



April 7, 2011  
Project No. 117800

Mr. Jim Jachetta  
**Prologis**  
4041 MacArthur Blvd., #400  
Newport Beach, California 92660

**Subject: Update Letter – Geotechnical Report and Grading Plan Review  
Proposed Kaiser Commerce Center Parcel 5 - Basin D  
NW corner of Valley View Blvd. and Commerce Drive  
Ontario, California**

Dear Mr. Jachetta:

This letter provides an update to our October 2, 2008 Geotechnical Report Update and Supplemental Recommendations Report for Parcel 5 – Basin D. The following letter provides a reference to our previous geotechnical reports, summary of our background with the project, a summary of our observations regarding the current conditions of the site, conclusions and supplemental recommendations for design and construction of the proposed project. The conclusions and recommendations provided in the listed geotechnical reports (referenced below) remain valid unless otherwise presented herein.

## REFERENCES

The following references were reviewed to evaluate the previously presented conclusions and recommendations:

- Interim Rough Grading report, dated February 5, 2003;
- Soil Hydraulic Conductivity Analysis, dated October 9, 2007
- Rough Grading report – Parcel 5- Retention Basin, dated December 31, 2008;
- Geotechnical Report Update and Supplemental Recommendations Report, dated October 2, 2008;
- Precise Grading Plans, Prologis – Parcel 5 PM 15118, Kaiser Commerce Center, Sheets 1, 2, 3, 4, 5 of 5, prepared by Danjon Engineering, Inc., (Plotted, April 06, 2011);

## **BACKGROUND AND PROJECT DESCRIPTION**

The project site and adjacent parcels are located within the Kaiser Commerce Center Industrial Park. Prior to development, the area was the former Kaiser steel slag piles. Kleinfelder previously performed a geotechnical investigation in the steel slag piles which included the Parcel 5 project site. The results of that investigation are presented in our report dated March 13, 2001. At the time of our previous investigation, the site was covered with piles of steel slag from the former Kaiser Steel plant. Height of the slag piles were on the order of 50 to 70 feet above the original ground surface.

The project site was subsequently graded as an approximately 9 acre flood control retention basin (Basin D) as part of the overall Kaiser Commerce Center warehouse complex. Site grading was conducted from 2002 to 2003 and included removal of the slag piles to native alluvial soils and placing the slag as processed compacted fill. Kleinfelder was retained by Catellus Commercial Group, LLC for observation and testing of engineered fill during site grading which included the project site basin construction. Results of the observation and testing during grading of the project site basin are presented in the Rough Grading Report, prepared by Kleinfelder, dated December 31, 2008.

The existing retention basin is proposed to be abandoned, backfilled with import soil and a warehouse constructed. The proposed approximately 186,000-square-foot building is anticipated to be concrete tilt-up construction with office space, loading docks and truck parking. Structural loads were not available at the time of preparation of this letter. Based on the anticipated concrete tilt-up construction of the structure, we estimated column loads (dead plus live) of up to approximately 150 kips and continuous footing loads of approximately 3 to 5 kips per linear foot. The building is proposed to have slab on grade floors with loading docks along the west side of the building.

We understand that the proposed project will consist of grading the approximately 9 acre site located on the northwest corner of Valley View Boulevard and Commerce Drive in the Kaiser Commerce Center. Construction will include backfilling the existing detention basin with import soil, demolition of existing storm drain inlet and outlet structures, and placement of new storm drain pipe along Commerce Drive and Valley View Boulevard.

## **SCOPE**

The scope of services for this update letter included the following:

- Review of the referenced Geotechnical Engineering reports;
- Conduct a Site visit;
- Review of the proposed project Precise Grading Plans;
- Provide subdrain system detail recommendations:

- Update seismic design recommendations due to 2010 California Building Code (CBC) changes and:
- Publish this update letter.

## **SITE RECONNAISSANCE AND SITE DESCRIPTION**

The subject site is located on the northwest corner of Valley View Boulevard and Commerce Drive in Ontario, California. The site is bounded by commercial warehouse buildings on the west and north, Commerce Drive on the east, and Valley View Boulevard on the south.

Currently, the site is an approximately 9-acre retention basin approximately 15 feet deep. The surface is generally devoid of vegetation except for the northeast corner. Storm drain inlets are located in the northeast corner, north end and southwest corner of the basin and one outlet structure is located in the southeast corner. The inlet and outlet structures are concrete-lined headwalls and floor with large rip-rap in the northeast side. A concrete spill way is located along Valley View Boulevard on the south side of the basin.

Based on our site reconnaissance conducted on March 2, 2011, the site is generally in the same condition as described in the October 2, 2008, Geotechnical Investigation Report.

## **CONCLUSIONS AND RECOMMENDATIONS**

We have based our conclusions and recommendations on our understanding of the project, our observations made during our recent site reconnaissance, review of the referenced geotechnical reports, and review of Precise Grading Plans prepared by Danjon Engineering, Inc. It is our opinion that the recommendations presented in our October 2, 2008 report remain valid except as noted herein.

It is our opinion that construction activities have not been performed at the site subsequent to our observation and testing of the soils during construction of the retention basin as presented in the Rough Grading Report dated December 31, 2008.

In our referenced Update Geotechnical Report, dated October 2, 2008, the geologic and geotechnical criteria were based on the 2007 version of the CBC. Currently, reviewing agencies are requiring that the design be based on geologic and seismic values obtained per the 2010 version of the CBC which was adopted by San Bernardino County, January 2011.

The following items update and supersede information presented in the referenced reports:

### Subdrain

Since the slag fill materials present within the bottom and slopes of the basin is anticipated to have a lower permeability than proposed granular import fill soils, a subdrain system is recommended. The subdrain is recommended along the toe of existing basin slopes and outlet into the existing storm drain in the southeast corner (see Plate 2, attached for the approximate limits of the proposed subdrain). Construction staging of the subdrain should consider the proposed excavation and backfilling of the storm drains along Commerce Drive and Valley View Boulevard and the proposed subsurface retention structures proposed along the west and north sides of the project site. Connection of the subdrain system outlet should be planned as part of the construction of the abandoned storm drain plug in the southeast corner of the existing basin. As noted, the attached Plate 2 supersedes the Plate 2 presented in the October 2, 2008 update report.

## **SEISMIC DESIGN RECOMMENDATIONS**

### California Building Code (CBC) 2010 Edition

We recommend, at a minimum, the proposed development be designed in accordance with the requirements of the 2010 edition of the CBC. According to 2010 CBC, peak and spectral accelerations are to be developed for the Maximum Considered Earthquake (MCE). It should be noted that The 2010 CBC is based on the 2009 International Building Code (IBC) and ASCE 7-05. According to The 2010 CBC and ASCE 7-05, the MCE is defined as the lesser of the (1) 2 percent probability of being exceeded in 50 years (return period of about 2,475 years) and (2) greater of 150 percent of the median deterministic values from the controlling fault and lower limit of the Figure 21.2-1 of ASCE 7-05. In addition, for site-specific parameters, procedures provided in Chapter 21 of ASCE 7-05 should be used and the spectral accelerations at any period from site-specific analyses should not be less than the 80% of the Code spectrum based on  $S_{MS}$  and  $S_{M1}$  values from Chapter 11 of ASCE 7-05. According to 2010 CBC, the Design Earthquake (DE) may be taken as two thirds of the MCE.

### 2010 CBC Seismic Design Parameters

The Maximum Considered Earthquake (MCE) mapped spectral accelerations for 0.2 second and 1 second periods ( $S_S$  and  $S_1$ ) were estimated using Section 1613.5 of 2010 CBC. The mapped acceleration values and associated soil amplification factors ( $F_a$  and  $F_v$ ) based on the 2010 CBC are presented in Table 1 below. Corresponding design spectral accelerations ( $S_{DS}$  and  $S_{D1}$ ) are also presented in Table 1, below.

**Table 1**  
**Ground Motion Parameters Based on 2010 CBC**

| Ground Motion Parameter | Value | 2010 CBC Reference |
|-------------------------|-------|--------------------|
| $S_s$                   | 1.5g  | Section 1613.5.1   |
| $S_1$                   | 0.6g  | Section 1613.5.1   |
| Site Class              | C     | Table 1613.5.2     |
| $F_a$                   | 1.0   | Table 1613.5.3(1)  |
| $F_v$                   | 1.3   | Table 1613.5.3(2)  |
| $S_{MS}$                | 1.5g  | Section 1613.5.3   |
| $S_{M1}$                | 0.78g | Section 1613.5.3   |
| $S_{DS}$                | 1.0g  | Section 1613.5.4   |
| $S_{D1}$                | 0.52g | Section 1613.5.4   |

## LIMITATIONS

The scope of services was limited to a site reconnaissance, review of the referenced reports, and review of the proposed precise grading plan for the site. It should be recognized that definition and evaluation of subsurface conditions are difficult. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present due to the limitations of data from field studies. The conclusions of this assessment are based on data presented in the referenced reports.

Recommendations contained in this report are based on the referenced reports, our field observations and subsurface explorations, limited laboratory tests, and our present knowledge of the proposed construction. It is possible that fill, soil, or groundwater conditions could vary between or beyond the points explored. If fill, soil, or groundwater conditions are encountered during construction that differ from those described herein, the client is responsible for ensuring that Kleinfelder is notified immediately so that we may reevaluate the recommendations of this report. If the scope of the proposed construction, including the estimated building loads, and the design depths or locations of the foundations changes from that described in this report, the conclusions and recommendations contained in this report are not considered valid unless the changes are reviewed, and the conclusions of this report are modified or approved in writing, by Kleinfelder.

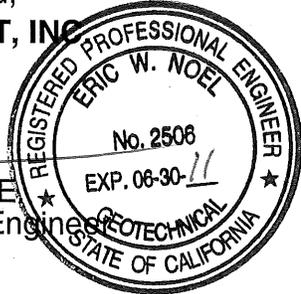
As the geotechnical engineering firm that performed the geotechnical evaluation for this project, Kleinfelder should be retained to confirm that the recommendations of this report are properly incorporated in the design of this project, and properly implemented during construction. This may avoid misinterpretation of the information by other parties

and will allow us to review and modify our recommendations if variations in the soil conditions are encountered. As a minimum, Kleinfelder should be retained to provide the following continuing observation and testing services for the project: construction of the subdrain system, backfill of the retention basin with import soil, abandonment of inlet and outlet structures and construction of new storm drains.

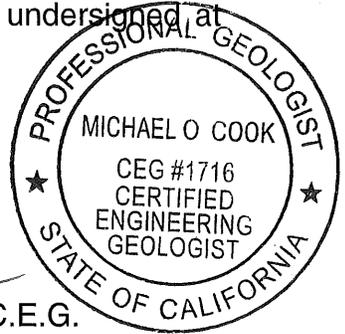
We appreciate the opportunity to be of services. Please contact the undersigned at (909) 396-0335 if you have questions regarding this submittal.

Respectfully submitted,  
**KLEINFELDER WEST, INC.**

  
Eric W. Noel, P.E., G.E.  
Senior Geotechnical Engineer



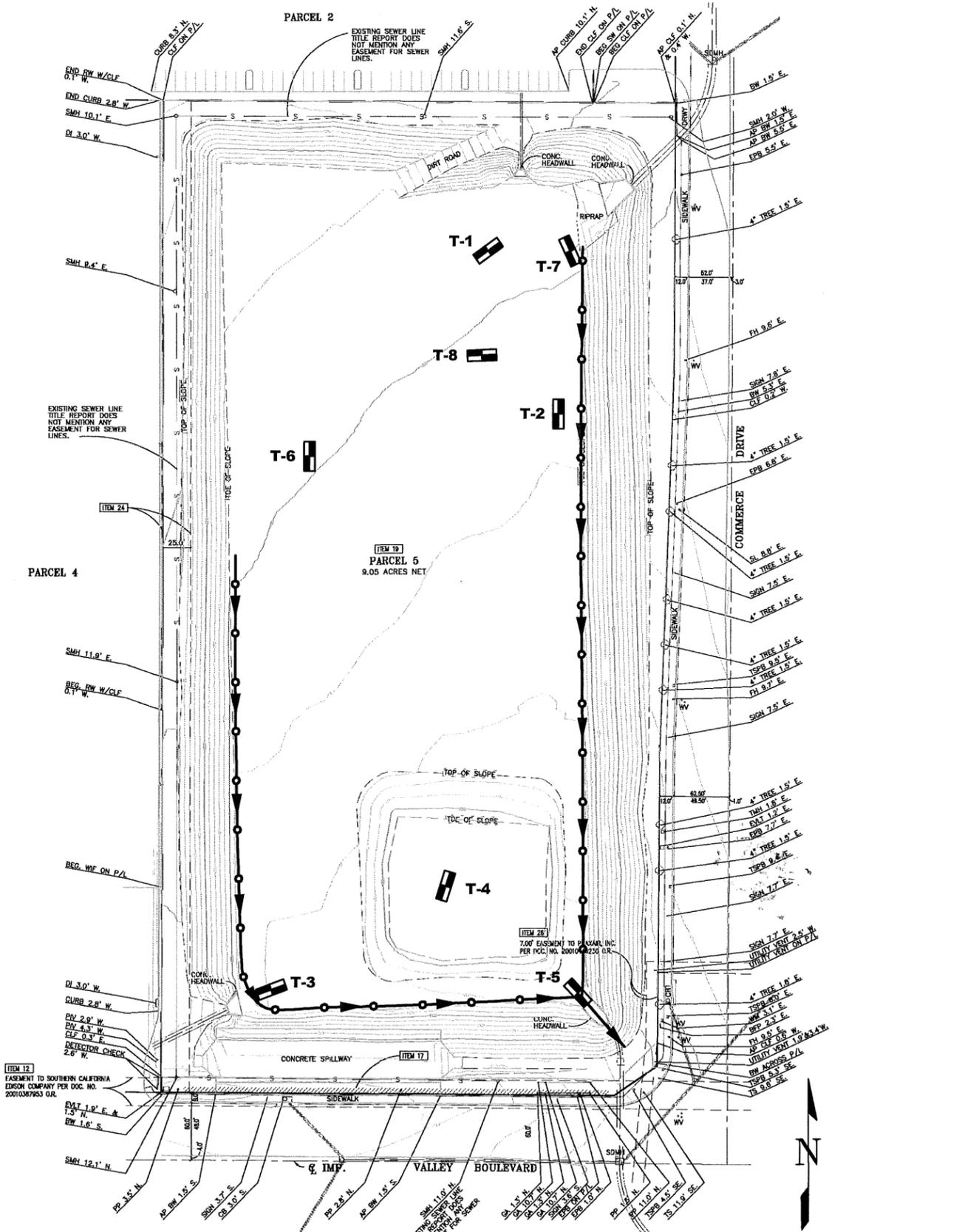
  
Michael O. Cook, P.G., C.E.G.  
Senior Engineering Geologist



cc: Mark Klaver, Kleinfelder.

Attachments: Plate 2 – Test Pit Location Map and Subdrain Details

ATTACHED IMAGES: Images: Parcel map.tif  
 ATTACHED XREFS: DIAMOND BAR, CA  
 PLOTTED: 21 Mar 2011, 4:47pm, dfahmney  
 CAD FILE: U:\MGriffin\CADD\2008\96963 LAYOUT: 2



**EXPLANATION**

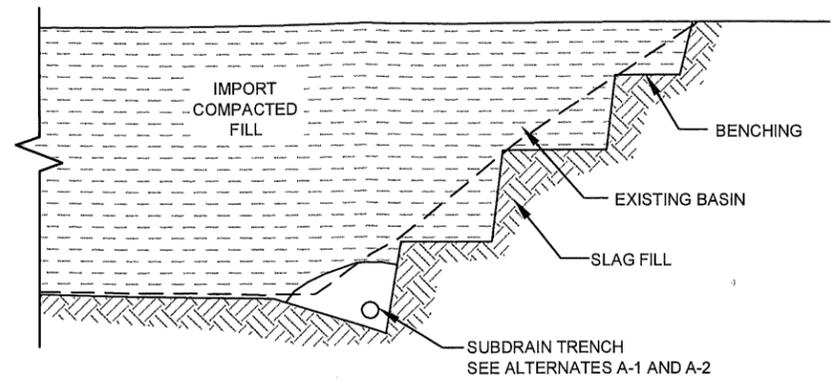
- T-8 APPROXIMATE TEST PIT LOCATION
- 6-INCH PERFORATED PVC DRAIN PIPE
- 6-INCH SOLID PVC DRAIN PIPE OUTLET



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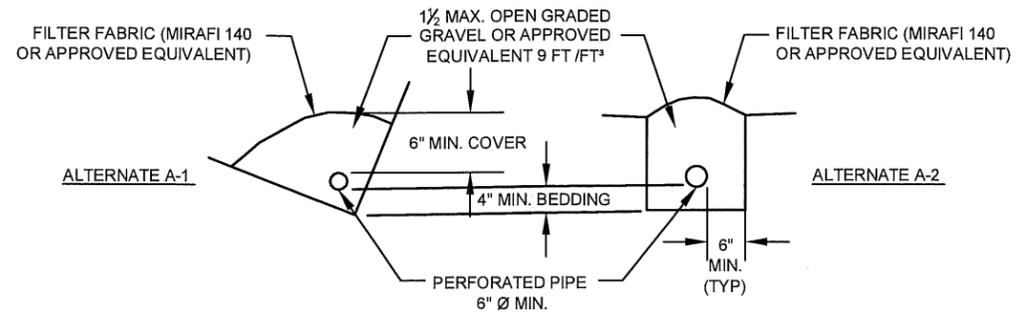
**SUBDRAIN DETAIL**

NOT TO SCALE

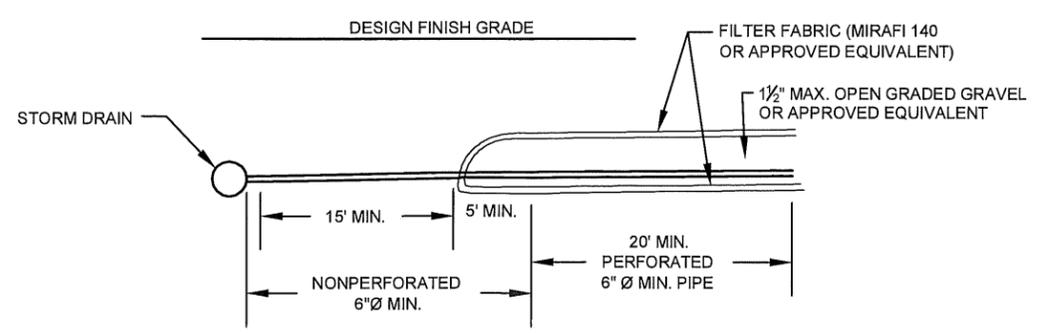


**SUBDRAIN ALTERNATE A:**

PERFORATED PIPE SURROUNDED BY FILTER MATERIAL



**DETAIL OF SUBDRAIN TERMINOUS**



**SUBDRAIN INSTALLATION:** SUBDRAIN PIPE SHALL BE INSTALLED WITH PERFORATIONS DOWN, OR AT LOCATIONS DESIGNATED BY THE GEOTECHNICAL CONSULTANT. OUTLET PIPE SHALL BE NON-PERFORATED PIPE.

**SUBDRAIN PIPE TYPE:** SUBDRAIN TYPE SHALL BE SCHEDULE 40 PVC PIPE OR AN APPROVED EQUIVALENT.

REFERENCE: BASE MAP PROVIDED BY DANJON ENGINEERING, INC., SHEET 1 OF 2, PARCEL MAP 15118, DATED 6/19/08.

|  |                   |   |                       |
|--|-------------------|---|-----------------------|
| <br>Bright People. Right Solutions.<br>www.kleinfelder.com | PROJECT NO. 96963 | <b>TEST PIT LOCATION MAP AND SUBDRAIN DETAILS</b><br><br>NWC OF VALLEY BLVD. AND COMMERCE DR. ONTARIO, CALIFORNIA | PLATE<br><br><b>2</b> |
|  | DRAWN: 3/2011     |   |                       |
|  | DRAWN BY: DMF/MRG |   |                       |
|  | CHECKED BY: MC    |   |                       |
| FILE NAME: 96963p2_3-18-11.dwg                             |                   |   |                       |