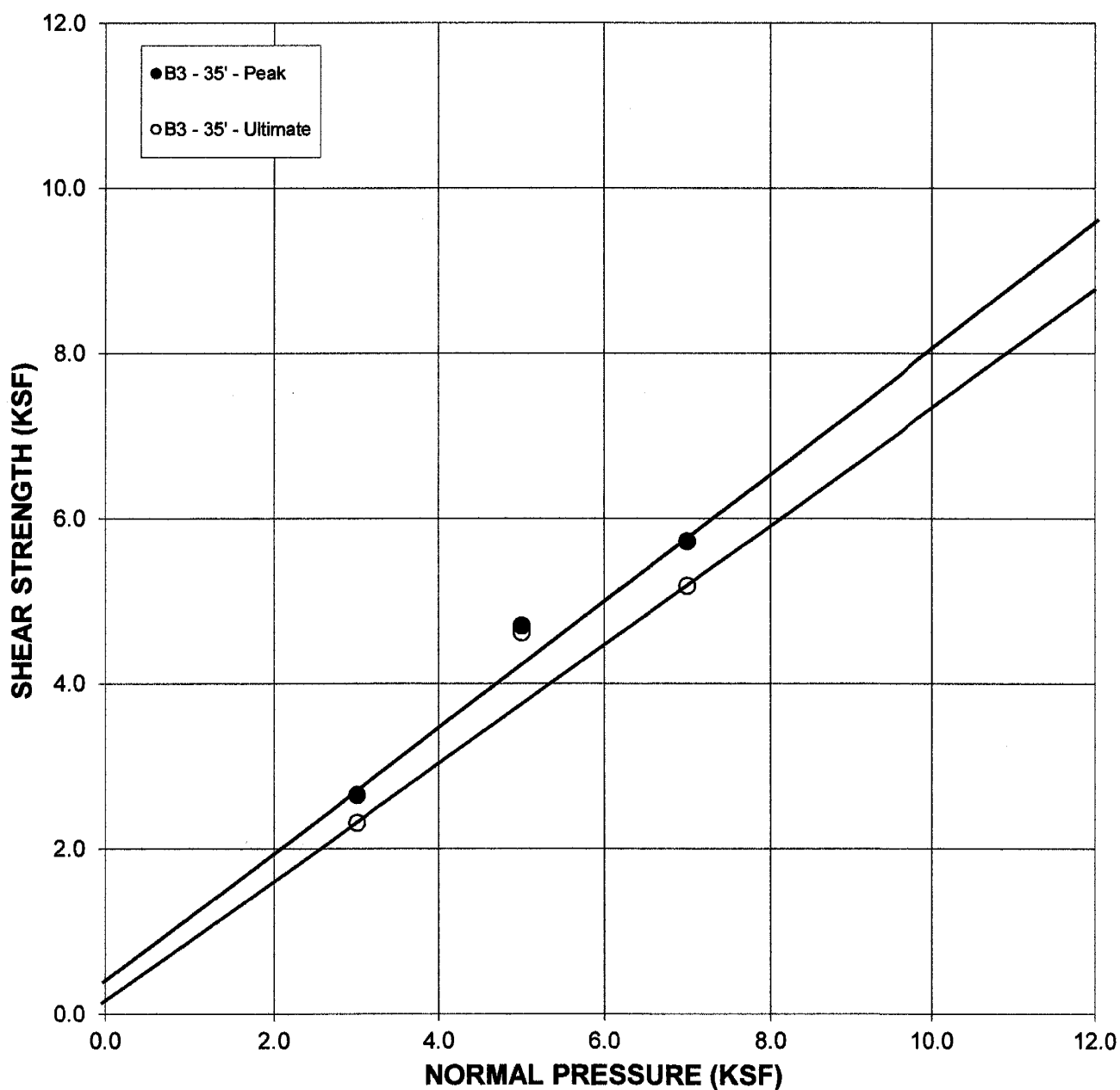
JN: SL19.3116 CONSULTANT JAI  
CLIENT: Feffer/Yorkwood LLC-6800-6822 W Hollywood

EARTH MATERIAL: ALLUVIUM

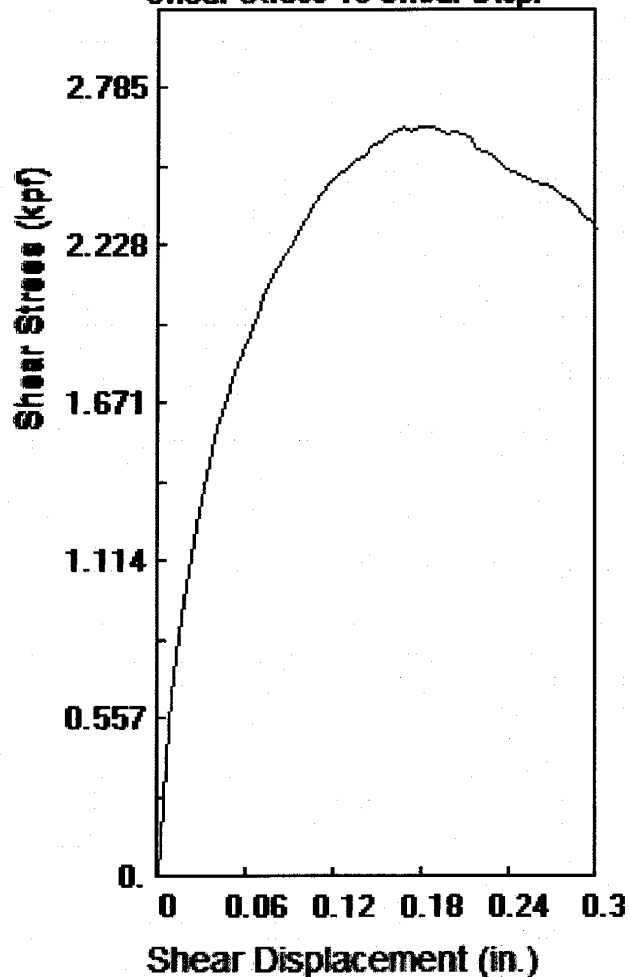
	PEAK	ULTIMATE	
Phi Angle	37	35	degrees
Cohesion	400	160	psf

Average Moisture Content	18.2%
Average Dry Density (pcf)	116.6
Percent Saturation	100.0%

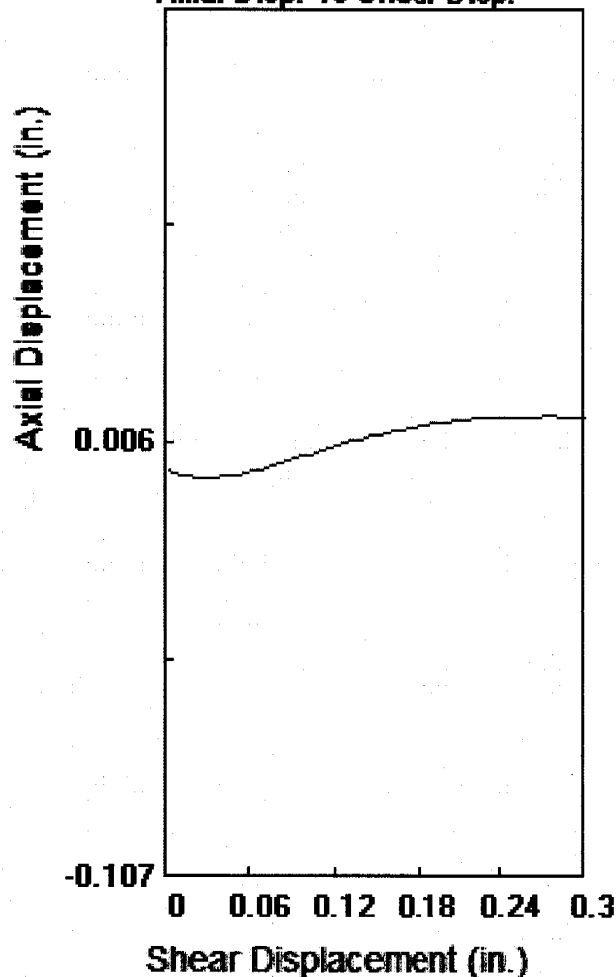
### DIRECT SHEAR TEST - ASTM D-3080



**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 1

**Boring:** B3

**Depth:** 35 ft.

**File:** 3116B3353.dat

**Stress at Max Def**  
2652      0.166

**Soil Type:**

**Technician:** BF

**Axial Load:** 3000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      2316

**Maximum Load**

2652 psf

**Shear Displacement at maximum Load**

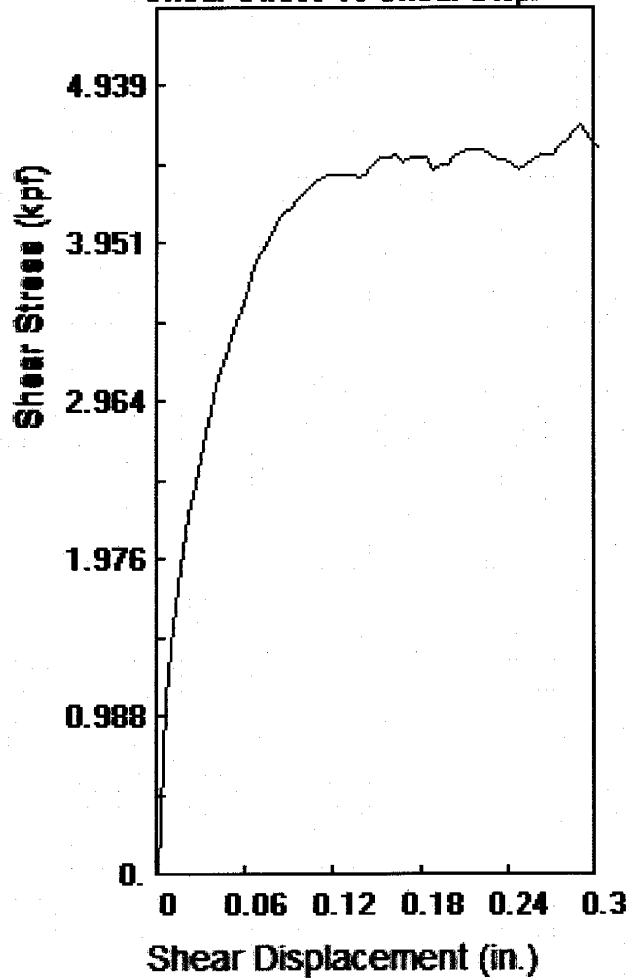
0.1656 in.

**Date**

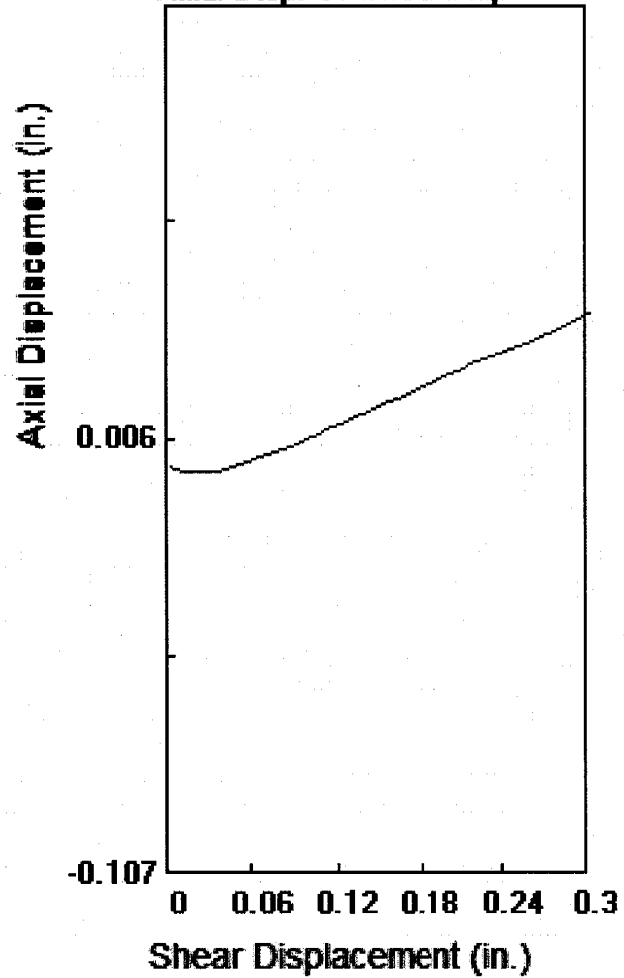
7/16/2019

**Soil Labworks**

**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 2

**Boring:** B3

**Depth:** 35 ft.

**File:** 3116B3355.dat

**Stress at Max Def**  
4704    0.29

**Soil Type:**

**Technician:** BF

**Axial Load:** 5000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296    4620

**Maximum Load**

4704 psf

**Shear  
Displacement  
at maximum  
Load**

0.2904 in.

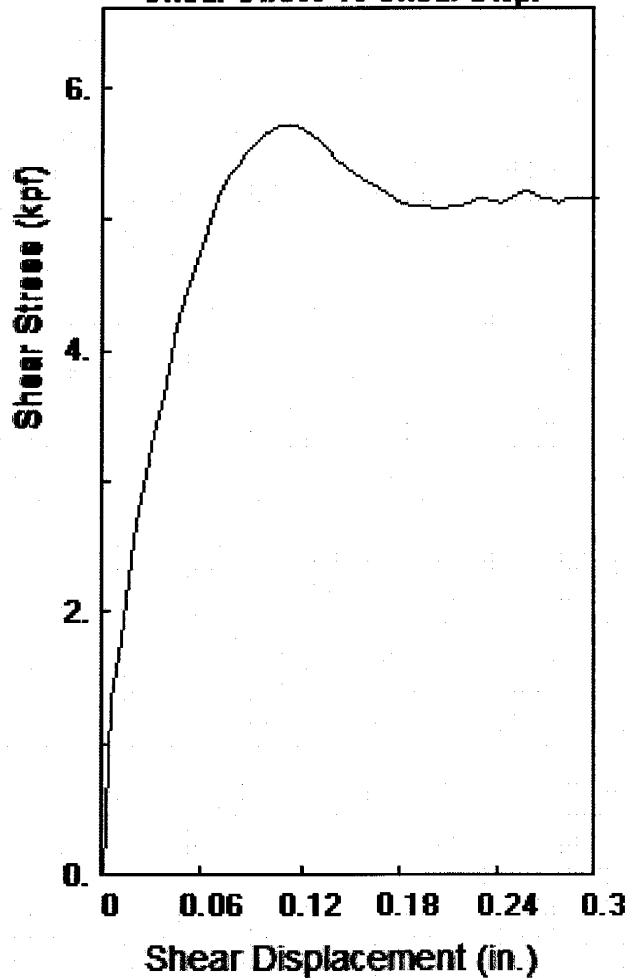
**Date**

7/16/2019

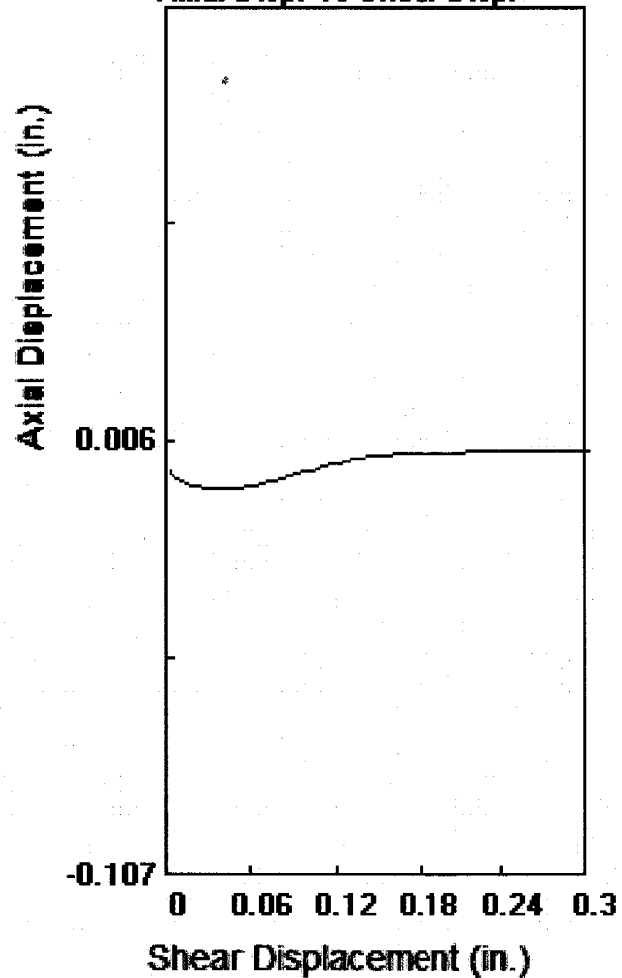
**Soil Labworks**



**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 3

**Boring:** B3

**Depth:** 35 ft.

**File:** 3116B3357.dat

**Stress at Max Def**  
5724      0.106

**Soil Type:**

**Technician:** BF

**Axial Load:** 7000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      5184

**Maximum Load**

5724 psf

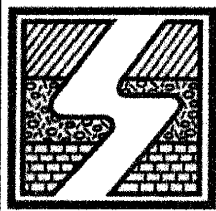
**Shear Displacement at maximum Load**

0.1057 in.

**Date**

7/16/2019

**Soil Labworks**



**SOIL  
LABWORKS** LLC

## SHEAR DIAGRAM B-6

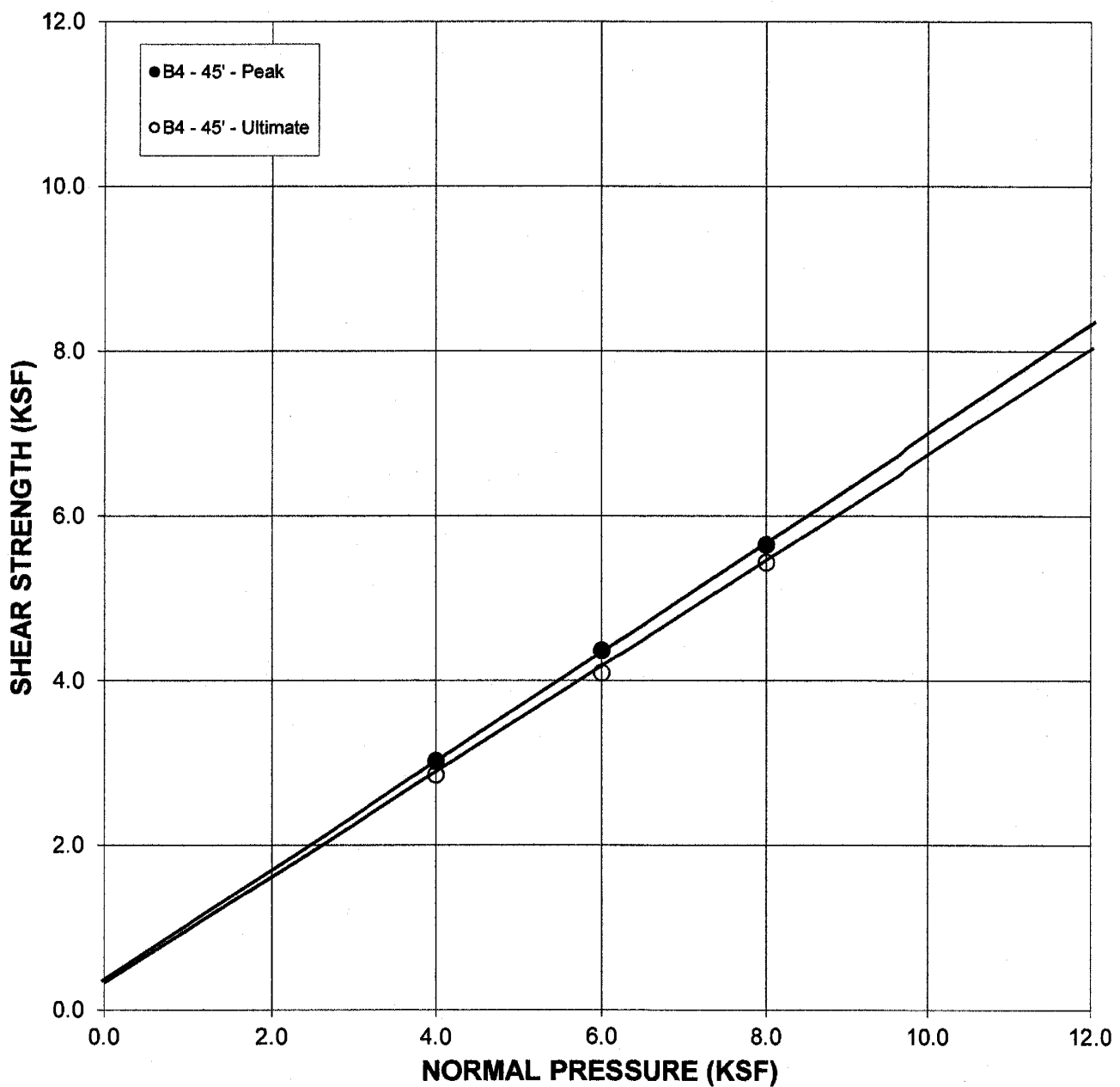
JN: SL19.3116 CONSULTANT JAI  
CLIENT: Feffer/Yorkwood LLC-6800-6822 W Hollywood

EARTH MATERIAL: ALLUVIUM

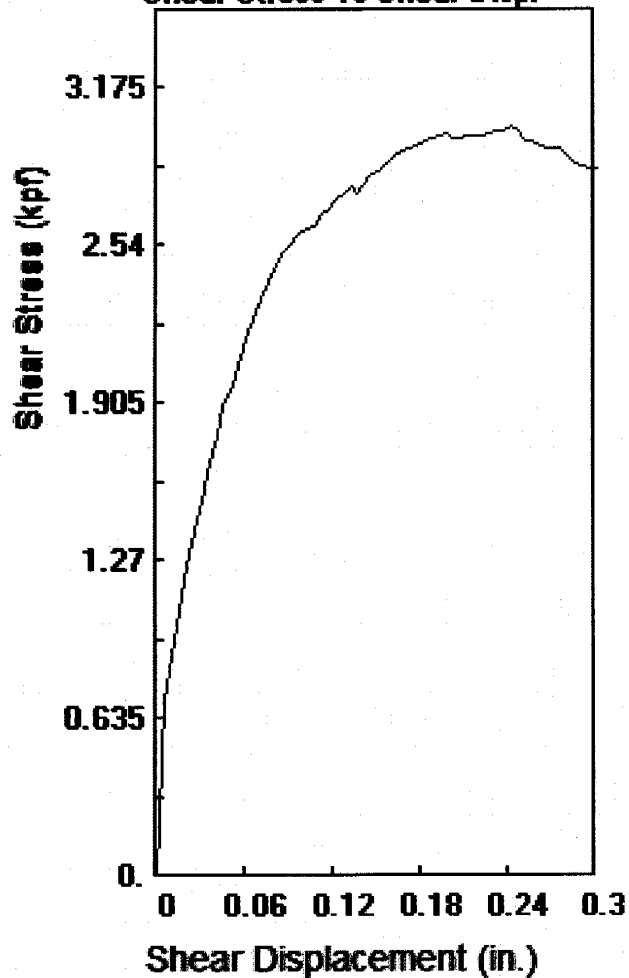
	PEAK	ULTIMATE	
Phi Angle	33	32.5	degrees
Cohesion	420	280	psf

Average Moisture Content	18.9%
Average Dry Density (pcf)	114.8
Percent Saturation	100.0%

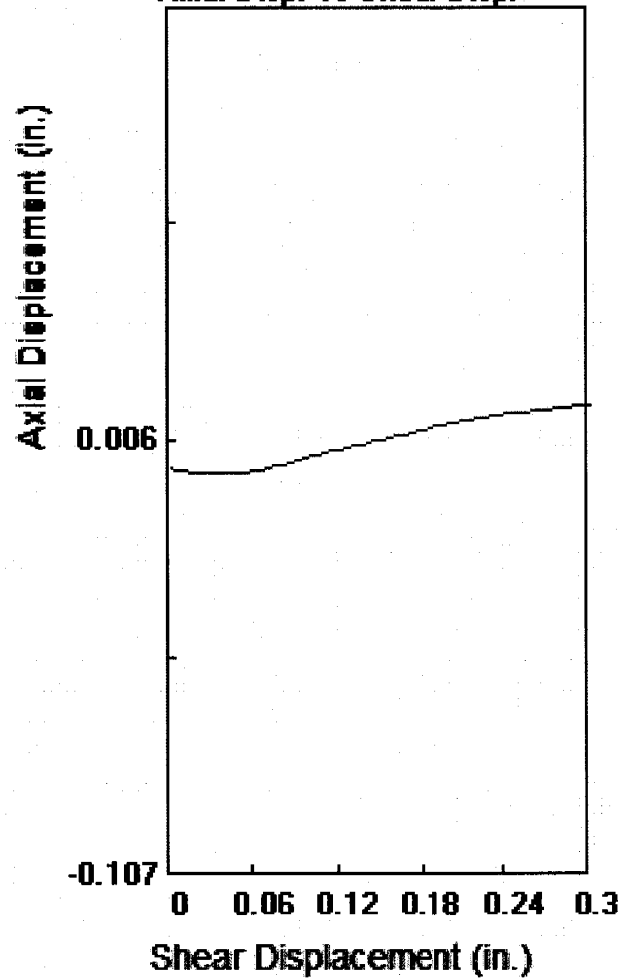
### DIRECT SHEAR TEST - ASTM D-3080



**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 1

**Boring:** B4

**Depth:** 45 ft.

**File:** 311684454.dat

**Stress at Max Def**  
3024      0.241

**Soil Type:**

**Technician:** BF

**Axial Load:** 4000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      2856

**Maximum Load**

**3024 psf**

**Shear Displacement at maximum Load**

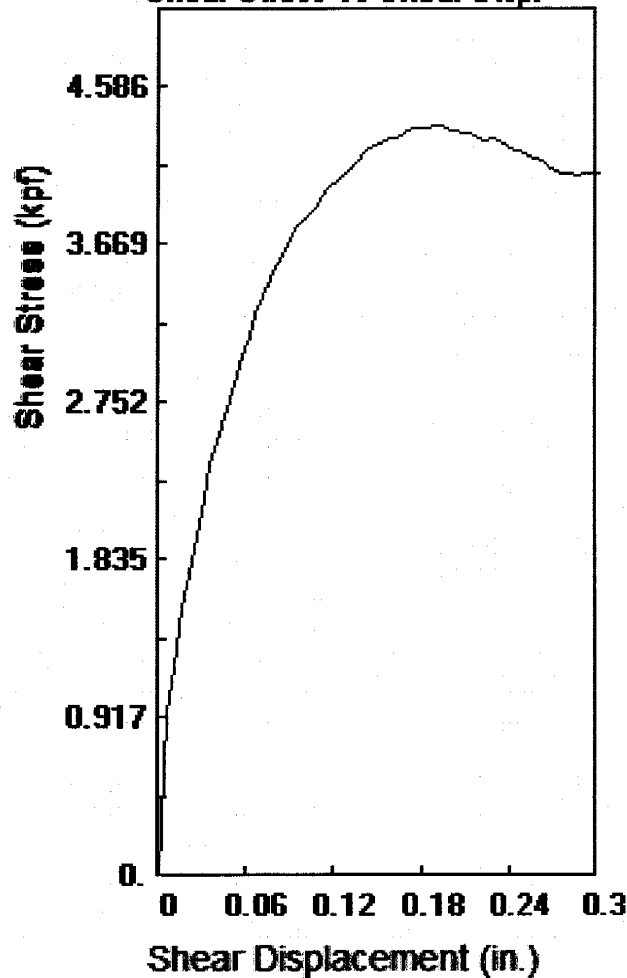
**0.2407 in.**

**Date**

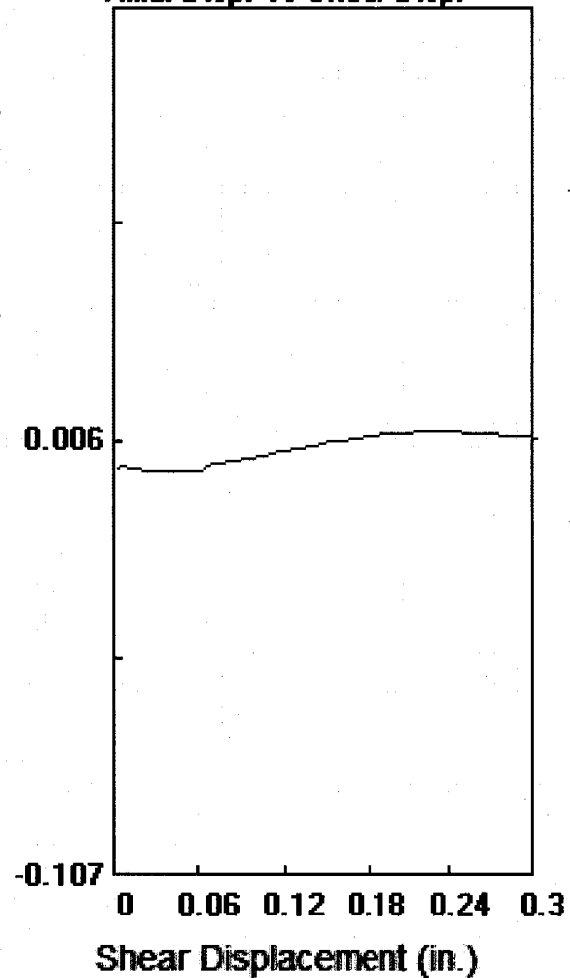
**7/16/2019**

**Soil Labworks**

**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 2

**Boring:** B4

**Depth:** 45 ft.

**File:** 3116B4456.dat

**Stress at Max Def**  
4368      0.186

**Soil Type:**

**Technician:** BF

**Axial Load:** 6000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      4092

**Maximum Load**

4368 psf

**Shear Displacement at maximum Load**

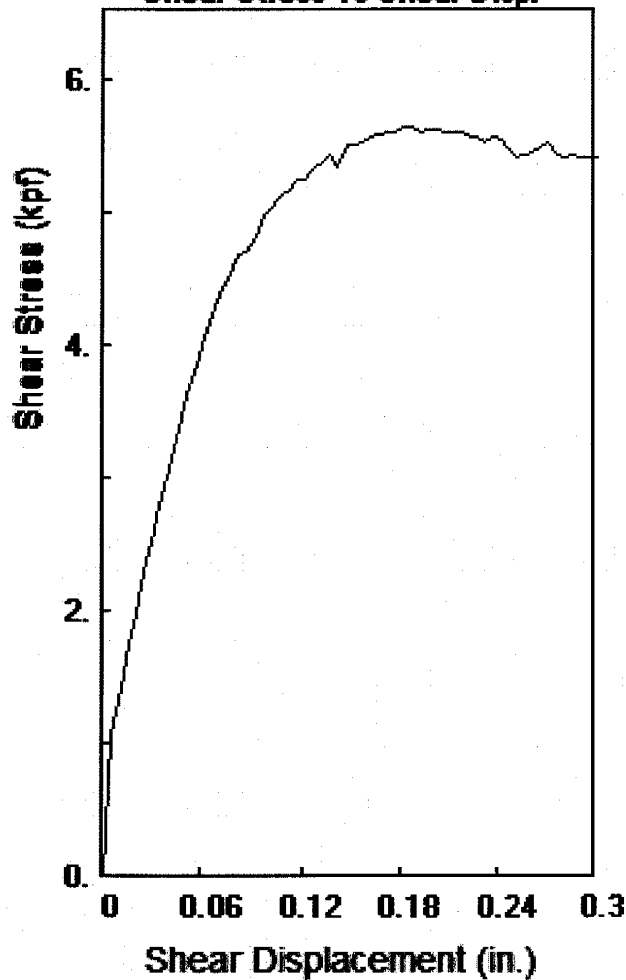
0.1857 in.

**Date**

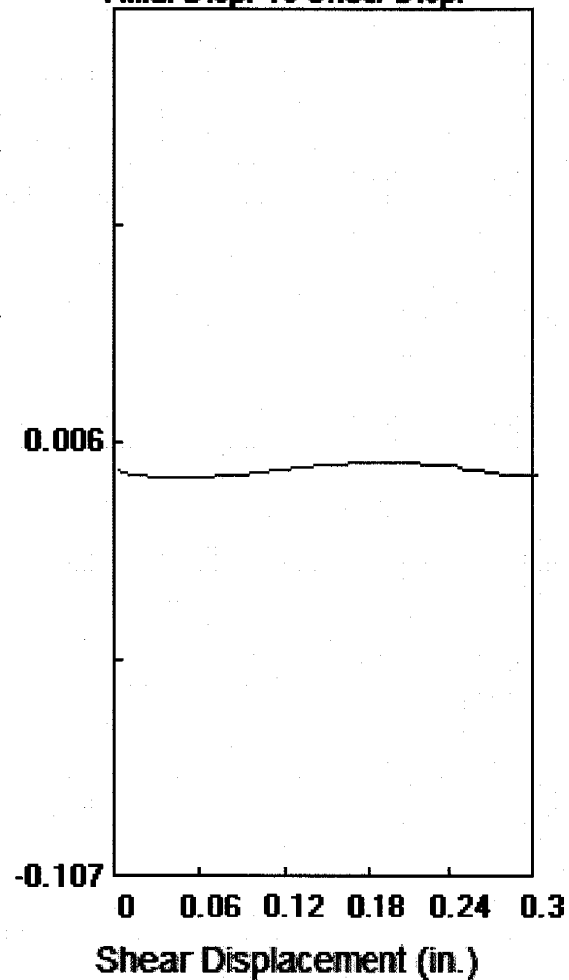
7/16/2019

**Soil Labworks**

**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 3

**Boring:** B4

**Depth:** 45 ft.

**File:** 3116B4458.dat

**Stress at Max Def**  
5652      0.181

**Soil Type:**

**Technician:** BF

**Axial Load:** 8000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      5436

**Maximum Load**

5652 psf

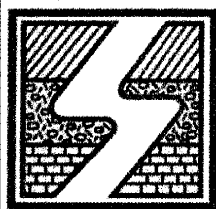
**Shear Displacement at maximum Load**

0.1807 in.

**Date**

7/16/2019

Soil Labworks



**SOIL  
LABWORKS LLC**

## SHEAR DIAGRAM B-7

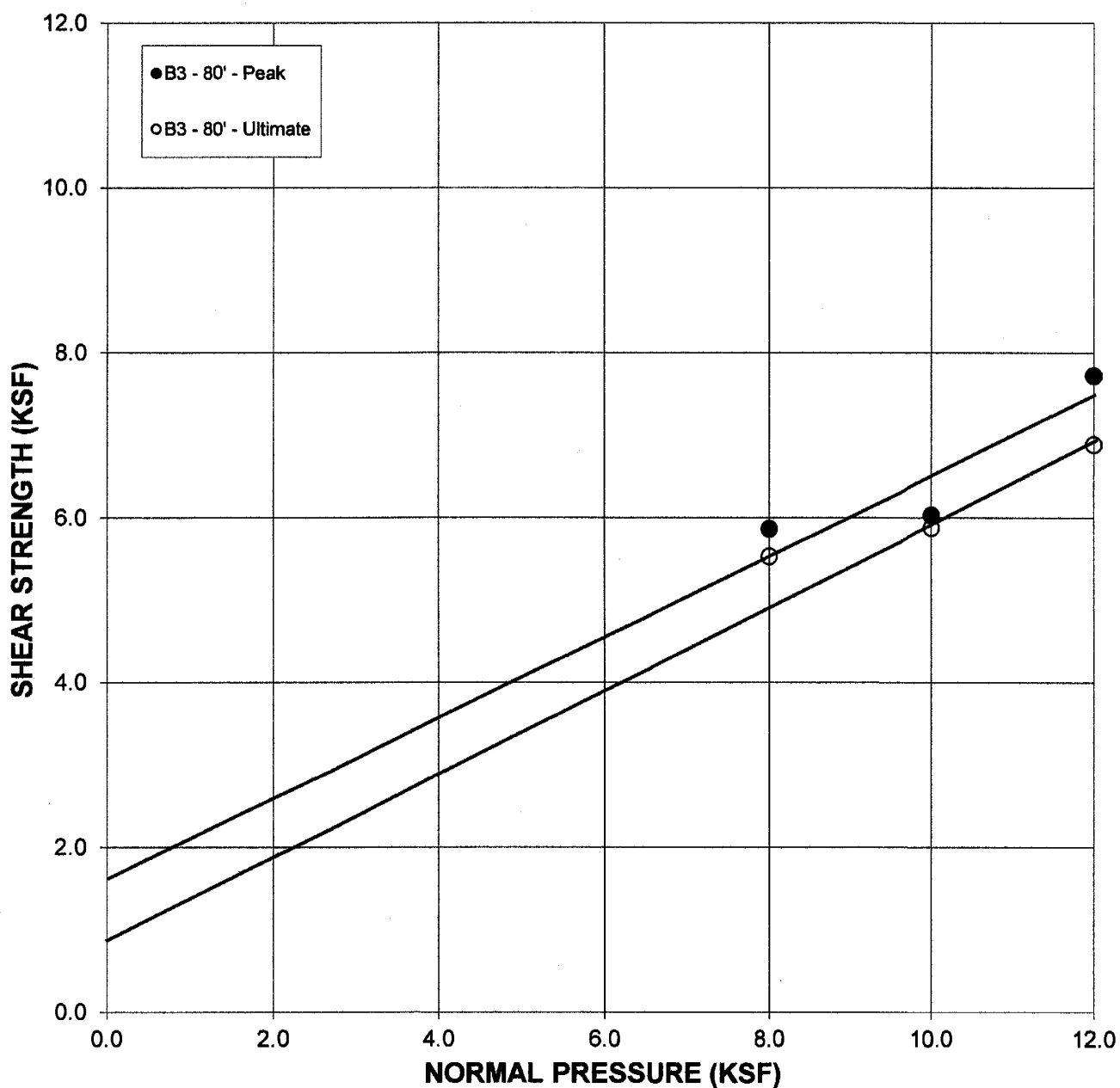
JN: SL19.3116 CONSULTANT JAI  
CLIENT: Feffer/Yorkwood LLC-6800-6822 W Hollywood

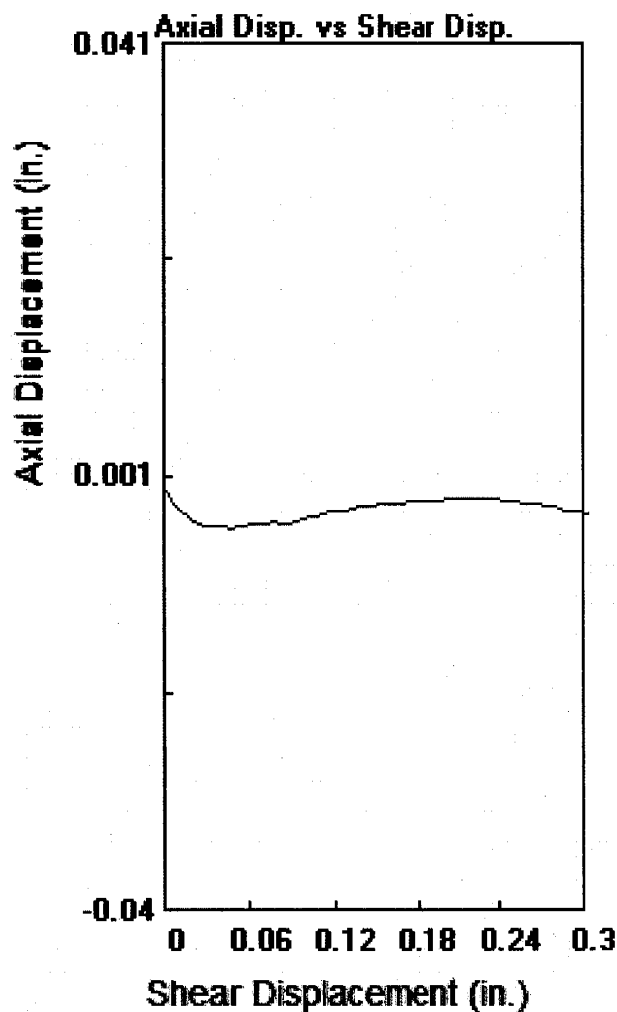
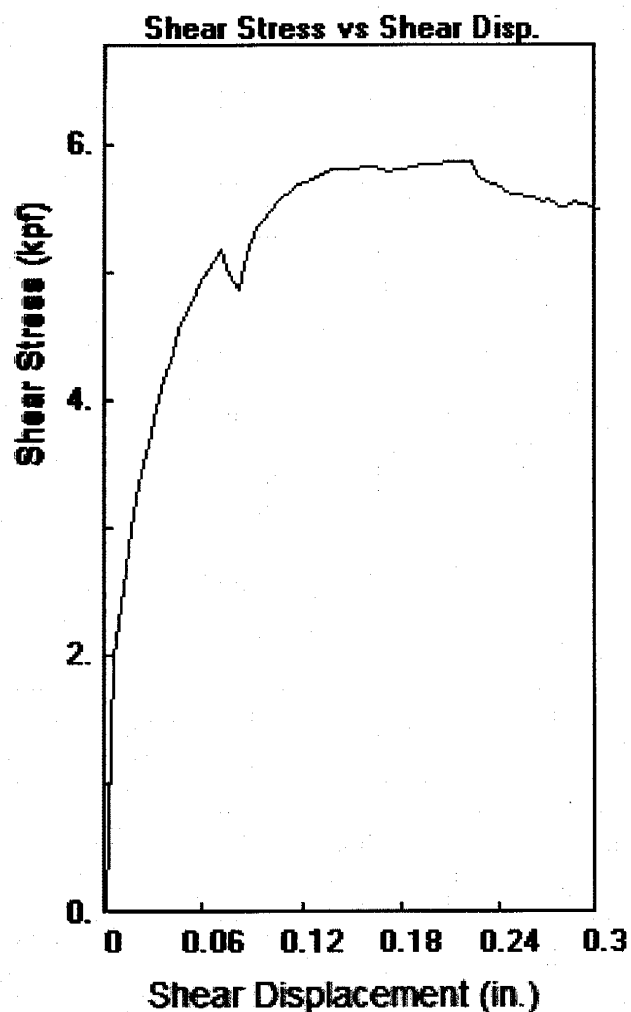
EARTH MATERIAL: ALLUVIUM

	PEAK	ULTIMATE	
Phi Angle	24.5	26	degrees
Cohesion	1760	920	psf

Average Moisture Content	18.9%
Average Dry Density (pcf)	122.1
Percent Saturation	100.0%

### DIRECT SHEAR TEST - ASTM D-3080





**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 1

**Boring:** B3

**Depth:** 80 ft.

**File:** 3116B3808.dat

**Stress at Max Def**  
5868      0.206

**Soil Type:**

**Technician:** BF

**Axial Load:** 8000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      5532

**Maximum Load**

5868 psf

**Shear Displacement at maximum Load**

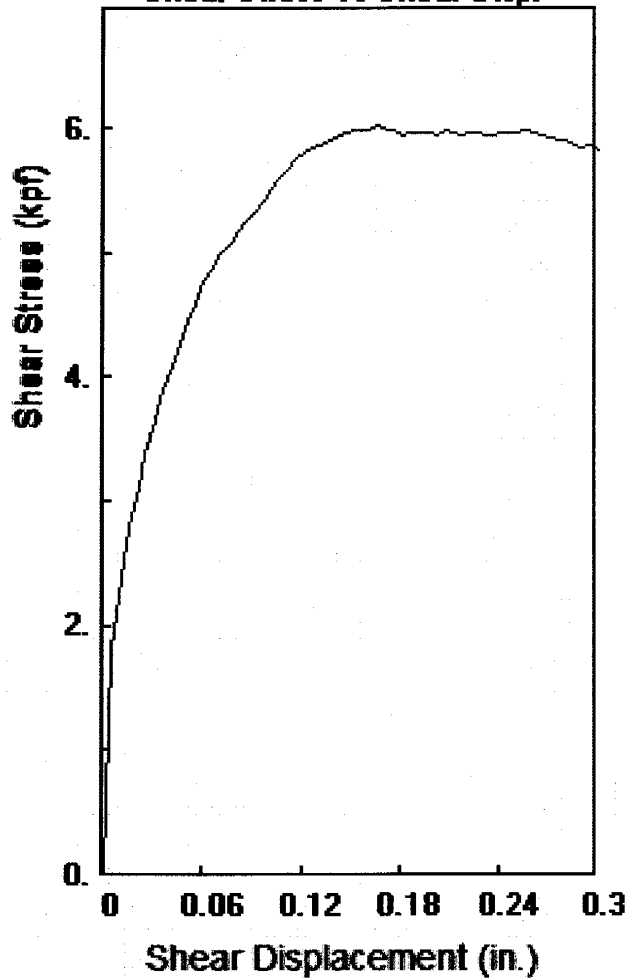
0.2057 in.

**Date**

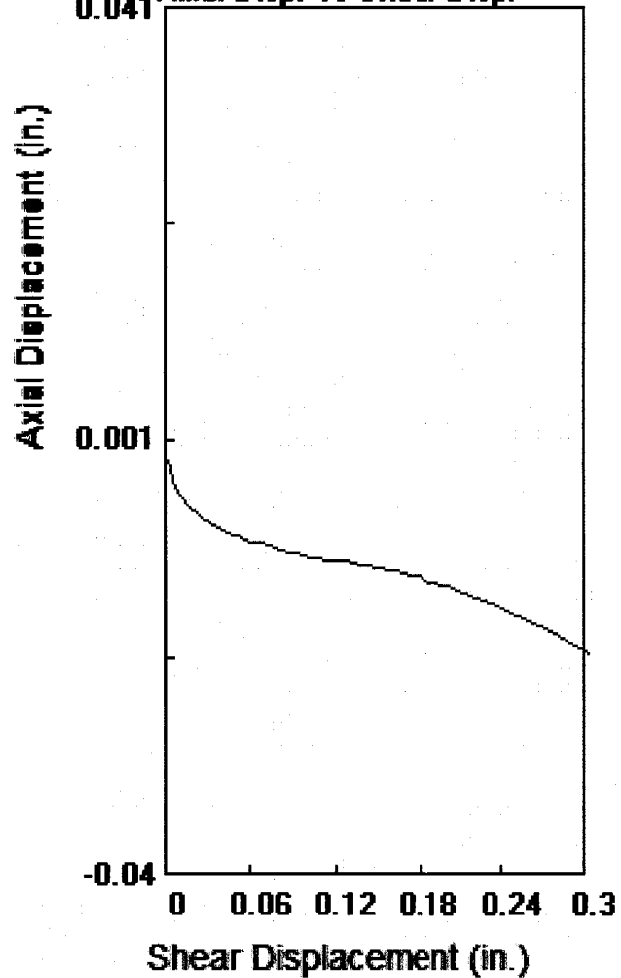
7/17/2019

**Soil Labworks**

**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 2

**Boring:** B3

**Depth:** 80 ft.

**File:** 3116B38010.dat

**Stress at Max Def**  
6036      0.166

**Soil Type:**

**Technician:** BF

**Axial Load:** 10000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      5880

**Maximum Load**

6036 psf

**Shear Displacement at maximum Load**

0.1656 in.

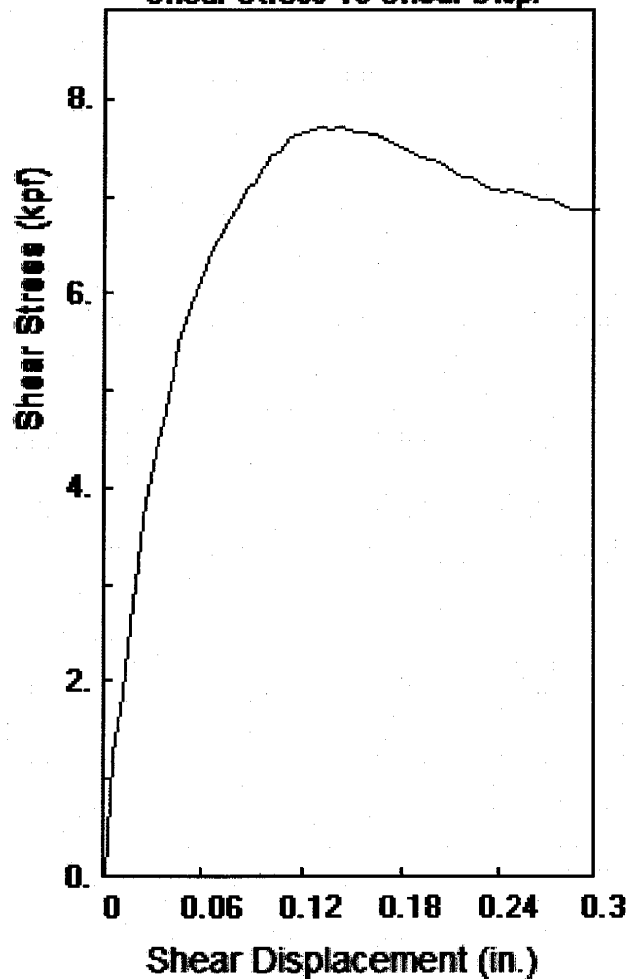
**Date**

7/17/2019

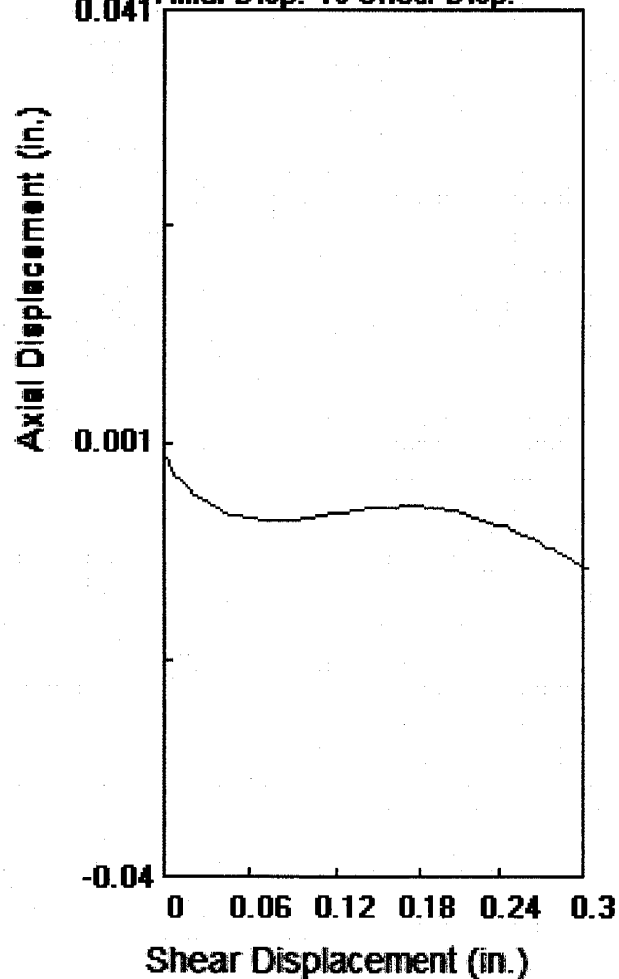
**Soil Labworks**



**Shear Stress vs Shear Disp.**



**Axial Disp. vs Shear Disp.**



**Parameters**

**Client:** FEFFER/YORKWOOD LLC

**Location:** 6800-6822 W HOLLYWOOD BLVD

**Job #** 3116

**Sample:** 3

**Boring:** B3

**Depth:** 80 ft.

**File:** 3116B38012.dat

**Stress at Max Def**  
7728      0.131

**Soil Type:**

**Technician:** BF

**Axial Load:** 12000 psf

**Shear Rate:** 0.010 in./sec.

**Distance:** 0.30 in.

**Stress at Max Disp**  
0.296      6888

**Maximum Load**

7728 psf

**Shear Displacement at maximum Load**

0.1307 in.

**Date**

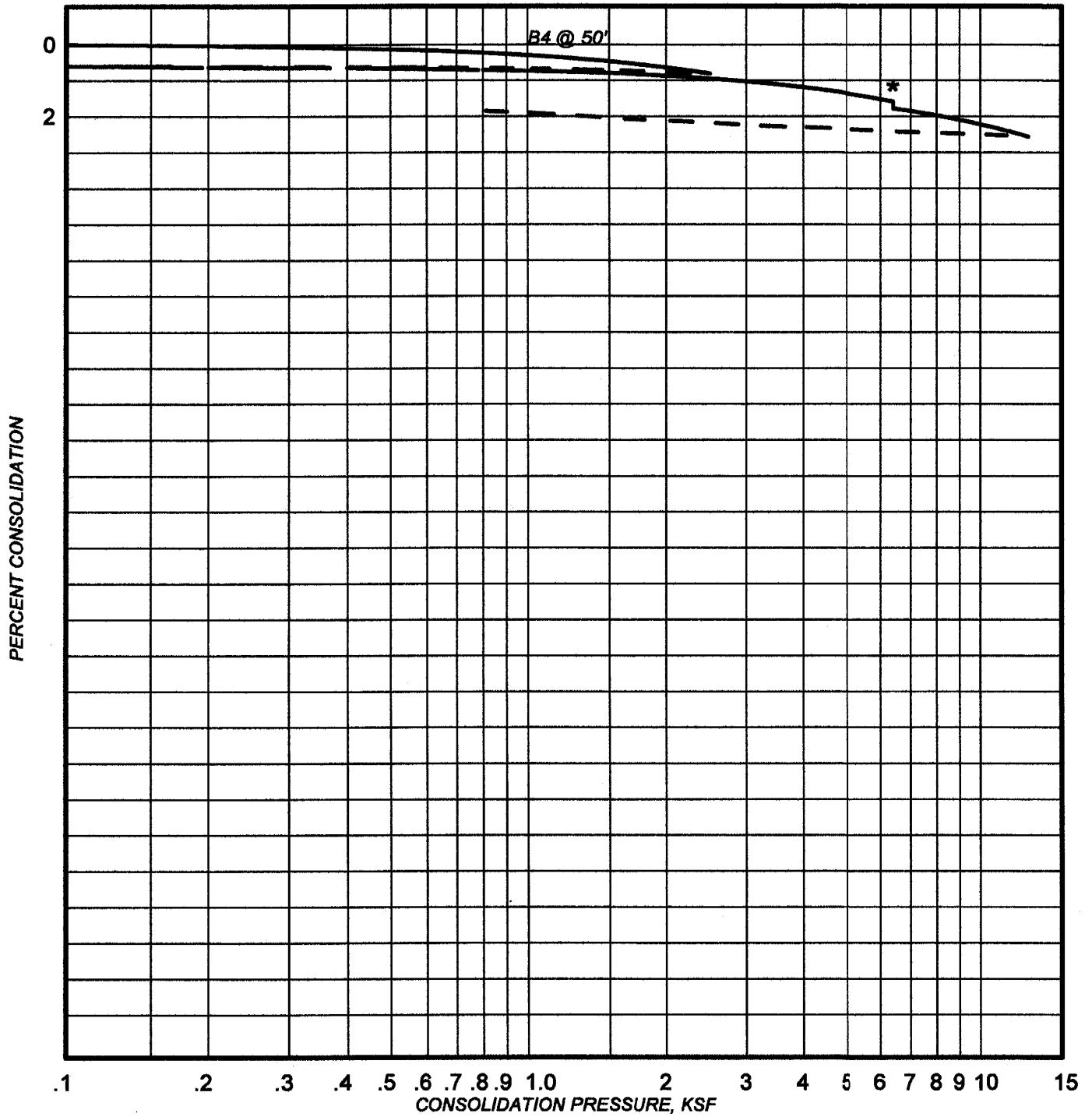
7/17/2019

**Soil Labworks**

# CONSOLIDATION TEST

PROJECT: FEFFER/YORKWOOD, LLC-6800-6822 W HOLLYWOOD BLVD  
SAMPLE: B4 @ 50'

## ALLUVIUM



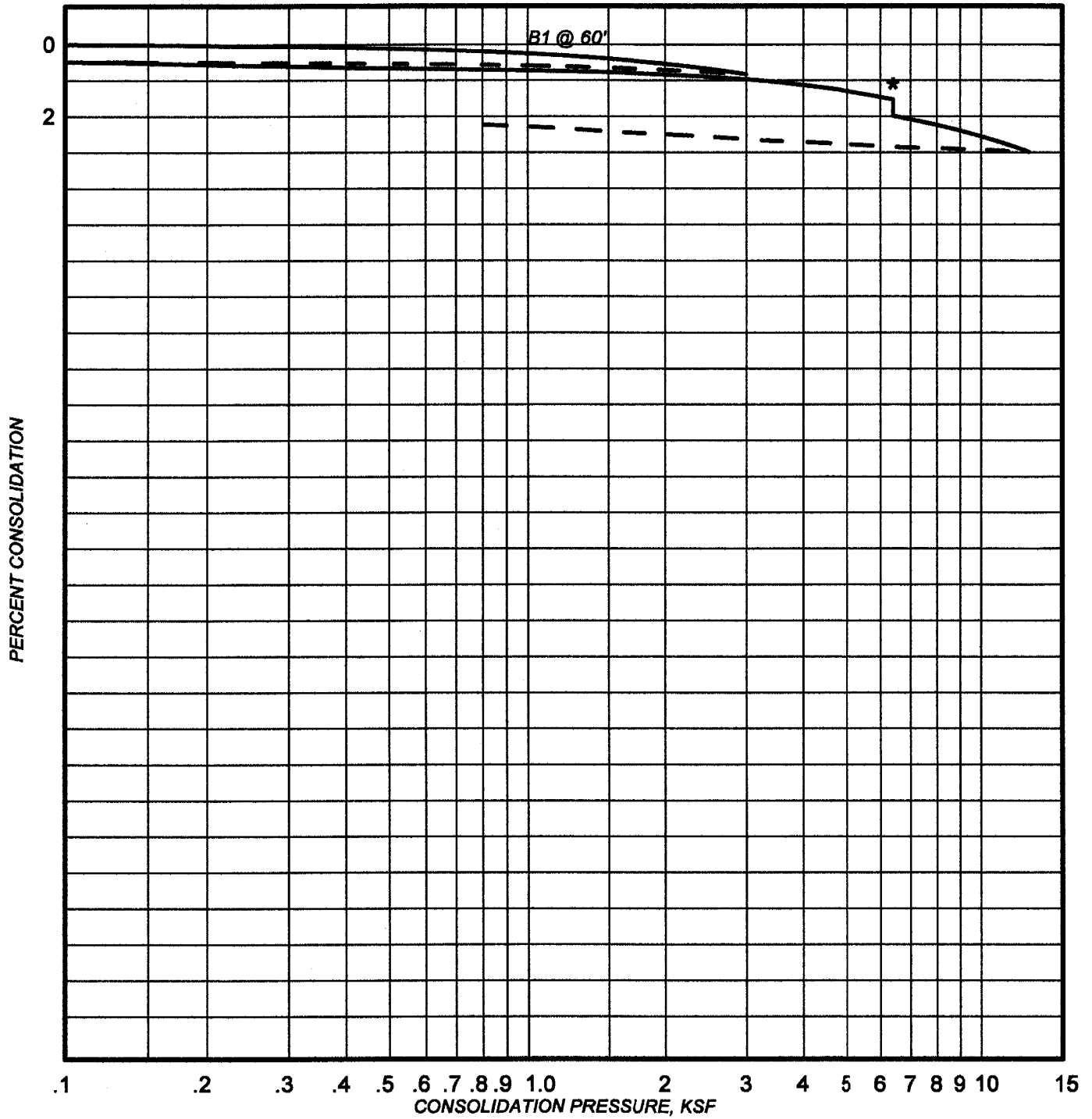
\* Water Added

PLATE:

# CONSOLIDATION TEST

PROJECT: FEFFER/YORKWOOD, LLC-6800-6822 W HOLLYWOOD BLVD  
SAMPLE: B1 @ 60'

## ALLUVIUM



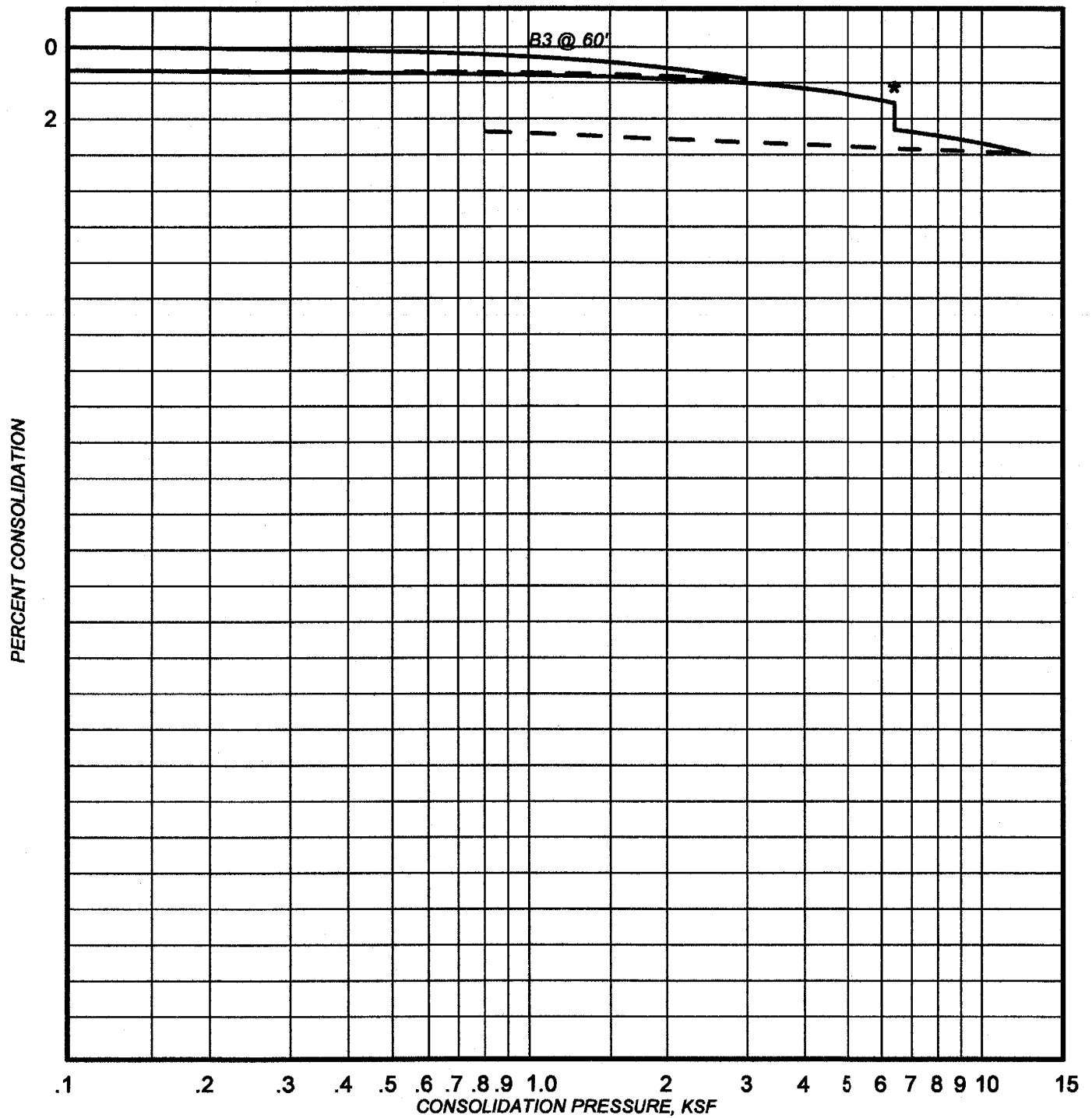
\* Water Added

PLATE:

# CONSOLIDATION TEST

PROJECT: FEFFER/YORKWOOD, LLC-6800-6822 W HOLLYWOOD BLVD  
SAMPLE: B3 @ 60'

## ALLUVIUM



\* Water Added

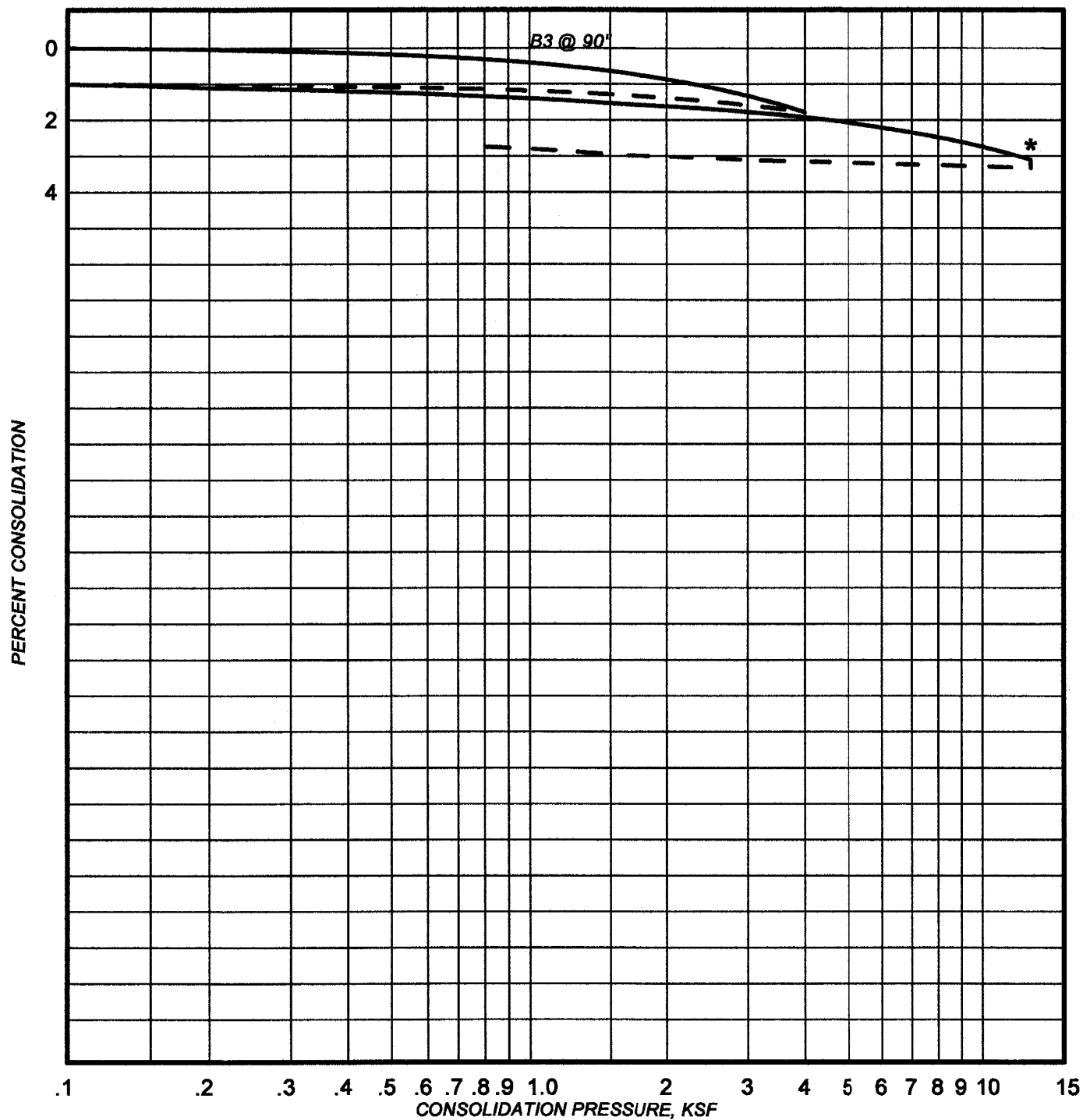
PLATE:

# CONSOLIDATION TEST

PROJECT: FEFFER/YORKWOOD, LLC-6800-6822 W HOLLYWOOD BLVD

SAMPLE: B3 @ 90"

## ALLUVIUM



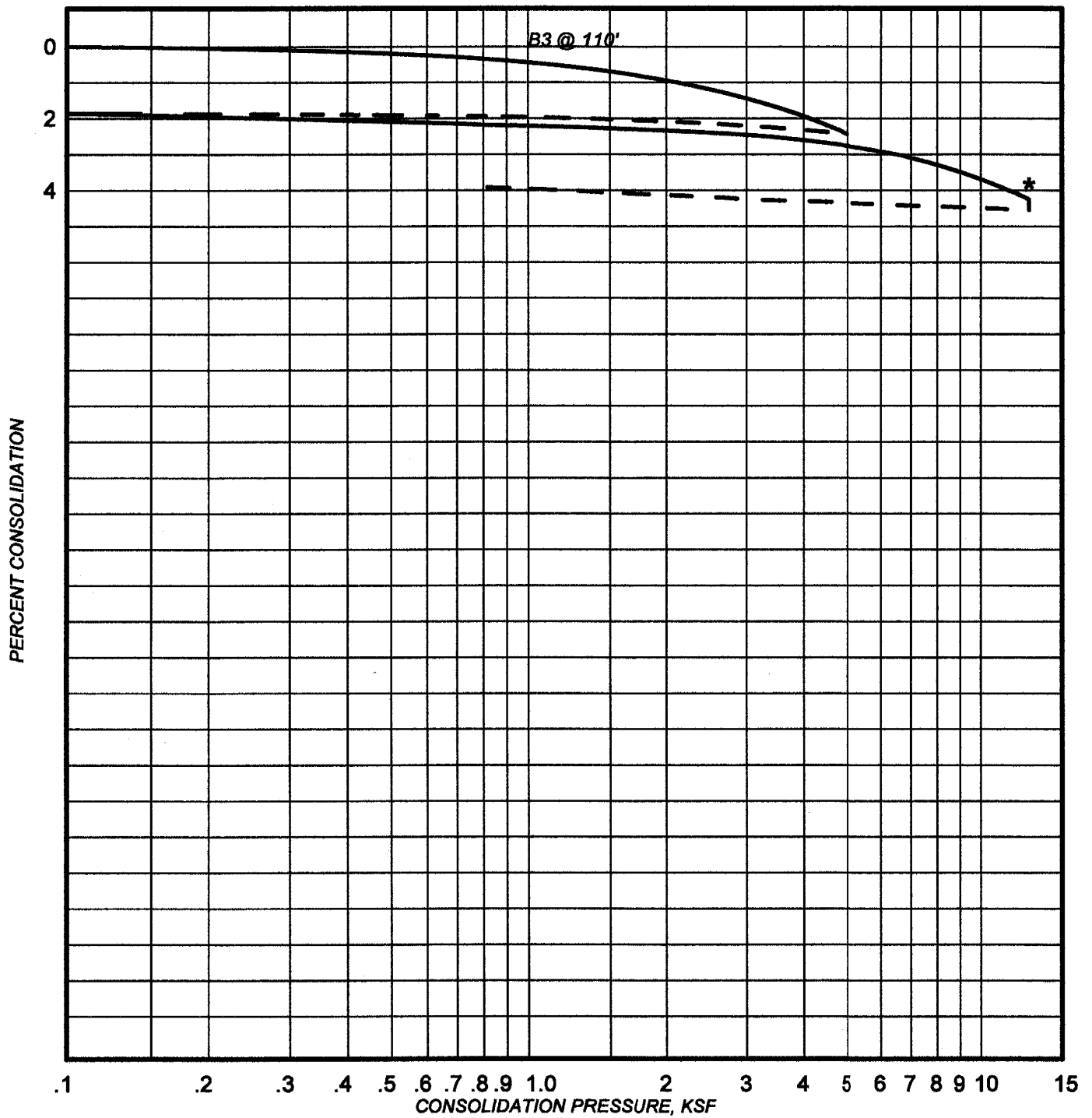
\* Water Added

PLATE:

# CONSOLIDATION TEST

PROJECT: FEFFER/YORKWOOD, LLC-6800-6822 W HOLLYWOOD BLVD  
SAMPLE: B3 @ 110'

## ALLUVIUM



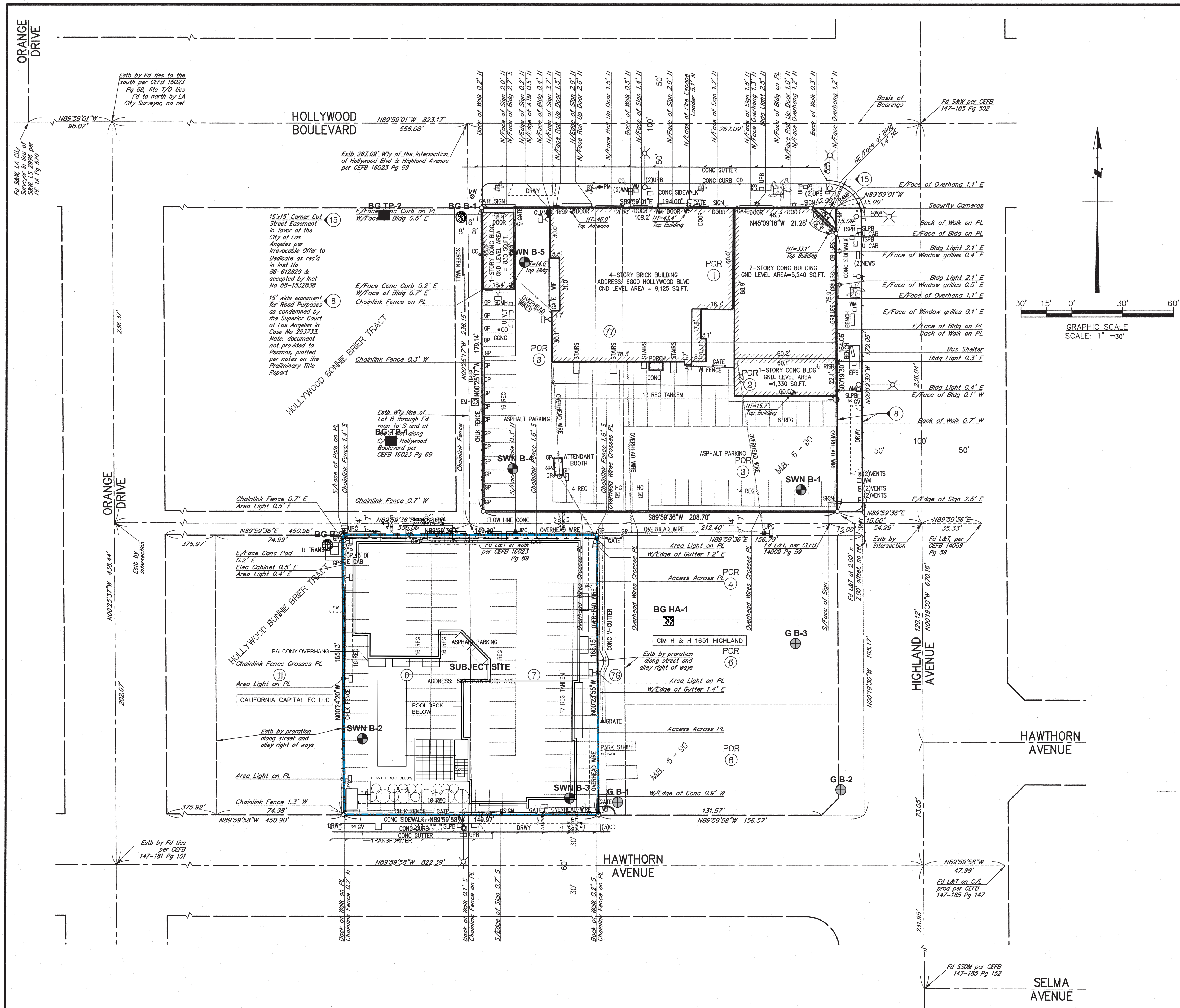
\* Water Added

PLATE:

## **APPENDIX ‘C’**

### **Site Plan**





### COMMENTS:

BOUNDARY LINES . . . . . WERE ESTABLISHED FROM RECOVERED CITY, COUNTY AND/OR PRIVATE SURVEY MONUMENTS WHOSE CHARACTER AND SOURCE ARE SO NOTED ON THE SURVEY.

LEGAL DESCRIPTION . . . . . FROM INFORMATION SUPPLIED BY CLIENT. USUALLY A TITLE POLICY OR TITLE REPORT.

EASEMENTS . . . . . PLOTTABLE EASEMENTS ARE SHOWN FROM AN OWNER SUPPLIED TITLE REPORT. NON-PLOTTABLE ONES ARE NOTED ON THE SURVEY AS HAVING "EFFECT OF". BECAUSE OUR SERVICE IS LIMITED TO REPORTING ON EASEMENT LOCATIONS WE STRONGLY RECOMMEND LEGAL COUNSEL BE RETAINED TO REPORT ON TITLE PAPERS IN THEIR ENTIRETY.

TITLE REPORT . . . . . NORTH AMERICAN TITLE COMPANY PRELIMINARY TITLE NO. 1213116 DATED JANUARY 11, 2013.

INDICATES TITLE REPORT EXCEPTION NO.

BASIS OF BEARINGS . . . . . THE BEARING NORTH 89°59'01" WEST OF THE CENTERLINE OF HOLLYWOOD BOULEVARD, AS SHOWN ON TRACT NO. 33567 IN BOOK 894 PAGES 64 TO 66 OF MAPS WAS TAKEN AS THE BASIS OF BEARINGS FOR THIS SURVEY.

AREA . . . . . BASED UPON MEASURED BEARINGS AND DISTANCES AS SHOWN HEREON, THE AREA IS:

GROSS: 64,857 SQ. FT. = 1.4889 ACRES  
NET: 62,059 SQ. FT. = 1.4247 ACRES

WHERE "GROSS" IS DEFINED AS THE AREA OF THE SUBJECT FEE PARCEL AS LEGALLY DESCRIBED HEREON AND "NET" IS DEFINED AS THE REMAINING SUBJECT PARCEL AFTER SUBTRACTION OF EXISTING STREET EASEMENTS."

PARKING . . . . . BASED UPON ON-SITE STRIPING, THE PARKING IS:

STANDARD SPACE . . . . . 115  
STD. TANDUM SPACE . . . . . 60  
HANDICAP SPACE . . . . . 2  
TOTAL SPACES . . . . . 177

FLOOD ZONE . . . . . SUBJECT PROPERTY LIES WITHIN FLOOD ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN) AS SHOWN ON FLOOD INSURANCE RATE MAP NO. 06037C1620F DATED SEPTEMBER 26, 2008, AS PUBLISHED BY FEDERAL EMERGENCY MANAGEMENT AGENCY.

ZONING, AND . . . . . ZONING REPORT NOT PROVIDED BY CLIENT. ITEM 6(b) NOT CERTIFIED.

BUILDING SETBACK . . . . .

EFFECT OF . . . . . PROPERTY TAXES, LIENS AND ASSESSMENTS.

EFFECT OF . . . . . WATER RIGHTS, CLAIMS OR TITLE TO WATER, WHETHER OR NOT SHOWN BY THE PUBLIC RECORDS.

EFFECT OF . . . . . 15' WIDE EASEMENT FOR ROAD PURPOSES OVER SAID LAND, AS CONDEMNED IN SUPERIOR COURT OF LOS ANGELES, CASE NO. 293733 (AFFECTS THE EASTERLY 15' OF LOTS 1, 2 AND 3). DOCUMENTS NOT PROVIDED, PLOTTED FROM INFORMATION CONTAINED IN PRELIMINARY TITLE REPORT.

EFFECT OF . . . . . NOTICE OF BUILDINGS WITHIN THE SCOPE OF DIVISION 88 EARTHQUAKE HAZARD REDUCTION IN EXISTING BUILDINGS AS DESCRIBED BY THE DOCUMENT RECORDED FEBRUARY 11, 1986 AS INSTRUMENT NO. 86-190816, O.R.

EFFECT OF . . . . . COVENANT AND AGREEMENT TO HOLD PROPERTY AS ONE PARCEL PER DOCUMENT RECORDED APRIL 24, 1986 AS INSTRUMENT NO. 86-508650, O.R. (AFFECTS LOTS 7 & 9)

EFFECT OF . . . . . COVENANT AND AGREEMENT TO PROVIDE PARKING ATTENDANT PER DOCUMENT RECORDED APRIL 24, 1986 AS INSTRUMENT NO. 86-508651, O.R.

EFFECT OF . . . . . COVENANT AND AGREEMENT TO PROVIDE NOT LESS THAN 90 PARKING SPACES, PER DOCUMENT RECORDED APRIL 24, 1986 AS INSTRUMENT NO. 86-508652, O.R. (AFFECTS LOTS 1, 2, 3, 8 & 77)

EFFECT OF . . . . . COVENANT AND AGREEMENT TO HOLD PROPERTY AS ONE PARCEL PER DOCUMENT RECORDED APRIL 24, 1986 AS INSTRUMENT NO. 86-508653, O.R. (AFFECTS LOTS 1, 2, 3, 8 & 77)

EFFECT OF . . . . . LAND LIES WITHIN THE BOUNDARIES OF THE HOLLYWOOD REDEVELOPMENT PROJECT PER DOCUMENT RECORDED MAY 9, 1986 AS INSTRUMENT NO. 86-581502, O.R.

EFFECT OF . . . . . A DEED OF TRUST, RECORDED SEPTEMBER 17, 1996 AS INSTRUMENT NO. 96-1524669 O.R. MODIFIED PER DOCUMENT RECORDED FEBRUARY 18, 2005 AS INSTRUMENT NO. 05-0381620 O.R.

EFFECT OF . . . . . A DEED OF TRUST, RECORDED OCTOBER 20, 2005 AS INSTRUMENT NO. 05-2532037 O.R.

EFFECT OF . . . . . A DEED OF TRUST, RECORDED OCTOBER 20, 2005 AS INSTRUMENT NO. 05-2532038 O.R.

EFFECT OF . . . . . A DEED OF TRUST, RECORDED JANUARY 6, 2006 AS INSTRUMENT NO. 06-0037271 O.R.

EFFECT OF . . . . . A DEED OF TRUST, RECORDED JANUARY 6, 2006 AS INSTRUMENT NO. 06-0037272 O.R.

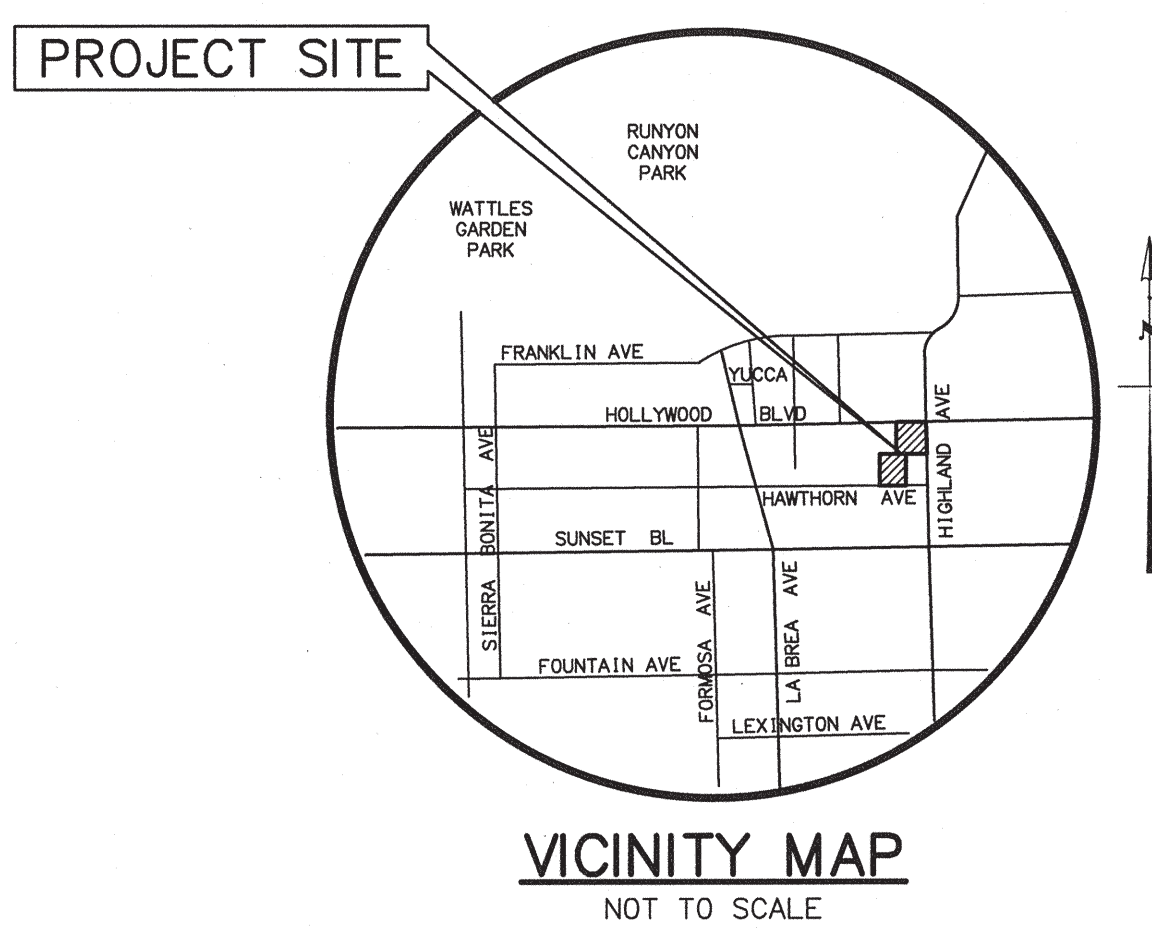
EFFECT OF . . . . . A DEED OF TRUST, RECORDED DECEMBER 19, 2012 AS INSTRUMENT NO. 20121970100 O.R.

EARTH WORK . . . . . THERE IS NO OBSERVABLE EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS.

STREET RIGHT OF WAY . . . . . THERE IS NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTIONS, AND THERE IS NO ANTICIPATED STREET WIDENING.

SOLID WASTE DUMP . . . . . THERE IS NO OBSERVABLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.

WETLAND . . . . . THE SUBJECT PROPERTY IS NOT IN A DESIGNATED WETLAND AREA PER THE U.S. FISH AND WILDLIFE SERVICE, NATIONAL WETLAND INVENTORY.



### LEGEND

- PROPERTY / BOUNDARY LINE
- STREET / WAY LINE
- CURB LINE (FROM 1"=20" ON TO 1"=200")
- CURB LINE (1"=10", 1"=8", 1"=16")
- CENTER LINE
- LOT LINE
- FLOW LINE
- LOT LINE / PARCEL LINE
- CONTAINMENT LINE (APPROXIMATE)
- BUILDING FOOT PRINT LINE
- OVERLAP LINE
- FENCE LINE
- GUARD RAIL
- RETAINING WALL
- CONC. BLOCK WALL
- EDGE OF ASPHALT PAVING
- CONCRETE PAVING
- AREA DRAIN
- CATCH BASIN W/ACCESS HOLE
- MANHOLE (SEWER, STORM DRAIN, POWER, TELEPHONE)
- POWER POLE (P.P.) / TELEPHONE POLE (T.P.)
- SIGN (ALL KINDS)
- STREET LIGHT
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL W/STREET LIGHT
- YARD LIGHT
- FIRE HYDRANT
- DOWNPOUT
- FIRE DEPARTMENT CONNECTION
- POST INDICATOR VALVE
- DIRECTION OF WATER DRAINAGE FLOW
- PARKING METER
- GAS / WATER METER
- GAS / WATER VALVE
- ELEC./STREET LIGHT/TRAFFIC/UNKNOWN FULL BOX
- TREE IN WELL W/TRUNK DIAMETER
- PLANTER
- GUARD POST
- APPROACH (DRIVEWAY)
- BACKSTOP PREVENTER
- CLEAN OUT
- CHAIN LINK (FENCE/GATE)
- BENCHMARK
- RECORD LOT / PARCEL NUMBER
- RECORD DIMENSION OR BEARING IF DIFFERENT THAN MEASURED
- IMPROVEMENT FACE
- IMPROVEMENT EDGE
- IMPROVEMENT END
- NORTH/EAST/SOUTH/WEST LOCATION OF IMPROVEMENT W/ RESPECT TO NEAREST NORTH AND PROPERTY LINE.
- [NAME]
- ADJACENT PROPERTY OWNER

FEFFER	SITE MAP
JB: 2324-94	NAME: YORKWOOD LLC BY: YMH
DATE: 4/7/20	SCALE: 1"=20' SITE: HOLLYWOOD BLVD & HAWTHORN AVE
REF:	BASE MAP FROM NAVIGATE LA

- FG-B4 LOCATION OF FEFFER GEOLOGICAL BORINGS (SUBJECT SITE)
- SWN-B-5 LOCATION OF SWN SOILTECH CONSULTANTS BORING (6800 HOLLYWOOD BOULEVARD)
- GB-B4 LOCATION OF GEOTECHNOLOGIES INC BORING (6837 HAWTHORNE AVENUE)
- BG-HA-1 LOCATION OF J BYER GROUP GEOTECHNICAL INC HAND AUGER (1639 HIGHLAND)
- GB-B-2 LOCATION OF J BYER GROUP GEOTECHNICAL INC BORING (6834 HOLLYWOOD BOULEVARD)
- BG-TP-2 LOCATION OF J BYER GROUP GEOTECHNICAL INC TEST PITS (6834 HOLLYWOOD BOULEVARD)
- AI ARTIFICIAL FILL
- Qcol QUATERNARY COLLUVIUM
- Qs QUATERNARY SOIL
- Qa QUATERNARY ALLUVIUM
- Qoa QUATERNARY OLDER ALLUVIUM

### SURVEYOR'S CERTIFICATE:

TO RONDEC INTERNATIONAL INC AND ITS SUCCESSORS AND ASSIGNS, AND NORTH AMERICAN TITLE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 7(a), 7(b)(1), 7(c), 8, 9, 10(c), 11(a), 13, 14, 16, 17, 18, 19, AND 20(a) OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON JANUARY 17, 2013.

JOHN CHIAPPE JR, PLS 2850  
PSOMAS  
2/1/2013  
DATE

NOTE: SECTION 8770.6 OF THE CALIFORNIA BUSINESS AND PROFESSIONS CODE STATES THAT THE USE OF THE WORD CERTIFY OR CERTIFICATION BY A LICENSED LAND SURVEYOR IN THE PRACTICE OF LAND SURVEYING OR THE PREPARATION OF MAPS, PLATS, REPORTS, DESCRIPTIONS OR OTHER SURVEYING DOCUMENTS ONLY CONSTITUTES AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THOSE FACTS OR FINDINGS WHICH ARE THE SUBJECT OF THE CERTIFICATION AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE, EITHER EXPRESSED OR IMPLIED.

### SURVEYOR'S NOTES:

THIS SURVEY HAS BEEN PREPARED FOR TITLE INSURANCE PURPOSES

1. THE BOUNDARY DATA AND TITLE MATTERS AS SHOWN HEREON HAVE BEEN DEVELOPED FROM THE REFERENCED TITLE REPORT.

2. THIS SURVEY MAY NOT CONTAIN SUFFICIENT DETAIL FOR DESIGN PURPOSES.

3. THIS SURVEY DOES NOT INCLUDE EASEMENTS EXCEPT THOSE SPECIFICALLY DELINEATED HEREON, NOR DOES IT SHOW THE LOCATION OF, OR ENCROACHMENTS BY SUBSURFACE FOOTINGS AND/OR FOUNDATIONS OF BUILDINGS SHOWN ON THIS MAP.

4. IF UNDERGROUND PUBLIC UTILITIES AND OTHER SUBSTRUCTURES, ZONES, SET BACK AND STREET WIDENING DATA ARE SHOWN HEREON, IT IS FOR INFORMATION ONLY, HAVING BEEN OBTAINED FROM A GENERAL REQUEST AT THE LOCAL AGENCY'S PUBLIC COUNTER AND/OR OTHER SOURCES NOT CONNECTED WITH THIS COMPANY. NO REPRESENTATION IS MADE AS TO THE ACCURACY, CURRENCY OR COMPLETENESS OF SAID INFORMATION AND ANY USERS OF SAID INFORMATION IS URGED TO CONTACT THE UTILITY OR LOCAL AGENCY DIRECTLY.

### LEGAL DESCRIPTION:

LOTS 1, 2, 3, 7, 8, 9 AND 77 OF HOLLYWOOD BONNIE BRIER TRACT, IN THE CITY OF LOS ANGELES, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 5, PAGE 90 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING FROM SAID LOT 8, THE WEST 8.00 FEET, AS GRANTED TO THE CITY OF LOS ANGELES, FOR ALLEY PURPOSES.

PSOMAS  
555 South Flower Street, Suite 4300  
Los Angeles, CA 90071  
(213) 223-1400 (213) 223-1444 (FAX)  
www.psomas.com

ALTA/ACSM LAND TITLE SURVEY FOR:  
**RONDEC INTERNATIONAL INC.**  
6831 HAWTHORN AVE AND 6800 HOLLYWOOD BLVD  
IN THE CITY OF LOS ANGELES COUNTY OF LOS ANGELES STATE OF CALIFORNIA

DATE:	JANUARY 18, 2013	SHEET
SCALE:	1" = 30'	1
PROJECT NUMBER:	IRON010100	1
REF:		



## **APPENDIX 'D'**

### **Grading Specifications**

## **STANDARD GRADING SPECIFICATIONS**

These specifications present the usual and minimum requirements for grading operations performed under our supervision.

### **GENERAL**

- 1) The Geotechnical Engineer and Engineering Geologist are the developer's representative on the project.
- 2) All clearing, site preparation or earth work performed on the project shall be conducted by the contractor under the supervision of the Geotechnical Engineer.
- 3) It is the contractor's responsibility to prepare the ground surface to receive the fills to the satisfaction of the Geotechnical Engineer and to place, spread, mix, water, and compact the fill in accordance with the specifications of the Geotechnical Engineer. The contractor shall also remove all material considered unsatisfactory by the Geotechnical Engineer.
- 4) It is the contractor's responsibility to have suitable and sufficient compaction equipment on the job site to handle the amount of fill being placed. If necessary, excavation equipment will be shut down to permit completion of compaction. Sufficient watering apparatus will also be provided by the contractor, with due consideration for the fill material, rate of placement and time of year.
- 5) A final report shall be issued by our firm outlining the contractor's conformance with these specifications.

### **SITE PREPARATION**

- 1) All vegetation and deleterious materials such as rubbish shall be disposed of off-site. Soil, alluvium or rock materials determined by the Geotechnical Engineer as being unsuitable for placement in compacted fills shall be removed and wasted from the site. Any material incorporated as a part of a compacted fill must be approved by the Geotechnical Engineer.
- 2) The Engineer shall locate all houses, sheds, sewage disposal systems, large trees or structures on the site or on the grading plan to the best of his knowledge prior to preparing the ground surface.

Any underground structures such as cesspools, cisterns, mining shafts, tunnels, septic tanks, wells, pipe lines, or others not located prior to grading are to be removed or treated in a manner prescribed by the Geotechnical Engineer.

3) After the ground surface to receive fill has been cleared, it shall be scarified, disced or bladed by the contractor until it is uniform and free from ruts, hollows, hummocks or other uneven features which may prevent uniform compaction.

The scarified ground surface shall then be brought to optimum moisture, mixed as required, and compacted as specified. If the scarified zone is greater than twelve inches (12") in depth, the excess shall be removed and placed in lifts restricted to six inches (6").

Prior to placing fill, the ground surface to receive fill shall be inspected, tested and approved by the Geotechnical Engineer.

#### **PLACING, SPREADING AND COMPACTION OF FILL MATERIALS**

1) The selected fill material shall be placed in layers which when compacted shall not exceed six inches (6") in thickness. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to insure uniformity of material and moisture of each layer.

2) Where the moisture content of the fill material is below the limits specified by the Geotechnical Engineer, water shall be added until the moisture content is as required to assure thorough bonding and thorough compaction.

3) Where the moisture content of the fill material is above the limits specified by the Geotechnical Engineer, the fill materials shall be aerated by blading or other satisfactory methods until the moisture content is adequate.

#### **COMPACTED FILLS**

1) Any material imported or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable by the Geotechnical Engineer. Roots, tree branches or other matter missed during clearing shall be removed from the fill as directed by the Geotechnical Engineer.

2) Rock fragments less than six inches (6") in diameter may be utilized in the fill, provided:

- a) They are not placed in concentrated pockets.
- b) There is a sufficient percentage of fine-grained material to surround the rocks.
- c) The distribution of the rocks is supervised by the Geotechnical Engineer.

3) Rocks greater than six inches (6") in diameter shall be taken off-site, or placed in accordance with the recommendations of the Geotechnical Engineer in areas designated as suitable for rock disposal. Details for rock disposal such as location, moisture control, percentage of rock placed, will be referred to in the "Conclusions and Recommendations" section of the geotechnical report.

If the rocks greater than six inches (6") in diameter were not anticipated in the preliminary geotechnical and geology report, rock disposal recommendations may not have been made in the "Conclusions and Recommendations" section. In this case, the contractor shall notify the Geotechnical Engineer if rocks greater than six inches (6") in diameter are encountered. The Geotechnical Engineer will then prepare a rock disposal recommendation or request that such rocks be taken off-site.

4) Representative samples of materials to be utilized as compacted fill shall be analyzed in the laboratory by the Geotechnical Engineer to determine their physical properties. If any materials other than that previously tested is encountered during grading, the appropriate analysis of this material shall be conducted by the Geotechnical Engineer as soon as possible.

Material that is spongy, subject to decay or otherwise considered unsuitable shall not be used in the compacted fill.

5) Each layer shall be compacted to a minimum of ninety percent (90%) of the maximum density in compliance with the testing method specified by the controlling governmental agency (ASTM D-1557).

If compaction to a lesser percentage is authorized by the controlling governmental agency because of a specific land use or expansive soil conditions, the area to receive fill compacted to less than ninety percent (90%) shall either be delineated on the grading plan or appropriate reference made to the area in the geotechnical report.

6) Compaction shall be by sheeps foot roller, multi-wheeled pneumatic tire roller, or other types of acceptable rollers. Rollers shall be of such design that they will be able to compact the fill to the specified density. Rolling shall be accomplished while the fill material is at the specified moisture content. The final surface of the lot areas to receive slabs-on-grade should be rolled to a smooth, firm surface.

7) Field density tests shall be made by the Geotechnical Engineer of the compaction of each layer of fill. Density tests shall be made at intervals not to exceed two feet (2') of fill height provided all layers are tested. Where the sheeps foot rollers are used, the soil may be disturbed to a depth of several inches and density readings shall be taken in the compacted material below the disturbed surface. When these readings indicate the density of any layer of fill or portion thereof is below the required ninety percent (90%) density, the particular layer or portion shall be reworked until the required density has been obtained.

8) Buildings shall not span from cut to fill. Cut areas shall be over excavated and compacted to provide a fill mat of three feet (3').

#### **FILL SLOPES**

1) All fills shall be keyed and benched through all top soil, colluvium, alluvium, or creep material into sound bedrock or firm material where the slope receiving fill exceeds a ratio of five (5) horizontal to one (1) vertical, in accordance with the recommendations of the Geotechnical Engineer.

2) The key for side hill fills shall be a minimum of fifteen feet (15') within bedrock or firm materials, unless otherwise specified in the geotechnical report.

3) Drainage terraces and subdrainage devices shall be constructed in compliance with the ordinances of the controlling governmental agency, or with the recommendations of the Geotechnical Engineer.

4) The Contractor will be required to obtain a minimum relative compaction of ninety percent (90%) out to the finish slope face of fill slopes, buttresses, and stabilization fills. This may be achieved by either over-building

the slope and cutting back to the compacted core, or by direct compaction of the slope face with suitable equipment, or by any other procedure which produces the required compaction.

5) All fill slopes should be planted or protected from erosion by methods specified in the geotechnical report and by the governing agency.

6) Fill-over-cut slopes shall be properly keyed through topsoil, colluvium, or creep material into rock or firm materials. The transition zone shall be stripped of all soil prior to placing fill.

### **CUT SLOPES**

1) The Engineering Geologist shall inspect all cut slopes excavated in rock, lithified, or formation material at vertical intervals not exceeding ten feet (10').

2) If any conditions not anticipated in the preliminary report such as perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints, or fault planes, are encountered during grading, these conditions shall be analyzed by the Engineering Geologist and Geotechnical Engineer; and recommendations shall be made to treat these problems.

3) Cut slope that face in the same direction as the prevailing drainage shall be protected from slope wash by a non-erosive interceptor swale placed at the top of the slope.

4) Unless otherwise specified in the geological and geotechnical report, no cut slopes shall be excavated higher or steeper than that allowed by the ordinances of the controlling governmental agencies.

5) Drainage terraces shall be constructed in compliance with the ordinances of controlling governmental agencies, or with the recommendations of the Geotechnical Engineer or Engineering Geologist.

### **GRADING CONTROL**

1) Inspection of the fill placement shall be provided by the Geotechnical Engineer during the progress of grading.

2) In general, density tests should be made at intervals not exceeding two feet (2') of fill height or every five hundred (500) cubic yards of fill placed. These criteria will vary depending on soil conditions and the size of the job. In any event, an adequate number of field density tests shall be made to verify that the required compaction is being achieved.

3) Density tests should also be made on the surface materials to receive fill as required by the Geotechnical Engineer.

4) All clean-out, processed ground to receive fill, key excavations, subdrains, and rock disposal must be inspected and approved by the Geotechnical Engineer prior to placing any fill. It shall be the Contractor's responsibility to notify the Geotechnical Engineer when such areas are ready for inspection.

#### **CONSTRUCTION CONSIDERATIONS**

1) Erosion control measures, when necessary, shall be provided by the Contractor during grading and prior to the completion and construction of permanent drainage controls.

2) Upon completion of grading and termination of inspections by the Geotechnical Engineer, no further filling or excavating, including that necessary for footings, foundations, large tree wells, retaining walls, or other features shall be performed without the approval of the Geotechnical Engineer or Engineering Geologist.

3) Care shall be taken by the contractor during final grading to preserve any berms, drainage terraces, interceptor swales, or other devices of a permanent nature on or adjacent to the property.

## **APPENDIX 'E'**

### **Architectural Development Plans**



UNITS

Unit Type	Average SF	Units Per Floor	Total in Building	Percentage
Studio	406	8	54	39%
1 Bedroom	544	8	56	41%
2 Bedroom	960	1	8	6%
2 Bedroom Corner	1000	2	12	9%
3 Bedroom	1148	1	7	5%
		20	137	100%

FLOOR AREA (FOR FAR)

Ground Floor	3,148
Second Floor	13,204
Third Floor	13,330
Fourth Floor	13,344
Fifth Floor	13,344
Sixth Floor	13,344
Seventh Floor	13,344
Eight Floor	12,928
95,986	

FAR

Lot Size	24,798
Buildable Area	21,332
Allowable SF at 4.5	95,996
Actual SF	95,986
Actual FAR	4.5

\*Notes: FAR  
4.5 Max

Height                      qsave  
86' max by zoning  
85' if Type III building  
75' to highest occupied area

Setbacks                      Balcony Projections  
5' Front                      0' sideyards  
5' Side                      30" at front  
3' rear dedication due    4' at rear  
to alley

OPEN SPACE REQUIRED

Per Unit Type	Open Space Required
(<3HB 100sf per unit required) Studio	5,400
(<3HB 100sf per unit required) 1 Bedroom Loft	5,600
(=3HB 125sf per unit required) 2 Bedroom	1,000
(=3HB 125sf per unit required) 2 Bedroom Corner	1,500
(>3HB 175sf per unit required) 3 Bedroom	1,225
14,725	
* with 10% reduction "Miscellaneous Plan Approval"	
13,252.5	

COMMON OPEN SPACE REQUIRED

Minimum Common Open Space Required (50% of total open space required)	6,626
Maximum Private Open Space allowed (Allowed per density)	7,000
Maximum Allowed Common Enclosed Space (25% of total open space required)	3,313
Required Landscaped Common Open Space (25% of common open space required)	1,657

COMMON OPEN SPACE PROVIDED

Open Space:	
Podium Pool Deck	5,141
Sky Deck	625
total	5,766
Enclosed Common Space:	
Gym	804
Lobby / Lounge	887
Ground level Rec. Room	677
Sky Lounge	600
total	2,968
Landscaped Common Space	1,866
Total Common Open Space Provided	8,734

PRIVATE OPEN SPACE PROVIDED

Private Open Space (Balconies and Patios)	4,850
Grand Total Open Space Provided	13,584

RESIDENTIAL PARKING REQUIRED

Number of Units	Parking at .5 per Unit
137	68.5

NON-RESIDENTIAL PARKING REQUIRED

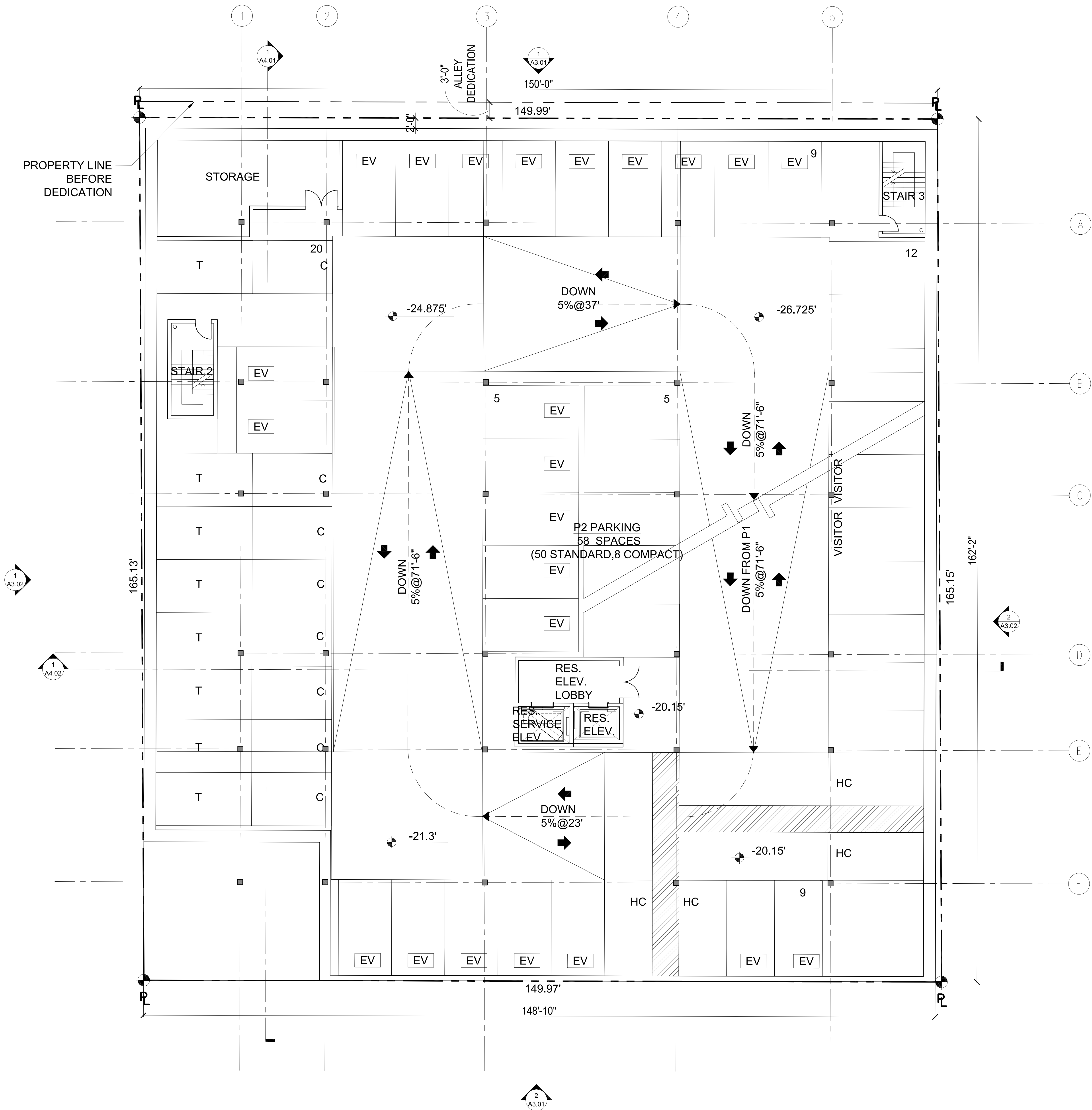
Non-Residential Area	1 Parking per 500 sf
1,207	2.4
Total Required	70.9

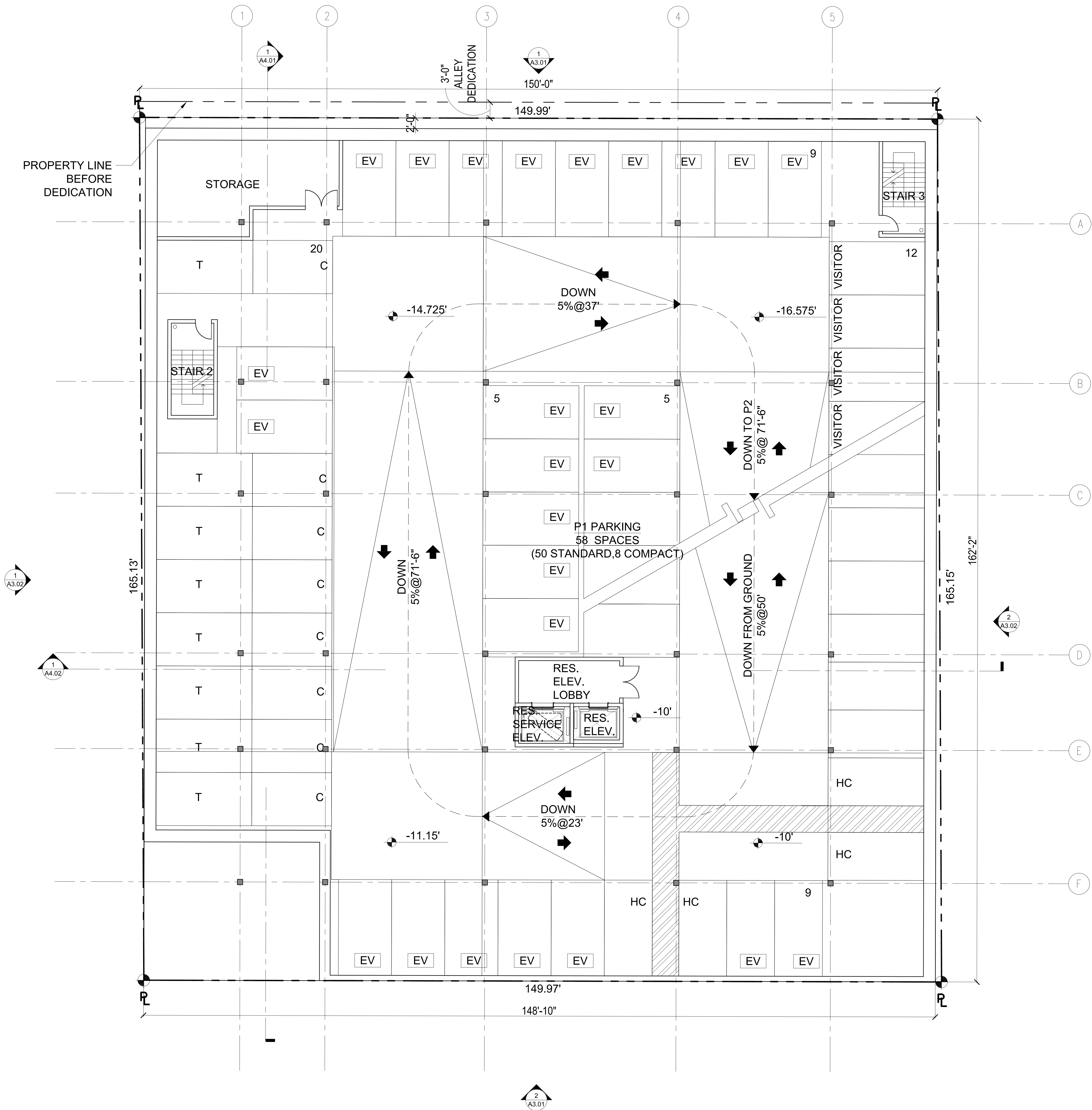
PARKING REQUIRED PER CLIENT DIRECTION

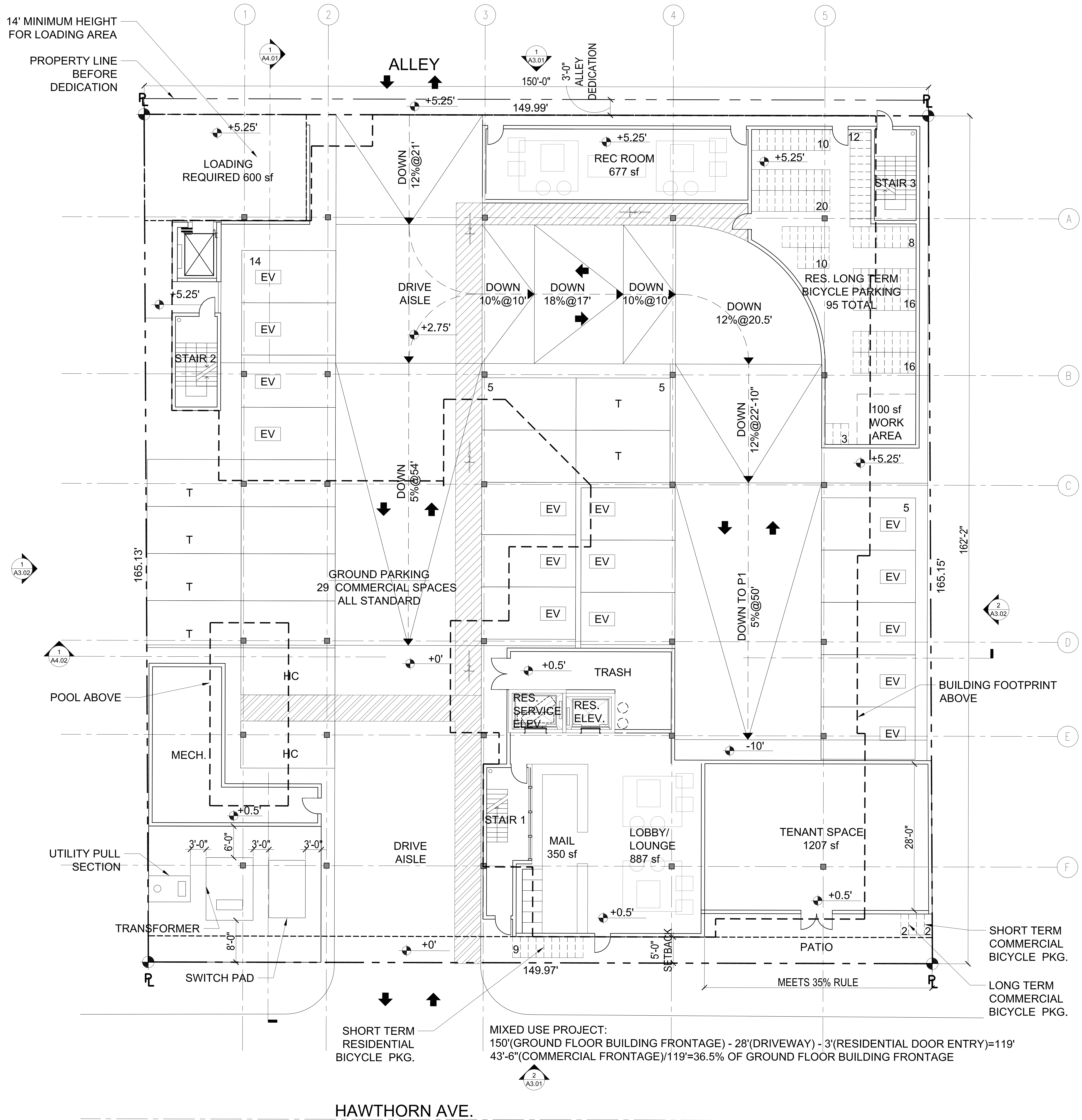
Number of Bedrooms	Parking at .5 per Bedroom
Studio	
54	27
1 Bedrooms	
56	28
2 Bedrooms	
16	8
2 Bedroom corner	
24	12
3 Bedroom	
21	10.5
85.5	

PARKING PROVIDED

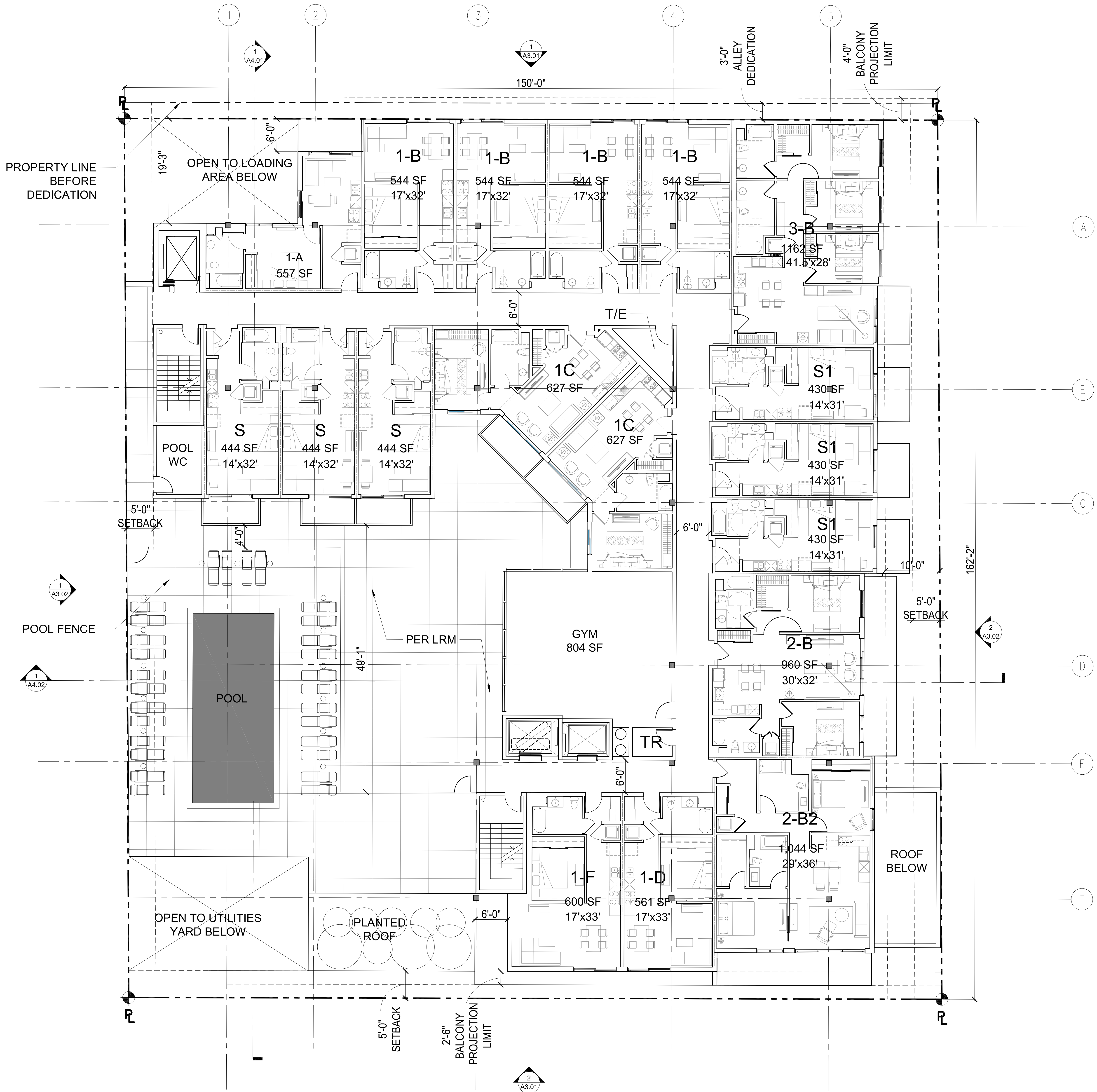
Ground Floor	29
P1	58
P2	58
145	



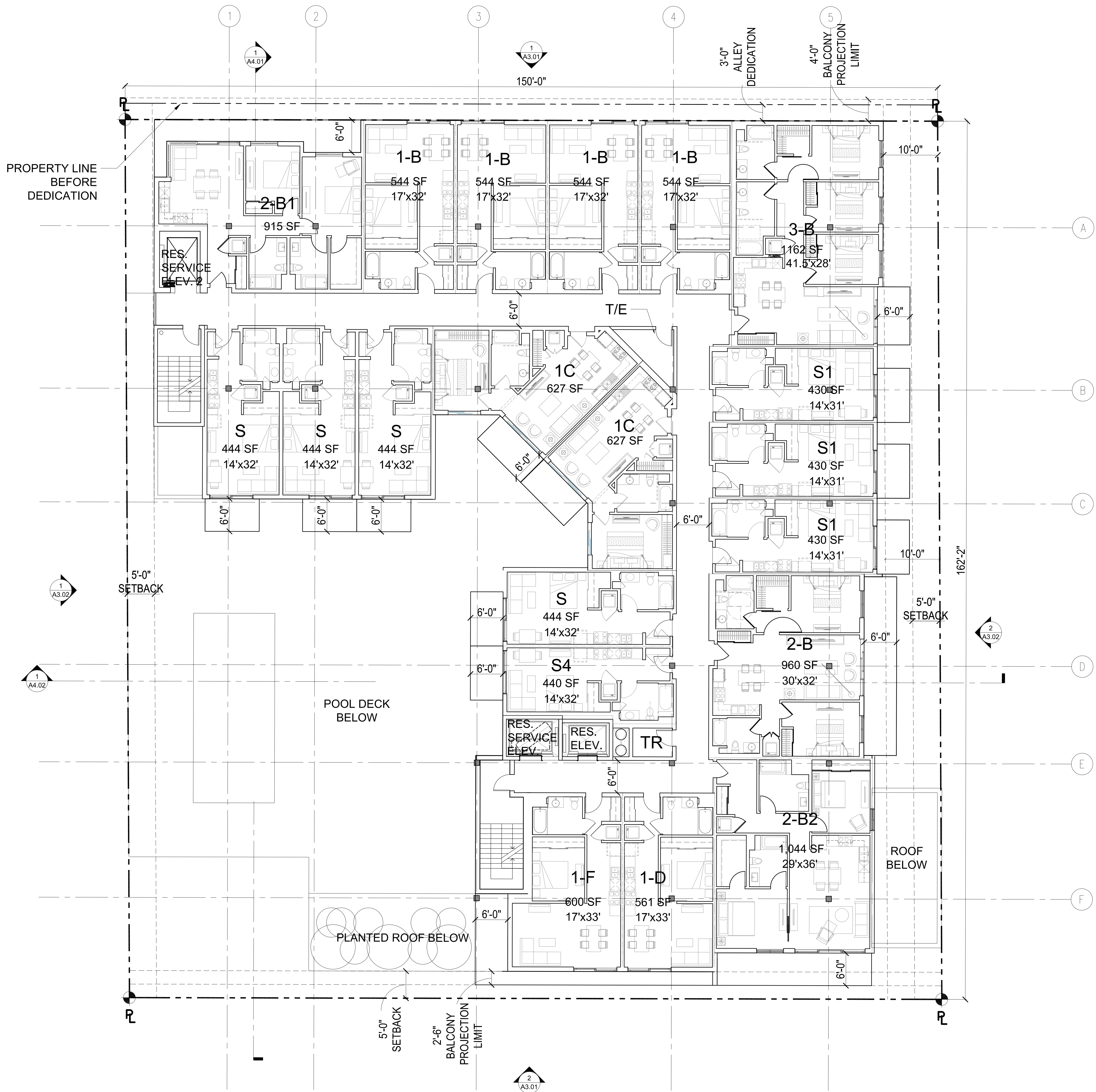




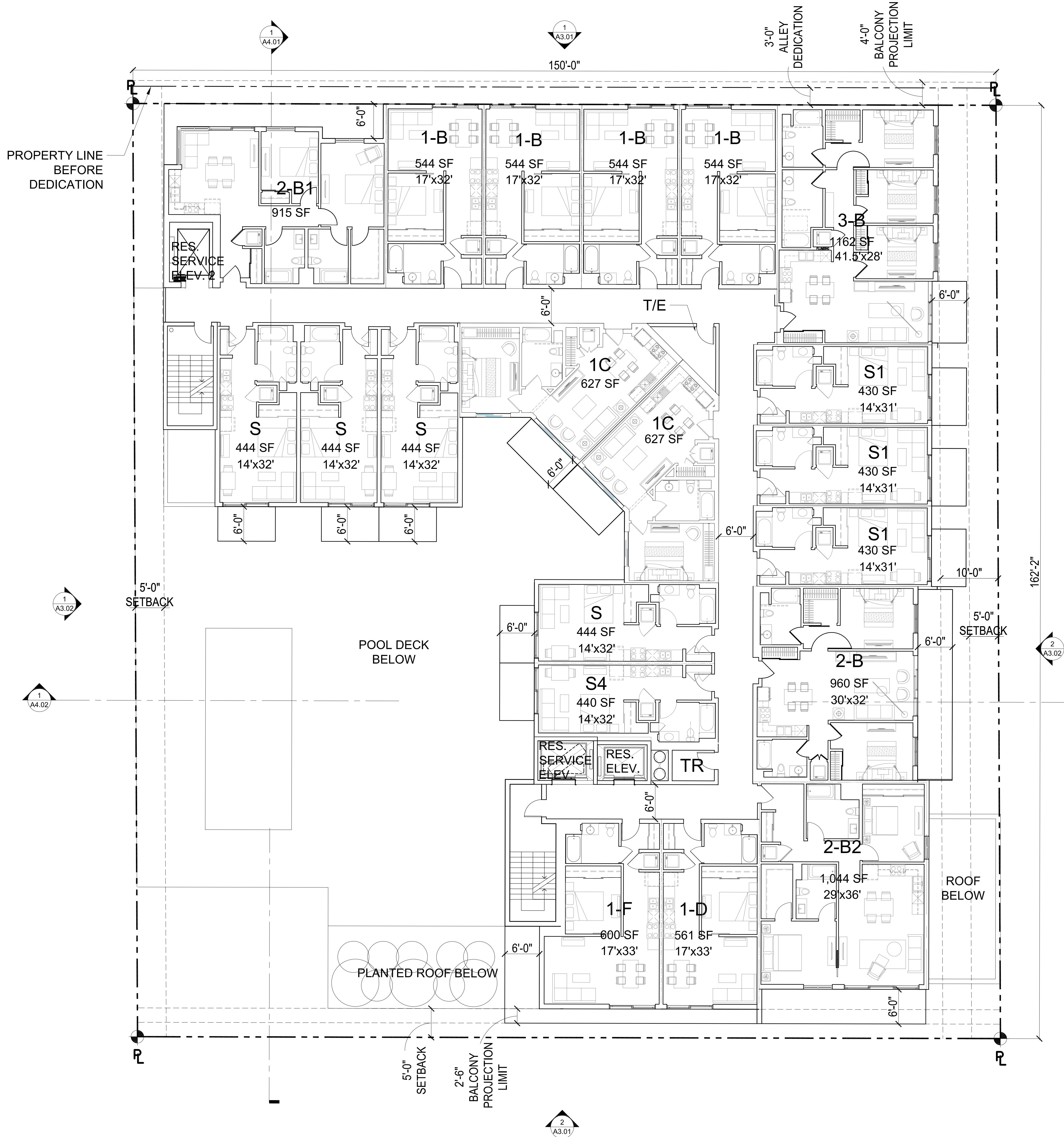














NADEL SPECIAL PROJECTS  
INC.

1990 S. BUNDY DRIVE  
SUITE 400  
LOS ANGELES, CA 90025  
T. 310.826.2100  
F. 310.826.0182  
**WWW.NADELARC.COM**

LOS ANGELES  
LAS VEGAS

PROFESSIONAL STAMP(S):

CONSULTANT(S):

CLIENT:  
YORKWOOD LLC

DEVELOPER:

11755 WILSHIRE BLVD, SUITE 2140  
LOS ANGELES, CA 90025

PROJECT:  
HOLLYWOOD & HIGHLAND

6817 - 6831½ W HAWTHORN AVE  
LOS ANGELES, CA

KEYPLAN:

PUBLIC AGENCY SUBMITTAL:	XXXXXXXXXX
ISSUED FOR BIDDING:	N/A
ISSUED FOR CONSTRUCTION:	N/A

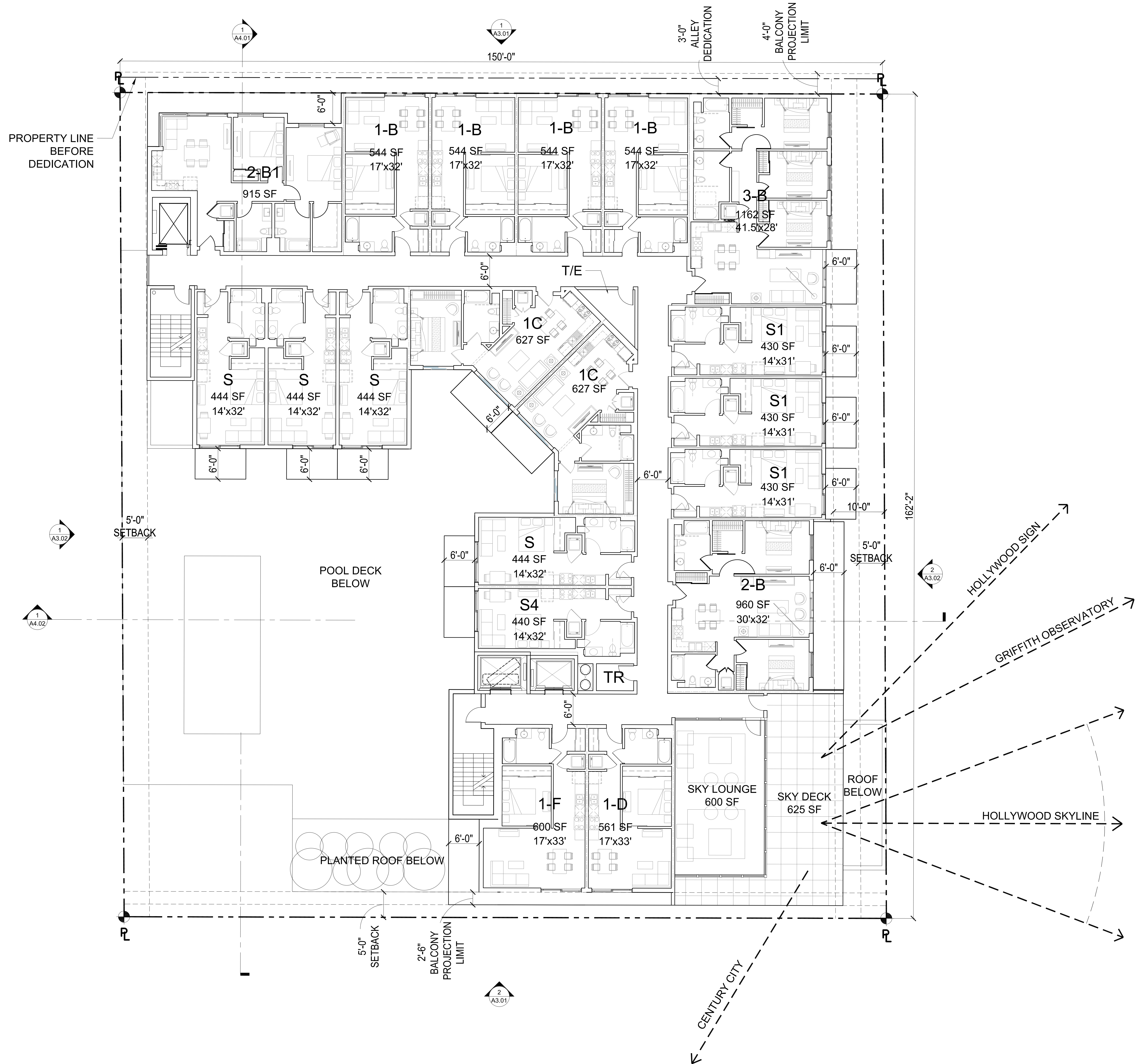
REVISIONS:		
ISSUE DESCRIPTION:		
NO.	DESCRIPTION	DATE

100% SD NOT FOR CONSTRUCTION

WADEL-PROJECT No.: 19032  
PROJECT DATE: APRIL 28, 2020  
SCALE: 1/8" = 1'-0"

## EIGHT FLOOR PLAN

## A2.06





PROFESSIONAL STAMP(S):

CONSULTANT(S):

CLIENT:  
YORKWOOD LLC

DEVELOPER:

11755 WILSHIRE BLVD, SUITE 2140  
LOS ANGELES, CA 90025

PROJECT:  
HOLLYWOOD & HIGHLAND

6817 - 6831 1/2 W HAWTHORN AVE  
LOS ANGELES, CA

KEYPLAN:

PUBLIC AGENCY SUBMITTAL: XXXXXXXX  
ISSUED FOR BIDDING: N/A  
ISSUED FOR CONSTRUCTION: N/A

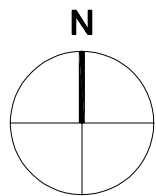
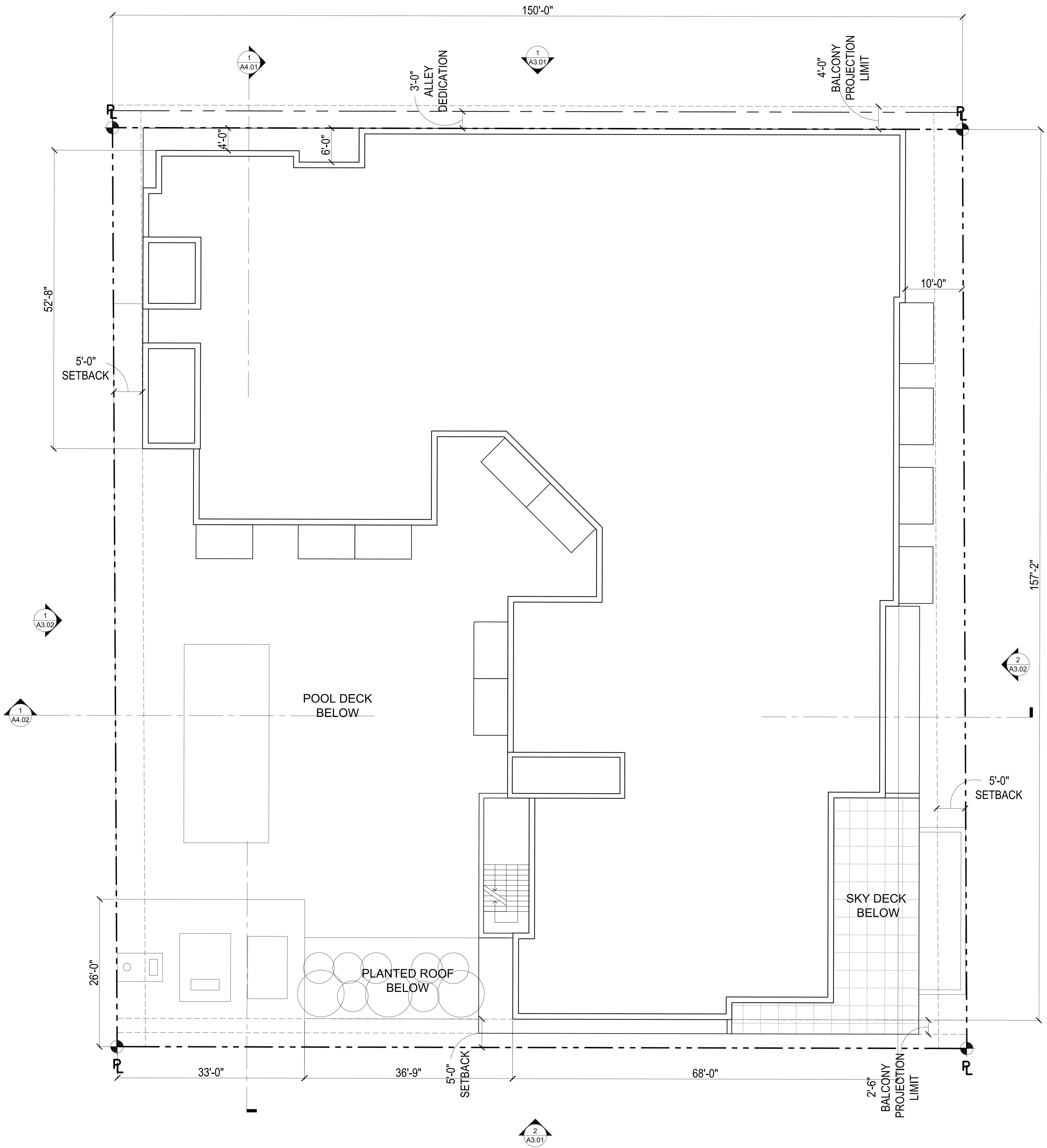
REVISIONS:  
ISSUE DESCRIPTION: DATE

100% SD NOT FOR CONSTRUCTION

NADEL-PROJECT No.: 19032  
PROJECT DATE: APRIL 28, 2020  
SCALE: 1/8" = 1'-0"

ROOF PLAN

A2.07



PROFESSIONAL STAMP(S):

CONSULTANT(S):

CLIENT:  
YORKWOOD LLC

DEVELOPER:

11755 WILSHIRE BLVD. SUITE 2140  
LOS ANGELES, CA 90025

PROJECT:  
HOLLYWOOD & HIGHLAND

6817 - 6831 W HAWTHORN AVE  
LOS ANGELES, CA

KEYPLAN:

PUBLIC AGENCY SUBMITTAL: XXXXXXXX  
ISSUED FOR BIDDING: N/A  
ISSUED FOR CONSTRUCTION: N/A

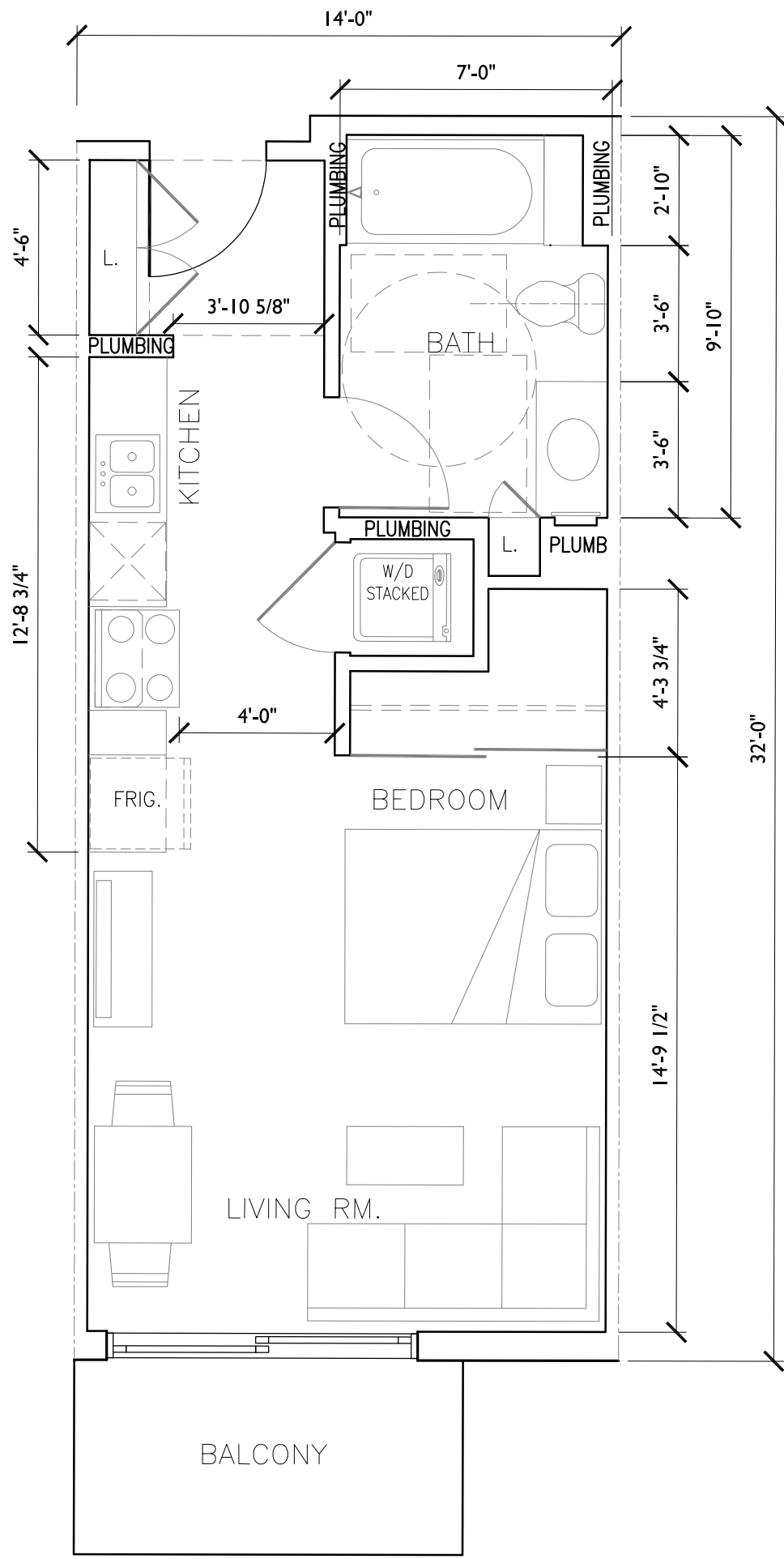
REVISIONS:  
ISSUE DESCRIPTION: DATE

NADEL-PROJECT No.: 19032  
PROJECT DATE: APRIL 28, 2020  
SCALE: 1/4" = 1'-0"

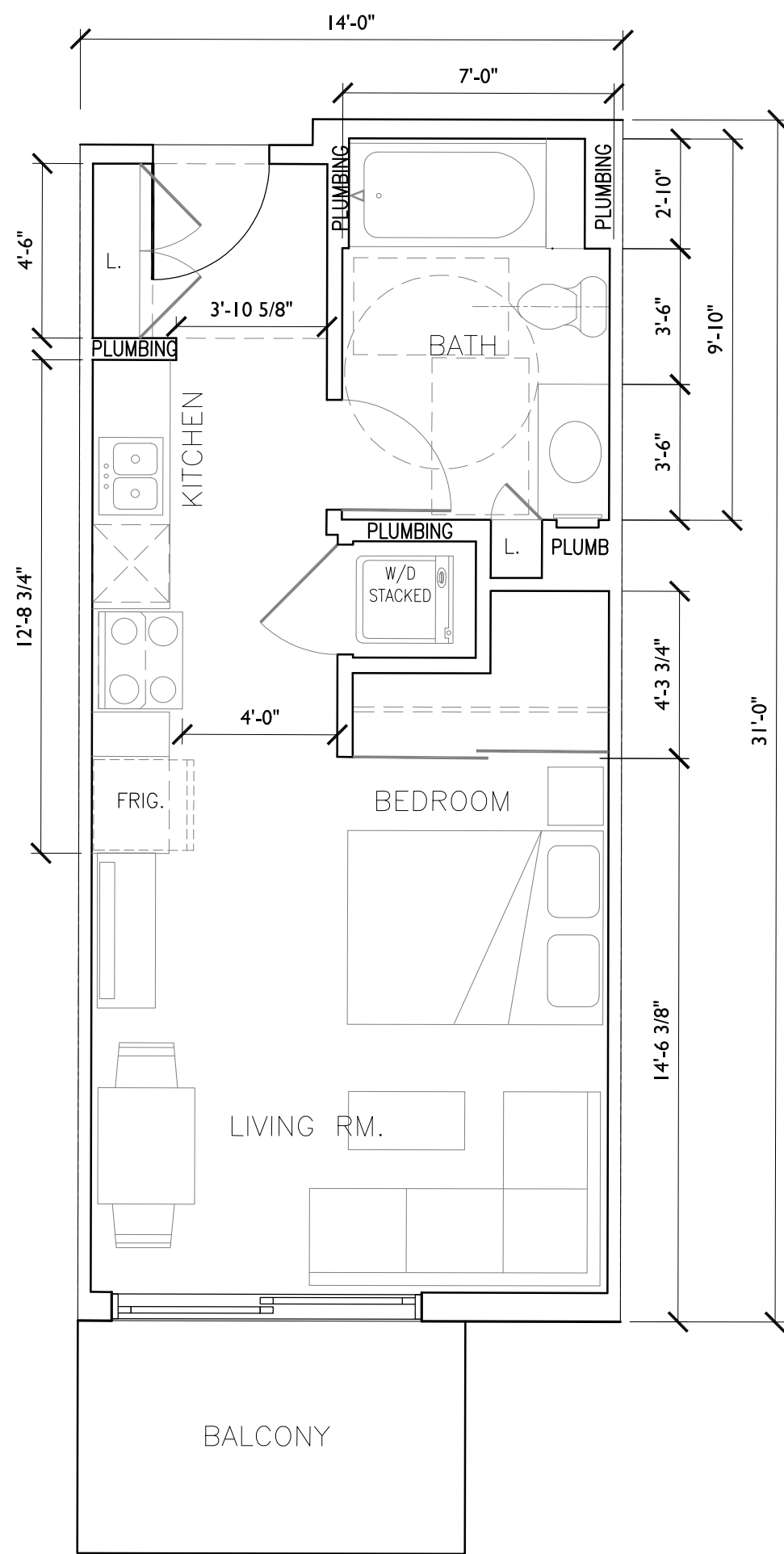
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UNIT PLANS

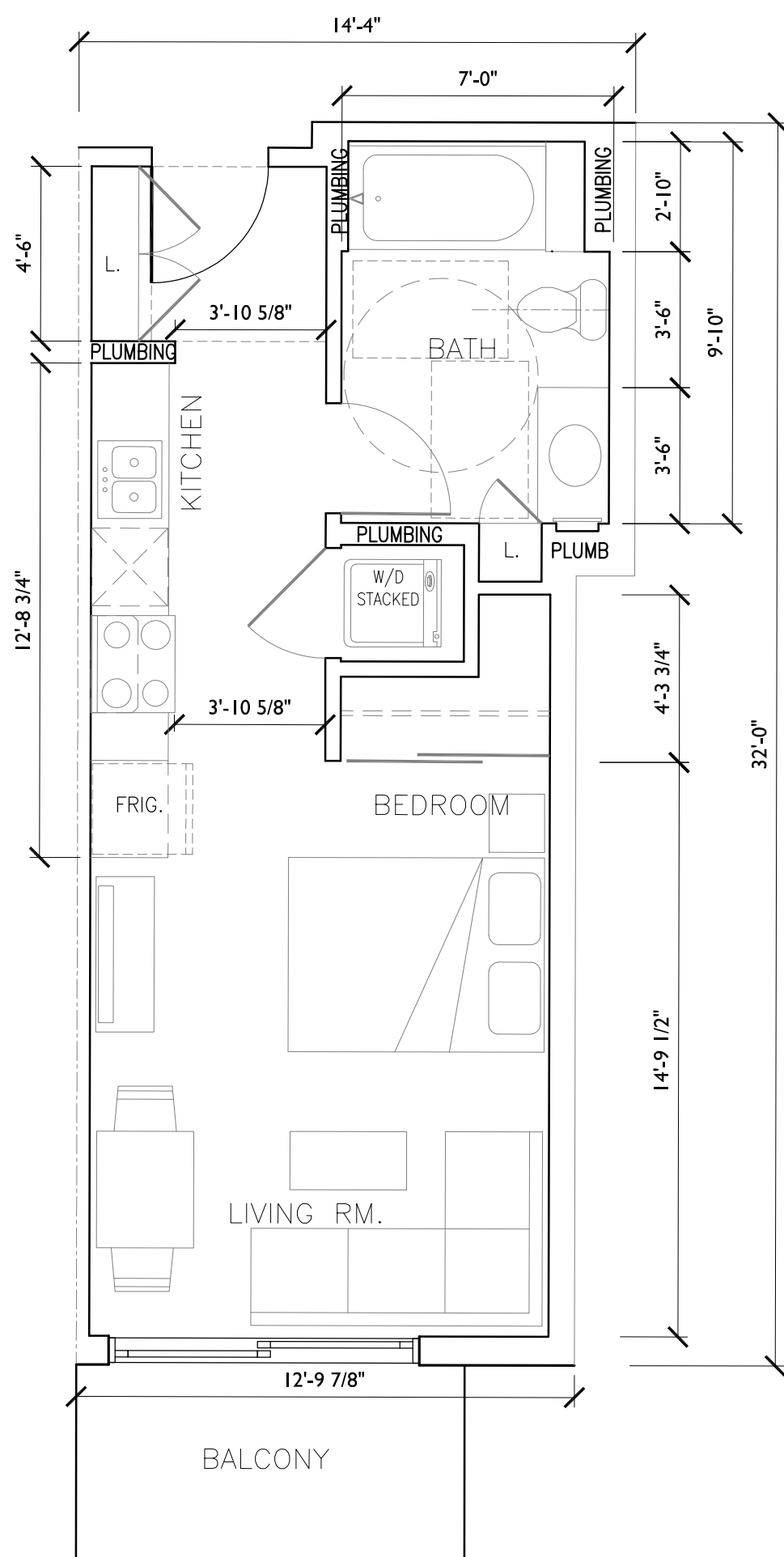
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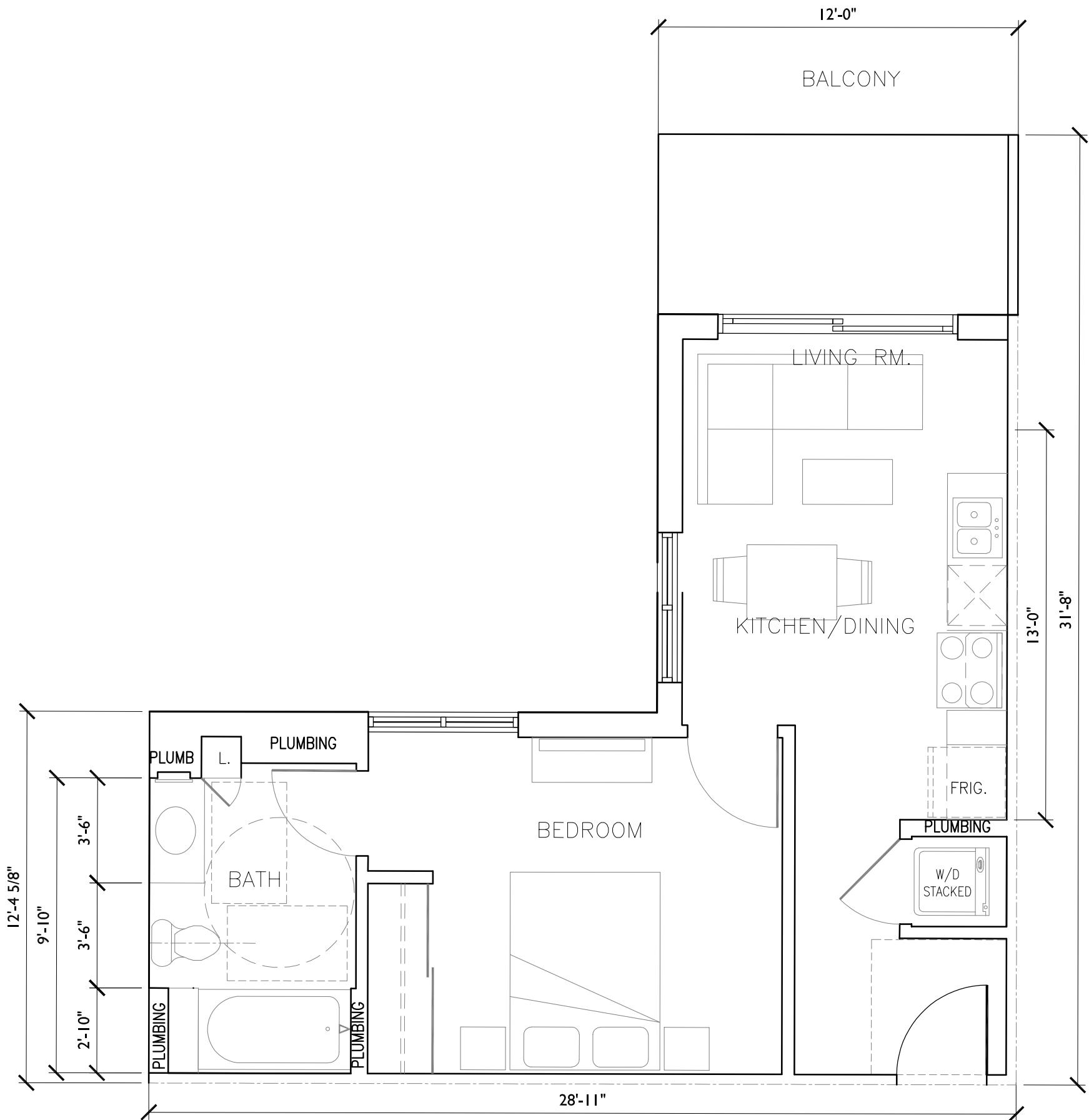
STUDIO UNIT S  
444 SF



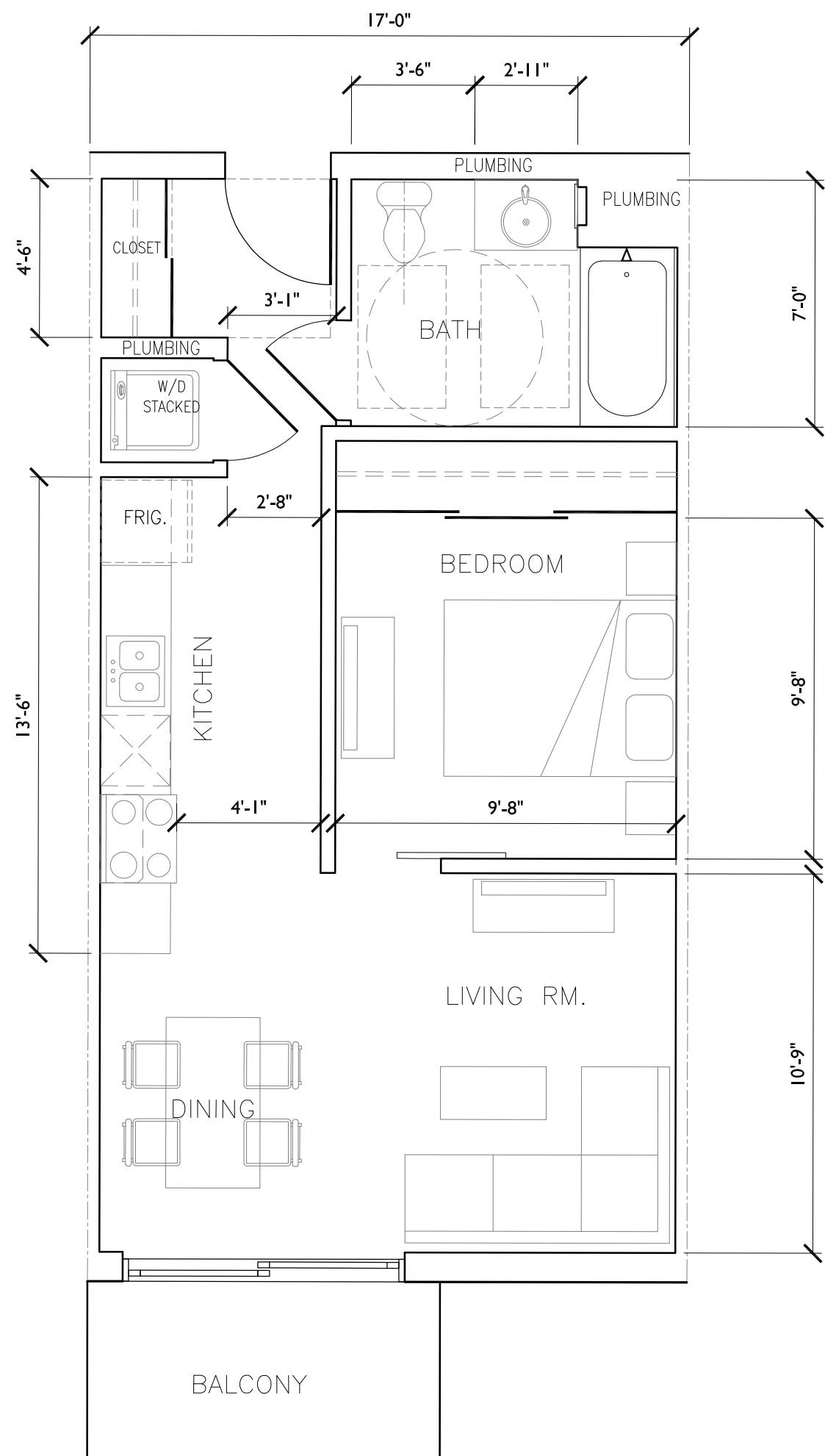
STUDIO UNIT S1  
430 SF



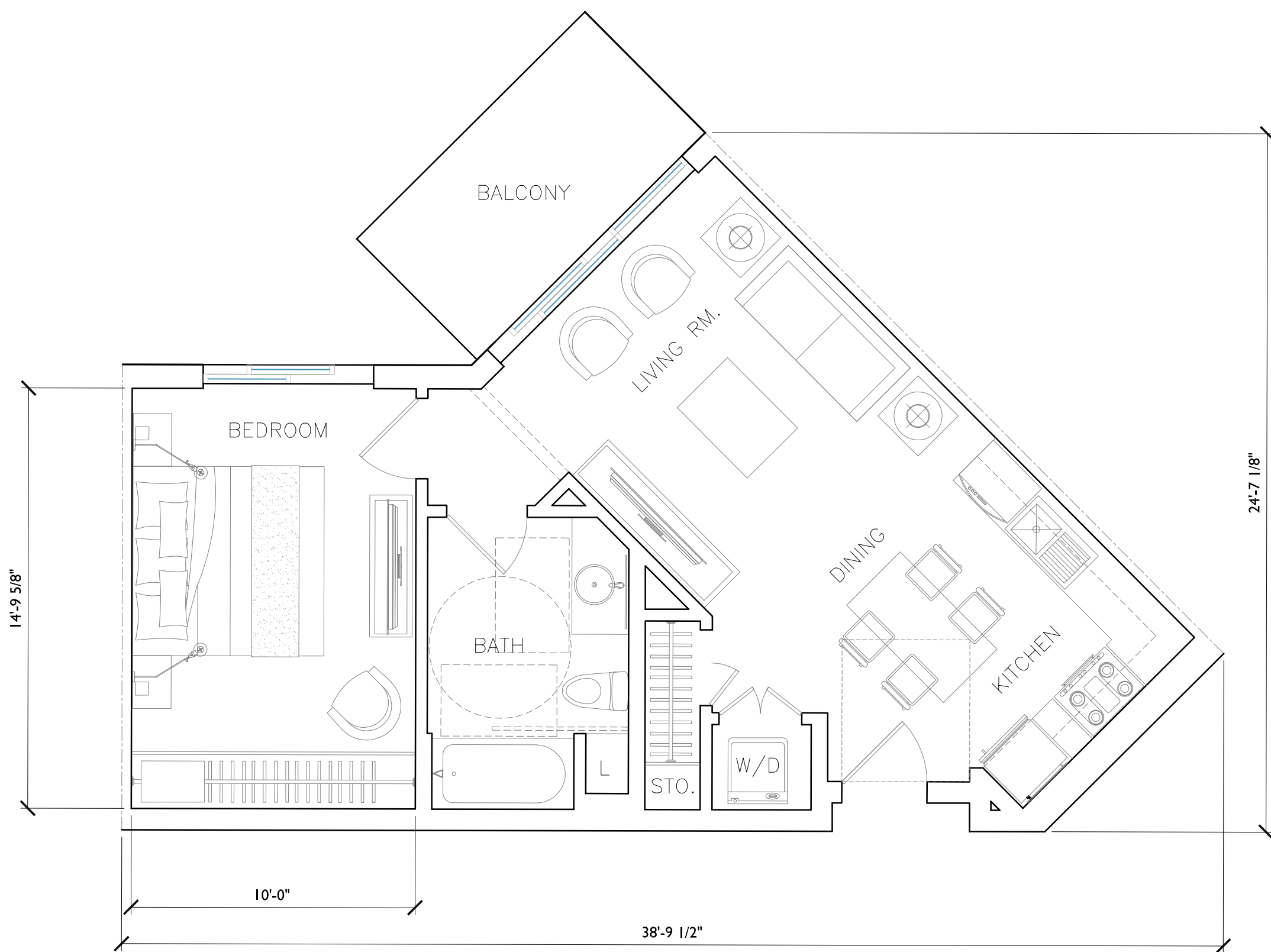
STUDIO UNIT S4  
440 SF



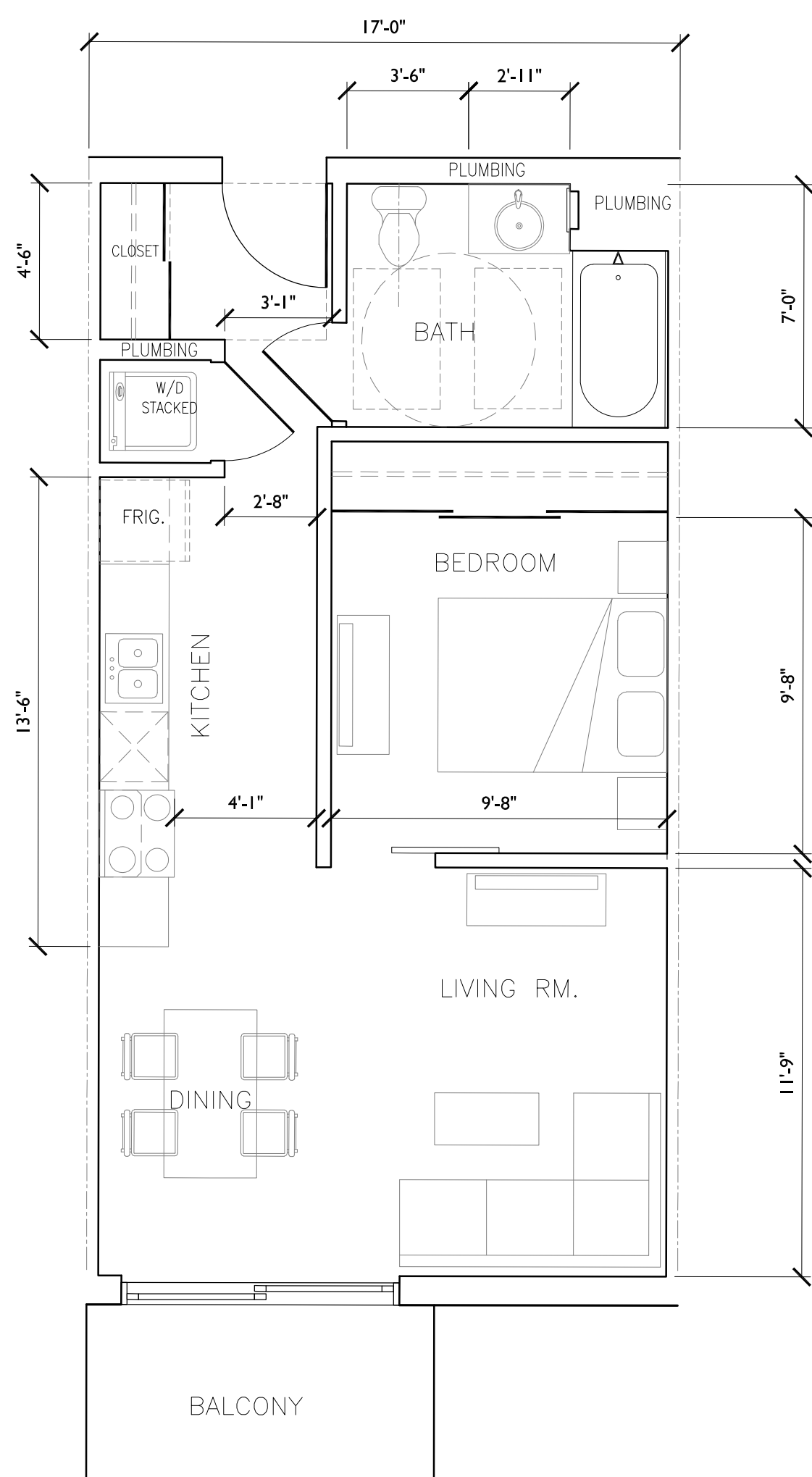
ONE BEDROOM UNIT 1-A  
590 SF



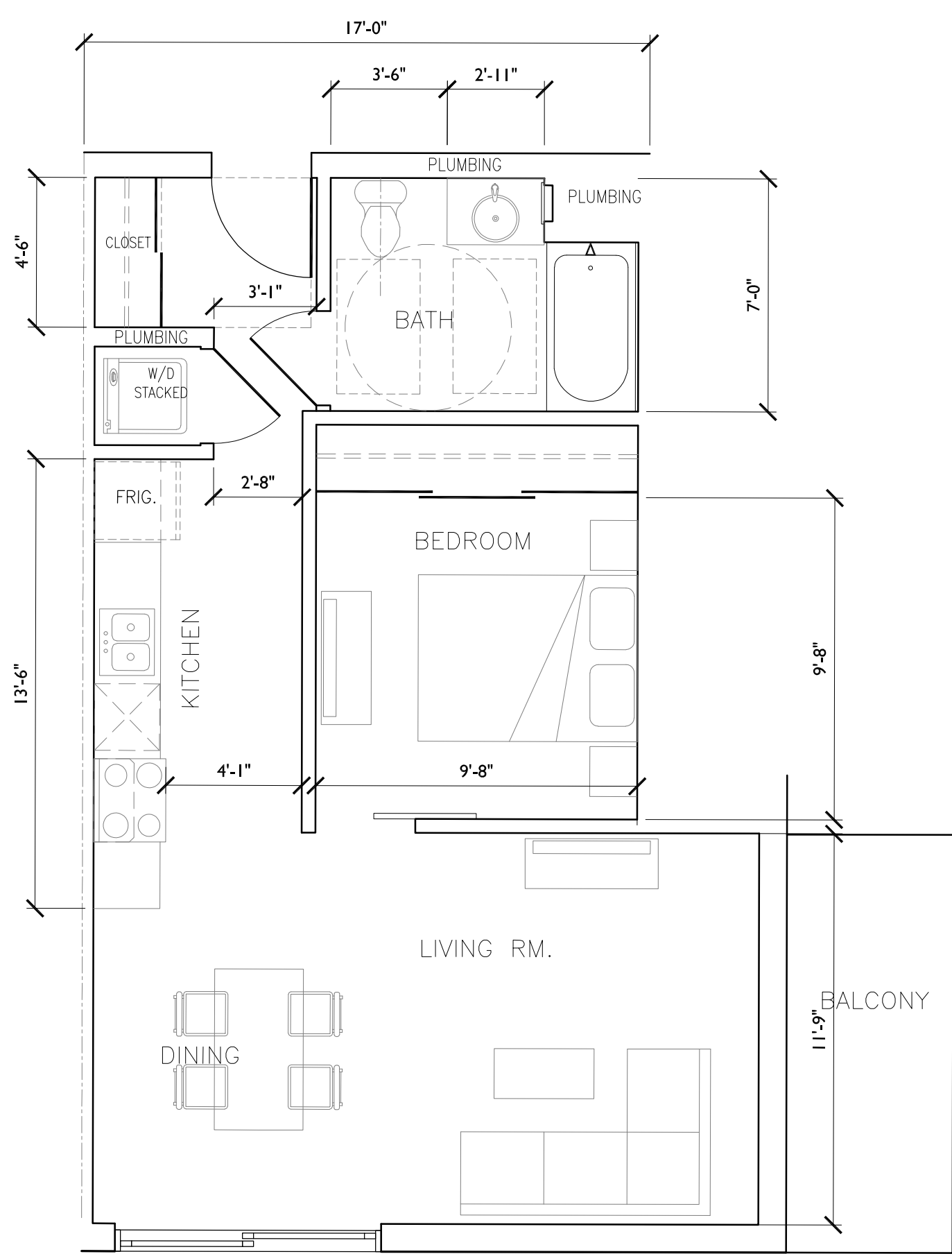
ONE BEDROOM UNIT 1-B  
544 SF



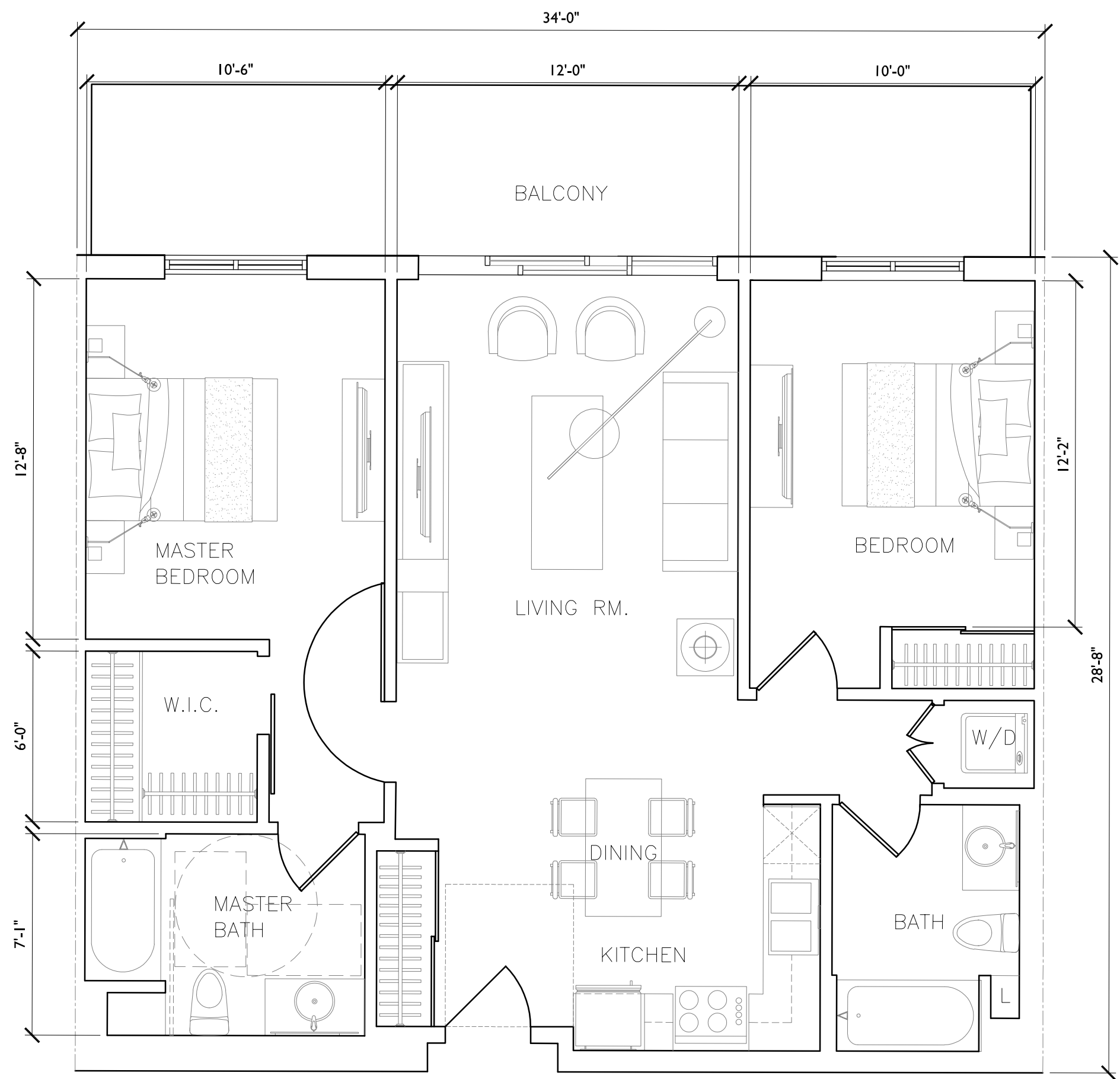
ONE BEDROOM UNIT 1-C  
627 SF



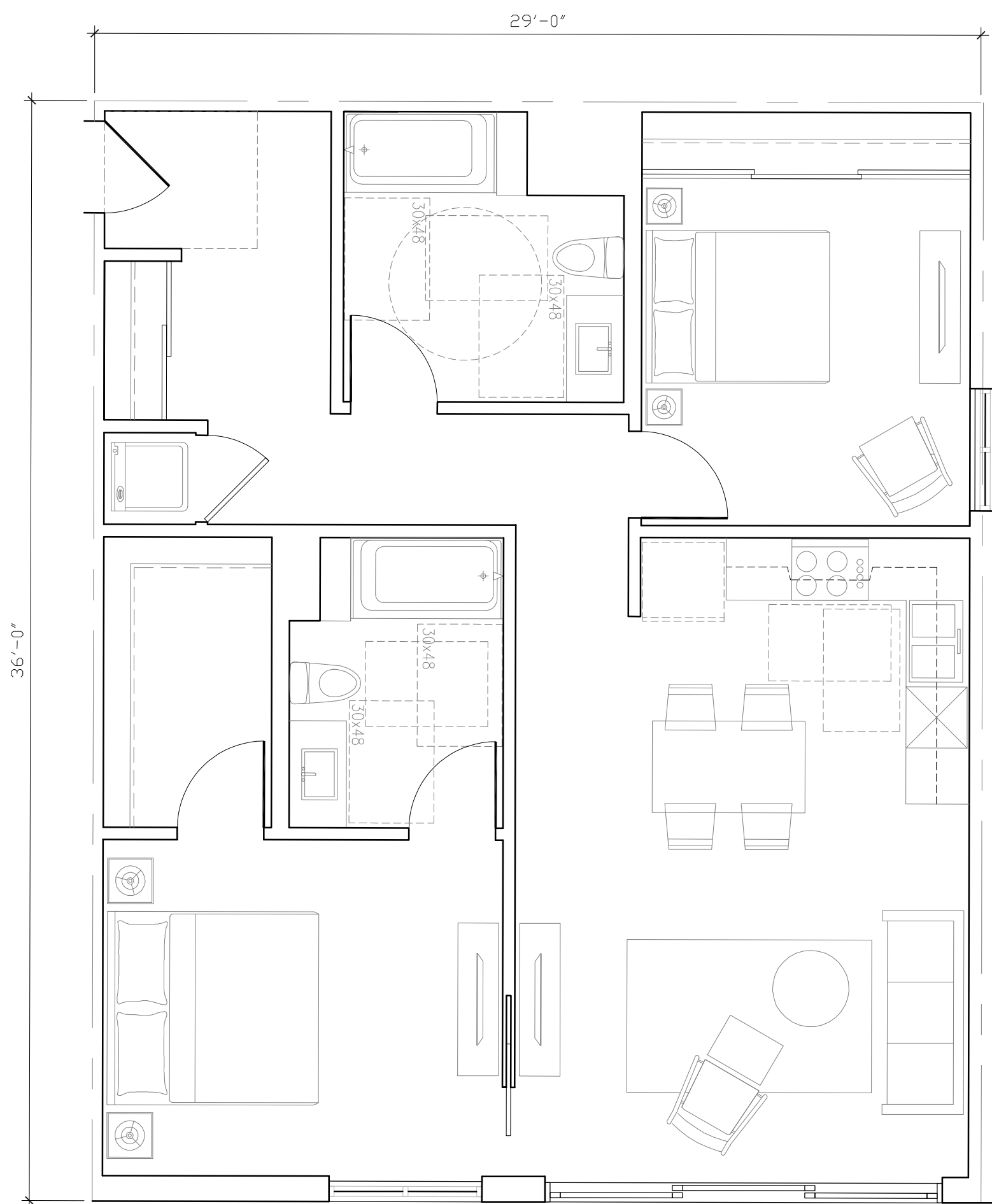
ONE BEDROOM UNIT 1-D  
561 SF



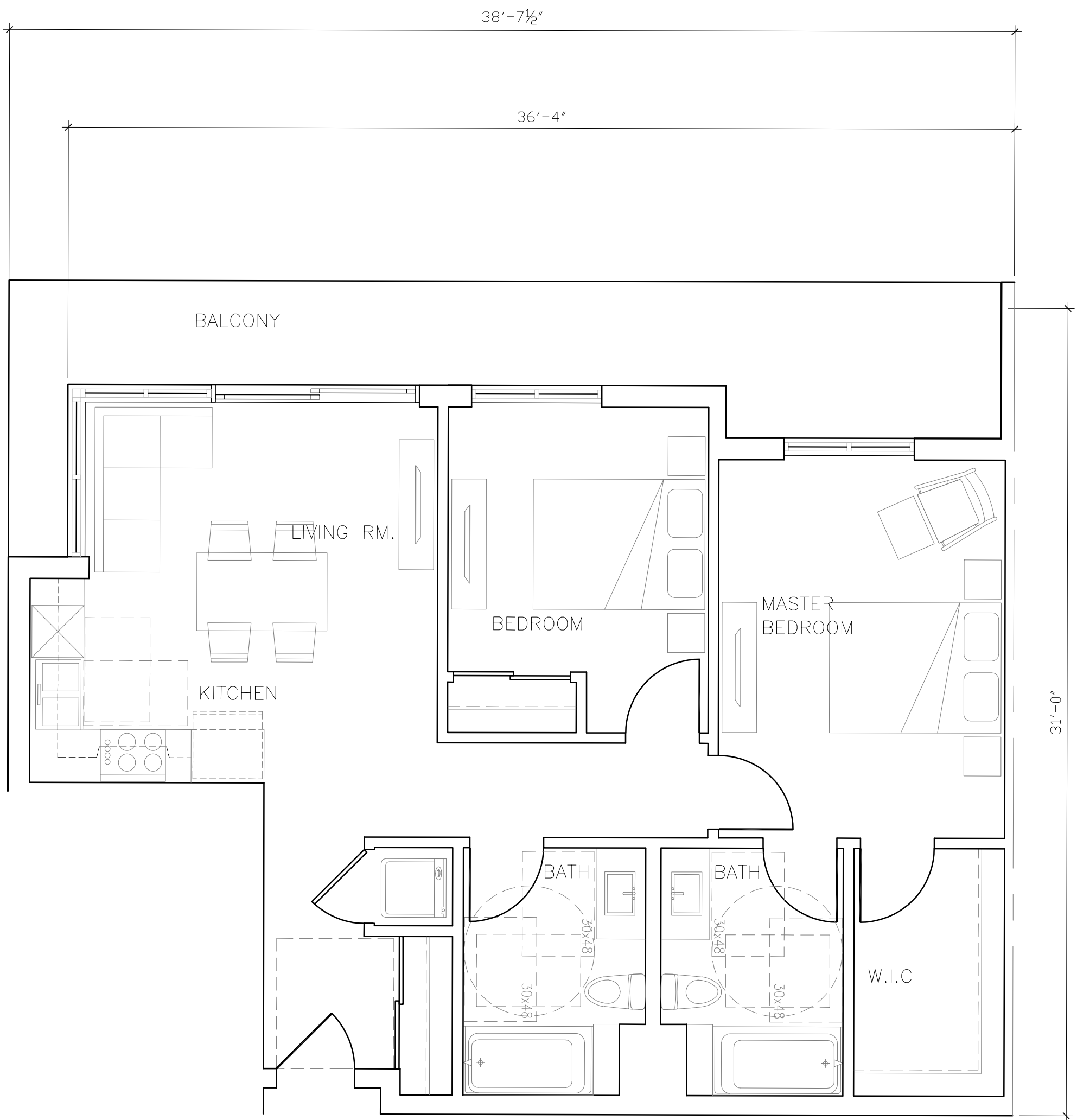
ONE BEDROOM UNIT 1-F  
600 SF



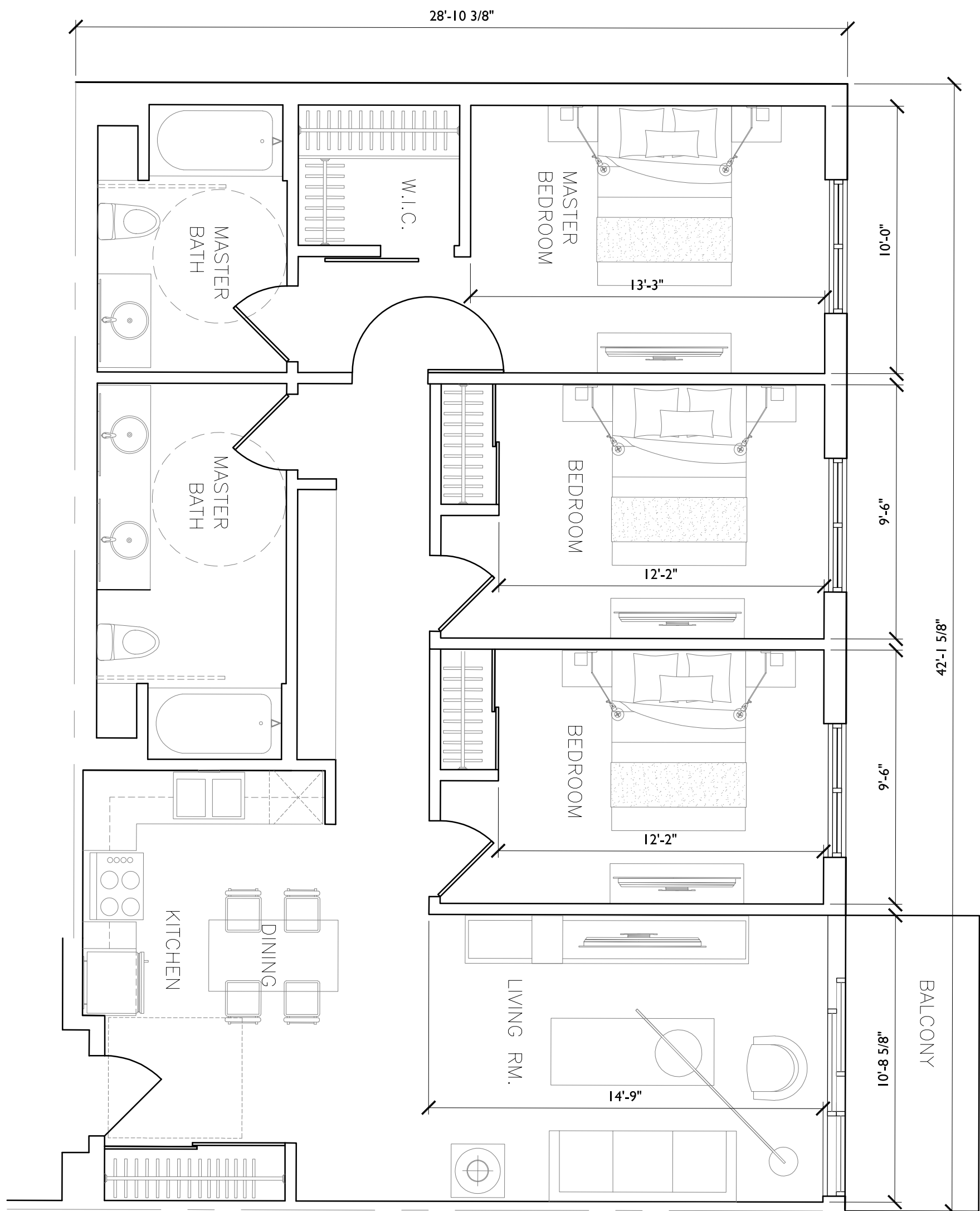
TWO BEDROOM UNIT 2-B  
975 SF



TWO BEDROOM UNIT 2-B2  
1,044 SF



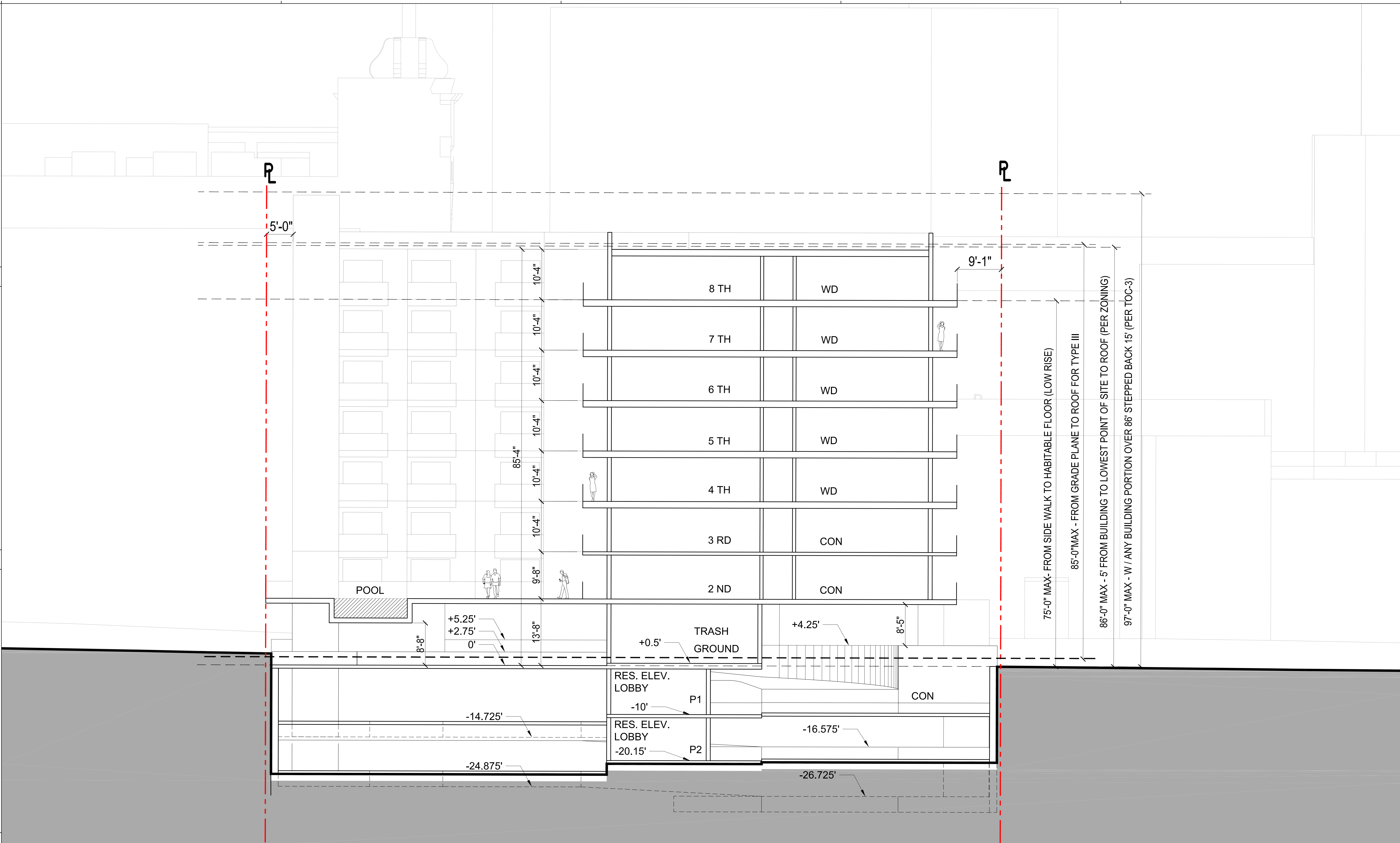
TWO BEDROOM UNIT 2-B1  
1,045 SF



THREE BEDROOM UNIT 3B  
1,216 SF







## **APPENDIX 'F'**

### **Engineering Analysis**

## SHORING PILE

IC: **2324-94** CONSULT: **JRF**  
CLIENT: **YORKWOOD**

CALCULATION SHEET #

CALCULATE THE DESIGN MINIMUM EQUIVALENT FLUID PRESSURE (EFP) FOR PROPOSED RETAINING WALLS. THE WALL HEIGHT AND BACKSLOPE AND SURCHARGE CONDITIONS ARE LISTED BELOW. ASSUME THE BACKFILL IS SATURATED WITH NO EXCESS HYDROSTATIC PRESSURE. USE THE MONONOB-OKABE METHOD FOR SEISMIC FORCES.

### CALCULATION PARAMETERS

EARTH MATERIAL:	Alluvium	RETAINED LENGTH	25 feet
SHEAR DIAGRAM:	B-1	BACKSLOPE ANGLE:	0 degrees
COHESION:	410 psf	SURCHARGE:	250 pounds
PHI ANGLE:	25 degrees	SURCHARGE TYPE:	U Uniform
DENSITY	125 pcf	INITIAL FAILURE ANGLE:	10 degrees
SAFETY FACTOR:	1.25	FINAL FAILURE ANGLE:	70 degrees
PILE FRICTION	10 degrees	INITIAL TENSION CRACK:	1 feet
CD (C/FS):	328.0 psf	FINAL TENSION CRACK:	20 feet
PHID = ATAN(TAN(PHI)/FS) =	20.5 degrees		
HORIZONTAL PSEUDO STATIC SEISMIC COEFFICIENT ( $k_h$ )			0 %g
VERTICAL PSEUDO STATIC SEISMIC COEFFICIENT ( $k_v$ )			0 %g

### CALCULATED RESULTS

CRITICAL FAILURE ANGLE	54 degrees
AREA OF TRIAL FAILURE WEDGE	215.1 square feet
TOTAL EXTERNAL SURCHARGE	3250.0 pounds
WEIGHT OF TRIAL FAILURE WEDGE	30139.3 pounds
NUMBER OF TRIAL WEDGES ANALYZED	1220 trials
LENGTH OF FAILURE PLANE	23.8 feet
DEPTH OF TENSION CRACK	5.7 feet
HORIZONTAL DISTANCE TO UPSLOPE TENSION CRACK	14.0 feet
<b>CALCULATED THRUST ON PILE</b>	<b>10085.4 pounds</b>
<b>CALCULATED EQUIVALENT FLUID PRESSURE</b>	<b>32.3 pcf</b>
<b>DESIGN EQUIVALENT FLUID PRESSURE</b>	<b>35.0 pcf</b>

**THE CALCULATION INDICATES THAT THE PROPOSED SHORING PILES MAY MAY BE DESIGNED FOR AN EQUIVALENT FLUID PRESSURE OF 35 POUNDS PER CUBIC FOOT. THE FLUID PRESSURE SHOULD BE MULTIPLIED BY THE PILE SPACING.**

## RETAINING WALL

IC: **2324-94** CONSULT: **JRF**  
CLIENT: **YORKWOOD**

CALCULATION SHEET #

CALCULATE THE DESIGN MINIMUM EQUIVALENT FLUID PRESSURE (EFP) FOR PROPOSED RETAINING WALLS. THE WALL HEIGHT AND BACKSLOPE AND SURCHARGE CONDITIONS ARE LISTED BELOW. ASSUME THE BACKFILL IS SATURATED WITH NO EXCESS HYDROSTATIC PRESSURE. USE THE MONONOB-OKABE METHOD FOR SEISMIC FORCES.

### CALCULATION PARAMETERS

EARTH MATERIAL:	Alluvium	WALL HEIGHT	25 feet
SHEAR DIAGRAM:	B-1	BACKSLOPE ANGLE:	0 degrees
COHESION:	410 psf	SURCHARGE:	250 pounds
PHI ANGLE:	25 degrees	SURCHARGE TYPE:	U Uniform
DENSITY	125 pcf	INITIAL FAILURE ANGLE:	10 degrees
SAFETY FACTOR:	1	FINAL FAILURE ANGLE:	70 degrees
WALL FRICTION	10 degrees	INITIAL TENSION CRACK:	1 feet
CD (C/FS):	410.0 psf	FINAL TENSION CRACK:	20 feet
PHID = ATAN(TAN(PHI)/FS) =	25.0 degrees		
HORIZONTAL PSEUDO STATIC SEISMIC COEFFICIENT ( $k_h$ )		0.333 %g	
VERTICAL PSEUDO STATIC SEISMIC COEFFICIENT ( $k_v$ )		0 %g	

### CALCULATED RESULTS

CRITICAL FAILURE ANGLE	44 degrees
AREA OF TRIAL FAILURE WEDGE	306.9 square feet
TOTAL EXTERNAL SURCHARGE	4750.0 pounds
WEIGHT OF TRIAL FAILURE WEDGE	43107.8 pounds
NUMBER OF TRIAL WEDGES ANALYZED	1220 trials
LENGTH OF FAILURE PLANE	27.8 feet
DEPTH OF TENSION CRACK	5.7 feet
HORIZONTAL DISTANCE TO UPSLOPE TENSION CRACK	20.0 feet
<b>CALCULATED HORIZONTAL THRUST ON WALL</b>	<b>17773.1 pounds</b>

**THE CALCULATION INDICATES THAT THESEISMIC LOAD IS HIGHER THAN THE STATIC DESIGN AND THEREFORE A SURCHARGE OF AN EQUIVALENT FLUID PRESSURE OF 12 POUNDS PER CUBIC FOOT SHOULD BE ADDED TO CANTILEVER WALLS.**



## RETAINING WALL

IC: **2324-94** CONSULT: **JRF**  
CLIENT: **YORKWOOD**

CALCULATION SHEET #

CALCULATE THE DESIGN MINIMUM EQUIVALENT FLUID PRESSURE (EFP) FOR PROPOSED RETAINING WALLS. THE WALL HEIGHT AND BACKSLOPE AND SURCHARGE CONDITIONS ARE LISTED BELOW. ASSUME THE BACKFILL IS SATURATED WITH NO EXCESS HYDROSTATIC PRESSURE. USE THE MONONOB-OKABE METHOD FOR SEISMIC FORCES.

### CALCULATION PARAMETERS

EARTH MATERIAL:	Alluvium	WALL HEIGHT	25 feet
SHEAR DIAGRAM:	B-1	BACKSLOPE ANGLE:	0 degrees
COHESION:	410 psf	SURCHARGE:	250 pounds
PHI ANGLE:	25 degrees	SURCHARGE TYPE:	U Uniform
DENSITY	125 pcf	INITIAL FAILURE ANGLE:	10 degrees
SAFETY FACTOR:	1.5	FINAL FAILURE ANGLE:	70 degrees
WALL FRICTION	10 degrees	INITIAL TENSION CRACK:	1 feet
CD (C/FS):	273.3 psf	FINAL TENSION CRACK:	20 feet
PHID = ATAN(TAN(PHI)/FS) =	17.3 degrees		
HORIZONTAL PSEUDO STATIC SEISMIC COEFFICIENT (k <sub>h</sub> )			0 %g
VERTICAL PSEUDO STATIC SEISMIC COEFFICIENT (k <sub>v</sub> )			0 %g

### CALCULATED RESULTS

CRITICAL FAILURE ANGLE	51 degrees
AREA OF TRIAL FAILURE WEDGE	246.6 square feet
TOTAL EXTERNAL SURCHARGE	4000.0 pounds
WEIGHT OF TRIAL FAILURE WEDGE	34819.7 pounds
NUMBER OF TRIAL WEDGES ANALYZED	1220 trials
LENGTH OF FAILURE PLANE	27.0 feet
DEPTH OF TENSION CRACK	4.0 feet
HORIZONTAL DISTANCE TO UPSLOPE TENSION CRACK	17.0 feet
<b>CALCULATED HORIZONTAL THRUST ON WALL</b>	<b>13488.0 pounds</b>
<b>CALCULATED EQUIVALENT FLUID PRESSURE</b>	<b>43.2 pcf</b>
<b>DESIGN EQUIVALENT FLUID PRESSURE</b>	<b>45.0 pcf</b>

**THE CALCULATION INDICATES THAT THE PROPOSED RETAINING WALL MAY BE DESIGNED FOR AN EQUIVALENT FLUID PRESSURE OF 45 POUNDS PER CUBIC FOOT.**

## **APPENDIX ‘G’**

**Research**

**See CD**