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College for Certain, LLC

Cap Modification Plan Addendum

Former Pacific Electric Motors Facility, 1009 66th Avenue, Oakland, California
(Fuel Leak Case Number RO0000411)

December 3, 2014

ARCADIS

Cap Modification Plan Addendum

Former Pacific Electric Motors Facility, 1009 66th Avenue, Oakland, California

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1. Introduction

On behalf of College for Certain, LLC (CFC), ARCADIS U.S., Inc. (ARCADIS) has prepared this Cap Modification Plan Addendum (Addendum) for the Former PacificElectric Motors (PEM) Facility located at 1009 66th Avenue in Oakland, California ("the Site"; Figures 1 and 2). This Addendum covers additional soil sampling in the proposed gymnasium building (Building 300; Figure 2) footprint and air monitoring to protect persons from direct exposure to potential residual concentrations of polychlorinated biphenyls (PCBs) in soil during construction activities. The scope of the Addendum is in accordance with items discussed via conference call on November 14, 2014 with representatives of the United States Environmental Protection Agency (USEPA), Aspire Public Schools (Aspire on behalf of CFC), and ARCADIS.

A Cap Modification Plan (CMP; ARCADIS 2014) was submitted on October 17, 2014 and comments were verbally received from USEPA. As discussed, the purpose for the proposed scope of work included in this Addendum is to pre-characterize PCB-affected soil that is beneath the cap for waste disposal and to mitigate potential exposure of affected soil due to the construction activities.

This Addendum includes the following updates:

- Fourteen additional soil boring locations were added to the area of the proposed building footprint (Figure 3); soil samples will be collected only from the cement-treated native soil layer.

- Soil samples will be collected only from the cement-treated native soil layer for the two sample locations outside of the proposed building footprint (Figure 3).

- Results of the pre-demolition sampling will be used to pre-characterize and profile the soil for disposal. Therefore, Section 2.5.4 of the CMP (Soil Characterization and Off-Site Reuse/Disposal) will not be implemented.

- The estimated quantities of material that will be generated during construction were reviewed and updated quantities are presented.

- A description of the perimeter air monitoring program that will be implemented during building construction based on analytical results from the soil sampling event.

2. Pre-Demolition Soil Sampling Plan

The purpose of the pre-demolition soil sampling plan is to assess soil quality within the area of the cap (canopy footings, site utilities, and proposed building footprint) that will be modified down to the cement-treated native soil and native soil, and to pre-characterize the soil for disposal. Twelve soil boring locations (ten at the locations of the proposed canopy footings and two on the north and south side of the proposed building 300) were proposed in the CMP (ARCADIS 2014). Soil samples were proposed to be collected at depths of approximately 0.5 to 1.0 feet (below ground surface) bgs in the cement treated native soil, and 2.5 to 3.0 feet bgs in the native soil. However, because excavation into native soil will not occur in the vicinity of the two soil boring locations at the north and south end of the proposed building, the revise dplan is to collect one soil sample at each location between 0.5 to 1.0 foot bgs to characterize cement treated native soil. Additionally, fourteen soil boring locations are included in this Addendum as discussed on the November 14, 2014 conference call with Aspire and USEPA. The advancement of the fourteen soil borings, soil sample collection and laboratory analysis are described below.

2.1 Soil Borings

ARCADIS will advance an additional fourteen soil borings to a depth of between 0.5 and 1.0 feet bgs. Soil boring locations are shown on Figure 3. The proposed locations are positioned within the proposed building footprint in a 25 feet by 25 feet hexagonal grid.

2.2 Soil Sample Collection

Fourteen soil samples will be collected from fourteen soil boring locations using direct push sampling techniques. Soil samples will be collected at depths of approximately 0.5 to 1.0 feet bgs at each location. Samples will be collected from the cement treated native soil layer. The soil samples will be transferred into clean, laboratory-provided sample containers, labeled stored in an ice-chilled cooler, and transported under chain-of-custody protocol to the laboratory for analysis.

2.3 Laboratory Analyses

Soil samples will be submitted to a state-certified laboratory for the following analyses:

- TPHg by USEPA test method 8015, modified

- benzene, using USEPA test method 8260
- arsenic and lead by USEPA test method 6010B
- PCBs by USEPA test method 8082

In order for the soil to be re-used at the Site, the analytical results should be less than the site specific clean up goals listed in Section 2.4 of the CMP.

2.4 Reporting

ARCADIS will transmit the analytical results for these samples to the USEPA within 10 days of receiving the analytical results.

3. Soil Management Plan

This section provides an update/revision to the soil management plan in the CMP.

3.1 Soil Management Strategy

Soil will not be reuse at the Site. Soils containing native soil material (i.e., cement treated native soil or native soil) will be pre-characterized prior to construction; as the excavated material is generated, it will be placed in plastic-lined roll-off bins equipped with lids to prevent dust emissions.

3.1.1 Stockpile Management

Instead of stockpiling, soil generated from construction activities will be placed directly onto roll-off bins with secured lids on site or placed directly onto trucks for immediate hauling. The lids of the bins will be closed securely to control dust emissions while the roll-off bins are loaded with site soil. No waste will be removed from the Site without Aspire's written permission.

3.1.2 Soil Characterization and Off-Site Reuse/Disposal

Results of the pre-demolition sampling will be used to pre-characterize and profile the soil for off-site disposal. Therefore Section 2.5.4 of the CMP will not be implemented. Subsequent to permission by Aspire, all soils removed from the Site for disposal will be disposed of at a disposal facility approved by Aspire and that meets the regulatory and

permitting requirements to accept the waste. All soil transportation and disposal documentation must be forwarded to Aspire upon completion of the disposal activities. All documentation regarding soil removal and disposal must be submitted to USEPA within 14 days after disposal.

4. Demolition Plan

The demolition plan includes the disturbance or removal of the existing cap located at Building 300 (see Figure 3). ARCADIS conducted a review and updated the estimated quantities of cap materials that will be generated as part of the CMP. The updated table is presented below.

Cap Material	Estimated Removal Quantity (cy)
Concrete	20 to 23
Asphalt	66 to 74
Aggregate Base	114 to 126
Cement Treated Soil	202 to 224
Native Soil	7 to 10

4.1 Waste Segregation and Disposal Plan

To the extent possible, material that does not contain native soil (i.e., asphalt, concrete, and aggregate base rock) will be segregated and managed separately than the material that does contain native soil (i.e., cement treated native soil and native soil). The material that does not contain native soil (asphalt, concrete and aggregate base rock) will be transported to a local recycling center to be processed and recycled into re-usable construction material.

The cement treated native soil and native soil will be handled in accordance with Section 3.1 of this Addendum. As described, excavated soil will not be reused at the Site. Subsequent to permission by Aspire, soil removed from the Site for disposal will be transported to a facility approved by Aspire and that meets the regulatory and permitting requirements for disposal. All documentation regarding soil removal and disposal will be submitted to USEPA within 14 days after disposal.

5. Perimeter Air Monitoring Plan

Perimeter air monitoring activities will be implemented during the construction activities to monitor for potential airborne dust potentially containing PCBs. The greatest potential for airborne transport of PCBs during the construction activities of the proposed building is via released particulate matter ("fugitive dust"). During work activities, PCBs adsorbed to particulate matter could be transported into ambient air by wind erosion and/or mechanical disturbances of subsurface soil.

Potential exposure to PCBs will be assessed through real-time dust monitoring.. Potential Action Levels and the procedures for developing the chemical-specific risk-based Action Levels are presented below.

5.1 Development and Selection of Action Levels

The objectives of the perimeter air monitoring during the proposed work is to demonstrate that the surrounding community is protected from potential exposure to PCBs in the form of fugitive dust and to evaluate the adequacy of dust control methods being applied by the contractor. This section describes the procedures and potentially applicable or relevant state and federal regulations and guidelines considered during the development of Action Levels for perimeter air sampling.

5.1.1 Chemical-Specific Risk-Based Action Levels

The on-site populations were identified as the most sensitive populations potentially exposed to fugitive dust. The workers within the construction zone will be protected against potential exposure because of the engineering controls and personal protective equipment utilized per the site-specific health and safety plan (HASP). The identified on-site receptors include workers and students (high school age). The high school student receptor is assumed to be the most sensitive on-site receptor. Chemical-specific action levels developed to protect the student will also be protective of less sensitive receptors, such as the worker or visitors. The on-site student Action Levels will be applied for the on-site worker Action Levels.

The equation and parameters that will be used in the calculations for the PCBs are presented below. The exposure input parameters are presented below.

$$AL = \frac{CR \text{ x } AT \text{ x } LT}{EF \text{ x } ED \text{ x } ET \text{ x } IUR}$$

Table A: Exposure Input Parameters

Input Parameter	Value	Units	Source
Age of Receptor	12 to 18	years	Most sensitive receptor
Cancer Risk (CR)	1×10^{-6}		US EPA 1989
Exposure Time (ET)	8/24	Hours exposed/hours in a day	Hours of construction activities
Averaging Time (AT)	25,550	days	US EPA
Exposure Frequency (EF)	20	days/year	Days of soil excavation activities
Exposure Duration (ED)	0.25	year	Activity to be completed in less than 3 months
Inhalation Unit Risk (IUR)	(IUT)	$\mu g/m^3$	US EPA 2014
LT	Lifetime	years	70

5.1.2 Potential Dust Action Levels Calculated Based on Chemical-Specific Risk-Based Action Levels

An evaluation will be performed to identify whether the Dust Action Level would be protective of the on-site receptors. The maximum detected concentration of PCBs based on the pre-demolition soil sampling results will be used to calculate a hypothetical dust concentration. This hypothetical dust concentration was compared to

total allowable dust concentration. The hypothetical dust action level will be used to calculate using the following equation:

$$\text{Dust Concentration (mg/m}^3\text{)} = \frac{\text{AL (mg/m}^3\text{)}}{\text{PCB}_{\text{max}}\text{ (mg/kg) x 10}^{-6}\text{ kg/mg}}$$

Where:

AL = Action Level
PCB_{max} = maximum detected PCBs concentration

5.2 Perimeter Air Sampling Protocols

This section outlines protocols for perimeter air sampling for dust, PM10, and PCBs. Perimeter monitoring will include sampling for dust and PCBs during all activities associated with the removal of the existing cap and subsurface soil. Dust monitoring will be conducted for the remaining grading activities; however, following the removal of the subsurface soil, airborne PCB monitoring will no longer be necessary.

Work will be temporarily halted and the USEPA will be consulted regarding a plan for further action, if a direct-reading instrument result is more than five times its Action Level. Temporarily halting work and consulting USEPA if a PCB is detected greater than five times its Action Level is considered appropriate based on methodology used by Agency for Toxic Substances and Disease Registry (ATSDR) for extrapolation of MRLs across exposure durations. Therefore, halting work before reaching 5-times the Action Level for a PCB is consistent with the ATSDR methodology for extrapolating potential adverse health effects resulting from exposure to PCBs over a longer duration.

5.2.1 Meteorological Measurements

A meteorological station will be maintained at a location that is free from obstruction and generally representative of wind patterns present at the Site. The meteorological station will be placed at the downwind upwind (southwestern) air monitoring location.

Wind speed and wind direction measurements will be collected continuously at the Site during soil loading and grading activities. A wind sock will also be located at the Site.

The wind speed and wind direction will be collected using an anemometer and wind direction sensor, which utilizes a potentiometer. The anemometer and wind vane will be mounted at least 20 feet away from and 4 feet above any structures or other obstructions that could affect ambient air flow patterns. A Met One Model 4 Wind Recorder (or other similar model) will calculate 15-minute average wind speed and direction data for the Site. The 15-minute average wind speed and direction data will be retained by an onboard data logging system that will be downloaded on a daily basis.

If the sustained wind speed exceeds 15 mph (sustained for 15 minutes), work will be stopped.

5.2.2 Air Monitoring Station Locations

The purpose of the air monitoring stations is to collect data from the most likely pathway for PCBs to migrate off site to locations where exposures to human receptors could occur. A total of four perimeter air sampling stations will be located around the boundary of the proposed building in the vicinity of the active work areas. One station will be located crosswind, one station upwind and one station downwind.

There may be relatively high levels of chemicals and particulates in air due to the high number of large-scale industrial companies in the vicinity of the Site. Therefore, background concentrations of analytes will be monitored at each of the four air monitoring stations for two days prior to implementing activities associated with the construction activities.

As discussed above, wind direction will be monitored during the construction activities where PCB emissions could occur. If the wind data indicate that a significant shift in wind direction has occurred, work will be suspended until the perimeter air sampling stations can be repositioned, as appropriate.

5.2.3 Air Monitoring Parameters

PCBs will be monitored during the perimeter air monitoring activities associated with the proposed work. In addition, real-time monitoring for total dust will also be performed at the work areas and at the Site's perimeter.

Back-up batteries and back-up air monitoring equipment (i.e., pumps) will be maintained on site during implementation of the proposed work to minimize potential issues associated with disabled or faulty air monitoring equipment.

It is anticipated that during highly inclement weather, the contractor will not be performing work at the Site. However, light precipitation may affect air monitoring results by biasing real-time total dust measurements high due to moisture in the air. In inclement weather the air monitoring plan may be modified in consultation with the USEPA to protect equipment and preserve the accuracy of monitoring results.

5.2.4 Total Airborne Dust (Real-Time Air Monitoring)

TSI Inc aerosol monitor model number 510 (TSI AM510) without a particle size-specific inlet, or Personal DataRAMS (PDRs), will be used to provide immediate information for total airborne dust levels present at the site perimeter station location. The data collected will provide real-time information that will be used to evaluate the effectiveness of dust control procedures being implemented by the contractor. In addition, the total dust measurements provide data that can be used to evaluate potential PCB-specific airborne concentrations.

The monitors will be checked approximately every hour during the work shift to verify operation and compliance with the target Action Levels. The airborne dust concentration will be recorded in a data logger and the stored data will be downloaded at the end of each work shift. The monitors will be factory calibrated and operated in accordance with the manufacturer's instructions.

5.2.5 Sample Collection and Analysis Frequencies

Perimeter monitoring will include sampling for dust, and PCBs during all activities associated with the removal of the cap and subsurface soil. Dust monitoring will be conducted for the remaining construction activities; however, following the removal of the cap and subsurface soil, air monitoring for PCBs will no longer be necessary.

6. References

Agency for Toxic Substances and Disease Registry (ATSDR). 2004. Agency for Toxic Substances and Disease Registry, Division of Toxicology. Minimal Risk Levels (MRLs) for Hazardous Substances. December.

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Figures

MAP SOURCE: Copyright 1995, Thomas Bros. Map ALAMEDA COUNTY 2002 Edition

0 2,000 4,000 FEET

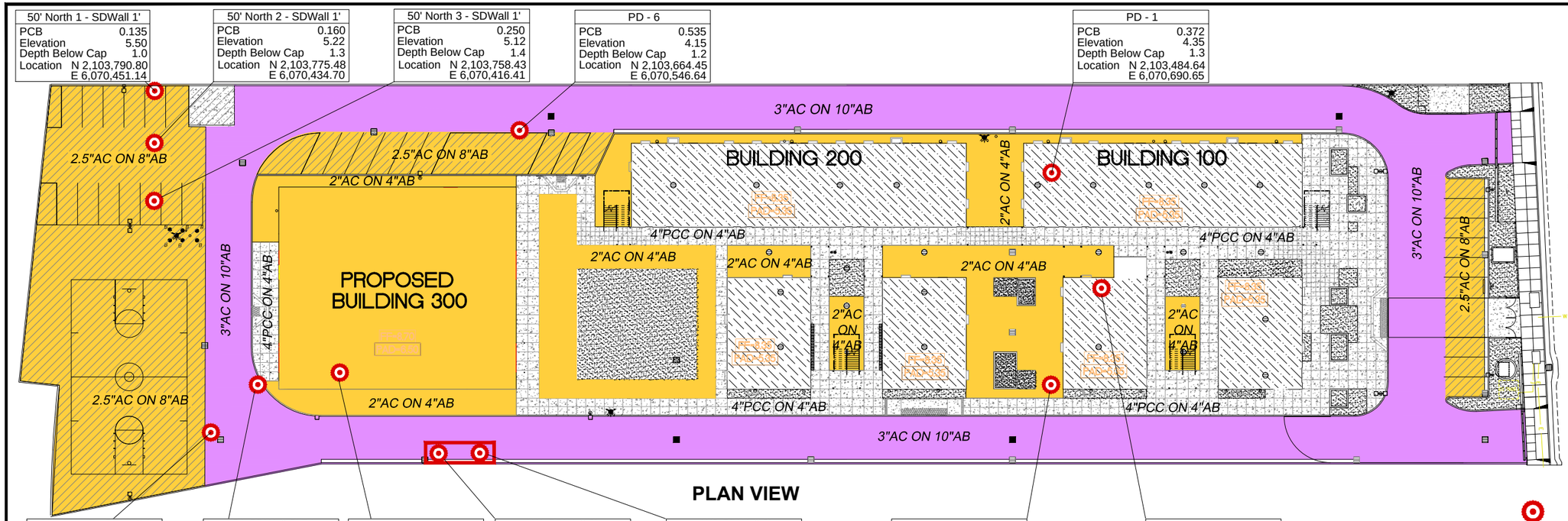
1009 66TH AVENUE, OAKLAND, CALIFORNIA

SITE VICINITY MAP

ARCADIS

FIGURE 1

DESIGN\003\09155\Figure 1 Site Vicinity - 003-09155.cdr



PLAN VIEW

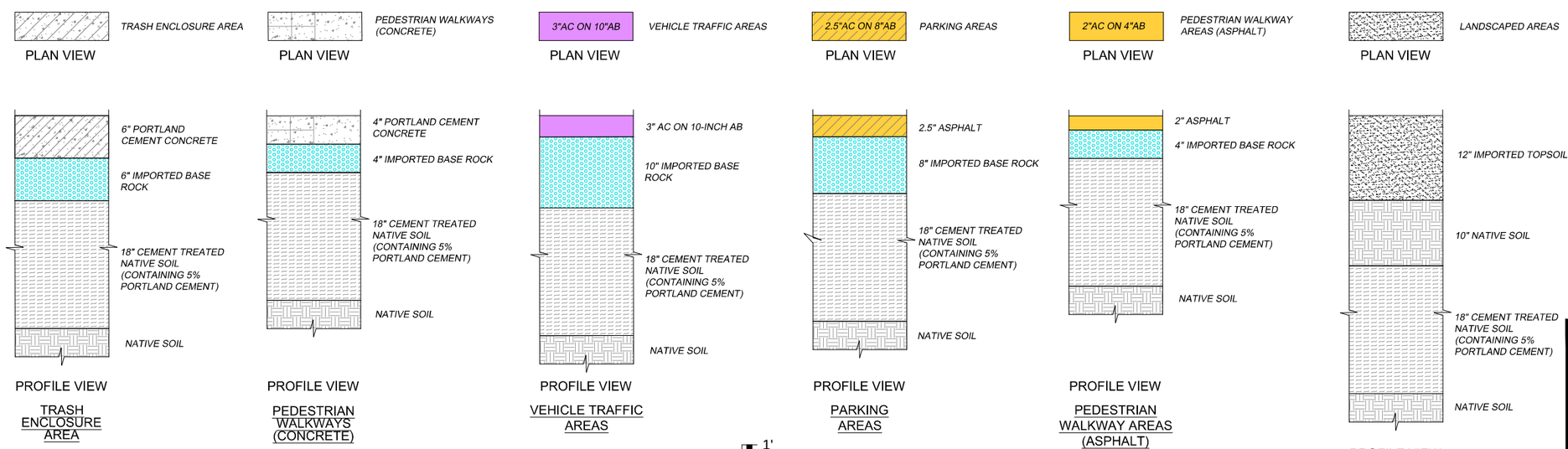
0 25' 50'
APPROXIMATE SCALE IN FEET

LEGEND

- SOIL SAMPLE FAILED POLYCHLORINATED BIPHENYLS (PCB) CRITERIA OF 0.130 mg/kg
- LOCATION OF PCB AFFECTED SOIL ENCAPSULATED FROM APPROXIMATELY 3 TO 8 FEET BELOW FINISHED GRADE
- EXISTING CONCRETE SLAB (6" REINFORCED PCC ON 6" CLASS 2 AB ON 6" RECOMPACTED SUBGRADE (90%)) PER GEOTECHNICAL REPORT
- EXISTING CONCRETE SLAB (4" REINFORCED PCC ON 4" CLASS 2 AB ON 6" RECOMPACTED SUBGRADE (90%)) PER GEOTECHNICAL REPORT
- 3"AC ON 10"AB — EXISTING AC PAVEMENT-TRAFFIC SECTION (3" AC ON 10" CLASS 2 AB ON 6" RECOMPACTED SUBGRADE (95%)) PER GEOTECHNICAL REPORT
- 2.5"AC ON 8"AB — EXISTING AC PAVEMENT-PARKING SECTION (2.5" AC ON 8" CLASS 2 AB ON 6" RECOMPACTED SUBGRADE (95%))
- 2"AC ON 4"AB — EXISTING AC PAVEMENT-PEDESTRIAN SECTION (2" AC ON 4" CLASS 2 AB ON 6" RECOMPACTED SUBGRADE (95%)) PER GEOTECHNICAL REPORT
- LANDSCAPING: 12" TOP SOIL OVER 10" CAP OF IMPORTED SOIL. COMPACT CAP TO 90%. ORANGE WARNING NETTING UNDERNEATH CAP.
- RAT SLAB UNDERNEATH ALL MODULAR BUILDINGS: 2"AC ON 4" CLASS 2 AB

mg/kg = MILLIGRAMS PER KILOGRAM

EXISTING PAVEMENT/CAP DETAILS



SOURCES: UNDERWOOD & ROSENBLUM, INC.
K2A ARCHITECTURE + INTERIORS
GRADING AND PAVING PLANS

PROPOSED CHARTER SCHOOL SITE
1009 66TH AVENUE, OAKLAND, CALIFORNIA

SITE PLAN
EXISTING PAVEMENT/CAP

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FIGURE
2

CITY: EMERYVILLE, CA DIV/GROUP: ENVCAD DB: A. REYES, J. HARRIS LAYOUT: 2 SAVED: 10/14/2014 12:11 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 10/17/2014 12:02 PM BY: HARRIS, JESSICA
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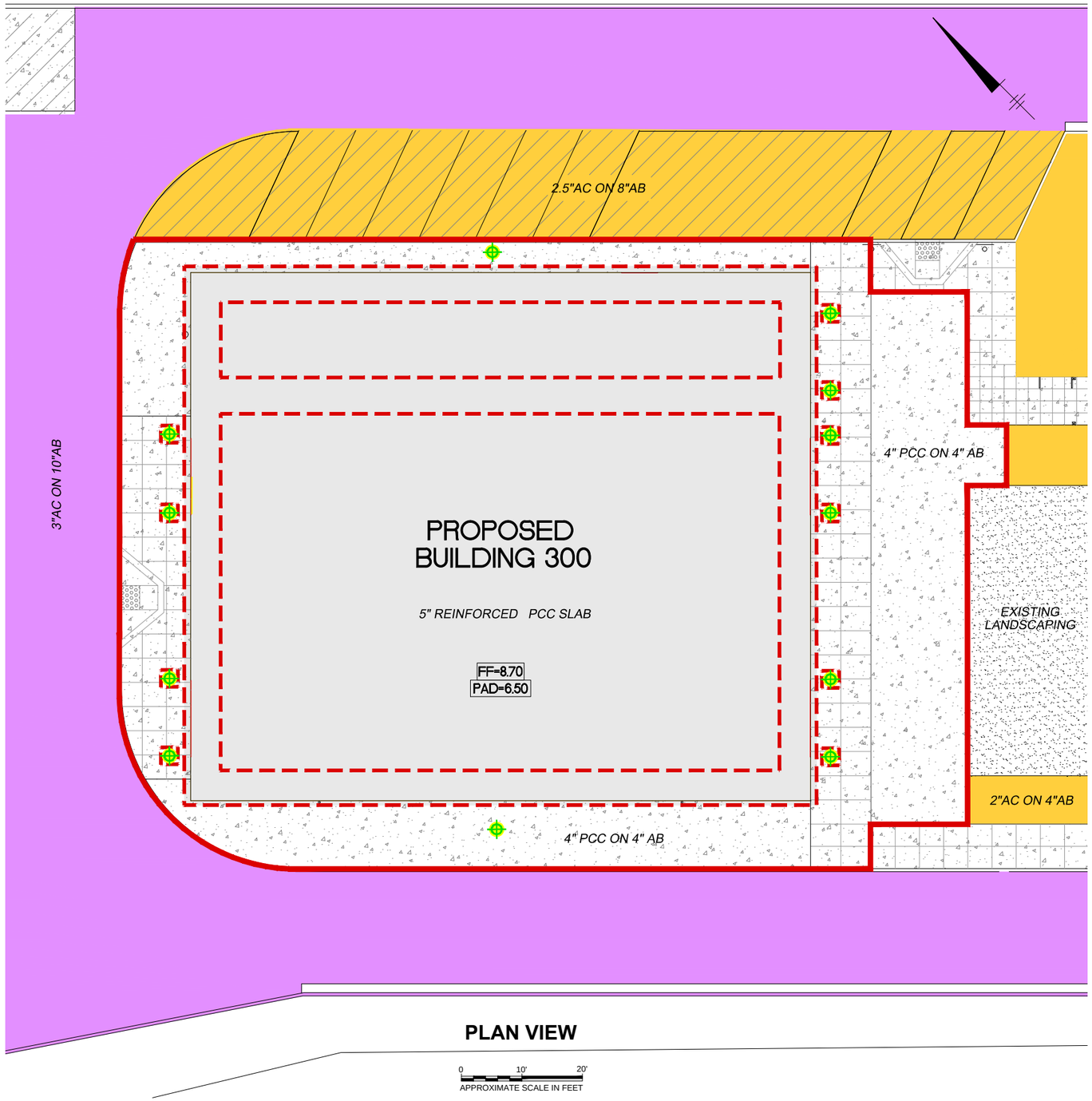
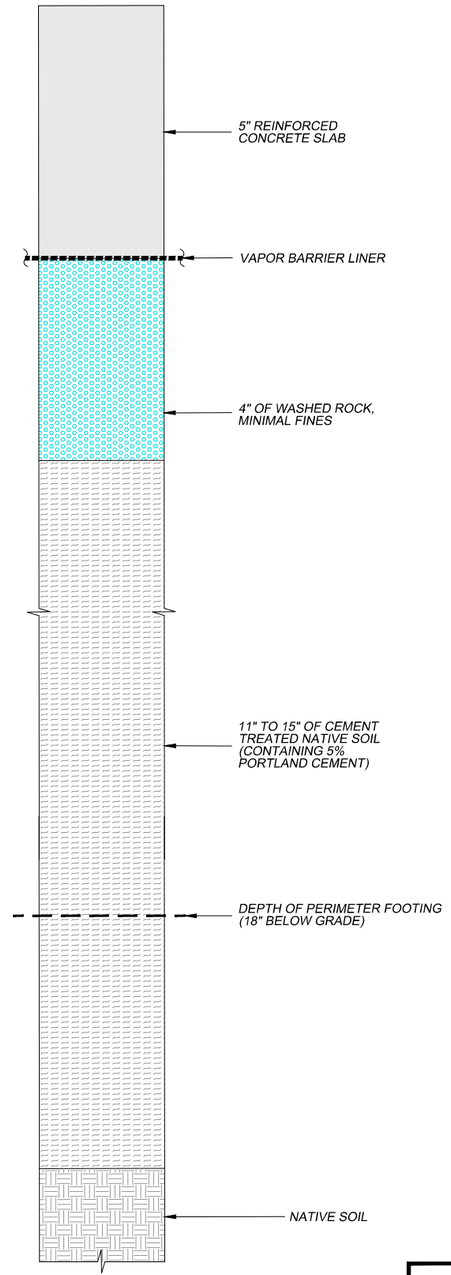
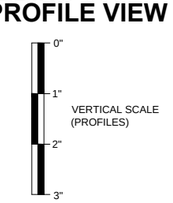


PLAN VIEW

SOURCES:
UNDERWOOD & ROSENBLUM, INC.
K2A ARCHITECTURE + INTERIORS GRADING AND PAVING PLANS



BUILDING 300
SLAB PROFILE VIEW



LEGEND

- LIMITS OF CAP MODIFICATION
- LIMITS OF PROPOSED BUILDING FOOTING FOUNDATIONS
- LIMITS OF PROPOSED CANOPY FOOTING
- PROPOSED PRE-DEMOLITION SOIL BORING
- NEW CONCRETE BUILDING SLAB (5" REINFORCED PCC, SEE PROFILE THIS FIGURE)
- NEW CONCRETE PEDESTRIAN WALKWAY SLAB (4" REINFORCED PCC ON 4" CLASS 2 AB)
- EXISTING LANDSCAPING: 12" TOP SOIL OVER 10" CAP OF IMPORTED SOIL. COMPACT CAP TO 90%. PLACE ORANGE WARNING NETTING UNDERNEATH CAP.
- 3"AC ON 10"AB — EXISTING AC PAVEMENT-TRAFFIC SECTION (3" AC ON 10" CLASS 2 AB)
- 2.5"AC ON 8"AB — EXISTING AC PAVEMENT-PARKING SECTION (2.5" AC ON 8" CLASS 2 AB)
- 2"AC ON 4"AB — EXISTING AC PAVEMENT-PEDESTRIAN SECTION (2" AC ON 4" CLASS 2 AB)

NOTE:

1. SEE FIGURE 4 FOR LAYOUT DETAILS OF VAPOR COLLECTION SYSTEM.

PROPOSED CHARTER SCHOOL SITE
1009 66TH AVENUE, OAKLAND, CALIFORNIA

BUILDING 300 CAP MODIFICATION PLAN

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FIGURE
3