PROJECT DESCRIPTION
Kiln Stack and Cooler Vent Stack

Introduction

Lehigh Southwest Cement Company seeks approval from the Santa Clara County Architecture and Site Approval Committee to replace certain emissions control equipment at the Permanente Cement Plant. The equipment is required by the Bay Area Air Quality Management District's ("BAAQMD") to comply with air emissions requirements. The zoning ordinance[1] authorizes the installation of air pollution control equipment subject to approval by the ASA Committee.

Approval will allow Lehigh to replace existing emissions equipment with taller stacks that improve atmospheric dispersion of missions. The equipment is necessary to comply with BAAQMD's "Hot Spots Program" and to comply with a September 2013 compliance agreement with BAAQMD that requires Lehigh to reduce the potential health risks associated with cement manufacturing emissions.

Site Description

The project would replace components of the existing Permanente Cement Plant. The plant site is located in an unincorporated foothill area of Santa Clara County, approximately two miles west of the City of Cupertino. It lies within an approximately 77-acre parcel designated as APN 351-10-005. Topography within the parcel slopes west to east, from approximately 500 to 800 feet above sea level ("asl"). The base elevation of the kiln stack is 661 asl; the base elevation of the cooler stack is 584 feet asl. The parcel is part of a larger 3,510-acre property that includes the cement plant and the Permanente Quarry, a surface mining operation that extracts limestone for delivery to the cement plant. The parcel is zoned "Exclusive Agriculture."

Project Overview

The Permanente Cement Plant, like most major cement plants, manufactures Portland cement through a pyroprocess, in which calcium carbonate (limestone) reacts with other minerals at the extremely high temperature achieved in a rotary kiln. The combustion generates emissions that, currently, are vented to the atmosphere by a series of 34 short stacks located at the southern end of the plant. Lehigh proposes to replace the 34 short stacks with a free-standing single stack of 295 feet in height and 15 feet in diameter. The stack would be accompanied by a foundation, ducting and connections as needed to integrate the single stack within the existing plant components.

Lehigh also proposes to install a second, smaller stack in the northern section of the cement plant to exhaust gases relating to the clinker cooler system. The cooler vent stack will be 116 feet in height and 7 feet in diameter. It will replace an existing set of ten short stacks with a single, taller stack to improve dispersion of clinker cooler emissions, and further improve overall emissions from the cement plant. The single stack would include a foundation, ducting and new connections as needed to integrate with the existing components. Neither equipment change will result in any change to the plant's output or production capacity, or to the adjacent surface mining operation.

[1] SCC Zoning Ordinance, Supplemental Development Standards, § 4.20.110(B)(5).

The stacks represent typical emissions control equipment for a modern cement plant, demonstrated by their use at similar plants, and through BAAQMD's requirements. The stacks' foundations will occupy small portions of areas which are currently paved. The foundation areas are flat and have received geotechnical review. No significant grading is needed, and no parking is required for the project. As stack equipment is assembled off-site, on-site construction will be minimal and will not generate significant construction traffic or noise. The stacks also would be visually in keeping with structures that currently exist, including the pre-heater tower and hillside conveyor equipment which have elevated visual profiles. The project would not adversely affect vegetation, habitat, water use, traffic, geology or other resources. Engineering details for both stacks are included in building permit submittals dated December 2013 and January 2014.

The Permanente Cement Plant currently has all required land use entitlements, under a use permit issued by the County in 1939 and amendments thereto. The plant has operated since 1939 under a May 8, 1939 use permit which allows the "erection, construction and operation of a cement mill and the storage of cement…" The plant was recognized as the world's largest in the 1940s and 1950s and has played a continuing role in the supply of Portland cement to the County and broader San Francisco Bay Area. Lehigh is not requesting any modification to its use permit in connection with this project.

The current application follows past actions by the County to allow the replacement of cement plant equipment with modern technology. In 1977, the County approved plans to replace six "wet" kilns with a single dry kiln in a different location that featured greatly improved energy efficiency and fewer emissions. The action allowed a replacement cement plant and demolition of many of the former structures. The 1977 plant replacement project proceeded under CEQA categorical exemptions.

* * *

Lehigh Hanson

HEIDELBERGCEMENT Group

LEHIGH PERMANENTE PLANT - SANTA CLARA COUNTY, CA
KILN VENT SYSTEM AND CLINKER COOLER VENT SYSTEM REPLACEMENT

SITE PLAN
SCALE: N.T.S.

PROJECT PURPOSE

THE PROJECT'S PURPOSE IS TO REPLACE CERTAIN EMISSIONS EQUIPMENT. THE REPLACEMENT IS NEEDED TO MEET FUTURE EMISSIONS STANDARDS ESTABLISHED BY THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT ("BAAQMD"), INCLUDING BAAQMD'S "HOT SPOTS PROGRAM" REQUIREMENTS. THE PROJECT ALSO IS NEEDED TO COMPLY WITH A SEPTEMBER 2013 COMPLIANCE AGREEMENT WITH BAAQMD, WHICH REQUIRES LEHIGH TO REDUCE THE POTENTIAL HEALTH RISKS ASSOCIATED WITH CEMENT MANUFACTURING EMISSIONS.

PROJECT DESCRIPTION

LEHIGH SOUTHWEST CEMENT COMPANY, AT ITS PERMANENTE CEMENT PLANT, IS PROPOSING REPLACEMENT OF EXISTING MULTIPLE EXHAUST SOURCES AT THE KILN VENT AND CLINKER COOLER, WITH SINGLE STACKS.
KILN VENT SYSTEM: THE PROJECT REQUIRES DIRECTING THE CURRENT 34-STACK SYSTEM INTO A MANIFOLD, RUNNING THIS THROUGH A BOOSTER FAN AND INTO A SINGLE 15FT DIAMETER, 295FT TALL, FREE-STANDING STEEL STACK.
CLINKER COOLER VENT SYSTEM: THE NEW SINGLE STACK SYSTEM WILL REPLACE THE EXISTING 10-STACK COOLER DUST COLLECTOR SYSTEM WITH A SINGLE STACK. THE NEW SINGLE STACK SYSTEMS WILL BE BUILT TO MEET OR EXCEED ALL APPLICABLE BUILDING CODE STANDARDS.

PROJECT DATA

APN: 351-10-005
ADDRESS: 24001 STEVENS CREEK BOULEVARD, CUPERTINO
ZONING: HS-d1
--NO HABITABLE SPACES, NO INCREASE IN FLOOR AREA, NO GRADING PROPOSED, NO CHANGE TO EXISTING SITE DRAINAGE OR UTILITIES.

PROJECT DIRECTORY

OWNER:
LEHIGH PERMANENTE PLANT
24001 STEVENS CREEK BLVD.
CUPERTINO, CA 95014

OWNER ENGINEER:
HEIDELBERG TECHNOLOGY CENTER
7660 IMPERIAL WAY
ALLENTOWN, PA
610-366-4600

CONSULTING ENGINEER:
LEHIGH VALLEY TECHNICAL ASSOCIATES INC.
1584 WEAVERSVILLE ROAD
NORTHAMPTON, PA
610-262-6345

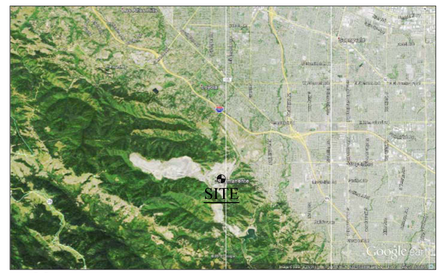
STACK DESIGNER:
WARREN ENVIRONMENT INC.
5075 ROSWELL ROAD
ATLANTA, GA
404-843-8333

ELECTRICAL ENGINEER:
DAMATT PROFESSIONAL ENGINEERING CORPORATION
510 THIRD STREET, SUITE 201
OAKLAND, CA 94607
501-891-0970
PROJECT NO. 1343A

CONSULTING ENGINEER:
S.Y. KIM PE SE
2384 LANCASTER COURT
HATWARD, CA 94542
510-582-9718

CONSULTING ARCHITECT:
RMW ARCHITECTURE & INTERIORS
160 PINE STREET SUITE 400
SAN FRANCISCO, CA 94720
415-781-9800

GEOTECHNICAL ENGINEER:
PSI (PROFESSIONAL SERVICE INDUSTRIES) INC.
4703 TIDEWATER AVE. SUITE B
OAKLAND, CA 94601
510-434-9200
PROJECT NO. PSI-575-595-1



AREA MAP
SCALE: N.T.S.

VICINITY MAP
SCALE: N.T.S.

1

Lehigh Valley Technical Associates, Inc.
CONSULTING ENGINEERING / FABRICATION DETAILS
1584 Weaversville Road, Northampton, PA 18067-9039
Phone: 610-262-6345
Fax: 610-262-8188

LVTA PROJ. NO: 56546 | LVTA DWG. NO: TP001

EXTERNAL CONTRACTOR

SEAL

		REV:	DATE
		DWN:	
DWG. NO.	TITLE	CHD.:	
REFERENCE DRAWINGS		APPR.:	

REV:	DATE
DWN:	
CHD.:	
APPR.:	

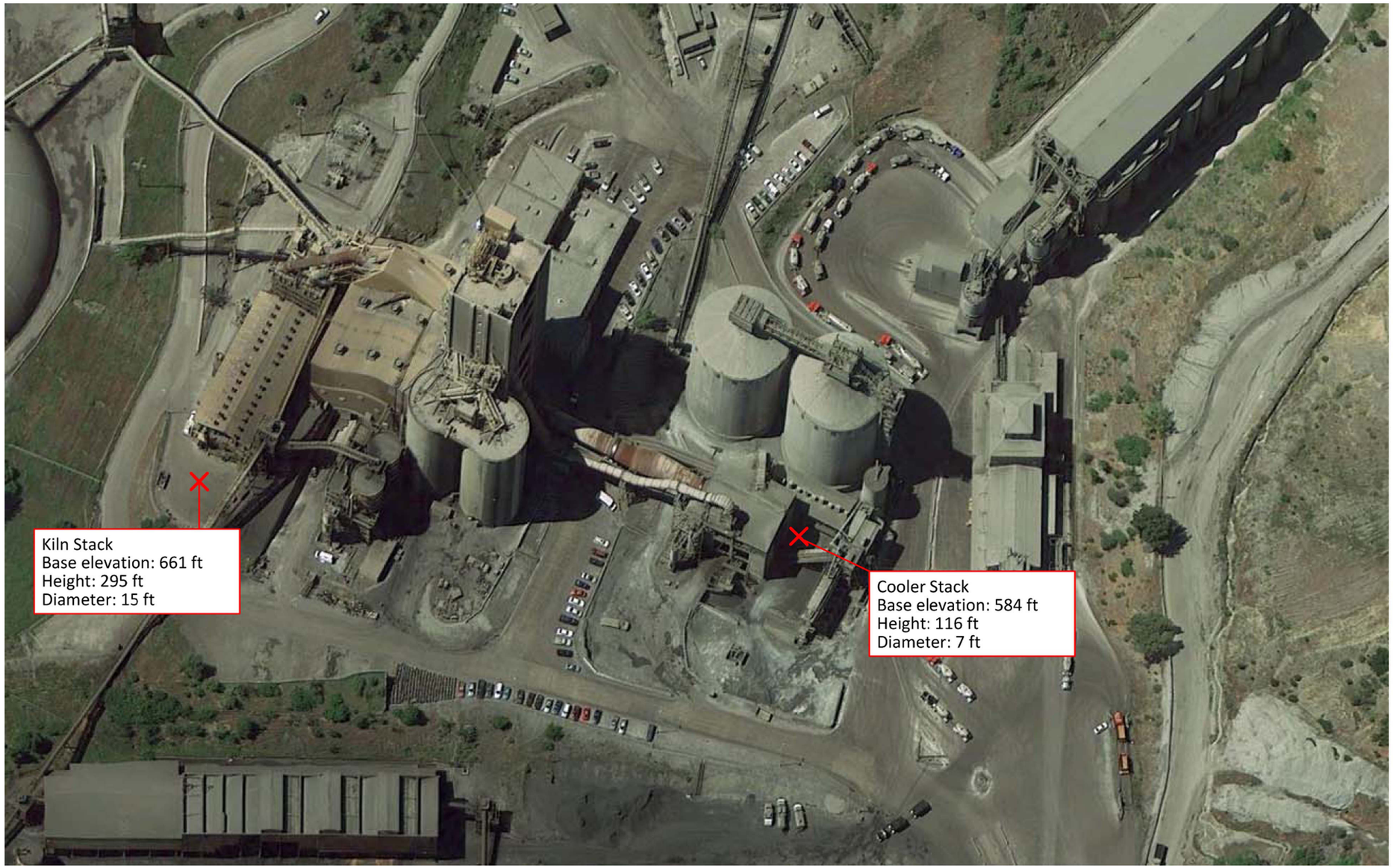
REV:	DATE
DWN:	
CHD.:	
APPR.:	

HEIDELBERG TECHNOLOGY CENTER
HEIDELBERGCEMENT Group

KILN VENT AND CLINKER COOLER SYSTEM REPLACEMENT

AFE#		DATE	
DRAWN	AJP	10/10/13	
CHD.			
APPR.			

DWG. TYPE	STRUC. ARRANGEMENT	SCALE	N.T.S.
PLANT	PERMANENTE, CA	SHEET	1
		OF	1
DWG. NO.		REV.	F



AERIAL VIEW

2

Lehigh Valley Technical Associates, Inc.
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1584 Weaversville Road, Northampton, PA 18067-9039
Phone: 610-262-6345
Fax: 610-262-8188

LVTA PROJ. NO: 56546 | LVTA DWG. NO:

EXTERNAL CONTRACTOR

SEAL

		REV:	DATE
		DWN:	
DWG. NO.	TITLE	CHD.:	
REFERENCE DRAWINGS		APPR.:	

REV:	DATE
DWN:	
CHD.:	
APPR.:	

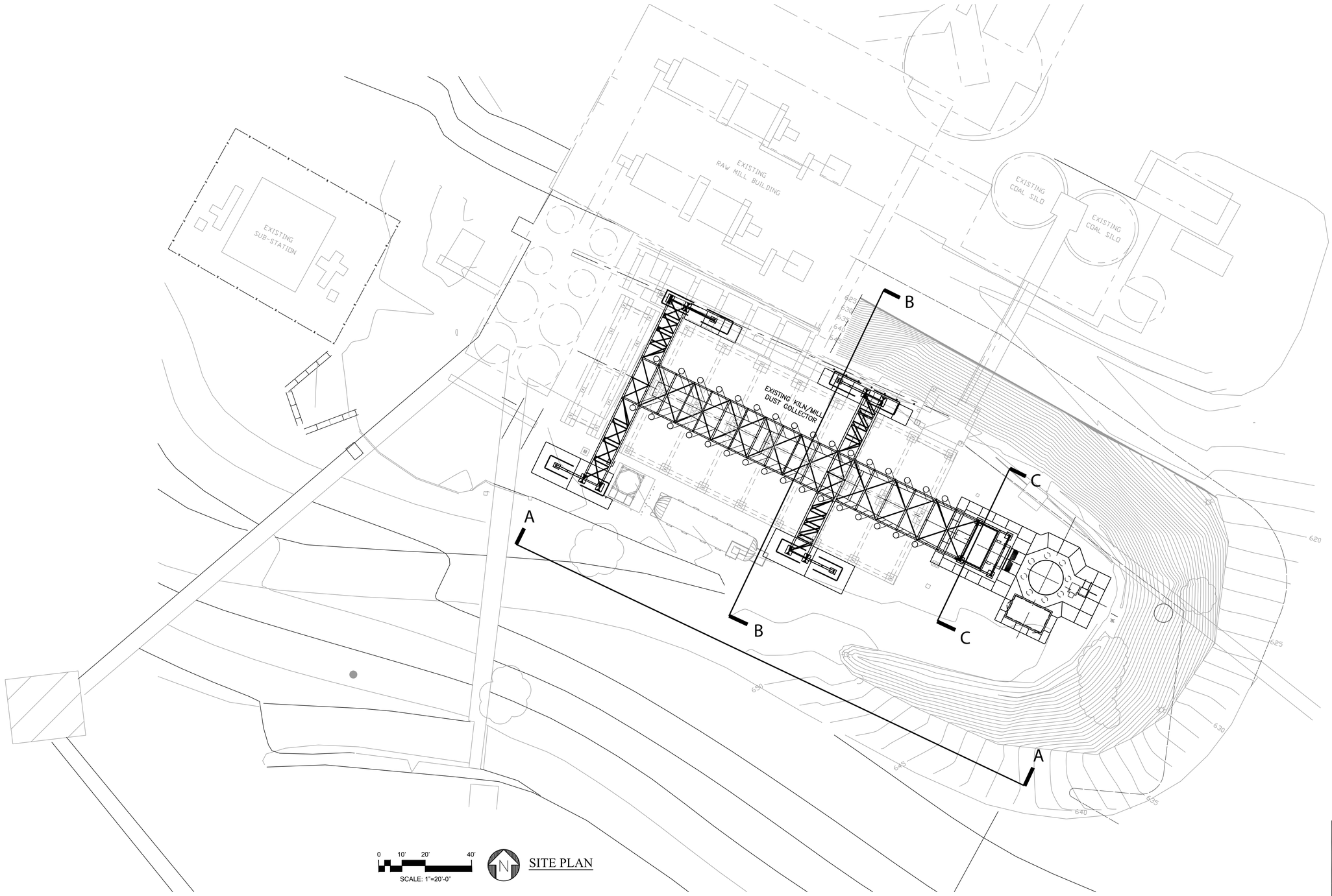
REV:	DATE
DWN:	
CHD.:	
APPR.:	

HEIDELBERG TECHNOLOGY CENTER
HEIDELBERG CEMENTGroup

KILN VENT AND CLINKER COOLER SYSTEM REPLACEMENT

AERIAL VIEW

AFE#	DATE	DWG. TYPE	SCALE
DRAWN		PLANT: PERMANENTE, CA	SHEET
CHD.			OF
APPR.		DWG. NO.	REV.



0 10' 20' 40'

SCALE: 1"=20'-0"

SITE PLAN

3

LVTA

Lehigh Valley
Technical Associates, Inc.

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1584 Weaversville Road, Northampton, PA 18067-9039
Phone: 610-262-6345
Fax: 610-262-8188

LVTA PROJ. NO: 56546 | LVTA DWG. NO: SP002

SEAL

EXTERNAL CONTRACTOR

DWG. NO.	TITLE	REV:	DATE
		DWN:	
		CHD.:	
REFERENCE DRAWINGS		APPR.:	

REV:	DATE
DWN:	
CHD.:	
APPR.:	

REV:	DATE
DWN:	
CHD.:	
APPR.:	

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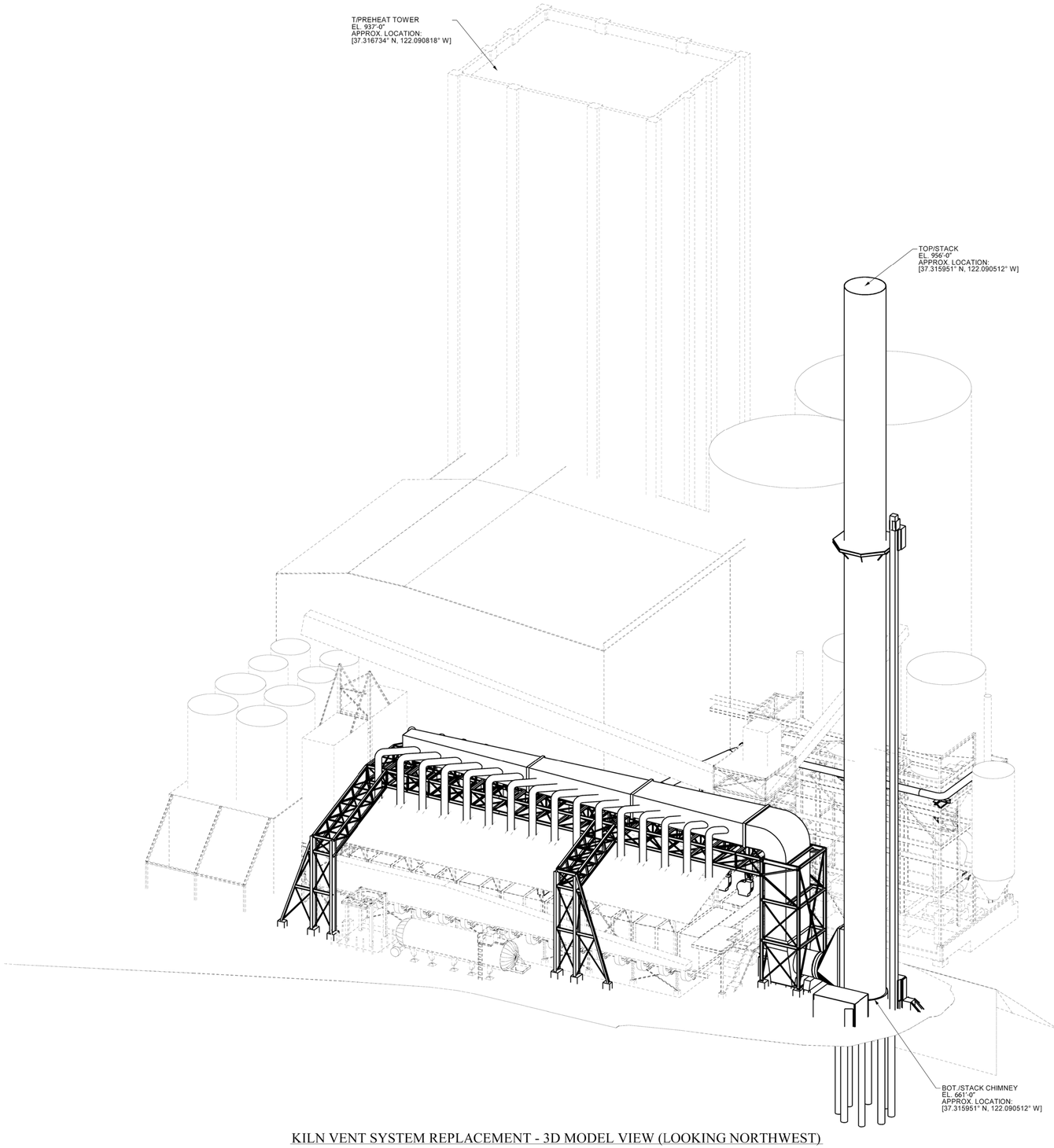
KILN VENT SYSTEM REPLACEMENT

SITE PLAN

AFE#		DATE	DWG. TYPE	CIVIL	SCALE	1"=20'-0"
DRAWN	DRL	10/31/13	PLANT	PERMANENTE, CA	SHEET	2
CHD.					OF	X
APPR.			DWG. NO.		REV.	F



KILN VENT SYSTEM REPLACEMENT - 3D MODEL VIEW (LOOKING NORTHWEST)

4

		REV:	DATE
		DWN:	
DWG. NO.	TITLE	CHD.:	
REFERENCE DRAWINGS		APPR.:	

REV:	DATE
DWN:	
CHD.:	
APPR.:	

REV: F	DATE
DWN: ABB	
CHD.:	
APPR.:	

HEIDELBERG TECHNOLOGY CENTER
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KILN VENT SYSTEM REPLACEMENT

3D MODEL VIEW

Lehigh Valley Technical Associates, Inc.
CONSULTING ENGINEERING / FABRICATION DETAILS
1584 Weaversville Road, Northampton, PA 18067-9039
Phone: 610-262-6345
Fax: 610-262-8188

LVTA PROJ. NO: 56546 | LVTA DWG. NO: GA002

SEAL

EXTERNAL CONTRACTOR

AFE#:	DATE:	DWG. TYPE STRUCTURAL ARRANGEMENT	SCALE N.T.S.
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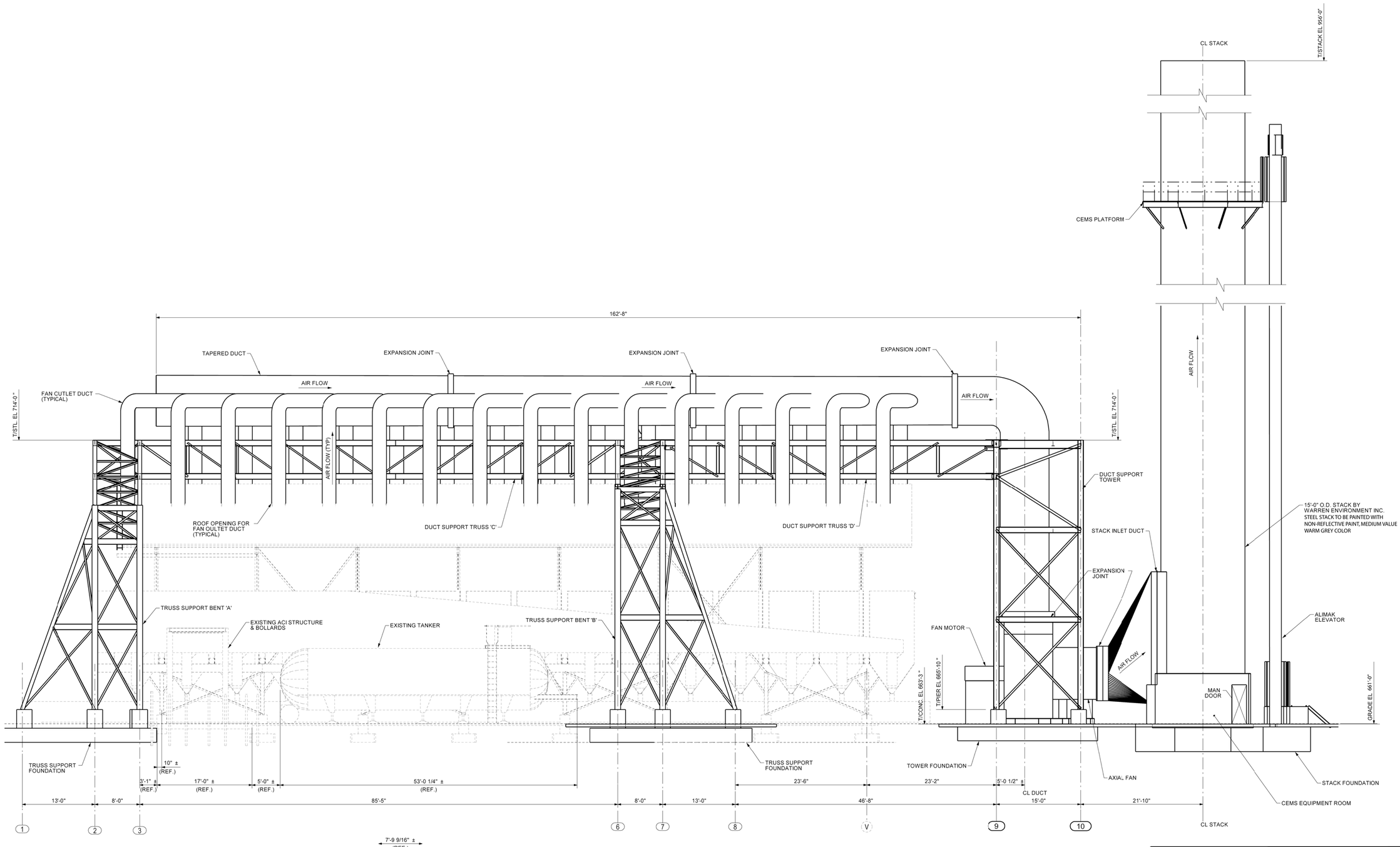
CHD:			OF 8
APPR:		DWG. NO.	REV. F



SECTION A - A (LOOKING NORTH)

SCALE: 1/8" = 1'-0"

(-) - INDICATES EXISTING COLUMN LINE;

5

		REV:	DATE
		DWN:	
DWG. NO.	TITLE	CHD.:	
REFERENCE DRAWINGS		APPR.:	

REV:	DATE
DWN:	
CHD.:	
APPR.:	

REV: F	DATE
DWN: ABB	
CHD.:	
APPR.:	

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KILN VENT SYSTEM REPLACEMENT

SECTION A-A

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Phone: 610-262-6345
Fax: 610-262-8188

LVTA PROJ. NO: 56546 | LVTA DWG. NO: GA005

EXTERNAL CONTRACTOR

SEAL

AFE#:	DATE:	DWG. TYPE STRUCTURAL ARRANGEMENT	SCALE AS NOTED
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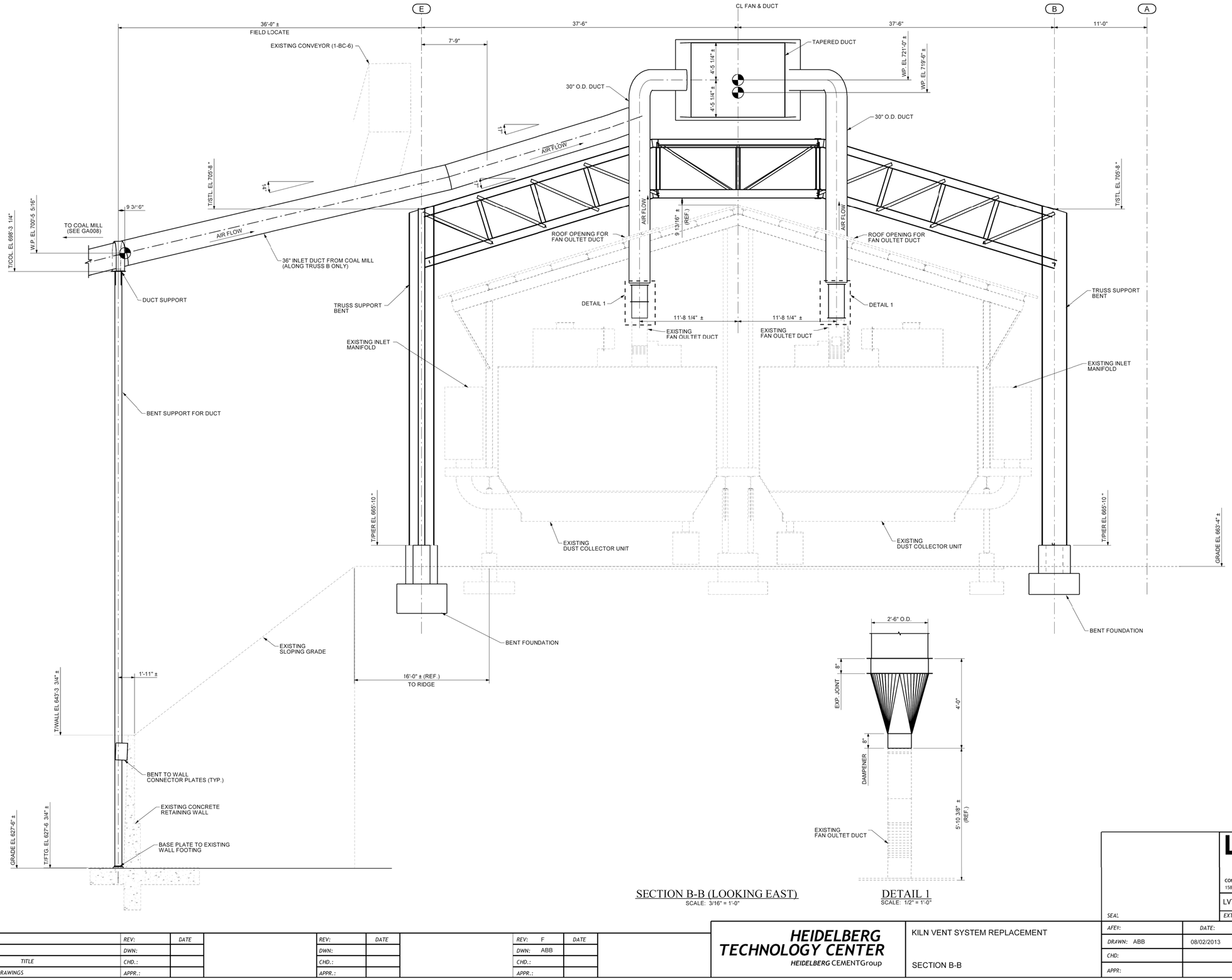
CHD:			OF 8
APPR:		DWG. NO.	REV. F



SECTION B-B (LOOKING EAST)
SCALE: 3/16" = 1'-0"

DETAIL 1
SCALE: 1/2" = 1'-0"

6

		REV:	DATE		REV:	DATE		REV: F	DATE		
		DWN:			DWN:			DWN: ABB			
DWG. NO.	TITLE	CHD.:			CHD.:			CHD.:			
REFERENCE DRAWINGS		APPR.:			APPR.:			APPR.:			

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KILN VENT SYSTEM REPLACEMENT

SECTION B-B

AFE#:	DATE:	DWG. TYPE	STRUCTURAL ARRANGEMENT	SCALE	AS NOTED
DRAWN: ABB	08/02/2013	PLANT	PERMANENTE, CA	SHEET	6
CHD:				OF	8
APPR:		DWG. NO.		REV.	F

SEAL

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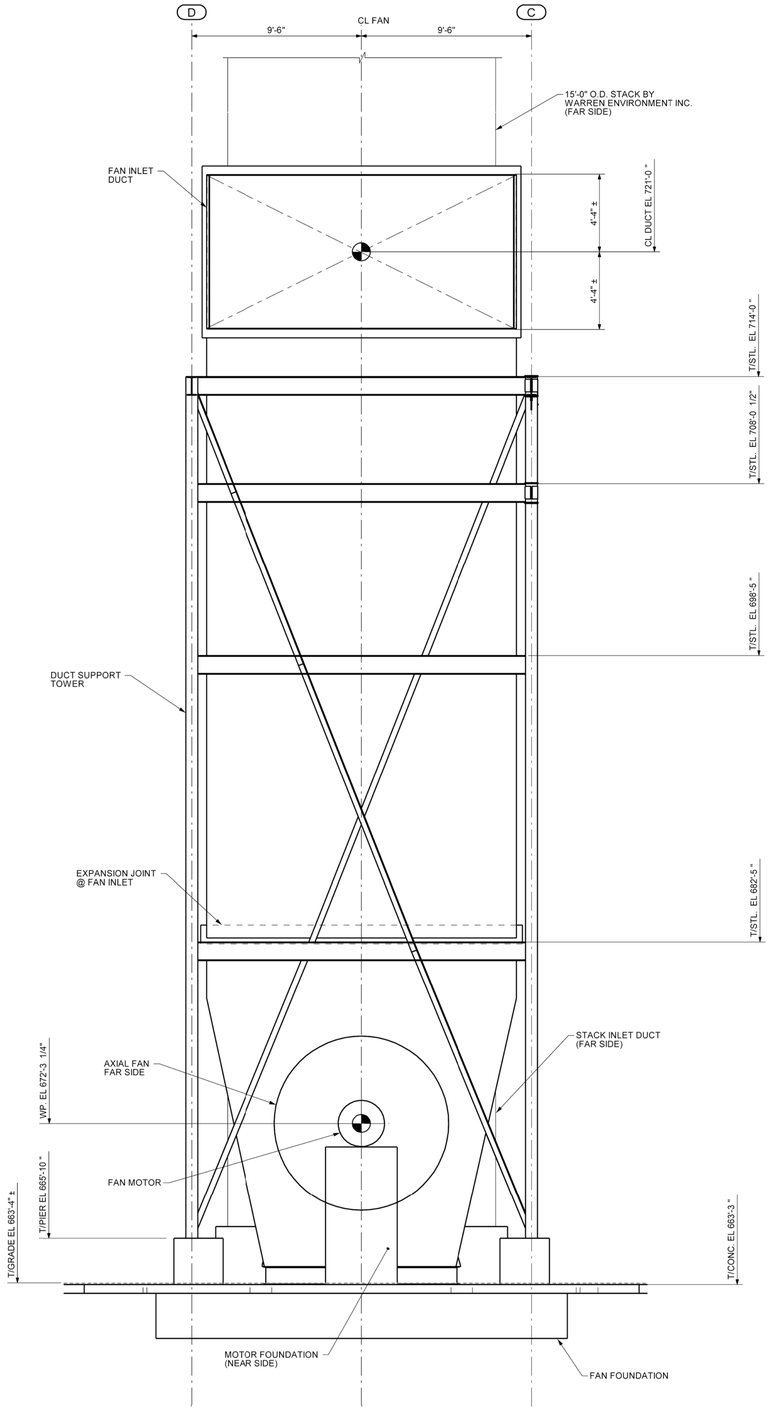
1584 Weaversville Road, Northampton, PA 18067-9039
Phone: 610-262-6345
Fax: 610-262-8188

LVTA PROJ. NO: 56546 | LVTA DWG. NO: GA006

EXTERNAL CONTRACTOR



SECTION C-C (LOOKING EAST)

SCALE: 1/4" = 1'-0"

7

		REV:	DATE
		DWN:	
DWG. NO.	TITLE	CHD.:	
REFERENCE DRAWINGS		APPR.:	

REV:	DATE
DWN:	
CHD.:	
APPR.:	

REV: F	DATE
DWN: ABB	
CHD.:	
APPR.:	

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KILN VENT SYSTEM REPLACEMENT

SECTION C-C & D

SEAL

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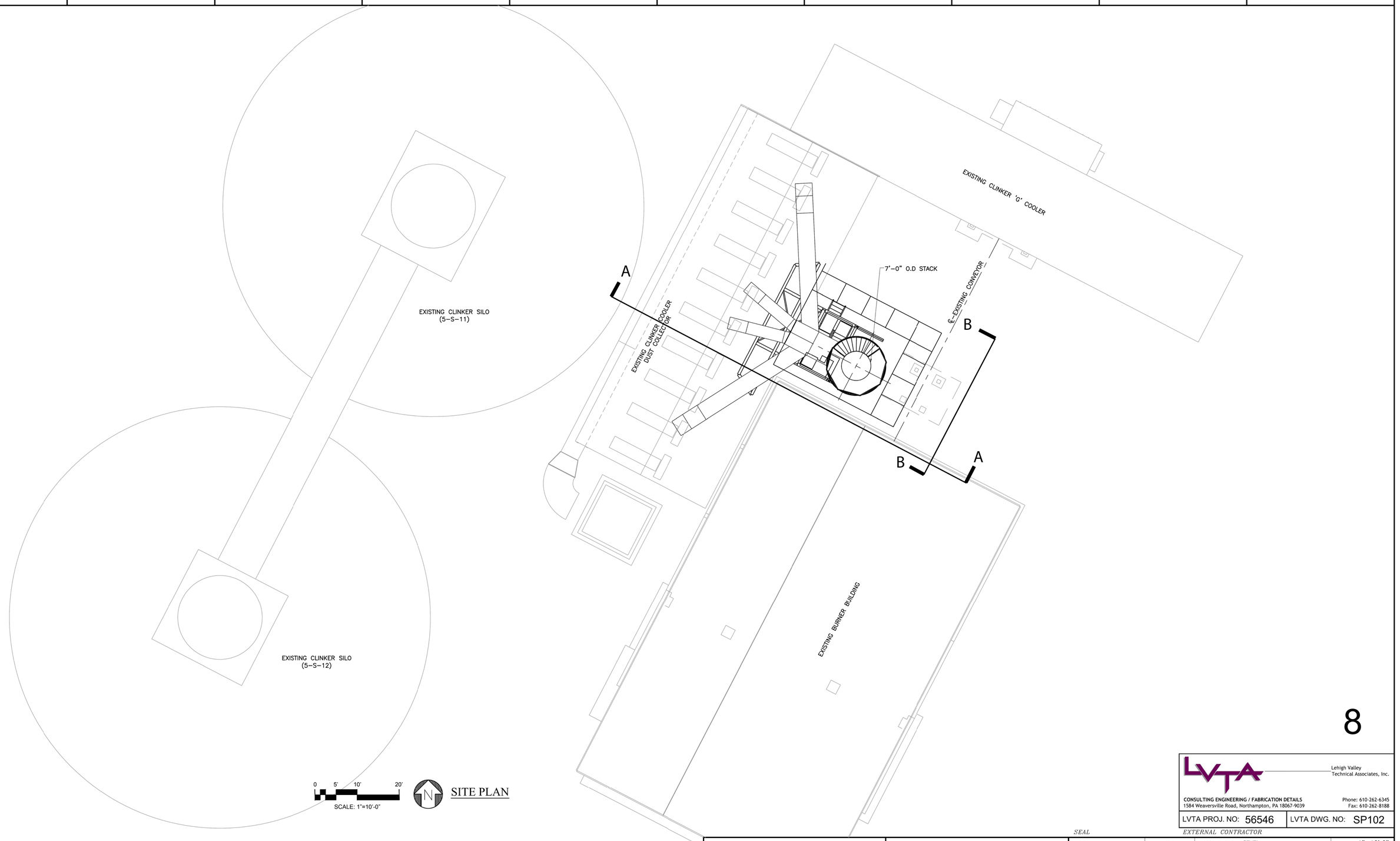
Phone: 610-262-6345
Fax: 610-262-8188

LVTA PROJ. NO: 56546 | LVTA DWG. NO: GA007

EXTERNAL CONTRACTOR

AFE#:	DATE:	DWG. TYPE STRUCTURAL ARRANGEMENT	SCALE AS NOTED
DRAWN: ABB	08/02/2013	PLANT PERMANENTE, CA	SHEET 7
CHD:			OF 8
APPR:		DWG. NO.	REV. F



SITE PLAN

8

LVTA — Lehigh Valley Technical Associates, Inc.
CONSULTING ENGINEERING / FABRICATION DETAILS
1584 Weaversville Road, Northampton, PA 18067-9039
Phone: 610-262-6345
Fax: 610-262-8188

LVTA PROJ. NO: 56546 | LVTA DWG. NO: SP102

SEAL

EXTERNAL CONTRACTOR

DWG. NO.	TITLE
	REFERENCE DRAWINGS

	REV:	DATE
	DWN:	
	CHD.:	
	APPR.:	

	REV:	DATE
	DWN:	
	CHD.:	
	APPR.:	

	REV:	DATE
	DWN:	
	CHD.:	
	APPR.:	

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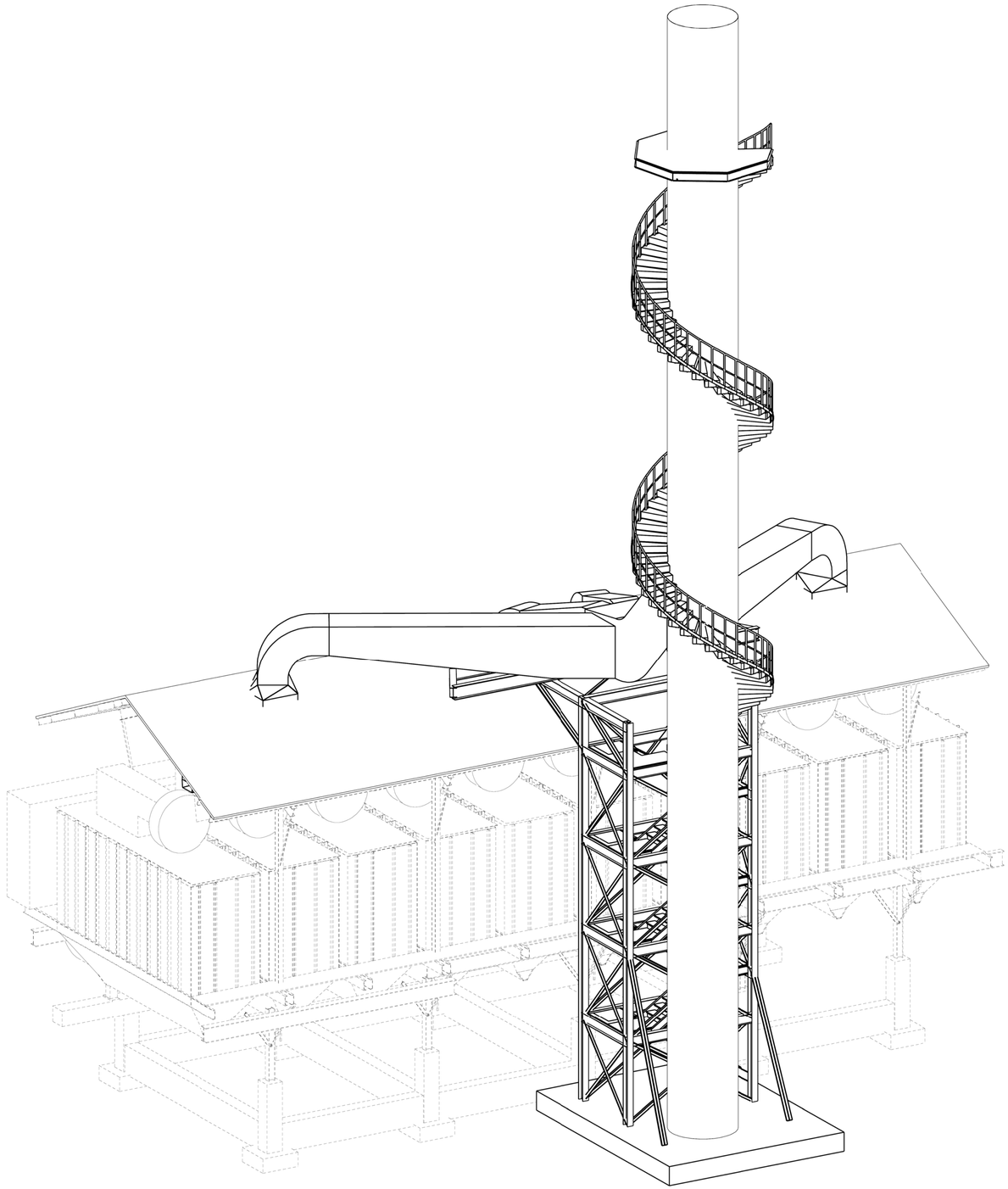
CLINKER COOLER VENT SYSTEM REPLACEMENT

SITE PLAN

AFE#		DWG. TYPE	CIVIL
DRAWN	DRL	DATE	10/31/13
CHD.		PLANT	PERMANENTE, CA
APPR.		DWG. NO.	

SCALE 1"=10'-0"
SHEET 2
OF X
REV. A



COOLER VENT SYSTEM REPLACEMENT
3D MODEL VIEW (LOOKING NORTHWEST)
NO SCALE

9

		REV:	DATE
		DWN:	
DWG. NO.	TITLE	CHD.:	
REFERENCE DRAWINGS		APPR.:	

REV:	DATE
DWN:	
CHD.:	
APPR.:	

REV: A	DATE
DWN: ABB	
CHD.:	
APPR.:	

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HEIDELBERG CEMENTGroup

CLINKER COOLER VENT SYSTEM REPLACEMENT

3D MODEL VIEW

SEAL

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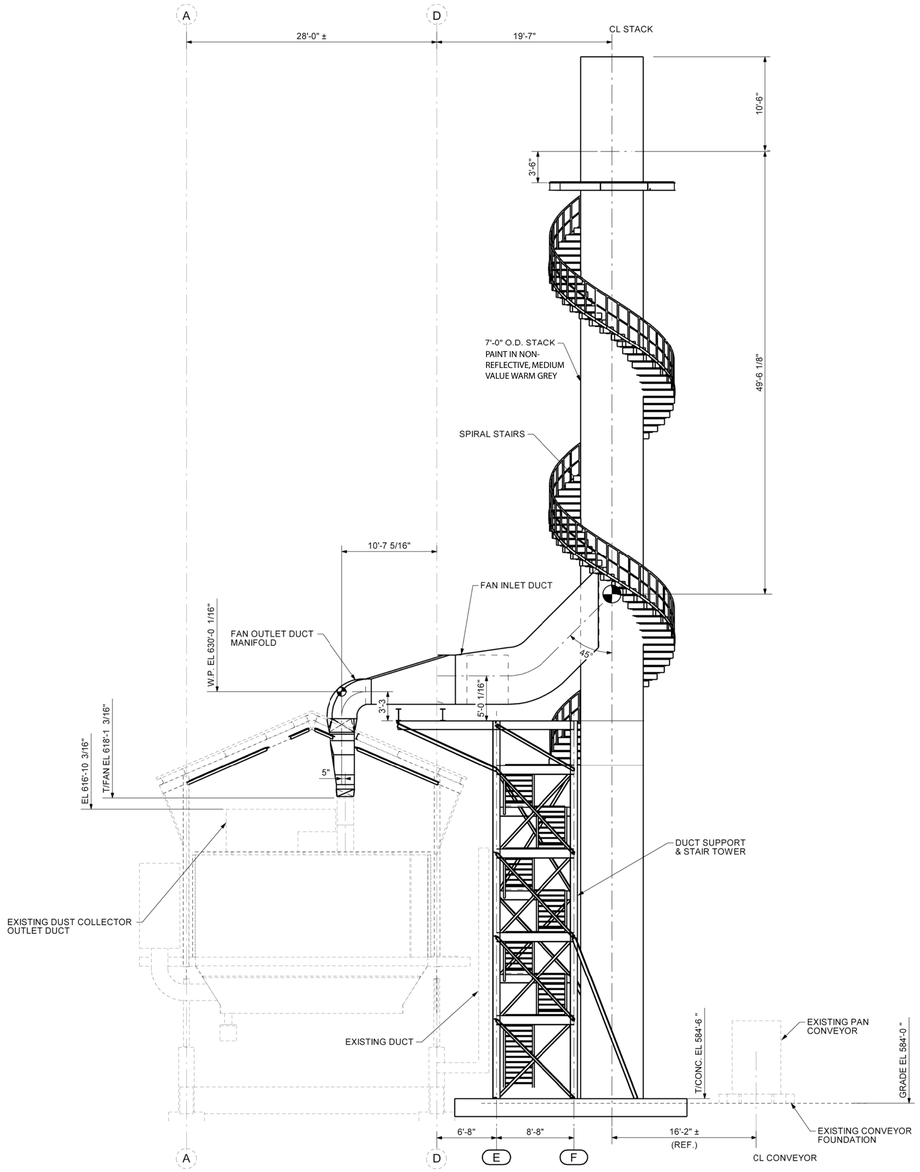
Phone: 610-262-6345
Fax: 610-262-8188

LVTA PROJ. NO: 56546 | LVTA DWG. NO: GA102

EXTERNAL CONTRACTOR

AFE#:	DATE:	DWG. TYPE STRUCTURAL ARRANGEMENT	SCALE N.T.S.
DRAWN: JGK	09/08/2013	PLANT PERMANENTE, CA	SHEET 2 OF X
CHD:			
APPR:		DWG. NO.	REV. A



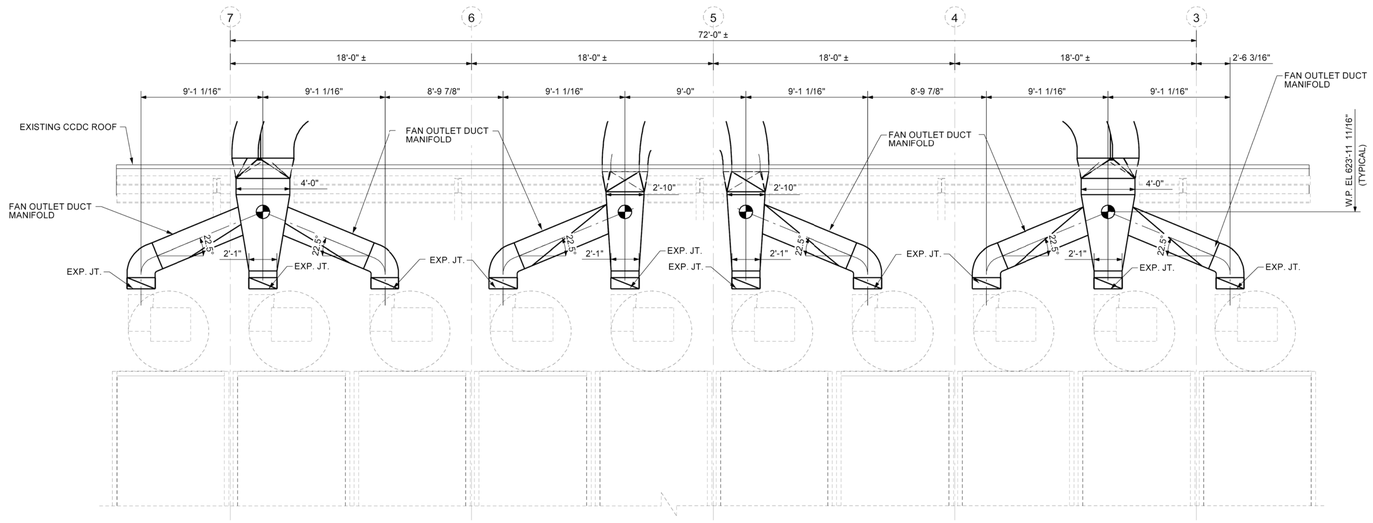
SECTION A - A (LOOKING NORTH)

SCALE: 1/8" = 1'-0"

NOTE: PARTIAL HANDRAIL NOT SHOWN FOR CLARITY

- - INDICATES EXISTING COLUMN LINE

(DWG. GA104)

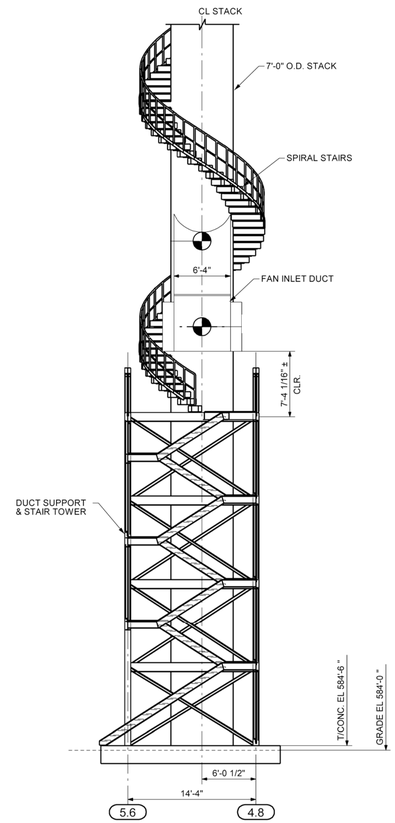


SECTION C - C (LOOKING EAST)

SCALE: 3/16" = 1'-0"

- - INDICATES EXISTING COLUMN LINE

(DWG. GA104)



SECTION B - B (LOOKING EAST)

SCALE: 1/8" = 1'-0"

NOTE: PARTIAL HANDRAIL NOT SHOWN FOR CLARITY

- - INDICATES EXISTING COLUMN LINE

(DWG. GA104)

10

		REV:	DATE		REV:	DATE		REV: A	DATE
		DWN:			DWN:			DWN: ABB	
DWG. NO.	TITLE	CHD.:			CHD.:			CHD.:	
REFERENCE DRAWINGS		APPR.:			APPR.:			APPR.:	

HEIDELBERG TECHNOLOGY CENTER
HEIDELBERG CEMENTGroup

CLINKER COOLER VENT SYSTEM REPLACEMENT

SECTIONS A-A, B-B & C-C

SEAL

LVTA — Lehigh Valley Technical Associates, Inc.
CONSULTING ENGINEERING / FABRICATION DETAILS
1584 Weaversville Road, Northampton, PA 18067-9039
Phone: 610-262-6345
Fax: 610-262-8188

LVTA PROJ. NO: 56546 | LVTA DWG. NO: GA105

EXTERNAL CONTRACTOR

AFE#:		DWG. TYPE STRUCTURAL ARRANGEMENT	SCALE N.T.S.
DRAWN: JGK	DATE: 12/09/2013	PLANT PERMANENTE, CA	SHEET 5
CHD:			OF X
APPR:		DWG. NO.	REV. A

PARCEL MAP AERIAL

11

LVTA
Lehigh Valley Technical Associates, Inc.
CONSULTING ENGINEERING / FABRICATION DETAILS
1584 Weaversville Road, Northampton, PA 18067-9039
Phone: 610-262-6345
Fax: 610-262-8188

LVTA PROJ. NO: 56546 | LVTA DWG. NO:

SEAL

EXTERNAL CONTRACTOR

DWG. NO.	TITLE	REV:	DATE	REV:	DATE	REV:	DATE
		DWN:		DWN:		DWN:	
	REFERENCE DRAWINGS	CHD.:		CHD.:		CHD.:	
		APPR.:		APPR.:		APPR.:	

HEIDELBERG TECHNOLOGY CENTER
HEIDELBERG CEMENTGroup

KILN VENT AND CLINKER COOLER SYSTEM REPLACEMENT

PARCEL MAP AERIAL

AFE#	DATE	DWG. TYPE	SCALE
DRAWN		PLANT: PERMANENTE, CA	SHEET OF
CHD.		DWG. NO.	REV.
APPR.			

January 8, 2014

LEHIGH
HEIDELBERGCEMENT Group

Lehigh Southwest Cement Company
12667 Alcosta Blvd., Suite #400
San Ramon, CA 94583
Phone 925 244 6500
Fax 925 244 6565
www.heidelbergcement.com

Marina Rush, Senior Planner
Department of Planning and Development
County of Santa Clara
70 W. Hedding Street, 7th Floor
San Jose, CA 95110

Re: Permanente Cement Plant – Replacement of Kiln and Cooler Vent Stack Systems
Application for Architectural and Site Approval

Dear Ms. Rush:

On behalf of Lehigh Southwest Cement Company ("Lehigh"), we are pleased to present the attached application for Architecture and Site Approval ("ASA") Committee approval of air pollution control equipment at the Permanente Cement Plant. Lehigh is requesting ASA approval to replace the kiln stack and cooler vent stack systems at the Permanente Cement Plant with single-stack structures that will improve emissions.

This letter identifies the application materials being provided to the County. The total number of copies of these materials are indicated below and are being provided in both hard copy and digital (disc) form, according to the Planning Department's instructions. For reference, we have listed the contents of the application package below:

1. Master Application Form (1 copy)
2. Project Description (1)
3. Environmental Information Form and Addendum (11)
4. Reduced Site Plan (1)
5. Visual Simulations (1)
6. Geotechnical Analysis (2)
7 Hazardous Substances Sites List Questionnaire (1)
8 . Assessor's Parcel Map (1)
9 Grant Deed (1)
10 Acknowledgements and Agreements Form (1)
11 Engineering Drawings: Site Plans (14); Exterior Elevations (7); Additional Drawings (7)

We would be pleased to provide additional copies of these materials on request. We look forward to supplementing this application package with additional materials as necessary for the County to fully review this project.

Lehigh Southwest Cement Company

By: _____
John P. Bruno
VP Real Estate

1-8-14
Date

Attachments
cc: (w/o encls)
Ignacio Gonzales, Director of Planning and Development, Santa Clara County
Mark Harrison, Esq.

Information To Build On
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GEOTECHNICAL ENGINEERING SERVICES REPORT

For the
KILN / MILL AND COOLER VENT FILTER MODERNIZATION

Lehigh Southwest Cement Company
24001 Stevens Creek Road,
Cupertino, California

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For the
KILN / MILL AND COOLER VENT FILTER MODERNIZATION

Lehigh Southwest Cement Company
24001 Stevens Creek Road,
Cupertino, California

Prepared for
Lehigh Southwest Cement Company
7660 Imperial Way
Allentown, Pennsylvania 18195

Prepared by
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PSI Project No. 575-372-1

January 6, 2012

Information To Build On
Engineering • Consulting • Testing

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Mr. Frank Tedesco
Senior Project Engineer
Lehigh Southwest Cement Company
7660 Imperial Way
Allentown, Pennsylvania 18195

Subject: **Geotechnical Engineering Services**
Kiln/Mill and Cooler Vent Filter Modernization
Lehigh Southwest Cement Company
24001 Stevens Creek Road, Cupertino, California
PSI Project No. 575-372-1

Dear Mr. Tedesco:

Professional Service Industries, Inc. (PSI) is pleased to transmit our Geotechnical Engineering Services Report for the subject site in Cupertino, California. This report includes the results of field and laboratory testing and geotechnical recommendations for foundation design as well as general site development.

We appreciate the opportunity to perform this Geotechnical Study and look forward to continued participation during the design and construction phases of this project. If you have any questions pertaining to this report, or if we may be of further service, please contact our office.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Robert R. Russell, GE #2042
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1.0 PROJECT INFORMATION

1.1 Project Authorization

Professional Service Industries, Inc. (PSI) is pleased to submit our Geotechnical Engineering Services Report for the Kiln/Mill and Cooler Vent Filter Modernization project at the Lehigh Southwest Cement Company plant in Cupertino, California. Our work was performed in general accordance with our Proposal Number 575-58830, dated December 7, 2011. Our services were authorized by Mr. Kyle Krick of Lehigh Cement Company, LLC by issuing a Purchase Order (PO# 4500481996, dated December 12, 2011) in response to our proposal.

1.2 Site Location and Description

The Kiln/Mill and Cooler Vent Filter Modernization project is located within the Lehigh Southwest Cement Company plant, referenced by a street address of 24001 Stevens Creek Road in Cupertino, California (see Figure 1 – Site Location Map). Topography at the plant generally consists of moderately to steeply-sloped terrain with rounded ridges and drainages. Elevations in the project area range from about 600 feet above mean sea level (msl) at the Clinker Cooler to about 700 feet msl in the Kiln/Mill dust collector (Google Earth, 2012). This generally agrees with the Cupertino Quadrangle, California topographic map (USGS, 1991). The locations of the existing and proposed improvements are shown on the attached Figure 2.

1.3 Project Understanding

Based on your request for proposal (RFP No. 1-0333-00099-2) dated December 5, 2011, PSI understands that the Lehigh Southwest Cement Company proposes to construct stack and ductwork supports for its filters. A free-standing stack or new support bent for ductwork is planned for the Kiln/Mill Dust Collector (KMDC) and a new free-standing exhaust stack is planned for the Clinker Cooler Dust Collector (CCDC). To assist in this report, we were provided with a scaled site plan, conceptual drawings and preliminary layout plans of the proposed improvements. We understand that the Kiln/Mill and Cooler Vent Filter Modernization will consist of foundations for the following items:

- KMDC fans and 1,000 hp motors (2) with dead load of 86 kips each.
- KMDC exhaust stack and duct support structures with dead loads of 132 and 145 kips.
- CCDC fan and 600 hp motor with dead load of 44 kips.
- CCDC exhaust stack with dead load of 50 kips.

The approximate locations of the proposed improvements are shown on Figure 2.

Based on a review of the provided information, it appears that final grades will be close to existing. We assume that cuts and fills will be limited to 2 feet. Should any of the above information or assumptions made by PSI be inconsistent with the planned construction, we request that you contact us immediately to allow us to make any necessary modifications to our recommendations.

1.4 Purpose and Scope of Services

The purpose of our geotechnical services was to review the provided documentation and perform field exploration and laboratory testing to allow PSI to provide foundation design recommendations for the proposed Kiln/Mill and Cooler Vent Filter Modernization. Our evaluation was performed in general accordance with the scope of work outlined in our Proposal Number 575-58830, dated December 7, 2011.

Our scope of services included three borings, drilled to a depth of approximately 30 feet below ground surface (bgs) in the general areas of the proposed improvements, laboratory testing and the preparation of this geotechnical report. This report briefly outlines the testing procedures, presents available project information, describes the site and subsurface conditions, and presents geotechnical recommendations regarding the following:

- Site topographic information and surface conditions
- Review of subsurface conditions including groundwater
- Review of field and laboratory test procedures and test data
- Information on potentially deleterious, chemically active or corrosive materials
- California Building Code (CBC) site class and seismic site coefficients for use in seismic design (CBC 2010)
- Site preparation and grading considerations, including recommended fill material characteristics and compaction requirements for general site fill and subgrades, including an assessment as to the suitability of on-site soils for use as fill
- Recommendations pertaining to design and construction of foundations, including allowable soil bearing pressures, anticipated bearing depths and estimated settlements
- Geologic hazards identified for the proposed development
- Comments regarding factors that may impact construction and performance of the proposed construction

The scope of services did not include an environmental assessment for determining the presence or absence of wetlands or hazardous or toxic materials in the soil, bedrock, surface water, groundwater, or air on or below, or around this site. Any statements in this report or on the boring logs regarding odors, colors, and unusual or suspicious items or conditions are strictly for information purposes only.

2.0 SUBSURFACE EXPLORATION

2.1 Site Geology

The subject site is located within a large region known as the Coast Ranges geomorphic province. This province is characterized by extensively folded, faulted, and fractured earth materials. These structural features trend in a northwesterly direction, and make up the prominent system of northwest-trending mountain ranges separated by sediment-filled valleys (CGS, 2002).

The subject site is situated in the foothills of the northwest-trending Santa Cruz Mountains. Our observations and analysis of readily available, pertinent regional geologic literature indicate that the subject site is underlain by bedrock of the Santa Clara Formation, described as poorly indurated conglomerate, sandstone, and mudstone in irregular and lenticular beds (Brabb et. al., 2000). A regional geologic map is presented as Figure 3.

2.2 Pre-Field Activities

Prior to initiation of field drilling activities, PSI outlined the site in white paint and contacted Underground Service Alert (USA) a minimum of 48 hours prior to beginning work to locate any potential buried utilities. The USA inquiry identification number (or "Ticket Number") for the utility locate request was #415810. Additionally, PSI subcontracted a private utility locator to check the proposed boring locations for existing private underground utilities.

2.3 Subsurface Conditions

In order to evaluate soil conditions at the site, PSI advanced three soil borings with a truck-mounted drill rig, using solid-flight auger methods. The borings (B-1 though B-3) were all advanced to a depth of about 30 feet bgs in locations chosen by you (in the RFP) and as directed by your field representative. Boring B-1 was advanced in the area of the proposed KMDC free standing stack, B-2 in the area of the proposed KMDC ductwork support bent, and B-3 in the area of the proposed CCDC free standing stack.

At the completion of drilling, the borings were backfilled to the surface with cement grout in accordance with the requirements of the RFP and topped with concrete to match the existing surface grade. Locations of the soil borings, as well as the proposed improvements, are shown on Figure 2. Logs of the soil borings are presented in Appendix A.

During the sampling procedure, Standard Penetration Tests (SPT) were performed by driving a 2-inch, outer diameter (O.D.) split-spoon (SS) sampler into the undisturbed formation located at the bottom of the advanced borehole with repeated blows of a 140-pound auto-hammer falling a vertical distance of 30 inches. Relatively undisturbed samples were obtained utilizing a 3-inch O.D. California split-spoon sampler. The number of blows required to drive the sampler the last 12 inches of an 18-inch penetration depth is a measure of the soil consistency (see Appendix A). The blow count obtained from the California sampler should be reduced by

approximately ⅓ to obtain a rough correlation to SPT blow counts (N-value). Samples were identified in the field, placed in sealed containers and transported to the laboratory for further classification and testing.

The area of the proposed KMDC stack (at B-1) is underlain by about 7½ feet of existing fill, consisting of about 4 feet of sandy, gravelly silt (ML) and 3½ feet of silty clay (CL). Clayey silt and sandy silt (ML) with gravel (weathered conglomerate bedrock) was encountered below the fill to the total depth explored of about 30 feet. The other two areas (ductwork support bent at B-2 and stack at B-3) were underlain by about 3½ to 4 feet of fill, consisting of clayey or gravelly silt (ML). Clayey silt (weathered mudstone bedrock) was encountered below the fill to the total depths explored of about 30 feet bgs. The areas of borings B-1 and B-2 were surfaced with an approximately 8-inch thick concrete slab. The consistency of the silts and clays encountered were typically very stiff to hard.

The above subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs, included in Appendix A, should be reviewed for specific information at individual boring locations. These records include soil descriptions, stratification, penetration resistance, locations of the samples and laboratory test data. The stratification shown on the boring logs represents the conditions only at the actual boring locations at the time of our exploration. Variations may occur and should be expected between boring locations. The stratification that represents the approximate boundary between subsurface materials and the actual transition may be gradual. The samples that were not altered by laboratory testing will be retained for 60 days from the date of this report and will then be discarded.

2.4 Groundwater

At the time of drilling, groundwater was not encountered in any of our borings to the total depth explored of about 30 feet. Groundwater is not expected to impact the proposed construction. It is possible, however, that transient, saturated ground conditions at shallower depths could develop at a later time due to periods of heavy precipitation, landscape watering, leaking water lines, or other unforeseen causes. Variations in groundwater levels should be expected seasonally, annually, and from location to location.

2.5 Laboratory Evaluation

Selected samples of the subsurface soils encountered were returned to our laboratory for further evaluation to aid in classification of the materials, and to help assess their strength and compressibility characteristics. The laboratory evaluation consisted of visual and textural examinations, moisture and density testing, Atterberg limits testing, unconfined compression testing and consolidation testing. Sulfate, chloride, pH and resistivity testing were also performed to evaluate the corrosive potential of the site soils. A brief discussion of the laboratory tests performed and a portion of the test results are presented in Appendix B. The remaining test results are shown on the boring logs (Appendix A).

3.0 SEISMIC HAZARDS

3.1 Regional Seismicity

Generally, seismicity within California can be attributed to faulting due to regional tectonic movement. This includes the Monte Vista – Shannon Fault, the San Andreas Fault and most parallel and subparallel faulting within the State. The portion of California which includes the subject site is considered seismically active. Seismic hazards within the site can be attributed to potential groundshaking resulting from earthquake events along nearby or more distant faulting.

According to regional geologic literature the closest known late Quaternary (active) fault is the San Andreas Fault. According to the Cupertino Quadrangle Special Studies Zone Map (CDMG, 1974) the San Andreas Fault is located approximately 2½ miles southwest of the site. Several potentially active and pre-Quaternary faults also exist within the regional vicinity.

The site is subject to a Maximum Magnitude Event of 7.9 Magnitude along the San Andreas Fault. The Maximum Magnitude Event is defined as the maximum earthquake that appears capable of occurring under the presently known tectonic framework. According to the California Geological Survey website (CGS, 2007) the site has a probabilistic site acceleration (10% probability of exceedance in 50 years) of 0.63g.

3.2 Seismic Analysis

According to the Alquist-Priolo Special Studies Zones Act of 1972 (revised 1994) active faults are those that have shown movement during the last 11,000 years (i.e., Holocene time). This site is not currently situated within a mapped Earthquake Fault Zone (CDMG, 1974).

The site will be affected by seismic shaking as a result of earthquakes on major active faults located throughout the northern California area. As part of the California Building Code (CBC), the design of structures must consider dynamic forces resulting from seismic events. These forces are dependant upon the magnitude of the earthquake event as well as the properties of the soils that underlie the site. As part of the procedure to evaluate seismic forces, the code requires the evaluation of the Seismic Site Class, which categorizes the site based upon the characteristics of the subsurface profile within the upper 100 feet of the ground surface.

To define the Site Class for this project, we interpreted the results of our soil test borings drilled within the project site and estimated appropriate soil properties below the base of the borings to a depth of 100 feet. The estimated soil properties were based upon data available in previous studies for the site and published geologic reports as well as our experience with subsurface conditions in the general site area. Based upon this, the subsurface conditions within the site are consistent within the characteristics of Site Class C (very dense soil and soft rock).

The USGS-NEHRP probabilistic ground acceleration values for the site (latitude 37.3164° and longitude -122.0907°) obtained from the USGS geohazards web page are as follows:

Period (seconds)	2% Probability of Event in 50 years (g)	Site Coefficient F_a	Site Coefficient F_v
0.2 (S_S)	2.510	1.0	N/A
1.0 (S_1)	0.957	N/A	1.3

The Site Coefficients, F_a and F_v, presented in the above table, were obtained from CBC Tables 1613.5.3(1) and 1613.5.3(2) as a function of the site classification and mapped spectral response acceleration at the short (S_S) and 1 second (S_1) periods. Corresponding values for S_{MS} and S_{M1} are 2.510 and 1.244 and for S_{DS} and S_{D1} are 1.673 and 0.830 (five percent damped design spectral response acceleration at short period and 1-second period). Design of the proposed improvements should comply with the requirements of the governing justification's building codes and standard practices of the Structural Engineering Association of California.

3.3 Hazard Assessment

Seismically-Induced Dry Settlement of Soils – The subsurface soils encountered at the site were observed to consist primarily of very stiff to hard clay and silt (fill) and very stiff silt (weathered mudstone bedrock). Based on the anticipated earthquake effect and the stratigraphy of the site, only relatively minor seismically-induced dry settlement is likely to occur. Such settlement will likely affect relatively large areas so that differential settlement over short distances is likely to be very small (less than 1 inch).

Liquefaction - Liquefaction and seismically induced settlement typically occurs in loose granular soils and low-cohesive silt and clays (PI<12) with relatively shallow groundwater. During an earthquake, ground shaking causes a rapid increase in the porewater pressure within the soil mass and a corresponding decrease in the soil's effective stress, which can result in a sudden loss of soil bearing strength. Highly plastic fine-grained soils are not generally susceptible to liquefaction. Liquefaction potential has been found to be the greatest where the groundwater level is within a depth of 50 feet and loose fine sands occur within that depth. The liquefaction potential decreases with increasing grain size and clay and gravel content, but increases as the ground acceleration and duration of shaking increases.

A detailed liquefaction analysis was not requested and is beyond the scope of our geotechnical study, however the site is not located within an area mapped by the state as being in a zone of required investigation for liquefaction potential (CGS, 2003). Additionally, the Association of Bay Area Governments (ABAG) liquefaction hazard map (ABAG, 2007) indicates that the hazard for seismically-induced liquefaction at the site, for both the Monte Vista and San Andreas earthquake scenarios, is considered to be very low. Our borings at the site encountered very stiff to hard clay and silt (fill) and hard silt (weathered mudstone bedrock). Consequently, it is

our opinion that the potential for liquefaction is very low and is not a design constraint for this project.

Lurching and Shallow Ground Rupture – Evidence of active fault rupture was not observed within the explored areas of the site at the time of our subsurface exploration and no active faults are mapped as crossing the site. The site is not within any State or County Earthquake Fault Hazard Zones (CDMG, 1974; CSC, 2002). As such, the potential for ground rupture from faulting at the site is considered to be low.

Landsliding - In general, the subject site has a slight to steep slope toward the northeast. The locations of the proposed improvements are all within developed, relatively flat areas. There is a steep northeast-facing slope located between borings B-1 and B-2 and a gentle to moderate slope between B-2 and B-3. The site is not within an area mapped by the state of California as within a Seismic Hazard Zone for landsliding (CGS, 2003). A slope stability analysis was neither requested nor is a part of our scope of services presented herein.

Tsunamis and Seiches - Inundation by tsunamis (seismic or "tidal waves") or seiches ("tidal waves" in confined bodies of water) are not considered to be a significant threat to the subject site due to the absence of proximal large bodies of water. The potential for Tsunamis and Seiches at the subject site is considered to be very low.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results obtained from our exploration and analysis, the primary geotechnical hazard to the proposed site development is seismic shaking due to activity along nearby earthquake faults. It is our opinion that the geotechnical constraints identified will not preclude the development of the proposed structures and that the site is suitable to receive the proposed improvements provided the recommendations presented in this report are incorporated into design and construction.

Soil deposits, which consist generally of very stiff to hard clay and silt (fill and weathered bedrock) were encountered at the site in all of the boring locations to the maximum depth explored of about 30 feet below grade. It is our opinion that the proposed structures can be supported by mat foundations excavated into the firm fill or native following proper site preparation as recommended herein.

The proposed construction at the site should be performed in accordance with the following recommendations, the current edition of the State of California Building Code and local governmental standards which have jurisdiction over this project. Our recommendations have been developed on the basis of the previously described project characteristics and subsurface conditions encountered. If there are any changes in these project criteria, including project location on the site, a review should be made by PSI to determine if modifications to the recommendations are warranted.

Once final design plans and specifications are available, a general review by PSI is recommended as a means to check that the evaluations made in preparation of this report are correct and that earthwork and foundation recommendations are properly interpreted and implemented.

4.1 Site Preparation

Prior to construction, the existing improvements, including all underground utilities, foundations and other below-grade construction in the areas of the proposed improvements should be located, and removed or relocated as necessary, with proper disposal of all associated debris. All soils disturbed by these operations should also be removed but may be stockpiled on-site for future use as engineered fill, if suitable.

Based on our subsurface exploration and laboratory testing, it is our opinion the near-surface fill and native soils at the site are suitable for the support of the proposed improvements. No overexcavation of foundation soils is expected. Following excavation for the proposed foundations, and examination of the foundation subgrade soil by a PSI representative, the exposed soils should be scarified, moisture treated as needed and compacted to at least 90 percent of the soil's maximum dry density, per ASTM D-1557.

The bottom of any excavations should be sloped to allow for drainage of precipitation during construction in inclement weather, and protected as necessary. The base of the foundation excavations and any areas to receive engineered fill should be examined by a representative of PSI to assess the suitability (firm and unyielding nature) of the exposed soils and to confirm that all unsuitable materials, including any remnants of the existing site improvements, have been removed.

All backfill and engineered fill used to achieve final design grades should be placed in shallow lifts, moisture treated to slightly above optimum moisture content and compacted to at least 90 percent relative compaction (per Section 4.2 below). All grading operations should be performed in accordance with the requirements of the current CBC, and local governmental standards which have jurisdiction over this project.

4.2 Engineered Fill

We understand that the proposed construction will be primarily at or near existing site grades and that significant fills are not expected; however the following general fill recommendations are provided for your use. Fill materials, including both on-site and import soil, should be free of organic or other deleterious materials and have a maximum particle size of 3 inches or less. Fill beneath proposed structures should possess a low expansion potential (Expansion Index < 50). The on-site soils appear to be suitable for use as engineered fill. If a silt or clay soil is used for engineered fill, close moisture content control will be required to achieve the recommended degree of compaction. Engineered fill should be moisture conditioned and compacted to at least 90 percent of the maximum dry density as determined by ASTM Designation D1557.

Fill should be placed in maximum loose lifts of 12 inches and should be moisture conditioned and compacted at approximately 0 to 3 percent above the optimum moisture content. Dependent upon the results of field compaction testing during grading, some modification to the maximum lift thickness may be necessary. If water must be added, it should be uniformly applied and thoroughly mixed into the soil by disking or scarifying. Each lift of compacted, engineered fill should be tested by a representative of the geotechnical engineer prior to placement of subsequent lifts. The edges of compacted fill should extend 5 feet beyond the edges of improvements, where possible.

We recommend that at the time of initial site stripping and grading, that PSI be retained to observe the subgrade conditions to verify that no potentially deleterious soils are present in the site fill soils encountered near the surface in our borings.

4.3 Excavations

Excavation and construction operations may expose the on-site soils to inclement weather conditions. The stability of exposed soils will rapidly deteriorate due to precipitation or the action of heavy or repeated construction traffic. Accordingly, foundation area excavations

should be adequately protected from the elements, and from the action of repetitive or heavy construction loading.

4.3.1 Excavations/Slopes

Temporary earth slopes may be cut near vertical to heights of 4 feet. Excavations deeper than 4 (to a maximum depth of 20 feet) may be cut vertically for the first 4 feet and then sloped back at 1:1 (horizontal to vertical) if constructed in fill and at an inclination no steeper than ½:1 within bedrock or shored for safety. Excavations extending below a 1:1 (horizontal to vertical) plane extending down from any adjacent footings should be shored for safety. All excavations should be inspected by a representative of the geotechnical engineer during construction to allow any modifications to be made due to variation in the soil types. All work should be performed in accordance with Department of Labor Occupational Safety and Health Administration (OSHA) guidelines. Job site safety is the responsibility of the project contractor.

In Federal Register, Volume 54, No. 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, subpart P". This document was issued to better insure the safety of personnel entering trenches or excavations. It is mandated by this federal regulation that excavations, whether they be utility trenches, basement excavations, or footing excavations, be constructed in accordance with the current OSHA guidelines.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person", as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal state regulations.

We are providing this information solely as a service to our client. PSI does not assume responsibility for construction site safety or the contractor's or other parties' compliance with local, state, and federal safety or other regulations.

4.3.2 Trench Backfill

Except where extending perpendicular under proposed foundations, utility trenches should be constructed outside a 1:1 projection from the base-of-foundations. Trench excavations for utility lines, which extend under structural areas should be properly backfilled and compacted.

Utilities should be bedded and backfilled with clean sand or approved granular soil to a depth of at least 1 foot over the pipe. This backfill should be uniformly watered and compacted to a firm condition for pipe support. All required trench backfill should be mechanically compacted in layers to at least 90% of maximum dry density based on ASTM D1557. Flooding should not be permitted.

The remainder of the backfill shall be typical on-site soil or imported soil which should be placed in lifts not exceeding 8 inches in thickness, watered or aerated to 0 to 3 percent above the optimum moisture content, and mechanically compacted to at least 90 percent of maximum dry density (based on ASTM D1557).

Some settlement of the backfill may be expected and any utilities within the trenches or concrete walks supported on the trench backfill should be designed to accept these differential movements.

4.4 Foundation Support

It is our opinion that mat foundations are suitable for support of the proposed structures. Following site preparation, the mat foundations should be founded at least 3 feet below lowest adjacent finished grade. The mat foundation within the area underlain by the deeper existing fill (proposed KMDC free standing stack at B-1) can be designed for an allowable soil bearing pressure of 3,000 psi and a subgrade modulus of 150 pci. For the other two areas, underlain by shallow weathered bedrock (KMDC ductwork support bent at B-2 and CCDC free standing stack at B-3) mat foundations can be designed for an allowable soil bearing pressure of 3,500 psf and a subgrade modulus of 175 pci, provided the foundation is entirely underlain by weathered bedrock.

Appropriate foundation reinforcement should be provided in accordance with the Structural Engineer's design. The recommended allowable soil bearing pressure may be increased by ⅓ for short term wind and/or seismic loads.

Lateral loads may be resisted by any rational method, which incorporates sliding friction and/or passive earth pressure. The design may incorporate an allowable passive earth pressure of 350 psf per foot of depth below a depth of 1 foot, provided that the footing concrete is poured tightly against firm soil. This value may be increased by 350 psf for each additional foot of depth, to a maximum of 2,500 psf. An allowable friction coefficient of 0.45 may be used at the concrete-soil interface. No reductions are necessary when combining the frictional and passive resistance of the soils to determine the total lateral resistance.

4.4.1 Foundation Construction Considerations

Weathered bedrock was encountered within borings B-2 and B-3 at depths of about 3½ and 4 feet below existing grades. However, based on the penetration test data and observed friability of the rock samples collected, excavations into the on-site bedrock will likely not require special excavation equipment for the proposed mat foundations.

The foundation excavations should be observed by a representative of PSI prior to steel or concrete placement to assess that the foundation materials are capable of supporting the design loads and are consistent with the materials discussed in this report. Soft or loose soil

zones encountered at the bottom of the foundation excavations should be removed in accordance with Section 4.1, as directed by the geotechnical engineer.

After opening, foundation excavations should be observed and concrete placed as quickly as possible to avoid exposure of the foundation bottoms to wetting and drying. Surface run-off water should be drained away from the excavations and not be allowed to pond. If possible, the foundation concrete should be placed during the same day the excavation is made.

4.4.2 Settlement

Based on the results of our field and laboratory testing, we estimate that the recommended mat foundations, designed and constructed as recommended herein will experience total static settlement of less than 1-inch. The structural engineer should design the foundation and above-ground improvements to withstand the estimated settlement in accordance with applicable codes.

4.5 Corrosivity

Testing was performed on two representative soil samples to evaluate the corrosivity of the on-site fill and native soils and the potential for attack on concrete and subsurface utility pipes, specifically cast iron and ductile iron. The testing included pH, sulfate, chloride and electrical resistivity. The results of the chemical analyses are as follows:

Boring Number	Sample Depth (feet)	pH	Resistivity (ohm-cm)	Water Soluble Sulfates (ppm)	Water Soluble Chlorides (ppm)
B-1 (fill)	2.5	---	---	116	4.8
B-2 (bulk native)	1 to 5	11.9	670	22.4	4.5

Note: --- indicates not tested

Concrete mix design should follow the minimum requirements of the California Building Code. Laboratory testing of selected soil samples indicates the on-site soils have a *low* degree of corrosivity with respect to concrete. For preliminary design purposes, it is our opinion that the use of Type II cement is suitable for concrete in contact with on-site soils. Final concrete mix design should be evaluated after sulfate tests have been performed on the actual subgrade material.

Corrosivity testing was also performed to determine whether the on-site native soils have the potential to attack subsurface utility pipes. Based on the resistivity test results, the soils are characterized as being *corrosive* to cast iron or ductile iron piping (NACE, 1984). PSI does not practice in the field of corrosion engineering. We suggest that a qualified corrosion engineer be consulted to determine if special corrosion protection is warranted. Testing for corrosivity of any fill soils should be conducted after site grading.

4.6 Drainage Considerations

Water should not be allowed to collect in the foundation excavations or on prepared subgrades of the construction area either during or after construction. Positive site drainage away from excavation areas should be established to minimize the flow of surface runoff or rain water into the excavations. Undercut or excavated areas should be sloped toward one corner to facilitate removal of any collected rainwater or surface runoff. The on-site soils may be susceptible to erosion. The contractor should exercise care in creating drainage paths for water during the construction phase of the project.

Following construction, water should not be allowed to pond adjacent to the foundations or adjacent to concrete flatwork. Positive site drainage of the finish grade should be provided to reduce infiltration of surface water around the perimeter of foundations for the proposed improvements. The grades should be sloped and surface drainage should be collected and discharged to an acceptable location away from the proposed site improvements.

4.7 Retaining Walls

Retaining walls are not expected to be needed for the proposed development, however based on the soil conditions encountered, the following general recommendations are provided for your use. It is our opinion that retaining walls can be supported by conventional shallow continuous (strip) footings bearing in suitable bearing native bedrock or existing very stiff to hard fill soil. A net allowable bearing pressure of 3,000 psf may be used for the design, provided the retaining wall footings extend to a minimum depth of 24 inches below lowest adjacent finished grade. The project structural engineer should determine minimum footing widths, depth and reinforcement requirements.

The lateral earth pressures presented in the following table should be used for the design of retaining walls backfilled with suitable very low expansive import granular soils.

Table of Equivalent Fluid Weight (pcf)		
Wall Type	**Level Backfill**	**2:1 Sloped Backfill (Ascending)**
Active	30	55
At-Rest (fixed at top)	50	70
Passive	350	225

The above values assume backfill soils will have a very low expansion potential and free-draining condition. If conditions other than those covered herein are anticipated, the geotechnical engineer should provide the equivalent fluid pressures on an individual basis.

Retaining walls should include a positive drainage system. A typical wall drain consists of a minimum 4 inch diameter rigid perforated pipe surrounded by ¾-inch crushed rock and wrapped in a non-woven geotextile fabric (consisting of Mirafi 140N or approved equivalent). This system typically is installed directly on top of the retaining wall footing on the retained soil side of the wall.

Perforations in the drain pipe should be placed facing down. The gravel pack around the pipe should be brought up to within one foot of the soil surface. The subsurface drainage system should be tied to the storm drainage system, allowed to daylight down slope, or collected in a sump and pumped out. Cleanouts should be installed at regular intervals and at each bend of the drainage pipe.

Retaining wall backfill should consist of approved granular material. This fill material should be compacted to at least 90 percent of the maximum dry density (as determined by ASTM D1557). Flooding or jetting of the backfill should not be permitted. Granular backfill should be capped with relatively impervious fill to seal the backfill and reduce the potential for saturation.

Cantilever walls subject to uniform surcharge loads should be designed for an additional uniform lateral pressure equal to one-third the anticipated surcharge pressure (active conditions). It should be noted that the use of heavy compaction equipment in close proximity to retaining structures can result in wall pressures exceeding design values and corresponding wall movement greater than normally associated with the development of active conditions. In this regard, the contractor should take appropriate precautions during the backfill placement.

Lateral soil resistance developed against lateral structural movement should be calculated in accordance with the recommendations in the shallow foundations section herein.

4.8 Construction Monitoring

It is recommended that PSI be retained to examine and identify soil exposures created during project construction in order to document that soil conditions are as anticipated. We further recommend that any engineered fills be continuously observed and tested by our representative in order to evaluate the thoroughness and uniformity of their compaction. If possible, samples of fill materials should be submitted to our laboratory for evaluation prior to placement of fills on site. Costs for the recommended observations during construction are beyond the scope of this current consultation.

5.0 GENERAL

Our conclusions and recommendations described in this report are subject to the following general conditions:

5.1 Use of Report

This report is for the exclusive use of the Lehigh Southwest Cement Company and their representatives to use for the design of the proposed structures described herein and preparation of construction documents. The data, analyses, and recommendations may not be appropriate for other structures or purposes. We recommend that parties contemplating other structures or purposes contact us. In the absence of our written approval, we make no representation and assume no responsibility to other parties regarding this report.

After the plans and specifications are more complete, the geotechnical engineer should be retained and provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents.

5.2 Limitations

The recommendations contained in this report are based on the available subsurface information obtained by PSI, and design details furnished for the proposed project. If there are any revisions to the plans for this project, or if deviations from the subsurface conditions noted in this report are encountered during construction, PSI should be notified immediately to determine if changes in the foundation recommendations are required. If PSI is not retained to perform these functions, PSI will not be responsible for the impact of those conditions on the project.

Services performed by PSI for this project have been conducted with that level of care and skill ordinarily exercised by members of the profession currently practicing in this area. No warranty, expressed or implied, is made.

6.0 REFERENCES

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2. Association of Bay Area Governments (ABAG), March 2007, “Hazard Maps - Liquefaction Scenario Shaking Maps, http://gis3.abag.ca.gov/Website/liq_scenario_maps/viewer.htm (web site).

3. Blake, T.F., 1989-2000, Documentation For Eqfault Version 3.00b Update, Thomas F. Blake Computer Services and Software, Thousand Oaks, California.

4. Brabb, E.E., Graymer, R.W., and Jones, D.L., 2000, "Geologic Map and Map Database of the Palo Alto 30' x 60' Quadrangle, California," U.S. Geological Survey Miscellaneous Field Studies Map MF-2332.

5. California Division of Mines and Geology (CDMG), July 1, 1974, “State of California Special Studies Zones, Cupertino Quadrangle, Official Map,” Scale: 1:24,000.

6. California Geological Survey (CGS), April, 2002, “California Geomorphic Provinces” http://www.consrv.ca.gov/cgs/information/publications/cgs_notes/note_36/note_36.pdf (web document).

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8. California Geological Survey (CGS), September 23, 2002, “State of California Seismic Hazard Zones, Cupertino Quadrangle, Official Map,” Scale 1:24,000.

9. California Geological Survey (CGS), 2007, “Seismic Shaking Hazards in California” http://www.consrv.ca.gov/cgs/rghm/pshamap/pshamain.html (web site).

10. California Geological Survey (CGS), 2008, “Guidelines for Evaluating and Mitigating Seismic Hazards in California,” Special Publication 117, 102 pp.

11. California Building Standards Commission (CBSC), 2010 California Building Code (CBC), California Code of Regulations, Title 24, Part 2.

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13. Google Earth, Ver. 6.1.0.5001 (web-based program), 24001 Stevens Creek Blvd., Cupertino, CA, aerial imagery dated June 19, 2011, accessed Jan 2, 2012.

14. Hanson, January 21, 1997, “General Plot Plan” Dwg. No. D-O-G-07, Scale: 1”=200’.

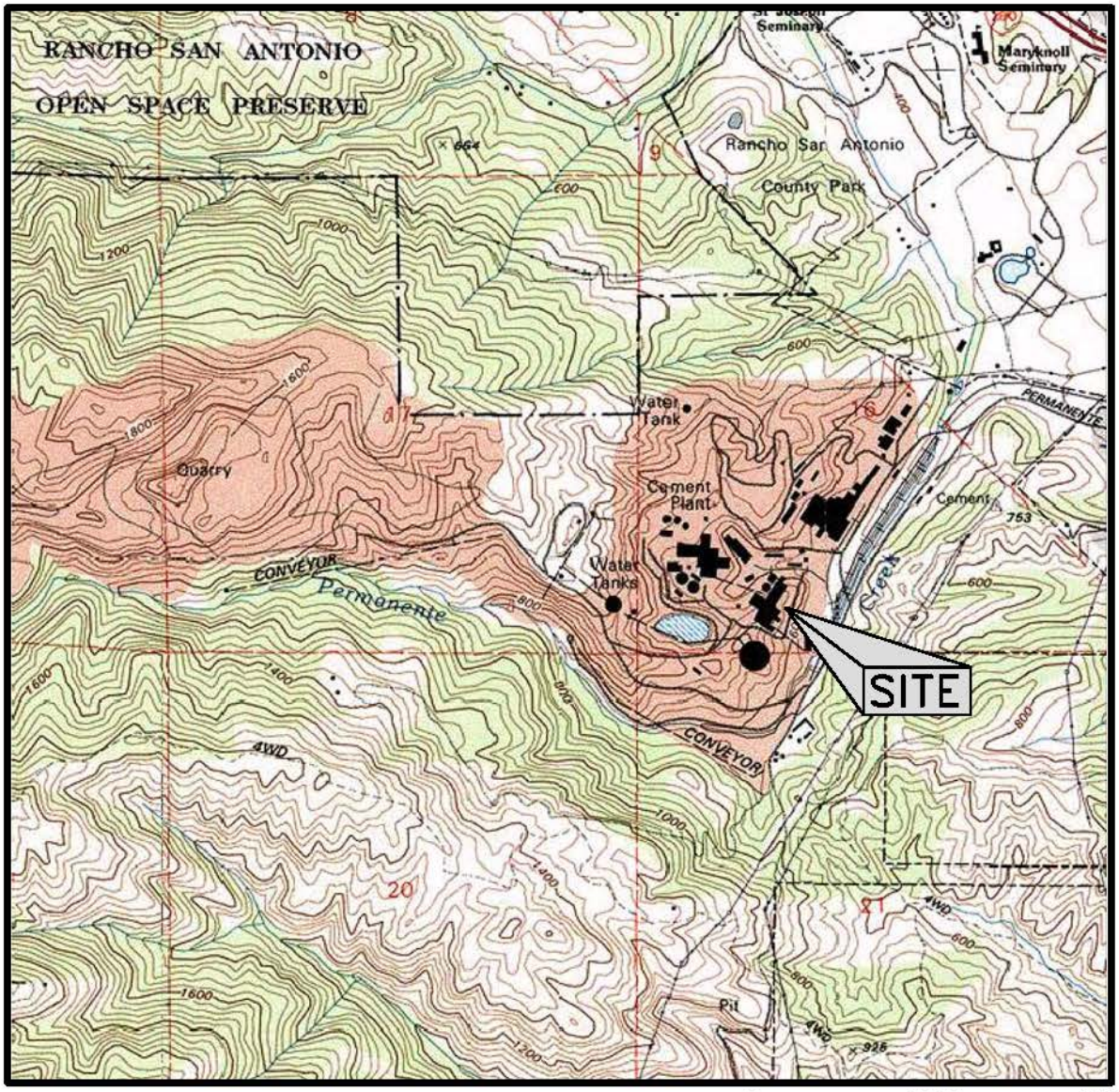
15. Lehigh Valley Technical Associates, Inc. (LVTA), October 2011 (rev. Dec 23, 2011), Preliminary Proposed Construction Layout Drawings, Kiln/Mill Dust Collector and Clinker Cooler Dust Collector (2 sheets).

16. National Association of Corrosion Engineers (NACE), 1984, Corrosion Basics, an Introduction.

17. US Geological Survey (USGS), 1991, Cupertino Quadrangle, California, 7.5 Minute Series (topographic), United States Department of the Interior, Scale: 1:24,000.

18. USGS, Seismic Hazard Curves, Response Parameters and Design Parameters website.

FIGURES



REFERENCE:

U.S.G.S. CUPERTINO, CALIFORNIA, 7.5 MINUTE SERIES TOPOGRAPHIC MAP, DATED 1991.

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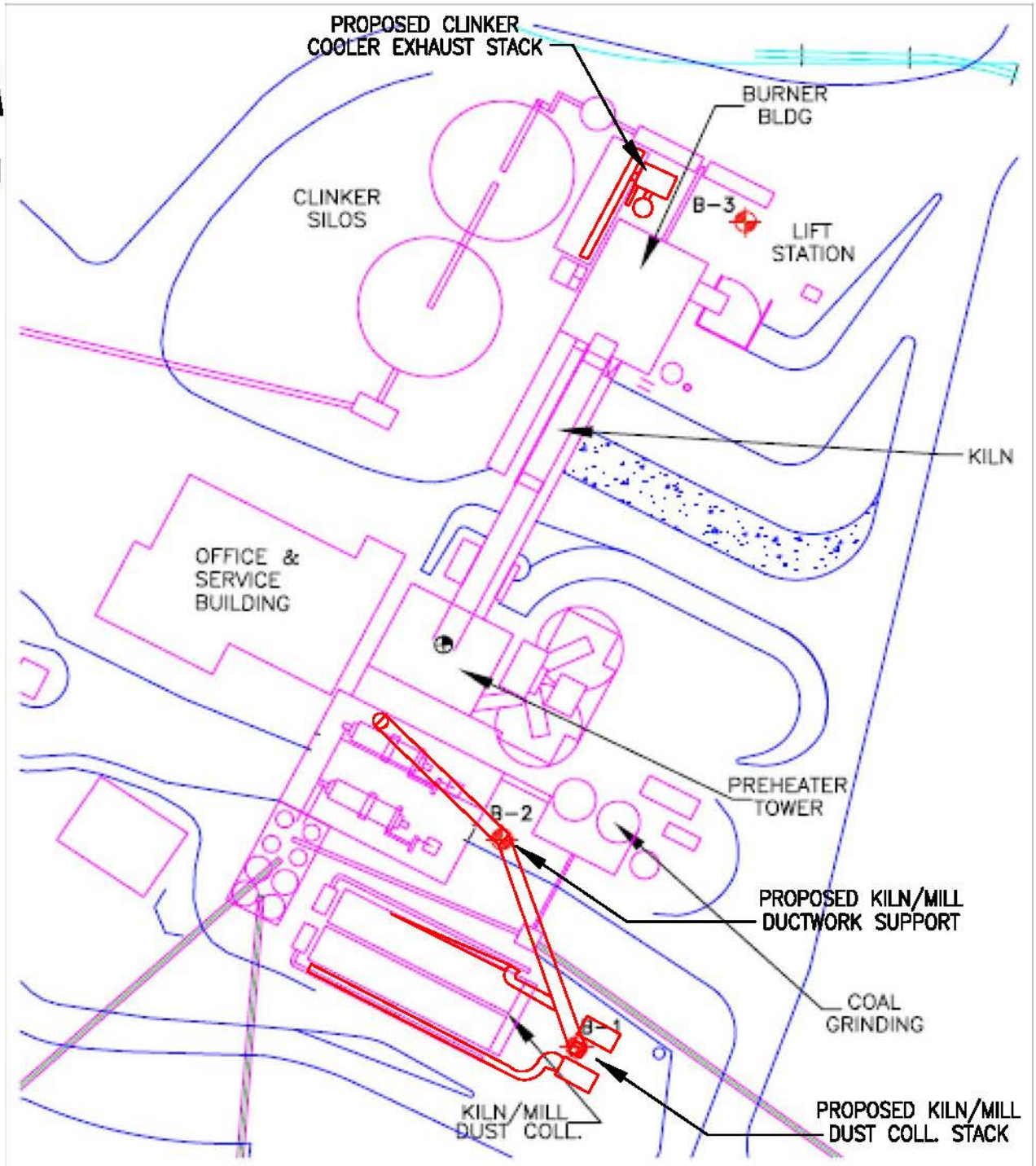
Oakland, California 94601
(510) 434-9200

Project Name	Drawn By	Date	File No.	Figure No.
KILN/MILL & COOLER VENT FILTER MOD. 24001 STEVENS CREEK BLVD. CUPERTINO, CALIFORNIA	S.R.	12/11	372-1-1	1
Title: SITE LOCATION MAP	Approved By: R.R.	Project No.: 575-372-1		



LEGEND

B-3 – APPROXIMATE BORING LOCATION (12-16-11)

0 100 200ft

APPROXIMATE SCALE

NOTES

1. BASE MAP TAKEN FROM HANSON PERMANENTE CEMENT, "GENERAL PLOT PLAN" DWG NO: D-O-G-07 DATED 01-21-1997.
2. PROPOSED STRUCTURES SHOWN IN RED.

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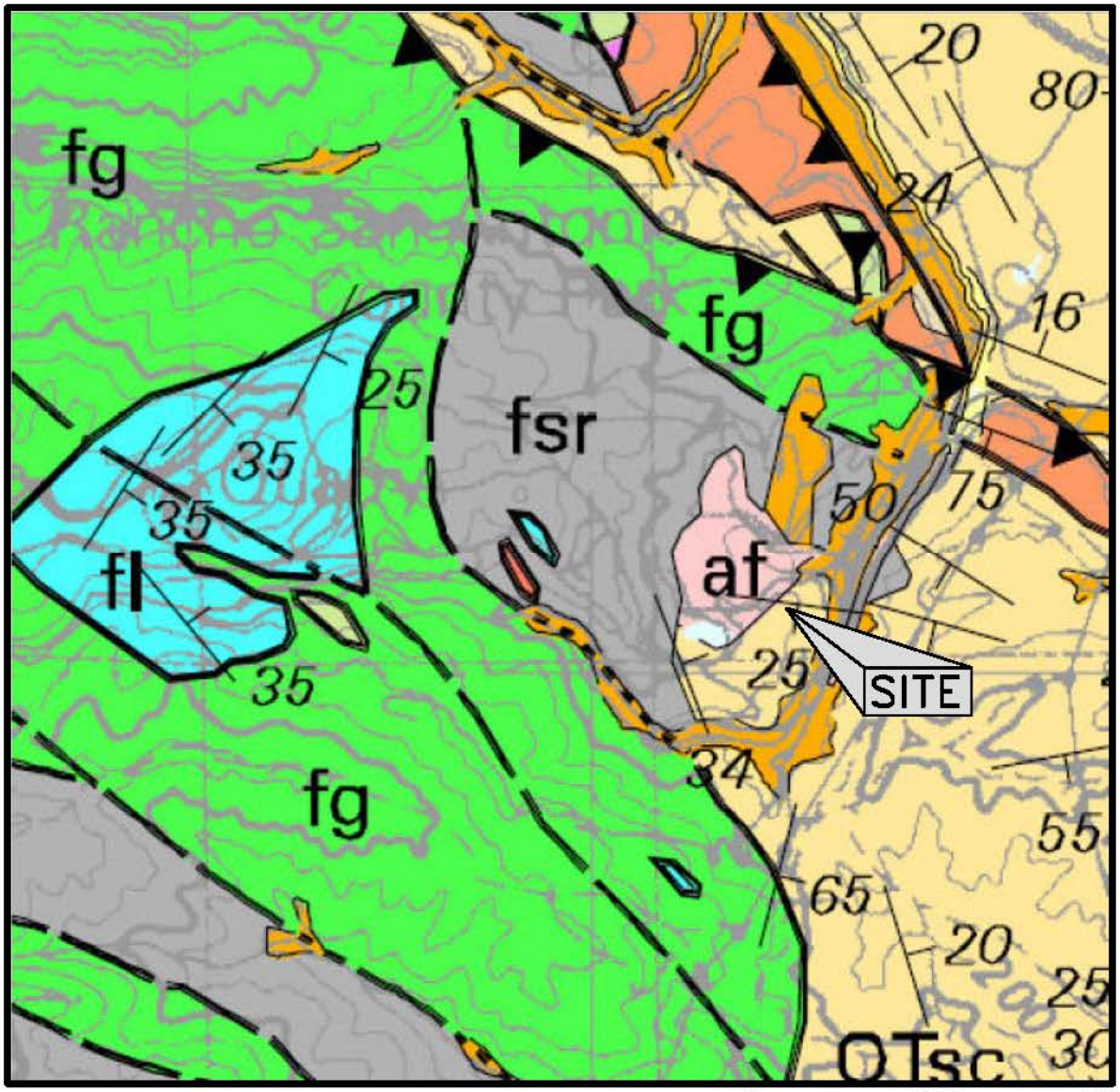
Project Name	Drawn By	Date	File No.	Figure No.
KILN/MILL & COOLER VENT FILTER MOD. 24001 STEVENS CREEK BLVD. CUPERTINO, CALIFORNIA	S.R.	12/11	372-1-2	2
Title: SITE PLAN AND BORING LOCATION MAP	Approved By: R.R.	Project No.: 575-372-1		



0 2000 4000ft

APPROXIMATE SCALE

EXPLANATION:

af – Artificial Fill (Historic)

Qpaf – Alluvial fan and fluvial deposits (Pleistocene)

QTsc – Santa Clara Formation (lower Pleistocene and upper Pliocene)

Tm – Monterey Formation (middle Miocene)

Franciscan Complex (Cretaceous and Jurassic)

fsr – Sheared rock (melange) – Predominantly graywacke, siltstone, and shale.

fl – Limestone – Light-gray, finely to coarsely crystalline limestone.

fg – Greenstone – Dark-green to red, altered basaltic rocks.

– Contact; dashed where approx, dotted where concealed

– Fault; dashed where approx, dotted where concealed

REFERENCE:

Brabb, E.E., Graymer, R.W., and Jones, D.L., 2000, "Geologic Map and Map Database of the Palo Alto 30' x 60' Quadrangle, Calif.," USGS MF-2332,

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Project Name	Drawn By	Date	File No.	Figure No.
KILN/MILL & COOLER VENT FILTER MOD. 24001 STEVENS CREEK BLVD. CUPERTINO, CALIFORNIA	B.B.	12/11	372-1-3	3
Title: REGIONAL GEOLOGIC MAP	Approved By: R.R.	Project No.: 575-372-1		

APPENDIX A

EXPLORATION LOGS

Professional Service Industries, Inc.
4703 Tidewater Avenue, Suite B
Oakland, CA 94601
Telephone: (510) 434-9200
Fax: (510) 434-7676

LOG OF BORING B-1

PSI Job No.: 575-372-1
Project: Heidelberg - Permanente Cement - Cupertino
Location: 24001 Stevens Creek Blvd
Cupertino, CA

Drilling Method: 6 inch Solid Flight Auger
Sampling Method: SS
Hammer Type: Automatic
Boring Location:

WATER LEVELS

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (0, 25, 50); STRENGTH, tsf ▲ Qu ✳ Qp (0, 2.0, 4.0)	Additional Remarks
	0					8-inch Concrete Slab					
				1	12	FILL - Sandy Gravelly SILT, dark brown, moist, hard, fine to coarse sand, fine to medium angular gravel	ML	18-50	8	×	>>◎DD = 122 pcf
				2	6	medium brown, damp		50/3"			>>◎
	5			3	12	Silty CLAY, dark olive gray, damp, hard, few fine sand	CL	23-50		◪ ✚	LL = 28 PL = 17 >>◎
				4	12	NATIVE - Clayey SILT, dark olive gray, damp, hard, some fine to medium angular gravel, some fine to coarse sand (weathered conglomerate bedrock)		17-50			>>◎
	10			5	12			20-50/4"			>>◎
	15			6	6			50			>>◎
	20			7	15		ML	7-32-50/3"			>>▲ Q_u = 8.2 tsf
	25			8	12			11-50			>>◎
	30			9	6	Sandy SILT, dark olive gray, damp, hard, fine sand		50			>>◎

End of boring at 30.5 feet below grade.
No free water encountered.
Backfilled with cement grout and topped with concrete.

Completion Depth: 30.5 ft
Date Boring Started: 12/16/11
Date Boring Completed: 12/16/11
Logged By: Brand Burfield
Drilling Contractor: V&W Drilling, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Calif. Sampler
Texas Cone

Latitude: 37.3164°
Longitude: -122.0907°
Drill Rig: CME 75
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
4703 Tidewater Avenue, Suite B
Oakland, CA 94601
Telephone: (510) 434-9200
Fax: (510) 434-7676

LOG OF BORING B-2

PSI Job No.: 575-372-1
Project: Heidelberg - Permanente Cement - Cupertino
Location: 24001 Stevens Creek Blvd
Cupertino, CA

Drilling Method: 6 inch Solid Flight Auger
Sampling Method: SS
Hammer Type: Automatic
Boring Location:

WATER LEVELS

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (0, 25, 50) STRENGTH, tsf ▲ Qu ✳ Qp (0, 2.0, 4.0)	Additional Remarks
	0					8-inch Concrete Slab					
						FILL - Gravelly SILT, medium greenish gray, damp to moist, fine to medium angular gravel, some sand	ML				Hand auger to 3'
				1	14	NATIVE - Clayey SILT, medium greenish gray, damp, hard (weathered mudstone bedrock)		22-38-50/2"	10	× >>◎	DD = 131 pcf
	5			2	10			27-50/4"		>>◎	
				3	6			50	8	× >>◎	DD = 116 pcf
	10			4	10			35-50/4"		>>◎	
	15			5	10	dry to damp	ML	27-50/4"		>>◎	
	20			6	6			50		>>◎	
	25			7	5			50/5"		>>◎	
	30			8	2			50/2"		>>◎	
						End of boring at 30.2 feet below grade. No free water encountered. Backfilled with cement grout and topped with concrete.					

Completion Depth: 30.2 ft
Date Boring Started: 12/16/11
Date Boring Completed: 12/16/11
Logged By: Brand Burfield
Drilling Contractor: V&W Drilling, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Calif. Sampler
Texas Cone

Latitude: 37.3164°
Longitude: -122.0907°
Drill Rig: CME 75
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
4703 Tidewater Avenue, Suite B
Oakland, CA 94601
Telephone: (510) 434-9200
Fax: (510) 434-7676

LOG OF BORING B-3

PSI Job No.: 575-372-1
Project: Heidelberg - Permanente Cement - Cupertino
Location: 24001 Stevens Creek Blvd
Cupertino, CA

Drilling Method: 6 inch Solid Flight Auger
Sampling Method: SS
Hammer Type: Automatic
Boring Location:

WATER LEVELS

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (0, 25, 50) STRENGTH, tsf ▲ Qu ✳ Qp (0, 2.0, 4.0)	Additional Remarks
	0					FILL - Clayey SILT, medium brown, damp to moist, some fine to medium gravel, some fine to coarse sand	ML				
	5			1	18	NATIVE - Clayey SILT, light greenish-gray, damp to moist, very stiff, few fine sand (weathered mudstone bedrock)		8-14-15 N=29	14	× ◎	DD = 119 pcf
				2	18			6-12-24 N=36		◎	
	10			3	18			8-13-19 N=32		▲ ◎	Q_u = 1.9 tsf
	15			4	18	white minerals present in fractures	ML	13-13-24 N=37		◎	
	20			5	6	hard		50		>>◎	
	25			6	18	few fine to medium sand		13-17-50 N=67		>>◎	
	30			7	3			50/3"		>>◎	
						End of boring at 30.3 feet below grade. No free water encountered. Backfilled with cement grout and topped with concrete.					

Completion Depth: 30.3 ft
Date Boring Started: 12/16/11
Date Boring Completed: 12/16/11
Logged By: Brand Burfield
Drilling Contractor: V&W Drilling, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Calif. Sampler
Texas Cone

Latitude: 37.3164°
Longitude: -122.0907°
Drill Rig: CME 75
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

APPENDIX B

LABORATORY TEST RESULTS

LABORATORY TEST RESULTS

Laboratory tests were performed on representative soil samples to determine their relative engineering properties. Tests were performed in general accordance with test methods of the American Society for Testing Materials or other accepted standards. The following presents a brief description of the various test methods used.

Classification - Soils were classified visually according to the Unified Soil Classification System. Visual classifications were supplemented by laboratory testing of selected samples in general accordance with ASTM D2487. The soil classifications are shown on the exploration logs in Appendix A.

In-Situ Moisture/Density - The in-place moisture content and dry unit weight of selected samples were determined using relatively undisturbed samples from the linear rings of a 2.38 inch I.D. modified California Sampler. The moisture content of representative SPT samples was also determined. The dry unit weight and moisture contents are shown on the boring logs.

Unconfined Compression – The unconfined compressive strength of representative cohesive samples was determined in general conformance with ASTM D-2166-06. The results of these tests are summarized on the boring logs.

Atterberg Limits – The liquid limit, plastic limit, and plasticity index of selected representative samples were determined in accordance with ASTM D4318. The liquid limit and plastic limit are shown on the boring logs.

Consolidation – The gradual reduction in volume of a soil mass resulting from an increase in compressive stress was measured to determine the consolidation properties of selected samples. The specimen is literally confined in a ring in accordance with ASTM D-2435. The results of these tests are provided below in this appendix.

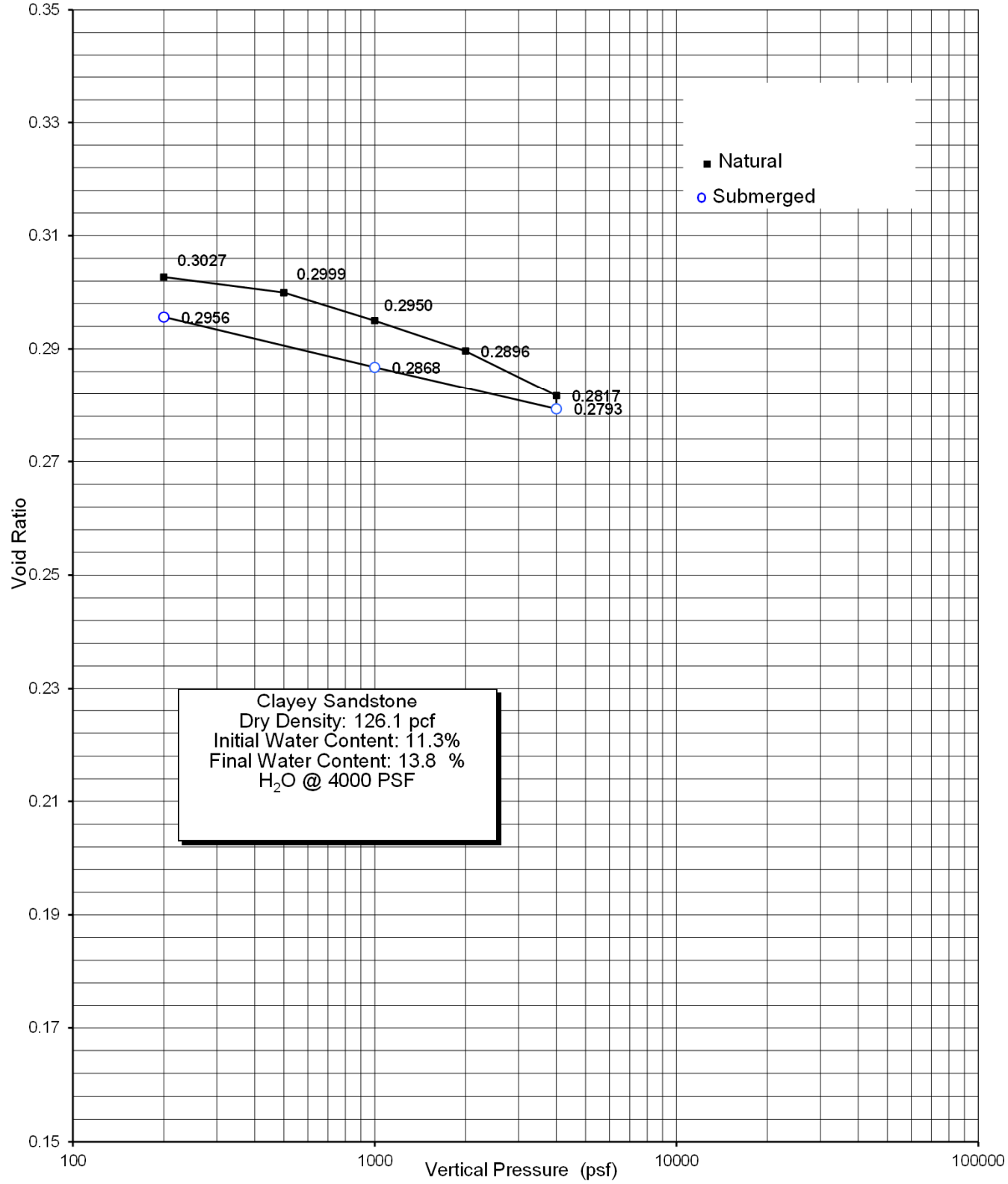
Soil Sulfate / Chloride Test – In order to estimate the concrete degradation potential of soils, the soluble sulfate and chloride content of a representative sample of the on-site soil, provided in the text of this report, was determined in accordance with EPA Test Method 300.0.

pH (Potential of Hydrogen) – The measure of acidity or alkalinity of a material is referred to as the pH factor, which increases with alkalinity and decreases with acidity. The corrosivity potential of iron increases with low pH (4-5), while the corrosivity potential of copper increases with high pH (10-11). The pH value of a representative sample of the on-site soil, provided in the text of this report, was determined in accordance with EPA Test Method 9045B.

Resistivity – The electrical resistivity of a soil is a measure of its resistance to electrical current flow. Corrosion of buried ferrous metals is an electrochemical process which is related to the flow of electrical current from the metal to the soil. Lower electrical resistivity (higher currents) result from higher moisture and chemical contents in the soil. Resistivity is minimal when the soil is saturated. The resistivity of a representative sample of the on-site soil, provided in the text of this report, was determined in accordance with AASHTO Test Method T 288-91.

CONSOLIDATION TEST - ASTM D2435

Boring / Sample No.	B-3 / SS-2	Depth:	8.5'	Date	12-20-11



Geo-Logic ASSOCIATES

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December 18, 2013

Mr. Frank Tedesco
Senior Project Engineer
Lehigh Southwest Cement Company
7660 Imperial Way
Allentown, Pennsylvania 18195

Subject: **Addendum No. 1 to Geotechnical Engineering Services Report**
Revised Foundation Recommendations
Proposed Lehigh Quarry Kiln Mill Dust Collector Exhaust Stack
24001 Stevens Creek Road
Cupertino, Santa Clara County, California
PSI Project No. 575-595-1

Reference: Geotechnical Engineering Services, Kiln/Mill and Cooler Vent Filter Modernization, Lehigh Southwest Cement Company, 24001 Stevens Creek Road, Cupertino, California, PSI Project No. 575-372-1, January 6, 2012.

Mr. Tedesco:

As requested by you, PSI has completed this Addendum No. 1 to PSI's referenced Geotechnical Engineering Services report at the subject site (refer to Figure 1, Site Location Map). This addendum was issued in response to an increase in the expected structural loading for the proposed Kiln Mill Dust Collector (KMDC) exhaust stack and to the proposed additional improvements for the project. A supplementary subsurface exploration program was conducted to provide the information required. A written authorization for PSI's services was provided by your office on July 19, 2013 (Lehigh PO 4500537570).

Previous Study

In PSI's previous geotechnical study for the project the proposed KMDC exhaust stack was expected to be approximately 12 feet in diameter and 230 feet in height. The referenced geotechnical report (PSI, 2012) included one soil boring in the proposed exhaust stack location and included recommendations for a mat foundation to support the stack with an allowable soil bearing pressure of 3,000 psi and a subgrade modulus of 150 pci.

Project Information

Based on information and preliminary plans provided by you (LVTA, 2013), PSI understands that the planned construction has changed; the current plans include the construction of a 15-foot diameter stack, 295 feet in height. The anticipated structural loads will require drilled pier foundations. Additionally, we understand that additional proposed improvements including truss supports for the proposed ductwork that span the baghouse and duct support tower will also be involved. On the north side of the baghouse there is an approximately 5- to 10-foot wide

relatively level area followed by an approximate 45-degree slope leading down to the top of a 15-foot tall concrete retaining wall. The approximate locations of the proposed improvements are shown on Figure 2, Site Plan and Boring Location Map. The proposed improvements are considered to be outside of the County Landslide Hazard Zone, as approximately presented on Figure 3.

The following design structural loads for individual piers are provided by the structural engineer:

ASD Values:
- Maximum Tension: 287.2 kips/pier
- Maximum Compression: 428.2 kips/pier
- Shear: 8.8 kips/pier

LFRD Values:
- Maximum Tension: 407.2 kips/pier
- Maximum Compression: 591.6 kips/pier

Drilled shaft foundations have been proposed for the kiln stack and shallow isolated or strip footings for the truss and support tower foundations.

Based on a review of the provided information, it appears that final grades will be close to existing grades. We understand that that cuts and fills will be less than approximately 2 feet. Should any of the above information or project understanding be inconsistent with the planned construction, PSI requests that you contact us immediately to allow us to make any necessary modifications to our recommendations.

Purpose and Scope of Services

The purpose of our supplemental geotechnical services was to review the provided information and perform field exploration and laboratory testing to allow PSI to provide foundation design recommendations for the proposed Kiln/Mill stack and ductwork. PSI performed the following scope of services:

- Marked boring locations and contacted Underground Service Alert (USA) a minimum of 48 hours prior to beginning work to locate any potential buried public utilities (USA Ticket No. 302585) and coordinated with a private utility location service (contracted by Lehigh) to check the proposed boring locations for existing private underground utilities. Additionally, PSI obtained a drilling permit for the deep boring (B-1) from the Santa Clara Valley Water District (SCVWD).

- Provided drilling equipment and crew to drill 2 standard penetration test (SPT) soil borings (B-1 and B-2) in order to evaluate the subsurface conditions in areas of the proposed construction at the project site.

- Performed field and laboratory classification and testing of select representative samples to evaluate the characteristics of the encountered earth materials.

- Prepared this letter report which presents the results of our field exploration as well as our opinions and recommendations pertaining to the proposed foundations.

Our evaluation was performed in general accordance with the scope of work outlined in our proposal number 575-98453 dated June 18, 2013, with the second boring (B-2) in the ductwork truss support foundation area added per your e-mailed authorization of August 13, 2013. This report should be considered an addendum to our original report.

Subsurface Exploration

In order to evaluate soil conditions at the site, PSI advanced two soil borings with a truck-mounted BK-81 drill rig, using hollow-stem auger methods, operated by V&W Drilling of Stockton, California. Boring B-1 was advanced in the area of the proposed KMDC free-standing exhaust stack to a depth of about 60 feet below the ground surface (bgs), while B-2 was advanced in the area of one of the proposed ductwork truss support foundations to a depth of about 20 feet bgs.

During the sampling procedure, Standard Penetration Tests (SPT) were performed by driving a 2-inch, outer diameter (O.D.) split-spoon (SS) sampler into the undisturbed formation located at the bottom of the advanced borehole with repeated blows of a 140-pound auto-hammer falling a vertical distance of 30 inches. Relatively undisturbed samples were obtained utilizing a 3-inch O.D. California split-spoon sampler. The number of blows required to drive the sampler the last 12 inches of an 18-inch penetration depth is a measure of the soil consistency (see attached Logs of Borings). The blow count obtained from the California sampler should be reduced by approximately ⅓ to obtain a rough correlation to SPT blow counts (N-value). Samples were identified in the field, placed in sealed containers and transported to the laboratory for further classification and testing.

At the completion of drilling, boring B-1 was backfilled to the surface with cement grout in accordance with SCVWD permit requirements and B-2 was backfilled to the surface with soil cuttings and topped with concrete to match the existing surface grade. Locations of the soil borings, as well as the proposed improvements, are shown on Figure 2. Logs of the soil borings are presented as attachments to this report.

Subsurface Conditions

The area of the proposed KMDC stack at boring B-1 is underlain by about 7 feet of existing fill, consisting of about 4½ feet of gravelly sand (SW) and 2½ feet of sandy clay (CL). Native clayey sand (SC) and silt (ML) were encountered below the fill to a depth of about 13 feet bgs, with weathered bedrock encountered from 13 feet to the total depth explored of about 60 feet. This is in general agreement with the subsurface materials encountered at the exploration (previous B-1) performed for the referenced study (PSI, 2012).

The other area explored (ductwork truss support at B-2) was underlain by about 9½ feet of fill, consisting of sandy silt (ML) and silty sand (SM). Native clayey silt (ML) and sand (SW) were encountered below the fill to a depth of about 17½ feet bgs, with weathered bedrock encountered from 17½ feet to the total depth explored of about 20 feet.

The consistency of the silts and clays encountered were hard, while the sands encountered were very dense in terms of the standard penetration tests performed.

The above subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs, included as attachments to this report, should be reviewed for specific information at individual boring locations. These records include soil descriptions, stratification, penetration resistance, locations of the samples and laboratory test data. The stratification shown on the boring logs represents the conditions only at the actual boring locations at the time of our exploration. Variations may occur and should be expected between boring locations. The stratification that represents the approximate boundary between subsurface materials and the actual transition may be gradual. The samples that were not altered by laboratory testing will be retained for 60 days from the date of this report and will then be discarded.

Supplemental Foundation Recommendations

Based on our referenced and current geotechnical study and on our discussions with the project structural engineer, the following supplemental foundation recommendations are made for the proposed improvements, as requested;

Ductwork Truss; Shallow Continuous and Isolated Concrete Footing Foundation

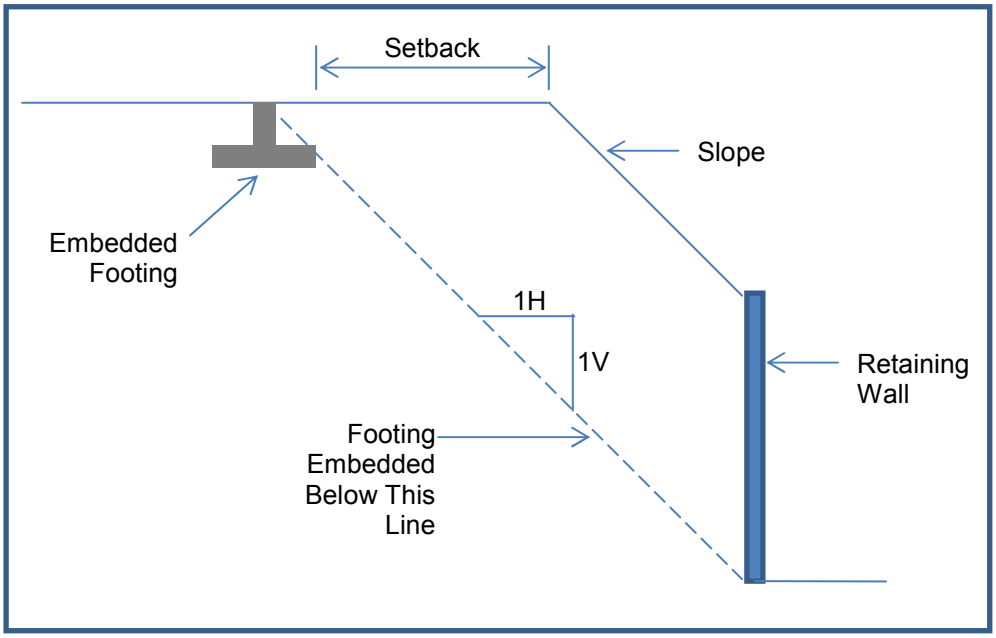
It is our opinion that conventional continuous and isolated spread footings are suitable for the support of the proposed ductwork supports. All footings should be supported by the on-site firm bearing fill or native earth materials, as determined by a PSI representative. Isolated spread footings should be at least 24 inches wide and supported at a depth of 24 inches below the lowest adjacent grade. Footings with the above recommended minimum dimensions may be designed for an allowable bearing pressure of 3,000 psf and a modulus of subgrade reaction of 150 pci. The allowable soil bearing pressure may be increased by one-third for loads of short duration, including wind and seismic forces.

Appropriate foundation reinforcement should be provided in accordance with the Structural Engineer's design.

Horizontal loads acting on shallow foundations are resisted by friction along the foundation base and by passive pressure against the footing face, which is perpendicular to the line of applied force. The coefficient of friction between the base of the footing and the subgrade soils may be assumed to be 0.45. A passive soil resistance equal to a uniform pressure of 300 psf may be used for compacted soil or firm native soil against the face of the footing (assuming a level ground surface) or 15 feet between the edge of embedded footing and face of slope.

Structural Setback - This setback requirement applies to the footings on the north side of the baghouse, near the top of the steep north-facing slope. We recommend a minimum horizontal setback distance 15 feet from the face of descending slopes and retaining walls for all structural footings and settlement-sensitive structures. This distance is measured from the outside bottom edge of the footing, horizontally to a projected 1H:1V line from the bottom of the retaining wall. Please note that the soils within the structural setback area possess poor lateral stability, and

improvements constructed within this setback area may be subject to lateral movement and/or differential settlement. The figure below illustrates the setback as described above.



Based on the location of the proposed truss footings on the north side of the baghouse and the limited space between the edge of the baghouse and the adjacent slope, it may be advisable to construct end bearing drilled piers instead of deeply imbedded isolated footings.

Free-Standing KMDC Exhaust Stack - Drilled Pier Foundation

The proposed free-standing exhaust stack structure may be supported on drilled, straight-shaft cast-in-place reinforced concrete piers embedded in weathered bedrock. The piers should have a minimum spacing of three pier diameters, center to center. Construction should be conducted in general accordance with guidelines below.

Vertical Load Resistance – We recommend that each of the eight (8) drilled piers used for the Exhaust Stack support be designed with a minimum 30 inches in diameter and be embedded at least 48 feet below the existing grade. The minimum diameter and embedment are required for settlement control purposes.

An allowable skin friction value of up to 1,600 psf in the top 13 feet; and 2,000 psf below 13 feet may be used in design of the piers. This skin friction value was estimated using a factor of safety of 2. Based on subsurface conditions encountered in our field exploration, the top seven feet of materials consist of fill materials. We recommend that the compressive and uplift skin friction of the upper 7 feet be ignored.

We recommend that the end bearing capacity of the piers be ignored unless the bottom of piers can be cleaned and verified that a firm and unyielding base is established. If properly cleaned and verified, an allowable end bearing pressure of 10,000 psf can be used in design, which included a factor of safety of 3. The dead weight of the concrete within the CIDH pile and up to

two-thirds of the allowable skin friction may also be used in determining the uplift resistance. The allowable skin friction value may be increased by one-third for loads of short duration, including wind and seismic forces.

The steel reinforcement and other aspects of the pier design should ultimately be determined by the structural engineer based on the structural requirements. It should also be noted that these bearing capacities are based on an allowable settlement of one inch. Drilled pier embedment should be determined based on the recommendations contained herein and the structural engineer's analysis, in accordance with the pier type/dimension, calculated live/dead loads, and predicted overturning moment.

Lateral Load Resistance - A drilled, cast-in-place, reinforced concrete pier should be embedded sufficiently to resist the combination of shear and axial loads, and overturning moments. Lateral loads may be resisted by any method that incorporates lateral earth pressure and/or horizontal subgrade reaction. The design may incorporate a passive earth pressure of 500 psf/ft if the pier concrete is poured tightly against relatively undisturbed native earth materials. The maximum passive resistance should not exceed 7,000 psf. The passive resistance of the top one foot of the drilled pier should be ignored. The passive earth pressure below a depth of one foot can be applied to a width of two times the design drilled pier diameter. The passive resistance value may be increased by one-third (1/3) when subject to transient loading conditions such as seismic impact or wind load. We recommend that PSI be provided with the design lateral load and bending moment when they become available, such that the behavior of the laterally-loaded piers can be checked and pier design recommendations verified.

Settlement - The recommended 30-inch-diameter, 48-foot-long piers were evaluated for total and differential settlements using computer program Shaft (2012, Ensoft, Inc.). The required compressive capacity was estimated based on skin friction. A factor of safety of 2 was included in the skin friction calculation. For piers constructed as described above and subjected to the anticipated design loads, we estimate total settlement to be on the order of ½-inch or less, and a differential settlement on the order of ¼-inch or less over the span of the pile cap.

We understand that the structural engineer will design the required concrete strength and reinforcement steel to accommodate anticipated stresses due to axial and lateral loads and the bending moments.

If the pier spacing (center to center) is greater than three times the pier diameter as currently planned, no reduction for group effect is considered necessary for the design axial compressive capacities of the piers. However, if the piers are spaced closer than three times the pier diameter, the group action effect on axial capacities should be considered, and the settlements re-evaluated.

Installation Considerations and Requirements

Due to the presence of weathered bedrock, slow drilling and equipment wearing should be expected. Potential cave-ins below a depth of approximately 50 feet (where groundwater was encountered) should be expected. The contractor should be prepared to cope with cave-ins either using casings or bentonite drilling mud, or other means and methods to be proposed by

the contractor. Contractor's proposed drilling equipment and method should be submitted to PSI for review at least ten working days before the commencement of drilling.

Proper quality and construction control during the installation is critical for performance of the drilled piers. The following are minimum requirements for proper installation of drilled piers:

- A qualified, on-site geotechnical engineer or geologist should observe the excavation for possible anomalies, unexpected localized unstable conditions, subsurface obstructions, or cave-ins throughout drilled pier installation until concrete placement is completed.

- Minimal cave-ins or sloughing are not expected for drilled piers that are 40 feet or shorter, except for the top seven (7) feet where gravelly sand [Fill] was encountered. Casing may be required in the top 7 feet.

- Cave-ins and sloughing will likely be encountered below a depth of approximately 50 feet (or shallower) where groundwater was encountered during PSI's field investigation. Capability to prevent cave-ins during excavation should be made available at the project site.

- Structural stability of the reinforcement cage should be maintained during the concrete placement. Spacers between steel reinforcement and the walls of the drilled hole should be provided.

- Concrete must be placed with tremie pipes starting from the bottom of the drilled hole. The top of concrete should be maintained at least 5 feet above tip of pipe.

- Pulling casing (if needed) with insufficient concrete inside should not be allowed. A minimum of 5 feet of concrete should be maintained above the bottom of the casing during casing withdrawal.

- No adjacent holes should be drilled of the cast-in-place piers until the concrete has reached its initial set. Drilled holes should not be left open overnight.

General Comments Regarding Construction Observations

The foundation excavations for the drilled piers and the duct truss foundations should be continuously observed by a representative of PSI prior to steel or concrete placement. Our geotechnical engineering personnel should confirm proper diameter, width, depth and cleaning, and should also confirm the nature of the materials encountered in the foundation excavations. Soft or loose soil zones encountered at the bottom of the foundation excavations should be removed as directed by the geotechnical engineer. Concrete placement should be continuously observed to confirm that it meets requirements. A quality control report should be submitted on each of the piers, verifying that details of pier construction have been observed.

Limitations

The recommendations contained in this report are based on review of our referenced geotechnical study and information provided by the project engineer. If there are any revisions to the plans for this project, or if deviations from the subsurface conditions noted in our referenced report are encountered during construction, PSI should be notified immediately to determine if changes in our recommendations are required. If PSI is not retained to perform these functions, PSI will not be responsible for the impact of those conditions on the project.

Services performed by the geotechnical engineer for this project have been conducted with that level of care and skill ordinarily exercised by members of the profession currently practicing in this area. No warranty, expressed or implied, is made.

Should you have any questions after reviewing this letter or require anything further, please contact the undersigned at your convenience.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Ezekiel R. Robles, PE
Project Engineer
PE No. C80689

REGISTERED PROFESSIONAL ENGINEER
EZEKIEL R. ROBLES
C 80689
CIVIL
STATE OF CALIFORNIA

Sheng-Zong John Ho, PE, GE
Principal Consultant

REGISTERED PROFESSIONAL ENGINEER
SHENG-ZONG JOHN HO
No. GE2322
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GEOTECHNICAL
STATE OF CALIFORNIA

Brand Burfield, PG
Project Geologist
PG No 6986

REGISTERED GEOLOGIST
BRAND W. BURFIELD
NO. 6986
STATE OF CALIFORNIA

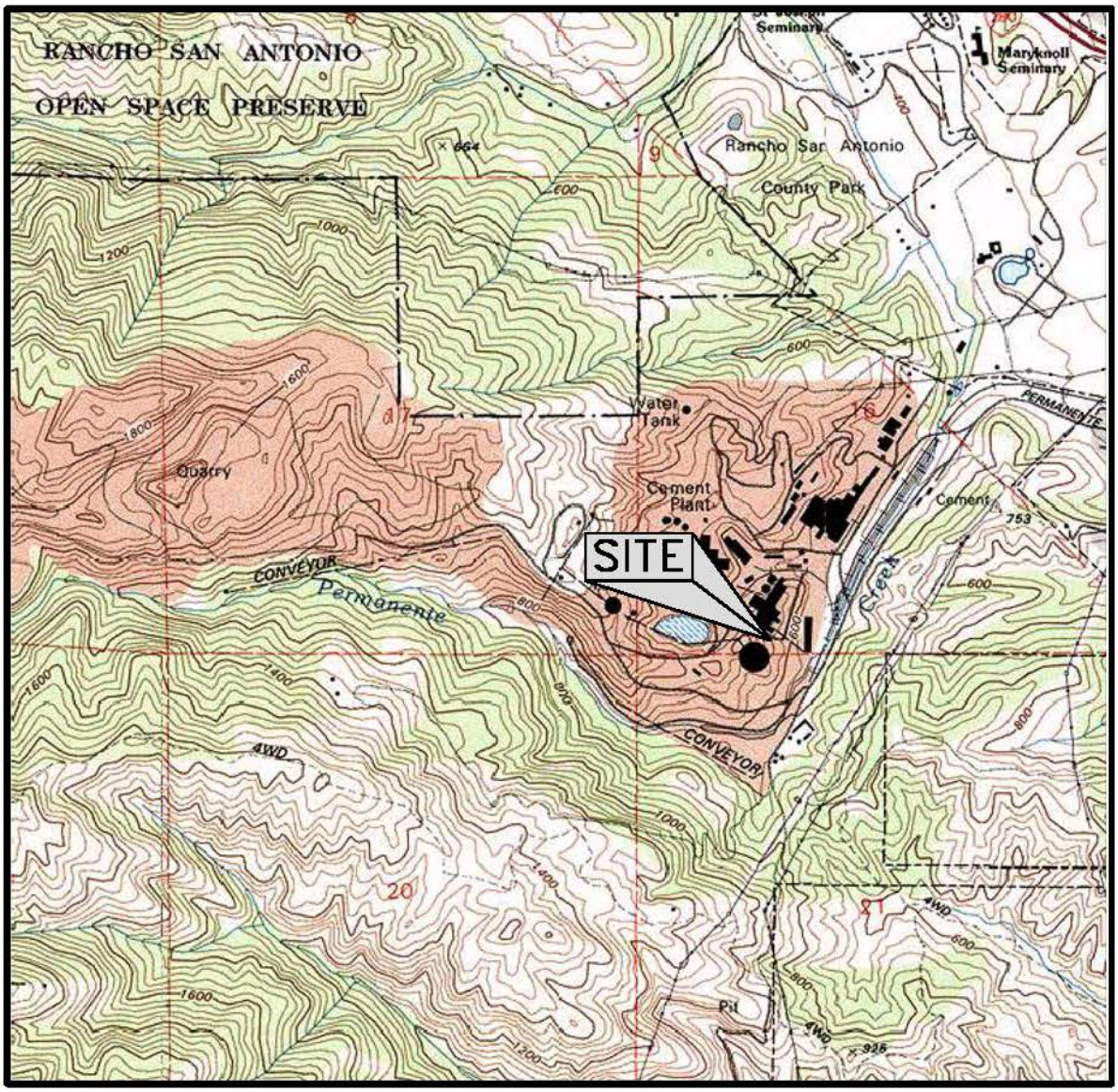
Attachments: Figure 1 - Site Location Map
Figure 2 - Site Plan and Boring Location Map
Figure 3 - Site Location and Landslide Hazard Zone
Logs of Borings B-1 and B-2

References

1. PSI, January 6, 2012, “"Geotechnical Engineering Services, Kiln / Mill and Cooler Vent Filter Modernization, Lehigh Southwest Cement Company, 24001 Stevens Creek Road, Cupertino, California," PSI Project No. 575-372-1.

2. Lehigh Valley Technical Associates, Inc. (LVTA), July 17, 2013, “Free-Standing Stack Pile Cap Plan - Options 1 and 2,” Preliminary Plans, 1 pg.

3. Lehigh Valley Technical Associates, Inc. (LVTA), August 30, 2013, “Kiln Mill Dust Collector (KMDC), Proposed Option C11,” Preliminary Plans, 7 pgs., Sheets GA1100 - GA1106, Project No 56546.



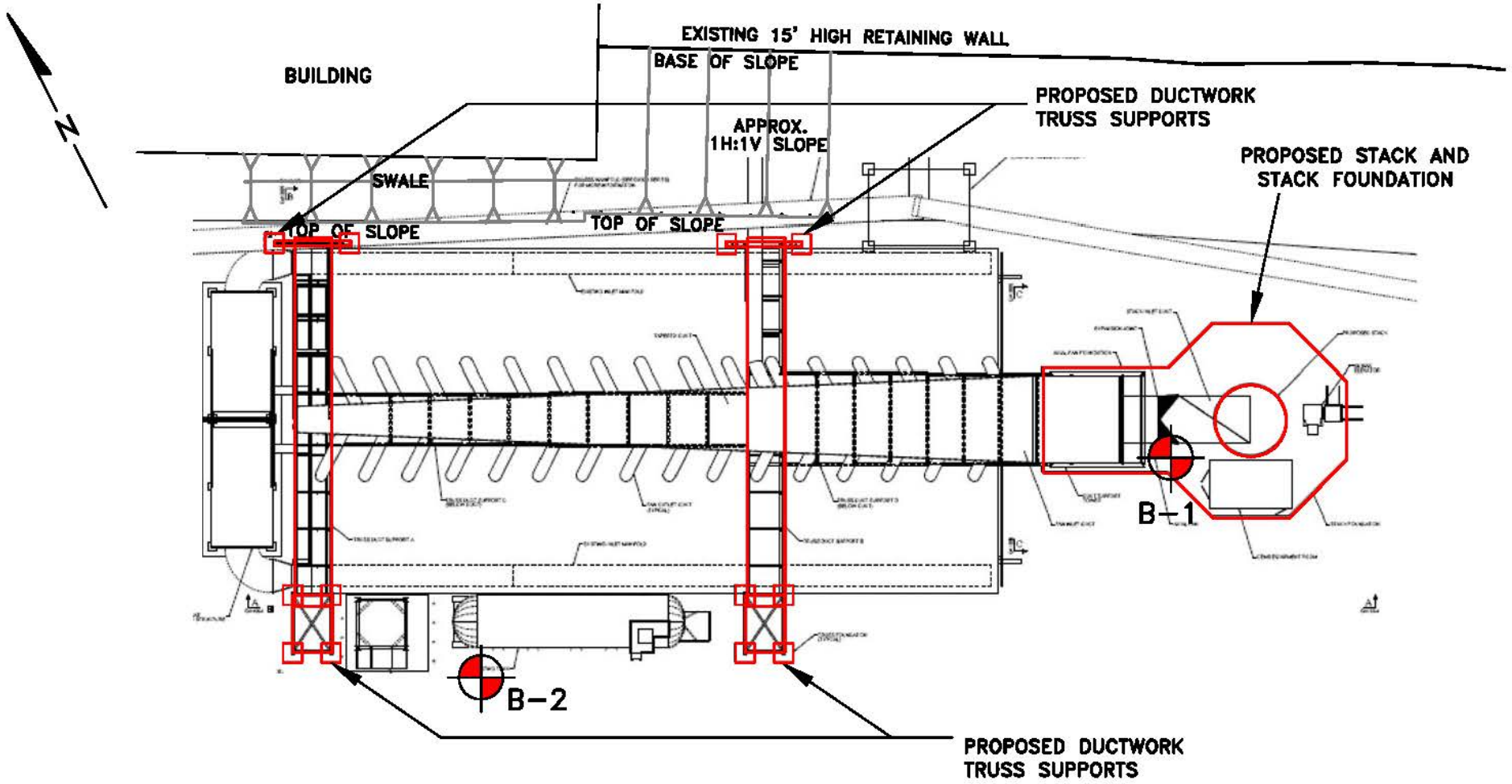
REFERENCE:

U.S.G.S. CUPERTINO, CALIFORNIA, 7.5 MINUTE SERIES TOPOGRAPHIC MAP, DATED 1991.

psi *Information To Build On*
Engineering • Consulting • Testing

4703 Tidewater Avenue, Suite B
Oakland, California 94601
(510) 434-9200

Project Name:	Drawn By:	Date:	File No.:	Figure No.:
KILN EXHAUST STACK *24001 STEVENS CREEK BLVD., CUPERTINO, CALIFORNIA*	*R.D.*	*8/13*	*595-1-1*	*1*
Title: SITE LOCATION MAP	**Approved By:** *B.B.*	**Project No.:** *575-595-1*		



LEGEND

B-2 ⊕ – APPROXIMATE BORING LOCATION

0 30 60ft

APPROXIMATE SCALE

NOTES

1. BASE MAP TAKEN FROM LEHIGH VALLEY TECHNICAL ASSOCIATES, INC., "KILN MILL DUST COLLECTOR (KMDC), PROPOSED OPTION C11," PRELIMINARY PLANS, 7 PGS., SHEETS GA1100 – GA1106, PROJECT NO 56546, REV. D, DATED AUGUST 30, 2013.
2. PROPOSED STRUCTURES OUTLINED IN RED.

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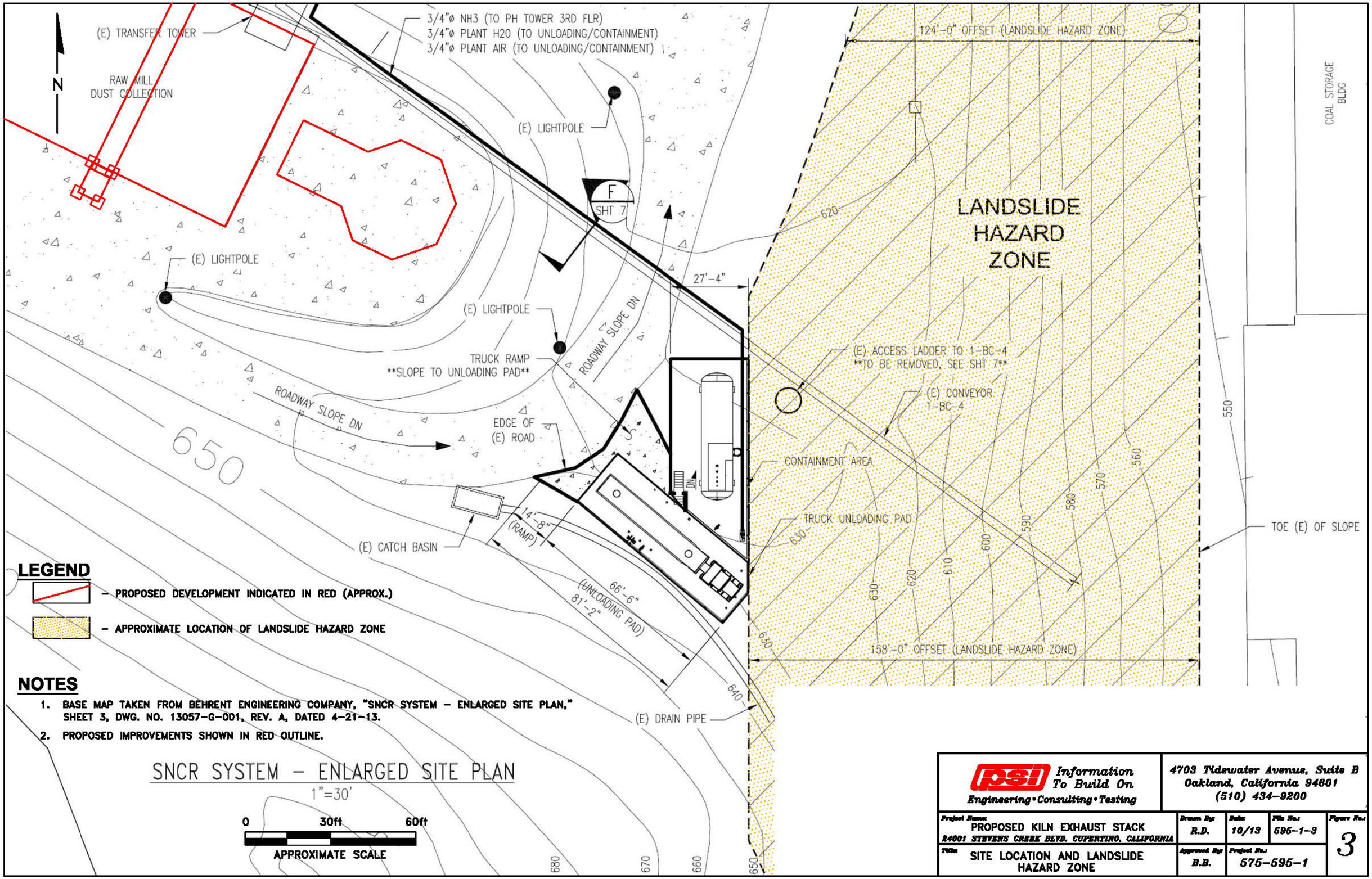
Project Name	Drawn By	Date	File No.	Figure No.
KILN EXHAUST STACK 24001 STEVENS CREEK BLVD. CUPERTINO, CALIFORNIA	B.B.	10/13	595-1-2	2
Title SITE PLAN AND BORING LOCATION MAP	Approved By B.B.	Project No. 575-595-1		



LEGEND

- PROPOSED DEVELOPMENT INDICATED IN RED (APPROX.)
- APPROXIMATE LOCATION OF LANDSLIDE HAZARD ZONE

NOTES

1. BASE MAP TAKEN FROM BEHRENT ENGINEERING COMPANY, "SNCR SYSTEM – ENLARGED SITE PLAN," SHEET 3, DWG. NO. 13057-G-001, REV. A, DATED 4-21-13.
2. PROPOSED IMPROVEMENTS SHOWN IN RED OUTLINE.

SNCR SYSTEM – ENLARGED SITE PLAN

1"=30'

0 30ft 60ft

APPROXIMATE SCALE

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Oakland, California 94601
(510) 434-9200

Project Name	Drawn By	Date	File No.	Figure No.
PROPOSED KILN EXHAUST STACK 14001 STEVENS CREEK BLVD. CUPERTINO, CALIFORNIA	R.D.	10/13	595-1-3	3
Title: SITE LOCATION AND LANDSLIDE HAZARD ZONE	Approved By: B.B.	Project No.: 575-595-1		

Professional Service Industries, Inc.
4703 Tidewater Avenue, Suite B
Oakland, CA 94601
Telephone: (510) 434-9200
Fax: (510) 434-7676

LOG OF BORING B-1

PSI Job No.: 575-595-1
Project: Lehigh - Cupertino - Kiln Stack
Location: 24001 Stevens Creek Blvd
Cupertino, CA

Drilling Method: 8" Diameter Hollow Stem Auger
Sampling Method:
Hammer Type: Manual
Boring Location:

WATER LEVELS
While Drilling 50 feet
Upon Completion feet
Delay N/A

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification		Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (0 25 50) STRENGTH, tsf ▲ Qu ✳ Qp (0 2.0 4.0)	Additional Remarks
	0					6 inches of concrete over 8 inches of aggregate					
				1	18	FILL - Gravelly SAND with silt, dark brown, moist, very dense, fine to coarse sand, fine gravel, trace clay	SW	50/3"	6	× >>◎	DD = 117 pcf
				2	18			50/4"	7	× >>◎	DD = 106 pcf
	5			3	18	Sandy CLAY, black to dark brown, damp to moist, hard, fine to medium sand, trace silt	CL	45-50/6"	11	× >>⊗	
				4	18	NATIVE - Clayey SAND, dark olive grey, moist, fine to coarse sand, very dense, trace fine gravel, trace silt	SC	50/4"	10	× >>◎	DD = 119 pcf
	10			5	18	SILT, dark olive grey, moist, hard, trace fine to medium sand	ML	41-50/6"	8	× >>◎	
						SILTSTONE, dark olive grey, friable to low hardness, damp, deeply weathered, clay matrix					
	15			6	18			50/6"	13	× >>◎	
	20			7	18			46-50	10	× >>◎	
	25										

Continued Next Page

Completion Depth: 60.0 ft
Date Boring Started: 8/13/13
Date Boring Completed: 8/13/13
Logged By: Ruben Donahan
Drilling Contractor: V & W

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Calif. Sampler
Texas Cone

Latitude: 37.3164°
Longitude: -122.0907°
Drill Rig: CME-81
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
4703 Tidewater Avenue, Suite B
Oakland, CA 94601
Telephone: (510) 434-9200
Fax: (510) 434-7676

LOG OF BORING B-1

PSI Job No.: 575-595-1
Project: Lehigh - Cupertino - Kiln Stack
Location: 24001 Stevens Creek Blvd
Cupertino, CA

Drilling Method: 8" Diameter Hollow Stem Auger
Sampling Method:
Hammer Type: Manual
Boring Location:

WATER LEVELS
While Drilling 50 feet
Upon Completion feet
Delay N/A

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	STANDARD PENETRATION TEST DATA N in blows/ft	Moisture, %	Additional Remarks
	25			8	18			50/6"	11	>>
	30			9	18			36-50/4"	12	>>
	35			10	18	moist		50/6"	13	>>
	40			11	18			25-30-35 N=65	18	>>
	45			12	18			50/6"	12	>>
	50									

Moisture: ✕ PL: ◪ LL: ✚ (0, 25, 50)
STRENGTH, tsf: ▲ Qu ✳ Qp (0, 2.0, 4.0)

Continued Next Page

Completion Depth: 60.0 ft
Date Boring Started: 8/13/13
Date Boring Completed: 8/13/13
Logged By: Ruben Donahan
Drilling Contractor: V & W

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Calif. Sampler
Texas Cone

Latitude: 37.3164°
Longitude: -122.0907°
Drill Rig: CME-81
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
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Telephone: (510) 434-9200
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LOG OF BORING B-1

PSI Job No.: 575-595-1
Project: Lehigh - Cupertino - Kiln Stack
Location: 24001 Stevens Creek Blvd
Cupertino, CA

Drilling Method: 8" Diameter Hollow Stem Auger
Sampling Method:
Hammer Type: Manual
Boring Location:

WATER LEVELS

While Drilling	50 feet
Upon Completion	feet
Delay	N/A

Station: N/A
Offset: N/A

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification		Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (0 / 25 / 50) STRENGTH, tsf ▲ Qu ✳ Qp (0 / 2.0 / 4.0)	Additional Remarks
	50			13	18	friable		32-50	16		
	55			14	18			50/6"	11		
				15	18	friable to low hardness		50/5"	11		
	60					End of boring at 58.5 feet below grade - sampled to 60 feet. Groundwater encountered at 50 feet. Borehole backfilled with cement grout.					

Completion Depth: 60.0 ft
Date Boring Started: 8/13/13
Date Boring Completed: 8/13/13
Logged By: Ruben Donahan
Drilling Contractor: V & W

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Calif. Sampler
Texas Cone

Latitude: 37.3164°
Longitude: -122.0907°
Drill Rig: CME-81
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
4703 Tidewater Avenue, Suite B
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Telephone: (510) 434-9200
Fax: (510) 434-7676

LOG OF BORING B-2

PSI Job No.: 575-595-1
Project: Lehigh - Cupertino - Kiln Stack
Location: 24001 Stevens Creek Blvd
Cupertino, CA

Drilling Method: 8" Diameter Hollow Stem Auger
Sampling Method:
Hammer Type: Manual
Boring Location:

WATER LEVELS

Station: N/A
Offset: N/A

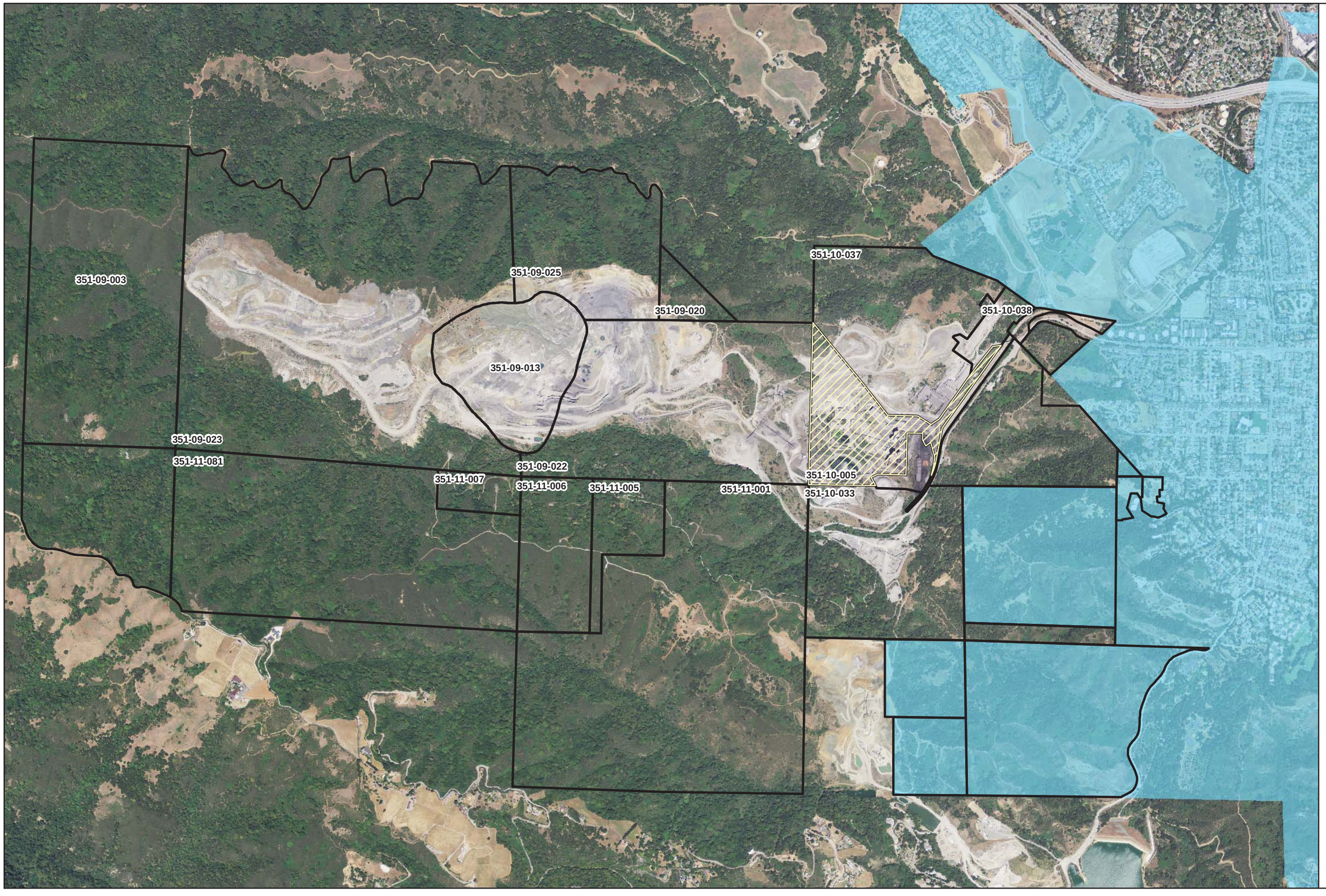
Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification		Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (0 25 50) STRENGTH, tsf ▲ Qu ✳ Qp (0 2.0 4.0)	Additional Remarks
	0					5 inches of concrete over 6 inches of aggregate					
				1	18	FILL - Sandy SILT, dark olive, moist, hard, fine to coarse sand, trace clay	ML	38-50	13	>>◎	DD = 125 pcf
				2	18	Silty SAND, dark olive with white, damp to moist, very dense, fine to coarse sand, trace clay, trace fine gravel		37-50/6"	10	>>◎	
	5			3	18		SM	50/6"	6	>>◎	DD = 117 pcf
				4	18			40-50/5"	5	>>◎	
	10			5	18	NATIVE - Clayey SILT, dark olive grey, damp, hard, trace fine sand	ML	50/6"	13	>>◎	DD = 121 pcf
	15			6	18	SAND, dark olive grey, moist, very dense, fine to medium sand, trace clay, trace fine gravel, trace silt	SW	30-50/3"	9	>>◎	
				7	18	SILTSTONE, dark olive grey, friable to low hardness, dry to damp, moderate to deeply weathered, clay matrix		26-50	10	>>◎	
	20					End of boring at 18.5 feet below grade - sampled to 20 feet. Groundwater not encountered. Borehole backfilled with cuttings and topped with concrete.					

Completion Depth: 20.0 ft
Date Boring Started: 8/13/13
Date Boring Completed: 8/13/13
Logged By: Ruben Donahan
Drilling Contractor: V & W

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger
Calif. Sampler
Texas Cone

Latitude: 37.3164°
Longitude: -122.0907°
Drill Rig: CME-81
Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.



Legend

- Cupertino City Limits
- Cement Plant Parcel
- Asessors Parcels

N
W E
S

Feet
0 1,500

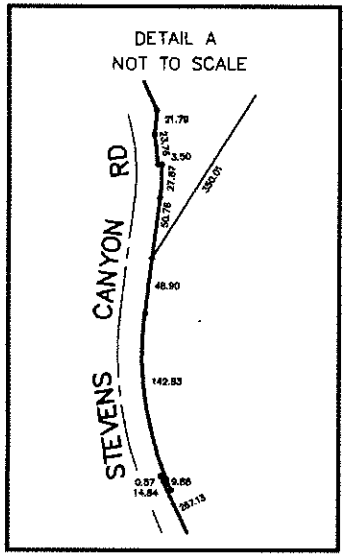
1 inch = 1,500 feet

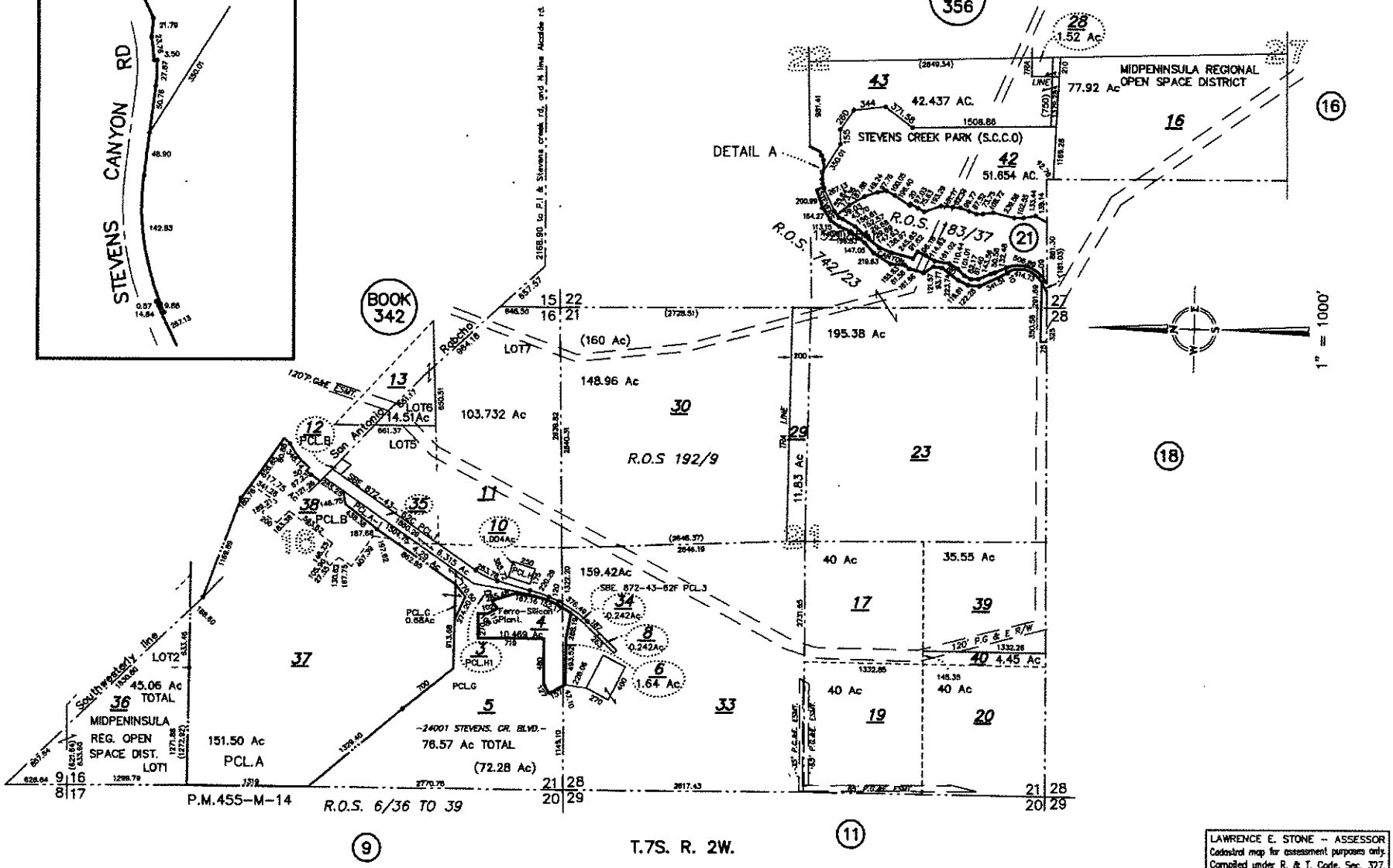
EnviroMINE Inc.

Date: January 2014
RPA Area: Lehigh
Parcels: Santa Clara Cnty.
City Limits: Digitized from Jan. 17, 2012 City of Cupertino Zoning Map
Aerial: 2012, USDA NAIP

OFFICE OF COUNTY ASSESSOR — SANTA CLARA COUNTY, CALIFORNIA

BOOK	PAGE
351	10





LAWRENCE E. STONE – ASSESSOR
Cadastral map for assessment purposes only.
Compiled under R. & T. Code, Sec. 327.
Effective Roll Year 2006–2007

WITNESS my hand and official seal.

(NOTARIAL SEAL)

Leo. H. Vinhcot, Notary Public in and for the County of Santa Clara, State of California.

FILING NO. 164756

Filed for record at the request of San Jose Abstract and Title Insurance Co. Jul 12 1939 at 23 min. past 11 o'clock A.M.

fee 1.10 6f 7-12-1939 CHAS. A. PAYNE, RECORDER 94290

compared doc M. W. Emlen Deputy Recorder

compared book

$35.00 U. S. INT. REV. STAMP CANCELLED

DEED

Santa Clara Holding Company, Ltd., a Nevada corporation, first party, hereby grants to The Permanente Corporation, a California corporation, second party, all that real property situate in the County of Santa Clara, State of California, described as follows, to wit:

Parcel No.1: (1) The Southeast 1/4 of Section 18, Township 7 South, Range 2 West, M.D.B.& M., containing 160 acres of land according to United States Government Survey.

(2) Beginning at a 3" x 4" post marked P.R.R. and A.S.1 standing at the point of intersection of the Northeasterly line of the land and right of way of the Peninsular Railroad Company with the Southerly line of the Homestead Road and from which stake a white oak 16" in diameter marked B.T.A.S.1 bears N.52°W. 12.61 feet and an iron pipe driven in the center line of said Road bears N.18°3'E. 31.45 feet and running thence along the Southerly line of the Homestead Road, S.89°57'E. 364.61 feet, to a 3" x 4" post marked A.S.2 and B from which the quarter Section corner between Sections 10 and 11 T.7 S.R.2 W. M.D.M. bears N.89°8'E. 1888.51 feet and an iron pipe driven in the center line of said road bears N.0° 46'E. 30 feet; thence leaving said Southerly line of said road and running S.0°46'W. 346.81 feet to a 3" x 4" post marked P.R.R. and A.S.3 standing in the Northeasterly line of land and right of way of the Peninsular Railroad Company; thence along the Northeasterly line of said Company's land and parallel to the Northeasterly line of the San Antonio Rancho and distant therefrom thirty feet Southerly N.46°5'W. 500 feet to the place of beginning, containing 1.451 acres and being part of Lot 5, Sec.10, T.7 S.,R. 2 W., M.D.B.& M. and a part of the San Antonio Rancho Courses true. Var.17°35'E. as surveyed May 18, 1908 by Chas. Herrmann of Herrmann Bros. Surveyor and C.E., San Jose, California.

Parcel No.2: The Southwest Quarter of the Southwest Quarter of Section 16, Township 7 South, Range 2 West of Mount Diablo Base & Meridian, containing, according to United States Government Survey, 40 acres of land.

Parcel No.3: Lots 5, 6, 7 and 8, being the Southwest quarter of Section 17, T.7 S.R.2 W.,M.D.B. & M., and all of said Southwest quarter of said section and containing 154.50 acres, more or less, but excluding and excepting therefrom that certain parcel of land more particularly described as follows, to-wit:

Beginning at an iron pipe set for the quarter section corner between Sections 17 and 20, T.7 S., R.2 W., M.D.B.& M., from which is set an iron pipe on ridge, S.89°51'E. 201.50 feet; thence N.89°51'W. 18.18 chains to a stake, from which bears a live oak tree marked with a blaze and a round tin S.89°15'E. 26.80 feet; thence N.1°28'W. 22 chains to a stake; thence S.89°51'E. 18.18 chains to a stake; thence S.1°28'E. 22 chains to the place of beginning, containing 40 acres and being part of the Southwest quarter of said Section 17, T.7 S.,R. 2 W., M.D.B.& M.

Parcel No.4: The Southeast quarter of Section 17, Township 7 South, Range 2 West, M.D.B. & M.

Parcel No.5: Lots 1, 2, 3, & 4, comprising the fractional Northwest quarter of Section 17, Township 7 South, Range 2 West, M.D.B. & M. containing according to the Official Surveys of the United States Government, 165.82 acres, more or less.

Parcel No.6: Parcel No.1: A strip of land 60.00 feet wide extending from the Northeasterly line of that certain 97.745 acre tract of land shown and delineated upon that certain Map entitled, "Map of the Heney Vineyard", recorded in Book "Z" of Maps, page

17, records of Santa Clara County, California, in a general Southerly direction, the center line of which strip of land is described as follows:

Beginning at Station B 0+00 at a 3/4" iron pipe set flush in the Northeasterly line of said 97.745 acre tract distant thereon N.46°06'W. 508.66 feet from an iron pipe, "H.A." at Northeasterly corner of said 97.745 acre tract (and from which Station B.0+00 a 1 inch iron pipe set at the Northwesterly corner of said 60.00 foot strip of land bears N.46°06'West 58.92 feet, and a 1 inch iron pipe set at the Northeasterly corner of said 60.00 foot strip of land bears S.46°06' East 58.92 feet) and running thence from said Station B 0+00, South 15° 29' 30" East 359.06 feet to a 3/4" iron pipe set flush at Station B 3+59.05 (from which an almond tree 12 inches in diameter marked "B.T.P." bears South 3/° 35' East 61.30 feet and a 1 inch iron pipe bears S.74°30'30"W. 30.00 feet and a 1 inch iron pipe bears N.74°30'30"E. 30.00 feet) thence curving tangentially to the left through an angle of 15°34' along a curve of 410.28 feet radius for a distance of 111.47 feet to a 3/4" iron pipe set flush at Station B 4+70.52 (from which a 1 inch iron pipe bears S.58°56'30" West 30.00 feet and a 1 inch iron pipe bears N.58° 56'30"E. 30.00 feet); thence tangent to said curve, South 31°03'30"East 75.15 feet to a 3/4" iron pipe set flush at Station B 5+45.67 (from which a 1 inch iron pipe bears S.58° 56'30"W. 30.00 feet, and a 1 inch iron pipe bears N.58°56'30"E. 30.00 feet) thence curving tangentially to the right through an angle of 81°46' along a curve of 819.02 feet radius for a distance of 1168.62 feet to a 3/4" iron pipe set flush at Station B 17+14.49 (from which a 1 inch iron pipe bears S.39°17'30"East 30.00 feet and a 1 inch iron pipe bears N.39°17'30"W. 30.00 feet) thence tangent to said curve, S.50°42'30"W. 245.51 feet to a 3/4" iron pipe set flush at Station B 19+60.00 at Southerly terminus of said center line of Parcel No.1 (from which a 1 inch iron pipe bears N.39°17'30"W. 30.00 feet and a 1 inch iron pipe bears N.39°17'30"W. 50.00 feet, and a 1 inch iron pipe bears South 39° 17' 30" East 30.00 feet and a 1 inch iron pipe bears S.39°17'30" E. 50.00 feet), Courses true. Variation 18°05' E.

Parcel No.2: A strip of land 100.00 feet wide, the center line of which is described as follows:

Beginning at a 3/4" iron pipe set flush at the above mentioned Station B 19+60.00 at Southerly terminus of the above described Parcel No.1, and running thence South 50°42'30"West 139.95 feet to a 3/4" iron pipe set flush at Station B 20+99.95 at Southerly terminus of said center line of Parcel No.2 (from which a live oak 20 inches in diameter marked "B.T.P." bears North 22° 10' West 45.33 feet and a 1 inch iron pipe bears N.39° 17' 30" West 30.00, and a 1 inch iron pipe bears N.39°17'30"West 50.00 feet, and a 1 inch iron pipe bears S.39°17'30" East 30.00 feet, and a 1 inch iron pipe bears S.39°17'30"East 50.00 feet). Courses true. Variation 18° 05' East.

Parcel No.3: A strip of land 60.00 feet wide, the center line of which is described as follows:

Beginning at a 3/4" iron pipe set flush at the above mentioned Station B 20+99.95 at Southerly terminus of the above described Parcel No.2, and running thence Southwesterly along a curve whose center point bears S.39°17'30" East 319.62 feet, through an angle of 25°17' for a distance of 141.04 feet to a 3/4" iron pipe set flush at Station B 22+40.99 (from which a 2" iron pipe bears North 64°34'30" West 30.00 feet and a 1" iron pipe bears South 64° 34' 30" East 30.00 feet) thence tangent to said curve, South 25° 25' 30" West 205.01 feet to a 3/4" iron pipe set flush at Station B 24+46.00 at Southerly terminus of said center line of Parcel No.3 (from which a 1" iron pipe bears N.64°34'30" West 30.00 feet, and a 1" iron pipe bears N.64°34'30"West 50.00 feet, and a 1" iron pipe bears S.64°34'30" East 30.00 feet and a 1" iron pipe bears S.64°34'30" East 50.00 feet.) Courses true. Variation 18° 05' East.

Parcel No.4: A strip of land 100.00 feet wide, the center line of which is described as follows:

Beginning at a 3/4" iron pipe set flush at the above mentioned Station B 24+46.00 at Southerly terminus of the above described Parcel No.3, and running thence South 25°25'30" West 155.00 feet to a 3/4" iron pipe set flush at Station B.26+01.00 at Southerly terminus of said center line of Parcel No.4 (from which a live oak 36" in diameter marked "B.T.P." bears South 71°35'E. 36.10 feet and a 1" iron pipe bears N.64°34'30"West 30.00 feet, and a 1 inch iron pipe bears N.64°34'30" W. 50.00 feet and a 1 inch iron pipe bears S.64°34'30"East 30.00 feet, and a 1 inch iron pipe bears S.64°34'30" East 50.00 feet.) Courses true. Variation 18° 05' East.

Parcel No.5: A strip of land 60.00 feet wide, the center line of which is described as follows:

Beginning at a 3/4" iron pipe set flush at the above mentioned Station B 26+01.00 at Southerly terminus of the above described Parcel No.4, and running thence South 25° 25' 30" West 83.74 feet to a 3/4" iron pipe set flush at Station B 26+84.74 (from which a 1" iron pipe bears North 64°34'30" West 30.00 feet and a 1" iron pipe bears South 64°34'30" East 30.00 feet) thence curving tangentially to the left through an angle of 19°41' along a curve of 764.49 feet radius for a distance of 262.63 feet to a 3/4" iron pipe set flush at Station B 29+47.37 (from which a 1" iron pipe bears N.84°14'30" West 30.00 feet and a 1" iron pipe bears South 84° 14' 30" East 30.00 feet) and thence tangent to said curve and along a line parallel with and distant 30.00 feet at right angles Westerly from the Westerly line of the 1.969 acre tract standing in the name of William F. McCarthy, South 5°45'30" West 217.30 feet to a 3/4" iron pipe set at Station B 31+64.67 and standing in

the Southwesterly line of the above described 97.745 acre tract at a point distant thereon North 53°46' West 34.80 feet from corner "S.L.1" at Westernmost corner of said 1.969 acre tract, said corner "S.L.1" being also the Southernmost corner of Parcel No.5 (and from which Station B 21+64.67 a 1" iron pipe set at the Westernmost corner of said Parcel No.5, bears N.53°46' West 34.80 feet). Courses true. Variation 18° 05' East.

Parcel No.6: A strip of land 41.50 feet wide connecting the Westerly line of said Mountain View and Stevens Creek Road with the Easterly line of the above described Parcel No.1, the center line of which strip of land is described as follows:

Beginning at a 3/4" iron pipe set flush in said Westerly line of said Mountain View and Stevens Creek Road, distant thereon North 4°26' W. 60.10 feet from the corner "H.E." in the Easterly boundary line of above mentioned 97.745 acre tract (from which a 3/4" iron pipe set at the Northernmost corner of Parcel No.6 bears N.4°26'W. 30.10 feet and a 3/4" iron pipe set at the Easternmost corner of said Parcel No.6 bears S.4°26'E. 30.10 feet) and running thence S.39°09'W. 121.48 feet to a 3/4" iron pipe set flush in the Easterly line of said Parcel No.1 (from which a 3/4" iron pipe set flush at Station B 10+03.09 of said center line of said Parcel No.1, bears S.39°09'W. 47.19 feet) Courses true. Variation 18° 05' East.

Parcel No.7: That certain parcel of land 20.00 feet wide extending from the Westerly line of Mountain View and Stevens Creek Road at the iron pipe "H.A." marking Northeasterly corner of the above mentioned 97.745 acre tract, in a Northwesterly direction to the Easterly line of the above described Parcel No.1, said strip of land adjoining and lying next Southwesterly to the Northeasterly line of the above mentioned 97.745 acre tract and being designated "20 foot right of way" on the Map hereinbefore mentioned.

Parcel No.7: Lots 3, 4, 5 and 7 and the Southwest quarter of the Northwest quarter and the N 1/2 of the S.W. 1/4 and the S.E. 1/4 of the S.W. 1/4 and the S.W. 1/4 of the S.E. 1/4, all of Section 16 and the N.W. 1/4 of Section 21, all in T.7 S., R. 2 W., M.D.B.& M.

Parcel No.8: Lots 3, 4, 7 and 8 of Sec.18, T.7 S.R. 2 W., M.D.B.& M. Containing 162.50 acres all according to the Official Survey of said Township.

Parcel No.9: A strip of land varying in width, being 100 feet wide, lying 50 feet on each side of, measured at right angles to and parallel with a surveyed center line, and extending from the boundary line between the lands of the Roman Catholic Archbishop of San Francisco and the Grantor, Santa Clara Holding Company, Ltd., a corporation, at or near Engineer's Station "L" 50+26.7 of the said surveyed center line, in an Easterly direction 573.3 feet measured along the said surveyed center line to Engineer's Station "D" 56+00 then 80 feet wide, lying 50 feet on the Northwesterly side and 30 feet on the Southeasterly side of and parallel with the said surveyed center line, measured at right angles thereto and extending from the said Engineer's Station "D" 56+00 in a Northeasterly direction a distance of 1222.8 feet, measured along the said surveyed center line, to the boundary line between the lands of Geo. L. Anthony and the Grantor, at or near Engineer's Station "L" 68+47.6 of said surveyed center line. The said surveyed center line being more particularly described as follows, to-wit:

Beginning at the point of intersection of the said surveyed center line, at or near Engineer's Station "L" 50+26.7 with the boundary line between the lands of the Roman Catholic Archbishop of San Francisco and the Grantor, Santa Clara Holding Company, Ltd., a corporation, distant thereon S.45°41' W. 1336.8 feet from stake marked G.F.5 standing in the said boundary line, said stake also stands at the Westernmost corner of Geo. L. Anthony's 22.54 acre tract; running thence S.61°02'E. 2.3 feet to Engineer's Station "D" 50+29.9; thence Easterly along the arc of a taper curve to the left of curvature increasing 1° 30' every 30 feet, 90 feet to Engineer's Station "D" 51+19.9, the long chord bears S.82°05'E. 89.98 feet; thence Easterly and Northeasterly along the arc of a curve to the left having a radius of 955.04 feet, 940.6 feet to Engineer's Station "D" 60+60.5, the long chord bears N.68°03'E. 903.1 feet; thence in a Northeasterly direction along the arc of a taper curve to the left of curvature decreasing 1°30' every 30 feet, 90 feet to Engineer's Station "D" 61+50.5= "L" 61+75.8, the long chord bears N.38°11'E. 89.98 feet; thence N.37°08'E. 671.8 feet to the boundary line between the lands of Geo. L. Anthony and the Grantor, at or near Engineer's Station "L" 68+47.6 distant thereon S.89°37'E. 434.7 feet from the said stake marked G.F.5 standing at the Westernmost corner of Geo. L. Anthony's 22.54 acre tract, containing an area of 3.50 acres, more or less.

Parcel No.10: A strip of land varying in width being 80 feet wide, lying 50 feet on the Westerly side and 30 feet on the Easterly side of and parallel with a surveyed center line, measured at right angles thereto and extending from the boundary line between the lands of Frank M. Anthony and the Grantor, at or near Engineer's Station "L" 68+47.6 of said surveyed center line in a Northwesterly direction, 1052.4 feet measured along the said surveyed center line to Engineer's Station "L" 79+00; thence 120 feet wide, lying 50 feet on the Westerly side and 70 feet on the Easterly side of and parallel with the said surveyed center line, measured at right angles thereto, and extending from the said engineer's station "L" 79+00 in a Northwesterly direction, 129.6 feet, measured along the said surveyed center line, to engineer's station "L" 80+29.6 and 90 feet wide lying 50 feet on the Westerly side and 40 feet on the Easterly side of and parallel with the said surveyed center line, measured at right angles thereto, and extending from the said engineer's station "L" 80+29.6 in a Northwesterly direction 18.8 feet, measured along the said surveyed center line, to the boundary line between the lands of the Roman Catholic Archbishop of San Francisco and the Grantor, at or near Engineer's Station "L" 80+48.4 of said surveyed center line. The said surveyed center line being more particularly described as follows, to-wit:

Beginning at the point of intersection of the said surveyed center line at or near Engineer's Station "L" 68+47.6, with the boundary line between the lands of Frank M. Anthony and the Grantor, distant thereon S.89°37'E. 34.7 feet from a stake marked C.F.5, standing at the Westernmost corner of the Grantor's 22.54 acre tract; running thence N.37°08'E. 459.5 feet to Engineer's Station "L" 73+17.1; thence in a Northeasterly direction along the arc of a taper curve to the left of curvature increasing 1° every 30 feet, 90 feet to Engineer's Station "L" 74+07.1, the long chord bears N.36° 26'E. 90 feet; thence continuing in a Northeasterly direction along the arc of a curve to the left having a radius of 1432.47 feet, a distance of 313.8 feet to Engineer's Station "L" 77+20.9, the long chord bears N.29°03 1/2'E. 313.14 feet; thence continuing in a Northeasterly direction along the arc of a taper curve to the left of curvature decreasing 1° every 30 feet, 90 feet to Engineer's Station "L" 78+10.9, the long chord bears N.21°41'E. 90 feet; thence N.20°59'E. 218.7 feet to Engineer's Station "L" 80+29.6; thence Northeasterly along the arc of a curve to the right having a radius of 5864.62 feet, 18.8 feet to the boundary line, at or near Engineer's Station "L" 80+48.4, between the lands of the Roman Catholic Archbishop of San Francisco and the Grantor, distant thereon N.45°31 1/2' E. 1460.2 feet from the said stake marked C.F.5 standing in the said boundary line between the lands of the Roman Catholic Archbishop of San Francisco and the Grantor, containing an area of 2.306 acres, more or less.

Parcel No.11: (1) Beginning at an iron pipe "R1", set at the point of intersection of the Southwesterly line of the Rancho San Antonio as patented with the present center line of the Permanente Road, said point of beginning being also the Southernmost corner of that certain 108.678 acre tract conveyed by Muriel M. Haines to the Roman Catholic Archbishop of San Francisco by Deed dated February 21, 1924 and recorded in Vol.74 of Official Records, page 78, in the office of the County Recorder of Santa Clara County, California, said point of beginning being also the Westernmost corner of that certain 13.738 acre tract distributed to Althea L. Haines by Decree of Distribution dated March 11, 1927 and recorded in Vol. 312 of Official Records, page 117, in said Recorder's Office and from which point of beginning an iron witness pipe set flush in the Northwesterly line of said Road bears N.45°10'W. 20.32 feet, and a white oak 12" in diameter bears N.70°E. 13.15 feet, and a white oak 15" in diameter bears N.10°10'W. 38.45 feet, both trees being marked "B.T.P."; and running thence Northwesterly along said Southwesterly line of said Rancho San Antonio and along the Southwesterly line of said 108.678 acre tract N.45°10'W. 459.94 feet to an iron pipe from which a flush iron pipe bears S.49°10'E. 42.04 feet, and a live oak 12" in diameter bears S.52°30'E. 20.95 feet, and a live oak 15" in diameter bears S.12°25'W. 22.28 feet, both trees being marked "B.T.P."; thence leaving said line of said Rancho and said line of said 108.678 acre tract and running, N.33°36'E. 37.28 feet to an iron pipe; thence curving to the right along a curve of 615.69 feet radius, the center point of which curve bears S.56° 24'E. 615.69 feet, for a distance of 651.94 feet (the chord of said curve being N.64° 02'E. 621.78 feet) to an iron pipe; thence, S.62°47'E. 93.12 feet to an iron pipe; thence S.81°02'E. 1198.60 feet to an iron pipe standing in the Northwesterly line of that certain 13.30 acre tract conveyed by Frank M. Anthony to Santa Clara Holding Company Ltd. by Deed dated February 5, 1933, and recorded in Vol. 537 of Official Records, page 393, in said Recorder's Office, said iron pipe being distant N.45°50' 30" E. 112.50 feet from the Westernmost corner of said 13.30 acre tract, said iron pipe being also in the Southeasterly line of said 108.678 acre tract, and from which iron pipe an iron witness pipe bears S.45°50'30" W. 50.00 feet, thence Southwesterly along said Southeasterly line of said 108.678 acre tract, S.45°50'30"W. 502.05 feet to an iron pipe set flush at Station "J5"-"R11" in said center line of said Permanente Road and at the Easternmost common corner for said 108.678 acre tract and said 13.738 acre tract, and from which an iron witness pipe standing in the Northerly line of said road bears N.45°50'30" E. 27.27 feet; and thence in a general Westerly direction along the general center line of said Permanente Road as now fenced, and along the dividing line between said 108.678 acre tract and said 13.738 acre tract the ten following courses and distances: N.75°52'W. 83.20 feet to an iron pipe, "R10", N.63°41'W. 104.60 feet to an iron pipe, "R9", N.45°05'W. 131.00 feet to an iron pipe, "R8", N.52°16'W. 51.40 feet to an iron pipe, "R7", N.72°06'W. 405.00 feet to an iron pipe, "R6", set in the place of an old 2" x 3" stake, N.81°46'W. 70.95 feet to an iron pipe, "R5", S.76°14'W. 69.40 feet to an iron pipe, "R4", S.59°26'W. 77.12 feet to an iron pipe, "R3", from which a live oak 18" in diameter marked "B.T.J.10" bears S.28°15'E. 7.78 feet, S.39°49'W. 275.87 feet to an iron pipe, "R2", set in the place of an old 2" x 3" stake, and S.34°49'W. 167.20 feet to the point of beginning, Containing a gross area of 12.508 acres of which 0.668 acres lies within the limits of said Permanente Road as now fenced, leaving a net area of 11.840 acres, and being part of said 108.678 acre tract in the Rancho San Antonio as patented. Courses true. Var. 18° E.

(2) Beginning at an iron pipe standing in the Southeasterly line of that certain 473 acre tract conveyed by Sarah A. Foss to The Roman Catholic Archbishop of San Francisco, by Deed dated May 5, 1920 and recorded in Vol. 517 of Deeds, page 42, in the office of the County Recorder of Santa Clara County, California, said point of beginning being also the Northernmost corner of that certain 7.197 acre tract conveyed by George L. Anthony et ux to Santa Clara Holding Company, Ltd., by Deed dated February 3, 1933 and recorded in Vol. 537 of Official Records, page 392 in said Recorder's Office, and running thence Southwesterly along the dividing line between said 473 acre tract and said 7.197 acre tract, S.45°28'40" W. 233.70 feet to an iron pipe, thence leaving

said dividing line and running, N.20°59'E. 111.08 feet to an iron pipe; thence, N.19°14'E. 85.27 feet to an iron pipe; thence curving to the left along a curve of 513.69 feet radius, the center point of which curve bears N.7.6°31'W. [illegible] feet, for a distance of 161.38 feet (the chord of said curve being N.7°29'E. 160.71 feet) to an iron pipe; thence radially to said curve N.88°29'E. 20.00 feet to an iron pipe; thence curving to the left along a curve of 533.69 feet radius, the center point of which curve bears S.88°29'W. 533.69 feet for a distance of 211.13 feet (the chord of which curve is N.12°51'W. 209.76 feet) to an iron pipe; thence N.26°56'W. 86.84 feet to an iron pipe; thence N.28°41'W. 69.80 feet to an iron pipe; thence N.26°56'W. 93.12 feet to an iron pipe; thence curving to the right along a curve of 613.69 feet radius, the center point of which curve bears N.65°49'E. 613.69 feet, for a distance of 315.53 feet (the chord of said curve being N.9°27'15" W. 312.06 feet) to an iron pipe standing in the Northeasterly line of said 473 acre tract, and from which iron pipe an iron pipe set flush bears S.53°46'E. 47.21 feet; thence Southeasterly along said Northeasterly line of said 473 acre tract, S.53°46'E. 854.55 feet to a 4" x 6" corner fence post marked "A.1.1" standing at the Easternmost corner of said 473 acre tract and in the Northwesterly line of that certain 0.155 acre tract conveyed by George L. Anthony et ux, to The Roman Catholic Archbishop of San Francisco by Deed dated November 18, 1922 and recorded in Vol. 564 of Deeds, page 360, in said Recorder's Office; thence leaving said 473 acre tract and running Northeasterly along said Northwesterly line of said 0.155 acre tract, N.45°38'E. 144.94 feet to an iron pipe set in the place of an old 2" x 3" stake standing at the Northernmost corner of said 0.155 acre tract and in the Westerly line of the Mountain View and Stevens Creek Road; thence Southeasterly along the Northeasterly line of said 0.155 acre tract and along said Westerly line of said Road, S.4°47'E. 28.51 feet to an iron pipe set in the place of an old 2" x 3" stake thence leaving said Road and running Southwesterly along the Southeasterly line of said 0.155 acre tract the two following courses and distances: S.45°38'W. 287.48 feet to an iron pipe, "C1", set in place of an old 2" x 3" stake, and S.54°26'W. 145.56 feet to an iron pipe "C2" set in place of an old 2" x 3" stake at Westernmost corner of said 0.155 acre tract and in said Southeasterly line of said 473 acre tract; and thence leaving said 0.155 acre tract and running Southwesterly along said Southeasterly line of said 473 acre tract, S.45°43'W. 312.87 feet to the point of beginning.

Containing 6.531 acres and being all of said 0.155 acre tract and a part of said 473 acre tract in the Rancho San Antonio as patented. Courses true. Var. 18° E.

It is the intent of this deed to, and First Party hereby does, grant and convey to Second Party all of First Party's real property situate in said County of Santa Clara, State of California, whether owned by First Party in fee or otherwise and including, without limitation, all rights of way, easements and licenses.

TO HAVE AND TO HOLD to second party, its successors and assigns.

IN WITNESS WHEREOF, first party has executed these presents, by its proper officers thereunto duly authorized, this 10th day of July, 1939.

(CORPORATE SEAL) SANTA CLARA HOLDING COMPANY, LTD.
By F. A. Bailey, Vice President.
By G. F. Dauler, Secretary.

STATE OF CALIFORNIA, CITY AND COUNTY OF SAN FRANCISCO) ss. On this 10th day of July, in the year One Thousand Nine Hundred and Thirty-nine, before me, Helen G. Boyle, a Notary Public in and for the City and County of San Francisco, State of California, residing therein, duly commissioned and sworn, personally appeared F. A. Bailey and G. F. Dauler, known to me to be the Vice-President and Secretary, respectively, of the corporation that executed the within instrument, and also known to me to be the persons who executed the within instrument on behalf of the corporation therein named, and acknowledged to me that such corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in the City and County of San Francisco, the day and year in this certificate first above written.

(NOTARIAL SEAL) Helen G. Boyle, Notary Public in and for the City and County of San Francisco, State of California.

My commission expires September 19, 1942.

CERTIFICATE OF SECRETARY OF SANTA CLARA HOLDING COMPANY, LTD.

I, G. F. Dauler, Secretary of Santa Clara Holding Company, Ltd., a Nevada corporation, do hereby certify:

1. That the following is a full, true and correct copy of a resolution duly adopted by the Board of Directors of this corporation at a meeting duly held on the 9th day of March 1938, at which meeting a quorum of the Directors of said corporation was present and acting:

"RESOLVED, that F. A. Bailey, the Vice-President, and G. F. Dauler, the Secretary, and C. J. Stacey, the General Manager, of this corporation be, and they are, hereby authorized and empowered, for and on behalf of and in the name of this corporation and as its corporate act and deed, to lease the properties of this corporation to the Henry J. Kaiser Company, Oakland, California, for a period of three years at such rental or royalty as they may determine, but not less than Twelve Thousand Dollars per annum, and to grant to said Henry J. Kaiser Company an option to purchase the properties of this corporation, at any time during the period of said lease, for the sum of Two Hundred Thirty-five Thousand Dollars, and to perform all acts and execute and deliver all instruments in writing which may be necessary to carry out the purposes of this resolution, and to consummate the sale of the corporation's

properties."

That said resolution is now spread upon the minutes of said corporation and has not been altered, amended or repealed;

2. That the following is a full, true and correct copy of a resolution duly adopted by the Board of Directors of this corporation at a meeting duly held on the 8th day of June, 1939, at which meeting a quorum of the Directors of said corporation was present and acting:

"WHEREAS, on the 9th day of March, 1938, this Board adopted a resolution authorizing F. A. Bailey, the Vice-President, G. F. Dauler, the Secretary, and C. J. Stacey, the General Manager, of this corporation to act for its behalf in leasing the property of this corporation to Henry J. Kaiser Company for a period of three (3) years at a rental of not less than Twelve Thousand Dollars ($12,000.00) per year, and to grant to said Henry J. Kaiser Company an option to purchase the property of the corporation for the sum of Two Hundred Thirty-five Thousand Dollars ($235,000.00) and to do any and all things necessary to carry out said purposes and to consummate the sale of the corporation's property;

"WHEREAS, it was the intention of this Board, in adopting said resolution, to authorize any two (2) of said officers hereinabove named to take the action provided for in said resolution and to execute, in the name of this corporation and as its corporate deed, any instruments required to carry out the purposes of said resolution;

"WHEREAS, subsequent to said 9th day of March, 1938, and on or prior to the 18th day of September, 1938, F. A. Bailey, the Vice-President, and G. F. Dauler, the Secretary, of this corporation, acting under said resolution of March 9th, 1938 and in pursuance of the authority granted to them by said resolution did, in its corporate name, under its corporate seal and as its corporate act and deed, make, execute and deliver to said Henry J. Kaiser Company a certain lease and option to purchase the property of this corporation, which said Lease and Option to Purchase was, on the 18th day of October, 1938, recorded in the office of the County Recorder of the County of Santa Clara, State of California, in Liber 901 of Official Records, of said County, at page 8;

"NOW, THEREFORE, BE IT RESOLVED, that this Board of Directors does hereby ratify and confirm said resolution of March 9th, 1938, authorizing any two (2) of the officers of this corporation named in said resolution to do the acts and things therein referred to; and

"BE IT FURTHER RESOLVED, that this Board does hereby ratify and confirm, as the corporate act and deed of this corporation, the Lease and Option to Purchase, hereinabove referred to, made, executed and delivered by the said Vice-President and the said Secretary of this corporation on its behalf; and this Board does hereby expressly ratify, confirm and approve, on behalf of this corporation, each and every term, condition and provision of said Lease and Option to Purchase, including, without limitation, the rental provided for therein, the purchase price to be paid to this corporation in the event of the exercise by the said Henry J. Kaiser Company of the option granted to it, the term of said lease, from March 9th, 1938 to March 9th, 1941, the right granted to said Henry J. Kaiser Company to remove and take from the property mineral or nonmineral deposits, the royalties to be paid to this corporation, and the provisions with reference to the exercise of the option to purchase granted to said Henry J. Kaiser Company and the manner and mode of payment of the amount to be paid to this corporation in the event of such exercise."

That said resolution is now spread upon the minutes of said corporation and has not been altered, amended or repealed;

3. That said resolutions, and each thereof, and the Lease and Option to Purchase referred to in the resolution of June 8th, 1939, have been approved, ratified, confirmed and consented to by the written consent of shareholders of this corporation entitled to exercise a majority of the voting power of this corporation.

4. That the deed to which this certificate is annexed was executed on behalf of this corporation by F. A. Bailey, Vice-President, and G. F. Dauler, Secretary, under and pursuant to the foregoing resolutions, and under and pursuant to the terms of the option contained in the Lease and Option to Purchase referred to in the resolution of June 8th, 1939, and with the above mentioned approval, ratification, confirmation and consent of the shareholders of this corporation.

Dated: this 10th day of July, 1939.

(CORPORATE SEAL).

G. F. Dauler, Secretary of Santa Clara Holding Company, Ltd., a Nevada corporation.

STATE OF CALIFORNIA, CITY AND COUNTY OF SAN FRANCISCO) ss.

On this 10th day of July, in the year One Thousand Nine Hundred Thirty-nine (1939), before me, Helen G. Boyle, a Notary Public in and for the City and County of San Francisco, State of California, residing therein, duly commissioned and sworn, personally appeared G. F. Dauler, known to me to be the person described in, whose name is subscribed to, and who executed the foregoing instrument, and he acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, at

my office in the City and County of San Francisco, the day and year in this certificate first above written.

(NOTARIAL SEAL) Helen G. Boyle.

My commission expires September 19, 1942.

FILING NO.164821

Filed for record at the request of San Jose Abstract & Title Insurance Co. Jul 12 1939 at 31 min. past 12 o'clock M.

CHAS. A. PAYNE, RECORDER

fee 9.00 85f E. B. O'Brien Deputy Recorder

compared doc compared book

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SUBORDINATION AGREEMENT

WHEREAS, Jesse E. Hayes leased the hereinafter described property to Simpson Motors, a co-partnership, by Lease dated November 20, 1938, which Lease expires November 20, 1939.

NOW, THEREFORE, in consideration of the sum of $1.00 paid to the undersigned, the undersigned does hereby subordinate their interest as lessee to the lien of that certain deed of trust dated May 1, 1939, executed by Jesse E. Hayes and Ruth Hayes, his wife, to The Anglo California National Bank of San Francisco, a corporation, as trustee, for West Coast Life Insurance Company, a corporation, as beneficiary, in the amount of $6,000.00, which deed of trust is recorded concurrently herewith.

The property hereinabove referred to is described as follows:

All that certain real property situate in the City of Palo Alto, County of Santa Clara, State of California, described as follows:

Portion of Lot 1, as shown upon that certain Map entitled, "Map of Subdivision of Blk 7 University Park," which Map was filed for record in the office of the Recorder of the County of Santa Clara, State of California, on February 24, 1903, in Book F3 of Maps, at page 10, and more particularly described as follows:

Beginning at a point on the Northeasterly line of Alma Street, distant thereon Southeasterly 82 feet from the point of intersection thereof with the Southeasterly line of Forest Avenue, as said Street and Avenue are shown upon the Map hereinabove referred to; thence Southeasterly on and along said Northeasterly line of Alma Street, 100 feet; thence at a right angle Northeasterly 105 feet to the Southwesterly line of a 15 foot alley; thence Northwesterly on and along the Southwesterly line of said alley and parallel with the Northeasterly line of Alma Street, 100 feet; thence at a right angle Southwesterly 105 feet to the point of beginning.

Dated: July 12, 1939.

SIMPSON MOTORS
By C. H. Simpson

STATE OF CALIFORNIA)
COUNTY OF SANTA CLARA)

On this 12th day of July, in the year nineteen hundred and thirty-nine, before me, A.A.Prior, a Notary Public in and for said County of Santa Clara, State of California, residing therein, duly commissioned and sworn, personally appeared C. H. Simpson known to me to be one of the partners of the partnership that executed the within instrument, and acknowledged to me that such partnership executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal at my office in said County of Santa Clara, the day and year in this certificate first above written.

(NOTARIAL SEAL) A.A.Prior, Notary Public in and for the County of Santa Clara, State of California.

My commission expires: June 12th, 1941.

FILING NO. 164916

Filed for record at the request of California Pacific Title & Trust Company Jul 13 1939 at 15 min past 1 o'clock P.M.

CHAS. A. PAYNE, RECORDER

fee 1.00 6f M. W. Emlen Deputy Recorder

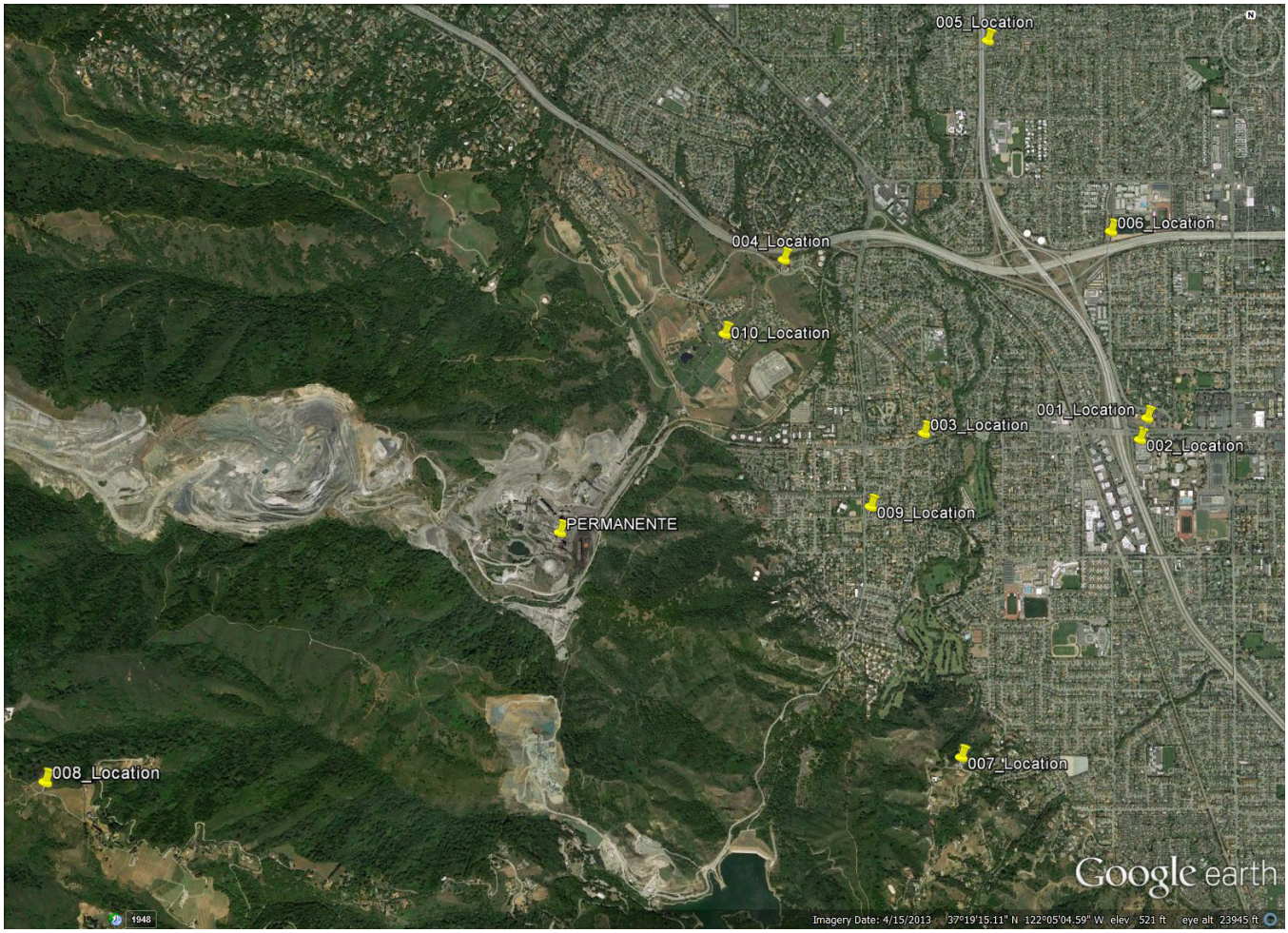
compared doc compared book

IBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIBIB

NOTICE OF INTENDED SALE OF FIXTURES AND STOCK IN TRADE

NOTICE is hereby given that August K. Schuler, residing at 1890 South First Street, San Jose, California, intends to sell to William E. Brewen and Dorothy Adrian, residing at 625 San Pablo Avenue, Albany, California, the following described property, to-wit: Situated at 1890 South First Street, San Jose, California, known as The Chateau,

1 back bar 1 Ranney ice-box



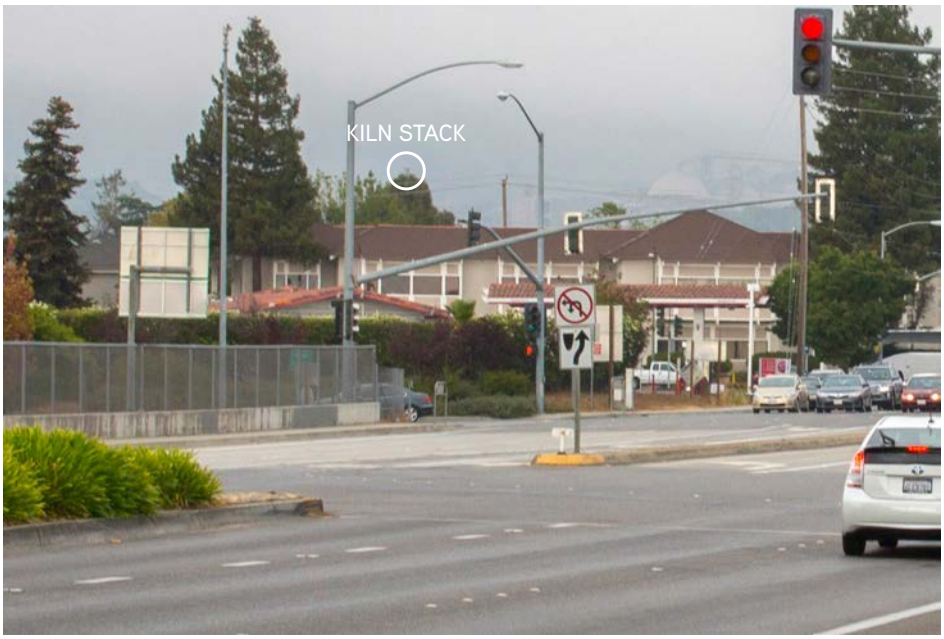
LEHIGH PERMANENTE PLANT

Cupertino, CA

001_LOCATION

Oaks Shopping Center, Stevens Creek Blvd & Mary Ave

Existing Condition

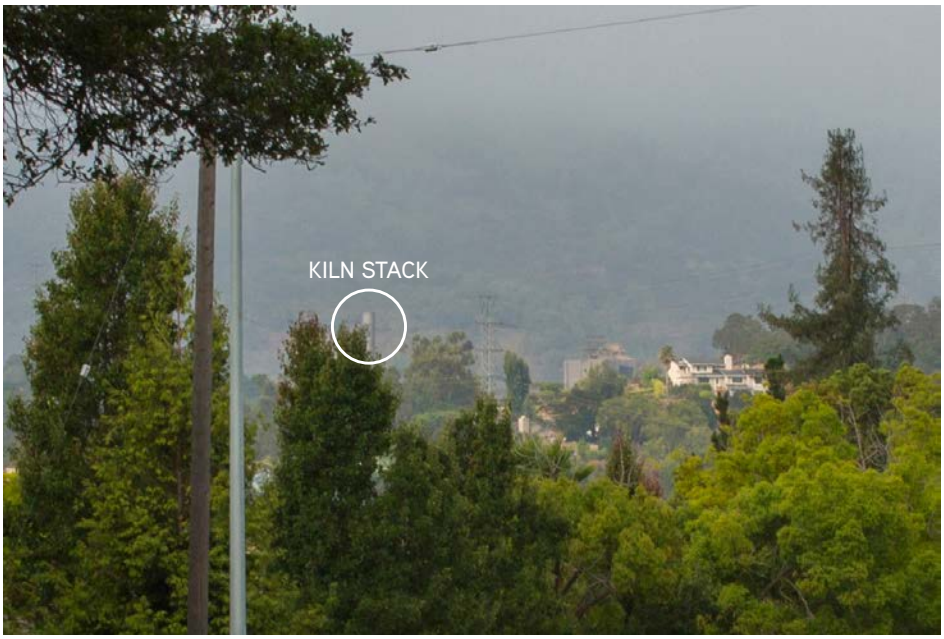


After Cooler and Kiln Stacks

002_LOCATION

Parking Structure at De Anza College

Existing Condition

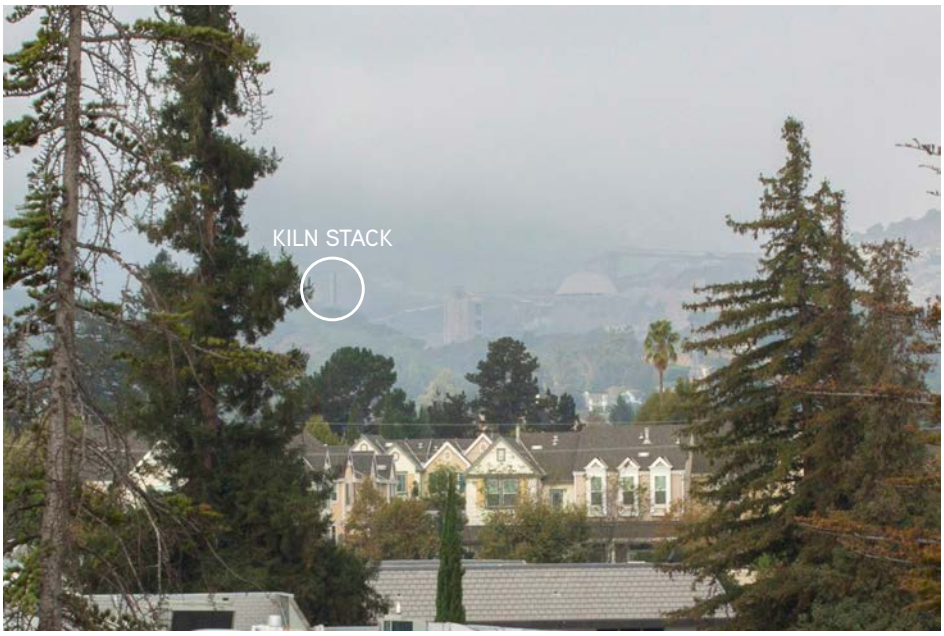


After Cooler and Kiln Stacks

003_LOCATION

Stevens Creek Blvd & Cupertino Rd

Existing Condition



After Cooler and Kiln Stacks

004_LOCATION

Cristo Rey Dr & Cristo Rey Pl

Existing Condition

After Cooler and Kiln Stacks

005_LOCATION

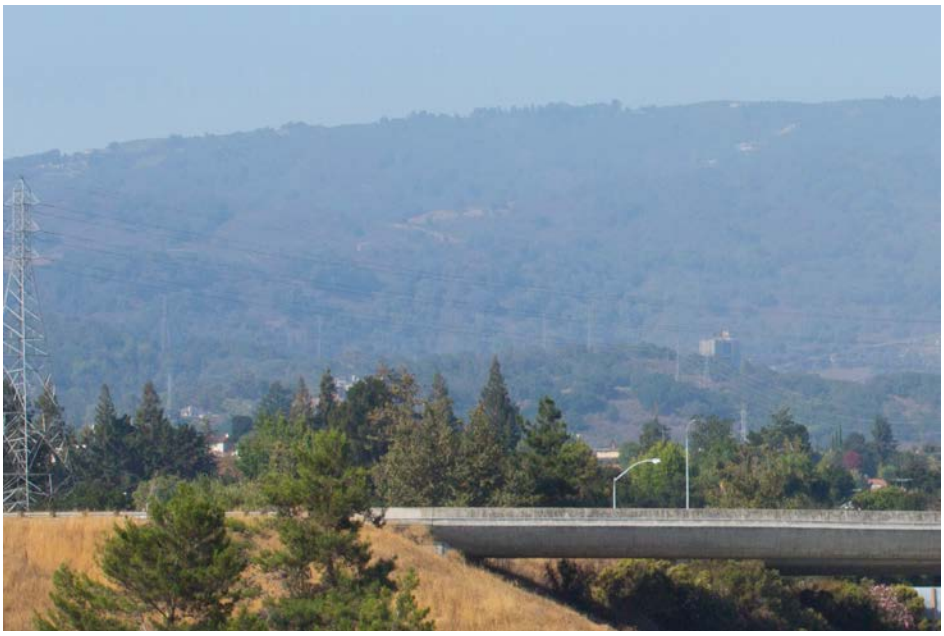
Pedestrian Bridge on CA-85 at The Dalles Ave

Existing Condition

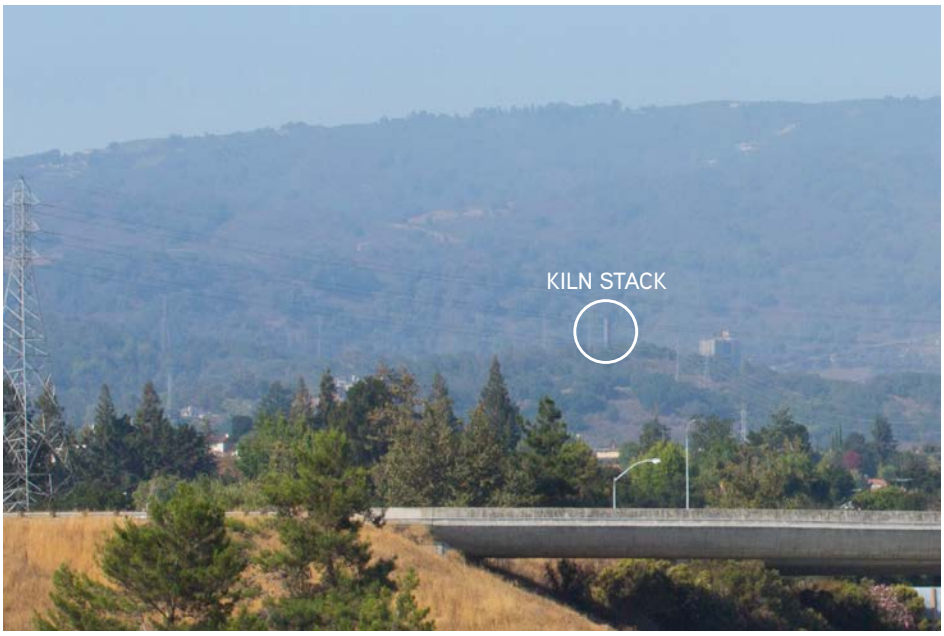
After Cooler and Kiln Stacks

006_LOCATION

The Don Burnett Bicycle Pedestrian Bridge on I-280



Existing Condition



After Cooler and Kiln Stacks

007_LOCATION

Lindy Lane

Existing Condition

After Cooler and Kiln Stacks

008_LOCATION

Montebello Rd

Existing Condition

After Cooler and Kiln Stacks

009_LOCATION

Intersection of Foothill Blvd & Voss Ave

Existing Condition

After Cooler and Kiln Stacks

010_LOCATION

Gate of Heaven Cemetery, Canyon Oak Way

Existing Condition

After Cooler and Kiln Stacks

SANTA CLARA COUNTY PLANNING DEVELOPMENT APPLICATION

PROPERTY OWNER'S NAME	Phone	Email	Prefer correspondence: Email ☒ Mail ☐
Lehigh Southwest Cement Company	(925) 244-6509	marcelo.barajas@hanson.biz	
Mailing Address	**City**		**Zip**
12667 Alcosta Blvd. Suite 400	San Ramon		94583

APPLICANT OR APPELLANT NAME	Phone	Email	Prefer correspondence: Email ☒ Mail ☐
Marcelo Barajas	(925) 244-6509	marcelo.barajas@hanson.biz	
Mailing Address	**City**		**Zip**
12667 Alcosta Blvd. Suite 400	San Ramon		94583

ADDRESS OF SUBJECT PROPERTY: 24001 Stevens Creek Blvd. APN: 351-10-005

EXISTING USE OF PROPERTY: Cement Plant ACCESS RESTRICTIONS (gate, dog, etc.): Gated Access

The ACKNOWLEDGEMENTS AND AGREEMENTS FORM on the reverse side of this application must be completed and signed by the property owner(s).

FOR DEPARTMENT USE ONLY

FILE NUMBER: _____ – _____

PROJECT DESCRIPTION: _____

APPLICATION TYPES	FEE(S)	COMMENTS / SUBMITTAL MATERIALS
Architecture and Site Approval / ASX		
Building Site Approval / BA (Urban / Rural)		
Certificate of Compliance		
Design Review / DRX		
CEQA (EA / Cat Ex / Prior CEQA / EIR)		
Compatible Use Determination (WA / OSE)		
Geologic Report / Letter		
Grading Approval / Abatement		
Lot Line Adjustment / Lot Merger		
Pre-Screening		
Special Permit		
Subdivision		
Use Permit		
Variance		
Other		
TOTAL FEES		

Application fees are not refundable.

Submittal reviewed and received by: _____

Date: _____

Coordinates: X _____ Y _____

Zoning: _____

General Plan: _____

Parcel Size: _____

USA / SOI _____

WA / OSE / HCP

Supervisorial Dist: _____

Previous Files: _____

ACKNOWLEDGEMENTS AND AGREEMENTS

FILE NUMBER: _____ – _____

I. INDEMNITY

Applies to all Planning applications.

As it relates to the above referenced application, pursuant to County of Santa Clara Ordinance Code Section A33-6, except where otherwise expressly prohibited by state or federal law, I hereby agree to defend, indemnify and hold harmless the County and its officers, agents, employees, boards and commissions from any claim, action or proceeding brought by any person or entity other than the applicant ("third party") against the County or its officers, agents, employees, boards and commissions that arises from or is in any way related to the approval of this application, including but not limited to claims, actions or proceedings to attack, set aside, void or annul the approval. If a third party claim, action or proceeding is filed, the County will promptly notify the applicant of the claim, action or proceeding and will cooperate fully in the defense. Notwithstanding the above, the County has the right to participate in the defense of any claim, action or proceeding provided the County bears its own costs and attorney fees directly associated with such participation and defend the action in good faith. The applicant will not be required to pay or perform any settlement unless the applicant agrees to the settlement.

II. FEES

Applies to hourly billable application types. Refer to Department of Planning and Development fee schedule.

a. I/We the Owner(s) of the subject property, understand that my/our application requires payment of a minimum non-refundable fee, plus additional funds when staff hours devoted to the application exhaust the initial payment. Staff hours are billed at the hourly rate in effect at the time the staff hours are accrued.

b. Typical tasks charged to an application include, but are not limited to, the following: intake and distribution of application, staff review of plans and other relevant materials; correspondence; discussions/ meetings with owner, applicant and/or other interested parties; visits to the project site by authorized agency staff; file maintenance; environmental assessment; staff report preparation; agenda and meeting preparation; meeting attendance; presentations to boards, commissions, and community groups; contract administration.

c. The minimum nonrefundable fees for development applications are based on staff billing rates and staff hours needed to process a typical application. Staff hours may exceed a base application fee (requiring additional billing) due to project complexity and public interest on a project. This could include the need to review technical reports, conduct several meetings with the owner / applicant, and respond to public inquiries.

d. Invoiced fees are due within 30 days of the date on the billing letter. Fees not paid within 30 days are considered late and are subject to collection at the expense of the Owner. While such fees are outstanding, the Planning Office reserves the right to cease all work on a project until said fees are paid in full.

e. Any fees not paid within 45 days of invoicing shall be subject to interest charged at a rate equal to that earned by the County Treasury investment pool for that period.

f. The owner and applicant are encouraged to periodically check on the status of their projects and fees. Questions regarding the status of hours charged to an application may be addressed to the planner assigned to the project.

g. For more information on Planning Office application fees and how they are calculated, visit the County Planning Office web site at www.sccplanning.org.

III. APPLICATION AUTHORIZATION AND AGREEMENT TO PAY

I (We), the Owner(s) of the subject property, hereby authorize(s) the filing of this application and on-site visit by authorized staff. In addition I (We) acknowledge and understand the information above related to fees and agree to pay all application fees. I (We) certify and accept the terms and conditions as described above.

OWNER'S NAME(S) (Please Print)

Lehigh Southwest Cement Company

OWNER'S SIGNATURE(S)	DATE

HAZARDOUS WASTE AND SUBSTANCE SITES LIST QUESTIONNAIRE

(AB 3750 - Cortese Bill)

TO BE FILLED OUT AT COUNTER UPON SUBMITTAL OF APPLICATION

Applicant Name: Lehigh Southwest Cement Company

APN(s): 351-10-005

Is the proposed development property listed in the Office of Planning and Research Hazardous Waste and Substance Sites List?

Yes ☐ No ☐

If "yes," complete the following:

Site: _____ Page: _____

Address: _____

_____

I certify that I have reviewed the Hazardous Waste and Substance Sites List, dated current online list - Jan 10,2014 , and, to the best of my knowledge, the above information is correct.

Signature: _____ Date: _____

County of Santa Clara
Department of Planning and Development
Planning Office

Environmental Information Form

Project Applicant or Representative:

Name: Marcelo Barajas, Lehigh Southwest Cement Co.
Address: 12667 Alcosta Blvd. Suite #400
San Ramon, CA 94583

Phone: 925-244-6509
E-mail: Marcelo.Barajas@hanson.biz

Please answer the following questions in the spaces provided. Use additional sheets if necessary. If the question does not apply, mark "N/A."

Failure to provide complete and accurate information will result in your application being declared incomplete, which will delay application processing.

Project Description:

1. Project address (or location): 24001 Stevens Creek Blvd.
Cupertino, CA 95014

2. Describe the project (i.e., What will be constructed? Proposed use? Project objectives?):
The proposed project will replace the current 34-stack kiln vent system with a single taller stack. An additional cooler vent stack will replace an existing set of ten short short stacks. The proposed project will more efficiently disperse emissions, and meet upcoming BAAQMD requirements.

3. Is the project part of a master plan, or a phase of a larger project? Yes [ ] No [X]

   If yes, describe the project's situation/ role in the master plan or larger project (e.g., project is Phase 2 of 4, brief description of what each phase entails): _____

4. Where on the site will project construction and activities occur (describe and show on site plan construction footprint and staging areas)? The project will replace existing emissions devices attached to the cement plant. Refer to the engineer drawings attached to the building permit application.

5. Site and project area information:

   (a) Parcel size (acres or square feet): 76.57 Acres, APN 351-10-005

   (b) Describe all buildings (existing and proposed) associated with the proposed use:

BUILDING	SIZE (sq. ft)	HEIGHT
There are no new buildings. The project will replace the existing 34-stack kiln system with a single 295-foot stack, and the existing 10-stack cooler vent with a 116-foot stack.		

   If more space is needed, please attach a supplemental sheet.

   (c) Indicate total area (sq. ft.) of parking areas: No new parking.

   (d) Number of on-site parking spaces: No new spaces.

   (e) Indicate total area (sq. ft.) of buildings, driveways, patios, walkways and other impervious surfaces: The project will add 822 sq. ft. of impervious area.

   (f) Describe any other outdoor areas dedicated to activities of the proposed use (e.g. sales, storage, animal confinement, etc). Include land area (sq. feet or acres). None.

   (g) Indicate total area (sq. feet or acres) of vacant or undeveloped land, and land not devoted to the proposed use: N/A

6. Will grading (cut and/or fill) be required as part of the project? Yes [ ] No [X]

   If yes, a licensed civil engineer or land surveyor must complete the following information. If no, proceed to question 7.

IMPROVEMENT	EARTHWORK QUANTITY (cubic yards) CUT	FILL	MAXIMUM DEPTH (feet) CUT	FILL
Driveway, Access Road				
Building Pad				
Landscaping				
Other Improvements				
TOTAL				

If more space is needed, please attach supplemental sheet.

(a) If volume of cut exceeds fill, where will excess soil be disposed? N/A

(b) Are retaining walls proposed? Yes [ ] No [X]

If yes, what is maximum height? N/A

7. Are any structures on the property proposed to be demolished? Yes [ ] No [X]

If yes, attach photos of each structure from at least two directions, and describe the types of structures (e.g. barn), and age of the structures:

STRUCTURE	AGE	SIZE

If more space is needed, please attach supplemental sheet.

Applicants are required to submit a Santa Clara County property appraisal record to document the age of the structures proposed for demolition. The property owner may obtain a copy from the County Assessor's Office (70 W Hedding St., 5th Floor).

8. If the project is institutional, commercial or industrial, answer the following:

(a) Number of daily customers, residents or other users of your project? 0

(b) Basis for this number (e.g., seating, etc)? N/A

(c). Number of employees? (i) Total: _____ (ii) Max. at any one time: _____

(d) Hours of operation: 24 hours a day, 365 days a year

9. Indicate the water source serving the proposed use. Include provider name if applicable.
N/A

10. If there are existing wells on the property: N/A
    (a) How many are functioning? _____
    (b) How many are abandoned? _____
    (c) Are the abandoned wells sealed? _____

11. What is the distance to nearest water line? _____

12. Indicate the method of sewage disposal for the proposed use. Include sewer district name if applicable. The project will not require new sewage disposal facilities.

13. If a septic system is being proposed, have percolation tests been done? Yes ☐ No ☐
    If yes, who conducted the tests and what were the results? N/A

Form continues on next page

Environmental Setting:

1. Describe the natural characteristics (e.g., topography, vegetation, drainage, soil stability, habitat, etc.) on the project site. See addendum.

2. Describe the existing land uses on the project site. Industrial - cement plant.

3. Describe the existing land uses adjacent to the project site (note location in relation to the project site): West, North and South - surface mining; East - open space and residential.

4. Are there any known technical reports that evaluate the property or the proposed project (e.g., geologic, biological, archaeological, environmental impact reports, etc.)? Indicate which reports will be submitted with this application: See addendum.

Form continues on next page

Environmental Aspects of Project:

1. **Geology:**

   (a) Are there any known geologic hazards on the site or in the immediate area. (e.g., earthquake faults, landslides, subsidence, steep slopes, etc.)? Yes [X] No [ ]

   If yes, describe: See 1/6/12 geotechnical report and 12/18/13 addendum.

   (b) Will construction occur on slopes greater than 10%? Yes [ ] No [X]

   If yes, indicate percent of slope: _____%; and describe how erosion/siltation will be prevented?

2. **Trees:**

   (a) On the site plan, show all trees with trunk diameter of 12 inches or larger, measured at 4.5 feet above the ground (12-inch dbh), and any other protected trees (See "Protected Trees" text box). Indicate the species and size of each tree, and clearly mark each of those trees that are proposed for removal.

   (b) In the table below, indicate the species, trunk diameter and location of each tree proposed to be removed.

TREE SPECIES	TRUNK DIAMETER	LOCATION
N/A - no trees or vegetation will be removed. The site is fully disturbed.		

If more space is needed, please attach a supplemental sheet.

PROTECTED TREES. In addition to the general requirement to show trees with trunk diameter of 12 inches or larger, measured at 4.5 feet above ground (12-inch diameter at breast height, or dbh), the following must also be reported: (a) Oak trees 5" dbh or larger, to determine whether oak woodlands are present (see *Guide to Evaluating Oak Woodland Impacts*); (b) Trees 6" dbh or larger in the "-h_1" (Historic Preservation) district; (c) Any heritage tree, as defined in Section C16-2 of the County Ordinance Code; (d) Any tree required to be planted as a replacement for an unlawfully removed tree, pursuant to Section C16-17e; and (e) Any tree that was required to be planted or retained by the conditions of any discretionary County land use permit.

3. **Agriculture:**

(a) Is the site currently under Williamson Act contract? Yes [ ] No [X]

If yes, contact Planning Office for more information pertaining to Williamson Act compatible use determination. The application is available at the Planning Office.

(b) Are there any agricultural uses on-site? Yes [ ] No [X]

If yes, describe: _____

_____

(c) Are there any commercial agricultural uses on-site? Yes [ ] No [X]

If yes, describe: _____

_____

(d) Are there any agricultural uses adjacent to the project site? Yes [ ] No [X]

If yes, describe: _____

_____

(e) Is the site currently under an open space easement contract? Yes [ ] No [X]

If yes, contact Planning Office for more information pertaining to Open Space Easement compatible use determination. The application is available at the Planning Office.

(f) Would the project convert more than 1 acre of farmland to a non-agricultural use? Yes [ ] No [X]

If yes, describe: _____

_____

4. **Drainage/Flooding/Riparian:**

Are there any watercourses and riparian habitat (e.g. drainage swale, stream course, spring, pond, lake, creek, tributary of creek, wetlands) within 150 feet of proposed construction or grading?

Yes [ ] No [X]

If yes, describe, and indicate its location relative to the project: _____

_____

_____

_____

_____

5. **Transportation:**

(a) Name street(s) to be used to access project: Stevens Creek Blvd.

(b) Approximate number of vehicle trips per day to be generated by project (Please note that each direction equals one trip)? See addendum.

(c) Indicate the days & times you expect most trips to occur: See addendum.

(d) Is there traffic congestion during commute hours at any nearby street intersections providing access to the project? Yes [ ] No [X]

If yes, list the intersections: _____

Transportation Impact Analyses (TIAs) using the Congestion Management Agency's methodology must be prepared for all projects that generate 100 or more peak hour trips. Transportation impact analyses (TIAs) using the Congestion Management Agency's methodology may also be required if the project will generate substantial growth in the project area, result in an increase of traffic in relation to the existing traffic load and capacity of the street system, etc.

6. **Safety/Health:**

(a) To your knowledge, do potentially hazardous materials exist on either this site or nearby property? (e.g., fuels, chemicals, industrial residue, etc.) Yes [X] No [ ]

If yes, describe: See addendum.

(b) Will the project require the use, storage or disposal of hazardous materials such as toxic substances, flammables, or explosives (e.g diesel generator), underground storage of chemicals)? Yes [ ] No [X]

If yes, describe: _____

7. **Air/Noise:**

(a) Describe the types (and numbers) of construction equipment that will be used during project construction? (e.g. grader, backhoe, pile driver, jackhammer).

See addedendum.

(b) Will the ongoing operation of the proposed use generate dust, smoke, fumes, odors, or noise (such as outdoor amplified noise or industrial activity)? Yes [ ] No [X]

If yes, describe: _____

8. **Aesthetic:**

(a) Does the property contain natural features of scenic value or rare or unique characteristics (e.g., rock outcropping, mature trees)? Yes ☐ No ☒

If yes, describe: _____

(b) Will construction occur at or near a ridgeline or hilltop? Yes ☐ No ☒

(c) Will the project include visual impact mitigation (e.g. new landscaping, light reflectivity value of exterior surfaces less than 45, etc.) ?

Yes ☒ No ☐

If yes, describe: The stacks are designed with non-reflective coating.

9. **Historical/Archaeological:**

(a) Has the property received any historic designation(s)? Yes ☐ No ☒

If yes, check the boxes that apply and attach the appropriate nomination form or documentation related to its listing.

- ☐ National Historic Register of Historic Places
- ☐ California Historical Landmark
- ☐ California Point of Historic Interest
- ☐ California Register of Historical Resources
- ☐ Santa Clara County Heritage Resource Inventory
- ☐ Santa Clara County Historical Zoning District

(b) Are you aware of any archaeological remains on the property? Yes ☐ No ☒

If yes, describe: _____

10. **Habitat for endangered, threatened, or rare wildlife or plants:**

(a) Does the property contain critical habitat for special-status species (e.g., California Tiger Salamander, Bay Checkerspot Butterfly, Red Legged Frog)? Yes ☐ No ☒

(b) Is the property in or adjacent to a mapped occurrence of a special-status species as reported in the California Natural Diversity Database (CNDDB)? Yes ☐ No ☒

If yes, describe: [see Planning Office for assistance] _____

_____

_____

_____

Reduction or Avoidance of Impacts:

Discuss possible actions that could reduce or avoid any adverse environmental affects raised in the previous section (*Environmental Aspects of Project*). Use appropriate reference numbers.

_____

_____

_____

If more space is needed, please attach a supplemental sheet.

Certification:

I hereby certify that the statements on this form and the attached exhibits are true and correct to the best of my knowledge. If any of the facts represented here change, it is my responsibility to inform the County of Santa Clara.

Owner/Applicant Signature: _____ Date: _____

Staff Use Only

FILE #: _____

Environmental information form reviewed and found to be complete?:

Yes ☐ No ☐

If no, what additional information is needed?

_____

_____

_____

Signature: _____ Date: _____

ADDENDUM
Application for Environmental Clearance

Environmental Setting:

1. Describe the natural characteristics (e.g., topography, vegetation, drainage, soil stability, habitat, etc.) on the project site. The site is fully disturbed and devoted to the existing cement plant. See accompanying Project Description for additional details. While there is considerable topography across the entire cement plant, each of the sites for the Kiln Vent and Clinker Cooler Vent are flat. Minimal grading is anticipated as part of construction operations. There will be no change to existing drainage patterns or major utilities on the site. No vegetation will be removed; the Kiln Vent will occupy an area that is currently paved.

4. Are there any known technical reports that evaluate the property or the proposed project (e.g., geologic, biological, archaeological, environmental impact reports, etc.)? Indicate which reports will be submitted with this application. A geotechnical engineering/soils report has been prepared for this project by Professional Services Industries (PSI) dated 01/06/2012 with addendum dated 12/18/2013. All recommendations contained in the report have been used for the design of the stack structures and will be followed during construction. A copy of the report accompanied the submission of the building permit application for the Kiln Vent.

Environmental Aspects of the Project

5. Transportation:
(b) Approximate number of vehicle trips per day to be generated by project (Please note that each direction equals one trip)? The project will have no permanent traffic impacts and minimal construction impacts due to traffic and parking for construction vehicles. The amount of construction related traffic is insignificant compared to the number of trips to and from the site for existing ongoing commercial operations, therefore there is no significant impact on the operation of intersections. Parking impacts related to construction of the new stacks is minimal and contained entirely on site. There is ample space for parking for construction vehicles, storing construction materials and equipment on site, and parking for construction workers.

(c) Indicate the days & times you expect most trips to occur:
Construction activities are scheduled Monday – Friday from 7AM to 6PM.

6. Safety/Health
(a) To your knowledge, do potentially hazardous materials exist on either this site or nearby property? (e.g., fuels, chemicals, industrial residue, etc.)
The Permanente Quarry and Lehigh Cement Plant currently use, store and maintain materials considered hazardous under the applicable laws. Most are connected to vehicle and/or equipment maintenance. Liquids include liquid polymer, sulfuric acid (battery acid), ethylene glycol (coolant), and parts cleaner. These liquids are stored in 25- and 55-gallon drums using secondary containment, or in above-ground storage tanks ranging in capacity from 150 gallons to 1,000

gallons. The Quarry also uses miscellaneous containerized (less than one gallon capacity) chemicals, including spray paints, glass cleaner, etc. Gasoline and diesel are stored in above-ground storage tanks including diesel (12,000 gallons), oil (500 gallons) and grease (55 gallons). The Quarry stores other gases such as acetylene, argon/carbon dioxide, oxygen, nitrogen, and helium in cylinders with capacities of 230 cubic feet. Storage of hazardous chemicals is overseen by the Hazardous Materials Compliance Division of Santa Clara County. Above-ground storage tanks are operated under permits issued by the County. An inventory of these materials is available upon request.

7. Air/Noise

(a) Describe the types (and numbers) of construction equipment that will be used during project construction? (e.g. grader, backhoe, pile driver, jackhammer).

The project involves the construction of vent stacks located in the approximate center of an industrial plant used to manufacture cement. Air and noise impacts from construction activity will be insignificant compared to existing ongoing operations of the cement plant. Anticipated construction equipment includes heavy-duty diesel equipment (truck mounted drill rig for foundation cessions; dump trucks; concrete mixing trucks; flatbed trucks for delivery of materials, etc.) and possibly will require a diesel back-up generator. All equipment used during construction will be required to meet all regulations regarding their use.