

Appendix C
Energy Data

Forthcoming

Appendix D
Geotechnical Study



November 13, 2020
Kleinfelder Project No.: 20203313.001A

MG2

1101 Second Ave, Ste 100
Seattle, Washington 98101

Attention: Mr. Matthew Goelzer AIA, LEED AP

**Subject: Geotechnical Study
Proposed DAX9 Warehouse Improvements
1211 Badillo Street
West Covina, California**

Dear Mr. Goelzer:

Kleinfelder is pleased to present this report summarizing our geotechnical study for the proposed DAX9 Warehouse Improvements project located at 1211 Badillo Street in West Covina, California. The purpose of our study was to evaluate subsurface conditions at the project site to provide design and construction recommendations for the proposed improvements. The conclusions and recommendations presented in this report are subject to the limitations presented in Section 5.

We appreciate the opportunity to provide geotechnical engineering services to you on this project. If you have any questions regarding this report or if we can be of further service, please do not hesitate to contact the undersigned at (949) 727-4466.

Respectfully submitted,

KLEINFELDER

Zachary S. Jarecki, PE
Project Engineer

Brian E. Crystal, PE, GE
Senior Project Manager



**GEOTECHNICAL STUDY
PROPOSED DAX9 WAREHOUSE IMPROVEMENTS
1211 BADILLO STREET
WEST COVINA, CALIFORNIA**

KLEINFELDER PROJECT NO. 20203313.001A

NOVEMBER 13, 2020

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PROJECT FOR WHICH THIS REPORT WAS PREPARED.**

A Report Prepared for:

MG2

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Seattle, Washington 98101

Attention: Mr. Matthew Goelzer AIA, LEED AP

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PROPOSED DAX9 WAREHOUSE IMPROVEMENTS
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1 INTRODUCTION

This report presents the results of our geotechnical study for the proposed DAX9 Warehouse Improvements project located at 1211 Badillo Street in West Covina, California. The location of the project site is presented on Figure 1, Site Vicinity Map. The purpose of our study is to evaluate surface conditions at the project site to provide design and construction recommendations for the proposed improvements. The scope of our services was presented in our proposal titled “Proposal for Geotechnical Services, Proposed DAX9 Warehouse Improvements, 1211 Badillo Street, West Covina, California,” dated January 15, 2020.

Our report includes a description of the work performed, a discussion of the subsurface and surficial conditions observed at the site, and recommendations developed from our engineering analyses of field and laboratory data.

1.1 PROJECT DESCRIPTION

We understand that the existing warehouse facility located at 1211 Badillo Street in West Covina, California will be improved/retrofitted for a new distribution center. Significant structural improvements to the existing warehouse building are not currently planned; however, new building openings and exterior canopies will be constructed. Exterior improvements around the existing warehouse will be limited primarily to reconstructing the pavement. The proposed improvements are shown on Figure 2, Exploration Location Map.

1.2 SCOPE OF SERVICES

The scope of our limited geotechnical study consisted of a literature review, field explorations, pavement condition assessment, infiltration testing, laboratory testing, engineering evaluation and analysis, and preparation of this report. Studies to assess environmental hazards that may affect the soil and groundwater at the site were beyond our geotechnical scope of work. A description of our scope of services performed for the geotechnical portion of the project follows.

1.2.1 Task 1 – Background Data Review

We reviewed readily available published and unpublished geologic literature in our files and the files of public agencies, including selected publications prepared by the California Geological Survey (formerly known as the California Division of Mines and Geology) and the U.S. Geological Survey (USGS). We also reviewed readily available seismic and faulting

information, including data for designated earthquake fault zones as well as our in-house database of faulting in the general site vicinity.

1.2.2 Task 2 – Field Exploration and Infiltration Testing

Subsurface conditions at the site were explored by excavating five (5) borings to depths of approximately 5 to 51½ feet below the existing ground surface (bgs). We also performed four (4) borehole infiltration tests in borings drilled to depths of approximately 15 feet bgs. Infiltration testing was performed using the boring percolation test procedure in accordance with the County of Los Angeles Department of Public Works Administrative Manual GS200.2, Guidelines for Geotechnical Investigation and Reporting Low Impact Development Stormwater Infiltration, dated June 30, 2017. The site location and approximate boring and infiltration test locations are shown on Figure 2.

Prior to commencement of the fieldwork, various geophysical techniques were used at the boring locations to identify potential conflicts with subsurface structures. Each of our proposed field exploration locations were also cleared for buried utilities through Underground Service Alert (USA).

A Kleinfelder staff professional supervised the field operations and logged the explorations. Selected bulk and drive samples were retrieved, placed in plastic bags and containers, and transported to our laboratory for further evaluation. The number of blows necessary to drive the California and Standard Penetration Test (SPT) sampler was recorded. Appendix A presents a description of the field exploration program, exploration logs, and a legend of terms and symbols used on the logs. Soil descriptions used on the logs result from field observations and data, as well as from laboratory test data. Stratification lines on the logs represent the approximate boundary between soil and/or rock types, and the actual transition may vary and can be gradual.

1.2.3 Task 3 – Laboratory Testing

Laboratory testing was performed on representative samples to substantiate field classifications and to provide engineering parameters for geotechnical design. Laboratory testing consisted of moisture content and dry density testing, percent passing the No. 200 sieve, Atterberg limits, sieve analyses, hydrometer, maximum density and optimum moisture content, R-Value, and preliminary corrosion testing. The results are presented in Appendix B.

1.2.4 Task 4 – Visual Pavement Condition Assessment

A visual assessment was performed to evaluate existing pavements at the site. A field reconnaissance was conducted by a Kleinfelder professional to observe and document the existing pavement conditions using the Pavement Surface Evaluation and Rating (PASER) methodology. Figure 3 presents the PASER ratings map. Site photographs are presented in Appendix C and the approximate photo locations are shown on Figure 4.

1.2.5 Task 5 – Geotechnical Analyses and Report Preparation

Field and laboratory data were analyzed in conjunction with our understanding of the project to provide geotechnical recommendations for the design and construction. We have provided recommendations for the design and construction for the proposed warehouse improvements, pavement rehabilitation/reconstruction, and proposed stormwater management facilities.

This report summarizes the work performed, data acquired, and our findings, conclusions, and geotechnical recommendations for the design and construction of the proposed improvements. Our report includes the following items:

- Vicinity map and site plan showing the approximate field exploration locations;
- Logs of the borings and infiltration tests (Appendix A);
- Results of laboratory tests (Appendix B);
- A field reconnaissance to observe and photo-document the existing condition of pavements using the Pavement Surface Evaluation and Rating (PASER) system (Appendix C);
- Discussion of general site conditions;
- Discussion of general subsurface conditions as encountered in our field exploration, including depth to groundwater (if encountered);
- Recommendations for foundation design (spread footings and drilled piles), allowable bearing capacities, embedment depths, and settlement estimates under various loading conditions;
- Recommendations for seismic design parameters in accordance with the 2019 California Building Codes (CBC);
- Assessment of the current pavement conditions and recommendations for flexible and rigid pavement structural sections based on estimated Traffic Indices (TIs) from provided traffic loading;

- Recommendations for site preparation, earthwork, temporary slope inclinations, fill placement, and compaction specifications;
- Recommendations for the excavation of subsurface soil deposits; and
- Results of the infiltration testing and recommendations for long-term design infiltration rates (Appendix D).

2 SITE AND SUBSURFACE CONDITIONS

2.1 SITE DESCRIPTION

The site is bounded by San Bernardino Road to the north, residential properties to the east, Badillo Street to the south, and a commercial development to the west. The site is currently developed and occupied by one large warehouse building surrounded by asphalt and concrete pavement. The site is relatively flat with drainage achieved primarily by sheet flow over the existing pavement.

2.2 VISUAL PAVEMENT ASSESSMENT

2.2.1 Pavement Condition

A Kleinfelder professional visited the site on January 22 and February 22, 2020 to observe site pavement conditions and check for visual signs of distress or movement indicative of settlement, expansive soils, or poor compaction. Based on our site reconnaissance, we observed signs of varying amounts of pavement distress depending on the location throughout the site. In general, the pavement appears to be in poor to fair condition, with some areas in good condition. Pictures showing the pavement distress are presented in the photograph log in Appendix C.

The asphalt concrete (AC) pavement condition varies across the site with some isolated areas that are in failed condition (PASER rating of 3) near the western boundary of the site. The majority of the AC pavement is in fair condition with a PASER rating of 4 or 5. In a few areas the pavement is in good condition with a PASER rating of 5 to 6, such as the eastern boundary of the site and the parking area in the southeast corner. Figure 3 shows pavement conditions and PASER ratings.

In AC areas with PASER ratings of 3, pavement distress generally consisted of alligator cracking, isolated potholes, and loss of surface integrity. In AC areas with PASER ratings of 4 or 5, the pavement distress generally consisted of widespread longitudinal and transverse cracks with widths greater than ½ inch and block cracking over more than 50 percent of the surface. In a few areas with a PASER rating of 5 to 6, the pavement distress consisted of longitudinal and transverse cracking that was less prevalent.

2.2.2 Existing Pavement Thicknesses

The existing pavement thickness was measured in the borings. Asphalt concrete was observed to overlie aggregate base material. Approximate asphalt concrete and aggregate base course thicknesses (measured to the nearest ½ inch) are summarized in Table 1.

**Table 1
Existing Pavement Section Thicknesses**

Location	Approximate Asphalt Concrete Thickness (inches)	Approximate Aggregate Base Thickness (inches)
B-1	3	4
B-2	3	4
B-3	4	No base observed
B-4	4	6½
B-5	2½	10
INF-1	3	5
INF-2	3	4
INF-3	3	9
INF-4	2½	8

2.3 SUBSURFACE CONDITIONS

The subsurface conditions at the site generally consist of artificial fill over alluvial soils. The artificial fill soils generally consist of silty to clayey sand with varying amounts of gravel and were observed to be approximately 1½ to 4 feet thick in our borings. Alluvial soils underlie the artificial fill and generally consist of medium dense to very dense silty sand, clayey sand, and poorly graded sand with silt and gravel. Additionally, two of the borings (Boring B-5 and INF-3) encountered a sandy lean clay layer at approximately 4 feet bgs with a thickness of approximately 2 and 4½ feet respectively. Detailed descriptions of the soils are provided in our boring logs presented in Appendix A.

Groundwater was not observed in any of our borings drilled to a maximum depth of 51½ feet bgs. Historic high groundwater levels in the area have been at depths greater than 100 feet below grade (CDMG, 1998). However, localized zones of perched water, and increased soil

moisture content should be anticipated during and following rainy seasons. Irrigation of landscaped areas on or adjacent to the site can also cause perched water and increased soil moisture content.

3 CONCLUSIONS AND RECOMMENDATIONS

3.1 GENERAL

Based on the results of the field explorations, laboratory testing and our engineering analyses conducted during this study, it is our professional opinion that the proposed project is geotechnically feasible, provided the recommendations presented in this report are incorporated into the project design and construction. The following opinions, conclusions, and recommendations are based on the properties of the materials encountered in the borings, the results of the laboratory-testing program, and our engineering analyses performed. Our recommendations regarding the geotechnical aspects of the design and construction of the project are presented in the following sections.

3.2 FOUNDATIONS

3.2.1 General

Based on our understanding of the project, significant structural improvements of the existing warehouse buildings are not currently planned; however, new building openings and exterior canopies will be constructed. Recommendations for spread footing foundations for building improvements are presented below. New canopies and light poles may be founded on spread footing or short drilled piles. Recommendations for short drilled piles are also presented below.

3.2.2 Spread Footing Foundations

Allowable Bearing Pressure

Footings for building improvements may be designed for a net allowable bearing pressure of 2,000 pounds per square foot (psf) for dead plus sustained live loads. A reduced allowable bearing value has been provided to limit differential static settlement, which may be abrupt between the existing warehouse and proposed improvements. Footings for exterior canopies may be designed for a net allowable bearing pressure of 3,000 pounds per square foot (psf) for dead plus sustained live loads. A one-third increase in the bearing value can be used for wind or seismic loads. All footings should be established at a depth of at least 24 inches below the lowest adjacent grade. The footing dimension and reinforcement should be designed by the structural engineer.

Estimated Settlements

We estimate that total static settlement for footings designed in accordance with the recommendations presented above should be on the order ½ inch or less, depending on the size of the footing and applied load.

Lateral Resistance

Lateral load resistance may be derived from passive resistance along the vertical sides of the footings, friction acting at the base of the footings, or a combination of the two. An allowable passive earth pressure of 300 psf per foot of depth may be used for design. Allowable passive earth pressure values should not exceed 3,000 psf. An ultimate coefficient of friction value of 0.40 between the base of the footings, or slabs founded on grade, and the existing soils can be used for sliding resistance using the dead load forces. Friction and passive resistance may be combined without reduction.

3.2.3 Short Drilled Piles

Axial Capacity

The downward axial capacity of drilled piles may be computed based on an allowable skin friction capacity of 200 pounds per square foot. The upper one foot of the drilled piers should be neglected when computing the axial capacity of the pile. The upward capacity may be taken as one-half the downward allowable axial capacity. A one-third increase in the allowable capacities may be used for wind or seismic loads.

Lateral Loads

For computing the lateral resistance, drilled pier foundations can be designed in general accordance with Section 1807.3 of the California Building Code (CBC). We recommend an allowable lateral soil bearing pressure of 300 psf per foot of depth below grade. The allowable lateral soil bearing pressure should not exceed 3,000 psf. Since drilled piles are isolated pole foundations, the allowable lateral soil bearing pressure may be increased by a factor of 2 for short-term lateral loads provided the structure will not be adversely affected by ½ inch of movement at the ground surface.

Settlement

Settlement of the proposed foundation supported on drilled piles, as recommended, is estimated to be less than ½ inch. This value does not include elastic compression of the piles under design loads.

3.3 SEISMIC DESIGN

3.3.1 2019 CBC Seismic Design Parameters

Based on information obtained from the investigation, published geologic literature and maps, and on our interpretation of the ASCE/SEI 7-16 criteria, it is our opinion that the project site may be classified as Site Class D, Stiff Soil. Approximate coordinates for the site are noted below.

- Latitude: 34.0878° N
- Longitude: -117.9205° W

In accordance with Section 11.4.8 of ASCE 7-16, a site-specific ground motion analysis is required for Site Class D sites with an S_1 greater than 0.2 g. However, a site-specific ground motion analysis is not required if the seismic response coefficient (C_s) is determined in accordance with requirements of Chapter 12 and exceptions as noted in Section 11.4.8. The assumption that C_s may be determined in accordance with the requirements of Chapter 12 and exceptions as noted in Section 11.4.8 will be used should be verified by the project structural engineer during final design. The ASCE 7-16 Seismic Design Parameters (non site-specific) for these structures are summarized in Table 2.

**Table 2
2019 CBC Seismic Design Parameters**

Design Parameter	Recommended Value
Site Class	D
S_s (g)	1.655
S_1 (g)	0.612
F_a	1.0
F_v	N/A *
PGA	0.701
S_{MS} (g)	1.655
S_{M1} (g)	N/A *
S_{DS} (g)	1.103
S_{D1} (g)	N/A
PGA_M (g)	0.771

* N/A = Not Applicable; Section 11.4.8 of ASCE 7-16 requires a site-specific ground motion hazard analysis be performed for Site Class D sites with S_1 values greater than or equal to 0.2g unless exceptions are taken. If exceptions are taken, then a F_v value of 1.7 could be used only to calculate the T_s value.

3.3.2 Liquefaction and Seismic Settlement

The term liquefaction describes a phenomenon in which saturated, cohesionless or very low plasticity soils temporarily lose shear strength (liquefy) due to increased pore water pressures induced by strong, cyclic ground motions during an earthquake. Structures founded on or above potentially liquefiable soils may experience bearing capacity failures due to the temporary loss of foundation support, vertical settlements (both total and differential), and/or undergo lateral spreading. The factors known to influence liquefaction potential include age, soil type, relative density, grain size, plasticity, confining pressure, depth to groundwater, and the intensity and duration of the seismic ground shaking. Liquefaction is most prevalent in young loose to medium dense, non-plastic coarse-grained soils.

The site is not located within a state designated liquefaction hazard zone (CGS, 1999). Additionally, the historic high groundwater is estimated to be greater than 100 feet bgs (CDMG, 1998). Based on the density of the granular soils encountered and lack of groundwater within the upper 50 feet bgs, it is our opinion that the potential for liquefaction and seismically induced settlement is not considered a hazard at the site.

Seismic compression results from the accumulation of contractive volumetric strains in unsaturated soil during earthquake shaking. Loose to medium dense granular material with no fines or with low plasticity fines are most susceptible to seismic compression. Based on the density and soil composition of the underlying soils, seismic compression (dynamic dry settlement) is estimated to be up to 1½ inches total with differential settlements up to 1 inch over 50 feet.

3.4 PAVEMENT REHABILITATION AND NEW PAVEMENT SECTIONS

3.4.1 General

Based on the client's development guidelines, Version 2.02, dated July 30, 2020, we understand that heavy-duty pavements may be subjected to 200 trucks per day (in and out). However, pavements subjected to delivery van traffic only do not need to be designed for same heavy traffic loads as trucks. Accordingly, we have provided a medium-duty pavement section for areas subjected to traffic loads primarily from delivery vans.

Based on our visual pavement condition, the majority of the pavement is in fair condition with some isolated areas that are in poor to failing condition. However, the existing AC pavement sections are relatively thin and are only considered adequate for associate parking areas. Because the existing AC pavement sections are relatively thin, rehabilitation using mill and overlay techniques is not considered feasible. Accordingly, we recommend full depth reconstruction of the AC pavement sections subject to both truck and van traffic loading. In areas subject to van loading only, the existing aggregate base may be left in place and reused.

Further discussions of our recommendations are presented below. Subgrade preparation recommendations are provided in Section 3.5.2.

3.4.2 Heavy-Duty Pavement (TI of 10.0 based on Client Design Criteria)

As discussed above, the current AC pavement sections are not adequate for heavy traffic loading and we recommend full-depth reconstruction of the pavement sections for truck traffic. We have based our pavement design for heavy-duty pavement based on 200 trucks per day with a typical weight of 75,000 pounds and 15-year design life in accordance with the client's design criteria. New AC pavement sections in heavy truck traffic areas should consist of 5.0 inches of AC over 9.5 inches of aggregate base (AB) or 6.0 inches of AC over 8.0 inches of AB.

New PCC pavement should be comprised of 8.0 inches of concrete pavement over 6.0 inches of aggregate base. Longitudinal and transverse joint spacing for concrete pavements should not exceed 12 feet and 15 feet, respectively. Joint details should conform to the Portland Cement Association (PCA) guidelines. Concrete should have a minimum compressive strength (f'_c) of 4,000 psi for areas subject to vehicle traffic. Expansion joints in concrete slabs should be sealed with petroleum resistant sealant to prevent minor releases from impacting subsurface soil.

3.4.3 Medium-Duty Pavement (Assumed TI of 6.5)

Pavements subjected to traffic loads from delivery vans only may be designed for a medium-duty pavement section. Similar to the heavy-duty pavement, the existing AC pavement are not considered adequate for traffic from delivery vans, and therefore recommend full depth reconstruction of the pavements in areas subject to delivery vans. We recommend that new AC pavement sections in medium-duty traffic areas consist of 4.0 inches of AC over 4.0 inches of AB.

The existing AB may be left in place and re-used. The existing AC should be removed and replaced with 4.0 inches of new AC. Prior to placing new AC, the existing AB should be proof-rolled with heavy construction equipment (e.g., loader or smooth-drum roller) to disclose areas of soft and yielding material. In areas where soft and yielding material is observed, the existing AB should be removed, and the subgrade should be stabilized. If subgrade stabilization is needed, the new AB section should be at least 4.0 inches thick.

3.4.4 New Light-Duty Pavement (Assumed TI of 4.5)

The existing pavement sections are considered adequate for associate parking areas only. For AC areas with a PASER rating greater than 4, we recommend that the existing cracks be cleaned and sealed, and a seal coat be applied over the asphalt pavement. However, in areas where the pavement is in poor to fair condition (PASER rating of 4 or less), we recommend full-depth reconstruction of pavement as the pavement has likely reached the end of its design life and needs to be replaced. For pavements subjected to automobile/associate parking only (light-duty) pavement, we recommend that new AC pavement sections consist of at least 3.0 inches of AC over 4.0 inches of AB.

3.4.5 Asphalt Concrete Materials

We recommend that asphalt concrete materials meet the 2010 (or latest) Caltrans specifications for ½-inch Type A, or the specifications for Type III Class C2 for Hot Mix Asphalt (HMA) as

defined in Section 203-6 in the Standard Specifications for Public Works Construction (Greenbook). Asphalt paving materials and placement methods should meet current Caltrans specifications for asphalt concrete or Section 400 of the current edition of the Greenbook. Positive drainage of the paved areas should be provided since moisture infiltration into the subgrade may decrease the life of pavements.

3.4.6 Aggregate Base

Aggregate base material should meet the current Caltrans specifications for Class 2 aggregate base. Alternatively, the aggregate base course could meet the specifications for untreated base materials (crushed aggregate base or crushed miscellaneous base) as defined in Section 200-2 of the current edition of the Standard Specifications for Public Works Construction (Greenbook).

3.4.7 Construction Considerations

The pavement sections provided above are contingent on the following recommendations being implemented during construction.

- The subgrade should be prepared in accordance with the recommendations in Section 3.5.2.
- Aggregate base should be compacted to at least 95 percent of the soil's maximum dry unit weight (ASTM D1557). Moisture contents should be maintained near optimum during compaction.
- Subgrade soils should be in a stable, non-pumping condition at the time the aggregate base materials are placed and compacted.
- Asphalt paving materials and placement methods should meet current applicable code specifications.
- Adequate drainage (both surface and subsurface) should be provided such that the subgrade soils and aggregate base materials are not allowed to become wet.

3.5 EARTHWORK

3.5.1 General

Site preparation and earthwork operations should be performed in accordance with applicable codes, safety regulations and other local, state or federal specifications, and the recommendations included in this report. References to maximum dry unit weights are established in accordance with the latest version of ASTM Standard Test Method D1557

(modified Proctor). The earthwork operations should be observed and tested by a representative of Kleinfelder.

3.5.2 Site Preparation

Pavement, planters, abandoned utilities, foundations, and other existing improvements within the proposed improvement areas should be removed and the excavation(s) backfilled with engineered fill. Debris produced by demolition operations, including wood, steel, piping, plastics, etc., should be separated and disposed of off-site. Existing utility pipelines or conduits that extend beyond the limits of the proposed construction and are to be abandoned in place, should be plugged with non-shrinking cement grout to prevent migration of soil and/or water. Demolition, disposal and grading operations should be observed and tested by a representative of the geotechnical engineer. Areas to receive fill should be stripped of all dry, loose or soft earth materials and undocumented fill materials to the satisfaction of the geotechnical engineer.

After the area has been stripped of soft earth materials and debris, we recommend that the exposed subgrade be proof-rolled with heavy construction equipment (e.g. loader or smooth-drum roller) to disclose areas of soft and yielding material. Where soft and yielding material is observed, it should be overexcavated and replaced as structural fill. After proof-rolling and/or prior to placement of fill, the subgrade should be scarified to a depth of 6 to 8 inches, moisture conditioned, and compacted to at least 95 percent of the maximum dry unit weight. The proof-rolling should extend beyond the proposed improvements a horizontal distance of at least 2 feet.

It is also common to encounter wet, unstable soils upon removal of site pavements or flatwork as a result of subsurface moisture becoming trapped beneath relatively impervious asphalt concrete or Portland cement concrete surfaces. Pumping/wet subgrade conditions are likely to be encountered and the subgrade will likely need to be stabilized. The contractor should be prepared to stabilize the subgrade prior to the start of grading activities so that significant delays in construction do not occur. The contractor should also provide unit pricing for stabilizing subgrade at the time of the bid. Subgrade stabilization options are provided below.

3.5.3 Unstable Subgrade Conditions

As discussed above, it is common to encounter wet, unstable soils upon removal of site pavements or flatwork as a result of moisture becoming trapped beneath relatively impervious surfaces. Additionally, should grading be performed during or following periods of rainfall, the

moisture content of the near-surface soils may be significantly above the optimum moisture content. Typical remedial measures include the following:

- Drying: Drying unstable subgrade involves disking or ripping wet subgrade to a depth of approximately 18 to 24 inches and allowing the exposed soil to dry. Multiple passes of the equipment (likely on a daily basis) will be needed because as the surface of the soil dries, a crust forms that reduces further evaporation. Frequent disking will help prevent the formation of a crust and will promote drying. This process could take several days to several weeks depending on the depth of ripping, the number of passes, and the weather.
- Removal and Replacement with Crushed Rock and Geotextile Fabric: Unstable subgrade could be over-excavated 12 to 24 inches below existing grade and replaced with $\frac{3}{4}$ - or 1-inch crushed rock underlain and/or wrapped by geotextile fabric. The geotextile fabric should consist of a woven geotextile, such as Mirafi HP series or equivalent. The final depth of removal will depend upon the conditions observed in the field once overexcavation begins. The geotextile fabric should be placed in accordance with the manufacturer's recommendations.
- Cement Treatment: Unstable subgrade could be stabilized by mixing the upper 12 to 18 inches of the subgrade with Portland cement or Class C flyash. For estimating purposes, an application rate of 10 to 12 percent Class C flyash or 4 to 5 percent Portland cement may be used. Final application rates should be determined in the field at the time of construction in consultation with the geotechnical engineer. Cement treatment should be performed by a specialty contractor experienced in this work. Since cement treatment uses the on-site soil, the expense of importing material can be avoided.

3.5.4 Foundation Excavations

Spread Footings

Following excavation to the foundation subgrade elevations, the exposed subgrade should be observed by a representative of the geotechnical engineer to evaluate the presence of satisfactory materials at design elevations. If unsatisfactory material, such as soft or disturbed soil, debris or otherwise unsuitable soil is present at the base of footing excavations, the unsuitable materials should be overexcavated and replaced with structural concrete, 2-sack sand-cement slurry, or structural fill to the depth and extent determined by the geotechnical

engineer. As a minimum, the contractor should be prepared to scarify, moisture condition, and re-compact the upper 12 inches of footing subgrade.

Drilled Piles

The performance and capacities of piles can be influenced significantly by the selected construction methods and procedures used. Construction methods that create large zones of disturbance around the drilled shafts can lead to lower than expected skin friction due to excessive stress relief around the shaft length. Drilling of the pile shafts should be accomplished using heavy-duty excavation equipment.

Sandy soils may cave during drilling of the pile shafts and temporary steel casing may be needed to stabilize the sides of the pile shaft. Concrete should be placed immediately after drilling of the hole is complete. The concrete should be pumped to the bottom of the drilled shaft using a down-hole tremie. If steel casing is used, the casing should be removed as the concrete is placed but the bottom of the casing should be kept at least 5 feet below the top of the concrete.

3.5.5 Structural Fill Material and Compaction Criteria

Materials placed below pavements or structures should be structural fill. The on-site soils, minus debris, organic matter, or other deleterious materials may be used as structural fill. Rock or other soil fragments greater than 3 inches in size should not be used in the fills and disposed of off-site.

Structural fill soils should be compacted to at least 95 percent of the maximum dry unit weight (ASTM D1557). The moisture content of the fill should be maintained near optimum moisture content during compaction. Processing (moisture reduction) of on-site soil may be required prior to placement as structural fill. Processing may require ripping the material, disking to break up clumps, and blending to attain uniform moisture contents necessary for compaction.

Fill should be placed in loose horizontal lifts not more than 8 inches thick (loose measurement). Utility trench backfill should be mechanically compacted. Flooding should not be permitted. If both criteria (minimum compaction and moisture content) are not within the specified tolerances, the fill should not be accepted, and the contractor should rework the material until the fill is placed within the specified tolerances.

Imported fill, if needed, should consist of granular soils with at least 70 percent passing the No. 4 sieve and no more than 30 percent passing the No. 200 sieve with soil and rock particles no larger than 3 inches in diameter. The Expansion Index (EI) of material should be less than 20. Imported fill materials must be approved by the geotechnical engineer prior to importing. The contractor should provide documentation that imported fill is free of hazardous materials, including petroleum or petroleum byproducts, chemicals and harmful minerals. Also, prior to placing fill, the excavations should be observed by the geotechnical engineer to observe that all unsuitable materials have been removed and that the exposed soils are in a firm, unyielding condition.

3.5.6 Excavation Characteristics

The upper soils consist predominantly of silty to clayey sand with varying amounts of gravel. It is anticipated that conventional heavy-duty earthmoving equipment maintained in good condition should be capable of excavating the anticipated materials.

3.5.7 Temporary Excavations

All excavations must comply with applicable local, state, and federal safety regulations, including OSHA requirements. The responsibility for excavation safety and stability of temporary construction slopes lies solely with the contractor. We are providing this information below solely as a service to our client. Under no circumstances should this information provided be interpreted to mean that Kleinfelder is assuming responsibility for final engineering of excavations or shoring, construction site safety, or the contractors' activities; such responsibility is not being implied and should not be inferred.

Minor sloughing and/or raveling of slopes should be anticipated as they dry out. Where space for sloped embankments is not available, shoring will be necessary. In addition, excavations within a 1:1 plane extending downward from a horizontal distance of 2 feet beyond the bottom outer edge of existing improvements should not be attempted without bracing and/or underpinning the footings, as discussed above. The geotechnical engineer or their field representative should observe the excavations so that modifications can be made to the excavations, as necessary, based on variations in the encountered soil conditions. All applicable excavation safety requirements and regulations, including OSHA requirements, should be met.

All trench excavations should be braced and shored in accordance with good construction practice and all applicable safety ordinances and codes. Stockpiled (excavated) materials

should be placed no closer to the edge of an excavation than a distance equal to the depth of the excavation, but no closer than 4 feet.

3.6 RETAINING WALL

3.6.1 General

As part of the proposed improvements, we understand that cast-in-place cantilever-type retaining wall (approximately 4 feet tall) will be constructed to provide ramps for a proposed loading dock on the west side of the building. Recommendations for design of retaining walls are presented in the following section.

3.6.2 Lateral Earth Pressures

Design earth pressures for retaining structures depend primarily on the allowable wall movement, wall inclination, type of backfill materials, backfill slopes, surcharges, and drainage. Earth pressures provided assume that the onsite granular (sandy) soils will be used as backfill. Import backfill, if needed, should meet the requirements for imported fill as defined in Section 3.5.5. The onsite soils are anticipated to meet this requirement. For design purposes, a soil density of 120 pcf should be assumed for retaining wall backfill.

If a drainage system is not installed, the wall should be designed to resist hydrostatic pressure in addition to the earth pressure. Determination of whether the active or at-rest condition is appropriate for design will depend on the flexibility of the walls. Walls that are free to rotate at least 0.002 radians (deflection at the top of the wall of at least $0.002 \times H$, where H is the unbalanced wall height) may be designed for the active condition. Walls that are not capable of this movement should be assumed rigid and designed for the at-rest condition. The recommended active and at-rest earth pressures and passive resistance values are provided in Table 3.

Table 3
Lateral Earth Pressures for Earth Retaining Structures
(Granular Backfill – Import or Onsite Granular Soils)

Wall Movement	Backfill Condition	Equivalent Fluid Pressure (pcf)	Seismic Increment * (pcf)
Free to Deflect (active condition)	Level	40	23
Restrained (at-rest condition)		60	N/A**

*Note: * Walls supporting more than 6 feet of backfill should be designed to support an incremental seismic lateral pressure, which is applied as a triangular pressure distribution with a maximum pressure at the bottom of the wall, similar to the active lateral earth pressure.*

*** for restrained walls, use the static active earth pressure plus the seismic increment to check the seismic condition; use at-rest earth pressure only to check the static condition; the larger loading of both cases should be used for the design of restrained wall.*

The above lateral earth pressures do not include the effects of surcharges (e.g., traffic, footings), compaction, or truck-induced wall pressures. Any surcharge (live, including traffic, or dead load) located within a 1:1 (horizontal to vertical) plane drawn upward from the base of the excavation should be added to the lateral earth pressures. The lateral contribution of a uniform surcharge load located immediately behind walls with a level backfill condition may be calculated by multiplying the surcharge by 0.33 for cantilevered walls under active conditions and 0.50 for restrained walls under at-rest conditions. Walls adjacent to areas subject to vehicular traffic should be designed for a 2-foot equivalent vertical soil surcharge (250 psf). Lateral load contributions from other surcharges located behind walls may be provided once the load configurations and layouts are known.

3.6.3 Drainage

Walls should be properly drained or designed to resist hydrostatic pressures. Adequate drainage is essential to provide a free-drained backfill condition so that there is no hydrostatic buildup behind the wall. Walls should also be appropriately waterproofed to reduce the potential for staining. Drainage behind loading dock walls can consist of weep holes placed along the base of the wall. Weep holes should be spaced 10 to 15 feet apart and connected with a gravel drain consisting of approximately 2 cubic feet of clean gravel per foot of wall length wrapped with filter fabric. Other types of retaining walls should have a continuous back drain as described below.

For backfill of walls with a continuous back drain, except for the upper 2 feet, the backfill immediately behind retaining walls (minimum horizontal distance of 2 feet measured

perpendicular to the wall) should consist of free-draining $\frac{3}{4}$ -inch crushed rock wrapped with filter fabric. The upper 2 feet of cover backfill should consist of relatively impervious material. A 4-inch-diameter perforated PVC pipe, placed perforations down at the bottom of the rock layer leading to a suitable gravity outlet, should be installed at the base of the walls.

As an alternative to the gravel drain noted above, a manufactured drain panel may be utilized behind retaining walls in addition to normal waterproofing. This system generally consists of a prefabricated drain panel lined with filter fabric. At the wall base, we recommend that a gravel drain be installed to collect and discharge drainage to a suitable outlet. The drain should consist of a 4-inch-diameter perforated PVC pipe, placed perforations down at the bottom of approximately 2 cubic feet of clean gravel per foot of wall length. The gravel drain should be wrapped in filter fabric (Mirafi 140N or equivalent). The pipe should be sloped to drain to a suitable outlet and cleanouts should be provided at appropriate intervals.

If drainage behind the wall is omitted, the wall should be designed for full hydrostatic pressure. The design of any drain system should be submitted to Kleinfelder for review to check that our recommendations have been properly incorporated into the design. Installation of the drainage system should be reviewed and documented by a Kleinfelder representative.

3.7 STORM WATER MANAGEMENT

We understand that as part of the storm water management for the project, Infiltration Best Management Practices (BMPs), are being considered. We performed four falling-head borehole infiltration tests in general accordance with the County of Los Angeles Department of Public Works Administrative Manual GS200.2, Guidelines for Geotechnical Investigation and Reporting Low Impact Development Stormwater Infiltration, dated June 30, 2017. We also performed sieve analysis and hydrometer testing to assess the grain-size characteristics of the onsite soils. The results of the laboratory testing are presented in Appendix B and the results of the infiltration testing is presented in Appendix D.

Based on visual soil classification and laboratory testing of the soil samples collected during our field exploration, the upper approximately 15 feet of the subsurface soils consist of medium dense silty sand, clayey sand, and poorly graded sand with varying amounts of silt and gravel. Additionally, two of our borings (B-5 and INF-3) encountered a sandy lean clay layer at approximately 4 feet bgs with a thickness of approximately 2 and 4½ feet respectively. The fines content of the upper sandy soil ranges from approximately 9 to 24 percent. Table 4 summarizes the unfactored average measured in-situ percolation rate.

Table 4
Summary of Unfactored Average Measured Percolation Rates

Infiltration Test Location	Tested Depth from Ground Surface (ft)	Unfactored Average Measured Percolation Rate (in/hr)	Soil Description
INF-1	12-15	3.3	Silty Sand (SM)
INF-2	12-15	3.7	Silty Sand (SM)
INF-3	12-15	4.0	Poorly Graded Sand with Silt and Gravel (SP-SM)
INF-4	12-15	2.8	Poorly Graded Sand with Silt and Gravel (SP-SM)

The field percolation rates provided in Table 4 do not include reduction factors for the test type, site variability, and long-term performance. To evaluate long-term infiltration rates used for system design, correction factors are applied in accordance with the GS200.2 guidelines. The variables and associated correction factor ranges are presented in Table 5.

Table 5
County of Los Angeles Correction Factors

CATEGORY	PARTIAL CORRECTION FACTOR
Test Type - Boring percolation	$RF_t = 2$
Site variability, number of tests, and thoroughness of subsurface investigation	$RF_v = 1 \text{ to } 3$
Long-term siltation, plugging and maintenance	$RF_s = 1 \text{ to } 3$

Where:

- The test-specific correction factor (RF_t) accounts for the direction of flow during the test and calculations.
- The site variability correction factor (RF_v) accounts for site variability, number of tests performed, and thoroughness of subsurface investigation.
- The maintenance correction factor (RF_s) accounts for siltation plugging, and bio-buildup in the system. CF_m should be selected based on the specified levels of pre-treatment and maintenance for the proposed BMPs.
- The measured percolation rate is divided by the total correction factor to determine the design infiltration rate.

$$RF = RF_t \times RF_v \times RF_s$$

For design (long-term) infiltration rate, Kleinfelder recommends the following correction factors shown below in Table 6.

**Table 6
Recommended Correction Factors**

RF_t	RF_v	RF_s
2	2	2

The long-term infiltration rate was estimated by dividing the short-term percolation rates shown in Table 4 by the recommended total correction factor in accordance with the County of Los Angeles Guidelines. The estimated long-term infiltration rates are presented in Table 7.

**Table 7
Design Infiltration Rates**

Infiltration Test Location	Average Measured Percolation Rate (in/hr)	Recommended Reduction Factor	Long-Term Infiltration Rate (in/hr)
INF-1	3.3	8	0.42
INF-2	3.7	8	0.46
INF-3	4.0	8	0.49
INF-4	2.8	8	0.34

According to the County of Los Angeles Guidelines, subsurface materials shall have a design infiltration rate equal to or greater than 0.3 inches per hour for stormwater infiltration. It is therefore our opinion that the site is suitable for infiltration BMPs provided the following recommendations are incorporated into the design and construction. We recommend that a design infiltration rate of 0.4 inches per hour be used for BMPs with a proposed invert depth between 10 to 15 feet below grade.

If infiltration BMPs are impractical due to existing site constraints, we recommend alternatives, such as bio-filtration/bio-retention systems (bio-swales and planter boxes), be implemented at the project site. If bio-filtration/bio-retention systems are employed, we recommend that the BMPs be built such that water exiting from them will not seep into the foundation areas or beneath slabs and pavement. If planters are located within 10 feet of the building or building foundations, or adjacent to slabs and pavements, then some means of diverting water away

from the building, building foundation soils, or soils that support slabs and pavements would be required, such as lining the planters.

3.8 SOIL CORROSION

A preliminary evaluation of the corrosion potential of the on-site soils to steel and buried concrete was completed. Laboratory testing was performed on two soil samples to evaluate pH, minimum resistivity, chloride and soluble sulfate content. The test results are presented in Table 8.

**Table 8
Corrosion Test Results**

Boring	Depth (ft)	Minimum Resistivity (ohm-cm)	pH	Soluble Sulfate Content (ppm)	Soluble Chloride Content (ppm)
B-1	2-5	24,250	7.2	40	37
B-5	2-5	3,458	8.1	37	44

These tests are only an indicator of soil corrosivity for the samples tested. Other soils found on site may be more, less, or of a similar corrosive nature. Imported fill materials should be tested to confirm that their corrosion potential is not more severe than those noted.

Resistivity values between 3,000 to 5,000 ohm-cm are considered corrosive to buried ferrous metals (Roberge, 2006). The concentrations of soluble sulfates indicate that the subsurface soils represent a Class S0 exposure to sulfate attack on concrete in contact with the soil based on ACI 318-14 Table 19.3.1.1 (ACI, 2014). Therefore, in accordance with ACI Building Code 318-14, no special provisions for selection of cement type are required.

Kleinfelder's scope of services does not include corrosion engineering and, therefore, a detailed analysis of the corrosion test results is not included. We recommend the review of these results and consultation of a corrosion expert for further evaluation, if necessary.

4 ADDITIONAL SERVICES

4.1 PLANS AND SPECIFICATIONS REVIEW

We recommend that Kleinfelder perform a general review of the project plans and specifications before they are finalized to verify that our geotechnical recommendations have been properly interpreted and implemented during design. If we are not accorded the privilege of performing this review, we can assume no responsibility for misinterpretation of our recommendations.

4.2 CONSTRUCTION OBSERVATION AND TESTING

The construction process is an integral design component with respect to the geotechnical aspects of a project. Because geotechnical engineering is an inexact science due to the variability of natural processes, and because we sample only a limited portion of the soils affecting the performance of the proposed structure, unanticipated or changed conditions can be encountered during grading. Proper geotechnical observation and testing during construction are imperative to allow the geotechnical engineer the opportunity to verify assumptions made during the design process. Therefore, we recommend that Kleinfelder be retained during the construction of the proposed improvements to observe compliance with the design concepts and geotechnical recommendations, and to allow design changes in the event that subsurface conditions or methods of construction differ from those assumed while completing this study.

Our services are typically needed at the following stages of grading:

- After demolition;
- During grading;
- After the overexcavation, but prior to scarification;
- During utility trench backfill;
- During base placement and site paving; and
- After excavation for foundations.

5 LIMITATIONS

This pavement study has been prepared for the exclusive use of MG2 and their agents for specific application to the proposed DAX9 Warehouse Improvements project located at 1211 Badillo Street in West Covina, California. The findings, conclusions and recommendations presented in this report were prepared in accordance with generally accepted geotechnical engineering practice. No other warranty, express or implied, is made.

The scope of services was limited to a background data review and our current field exploration. 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 our field exploration and laboratory testing programs, and engineering analyses.

Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. Although risk can never be eliminated, more detailed and extensive studies yield more information, which may help understand and manage the level of risk. Since detailed study and analysis involves greater expense, our clients participate in determining levels of service, which provide information for their purposes at acceptable levels of risk. The client and key members of the design team should discuss the issues covered in this report with Kleinfelder, so that the issues are understood and applied in a manner consistent with the owner's budget, tolerance of risk and expectations for future performance and maintenance.

Recommendations contained in this report are based on our field observations and subsurface explorations, limited laboratory tests, and our present knowledge of the proposed construction. It is possible that soil or groundwater conditions could vary between or beyond the points explored. If 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 changes from that described in this report, the conclusions and recommendations contained in this report are not considered valid until the changes are reviewed, and the conclusions of this report are modified or approved in writing, by Kleinfelder.

The scope of services for this subsurface exploration and geotechnical report did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous substances in the soil, surface water, or groundwater at this site.

Kleinfelder cannot be responsible for interpretation by others of this report or the conditions encountered in the field. Kleinfelder must be retained so that all geotechnical aspects of construction will be monitored on a full-time basis by a representative from Kleinfelder, including site preparation, preparation of foundations, and placement of engineered fill and trench backfill. These services provide Kleinfelder the opportunity to observe the actual soil and groundwater conditions encountered during construction and to evaluate the applicability of the recommendations presented in this report to the site conditions. If Kleinfelder is not retained to provide these services, we will cease to be the engineer of record for this project and will assume no responsibility for any potential claim during or after construction on this project. If changed site conditions affect the recommendations presented herein, Kleinfelder must also be retained to perform a supplemental evaluation and to issue a revision to our original report.

This report, and any future addenda or reports regarding this site, may be made available to bidders to supply them with only the data contained in the report regarding subsurface conditions and laboratory test results at the point and time noted. Bidders may not rely on interpretations, opinion, recommendations, or conclusions contained in the report. Because of the limited nature of any subsurface study, the contractor may encounter conditions during construction which differ from those presented in this report. In such event, the contractor should promptly notify the owner so that Kleinfelder's geotechnical engineer can be contacted to confirm those conditions. We recommend the contractor describe the nature and extent of the differing conditions in writing and that the construction contract include provisions for dealing with differing conditions. Contingency funds should be reserved for potential problems during earthwork and foundation construction.

This report may be used only by the client and only for the purposes stated, within a reasonable time from its issuance, but in no event later than one year from the date of the report. Land use, site conditions (both on site and off site) or other factors may change over time, and additional work may be required with the passage of time. Any party, other than the client who wishes to use this report shall notify Kleinfelder of such intended use. Based on the intended use of this report and the nature of the new project, Kleinfelder may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release Kleinfelder from any liability resulting from the use of this report by any unauthorized party and the client agrees to defend, indemnify, and hold harmless Kleinfelder from any claims or liability associated with such unauthorized use or non-compliance.

6 REFERENCES

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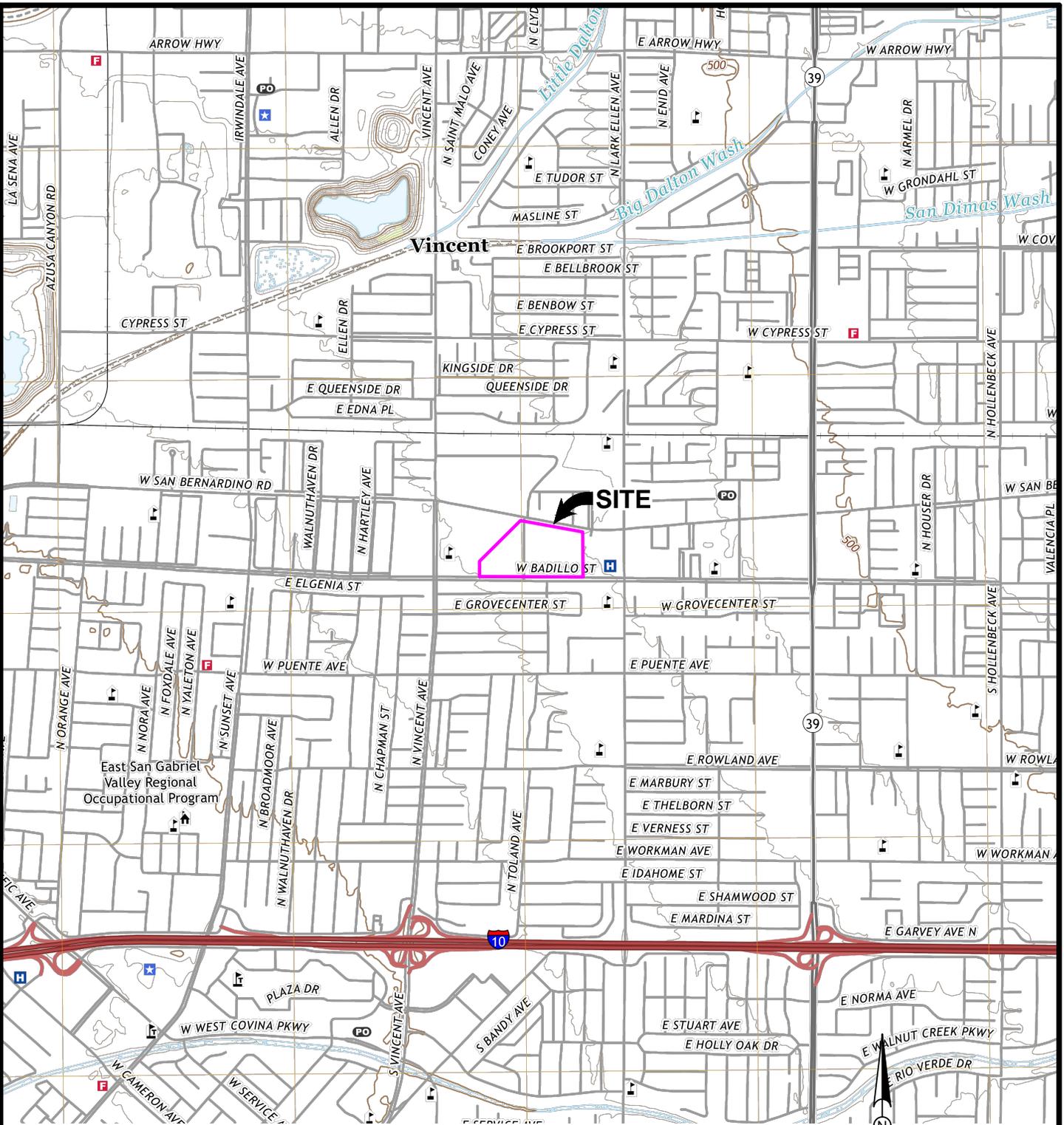
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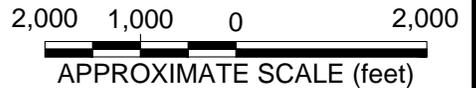
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Concrete Roads Manual, Pavement Surface Evaluation and Rating, dated 2015.

FIGURES



SOURCE: U.S.G.S. 7.5' topographic series, Baldwin Park, California quadrangle, dated 2018.

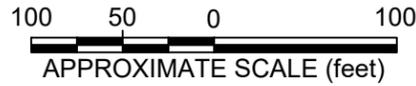
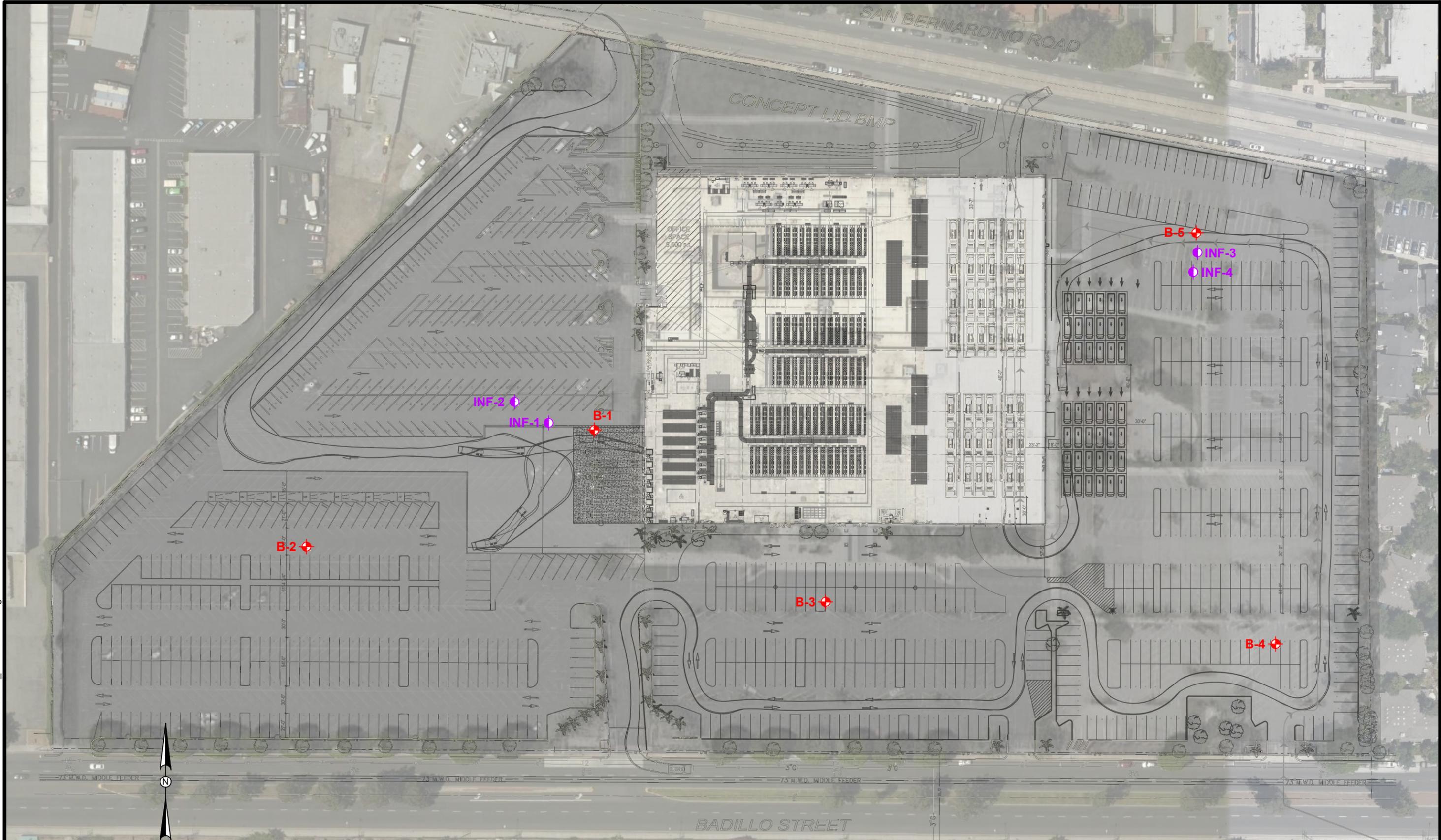
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 CHECKED BY: ZJ
 DATE: 06/2020
 REVISED: 06/2020

SITE VICINITY MAP
 PROPOSED DAX9
 WAREHOUSE IMPROVEMENTS
 1211 BADILLO STREET
 WEST COVINA, CALIFORNIA

FIGURE
 1



EXPLANATION

- B-4** APPROXIMATE BORING LOCATION
- INF-4** APPROXIMATE INFILTRATION TEST LOCATION

REFERENCE: BASE MAP PROVIDED BY MG2, DATED 05/12/2020



PROJECT:	20203313
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CHECKED BY:	ZJ
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REVISED:	06/2020

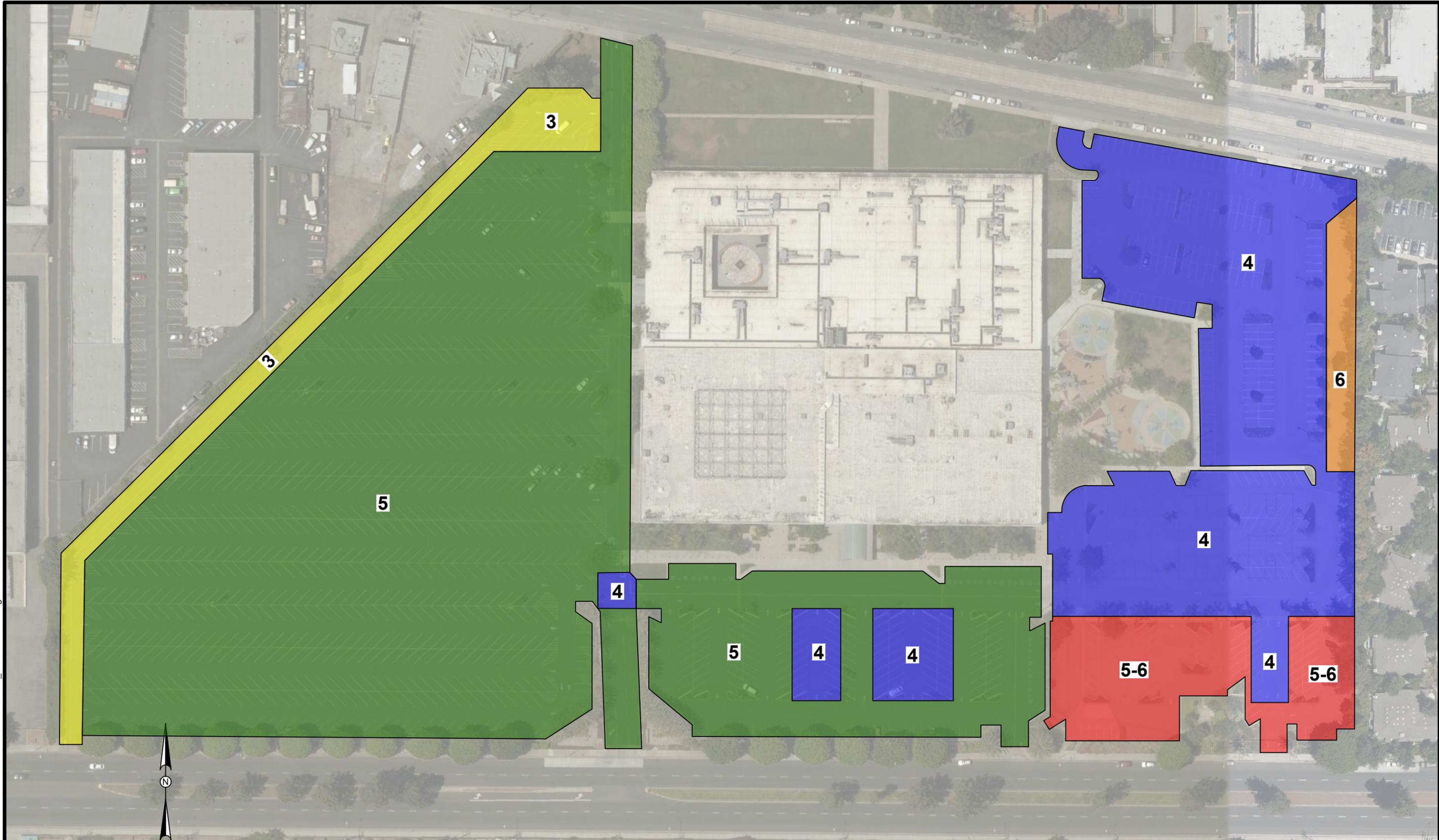
EXPLORATION LOCATION MAP

PROPOSED DAX9
WAREHOUSE IMPROVEMENTS
1211 BADILLO STREET
WEST COVINA, CALIFORNIA

FIGURE

2

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100 50 0 100
 APPROXIMATE SCALE (feet)

EXPLANATION

- PASER RATING 3
- PASER RATING 4
- PASER RATING 5
- PASER RATING 5-6
- PASER RATING 6

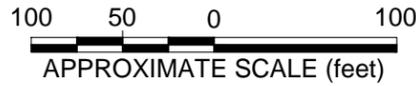
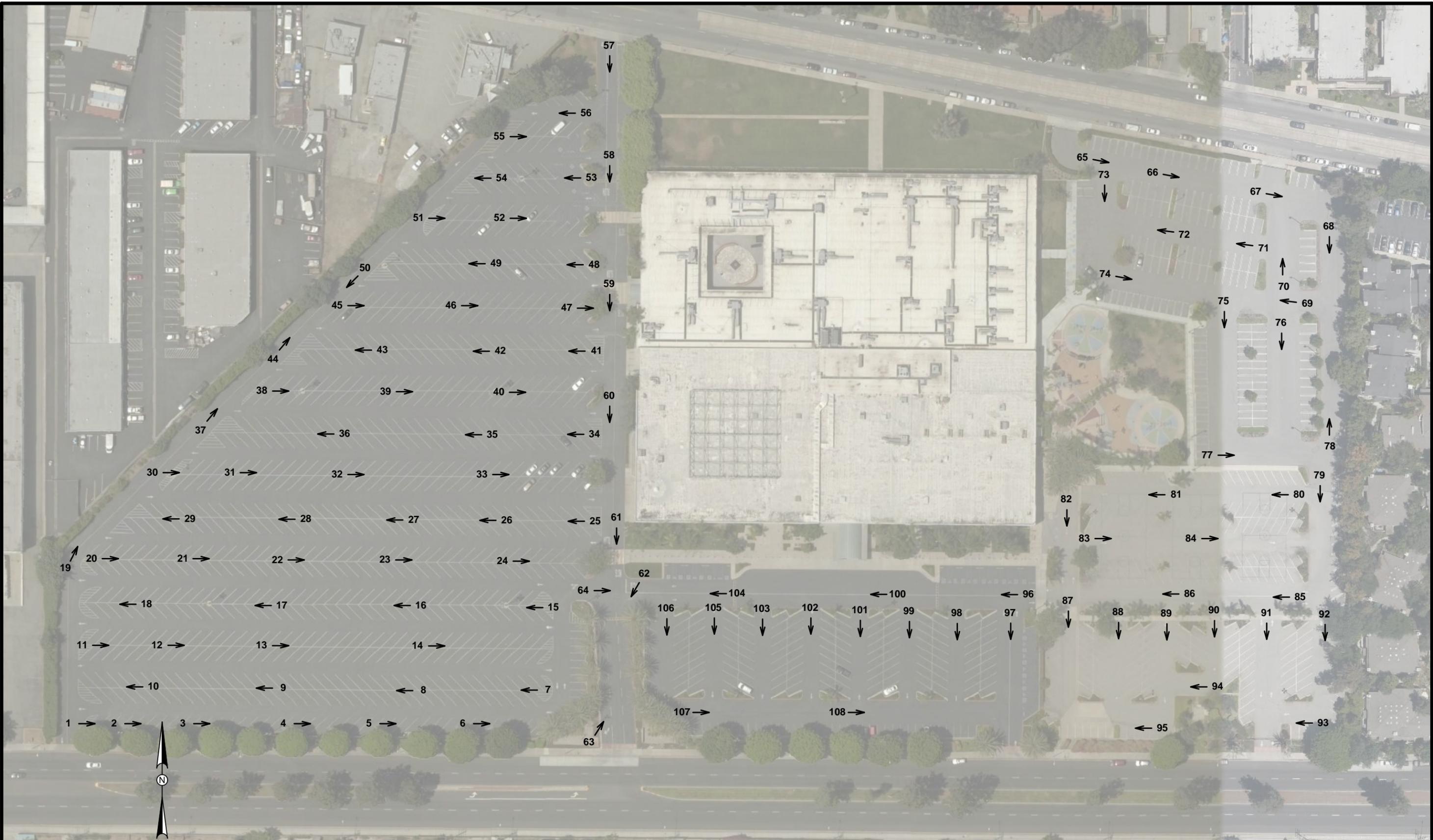
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PASER MAP
 PROPOSED DAX9
 WAREHOUSE IMPROVEMENTS
 1211 BADILLO STREET
 WEST COVINA, CALIFORNIA

FIGURE
 3



EXPLANATION
 ← 110 PHOTOGRAPH LOCATION AND DIRECTION

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PHOTO LOCATION MAP
 PROPOSED DAX9
 WAREHOUSE IMPROVEMENTS
 1211 BADILLO STREET
 WEST COVINA, CALIFORNIA

FIGURE
 4

APPENDIX A

Field Explorations

SAMPLE/SAMPLER TYPE GRAPHICS

	BAG SAMPLE
	BULK SAMPLE
	CALIFORNIA SAMPLER (3 in. (76.2 mm.) outer diameter)
	STANDARD PENETRATION SPLIT SPOON SAMPLER (2 in. (50.8 mm.) outer diameter and 1-3/8 in. (34.9 mm.) inner diameter)

GROUND WATER GRAPHICS

	WATER LEVEL (level where first observed)
	WATER LEVEL (level after exploration completion)
	WATER LEVEL (additional levels after exploration)
	OBSERVED SEEPAGE

NOTES

- The report and graphics key are an integral part of these logs. All data and interpretations in this log are subject to the explanations and limitations stated in the report.
- Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual or differ from those shown.
- No warranty is provided as to the continuity of soil or rock conditions between individual sample locations.
- Logs represent general soil or rock conditions observed at the point of exploration on the date indicated.
- In general, Unified Soil Classification System designations presented on the logs were based on visual classification in the field and were modified where appropriate based on gradation and index property testing.
- Fine grained soils that plot within the hatched area on the Plasticity Chart, and coarse grained soils with between 5% and 12% passing the No. 200 sieve require dual USCS symbols, i.e., GW-GM, GP-GM, GW-GC, GP-GC, GC-GM, SW-SM, SP-SM, SW-SC, SP-SC, SC-SM.
- If sampler is not able to be driven at least 6 inches then 50/X indicates number of blows required to drive the identified sampler X inches with a 140 pound hammer falling 30 inches.

ABBREVIATIONS

WOH - Weight of Hammer
WOR - Weight of Rod

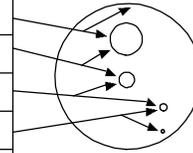
UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

GRAVELS (More than half of coarse fraction is larger than the #200 sieve)	CLEAN GRAVEL WITH <5% FINES	Cu ≥ 4 and 1 ≤ Cc ≤ 3		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES	
		Cu < 4 and/or 1 > Cc > 3		GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES	
	GRAVELS WITH 5% TO 12% FINES	Cu ≥ 4 and 1 ≤ Cc ≤ 3		GW-GM	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES	
				GW-GC	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES	
		Cu < 4 and/or 1 > Cc > 3		GP-GM	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES	
				GP-GC	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES	
	GRAVELS WITH > 12% FINES			GM	SILTY GRAVELS, GRAVEL-SILT-SAND MIXTURES	
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES	
				GC-GM	CLAYEY GRAVELS, GRAVEL-SAND-CLAY-SILT MIXTURES	
	SANDS (Half or more of coarse fraction is smaller than the #4 sieve)	CLEAN SANDS WITH <5% FINES	Cu ≥ 6 and 1 ≤ Cc ≤ 3		SW	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
			Cu < 6 and/or 1 > Cc > 3		SP	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
		SANDS WITH 5% TO 12% FINES	Cu ≥ 6 and 1 ≤ Cc ≤ 3		SW-SM	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
				SW-SC	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES	
Cu < 6 and/or 1 > Cc > 3				SP-SM	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES	
				SP-SC	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES	
SANDS WITH > 12% FINES				SM	SILTY SANDS, SAND-GRAVEL-SILT MIXTURES	
				SC	CLAYEY SANDS, SAND-GRAVEL-CLAY MIXTURES	
				SC-SM	CLAYEY SANDS, SAND-SILT-CLAY MIXTURES	
FINE GRAINED SOILS (Half or more of material is smaller than the #200 sieve)	SILTS AND CLAYS (Liquid Limit less than 50)		ML	INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY		
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS		
			CL-ML	INORGANIC CLAYS-SILTS OF LOW PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS		
	SILTS AND CLAYS (Liquid Limit 50 or greater)		OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY		
			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT		
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS		
		OH	ORGANIC CLAYS & ORGANIC SILTS OF MEDIUM-TO-HIGH PLASTICITY			

 KLEINFELDER Bright People. Right Solutions.	PROJECT NO.: 20203313.001A	GRAPHICS KEY Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, California	FIGURE
	DRAWN BY: JRH CHECKED BY: ZSJ DATE: 6/12/2020		A-1

GRAIN SIZE

DESCRIPTION	SIEVE SIZE	GRAIN SIZE	APPROXIMATE SIZE
Boulders	>12 in. (304.8 mm.)	>12 in. (304.8 mm.)	Larger than basketball-sized
Cobbles	3 - 12 in. (76.2 - 304.8 mm.)	3 - 12 in. (76.2 - 304.8 mm.)	Fist-sized to basketball-sized
Gravel	coarse 3/4 - 3 in. (19 - 76.2 mm.)	3/4 - 3 in. (19 - 76.2 mm.)	Thumb-sized to fist-sized
	fine #4 - 3/4 in. (#4 - 19 mm.)	0.19 - 0.75 in. (4.8 - 19 mm.)	Pea-sized to thumb-sized
Sand	coarse #10 - #4	0.079 - 0.19 in. (2 - 4.9 mm.)	Rock salt-sized to pea-sized
	medium #40 - #10	0.017 - 0.079 in. (0.43 - 2 mm.)	Sugar-sized to rock salt-sized
	fine #200 - #40	0.0029 - 0.017 in. (0.07 - 0.43 mm.)	Flour-sized to sugar-sized
Fines	Passing #200	<0.0029 in. (<0.07 mm.)	Flour-sized and smaller



SECONDARY CONSTITUENT

Term of Use	AMOUNT	
	Secondary Constituent is Fine Grained	Secondary Constituent is Coarse Grained
Trace	<5%	<15%
With	≥5 to <15%	≥15 to <30%
Modifier	≥15%	≥30%

MOISTURE CONTENT

DESCRIPTION	FIELD TEST
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

CEMENTATION

DESCRIPTION	FIELD TEST
Weakly	Crumbles or breaks with handling or slight finger pressure
Moderately	Crumbles or breaks with considerable finger pressure
Strongly	Will not crumble or break with finger pressure

CONSISTENCY - FINE-GRAINED SOIL

CONSISTENCY	SPT - N ₆₀ (# blows / ft)	Pocket Pen (tsf)	UNCONFINED COMPRESSIVE STRENGTH (Q _u)(psf)	VISUAL / MANUAL CRITERIA
Very Soft	<2	PP < 0.25	<500	Thumb will penetrate more than 1 inch (25 mm). Extrudes between fingers when squeezed.
Soft	2 - 4	0.25 ≤ PP <0.5	500 - 1000	Thumb will penetrate soil about 1 inch (25 mm). Remolded by light finger pressure.
Medium Stiff	4 - 8	0.5 ≤ PP <1	1000 - 2000	Thumb will penetrate soil about 1/4 inch (6 mm). Remolded by strong finger pressure.
Stiff	8 - 15	1 ≤ PP <2	2000 - 4000	Can be imprinted with considerable pressure from thumb.
Very Stiff	15 - 30	2 ≤ PP <4	4000 - 8000	Thumb will not indent soil but readily indented with thumbnail.
Hard	>30	4 ≤ PP	>8000	Thumbnail will not indent soil.

REACTION WITH HYDROCHLORIC ACID

DESCRIPTION	FIELD TEST
None	No visible reaction
Weak	Some reaction, with bubbles forming slowly
Strong	Violent reaction, with bubbles forming immediately

FROM TERZAGHI AND PECK, 1948; LAMBE AND WHITMAN, 1969; FHWA, 2002; AND ASTM D2488

APPARENT / RELATIVE DENSITY - COARSE-GRAINED SOIL

APPARENT DENSITY	SPT-N ₆₀ (# blows/ft)	MODIFIED CA SAMPLER (# blows/ft)	CALIFORNIA SAMPLER (# blows/ft)	RELATIVE DENSITY (%)
Very Loose	<4	<4	<5	0 - 15
Loose	4 - 10	5 - 12	5 - 15	15 - 35
Medium Dense	10 - 30	12 - 35	15 - 40	35 - 65
Dense	30 - 50	35 - 60	40 - 70	65 - 85
Very Dense	>50	>60	>70	85 - 100

FROM TERZAGHI AND PECK, 1948

STRUCTURE

DESCRIPTION	CRITERIA
Stratified	Alternating layers of varying material or color with layers at least 1/4-in. thick, note thickness.
Laminated	Alternating layers of varying material or color with the layer less than 1/4-in. thick, note thickness.
Fissured	Breaks along definite planes of fracture with little resistance to fracturing.
Slickensided	Fracture planes appear polished or glossy, sometimes striated.
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown.
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay; note thickness.

PLASTICITY

DESCRIPTION	LL	FIELD TEST
Non-plastic	NP	A 1/8-in. (3 mm.) thread cannot be rolled at any water content.
Low (L)	< 30	The thread can barely be rolled and the lump or thread cannot be formed when drier than the plastic limit.
Medium (M)	30 - 50	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump or thread crumbles when drier than the plastic limit.
High (H)	> 50	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump or thread can be formed without crumbling when drier than the plastic limit.

ANGULARITY

DESCRIPTION	CRITERIA
Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces.
Subangular	Particles are similar to angular description but have rounded edges.
Subrounded	Particles have nearly plane sides but have well-rounded corners and edges.
Rounded	Particles have smoothly curved sides and no edges.



PROJECT NO.: 20203313.001A
 DRAWN BY: JRH
 CHECKED BY: ZSJ
 DATE: 6/12/2020

SOIL DESCRIPTION KEY
 Proposed DAX9
 Warehouse Improvements
 1211 Badillo Street
 West Covina, California

FIGURE
 A-2

PLOTTED: 06/15/2020 09:05 AM BY: JHawkins

BORING LOG B-1

Date Begin - End: 5/28/2020 **Drilling Co.-Lic.#:** 2R - #709029
Logged By: D. Dockendorf **Drill Crew:** Nick and Mark
Hor.-Vert. Datum: Not Available **Drilling Equipment:** CME-75
Plunge: -90 degrees **Drilling Method:** Hollow Stem Auger
Weather: Sunny **Exploration Diameter:** 8 in. O.D.

Hammer Type - Drop: 140 lb. Auto - 30 in.

Depth (feet)	Graphical Log	FIELD EXPLORATION				LABORATORY RESULTS							Additional Tests/ Remarks
		Surface Condition: Asphalt	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	
Lithologic Description													
	Asphalt Concrete: approximately 3-inches thick												Hand augered to 5 feet below ground surface
	Aggregate Base: approximately 4-inches thick												
	Artificial Fill												
	Silty SAND (SM): fine- to medium-grained, reddish brown, moist						9.5						
	Alluvium												
5	Silty SAND (SM): fine- to medium-grained, reddish brown, moist						8.1			18			R-Value, Corrosion Test
	medium dense, increased silt content	BC=4 6 7		12"			7.2	107.8					
	iron oxide staining	BC=4 6 9		12"			10.7	111.2					
10		BC=5 7 9		12"			8.5	105.1					
	fine-grained, olive brown												
15		BC=2 4 6		12"			8.6			20			
20		BC=5 7 11		12"			7.0	110.1					
25	Poorly Graded SAND with Silt and Gravel (SP-SM): fine- to medium-grained, light brownish grey, moist, medium dense, fine to coarse, subrounded gravel up to 1 inch.	BC=4 9 9		8"						6.3			
30	fine- to coarse-grained, dry, dense	BC=8 14 17		12"									

PROJECT NUMBER: 20203313.001A OFFICE FILTER: LAGUNA HILLS
 GINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_BORING/TEST PIT SOIL LOG]



PROJECT NO.: 20203313.001A
 DRAWN BY: JRH
 CHECKED BY: ZSJ
 DATE: 6/12/2020

BORING LOG B-1
 Proposed DAX9
 Warehouse Improvements
 1211 Badillo Street
 West Covina, California

FIGURE
A-3
 PAGE: 1 of 2

PLOTTED: 06/15/2020 09:05 AM BY: JHawkins

BORING LOG B-1

Date Begin - End: 5/28/2020 **Drilling Co.-Lic.#:** 2R - #709029
Logged By: D. Dockendorf **Drill Crew:** Nick and Mark
Hor.-Vert. Datum: Not Available **Drilling Equipment:** CME-75 **Hammer Type - Drop:** 140 lb. Auto - 30 in.
Plunge: -90 degrees **Drilling Method:** Hollow Stem Auger
Weather: Sunny **Exploration Diameter:** 8 in. O.D.

Depth (feet)	Graphical Log	FIELD EXPLORATION				LABORATORY RESULTS						
		Surface Condition: Asphalt	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)
Lithologic Description												
38		Silty SAND with Gravel (SM): fine- to medium-grained, dark brown, moist, dense, fine, subrounded gravel up to 0.75 inch	BC=3 6 18	12"						27		
42		pale olive, very dense, increased fine to coarse gravel up to 1 inch	BC=27 50/6"	10"								
46		dark reddish brown, dense to very dense, decreased gravel	BC=27 14 18	14"								
50		Poorly Graded SAND with Gravel (SP): fine- to medium-grained, reddish yellow, moist, very dense, fine, subrounded gravel up to 0.5 inch	BC=23 33 50									
51.5	The boring was terminated at approximately 51.5 ft. below ground surface. The boring was backfilled with cement/bentonite grout on May 28, 2020.				GROUNDWATER LEVEL INFORMATION: Groundwater was not observed during drilling or after completion. GENERAL NOTES:							

PROJECT NUMBER: 20203313.001A OFFICE FILTER: LAGUNA HILLS
 GINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]



PROJECT NO.: 20203313.001A
 DRAWN BY: JRH
 CHECKED BY: ZSJ
 DATE: 6/12/2020

BORING LOG B-1
 Proposed DAX9
 Warehouse Improvements
 1211 Badillo Street
 West Covina, California

FIGURE
A-4
 PAGE: 2 of 2

PLOTTED: 06/15/2020 09:06 AM BY: JHawkins

Date Begin - End: 5/28/2020 **Drilling Co.-Lic.#:** 2R - #709029 **BORING LOG B-2**
Logged By: D. Dockendorf **Drill Crew:** Nick and Mark
Hor.-Vert. Datum: Not Available **Drilling Equipment:** CME-75 **Hammer Type - Drop:** 140 lb. Auto - 30 in.
Plunge: -90 degrees **Drilling Method:** Hollow Stem Auger
Weather: Sunny **Exploration Diameter:** 8 in. O.D.

Depth (feet)	Graphical Log	FIELD EXPLORATION					LABORATORY RESULTS						Additional Tests/ Remarks
		Surface Condition: Asphalt	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	
Lithologic Description													
5	<p>Asphalt Concrete: approximately 3-inches thick Aggregate Base: approximately 4-inches thick Artificial Fill Silty SAND with Gravel (SM): fine- to medium-grained, moist, fine to coarse gravel Alluvium Poorly Graded SAND with Silt (SP-SM): fine- to medium-grained, reddish brown, moist</p>					7.5						Hand augered to 5 feet below ground surface Compaction Test	
<p>The boring was terminated at approximately 5 ft. below ground surface. The boring was backfilled with auger cuttings and patched at surface on May 28, 2020.</p> <p>GROUNDWATER LEVEL INFORMATION: Groundwater was not observed during drilling or after completion.</p> <p>GENERAL NOTES:</p>													

PROJECT NUMBER: 20203313.001A OFFICE FILTER: LAGUNA HILLS
 GINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

	PROJECT NO.: 20203313.001A	BORING LOG B-2 Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, California	FIGURE
	DRAWN BY: JRH CHECKED BY: ZSJ DATE: 6/12/2020		A-5
			PAGE: 1 of 1

Date Begin - End: 5/28/2020 **Drilling Co.-Lic.#:** 2R - #709029
Logged By: D. Dockendorf **Drill Crew:** Nick and Mark
Hor.-Vert. Datum: Not Available **Drilling Equipment:** CME-75 **Hammer Type - Drop:** 140 lb. Auto - 30 in.
Plunge: -90 degrees **Drilling Method:** Hollow Stem Auger
Weather: Sunny **Exploration Diameter:** 8 in. O.D.

Depth (feet)	Graphical Log	FIELD EXPLORATION					LABORATORY RESULTS						Additional Tests/ Remarks
		Surface Condition: Asphalt	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	
Lithologic Description													
0		Asphalt Concrete: approximately 4-inches thick, no base observed											Hand augered to 5 feet below ground surface
4		Artificial Fill Silty SAND with Gravel (SM): fine- to medium-grained, moist, fine to coarse gravel				7.8							
5		Alluvium Silty SAND (SM): fine- to medium-grained, reddish brown, moist, micaceous				8.8							
5		<p>The boring was terminated at approximately 5 ft. below ground surface. The boring was backfilled with auger cuttings and patched at surface on May 28, 2020.</p> <p>GROUNDWATER LEVEL INFORMATION: Groundwater was not observed during drilling or after completion.</p> <p>GENERAL NOTES:</p>											

	PROJECT NO.: 20203313.001A	BORING LOG B-3 Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, California	FIGURE
	DRAWN BY: JRH CHECKED BY: ZSJ DATE: 6/12/2020		A-6
			PAGE: 1 of 1

Date Begin - End: 5/28/2020 **Drilling Co.-Lic.#:** 2R - #709029 **BORING LOG B-4**
Logged By: D. Dockendorf **Drill Crew:** Nick and Mark
Hor.-Vert. Datum: Not Available **Drilling Equipment:** CME-75 **Hammer Type - Drop:** 140 lb. Auto - 30 in.
Plunge: -90 degrees **Drilling Method:** Hollow Stem Auger
Weather: Sunny **Exploration Diameter:** 8 in. O.D.

Depth (feet)	Graphical Log	FIELD EXPLORATION					LABORATORY RESULTS						
		Surface Condition: Asphalt	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
Lithologic Description													
5	<p>Asphalt Concrete: approximately 4-inches thick Aggregate Base: approximately 6.5-inches thick Artificial Fill Silty SAND with Gravel (SM): fine- to medium-grained, moist, fine to coarse gravel Alluvium Silty SAND (SM): fine-grained, reddish brown, moist</p>					8.2							Hand augered to 5 feet below ground surface
<p>The boring was terminated at approximately 5 ft. below ground surface. The boring was backfilled with auger cuttings and patched at surface on May 28, 2020.</p>		<p>GROUNDWATER LEVEL INFORMATION: Groundwater was not observed during drilling or after completion. GENERAL NOTES:</p>											

	PROJECT NO.: 20203313.001A	BORING LOG B-4 Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, California	FIGURE
	DRAWN BY: JRH CHECKED BY: ZSJ DATE: 6/12/2020		A-7
			PAGE: 1 of 1

PLOTTED: 06/15/2020 09:06 AM BY: JHawkins

BORING LOG B-5

Date Begin - End: 5/28/2020 **Drilling Co.-Lic.#:** 2R - #709029
Logged By: D. Dockendorf **Drill Crew:** Nick and Mark
Hor.-Vert. Datum: Not Available **Drilling Equipment:** CME-75
Plunge: -90 degrees **Drilling Method:** Hollow Stem Auger
Weather: Sunny **Exploration Diameter:** 8 in. O.D.

Hammer Type - Drop: 140 lb. Auto - 30 in.

Depth (feet)	Graphical Log	FIELD EXPLORATION				LABORATORY RESULTS						
		Surface Condition: Asphalt	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)
Lithologic Description												
		Asphalt Concrete: approximately 2.5-inches thick										Hand augered to 5 feet below ground surface
		Aggregate Base: approximately 10-inches thick										
		Artificial Fill										
		Silty SAND with Gravel (SM): olive grey, odor, moist, fine- to medium-grained sand, fine, angular gravel up to 0.25 inch, trash and concrete pieces observed in fill									44	Corrosion Test Boulder observed at 2.5 feet below ground surface during hand augering
5		Alluvium										
		Sandy Lean CLAY with Gravel (CL): medium plasticity, moist, very stiff, fine, subangular gravel up to 0.5 inch	BC=5 9 11	12"		10.8	125.5					
		Clayey SAND with Gravel (SC): fine- to medium-grained, low plasticity, olive brown, moist, fine, subangular gravel up to 0.25 inch medium dense	BC=3 4 8	12"		12.8	116.9					
10		Poorly Graded SAND with Gravel (SP): fine- to coarse-grained, pale grey, dry, very dense, fine to coarse, subrounded gravel up to 1 inch	BC=20 27 33	12"		2.8						Rock observed in shoe, sample disturbed and placed into SPT bag
		Poorly Graded SAND with Silt and Gravel (SP-SM): fine- to medium-grained, olive brown, dry, very dense, fine, angular gravel up to 0.5 inch	BC=10 17 18	12"						6.4		
15		Silty SAND (SM): fine-grained, reddish brown, moist, medium dense	BC=4 5 7	12"								
20			BC=5 6 9	14"								
25												

The boring was terminated at approximately 26.5 ft. below ground surface. The boring was backfilled with cement/bentonite grout on May 28, 2020.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:

PROJECT NUMBER: 20203313.001A OFFICE FILTER: LAGUNA HILLS
 GINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_BORING/TEST PIT SOIL LOG]



PROJECT NO.: 20203313.001A
 DRAWN BY: JRH
 CHECKED BY: ZSJ
 DATE: 6/12/2020

BORING LOG B-5
 Proposed DAX9
 Warehouse Improvements
 1211 Badillo Street
 West Covina, California

FIGURE
A-8
 PAGE: 1 of 1

PLOTTED: 06/15/2020 09:06 AM BY: JHawkins

Date Begin - End: 5/28/2020 - 5/29/2020 **Drilling Co.-Lic.#:** 2R - #709029
Logged By: D. Dockendorf **Drill Crew:** Nick and Mark
Hor.-Vert. Datum: Not Available **Drilling Equipment:** CME-75 **Hammer Type - Drop:** 140 lb. Auto - 30 in.
Plunge: -90 degrees **Drilling Method:** Hollow Stem Auger
Weather: Sunny **Exploration Diameter:** 8 in. O.D.

PERCOLATION TEST HOLE LOG INF-1

Depth (feet)	Graphical Log	FIELD EXPLORATION					LABORATORY RESULTS						Additional Tests/ Remarks
		Surface Condition: Asphalt	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	
Lithologic Description													
0		Asphalt Concrete: approximately 3-inches thick Aggregate Base: approximately 5-inches thick											Hand augered to 5 feet below ground surface
5		Artificial Fill Silty SAND with Gravel (SM): fine- to medium-grained, olive brown, moist, fine, rounded gravel up to 0.75 inch, cobbles present Alluvium Silty SAND (SM): fine-grained, reddish brown, moist	X			7.4							
15		pale olive, medium dense, increased silt, micaceous		BC=4 5 5	12"			100	24				

The percolation test hole was terminated at approximately 15 ft. below ground surface. The percolation test hole was backfilled with auger cuttings and patched at surface on May 29, 2020.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:

PROJECT NUMBER: 20203313.001A OFFICE FILTER: LAGUNA HILLS
 GINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]



PROJECT NO.:
20203313.001A

 DRAWN BY: JRH
 CHECKED BY: ZSJ
 DATE: 6/12/2020

PERCOLATION TEST HOLE LOG INF-1

 Proposed DAX9
 Warehouse Improvements
 1211 Badillo Street
 West Covina, California

FIGURE

A-9

 PAGE: 1 of 1

PLOTTED: 06/15/2020 09:06 AM BY: JHawkins

Date Begin - End: 5/28/2020 - 5/29/2020 **Drilling Co.-Lic.#:** 2R - #709029
Logged By: D. Dockendorf **Drill Crew:** Nick and Mark
Hor.-Vert. Datum: Not Available **Drilling Equipment:** CME-75 **Hammer Type - Drop:** 140 lb. Auto - 30 in.
Plunge: -90 degrees **Drilling Method:** Hollow Stem Auger
Weather: Sunny **Exploration Diameter:** 8 in. O.D.

PERCOLATION TEST HOLE LOG INF-2

Depth (feet)	Graphical Log	FIELD EXPLORATION					LABORATORY RESULTS						
		Surface Condition: Asphalt	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
Lithologic Description													
0		Asphalt Concrete: approximately 3-inches thick Aggregate Base: approximately 4-inches thick	⊗										Hand augered to 5 feet below ground surface
0-5		Artificial Fill Silty SAND with Gravel (SM): fine- to medium-grained, olive brown, moist, fine, rounded gravel up to 0.5 inch Alluvium Poorly Graded SAND with Gravel (SP): fine- to medium-grained, olive yellow, moist, fine, angular gravel up to 0.25 inch Silty SAND (SM): fine- to medium-grained, reddish brown, moist				5.9							
5-15		pale olive, medium dense, micaceous											
15				BC=4 4 5	18"				98	24			
The percolation test hole was terminated at approximately 15.5 ft. below ground surface. The percolation test hole was backfilled with auger cuttings and patched at surface on May 29, 2020.						GROUNDWATER LEVEL INFORMATION: Groundwater was not observed during drilling or after completion. GENERAL NOTES:							

PROJECT NUMBER: 20203313.001A OFFICE FILTER: LAGUNA HILLS
 GINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2020.GLB [KLF_BORING/TEST PIT SOIL LOG]



PROJECT NO.: 20203313.001A
 DRAWN BY: JRH
 CHECKED BY: ZSJ
 DATE: 6/12/2020

PERCOLATION TEST HOLE LOG INF-2
 Proposed DAX9
 Warehouse Improvements
 1211 Badillo Street
 West Covina, California

FIGURE
A-10
 PAGE: 1 of 1

PLOTTED: 06/15/2020 09:06 AM BY: JHawkins

Date Begin - End: 5/28/2020 - 5/29/2020 **Drilling Co.-Lic.#:** 2R - #709029
Logged By: D. Dockendorf **Drill Crew:** Nick and Mark
Hor.-Vert. Datum: Not Available **Drilling Equipment:** CME-75 **Hammer Type - Drop:** 140 lb. Auto - 30 in.
Plunge: -90 degrees **Drilling Method:** Hollow Stem Auger
Weather: Sunny **Exploration Diameter:** 8 in. O.D.

PERCOLATION TEST HOLE LOG INF-3

Depth (feet)	Graphical Log	FIELD EXPLORATION						LABORATORY RESULTS					
		Surface Condition: Asphalt	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
Lithologic Description													
0		Asphalt Concrete: approximately 3-inches thick Aggregate Base: approximately 9-inches thick										Hand augered to 5 feet below ground surface	
0-5		Artificial Fill Clayey SAND with Gravel (SC): fine-grained, olive grey, moist, fine gravel up to 0.25 inch				11.8							
5-10		Alluvium Sandy Lean CLAY (CL): medium plasticity, dark grey, moist, fine to coarse gravel up to 1 inch, trace cobbles											
10-15		Silty SAND (SM): fine-grained, reddish brown, moist											
15		Poorly Graded SAND with Silt and Gravel (SP-SM): fine- to coarse-grained, dry, very dense, fine, angular gravel up to 0.5 inch											
			BC=16 22 31	18"	SP-SM			67	9.0				
<p>The percolation test hole was terminated at approximately 15 ft. below ground surface. The percolation test hole was backfilled with auger cuttings and patched at surface on May 29, 2020.</p> <p>GROUNDWATER LEVEL INFORMATION: Groundwater was not observed during drilling or after completion.</p> <p>GENERAL NOTES:</p>													

PROJECT NUMBER: 20203313.001A OFFICE FILTER: LAGUNA HILLS
 GINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]

 Bright People. Right Solutions.	PROJECT NO.: 20203313.001A	PERCOLATION TEST HOLE LOG INF-3 Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, California	FIGURE
	DRAWN BY: JRH CHECKED BY: ZSJ DATE: 6/12/2020		A-11
			PAGE: 1 of 1

PLOTTED: 06/15/2020 09:07 AM BY: JHawkins

Date Begin - End: 5/28/2020 - 5/29/2020 **Drilling Co.-Lic.#:** 2R - #709029
Logged By: D. Dockendorf **Drill Crew:** Nick and Mark
Hor.-Vert. Datum: Not Available **Drilling Equipment:** CME-75 **Hammer Type - Drop:** 140 lb. Auto - 30 in.
Plunge: -90 degrees **Drilling Method:** Hollow Stem Auger
Weather: Sunny **Exploration Diameter:** 8 in. O.D.

Depth (feet)	Graphical Log	FIELD EXPLORATION					LABORATORY RESULTS						
		Surface Condition: Asphalt	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in.	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
Lithologic Description													
0 - 2.5		Asphalt Concrete: approximately 2.5-inches thick										Hand augered to 5 feet below ground surface	
2.5 - 8		Aggregate Base: approximately 8-inches thick											
8 - 11		Artificial Fill Clayey SAND with Gravel (SC): fine-grained, olive grey, moist, fine, angular gravel up to 0.25 inch				13.2							
11 - 15		Alluvium Silty SAND (SM): reddish brown, moist, increased gravel content											
15 - 15.5		Poorly Graded SAND with Silt and Gravel (SP-SM): fine- to coarse-grained, mottled olive and white, dry, very dense, fine, angular gravel up to 0.25 inch											
			BC=12 22 23	12"	SP-SM			65	9.0				
<p>The percolation test hole was terminated at approximately 15 ft. below ground surface. The percolation test hole was backfilled with auger cuttings and patched at surface on May 29, 2020.</p>						<p>GROUNDWATER LEVEL INFORMATION: Groundwater was not observed during drilling or after completion. GENERAL NOTES:</p>							

PROJECT NUMBER: 20203313.001A OFFICE FILTER: LAGUNA HILLS
 GINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2020.GLB [_KLF_BORING/TEST PIT SOIL LOG]



PROJECT NO.: 20203313.001A
 DRAWN BY: JRH
 CHECKED BY: ZSJ
 DATE: 6/12/2020

PERCOLATION TEST HOLE LOG INF-4
 Proposed DAX9
 Warehouse Improvements
 1211 Badillo Street
 West Covina, California

FIGURE
A-12
 PAGE: 1 of 1

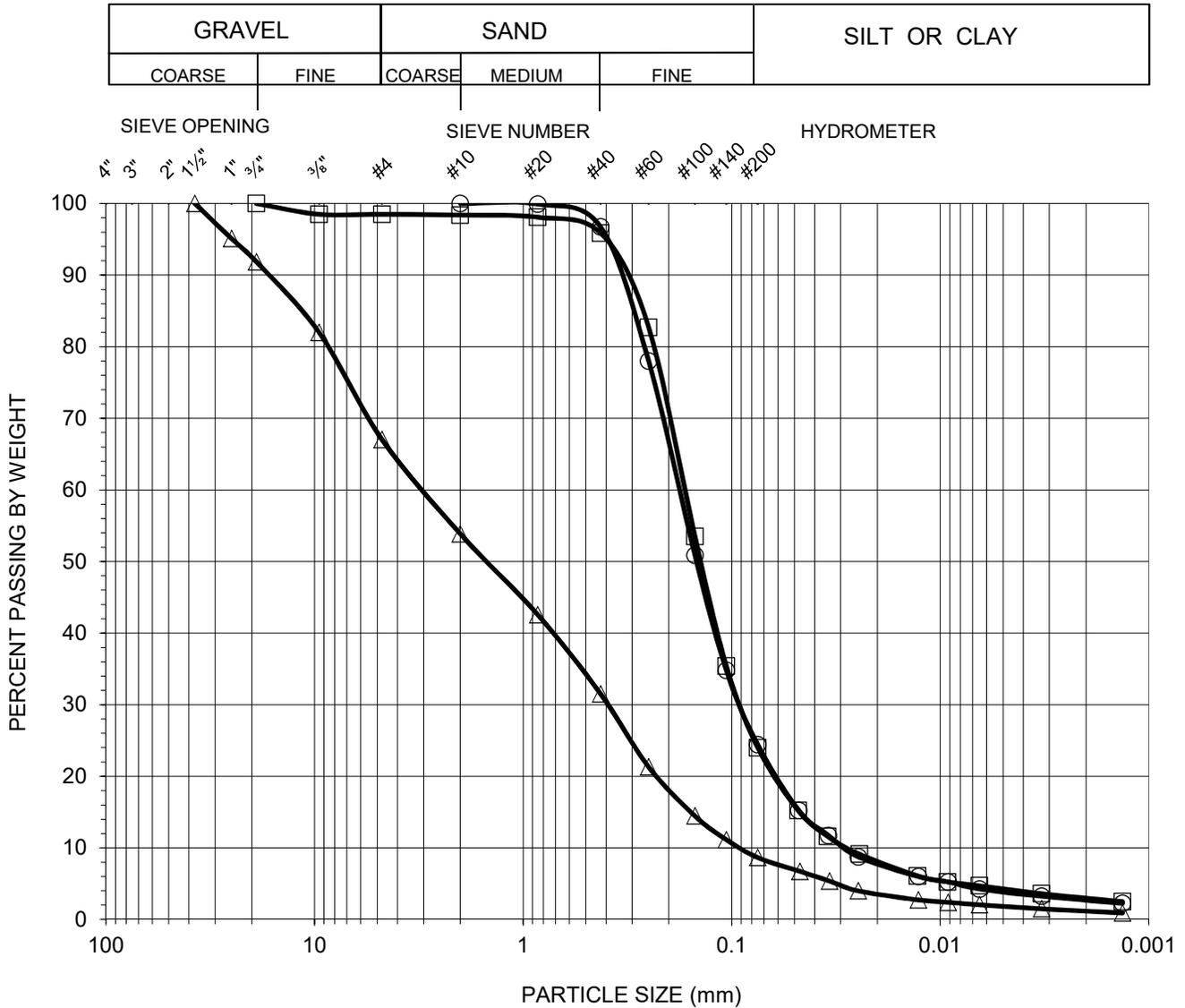
APPENDIX B

Laboratory Testing



GRAIN SIZE DISTRIBUTION CURVE ASTM D 6913 & D 7928

Client Name: Kleinfelder Tested by: NR Date: 06/08/20
 Project Name: DAX9 West Covina, CA Computed by: NR Date: 06/09/20
 Project No.: 20203313.001A Checked by: AP Date: 06/09/20



Symbol	Boring No.	Sample No.	Sample Depth (feet)	Percent			Atterberg Limits LL:PL:PI	Soil Type U.S.C.S
				Gravel	Sand	Silt & Clay		
○	INF-1	1	13.5	0	76	24	N/A	SM
□	INF-2	1	13.5	2	74	24	N/A	SM
△	INF-3	1	13.5	33	58	9	N/A	SP-SM



COMPACTION TEST

Client: Kleinfelder
 Project Name: DAX9 West Covina, CA
 Project No.: 20203313.001A
 Boring No.: B-2
 Sample No.: Bulk
 Visual Sample Description: Poorly-Graded Sand w/silt

AP Number: 20-0606
 Tested By: SM Date: 06/04/20
 Calculated By: NR Date: 06/05/20
 Checked By: AP Date: 06/09/20
 Depth(ft.): 2-5

METHOD A
 MOLD VOLUME (CU.FT) 0.0333

Compaction Method ASTM D1557
 ASTM D698
 Preparation Method Moist
 Dry

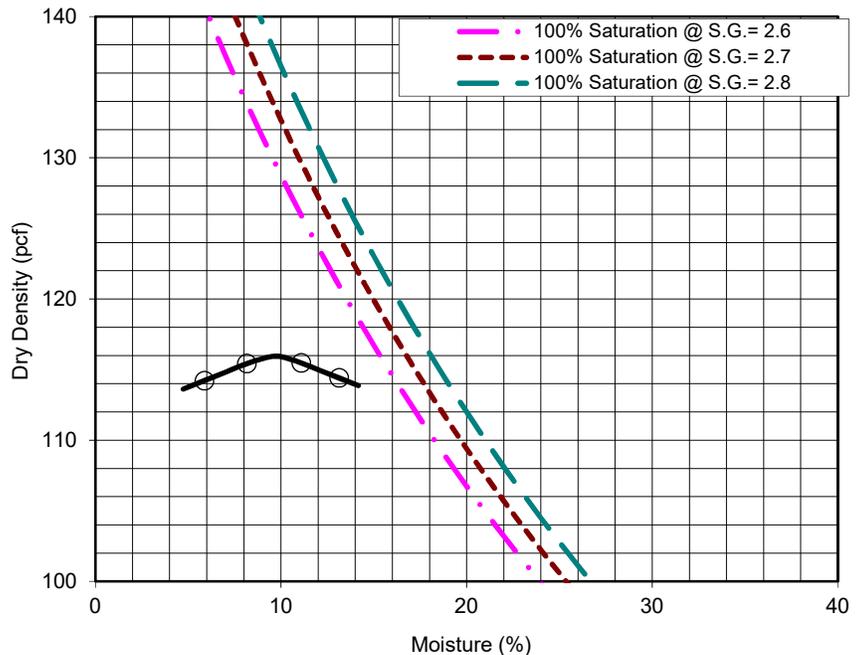
Wt. Comp. Soil + Mold (gm.)	3674	3733	3785	3802		
Wt. of Mold (gm.)	1845	1845	1845	1845		
Net Wt. of Soil (gm.)	1829	1888	1940	1957		
Container No.						
Wt. of Container (gm.)	149.68	147.36	151.07	151.95		
Wet Wt. of Soil + Cont. (gm.)	634.82	569.85	549.29	576.20		
Dry Wt. of Soil + Cont. (gm.)	607.89	537.99	509.53	526.94		
Moisture Content (%)	5.88	8.16	11.09	13.14		
Wet Density (pcf)	120.93	124.83	128.27	129.43		
Dry Density (pcf)	114.22	115.42	115.47	114.40		

Maximum Dry Density (pcf) 115.9
 Maximum Dry Density w/ Rock Correction (pcf) N/A

Optimum Moisture Content (%) 9.8
 Optimum Moisture Content w/ Rock Correction (%) N/A

PROCEDURE USED

- METHOD A: Percent of Oversize:** 0.9%
 Soil Passing No. 4 (4.75 mm) Sieve
 Mold : 4 in. (101.6 mm) diameter
 Layers : 5 (Five)
 Blows per layer : 25 (twenty-five)
- METHOD B: Percent of Oversize:** N/A
 Soil Passing 3/8 in. (9.5 mm) Sieve
 Mold : 4 in. (101.6 mm) diameter
 Layers : 5 (Five)
 Blows per layer : 25 (twenty-five)
- METHOD C: Percent of Oversize:** N/A
 Soil Passing 3/4 in. (19.0 mm) Sieve
 Mold : 6 in. (152.4 mm) diameter
 Layers : 5 (Five)
 Blows per layer : 56 (fifty-six)



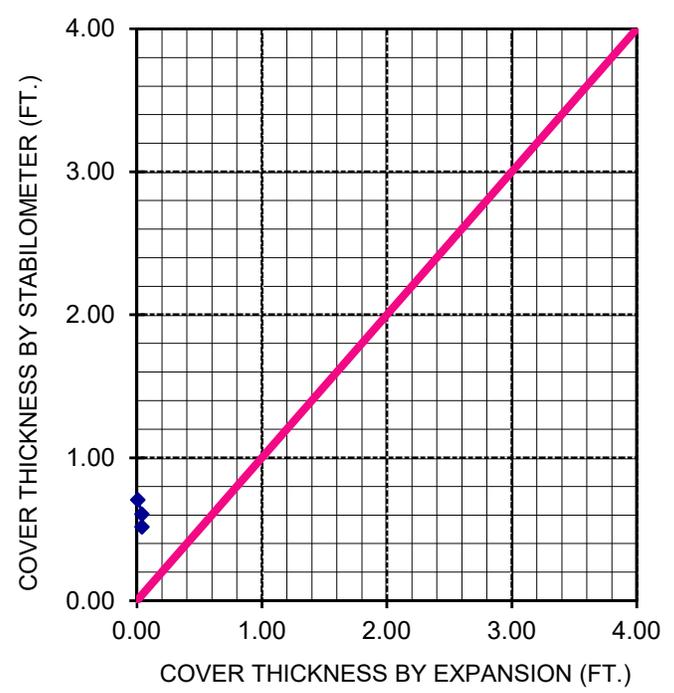
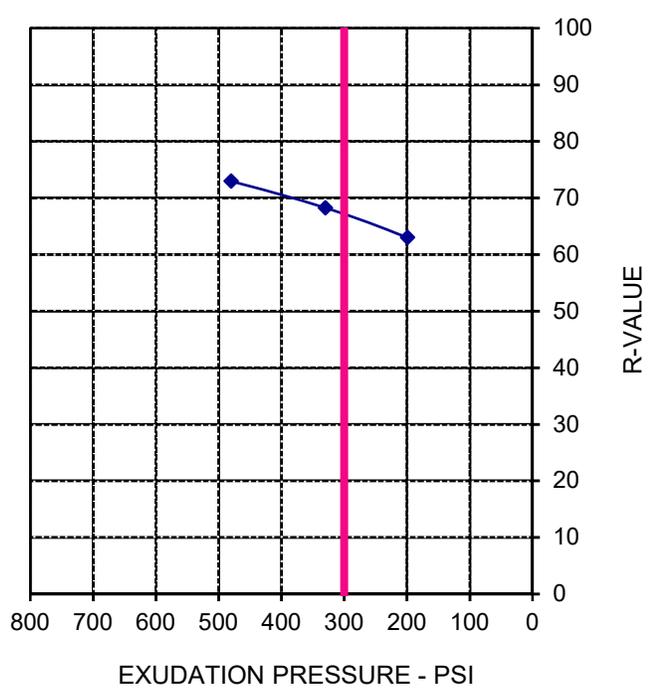


R-VALUE TEST DATA
 ASTM D2844

Project Name	<u>DAX9 West Covina, CA</u>	Tested By:	<u>ST</u>	Date:	<u>06/03/20</u>
Project Number:	<u>20203313.001A</u>	Computed By:	<u>KM</u>	Date:	<u>06/08/20</u>
Boring No.:	<u>B-1</u>	Checked By:	<u>AP</u>	Date:	<u>06/09/20</u>
Sample No.:	<u>Bulk</u>	Depth (ft.):	<u>2-5</u>		
Location:	<u>N/A</u>				
Soil Description:	<u>Silty Sand</u>				

Mold Number	A	C	B
Water Added, g	33	38	44
Compact Moisture(%)	11.3	11.8	12.4
Compaction Gage Pressure, psi	250	250	250
Exudation Pressure, psi	480	330	199
Sample Height, Inches	2.5	2.5	2.5
Gross Weight Mold, g	3024	3042	3054
Tare Weight Mold, g	1968	1969	1967
Net Sample Weight, g	1056	1073	1087
Expansion, inches $\times 10^{-4}$	12	12	2
Stability 2,000 (160 psi)	14/25	17/30	20/36
Turns Displacement	5.00	5.03	5.05
R-Value Uncorrected	73	68	63
R-Value Corrected	73	68	63
Dry Density, pcf	115.0	116.3	117.2
Traffic Index	8.0	8.0	8.0
G.E. by Stability	0.52	0.61	0.71
G.E. by Expansion	0.04	0.04	0.01

R-VALUE	By Exudation:	67
	By Expansion:	*N/A
	At Equilibrium: (by Exudation)	67
Remarks	Gf = 1.34, and 0.0 % Retained on the 3/4" *Not Applicable	



APPENDIX C Photo Log



1

	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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3

	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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PROJECT NO.	20203313.001A
DRAWN:	02/2020
DRAWN BY:	HTM
CHECKED BY:	ZSJ
FILE NAME:	APPENDIX C

PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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PROJECT NO.	20203313.001A
DRAWN:	02/2020
DRAWN BY:	HTM
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FILE NAME:	APPENDIX C

PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



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PROJECT NO.	20203313.001A
DRAWN:	02/2020
DRAWN BY:	HTM
CHECKED BY:	ZSJ
FILE NAME:	APPENDIX C

PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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PROJECT NO.	20203313.001A
DRAWN:	02/2020
DRAWN BY:	HTM
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FILE NAME:	APPENDIX C

PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM		
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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PROJECT NO.	20203313.001A
DRAWN:	02/2020
DRAWN BY:	HTM
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FILE NAME:	APPENDIX C

PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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 <p>KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com</p>	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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PROJECT NO.	20203313.001A
DRAWN:	02/2020
DRAWN BY:	HTM
CHECKED BY:	ZSJ
FILE NAME:	APPENDIX C

PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM		
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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PROJECT NO.	20203313.001A
DRAWN:	02/2020
DRAWN BY:	HTM
CHECKED BY:	ZSJ
FILE NAME:	APPENDIX C

PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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PROJECT NO.	20203313.001A
DRAWN:	02/2020
DRAWN BY:	HTM
CHECKED BY:	ZSJ
FILE NAME:	APPENDIX C

PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



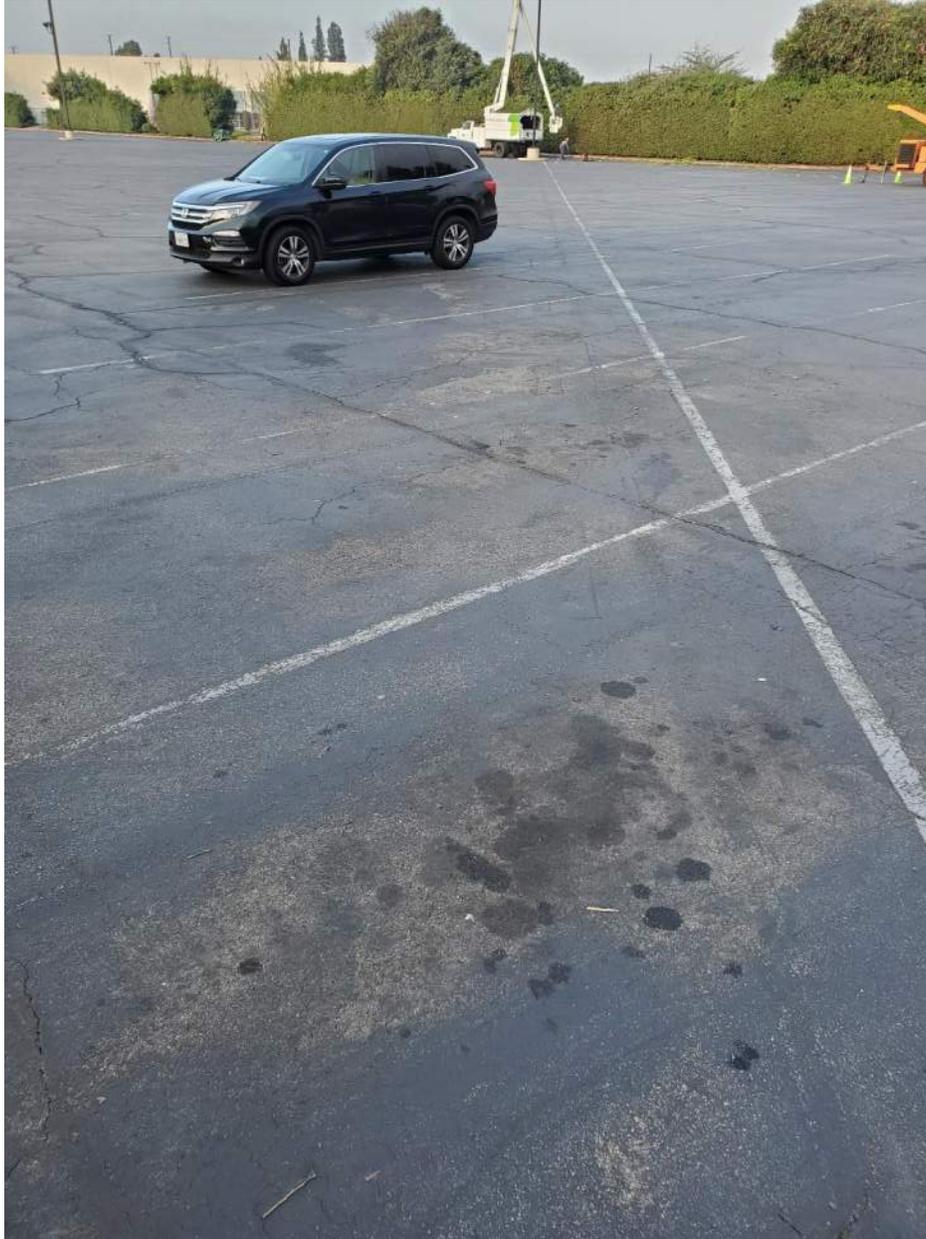
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
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	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



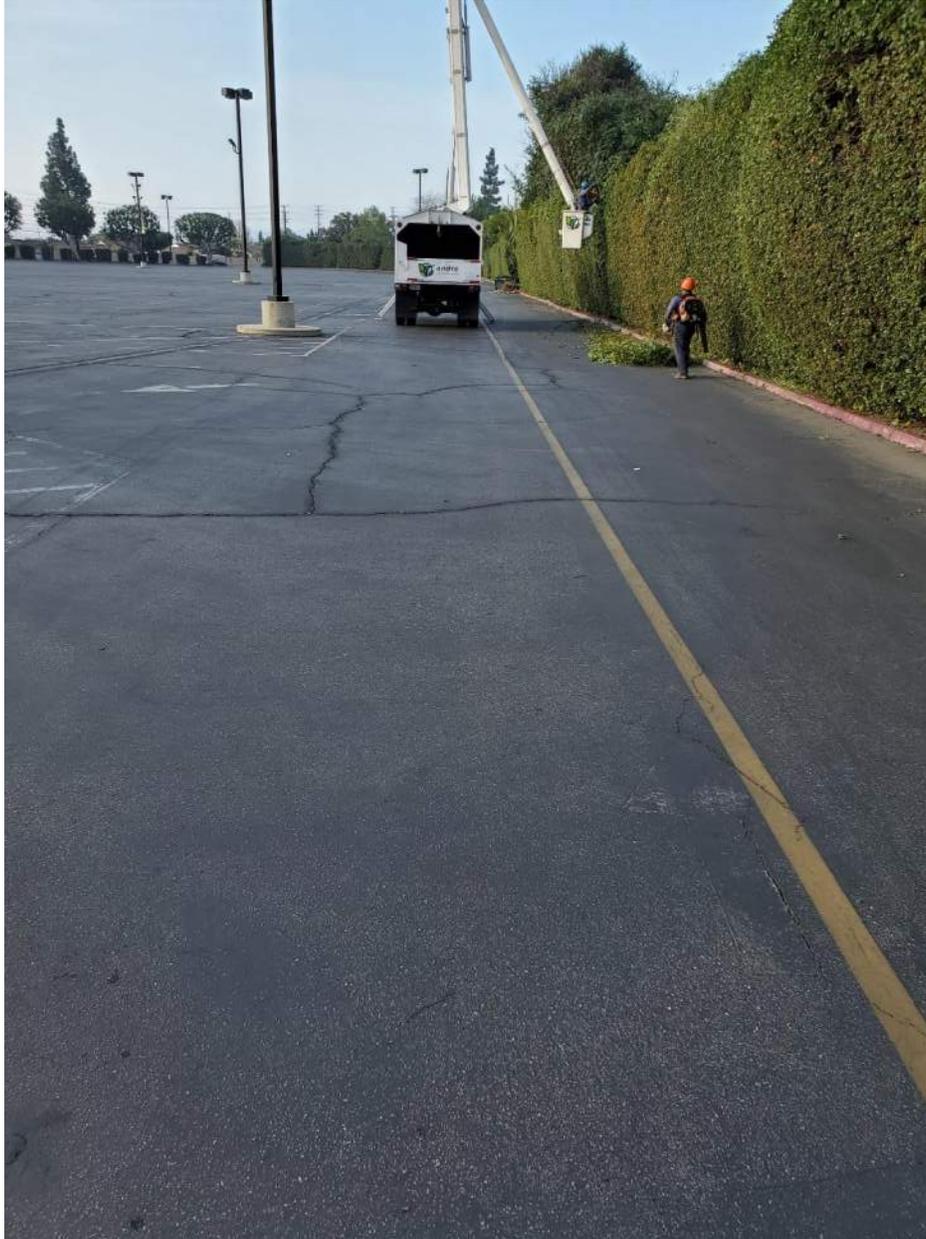
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	<p style="text-align: center;">PAVEMENT PHOTO LOG</p> <p style="text-align: center;">Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790</p>	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM		
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PROJECT NO.	20203313.001A
DRAWN:	02/2020
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CHECKED BY:	ZSJ
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PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



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PROJECT NO.	20203313.001A
DRAWN:	02/2020
DRAWN BY:	HTM
CHECKED BY:	ZSJ
FILE NAME:	APPENDIX C

PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	FIGURE:
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
	FILE NAME: APPENDIX C		



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
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	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	FIGURE:
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PROJECT NO.	20203313.001A
DRAWN:	02/2020
DRAWN BY:	HTM
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PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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PROJECT NO.	20203313.001A
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DRAWN BY:	HTM
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PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
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	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
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	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
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	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
	CHECKED BY: ZSJ		
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PROJECT NO.	20203313.001A
DRAWN:	02/2020
DRAWN BY:	HTM
CHECKED BY:	ZSJ
FILE NAME:	APPENDIX C

PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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PROJECT NO.	20203313.001A
DRAWN:	02/2020
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PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
 West Covina, CA 91790

FIGURE:



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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PROJECT NO.	20203313.001A
DRAWN:	02/2020
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PAVEMENT PHOTO LOG

Proposed DAX9 Warehouse Improvements
 1211 Badillo Street
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FIGURE:



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	PROJECT NO. 20203313.001A	PAVEMENT PHOTO LOG	FIGURE:
	DRAWN: 02/2020		
	DRAWN BY: HTM	Proposed DAX9 Warehouse Improvements 1211 Badillo Street West Covina, CA 91790	
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APPENDIX D

Infiltration Testing Results
